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GENERAC®

POWER SYSTEMS, INC.

WIRING DIAGRAMS AND ELECTRICAL SCHEMATICS

FOREWORD

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This manual contains wiring diagrams and electrical schematics for many Generac standby generator sets. To locate the wiring diagram and/or electrical schematic needed, refer to the DATA CARD supplied with each standby generator model. The appropriate diagrams and schematics are listed under the "Assembly Numbers" column for group G.

A "DIAGNOSTIC REPAIR MANUAL" for Generac standby generators is also available. To order the repair manual, specify Manual Part No. 79247.

Instructions for Viewing This Manual

This is an interactive CD-rom program allowing you to view wiring diagrams, schematics, and interconnection diagrams for standby generator systems.

The Table of Contents at right is linked to the Indexes and text found within this manual. Click on any topic in the TOC to instantly view that section or index.

Use the Bookmark section at the left to return to the Index, or to return to the Main Menu. A triangle next to a bookmark indicates that further bookmarks can be viewed. By clicking on the triangle, a new set of bookmarks drops down. This can best be used to navigate to a specific index page more quickly because the range of drawing numbers found on any index page is listed with its corresponding bookmark.

Simply point and click on any drawing number within the index to view that particular drawing.

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Index to Prepackaged Standby System Interconnection Diagrams ..... Click Here

Electrical Formulas ..... Click Here

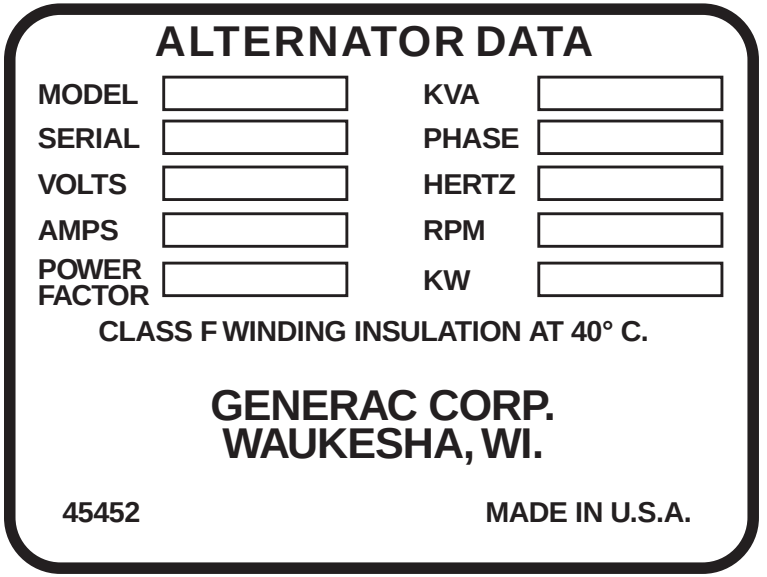
Standby Generator Identification

The Data Plate

A DATA PLATE has been prominently affixed to each standby generator. A typical Data Plate is shown in Figure 1. The plate lists lists the following information:

- Generator Model Number.
- Generator Serial Number.
- Rated voltage of the generator.
- Rated maximum continuous output current, in AMPS.
- Power Factor of the unit.
- Rated kVA of the generator.
- Phase (1 or 3-phase).
- Rated AC frequency.
- Rated speed of the Rotor, in RPM.
- The unit's rated kilowatts (kW).

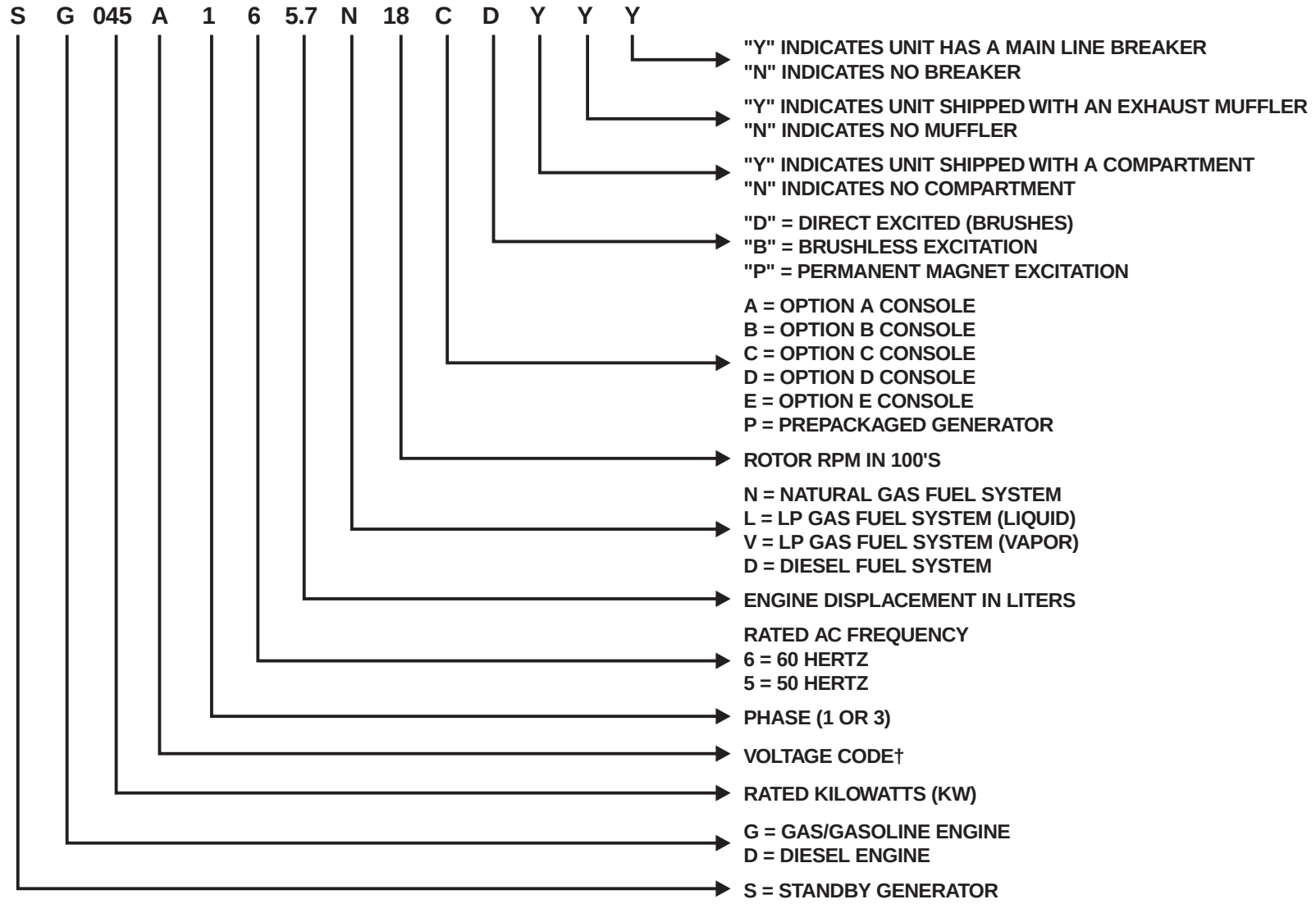
Figure 1. Typical Generator Data Plate



Standby Generator Identification

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Generator Identification Code



† see "Voltage Codes"

Standby Generator Identification

The Data Card

One or more DATA CARDS are shipped with each Generac standby generator set. The card provides important information peculiar to each unit. When ordering parts or requesting information you may be asked to provide information from this card. The following information is listed on the card:

- The unit's Model Number.
- The Date of Manufacture.
- The generator's "Identification Code" (see "Generator Identification Code" on Page 1).
- A GROUP-DESCRIPTION-ASSEMBLY NUMBERS listing.

Use the GROUP-DESCRIPTION-ASSEMBLY NUMBERS listing to locate the electrical schematics and wiring diagrams for the specific Model Number given on the card. Wiring diagrams and electrical schematic Assembly (Drawing) numbers are listed under "Assembly Numbers" column (Group "G").

GENERAC CORP.

MODEL NO. 92A01256S **DATE 7/10/92**
SG012-A161.2N18CDYNY

GROUP	DESCRIPTION	ASSEMBLY NUMBERS		
A	Generator	00000	00000	00000
B	Control Panel	00000	00000	00000
C	Mounting Base	00000	00000	
D	Engine & Accy	00000	00000	
E	Fuel System	00000		
G	Wiring Diagram	00000	00000	00000
		00000	00000	

Standby Generator Identification

Voltage Code Chart

VOLTAGE CODE	PHASE	RATED FREQUENCY	RATED VOLTAGE	STATOR POWER WINDING CONFIGURATION
A	1	60	120/240	Dual stator windings with 4 leads coming out.
D	3	60	120/240	Center Tap Delta is reconnectable to 480 volts. Full capacity available at both 1 and 3-phase.
G	3	60	120/208	12-lead reconnectable stator is reconnectable to all voltages (Broad Range).
J	3	60	120/240	12-lead reconnectable stator is reconnectable to all voltages (Broad Range).
K	3	60	277/480	12-lead reconnectable stator is reconnectable to all voltages (Broad Range).
L	3	60	600	
M	1	50	110/220	Dual stator windings with 4 leads brought out.
N	3	50	220/380	Wye Connected stator
O	3	50	240/416	Wye Connected stator
P	3	50	120/240	Center Tap Delta stator

NOTE: The "Voltage Code" for a specific unit is part of the "Generator Identification Code" for that unit. The "Code" can be found on the Data Card.

Generac Standard Wire Numbers

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WIRE #	WIRE FUNCTION
00	Stator 3-Phase “Neutral” line
1	Negative (-) field (Rotor) excitation lead
2	Excitation (DPE) winding output- thermal protector to DPE circuit breaker
3	Positive (+) field (with Variable Gain Regulator)
4	Positive (+) field (with V/F or DPE Regulator)
5	Stator excitation (DPE) lead
6	Stator excitation (DPE) lead
7	DPE lead (Gap)
8	DPE lead (second tap)
8	Ignition charge coil (air-cooled engines)
8	Control Bridge Module (CBM) to V/F Regulator
9	Ignition battery coil (+)
10	“Neutral” line on tractor-driven generators
11	AC power winding output lead
12	Choke solenoid (water-cooled engine)
12	Ignition coil (air-cooled engine)
13	Positive (+) battery cable
13A	Line to battery charge ammeter
13R	Battery to DC alternator regulator
14	+12 volts DC (only with engine running)
15	Fused battery output, +12 VDC
16	+12 volts DC (only with engine cranking)
17	Manual engine crank (ground to crank)
18	Manual engine stop (ground to stop)
19	LOS fuel solenoid control - Diesel
20	Fused AC power
21	Generator AC output power (after breaker)
22	AC power winding output lead

WIRE #	WIRE FUNCTION
23	Transfer relay control lead
24	Center contact for High-Low Bias switch and DPE
25	Ignition stator trigger coil
26	Return of AC portion of Bias Rectifier
27	Bias (common)
28	Bias (Low)
29	Bias (High)
29	+VDC Field boost diode
30	Fused AC power
31	Generator AC output power (after Breaker)
32	AC power line
33	AC power winding output lead
34	Welder regulator (sensing)
35	Welder regulator (sensing)
36	Welder regulator (sensing)
37	Welder auxiliary power (while welding)
38	Welder auxiliary power (while welding)
39	Choke Heater
40	Fused AC power
41	AC power
42	AC power
43	AC power
44	AC power winding output lead
45	Welder output (+DC) choke output
46	Welder output (-DC) Diode output
47	Choke lead
47	Engine DC alternator field
48	Engine DC alternator field
49	Engine DC alternator field

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WIRE #	WIRE FUNCTION
50	Weld winding
51	Welder diode leads (AC) Phase “A”
52	Welder diode leads (AC) Phase “B”
53	Welder diode leads (AC) Phase “C”
54	Trickle charger ammeter lead
55	Battery charge winding output
56	+12/24 VDC, Engine crank signal
57	Current transformer
58	Current transformer
59	Current transformer
60	Weld winding
61	Remote output jack (welders)
62	Current adjust resistor (welders)
63	Current adjust resistor (welders)
64	Line voltage meter lead
65	Line voltage meter lead
66	Battery charge winding output
67	Selector switch to ammeter
68	Water temperature sensor to gauge
69	Oil pressure sender to gauge
70	Weld winding
71	Engine running (Auto start controller signal)
72	-DC power to outlets while welding
73	+DC power to outlets while welding
74	DC power to outlets while welding
75	DC power to outlets while welding
76	DC power to outlets while welding
77	Battery charge winding output
78	Battery charge winding through circuit breaker

WIRE #	WIRE FUNCTION
79	RPM sensor output signal
80	Weld winding
81	Idle control lead
82	Idle control lead
83	Idle control lead
84	Idle control lead
85	Low coolant level & high coolant temperature sensor lead
86	Low oil pressure switch lead
87	Auxiliary power
88	Auxiliary power
89	Voltage adjust to regulator
90	Choke solenoid lead
91	Choke solenoid lead
92	Thermostat
93	Thermostat
94	Low oil level indicator lamp
95	High temperature indicator lamp
96	Overcrank indicator lamp lead
97	Overspeed indicator lamp lead
98	RPM Sensor loss indicator lamp lead
99	Stator lead (center tap)
100	Latch circuit board annunciator horn (+12 volts DC when failure occurs)
101	Utility line
102	Utility line
103	Utility line
104	Emergency line
105	Emergency line

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WIRE #	WIRE FUNCTION
106	Utility line
107	Transfer switch position contacts
108	Transfer switch position contacts
109	Utility line
110	Transfer switch position contacts
111	Utility line
112	Utility line
113	Utility line
114	Emergency line
115	Emergency line
116	Transfer switch motor lead (First tap Primary transformer)
117	Transfer switch motor lead (Second tap Primary transformer)
118	Transfer switch motor lead (Third tap Primary transformer)
119	Transfer switch motor lead (Fourth tap Primary transformer)
120	Transfer switch motor lead (Fifth tap Primary transformer)
121	Transfer switch motor lead (Tap selector Primary transformer)
122	Transfer switch motor lead (Primary transformer common)
123	Transfer switch motor lead (Fused secondary)
124	Transfer switch motor lead (Fused secondary)
125	Transfer switch motor lead (Unfused secondary)

WIRE #	WIRE FUNCTION
126	Transfer switch motor lead (Unfused secondary)
127	Normally-Closed transfer switch contacts
128	Normally-Closed transfer switch contacts
129	Positive (+) lead - frequency meter
130	Positive (+) battery (Before BCM Shunt)
131	Overspeed shutdown
132	RPM Sensor loss shutdown
133	Crank Signal (From Crank/Latch-DC Control circuit board)
134	Crank Limit (Output signal to transfer switch)
135	Engine Off signal (From Crank/Latch board)
136	Automatic Start (Ground to start)
137	Latch Test Switch (Engine Monitor Panel)
138	Latch Reset Switch (Engine Monitor Panel)
139	Negative (-) lead to frequency meter
140	Sensing Transformer secondary (Common lead)
141	Sensing Transformer secondary (Voltage Divider Resistor - 200V)
142	Sensing Transformer secondary (Voltage Divider Resistor - 230V)
143	Sensing Transformer secondary (Voltage Divider Resistor - 400V)
144	Sensing Transformer secondary (Voltage Divider Resistor - 460V)
145	Sensing Transformer secondary (Voltage Divider Resistor - 575V)
146	Sensing Transformer - Voltage Divider Resistor Selector
147	Transformer Switch Position Lamps (Emergency)
148	Transformer Switch Position Lamps (Normal)

Generac Standard Wire Numbers

WIRE #	WIRE FUNCTION
149	Fuel Filter contact line
150	Preheat solenoid +12/24 VDC
151	PTO Generator boost winding
152	PTO Generator boost winding
153	Boost circuit
154	Boost circuit
155	Sensing Transformer lead
156	Sensing Transformer lead
157	Idle Control Solenoid interlock line
158	Bypass Switch lead
159	Engine Governor power lead
160	Governor Actuator power lead (Barber-Coleman Governor)
161	Governor Actuator power lead (Barber-Coleman Governor)
162	Throttle Positioner lead
163	Throttle Positioner lead
164	Throttle Positioner lead
165	Throttle Positioner lead
166	Diode protected 12 volts DC
167	Switched 12 volts DC
168	12 volts DC to electronic governor
169	12 volts DC to electronic governor
170	7-Day Exercise circuit board disable line
171	Latch Board annunciator dialer/system fail (+12 VDC when failure occurs)
172	Run signal
173	Sensing transformer secondary lead
174	Auto-Option 2-position switch

WIRE #	WIRE FUNCTION
175	Manual-Option 2-position switch
176	Engine indicator lamp
177	2-wire automatic start circuit
178	2-wire automatic start circuit
179	Alternator field
180	Alternator field
181	Alternator field
182	Switched sensing input to Logic circuit board
183	2-wire automatic start circuit
184	Fused AC load power
185	7-Day Exercise Timer input voltage
186	“Line Fail” indicator lamp wire
187	Time Delay Neutral lead (Y-Type transfer switch)
188	Time Delay Neutral lead (Y-Type transfer switch)
189	Time Delay Neutral lead (Y-Type transfer switch)
190	Alarm Control Relay lead
191	Generator sensing lead (low voltage)
192	Generator sensing lead (low voltage)
193	Time Delay Neutral relay control
194	+12 volts DC transfer relay control
195	Circuit Board Interconnection (Transfer Switch)
196	Circuit Board Interconnection (Transfer Switch)
197	Circuit Board Interconnection (Transfer Switch)
198	Circuit Board Interconnection (Transfer Switch)
199	Circuit Board Interconnection (Transfer Switch)
200	Circuit Board Interconnection (Transfer Switch)
201	Circuit Board Interconnection (Transfer Switch)
202	Circuit Board Interconnection (Transfer Switch)
203	Circuit Board Interconnection (Transfer Switch)

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WIRE #	WIRE FUNCTION
204	Current transformer common lead (Transfer Switch)
205	Transfer Switch operation (unfused secondary)
206	Transfer Switch operation (unfused secondary)
207	Transfer Switch operation (unfused secondary)
208	Transfer Switch operation (unfused secondary)
209	Normally-closed alarm contact
210	Common alarm contact
211	Normally-open alarm contact
212	Low filter indicator
213	3-wire start common lead (Transfer Switch)
214	Switch operation (“M” type transfer switch)
215	Switch operation (“M” type transfer switch)
216	Switch operation (“M” type transfer switch)
217	Switched 3-wire common (transfer switch)
218	+24 VDC
219	+24 VDC run circuit
220	Fuse protected +24 volts DC
221	Preheat relay coil drive (ground to operate)
222	Glow Plug Propane Engine Heater (+12 VDC to operate)
223	Crank/Latch circuit board to DC control board (Auto Stop- +12VDC to stop)
224	Utility voltage sensing input to circuit board (Low voltage- Transfer Switch)
225	Utility voltage sensing input to circuit board (Low voltage- Transfer Switch)
226	Utility voltage sensing input to circuit board (Low voltage- Transfer Switch)
227	Utility voltage sensing input to circuit board (Low voltage- Transfer Switch)

WIRE #	WIRE FUNCTION
228	Control auto mode enable
229	Control panel alarm relay (active low)
230	Remote manual start override
231	Transfer switch position - Emergency
232	Alternator excitation
233	Transfer switch operation - Time Delay Neutral (Wn-type transfer switch)
234	Transfer switch operation - Time Delay Neutral (Wn-type transfer switch)
235	Time delay Neutral Relay control (Transfer switch)
236	Signal before Transfer lead
237	Signal before Transfer lead
238	Signal before Transfer lead
239	Regulated voltage output (Home standby)
240	Signal before Transfer lead
241	Gasoline fuel shutoff solenoid
242	LP gas fuel shutoff solenoid
243	RV exhaust fan relay (ground)
244	RV Remote radiator fan (+12 volts DC)
252	2-wire start signal- preferred source option
253	2-wire start signal- preferred source option
254	2-wire start signal- preferred source option
255	System ready signal (+12 VDC)
256	Engine run enable (Active low)
257	Shunt trip overload sensing - Line 1
258	Shunt trip overload sensing - Line 1
259	Shunt trip overload sensing - Line 2
260	Shunt trip overload sensing - Line 2

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WIRE #	WIRE FUNCTION
261	Shunt trip overload sensing - Line 3
262	Shunt trip overload sensing - Line 3
263	Shunt Trip Signal
264	GTS inphase utility sensing, low voltage in phase w/N1
265	GTS return bypass control signal
266	Generator sensing (48 Vrms)
267	Signal before transfer control
268	Utility fail signal to customer
269	Engine alarm signal to annunciator relay (active +12V)
270	Extended line interupt delay for PPS control
271	Utility fail signal (+12V) APS units
272	Annunciator signal (spare) APS units
273	Annunciator signal (spare) APS units
274	Annunciator common - Cust. Conn. (APS units)
275	Annunciator alarm signal - Cust. conn. (APS units)
276	Annunciator generator run - Cust. conn. (APS units)
277	Control in Auto +12 VDC active (APS units)
278	+DC volts from PCB, reference (no power)(APS units)
279	DC relay control start signal from cust. (APS units)
280	DC relay control start signal from cust. (APS units)
281	DC relay control stop signal from cust. (APS units)
282	DC relay control stop signal from cust. (APS units)
500	Low water temperature pre-alarm lamp
501	Low oil pressure pre-alarm lamp
502	Low fuel alarm signal (20%)
503	Auto-Off-Manual switch set to OFF
504	High battery voltage alarm
505	Low battery voltage alarm
506	High water temperature pre-alarm lamp

WIRE #	WIRE FUNCTION
507	High oil temperature shutdown
508	High oil temperature pre-alarm
509	Low fuel alarm sensor wire
510	Line O.K. signal
511	Remote annunciator auxiliary contacts (N.O.)
512	Remote annunciator aux.. contacts (Common)
513	Remote annunciator aux.. contacts (N.C.)
514	Low fuel alarm lamp
515	Low fuel alarm horn
516	Line O.K., 20% fuel, switch Off horn
517	Low fuel alarm lamp
518	Auto-Off-Manual switch set to OFF lamp
519	Utility line O.K. lamp
520	Remote annunciator lamp test
521	Remote annunciator horn reset
522	High oil temperature alarm
523	Oil temperature sender to gauge
524	Utility line voltage sensing relay
525	Switch Position - Emergency
526	Engine exercise signal to annunciator circuit board
527	Utility voltage available on annunciator
528	Engine exercising lamp on annunciator
529	Remote horn (customer connection)
530	Remote horn (customer connection)
531	Emergency power operating lamp
532	Barber-Coleman Governor Remote Speed pot (Controller terminal #7)
533	Barber-Coleman Governor Remote Speed pot (Controller terminal #9)

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WIRE #	WIRE FUNCTION
534	Barber-Coleman Governor Remote Speed pot (Controller terminal #6)
535	Special standby annunciator (Flash Lead)
536	Control circuit ready annunciator lamp
537	80% Rated Load annunciator lamp
538	Dual Genset Select
539	Unit Mount Time Delay on Stop
540	Unit Mount Time Delay on Stop
541	Lead Generator #1 lamp - Dual Genset controller
542	Lead Generator #2 lamp - Dual Genset controller
543	Battery Trouble annunciator signal
544	Battery Trouble lamp
545	Diesel Fuel Heater switches
546	LP Gas leak detector - Auxiliary Relay
547	LP Gas leak detector - Auxiliary Relay
548	LP Gas leak detector - Auxiliary Relay
549	LP Gas leak detector - Auxiliary Relay contacts
550	LP gas leak detector output (+12 VDC when no leak is detected)
551	Remote Reset (Latched shutdowns)
552	Under voltage relay activated
553	Voltage Select 480 VAC indicator lamp
554	Voltage Select 480 VAC indicator lamp
555	Voltage Select 240 VAC indicator lamp
556	Transfer switch No. O. auxiliary contact
557	Transfer switch common auxiliary contact
558	Transfer switch common auxiliary contact
559	Transfer switch N.O. auxiliary contact
560	Transfer switch Priority Selector switch

WIRE #	WIRE FUNCTION
561	Transfer switch Priority Selector switch
562	Transfer Switch - Generator Priority lamp
563	Transfer Switch - Generator Priority lamp
564	High/Low Voltage Shutdown annunciator lamp
565	Generator High/Low Voltage Monitor
566	Engine Run Signal - Oil Pressure
567	Gas/Diesel Leak detector - Dual Wall tank
568	MCI Leak Detector (12 VDC if leaking)
569	Fuel level sender (gauge to sender)
570	Lamp - annunciator, high/low voltage shutdown
571	Generator high/low voltage monitor
572	Engine run signal - oil pressure
573	Low water sensor signal
574	Transfer switch solenoid
575	Fuel level sender (gauge to sender)
576	Low coolant level alarm lamp
577	Pickup resistor to low coolant level relay coil
578	Auto start delay +12V battery
579	240V Generator supplying load
580	240V Generator available contact closure
581	Coolant heater line, broken for lockout in control panel
582	Coolant heater line, broken for lockout in control panel
583	Coolant low level contact closure
584	GTS neutral activation solenoid
585	Utility fail signal
586	GTS 24VAC common - Switch position indicator lamps
587	Carburetor preheat - Thermostat manual override

Generac Standard Wire Numbers

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WIRE #	WIRE FUNCTION
588	Carburetor preheat - Auto operation
589	MLCB Open
	HARRIS WIRE NUMBERS
700	Stand-by oil heater / T-start interconnection
701	Battery heater / T-start interconnection
702	Low oil temperature sensor
703	Low oil temperature sensor
704	Low temperature sensor - fuel filter
705	Low temperature sensor - fuel filter
706	Low temperature sensor - battery #1
707	Low temperature sensor - battery #1
708	Low temperature sensor - battery #2
709	Low temperature sensor - battery #2
710	Low temperature sensor - day tank
711	Low temperature sensor - day tank
712	Common alarm output PCB assembly 83966
713	Common alarm output PCB assembly 83945-A
714	Low temperature sensor - control panel

WIRE #	WIRE FUNCTION
715	Low temperature sensor - control panel
716	Control panel heater / T-start interconnection
717	Fuel filter heater relay to switch interconnection
718	Generator accessories 120 VAC w/breakers (S1)
719	O/U frequency relay common alarm terminal
720	O/U frequency relay N.O. alarm terminal
721	O/U voltage relay common alarm terminal
721A	O/U voltage common - switched
722	Alarm disconnect
723	Generator output relay N.O. contact
724	Generator output relay common contact
725	Generator accessories 120V w/breaker (52)
726	Generator accessories 120V w/breaker (53)
727	Low temperature sensor - transfer switch
728	Low temperature sensor - transfer switch
729	Transfer switch position - (utility) N.C.
730	High fuel alarm
731	Rupture fuel alarm

12 and 24 VDC Engine Electrical Systems

Early Production Generators

Prior to the last quarter of 1991, Option A, B and C control consoles were designed for operation only by a 12 volt DC power source. The power supply for all control consoles, then and now, is the unit battery.

Units equipped with a 12 volt DC engine electrical system could be connected directly to the control console for operation of console components.

However, some standby generator engines are equipped with a 24 volt DC engine electrical system (usually supplied by two 12 volt batteries connected in series). This meant that the 24 volt power supply had to be reduced to 12 volts for control console operation. A 24-to-12 volt DC converter was used for this purpose.

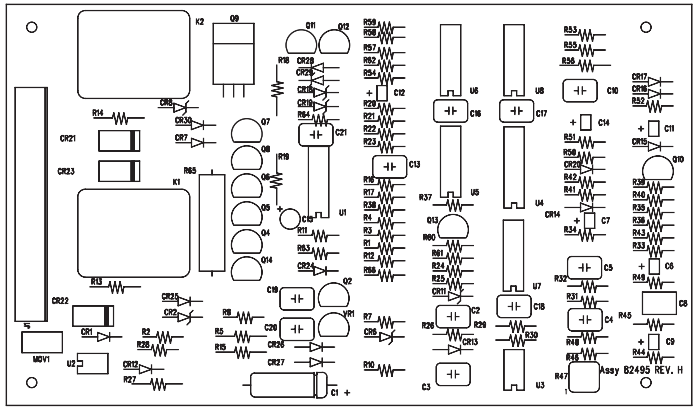
Later Production Generators

Beginning in the final quarter of 1991, the following changes were incorporated into Generac standby generators:

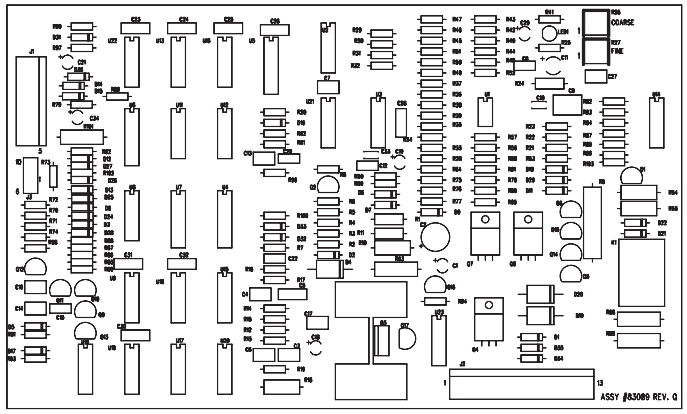
- Control console components, including the DC control/latch-crank circuit board, were changed to dual voltage type. That is, all console components can now be operated on either 12 or 24 volts DC.
- For units with a 24 volt DC electrical system, the DC converter is no longer required.
- Units equipped with a 24 volt DC engine system no longer require an engine run relay.
- Generators manufactured more recently and having an Option A or B control console will be equipped with engine control circuit board Part No. 82495. This is a dual voltage (12 or 24 volts) circuit board.
- Units manufactured more recently and having an Option C control console are equipped with engine control circuit board Part No. 83089. This is also a dual voltage (12 or 24 volt) board.

NOTE: When the old style (12 volts only) circuit board has failed, the new dual voltage board will be shipped as a replacement part. The new dual voltage board will work with any old or new (12 or 24 volt) system.

Option A & B Dual Voltage Circuit Board (82495)



Option C Dual Voltage Circuit Board (83089)



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DRAWING NUMBER	DRAWING TYPE	ENGINE	CNTRL CNSL OPT.	DESCRIPTION OF DRAWING	REV. DATE
A1007	Schematic	3.0 L Gas		3.0 Liter Gas Engine	12/22/97
A1008	Wiring Diagram	3.0 L Gas		3.0 Liter Gas Engine	12/22/97
A1013	Wiring Diagram		A	A Option Control Panel	11/22/96
A1014	Wiring Diagram		A	A Option Control Panel	11/22/96
A1062	Wiring Diagram		C	C Option Control Panel	01/21/98
A1063	Schematic		C	C Option Control Panel	11/19/96
A1233	Wiring Diagram		A	A Option Control Panel	11/22/96
A1233	Wiring Diagram		A	A Option Control Panel	11/22/96
A1233	Wiring Diagram		A	A Option Control Panel	11/22/96
A1233	Wiring Diagram		A	A Option Control Panel	11/22/96
A1233	Wiring Diagram		A	A Option Control Panel	11/22/96
A1233	Wiring Diagram		A	A Option Control Panel	11/22/96
A1233	Wiring Diagram		A	A Option Control Panel	11/22/96
A1249	Schematic		B	B Option Control Panel	11/18/96
A1251	Wiring Diagram		B	B Option Control Panel	11/18/96
A2800	Schematic	1.6 L Gas		1.6 Liter Gas Engine	10/13/97
A2801	Wiring Diagram	1.6 L Gas		1.6 Liter Gas Engine	10/13/97
A2802	Schematic	1.6 L Gas		Prepack Units With 1.6 Liter Gas Engine	03/05/97
A2803	Wiring Diagram	1.6 L Gas		Prepack Units With 1.6 Liter Gas Engine	03/05/97
A2804	Wiring Diagram	1.6 L Gas		Prepack Units With 1.6 Liter Gas Engine-3 Phase	03/05/97
A2805	Schematic	1.6 L Gas		Prepack Units With 1.6 Liter Gas Engine-3 Phase	03/05/97
A2806	Schematic	1.6 L Gas	A	1.6 Liter Gas Engine - A Option Control Panel	03/05/97
A2807	Wiring Diagram	1.6 L Gas	A	1.6 Liter Gas Engine - A Option Control Panel	03/05/97
A2808	Wiring Diagram	1.6 L Gas	B	1.6 Liter Gas Engine - B Option Control Panel	03/05/97
A2809	Schematic		B	B Option Control Panel	10/13/97
A2810	Wiring Diagram	1.6 L Gas	C	1.6 Liter Gas Engine - C Option Control Panel	03/05/97
A2811	Schematic	1.6 L Gas	C	1.6 Liter Gas Engine - C Option Control Panel	03/05/97
A3332	Wiring Diagram	4.5 L Diesel		4.5 Liter Diesel Engine	08/12/97
A3333	Schematic	4.5 L Diesel		4.5 Liter Diesel Engine	08/12/97
A3793	Schematic		B	B Option Control Panel-Mobile	12/01/97
A3794	Wiring Diagram			GR-8 Control Panel	12/01/97
A3796	Wiring Diagram	1.0 L Diesel		1.0 Liter Diesel Engine	12/01/97
A4366	Wiring Diagram	2.4 L Diesel		2.4 Liter Diesel Engine	09/05/97
A4367	Wiring Diagram	2.4 L Diesel		2.4 Liter Diesel Engine	09/05/97
A4482	Wiring Diagram	5.0 L Diesel		5.0 Liter Diesel Engine	08/12/97
A4483	Schematic	5.0 L Diesel		5.0 Liter Diesel Engine	08/12/97

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A4591	Wiring Diagram	4.3 & 7.4 L Gas		4.3 & 7.4 Liter Gas Engine	07/29/97
A4592	Wiring Diagram	4.3 & 7.4 L Gas		4.3 & 7.4 Liter Gas Engine	07/29/97
A4794	Wiring Diagram	4.0 L Diesel		4.0 Liter Diesel Engine	09/22/97
A4795	Schematic	4.0 L Diesel		4.0 Liter Diesel Engine	09/22/97
A4806	Wiring Diagram	4.0 L Diesel		4.0 Liter Diesel Engine	06/24/97
A4808	Wiring Diagram	4.0 L Diesel		4.0 Liter Diesel Engine	10/24/97
A5172	Schematic	1.6 L Gas		1.6 Liter Gas Engine	09/05/97
A5173	Schematic	1.6 L Gas		1.6 Liter Gas Engine	10/22/97
A5174	Schematic	1.6 L Gas	A	1.6 Liter Gas Engine - A Option Control Panel	09/05/97
A5175	Wiring Diagram	1.6 L Gas	A	1.6 Liter Gas Engine - A Option Control Panel	09/05/97
A5176	Wiring Diagram	1.6 L Gas	B	1.6 Liter Gas Engine - B Option Control Panel	09/05/97
A5177	Schematic	1.6 L Gas	B	1.6 Liter Gas Engine - B Option Control Panel	09/05/97
A5178	Wiring Diagram	1.6 L Gas	C	1.6 Liter Gas Engine - C Option Control Panel	09/05/97
A5179	Schematic	1.6 L Gas	C	1.6 Liter Gas Engine - C Option Control Panel	09/05/97
A5269	Wiring Diagram	1.6 L Gas		Engine — 1.6 Liter Sprint	07/29/98
A5270	Wiring Diagram	1.6 L Gas		1.6 Liter Pre-pack	07/29/98
A5345	Wiring Diagram	6.8 L Diesel		6.8 Liter Diesel Engine Control Panel	05/15/98
A5346	Schematic	6.8 L Diesel		6.8 Liter Diesel Engine Control Panel	05/15/98
A5347	Wiring Diagram	6.8 L Diesel		6.8 Liter Diesel Engine AC Receptacle Panel	05/15/98
A5348	Schematic	6.8 L Diesel		6.8 Liter Diesel Engine AC Receptacle Panel	05/15/98
A5356	Wiring Diagram	6.8 L Diesel		6.8 Liter Diesel Engine - John Deere	05/15/98
A5357	Wiring Diagram	6.8 L Diesel		6.8 Liter Diesel Engine - John Deere	05/15/98
A5502	Wiring Diagram		E	E Option Control Panel	06/16/98
A5858	Wiring Diagram			Stepper Motor	10/15/97
A6363	Wiring Diagram		C	C Option Control Panel	12/09/97
A6364	Schematic		C	C Option Control Panel	12/09/97
A6665	Schematic	12.0 L Diesel		12.0 Liter Diesel Engine	08/12/98
A6666	Wiring Diagram	12.0 L Diesel		12.0 Liter Diesel Engine	08/12/98
A7045	Wiring Diagram	12.0 L Diesel	C	12.0 Liter Diesel Engine - C Option Control Panel	08/12/98
A7046	Schematic	12.0 L Diesel	C	12.0 Liter Diesel Engine - C Option Control Panel	08/12/98
A7109	Wiring Diagram		B	B Option Control Panel	10/16/98
A7110	Schematic		B	B Option Control Panel	10/16/98
A7176	Wiring Diagram	1.5 L Gas		1.5 Liter Gas Engine	11/03/98
A7182	Schematic	1.5 L Gas		1.5 Liter Pre-pack	11/03/98
A7666	Wiring Diagram	3.0 L Diesel		3.0 Liter Diesel Engine	05/28/98
A7667	Wiring Diagram	3.0 L Diesel		3.0 Liter Diesel Engine	05/21/98

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20451	Wiring Diagram		A	A Option Control Panel	05/21/98
20452	Wiring Diagram		B	B Option Control Panel	05/21/98
20453	Wiring Diagram		C	C Option Control Panel	05/21/98
20454	Wiring Diagram			Prepack	05/21/98
20459	Wiring Diagram	1.6 L Gas		1.6 Liter Gas Engine	05/21/96
20461	Schematic		A	A Option Control Panel	05/21/96
20462	Schematic		B	B Option Control Panel	05/21/96
20463	Schematic		C	C Option Control Panel	05/21/96
20464	Schematic			Prepack	05/21/96
20485	Wiring Diagram			Prepack - 3 Phase	05/21/96
20486	Schematic			Prepack - 3 Phase	05/21/96
20525	Schematic	1.6 L Gas		1.6 Liter Gas Engine	05/21/96
65085	Wiring Diagram	3.0 L Diesel		3.0 Liter Diesel Engine	No Date
66144A	Schematic			Diesel Engine Units	08/01/91
66144A	Schematic			Diesel Engine Units	08/01/91
66144A	Schematic			Diesel Engine Units	08/01/91
66144A	Schematic			Diesel Engine Units	08/01/91
66144A	Schematic			Diesel Engine Units	08/01/91
66573	Wiring Diagram			Dual Voltage Board - 208/480 VDC	No Date
69128	Wiring Diagram			Mervyn's Remote Annunciator	06/11/91
70062	Schematic		B	B Option Control Panel - 24 VDC Diesel	03/16/87
70063	Schematic		B	B Option Control Panel - 12 VDC Diesel	04/27/91
70064	Schematic		B	B Option Control Panel - 12 VDC Gas	04/27/91
70065	Schematic		C	C Option Control Panel - 24 VDC Diesel	04/27/91
70066	Schematic		C	C Option Control Panel - 12 VDC Diesel	06/01/91
70067	Schematic		C	C Option Control Panel - 12 VDC Gas	06/01/91
70252	Schematic		A	A Option Control Panel - 24 VDC Diesel	06/01/91
70253	Schematic		A	A Option Control Panel - 12 VDC Diesel	06/01/91
70254	Schematic		A	A Option Control Panel - 12 VDC Gas	06/01/91
70255	Wiring Diagram			Generator & AC Connection Panel	08/08/91
70255	Wiring Diagram			Generator & AC Connection Panel	08/08/91
70255	Wiring Diagram			Generator & AC Connection Panel	08/08/91
70255	Wiring Diagram			Generator & AC Connection Panel	08/08/91
70289	Wiring Diagram			Generator & AC Connection Panel	08/08/91
70289	Wiring Diagram			Generator & AC Connection Panel	08/08/91
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70289	Wiring Diagram			Generator & AC Connection Panel	08/08/91
70294	Schematic	5.7 & 7.4 L Gas		5.7 And 7.4 Liter Gas Engine	02/18/87
70295	Schematic	1.3 L Gas		1.3 Liter Gas Engine	02/18/87
70296	Wiring Diagram	1.3 L Gas		1.3 Liter Gas Engine	05/06/91
70297	Schematic	2.6 L Gas		2.6 Liter Gas Engine	02/18/87
70298	Wiring Diagram	2.6 L Gas		2.6 Liter Gas Engine	02/18/87
70299	Schematic	3.0 L Diesel		3.0 Liter Diesel Engine	06/01/89
70790	Schematic	7.4 L Gas		Mervyn's 7.4 Liter Gas GTS - 12 VDC	09/18/90
70791	Wiring Diagram			Mervyn's 12 VDC Control Panel	10/18/90
70792	Wiring Diagram	7.4 L Gas		Mervyn's 7.4 Liter Gas Engine	10/18/90
70793	Schematic	7.4 L Gas		Mervyn's 7.4 Liter Gas Engine	09/13/90
70794	Wiring Diagram	7.4 L Gas		Mervyn's 7.4 Liter Gas Engine	09/13/90
71221	Wiring Diagram		A	A Option Control Panel - 24 VDC Diesel	05/14/91
71222	Wiring Diagram		A	A Option Control Panel - 12 VDC Diesel	04/01/91
71223	Wiring Diagram		A	A Option Control Panel - 12 VDC Gas	04/01/91
71224	Wiring Diagram		B	B Option Control Panel - 24 VDC Diesel	04/01/91
71225	Wiring Diagram		B	B Option Control Panel - 12 VDC Diesel	04/01/91
71226	Wiring Diagram		B	B Option Control Panel - 12 VDC Gas	04/01/91
71227	Wiring Diagram		C	C Option Control Panel - 24 VDC Diesel	04/01/91
71228	Wiring Diagram		C	C Option Control Panel - 12 VDC Diesel	04/01/91
71229	Wiring Diagram		C	C Option Control Panel - 12 VDC Gas	04/01/91
71317	Schematic			Mervyn's Control Panel	04/21/89
71318	Wiring Diagram			Mervyn's Control Panel	04/21/89
71683	Schematic		C	C Option Control Panel - 12 VDC Diesel	04/04/87
71684	Wiring Diagram		C	C Option Control Panel - 12 VDC Diesel	04/28/87
71685	Schematic		C	C Option Control Panel - 12 VDC Gas	04/28/87
71687	Wiring Diagram		C	C Option Control Panel - 12 VDC Gas	04/28/87
71717	Wiring Diagram	3.0 L Diesel		3.0 Liter Diesel Engine	05/04/91
71718	Schematic	4.0 L Diesel		4.0 Liter Diesel Engine	02/18/87
71719	Wiring Diagram	4.0 L Diesel		4.0 Liter Diesel Engine	05/04/91
71720	Schematic	6.4 L Diesel		6.4 Liter Diesel Engine	02/18/87
71721	Wiring Diagram	6.4 L Diesel		6.4 Liter Diesel Engine	05/04/91
71722	Schematic	13.3 L Diesel		13.3 Liter Diesel Engine	02/18/87
71723	Wiring Diagram	13.3 L Diesel		13.3 Liter Diesel Engine	01/13/93
71724	Schematic		A	A Option Control Panel-Alternator & Lower Panel	08/20/91
71724	Schematic		A	A Option Control Panel-Alternator & Lower Panel	08/20/91

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71725	Schematic		B & C	B & C Option Control Panel-Alternator & Lower Panel	08/20/91
71725	Schematic		B & C	B & C Option Control Panel-Alternator & Lower Panel	08/20/91
71731	Schematic	2.2 L Diesel		2.2 Liter Diesel Engine	02/02/87
71732	Wiring Diagram	2.2 L Diesel		2.2 Liter Diesel Engine	04/27/91
71890	Wiring Diagram			Mervyn's Remote Annunciator - 24 VDC	06/11/91
72016	Wiring Diagram			Meter And Control Panel	05/22/87
72033	Schematic			Meter And Control Panel	05/26/87
72436	Wiring Diagram			Generator & AC Connection Panel	05/14/87
72587	WD & SCH			Remote Start With Preheat	03/17/90
72830	Wiring Diagram			Outlet Box	07/20/87
72831	Schematic			Outlet Box	01/24/88
72834	Wiring Diagram	2.2 L Diesel		2.2 Liter Diesel Engine	04/29/88
72835	Schematic	2.2 L Diesel		2.2 Liter Diesel Engine	04/29/88
72838	Schematic		C	C Option Control Panel - 12 VDC Diesel	03/14/89
72839	Wiring Diagram		C	C Option Control Panel - 12 VDC Diesel	03/14/89
73300	Wiring Diagram			Generator & AC Connection Panel	08/03/87
73350	Schematic		C	C Option Control Panel - 12 VDC Gas	01/07/88
73351	Wiring Diagram		C	C Option Control Panel - 12 VDC Gas	01/07/88
73800	Wiring Diagram			Generator & AC Connection Panel	09/18/87
73831	Wiring Diagram			Stator Can Strip Heaters	12/18/87
74177	WD & SCH			Remote Start With Preheat	12/01/90
74419A	Wiring Diagram			Reconnectable	02/01/91
76045	Wiring Diagram	1.2 L Gas		1.2 Liter Gas Engine	12/03/92
76046	Schematic	1.2 L Gas		1.2 Liter Gas Engine	12/03/92
76049	Wiring Diagram			Prepack	12/03/92
76058	Wiring Diagram			3 Phase Prepack	12/03/92
76062	Wiring Diagram			Prepack	12/03/92
76064	Wiring Diagram	1.2 L Gas		1.2 Liter Gas Engine - 1 Phase	01/01/89
76065	Wiring Diagram	1.2 L Gas		1.2 Liter Gas Engine - 3 Phase	01/01/89
76066	Wiring Diagram			Prepack - 3 Phase	12/03/92
76072	Wiring Diagram	1.2 L Gas	B	1.2 Liter Gas Engine - B Option Control Panel 3 Phase	01/01/89
76075	Wiring Diagram	1.2 L Gas	B	1.2 Liter Gas Engine - B Option Control Panel 3 Phase	01/01/89
76076	Wiring Diagram	1.2 L Gas	A	1.2 Liter Gas Engine - A Option Control Panel 3 Phase	01/01/89
76077	Wiring Diagram	1.2 L Gas	A	1.2 Liter Gas Engine - A Option Control Panel 3 Phase	01/01/89
76078	Schematic	1.2 L Gas	C	1.2 Liter Gas Engine - C Option Control Panel 3 Phase	01/06/89
76079	Schematic	1.2 L Gas	C	1.2 Liter Gas Engine - C Option Control Panel 3 Phase	12/30/88

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76080	Schematic	1.2 L Gas	A	1.2 Liter Gas Engine - A Option Control Panel 3 Phase	01/09/89
76081	Schematic	1.2 L Gas	A	1.2 Liter Gas Engine - A Option Control Panel 3 Phase	12/30/88
76082	Schematic	1.2 L Gas	B	1.2 Liter Gas Engine - B Option Control Panel 3 Phase	01/09/89
76083	Schematic	1.2 L Gas	B	1.2 Liter Gas Engine - B Option Control Panel 3 Phase	12/30/88
76116	Schematic	2.6 L Gas		2.6 Liter Gas Engine	No Date
76117	Schematic		B	B Option Control Panel - 12 VDC Gas Engine	03/29/89
76118	Wiring Diagram		B	B Option Control Panel - 12 VDC Gas Engine	No Date
76119	Wiring Diagram	2.6 L Gas		2.6 Liter Gas Engine	No Date
76317	Schematic		B	B Option Control Panel - 12 VDC Diesel Engine	04/26/90
76318	Schematic		B	B Option Control Panel - 12 VDC Diesel Engine	04/26/90
76319	Schematic	2.3 L Gas		2.3 Liter Gas Engine	06/01/91
76320	Wiring Diagram	2.3 L Gas		2.3 Liter Gas Engine	07/17/91
76661	Schematic			Outlet Panel - Grainger	04/26/90
76662	Wiring Diagram			Alternator And Lower Panel	04/05/89
76787	Schematic	7.4 L Gas		7.4 Liter Gas Engine	05/24/91
76788	Schematic	7.4 L Gas		7.4 Liter Gas Engine	12/18/90
76892	Wiring Diagram			8 KW Trailer Mounted Unit	No Date
76910	Wiring Diagram	5.7 L Gas		5.7 Liter Gas Engine	03/01/89
76946	Schematic	5.7 L Gas		5.7 Liter Gas Engine	04/05/89
76985	Wiring Diagram			Meter And Control Panel - 2 Wire	No Date
77035	Wiring Diagram			Home Standby	No Date
77042	Wiring Diagram			Home Standby	No Date
77418	Schematic	1.2 L Gas		1.2 Liter Gas Engine -Control Panel - 3 Phase	12/03/92
77419	Wiring Diagram	1.2 L Gas		1.2 Liter Gas Engine -Reconnectable	12/03/92
77525	Wiring Diagram			Alternator And Lower Panel - 17.5 kw trail	05/19/89
77526	Schematic			Alternator and Lower Panel	05/19/89
77527	Wiring Diagram			Outlet Panel	04/26/90
77528	Schematic			Outlet Panel	04/26/90
77853	Wiring Diagram			LPG Leak Detector	No Date
77858	Wiring Diagram			Control Panel - 2 wire	No Date
77930	Wiring Diagram	1.0 L Diesel		1.0 Liter Diesel Engine	12/03/92
77931	Schematic	1.0 L Diesel		1.0 Liter Diesel Engine	12/03/92
77932	Schematic			Control Panel - Prepuce	12/03/92
77933	Wiring Diagram	1.0 L Diesel		1.0 Liter Diesel Engine - Prepack	12/03/92
78150	Schematic	1.0 L Diesel	A	A Option Control Panel - 1.0 Liter Diesel Engine	06/04/91
78152	Wiring Diagram		C	C Option Control Panel - Single Phase	06/14/91

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78153	Wiring Diagram		A	A Option Control Panel - Single Phase	05/04/91
78154	Wiring Diagram		B	B Option Control Panel - Single Phase	04/18/91
78155	Wiring Diagram		C	C Option Control Panel - Single Phase	04/18/91
78165	Wiring Diagram	1.0 L Diesel		1.0 Liter Diesel Engine	01/28/92
78166	Schematic	1.0 L Diesel		1.0 Liter Diesel Engine	01/28/92
78205	Wiring Diagram			8 KW Trailer	No Date
78206	Schematic	1.0 L Diesel		1.0 Liter Diesel Liter	07/24/90
78321	Wiring Diagram			Outlet Box	06/22/90
78322	Schematic			Outlet Box	06/22/90
78323	Wiring Diagram			Control Panel - 24 VDC Diesel	No Date
78327	Schematic	4.0 L diesel		4.0 Liter Diesel Engine	06/23/90
78331	Schematic			24 VDC Diesel Engine	No Date
78340	Schematic	4.0 L Diesel		AT&T 4.0 Liter Diesel Engine	06/23/90
78446	Schematic			AC Receptacle Panel	11/21/91
78446	Schematic			AC Receptacle Panel	11/21/91
78447	Wiring Diagram			Alternator And Control Panel	1/28/92
78448	Schematic			Alternator And Control Panel	1/28/92
78449	Wiring Diagram			Alternator And Control Panel	1/28/92
78449	Wiring Diagram			Alternator And Control Panel	1/28/92
78449	Wiring Diagram			Alternator And Control Panel	1/28/92
78574	Wiring Diagram			Control Panel	No Date
78575	Schematic	1.2 Gas	C	C Option Control Panel - 1.2 Liter Gas Engine	No Date
79053	Schematic	4.3 Diesel		4.3 Liter Diesel Engine	6/11/91
79054	Wiring Diagram	4.3 Diesel		4.3 Liter Diesel Engine	6/4/91
79151	Wiring Diagram		B	B Option Control Panel - Diesel Engine Single Phase	6/14/91
79236	WD & SCH			Gas Engine - 3 Phase - Home Standby	3/19/90
79509	Wiring Diagram	1.0 Diesel		1.0 Liter Diesel - 3 Phase - Prepack	12/4/92
79510	Schematic	1.0 Diesel		1.0 Liter Diesel - 3 Phase - Prepack	12/4/92
79511	Wiring Diagram		A	A Option Control Panel - 3 Phase - Prepack	4/18/91
79512	Schematic		A	A Option Control Panel - 3 Phase - Prepack	6/4/91
79513	Wiring Diagram		B	B Option Control Panel - 3 Phase - Prepack	4/18/91
79514	Schematic		B	B Option Control Panel - 3 Phase	4/27/91
79515	Wiring Diagram		C	C Option Control Panel - 3 Phase	4/17/90
79516	Schematic		C	C Option Control Panel - 3 Phase	4/17/90
79540	Wiring Diagram	1.2 Gas	C	C Option Control Panel - 1.2 Liter Gas Engine	No Date
79870	Wiring Diagram			Outlet Box	7/11/90

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79871	Schematic			Outlet Box	7/11/90
79923	Wiring Diagram	1.2 Gas		1.2 Liter Gas Engine - Single Phase	4/18/91
79924	Wiring Diagram		B	B Option Control Panel - 1 & 3 Phase	5/4/91
79925	Wiring Diagram		C	C Option Control Panel - 3 Phase	4/18/91
79926	Schematic	1.2 Gas	A	A Option Control Panel - 1.2 Liter Gas Engine	7/4/91
79927	Schematic	1.2 Gas	B	B Option Control Panel - 1.2 Liter Gas Engine	7/11/91
79928	Schematic	1.2 Gas	C	C Option Control Panel - 1.2 Liter Gas Engine	8/9/92
79936	Schematic		A	A Option Control Panel	7/14/91
79936	Schematic		B & C	B And C Option Control Panel	7/14/91
79937	Wiring Diagram		A	A Option Control Panel	7/1/90
79937	Wiring Diagram		B & C	B And C Option Control Panel	7/1/90
79961	Wiring Diagram	1.2 Gas		1.2 Liter Gas Engine	1/28/92
79962	Schematic	1.2 Gas		1.2 Liter Gas Engine	1/28/92
80400	Schematic			Alternator And Control Panel	9/20/90
80401	Schematic			AC Receptacle Panel	7/3/90
80417	Schematic			Trailer Lighting	8/6/90
80418	Wiring Diagram			Trailer Lighting	8/6/90
80419	Schematic		C	C Option Control Panel - 12 VDC Gas	8/16/90
80420	Wiring Diagram		C	C Option Control Panel - 12 VDC Gas	8/16/90
80437	Wiring Diagram			Generator And AC Connection Panel	8/16/90
80453	Wiring Diagram		B	B Option Control Panel - 24 VDC Diesel	4/1/91
80530	Schematic		A	Alternator And Lower A Option Control Panel	7/9/91
80530	Schematic		B & C	Alternator And Lower B & C Option Control Panel	7/9/91
80531	Wiring Diagram			Alternator And Lower Control Panel	7/9/91
80531	Wiring Diagram			Alternator And Lower Control Panel	7/9/91
80531	Wiring Diagram			Alternator And Lower Control Panel	7/9/91
80532	Schematic			Diesel Engine	6/11/91
80533	Wiring Diagram	13.3 Diesel		13.3 Liter Diesel Engine	5/4/91
80542	Wiring Diagram		A	A Option Control Panel - 24 VDC Diesel	4/1/91
80543	Wiring Diagram		B	B Option Control Panel - 24 VDC	7/1/90
80544	Wiring Diagram		C	C Option Control Panel	4/3/96
80545	Schematic		A	A Option Control Panel - 24 VDC	7/1/90
80546	Schematic		B	B Option Control Panel - 24 VDC	4/27/91
80547	Schematic		C	C Option Control Panel	4/3/96
80561	Wiring Diagram	7.4 Gas		Mervyn's 7.4 Liter Gas GTS - 12 VDC	9/18/90
80602	Schematic			Meter And Control Panel - 2 Wire	8/6/90

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80603	Wiring Diagram			Meter And Control Panel - 2 Wire	8/6/90
80612	Wiring Diagram	5.7 & 7.4 Gas		5.7 And 7.4 Liter Gas Engine	No Date
80613	Schematic	5.7 & 7.4 Gas		5.7 And 7.4 Liter Gas Engine	No Date
80619	Wiring Diagram			Meter And Control Panel - 2 Wire	No Date
80620	Wiring Diagram			Meter And Control Panel - 2 Wire	No Date
80621	Schematic			Alternator And Lower Panel	No Date
80639	Wiring Diagram			Generator And AC Connection Panel	No Date
80671	Wiring Diagram			Diesel Engine With Electronic Governor	9/1/90
80672	Schematic			Diesel Engine With Electronic Governor	9/1/90
80673	Wiring Diagram			Generator And AC Panel (Electronic Governor)	7/9/91
80673	Wiring Diagram			Generator And AC Panel (Electronic Governor)	7/9/91
80673	Wiring Diagram			Generator And AC Panel (Electronic Governor)	7/9/91
80673	Wiring Diagram			Generator And AC Panel (Electronic Governor)	7/9/91
80674	Schematic		B & C	B & C Option Control Panel-Alternator (Elec. Gov)	9/1/90
80678	Schematic		A	A Option Control Panel-Alternator (Elec. Gov)	9/1/90
80679	Wiring Diagram		A	A Option Control Panel-Alternator (Elec. Gov)	8/8/91
80679	Wiring Diagram			Generator And AC Panel (Electronic Governor)	8/8/91
80679	Wiring Diagram			Generator And AC Panel (Electronic Governor)	8/8/91
80679	Wiring Diagram			Generator And AC Panel (Electronic Governor)	8/8/91
80697		5.0 Gas		5.0 Liter Gas Engine	1/28/91
80700	Wiring Diagram			AC Receptacle Panel	7/3/90
80701	Wiring Diagram			Alternator And Control Panel	9/20/90
80720	Wiring Diagram			8 KW Trailer	7/24/90
80721	Wiring Diagram		B	B Option Control Panel - 8 KW Trailer - 3 Phase	7/24/90
80749	Wiring Diagram			Exciter Kit	7/31/90
80794	Wiring Diagram		C	C Option Control Panel	4/3/96
80795	Schematic		C	C Option Control Panel	4/3/96
80796	Wiring Diagram		B	B Option Control Panel	7/30/91
80797	Schematic		B	B Option Control Panel	7/6/91
80798	Wiring Diagram		A	A Option Control Panel	7/30/91
80799	Schematic		A	A Option Control Panel	7/6/91
81281	Schematic	3.0 Gas		3.0 Liter Gas Engine	7/6/91
81282	Wiring Diagram	3.0 Gas		3.0 Liter Gas Engine	7/6/91
81287	Wiring Diagram	1.0 Diesel		1.0 Liter Diesel Engine - Grainger	12/4/92
81288	Schematic	1.0 Diesel		1.0 Liter Diesel Engine - Grainger	12/4/92
81469	Wiring Diagram	5.7 Gas		5.7 Liter Gas Engine - Dual Fuel Gas/LPG	9/29/90

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81470	Schematic	5.7 Gas		5.7 Liter Gas Engine - Dual Fuel Gas/LPG	9/29/90
81748	Wiring Diagram			Alternator And Control Panel	5/4/91
81749	Schematic			Alternator And Control Panel	5/4/91
81750	Schematic	4.0 Diesel		4.0 Liter Diesel Engine - AC Receptacle Panel	5/4/91
81751	Wiring Diagram	4.0 Diesel		4.0 Liter Diesel Enigne	5/4/91
81752	Schematic	4.0 Diesel		4.0 Liter Diesel Engine	5/4/91
82134	Wiring Diagram			LPG Engine	8/8/91
82233	Wiring Diagram			Horn Alarm	1/7/91
82234	Wiring Diagram			Horn Alarm	1/7/91
82235	Wiring Diagram			Horn Alarm	1/7/91
82240	Wiring Diagram			Relay Engine Run	1/8/91
82285	Wiring Diagram			Oil Temperature Gauge	3/21/91
82554	Schematic		B	B Option Control Panel	7/18/92
82555	Wiring Diagram		B	B Option Control Panel	7/18/92
82556	Wiring Diagram		C	C Option Control Panel	7/18/92
82557	Schematic		C	C Option Control Panel	7/18/92
82558	Wiring Diagram		A	A Option Control Panel	7/18/92
82559	Schematic		A	A Option Control Panel	7/18/92
82890	Wiring Diagram			Alternator And Control Panel	3/31/92
82891	Wiring Diagram			AC Receptacle Panel	3/31/92
82972	Schematic	6.4 Diesel		6.4 Liter Diesel Engine	11/25/91
82973	Wiring Diagram	6.4 Diesel		6.4 Liter Diesel Engine	11/25/91
82989	Schematic			Alternator And Control Panel	2/1/95
82990	Schematic	4.0 Diesel		4.0 Liter Diesel Engine - AC Receptacle Panel	3/31/92
83154	Wiring Diagram			Enertec	11/8/91
83466	WD & SCH			Unit And Compartment	1/8/92
83578	Wiring Diagram	5.0 & 5.7 Gas		5.0 And 5.7 Gas Engine	3/18/92
83579	Schematic	5.0 & 5.7 Gas		5.0 And 5.7 Gas Engine	3/18/92
83689	Wiring Diagram	4.0 Diesel		4.0 Liter Diesel Engine - LPS	3/31/92
83690	Schematic	4.0 Diesel		4.0 Liter Diesel Engine - LPS	3/31/92
83710	Schematic			AC Receptacle Panel	1/10/92
83711	Schematic			Alternator And Control Panel	1/10/92
83712	Wiring Diagram			AC Receptacle Panel	1/10/92
83713	Wiring Diagram			Alternator And Control Panel	1/10/92
83793	Schematic			Annunciator Panel	10/10/91
83802	Wiring Diagram			Annunciator Panel	10/10/91

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83865	Wiring Diagram			Control Panel	1/7/92
83866	Wiring Diagram			Control Panel	1/8/92
83868	Wiring Diagram			AC Distribution Panel - Canada Bell	1/8/92
83876	Wiring Diagram			Alternator And Lower Panel	1/8/92
83883	Schematic			Alternator And Lower Panel	1/8/92
83884	Schematic			AC Distribution Panel	1/8/92
83892	Wiring Diagram	4.0 Diesel		4.0 Liter Diesel Engine	1/8/92
83893	Schematic	4.0 Diesel		4.0 Liter Diesel Engine	1/8/92
84029	Schematic	4.3 Diesel		4.3 Liter Diesel Engine	No Date
84030	Wiring Diagram	4.3 Diesel		4.3 Liter Diesel Engine	1/8/92
84245	Wiring Diagram			Voltage Regulator Select Switch	1/8/92
84253	Schematic			Engine - MCI	1/10/92
84254	Wiring Diagram			Engine - MCI	1/10/92
84255	Schematic	2.2 Diesel		Control Panel - 2.2 Liter Diesel Engine - 12.5 KW	1/10/92
84256	Wiring Diagram			Control Panel	1/8/92
84511	Wiring Diagram	5.7 & 7.4 Gas		5.7 And 7.4 Liter Gas Engine	2/3/92
84512	Schematic	5.7 & 7.4 Gas		5.7 And 7.4 Liter Gas Engine	2/3/92
84515	Wiring Diagram			Control Panel	2/3/92
84516	Schematic			Control Panel - MCI	3/18/92
84669	Wiring Diagram		A	A Option Control Panel	11/22/94
84670	Schematic		A	A Option Control Panel	11/22/94
84671	Wiring Diagram		B	B Option Control Panel	Nov-94
84672	Schematic		B	B Option Control Panel	11/22/94
84673	Wiring Diagram		C	C Option Control Panel	4/10/96
84674	Schematic		C	C Option Control Panel	4/10/96
84748	Wiring Diagram	13.3 Gas		13.3 Liter Natural Gas Engine	11/22/94
84749	Schematic	13.3 Gas		13.3 Liter Natural Gas Engine	11/22/94
84839	Wiring Diagram		A	A Option Control Panel	9/23/93
84840	Schematic		A	A Option Control Panel	9/23/93
84844	Wiring Diagram		B	B Option Control Panel	9/23/93
84845	Schematic		B	B Option Control Panel	9/23/93
84849	Wiring Diagram		C	C Option Control Panel	4/10/96
84850	Schematic		C	C Option Control Panel	4/10/96
84872	WD & SCH	4.0 Diesel		4.0 Liter Diesel Engine	6/25/92
84873	Wiring Diagram	4.0 Diesel		4.0 Liter Diesel Engine	6/25/92
84884	Wiring Diagram		A	A Option Control Panel - 24 VDC	6/25/92

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84885	Schematic	13.3 Diesel	A	A Option Control Panel - 13.3 Liter Diesel Engine	6/25/92
84886	Wiring Diagram	13.3 Diesel	B	B Option Control Panel - 13.3 Liter Diesel Engine	6/25/92
84887	Schematic	13.3 Diesel	B	B Option Control Panel - 13.3 Liter Diesel Engine	6/25/92
84888	Wiring Diagram		C	C Option Control Panel	4/10/96
84889	Schematic		C	C Option Control Panel	4/10/96
84960	Wiring Diagram			Receptacle Panel	2/25/93
84961	Schematic			Receptacle Panel	2/25/93
84962	Schematic			Control Panel	2/25/93
84963	Wiring Diagram			Control Panel	2/25/93
84978	Schematic	6.4 Diesel		6.4 Liter Diesel Engine	6/19/92
84979	Wiring Diagram	6.4 Diesel		6.4 Liter Diesel Engine	6/19/92
84980	Schematic	13.3 Gas		13.3 Liter Gas Engine - 275 KW - 24 VDC	7/18/92
84981	Wiring Diagram	13.3 Gas		13.3 Liter Gas Engine - 275 KW - 24 VDC	6/29/92
85013	Schematic		A	A Option Control Panel	6/29/92
85014	Wiring Diagram		A	A Option Control Panel	6/29/92
85018	Schematic		B	B Option Control Panel	7/1/92
85019	Wiring Diagram		B	B Option Control Panel	7/1/92
85023	Schematic		C	C Option Control Panel	4/3/96
85024	Wiring Diagram		C	C Option Control Panel	4/3/96
85031	Schematic		A	A Option Control Panel	7/18/92
85032	Wiring Diagram		A	A Option Control Panel	7/18/92
85036	Schematic		B	B Option Control Panel	7/18/92
85037	Wiring Diagram		B	B Option Control Panel	7/18/92
85041	Schematic		C	C Option Control Panel	4/10/96
85042	Wiring Diagram		C	C Option Control Panel	4/10/96
85046	Schematic		A	A Option Control Panel	7/20/92
85047	Wiring Diagram		A	A Option Control Panel	7/20/92
85051	Schematic		B	B Option Control Panel	7/20/92
85052	Wiring Diagram		B	B Option Control Panel	7/20/92
85056	Schematic		C	C Option Control Panel	4/10/96
85057	Wiring Diagram		C	C Option Control Panel	4/10/96
85067	Schematic		A	A Option Control Panel	4/14/94
85068	Wiring Diagram		A	A Option Control Panel	4/14/94
85072	Schematic		B	B Option Control Panel	4/14/94
85073	Wiring Diagram		B	B Option Control Panel	4/14/94
85077	Schematic		C	C Option Control Panel	4/10/96

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85078	Wiring Diagram		C	C Option Control Panel	4/3/96
85100	Wiring Diagram			Annunciator Kit	4/20/92
85445	Schematic	3.0 Gas		3.0 Liter Gas Engine	7/20/92
85446	Wiring Diagram	3.0 Gas		3.0 Liter Gas Engine	6/25/92
85448	Schematic	3.0 Diesel		3.0 Liter Diesel Engine	7/1/92
85449	Wiring Diagram	3.0 Diesel		3.0 Liter Diesel Engine	7/1/92
85451	Schematic	4.3 Diesel		4.3 Liter Diesel Engine	7/1/92
85452	Wiring Diagram	4.3 Diesel		4.3 Liter Diesel Engine	12/18/92
85531	Schematic	2.2 Diesel		2.2 Liter Diesel Engine	7/20/92
85532	Wiring Diagram	2.2 Diesel		2.2 Liter Diesel Engine	7/1/92
85565	Schematic	7.4 Gas		7.4 Liter Gas Engine	7/1/92
85752	Schematic	5.0 & 5.7 Gas		5.0 And 5.7 Liter Gas Engine	7/1/92
85753	Wiring Diagram	5.0 & 5.7 Gas		5.0 And 5.7 Liter Gas Engine	7/1/92
85831	Schematic	1.2 Gas		1.2 Liter Gas Engine	7/1/92
85832	Wiring Diagram	1.2 Gas		1.2 Liter Gas Engine	7/1/92
85885	Schematic	1.0 Diesel		1.0 Liter Diesel Engine	7/18/92
85886	Wiring Diagram	1.0 Diesel		1.0 Liter Diesel Engine	7/18/92
86171	Schematic		A	A Option Control Panel	6/25/92
86171	Schematic		A,B,C	A, B, & C Option Control Panel And Alternator	6/25/92
86172	Wiring Diagram		A	A Option Control Panel & Alternator-AC Control Box	6/25/92
86172	Wiring Diagram		A	A Option Control Panel & Alternator-AC Control Box	6/25/92
86172	Wiring Diagram		A	A Option Control Panel & Alternator-AC Control Box	6/25/92
86172	Wiring Diagram		B & C	B & C Option Control Panel & Alternator- AC Con. Box	6/25/92
86172	Wiring Diagram		B & C	B & C Option Control Panel & Alternator- AC Con. Box	6/25/92
86172	Wiring Diagram		B & C	B & C Option Control Panel & Alternator- AC Con. Box	6/25/92
86173	Schematic		C	C Option Control Panel & Alternator	7/22/93
86173	Schematic		C	C Option Control Panel & Alternator	7/22/93
86173	Schematic		C	C Option Control Panel & Alternator	7/22/93
86173	Schematic		C	C Option Control Panel & Alternator	7/22/93
86174	Schematic		A & B	A & B Option Control Panel & Alternator	7/27/93
86174	Schematic		A & B	A & B Option Control Panel & Alternator	7/27/93
86174	Schematic		A & B	A & B Option Control Panel & Alternator	7/27/93
86174	Schematic		A & B	A & B Option Control Panel & Alternator	7/27/93
86192	Wiring Diagram	1.2 Gas		1.2 Liter Gas Engine - Electronic Governor	6/18/92
86205	Wiring Diagram		A & B	A & B Option Generator And AC Control Panel	3/28/94
86205	Wiring Diagram		A & B	A & B Option Generator And AC Control Panel	3/28/94

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86205	Wiring Diagram		A & B	A & B Option Generator And AC Control Panel	3/28/94
86205	Wiring Diagram		A & B	A & B Option Generator And AC Control Panel	3/28/94
86206	Wiring Diagram		C	C Option Generator And AC Control Panel	6/16/95
86206	Wiring Diagram		C	C Option Generator And AC Control Panel	6/16/95
86206	Wiring Diagram		C	C Option Generator And AC Control Panel	6/16/95
86206	Wiring Diagram		C	C Option Generator And AC Control Panel	6/16/95
86378	Schematic	13.3 Diesel		13.3 Liter Diesel Engine	6/19/92
86379	Wiring Diagram	13.3 Diesel		13.3 Liter Diesel Engine	6/19/92
86392	Wiring Diagram	3.0 Hubill		3.0 Liter Hubill Engine Control Panel	11/24/92
86393	Schematic	3.0 Hubill		3.0 Liter Hubill Engine Control Panel	11/24/92
86394	Wiring Diagram	3.0 Gas		3.0 Liter Gas Engine	9/18/92
86496	Schematic	3.0 Gas		3.0 Liter Gas Engine	9/18/92
86610	Wiring Diagram			Alternator And Lower Panel	9/3/92
86617	Schematic			Alternator And Lower Panel	9/3/92
86764	Wiring Diagram		C	C Option Control Panel Horn Alarm	9/17/92
86765	Wiring Diagram		A & B	A & B Option Control Panel Horn Alarm	09/17/92
86766				Relay Engine Run	9/28/92
86804	Wiring Diagram			Stator Can Strip Heater	10/7/92
86833	Wiring Diagram			18 Light Annunciator	10/29/92
87030	Schematic	7.4 Gas		7.4 Liter Gas Engine	11/2/92
87031	Wiring Diagram	7.4 Gas		7.4 Liter Gas Engine	12/21/92
87035	Schematic		C	C Option Control Panel Mervyn 12 VDC	11/2/92
87036	Wiring Diagram			Mervyn's 12 VDC Control Panel	11/2/92
87043	Schematic		C	C Option Control Panel	4/3/96
87044	Wiring Diagram		C	C Option Control Panel	4/3/96
87045	Wiring Diagram			Lower Control Panel	11/2/92
87046	Schematic			Lower Control Panel	11/2/92
87086	Schematic	3.0 Gas		3.0 Liter Gas Engine	9/22/92
87087	Wiring Diagram	3.0 Gas		3.0 Liter Gas Engine	12/21/92
87165	Schematic			Alternator And Lower Control Panel	11/9/92
87166	Wiring Diagram			Alternator And Lower Control Panel	11/11/92
87200	Schematic		B	B Option Control Panel - 3 Phase	11/11/92
87201	Wiring Diagram			8 KW Trailer	11/11/92
87214	Schematic		C	C Option Control Panel	4/3/96
87215	Wiring Diagram		C	C Option Control Panel	4/3/96
87291	Wiring Diagram	4.0 & 6.0 Diesel		4.0 And 6.0 Liter Diesel Engine - Olympian	9/14/93

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87292	Schematic	4.0 & 6.0 Diesel		4.0 And 6.0 Liter Diesel Engine - Olympian	2/25/93
87357	Schematic	5.0,5.7,&7.4 G.		5.0, 5.7, And 7.4 Liter Gas Engine	12/14/92
87358	Wiring Diagram	5.0,5.7,&7.4 G.		5.0, 5.7, And 7.4 Liter Gas Engine	10/7/97
87474	Schematic	5.7 Gas		5.7 Liter Gas Engine	11/11/92
87475	Wiring Diagram	5.7 Gas		5.7 Liter Gas Engine	12/21/92
87620	Schematic	2.2 Diesel		2.2 Liter Diesel Engine	11/11/92
87621	Wiring Diagram	2.2 Diesel		2.2 Liter Diesel Engine	11/11/92
87886	Wiring Diagram		A	A Option Control Panel	3/9/93
87887	Schematic		A	A Option Alternator And Lower Control Panel	2/8/93
87887	Schematic		B & C	B & C Option Alternator And Lower Control Panel	2/8/93
87913	Schematic		A	A Option Control Panel	2/8/93
87914	Schematic		B	B Option Control Panel	2/8/93
87918	Wiring Diagram		C	C Option Control Panel	2/8/93
87919	Schematic		C	C Option Control Panel	2/8/93
87924	Wiring Diagram		A	A Option Alternator And Lower AC Control Panel	2/8/93
87924	Wiring Diagram		A	A Option Alternator And Lower AC Control Panel	2/8/93
87924	Wiring Diagram		A	A Option Alternator And Lower AC Control Panel	2/8/93
87924	Wiring Diagram		B & C	B & C Option Alternator And Lower AC Control Panel	2/8/93
87924	Wiring Diagram		B & C	B & C Option Alternator And Lower AC Control Panel	2/8/93
87924	Wiring Diagram		B & C	B & C Option Alternator And Lower AC Control Panel	2/8/93
87928	Schematic	10.4 Diesel		10.4 Liter Diesel Engine	2/8/93
87929	Wiring Diagram	10.4 Diesel		10.4 Liter Diesel Engine	2/8/93
87936	Wiring Diagram		B	B Option Control Panel	2/8/93
88133	Schematic	3.0 Gas		3.0 Liter Gas Engine - MCI	1/12/93
88134	Wiring Diagram	3.0 Gas		3.0 Liter Gas Engine - MCI	1/12/93
88140	Schematic	3.0 Liter		3.0 Liter Engine - MCI - Meter And Control Panel	1/12/93
88141	Wiring Diagram	3.0 Liter		3.0 Liter Engine - MCI - Meter And Control Panel	1/12/93
88149	Wiring Diagram	3.0 Diesel		3.0 Liter Diesel Engine	2/26/93
88150	Schematic	3.0 Diesel		3.0 Liter Diesel Engine	2/26/93
88152	Wiring Diagram			Control Panel - 12 VDC	2/26/93
88153	Schematic			Control Panel - 12 VDC	2/26/93
88531	Schematic		A	A Option Alternator And Lower Control Panel	2/11/93
88531	Schematic		A	A Option Alternator And Lower Control Panel	2/11/93
88532	Wiring Diagram		A	A Option Generator And AC Control Panel	2/11/93
88532	Wiring Diagram		A	A Option Generator And AC Control Panel	2/11/93
88532	Wiring Diagram		A	A Option Generator And AC Control Panel	2/11/93

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88532	Wiring Diagram		A	A Option Generator And AC Control Panel	2/11/93
88532	Wiring Diagram		A	A Option Generator And AC Control Panel	2/11/93
88532	Wiring Diagram		A	A Option Generator And AC Control Panel	2/11/93
88532	Wiring Diagram		A	A Option Generator And AC Control Panel	2/11/93
88533	Schematic		B & C	B & C Option Alternator And Lower Control Panel	2/11/93
88533	Schematic		B & C	B & C Option Alternator And Lower Control Panel	2/11/93
88534	Wiring Diagram		B & C	B & C Option Generator And AC Control Panel	2/11/93
88534	Wiring Diagram		B & C	B & C Option Generator And AC Control Panel	2/11/93
88534	Wiring Diagram		B & C	B & C Option Generator And AC Control Panel	2/11/93
88534	Wiring Diagram		B & C	B & C Option Generator And AC Control Panel	2/11/93
88534	Wiring Diagram		B & C	B & C Option Generator And AC Control Panel	2/11/93
88534	Wiring Diagram		B & C	B & C Option Generator And AC Control Panel	2/11/93
88534	Wiring Diagram		B & C	B & C Option Generator And AC Control Panel	2/11/93
88611	Wiring Diagram	4.0 Diesel		4.0 Liter Diesel Engine	2/11/93
88612	Schematic	4.0 Diesel		4.0 Liter Diesel Engine	2/11/93
88683	Wiring Diagram			Relay Enclosure	2/26/93
88684	Schematic			Relay Enclosure	2/26/93
89031	Wiring Diagram	5.7 Gas		5.7 Liter Gas Engine	3/10/93
89032	Schematic	5.7 Gas		5.7 Liter Gas Engine	3/10/93
89039	Wiring Diagram			Meter And Control Panel	3/10/93
89040	Schematic			Meter And Control Panel	3/10/93
89499	Schematic	4.3 Diesel		4.3 Liter Diesel Engine	4/6/93
89500	Wiring Diagram	4.3 Diesel		4.3 Liter Diesel Engine	4/6/93
89591	Wiring Diagram	5.7 Gas		5.7 Liter Gas Engine	4/19/93
89592	Schematic	5.7 Gas		5.7 Liter Gas Engine	4/19/93
89605	Schematic			Control Panel - 50 HZ	5/6/93
89605	Schematic			Control Panel - 50 HZ	5/6/93
89606	Wiring Diagram		A	A Option Alternator And Lower Control Panel	5/6/93
89606	Wiring Diagram		A	A Option Alternator And Lower Control Panel	5/6/93
89606	Wiring Diagram		A	A Option Alternator And Lower Control Panel	5/6/93
89606	Wiring Diagram		B & C	B & C Option Alternator And Lower Control Panel	5/6/93
89606	Wiring Diagram		B & C	B & C Option Alternator And Lower Control Panel	5/6/93
89606	Wiring Diagram		B & C	B & C Option Alternator And Lower Control Panel	5/6/93
89610	Schematic	10.4 Diesel		10.4 Liter Diesel Engine	5/6/93
89611	Wiring Diagram	10.4 Diesel		10.4 Liter Diesel Engine	5/6/93
89808	Wiring Diagram	4.0 Diesel		4.0 Liter Diesel Engine	6/16/93

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89809	Schematic	4.0 Diesel		4.0 Liter Diesel Engine	6/16/93
89841	Wiring Diagram	6.4 Diesel		6.4 Liter Diesel Engine	5/18/93
89842	Schematic	6.4 Diesel		6.4 Liter Diesel Engine	5/18/93
89860	Wiring Diagram			Stator Can Heater Strips	6/23/93
90092	Wiring Diagram	4.0 Diesel		4.0 Liter Diesel Engine - Electronic Governor (OLY)	12/21/93
90116	Wiring Diagram	4.0 Diesel		4.0 Liter Diesel Engine	9/22/93
90117	Schematic	4.0 Diesel		4.0 Liter Diesel Engine	9/22/93
90118	Wiring Diagram			Control Panel	9/22/93
90119	Schematic			Control Panel	9/22/93
90120	Wiring Diagram			AC Receptacle Panel	9/27/93
90121	Schematic			AC Receptacle Panel	9/27/93
90618	Schematic	3.0 Diesel		3.0 Liter Diesel Engine	7/27/93
90619	Wiring Diagram	3.0 Diesel		3.0 Liter Diesel Engine	7/27/93
90712	Wiring Diagram	2.2 Diesel		2.2 Liter Diesel Engine	11/18/93
90713	Schematic	2.2 Diesel		2.2 Liter Diesel Engine	11/18/93
91398	Wiring Diagram			208 And 240 VDC Generator	1/12/93
94386	Wiring Diagram			AC Receptacle Panel	7/19/94
94387	Schematic			AC Receptacle Panel	7/19/94
94388	Wiring Diagram			Control Panel	7/19/94
94389	Schematic			Control Panel	7/19/94
95228	Wiring Diagram	4.0 Diesel		4.0 Liter Diesel Engine And Harris Acc.	8/15/95
95256	Wiring Diagram	5.0 Diesel		5.0 Liter Diesel Engine - Iveco	3/15/95
95257	Schematic	5.0 Diesel		5.0 Liter Diesel Engine - Iveco	3/15/95
95847	Wiring Diagram	6.6 Diesel		6.6 Liter Diesel Engine - Olympian	4/27/95
95848	Schematic	6.6 Diesel		6.6 Liter Diesel Engine - Olympian	4/27/95
96644	Wiring Diagram	1.0 Diesel		1.0 Liter Diesel Engine	5/30/95
96645	Schematic	1.0 Diesel		1.0 Liter Diesel Engine	5/30/95
96646	Wiring Diagram			Control Panel	5/30/95
96647	Schematic			Control Panel	5/30/95
97158	Schematic	4.0 Diesel		4.0 Liter Diesel Engine And Harris Acc.	8/14/95
97159	Wiring Diagram			Control Panel	8/14/95
97160	Schematic		C	C Option Control Panel	8/14/95
97162	Wiring Diagram			Lower Connection Box	8/14/95
97163	Schematic			Lower Connection Box	8/14/95
97164	Wiring Diagram			Lower Connection Box	8/14/95
97165	Schematic			Lower Connection Box	8/14/95

INDEX TO GENERATOR DRAWINGS

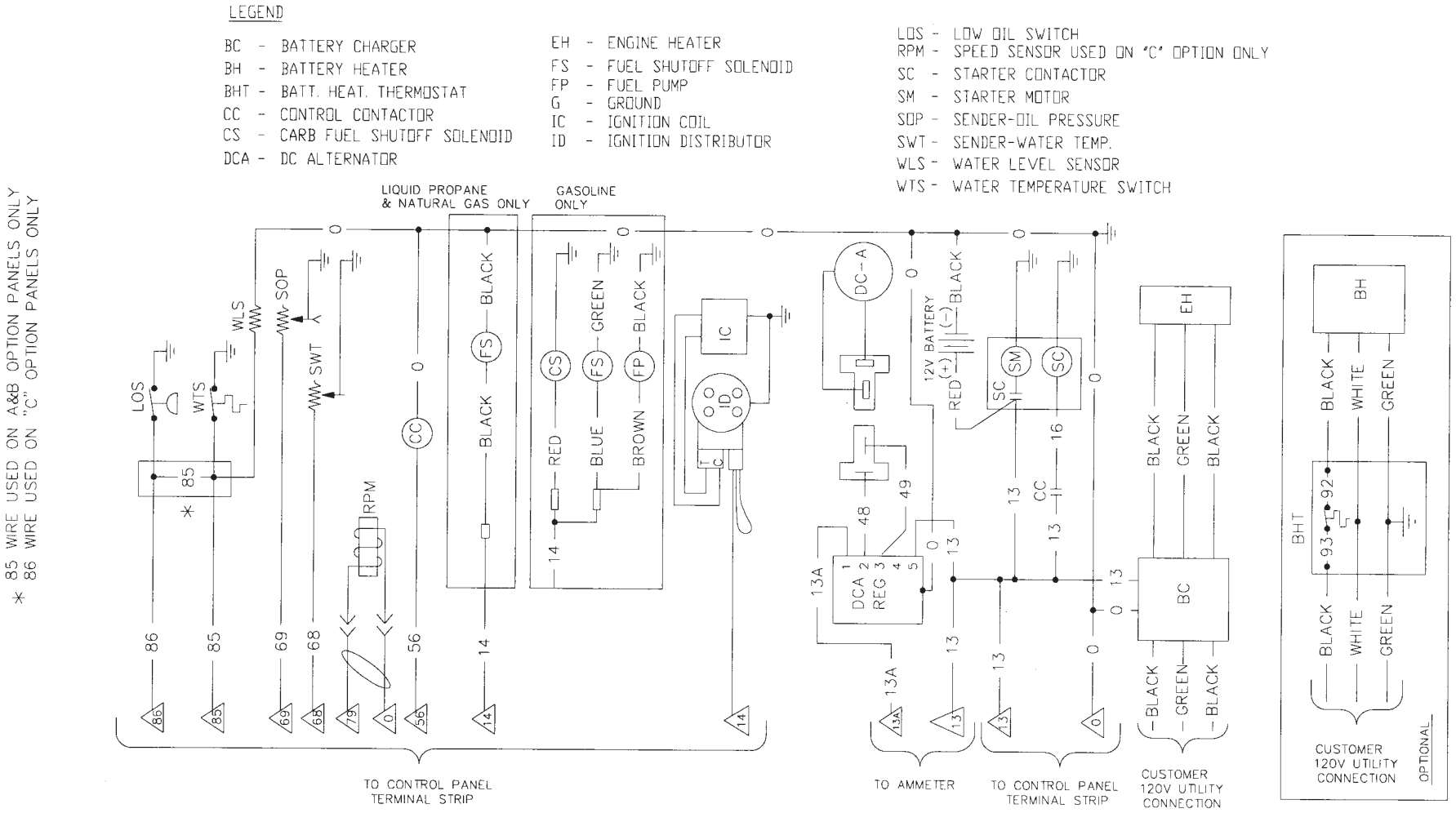
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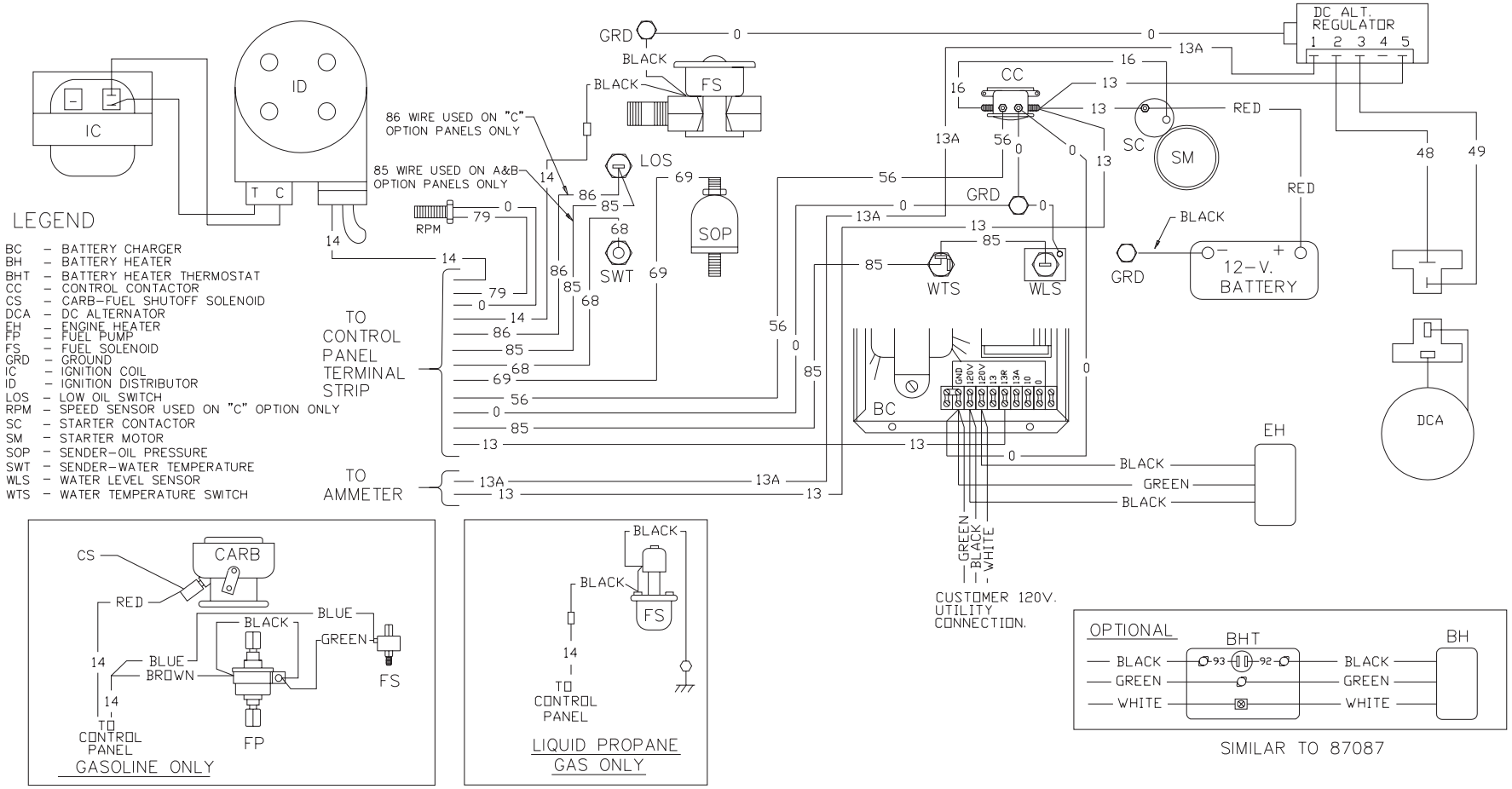
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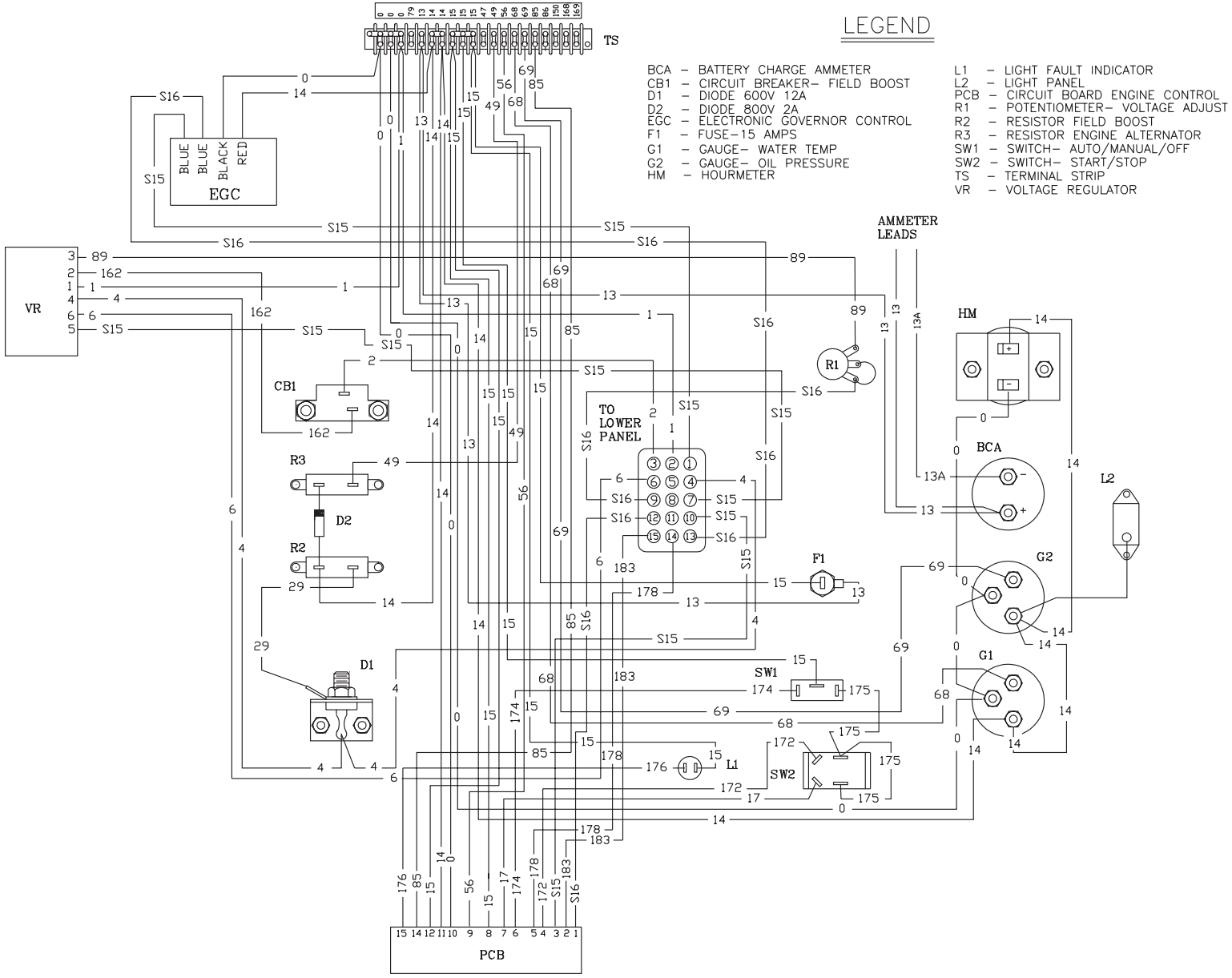
BOOKMARKS

NO BOOKMARKS

DRAWING NUMBER	DRAWING TYPE	ENGINE	CNTRL CNSL OPT.	DESCRIPTION OF DRAWING	REV. DATE
97901	Schematic	2.4 Diesel		2.4 Liter Diesel Engine	6/18/96
97902	Wiring Diagram	2.4 Diesel		2.4 Liter Diesel Engine	6/18/96
98112	Schematic	3.2 Diesel		3.2 Liter Diesel Engine	1/12/96
98115	Wiring Diagram	3.2 Diesel		3.2 Liter Diesel Engine	1/12/96
98181	Wiring Diagram	7.5 Diesel		7.5 Liter Diesel Engine	5/22/96
98182	Schematic	7.5 Diesel		7.5 Liter Diesel Engine	5/21/96
98973	Wiring Diagram	1.6 Gas		1.6 Liter Gas Engine	1/21/96
98977	Wiring Diagram	1.6 Gas		1.6 Liter Gas Engine	1/12/96
99924	Wiring Diagram			390 MM Terminal Block	11/19/97

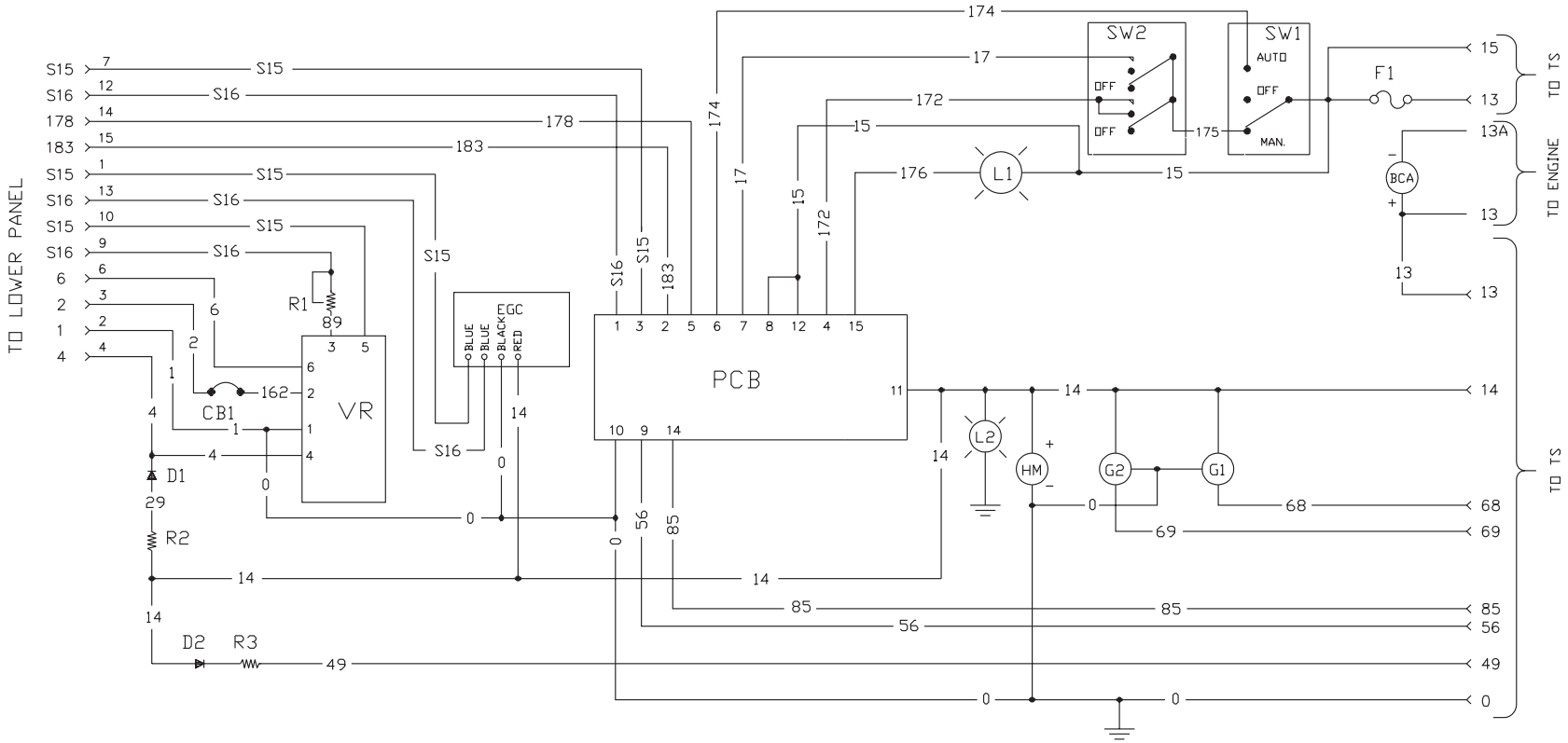

LEGEND
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
CS - CARB FUEL SHUTOFF SOLENOID
DCA - DC ALTERNATOR
EH - ENGINE HEATER
FS - FUEL SHUTOFF SOLENOID
FP - FUEL PUMP
G - GROUND
IC - IGNITION COIL
ID - IGNITION DISTRIBUTOR
LOS - LOW OIL SWITCH
RPM - SPEED SENSOR USED ON "C" OPTION ONLY
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
* 85 WIRE USED ON A&B OPTION PANELS ONLY
* 86 WIRE USED ON "C" OPTION PANELS ONLY
LIQUID PROPANE & NATURAL GAS ONLY
GASOLINE ONLY
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
TO CONTROL PANEL TERMINAL STRIP
CUSTOMER 120V UTILITY CONNECTION
CUSTOMER 120V UTILITY CONNECTION
OPTIONAL

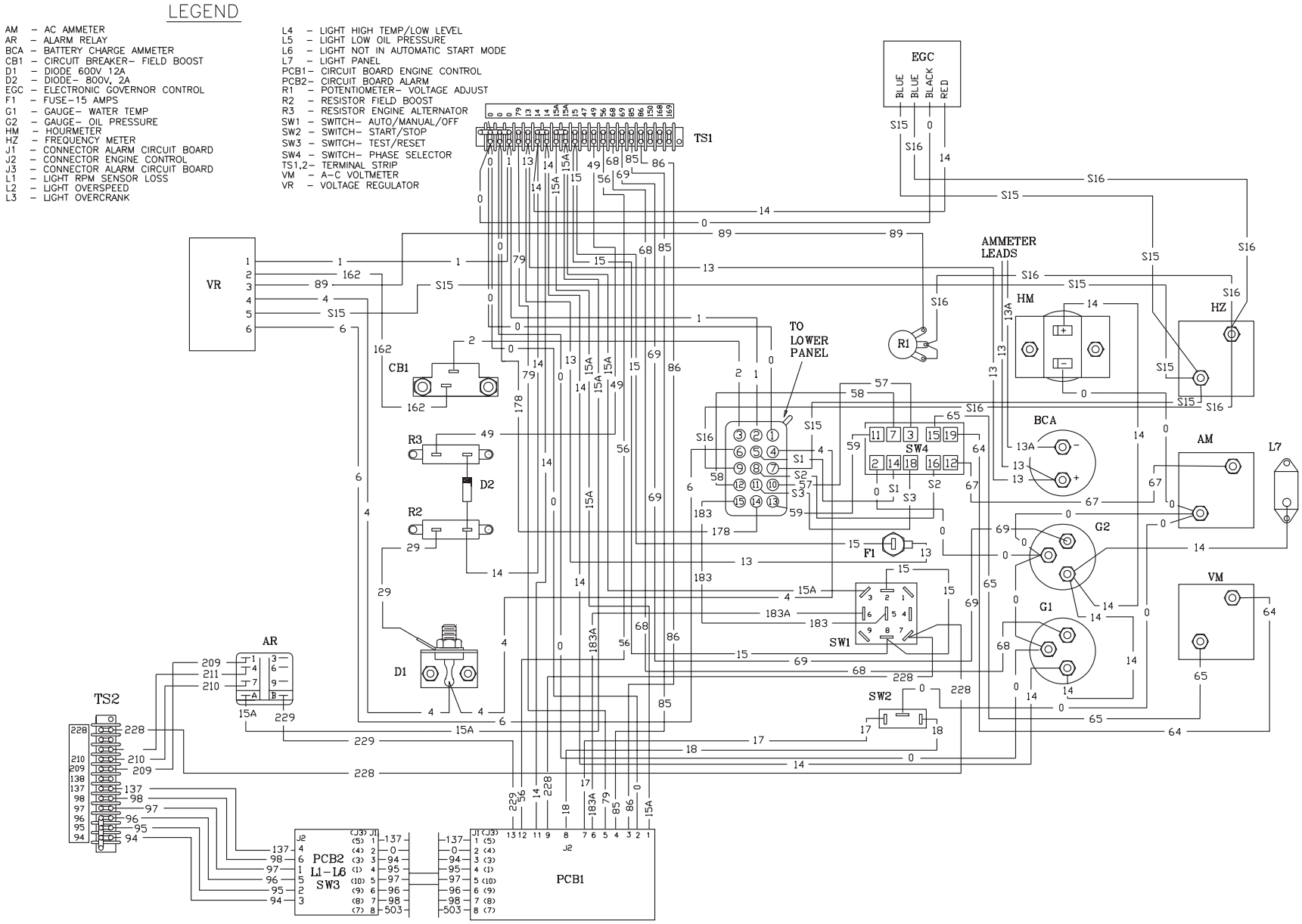

LEGEND
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARB–FUEL SHUTOFF SOLENOID
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
ID – IGNITION DISTRIBUTOR
LOS – LOW OIL SWITCH
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SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
IC
ID
T C
RPM
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A&B OPTION PANELS ONLY
GRD
BLACK
FS
LOS
SOP
SWT
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
DC ALT. REGULATOR
1 2 3 4 5
CC
SC
SM
RED
WTS
WLS
BLACK
12–V. BATTERY
48
49
DCA
BC
EH
GREEN
BLACK
WHITE
CUSTOMER 120V. UTILITY CONNECTION.
CS
CARB
RED
BLUE
BROWN
GREEN
FP
TO CONTROL PANEL
GASOLINE ONLY
LIQUID PROPANE GAS ONLY
OPTIONAL
BHT
BH
93
92
SIMILAR TO 87087

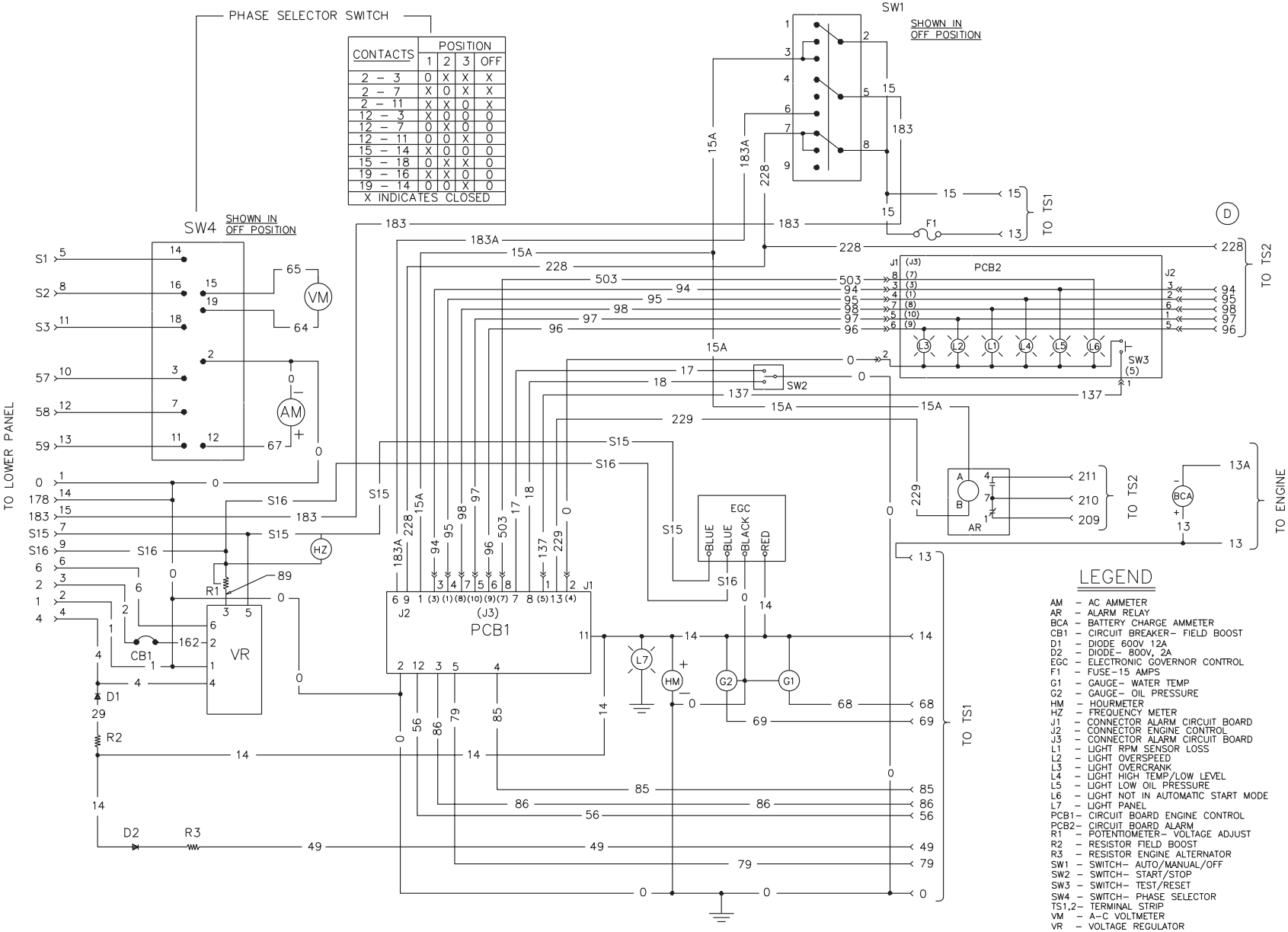

LEGEND
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE 800V 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS – TERMINAL STRIP
VR – VOLTAGE REGULATOR
TS
EGC
BLUE
BLUE
BLACK
RED
VR
CB1
R1
R2
R3
D1
D2
F1
SW1
SW2
L1
L2
HM
BCA
G1
G2
PCB
AMMETER LEADS
TO LOWER PANEL

LEGEND

BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
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SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS – TERMINAL STRIP
VR – VOLTAGE REGULATOR

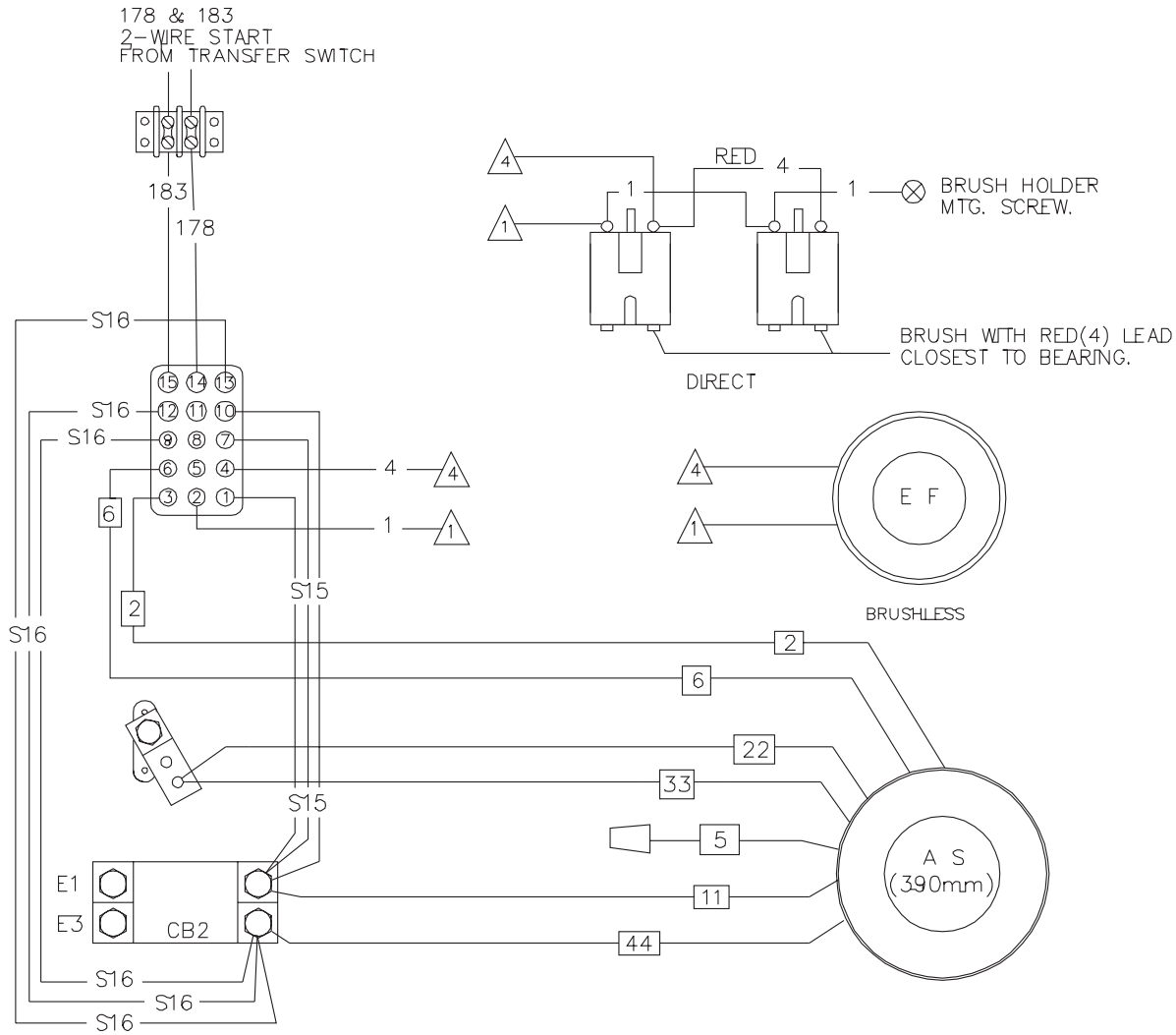



LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V, 12A
D2 – DIODE– 800V, 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
EGC
BLUE
BLUE
BLACK
RED
TS1
VR
CB1
R3
R2
D2
D1
AR
TS2
TO LOWER PANEL
R1
AMMETER LEADS
HM
HZ
BCA
AM
L7
SW4
SW1
SW2
F1
G1
G2
VM
PCB2
L1–L6
SW3
PCB1



LEGEND

AM – AC AMMETER
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D1 – DIODE 600V 12A
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SW2 – SWITCH– START/STOP
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TS1,2– TERMINAL STRIP
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VR – VOLTAGE REGULATOR

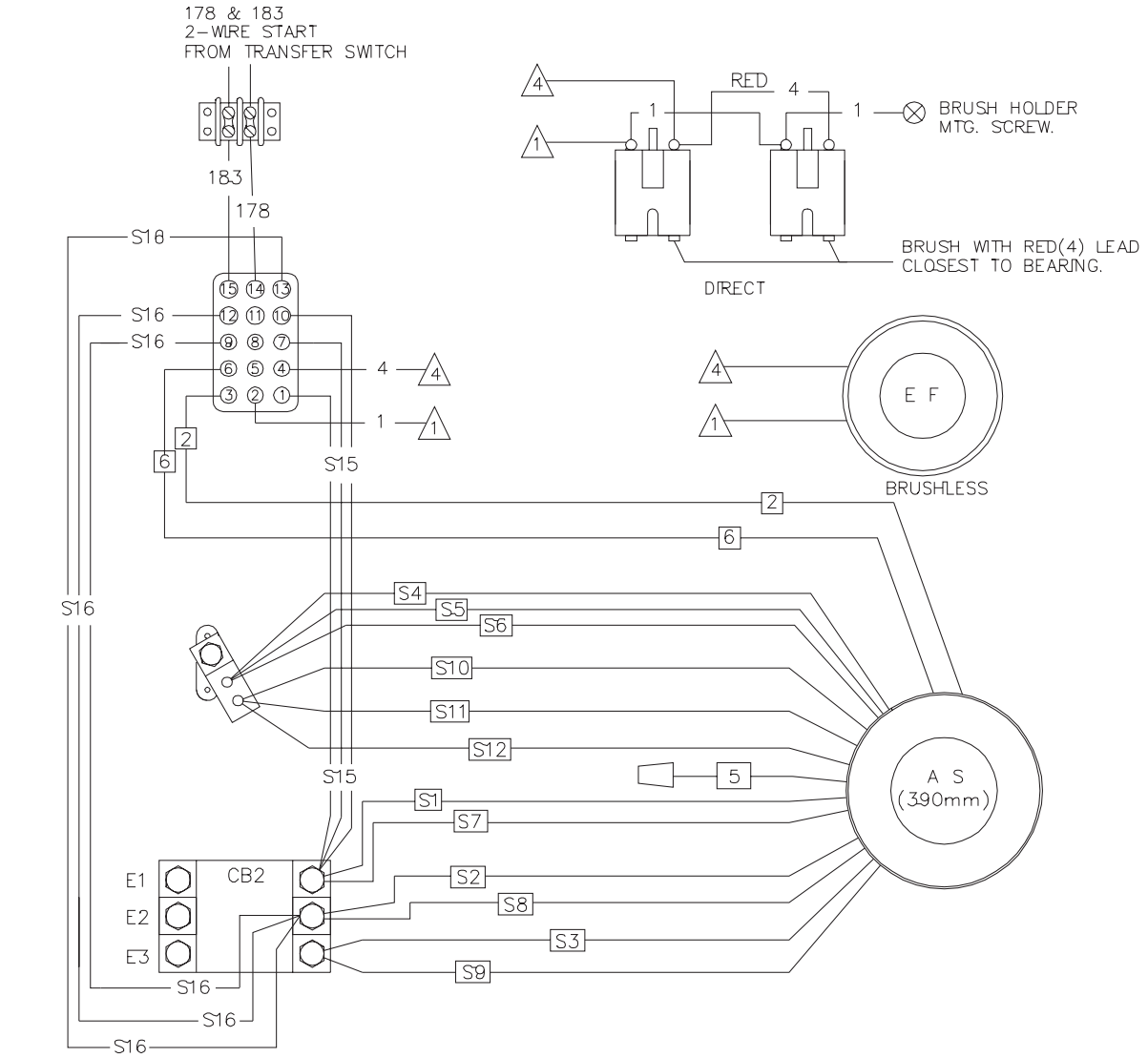


E1 TO E3	240V.
E1 TO 00	120V.
E3 TO 00	120V.

CUSTOMER CONNECTION
120/240V. 1-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD

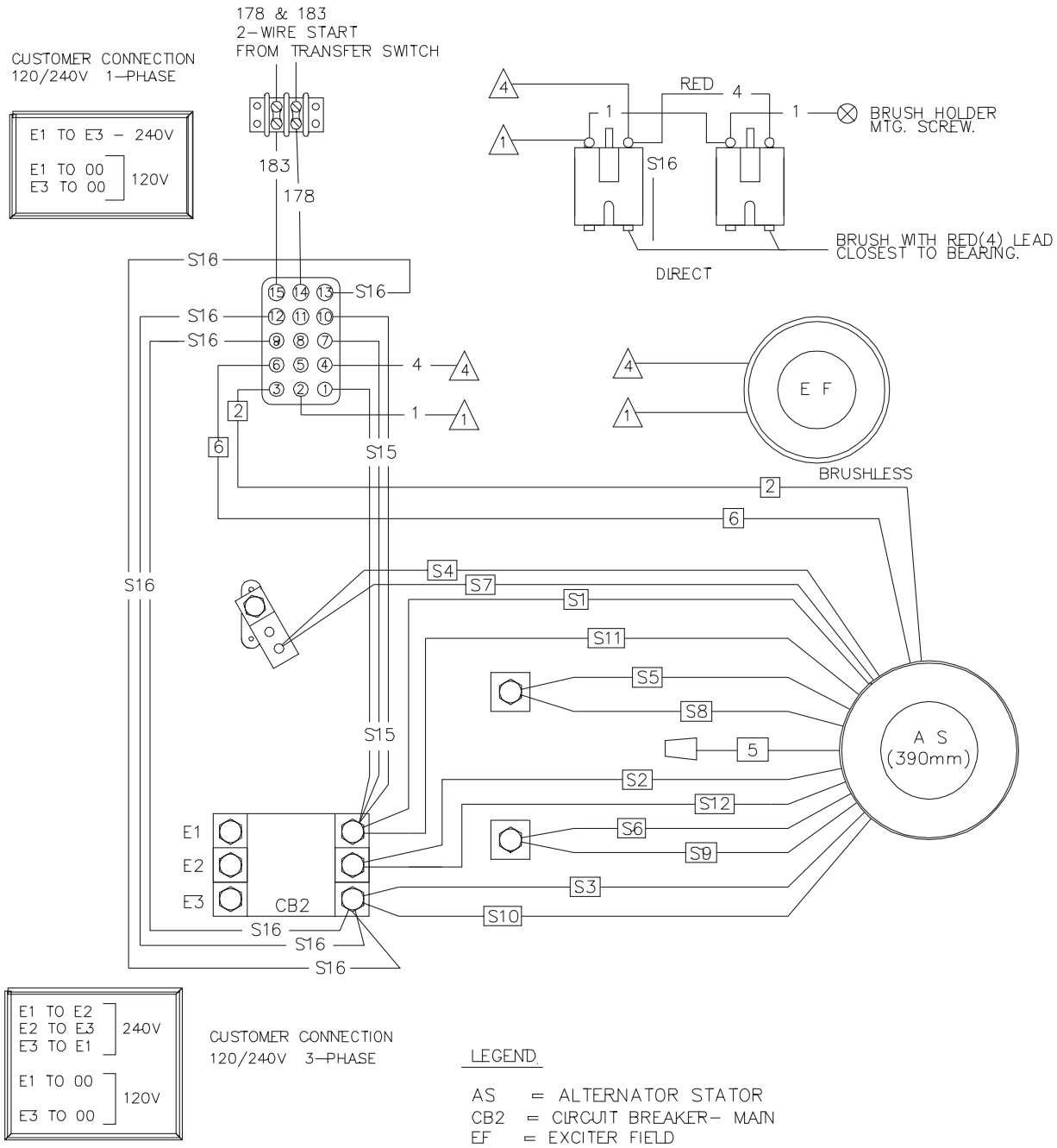


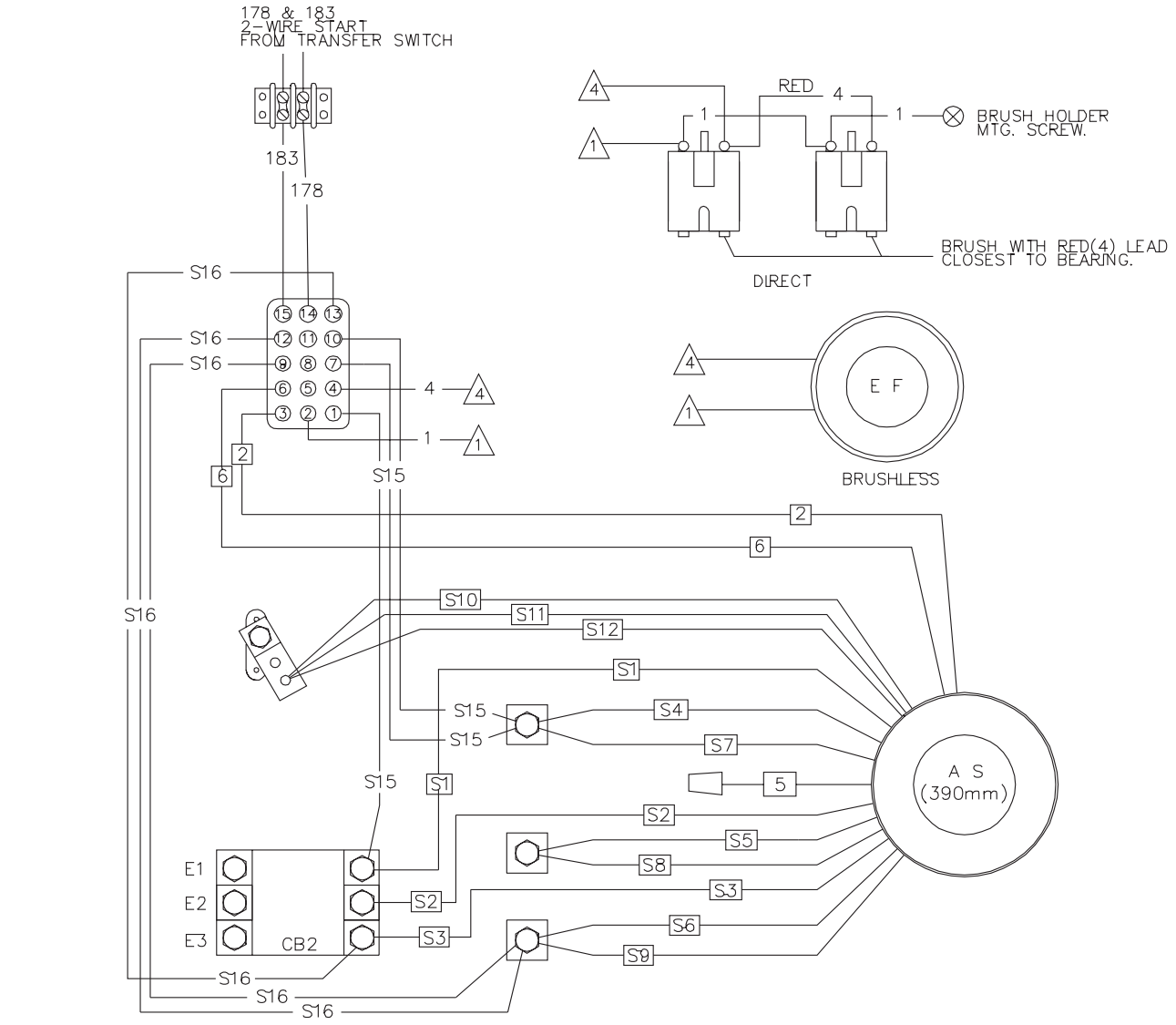
E1 TO E2 E2 TO E3 E3 TO E1	208V OR 240V
E1 TO 00 E2 TO 00 E3 TO 00	120V OR 139V

CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD


178 & 183
2–WIRE START
FROM TRANSFER SWITCH
CUSTOMER CONNECTION
120/240V 1–PHASE
E1 TO E3 – 240V
E1 TO 00
E3 TO 00
120V
183
178
RED
BRUSH HOLDER
MTG. SCREW.
S16
BRUSH WITH RED(4) LEAD
CLOSEST TO BEARING.
DIRECT
E F
BRUSHLESS
S15
S4
S7
S1
S11
S5
S8
5
S2
S12
S6
S9
S3
S10
A S
(390mm)
E1
E2
E3
CB2
E1 TO E2
E2 TO E3
E3 TO E1
240V
E1 TO 00
E3 TO 00
120V
CUSTOMER CONNECTION
120/240V 3–PHASE
LEGEND
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER– MAIN
EF = EXCITER FIELD



E1 TO E2	480V
E2 TO E3	OR
E3 TO E1	416V
E1 TO 00	277V
E2 TO 00	OR
E3 TO 00	240V

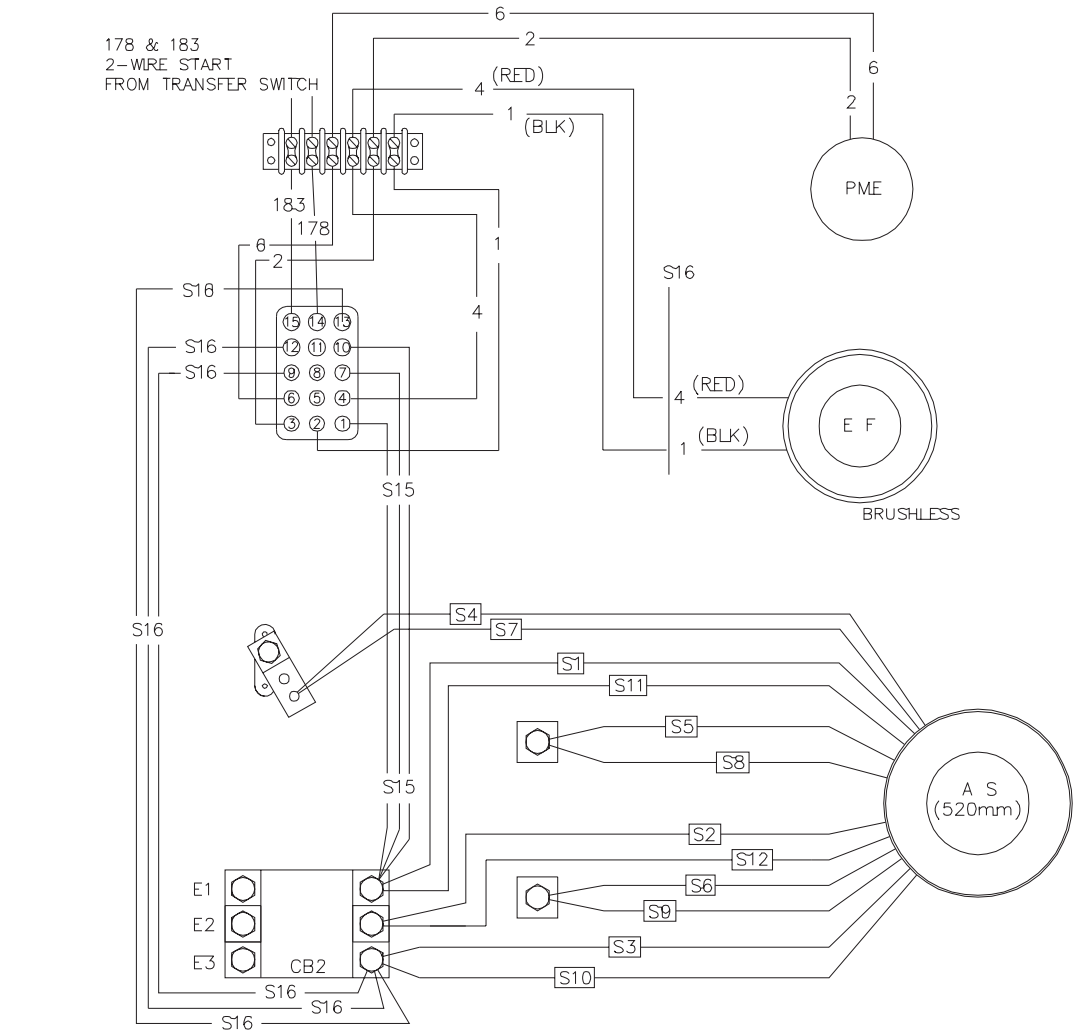
CUSTOMER CONNECTION

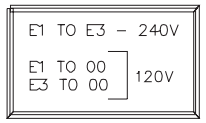
277/480V 3-PHASE

240/416V 3-PHASE

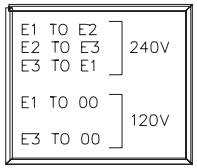
LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD





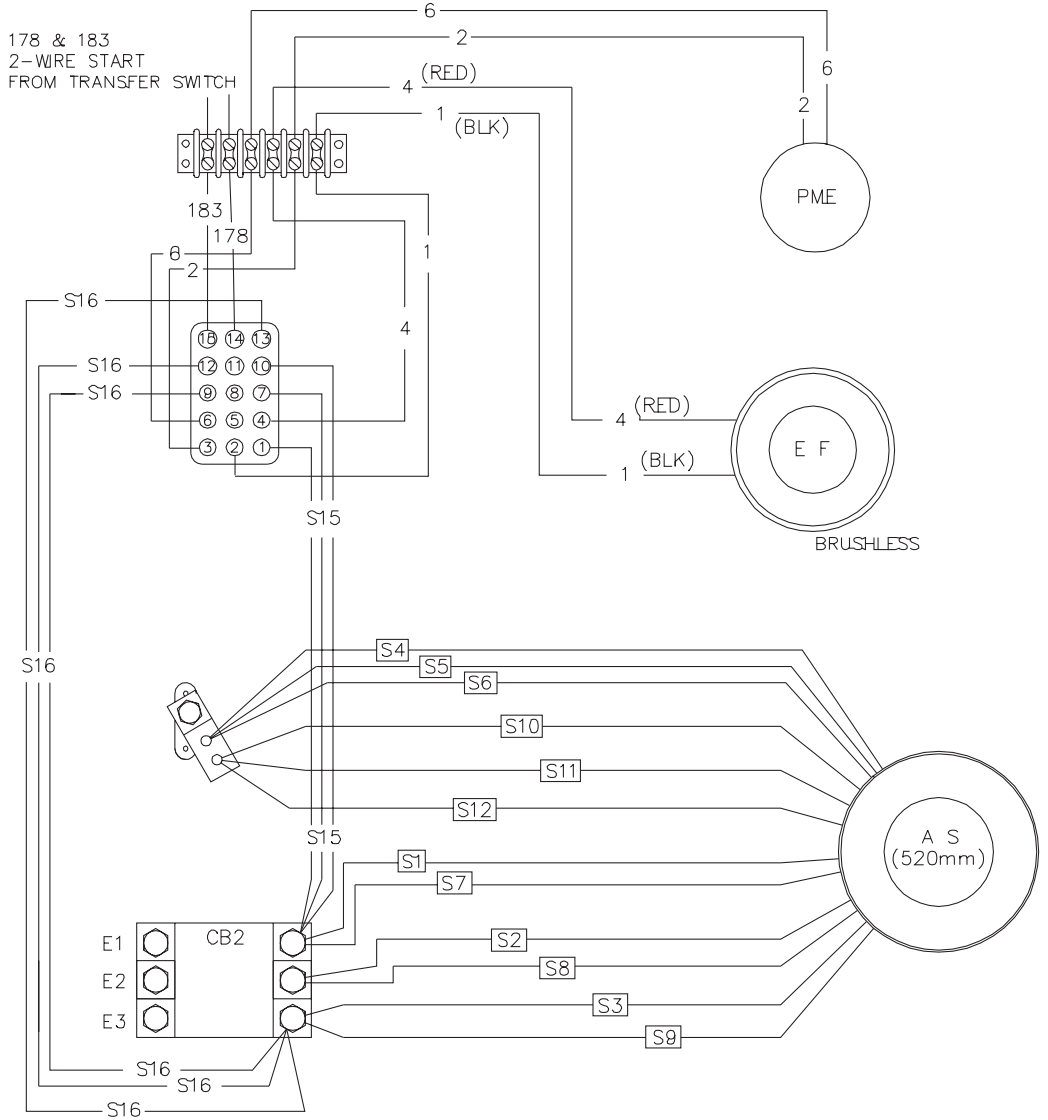
120/240V 1-PHASE



CUSTOMER CONNECTION
120/240V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
PME = PERMANENT MAGNET EXCITER

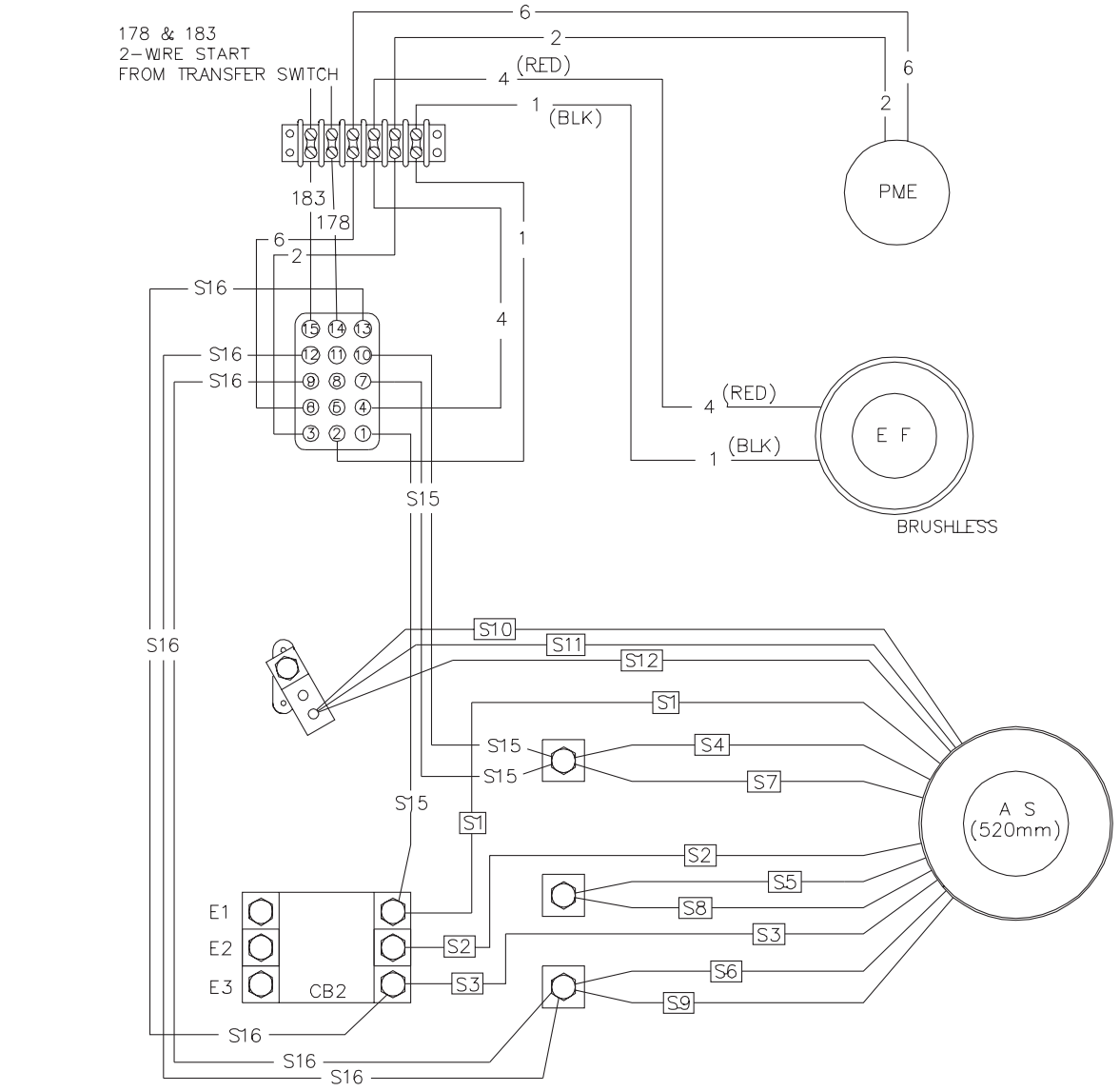


E1 TO E2	208V
E2 TO E3	OR
E3 TO E1	240V
E1 TO 00	120V
E2 TO 00	OR
E3 TO 00	139V

CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
PME = PERMANENT MAGNET EXCITER



E1 TO E2	480V
E2 TO E3	OR
E3 TO E1	416V
E1 TO 00	277V
E2 TO 00	OR
E3 TO 00	240V

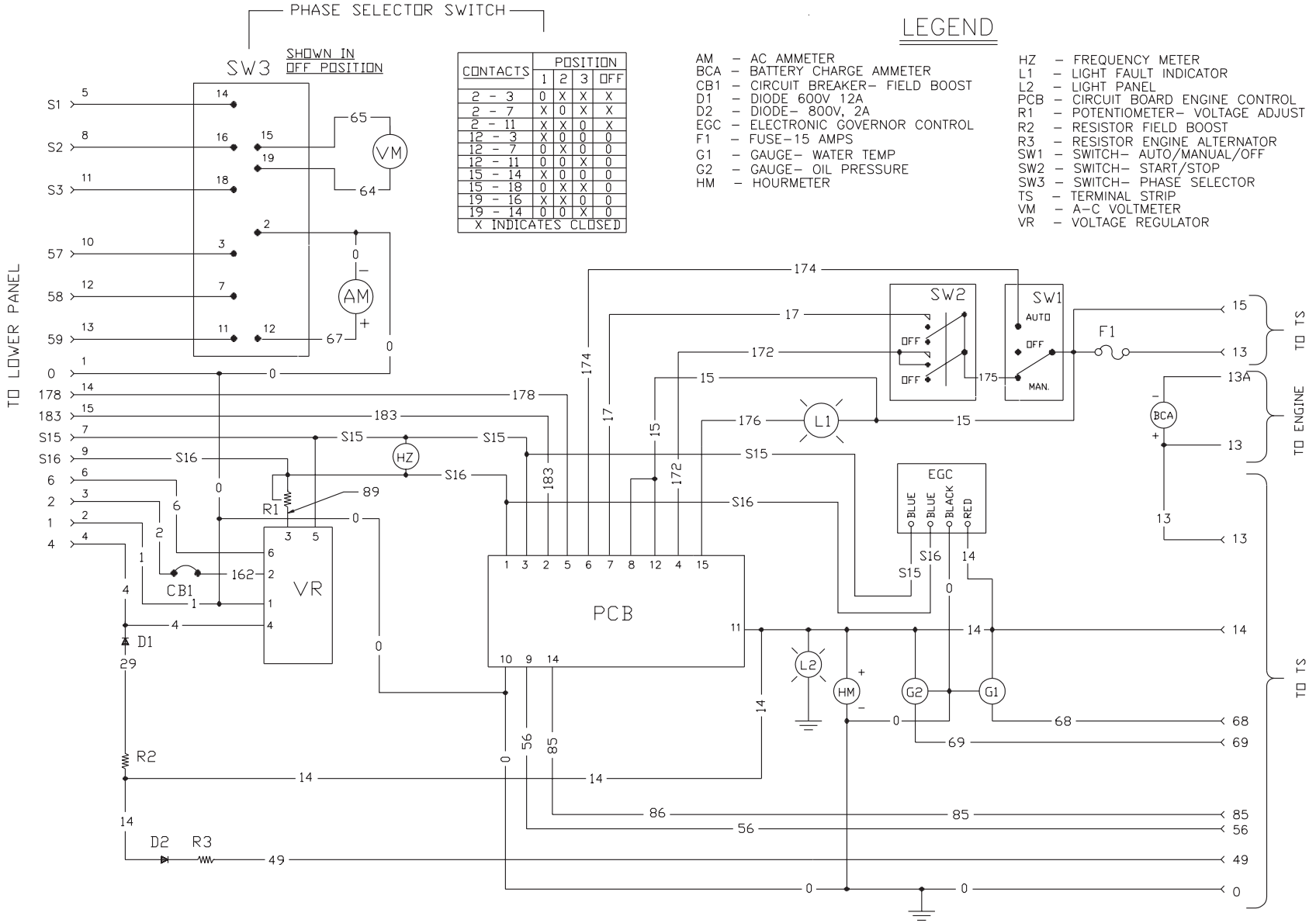
CUSTOMER CONNECTION

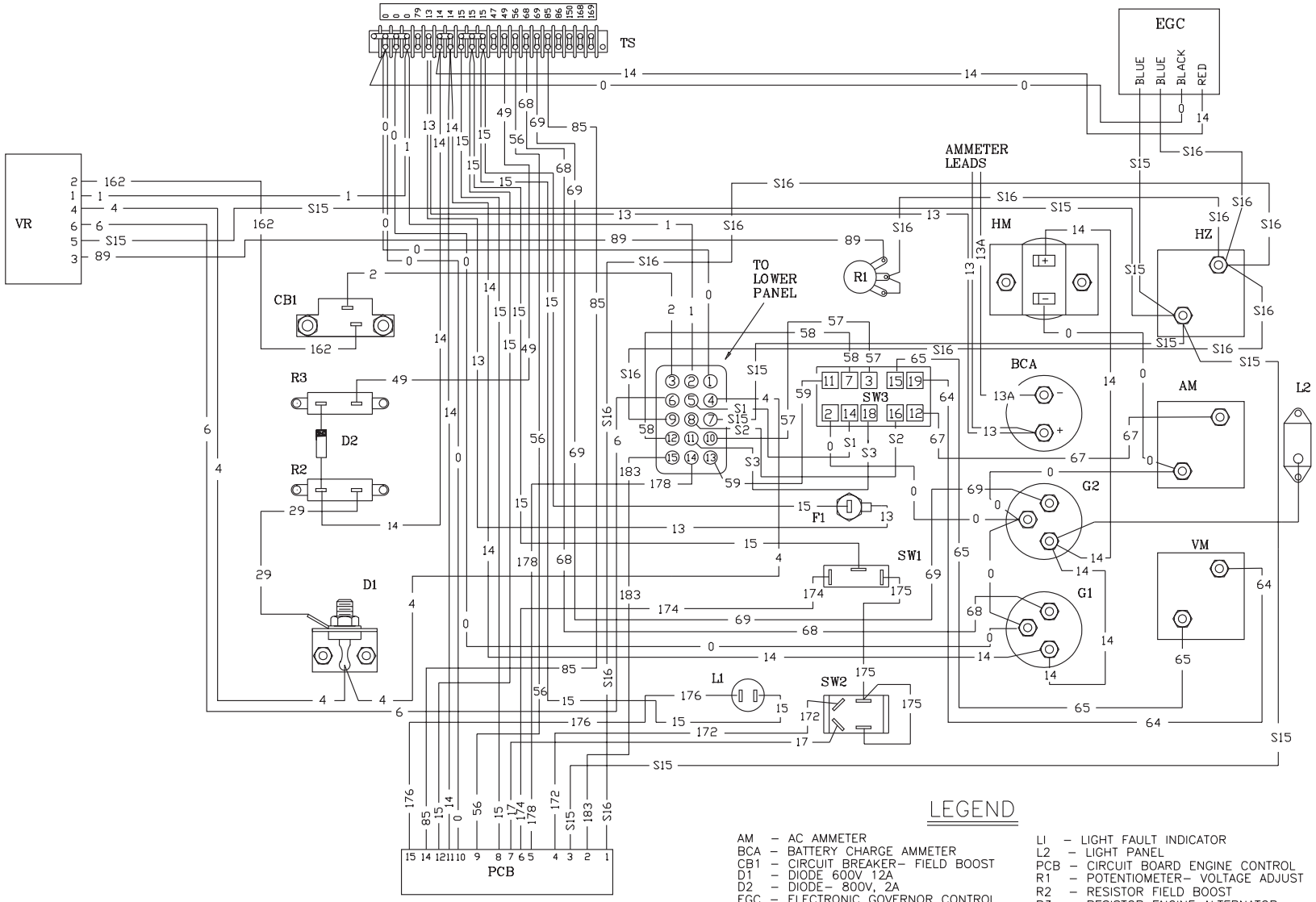
277/480V 3-PHASE

240/416V 3-PHASE

LEGEND

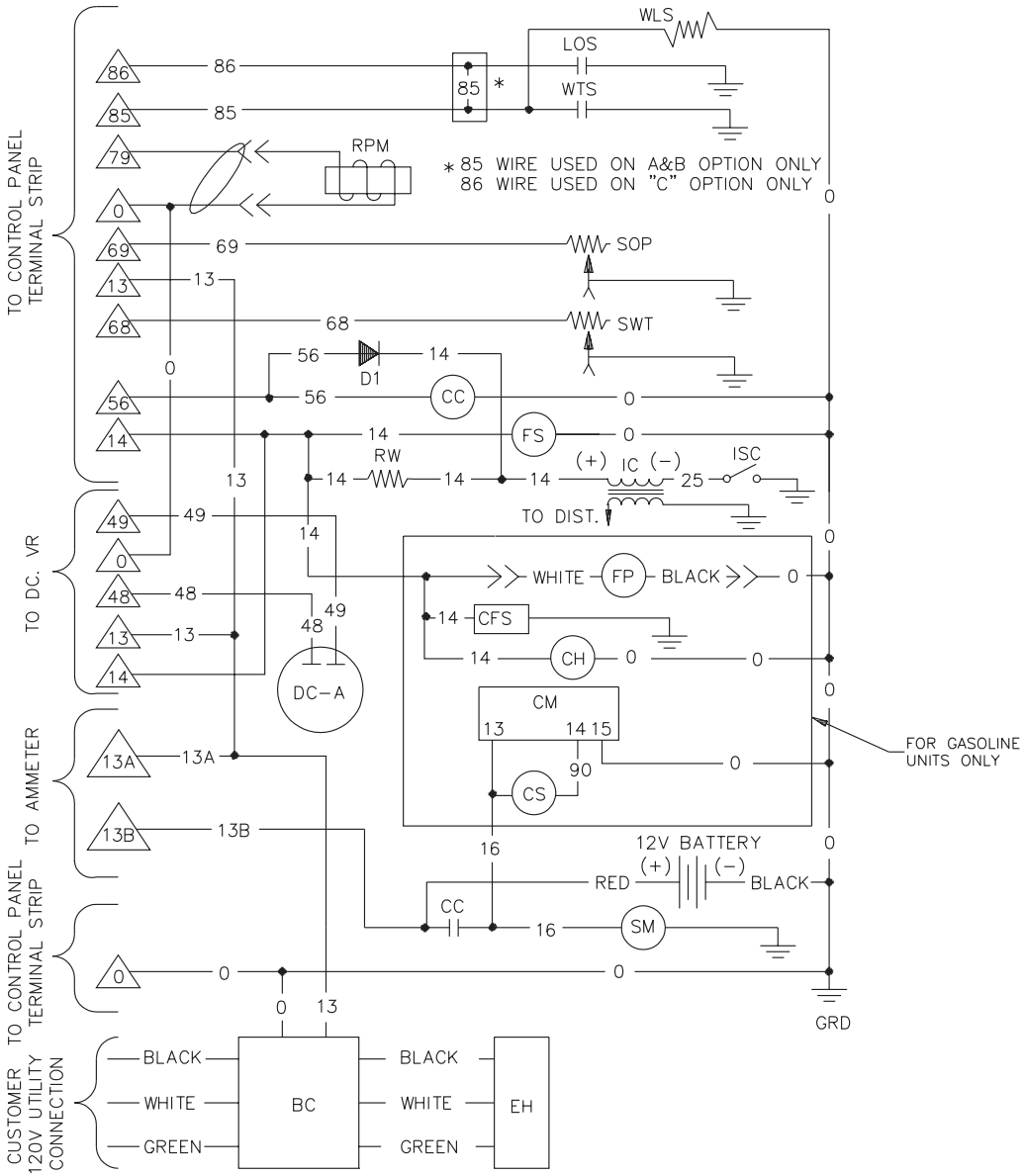
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
PME = PERMANENT MAGNET EXCITER


PHASE SELECTOR SWITCH
SW3 SHOWN IN OFF POSITION
CONTACTS | POSITION 1 2 3 OFF
2 - 3 | 0 X X X
2 - 7 | X 0 X X
2 - 11 | X X 0 X
12 - 3 | X 0 0 0
12 - 7 | 0 X 0 0
12 - 11 | 0 0 X 0
15 - 14 | X 0 0 0
15 - 18 | 0 X X 0
19 - 16 | X X 0 0
19 - 14 | 0 0 X 0
X INDICATES CLOSED
LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
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SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
TO LOWER PANEL
TO ENGINE
TO TS
TO TS
SW2
SW1
AUTO
OFF
MAN.
F1
L1
BCA
HZ
VM
AM
R1
VR
CB1
D1
R2
D2
R3
EGC
BLUE
BLUE
BLACK
RED
PCB
L2
HM
G2
G1



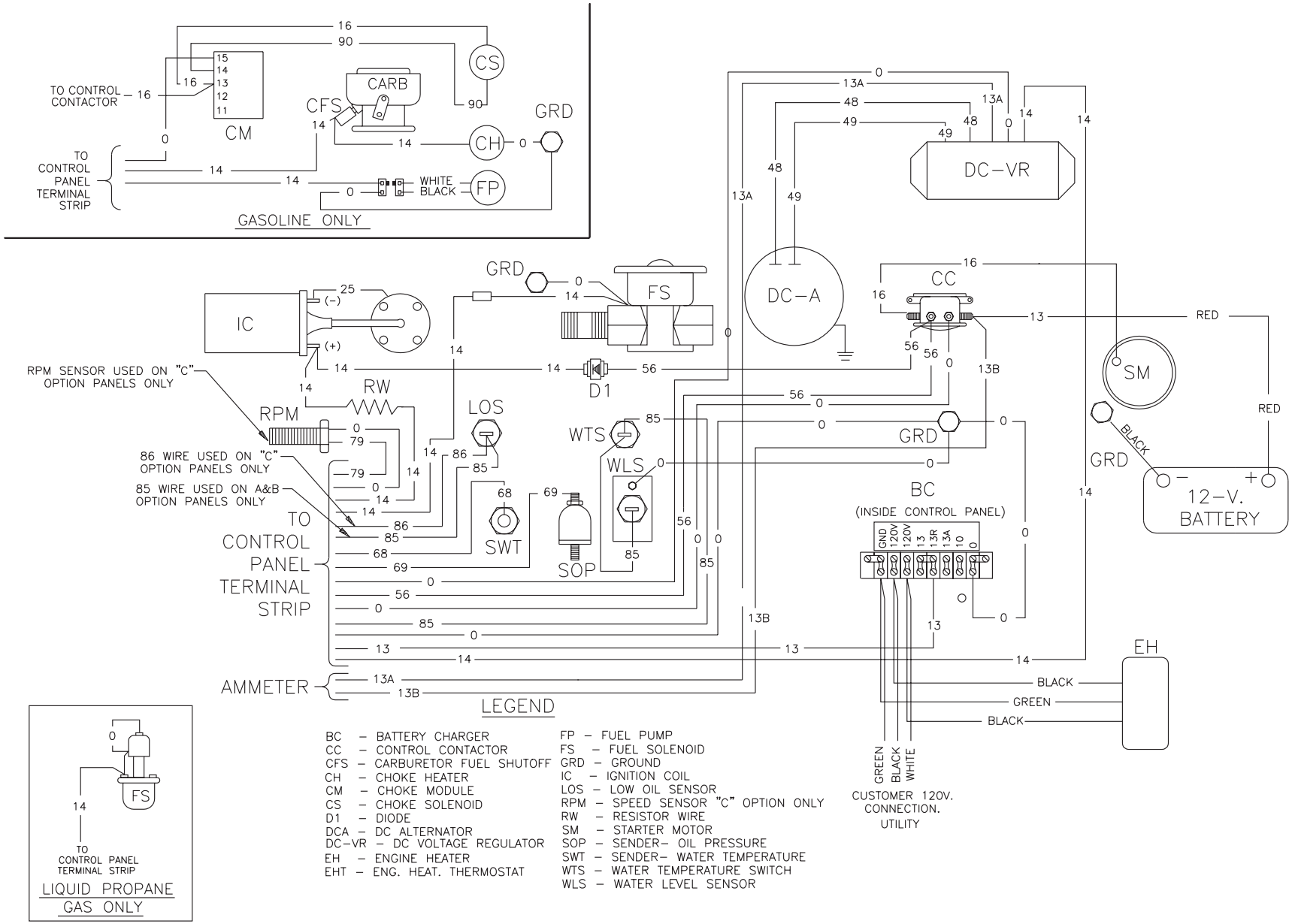
LEGEND

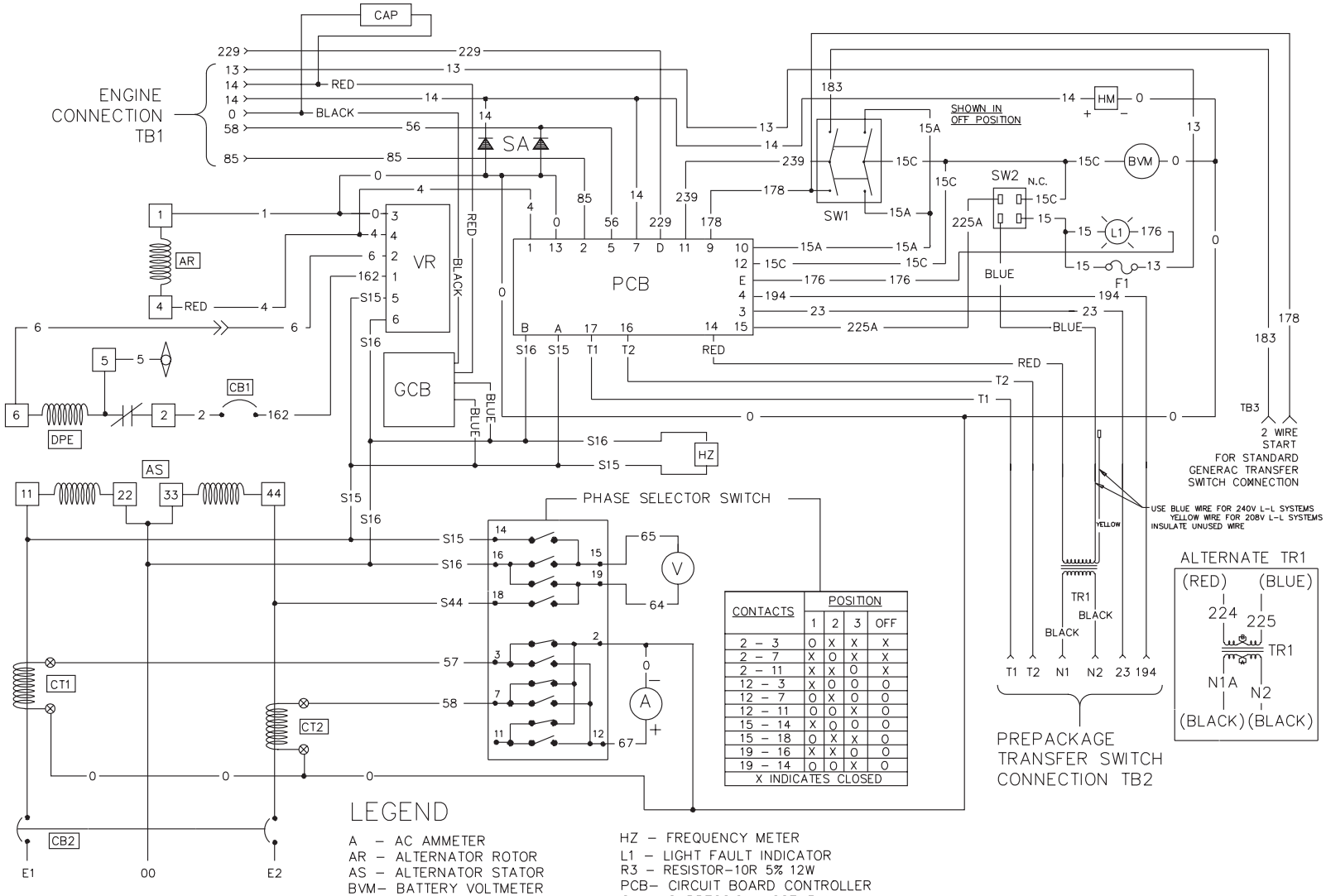
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SW3 – SWITCH– PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR



LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC.VR – DC ALTERNATOR
DP – DISTRIBUTOR POINTS
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
FP – FUEL PUMP
GRD – GROUND
IC – IGNITION COIL
ISC – IGNITION SYSTEM CONTACT
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR FOR "C" OPTION ONLY
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR


TO CONTROL CONTACTOR
CM
CARB
CFS
CS
CH
GRD
FP
WHITE
BLACK
TO CONTROL PANEL TERMINAL STRIP
GASOLINE ONLY
IC
FS
DC–A
DC–VR
CC
SM
RED
BLACK
GRD
12–V. BATTERY
RPM SENSOR USED ON "C" OPTION PANELS ONLY
RW
RPM
LOS
WTS
WLS
D1
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A&B OPTION PANELS ONLY
TO CONTROL PANEL TERMINAL STRIP
SWT
SOP
BC
(INSIDE CONTROL PANEL)
GND
120V
120V
AMMETER
EH
GREEN
BLACK
WHITE
CUSTOMER 120V. CONNECTION. UTILITY
LEGEND
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC–VR – DC VOLTAGE REGULATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL SENSOR
RPM – SPEED SENSOR "C" OPTION ONLY
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR
TO CONTROL PANEL TERMINAL STRIP
LIQUID PROPANE GAS ONLY

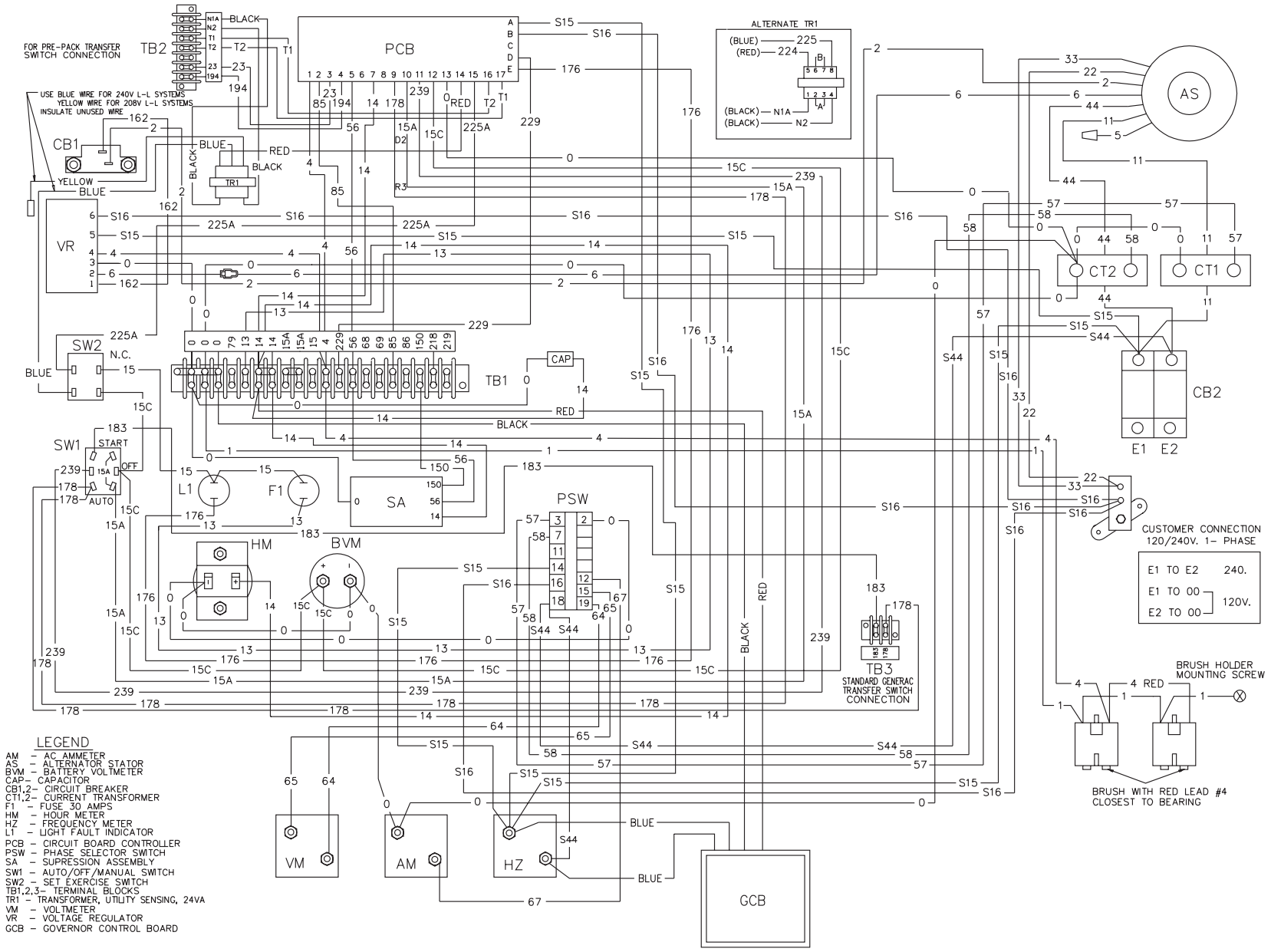


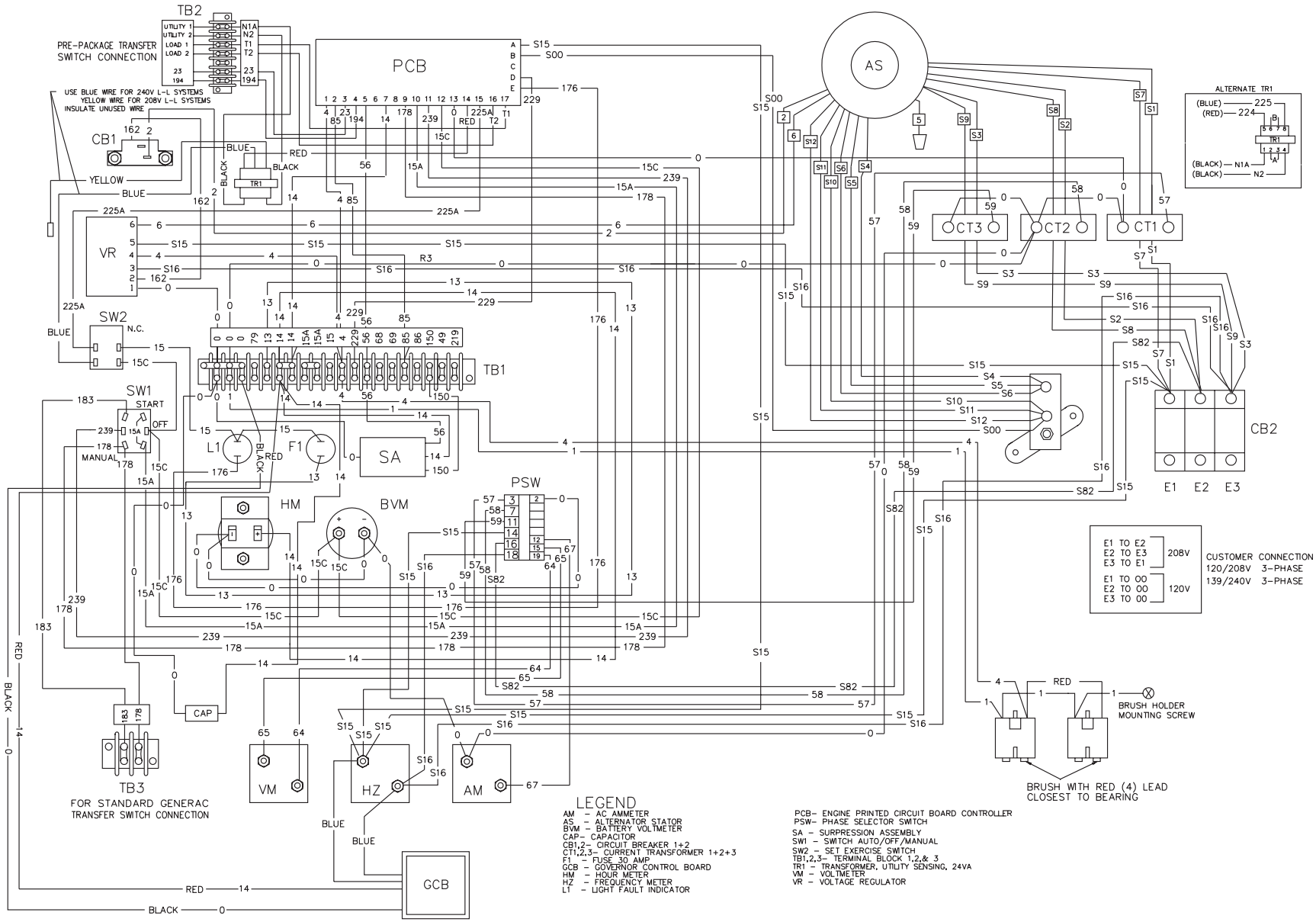
CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	O	X	X	X
2 – 7	X	O	X	X
2 – 11	X	X	O	X
12 – 3	X	O	O	O
12 – 7	O	X	O	O
12 – 11	O	O	X	O
15 – 14	X	O	O	O
15 – 18	O	X	X	O
19 – 16	X	X	O	O
19 – 14	O	O	X	O

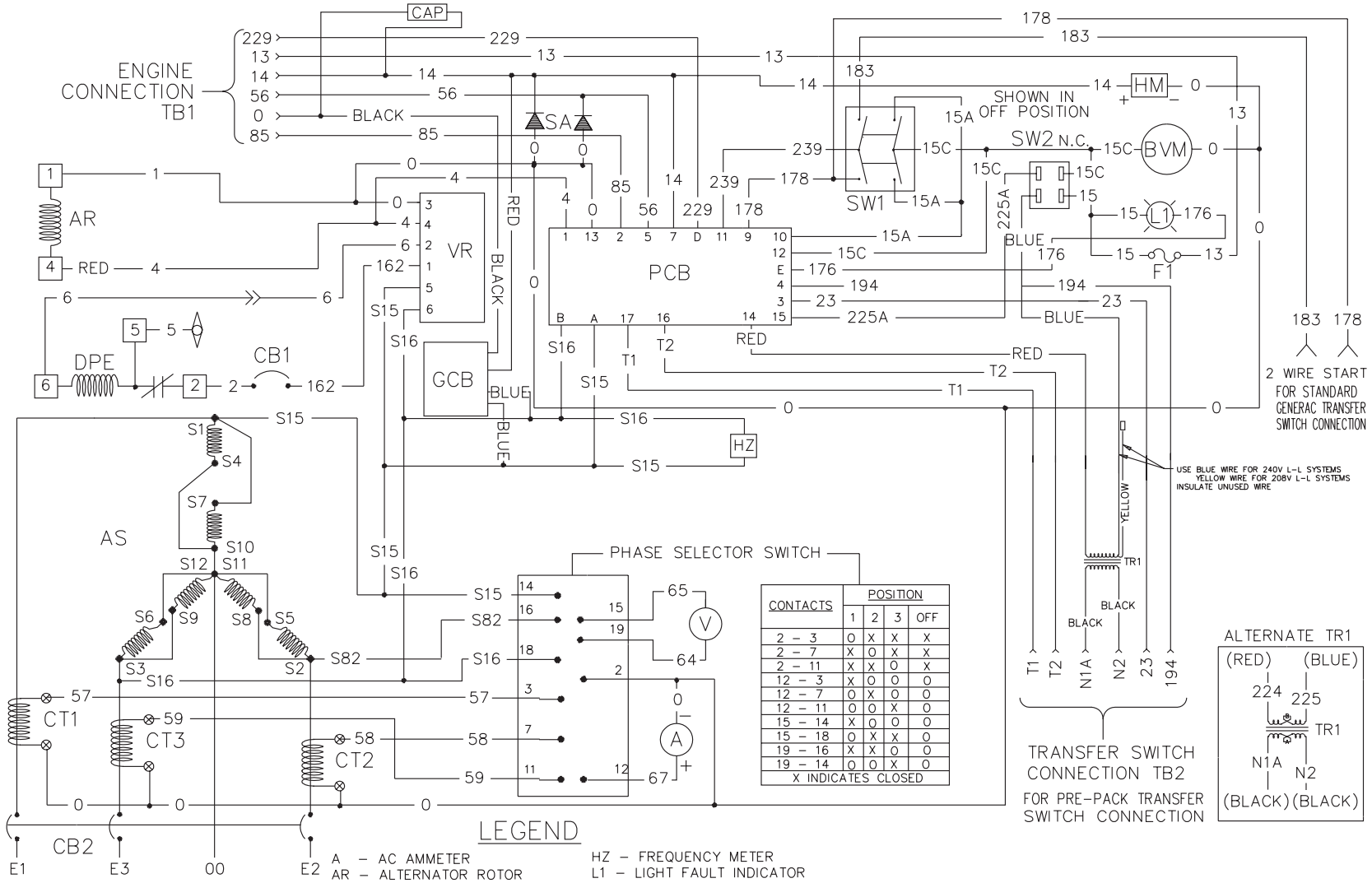
X INDICATES CLOSED

LEGEND

A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BVM– BATTERY VOLTMETER
CAP– CAPACITOR
CB1,2– CIRCUIT BREAKERS
CT1,2– CURRENT TRANSFORMER
D2 – DIODE 600V 2A
DPE– EXCITATION WINDING
F1 – FUSE 30 AMPS
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
R3 – RESISTOR-10R 5% 12W
PCB– CIRCUIT BOARD CONTROLLER
SA – SUPRESSION ASSEMBLY
SW1– AUTO/OFF/MANUAL SWITCH
SW2– SET EXERCISE SWITCH
TB1,2,3– TERMINAL BOARDS
V – AC VOLTMETER
VR – VOLTAGE REGULATOR
TR1–TRANSFORMER, UTILITY SENSING


TB2
FOR PRE-PACK TRANSFER SWITCH CONNECTION
PCB
ALTERNATE TR1
USE BLUE WIRE FOR 240V L-L SYSTEMS
YELLOW WIRE FOR 208V L-L SYSTEMS
INSULATE UNUSED WIRE
CB1
VR
SW2
N.C.
TB1
CAP
SW1
START
OFF
AUTO
L1
F1
SA
PSW
HM
BVM
AS
CT2
CT1
CB2
E1 E2
CUSTOMER CONNECTION
120/240V. 1- PHASE
E1 TO E2 240.
E1 TO 00 120V.
E2 TO 00
TB3
STANDARD GENERAC TRANSFER SWITCH CONNECTION
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
VM
AM
HZ
GCB
LEGEND
AM - AC AMMETER
AS - ALTERNATOR STATOR
BVM - BATTERY VOLTMETER
CAP - CAPACITOR
CB1,2 - CIRCUIT BREAKER
CT1,2 - CURRENT TRANSFORMER
F1 - FUSE 30 AMPS
HM - HOUR METER
HZ - FREQUENCY METER
L1 - LIGHT FAULT INDICATOR
PCB - CIRCUIT BOARD CONTROLLER
PSW - PHASE SELECTOR SWITCH
SA - SUPRESSION ASSEMBLY
SW1 - AUTO/OFF/MANUAL SWITCH
SW2 - SET EXERCISE SWITCH
TB1,2,3 - TERMINAL BLOCKS
TR1 - TRANSFORMER, UTILITY SENSING, 24VA
VM - VOLTMETER
VR - VOLTAGE REGULATOR
GCB - GOVERNOR CONTROL BOARD


TB2
PRE-PACKAGE TRANSFER SWITCH CONNECTION
UTILITY 1
UTILITY 2
LOAD 1
LOAD 2
N1A
N2
T1
T2
USE BLUE WIRE FOR 240V L-L SYSTEMS
YELLOW WIRE FOR 208V L-L SYSTEMS
INSULATE UNUSED WIRE
PCB
CB1
TR1
VR
SW2
N.C.
SW1
START
OFF
MANUAL
L1
F1
SA
TB1
HM
BVM
PSW
CAP
TB3
FOR STANDARD GENERAC TRANSFER SWITCH CONNECTION
VM
HZ
AM
GCB
AS
CT3
CT2
CT1
CB2
E1
E2
E3
ALTERNATE TR1
(BLUE) 225
(RED) 224
(BLACK) N1A
(BLACK) N2
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO 00
E2 TO 00
E3 TO 00
120V
CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BVM – BATTERY VOLTMETER
CAP– CAPACITOR
CB1,2– CIRCUIT BREAKER 1+2
CT1,2,3– CURRENT TRANSFORMER 1+2+3
F1 – FUSE 30 AMP
GCB – GOVERNOR CONTROL BOARD
HM – HOUR METER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
PCB– ENGINE PRINTED CIRCUIT BOARD CONTROLLER
PSW– PHASE SELECTOR SWITCH
SA – SURPRESSION ASSEMBLY
SW1 – SWITCH AUTO/OFF/MANUAL
SW2 – SET EXERCISE SWITCH
TB1,2,3– TERMINAL BLOCK 1,2,& 3
TR1 – TRANSFORMER, UTILITY SENSING, 24VA
VM – VOLTMETER
VR – VOLTAGE REGULATOR

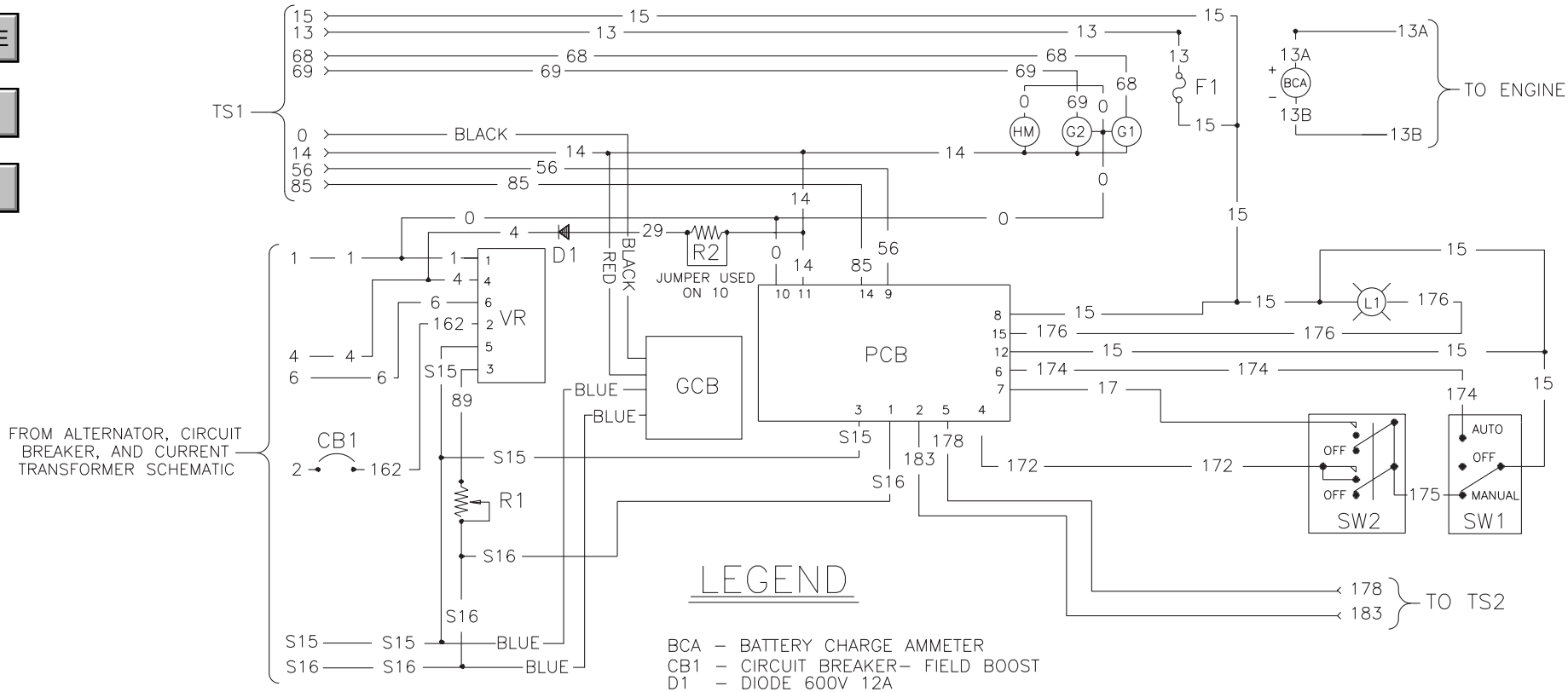


CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	O	X	X	X
2 – 7	X	O	X	X
2 – 11	X	X	O	X
12 – 3	X	O	O	O
12 – 7	O	X	O	O
12 – 11	O	O	X	O
15 – 14	X	O	O	O
15 – 18	O	X	X	O
19 – 16	X	X	O	O
19 – 14	O	O	X	O

X INDICATES CLOSED

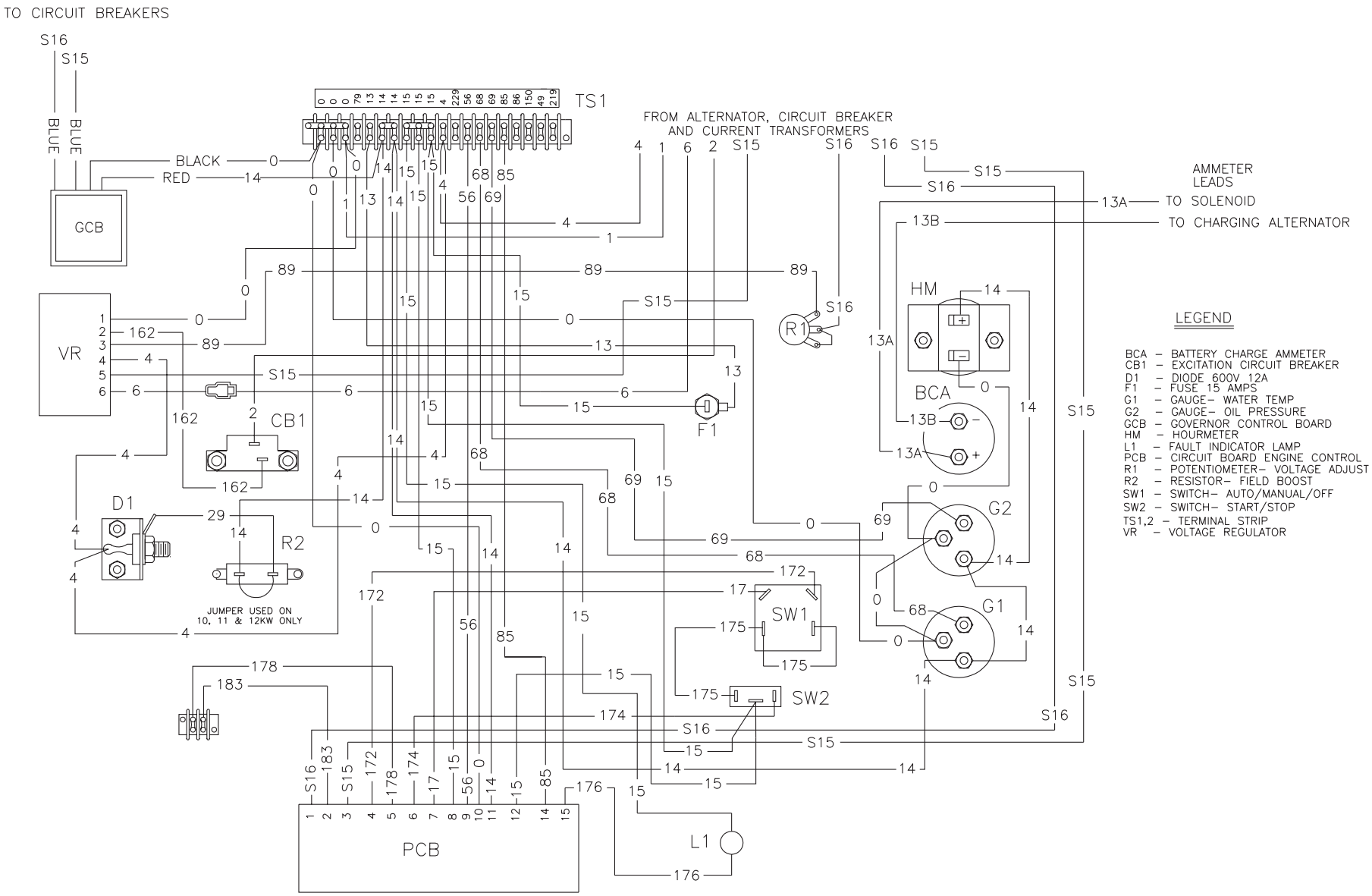
LEGEND

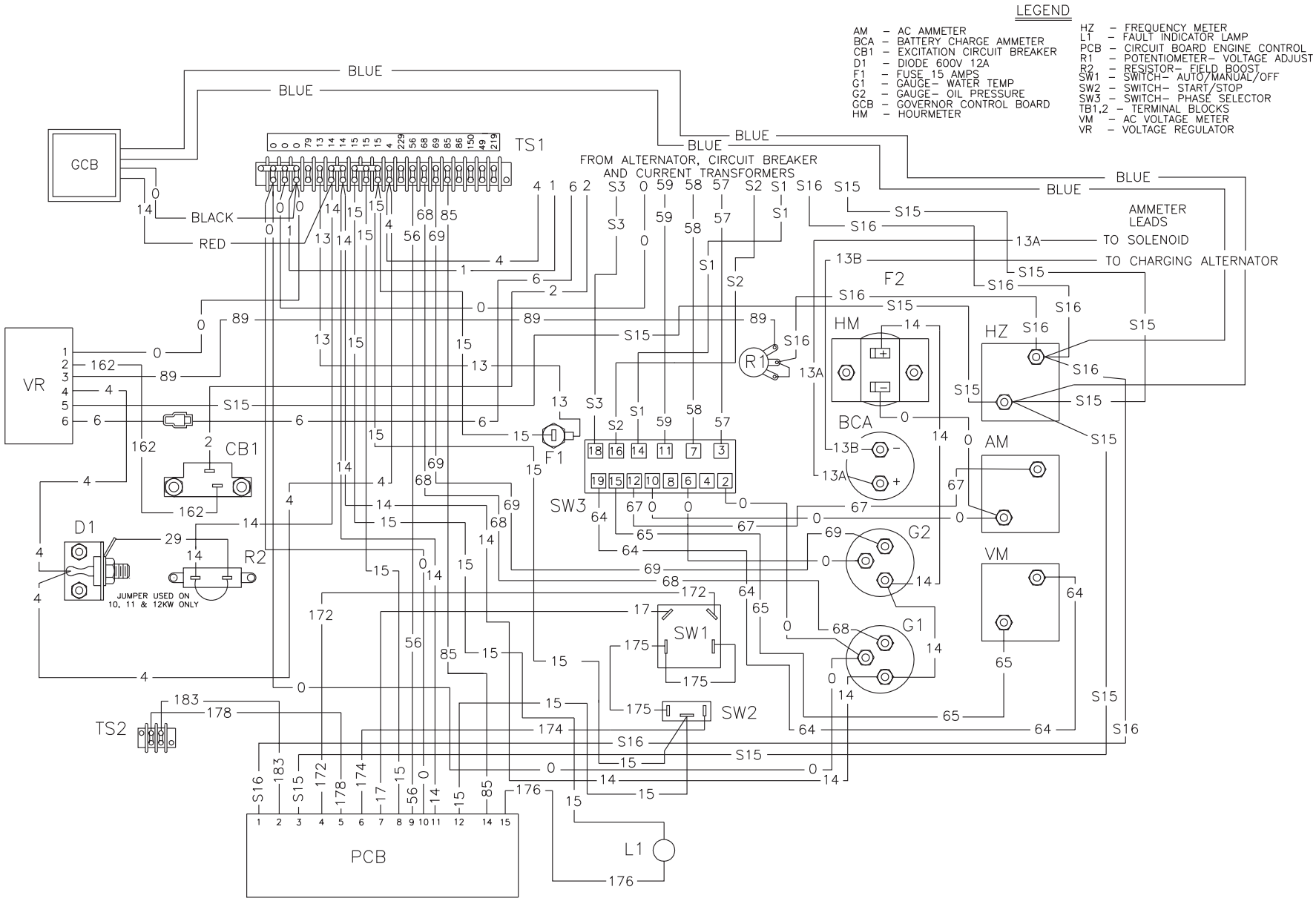
A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BVM– BATTERY VOLTMETER
CAP– CAPACITOR
CB1,2– CIRCUIT BREAKERS
CT1,2– CURRENT TRANSFORMER
GCB– GOVERNOR CONTROL BOARD
DPE– EXCITATION WINDING
F1 – FUSE 30 AMPS
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
PCB– CIRCUIT BOARD CONTROLLER
SW1– AUTO/OFF/MANUAL SWITCH
SW2– SET EXERCISE SWITCH
SA – SUPRESSION ASSEMBLY
TB1,2– TERMINAL BOARD
TR1 – TRANSFORMER, UTILITY SENSING, 24VA
V – AC VOLTMETER
VR – VOLTAGE REGULATOR

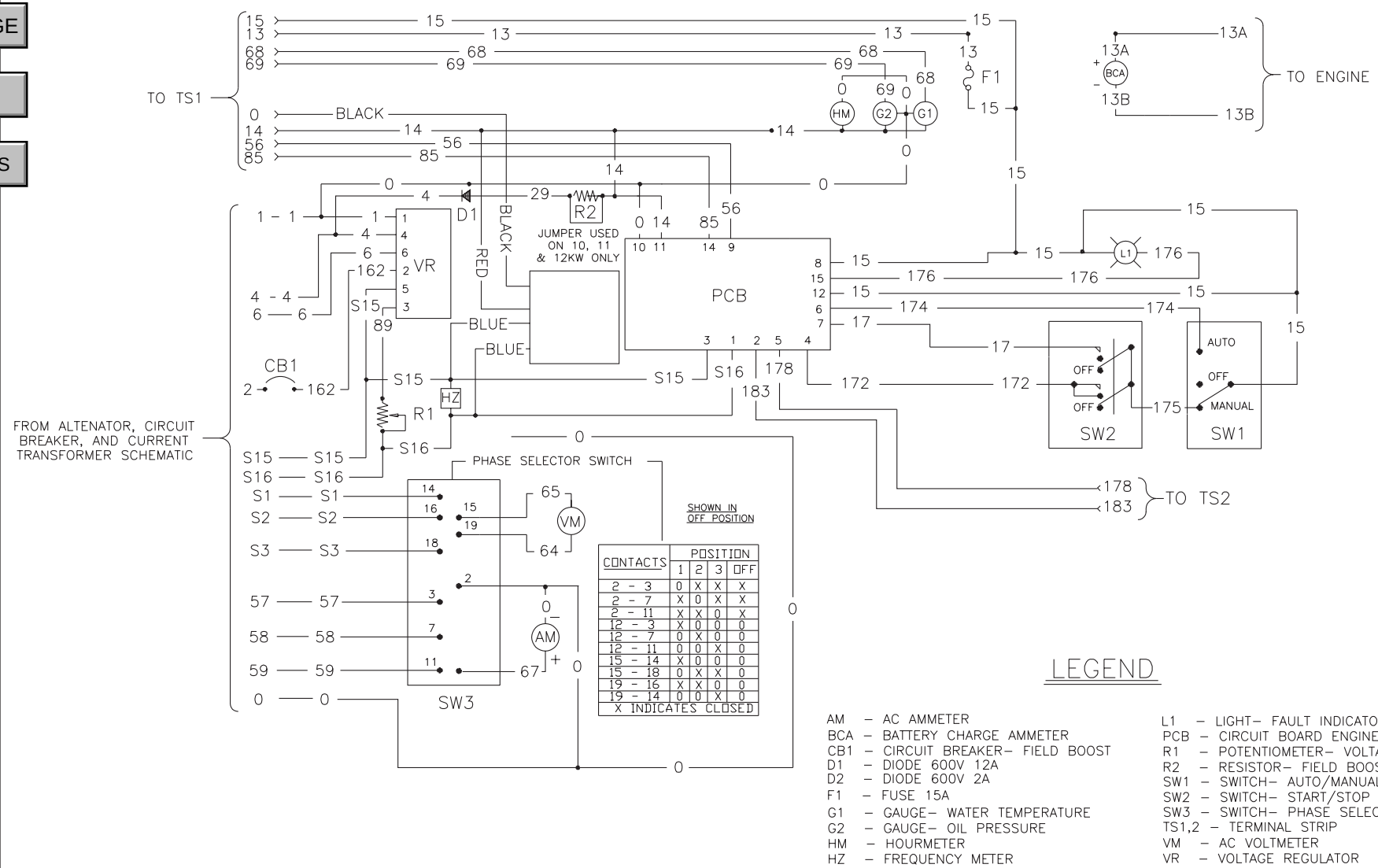


LEGEND

BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
GCB – GOVERNOR CONTROL BOARD
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS1,2 – TERMINAL STRIP
VR – VOLTAGE REGULATOR


TO CIRCUIT BREAKERS
S16
S15
BLUE
BLUE
GCB
BLACK
RED
TS1
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
VR
CB1
D1
R2
JUMPER USED ON 10, 11 & 12KW ONLY
R1
F1
HM
BCA
G2
G1
SW1
SW2
PCB
L1
AMMETER LEADS
13A TO SOLENOID
13B TO CHARGING ALTERNATOR
LEGEND
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
L1 – FAULT INDICATOR LAMP
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS1,2 – TERMINAL STRIP
VR – VOLTAGE REGULATOR


LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
AMMETER LEADS
13A TO SOLENOID
13B TO CHARGING ALTERNATOR
JUMPER USED ON 10, 11 & 12KW ONLY
GCB
TS1
TS2
VR
CB1
D1
R1
R2
F1
SW1
SW2
SW3
HM
HZ
BCA
AM
VM
G1
G2
PCB
L1
F2
BLUE
BLACK
RED

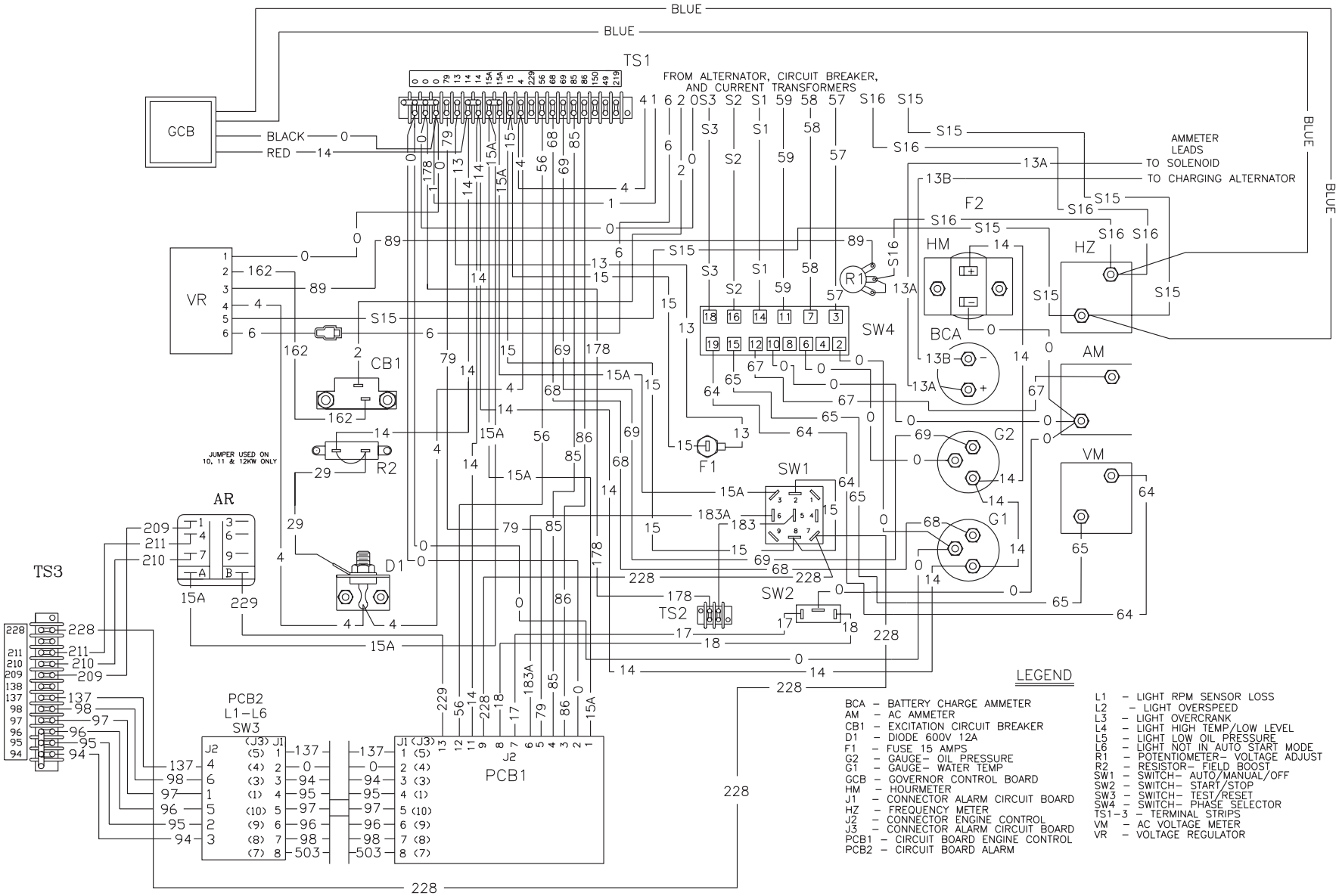


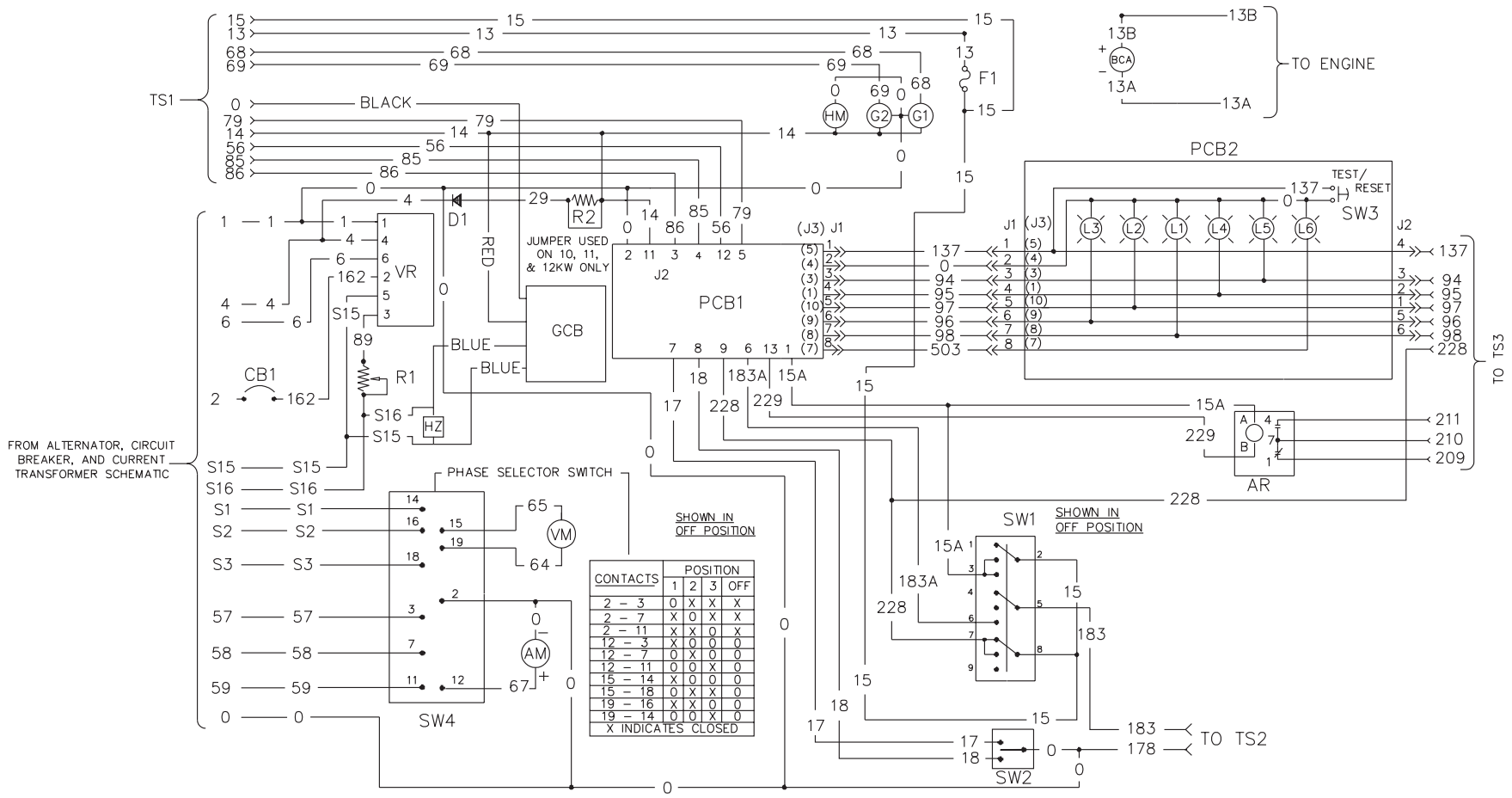
CONTACTS	POSITION 1	2	3	OFF
2 - 3	0	X	X	X
2 - 7	X	0	X	X
2 - 11	X	X	0	X
12 - 3	X	0	0	0
12 - 7	0	X	0	0
12 - 11	0	0	X	0
15 - 14	X	0	0	0
15 - 18	0	X	X	0
19 - 16	X	X	0	0
19 - 14	0	0	X	0

X INDICATES CLOSED

LEGEND

AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE 600V 2A
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TS1,2 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR


BLUE
BLUE
TS1
FROM ALTERNATOR, CIRCUIT BREAKER, AND CURRENT TRANSFORMERS
GCB
BLACK
RED
AMMETER LEADS
TO SOLENOID
TO CHARGING ALTERNATOR
F2
HM
HZ
VR
R1
SW4
BCA
AM
CB1
R2
F1
SW1
G2
VM
G1
JUMPER USED ON 10, 11 & 12KW ONLY
AR
D1
SW2
TS2
TS3
PCB2
L1-L6
SW3
PCB1
LEGEND
BCA – BATTERY CHARGE AMMETER
AM – AC AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
G2 – GAUGE– OIL PRESSURE
G1 – GAUGE– WATER TEMP
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
J1 – CONNECTOR ALARM CIRCUIT BOARD
HZ – FREQUENCY METER
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – CIRCUIT BOARD ALARM
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTO START MODE
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIPS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR

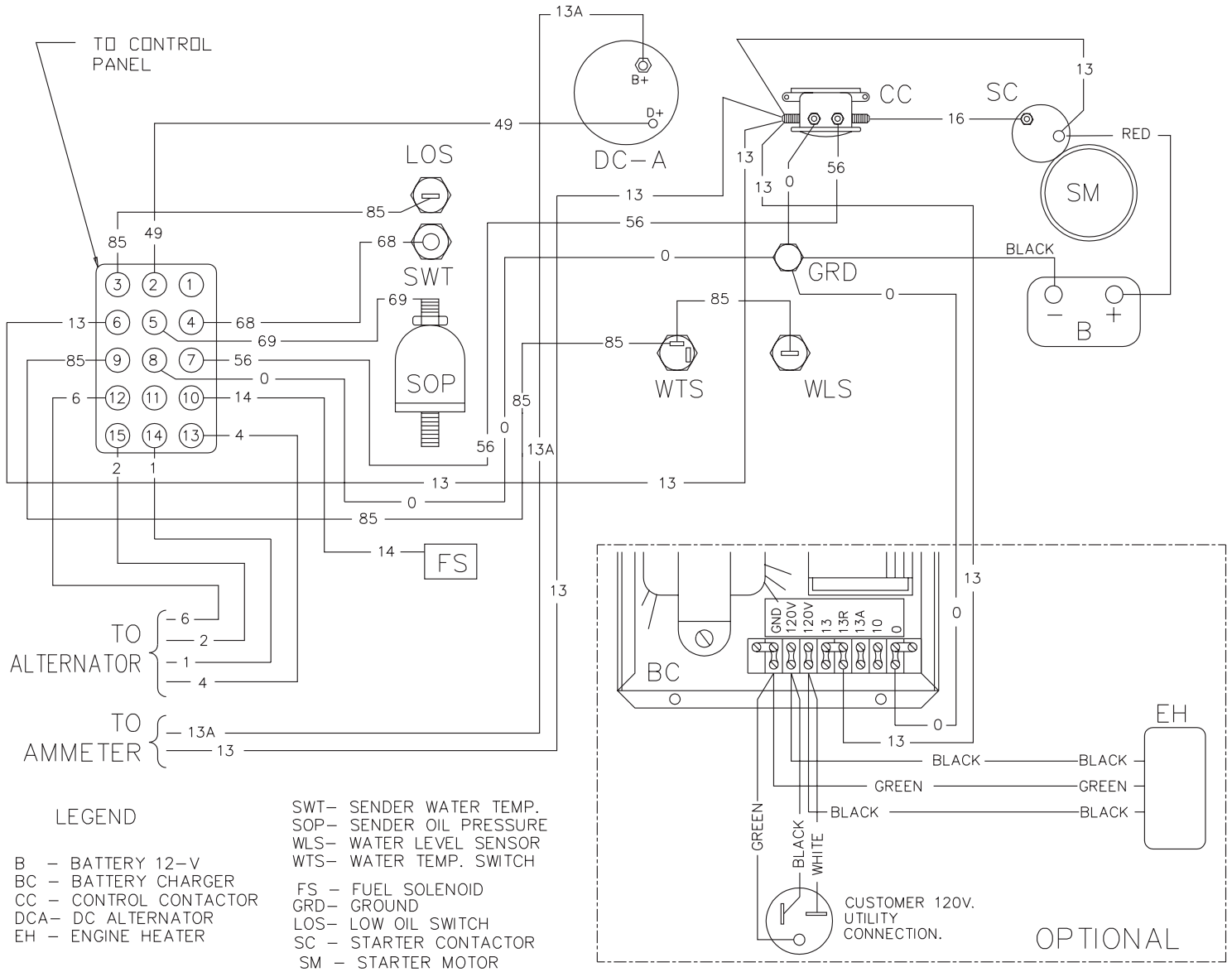


LEGEND

AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
HZ – FREQUENCY METER

G1 – GAUGE– WATER TEMPERATURE
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB1– CIRCUIT BOARD ENGINE CONTROL

PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR

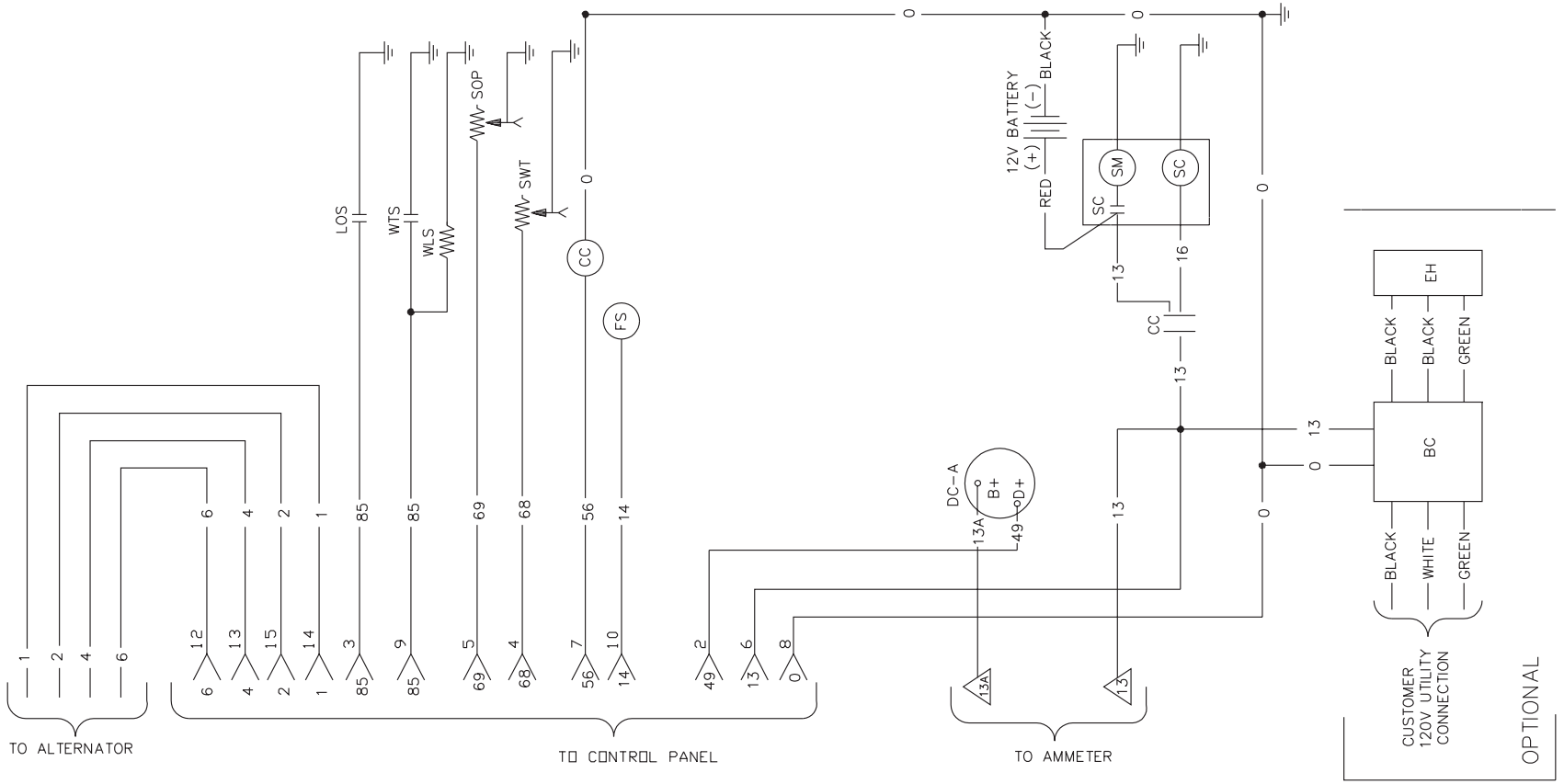


LEGEND

B – BATTERY 12–V
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER

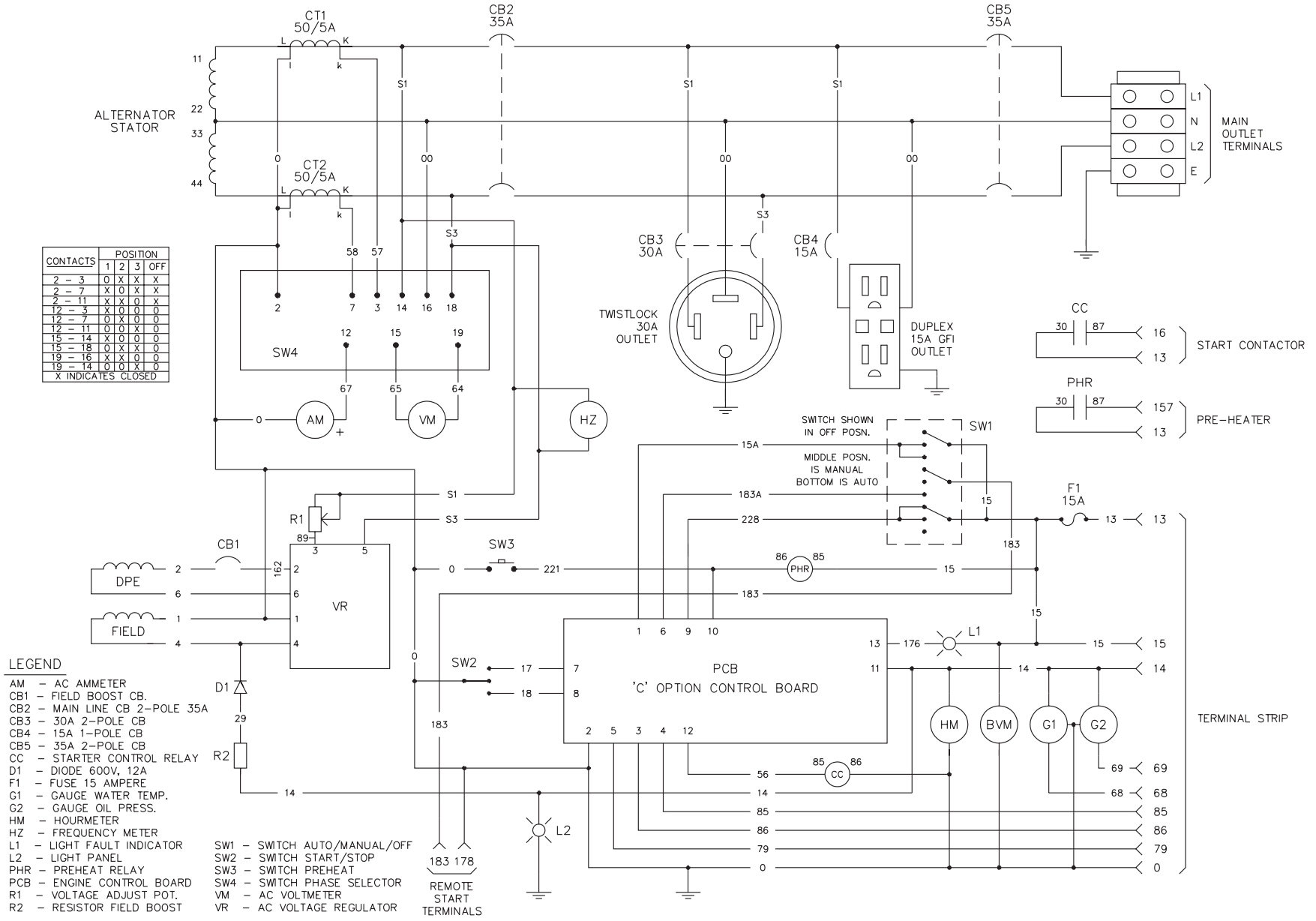
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH

FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR



LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
LOS– LOW OIL SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



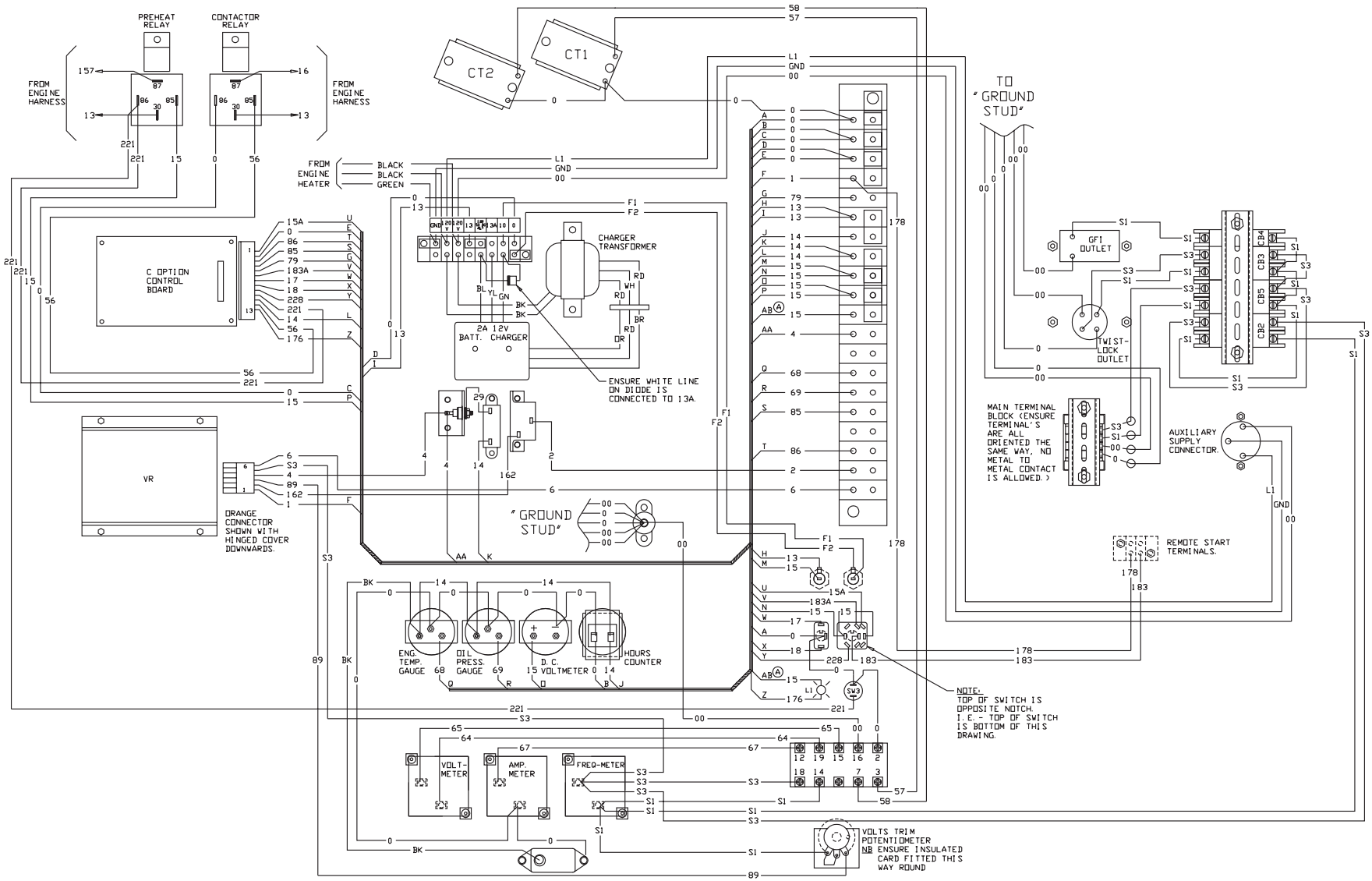
CONTACTS	POSITION 1	2	3	OFF
2 – 3	0	X	X	X
2 – 7	X	0	X	X
2 – 11	X	X	0	X
12 – 3	X	0	0	0
12 – 7	0	X	0	0
12 – 11	0	0	X	0
15 – 14	X	0	0	0
15 – 18	0	X	X	0
19 – 16	X	0	0	0
19 – 14	0	0	X	0

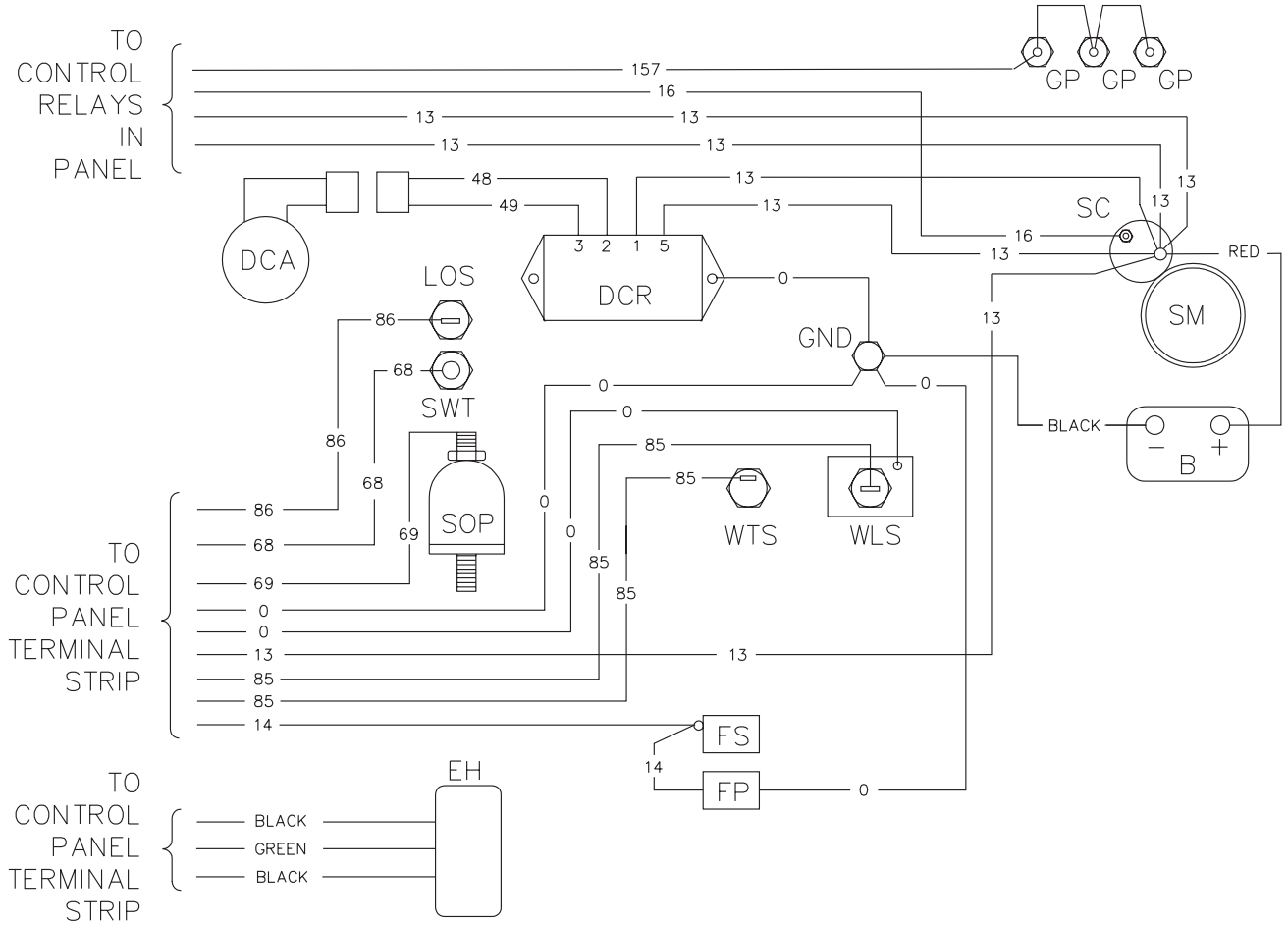
X INDICATES CLOSED

LEGEND

AM – AC AMMETER
CB1 – FIELD BOOST CB.
CB2 – MAIN LINE CB 2-POLE 35A
CB3 – 30A 2-POLE CB
CB4 – 15A 1-POLE CB
CB5 – 35A 2-POLE CB
CC – STARTER CONTROL RELAY
D1 – DIODE 600V, 12A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMP.
G2 – GAUGE OIL PRESS.
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PHR – PREHEAT RELAY
PCB – ENGINE CONTROL BOARD
R1 – VOLTAGE ADJUST POT.
R2 – RESISTOR FIELD BOOST

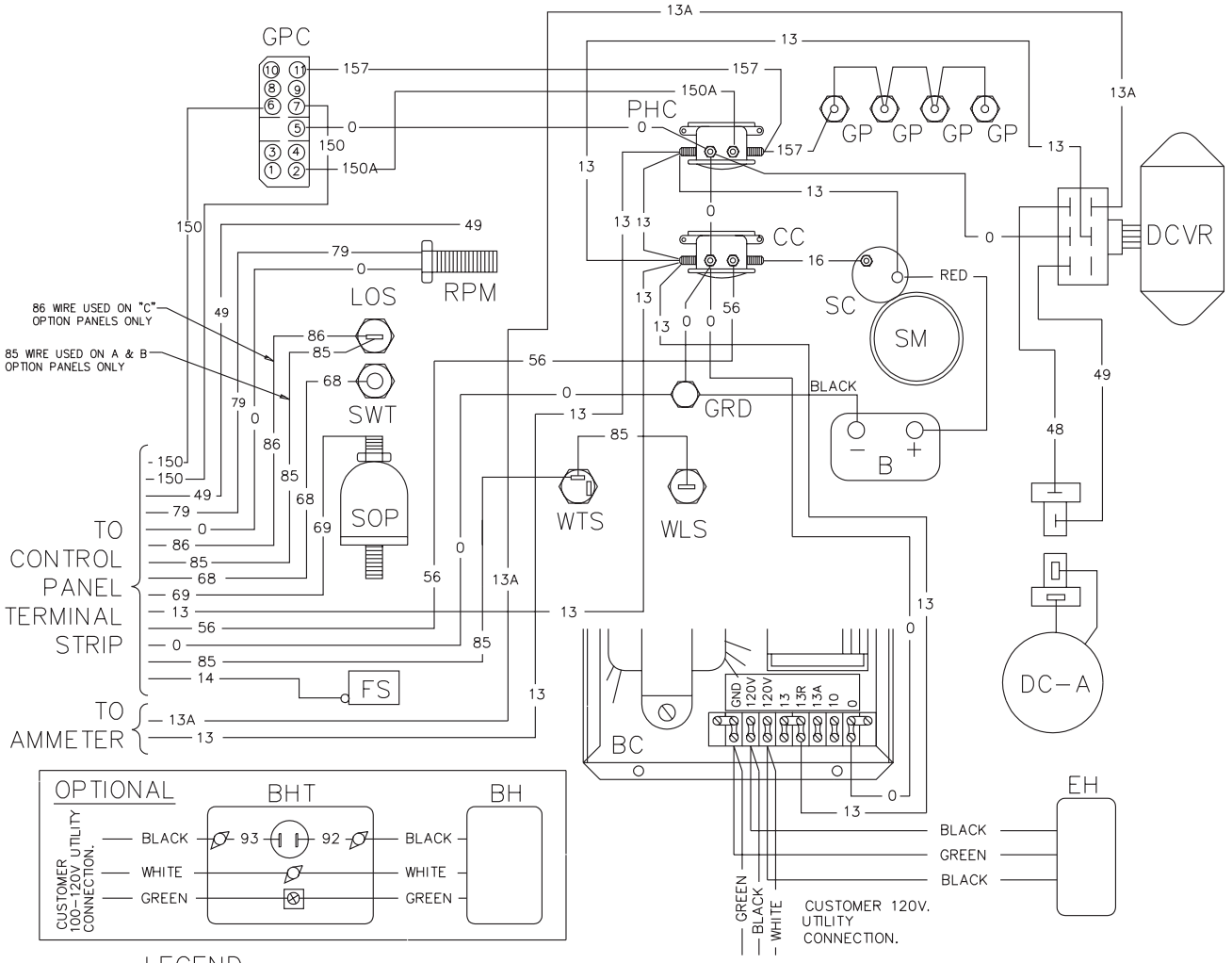
SW1 – SWITCH AUTO/MANUAL/OFF
SW2 – SWITCH START/STOP
SW3 – SWITCH PREHEAT
SW4 – SWITCH PHASE SELECTOR
VM – AC VOLTMETER
VR – AC VOLTAGE REGULATOR


PREHEAT RELAY
CONTACTOR RELAY
FROM ENGINE HARNESS
FROM ENGINE HEATER
BLACK
BLACK
GREEN
C OPTION CONTROL BOARD
CHARGER TRANSFORMER
2A 12V BATT. CHARGER
ENSURE WHITE LINE ON DIODE IS CONNECTED TO 13A.
VR
ORANGE CONNECTOR SHOWN WITH HINGED COVER DOWNWARDS.
"GROUND STUD"
TO "GROUND STUD"
CT1
CT2
ENG. TEMP. GAUGE
OIL PRESS. GAUGE
D.C. VOLTMETER
HOURS COUNTER
VOLT-METER
AMP. METER
FREQ-METER
GFI OUTLET
TWIST-LOCK OUTLET
MAIN TERMINAL BLOCK (ENSURE TERMINAL'S ARE ALL ORIENTED THE SAME WAY, NO METAL TO METAL CONTACT IS ALLOWED.)
AUXILIARY SUPPLY CONNECTOR.
REMOTE START TERMINALS.
NOTE: TOP OF SWITCH IS OPPOSITE NOTCH. I.E. - TOP OF SWITCH IS BOTTOM OF THIS DRAWING.
VOLTS TRIM POTENTIOMETER NB ENSURE INSULATED CARD FITTED THIS WAY ROUND



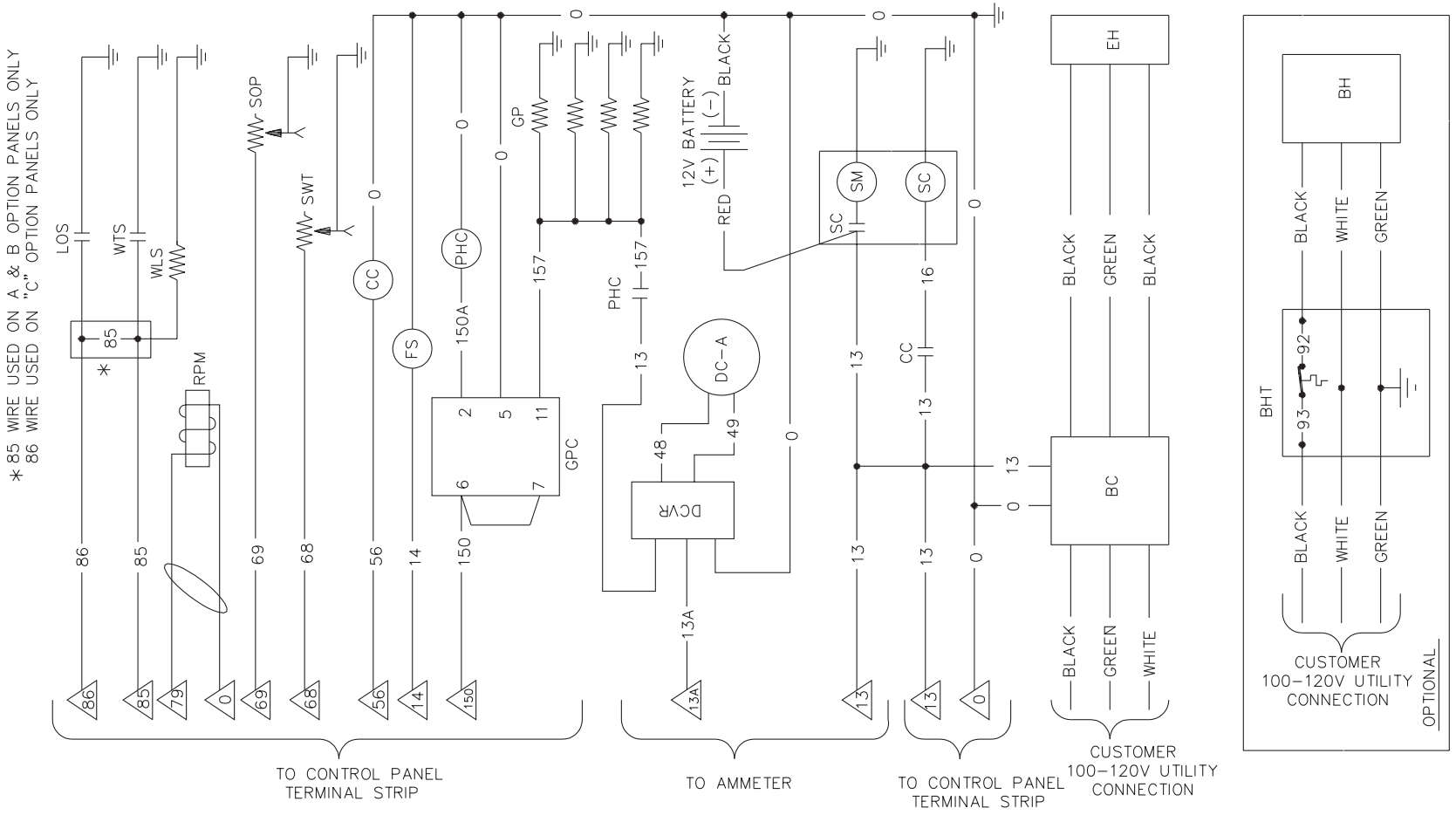
LEGEND

B – BATTERY 12–V
DCA– DC ALTERNATOR
DCR– DC REGULATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
FP – FUEL PUMP
GP – GLOW PLUG
GND– GROUND
LOS– LOW OIL PRESS SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH



LEGEND

B – BATTERY 12-V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
DCVR – DC VOLTAGE REGULATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC– GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE-HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH

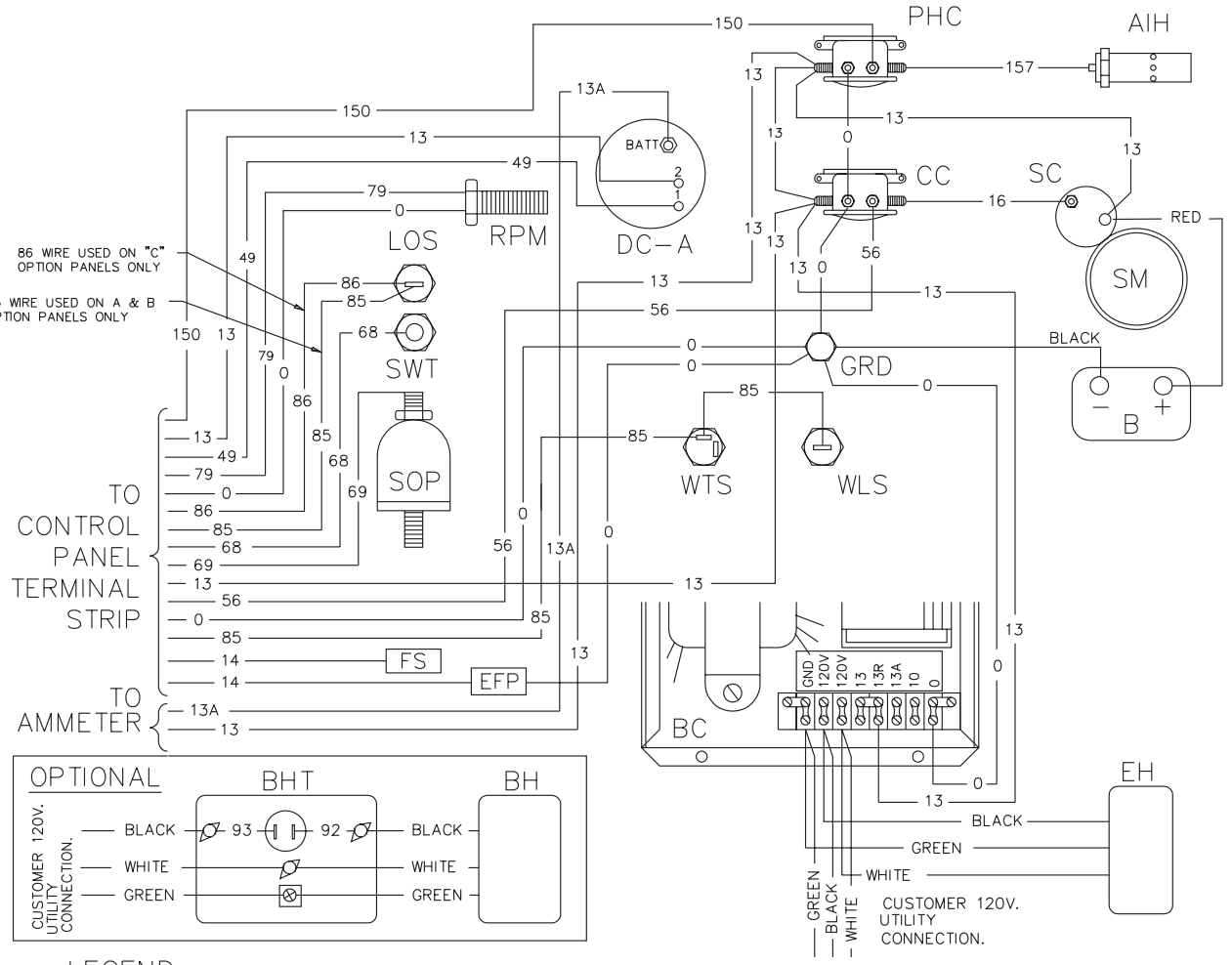


LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
DCVR – DC VOLTAGE REGULATOR

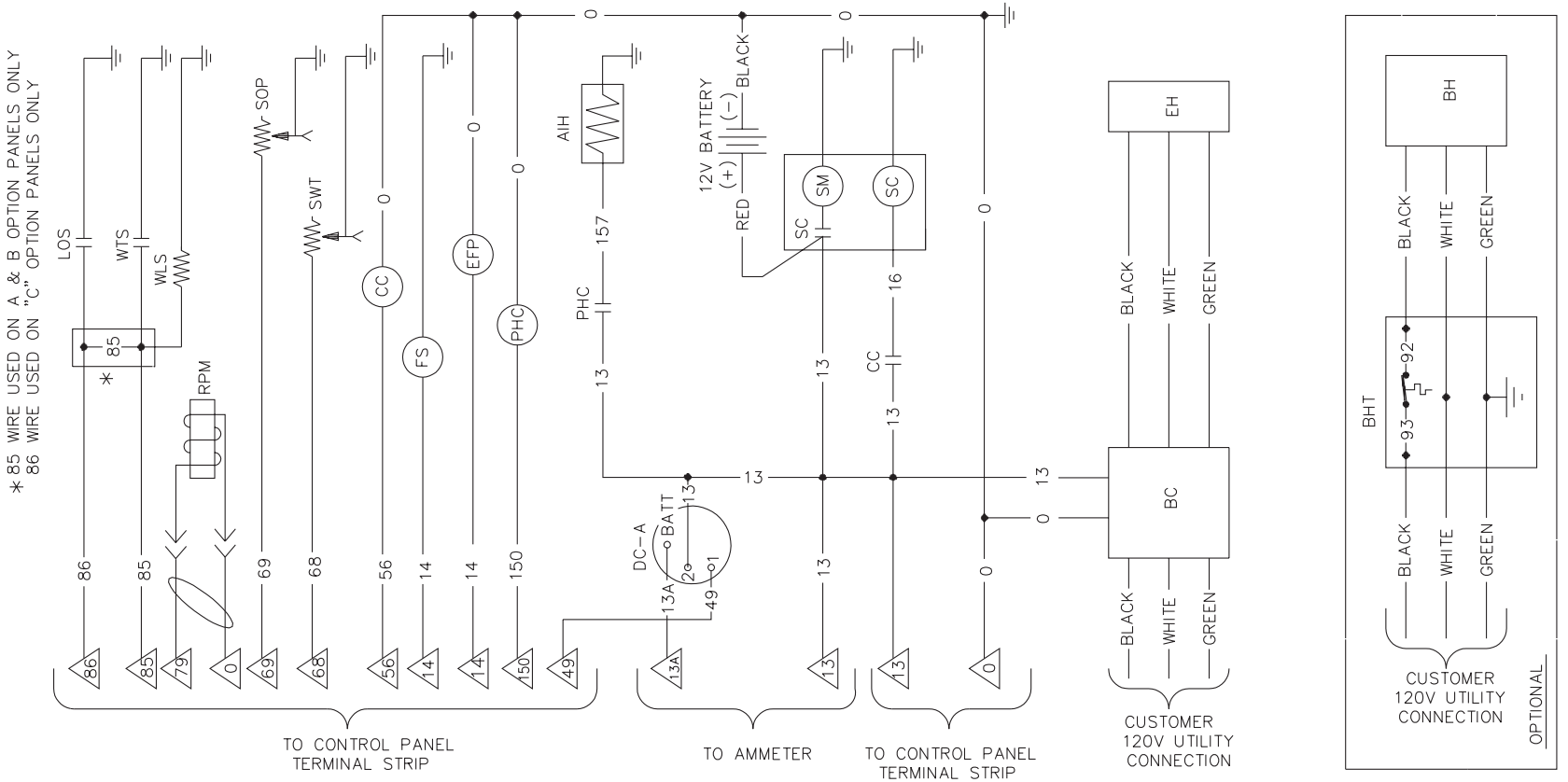
GP – GLOW PLUG
GPC–GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR

RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



LEGEND

AIH– AIR INTAKE HEATER
B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EFP– ELECTRIC FUEL PUMP
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH



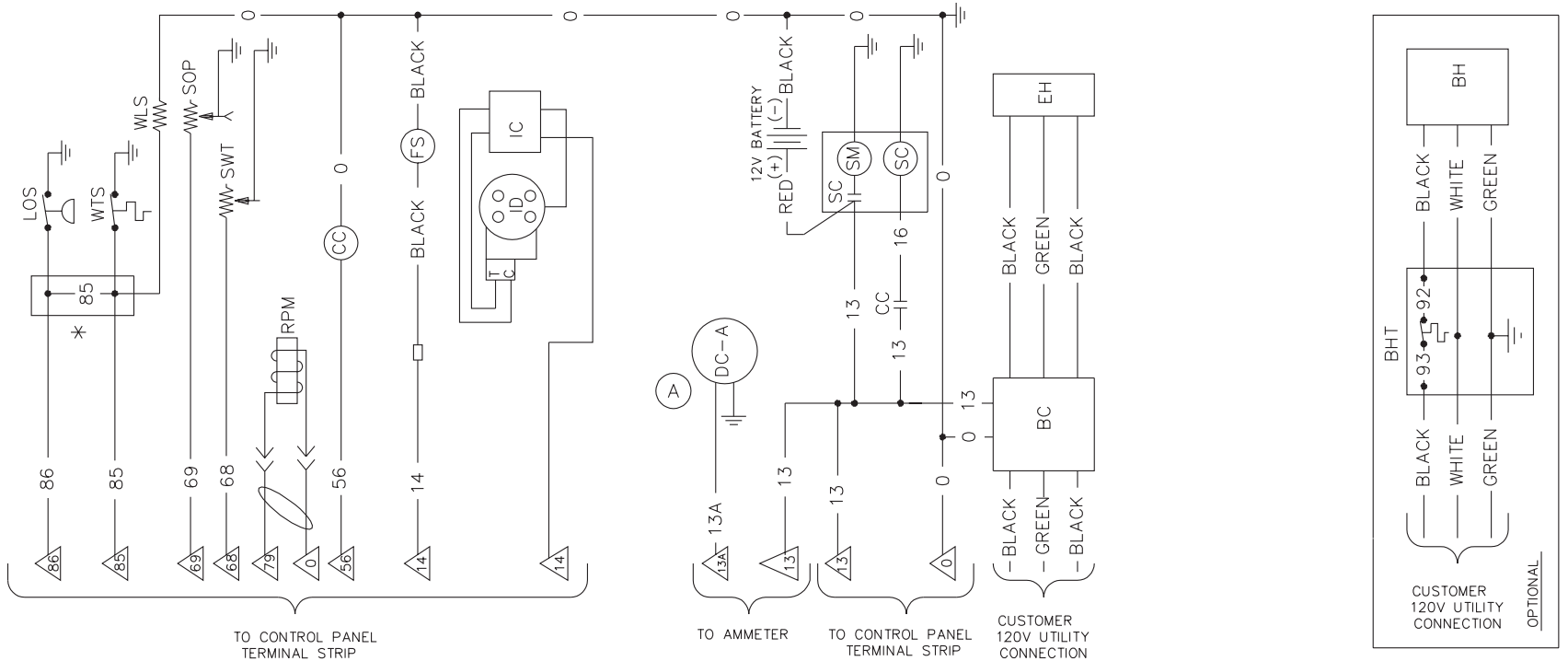
LEGEND

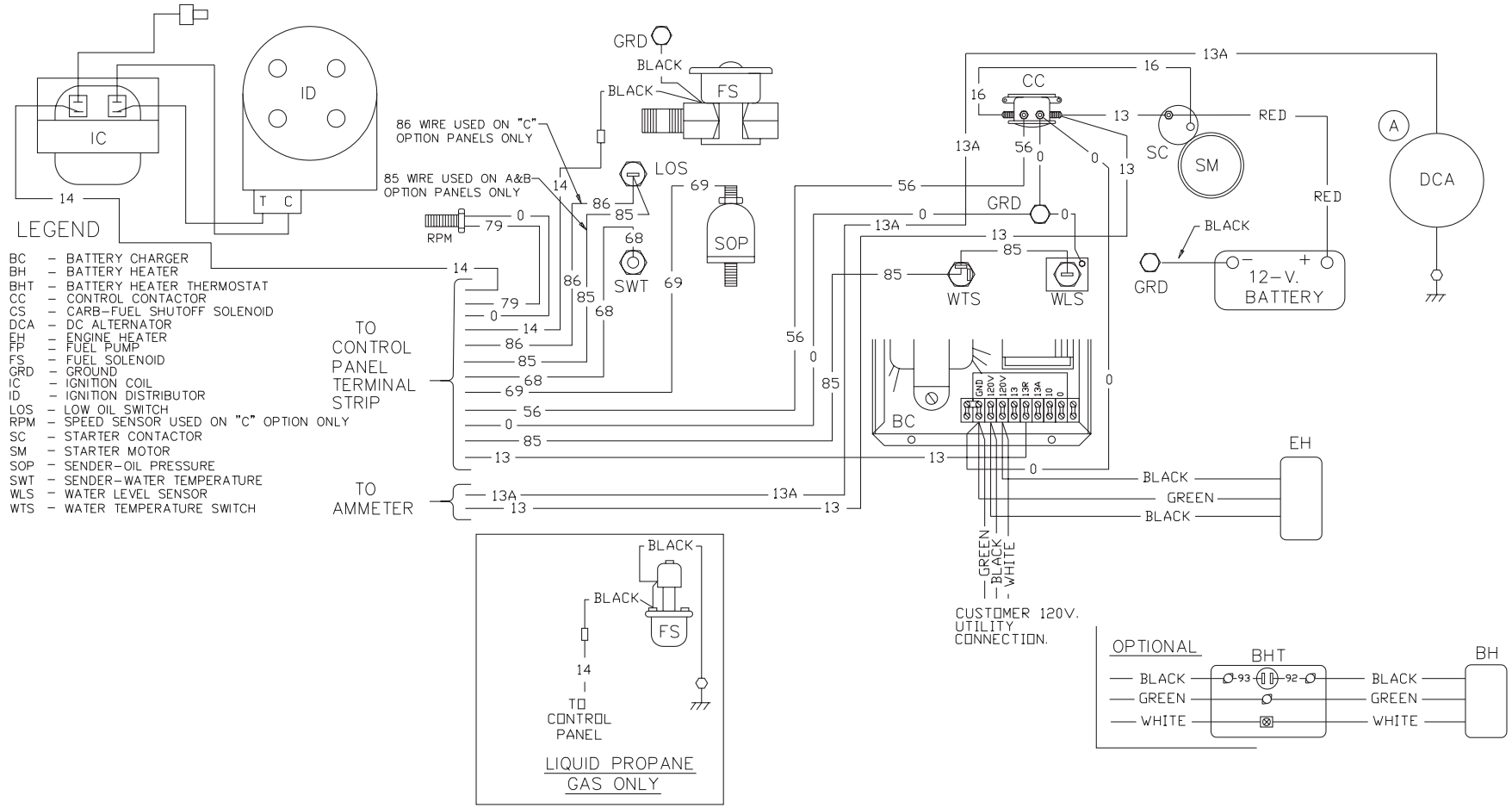
AIH− AIR INTAKE HEATER
B − BATTERY 12V
BC − BATTERY CHARGER
BH − BATTERY HEATER
BHT − BATTERY HEATER THERMOSTAT
CC − CONTROL CONTACTOR
DCA− DC ALTERNATOR
GRD− GROUND
LOS− LOW OIL SWITCH
EFP− ELECTRIC FUEL PUMP
EH − ENGINE HEATER
FS − FUEL SOLENOID
PHC− PRE−HEAT CONTACTOR
RPM− SPEED SENSOR USED ON "C" OPTION ONLY
SC − STARTER CONTACTOR
SM − STARTER MOTOR
SOP− SENDER, OIL PRESSURE
SWT− SENDER, WATER TEMPERATURE
WLS− WATER LEVEL SENSOR
WTS− WATER TEMPERATURE SWITCH

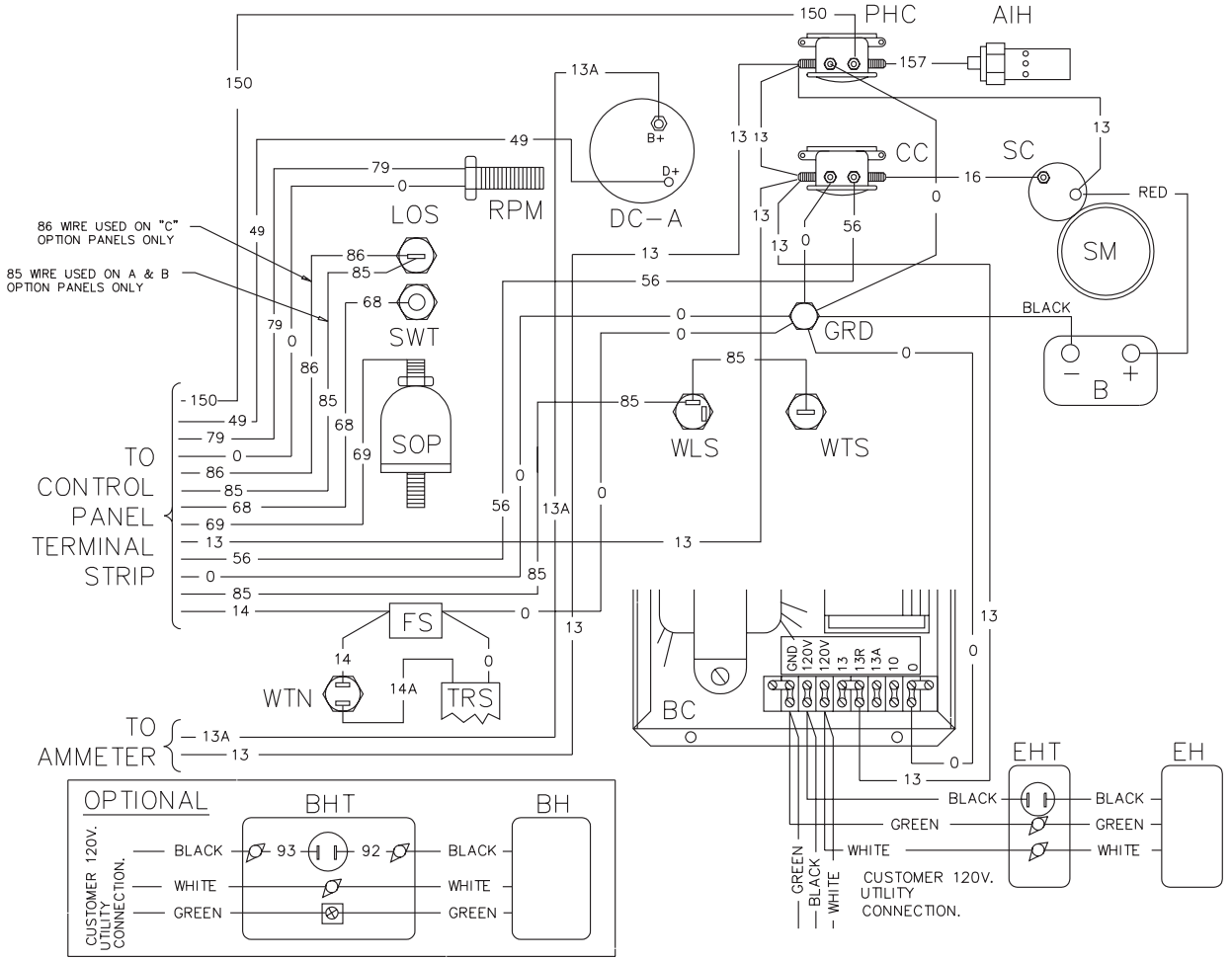
LEGEND

BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
CS - CARB FUEL SHUTOFF SOLENOID
DCA - DC ALTERNATOR
EH - ENGINE HEATER
FS - FUEL SHUTOFF SOLENOID
FP - FUEL PUMP
G - GROUND
IC - IGNITION COIL
ID - IGNITION DISTRIBUTOR
LOS - LOW OIL SWITCH
RPM - SPEED SENSOR USED ON "C" OPTION ONLY
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH

* 85 WIRE USED ON A&B OPTION PANELS ONLY
* 86 WIRE USED ON "C" OPTION PANELS ONLY

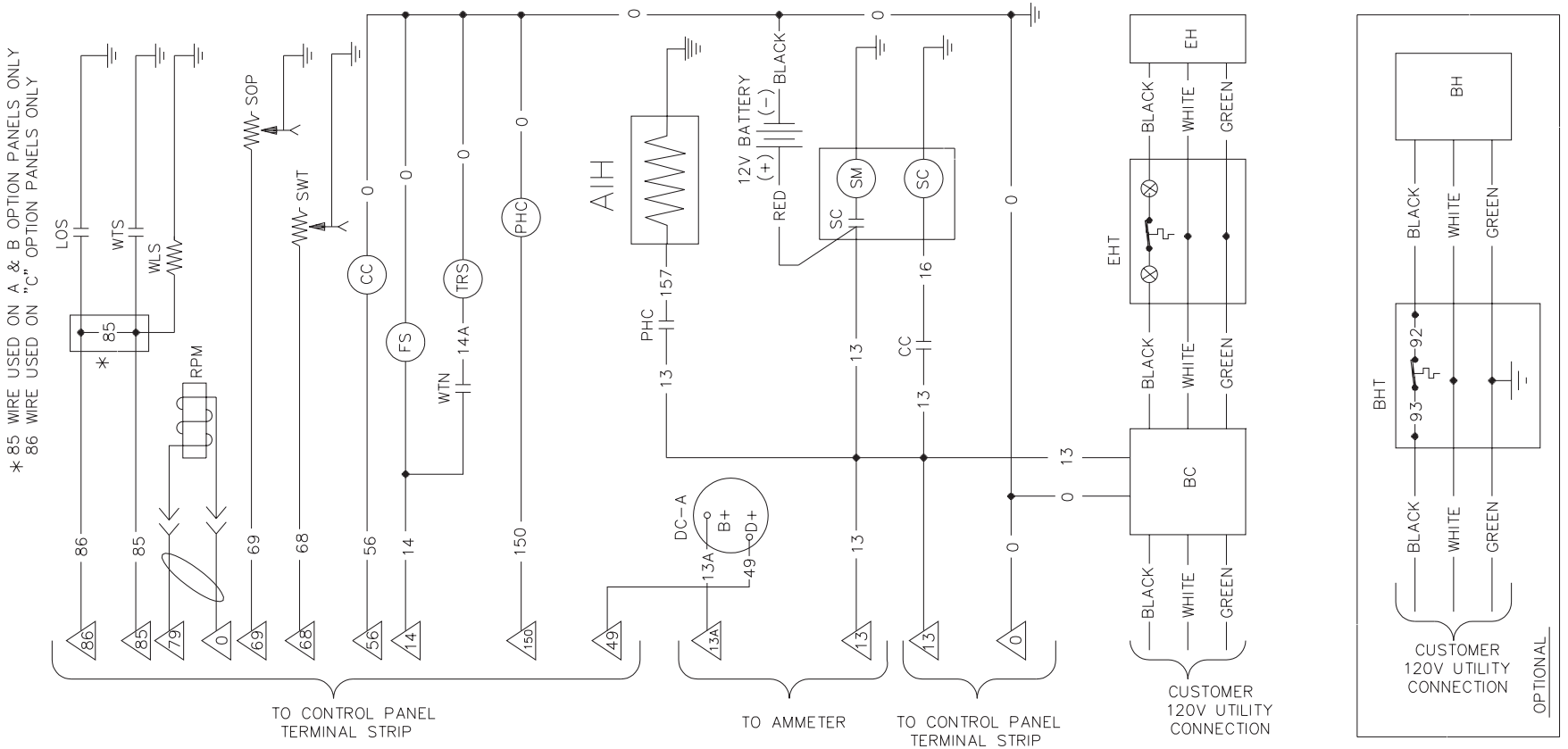



LEGEND
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARB–FUEL SHUTOFF SOLENOID
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
ID – IGNITION DISTRIBUTOR
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
IC
ID
T C
RPM
GRD
BLACK
FS
LOS
SOP
SWT
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A&B OPTION PANELS ONLY
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
CC
SC
SM
RED
DCA
A
WTS
WLS
12–V. BATTERY
BC
EH
BLACK
GREEN
BLACK
GREEN
BLACK
WHITE
CUSTOMER 120V. UTILITY CONNECTION.
LIQUID PROPANE GAS ONLY
TO CONTROL PANEL
OPTIONAL
BHT
BH
BLACK
GREEN
WHITE



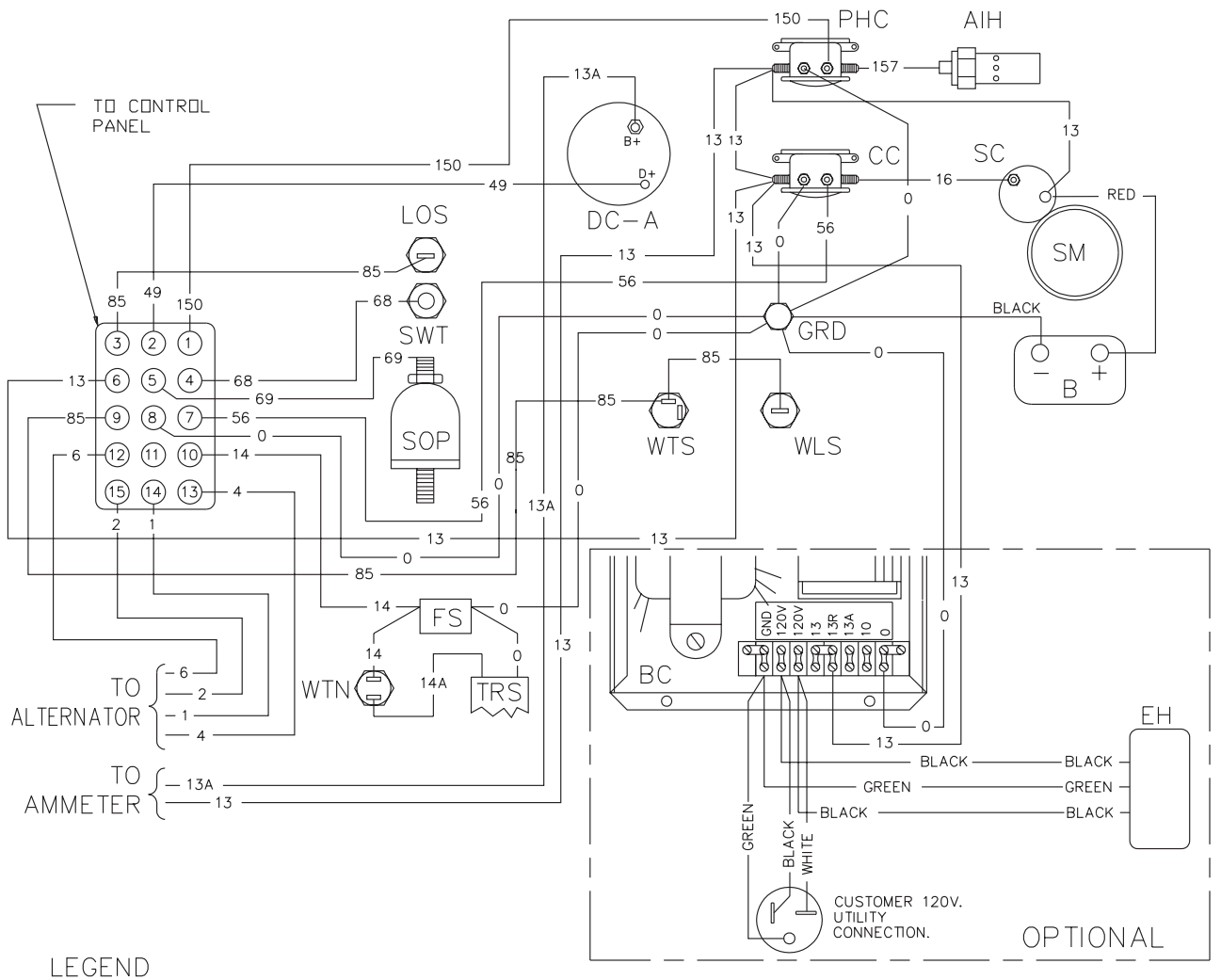
LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER THERMOSTAT
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
TRS– TIMING RETARD SOLENOID
WLS– WATER LEVEL SENSOR
WTN– WATER TEMP. SENSOR
WTS– WATER TEMP. SWITCH



LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
TRS– TIMING RETARD SOLENOID
WLS– WATER LEVEL SENSOR
WTN– WATER TEMPERATURE SENSOR
WTS– WATER TEMPERATURE SWITCH

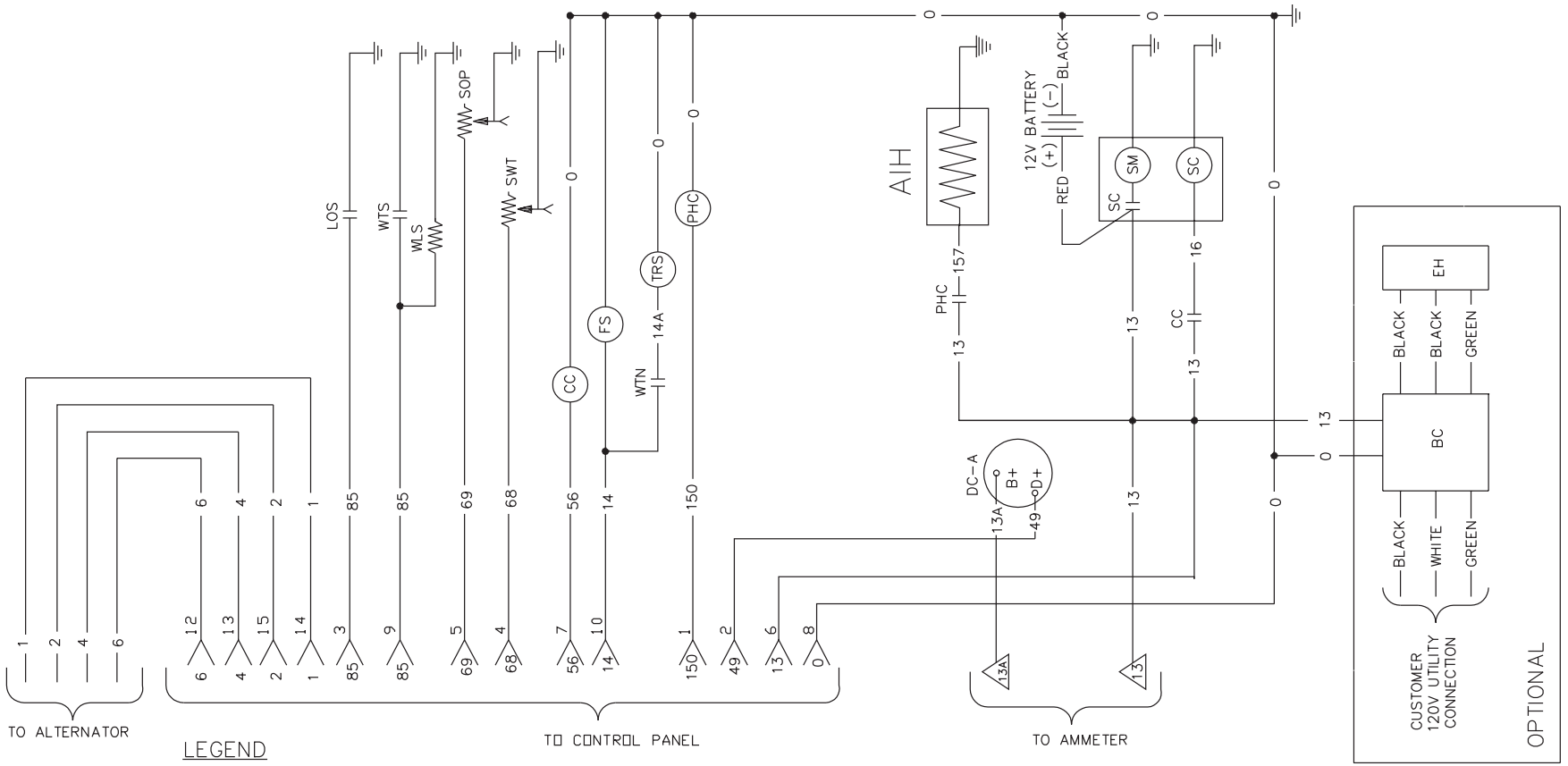


LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12–V
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER

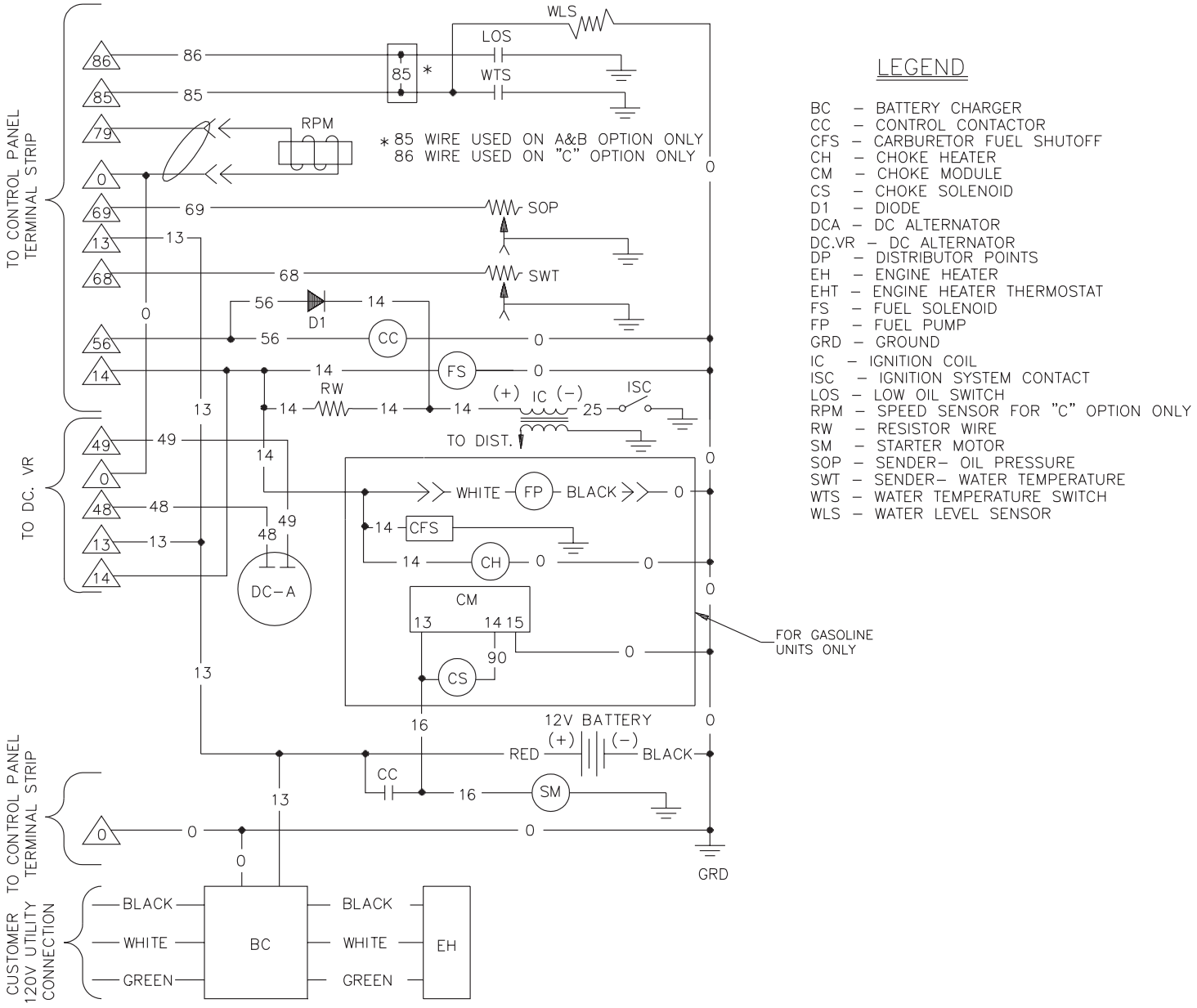
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR

SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
TRS– TIMING RETARD SOLENOID
WLS– WATER LEVEL SENSOR
WTN– WATER TEMP. SENSOR
WTS– WATER TEMP. SWITCH



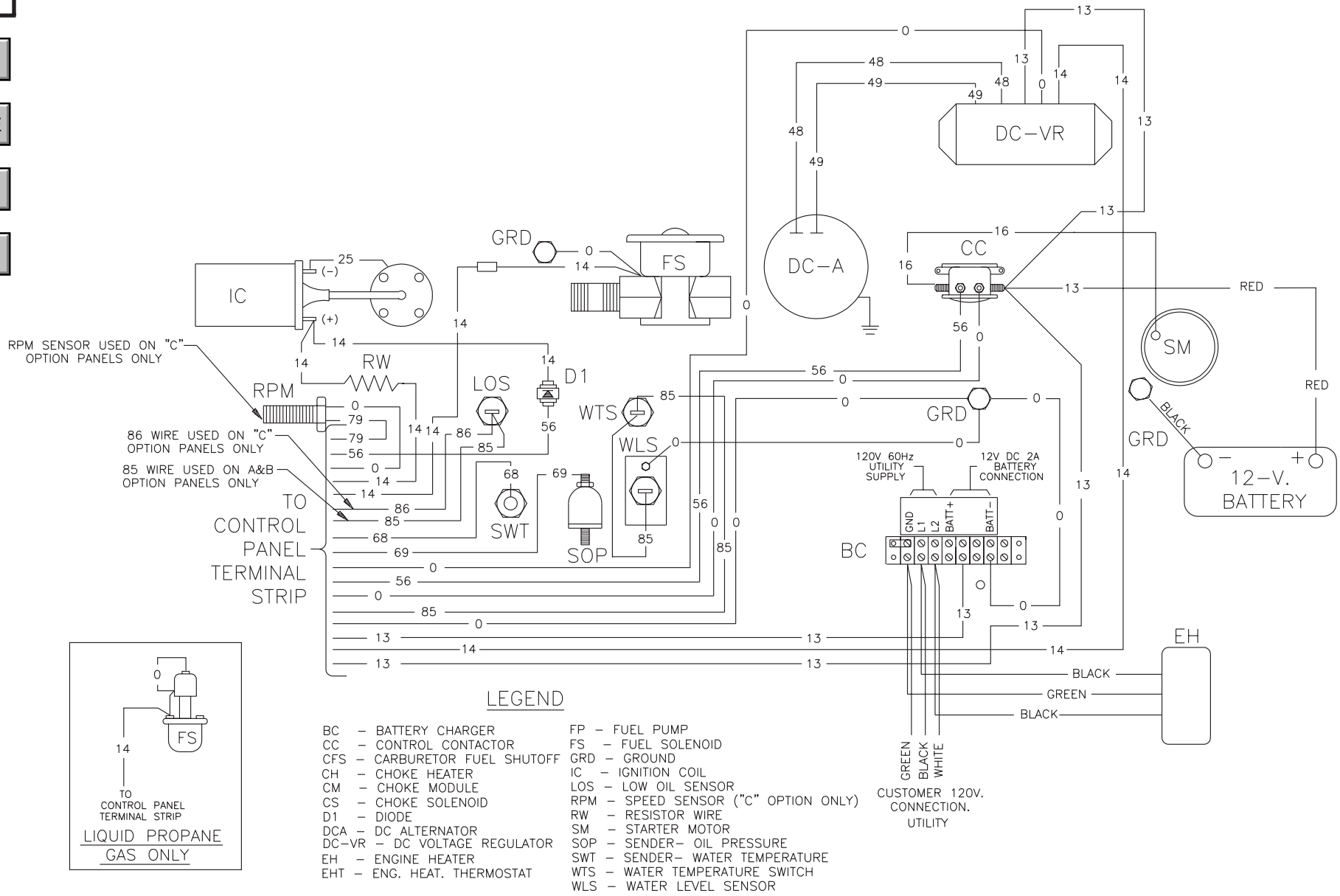
LEGEND

AIH – AIR INTAKE HEATER
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
TRS– TIMING RETARD SOLENOID
WLS– WATER LEVEL SENSOR
WTN– WATER TEMP. SENSOR
WTS– WATER TEMPERATURE SWITCH



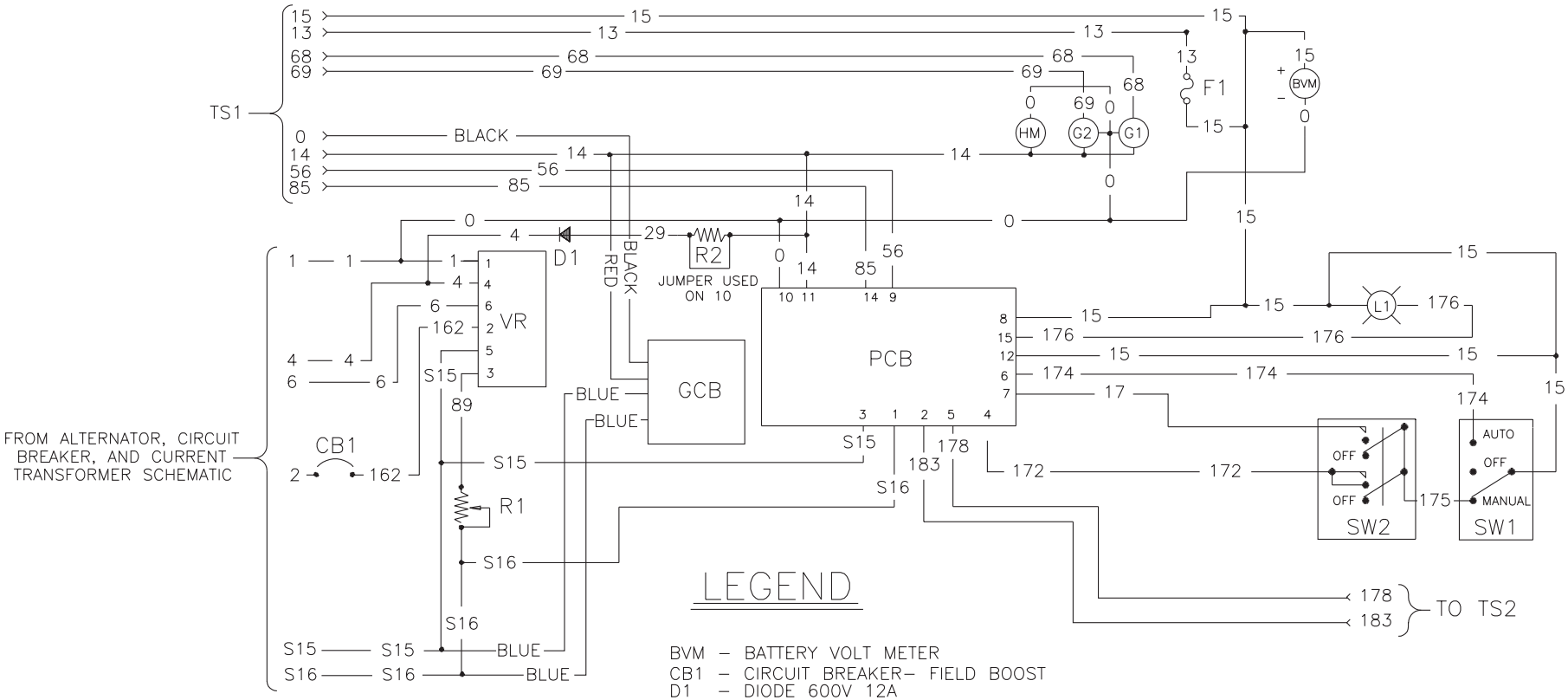
LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC.VR – DC ALTERNATOR
DP – DISTRIBUTOR POINTS
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
FP – FUEL PUMP
GRD – GROUND
IC – IGNITION COIL
ISC – IGNITION SYSTEM CONTACT
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR FOR "C" OPTION ONLY
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR



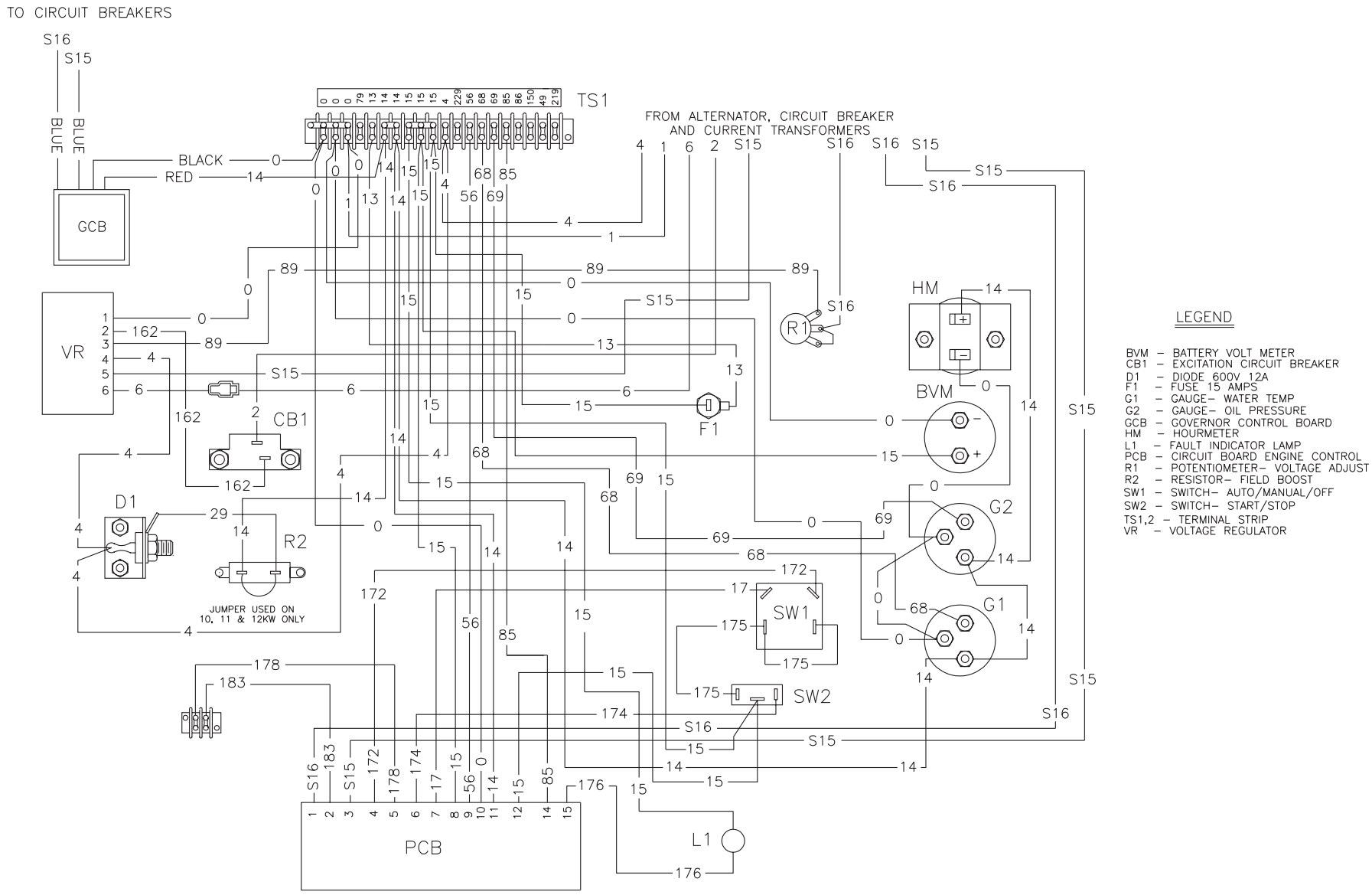
LEGEND

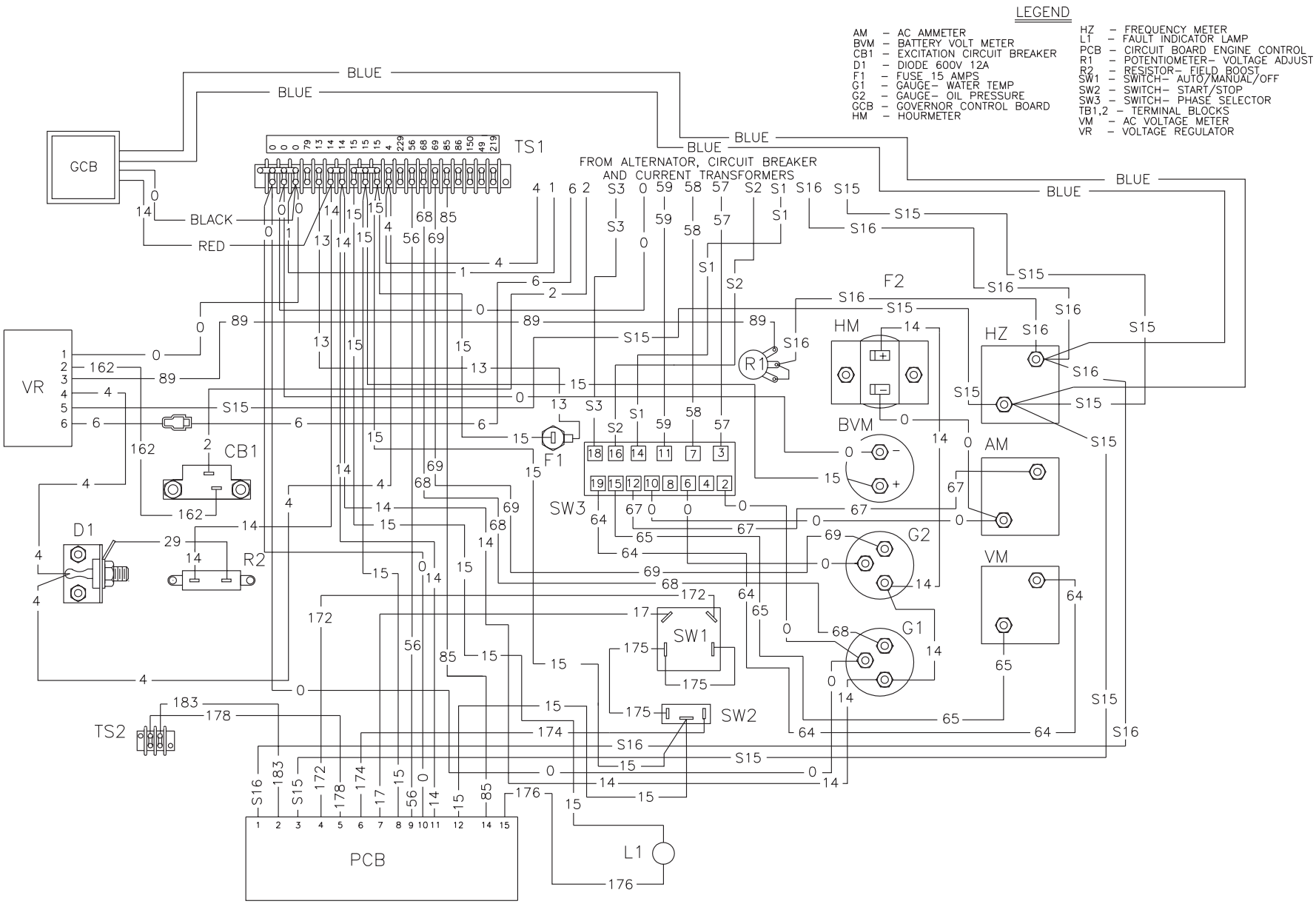
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC–VR – DC VOLTAGE REGULATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL SENSOR
RPM – SPEED SENSOR ("C" OPTION ONLY)
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR

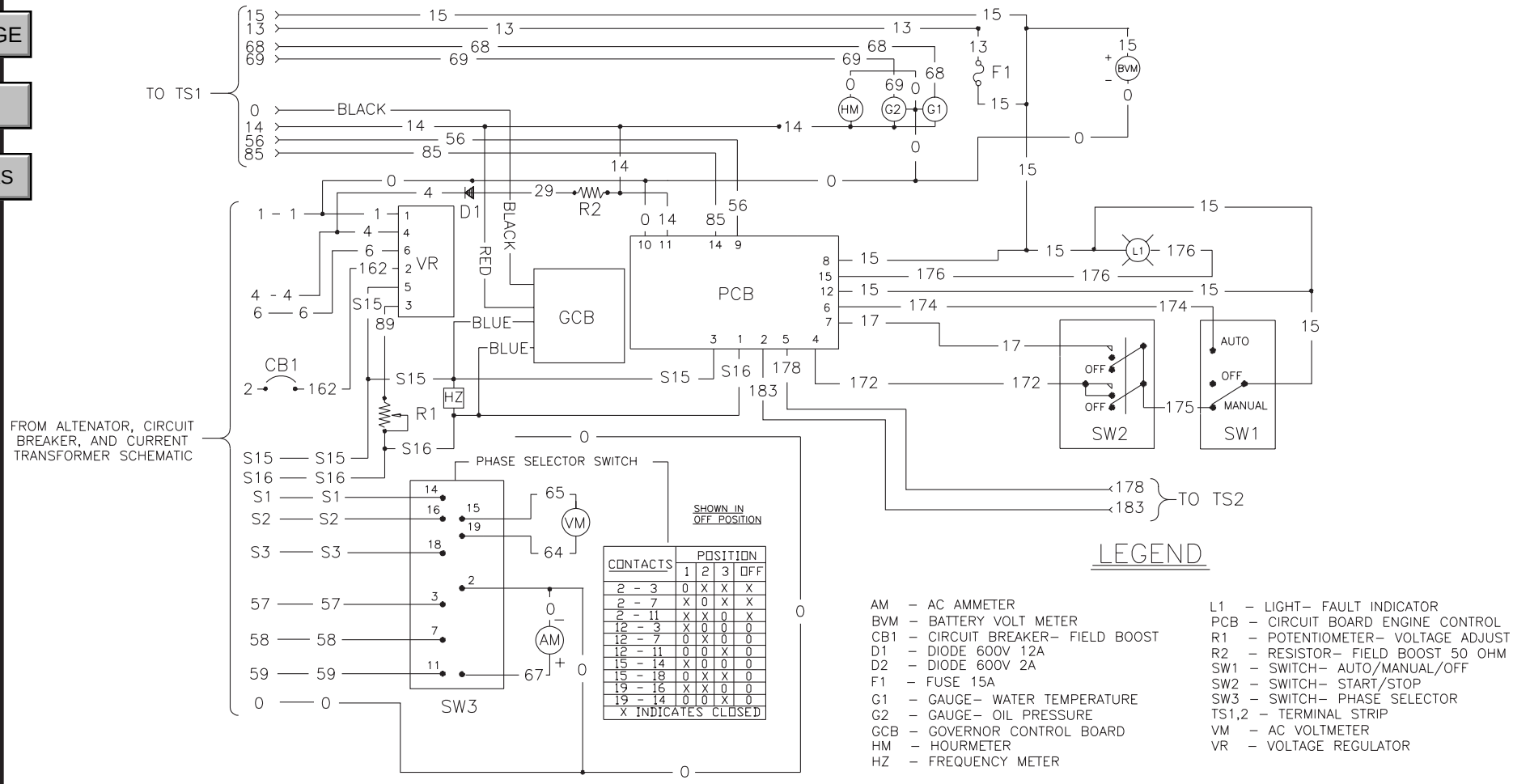


LEGEND

BVM – BATTERY VOLT METER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
GCB – GOVERNOR CONTROL BOARD
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS1,2 – TERMINAL STRIP
VR – VOLTAGE REGULATOR


TO CIRCUIT BREAKERS
S16
S15
BLUE
BLUE
BLACK
RED
GCB
TS1
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
VR
CB1
D1
R2
JUMPER USED ON 10, 11 & 12KW ONLY
R1
HM
BVM
F1
G2
G1
SW1
SW2
PCB
L1
LEGEND
BVM – BATTERY VOLT METER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
L1 – FAULT INDICATOR LAMP
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS1,2 – TERMINAL STRIP
VR – VOLTAGE REGULATOR


LEGEND
AM – AC AMMETER
BVM – BATTERY VOLT METER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
GCB
TS1
TS2
PCB
VR
CB1
D1
R1
R2
F1
F2
SW1
SW2
SW3
HM
HZ
BVM
AM
VM
G1
G2
L1
BLUE
BLACK
RED

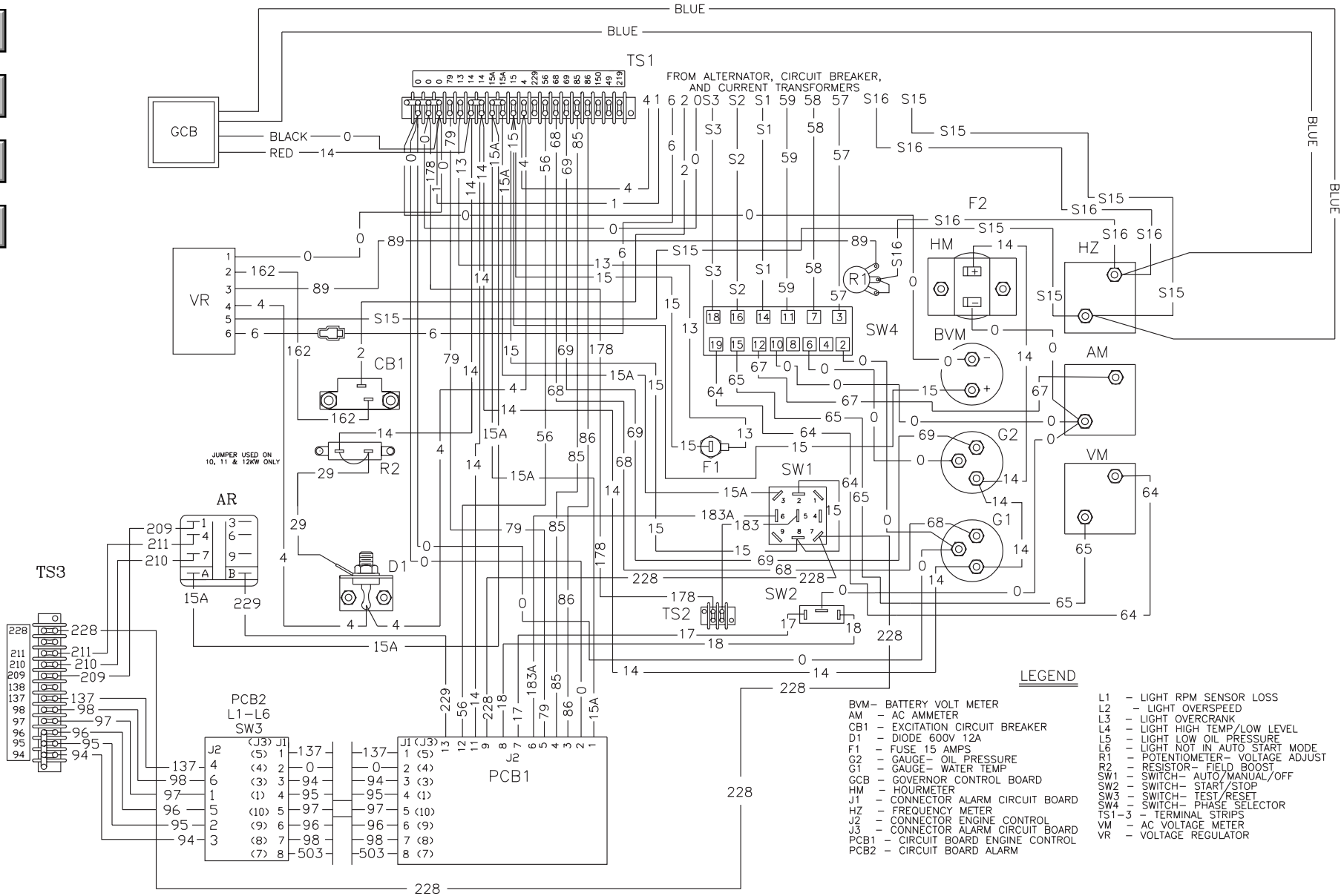


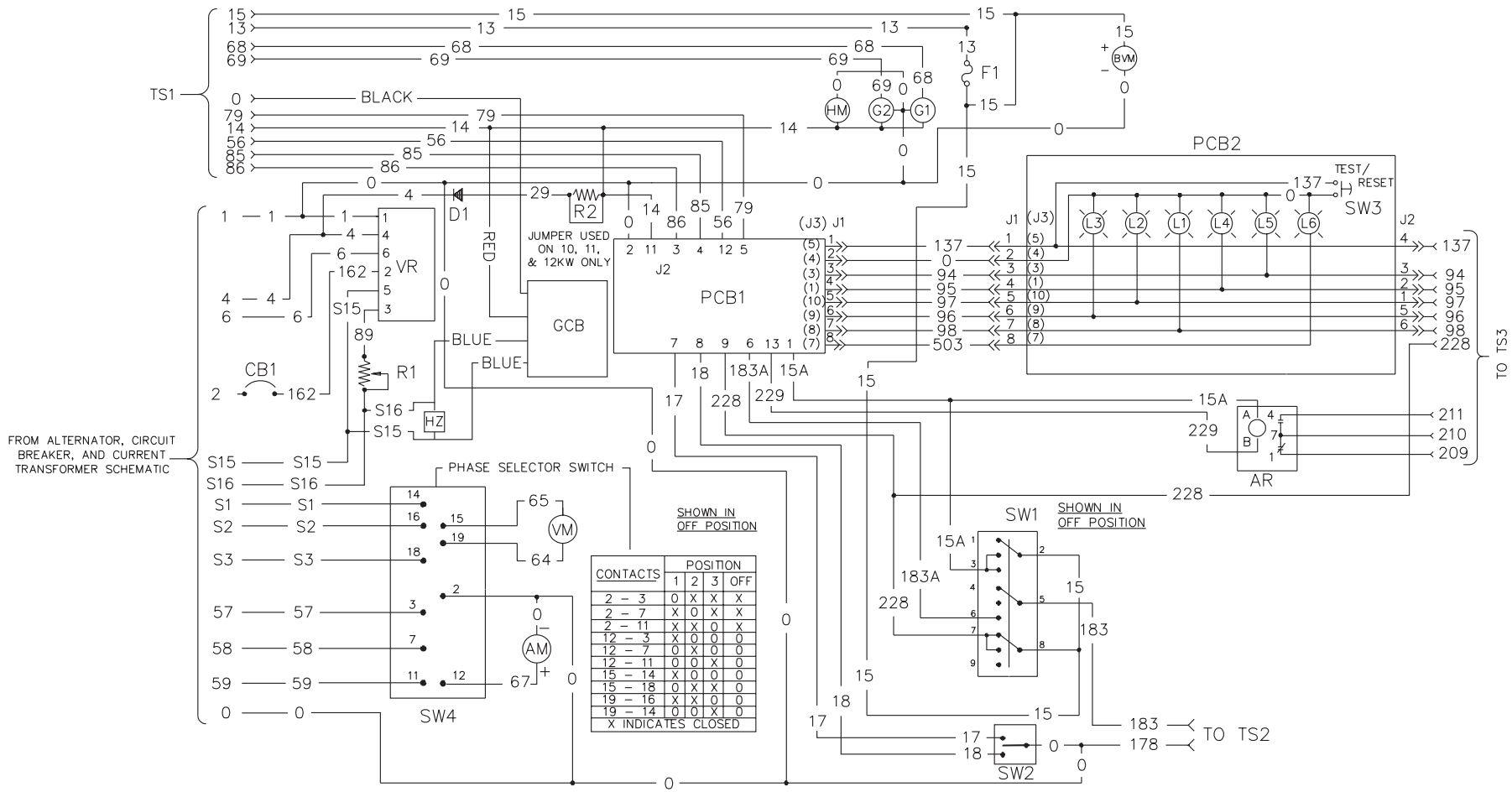
CONTACTS	POSITION 1	2	3	OFF
2 - 3	0	X	X	X
2 - 7	X	0	X	X
2 - 11	X	X	0	X
12 - 3	X	0	0	0
12 - 7	0	X	0	0
12 - 11	0	0	X	0
15 - 14	X	0	0	0
15 - 18	0	X	X	0
19 - 16	X	X	0	0
19 - 14	0	0	X	0

X INDICATES CLOSED

LEGEND

AM – AC AMMETER
BVM – BATTERY VOLT METER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE 600V 2A
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST 50 OHM
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TS1,2 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR


TS1
FROM ALTERNATOR, CIRCUIT BREAKER, AND CURRENT TRANSFORMERS
GCB
BLACK
RED
BLUE
VR
CB1
R2
JUMPER USED ON 10, 11 & 12KW ONLY
AR
D1
TS3
PCB2 L1–L6 SW3
PCB1
F1
F2
R1
SW1
SW2
SW4
TS2
HM
HZ
BVM
AM
VM
G1
G2
LEGEND
BVM– BATTERY VOLT METER
AM – AC AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
G2 – GAUGE– OIL PRESSURE
G1 – GAUGE– WATER TEMP
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
J1 – CONNECTOR ALARM CIRCUIT BOARD
HZ – FREQUENCY METER
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – CIRCUIT BOARD ALARM
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTO START MODE
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIPS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR

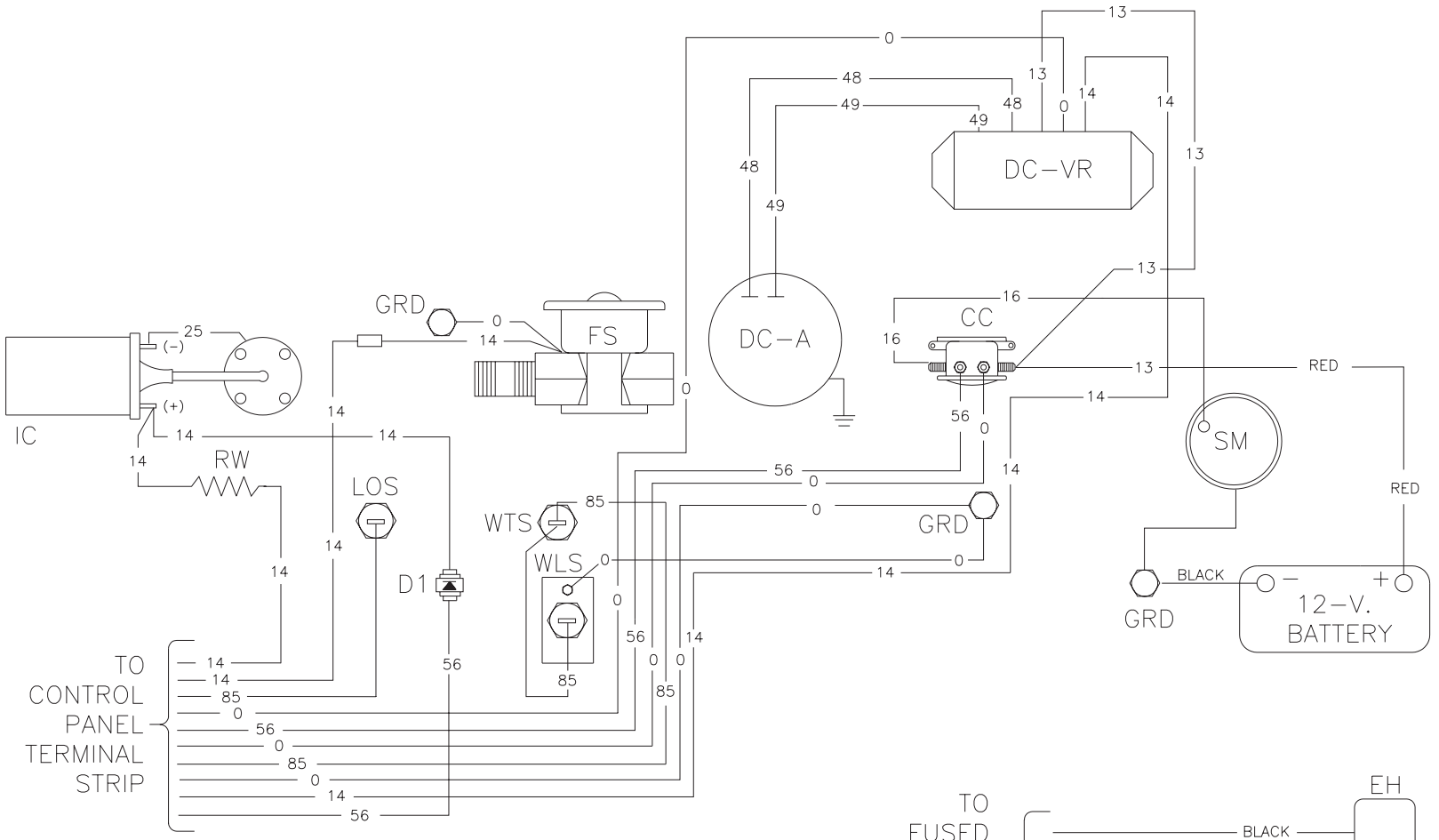


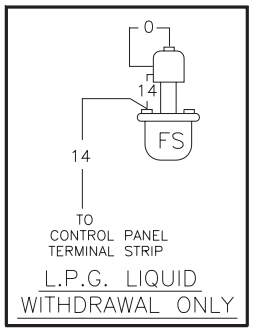
CONTACTS	POSITION 1	2	3	OFF
2 – 3	0	X	X	X
2 – 7	X	0	X	X
2 – 11	X	X	0	X
12 – 3	X	0	0	0
12 – 7	0	X	0	0
12 – 11	0	0	X	0
15 – 14	X	0	0	0
15 – 18	0	X	X	0
19 – 16	X	X	0	0
19 – 14	0	0	X	0

X INDICATES CLOSED

LEGEND

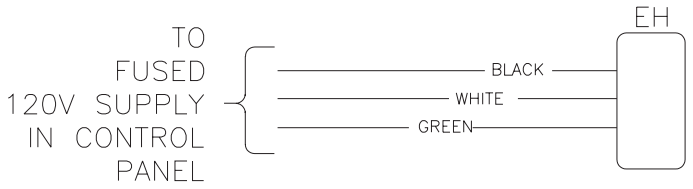
AM – AC AMMETER
AR – ALARM RELAY
BVM – BATTERY VOTE METER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
HZ – FREQUENCY METER
G1 – GAUGE– WATER TEMPERATURE
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR

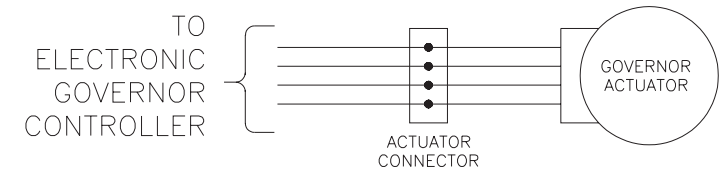


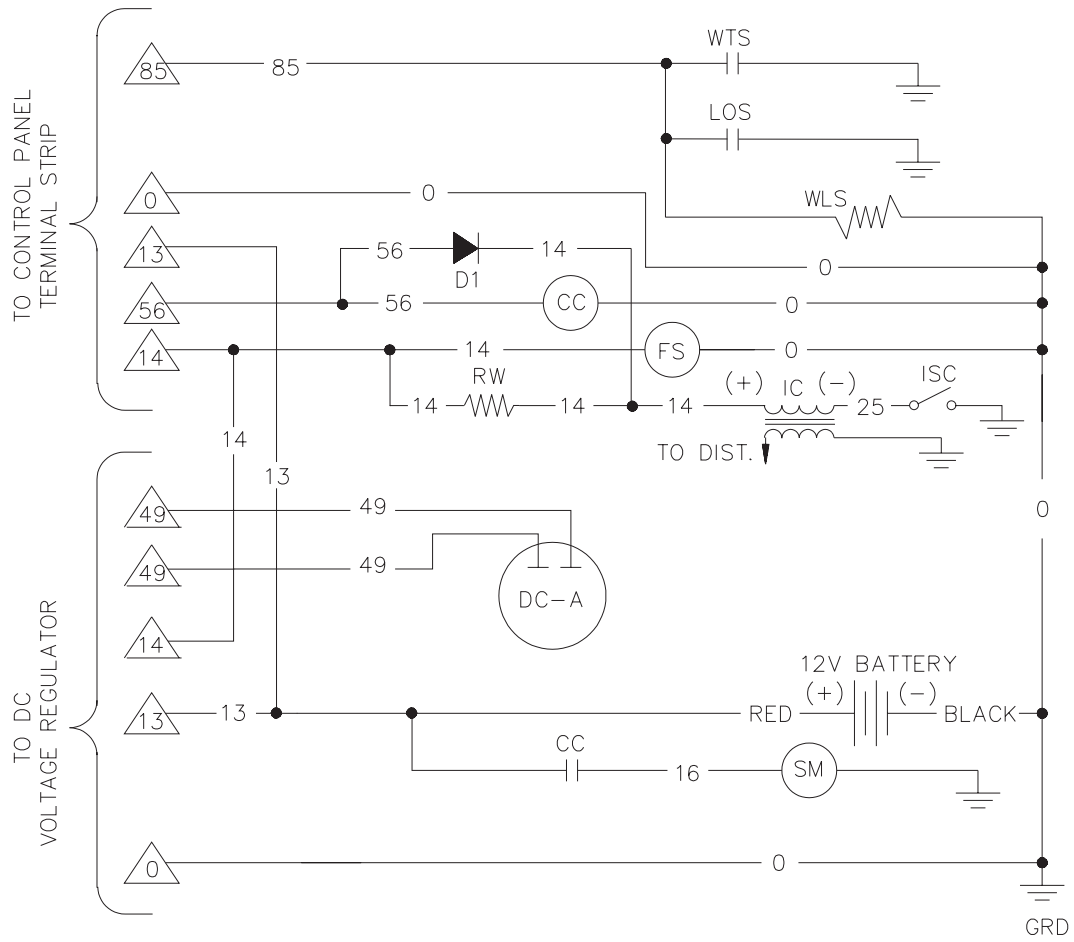


LEGEND

CC – CONTROL CONTACTOR
D1 – DIODE
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL PRESSURE SWITCH
RW – RESISTOR WIRE
SM – STARTER MOTOR
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR



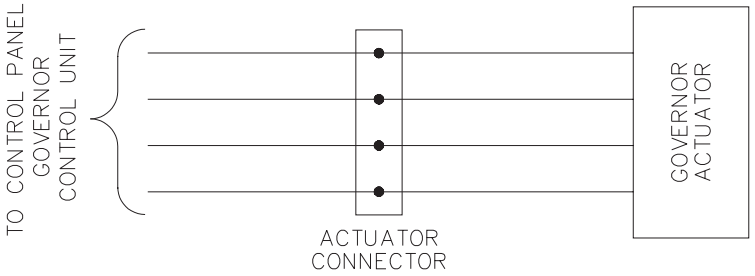


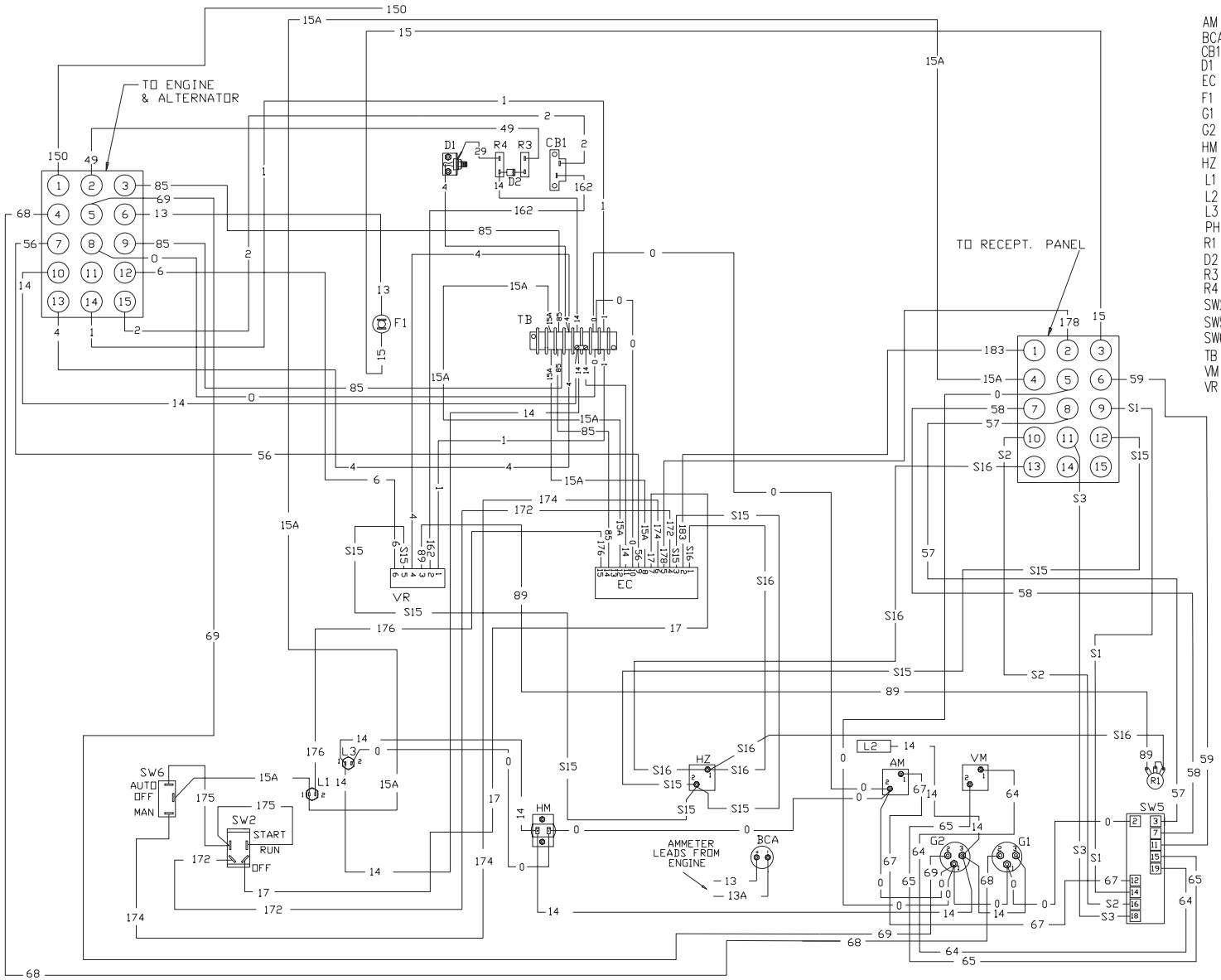


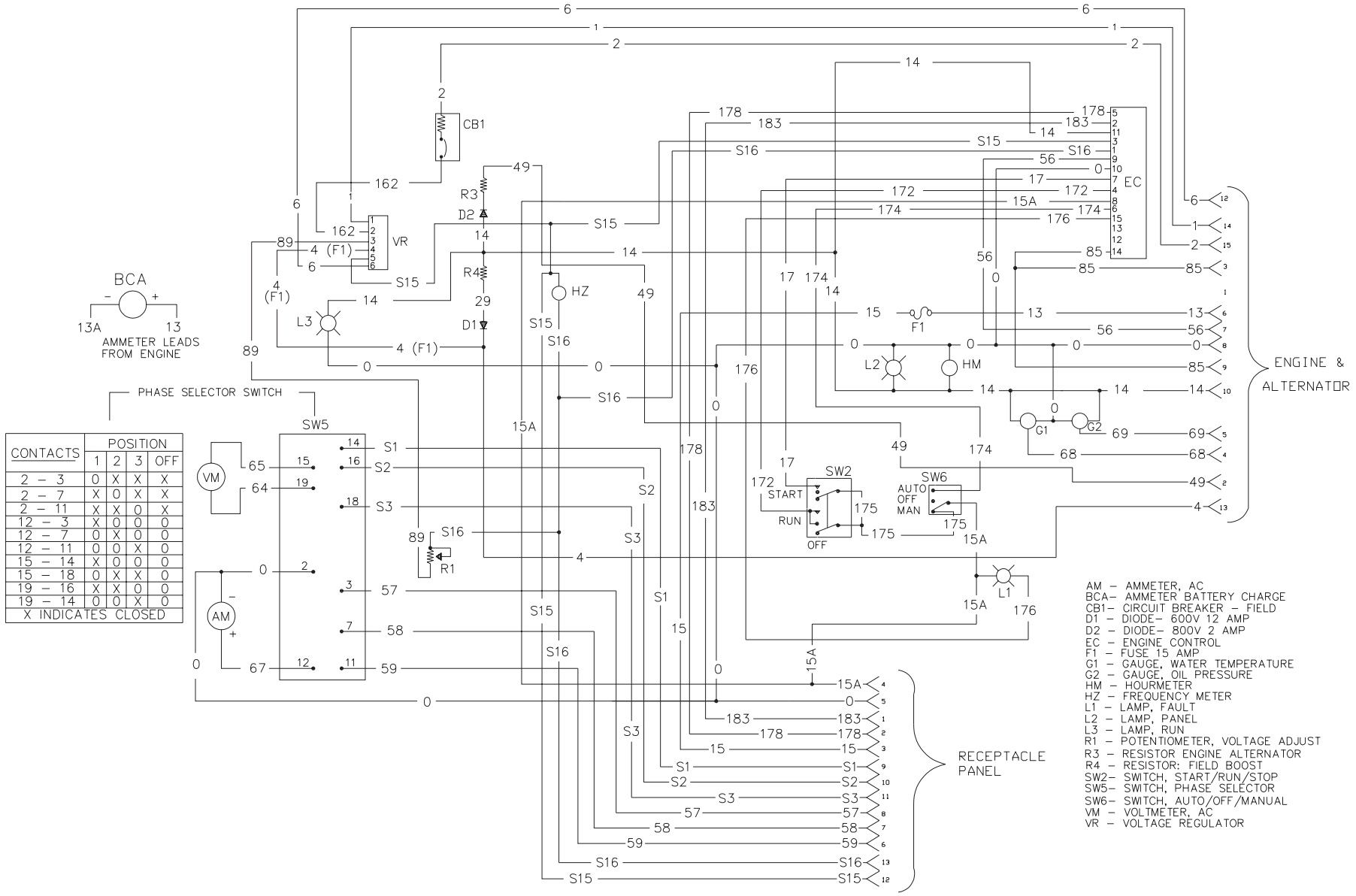
LEGEND

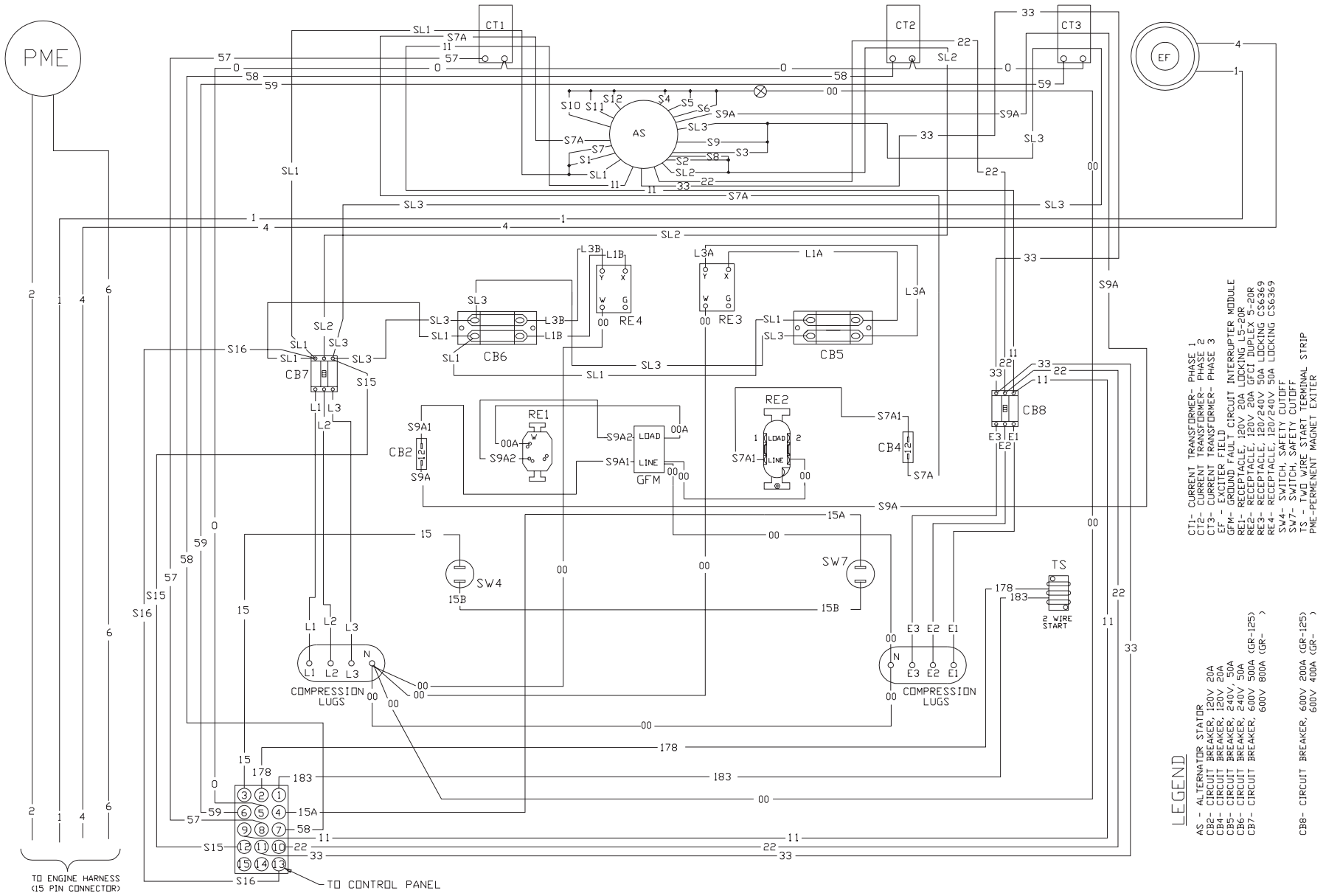
CC – CONTROL CONTACTOR
D1 – DIODE
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
ISC – IGNITION SYSTEM CONTA
LOS – LOW OIL SWITCH
RW – RESISTOR WIRE
SM – STARTER MOTOR
WTS – WATER TEMPERATURE SW
WLS – WATER LEVEL SENSOR

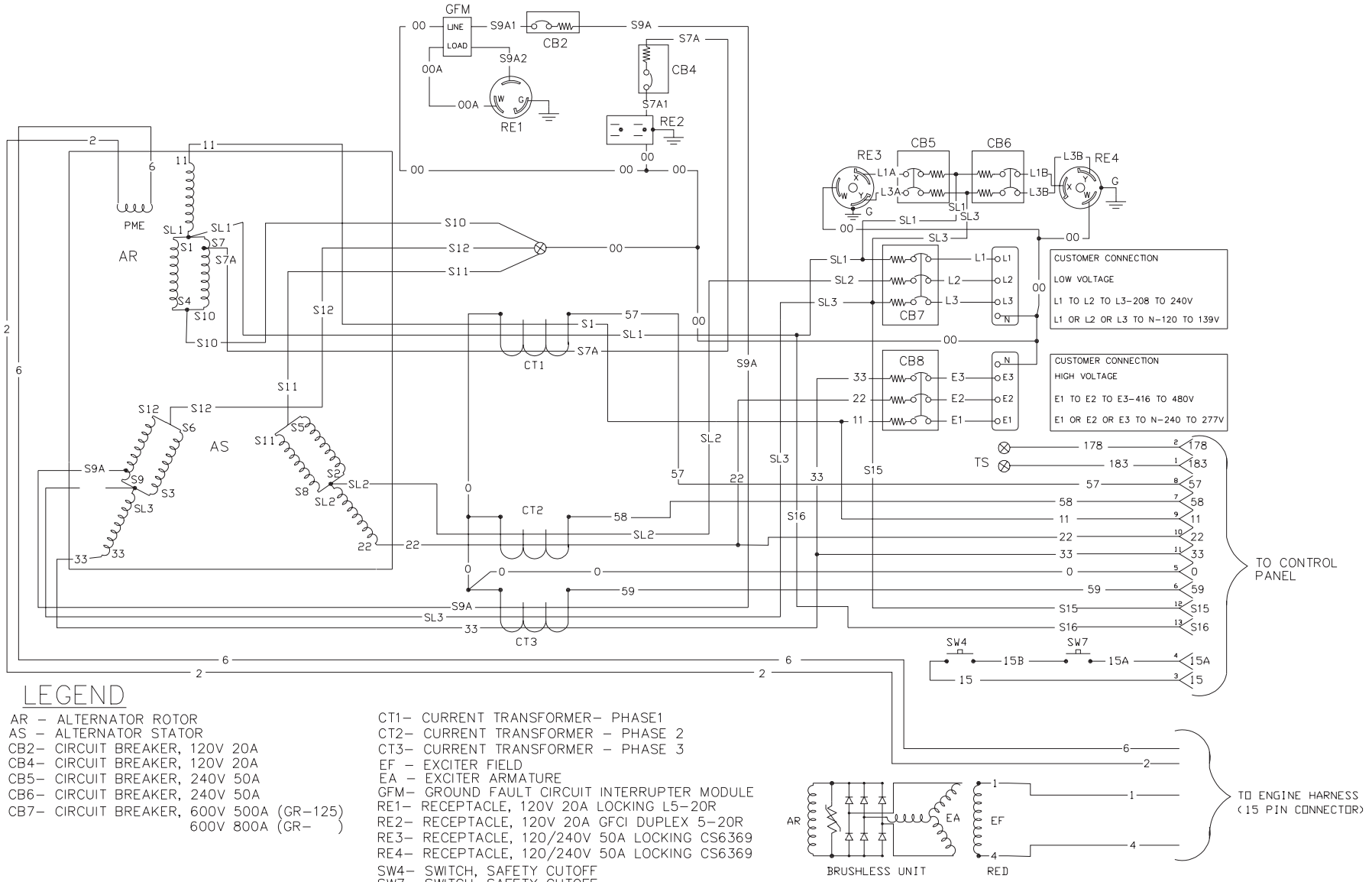





TO ENGINE & ALTERNATOR
TO RECEPT. PANEL
TB
F1
VR
EC
D1
D2
R4
R3
CB1
HM
HZ
AM
VM
L1
L2
L3
SW2
START
RUN
OFF
SW5
SW6
AUTO
MAN
G1
G2
BCA
AMMETER LEADS FROM ENGINE
AM – AMMETER, AC
BCA – AMMETER BATTERY CHARGER
CB1– CIRCUIT BREAKER – FIELD
D1 – DIODE 600V 12 AMP
EC – ENGINE CONTROL
F1 – FUSE 15 AMP
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
D2 – DIODE 800V 2A
R3 – RESISTOR – ENG. ALTERNATOR
R4 – RESISTOR, FIELD BOOST
SW2– SWITCH, START/RUN/STOP
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
TB – TERMINAL BLOCK
VM – VOLTMETER, AC
VR – VOLTAGE REGULATOR


BCA
13A
13
AMMETER LEADS FROM ENGINE
PHASE SELECTOR SWITCH
SW5
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
CB1
VR
R3
R4
D1
D2
R1
HZ
L1
L2
L3
HM
F1
G1
G2
SW2
SW6
START
RUN
OFF
AUTO
MAN
VM
AM
EC
ENGINE & ALTERNATOR
RECEPTACLE PANEL
AM – AMMETER, AC
BCA– AMMETER BATTERY CHARGE
CB1– CIRCUIT BREAKER – FIELD
D1 – DIODE– 600V 12 AMP
D2 – DIODE– 800V 2 AMP
EC – ENGINE CONTROL
F1 – FUSE 15 AMP
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
R1 – POTENTIOMETER, VOLTAGE ADJUST
R3 – RESISTOR ENGINE ALTERNATOR
R4 – RESISTOR: FIELD BOOST
SW2– SWITCH, START/RUN/STOP
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
VM – VOLTMETER, AC
VR – VOLTAGE REGULATOR


PME
CT1
CT2
CT3
EF
AS
RE1
RE2
RE3
RE4
GFM
CB2
CB4
CB5
CB6
CB7
CB8
SW4
SW7
TS
2 WIRE START
COMPRESSION LUGS
COMPRESSION LUGS
TO ENGINE HARNESS (15 PIN CONNECTOR)
TO CONTROL PANEL
LEGEND
CT1- CURRENT TRANSFORMER- PHASE 1
CT2- CURRENT TRANSFORMER- PHASE 2
CT3- CURRENT TRANSFORMER- PHASE 3
EF - EXCITER FIELD
GFM- GROUND FAULT CIRCUIT INTERRUPTER MODULE
RE1- RECEPTACLE, 120V 20A LOCKING L5-20R
RE2- RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE3- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4- RECEPTACLE, 120/240V 50A LOCKING CS6369
SW4- SWITCH, SAFETY CUTOFF
SW7- SWITCH, SAFETY CUTOFF
TS - TWO WIRE START TERMINAL STRIP
PME-PERMENENT MAGNET EXITER
AS - ALTERNATOR STATOR
CB2- CIRCUIT BREAKER, 120V 20A
CB4- CIRCUIT BREAKER, 120V 20A
CB5- CIRCUIT BREAKER, 240V, 50A
CB6- CIRCUIT BREAKER, 240V 50A
CB7- CIRCUIT BREAKER, 600V 500A (GR-12S)
600V 800A (GR-)
CB8- CIRCUIT BREAKER, 600V 200A (GR-12S)
600V 400A (GR-)

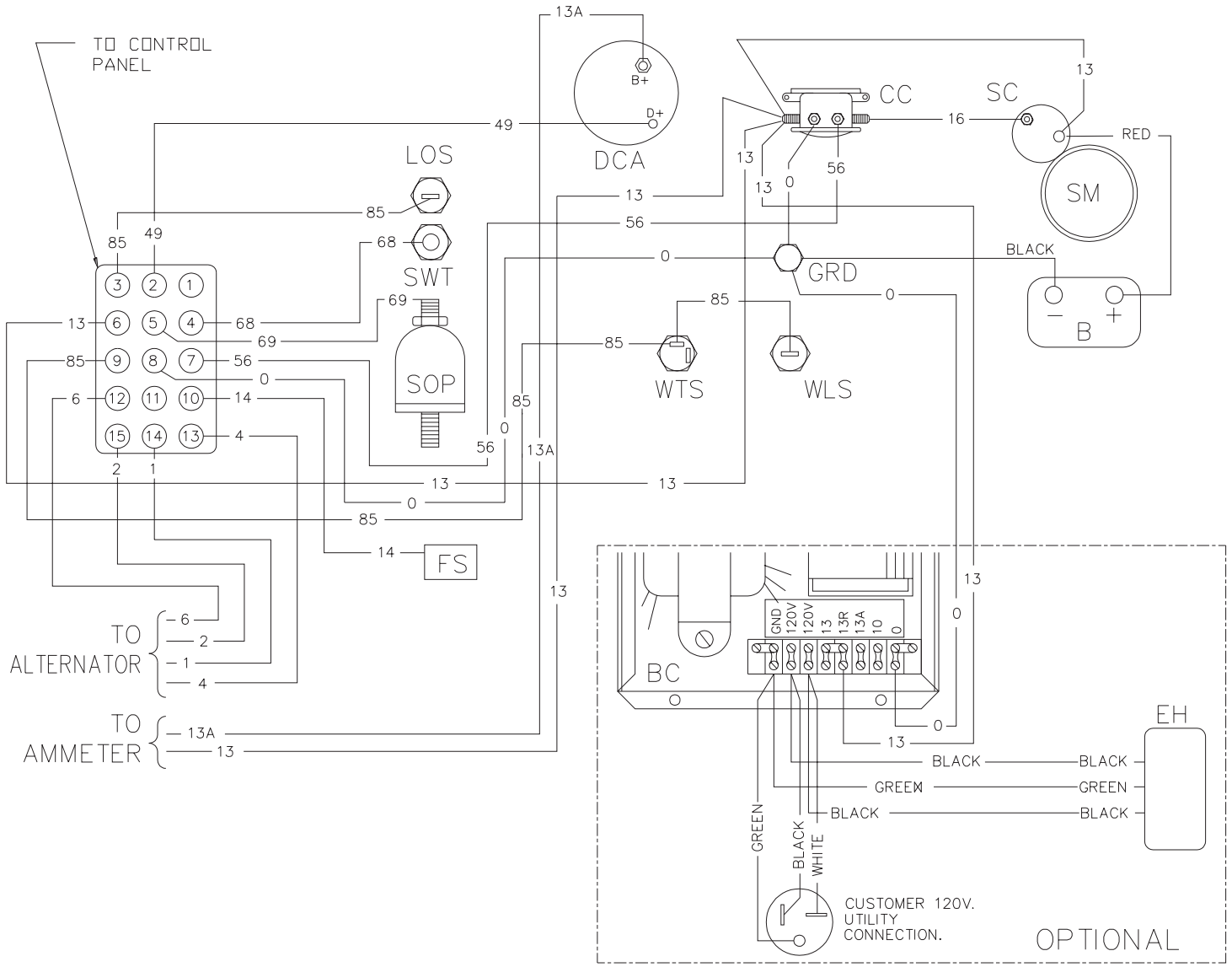


LEGEND

AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
CB2– CIRCUIT BREAKER, 120V 20A
CB4– CIRCUIT BREAKER, 120V 20A
CB5– CIRCUIT BREAKER, 240V 50A
CB6– CIRCUIT BREAKER, 240V 50A
CB7– CIRCUIT BREAKER, 600V 500A (GR–125)
600V 800A (GR–)

CB8– CIRCUIT BREAKER, 600V 200A (GR–125)
600V 400A (GR–)

CT1– CURRENT TRANSFORMER– PHASE1
CT2– CURRENT TRANSFORMER – PHASE 2
CT3– CURRENT TRANSFORMER – PHASE 3
EF – EXCITER FIELD
EA – EXCITER ARMATURE
GFM– GROUND FAULT CIRCUIT INTERRUPTER MODULE
RE1– RECEPTACLE, 120V 20A LOCKING L5–20R
RE2– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE3– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4– RECEPTACLE, 120/240V 50A LOCKING CS6369
SW4– SWITCH, SAFETY CUTOFF
SW7– SWITCH, SAFETY CUTOFF
TS – TWO WIRE START TERMINAL STRIP
PME–PERMENENT MAGNET EXCITER

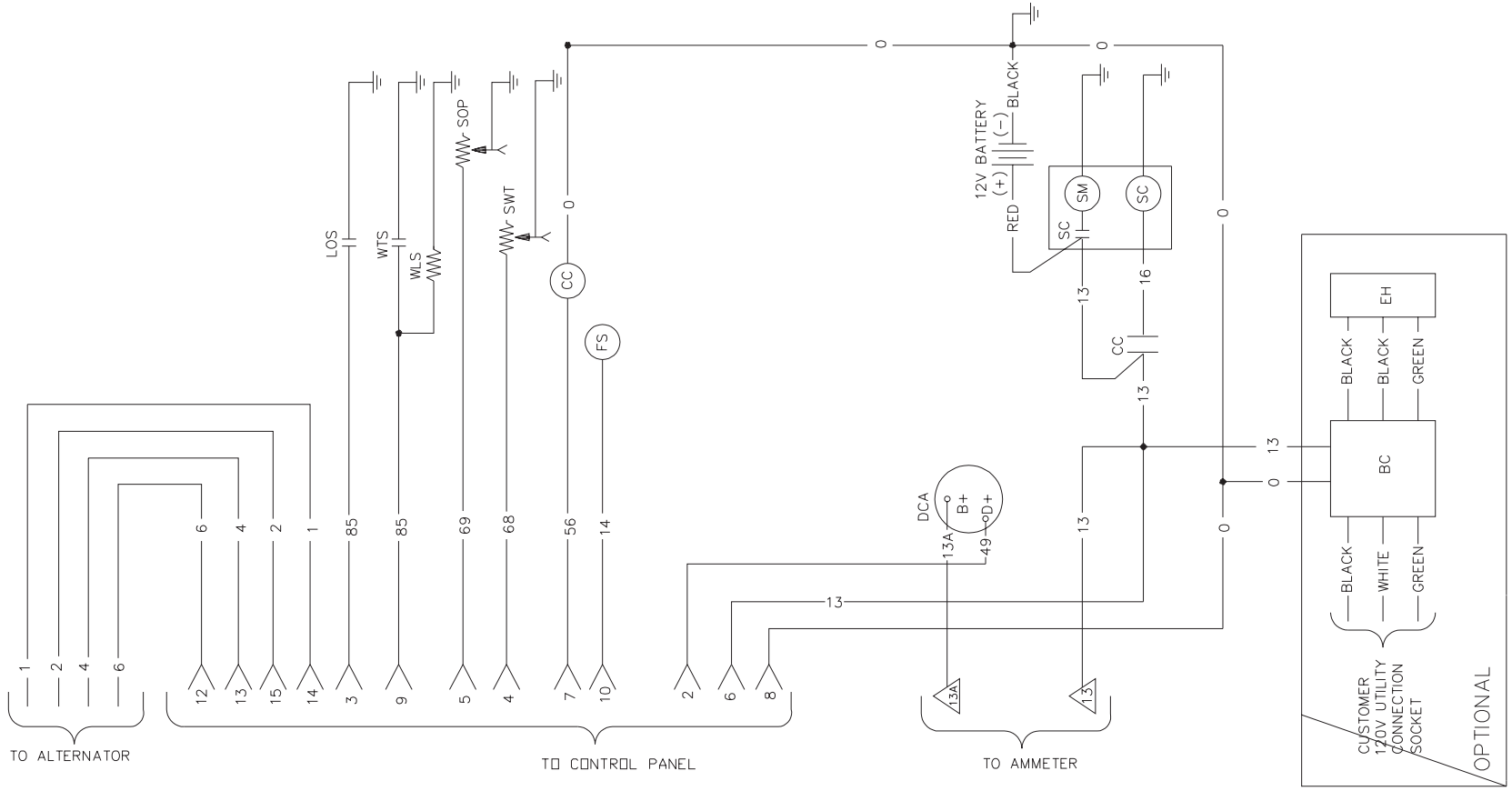


LEGEND

B – BATTERY 12–V
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER

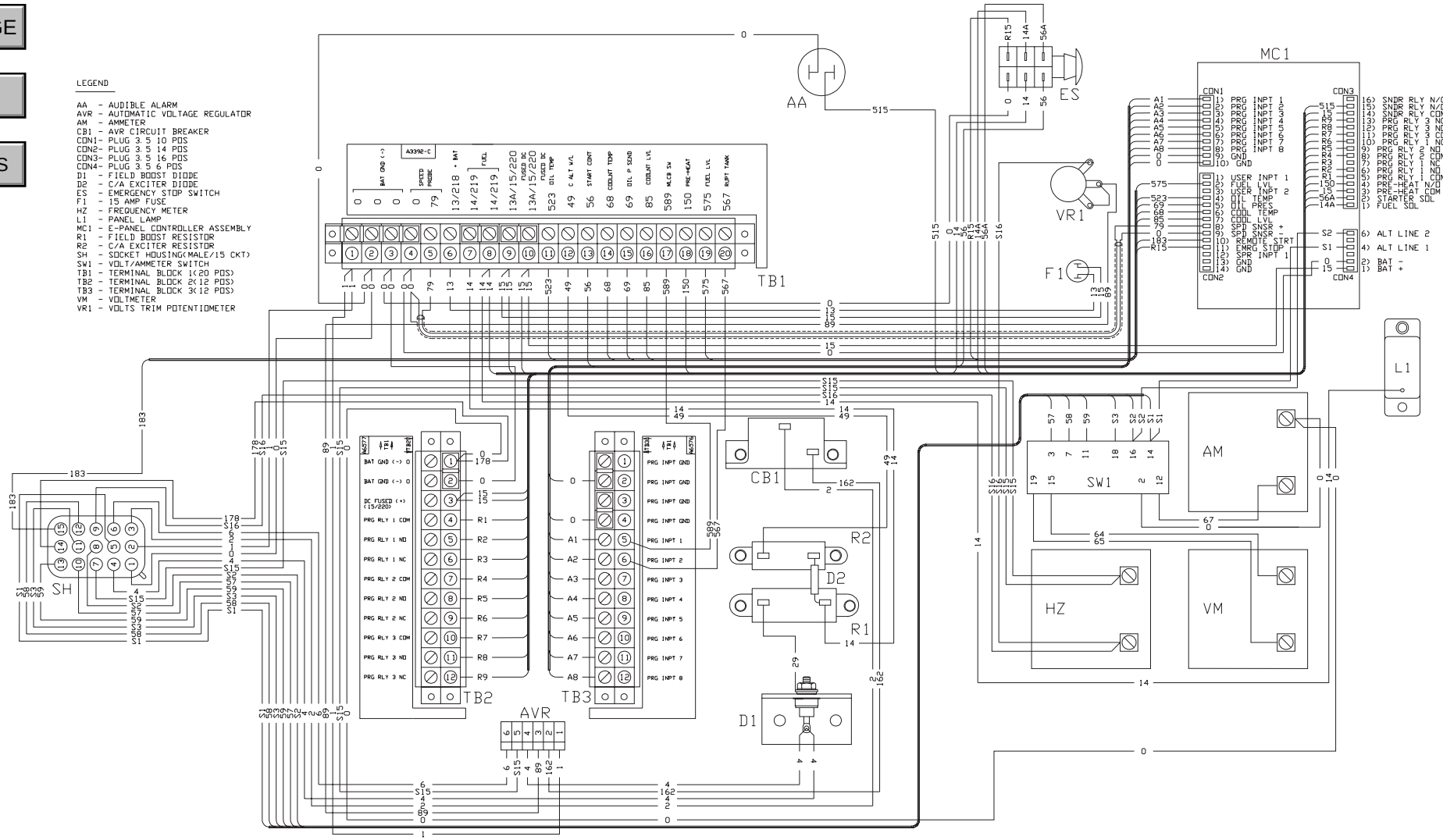
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR

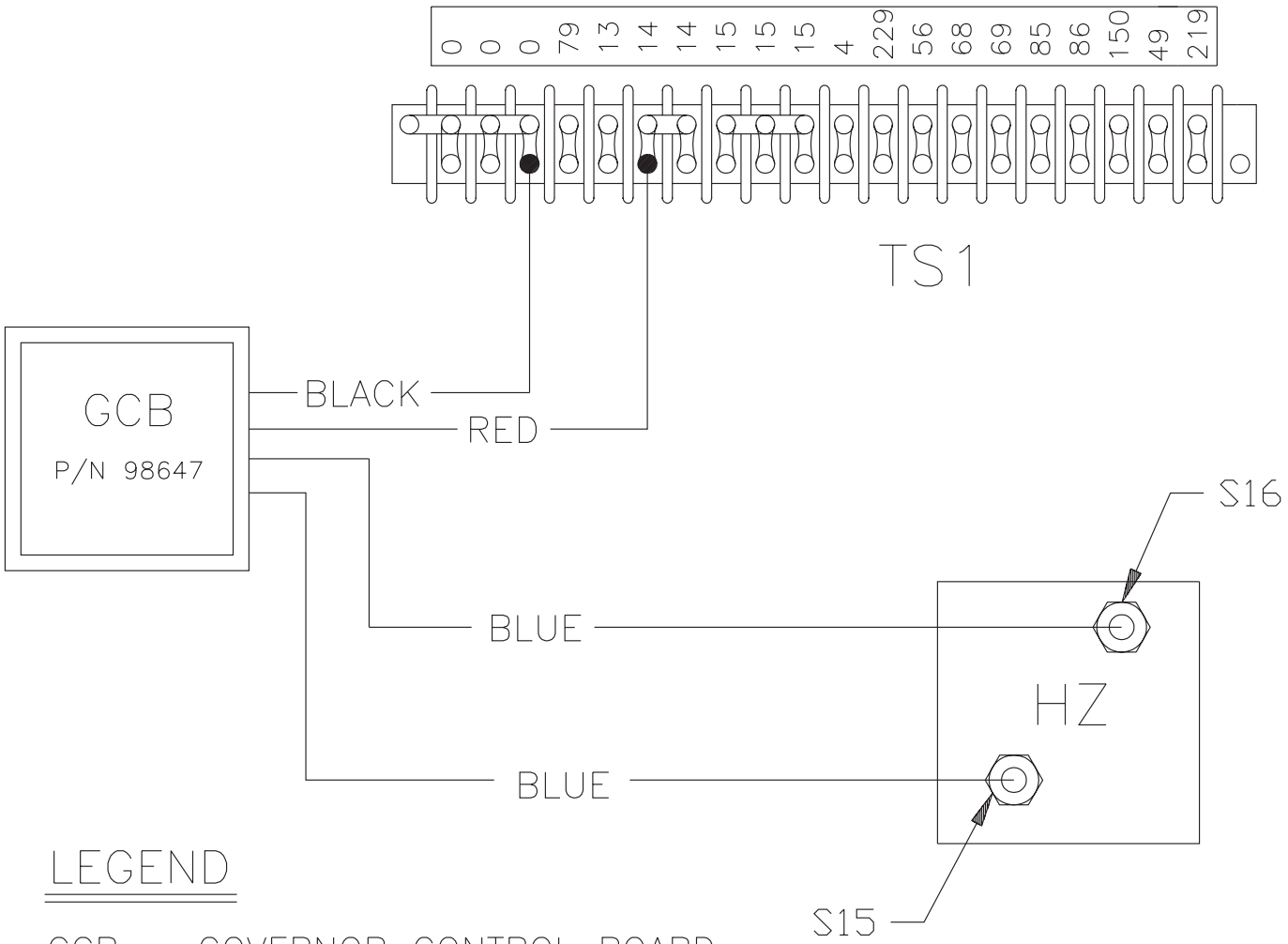
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– HIGH WATER TEMP. SWITCH



LEGEND

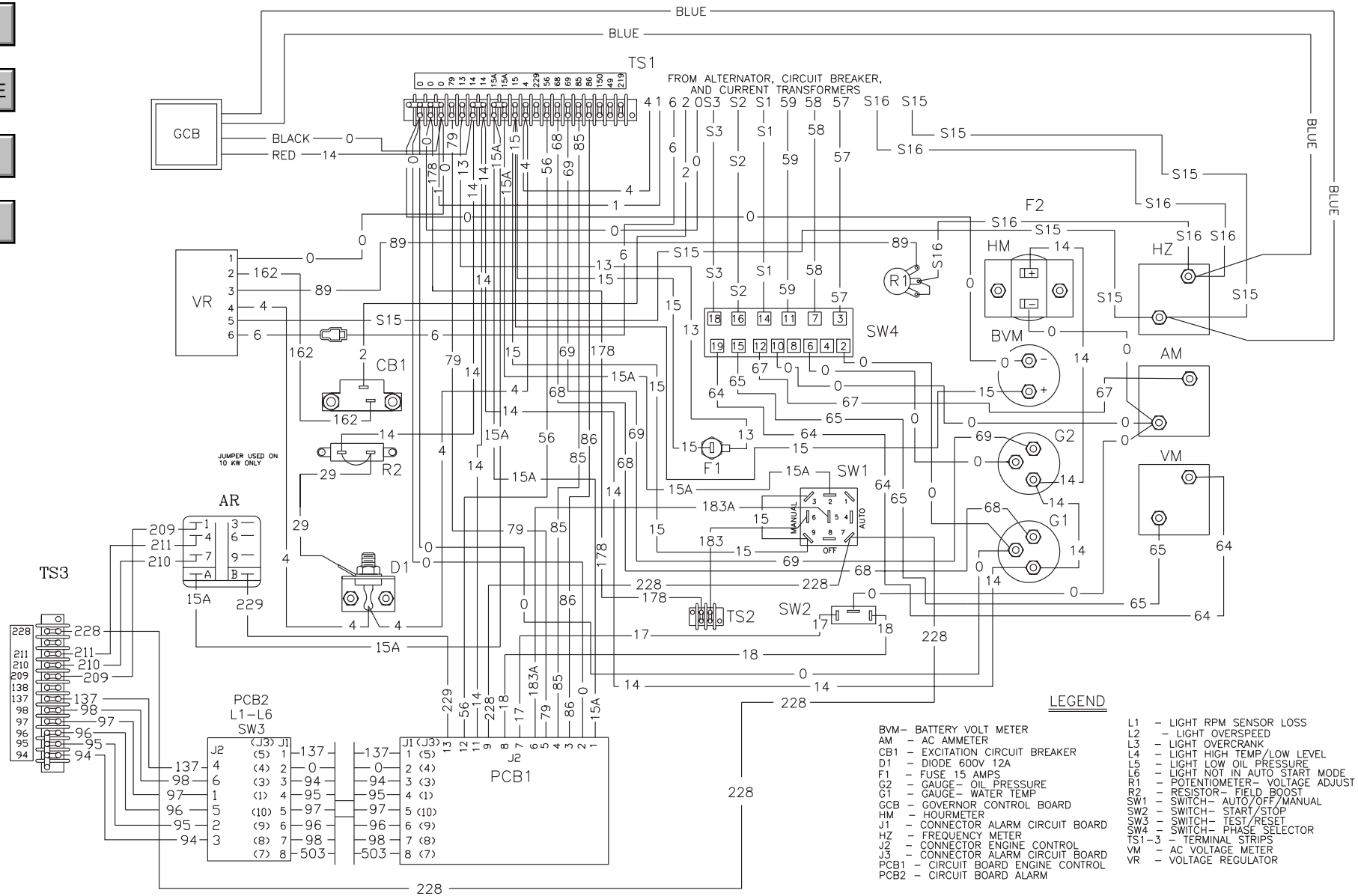
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
LOS– LOW OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– HIGH WATER TEMPERATURE SWITCH

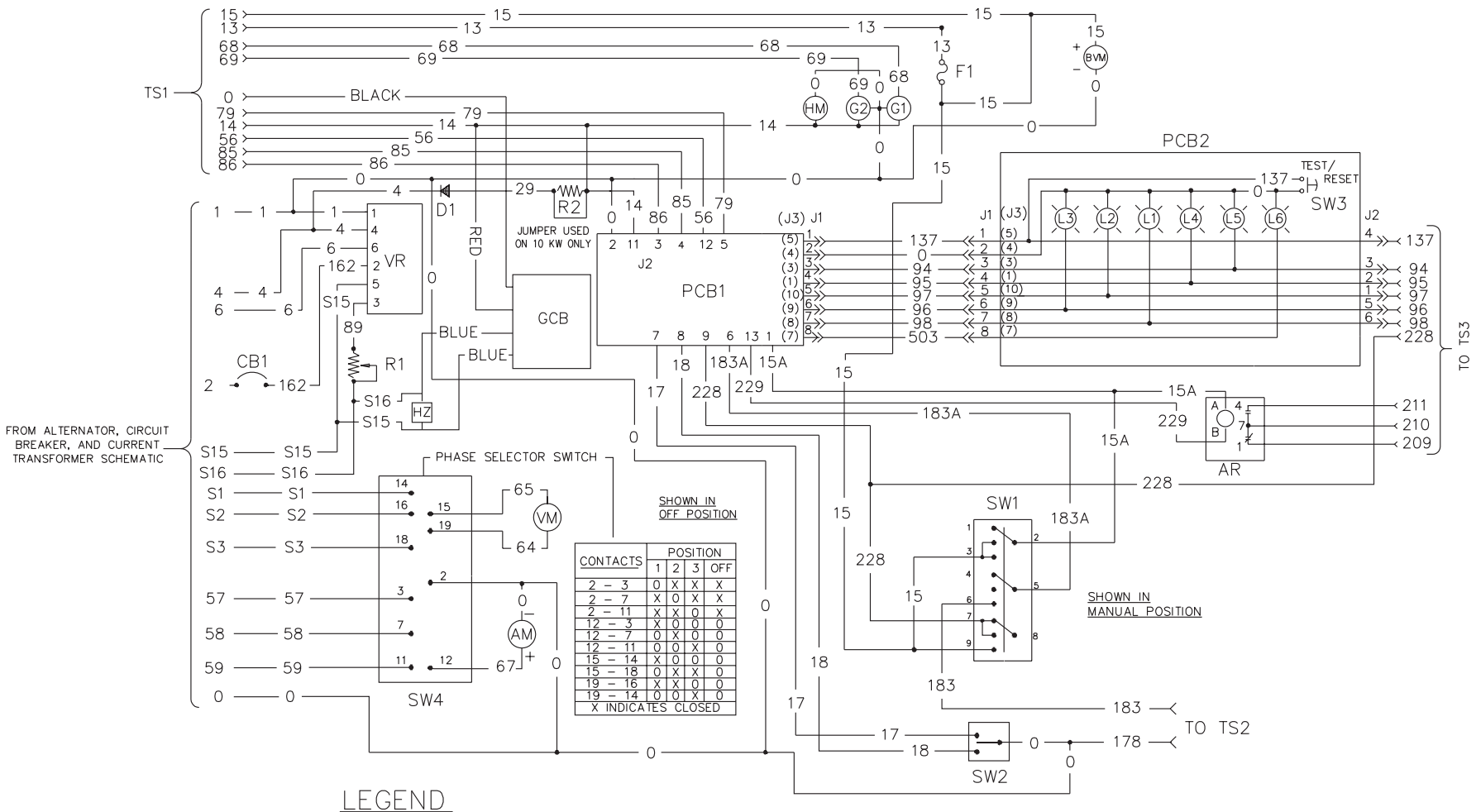

LEGEND
AA - AUDIBLE ALARM
AVR - AUTOMATIC VOLTAGE REGULATOR
AM - AMMETER
CB1 - AVR CIRCUIT BREAKER
CON1- PLUG 3.5 10 POS
CON2- PLUG 3.5 14 POS
CON3- PLUG 3.5 16 POS
CON4- PLUG 3.5 6 POS
D1 - FIELD BOOST DIODE
D2 - C/A EXCITER DIODE
ES - EMERGENCY STOP SWITCH
F1 - 15 AMP FUSE
HZ - FREQUENCY METER
L1 - PANEL LAMP
MC1 - E-PANEL CONTROLLER ASSEMBLY
R1 - FIELD BOOST RESISTOR
R2 - C/A EXCITER RESISTOR
SH - SOCKET HOUSING(MALE/15 CKT)
SW1 - VOLT/AMMETER SWITCH
TB1 - TERMINAL BLOCK 1(20 POS)
TB2 - TERMINAL BLOCK 2(12 POS)
TB3 - TERMINAL BLOCK 3(12 POS)
VM - VOLTMETER
VR1 - VOLTS TRIM POTENTIOMETER
AA
ES
VR1
F1
MC1
CON1
CON2
CON3
CON4
TB1
TB2
TB3
SH
SW1
AM
VM
HZ
L1
CB1
R1
R2
D1
D2
AVR



LEGEND

GCB – GOVERNOR CONTROL BOARD
HZ – FREQUENCY METER
TB1 – TERMINAL BLOCKS


BLUE
BLUE
TS1
FROM ALTERNATOR, CIRCUIT BREAKER, AND CURRENT TRANSFORMERS
GCB
BLACK
RED
VR
CB1
R2
JUMPER USED ON 10 KW ONLY
AR
D1
TS3
15A
229
PCB2
L1–L6
SW3
PCB1
F2
HM
HZ
R1
SW4
BVM
AM
G2
VM
F1
SW1
G1
TS2
SW2
MANUAL
AUTO
OFF
228
LEGEND
BVM– BATTERY VOLT METER
AM – AC AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
G2 – GAUGE– OIL PRESSURE
G1 – GAUGE– WATER TEMP
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
J1 – CONNECTOR ALARM CIRCUIT BOARD
HZ – FREQUENCY METER
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – CIRCUIT BOARD ALARM
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTO START MODE
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/OFF/MANUAL
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIPS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR



CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	0	X	X	X
2 – 7	X	0	X	X
2 – 11	X	X	0	X
12 – 3	X	0	0	0
12 – 7	0	X	0	0
12 – 11	0	0	X	0
15 – 14	X	0	0	0
15 – 18	0	X	X	0
19 – 16	X	X	0	0
19 – 14	0	0	X	0

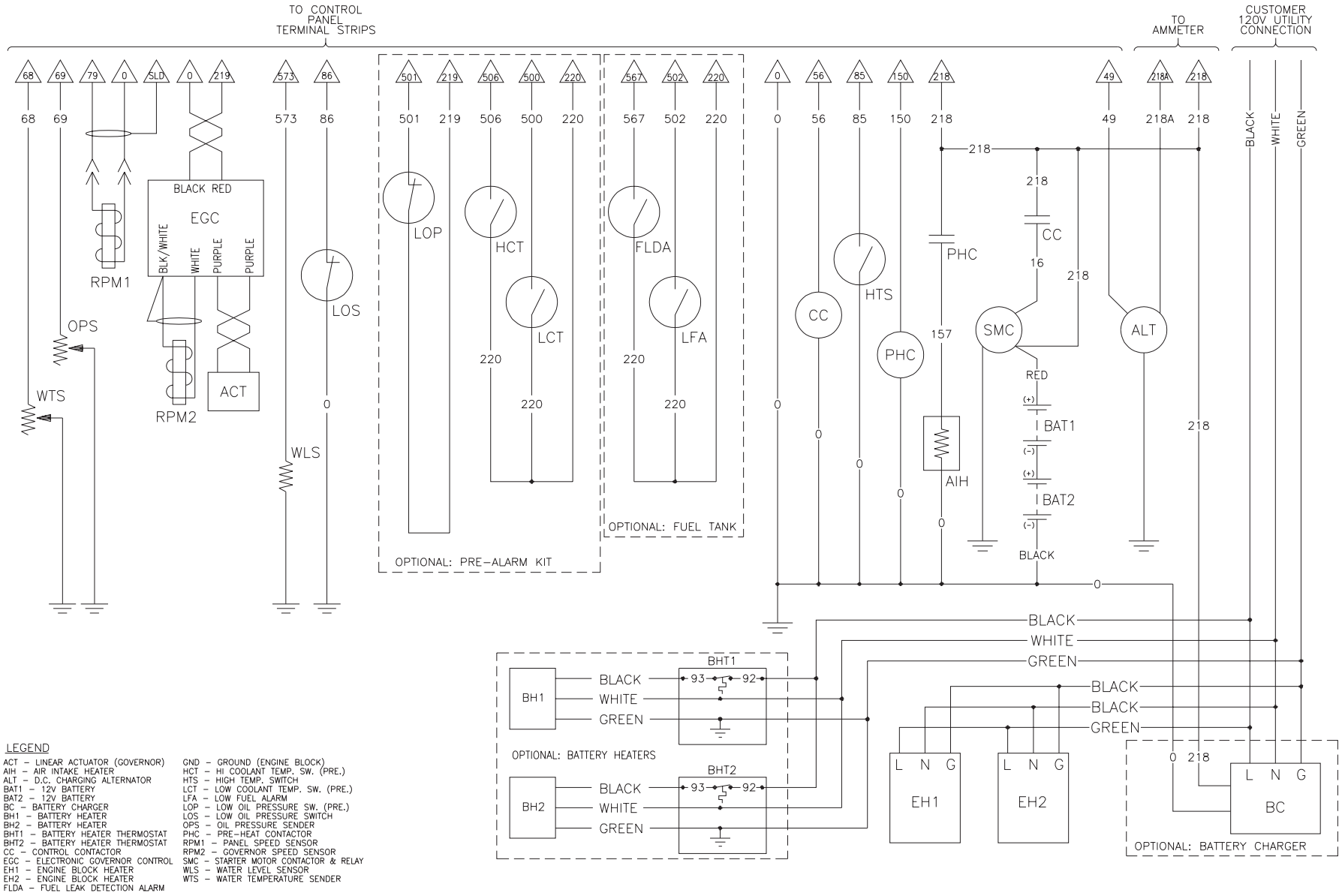
X INDICATES CLOSED

LEGEND

AM – AC AMMETER
AR – ALARM RELAY
BVM – BATTERY VOTE METER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
HZ – FREQUENCY METER

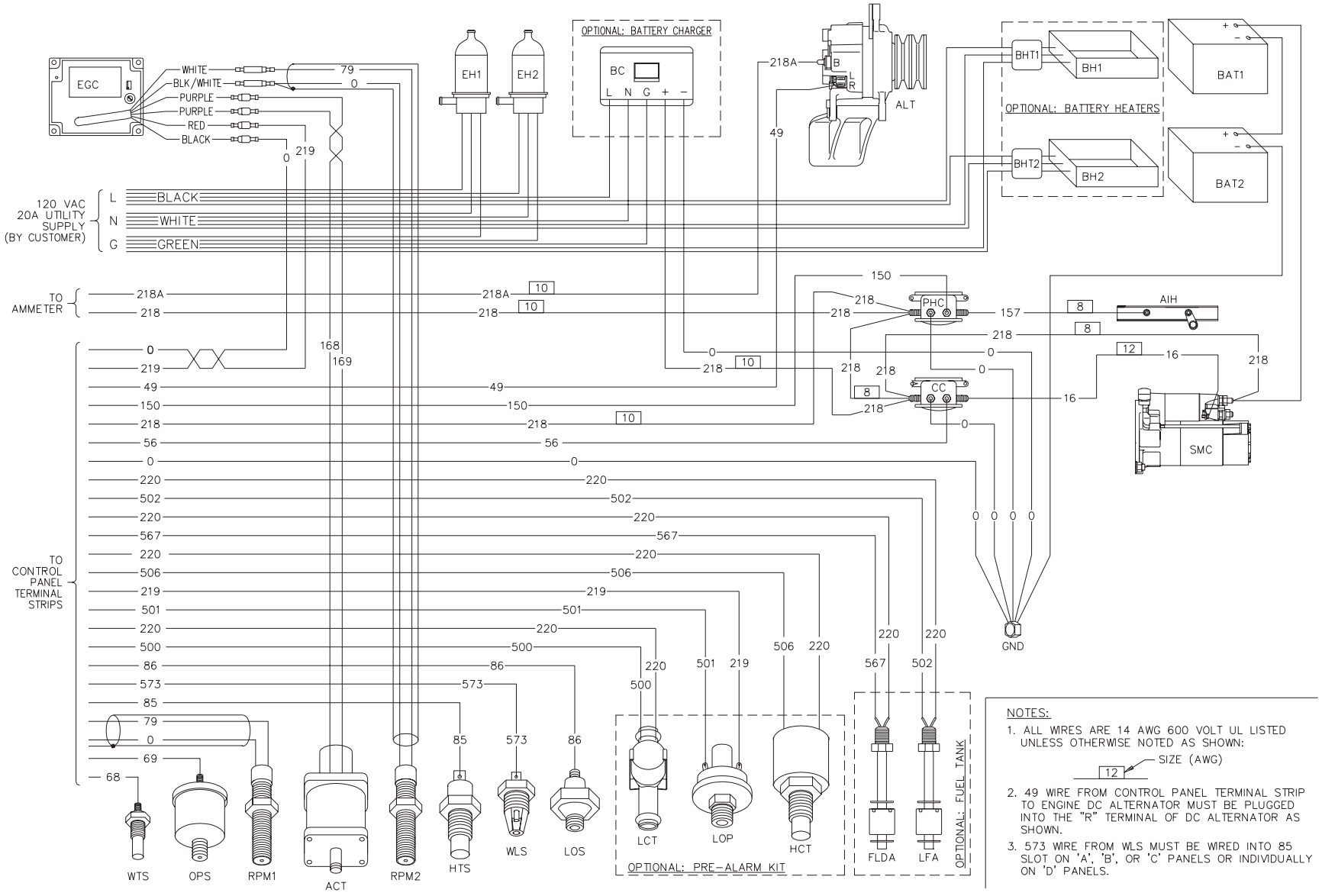
G1 – GAUGE– WATER TEMPERATURE
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB1– CIRCUIT BOARD ENGINE CONTROL

PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/OFF/MANUAL
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR



LEGEND

ACT – LINEAR ACTUATOR (GOVERNOR)
AIH – AIR INTAKE HEATER
ALT – D.C. CHARGING ALTERNATOR
BAT1 – 12V BATTERY
BAT2 – 12V BATTERY
BC – BATTERY CHARGER
BH1 – BATTERY HEATER
BH2 – BATTERY HEATER
BHT1 – BATTERY HEATER THERMOSTAT
BHT2 – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
EGC – ELECTRONIC GOVERNOR CONTROL
EH1 – ENGINE BLOCK HEATER
EH2 – ENGINE BLOCK HEATER
FLDA – FUEL LEAK DETECTION ALARM
GND – GROUND (ENGINE BLOCK)
HCT – HI COOLANT TEMP. SW. (PRE.)
HTS – HIGH TEMP. SWITCH
LCT – LOW COOLANT TEMP. SW. (PRE.)
LFA – LOW FUEL ALARM
LOP – LOW OIL PRESSURE SW. (PRE.)
LOS – LOW OIL PRESSURE SWITCH
OPS – OIL PRESSURE SENDER
PHC – PRE-HEAT CONTACTOR
RPM1 – PANEL SPEED SENSOR
RPM2 – GOVERNOR SPEED SENSOR
SMC – STARTER MOTOR CONTACTOR & RELAY
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SENDER

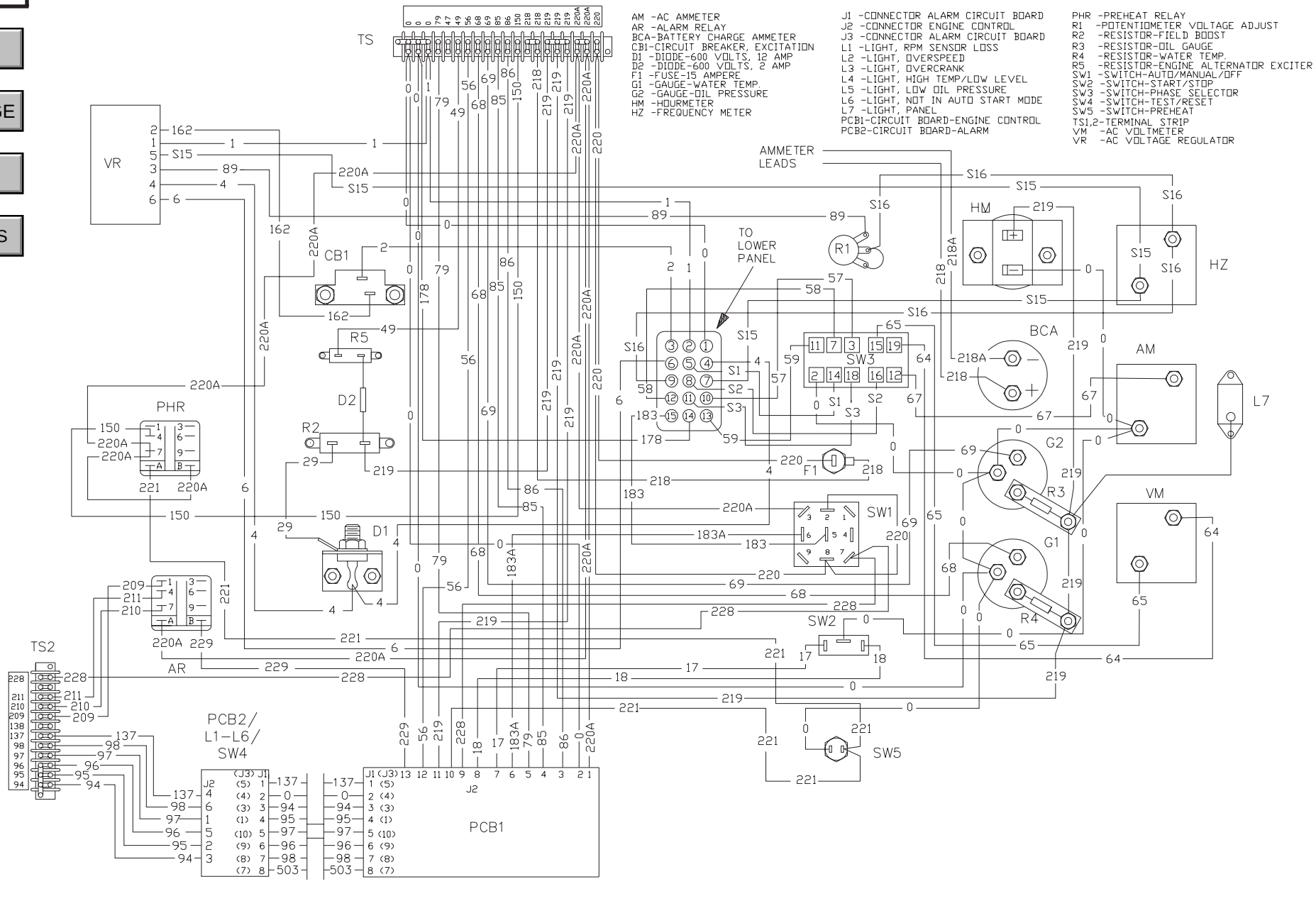


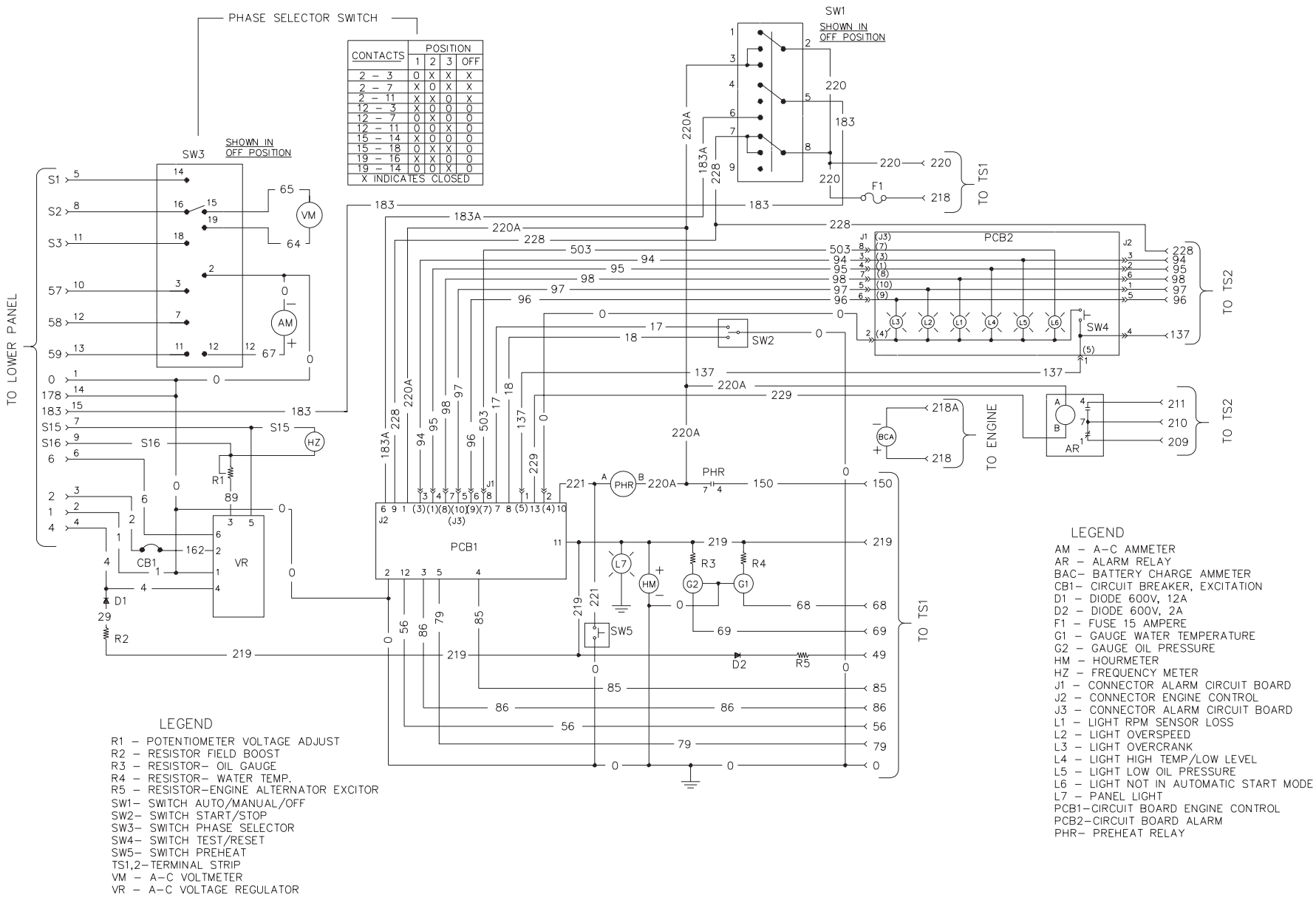
NOTES:

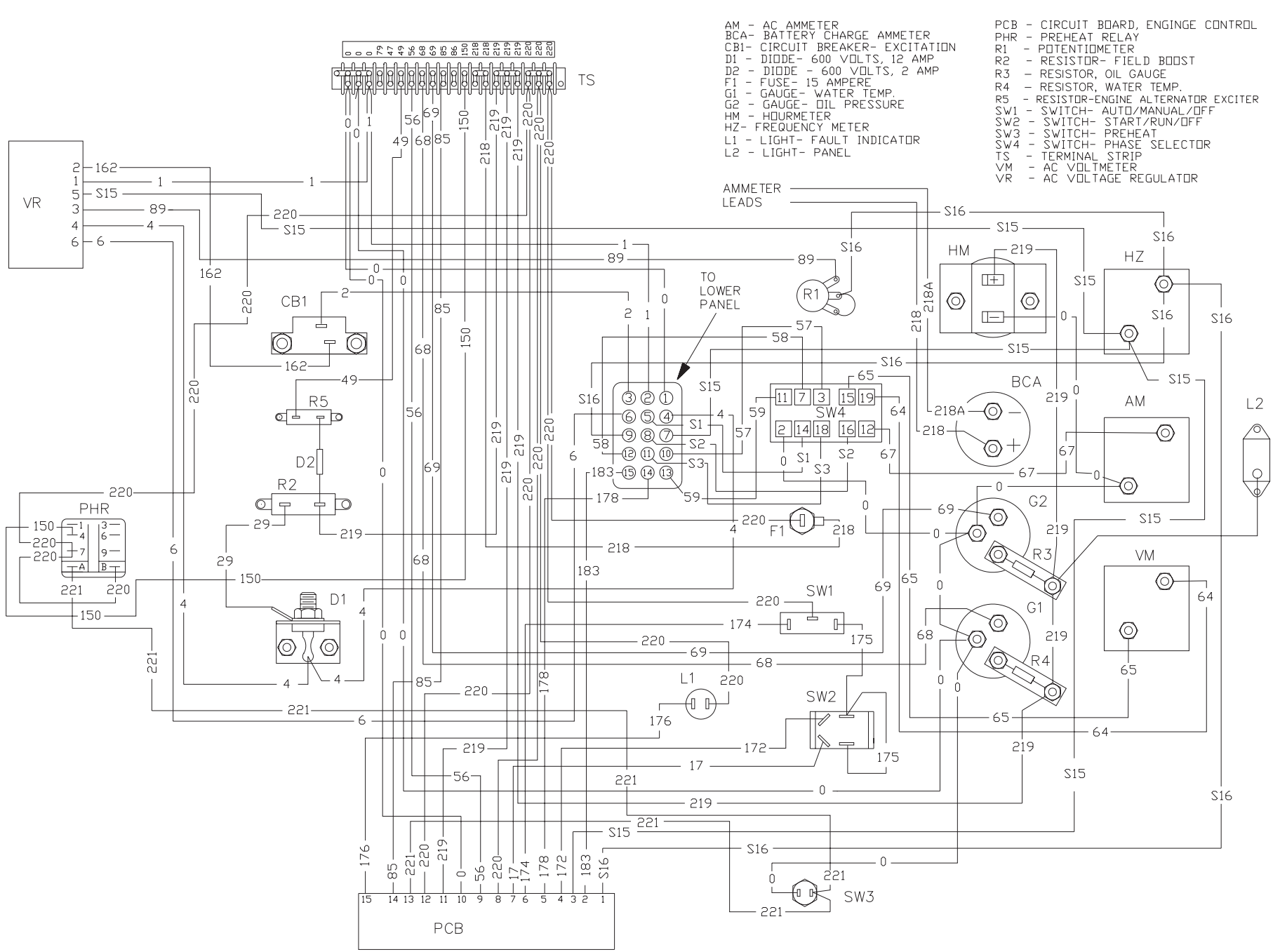
1. ALL WIRES ARE 14 AWG 600 VOLT UL LISTED UNLESS OTHERWISE NOTED AS SHOWN:
   12 — SIZE (AWG)
2. 49 WIRE FROM CONTROL PANEL TERMINAL STRIP TO ENGINE DC ALTERNATOR MUST BE PLUGGED INTO THE "R" TERMINAL OF DC ALTERNATOR AS SHOWN.
3. 573 WIRE FROM WLS MUST BE WIRED INTO 85 SLOT ON 'A', 'B', OR 'C' PANELS OR INDIVIDUALLY ON 'D' PANELS.

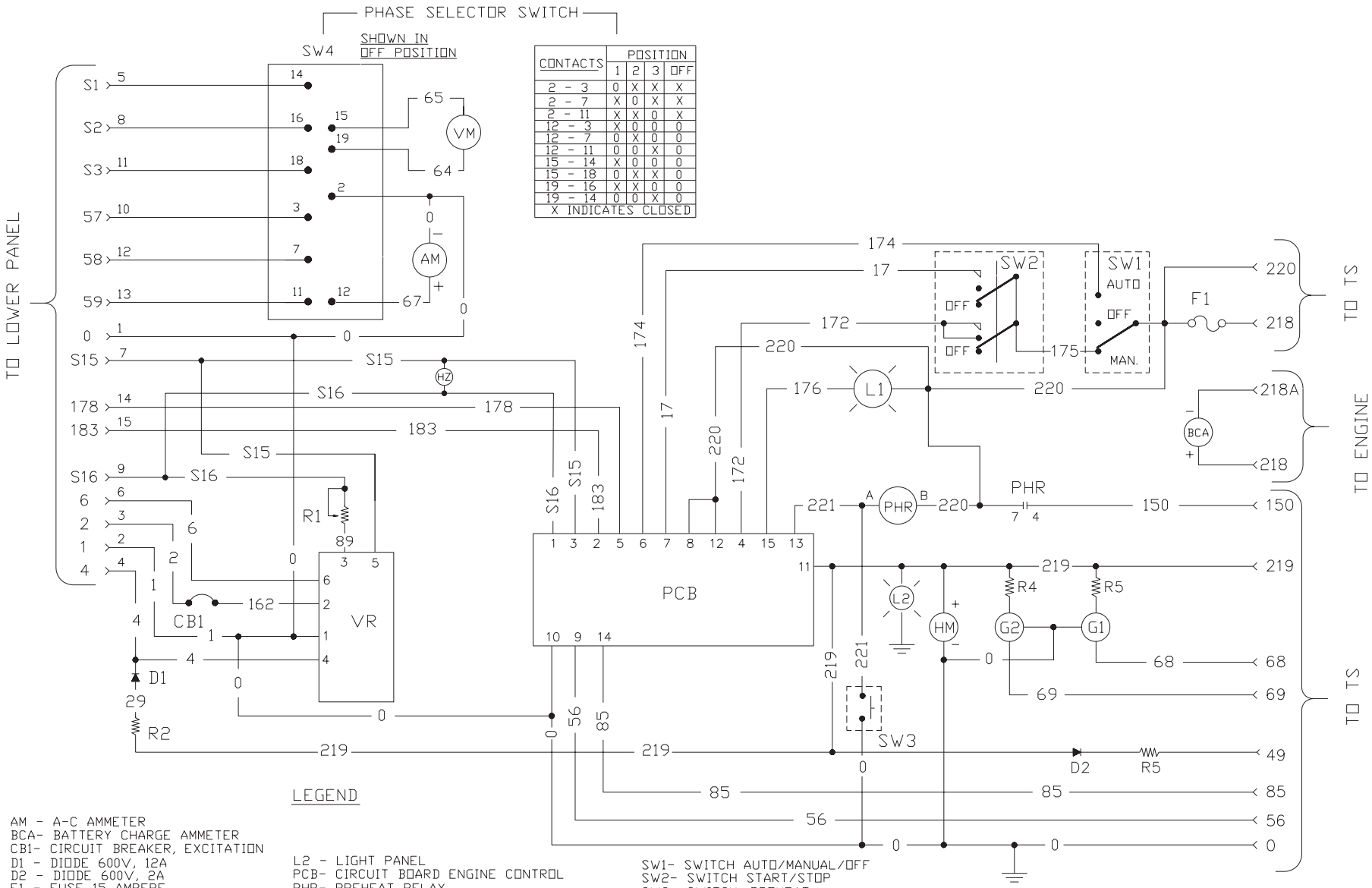
LEGEND

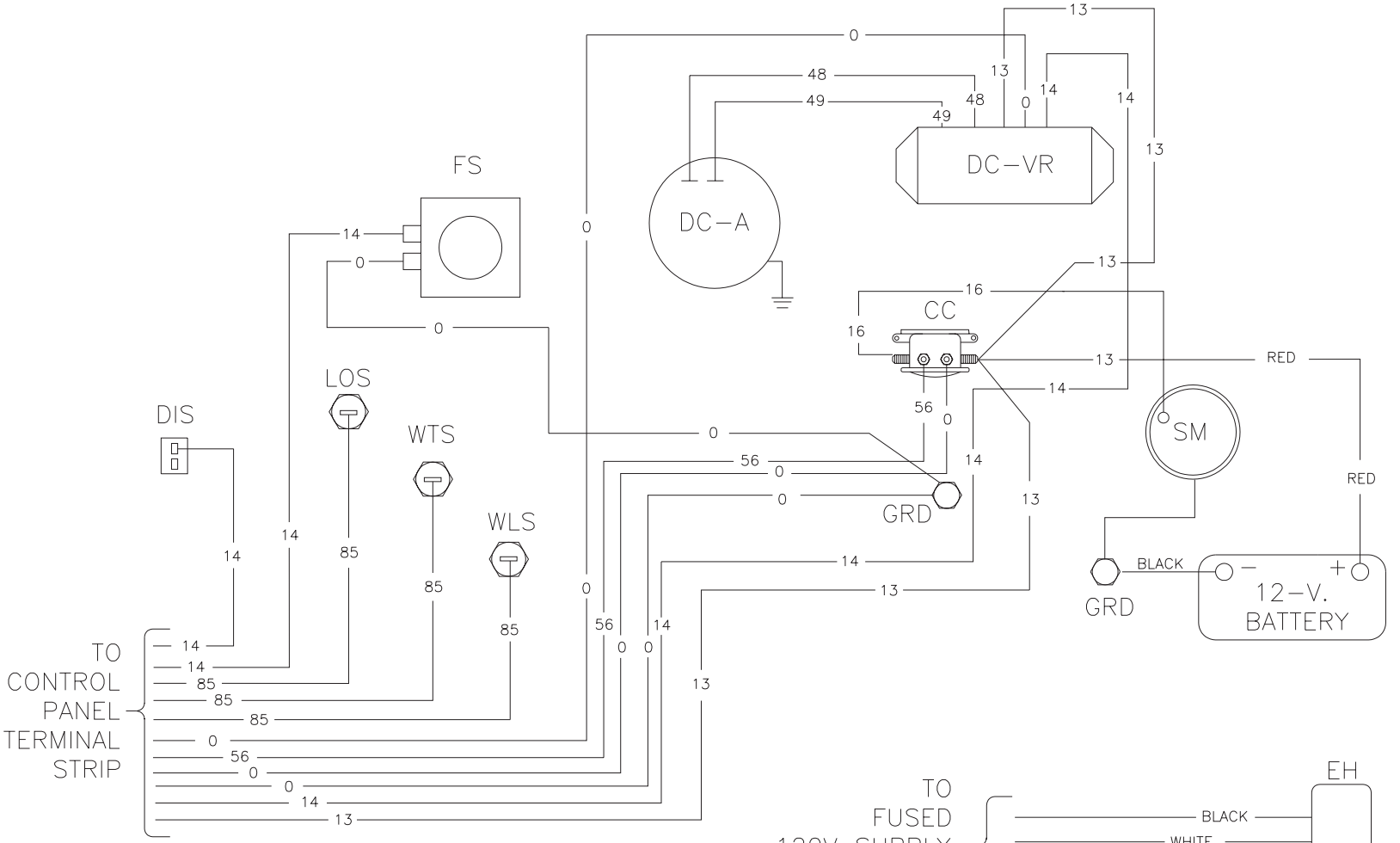
ACT – LINEAR ACTUATOR (GOVERNOR)
AIH – AIR INTAKE HEATER
ALT – D.C. CHARGING ALTERNATOR
BAT1, BAT2 – 12V BATTERY
BC – BATTERY CHARGER
BH1, BH2 – BATTERY HEATER
BHT1, BHT2 – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
EGC – ELECTRONIC GOVERNOR CONTROL
EH1, EH2 – ENGINE BLOCK HEATER
FLDA – FUEL LEAD DETECTION ALARM
GND – GROUND (ENGINE BLOCK)
HCT – HI COOLANT TEMP. SW. (PRE.)
HTS – HIGH TEMP. SWITCH
LCT – LOW COOLANT TEMP. SW. (PRE.)
LFA – LOW FUEL ALARM
LOP – LOW OIL PRESSURE SW. (PRE.)
LOS – LOW OIL PRESSURE SWITCH
OPS – OIL PRESSURE SENDER
PHC – PRE-HEAT CONTACTOR
RPM1 – PANEL SPEED SENSOR
RPM2 – GOVERNOR SPEED SENSOR
SMC – STARTER MOTOR CONTACTOR & RELAY
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SENDER

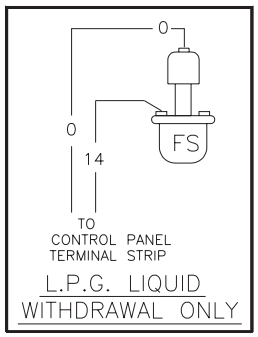

AM -AC AMMETER
AR -ALARM RELAY
BCA-BATTERY CHARGE AMMETER
CB1-CIRCUIT BREAKER, EXCITATION
D1 -DIODE-600 VOLTS, 12 AMP
D2 -DIODE-600 VOLTS, 2 AMP
F1 -FUSE-15 AMPERE
G1 -GAUGE-WATER TEMP.
G2 -GAUGE-OIL PRESSURE
HM -HOURMETER
HZ -FREQUENCY METER
J1 -CONNECTOR ALARM CIRCUIT BOARD
J2 -CONNECTOR ENGINE CONTROL
J3 -CONNECTOR ALARM CIRCUIT BOARD
L1 -LIGHT, RPM SENSOR LOSS
L2 -LIGHT, OVERSPEED
L3 -LIGHT, OVERCRANK
L4 -LIGHT, HIGH TEMP/LOW LEVEL
L5 -LIGHT, LOW OIL PRESSURE
L6 -LIGHT, NOT IN AUTO START MODE
L7 -LIGHT, PANEL
PCB1-CIRCUIT BOARD-ENGINE CONTROL
PCB2-CIRCUIT BOARD-ALARM
PHR -PREHEAT RELAY
R1 -POTENTIOMETER VOLTAGE ADJUST
R2 -RESISTOR-FIELD BOOST
R3 -RESISTOR-OIL GAUGE
R4 -RESISTOR-WATER TEMP.
R5 -RESISTOR-ENGINE ALTERNATOR EXCITER
SW1 -SWITCH-AUTO/MANUAL/OFF
SW2 -SWITCH-START/STOP
SW3 -SWITCH-PHASE SELECTOR
SW4 -SWITCH-TEST/RESET
SW5 -SWITCH-PREHEAT
TS1,2-TERMINAL STRIP
VM -AC VOLTMETER
VR -AC VOLTAGE REGULATOR
TS
VR
CB1
R5
D2
R2
PHR
D1
TS2
AR
SW1
SW2
SW3
SW4
SW5
R1
F1
HM
HZ
BCA
AM
L7
G1
G2
R3
R4
VM
AMMETER LEADS
TO LOWER PANEL
PCB2/ L1-L6/ SW4
PCB1
ADD WIRE 228 TO TS2.


PHASE SELECTOR SWITCH
CONTACTS
POSITION
1 2 3 OFF
2 – 3 0 X X X
2 – 7 X 0 X X
2 – 11 X X 0 X
12 – 3 X 0 0 0
12 – 7 0 X 0 0
12 – 11 0 0 X 0
15 – 14 X 0 0 0
15 – 18 0 X X 0
19 – 16 X X 0 0
19 – 14 0 0 X 0
X INDICATES CLOSED
SW1
SHOWN IN OFF POSITION
SW3
SHOWN IN OFF POSITION
TO LOWER PANEL
TO TS1
TO TS2
TO ENGINE
PCB1
PCB2
PHR
VR
CB1
SW2
SW4
SW5
AR
BCA
VM
AM
HZ
HM
F1
D1
D2
R1
R2
R3
R4
R5
LEGEND
R1 – POTENTIOMETER VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR– OIL GAUGE
R4 – RESISTOR– WATER TEMP.
R5 – RESISTOR–ENGINE ALTERNATOR EXCITOR
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH PHASE SELECTOR
SW4– SWITCH TEST/RESET
SW5– SWITCH PREHEAT
TS1,2–TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR
LEGEND
AM – A–C AMMETER
AR – ALARM RELAY
BAC– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, EXCITATION
D1 – DIODE 600V, 12A
D2 – DIODE 600V, 2A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – PANEL LIGHT
PCB1–CIRCUIT BOARD ENGINE CONTROL
PCB2–CIRCUIT BOARD ALARM
PHR– PREHEAT RELAY


AM - AC AMMETER
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER- EXCITATION
D1 - DIODE- 600 VOLTS, 12 AMP
D2 - DIODE - 600 VOLTS, 2 AMP
F1 - FUSE- 15 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ- FREQUENCY METER
L1 - LIGHT- FAULT INDICATOR
L2 - LIGHT- PANEL
PCB - CIRCUIT BOARD, ENGINGE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR, OIL GAUGE
R4 - RESISTOR, WATER TEMP.
R5 - RESISTOR-ENGINE ALTERNATOR EXCITER
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
SW4 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
TS
VR
CB1
R5
D2
R2
PHR
D1
TO LOWER PANEL
R1
AMMETER LEADS
HM
HZ
BCA
AM
L2
SW4
F1
G2
R3
VM
G1
R4
SW1
L1
SW2
SW3
PCB

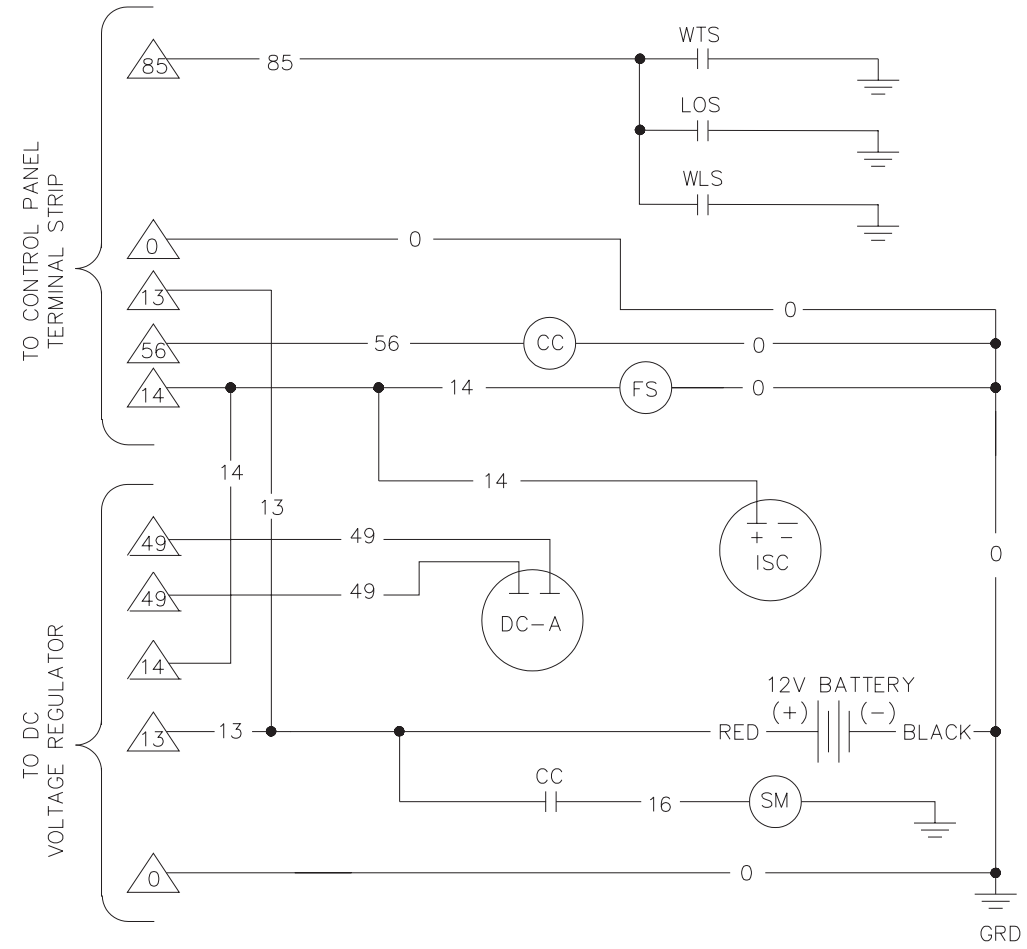

PHASE SELECTOR SWITCH
SW4
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 - 3 | 0 | X | X | X
2 - 7 | X | 0 | X | X
2 - 11 | X | X | 0 | X
12 - 3 | X | 0 | 0 | 0
12 - 7 | 0 | X | 0 | 0
12 - 11 | 0 | 0 | X | 0
15 - 14 | X | 0 | 0 | 0
15 - 18 | 0 | X | X | 0
19 - 16 | X | X | 0 | 0
19 - 14 | 0 | 0 | X | 0
X INDICATES CLOSED
TO LOWER PANEL
S1
S2
S3
57
58
59
VM
AM
HZ
SW2
SW1
AUTO
OFF
MAN.
F1
TO TS
TO ENGINE
L1
BCA
PHR
R1
R2
R3
R4
R5
CB1
D1
D2
VR
PCB
SW3
L2
HM
G1
G2
LEGEND
AM - A-C AMMETER
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, EXCITATION
D1 - DIODE 600V, 12A
D2 - DIODE 600V, 2A
F1 - FUSE 15 AMPERE
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL
PCB- CIRCUIT BOARD ENGINE CONTROL
PHR- PREHEAT RELAY
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR FIELD BOOST
R3 - RESISTOR- OIL GAUGE
R4 - RESISTOR- WATER TEMP.
R5 - RESISTOR-ENGINE ALTERNATOR EXCITOR
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW3- SWITCH, PREHEAT
SW4- SWITCH PHASE SELECTOR
TS - TERMINAL STRIP
VM - A-C VOLTMETER
VR - A-C VOLTAGE REGULATOR





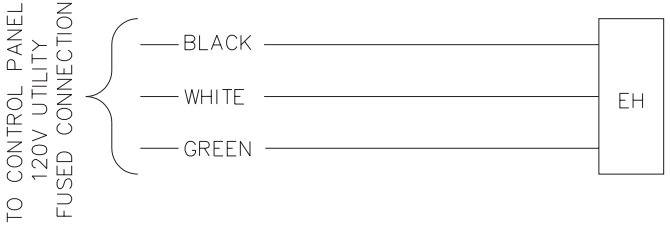
LEGEND

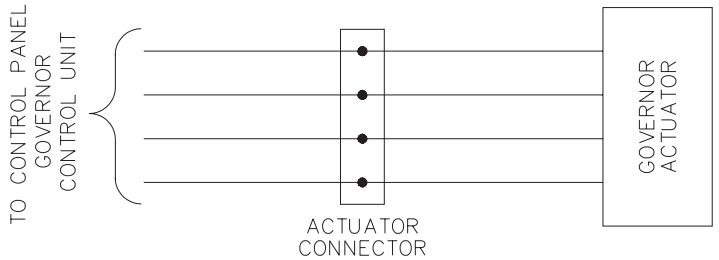
CC – CONTROL CONTACTOR
DIS – DISTRIBUTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD – GROUND
LOS – LOW OIL PRESSURE SWITCH
SM – STARTER MOTOR
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR

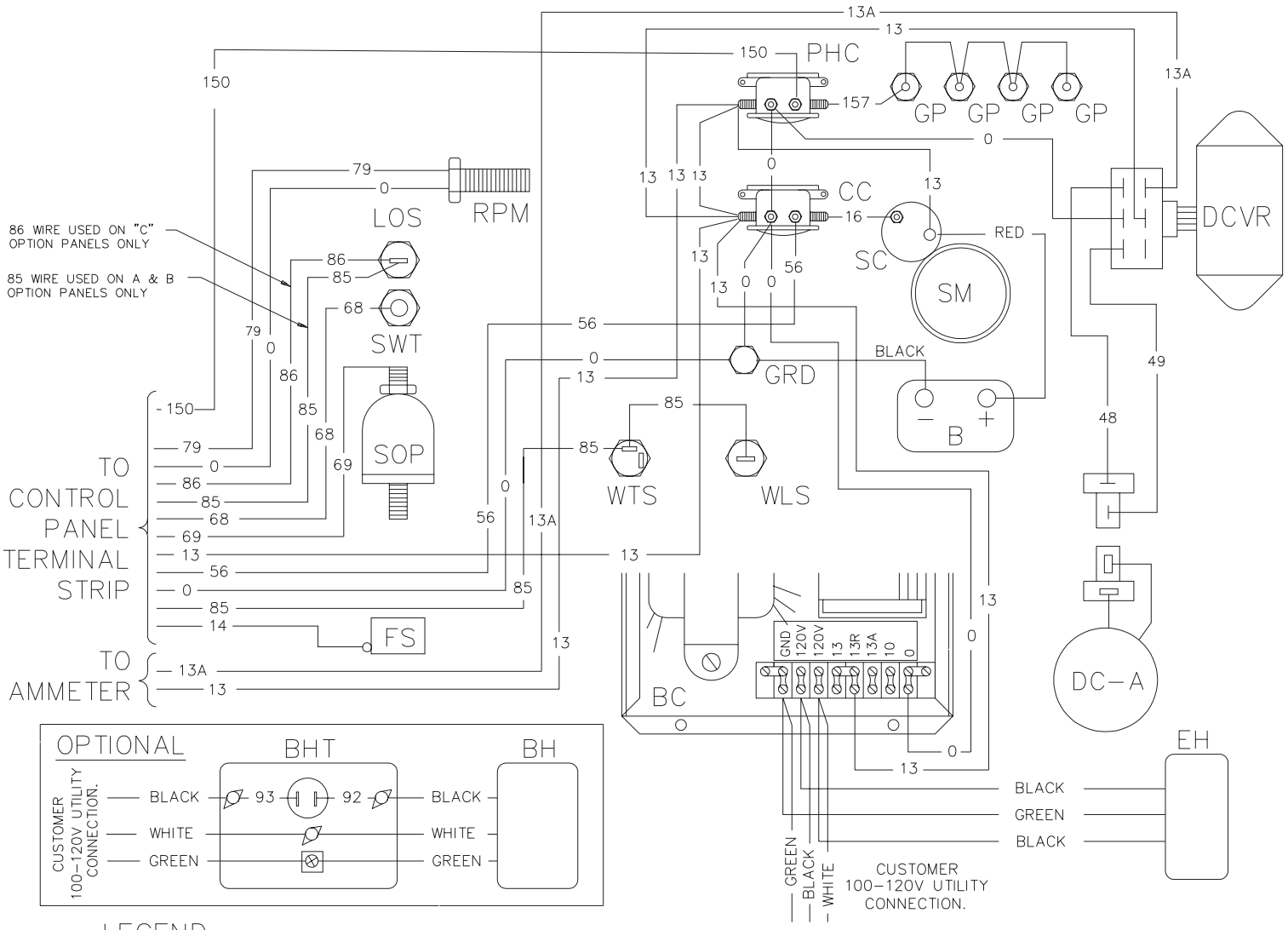


LEGEND

CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD – GROUND
ISC – IGNITION SYSTEM CONTACT
LOS – LOW OIL SWITCH
SM – STARTER MOTOR
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SWITCH



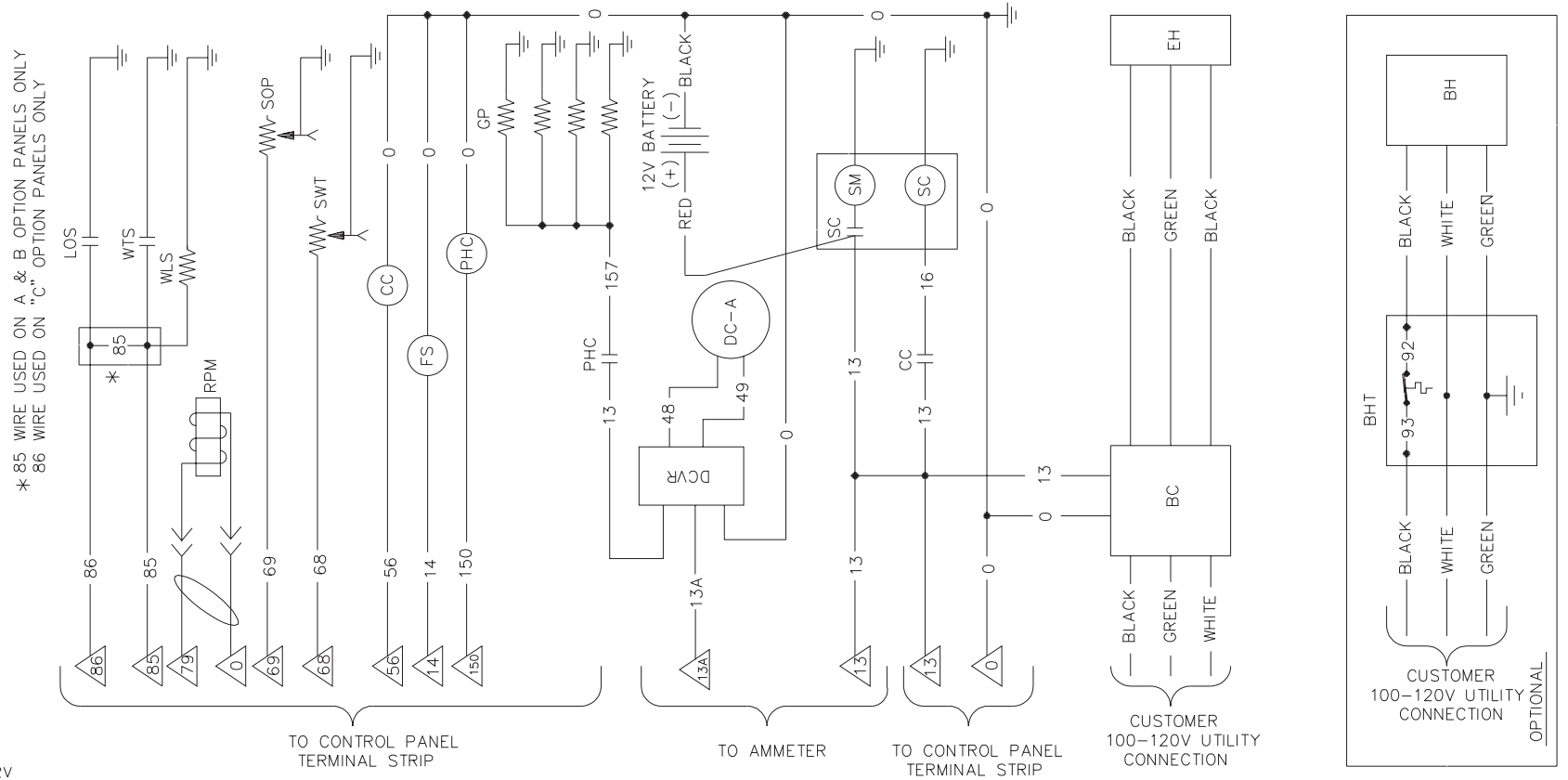




LEGEND

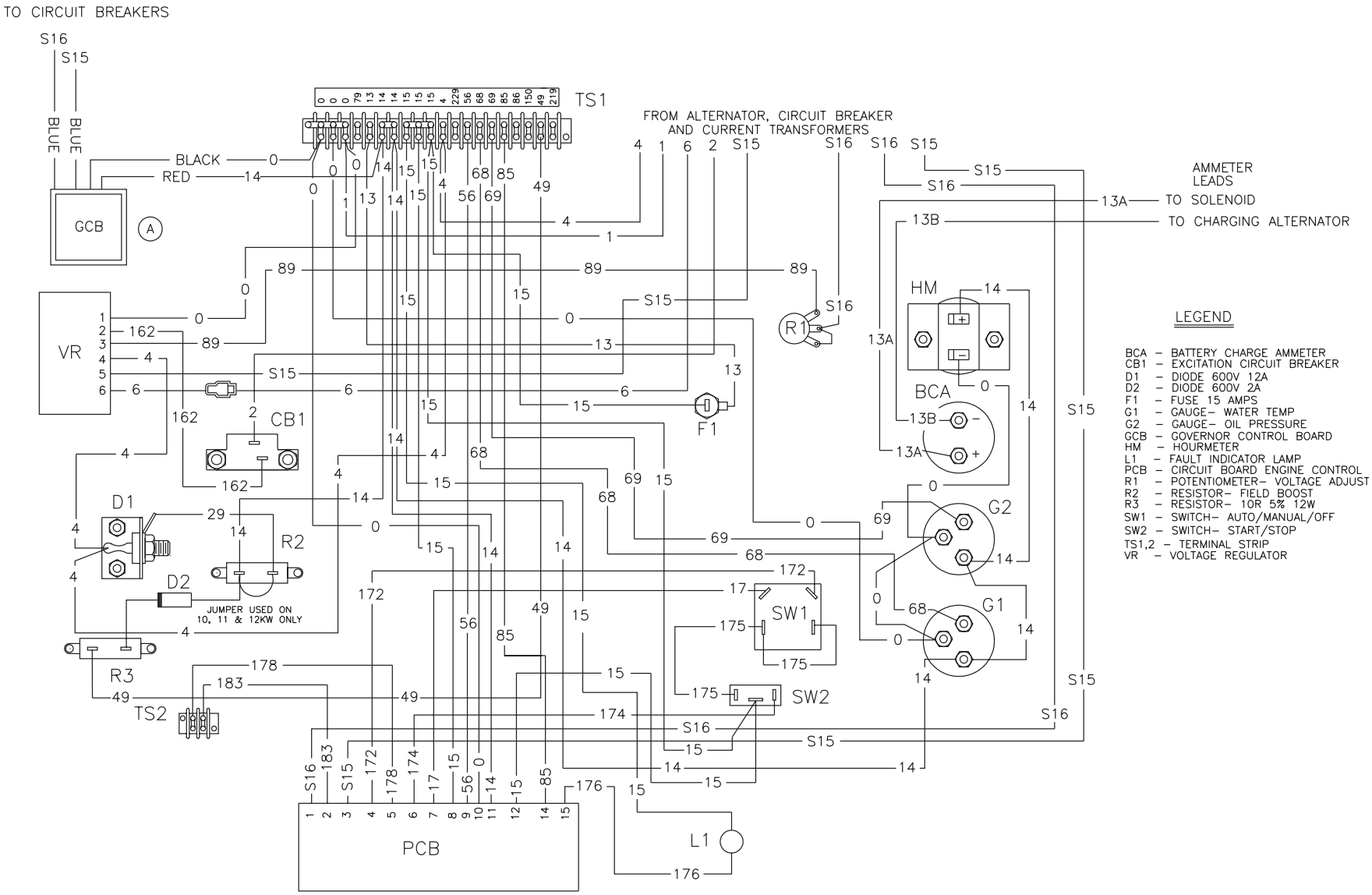
B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER THERMOSTAT
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC– GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH

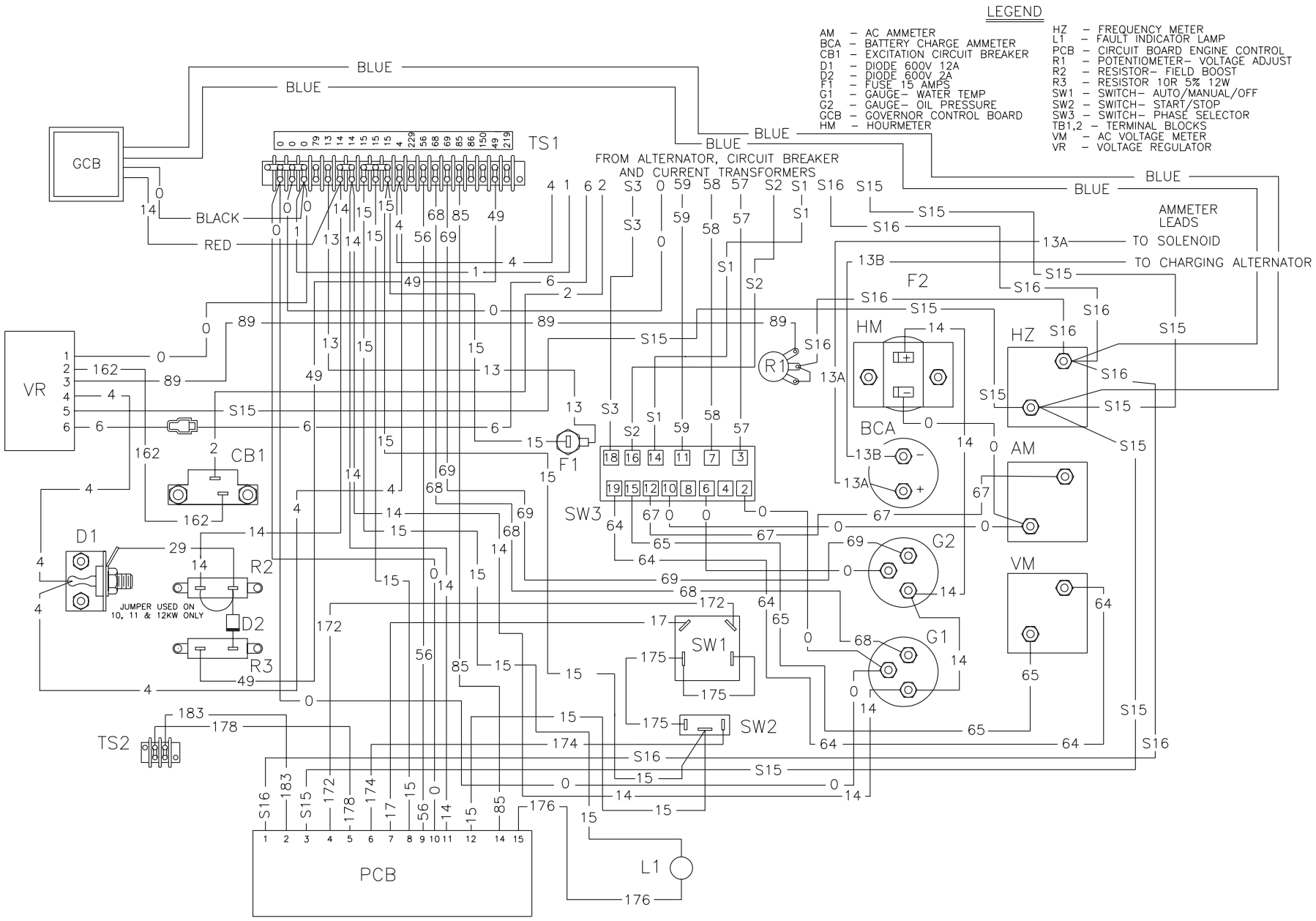
NOTE:
SEE DRAWING No. 60804 FOR THROTTLE POSITIONER INFORMATION.

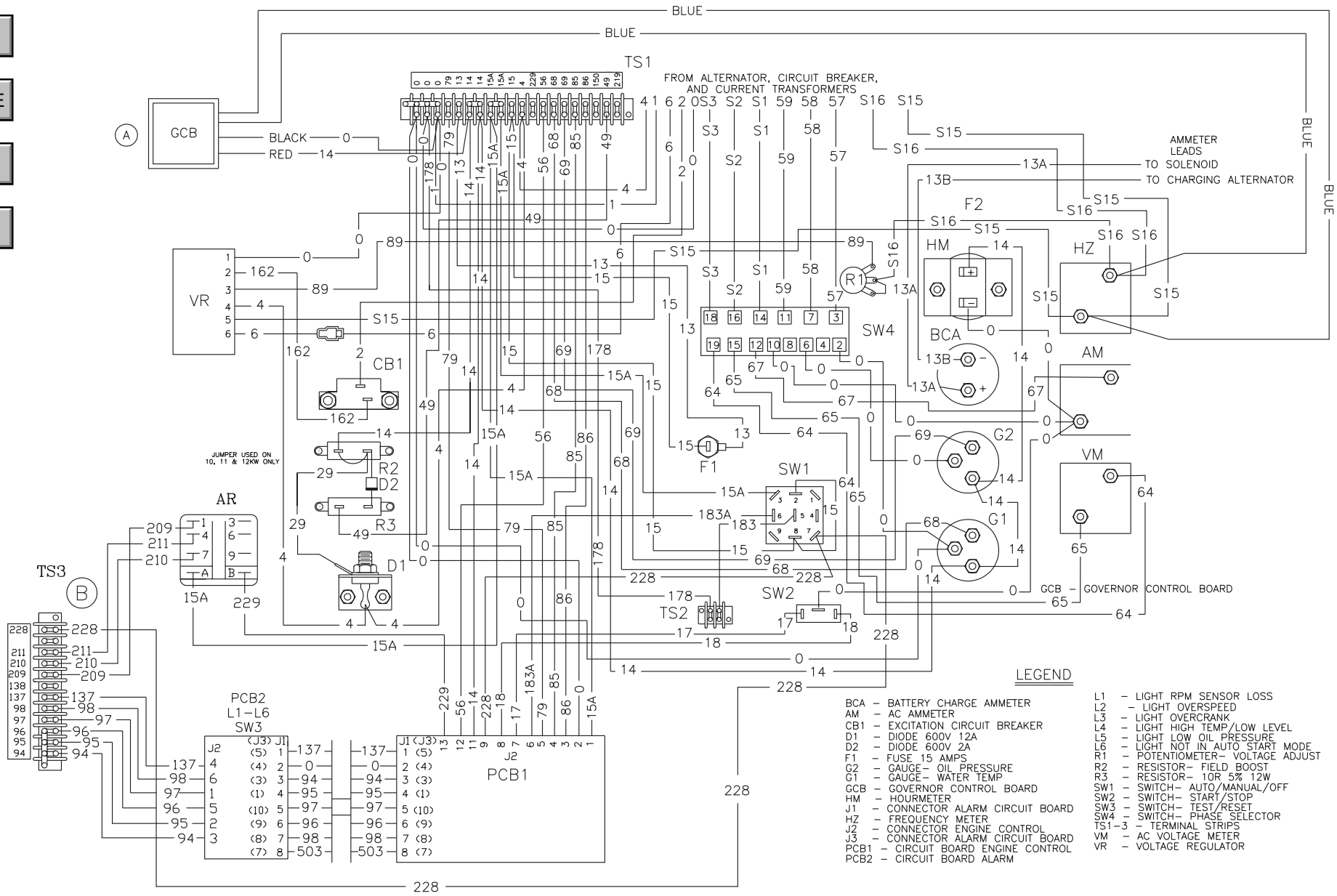


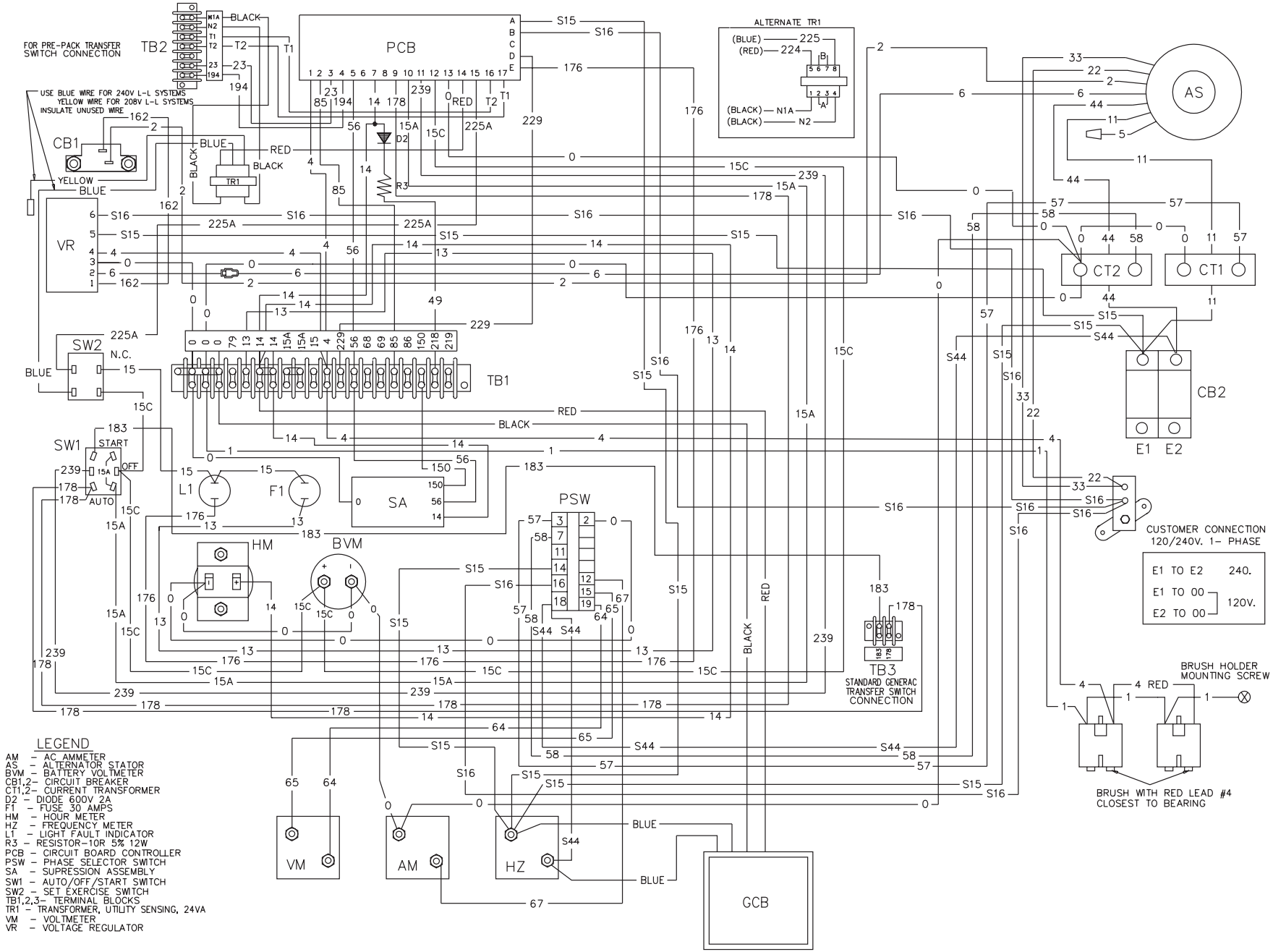
LEGEND

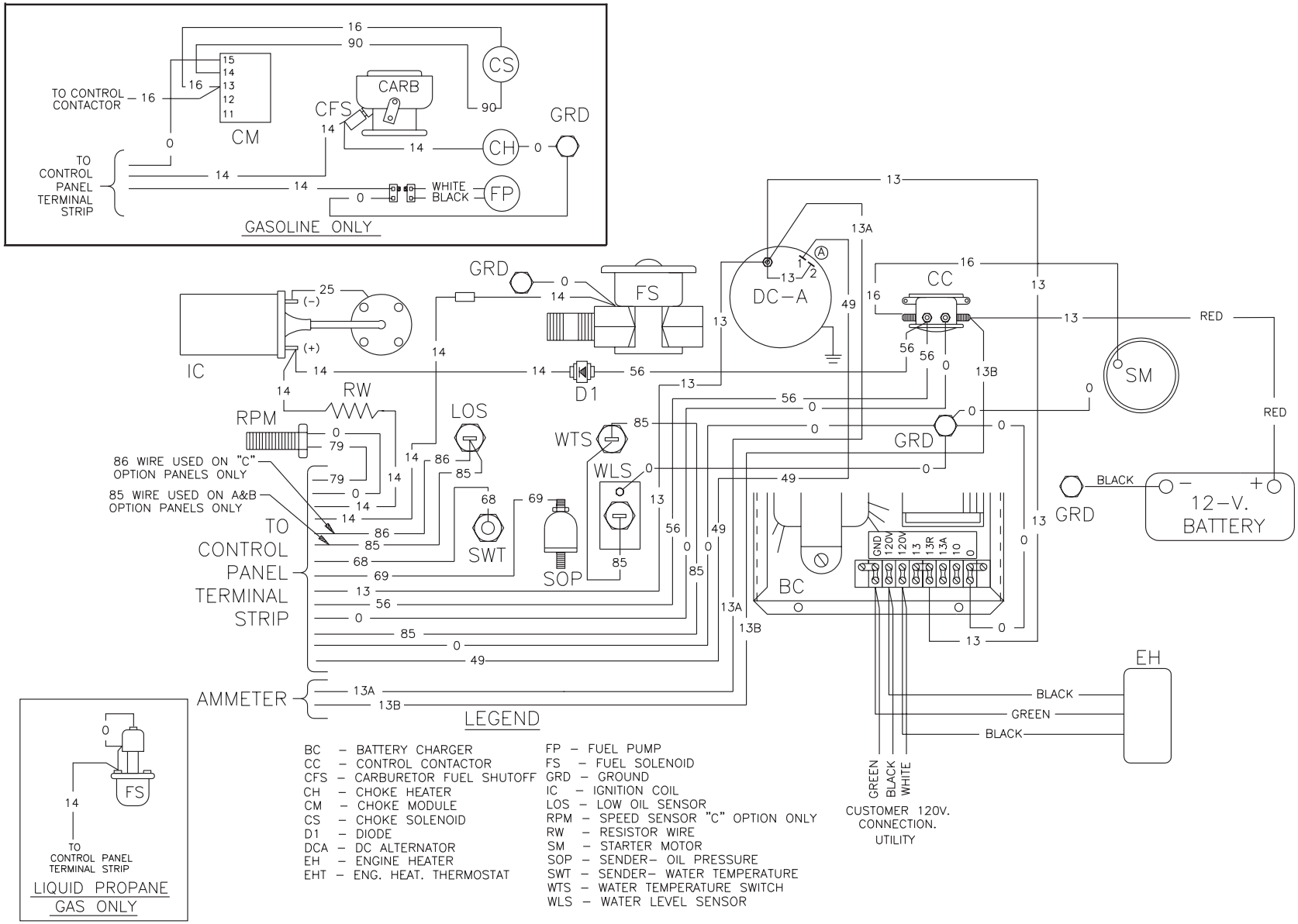
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

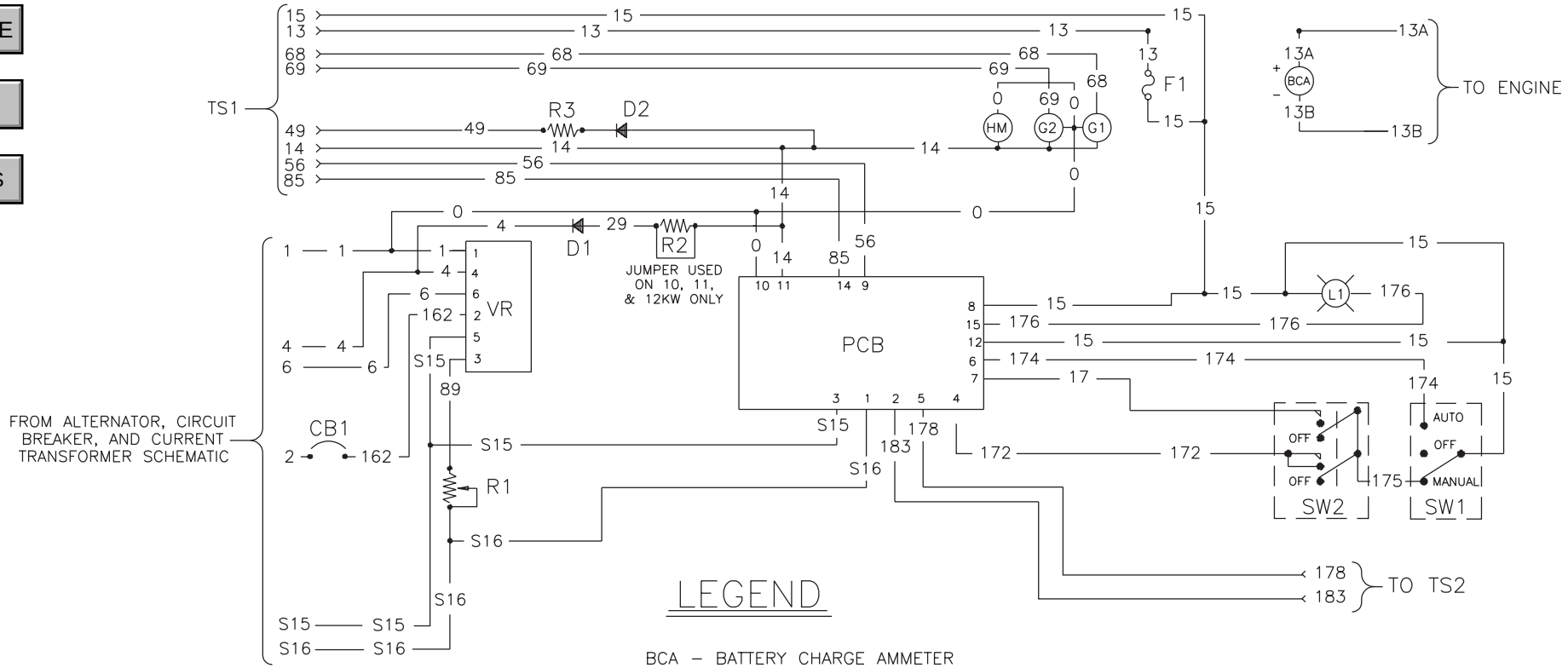

TO CIRCUIT BREAKERS
S16
S15
BLUE
BLUE
BLACK
RED
GCB
A
TS1
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
VR
CB1
D1
D2
R2
R3
JUMPER USED ON 10, 11 & 12KW ONLY
TS2
PCB
L1
R1
F1
HM
BCA
G1
G2
SW1
SW2
AMMETER LEADS
13A TO SOLENOID
13B TO CHARGING ALTERNATOR
LEGEND
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
D2 – DIODE 600V 2A
F1 – FUSE 15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
L1 – FAULT INDICATOR LAMP
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
R3 – RESISTOR– 10R 5% 12W
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS1,2 – TERMINAL STRIP
VR – VOLTAGE REGULATOR


LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
D2 – DIODE 600V 2A
F1 – FUSE 15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
R3 – RESISTOR 10R 5% 12W
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
GCB
TS1
TS2
PCB
VR
CB1
D1
D2
R1
R2
R3
F1
F2
SW1
SW2
SW3
HM
HZ
BCA
AM
VM
G1
G2
L1
BLUE
BLACK
RED
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
AMMETER LEADS
13A – TO SOLENOID
13B – TO CHARGING ALTERNATOR
JUMPER USED ON 10, 11 & 12KW ONLY


BLUE
BLUE
TS1
FROM ALTERNATOR, CIRCUIT BREAKER, AND CURRENT TRANSFORMERS
GCB
BLACK
RED
AMMETER LEADS
TO SOLENOID
TO CHARGING ALTERNATOR
F2
HM
HZ
VR
CB1
SW4
BCA
AM
R1
R2
D2
R3
D1
F1
SW1
G2
G1
VM
AR
JUMPER USED ON 10, 11 & 12KW ONLY
TS3
TS2
SW2
GCB – GOVERNOR CONTROL BOARD
PCB2 L1–L6 SW3
PCB1
LEGEND
BCA – BATTERY CHARGE AMMETER
AM – AC AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
D2 – DIODE 600V 2A
F1 – FUSE 15 AMPS
G2 – GAUGE– OIL PRESSURE
G1 – GAUGE– WATER TEMP
GCB – GOVERNOR CONTROL BOARD
HM – HOURMETER
J1 – CONNECTOR ALARM CIRCUIT BOARD
HZ – FREQUENCY METER
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – CIRCUIT BOARD ALARM
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTO START MODE
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
R3 – RESISTOR– 10R 5% 12W
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIPS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR

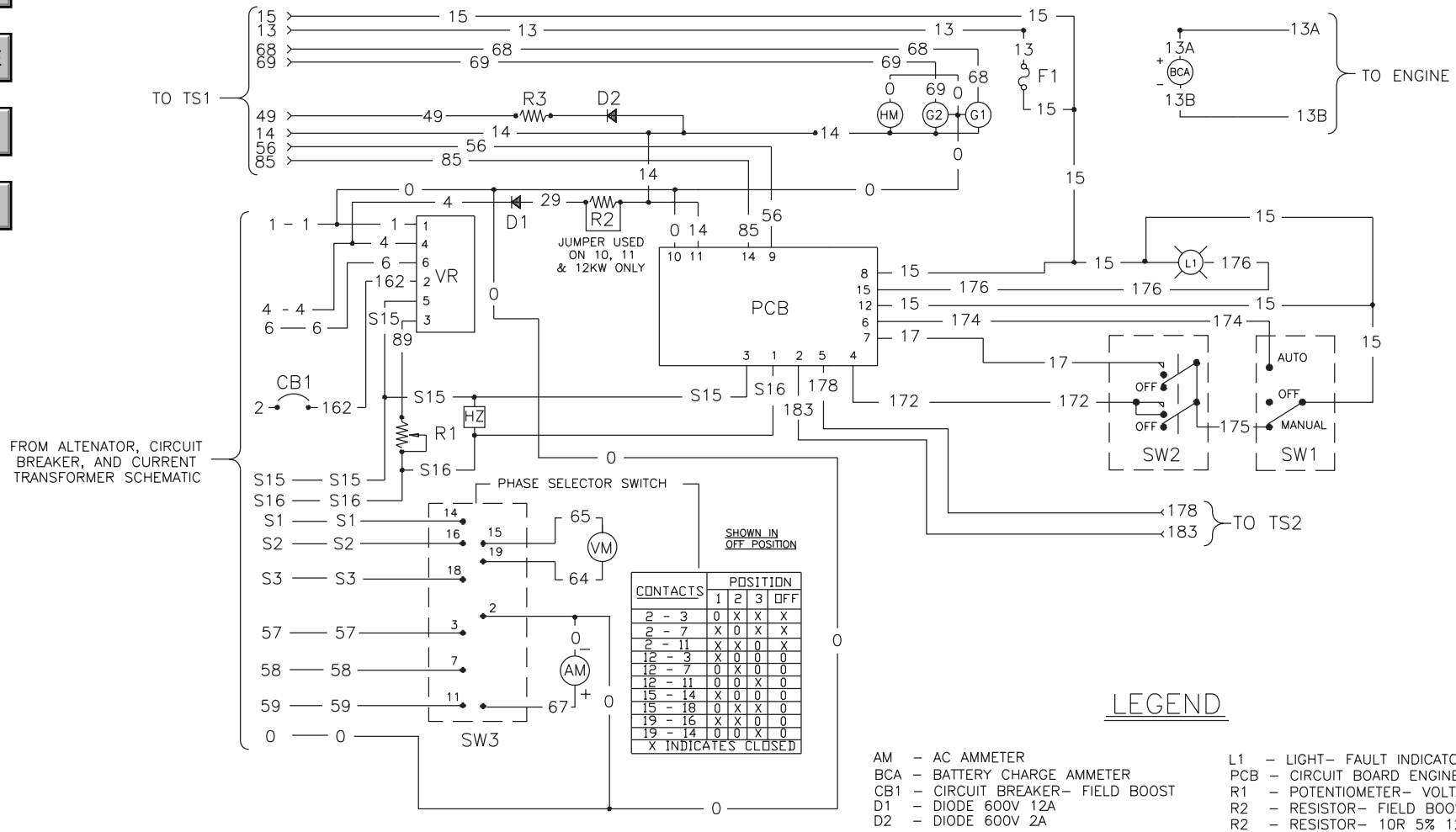

FOR PRE-PACK TRANSFER SWITCH CONNECTION
TB2
PCB
ALTERNATE TR1
USE BLUE WIRE FOR 240V L-L SYSTEMS
YELLOW WIRE FOR 208V L-L SYSTEMS
INSULATE UNUSED WIRE
CB1
VR
SW2
N.C.
SW1
START
OFF
AUTO
L1
F1
SA
HM
BVM
PSW
TB1
TB3
STANDARD GENERAC TRANSFER SWITCH CONNECTION
AS
CT2
CT1
CB2
E1 E2
CUSTOMER CONNECTION
120/240V. 1- PHASE
E1 TO E2 240.
E1 TO 00 120V.
E2 TO 00
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
VM
AM
HZ
GCB
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BVM – BATTERY VOLTMETER
CB1,2– CIRCUIT BREAKER
CT1,2– CURRENT TRANSFORMER
D2 – DIODE 600V 2A
F1 – FUSE 30 AMPS
HM – HOUR METER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
R3 – RESISTOR–10R 5% 12W
PCB – CIRCUIT BOARD CONTROLLER
PSW – PHASE SELECTOR SWITCH
SA – SUPRESSION ASSEMBLY
SW1 – AUTO/OFF/START SWITCH
SW2 – SET EXERCISE SWITCH
TB1,2,3– TERMINAL BLOCKS
TR1 – TRANSFORMER, UTILITY SENSING, 24VA
VM – VOLTMETER
VR – VOLTAGE REGULATOR


TO CONTROL CONTACTOR
CM
CARB
CFS
CS
CH
GRD
FP
WHITE
BLACK
TO CONTROL PANEL TERMINAL STRIP
GASOLINE ONLY
IC
FS
DC–A
CC
SM
RED
D1
RW
RPM
LOS
WTS
WLS
SWT
SOP
GRD
BLACK
12–V. BATTERY
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A&B OPTION PANELS ONLY
TO CONTROL PANEL TERMINAL STRIP
BC
GND
120V
13
13R
13A
10
EH
BLACK
GREEN
BLACK
GREEN
BLACK
WHITE
CUSTOMER 120V. CONNECTION.
UTILITY
AMMETER
LEGEND
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL SENSOR
RPM – SPEED SENSOR "C" OPTION ONLY
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR
FS
TO CONTROL PANEL TERMINAL STRIP
LIQUID PROPANE GAS ONLY



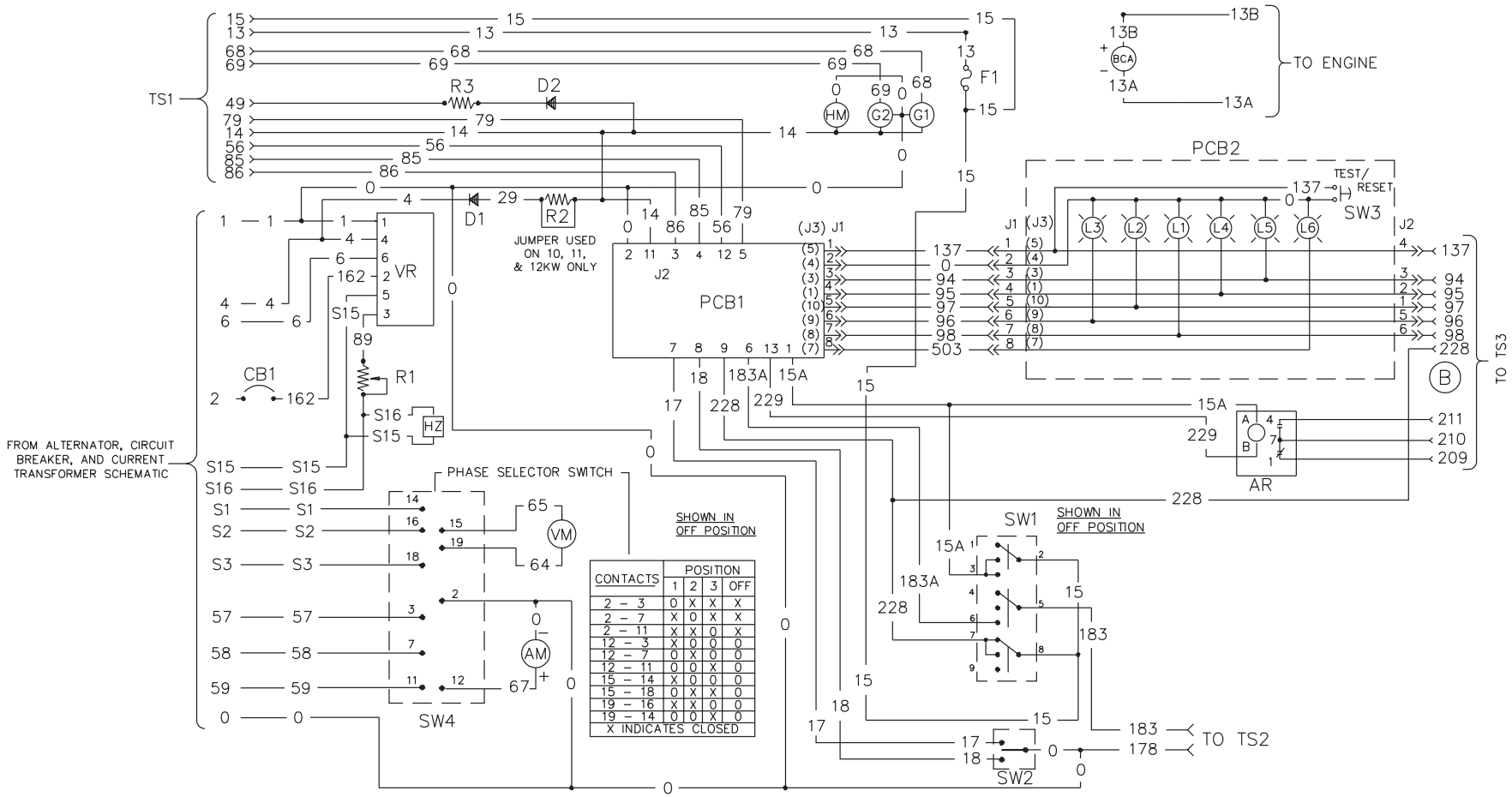
LEGEND

BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE 600V 2A
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
R3 – RESISTOR– 10R 5% 12W
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS1,2 – TERMINAL STRIP
VR – VOLTAGE REGULATOR



LEGEND

AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE 600V 2A
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
R2 – RESISTOR– 10R 5% 12W
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TS1,2 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR



CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	0	X	X	X
2 – 7	X	0	X	X
2 – 11	X	X	0	X
12 – 3	X	0	0	0
12 – 7	0	X	0	0
12 – 11	0	0	X	0
15 – 14	X	0	0	0
15 – 18	0	X	X	0
19 – 16	X	X	0	0
19 – 14	0	0	X	0

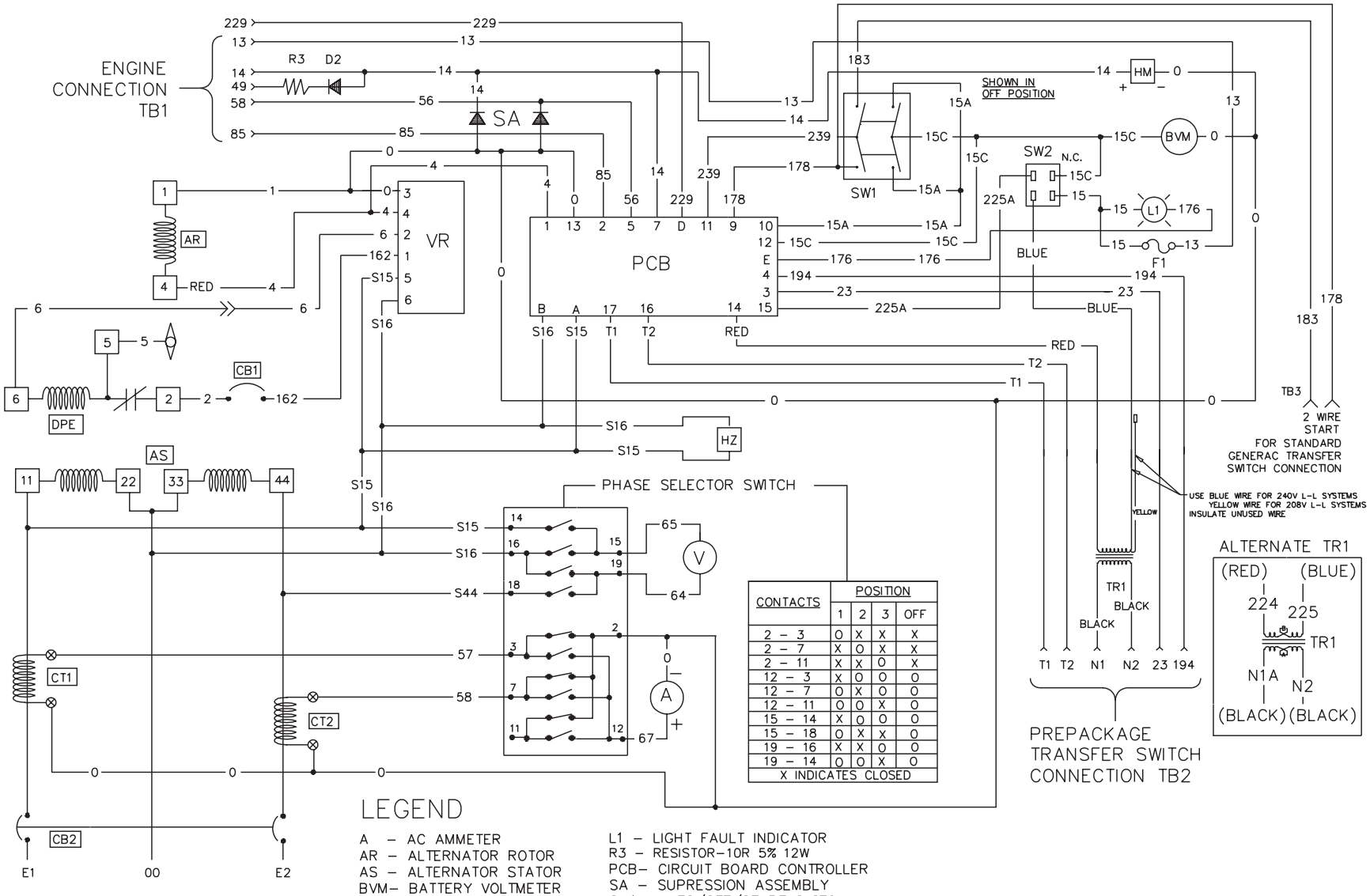
X INDICATES CLOSED

LEGEND

AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE 600V 2A
F1 – FUSE 15A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER

G1 – GAUGE– WATER TEMPERATURE
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB1– CIRCUIT BOARD ENGINE CONTROL

PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
R3 – RESISTOR– 10R 5% 12W
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR



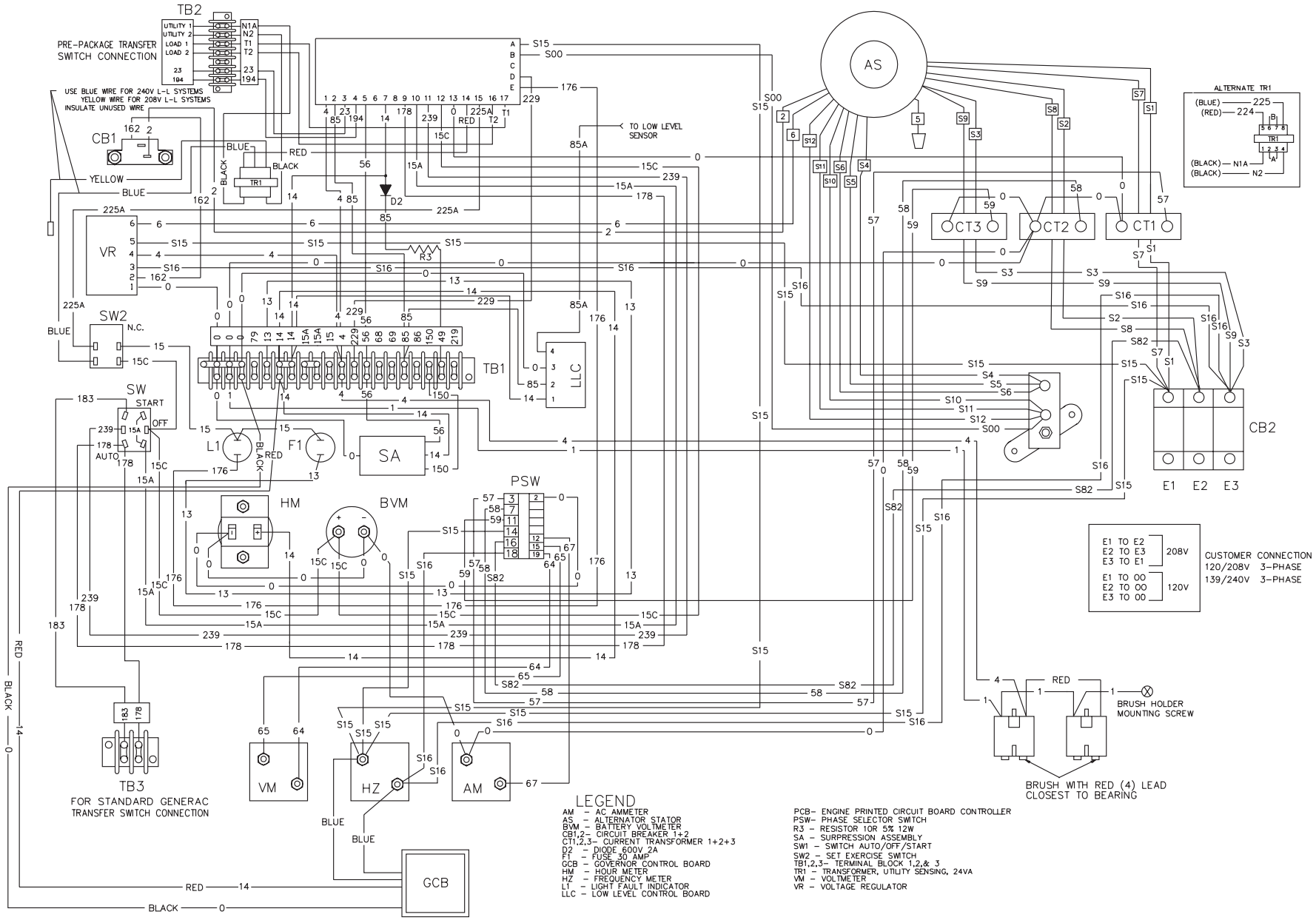
CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	O	X	X	X
2 – 7	X	O	X	X
2 – 11	X	X	O	X
12 – 3	X	O	O	O
12 – 7	O	X	O	O
12 – 11	O	O	X	O
15 – 14	X	O	O	O
15 – 18	O	X	X	O
19 – 16	X	X	O	O
19 – 14	O	O	X	O

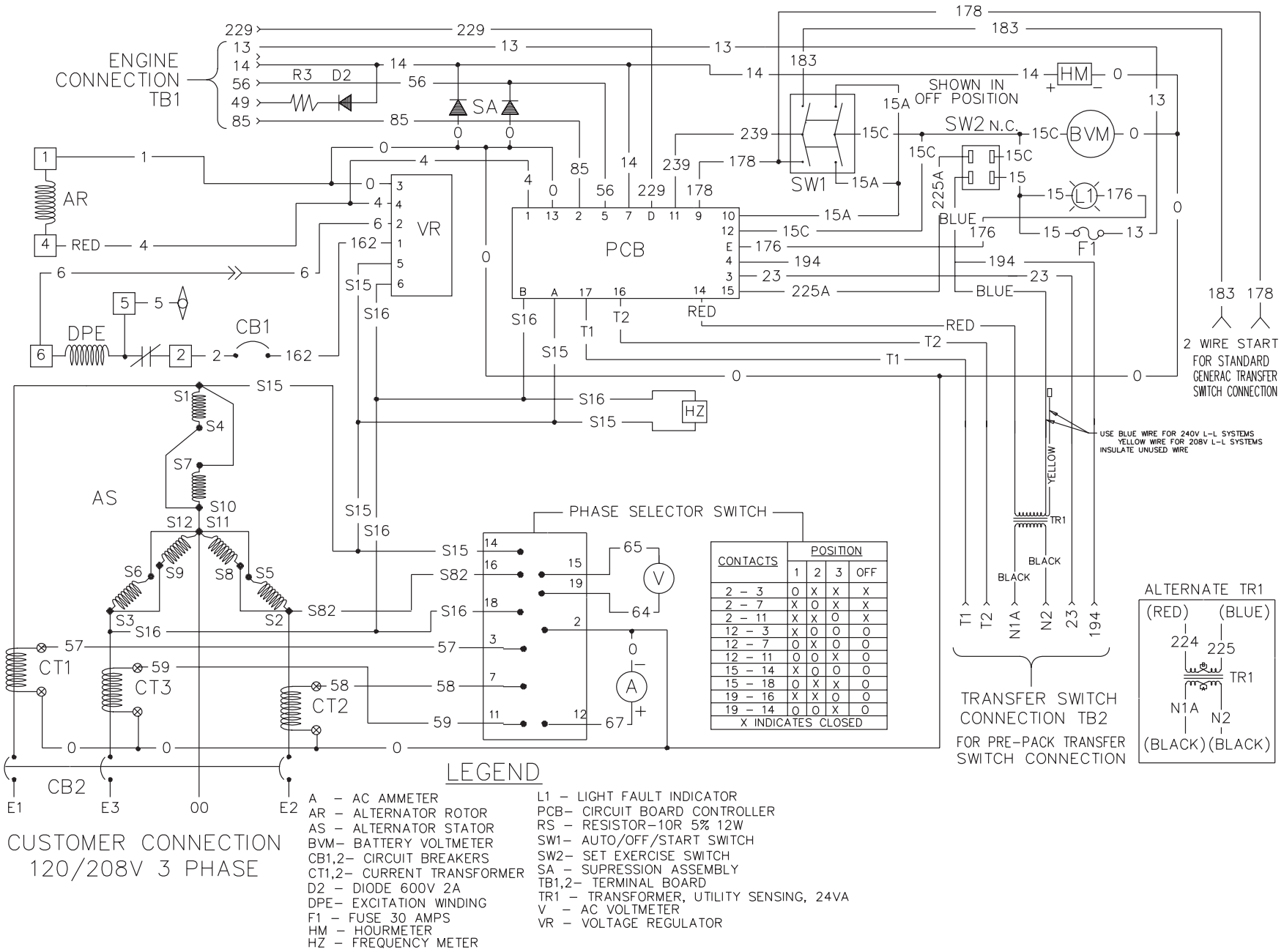
X INDICATES CLOSED

CUSTOMER CONNECTION
120/240V 1–PHASE

LEGEND

A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BVM– BATTERY VOLTMETER
CB1,2– CIRCUIT BREAKERS
CT1,2– CURRENT TRANSFORMER
D2 – DIODE 600V 2A
DPE– EXCITATION WINDING
F1 – FUSE 30 AMPS
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
R3 – RESISTOR–10R 5% 12W
PCB– CIRCUIT BOARD CONTROLLER
SA – SUPRESSION ASSEMBLY
SW1– AUTO/OFF/START SWITCH
SW2– SET EXERCISE SWITCH
TB1,2,3– TERMINAL BOARDS
V – AC VOLTMETER
VR – VOLTAGE REGULATOR
TR1–TRANSFORMER, UTILITY SENSING


TB2
PRE-PACKAGE TRANSFER SWITCH CONNECTION
UTILITY 1
UTILITY 2
LOAD 1
LOAD 2
N1A
N2
T1
T2
USE BLUE WIRE FOR 240V L-L SYSTEMS
YELLOW WIRE FOR 208V L-L SYSTEMS
INSULATE UNUSED WIRE
CB1
TR1
D2
VR
R3
SW2
N.C.
SW
START
OFF
AUTO
L1
F1
SA
TB1
LLC
HM
BVM
PSW
AS
CT3
CT2
CT1
ALTERNATE TR1
(BLUE) 225
(RED) 224
(BLACK) N1A
(BLACK) N2
CB2
E1 E2 E3
TO LOW LEVEL SENSOR
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO OO
E2 TO OO
E3 TO OO
120V
CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING
TB3
FOR STANDARD GENERAC TRANSFER SWITCH CONNECTION
VM
HZ
AM
GCB
LEGEND
AM - AC AMMETER
AS - ALTERNATOR STATOR
BVM - BATTERY VOLTMETER
CB1,2- CIRCUIT BREAKER 1+2
CT1,2,3- CURRENT TRANSFORMER 1+2+3
D2 - DIODE 600V 2A
F1 - FUSE 30 AMP
GCB - GOVERNOR CONTROL BOARD
HM - HOUR METER
HZ - FREQUENCY METER
LT - LIGHT FAULT INDICATOR
LLC - LOW LEVEL CONTROL BOARD
PCB- ENGINE PRINTED CIRCUIT BOARD CONTROLLER
PSW- PHASE SELECTOR SWITCH
R3 - RESISTOR 10R 5% 12W
SA - SURPRESSION ASSEMBLY
SW1 - SWITCH AUTO/OFF/START
SW2 - SET EXERCISE SWITCH
TB1,2,3- TERMINAL BLOCK 1,2,& 3
TR1 - TRANSFORMER, UTILITY SENSING, 24VA
VM - VOLTMETER
VR - VOLTAGE REGULATOR



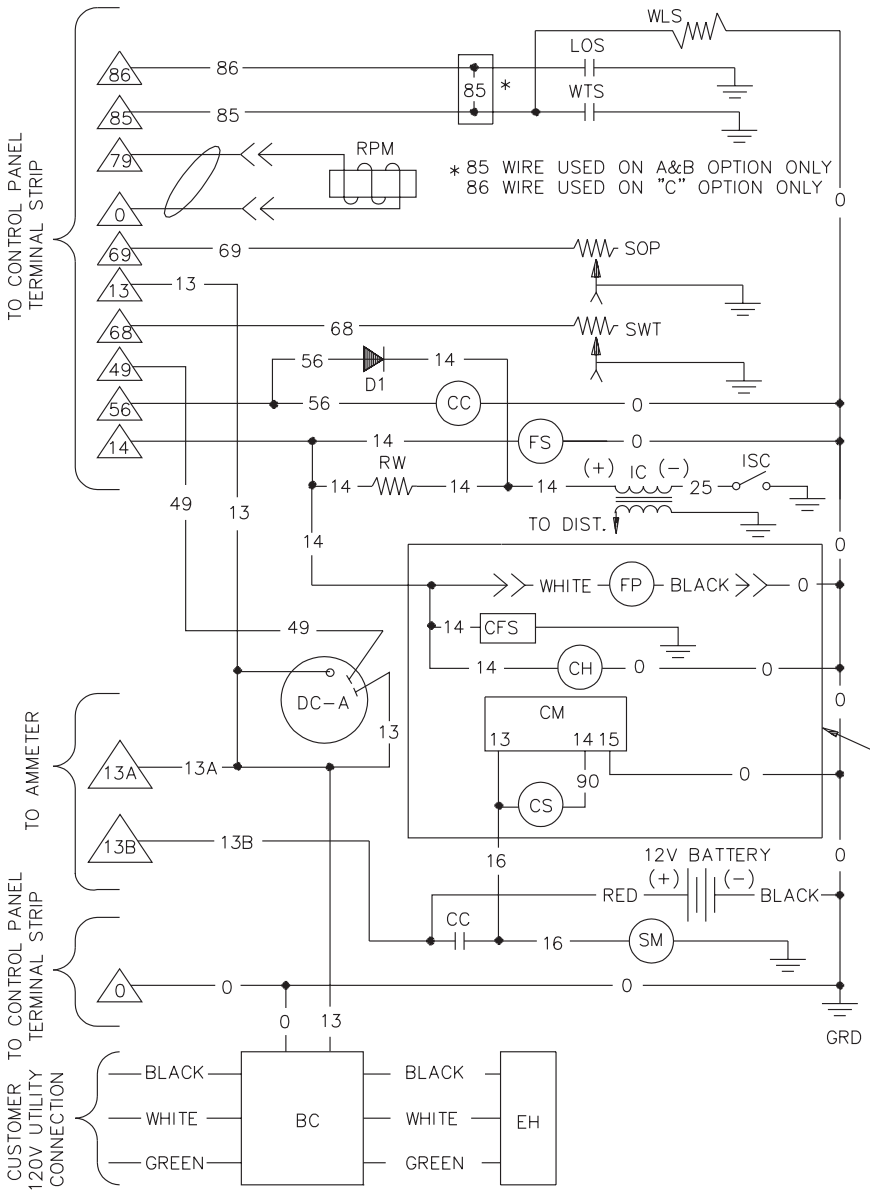
CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	0	X	X	X
2 – 7	X	0	X	X
2 – 11	X	X	0	X
12 – 3	X	0	0	0
12 – 7	0	X	0	0
12 – 11	0	0	X	0
15 – 14	X	0	0	0
15 – 18	0	X	X	0
19 – 16	X	X	0	0
19 – 14	0	0	X	0

X INDICATES CLOSED

CUSTOMER CONNECTION
120/208V 3 PHASE

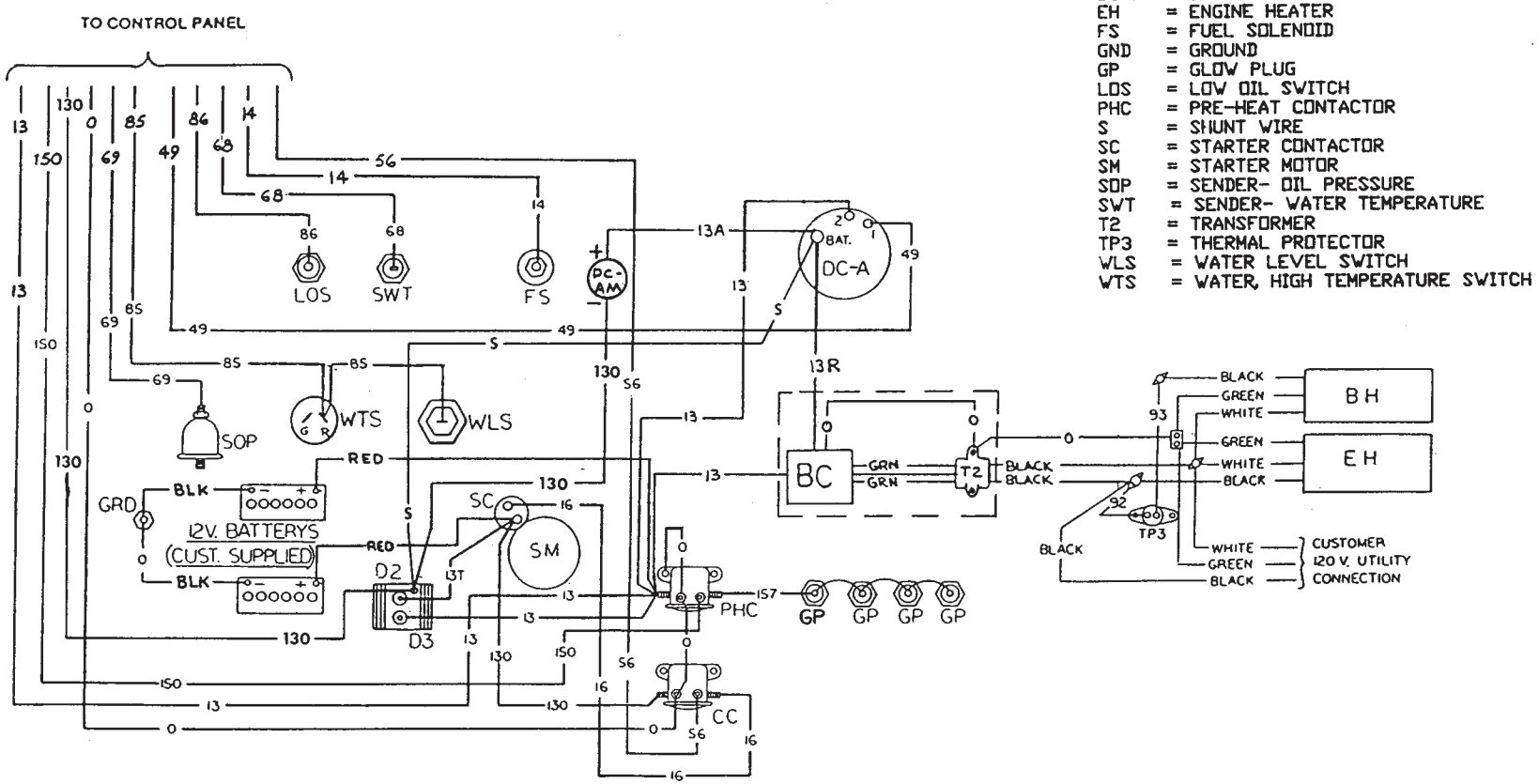
LEGEND

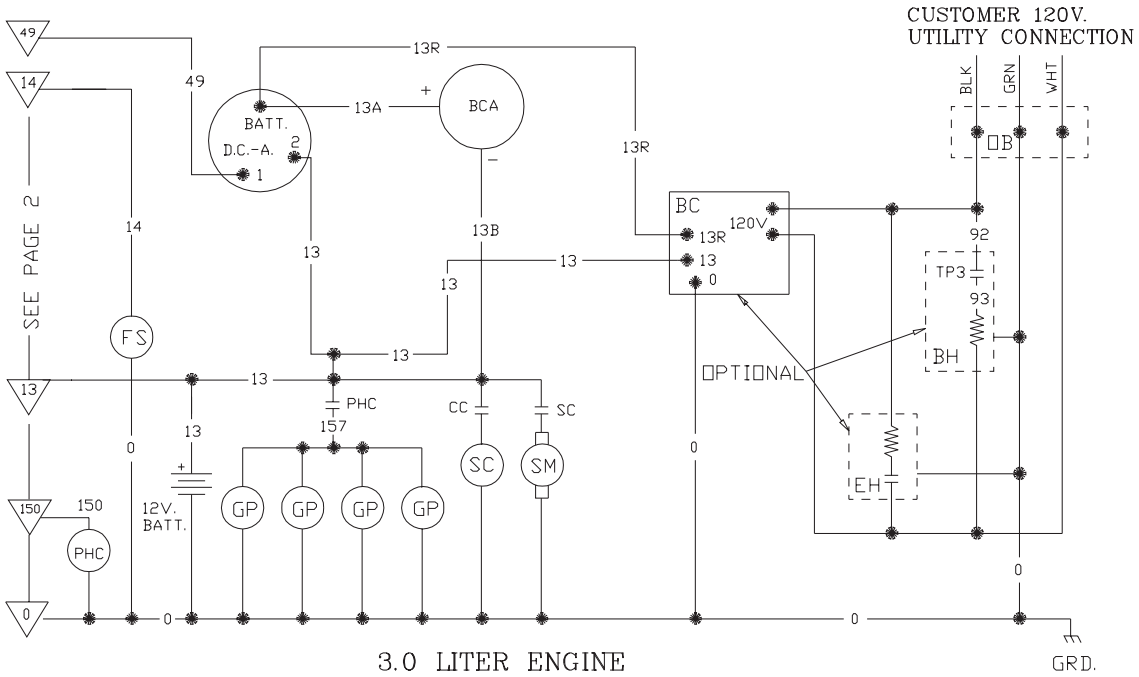
A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BVM– BATTERY VOLTMETER
CB1,2– CIRCUIT BREAKERS
CT1,2– CURRENT TRANSFORMER
D2 – DIODE 600V 2A
DPE– EXCITATION WINDING
F1 – FUSE 30 AMPS
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
PCB– CIRCUIT BOARD CONTROLLER
RS – RESISTOR–10R 5% 12W
SW1– AUTO/OFF/START SWITCH
SW2– SET EXERCISE SWITCH
SA – SUPRESSION ASSEMBLY
TB1,2– TERMINAL BOARD
TR1 – TRANSFORMER, UTILITY SENSING, 24VA
V – AC VOLTMETER
VR – VOLTAGE REGULATOR



LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DP – DISTRIBUTOR POINTS
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
FP – FUEL PUMP
GRD – GROUND
IC – IGNITION COIL
ISC – IGNITION SYSTEM CONTACT
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR FOR "C" OPTION ONLY
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR


TO CONTROL PANEL
LEGEND
BC = BATTERY CHARGER 12V
BH = BATTERY HEATER
CC = CRANKING CONTACTOR
D2,D3 = DIODE, BATTERY ISOLATOR
DC-A = DC ALTERNATOR
DC-AM = DC- AMMETER (CONTROL PANEL)
EH = ENGINE HEATER
FS = FUEL SOLENOID
GND = GROUND
GP = GLOW PLUG
LOS = LOW OIL SWITCH
PHC = PRE-HEAT CONTACTOR
S = SHUNT WIRE
SC = STARTER CONTACTOR
SM = STARTER MOTOR
SOP = SENDER- OIL PRESSURE
SWT = SENDER- WATER TEMPERATURE
T2 = TRANSFORMER
TP3 = THERMAL PROTECTOR
WLS = WATER LEVEL SWITCH
WTS = WATER, HIGH TEMPERATURE SWITCH
LOS
SWT
FS
DC-AM
DC-A
BAT.
WTS
WLS
SOP
BC
T2
TP3
SC
SM
D2
D3
PHC
CC
GP
GRD
12V. BATTERYS
(CUST. SUPPLIED)
BLK
RED
GRN
BLACK
WHITE
GREEN
BH
EH
CUSTOMER
120 V. UTILITY
CONNECTION



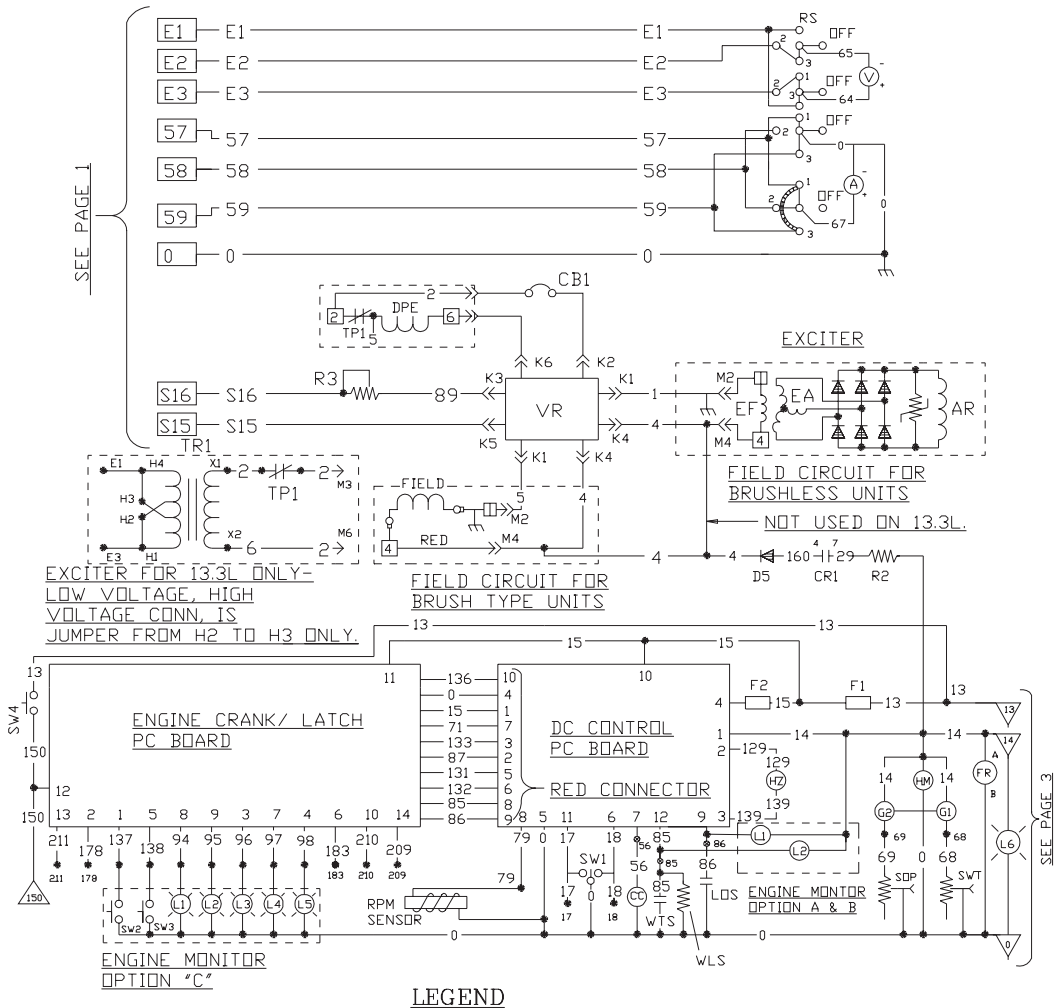
3.0 LITER ENGINE
W/ SINGLE 12V. BATTERY

LEGEND

BC = BATTERY CHARGER 12V
BH = BATTERY HEATER
CC = CRANKING CONTACTOR
D2,D3 = DIODE, BATTERY ISOLATOR
DC-A = DC ALTERNATOR
DC-AM = DC- AMMETER (CONTROL PANEL)
EH = ENGINE HEATER
FS = FUEL SOLENOID
GND = GROUND
GP = GLOW PLUG
LOS = LOW OIL SWITCH
PHC = PRE-HEAT CONTACTOR
S = SHUNT WIRE
SC = STARTER CONTACTOR
SM = STARTER MOTOR
SOP = SENDER- OIL PRESSURE
SWT = SENDER- WATER TEMPERATURE
T2 = TRANSFORMER
TP3 = THERMAL PROTECTOR
WLS = WATER LEVEL SWITCH
WTS = WATER, HIGH TEMPERATURE SWITCH

LEGEND

AIH = AIR INTAKE HEATER
BC = BATTERY CHARGER
BCA = DC AMMETER- BATTERY CHARGE
BH = BATTERY HEATER
CB7 = CIRCUIT BREAKER- 10A
CC = CONTROL CONTACTER- ENGINE CRANKING
CONV = 24- 12V DC CONVERTOR
CR2 = CONTROL RELAY- 24V
D2 = DIODE- 50A, 200V
D3 = DIODE- 50A, 200V
DC-A = DC ALTERNATOR
EH = ENGINE HEATER
FS = FUEL SOLENOID
FR = RELAY- FIELD BOOST
GP = GLOW PLUG
GRD = GROUND
HR = HEATER RELAY
OB = OUTLET BOX
PHC = PRE-HEAT CONTACTER
SC = STARTER CONTACTOR
SM = STARTER MOTOR
TP1 = THERMOSAT- ENGINE HEATER
TP3 = BATTERY HEATER THERMOSTAT
TR1 = TRANSFORMER- 500VA 240/480- 120V



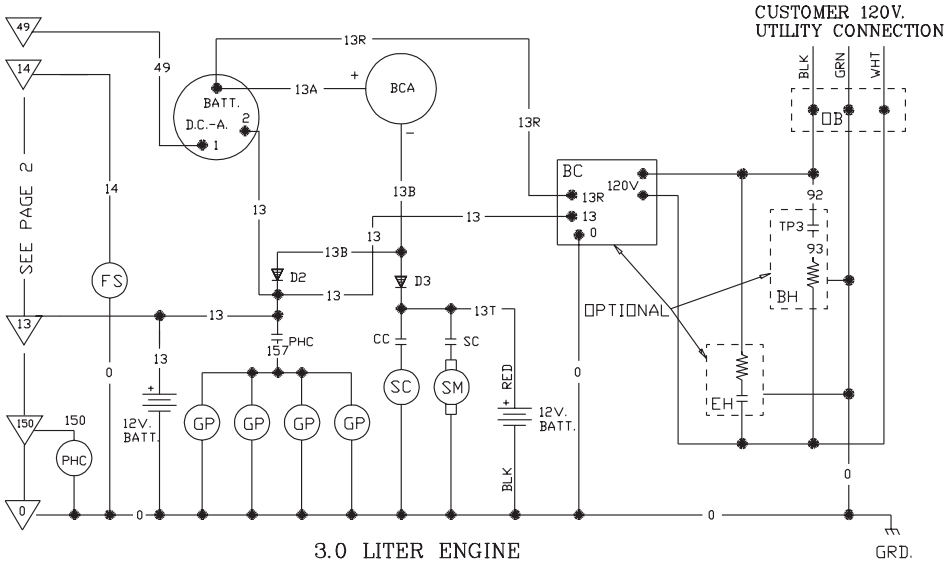
LEGEND

A = AC AMMETER- ALTERNATOR OUT
AR = ALTERNATER ROTOR
CB1 = FIELD CIRCUIT BREAKER
CC = CRANKING CONTACTOR
D5 = DIODE- FIELD BOOST 12A, 600V
DPE = DISPLACED PHASE EXCITATION
EA = EXCITER ARMATURE
EF = EXCITER FIELD
F1 = FUSE- 30 AMP
F2 = FUSE- 14 AMP
FR = RELAY, FIELD BOOST
G1 = GAUGE- WATER TEMPERATURE
G2 = GAUGE- OIL PRESSURE
HM = HOURMETER
HZ = FREQUENCY METER
L1 = LIGHT- LOW OIL PRESSURE
L2 = LIGHT- HIGH COOL. TEMPERATURE
L3 = LIGHT- OVERCRANK
L4 = LIGHT- OVERSPEED
L5 = LIGHT- RPM SENSOR LOSS
L6 = LIGHT- PANEL
LOS = LOW OIL PRESSURE SWITCH
R2 = RESISTOR- FIELD BOOST
R3 = POTENTIOMETER- VOLTAGE ADJUST 10 K-Ohms, 2 WATT
RS = ROTARY SWITCH
SDP = SENDER- OIL PRESSURE
SW1 = SWITCH- START/STOP
SW2 = SWITCH- TEST
SW3 = SWITCH- RESET
SW4 = PUSHBUTTON SWITCH, PRE-HEAT
SWT = SENDER- WATER TEMP.
TP1 = THERMAL PROTECTER- STATER
TR1 = TRANSFORMER- 500VA 240/480- 120V
V = AC VOLTMETER- ALTERNATOR OUT
VR = VOLTAGE REGULATER
WLS = WATER LEVEL SENSOR
WTS = SWITCH- HIGH WATER TEMPERATURE
⊠ = SCREW TERMINAL
◁○▷ = WIRE NUT

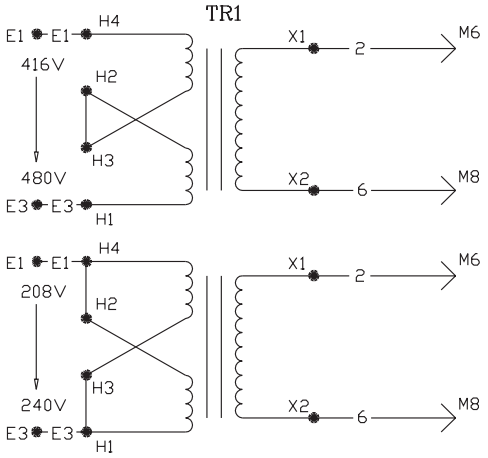
ALARM CONTACT WIRE NUMBERS

209- NORMALLY CLOSED
210- COMMON
211- NORMALLY OPEN

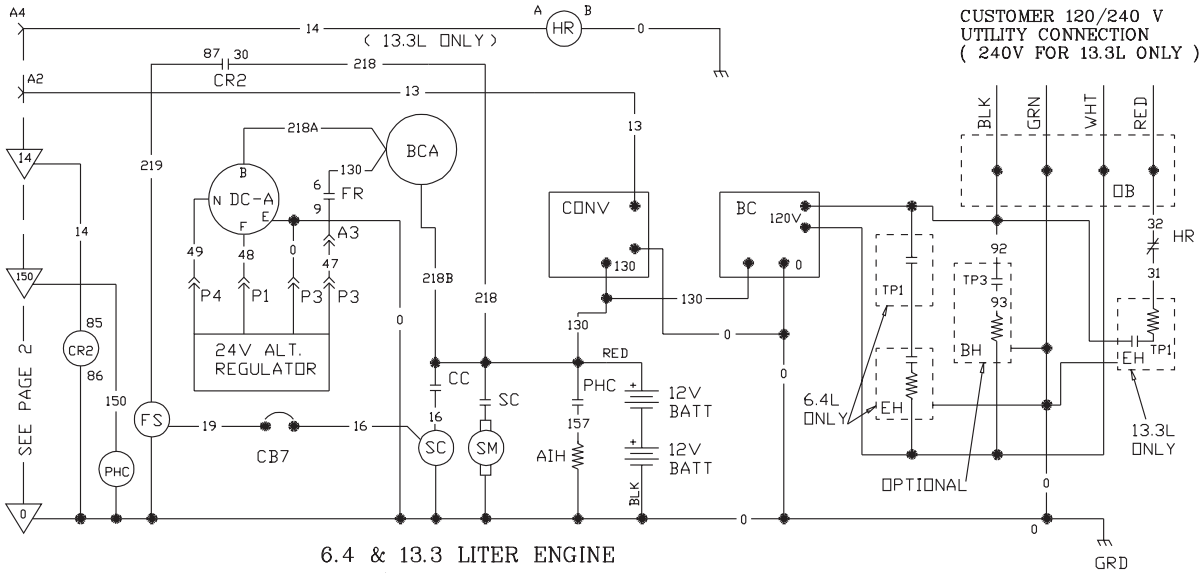
SCHEMATIC
DRAWING NUMBER 66144
SHEET 2 OF 4
ISSUED- 06/04/84
FILE #10-84.5



3.0 LITER ENGINE
W/ DUAL 12V BATTERIES



13.3 LITER ONLY

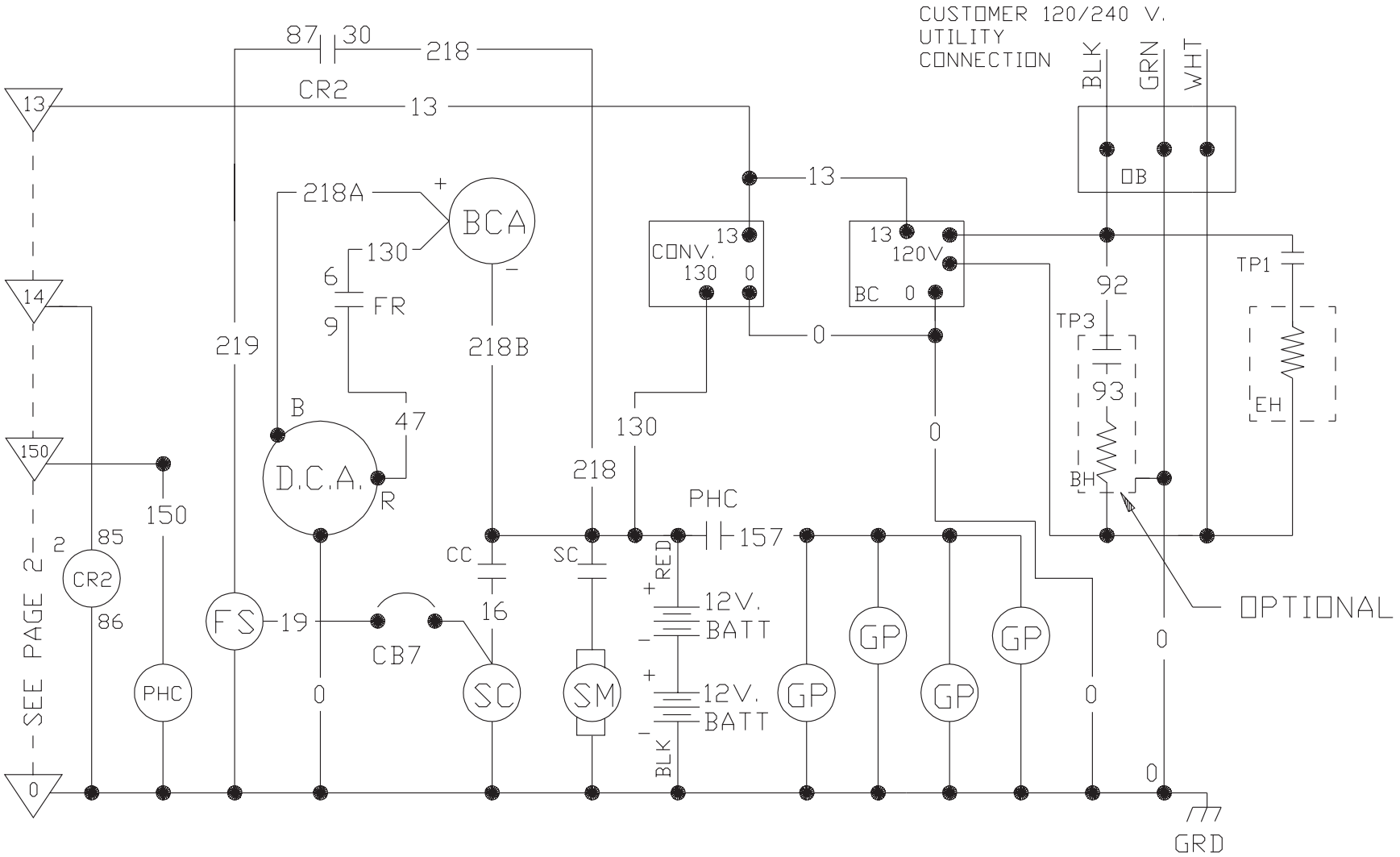


6.4 & 13.3 LITER ENGINE
W/ 24V. SYSTEM

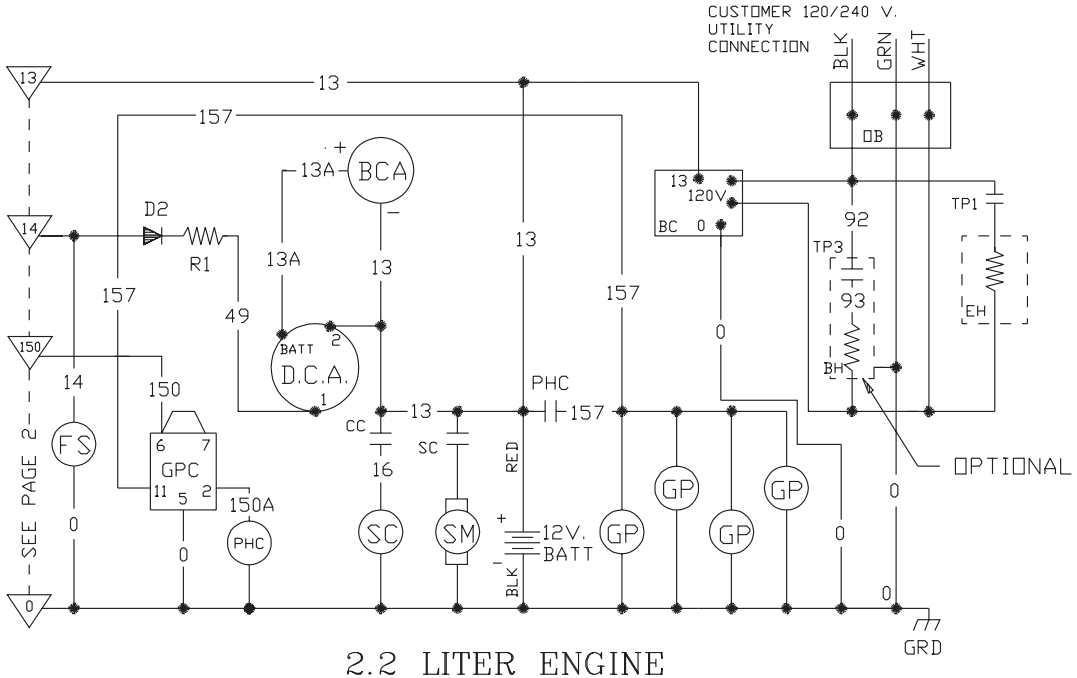
LEGEND

AIH = AIR INTAKE HEATER
BC = BATTERY CHARGER
BCA = DC AMMETER- BATTERY CHARGE
BH = BATTERY HEATER
CB7 = CIRCUIT BREAKER- 10A
CC = CONTROL CONTACTER- ENGINE CRANKING
CONV = 24- 12V DC CONVERTOR
CR2 = CONTROL RELAY- 24V
D2 = DIODE- 50A, 200V
D3 = DIODE- 50A, 200V
DC-A = DC ALTERNATOR
EH = ENGINE HEATER
FS = FUEL SOLENOID
FR = RELAY- FIELD BOOST
GP = GLOW PLUG
GRD = GROUND
HR = HEATER RELAY
OB = OUTLET BOX
PHC = PRE-HEAT CONTACTER
SC = STARTER CONTACTOR
SM = STARTER MOTOR
TP1 = THERMOSAT- ENGINE HEATER
TP3 = BATTERY HEATER THERMOSTAT
TR1 = TRANSFORMER- 500VA 240/480- 120V

SCHEMATIC
DRAWING NUMBER 66144
SHEET 3 OF 4
ISSUED- 06/04/84
FILE #10-84.5



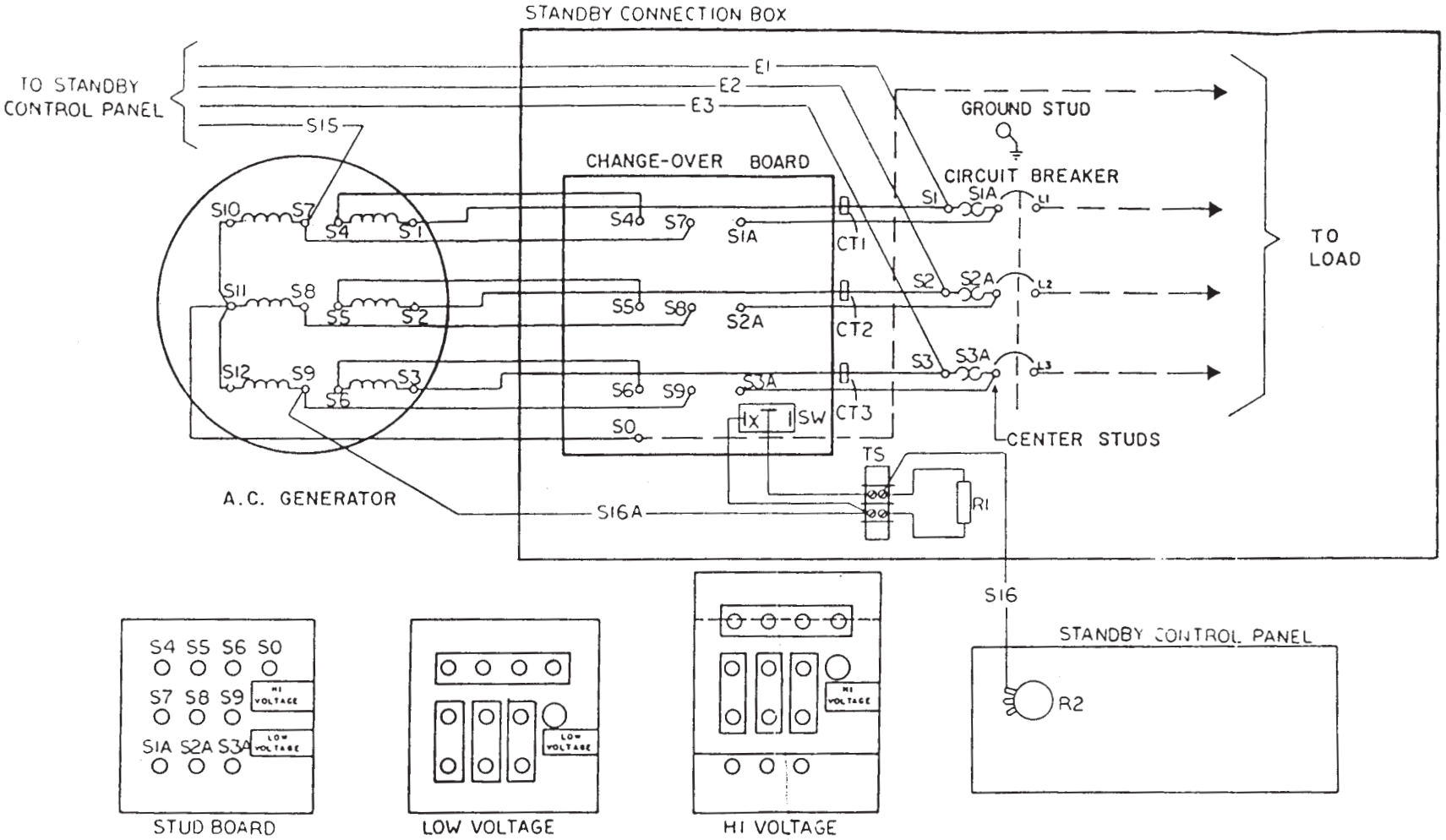
4.0 LITER ENGINE



2.2 LITER ENGINE

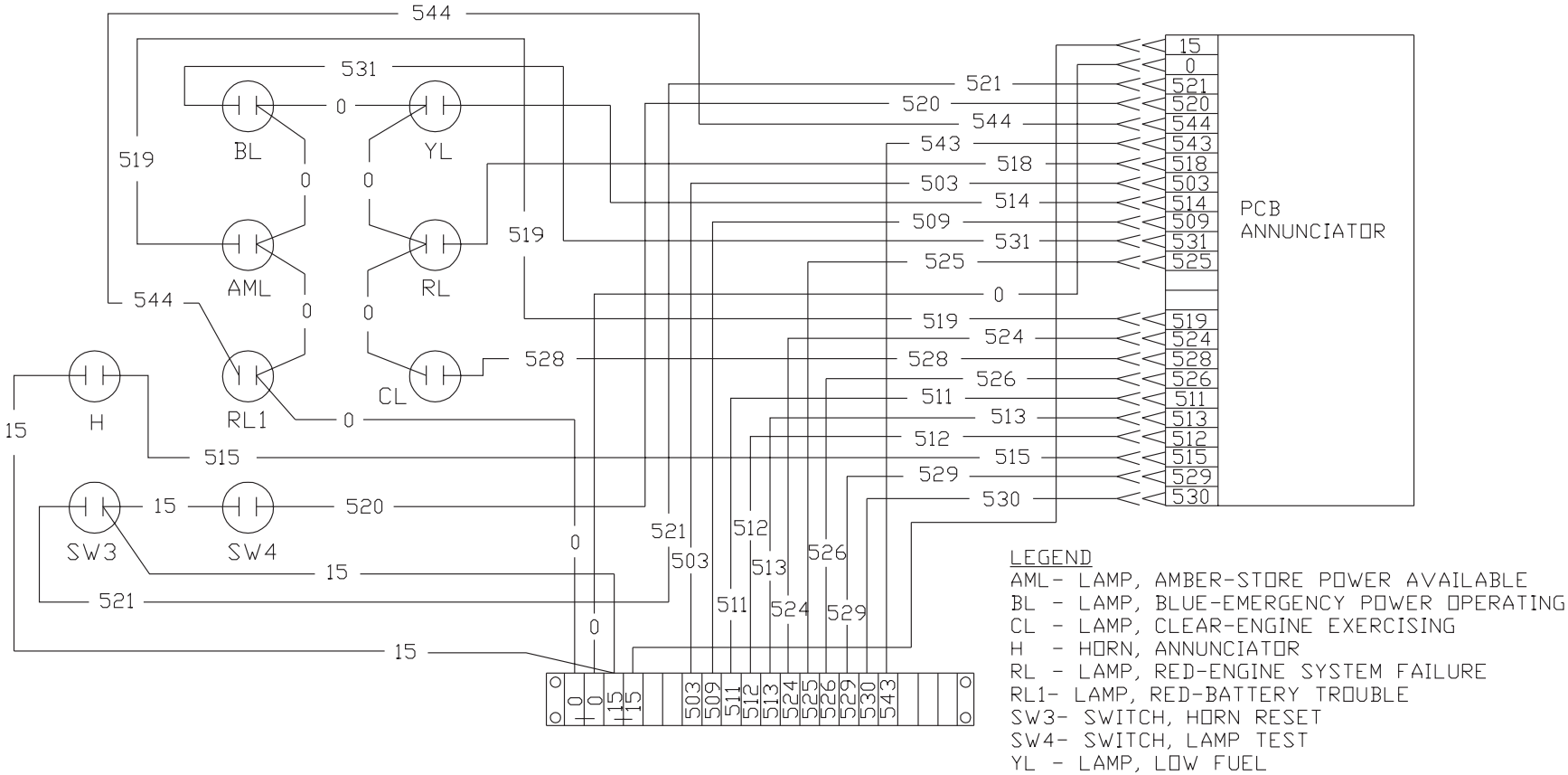
LEGEND

BC = BATTERY CHARGER
BCA = DC AMMETER- BATTERY CHARGER
BH = BATTERY HEATER
CB7 = CIRCUIT BREAKER- 10A
CC = CONTROL CONTACTER- ENGINE CRANKING
CONV = 24- 12V DC CONVERTER
CR2 = CONTROL RELAY- 24V
DC-A = DC ALTERNATOR
EH = ENGINE HEATER
FS = FUEL SOLENOID
FR = RELAY- FIELD BOOST
GP = GLOW PLUG
GPC = GLOW PLUG CONTROLLER
GRD = GROUND
OB = OUTLET BOX
PHC = PRE-HEAT CONTACTOR
SC = STARTER CONTACTOR
SM = STARTER MOTER
TP1 = THERMOSTAT- ENGINE HEATER
TP3 = BATTERY HEATER THERMOSTAT



LEGEND

SW = SWITCH- PUSH BUTTON
TS = TERMINAL STRIP
R1 = RESISTOR- 12K
R2 = POTENTIOMETER, VOLTAGE ADJUST- 10K, 2 WATT
CT1 = CURRENT TRANSFORMER
CT2 = CURRENT TRANSFORMER
CT3 = CURRENT TRANSFORMER


544
531
519
BL
YL
0
AML
RL
RL1
CL
H
SW3
SW4
15
515
520
521
503
512
513
526
511
524
529
PCB
ANNUNCIATOR
LEGEND
AML- LAMP, AMBER-STORE POWER AVAILABLE
BL - LAMP, BLUE-EMERGENCY POWER OPERATING
CL - LAMP, CLEAR-ENGINE EXCERCISING
H - HORN, ANNUNCIATOR
RL - LAMP, RED-ENGINE SYSTEM FAILURE
RL1- LAMP, RED-BATTERY TROUBLE
SW3- SWITCH, HORN RESET
SW4- SWITCH, LAMP TEST
YL - LAMP, LOW FUEL

LEGEND

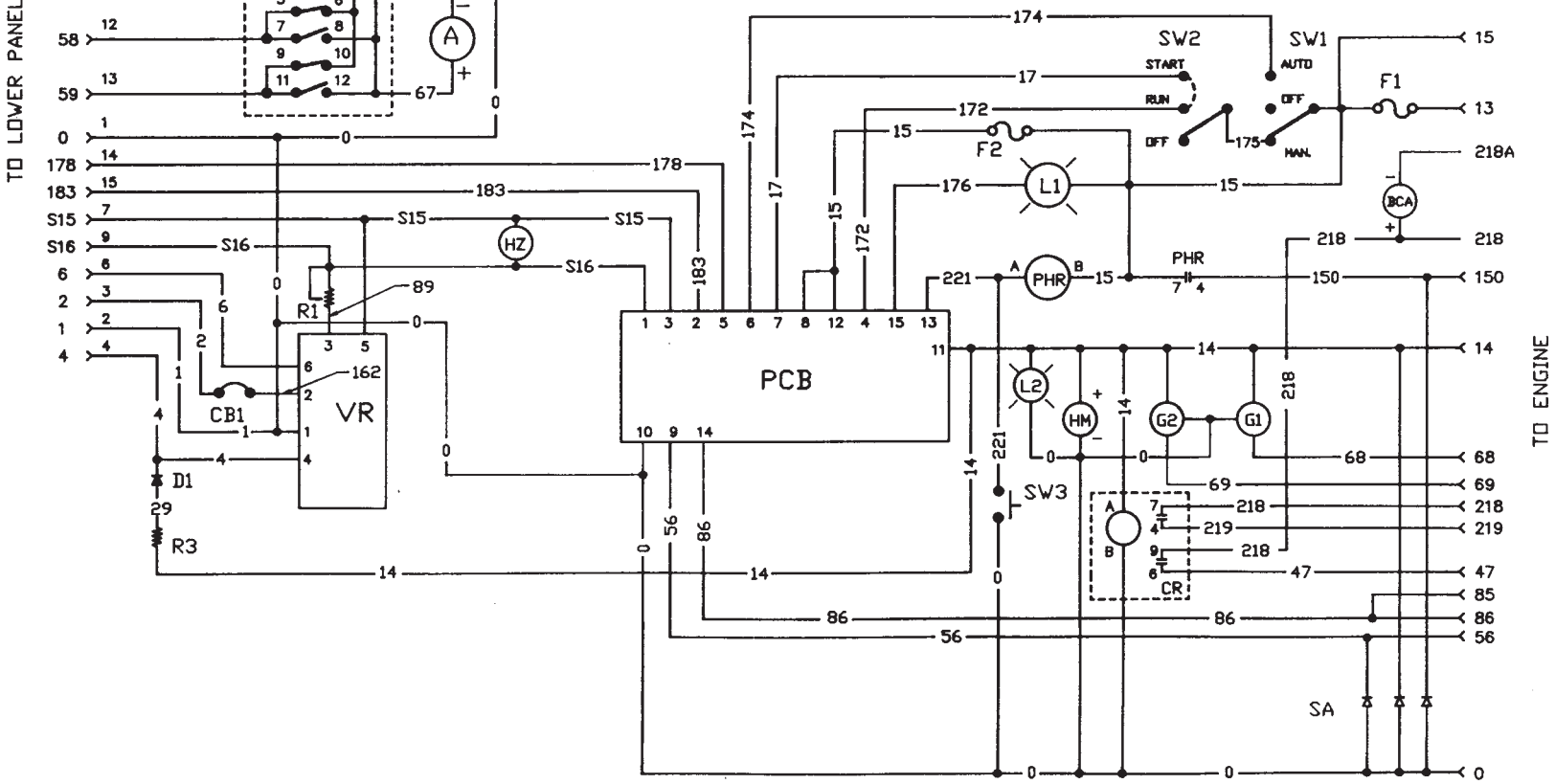
A	=	A-C AMMETER
BCA	=	BATTERY CHARGE AMMETER
CB1	=	CIRCUIT BREAKER- FIELD BOOST
CR	=	CONTROL RELAY- ENGINE RUN
D1	=	DIODE- 600V., 12A.
F1	=	FUSE- 30 Ampere
F2	=	FUSE- 14 Ampere
G1	=	GAUGE- WATER TEMPERATURE
G2	=	GAUGE- OIL PRESSURE
HM	=	HOURMETER
HZ	=	FREQUENCY METER
L1	=	LIGHT- FAULT INDICATOR
L2	=	LIGHT- PANEL
PCB	=	CIRCUIT BOARD- D-C CONTROL/CRANK-LATCH
PHR	=	PREHEAT RELAY
R1	=	POTENTIOMETER- VOLTAGE ADJUST
R3	=	RESISTOR- FIELD BOOST
SW1	=	SWITCH- AUTO/MANUAL/OFF
SW2	=	SWITCH- START/STOP
SW3	=	SWITCH- PREHEAT
SW5	=	SWITCH- PHASE SELECTOR
V	=	A-C VOLTMETER
VR	=	A-C VOLTAGE REGULATOR

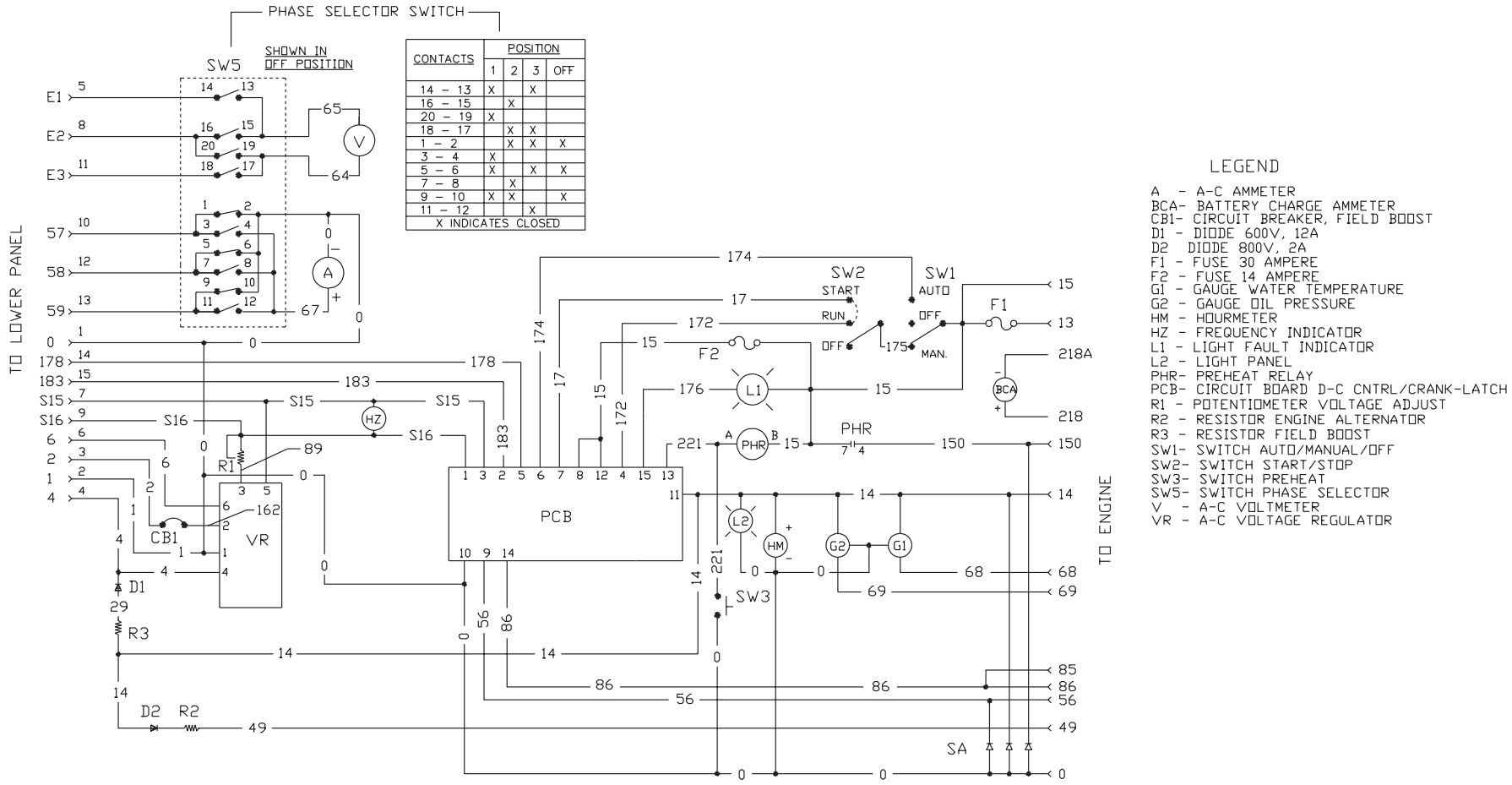
PHASE SELECTOR SWITCH

SW5 SHOWN IN OFF POSITION

CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

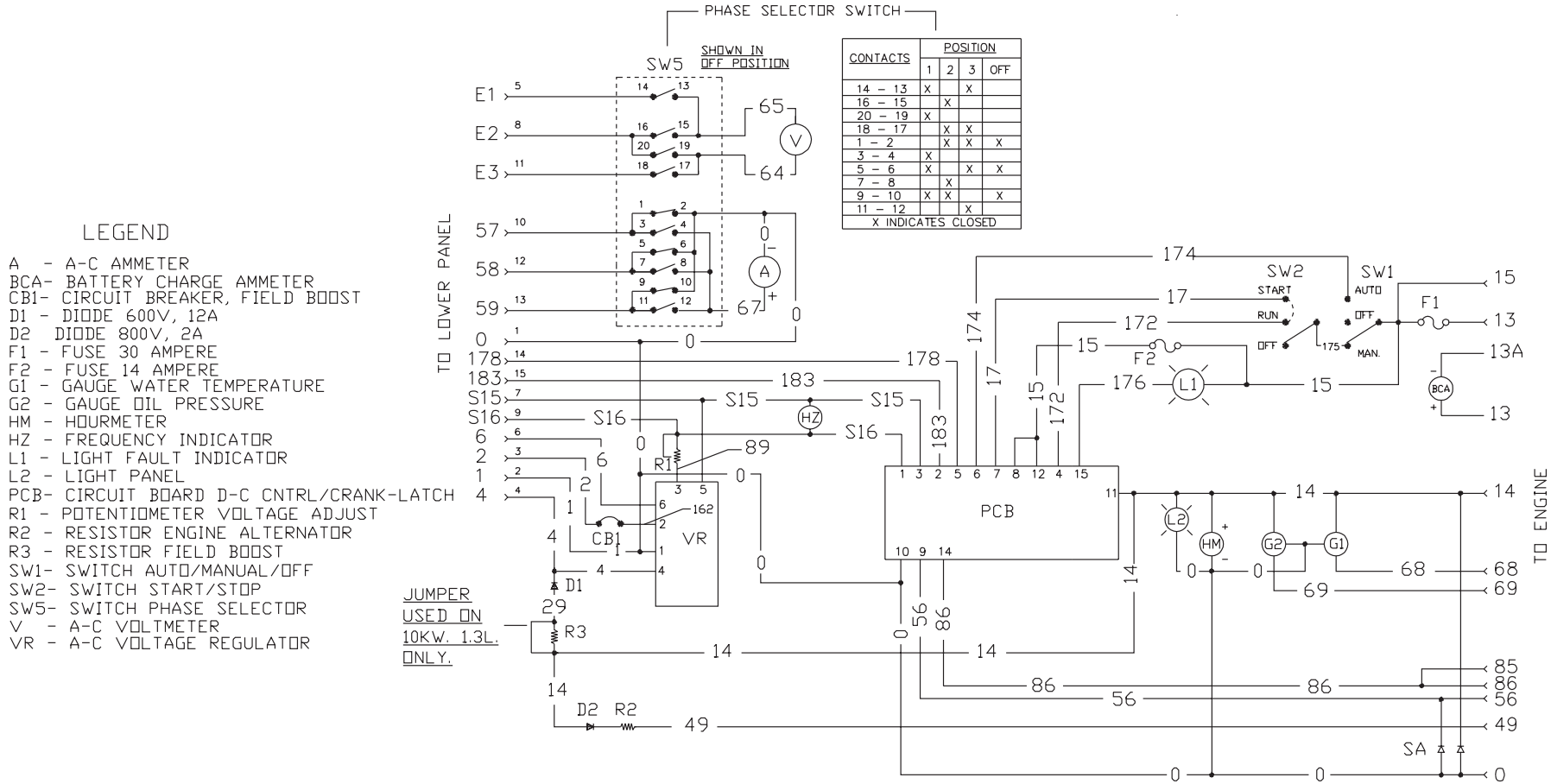
X INDICATES CLOSED

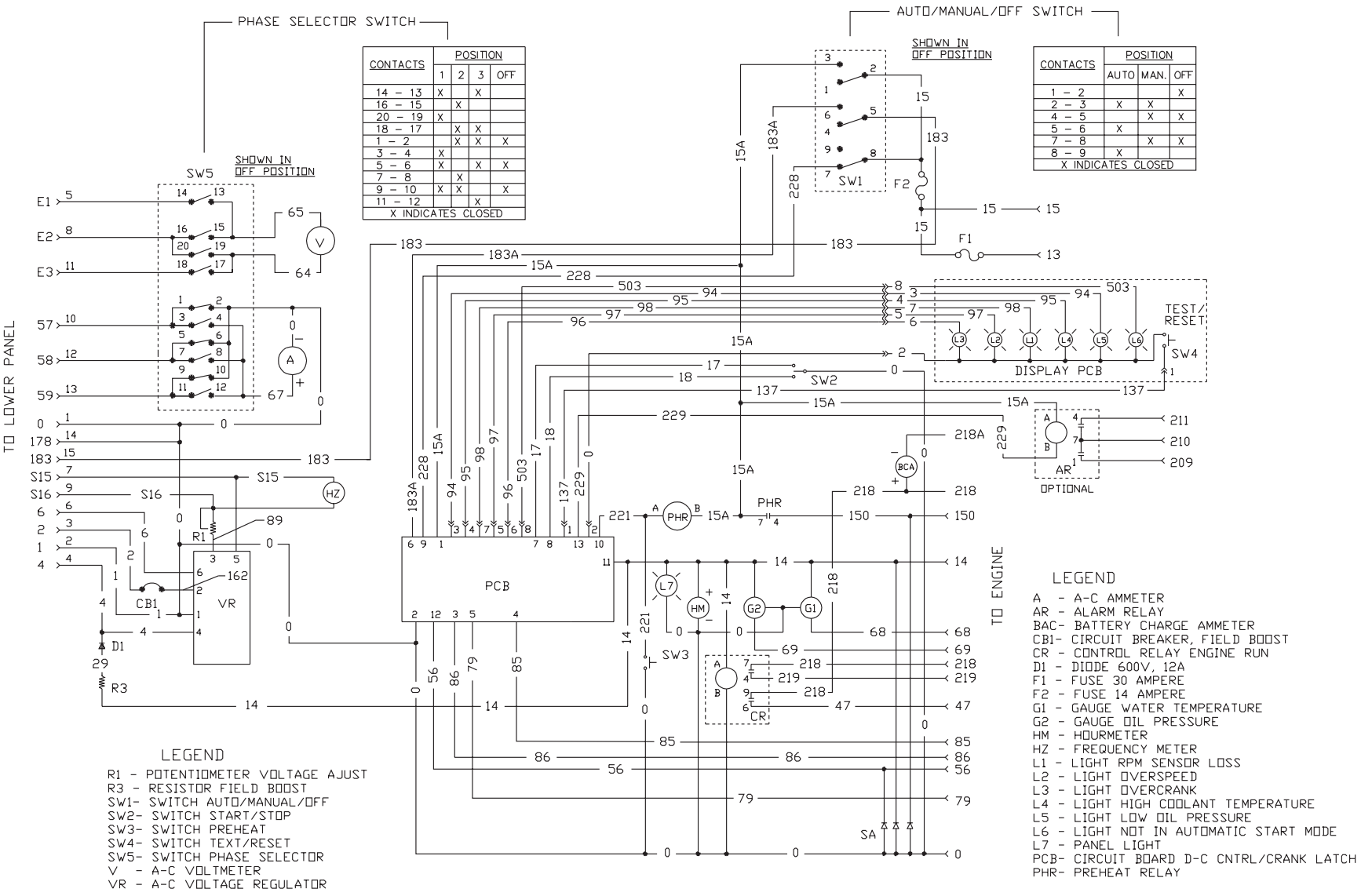




LEGEND

A - A-C AMMETER
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600V, 12A
D2 DIODE 800V, 2A
F1 - FUSE 30 AMPERE
F2 - FUSE 14 AMPERE
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY INDICATOR
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL
PHR- PREHEAT RELAY
PCB- CIRCUIT BOARD D-C CNTRL/CRANK-LATCH
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR ENGINE ALTERNATOR
R3 - RESISTOR FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW3- SWITCH PREHEAT
SW5- SWITCH PHASE SELECTOR
V - A-C VOLTMETER
VR - A-C VOLTAGE REGULATOR


LEGEND
A - A-C AMMETER
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600V, 12A
D2 DIODE 800V, 2A
F1 - FUSE 30 AMPERE
F2 - FUSE 14 AMPERE
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY INDICATOR
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL
PCB- CIRCUIT BOARD D-C CNTRL/CRANK-LATCH
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR ENGINE ALTERNATOR
R3 - RESISTOR FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW5- SWITCH PHASE SELECTOR
V - A-C VOLTMETER
VR - A-C VOLTAGE REGULATOR
PHASE SELECTOR SWITCH
SW5
SHOWN IN OFF POSITION
CONTACTS
POSITION
1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
TO LOWER PANEL
E1
E2
E3
57
58
59
65
64
67
V
A
SW2
START
RUN
OFF
SW1
AUTO
OFF
MAN.
F1
F2
L1
BCA
HZ
R1
VR
CB1
D1
R3
D2
R2
PCB
L2
HM
G2
G1
JUMPER USED ON 10KW. 1.3L. ONLY.
SA
TO ENGINE



CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

X INDICATES CLOSED

CONTACTS	POSITION AUTO	MAN.	OFF
1 – 2			X
2 – 3	X	X	
4 – 5		X	X
5 – 6	X		
7 – 8		X	X
8 – 9	X		

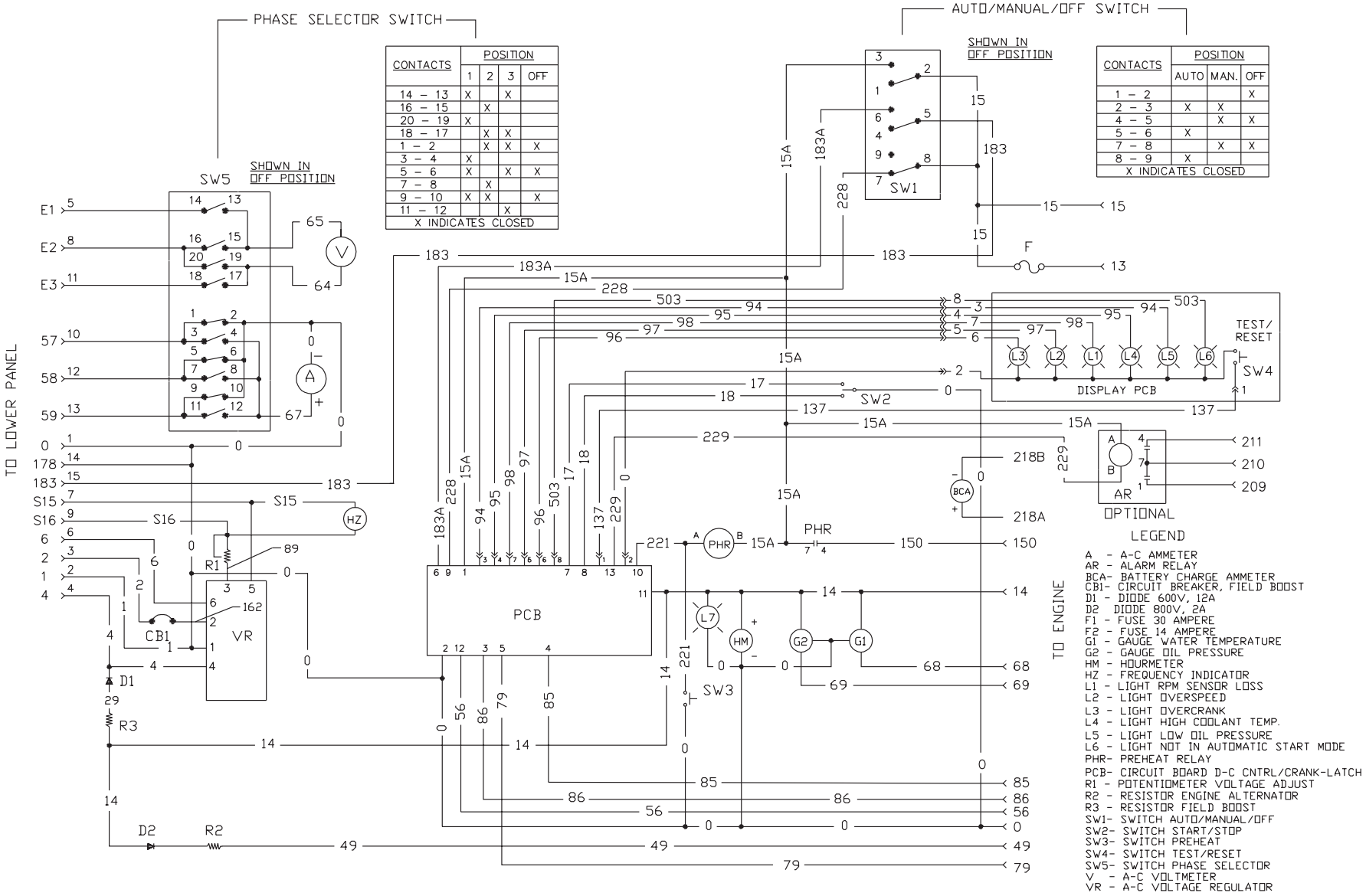
X INDICATES CLOSED

LEGEND

R1 - POTENTIOMETER VOLTAGE AJUST
R3 - RESISTOR FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW3- SWITCH PREHEAT
SW4- SWITCH TEXT/RESET
SW5- SWITCH PHASE SELECTOR
V - A-C VOLTMETER
VR - A-C VOLTAGE REGULATOR

LEGEND

A - A-C AMMETER
AR - ALARM RELAY
BAC- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
CR - CONTROL RELAY ENGINE RUN
D1 - DIODE 600V, 12A
F1 - FUSE 30 AMPERE
F2 - FUSE 14 AMPERE
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT RPM SENSOR LOSS
L2 - LIGHT OVERSPEED
L3 - LIGHT OVERCRANK
L4 - LIGHT HIGH COOLANT TEMPERATURE
L5 - LIGHT LOW OIL PRESSURE
L6 - LIGHT NOT IN AUTOMATIC START MODE
L7 - PANEL LIGHT
PCB- CIRCUIT BOARD D-C CNTRL/CRANK LATCH
PHR- PREHEAT RELAY



CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

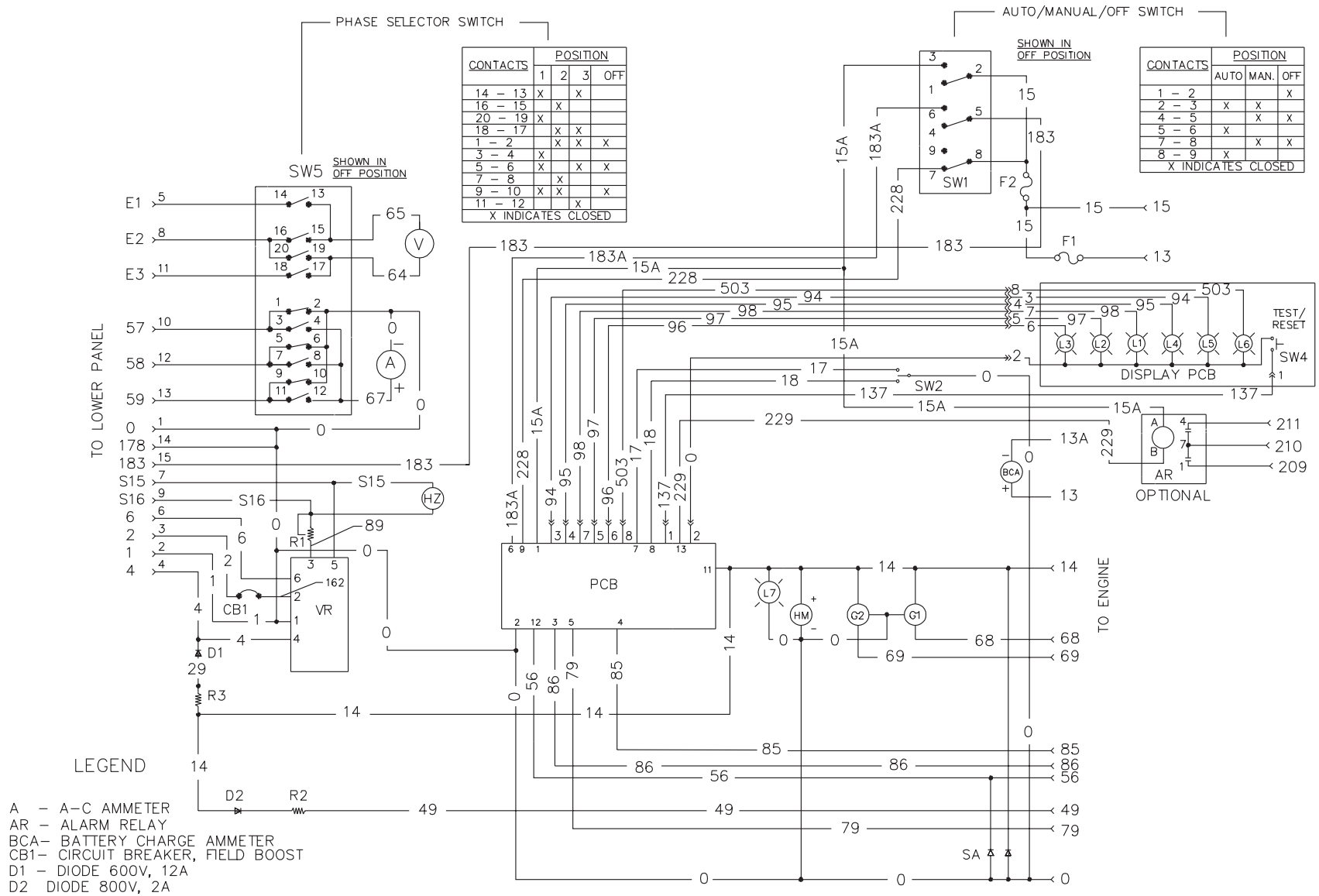
X INDICATES CLOSED

CONTACTS	POSITION AUTO	MAN.	OFF
1 – 2			X
2 – 3	X	X	
4 – 5		X	X
5 – 6	X		
7 – 8		X	X
8 – 9	X		

X INDICATES CLOSED

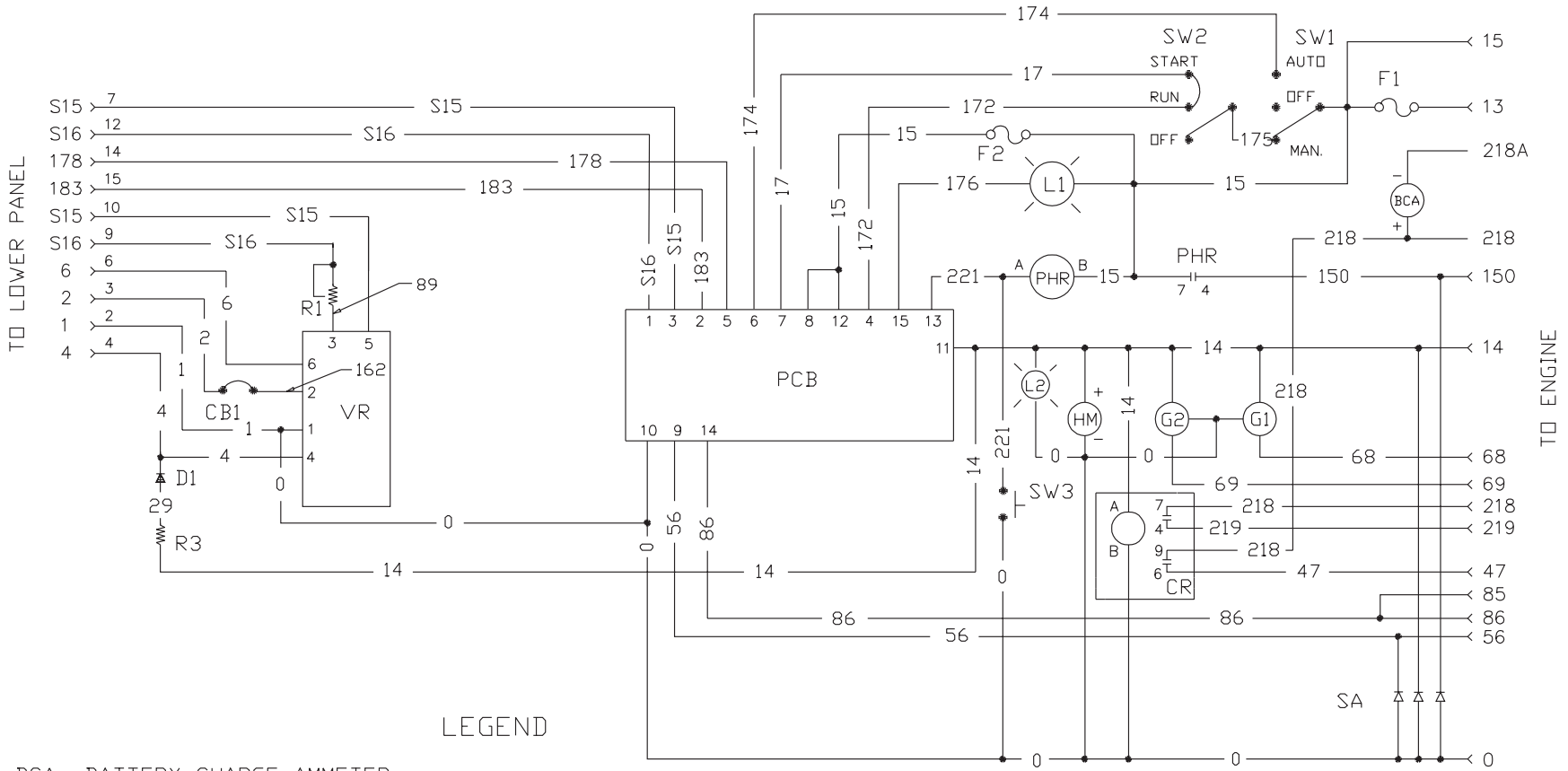
LEGEND

A - A-C AMMETER
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CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600V, 12A
D2 - DIODE 800V, 2A
F1 - FUSE 30 AMPERE
F2 - FUSE 14 AMPERE
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY INDICATOR
L1 - LIGHT RPM SENSOR LOSS
L2 - LIGHT OVERSPEED
L3 - LIGHT OVERCRANK
L4 - LIGHT HIGH COOLANT TEMP.
L5 - LIGHT LOW OIL PRESSURE
L6 - LIGHT NOT IN AUTOMATIC START MODE
PHR- PREHEAT RELAY
PCB- CIRCUIT BOARD D-C CNTRL/CRANK-LATCH
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR ENGINE ALTERNATOR
R3 - RESISTOR FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW3- SWITCH PREHEAT
SW4- SWITCH TEST/RESET
SW5- SWITCH PHASE SELECTOR
V - A-C VOLTMETER
VR - A-C VOLTAGE REGULATOR



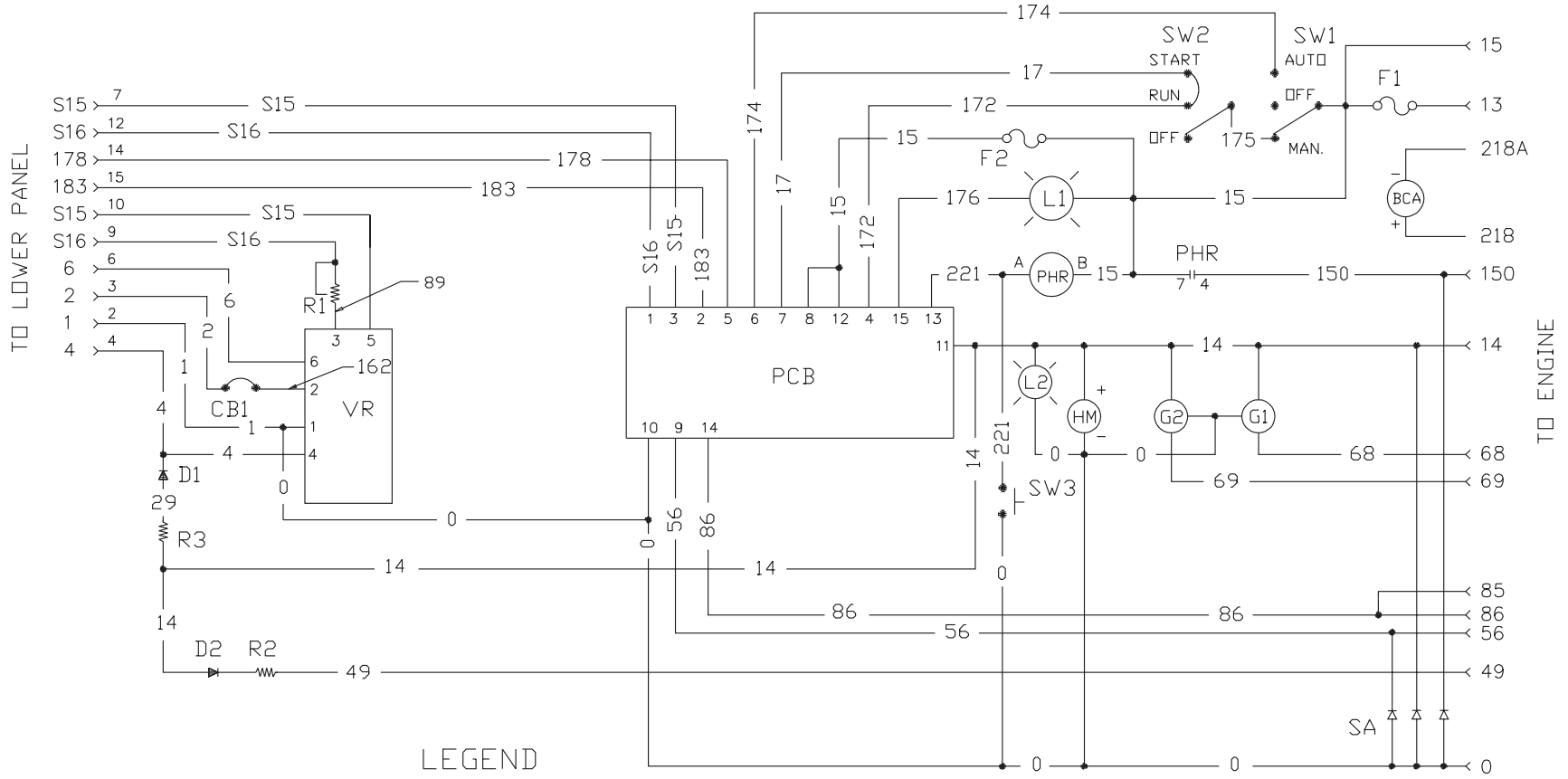
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L4 – LIGHT HIGH COOLANT TEMP.
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PCB– CIRCUIT BOARD D–C CNTRL/CRANK–LATCH
R1 – POTENTIOMETER VOLTAGE ADJUST
R2 – RESISTOR ENGINE ALTERNATOR
R3 – RESISTOR FIELD BOOST
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW4– SWITCH TEST/RESET
SW5– SWITCH PHASE SELECTOR
V – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR



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F1 - FUSE 30 AMPERE
F2 - FUSE 14 AMPERE
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY INDICATOR
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL
PCB- CIRCUIT BOARD D-C CNTRL/CRANK-LATCH
PHR- PREHEAT RELAY

R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR ENGINE ALTERNATOR
R3 - RESISTOR FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW5- SWITCH PHASE SELECTOR
VR - A-C VOLTAGE REGULATOR

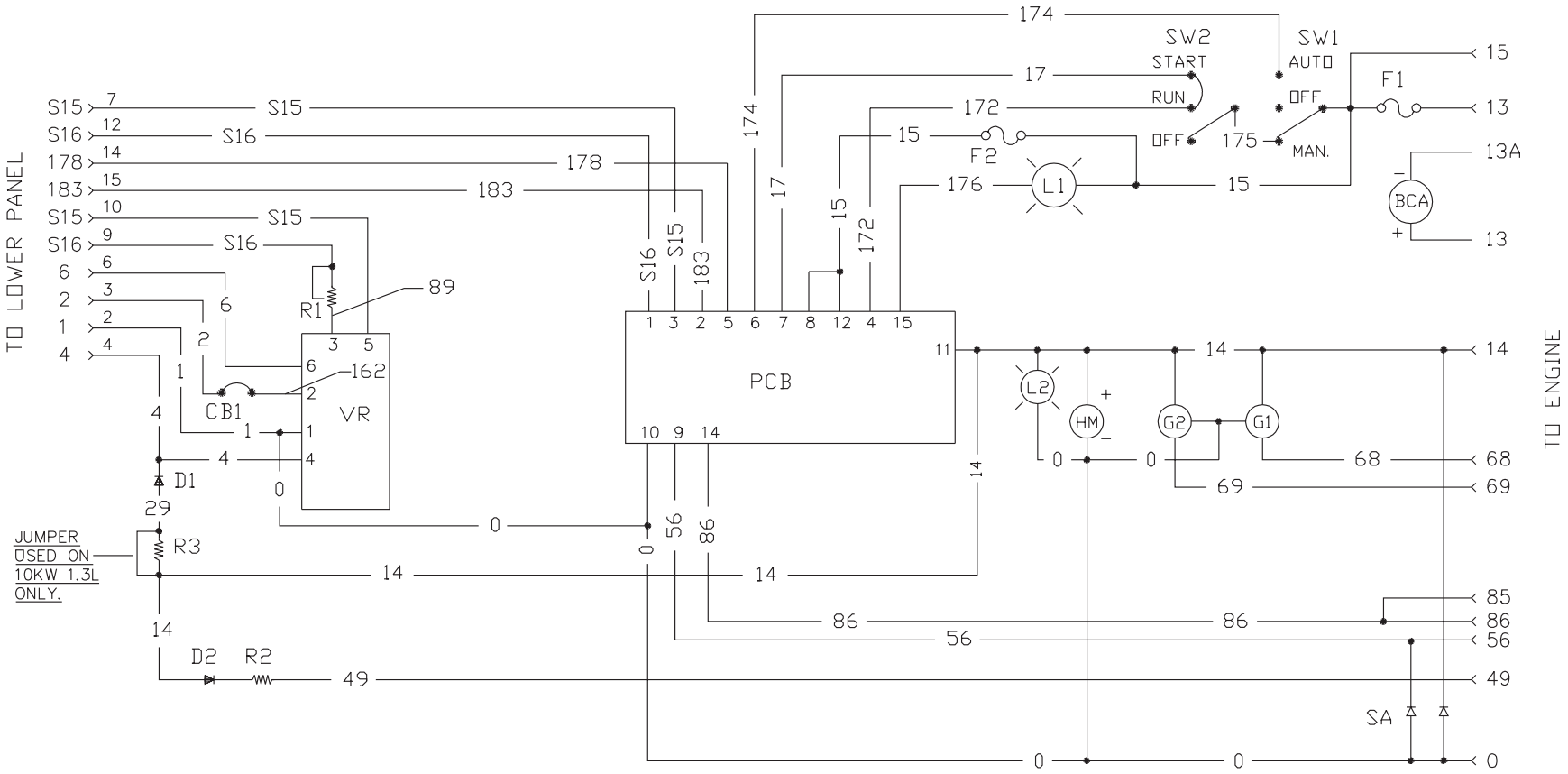


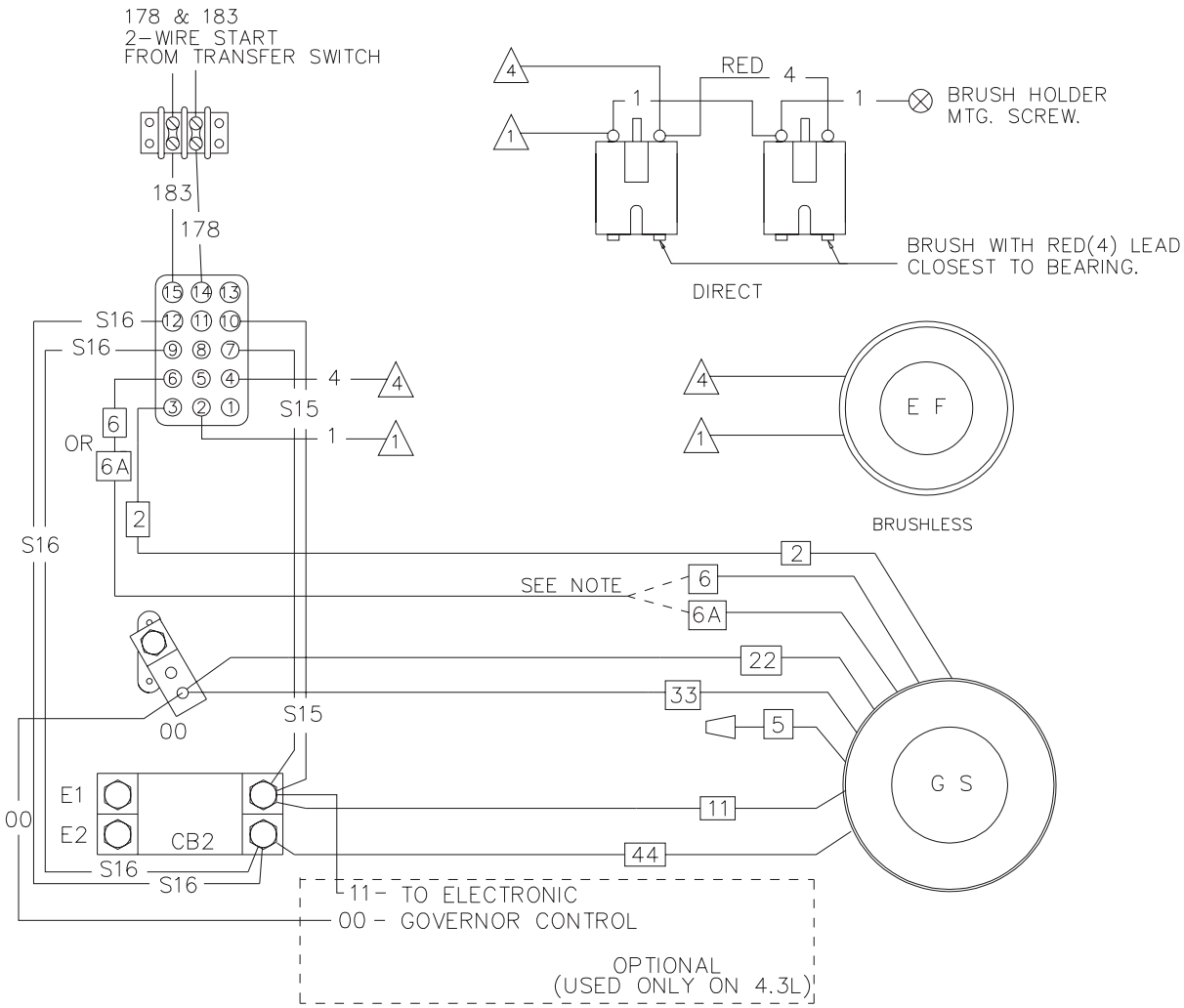
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600V, 12A
D2 DIODE 800V, 2A
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G2 - GAUGE OIL PRESSURE
HM - HOURMETER
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL

PCB- CIRCUIT BOARD D-C CNTRL/CRANK-LATCH
PHR- PREHEAT RELAY
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR ENGINE ALTERNATOR
R3 - RESISTOR FIELD BOOST
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LEGEND

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R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR ENGINE ALTERNATOR
R3 - RESISTOR FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
VR - A-C VOLTAGE REGULATOR





E1 TO E3	240V.
E1 TO 00	120V.
E3 TO 00	120V.

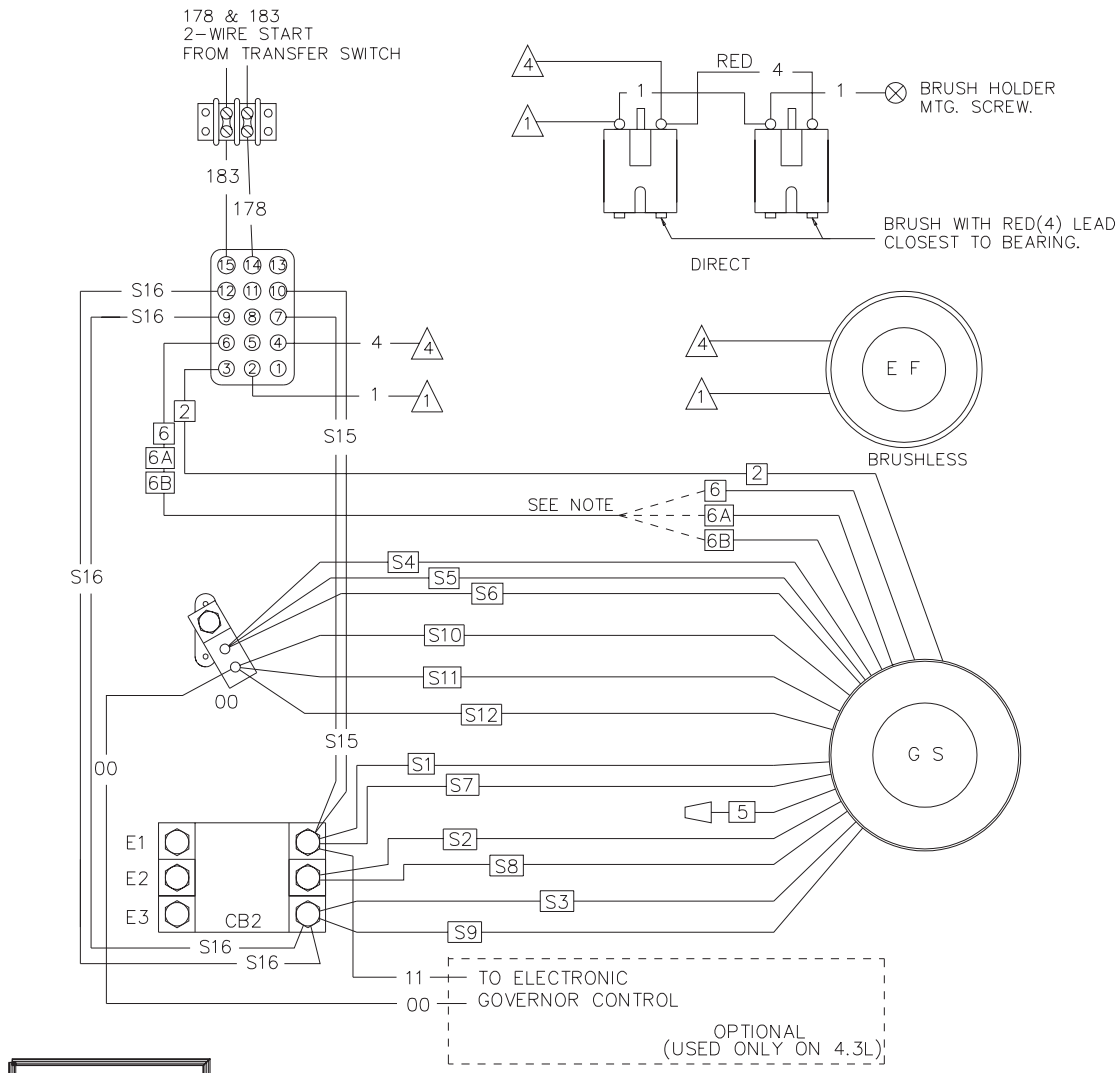
CUSTOMER CONNECTION
120/240V. 1-PHASE

LEGEND

CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
GS = GENERATOR STATOR

NOTE:
USE 6 FOR BRUSHLESS UNITS (6A MAY NOT BE PROVIDED)
USE 6A FOR BRUSH (DIRECT) UNITS

SHEET 1 OF 4



E1 TO E2 E2 TO E3 E3 TO E1	208V
E1 TO 00 E2 TO 00 E3 TO 00	120V

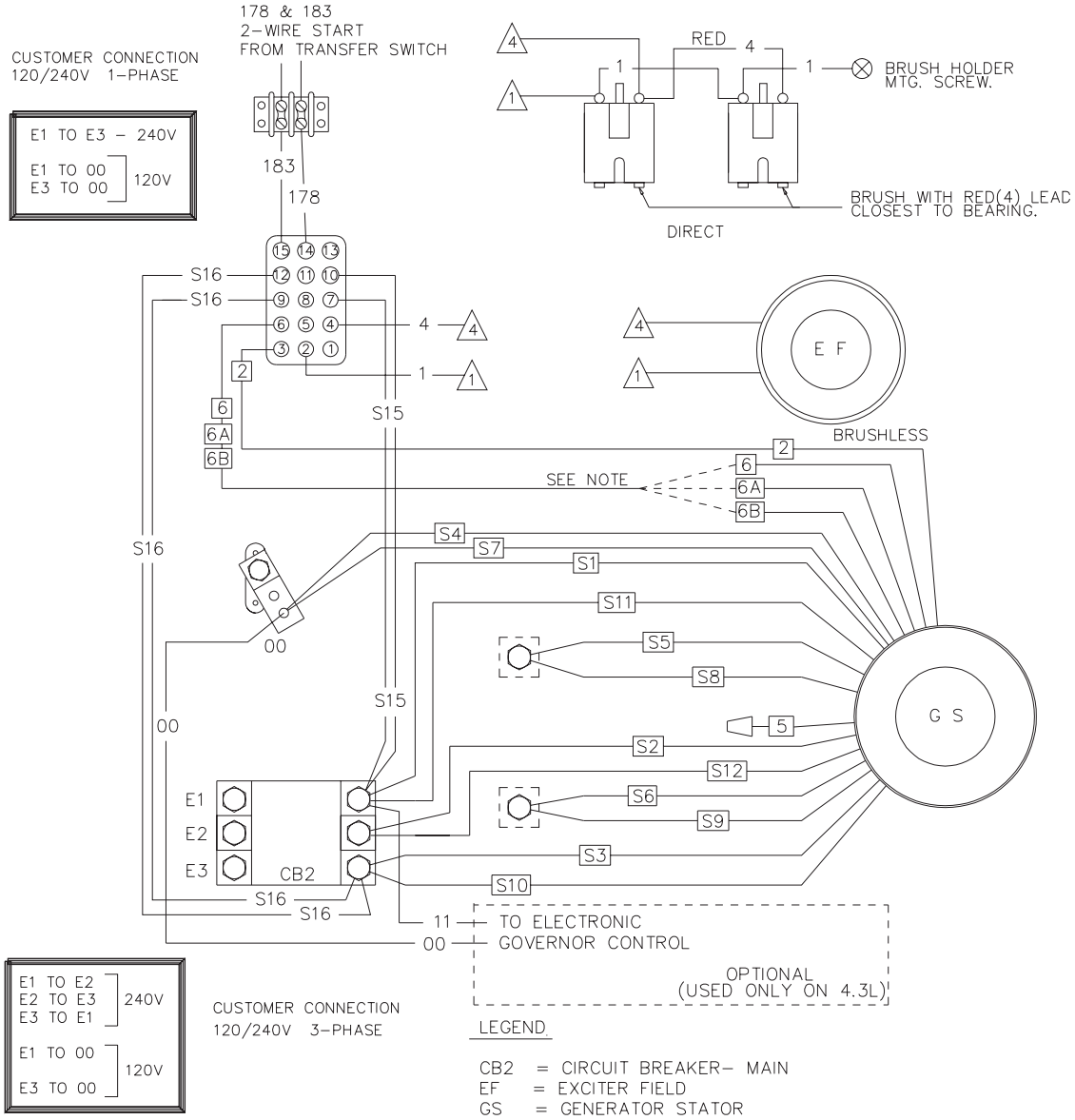
CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE

LEGEND

CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
GS = GENERATOR STATOR

SHEET 2 OF 4

NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

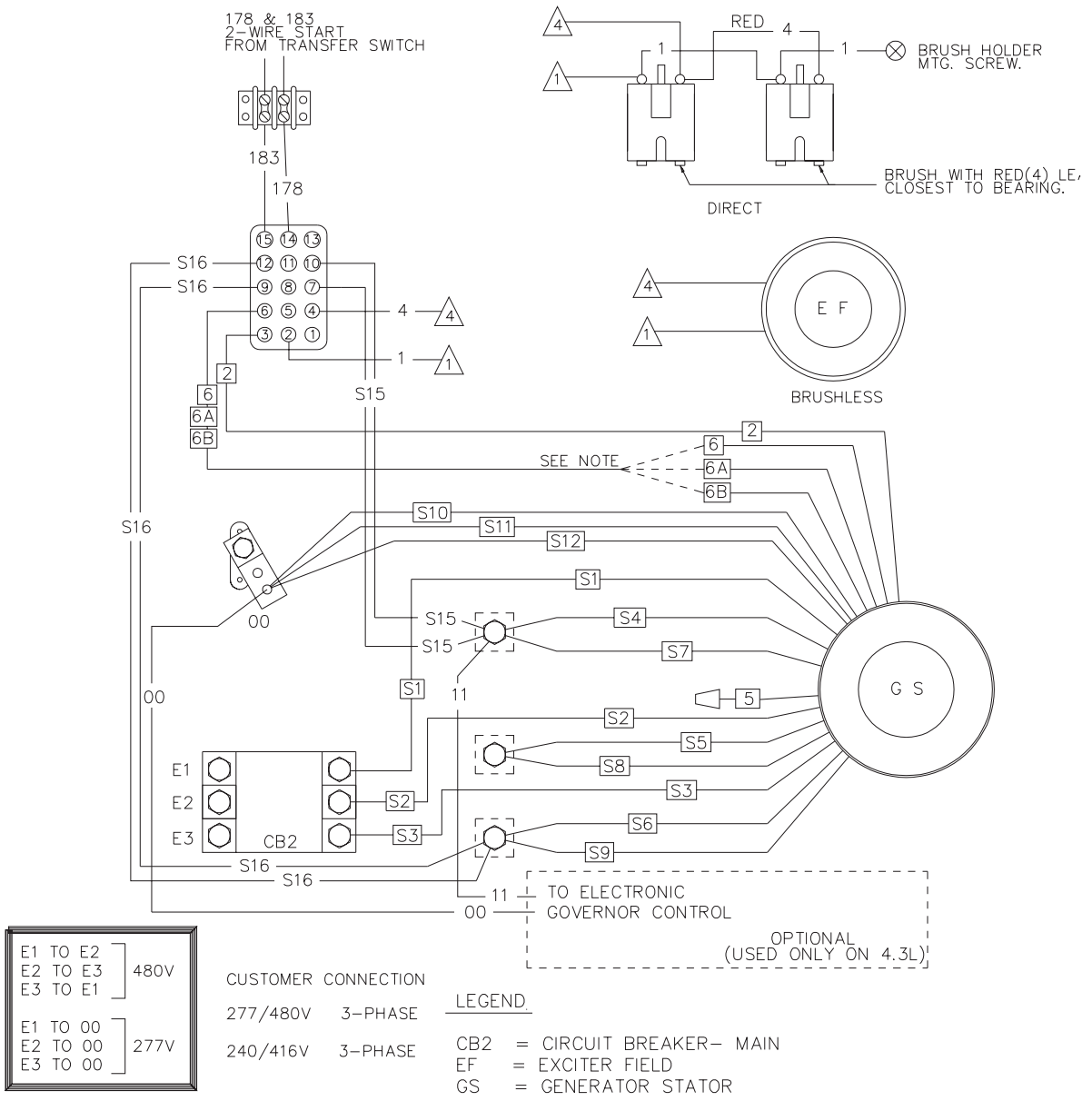


NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)

USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.

USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

SHEET 3 OF 4



E1 TO E2 E2 TO E3 E3 TO E1	480V
E1 TO 00 E2 TO 00 E3 TO 00	277V

CUSTOMER CONNECTION

277/480V 3-PHASE

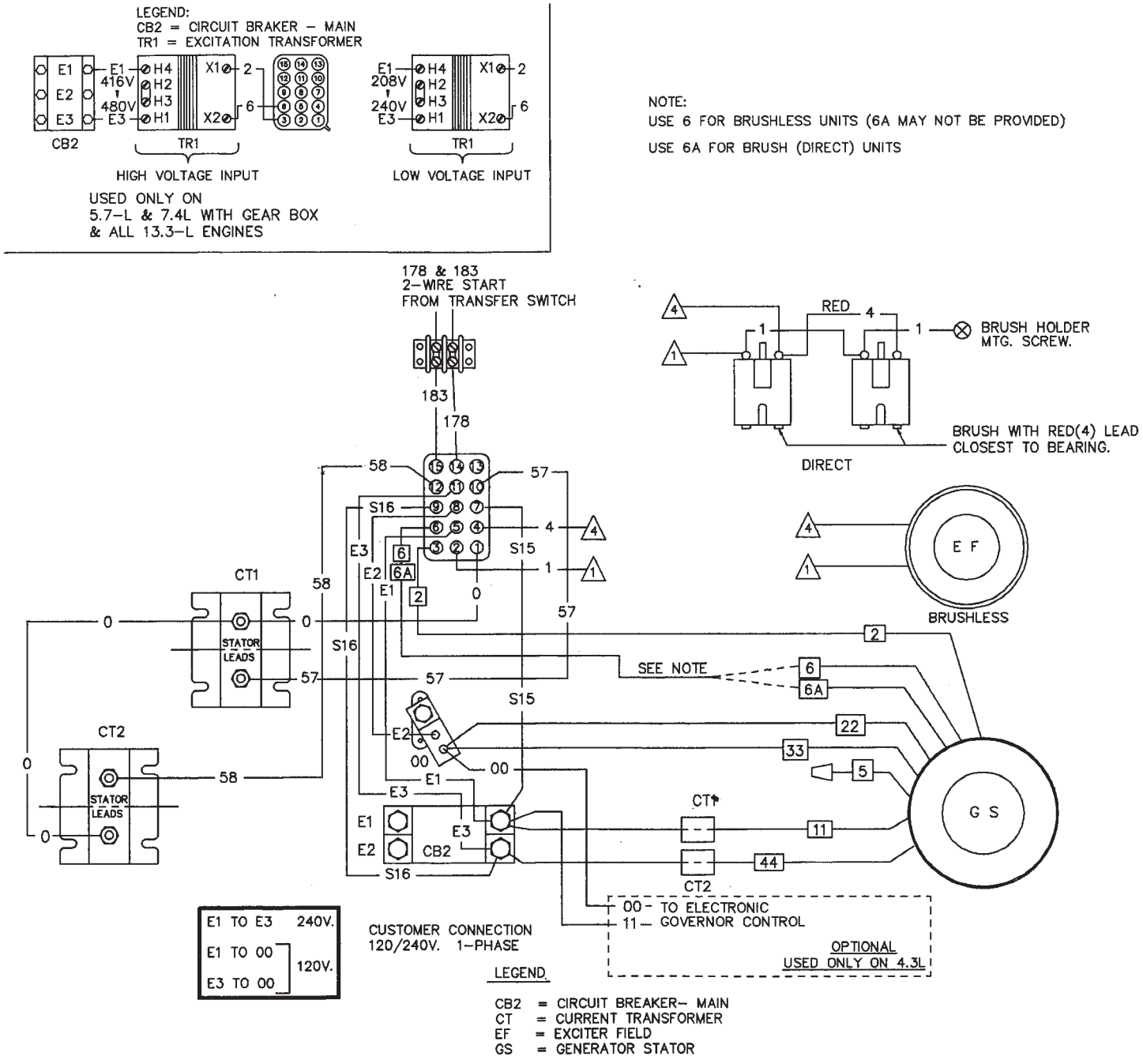
240/416V 3-PHASE

LEGEND

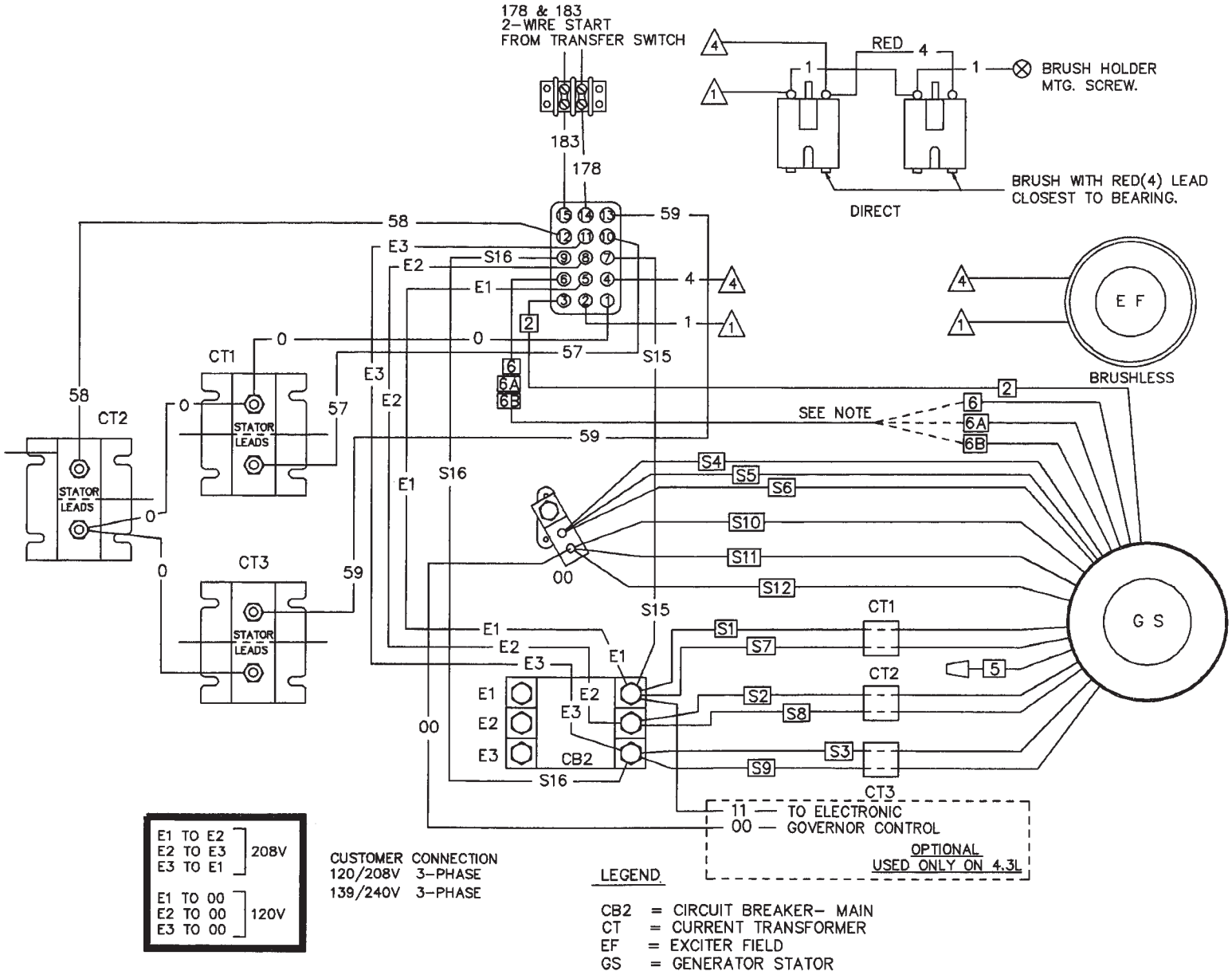
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
GS = GENERATOR STATOR

NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

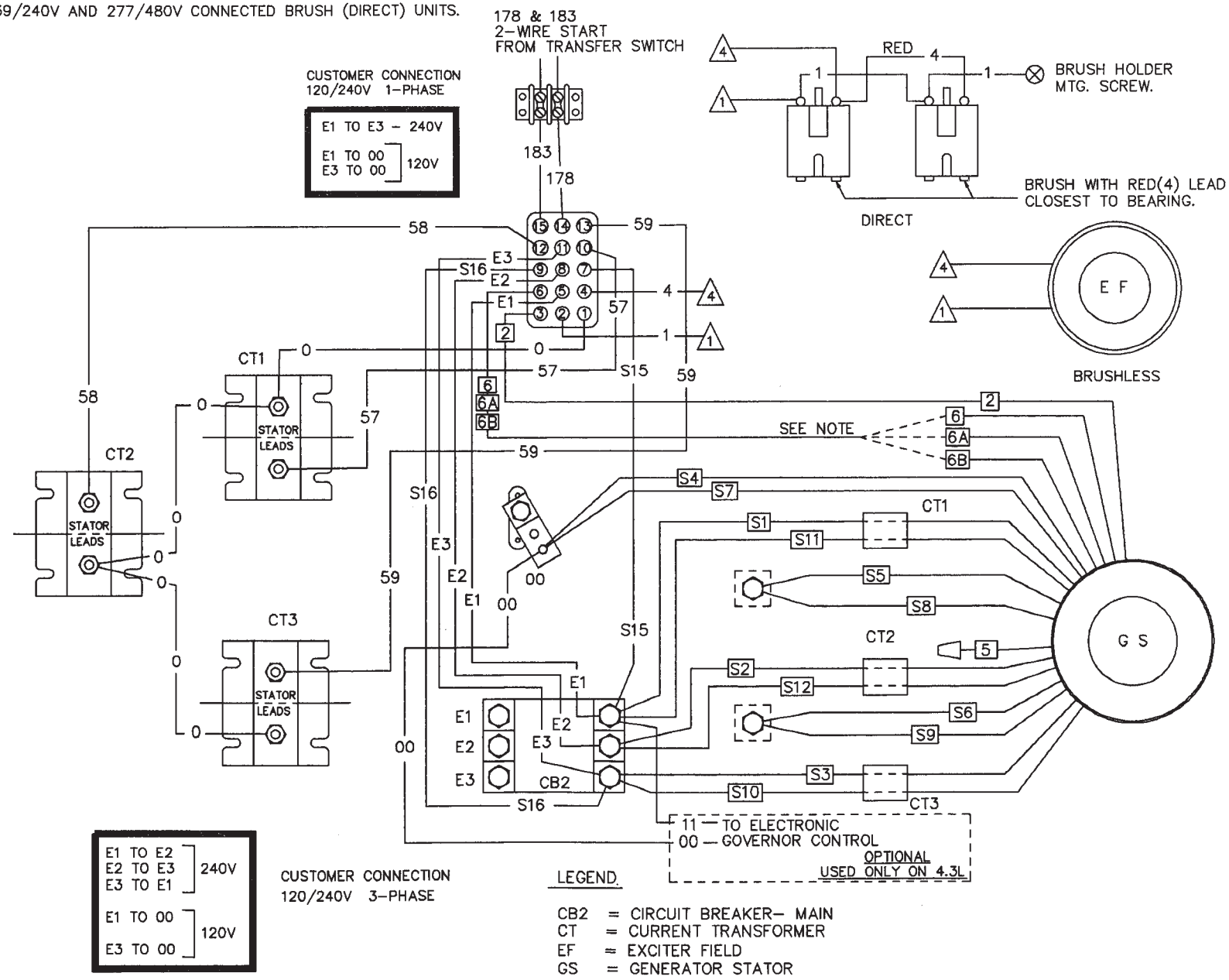
SHEET 4 OF 4


LEGEND:
CB2 = CIRCUIT BRAKER – MAIN
TR1 = EXCITATION TRANSFORMER
E1
E2
E3
416V
480V
H4
H2
H3
H1
X1
X2
2
6
CB2
TR1
HIGH VOLTAGE INPUT
208V
240V
LOW VOLTAGE INPUT
USED ONLY ON
5.7–L & 7.4L WITH GEAR BOX
& ALL 13.3–L ENGINES
NOTE:
USE 6 FOR BRUSHLESS UNITS (6A MAY NOT BE PROVIDED)
USE 6A FOR BRUSH (DIRECT) UNITS
178 & 183
2–WIRE START
FROM TRANSFER SWITCH
183
178
RED
BRUSH HOLDER
MTG. SCREW.
BRUSH WITH RED(4) LEAD
CLOSEST TO BEARING.
DIRECT
E F
BRUSHLESS
58
57
S16
S15
E3
E2
E1
6
6A
2
0
4
1
CT1
CT2
STATOR
LEADS
SEE NOTE
22
33
5
11
44
00
G S
CT
CB2
E1 TO E3 240V.
E1 TO 00 120V.
E3 TO 00
CUSTOMER CONNECTION
120/240V. 1–PHASE
00 – TO ELECTRONIC
11 – GOVERNOR CONTROL
OPTIONAL
USED ONLY ON 4.3L
LEGEND.
CB2 = CIRCUIT BREAKER– MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
GS = GENERATOR STATOR

NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

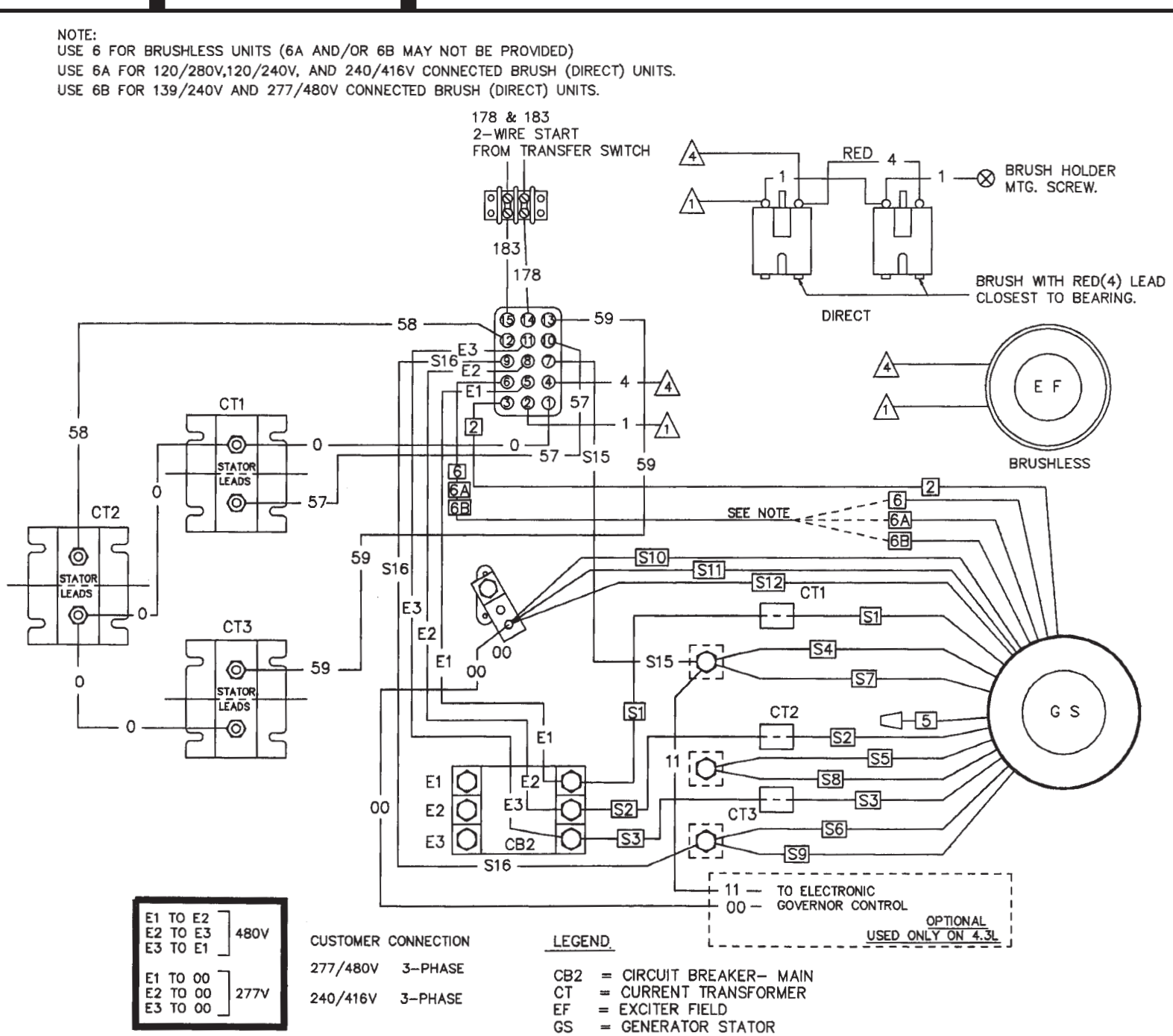


NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.



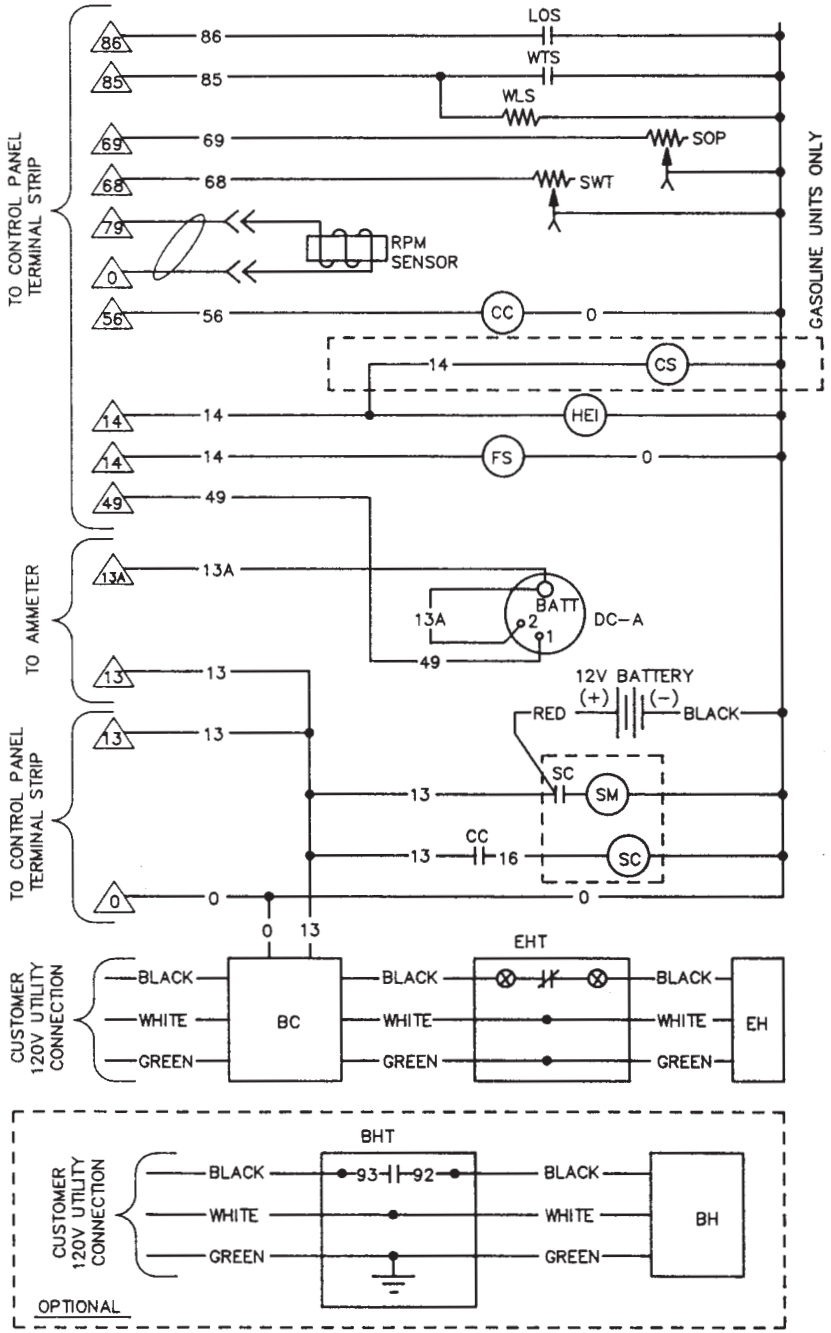
LEGEND

CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
GS = GENERATOR STATOR


NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
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178 & 183
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FROM TRANSFER SWITCH
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DIRECT
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CT1
CT2
CT3
STATOR
LEADS
SEE NOTE
G S
CB2
E1 TO E2
E2 TO E3
E3 TO E1
480V
E1 TO 00
E2 TO 00
E3 TO 00
277V
CUSTOMER CONNECTION
277/480V 3-PHASE
240/416V 3-PHASE
11 — TO ELECTRONIC
00 — GOVERNOR CONTROL
OPTIONAL
USED ONLY ON 4.3L
LEGEND
CB2 = CIRCUIT BREAKER- MAIN
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GS = GENERATOR STATOR

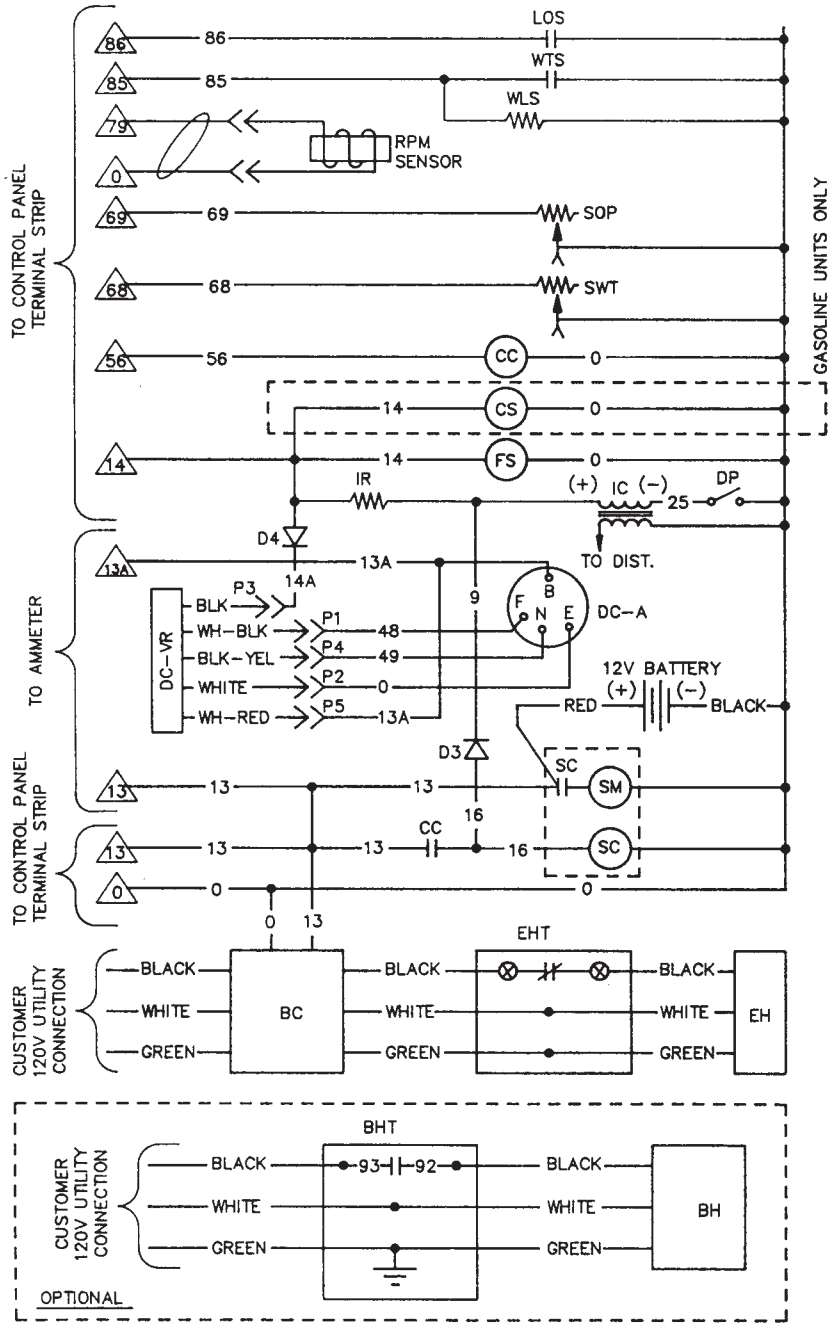
LEGEND

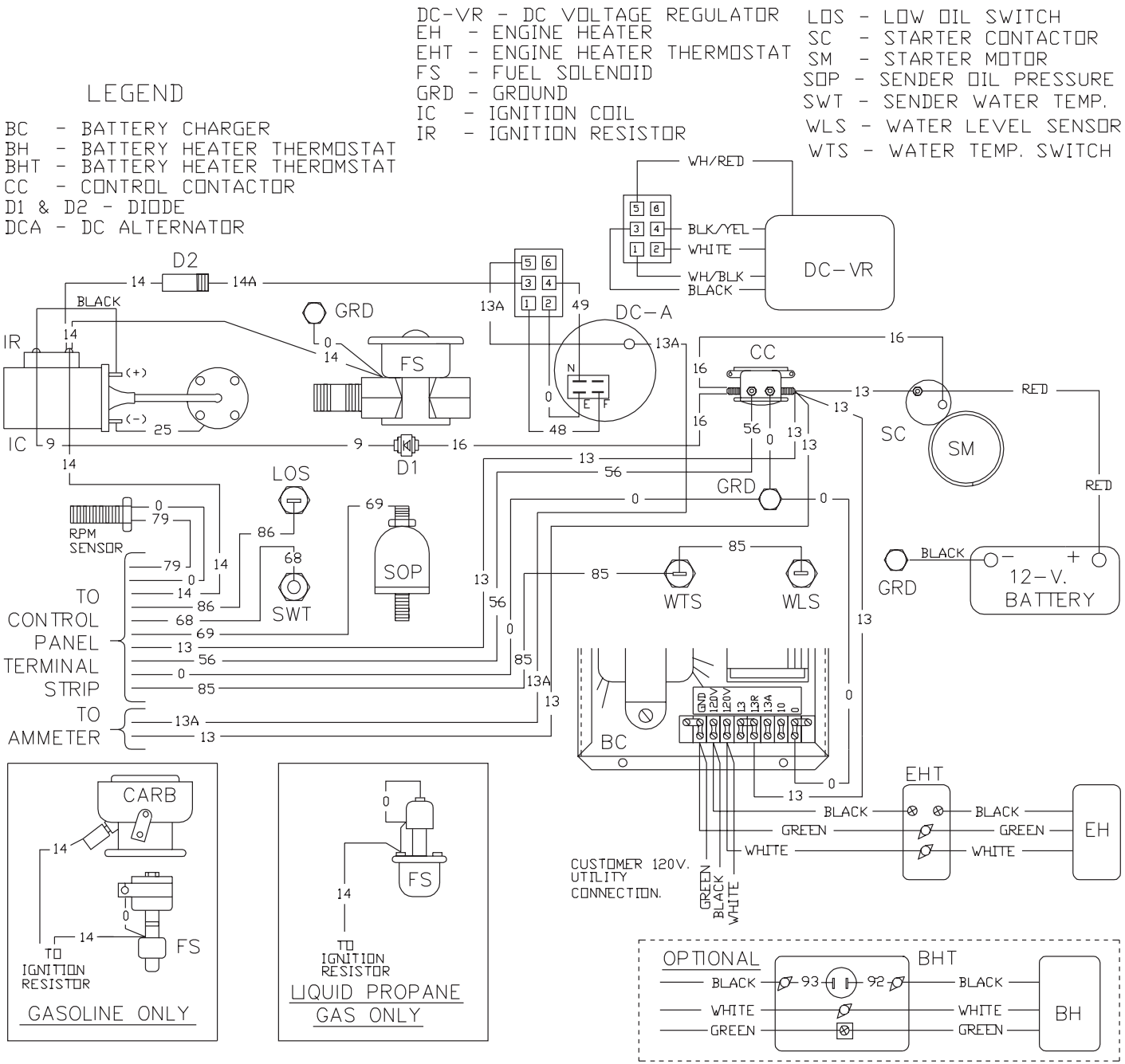
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATTERY HEATER THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENGINE HEATER THERMOSTAT
FS - FUEL SOLENOID
GRD - GROUND
HEI - HIGH ENERGY IGNITION
LOS - LOW OIL SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMPERATURE
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH



LEGEND

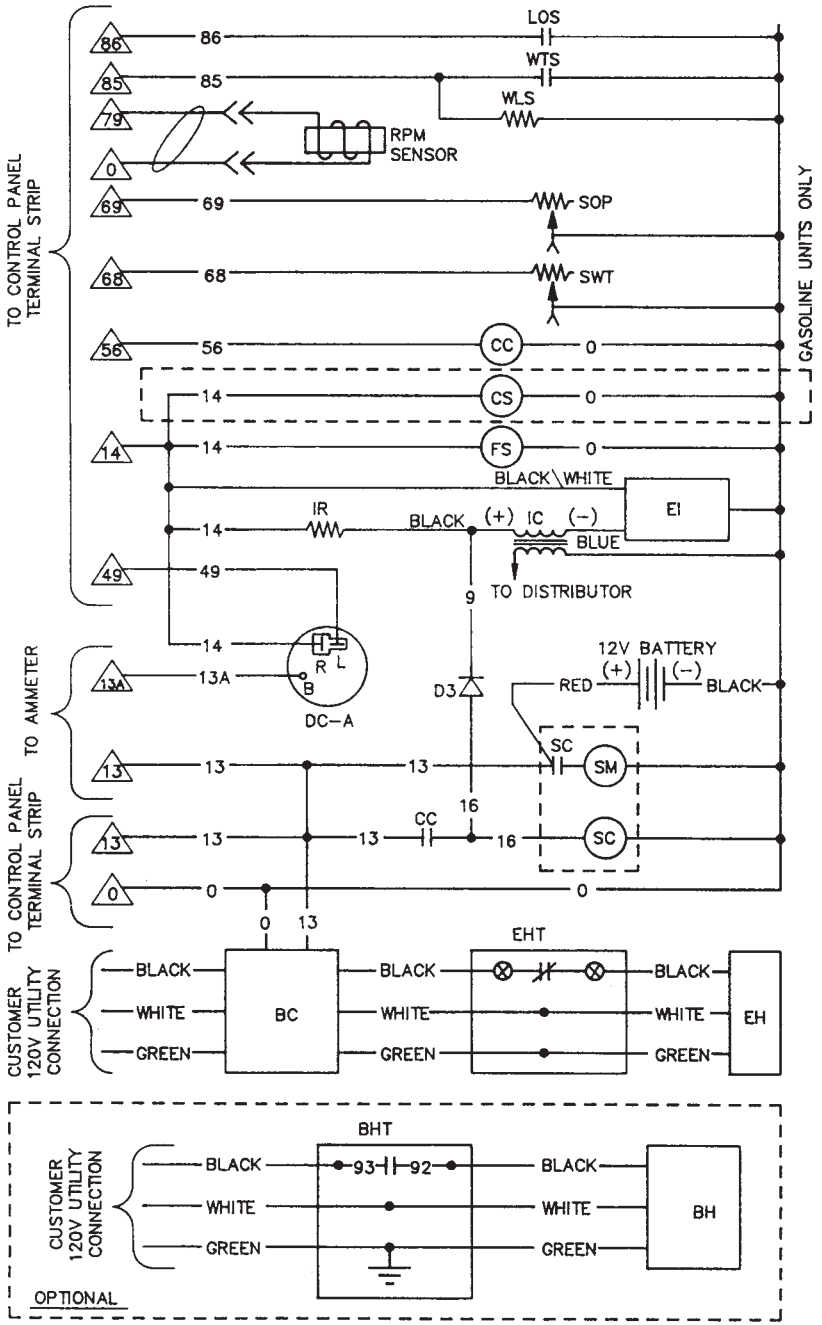
BC - BATTERY CHARGER
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CC - CONTROL CONTACTOR
D1 & D2 - DIODE
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
EH - ENGINE HEATER
EHT - ENGINE HEATER THERMOSTAT
FS - FUEL SOLENOID
GRD - GROUND
IC - IGNITION COIL
IR - IGNITION RESISTOR
LOS - LOW OIL SWITCH
SC - STARTER CONTACTOR
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WH/RED
BLK/YEL
WHITE
WH/BLK
BLACK
DC-VR
D2
14
14A
BLACK
GRD
IR
IC
FS
DC-A
13A
49
48
CC
SC
SM
RED
D1
LOS
SOP
SWT
WTS
WLS
RPM SENSOR
12-V. BATTERY
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
BC
EHT
EH
CUSTOMER 120V. UTILITY CONNECTION.
GREEN
BLACK
WHITE
CARB
TO IGNITION RESISTOR
GASOLINE ONLY
LIQUID PROPANE GAS ONLY
OPTIONAL
BHT
BH
93
92

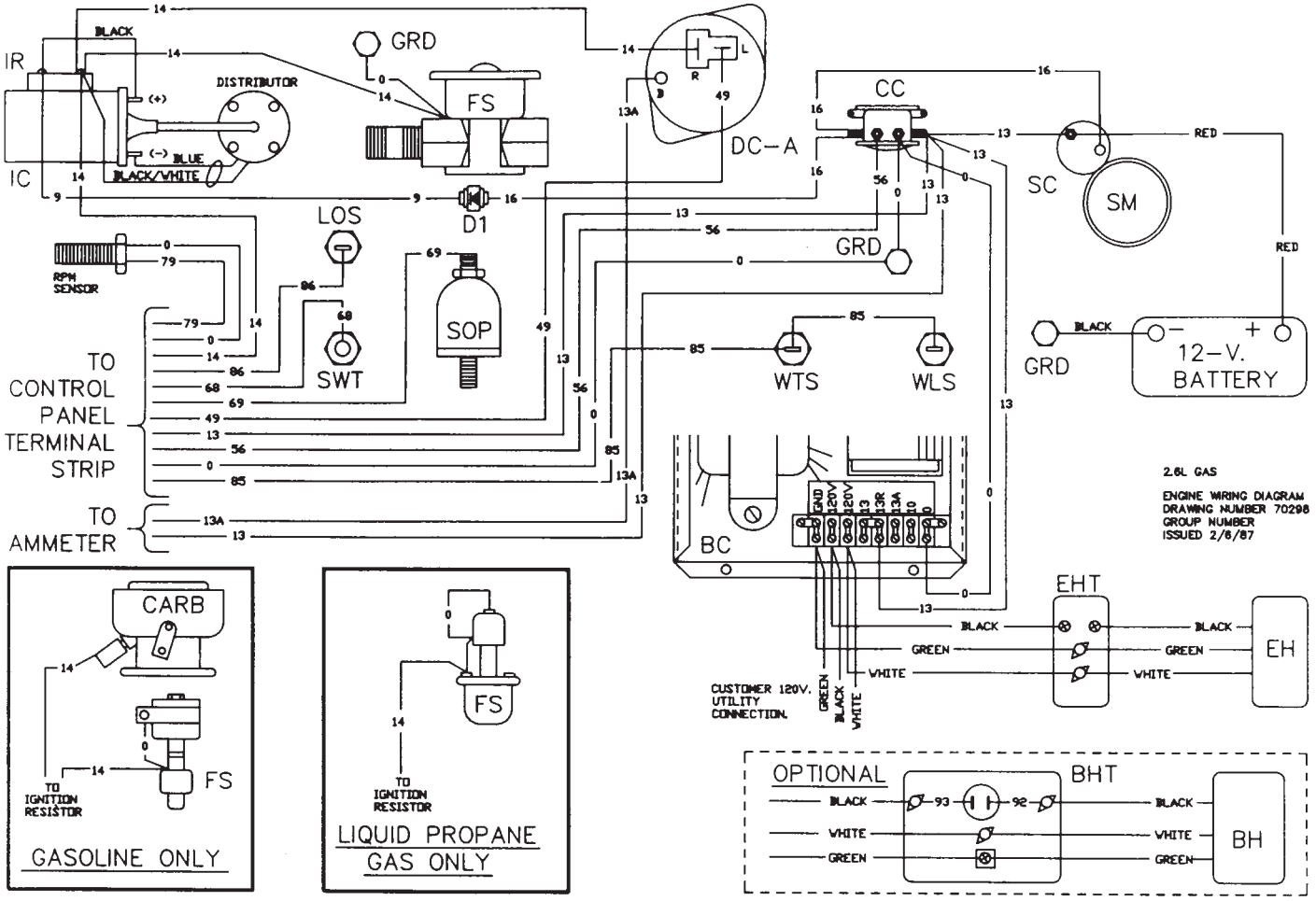
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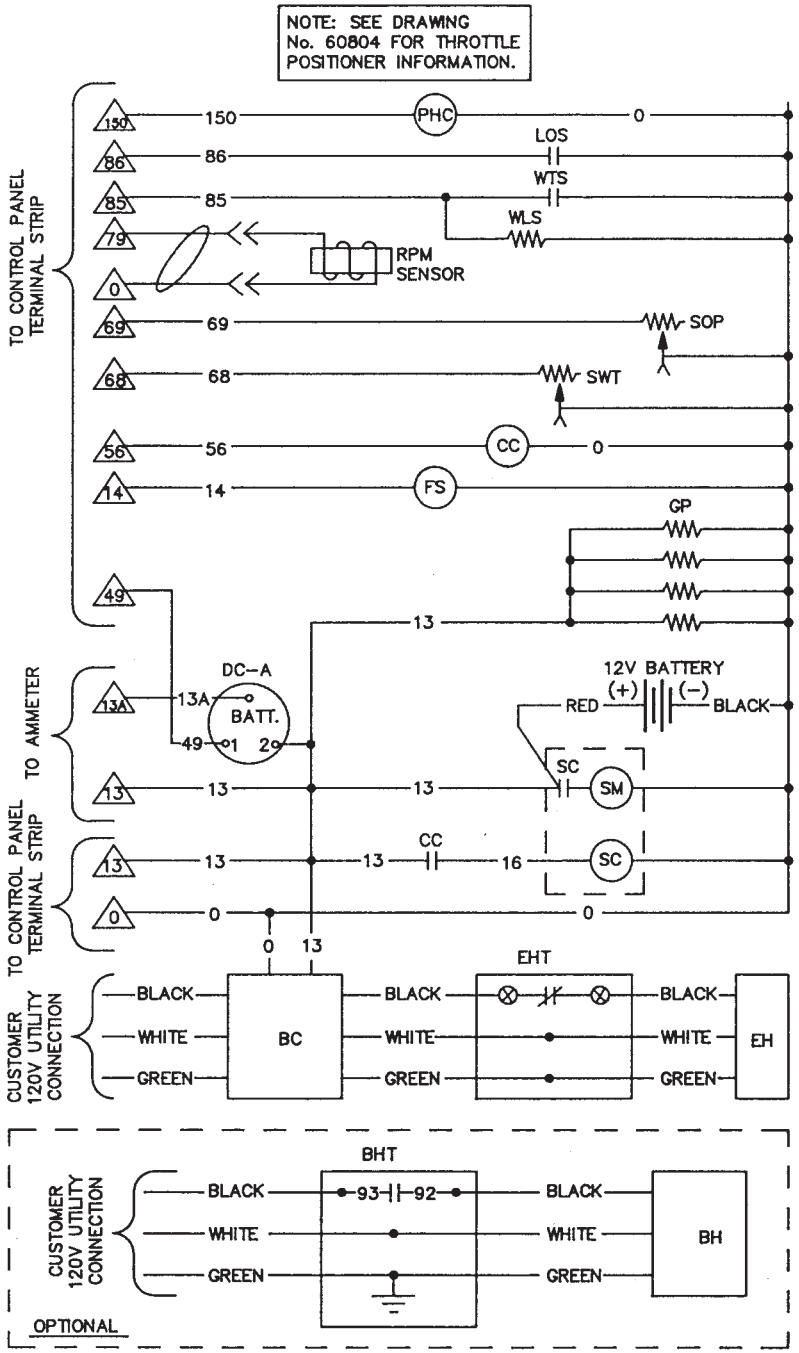
LEGEND

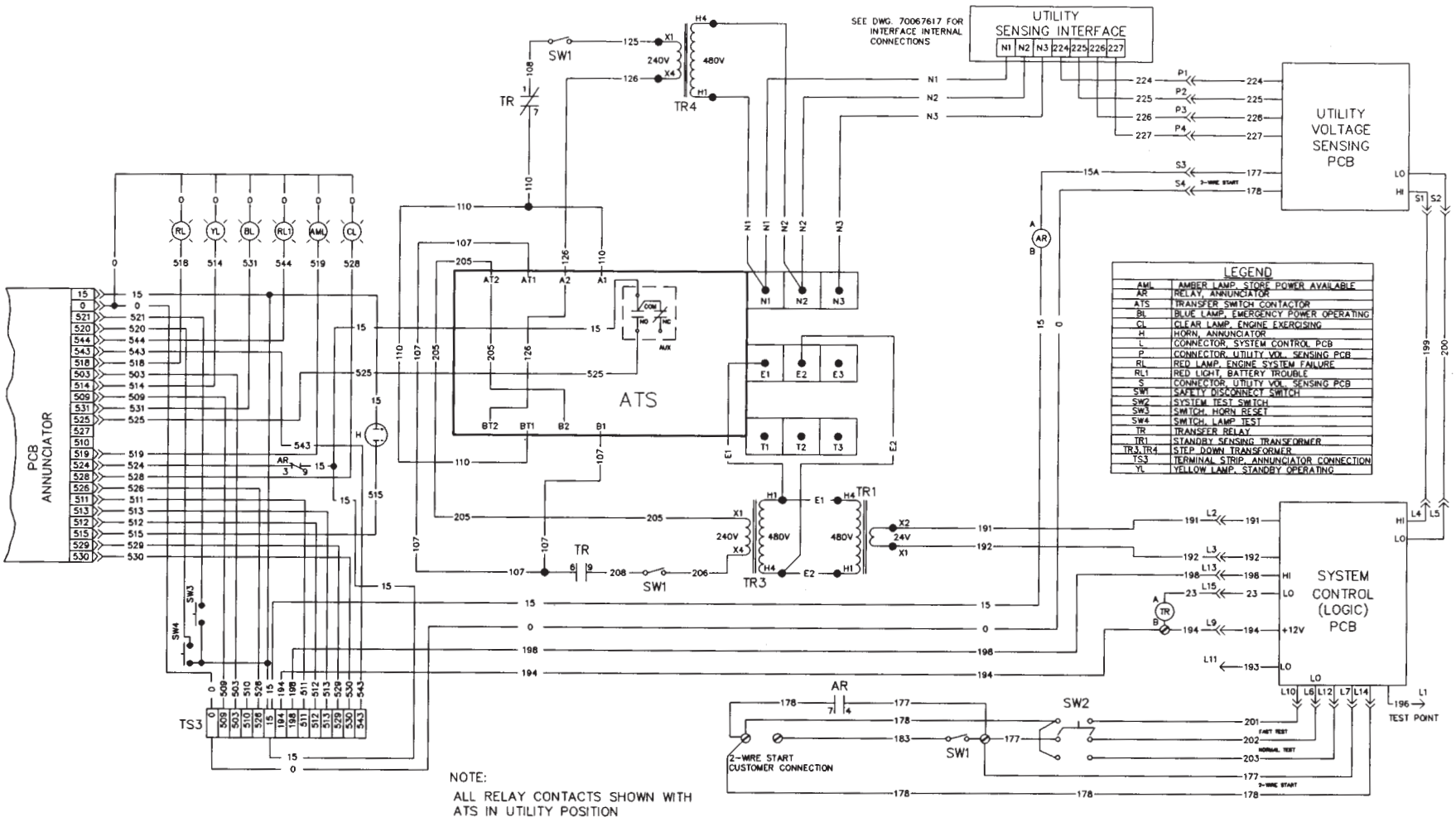
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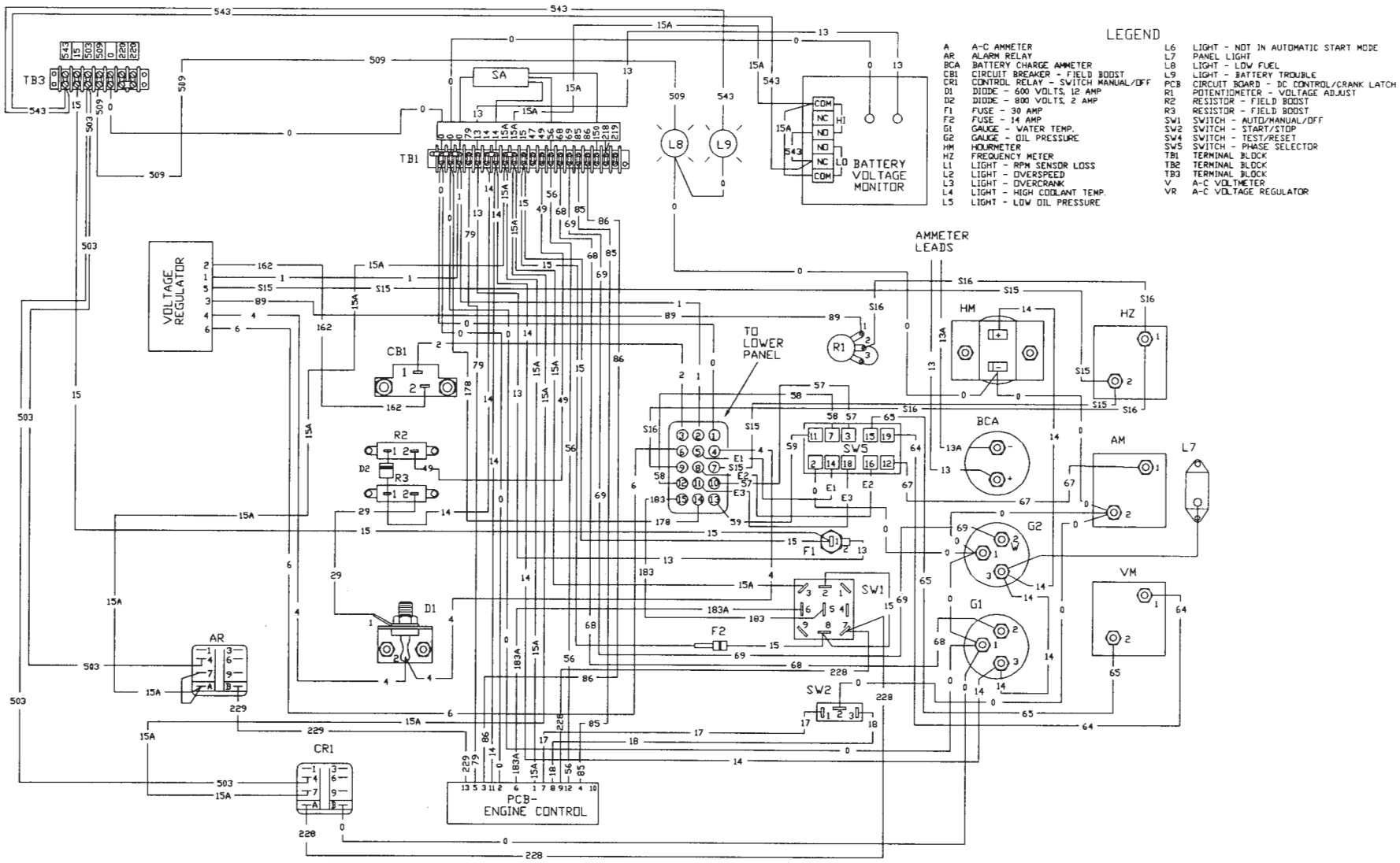


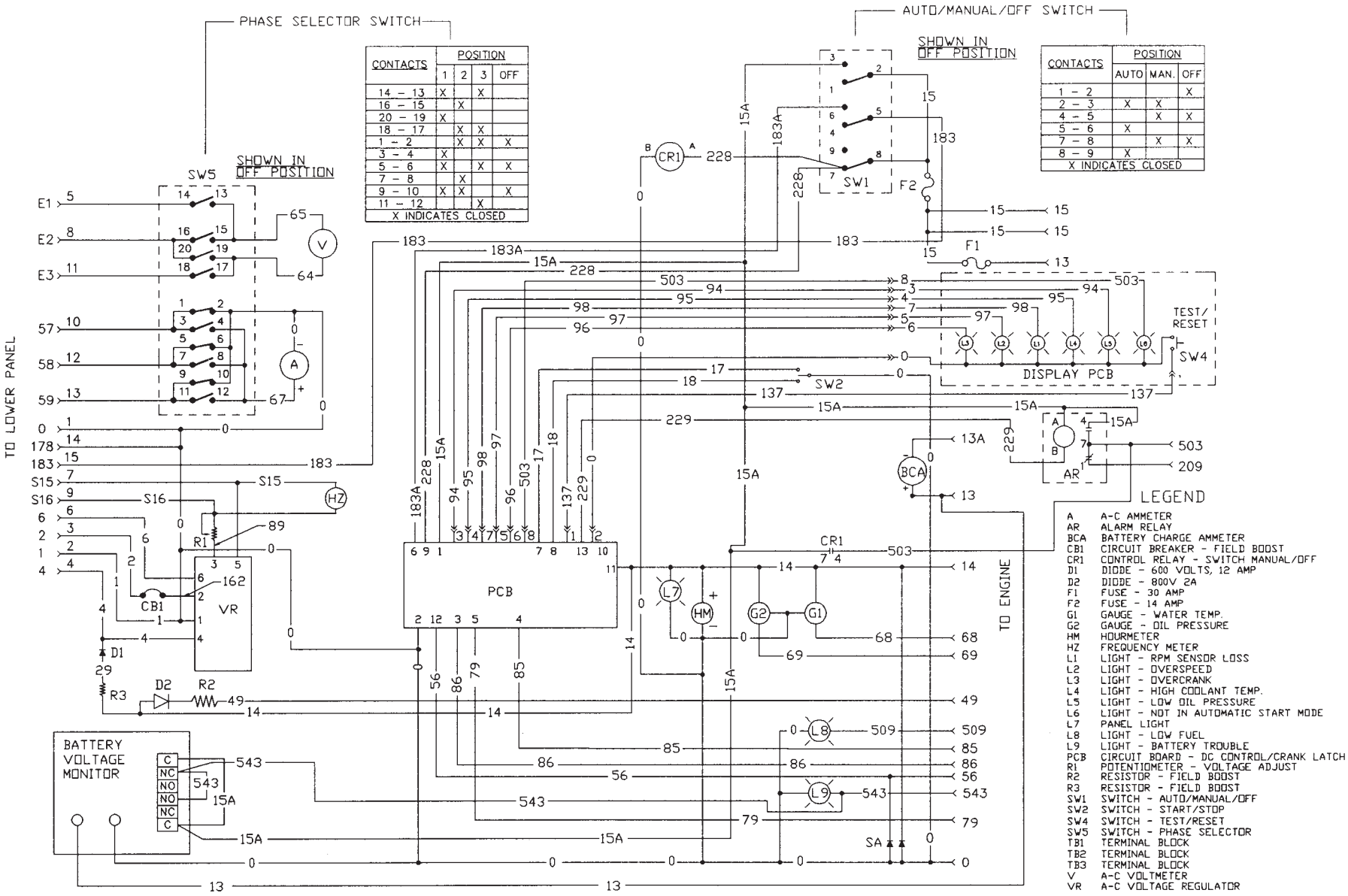
LEGEND

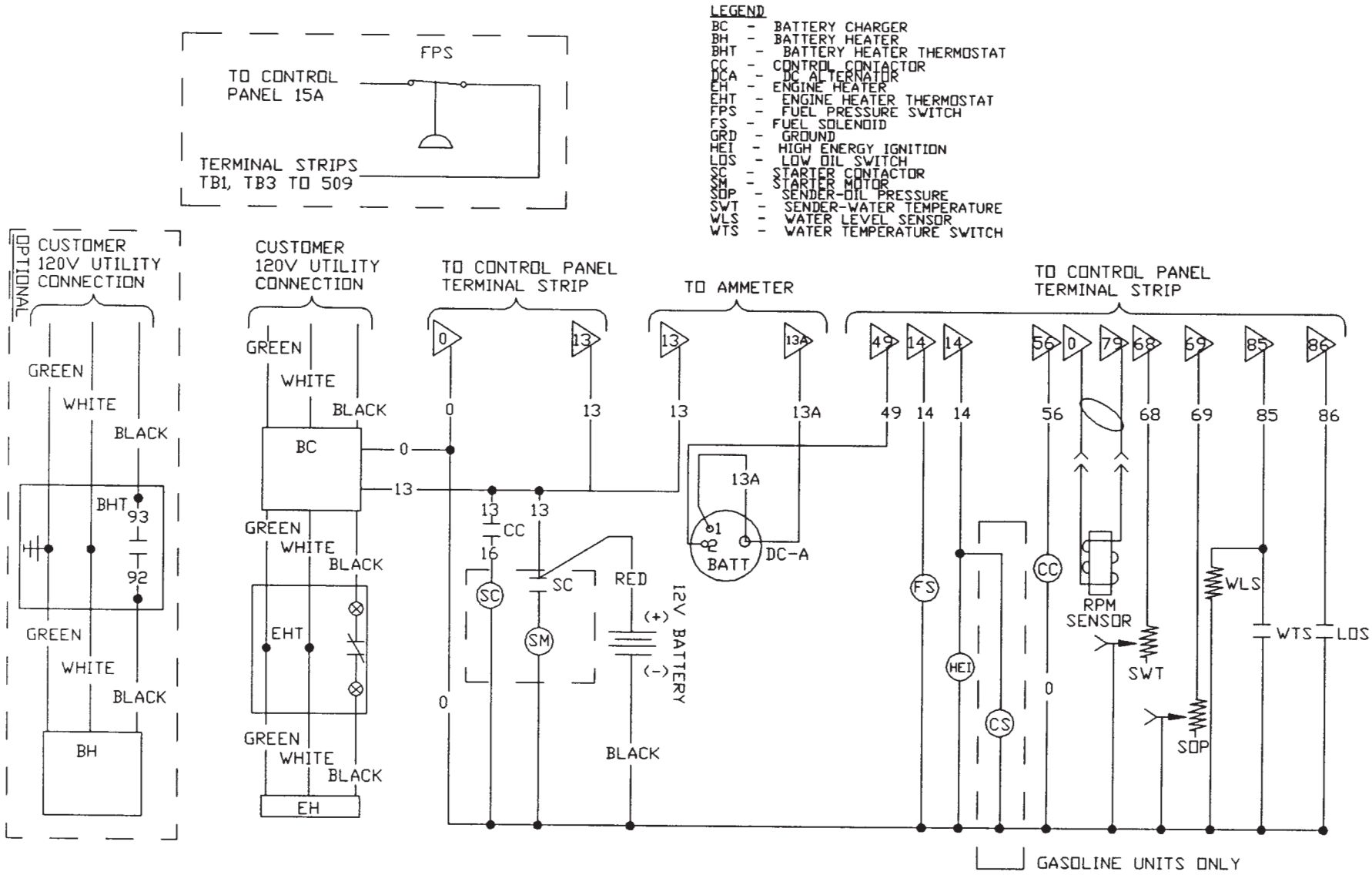
B - BATTERY 12-V.
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FS - FUEL SOLENOID
GP - GLOW PLUG
GPC - GLOW PLUG CONTROLLER
GRD - GROUND
LOS - LOW OIL SWITCH
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TP2 - THERMAL PROTECTOR BATT. HEAT.
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH

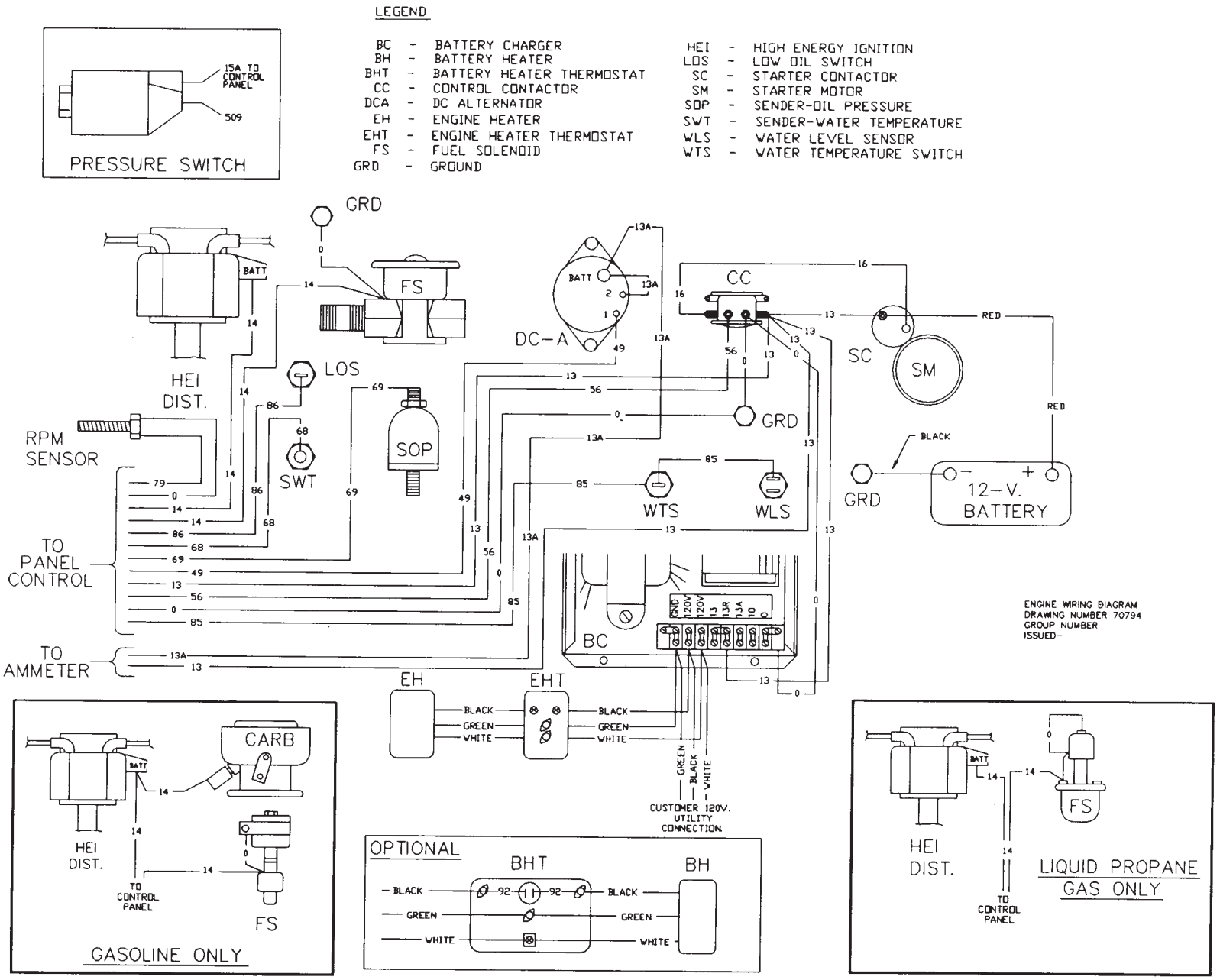


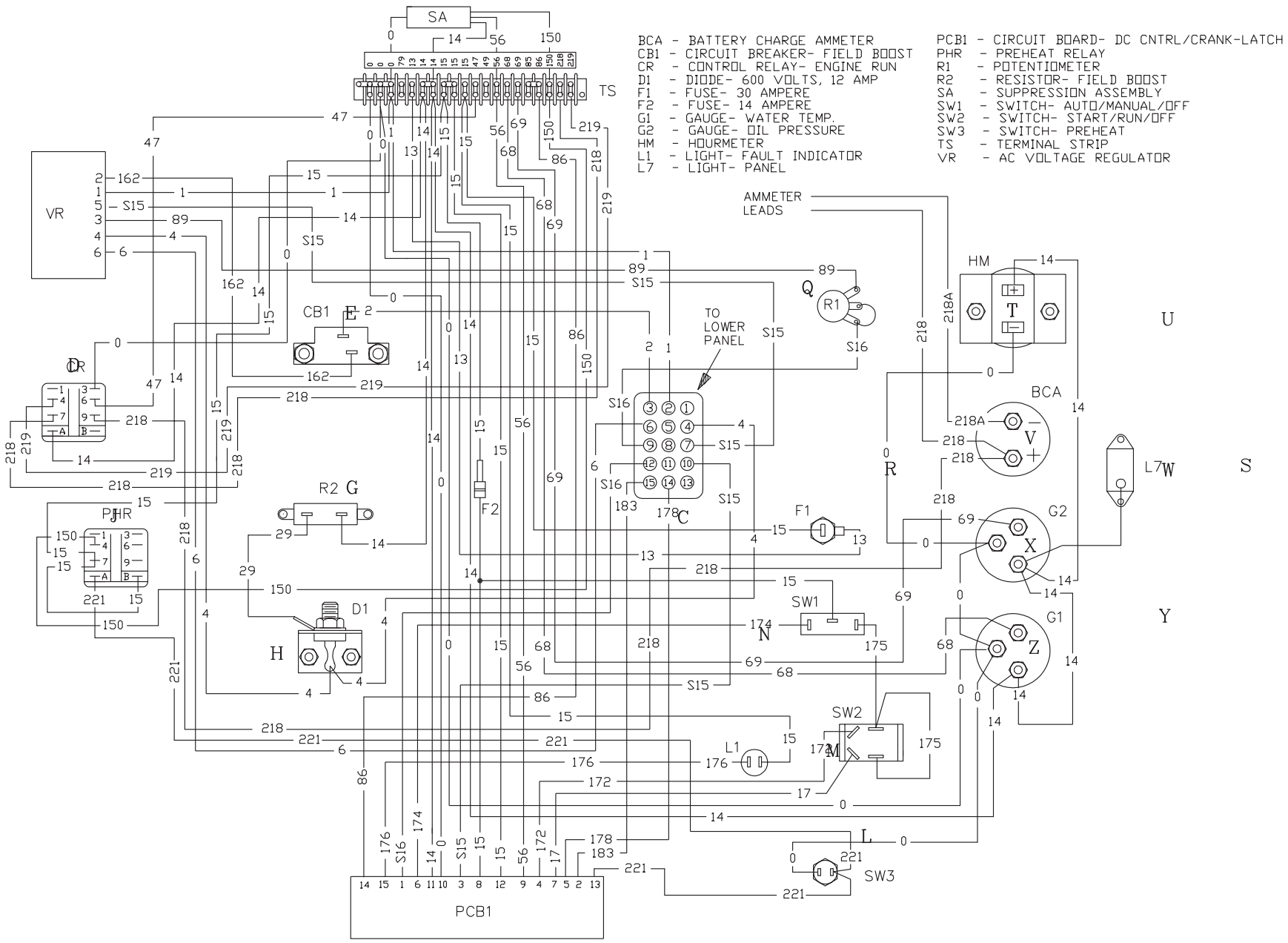

SEE DWG. 70067617 FOR INTERFACE INTERNAL CONNECTIONS
UTILITY SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY VOLTAGE SENSING PCB
SYSTEM CONTROL (LOGIC) PCB
ATS
TR
TR1
TR3
TR4
SW1
SW2
AR
PCB ANNUNCIATOR
TS3
LEGEND
AML AMBER LAMP, STORE POWER AVAILABLE
AR RELAY, ANNUNCIATOR
ATS TRANSFER SWITCH CONTACTOR
BL BLUE LAMP, EMERGENCY POWER OPERATING
CL CLEAR LAMP, ENGINE EXERCISING
H HORN, ANNUNCIATOR
L CONNECTOR, SYSTEM CONTROL PCB
P CONNECTOR, UTILITY VOL. SENSING PCB
RL RED LAMP, ENGINE SYSTEM FAILURE
RL1 RED LIGHT, BATTERY TROUBLE
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SAFETY DISCONNECT SWITCH
SW2 SYSTEM TEST SWITCH
SW3 SWITCH, HORN RESET
SW4 SWITCH, LAMP TEST
TR TRANSFER RELAY
TR1 STANDBY SENSING TRANSFORMER
TR3,TR4 STEP DOWN TRANSFORMER
TS3 TERMINAL STRIP, ANNUNCIATOR CONNECTION
YL YELLOW LAMP, STANDBY OPERATING
2-WIRE START CUSTOMER CONNECTION
TEST POINT
NOTE:
ALL RELAY CONTACTS SHOWN WITH ATS IN UTILITY POSITION

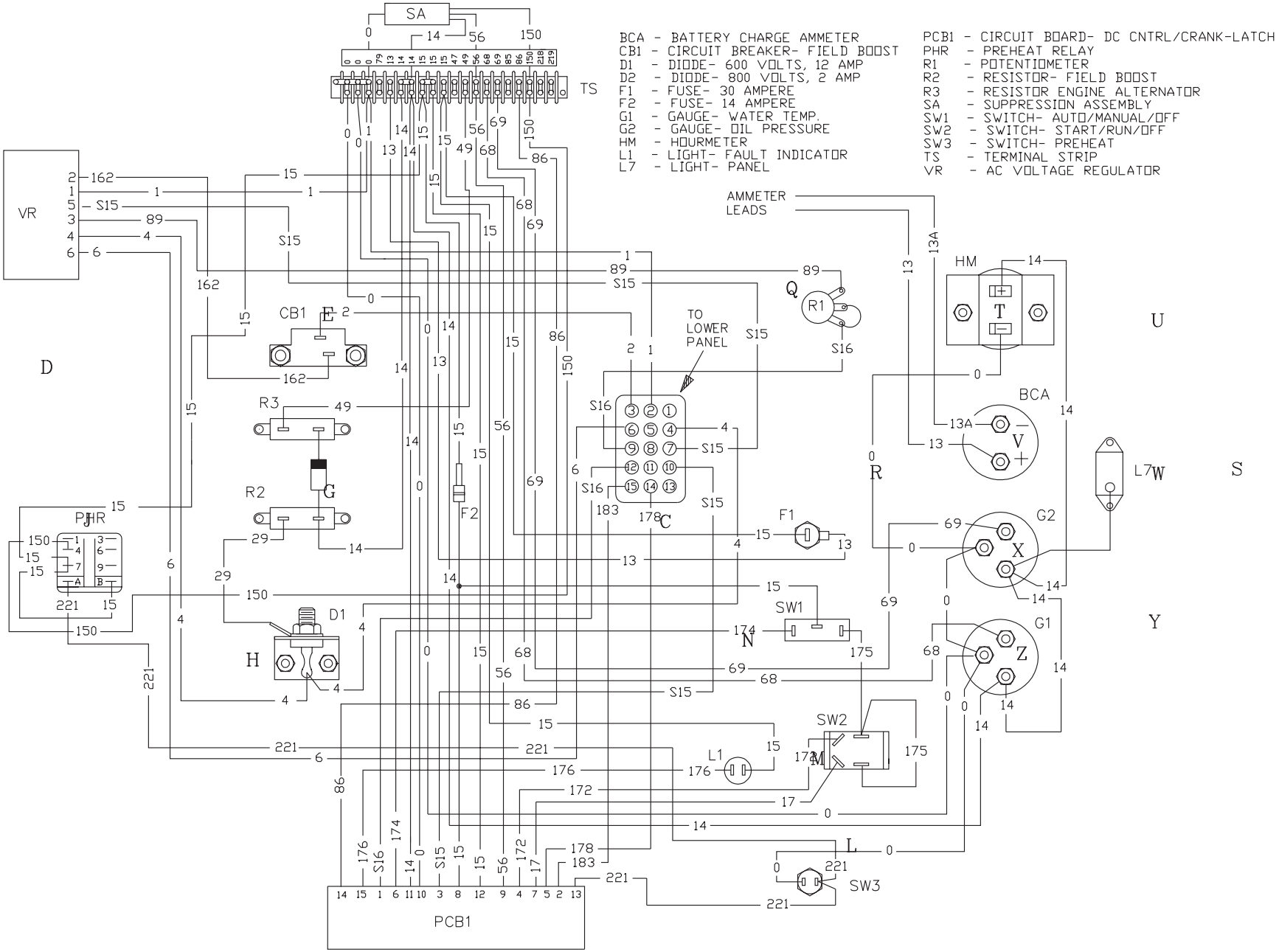

LEGEND
A A-C AMMETER
AR ALARM RELAY
BCA BATTERY CHARGE AMMETER
CB1 CIRCUIT BREAKER - FIELD BOOST
CR1 CONTROL RELAY - SWITCH MANUAL/OFF
D1 DIODE - 600 VOLTS, 12 AMP
D2 DIODE - 800 VOLTS, 2 AMP
F1 FUSE - 30 AMP
F2 FUSE - 14 AMP
G1 GAUGE - WATER TEMP.
G2 GAUGE - OIL PRESSURE
HM HOURMETER
HZ FREQUENCY METER
L1 LIGHT - RPM SENSOR LOSS
L2 LIGHT - OVERSPEED
L3 LIGHT - OVERCRANK
L4 LIGHT - HIGH COOLANT TEMP.
L5 LIGHT - LOW OIL PRESSURE
L6 LIGHT - NOT IN AUTOMATIC START MODE
L7 PANEL LIGHT
L8 LIGHT - LOW FUEL
L9 LIGHT - BATTERY TROUBLE
PCB CIRCUIT BOARD - DC CONTROL/CRANK LATCH
R1 POTENTIOMETER - VOLTAGE ADJUST
R2 RESISTOR - FIELD BOOST
R3 RESISTOR - FIELD BOOST
SW1 SWITCH - AUTO/MANUAL/OFF
SW2 SWITCH - START/STOP
SW4 SWITCH - TEST/RESET
SW5 SWITCH - PHASE SELECTOR
TB1 TERMINAL BLOCK
TB2 TERMINAL BLOCK
TB3 TERMINAL BLOCK
V A-C VOLTMETER
VR A-C VOLTAGE REGULATOR
TB3
TB1
SA
L8
L9
BATTERY VOLTAGE MONITOR
VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
CB1
R1
HM
HZ
BCA
AM
L7
R2
R3
D2
SW5
G2
F1
VM
D1
SW1
G1
F2
AR
SW2
CR1
PCB- ENGINE CONTROL

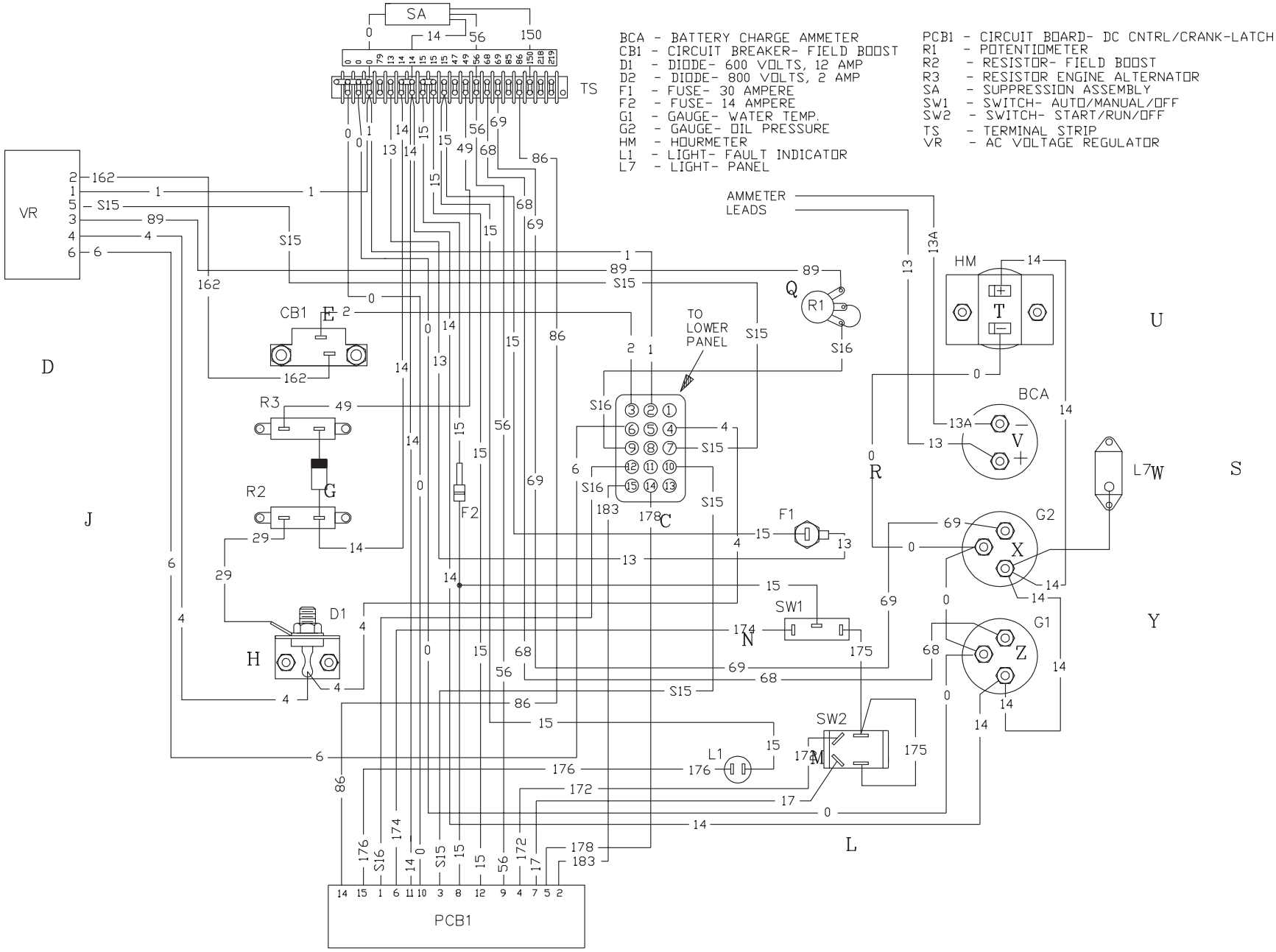

PHASE SELECTOR SWITCH
SHOWN IN OFF POSITION
SW5
CONTACTS | POSITION 1 | 2 | 3 | OFF
14 – 13 | X | | X |
16 – 15 | | X | |
20 – 19 | X | | |
18 – 17 | | X | X |
1 – 2 | | X | X | X
3 – 4 | X | | |
5 – 6 | X | | X | X
7 – 8 | | X | |
9 – 10 | X | X | | X
11 – 12 | | | X |
X INDICATES CLOSED
AUTO/MANUAL/OFF SWITCH
SHOWN IN OFF POSITION
SW1
CONTACTS | POSITION AUTO | MAN. | OFF
1 – 2 | | | X
2 – 3 | X | X |
4 – 5 | | X | X
5 – 6 | X | | |
7 – 8 | | X | X
8 – 9 | X | |
X INDICATES CLOSED
TO LOWER PANEL
E1
E2
E3
V
A
HZ
R1
VR
CB1
D1
D2
R2
R3
PCB
CR1
BCA
AR
F1
F2
SW2
SW4
TEST/ RESET
DISPLAY PCB
L1
L2
L3
L4
L5
L6
L7
L8
L9
HM
G1
G2
BATTERY VOLTAGE MONITOR
TO ENGINE
SA
LEGEND
A A-C AMMETER
AR ALARM RELAY
BCA BATTERY CHARGE AMMETER
CB1 CIRCUIT BREAKER - FIELD BOOST
CR1 CONTROL RELAY - SWITCH MANUAL/OFF
D1 DIODE - 600 VOLTS, 12 AMP
D2 DIODE - 800V 2A
F1 FUSE - 30 AMP
F2 FUSE - 14 AMP
G1 GAUGE - WATER TEMP.
G2 GAUGE - OIL PRESSURE
HM HOURMETER
HZ FREQUENCY METER
L1 LIGHT - RPM SENSOR LOSS
L2 LIGHT - OVERSPEED
L3 LIGHT - OVERCRANK
L4 LIGHT - HIGH COOLANT TEMP.
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R2 RESISTOR - FIELD BOOST
R3 RESISTOR - FIELD BOOST
SW1 SWITCH - AUTO/MANUAL/OFF
SW2 SWITCH - START/STOP
SW4 SWITCH - TEST/RESET
SW5 SWITCH - PHASE SELECTOR
TB1 TERMINAL BLOCK
TB2 TERMINAL BLOCK
TB3 TERMINAL BLOCK
V A-C VOLTMETER
VR A-C VOLTAGE REGULATOR

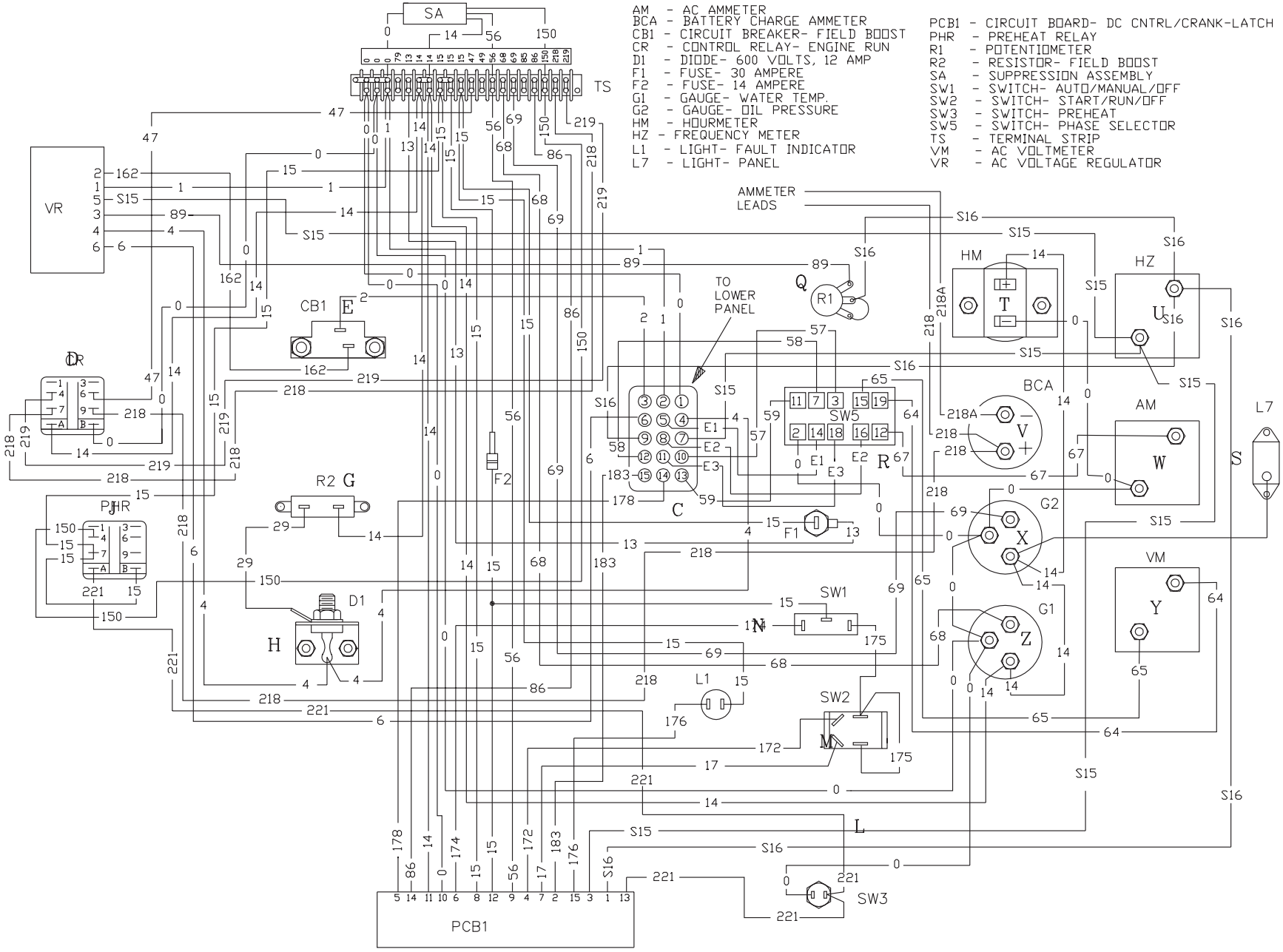

LEGEND
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATTERY HEATER THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENGINE HEATER THERMOSTAT
FPS - FUEL PRESSURE SWITCH
FS - FUEL SOLENOID
GRD - GROUND
HEI - HIGH ENERGY IGNITION
LOS - LOW OIL SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMPERATURE
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
FPS
TO CONTROL PANEL 15A
TERMINAL STRIPS TB1, TB3 TO 509
OPTIONAL
CUSTOMER 120V UTILITY CONNECTION
GREEN
WHITE
BLACK
BHT
93
92
BH
CUSTOMER 120V UTILITY CONNECTION
BC
EHT
EH
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
TO CONTROL PANEL TERMINAL STRIP
0
13
13A
49
14
56
68
69
85
86
CC
16
SC
SM
RED
12V BATTERY
(+)
(-)
BATT
DC-A
FS
HEI
CS
RPM SENSOR
SWT
SOP
WLS
WTS
LOS
GASOLINE UNITS ONLY

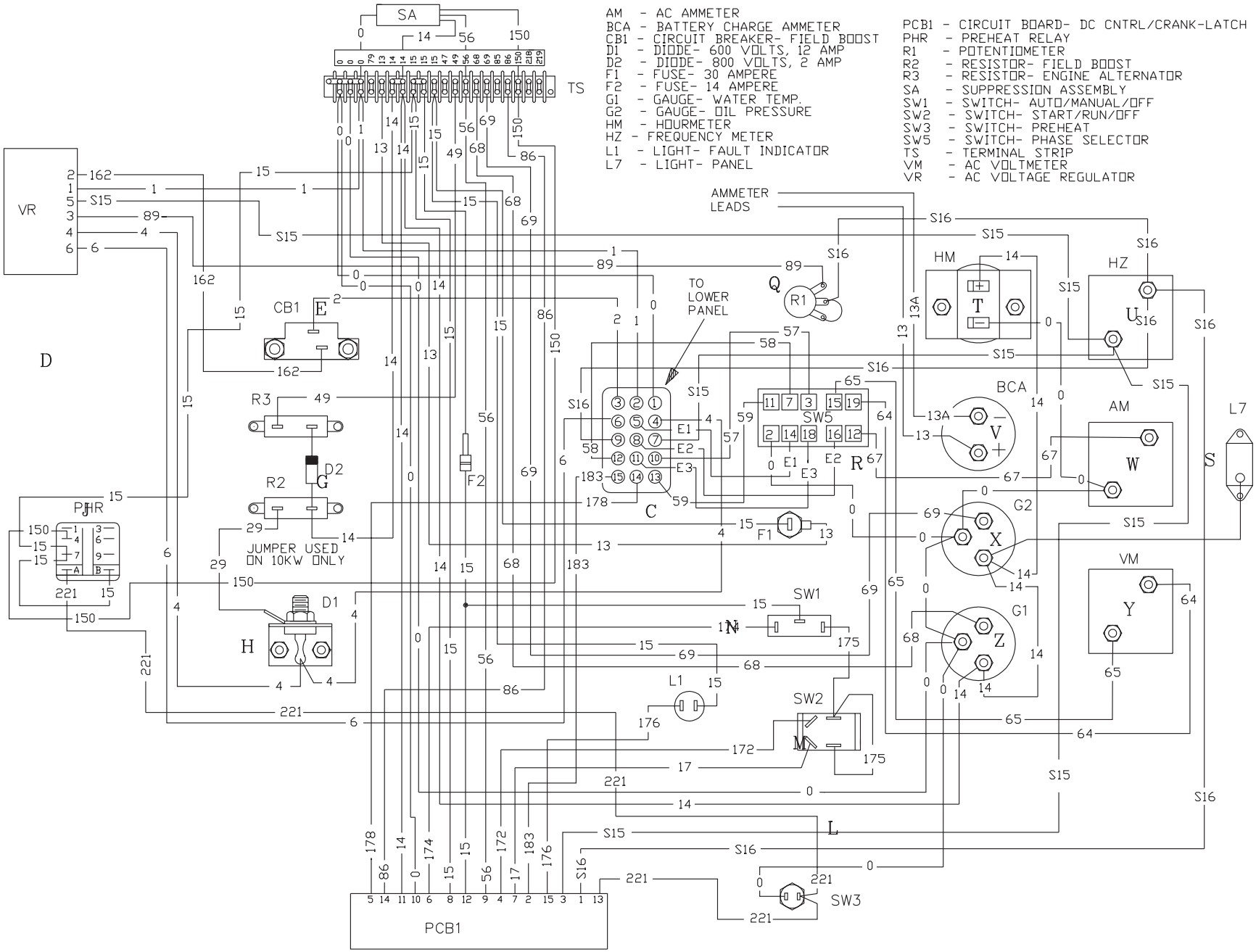

LEGEND
BC - BATTERY CHARGER
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CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENGINE HEATER THERMOSTAT
FS - FUEL SOLENOID
GRD - GROUND
HEI - HIGH ENERGY IGNITION
LOS - LOW OIL SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMPERATURE
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
15A TO CONTROL PANEL
509
PRESSURE SWITCH
GRD
FS
BATT
HEI DIST.
LOS
SOP
SWT
RPM SENSOR
DC-A
CC
SC
SM
RED
BLACK
GRD
12-V. BATTERY
WTS
WLS
TO PANEL CONTROL
TO AMMETER
BC
EH
EHT
BLACK
GREEN
WHITE
CUSTOMER 120V. UTILITY CONNECTION
ENGINE WIRING DIAGRAM
DRAWING NUMBER 70794
GROUP NUMBER
ISSUED-
CARB
HEI DIST.
TO CONTROL PANEL
FS
GASOLINE ONLY
OPTIONAL
BHT
BH
LIQUID PROPANE GAS ONLY

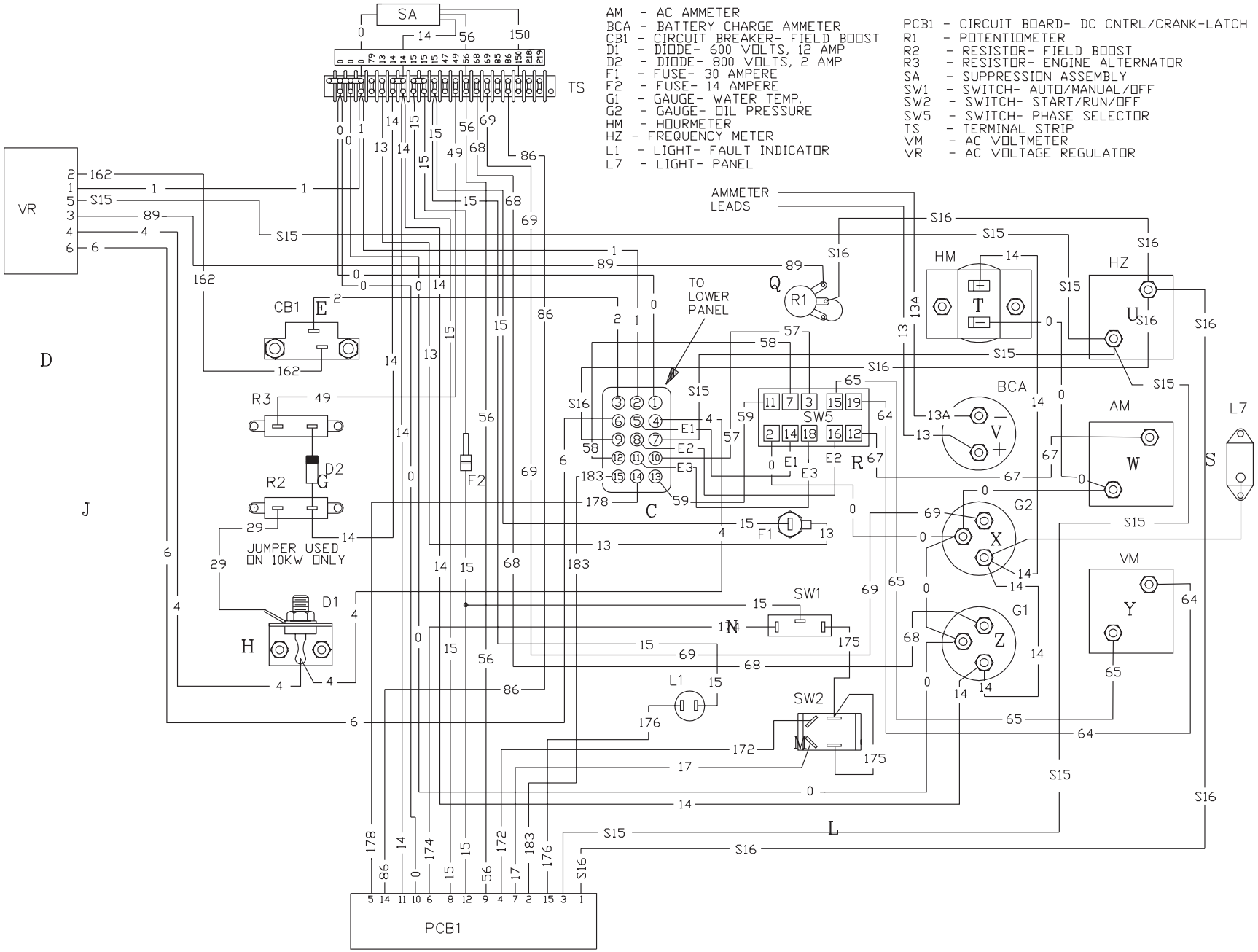

BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
CR - CONTROL RELAY- ENGINE RUN
D1 - DIODE- 600 VOLTS, 12 AMP
F1 - FUSE- 30 AMPERE
F2 - FUSE- 14 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
L1 - LIGHT- FAULT INDICATOR
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD- DC CNTRL/CRANK-LATCH
PHR - PREHEAT RELAY
R1 - POTENTIOMETER
R2 - RESISTOR- FIELD BOOST
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
TS - TERMINAL STRIP
VR - AC VOLTAGE REGULATOR
SA
TS
VR
CB1
CR
PHR
D1
F1
F2
R2
R1
HM
BCA
G2
G1
SW1
SW2
SW3
L1
L7
PCB1
AMMETER LEADS
TO LOWER PANEL

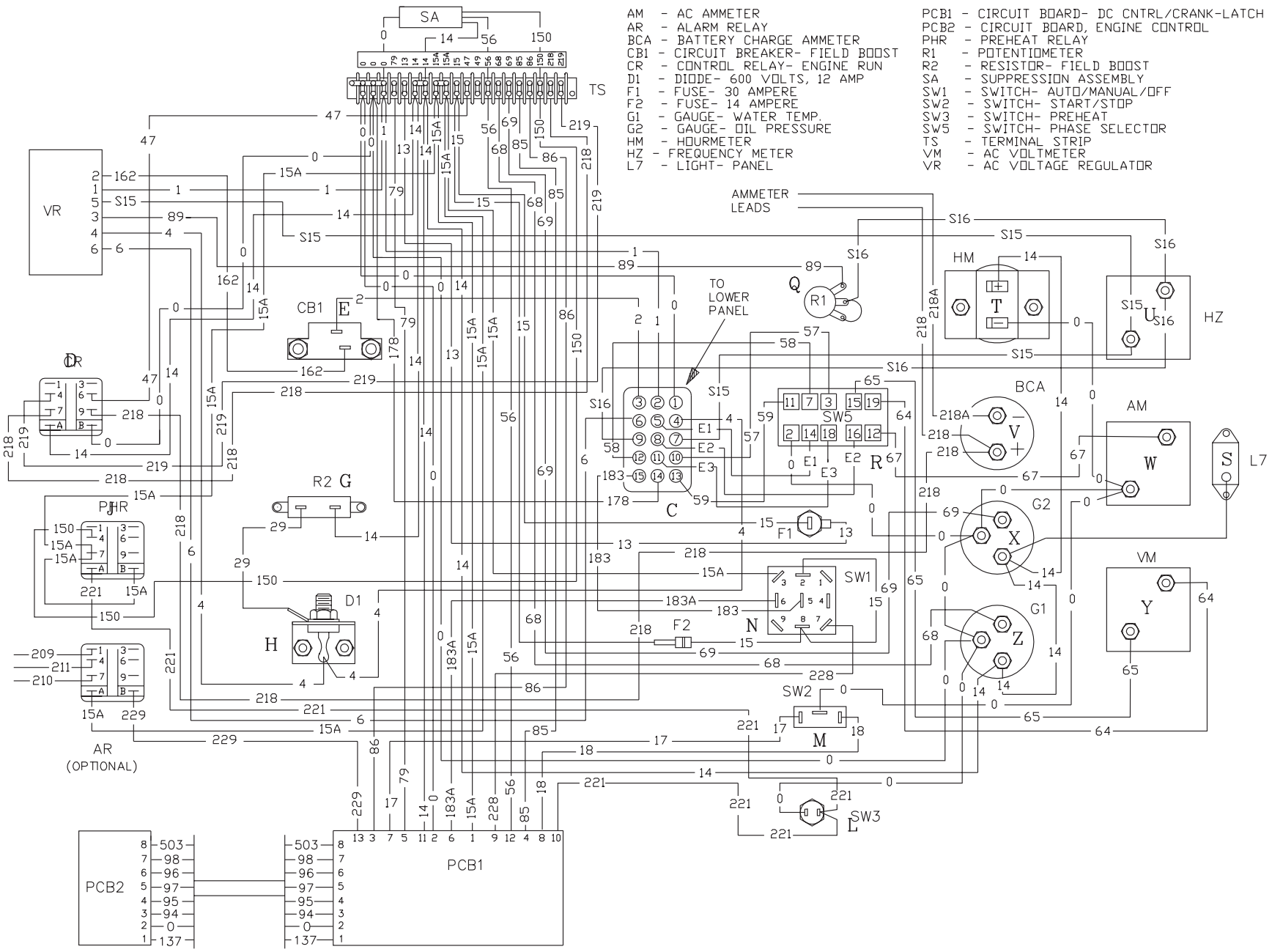

BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
D1 - DIODE- 600 VOLTS, 12 AMP
D2 - DIODE- 800 VOLTS, 2 AMP
F1 - FUSE- 30 AMPERE
F2 - FUSE- 14 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
L1 - LIGHT- FAULT INDICATOR
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD- DC CNTRL/CRANK-LATCH
PHR - PREHEAT RELAY
R1 - POTENTIOMETER
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR ENGINE ALTERNATOR
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
TS - TERMINAL STRIP
VR - AC VOLTAGE REGULATOR
SA
TS
VR
AMMETER LEADS
TO LOWER PANEL
CB1
R1
R2
R3
PHR
D1
F1
F2
SW1
SW2
SW3
L1
HM
BCA
G1
G2
PCB1

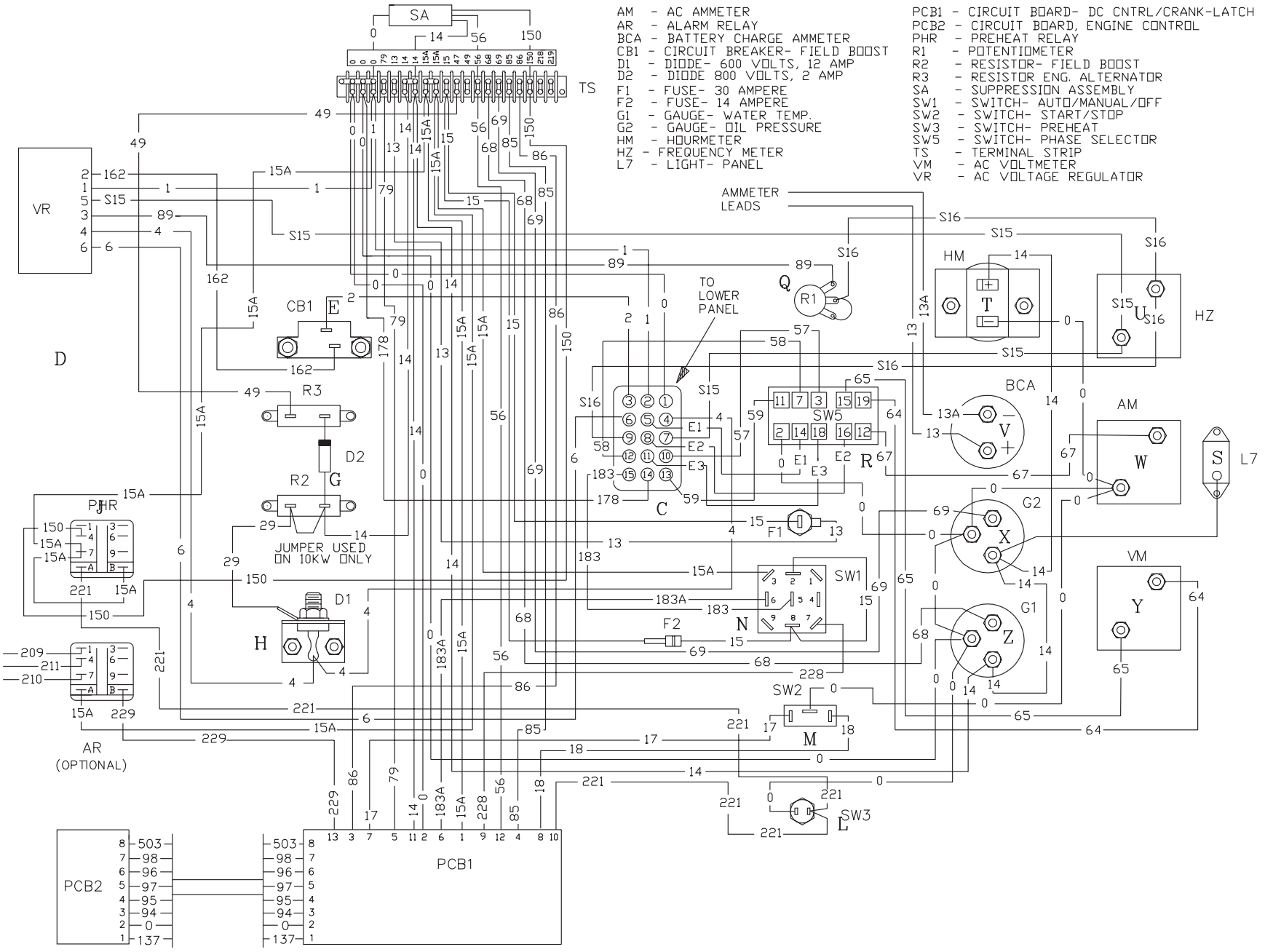

BCA - BATTERY CHARGE AMMETER
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TS - TERMINAL STRIP
VR - AC VOLTAGE REGULATOR
SA
TS
VR
AMMETER LEADS
HM
BCA
CB1
R1
R2
R3
F1
F2
D1
G1
G2
SW1
SW2
L1
L7
TO LOWER PANEL
PCB1
D
E
J
C
H
N
M
L
R
U
S
W
Y
Z
X
V
T
Q

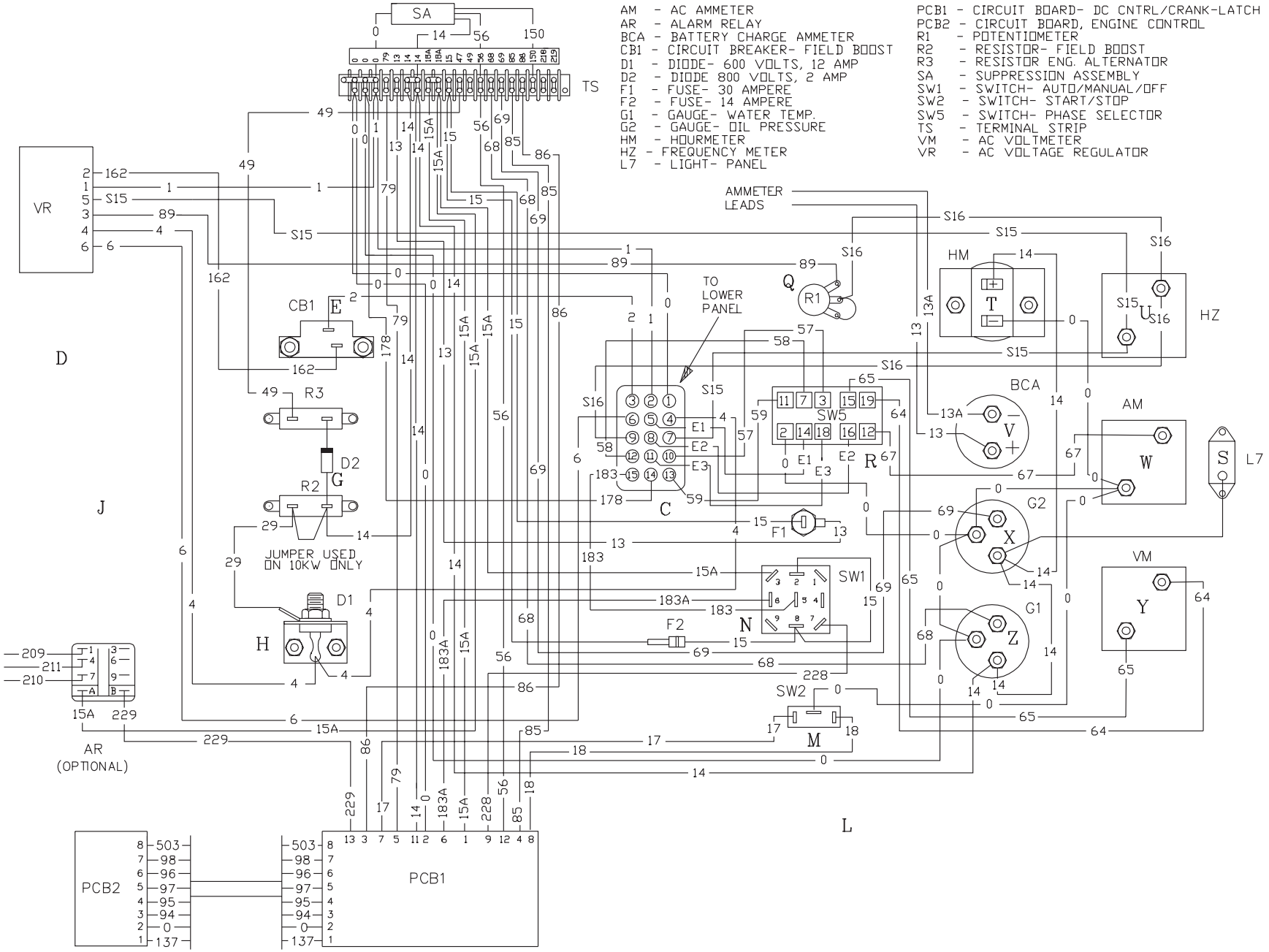

AM - AC AMMETER
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
CR - CONTROL RELAY- ENGINE RUN
D1 - DIODE- 600 VOLTS, 12 AMP
F1 - FUSE- 30 AMPERE
F2 - FUSE- 14 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT- FAULT INDICATOR
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R2 - RESISTOR- FIELD BOOST
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
SW5 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
SA
TS
VR
CB1
CR
PHR
R2
F2
F1
D1
SW1
SW2
SW3
SW5
L1
R1
HM
HZ
BCA
AM
L7
VM
G1
G2
PCB1

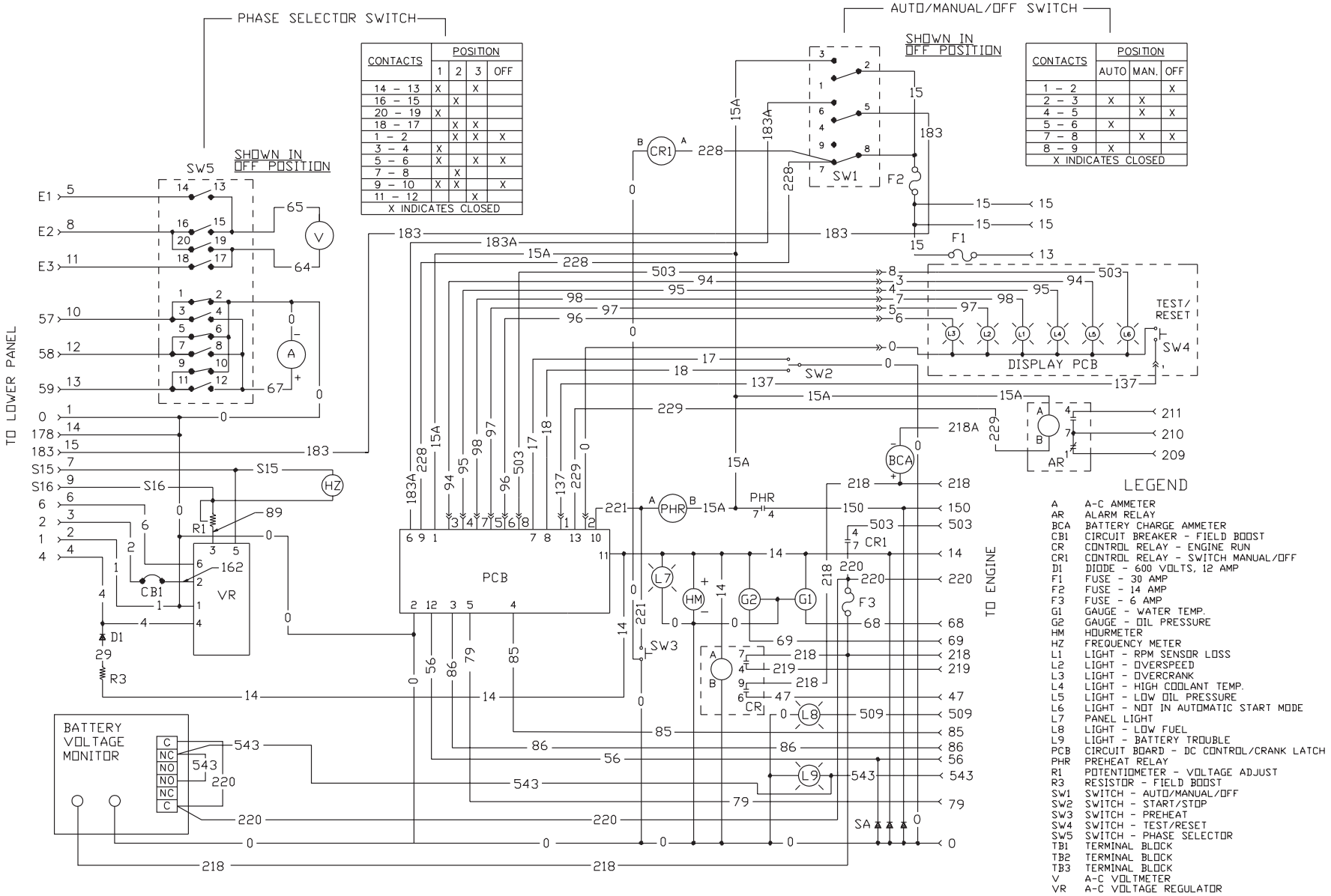

AM - AC AMMETER
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CB1 - CIRCUIT BREAKER- FIELD BOOST
D1 - DIODE- 600 VOLTS, 12 AMP
D2 - DIODE- 800 VOLTS, 2 AMP
F1 - FUSE- 30 AMPERE
F2 - FUSE- 14 AMPERE
G1 - GAUGE- WATER TEMP.
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R3 - RESISTOR- ENGINE ALTERNATOR
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SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
SW5 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
SA
TS
VR
CB1
R3
R2
D2
F2
F1
D1
PHR
JUMPER USED ON 10KW ONLY
TO LOWER PANEL
AMMETER LEADS
R1
HM
HZ
BCA
AM
VM
L7
SW1
SW2
SW3
SW5
L1
PCB1

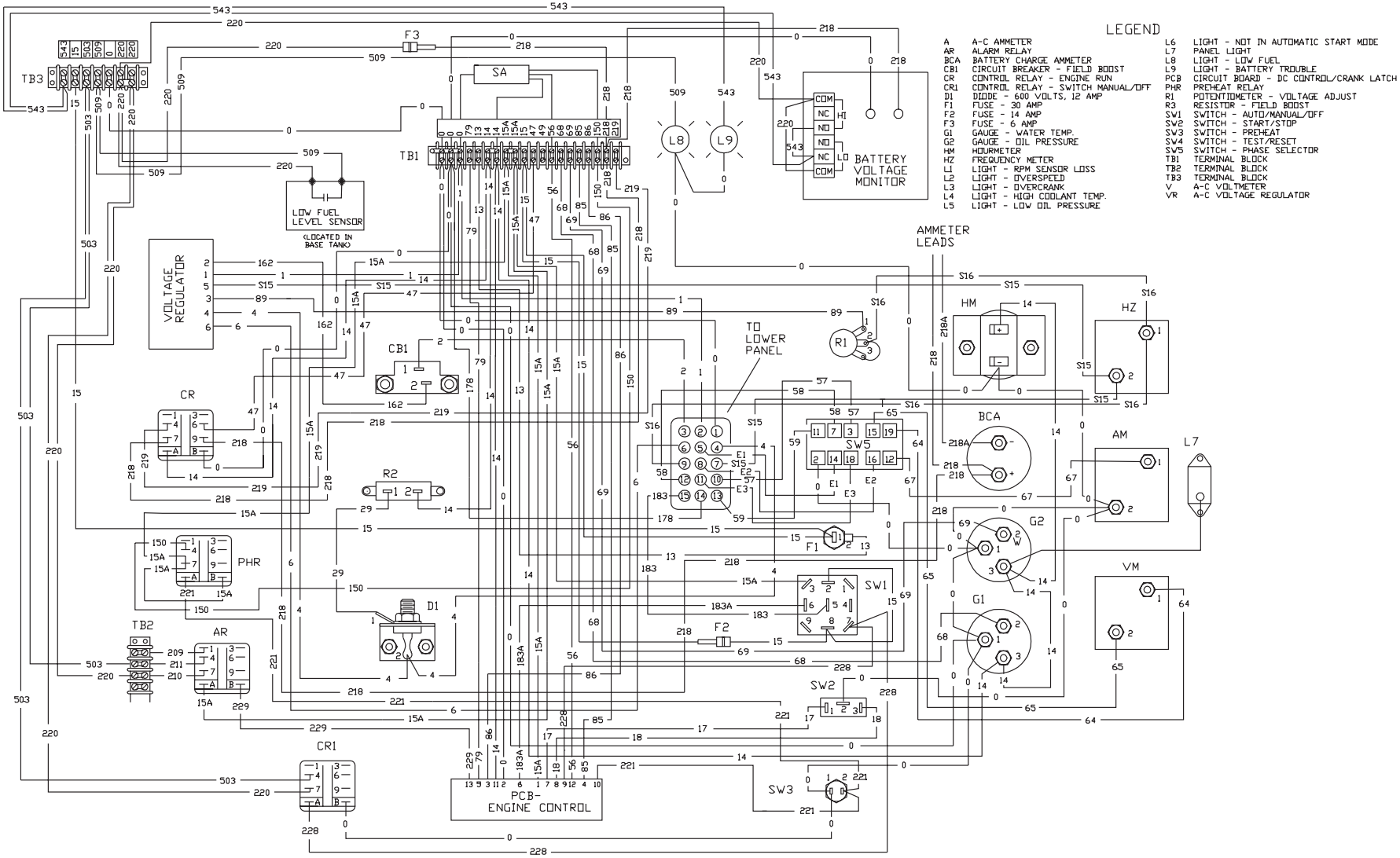

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VR
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R2
R3
D1
D2
F1
F2
L1
L7
SW1
SW2
SW5
HM
HZ
BCA
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PCB1
AMMETER LEADS
TO LOWER PANEL
JUMPER USED ON 10KW ONLY
D
J
C
R
S
L

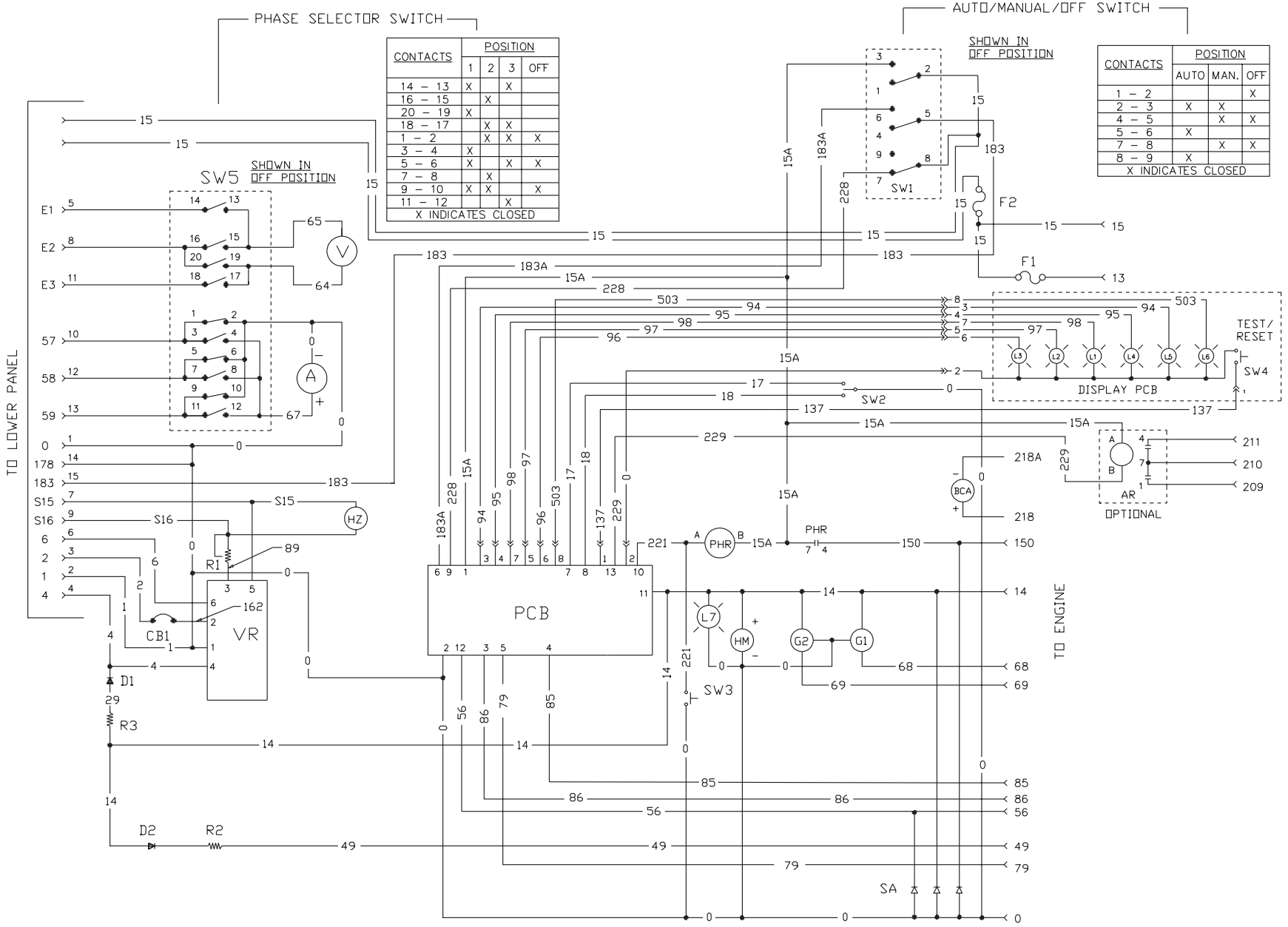

AM - AC AMMETER
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G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD- DC CNTRL/CRANK-LATCH
PCB2 - CIRCUIT BOARD, ENGINE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER
R2 - RESISTOR- FIELD BOOST
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/STOP
SW3 - SWITCH- PREHEAT
SW5 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
SA
TS
VR
CB1
CR
PHR
R2
D1
F1
F2
SW1
SW2
SW3
SW5
R1
HM
BCA
AM
VM
HZ
L7
AR
(OPTIONAL)
PCB1
PCB2
AMMETER
LEADS
TO
LOWER
PANEL

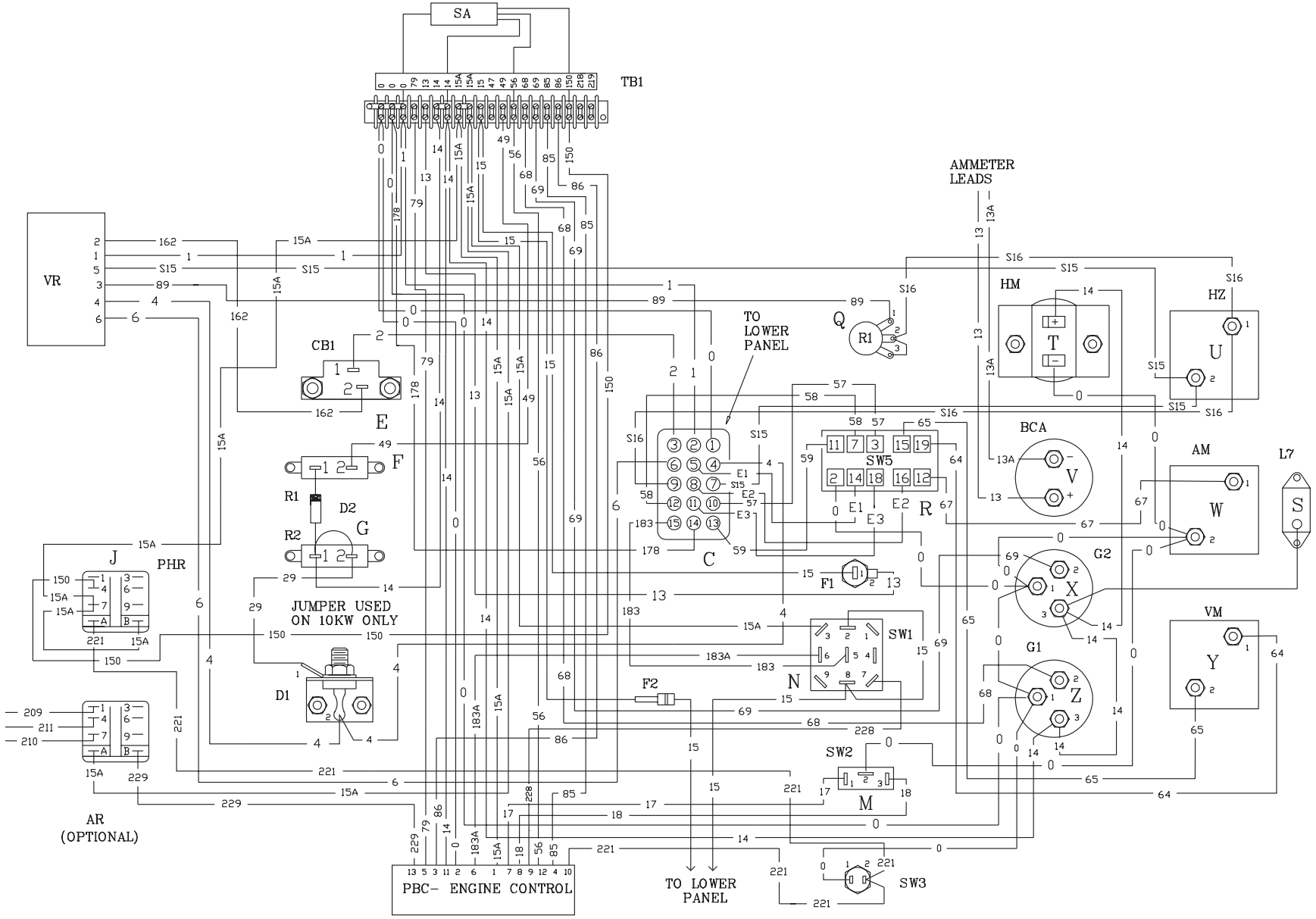

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D1 - DIODE- 600 VOLTS, 12 AMP
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R1 - POTENTIOMETER
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR ENG. ALTERNATOR
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/STOP
SW3 - SWITCH- PREHEAT
SW5 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
SA
TS
VR
CB1
D
R3
D2
R2
G
PHR
JUMPER USED ON 10KW ONLY
D1
H
AR (OPTIONAL)
AMMETER LEADS
TO LOWER PANEL
R1
Q
HM
T
U
HZ
SW5
C
E
R
BCA
V
AM
W
S
L7
F1
G2
X
SW1
N
F2
G1
Z
VM
Y
SW2
M
SW3
L
PCB2
PCB1

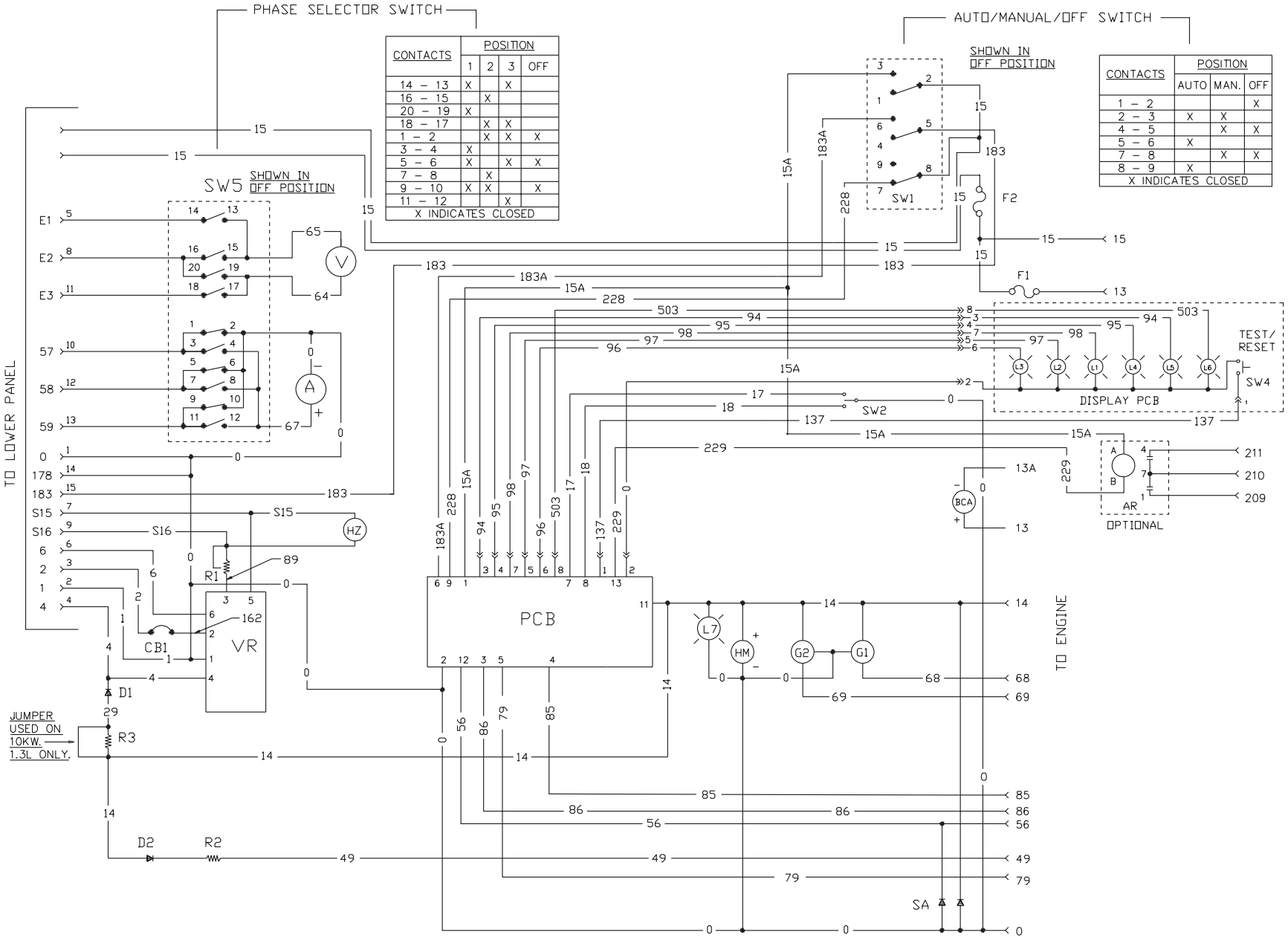

AM - AC AMMETER
AR - ALARM RELAY
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
D1 - DIODE- 600 VOLTS, 12 AMP
D2 - DIODE 800 VOLTS, 2 AMP
F1 - FUSE- 30 AMPERE
F2 - FUSE- 14 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD- DC CNTRL/CRANK-LATCH
PCB2 - CIRCUIT BOARD, ENGINE CONTROL
R1 - POTENTIOMETER
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR ENG. ALTERNATOR
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/STOP
SW5 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
SA
TS
VR
CB1
R3
D2
R2
JUMPER USED ON 10KW ONLY
D1
F2
F1
SW1
SW2
SW5
R1
TO LOWER PANEL
AMMETER LEADS
HM
BCA
AM
VM
G2
G1
HZ
L7
AR (OPTIONAL)
PCB2
PCB1
D
J
H
C
R
N
M
L

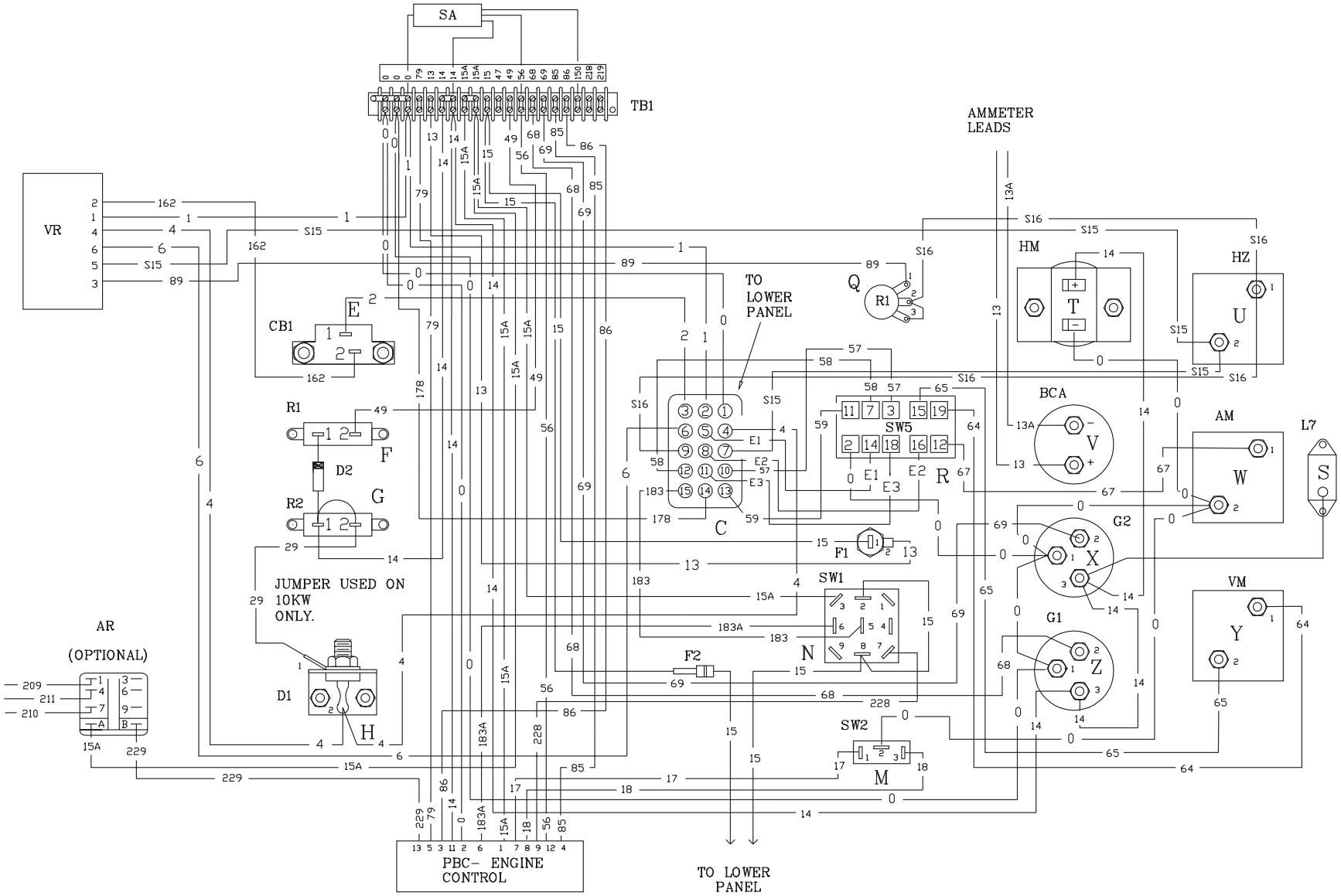

PHASE SELECTOR SWITCH
SHOWN IN OFF POSITION
SW5
CONTACTS | POSITION 1 | 2 | 3 | OFF
14 – 13 | X | | X |
16 – 15 | | X | |
20 – 19 | X | | |
18 – 17 | | X | X |
1 – 2 | | X | X | X
3 – 4 | X | | |
5 – 6 | X | | X | X
7 – 8 | | X | |
9 – 10 | X | X | | X
11 – 12 | | | X |
X INDICATES CLOSED
AUTO/MANUAL/OFF SWITCH
SHOWN IN OFF POSITION
SW1
CONTACTS | POSITION AUTO | MAN. | OFF
1 – 2 | | | X
2 – 3 | X | X |
4 – 5 | | X | X
5 – 6 | X | | |
7 – 8 | | X | X
8 – 9 | X | | |
X INDICATES CLOSED
TO LOWER PANEL
TO ENGINE
TEST/ RESET
SW4
DISPLAY PCB
PCB
VR
CB1
R1
R3
D1
SW2
SW3
BATTERY VOLTAGE MONITOR
LEGEND
A A-C AMMETER
AR ALARM RELAY
BCA BATTERY CHARGE AMMETER
CB1 CIRCUIT BREAKER - FIELD BOOST
CR CONTROL RELAY - ENGINE RUN
CR1 CONTROL RELAY - SWITCH MANUAL/OFF
D1 DIODE - 600 VOLTS, 12 AMP
F1 FUSE - 30 AMP
F2 FUSE - 14 AMP
F3 FUSE - 6 AMP
G1 GAUGE - WATER TEMP.
G2 GAUGE - OIL PRESSURE
HM HOURMETER
HZ FREQUENCY METER
L1 LIGHT - RPM SENSOR LOSS
L2 LIGHT - OVERSPEED
L3 LIGHT - OVERCRANK
L4 LIGHT - HIGH COOLANT TEMP.
L5 LIGHT - LOW OIL PRESSURE
L6 LIGHT - NOT IN AUTOMATIC START MODE
L7 PANEL LIGHT
L8 LIGHT - LOW FUEL
L9 LIGHT - BATTERY TROUBLE
PCB CIRCUIT BOARD - DC CONTROL/CRANK LATCH
PHR PREHEAT RELAY
R1 POTENTIOMETER - VOLTAGE ADJUST
R3 RESISTOR - FIELD BOOST
SW1 SWITCH - AUTO/MANUAL/OFF
SW2 SWITCH - START/STOP
SW3 SWITCH - PREHEAT
SW4 SWITCH - TEST/RESET
SW5 SWITCH - PHASE SELECTOR
TB1 TERMINAL BLOCK
TB2 TERMINAL BLOCK
TB3 TERMINAL BLOCK
V A-C VOLTMETER
VR A-C VOLTAGE REGULATOR

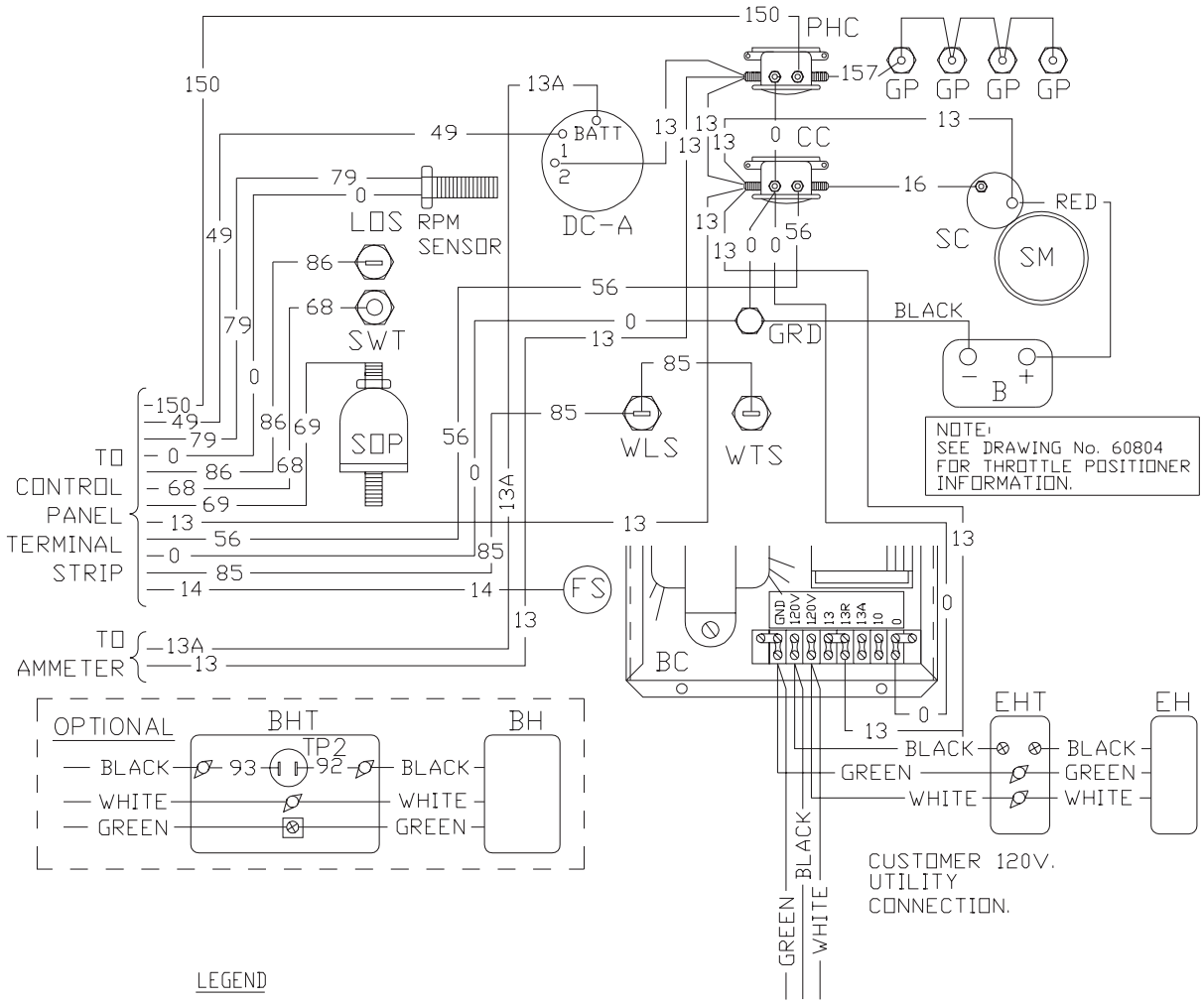

LEGEND
A A-C AMMETER
AR ALARM RELAY
BCA BATTERY CHARGE AMMETER
CB1 CIRCUIT BREAKER - FIELD BOOST
CR CONTROL RELAY - ENGINE RUN
CR1 CONTROL RELAY - SWITCH MANUAL/OFF
D1 DIODE - 600 VOLTS, 12 AMP
F1 FUSE - 30 AMP
F2 FUSE - 14 AMP
F3 FUSE - 6 AMP
G1 GAUGE - WATER TEMP.
G2 GAUGE - OIL PRESSURE
HM HOURMETER
HZ FREQUENCY METER
L1 LIGHT - RPM SENSOR LOSS
L2 LIGHT - OVERSPEED
L3 LIGHT - OVERCRANK
L4 LIGHT - HIGH COOLANT TEMP.
L5 LIGHT - LOW OIL PRESSURE
L6 LIGHT - NOT IN AUTOMATIC START MODE
L7 PANEL LIGHT
L8 LIGHT - LOW FUEL
L9 LIGHT - BATTERY TROUBLE
PCB CIRCUIT BOARD - DC CONTROL/CRANK LATCH
PHR PRECHEAT RELAY
R1 POTENTIOMETER - VOLTAGE ADJUST
R3 RESISTOR - FIELD BOOST
SW1 SWITCH - AUTO/MANUAL/OFF
SW2 SWITCH - START/STOP
SW3 SWITCH - PRECHEAT
SW4 SWITCH - TEST/RESET
SW5 SWITCH - PHASE SELECTOR
TB1 TERMINAL BLOCK
TB2 TERMINAL BLOCK
TB3 TERMINAL BLOCK
V A-C VOLTMETER
VR A-C VOLTAGE REGULATOR
TB3
F3
SA
TB1
L8
L9
BATTERY VOLTAGE MONITOR
LOW FUEL LEVEL SENSOR
(LOCATED IN BASE TANK)
VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
CB1
CR
R1
HM
HZ
R2
BCA
AM
L7
SW5
G2
PHR
F1
SW1
VM
D1
G1
TB2
AR
F2
SW2
CR1
PCB- ENGINE CONTROL
SW3


PHASE SELECTOR SWITCH
CONTACTS
POSITION
1
2
3
OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
AUTO/MANUAL/OFF SWITCH
SHOWN IN OFF POSITION
CONTACTS
POSITION
AUTO
MAN.
OFF
1 – 2 X
2 – 3 X X
4 – 5 X X
5 – 6 X
7 – 8 X X
8 – 9 X
X INDICATES CLOSED
SW5
SHOWN IN OFF POSITION
SW1
F1
F2
SW2
SW3
SW4
TEST/ RESET
DISPLAY PCB
PCB
VR
R1
R2
R3
D1
D2
CB1
HZ
PHR
BCA
HM
SA
AR
OPTIONAL
TO LOWER PANEL
TO ENGINE


SA
TB1
AMMETER LEADS
VR
CB1
TO LOWER PANEL
HM
HZ
BCA
AM
L7
SW5
SW1
SW2
SW3
F1
F2
JUMPER USED ON 10KW ONLY
PHR
AR (OPTIONAL)
PBC– ENGINE CONTROL
TO LOWER PANEL
D1
D2
R1
R2
VM
G1
G2

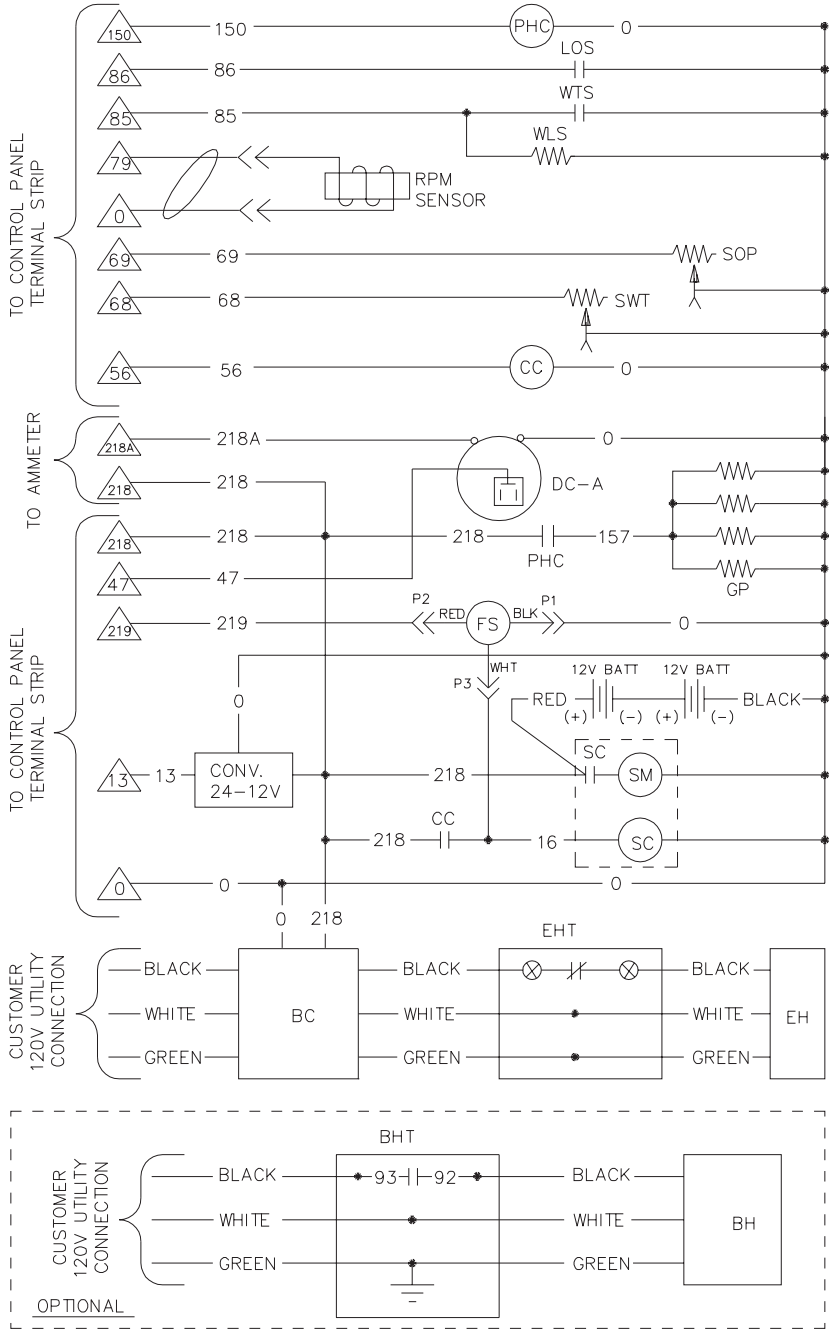

PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
14 – 13 | X | | X |
16 – 15 | | X | |
20 – 19 | X | | |
18 – 17 | | X | X |
1 – 2 | | X | X | X
3 – 4 | X | | |
5 – 6 | X | | X | X
7 – 8 | | X | |
9 – 10 | X | X | | X
11 – 12 | | | X |
X INDICATES CLOSED
AUTO/MANUAL/OFF SWITCH
SHOWN IN OFF POSITION
CONTACTS | POSITION AUTO | MAN. | OFF
1 – 2 | | | X
2 – 3 | X | X |
4 – 5 | | X | X
5 – 6 | X | | |
7 – 8 | | X | X
8 – 9 | X | | |
X INDICATES CLOSED
SW5
SHOWN IN OFF POSITION
SW1
F1
F2
SW2
SW4
TEST/ RESET
DISPLAY PCB
TO LOWER PANEL
PCB
VR
CB1
R1
R2
R3
D1
D2
HZ
BCA
HM
L7
G1
G2
AR
OPTIONAL
TO ENGINE
SA
JUMPER USED ON 10KW. 1.3L ONLY.


SA
TB1
AMMETER LEADS
VR
CB1
R1
R2
D1
D2
AR
(OPTIONAL)
JUMPER USED ON 10KW ONLY.
TO LOWER PANEL
PBC– ENGINE CONTROL
TO LOWER PANEL
SW1
SW2
SW5
F1
F2
HM
HZ
BCA
AM
VM
G1
G2
L7



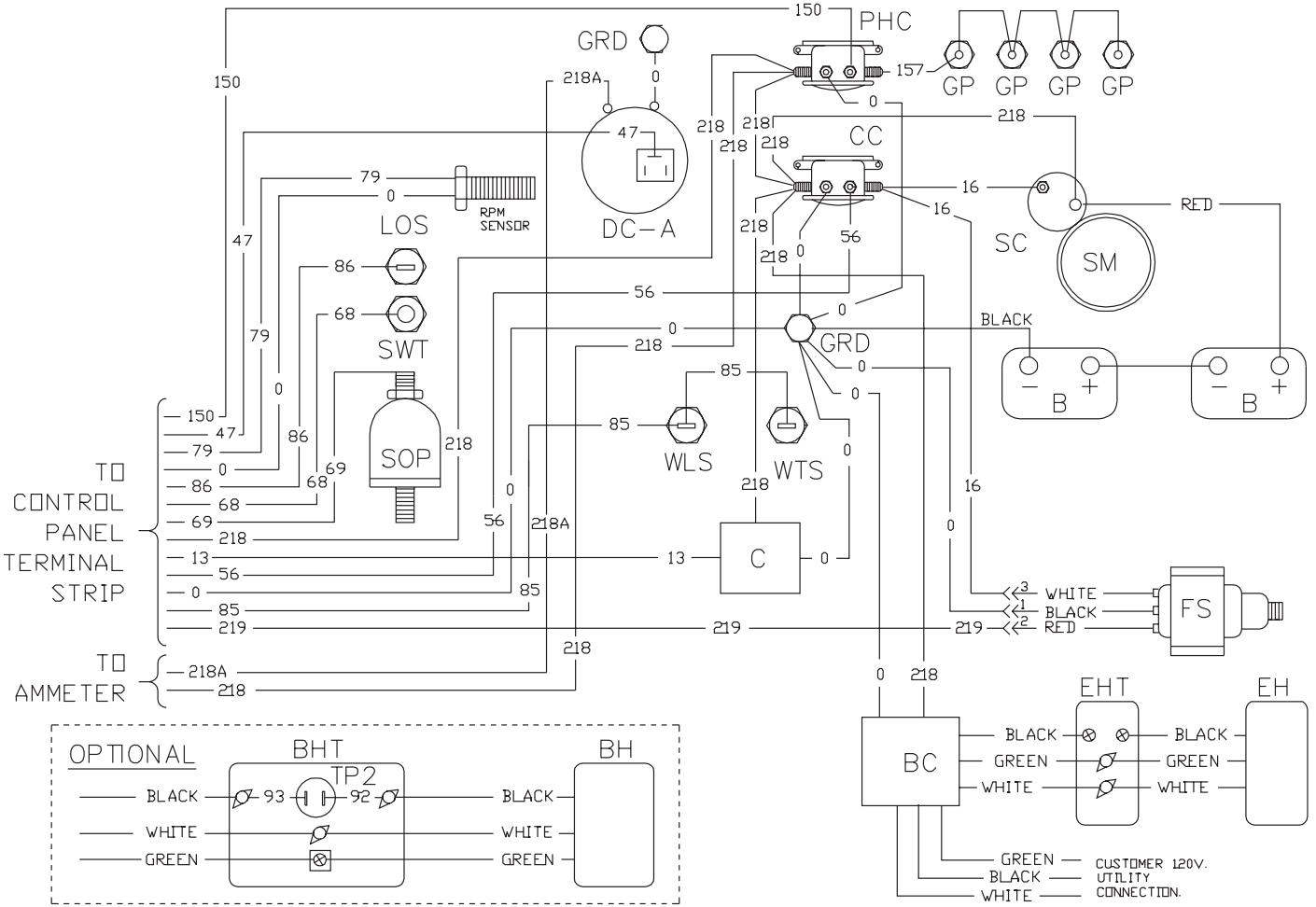
LEGEND

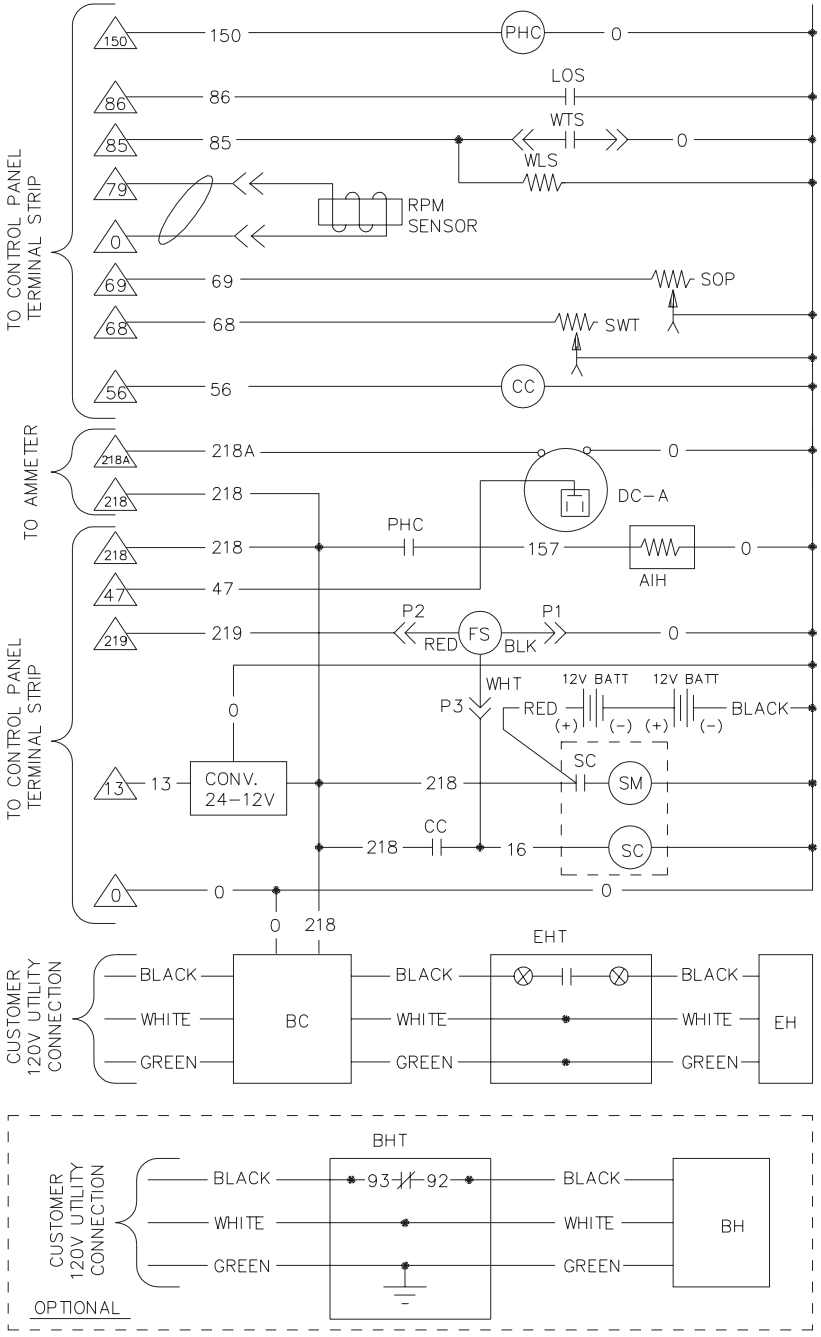
B - BATTERY 12-V.
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FS - FUEL SOLENOID
GP - GLOW PLUG
GPC - GLOW PLUG CONTROLLER
GRD - GROUND
LOS - LOW OIL SWITCH
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TP2 - THERMAL PROTECTOR BATT. HEAT.
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH


TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
TO CONTROL PANEL TERMINAL STRIP
150
PHC
0
LOS
86
WTS
85
WLS
79
RPM SENSOR
0
69
SOP
68
SWT
56
CC
218A
DC-A
218
157
PHC
47
GP
219
P2
RED
FS
BLK
P1
WHT
P3
12V BATT
RED
BLACK
(+)
(-)
SC
13
CONV. 24-12V
SM
16
SC
CUSTOMER 120V UTILITY CONNECTION
BLACK
WHITE
GREEN
BC
EHT
EH
BHT
93
92
BH
OPTIONAL

LEGEND

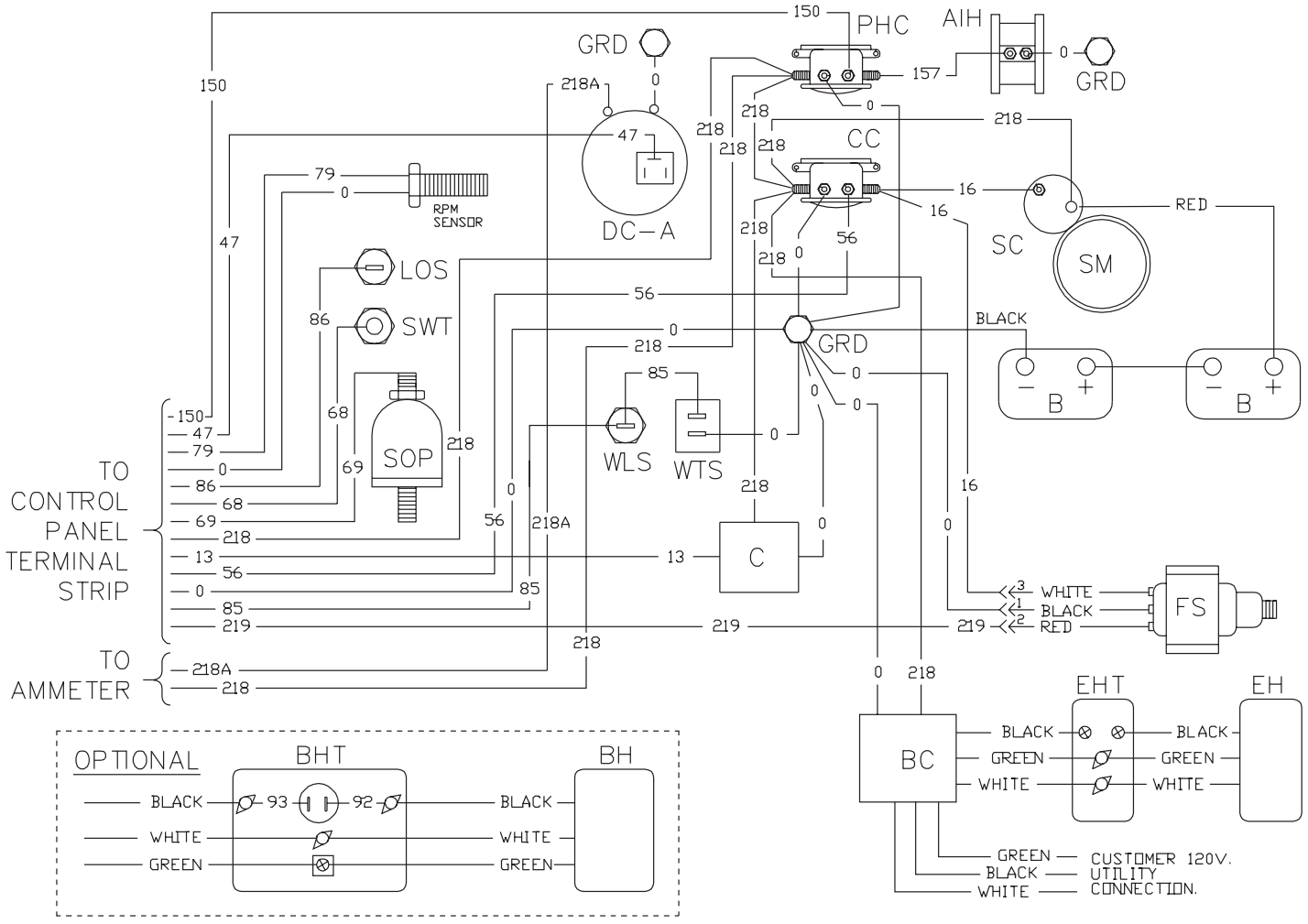
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
C – CONVERTER 24 TO 12V DC
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER OIL PRESSURE
SWT– SWITCH WATER TEMPERATURE
TP2– THERMAL PROTECTOR
WLS– WATER TEMPERATURE SWITCH
WTS– WATER TEMPERATURE SWITCH

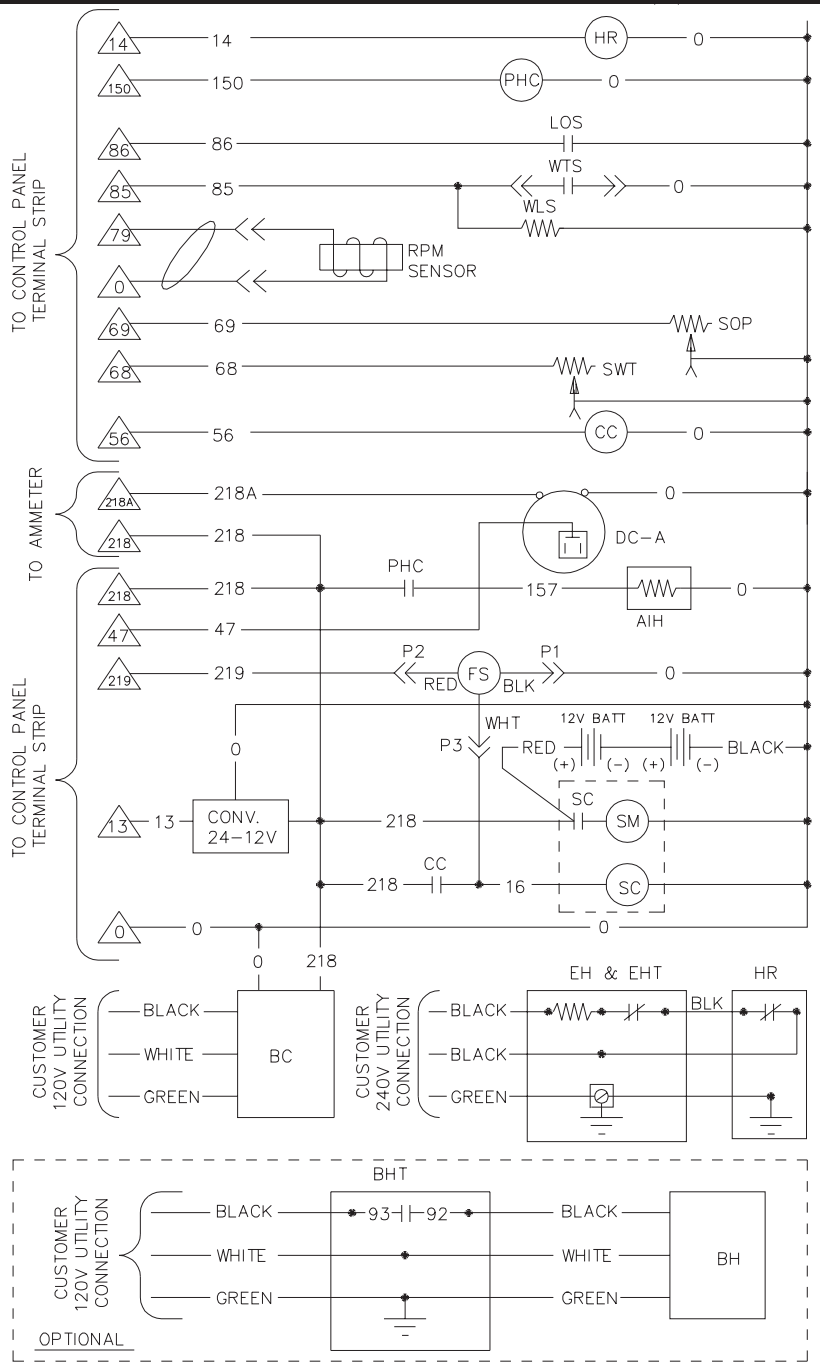


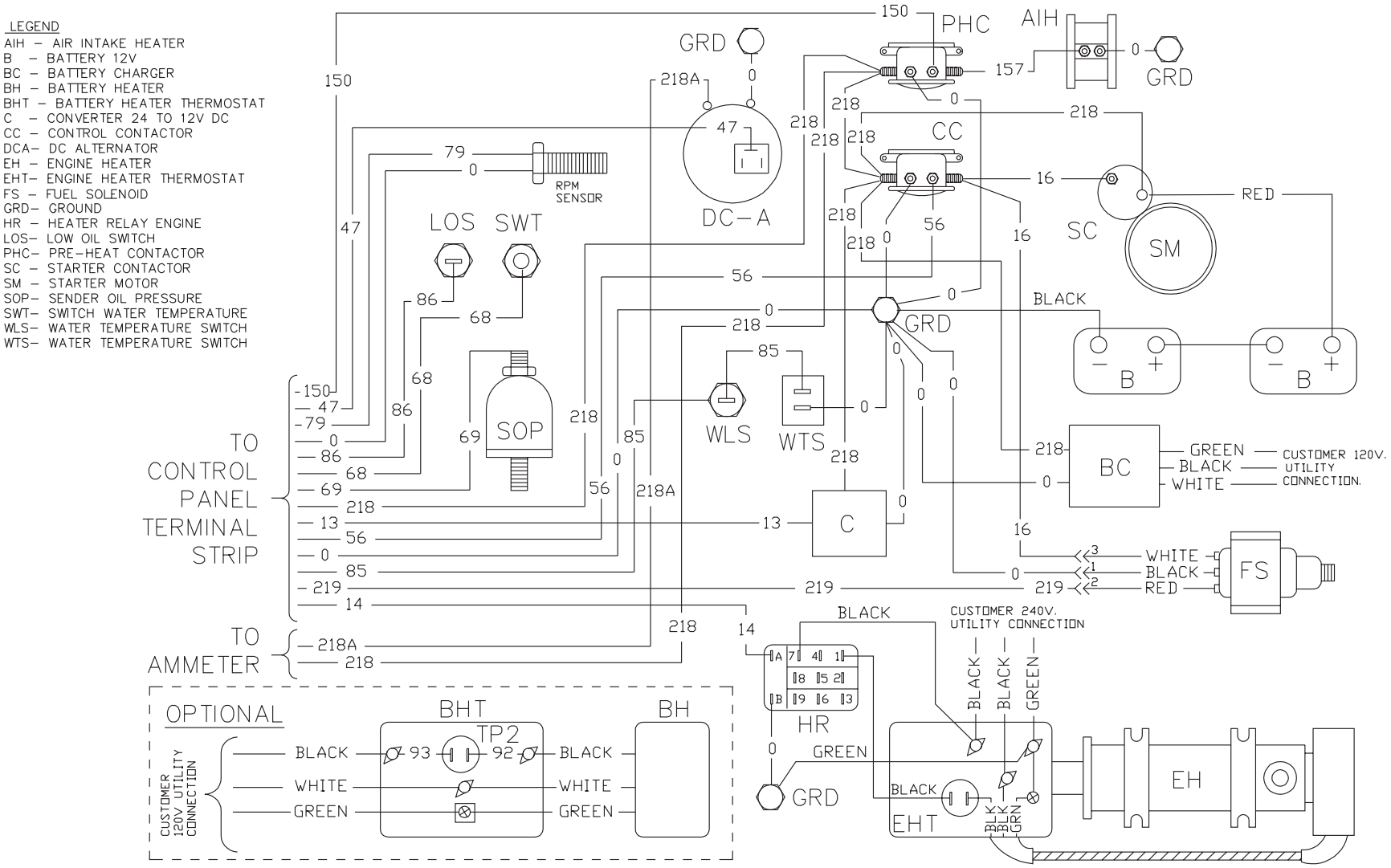

TO CONTROL PANEL TERMINAL STRIP
150
PHC
0
86
LOS
85
WTS
WLS
79
RPM SENSOR
0
69
SOP
68
SWT
56
CC
TO AMMETER
218A
DC–A
218
PHC
157
AIH
47
P2
RED
FS
BLK
P1
219
WHT
P3
12V BATT
RED
BLACK
(+)
(–)
SC
13
CONV. 24–12V
SM
16
CUSTOMER 120V UTILITY CONNECTION
BLACK
WHITE
GREEN
BC
EHT
EH
BHT
93
92
BH
OPTIONAL

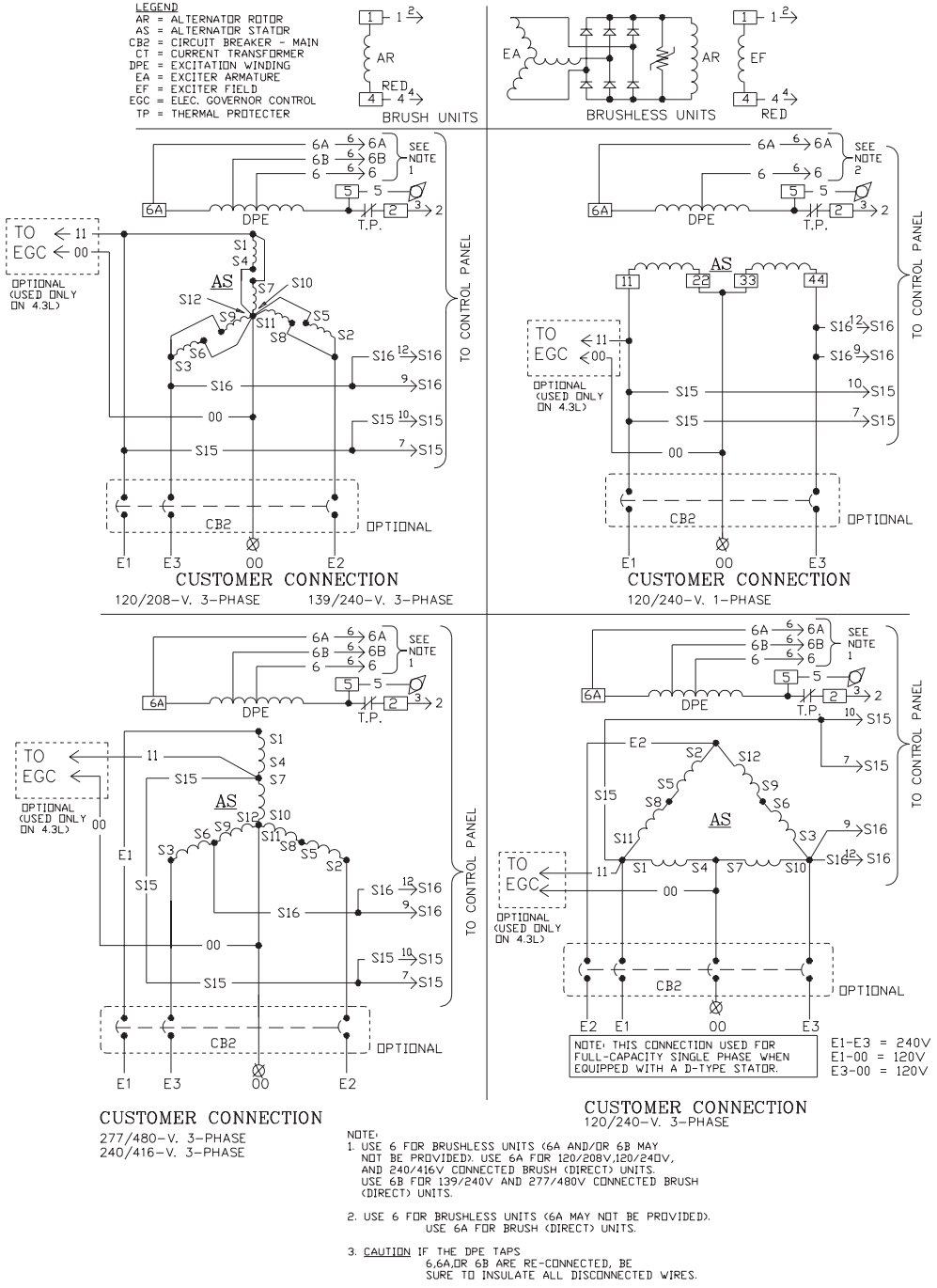
LEGEND

AIH - AIR INTAKE HEATER
B - BATTERY 12V
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATTERY HEATER THERMOSTAT
C - CONVERTER 24 TO 12V DC
CC - CONTROL CONTACTOR
DCA- DC ALTERNATOR
EGC- ELECTRONIC GOVERNOR CONTROL
EH - ENGINE HEATER
EHT- ENGINE HEATER THERMOSTAT
FS - FUEL SOLENOID
GRD- GROUND
LOS- LOW OIL SWITCH
PHC- PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP- SENDER OIL PRESSURE
SWT- SWITCH WATER TEMPERATURE
WLS- WATER TEMPERATURE SWITCH
WTS- WATER TEMPERATURE SWITCH




TO CONTROL PANEL TERMINAL STRIP
14
150
86
85
79
0
69
68
56
HR
PHC
LOS
WTS
WLS
RPM SENSOR
SOP
SWT
CC
TO AMMETER
218A
218
DC–A
PHC
157
AIH
47
219
P2
P1
RED
FS
BLK
WHT
P3
12V BATT
RED
BLACK
SC
13
CONV. 24–12V
SM
16
CUSTOMER 120V UTILITY CONNECTION
BLACK
WHITE
GREEN
BC
CUSTOMER 240V UTILITY CONNECTION
EH & EHT
HR
BHT
93
92
BH
OPTIONAL

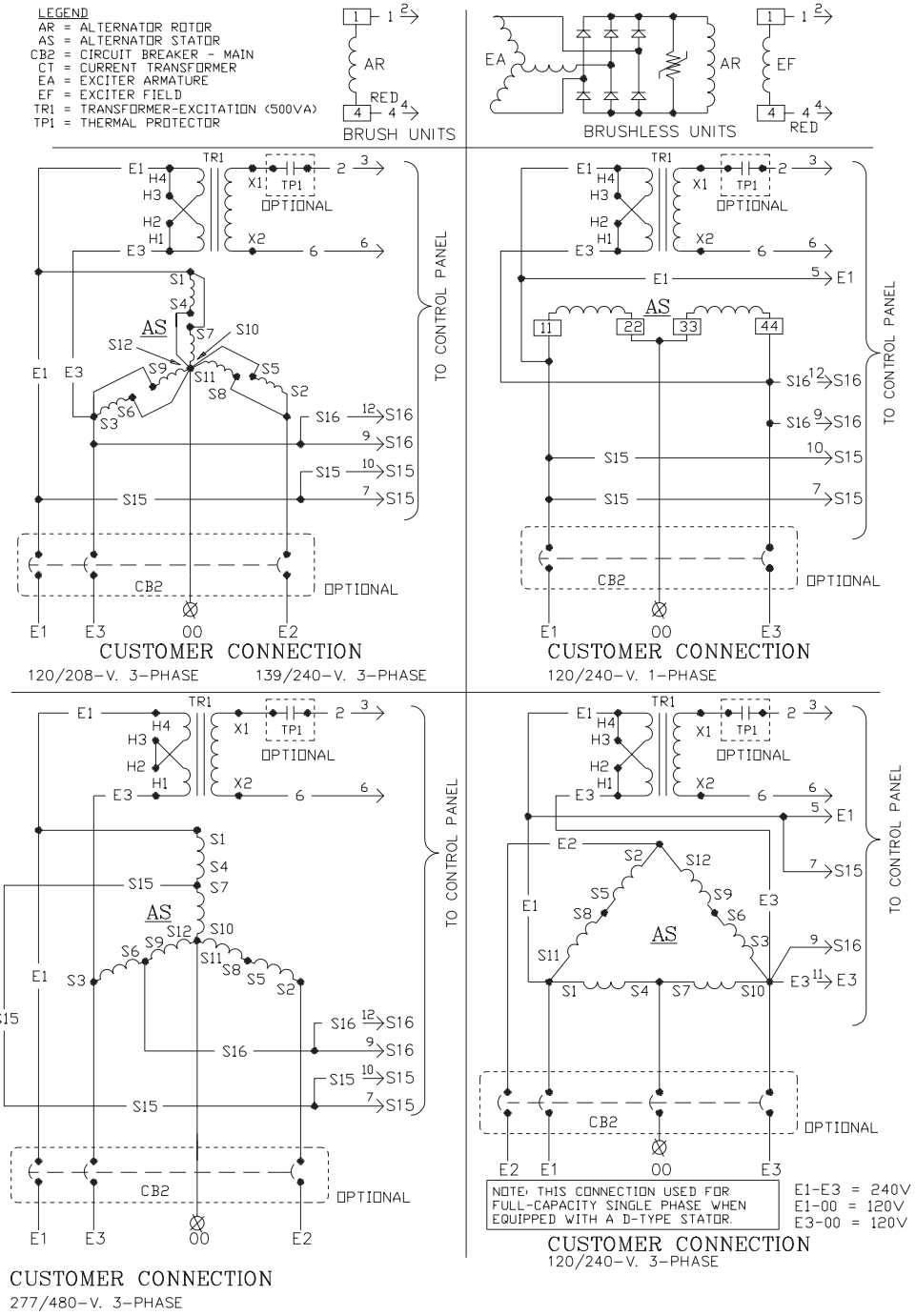

LEGEND
AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
C – CONVERTER 24 TO 12V DC
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD– GROUND
HR – HEATER RELAY ENGINE
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER OIL PRESSURE
SWT– SWITCH WATER TEMPERATURE
WLS– WATER TEMPERATURE SWITCH
WTS– WATER TEMPERATURE SWITCH
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
OPTIONAL
BHT
BH
TP2
CUSTOMER 120V UTILITY CONNECTION
CUSTOMER 240V. UTILITY CONNECTION
RPM SENSOR
DC–A
LOS
SWT
SOP
WLS
WTS
PHC
AIH
CC
SC
SM
FS
BC
HR
EH
EHT
GRD
BLACK
WHITE
GREEN
RED

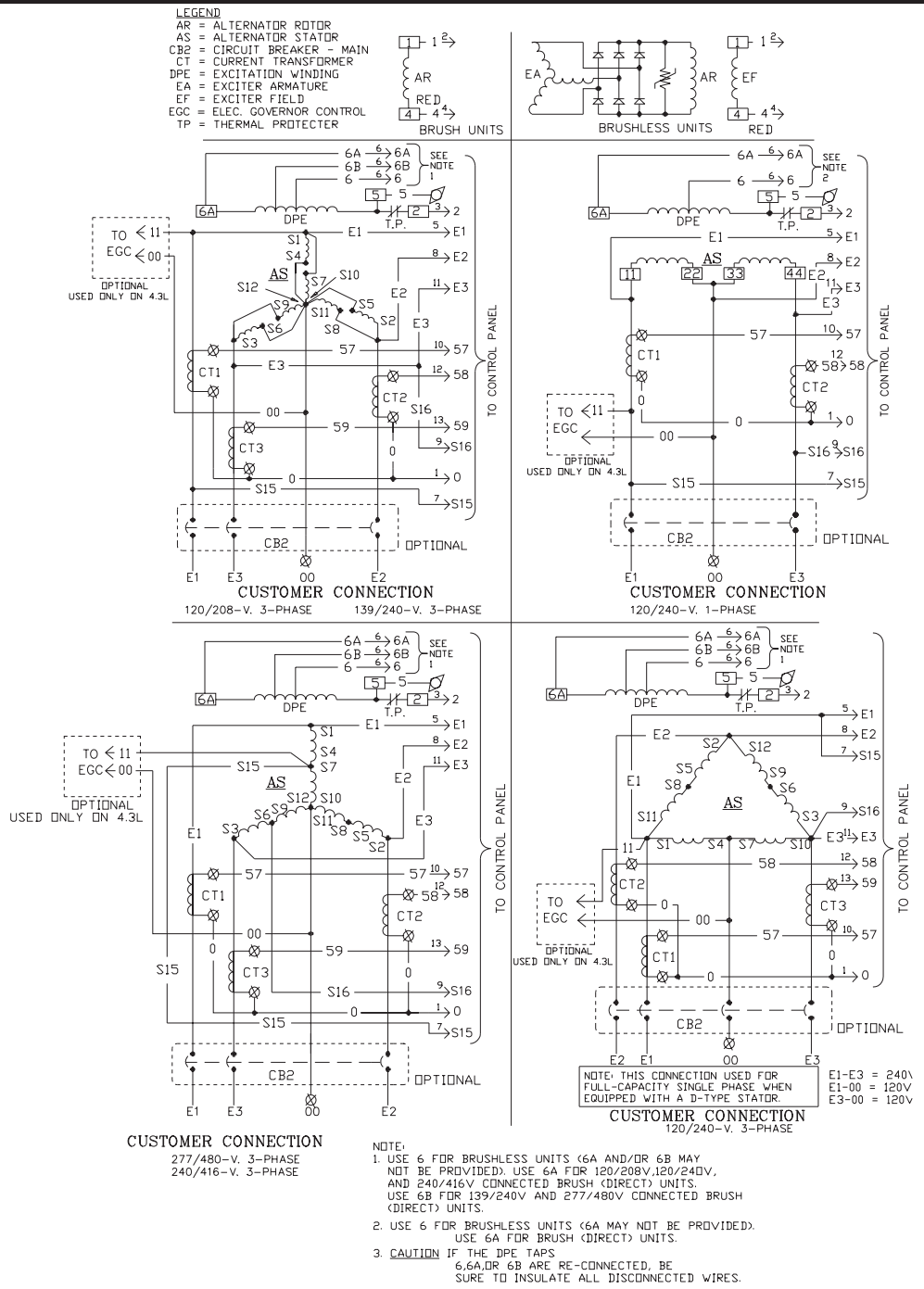


NOTE:
1. USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED). USE 6A FOR 120/208V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS. USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

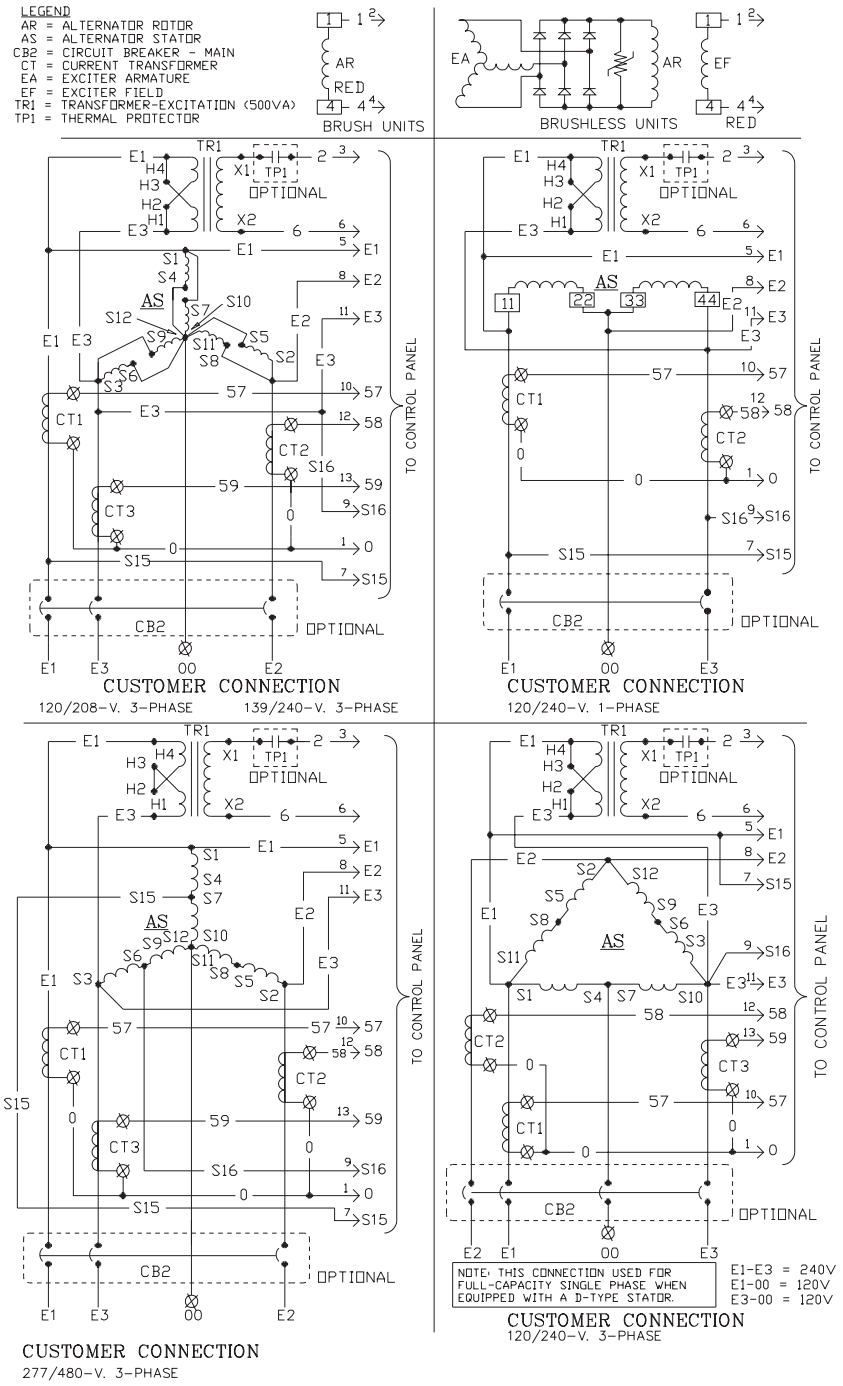
2. USE 6 FOR BRUSHLESS UNITS (6A MAY NOT BE PROVIDED). USE 6A FOR BRUSH (DIRECT) UNITS.

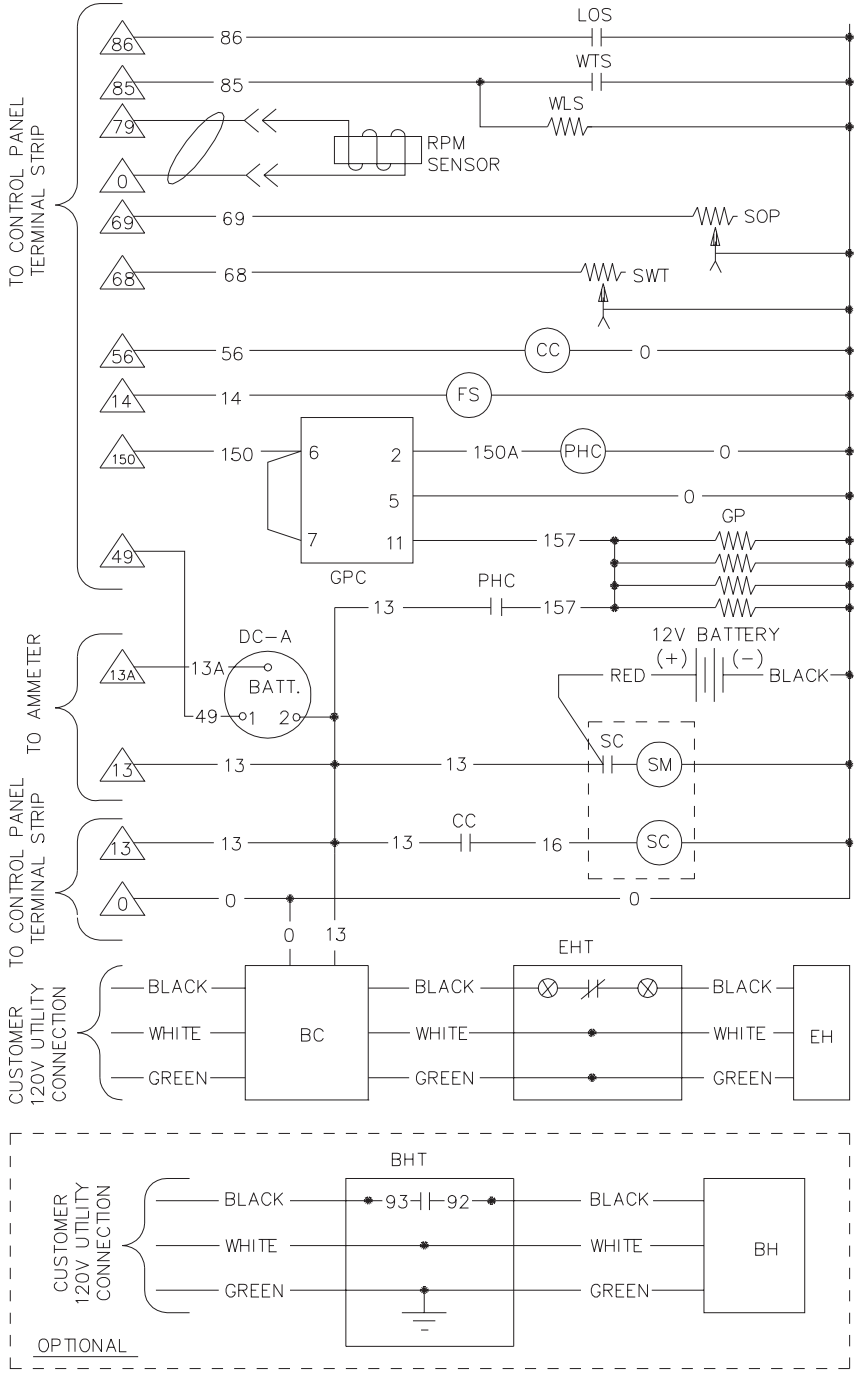
3. CAUTION IF THE DPE TAPS 6,6A,OR 6B ARE RE-CONNECTED, BE SURE TO INSULATE ALL DISCONNECTED WIRES.

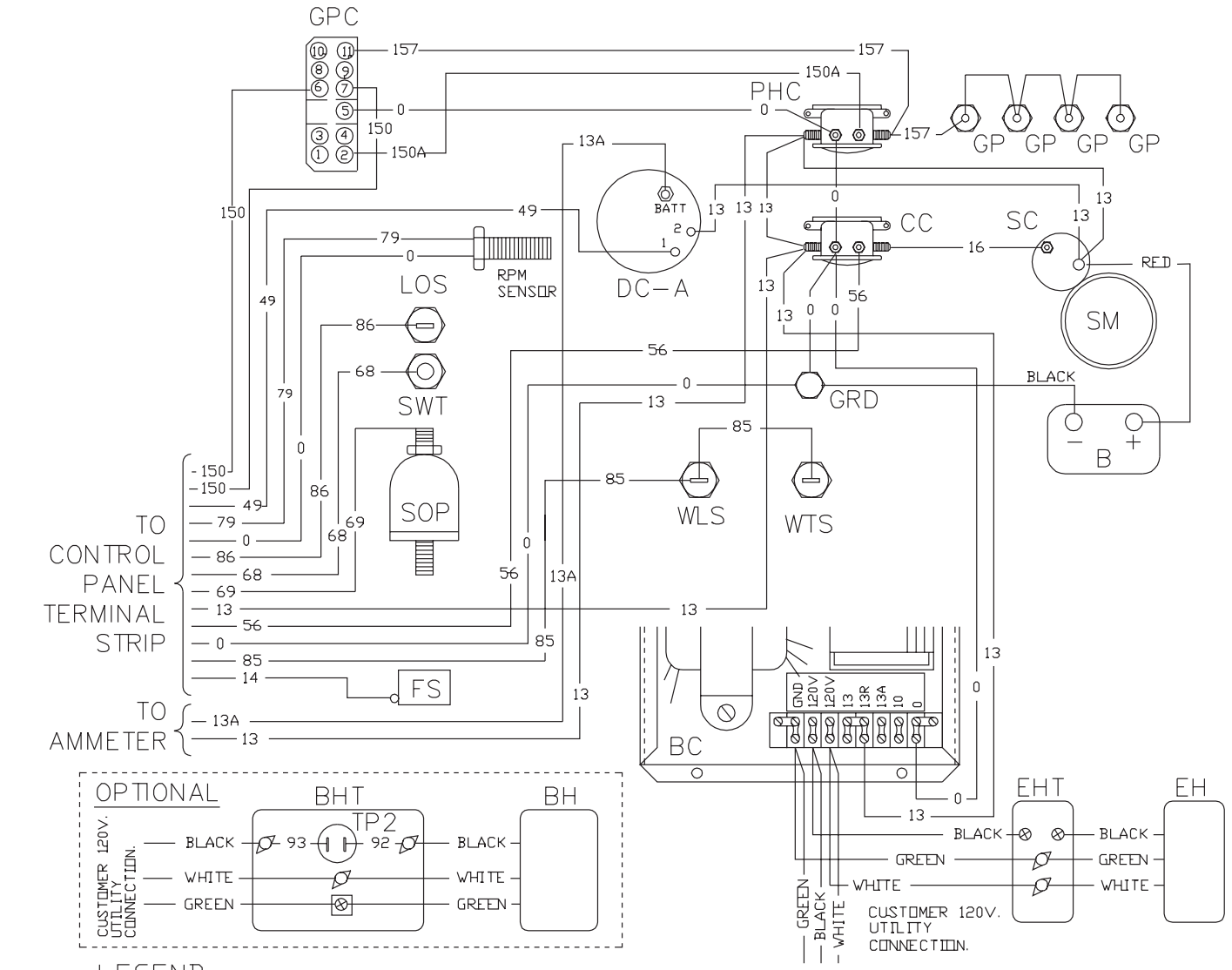

LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
TR1 = TRANSFORMER-EXCITATION (500VA)
TP1 = THERMAL PROTECTOR
BRUSH UNITS
BRUSHLESS UNITS
TO CONTROL PANEL
OPTIONAL
CUSTOMER CONNECTION
120/208-V. 3-PHASE
139/240-V. 3-PHASE
CUSTOMER CONNECTION
120/240-V. 1-PHASE
CUSTOMER CONNECTION
277/480-V. 3-PHASE
CUSTOMER CONNECTION
120/240-V. 3-PHASE
NOTE: THIS CONNECTION USED FOR FULL-CAPACITY SINGLE PHASE WHEN EQUIPPED WITH A D-TYPE STATOR.
E1-E3 = 240V
E1-00 = 120V
E3-00 = 120V



NOTE:
1. USE 6 FOR BRUSHLESS UNITS (6A MAY NOT BE PROVIDED). USE 6A FOR 120/208V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS. USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.
2. USE 6 FOR BRUSHLESS UNITS (6A MAY NOT BE PROVIDED). USE 6A FOR BRUSH (DIRECT) UNITS.
3. CAUTION IF THE DPE TAPS 6,6A,OR 6B ARE RE-CONNECTED, BE SURE TO INSULATE ALL DISCONNECTED WIRES.

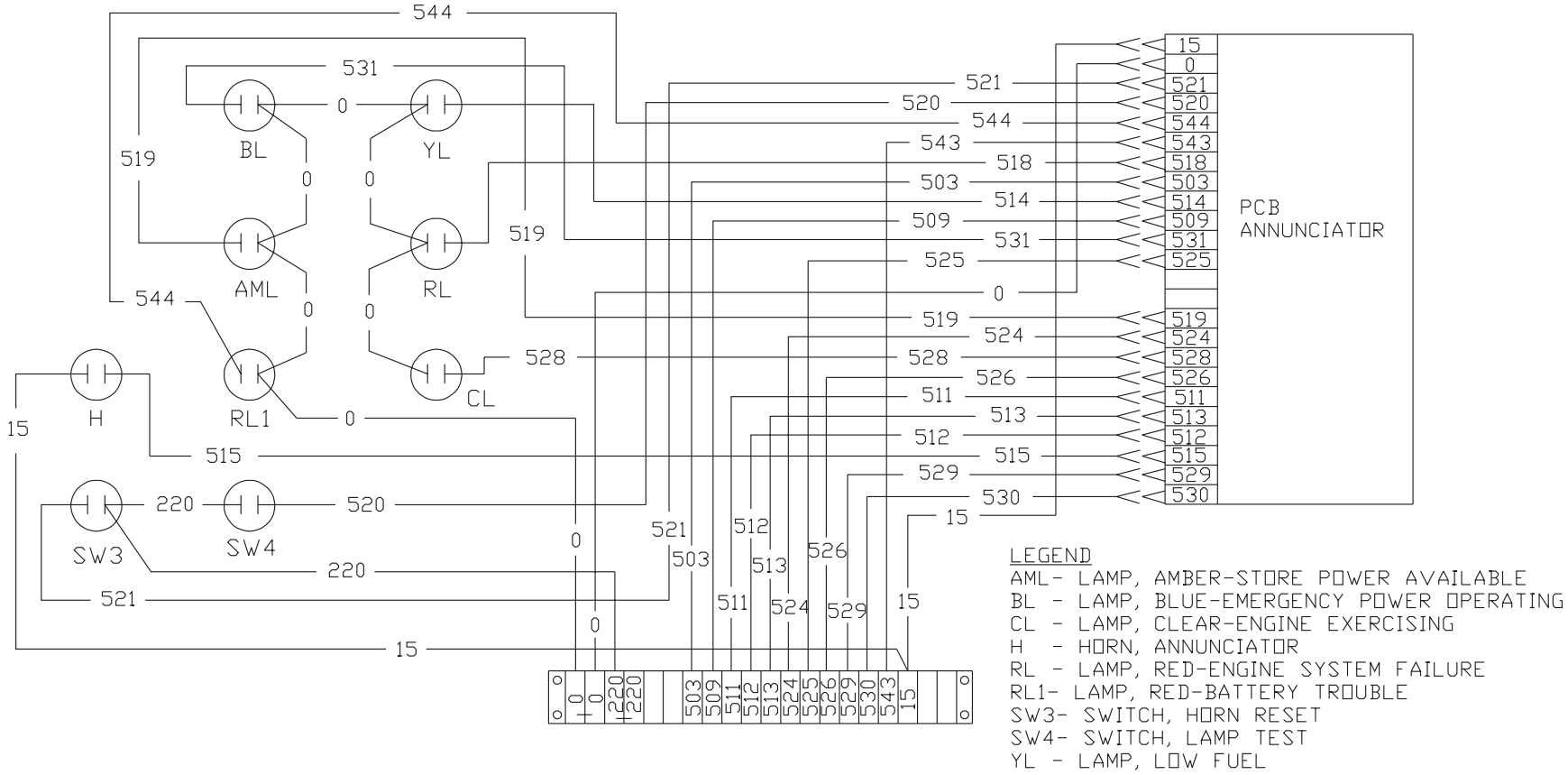

LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
TR1 = TRANSFORMER-EXCITATION (500VA)
TP1 = THERMAL PROTECTOR
BRUSH UNITS
BRUSHLESS UNITS
RED
TR1
TP1
OPTIONAL
AS
CT1
CT2
CT3
CB2
TO CONTROL PANEL
CUSTOMER CONNECTION
120/208-V. 3-PHASE
139/240-V. 3-PHASE
120/240-V. 1-PHASE
277/480-V. 3-PHASE
120/240-V. 3-PHASE
NOTE: THIS CONNECTION USED FOR FULL-CAPACITY SINGLE PHASE WHEN EQUIPPED WITH A D-TYPE STATOR.
E1-E3 = 240V
E1-00 = 120V
E3-00 = 120V


TO CONTROL PANEL TERMINAL STRIP
86
85
79
0
69
68
56
14
150
49
LOS
WTS
WLS
RPM SENSOR
SOP
SWT
CC
FS
6
2
5
7
11
150A
PHC
GP
157
GPC
13
DC–A
13A
BATT.
49
1
2
12V BATTERY
(+)
(–)
RED
BLACK
SC
SM
16
TO AMMETER
TO CONTROL PANEL TERMINAL STRIP
CUSTOMER 120V UTILITY CONNECTION
BLACK
WHITE
GREEN
BC
EHT
EH
BHT
93
92
BH
OPTIONAL



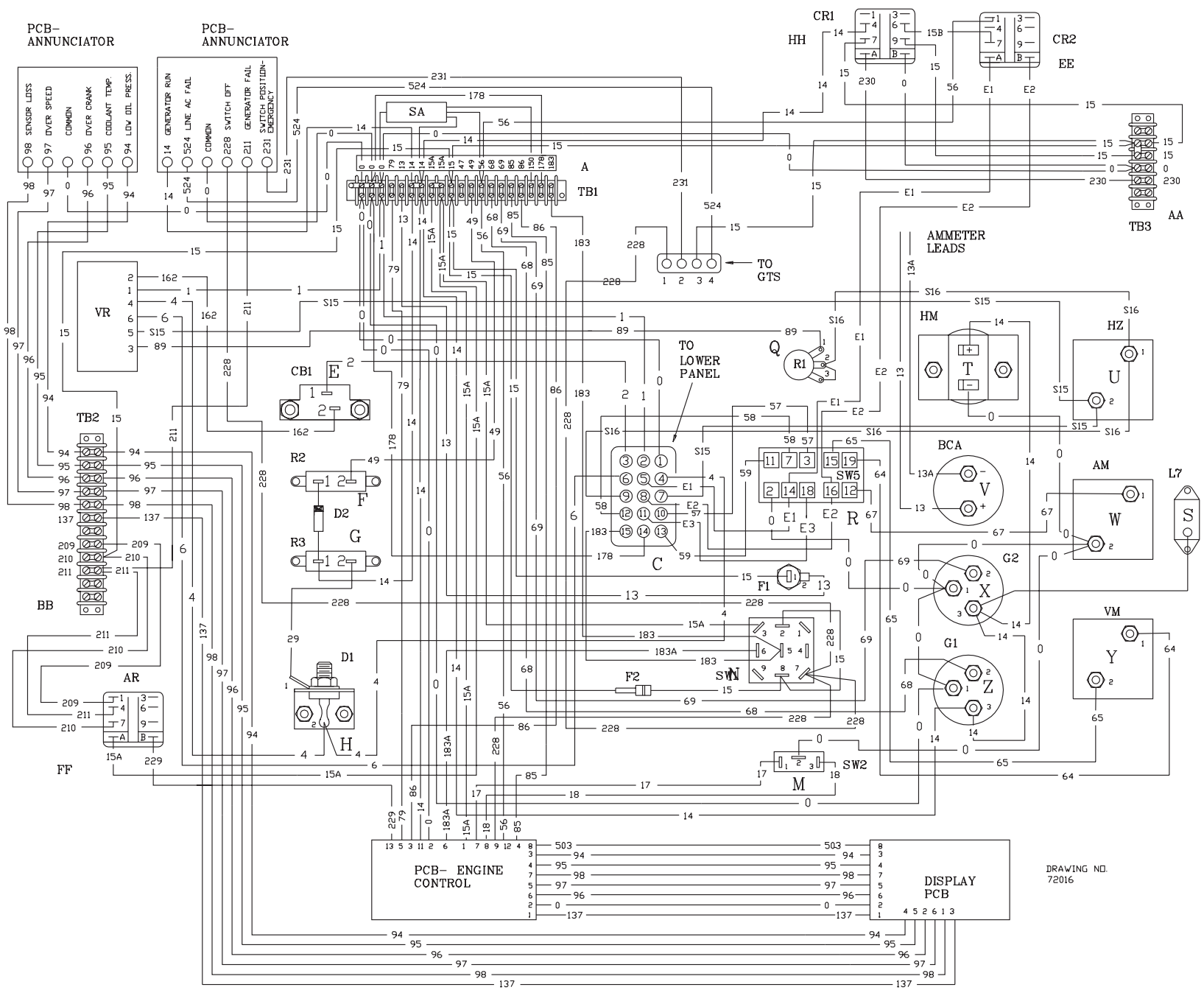
LEGEND

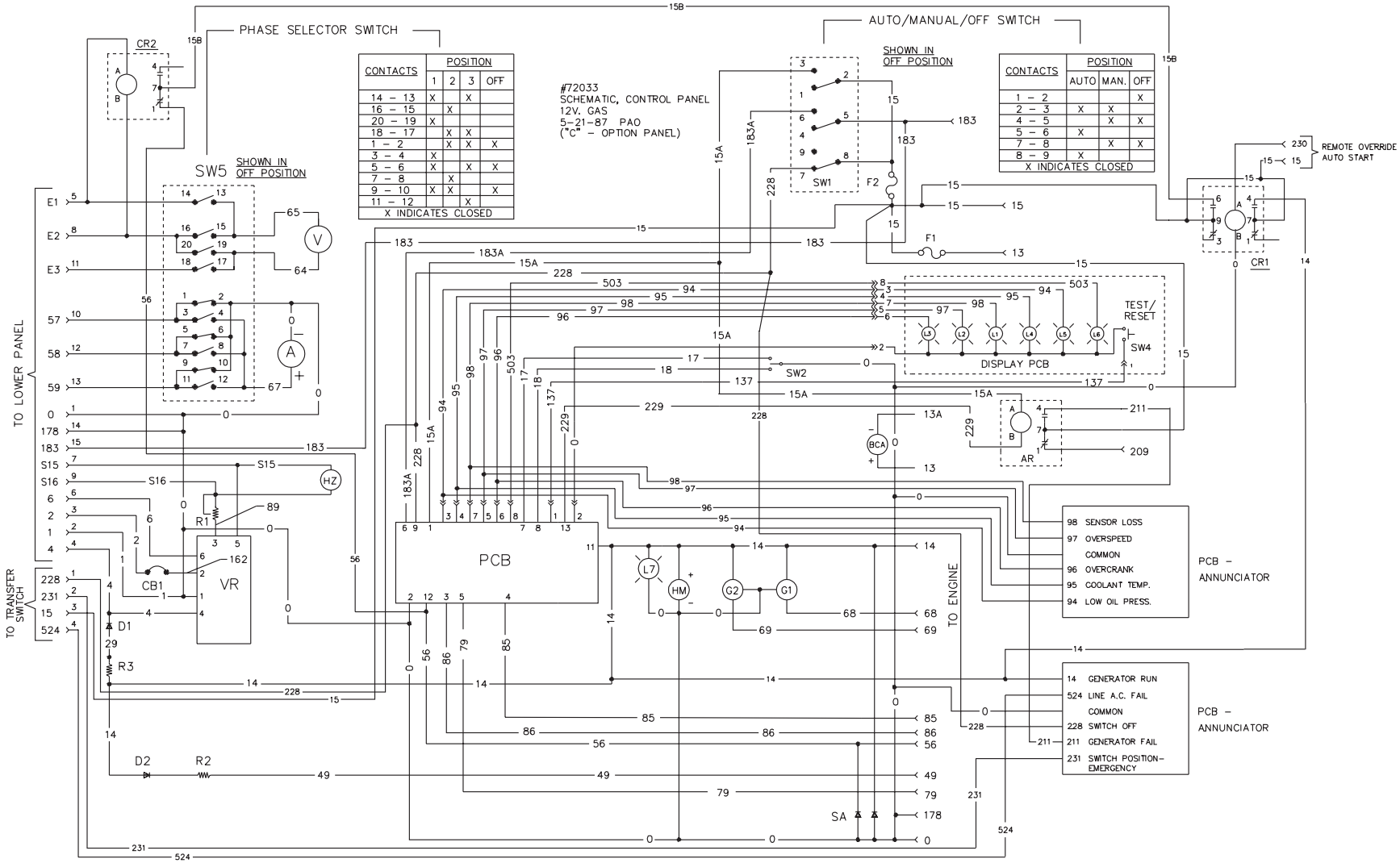
B - BATTERY 12-V
BC - BATTERY CHARGER
BH - BATTERY HEATER THERMOSTAT
BHT- BATTERY HEATER THERMOSTAT
CC - CONTROL CONTACTOR
DCA- DC ALTERNATOR
EH - ENGINE HEATER
EHT- ENGINE HEATER THERMOSTAT
FS - FUEL SOLENOID
GP - GLOW PLUG
GPC- GLOW PLUG CONTROLLER
GRD- GROUND
LOS- LOW OIL SWITCH
PHC- PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
TP2- THERMAL PROCTECTOR BATTERY HEATER
SWT- SENDER WATER TEMP.
SOP- SENDER OIL PRESSURE
WSL- WATER TEMP. SWITCH
WTS- WATER TEMP. SWITCH

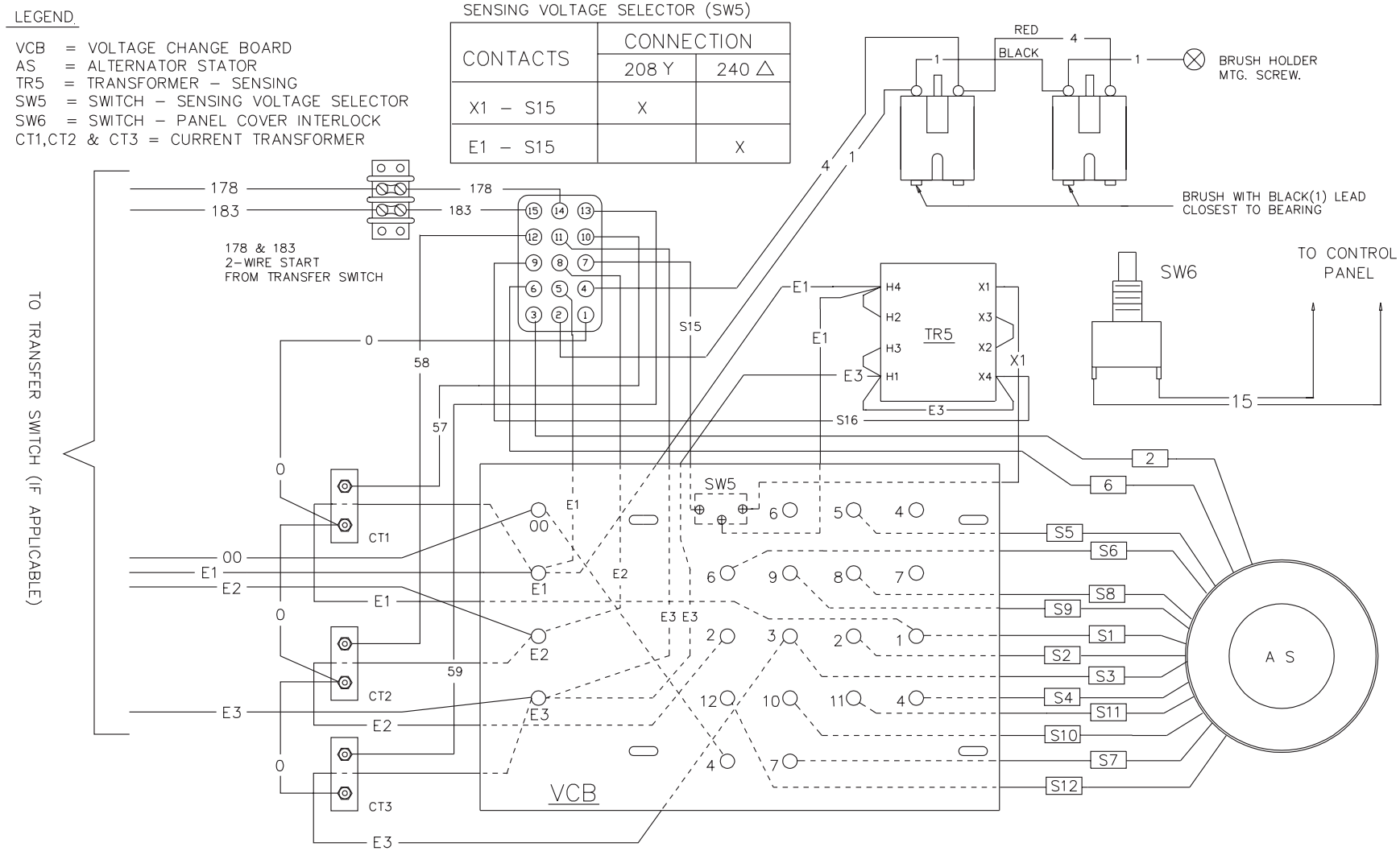

544
531
519
BL
YL
AML
RL
RL1
CL
H
SW3
SW4
PCB
ANNUNCIATOR
LEGEND
AML- LAMP, AMBER-STORE POWER AVAILABLE
BL - LAMP, BLUE-EMERGENCY POWER OPERATING
CL - LAMP, CLEAR-ENGINE EXERCISING
H - HORN, ANNUNCIATOR
RL - LAMP, RED-ENGINE SYSTEM FAILURE
RL1- LAMP, RED-BATTERY TROUBLE
SW3- SWITCH, HORN RESET
SW4- SWITCH, LAMP TEST
YL - LAMP, LOW FUEL

Drawing No. 72016 | Wiring Diagram | Meter and Control Panel

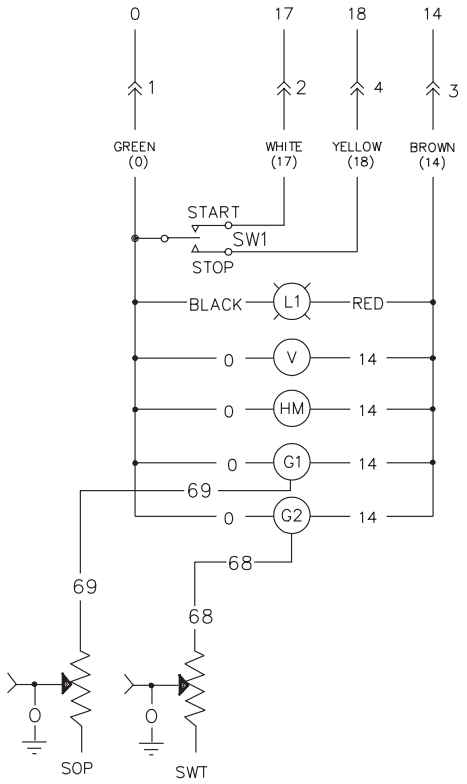
Revised: 05/22/87




#72033
SCHEMATIC, CONTROL PANEL
12V. GAS
5-21-87 PAO
("C" - OPTION PANEL)
PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
14 - 13 | X | | X |
16 - 15 | | X | |
20 - 19 | X | | |
18 - 17 | | X | X |
1 - 2 | | X | X | X
3 - 4 | X | | |
5 - 6 | X | | X | X
7 - 8 | | X | |
9 - 10 | X | X | | X
11 - 12 | | | X |
X INDICATES CLOSED
AUTO/MANUAL/OFF SWITCH
SHOWN IN OFF POSITION
CONTACTS | POSITION AUTO | MAN. | OFF
1 - 2 | | | X
2 - 3 | X | X |
4 - 5 | | X | X
5 - 6 | X | |
7 - 8 | | X | X
8 - 9 | X | |
X INDICATES CLOSED
SW5 SHOWN IN OFF POSITION
TO LOWER PANEL
TO TRANSFER SWITCH
TO ENGINE
CR2
CR1
SW1
SW2
SW4
F1
F2
CB1
D1
D2
R1
R2
R3
VR
HZ
V
A
BCA
AR
SA
PCB
DISPLAY PCB
TEST/ RESET
REMOTE OVERRIDE AUTO START
PCB - ANNUNCIATOR
98 SENSOR LOSS
97 OVERSPEED COMMON
96 OVERCRANK
95 COOLANT TEMP.
94 LOW OIL PRESS.
PCB - ANNUNCIATOR
14 GENERATOR RUN
524 LINE A.C. FAIL COMMON
228 SWITCH OFF
211 GENERATOR FAIL
231 SWITCH POSITION - EMERGENCY


LEGEND
VCB = VOLTAGE CHANGE BOARD
AS = ALTERNATOR STATOR
TR5 = TRANSFORMER – SENSING
SW5 = SWITCH – SENSING VOLTAGE SELECTOR
SW6 = SWITCH – PANEL COVER INTERLOCK
CT1,CT2 & CT3 = CURRENT TRANSFORMER
SENSING VOLTAGE SELECTOR (SW5)
CONTACTS
CONNECTION
208 Y
240 △
X1 – S15
E1 – S15
RED
BLACK
BRUSH HOLDER MTG. SCREW.
BRUSH WITH BLACK(1) LEAD CLOSEST TO BEARING
178 & 183
2–WIRE START
FROM TRANSFER SWITCH
TO TRANSFER SWITCH (IF APPLICABLE)
TO CONTROL PANEL
SW6
TR5
SW5
VCB
CT1
CT2
CT3
A S
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S15
S16
120/208V 3Ø
E1 TO E2: 208V
E2 TO E3: 208V
E3 TO E1: 208V
E1 TO 00: 120V
E2 TO 00: 120V
E3 TO 00: 120V
120/240V 3Ø
E1 TO E2: 240V
E2 TO E3: 240V
E3 TO E1: 240V
E1 TO 00: 120V
E3 TO 00: 120V
120/240V 1Ø
E1 TO E3: 240V
E1 TO 00: 120V
E3 TO 00: 120V
GENERATOR AND AC CONNECTION PANEL
WIRING DIAGRAM
DRAWING NUMBER 72436
ISSUED– 5–14–87

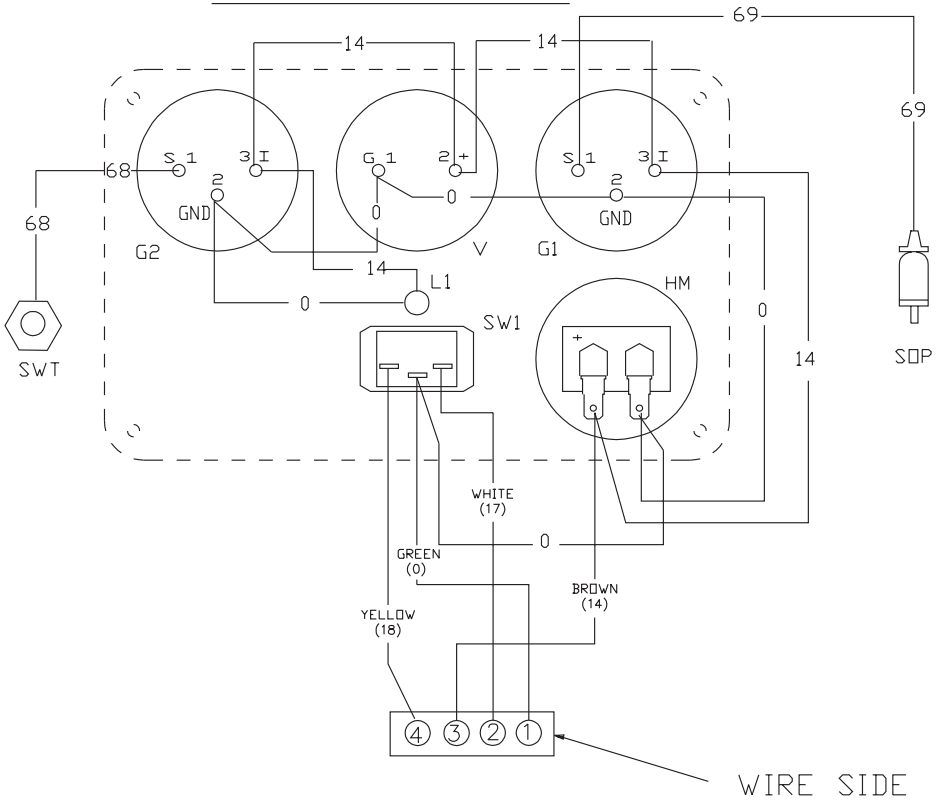
SCHEMATIC

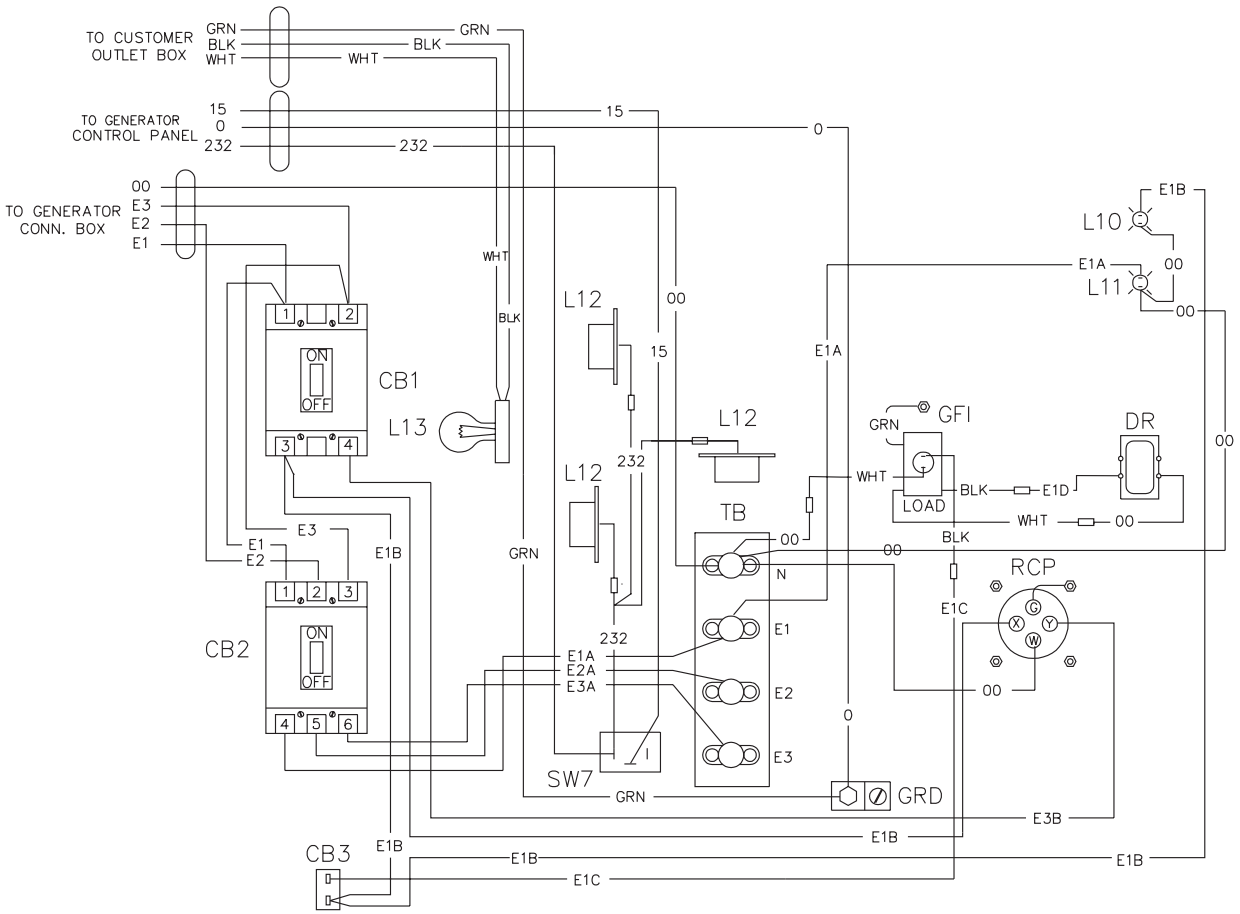


LEGEND

G1– OIL PRESSURE GAUGE
G2– WATER TEMP. GAUGE
HM– HOUR METER
L1– LAMP, ENGINE RUN
SOP– SENDER OIL PRESSURE
SW1– SWITCH, STOP/START
SWT– SENDER–WATER TEMP.
V– DC VOLT METER

WIRING DIAGRAM





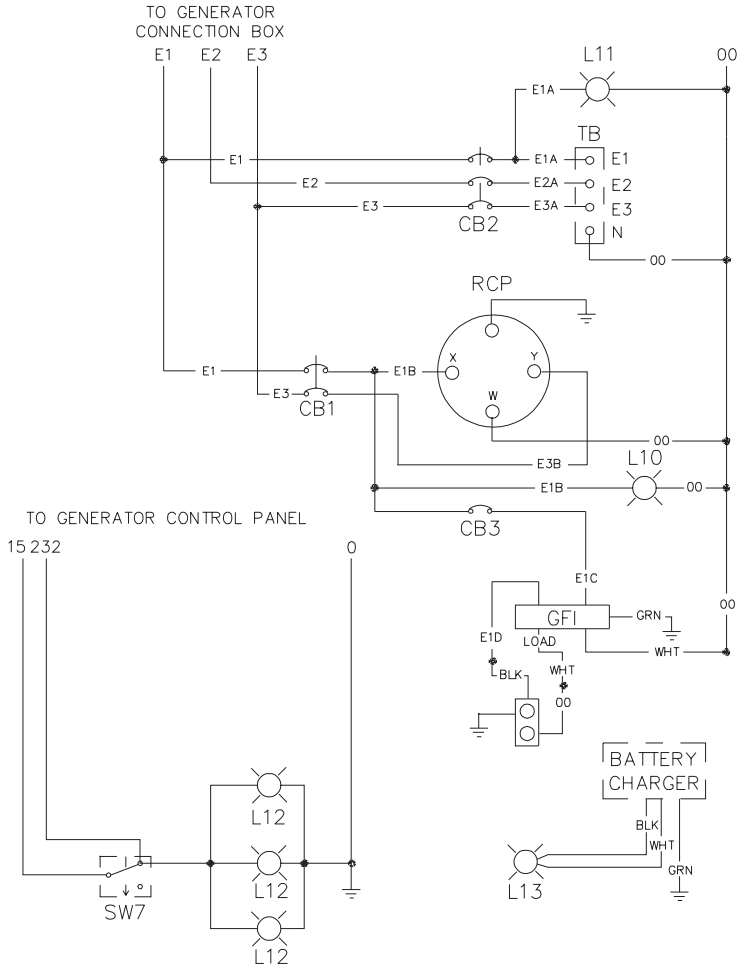
LEGEND

CB1 – CIRCUIT BREAKER, 60A @ 480V AC, 2–POLE
CB2 – CIRCUIT BREAKER, 50A @ 480V AC, 3–POLE
CB3 – CIRCUIT BREAKER, 20A SINGLE POLE
DR – DUPLEX RECEPTACLE, 20A @ 120V AC
GFI – GROUND FAULT INTERUPTER OUTLET
L10 – LAMP, INDICATOR, 240V AC, 1–PHASE
L11 – LAMP, INDICATOR, 240V AC, 3–PHASE
L12 – LAMP, 12V DC
L13 – LAMP, OUTLET BOX
N – NEUTRAL CONNECTIONS
RCP – RECEPTACLE, 60A @ 125/250V AC, 1–PHASE
SW7 – SWITCH, DOOR
TB – TERMINAL BOARD, CUSTOMER CONNECTION
– BUTT CONNECTOR, INSULATED

OUTLET BOX WIRING DIAGRAM
DRAWING NUMBER 72830
ISSUED – 07/20/87

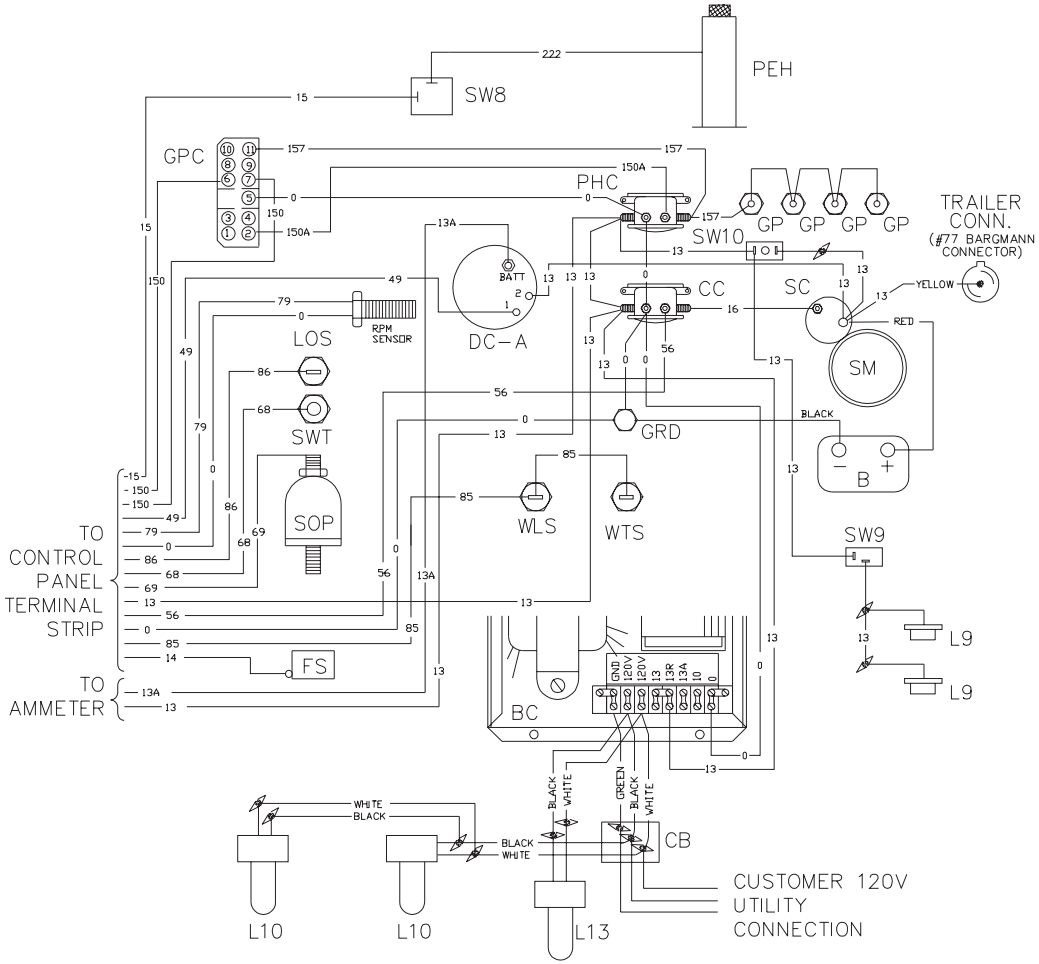
LEGEND

CB1 – CIRCUIT BREAKER, 60A @ 480V AC, 2–POLE
CB2 – CIRCUIT BREAKER, 50A @ 480V AC, 3–POLE
CB3 – CIRCUIT BREAKER, 20A SINGLE POLE
DR – DUPLEX RECEPTACLE, 20A @ 120V AC
GFI – GROUD FAULT INTERUPTER OUTLET
L10 – LAMP INDICATOR, 240V AC, 1–PHASE
L11 – LAMP INDICATOR, 240V AC, 3–PHASE
L12 – LAMP 12V DC
L13 – LAMP, OUTLET BOX
N – NEUTRAL CONNECTIONS
RCP – RECEPTACLE, 60A @ 125/250V AC, 1–PHASE
SW7 – SWITCH, DOOR
TB – TERMINAL BOARD, CUSTOMER CONNECTION
– BUTT CONNECTOR, INSULATED



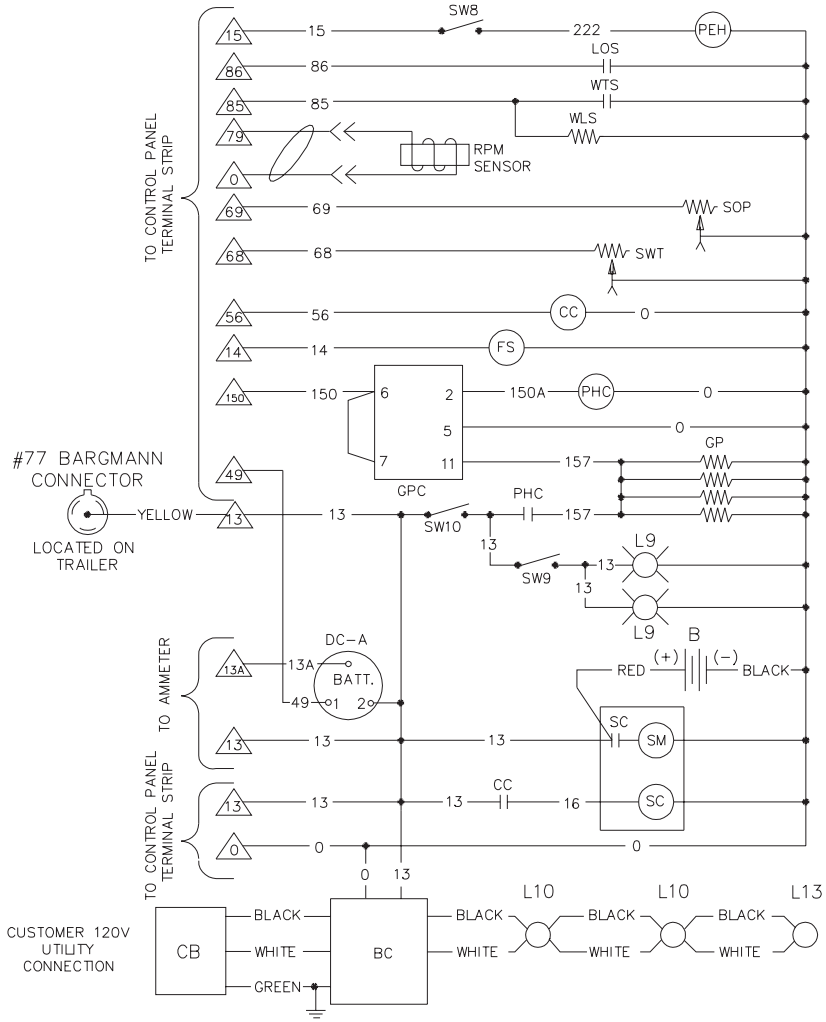
LEGEND

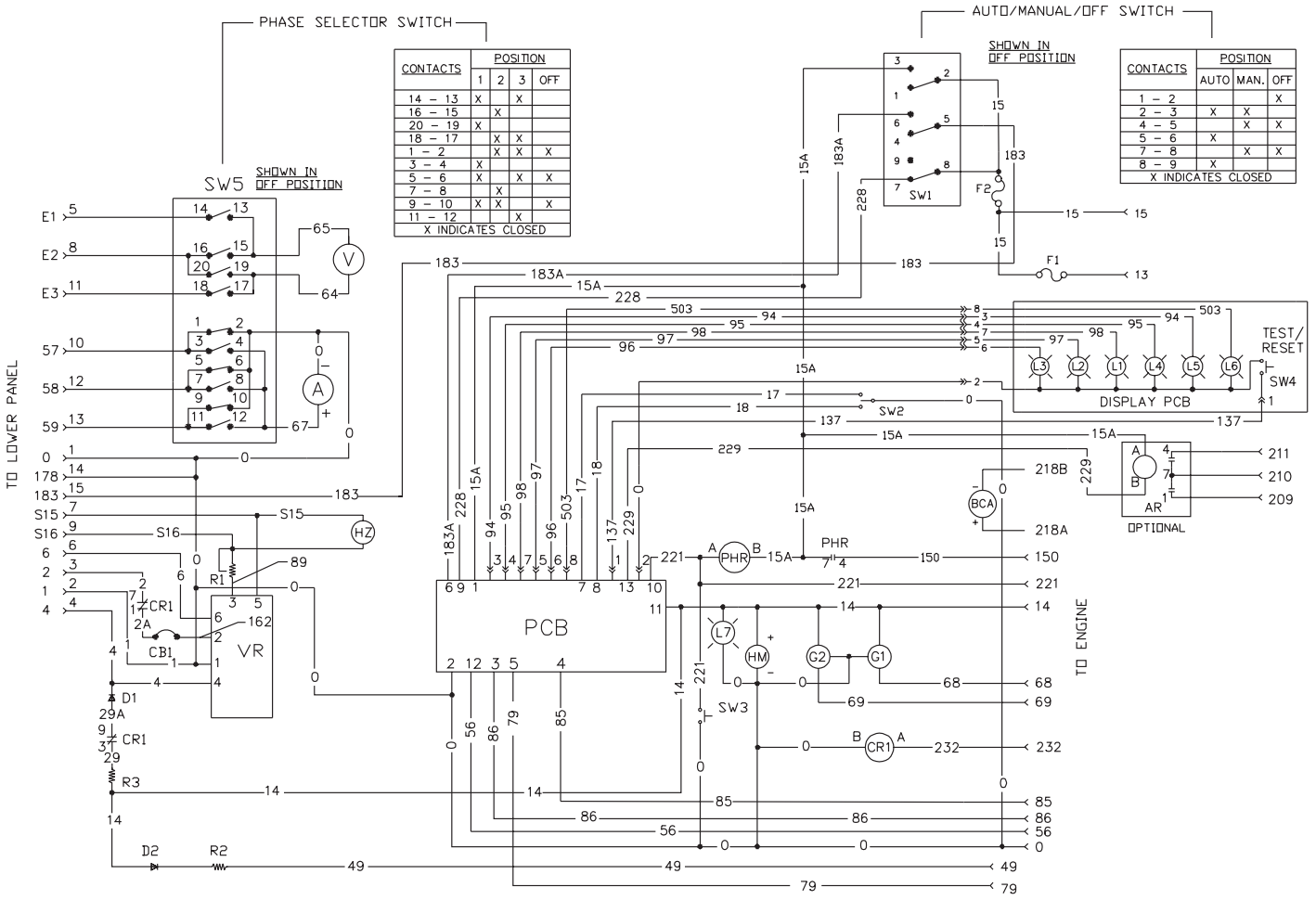
B – BATTERY 12V
BC – BATTERY CHARGER
CB – CONNECTION BOX 120V
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
FS – FUEL SOLINOID
GP – GLOW PLUG
GPC – GLOW PLUG CONTROLLER
GRD – GROUND
L9 – LAMPS, COMPARTMENT 12VDC
L10 – LAMPS, COMPARTMENT 120VAC
L13 – LAMP, OUTLET BOX 120VAC
LOS – LOW OIL SWITCH
PEH – PROPANE ENGINE HEATER
PHC – PRE-HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER-OIL PRESSURE
SWT – SENDER-WATER TEMPERATURE
SW8 – SWITCH, IGNITOR
SW9 – SWITCH, RADIATOR SHROUD
SW10 – SWITCH, COMPARTMENT LIGHTS
TP2 – THERMAL PROTECTOR BATTERY HEATER
WLS – WATER TEMPERATURE SWITCH
WTS – WATER TEMPERATURE SWITCH
– WIRE NUT



LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
CB – CONNECTION BOX 120V
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC – GLOW PLUG CONTROLLER
GRD – GROUND
L9 – LAMPS, COMPARTMENT 12VDC
L10 – LAMPS, COMPARTMENT 120VAC
L13 – LAMP, OUTLET BOX 120VAC
LOS – LOW OIL SWITCH
PEH – PROPANE ENGINE HEATER
PHC – PRE-HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER-OIL PRESSURE
SWT – SENDER-WATER TEMPERATURE
SW8 – SWITCH, IGNITOR
SW9 – SWITCH, RADIATOR SHROUD
SW10 – SWITCH, COMPARTMENT LIGHTS
TP2 – THERMAL PROTECTOR BATTERY HEATER
WLS – WATER TEMPERATURE SWITCH
WTS – WATER TEMPERATURE SWITCH





CONTACTS	POSITION			
	1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

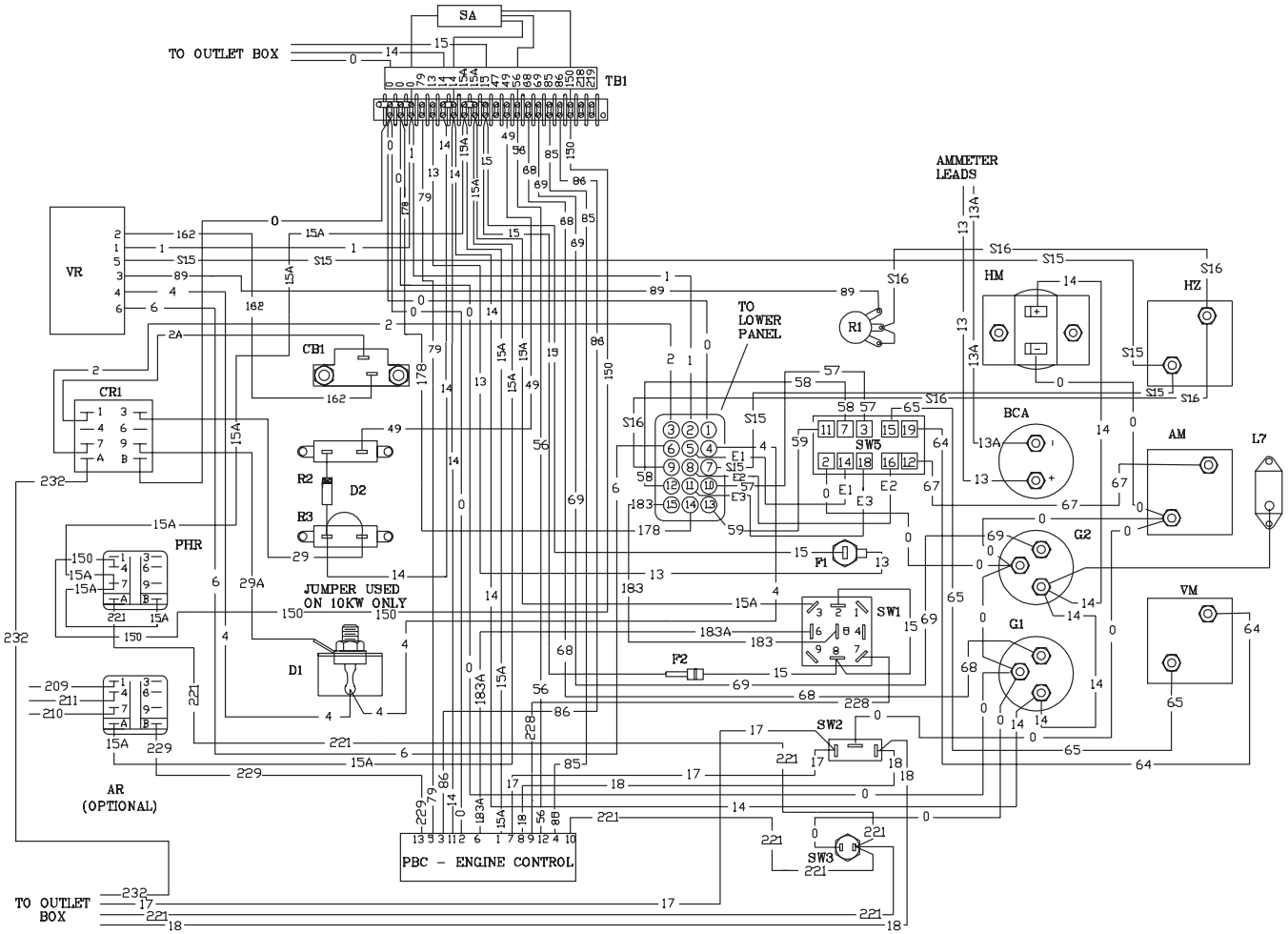
X INDICATES CLOSED

CONTACTS	POSITION		
	AUTO	MAN.	OFF
1 – 2			X
2 – 3	X	X	
4 – 5		X	X
5 – 6	X		
7 – 8		X	X
8 – 9	X		

X INDICATES CLOSED

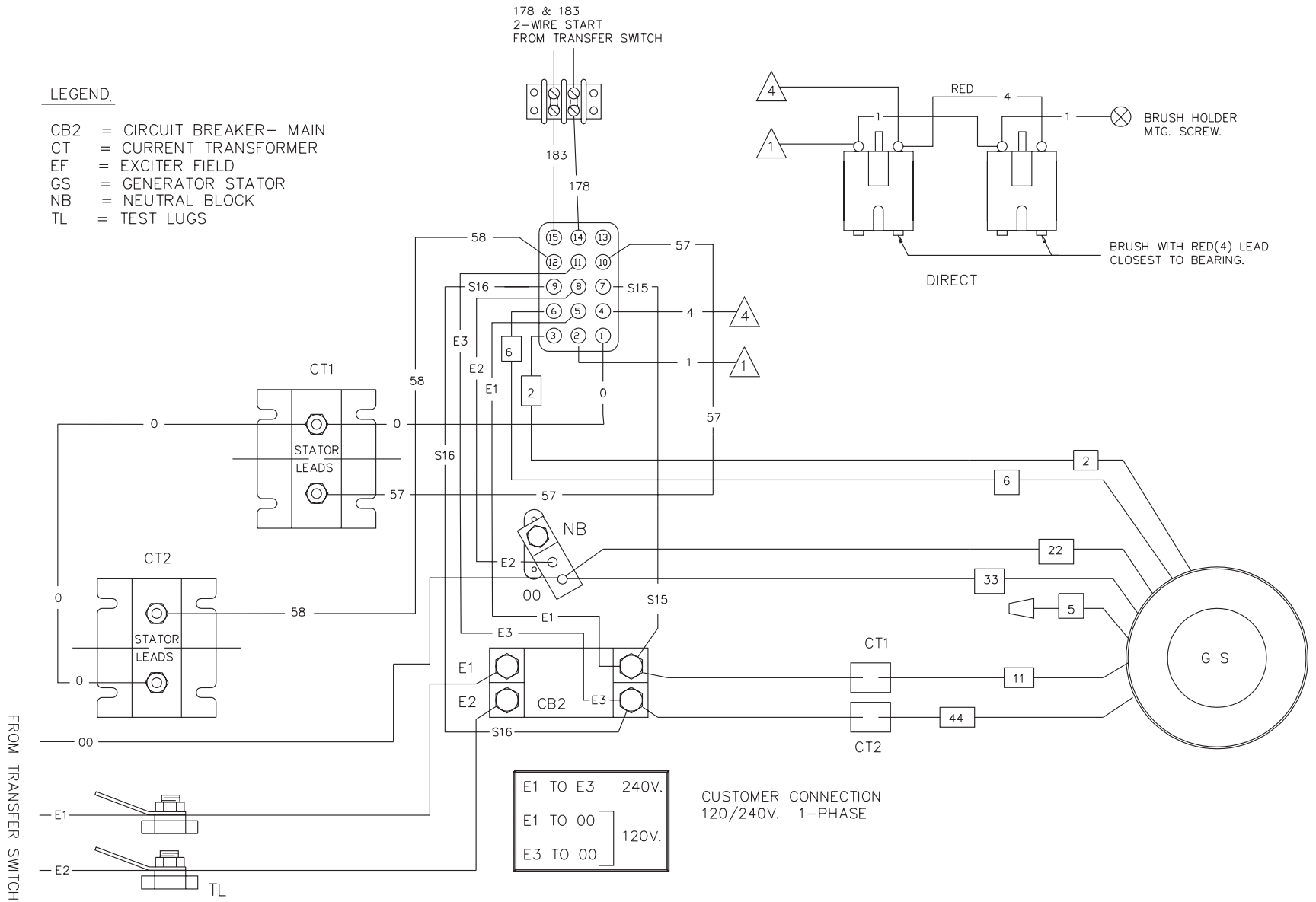
LEGEND

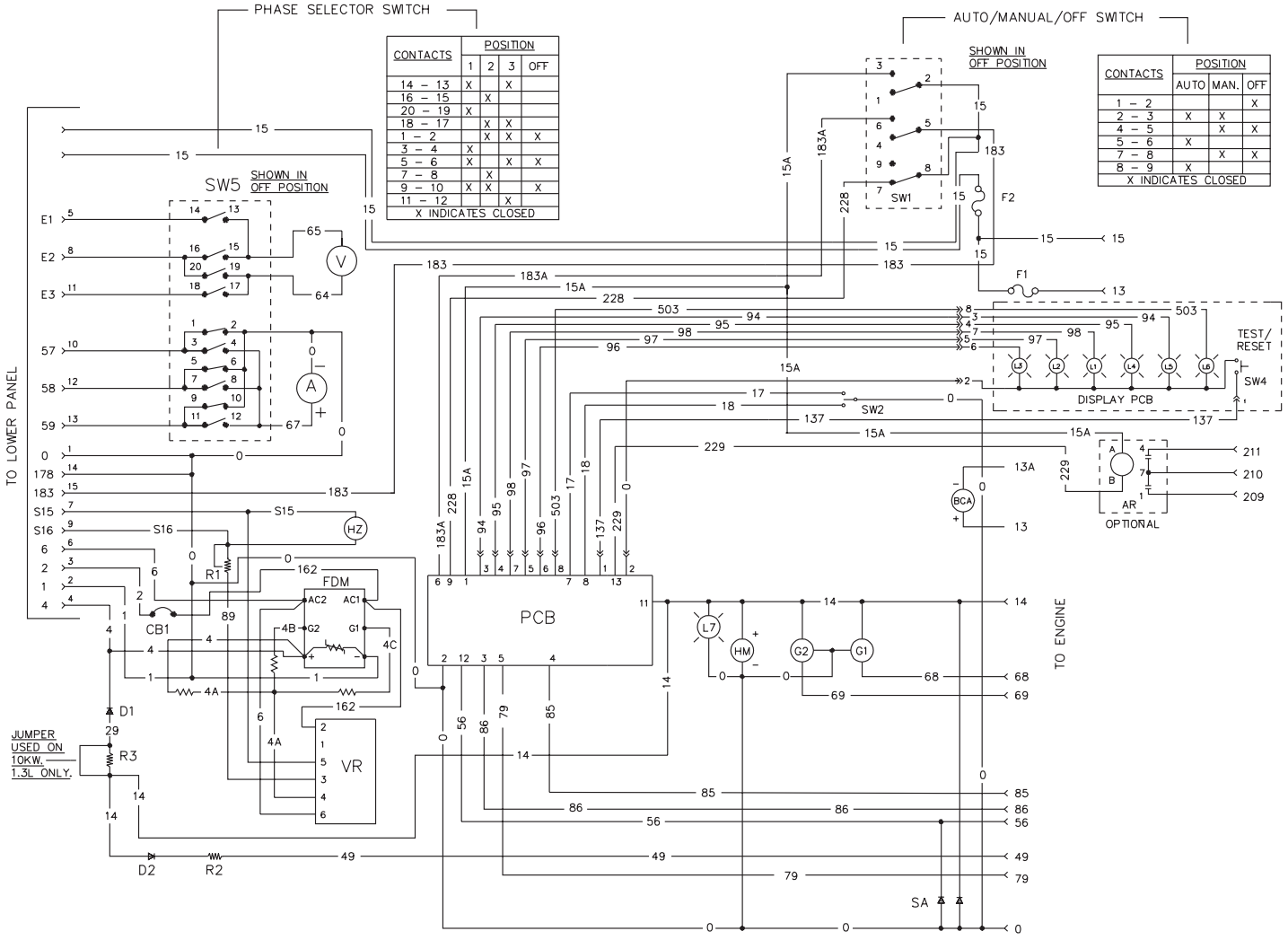
A – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER, FIELD BOOST
CR1 – RELAY, ALTERNATOR EXCITATION
D1 – DIODE, 600V 12A
D2 – DIODE, 800V 2A
F1 – FUSE, 30A
F2 – FUSE, 14A
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT, RPM SENSOR LOSS
L2 – LIGHT, OVERSPEED
L3 – LIGHT, OVERCRANK
L4 – LIGHT, HIGH COOLANT TEMP.
L5 – LIGHT, LOW OIL PRESSURE
L6 – LIGHT, NOT IN AUTOMATIC START MODE
L7 – LIGHT, PANEL
PC8 – CIRCUIT BOARD, DC CONTROL/ CRANK LATCH.
PHR – PRE-HEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
R2 – RESISTOR, ENGINE ALTERNATOR
R3 – RESISTOR, FIELD BOOST
SW1 – SWITCH, AUTO/MANUAL/OFF
SW2 – SWITCH, START/STOP
SW4 – SWITCH, TEST/RESET
SW5 – SWITCH, PHASE SELECTOR
V – AC VOLTMETER
VR – AC VOLTAGE REGULATOR



LEGEND

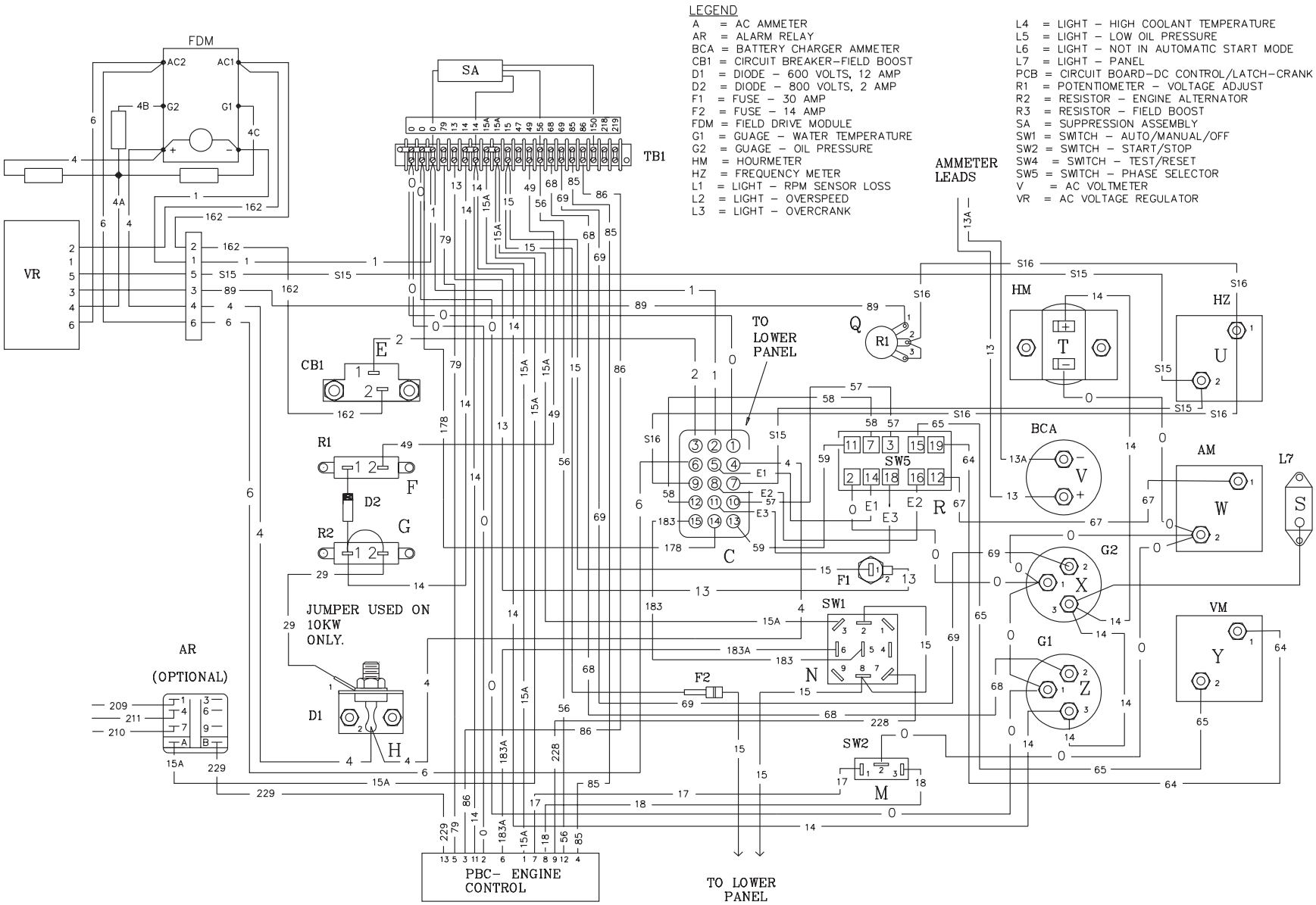
A – A-C AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER, FIELD BOOST
CR1 – RELAY, ALTERNATOR EXCITATION
D1 – DIODE – 600V., 12A
D2 – DIODE – 800V., 2A
F1 – FUSE, 30A
F2 – FUSE, 14A
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT, RPM SENSOR LOSS
L2 – LIGHT, OVERSPEED
L3 – LIGHT, OVERCRANK
L4 – LIGHT, HIGH COOLANT TEMP.
L5 – LIGHT, LOW OIL PRESSURE
L6 – LIGHT, NOT IN AUTOMATIC START MODE
L7 – LIGHT, PANEL
PCB – CIRCUIT BOARD, DC CONTROL/CRANK LATCH
PHR – PREHEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
R2 – RESISTOR, ENGINE ALTERNATOR
R3 – RESISTOR, FIELD BOOST
SW1 – SWITCH, AUTO/MANUAL/OFF
SW2 – SWITCH, START/STOP
SW4 – SWITCH, TEST/RESET
SW5 – SWITCH, PHASE SELECTOR
V – A-C VOLTMETER
VR – AC VOLTAGE REGULATOR


178 & 183
2-WIRE START
FROM TRANSFER SWITCH
LEGEND
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
GS = GENERATOR STATOR
NB = NEUTRAL BLOCK
TL = TEST LUGS
RED
BRUSH HOLDER MTG. SCREW.
BRUSH WITH RED(4) LEAD CLOSEST TO BEARING.
DIRECT
CT1
CT2
STATOR LEADS
NB
CB2
G S
FROM TRANSFER SWITCH
E1 TO E3 240V.
E1 TO 00 120V.
E3 TO 00
CUSTOMER CONNECTION
120/240V. 1-PHASE



LEGEND

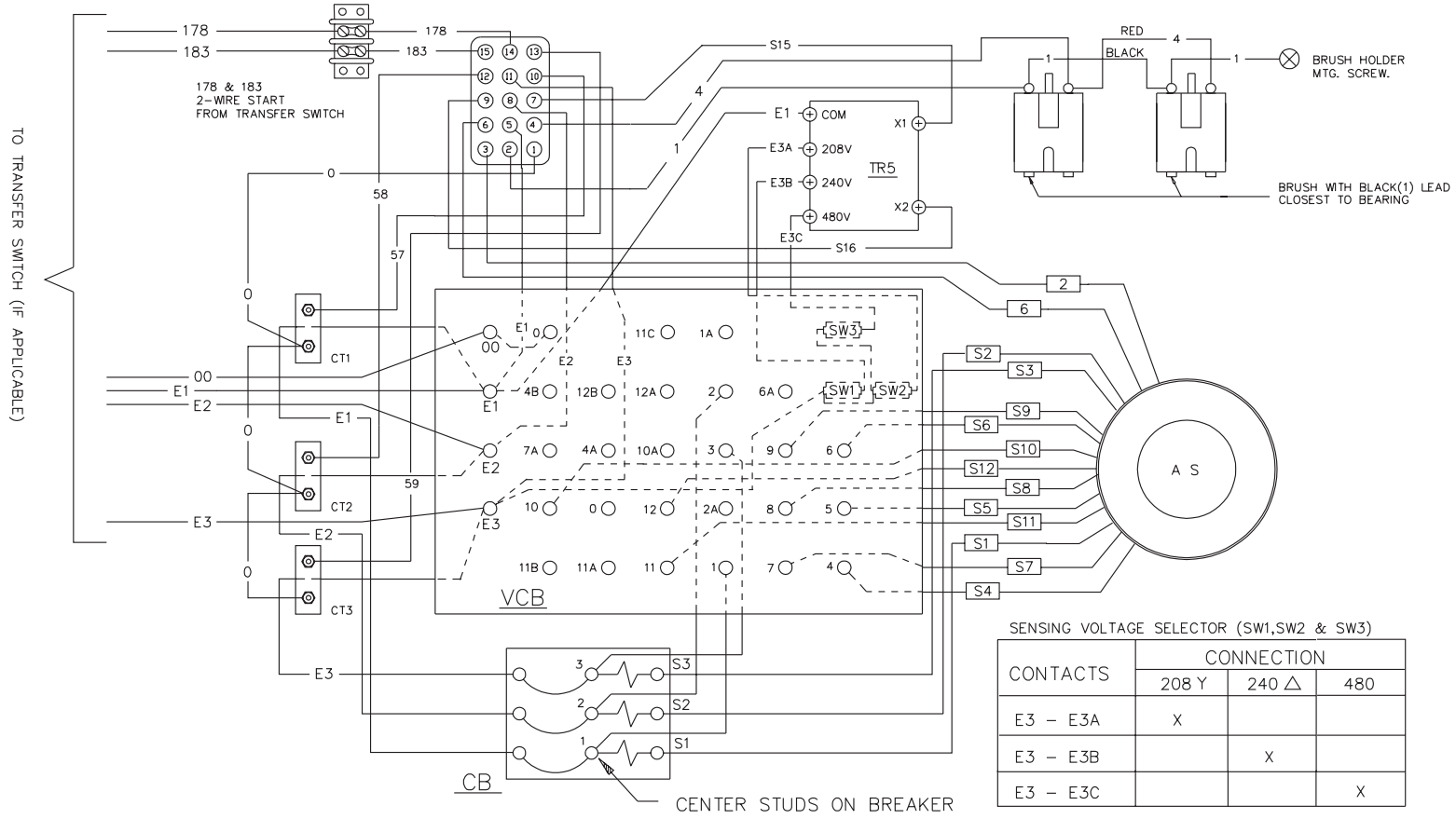
A = AC AMMETER
AR = ALARM RELAY
BCA = BATTERY CHARGER AMMETER
CB1 = CIRCUIT BREAKER–FIELD BOOST
D1 = DIODE – 600 VOLTS, 12 AMP
D2 = DIODE – 800 VOLTS, 2 AMP
F1 = FUSE – 30 AMP
F2 = FUSE – 14 AMP
FDM = FIELD DRIVE MODULE
G1 = GUAGE – WATER TEMPERATURE
G2 = GUAGE – OIL PRESSURE
HM = HOURMETER
HZ = FREQUENCY METER
L1 = LIGHT – RPM SENSOR LOSS
L2 = LIGHT – OVERSPEED
L3 = LIGHT – OVERCRANK
L4 = LIGHT – HIGH COOLANT TEMPERATURE
L5 = LIGHT – LOW OIL PRESSURE
L6 = LIGHT – NOT IN AUTOMATIC START MODE
L7 = LIGHT – PANEL
PCB = CIRCUIT BOARD–DC CONTROL/LATCH–CRANK
R1 = POTENTIOMETER – VOLTAGE ADJUST
R2 = RESISTOR – ENGINE ALTERNATOR
R3 = RESISTOR – FIELD BOOST
SW1 = SWITCH – AUTO/MANUAL/OFF
SW2 = SWITCH – START/STOP
SW4 = SWITCH – TEST/RESET
SW5 = SWITCH – PHASE SELECTOR
V = AC VOLTMETER
VR = AC VOLTAGE REGULATOR


LEGEND
A = AC AMMETER
AR = ALARM RELAY
BCA = BATTERY CHARGER AMMETER
CB1 = CIRCUIT BREAKER–FIELD BOOST
D1 = DIODE – 600 VOLTS, 12 AMP
D2 = DIODE – 800 VOLTS, 2 AMP
F1 = FUSE – 30 AMP
F2 = FUSE – 14 AMP
FDM = FIELD DRIVE MODULE
G1 = GUAGE – WATER TEMPERATURE
G2 = GUAGE – OIL PRESSURE
HM = HOURMETER
HZ = FREQUENCY METER
L1 = LIGHT – RPM SENSOR LOSS
L2 = LIGHT – OVERSPEED
L3 = LIGHT – OVERCRANK
L4 = LIGHT – HIGH COOLANT TEMPERATURE
L5 = LIGHT – LOW OIL PRESSURE
L6 = LIGHT – NOT IN AUTOMATIC START MODE
L7 = LIGHT – PANEL
PCB = CIRCUIT BOARD–DC CONTROL/LATCH–CRANK
R1 = POTENTIOMETER – VOLTAGE ADJUST
R2 = RESISTOR – ENGINE ALTERNATOR
R3 = RESISTOR – FIELD BOOST
SA = SUPPRESSION ASSEMBLY
SW1 = SWITCH – AUTO/MANUAL/OFF
SW2 = SWITCH – START/STOP
SW4 = SWITCH – TEST/RESET
SW5 = SWITCH – PHASE SELECTOR
V = AC VOLTMETER
VR = AC VOLTAGE REGULATOR
FDM
SA
TB1
VR
CB1
R1
R2
D1
D2
AR
(OPTIONAL)
JUMPER USED ON 10KW ONLY.
AMMETER LEADS
TO LOWER PANEL
SW1
SW2
SW5
F1
F2
HM
HZ
BCA
AM
L7
VM
G1
G2
PBC– ENGINE CONTROL
TO LOWER PANEL

LEGEND

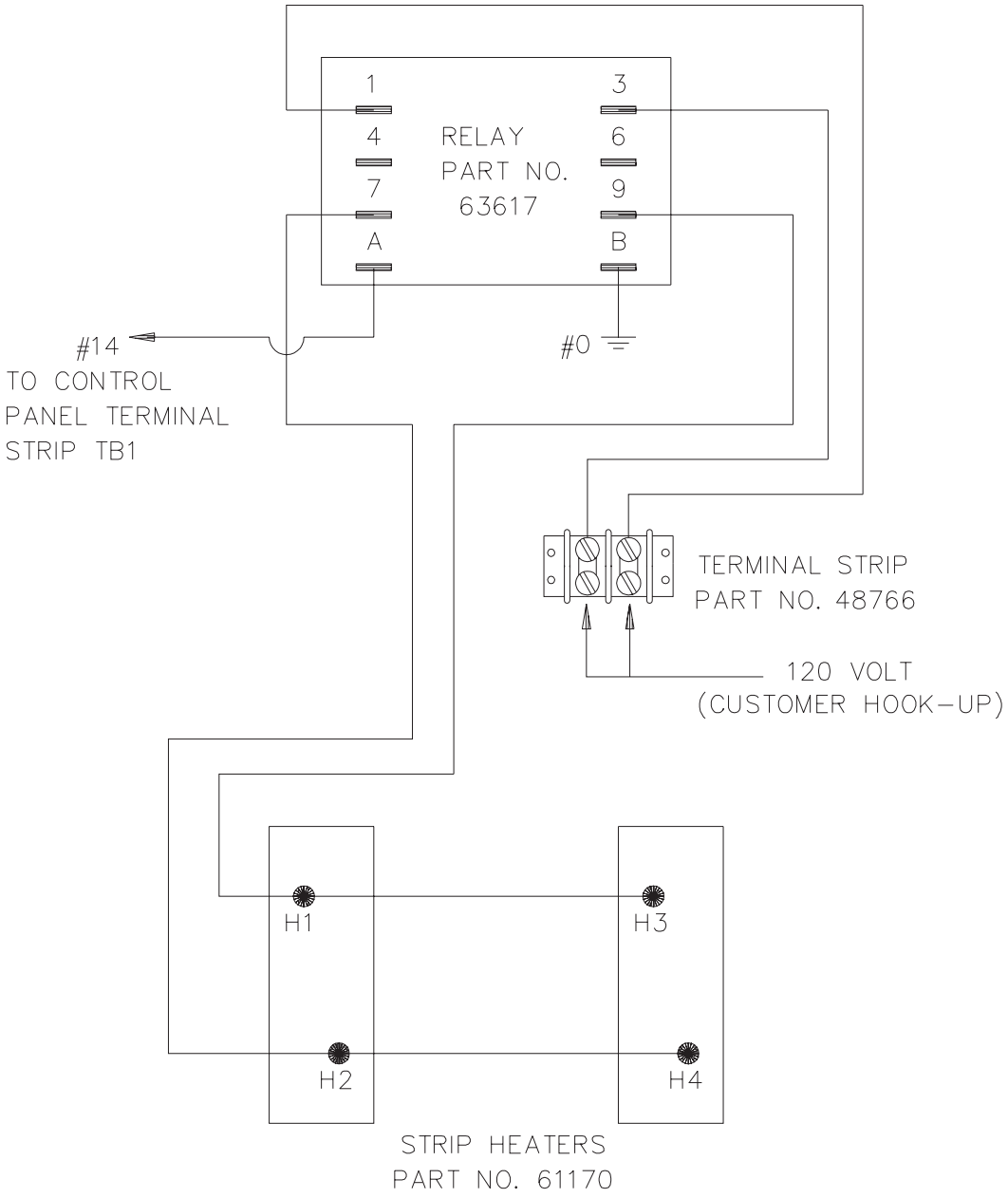
VCB = VOLTAGE CHANGE BOARD
AS = ALTERNATOR STATOR
TR5 = TRANSFORMER – SENSING
SW1,SW2 & SW3 = SWITCH – SENSING VOLTAGE SELECTOR
SW4 = SWITCH – PANEL COVER INTERLOCK
CT1,CT2 & CT3 = CURRENT TRANSFORMER
CB = CENTER STUD CIRCUIT BREAKER

120/208V 3Ø	E1 TO E2: 208V E2 TO E3: 208V E3 TO E1: 208V E1 TO 00: 120V E2 TO 00: 120V E3 TO 00: 120V
120/240V 3Ø	E1 TO E2: 240V E2 TO E3: 240V E3 TO E1: 240V E1 TO 00: 120V E3 TO 00: 120V
120/240V 1Ø	E1 TO E3: 240V E1 TO 00: 120V E3 TO 00: 120V
277/480V 3Ø	E1 TO E2: 480V E2 TO E3: 480V E3 TO E1: 480V E1 TO 00: 277V E2 TO 00: 277V E3 TO 00: 277V

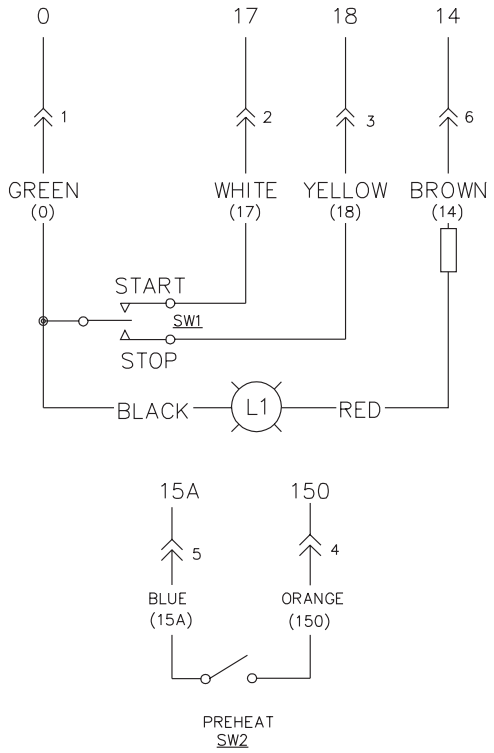


SENSING VOLTAGE SELECTOR (SW1,SW2 & SW3)

CONTACTS	CONNECTION		
	208 Y	240 △	480
E3 – E3A	X		
E3 – E3B		X	
E3 – E3C			X


1
3
4
RELAY
PART NO.
63617
6
7
9
A
B
#14
TO CONTROL
PANEL TERMINAL
STRIP TB1
#0
TERMINAL STRIP
PART NO. 48766
120 VOLT
(CUSTOMER HOOK-UP)
H1
H3
H2
H4
STRIP HEATERS
PART NO. 61170

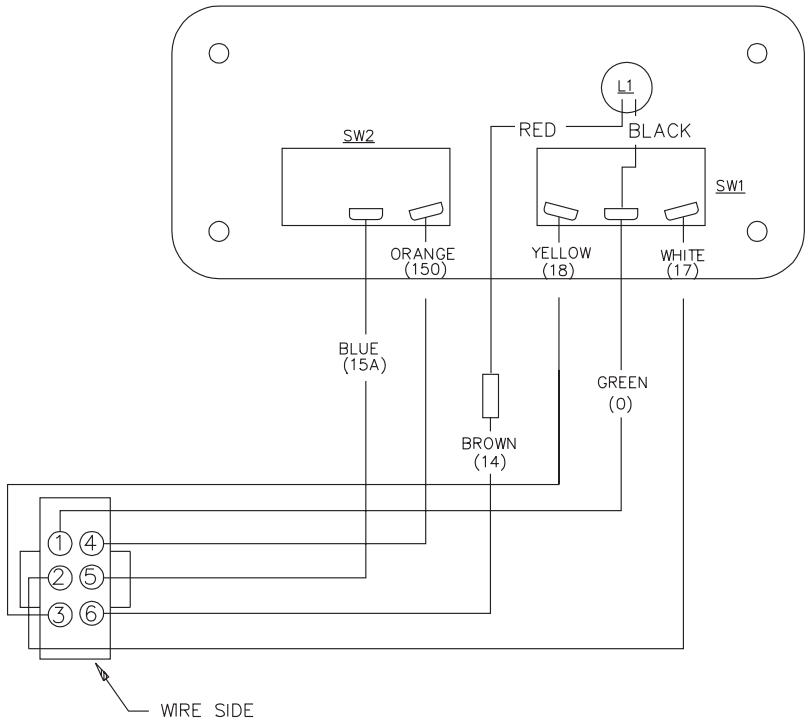
SCHEMATIC

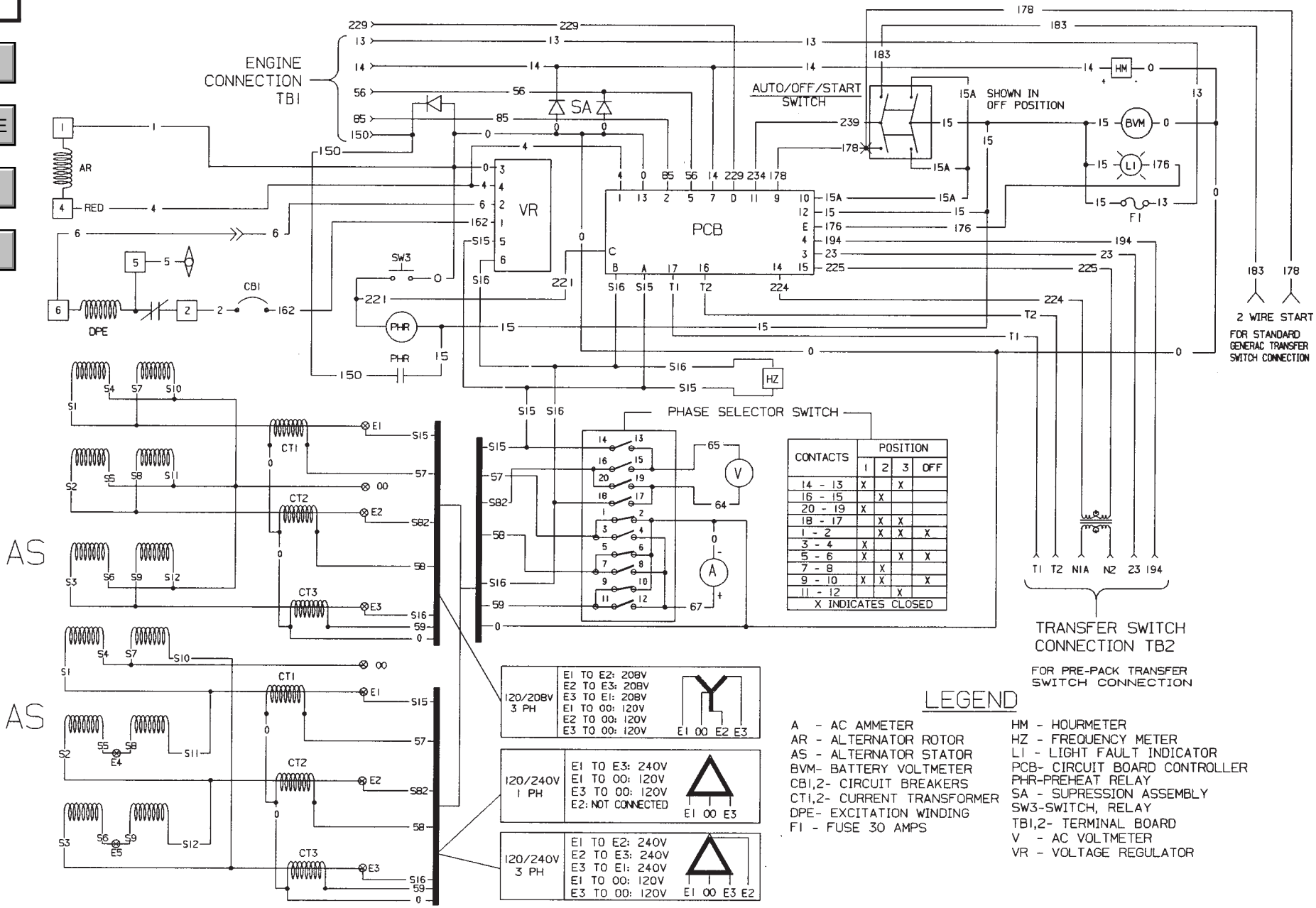


LEGEND

L1– LAMP, ENGINE RUN
SW1– SWITCH, STOP/START
SW2– SWITCH, ENGINE PREHEAT

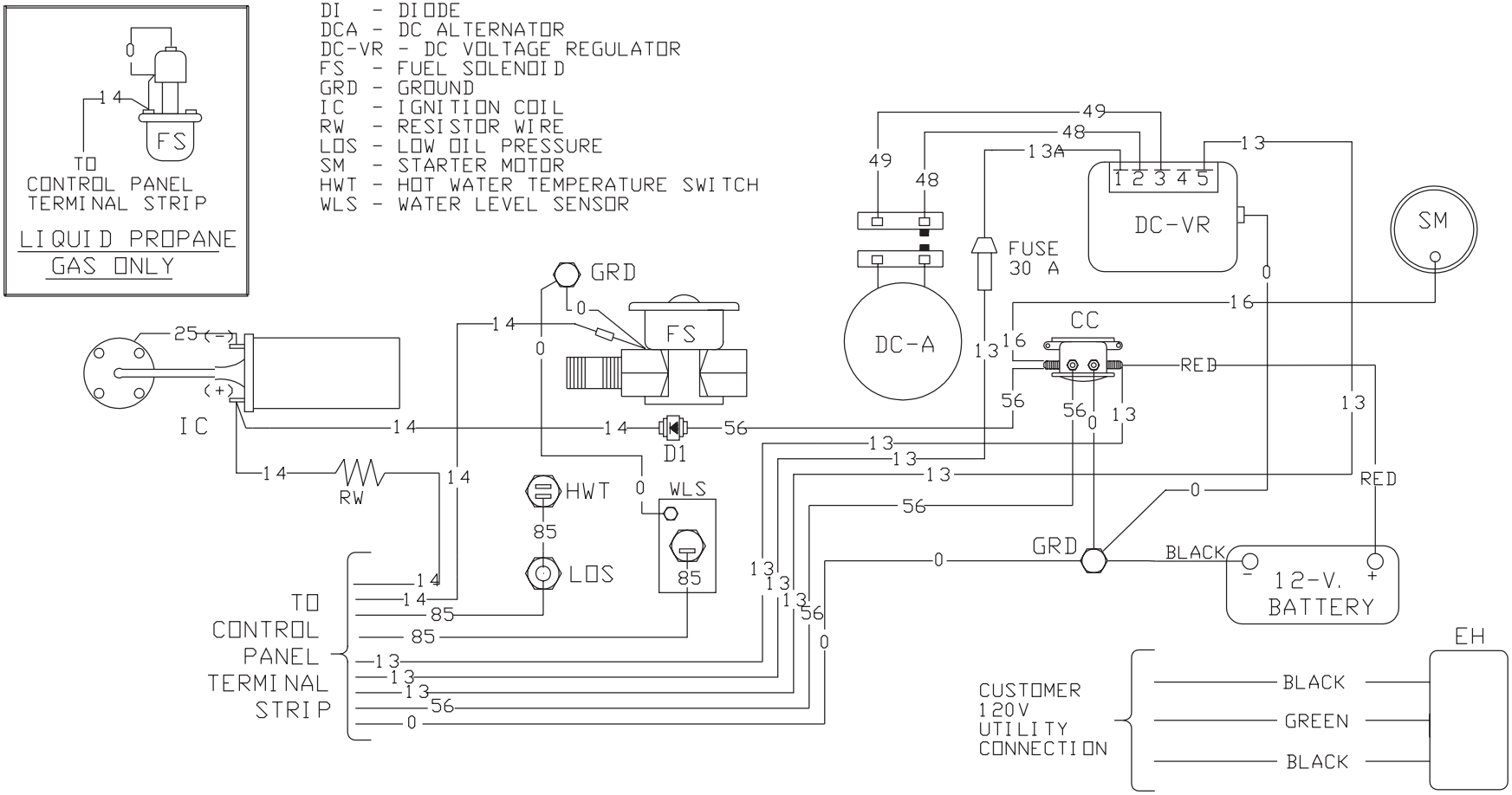
WIRING DIAGRAM

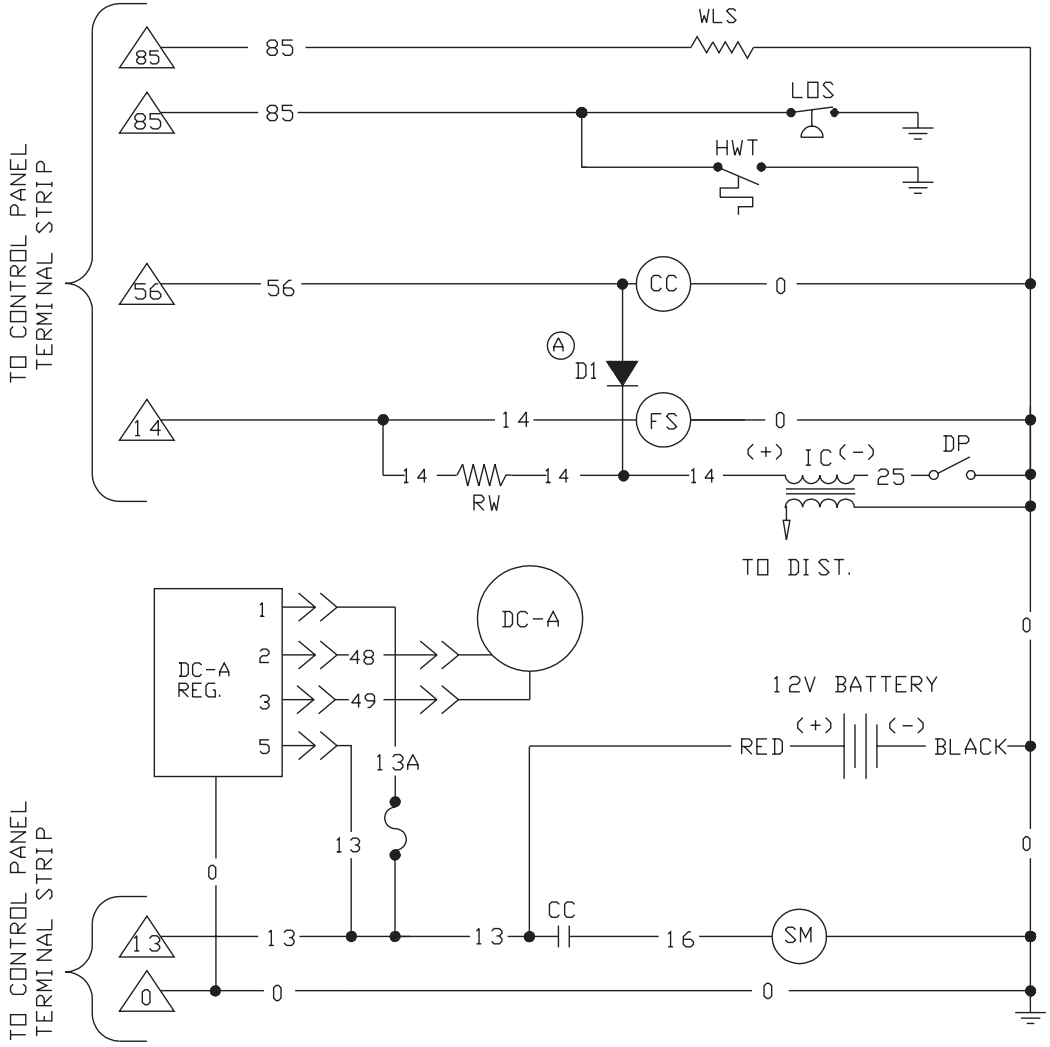


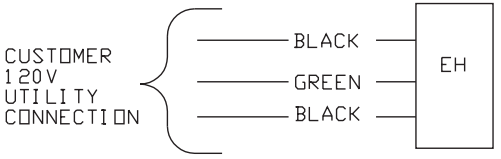


LEGEND

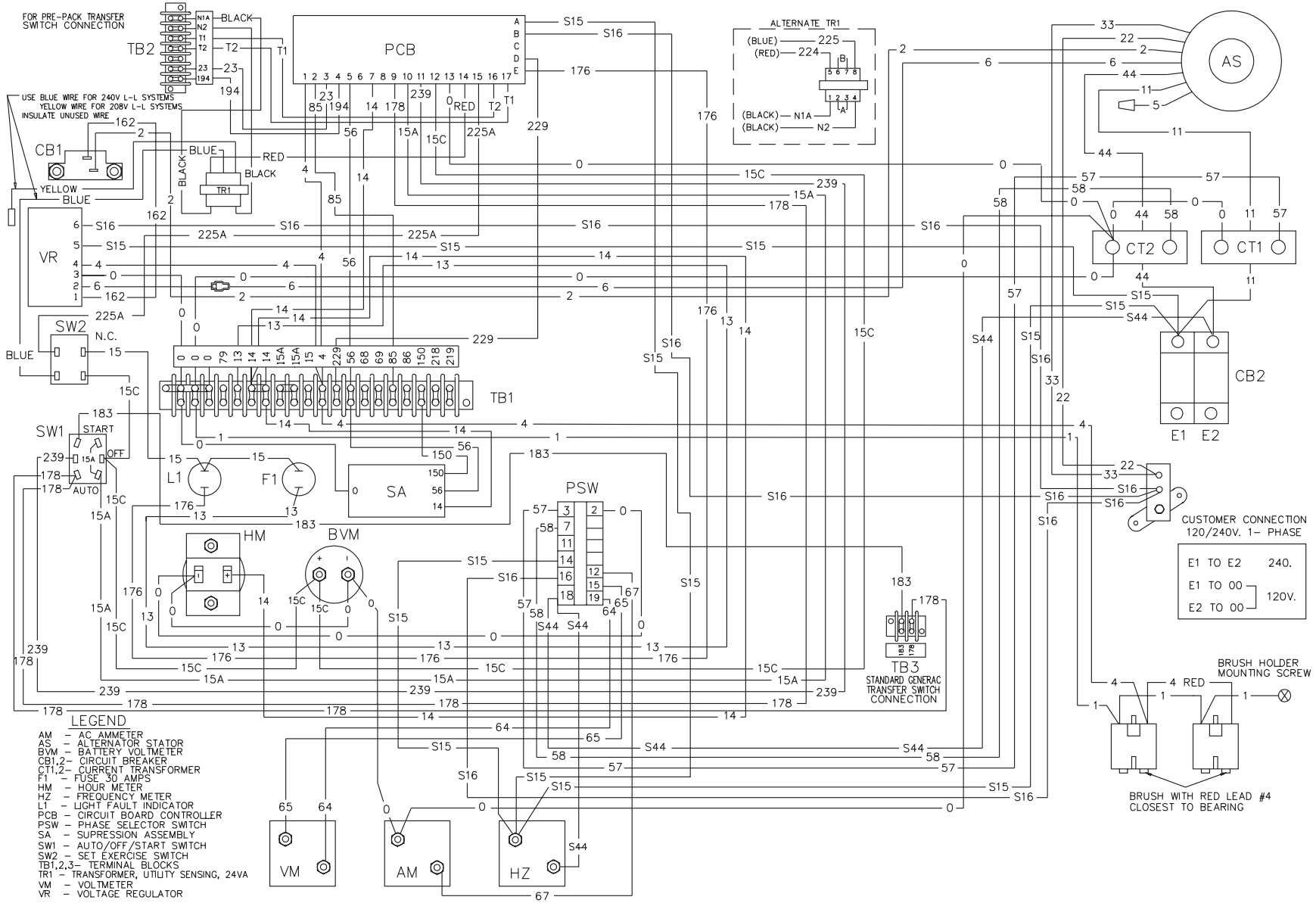
A - AC AMMETER
AR - ALTERNATOR ROTOR
AS - ALTERNATOR STATOR
BVM- BATTERY VOLTMETER
CB1,2- CIRCUIT BREAKERS
CT1,2- CURRENT TRANSFORMER
DPE- EXCITATION WINDING
FI - FUSE 30 AMPS
HM - HOURMETER
HZ - FREQUENCY METER
LI - LIGHT FAULT INDICATOR
PCB- CIRCUIT BOARD CONTROLLER
PHR-PREHEAT RELAY
SA - SUPRESSION ASSEMBLY
SW3-SWITCH, RELAY
TB1,2- TERMINAL BOARD
V - AC VOLTMETER
VR - VOLTAGE REGULATOR

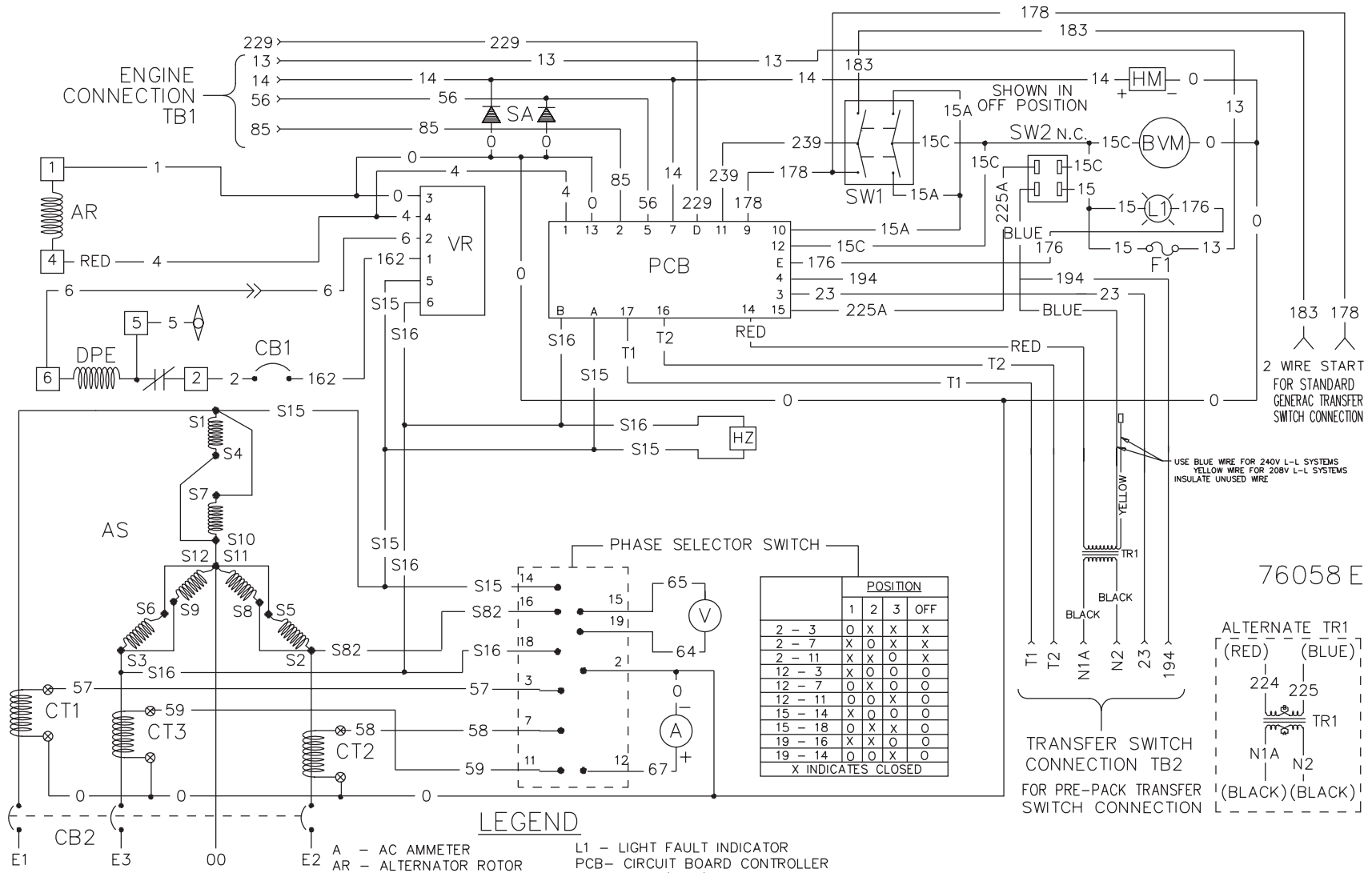

CC - CONTROL CONTACTOR
EH - ENGINE HEATER
DI - DIODE
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
FS - FUEL SOLENOID
GRD - GROUND
IC - IGNITION COIL
RW - RESISTOR WIRE
LOS - LOW OIL PRESSURE
SM - STARTER MOTOR
HWT - HOT WATER TEMPERATURE SWITCH
WLS - WATER LEVEL SENSOR
TO CONTROL PANEL TERMINAL STRIP
LIQUID PROPANE GAS ONLY
FS
DC-VR
DC-A
CC
SM
IC
D1
RW
HWT
LOS
WLS
GRD
FUSE 30 A
12-V. BATTERY
BLACK
RED
TO CONTROL PANEL TERMINAL STRIP
CUSTOMER 120V UTILITY CONNECTION
BLACK
GREEN
BLACK
EH

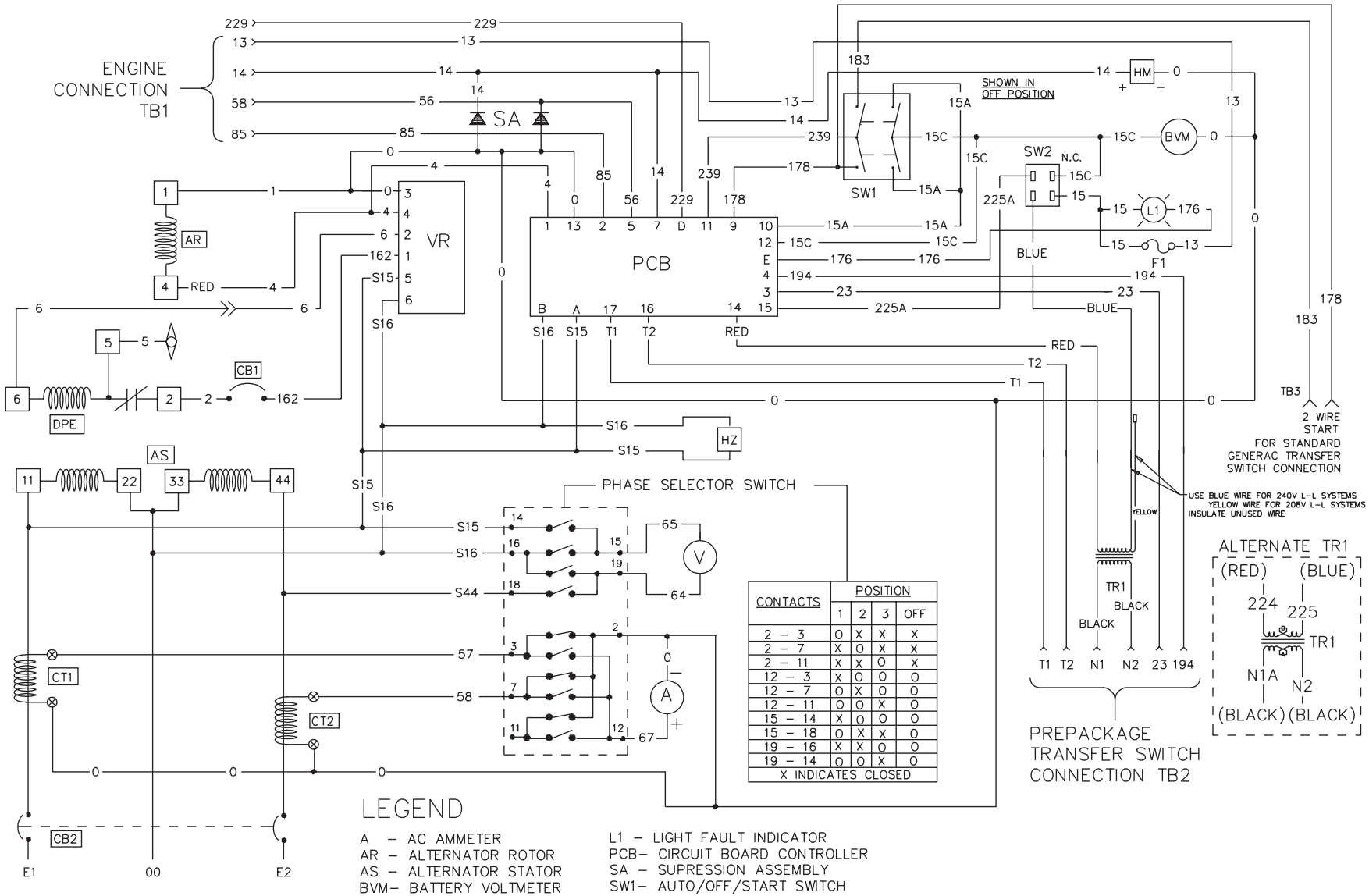




CC - CONTROL CONTACTOR
D1 - DIODE
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
DP - DISTRIBUTOR POINTS
EH - ENGINE HEATER
FS - FUEL SOLENOID
GRD - GROUND
HWT - HOT WATER TEMP SWITCH
IC - IGNITION COIL
LOS - LOW OIL SWITCH
SM - STARTER MOTOR
RW - RESISTOR WIRE
WLS - WATER LEVEL SENSOR


FOR PRE-PACK TRANSFER SWITCH CONNECTION
TB2
PCB
ALTERNATE TR1
AS
CT2
CT1
CB2
CB1
TR1
VR
SW2
N.C.
TB1
SW1
START
OFF
AUTO
L1
F1
SA
PSW
HM
BVM
TB3
STANDARD GENERAC TRANSFER SWITCH CONNECTION
CUSTOMER CONNECTION
120/240V. 1- PHASE
E1 TO E2 240.
E1 TO 00 120V.
E2 TO 00
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
VM
AM
HZ
USE BLUE WIRE FOR 240V L-L SYSTEMS
YELLOW WIRE FOR 208V L-L SYSTEMS
INSULATE UNUSED WIRE
LEGEND
AM - AC AMMETER
AS - ALTERNATOR STATOR
BVM - BATTERY VOLTMETER
CB1,2- CIRCUIT BREAKER
CT1,2- CURRENT TRANSFORMER
F1 - FUSE 30 AMPS
HM - HOUR METER
HZ - FREQUENCY METER
L1 - LIGHT FAULT INDICATOR
PCB - CIRCUIT BOARD CONTROLLER
PSW - PHASE SELECTOR SWITCH
SA - SUPRESSION ASSEMBLY
SW1 - AUTO/OFF/START SWITCH
SW2 - SET EXERCISE SWITCH
TB1,2,3- TERMINAL BLOCKS
TR1 - TRANSFORMER, UTILITY SENSING, 24VA
VM - VOLTMETER
VR - VOLTAGE REGULATOR


ENGINE CONNECTION TB1
SA
SHOWN IN OFF POSITION
SW2 N.C.
SW1
HM
BVM
L1
F1
AR
VR
PCB
DPE
CB1
HZ
AS
PHASE SELECTOR SWITCH
CT1
CT3
CT2
CB2
TR1
2 WIRE START FOR STANDARD GENERAC TRANSFER SWITCH CONNECTION
USE BLUE WIRE FOR 240V L-L SYSTEMS
YELLOW WIRE FOR 208V L-L SYSTEMS
INSULATE UNUSED WIRE
76058 E
ALTERNATE TR1
TRANSFER SWITCH CONNECTION TB2
FOR PRE-PACK TRANSFER SWITCH CONNECTION
POSITION
1 2 3 OFF
2 - 3 O X X X
2 - 7 X O X X
2 - 11 X X O X
12 - 3 X O O O
12 - 7 O X O O
12 - 11 O O X O
15 - 14 X O O O
15 - 18 O X X O
19 - 16 X X O O
19 - 14 O O X O
X INDICATES CLOSED
CUSTOMER CONNECTION 120/208V 3 PHASE
E1 E3 00 E2
LEGEND
A - AC AMMETER
AR - ALTERNATOR ROTOR
AS - ALTERNATOR STATOR
BVM- BATTERY VOLTMETER
CB1,2- CIRCUIT BREAKERS
CT1,2- CURRENT TRANSFORMER
DPE- EXCITATION WINDING
F1 - FUSE 30 AMPS
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT FAULT INDICATOR
PCB- CIRCUIT BOARD CONTROLLER
SW1- AUTO/OFF/START SWITCH
SW2- SET EXERCISE SWITCH
SA - SUPRESSION ASSEMBLY
TB1,2- TERMINAL BOARD
TR1 - TRANSFORMER, UTILITY SENSING, 24VA
V - AC VOLTMETER
VR - VOLTAGE REGULATOR



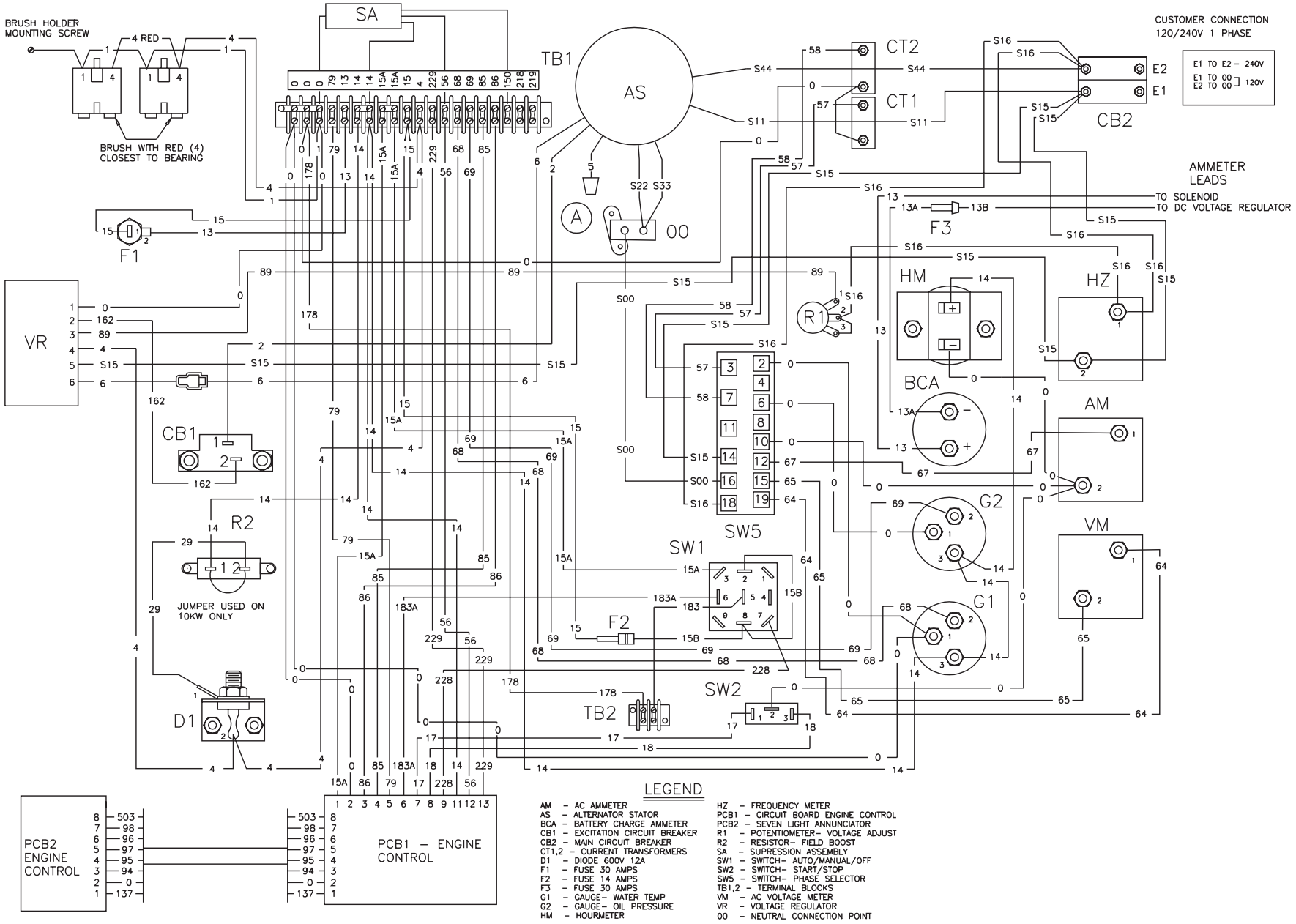
CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	O	X	X	X
2 – 7	X	O	X	X
2 – 11	X	X	O	X
12 – 3	X	O	O	O
12 – 7	O	X	O	O
12 – 11	O	O	X	O
15 – 14	X	O	O	O
15 – 18	O	X	X	O
19 – 16	X	X	O	O
19 – 14	O	O	X	O

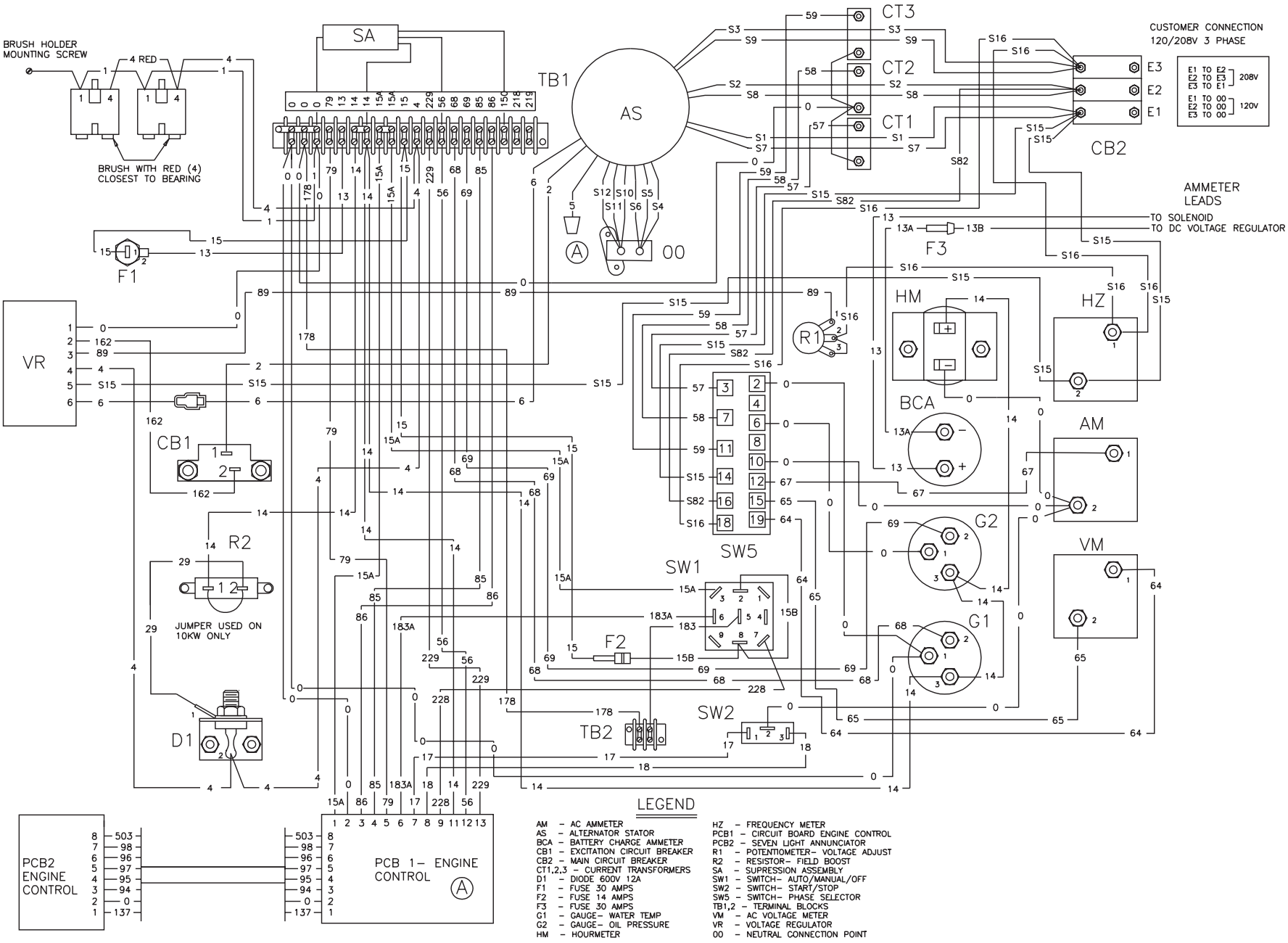
X INDICATES CLOSED

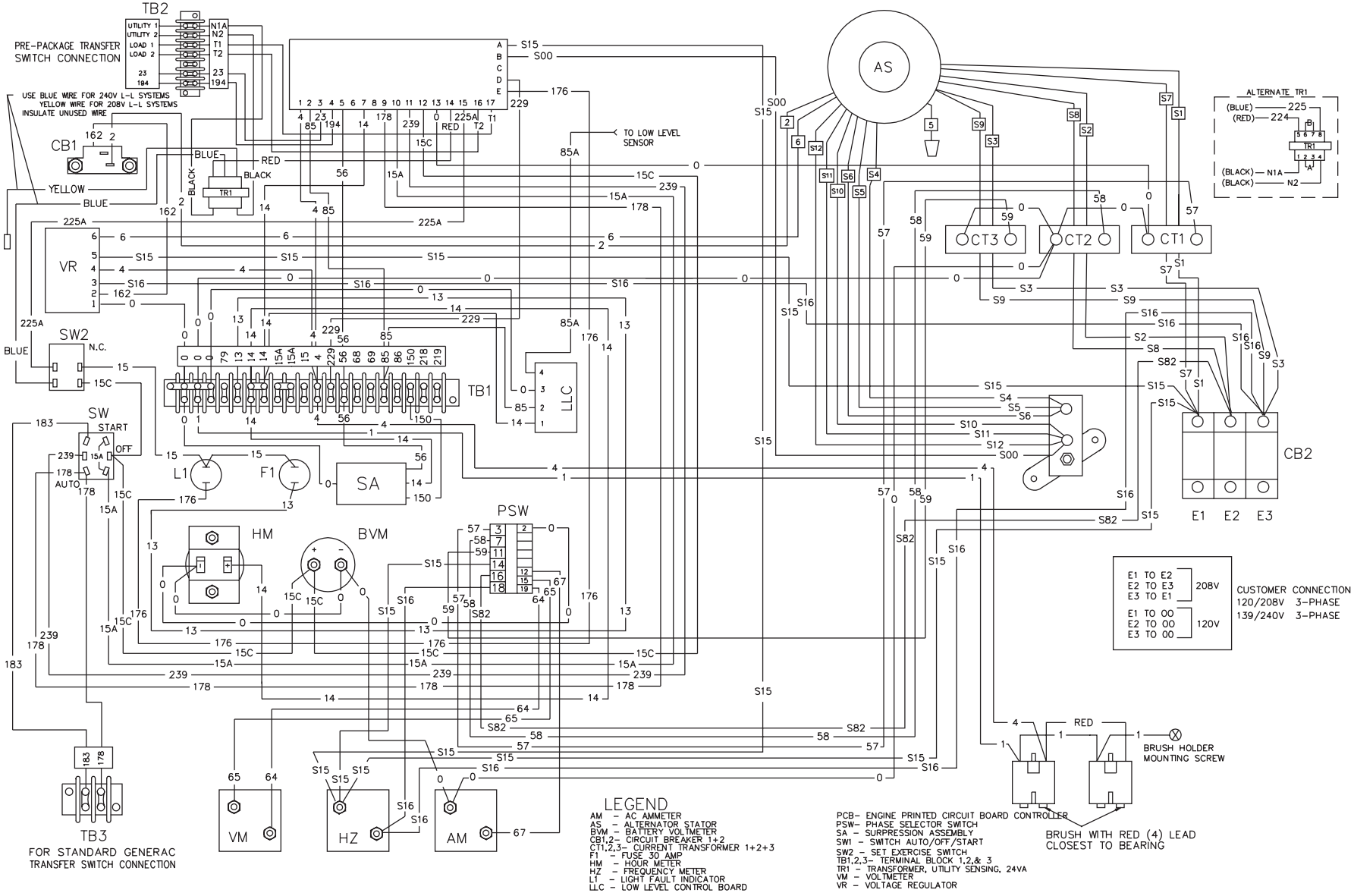
CUSTOMER CONNECTION
120/240V 1–PHASE

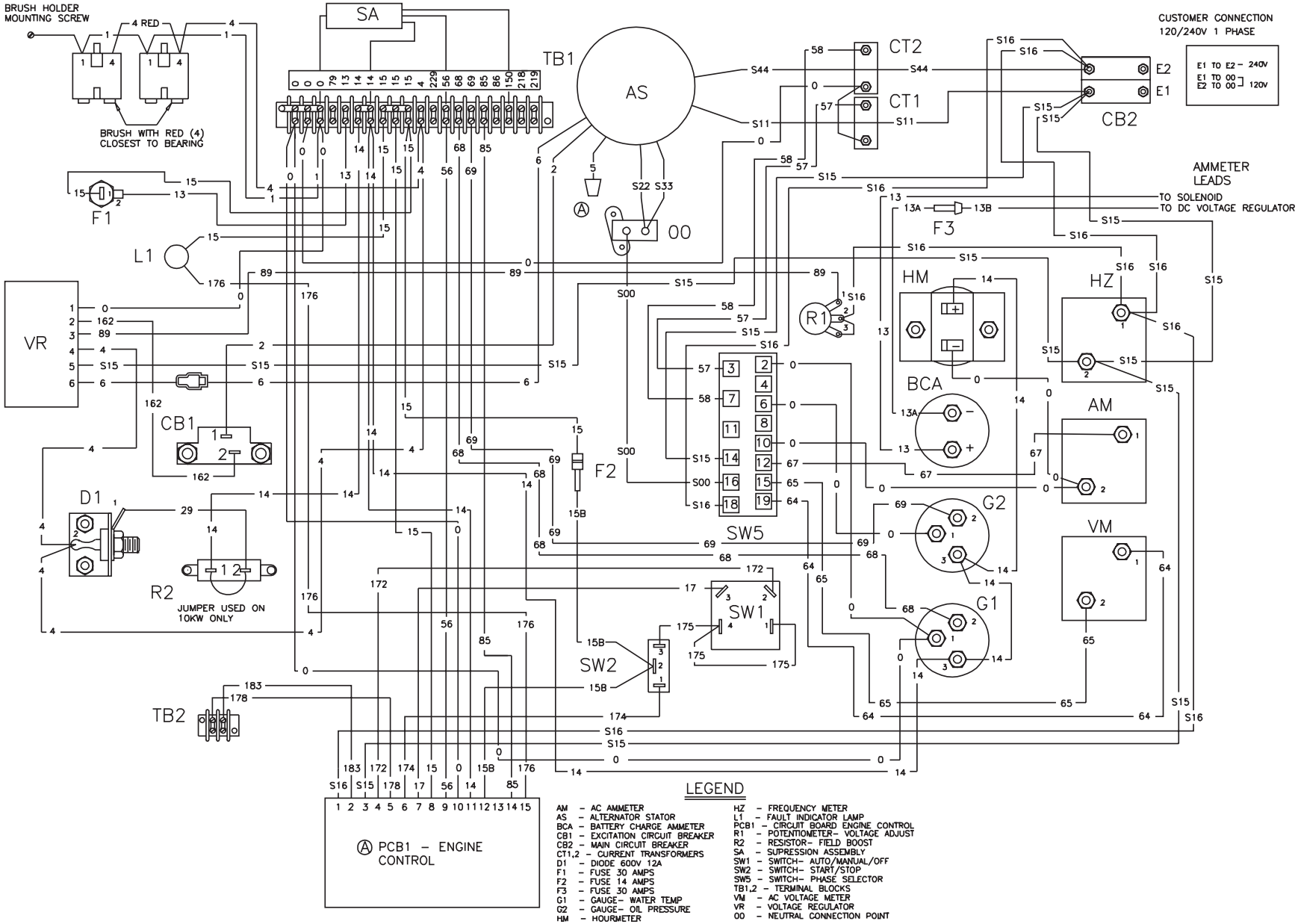
LEGEND

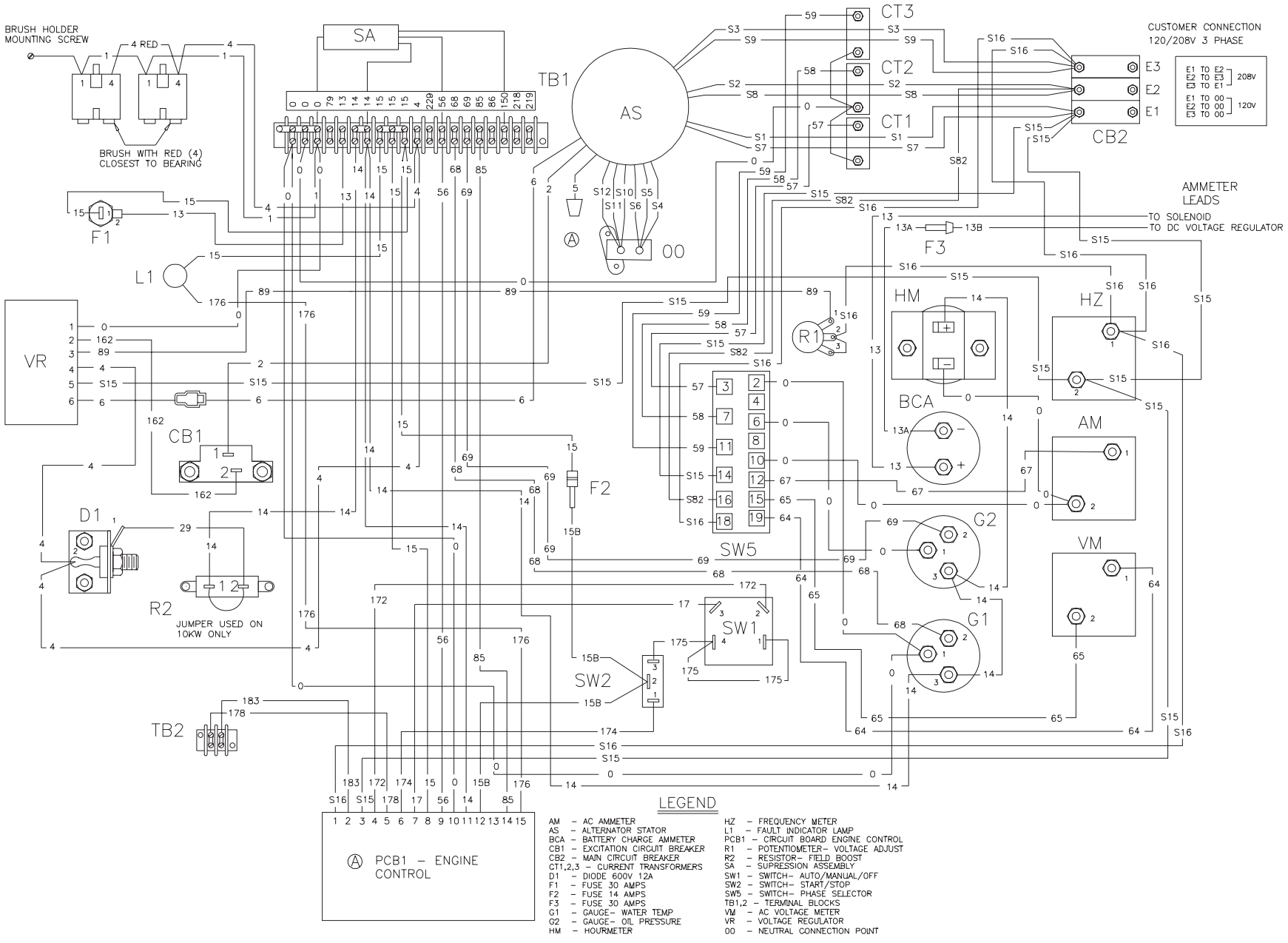
A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BVM– BATTERY VOLTMETER
CB1,2– CIRCUIT BREAKERS
CT1,2– CURRENT TRANSFORMER
DPE– EXCITATION WINDING
F1 – FUSE 30 AMPS
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
PCB– CIRCUIT BOARD CONTROLLER
SA – SUPRESSION ASSEMBLY
SW1– AUTO/OFF/START SWITCH
SW2– SET EXERCISE SWITCH
TB1,2,3– TERMINAL BOARDS
V – AC VOLTMETER
VR – VOLTAGE REGULATOR
TR1–TRANSFORMER, UTILITY SENSING

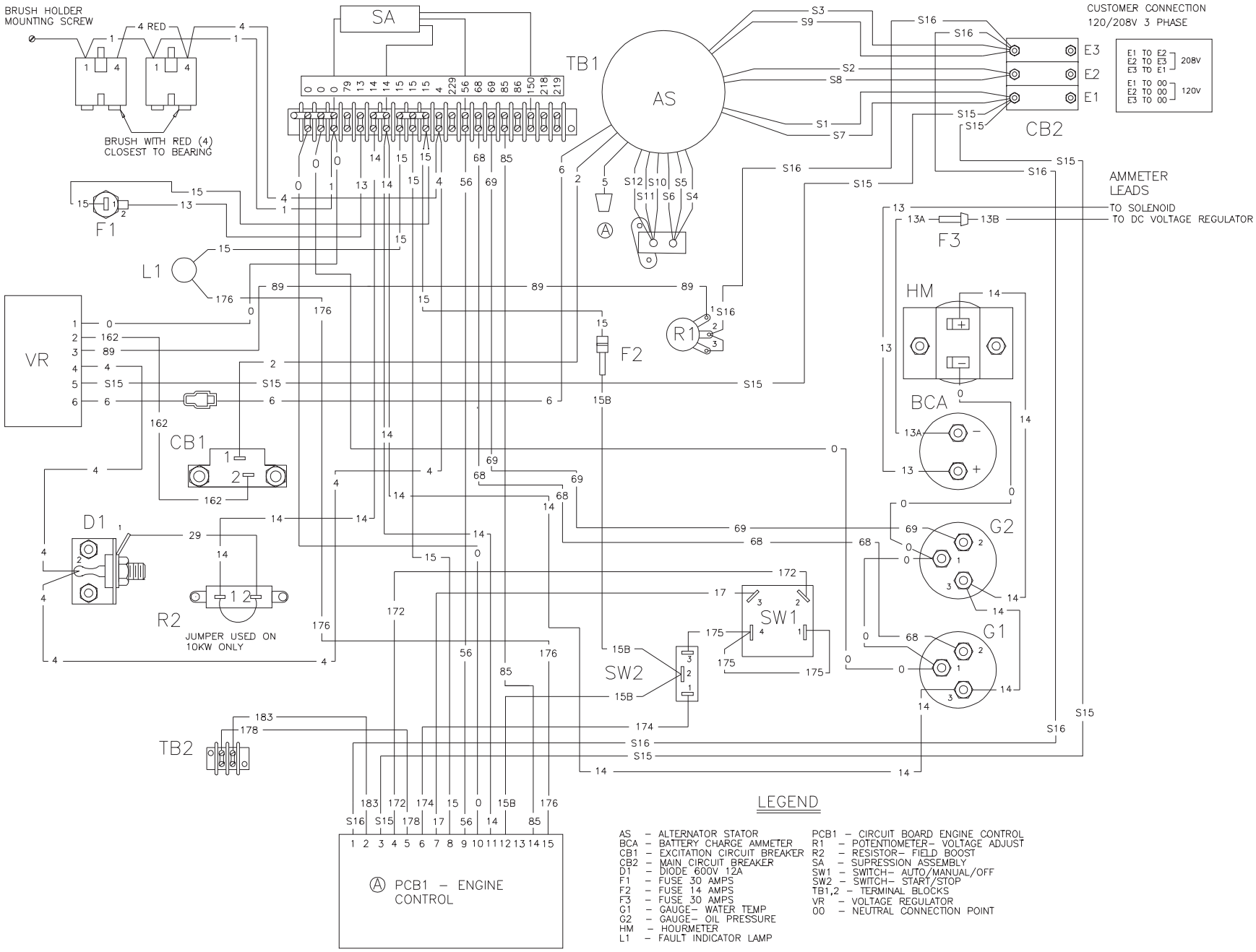

BRUSH HOLDER MOUNTING SCREW
4 RED
BRUSH WITH RED (4) CLOSEST TO BEARING
SA
TB1
AS
CT2
CT1
CB2
CUSTOMER CONNECTION
120/240V 1 PHASE
E1 TO E2 – 240V
E1 TO 00 – 120V
E2 TO 00 – 120V
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F1
F3
VR
CB1
R1
HM
HZ
BCA
AM
G2
VM
G1
SW1
SW5
SW2
F2
R2
D1
TB2
JUMPER USED ON 10KW ONLY
PCB2 ENGINE CONTROL
PCB1 – ENGINE CONTROL
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – SEVEN LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT


BRUSH HOLDER MOUNTING SCREW
4 RED
BRUSH WITH RED (4) CLOSEST TO BEARING
SA
TB1
AS
CT3
CT2
CT1
CB2
CUSTOMER CONNECTION
120/208V 3 PHASE
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO 00
E2 TO 00
E3 TO 00
120V
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F1
F3
VR
CB1
R1
HM
HZ
BCA
AM
VM
G1
G2
SW1
SW2
SW5
F2
R2
JUMPER USED ON 10KW ONLY
D1
TB2
00
PCB2 ENGINE CONTROL
PCB 1– ENGINE CONTROL
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2,3 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – SEVEN LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT


TB2
PRE-PACKAGE TRANSFER SWITCH CONNECTION
UTILITY 1
UTILITY 2
LOAD 1
LOAD 2
USE BLUE WIRE FOR 240V L-L SYSTEMS
YELLOW WIRE FOR 208V L-L SYSTEMS
INSULATE UNUSED WIRE
CB1
TR1
VR
SW2
N.C.
SW
START
OFF
AUTO
TB1
LLC
L1
F1
SA
HM
BVM
PSW
AS
TO LOW LEVEL SENSOR
CT3
CT2
CT1
ALTERNATE TR1
(BLUE) 225
(RED) 224
(BLACK) N1A
(BLACK) N2
CB2
E1 E2 E3
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO 00
E2 TO 00
E3 TO 00
120V
CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE
RED
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING
TB3
FOR STANDARD GENERAC TRANSFER SWITCH CONNECTION
VM
HZ
AM
LEGEND
AM - AC AMMETER
AS - ALTERNATOR STATOR
BVM - BATTERY VOLTMETER
CB1,2- CIRCUIT BREAKER 1+2
CT1,2,3- CURRENT TRANSFORMER 1+2+3
F1 - FUSE 30 AMP
HM - HOUR METER
HZ - FREQUENCY METER
L1 - LIGHT FAULT INDICATOR
LLC - LOW LEVEL CONTROL BOARD
PCB- ENGINE PRINTED CIRCUIT BOARD CONTROLLER
PSW- PHASE SELECTOR SWITCH
SA - SURPRESSION ASSEMBLY
SW1 - SWITCH AUTO/OFF/START
SW2 - SET EXERCISE SWITCH
TB1,2,3- TERMINAL BLOCK 1,2,& 3
TR1 - TRANSFORMER, UTILITY SENSING, 24VA
VM - VOLTMETER
VR - VOLTAGE REGULATOR

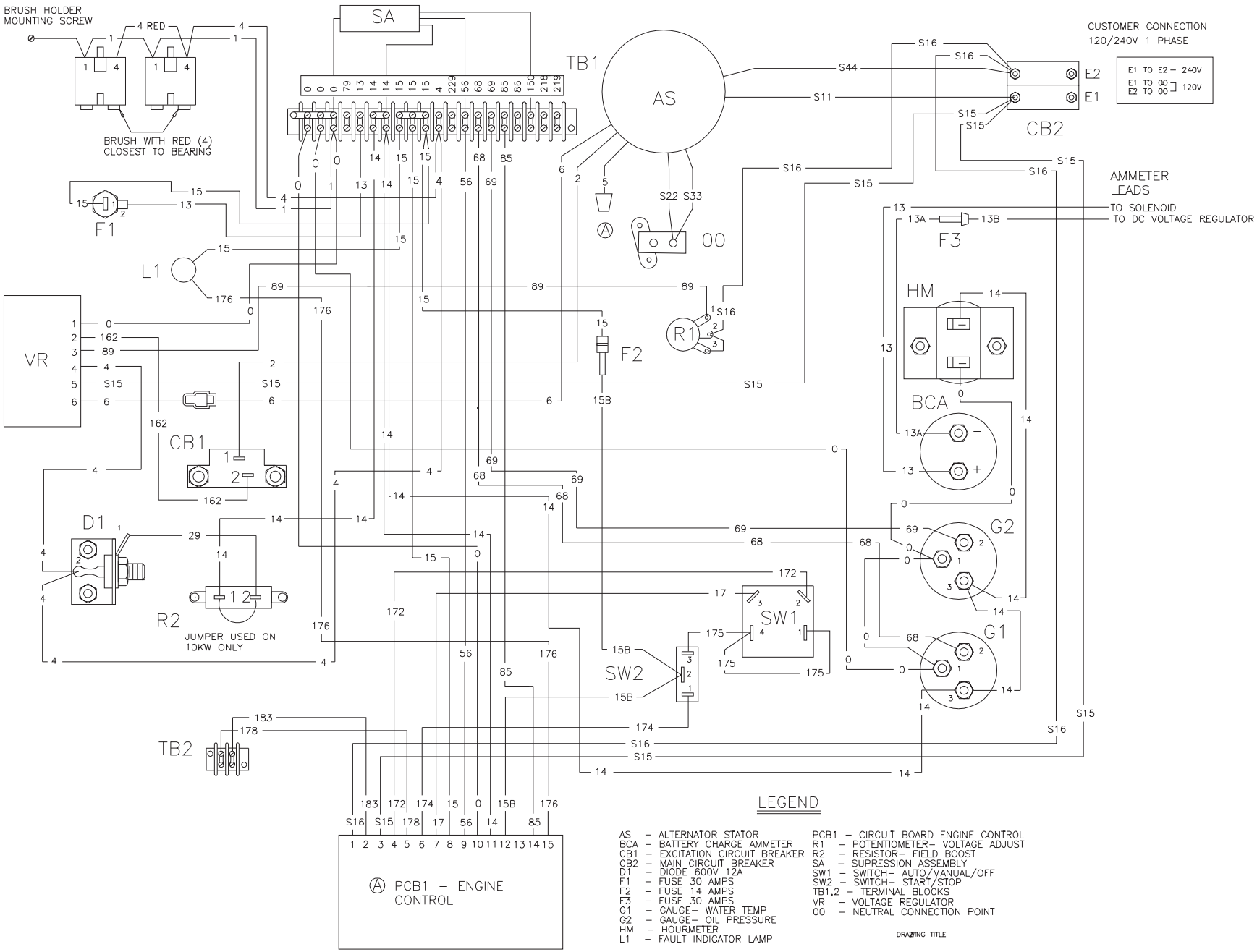

BRUSH HOLDER MOUNTING SCREW
4 RED
BRUSH WITH RED (4) CLOSEST TO BEARING
SA
TB1
AS
CT2
CT1
CB2
CUSTOMER CONNECTION 120/240V 1 PHASE
E1 TO E2 – 240V
E1 TO 00, E2 TO 00 – 120V
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F1
F3
L1
VR
CB1
F2
R1
HM
HZ
BCA
AM
VM
G1
G2
SW1
SW2
SW5
D1
R2
JUMPER USED ON 10KW ONLY
TB2
00
PCB1 – ENGINE CONTROL
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB1 – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT

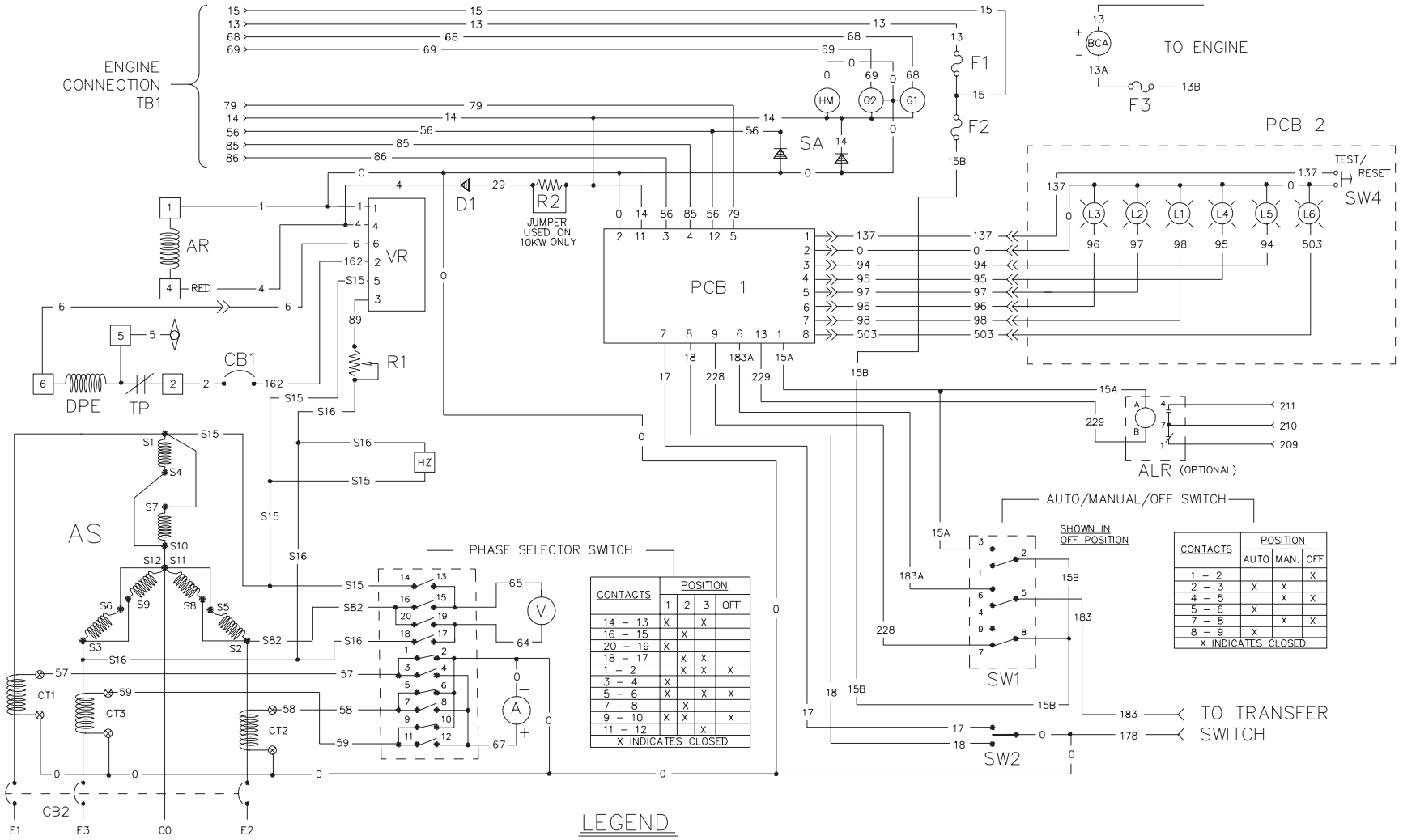

BRUSH HOLDER MOUNTING SCREW
4 RED
BRUSH WITH RED (4) CLOSEST TO BEARING
SA
TB1
AS
CT3
CT2
CT1
CB2
CUSTOMER CONNECTION 120/208V 3 PHASE
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO 00
E2 TO 00
E3 TO 00
120V
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F1
F3
L1
VR
HM
HZ
R1
BCA
AM
CB1
F2
D1
R2
JUMPER USED ON 10KW ONLY
SW5
G2
VM
SW1
G1
SW2
TB2
00
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2,3 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB1 – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT
Ⓐ PCB1 – ENGINE CONTROL



LEGEND

AS – ALTERNATOR STATOR	PCB1 – CIRCUIT BOARD ENGINE CONTROL
BCA – BATTERY CHARGE AMMETER	R1 – POTENTIOMETER– VOLTAGE ADJUST
CB1 – EXCITATION CIRCUIT BREAKER	R2 – RESISTOR– FIELD BOOST
CB2 – MAIN CIRCUIT BREAKER	SA – SUPRESSION ASSEMBLY
D1 – DIODE 600V 12A	SW1 – SWITCH– AUTO/MANUAL/OFF
F1 – FUSE 30 AMPS	SW2 – SWITCH– START/STOP
F2 – FUSE 14 AMPS	TB1,2 – TERMINAL BLOCKS
F3 – FUSE 30 AMPS	VR – VOLTAGE REGULATOR
G1 – GAUGE– WATER TEMP	00 – NEUTRAL CONNECTION POINT
G2 – GAUGE– OIL PRESSURE	
HM – HOURMETER	
L1 – FAULT INDICATOR LAMP	


BRUSH HOLDER MOUNTING SCREW
4 RED
BRUSH WITH RED (4) CLOSEST TO BEARING
SA
TB1
AS
CUSTOMER CONNECTION
120/240V 1 PHASE
E1 TO E2 – 240V
E1 TO 00] 120V
E2 TO 00]
E2
E1
CB2
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F1
F2
F3
L1
R1
VR
HM
BCA
CB1
D1
R2
JUMPER USED ON 10KW ONLY
G1
G2
SW1
SW2
TB2
S22 S33
00
PCB1 – ENGINE CONTROL
LEGEND
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – FAULT INDICATOR LAMP
PCB1 – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TB1,2 – TERMINAL BLOCKS
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT
DRAWING TITLE



CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

X INDICATES CLOSED

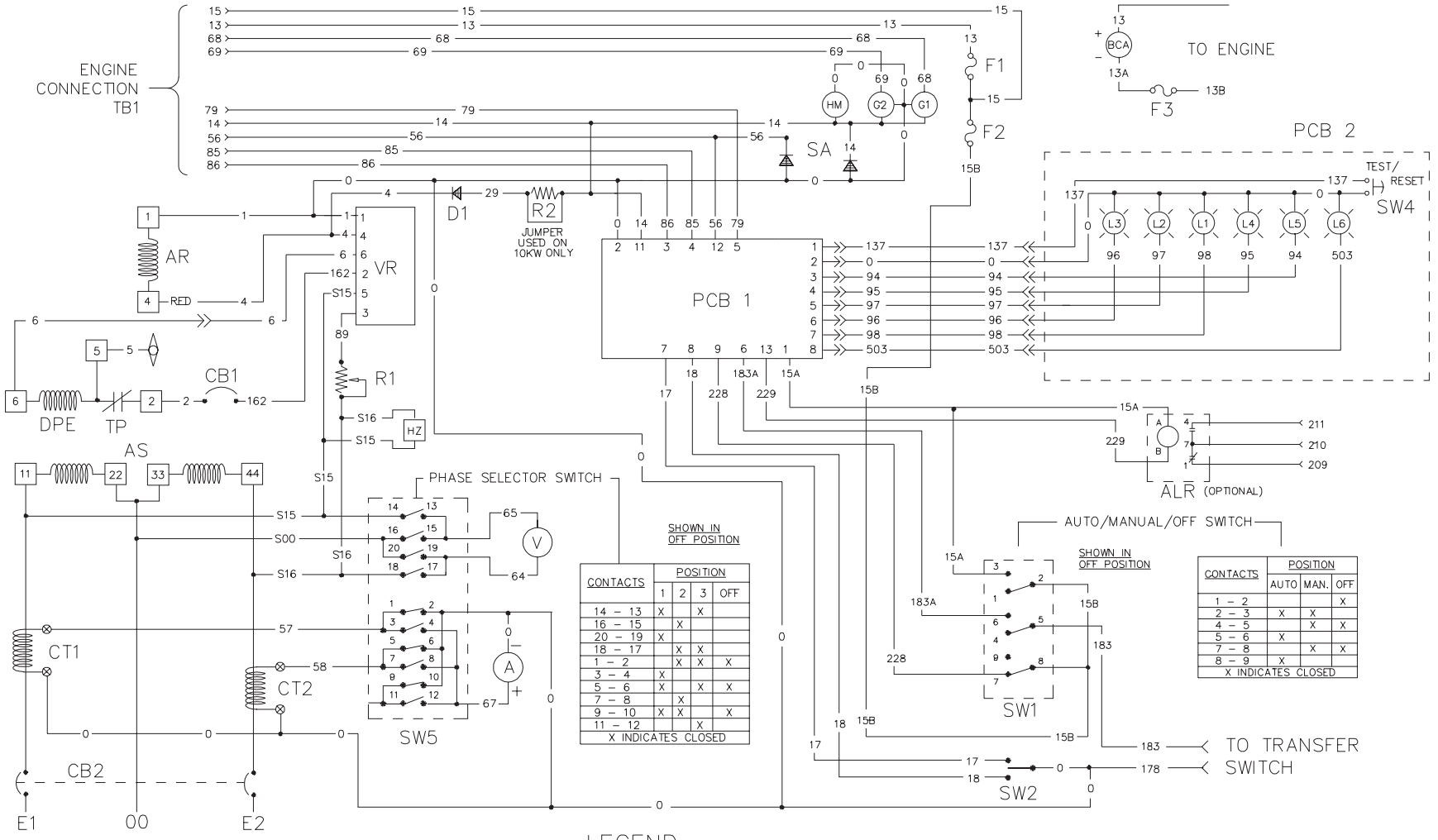
CONTACTS	POSITION AUTO	MAN.	OFF
1 – 2			X
2 – 3	X	X	
4 – 5		X	X
5 – 6	X		
7 – 8		X	X
8 – 9	X		

X INDICATES CLOSED

CUSTOMER CONNECTION
120/208V 3 PHASE

LEGEND

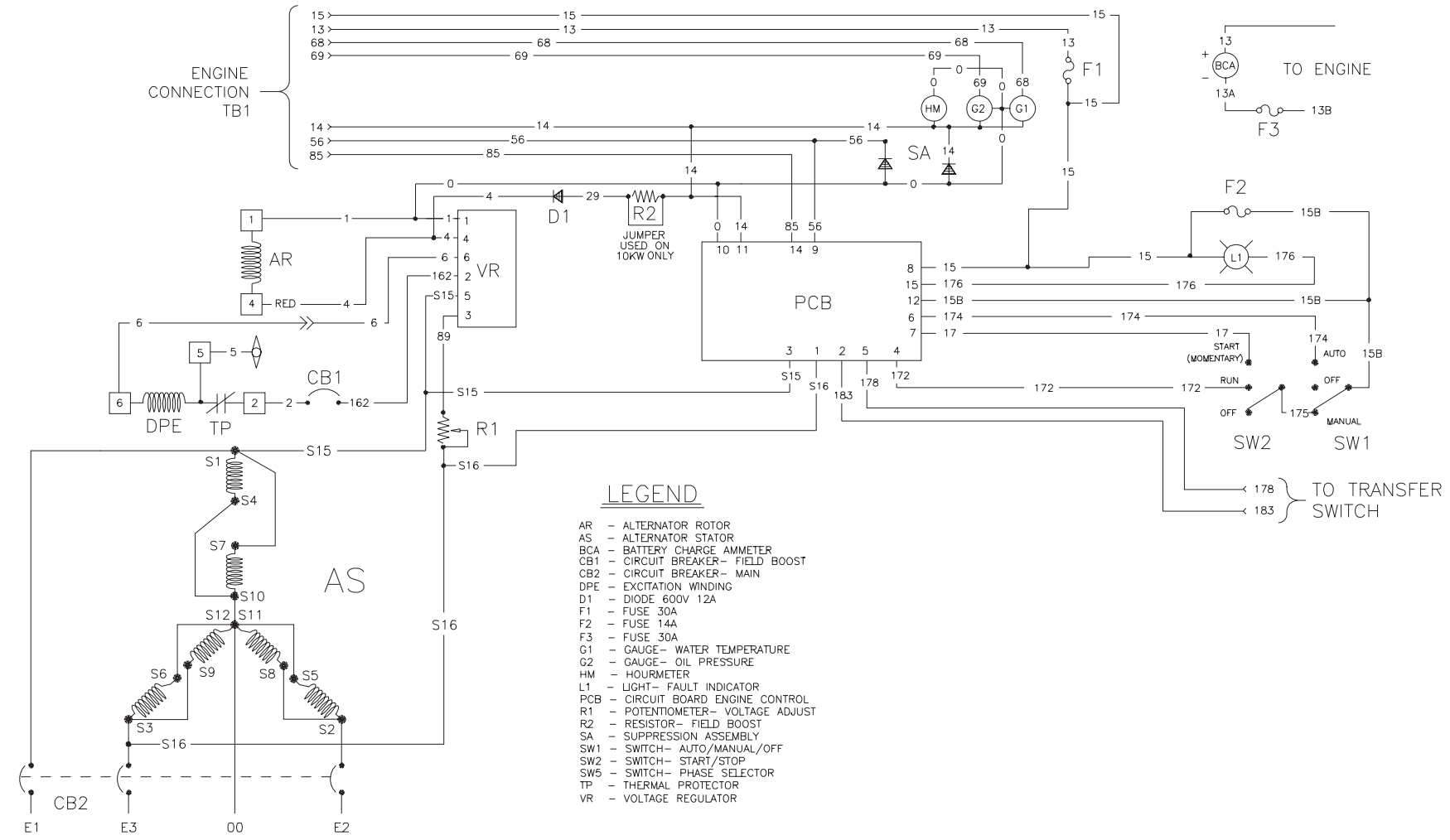
A – AC AMMETER
ALR – ALARM RELAY
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2,3– CURRENT TRANSFORMERS
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH COOLANT TEMPERATURE
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB 1– CIRCUIT BOARD ENGINE CONTROL
PCB 2– 6 LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW4 – SWITCH– TEST/RESET
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR



CUSTOMER CONNECTION
120/240V 1–PHASE

LEGEND

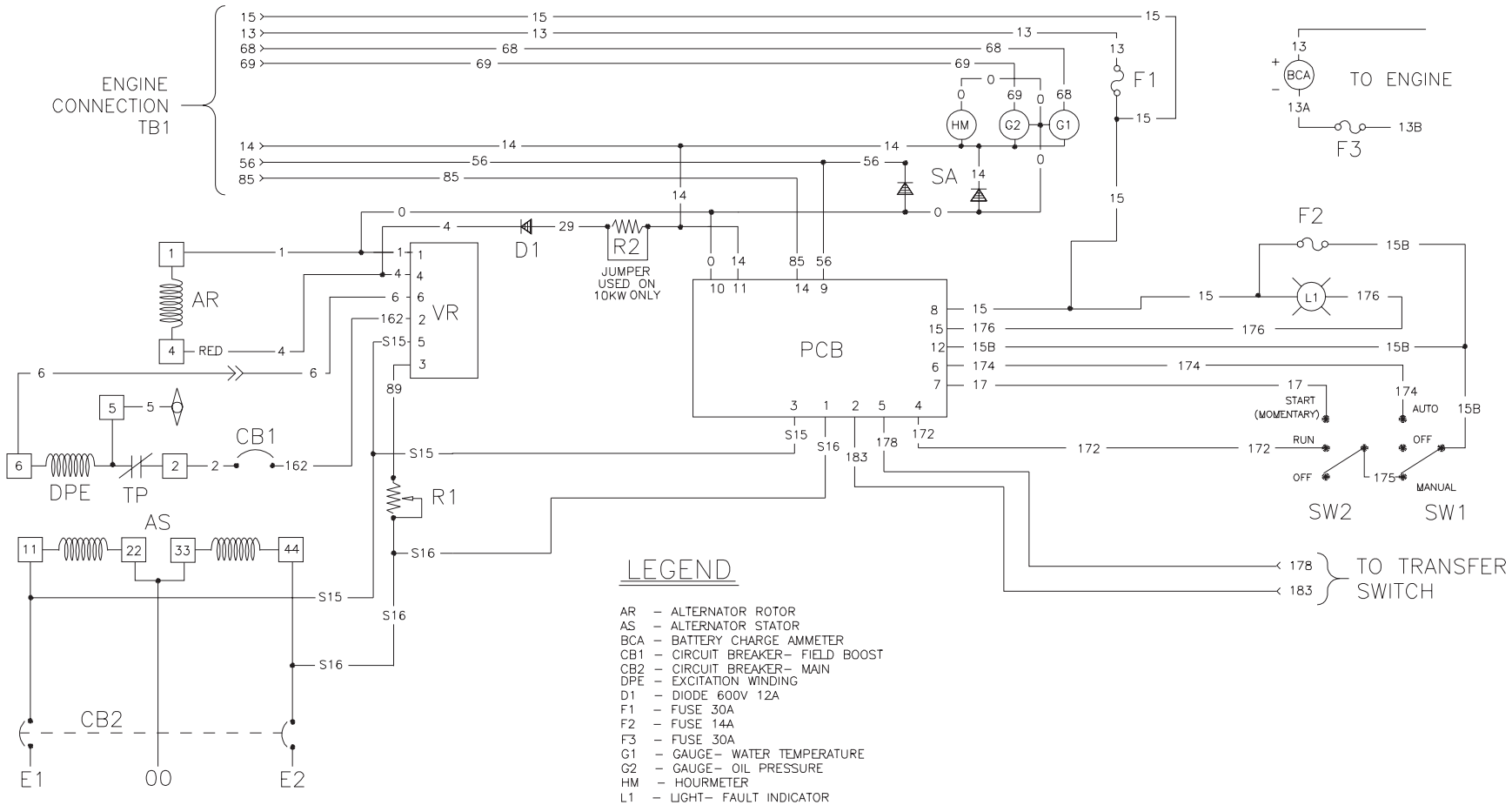
A – AC AMMETER
ALR – ALARM RELAY
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2 – CURRENT TRANSFORMER
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH COOLANT TEMPERATURE
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB 1– CIRCUIT BOARD ENGINE CONTROL
PCB 2– 6 LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW4 – SWITCH– TEST/RESET
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR



CUSTOMER CONNECTION
120/208V 3 PHASE

LEGEND

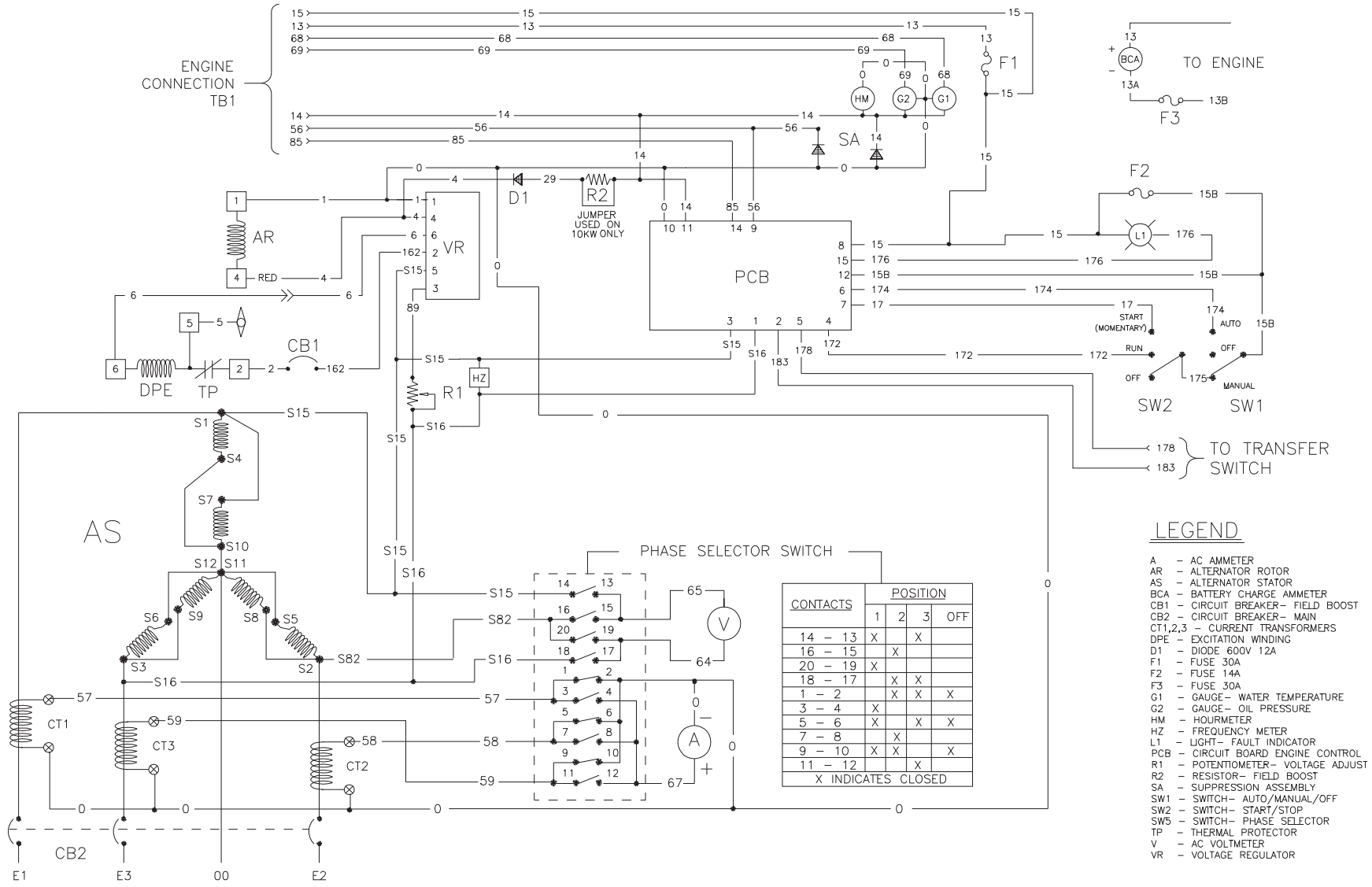
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
VR – VOLTAGE REGULATOR



CUSTOMER CONNECTION
120/240V 1−PHASE

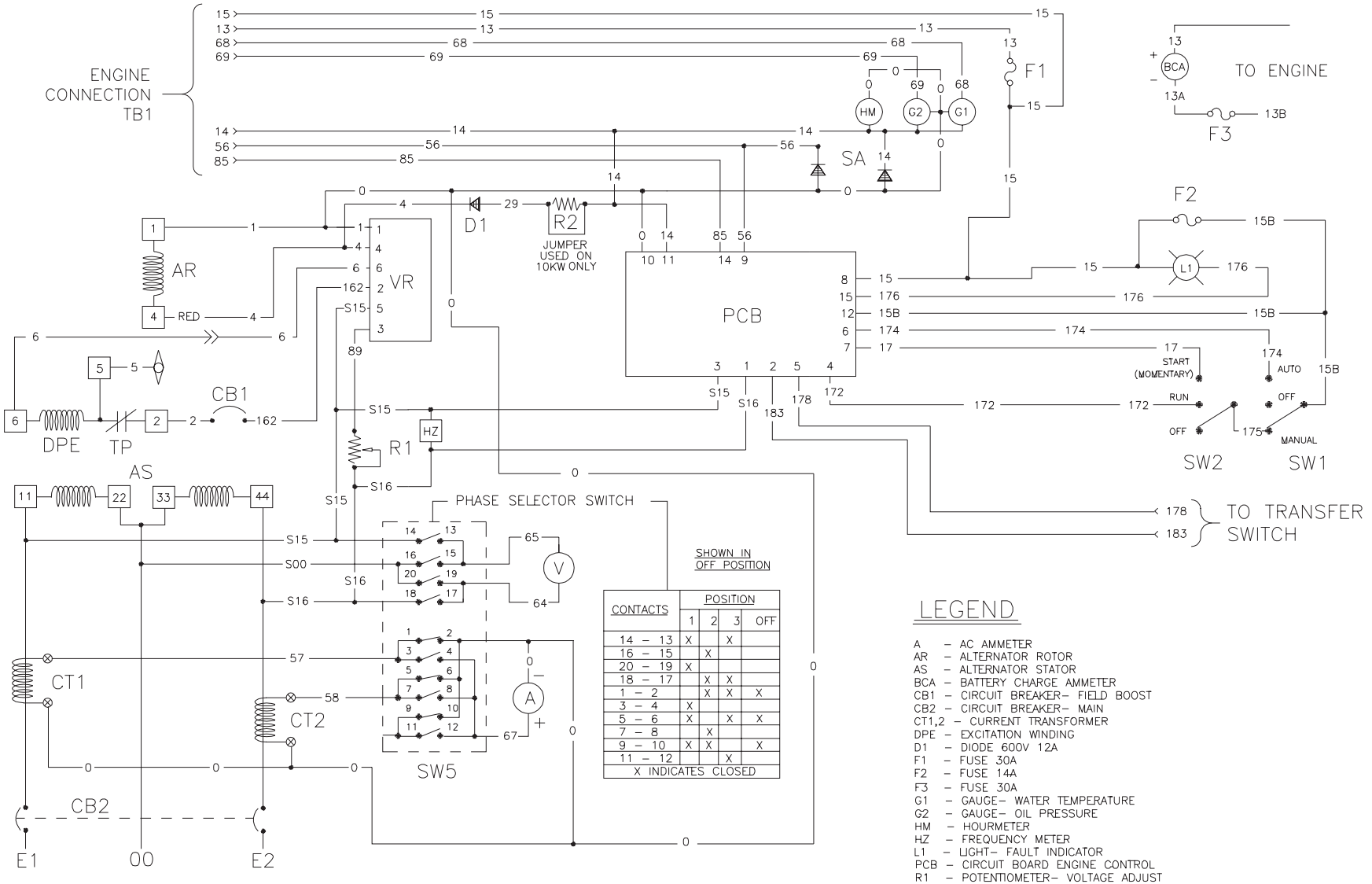
LEGEND

AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TP – THERMAL PROTECTOR
VR – VOLTAGE REGULATOR



LEGEND

A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2,3 – CURRENT TRANSFORMERS
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR



CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

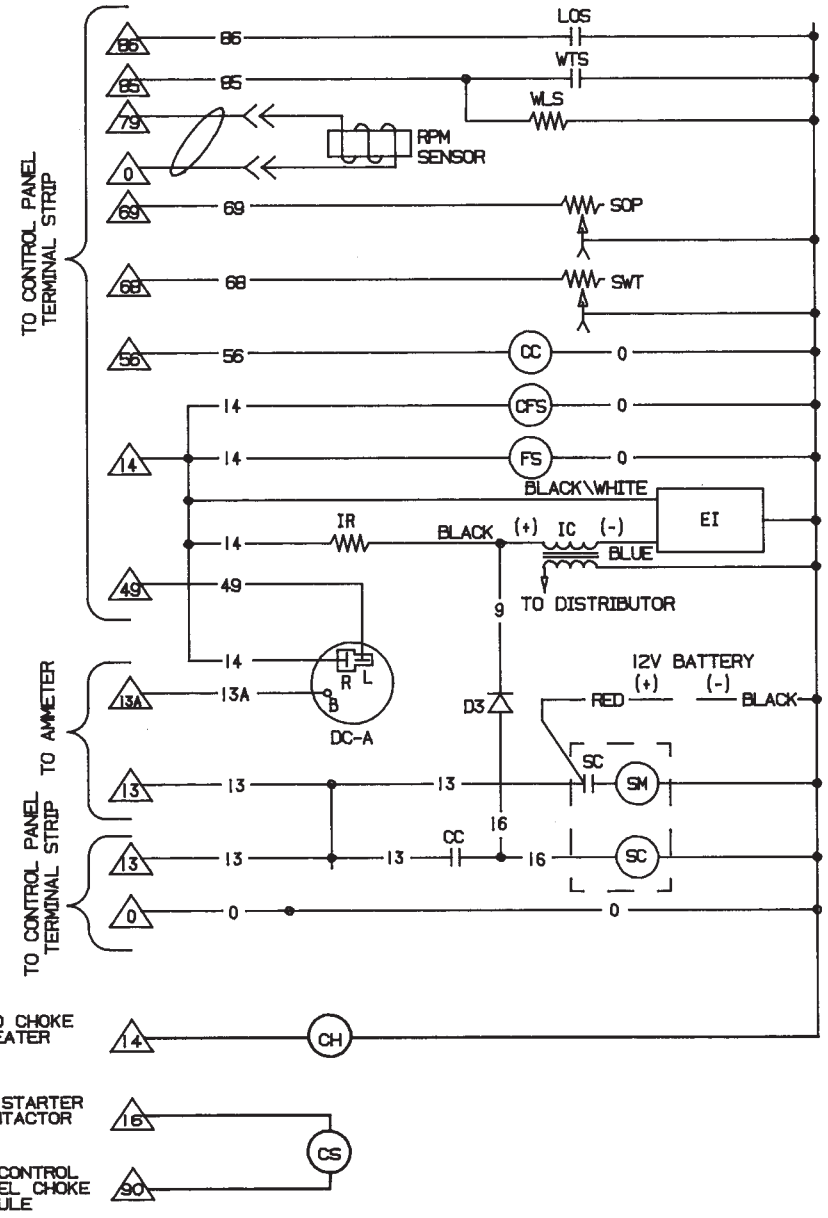
X INDICATES CLOSED

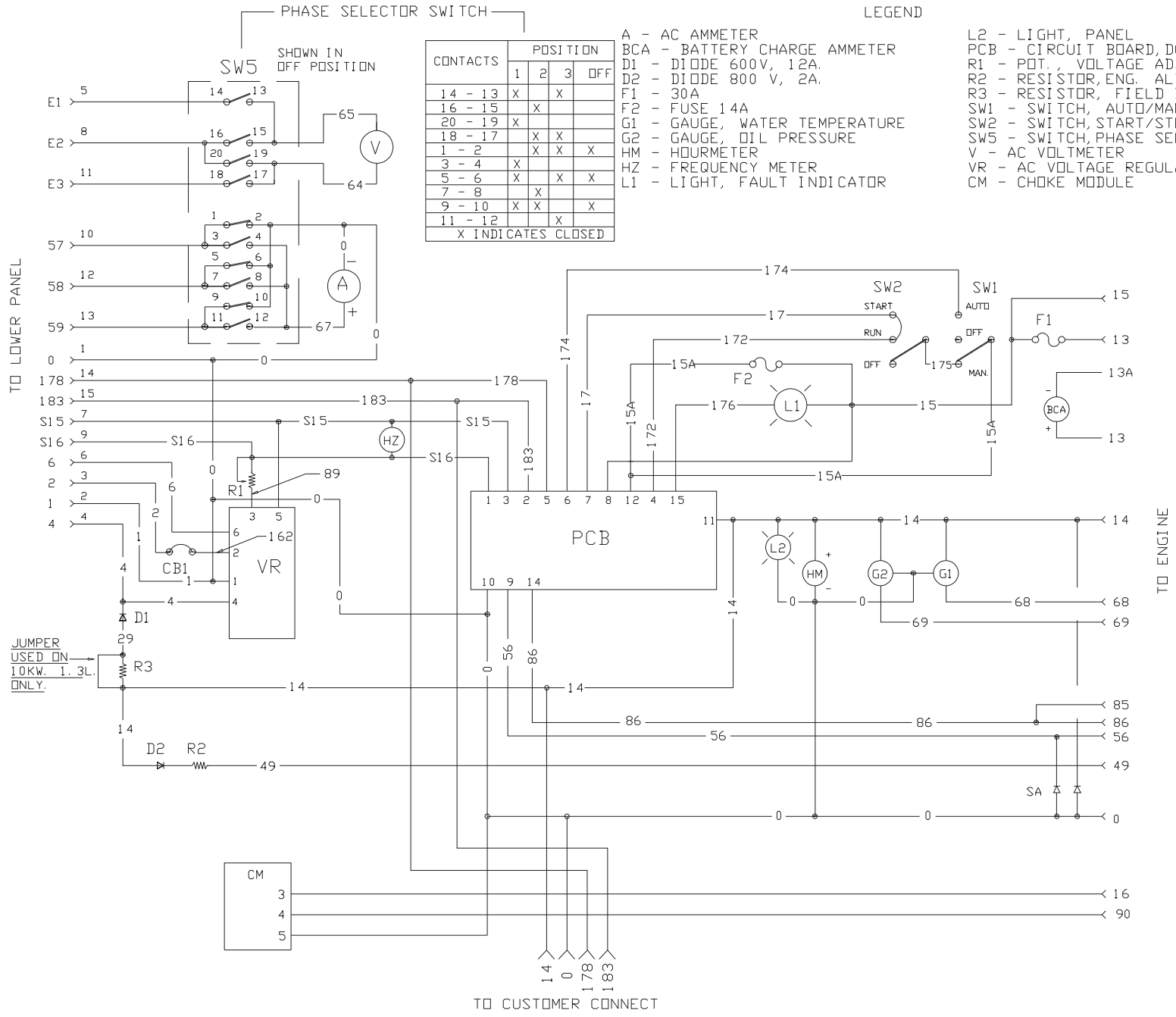
LEGEND

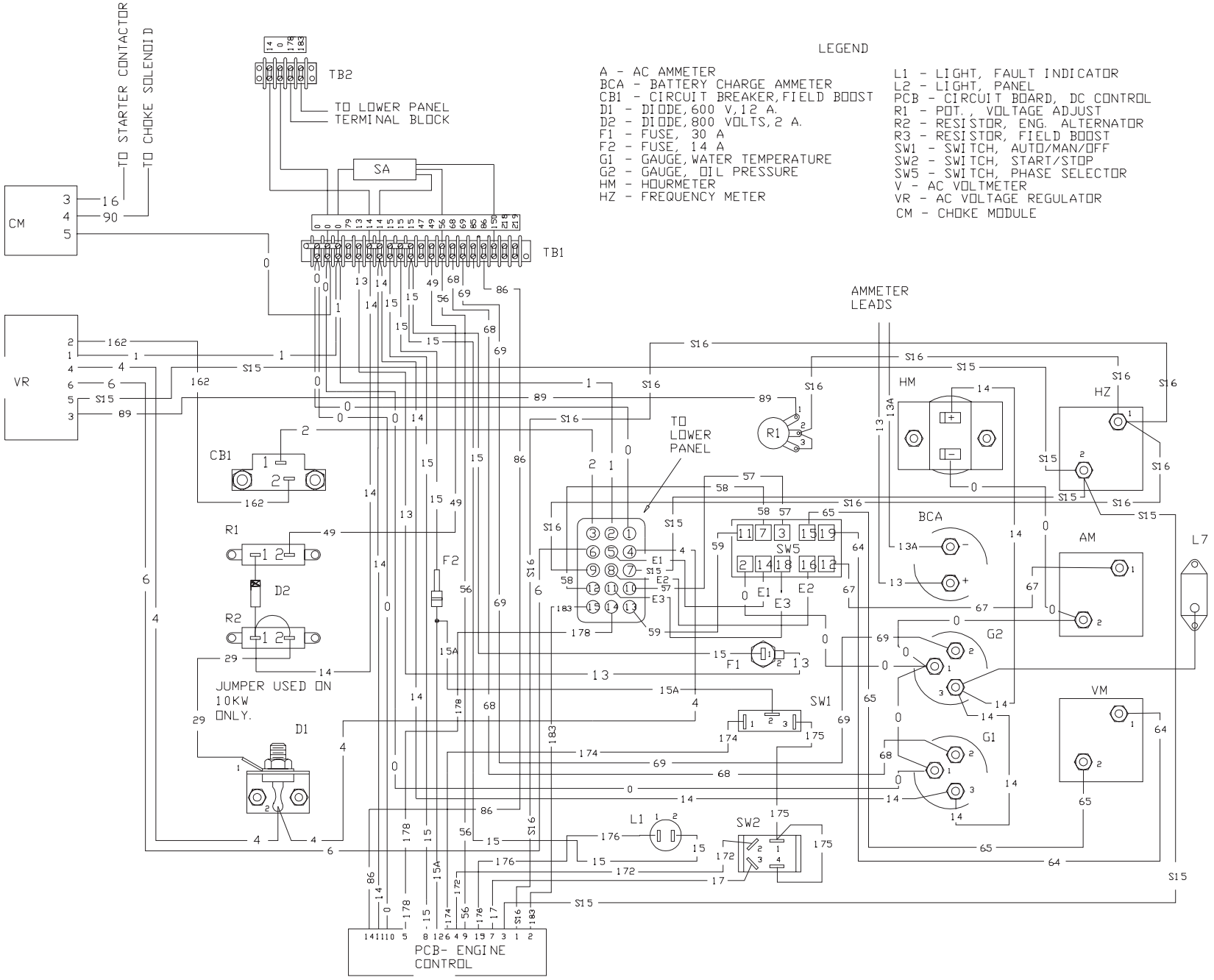
A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2 – CURRENT TRANSFORMER
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR

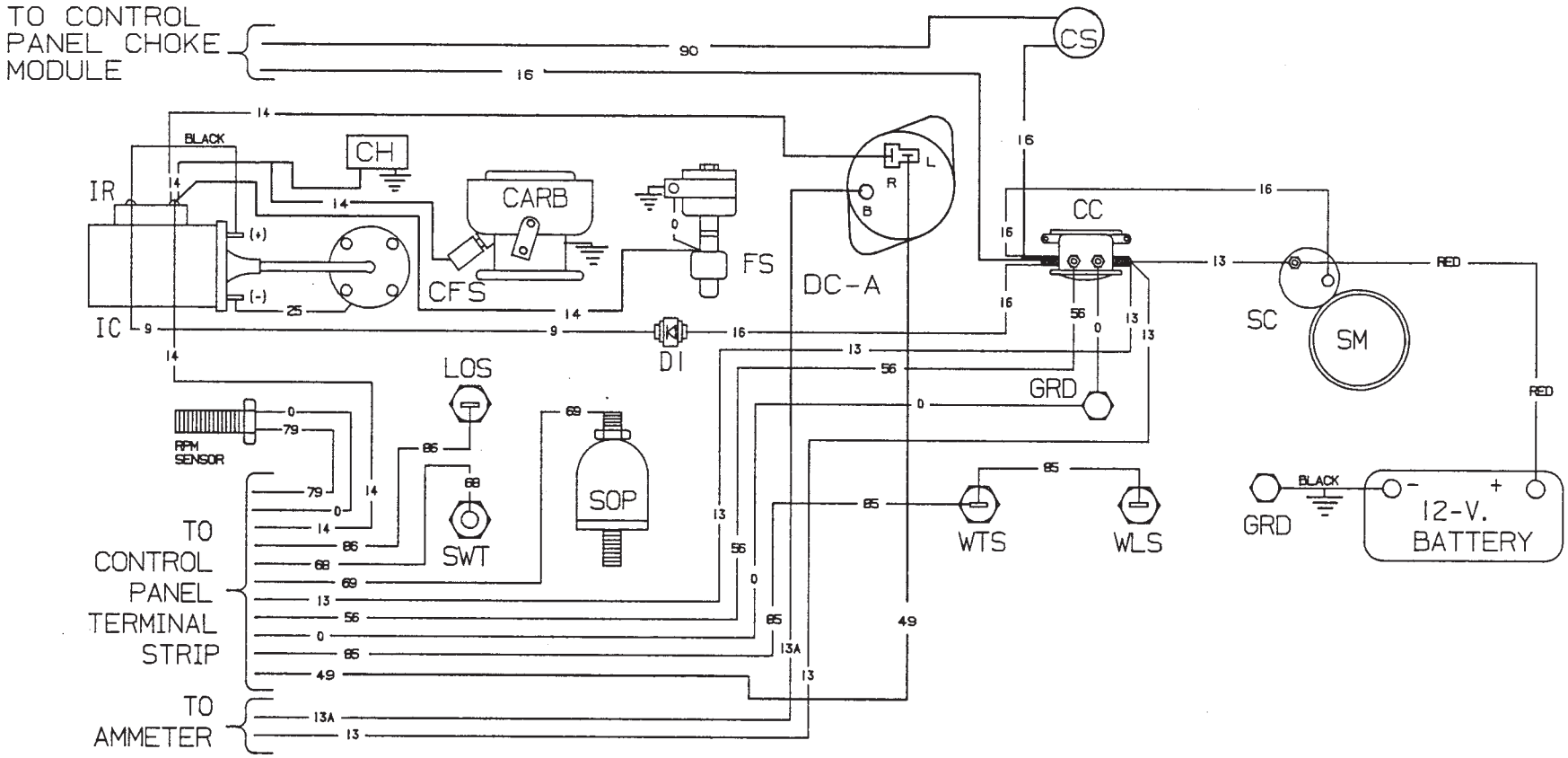
LEGEND

BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATTERY HEATER THERMOSTAT
CC - CONTROL CONTACTOR
DI - DIODE
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENGINE HEATER THERMOSTAT
FS - FUEL SOLENOID
GRD - GROUND
IC - IGNITION COIL
IR - IGNITION RESISTOR
LOS - LOW OIL SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER, OIL PRESSURE
SWT - SENDER, WATER TEMPERATURE
WLS - WATER TEMPERATURE SWITCH
CS - CHOKE SOLENOID
CH - CHOKE HEATER
CFS - CARB. FUEL SHUTOFF



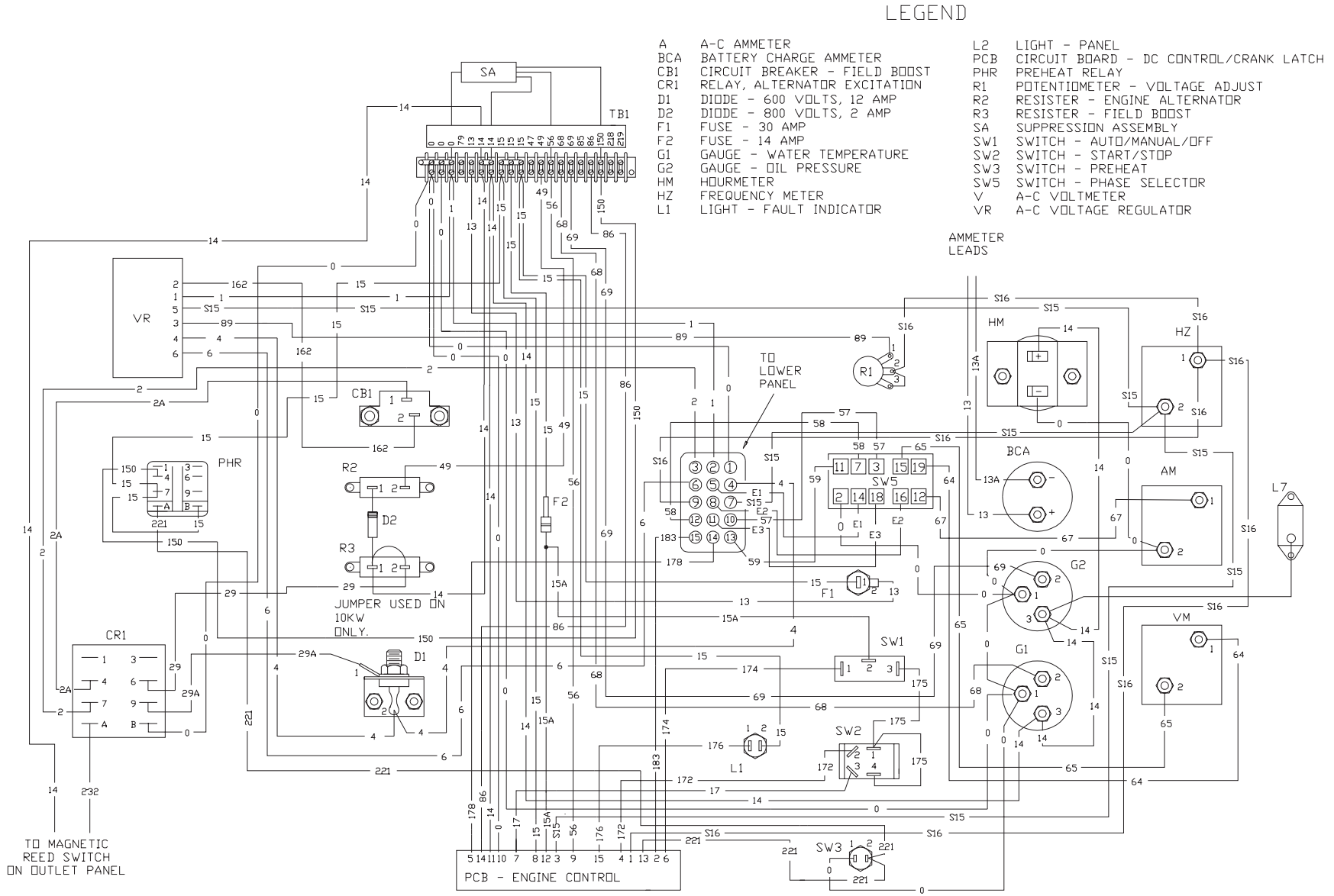

PHASE SELECTOR SWITCH
SW5
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
14 - 13 | X | | X |
16 - 15 | | X | |
20 - 19 | X | | |
18 - 17 | | X | X |
1 - 2 | | X | X | X
3 - 4 | X | | |
5 - 6 | X | | X | X
7 - 8 | | X | |
9 - 10 | X | X | | X
11 - 12 | | | X |
X INDICATES CLOSED
LEGEND
A - AC AMMETER
BCA - BATTERY CHARGE AMMETER
D1 - DIODE 600V, 12A.
D2 - DIODE 800 V, 2A.
F1 - 30A
F2 - FUSE 14A
G1 - GAUGE, WATER TEMPERATURE
G2 - GAUGE, OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT, FAULT INDICATOR
L2 - LIGHT, PANEL
PCB - CIRCUIT BOARD, DC CONTROL
R1 - POT., VOLTAGE ADJUST
R2 - RESISTOR, ENG. ALTERNATOR
R3 - RESISTOR, FIELD BOOST
SW1 - SWITCH, AUTO/MAN/OFF
SW2 - SWITCH, START/STOP
SW5 - SWITCH, PHASE SELECTOR
V - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
CM - CHOKE MODULE
TO LOWER PANEL
SW2
SW1
START
RUN
OFF
AUTO
MAN.
F1
F2
15A
L1
L2
HZ
BCA
R1
VR
CB1
D1
D2
R2
R3
JUMPER USED ON 10KW. 1. 3L. ONLY.
PCB
HM
G1
G2
SA
CM
TO ENGINE
TO CUSTOMER CONNECT

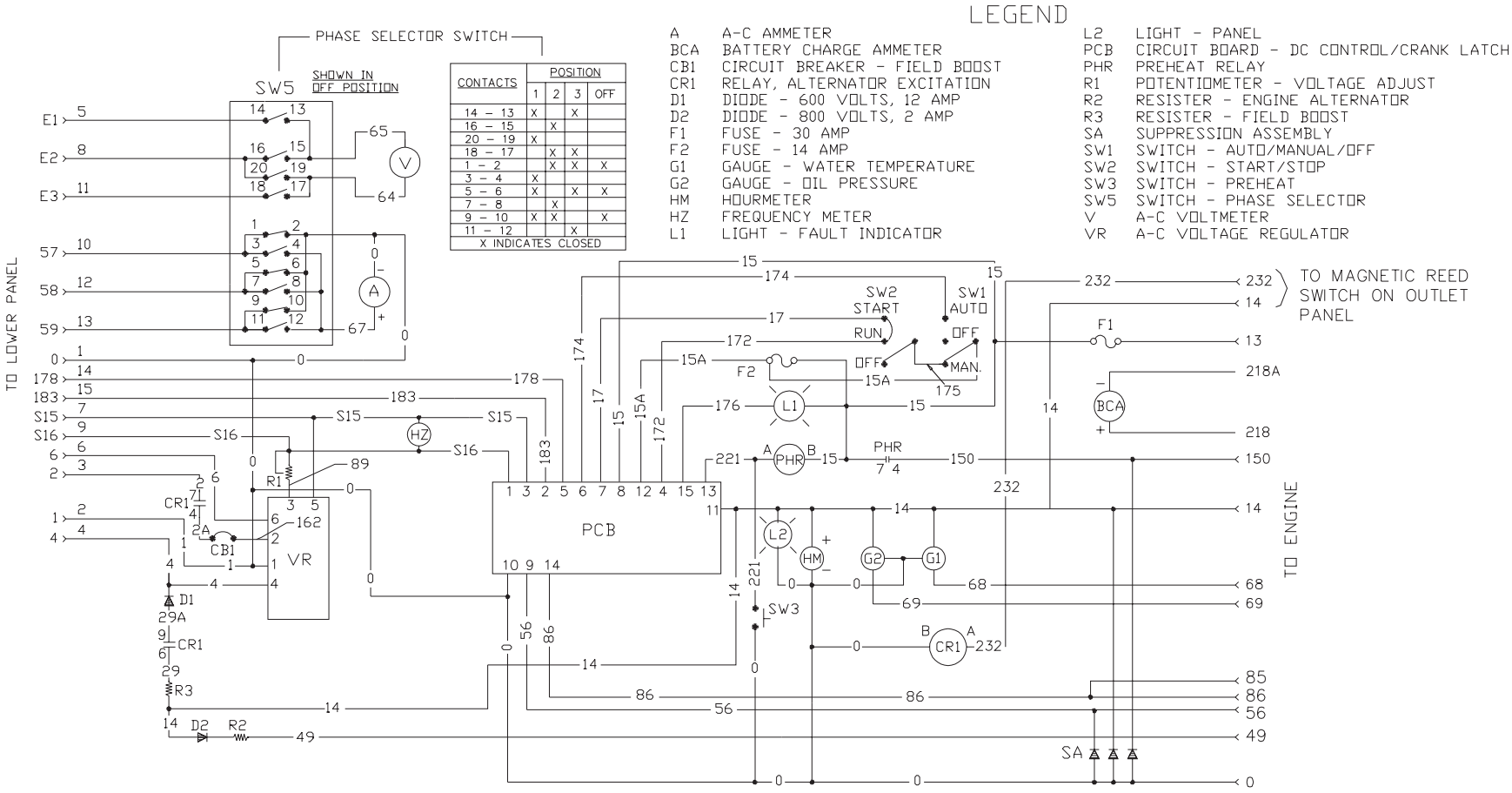

LEGEND
A - AC AMMETER
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE, 600 V, 12 A.
D2 - DIODE, 800 VOLTS, 2 A.
F1 - FUSE, 30 A
F2 - FUSE, 14 A
G1 - GAUGE, WATER TEMPERATURE
G2 - GAUGE, OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT, FAULT INDICATOR
L2 - LIGHT, PANEL
PCB - CIRCUIT BOARD, DC CONTROL
R1 - POT., VOLTAGE ADJUST
R2 - RESISTOR, ENG. ALTERNATOR
R3 - RESISTOR, FIELD BOOST
SW1 - SWITCH, AUTO/MAN/OFF
SW2 - SWITCH, START/STOP
SW5 - SWITCH, PHASE SELECTOR
V - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
CM - CHOKE MODULE
TO STARTER CONTACTOR
TO CHOKE SOLENOID
TB2
TO LOWER PANEL TERMINAL BLOCK
SA
TB1
CM
VR
CB1
R1
D2
R2
D1
F2
F1
JUMPER USED ON 10KW ONLY.
AMMETER LEADS
TO LOWER PANEL
SW5
SW1
SW2
L1
HM
HZ
BCA
AM
VM
G1
G2
L7
PCB- ENGINE CONTROL



LEGEND

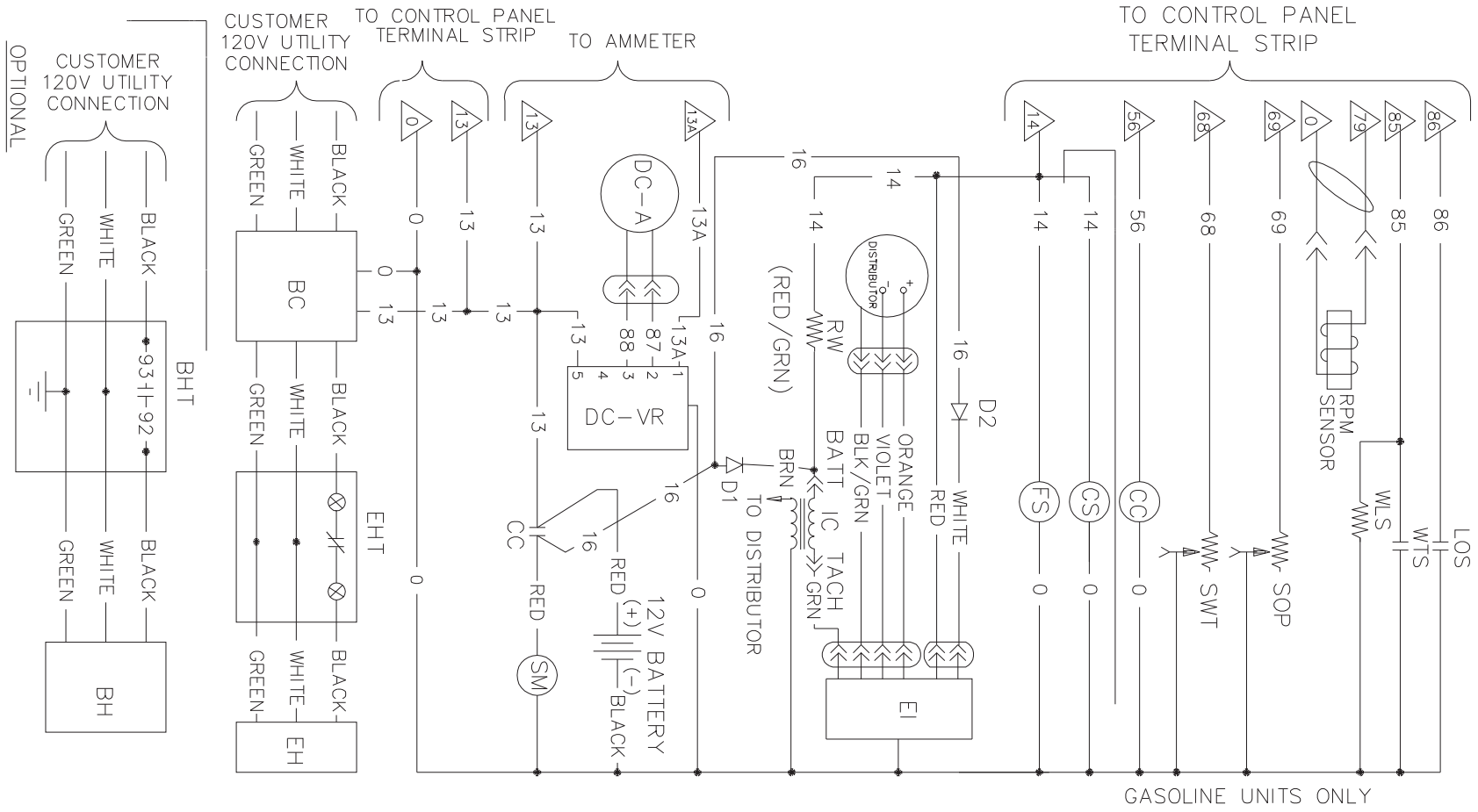
CC - CONTROL CONTACTOR
DI - DIODE
DCA - DC ALTERNATOR
FS - FUEL SOLENOID
GRD - GROUND
CH - CHOKE HEATER
IC - IGNITION COIL
IR - IGNITION RESISTOR
LOS - LOW OIL SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER, OIL PRESSURE
SWT - SENDER, WATER TEMPERATURE
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
CFS - CARB FUEL SHUTOFF
CS - CHOKE SOLENOID

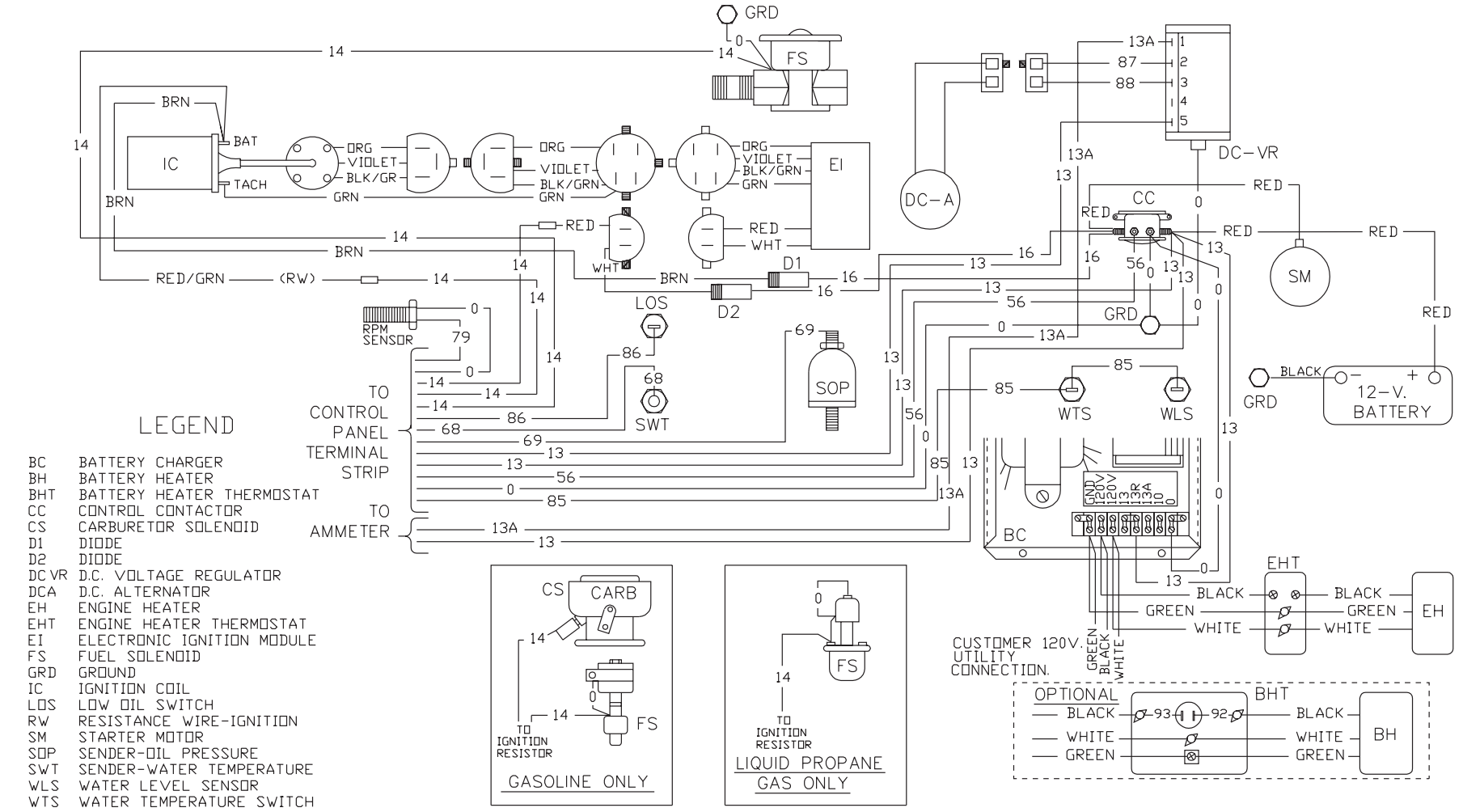

LEGEND
A A-C AMMETER
BCA BATTERY CHARGE AMMETER
CB1 CIRCUIT BREAKER - FIELD BOOST
CR1 RELAY, ALTERNATOR EXCITATION
D1 DIODE - 600 VOLTS, 12 AMP
D2 DIODE - 800 VOLTS, 2 AMP
F1 FUSE - 30 AMP
F2 FUSE - 14 AMP
G1 GAUGE - WATER TEMPERATURE
G2 GAUGE - OIL PRESSURE
HM HOURMETER
HZ FREQUENCY METER
L1 LIGHT - FAULT INDICATOR
L2 LIGHT - PANEL
PCB CIRCUIT BOARD - DC CONTROL/CRANK LATCH
PHR PREHEAT RELAY
R1 POTENTIOMETER - VOLTAGE ADJUST
R2 RESISTER - ENGINE ALTERNATOR
R3 RESISTER - FIELD BOOST
SA SUPPRESSION ASSEMBLY
SW1 SWITCH - AUTO/MANUAL/OFF
SW2 SWITCH - START/STOP
SW3 SWITCH - PREHEAT
SW5 SWITCH - PHASE SELECTOR
V A-C VOLTMETER
VR A-C VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
JUMPER USED ON 10KW ONLY.
TO MAGNETIC REED SWITCH ON OUTLET PANEL
PCB - ENGINE CONTROL
SA
TB1
VR
CB1
PHR
R1
R2
R3
D1
D2
F1
F2
CR1
SW1
SW2
SW3
SW5
HM
HZ
BCA
AM
VM
G1
G2
L1
L7


LEGEND
A A-C AMMETER
BCA BATTERY CHARGE AMMETER
CB1 CIRCUIT BREAKER - FIELD BOOST
CR1 RELAY, ALTERNATOR EXCITATION
D1 DIODE - 600 VOLTS, 12 AMP
D2 DIODE - 800 VOLTS, 2 AMP
F1 FUSE - 30 AMP
F2 FUSE - 14 AMP
G1 GAUGE - WATER TEMPERATURE
G2 GAUGE - OIL PRESSURE
HM HOURMETER
HZ FREQUENCY METER
L1 LIGHT - FAULT INDICATOR
L2 LIGHT - PANEL
PCB CIRCUIT BOARD - DC CONTROL/CRANK LATCH
PHR PREHEAT RELAY
R1 POTENTIOMETER - VOLTAGE ADJUST
R2 RESISTER - ENGINE ALTERNATOR
R3 RESISTER - FIELD BOOST
SA SUPPRESSION ASSEMBLY
SW1 SWITCH - AUTO/MANUAL/OFF
SW2 SWITCH - START/STOP
SW3 SWITCH - PREHEAT
SW5 SWITCH - PHASE SELECTOR
V A-C VOLTMETER
VR A-C VOLTAGE REGULATOR
PHASE SELECTOR SWITCH
SW5
SHOWN IN OFF POSITION
CONTACTS
POSITION
1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
TO LOWER PANEL
TO MAGNETIC REED SWITCH ON OUTLET PANEL
TO ENGINE
PCB
VR
SW1 AUTO
SW2 START
RUN
OFF
MAN.
F1
F2
L1
L2
HM
HZ
BCA
PHR
CR1
CB1
R1
R2
R3
D1
D2
SW3
SA

LEGEND

EI	ELECTRONIC IGNITION MODULE	BC	BATTERY CHARGER
FS	FUEL SOLENOID	BH	BATTERY HEATER
IC	IGNITION COIL	BHT	BATTERY HEATER THERMOSTAT
LOS	LOW OIL SWITCH	CC	CONTROL CONTACTOR
RW	RESISTANCE WIRE-IGNITION	CS	CARBURETOR SOLENOID
SM	STARTER MOTOR	D1	DIODE
SOP	SENDER-OIL PRESSURE	D2	DIODE
SWT	SENDER-WATER TEMPERATURE	DCVR	D.C. VOLTAGE REGULATOR
WLS	WATER LEVEL SENSOR	DCA	D.C. ALTERNATOR
WTS	WATER TEMPERATURE SWITCH	EH	ENGINE HEATER
		EHT	ENGINE HEATER THERMOSTAT



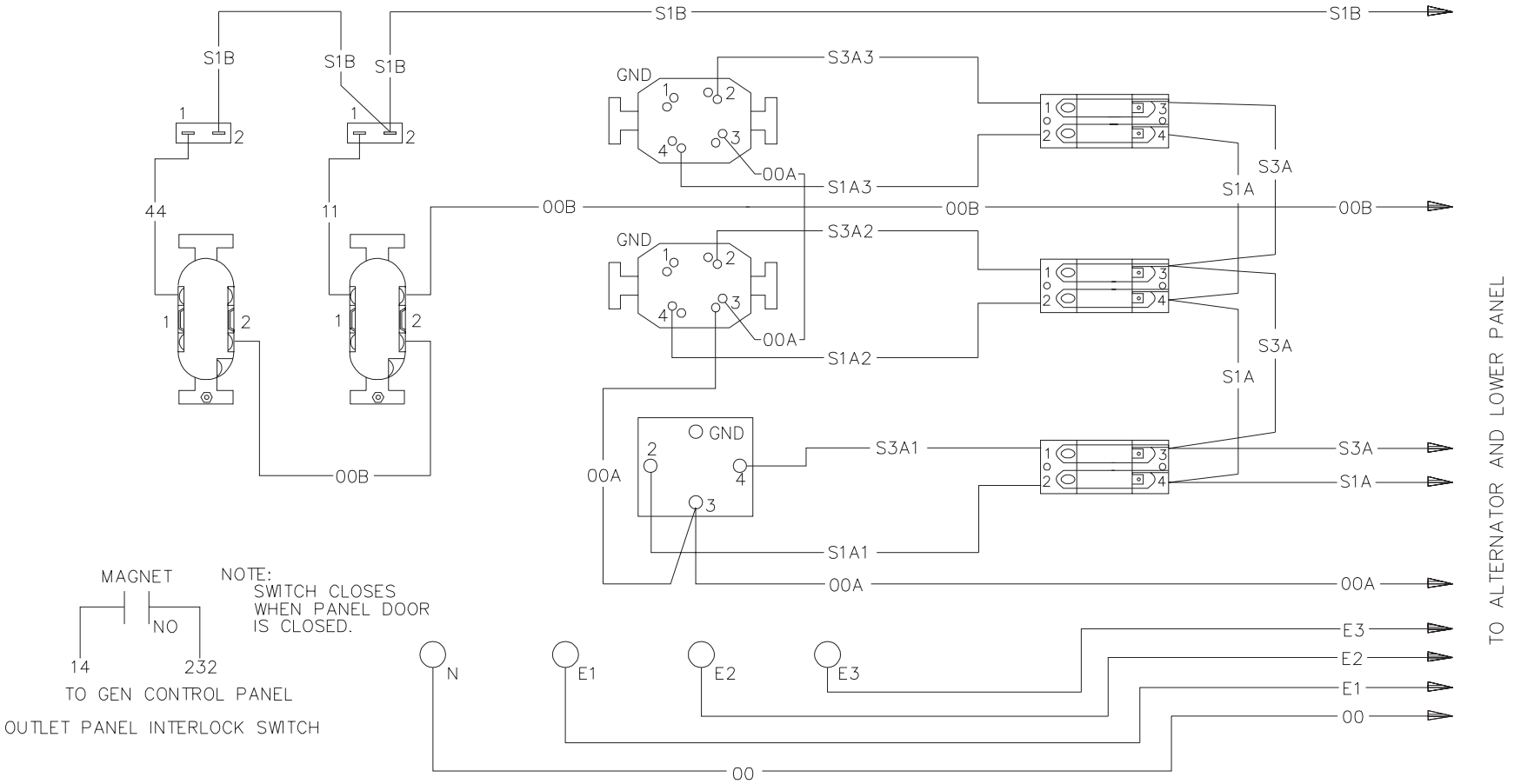


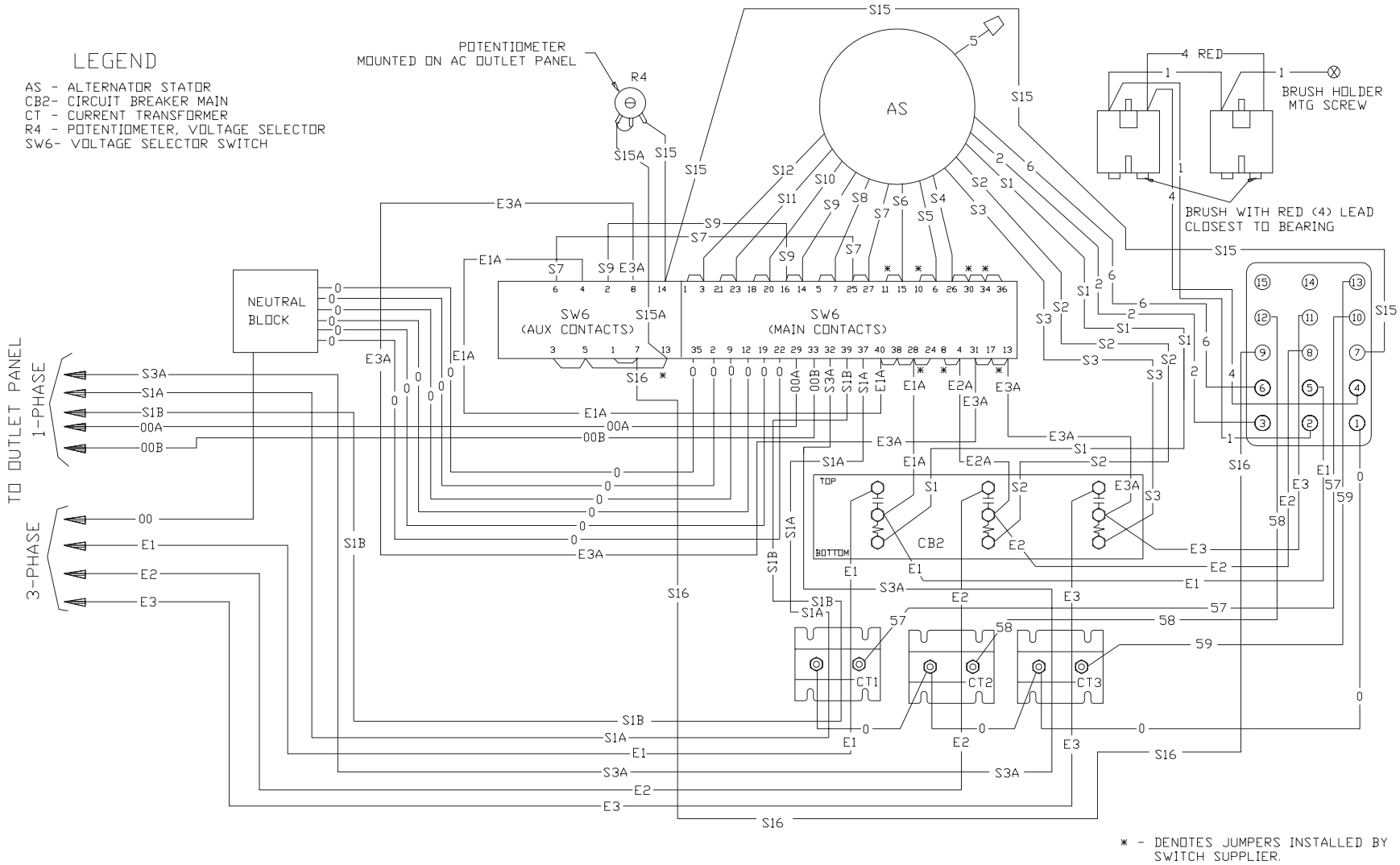
LEGEND

BC	BATTERY CHARGER
BH	BATTERY HEATER
BHT	BATTERY HEATER THERMOSTAT
CC	CONTROL CONTACTOR
CS	CARBURETOR SOLENOID
D1	DIODE
D2	DIODE
DC VR	D.C. VOLTAGE REGULATOR
DCA	D.C. ALTERNATOR
EH	ENGINE HEATER
EHT	ENGINE HEATER THERMOSTAT
EI	ELECTRONIC IGNITION MODULE
FS	FUEL SOLENOID
GRD	GROUND
IC	IGNITION COIL
LOS	LOW OIL SWITCH
RW	RESISTANCE WIRE-IGNITION
SM	STARTER MOTOR
SOP	SENDER-OIL PRESSURE
SWT	SENDER-WATER TEMPERATURE
WLS	WATER LEVEL SENSOR
WTS	WATER TEMPERATURE SWITCH

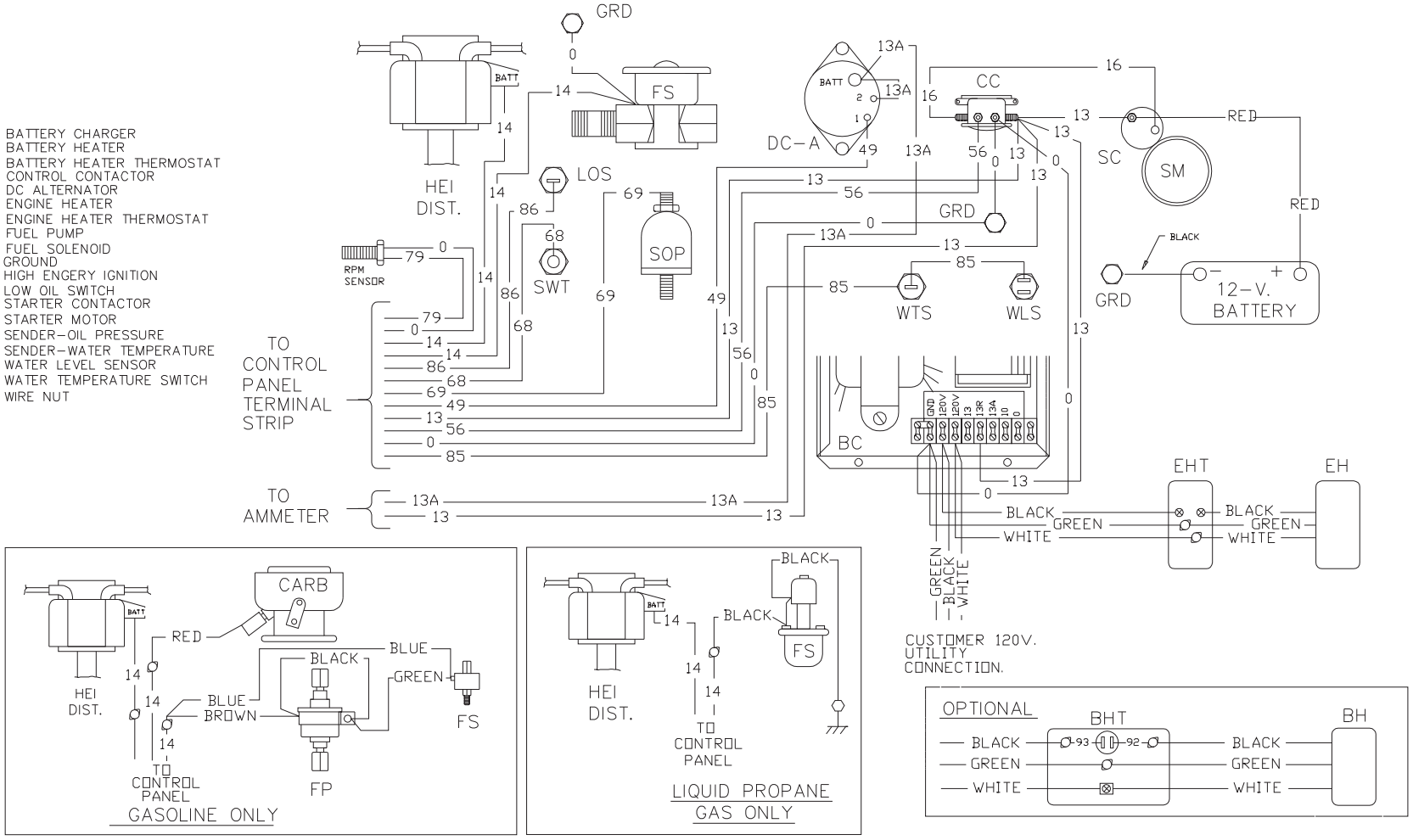
UNLESS OTHERWISE SPECIFIED:
ALL FRACTIONS - - - - +/- 1/64
ALL 2 PLACE DEC. - - +/- .015
ALL 3 PLACE DEC. - - +/- .005
ALL ANGLES - - - - - +/- 1 DEG.

METRIC DIMENSIONS:
ALL 1 PLACE DIM. - - +/- .4 MM
ALL 2 PLACE DIM. - - +/- .15 MM
(25.4 MM = 1.0000 INCH)


S1B
S1B
S1B
S1B
S1B
S1B
1
2
44
11
00B
00B
00B
00B
GND
S3A3
S1A3
00A
GND
S3A2
S1A2
00A
GND
S3A1
S1A1
00A
00A
S3A
S1A
S3A
S1A
S3A
S1A
MAGNET
NO
14
232
TO GEN CONTROL PANEL
OUTLET PANEL INTERLOCK SWITCH
NOTE:
SWITCH CLOSES
WHEN PANEL DOOR
IS CLOSED.
N
E1
E2
E3
E3
E2
E1
00
00
TO ALTERNATOR AND LOWER PANEL

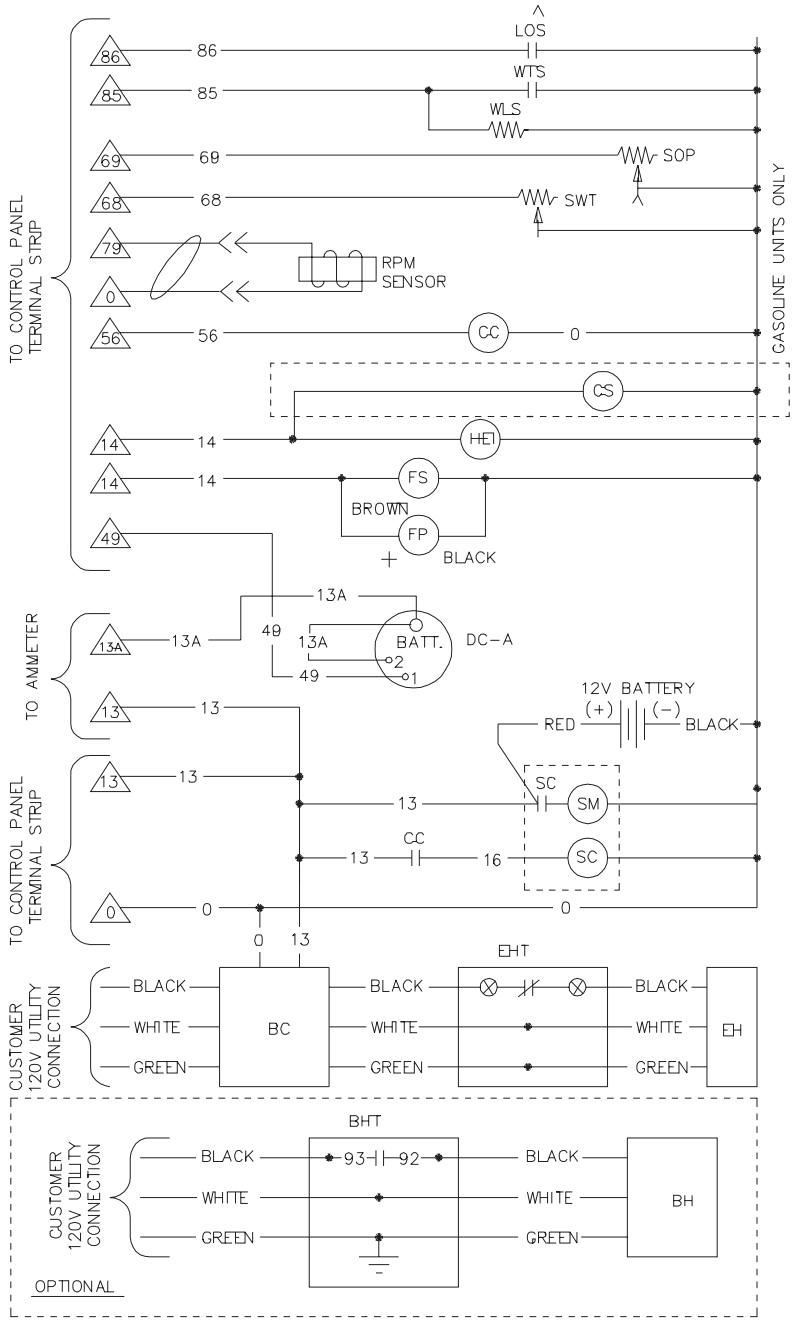

LEGEND
AS - ALTERNATOR STATOR
CB2- CIRCUIT BREAKER MAIN
CT - CURRENT TRANSFORMER
R4 - POTENTIOMETER, VOLTAGE SELECTOR
SW6- VOLTAGE SELECTOR SWITCH
POTENTIOMETER MOUNTED ON AC OUTLET PANEL
R4
AS
4 RED
BRUSH HOLDER MTG SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING
NEUTRAL BLOCK
SW6 (AUX CONTACTS)
SW6 (MAIN CONTACTS)
S15A
S16
TO OUTLET PANEL
1-PHASE
3-PHASE
S3A
S1A
S1B
00A
00B
00
E1
E2
E3
E1A
E2A
E3A
TOP
BOTTOM
CB2
CT1
CT2
CT3
* - DENOTES JUMPERS INSTALLED BY SWITCH SUPPLIER.

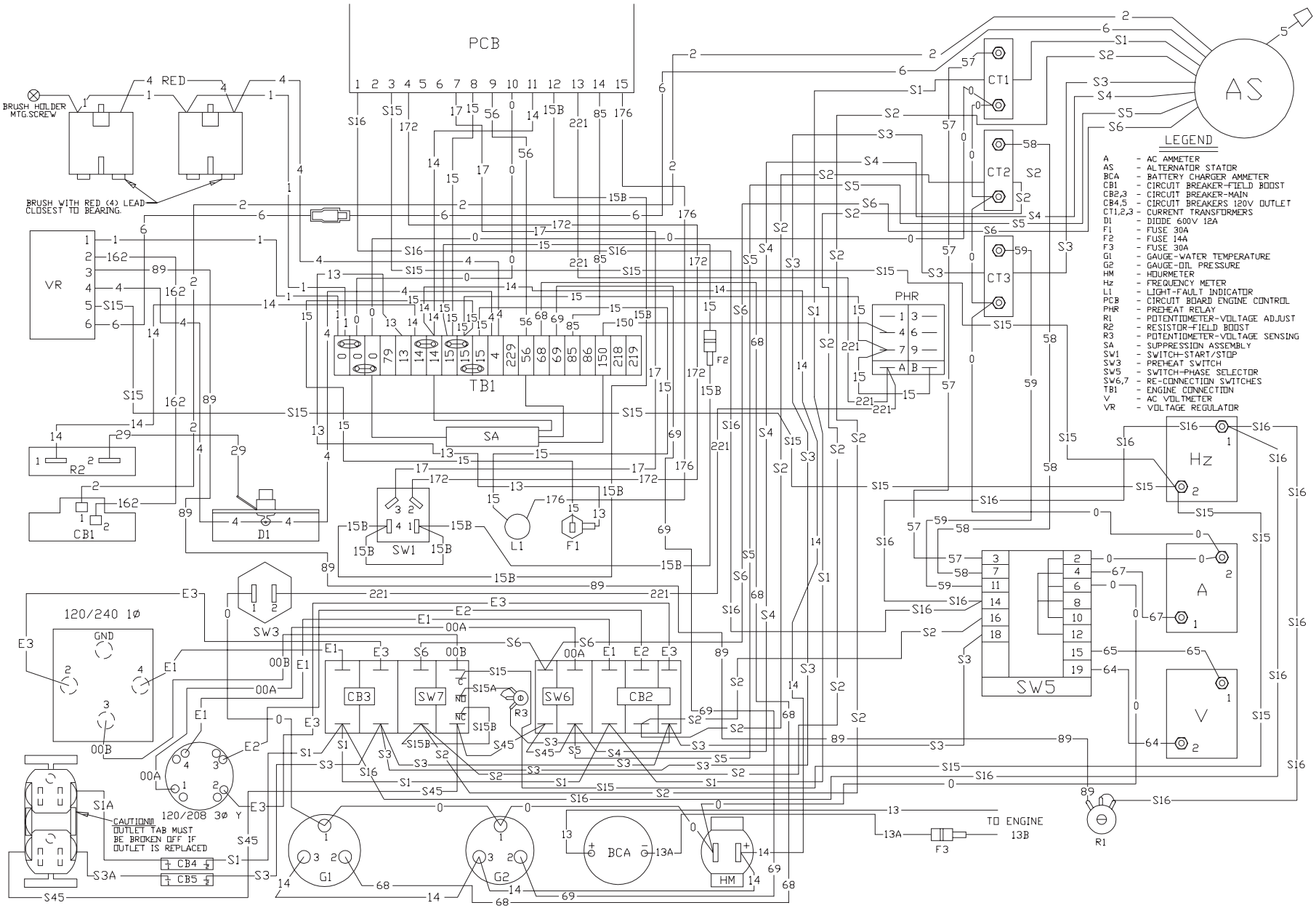
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENGERY IGNITION
LOS – LOW OIL SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
– WIRE NUT

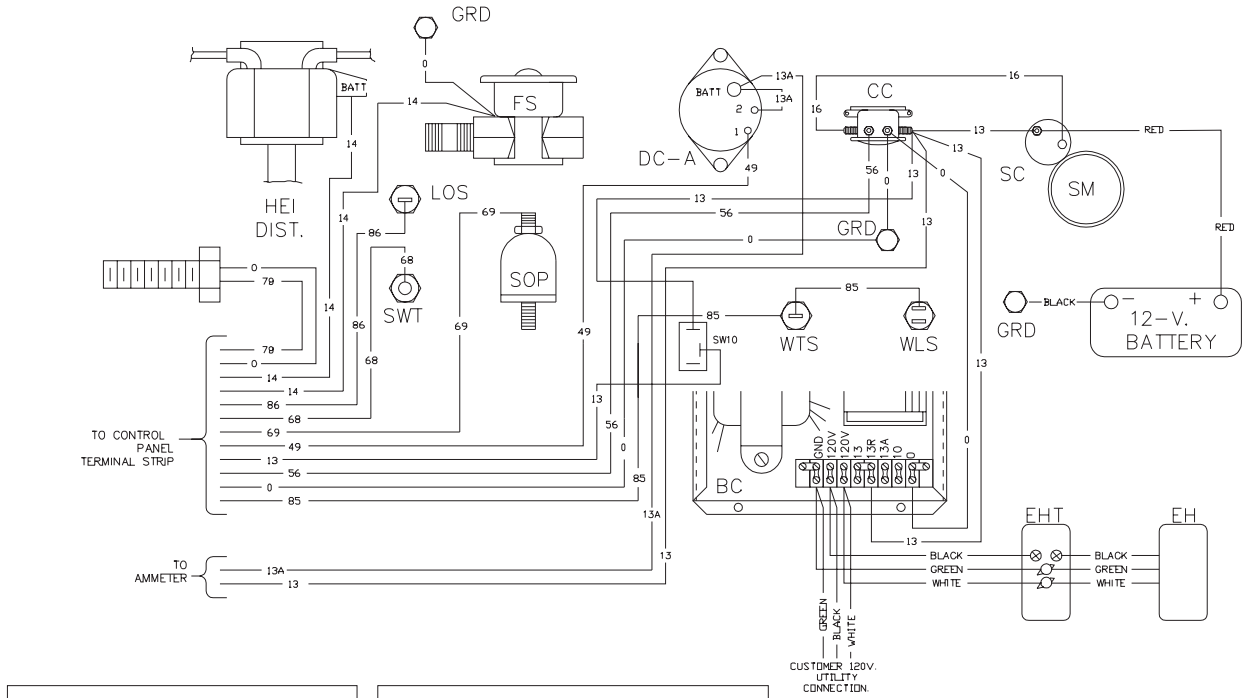


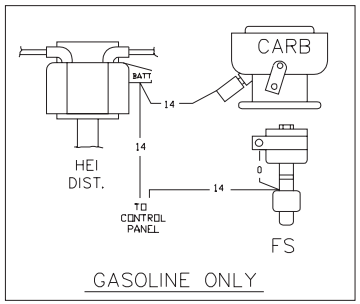
LEGEND

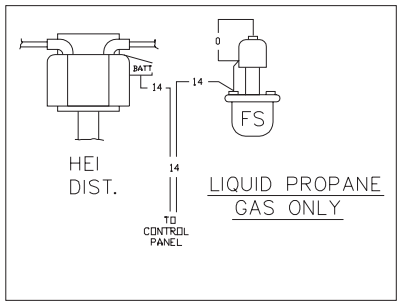
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FP - FUEL PUMP
FS - FUEL SOLENOID
FP - FUEL PUMP
GP - GLOW PLUG
LOS - LOW OIL SWITCH
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TP2 - THERMAL PROTECTOR BATT. HEAT.
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH

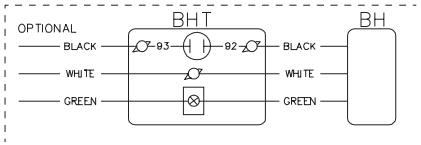



PCB
AS
CT1
CT2
CT3
VR
TB1
SA
PHR
R2
CB1
D1
SW1
L1
F1
F2
SW3
120/240 1ø
GND
CB3
SW7
SW6
CB2
SW5
A
V
Hz
S1A
120/208 3ø Y
CAUTION!!!
OUTLET TAB MUST
BE BROKEN OFF IF
OUTLET IS REPLACED
CB4
CB5
G1
G2
BCA
HM
F3
R1
TO ENGINE
13B
BRUSH HOLDER
MTG.SCREW
BRUSH WITH RED (4) LEAD
CLOSEST TO BEARING.
LEGEND
A - AC AMMETER
AS - ALTERNATOR STATOR
BCA - BATTERY CHARGER AMMETER
CB1 - CIRCUIT BREAKER-FIELD BOOST
CB2,3 - CIRCUIT BREAKER-MAIN
CB4,5 - CIRCUIT BREAKERS 120V OUTLET
CT1,2,3 - CURRENT TRANSFORMERS
D1 - DIODE 600V 12A
F1 - FUSE 30A
F2 - FUSE 14A
F3 - FUSE 30A
G1 - GAUGE-WATER TEMPERATURE
G2 - GAUGE-OIL PRESSURE
HM - HOURMETER
Hz - FREQUENCY METER
L1 - LIGHT-FAULT INDICATOR
PCB - CIRCUIT BOARD ENGINE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER-VOLTAGE ADJUST
R2 - RESISTOR-FIELD BOOST
R3 - POTENTIOMETER-VOLTAGE SENSING
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH-START/STOP
SW3 - PREHEAT SWITCH
SW5 - SWITCH-PHASE SELECTOR
SW6,7 - RE-CONNECTION SWITCHES
TB1 - ENGINE CONNECTION
V - AC VOLTMETER
VR - VOLTAGE REGULATOR

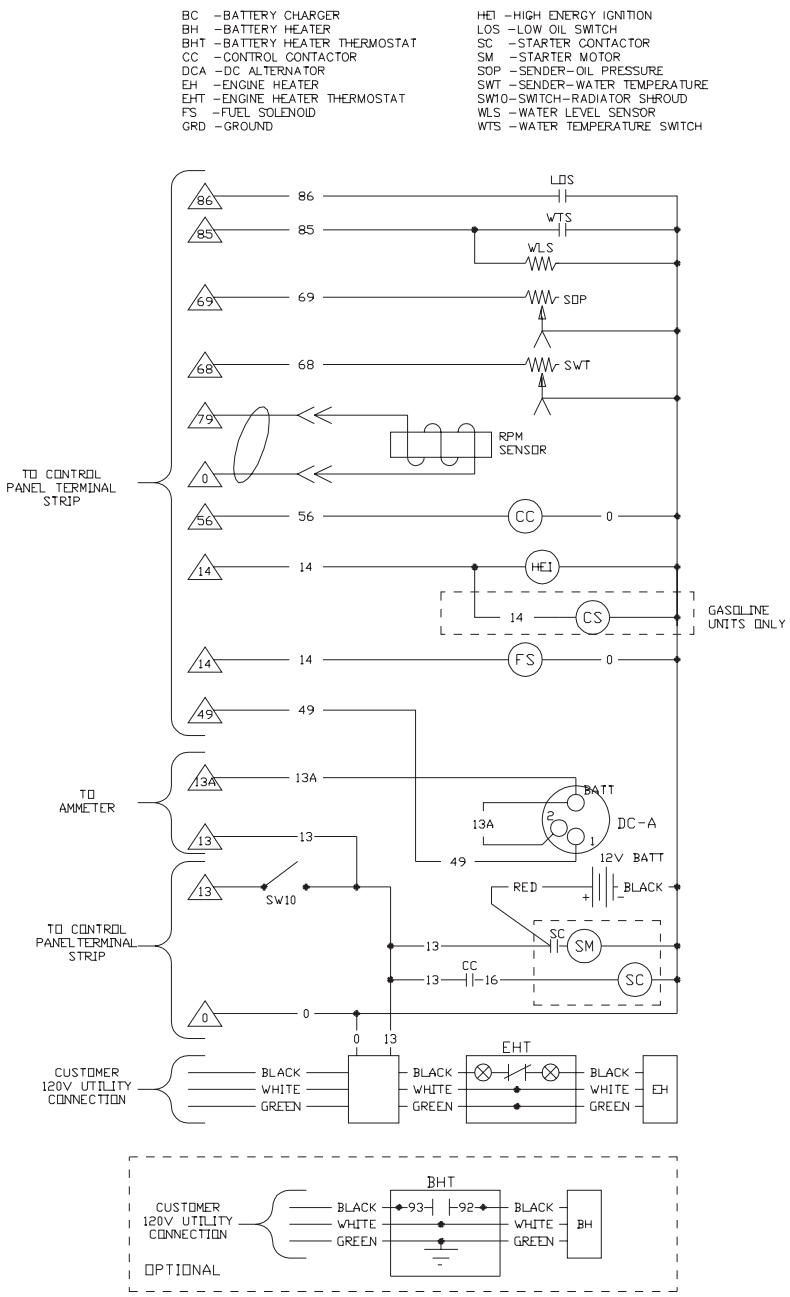


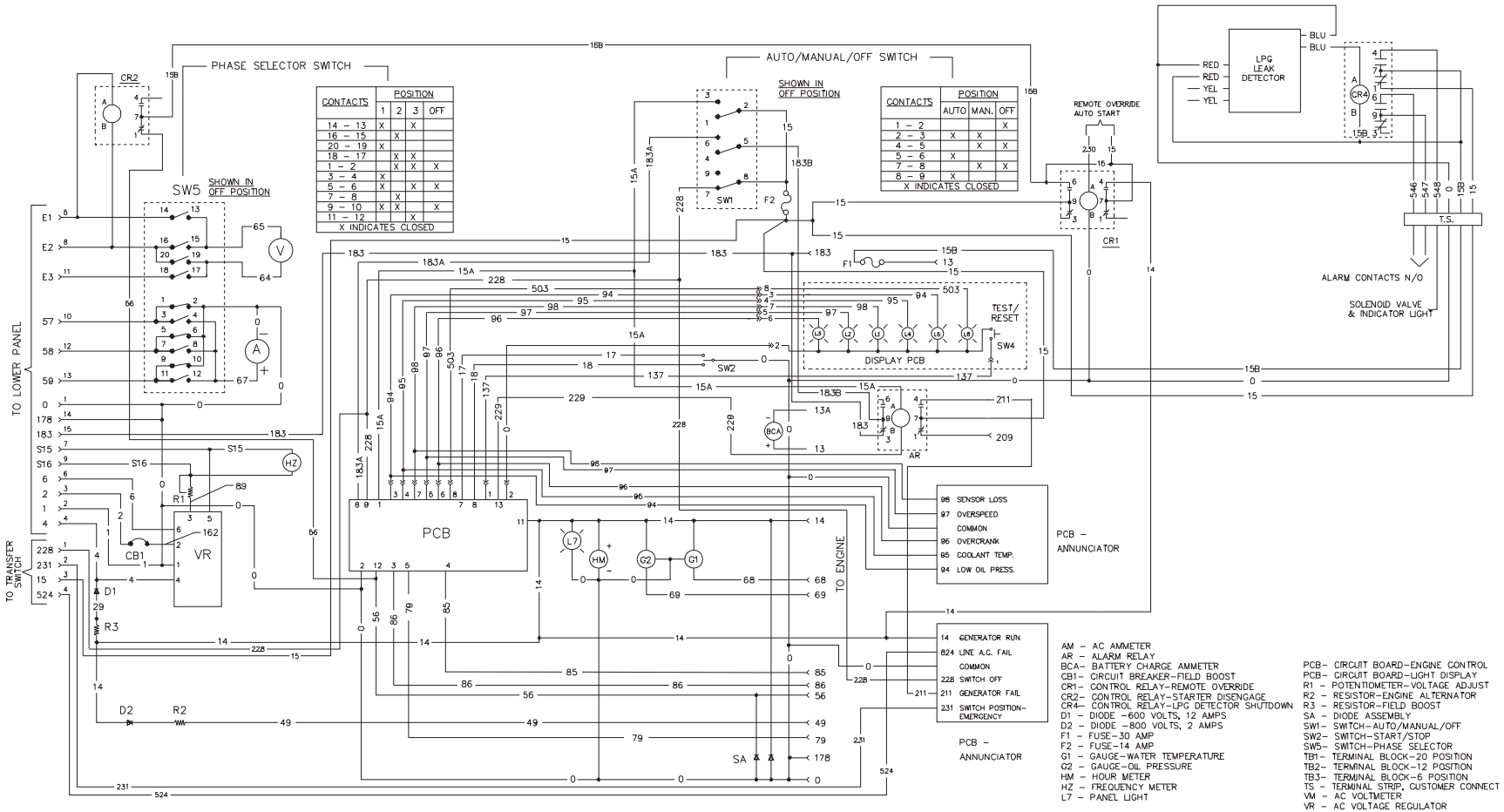






BC -BATTERY CHARGER
BH -BATTERY HEATER
BHT -BATTERY HEATER THERMOSTAT
CC -CONTROL CONTACTOR
DCA -DC ALTERNATOR
EH -ENGINE HEATER
EHT -ENGINE HEATER THERMOSTAT
FS -FUEL SOLENOID
GRD -GROUND
HEI -HIGH ENERGY IGNITION
LOS -LOW OIL SWITCH
SC -STARTER CONTACTOR
SM -STARTER MOTER
SOP -SENDER-OIL PRESSURE
SWT -SENDER-WATER TEMPERATURE
SW10-SWITCH-RADIATOR SHROUD
WLS -WATER LEVEL SENSOR
WTS -WATER TEMPERATURE SWITCH

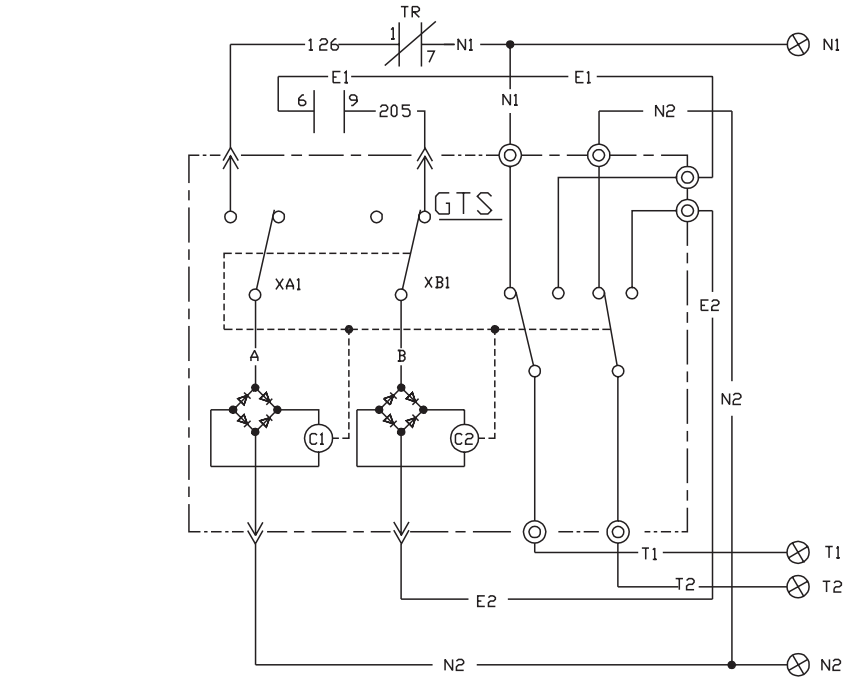

BC -BATTERY CHARGER
BH -BATTERY HEATER
BHT -BATTERY HEATER THERMOSTAT
CC -CONTROL CONTACTOR
DCA -DC ALTERNATOR
EH -ENGINE HEATER
EHT -ENGINE HEATER THERMOSTAT
FS -FUEL SOLENOID
GRD -GROUND
HEI -HIGH ENERGY IGNITION
LOS -LOW OIL SWITCH
SC -STARTER CONTACTOR
SM -STARTER MOTOR
SOP -SENDER-OIL PRESSURE
SWT -SENDER-WATER TEMPERATURE
SW10-SWITCH-RADIATOR SHROUD
WLS -WATER LEVEL SENSOR
WTS -WATER TEMPERATURE SWITCH
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
TO CONTROL PANEL TERMINAL STRIP
CUSTOMER 120V UTILITY CONNECTION
CUSTOMER 120V UTILITY CONNECTION
OPTIONAL
GASOLINE UNITS ONLY
LOS
WTS
WLS
SOP
SWT
RPM SENSOR
CC
HEI
CS
FS
BATT
DC-A
12V BATT
RED
BLACK
SW10
SC
SM
EHT
EH
BHT
BH
BLACK
WHITE
GREEN

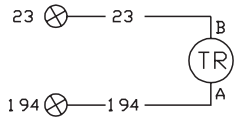


AM – AC AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER–FIELD BOOST
CR1– CONTROL RELAY–REMOTE OVERRIDE
CR2– CONTROL RELAY–STARTER DISENGAGE
CR4– CONTROL RELAY–LPG DETECTOR SHUTDOWN
D1 – DIODE –600 VOLTS, 12 AMPS
D2 – DIODE –800 VOLTS, 2 AMPS
F1 – FUSE–30 AMP
F2 – FUSE–14 AMP
G1 – GAUGE–WATER TEMPERATURE
G2 – GAUGE–OIL PRESSURE
HM – HOUR METER
HZ – FREQUENCY METER
L7 – PANEL LIGHT

PCB– CIRCUIT BOARD–ENGINE CONTROL
PCB– CIRCUIT BOARD–LIGHT DISPLAY
R1 – POTENTIOMETER–VOLTAGE ADJUST
R2 – RESISTOR–ENGINE ALTERNATOR
R3 – RESISTOR–FIELD BOOST
SA – DIODE ASSEMBLY
SW1– SWITCH–AUTO/MANUAL/OFF
SW2– SWITCH–START/STOP
SW5– SWITCH–PHASE SELECTOR
TB1– TERMINAL BLOCK–20 POSITION
TB2– TERMINAL BLOCK–12 POSITION
TB3– TERMINAL BLOCK–6 POSITION
TS – TERMINAL STRIP, CUSTOMER CONNECT
VM – AC VOLTMETER
VR – AC VOLTAGE REGULATOR

SCHEMATIC DIAGRAM

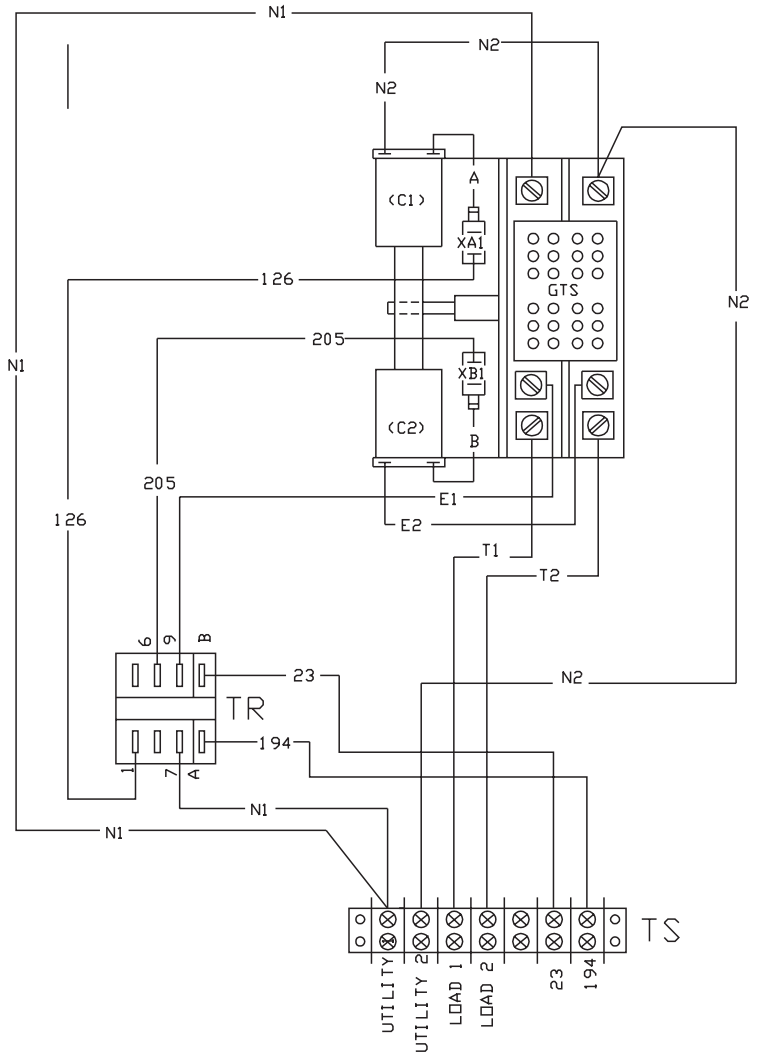


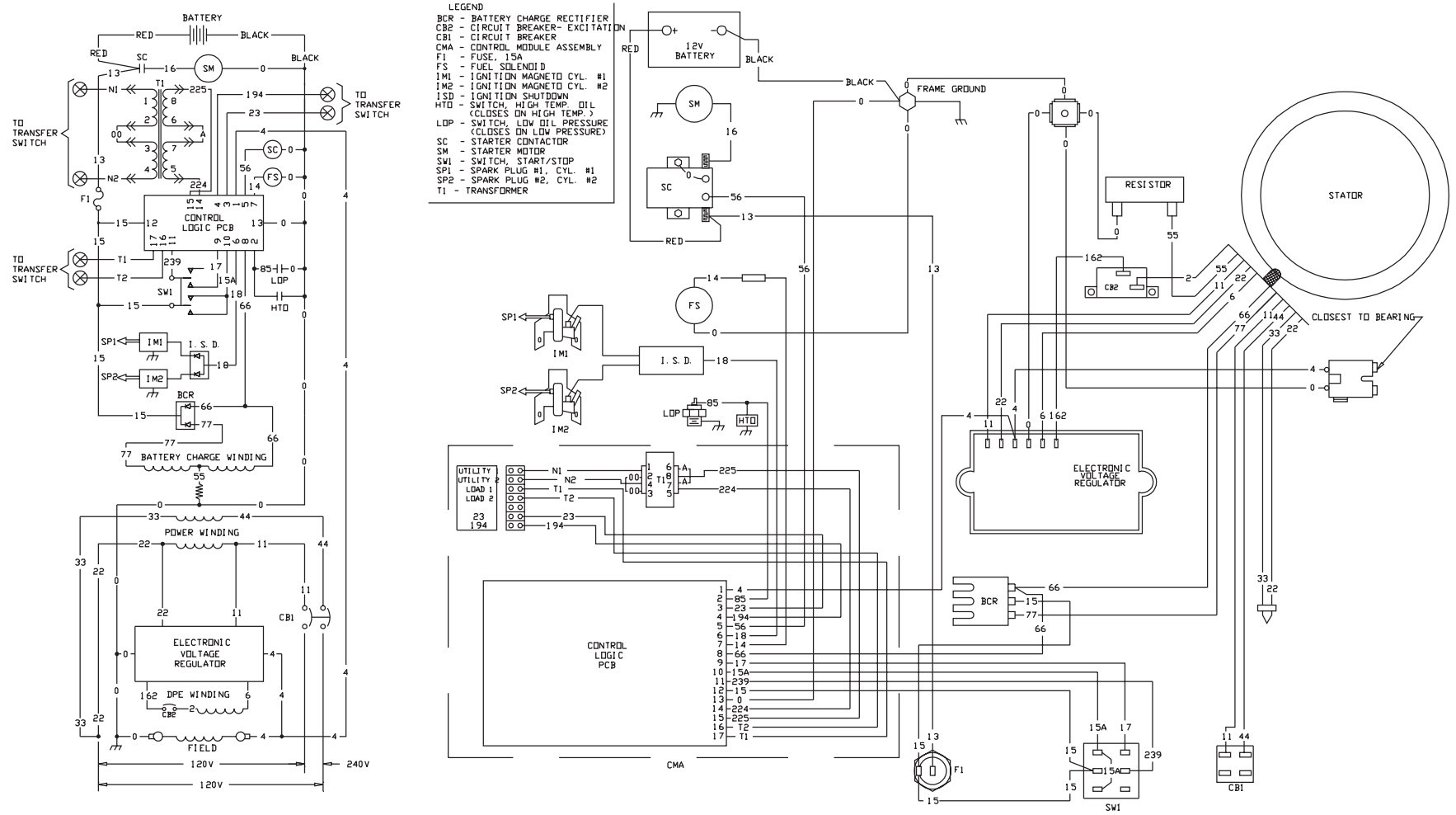


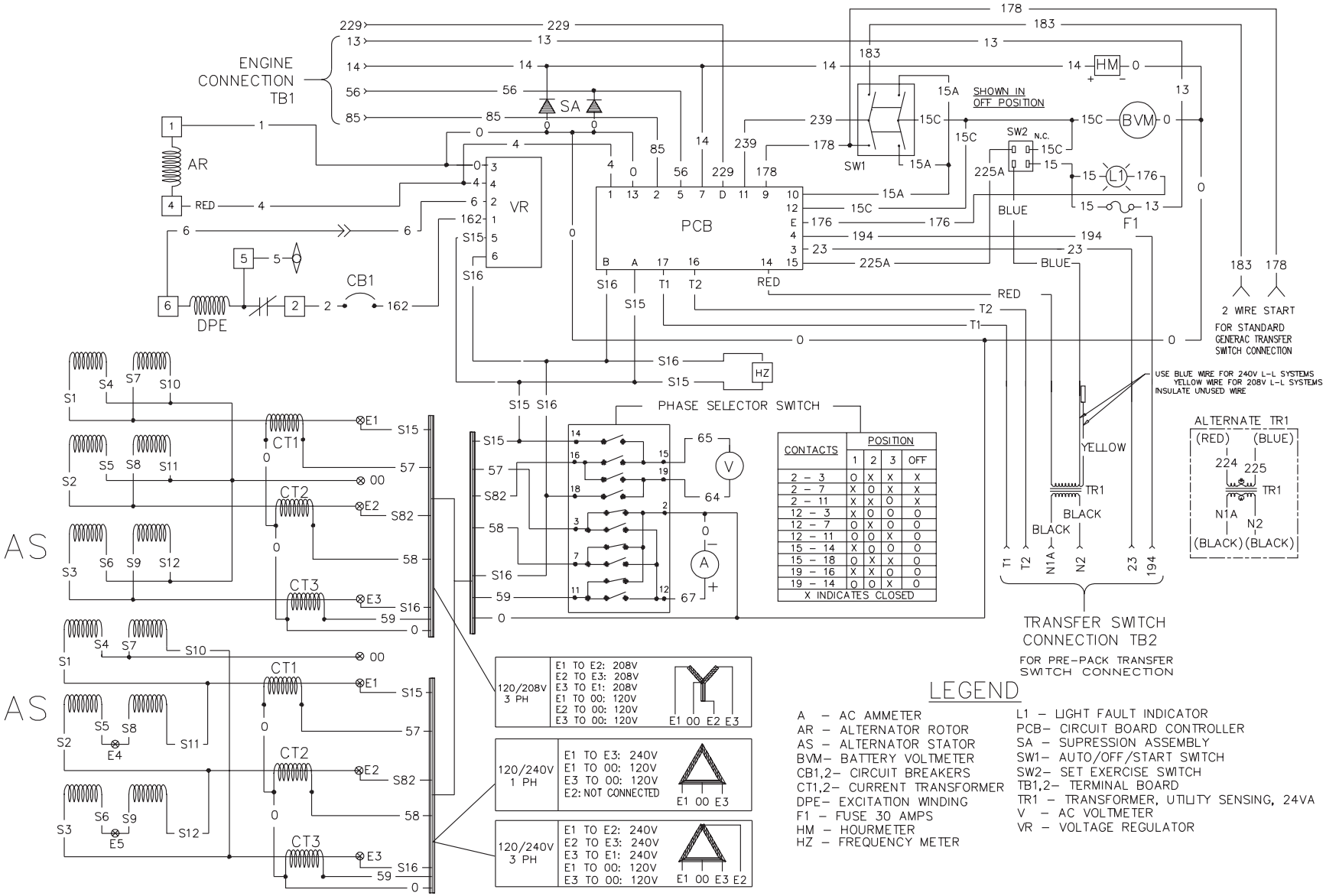
NOTE:
ALL CONTACTS SHOWN WITH TRANSFER SWITCH IN UTILITY POSITION.

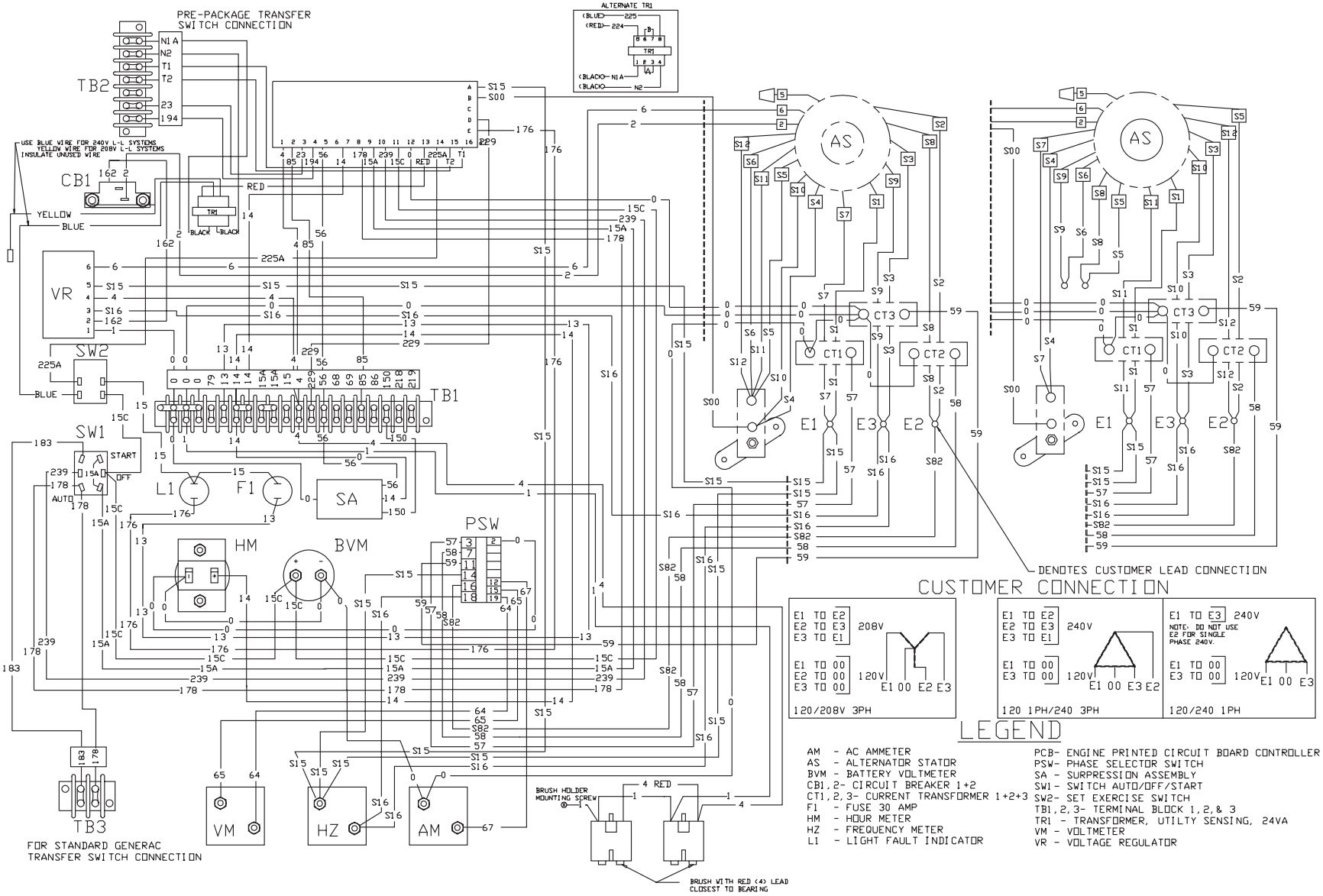
LEGEND
C1- SOLENOID COIL (UTILITY CLOSING)
C2- SOLENOID COIL (STANDBY CLOSING)
GTS - TRANSFER SWITCH CONTACTOR
TR - RELAY, TRANSFER
TS - TERMINAL STRIP (CUSTOMER CONNECTION)
XA1, XB1- LIMIT SWITCHES, ACTUATOR

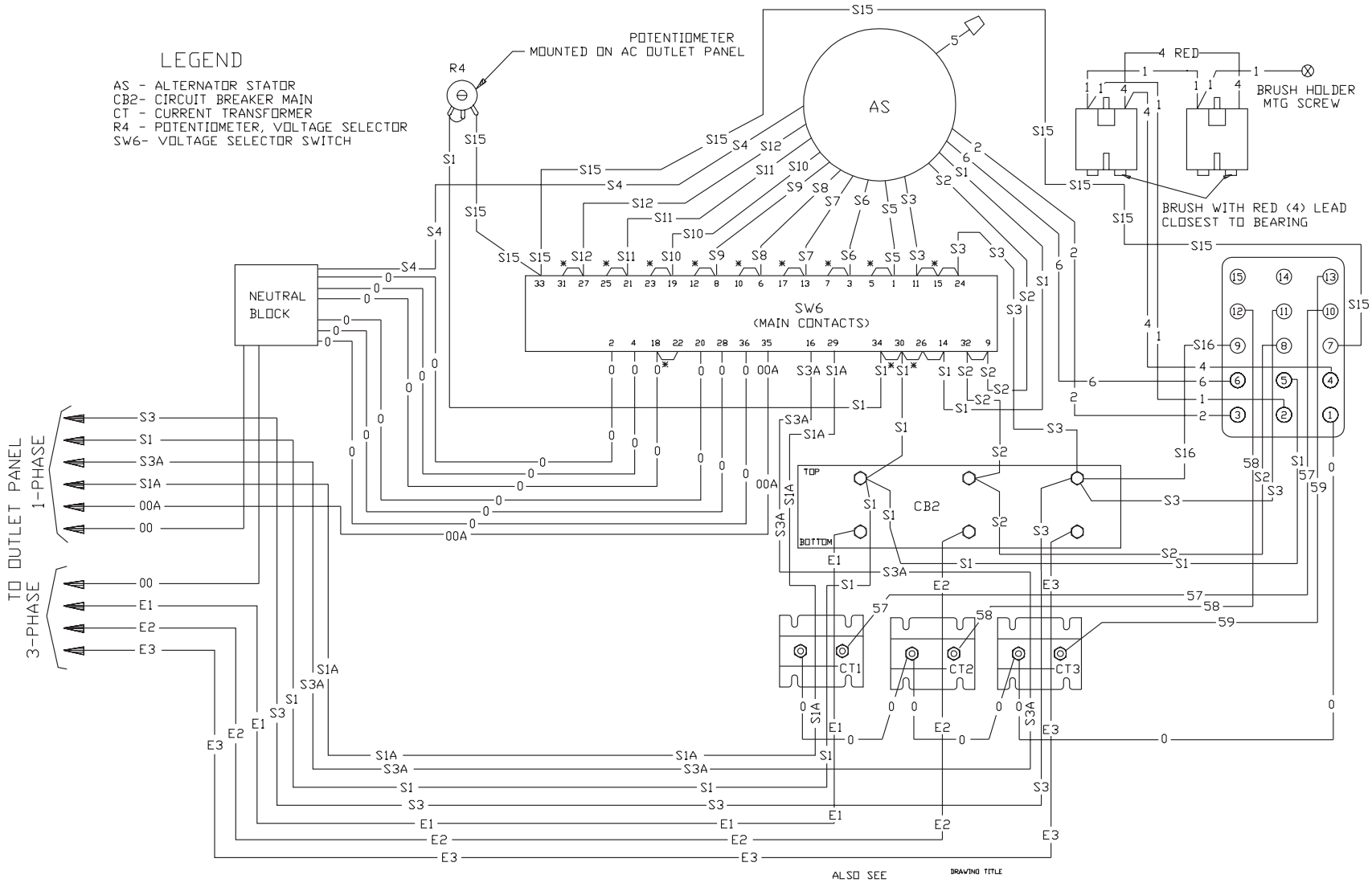
WIRING DIAGRAM

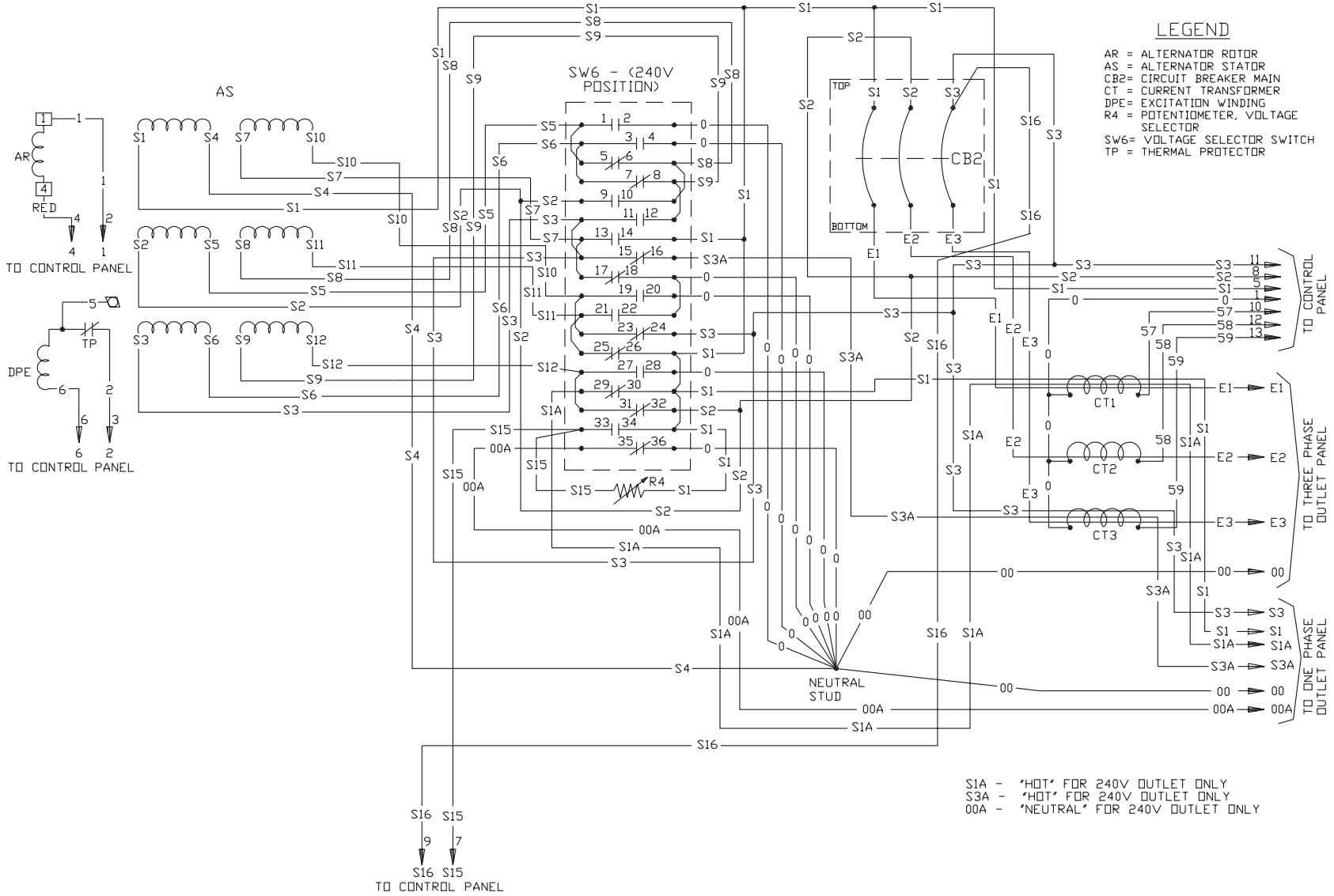


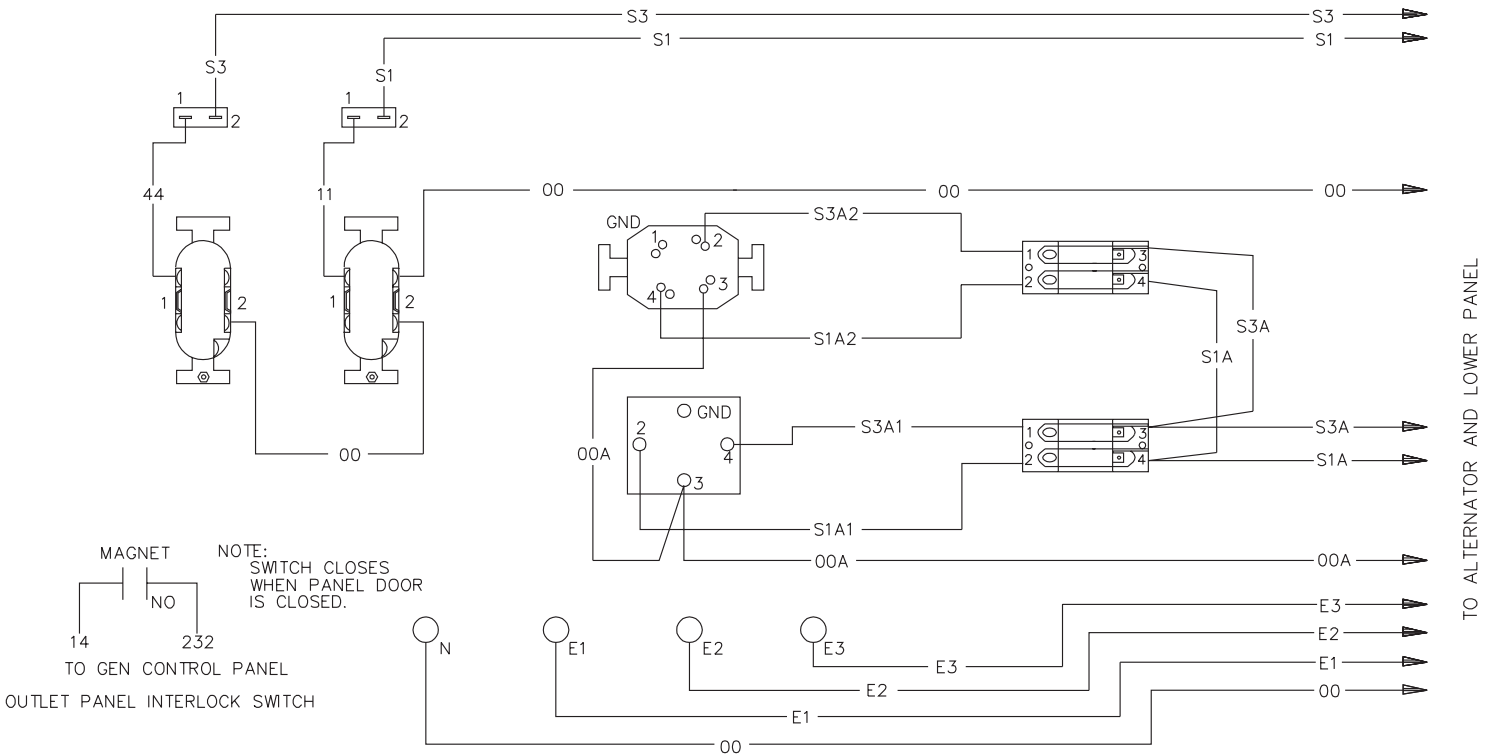

LEGEND
BCR - BATTERY CHARGE RECTIFIER
CB2 - CIRCUIT BREAKER- EXCITATION
CB1 - CIRCUIT BREAKER
CMA - CONTROL MODULE ASSEMBLY
F1 - FUSE, 15A
FS - FUEL SOLENOID
IM1 - IGNITION MAGNETO CYL. #1
IM2 - IGNITION MAGNETO CYL. #2
ISD - IGNITION SHUTDOWN
HTD - SWITCH, HIGH TEMP. OIL (CLOSES ON HIGH TEMP.)
LOP - SWITCH, LOW OIL PRESSURE (CLOSES ON LOW PRESSURE)
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SW1 - SWITCH, START/STOP
SP1 - SPARK PLUG #1, CYL. #1
SP2 - SPARK PLUG #2, CYL. #2
T1 - TRANSFORMER
BATTERY
12V BATTERY
FRAME GROUND
TO TRANSFER SWITCH
CONTROL LOGIC PCB
I. S. D.
BATTERY CHARGE WINDING
POWER WINDING
DPE WINDING
FIELD
ELECTRONIC VOLTAGE REGULATOR
RESISTOR
STATOR
CLOSEST TO BEARING
UTILITY
UTILITY 2
LOAD 1
LOAD 2
120V
240V
CMA
SW1
CB1
CB2
F1
BCR
SM
SC
FS
IM1
IM2
LOP
HTD

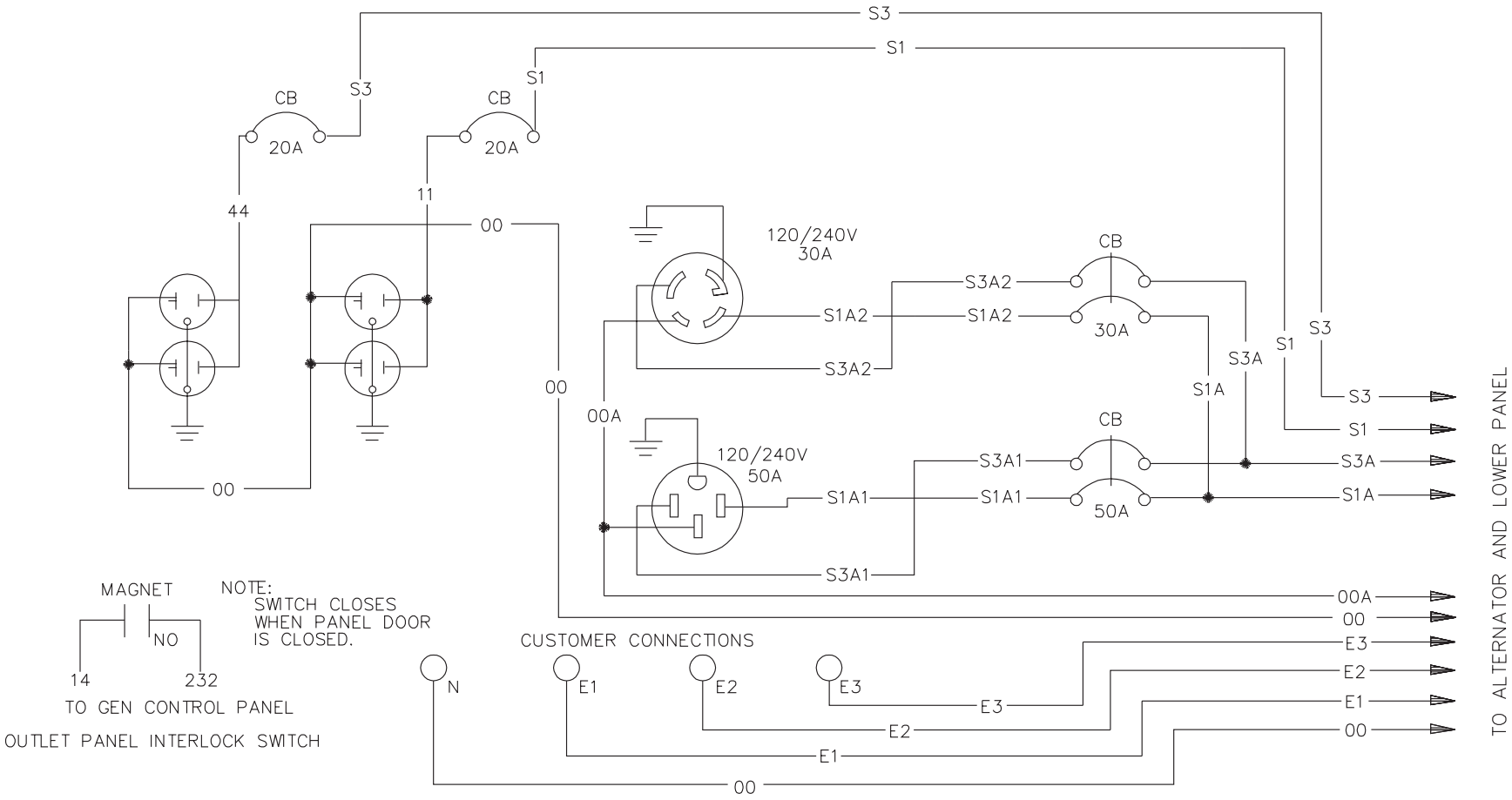

ENGINE CONNECTION TB1
AR
VR
SA
PCB
SW1
SW2 N.C.
SHOWN IN OFF POSITION
BVM
HM
L1
F1
CB1
DPE
HZ
PHASE SELECTOR SWITCH
CONTACTS
POSITION
1
2
3
OFF
2 – 3
2 – 7
2 – 11
12 – 3
12 – 7
12 – 11
15 – 14
15 – 18
19 – 16
19 – 14
X INDICATES CLOSED
CT1
CT2
CT3
AS
AS
120/208V 3 PH
E1 TO E2: 208V
E2 TO E3: 208V
E3 TO E1: 208V
E1 TO 00: 120V
E2 TO 00: 120V
E3 TO 00: 120V
120/240V 1 PH
E1 TO E3: 240V
E1 TO 00: 120V
E3 TO 00: 120V
E2: NOT CONNECTED
120/240V 3 PH
E1 TO E2: 240V
E2 TO E3: 240V
E3 TO E1: 240V
E1 TO 00: 120V
E3 TO 00: 120V
2 WIRE START
FOR STANDARD GENERAC TRANSFER SWITCH CONNECTION
USE BLUE WIRE FOR 240V L-L SYSTEMS
YELLOW WIRE FOR 208V L-L SYSTEMS
INSULATE UNUSED WIRE
ALTERNATE TR1
TRANSFER SWITCH CONNECTION TB2
FOR PRE-PACK TRANSFER SWITCH CONNECTION
LEGEND
A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BVM– BATTERY VOLTMETER
CB1,2– CIRCUIT BREAKERS
CT1,2– CURRENT TRANSFORMER
DPE– EXCITATION WINDING
F1 – FUSE 30 AMPS
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
PCB– CIRCUIT BOARD CONTROLLER
SA – SUPRESSION ASSEMBLY
SW1– AUTO/OFF/START SWITCH
SW2– SET EXERCISE SWITCH
TB1,2– TERMINAL BOARD
TR1 – TRANSFORMER, UTILITY SENSING, 24VA
V – AC VOLTMETER
VR – VOLTAGE REGULATOR

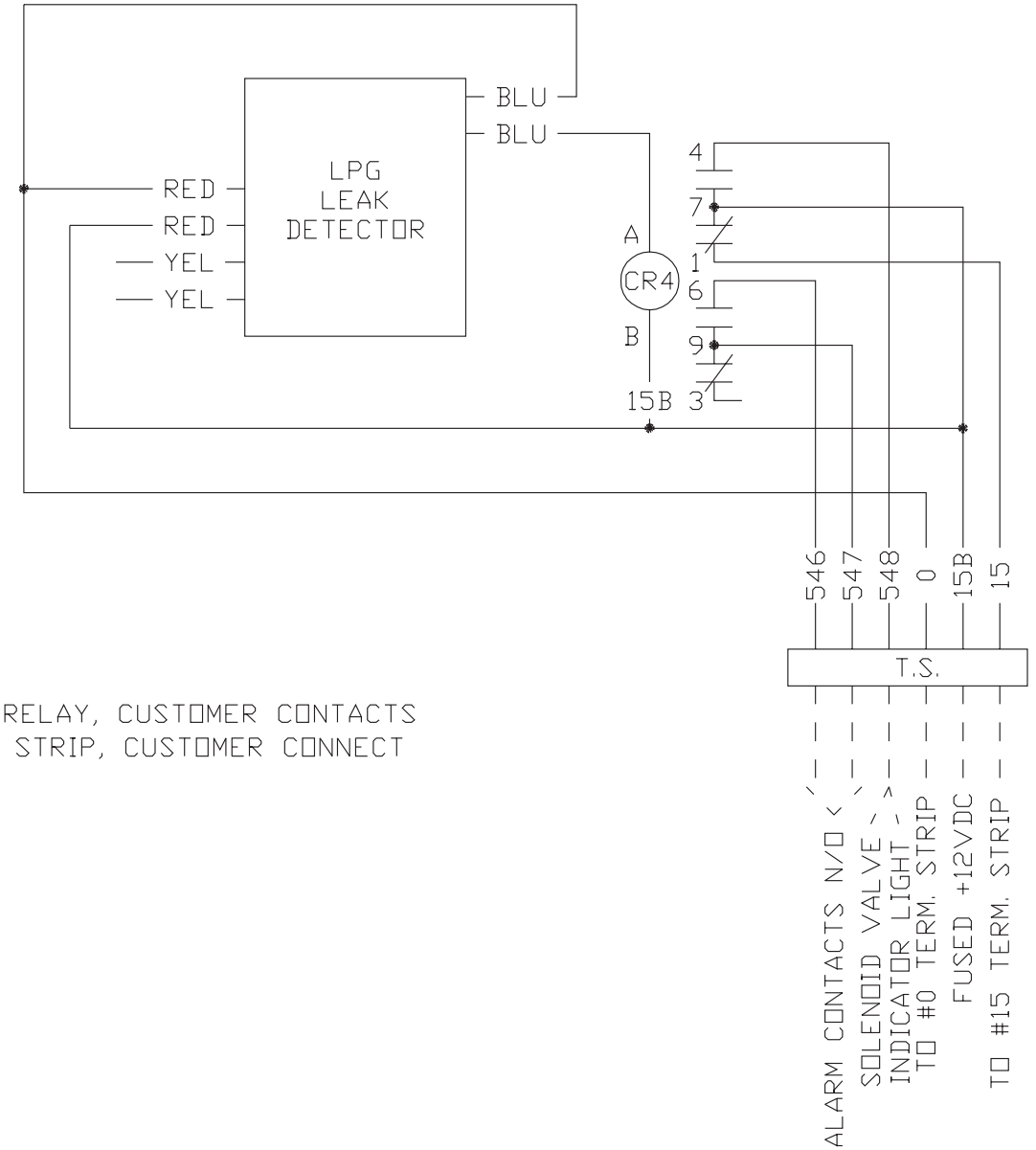

PRE-PACKAGE TRANSFER SWITCH CONNECTION
ALTERNATE TR1
TB2
CB1
TR1
VR
SW2
TB1
SW1
L1
F1
SA
HM
BVM
PSW
AS
CT1
CT2
CT3
E1
E3
E2
TB3
VM
HZ
AM
FOR STANDARD GENERAC TRANSFER SWITCH CONNECTION
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING
DENOTES CUSTOMER LEAD CONNECTION
CUSTOMER CONNECTION
E1 TO E2
E2 TO E3 208V
E3 TO E1
E1 TO 00
E2 TO 00 120V
E3 TO 00
E1 00 E2 E3
120/208V 3PH
E1 TO E2
E2 TO E3 240V
E3 TO E1
E1 TO 00
E3 TO 00 120V
E1 00 E3 E2
120 1PH/240 3PH
E1 TO E3 240V
NOTE: DO NOT USE E2 FOR SINGLE PHASE 240V.
E1 TO 00
E3 TO 00 120V
E1 00 E3
120/240 1PH
LEGEND
AM - AC AMMETER
AS - ALTERNATOR STATOR
BVM - BATTERY VOLTMETER
CB1, 2- CIRCUIT BREAKER 1+2
CT1, 2, 3- CURRENT TRANSFORMER 1+2+3
F1 - FUSE 30 AMP
HM - HOUR METER
HZ - FREQUENCY METER
L1 - LIGHT FAULT INDICATOR
PCB- ENGINE PRINTED CIRCUIT BOARD CONTROLLER
PSW- PHASE SELECTOR SWITCH
SA - SURPRESSION ASSEMBLY
SW1 - SWITCH AUTO/OFF/START
SW2- SET EXERCISE SWITCH
TB1, 2, 3- TERMINAL BLOCK 1, 2, & 3
TR1 - TRANSFORMER, UTILTY SENSING, 24VA
VM - VOLTMETER
VR - VOLTAGE REGULATOR


LEGEND
AS - ALTERNATOR STATOR
CB2- CIRCUIT BREAKER MAIN
CT - CURRENT TRANSFORMER
R4 - POTENTIOMETER, VOLTAGE SELECTOR
SW6- VOLTAGE SELECTOR SWITCH
POTENTIOMETER MOUNTED ON AC OUTLET PANEL
R4
AS
4 RED
BRUSH HOLDER MTG SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING
NEUTRAL BLOCK
SW6 (MAIN CONTACTS)
CB2
TOP
BOTTOM
CT1
CT2
CT3
TO OUTLET PANEL 1-PHASE
3-PHASE
S3
S1
S3A
S1A
00A
00
E1
E2
E3
ALSO SEE
DRAWING TITLE

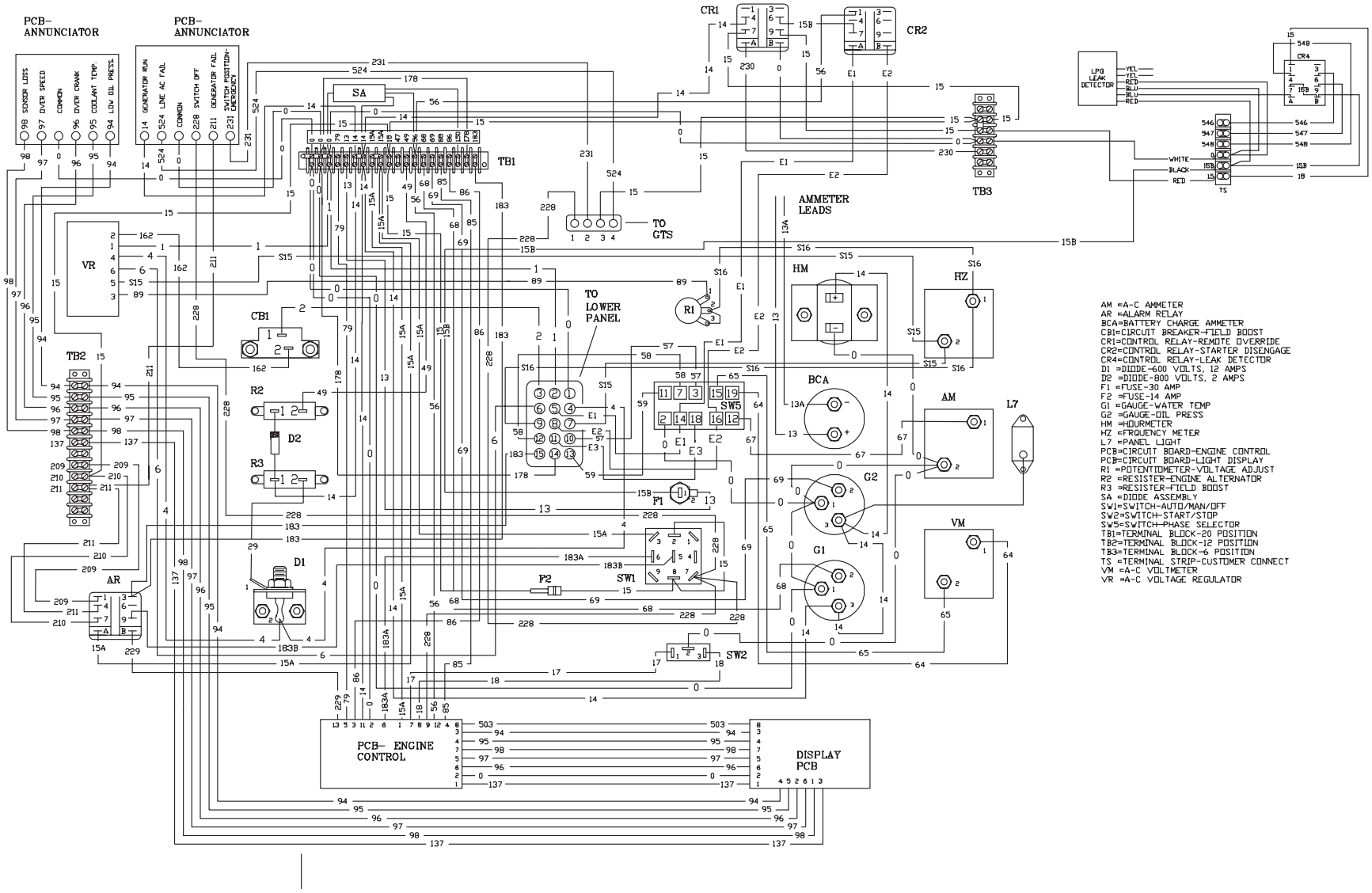

LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2= CIRCUIT BREAKER MAIN
CT = CURRENT TRANSFORMER
DPE= EXCITATION WINDING
R4 = POTENTIOMETER, VOLTAGE SELECTOR
SW6= VOLTAGE SELECTOR SWITCH
TP = THERMAL PROTECTOR
AS
AR
RED
TO CONTROL PANEL
DPE
TP
TO CONTROL PANEL
SW6 - (240V POSITION)
CB2
TOP
BOTTOM
CT1
CT2
CT3
R4
NEUTRAL STUD
TO CONTROL PANEL
TO THREE PHASE OUTLET PANEL
TO ONE PHASE OUTLET PANEL
S16 S15
TO CONTROL PANEL
S1A - 'HOT' FOR 240V OUTLET ONLY
S3A - 'HOT' FOR 240V OUTLET ONLY
00A - 'NEUTRAL' FOR 240V OUTLET ONLY


S3
S1
S3
S1
1
2
44
11
00
GND
S3A2
S1A2
S3A
S1A
S3A1
S1A1
00A
MAGNET
NO
14
232
NOTE:
SWITCH CLOSES
WHEN PANEL DOOR
IS CLOSED.
TO GEN CONTROL PANEL
OUTLET PANEL INTERLOCK SWITCH
N
E1
E2
E3
TO ALTERNATOR AND LOWER PANEL

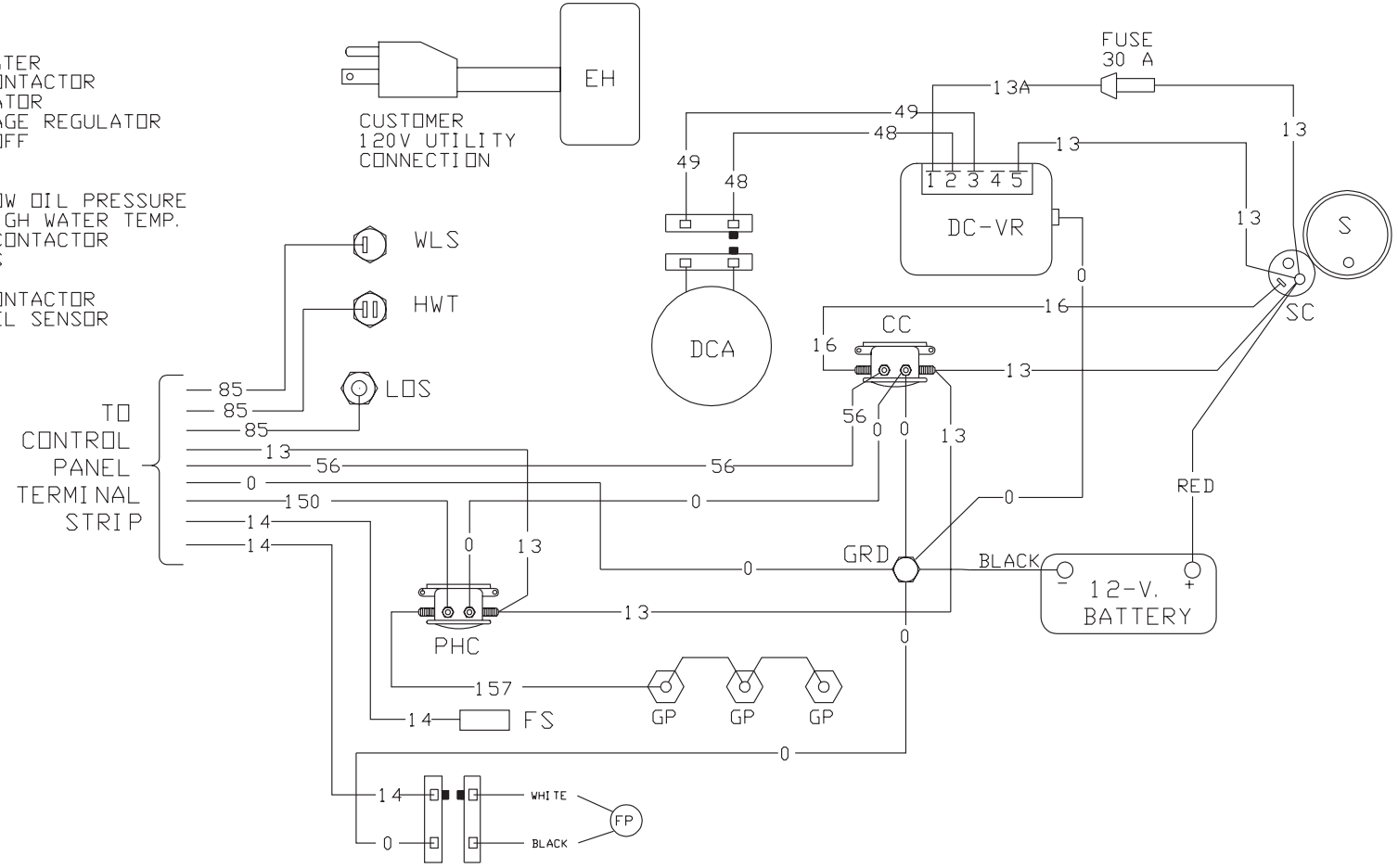

S3
S1
CB
20A
S3
CB
20A
S1
44
11
00
120/240V
30A
S3A2
S1A2
S1A2
S3A2
CB
30A
S3A
S1
S3
S1A
00
00A
120/240V
50A
S3A1
S1A1
S1A1
S3A1
CB
50A
S3
S1
S3A
S1A
00A
00
E3
E2
E1
00
TO ALTERNATOR AND LOWER PANEL
MAGNET
NO
14
232
TO GEN CONTROL PANEL
OUTLET PANEL INTERLOCK SWITCH
NOTE:
SWITCH CLOSES
WHEN PANEL DOOR
IS CLOSED.
CUSTOMER CONNECTIONS
N
E1
E2
E3
E3
E2
E1
00

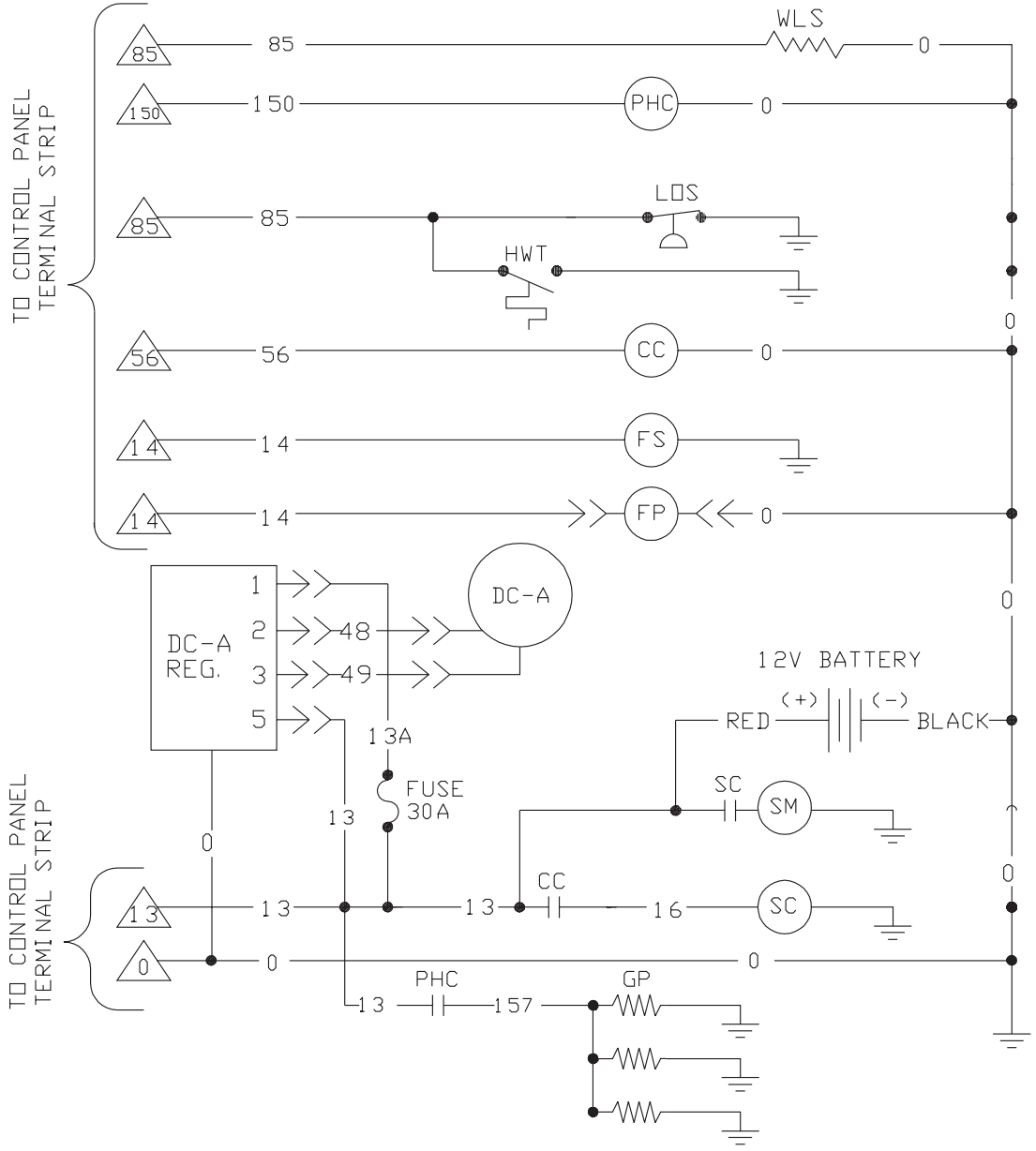


CR4= CONTROL RELAY, CUSTOMER CONTACTS
TS= TERMINAL STRIP, CUSTOMER CONNECT

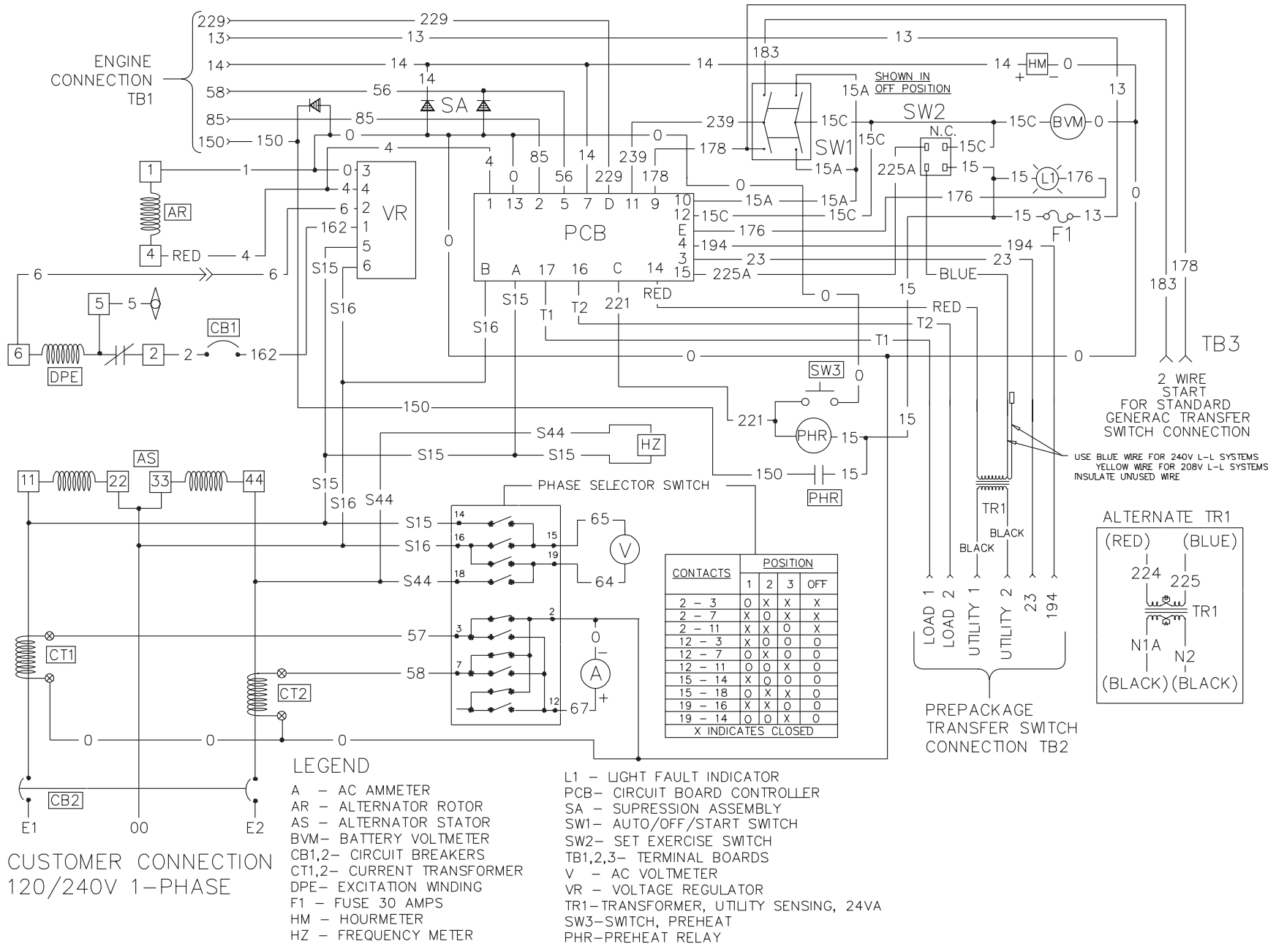

PCB– ANNUNCIATOR
PCB– ANNUNCIATOR
CR1
CR2
SA
TB1
TB2
TB3
VR
CB1
R1
R2
R3
D1
D2
AR
F1
F2
SW1
SW2
SW5
HM
HZ
BCA
AM
L7
G1
G2
VM
TO GTS
TO LOWER PANEL
AMMETER LEADS
LPG LEAK DETECTOR
PCB– ENGINE CONTROL
DISPLAY PCB
AM =A-C AMMETER
AR =ALARM RELAY
BCA=BATTERY CHARGE AMMETER
CB1=CIRCUIT BREAKER-FIELD BOOST
CR1=CONTROL RELAY-REMOTE OVERRIDE
CR2=CONTROL RELAY-STARTER DISENGAGE
CR4=CONTROL RELAY-LEAK DETECTOR
D1 =DIODE-600 VOLTS, 12 AMPS
D2 =DIODE-800 VOLTS, 2 AMPS
F1 =FUSE-30 AMP
F2 =FUSE-14 AMP
G1 =GAUGE-WATER TEMP
G2 =GAUGE-OIL PRESS
HM =HOURMETER
HZ =FRQUENCY METER
L7 =PANEL LIGHT
PCB=CIRCUIT BOARD-ENGINE CONTROL
PCB=CIRCUIT BOARD-LIGHT DISPLAY
R1 =POTENTIOMETER-VOLTAGE ADJUST
R2 =RESISTER-ENGINE ALTERNATOR
R3 =RESISTER-FIELD BOOST
SA =DIODE ASSEMBLY
SW1=SWITCH-AUTO/MAN/OFF
SW2=SWITCH-START/STOP
SW5=SWITCH-PHASE SELECTOR
TB1=TERMINAL BLOCK-20 POSITION
TB2=TERMINAL BLOCK-12 POSITION
TB3=TERMINAL BLOCK-6 POSITION
TS =TERMINAL STRIP-CUSTOMER CONNECT
VM =A-C VOLTMETER
VR =A-C VOLTAGE REGULATOR

EH - ENGINE HEATER
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
FS - FUEL SHUTOFF
FP - FUEL PUMP
GRD - GROUND
LOS - SWITCH, LOW OIL PRESSURE
HWT - SWITCH, HIGH WATER TEMP.
PHC - PRE-HEAT CONTACTOR
GP - GLOW PLUGS
S - STARTER
SC - STARTER CONTACTOR
WLS - WATER LEVEL SENSOR





CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
EH - ENGINE HEATER
FS - FUEL SHUTOFF SOLENOID
FP - FUEL PUMP
HWT - SWITCH, HIGH WATER TEMP.
LOS - SWITCH, LOW OIL PRESSURE
SC - STARTER CONTACTOR
SM - STARTER MOTOR
PHC - PRE-HEAT CONTACTOR
GP - GLOW PLUG
WLS - WATER LEVEL SENSOR

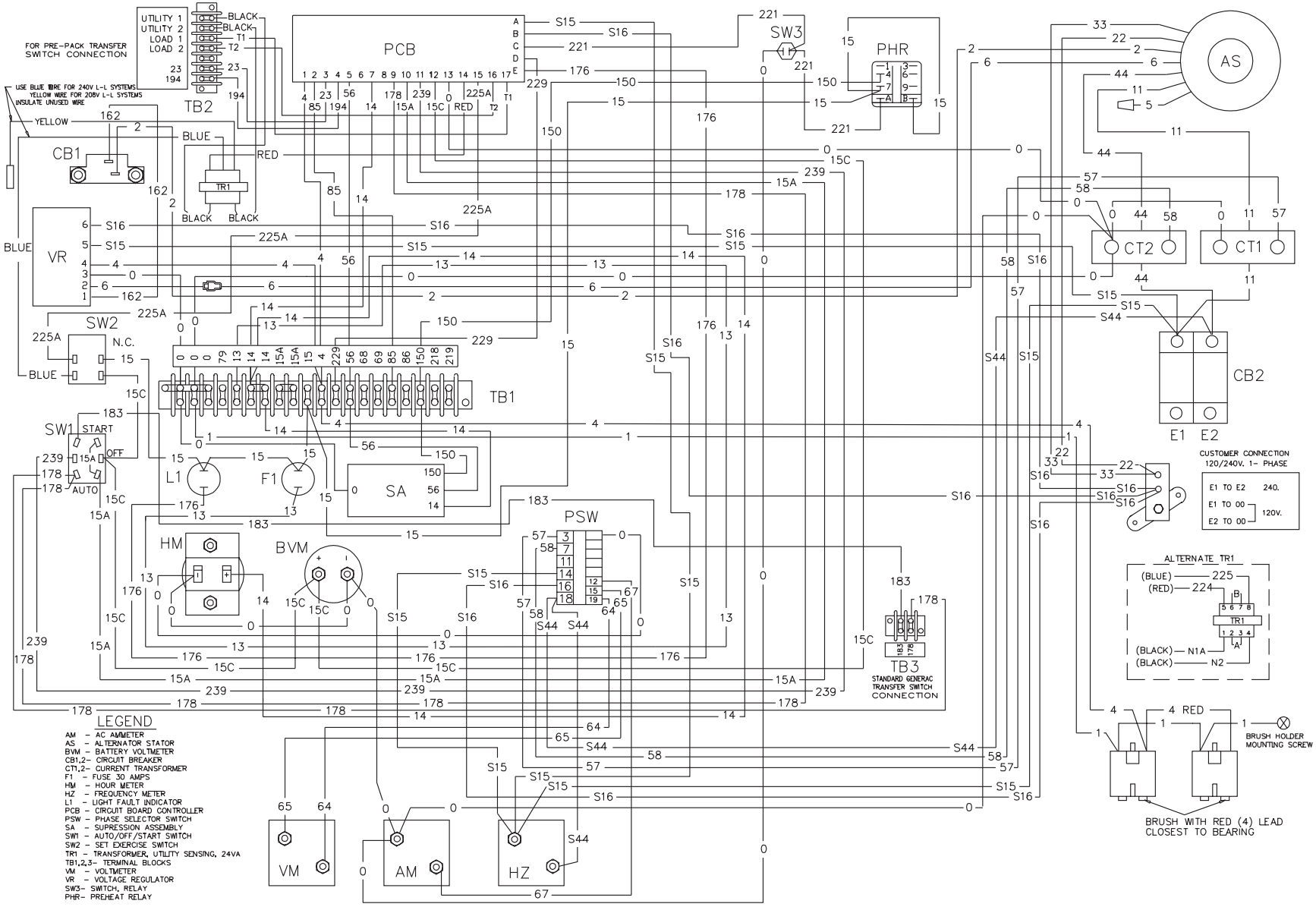


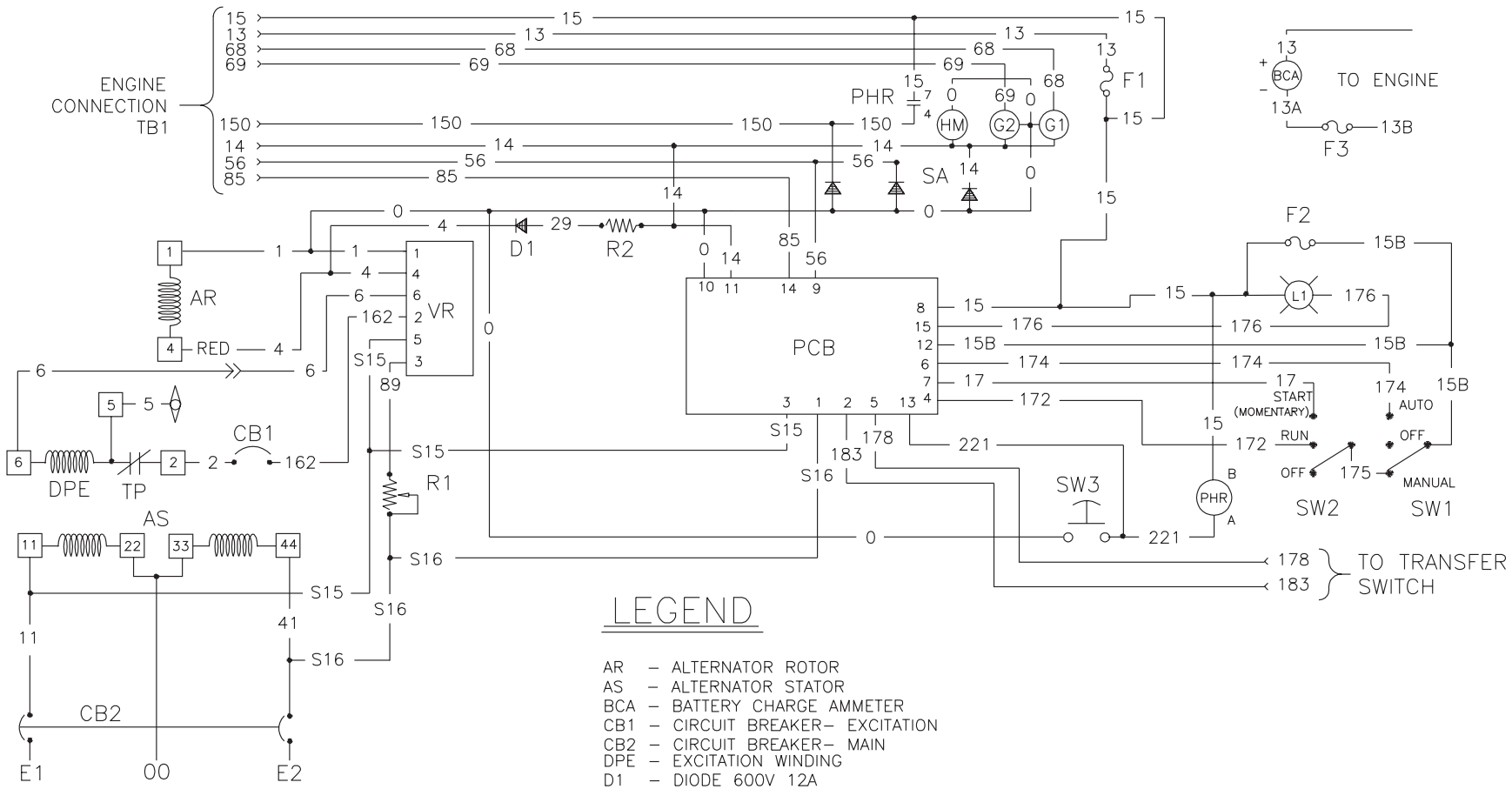
CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	O	X	X	X
2 – 7	X	O	X	X
2 – 11	X	X	O	X
12 – 3	X	O	O	O
12 – 7	O	X	O	O
12 – 11	O	O	X	O
15 – 14	X	O	O	O
15 – 18	O	X	X	O
19 – 16	X	X	O	O
19 – 14	O	O	X	O

X INDICATES CLOSED

LEGEND

A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BVM– BATTERY VOLTMETER
CB1,2– CIRCUIT BREAKERS
CT1,2– CURRENT TRANSFORMER
DPE– EXCITATION WINDING
F1 – FUSE 30 AMPS
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
PCB– CIRCUIT BOARD CONTROLLER
SA – SUPRESSION ASSEMBLY
SW1– AUTO/OFF/START SWITCH
SW2– SET EXERCISE SWITCH
TB1,2,3– TERMINAL BOARDS
V – AC VOLTMETER
VR – VOLTAGE REGULATOR
TR1–TRANSFORMER, UTILITY SENSING, 24VA
SW3–SWITCH, PREHEAT
PHR–PREHEAT RELAY

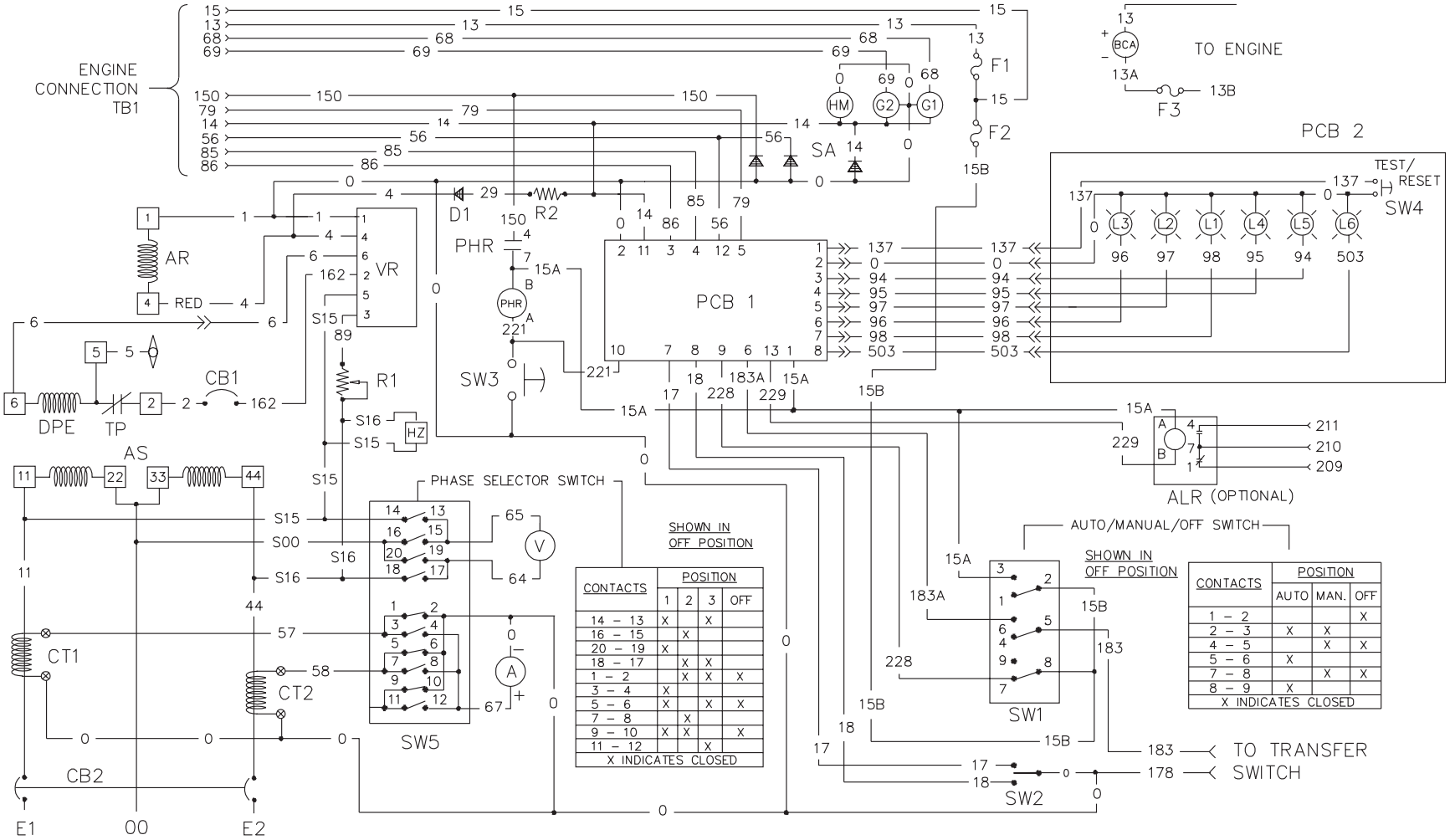

FOR PRE-PACK TRANSFER SWITCH CONNECTION
UTILITY 1
UTILITY 2
LOAD 1
LOAD 2
TB2
PCB
SW3
PHR
AS
CB1
TR1
VR
SW2
N.C.
TB1
SW1
START
OFF
AUTO
L1
F1
SA
HM
BVM
PSW
CT2
CT1
CB2
E1 E2
CUSTOMER CONNECTION
120/240V. 1- PHASE
E1 TO E2 240.
E1 TO 00 120V.
E2 TO 00
ALTERNATE TR1
(BLUE) 225
(RED) 224
(BLACK) N1A
(BLACK) N2
TB3
STANDARD GENERAC TRANSFER SWITCH CONNECTION
4 RED
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING
VM
AM
HZ
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BVM – BATTERY VOLTMETER
CB1,2– CIRCUIT BREAKER
CT1,2– CURRENT TRANSFORMER
F1 – FUSE 30 AMPS
HM – HOUR METER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
PCB – CIRCUIT BOARD CONTROLLER
PSW – PHASE SELECTOR SWITCH
SA – SUPRESSION ASSEMBLY
SW1 – AUTO/OFF/START SWITCH
SW2 – SET EXERCISE SWITCH
TR1 – TRANSFORMER, UTILITY SENSING, 24VA
TB1,2,3– TERMINAL BLOCKS
VM – VOLTMETER
VR – VOLTAGE REGULATOR
SW3– SWITCH, RELAY
PHR– PREHEAT RELAY



CUSTOMER CONNECTION
120/240V 1–PHASE

LEGEND

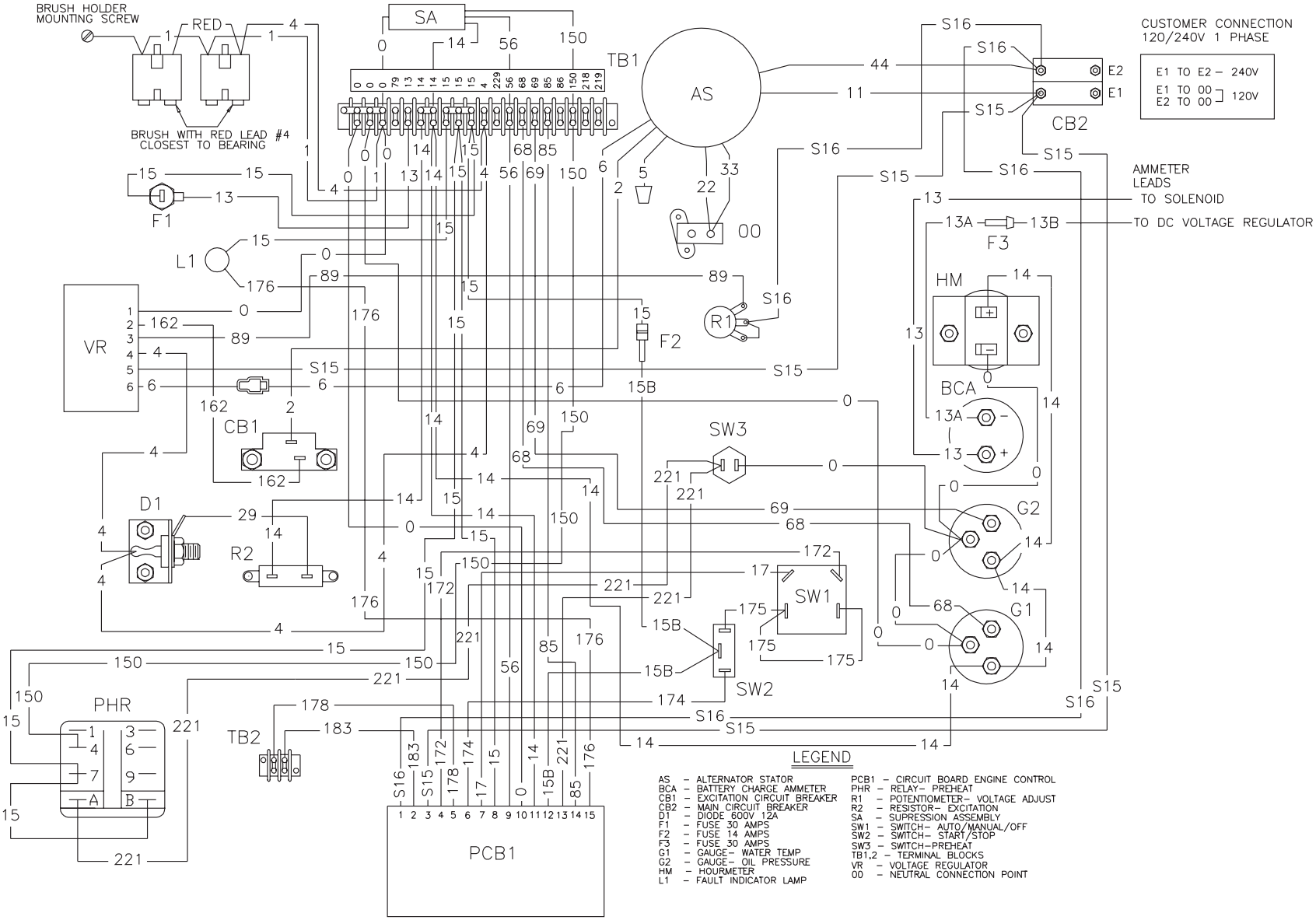
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– EXCITATION
CB2 – CIRCUIT BREAKER– MAIN
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
PHR – RELAY– PREHEAT
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH–PREHEAT
TP – THERMAL PROTECTOR
VR – VOLTAGE REGULATOR

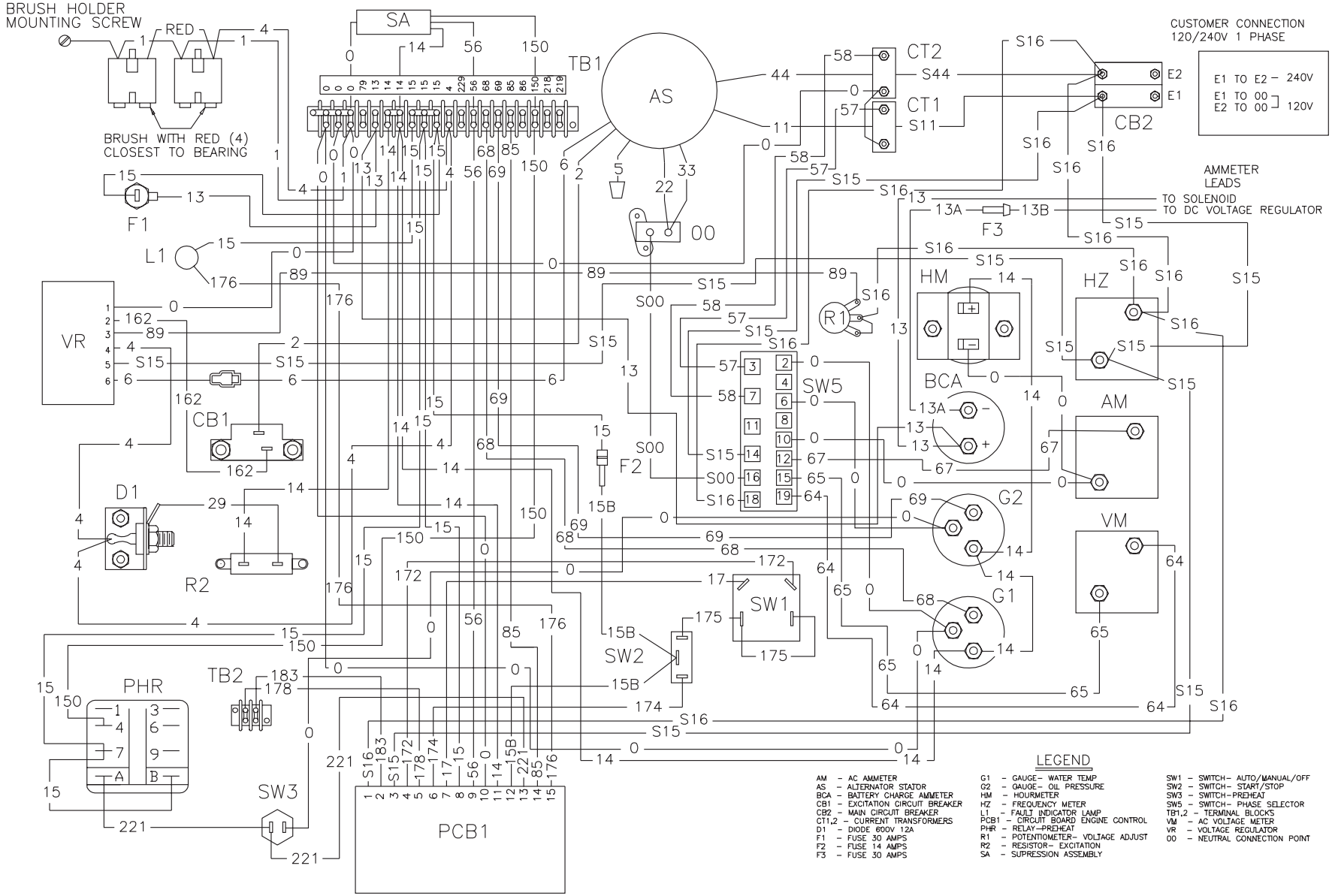


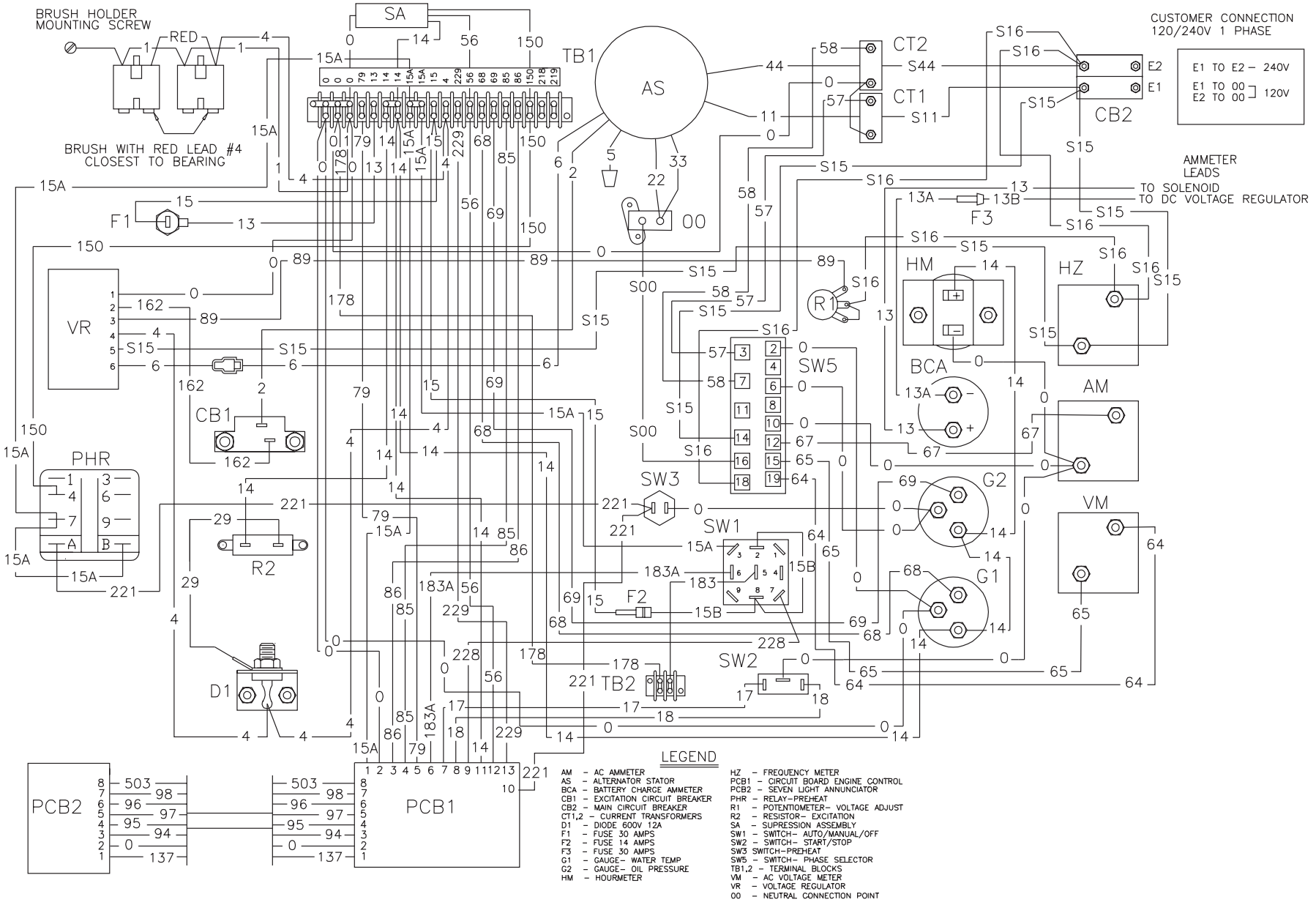
CUSTOMER CONNECTION
120/240V 1–PHASE

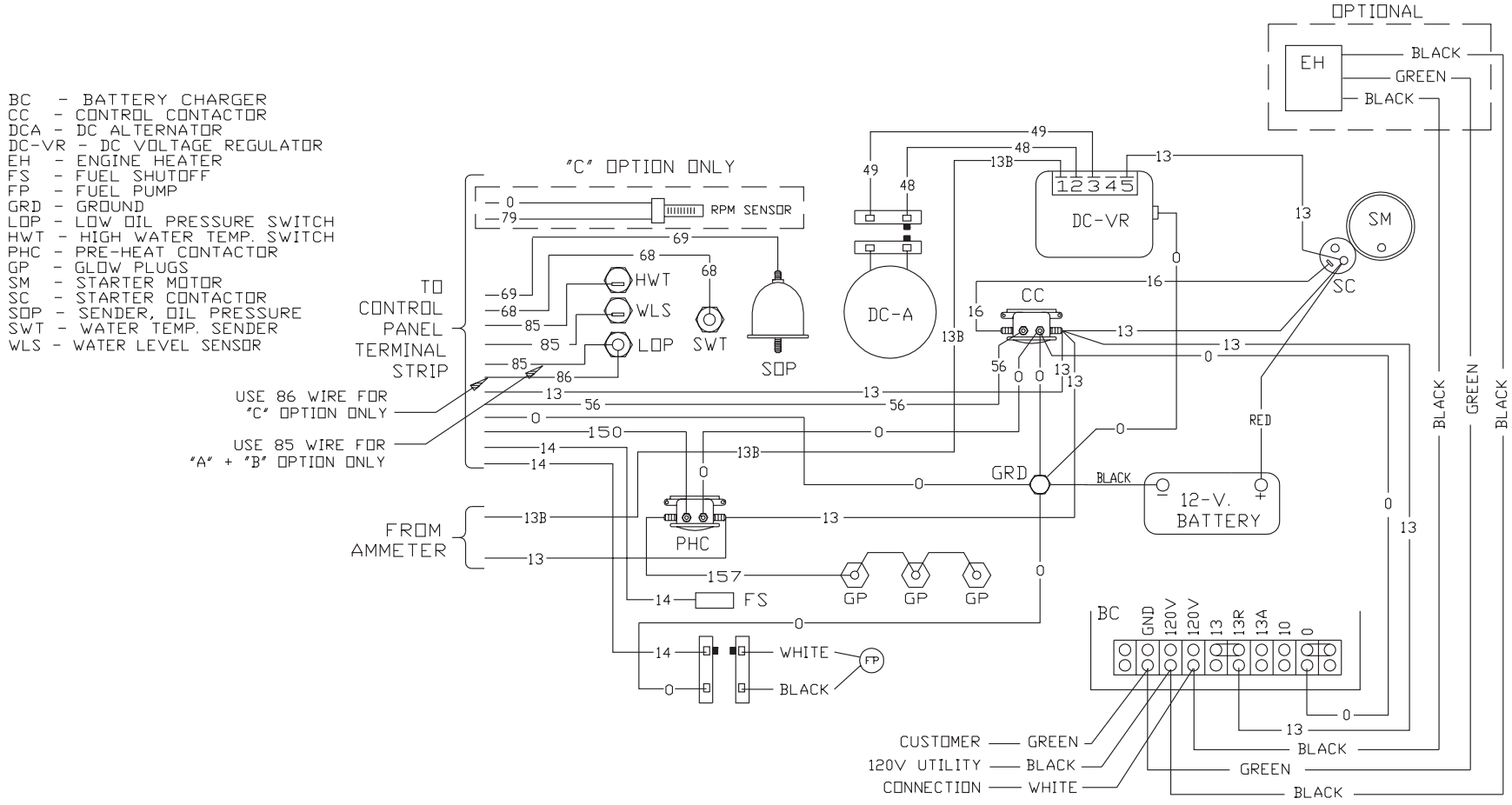
LEGEND

A – AC AMMETER
ALR – ALARM RELAY
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2 – CURRENT TRANSFORMER
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH COOLANT TEMPERATURE
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB 1– CIRCUIT BOARD ENGINE CONTROL
PCB 2– 6 LIGHT ANNUNCIATOR
PHR – RELAY–PREHEAT
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– EXCITATION
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH–PREHEAT
SW4 – SWITCH– TEST/RESET
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR

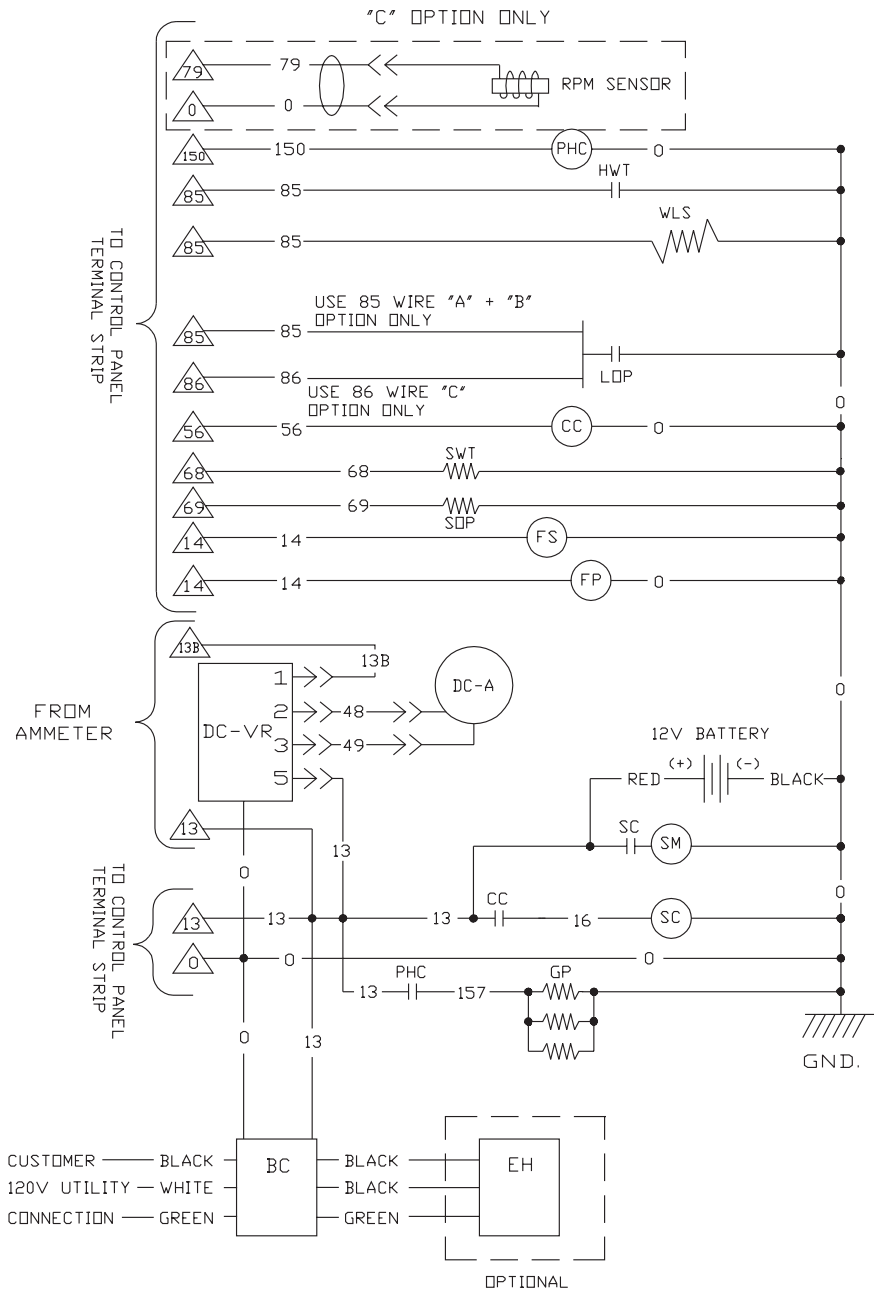

BRUSH HOLDER MOUNTING SCREW
RED
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
SA
TB1
AS
CB2
CUSTOMER CONNECTION
120/240V 1 PHASE
E1 TO E2 – 240V
E1 TO 00] 120V
E2 TO 00]
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F1
F2
F3
L1
VR
R1
HM
BCA
CB1
SW3
SW1
SW2
G1
G2
D1
R2
PHR
TB2
PCB1
00
LEGEND
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – FAULT INDICATOR LAMP
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PHR – RELAY– PREHEAT
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– EXCITATION
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH–PREHEAT
TB1,2 – TERMINAL BLOCKS
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT


BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED (4) CLOSEST TO BEARING
SA
TB1
AS
CT1
CT2
CB2
CB1
F1
F2
F3
L1
VR
R1
SW1
SW2
SW3
SW5
HM
HZ
BCA
AM
VM
G1
G2
D1
R2
PHR
TB2
PCB1
00
CUSTOMER CONNECTION
120/240V 1 PHASE
E1 TO E2 — 240V
E1 TO 00
E2 TO 00 — 120V
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
LEGEND
AM — AC AMMETER
AS — ALTERNATOR STATOR
BCA — BATTERY CHARGE AMMETER
CB1 — EXCITATION CIRCUIT BREAKER
CB2 — MAIN CIRCUIT BREAKER
CT1,2 — CURRENT TRANSFORMERS
D1 — DIODE 600V 12A
F1 — FUSE 30 AMPS
F2 — FUSE 14 AMPS
F3 — FUSE 30 AMPS
G1 — GAUGE— WATER TEMP
G2 — GAUGE— OIL PRESSURE
HM — HOURMETER
HZ — FREQUENCY METER
L1 — FAULT INDICATOR LAMP
PCB1 — CIRCUIT BOARD ENGINE CONTROL
PHR — RELAY—PREHEAT
R1 — POTENTIOMETER— VOLTAGE ADJUST
R2 — RESISTOR— EXCITATION
SA — SUPRESSION ASSEMBLY
SW1 — SWITCH— AUTO/MANUAL/OFF
SW2 — SWITCH— START/STOP
SW3 — SWITCH—PREHEAT
SW5 — SWITCH— PHASE SELECTOR
TB1,2 — TERMINAL BLOCKS
VM — AC VOLTAGE METER
VR — VOLTAGE REGULATOR
00 — NEUTRAL CONNECTION POINT

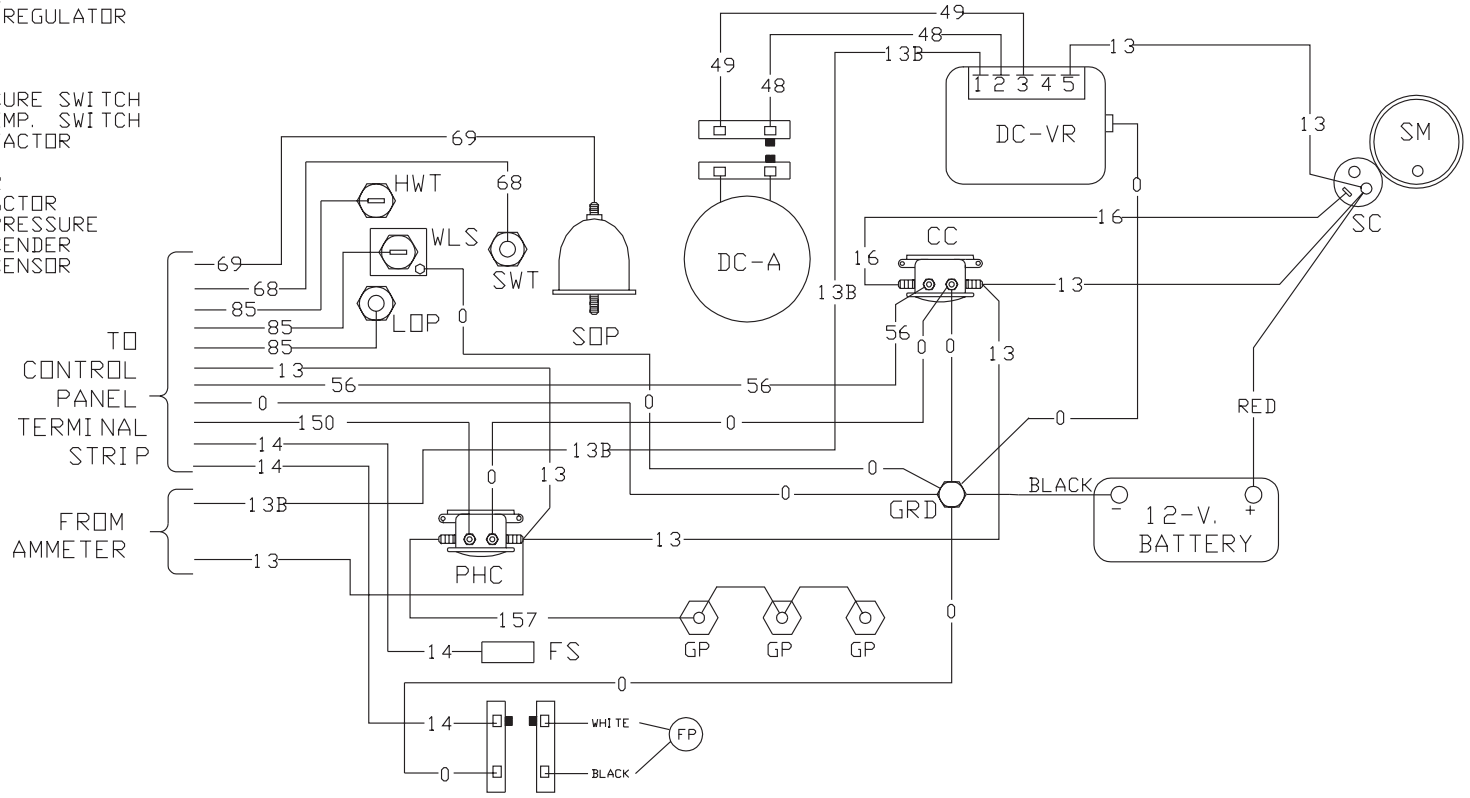

BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
CUSTOMER CONNECTION 120/240V 1 PHASE
E1 TO E2 – 240V
E1 TO 00 E2 TO 00 120V
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
SA
TB1
AS
CT1
CT2
CB2
F1
F2
F3
00
VR
CB1
PHR
R1
R2
SW1
SW2
SW3
SW5
HM
HZ
BCA
AM
VM
G1
G2
D1
TB2
PCB1
PCB2
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – SEVEN LIGHT ANNUNCIATOR
PHR – RELAY–PREHEAT
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– EXCITATION
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 SWITCH–PREHEAT
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT

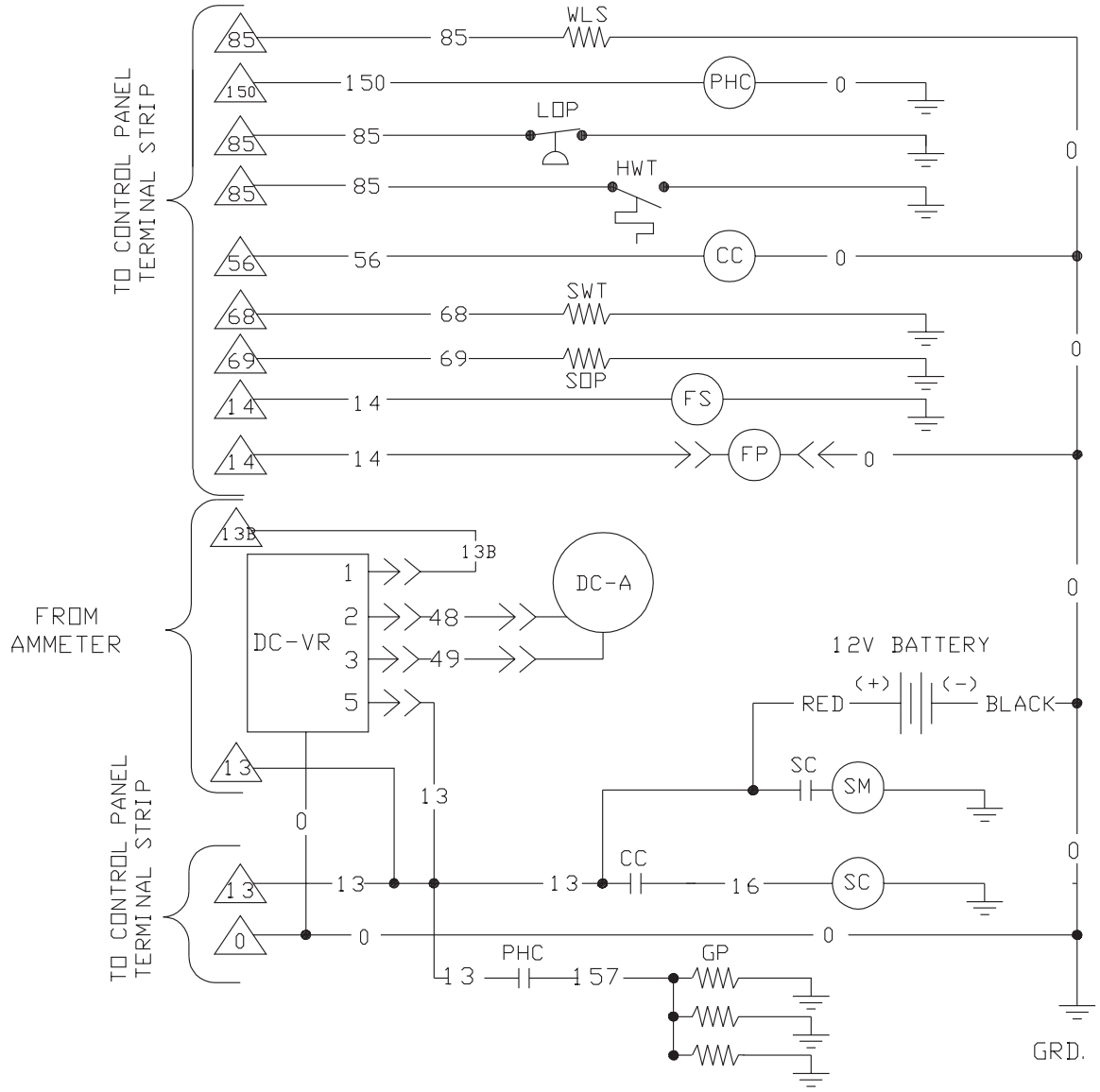

BC - BATTERY CHARGER
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
EH - ENGINE HEATER
FS - FUEL SHUTOFF
FP - FUEL PUMP
GRD - GROUND
LOP - LOW OIL PRESSURE SWITCH
HWT - HIGH WATER TEMP. SWITCH
PHC - PRE-HEAT CONTACTOR
GP - GLOW PLUGS
SM - STARTER MOTOR
SC - STARTER CONTACTOR
SOP - SENDER, OIL PRESSURE
SWT - WATER TEMP. SENDER
WLS - WATER LEVEL SENSOR
OPTIONAL
EH
BLACK
GREEN
BLACK
"C" OPTION ONLY
RPM SENSOR
TO CONTROL PANEL TERMINAL STRIP
HWT
WLS
LOP
SWT
SOP
USE 86 WIRE FOR "C" OPTION ONLY
USE 85 WIRE FOR "A" + "B" OPTION ONLY
FROM AMMETER
PHC
FS
GP
GP
GP
WHITE
BLACK
FP
DC-A
DC-VR
1 2 3 4 5
SM
SC
CC
GRD
BLACK
12-V. BATTERY
RED
BC
GND
120V
120V
13
13R
13A
10
0
CUSTOMER
120V UTILITY
CONNECTION
GREEN
BLACK
WHITE
BLACK
GREEN
BLACK

BC - BATTERY CHARGER
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
EH - ENGINE HEATER
FS - FUEL SHUTOFF
FP - FUEL PUMP
GP - GLOW PLUG
GRD - GROUND
HWT - HIGH WATER TEMP SWITCH
LOP - LOW OIL PRESSURE SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SWT - WATER TEMP. SENDER
PHC - PRE-HEAT CONTACTOR
SOP - SENDER - OIL PRESSURE
WLS - WATER LEVEL SENSOR

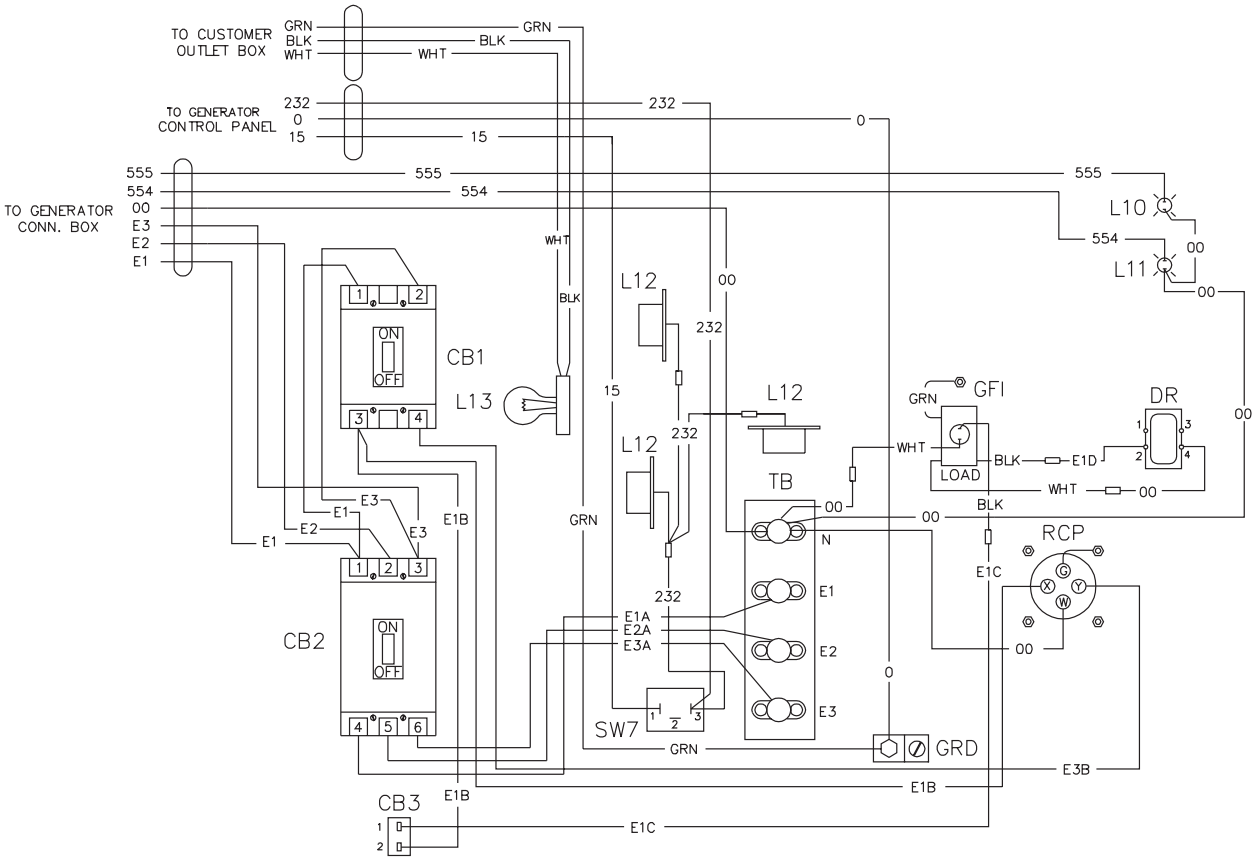


CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
FS - FUEL SHUTOFF
FP - FUEL PUMP
GRD - GROUND
LOP - LOW OIL PRESSURE SWITCH
HWT - HIGH WATER TEMP. SWITCH
PHC - PRE-HEAT CONTACTOR
GP - GLOW PLUGS
SM - STARTER MOTOR
SC - STARTER CONTACTOR
SOP - SENDER, OIL PRESSURE
SWT - WATER TEMP. SENDER
WLS - WATER LEVEL SENSOR





CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
FS - FUEL SHUTOFF
FP - FUEL PUMP
GP - GLOW PLUG
GRD - GROUND
HWT - HIGH WATER TEMP SWITCH
LOP - LOW OIL PRESSURE SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SWT - WATER TEMP. SENDER
PHC - PRE-HEAT CONTACTOR
SOP - SENDER - OIL PRESSURE
WLS - WATER LEVEL SENSOR

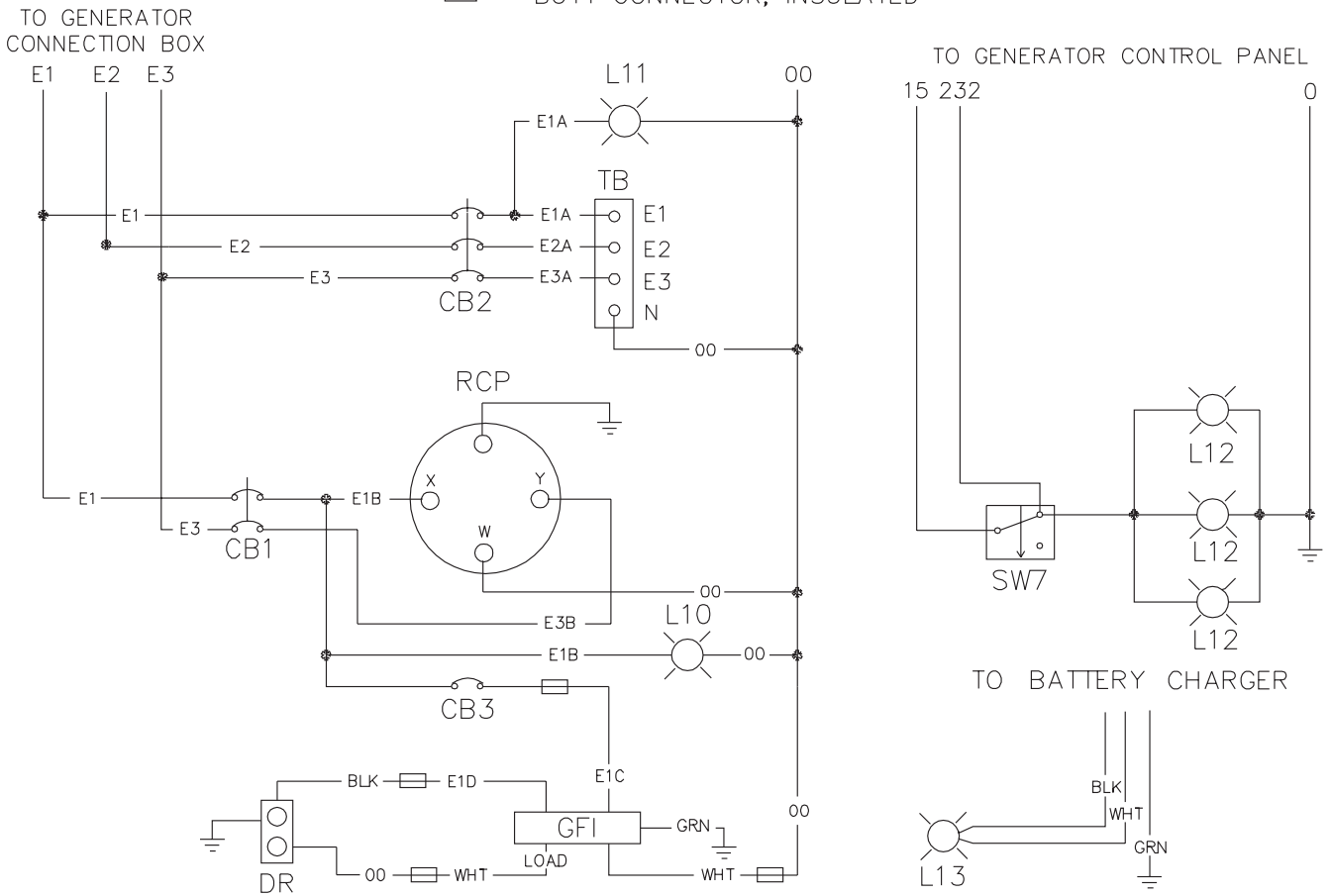


LEGEND

CB1 – CIRCUIT BREAKER, 50A @ 480V AC, 3–POLE
CB2 – CIRCUIT BREAKER, 200A @ 480V AC, 3–POLE
CB3 – CIRCUIT BREAKER, 20A SINGLE POLE
DR – DUPLEX RECEPTACLE, 20A @ 120V AC
GFI – GROUND FAULT INTERUPTER OUTLET
L10 – LAMP, INDICATOR, 240V AC, 1&3 PHASE
L11 – LAMP, INDICATOR, 208V AC, 3–PHASE
L12 – LAMP, 12V DC
L13 – LAMP, OUTLET BOX
N – NEUTRAL CONNECTIONS
RCP – RECEPTACLE, 60A @ 125/250V AC, 1–PHASE
SW7 – SWITCH, DOOR
TB – TERMINAL BOARD, CUSTOMER CONNECTION
– BUTT CONNECTOR, INSULATED

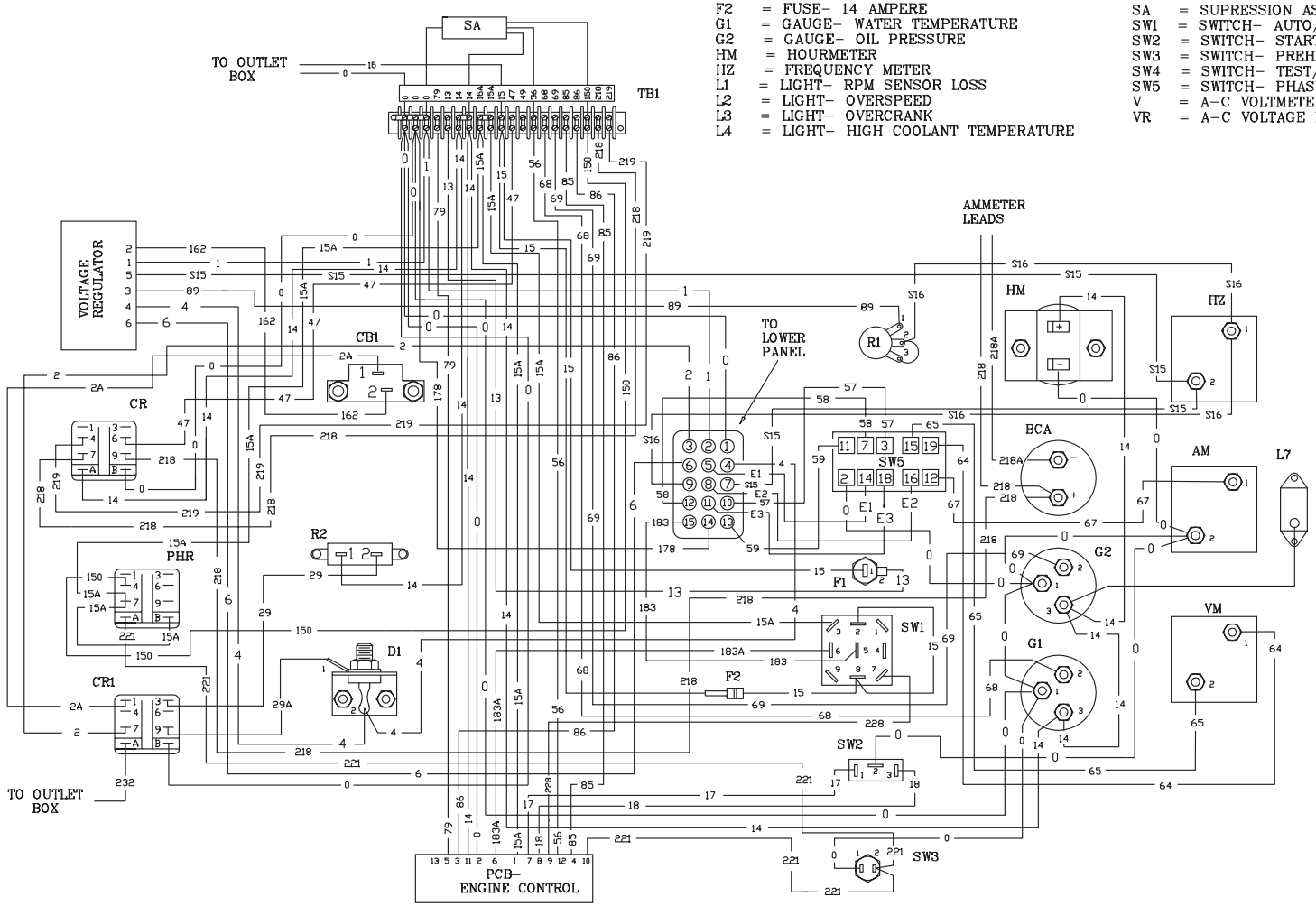
LEGEND

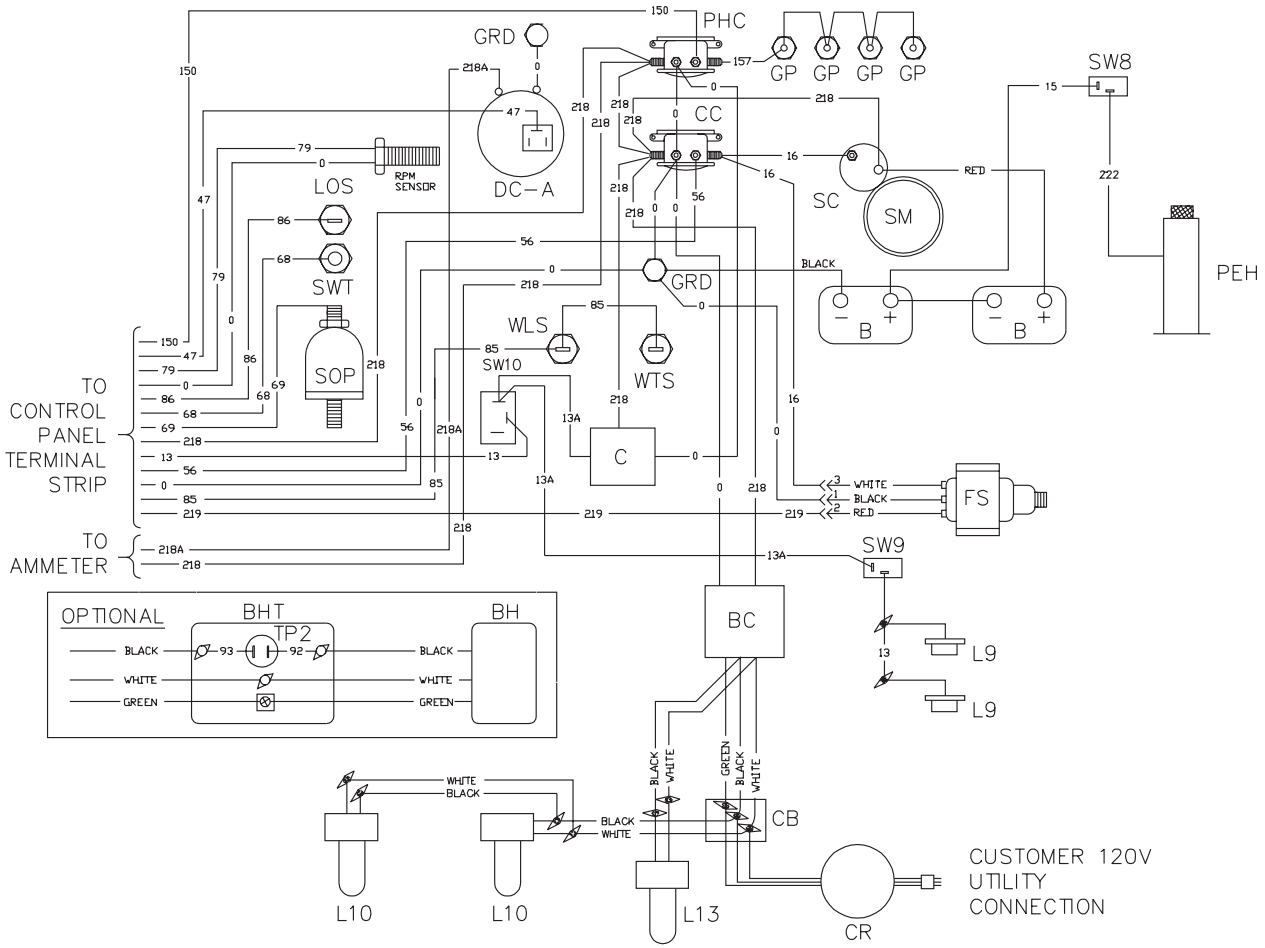
CB1 – CIRCUIT BREAKER, 50A @ 480V AC, 3–POLE
CB2 – CIRCUIT BREAKER, 200A @ 480V AC, 3–POLE
CB3 – CIRCUIT BREAKER, 20A SINGLE POLE
DR – DUPLEX RECEPTACLE, 20A @ 120V AC
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L10 – LAMP INDICATOR, 240V AC, 1&3 PHASE
L11 – LAMP INDICATOR, 208V AC, 3–PHASE
L12 – LAMP 12V DC
L13 – LAMP, OUTLET BOX
N – NEUTRAL CONNECTIONS
RCP – RECEPTACLE, 60A @ 125/250V AC, 1–PHASE
SW7 – SWITCH, DOOR
TB – TERMINAL BOARD, CUSTOMER CONNECTION
– BUTT CONNECTOR, INSULATED



LEGEND

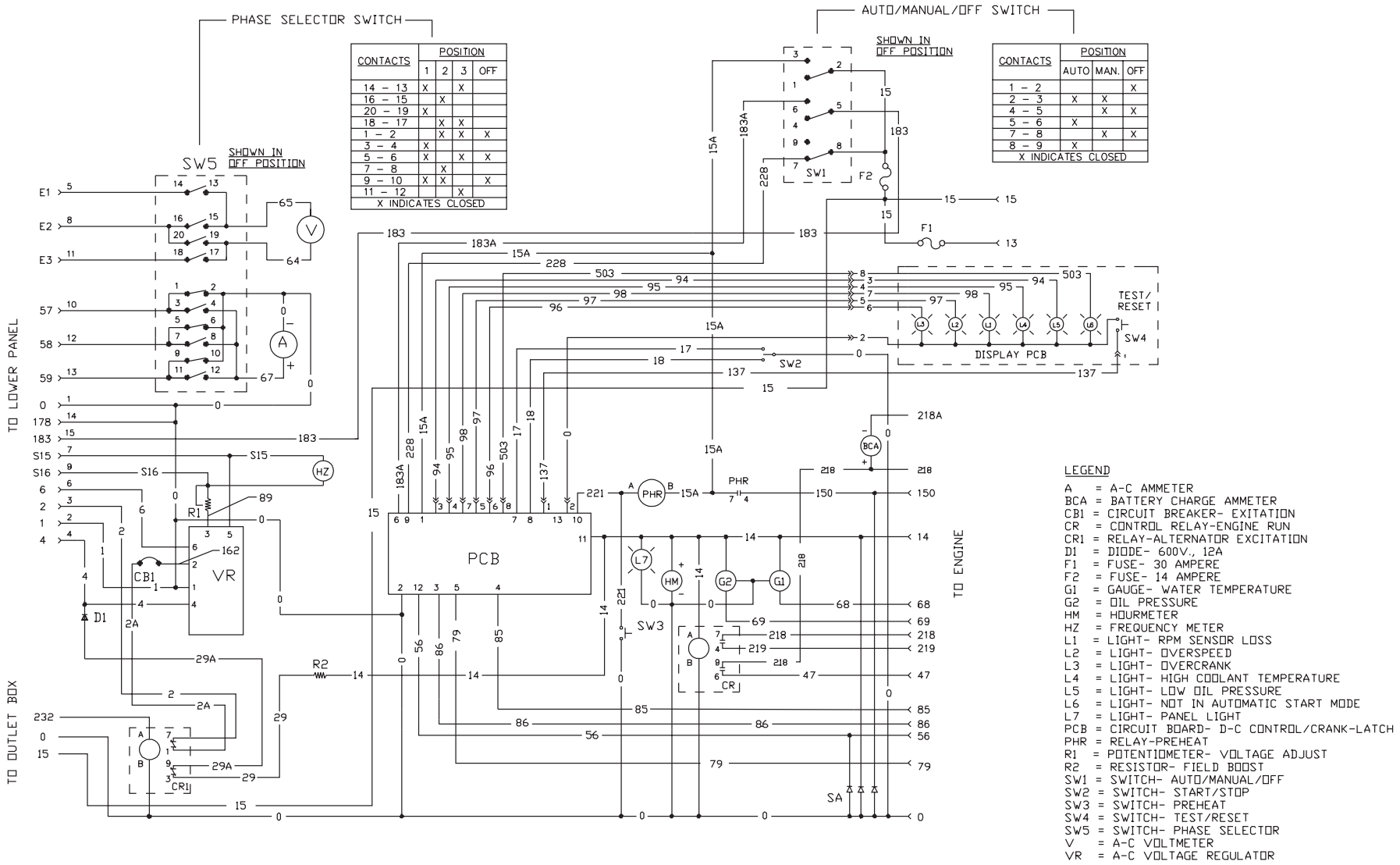
A	= A-C AMMETER	L5	= LIGHT- LOW OIL PRESSURE
BCA	= BATTERY CHARGE AMMETER	L6	= LIGHT- NOT IN AUTOMATIC START MODE
CB1	= CIRCUIT BREAKER- EXCITATION	L7	= LIGHT- PANEL
CR	= CONTROL RELAY- ENGINE RUN	PCB	= CIRCUIT BOARD- D-C CONTROL/CRANK-LATCH
CR1	= RELAY- ALTERNATOR EXCITATION	PHR	= RELAY- PREHEAT
D1	= DIODE- 600 VOLTS, 12 AMP	R1	= POTENTIOMETER- VOLTAGE ADJUST
F1	= FUSE- 30 AMPERE	R2	= RESISTOR- FIELD BOOST
F2	= FUSE- 14 AMPERE	SA	= SUPRESSION ASSEMBLY
G1	= GAUGE- WATER TEMPERATURE	SW1	= SWITCH- AUTO/MANUAL/OFF
G2	= GAUGE- OIL PRESSURE	SW2	= SWITCH- START/STOP
HM	= HOURMETER	SW3	= SWITCH- PREHEAT
HZ	= FREQUENCY METER	SW4	= SWITCH- TEST/RESET
L1	= LIGHT- RPM SENSOR LOSS	SW5	= SWITCH- PHASE SELECTOR
L2	= LIGHT- OVERSPEED	V	= A-C VOLTMETER
L3	= LIGHT- OVERCRANK	VR	= A-C VOLTAGE REGULATOR
L4	= LIGHT- HIGH COOLANT TEMPERATURE		





LEGEND

B	– BATTERY 12-V.
BC	– BATTERY CHARGER
BH	– BATTERY HEATER
BHT	– BATTERY HEATER THERMOSTAT
C	– CONVERTER 24 TO 12-V. DC
CB	– CONNECTION BOX 120V
CC	– CONTROL CONTACTOR
CR	– CORD REEL
DCA	– DC ALTERNATOR
FS	– FUEL SOLENOID
GP	– GLOW PLUG
GRD	– GROUND
LOS	– LOW OIL SWITCH
L9	– LAMP-COMPARTMENT LIGHT 12VDC
L10	– LAMP-COMPARTMENT LIGHT 120VAC
L13	– LAMP-OUTLET BOX 120VAC
PEH	– PROPANE ENGINE HEATER
PHC	– PREHEAT CONTACTOR
SC	– STARTER CONTACTOR
SM	– STARTER MOTOR
SOP	– SENDER-OIL PRESSURE
SWT	– SENDER-WATER TEMPERATURE
SW8	– SWITCH-IGNITOR
SW9	– SWITCH-COMPARTMENT LIGHTS
SW10	– SWITCH-RADIATOR DOOR
TP2	– THERMAL PROTECTOR
WLS	– WATER LEVEL SENSOR
WTS	– WATER TEMPERATURE SWITCH
	– WIRE NUT



CONTACTS	POSITION			
	1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

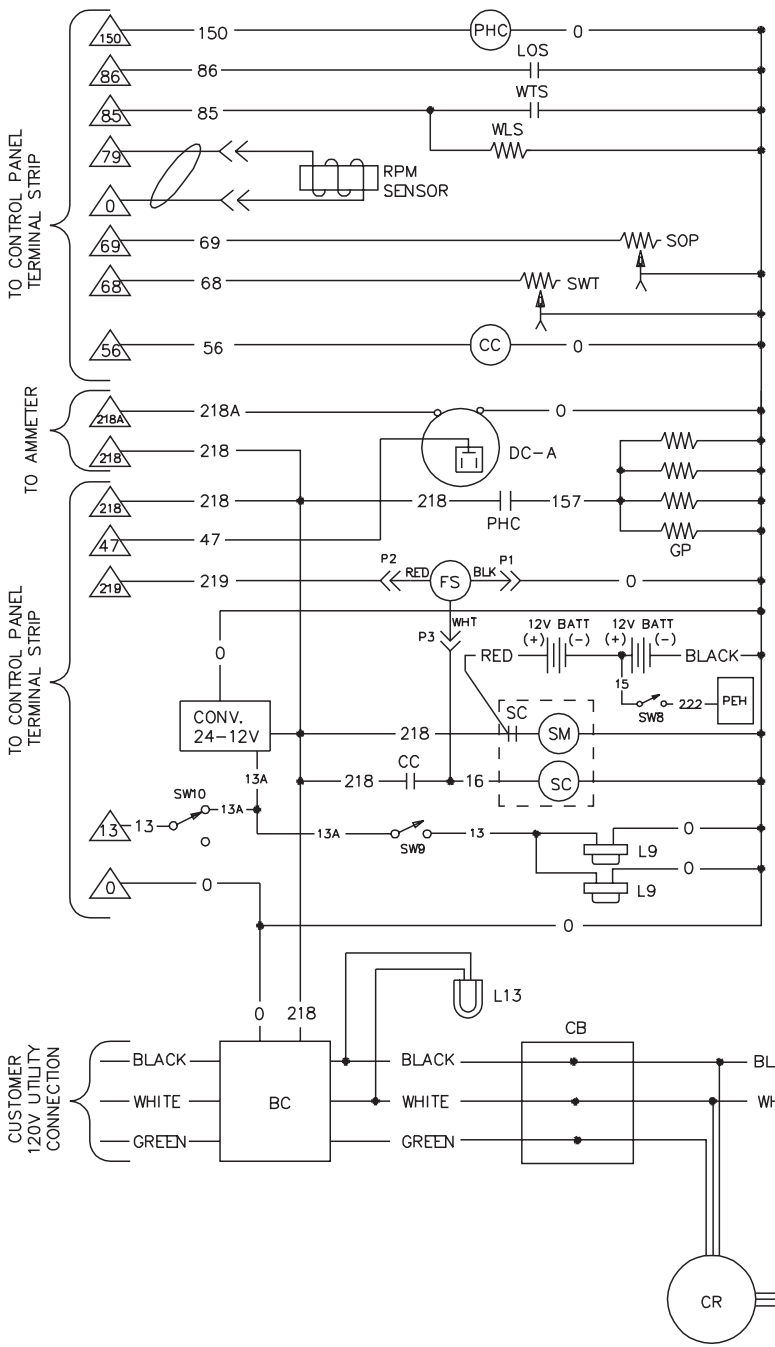
X INDICATES CLOSED

CONTACTS	POSITION		
	AUTO	MAN.	OFF
1 – 2			X
2 – 3	X	X	
4 – 5		X	X
5 – 6	X		
7 – 8		X	X
8 – 9	X		

X INDICATES CLOSED

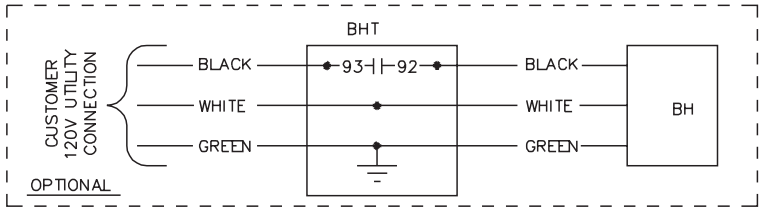
LEGEND

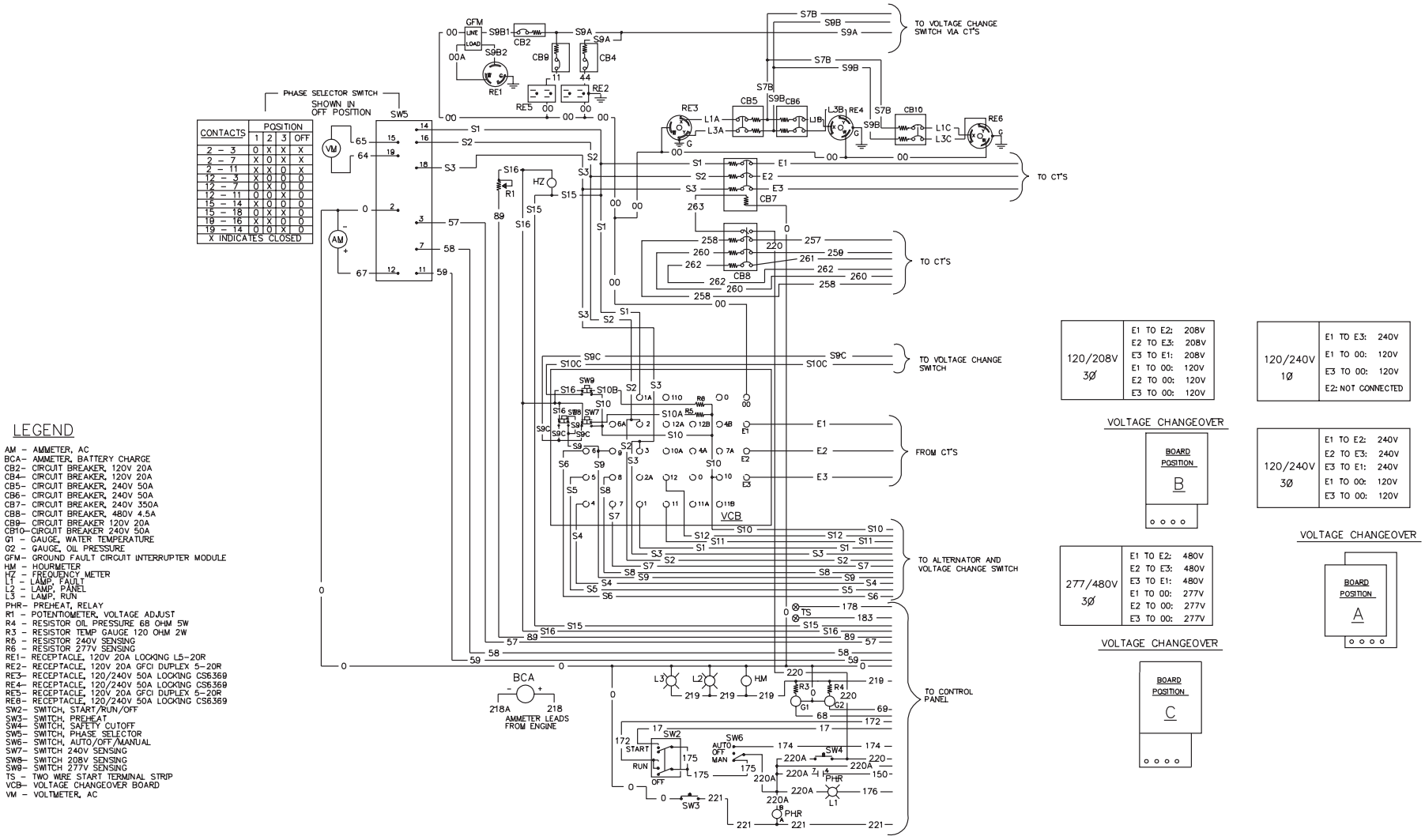
A = A-C AMMETER
BCA = BATTERY CHARGE AMMETER
CB1 = CIRCUIT BREAKER- EXITATION
CR = CONTROL RELAY-ENGINE RUN
CR1 = RELAY-ALTERNATOR EXCITATION
D1 = DIODE- 600V., 12A
F1 = FUSE- 30 AMPERE
F2 = FUSE- 14 AMPERE
G1 = GAUGE- WATER TEMPERATURE
G2 = OIL PRESSURE
HM = HOURMETER
HZ = FREQUENCY METER
L1 = LIGHT- RPM SENSOR LOSS
L2 = LIGHT- OVERSPEED
L3 = LIGHT- OVERCRANK
L4 = LIGHT- HIGH COOLANT TEMPERATURE
L5 = LIGHT- LOW OIL PRESSURE
L6 = LIGHT- NOT IN AUTOMATIC START MODE
L7 = LIGHT- PANEL LIGHT
PCB = CIRCUIT BOARD- D-C CONTROL/CRANK-LATCH
PHR = RELAY-PREHEAT
R1 = POTENTIOMETER- VOLTAGE ADJUST
R2 = RESISTOR- FIELD BOOST
SW1 = SWITCH- AUTO/MANUAL/OFF
SW2 = SWITCH- START/STOP
SW3 = SWITCH- PREHEAT
SW4 = SWITCH- TEST/RESET
SW5 = SWITCH- PHASE SELECTOR
V = A-C VOLTMETER
VR = A-C VOLTAGE REGULATOR



LEGEND

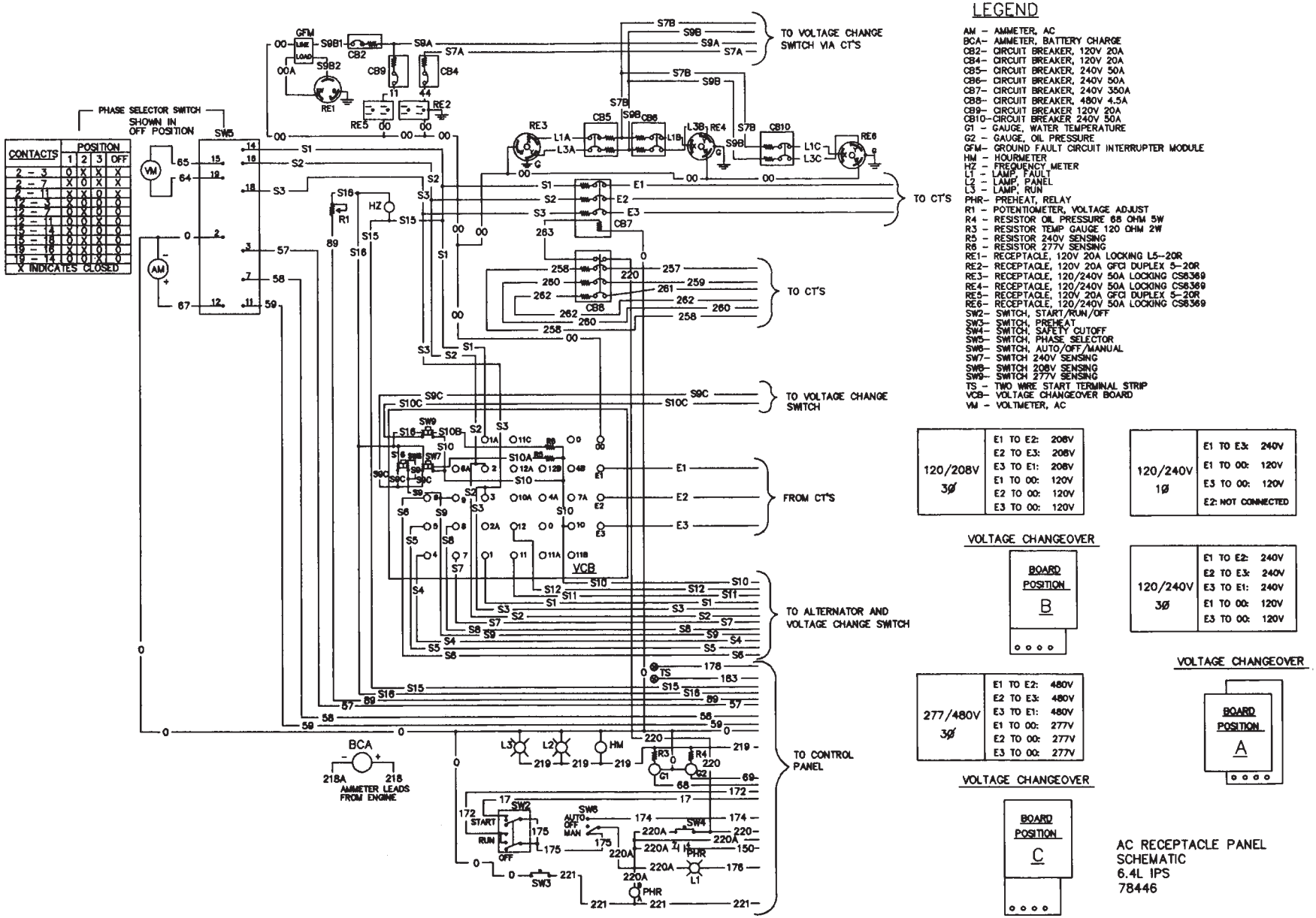
B	- BATTERY 12-V
BC	- BATTERY CHARGER
BH	- BATTERY HEATER
BHT	- BATTERY HEATER THERMOSTAT
C	- CONVERTER 24 TO 12-V DC
CB	- CONNECTION BOX 120V
CC	- CONTROL CONTACTOR
CR	- CORD REEL
DCA	- DC ALTERNATOR
FS	- FUEL SOLENOID
GP	- GLOW PLUG
GRD	- GROUND
LOS	- LOW OIL SWITCH
L9	- LAMP-COMPARTMENT LIGHT 12V DC
L10	- LAMP-COMPARTMENT LIGHTS 120V AC
L13	- LAMP-OUTLET BOX 120V AC
PEH	- PROPANE ENGINE HEATER
PHC	- PREHEAT CONTACTOR
SC	- STARTER CONTACTOR
SM	- STARTER MOTOR
SOP	- SENDER-OIL PRESSURE
SWT	- SENDER-WATER TEMPERATURE
SW8	- SWITCH-IGNITOR
SW9	- SWITCH-COMPARTMENT LIGHTS
SW10	- SWITCH-RADIATOR DOOR
TP2	- THERMAL PROTECTOR
WLS	- WATER LEVEL SENSOR
WTS	- WATER TEMPERATURE SWITCH

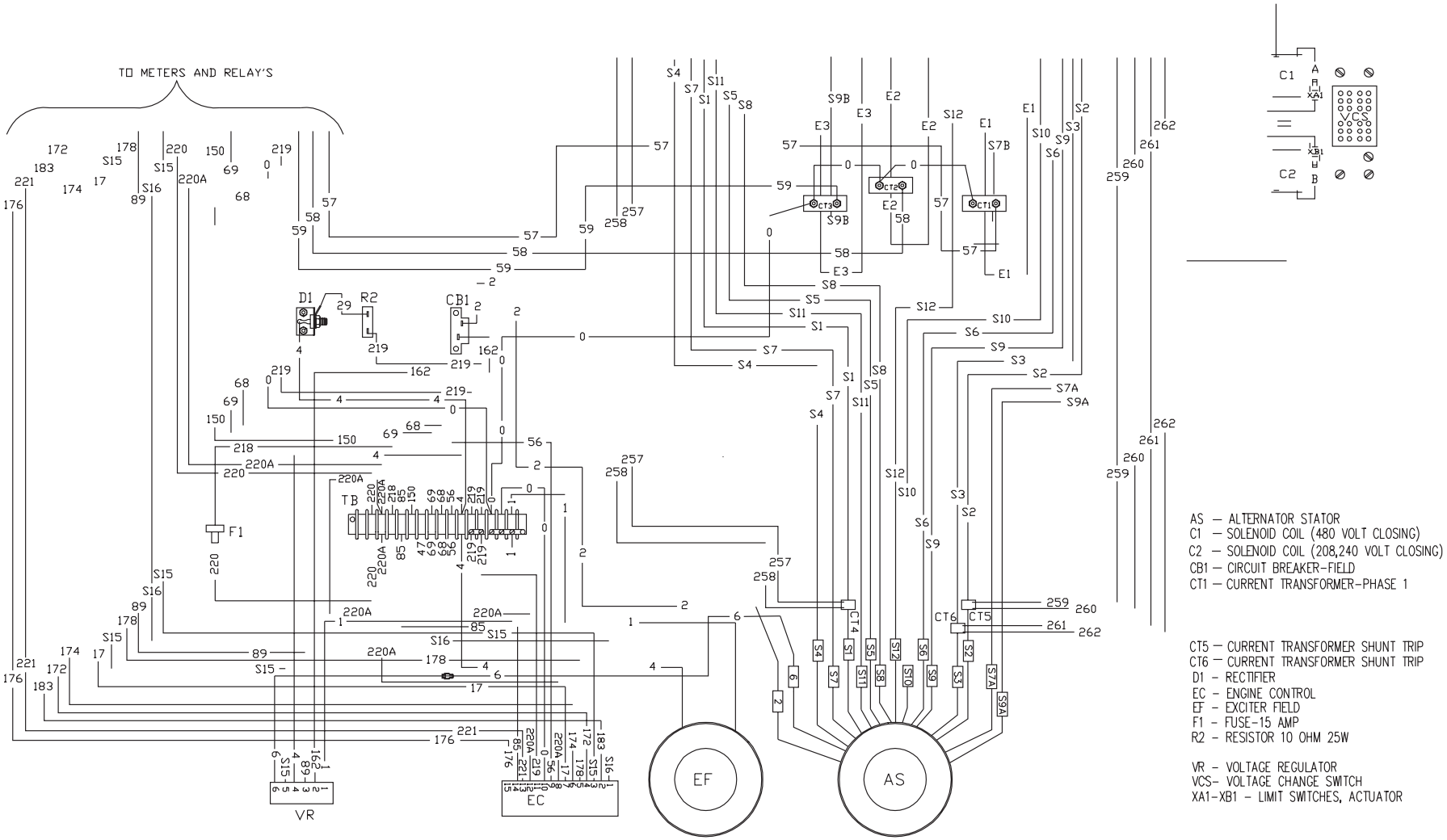




LEGEND

AM – AMMETER, AC
BCA– AMMETER, BATTERY CHARGE
CB2– CIRCUIT BREAKER, 120V 20A
CB4– CIRCUIT BREAKER, 120V 20A
CB5– CIRCUIT BREAKER, 240V 50A
CB6– CIRCUIT BREAKER, 240V 50A
CB7– CIRCUIT BREAKER, 240V 350A
CB8– CIRCUIT BREAKER, 480V 4.5A
CB9– CIRCUIT BREAKER 120V 20A
CB10–CIRCUIT BREAKER 240V 50A
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
GFM– GROUND FAULT CIRCUIT INTERRUPTER MODULE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT, RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
R4 – RESISTOR OIL PRESSURE 68 OHM 5W
R3 – RESISTOR TEMP GAUGE 120 OHM 2W
R5 – RESISTOR 240V SENSING
R6 – RESISTOR 277V SENSING
RE1– RECEPTACLE, 120V 20A LOCKING L5–20R
RE2– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE3– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE5– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE6– RECEPTACLE, 120/240V 50A LOCKING CS6369
SW2– SWITCH, START/RUN/OFF
SW3– SWITCH, PREHEAT
SW4– SWITCH, SAFETY CUTOFF
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
SW7– SWITCH 240V SENSING
SW8– SWITCH 208V SENSING
SW9– SWITCH 277V SENSING
TS – TWO WIRE START TERMINAL STRIP
VCB– VOLTAGE CHANGEOVER BOARD
VM – VOLTMETER, AC

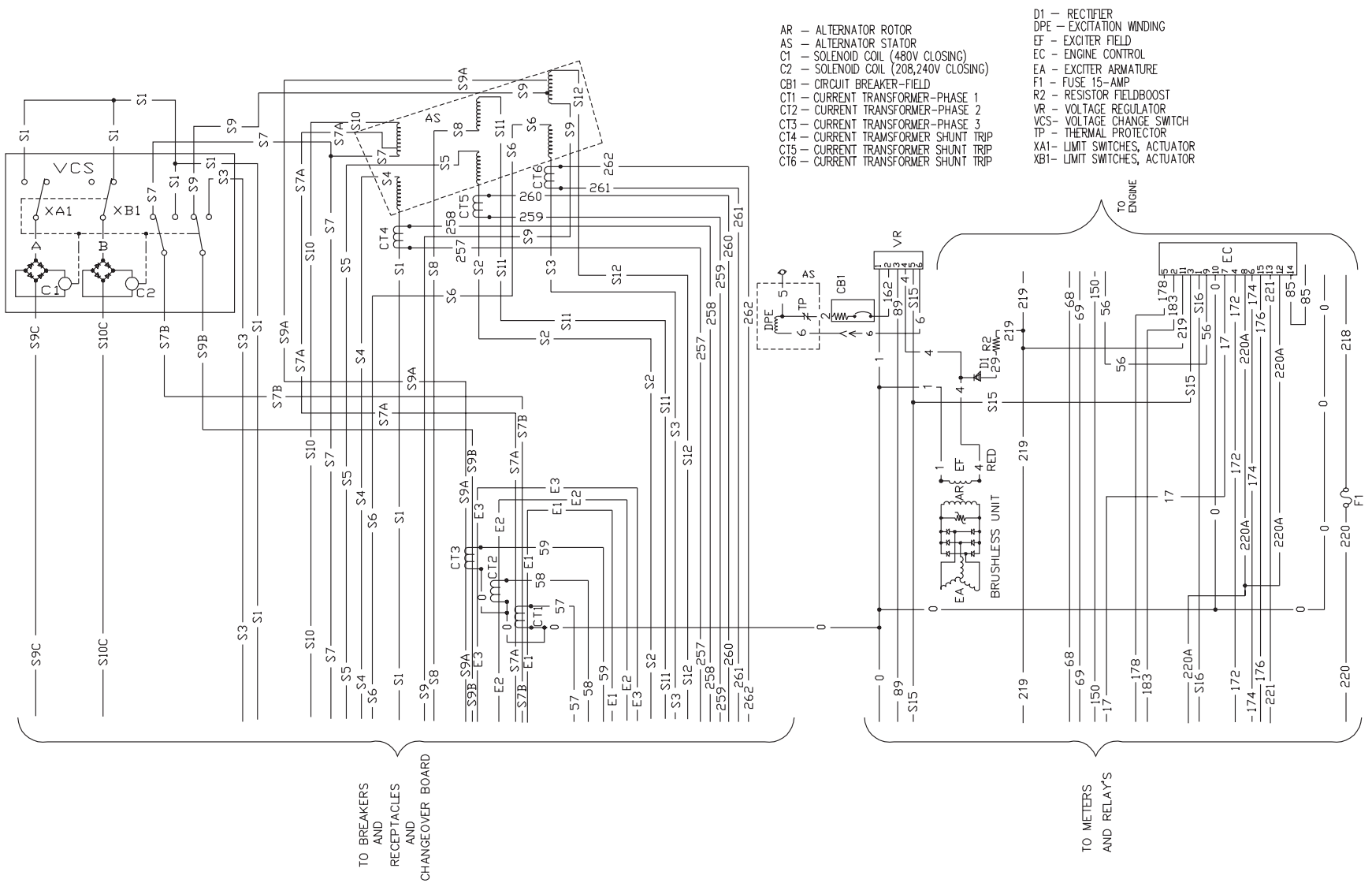

LEGEND
AM – AMMETER, AC
BCA– AMMETER, BATTERY CHARGE
CB2– CIRCUIT BREAKER, 120V 20A
CB4– CIRCUIT BREAKER, 120V 20A
CB5– CIRCUIT BREAKER, 240V 50A
CB6– CIRCUIT BREAKER, 240V 50A
CB7– CIRCUIT BREAKER, 240V 350A
CB8– CIRCUIT BREAKER, 480V 4.5A
CB9– CIRCUIT BREAKER 120V 20A
CB10–CIRCUIT BREAKER 240V 50A
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
GFM– GROUND FAULT CIRCUIT INTERRUPTER MODULE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT, RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
R4 – RESISTOR OIL PRESSURE 68 OHM 5W
R3 – RESISTOR TEMP GAUGE 120 OHM 2W
R5 – RESISTOR 240V SENSING
R6 – RESISTOR 277V SENSING
RE1– RECEPTACLE, 120V 20A LOCKING L5–20R
RE2– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE3– RECEPTACLE, 120/240V 50A LOCKING CS8369
RE4– RECEPTACLE, 120/240V 50A LOCKING CS8369
RE5– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE6– RECEPTACLE, 120/240V 50A LOCKING CS8369
SW2– SWITCH, START/RUN/OFF
SW3– SWITCH, PREHEAT
SW4– SWITCH, SAFETY CUTOFF
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
SW7– SWITCH 240V SENSING
SW8– SWITCH 208V SENSING
SW9– SWITCH 277V SENSING
TS – TWO WIRE START TERMINAL STRIP
VCB– VOLTAGE CHANGEOVER BOARD
VM – VOLTMETER, AC
PHASE SELECTOR SWITCH SHOWN IN OFF POSITION
CONTACTS
POSITION 1 2 3 OFF
2 – 3 0 X X X
4 – 7 X 0 X X
6 – 11 X X 0 X
12 – 9 X 0 0 0
13 – 7 0 X 0 0
12 – 11 0 0 X 0
15 – 14 X 0 0 0
15 – 18 0 X X 0
19 – 18 X X 0 0
19 – 14 0 0 X 0
X INDICATES CLOSED
TO VOLTAGE CHANGE SWITCH VIA CT'S
TO CT'S
TO VOLTAGE CHANGE SWITCH
FROM CT'S
TO ALTERNATOR AND VOLTAGE CHANGE SWITCH
TO CONTROL PANEL
AMMETER LEADS FROM ENGINE
120/208V 3Ø
E1 TO E2: 208V
E2 TO E3: 208V
E3 TO E1: 208V
E1 TO 00: 120V
E2 TO 00: 120V
E3 TO 00: 120V
120/240V 1Ø
E1 TO E3: 240V
E1 TO 00: 120V
E3 TO 00: 120V
E2: NOT CONNECTED
VOLTAGE CHANGEOVER
BOARD POSITION B
120/240V 3Ø
E1 TO E2: 240V
E2 TO E3: 240V
E3 TO E1: 240V
E1 TO 00: 120V
E3 TO 00: 120V
277/480V 3Ø
E1 TO E2: 480V
E2 TO E3: 480V
E3 TO E1: 480V
E1 TO 00: 277V
E2 TO 00: 277V
E3 TO 00: 277V
VOLTAGE CHANGEOVER
BOARD POSITION A
VOLTAGE CHANGEOVER
BOARD POSITION C
AC RECEPTACLE PANEL
SCHEMATIC
6.4L IPS
78446

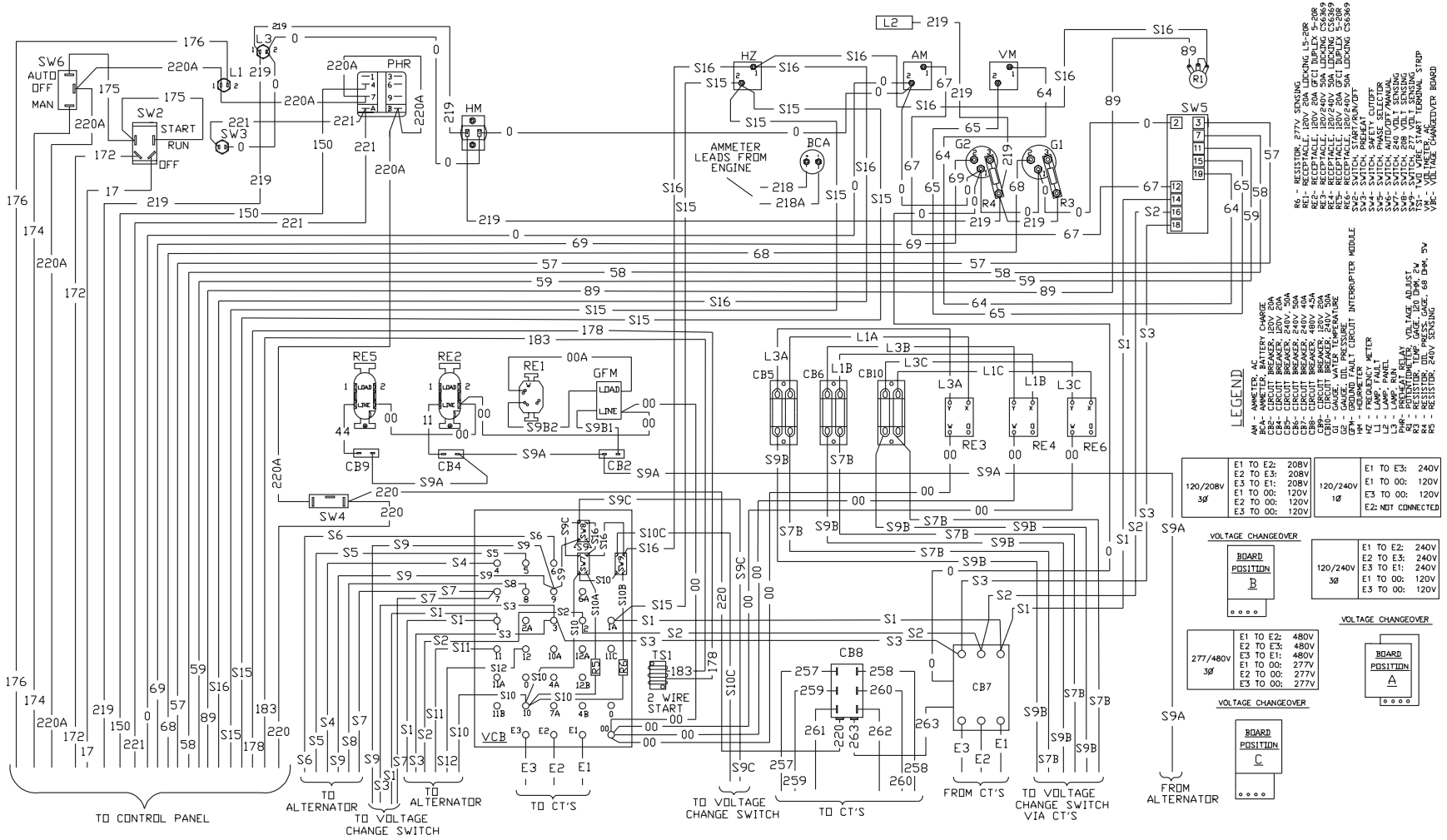


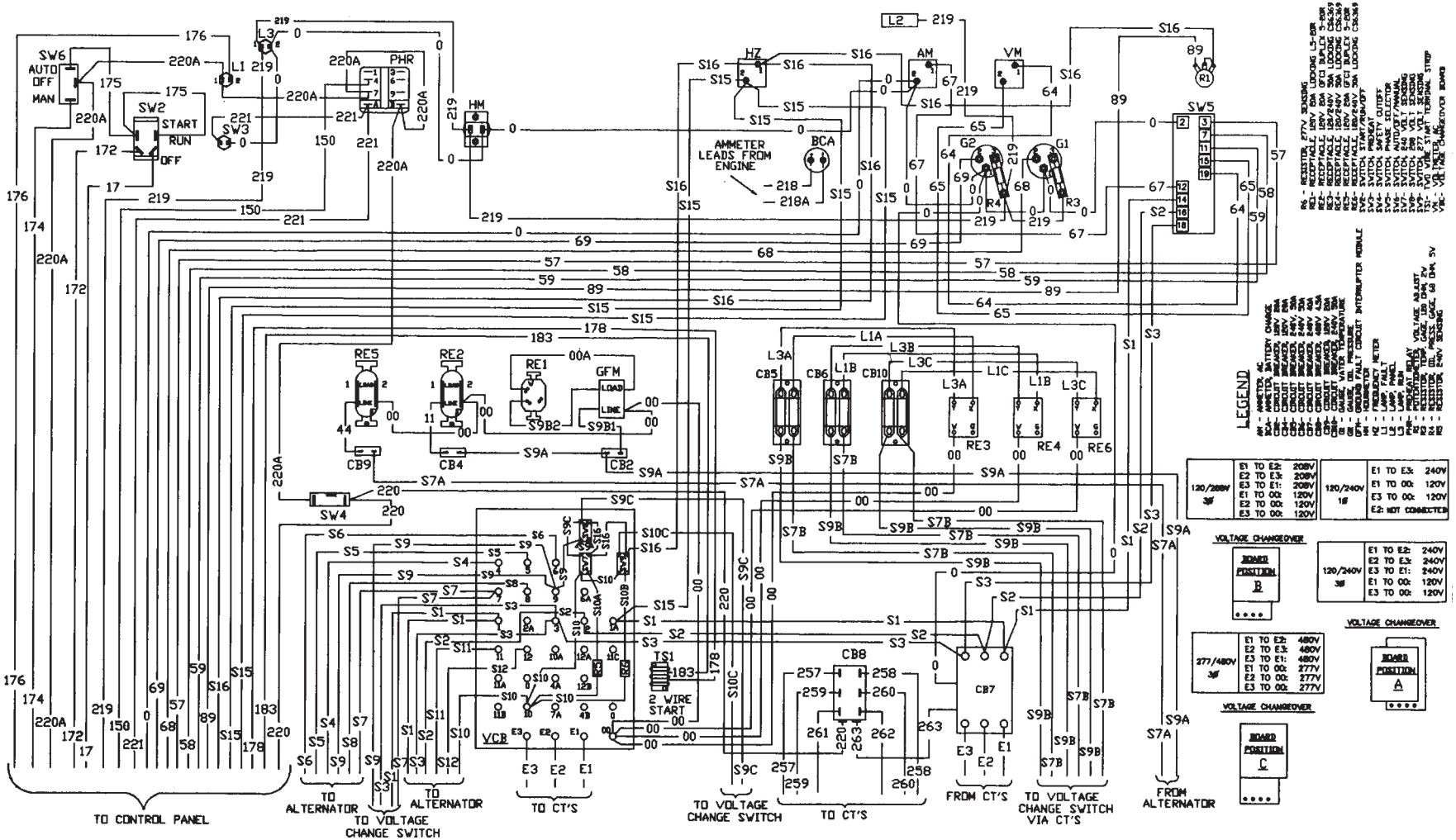
AS — ALTERNATOR STATOR
C1 — SOLENOID COIL (480 VOLT CLOSING)
C2 — SOLENOID COIL (208,240 VOLT CLOSING)
CB1 — CIRCUIT BREAKER-FIELD
CT1 — CURRENT TRANSFORMER-PHASE 1

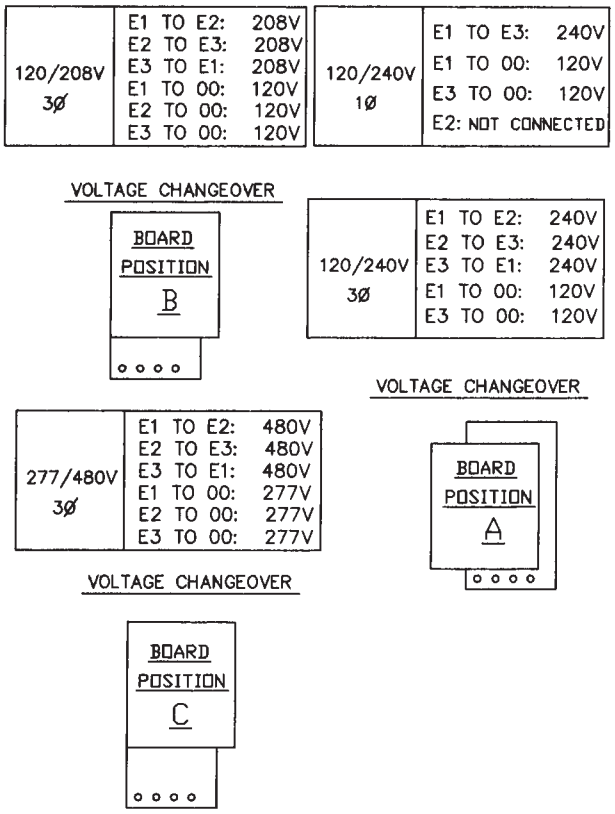
CT5 — CURRENT TRANSFORMER SHUNT TRIP
CT6 — CURRENT TRANSFORMER SHUNT TRIP
D1 - RECTIFIER
EC - ENGINE CONTROL
EF - EXCITER FIELD
F1 - FUSE-15 AMP
R2 - RESISTOR 10 OHM 25W

VR - VOLTAGE REGULATOR
VCS- VOLTAGE CHANGE SWITCH
XA1-XB1 - LIMIT SWITCHES, ACTUATOR


AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
C1 – SOLENOID COIL (480V CLOSING)
C2 – SOLENOID COIL (208,240V CLOSING)
CB1 – CIRCUIT BREAKER–FIELD
CT1 – CURRENT TRANSFORMER–PHASE 1
CT2 – CURRENT TRANSFORMER–PHASE 2
CT3 – CURRENT TRANSFORMER–PHASE 3
CT4 – CURRENT TRAMSFORMER SHUNT TRIP
CT5 – CURRENT TRANSFORMER SHUNT TRIP
CT6 – CURRENT TRANSFORMER SHUNT TRIP
D1 – RECTIFIER
DPE – EXCITATION WINDING
EF – EXCITER FIELD
EC – ENGINE CONTROL
EA – EXCITER ARMATURE
F1 – FUSE 15–AMP
R2 – RESISTOR FIELDBOOST
VR – VOLTAGE REGULATOR
VCS– VOLTAGE CHANGE SWITCH
TP – THERMAL PROTECTOR
XA1– LIMIT SWITCHES, ACTUATOR
XB1– LIMIT SWITCHES, ACTUATOR
VCS
XA1
XB1
C1
C2
CT1
CT2
CT3
CT4
CT5
CT6
AS
DPE
TP
CB1
VR
D1
R2
EF
AR
EA
EC
BRUSHLESS UNIT
RED
TO ENGINE
TO BREAKERS AND RECEPTACLES AND CHANGEOVER BOARD
TO METERS AND RELAY'S

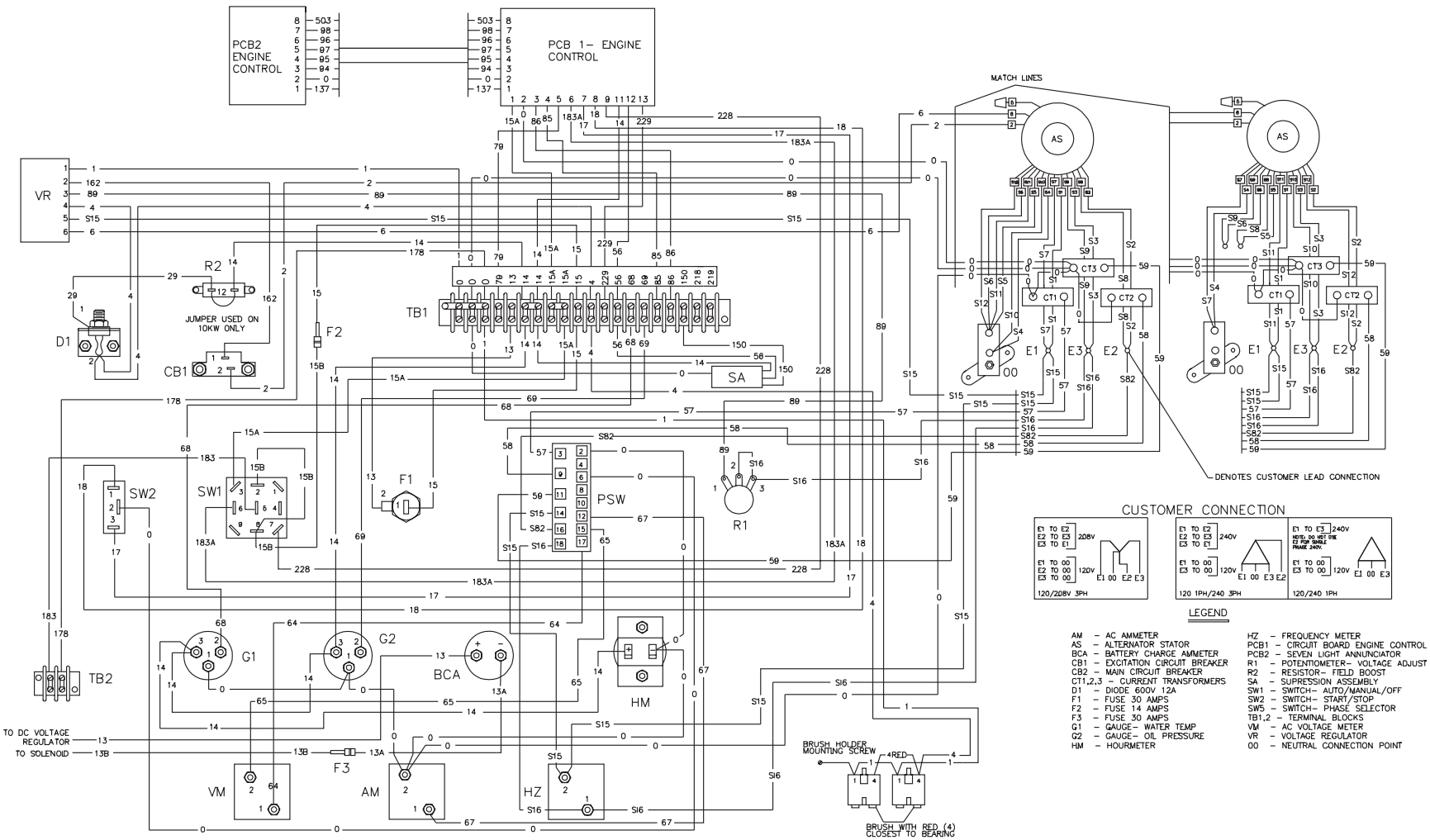

SW6
AUTO
OFF
MAN
SW2
START
RUN
OFF
SW3
L1
L2
L3
PHR
HM
HZ
AM
VM
SW5
R1
R2
R3
R4
G1
G2
AMMETER LEADS FROM ENGINE
BCA
RE1
RE2
RE3
RE4
RE5
RE6
GFM
CB1
CB2
CB4
CB5
CB6
CB7
CB8
CB9
CB10
SW4
TS1
2 WIRE START
VCB
TO CONTROL PANEL
TO ALTERNATOR
TO VOLTAGE CHANGE SWITCH
TO ALTERNATOR
TO CT'S
TO VOLTAGE CHANGE SWITCH
TO CT'S
FROM CT'S
TO VOLTAGE CHANGE SWITCH VIA CT'S
FROM ALTERNATOR
LEGEND
VOLTAGE CHANGEOVER
BOARD POSITION B
BOARD POSITION A
BOARD POSITION C
120/208V 3Ø
120/240V 1Ø
120/240V 3Ø
277/480V 3Ø

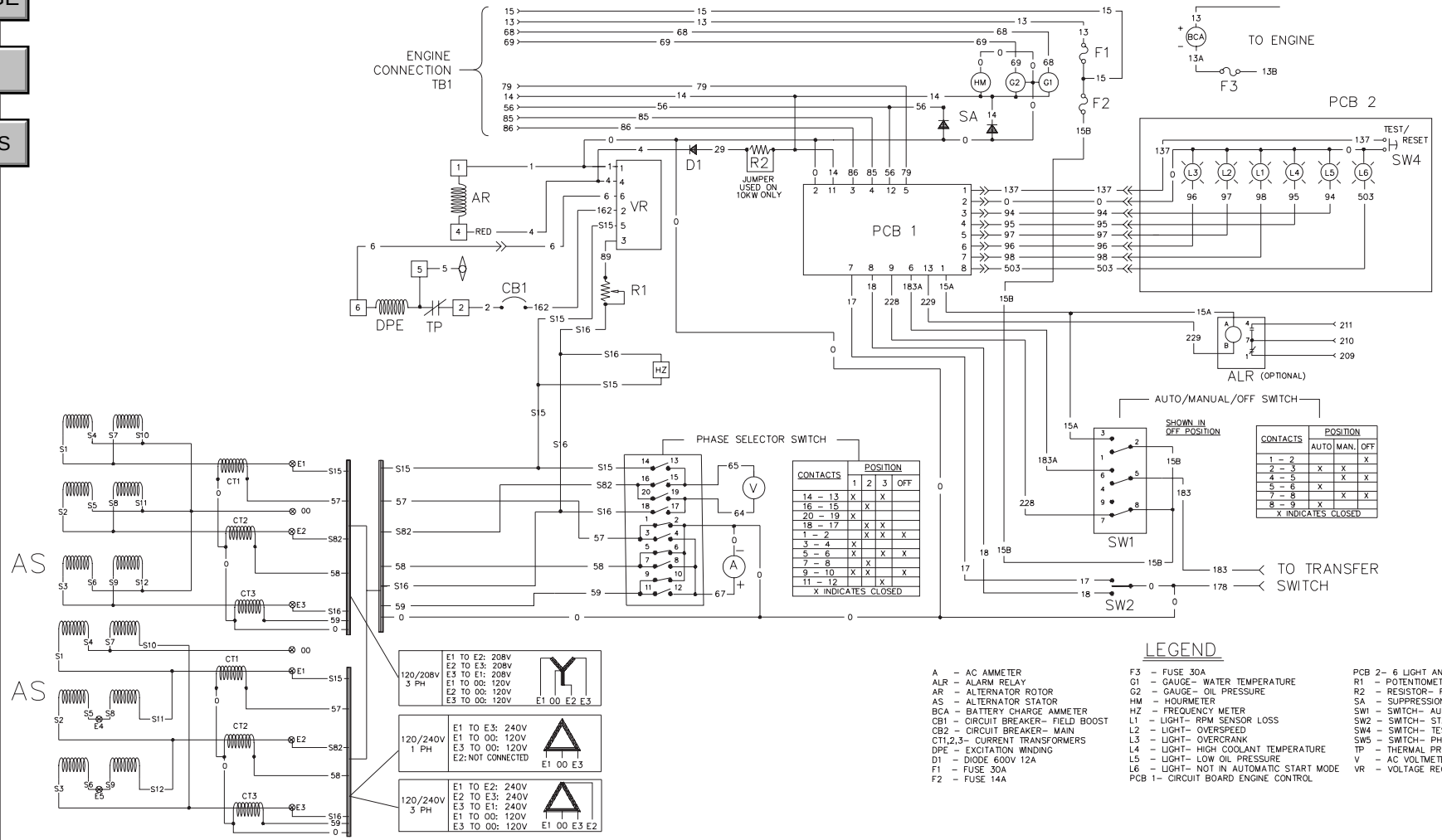

SW6
AUTO
OFF
MAN
SW2
START
RUN
OFF
SW3
L1
L3
PHR
HM
HZ
AM
VM
BCA
AMMETER LEADS FROM ENGINE
G1
G2
R3
R4
SW5
LEGEND
RE5
RE2
RE1
GFM
LOAD
LINE
CB9
CB4
CB2
SW4
CB5
CB6
CB10
RE3
RE4
RE6
L1A
L1B
L1C
L2
L3A
L3B
L3C
TS1
2 WIRE START
VCB
CB8
CB7
E3
E2
E1
120/208V 3Ø
120/240V 1Ø
120/240V 3Ø
277/480V 3Ø
VOLTAGE CHANGEOVER
BOARD POSITION
TO CONTROL PANEL
TO ALTERNATOR
TO VOLTAGE CHANGE SWITCH
TO ALTERNATOR
TO CT'S
TO VOLTAGE CHANGE SWITCH
TO CT'S
FROM CT'S
TO VOLTAGE CHANGE SWITCH VIA CT'S
FROM ALTERNATOR



LEGEND

AM - AMMETER, AC
BCA- AMMETER, BATTERY CHARGE
CB2- CIRCUIT BREAKER, 120V 20A
CB4- CIRCUIT BREAKER, 120V 20A
CB5- CIRCUIT BREAKER, 240V, 50A
CB6- CIRCUIT BREAKER, 240V 50A
CB7- CIRCUIT BREAKER, 240V 40A
CB8- CIRCUIT BREAKER, 480V 4.5A
CB9- CIRCUIT BREAKER, 120V 20A
CB10- CIRCUIT BREAKER, 240V 50A
G1 - GAUGE, WATER TEMPERATURE
G2 - GAUGE, OIL PRESSURE
GFM- GROUND FAULT CIRCUIT INTERRUPTER MODULE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LAMP, FAULT
L2 - LAMP, PANEL
L3 - LAMP, RUN
PHR- PREHEAT RELAY
R1 - POTENTIOMETER, VOLTAGE ADJUST
R3 - RESISTOR, TEMP. GAGE, 120 OHM, 2W
R4 - RESISTOR, OIL PRESS. GAGE, 68 OHM, 5W
R5 - RESISTOR, 240V SENSING
R6 - RESISTOR, 277V SENSING
RE1- RECEPTACLE, 120V 20A LOCKING L5-20R
RE2- RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE3- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE5- RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE6- RECEPTACLE, 120/240V 50A LOCKING CS6369
SW2- SWITCH, START/RUN/OFF
SW3- SWITCH, PREHEAT
SW4- SWITCH, SAFETY CUTOFF
SW5- SWITCH, PHASE SELECTOR
SW6- SWITCH, AUTO/OFF/MANUAL
SW7- SWITCH, 240 VOLT SENSING
SW8- SWITCH, 208 VOLT SENSING
SW9- SWITCH, 277 VOLT SENSING
TS1- TWO WIRE START TERMINAL STRIP
VM - VOLTMETER, AC
VBC- VOLTAGE CHANGEOVER BOARD


PCB2 ENGINE CONTROL
PCB 1– ENGINE CONTROL
MATCH LINES
VR
R2
JUMPER USED ON 10KW ONLY
D1
CB1
F2
TB1
SA
SW2
SW1
F1
PSW
R1
TB2
G1
G2
BCA
HM
VM
AM
HZ
F3
TO DC VOLTAGE REGULATOR
TO SOLENOID
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED (4) CLOSEST TO BEARING
DENOTES CUSTOMER LEAD CONNECTION
CUSTOMER CONNECTION
120/208V 3PH
120 1PH/240 3PH
120/240 1PH
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2,3 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – SEVEN LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT



CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

X INDICATES CLOSED

CONTACTS	POSITION AUTO	MAN.	OFF
1 – 2			X
2 – 3	X	X	
4 – 5		X	X
5 – 6	X		
7 – 8		X	X
8 – 9	X		

X INDICATES CLOSED

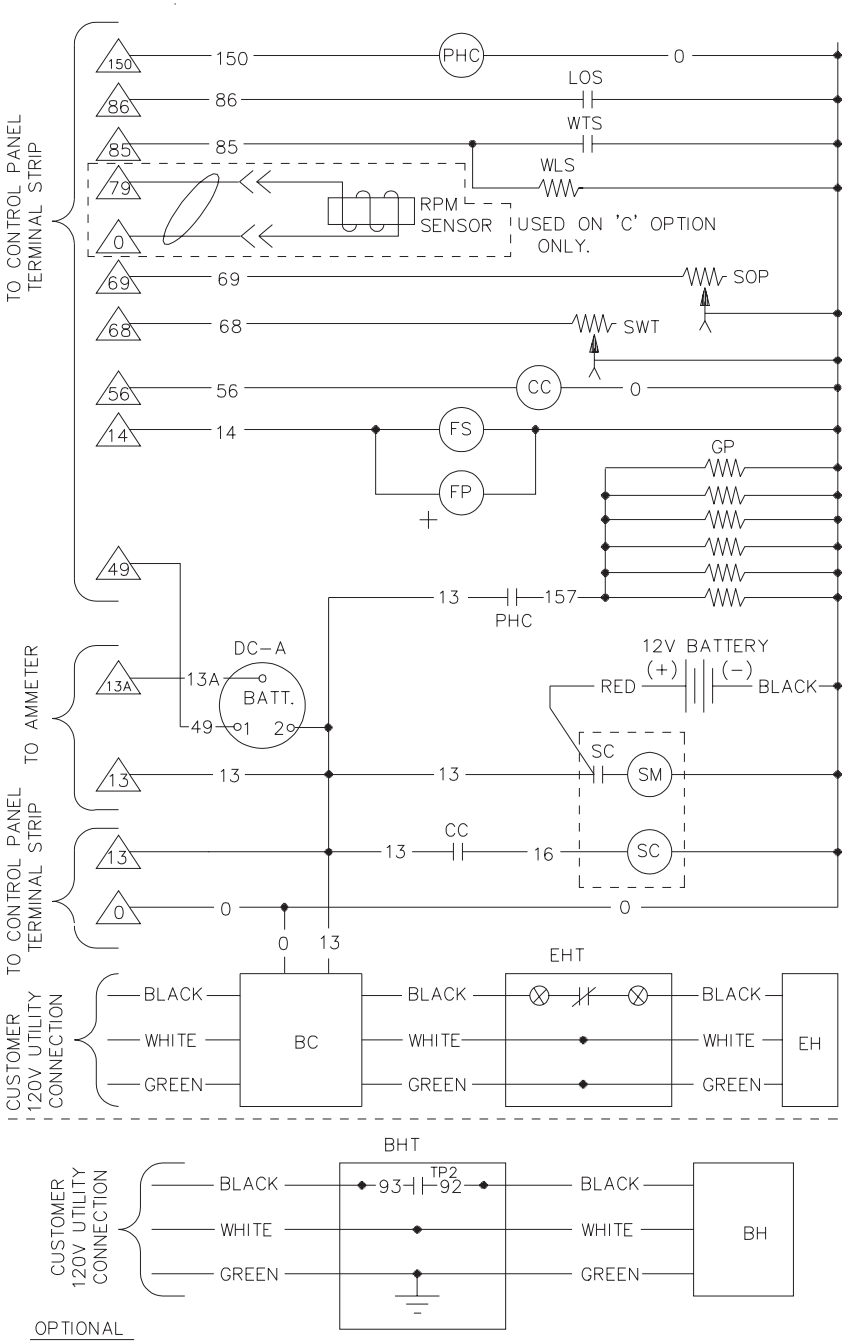
120/208V 3 PH	E1 TO E2: 208V E2 TO E3: 208V E3 TO E1: 208V E1 TO 00: 120V E2 TO 00: 120V E3 TO 00: 120V
120/240V 1 PH	E1 TO E3: 240V E1 TO 00: 120V E3 TO 00: 120V E2: NOT CONNECTED
120/240V 3 PH	E1 TO E2: 240V E2 TO E3: 240V E3 TO E1: 240V E1 TO 00: 120V E3 TO 00: 120V

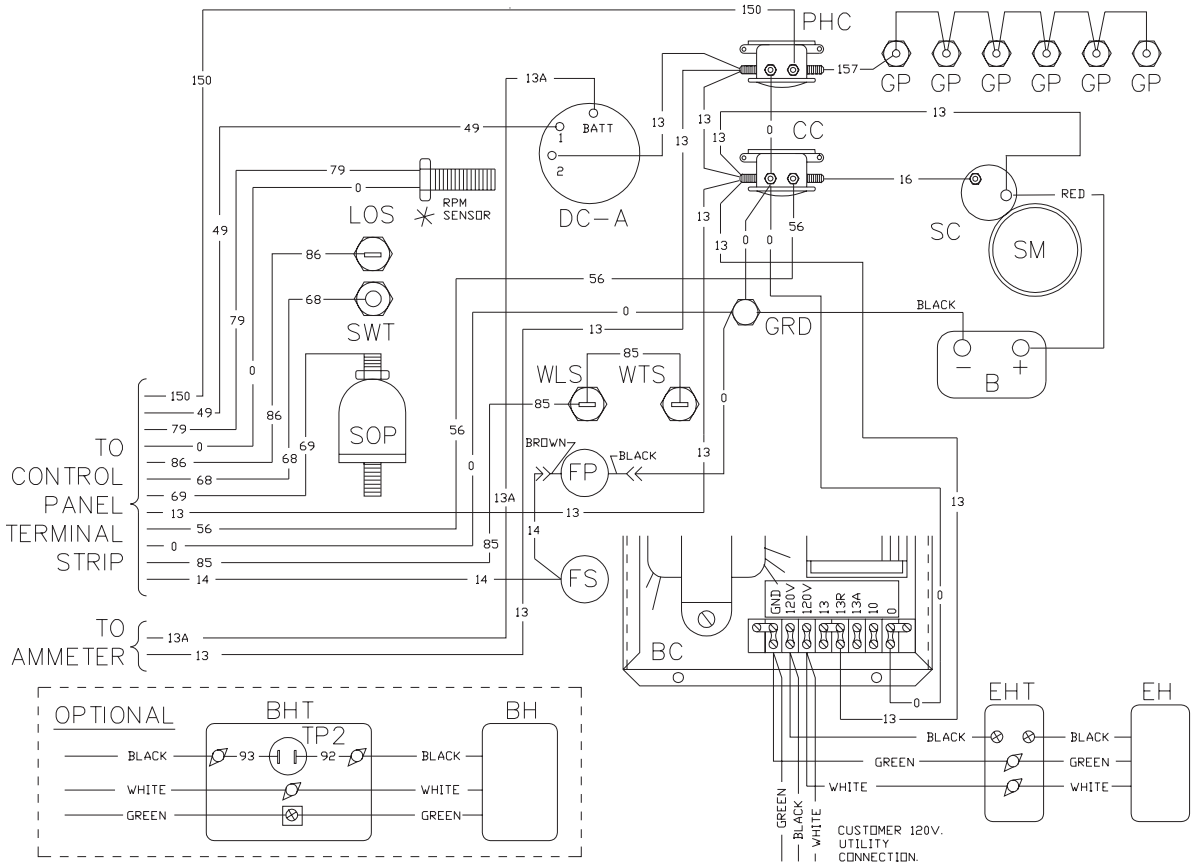
LEGEND

A – AC AMMETER
ALR – ALARM RELAY
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2,3– CURRENT TRANSFORMERS
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH COOLANT TEMPERATURE
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB 1– CIRCUIT BOARD ENGINE CONTROL
PCB 2– 6 LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW4 – SWITCH– TEST/RESET
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR

LEGEND

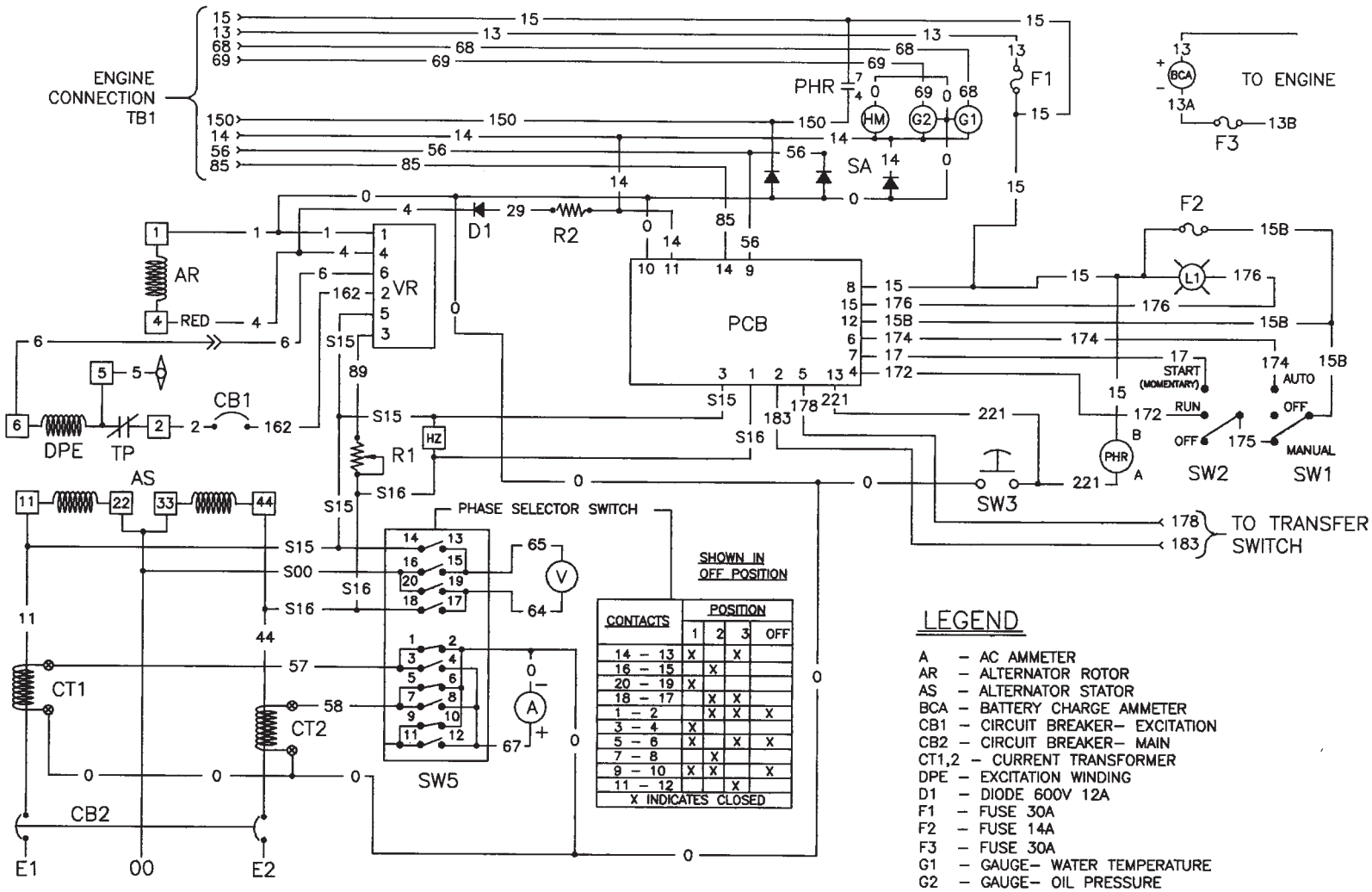
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FS - FUEL SOLENOID
FP - FUEL PUMP
GP - GLOW PLUG
LOS - LOW OIL SWITCH
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TP2 - THERMAL PROTECTOR BATT. HEAT.
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH





LEGEND

B - BATTERY 12-V.
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FS - FUEL SOLENOID
FP - FUEL PUMP
GP - GLOW PLUG
GPC - GLOW PLUG CONTROLLER
GRD - GROUND
LOS - LOW OIL SWITCH
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TP2 - THERMAL PROTECTOR BATT. HEAT.
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH
✳ - USED ON 'C' OPTION ONLY.

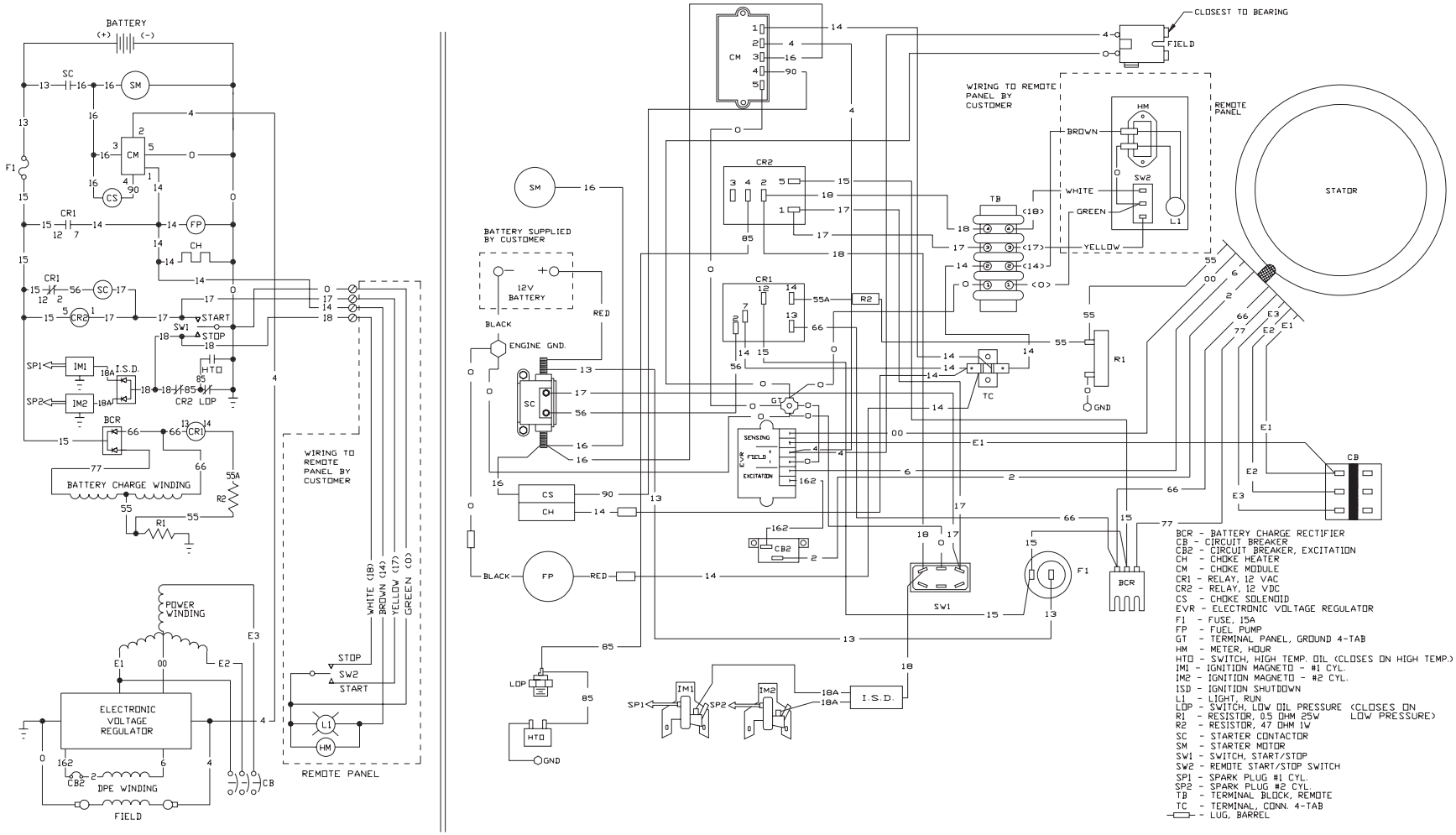


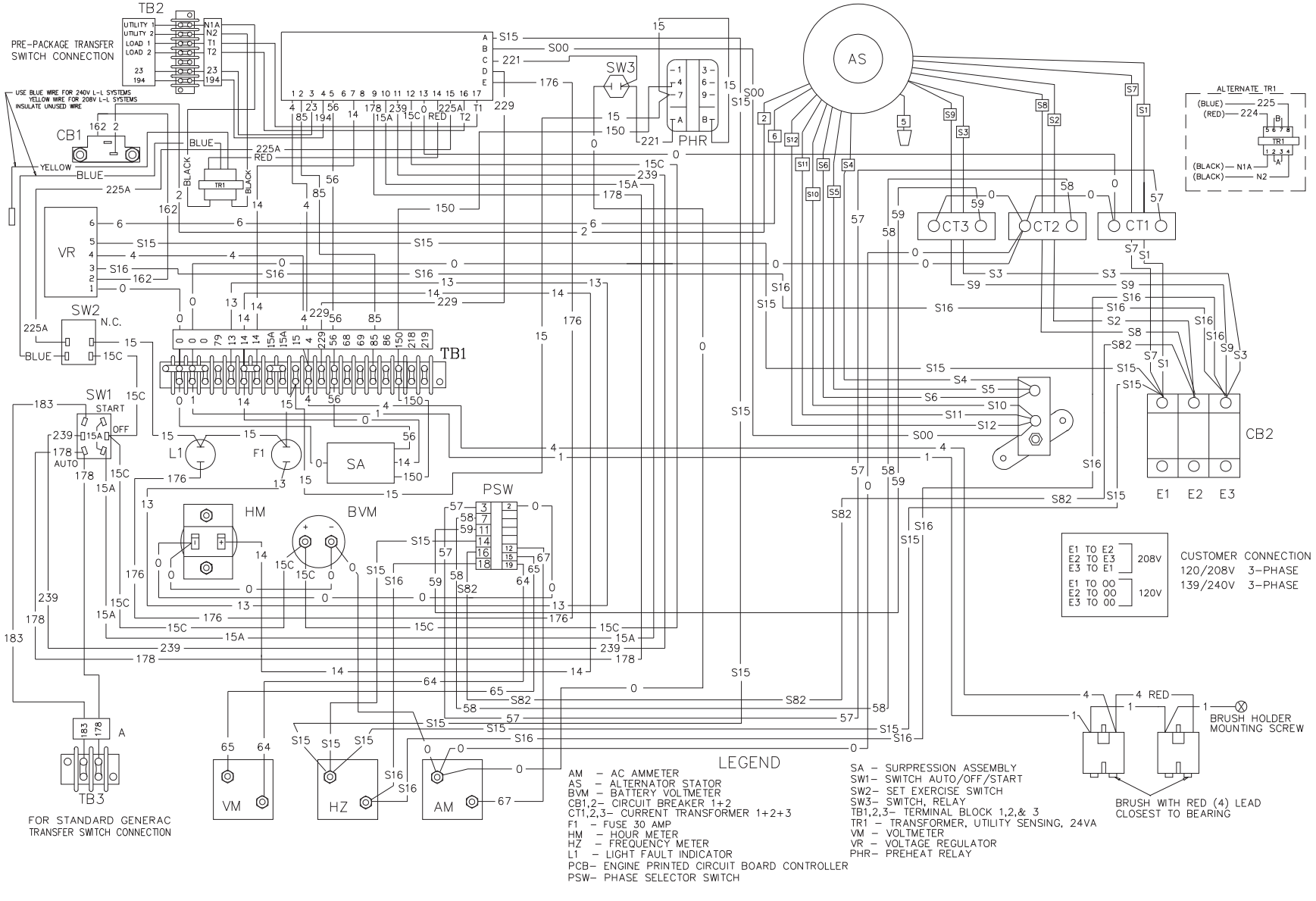
CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

X INDICATES CLOSED

LEGEND

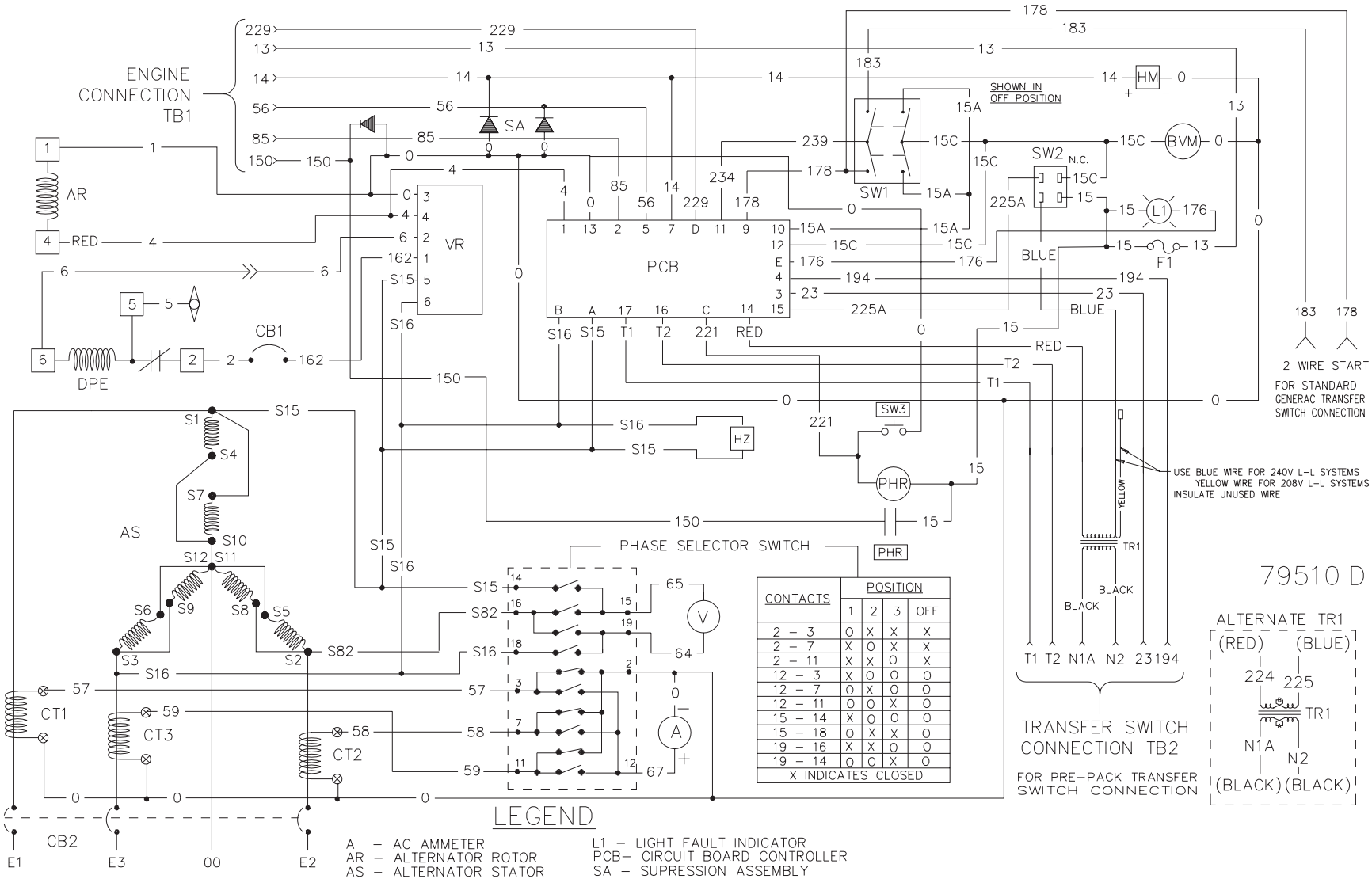
A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– EXCITATION
CB2 – CIRCUIT BREAKER– MAIN
CT1,2 – CURRENT TRANSFORMER
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
PHR – RELAY–PREHEAT
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH–PREHEAT
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR


BATTERY
(+) (-)
SC
SM
CM
CS
CR1
FP
CH
SW1
START
STOP
HTD
IM1
IM2
I.S.D.
CR2 LOP
BCR
BATTERY CHARGE WINDING
R2
R1
WIRING TO REMOTE PANEL BY CUSTOMER
WHITE (18)
BROWN (14)
YELLOW (17)
GREEN (0)
POWER WINDING
ELECTRONIC VOLTAGE REGULATOR
CB2
DPE WINDING
FIELD
CB
REMOTE PANEL
BATTERY SUPPLIED BY CUSTOMER
12V BATTERY
ENGINE GND.
GT
SENSING
EVR
EXCITATION
LOP
HTD
GND
TC
TB
HM
SW2
L1
CLOSEST TO BEARING
FIELD
STATOR
R1
GND
CB
SW1
F1
BCR
BCR - BATTERY CHARGE RECTIFIER
CB - CIRCUIT BREAKER
CB2 - CIRCUIT BREAKER, EXCITATION
CH - CHOKE HEATER
CM - CHOKE MODULE
CR1 - RELAY, 12 VAC
CR2 - RELAY, 12 VDC
CS - CHOKE SOLENOID
EVR - ELECTRONIC VOLTAGE REGULATOR
F1 - FUSE, 15A
FP - FUEL PUMP
GT - TERMINAL PANEL, GROUND 4-TAB
HM - METER, HOUR
HTD - SWITCH, HIGH TEMP. OIL (CLOSES ON HIGH TEMP.)
IM1 - IGNITION MAGNETO - #1 CYL.
IM2 - IGNITION MAGNETO - #2 CYL.
ISD - IGNITION SHUTDOWN
L1 - LIGHT, RUN
LOP - SWITCH, LOW OIL PRESSURE (CLOSES ON LOW PRESSURE)
R1 - RESISTOR, 0.5 OHM 25W
R2 - RESISTOR, 47 OHM 1W
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SW1 - SWITCH, START/STOP
SW2 - REMOTE START/STOP SWITCH
SP1 - SPARK PLUG #1 CYL.
SP2 - SPARK PLUG #2 CYL.
TB - TERMINAL BLOCK, REMOTE
TC - TERMINAL, CONN. 4-TAB
- LUG, BARREL



LEGEND

AM – AC AMMETER
AS – ALTERNATOR STATOR
BVM – BATTERY VOLTMETER
CB1,2– CIRCUIT BREAKER 1+2
CT1,2,3– CURRENT TRANSFORMER 1+2+3
F1 – FUSE 30 AMP
HM – HOUR METER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
PCB– ENGINE PRINTED CIRCUIT BOARD CONTROLLER
PSW– PHASE SELECTOR SWITCH
SA – SURPRESSION ASSEMBLY
SW1– SWITCH AUTO/OFF/START
SW2– SET EXERCISE SWITCH
SW3– SWITCH, RELAY
TB1,2,3– TERMINAL BLOCK 1,2,& 3
TR1 – TRANSFORMER, UTILITY SENSING, 24VA
VM – VOLTMETER
VR – VOLTAGE REGULATOR
PHR– PREHEAT RELAY



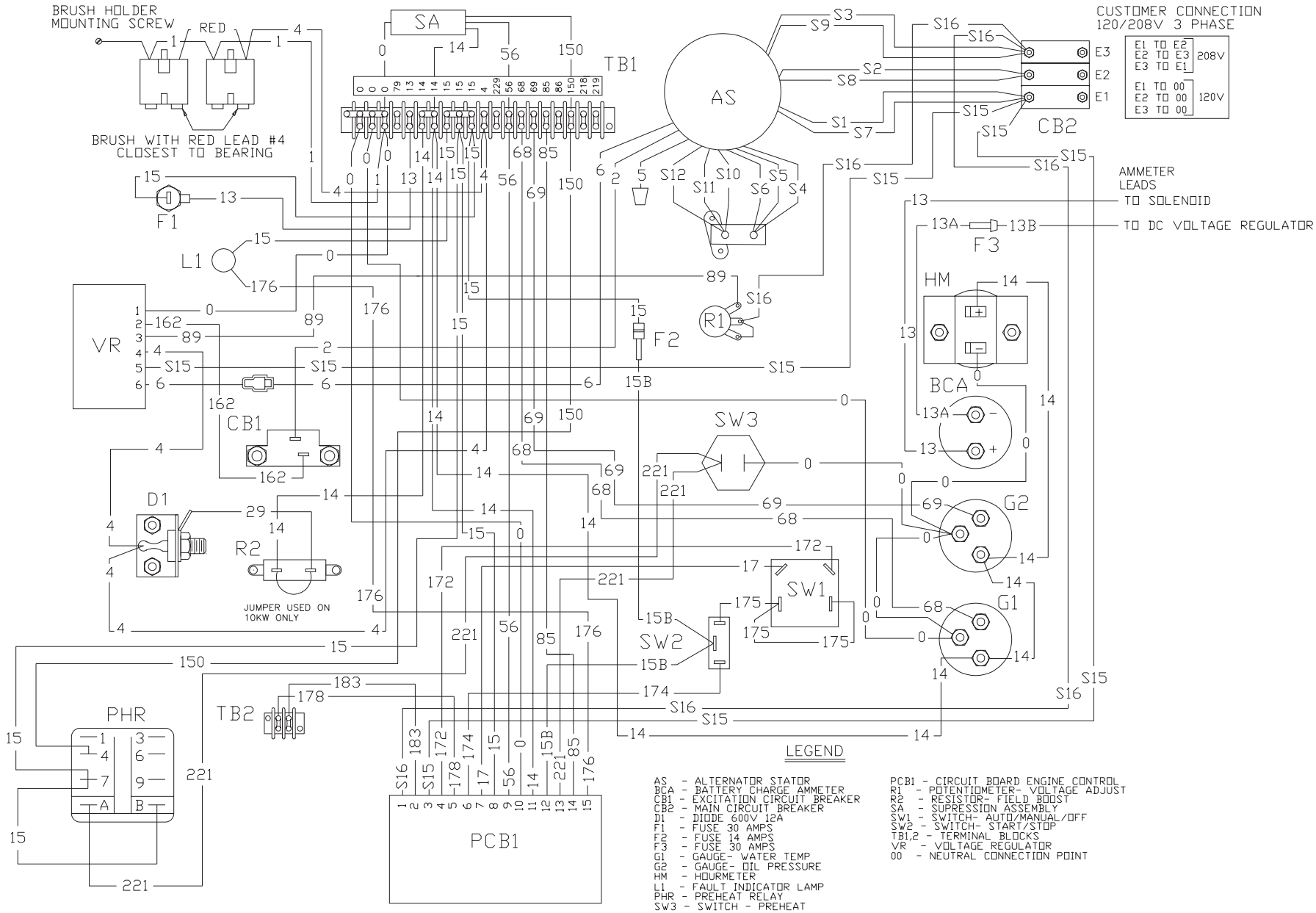
CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	O	X	X	X
2 – 7	X	O	X	X
2 – 11	X	X	O	X
12 – 3	X	O	O	O
12 – 7	O	X	O	O
12 – 11	O	O	X	O
15 – 14	X	O	O	O
15 – 18	O	X	X	O
19 – 16	X	X	O	O
19 – 14	O	O	X	O

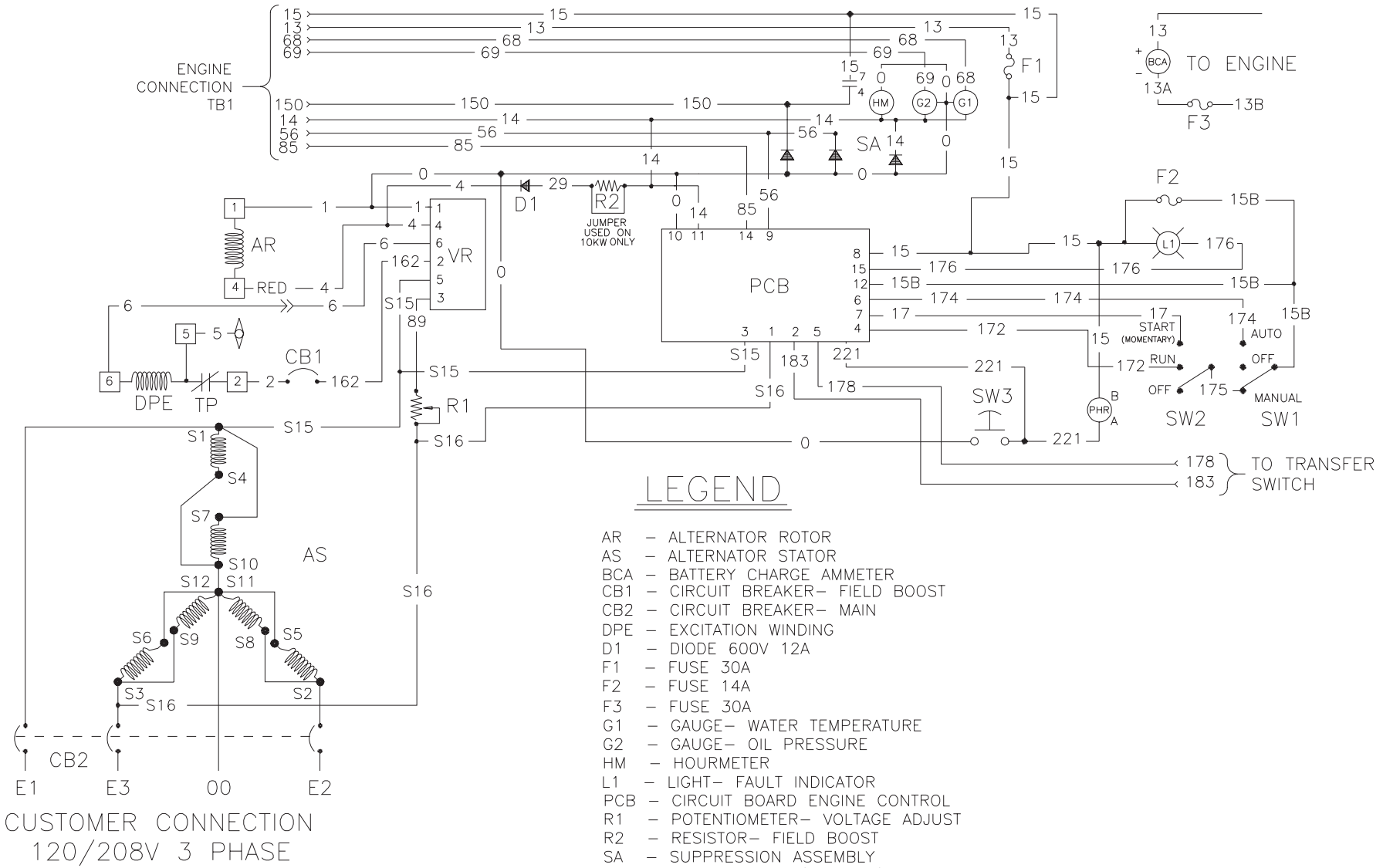
X INDICATES CLOSED

CUSTOMER CONNECTION
120/208V 3 PHASE

LEGEND

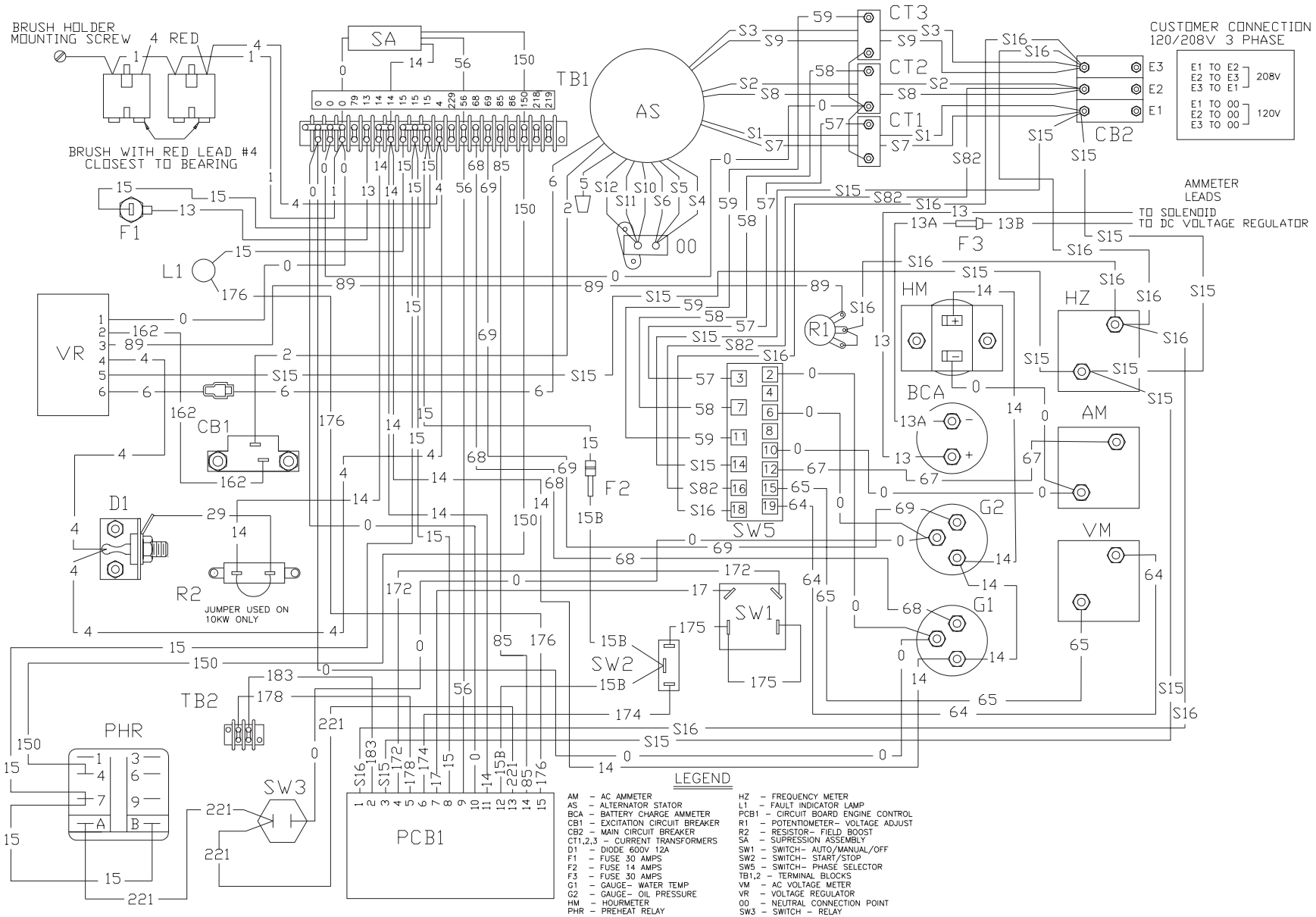
A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BVM – BATTERY VOLTMETER
CB1,2 – CIRCUIT BREAKERS
CT1,2 – CURRENT TRANSFORMER
DPE – EXCITATION WINDING
F1 – FUSE 30 AMPS
PHR – PREHEAT RELAY
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
PCB – CIRCUIT BOARD CONTROLLER
SA – SUPRESSION ASSEMBLY
TB1,2 – TERMINAL BOARD
TR1 – TRANSFORMER, UTILITY SENSING, 24VA
V – AC VOLTMETER
VR – VOLTAGE REGULATOR
SW1 – AUTO/OFF/START SWITCH
SW2 – SET EXERCISE SWITCH
SW3 – SWITCH, RELAY

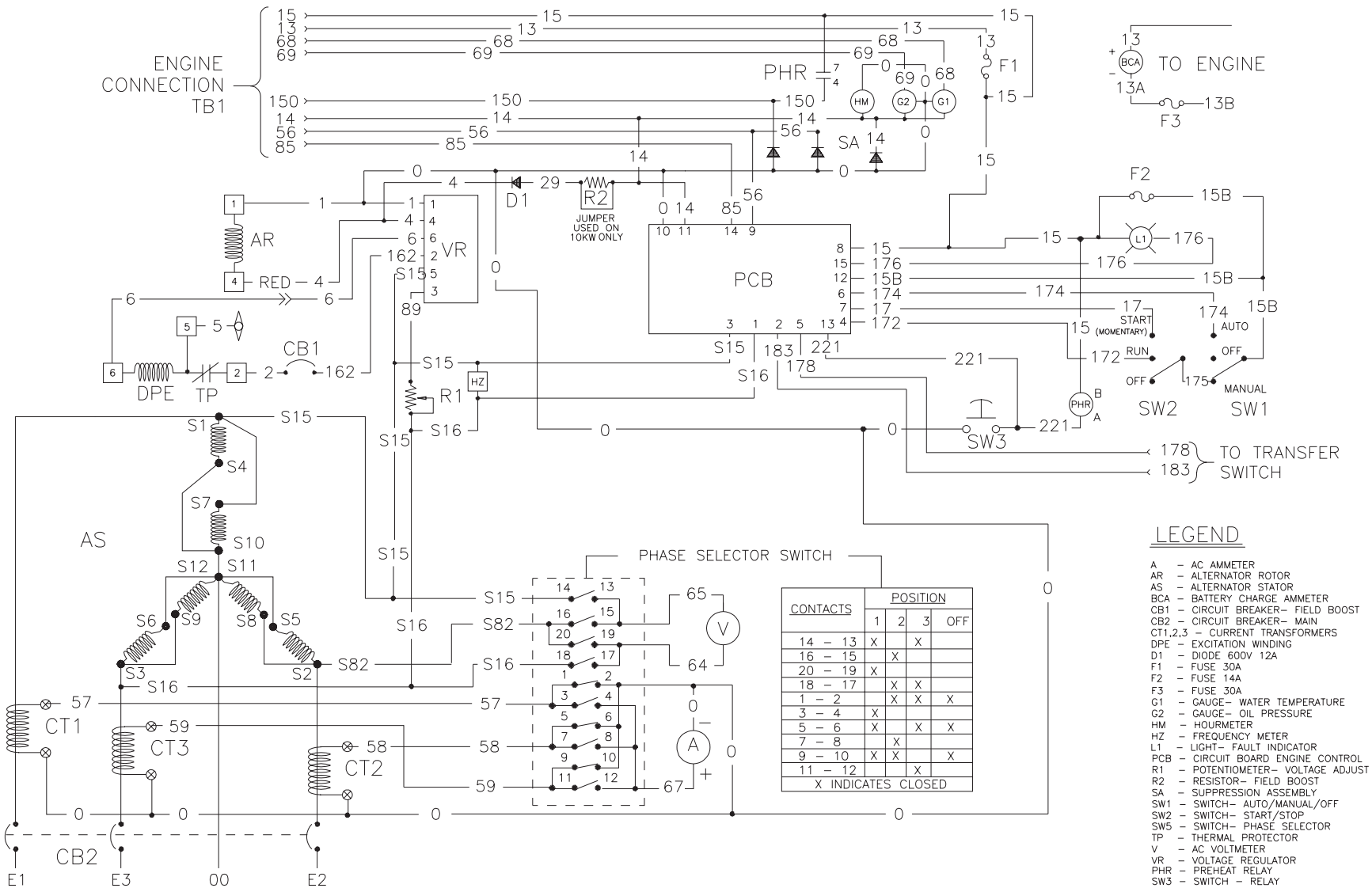

BRUSH HOLDER MOUNTING SCREW
RED
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
SA
TB1
AS
CUSTOMER CONNECTION 120/208V 3 PHASE
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO 00
E2 TO 00
E3 TO 00
120V
CB2
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F1
L1
VR
F2
R1
F3
HM
BCA
CB1
SW3
D1
R2
JUMPER USED ON 10KW ONLY
G2
SW1
G1
SW2
PHR
TB2
PCB1
LEGEND
AS - ALTERNATOR STATOR
BCA - BATTERY CHARGE AMMETER
CB1 - EXCITATION CIRCUIT BREAKER
CB2 - MAIN CIRCUIT BREAKER
D1 - DIODE 600V 12A
F1 - FUSE 30 AMPS
F2 - FUSE 14 AMPS
F3 - FUSE 30 AMPS
G1 - GAUGE- WATER TEMP
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
L1 - FAULT INDICATOR LAMP
PHR - PREHEAT RELAY
SW3 - SWITCH - PREHEAT
PCB1 - CIRCUIT BOARD ENGINE CONTROL
R1 - POTENTIOMETER- VOLTAGE ADJUST
R2 - RESISTOR- FIELD BOOST
SA - SUPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/STOP
TB1,2 - TERMINAL BLOCKS
VR - VOLTAGE REGULATOR
00 - NEUTRAL CONNECTION POINT



LEGEND

AR — ALTERNATOR ROTOR
AS — ALTERNATOR STATOR
BCA — BATTERY CHARGE AMMETER
CB1 — CIRCUIT BREAKER— FIELD BOOST
CB2 — CIRCUIT BREAKER— MAIN
DPE — EXCITATION WINDING
D1 — DIODE 600V 12A
F1 — FUSE 30A
F2 — FUSE 14A
F3 — FUSE 30A
G1 — GAUGE— WATER TEMPERATURE
G2 — GAUGE— OIL PRESSURE
HM — HOURMETER
L1 — LIGHT— FAULT INDICATOR
PCB — CIRCUIT BOARD ENGINE CONTROL
R1 — POTENTIOMETER— VOLTAGE ADJUST
R2 — RESISTOR— FIELD BOOST
SA — SUPPRESSION ASSEMBLY
SW1 — SWITCH— AUTO/MANUAL/OFF
SW2 — SWITCH— START/STOP
SW5 — SWITCH— PHASE SELECTOR
TP — THERMAL PROTECTOR
VR — VOLTAGE REGULATOR
PHR — PREHEAT RELAY
SW3 — SWITHC — RELAY


BRUSH HOLDER MOUNTING SCREW
4 RED
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
SA
TB1
AS
CT3
CT2
CT1
CB2
CUSTOMER CONNECTION 120/208V 3 PHASE
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO 00
E2 TO 00
E3 TO 00
120V
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F1
F3
L1
VR
CB1
F2
D1
R2
JUMPER USED ON 10KW ONLY
R1
HM
HZ
BCA
AM
VM
G2
G1
SW1
SW2
SW3
SW5
TB2
PHR
PCB1
00
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2,3 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
PHR – PREHEAT RELAY
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB1 – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT
SW3 – SWITCH – RELAY

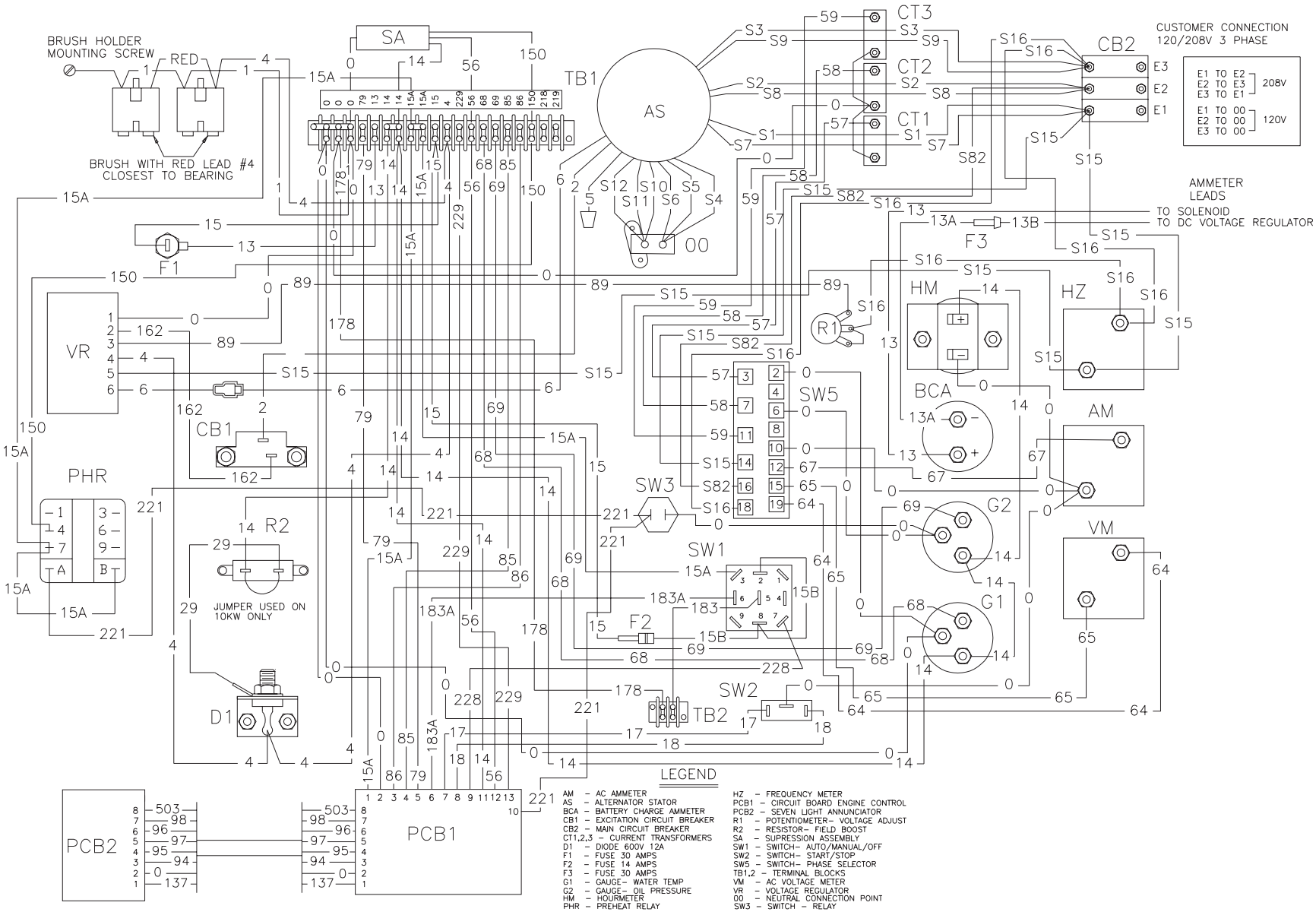


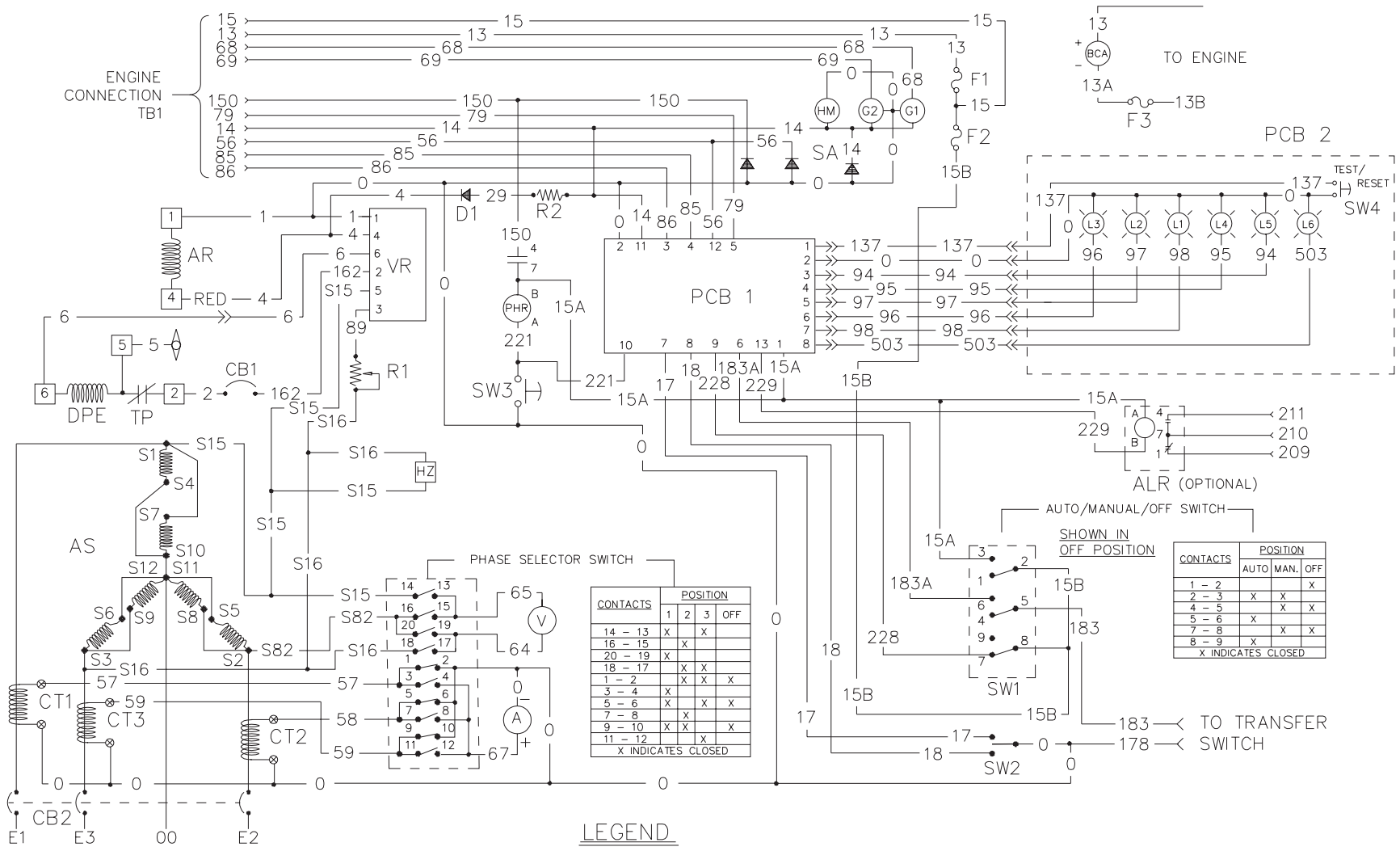
CONTACTS	POSITION			
	1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

X INDICATES CLOSED

LEGEND

A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2,3 – CURRENT TRANSFORMERS
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR
PHR – PREHEAT RELAY
SW3 – SWITCH – RELAY


BRUSH HOLDER MOUNTING SCREW
RED
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
SA
TB1
AS
CT3
CT2
CT1
CB2
CUSTOMER CONNECTION 120/208V 3 PHASE
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO 00
E2 TO 00
E3 TO 00
120V
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F1
F2
F3
VR
CB1
PHR
R1
R2
HM
HZ
BCA
AM
VM
G1
G2
SW1
SW2
SW3
SW5
TB2
D1
00
JUMPER USED ON 10KW ONLY
PCB1
PCB2
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2,3 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
PHR – PREHEAT RELAY
HZ – FREQUENCY METER
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – SEVEN LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT
SW3 – SWITCH – RELAY



CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

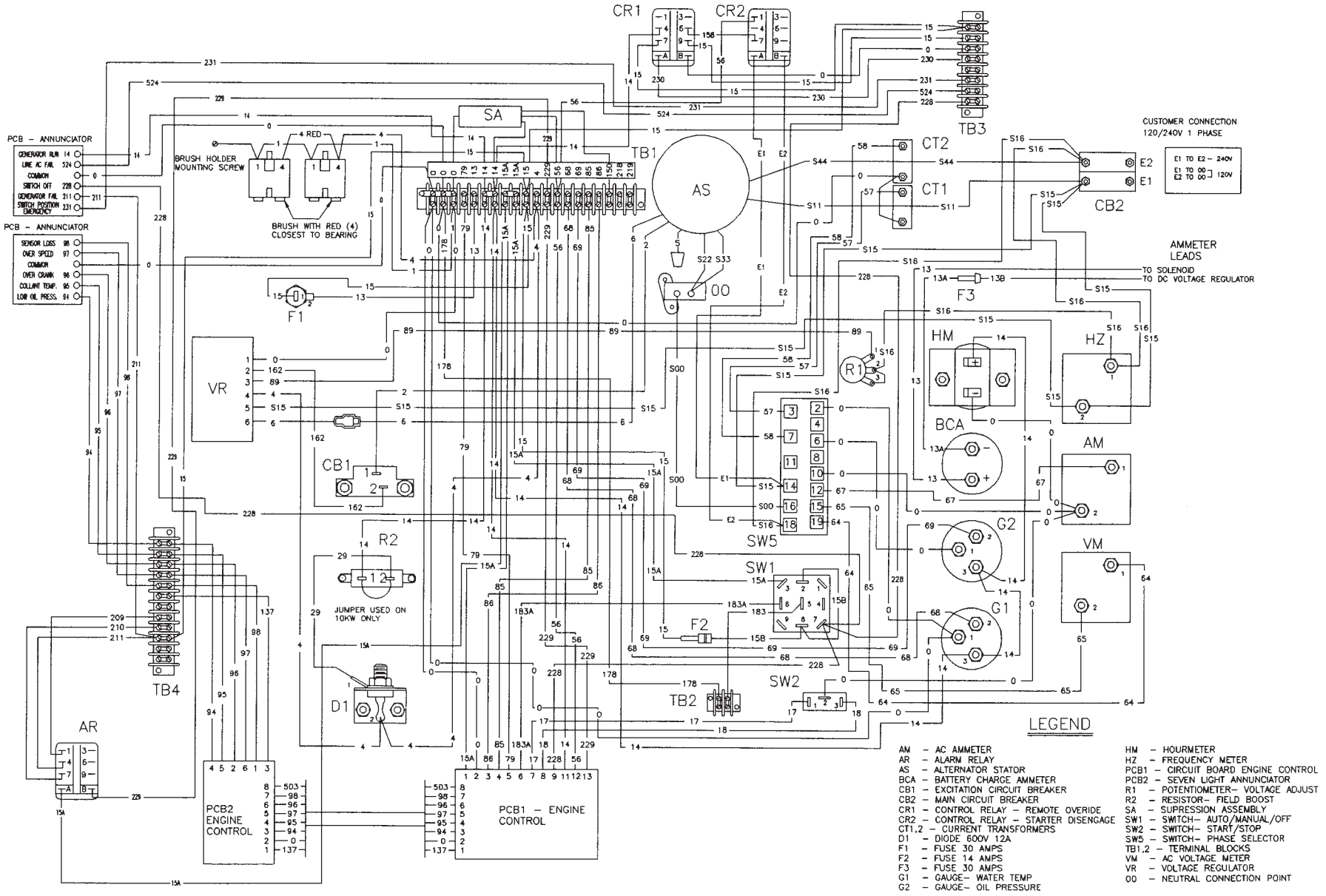
X INDICATES CLOSED

CONTACTS	POSITION AUTO	MAN.	OFF
1 – 2			X
2 – 3	X	X	
4 – 5		X	X
5 – 6	X		
7 – 8		X	X
8 – 9	X		

X INDICATES CLOSED

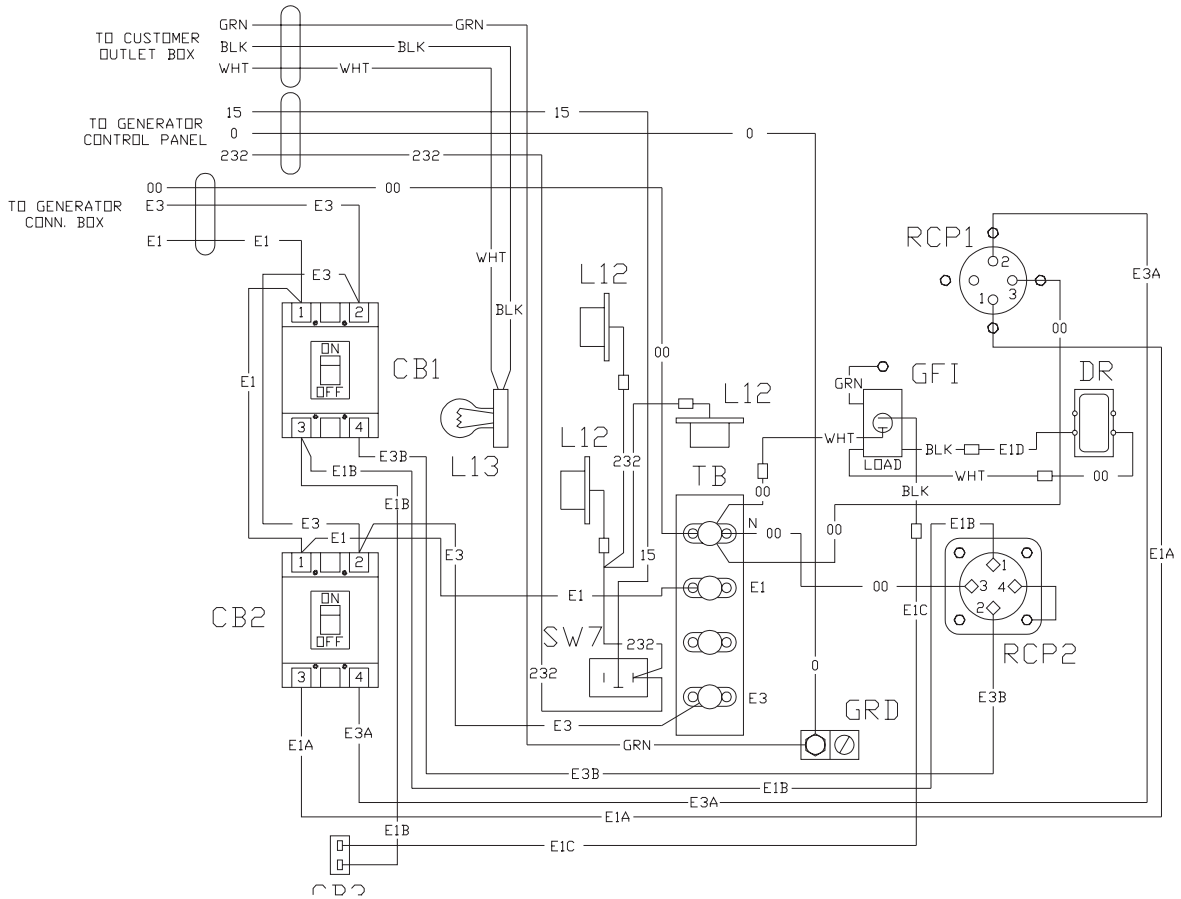
LEGEND

A – AC AMMETER
ALR – ALARM RELAY
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2,3– CURRENT TRANSFORMERS
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH COOLANT TEMPERATURE
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB 1– CIRCUIT BOARD ENGINE CONTROL
PCB 2– 6 LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW4 – SWITCH– TEST/RESET
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR
PHR – PREHEAT RELAY
SW3 – SWITCH – RELAY


CR1
CR2
TB3
SA
TB1
AS
CT2
CT1
CB2
CUSTOMER CONNECTION
120/240V 1 PHASE
E1 TO E2 – 240V
E1 TO 00 – 120V
E2 TO 00 – 120V
PCB – ANNUNCIATOR
GENERATOR RUN
LINE AC FAIL
COMMON
SWITCH OFF
GENERATOR FAIL
SWITCH POSITION EMERGENCY
SENSOR LOSS
OVER SPEED
COMMON
OVER CRANK
COOLANT TEMP.
LOW OIL PRESS.
BRUSH HOLDER MOUNTING SCREW
4 RED
BRUSH WITH RED (4) CLOSEST TO BEARING
S22 S33
00
F1
F3
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
VR
HM
HZ
R1
BCA
AM
CB1
SW5
G2
VM
SW1
G1
R2
JUMPER USED ON 10KW ONLY
F2
TB4
D1
SW2
TB2
AR
PCB2 ENGINE CONTROL
PCB1 – ENGINE CONTROL
LEGEND
AM – AC AMMETER
AR – ALARM RELAY
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CR1 – CONTROL RELAY – REMOTE OVERIDE
CR2 – CONTROL RELAY – STARTER DISENGAGE
CT1,2 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – SEVEN LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT

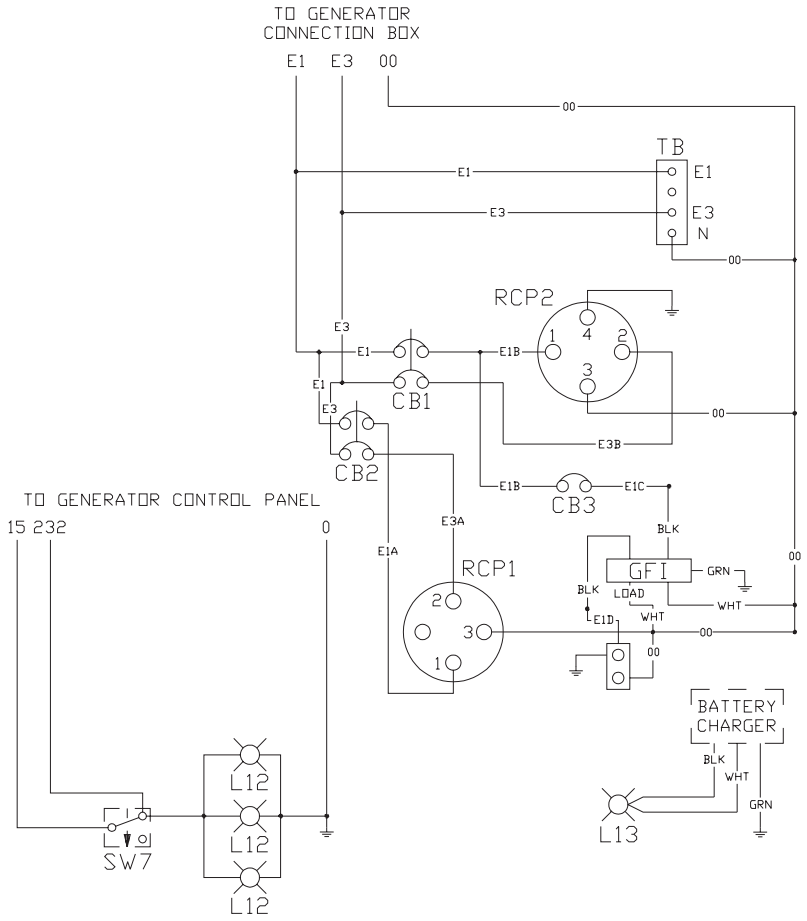
LEGEND

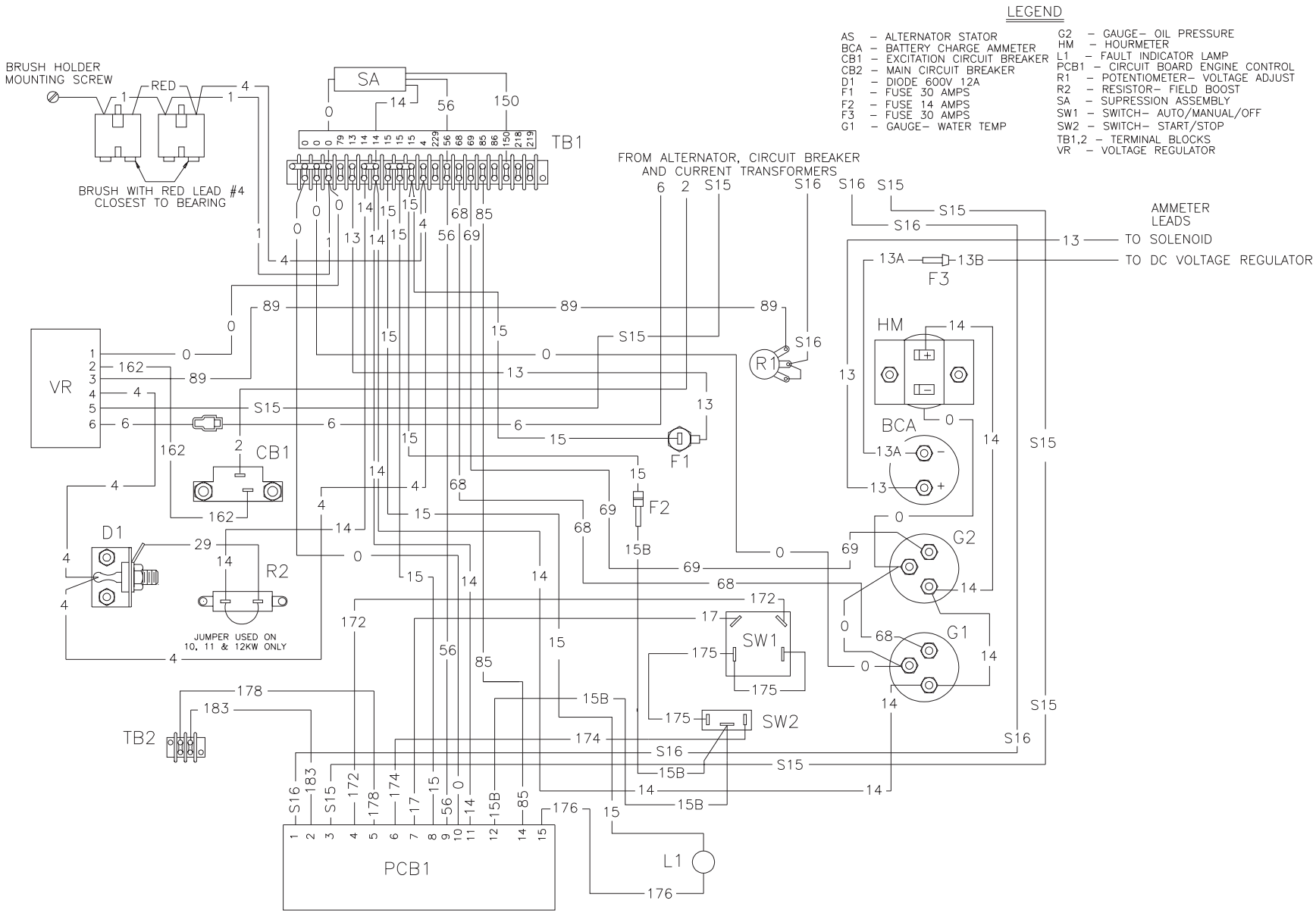
CB1 - CIRCUIT BREAKER, 100A @ 240V AC, 2-POLE
CB2 - CIRCUIT BREAKER, 125A @ 240V AC, 2-POLE
CB3 - CIRCUIT BREAKER, 20A SINGLE POLE
DR - DUPLEX RECEPTACLE, 20A @ 120V AC
GFI - GROUND FAULT INTERUPTER OUTLET
L12 - LAMP, 12V DC
L13 - LAMP, OUTLET BOX
N - NEUTRAL CONNECTIONS
RCP1 - RECEPTACLE, 200A 4-POLE 3-WIRE
RCP2 - RECEPTACLE, 100A 4-POLE 3-WIRE
SW7 - SWITCH, DOOR
TB - TERMINAL BOARD, CUSTOMER CONNECTION
—□— - BUTT CONNECTOR, INSULATED

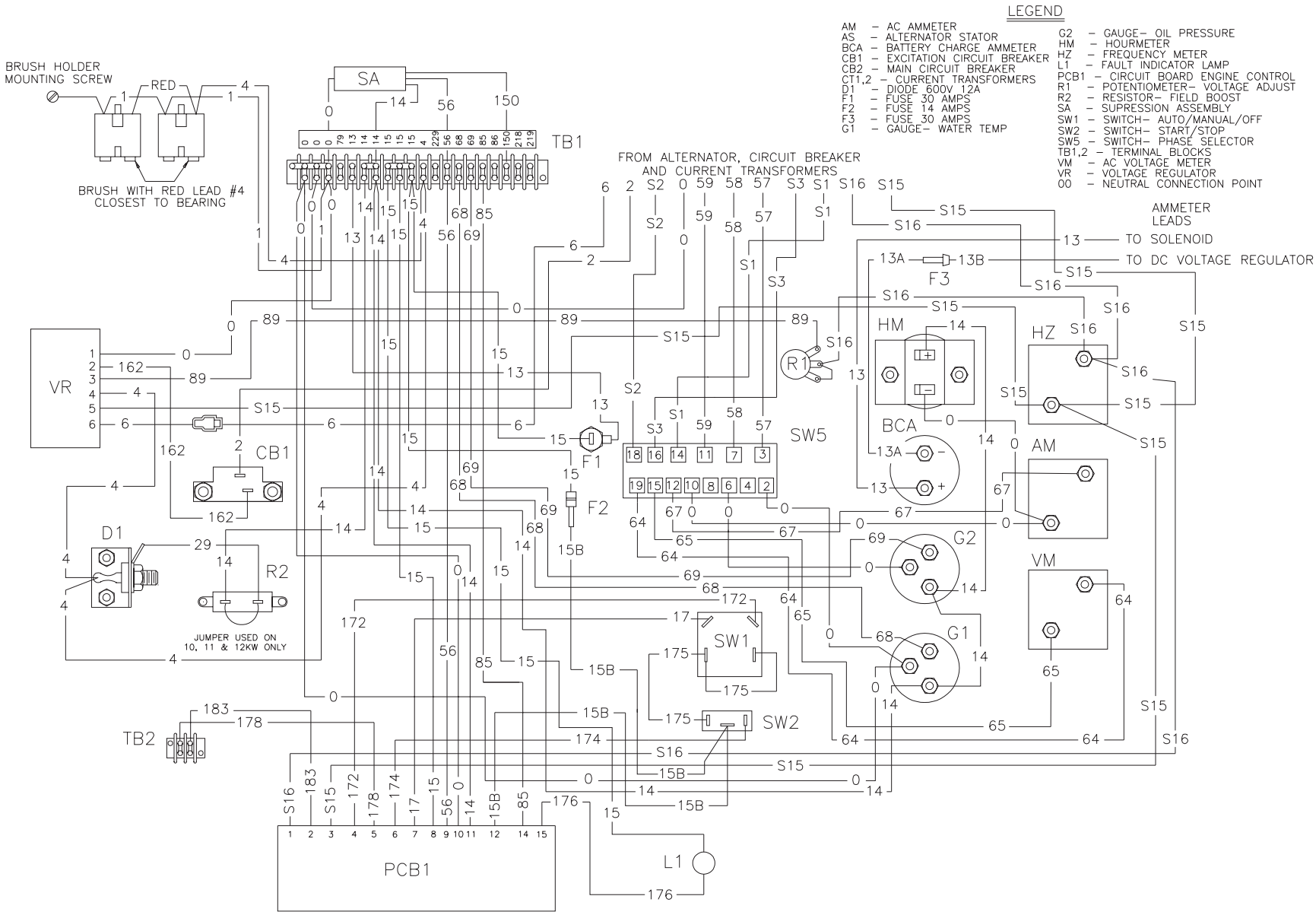


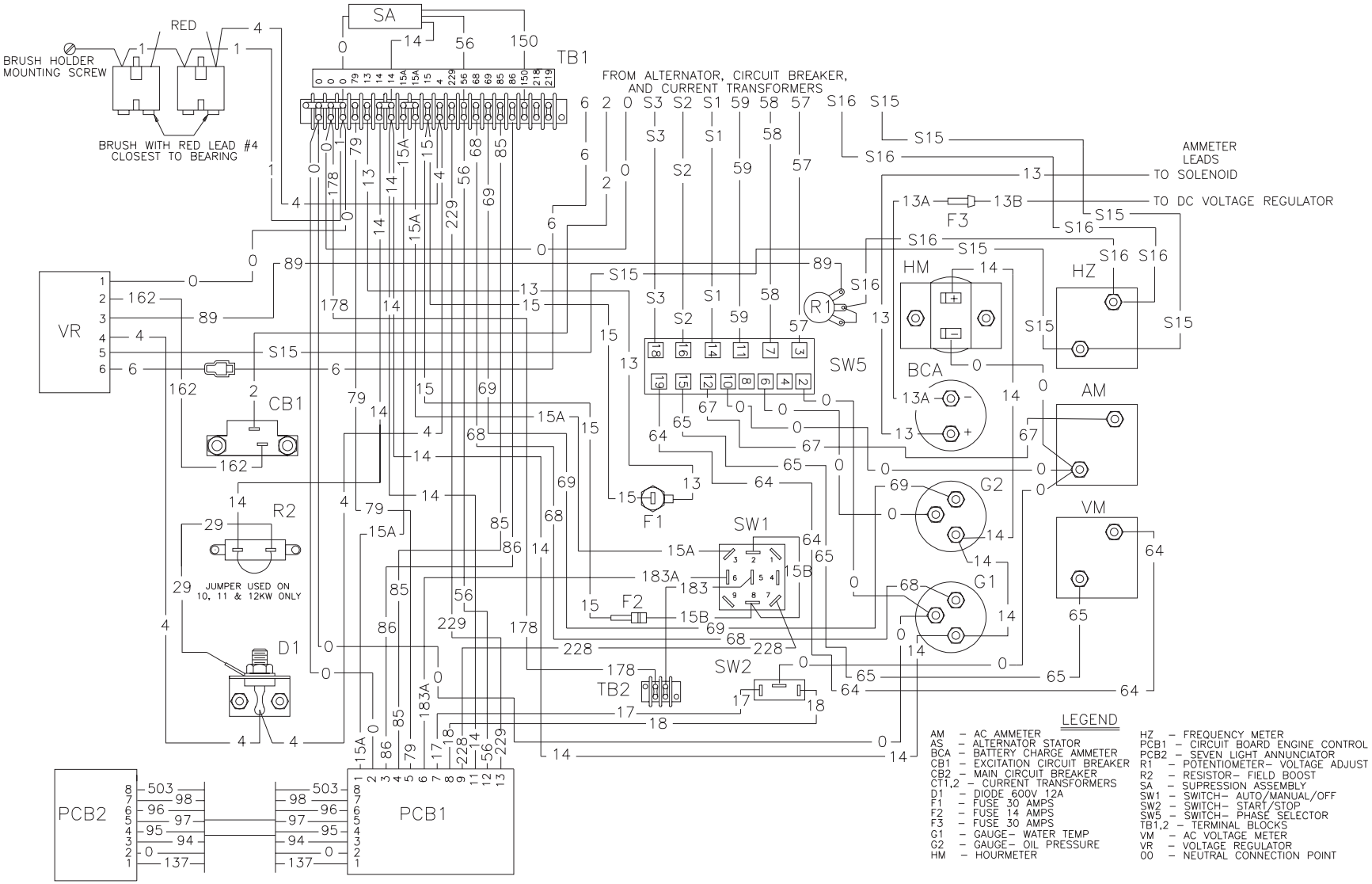
LEGEND

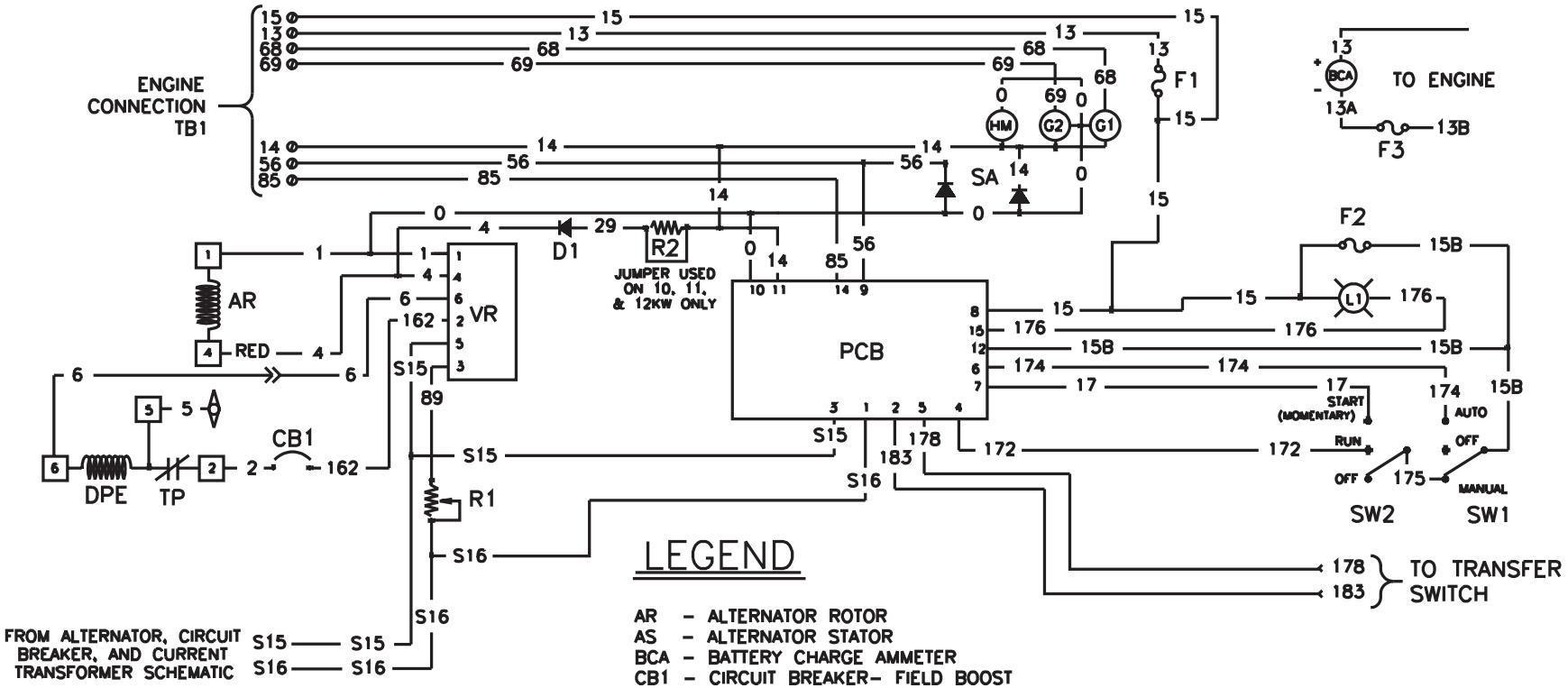
CB1 - CIRCUIT BREAKER, 100A @ 240V AC, 2-POLE
CB2 - CIRCUIT BREAKER, 125A @ 240V AC, 2-POLE
CB3 - CIRCUIT BREAKER, 20A SINGLE POLE
DR - DUPLEX RECEPTACLE, 20A @ 120V AC
GFI - GROUND FAULT INTERUPTER OUTLET
L12 - LAMP 12V DC
L13 - LAMP, OUTLET BOX
N - NEUTRAL CONNECTIONS
RCP1 - RECEPTACLE, 200A 4-POLE 3-WIRE
RCP2 - RECEPTACLE, 100A 4-POLE 3-WIRE
SW7 - SWITCH, DOOR
TB - TERMINAL BOARD, CUSTOMER CONNECTION
- BUTT CONNECTOR, INSULATED




LEGEND
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – FAULT INDICATOR LAMP
PCB1 – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TB1,2 – TERMINAL BLOCKS
VR – VOLTAGE REGULATOR
BRUSH HOLDER MOUNTING SCREW
RED
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
SA
TB1
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F3
HM
BCA
R1
VR
CB1
F1
F2
D1
R2
JUMPER USED ON 10, 11 & 12KW ONLY
G2
G1
SW1
SW2
TB2
PCB1
L1

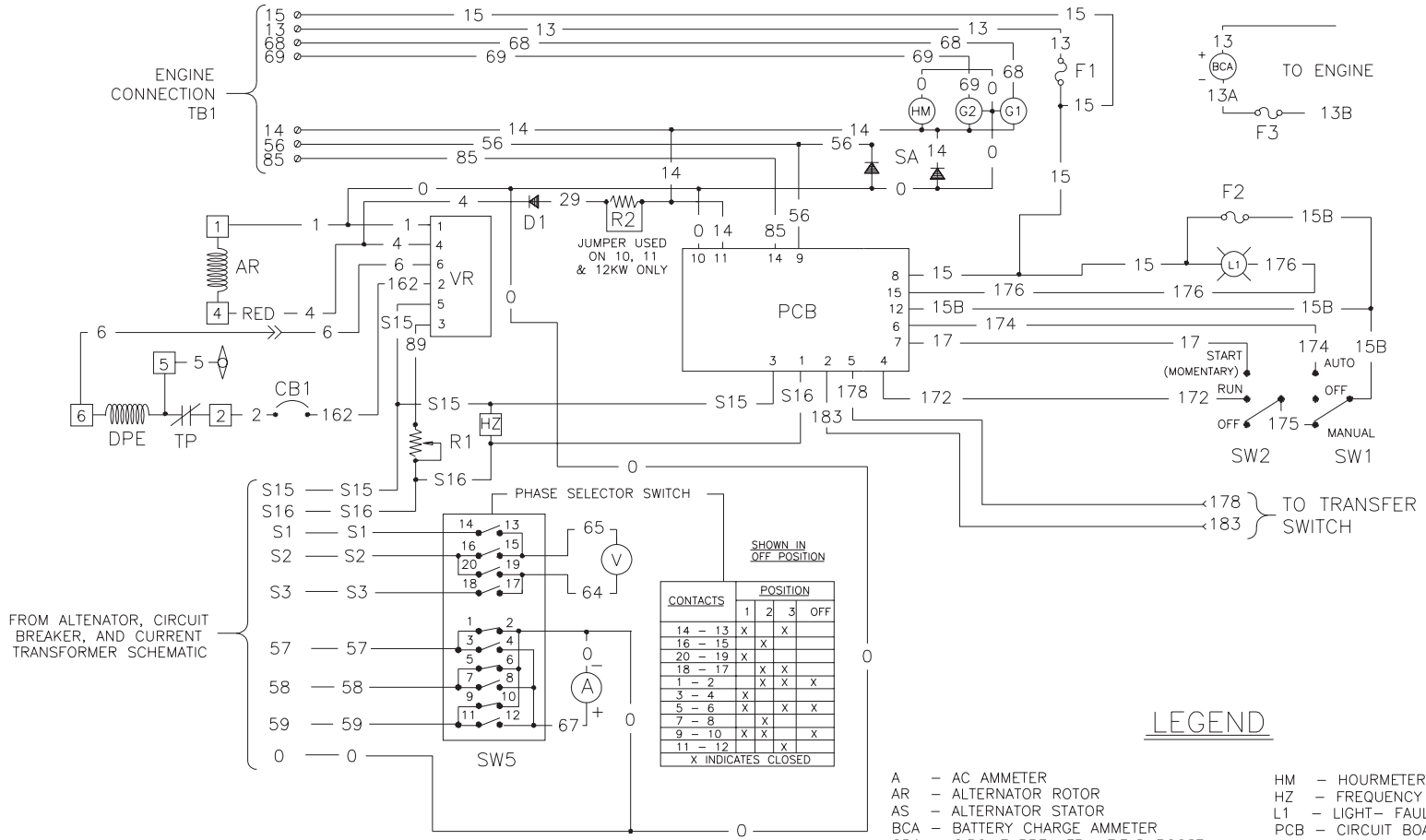

LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB1 – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
JUMPER USED ON 10, 11 & 12KW ONLY
SA
TB1
TB2
PCB1
VR
CB1
D1
R2
F1
F2
F3
R1
SW1
SW2
SW5
HM
HZ
BCA
AM
VM
G1
G2
L1


SA
TB1
RED
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED LEAD #4 CLOSEST TO BEARING
FROM ALTERNATOR, CIRCUIT BREAKER, AND CURRENT TRANSFORMERS
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F3
HM
HZ
R1
SW5
BCA
AM
VR
CB1
R2
JUMPER USED ON 10, 11 & 12KW ONLY
F1
SW1
G2
VM
G1
F2
D1
TB2
SW2
PCB2
PCB1
LEGEND
AM – AC AMMETER
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
CB2 – MAIN CIRCUIT BREAKER
CT1,2 – CURRENT TRANSFORMERS
D1 – DIODE 600V 12A
F1 – FUSE 30 AMPS
F2 – FUSE 14 AMPS
F3 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – SEVEN LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
00 – NEUTRAL CONNECTION POINT



LEGEND

AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TP – THERMAL PROTECTOR
VR – VOLTAGE REGULATOR

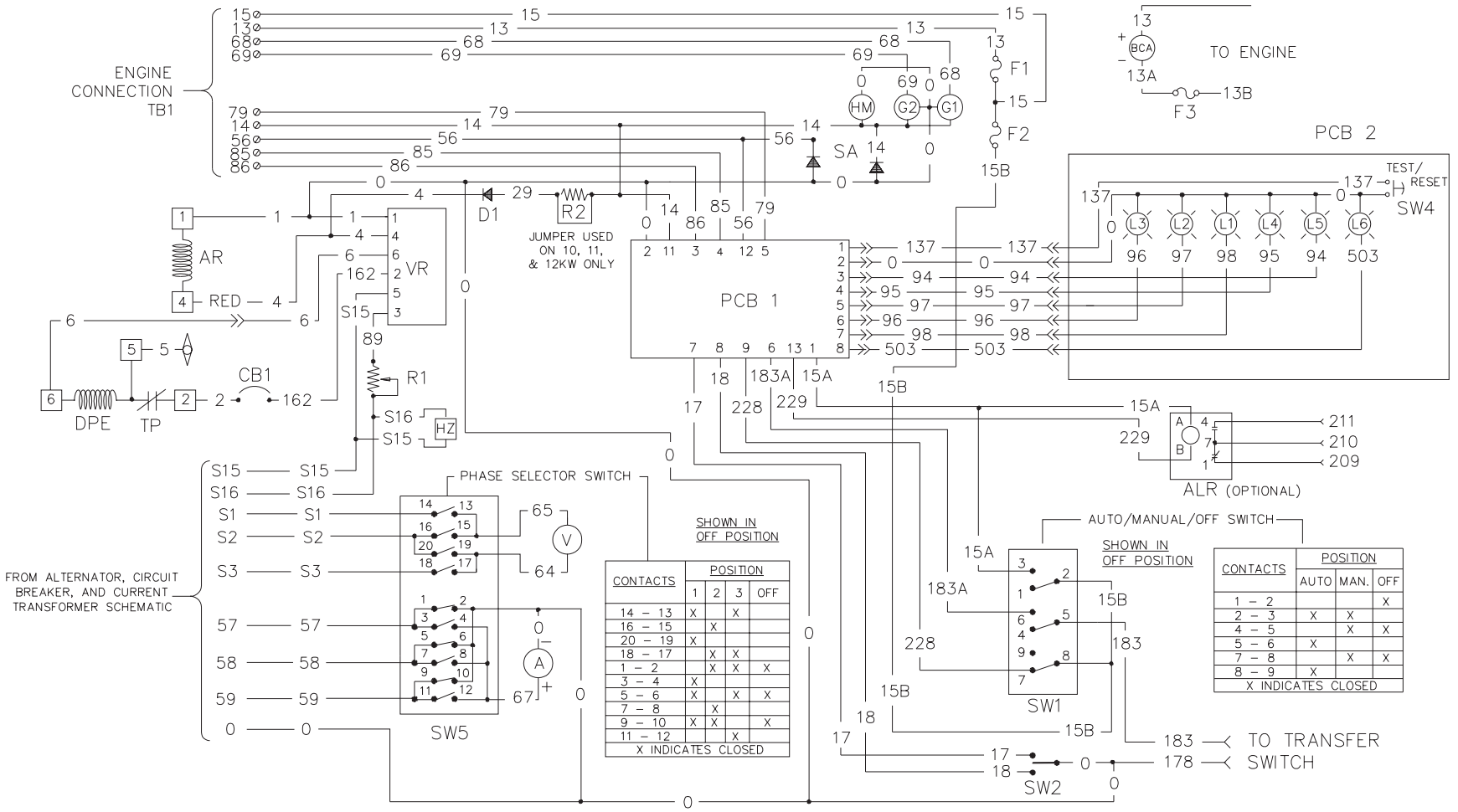


CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

X INDICATES CLOSED

LEGEND

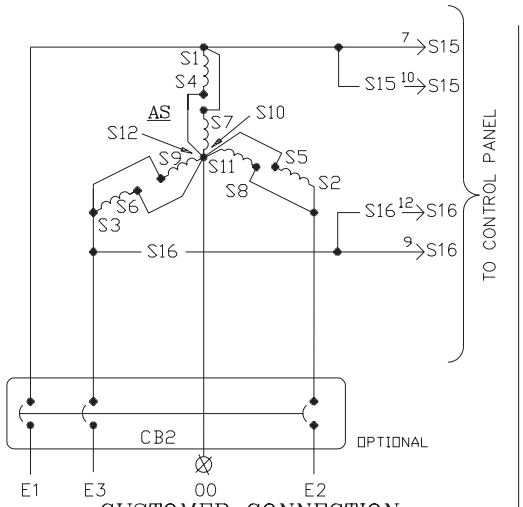
A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2 – CURRENT TRANSFORMER
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR



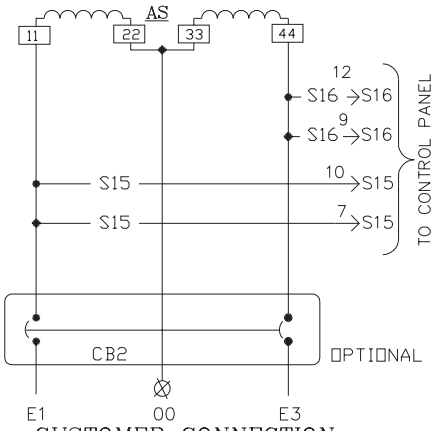
LEGEND

A – AC AMMETER
ALR – ALARM RELAY
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CB2 – CIRCUIT BREAKER– MAIN
CT1,2 – CURRENT TRANSFORMER
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH COOLANT TEMPERATURE
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB 1– CIRCUIT BOARD ENGINE CONTROL
PCB 2– 6 LIGHT ANNUNCIATOR
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW4 – SWITCH– TEST/RESET
SW5 – SWITCH– PHASE SELECTOR
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR

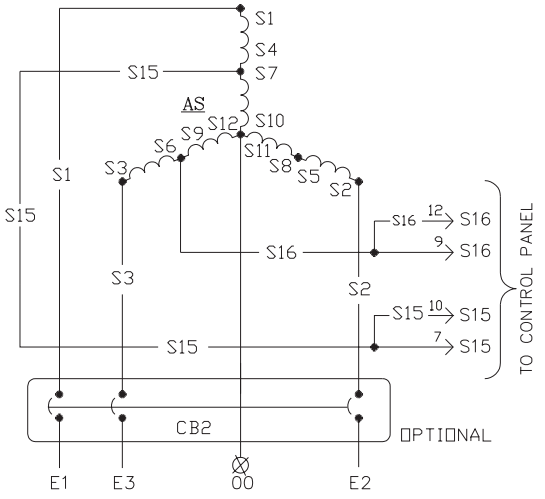
LEGEND
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER



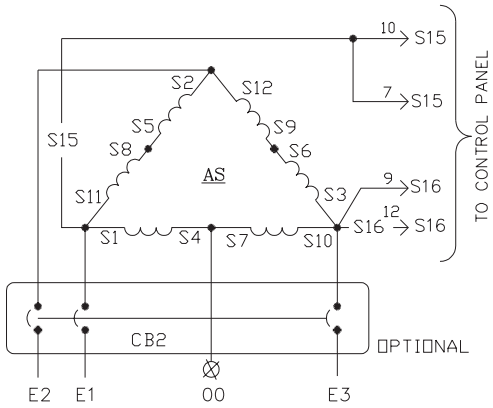
CUSTOMER CONNECTION
120/208-V. 3-PHASE 139/240-V. 3-PHASE



CUSTOMER CONNECTION
120/240-V. 1-PHASE



CUSTOMER CONNECTION
277/480-V. 3-PHASE
240/416-V. 3-PHASE

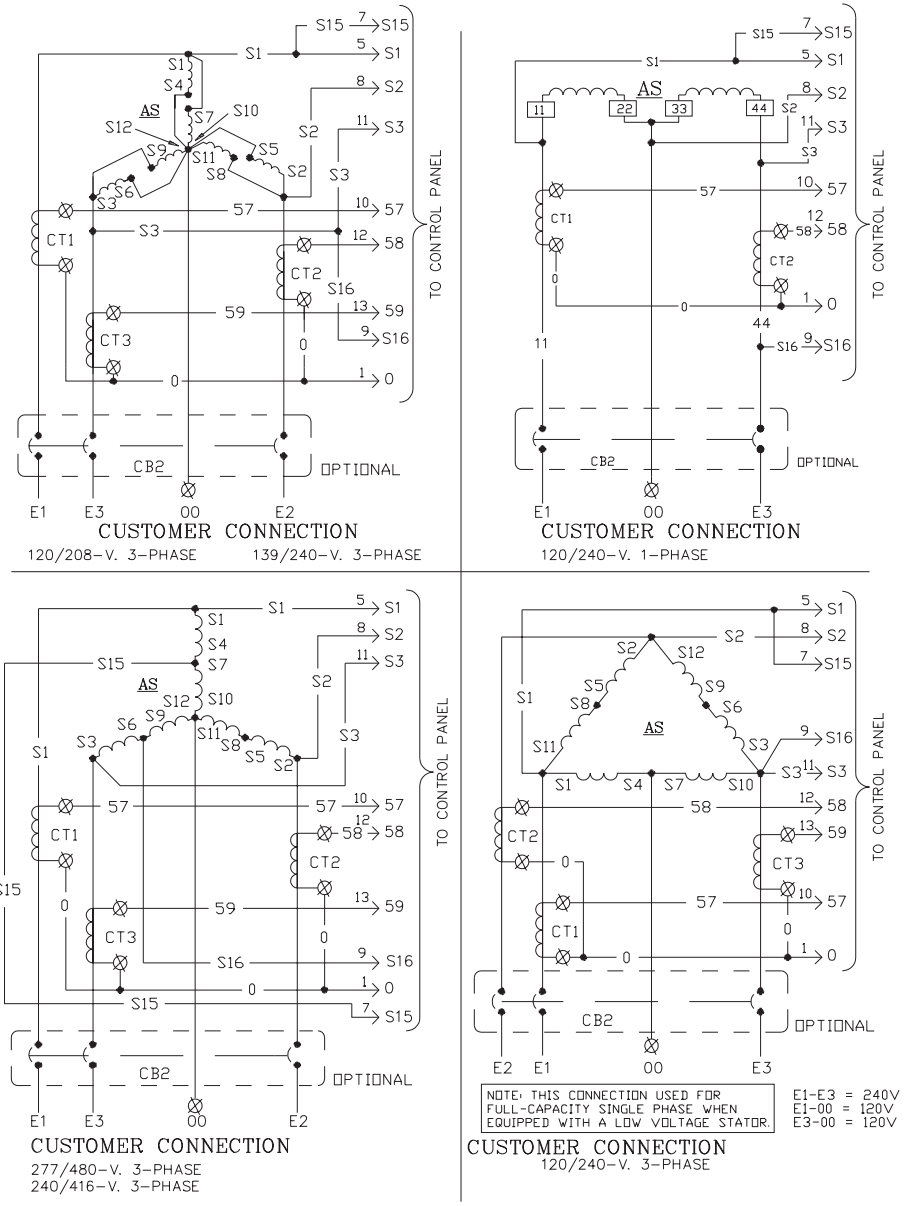


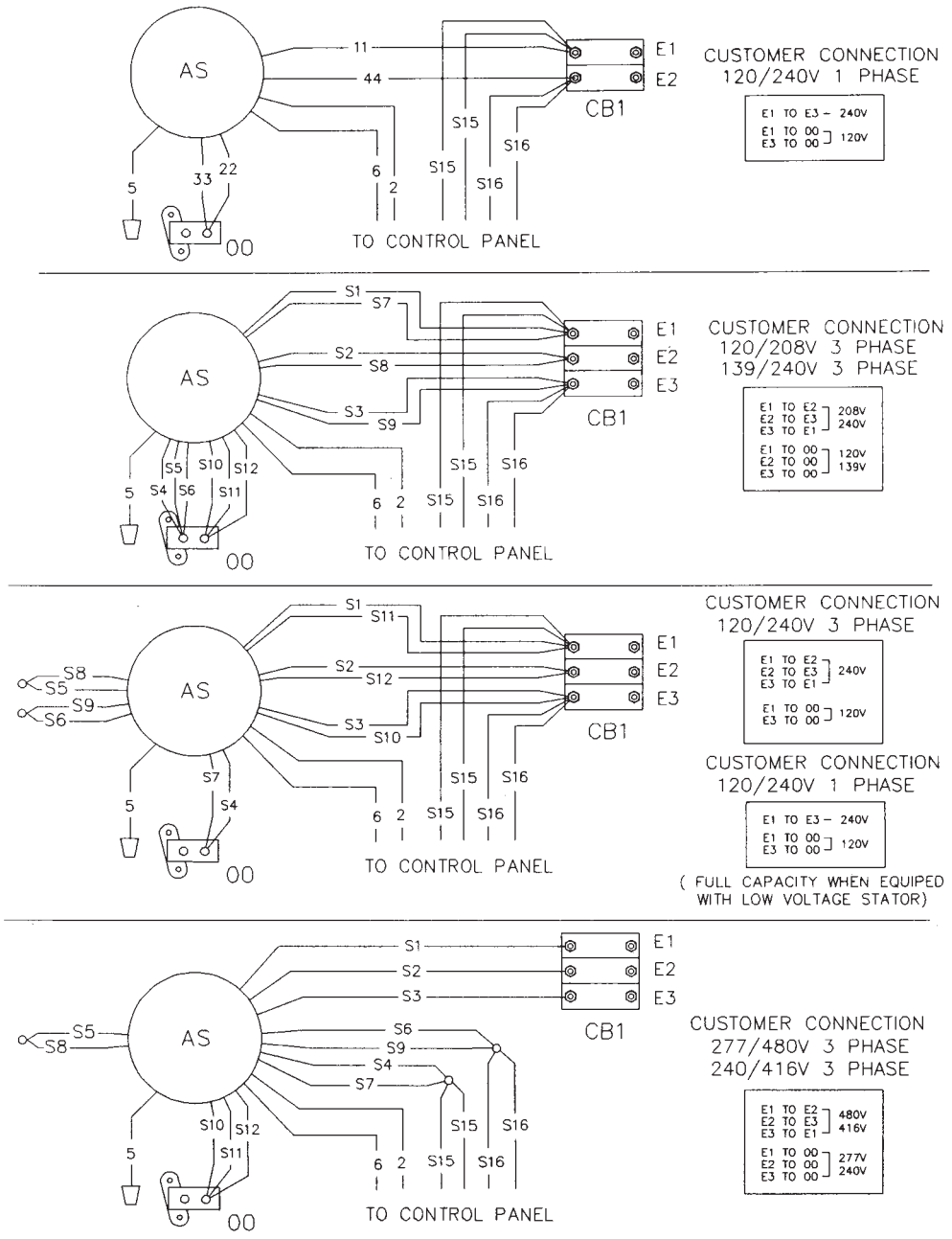
NOTE: THIS CONNECTION USED FOR FULL-CAPACITY SINGLE PHASE WHEN EQUIPPED WITH A LOW VOLTAGE STATOR.

E1-E3 = 240V
E1-00 = 120V
E3-00 = 120V

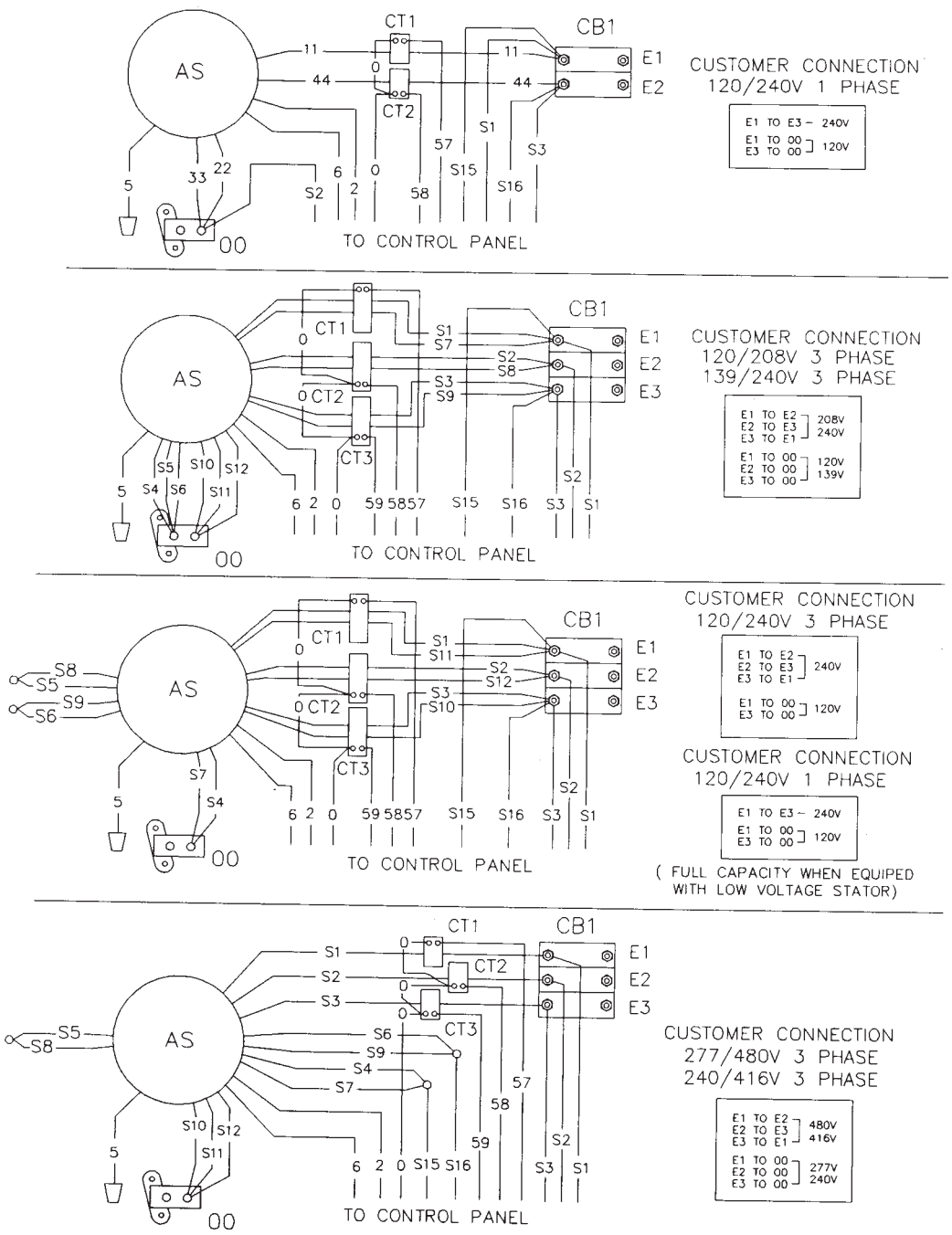
CUSTOMER CONNECTION
120/240-V. 3-PHASE

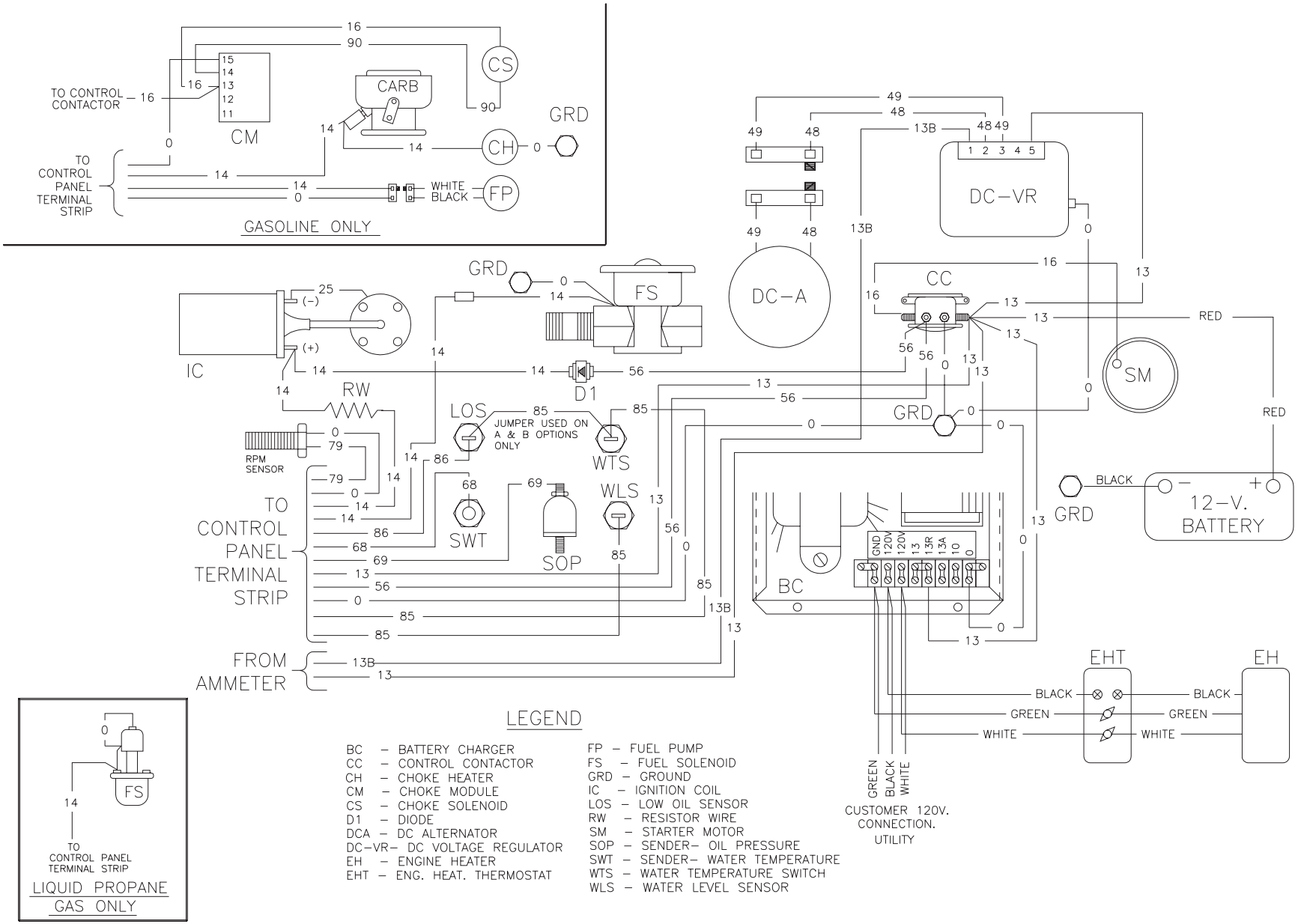
LEGEND
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER





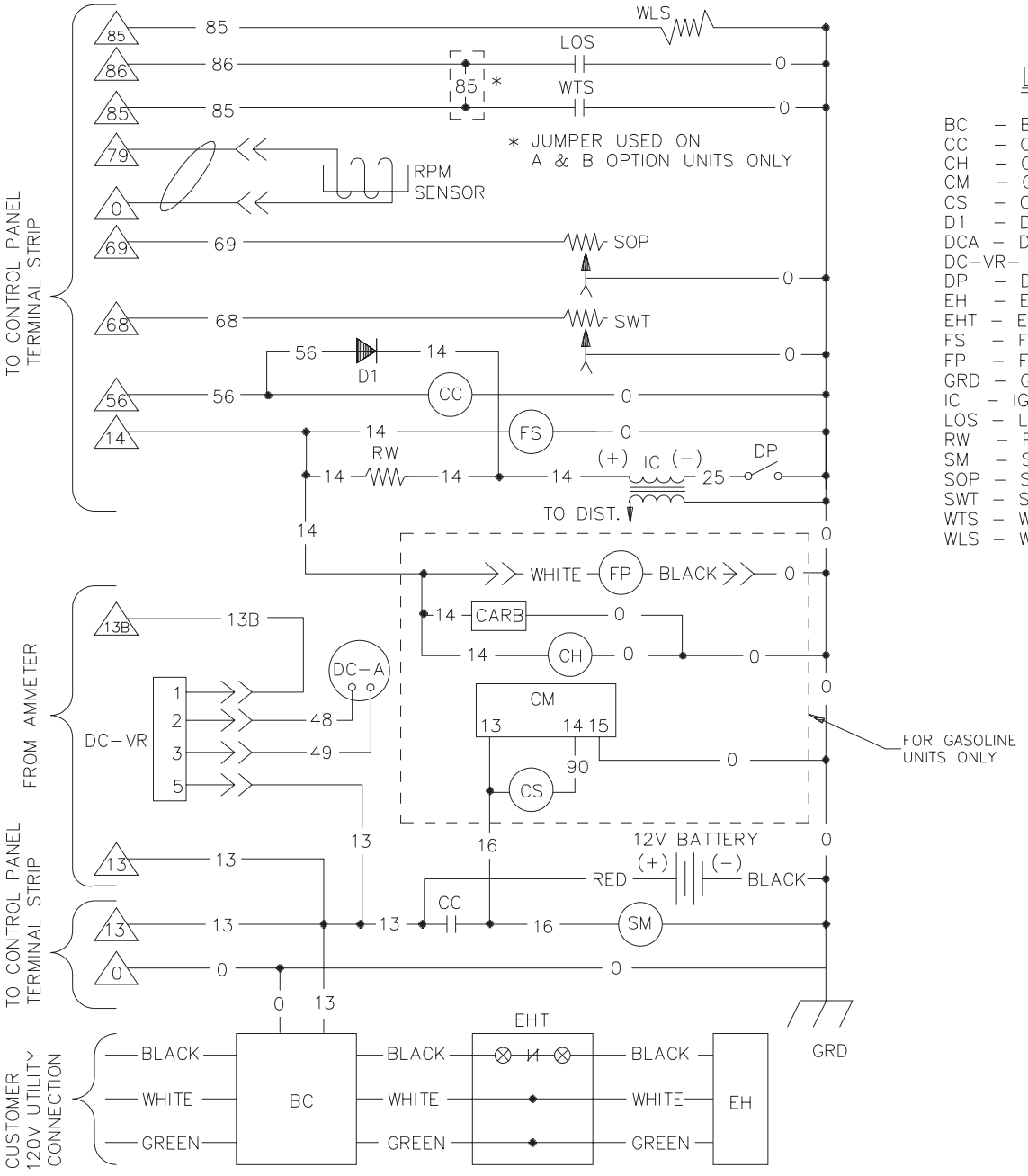
CUSTOMER CONNECTIONS "A" OPTION PANELS ONLY


AS
CT1
CT2
CB1
E1
E2
E3
00
TO CONTROL PANEL
CUSTOMER CONNECTION
120/240V 1 PHASE
E1 TO E3 – 240V
E1 TO 00] 120V
E3 TO 00
CUSTOMER CONNECTION
120/208V 3 PHASE
139/240V 3 PHASE
E1 TO E2] 208V
E2 TO E3] 240V
E3 TO E1
E1 TO 00] 120V
E2 TO 00] 139V
E3 TO 00
CUSTOMER CONNECTION
120/240V 3 PHASE
E1 TO E2] 240V
E2 TO E3] 240V
E3 TO E1
E1 TO 00] 120V
E3 TO 00
CUSTOMER CONNECTION
120/240V 1 PHASE
E1 TO E3 – 240V
E1 TO 00] 120V
E3 TO 00
(FULL CAPACITY WHEN EQUIPED
WITH LOW VOLTAGE STATOR)
CUSTOMER CONNECTION
277/480V 3 PHASE
240/416V 3 PHASE
E1 TO E2] 480V
E2 TO E3] 416V
E3 TO E1
E1 TO 00] 277V
E2 TO 00] 240V
E3 TO 00



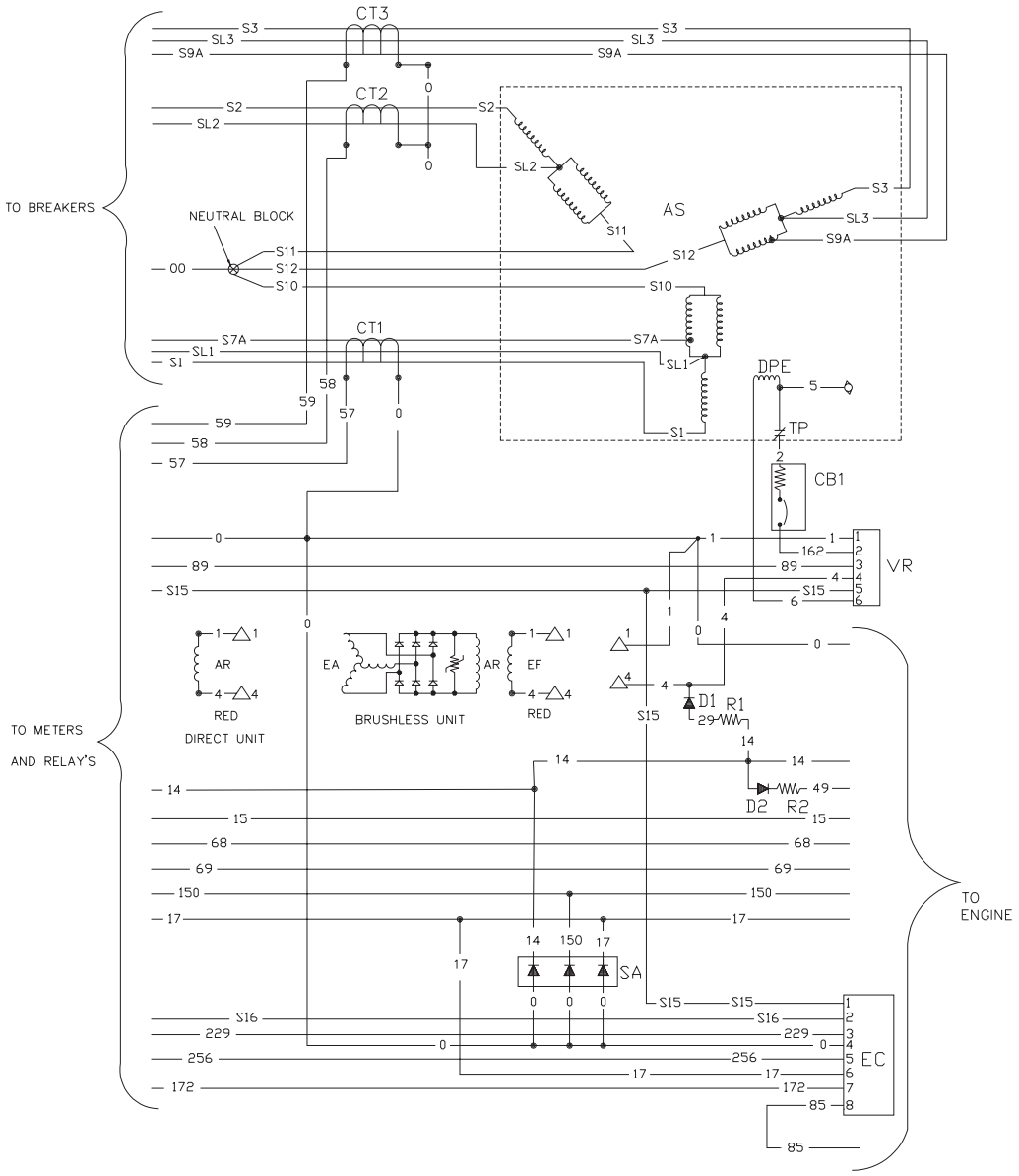
LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC-VR – DC VOLTAGE REGULATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL SENSOR
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR



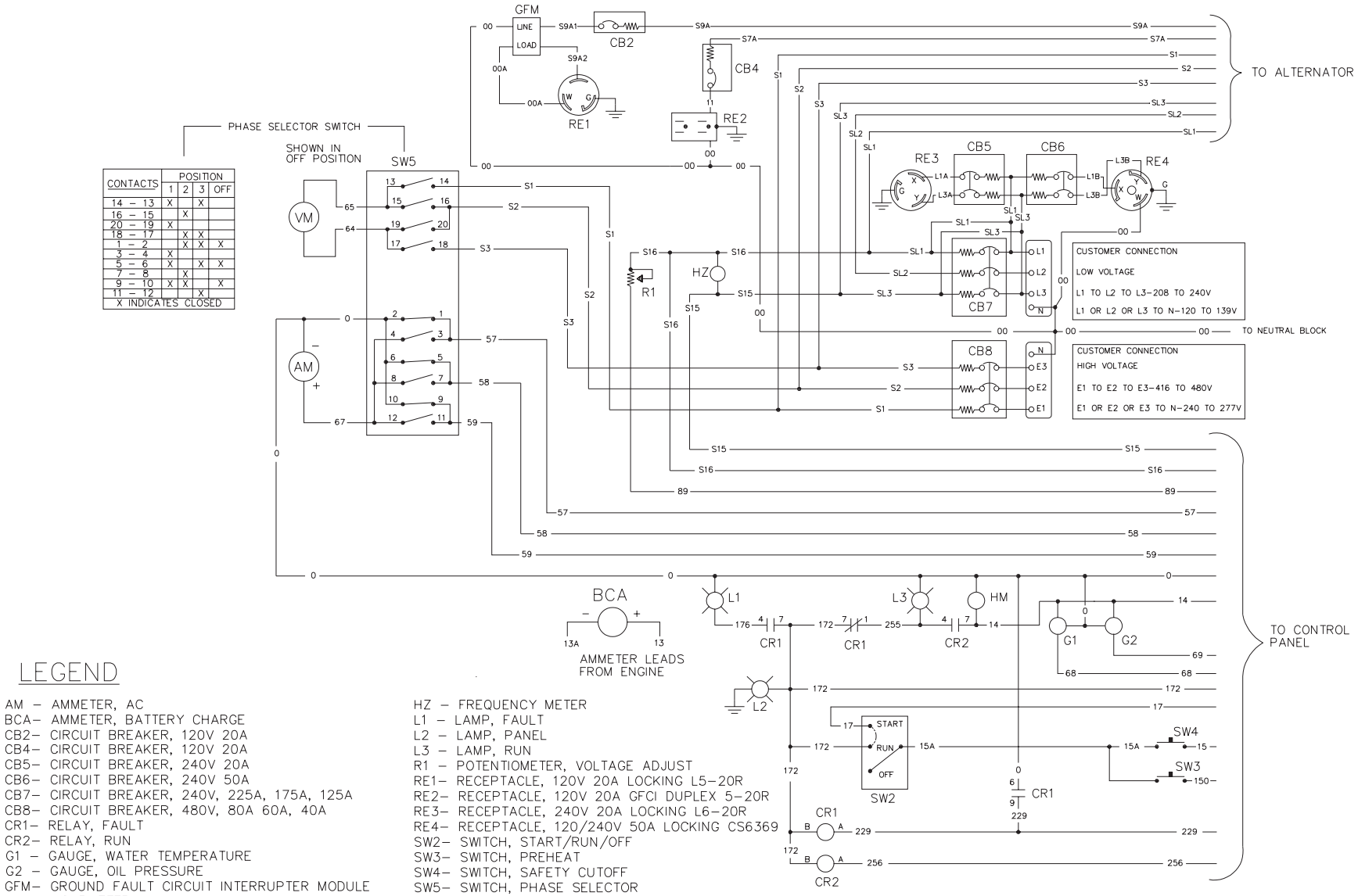
LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC–VR– DC VOLTAGE REGULATOR
DP – DISTRIBUTOR POINTS
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
FP – FUEL PUMP
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL SWITCH
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR



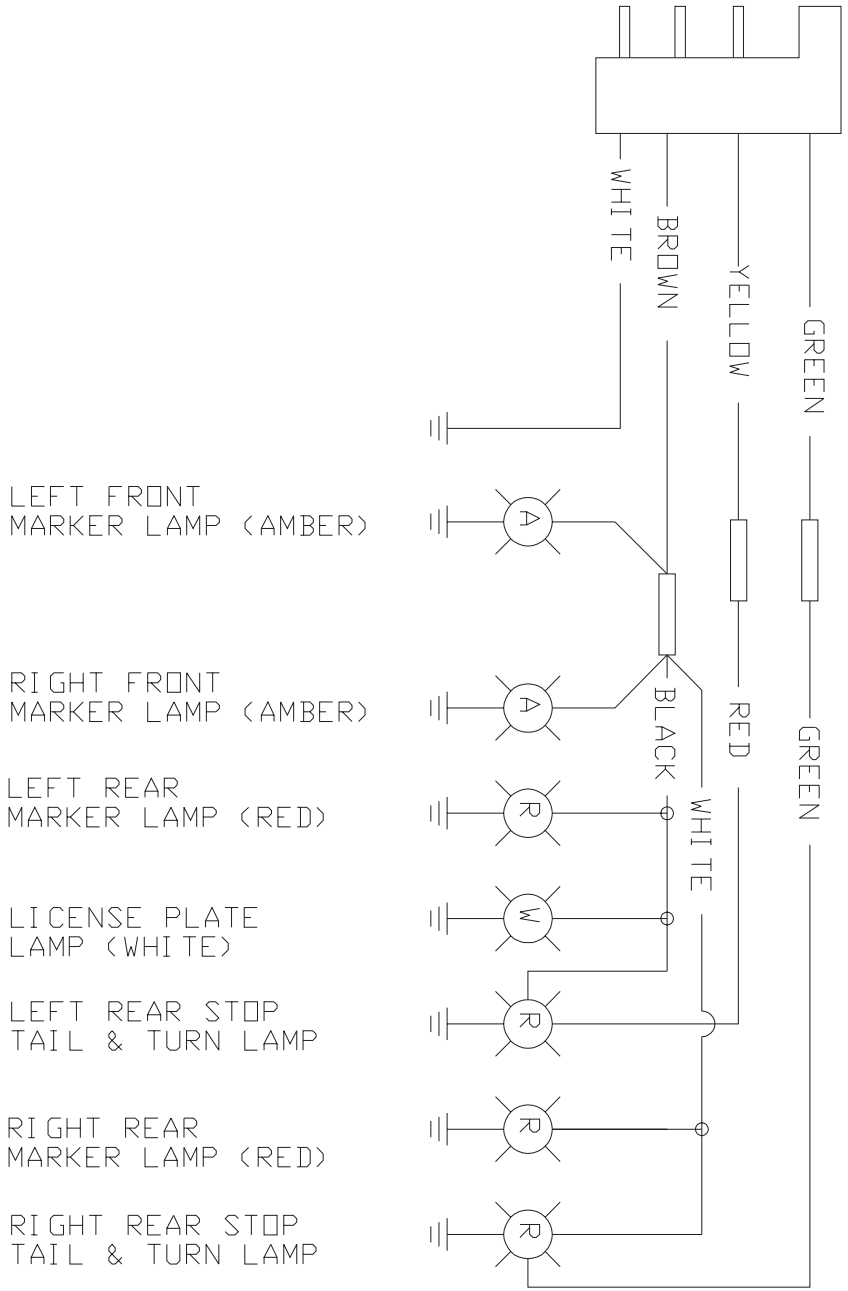
AR — ALTERNATOR ROTOR
AS — ALTERNATOR STATOR
CB1 — CIRCUIT BREAKER-FIELD
CT1 — CURRENT TRANSFORMER-PHASE 1
CT2 — CURRENT TRANSFORMER-PHASE 2
CT3 — CURRENT TRANSFORMER-PHASE 3
DPE — EXCITATION WINDING

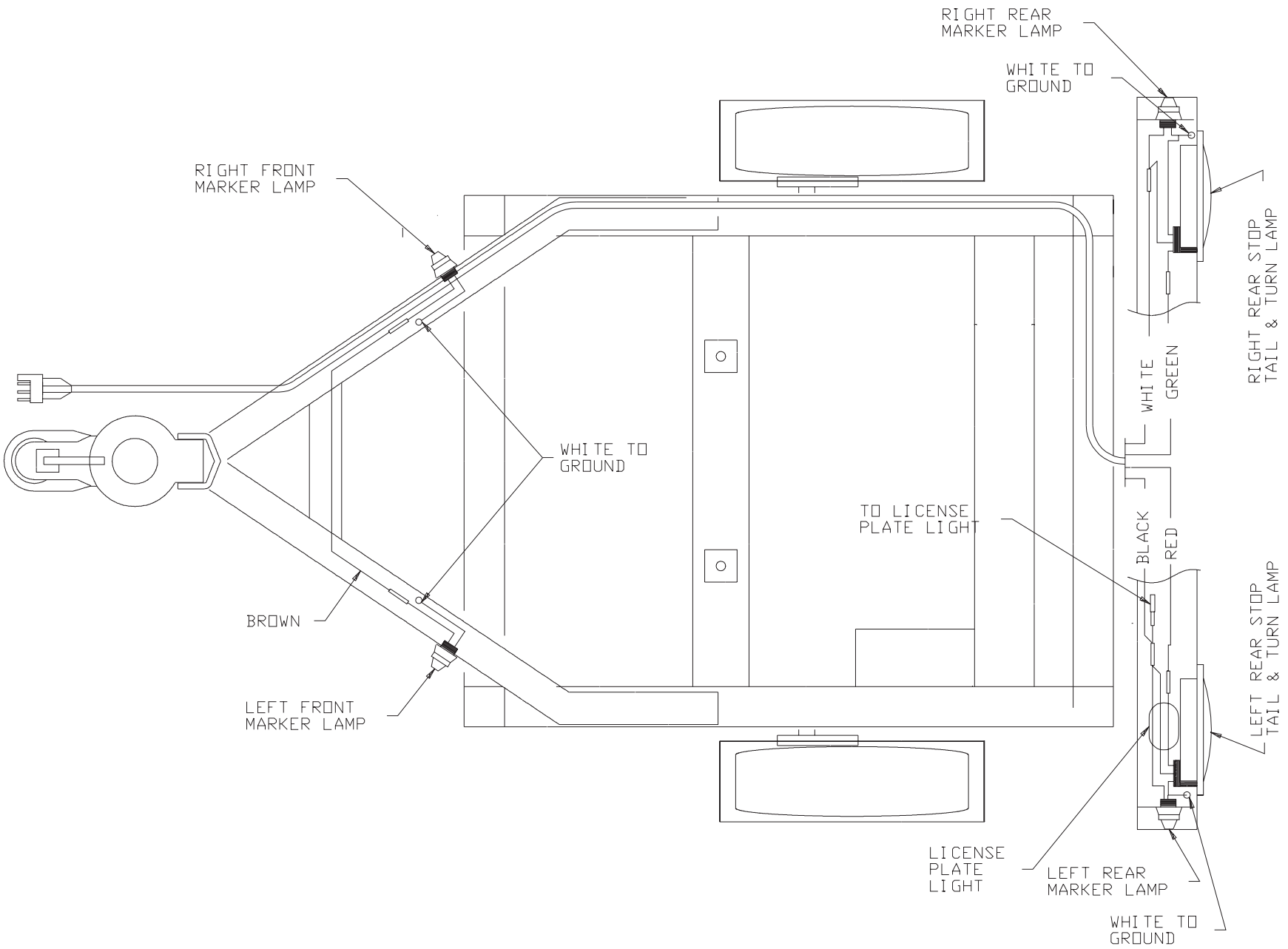
D2 - DIODE-ENGINE ALTERNATOR FIELDBOOST
EC - ENGINE CONTROL
R2 - RESISTOR-ENGINE ALTERNATOR FIELDBOOST
SA - SUPPRESSION ASSEMBLY
VR - VOLTAGE REGULATOR
TP - THERMAL PROTECTOR

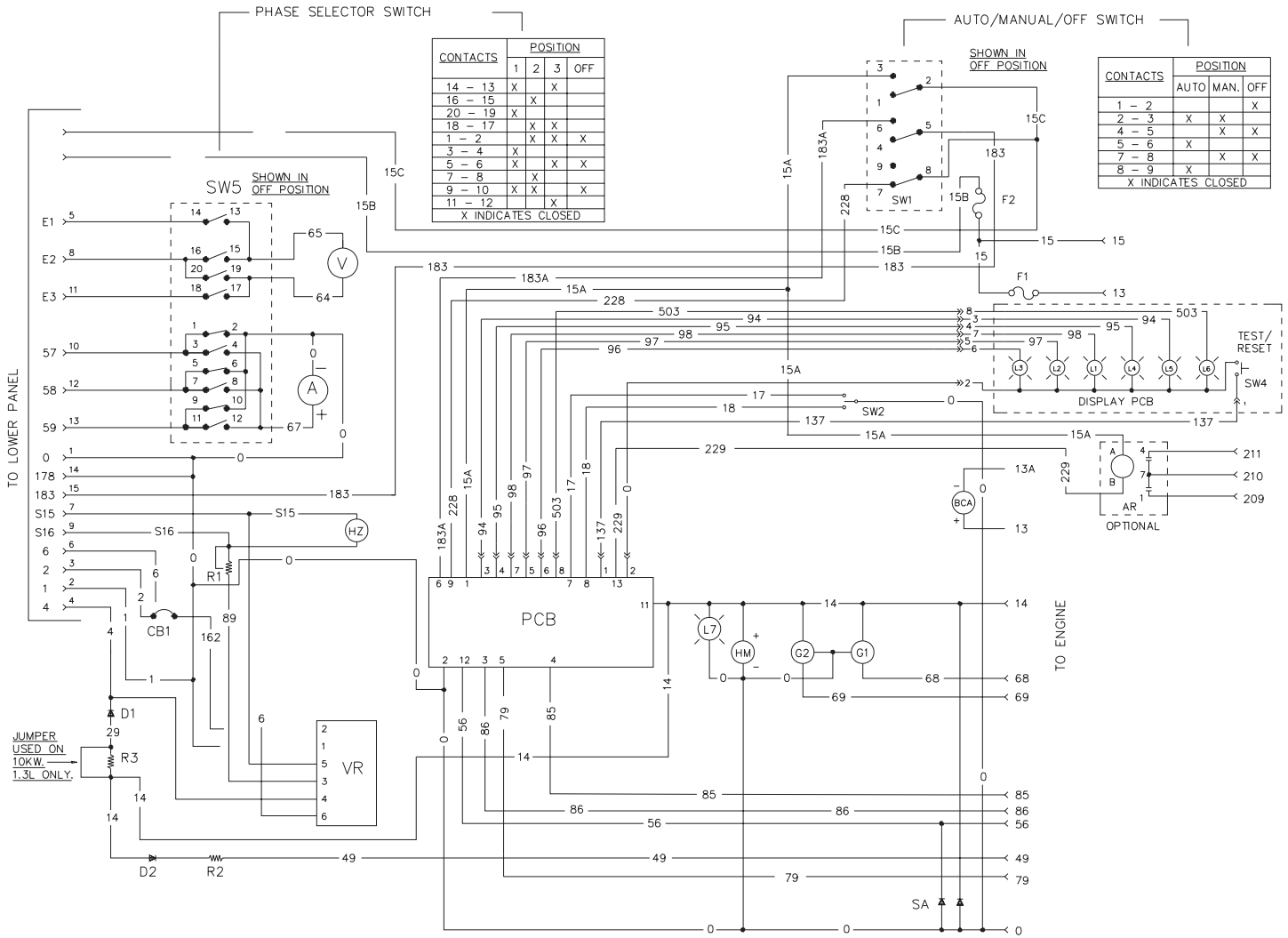


LEGEND

AM – AMMETER, AC
BCA– AMMETER, BATTERY CHARGE
CB2– CIRCUIT BREAKER, 120V 20A
CB4– CIRCUIT BREAKER, 120V 20A
CB5– CIRCUIT BREAKER, 240V 20A
CB6– CIRCUIT BREAKER, 240V 50A
CB7– CIRCUIT BREAKER, 240V, 225A, 175A, 125A
CB8– CIRCUIT BREAKER, 480V, 80A 60A, 40A
CR1– RELAY, FAULT
CR2– RELAY, RUN
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
GFM– GROUND FAULT CIRCUIT INTERRUPTER MODULE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
R1 – POTENTIOMETER, VOLTAGE ADJUST
RE1– RECEPTACLE, 120V 20A LOCKING L5–20R
RE2– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE3– RECEPTACLE, 240V 20A LOCKING L6–20R
RE4– RECEPTACLE, 120/240V 50A LOCKING CS6369
SW2– SWITCH, START/RUN/OFF
SW3– SWITCH, PREHEAT
SW4– SWITCH, SAFETY CUTOFF
SW5– SWITCH, PHASE SELECTOR
VM – VOLTMETER, AC

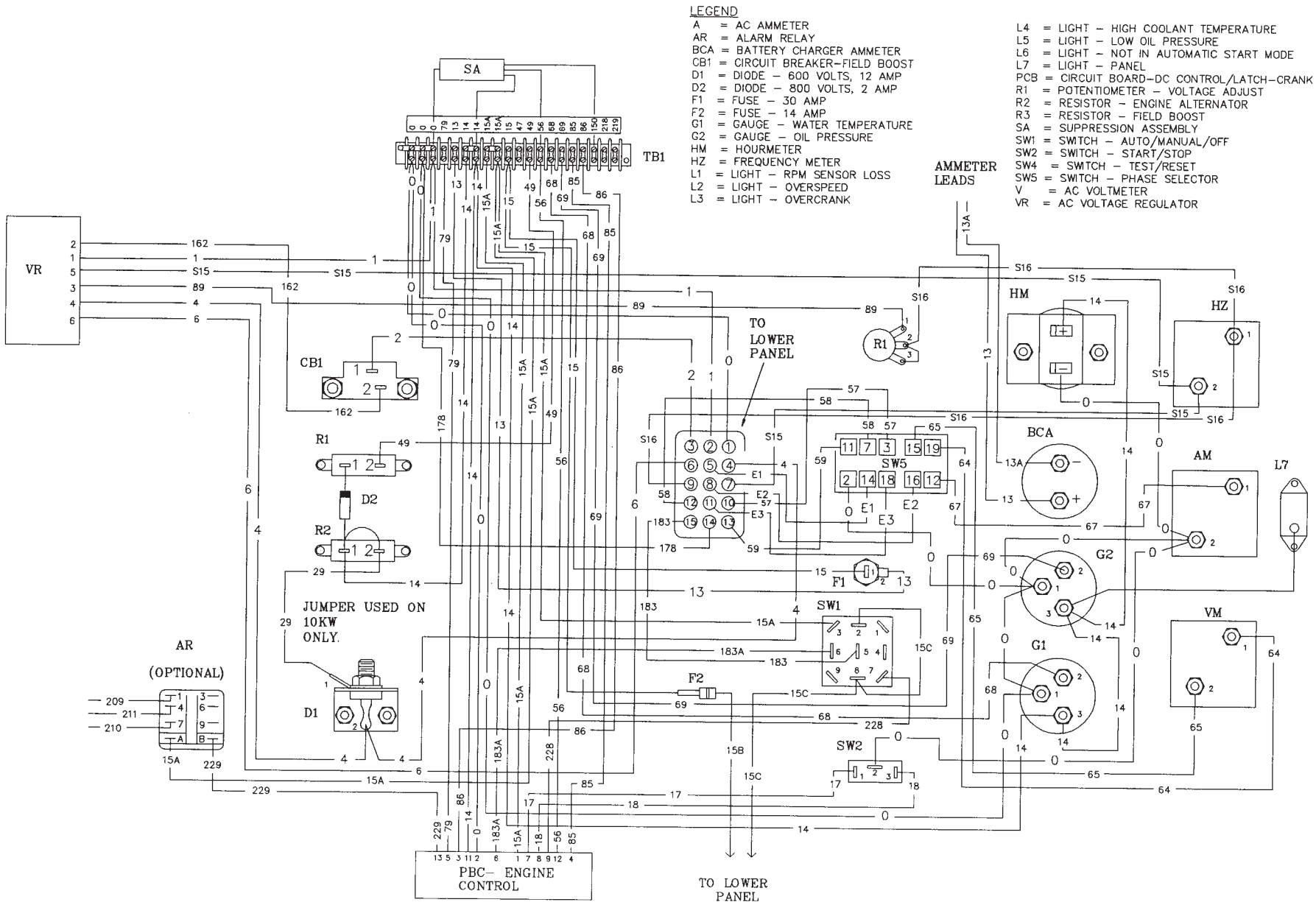

WHITE
BROWN
YELLOW
GREEN
LEFT FRONT
MARKER LAMP (AMBER)
A
RIGHT FRONT
MARKER LAMP (AMBER)
A
BLACK
RED
GREEN
LEFT REAR
MARKER LAMP (RED)
R
WHITE
LICENSE PLATE
LAMP (WHITE)
W
LEFT REAR STOP
TAIL & TURN LAMP
R
RIGHT REAR
MARKER LAMP (RED)
R
RIGHT REAR STOP
TAIL & TURN LAMP
R

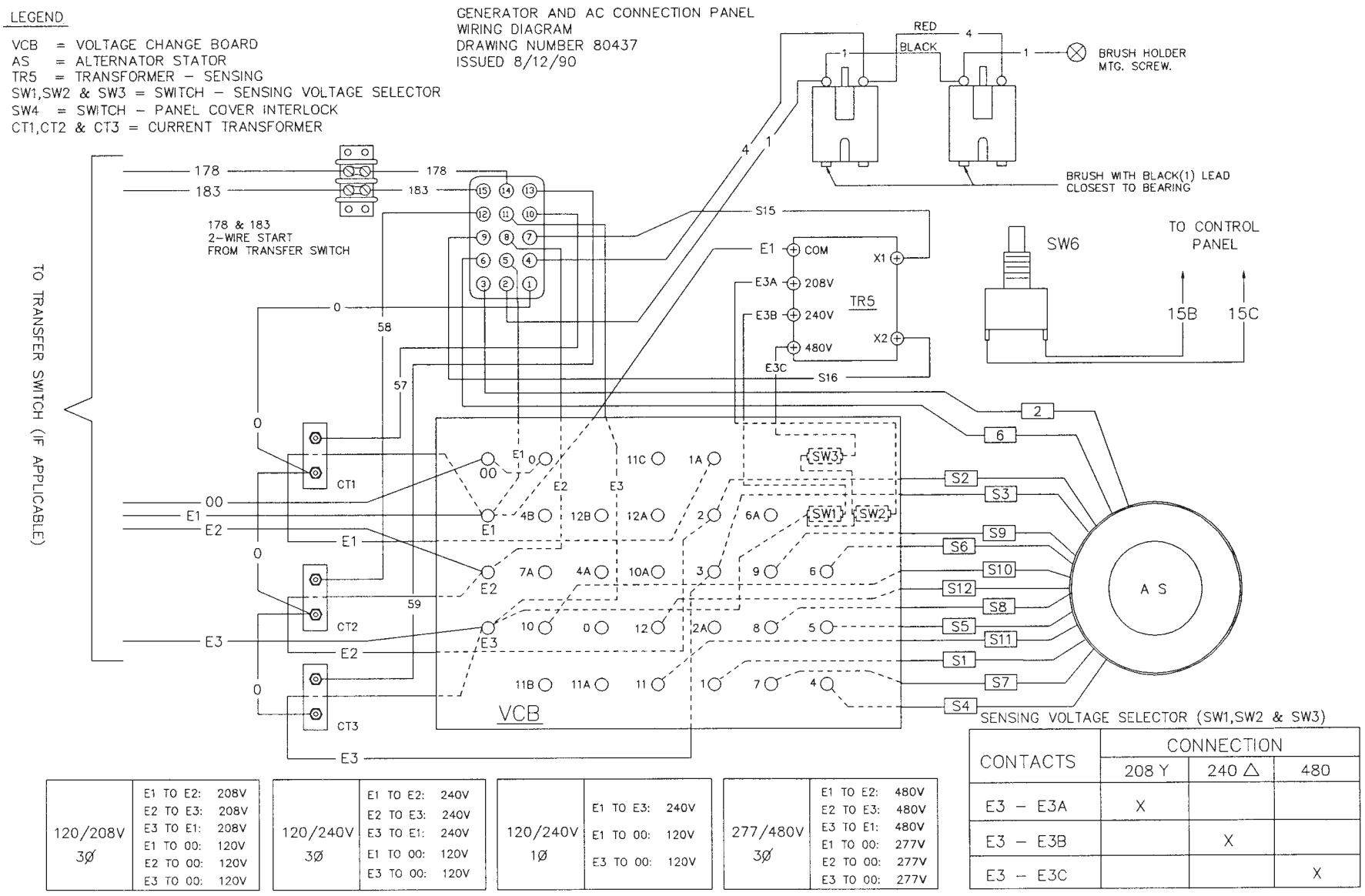

RIGHT REAR
MARKER LAMP
WHITE TO
GROUND
RIGHT FRONT
MARKER LAMP
RIGHT REAR STOP
TAIL & TURN LAMP
WHITE
GREEN
WHITE TO
GROUND
TO LICENSE
PLATE LIGHT
BLACK
RED
BROWN
LEFT REAR STOP
TAIL & TURN LAMP
LEFT FRONT
MARKER LAMP
LICENSE
PLATE
LIGHT
LEFT REAR
MARKER LAMP
WHITE TO
GROUND

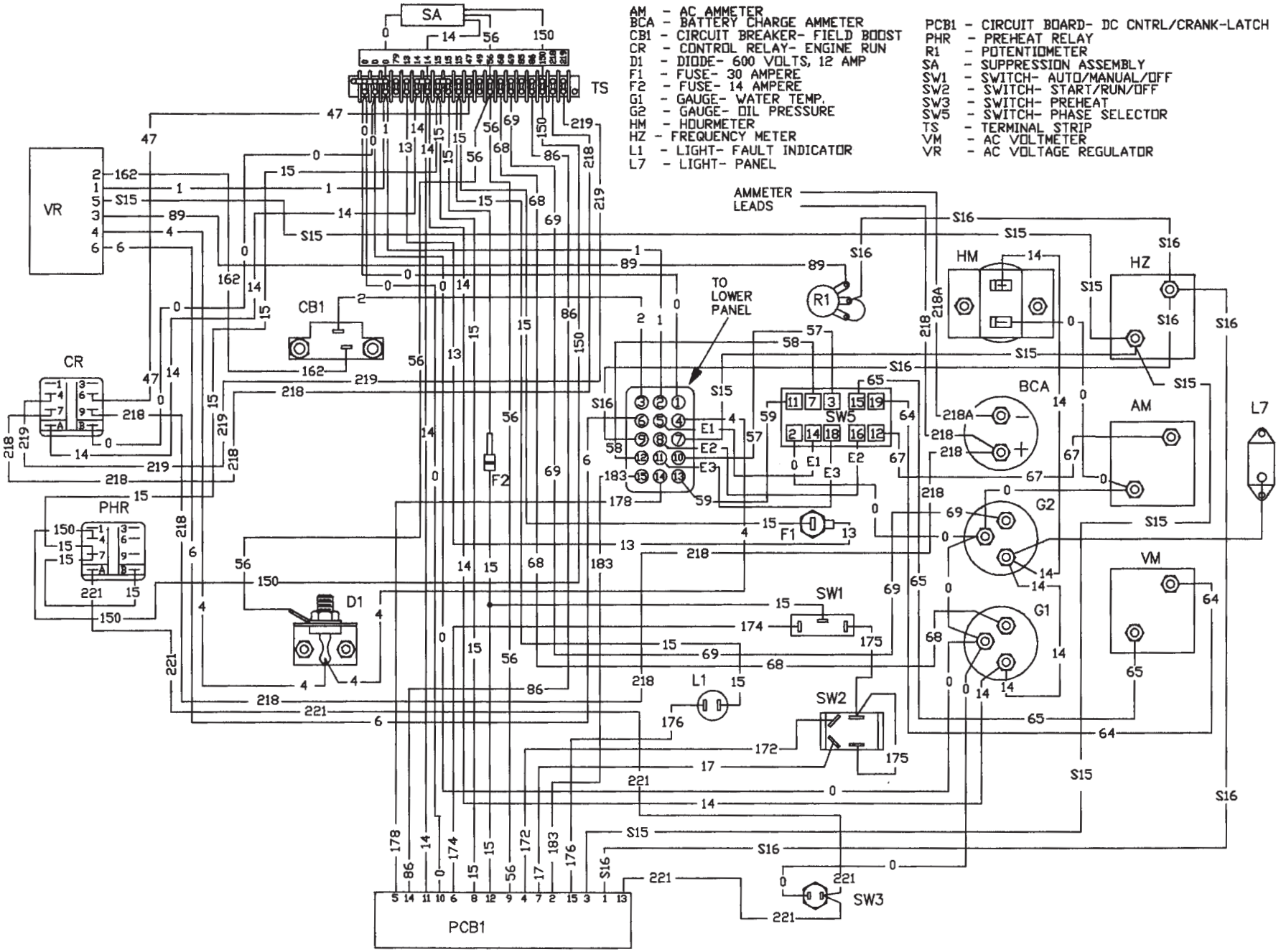


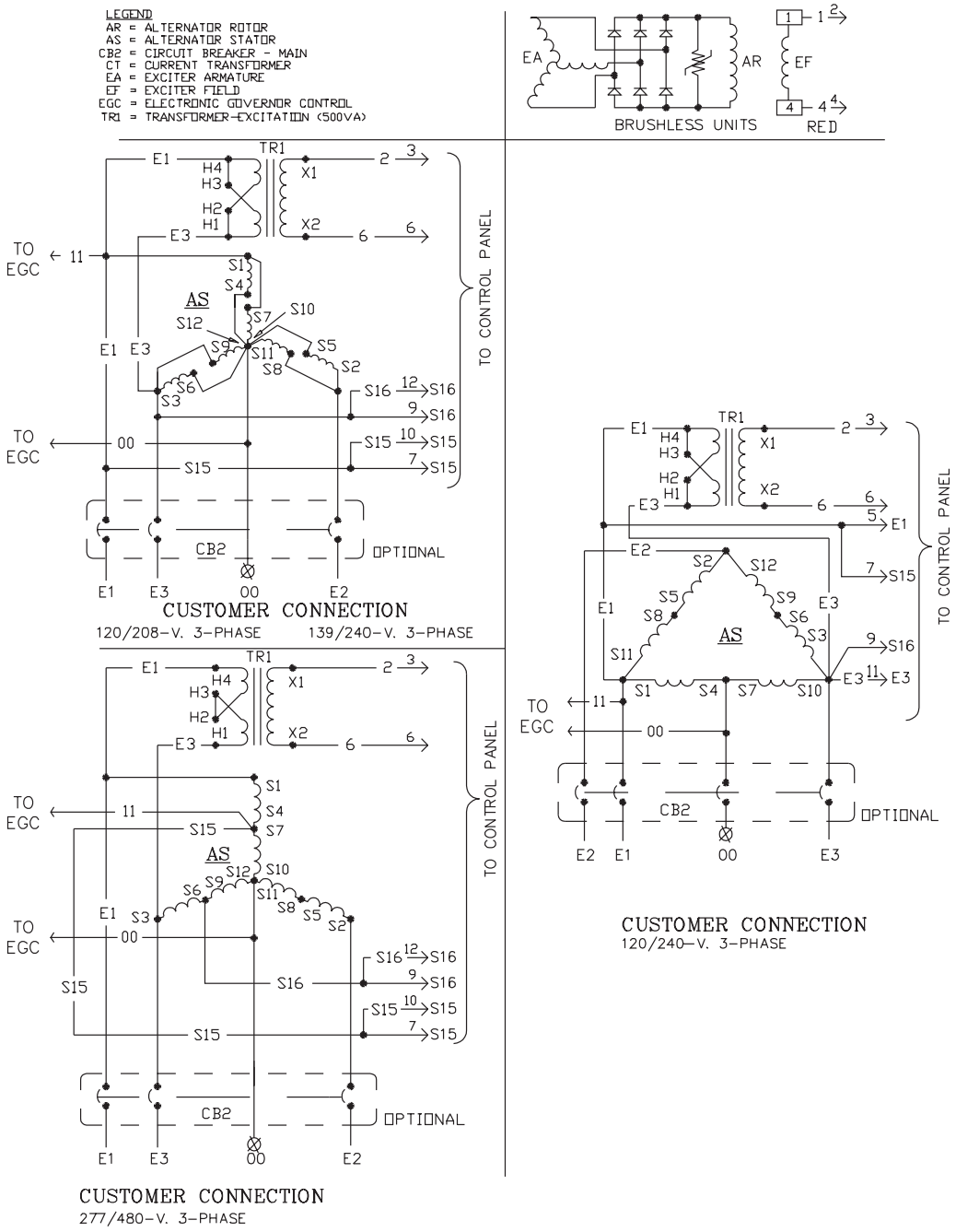
LEGEND

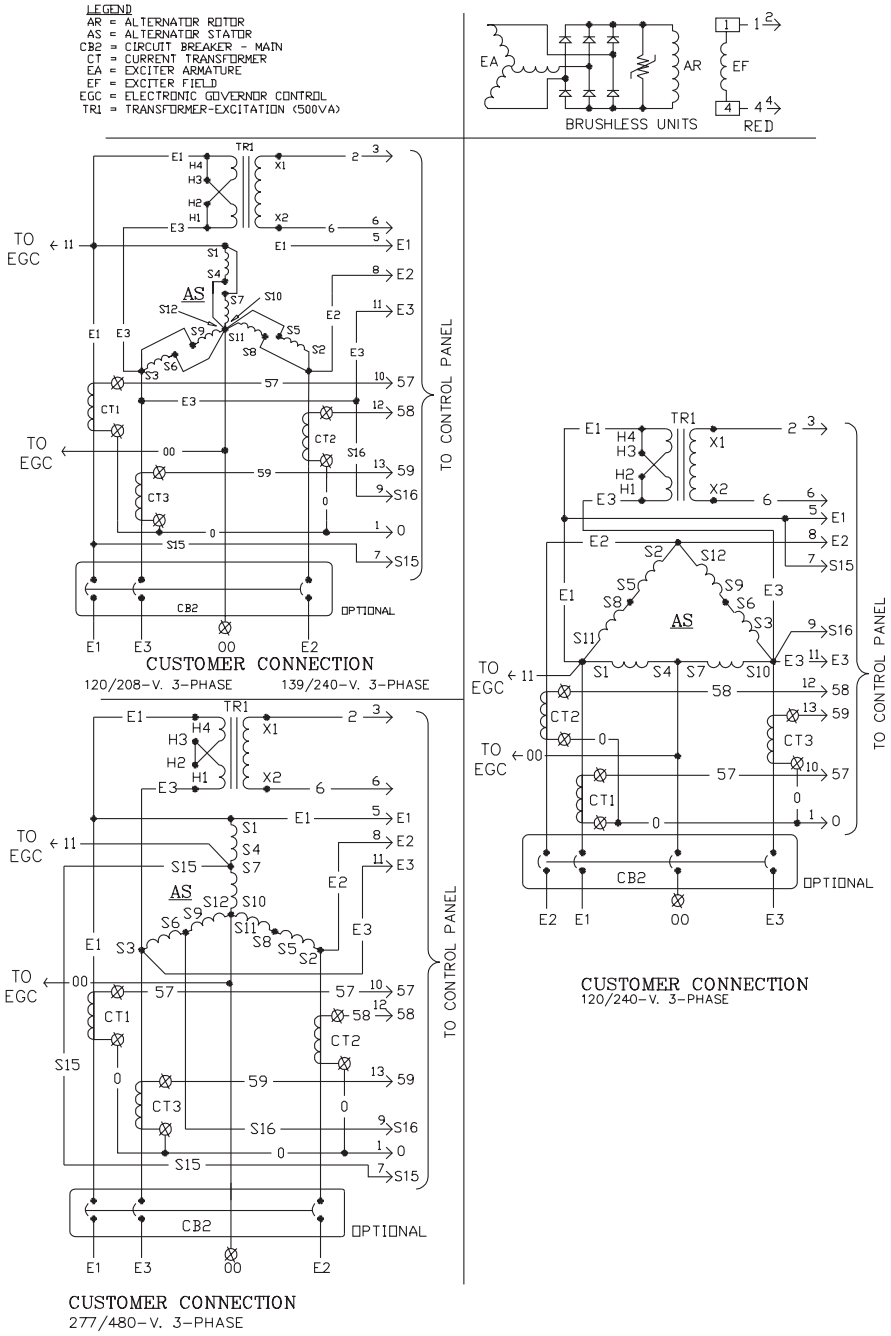
A = AC AMMETER
AR = ALARM RELAY
BCA = BATTERY CHARGER AMMETER
CB1 = CIRCUIT BREAKER–FIELD BOOST
D1 = DIODE – 600 VOLTS, 12 AMP
D2 = DIODE – 800 VOLTS, 2 AMP
F1 = FUSE – 30 AMP
F2 = FUSE – 14 AMP
FDM = FIELD DRIVE MODULE
G1 = GUAGE – WATER TEMPERATURE
G2 = GUAGE – OIL PRESSURE
HM = HOURMETER
HZ = FREQUENCY METER
L1 = LIGHT – RPM SENSOR LOSS
L2 = LIGHT – OVERSPEED
L3 = LIGHT – OVERCRANK
L4 = LIGHT – HIGH COOLANT TEMPERATURE
L5 = LIGHT – LOW OIL PRESSURE
L6 = LIGHT – NOT IN AUTOMATIC START MODE
L7 = LIGHT – PANEL
PCB = CIRCUIT BOARD–DC CONTROL/LATCH–CRANK
R1 = POTENTIOMETER – VOLTAGE ADJUST
R2 = RESISTOR – ENGINE ALTERNATOR
R3 = RESISTOR – FIELD BOOST
SW1 = SWITCH – AUTO/MANUAL/OFF
SW2 = SWITCH – START/STOP
SW4 = SWITCH – TEST/RESET
SW5 = SWITCH – PHASE SELECTOR
V = AC VOLTMETER
VR = AC VOLTAGE REGULATOR

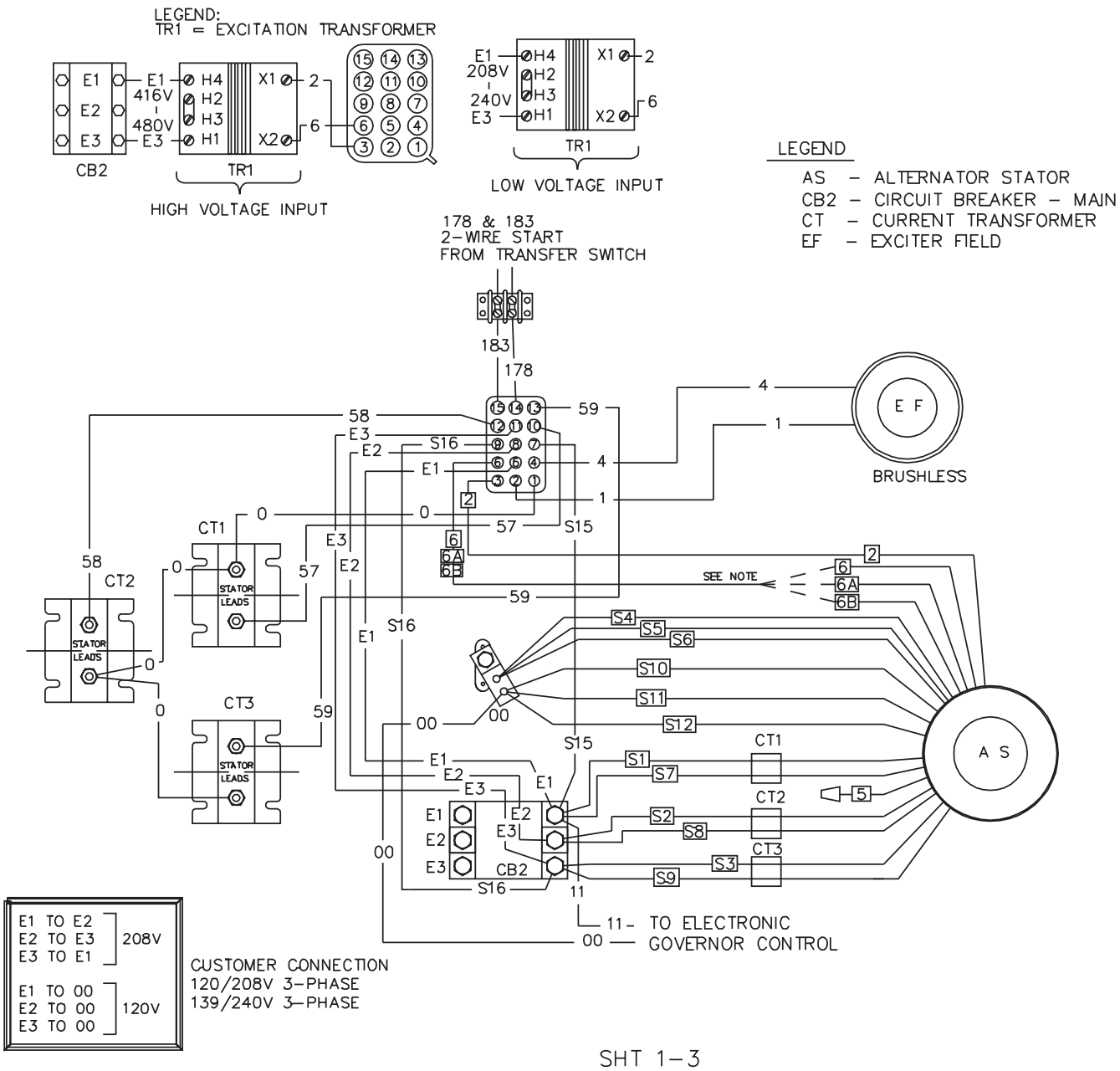

LEGEND
A = AC AMMETER
AR = ALARM RELAY
BCA = BATTERY CHARGER AMMETER
CB1 = CIRCUIT BREAKER-FIELD BOOST
D1 = DIODE – 600 VOLTS, 12 AMP
D2 = DIODE – 800 VOLTS, 2 AMP
F1 = FUSE – 30 AMP
F2 = FUSE – 14 AMP
G1 = GAUGE – WATER TEMPERATURE
G2 = GAUGE – OIL PRESSURE
HM = HOURMETER
HZ = FREQUENCY METER
L1 = LIGHT – RPM SENSOR LOSS
L2 = LIGHT – OVERSPEED
L3 = LIGHT – OVERCRANK
L4 = LIGHT – HIGH COOLANT TEMPERATURE
L5 = LIGHT – LOW OIL PRESSURE
L6 = LIGHT – NOT IN AUTOMATIC START MODE
L7 = LIGHT – PANEL
PCB = CIRCUIT BOARD–DC CONTROL/LATCH–CRANK
R1 = POTENTIOMETER – VOLTAGE ADJUST
R2 = RESISTOR – ENGINE ALTERNATOR
R3 = RESISTOR – FIELD BOOST
SA = SUPPRESSION ASSEMBLY
SW1 = SWITCH – AUTO/MANUAL/OFF
SW2 = SWITCH – START/STOP
SW4 = SWITCH – TEST/RESET
SW5 = SWITCH – PHASE SELECTOR
V = AC VOLTMETER
VR = AC VOLTAGE REGULATOR
SA
TB1
VR
CB1
R1
R2
D1
D2
AR
(OPTIONAL)
JUMPER USED ON 10KW ONLY.
TO LOWER PANEL
AMMETER LEADS
HM
HZ
BCA
AM
L7
G1
G2
VM
SW1
SW2
SW5
F1
F2
PBC– ENGINE CONTROL
TO LOWER PANEL

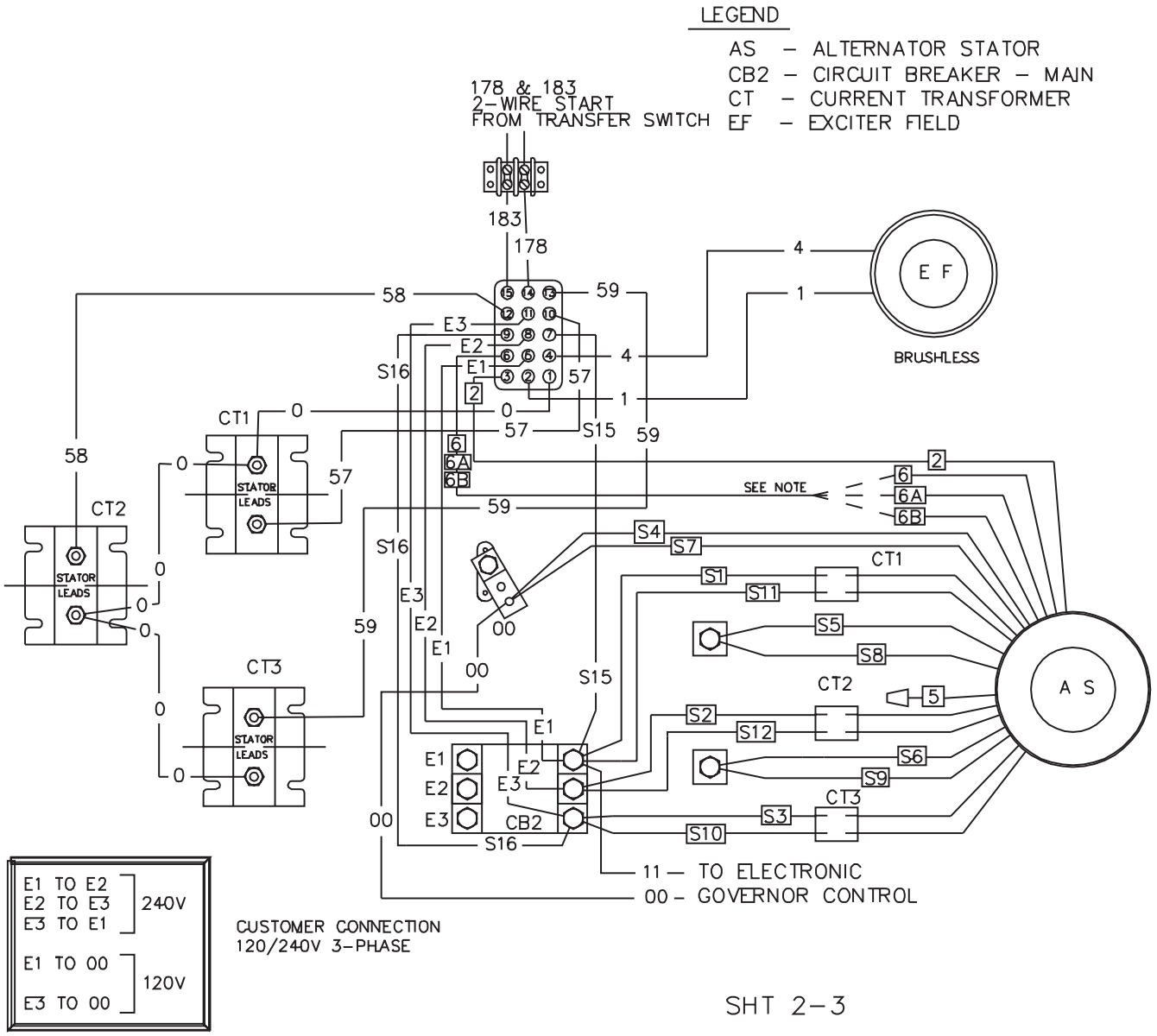

LEGEND
VCB = VOLTAGE CHANGE BOARD
AS = ALTERNATOR STATOR
TR5 = TRANSFORMER – SENSING
SW1,SW2 & SW3 = SWITCH – SENSING VOLTAGE SELECTOR
SW4 = SWITCH – PANEL COVER INTERLOCK
CT1,CT2 & CT3 = CURRENT TRANSFORMER
GENERATOR AND AC CONNECTION PANEL
WIRING DIAGRAM
DRAWING NUMBER 80437
ISSUED 8/12/90
RED
BLACK
BRUSH HOLDER MTG. SCREW.
BRUSH WITH BLACK(1) LEAD CLOSEST TO BEARING
178 & 183
2-WIRE START
FROM TRANSFER SWITCH
TO TRANSFER SWITCH (IF APPLICABLE)
TO CONTROL PANEL
SW6
15B
15C
TR5
COM
208V
240V
480V
X1
X2
E1
E3A
E3B
E3C
S15
S16
CT1
CT2
CT3
VCB
SW1
SW2
SW3
A S
SENSING VOLTAGE SELECTOR (SW1,SW2 & SW3)
120/208V 3Ø
E1 TO E2: 208V
E2 TO E3: 208V
E3 TO E1: 208V
E1 TO 00: 120V
E2 TO 00: 120V
E3 TO 00: 120V
120/240V 3Ø
E1 TO E2: 240V
E2 TO E3: 240V
E3 TO E1: 240V
E1 TO 00: 120V
E3 TO 00: 120V
120/240V 1Ø
E1 TO E3: 240V
E1 TO 00: 120V
E3 TO 00: 120V
277/480V 3Ø
E1 TO E2: 480V
E2 TO E3: 480V
E3 TO E1: 480V
E1 TO 00: 277V
E2 TO 00: 277V
E3 TO 00: 277V
CONTACTS
CONNECTION
208 Y
240 △
480
E3 – E3A X
E3 – E3B X
E3 – E3C X

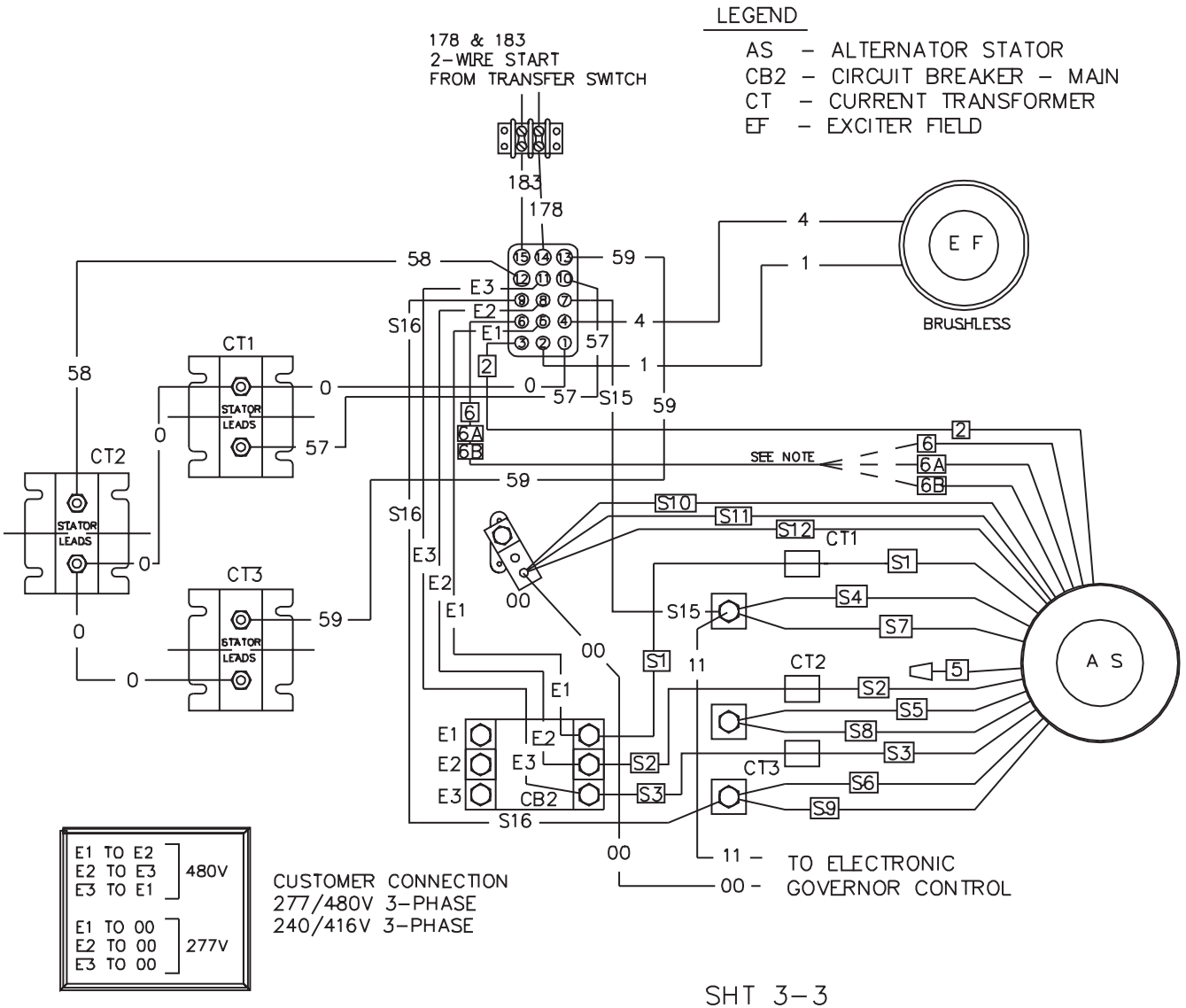

AM - AC AMMETER
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
CR - CONTROL RELAY- ENGINE RUN
D1 - DIODE- 600 VOLTS, 12 AMP
F1 - FUSE- 30 AMPERE
F2 - FUSE- 14 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT- FAULT INDICATOR
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD- DC CNTRL/CRANK-LATCH
PHR - PREHEAT RELAY
R1 - POTENTIOMETER
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
SW5 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
SA
TS
VR
CB1
CR
PHR
D1
F2
R1
SW5
F1
SW1
SW2
L1
SW3
PCB1
HM
HZ
BCA
AM
L7
G2
G1
VM


LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELECTRONIC GOVERNOR CONTROL
TR1 = TRANSFORMER-EXCITATION (500VA)
EA
AR
EF
BRUSHLESS UNITS
RED
TR1
TO CONTROL PANEL
TO EGC
AS
CB2
OPTIONAL
CUSTOMER CONNECTION
120/208-V. 3-PHASE
139/240-V. 3-PHASE
CUSTOMER CONNECTION
277/480-V. 3-PHASE
CUSTOMER CONNECTION
120/240-V. 3-PHASE

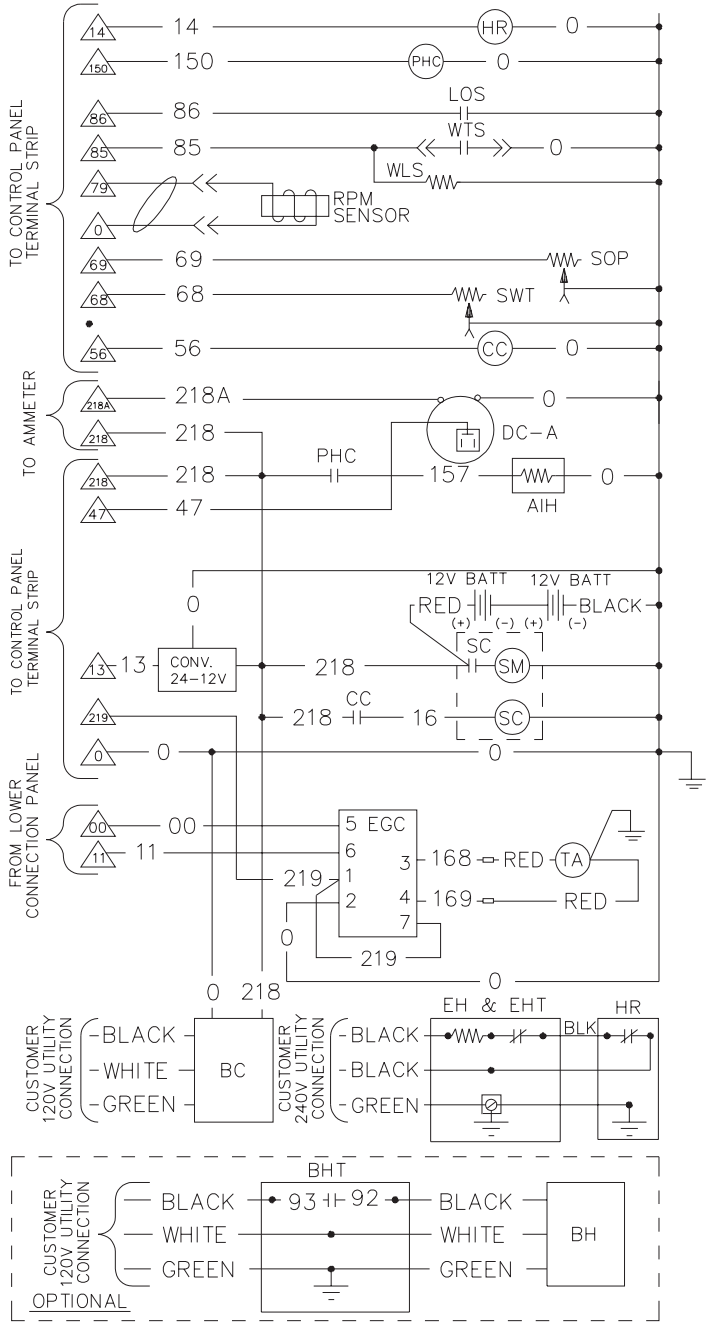

LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELECTRONIC GOVERNOR CONTROL
TR1 = TRANSFORMER-EXCITATION (500VA)
BRUSHLESS UNITS
RED
CUSTOMER CONNECTION
120/208-V. 3-PHASE
139/240-V. 3-PHASE
CUSTOMER CONNECTION
277/480-V. 3-PHASE
CUSTOMER CONNECTION
120/240-V. 3-PHASE
TO CONTROL PANEL
OPTIONAL
TO EGC


LEGEND:
TR1 = EXCITATION TRANSFORMER
E1
E2
E3
416V
480V
H4
H2
H3
H1
X1
X2
CB2
TR1
HIGH VOLTAGE INPUT
208V
240V
LOW VOLTAGE INPUT
LEGEND
AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
178 & 183
2–WIRE START
FROM TRANSFER SWITCH
BRUSHLESS
CT1
CT2
CT3
STATOR LEADS
SEE NOTE
CB2
A S
E F
11– TO ELECTRONIC
00 — GOVERNOR CONTROL
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO 00
E2 TO 00
E3 TO 00
120V
CUSTOMER CONNECTION
120/208V 3–PHASE
139/240V 3–PHASE
SHT 1–3

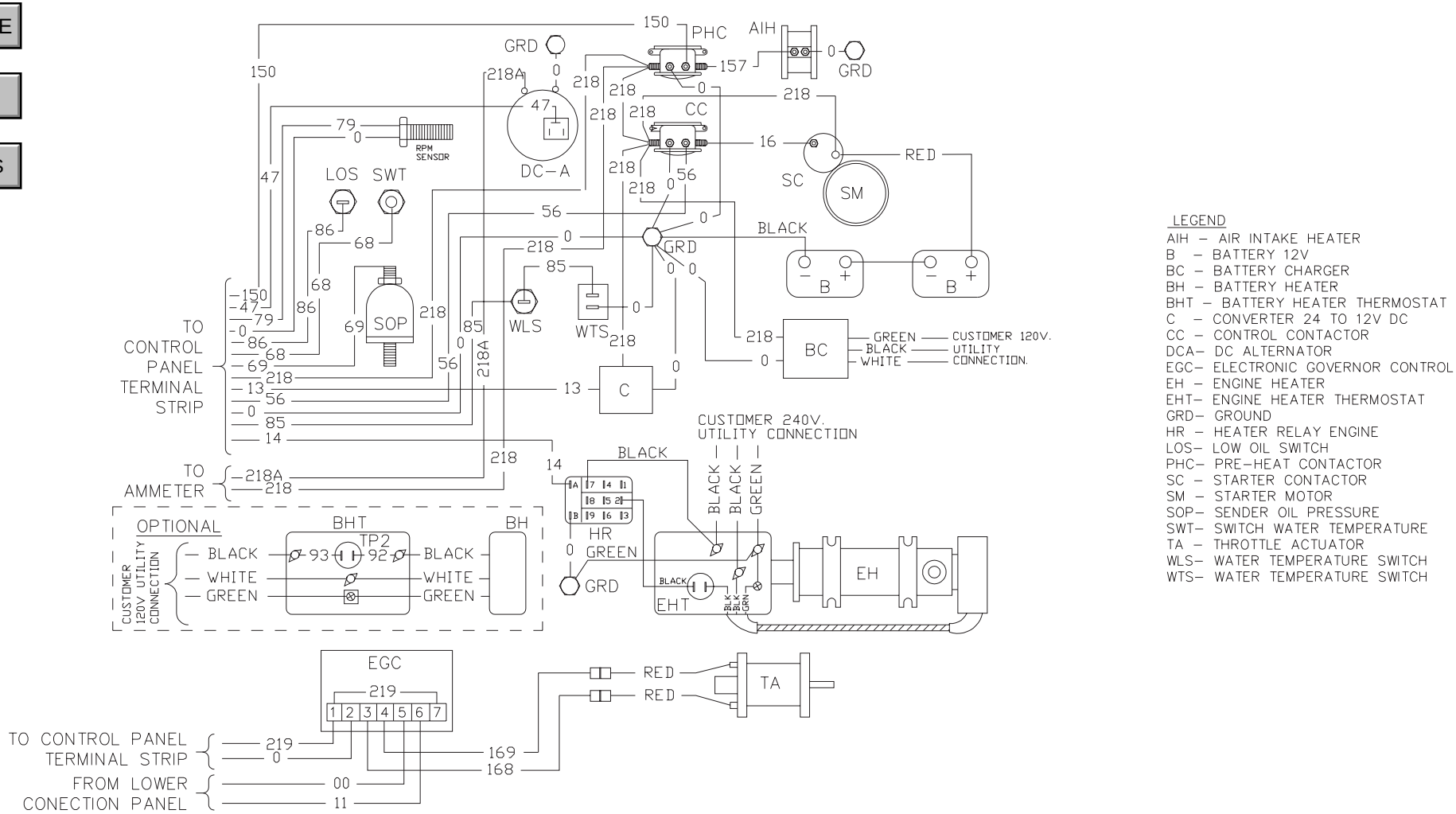

LEGEND
AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
178 & 183
2–WIRE START
FROM TRANSFER SWITCH
183
178
E F
BRUSHLESS
4
1
58
59
E3
E2
E1
S16
57
2
0
CT1
6
6A
6B
SEE NOTE
S15
CT2
STATOR LEADS
S4
S7
S1
S11
S5
S8
CT3
S2
S12
S6
S9
S3
S10
A S
5
00
CB2
11 – TO ELECTRONIC
00 – GOVERNOR CONTROL
E1 TO E2
E2 TO E3
E3 TO E1
240V
E1 TO 00
E3 TO 00
120V
CUSTOMER CONNECTION
120/240V 3–PHASE
SHT 2–3


LEGEND
AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
178 & 183
2-WIRE START
FROM TRANSFER SWITCH
183
178
E F
BRUSHLESS
CT1
CT2
CT3
STATOR LEADS
SEE NOTE
A S
CB2
TO ELECTRONIC GOVERNOR CONTROL
E1 TO E2
E2 TO E3
E3 TO E1
480V
E1 TO 00
E2 TO 00
E3 TO 00
277V
CUSTOMER CONNECTION
277/480V 3-PHASE
240/416V 3-PHASE

SHT 3-3

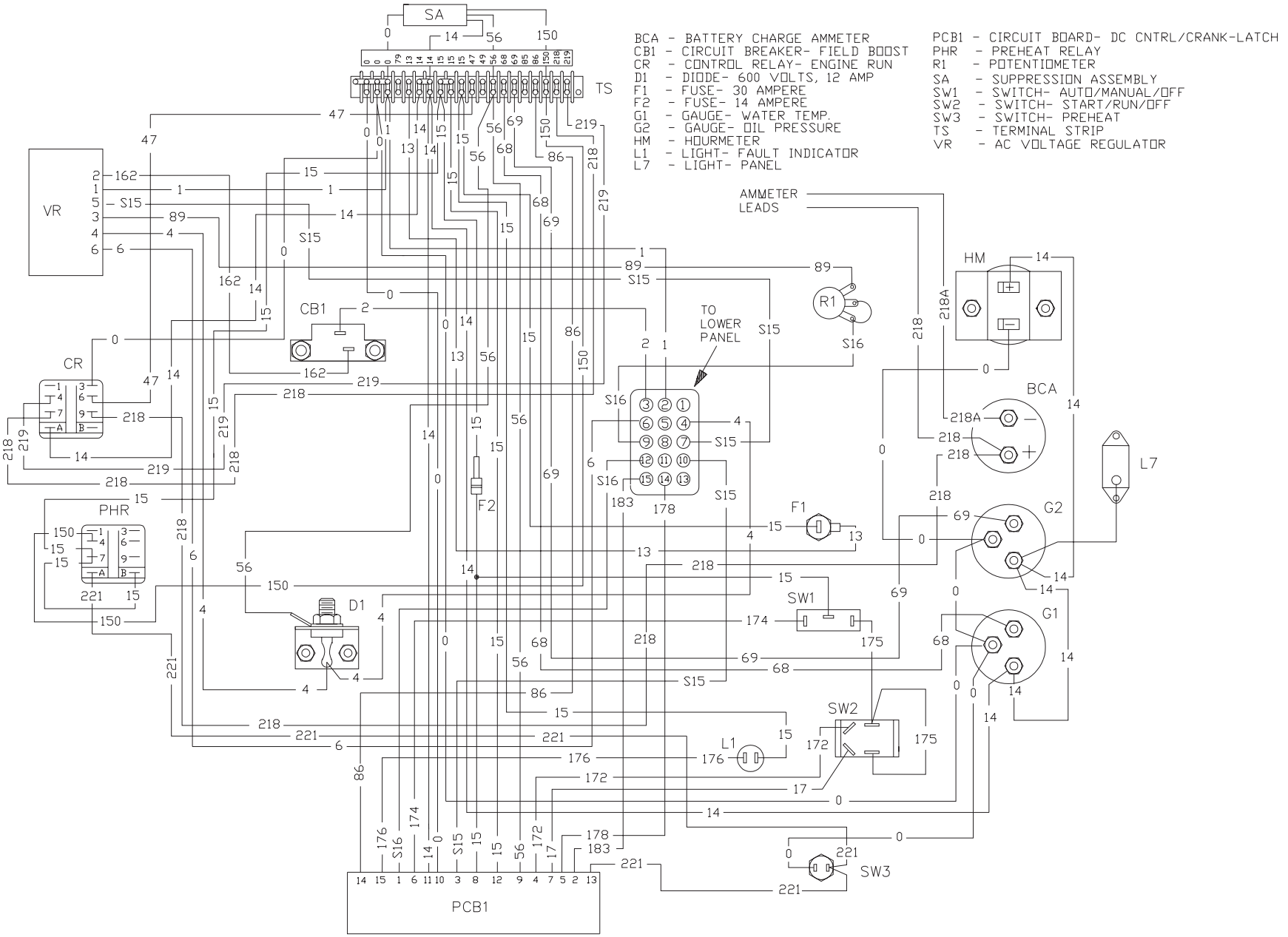


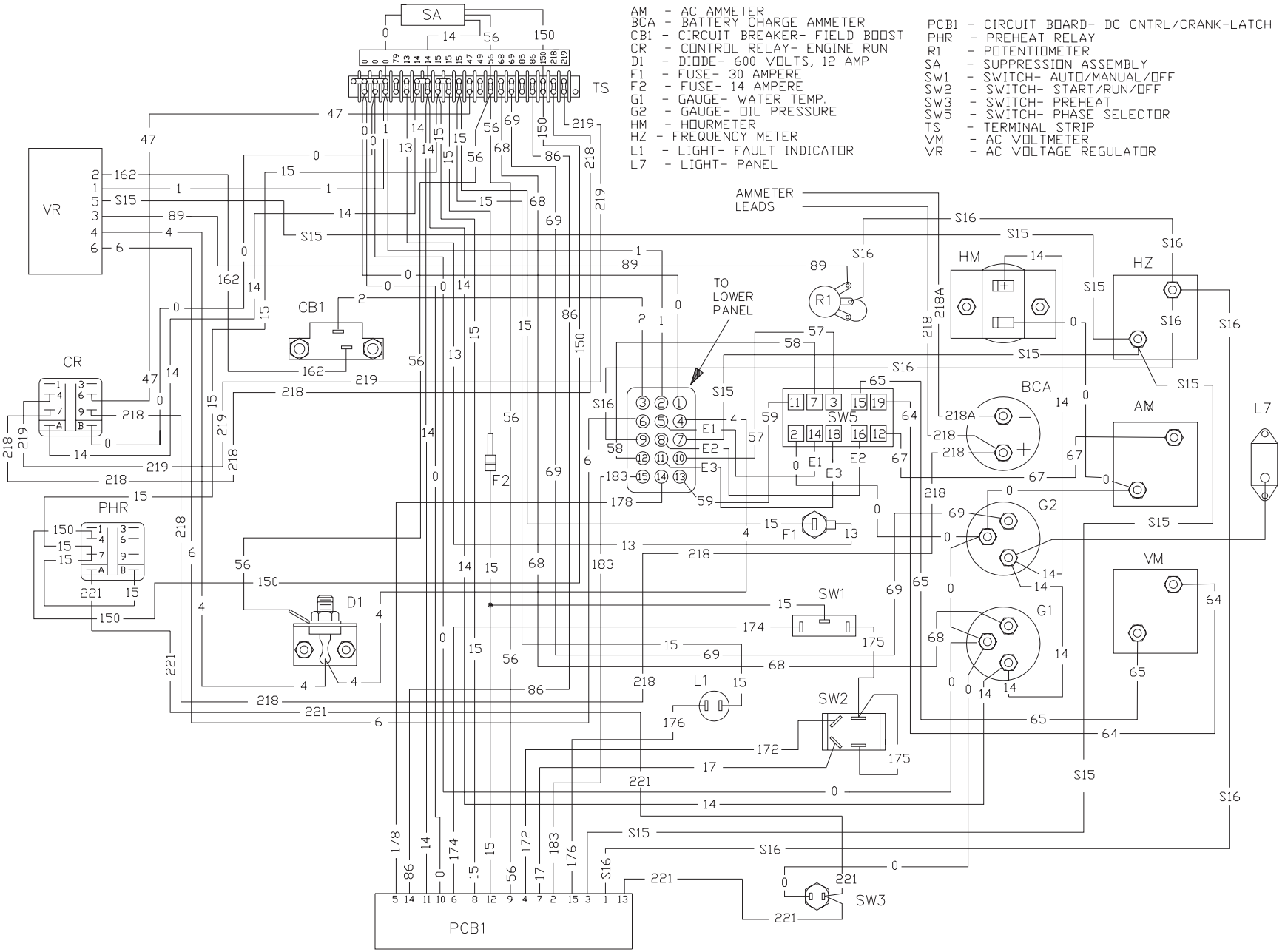
LEGEND
AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
C – CONVERTER 24 TO 12V DC
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EGC– ELECTRONIC GOVERNOR CONTROL
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
GRD– GROUND
HR – HEATER RELAY ENGINE
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER OIL PRESSURE
SWT– SWITCH WATER TEMPERATURE
TA – THROTTLE ACTUATOR
WLS– WATER TEMPERATURE SWITCH
WTS– WATER TEMPERATURE SWITCH



LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
C – CONVERTER 24 TO 12V DC
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SM – STARTER MOTOR
SOP– SENDER OIL PRESSURE
SWT– SWITCH WATER TEMPERATURE
TA – THROTTLE ACTUATOR
WLS– WATER TEMPERATURE SWITCH
WTS– WATER TEMPERATURE SWITCH


BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
CR - CONTROL RELAY- ENGINE RUN
D1 - DIODE- 600 VOLTS, 12 AMP
F1 - FUSE- 30 AMPERE
F2 - FUSE- 14 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
L1 - LIGHT- FAULT INDICATOR
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD- DC CNTRL/CRANK-LATCH
PHR - PREHEAT RELAY
R1 - POTENTIOMETER
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
TS - TERMINAL STRIP
VR - AC VOLTAGE REGULATOR
SA
TS
VR
CB1
CR
PHR
D1
F2
F1
R1
HM
BCA
G2
G1
L7
SW1
SW2
SW3
L1
PCB1
AMMETER LEADS
TO LOWER PANEL

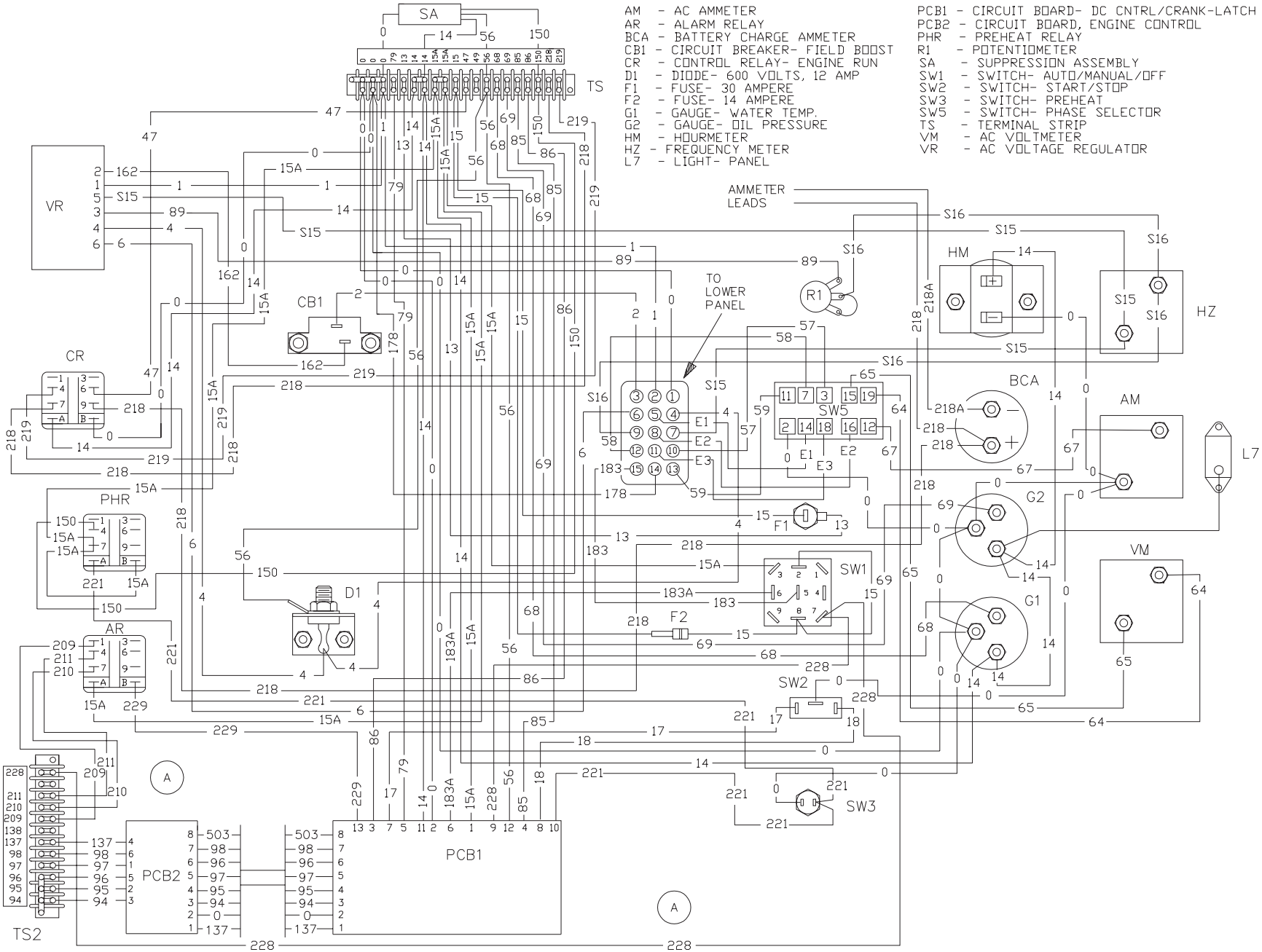

AM - AC AMMETER
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
CR - CONTROL RELAY- ENGINE RUN
D1 - DIODE- 600 VOLTS, 12 AMP
F1 - FUSE- 30 AMPERE
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L1 - LIGHT- FAULT INDICATOR
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD- DC CNTRL/CRANK-LATCH
PHR - PREHEAT RELAY
R1 - POTENTIOMETER
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
SW5 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
SA
TS
VR
CB1
CR
PHR
D1
F2
F1
R1
SW1
SW2
SW3
SW5
L1
L7
HM
HZ
BCA
AM
VM
G1
G2
PCB1

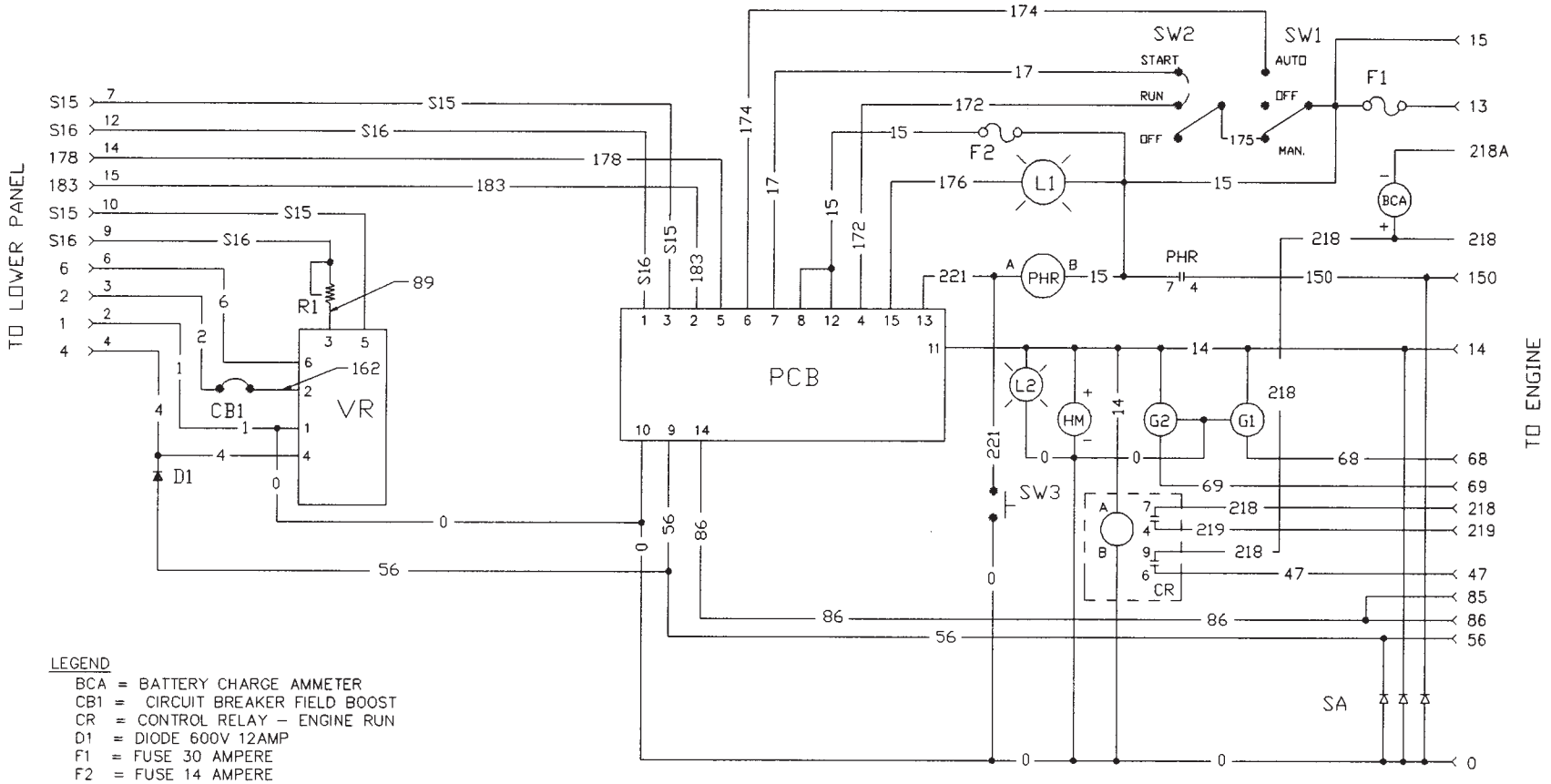
Drawing No. 80544

Revised: 04/03/96

Wiring Diagram

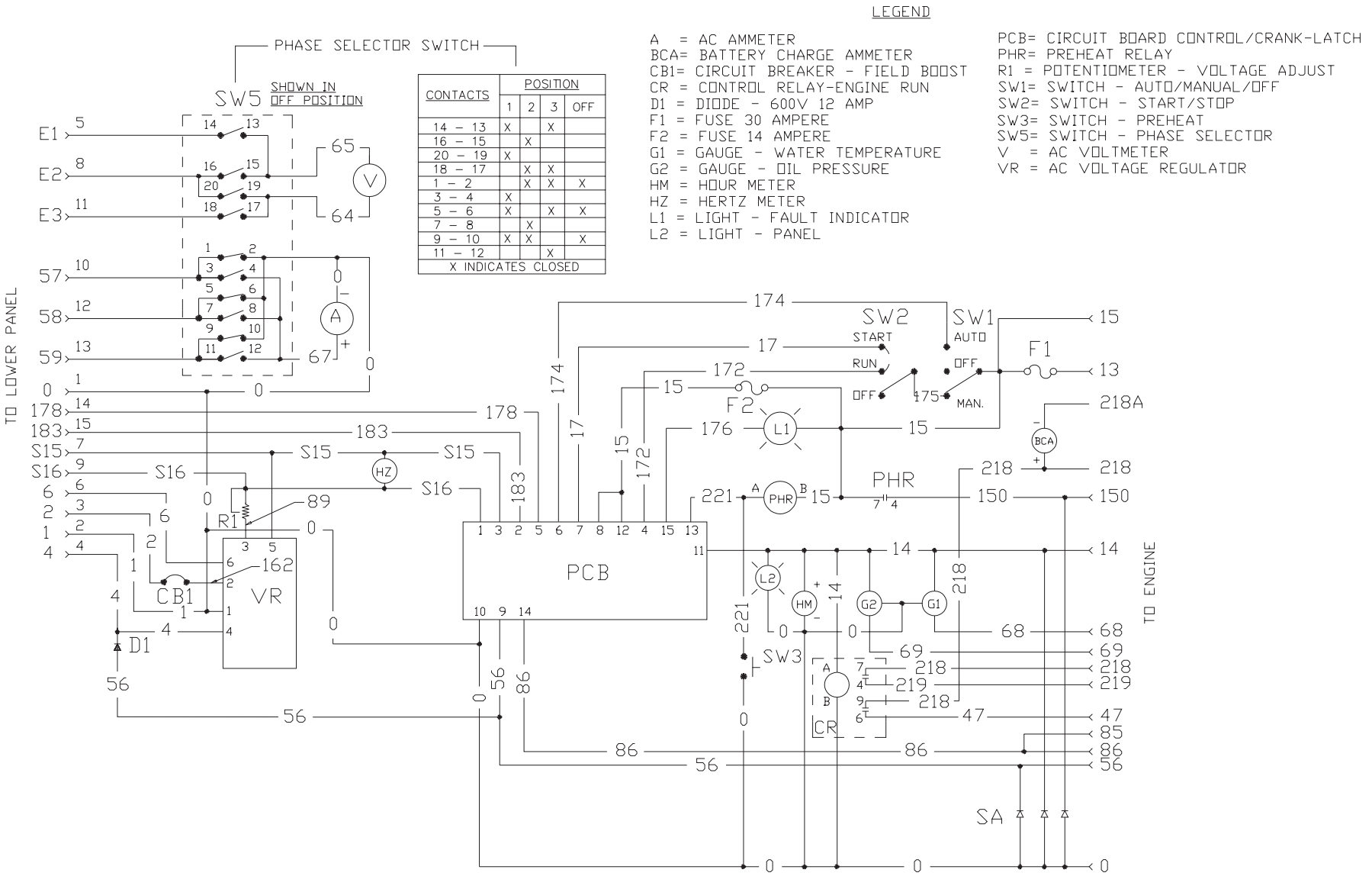
C Option Control Panel

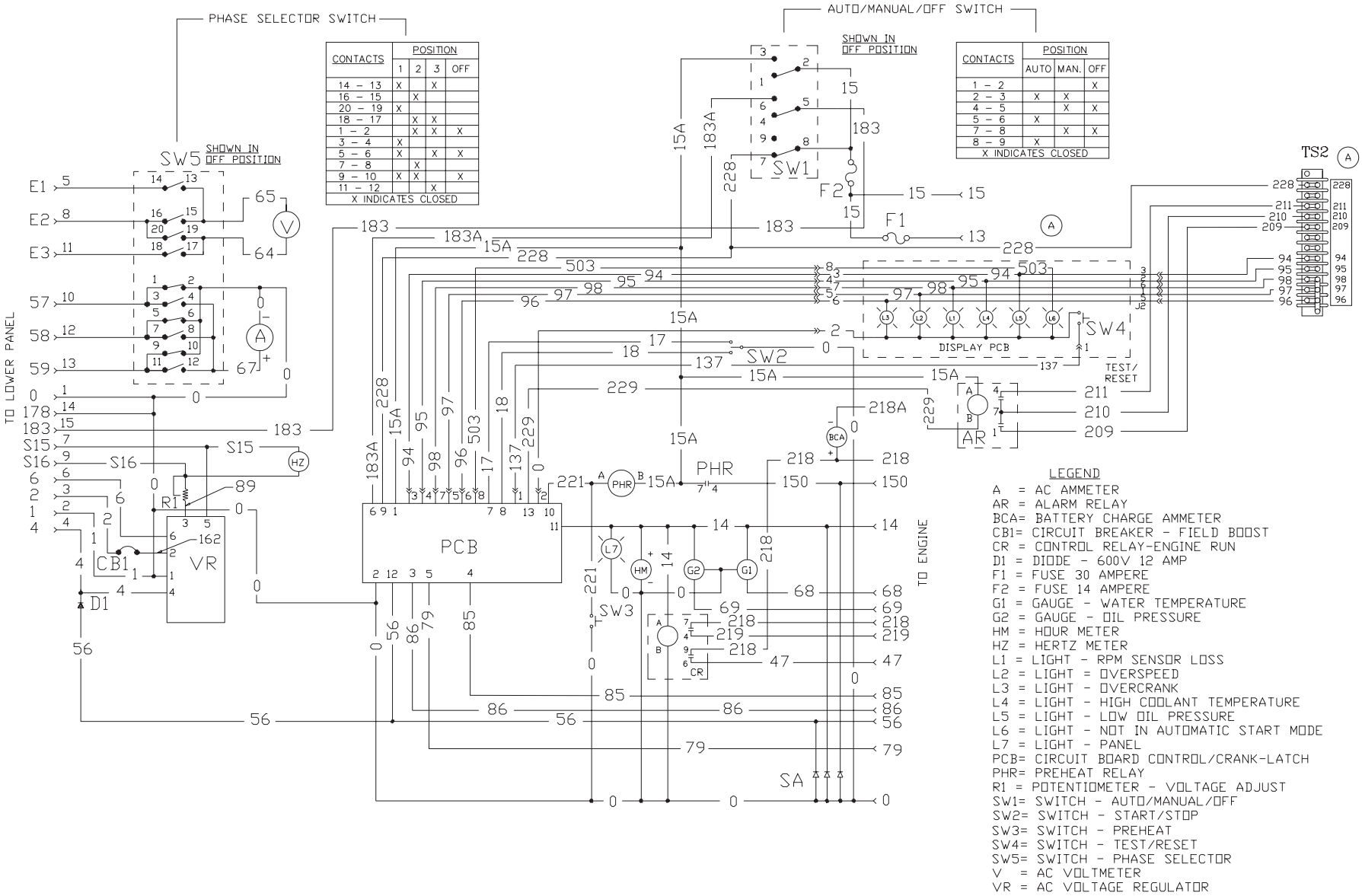


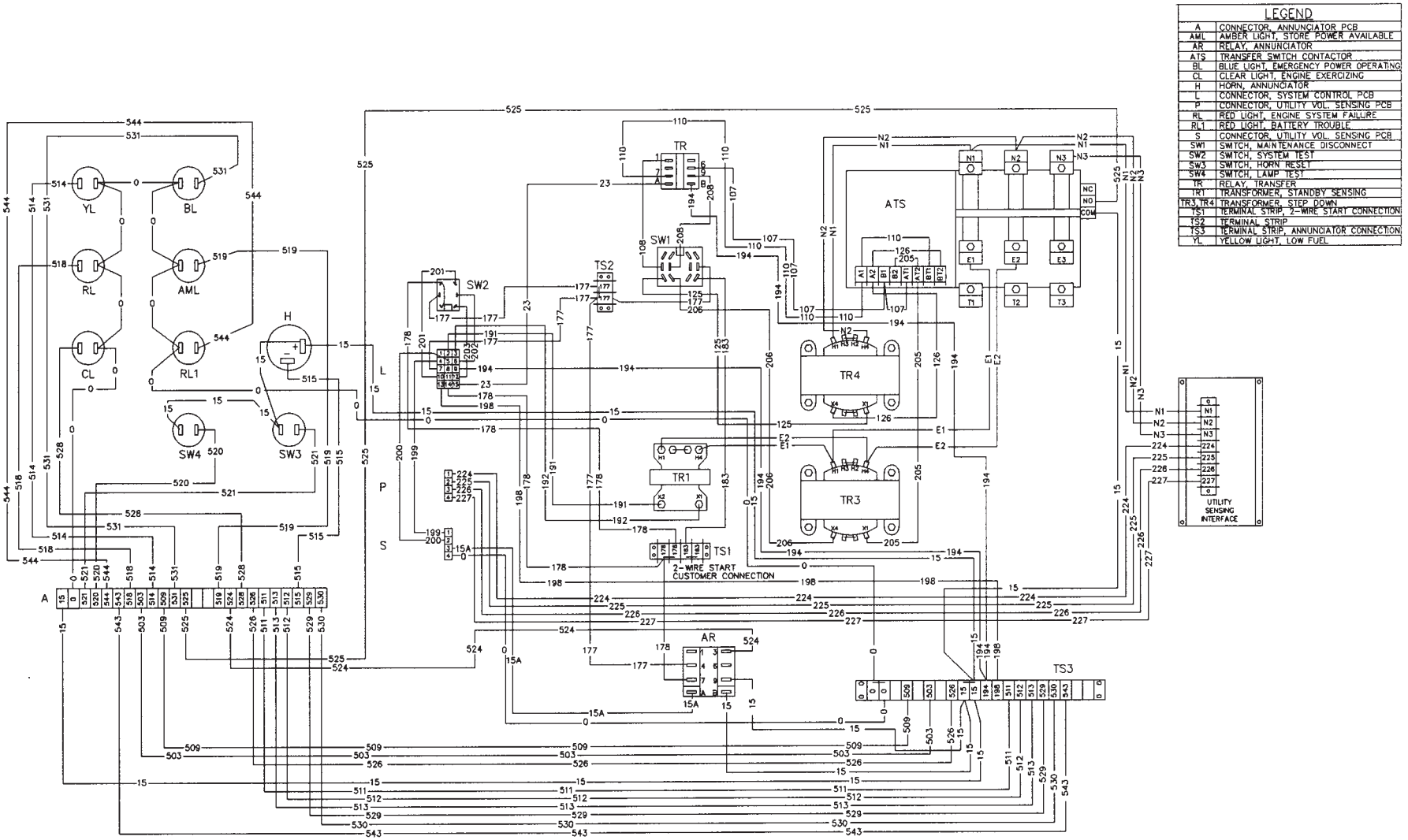


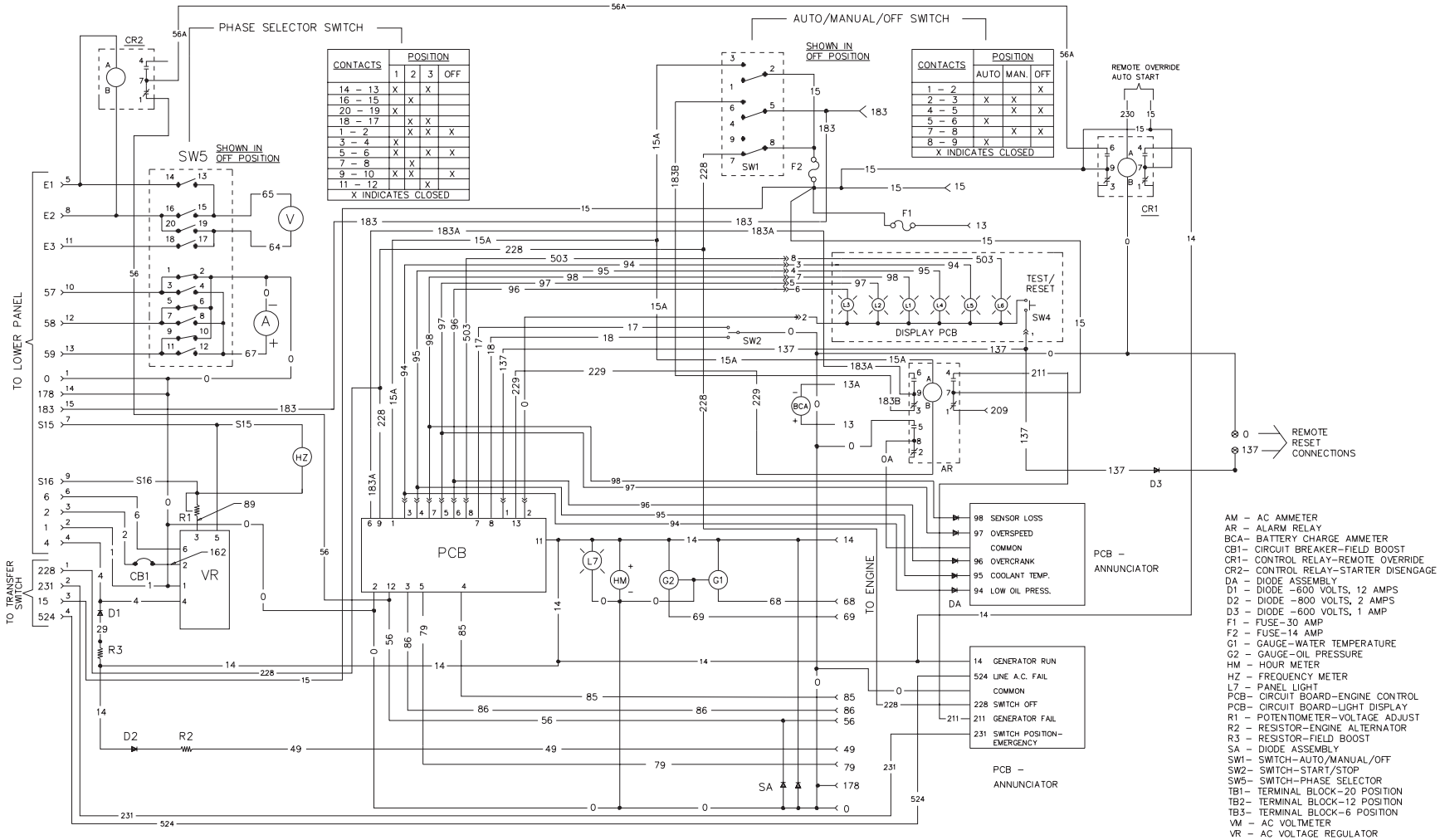
LEGEND

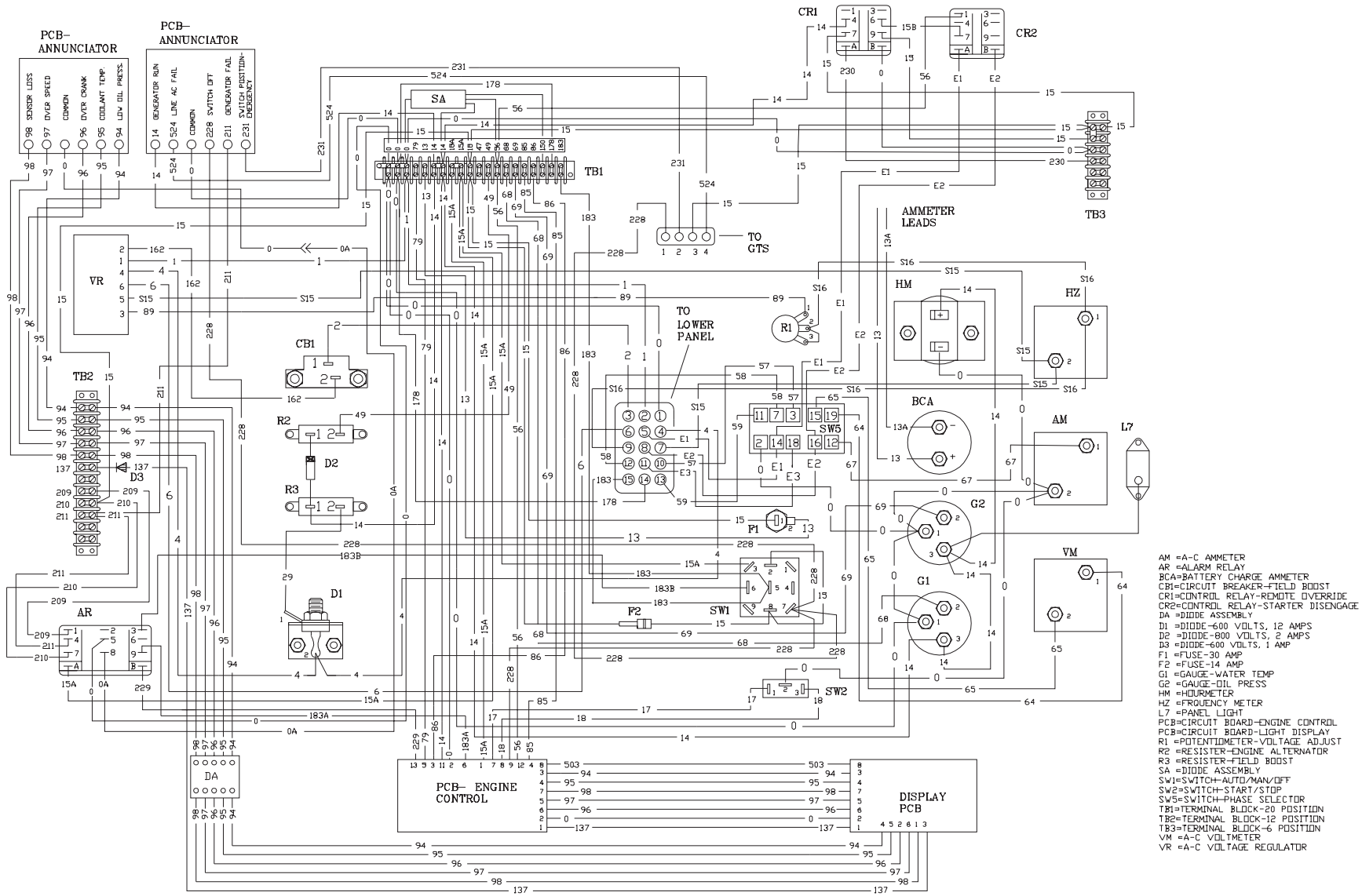
BCA = BATTERY CHARGE AMMETER
CB1 = CIRCUIT BREAKER FIELD BOOST
CR = CONTROL RELAY – ENGINE RUN
D1 = DIODE 600V 12AMP
F1 = FUSE 30 AMPERE
F2 = FUSE 14 AMPERE
G1 = GAUGE – WATER TEMPERATURE
G2 = GAUGE – OIL PRESSURE
HM = HOUR METER
L1 = LIGHT – FAULT INDICATOR
L2 = LIGHT – PANEL
PCB = CIRCUIT BOARD–DC CONTROL/CRANK LATCH
PHR = PREHEAT RELAY
R1 = POTENTIOMETER – VOLTAGE ADJUST
SW1 = SWITCH – AUTO/MANUAL/OFF
SW2 = SWITCH – START/STOP
SW3 = SWITCH – PREHEAT
VR = A–C VOLTAGE REGULATOR


PHASE SELECTOR SWITCH
SW5 SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
14 – 13 | X | | X |
16 – 15 | | X | |
20 – 19 | X | | |
18 – 17 | | X | X |
1 – 2 | | X | X | X
3 – 4 | X | | |
5 – 6 | X | | X | X
7 – 8 | | X | |
9 – 10 | X | X | | X
11 – 12 | | | X |
X INDICATES CLOSED
LEGEND
A = AC AMMETER
BCA= BATTERY CHARGE AMMETER
CB1= CIRCUIT BREAKER - FIELD BOOST
CR = CONTROL RELAY-ENGINE RUN
D1 = DIODE - 600V 12 AMP
F1 = FUSE 30 AMPERE
F2 = FUSE 14 AMPERE
G1 = GAUGE - WATER TEMPERATURE
G2 = GAUGE - OIL PRESSURE
HM = HOUR METER
HZ = HERTZ METER
L1 = LIGHT - FAULT INDICATOR
L2 = LIGHT - PANEL
PCB= CIRCUIT BOARD CONTROL/CRANK-LATCH
PHR= PREHEAT RELAY
R1 = POTENTIOMETER - VOLTAGE ADJUST
SW1= SWITCH - AUTO/MANUAL/OFF
SW2= SWITCH - START/STOP
SW3= SWITCH - PREHEAT
SW5= SWITCH - PHASE SELECTOR
V = AC VOLTMETER
VR = AC VOLTAGE REGULATOR
TO LOWER PANEL
TO ENGINE
SW2 START RUN OFF
SW1 AUTO OFF MAN.
F1
F2
L1
L2
HM
G1
G2
BCA
PHR
PCB
R1
VR
CB1
D1
HZ
SW3
CR
SA

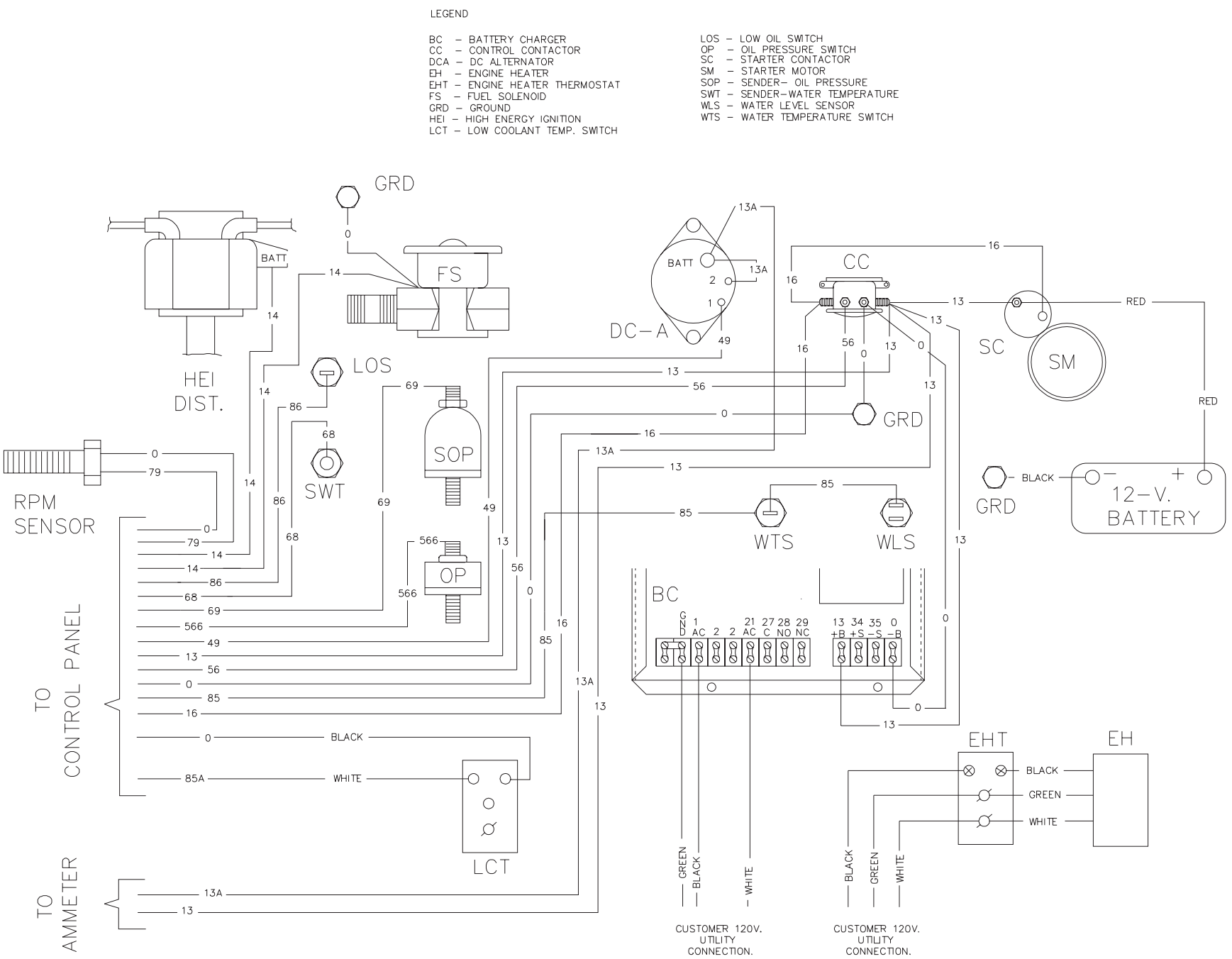

PHASE SELECTOR SWITCH
SW5
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
AUTO/MANUAL/OFF SWITCH
SW1
SHOWN IN OFF POSITION
CONTACTS | POSITION AUTO MAN. OFF
1 – 2 X
2 – 3 X X
4 – 5 X X
5 – 6 X
7 – 8 X X
8 – 9 X
X INDICATES CLOSED
TS2
DISPLAY PCB
SW4
TEST/ RESET
SW2
SW3
PCB
PHR
R1
VR
CB1
D1
AR
BCA
HM
CR
SA
TO LOWER PANEL
TO ENGINE
LEGEND
A = AC AMMETER
AR = ALARM RELAY
BCA= BATTERY CHARGE AMMETER
CB1= CIRCUIT BREAKER - FIELD BOOST
CR = CONTROL RELAY-ENGINE RUN
D1 = DIODE - 600V 12 AMP
F1 = FUSE 30 AMPERE
F2 = FUSE 14 AMPERE
G1 = GAUGE - WATER TEMPERATURE
G2 = GAUGE - OIL PRESSURE
HM = HOUR METER
HZ = HERTZ METER
L1 = LIGHT - RPM SENSOR LOSS
L2 = LIGHT = OVERSPEED
L3 = LIGHT - OVERCRANK
L4 = LIGHT - HIGH COOLANT TEMPERATURE
L5 = LIGHT - LOW OIL PRESSURE
L6 = LIGHT - NOT IN AUTOMATIC START MODE
L7 = LIGHT - PANEL
PCB= CIRCUIT BOARD CONTROL/CRANK-LATCH
PHR= PREHEAT RELAY
R1 = POTENTIOMETER - VOLTAGE ADJUST
SW1= SWITCH - AUTO/MANUAL/OFF
SW2= SWITCH - START/STOP
SW3= SWITCH - PREHEAT
SW4= SWITCH - TEST/RESET
SW5= SWITCH - PHASE SELECTOR
V = AC VOLTMETER
VR = AC VOLTAGE REGULATOR


LEGEND
A CONNECTOR, ANNUNCIATOR PCB
AML AMBER LIGHT, STORE POWER AVAILABLE
AR RELAY, ANNUNCIATOR
ATS TRANSFER SWITCH CONTACTOR
BL BLUE LIGHT, EMERGENCY POWER OPERATING
CL CLEAR LIGHT, ENGINE EXERCIZING
H HORN, ANNUNCIATOR
L CONNECTOR, SYSTEM CONTROL PCB
P CONNECTOR, UTILITY VOL. SENSING PCB
RL RED LIGHT, ENGINE SYSTEM FAILURE
RL1 RED LIGHT, BATTERY TROUBLE
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, HORN RESET
SW4 SWITCH, LAMP TEST
TR RELAY, TRANSFER
TR1 TRANSFORMER, STANDBY SENSING
TR3, TR4 TRANSFORMER, STEP DOWN
TS1 TERMINAL STRIP, 2-WIRE START CONNECTION
TS2 TERMINAL STRIP
TS3 TERMINAL STRIP, ANNUNCIATOR CONNECTION
YL YELLOW LIGHT, LOW FUEL
YL
BL
RL
AML
CL
RL1
H
SW4
SW3
SW2
SW1
TR
TS2
ATS
TR4
TR1
TR3
TS1
2-WIRE START CUSTOMER CONNECTION
AR
TS3
UTILITY SENSING INTERFACE
A
L
P
S

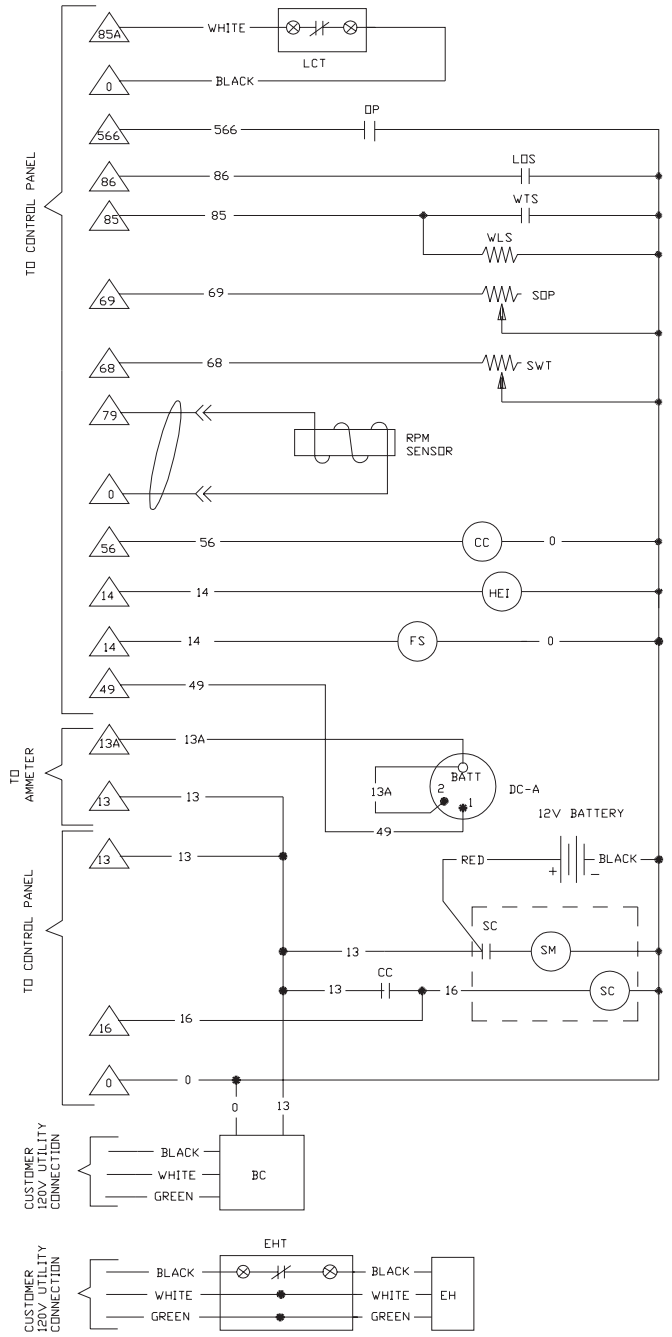

PHASE SELECTOR SWITCH
AUTO/MANUAL/OFF SWITCH
SHOWN IN OFF POSITION
CONTACTS
POSITION
1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X X
X INDICATES CLOSED
AUTO MAN. OFF
1 – 2 X
2 – 3 X X
4 – 5 X X
5 – 6 X
7 – 8 X X
8 – 9 X
X INDICATES CLOSED
REMOTE OVERRIDE AUTO START
CR1
CR2
SW1
SW2
SW4
SW5
F1
F2
TEST/ RESET
DISPLAY PCB
PCB
VR
CB1
R1
R2
R3
D1
D2
D3
SA
AR
BCA
HZ
HM
L7
G1
G2
TO LOWER PANEL
TO TRANSFER SWITCH
TO ENGINE
REMOTE RESET CONNECTIONS
98 SENSOR LOSS
97 OVERSPEED COMMON
96 OVERCRANK
95 COOLANT TEMP.
94 LOW OIL PRESS.
PCB – ANNUNCIATOR
14 GENERATOR RUN
524 LINE A.C. FAIL COMMON
228 SWITCH OFF
211 GENERATOR FAIL
231 SWITCH POSITION–EMERGENCY
PCB – ANNUNCIATOR
AM – AC AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER–FIELD BOOST
CR1– CONTROL RELAY–REMOTE OVERRIDE
CR2– CONTROL RELAY–STARTER DISENGAGE
DA – DIODE ASSEMBLY
D1 – DIODE –600 VOLTS, 12 AMPS
D2 – DIODE –800 VOLTS, 2 AMPS
D3 – DIODE –600 VOLTS, 1 AMP
F1 – FUSE–30 AMP
F2 – FUSE–14 AMP
G1 – GAUGE–WATER TEMPERATURE
G2 – GAUGE–OIL PRESSURE
HM – HOUR METER
HZ – FREQUENCY METER
L7 – PANEL LIGHT
PCB– CIRCUIT BOARD–ENGINE CONTROL
PCB– CIRCUIT BOARD–LIGHT DISPLAY
R1 – POTENTIOMETER–VOLTAGE ADJUST
R2 – RESISTOR–ENGINE ALTERNATOR
R3 – RESISTOR–FIELD BOOST
SA – DIODE ASSEMBLY
SW1– SWITCH–AUTO/MANUAL/OFF
SW2– SWITCH–START/STOP
SW5– SWITCH–PHASE SELECTOR
TB1– TERMINAL BLOCK–20 POSITION
TB2– TERMINAL BLOCK–12 POSITION
TB3– TERMINAL BLOCK–6 POSITION
VM – AC VOLTMETER
VR – AC VOLTAGE REGULATOR

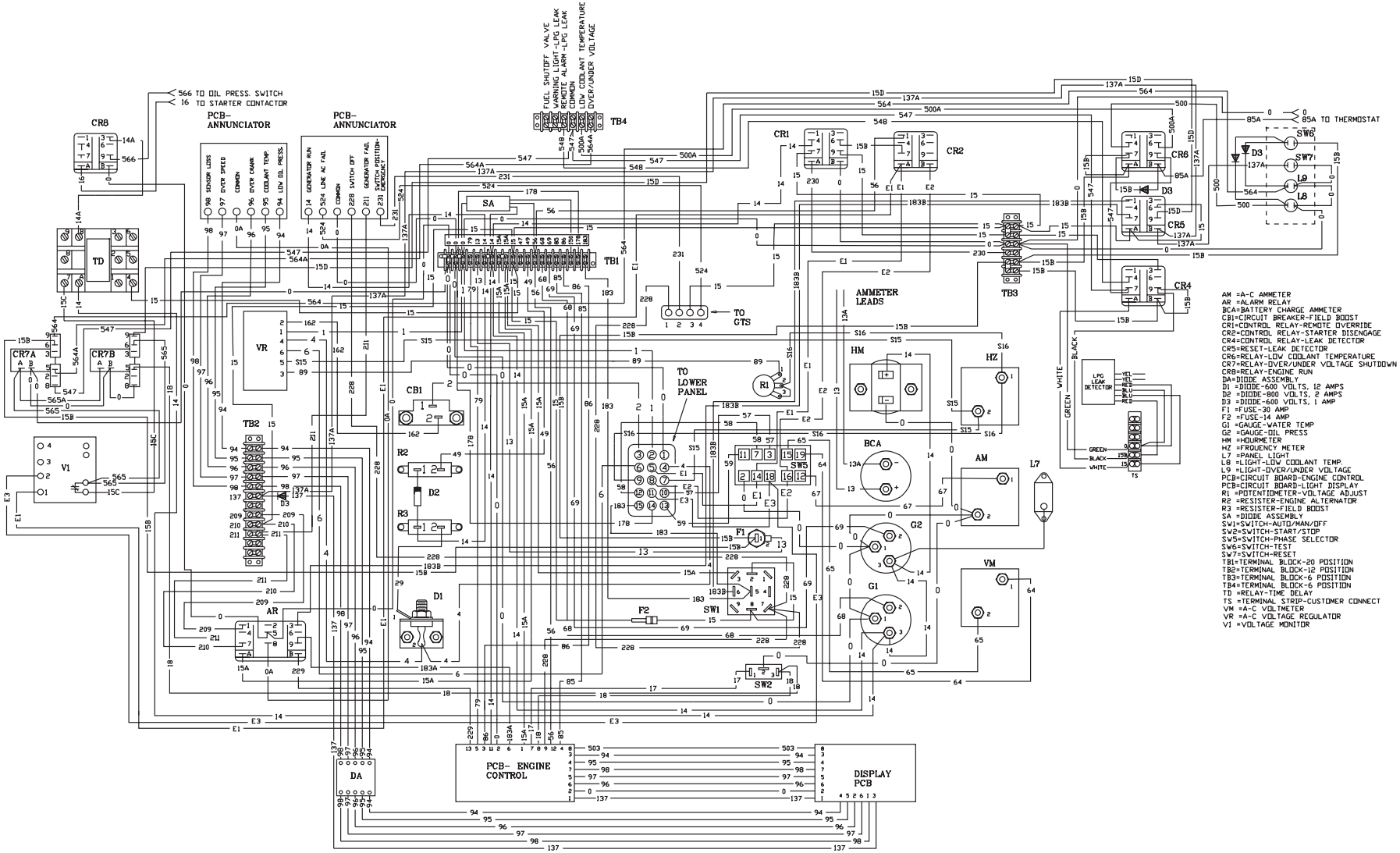


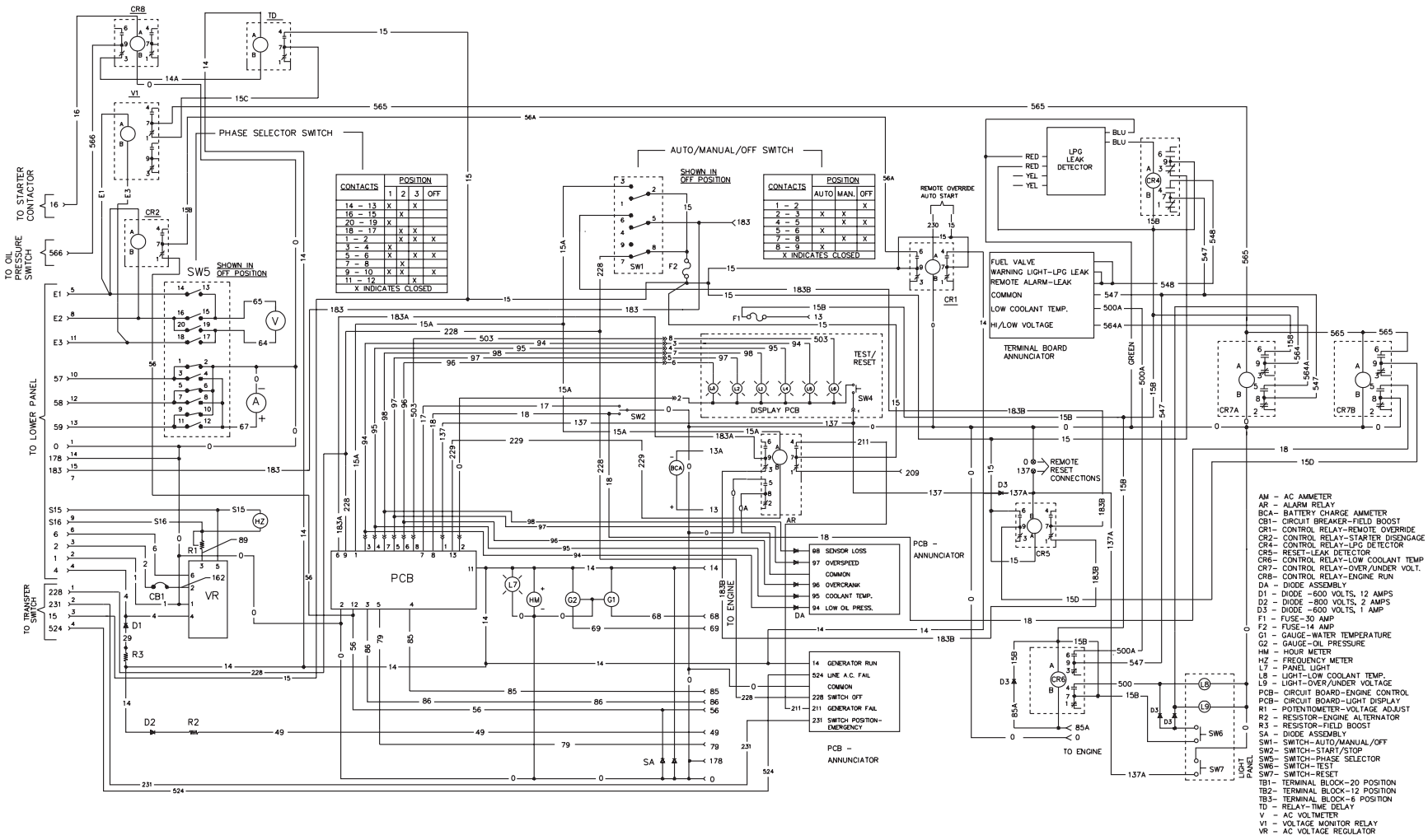
AM =A-C AMMETER
AR =ALARM RELAY
BCA=BATTERY CHARGE AMMETER
CB1=CIRCUIT BREAKER-FIELD BOOST
CR1=CONTROL RELAY-REMOTE OVERRIDE
CR2=CONTROL RELAY-STARTER DISENGAGE
DA =DIODE ASSEMBLY
D1 =DIODE-600 VOLTS, 12 AMPS
D2 =DIODE-800 VOLTS, 2 AMPS
D3 =DIODE-600 VOLTS, 1 AMP
F1 =FUSE-30 AMP
F2 =FUSE-14 AMP
G1 =GAUGE-WATER TEMP
G2 =GAUGE-OIL PRESS
HM =HOURMETER
HZ =FRQUENCY METER
L7 =PANEL LIGHT
PCB=CIRCUIT BOARD-ENGINE CONTROL
PCB=CIRCUIT BOARD-LIGHT DISPLAY
R1 =POTENTIOMETER-VOLTAGE ADJUST
R2 =RESISTER-ENGINE ALTERNATOR
R3 =RESISTER-FIELD BOOST
SA =DIODE ASSEMBLY
SW1=SWITCH-AUTO/MAN/OFF
SW2=SWITCH-START/STOP
SW5=SWITCH-PHASE SELECTOR
TB1=TERMINAL BLOCK-20 POSITION
TB2=TERMINAL BLOCK-12 POSITION
TB3=TERMINAL BLOCK-6 POSITION
VM =A-C VOLTMETER
VR =A-C VOLTAGE REGULATOR

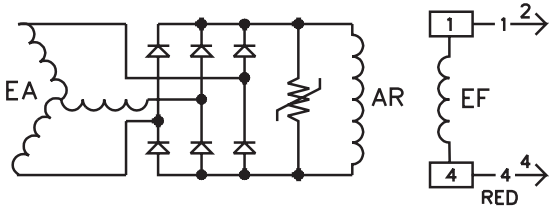

LEGEND
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENERGY IGNITION
LCT – LOW COOLANT TEMP. SWITCH
LOS – LOW OIL SWITCH
OP – OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
GRD
FS
BATT
HEI
DIST.
LOS
SOP
SWT
RPM
SENSOR
OP
WTS
WLS
DC–A
CC
SC
SM
GRD
BLACK
12–V.
BATTERY
BC
TO
CONTROL PANEL
TO
AMMETER
LCT
EHT
EH
BLACK
GREEN
WHITE
CUSTOMER 120V.
UTILITY
CONNECTION.
CUSTOMER 120V.
UTILITY
CONNECTION.

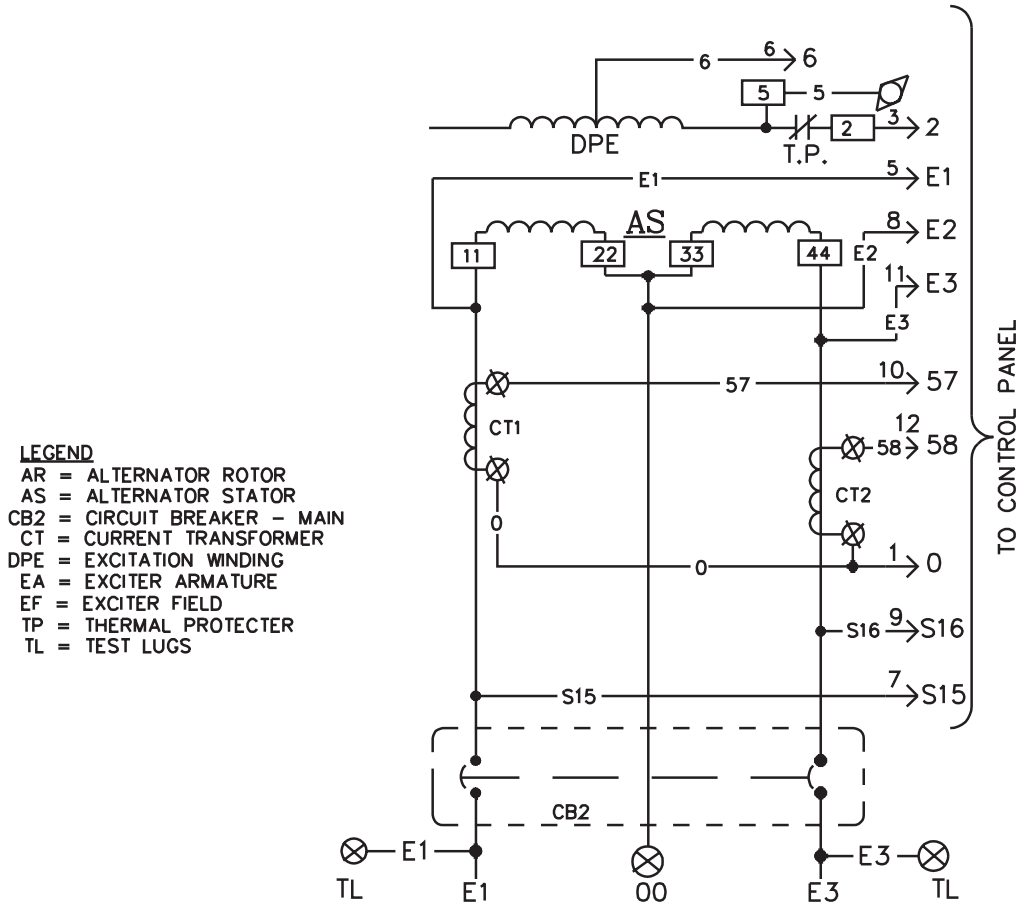
BC - BATTERY CHARGER
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENGINE HEATER THERMOSTAT
FS - FUEL SOLENOID
GRD - GROUND
HEI - HIGH ENERGY IGNITION
LCT - LOW COOLANT TEMP. THERMOSTAT
LOS - LOW OIL SWITCH
OP - OIL PRESSURE SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMPERATURE
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH




TB4
FUEL SHUTOFF VALVE
WARNING LIGHT -LPG LEAK
REMOTE ALARM -LPG LEAK
COMMON
LOW COOLANT TEMPERATURE
OVER/UNDER VOLTAGE
566 TO OIL PRESS. SWITCH
16 TO STARTER CONTACTOR
PCB- ANNUNCIATOR
PCB- ANNUNCIATOR
CR8
TD
SA
TB1
TB2
TB3
VR
CB1
R1
R2
R3
D1
D2
D3
F1
F2
SW1
SW2
SW5
SW6
SW7
L8
L9
CR1
CR2
CR4
CR5
CR6
CR7
CR7A
CR7B
AR
V1
HM
HZ
AM
BCA
G1
G2
L7
VM
TO GTS
TO LOWER PANEL
AMMETER LEADS
85A TO THERMOSTAT
PCB- ENGINE CONTROL
DISPLAY PCB
DA
LPG LEAK DETECTOR
AM =A-C AMMETER
AR =ALARM RELAY
BCA=BATTERY CHARGE AMMETER
CB1=CIRCUIT BREAKER-FIELD BOOST
CR1=CONTROL RELAY-REMOTE OVERRIDE
CR2=CONTROL RELAY-STARTER DISENGAGE
CR4=CONTROL RELAY-LEAK DETECTOR
CR5=RESET-LEAK DETECTOR
CR6=RELAY-LOW COOLANT TEMPERATURE
CR7=RELAY-OVER/UNDER VOLTAGE SHUTDOWN
CR8=RELAY-ENGINE RUN
DA=DIODE ASSEMBLY
D1 =DIODE-600 VOLTS, 12 AMPS
D2 =DIODE-800 VOLTS, 2 AMPS
D3 =DIODE-600 VOLTS, 1 AMP
F1 =FUSE-30 AMP
F2 =FUSE-14 AMP
G1 =GAUGE-WATER TEMP
G2 =GAUGE-OIL PRESS
HM =HOURMETER
HZ =FRQUENCY METER
L7 =PANEL LIGHT
L8 =LIGHT-LOW COOLANT TEMP.
L9 =LIGHT-OVER/UNDER VOLTAGE
PCB=CIRCUIT BOARD-ENGINE CONTROL
PCB=CIRCUIT BOARD-LIGHT DISPLAY
R1 =POTENTIOMETER-VOLTAGE ADJUST
R2 =RESISTER-ENGINE ALTERNATOR
R3 =RESISTER-FIELD BOOST
SA =DIODE ASSEMBLY
SW1=SWITCH-AUTO/MAN/OFF
SW2=SWITCH-START/STOP
SW5=SWITCH-PHASE SELECTOR
SW6=SWITCH-TEST
SW7=SWITCH-RESET
TB1=TERMINAL BLOCK-20 POSITION
TB2=TERMINAL BLOCK-12 POSITION
TB3=TERMINAL BLOCK-6 POSITION
TB4=TERMINAL BLOCK-6 POSITION
TD =RELAY-TIME DELAY
TS =TERMINAL STRIP-CUSTOMER CONNECT
VM =A-C VOLTMETER
VR =A-C VOLTAGE REGULATOR
V1 =VOLTAGE MONITOR

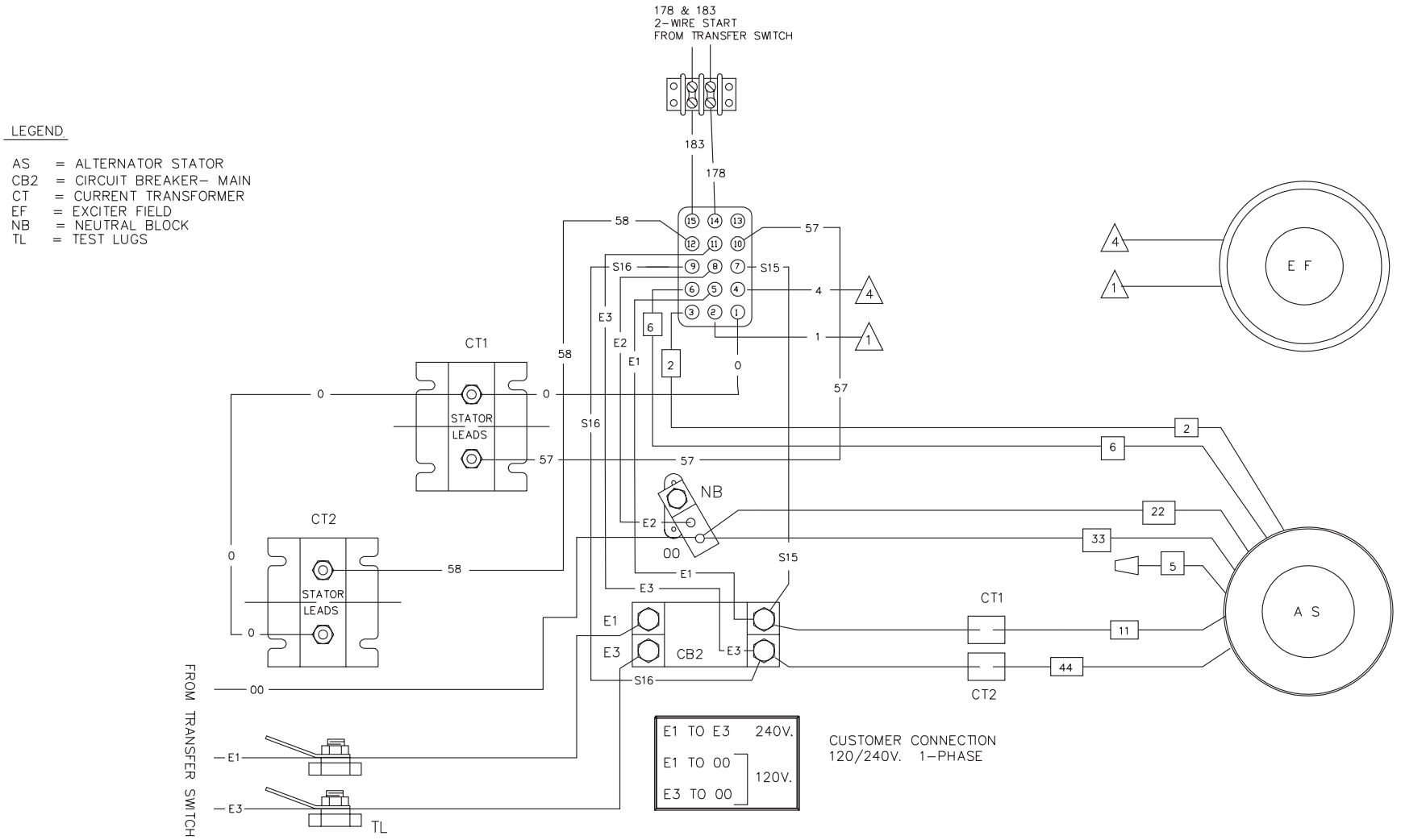

PHASE SELECTOR SWITCH
AUTO/MANUAL/OFF SWITCH
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 2 3 OFF
14 – 13 | X X
16 – 15 | X
20 – 19 | X
18 – 17 | X X
1 – 2 | X X X
3 – 4 | X
5 – 6 | X X X
7 – 8 | X
9 – 10 | X X X
11 – 12 | X
X INDICATES CLOSED
CONTACTS | POSITION AUTO MAN. OFF
1 – 2 | X
2 – 3 | X X
4 – 5 | X X
5 – 6 | X
7 – 8 | X X
8 – 9 | X
X INDICATES CLOSED
REMOTE OVERRIDE AUTO START
LPG LEAK DETECTOR
FUEL VALVE
WARNING LIGHT–LPG LEAK
REMOTE ALARM–LEAK
COMMON
LOW COOLANT TEMP.
HI/LOW VOLTAGE
TERMINAL BOARD ANNUNCIATOR
TEST/ RESET
DISPLAY PCB
PCB – ANNUNCIATOR
98 SENSOR LOSS
97 OVERSPEED
COMMON
96 OVERCRANK
95 COOLANT TEMP.
94 LOW OIL PRESS.
14 GENERATOR RUN
524 LINE A.C. FAIL
COMMON
228 SWITCH OFF
211 GENERATOR FAIL
231 SWITCH POSITION–EMERGENCY
REMOTE RESET CONNECTIONS
TO ENGINE
TO STARTER CONTACTOR
TO OIL PRESSURE SWITCH
TO LOWER PANEL
TO TRANSFER SWITCH
AM – AC AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER–FIELD BOOST
CR1– CONTROL RELAY–REMOTE OVERRIDE
CR2– CONTROL RELAY–STARTER DISENGAGE
CR4– CONTROL RELAY–LPG DETECTOR
CR5– RESET–LEAK DETECTOR
CR6– CONTROL RELAY–LOW COOLANT TEMP
CR7– CONTROL RELAY–OVER/UNDER VOLT.
CR8– CONTROL RELAY–ENGINE RUN
DA – DIODE ASSEMBLY
D1 – DIODE –600 VOLTS, 12 AMPS
D2 – DIODE –800 VOLTS, 2 AMPS
D3 – DIODE –600 VOLTS, 1 AMP
F1 – FUSE–30 AMP
F2 – FUSE–14 AMP
G1 – GAUGE–WATER TEMPERATURE
G2 – GAUGE–OIL PRESSURE
HM – HOUR METER
HZ – FREQUENCY METER
L7 – PANEL LIGHT
L8 – LIGHT–LOW COOLANT TEMP.
L9 – LIGHT–OVER/UNDER VOLTAGE
PCB– CIRCUIT BOARD–ENGINE CONTROL
PCB– CIRCUIT BOARD–LIGHT DISPLAY
R1 – POTENTIOMETER–VOLTAGE ADJUST
R2 – RESISTOR–ENGINE ALTERNATOR
R3 – RESISTOR–FIELD BOOST
SA – DIODE ASSEMBLY
SW1– SWITCH–AUTO/MANUAL/OFF
SW2– SWITCH–START/STOP
SW5– SWITCH–PHASE SELECTOR
SW6– SWITCH–TEST
SW7– SWITCH–RESET
TB1– TERMINAL BLOCK–20 POSITION
TB2– TERMINAL BLOCK–12 POSITION
TB3– TERMINAL BLOCK–6 POSITION
TD – RELAY–TIME DELAY
V – AC VOLTMETER
V1 – VOLTAGE MONITOR RELAY
VR – AC VOLTAGE REGULATOR

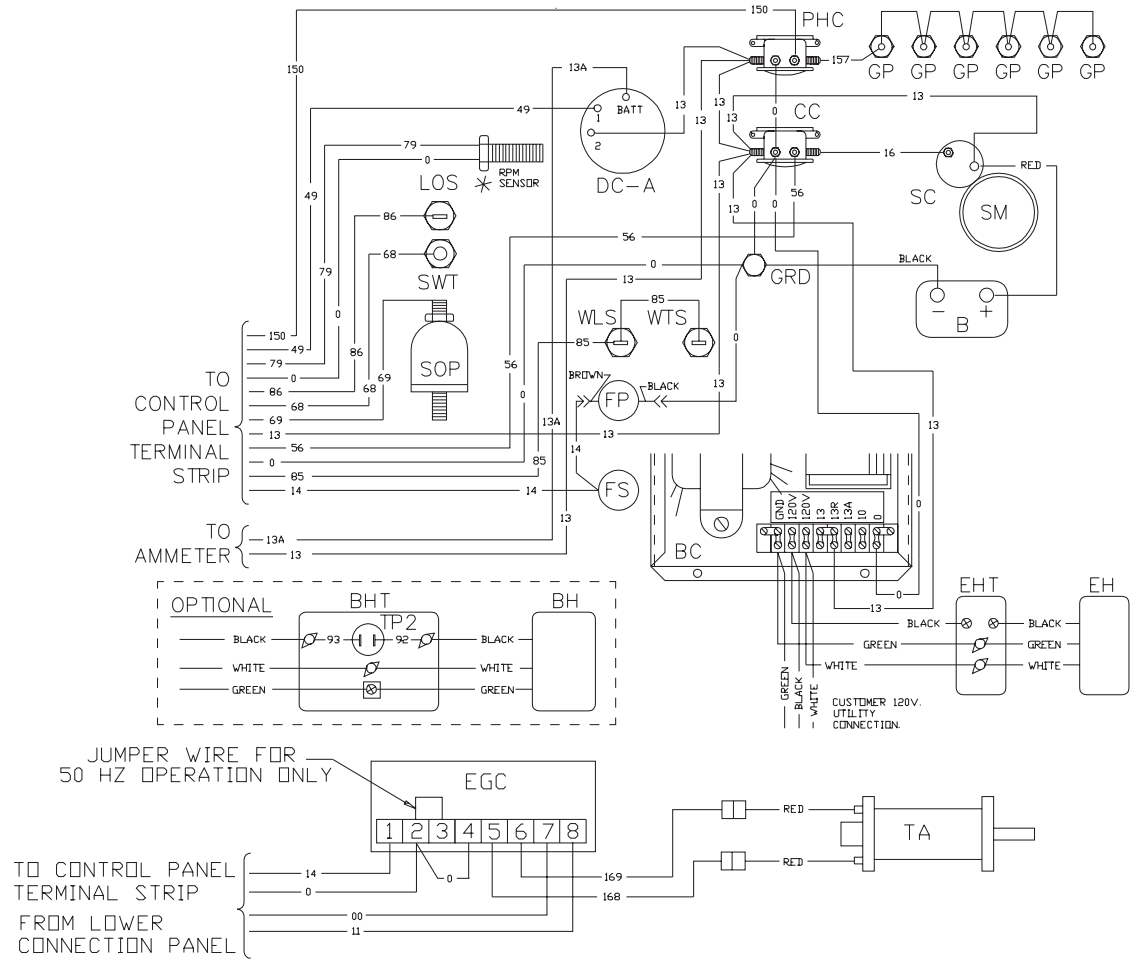




LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER – MAIN
CT = CURRENT TRANSFORMER
DPE = EXCITATION WINDING
EA = EXCITER ARMATURE
EF = EXCITER FIELD
TP = THERMAL PROTECTER
TL = TEST LUGS

CUSTOMER CONNECTION
120/240–V. 1–PHASE


LEGEND
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER– MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
NB = NEUTRAL BLOCK
TL = TEST LUGS
178 & 183
2–WIRE START
FROM TRANSFER SWITCH
183
178
58
57
S16
S15
E3
E2
E1
CT1
STATOR
LEADS
CT2
NB
00
CB2
FROM TRANSFER SWITCH
E1
E3
TL
E F
A S
E1 TO E3 240V.
E1 TO 00 120V.
E3 TO 00
CUSTOMER CONNECTION
120/240V. 1–PHASE

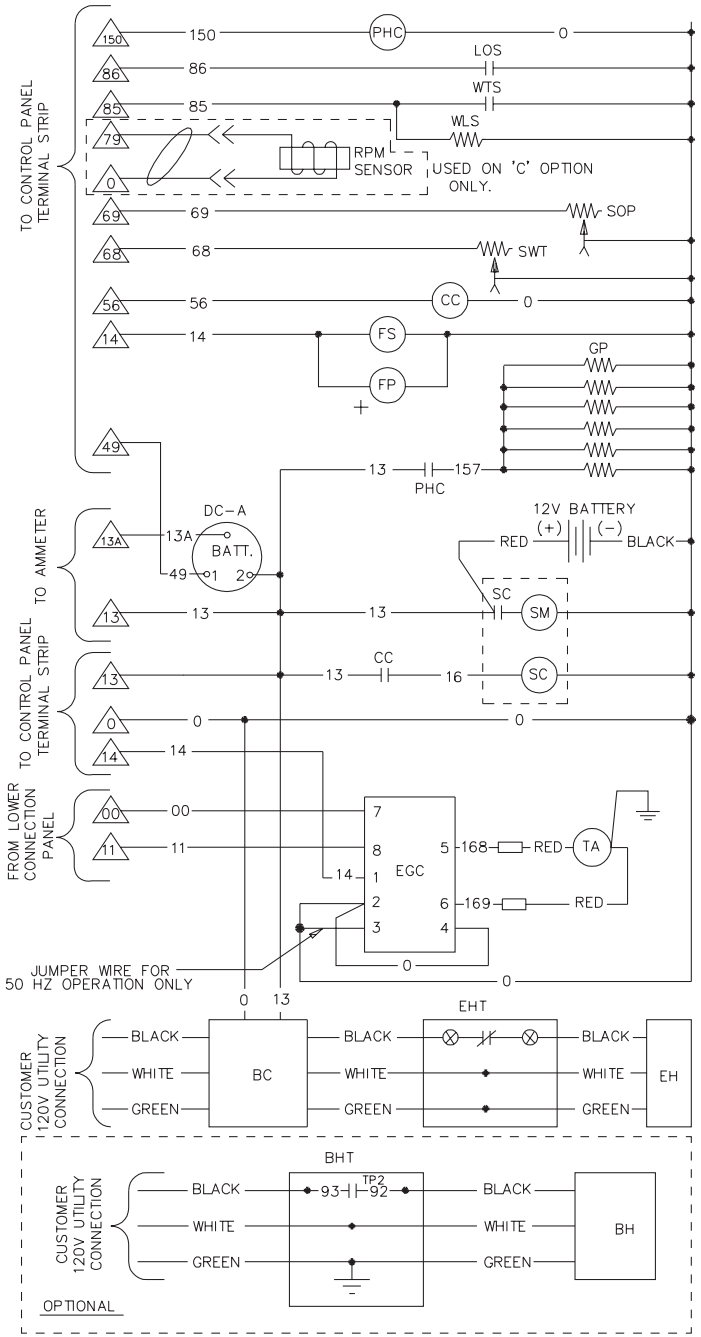


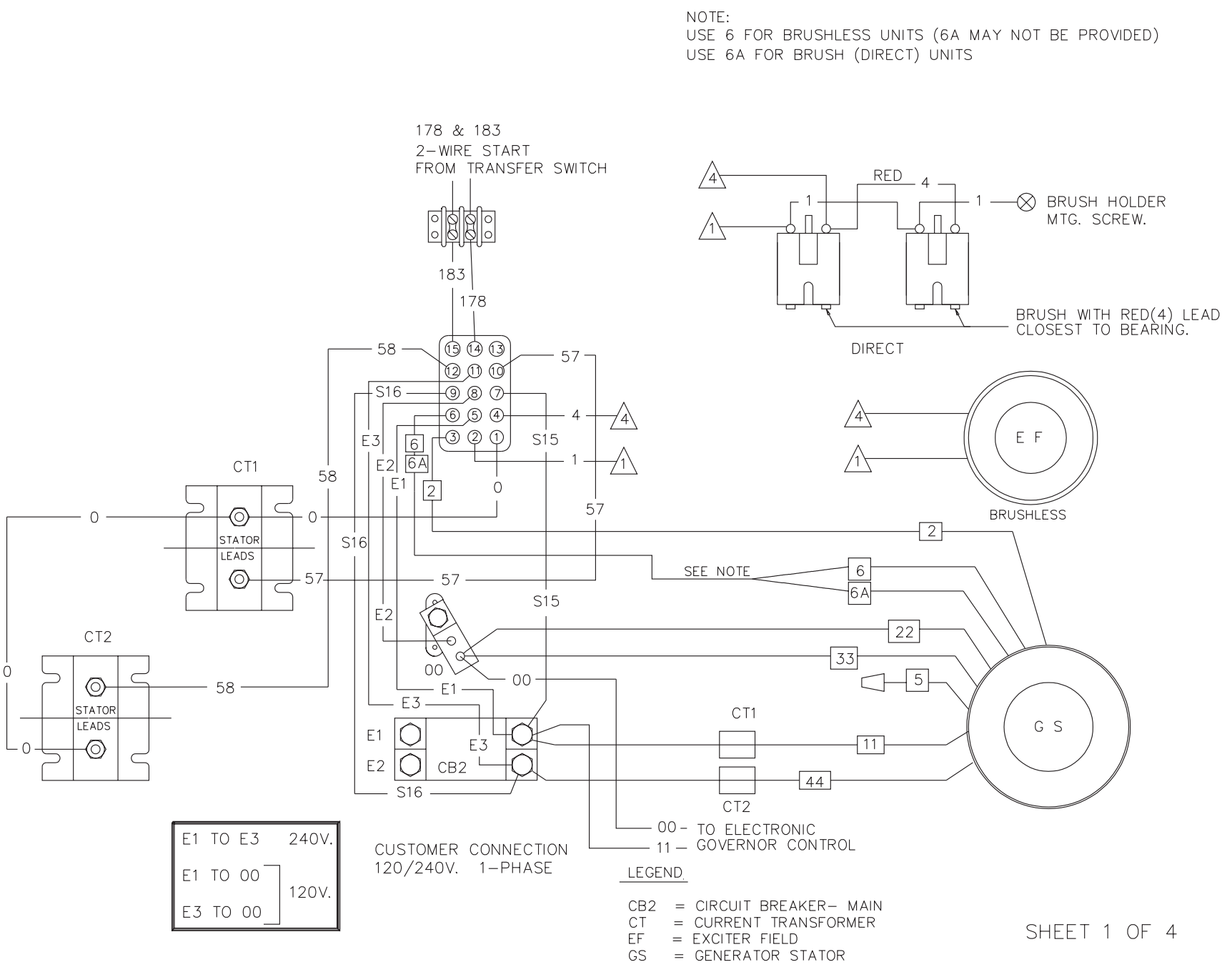
LEGEND

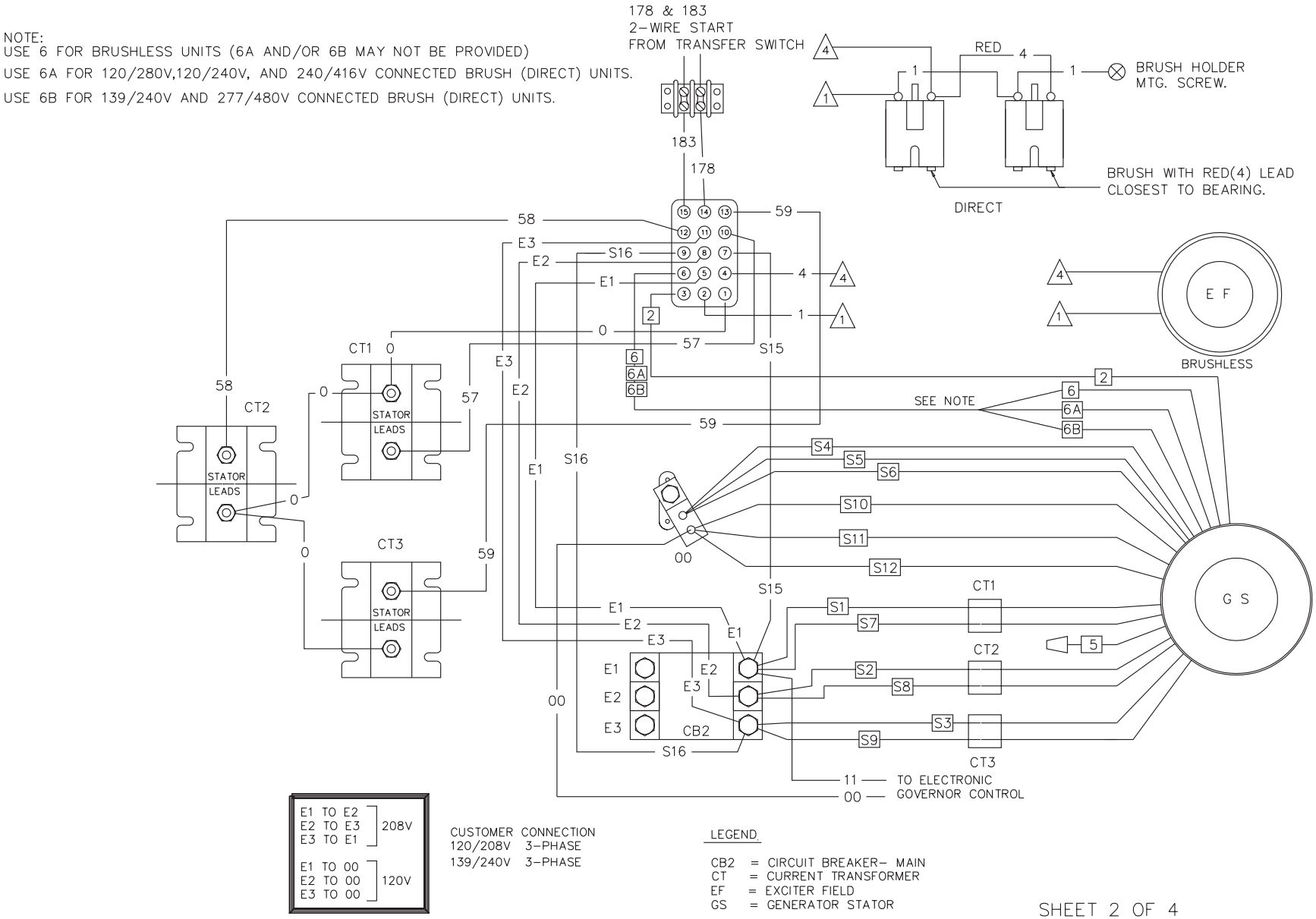
B - BATTERY 12-V.
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EGC - ELEC. GOV. CONTROL
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FS - FUEL SOLENOID
FP - FUEL PUMP
GP - GLOW PLUG
GPC - GLOW PLUG CONTROLLER
GRD - GROUND
LOS - LOW OIL SWITCH
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TA - THROTTLE ACTUATOR
TP2 - THERMAL PROTECTOR BATT. HEAT.
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH
✳ - USED ON 'C' OPTION ONLY.

LEGEND

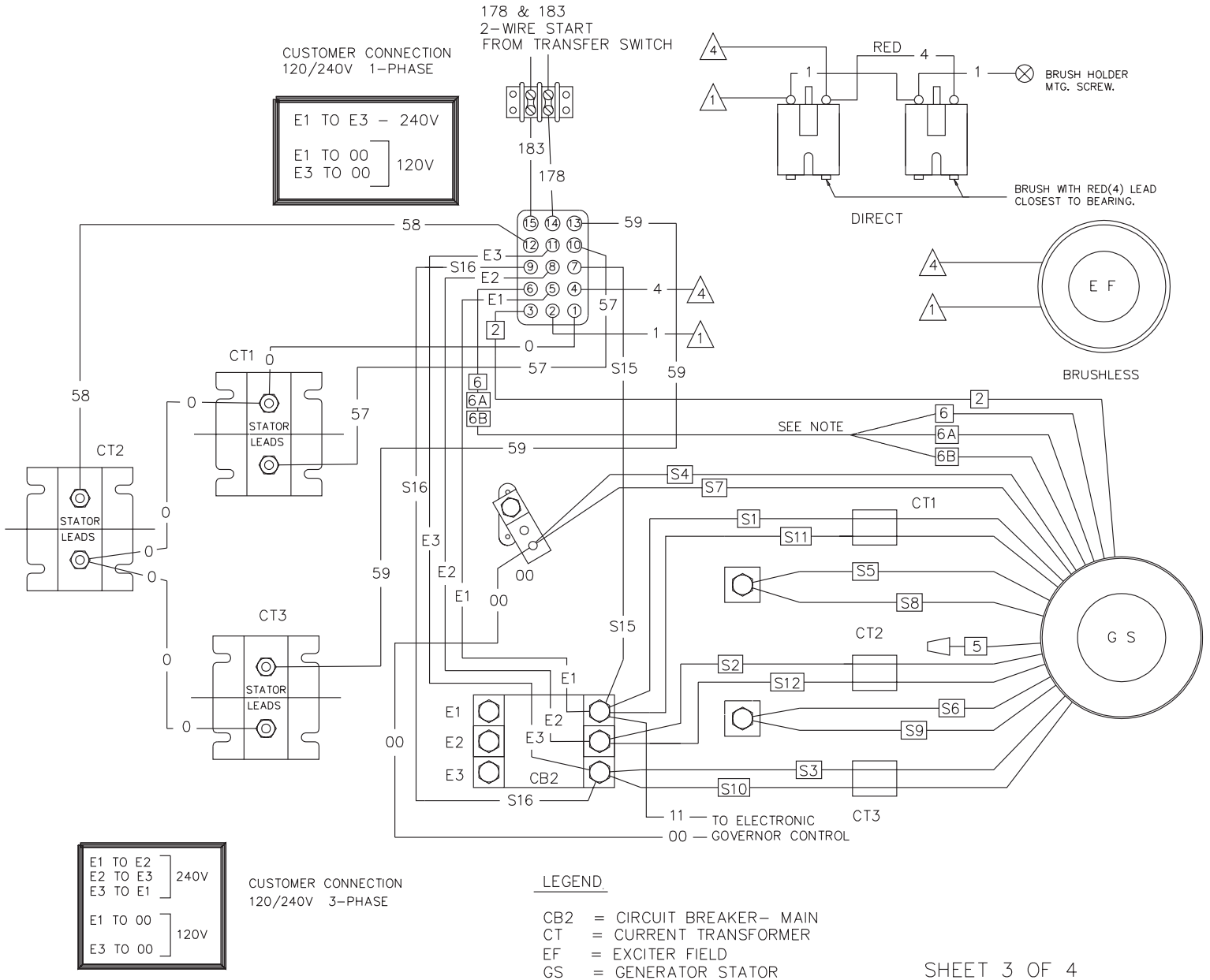
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EGC- ELEC. GOV. CONTROL
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FS - FUEL SOLENOID
FP - FUEL PUMP
GP - GLOW PLUG
LOS - LOW OIL SWITCH
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TA - THROTTLE ACTUATOR
TP2 - THERMAL PROTECTOR BATT. HEAT.
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH




NOTE:
USE 6 FOR BRUSHLESS UNITS (6A MAY NOT BE PROVIDED)
USE 6A FOR BRUSH (DIRECT) UNITS
178 & 183
2-WIRE START
FROM TRANSFER SWITCH
183
178
RED
BRUSH HOLDER MTG. SCREW.
BRUSH WITH RED(4) LEAD CLOSEST TO BEARING.
DIRECT
BRUSHLESS
E F
CT1
CT2
STATOR LEADS
SEE NOTE
G S
CB2
E1 TO E3 240V.
E1 TO 00 120V.
E3 TO 00
CUSTOMER CONNECTION
120/240V. 1-PHASE
00 - TO ELECTRONIC
11 - GOVERNOR CONTROL
LEGEND
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
GS = GENERATOR STATOR
SHEET 1 OF 4


NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.
178 & 183
2-WIRE START
FROM TRANSFER SWITCH
RED
BRUSH HOLDER
MTG. SCREW.
BRUSH WITH RED(4) LEAD
CLOSEST TO BEARING.
DIRECT
BRUSHLESS
E F
G S
SEE NOTE
CT1
CT2
CT3
STATOR
LEADS
CB2
TO ELECTRONIC
GOVERNOR CONTROL
E1 TO E2
E2 TO E3
E3 TO E1
208V
E1 TO 00
E2 TO 00
E3 TO 00
120V
CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE
LEGEND.
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
GS = GENERATOR STATOR
SHEET 2 OF 4

NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

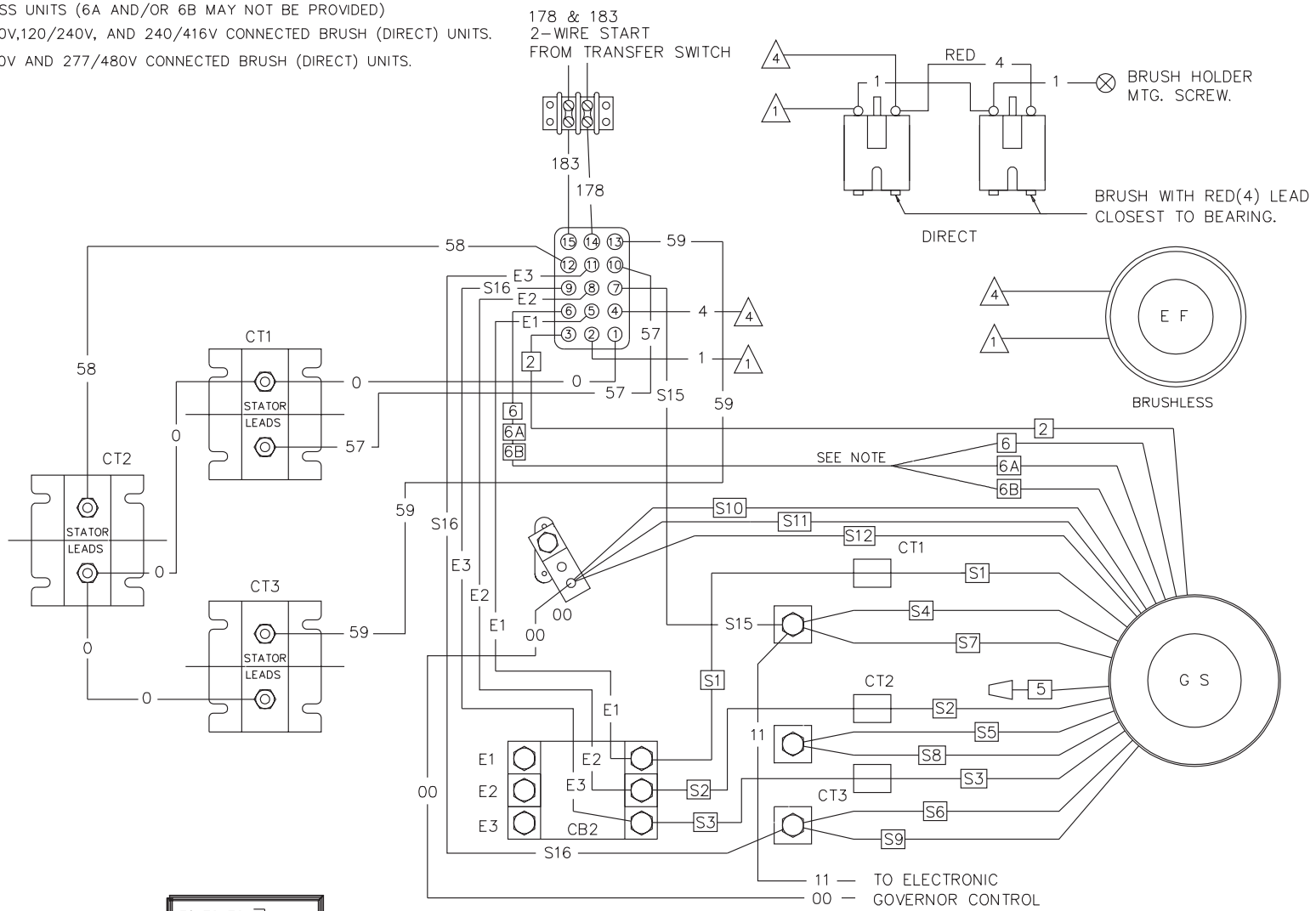


LEGEND

CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
GS = GENERATOR STATOR

SHEET 3 OF 4

NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.



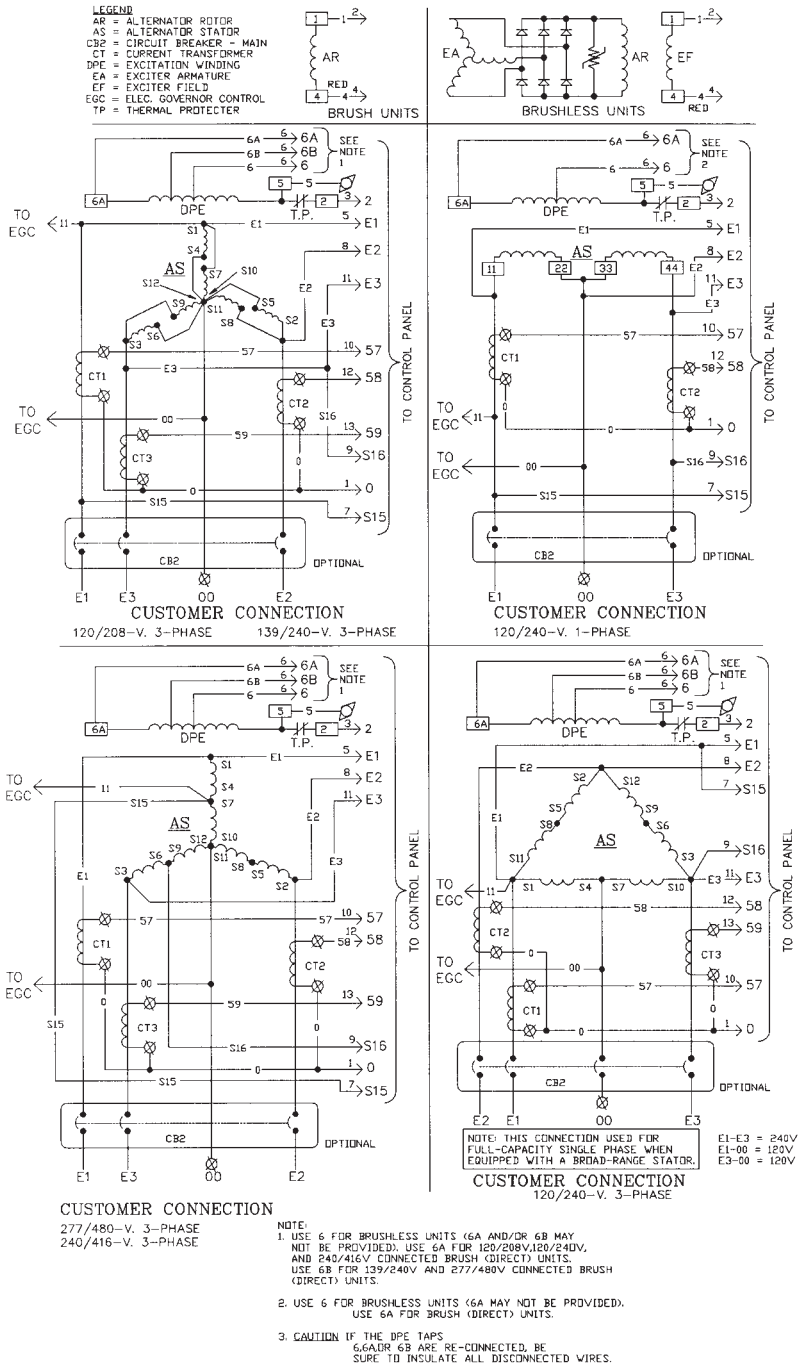
E1 TO E2 E2 TO E3 E3 TO E1	480V
E1 TO 00 E2 TO 00 E3 TO 00	277V

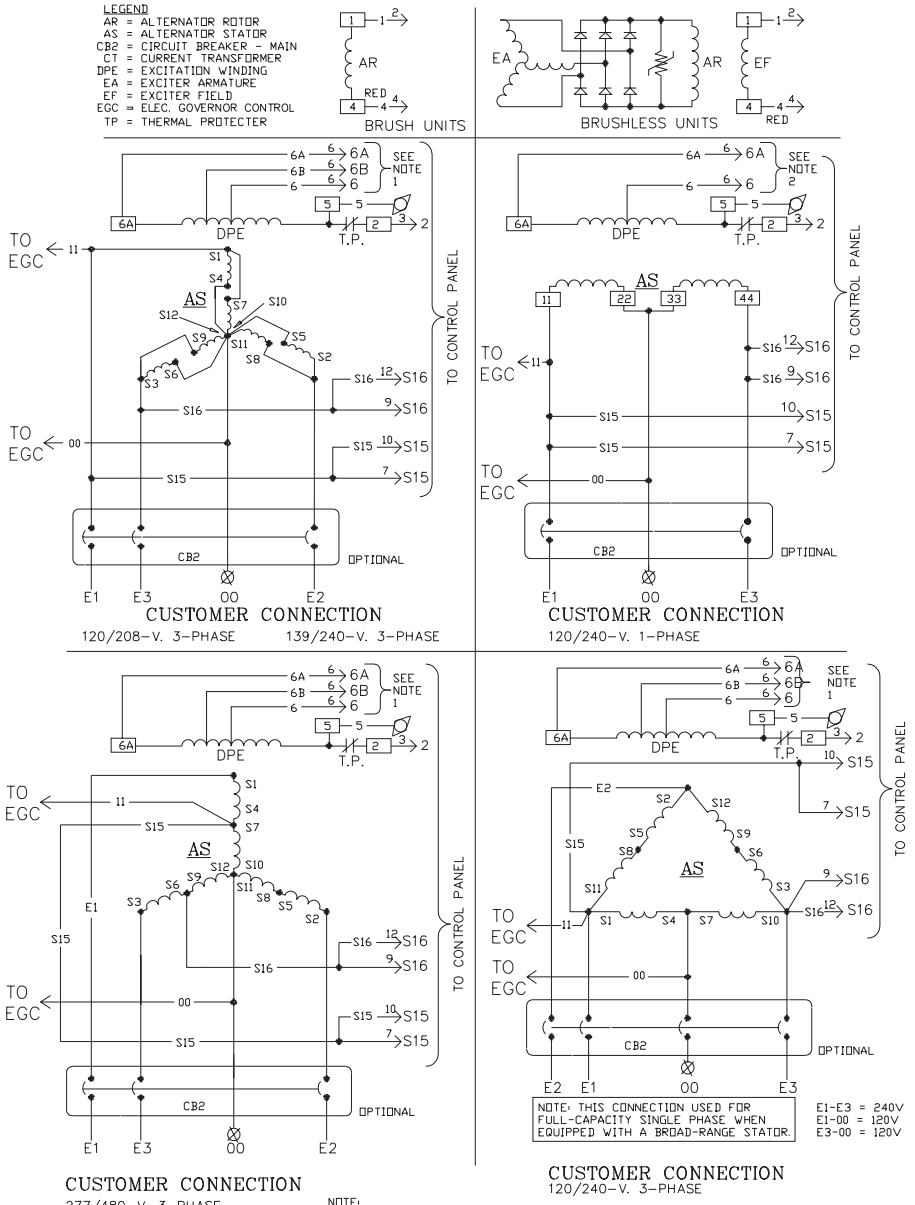
CUSTOMER CONNECTION
277/480V 3-PHASE
240/416V 3-PHASE

LEGEND

CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
GS = GENERATOR STATOR

SHEET 4 OF 4

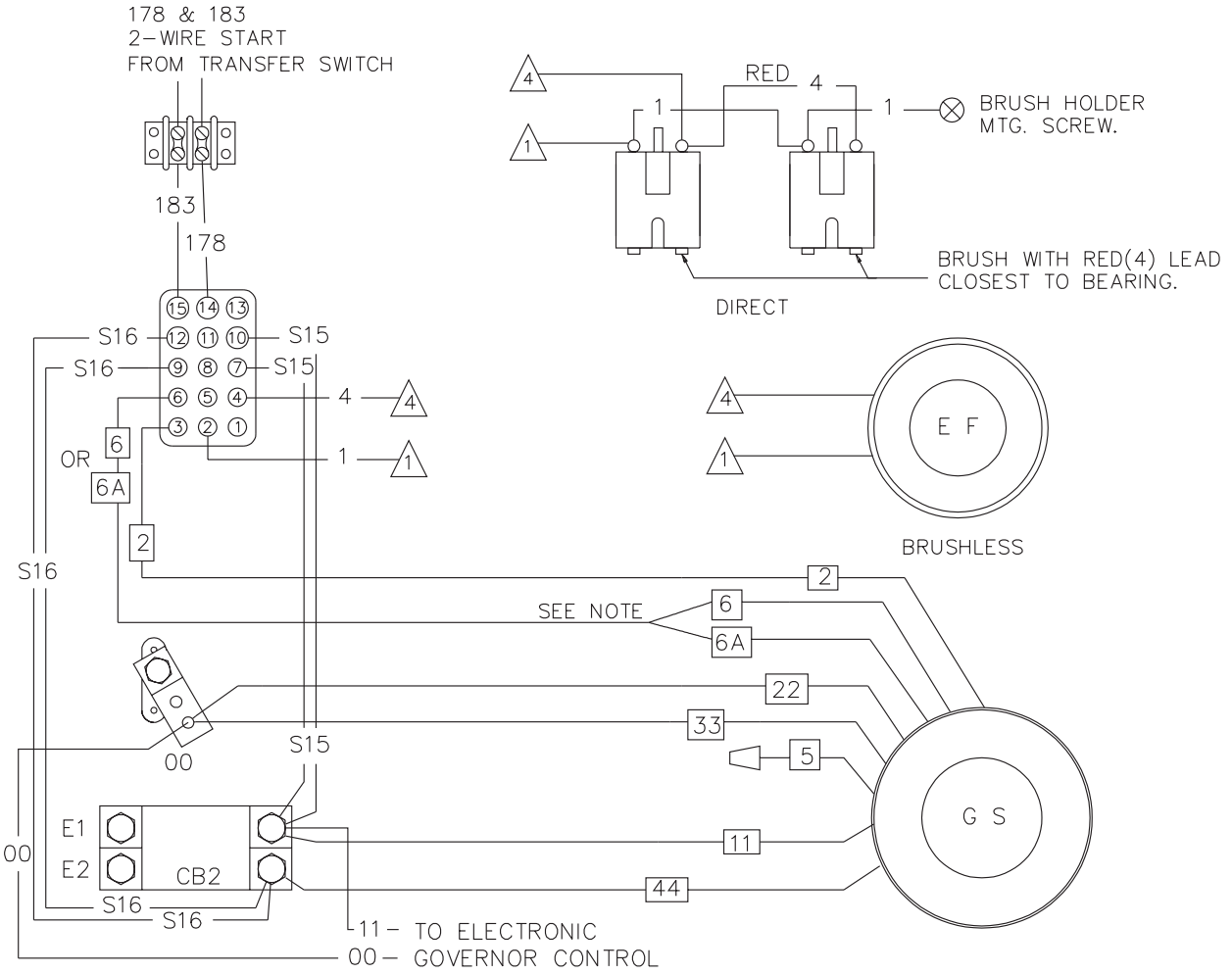

LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
DPE = EXCITATION WINDING
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELEC. GOVERNOR CONTROL
TP = THERMAL PROTECTER
BRUSH UNITS
BRUSHLESS UNITS
SEE NOTE 1
SEE NOTE 2
TO CONTROL PANEL
OPTIONAL
CUSTOMER CONNECTION
120/208-V. 3-PHASE
139/240-V. 3-PHASE
CUSTOMER CONNECTION
120/240-V. 1-PHASE
CUSTOMER CONNECTION
277/480-V. 3-PHASE
240/416-V. 3-PHASE
CUSTOMER CONNECTION
120/240-V. 3-PHASE
NOTE: THIS CONNECTION USED FOR FULL-CAPACITY SINGLE PHASE WHEN EQUIPPED WITH A BROAD-RANGE STATOR.
E1-E3 = 240V
E1-00 = 120V
E3-00 = 120V
NOTE:
1. USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED). USE 6A FOR 120/208V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS. USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.
2. USE 6 FOR BRUSHLESS UNITS (6A MAY NOT BE PROVIDED). USE 6A FOR BRUSH (DIRECT) UNITS.
3. CAUTION IF THE DPE TAPS 6,6A,OR 6B ARE RE-CONNECTED, BE SURE TO INSULATE ALL DISCONNECTED WIRES.



NOTE:
1. USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED). USE 6A FOR 120/208V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS. USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

2. USE 6 FOR BRUSHLESS UNITS (6A MAY NOT BE PROVIDED). USE 6A FOR BRUSH (DIRECT) UNITS.

3. CAUTION IF THE DPE TAPS 6,6A,OR 6B ARE RE-CONNECTED, BE SURE TO INSULATE ALL DISCONNECTED WIRES.



E1 TO E3	240V.
E1 TO 00	120V.
E3 TO 00	

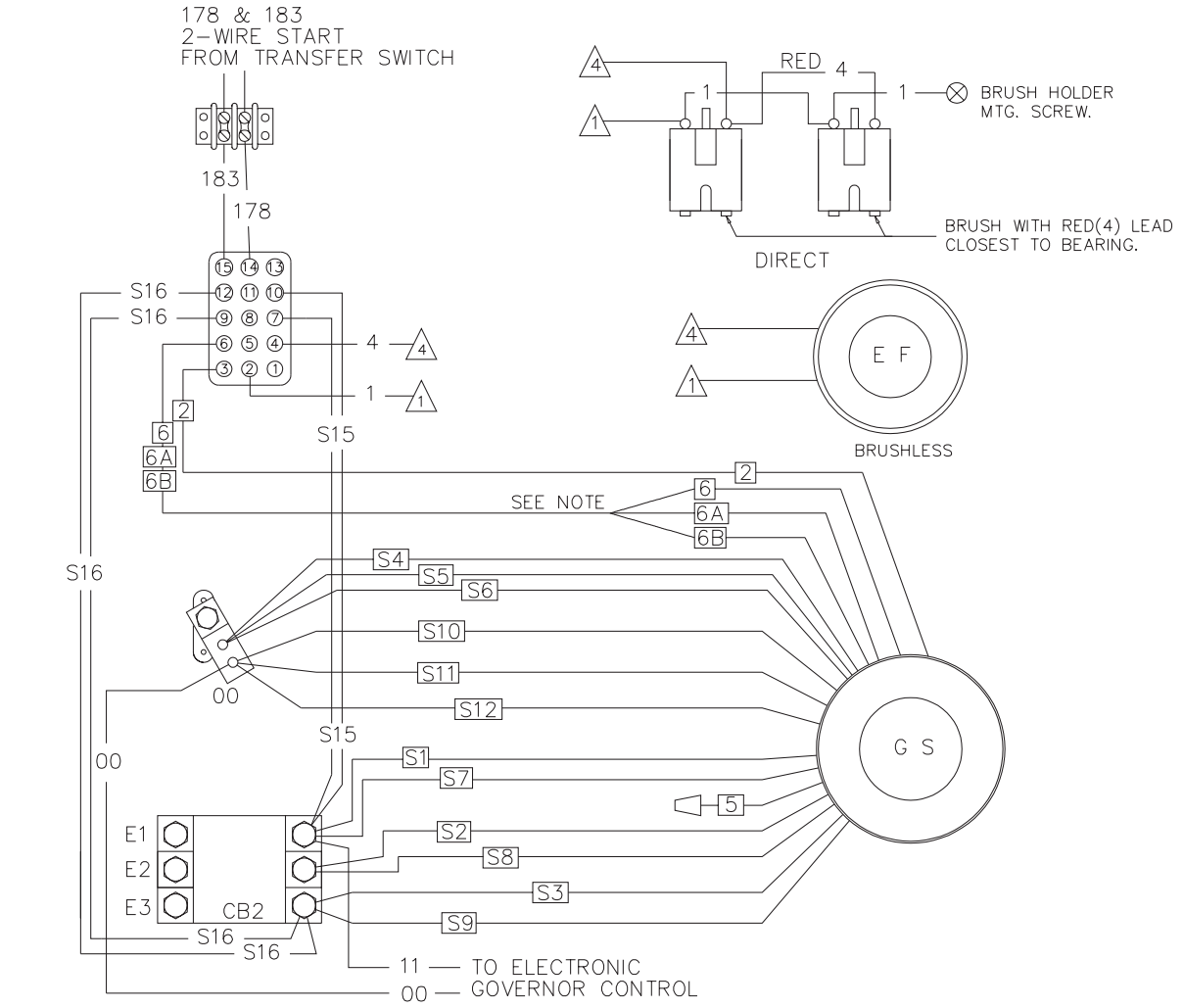
CUSTOMER CONNECTION
120/240V. 1–PHASE

LEGEND

CB2 = CIRCUIT BREAKER– MAIN
EF = EXCITER FIELD
GS = GENERATOR STATOR

NOTE:
USE 6 FOR BRUSHLESS UNITS (6A MAY NOT BE PROVIDED)
USE 6A FOR BRUSH (DIRECT) UNITS

SHEET 1 OF 4



E1 TO E2 E2 TO E3 E3 TO E1	208V
E1 TO 00 E2 TO 00 E3 TO 00	120V

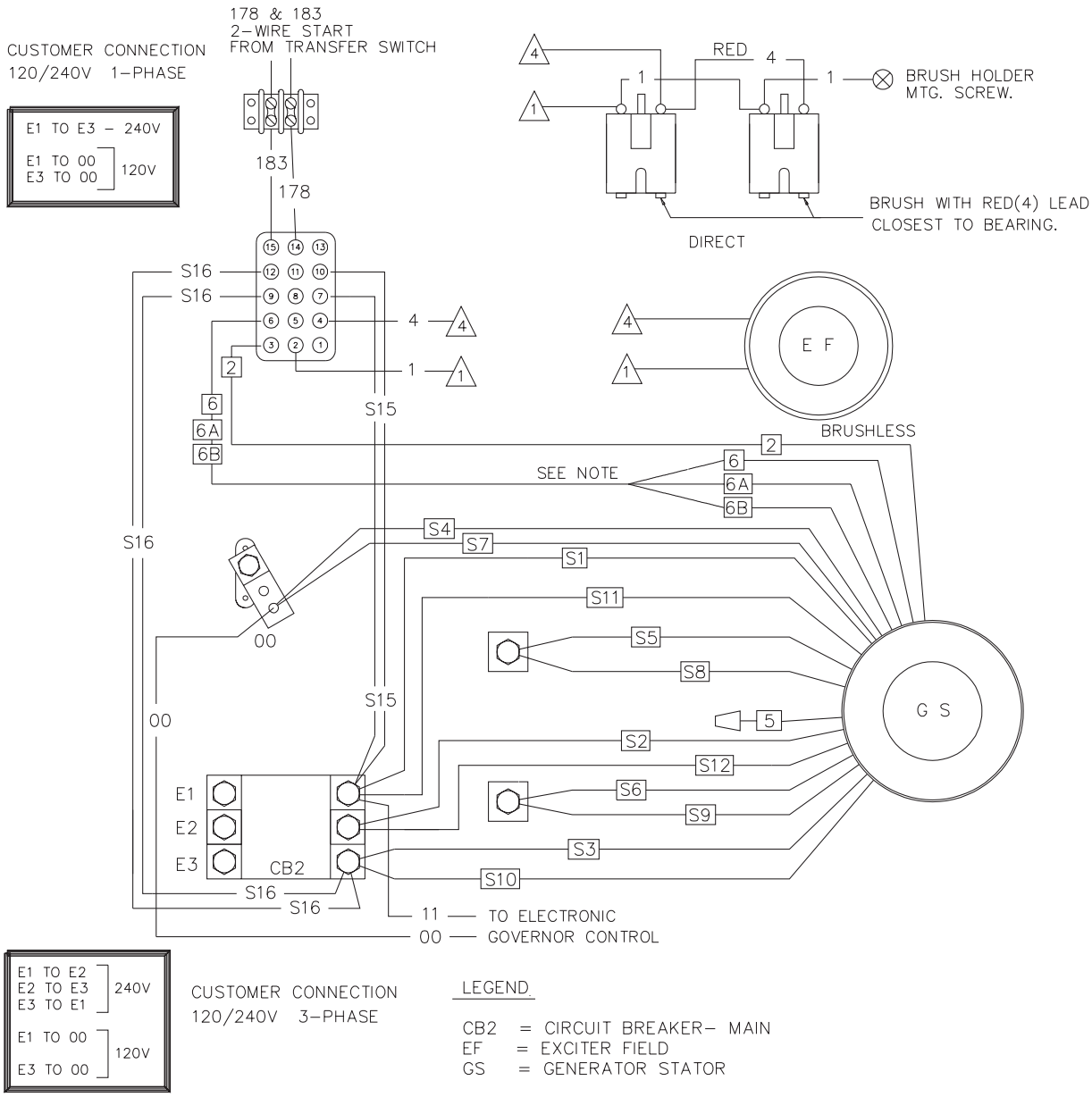
CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE

LEGEND

CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
GS = GENERATOR STATOR

NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

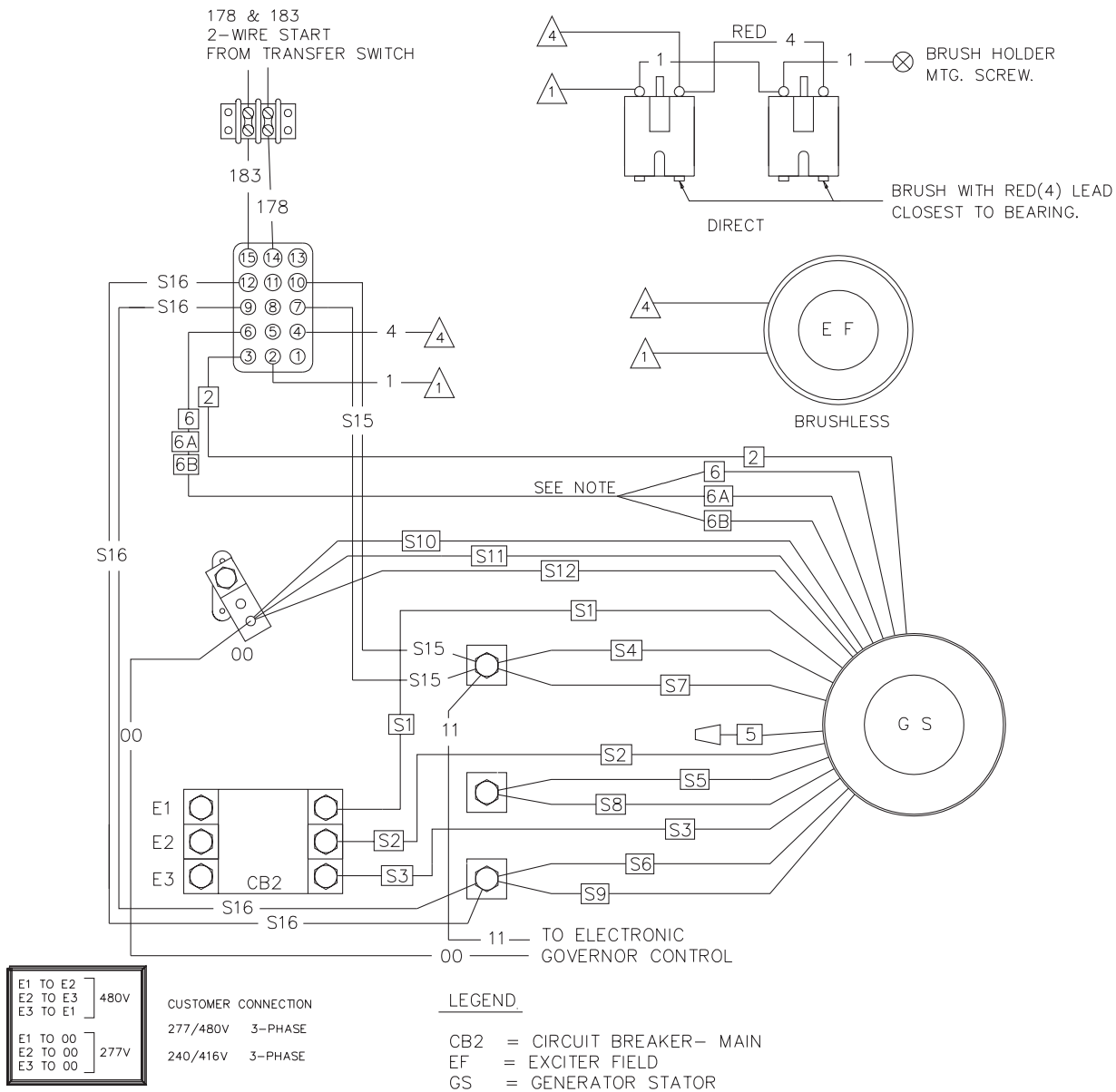
SHEET 2 OF 4



NOTE:

USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)
USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.
USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

SHEET 3 OF 4

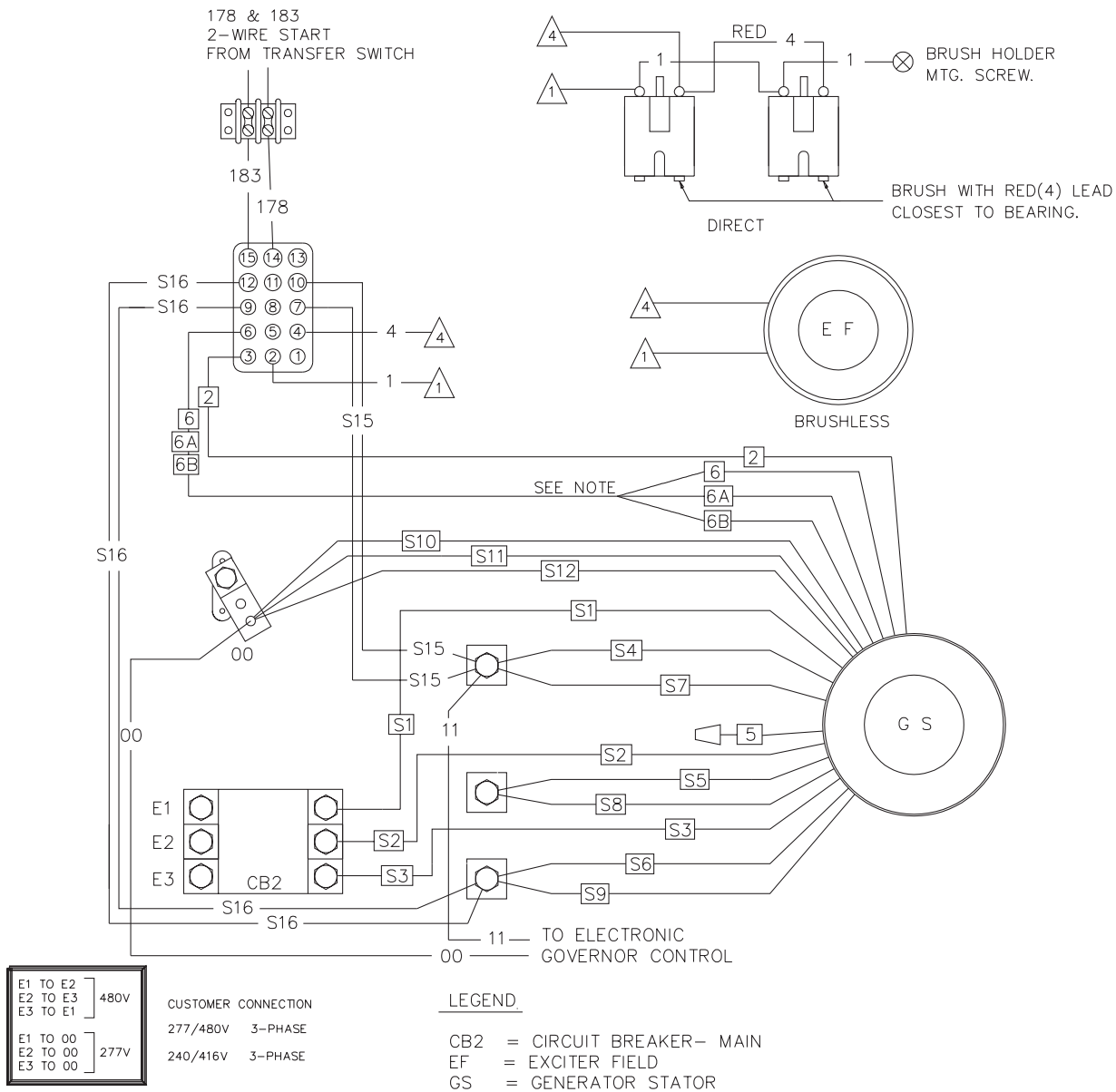


NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)

USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.

USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

SHEET 4 OF 4

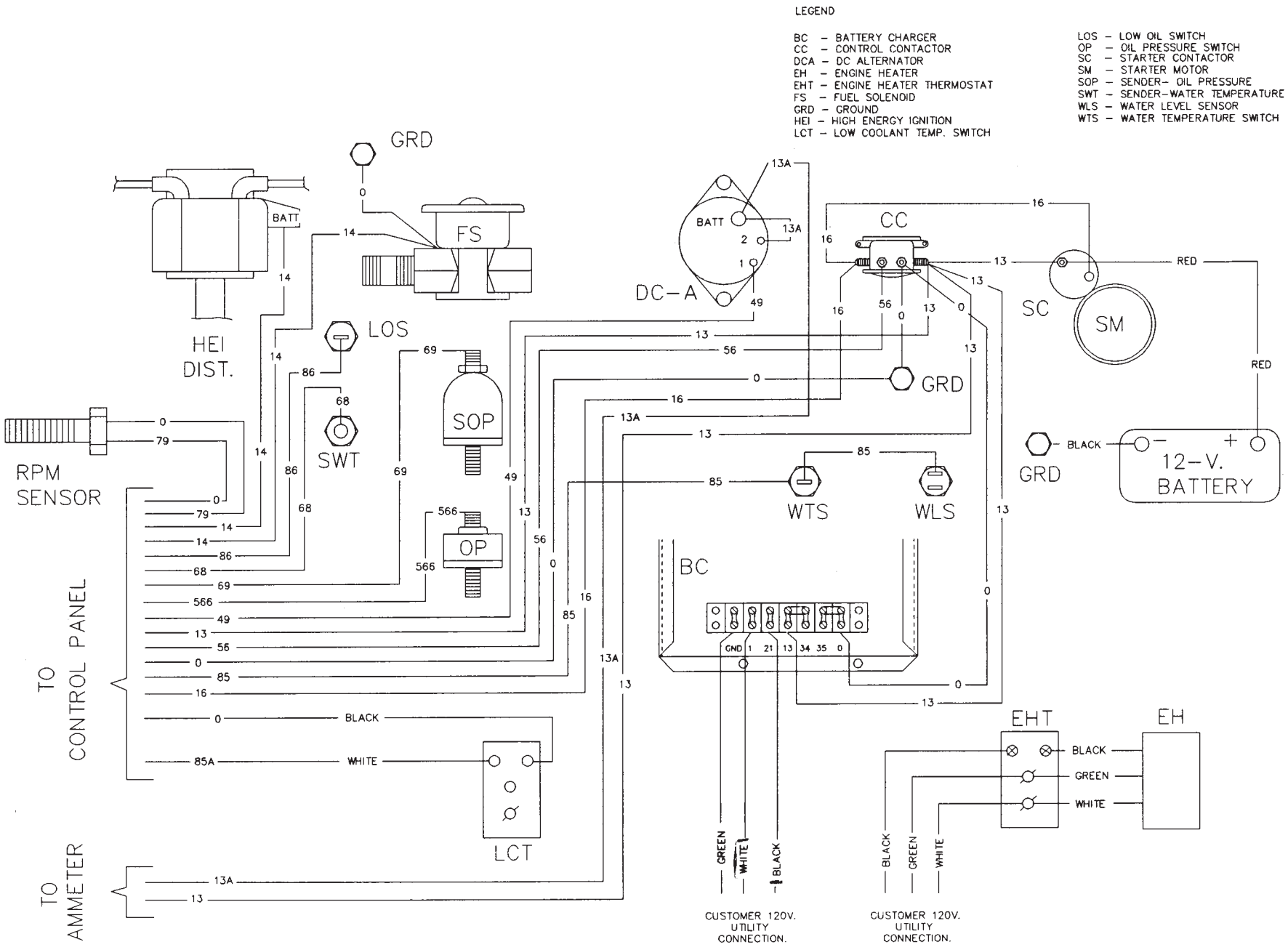


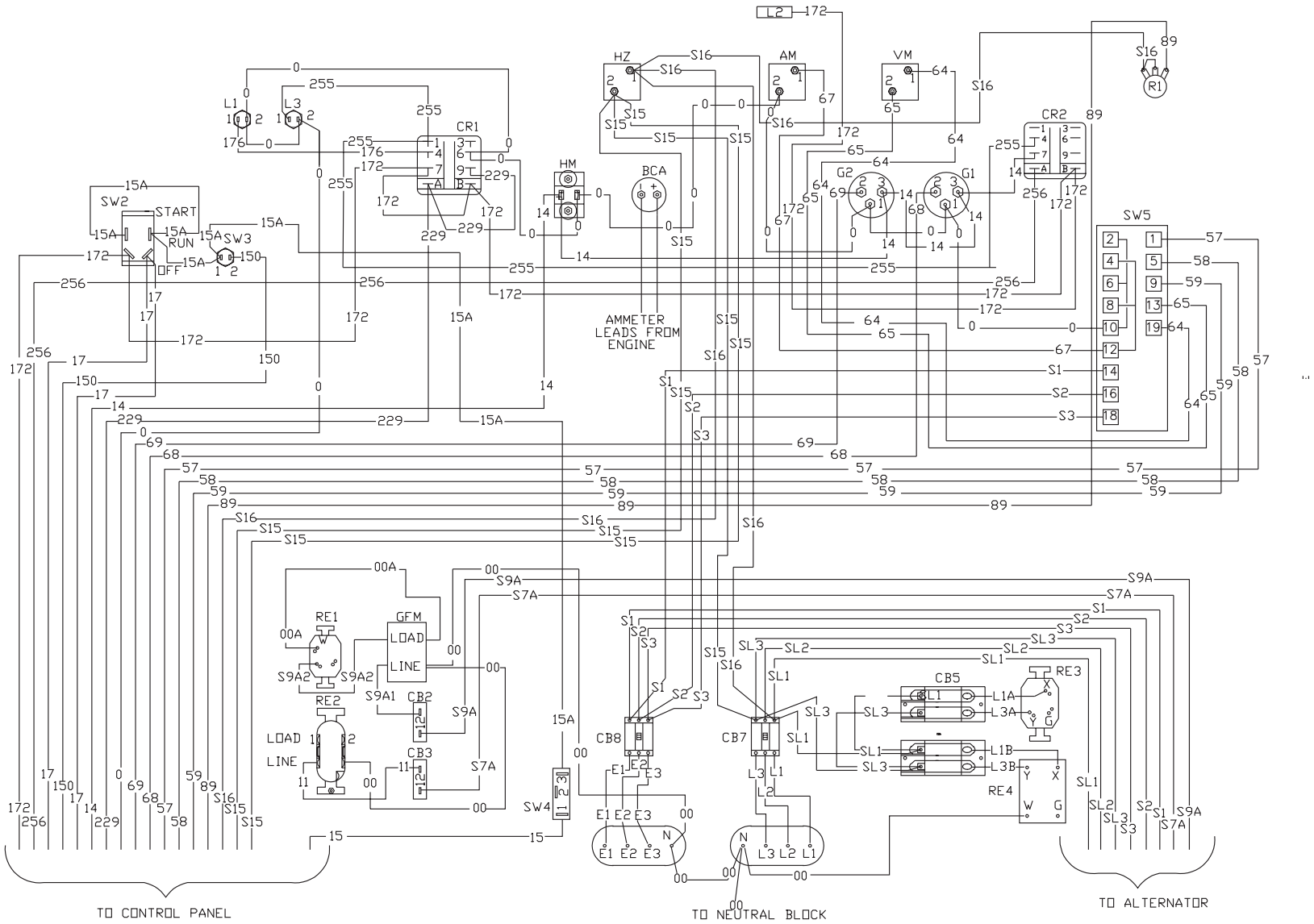
NOTE:
USE 6 FOR BRUSHLESS UNITS (6A AND/OR 6B MAY NOT BE PROVIDED)

USE 6A FOR 120/280V,120/240V, AND 240/416V CONNECTED BRUSH (DIRECT) UNITS.

USE 6B FOR 139/240V AND 277/480V CONNECTED BRUSH (DIRECT) UNITS.

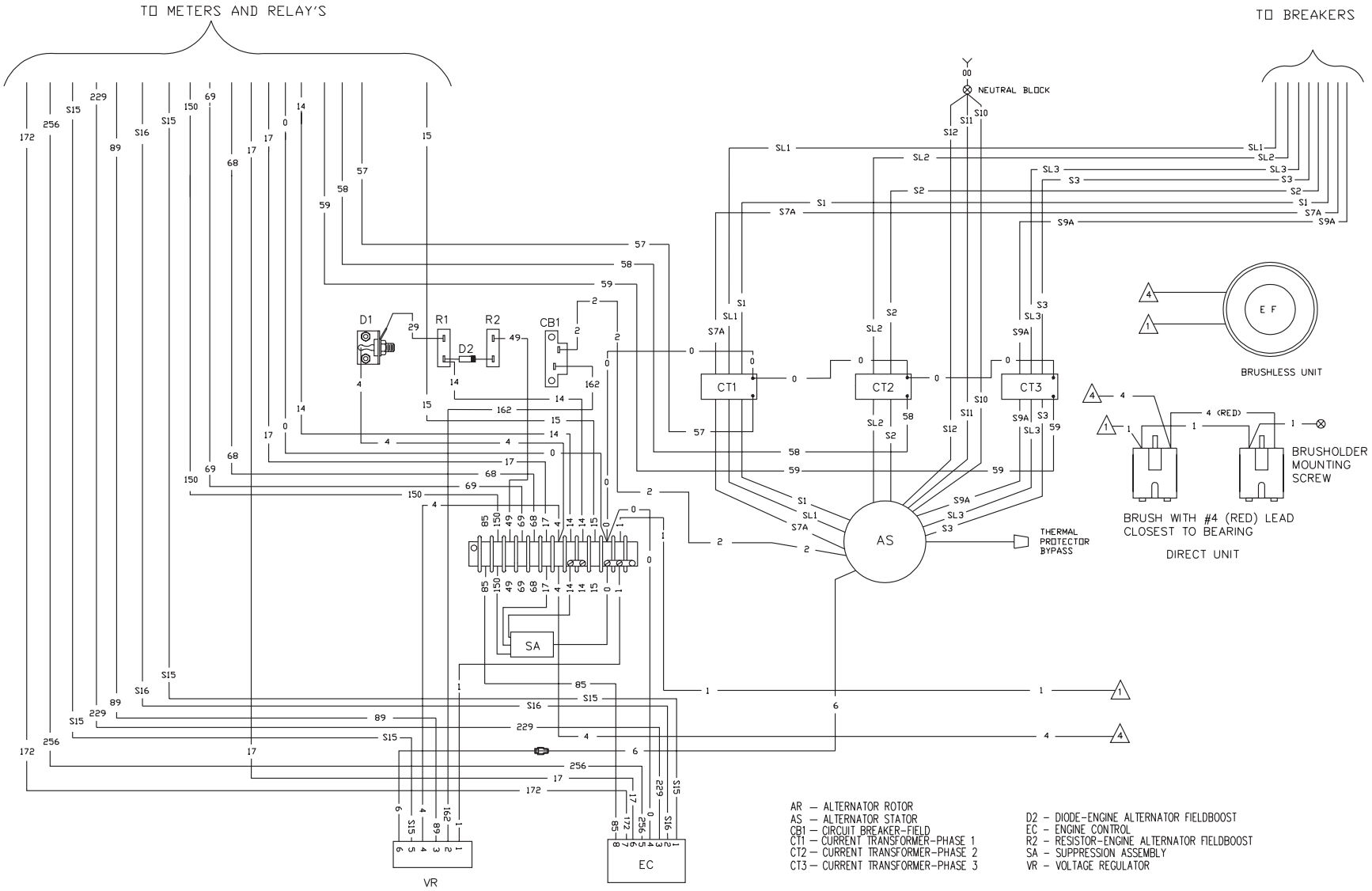
SHEET 4 OF 4

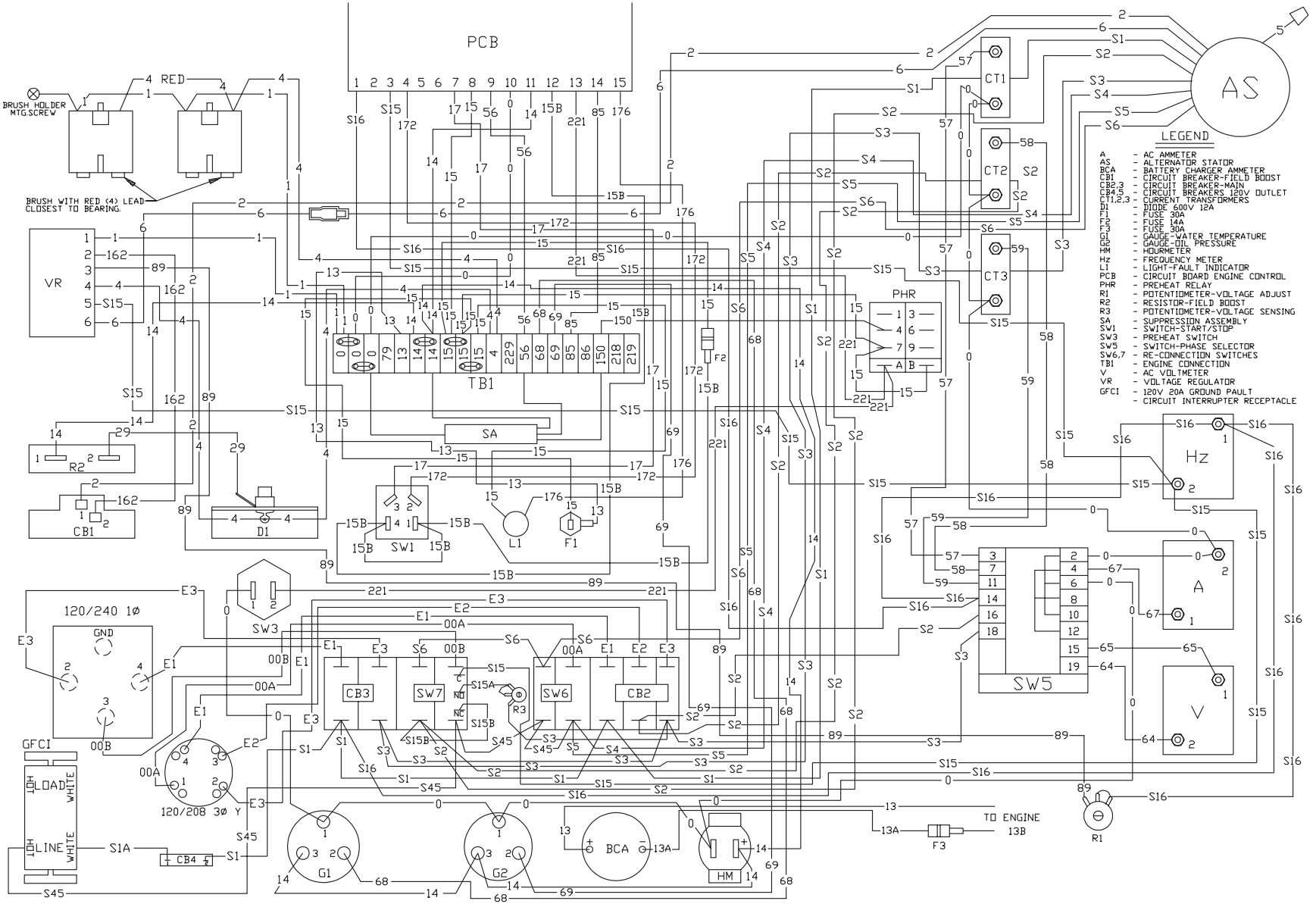

LEGEND
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENERGY IGNITION
LCT – LOW COOLANT TEMP. SWITCH
LOS – LOW OIL SWITCH
OP – OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
GRD
FS
BATT
HEI DIST.
LOS
SOP
SWT
RPM SENSOR
OP
WTS
WLS
DC–A
CC
SC
SM
RED
GRD
BLACK
12–V. BATTERY
BC
GND 1 21 13 34 35 0
EHT
EH
BLACK
GREEN
WHITE
TO CONTROL PANEL
TO AMMETER
LCT
CUSTOMER 120V. UTILITY CONNECTION.
CUSTOMER 120V. UTILITY CONNECTION.

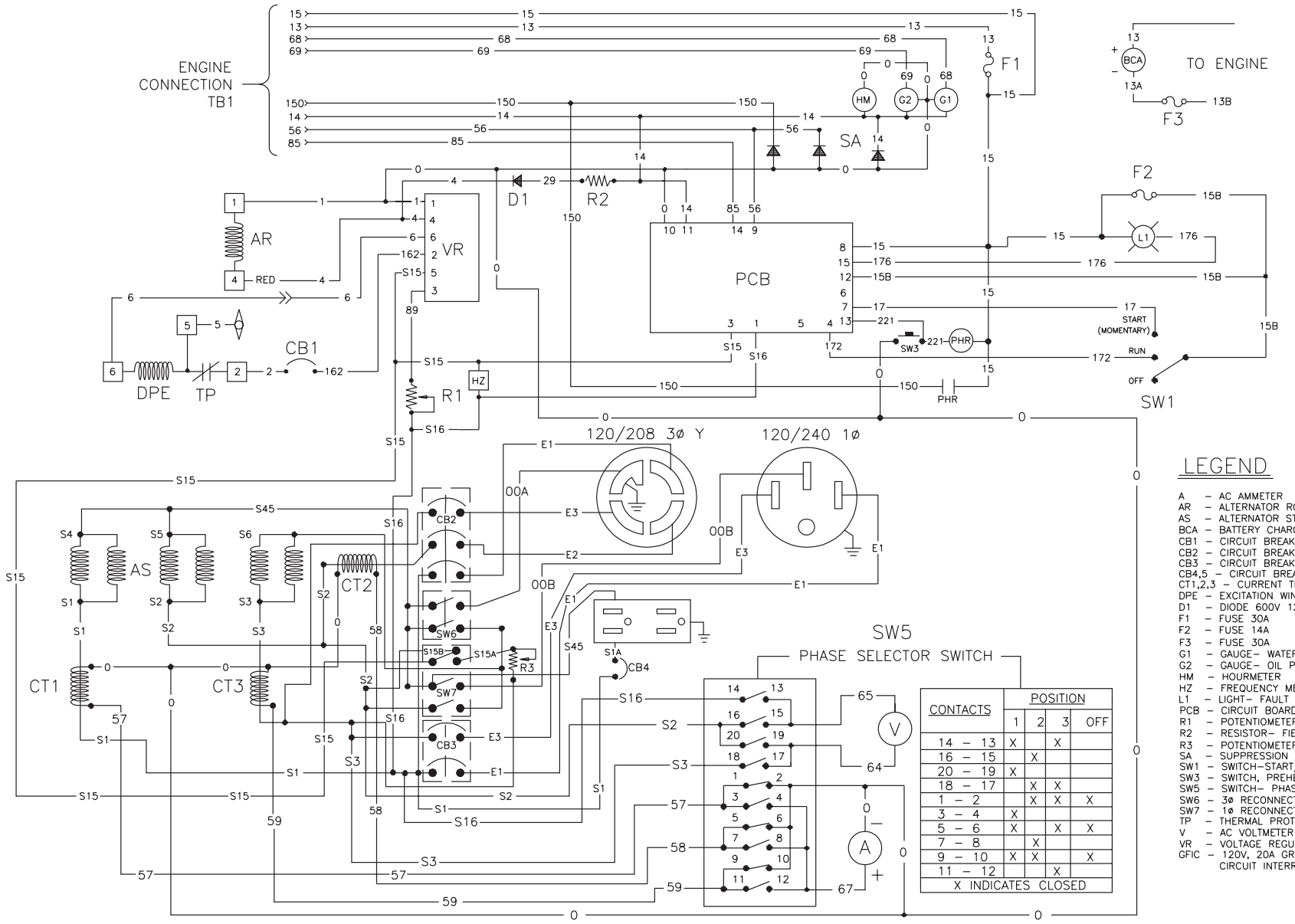


LEGEND

AM - AMMETER, AC
BCA- AMMETER, BATTERY CHARGE
CB2- CIRCUIT BREAKER, 120V 20A
CB4- CIRCUIT BREAKER, 120V 20A
CB5- CIRCUIT BREAKER, 240V 20A
CB6- CIRCUIT BREAKER, 240V 50A
CB7- CIRCUIT BREAKER, 240V, 225A, 175A, 125A
CB8- CIRCUIT BREAKER, 280V, 80A, 60A, 40A
CR1- RELAY, FAULT
CR2- RELAY, RUN
G1 - GAUGE, WATER TEMPERATURE
G2 - GAUGE, OIL PRESSURE
GFM- GROUND FAULT CIRCUIT INTERRUPTER MODULE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LAMP, FAULT
L2 - LAMP, PANEL
L3 - LAMP, RUN
R1 - POTENTIOMETER, VOLTAGE ADJUST
RE1- RECEPTACLE, 120V 20A LOCKING L5-20R
RE2- RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE3- RECEPTACLE, 240V 20A LOCKING L6-20R
RE4- RECEPTACLE, 120/240V 50A LOCKING CS6369
SW2- SWITCH, START/RUN/OFF
SW3- SWITCH, PREHEAT
SW4- SWITCH, SAFETY CUTOFF
SW5- SWITCH, PHASE SELECTOR
VM - VOLTMETER, AC


TO METERS AND RELAY'S
TO BREAKERS
NEUTRAL BLOCK
D1
D2
R1
R2
CB1
CT1
CT2
CT3
AS
SA
VR
EC
E F
BRUSHLESS UNIT
BRUSHOLDER MOUNTING SCREW
BRUSH WITH #4 (RED) LEAD CLOSEST TO BEARING
DIRECT UNIT
THERMAL PROTECTOR BYPASS
AR — ALTERNATOR ROTOR
AS — ALTERNATOR STATOR
CB1 — CIRCUIT BREAKER-FIELD
CT1 — CURRENT TRANSFORMER-PHASE 1
CT2 — CURRENT TRANSFORMER-PHASE 2
CT3 — CURRENT TRANSFORMER-PHASE 3
D2 - DIODE-ENGINE ALTERNATOR FIELDBOOST
EC - ENGINE CONTROL
R2 - RESISTOR-ENGINE ALTERNATOR FIELDBOOST
SA - SUPPRESSION ASSEMBLY
VR - VOLTAGE REGULATOR


PCB
AS
LEGEND
A - AC AMMETER
AS - ALTERNATOR STATOR
BCA - BATTERY CHARGER AMMETER
CB1 - CIRCUIT BREAKER-FIELD BOOST
CB2,3 - CIRCUIT BREAKER-MAIN
CB4,5 - CIRCUIT BREAKERS 120V OUTLET
CT1,2,3 - CURRENT TRANSFORMERS
D1 - DIODE 600V 12A
F1 - FUSE 30A
F2 - FUSE 14A
F3 - FUSE 30A
G1 - GAUGE-WATER TEMPERATURE
G2 - GAUGE-OIL PRESSURE
HM - HOURMETER
Hz - FREQUENCY METER
LI - LIGHT-FAULT INDICATOR
PCB - CIRCUIT BOARD ENGINE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER-VOLTAGE ADJUST
R2 - RESISTOR-FIELD BOOST
R3 - POTENTIOMETER-VOLTAGE SENSING
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH-START/STOP
SW3 - PREHEAT SWITCH
SW5 - SWITCH-PHASE SELECTOR
SW6,7 - RE-CONNECTION SWITCHES
TB1 - ENGINE CONNECTION
V - AC VOLTMETER
VR - VOLTAGE REGULATOR
GFCI - 120V 20A GROUND FAULT
- CIRCUIT INTERRUPTER RECEPTACLE
VR
TB1
PHR
SA
R2
CB1
D1
SW1
L1
F1
F2
SW3
120/240 1ø
GND
CB3
SW7
SW6
CB2
SW5
GFCI
LOAD
LINE
WHITE
120/208 3ø Y
CB4
G1
G2
BCA
HM
R1
F3
TO ENGINE
13B
Hz
A
V
CT1
CT2
CT3
BRUSH HOLDER MTG.SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING.
4 RED

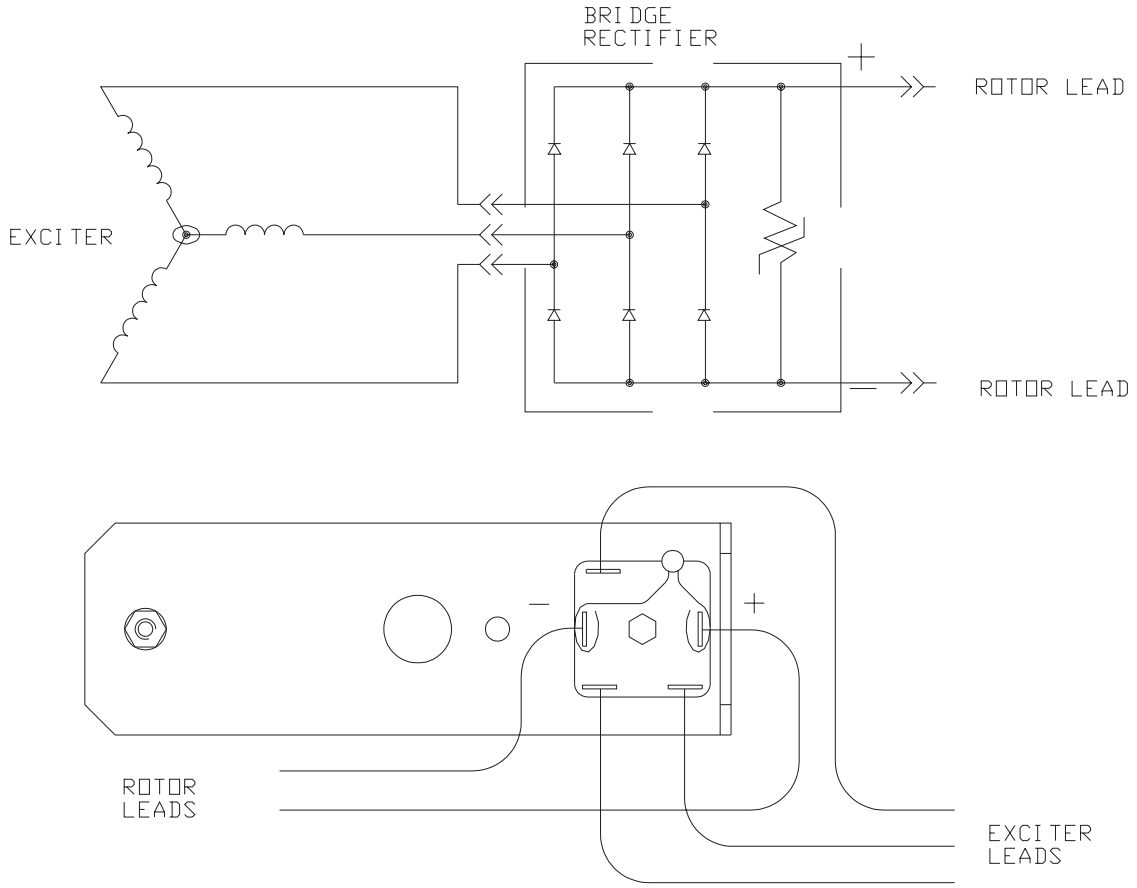


CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

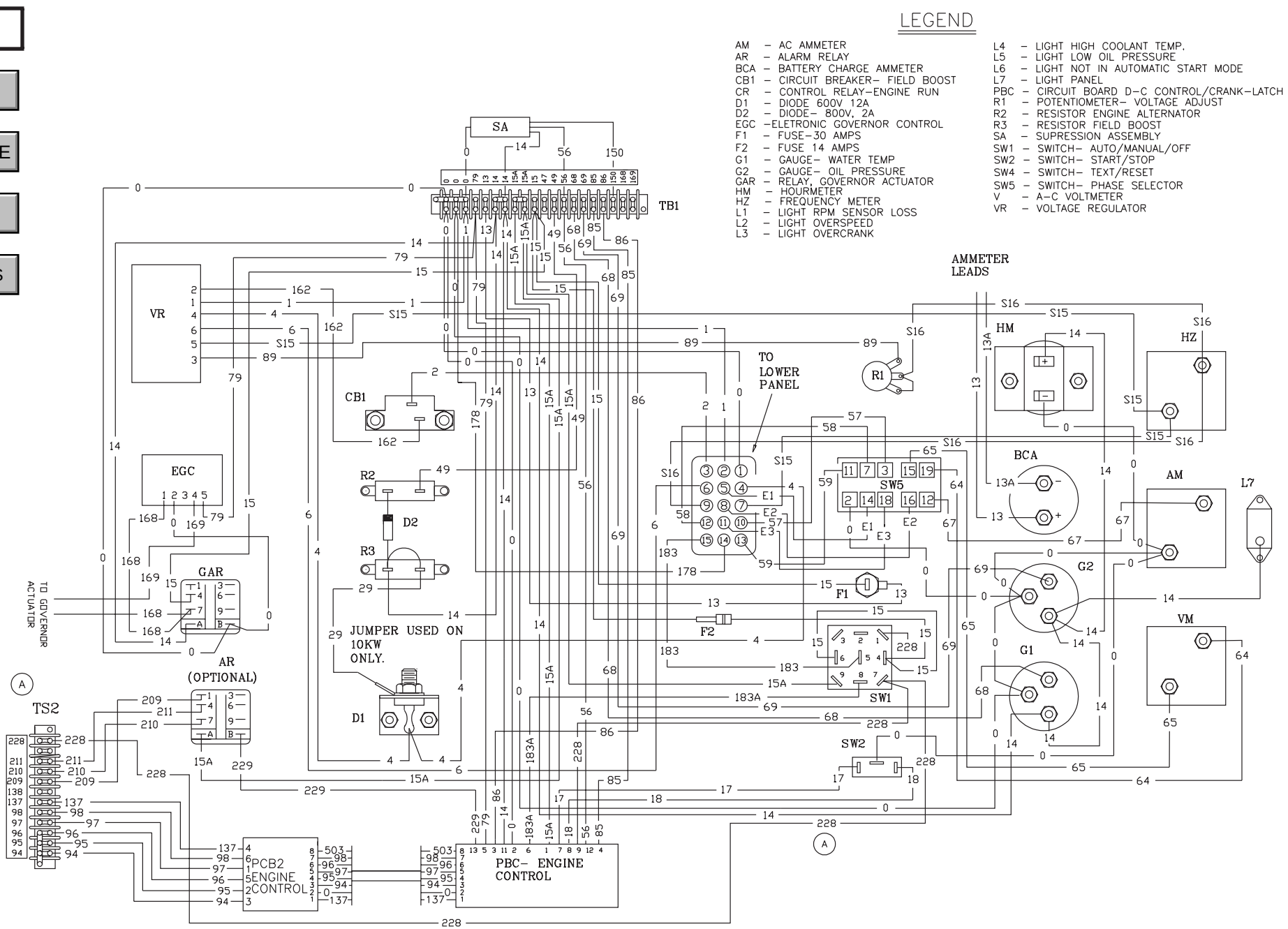
X INDICATES CLOSED

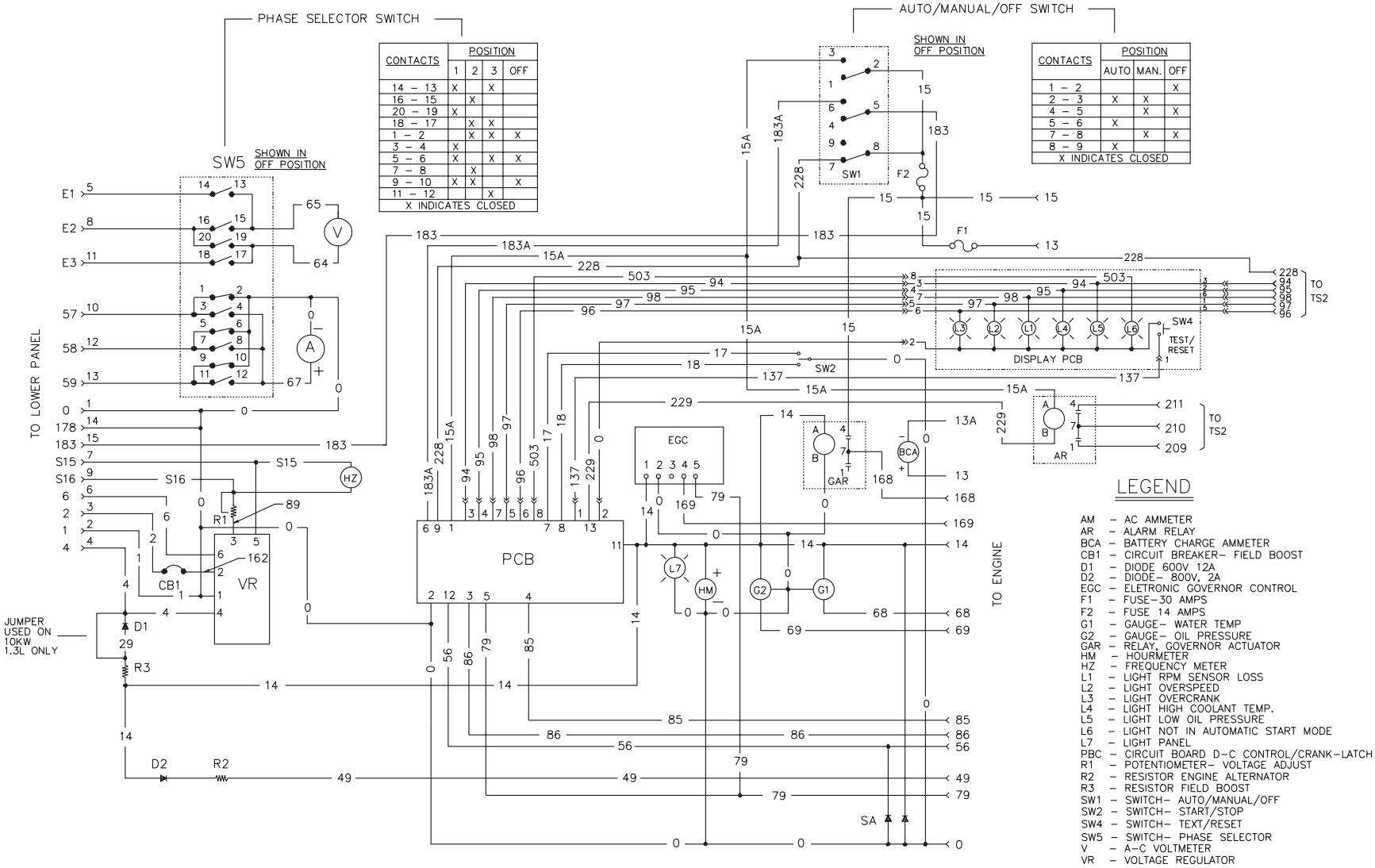
LEGEND

A – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER – EXCITATION
CB2 – CIRCUIT BREAKER – 3ø 30A
CB3 – CIRCUIT BREAKER – 1ø 35A
CB4,5 – CIRCUIT BREAKER – 20A
CT1,2,3 – CURRENT TRANSFORMERS
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 30A
F2 – FUSE 14A
F3 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
R3 – POTENTIOMETER–VOLTAGE SENSING
SA – SUPPRESSION ASSEMBLY
SW1 – SWITCH–START/STOP
SW3 – SWITCH, PREHEAT
SW5 – SWITCH– PHASE SELECTOR
SW6 – 3ø RECONNECTION SWITCH
SW7 – 1ø RECONNECTION SWITCH
TP – THERMAL PROTECTOR
V – AC VOLTMETER
VR – VOLTAGE REGULATOR
GFIC – 120V, 20A GROUND PAULT CIRCUIT INTERRUPTER RECEPTACLE



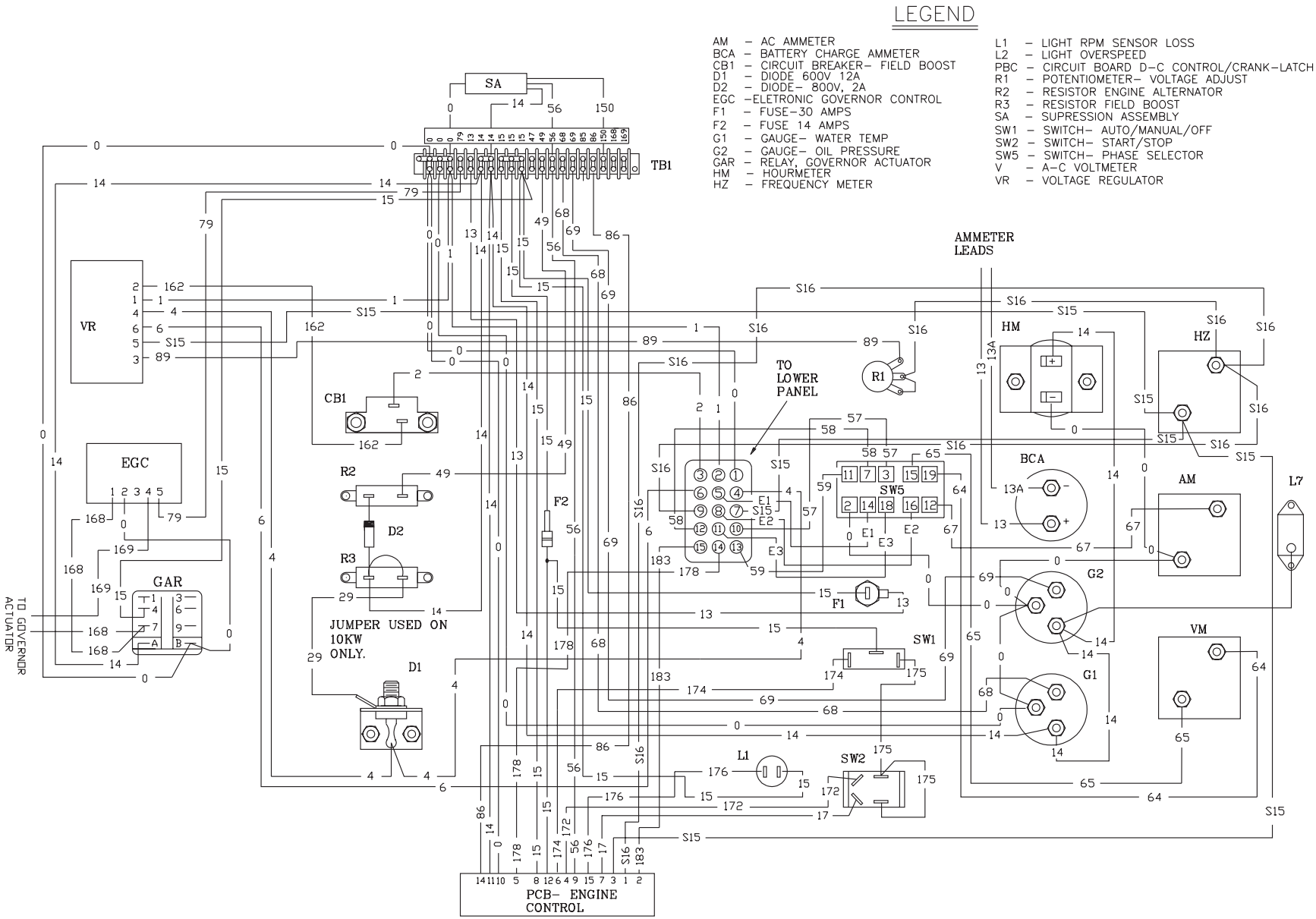
ROTOR AND EXCITER LEADS ARE NOT POLARITY SENSITIVE, ATTACH TO BRIDGE RECTIFIERS AS SHOWN

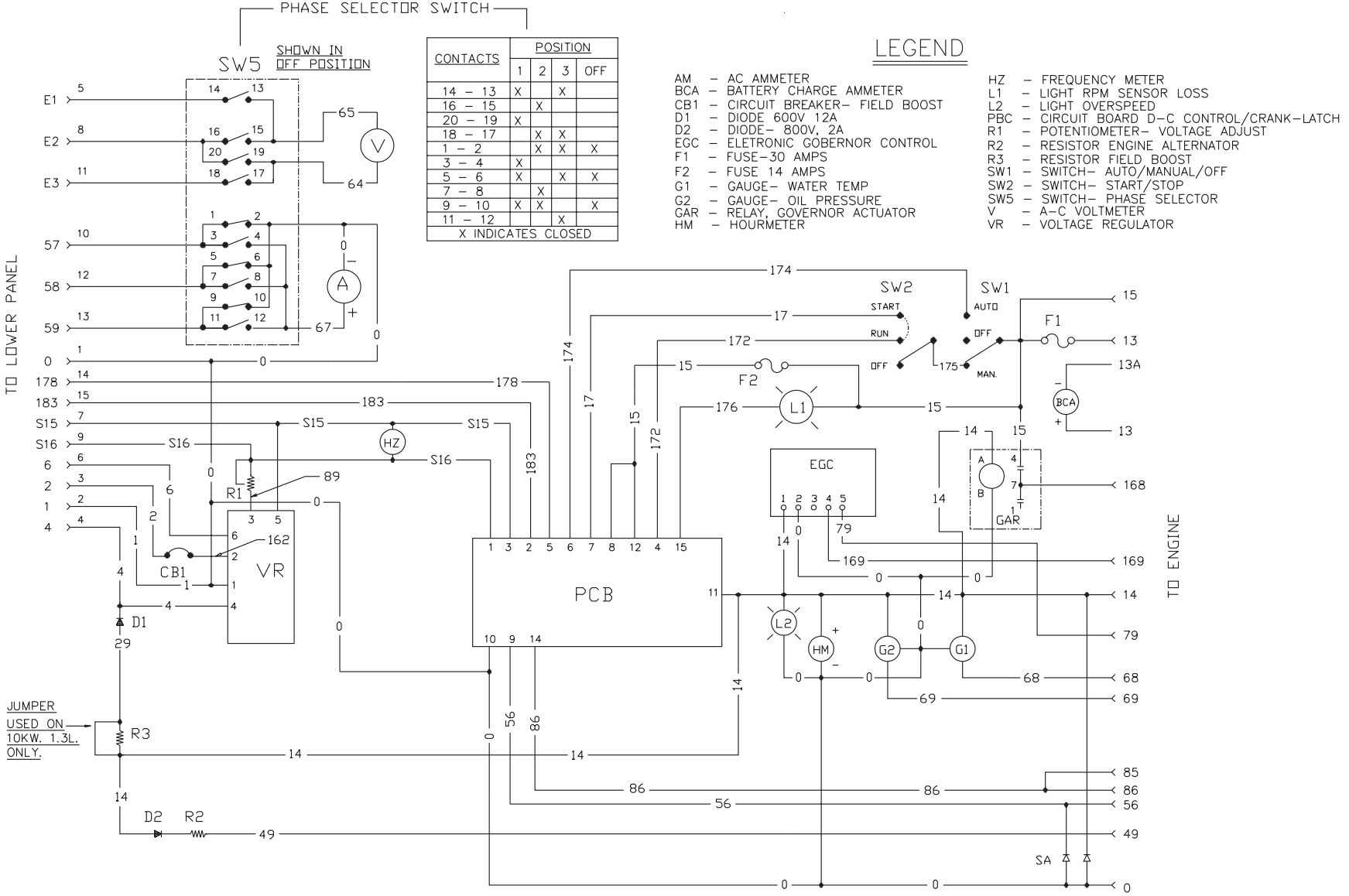

LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CR – CONTROL RELAY–ENGINE RUN
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC –ELETRONIC GOVERNOR CONTROL
F1 – FUSE–30 AMPS
F2 – FUSE 14 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH COOLANT TEMP.
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PBC – CIRCUIT BOARD D–C CONTROL/CRANK–LATCH
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR ENGINE ALTERNATOR
R3 – RESISTOR FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW4 – SWITCH– TEXT/RESET
SW5 – SWITCH– PHASE SELECTOR
V – A–C VOLTMETER
VR – VOLTAGE REGULATOR
SA
TB1
VR
CB1
EGC
R2
D2
R3
GAR
TO GOVERNOR ACTUATOR
AR (OPTIONAL)
JUMPER USED ON 10KW ONLY.
D1
TS2
PCB2 ENGINE CONTROL
PBC– ENGINE CONTROL
AMMETER LEADS
TO LOWER PANEL
R1
HM
HZ
BCA
SW5
AM
L7
G2
F1
F2
VM
G1
SW1
SW2

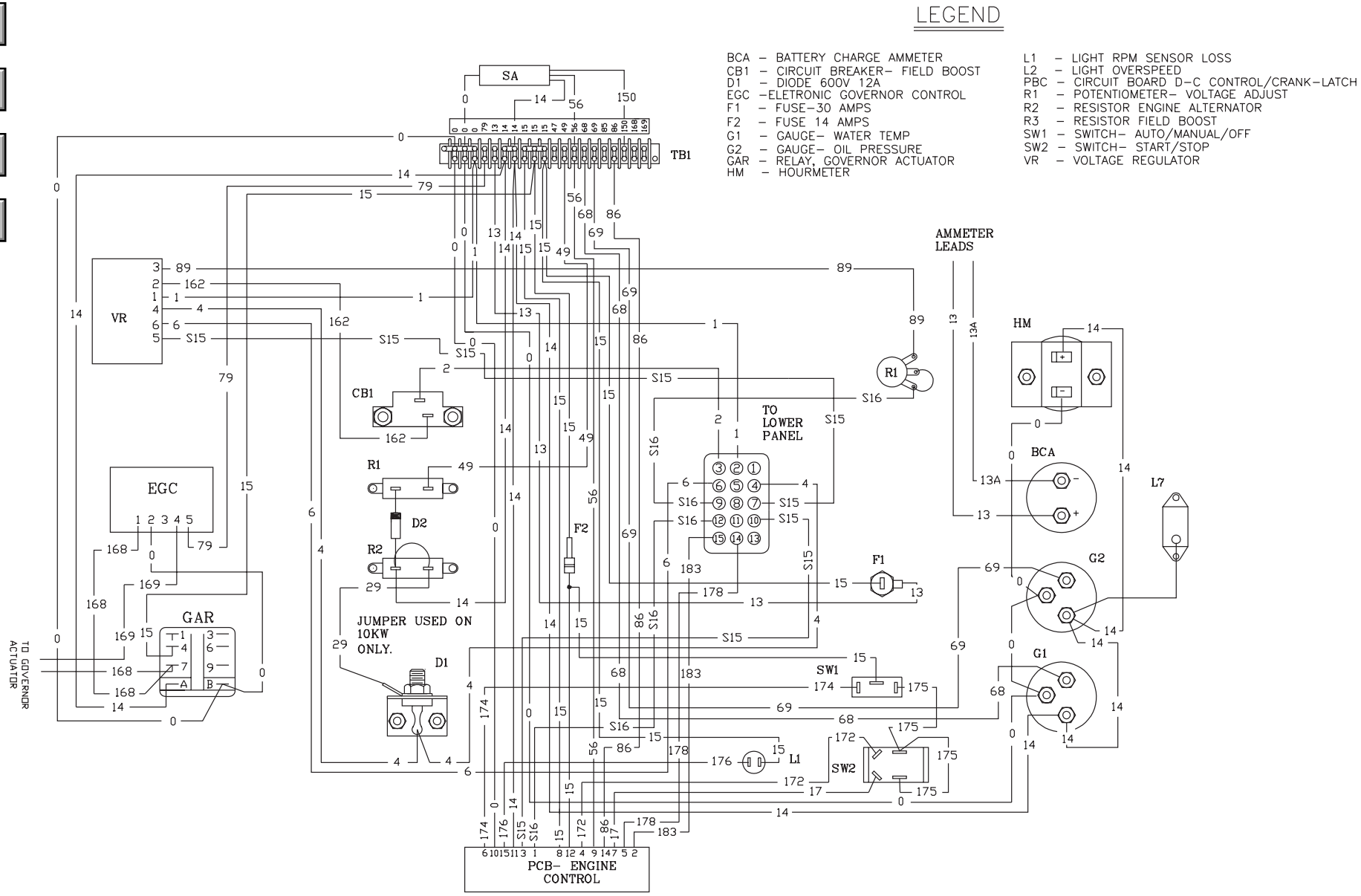


LEGEND

AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC – ELETRONIC GOVERNOR CONTROL
F1 – FUSE–30 AMPS
F2 – FUSE 14 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH COOLANT TEMP.
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PBC – CIRCUIT BOARD D–C CONTROL/CRANK–LATCH
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR ENGINE ALTERNATOR
R3 – RESISTOR FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW4 – SWITCH– TEXT/RESET
SW5 – SWITCH– PHASE SELECTOR
V – A–C VOLTMETER
VR – VOLTAGE REGULATOR


LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC –ELETRONIC GOVERNOR CONTROL
F1 – FUSE–30 AMPS
F2 – FUSE 14 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
PBC – CIRCUIT BOARD D–C CONTROL/CRANK–LATCH
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR ENGINE ALTERNATOR
R3 – RESISTOR FIELD BOOST
SA – SUPRESSION ASSEMBLY
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
V – A–C VOLTMETER
VR – VOLTAGE REGULATOR
SA
TB1
VR
EGC
CB1
R2
D2
R3
GAR
F2
D1
F1
R1
SW1
SW2
SW5
L1
HM
HZ
BCA
AM
L7
G2
G1
VM
AMMETER LEADS
TO LOWER PANEL
TO GOVERNOR ACTUATOR
JUMPER USED ON 10KW ONLY.
PCB– ENGINE CONTROL

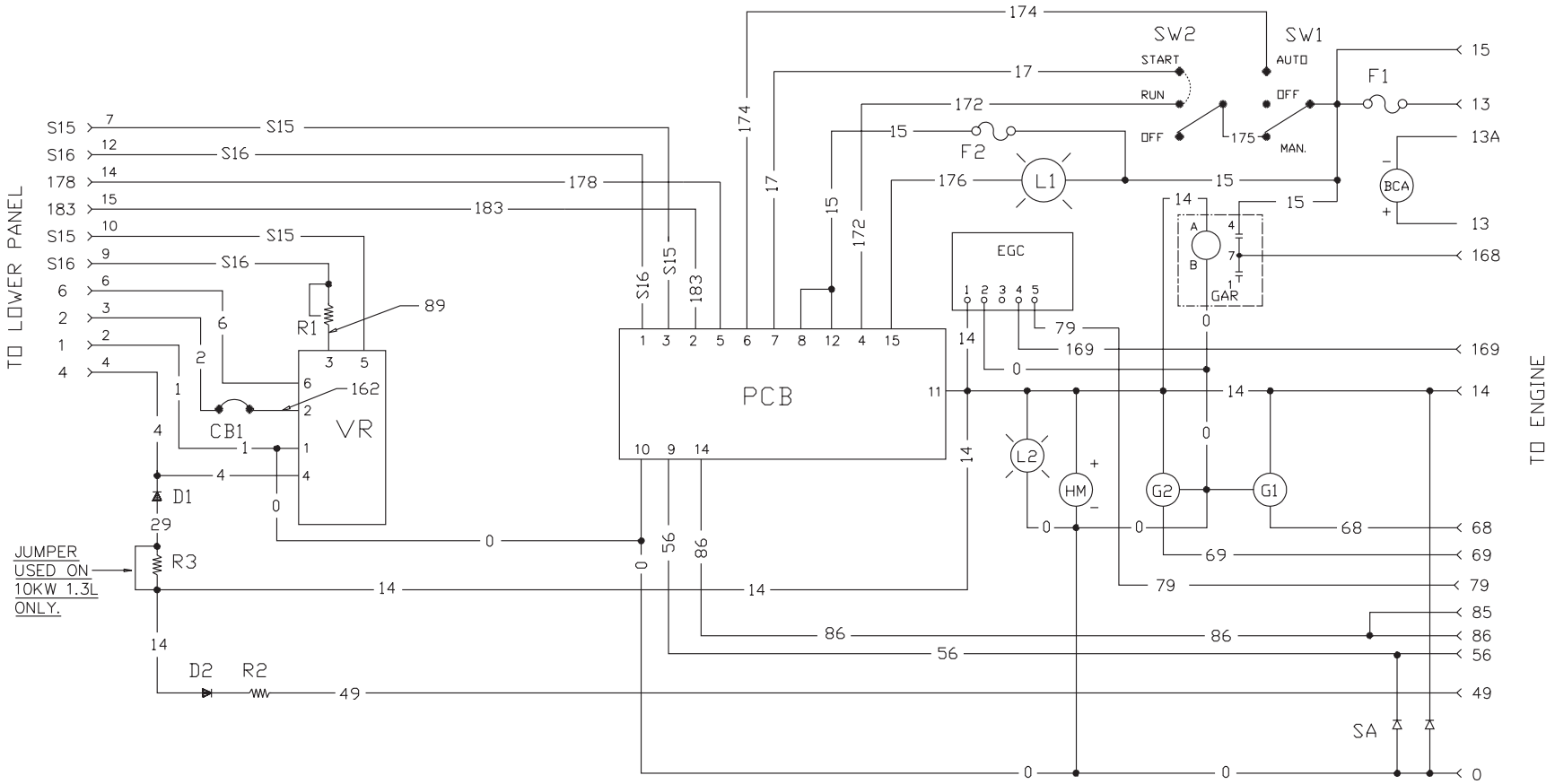

PHASE SELECTOR SWITCH
SW5
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
14 – 13 | X | | X |
16 – 15 | | X | |
20 – 19 | X | | |
18 – 17 | | X | X |
1 – 2 | | X | X | X
3 – 4 | X | | |
5 – 6 | X | | X | X
7 – 8 | | X | |
9 – 10 | X | X | | X
11 – 12 | | | X |
X INDICATES CLOSED
LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC – ELETRONIC GOBERNOR CONTROL
F1 – FUSE–30 AMPS
F2 – FUSE 14 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
PBC – CIRCUIT BOARD D–C CONTROL/CRANK–LATCH
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR ENGINE ALTERNATOR
R3 – RESISTOR FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW5 – SWITCH– PHASE SELECTOR
V – A–C VOLTMETER
VR – VOLTAGE REGULATOR
TO LOWER PANEL
TO ENGINE
JUMPER USED ON 10KW. 1.3L. ONLY.
PCB
VR
CB1
R1
R2
R3
D1
D2
SW2
START
RUN
OFF
SW1
AUTO
OFF
MAN.
F1
F2
L1
L2
HZ
BCA
EGC
GAR
HM
G1
G2
SA


LEGEND
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
EGC –ELETRONIC GOVERNOR CONTROL
F1 – FUSE–30 AMPS
F2 – FUSE 14 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
PBC – CIRCUIT BOARD D–C CONTROL/CRANK–LATCH
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR ENGINE ALTERNATOR
R3 – RESISTOR FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
VR – VOLTAGE REGULATOR
SA
TB1
VR
CB1
EGC
GAR
R1
D2
R2
F2
D1
F1
SW1
SW2
L1
L7
HM
BCA
G1
G2
AMMETER LEADS
TO LOWER PANEL
JUMPER USED ON 10KW ONLY.
TO GOVERNOR ACTUATOR
PCB– ENGINE CONTROL

LEGEND

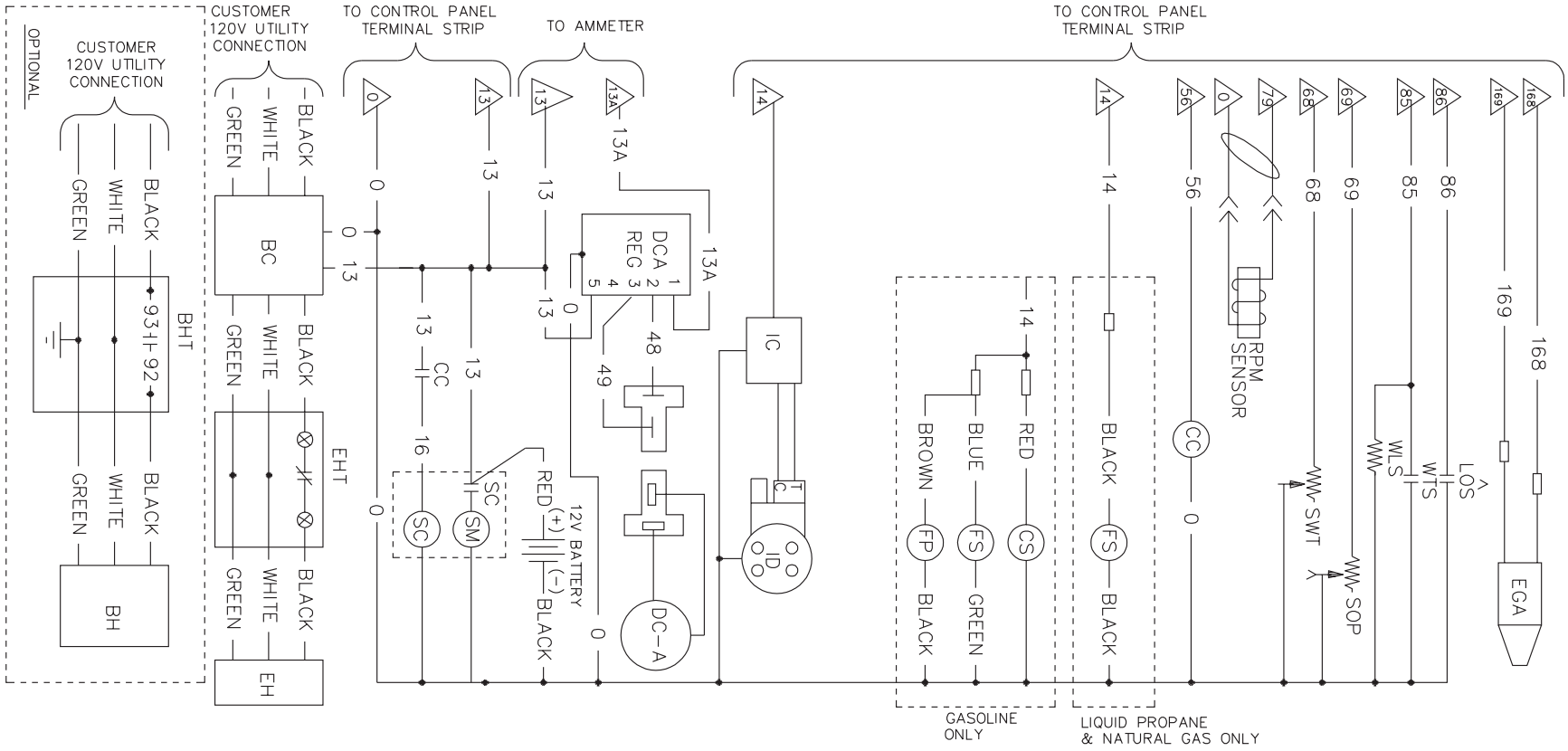
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC –ELETRONIC GOVERNOR CONTROL
F1 – FUSE–30 AMPS
F2 – FUSE 14 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER

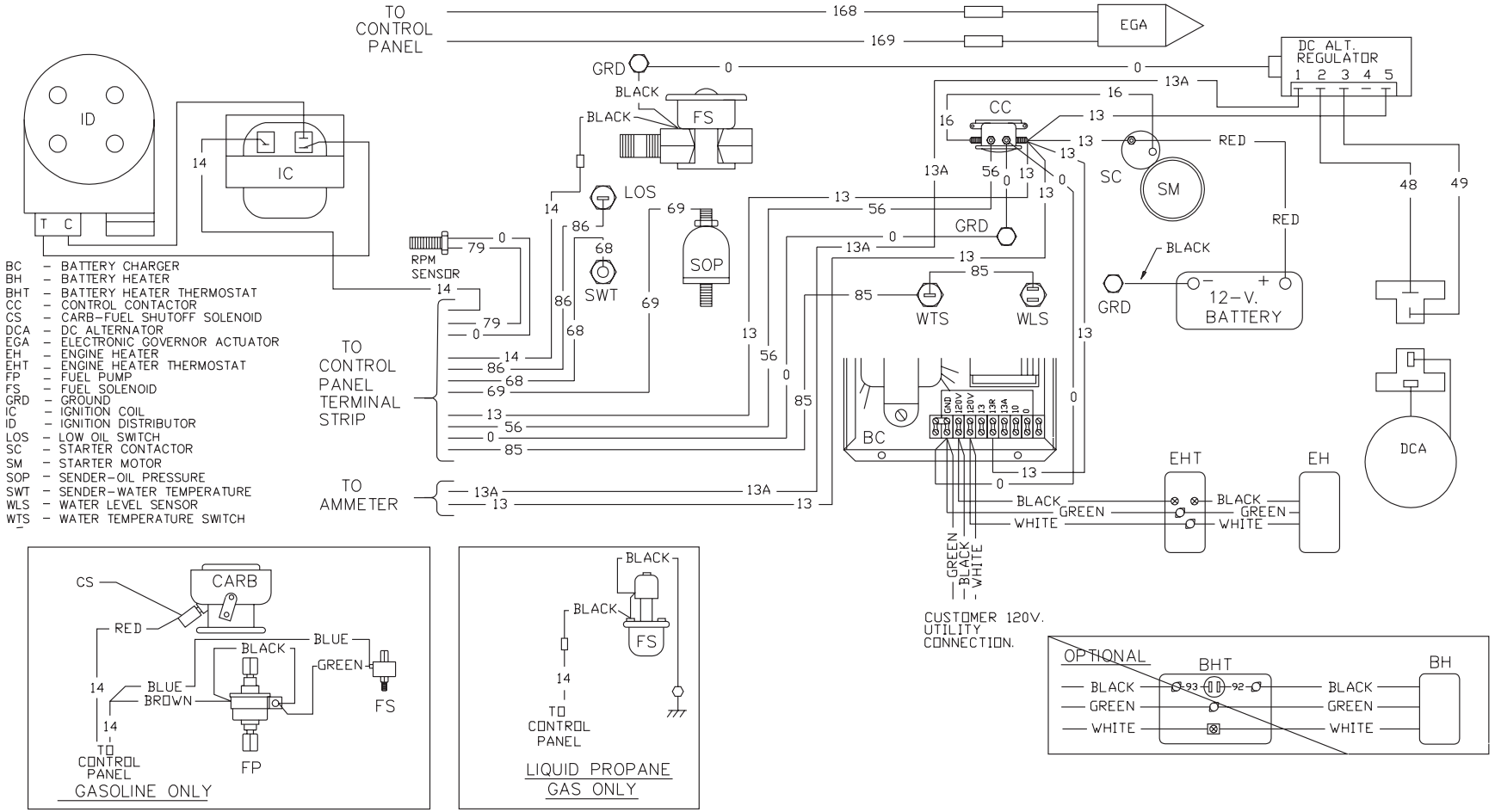
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
PBC – CIRCUIT BOARD D–C CONTROL/CRANK–LATCH
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR ENGINE ALTERNATOR
R3 – RESISTOR FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
VR – VOLTAGE REGULATOR



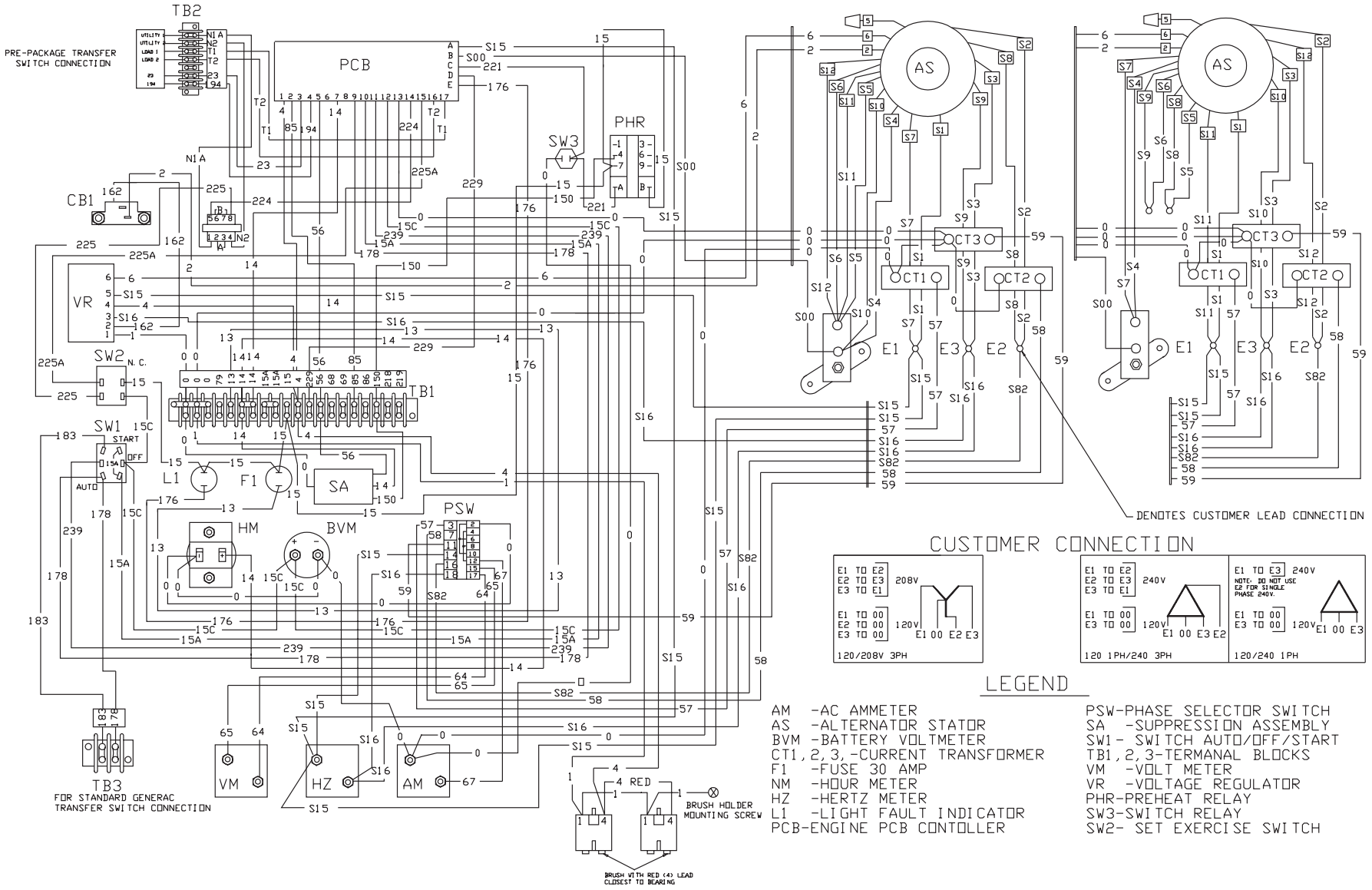
LEGEND

BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
CS - CARB FUEL SHUTOFF SOLENOID
DCA - DC ALTERNATOR
EGA - ELECTRONIC GOVERNOR ACTUATOR
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FS - FUEL SHUTOFF SOLENOID
FP - FUEL PUMP
G - GROUND
IC - IGNITION COIL
IC - IGNITION DISTRIBUTOR
LOS - LOW OIL SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH





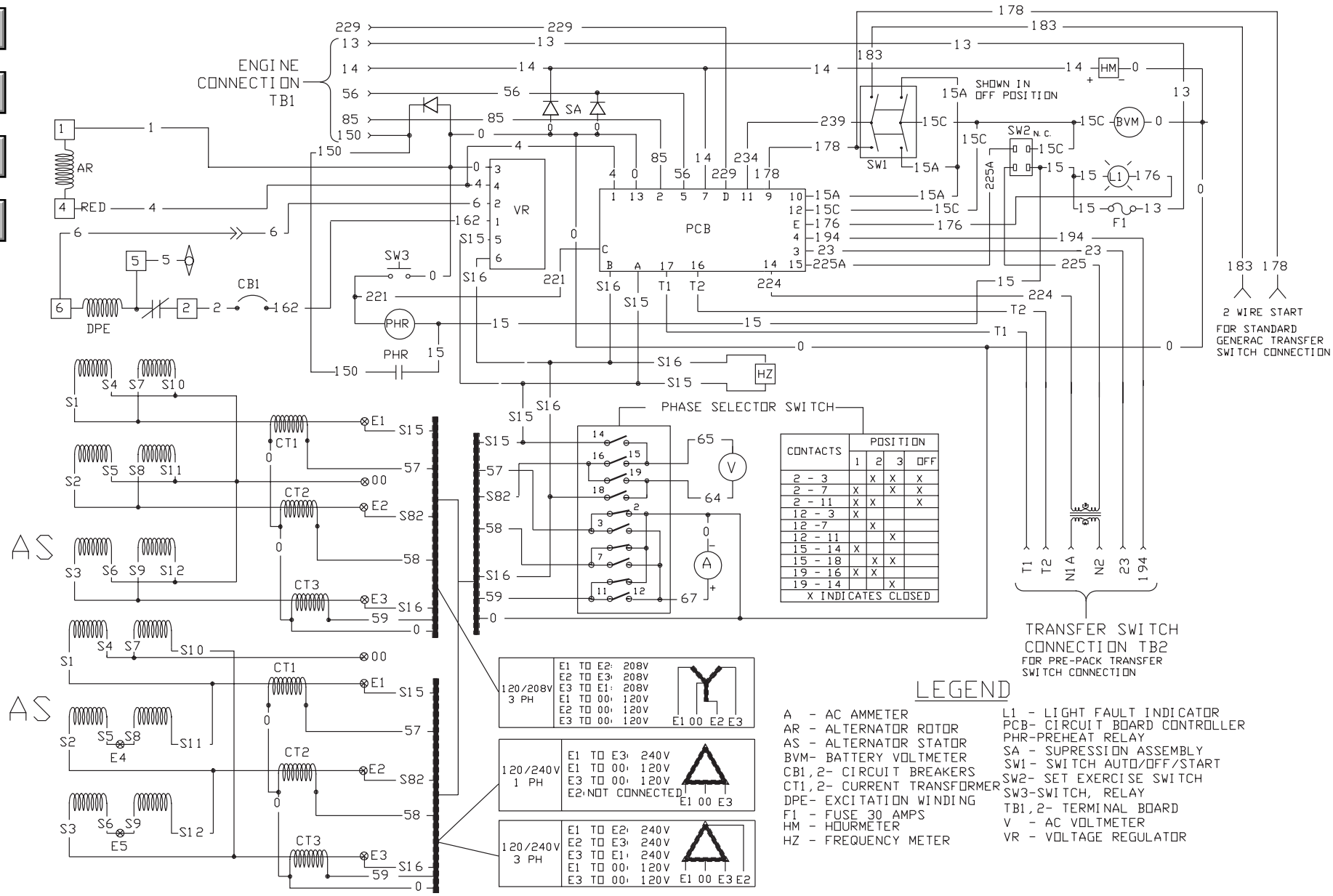
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARB–FUEL SHUTOFF SOLENOID
DCA – DC ALTERNATOR
EGA – ELECTRONIC GOVERNOR ACTUATOR
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
ID – IGNITION DISTRIBUTOR
LOS – LOW OIL SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH



CUSTOMER CONNECTION

LEGEND

AM -AC AMMETER
AS -ALTERNATOR STATOR
BVM -BATTERY VOLTMETER
CT1, 2, 3, -CURRENT TRANSFORMER
F1 -FUSE 30 AMP
NM -HOUR METER
HZ -HERTZ METER
L1 -LIGHT FAULT INDICATOR
PCB-ENGINE PCB CONTOLLER
PSW-PHASE SELECTOR SWITCH
SA -SUPPRESSION ASSEMBLY
SW1- SWITCH AUTO/OFF/START
TB1, 2, 3-TERMANAL BLOCKS
VM -VOLT METER
VR -VOLTAGE REGULATOR
PHR-PREHEAT RELAY
SW3-SWITCH RELAY
SW2- SET EXERCISE SWITCH

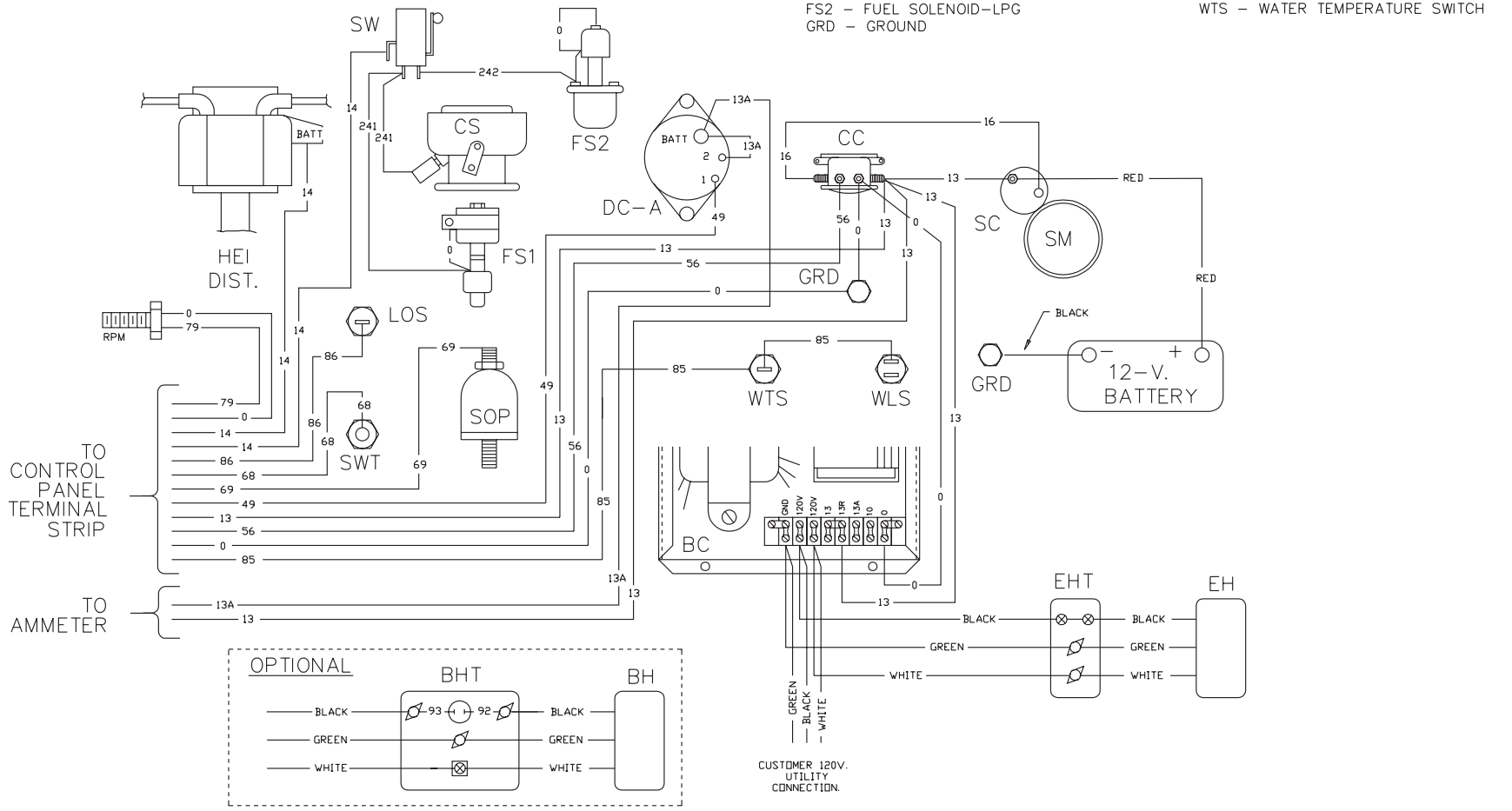


LEGEND

A - AC AMMETER
AR - ALTERNATOR ROTOR
AS - ALTERNATOR STATOR
BVM- BATTERY VOLTMETER
CB1,2- CIRCUIT BREAKERS
CT1,2- CURRENT TRANSFORMER
DPE- EXCITATION WINDING
F1 - FUSE 30 AMPS
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT FAULT INDICATOR
PCB- CIRCUIT BOARD CONTROLLER
PHR-PREHEAT RELAY
SA - SUPRESSION ASSEMBLY
SW1- SWITCH AUTO/OFF/START
SW2- SET EXERCISE SWITCH
SW3-SWITCH, RELAY
TB1,2- TERMINAL BOARD
V - AC VOLTMETER
VR - VOLTAGE REGULATOR

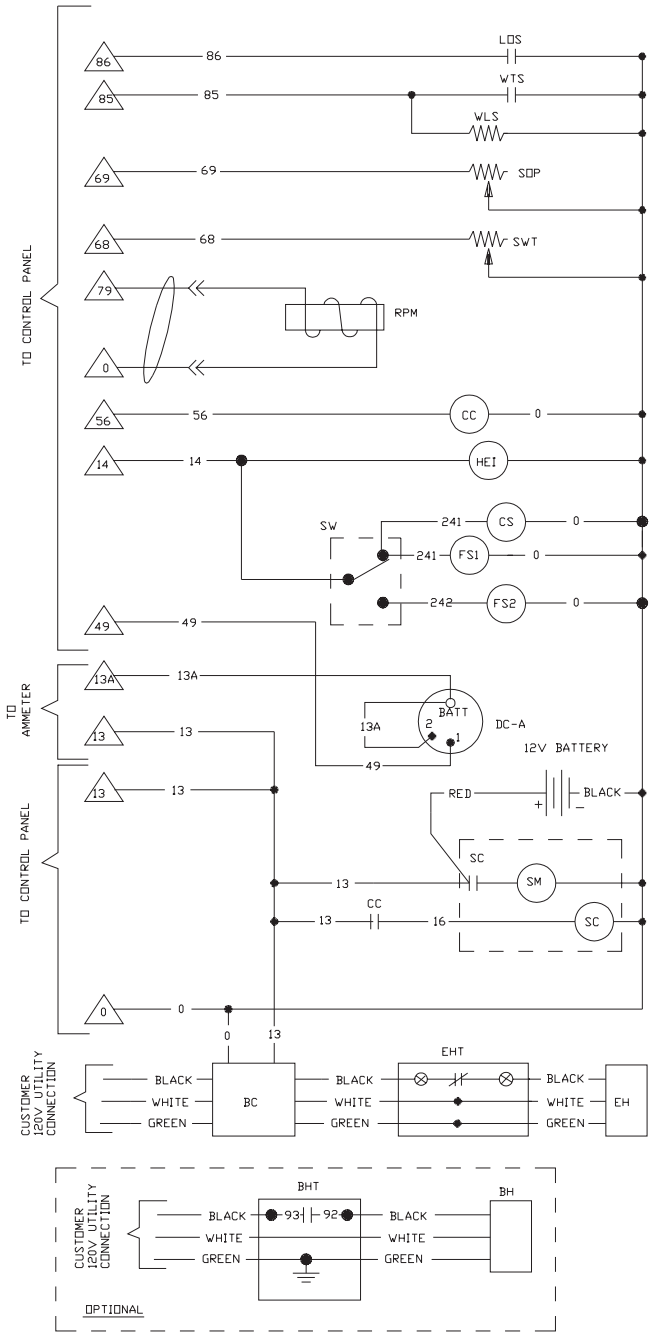
LEGEND

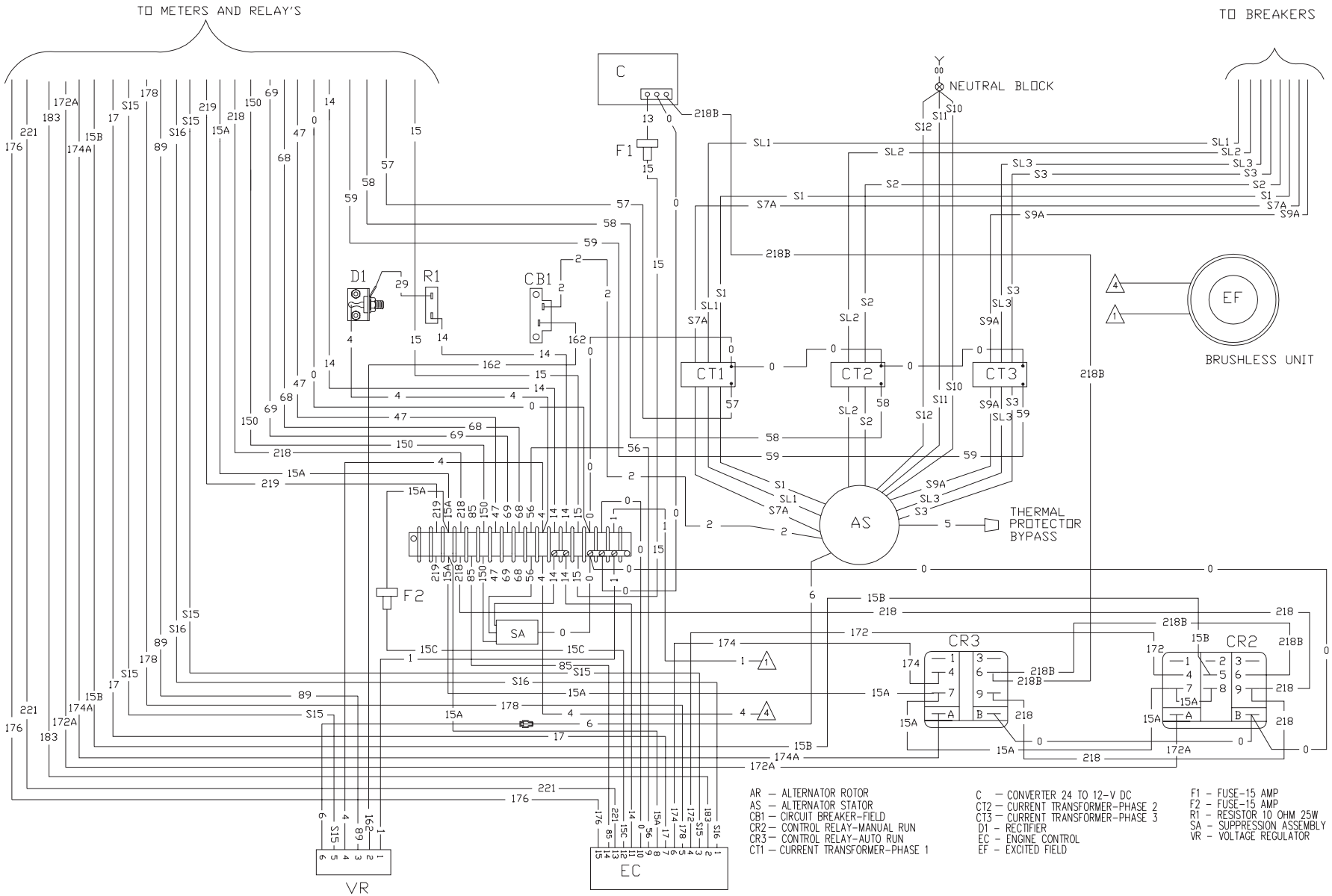
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARBURETOR SOLENOID
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS1 – FUEL SOLENOID– GASOLINE
FS2 – FUEL SOLENOID–LPG
GRD – GROUND
HEI – HIGH ENERGY IGNITION
LOS – LOW OIL SWITCH
RPM – RPM SENSOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SW – SELECTOR SWITCH–LP/GASOLINE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH



LEGEND

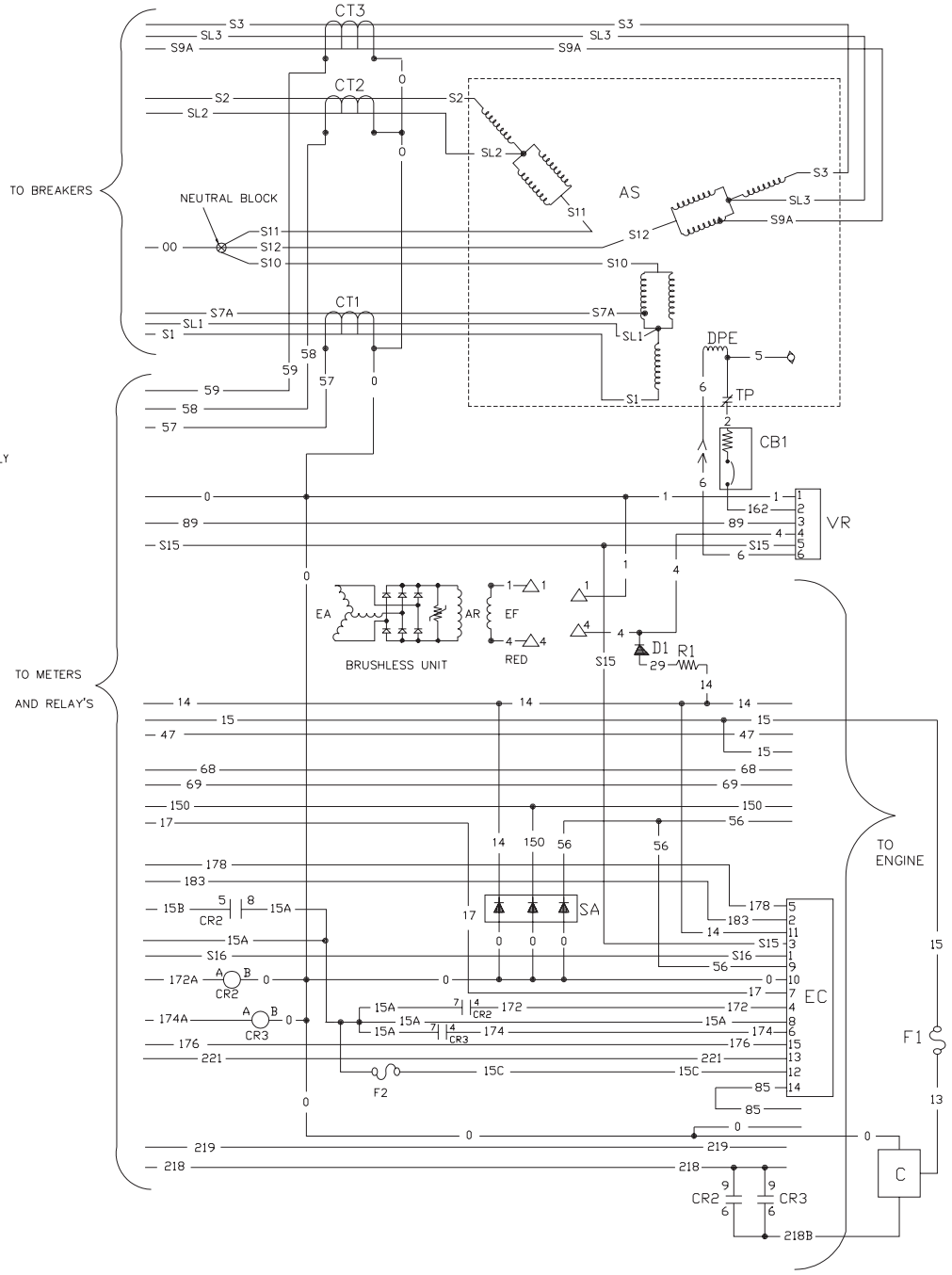
BC - BATTERY CHARGER
CC - CONTROL CONTACTOR
CS - CARBURETOR SOLENOID
DCA - DC ALTERNATOR
EH - ENGINE HEATER
EHT - ENGINE HEATER THERMOSTAT
FS1 - FUEL SHUTOFF-GASOLINE
FS2 - FUEL SHUTOFF-LPG
GRD - GROUND
HEI - HIGH ENERGY IGNITION
LCT - LOW COOLANT TEMP. THERMOSTAT
LOS - LOW OIL SWITCH
OP - OIL PRESSURE SWITCH
RPM - RPM SENSOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SW - SELECTOR SWITCH-LP/GASOLINE
SWT - SENDER-WATER TEMPERATURE
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH

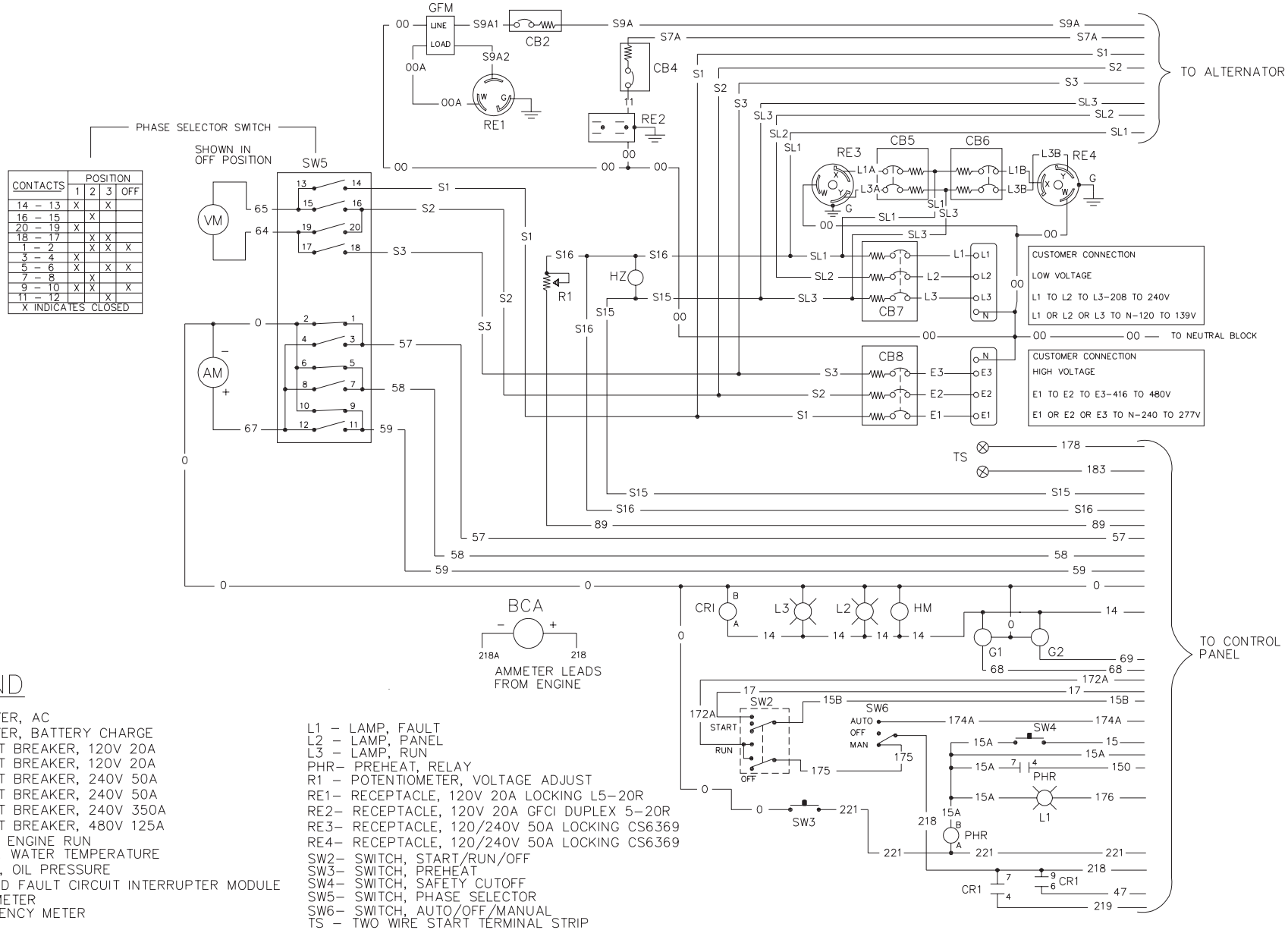



TO METERS AND RELAY'S
TO BREAKERS
NEUTRAL BLOCK
BRUSHLESS UNIT
EF
C
F1
D1
R1
CB1
CT1
CT2
CT3
AS
SA
F2
VR
EC
CR3
CR2
THERMAL PROTECTOR BYPASS
AR — ALTERNATOR ROTOR
AS — ALTERNATOR STATOR
CB1 — CIRCUIT BREAKER-FIELD
CR2 — CONTROL RELAY-MANUAL RUN
CR3 — CONTROL RELAY-AUTO RUN
CT1 — CURRENT TRANSFORMER-PHASE 1
C — CONVERTER 24 TO 12-V DC
CT2 — CURRENT TRANSFORMER-PHASE 2
CT3 — CURRENT TRANSFORMER-PHASE 3
D1 — RECTIFIER
EC — ENGINE CONTROL
EF — EXCITED FIELD
F1 — FUSE-15 AMP
F2 — FUSE-15 AMP
R1 — RESISTOR 10 OHM 25W
SA — SUPPRESSION ASSEMBLY
VR — VOLTAGE REGULATOR

AR — ALTERNATOR ROTOR
AS — ALTERNATOR STATOR
C — CONVERTER 24 TO 12-V DC
CB1 — CIRCUIT BREAKER-FIELD
CR2 — CONTROL RELAY-MANUAL RUN
CR3 — CONTROL RELAY-AUTO RUN
CT1 — CURRENT TRANSFORMER-PHASE 1
CT2 — CURRENT TRANSFORMER-PHASE 2
CT3 — CURRENT TRANSFORMER-PHASE 3

D1 — RECTIFIER
DPE — EXCITATION WINDING
EA — EXCITER FIELD
EC — ENGINE CONTROL
EA — EXCITER ARMATURE
F1 — FUSE 15-AMP
F2 — FUSE 15-AMP
SA — SUPPRESSION ASSEMBLY
VR — VOLTAGE REGULATOR
TP — THERMAL PROTECTOR



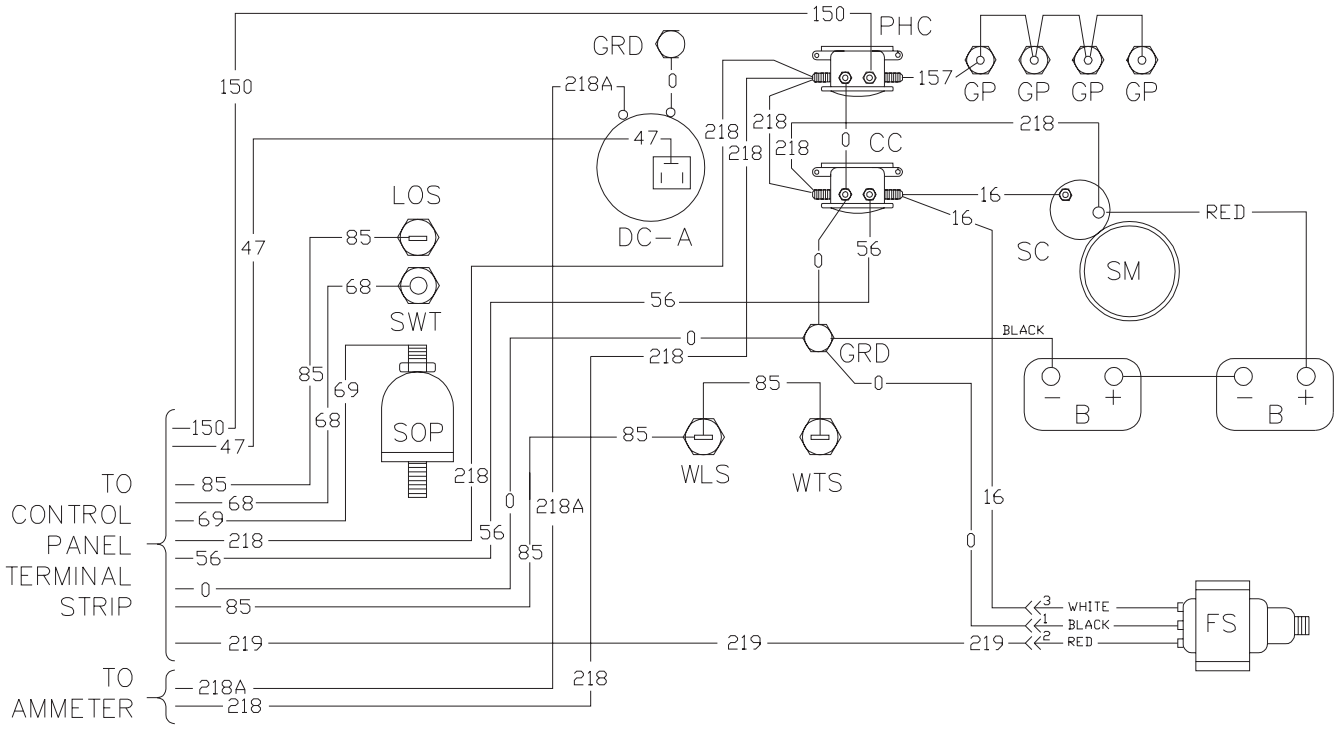


LEGEND

AM – AMMETER, AC
BCA– AMMETER, BATTERY CHARGE
CB2– CIRCUIT BREAKER, 120V 20A
CB4– CIRCUIT BREAKER, 120V 20A
CB5– CIRCUIT BREAKER, 240V 50A
CB6– CIRCUIT BREAKER, 240V 50A
CB7– CIRCUIT BREAKER, 240V 350A
CB8– CIRCUIT BREAKER, 480V 125A
CR1– RELAY, ENGINE RUN
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
GFM– GROUND FAULT CIRCUIT INTERRUPTER MODULE
HM – HOURMETER
HZ – FREQUENCY METER

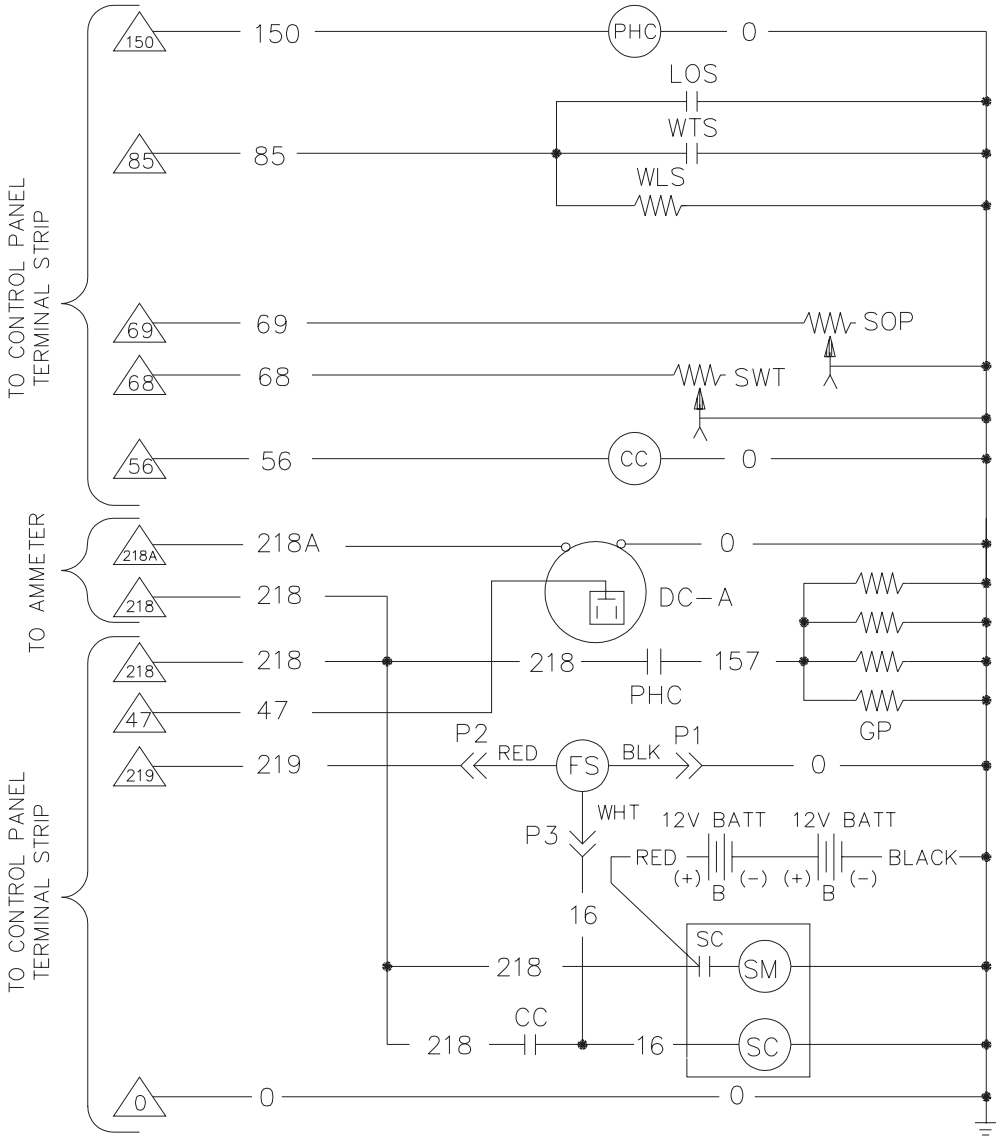
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT, RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
RE1– RECEPTACLE, 120V 20A LOCKING L5–20R
RE2– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE3– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4– RECEPTACLE, 120/240V 50A LOCKING CS6369
SW2– SWITCH, START/RUN/OFF
SW3– SWITCH, PREHEAT
SW4– SWITCH, SAFETY CUTOFF
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
TS – TWO WIRE START TERMINAL STRIP
VM – VOLTMETER, AC

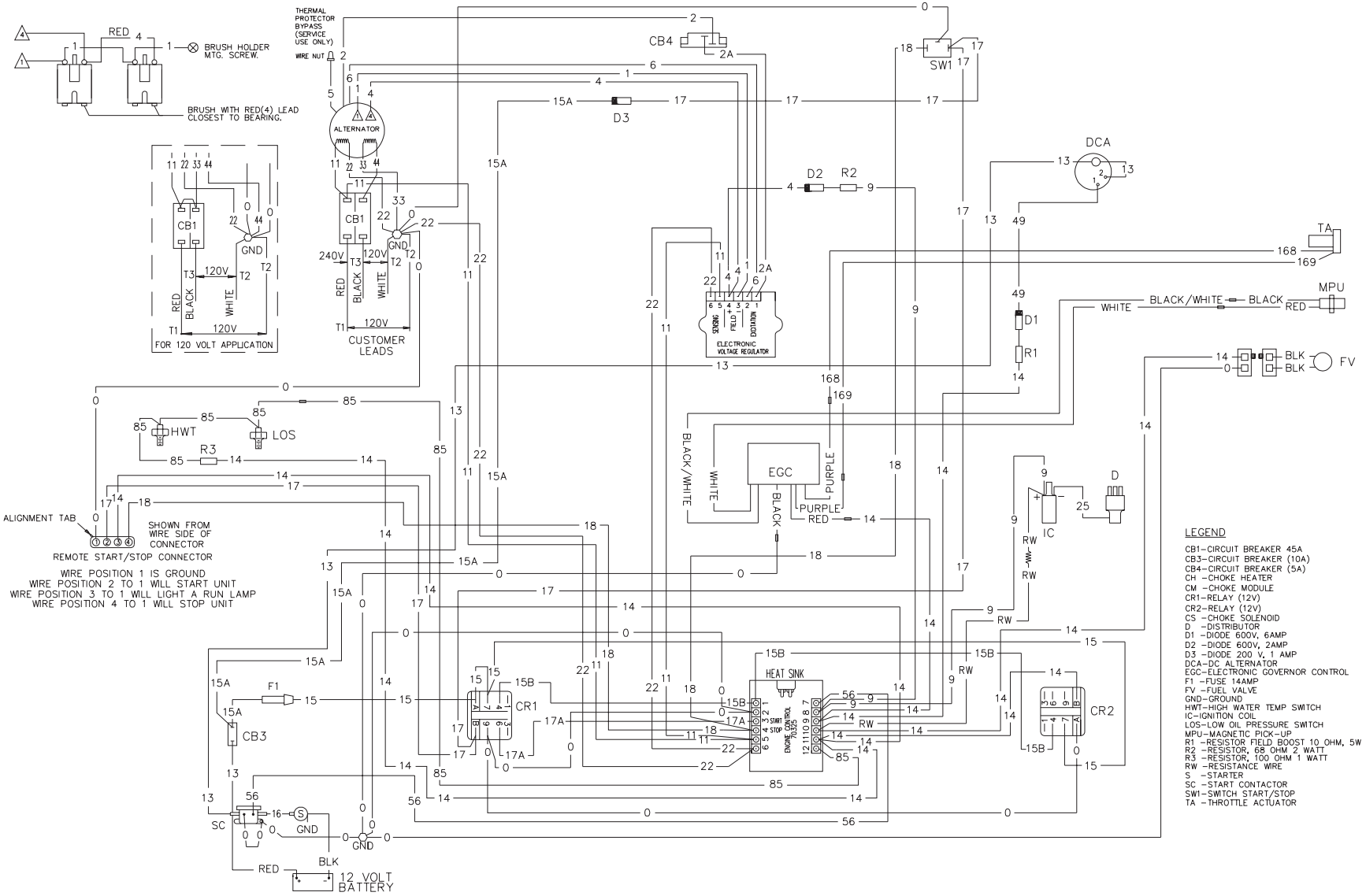
B — BATTERY 12V
CC — CONTROL CONTACTOR
DCA — DC ALTERNATOR
FS — FUEL SOLENOID
GP — GLOW PLUG
GRD — GROUND
LOS — LOW OIL SWITCH
PHC — PRE — HEAT CONTACTOR
SC — STARTER CONTACTOR
SM — STARTER MOTOR
SOP — SENDER — OIL PRESSURE
SWT — SENDER — WATER TEMPERATURE
WLS — WATER LEVEL SWITCH
WTS — WATER TEMPERATURE SWITCH

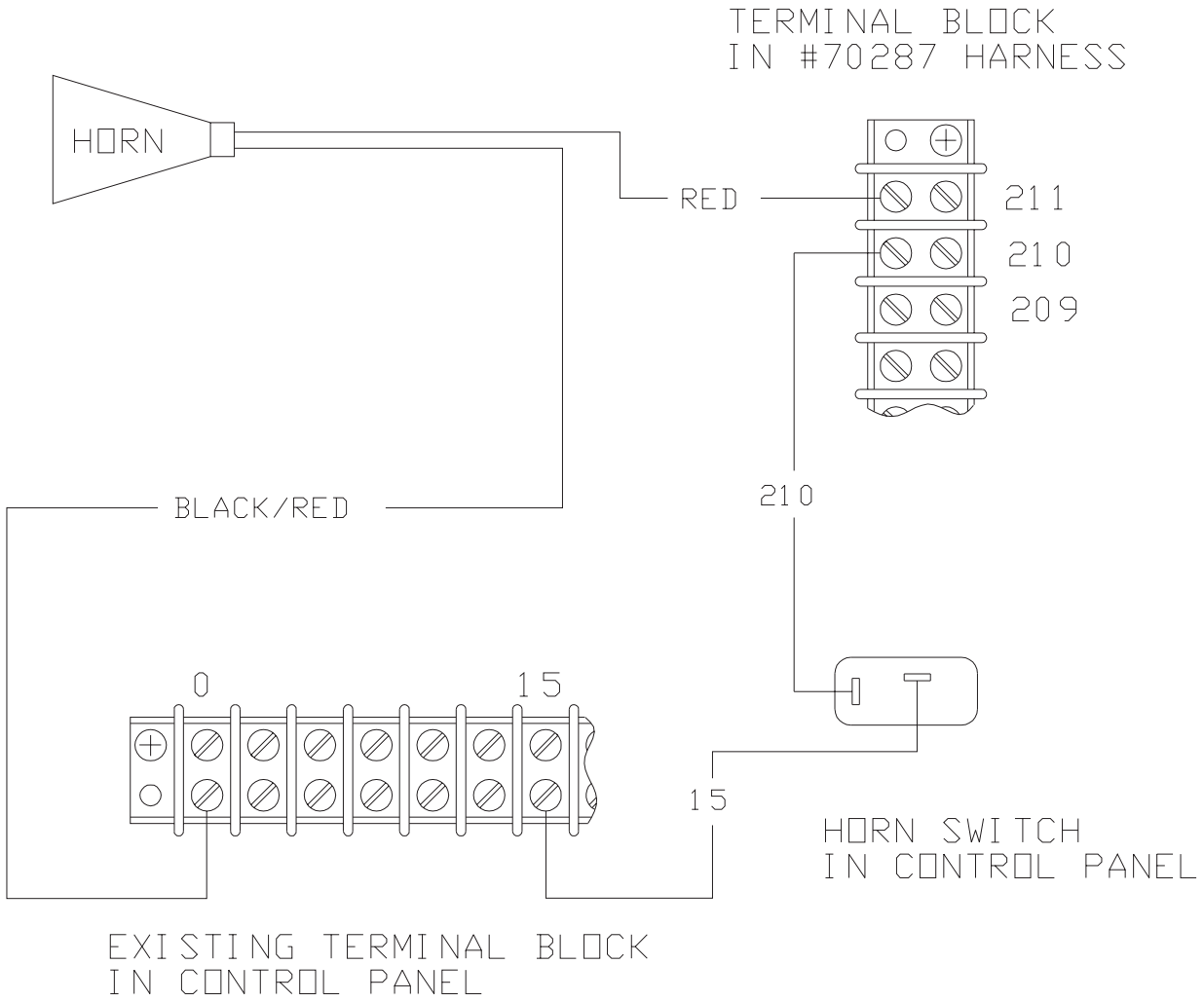


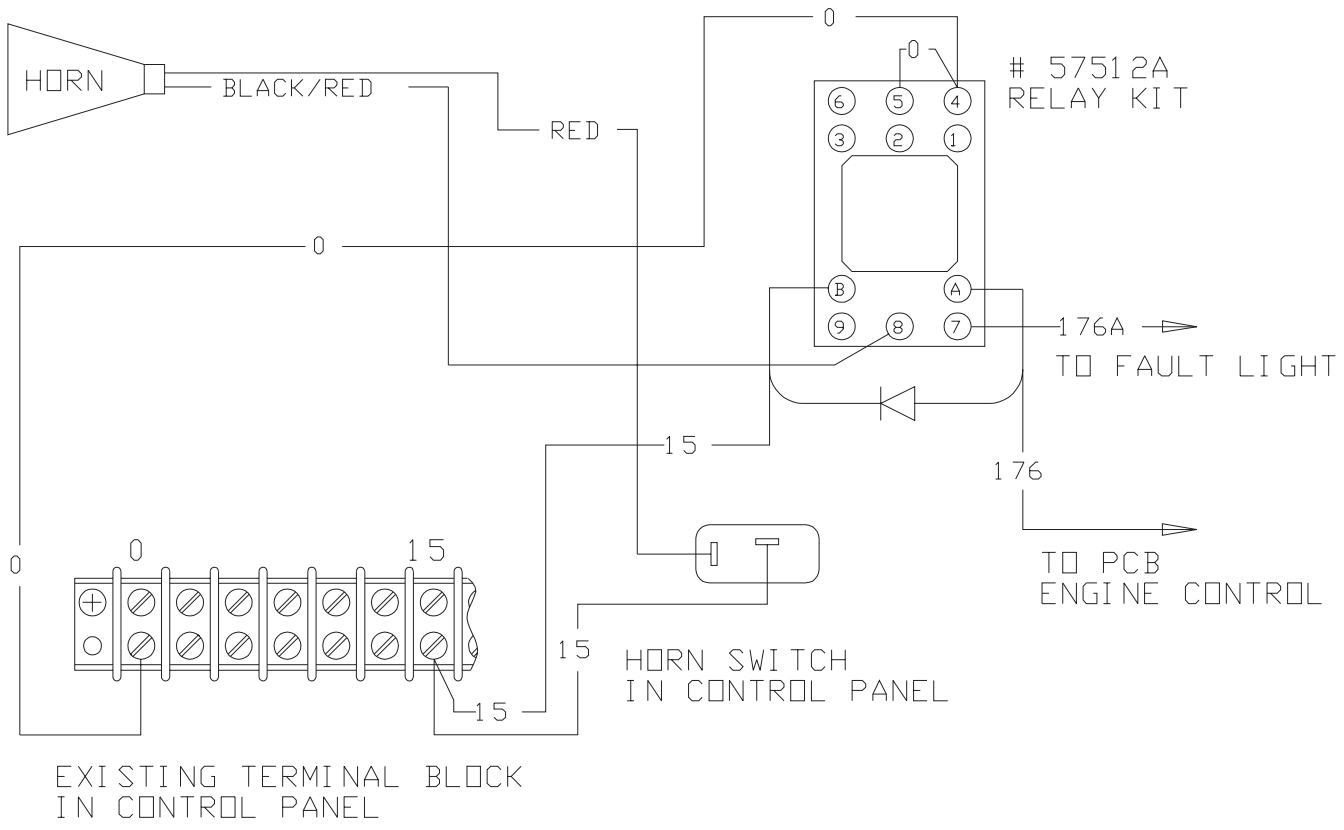
B – BATTERY 12V
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
FS – FUEL SOLENOID
GP – GLOW PLUG
LOS – LOW OIL SWITCH

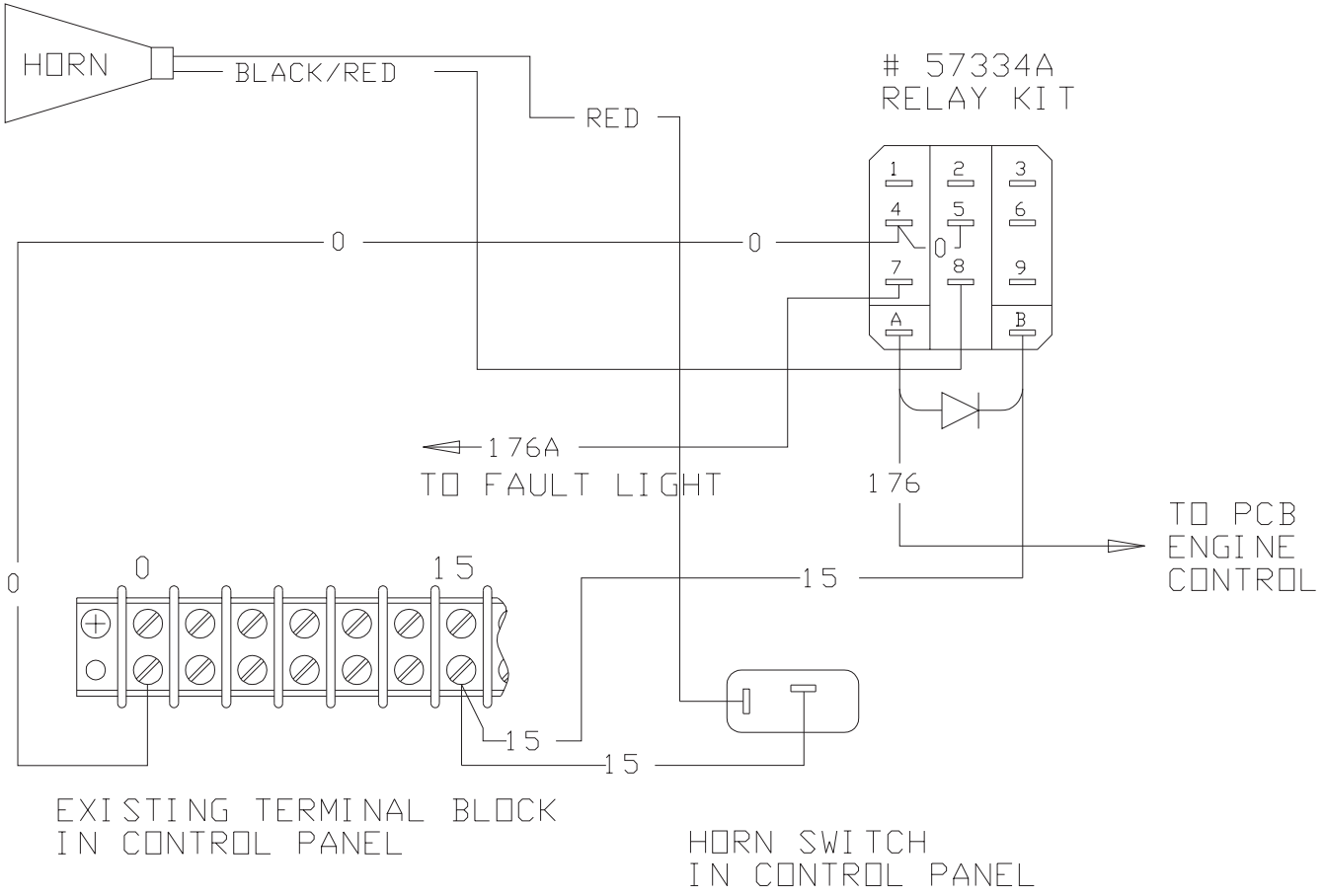
PHC – PRE-HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER-OIL PRESSURE
SWT – SENDER-WATER TEMPERATURE
WLS – WATER LEVEL SWITCH
WTS – WATER TEMPERATURE SWITCH

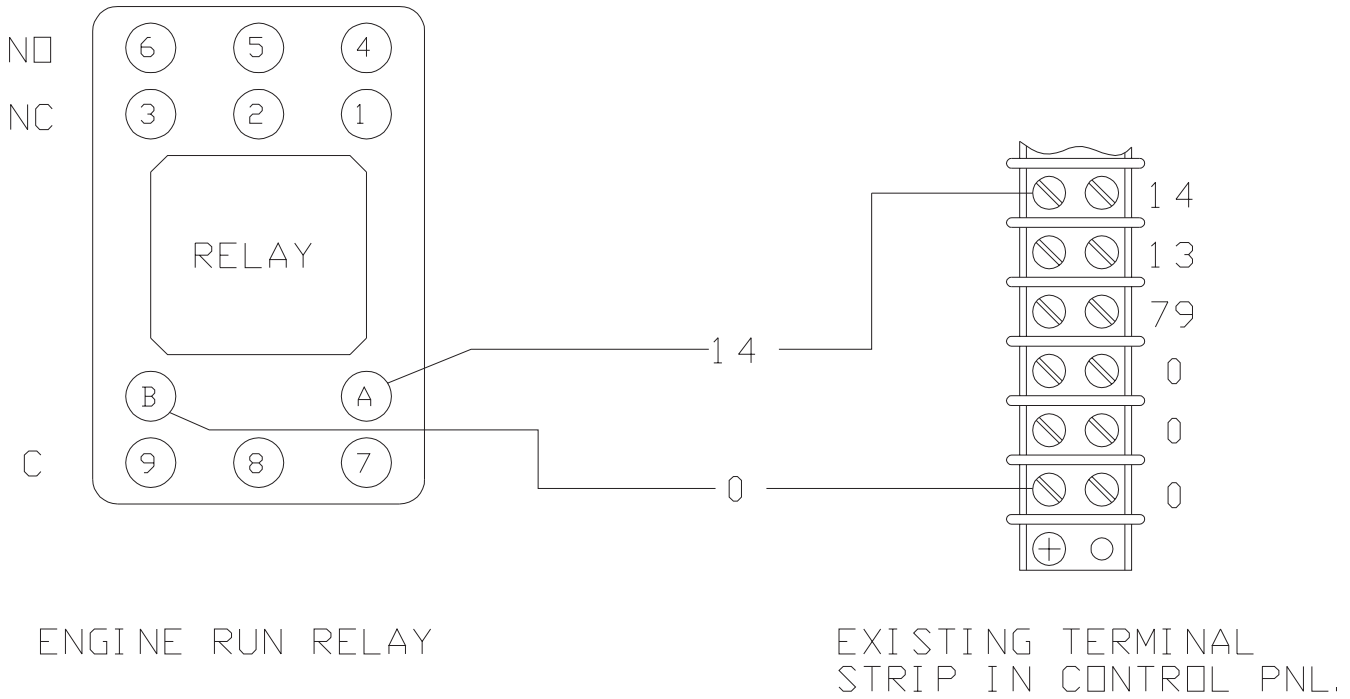



RED
BRUSH HOLDER MTG. SCREW.
BRUSH WITH RED(4) LEAD CLOSEST TO BEARING.
THERMAL PROTECTOR BYPASS (SERVICE USE ONLY)
WIRE NUT
ALTERNATOR
CB4
2A
SW1
D3
15A
DCA
D2
R2
CB1
GND
240V
120V
T1
T2
T3
RED
BLACK
WHITE
FOR 120 VOLT APPLICATION
CUSTOMER LEADS
ELECTRONIC VOLTAGE REGULATOR
SENSING
FIELD
EXCITATION
TA
MPU
BLACK/WHITE
D1
R1
FV
BLK
HWT
LOS
R3
EGC
PURPLE
IC
D
ALIGNMENT TAB
SHOWN FROM WIRE SIDE OF CONNECTOR
REMOTE START/STOP CONNECTOR
WIRE POSITION 1 IS GROUND
WIRE POSITION 2 TO 1 WILL START UNIT
WIRE POSITION 3 TO 1 WILL LIGHT A RUN LAMP
WIRE POSITION 4 TO 1 WILL STOP UNIT
F1
CB3
CR1
CR2
HEAT SINK
ENGINE CONTROL 70325
SC
S
12 VOLT BATTERY
LEGEND
CB1-CIRCUIT BREAKER 45A
CB3-CIRCUIT BREAKER (10A)
CB4-CIRCUIT BREAKER (5A)
CH -CHOKE HEATER
CM -CHOKE MODULE
CR1-RELAY (12V)
CR2-RELAY (12V)
CS -CHOKE SOLENOID
D -DISTRIBUTOR
D1 -DIODE 600V, 6AMP
D2 -DIODE 600V, 2AMP
D3 -DIODE 200 V, 1 AMP
DCA-DC ALTERNATOR
EGC-ELECTRONIC GOVERNOR CONTROL
F1 -FUSE 14AMP
FV -FUEL VALVE
GND-GROUND
HWT-HIGH WATER TEMP SWITCH
IC-IGNITION COIL
LOS-LOW OIL PRESSURE SWITCH
MPU-MAGNETIC PICK-UP
R1 -RESISTOR FIELD BOOST 10 OHM, 5W
R2 -RESISTOR, 68 OHM 2 WATT
R3 -RESISTOR, 100 OHM 1 WATT
RW -RESISTANCE WIRE
S -STARTER
SC -START CONTACTOR
SW1-SWITCH START/STOP
TA -THROTTLE ACTUATOR


TERMINAL BLOCK
IN #70287 HARNESS
HORN
RED
211
210
209
BLACK/RED
210
0
15
15
HORN SWITCH
IN CONTROL PANEL
EXISTING TERMINAL BLOCK
IN CONTROL PANEL

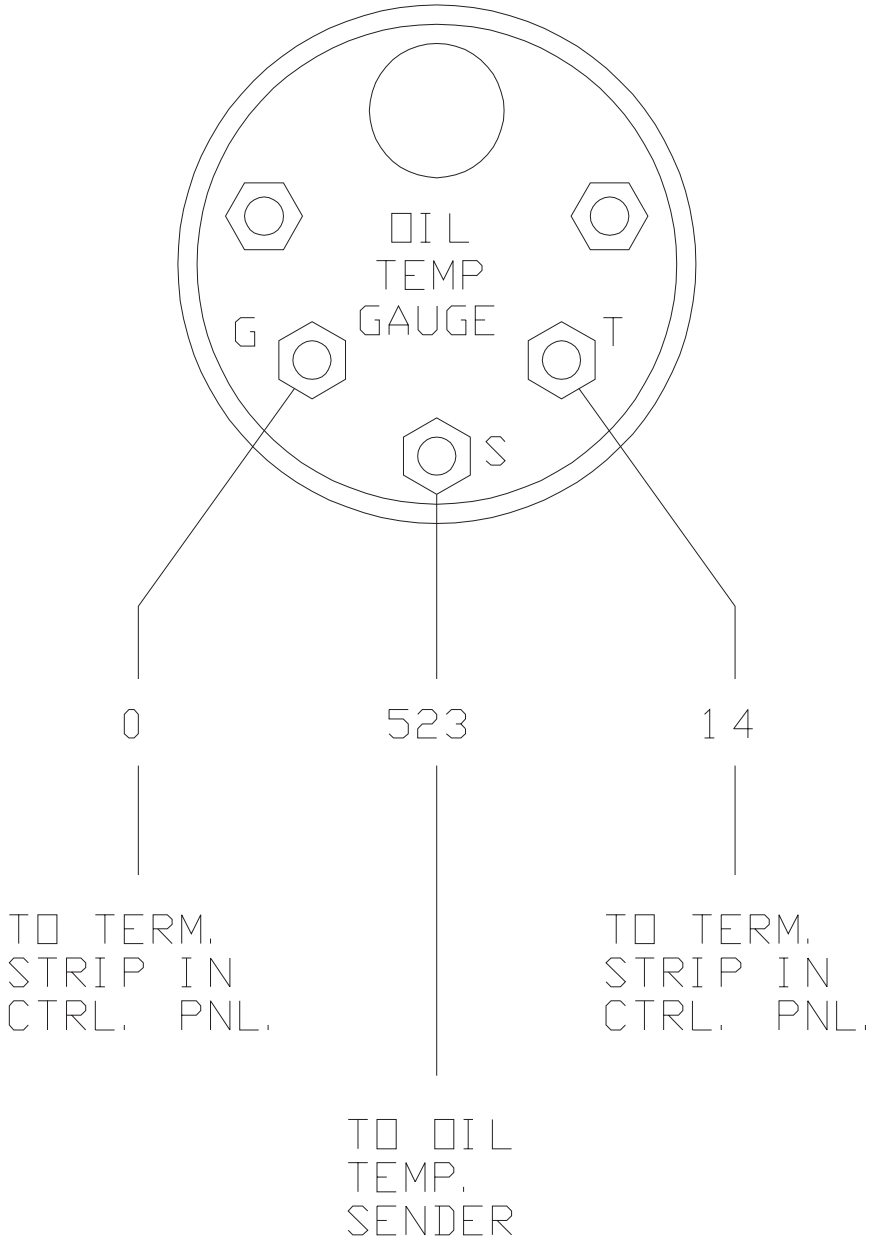

HORN
BLACK/RED
RED
0
0
575122A
RELAY KIT
6
5
4
3
2
1
B
A
9
8
7
176A
TO FAULT LIGHT
15
176
TO PCB
ENGINE CONTROL
0
0
15
15
15
HORN SWITCH
IN CONTROL PANEL
EXISTING TERMINAL BLOCK
IN CONTROL PANEL

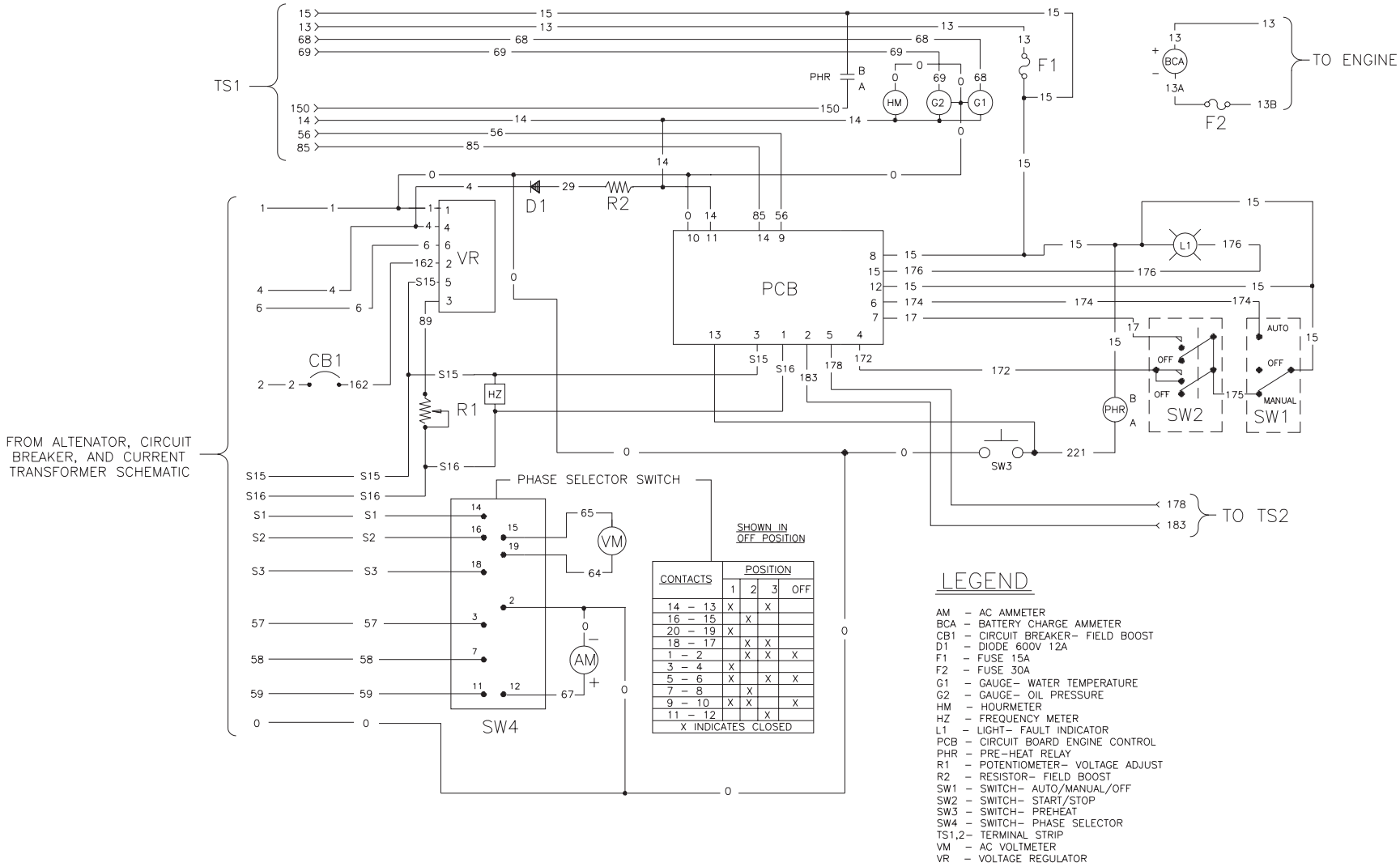

HORN
BLACK/RED
RED
57334A
RELAY KIT
1
2
3
4
5
6
7
8
9
A
B
0
0
0
0
176A
TO FAULT LIGHT
176
TO PCB
ENGINE
CONTROL
15
15
15
0
0
15
EXISTING TERMINAL BLOCK
IN CONTROL PANEL
HORN SWITCH
IN CONTROL PANEL



ENGINE RUN RELAY

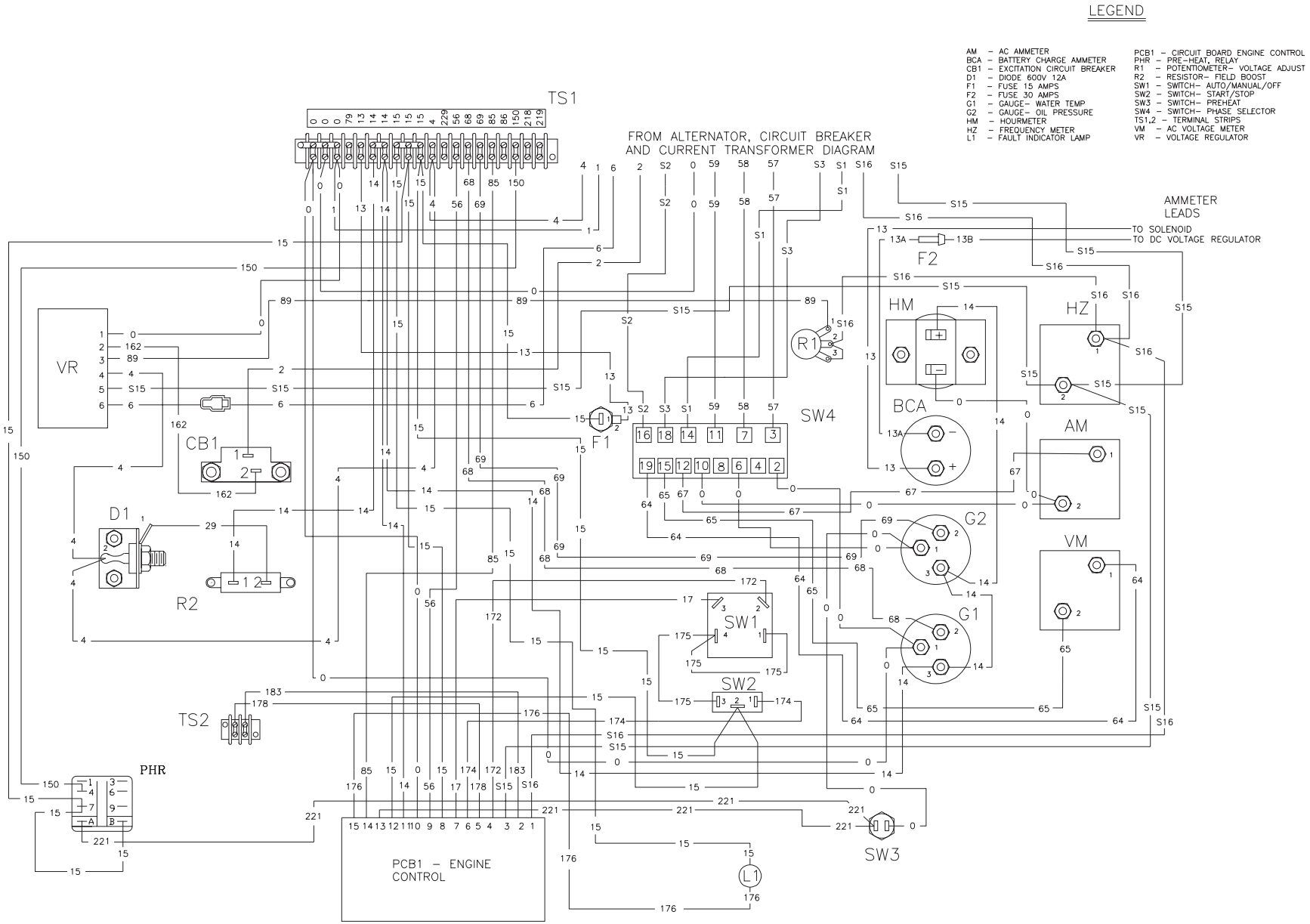
EXISTING TERMINAL
STRIP IN CONTROL PNL.

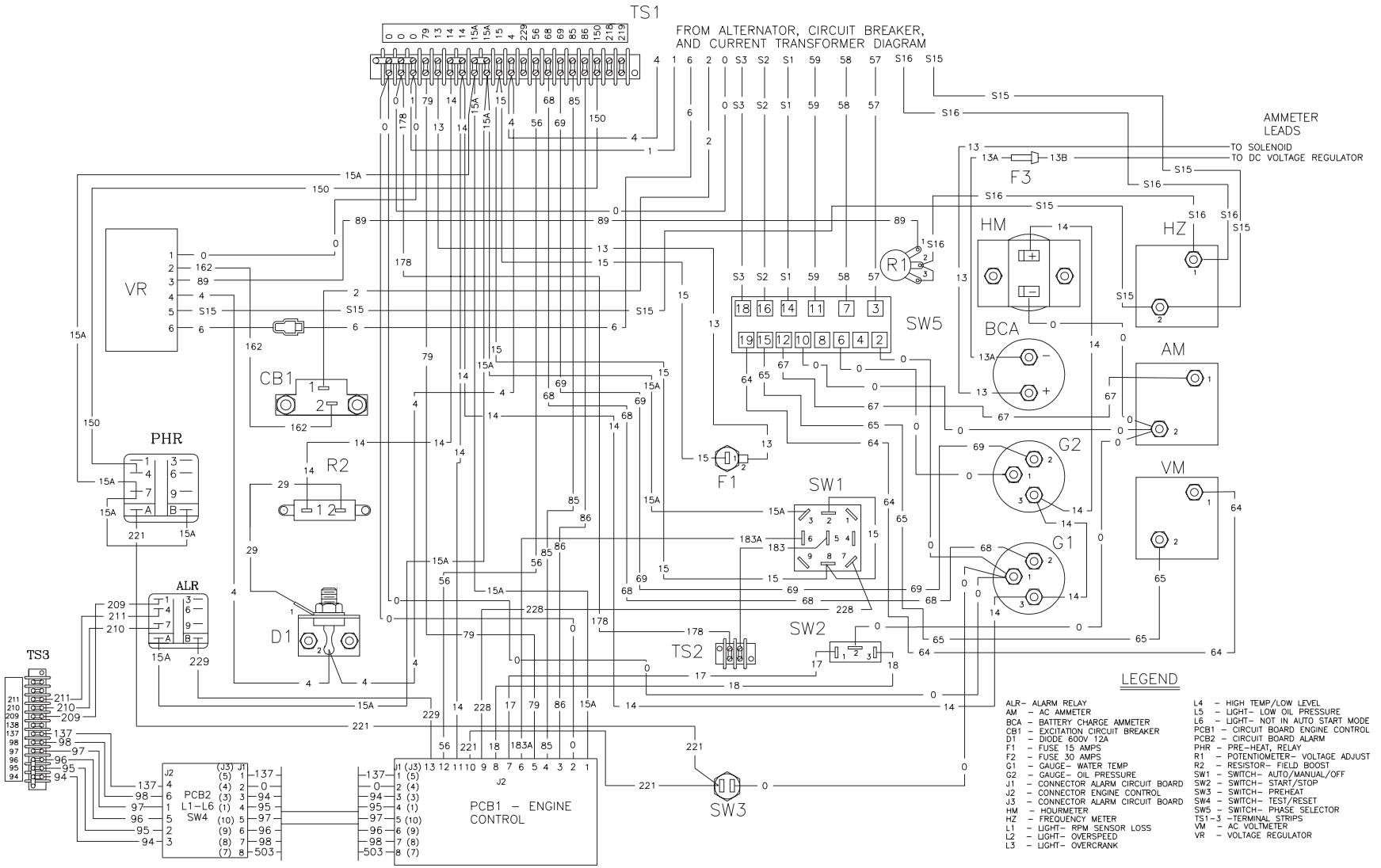

OIL
TEMP
GAUGE
G
T
S
0
523
14
TO TERM.
STRIP IN
CTRL. PNL.
TO TERM.
STRIP IN
CTRL. PNL.
TO OIL
TEMP.
SENDER

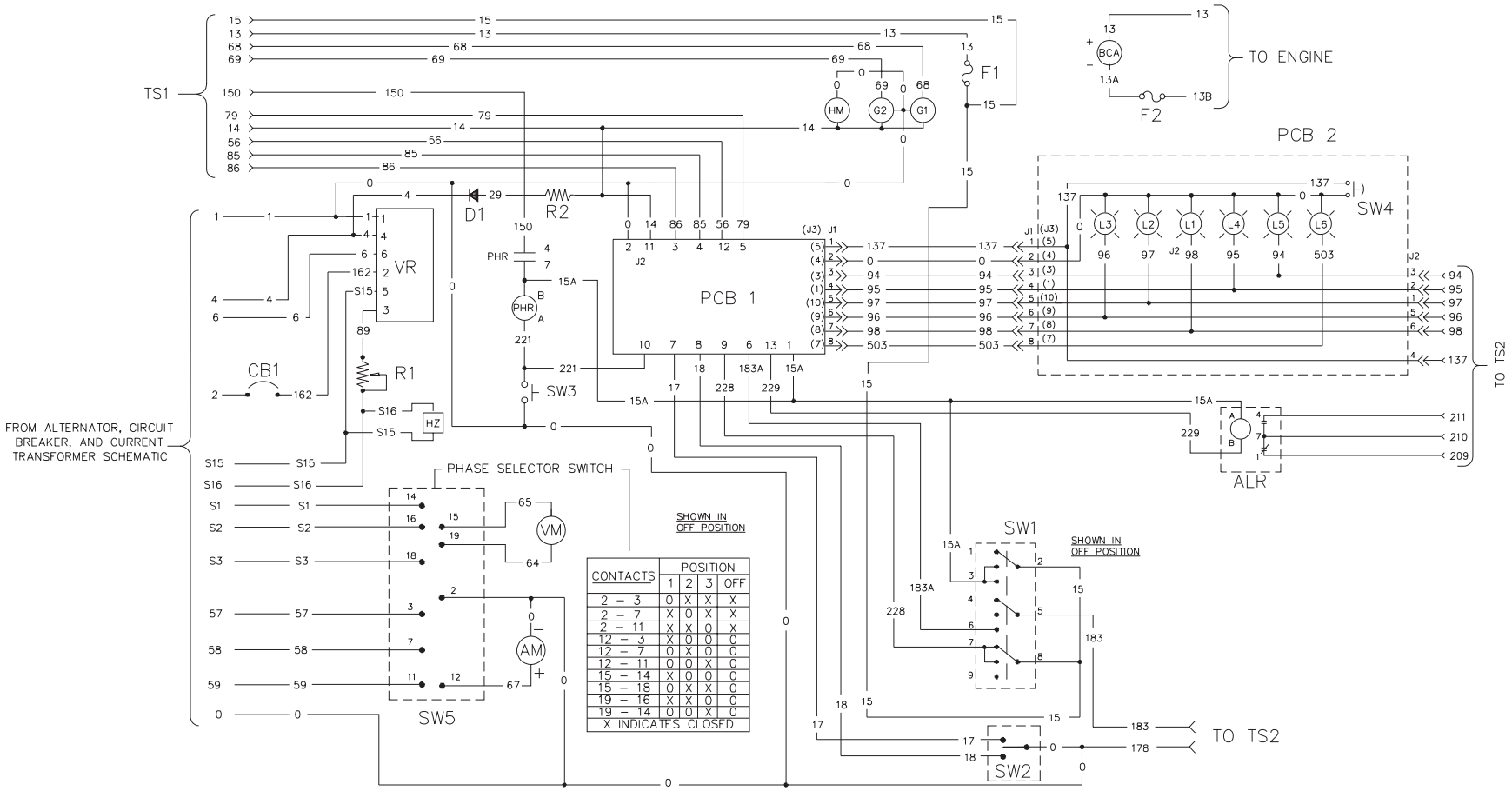


LEGEND

AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
F2 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
PHR – PRE–HEAT RELAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PREHEAT
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR


LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
F2 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PHR – PRE–HEAT, RELAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PREHEAT
SW4 – SWITCH– PHASE SELECTOR
TS1,2 – TERMINAL STRIPS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
TS1
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMER DIAGRAM
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F2
HM
HZ
R1
VR
SW4
BCA
AM
CB1
F1
D1
G2
VM
R2
SW1
G1
SW2
TS2
PHR
SW3
PCB1 – ENGINE CONTROL
L1


TS1
FROM ALTERNATOR, CIRCUIT BREAKER, AND CURRENT TRANSFORMER DIAGRAM
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F3
HM
HZ
R1
SW5
BCA
AM
VR
CB1
PHR
R2
F1
SW1
G2
VM
G1
ALR
D1
TS2
SW2
TS3
SW3
PCB2 L1-L6 SW4
PCB1 – ENGINE CONTROL
LEGEND
ALR– ALARM RELAY
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
F2 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTO START MODE
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PCB2 – CIRCUIT BOARD ALARM
PHR – PRE–HEAT, RELAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PREHEAT
SW4 – SWITCH– TEST/RESET
SW5 – SWITCH– PHASE SELECTOR
TS1–3 –TERMINAL STRIPS
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR

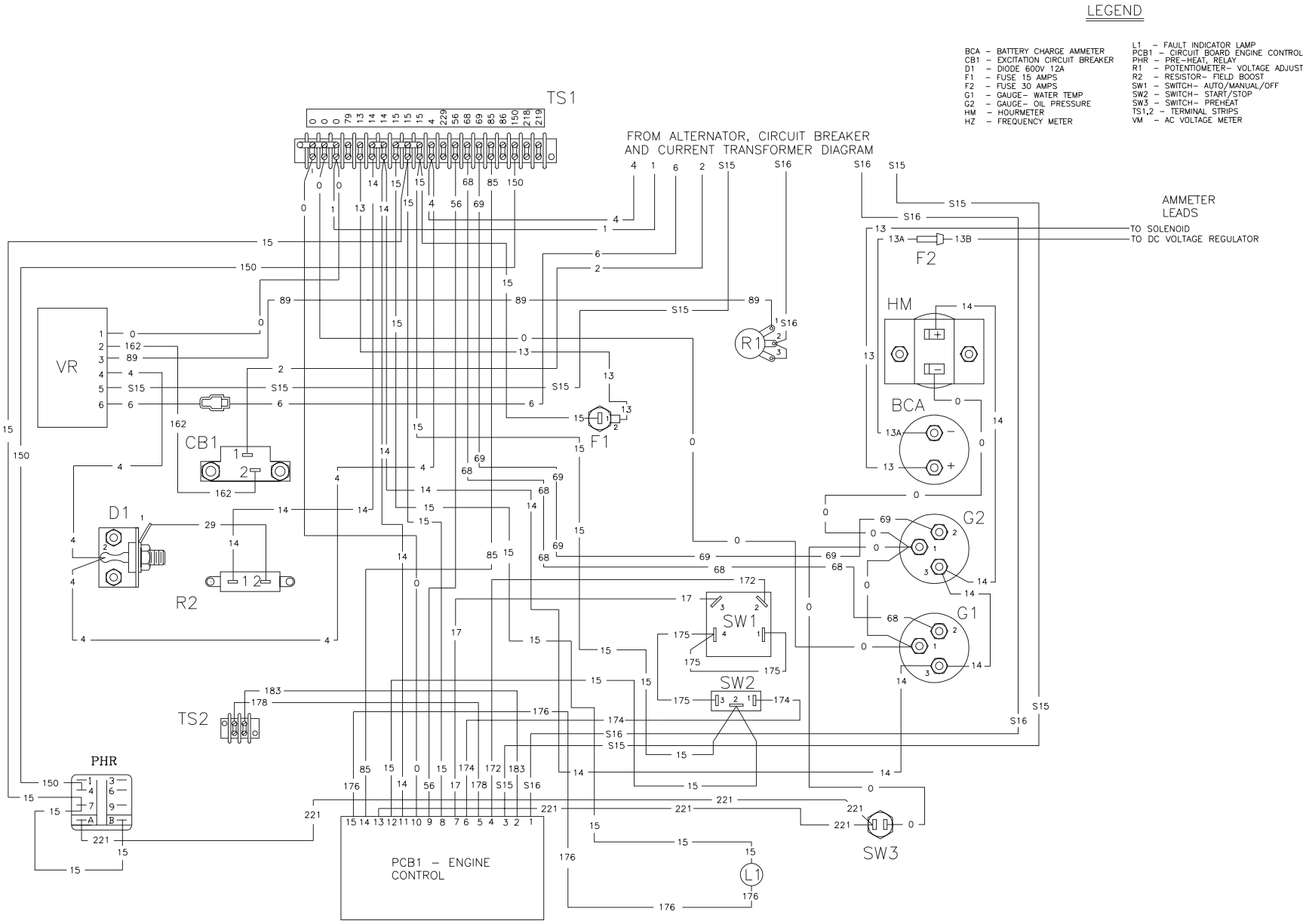


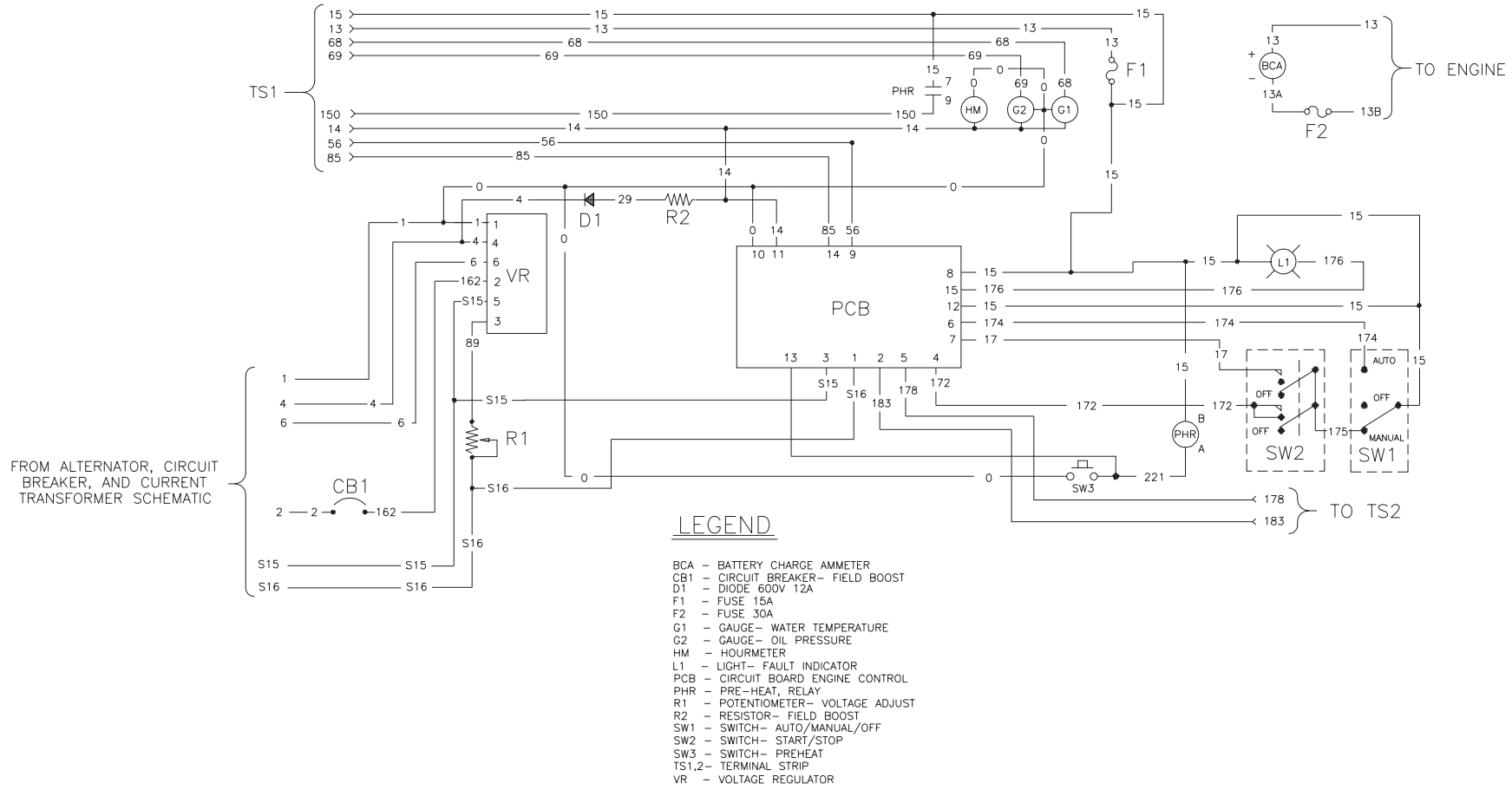
CONTACTS	POSITION			
	1	2	3	OFF
2 – 3	0	X	X	X
2 – 7	X	0	X	X
2 – 11	X	X	0	X
12 – 3	X	0	0	0
12 – 7	0	X	0	0
12 – 11	0	0	X	0
15 – 14	X	0	0	0
15 – 18	0	X	X	0
19 – 16	X	X	0	0
19 – 14	0	0	X	0

X INDICATES CLOSED

LEGEND

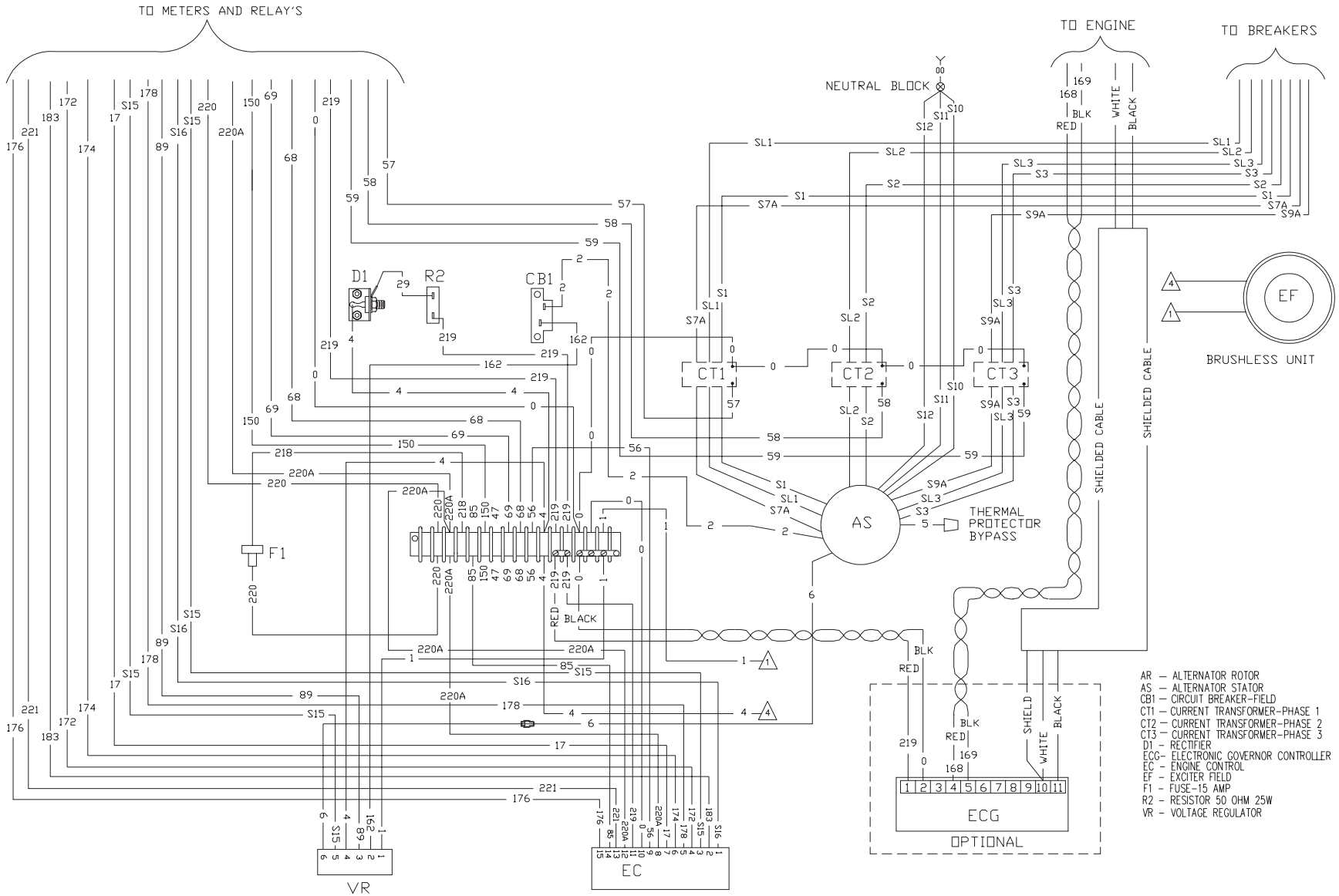
AM – AC AMMETER
ALR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
F2 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB 1– CIRCUIT BOARD ENGINE CONTROL
PCB 2– 6 LIGHT ANNUNCIATOR
PHR – PRE–HEAT RELAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– RELAY
SW4 – SWITCH– TEST/RESET
SW5 – SWITCH– PHASE SELECTOR
TS1,2–TERMINAL STRIPS
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR

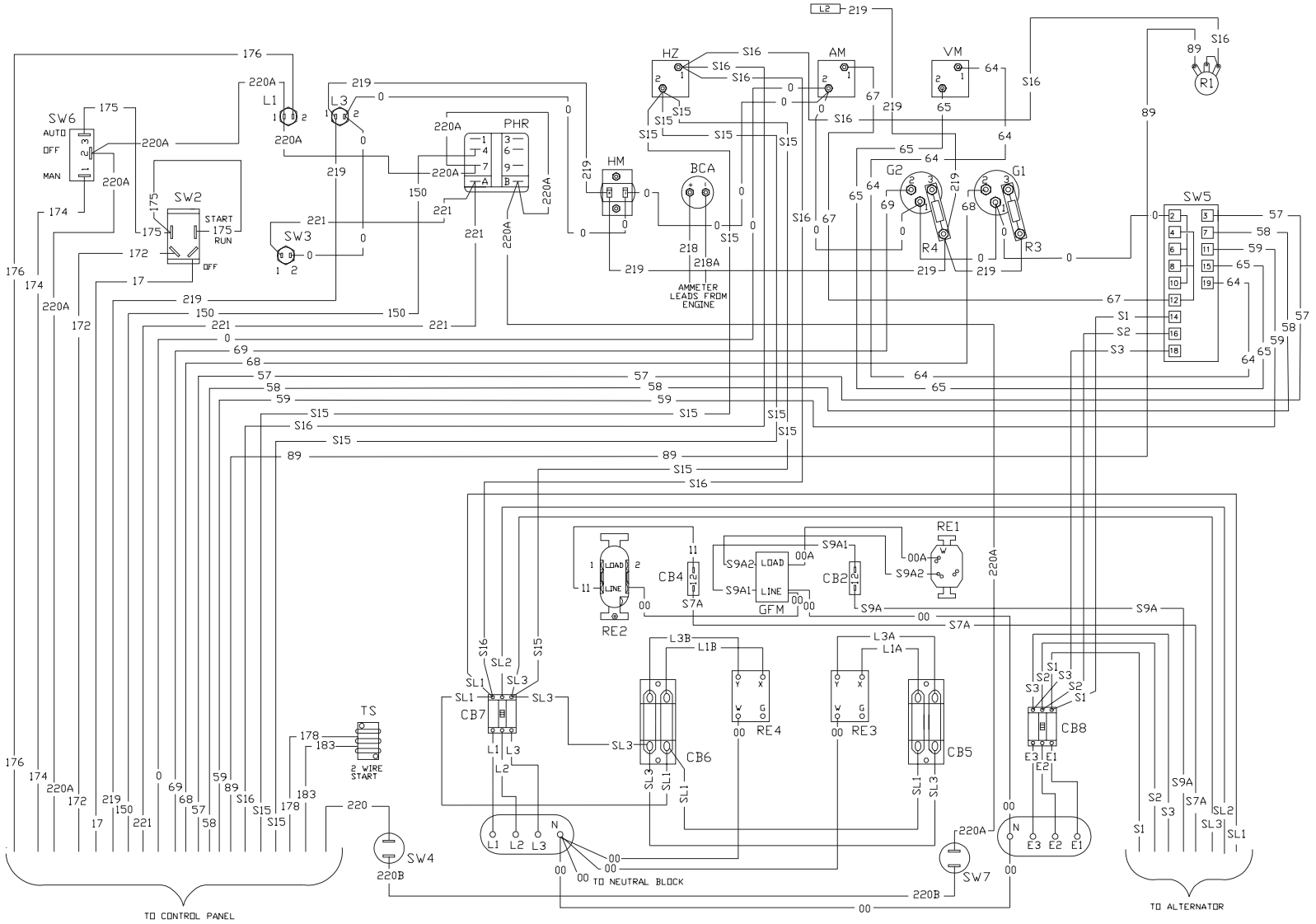

LEGEND
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
F2 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB1 – CIRCUIT BOARD ENGINE CONTROL
PHR – PRE–HEAT, RELAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PREHEAT
TS1,2 – TERMINAL STRIPS
VM – AC VOLTAGE METER
TS1
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMER DIAGRAM
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F2
HM
BCA
G2
G1
VR
CB1
F1
R1
D1
R2
SW1
SW2
SW3
TS2
PHR
PCB1 – ENGINE CONTROL
L1



LEGEND

BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
F2 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
PHR – PRE–HEAT, RELAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PREHEAT
TS1,2– TERMINAL STRIP
VR – VOLTAGE REGULATOR


TO METERS AND RELAY'S
TO ENGINE
TO BREAKERS
NEUTRAL BLOCK
D1
R2
CB1
CT1
CT2
CT3
AS
EF
BRUSHLESS UNIT
SHIELDED CABLE
THERMAL PROTECTOR BYPASS
F1
VR
EC
ECG
OPTIONAL
AR — ALTERNATOR ROTOR
AS — ALTERNATOR STATOR
CB1 — CIRCUIT BREAKER-FIELD
CT1 — CURRENT TRANSFORMER-PHASE 1
CT2 — CURRENT TRANSFORMER-PHASE 2
CT3 — CURRENT TRANSFORMER-PHASE 3
D1 - RECTIFIER
ECG- ELECTRONIC GOVERNOR CONTROLLER
EC - ENGINE CONTROL
EF - EXCITER FIELD
F1 - FUSE-15 AMP
R2 - RESISTOR 50 OHM 25W
VR - VOLTAGE REGULATOR



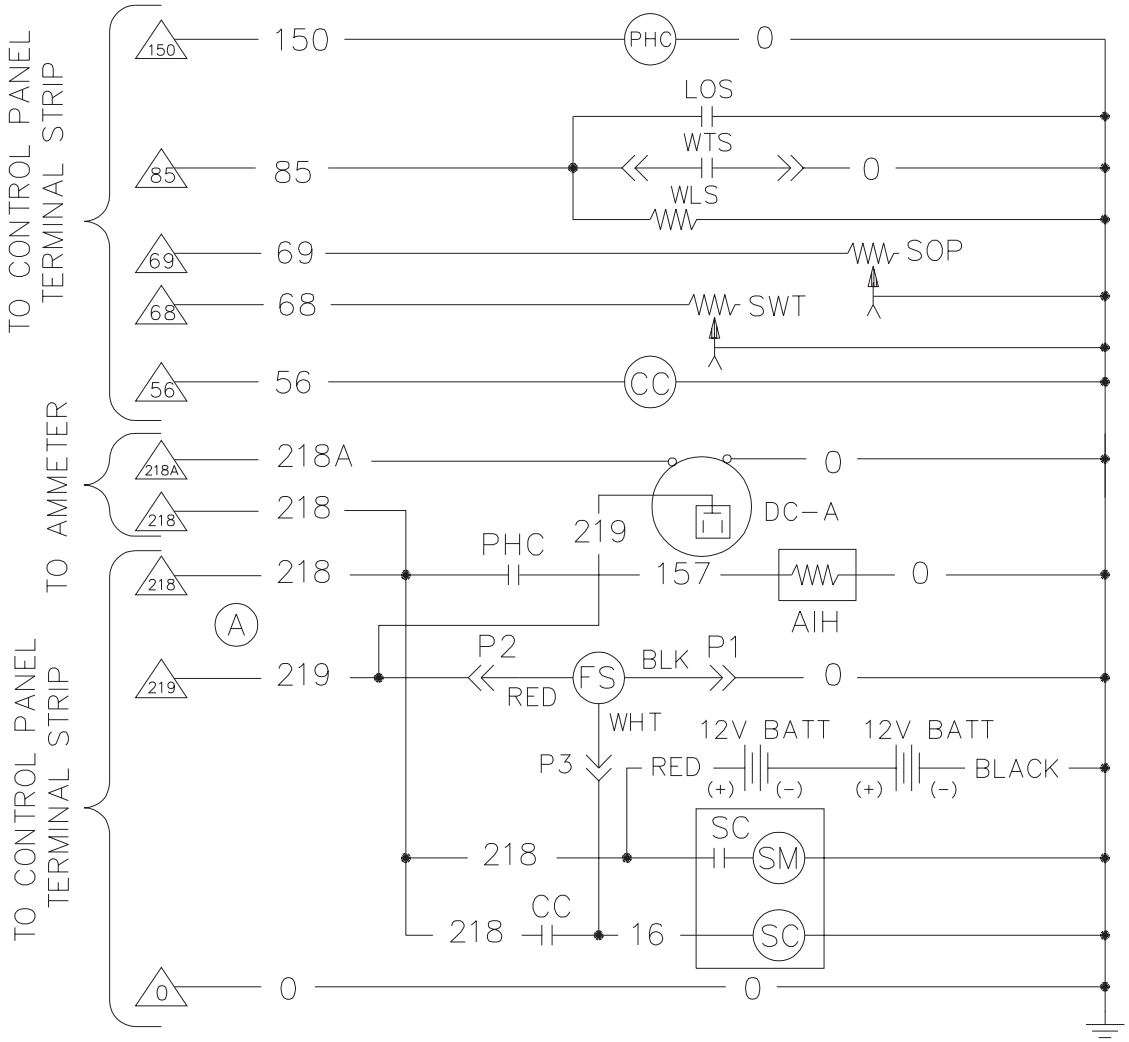
LEGEND

AM - AMMETER, AC
BCA- AMMETER, BATTERY CHARGE
CB2- CIRCUIT BREAKER, 120V 20A
CB4- CIRCUIT BREAKER, 120V 20A
CB5- CIRCUIT BREAKER, 240V, 50A
CB6- CIRCUIT BREAKER, 240V 50A
CB7- CIRCUIT BREAKER, 240V 350A
CB8- CIRCUIT BREAKER, 480V 125A
G1 - GAUGE, WATER TEMPERATURE
G2 - GAUGE, OIL PRESSURE
GFM- GROUND FAULT CIRCUIT INTERRUPTER MODULE

HM - HOURMETER
HZ - FREQUENCY METER
L1 - LAMP, FAULT
L2 - LAMP, PANEL
L3 - LAMP, RUN
PHR- PREHEAT RELAY
R1 - POTENTIOMETER, VOLTAGE ADJUST
R3 - RESISTOR, TEMP. GAGE, 120 OHM, 2W
R4 - RESISTOR, OIL PRESS. GAGE, 68 OHM, 5W
RE1- RECEPTACLE, 120V 20A LOCKING L5-20R

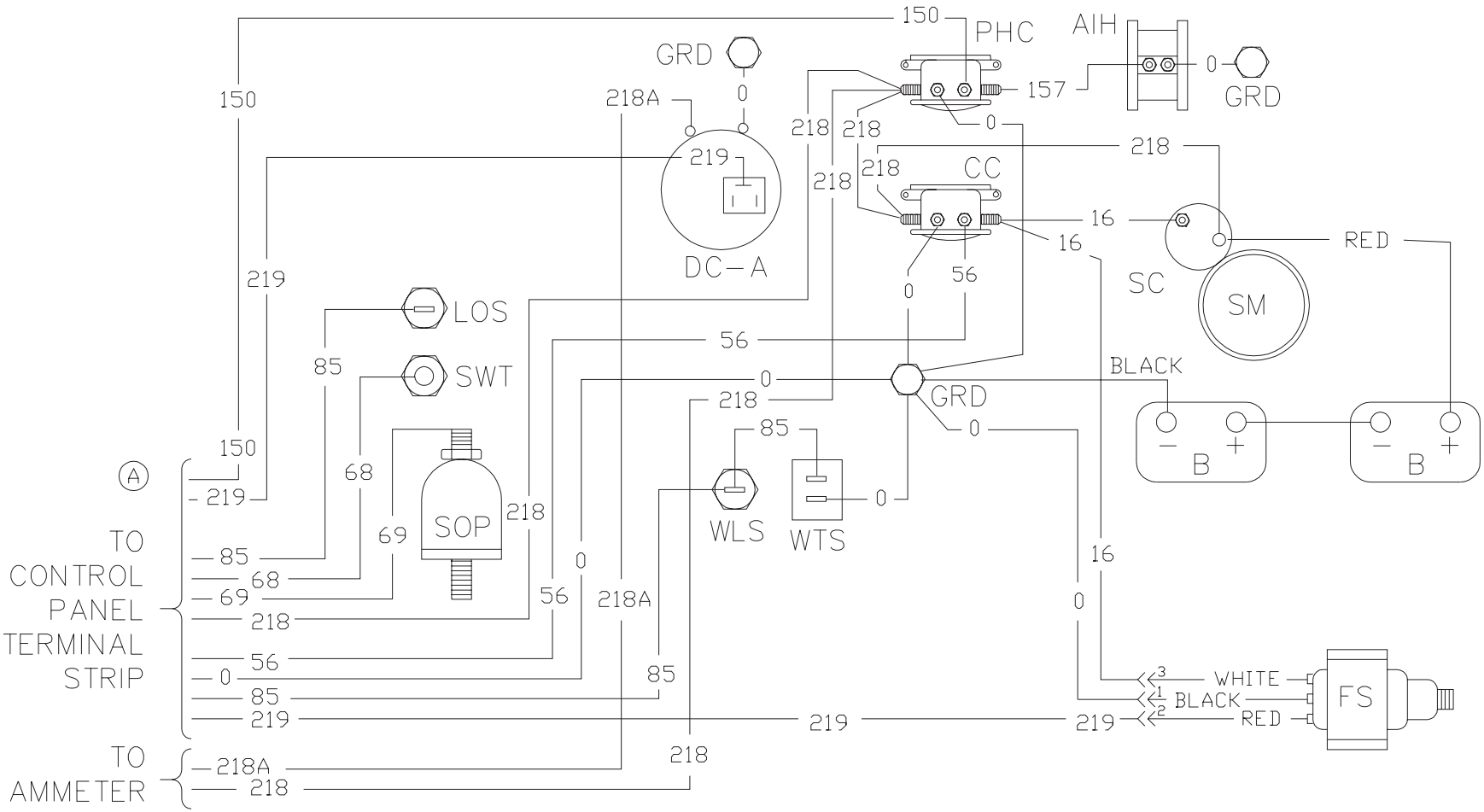
RE2- RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE3- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4- RECEPTACLE, 120/240V 50A LOCKING CS6369
SW2- SWITCH, START/RUN/OFF
SW3- SWITCH, PREHEAT
SW4- SWITCH, SAFETY CUTOFF
SW5- SWITCH, PHASE SELECTOR
SW6- SWITCH, AUTO/OFF/MANUAL
SW7- SWITCH, SAFETY CUTOFF
TS - TWO WIRE START TERMINAL STRIP
VM - VOLTMETER, AC

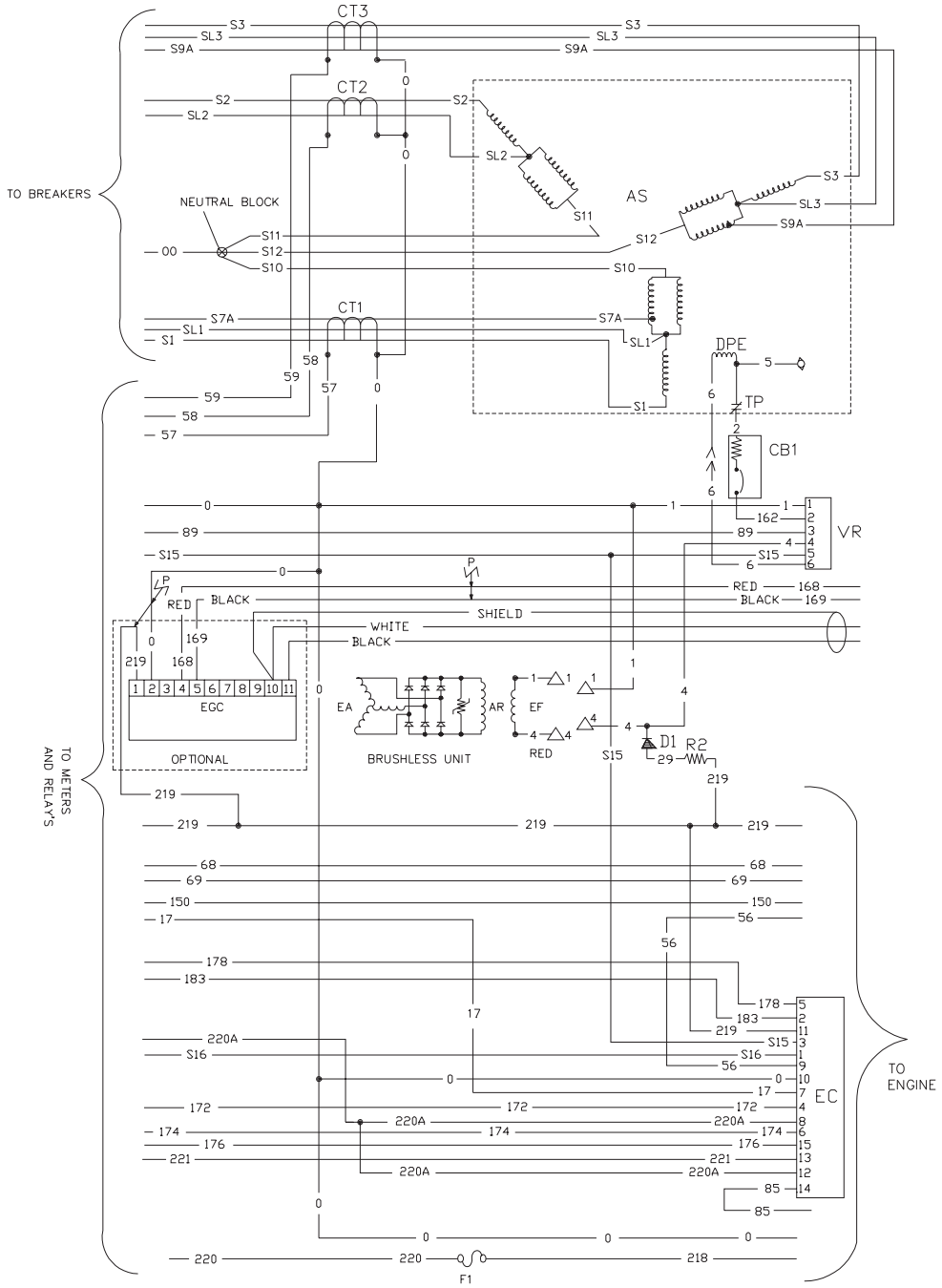
AIH– AIR INTAKE HEATER
B – BATTERY 12–V
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
FS – FUEL SOLENOID
LOS– LOW OIL SWITCH
PCH– PREHEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER OIL PRESSURE
SWT– SENDER WATER TEMP.
WLS– WATER LEVEL SWITCH
WTS– WATER TEMP. SWITCH



LEGEND

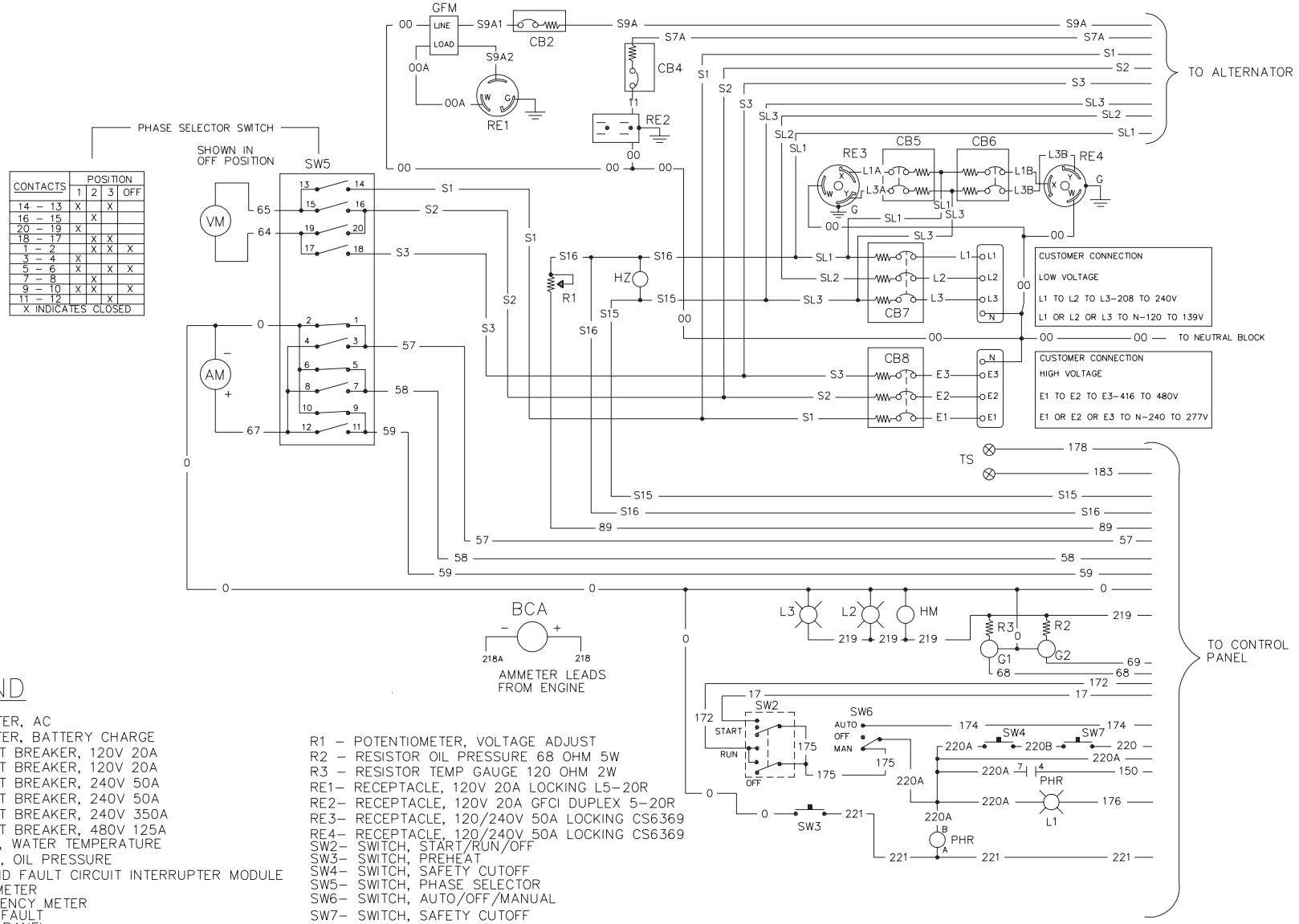
AIH - AIR INTAKE HEATER
B - BATTERY 12V
CC - CONTROL CONTACTOR
DCA- DC ALTERNATOR
FS - FUEL SOLENOID
GRD- GROUND
LOS- LOW OIL SWITCH
PHC- PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP- SENDER OIL PRESSURE
SWT- SWITCH WATER TEMPERATURE
WLS- WATER LEVEL SWITCH
WTS- WATER TEMPERATURE SWITCH





AR — ALTERNATOR ROTOR
AS — ALTERNATOR STATOR
CB1 — CIRCUIT BREAKER-FIELD
CT1 — CURRENT TRANSFORMER-PHASE 1
CT2 — CURRENT TRANSFORMER-PHASE 2
CT3 — CURRENT TRANSFORMER-PHASE 3
D1 — RECTIFIER
DPE — EXCITATION WINDING
EF — EXCITER FIELD

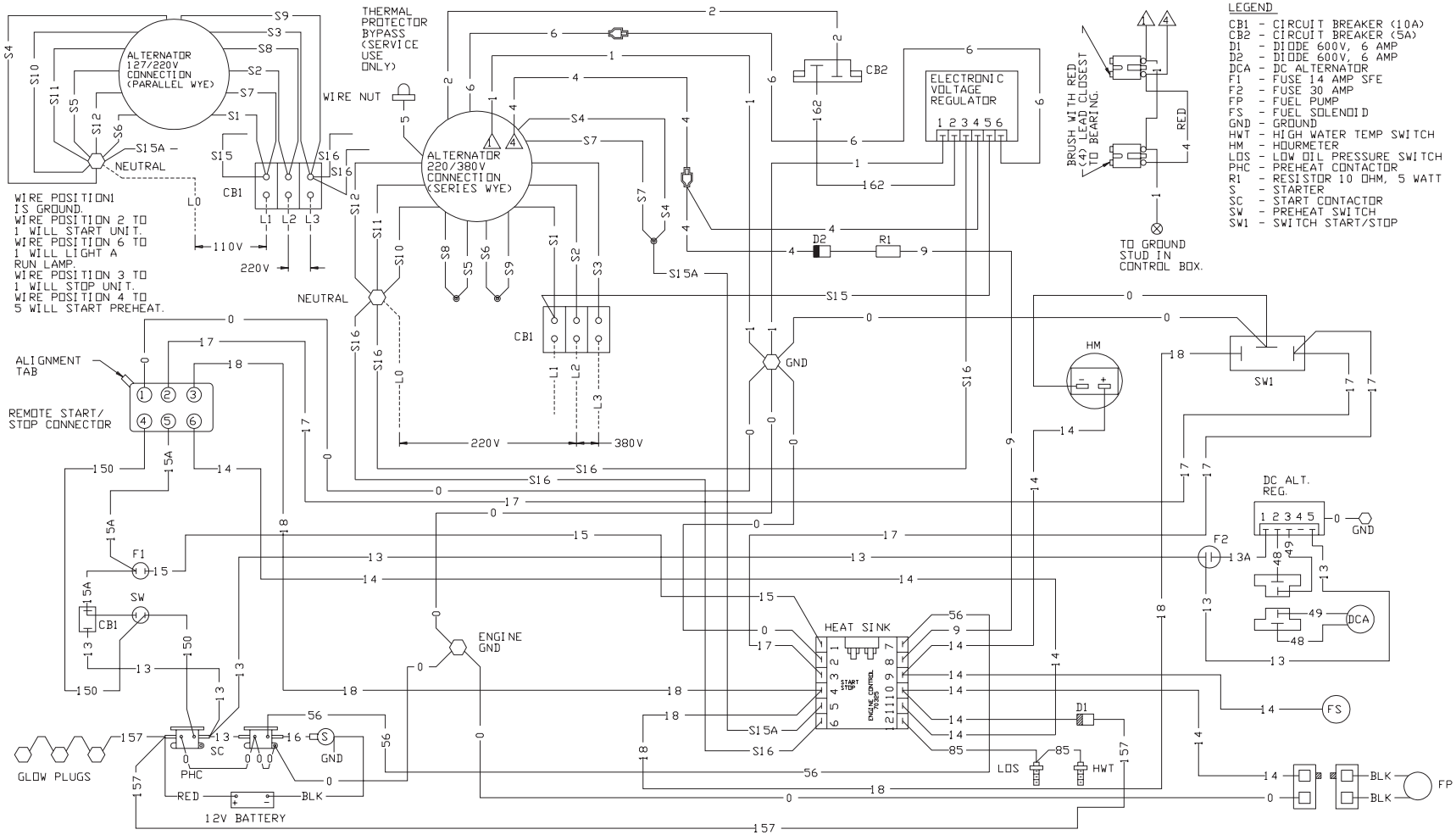
EGC— ELECTRONIC GOVERNOR CONTROLLER
EC — ENGINE CONTROL
EA — EXCITER ARMATURE
F1 — FUSE 15-AMP
R2 — RESISTOR FIELDBOOST
VR — VOLTAGE REGULATOR
TP — THERMAL PROTECTOR
P — TWISTED PAIR

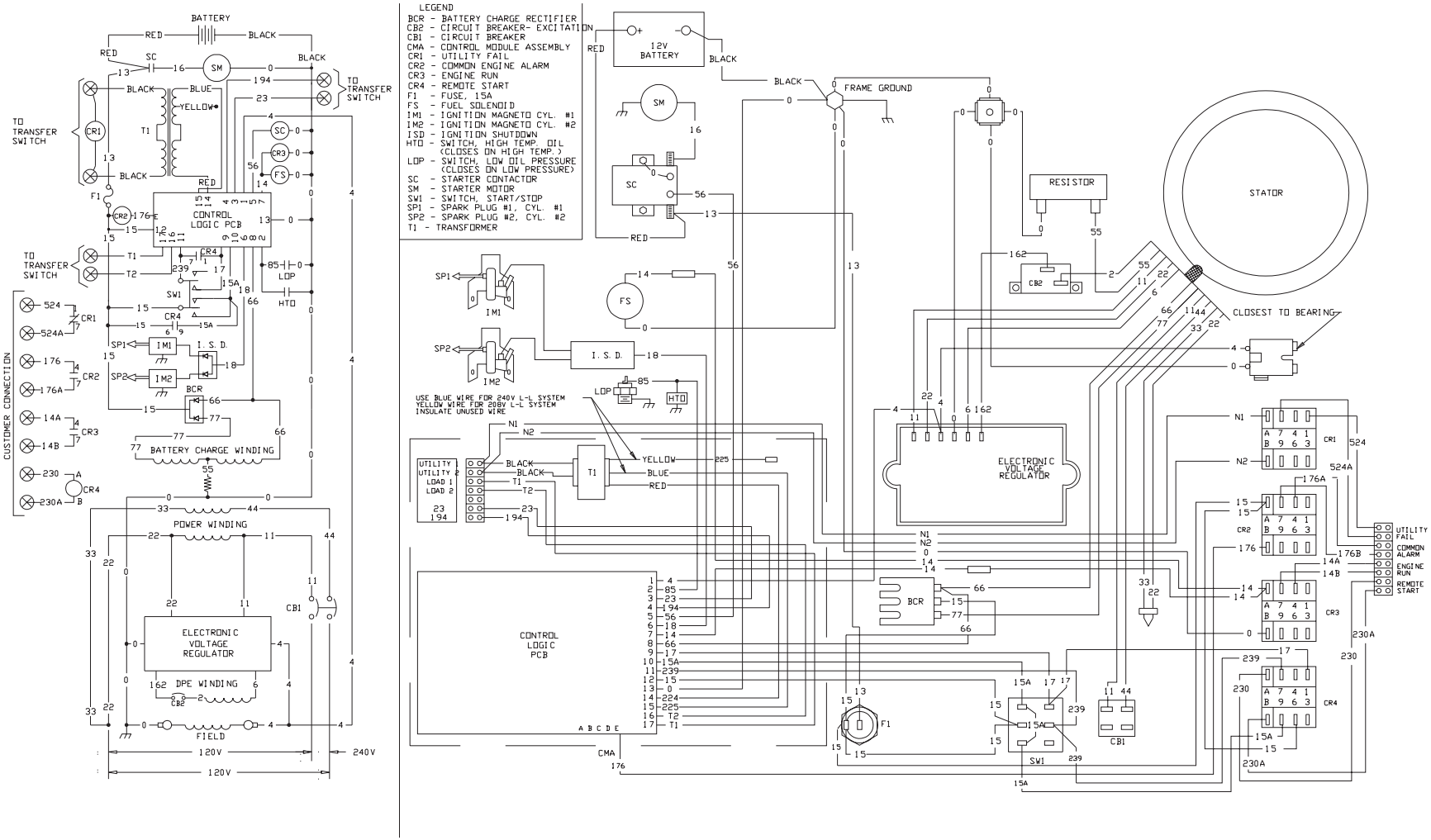


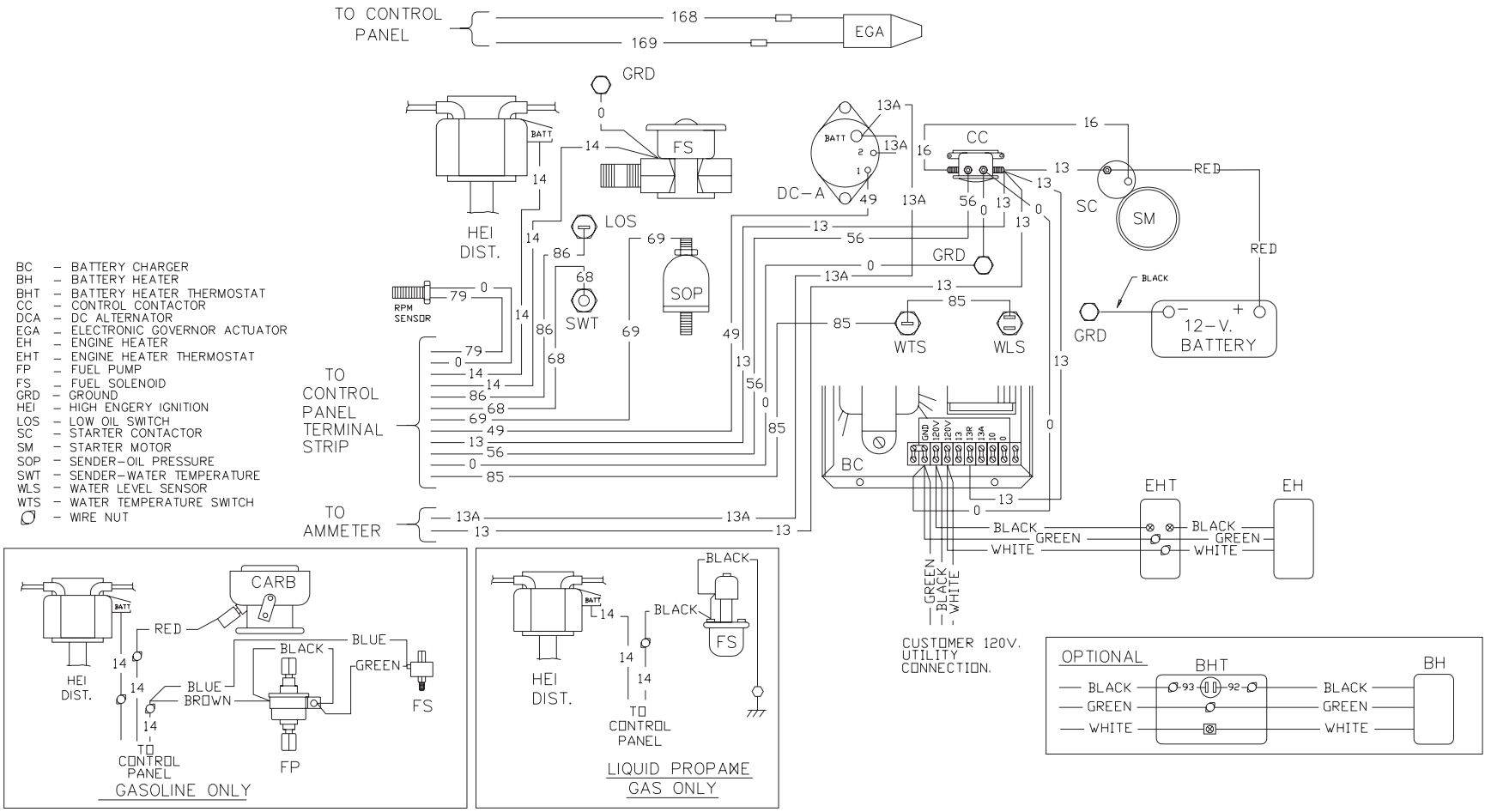
LEGEND

AM – AMMETER, AC
BCA– AMMETER, BATTERY CHARGE
CB2– CIRCUIT BREAKER, 120V 20A
CB4– CIRCUIT BREAKER, 120V 20A
CB5– CIRCUIT BREAKER, 240V 50A
CB6– CIRCUIT BREAKER, 240V 50A
CB7– CIRCUIT BREAKER, 240V 350A
CB8– CIRCUIT BREAKER, 480V 125A
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
GFM– GROUND FAULT CIRCUIT INTERRUPTER MODULE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT, RELAY

R1 – POTENTIOMETER, VOLTAGE ADJUST
R2 – RESISTOR OIL PRESSURE 68 OHM 5W
R3 – RESISTOR TEMP GAUGE 120 OHM 2W
RE1– RECEPTACLE, 120V 20A LOCKING L5–20R
RE2– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE3– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4– RECEPTACLE, 120/240V 50A LOCKING CS6369
SW2– SWITCH, START/RUN/OFF
SW3– SWITCH, PREHEAT
SW4– SWITCH, SAFETY CUTOFF
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
SW7– SWITCH, SAFETY CUTOFF
TS – TWO WIRE START TERMINAL STRIP
VM – VOLTMETER, AC

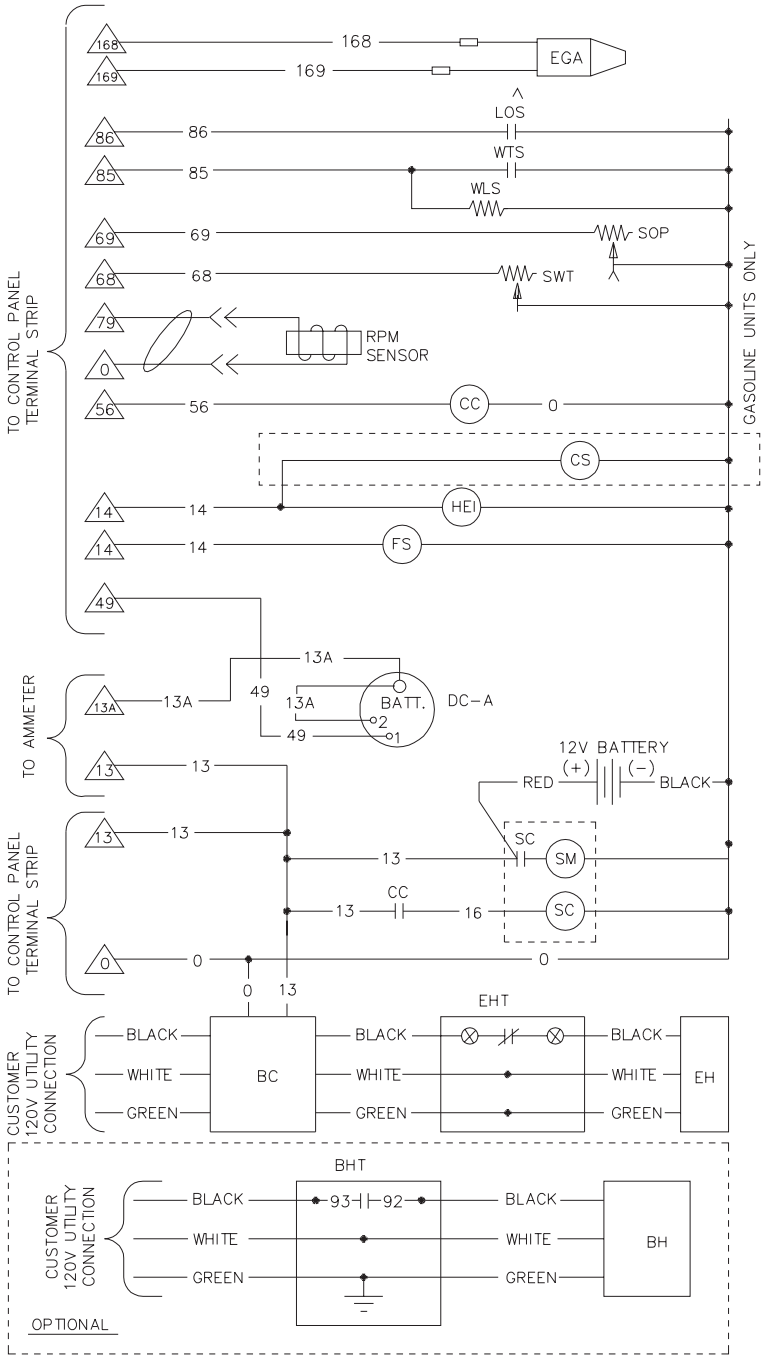

LEGEND
CB1 - CIRCUIT BREAKER (10A)
CB2 - CIRCUIT BREAKER (5A)
D1 - DIODE 600V, 6 AMP
D2 - DIODE 600V, 6 AMP
DCA - DC ALTERNATOR
F1 - FUSE 14 AMP SFE
F2 - FUSE 30 AMP
FP - FUEL PUMP
FS - FUEL SOLENOID
GND - GROUND
HWT - HIGH WATER TEMP SWITCH
HM - HOURMETER
LOS - LOW OIL PRESSURE SWITCH
PHC - PREHEAT CONTACTOR
R1 - RESISTOR 10 OHM, 5 WATT
S - STARTER
SC - START CONTACTOR
SW - PREHEAT SWITCH
SW1 - SWITCH START/STOP
ALTERNATOR 127/220V CONNECTION (PARALLEL WYE)
ALTERNATOR 220/380V CONNECTION (SERIES WYE)
THERMAL PROTECTOR BYPASS (SERVICE USE ONLY)
WIRE NUT
ELECTRONIC VOLTAGE REGULATOR
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING.
TO GROUND STUD IN CONTROL BOX.
WIRE POSITION 1 IS GROUND.
WIRE POSITION 2 TO 1 WILL START UNIT.
WIRE POSITION 6 TO 1 WILL LIGHT A RUN LAMP.
WIRE POSITION 3 TO 1 WILL STOP UNIT.
WIRE POSITION 4 TO 5 WILL START PREHEAT.
ALIGNMENT TAB
REMOTE START/ STOP CONNECTOR
NEUTRAL
110V
220V
380V
HEAT SINK
ENGINE GND
GLOW PLUGS
12V BATTERY
DC ALT. REG.


LEGEND
BCR - BATTERY CHARGE RECTIFIER
CB2 - CIRCUIT BREAKER- EXCITATION
CB1 - CIRCUIT BREAKER
CMA - CONTROL MODULE ASSEMBLY
CR1 - UTILITY FAIL
CR2 - COMMON ENGINE ALARM
CR3 - ENGINE RUN
CR4 - REMOTE START
F1 - FUSE, 15A
FS - FUEL SOLENOID
IM1 - IGNITION MAGNETO CYL. #1
IM2 - IGNITION MAGNETO CYL. #2
ISD - IGNITION SHUTDOWN
HTO - SWITCH, HIGH TEMP. OIL (CLOSES ON HIGH TEMP.)
LOP - SWITCH, LOW OIL PRESSURE (CLOSES ON LOW PRESSURE)
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SW1 - SWITCH, START/STOP
SP1 - SPARK PLUG #1, CYL. #1
SP2 - SPARK PLUG #2, CYL. #2
T1 - TRANSFORMER
BATTERY
12V BATTERY
TO TRANSFER SWITCH
CONTROL LOGIC PCB
CUSTOMER CONNECTION
BATTERY CHARGE WINDING
POWER WINDING
DPE WINDING
FIELD
ELECTRONIC VOLTAGE REGULATOR
FRAME GROUND
RESISTOR
STATOR
CLOSEST TO BEARING
I. S. D.
USE BLUE WIRE FOR 240V L-L SYSTEM
YELLOW WIRE FOR 208V L-L SYSTEM
INSULATE UNUSED WIRE
UTILITY FAIL
COMMON ALARM
ENGINE RUN
REMOTE START
120V
240V

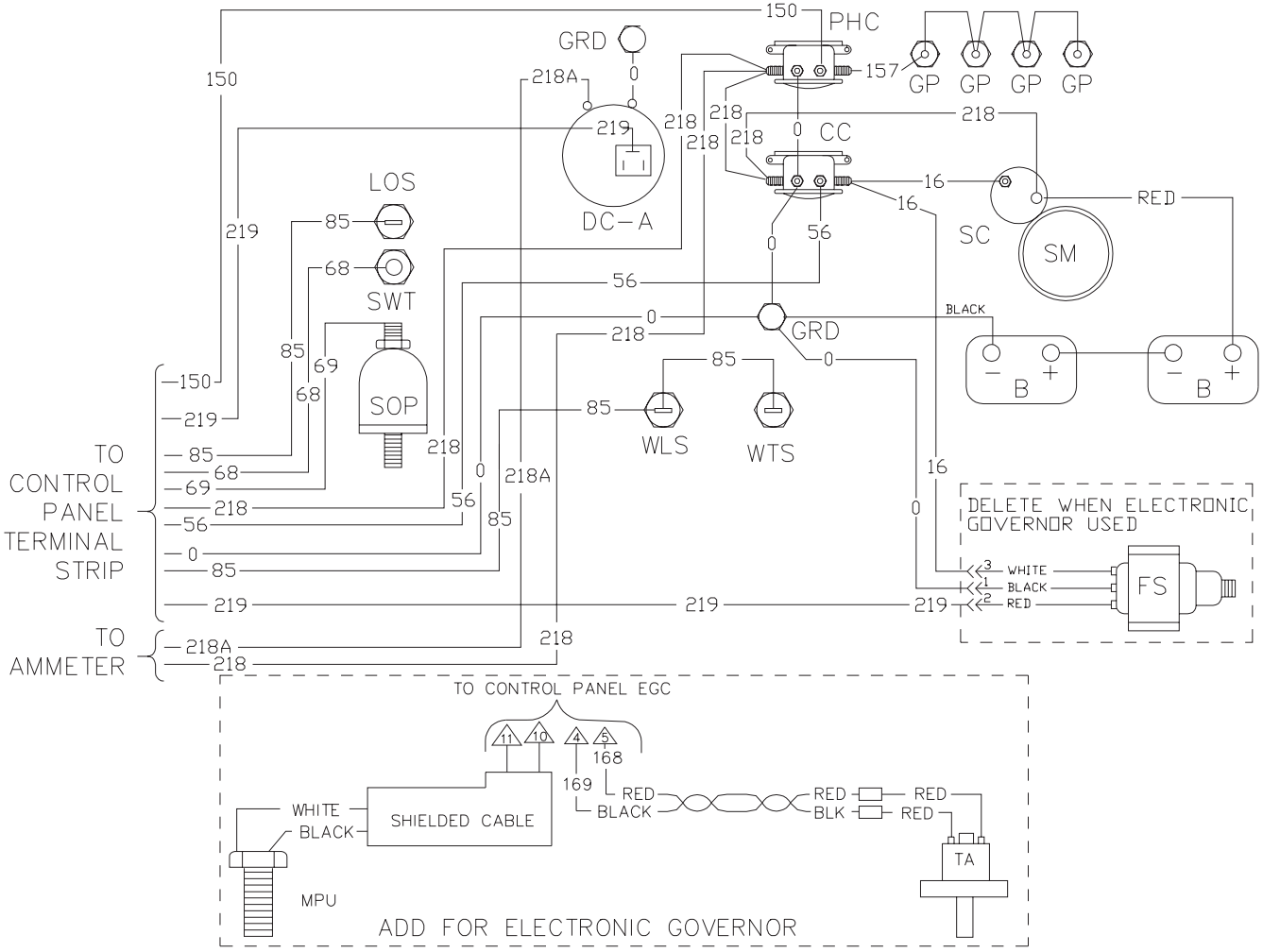

TO CONTROL PANEL
168
169
EGA
GRD
HEI DIST.
FS
LOS
SOP
RPM SENSOR
SWT
DC-A
CC
SC
SM
RED
BLACK
GRD
12-V. BATTERY
WTS
WLS
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
BC
EHT
EH
BLACK
GREEN
WHITE
CUSTOMER 120V. UTILITY CONNECTION.
OPTIONAL
BHT
BH
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EGA – ELECTRONIC GOVERNOR ACTUATOR
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENGERY IGNITION
LOS – LOW OIL SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
– WIRE NUT
CARB
RED
BLUE
BLACK
GREEN
BROWN
FP
TO CONTROL PANEL
GASOLINE ONLY
LIQUID PROPANE GAS ONLY

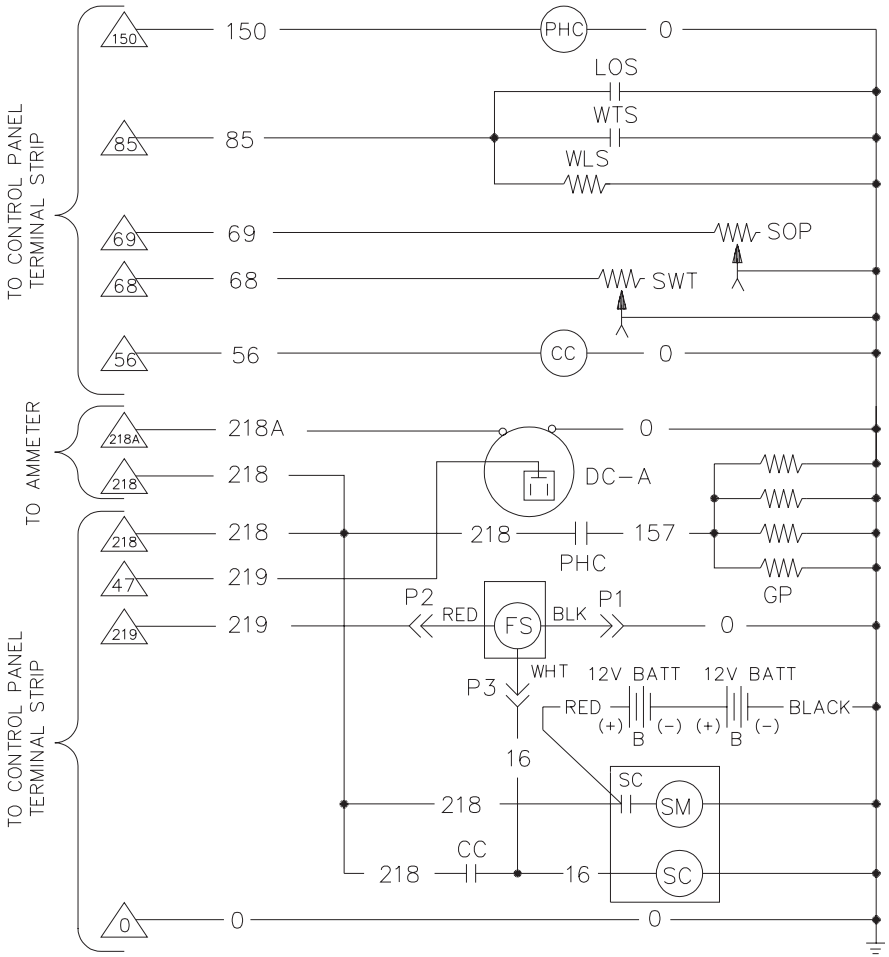
LEGEND

BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EGA - ELECTRONIC GOVERNOR ACTUATOR
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FP - FUEL PUMP
FS - FUEL SOLENOID
GP - GLOW PLUG
LOS - LOW OIL SWITCH
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TP2 - THERMAL PROTECTOR BATT. HEAT.
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH



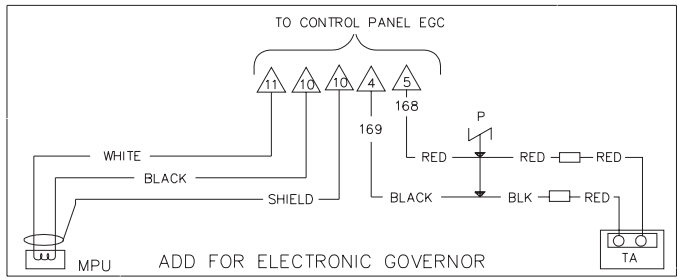
B – BATTERY 12V
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EGC – ELECT. GOVERNOR CONTROLLER
FS – FUEL SOLENOID
GP – GLOW PLUG
GRD – GROUND
LOS – LOW OIL SWITCH
MPU – MAGNETIC PICKUP
PHC – PRE – HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER – OIL PRESSURE
SWT – SENDER – WATER TEMPERATURE
TA – THROTTLE ACTUATOR
WLS – WATER LEVEL SWITCH
WTS – WATER TEMPERATURE SWITCH



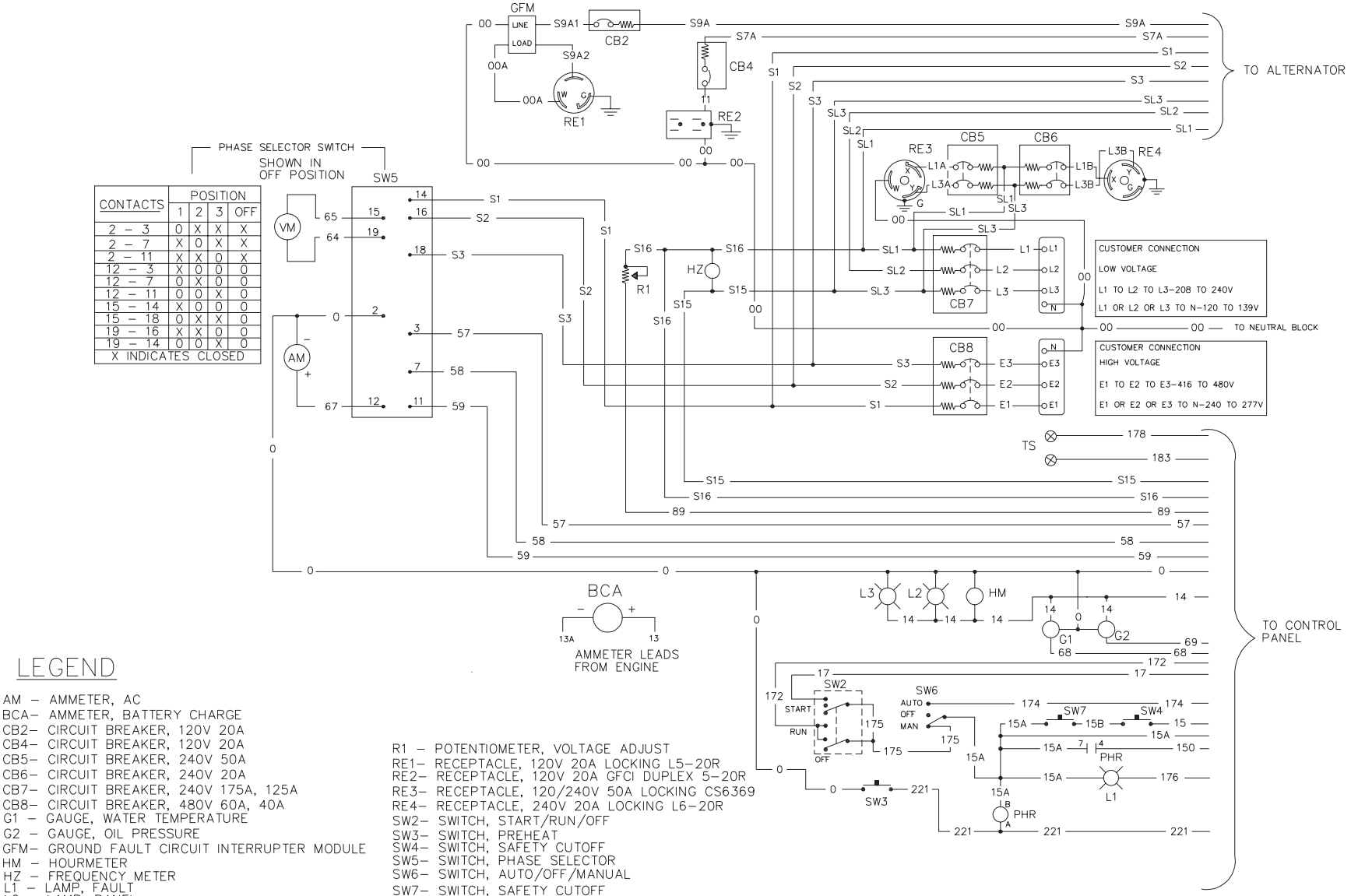


B – BATTERY 12V
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EGC – ELECTRONIC GOVERNOR CONTROLLER
FS – FUEL SOLENOID
GP – GLOW PLUG
LOS – LOW OIL SWITCH
MPU – MAGNETIC PICKUP
P – TWISTED PAIR

PHC – PRE-HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER-OIL PRESSURE
SWT – SENDER-WATER TEMPERATURE
TA – THROTTLEACTUATOR
WLS – WATER LEVEL SWITCH
WTS – WATER TEMPERATURE SWITCH



NOTE:
DELETE FUEL SOLENOID WHEN ELECTRONIC GOVERNOR USED

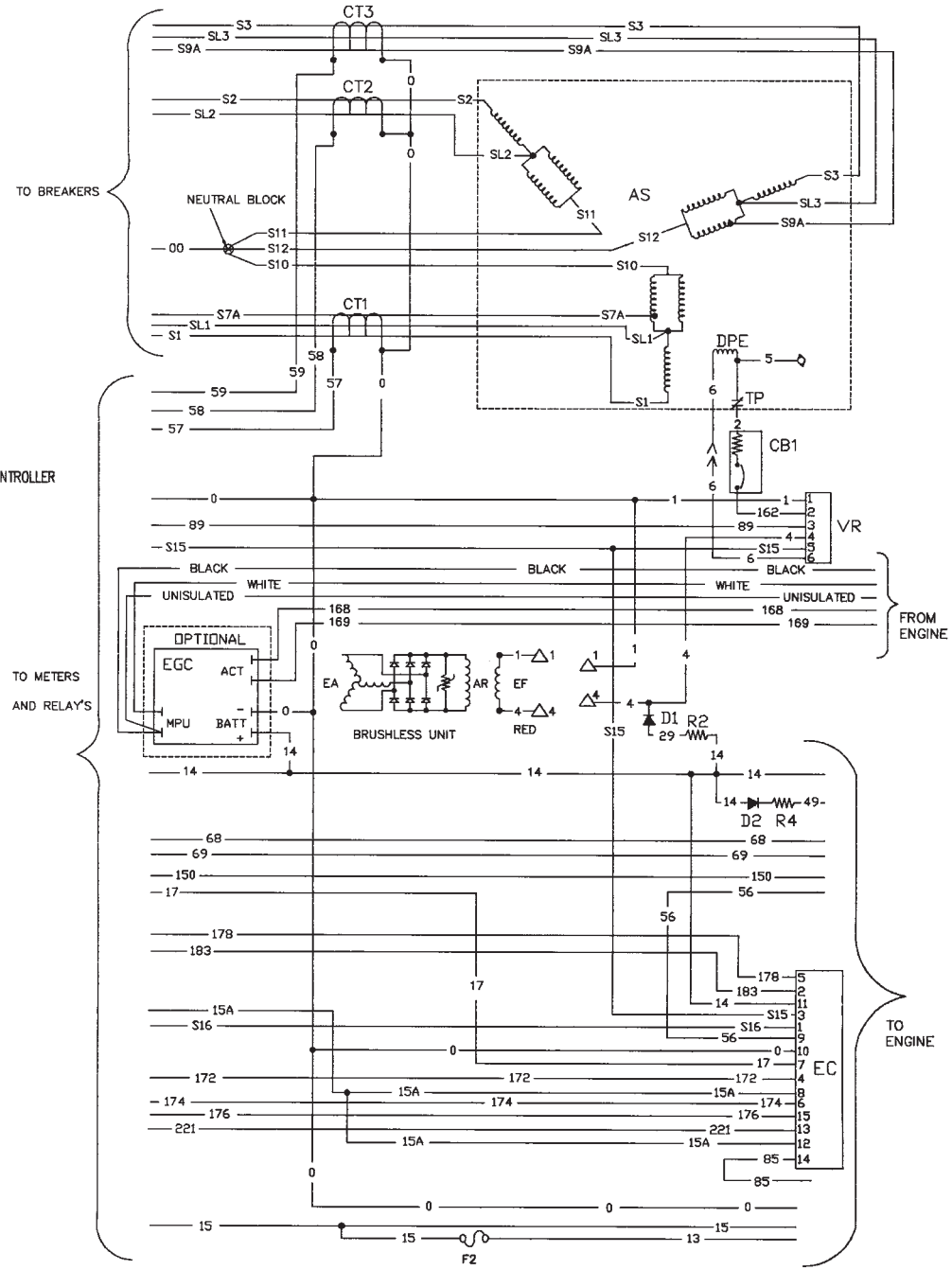


LEGEND

AM – AMMETER, AC
BCA– AMMETER, BATTERY CHARGE
CB2– CIRCUIT BREAKER, 120V 20A
CB4– CIRCUIT BREAKER, 120V 20A
CB5– CIRCUIT BREAKER, 240V 50A
CB6– CIRCUIT BREAKER, 240V 20A
CB7– CIRCUIT BREAKER, 240V 175A, 125A
CB8– CIRCUIT BREAKER, 480V 60A, 40A
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
GFM– GROUND FAULT CIRCUIT INTERRUPTER MODULE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT, RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
RE1– RECEPTACLE, 120V 20A LOCKING L5–20R
RE2– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE3– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4– RECEPTACLE, 240V 20A LOCKING L6–20R
SW2– SWITCH, START/RUN/OFF
SW3– SWITCH, PREHEAT
SW4– SWITCH, SAFETY CUTOFF
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
SW7– SWITCH, SAFETY CUTOFF
TS – TWO WIRE START TERMINAL STRIP
VM – VOLTMETER, AC

AR — ALTERNATOR ROTOR
AS — ALTERNATOR STATOR
CB1 — CIRCUIT BREAKER-FIELD
CT1 — CURRENT TRANSFORMER-PHASE 1
CT2 — CURRENT TRANSFORMER-PHASE 2
CT3 — CURRENT TRANSFORMER-PHASE 3
D1 — RECTIFIER
D2 — RECTIFIER 800V 2AMP
DPE — EXCITATION WINDING
EF — EXCITER FIELD

EGC-ELECTRONIC GOVERNOR CONTROLLER
EC — ENGINE CONTROL
EA — EXCITER ARMATURE
F1 — FUSE 15-AMP
F2 — FUSE 15-AMP
R2 — RESISTOR FIELDBOOST
R4 — RESISTOR ENGING ALT.
VR — VOLTAGE REGULATOR
TP — THERMAL PROTECTOR

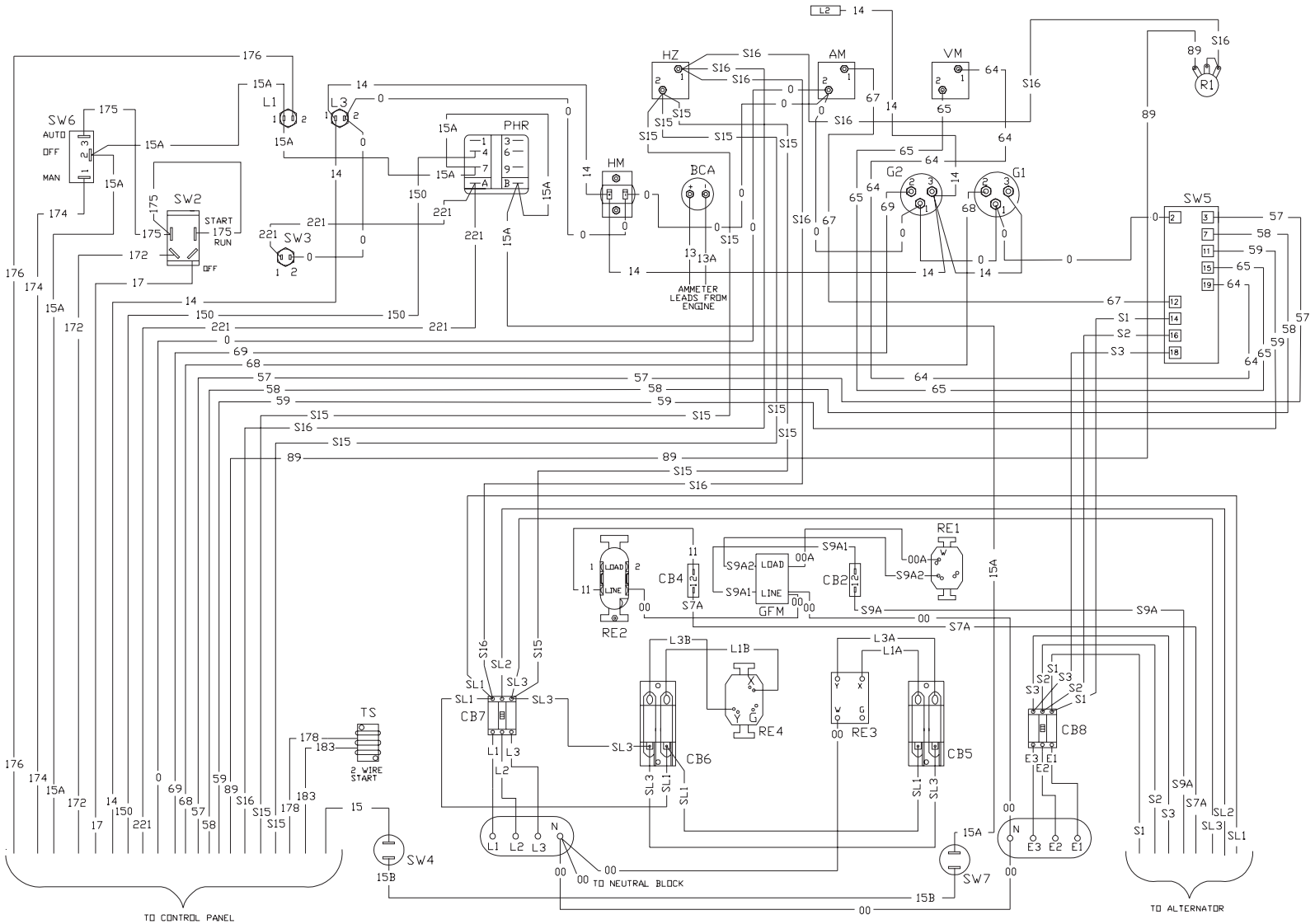


Drawing No. 83712

Revised: 01/10/92

Wiring Diagram

AC Receptacle Panel

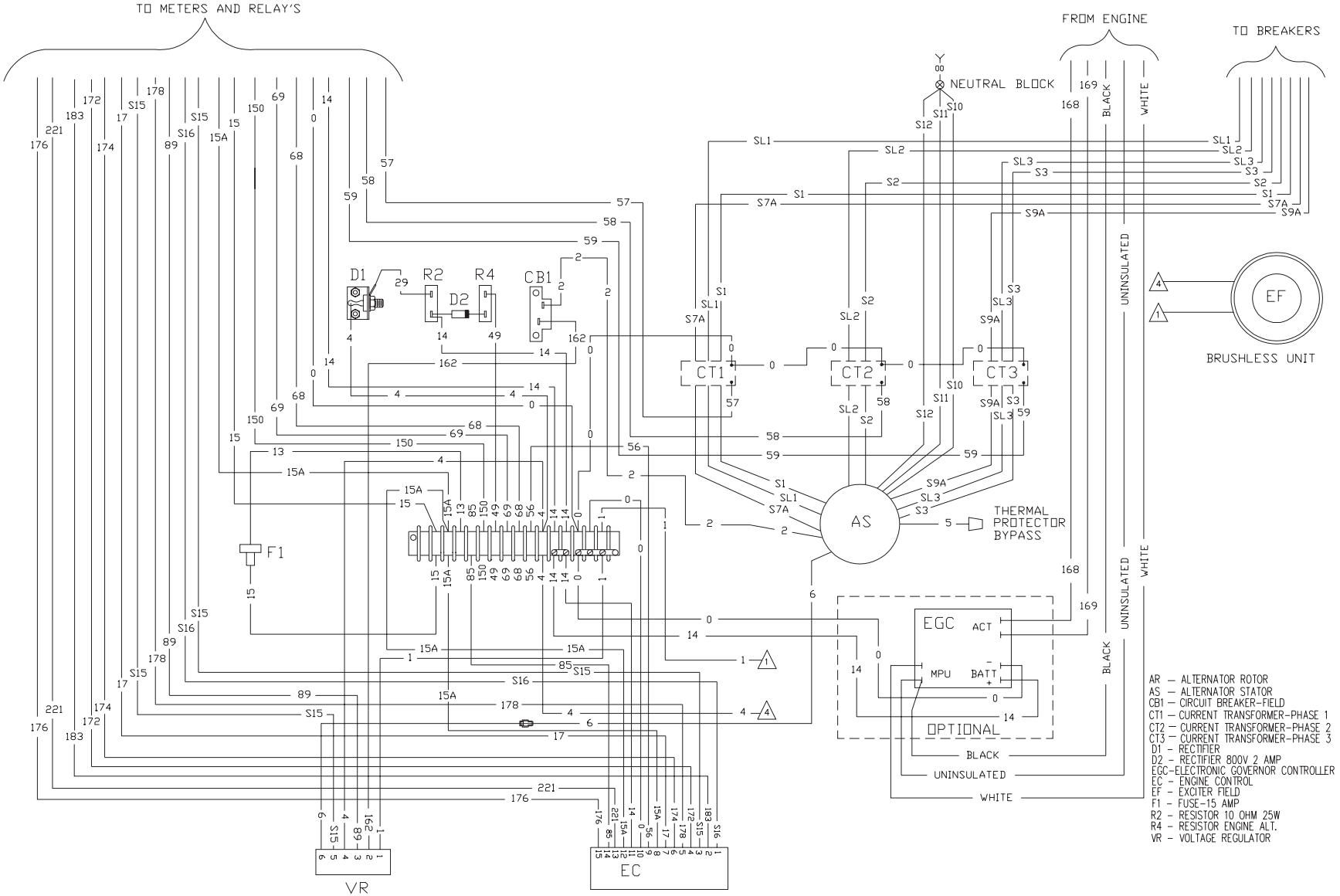


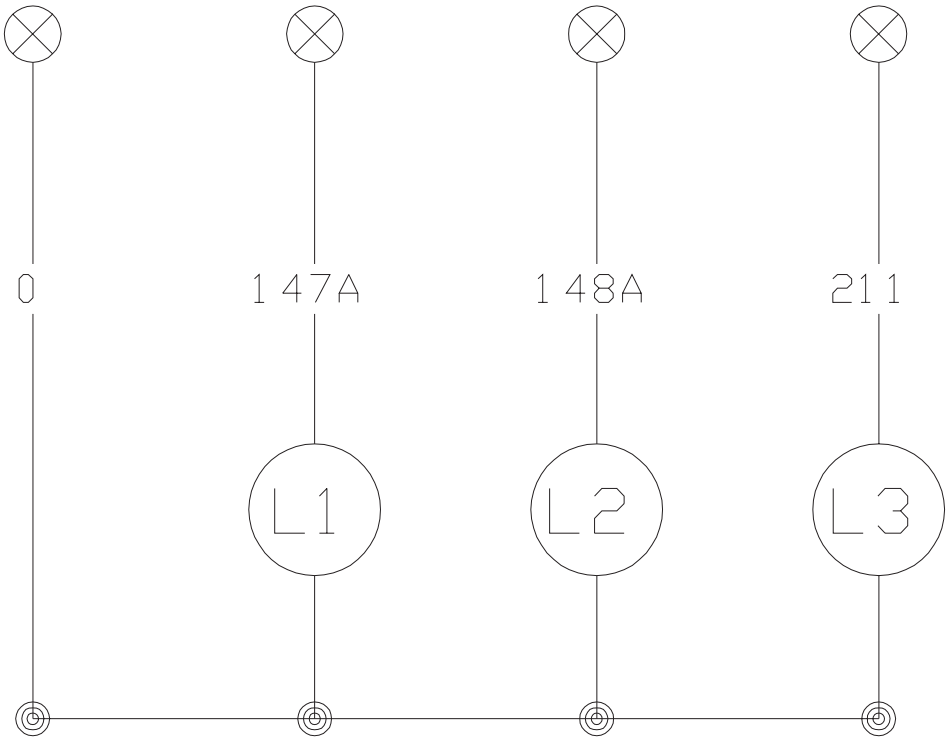
LEGEND

AM - AMMETER, AC
BCA- AMMETER, BATTERY CHARGE
CB2- CIRCUIT BREAKER, 120V 20A
CB4- CIRCUIT BREAKER, 120V 20A
CB5- CIRCUIT BREAKER, 240V, 50A
CB6- CIRCUIT BREAKER, 240V, 20A
CB7- CIRCUIT BREAKER, 240V, 175A, 125A
CB8- CIRCUIT BREAKER, 480V 60A, 40A
G1 - GAUGE, WATER TEMPERATURE
G2 - GAUGE, OIL PRESSURE
GFM- GROUND FAULT CIRCUIT INTERRUPTER MODULE

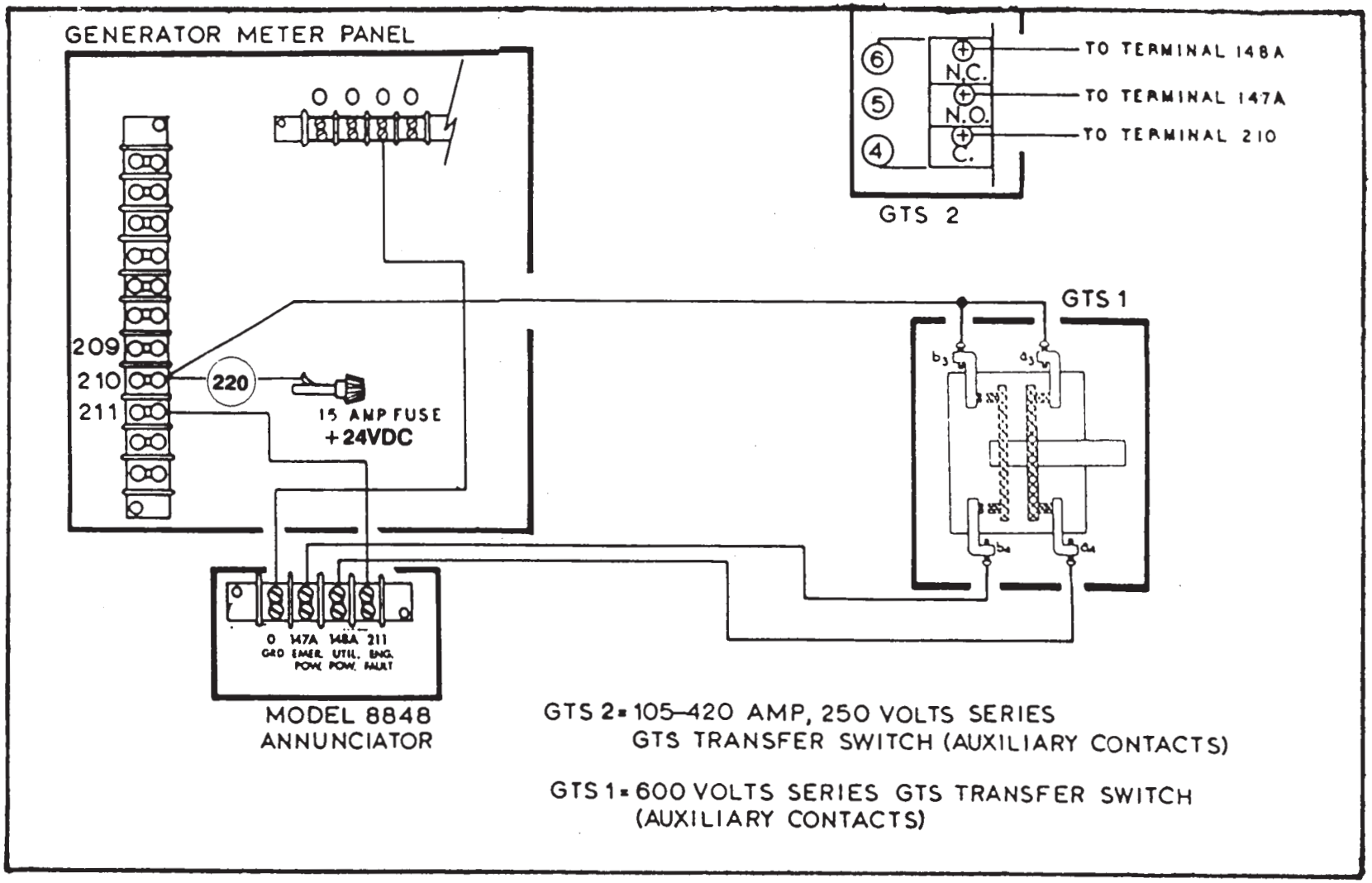
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LAMP, FAULT
L2 - LAMP, PANEL
L3 - LAMP, RUN
PHR- PREHEAT RELAY
R1 - POTENTIOMETER, VOLTAGE ADJUST
RE1- RECEPTACLE, 120V 20A LOCKING L5-20R

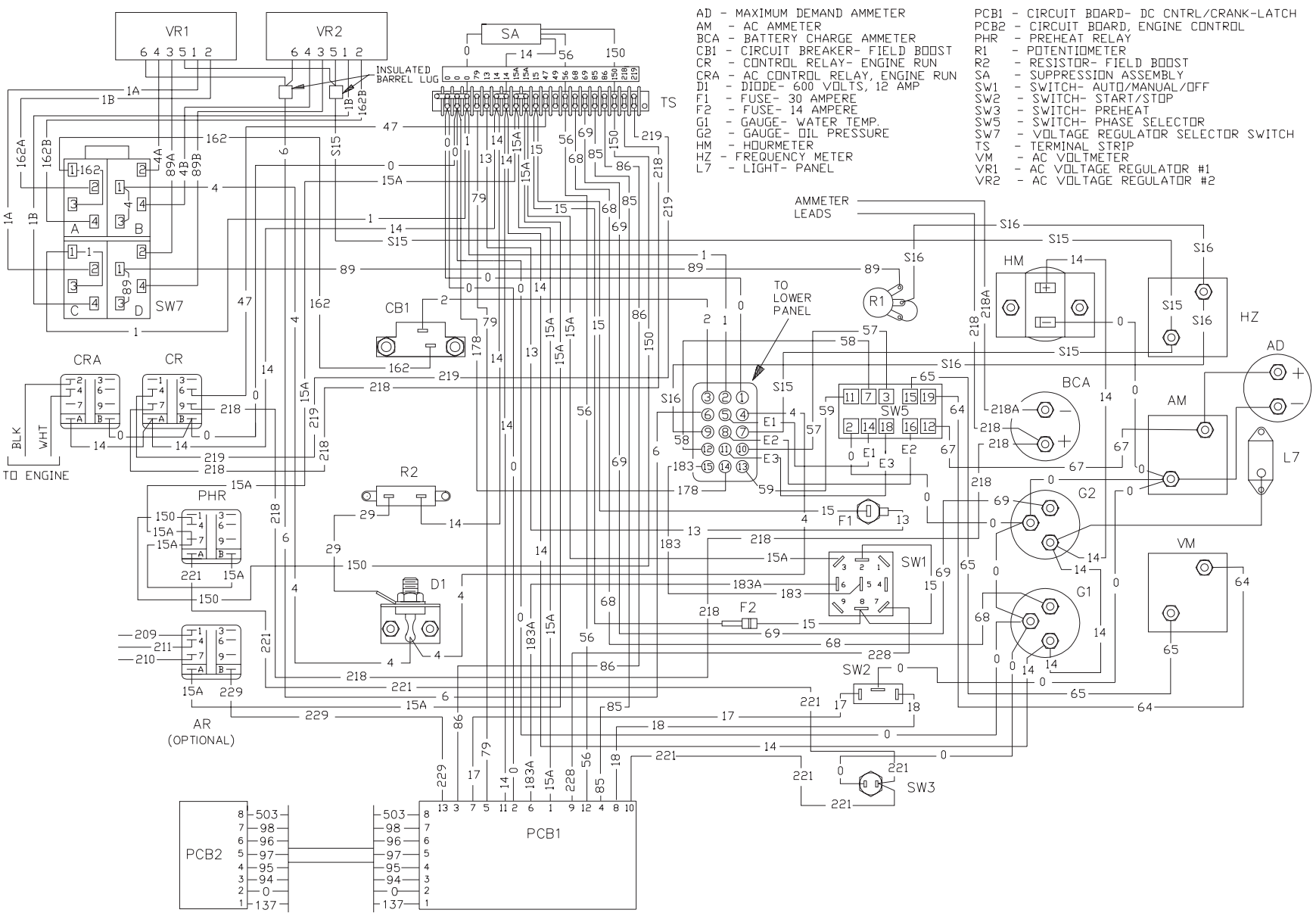
RE2- RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE3- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4- RECEPTACLE, 240V 20A LOCKING L6-20R
SW2- SWITCH, START/RUN/OFF
SW3- SWITCH, PREHEAT
SW4- SWITCH, SAFETY CUTOFF
SW5- SWITCH, PHASE SELECTOR
SW6- SWITCH, AUTO/OFF/MANUAL
SW7- SWITCH, SAFETY CUTOFF
TS - TWO WIRE START TERMINAL STRIP
VM - VOLTMETER, AC

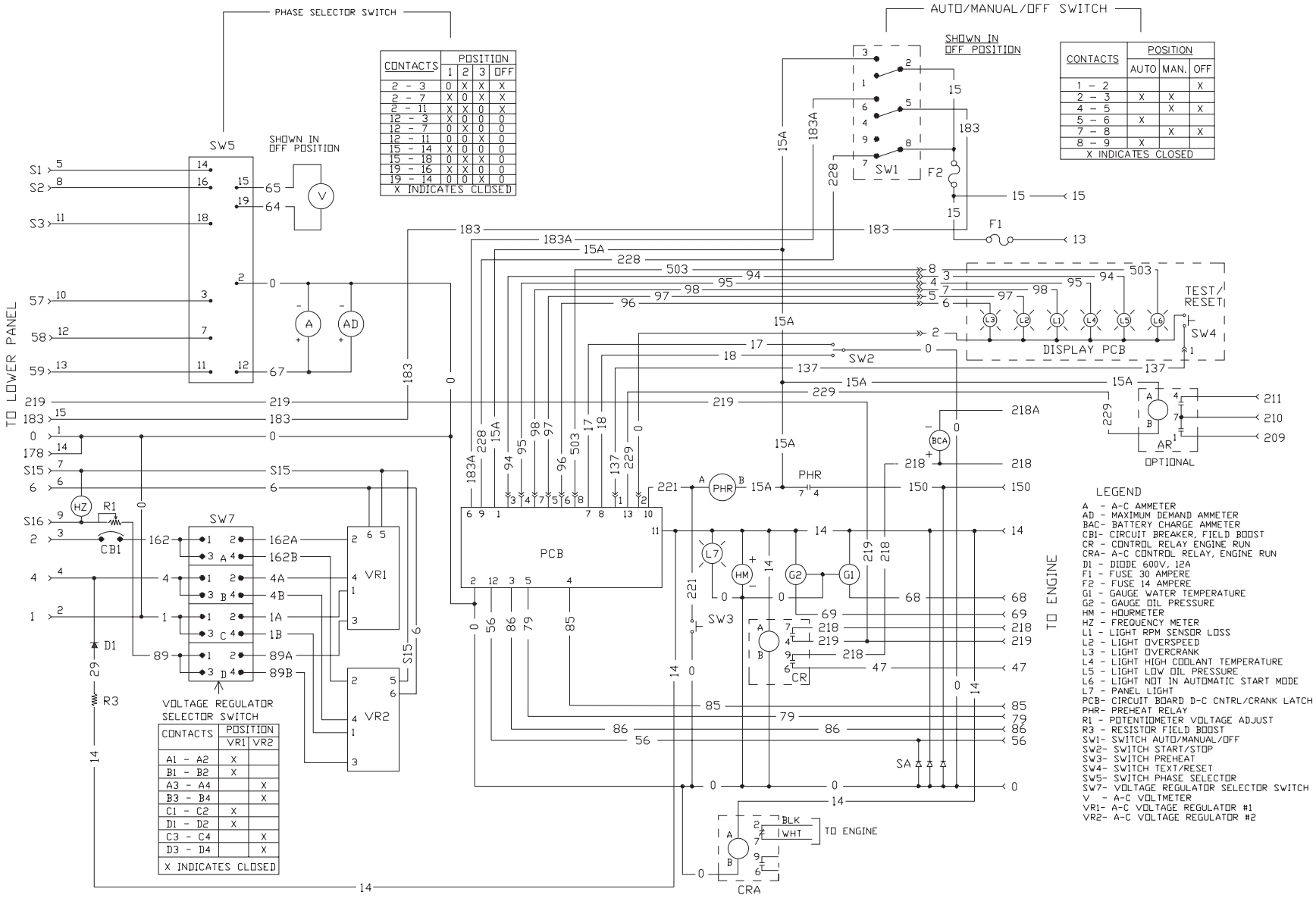

TO METERS AND RELAY'S
FROM ENGINE
TO BREAKERS
NEUTRAL BLOCK
D1
D2
R2
R4
CB1
CT1
CT2
CT3
AS
EF
BRUSHLESS UNIT
THERMAL PROTECTOR BYPASS
F1
EGC
ACT
MPU
BATT
OPTIONAL
VR
EC
BLACK
WHITE
UNINSULATED
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
CB1 – CIRCUIT BREAKER-FIELD
CT1 – CURRENT TRANSFORMER-PHASE 1
CT2 – CURRENT TRANSFORMER-PHASE 2
CT3 – CURRENT TRANSFORMER-PHASE 3
D1 – RECTIFIER
D2 – RECTIFIER 800V 2 AMP
EGC-ELECTRONIC GOVERNOR CONTROLLER
EC – ENGINE CONTROL
EF – EXCITER FIELD
F1 – FUSE-15 AMP
R2 – RESISTOR 10 OHM 25W
R4 – RESISTOR ENGINE ALT.
VR – VOLTAGE REGULATOR

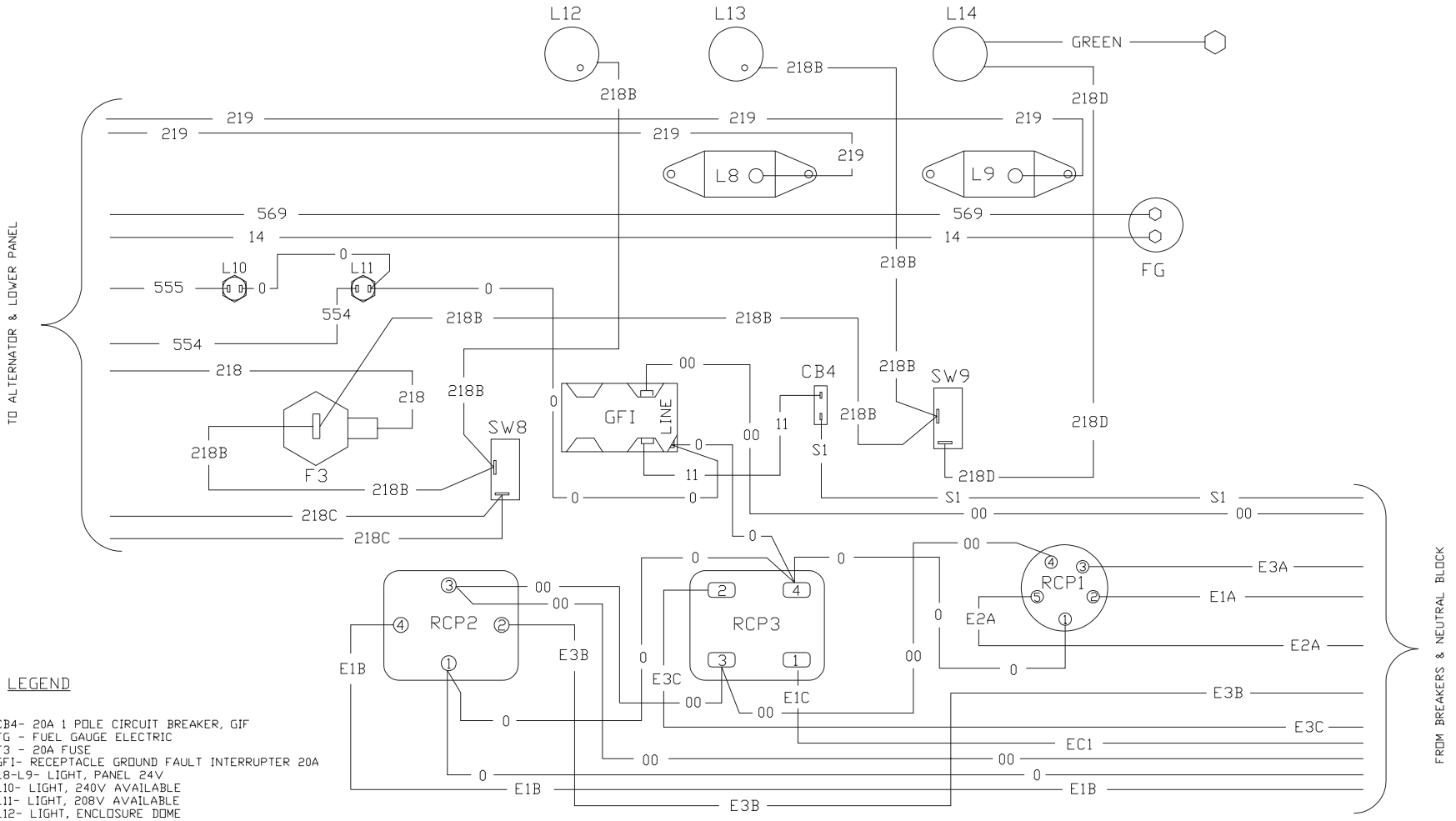


L1 - LIGHT EMERGENCY POWER - 24V LED
L2 - LIGHT UTILITY POWER - 24V LED
L3 - LIGHT ENGINE FAULT -24V LED
⊗ - SCREW TERMINAL


GENERATOR METER PANEL
0 0 0 0
209
210
211
220
15 AMP FUSE
+24VDC
0 147A 148A 211
GRD EMER. UTIL. ENG.
POW. POW. FAULT
MODEL 8848
ANNUNCIATOR
6
5
4
N.C.
N.O.
C.
TO TERMINAL 148A
TO TERMINAL 147A
TO TERMINAL 210
GTS 2
GTS 1
GTS 2 = 105–420 AMP, 250 VOLTS SERIES
GTS TRANSFER SWITCH (AUXILIARY CONTACTS)
GTS 1 = 600 VOLTS SERIES GTS TRANSFER SWITCH
(AUXILIARY CONTACTS)

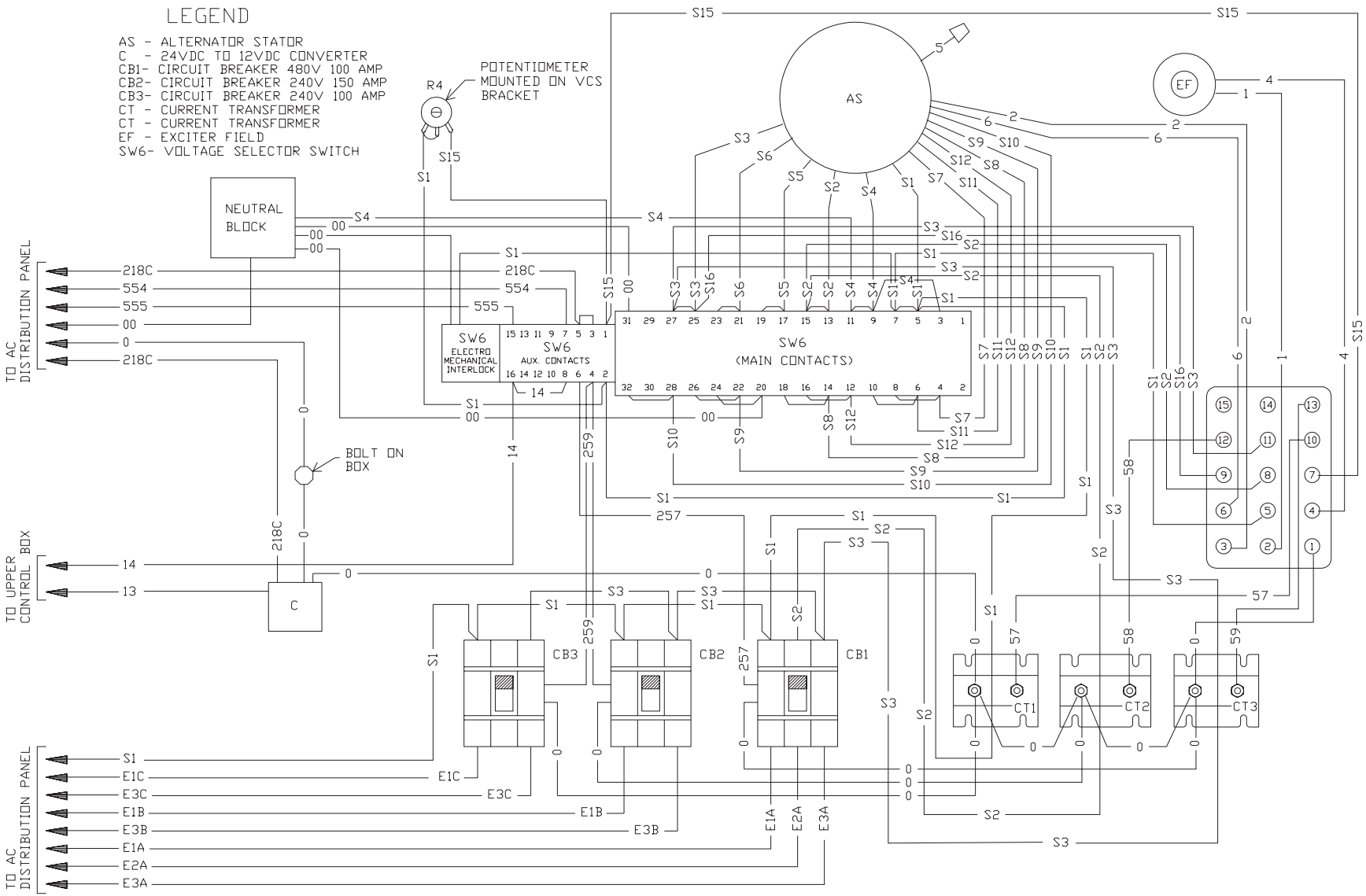

AD - MAXIMUM DEMAND AMMETER
AM - AC AMMETER
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
CR - CONTROL RELAY- ENGINE RUN
CRA - AC CONTROL RELAY, ENGINE RUN
D1 - DIODE- 600 VOLTS, 12 AMP
F1 - FUSE- 30 AMPERE
F2 - FUSE- 14 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD- DC CNTRL/CRANK-LATCH
PCB2 - CIRCUIT BOARD, ENGINE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER
R2 - RESISTOR- FIELD BOOST
SA - SUPPRESSION ASSEMBLY
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/STOP
SW3 - SWITCH- PREHEAT
SW5 - SWITCH- PHASE SELECTOR
SW7 - VOLTAGE REGULATOR SELECTOR SWITCH
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR1 - AC VOLTAGE REGULATOR #1
VR2 - AC VOLTAGE REGULATOR #2
VR1
VR2
SA
TS
INSULATED BARREL LUG
SW7
CB1
CRA
CR
R1
R2
PHR
D1
F1
F2
SW1
SW2
SW3
SW5
HM
HZ
AD
BCA
AM
L7
VM
G1
G2
AMMETER LEADS
TO LOWER PANEL
BLK
WHT
TO ENGINE
AR (OPTIONAL)
PCB1
PCB2

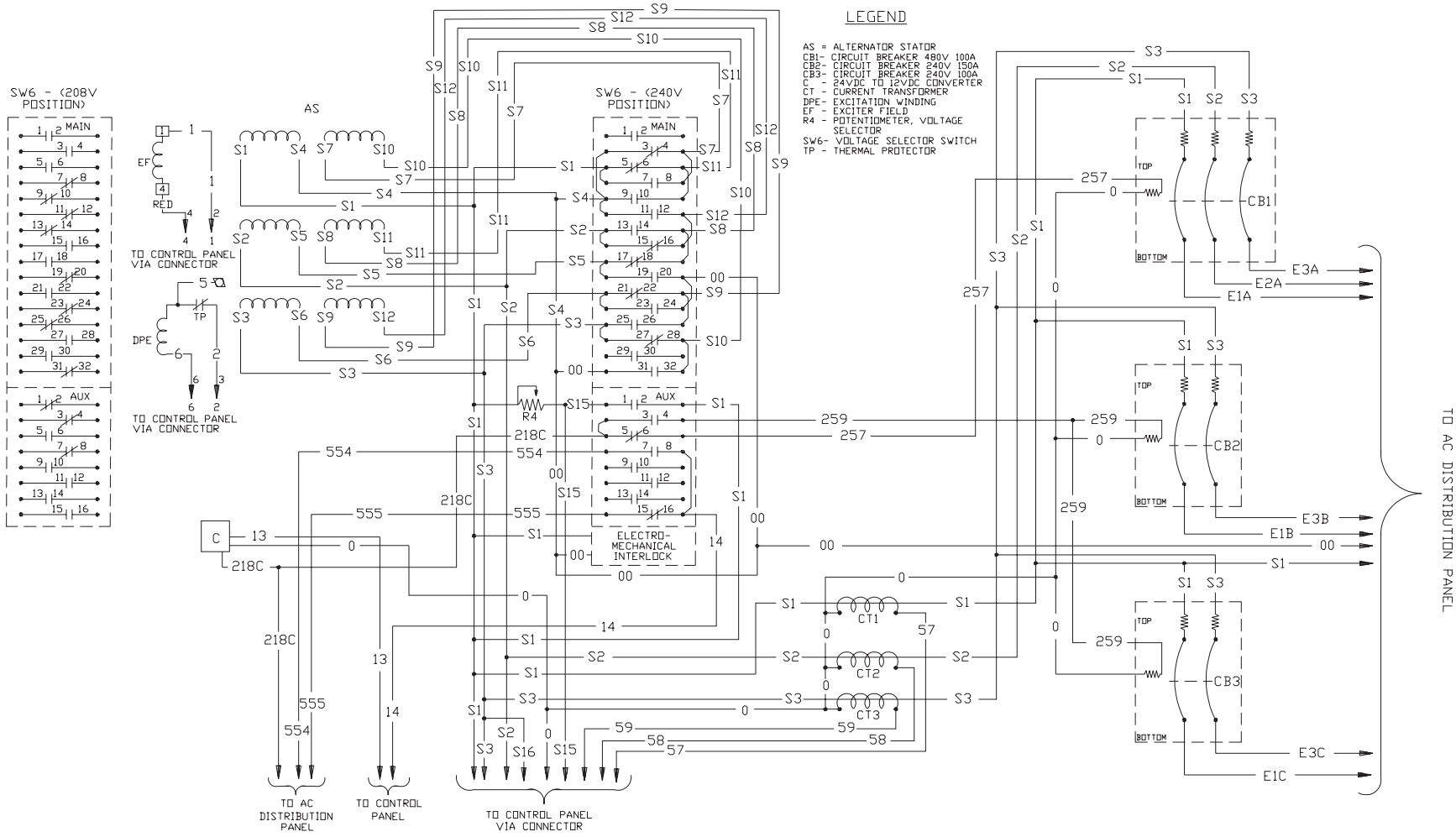

PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 - 3 | 0 | X | X | X
2 - 7 | X | 0 | X | X
2 - 11 | X | X | 0 | X
12 - 3 | X | 0 | 0 | 0
12 - 7 | 0 | X | 0 | 0
12 - 11 | 0 | 0 | X | 0
15 - 14 | X | 0 | 0 | 0
15 - 18 | 0 | X | X | 0
19 - 16 | X | X | 0 | 0
19 - 14 | 0 | 0 | X | 0
X INDICATES CLOSED
AUTO/MANUAL/OFF SWITCH
SHOWN IN OFF POSITION
CONTACTS | POSITION AUTO | MAN. | OFF
1 - 2 | | | X
2 - 3 | X | X |
4 - 5 | | X | X
5 - 6 | X | | |
7 - 8 | | X | X
8 - 9 | X | | |
X INDICATES CLOSED
SW5
SHOWN IN OFF POSITION
TO LOWER PANEL
SW1
SW2
SW3
SW4
SW7
F1
F2
TEST/RESET
DISPLAY PCB
PCB
VR1
VR2
CB1
D1
R1
R3
HZ
PHR
CR
CRA
SA
BCA
AR
OPTIONAL
TO ENGINE
BLK
WHT
VOLTAGE REGULATOR SELECTOR SWITCH
CONTACTS | POSITION VR1 | VR2
A1 - A2 | X |
B1 - B2 | X |
A3 - A4 | | X
B3 - B4 | | X
C1 - C2 | X |
D1 - D2 | X |
C3 - C4 | | X
D3 - D4 | | X
X INDICATES CLOSED
LEGEND
A - A-C AMMETER
AD - MAXIMUM DEMAND AMMETER
BAC- BATTERY CHARGE AMMETER
CBI- CIRCUIT BREAKER, FIELD BOOST
CR - CONTROL RELAY ENGINE RUN
CRA- A-C CONTROL RELAY, ENGINE RUN
D1 - DIODE 600V, 12A
F1 - FUSE 30 AMPERE
F2 - FUSE 14 AMPERE
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT RPM SENSOR LOSS
L2 - LIGHT OVERSPEED
L3 - LIGHT OVERCRANK
L4 - LIGHT HIGH COOLANT TEMPERATURE
L5 - LIGHT LOW OIL PRESSURE
L6 - LIGHT NOT IN AUTOMATIC START MODE
L7 - PANEL LIGHT
PCB- CIRCUIT BOARD D-C CNTRL/CRANK LATCH
PHR- PREHEAT RELAY
R1 - POTENTIOMETER VOLTAGE ADJUST
R3 - RESISTOR FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW3- SWITCH PREHEAT
SW4- SWITCH TEXT/RESET
SW5- SWITCH PHASE SELECTOR
SW7- VOLTAGE REGULATOR SELECTOR SWITCH
V - A-C VOLTMETER
VR1- A-C VOLTAGE REGULATOR #1
VR2- A-C VOLTAGE REGULATOR #2



LEGEND

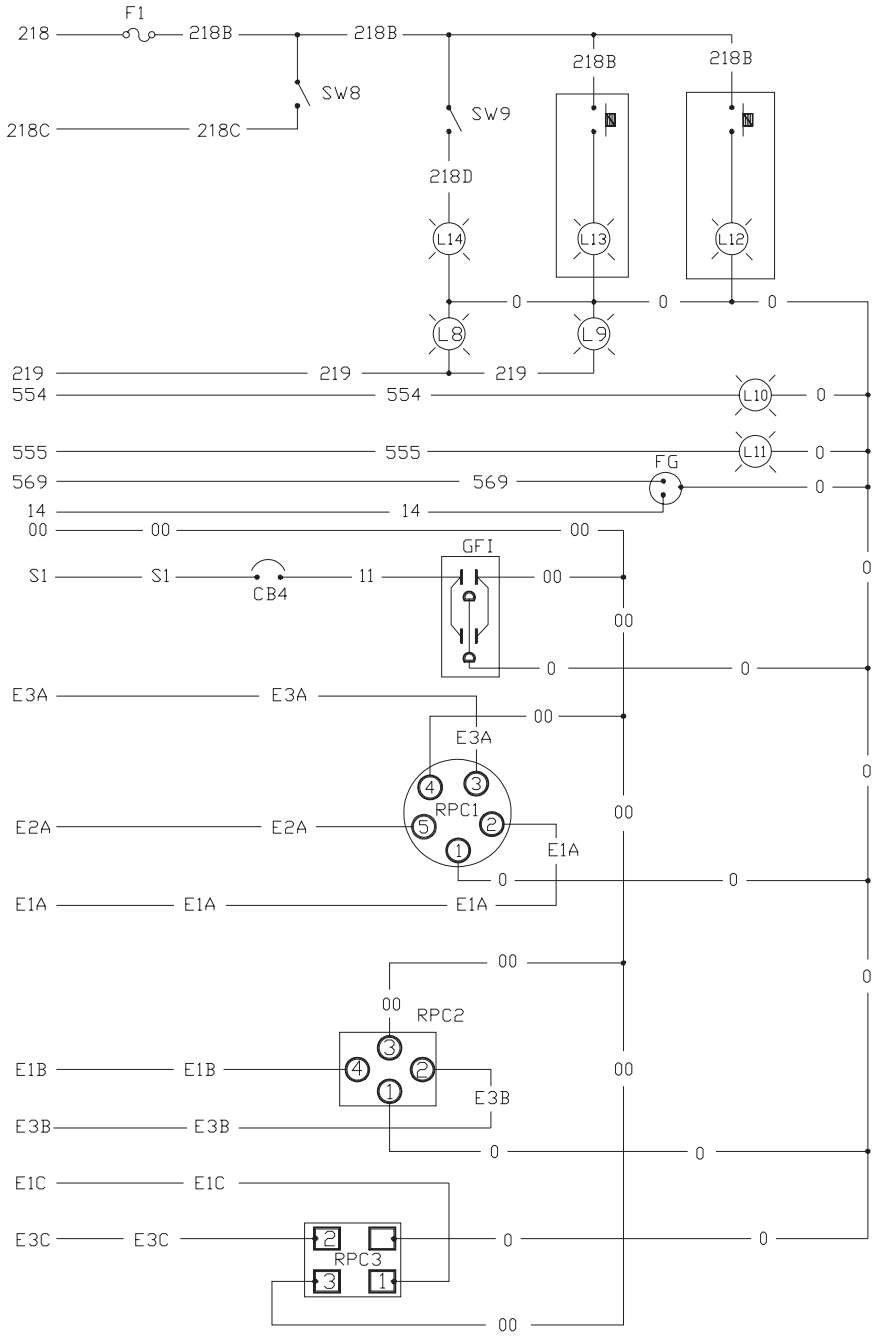
CB4- 20A 1 POLE CIRCUIT BREAKER, GIF
FG - FUEL GAUGE ELECTRIC
F3 - 20A FUSE
GFI- RECEPTACLE GROUND FAULT INTERRUPTER 20A
L8-L9- LIGHT, PANEL 24V
L10- LIGHT, 240V AVAILABLE
L11- LIGHT, 208V AVAILABLE
L12- LIGHT, ENCLOSURE DOME
L13- LIGHT, ENCLOSURE DOME
L14- LIGHT, HAZARD
RCP1- RECEPTACLE 100A 5 WIRE
RCP2- RECEPTACLE 150A 4 WIRE
RCP3- RECEPTACLE 100A 4 WIRE
SW8- SWITCH, CONTROL POWER
SW9- SWITCH, HAZARD LIGHT

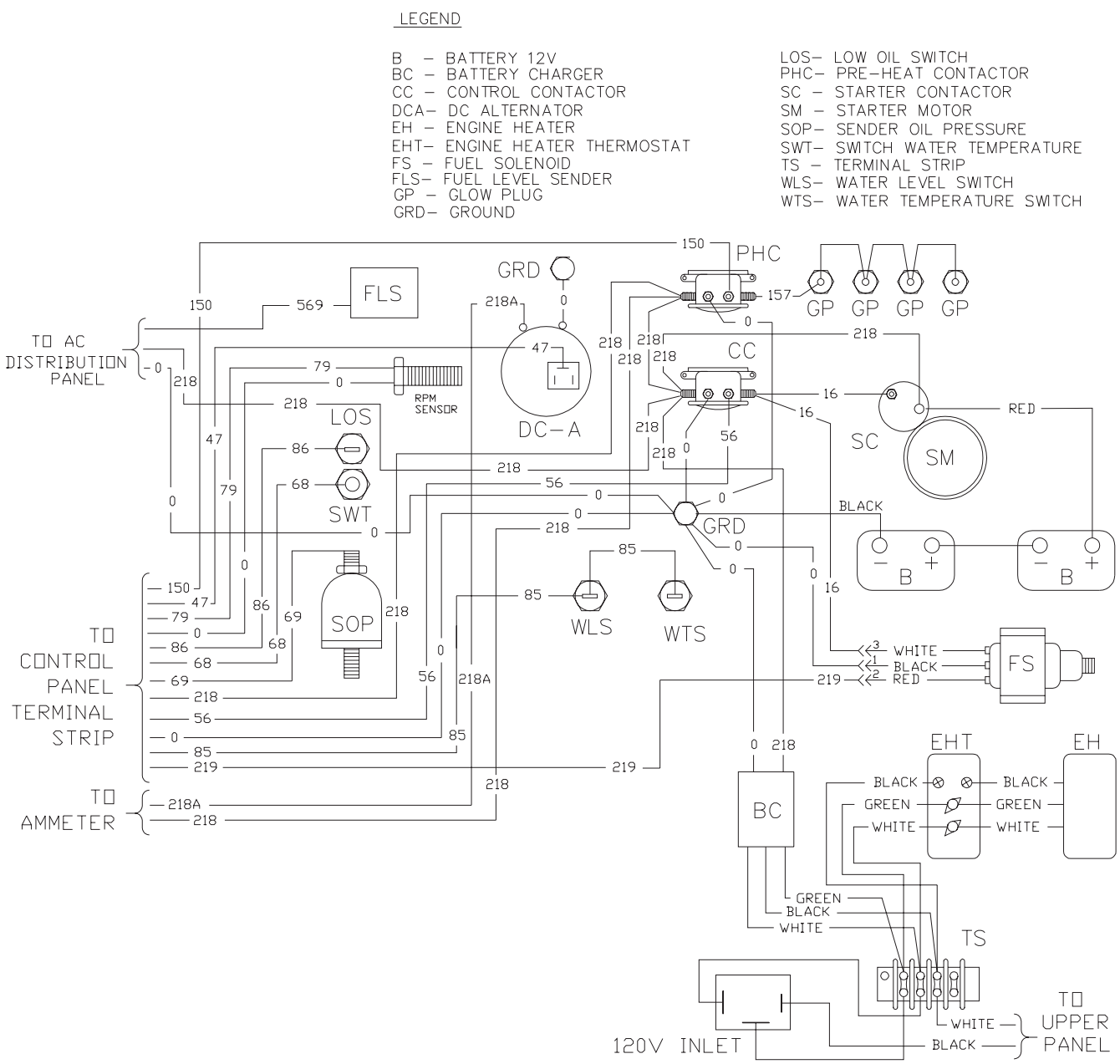

LEGEND
AS - ALTERNATOR STATOR
C - 24VDC TO 12VDC CONVERTER
CB1- CIRCUIT BREAKER 480V 100 AMP
CB2- CIRCUIT BREAKER 240V 150 AMP
CB3- CIRCUIT BREAKER 240V 100 AMP
CT - CURRENT TRANSFORMER
CT - CURRENT TRANSFORMER
EF - EXCITER FIELD
SW6- VOLTAGE SELECTOR SWITCH
POTENTIOMETER MOUNTED ON VCS BRACKET
R4
AS
EF
NEUTRAL BLOCK
TO AC DISTRIBUTION PANEL
218C
554
555
00
0
BOLT ON BOX
SW6 ELECTRO MECHANICAL INTERLOCK
SW6 AUX. CONTACTS
SW6 (MAIN CONTACTS)
TO UPPER CONTROL BOX
14
13
C
CB3
CB2
CB1
CT1
CT2
CT3
TO AC DISTRIBUTION PANEL
E1C
E3C
E1B
E3B
E1A
E2A
E3A

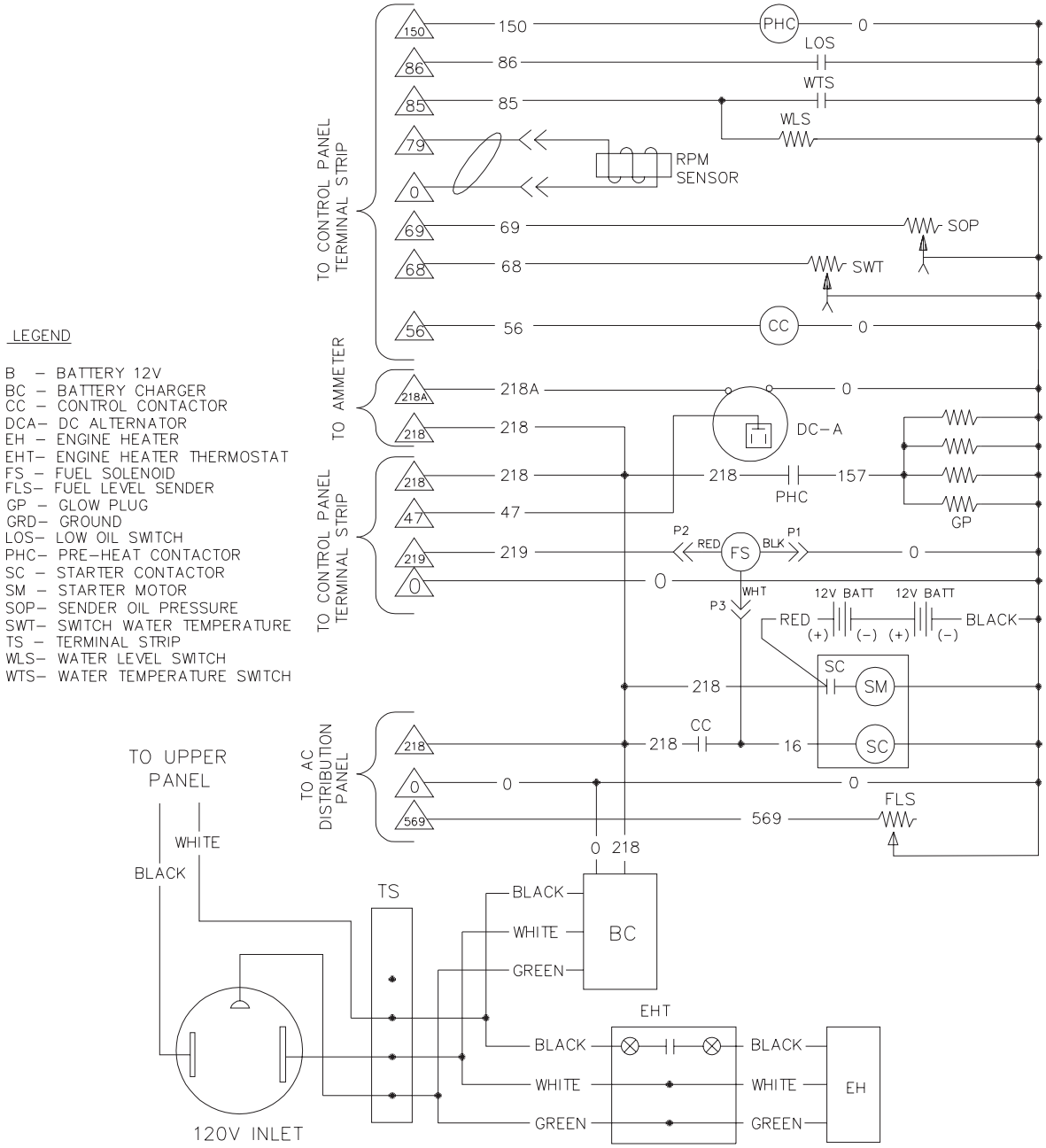

LEGEND
AS = ALTERNATOR STATOR
CB1- CIRCUIT BREAKER 480V 100A
CB2- CIRCUIT BREAKER 240V 150A
CB3- CIRCUIT BREAKER 240V 100A
C - 24VDC TO 12VDC CONVERTER
CT - CURRENT TRANSFORMER
DPE- EXCITATION WINDING
EF - EXCITER FIELD
R4 - POTENTIOMETER, VOLTAGE SELECTOR
SW6- VOLTAGE SELECTOR SWITCH
TP - THERMAL PROTECTOR
SW6 - (208V POSITION)
SW6 - (240V POSITION)
MAIN
AUX
AS
EF
RED
DPE
TP
R4
C
CT1
CT2
CT3
CB1
CB2
CB3
TOP
BOTTOM
ELECTRO-MECHANICAL INTERLOCK
TO CONTROL PANEL VIA CONNECTOR
TO AC DISTRIBUTION PANEL
TO CONTROL PANEL
TO CONTROL PANEL VIA CONNECTOR
TO AC DISTRIBUTION PANEL
E1A
E2A
E3A
E1B
E3B
E1C
E3C

LEGEND

CB4- 20A 1 POLE CIRCUIT BREAKER, GFI
FG - FUEL GAUGE ELECTRIC
F1 - 30A FUSE
GFI- RECEPTACLE GROUND FAULT INTERRUPTER 15A
L8-L9- LIGHT PANEL 24V
L10- LIGHT, 240V AVAILABLE
L11- LIGHT, 208V AVAILABLE
L12- LIGHT, ENCLOSURE DOME 24V
L13- LIGHT, ENCLOSURE DOME 24V
L14- LIGHT, HAZARD 24V
RCP1- RECEPTACLE 100A 5 WIRE
RCP2- RECEPTACLE 150A 4 WIRE
RCP3- RECEPTACLE 100A 4 WIRE
SW8- SWITCH, CONTROL POWER
SW9- SWITCH, HAZARD LIGHT

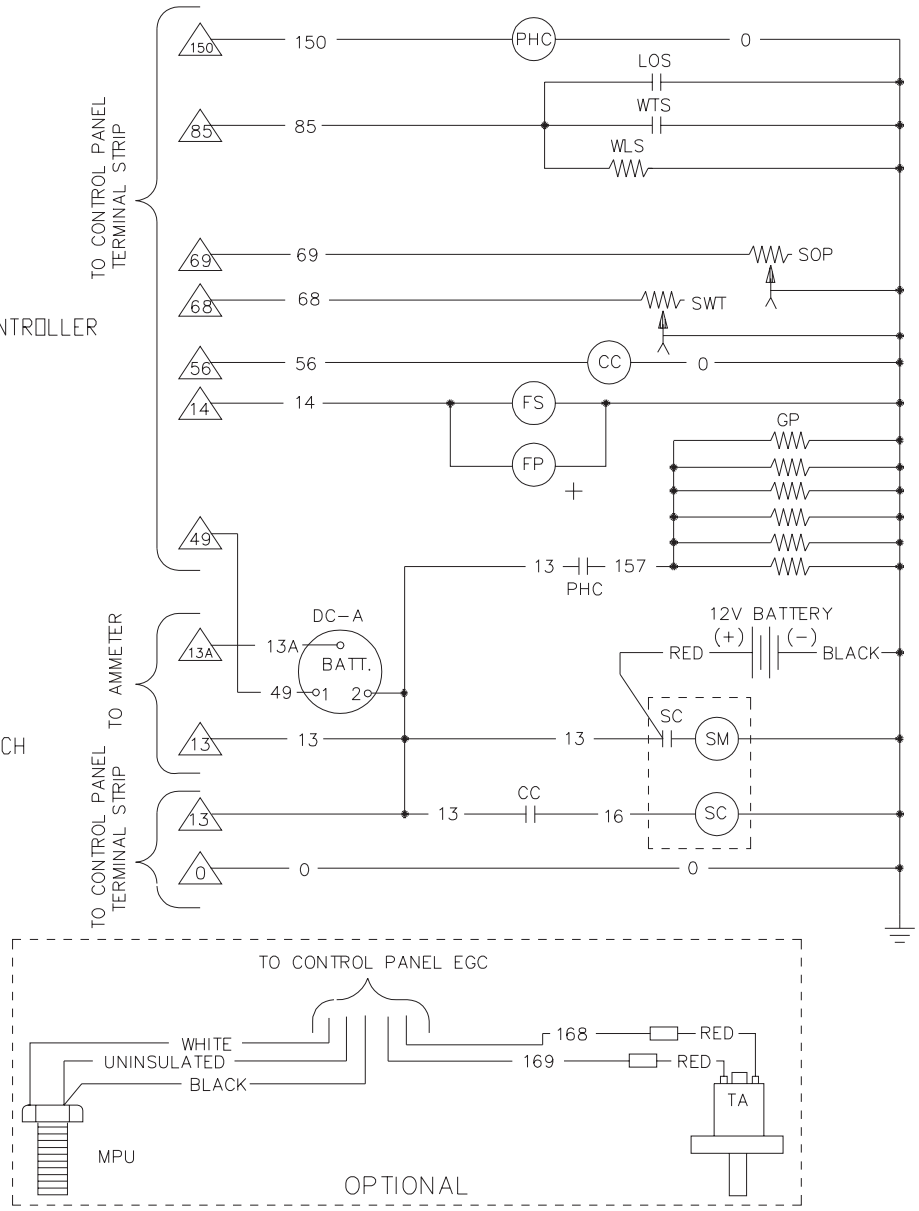


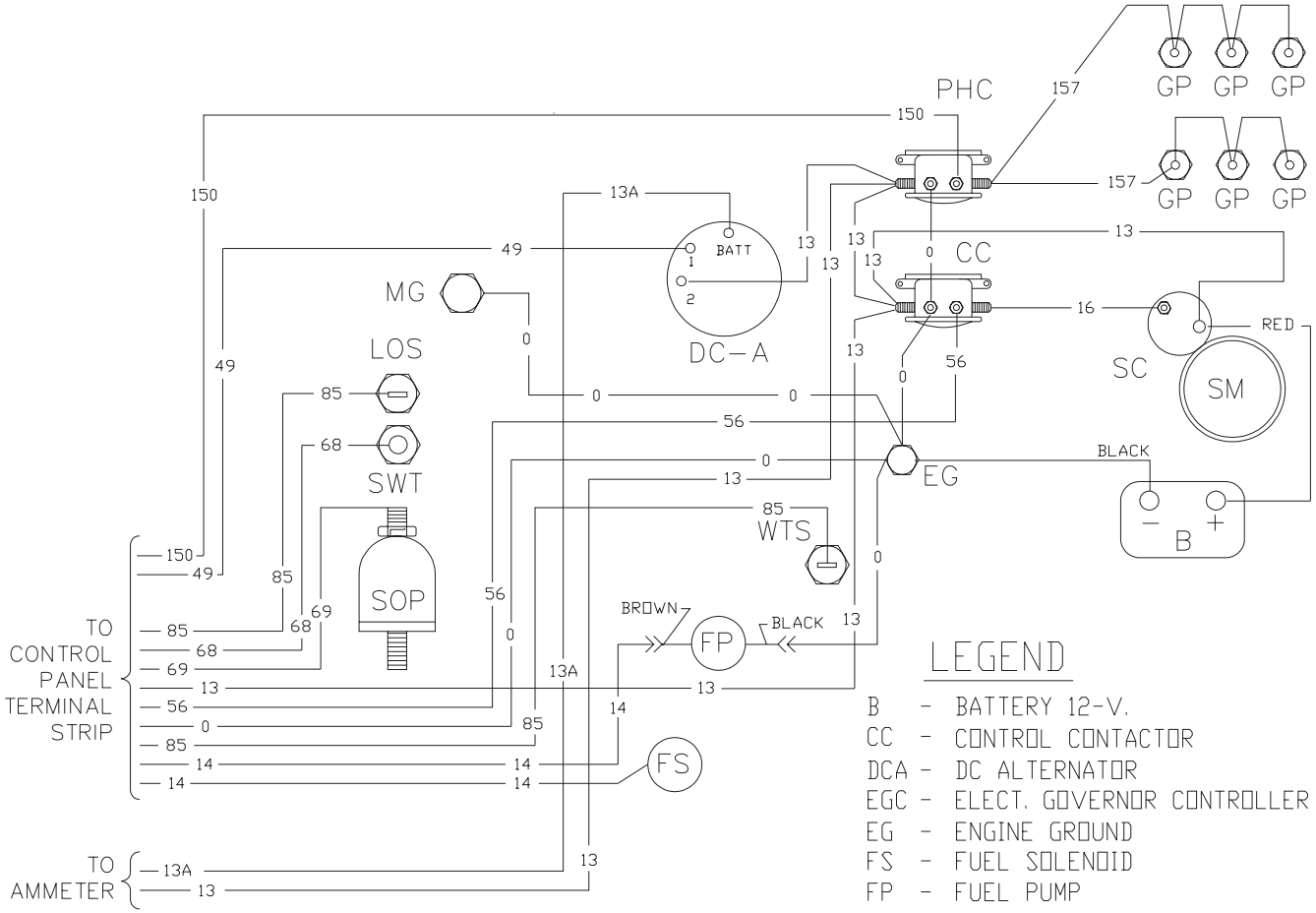

LEGEND
B – BATTERY 12V
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
FLS– FUEL LEVEL SENDER
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER OIL PRESSURE
SWT– SWITCH WATER TEMPERATURE
TS – TERMINAL STRIP
WLS– WATER LEVEL SWITCH
WTS– WATER TEMPERATURE SWITCH
PHC
GRD
FLS
GP GP GP GP
TO AC DISTRIBUTION PANEL
RPM SENSOR
DC–A
CC
LOS
SWT
SC
SM
RED
BLACK
GRD
B
B
SOP
WLS
WTS
FS
WHITE
BLACK
RED
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
BC
EHT
EH
BLACK
GREEN
WHITE
TS
120V INLET
TO UPPER PANEL

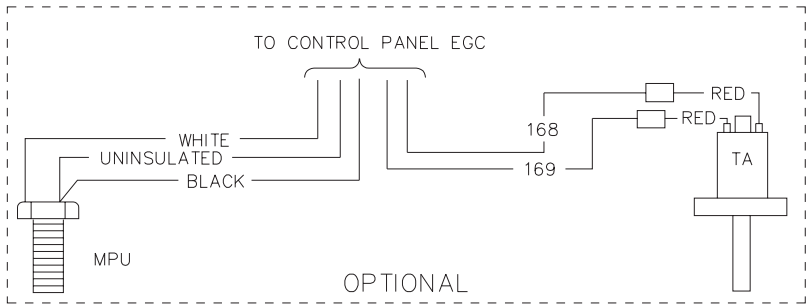

LEGEND
B – BATTERY 12V
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
FLS– FUEL LEVEL SENDER
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER OIL PRESSURE
SWT– SWITCH WATER TEMPERATURE
TS – TERMINAL STRIP
WLS– WATER LEVEL SWITCH
WTS– WATER TEMPERATURE SWITCH
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
TO CONTROL PANEL TERMINAL STRIP
TO AC DISTRIBUTION PANEL
150
86
85
79
0
69
68
56
218A
218
47
219
569
PHC
LOS
WTS
WLS
RPM SENSOR
SOP
SWT
CC
DC–A
157
GP
P2
RED
FS
BLK
P1
WHT
P3
12V BATT
RED
BLACK
SC
SM
16
FLS
TO UPPER PANEL
WHITE
BLACK
TS
BC
GREEN
EHT
EH
120V INLET

LEGEND

CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EGC - ELECTRONIC GOVERNOR CONTROLLER
FS - FUEL SOLENOID
FP - FUEL PUMP
GP - GLOW PLUG
LOS - LOW OIL SWITCH
MPU - MAGNETIC PICKUP
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TA - THROTTLE ACTUATOR
WLS - WATER LEVEL SWITCH
WTS - WATER TEMPERATURE SWITCH

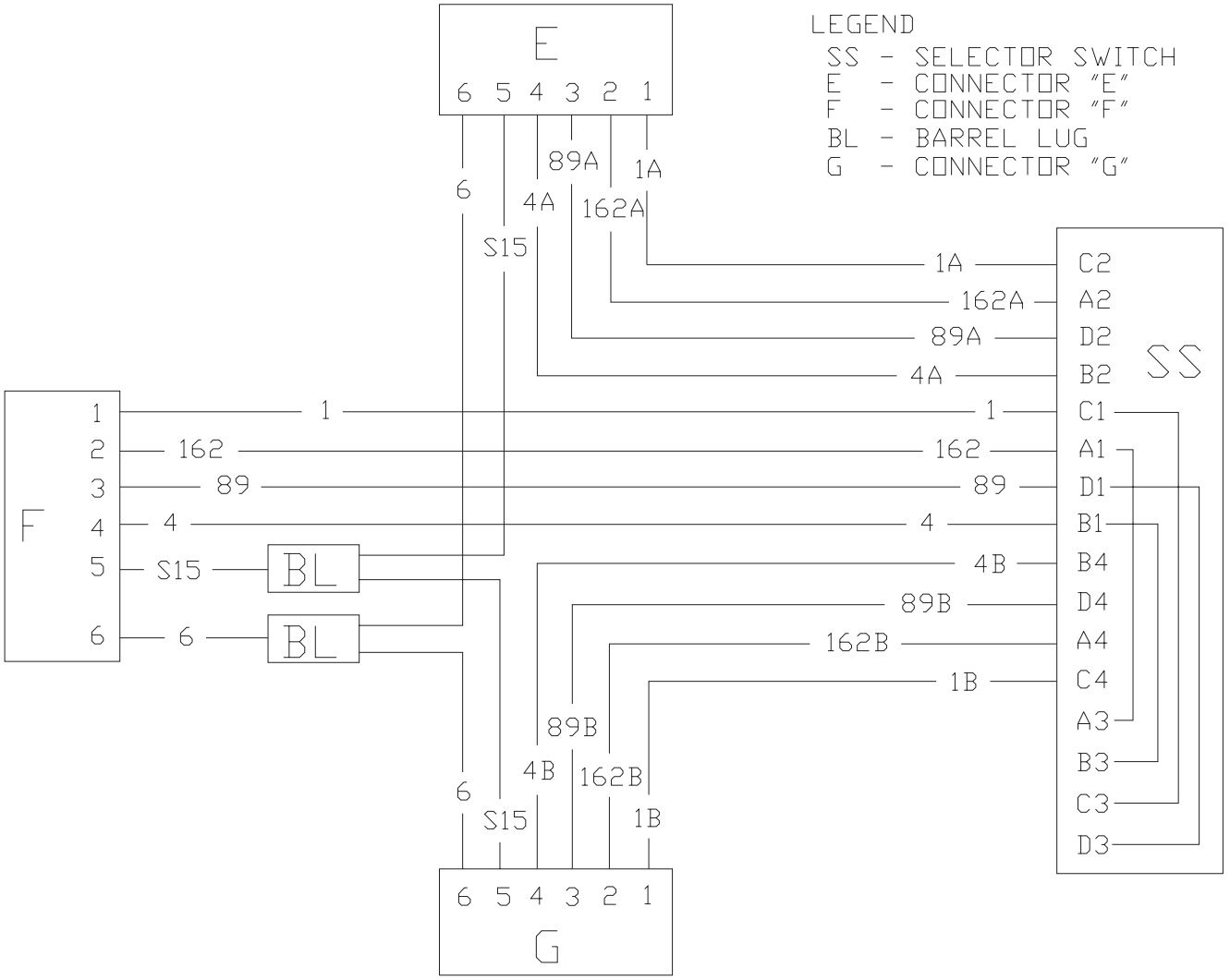


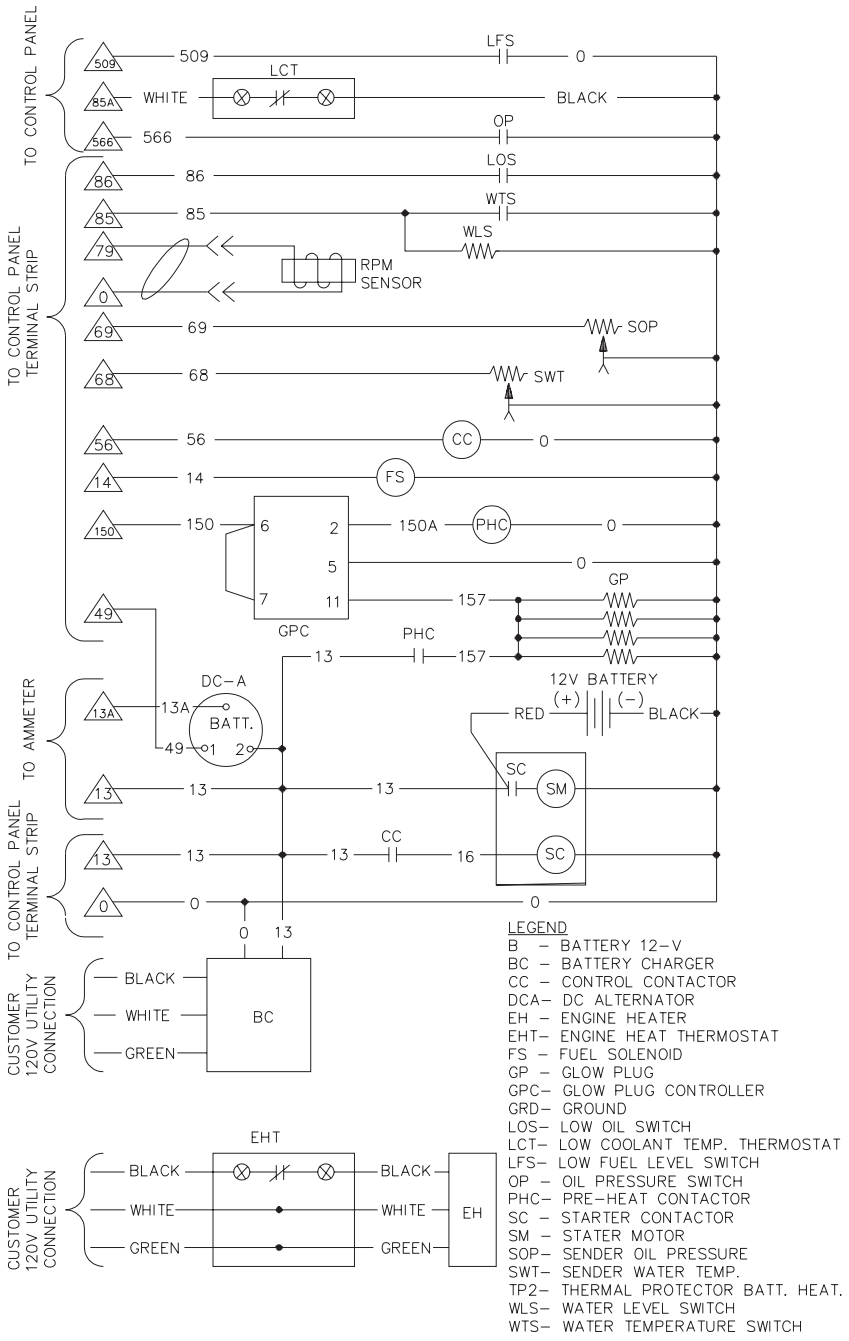


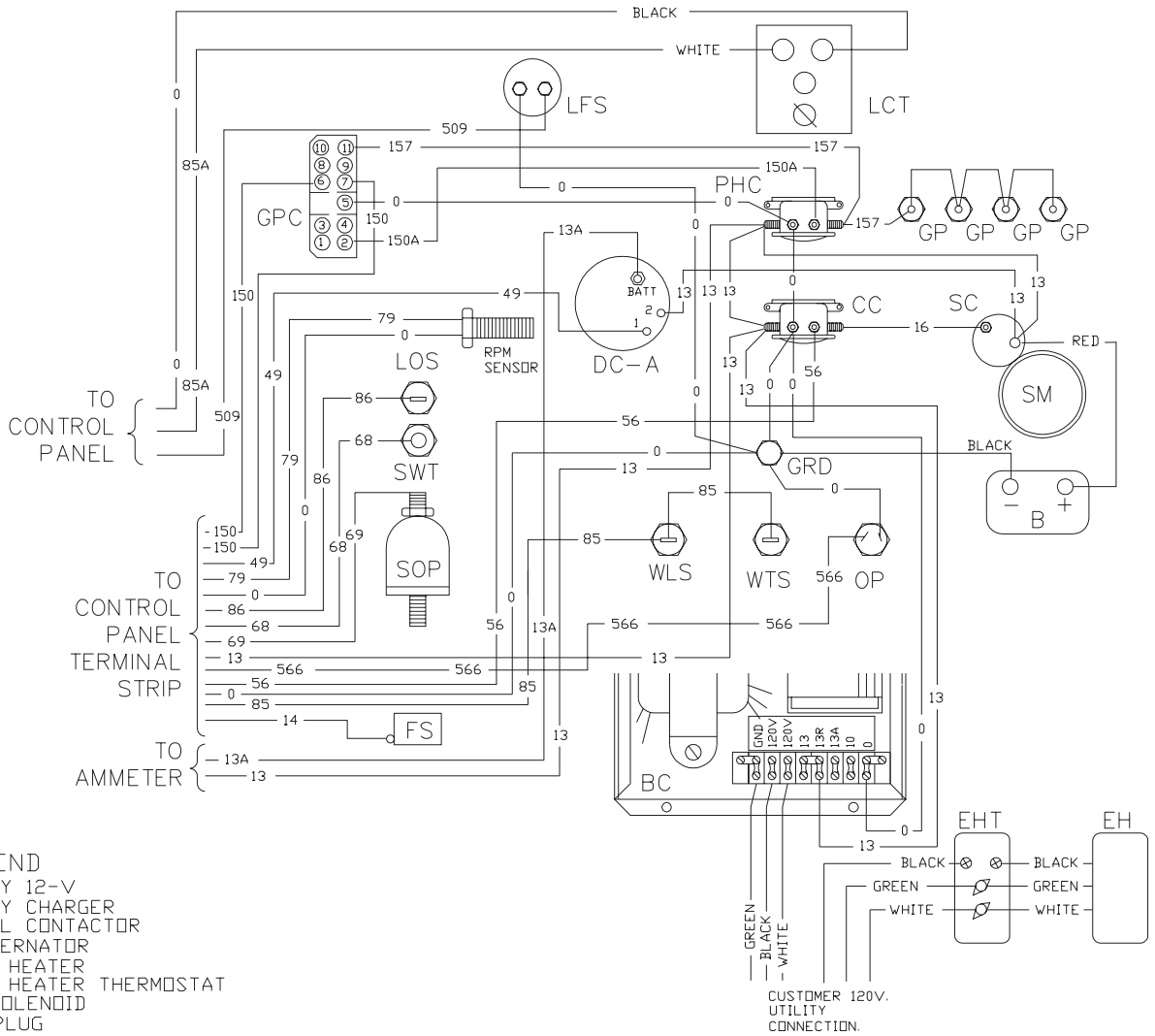


LEGEND

B - BATTERY 12-V.
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EGC - ELECT. GOVERNOR CONTROLLER
EG - ENGINE GROUND
FS - FUEL SOLENOID
FP - FUEL PUMP
GP - GLOW PLUG
LOS - LOW OIL SWITCH
MPU - MAGNETIC PICKUP
MG - MANIFOLD GROUND
PHC - PRE-HEAT CONTACTOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
TA - THROTTLE ACTUATOR
WTS - WATER TEMPERATURE SWITCH


E
6 5 4 3 2 1
LEGEND
SS - SELECTOR SWITCH
E - CONNECTOR "E"
F - CONNECTOR "F"
BL - BARREL LUG
G - CONNECTOR "G"
89A
1A
6
4A
162A
S15
1A
162A
89A
4A
C2
A2
D2
B2
SS
C1
A1
D1
B1
B4
D4
A4
C4
A3
B3
C3
D3
F
1
2
3
4
5
6
1
162
89
4
S15
6
BL
BL
1
162
89
4
4B
89B
162B
1B
89B
4B
162B
6
S15
1B
6 5 4 3 2 1
G

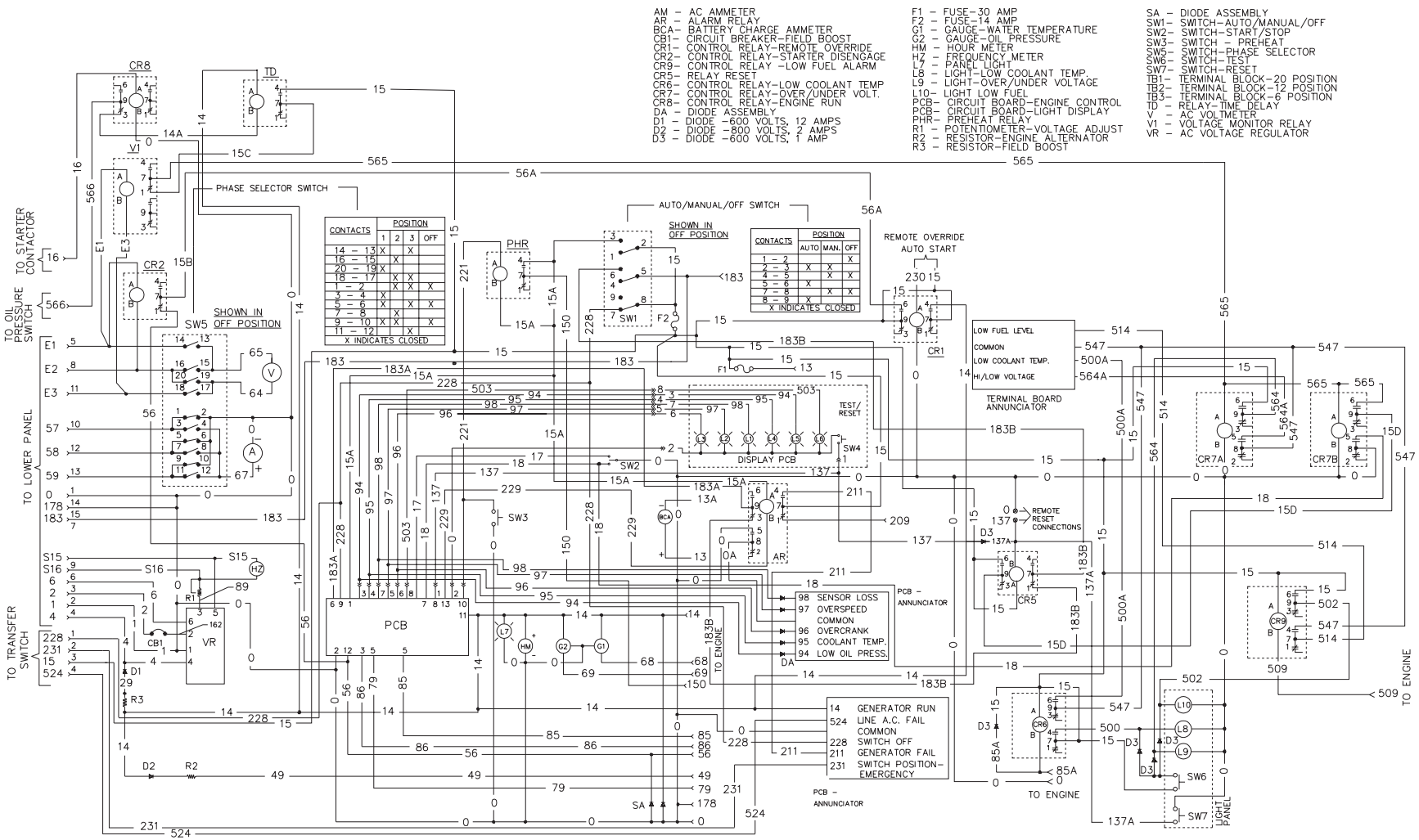

TO CONTROL PANEL
TERMINAL STRIP
509
LFS
0
LCT
WHITE
85A
BLACK
566
OP
86
LOS
85
WTS
WLS
79
RPM
SENSOR
0
69
SOP
68
SWT
56
CC
14
FS
150
6
2
150A
PHC
5
7
11
157
GP
49
GPC
13
PHC
157
TO AMMETER
DC–A
13A
BATT.
49
1
2
12V BATTERY
(+)
(–)
RED
BLACK
SC
SM
CC
16
TO CONTROL PANEL
TERMINAL STRIP
CUSTOMER
120V UTILITY
CONNECTION
BLACK
WHITE
GREEN
BC
EHT
EH
LEGEND
B – BATTERY 12–V
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEAT THERMOSTAT
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC– GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
LCT– LOW COOLANT TEMP. THERMOSTAT
LFS– LOW FUEL LEVEL SWITCH
OP – OIL PRESSURE SWITCH
PHC– PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STATER MOTOR
SOP– SENDER OIL PRESSURE
SWT– SENDER WATER TEMP.
TP2– THERMAL PROTECTOR BATT. HEAT.
WLS– WATER LEVEL SWITCH
WTS– WATER TEMPERATURE SWITCH

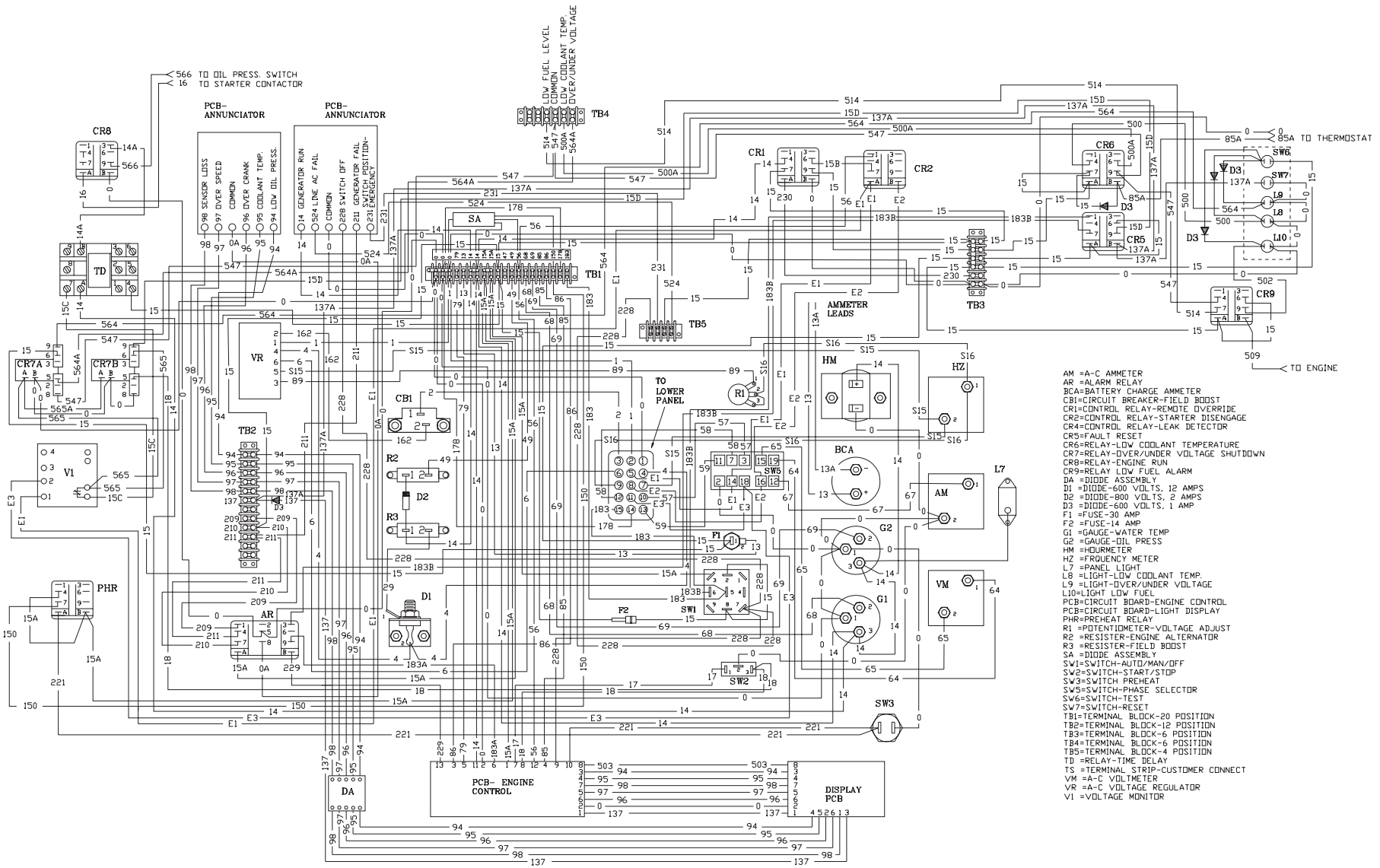


LEGEND

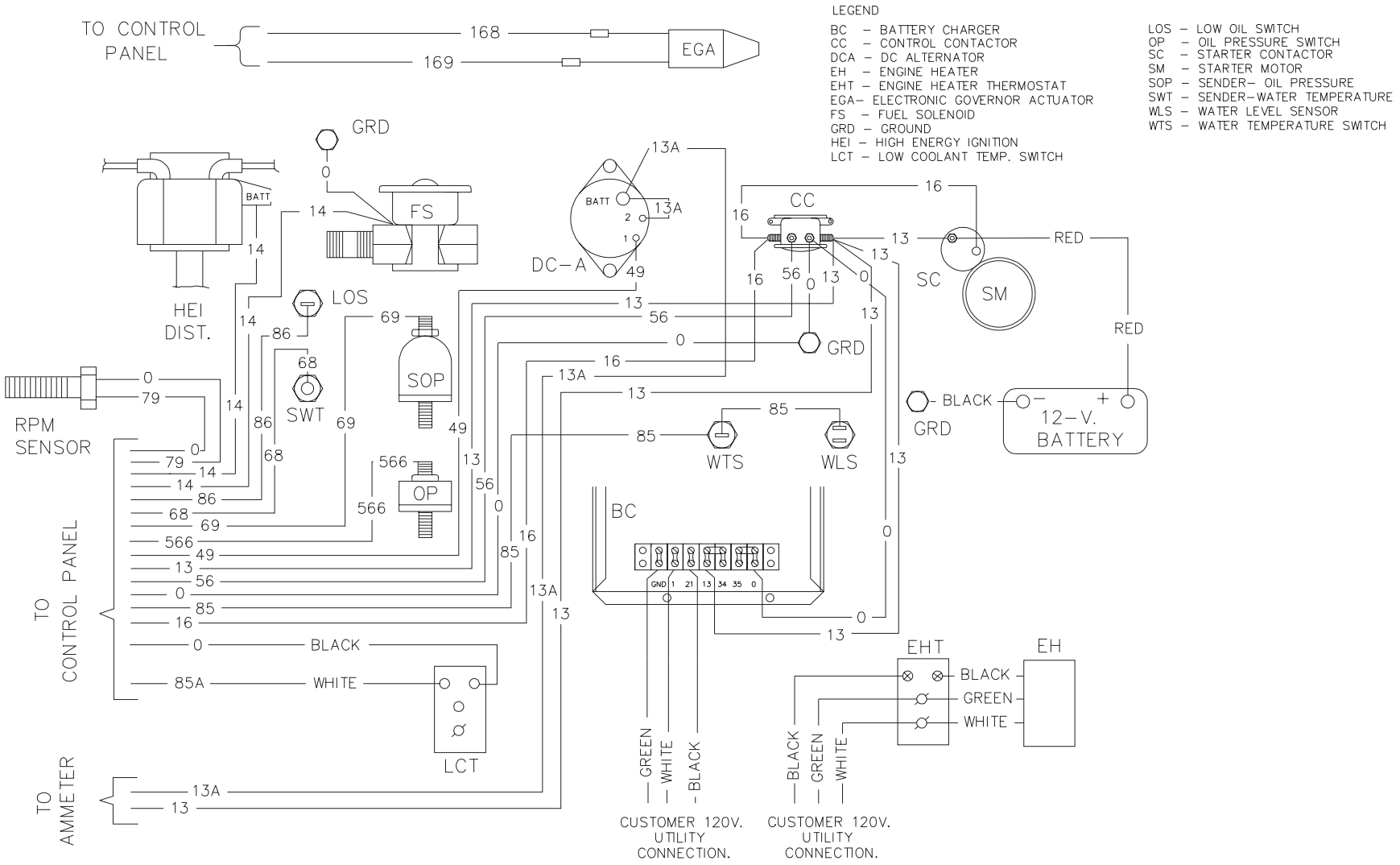
B - BATTERY 12-V
BC - BATTERY CHARGER
CC - CONTROL CONTACTOR
DCA- DC ALTERNATOR
EH - ENGINE HEATER
EHT- ENGINE HEATER THERMOSTAT
FS - FUEL SOLENOID
GP - GLOW PLUG
GPC- GLOW PLUG CONTROLLER
GRD- GROUND
LCT- LOW COOLANT TEMP. THERMOSTAT
LFS- LOW FUEL SWITCH
LOS- LOW OIL SWITCH
PHC- PRE-HEAT CONTACTOR
OP - OIL PRESSURE SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
TP2- THERMAL PROCTECTOR BATTERY HEATER

SWT- SENDER WATER TEMP.
SOP- SENDER OIL PRESSURE
WSL- WATER TEMP. SWITCH
WTS- WATER TEMP. SWITCH

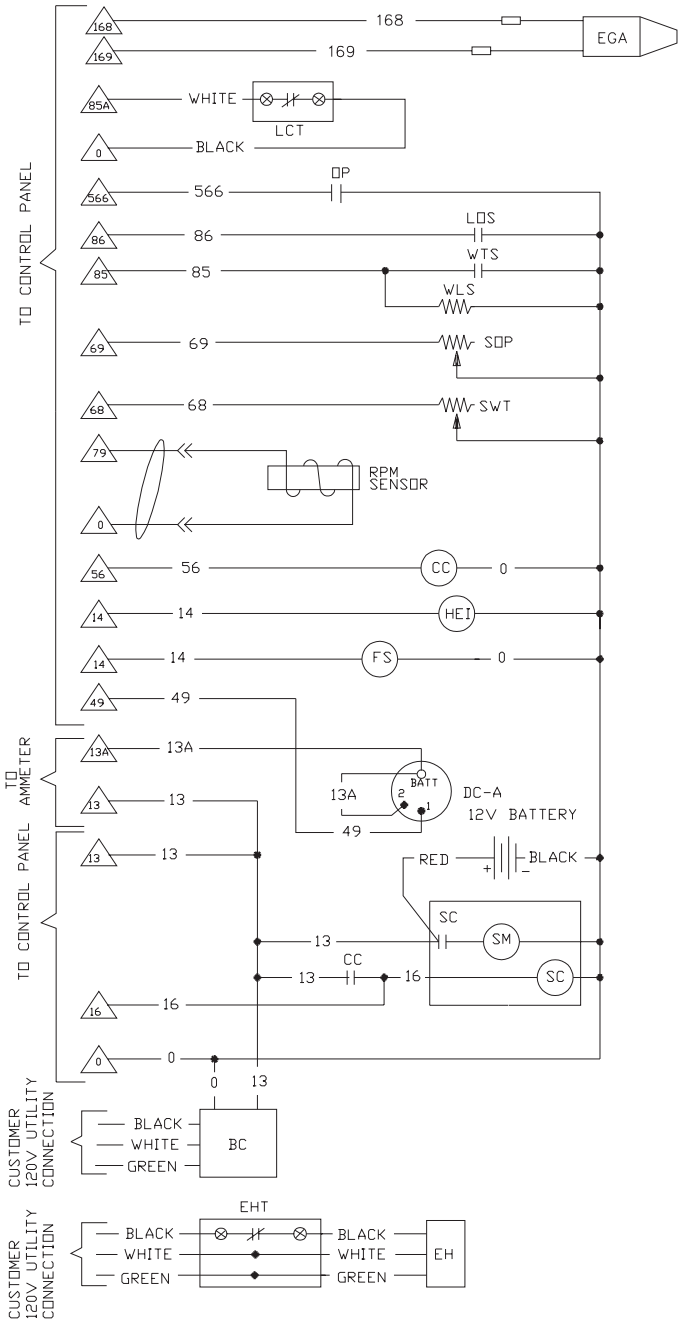

AM – AC AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER–FIELD BOOST
CR1– CONTROL RELAY–REMOTE OVERRIDE
CR2– CONTROL RELAY–STARTER DISENGAGE
CR9– CONTROL RELAY –LOW FUEL ALARM
CR5– RELAY RESET
CR6– CONTROL RELAY–LOW COOLANT TEMP
CR7– CONTROL RELAY–OVER/UNDER VOLT.
CR8– CONTROL RELAY–ENGINE RUN
DA – DIODE ASSEMBLY
D1 – DIODE –600 VOLTS, 12 AMPS
D2 – DIODE –800 VOLTS, 2 AMPS
D3 – DIODE –600 VOLTS, 1 AMP
F1 – FUSE–30 AMP
F2 – FUSE–14 AMP
G1 – GAUGE–WATER TEMPERATURE
G2 – GAUGE–OIL PRESSURE
HM – HOUR METER
HZ – FREQUENCY METER
L7 – PANEL LIGHT
L8 – LIGHT–LOW COOLANT TEMP.
L9 – LIGHT–OVER/UNDER VOLTAGE
L10– LIGHT LOW FUEL
PCB– CIRCUIT BOARD–ENGINE CONTROL
PCB– CIRCUIT BOARD–LIGHT DISPLAY
PHR– PREHEAT RELAY
R1 – POTENTIOMETER–VOLTAGE ADJUST
R2 – RESISTOR–ENGINE ALTERNATOR
R3 – RESISTOR–FIELD BOOST
SA – DIODE ASSEMBLY
SW1– SWITCH–AUTO/MANUAL/OFF
SW2– SWITCH–START/STOP
SW3– SWITCH – PREHEAT
SW5– SWITCH–PHASE SELECTOR
SW6– SWITCH–TEST
SW7– SWITCH–RESET
TB1– TERMINAL BLOCK–20 POSITION
TB2– TERMINAL BLOCK–12 POSITION
TB3– TERMINAL BLOCK–6 POSITION
TD – RELAY–TIME DELAY
V – AC VOLTMETER
V1 – VOLTAGE MONITOR RELAY
VR – AC VOLTAGE REGULATOR
CR8
TD
V1
PHASE SELECTOR SWITCH
CONTACTS
POSITION
1 2 3 OFF
X INDICATES CLOSED
SHOWN IN OFF POSITION
SW5
CR2
PHR
AUTO/MANUAL/OFF SWITCH
SW1
CONTACTS
POSITION
AUTO MAN. OFF
REMOTE OVERRIDE AUTO START
CR1
LOW FUEL LEVEL
COMMON
LOW COOLANT TEMP.
HI/LOW VOLTAGE
TERMINAL BOARD ANNUNCIATOR
TEST/ RESET
DISPLAY PCB
SW4
SW2
SW3
PCB
PCB – ANNUNCIATOR
98 SENSOR LOSS
97 OVERSPEED COMMON
96 OVERCRANK
95 COOLANT TEMP.
94 LOW OIL PRESS.
DA
REMOTE RESET CONNECTIONS
CR5
CR7A
CR7B
CR9
CR6
14 GENERATOR RUN
524 LINE A.C. FAIL COMMON
228 SWITCH OFF
211 GENERATOR FAIL
231 SWITCH POSITION–EMERGENCY
PCB – ANNUNCIATOR
TO ENGINE
SW6
SW7
LIGHT PANEL
TO STARTER CONTACTOR
TO OIL PRESSURE SWITCH
TO LOWER PANEL
TO TRANSFER SWITCH
VR
CB1
R1
R2
R3
D1
D2
D3
SA

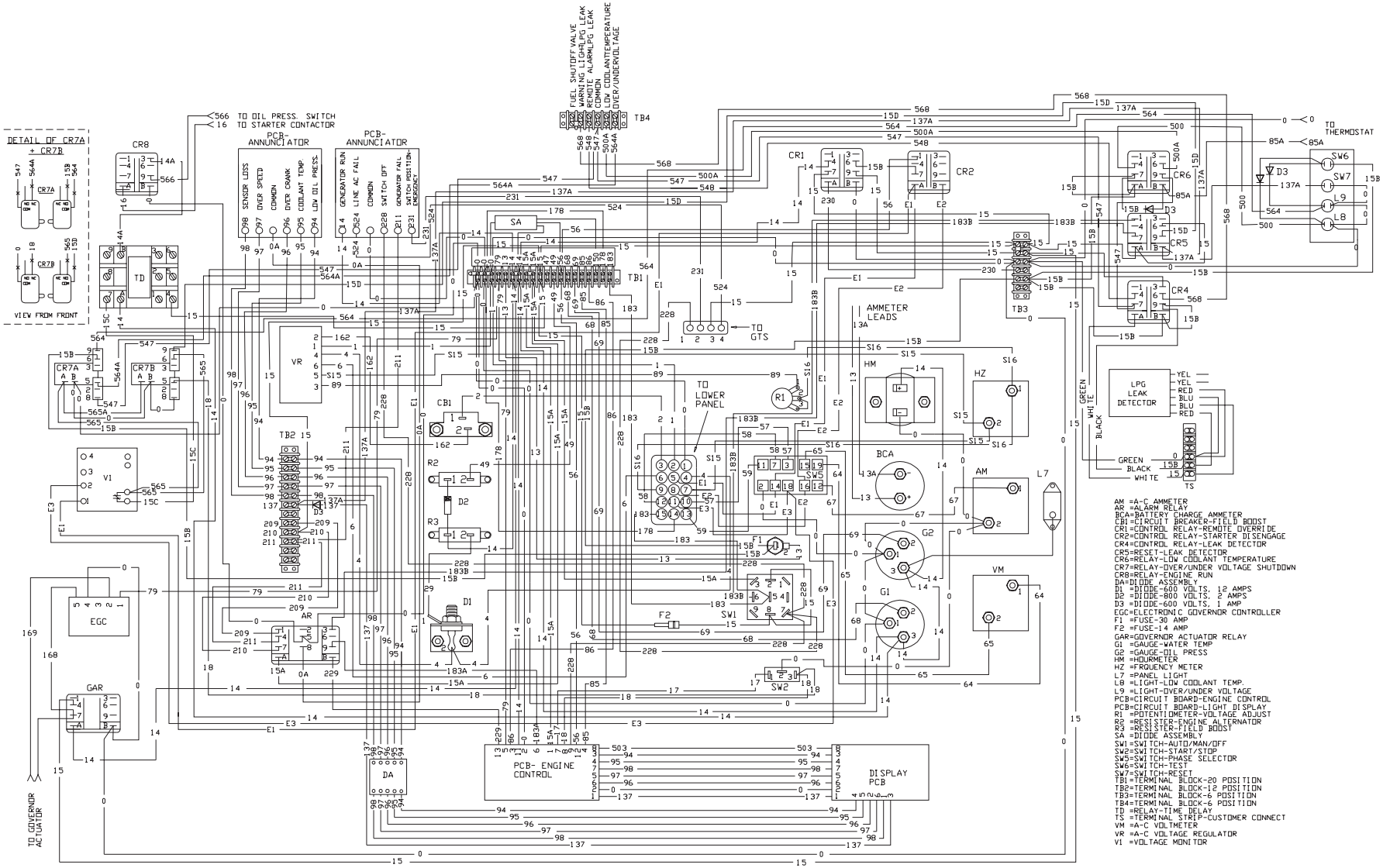


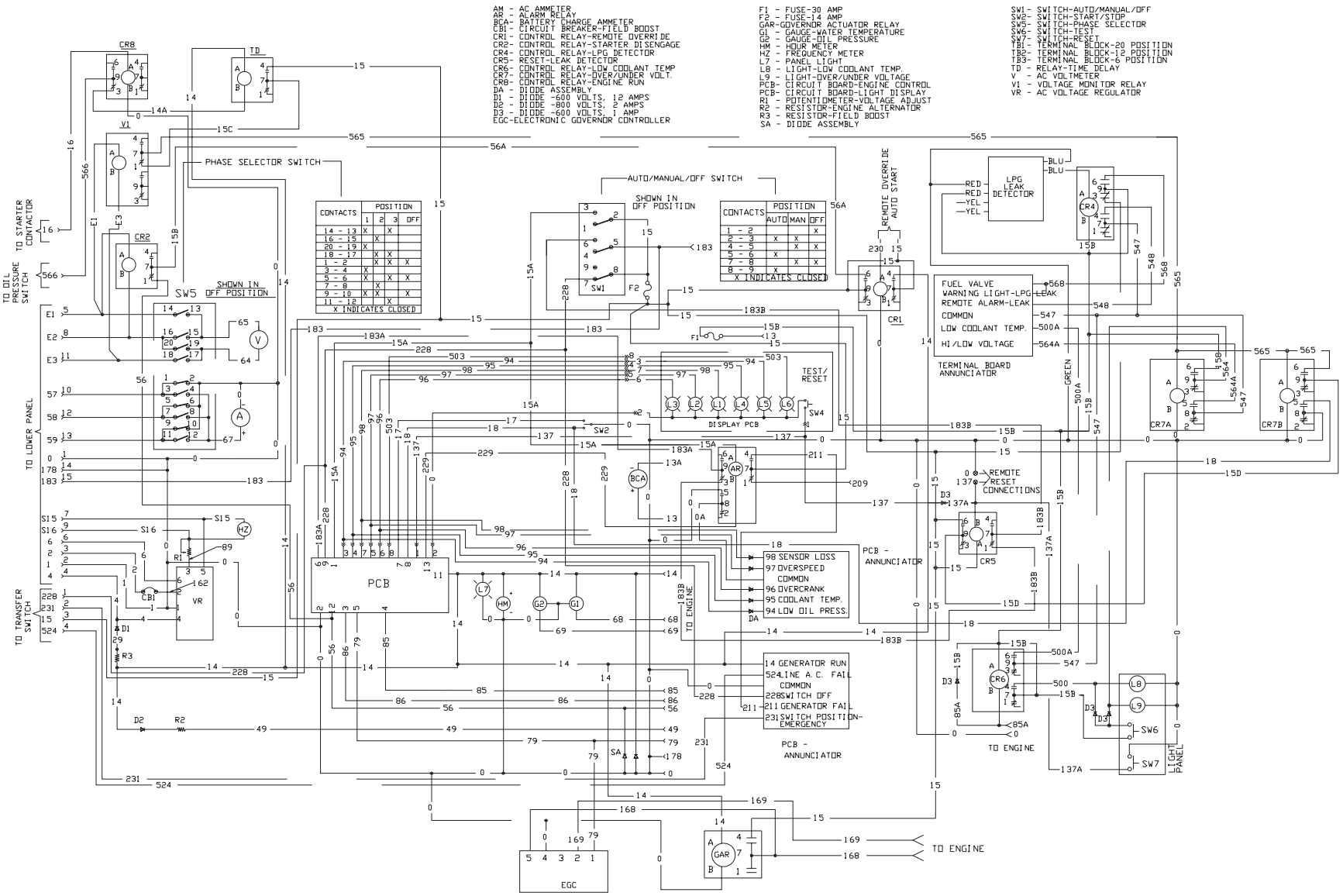
AM =A-C AMMETER
AR =ALARM RELAY
BCA=BATTERY CHARGE AMMETER
CB1=CIRCUIT BREAKER-FIELD BOOST
CR1=CONTROL RELAY-REMOTE OVERRIDE
CR2=CONTROL RELAY-STARTER DISENGAGE
CR4=CONTROL RELAY-LEAK DETECTOR
CR5=FAULT RESET
CR6=RELAY-LOW COOLANT TEMPERATURE
CR7=RELAY-OVER/UNDER VOLTAGE SHUTDOWN
CR8=RELAY-ENGINE RUN
CR9=RELAY LOW FUEL ALARM
DA =DIODE ASSEMBLY
D1 =DIODE-600 VOLTS, 12 AMPS
D2 =DIODE-800 VOLTS, 2 AMPS
D3 =DIODE-600 VOLTS, 1 AMP
F1 =FUSE-30 AMP
F2 =FUSE-14 AMP
G1 =GAUGE-WATER TEMP
G2 =GAUGE-OIL PRESS
HM =HOURMETER
HZ =FROQUENCY METER
L7 =PANEL LIGHT
L8 =LIGHT-LOW COOLANT TEMP.
L9 =LIGHT-OVER/UNDER VOLTAGE
L10=LIGHT LOW FUEL
PCB=CIRCUIT BOARD-ENGINE CONTROL
PCB=CIRCUIT BOARD-LIGHT DISPLAY
PHR=PREHEAT RELAY
R1 =POTENTIOMETER-VOLTAGE ADJUST
R2 =RESISTER-ENGINE ALTERNATOR
R3 =RESISTER-FIELD BOOST
SA =DIODE ASSEMBLY
SW1=SWITCH-AUTO/MAN/OFF
SW2=SWITCH-START/STOP
SW3=SWITCH PREHEAT
SW5=SWITCH-PHASE SELECTOR
SW6=SWITCH-TEST
SW7=SWITCH-RESET
TB1=TERMINAL BLOCK-20 POSITION
TB2=TERMINAL BLOCK-12 POSITION
TB3=TERMINAL BLOCK-6 POSITION
TB4=TERMINAL BLOCK-6 POSITION
TB5=TERMINAL BLOCK-4 POSITION
TD =RELAY-TIME DELAY
TS =TERMINAL STRIP-CUSTOMER CONNECT
VM =A-C VOLTMETER
VR =A-C VOLTAGE REGULATOR
V1 =VOLTAGE MONITOR

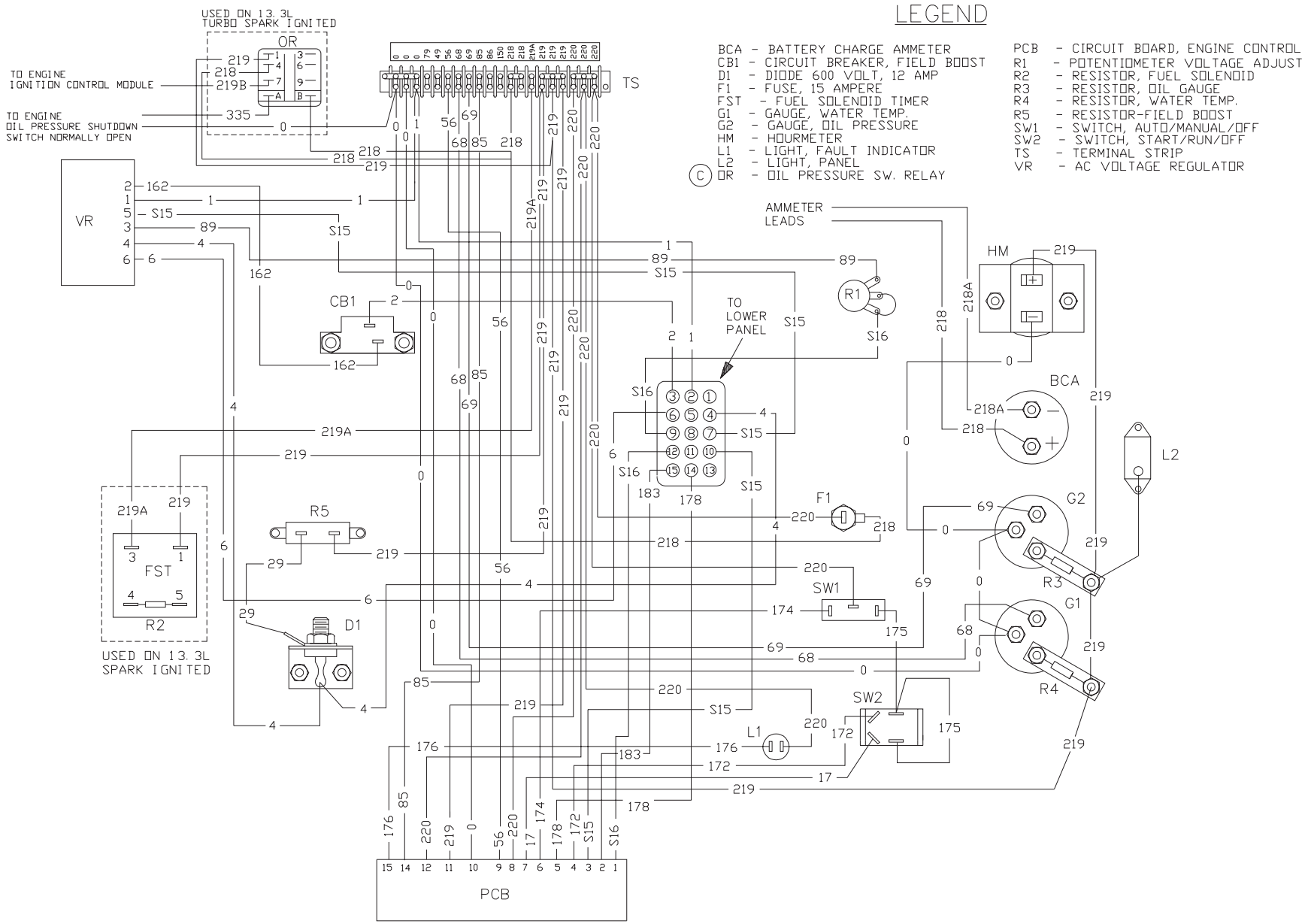

LEGEND
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
EGA– ELECTRONIC GOVERNOR ACTUATOR
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENERGY IGNITION
LCT – LOW COOLANT TEMP. SWITCH
LOS – LOW OIL SWITCH
OP – OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
TO CONTROL PANEL
168
169
EGA
GRD
BATT
FS
HEI
DIST.
DC–A
CC
SC
SM
RED
LOS
SOP
SWT
OP
WTS
WLS
RPM
SENSOR
BLACK
GRD
12–V.
BATTERY
BC
GND 1 21 13 34 35 0
EHT
EH
BLACK
GREEN
WHITE
TO CONTROL PANEL
TO AMMETER
85A
WHITE
LCT
CUSTOMER 120V. UTILITY CONNECTION.
CUSTOMER 120V. UTILITY CONNECTION.

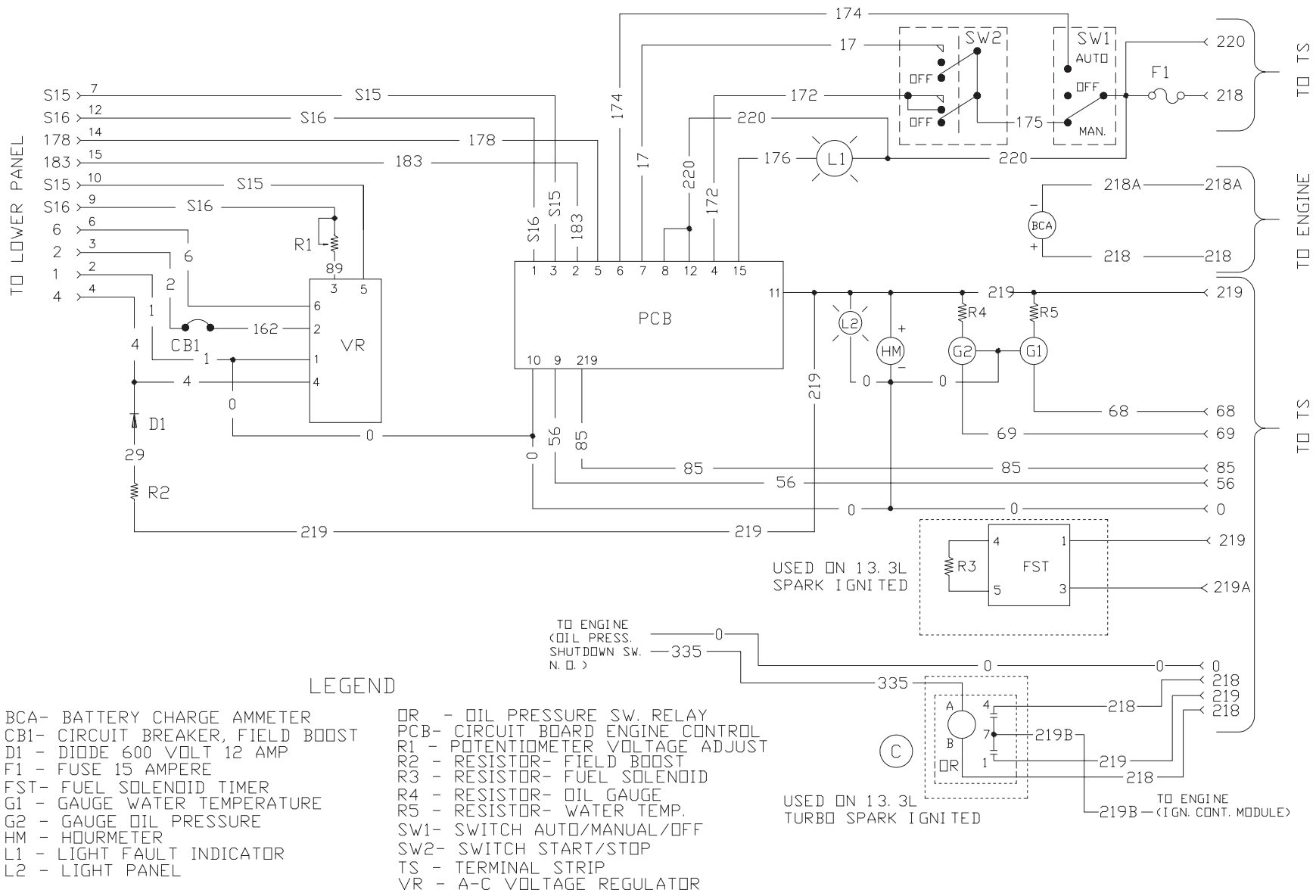
BC - BATTERY CHARGER
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FS - FUEL SOLENOID
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LCT - LOW COOLANT TEMP. THERMOSTAT
LOS - LOW OIL SWITCH
OP - OIL PRESSURE SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMPERATURE
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH




DETAIL OF CR7A + CR7B
VIEW FROM FRONT
CR8
TO OIL PRESS. SWITCH
TO STARTER CONTACTOR
PCB- ANNUNCIATOR
SENSOR LOSS
OVER SPEED
COMMON
OVER CRANK
COOLANT TEMP
LOW OIL PRESS.
PCB- ANNUNCIATOR
GENERATOR RUN
LINE AC FAIL
COMMON
SWITCH OFF
GENERATOR FAIL
SWITCH POSITION-EMERGENCY
FUEL SHUTOFF VALVE
WARNING LIGHT-LPG LEAK
REMOTE ALARM-LPG LEAK
COMMON ALARM
LOW COOLANTTEMPERATURE
OVER/UNDERVOLTAGE
TB4
CR1
CR2
CR3
CR4
CR5
CR6
CR7
TD THERMOSTAT
SW6
SW7
L9
L8
D3
SA
TB1
TB3
TD GTS
AMMETER LEADS
TD LOWER PANEL
R1
HM
HZ
LPG LEAK DETECTOR
YEL
YEL
RED
BLU
BLU
RED
GREEN
BLACK
WHITE
TS
VR
CB1
R2
D2
R3
D1
F1
F2
SW1
SW2
SW5
BCA
AM
L7
G2
G1
VM
V1
EGC
AR
GAR
TB2
DA
PCB- ENGINE CONTROL
DISPLAY PCB
TO GOVERNOR ACTUATOR
AM =A-C AMMETER
AR =ALARM RELAY
BCA=BATTERY CHARGE AMMETER
CB1=CIRCUIT BREAKER-FIELD BOOST
CR1=CONTROL RELAY-REMOTE OVERRIDE
CR2=CONTROL RELAY-STARTER DISENGAGE
CR4=CONTROL RELAY-LEAK DETECTOR
CR5=RESET-LEAK DETECTOR
CR6=RELAY-LOW COOLANT TEMPERATURE
CR7=RELAY-OVER/UNDER VOLTAGE SHUTDOWN
CR8=RELAY-ENGINE RUN
DA=DIODE ASSEMBLY
D1 =DIODE-600 VOLTS, 12 AMPS
D2 =DIODE-800 VOLTS, 2 AMPS
D3 =DIODE-600 VOLTS, 1 AMP
EGC=ELECTRONIC GOVERNOR CONTROLLER
F1 =FUSE-30 AMP
F2 =FUSE-14 AMP
GAR=GOVERNOR ACTUATOR RELAY
G1 =GAUGE-WATER TEMP
G2 =GAUGE-OIL PRESS
HM =HOURMETER
HZ =FRQUENCY METER
L7 =PANEL LIGHT
L8 =LIGHT-LOW COOLANT TEMP.
L9 =LIGHT-OVER/UNDER VOLTAGE
PCB=CIRCUIT BOARD-ENGINE CONTROL
PCB=CIRCUIT BOARD-LIGHT DISPLAY
R1 =POTENTIOMETER-VOLTAGE ADJUST
R2 =RESISTER-ENGINE ALTERNATOR
R3 =RESISTER-FIELD BOOST
SA =DIODE ASSEMBLY
SW1=SWITCH-AUTO/MAN/OFF
SW2=SWITCH-START/STOP
SW5=SWITCH-PHASE SELECTOR
SW6=SWITCH-TEST
SW7=SWITCH-RESET
TB1=TERMINAL BLOCK-20 POSITION
TB2=TERMINAL BLOCK-12 POSITION
TB3=TERMINAL BLOCK-6 POSITION
TB4=TERMINAL BLOCK-6 POSITION
TD =RELAY-TIME DELAY
TS =TERMINAL STRIP-CUSTOMER CONNECT
VM =A-C VOLTMETER
VR =A-C VOLTAGE REGULATOR
VI =VOLTAGE MONITOR

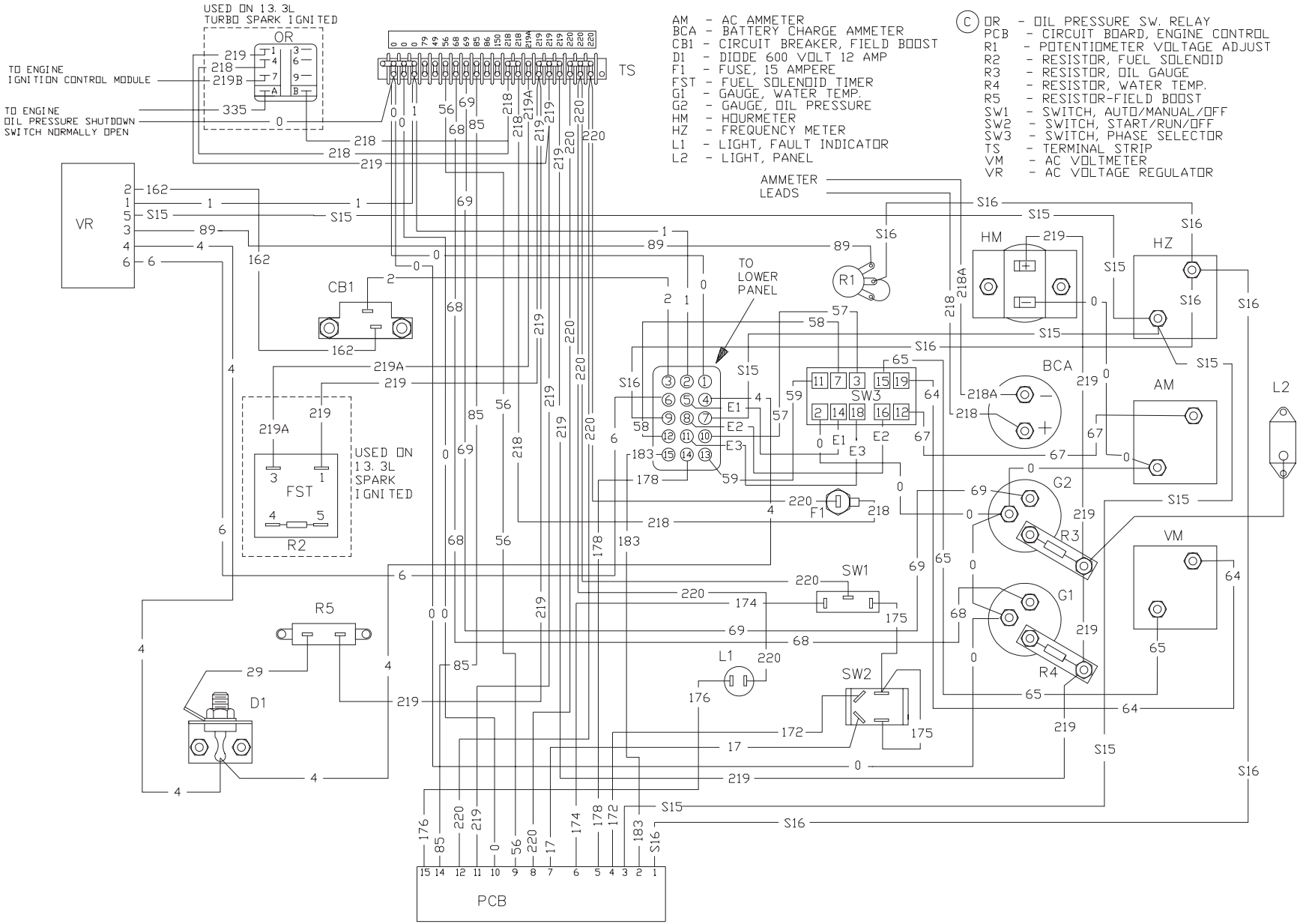

AM - AC AMMETER
AR - ALARM RELAY
BCA- BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER-FIELD BOOST
CR1 - CONTROL RELAY-REMOTE OVERRIDE
CR2 - CONTROL RELAY-STARTER DISENGAGE
CR4 - CONTROL RELAY-LPG DETECTOR
CR5 - RESET-LEAK DETECTOR
CR6 - CONTROL RELAY-LOW COOLANT TEMP
CR7 - CONTROL RELAY-OVER/UNDER VOLT.
CR8 - CONTROL RELAY-ENGINE RUN
DA - DIODE ASSEMBLY
D1 - DIODE -600 VOLTS, 12 AMPS
D2 - DIODE -800 VOLTS, 2 AMPS
D3 - DIODE -600 VOLTS, 1 AMP
EGC-ELECTRONIC GOVERNOR CONTROLLER
F1 - FUSE-30 AMP
F2 - FUSE-14 AMP
GAR-GOVERNOR ACTUATOR RELAY
G1 - GAUGE-WATER TEMPERATURE
G2 - GAUGE-OIL PRESSURE
HM - HOUR METER
HZ - FREQUENCY METER
L7 - PANEL LIGHT
L8 - LIGHT-LOW COOLANT TEMP.
L9 - LIGHT-OVER/UNDER VOLTAGE
PCB- CIRCUIT BOARD-ENGINE CONTROL
PCB- CIRCUIT BOARD-LIGHT DISPLAY
R1 - POTENTIOMETER-VOLTAGE ADJUST
R2 - RESISTOR-ENGINE ALTERNATOR
R3 - RESISTOR-FIELD BOOST
SA - DIODE ASSEMBLY
SW1 - SWITCH-AUTO/MANUAL/OFF
SW2 - SWITCH-START/STOP
SW5 - SWITCH-PHASE SELECTOR
SW6 - SWITCH-TEST
SW7 - SWITCH-RESET
TB1 - TERMINAL BLOCK-20 POSITION
TB2 - TERMINAL BLOCK-12 POSITION
TB3 - TERMINAL BLOCK-6 POSITION
TD - RELAY-TIME DELAY
V - AC VOLTMETER
V1 - VOLTAGE MONITOR RELAY
VR - AC VOLTAGE REGULATOR
PHASE SELECTOR SWITCH
AUTO/MANUAL/OFF SWITCH
SHOWN IN OFF POSITION
REMOTE OVERRIDE AUTO START
LPG LEAK DETECTOR
FUEL VALVE
WARNING LIGHT-LPG LEAK
REMOTE ALARM-LEAK
COMMON
LOW COOLANT TEMP.
HI/LOW VOLTAGE
TERMINAL BOARD ANNUNCIATOR
TEST/ RESET
DISPLAY PCB
REMOTE RESET CONNECTIONS
PCB - ANNUNCIATOR
98 SENSOR LOSS
97 OVERSPEED COMMON
96 OVERCRANK
95 COOLANT TEMP.
94 LOW OIL PRESS.
14 GENERATOR RUN
524 LINE A.C. FAIL COMMON
228 SWITCH OFF
211 GENERATOR FAIL
231 SWITCH POSITION-EMERGENCY
TO ENGINE
TO STARTER CONTACTOR
TO OIL PRESSURE SWITCH
TO LOWER PANEL
TO TRANSFER SWITCH
TO LIGHT PANEL
EGC
GAR
PCB
VR

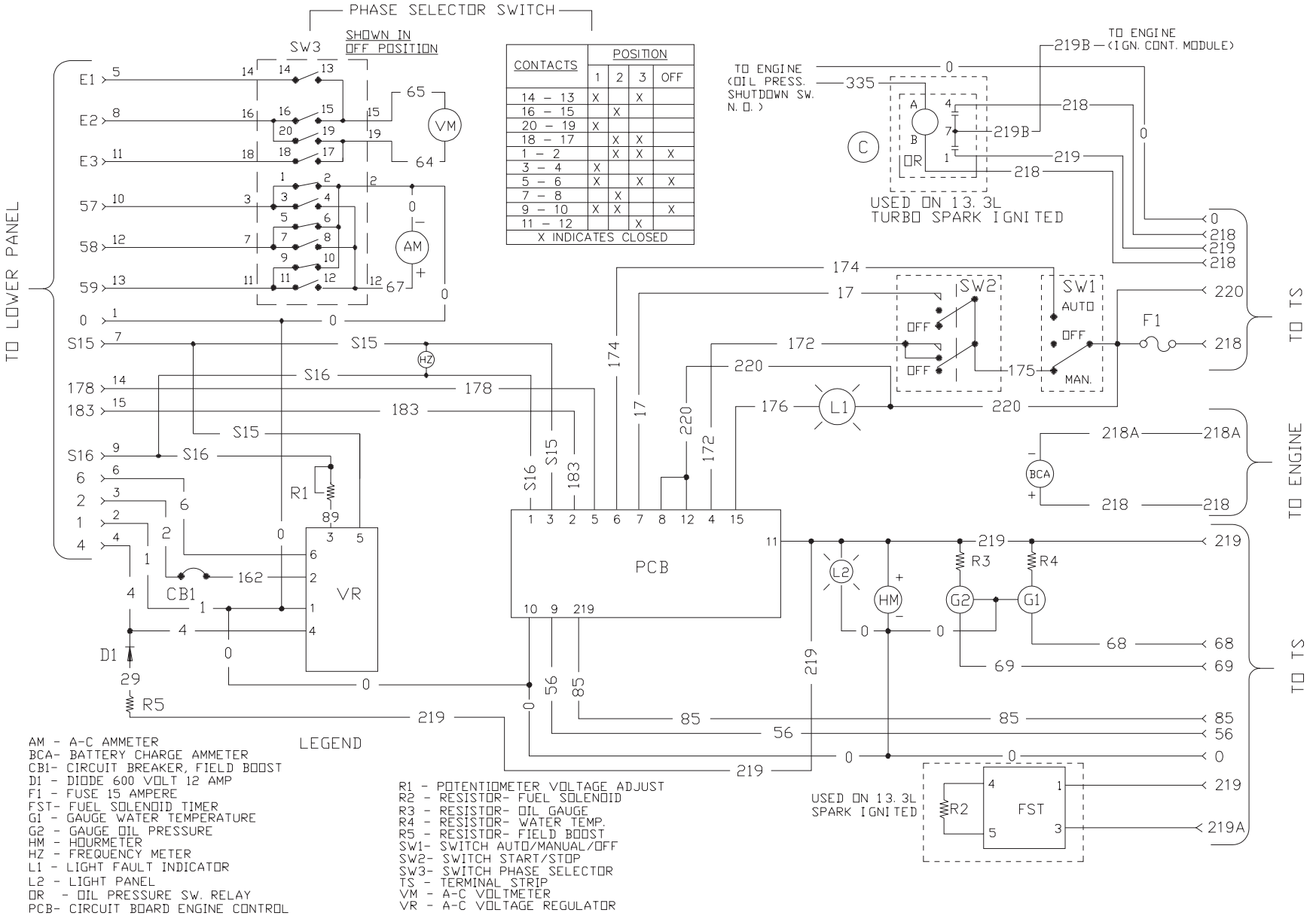

LEGEND
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600 VOLT, 12 AMP
F1 - FUSE, 15 AMPERE
FST - FUEL SOLENOID TIMER
G1 - GAUGE, WATER TEMP.
G2 - GAUGE, OIL PRESSURE
HM - HOURMETER
L1 - LIGHT, FAULT INDICATOR
L2 - LIGHT, PANEL
OR - OIL PRESSURE SW. RELAY
PCB - CIRCUIT BOARD, ENGINE CONTROL
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR, FUEL SOLENOID
R3 - RESISTOR, OIL GAUGE
R4 - RESISTOR, WATER TEMP.
R5 - RESISTOR-FIELD BOOST
SW1 - SWITCH, AUTO/MANUAL/OFF
SW2 - SWITCH, START/RUN/OFF
TS - TERMINAL STRIP
VR - AC VOLTAGE REGULATOR
USED ON 13.3L TURBO SPARK IGNITED
TO ENGINE IGNITION CONTROL MODULE
TO ENGINE OIL PRESSURE SHUTDOWN SWITCH NORMALLY OPEN
AMMETER LEADS
TO LOWER PANEL
USED ON 13.3L SPARK IGNITED
PCB

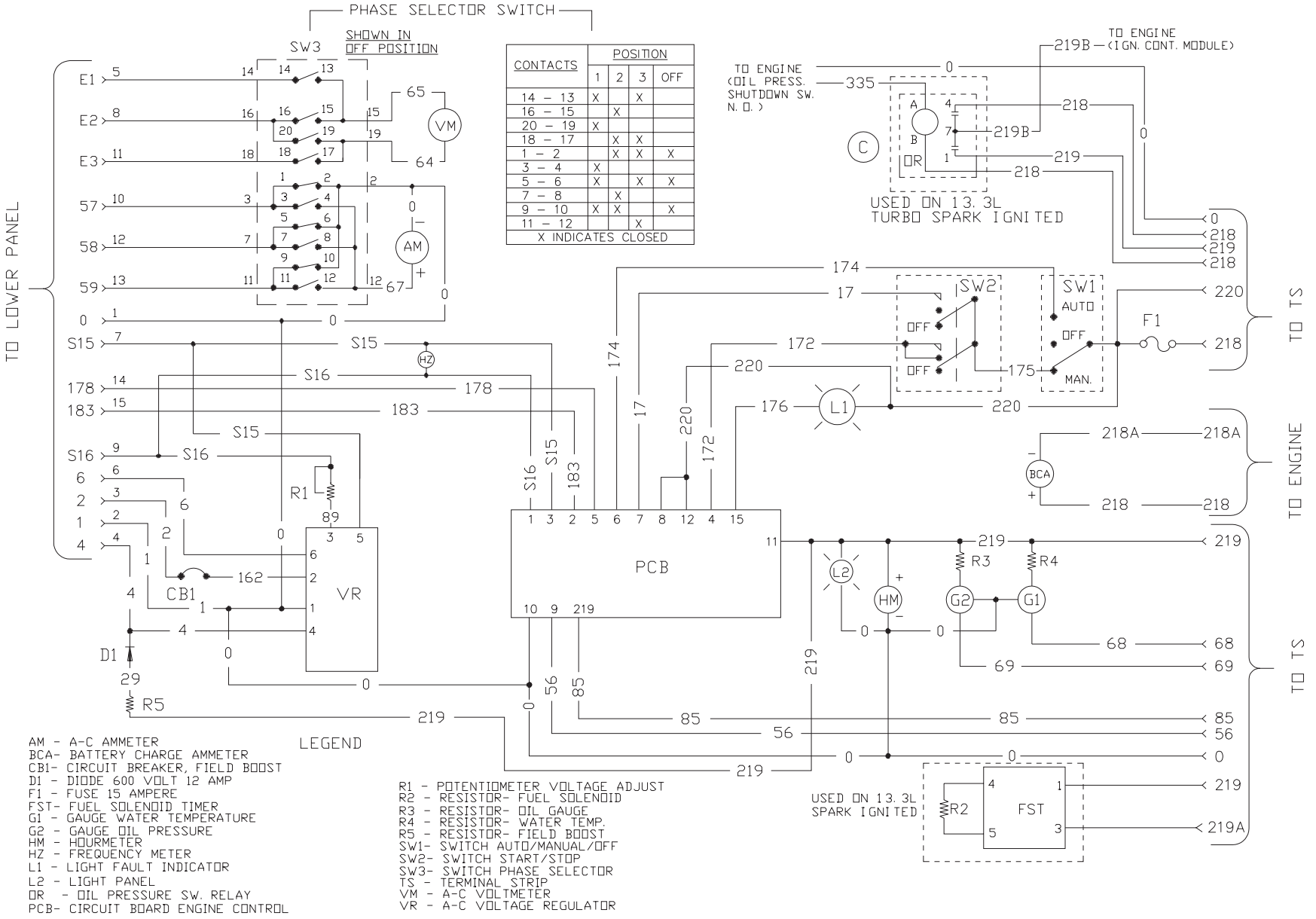


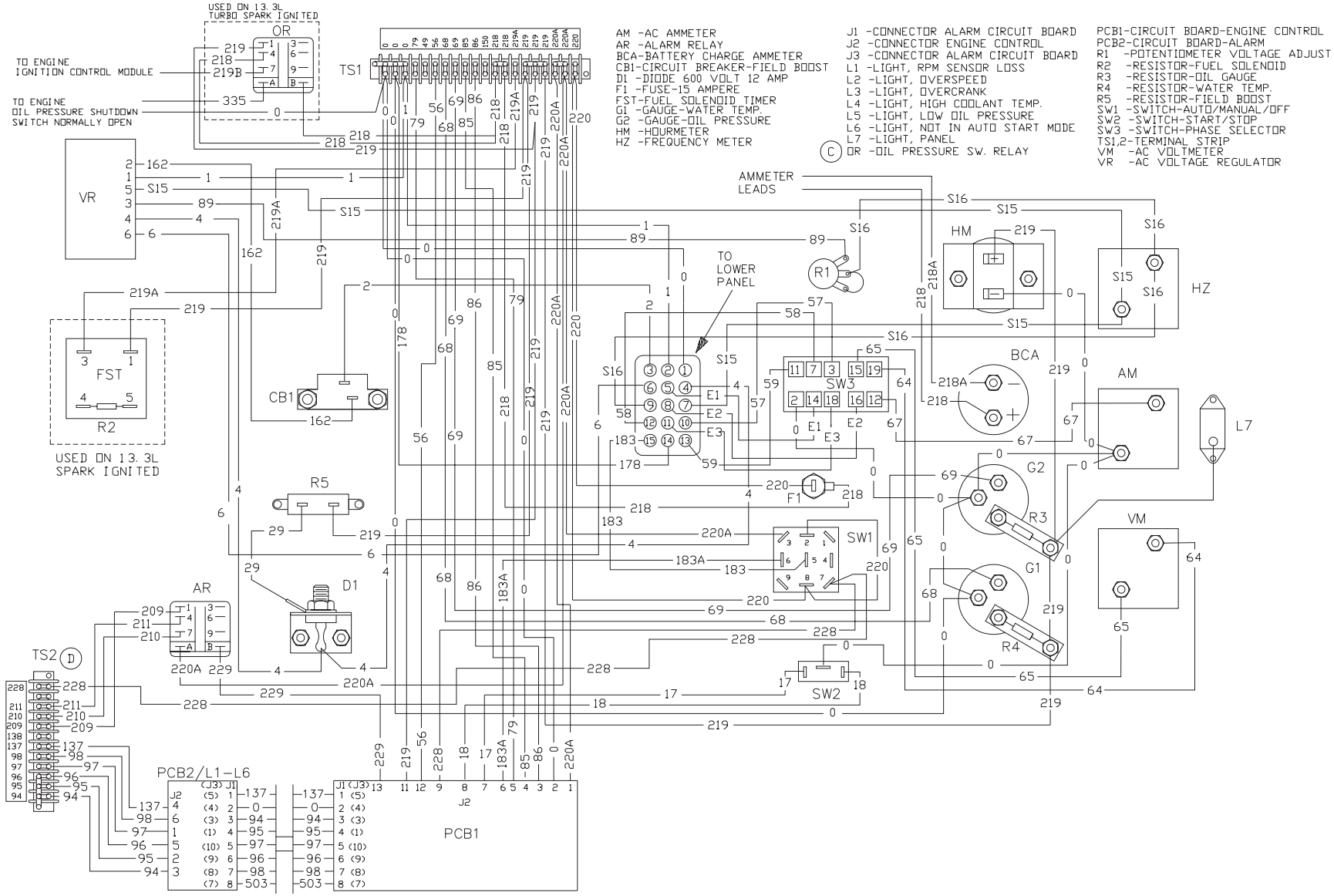
LEGEND

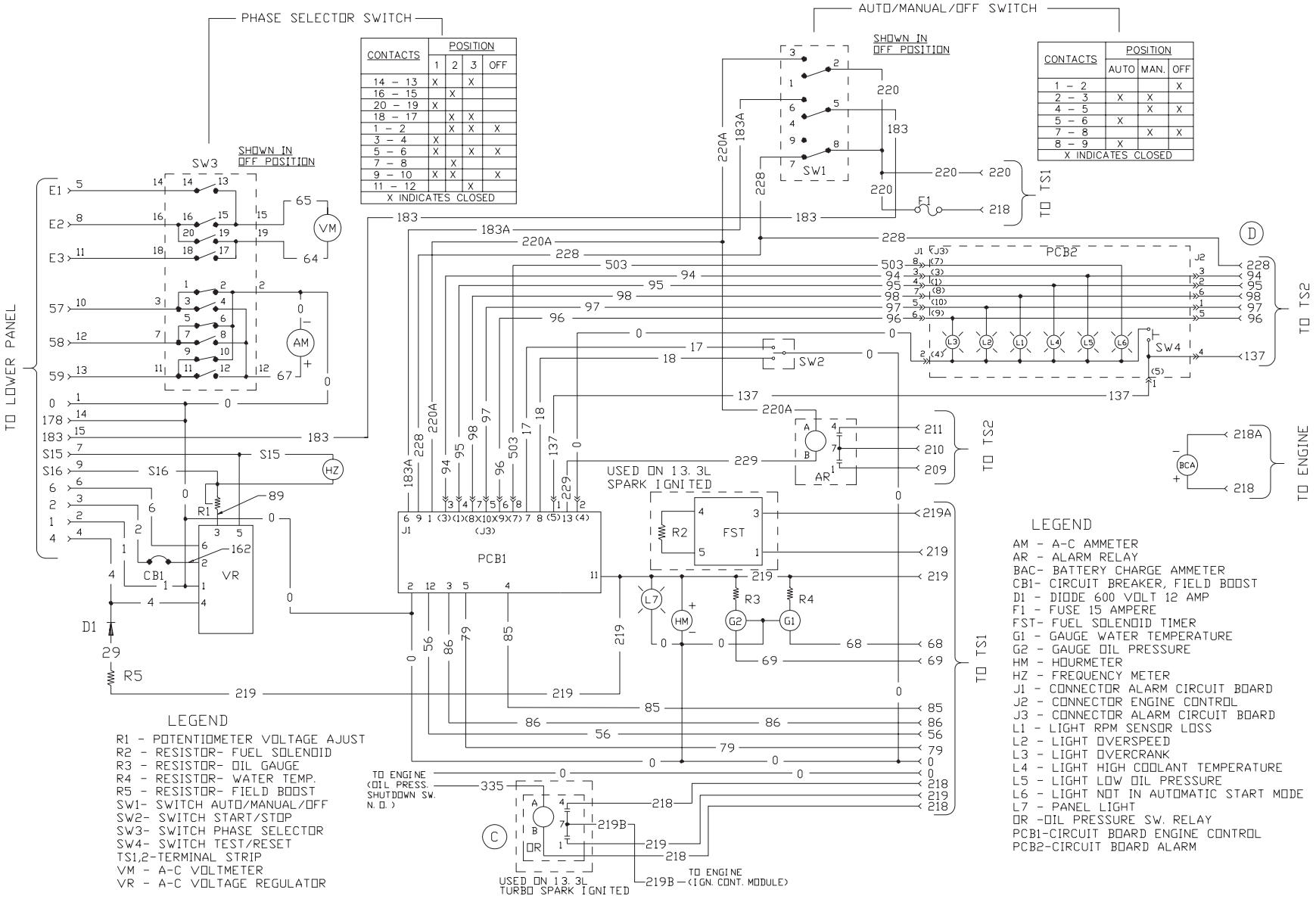
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600 VOLT 12 AMP
F1 - FUSE 15 AMPERE
FST- FUEL SOLENOID TIMER
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL
OR - OIL PRESSURE SW. RELAY
PCB- CIRCUIT BOARD ENGINE CONTROL
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR- FUEL SOLENOID
R4 - RESISTOR- OIL GAUGE
R5 - RESISTOR- WATER TEMP.
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
TS - TERMINAL STRIP
VR - A-C VOLTAGE REGULATOR


USED ON 13.3L TURBO SPARK IGNITED
OR
TO ENGINE IGNITION CONTROL MODULE
TO ENGINE OIL PRESSURE SHUTDOWN SWITCH NORMALLY OPEN
TS
AM - AC AMMETER
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600 VOLT 12 AMP
F1 - FUSE, 15 AMPERE
FST - FUEL SOLENOID TIMER
G1 - GAUGE, WATER TEMP.
G2 - GAUGE, OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT, FAULT INDICATOR
L2 - LIGHT, PANEL
OR - OIL PRESSURE SW. RELAY
PCB - CIRCUIT BOARD, ENGINE CONTROL
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR, FUEL SOLENOID
R3 - RESISTOR, OIL GAUGE
R4 - RESISTOR, WATER TEMP.
R5 - RESISTOR-FIELD BOOST
SW1 - SWITCH, AUTO/MANUAL/OFF
SW2 - SWITCH, START/RUN/OFF
SW3 - SWITCH, PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
AMMETER LEADS
VR
CB1
TO LOWER PANEL
R1
HM
HZ
BCA
AM
L2
SW3
FST
R2
USED ON 13.3L SPARK IGNITED
F1
G2
R3
VM
SW1
G1
R5
L1
SW2
R4
D1
PCB


PHASE SELECTOR SWITCH
SHOWN IN OFF POSITION
SW3
CONTACTS
POSITION
1
2
3
OFF
14 – 13
16 – 15
20 – 19
18 – 17
1 – 2
3 – 4
5 – 6
7 – 8
9 – 10
11 – 12
X INDICATES CLOSED
TO LOWER PANEL
TO ENGINE (OIL PRESS. SHUTDOWN SW. N. O.)
TO ENGINE (IGN. CONT. MODULE)
USED ON 13. 3L TURBO SPARK IGNITED
SW1
SW2
AUTO
MAN.
OFF
F1
L1
L2
HM
R1
R2
R3
R4
R5
CB1
D1
VR
PCB
FST
BCA
VM
AM
HZ
G1
G2
TO TS
TO ENGINE
USED ON 13. 3L SPARK IGNITED
LEGEND
AM - A-C AMMETER
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600 VOLT 12 AMP
F1 - FUSE 15 AMPERE
FST- FUEL SOLENOID TIMER
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL
OR - OIL PRESSURE SW. RELAY
PCB- CIRCUIT BOARD ENGINE CONTROL
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR- FUEL SOLENOID
R3 - RESISTOR- OIL GAUGE
R4 - RESISTOR- WATER TEMP.
R5 - RESISTOR- FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW3- SWITCH PHASE SELECTOR
TS - TERMINAL STRIP
VM - A-C VOLTMETER
VR - A-C VOLTAGE REGULATOR


PHASE SELECTOR SWITCH
SHOWN IN OFF POSITION
SW3
CONTACTS
POSITION
1
2
3
OFF
14 – 13
16 – 15
20 – 19
18 – 17
1 – 2
3 – 4
5 – 6
7 – 8
9 – 10
11 – 12
X INDICATES CLOSED
TO LOWER PANEL
TO ENGINE (OIL PRESS. SHUTDOWN SW. N. O.)
TO ENGINE (IGN. CONT. MODULE)
USED ON 13. 3L TURBO SPARK IGNITED
SW1
SW2
AUTO
MAN.
OFF
F1
L1
L2
HM
R1
R2
R3
R4
R5
CB1
D1
VR
PCB
FST
BCA
VM
AM
HZ
G1
G2
TO TS
TO ENGINE
USED ON 13. 3L SPARK IGNITED
LEGEND
AM - A-C AMMETER
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600 VOLT 12 AMP
F1 - FUSE 15 AMPERE
FST- FUEL SOLENOID TIMER
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL
OR - OIL PRESSURE SW. RELAY
PCB- CIRCUIT BOARD ENGINE CONTROL
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR- FUEL SOLENOID
R3 - RESISTOR- OIL GAUGE
R4 - RESISTOR- WATER TEMP.
R5 - RESISTOR- FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW3- SWITCH PHASE SELECTOR
TS - TERMINAL STRIP
VM - A-C VOLTMETER
VR - A-C VOLTAGE REGULATOR


AM -AC AMMETER
AR -ALARM RELAY
BCA-BATTERY CHARGE AMMETER
CB1-CIRCUIT BREAKER-FIELD BOOST
D1 -DIODE 600 VOLT 12 AMP
F1 -FUSE-15 AMPERE
FST-FUEL SOLENOID TIMER
G1 -GAUGE-WATER TEMP.
G2 -GAUGE-OIL PRESSURE
HM -HOURMETER
HZ -FREQUENCY METER
J1 -CONNECTOR ALARM CIRCUIT BOARD
J2 -CONNECTOR ENGINE CONTROL
J3 -CONNECTOR ALARM CIRCUIT BOARD
L1 -LIGHT, RPM SENSOR LOSS
L2 -LIGHT, OVERSPEED
L3 -LIGHT, OVERCRANK
L4 -LIGHT, HIGH COOLANT TEMP.
L5 -LIGHT, LOW OIL PRESSURE
L6 -LIGHT, NOT IN AUTO START MODE
L7 -LIGHT, PANEL
C OR -OIL PRESSURE SW. RELAY
PCB1-CIRCUIT BOARD-ENGINE CONTROL
PCB2-CIRCUIT BOARD-ALARM
R1 -POTENTIOMETER VOLTAGE ADJUST
R2 -RESISTOR-FUEL SOLENOID
R3 -RESISTOR-OIL GAUGE
R4 -RESISTOR-WATER TEMP.
R5 -RESISTOR-FIELD BOOST
SW1 -SWITCH-AUTO/MANUAL/OFF
SW2 -SWITCH-START/STOP
SW3 -SWITCH-PHASE SELECTOR
TS1,2-TERMINAL STRIP
VM -AC VOLTMETER
VR -AC VOLTAGE REGULATOR
USED ON 13.3L TURBO SPARK IGNITED
OR
TO ENGINE IGNITION CONTROL MODULE
TO ENGINE OIL PRESSURE SHUTDOWN SWITCH NORMALLY OPEN
TS1
VR
FST
R2
USED ON 13.3L SPARK IGNITED
CB1
R1
TO LOWER PANEL
AMMETER LEADS
HM
HZ
BCA
AM
L7
SW3
SW1
SW2
F1
R5
D1
AR
G1
G2
R3
R4
VM
TS2
PCB2/L1-L6
PCB1



CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

X INDICATES CLOSED

CONTACTS	POSITION AUTO	MAN.	OFF
1 – 2			X
2 – 3	X	X	
4 – 5		X	X
5 – 6	X		
7 – 8		X	X
8 – 9	X		

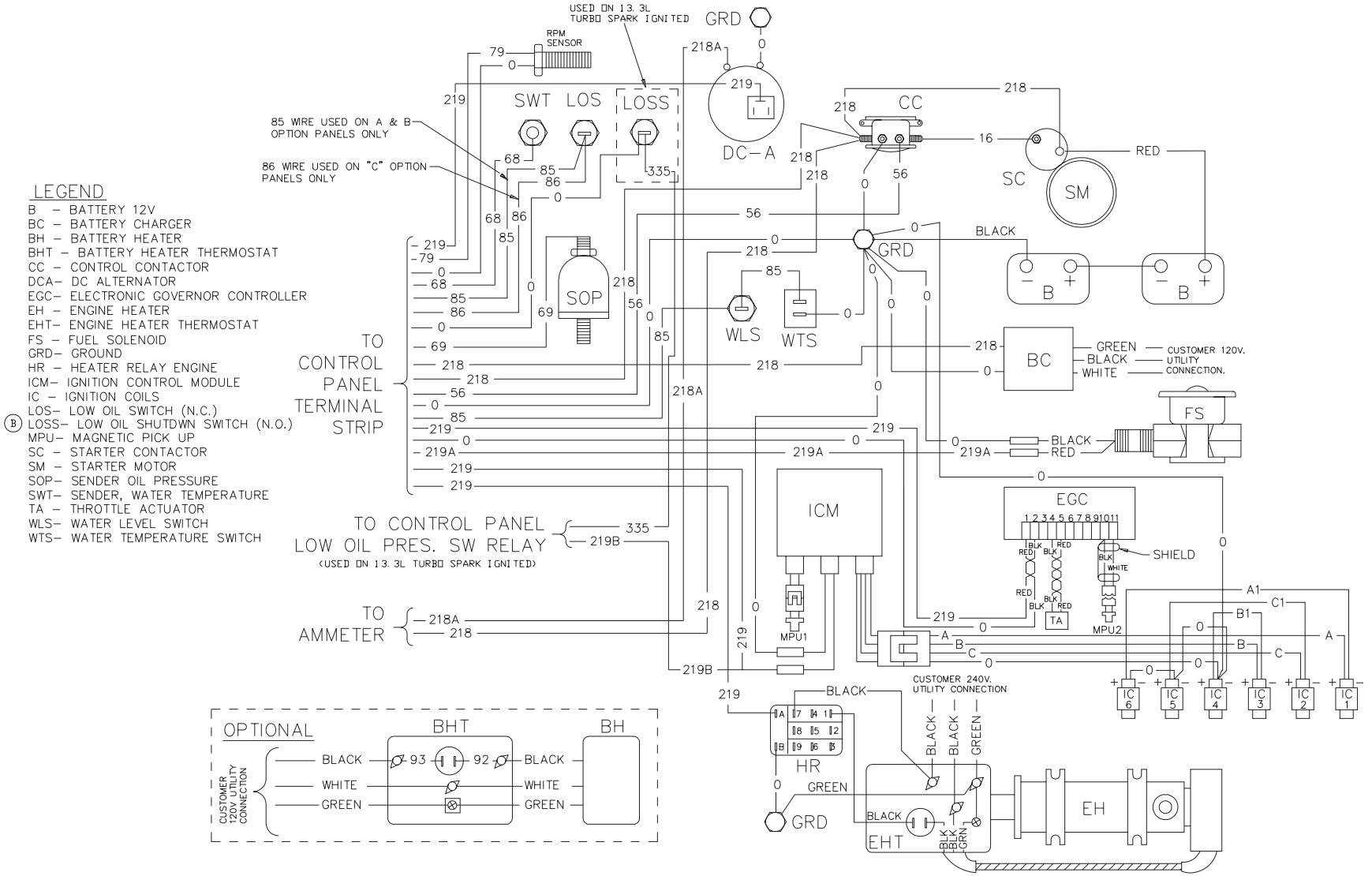
X INDICATES CLOSED

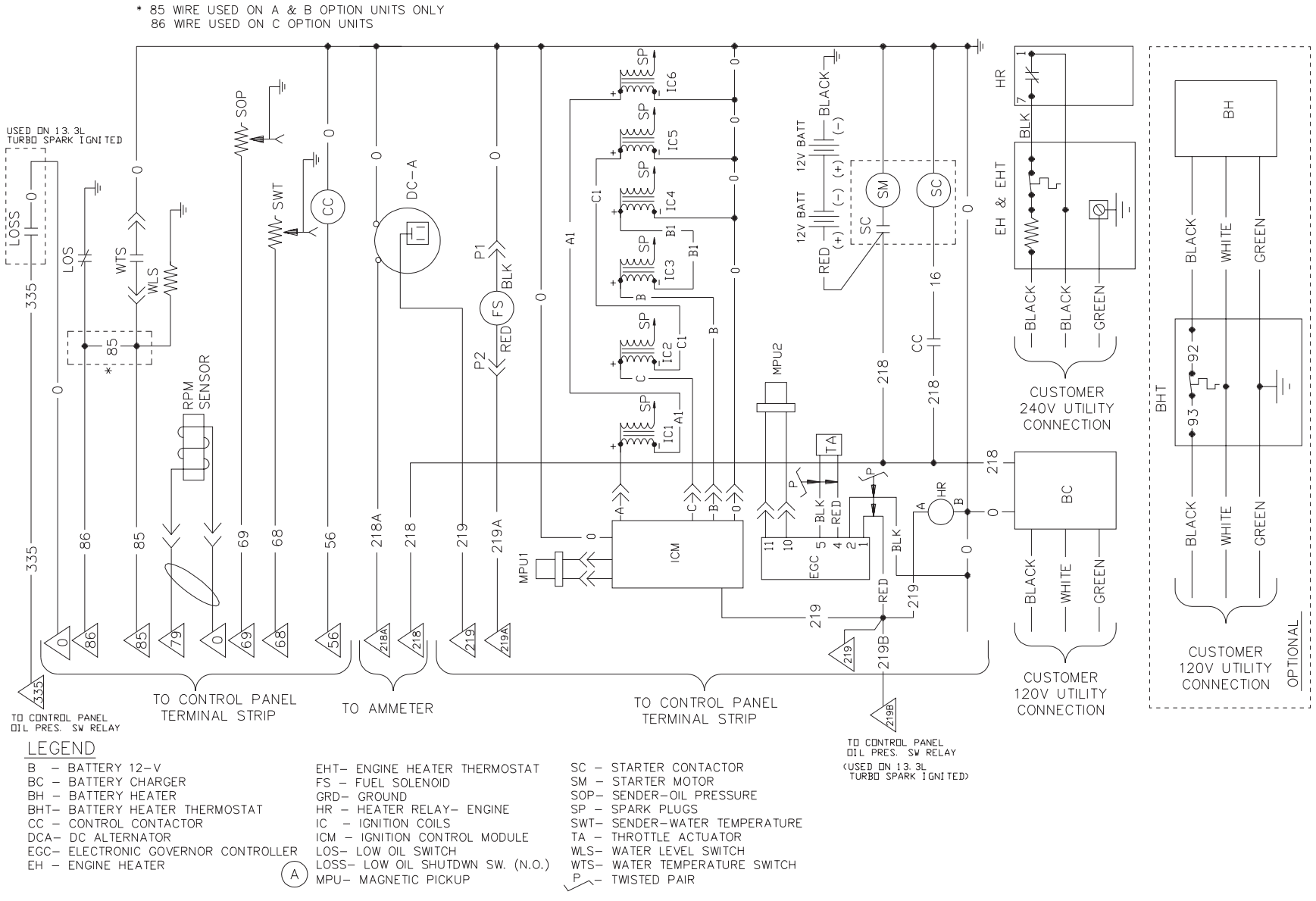
LEGEND

R1 - POTENTIOMETER VOLTAGE AJUST
R2 - RESISTOR- FUEL SOLENOID
R3 - RESISTOR- OIL GAUGE
R4 - RESISTOR- WATER TEMP.
R5 - RESISTOR- FIELD BOOST
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW3- SWITCH PHASE SELECTOR
SW4- SWITCH TEST/RESET
TS1,2-TERMINAL STRIP
VM - A-C VOLTMETER
VR - A-C VOLTAGE REGULATOR

LEGEND

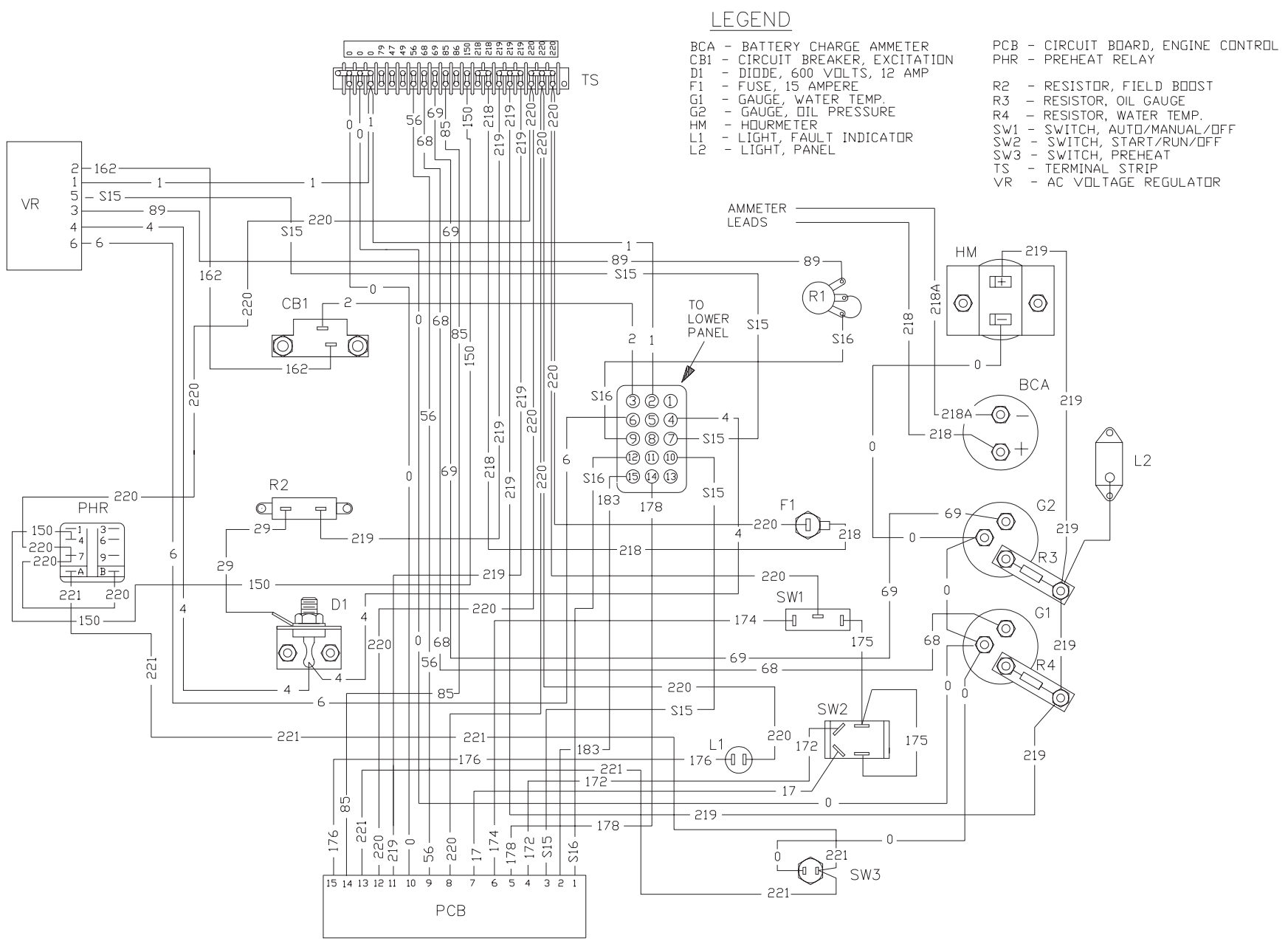
AM - A-C AMMETER
AR - ALARM RELAY
BAC- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600 VOLT 12 AMP
F1 - FUSE 15 AMPERE
FST- FUEL SOLENOID TIMER
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
J1 - CONNECTOR ALARM CIRCUIT BOARD
J2 - CONNECTOR ENGINE CONTROL
J3 - CONNECTOR ALARM CIRCUIT BOARD
L1 - LIGHT RPM SENSOR LOSS
L2 - LIGHT OVERSPEED
L3 - LIGHT OVERCRANK
L4 - LIGHT HIGH COOLANT TEMPERATURE
L5 - LIGHT LOW OIL PRESSURE
L6 - LIGHT NOT IN AUTOMATIC START MODE
L7 - PANEL LIGHT
OR -OIL PRESSURE SW. RELAY
PCB1-CIRCUIT BOARD ENGINE CONTROL
PCB2-CIRCUIT BOARD ALARM

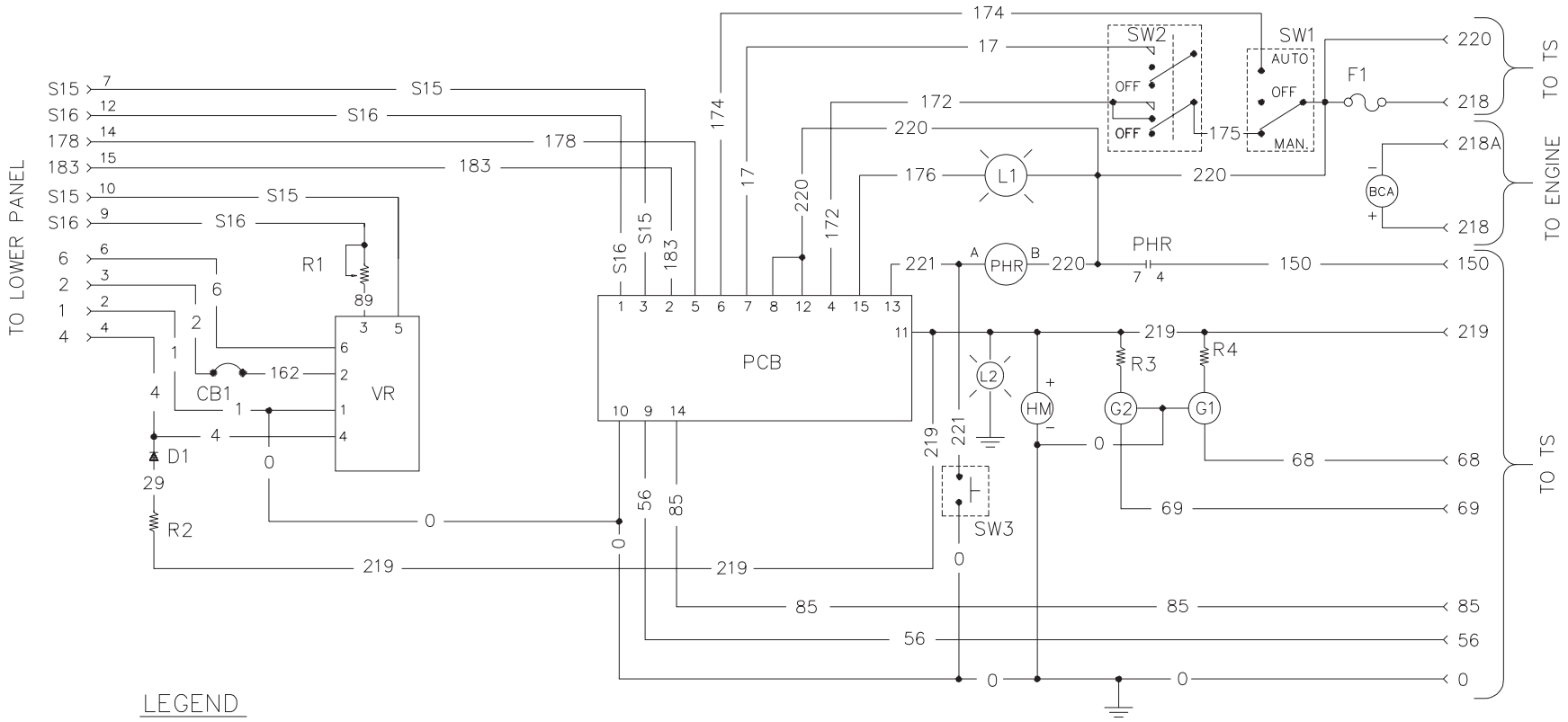

LEGEND
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EGC– ELECTRONIC GOVERNOR CONTROLLER
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD– GROUND
HR – HEATER RELAY ENGINE
ICM– IGNITION CONTROL MODULE
IC – IGNITION COILS
LOS– LOW OIL SWITCH (N.C.)
LOSS– LOW OIL SHUTDWN SWITCH (N.O.)
MPU– MAGNETIC PICK UP
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
TA – THROTTLE ACTUATOR
WLS– WATER LEVEL SWITCH
WTS– WATER TEMPERATURE SWITCH
USED ON 13.3L TURBO SPARK IGNITED
RPM SENSOR
85 WIRE USED ON A & B OPTION PANELS ONLY
86 WIRE USED ON "C" OPTION PANELS ONLY
TO CONTROL PANEL TERMINAL STRIP
TO CONTROL PANEL LOW OIL PRES. SW RELAY
(USED ON 13.3L TURBO SPARK IGNITED)
TO AMMETER
OPTIONAL
BHT
BH
CUSTOMER 120V UTILITY CONNECTION
CUSTOMER 240V. UTILITY CONNECTION
GRD
SWT
LOS
LOSS
DC–A
CC
SC
SM
SOP
WLS
WTS
BC
FS
ICM
EGC
SHIELD
MPU1
MPU2
TA
HR
EHT
EH
IC 6
IC 5
IC 4
IC 3
IC 2
IC 1
BLACK
WHITE
GREEN
RED



LEGEND

B – BATTERY 12-V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EGC– ELECTRONIC GOVERNOR CONTROLLER
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD– GROUND
HR – HEATER RELAY– ENGINE
IC – IGNITION COILS
ICM – IGNITION CONTROL MODULE
LOS– LOW OIL SWITCH
LOSS– LOW OIL SHUTDWN SW. (N.O.)
(A) MPU– MAGNETIC PICKUP
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER–OIL PRESSURE
SP – SPARK PLUGS
SWT– SENDER–WATER TEMPERATURE
TA – THROTTLE ACTUATOR
WLS– WATER LEVEL SWITCH
WTS– WATER TEMPERATURE SWITCH
P – TWISTED PAIR

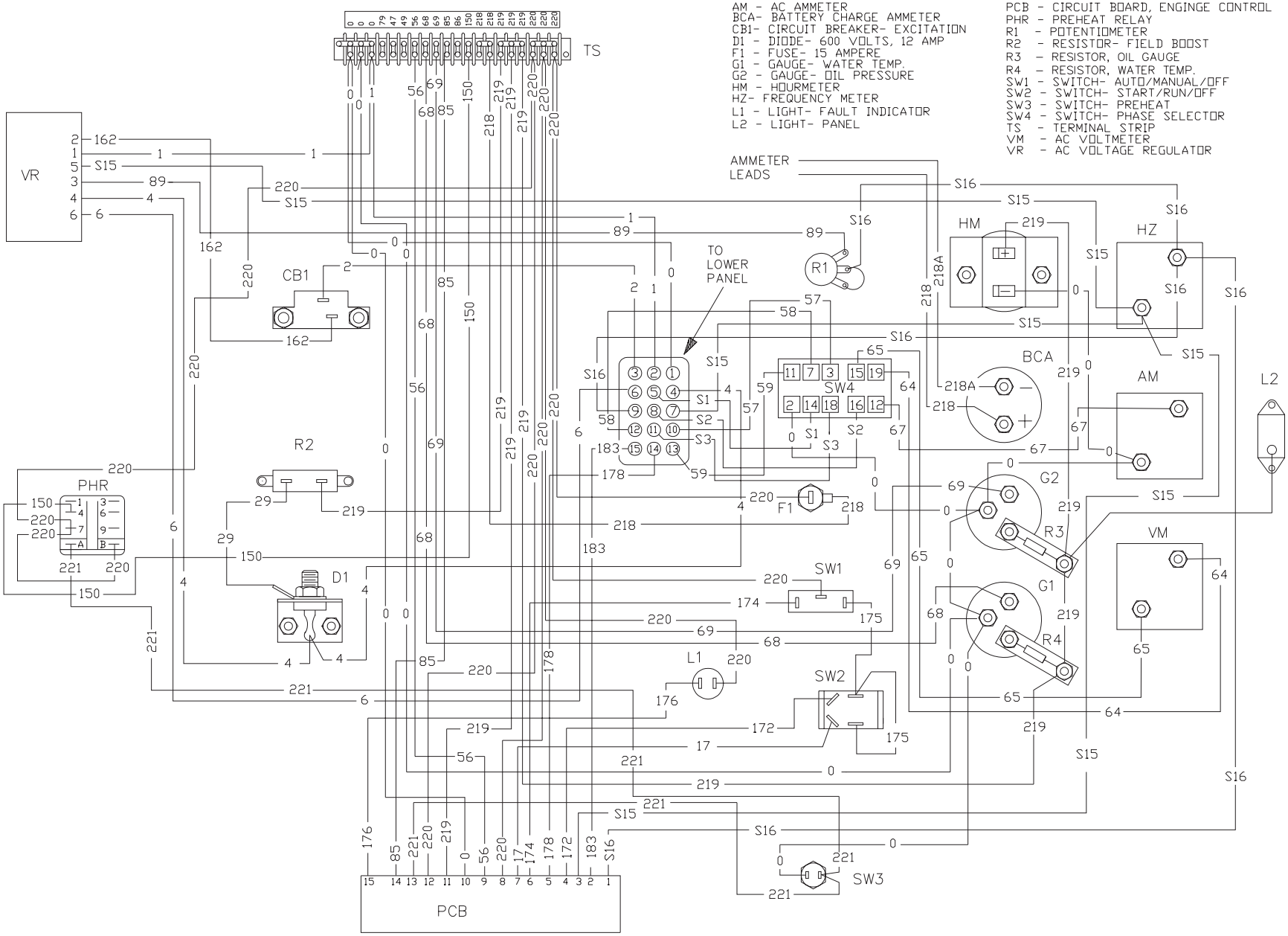

LEGEND
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER, EXCITATION
D1 - DIODE, 600 VOLTS, 12 AMP
F1 - FUSE, 15 AMPERE
G1 - GAUGE, WATER TEMP.
G2 - GAUGE, OIL PRESSURE
HM - HOURMETER
L1 - LIGHT, FAULT INDICATOR
L2 - LIGHT, PANEL
PCB - CIRCUIT BOARD, ENGINE CONTROL
PHR - PREHEAT RELAY
R2 - RESISTOR, FIELD BOOST
R3 - RESISTOR, OIL GAUGE
R4 - RESISTOR, WATER TEMP.
SW1 - SWITCH, AUTO/MANUAL/OFF
SW2 - SWITCH, START/RUN/OFF
SW3 - SWITCH, PREHEAT
TS - TERMINAL STRIP
VR - AC VOLTAGE REGULATOR
TS
VR
CB1
R1
R2
R3
R4
HM
BCA
L2
G1
G2
F1
D1
SW1
SW2
SW3
L1
PHR
PCB
AMMETER LEADS
TO LOWER PANEL

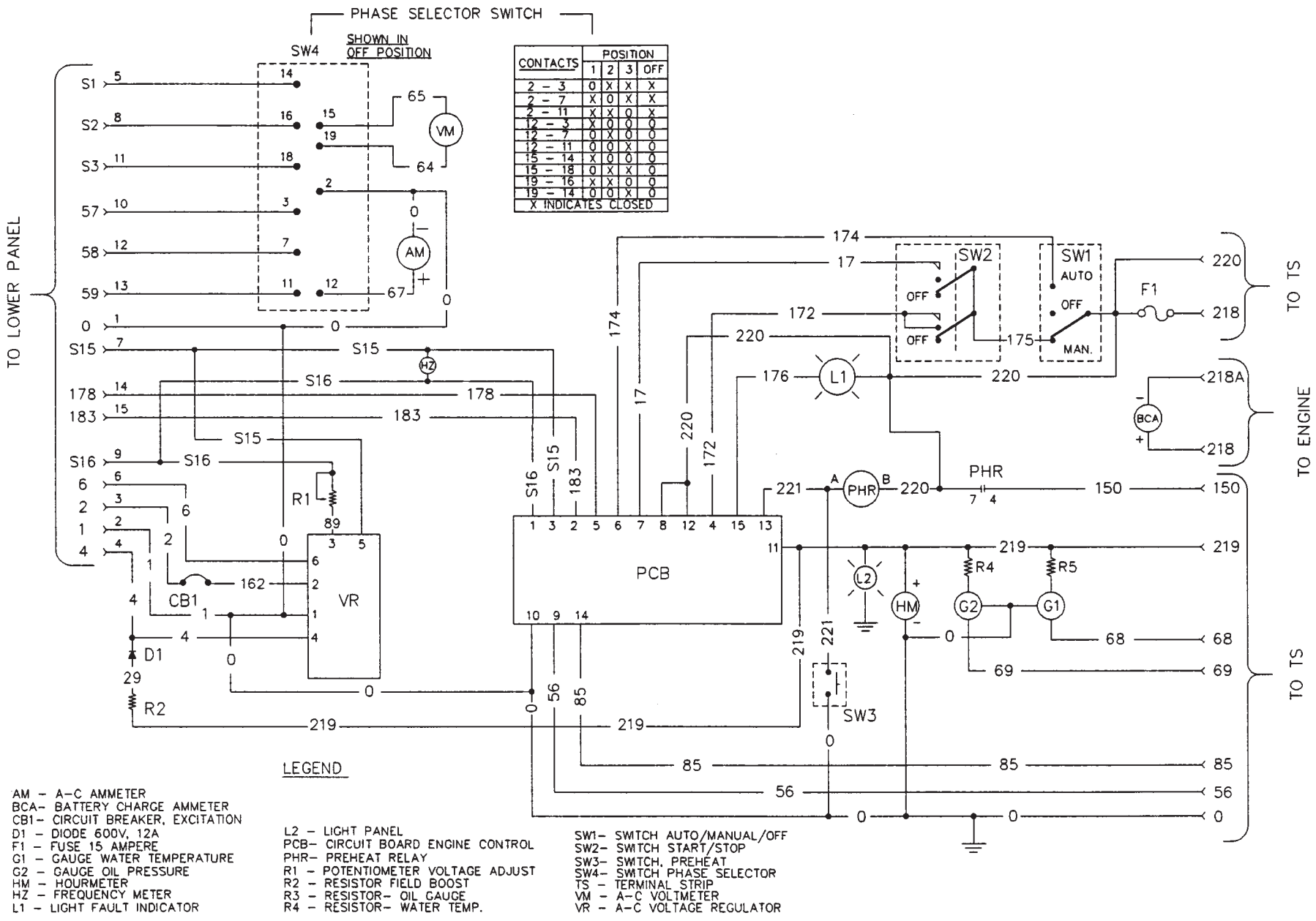


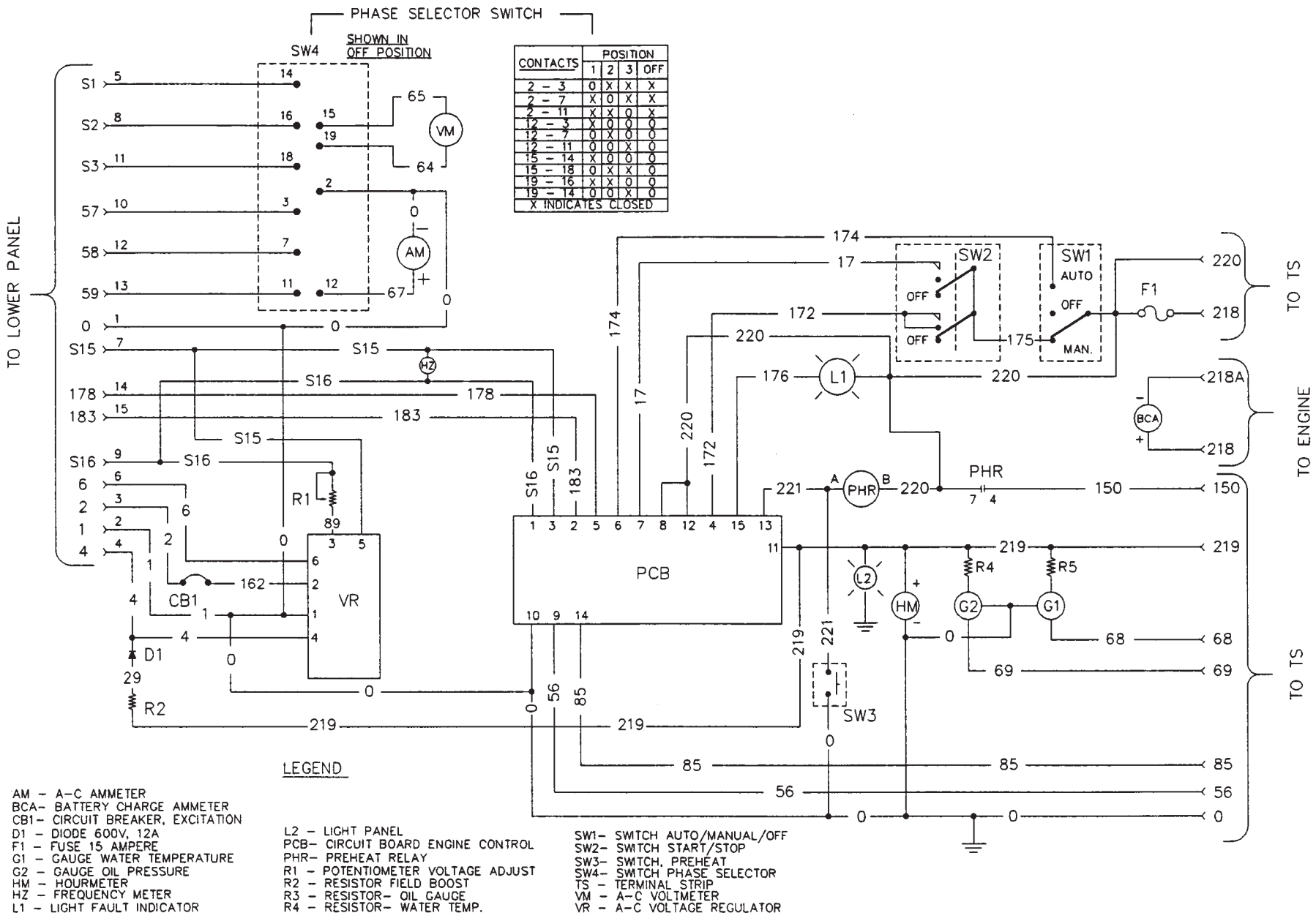
LEGEND

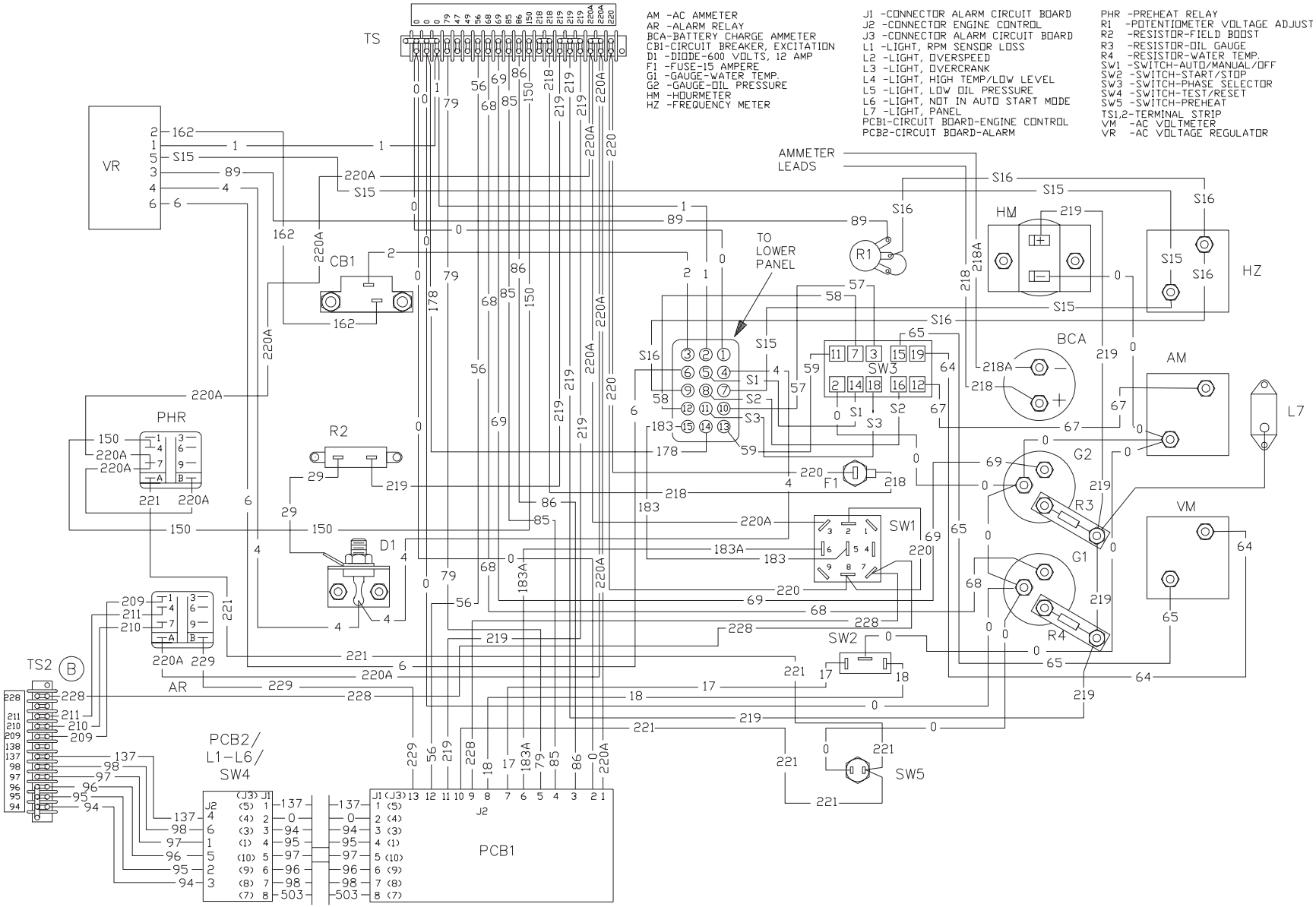
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, EXCITATION
D1 – DIODE 600V, 12A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY INDICATOR
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB– CIRCUIT BOARD, ENGINE CONTROL
PHR– PREHEAT RELAY

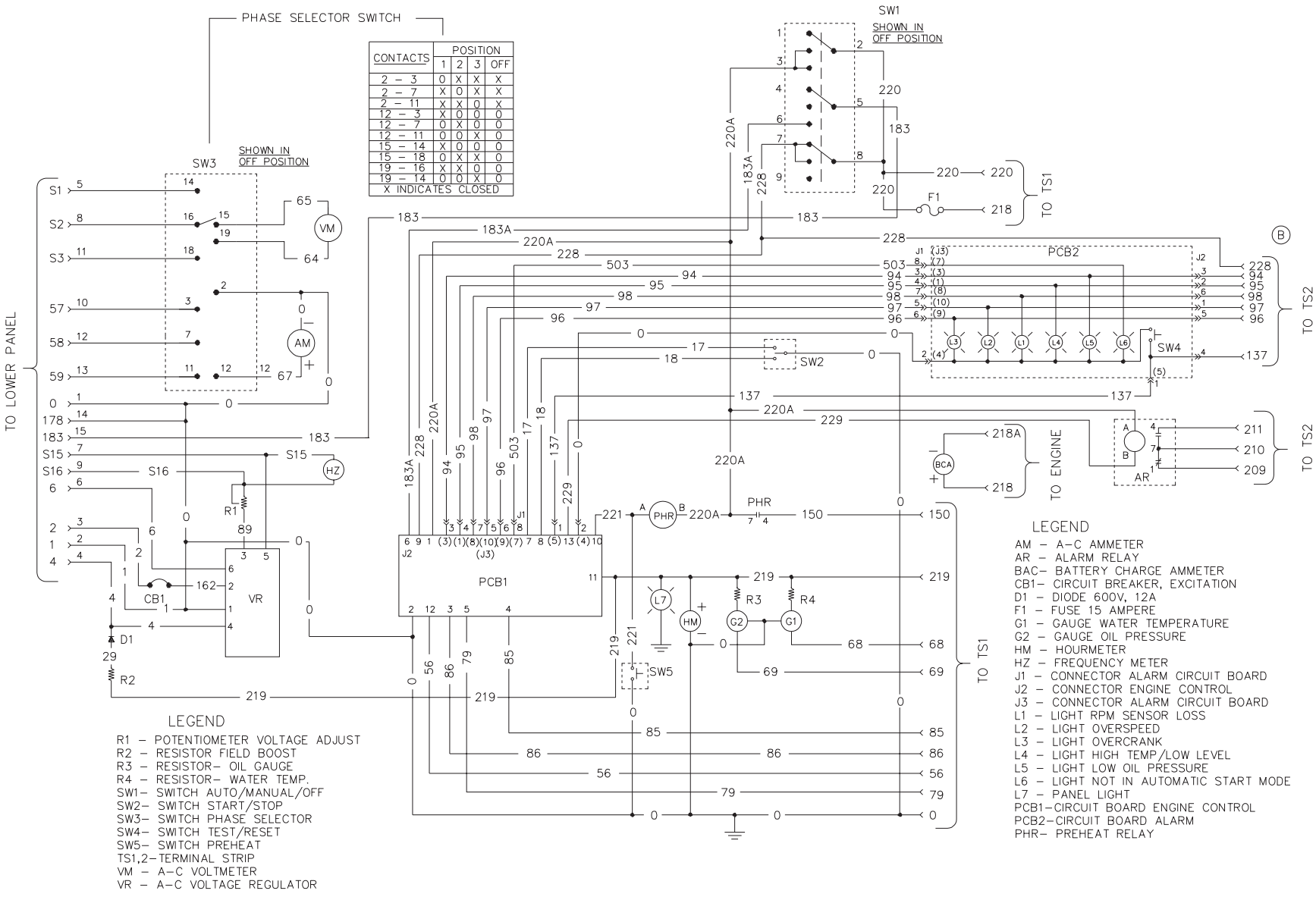
R1 – POTENTIOMETER VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR, OIL GAUGE
R4 – RESISTOR, WATER TEMP.
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH PREHEAT
TS – TERMINAL STRIP
VR – A–C VOLTAGE REGULATOR

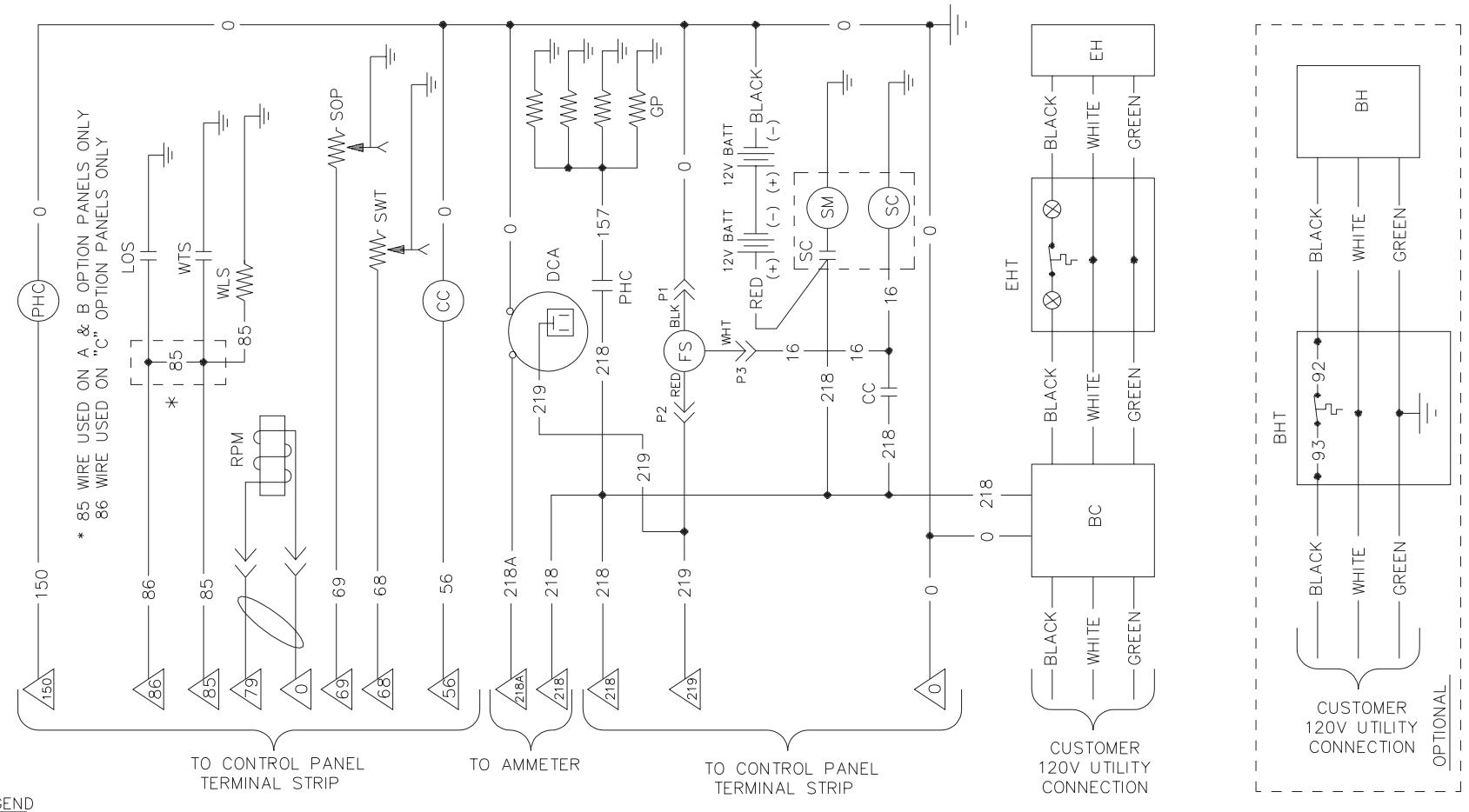

AM - AC AMMETER
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER- EXCITATION
D1 - DIODE- 600 VOLTS, 12 AMP
F1 - FUSE- 15 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ- FREQUENCY METER
L1 - LIGHT- FAULT INDICATOR
L2 - LIGHT- PANEL
PCB - CIRCUIT BOARD, ENGINGE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR, OIL GAUGE
R4 - RESISTOR, WATER TEMP.
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
SW4 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
TS
VR
CB1
R1
R2
HM
HZ
BCA
AM
L2
PHR
D1
F1
SW1
SW2
SW3
SW4
R3
R4
G1
G2
VM
L1
PCB


PHASE SELECTOR SWITCH
SW4
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
TO LOWER PANEL
S1
S2
S3
57
58
59
VM
AM
HZ
SW2
SW1
AUTO
OFF
MAN.
F1
L1
BCA
PHR
R1
VR
CB1
D1
R2
PCB
R4
R5
L2
HM
G2
G1
SW3
TO TS
TO ENGINE
TO TS
LEGEND
AM – A–C AMMETER
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, EXCITATION
D1 – DIODE 600V, 12A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB– CIRCUIT BOARD ENGINE CONTROL
PHR– PREHEAT RELAY
R1 – POTENTIOMETER VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR– OIL GAUGE
R4 – RESISTOR– WATER TEMP.
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH, PREHEAT
SW4– SWITCH PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR


PHASE SELECTOR SWITCH
SW4
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
TO LOWER PANEL
S1
S2
S3
57
58
59
VM
AM
HZ
SW2
SW1
AUTO
OFF
MAN.
F1
L1
BCA
PHR
R1
VR
CB1
D1
R2
PCB
R4
R5
L2
HM
G2
G1
SW3
TO TS
TO ENGINE
TO TS
LEGEND
AM – A–C AMMETER
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, EXCITATION
D1 – DIODE 600V, 12A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB– CIRCUIT BOARD ENGINE CONTROL
PHR– PREHEAT RELAY
R1 – POTENTIOMETER VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR– OIL GAUGE
R4 – RESISTOR– WATER TEMP.
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH, PREHEAT
SW4– SWITCH PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR


AM -AC AMMETER
AR -ALARM RELAY
BCA-BATTERY CHARGE AMMETER
CB1-CIRCUIT BREAKER, EXCITATION
D1 -DIODE-600 VOLTS, 12 AMP
F1 -FUSE-15 AMPERE
G1 -GAUGE-WATER TEMP.
G2 -GAUGE-OIL PRESSURE
HM -HOURMETER
HZ -FREQUENCY METER
J1 -CONNECTOR ALARM CIRCUIT BOARD
J2 -CONNECTOR ENGINE CONTROL
J3 -CONNECTOR ALARM CIRCUIT BOARD
L1 -LIGHT, RPM SENSOR LOSS
L2 -LIGHT, OVERSPEED
L3 -LIGHT, OVERCRANK
L4 -LIGHT, HIGH TEMP/LOW LEVEL
L5 -LIGHT, LOW OIL PRESSURE
L6 -LIGHT, NOT IN AUTO START MODE
L7 -LIGHT, PANEL
PCB1-CIRCUIT BOARD-ENGINE CONTROL
PCB2-CIRCUIT BOARD-ALARM
PHR -PREHEAT RELAY
R1 -POTENTIOMETER VOLTAGE ADJUST
R2 -RESISTOR-FIELD BOOST
R3 -RESISTOR-OIL GAUGE
R4 -RESISTOR-WATER TEMP.
SW1 -SWITCH-AUTO/MANUAL/OFF
SW2 -SWITCH-START/STOP
SW3 -SWITCH-PHASE SELECTOR
SW4 -SWITCH-TEST/RESET
SW5 -SWITCH-PREHEAT
TS1,2-TERMINAL STRIP
VM -AC VOLTMETER
VR -AC VOLTAGE REGULATOR
TS
VR
CB1
PHR
R2
D1
AR
TS2
PCB2/
L1-L6/
SW4
PCB1
AMMETER
LEADS
TO
LOWER
PANEL
R1
SW3
F1
SW1
SW2
SW5
HM
HZ
BCA
AM
L7
G2
R3
G1
R4
VM


PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
SW1
SHOWN IN OFF POSITION
SW3
SHOWN IN OFF POSITION
TO LOWER PANEL
TO TS1
TO TS2
TO ENGINE
PCB1
PCB2
SW2
SW4
SW5
F1
VM
AM
HZ
VR
CB1
D1
R1
R2
R3
R4
PHR
HM
L1
L2
L3
L4
L5
L6
L7
G1
G2
BCA
AR
LEGEND
R1 – POTENTIOMETER VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR– OIL GAUGE
R4 – RESISTOR– WATER TEMP.
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH PHASE SELECTOR
SW4– SWITCH TEST/RESET
SW5– SWITCH PREHEAT
TS1,2–TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR
LEGEND
AM – A–C AMMETER
AR – ALARM RELAY
BAC– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, EXCITATION
D1 – DIODE 600V, 12A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – PANEL LIGHT
PCB1–CIRCUIT BOARD ENGINE CONTROL
PCB2–CIRCUIT BOARD ALARM
PHR– PREHEAT RELAY

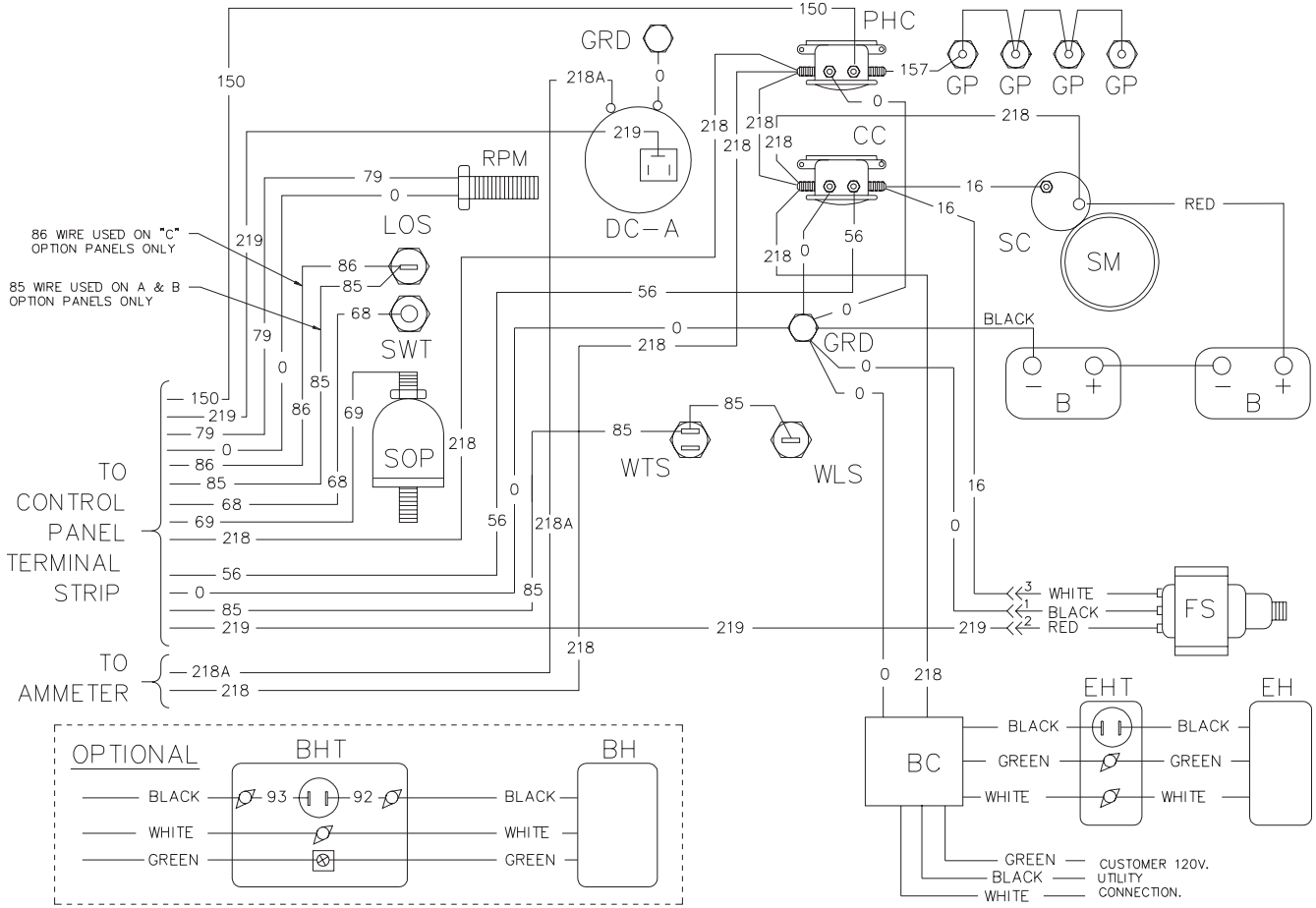


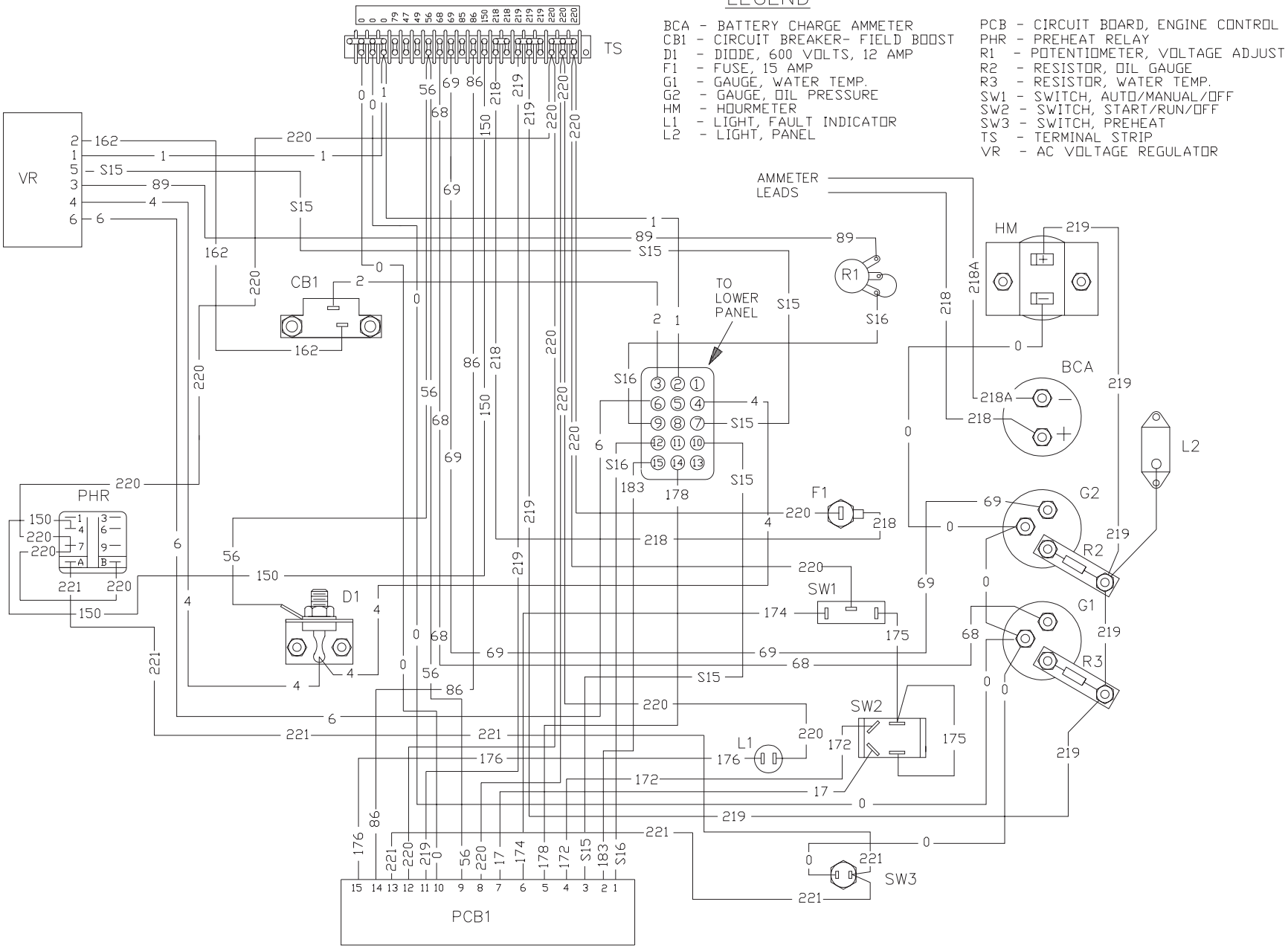
LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

LEGEND

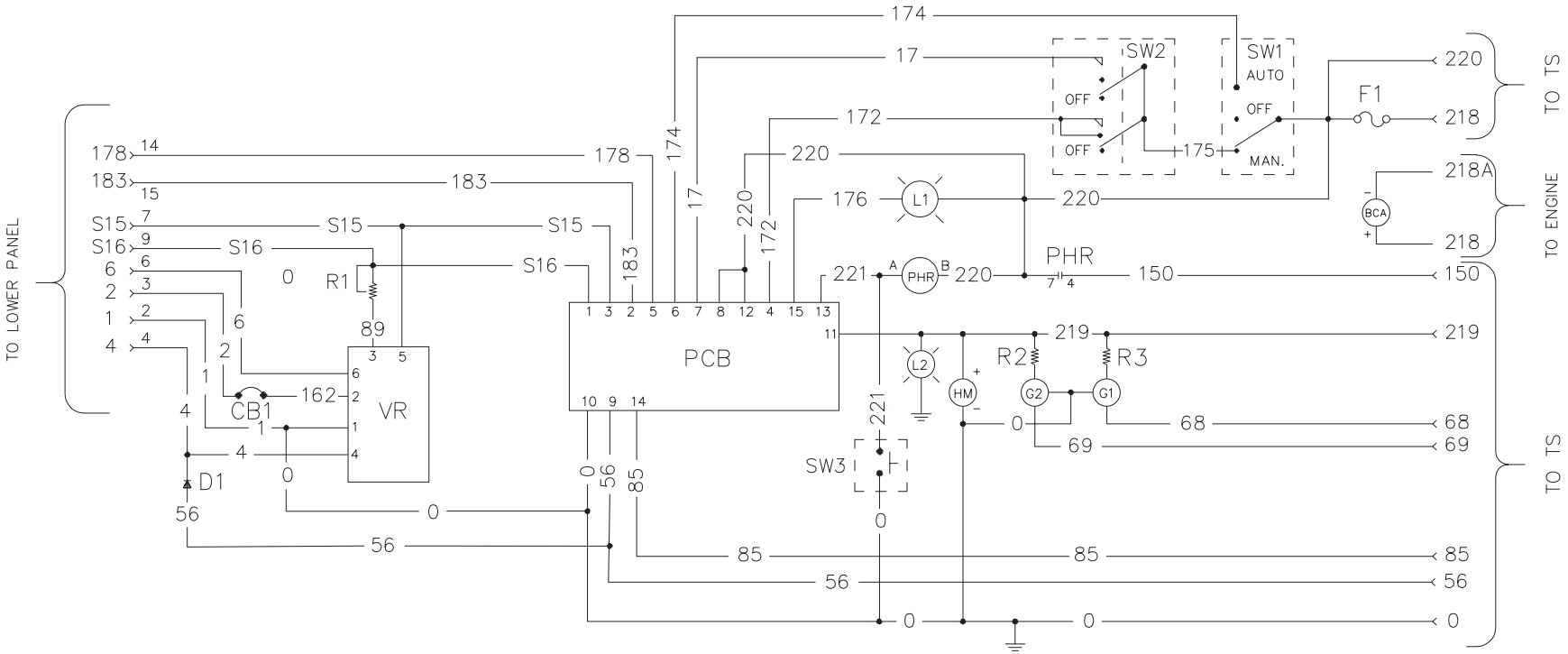
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DCA– DC ALTERNATOR
EH – ENGINE HEATER
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FS – FUEL SOLENOID
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR –USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

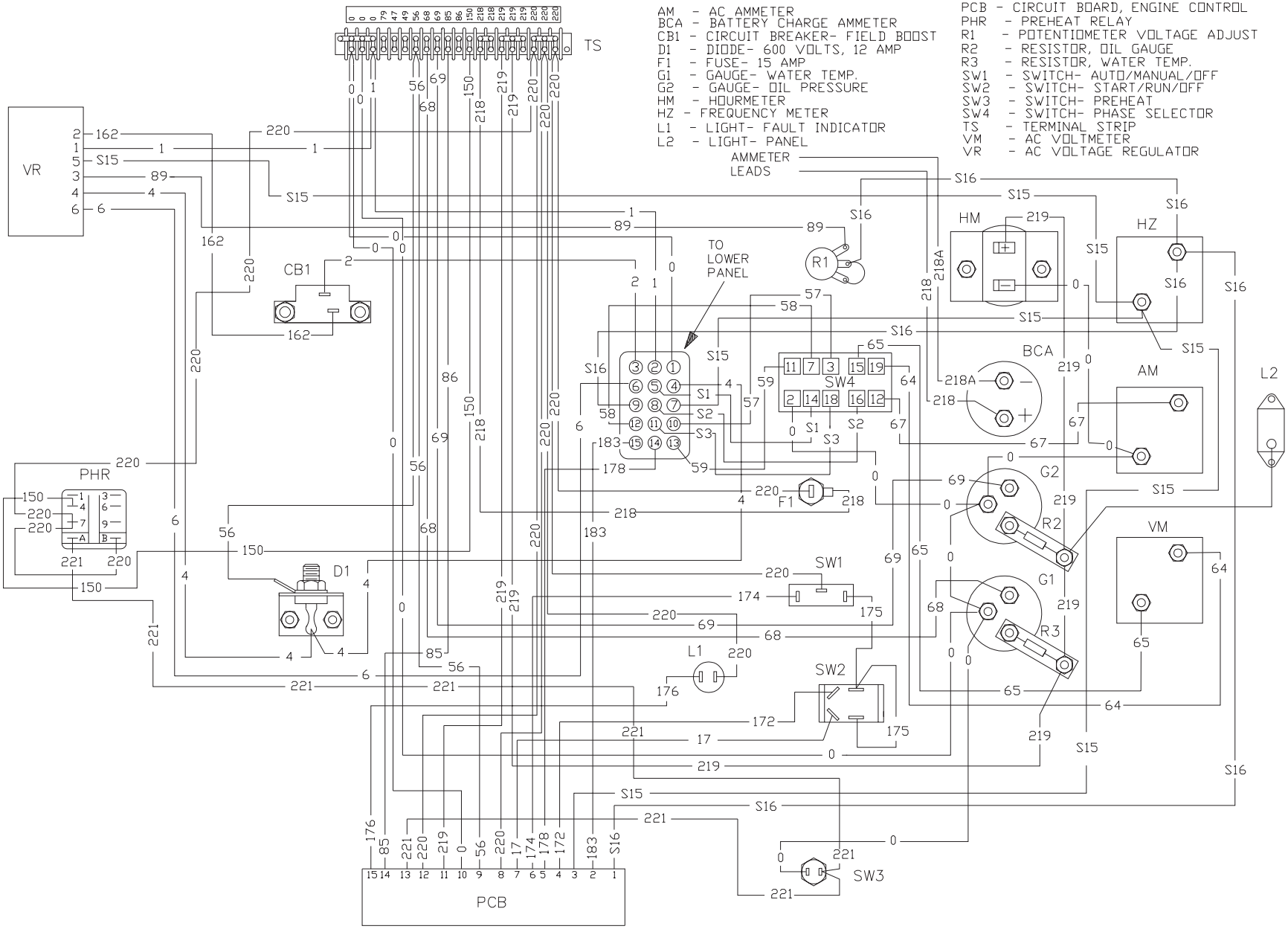


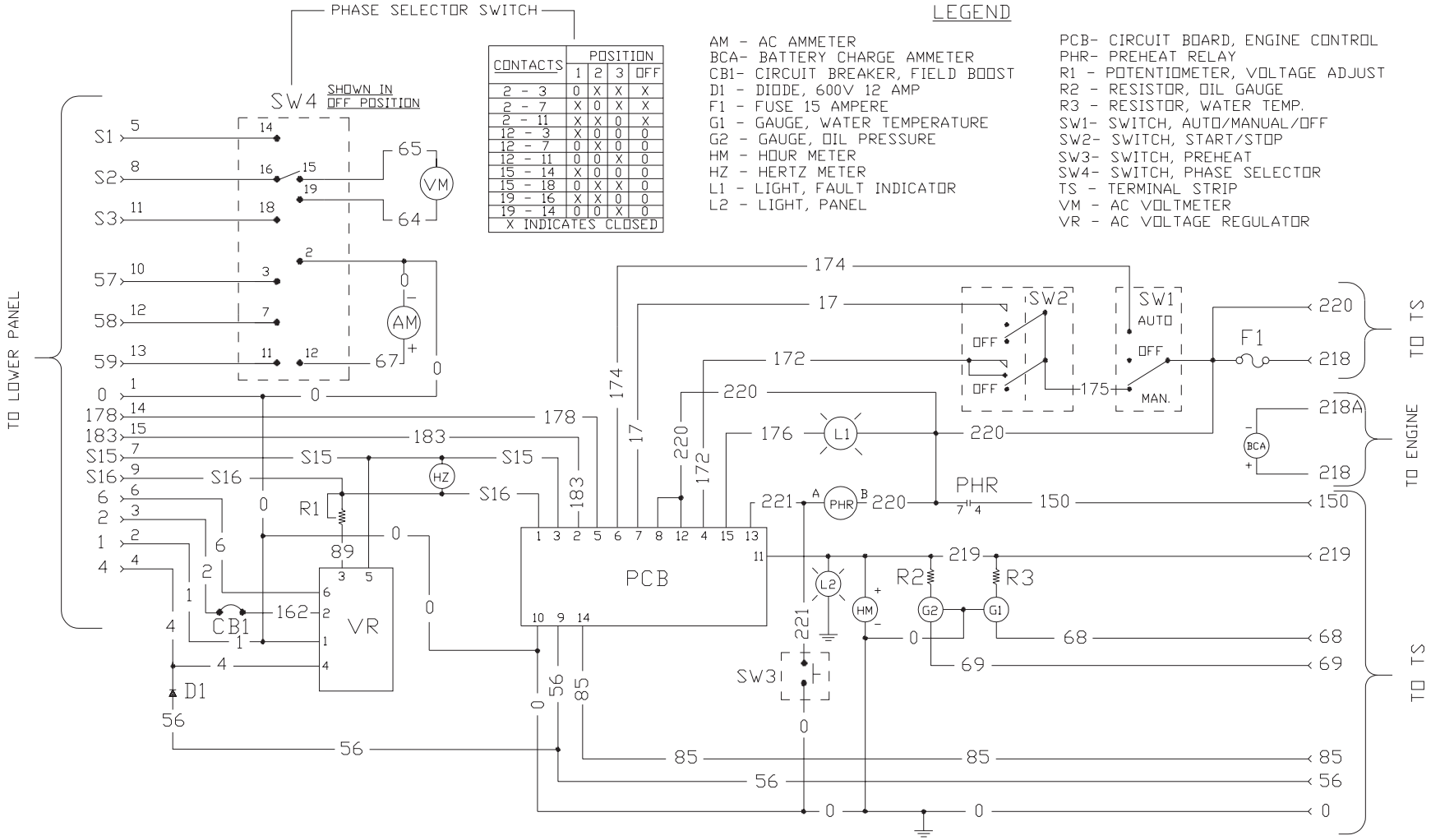

LEGEND
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
D1 - DIODE, 600 VOLTS, 12 AMP
F1 - FUSE, 15 AMP
G1 - GAUGE, WATER TEMP.
G2 - GAUGE, OIL PRESSURE
HM - HOURMETER
L1 - LIGHT, FAULT INDICATOR
L2 - LIGHT, PANEL
PCB - CIRCUIT BOARD, ENGINE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER, VOLTAGE ADJUST
R2 - RESISTOR, OIL GAUGE
R3 - RESISTOR, WATER TEMP.
SW1 - SWITCH, AUTO/MANUAL/OFF
SW2 - SWITCH, START/RUN/OFF
SW3 - SWITCH, PREHEAT
TS - TERMINAL STRIP
VR - AC VOLTAGE REGULATOR
TS
VR
CB1
PHR
D1
AMMETER LEADS
TO LOWER PANEL
R1
HM
BCA
L2
G2
R2
G1
R3
F1
SW1
SW2
SW3
L1
PCB1

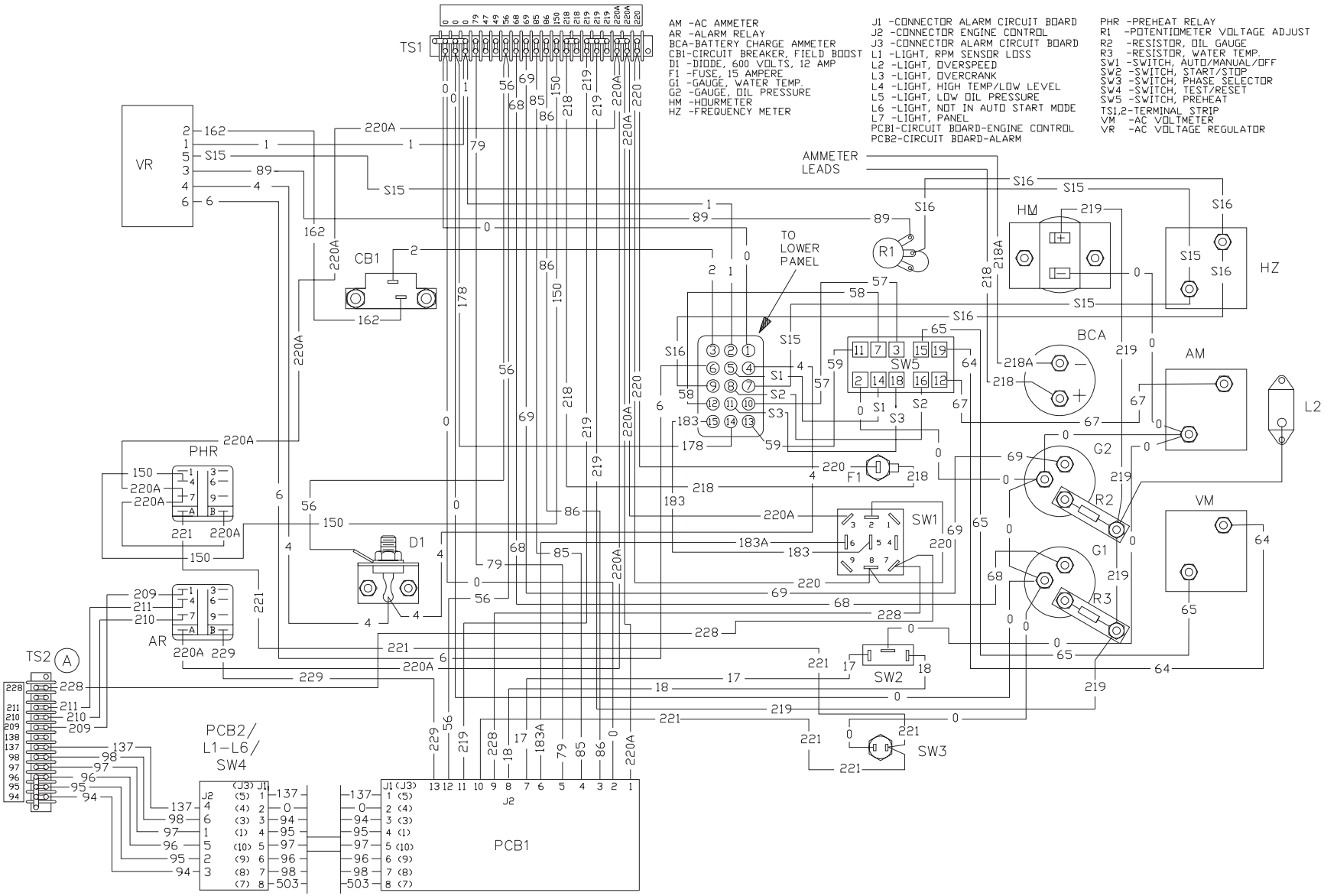
LEGEND

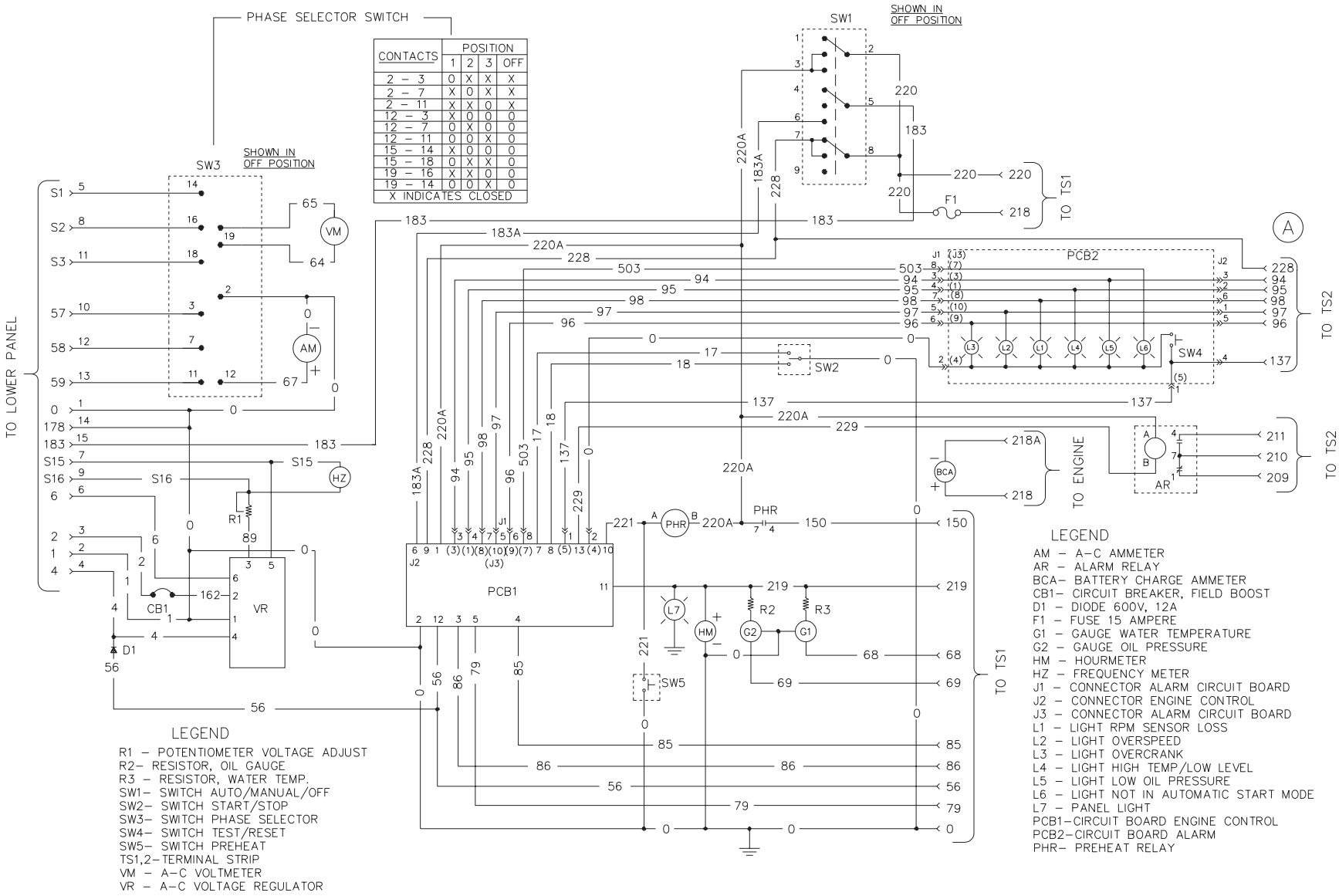
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, FIELD BOOST
D1 – DIODE, 600V 12 AMP
F1 – FUSE 15 AMPERE
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOUR METER
L1 – LIGHT, FAULT INDICATOR
L2 – LIGHT, PANEL
PCB– CIRCUIT BOARD, ENGINE CONTROL
PHR– PREHEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
R2 – RESISTOR, OIL GAUGE
R3 – RESISTOR, WATER TEMP.
SW1– SWITCH, AUTO/MANUAL/OFF
SW2– SWITCH, START/STOP
SW3– SWITCH, PREHEAT
TS – TERMINAL STRIP
VR – AC VOLTAGE REGULATOR




AM - AC AMMETER
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
D1 - DIODE- 600 VOLTS, 12 AMP
F1 - FUSE- 15 AMP
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT- FAULT INDICATOR
L2 - LIGHT- PANEL
PCB - CIRCUIT BOARD, ENGINE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR, OIL GAUGE
R3 - RESISTOR, WATER TEMP.
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
SW4 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
TS
VR
CB1
R1
HM
HZ
BCA
AM
L2
PHR
D1
F1
SW1
SW2
SW3
SW4
G1
G2
R2
R3
VM
L1
PCB


PHASE SELECTOR SWITCH
SW4 SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 - 3 | 0 | X | X | X
2 - 7 | X | 0 | X | X
2 - 11 | X | X | 0 | X
12 - 3 | X | 0 | 0 | 0
12 - 7 | 0 | X | 0 | 0
12 - 11 | 0 | 0 | X | 0
15 - 14 | X | 0 | 0 | 0
15 - 18 | 0 | X | X | 0
19 - 16 | X | 0 | 0 | 0
19 - 14 | 0 | 0 | X | 0
X INDICATES CLOSED
LEGEND
AM - AC AMMETER
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE, 600V 12 AMP
F1 - FUSE 15 AMPERE
G1 - GAUGE, WATER TEMPERATURE
G2 - GAUGE, OIL PRESSURE
HM - HOUR METER
HZ - HERTZ METER
L1 - LIGHT, FAULT INDICATOR
L2 - LIGHT, PANEL
PCB- CIRCUIT BOARD, ENGINE CONTROL
PHR- PREHEAT RELAY
R1 - POTENTIOMETER, VOLTAGE ADJUST
R2 - RESISTOR, OIL GAUGE
R3 - RESISTOR, WATER TEMP.
SW1- SWITCH, AUTO/MANUAL/OFF
SW2- SWITCH, START/STOP
SW3- SWITCH, PREHEAT
SW4- SWITCH, PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
TO LOWER PANEL
TO ENGINE
TO TS
TO TS
SW2
SW1
AUTO
OFF
MAN.
F1
BCA
PHR
PCB
VR
CB1
D1
R1
R2
R3
HZ
AM
VM
L1
L2
HM
G1
G2
SW3


AM -AC AMMETER
AR -ALARM RELAY
BCA-BATTERY CHARGE AMMETER
CB1-CIRCUIT BREAKER, FIELD BOOST
D1 -DIODE, 600 VOLTS, 12 AMP
F1 -FUSE, 15 AMPERE
G1 -GAUGE, WATER TEMP.
G2 -GAUGE, OIL PRESSURE
HM -HOURMETER
HZ -FREQUENCY METER
J1 -CONNECTOR ALARM CIRCUIT BOARD
J2 -CONNECTOR ENGINE CONTROL
J3 -CONNECTOR ALARM CIRCUIT BOARD
L1 -LIGHT, RPM SENSOR LOSS
L2 -LIGHT, OVERSPEED
L3 -LIGHT, OVERCRANK
L4 -LIGHT, HIGH TEMP/LOW LEVEL
L5 -LIGHT, LOW OIL PRESSURE
L6 -LIGHT, NOT IN AUTO START MODE
L7 -LIGHT, PANEL
PCB1-CIRCUIT BOARD-ENGINE CONTROL
PCB2-CIRCUIT BOARD-ALARM
PHR -PREHEAT RELAY
R1 -POTENTIOMETER VOLTAGE ADJUST
R2 -RESISTOR, OIL GAUGE
R3 -RESISTOR, WATER TEMP.
SW1 -SWITCH, AUTO/MANUAL/OFF
SW2 -SWITCH, START/STOP
SW3 -SWITCH, PHASE SELECTOR
SW4 -SWITCH, TEST/RESET
SW5 -SWITCH, PREHEAT
TS1,2-TERMINAL STRIP
VM -AC VOLTMETER
VR -AC VOLTAGE REGULATOR
TS1
VR
CB1
TO LOWER PANEL
AMMETER LEADS
R1
HM
HZ
BCA
AM
L2
SW5
SW1
SW2
SW3
F1
D1
PHR
AR
G1
G2
R2
R3
VM
TS2
PCB2/ L1-L6/ SW4
PCB1
J2

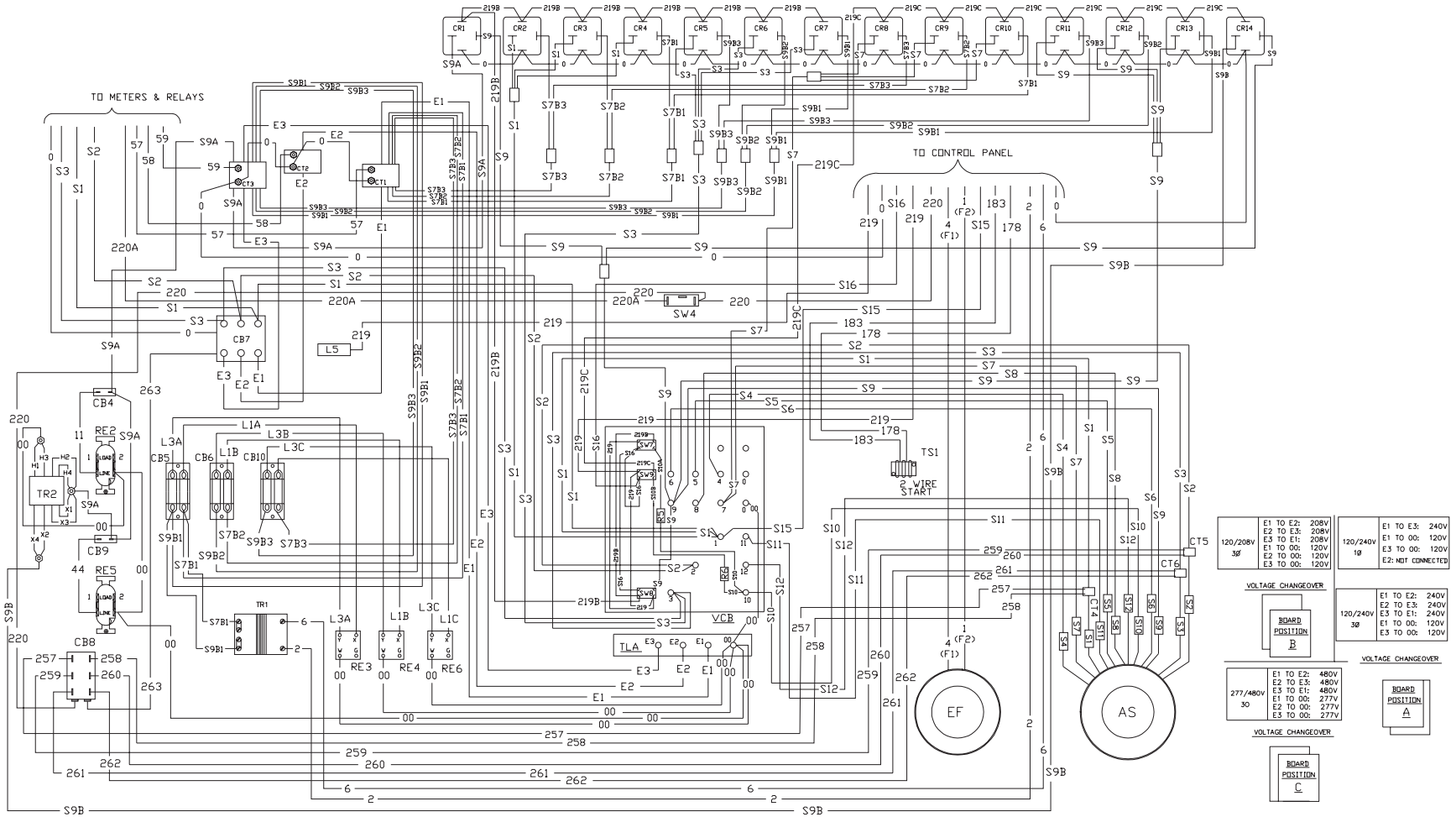


LEGEND

R1 – POTENTIOMETER VOLTAGE ADJUST
R2– RESISTOR, OIL GAUGE
R3 – RESISTOR, WATER TEMP.
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH PHASE SELECTOR
SW4– SWITCH TEST/RESET
SW5– SWITCH PREHEAT
TS1,2–TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR

LEGEND

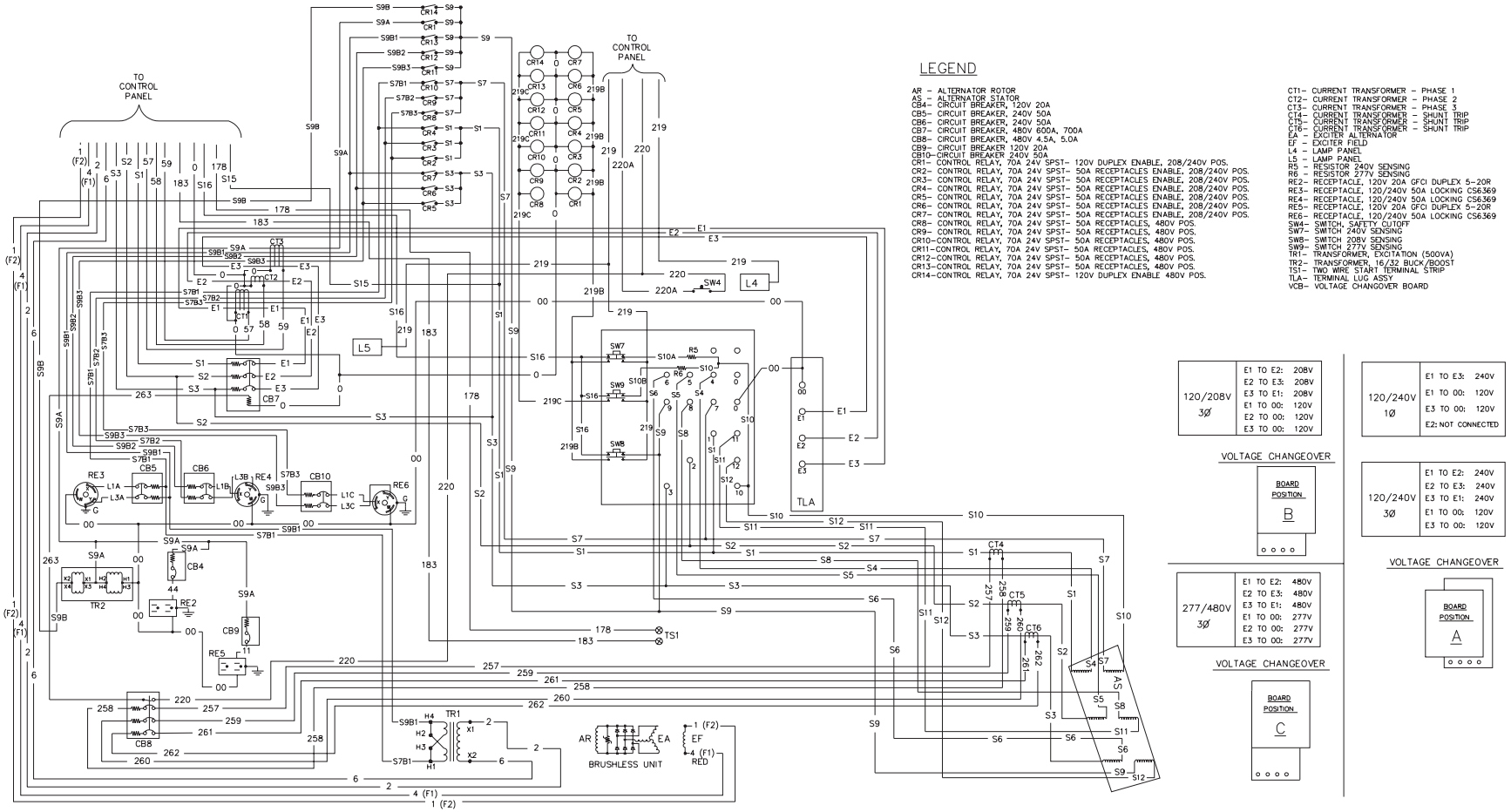
AM – A–C AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, FIELD BOOST
D1 – DIODE 600V, 12A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – PANEL LIGHT
PCB1–CIRCUIT BOARD ENGINE CONTROL
PCB2–CIRCUIT BOARD ALARM
PHR– PREHEAT RELAY

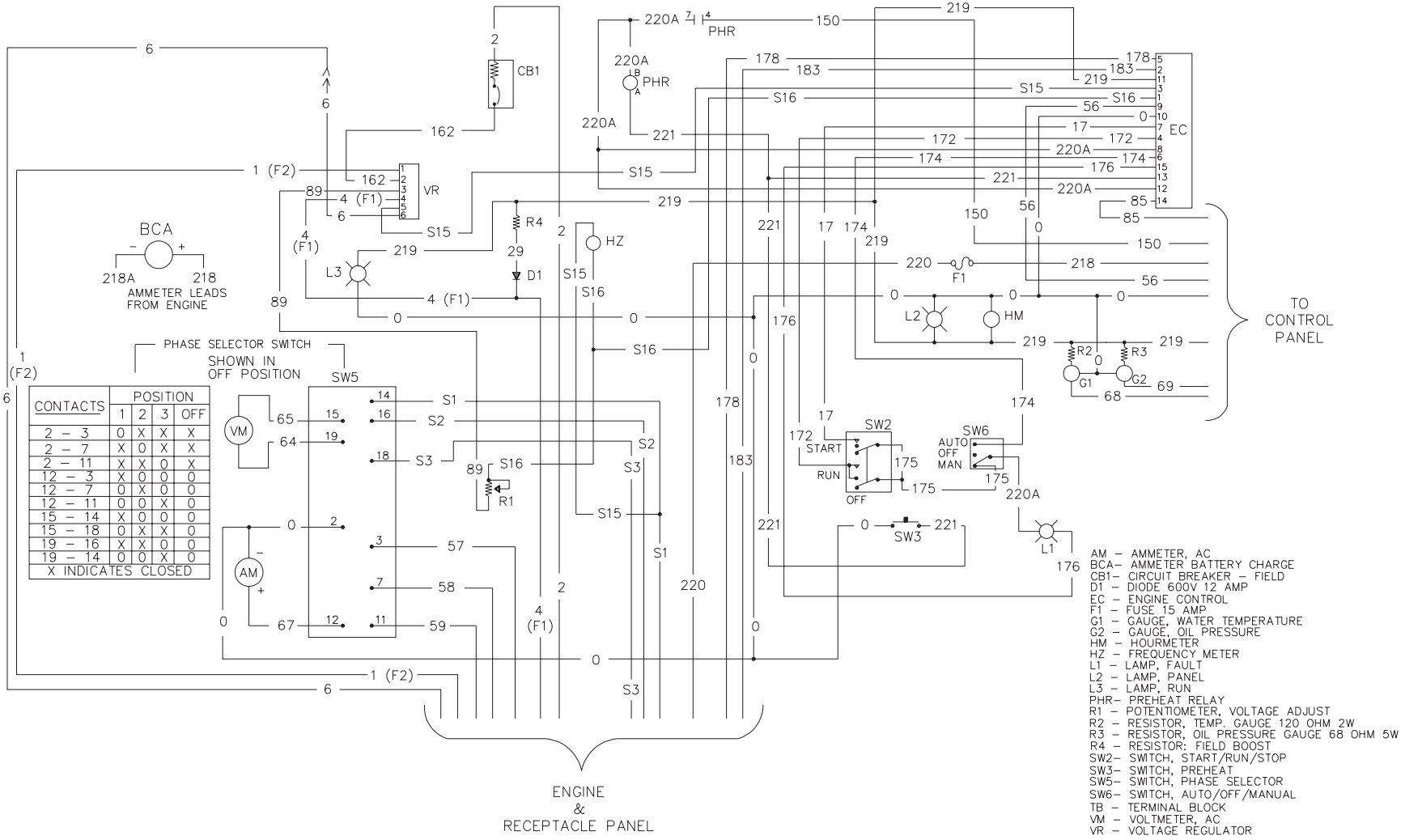


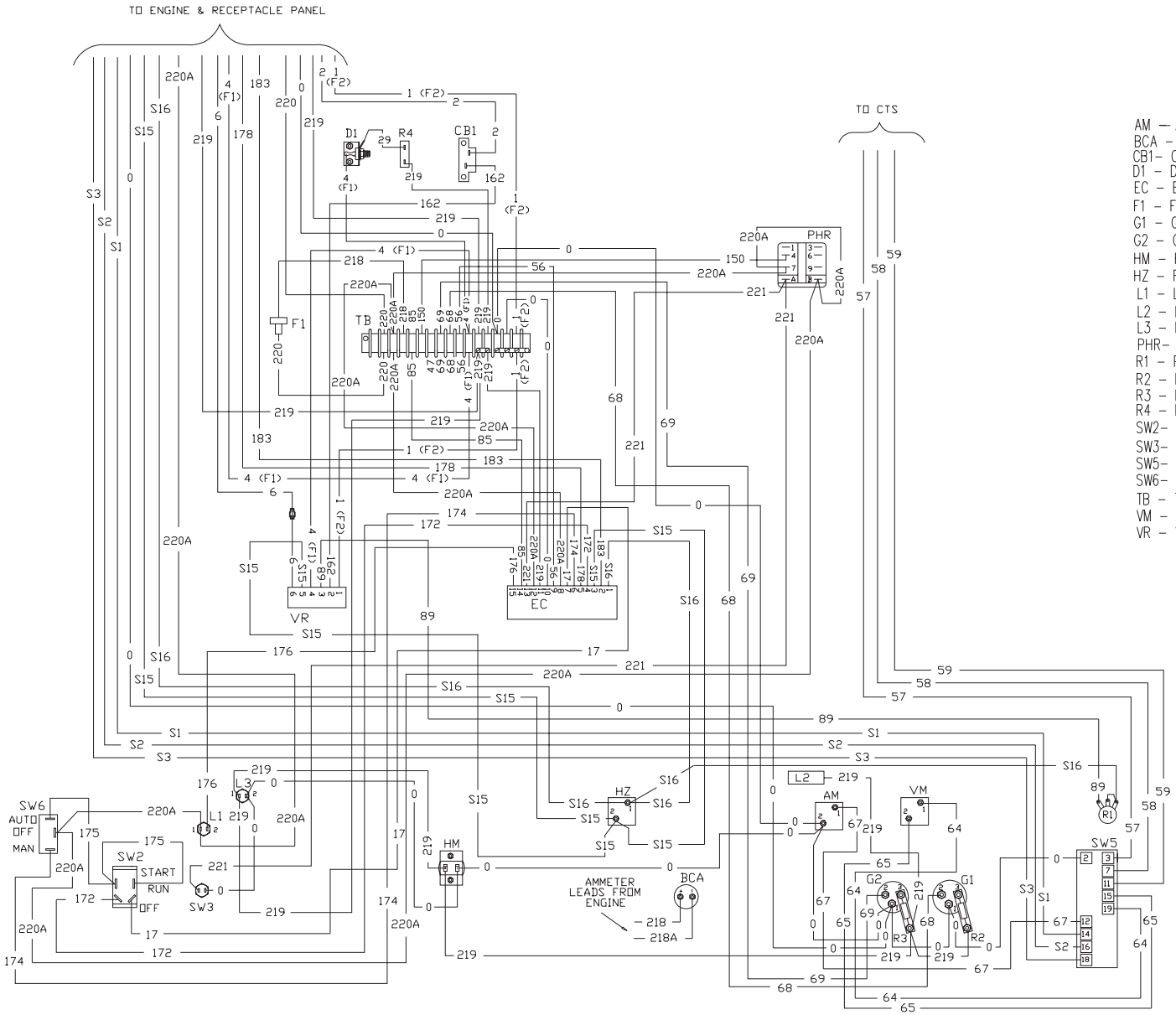
LEGEND

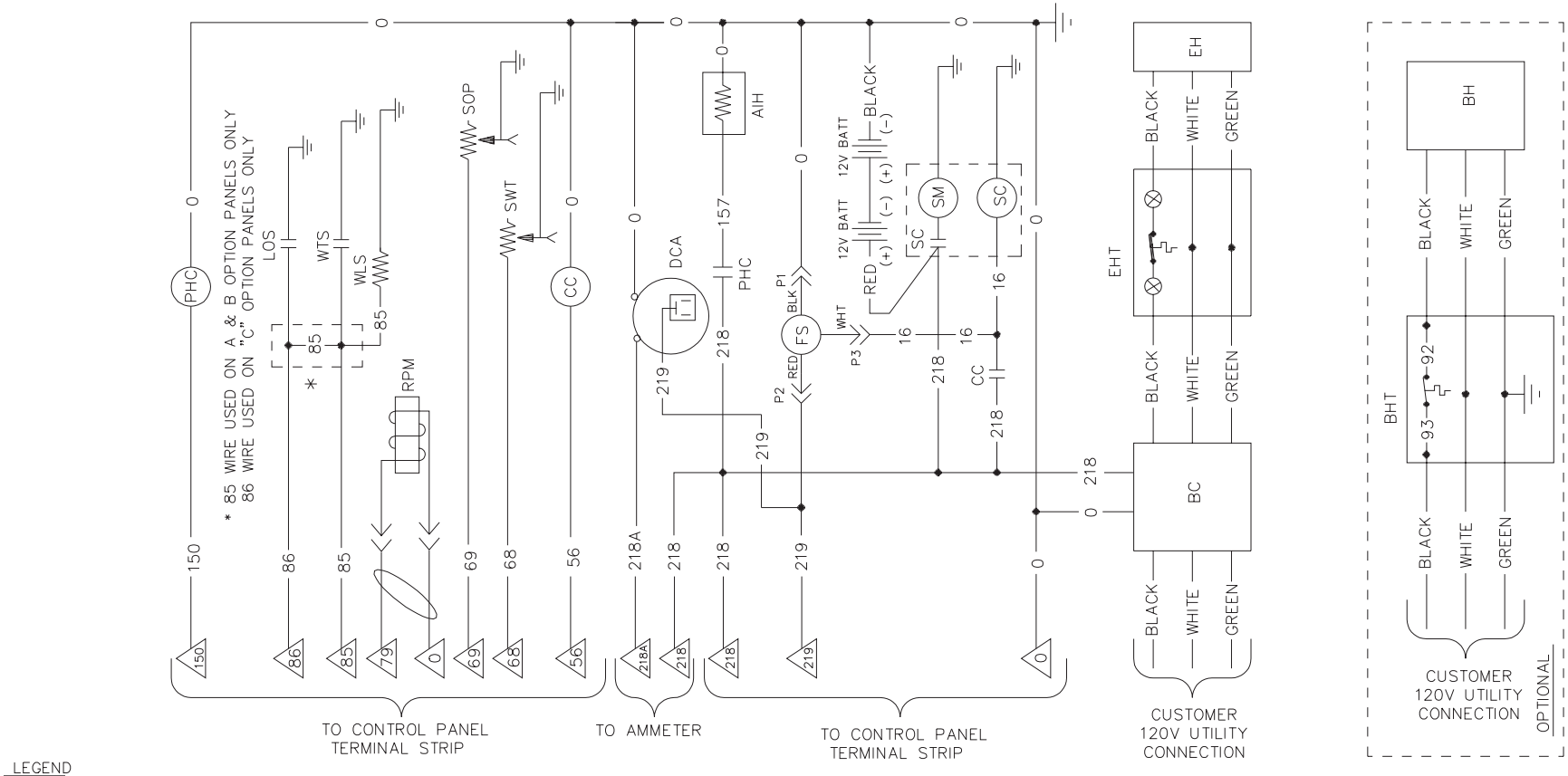
AS - ALTERNATOR STATOR
CB4- CIRCUIT BREAKER, 120V 20A
CB5- CIRCUIT BREAKER, 240V 50A
CB6- CIRCUIT BREAKER, 240V 50A
CB7- CIRCUIT BREAKER, 480V 600A, 700A
CB8- CIRCUIT BREAKER, 480V 4.5A, 5.0V
CB9- CIRCUIT BREAKER, 120V 20A
CB10- CIRCUIT BREAKER, 240V 50A
CR1- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLE ENABLE, 208/240V PDS.
CR2- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENABLE, 208/240V PDS.
CR3- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENABLE, 208/240V PDS.
CR4- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENABLE, 208/240V PDS.
CR5- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENABLE, 208/240V PDS.
CR6- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENABLE, 208/240V PDS.
CR7- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENABLE, 208/240V PDS.
CR8- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLE ENABLE, 208/240V PDS.
CR9- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENABLE, 208/240V PDS.
CR10- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENBLE, 208/240V PDS.
CR11- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENBLE, 208/240V PDS.
CR12- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENBLE, 208/240V PDS.
CR13- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLES ENBLE, 208/240V PDS.
CR14- CNTRL RELAY, 70A 24V SPST-50A RECEPTACLE ENABLE, 480V PDS.
CT1 - CURRENT TRANSFORMER - PHASE 1
CT2- CURRENT TRANSFORMER - PHASE 2
CT3- CURRENT TRANSFORMER - PHASE 3
CT4- CURRENT TRANSFORMER - SHUNT TRIP
CT5- CURRENT TRANSFORMER - SHUNT TRIP
CT6- CURRENT TRANSFORMER - SHUNT TRIP

EF - EXCITER FIELD
L5 - LAMP PANEL
R5 - RESISTOR, 240V SENSING
R6 - RESISTOR, 277V SENSING
RE2- RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE3- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE5- RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE6- RECEPTACLE, 120/240V 50A LOCKING CS6369
SW4- SWITCH, SAFETY CUTOFF
SW7- SWITCH, 240 VOLT SENSING
SW8- SWITCH, 208 VOLT SENSING
SW9- SWITCH, 277 VOLT SENSING
TR1- TRANSFORMER, EXCITATION (500VA)
TR2- TRANSFORMER, 16/32 BUCK/BOOST
TS1- TWO WIRE START TERMINAL STRIP
TLA- TERMINAL LUG ASSY
VCB- VOLTAGE CHANGEOVER BOARD


TO CONTROL PANEL
TO CONTROL PANEL
LEGEND
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
CB4– CIRCUIT BREAKER, 120V 20A
CB5– CIRCUIT BREAKER, 240V 50A
CB6– CIRCUIT BREAKER, 240V 50A
CB7– CIRCUIT BREAKER, 480V 600A, 700A
CB8– CIRCUIT BREAKER, 480V 4.5A, 5.0A
CB9– CIRCUIT BREAKER 120V 20A
CB10–CIRCUIT BREAKER 240V 50A
CR1– CONTROL RELAY, 70A 24V SPST– 120V DUPLEX ENABLE, 208/240V POS.
CR2– CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES ENABLE, 208/240V POS.
CR3– CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES ENABLE, 208/240V POS.
CR4– CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES ENABLE, 208/240V POS.
CR5– CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES ENABLE, 208/240V POS.
CR6– CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES ENABLE, 208/240V POS.
CR7– CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES ENABLE, 208/240V POS.
CR8– CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES, 480V POS.
CR9– CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES, 480V POS.
CR10–CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES, 480V POS.
CR11–CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES, 480V POS.
CR12–CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES, 480V POS.
CR13–CONTROL RELAY, 70A 24V SPST– 50A RECEPTACLES, 480V POS.
CR14–CONTROL RELAY, 70A 24V SPST– 120V DUPLEX ENABLE 480V POS.
CT1– CURRENT TRANSFORMER – PHASE 1
CT2– CURRENT TRANSFORMER – PHASE 2
CT3– CURRENT TRANSFORMER – PHASE 3
CT4– CURRENT TRANSFORMER – SHUNT TRIP
CT5– CURRENT TRANSFORMER – SHUNT TRIP
CT6– CURRENT TRANSFORMER – SHUNT TRIP
EA – EXCITER ALTERNATOR
EF – EXCITER FIELD
L4 – LAMP PANEL
L5 – LAMP PANEL
R5 – RESISTOR 240V SENSING
R6 – RESISTOR 277V SENSING
RE2– RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE3– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE5– RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE6– RECEPTACLE, 120/240V 50A LOCKING CS6369
SW4– SWITCH, SAFETY CUTOFF
SW7– SWITCH 240V SENSING
SW8– SWITCH 208V SENSING
SW9– SWITCH 277V SENSING
TR1– TRANSFORMER, EXCITATION (500VA)
TR2– TRANSFORMER 16/32 BUCK/BOOST
TS1– TWO WIRE START TERMINAL STRIP
TLA– TERMINAL LUG ASSY
VCB– VOLTAGE CHANGOVER BOARD
120/208V 3Ø
E1 TO E2: 208V
E2 TO E3: 208V
E3 TO E1: 208V
E1 TO 00: 120V
E2 TO 00: 120V
E3 TO 00: 120V
120/240V 1Ø
E1 TO E3: 240V
E1 TO 00: 120V
E3 TO 00: 120V
E2: NOT CONNECTED
120/240V 3Ø
E1 TO E2: 240V
E2 TO E3: 240V
E3 TO E1: 240V
E1 TO 00: 120V
E3 TO 00: 120V
277/480V 3Ø
E1 TO E2: 480V
E2 TO E3: 480V
E3 TO E1: 480V
E1 TO 00: 277V
E2 TO 00: 277V
E3 TO 00: 277V
VOLTAGE CHANGEOVER
BOARD POSITION B
VOLTAGE CHANGEOVER
BOARD POSITION A
VOLTAGE CHANGEOVER
BOARD POSITION C
BRUSHLESS UNIT


BCA
218A
218
AMMETER LEADS FROM ENGINE
PHASE SELECTOR SWITCH
SHOWN IN OFF POSITION
SW5
CONTACTS | POSITION 1 2 3 OFF
2 – 3 | 0 X X X
2 – 7 | X 0 X X
2 – 11 | X X 0 X
12 – 3 | X 0 0 0
12 – 7 | 0 X 0 0
12 – 11 | 0 0 X 0
15 – 14 | X 0 0 0
15 – 18 | 0 X X 0
19 – 16 | X X 0 0
19 – 14 | 0 0 X 0
X INDICATES CLOSED
CB1
VR
R4
D1
HZ
R1
L3
VM
AM
PHR
SW2
START
RUN
OFF
SW6
AUTO
OFF
MAN
SW3
L1
L2
HM
F1
R2
R3
G1
G2
EC
TO CONTROL PANEL
ENGINE & RECEPTACLE PANEL
AM – AMMETER, AC
BCA– AMMETER BATTERY CHARGE
CB1– CIRCUIT BREAKER – FIELD
D1 – DIODE 600V 12 AMP
EC – ENGINE CONTROL
F1 – FUSE 15 AMP
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
R2 – RESISTOR, TEMP. GAUGE 120 OHM 2W
R3 – RESISTOR, OIL PRESSURE GAUGE 68 OHM 5W
R4 – RESISTOR: FIELD BOOST
SW2– SWITCH, START/RUN/STOP
SW3– SWITCH, PREHEAT
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
TB – TERMINAL BLOCK
VM – VOLTMETER, AC
VR – VOLTAGE REGULATOR


TO ENGINE & RECEPTACLE PANEL
TO CTS
AM – AMMETER, AC
BCA – AMMETER BATTERY CHARGER
CB1– CIRCUIT BREAKER – FIELD
D1 – DIODE 600V 12 AMP
EC – ENGINE CONTROL
F1 – FUSE 15 AMP
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
R2 – RESISTOR, TEMP. GAUGE 120 OHM, 2W
R3 – RESISTOR, OIL PRESSURE GAUGE 68 OHM 5W
R4 – RESISTOR, FIELD BOOST
SW2– SWITCH, START/RUN/STOP
SW3– SWITCH, PREHEAT
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
TB – TERMINAL BLOCK
VM – VOLTMETER, AC
VR – VOLTAGE REGULATOR
AMMETER LEADS FROM ENGINE

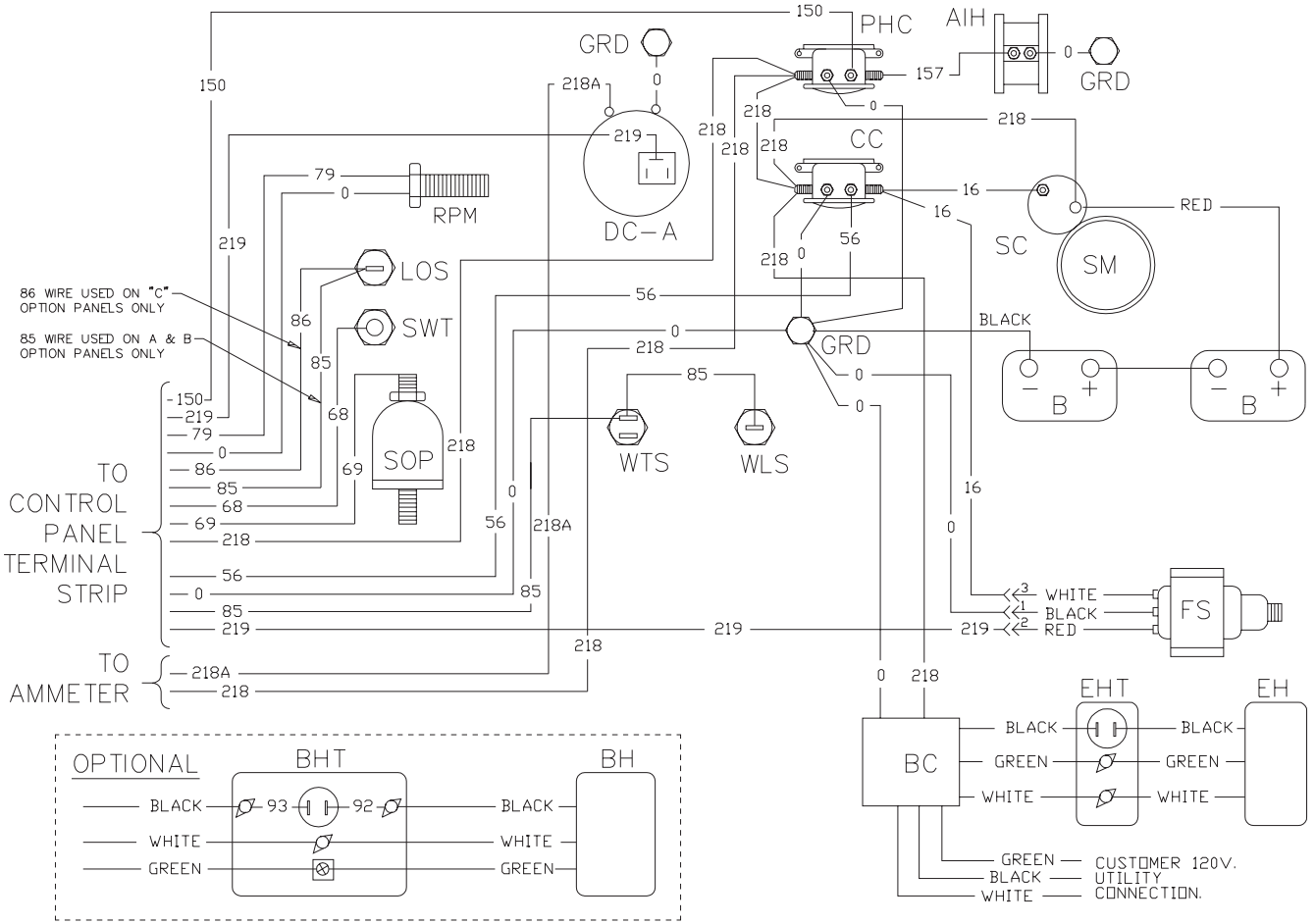


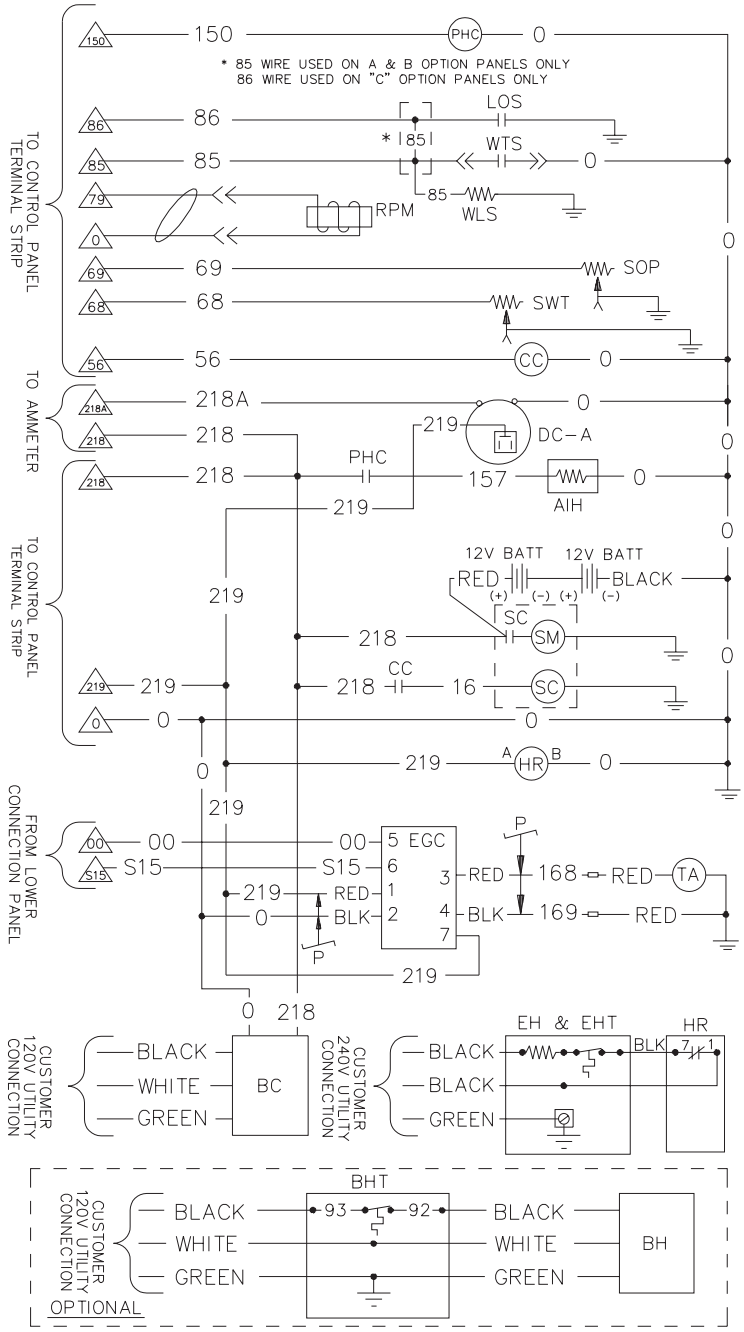
LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
GRD – GROUND
LOS – LOW OIL SWITCH
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
PHC – PRE-HEAT CONTACTOR
RPM – SPEED SENSOR USED ON "C" OPTION UNITS ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER, OIL PRESSURE
SWT – SENDER, WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH

LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EGC– ELECTRONIC GOVERNOR CONTROL
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION UNITS ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

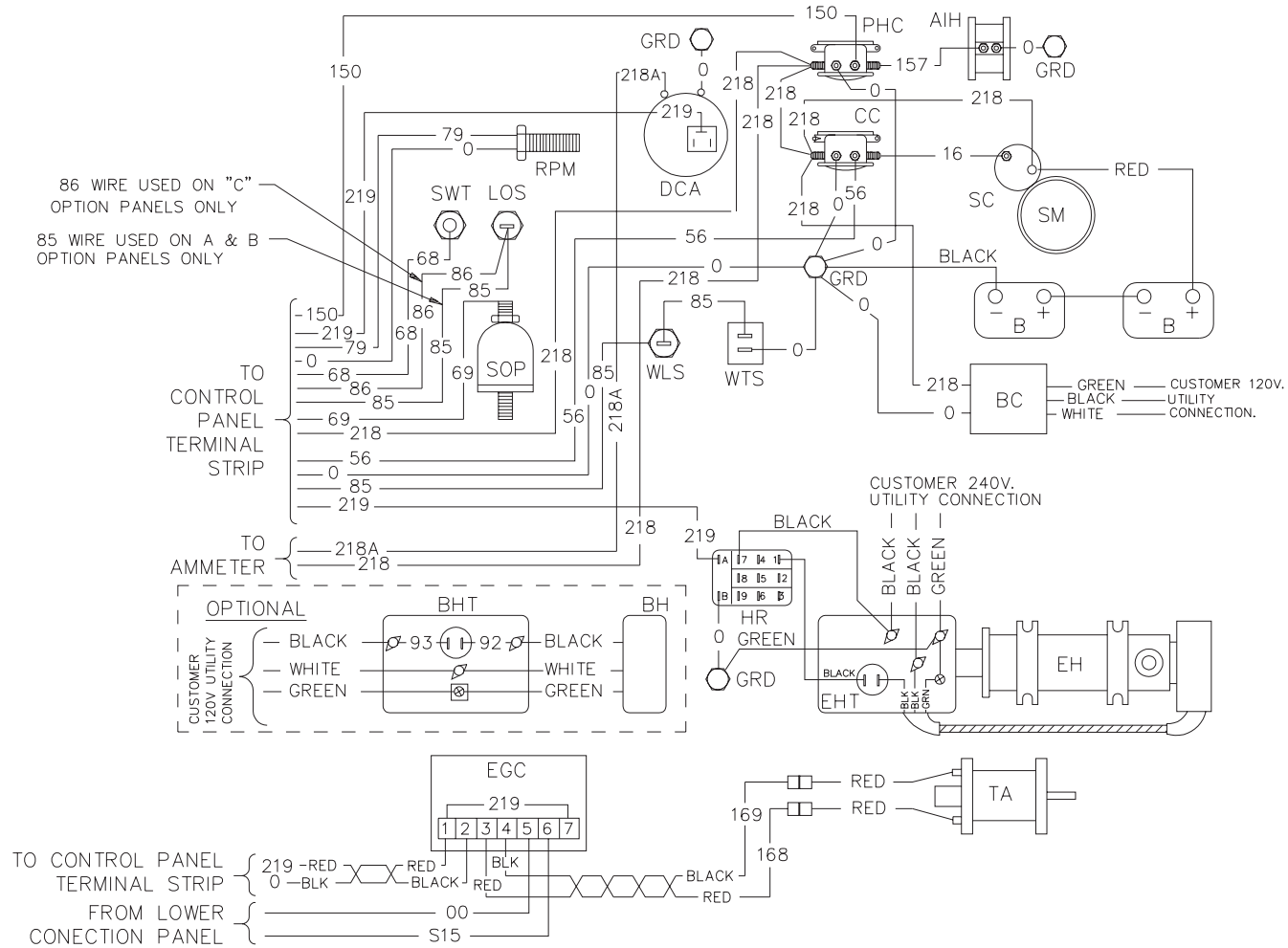




LEGEND

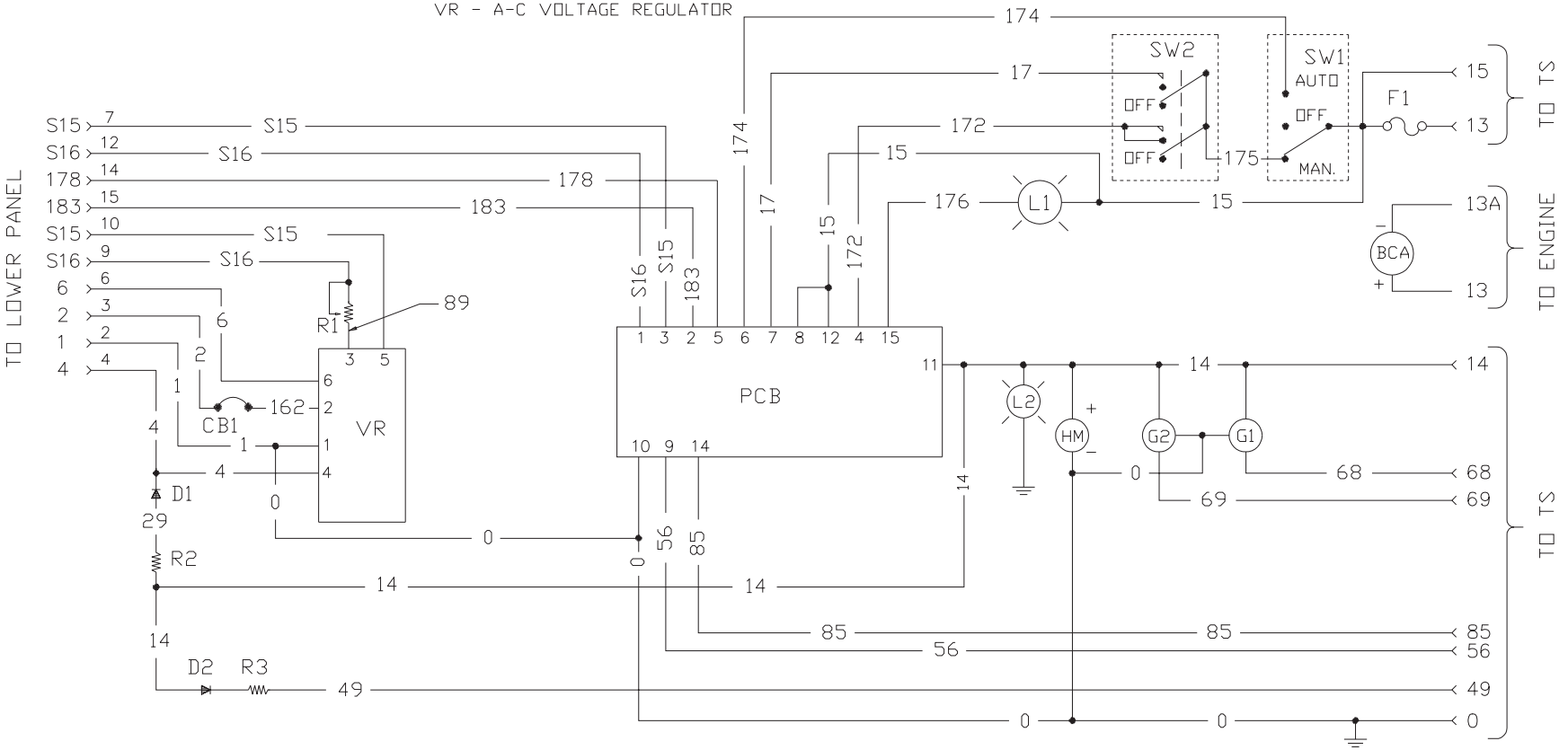
AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EGC– ELECTRONIC GOVERNOR CONTROL
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
GRD– GROUND
HR – HEATER RELAY ENGINE
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION UNITS ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
TA – THROTTLE ACTUATOR
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH
P – TWISTED PAIR

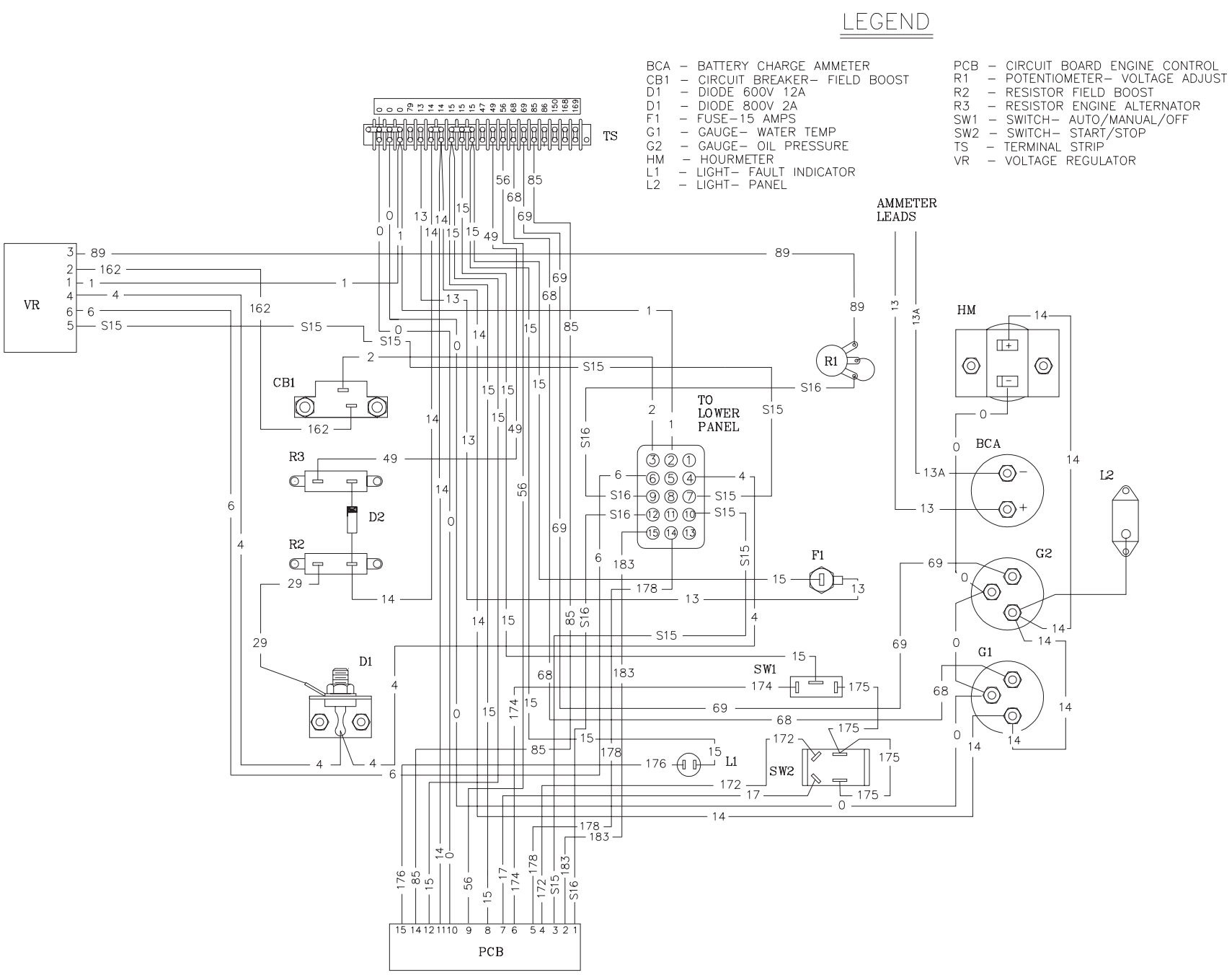
LEGEND
AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EGC– ELECTRONIC GOVERNOR CONTROL
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
GRD– GROUND
HR – HEATER RELAY ENGINE
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION UNITS ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
TA – THROTTLE ACTUATOR
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

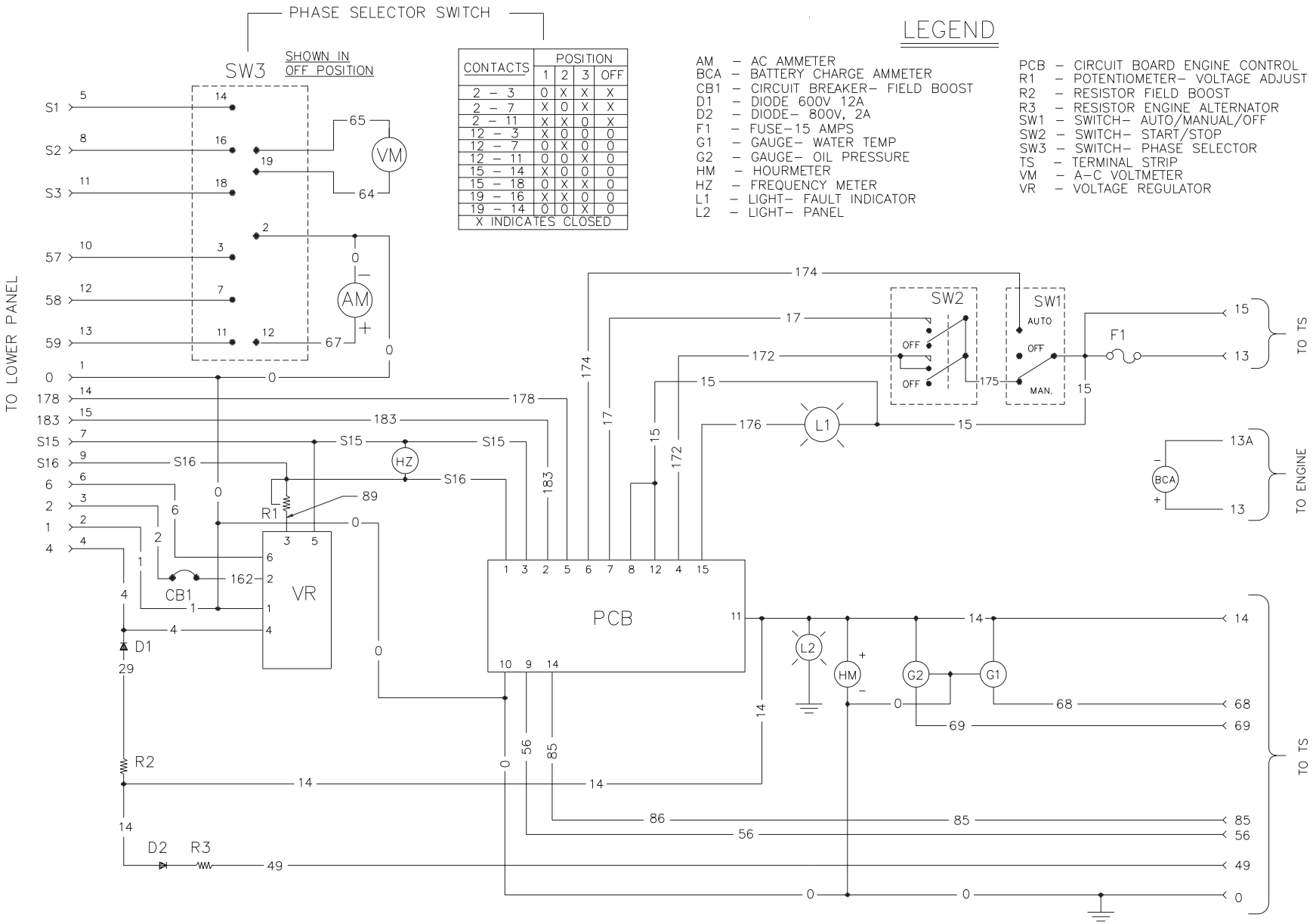


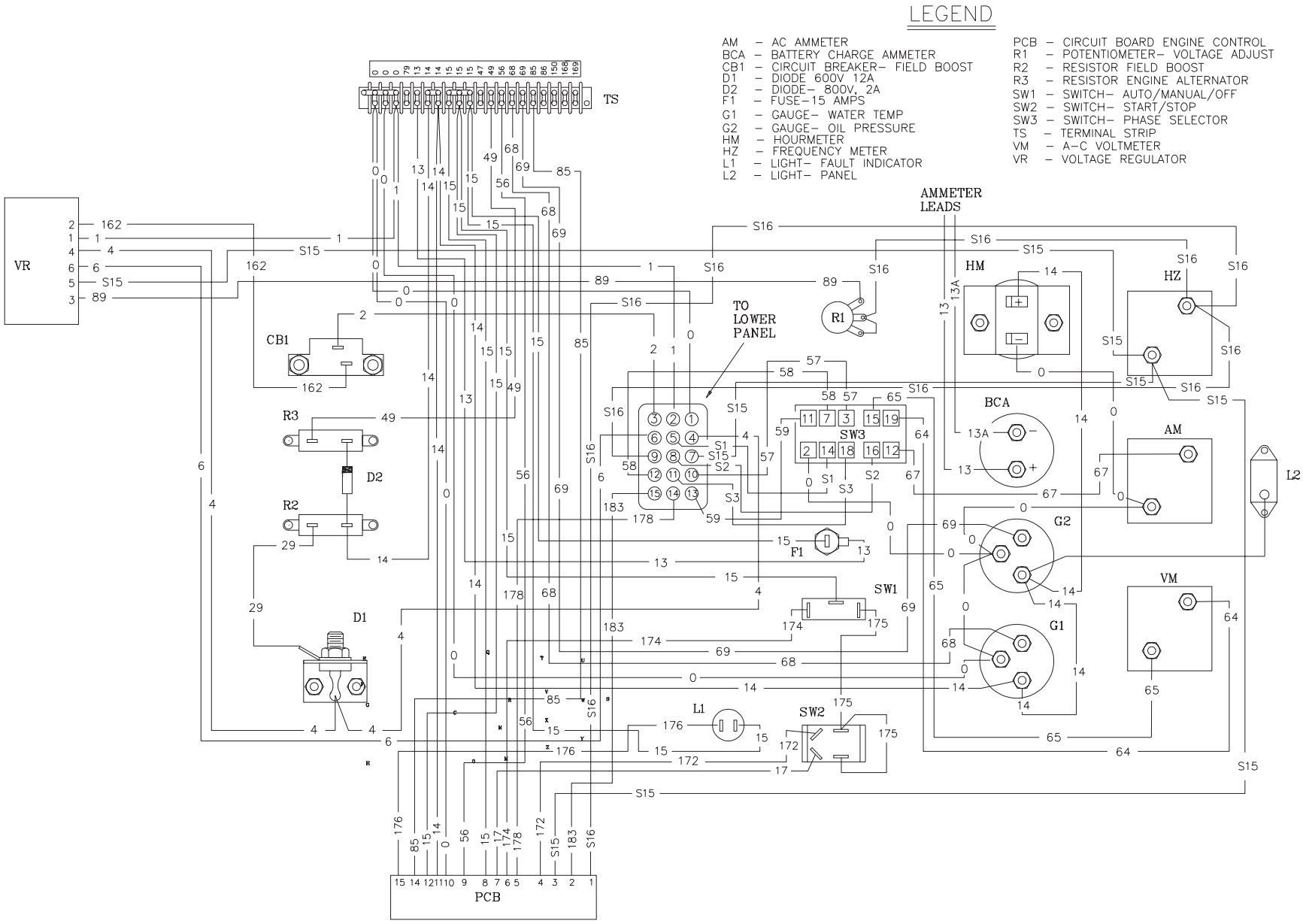
LEGEND

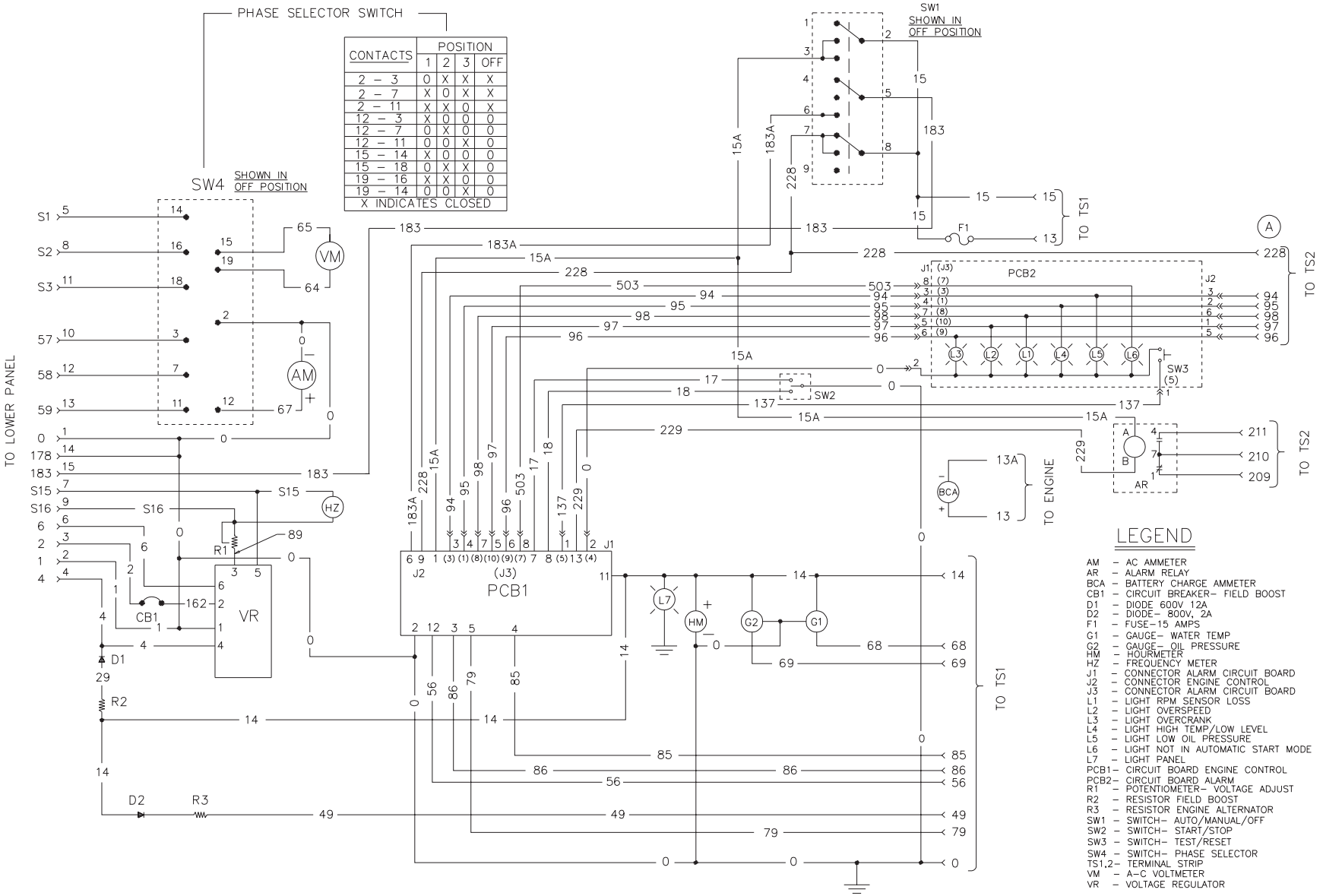
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600V, 12A
D2 DIODE 800V, 2A
F1 - FUSE 15 AMPERE
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL
PCB- CIRCUIT BOARD, ENGINE CONTROL
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR FIELD BOOST
R3 - RESISTOR ENGINE ALTERNATOR
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
TS - TERMINAL STRIP
VR - A-C VOLTAGE REGULATOR

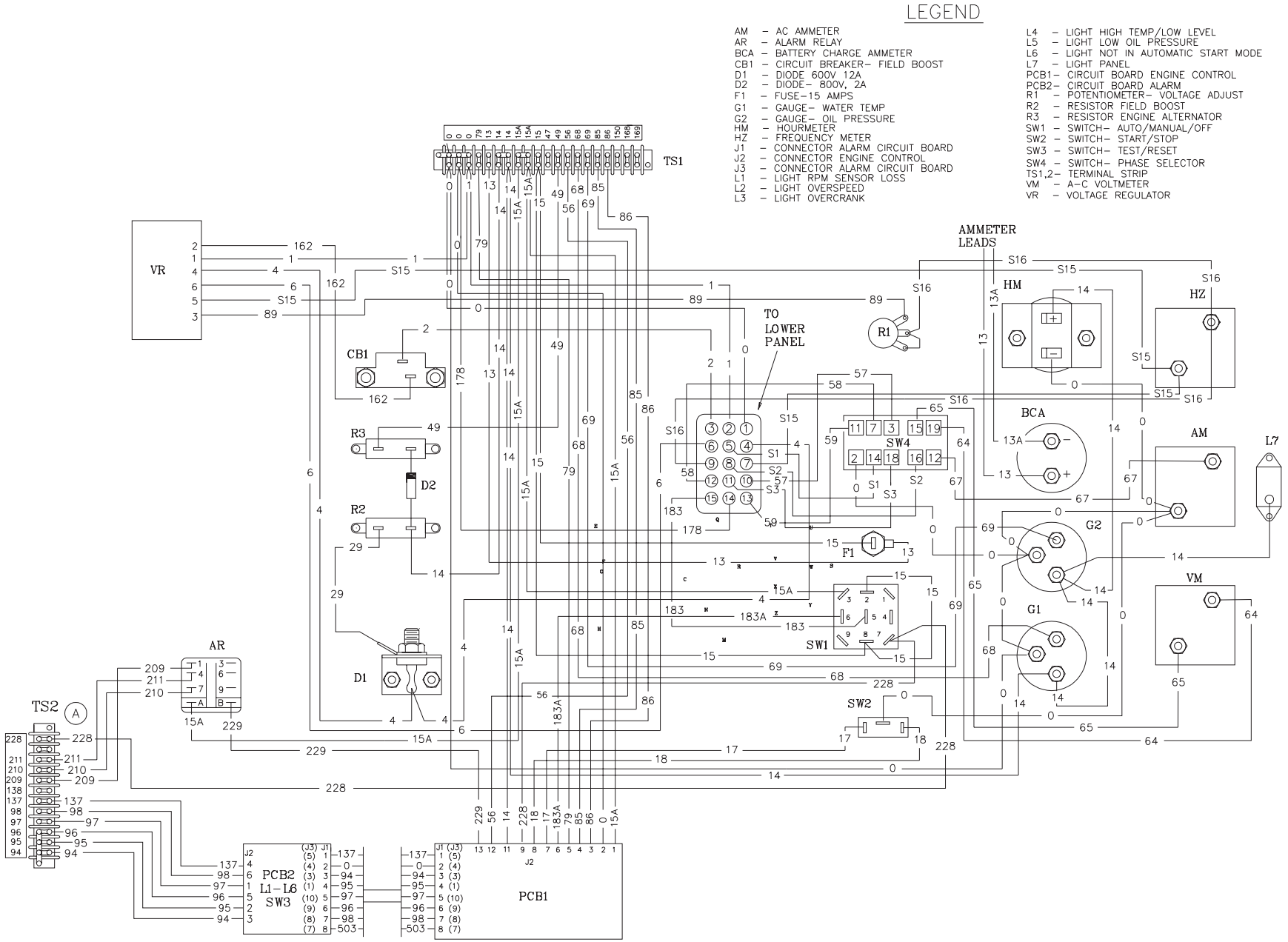


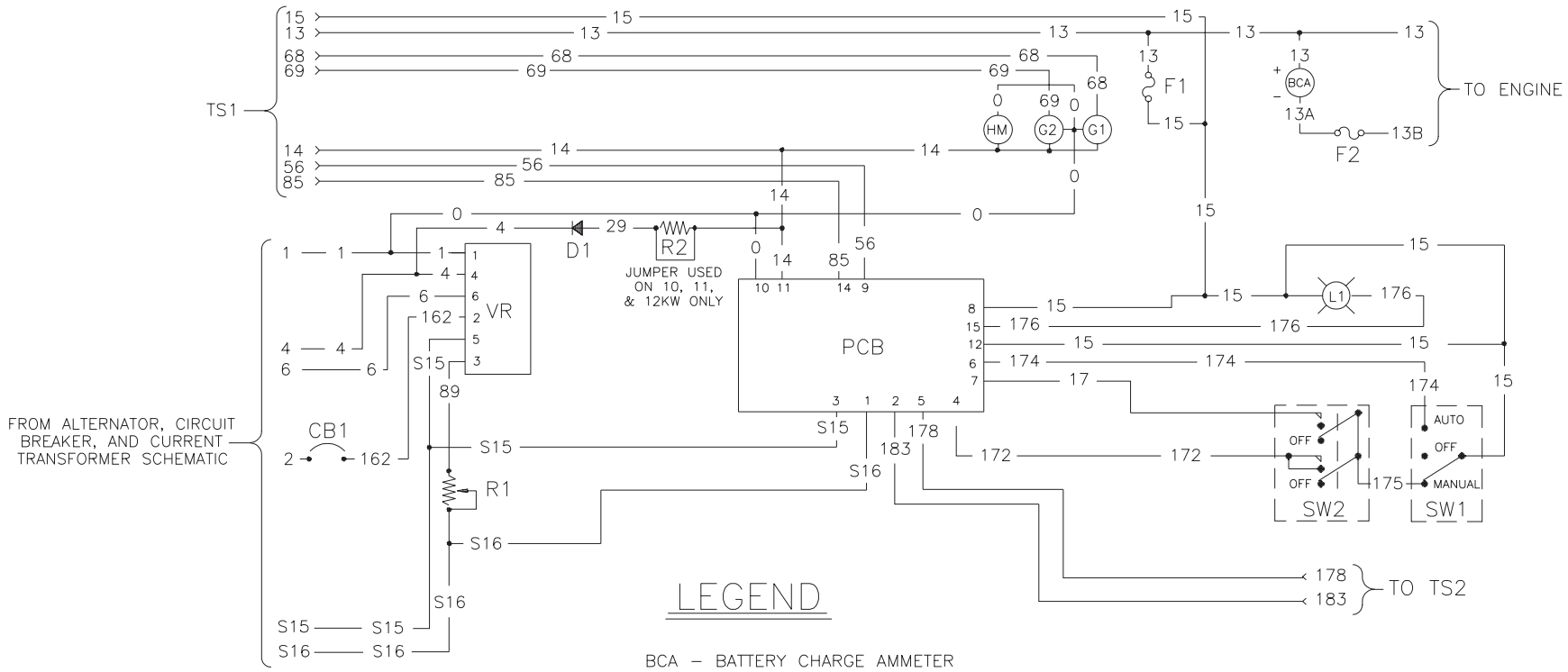

LEGEND
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D1 – DIODE 800V 2A
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
L2 – LIGHT– PANEL
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS – TERMINAL STRIP
VR – VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
TS
VR
CB1
R1
R2
R3
D1
D2
F1
G1
G2
HM
BCA
L1
L2
SW1
SW2
PCB


PHASE SELECTOR SWITCH
SW3
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
L2 – LIGHT– PANEL
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
TO LOWER PANEL
S1
S2
S3
57
58
59
0
178
183
S15
S16
6
2
1
4
VM
AM
HZ
R1
VR
CB1
D1
R2
D2
R3
PCB
SW2
SW1
AUTO
OFF
MAN.
F1
L1
L2
HM
G2
G1
BCA
TO TS
TO ENGINE
TO TS


LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
L2 – LIGHT– PANEL
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
AMMETER LEADS
TS
VR
CB1
R3
R2
D2
D1
R1
TO LOWER PANEL
SW3
SW1
SW2
F1
L1
L2
HM
HZ
BCA
AM
VM
G1
G2
PCB

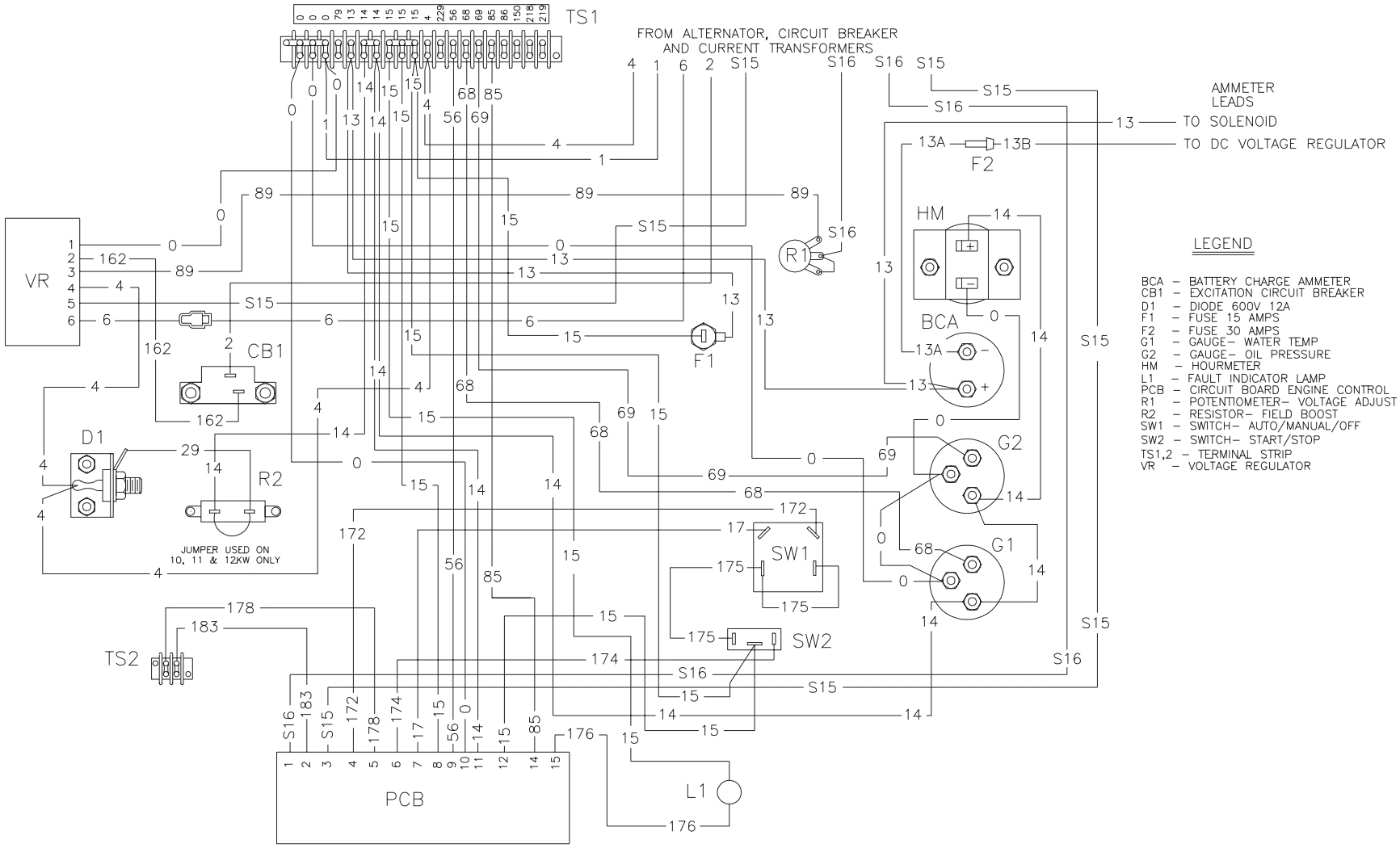

PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
SW4 SHOWN IN OFF POSITION
SW1 SHOWN IN OFF POSITION
TO LOWER PANEL
TO TS1
TO TS2
TO ENGINE
PCB1
PCB2
SW2
SW3
VM
AM
HZ
VR
CB1
R1
R2
R3
D1
D2
F1
BCA
L1
L2
L3
L4
L5
L6
L7
HM
G1
G2
LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR

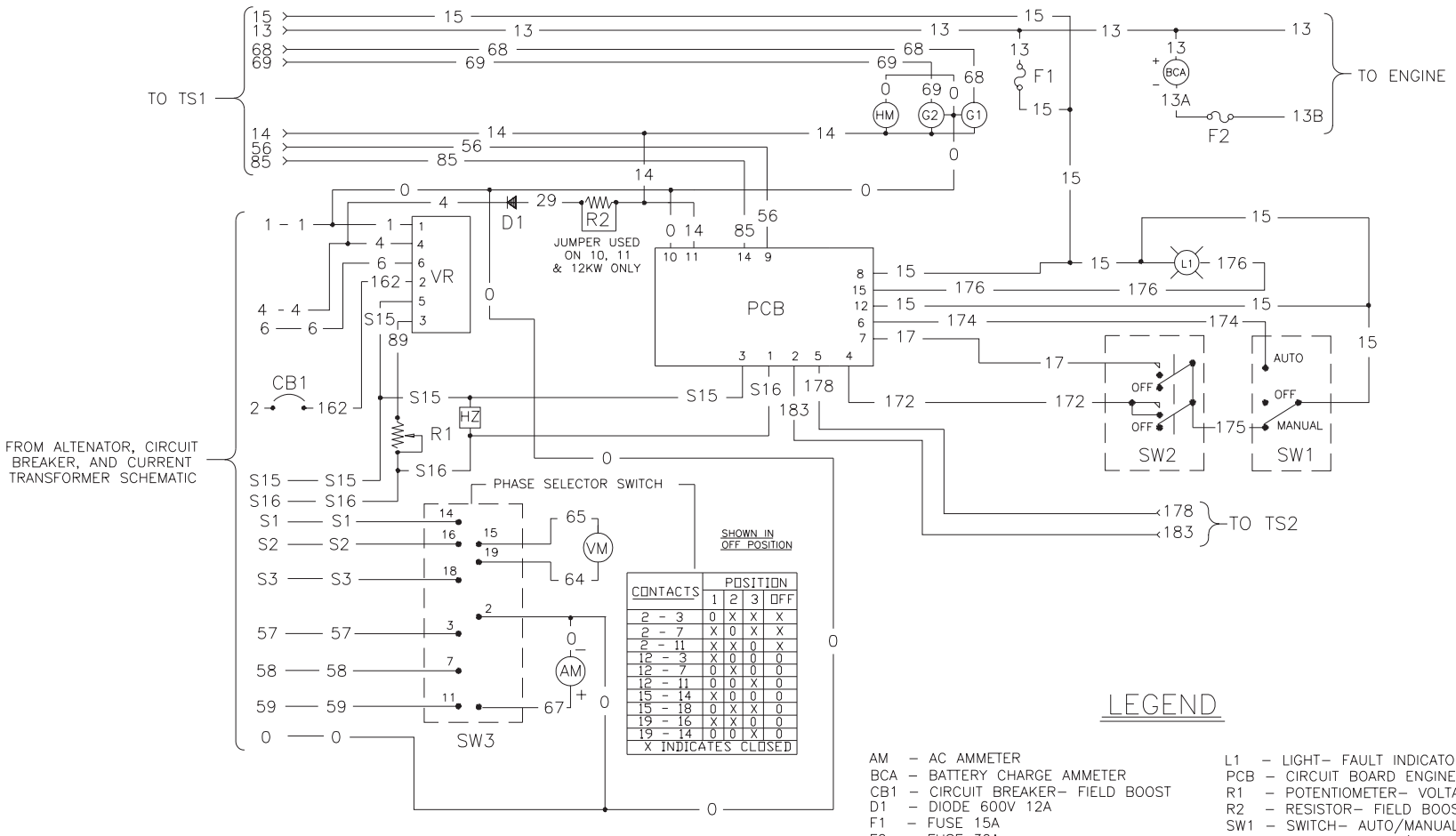

LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
TS1
VR
CB1
R3
D2
R2
D1
AR
TS2
TO LOWER PANEL
R1
AMMETER LEADS
HM
HZ
BCA
AM
L7
SW4
F1
G2
VM
G1
SW1
SW2
PCB2 L1–L6 SW3
PCB1



LEGEND

BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
F2 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS1,2 – TERMINAL STRIP
VR – VOLTAGE REGULATOR


TS1
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F2
HM
BCA
R1
F1
VR
CB1
D1
R2
JUMPER USED ON 10, 11 & 12KW ONLY
G2
G1
SW1
SW2
TS2
PCB
L1
LEGEND
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
F2 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
L1 – FAULT INDICATOR LAMP
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS1,2 – TERMINAL STRIP
VR – VOLTAGE REGULATOR

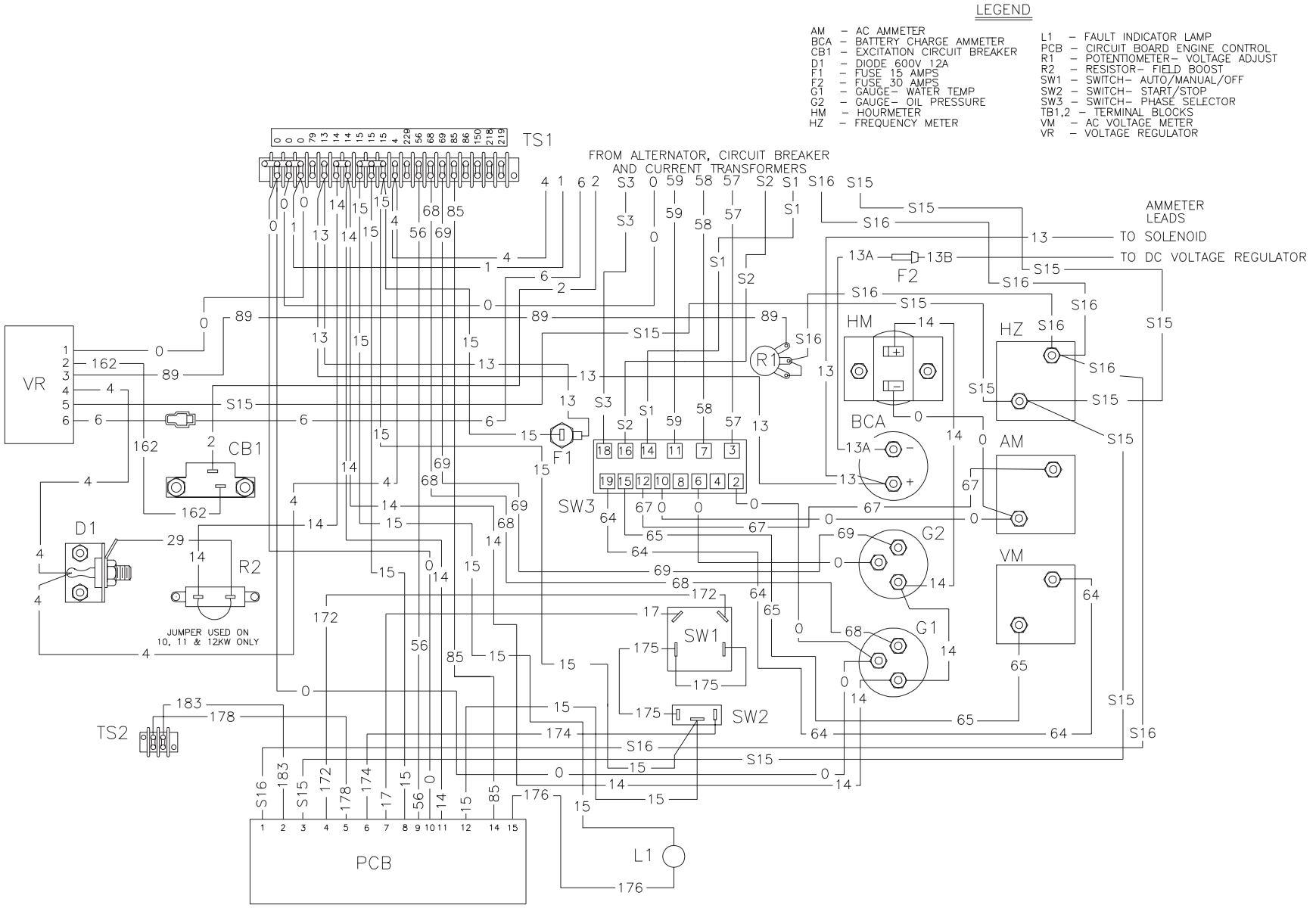


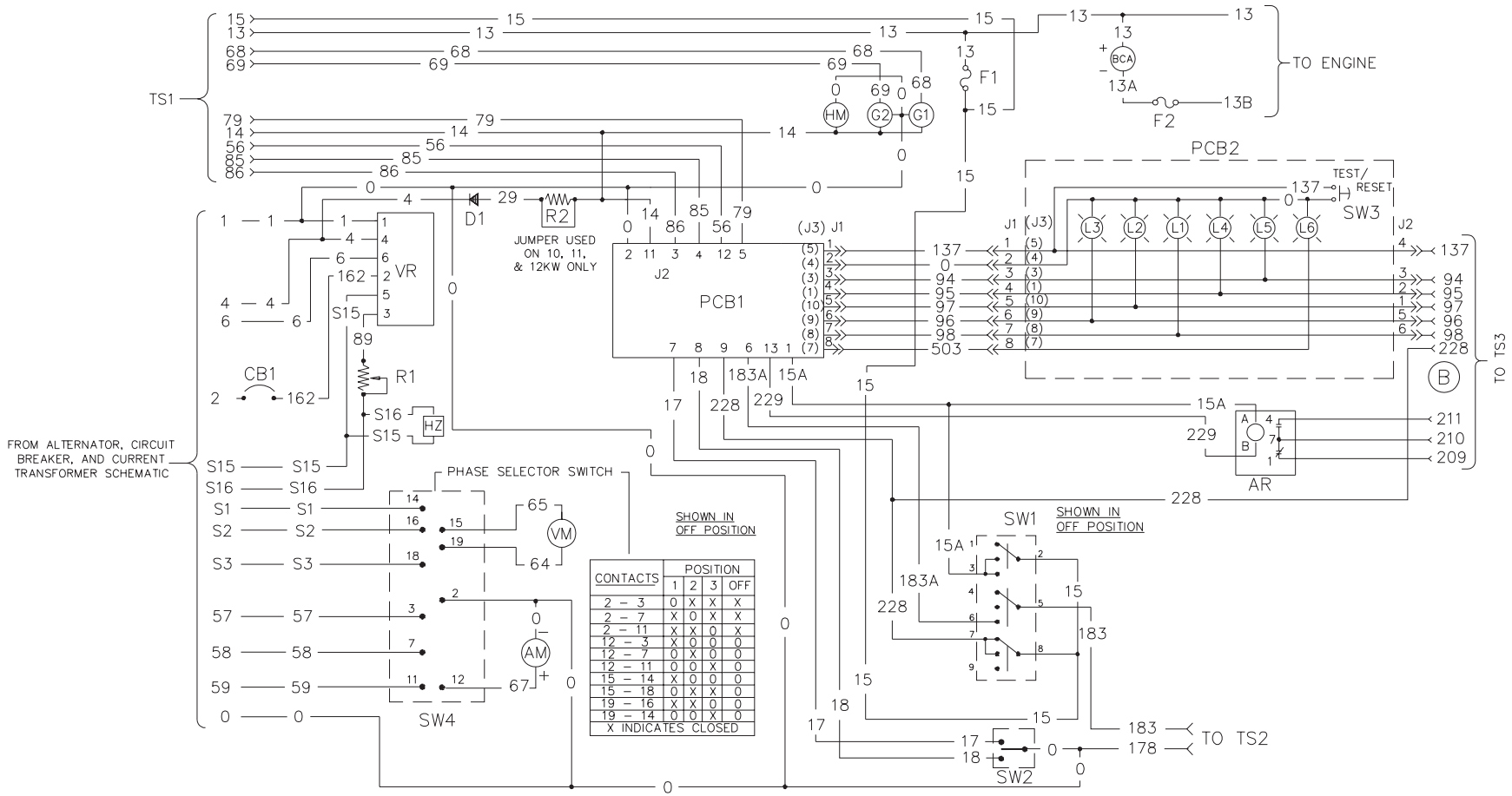
CONTACTS	POSITION 1	2	3	OFF
2 - 3	0	X	X	X
2 - 7	X	0	X	X
2 - 11	X	X	0	X
12 - 3	X	0	0	0
12 - 7	0	X	0	0
12 - 11	0	0	X	0
15 - 14	X	0	0	0
15 - 18	0	X	X	0
19 - 16	X	X	0	0
19 - 14	0	0	X	0

X INDICATES CLOSED

LEGEND

AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
F2 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TS1,2 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR


LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – EXCITATION CIRCUIT BREAKER
D1 – DIODE 600V 12A
F1 – FUSE 15 AMPS
F2 – FUSE 30 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – FAULT INDICATOR LAMP
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TB1,2 – TERMINAL BLOCKS
VM – AC VOLTAGE METER
VR – VOLTAGE REGULATOR
TS1
FROM ALTERNATOR, CIRCUIT BREAKER AND CURRENT TRANSFORMERS
AMMETER LEADS
TO SOLENOID
TO DC VOLTAGE REGULATOR
F2
HM
HZ
R1
VR
CB1
F1
BCA
AM
SW3
D1
R2
G2
VM
G1
SW1
SW2
TS2
PCB
L1
JUMPER USED ON 10, 11 & 12KW ONLY

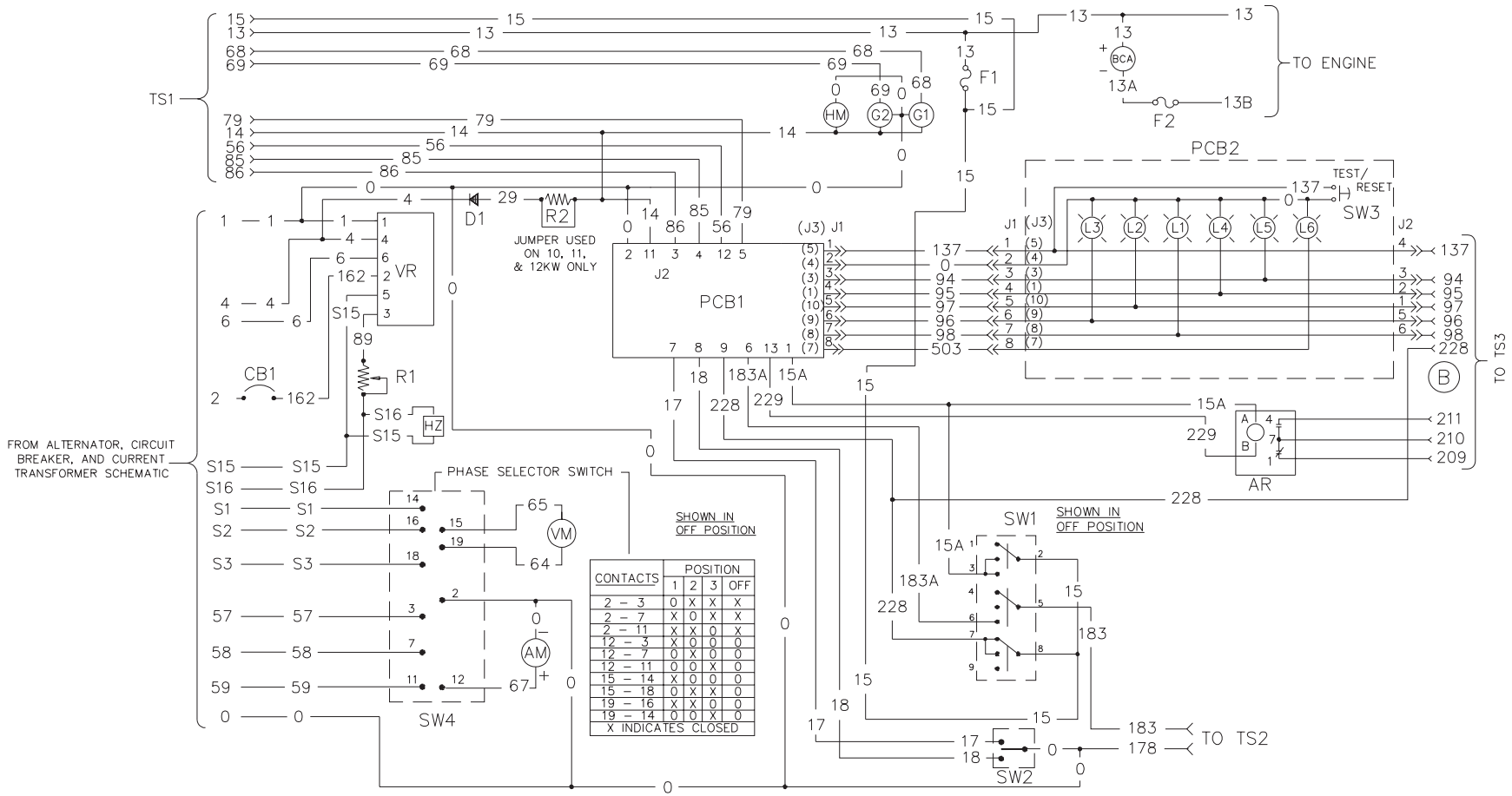


LEGEND

AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
F2 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER

G1 – GAUGE– WATER TEMPERATURE
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB1– CIRCUIT BOARD ENGINE CONTROL

PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR

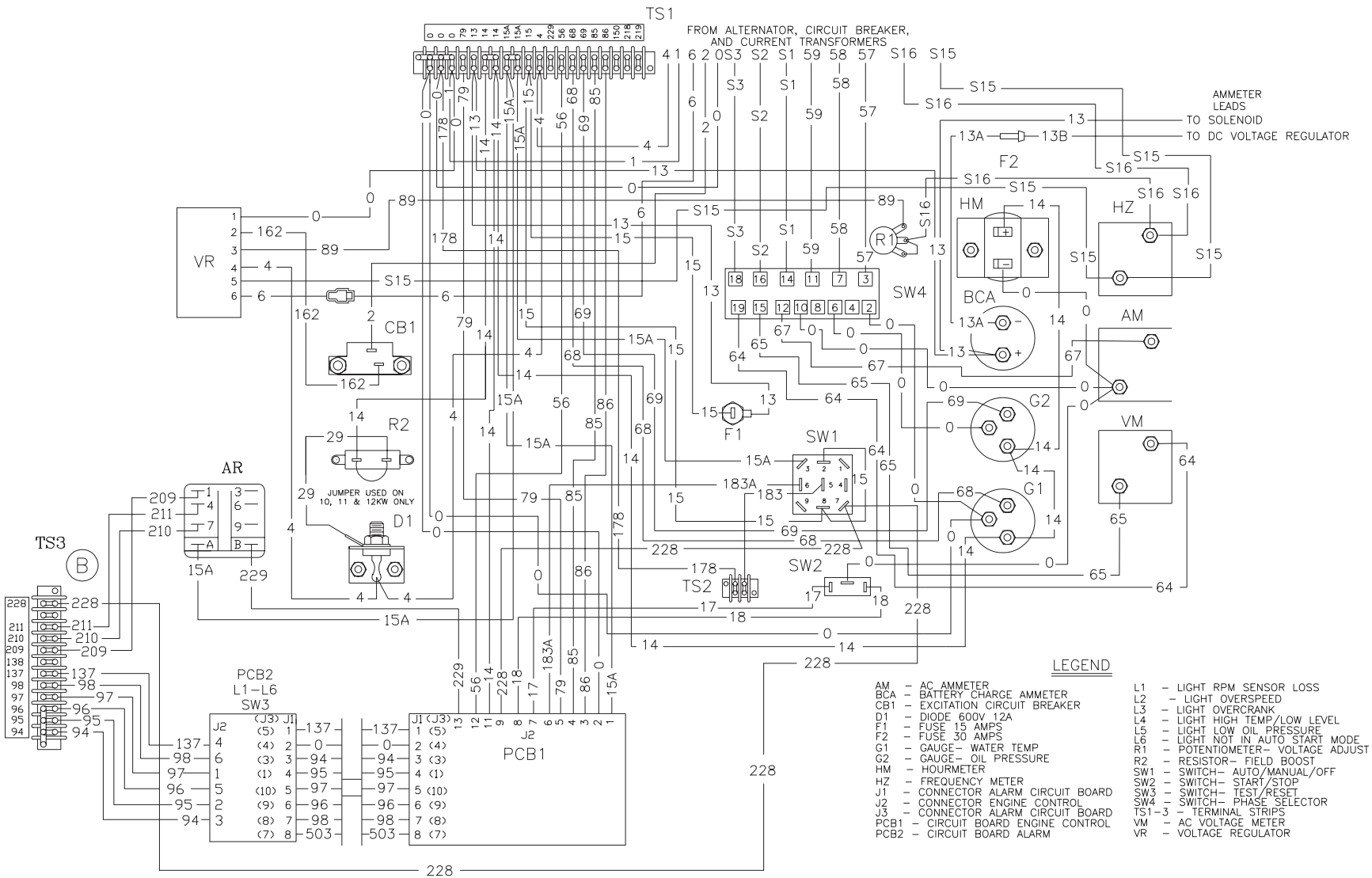


LEGEND

AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
F1 – FUSE 15A
F2 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER

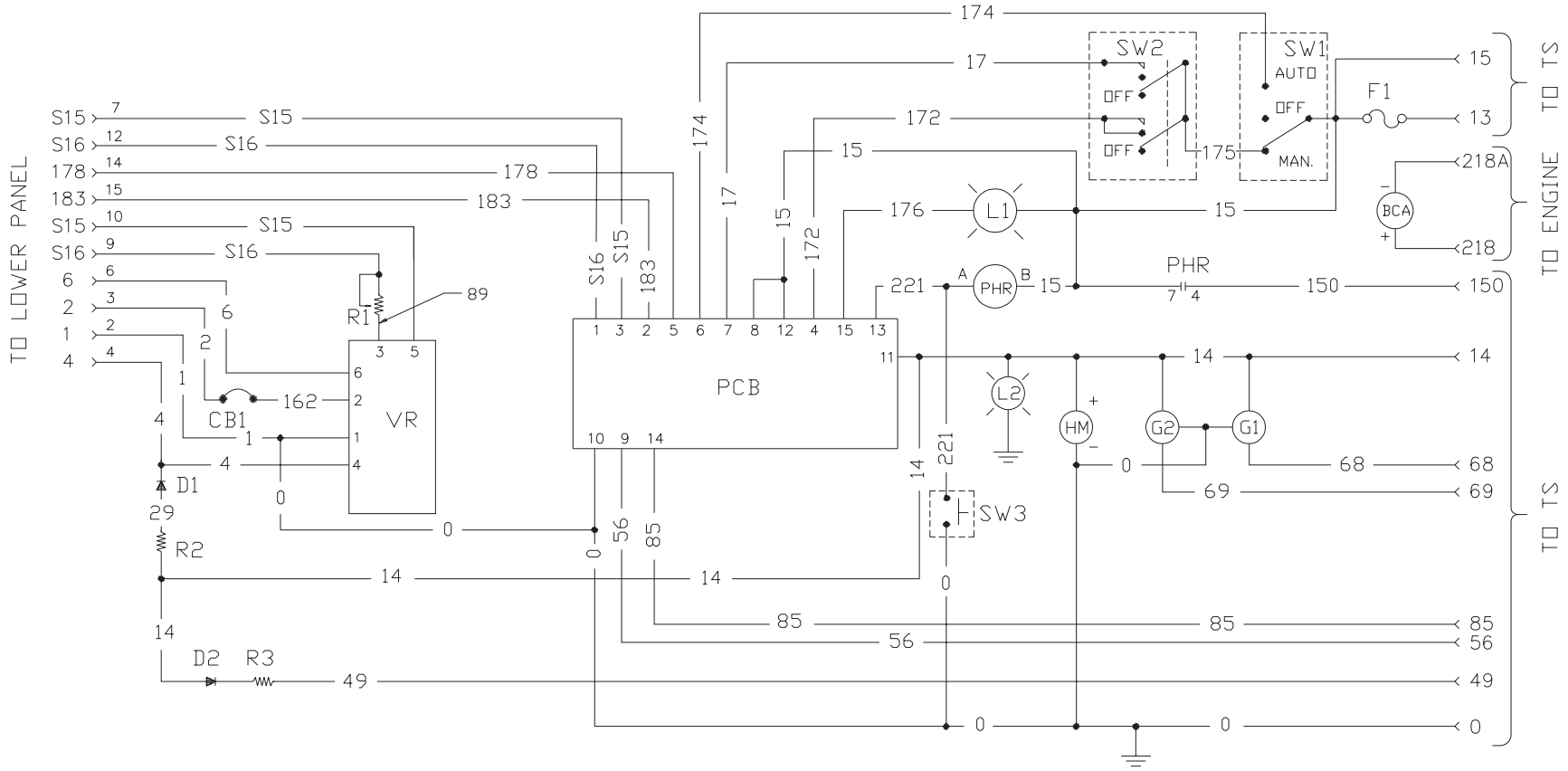
G1 – GAUGE– WATER TEMPERATURE
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
PCB1– CIRCUIT BOARD ENGINE CONTROL

PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1–3 – TERMINAL STRIP
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR



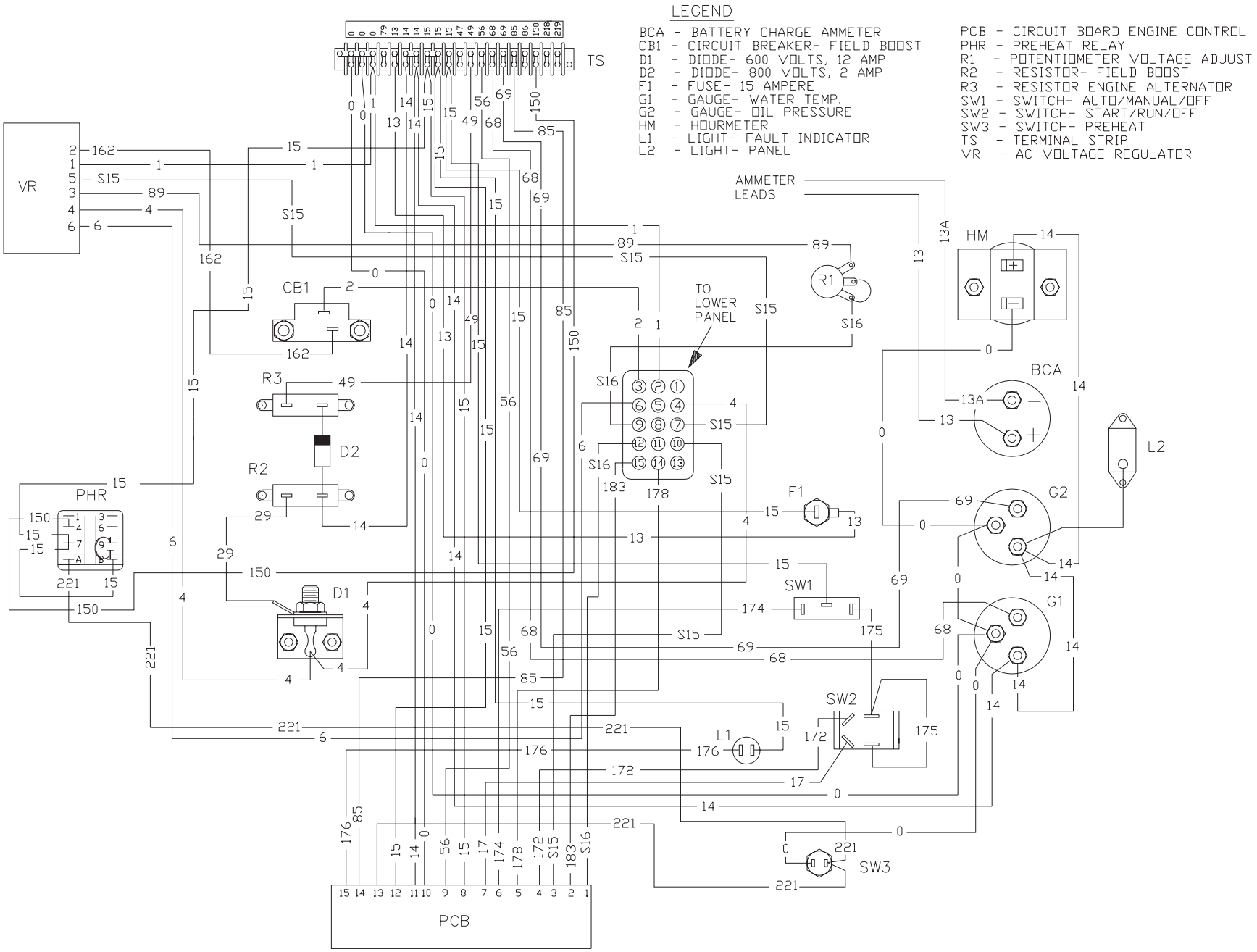
LEGEND

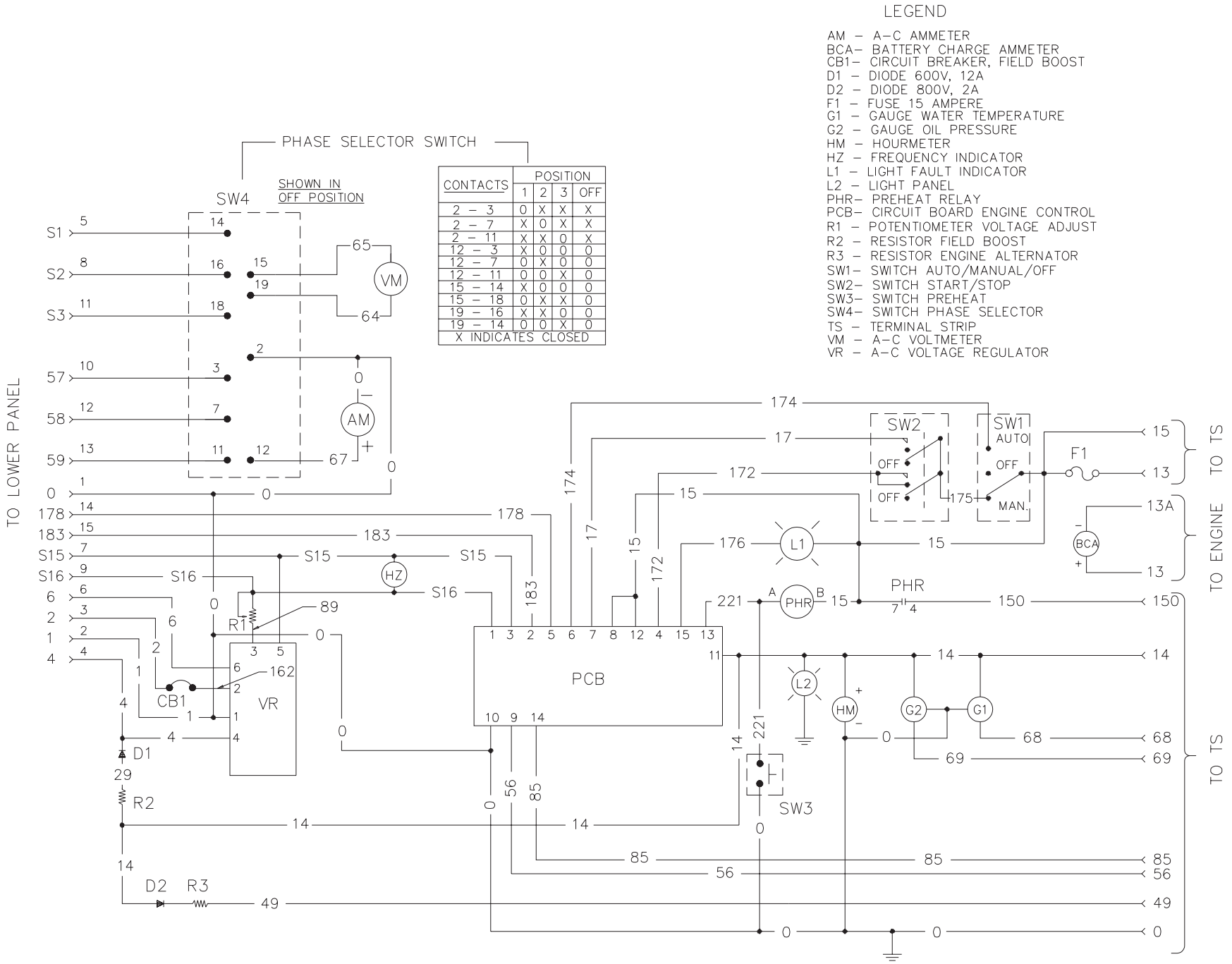
AM	– AC AMMETER	L1	– LIGHT RPM SENSOR LOSS
BCA	– BATTERY CHARGE AMMETER	L2	– LIGHT OVERSPEED
CB1	– EXCITATION CIRCUIT BREAKER	L3	– LIGHT OVERCRANK
D1	– DIODE 600V 12A	L4	– LIGHT HIGH TEMP/LOW LEVEL
F1	– FUSE 15 AMPS	L5	– LIGHT LOW OIL PRESSURE
F2	– FUSE 30 AMPS	L6	– LIGHT NOT IN AUTO START MODE
G1	– GAUGE– WATER TEMP	R1	– POTENTIOMETER– VOLTAGE ADJUST
G2	– GAUGE– OIL PRESSURE	R2	– RESISTOR– FIELD BOOST
HM	– HOURMETER	SW1	– SWITCH– AUTO/MANUAL/OFF
HZ	– FREQUENCY METER	SW2	– SWITCH– START/STOP
J1	– CONNECTOR ALARM CIRCUIT BOARD	SW3	– SWITCH– TEST/RESET
J2	– CONNECTOR ENGINE CONTROL	SW4	– SWITCH– PHASE SELECTOR
J3	– CONNECTOR ALARM CIRCUIT BOARD	TS1–3	– TERMINAL STRIPS
PCB1	– CIRCUIT BOARD ENGINE CONTROL	VM	– AC VOLTAGE METER
PCB2	– CIRCUIT BOARD ALARM	VR	– VOLTAGE REGULATOR

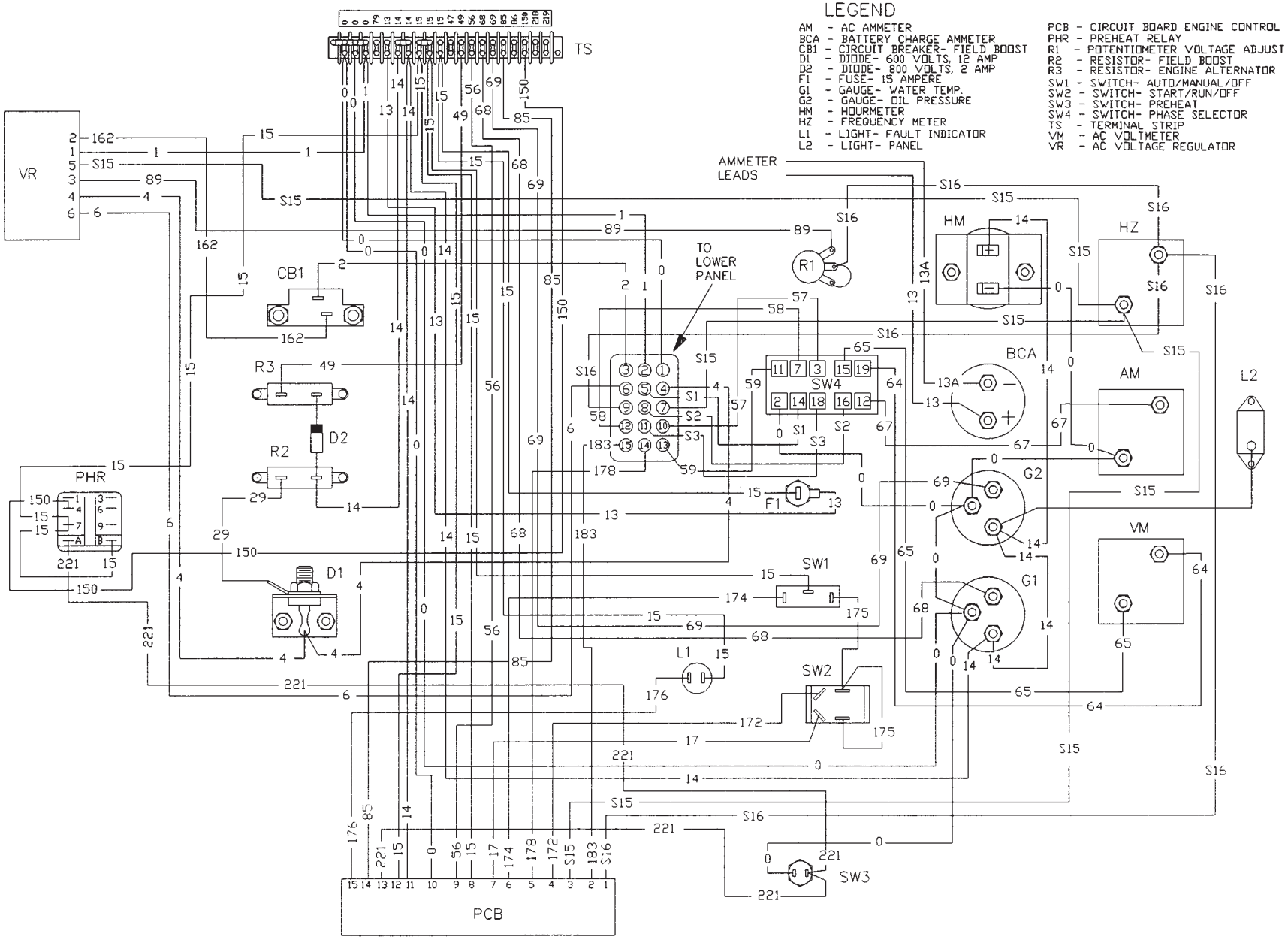


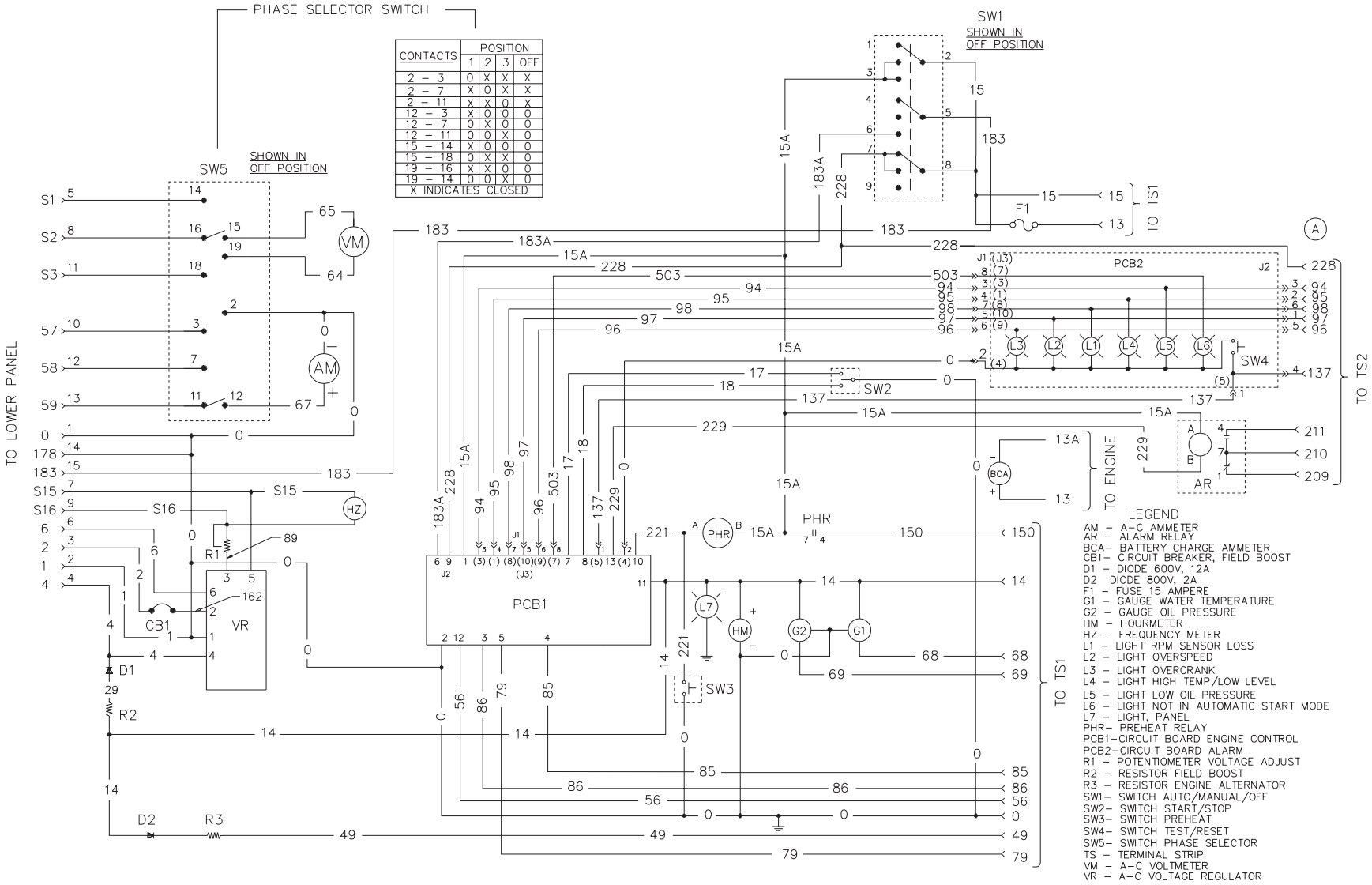
LEGEND

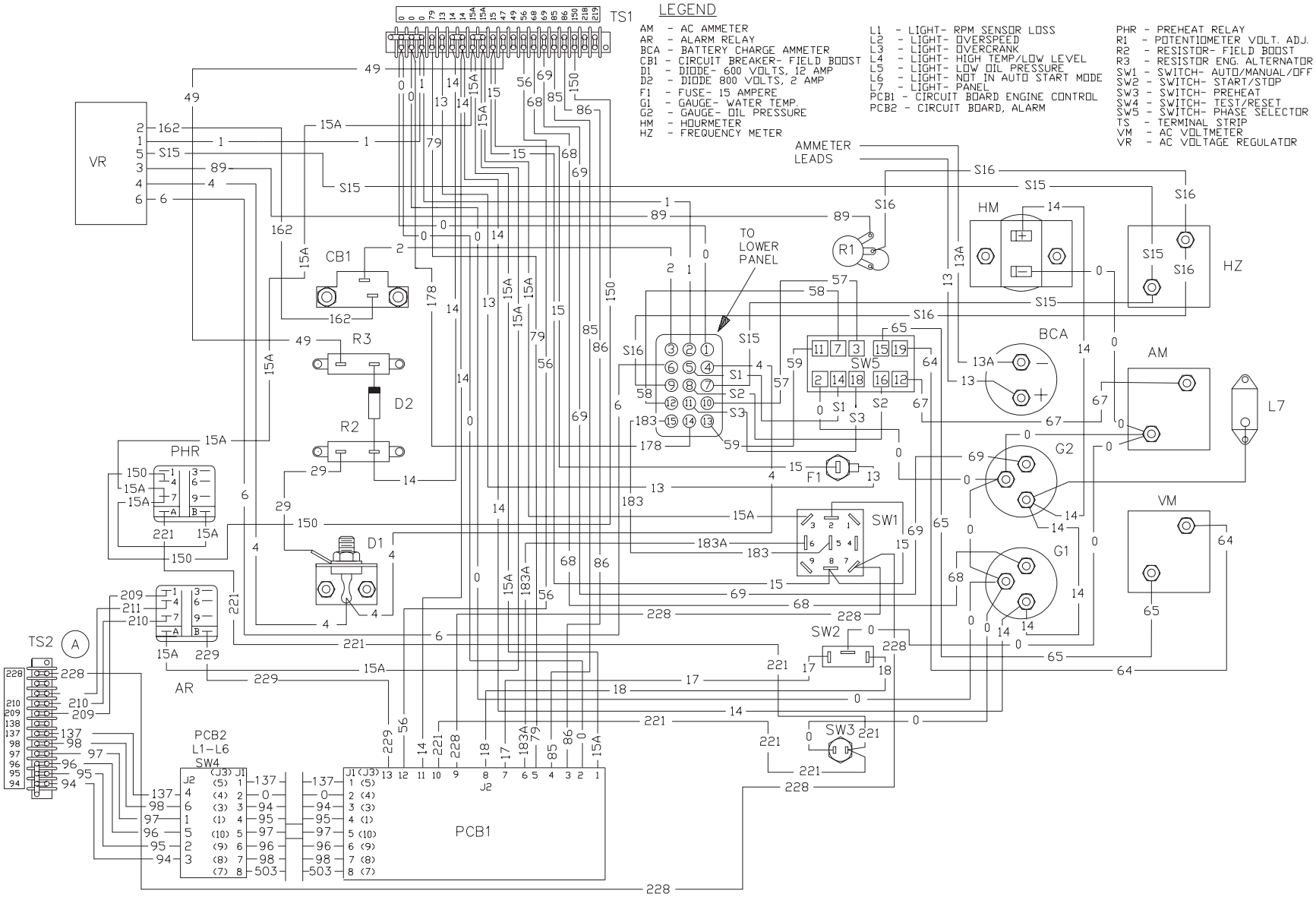
BCA- BATTERY CHARGE AMMETER
CB1- CIRCUIT BREAKER, FIELD BOOST
D1 - DIODE 600V, 12A
D2 -DIODE 800V, 2A
F1 - FUSE 15 AMPERE
G1 - GAUGE WATER TEMPERATURE
G2 - GAUGE OIL PRESSURE
HM - HOURMETER
L1 - LIGHT FAULT INDICATOR
L2 - LIGHT PANEL
PCB- CIRCUIT BOARD ENGINE CONTROL
PHR- PREHEAT RELAY
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR FIELD BOOST
R3 - RESISTOR ENGINE ALTERNATOR
SW1- SWITCH AUTO/MANUAL/OFF
SW2- SWITCH START/STOP
SW3- SWITCH PREHEAT
TS - TERMINAL STRIP
VR - A-C VOLTAGE REGULATOR


LEGEND
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
D1 - DIODE- 600 VOLTS, 12 AMP
D2 - DIODE- 800 VOLTS, 2 AMP
F1 - FUSE- 15 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
L1 - LIGHT- FAULT INDICATOR
L2 - LIGHT- PANEL
PCB - CIRCUIT BOARD ENGINE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR ENGINE ALTERNATOR
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
TS - TERMINAL STRIP
VR - AC VOLTAGE REGULATOR
TS
VR
CB1
R3
D2
R2
PHR
D1
R1
TO LOWER PANEL
AMMETER LEADS
HM
BCA
L2
G2
G1
F1
SW1
SW2
L1
SW3
PCB


LEGEND
AM – A–C AMMETER
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, FIELD BOOST
D1 – DIODE 600V, 12A
D2 – DIODE 800V, 2A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY INDICATOR
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PHR– PREHEAT RELAY
PCB– CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH PREHEAT
SW4– SWITCH PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR
PHASE SELECTOR SWITCH
SHOWN IN OFF POSITION
SW4
CONTACTS | POSITION 1 2 3 OFF
2 – 3 | 0 X X X
2 – 7 | X 0 X X
2 – 11 | X X 0 X
12 – 3 | X 0 0 0
12 – 7 | 0 X 0 0
12 – 11 | 0 0 X 0
15 – 14 | X 0 0 0
15 – 18 | 0 X X 0
19 – 16 | X X 0 0
19 – 14 | 0 0 X 0
X INDICATES CLOSED
TO LOWER PANEL
TO ENGINE TS
TO TS
SW2
SW1
AUTO
OFF
MAN.
F1
BCA
PHR
PCB
VR
R1
R2
R3
D1
D2
CB1
HZ
L1
L2
HM
G1
G2
SW3
VM
AM

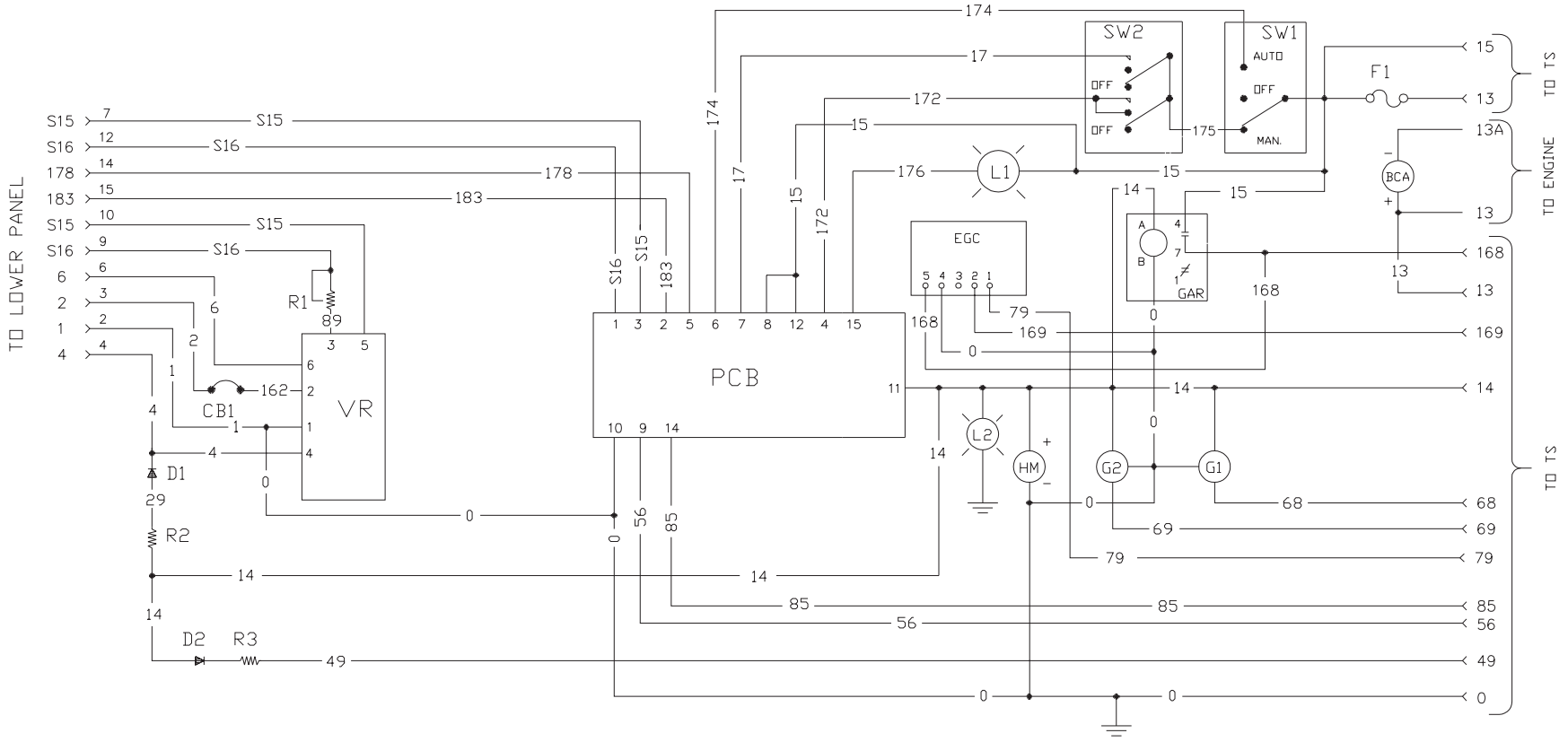

LEGEND
AM - AC AMMETER
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
D1 - DIODE- 600 VOLTS, 12 AMP
D2 - DIODE- 800 VOLTS, 2 AMP
F1 - FUSE- 15 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT- FAULT INDICATOR
L2 - LIGHT- PANEL
PCB - CIRCUIT BOARD ENGINE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER VOLTAGE ADJUST
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR- ENGINE ALTERNATOR
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW3 - SWITCH- PREHEAT
SW4 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
VR
CB1
R3
R2
D2
PHR
D1
R1
SW4
SW1
SW2
SW3
F1
L1
HM
HZ
BCA
AM
L2
G2
G1
VM
TS
PCB


PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
SW5
SHOWN IN OFF POSITION
SW1
SHOWN IN OFF POSITION
TO LOWER PANEL
TO TS1
TO TS2
TO ENGINE
PCB1
PCB2
J1 (J3)
J2
VM
AM
HZ
VR
R1
R2
R3
D1
D2
CB1
F1
SW2
SW3
SW4
PHR
BCA
AR
L1
L2
L3
L4
L5
L6
L7
HM
G1
G2
LEGEND
AM – A–C AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, FIELD BOOST
D1 – DIODE 600V, 12A
D2 DIODE 800V, 2A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT, PANEL
PHR– PREHEAT RELAY
PCB1–CIRCUIT BOARD ENGINE CONTROL
PCB2–CIRCUIT BOARD ALARM
R1 – POTENTIOMETER VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH PREHEAT
SW4– SWITCH TEST/RESET
SW5– SWITCH PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR


LEGEND
AM - AC AMMETER
AR - ALARM RELAY
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
D1 - DIODE- 600 VOLTS, 12 AMP
D2 - DIODE 800 VOLTS, 2 AMP
F1 - FUSE- 15 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT- RPM SENSOR LOSS
L2 - LIGHT- OVERSPEED
L3 - LIGHT- OVERCRANK
L4 - LIGHT- HIGH TEMP/LOW LEVEL
L5 - LIGHT- LOW OIL PRESSURE
L6 - LIGHT- NOT IN AUTO START MODE
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD ENGINE CONTROL
PCB2 - CIRCUIT BOARD, ALARM
PHR - PREHEAT RELAY
R1 - POTENTIOMETER VOLT. ADJ.
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR ENG. ALTERNATOR
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/STOP
SW3 - SWITCH- PREHEAT
SW4 - SWITCH- TEST/RESET
SW5 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
TS1
VR
CB1
R3
R2
D2
PHR
D1
TS2
AR
PCB2
L1-L6
SW4
PCB1
J2
J1
AMMETER
LEADS
TO
LOWER
PANEL
R1
HM
HZ
BCA
AM
L7
G2
G1
VM
SW1
SW2
SW3
SW5
F1

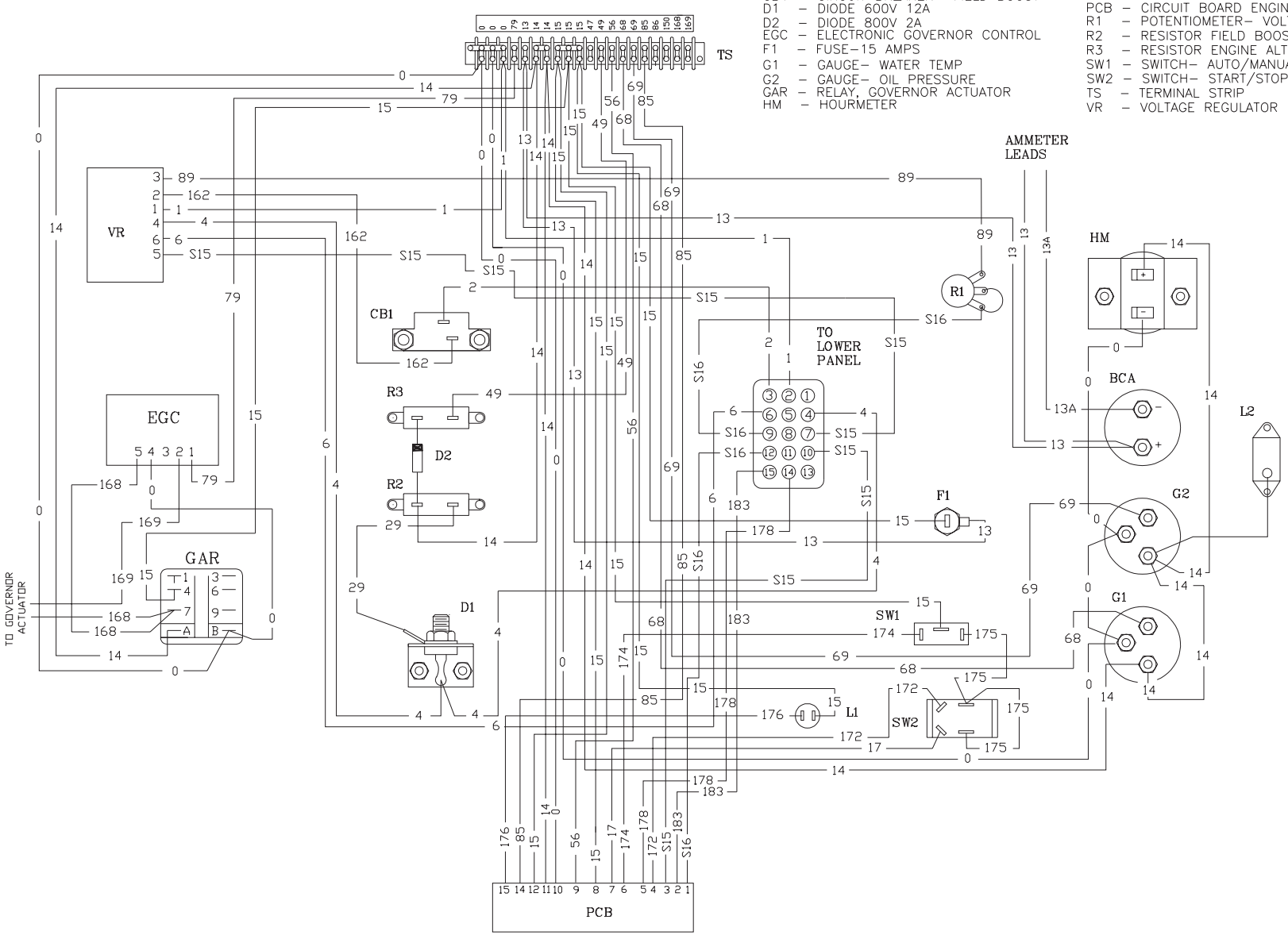
LEGEND

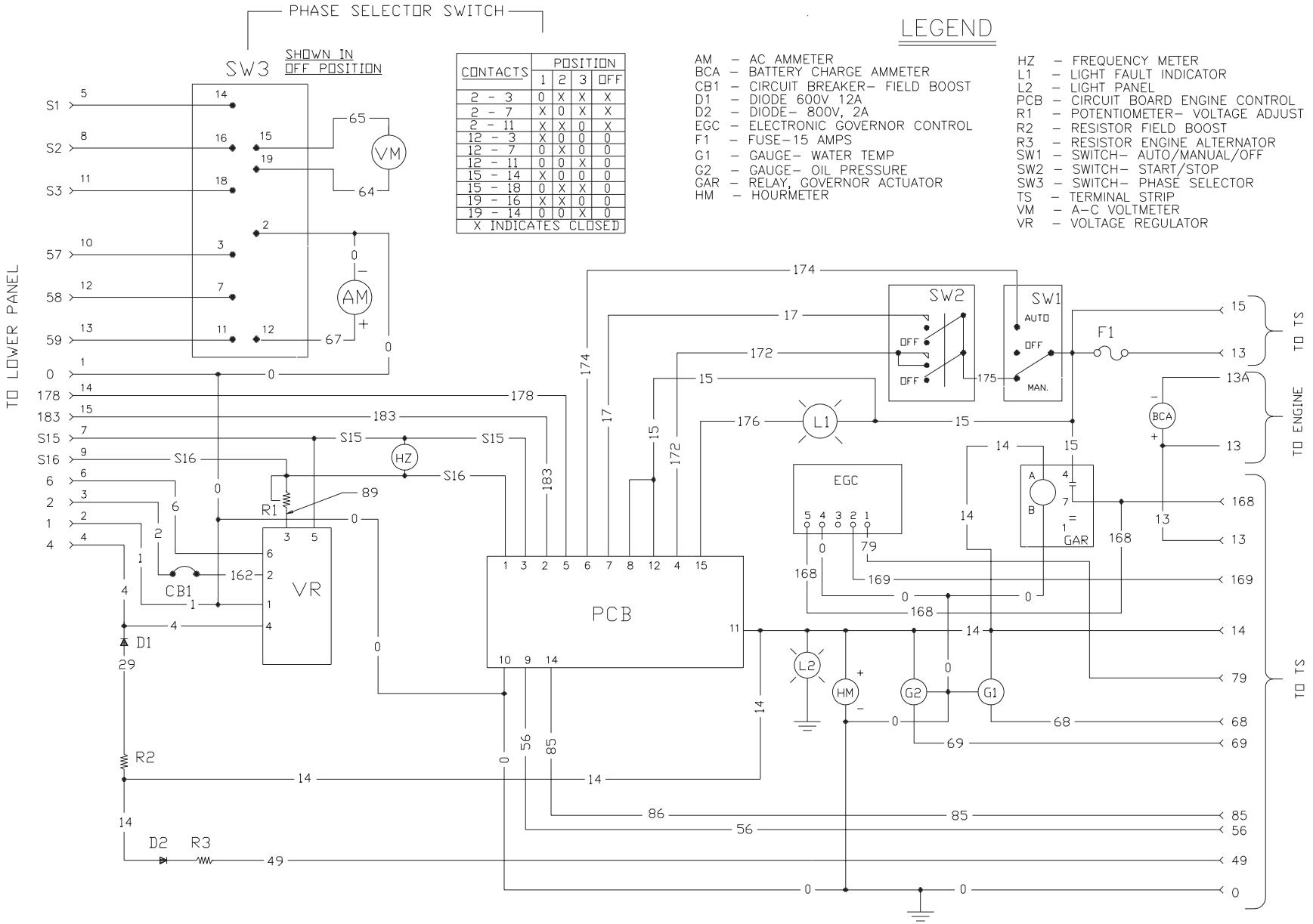
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB – CICUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS – TERMINAL STRIP
VR – VOLTAGE REGULATOR

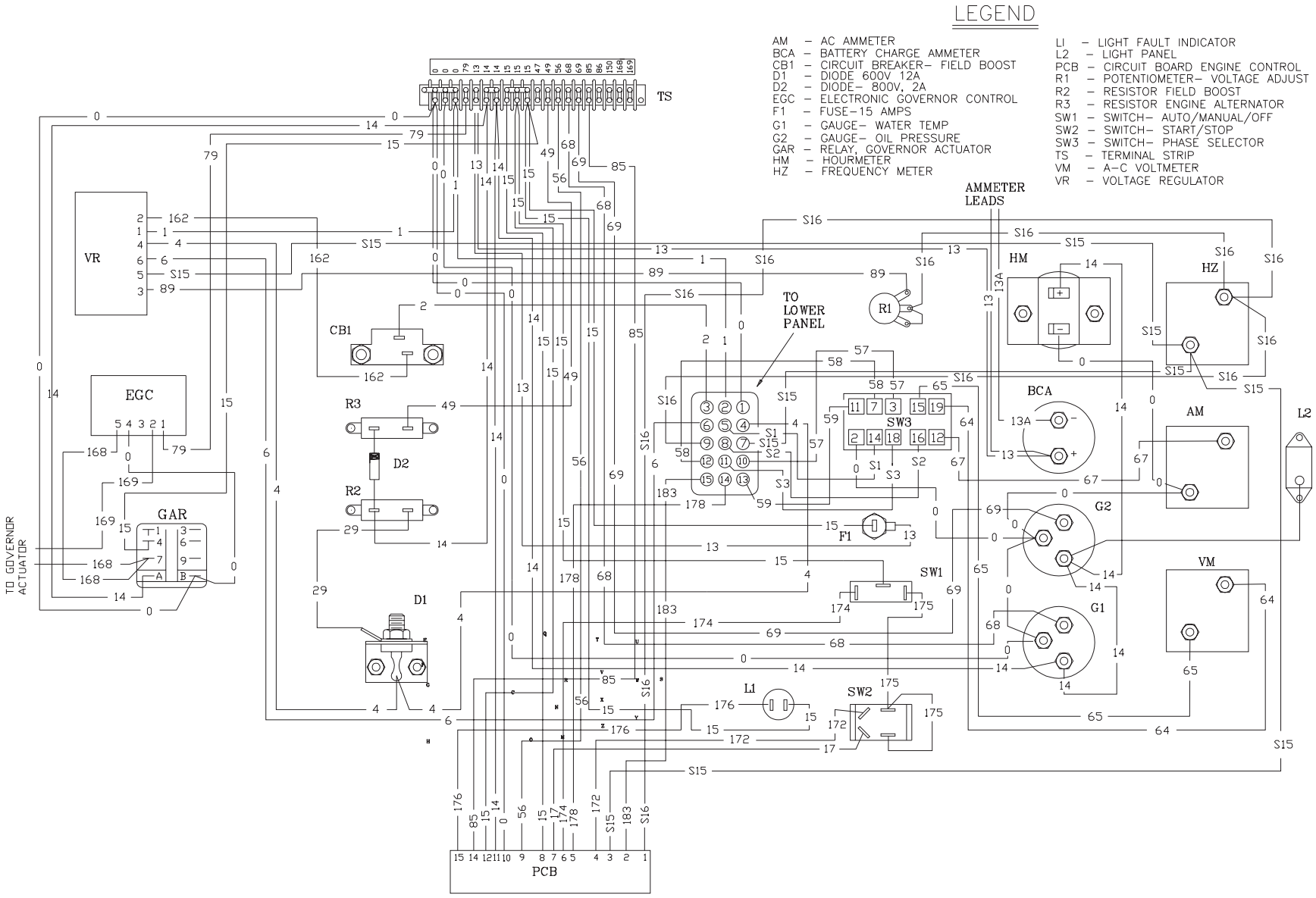


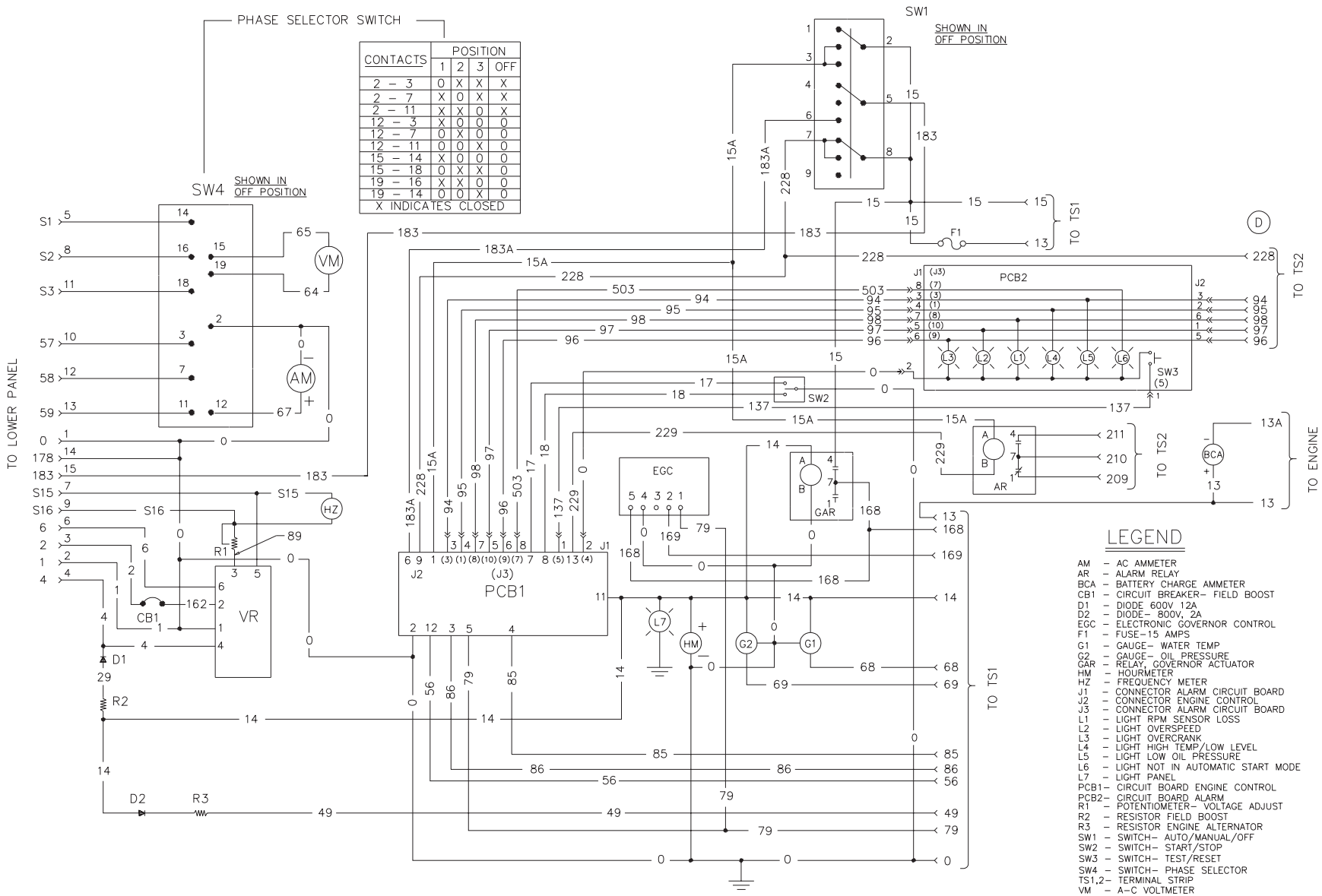
LEGEND

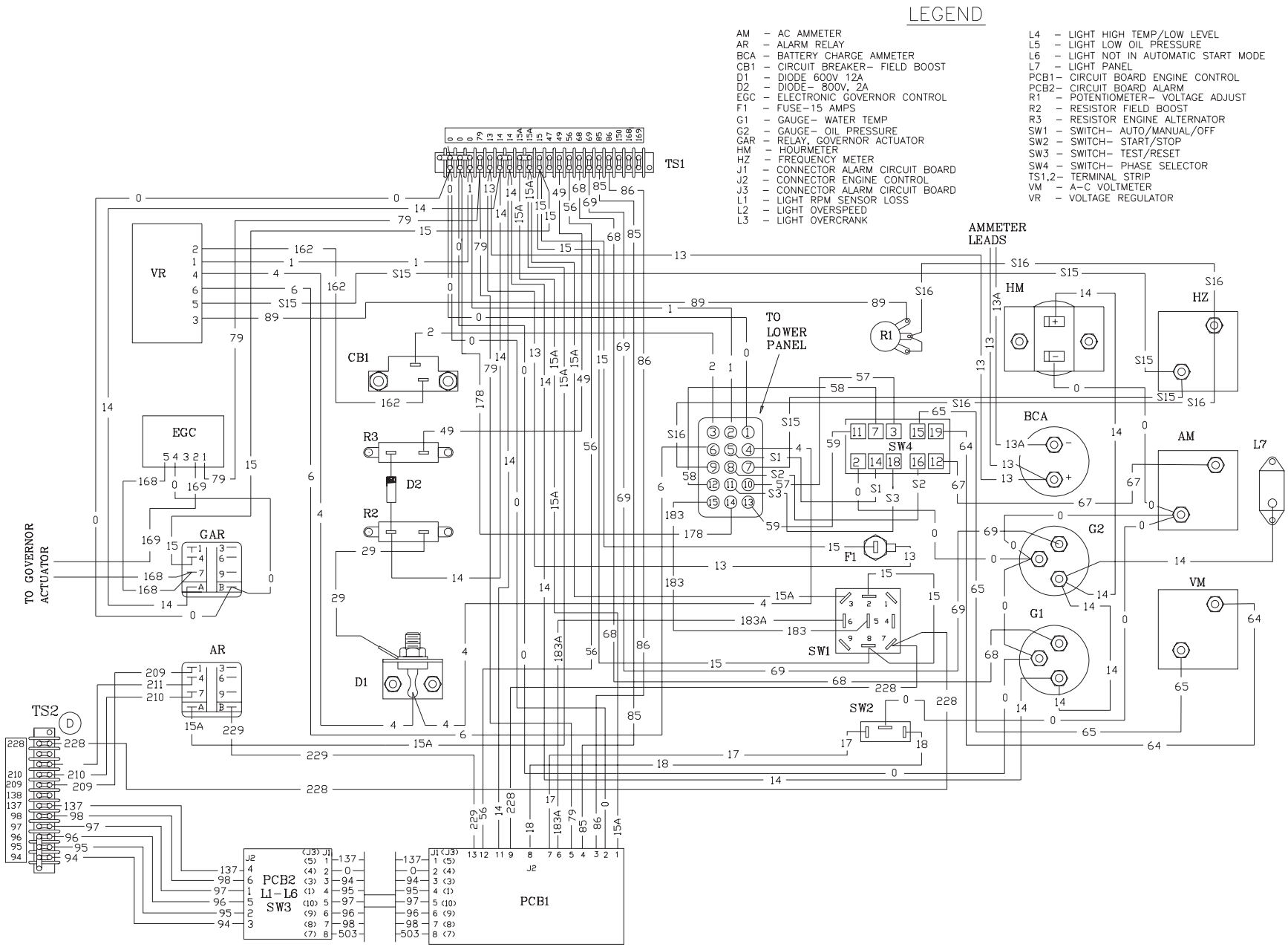
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE 800V 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
TS – TERMINAL STRIP
VR – VOLTAGE REGULATOR

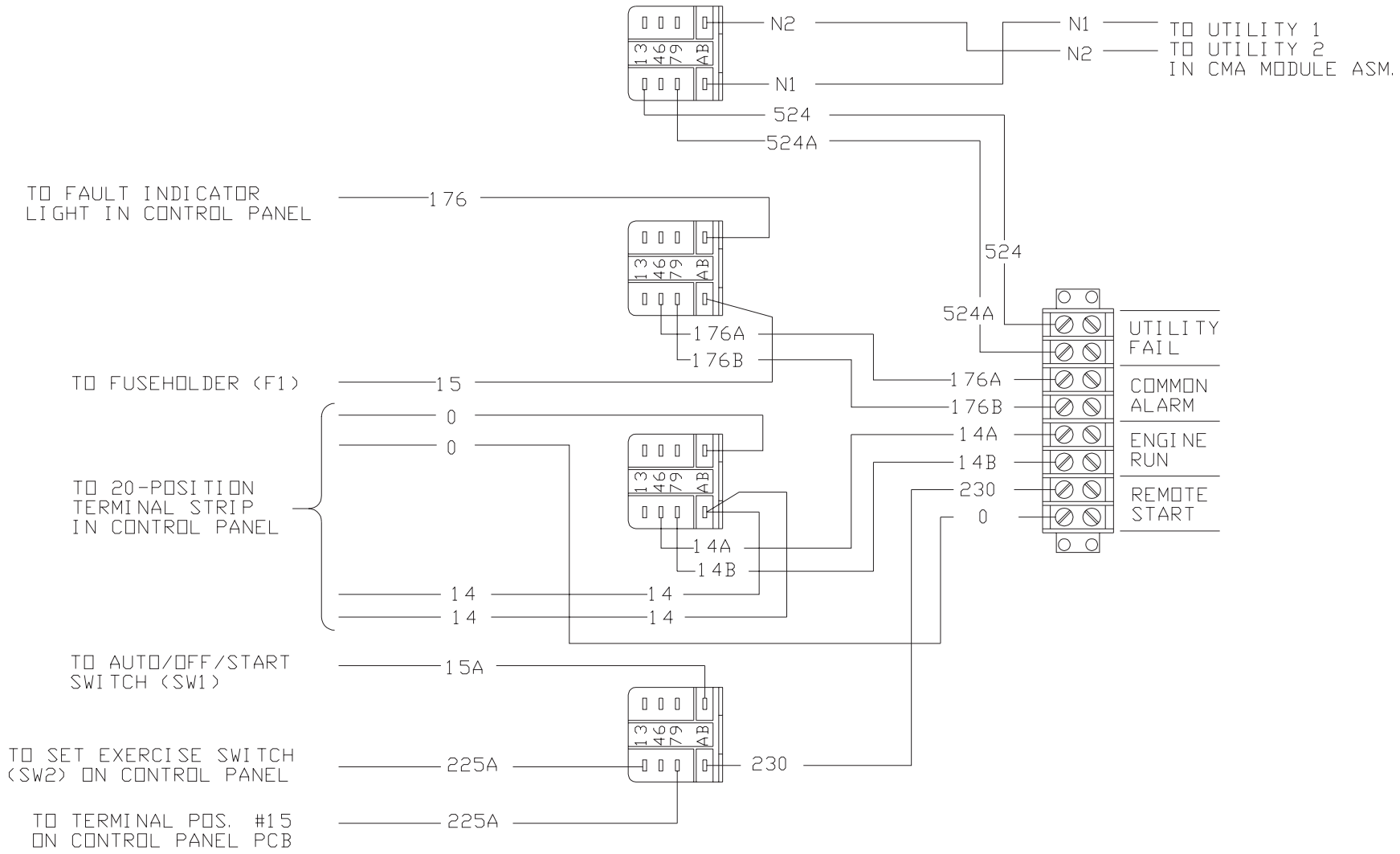


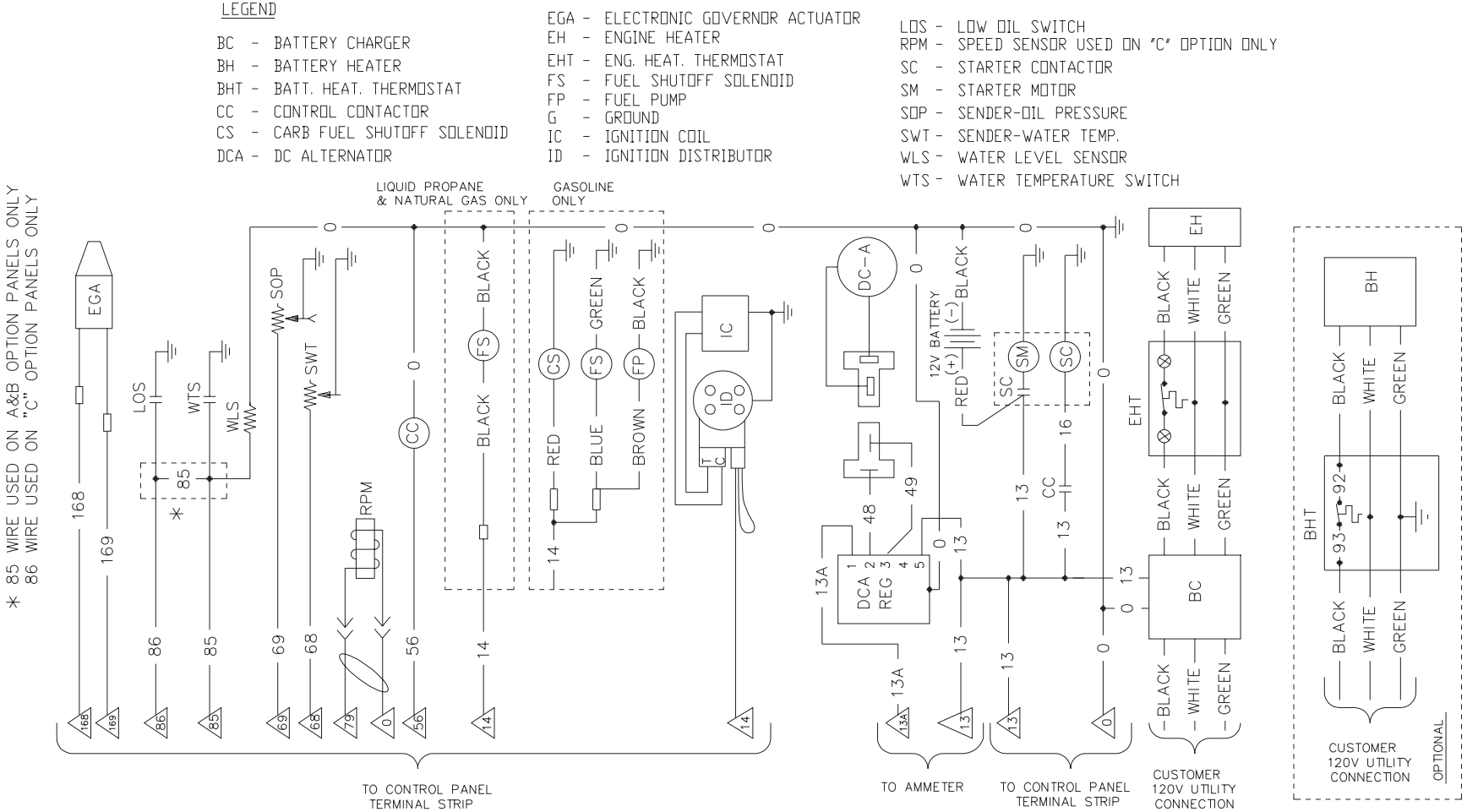

PHASE SELECTOR SWITCH
SW3
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 - 3 | 0 | X | X | X
2 - 7 | X | 0 | X | X
2 - 11 | X | X | 0 | X
12 - 3 | X | 0 | 0 | 0
12 - 7 | 0 | X | 0 | 0
12 - 11 | 0 | 0 | X | 0
15 - 14 | X | 0 | 0 | 0
15 - 18 | 0 | X | X | 0
19 - 16 | X | X | 0 | 0
19 - 14 | 0 | 0 | X | 0
X INDICATES CLOSED
LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
TO LOWER PANEL
TO TS
TO ENGINE
TO TS
SW2
SW1
AUTO
OFF
MAN.
F1
L1
BCA
EGC
GAR
HZ
R1
CB1
VR
PCB
D1
R2
D2
R3
L2
HM
G2
G1
VM
AM

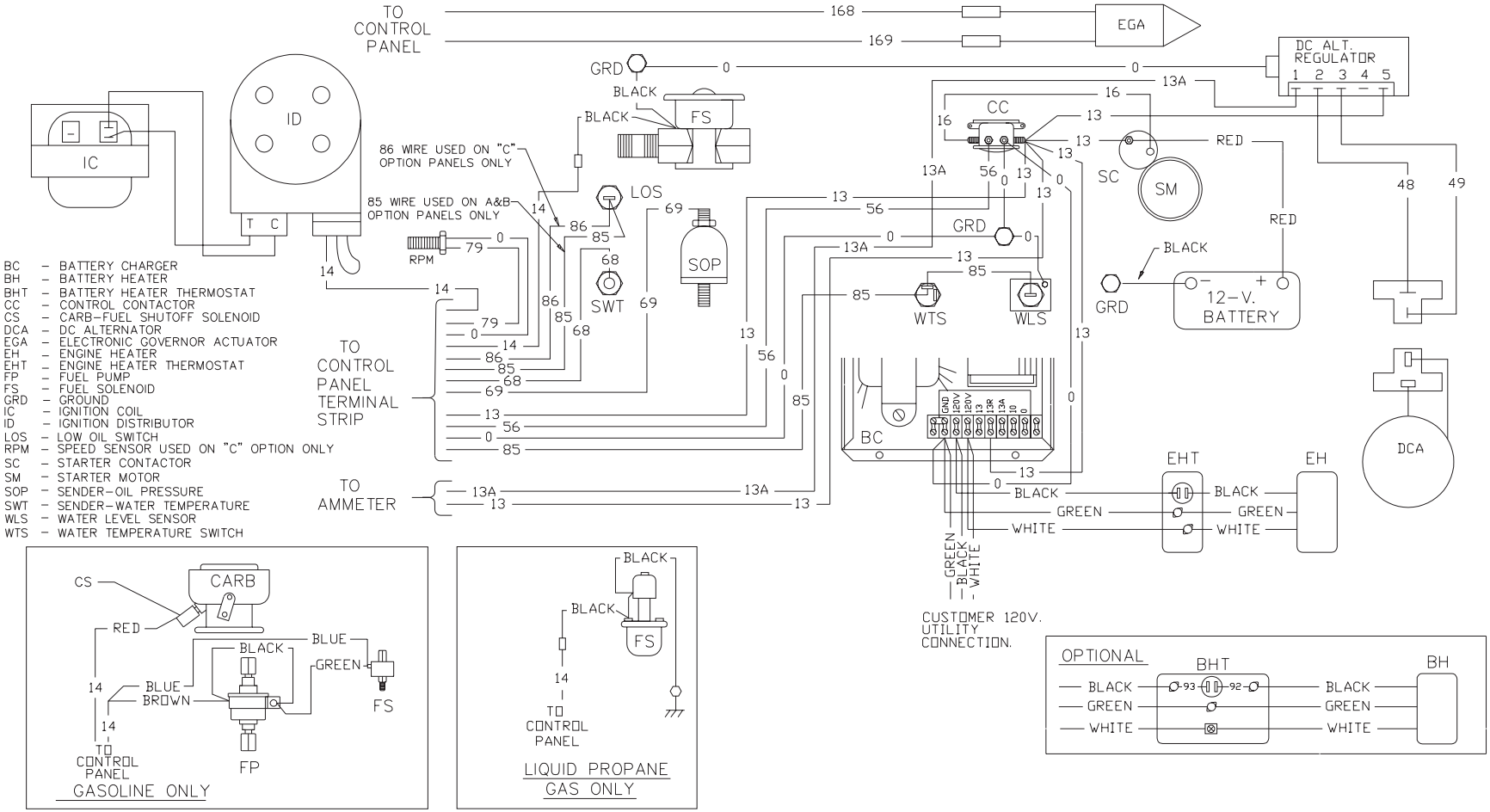

LEGEND
AM – AC AMMETER
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
HZ – FREQUENCY METER
LI – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
TO GOVERNOR ACTUATOR
TS
VR
EGC
GAR
CB1
R1
R2
R3
D1
D2
F1
SW1
SW2
SW3
HM
HZ
BCA
AM
L1
L2
G1
G2
VM
PCB

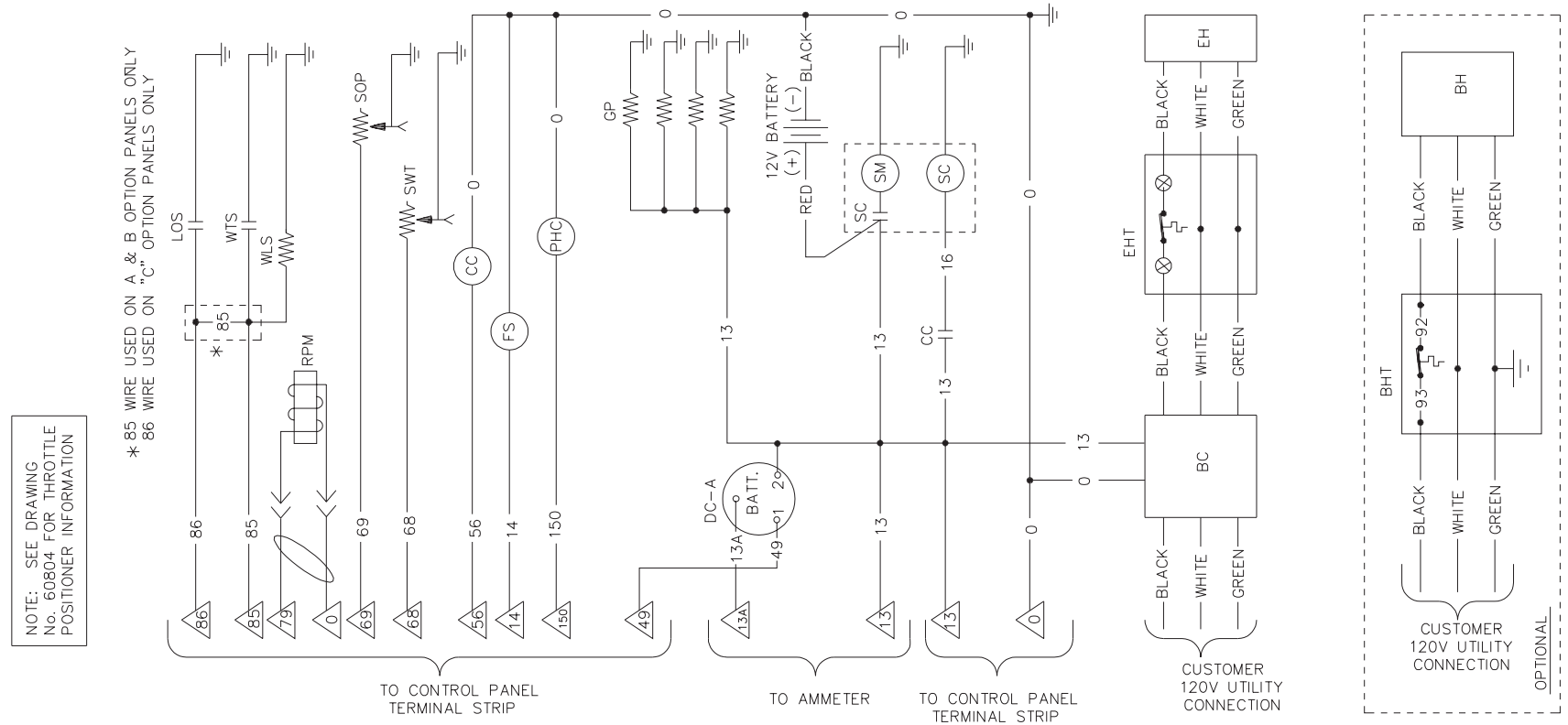

PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 X X X
2 – 7 | X 0 X X
2 – 11 | X X 0 X
12 – 3 | X 0 0 0
12 – 7 | 0 X 0 0
12 – 11 | 0 0 X 0
15 – 14 | X 0 0 0
15 – 18 | 0 X X 0
19 – 16 | X X 0 0
19 – 14 | 0 0 X 0
X INDICATES CLOSED
SW4 SHOWN IN OFF POSITION
SW1 SHOWN IN OFF POSITION
TO LOWER PANEL
PCB1
PCB2
VR
CB1
R1
R2
R3
D1
D2
F1
SW2
SW3
VM
AM
HZ
EGC
GAR
HM
BCA
L1
L2
L3
L4
L5
L6
L7
G1
G2
TO TS1
TO TS2
TO ENGINE
LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR


LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
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EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
TS1
VR
CB1
EGC
R3
D2
R2
GAR
TO GOVERNOR ACTUATOR
AR
D1
TS2
TO LOWER PANEL
R1
AMMETER LEADS
HM
HZ
BCA
AM
L7
SW4
F1
G2
VM
G1
SW1
SW2
PCB2 L1–L6 SW3
PCB1


N2
N1
13 46 79 AB
N1
N2
TO UTILITY 1
TO UTILITY 2
IN CMA MODULE ASM.
524
524A
TO FAULT INDICATOR
LIGHT IN CONTROL PANEL
176
524
524A
176A
176B
UTILITY
FAIL
TO FUSEHOLDER (F1)
15
176A
176B
COMMON
ALARM
0
0
14A
14B
ENGINE
RUN
TO 20-POSITION
TERMINAL STRIP
IN CONTROL PANEL
230
0
REMOTE
START
14A
14B
14
14
14
14
TO AUTO/OFF/START
SWITCH (SW1)
15A
TO SET EXERCISE SWITCH
(SW2) ON CONTROL PANEL
225A
230
TO TERMINAL POS. #15
ON CONTROL PANEL PCB
225A

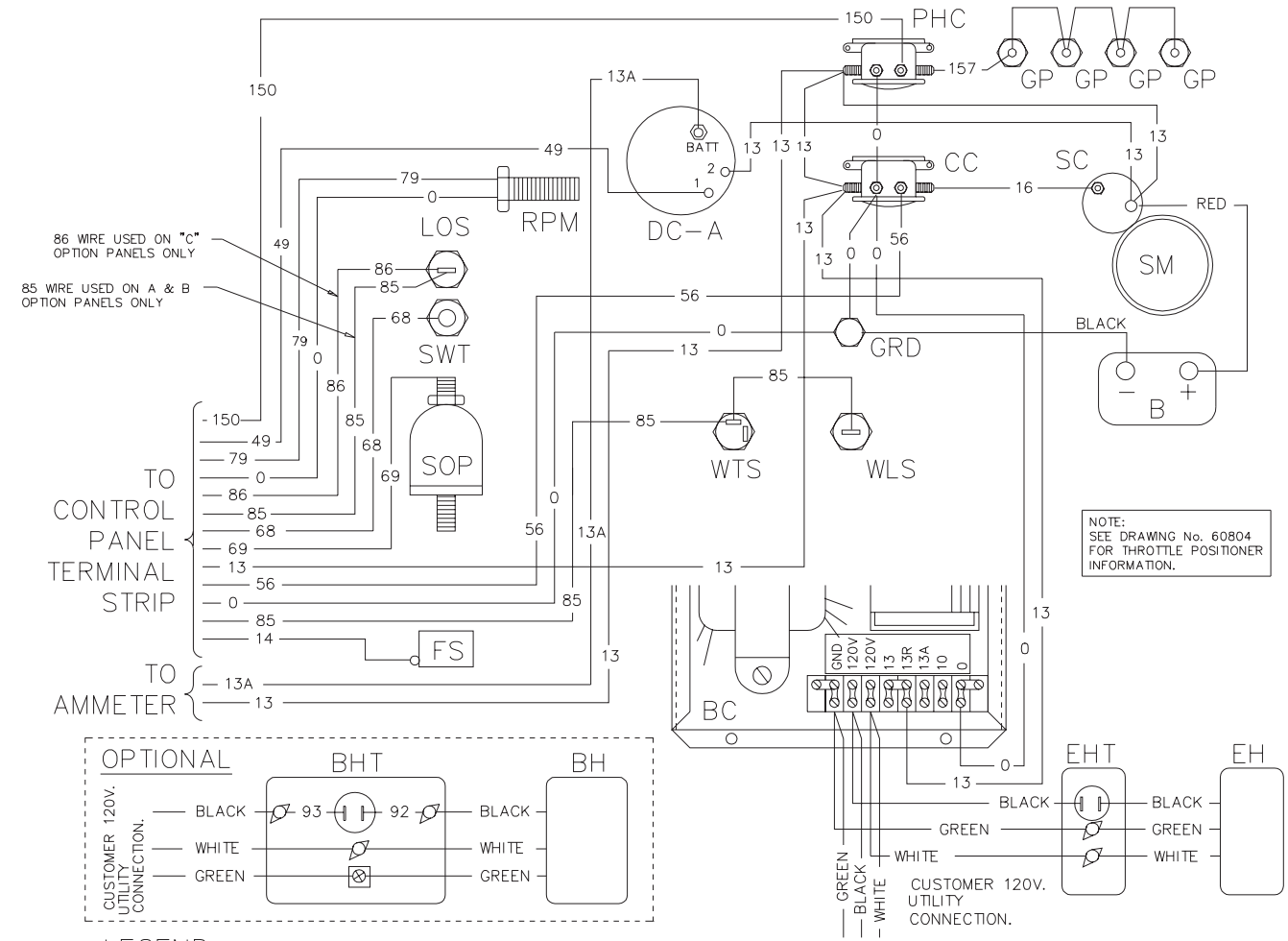

LEGEND
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
CS - CARB FUEL SHUTOFF SOLENOID
DCA - DC ALTERNATOR
EGA - ELECTRONIC GOVERNOR ACTUATOR
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FS - FUEL SHUTOFF SOLENOID
FP - FUEL PUMP
G - GROUND
IC - IGNITION COIL
ID - IGNITION DISTRIBUTOR
LOS - LOW OIL SWITCH
RPM - SPEED SENSOR USED ON "C" OPTION ONLY
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
* 85 WIRE USED ON A&B OPTION PANELS ONLY
86 WIRE USED ON "C" OPTION PANELS ONLY
LIQUID PROPANE & NATURAL GAS ONLY
GASOLINE ONLY
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
TO CONTROL PANEL TERMINAL STRIP
CUSTOMER 120V UTILITY CONNECTION
CUSTOMER 120V UTILITY CONNECTION
OPTIONAL


TO CONTROL PANEL
168
169
EGA
DC ALT. REGULATOR
1 2 3 4 5
GRD
BLACK
FS
ID
IC
T C
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A&B OPTION PANELS ONLY
LOS
SOP
SWT
RPM
CC
SC
SM
RED
GRD
BLACK
12-V. BATTERY
WTS
WLS
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
BC
EHT
EH
DCA
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATTERY HEATER THERMOSTAT
CC - CONTROL CONTACTOR
CS - CARB-FUEL SHUTOFF SOLENOID
DCA - DC ALTERNATOR
EGA - ELECTRONIC GOVERNOR ACTUATOR
EH - ENGINE HEATER
EHT - ENGINE HEATER THERMOSTAT
FP - FUEL PUMP
FS - FUEL SOLENOID
GRD - GROUND
IC - IGNITION COIL
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LOS - LOW OIL SWITCH
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SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMPERATURE
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
GREEN
BLACK
WHITE
CUSTOMER 120V. UTILITY CONNECTION.
CS
CARB
RED
BLUE
BROWN
GREEN
FP
TO CONTROL PANEL
GASOLINE ONLY
LIQUID PROPANE GAS ONLY
OPTIONAL
BHT
BH



LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

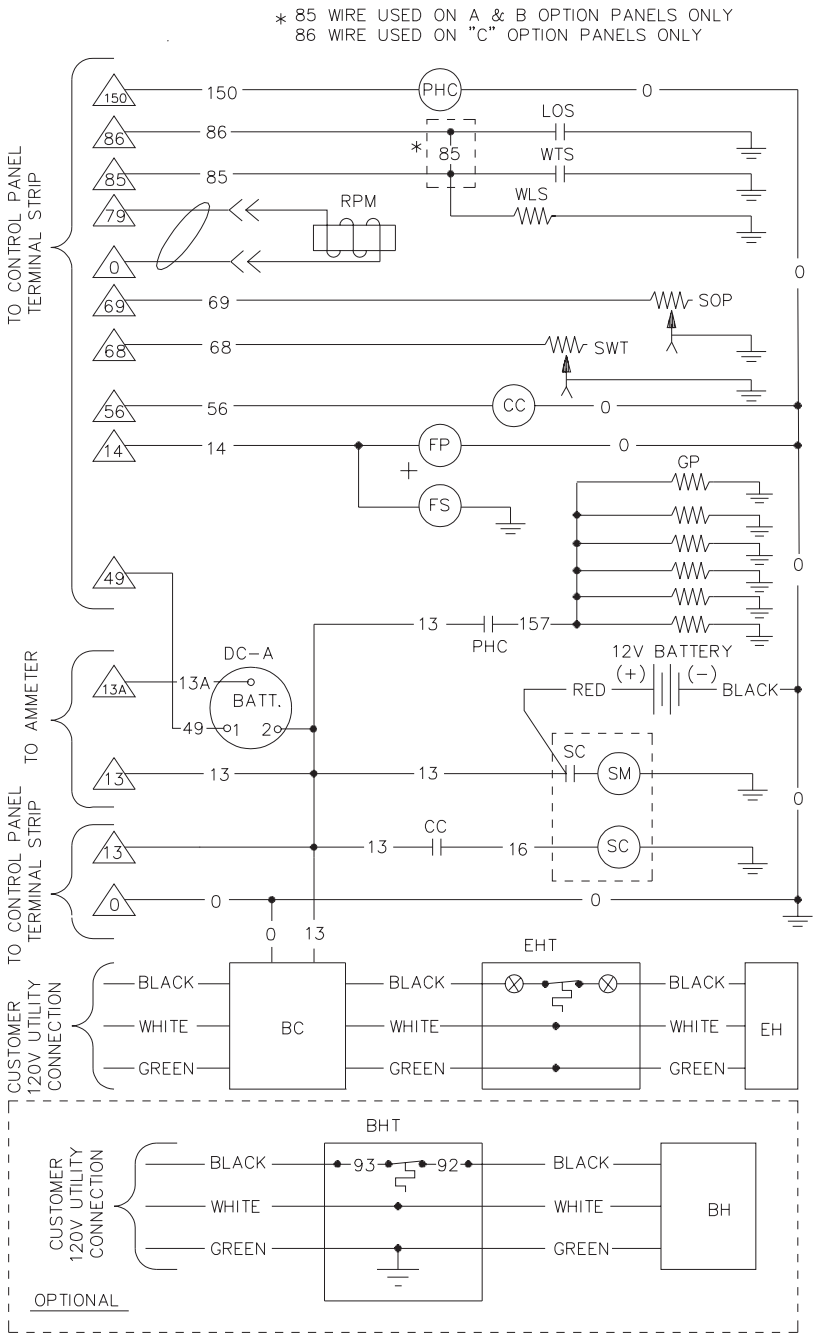


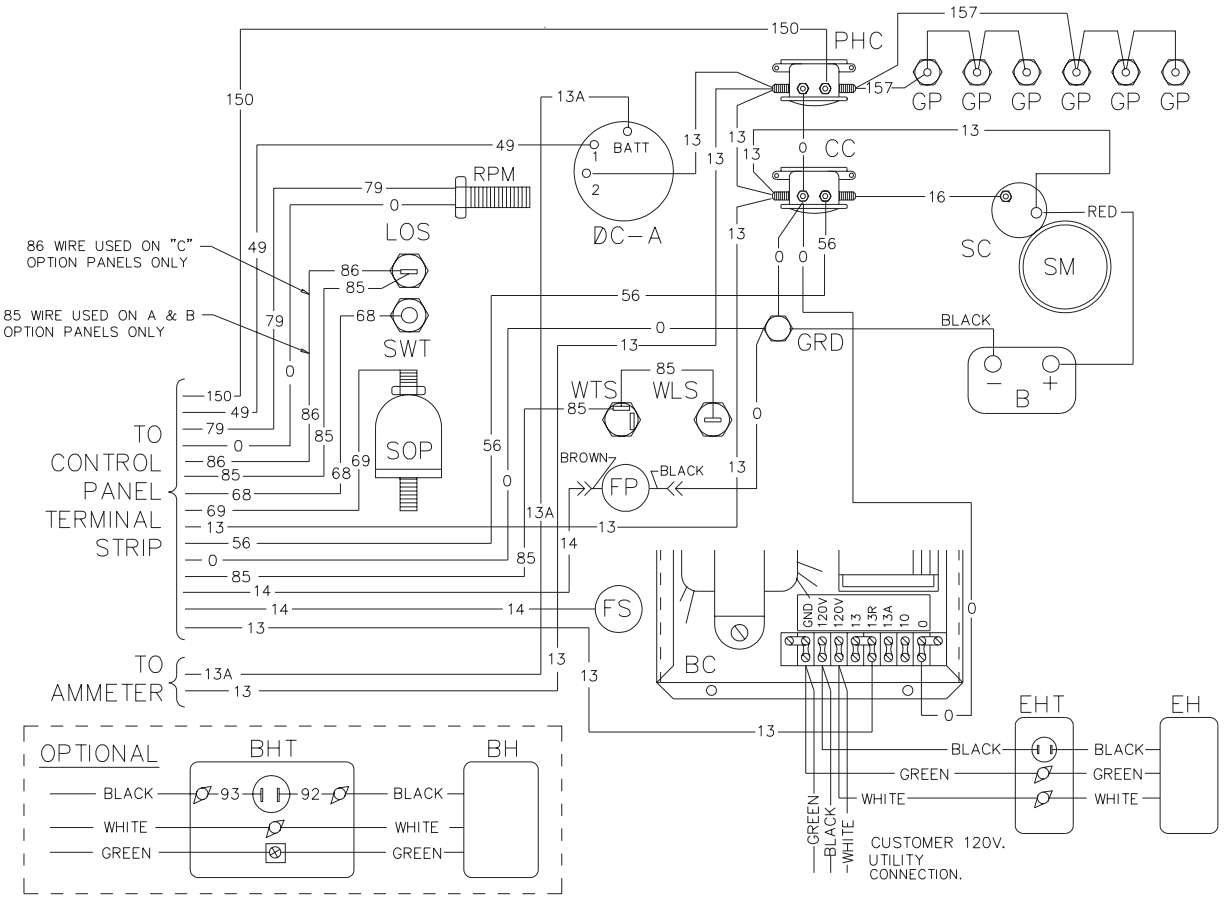
LEGEND

B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER THERMOSTAT
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC– GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH

LEGEND

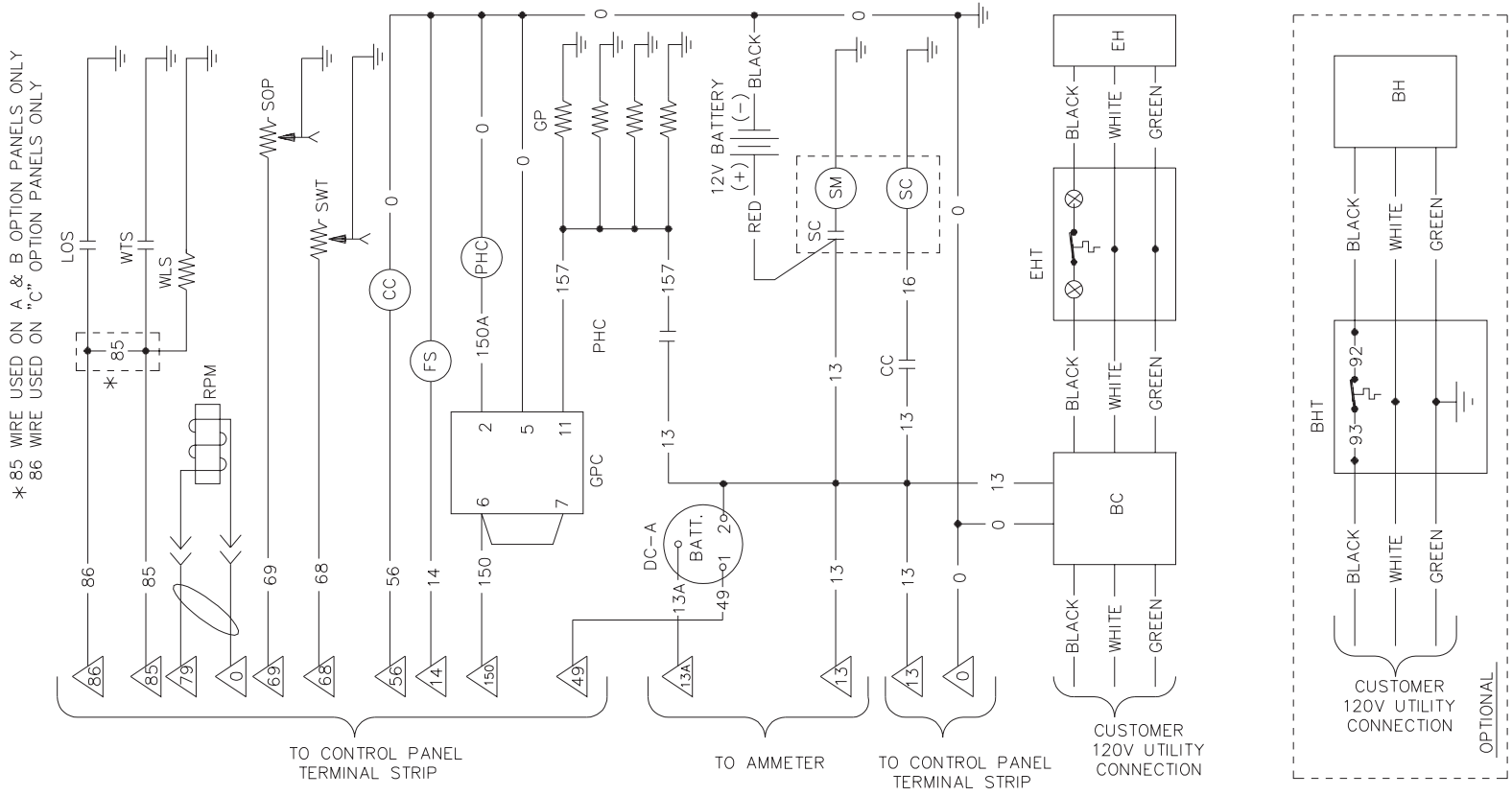
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATT. HEAT. THERMOSTAT
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FS – FUEL SOLENOID
FP – FUEL PUMP
GP – GLOW PLUG
LOS – LOW OIL SWITCH
PHC – PRE-HEAT CONTACTOR
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER-OIL PRESSURE
SWT – SENDER-WATER TEMP.
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH





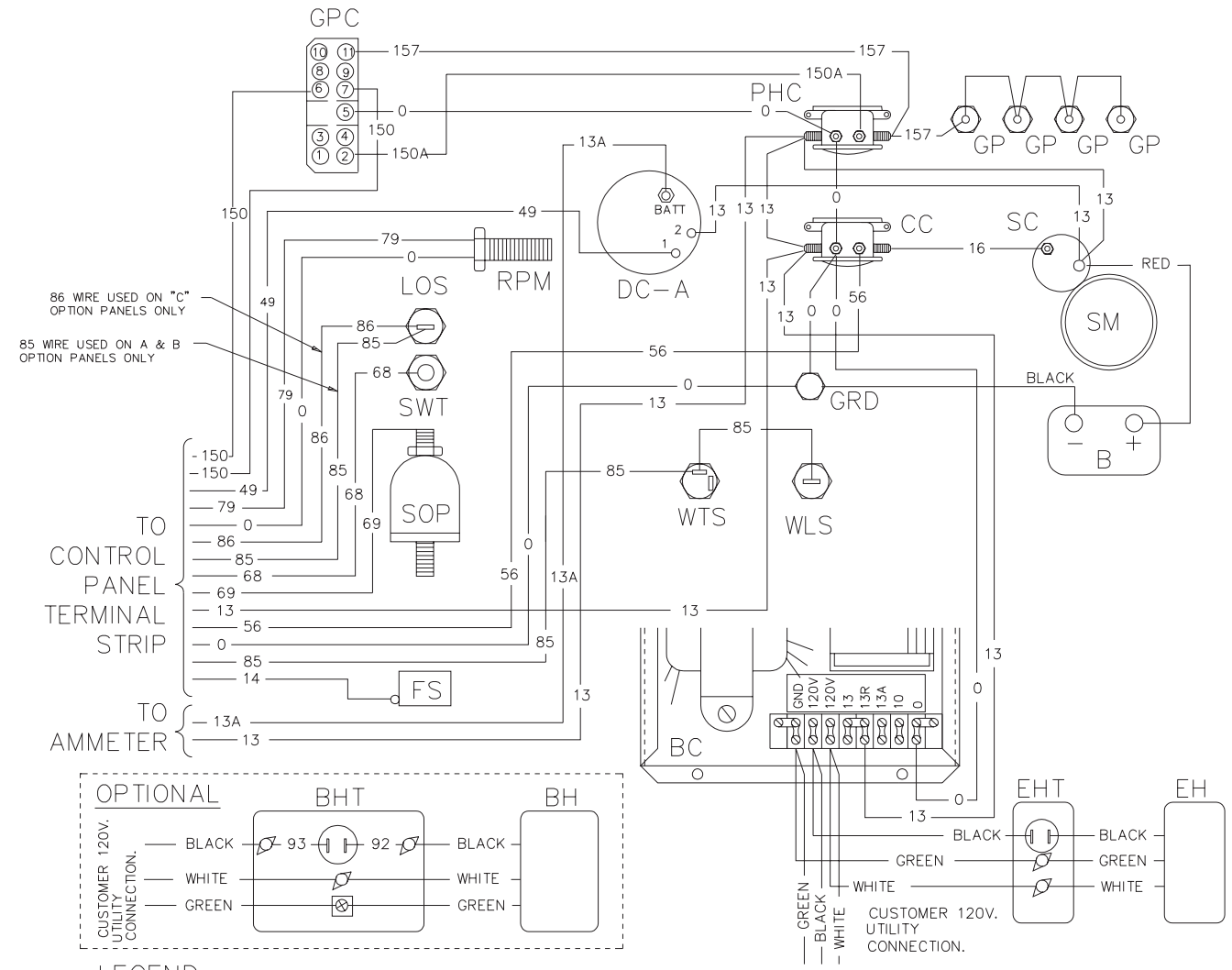
LEGEND

B – BATTERY 12–V.
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATT. HEAT. THERMOSTAT
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FS – FUEL SOLENOID
FP – FUEL PUMP
GP – GLOW PLUG
GPC – GLOW PLUG CONTROLLER
GRD – GROUND
LOS – LOW OIL SWITCH
PHC – PRE–HEAT CONTACTOR
RPM – SPEED SENSOR USED ON 'C' OPTION ONLY.
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMP.
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH



LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
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SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

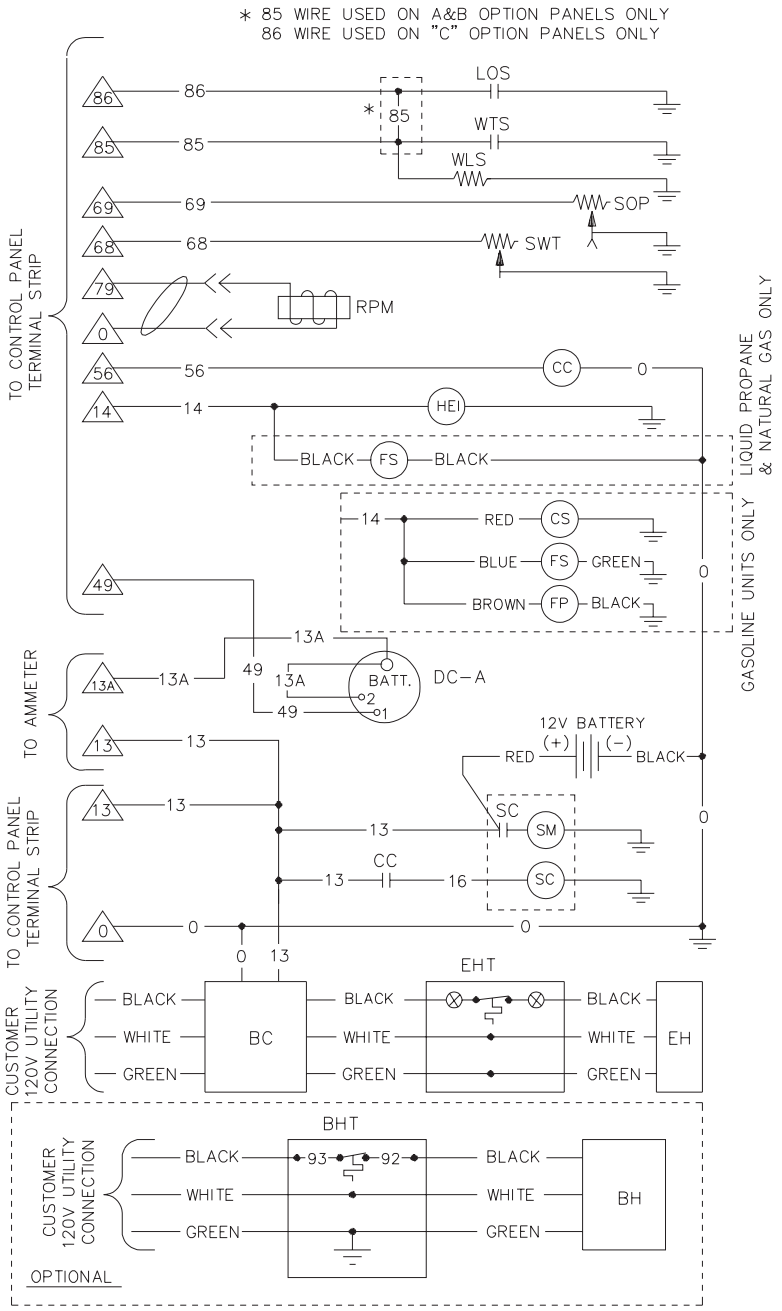


LEGEND

B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER THERMOSTAT
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC– GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH

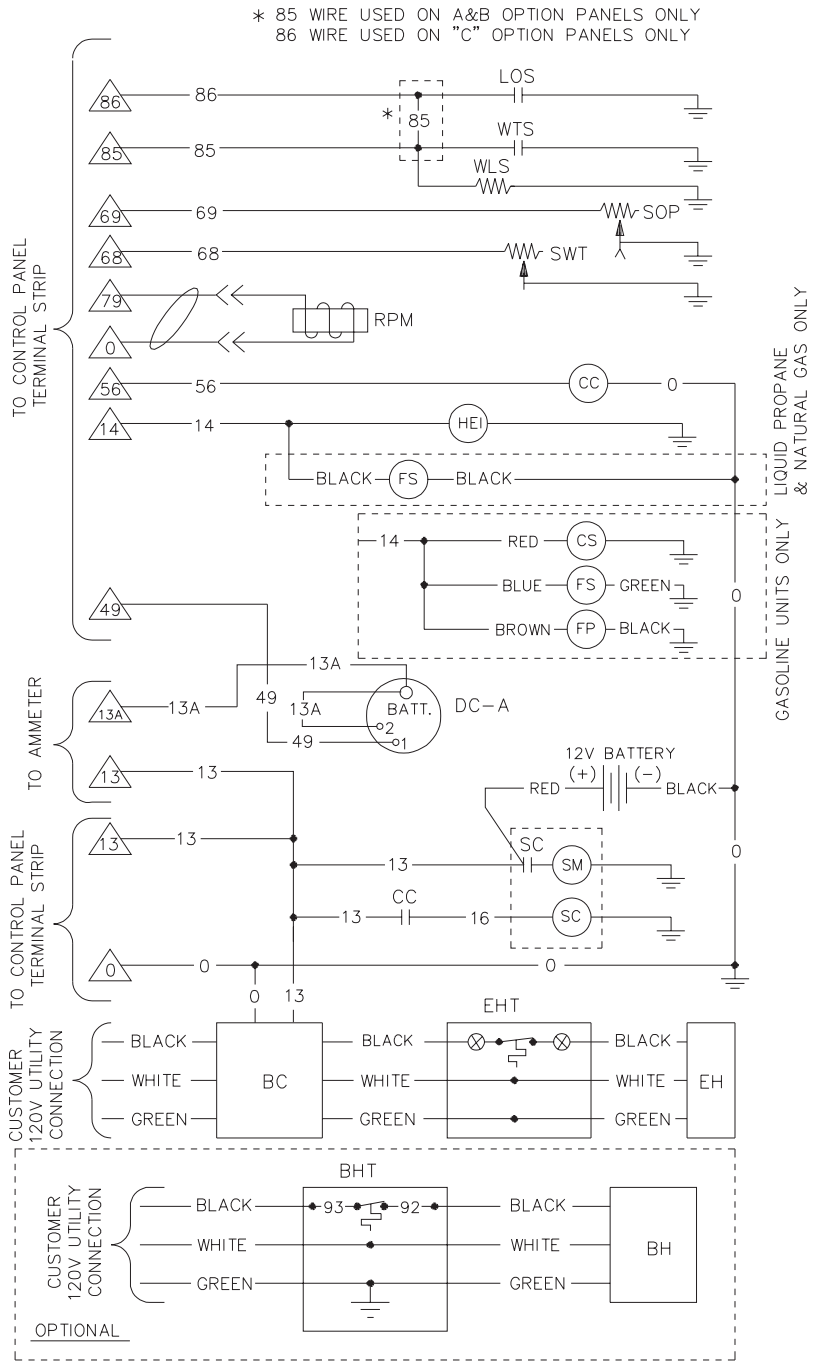
LEGEND

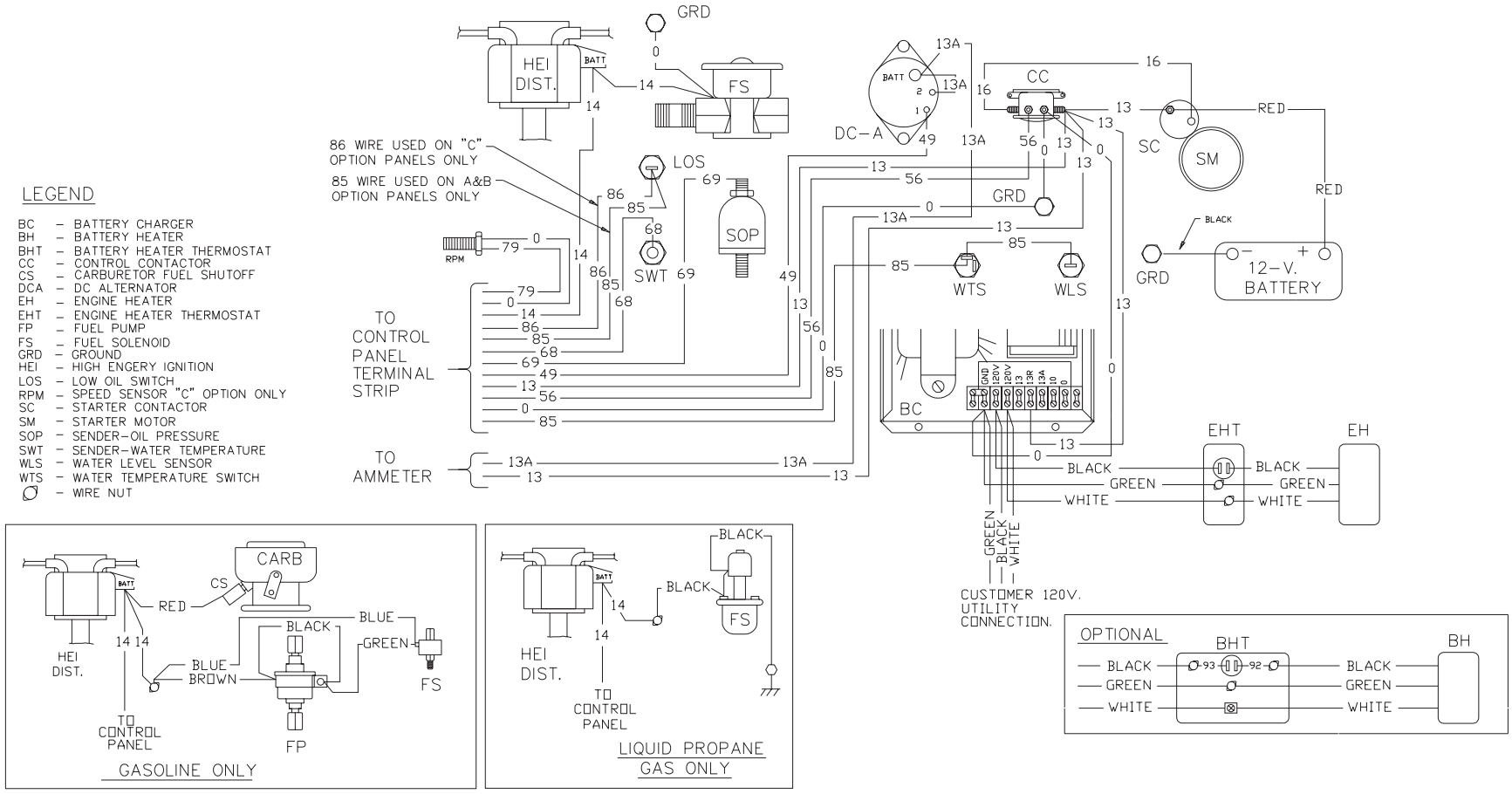
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATT. HEAT. THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARBURETOR FUEL SHUTOFF
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GP – GLOW PLUG
HEI – HIGH ENERGY IGNITION
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMP.
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH

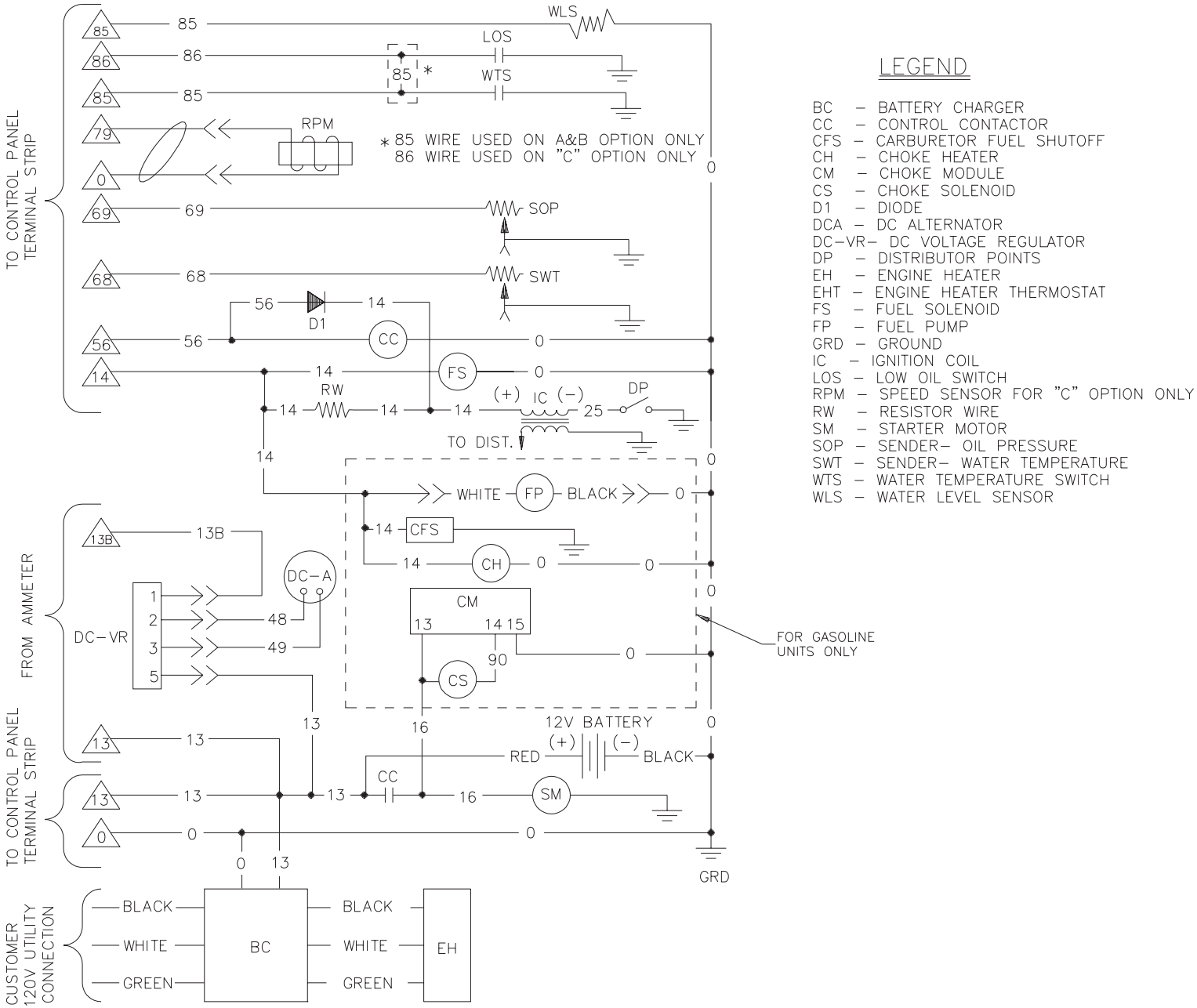


LEGEND

BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATT. HEAT. THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARBURETOR FUEL SHUTOFF
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GP – GLOW PLUG
HEI – HIGH ENERGY IGNITION
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMP.
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH

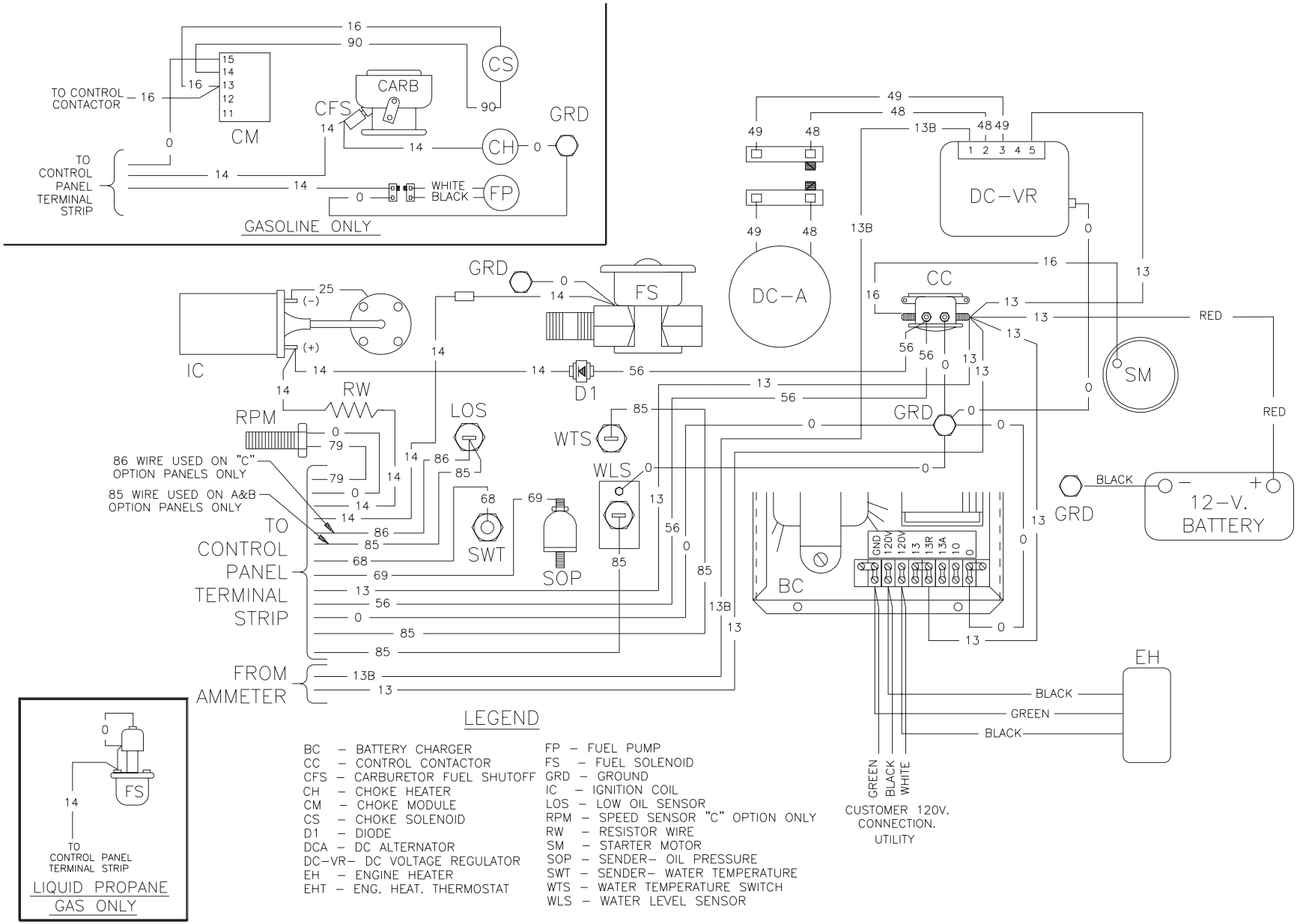



LEGEND
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARBURETOR FUEL SHUTOFF
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENGERY IGNITION
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
– WIRE NUT
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A&B OPTION PANELS ONLY
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
HEI DIST.
BATT
GRD
FS
LOS
SOP
SWT
RPM
DC–A
CC
SC
SM
WTS
WLS
12–V. BATTERY
BC
EHT
EH
CUSTOMER 120V. UTILITY CONNECTION.
OPTIONAL
BHT
BH
CARB
CS
FP
TO CONTROL PANEL
GASOLINE ONLY
LIQUID PROPANE GAS ONLY



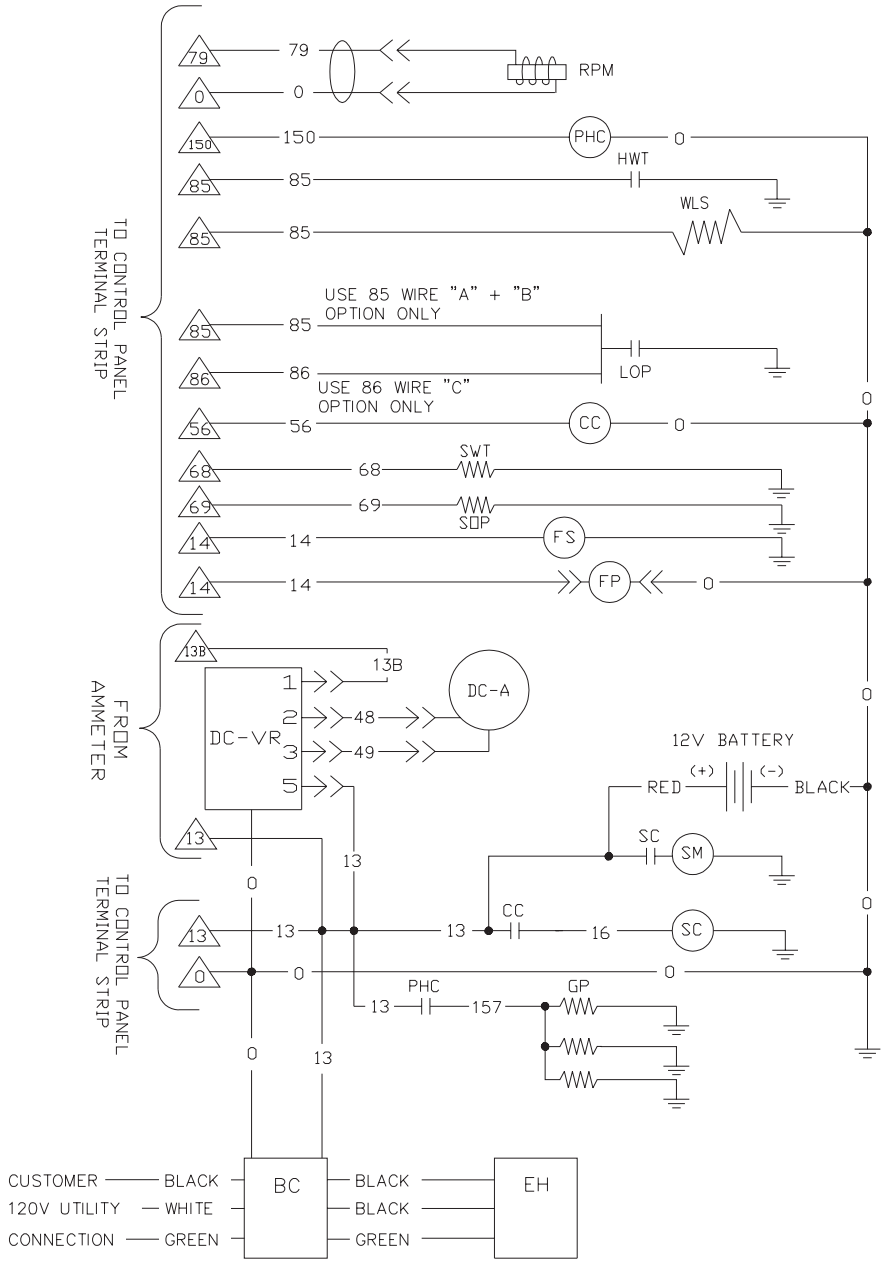
LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC–VR– DC VOLTAGE REGULATOR
DP – DISTRIBUTOR POINTS
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
FP – FUEL PUMP
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR FOR "C" OPTION ONLY
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR



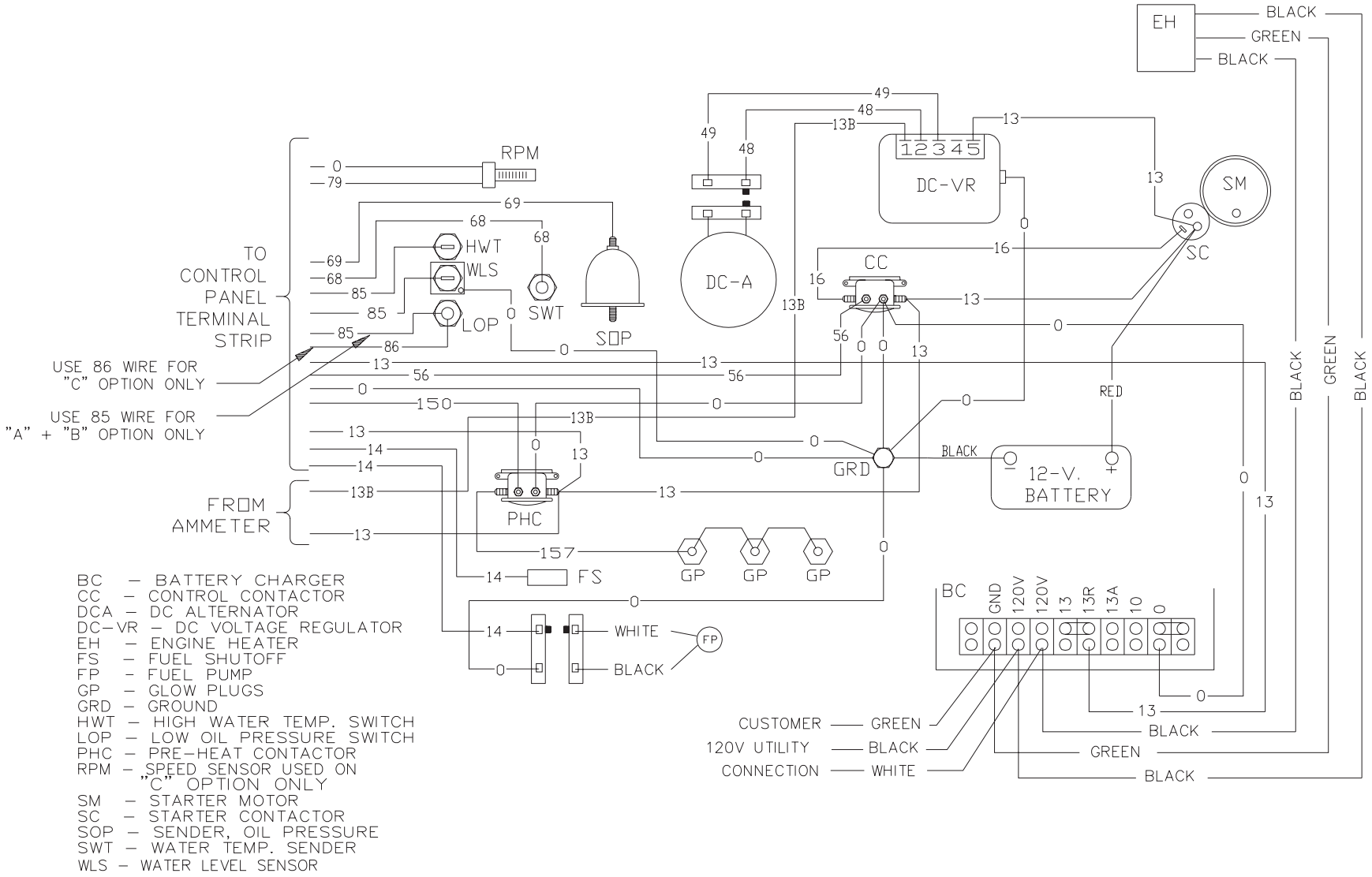
LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC-VR – DC VOLTAGE REGULATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL SENSOR
RPM – SPEED SENSOR "C" OPTION ONLY
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR

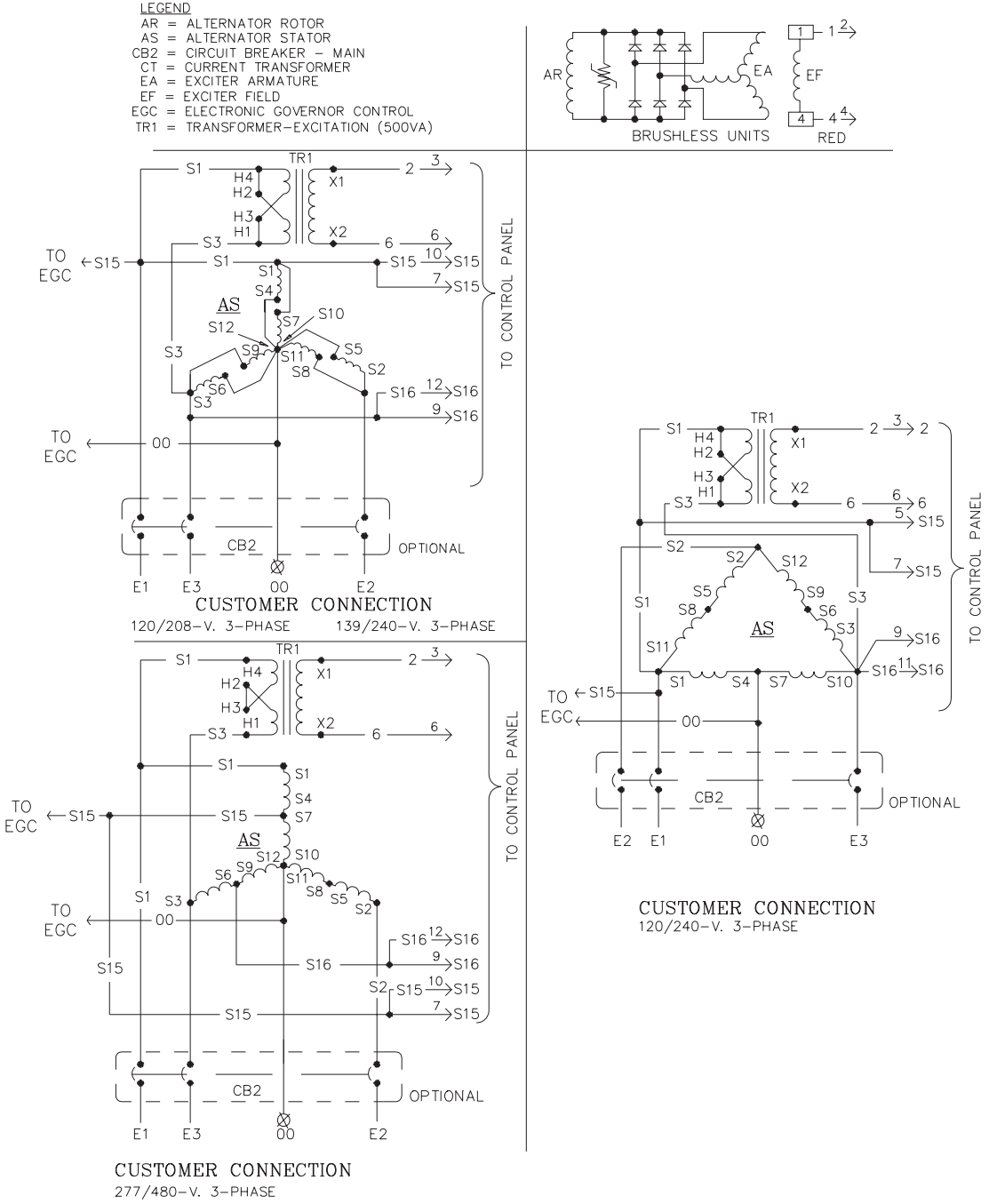


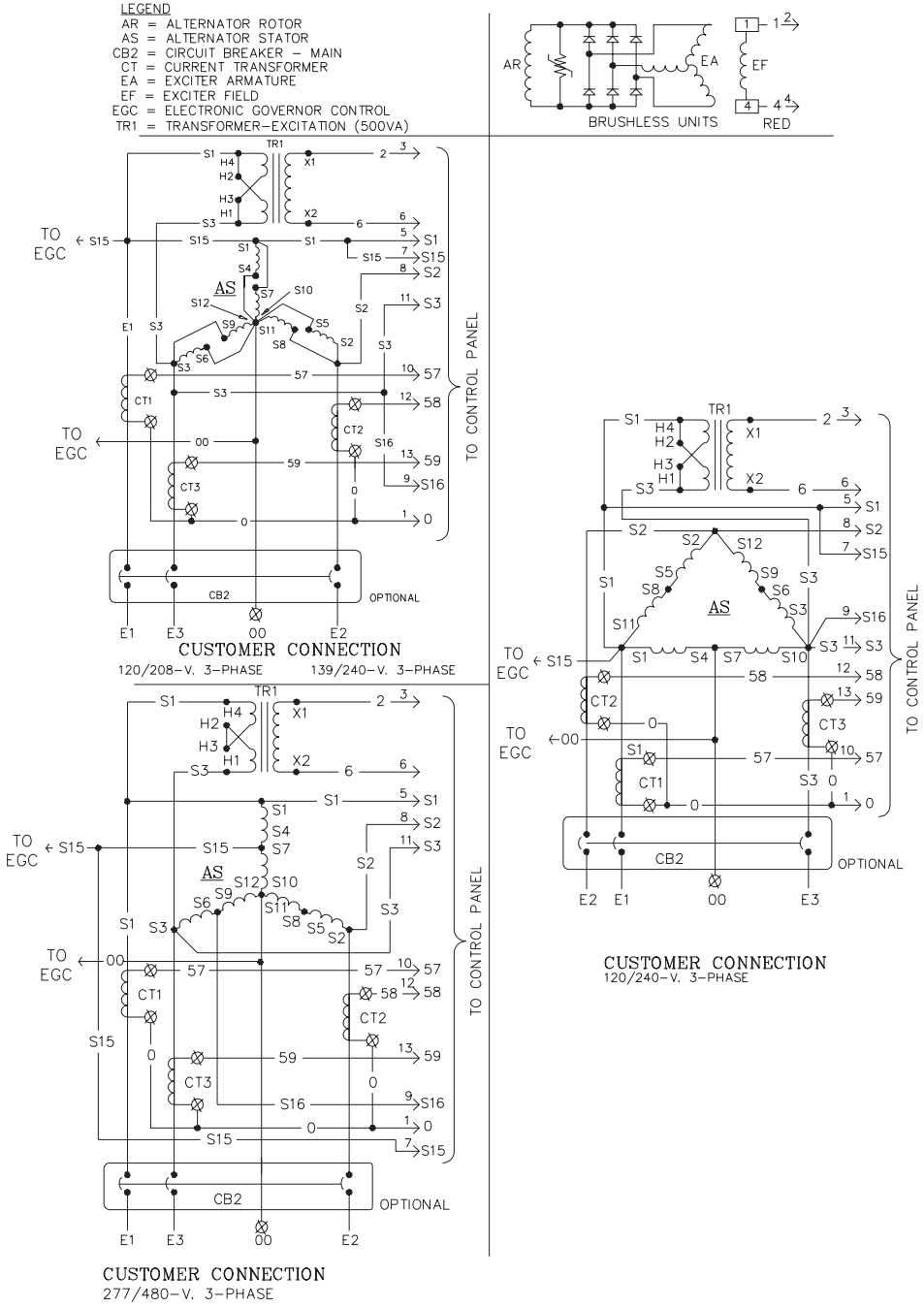
LEGEND

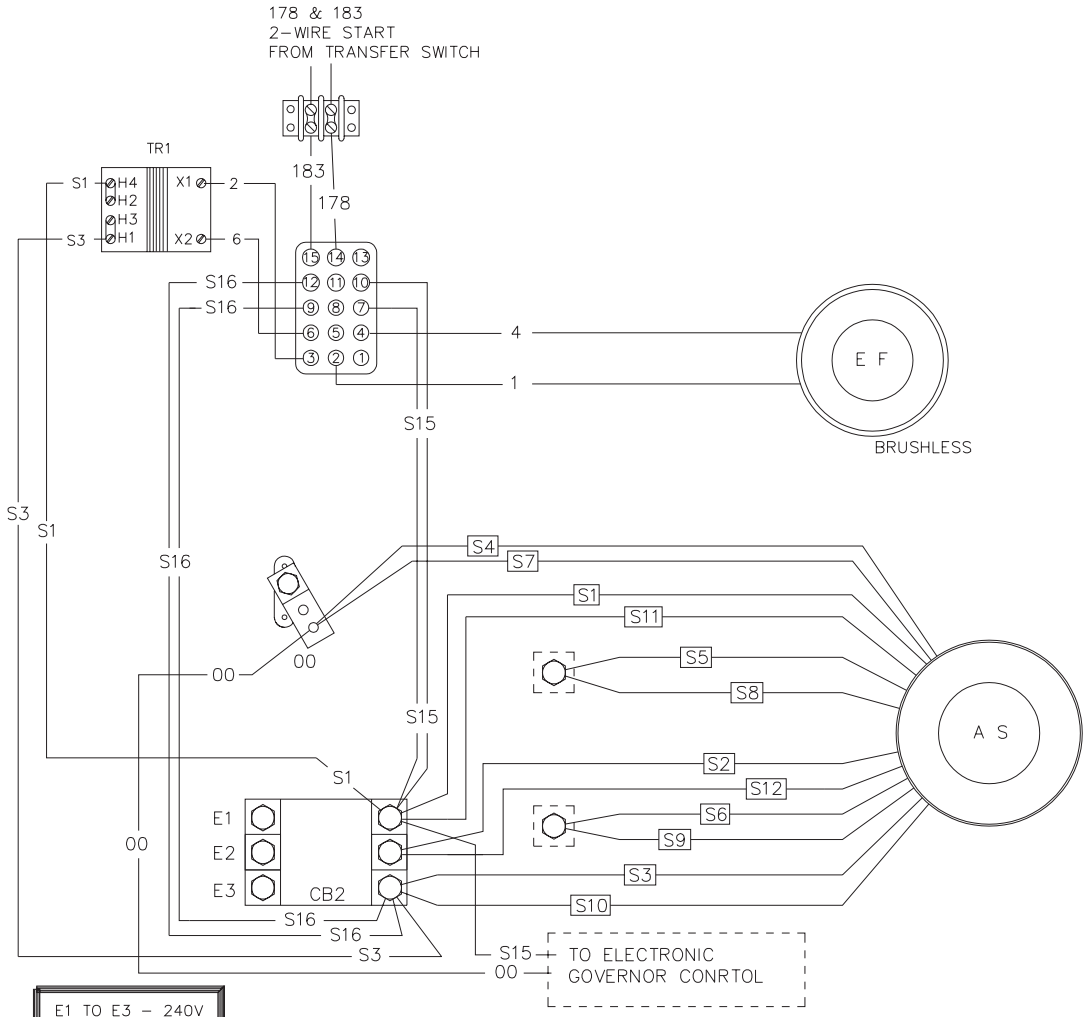
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
DC-VR – DC VOLTAGE REGULATOR
EH – ENGINE HEATER
FS – FUEL SHUTOFF
FP – FUEL PUMP
GP – GLOW PLUG
HWT – HIGH WATER TEMP SWITCH
LOP – LOW OIL PRESSURE SWITCH
PHC – PRE-HEAT CONTACTOR
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER – OIL PRESSURE
SWT – WATER TEMP. SENDER
WLS – WATER LEVEL SENSOR

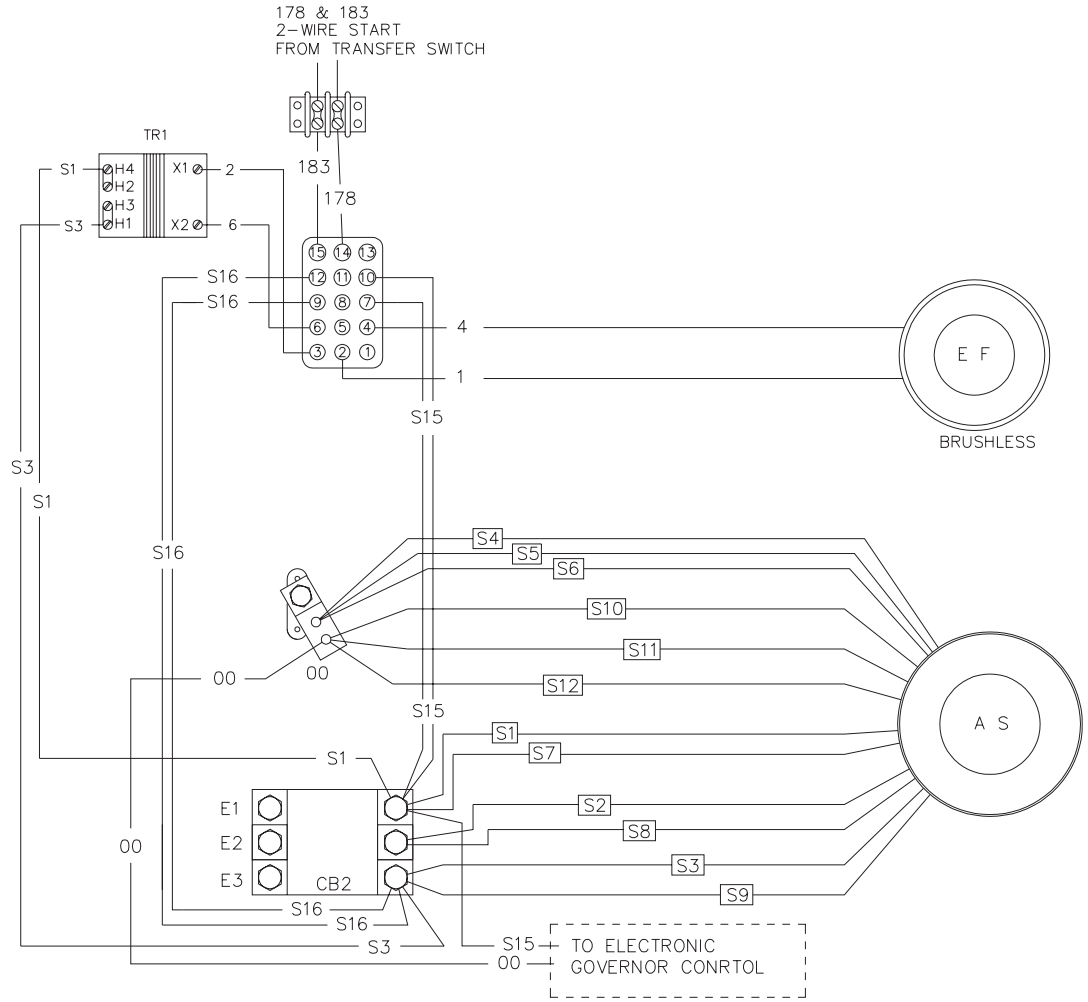


BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
DC–VR – DC VOLTAGE REGULATOR
EH – ENGINE HEATER
FS – FUEL SHUTOFF
FP – FUEL PUMP
GP – GLOW PLUGS
GRD – GROUND
HWT – HIGH WATER TEMP. SWITCH
LOP – LOW OIL PRESSURE SWITCH
PHC – PRE–HEAT CONTACTOR
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SM – STARTER MOTOR
SC – STARTER CONTACTOR
SOP – SENDER, OIL PRESSURE
SWT – WATER TEMP. SENDER
WLS – WATER LEVEL SENSOR


LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELECTRONIC GOVERNOR CONTROL
TR1 = TRANSFORMER-EXCITATION (500VA)
AR
EA
EF
BRUSHLESS UNITS
RED
TR1
TO CONTROL PANEL
TO EGC
AS
CB2
OPTIONAL
E1
E3
00
E2
CUSTOMER CONNECTION
120/208-V. 3-PHASE
139/240-V. 3-PHASE
CUSTOMER CONNECTION
120/240-V. 3-PHASE
CUSTOMER CONNECTION
277/480-V. 3-PHASE


LEGEND
AR = ALTERNATOR ROTOR
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CB2 = CIRCUIT BREAKER – MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELECTRONIC GOVERNOR CONTROL
TR1 = TRANSFORMER–EXCITATION (500VA)
BRUSHLESS UNITS
RED
CUSTOMER CONNECTION
120/208–V. 3–PHASE
139/240–V. 3–PHASE
CUSTOMER CONNECTION
277/480–V. 3–PHASE
CUSTOMER CONNECTION
120/240–V. 3–PHASE
TO CONTROL PANEL
OPTIONAL
TO EGC


178 & 183
2–WIRE START
FROM TRANSFER SWITCH
183
178
TR1
S1
H4
H2
H3
H1
S3
X1
X2
2
6
S16
S16
15 14 13
12 11 10
9 8 7
6 5 4
3 2 1
4
1
E F
BRUSHLESS
S15
S3
S1
S16
S4
S7
S1
S11
S5
S8
00
00
S15
S1
A S
S2
S12
S6
S9
S3
S10
E1
E2
E3
CB2
00
S16
S16
S3
S15
00
TO ELECTRONIC
GOVERNOR CONRTOL
E1 TO E3 – 240V
E1 TO 00
E3 TO 00
120V
CUSTOMER CONNECTION
120/240V 1–PHASE
E1 TO E2
E2 TO E3
E3 TO E1
240V
E1 TO 00
E3 TO 00
120V
CUSTOMER CONNECTION
120/240V 3–PHASE
LEGEND
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER– MAIN
EF = EXCITER FIELD
TR1 = TRANSFORMER– EXCITATION
"A" OPTION
SHEET 1 OF 6



E1 TO E2	208V
E2 TO E3	
E3 TO E1	
E1 TO 00	120V
E2 TO 00	
E3 TO 00	

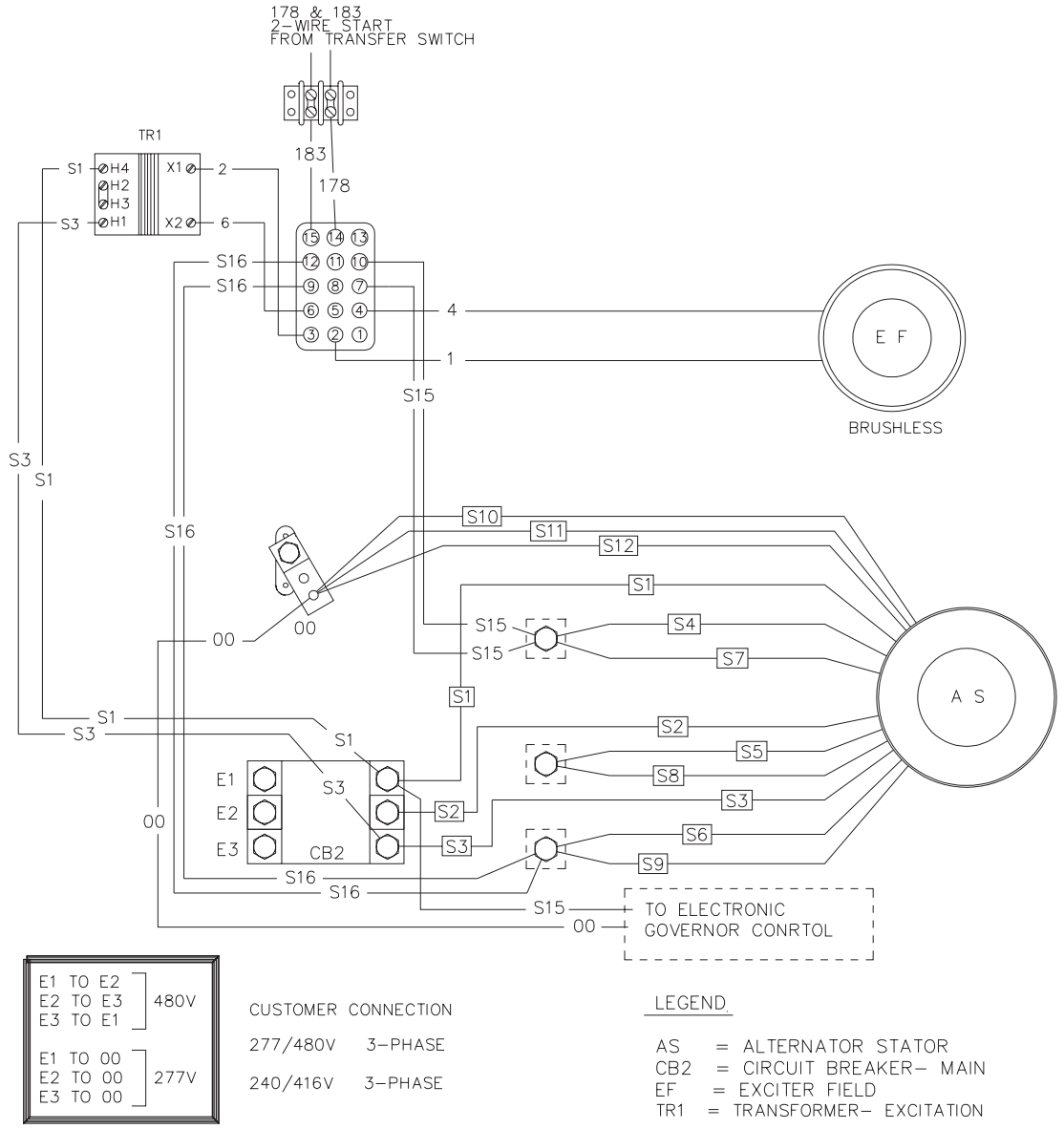
CUSTOMER CONNECTION
120/208V 3–PHASE
139/240V 3–PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER– MAIN
EF = EXCITER FIELD
TR1 = TRANSFORMER– EXCITATION

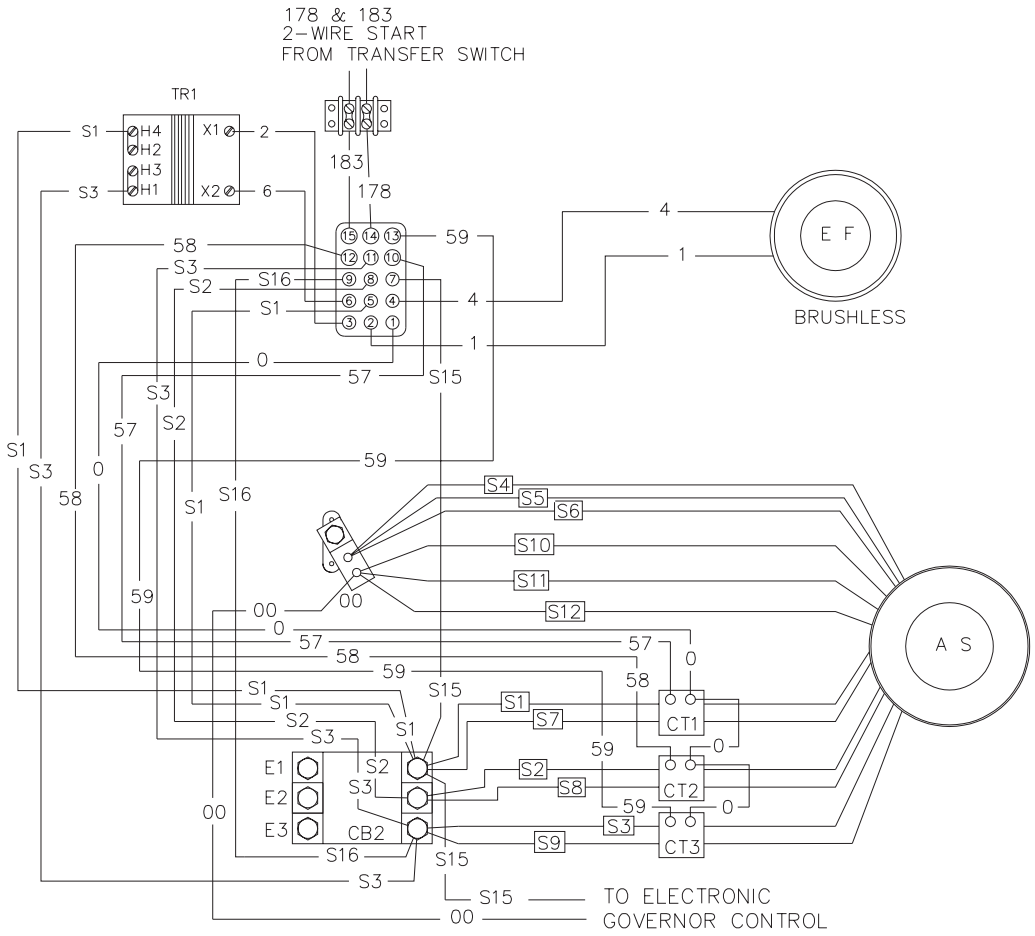
SHEET 2 OF 6

"A" OPTION



SHEET 3 OF 6

"A" OPTION



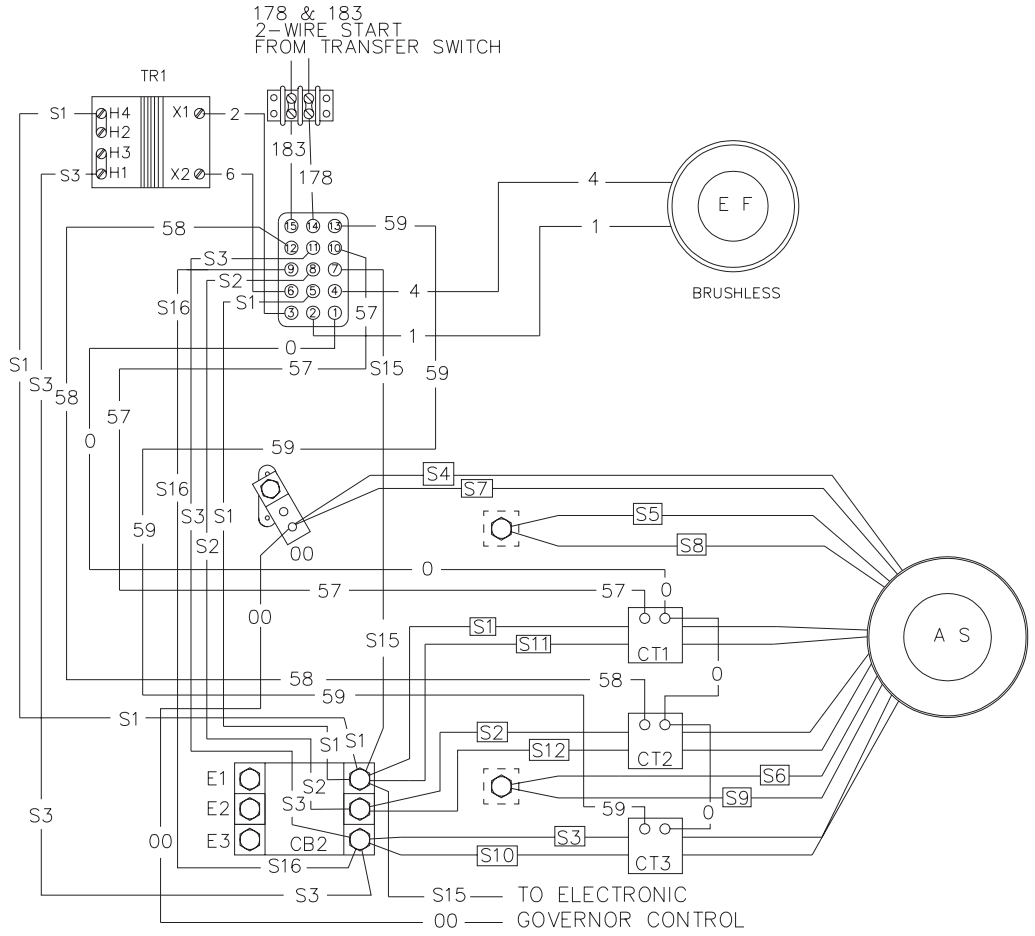
E1 TO E2 E2 TO E3 E3 TO E1	208V
E1 TO 00 E2 TO 00 E3 TO 00	120V

CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE

LEGEND

AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
TR1 – EXCITATION TRANSFORMER

"B" & "C" OPTION SHT 4-6



E1 TO E2	240V
E2 TO E3	
E3 TO E1	
E1 TO 00	120V
E3 TO 00	

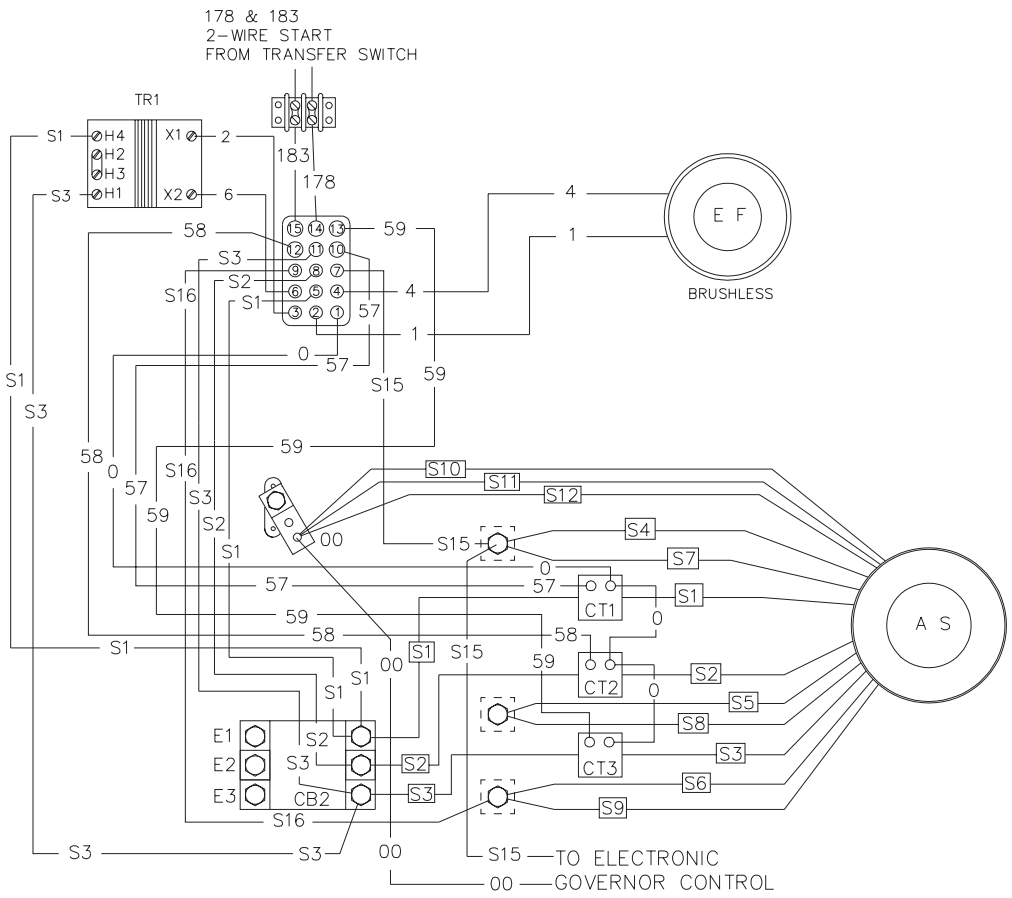
CUSTOMER CONNECTION
120/240V 3-PHASE

LEGEND

AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
TR1 – EXCITATION TRANSFORMER

SHT 5-6

"B" & "C" OPTION



E1 TO E2, E2 TO E3, E3 TO E1	480V
E1 TO 00, E2 TO 00, E3 TO 00	277V

CUSTOMER CONNECTION
277/480V 3–PHASE
240/416V 3–PHASE

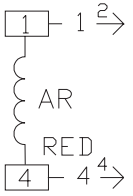
LEGEND

- AS – ALTERNATOR STATOR
- CB2 – CIRCUIT BREAKER – MAIN
- CT – CURRENT TRANSFORMER
- EF – EXCITER FIELD
- TR1 – EXCITATION TRANSFORMER

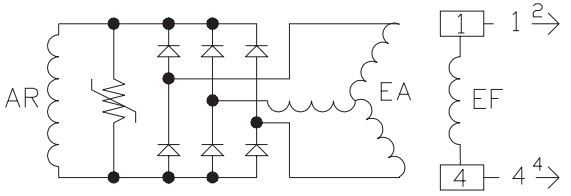
"B" & "C" OPTION

SHT 6–6

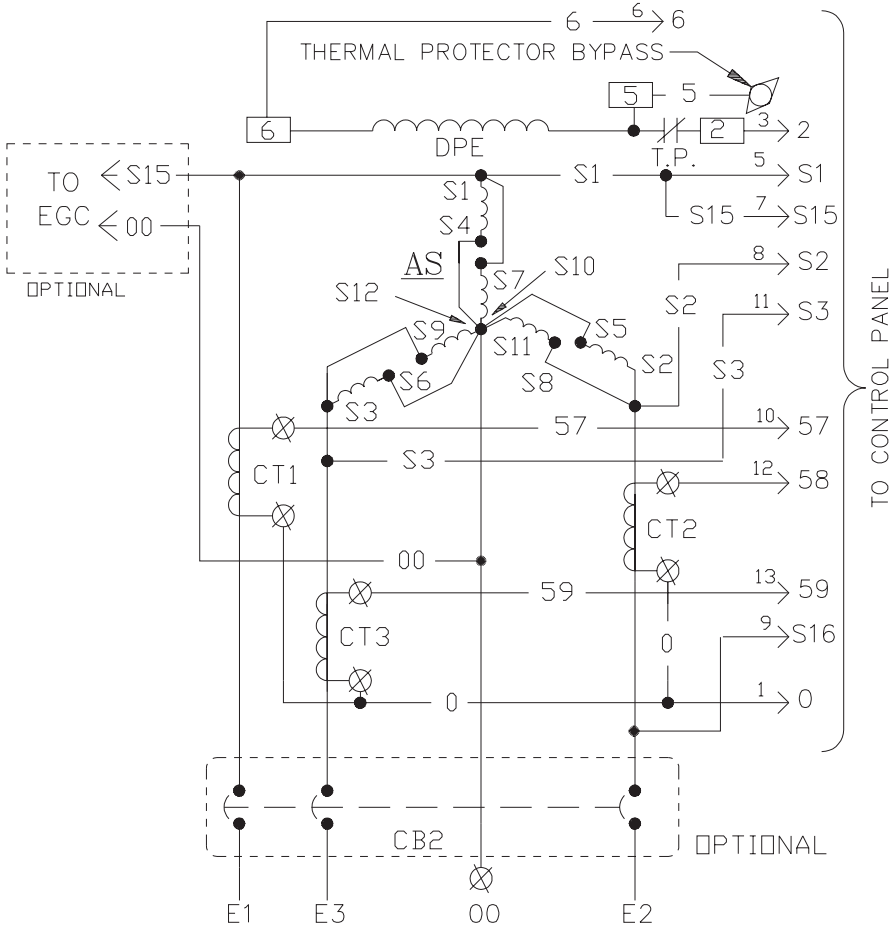
LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
DPE = EXCITATION WINDING
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELEC. GOVERNOR CONTROL
TP = THERMAL PROTECTER



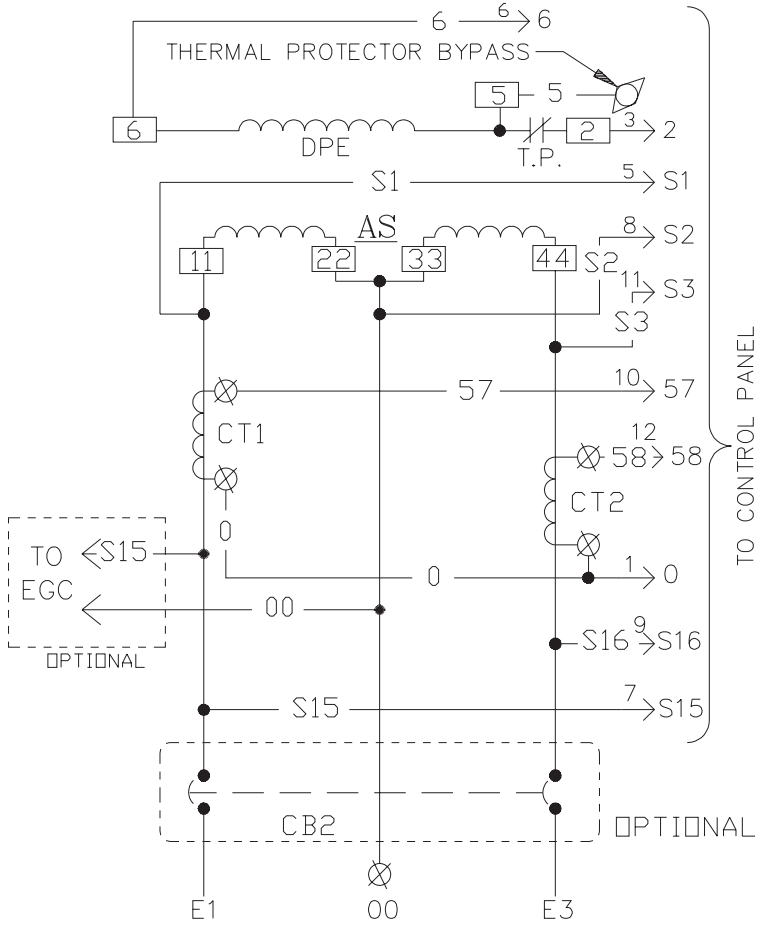
BRUSH UNITS



BRUSHLESS UNITS

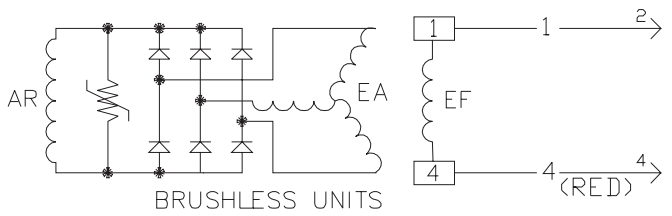


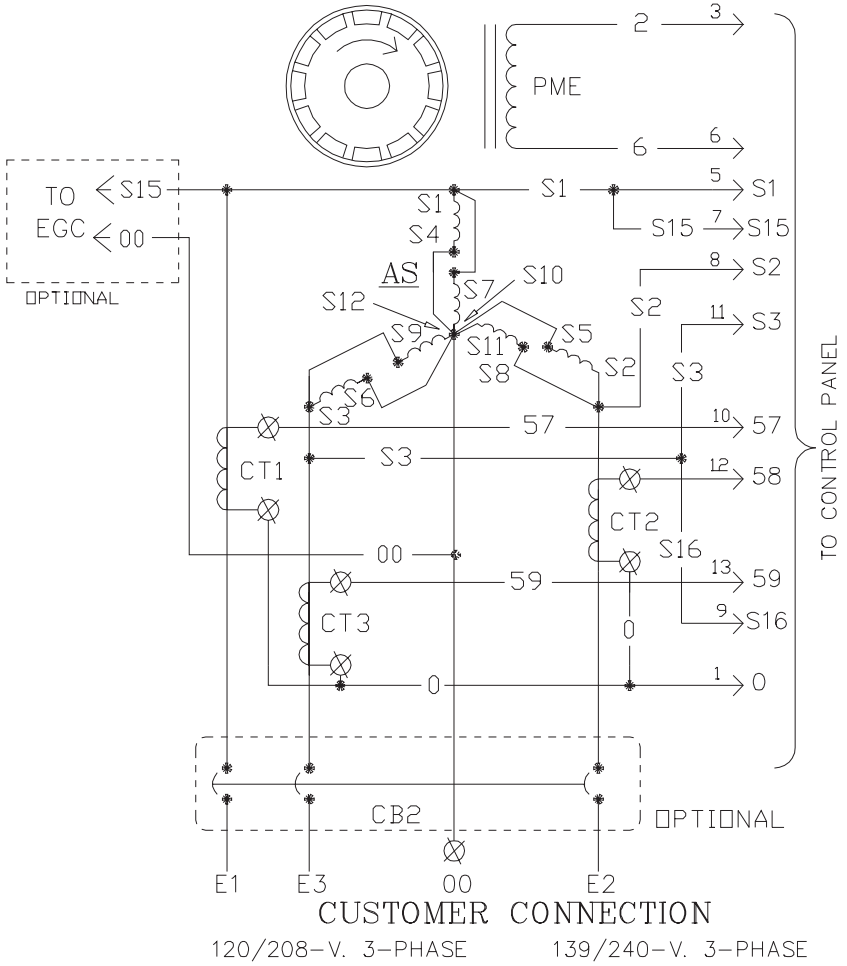
CUSTOMER CONNECTION
120/208-V. 3-PHASE 139/240-V. 3-PHASE

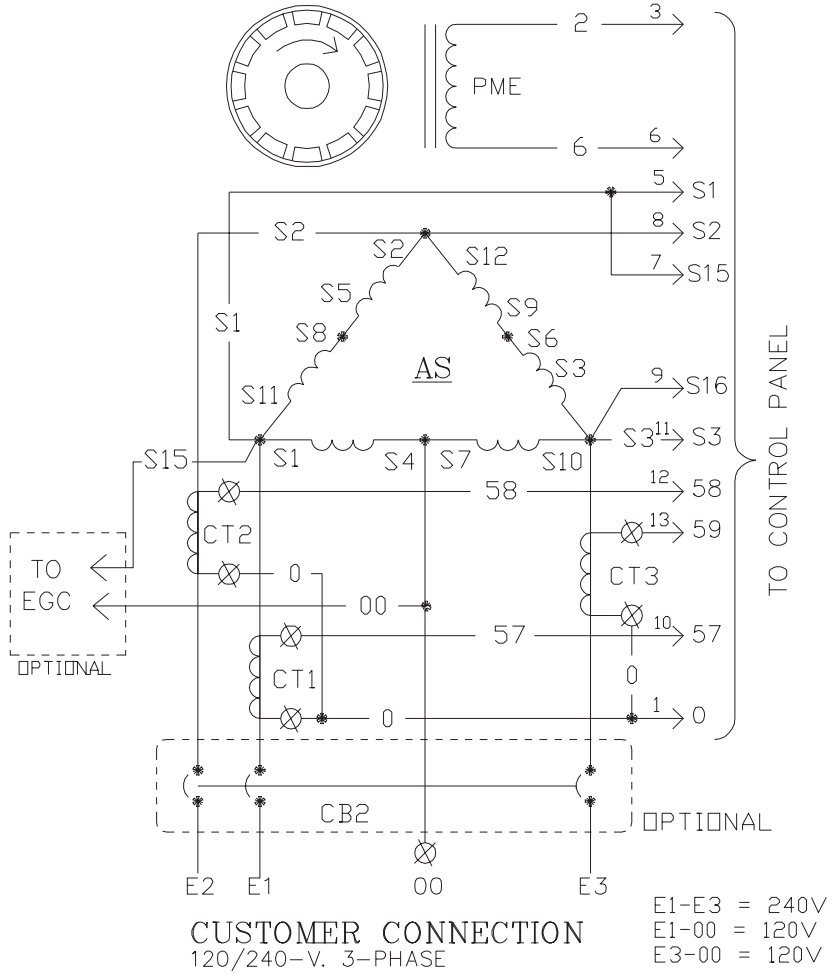


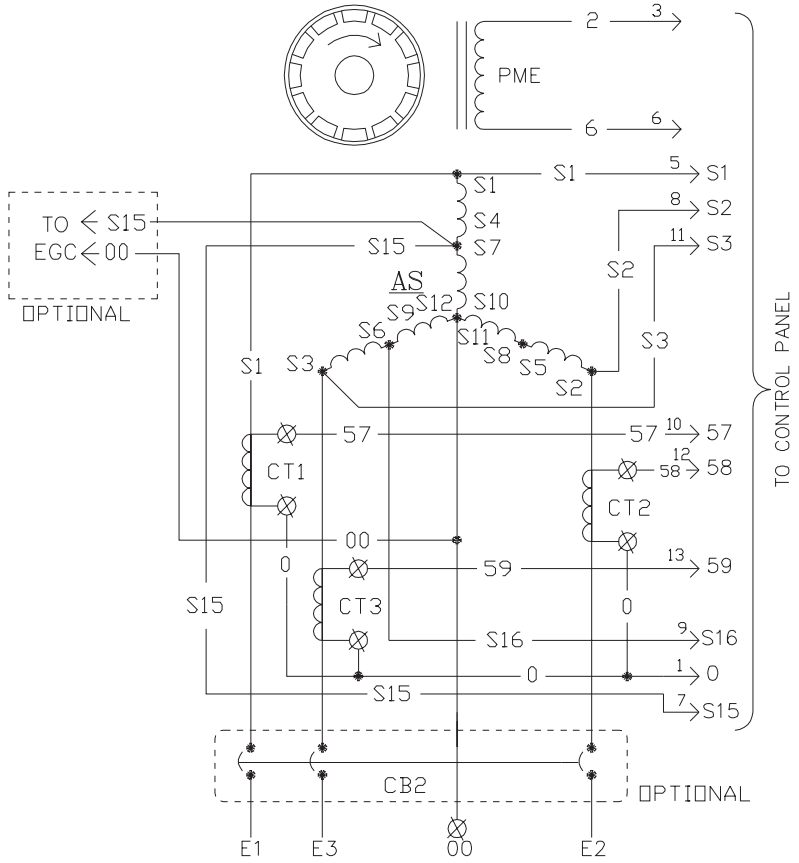
CUSTOMER CONNECTION
120/240-V. 1-PHASE

LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELEC. GOVERNOR CONTROL
PME = PERMANENT MAGNET EXCITER

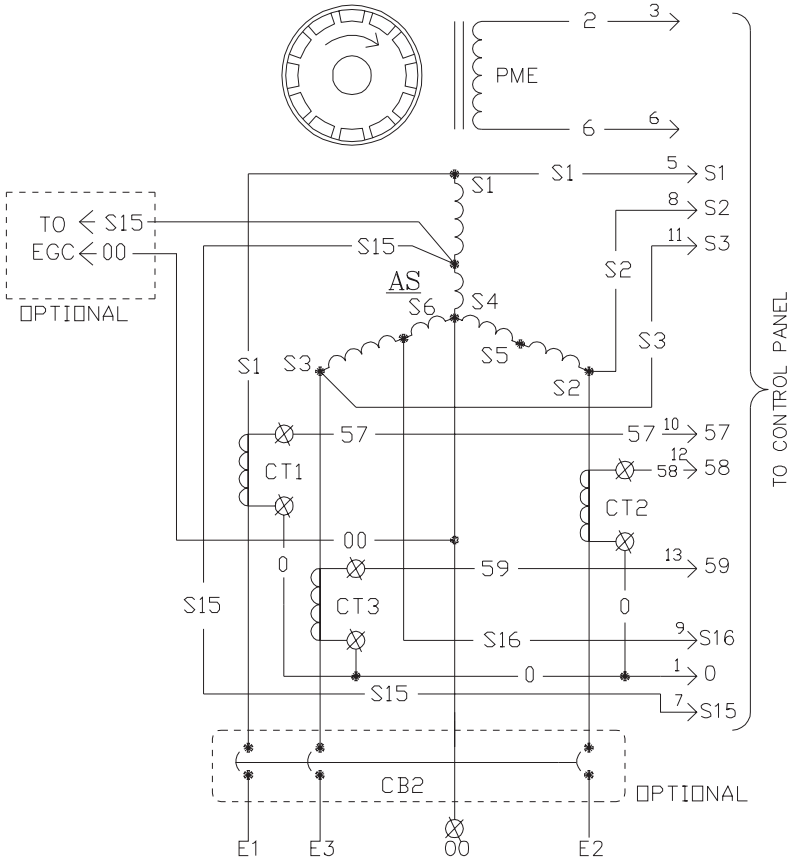






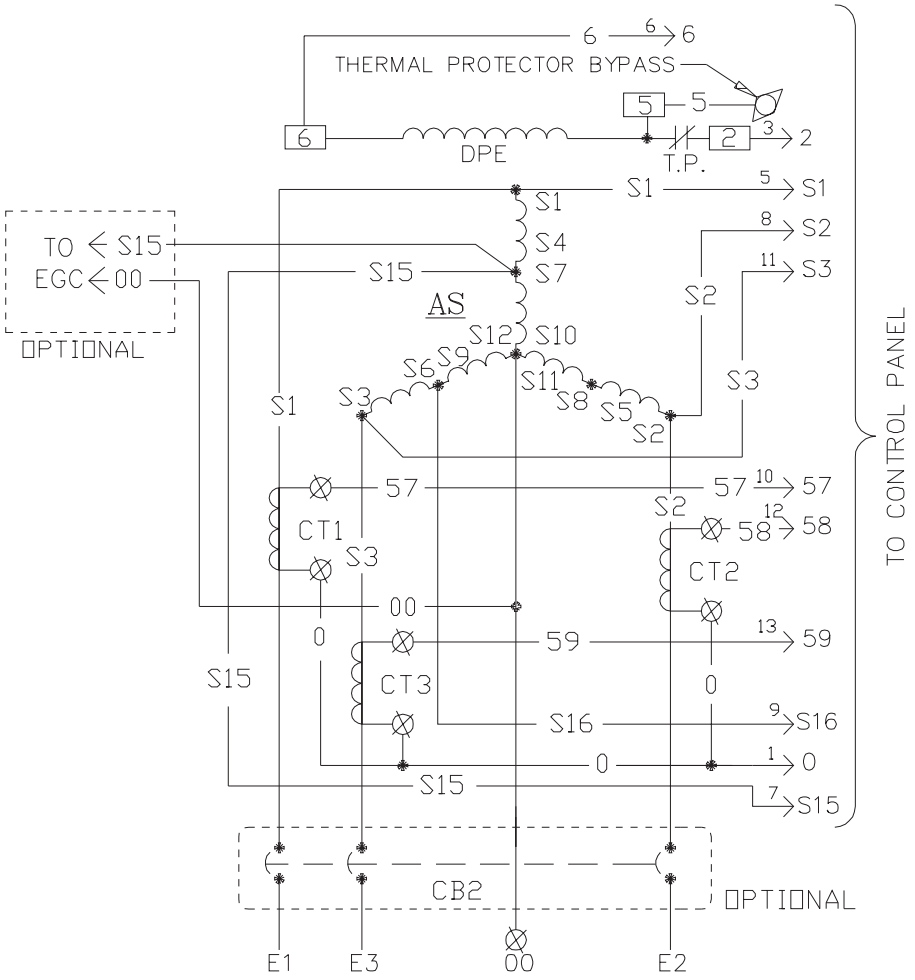


CUSTOMER CONNECTION
277/480-V. 3-PHASE

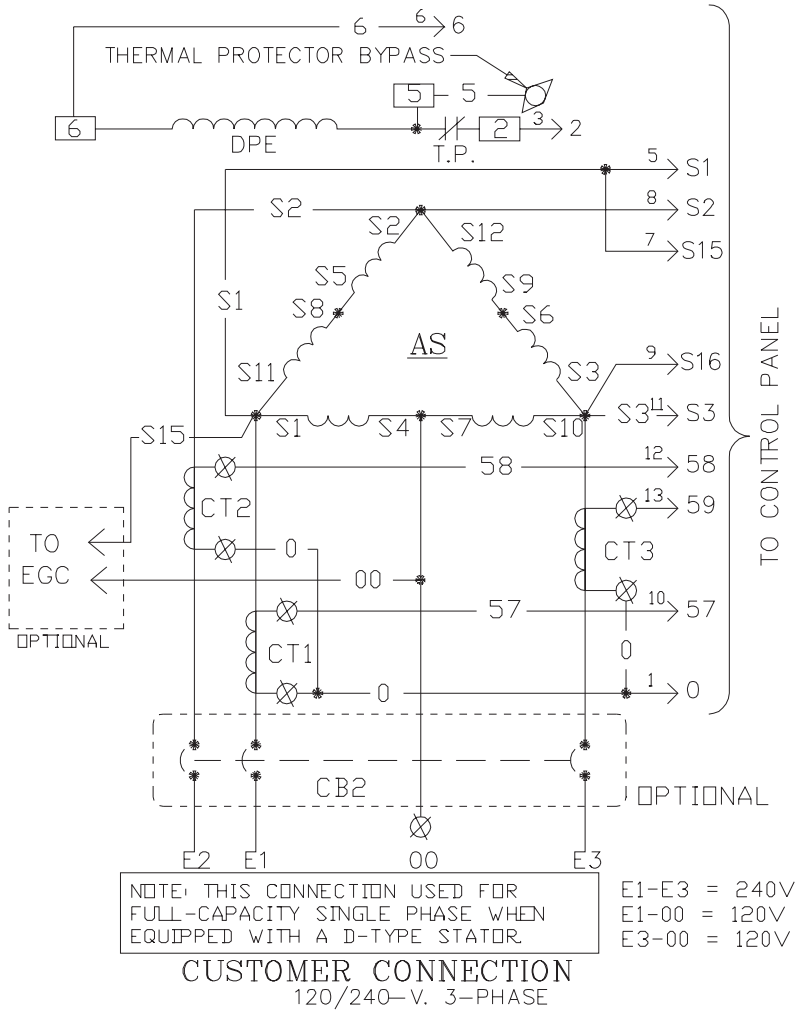


CUSTOMER CONNECTION
346/600-V. 3-PHASE

NOTE: 346/600V MAIN ALTERNATOR CONNECTIONS SAME FOR PME, BRUSH OR BRUSHLESS UNITS

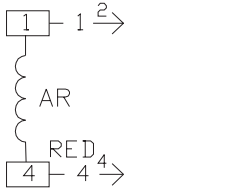


CUSTOMER CONNECTION
277/480–V. 3–PHASE
240/416–V. 3–PHASE

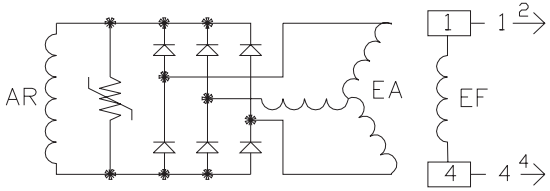


CUSTOMER CONNECTION
120/240–V. 3–PHASE

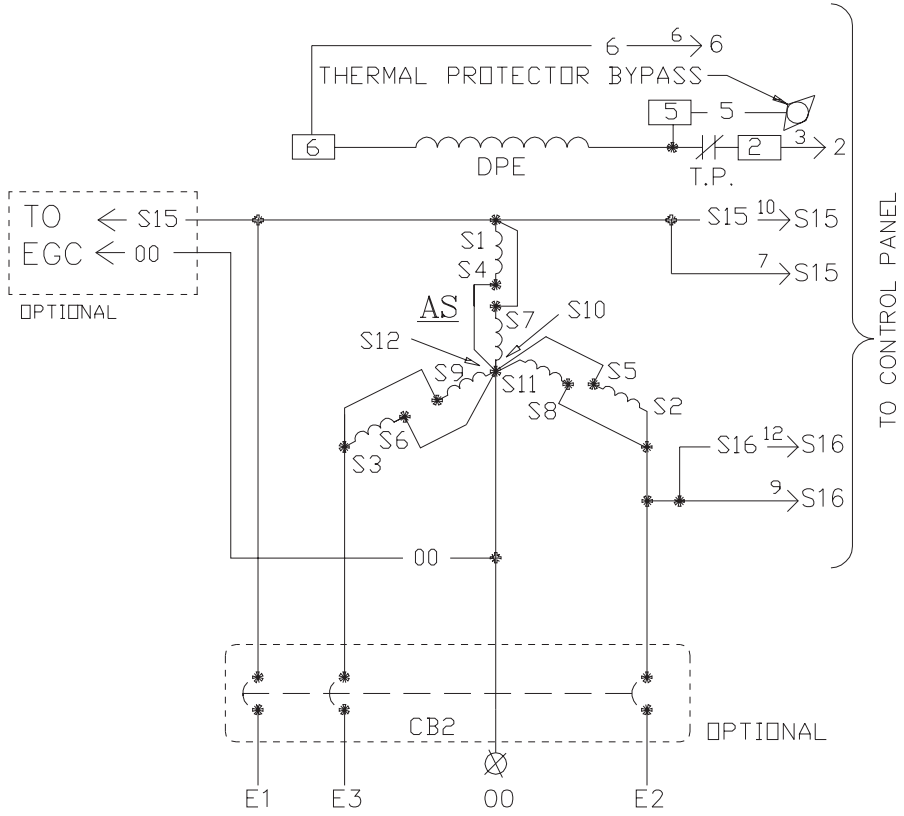
LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
DPE = EXCITATION WINDING
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELEC. GOVERNOR CONTROL
TP = THERMAL PROTECTER



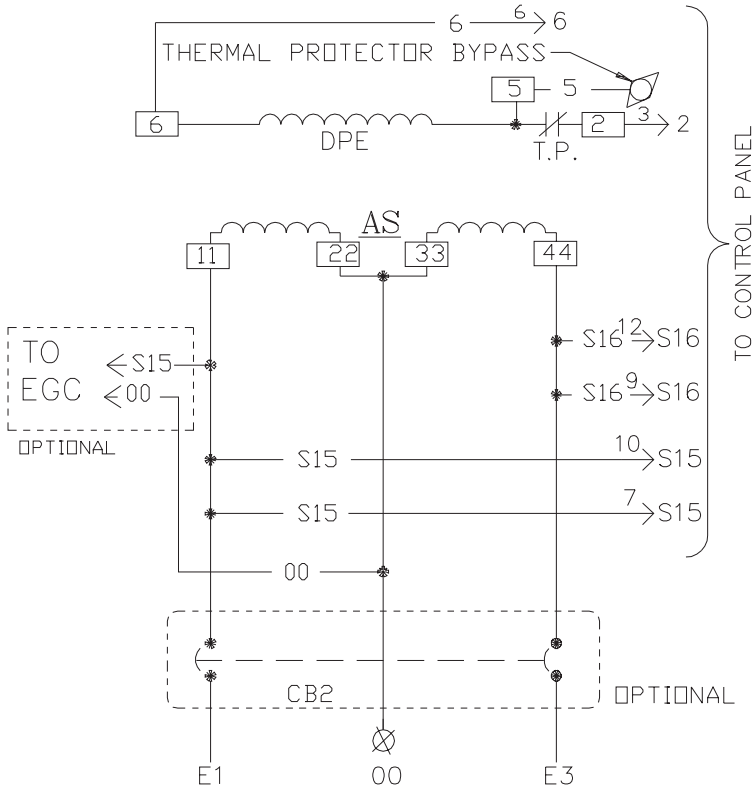
BRUSH UNITS



BRUSHLESS UNITS

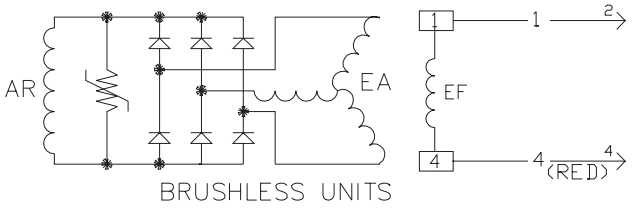


CUSTOMER CONNECTION
120/208-V. 3-PHASE 139/240-V. 3-PHASE

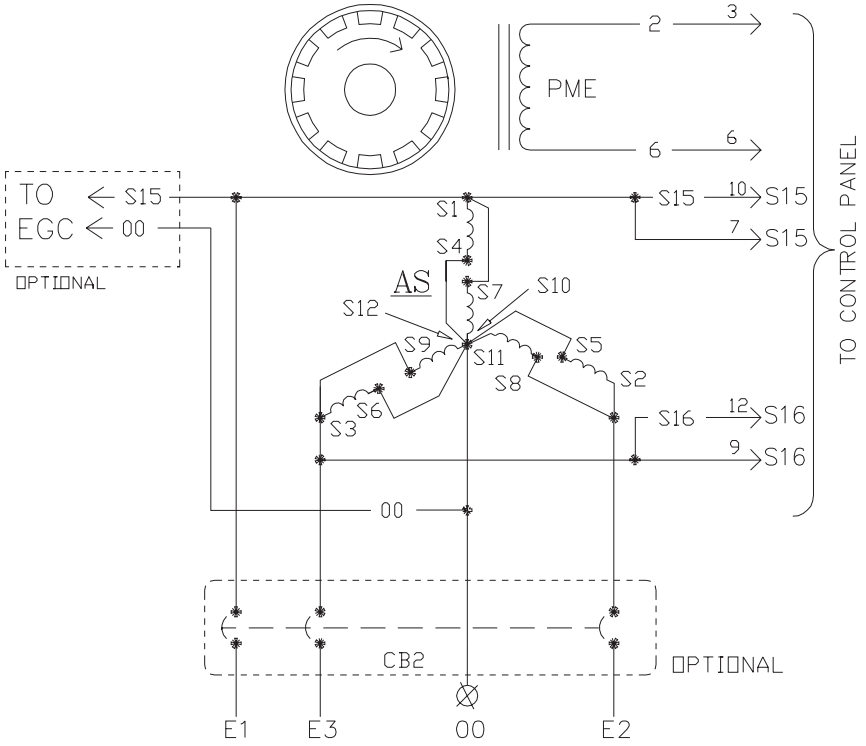


CUSTOMER CONNECTION
120/240-V. 1-PHASE

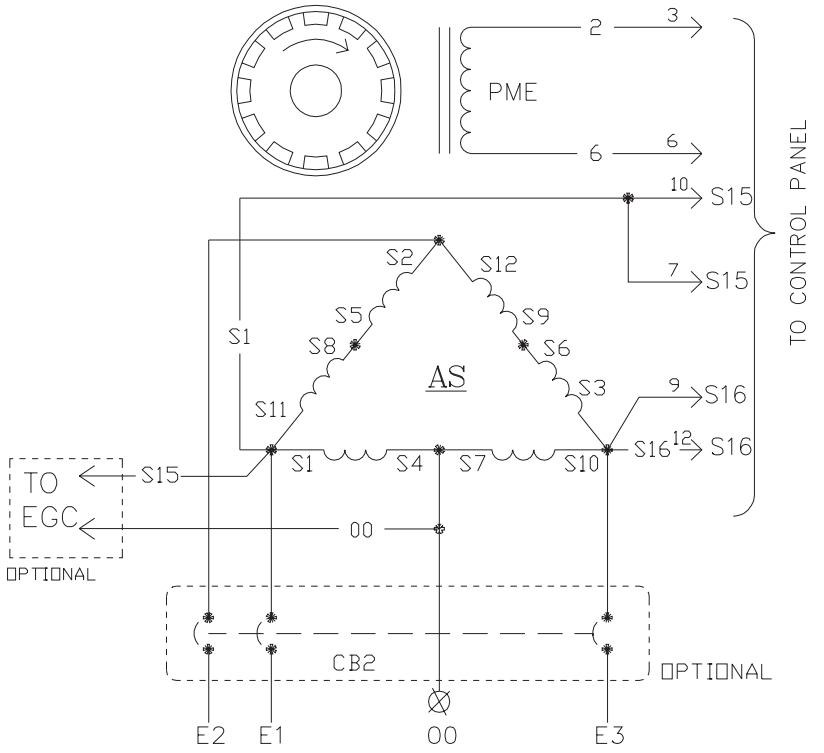
LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELEC. GOVERNOR CONTROL
PME = PERMANENT MAGNET EXCITER



BRUSHLESS UNITS

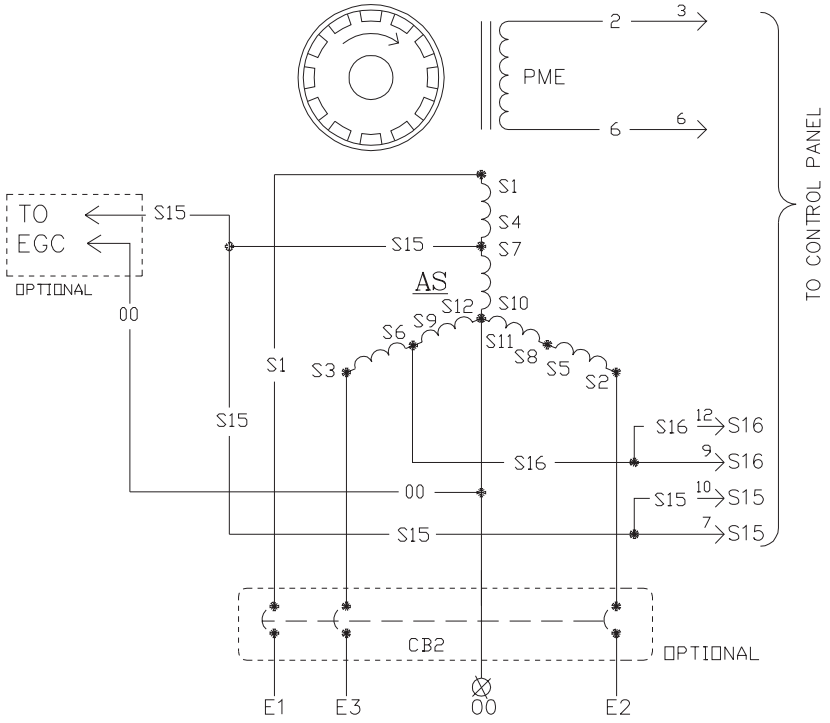


CUSTOMER CONNECTION
120/208-V. 3-PHASE 139/240-V. 3-PHASE

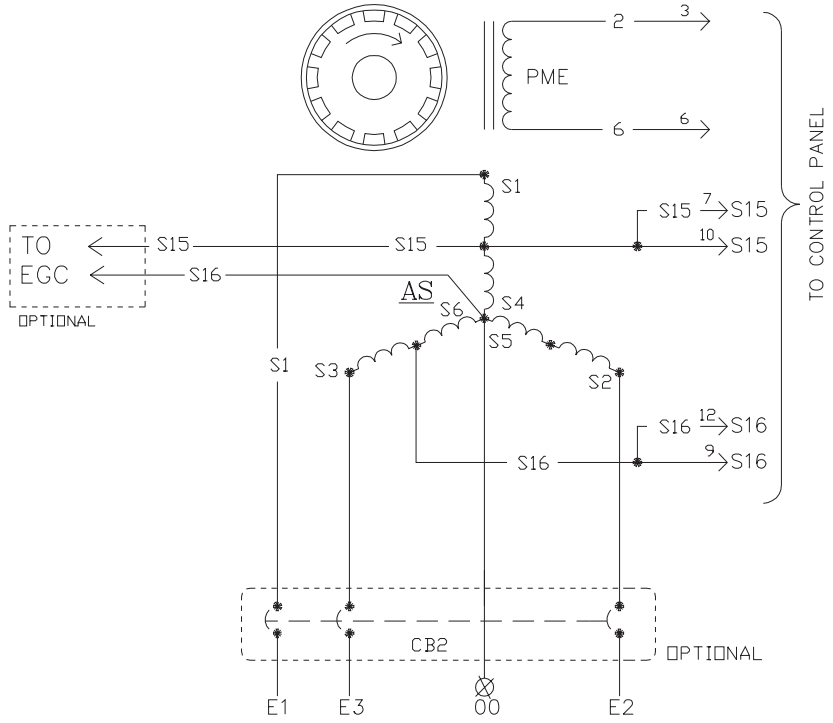


CUSTOMER CONNECTION
120/240-V. 3-PHASE

E1-E3 = 240V
E1-00 = 120V
E3-00 = 120V

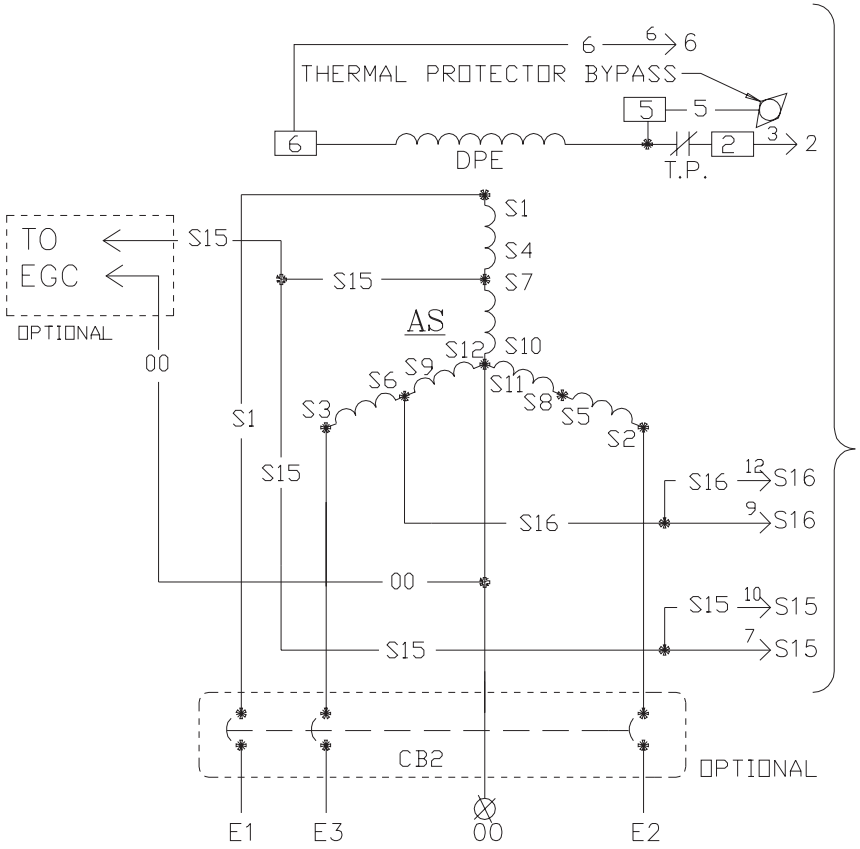


CUSTOMER CONNECTION
277/480-V. 3-PHASE

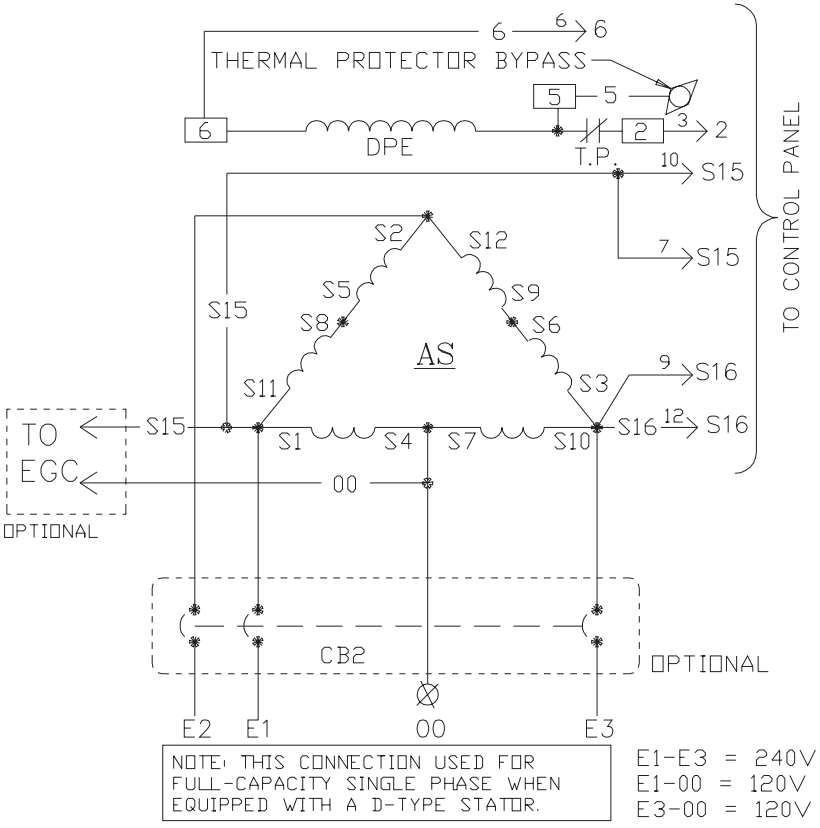


CUSTOMER CONNECTION
346/600-V. 3-PHASE

NOTE: 346/600V MAIN ALTERNATOR CONNECTIONS SAME FOR PME, BRUSH OR BRUSHLESS UNITS



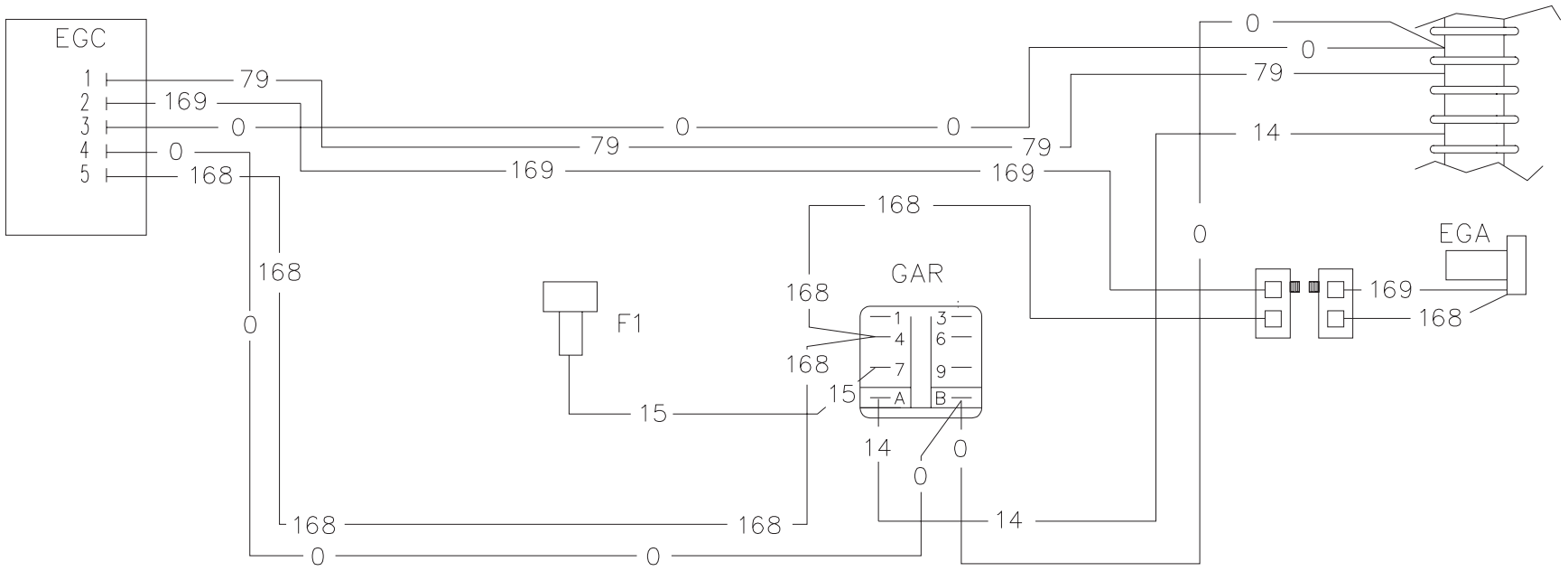
CUSTOMER CONNECTION
277/480-V. 3-PHASE
240/416-V. 3-PHASE

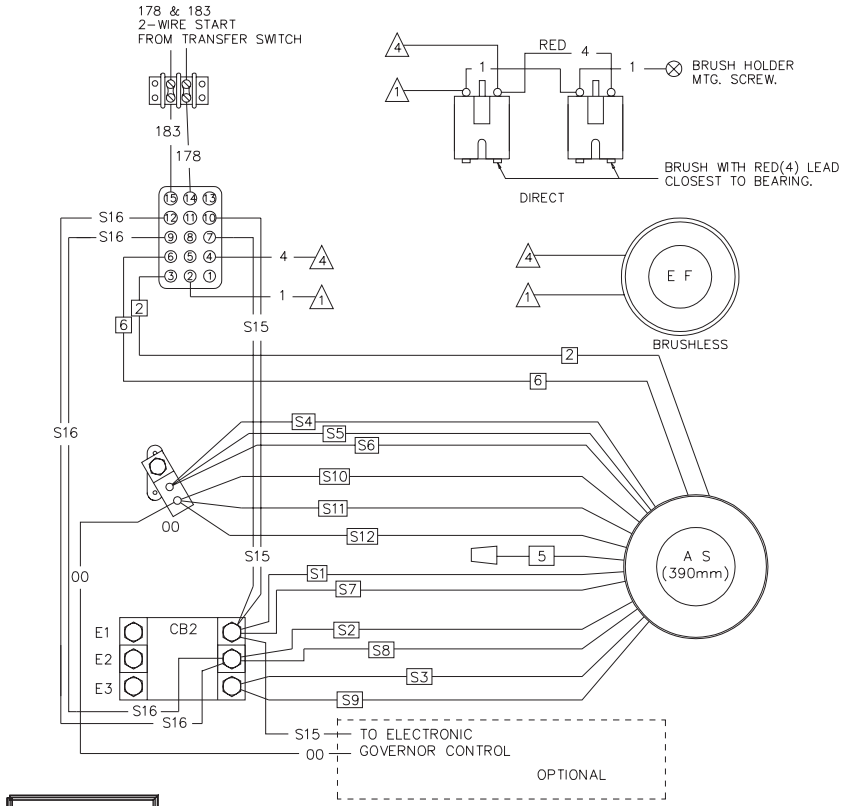


CUSTOMER CONNECTION
120/240-V. 3-PHASE

LEGEND

EGA–ELECTRONIC GOVERNOR ACTUATOR
EGC–ELECTRONIC GOVERNOR CONTROL
F1 –FUSE PANEL MOUNT (30A)
GAR–GOVERNOR ACTUATOR REALY (12V)





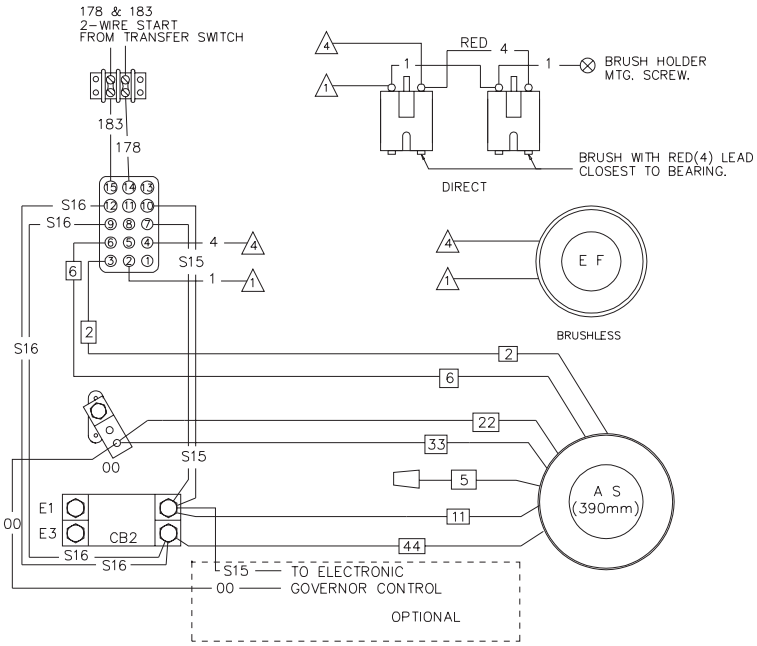
E1 TO E2 E2 TO E3 E3 TO E1	208V OR 240V
E1 TO 00 E2 TO 00 E3 TO 00	120V OR 139V

CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD

SHEET 2 OF 8



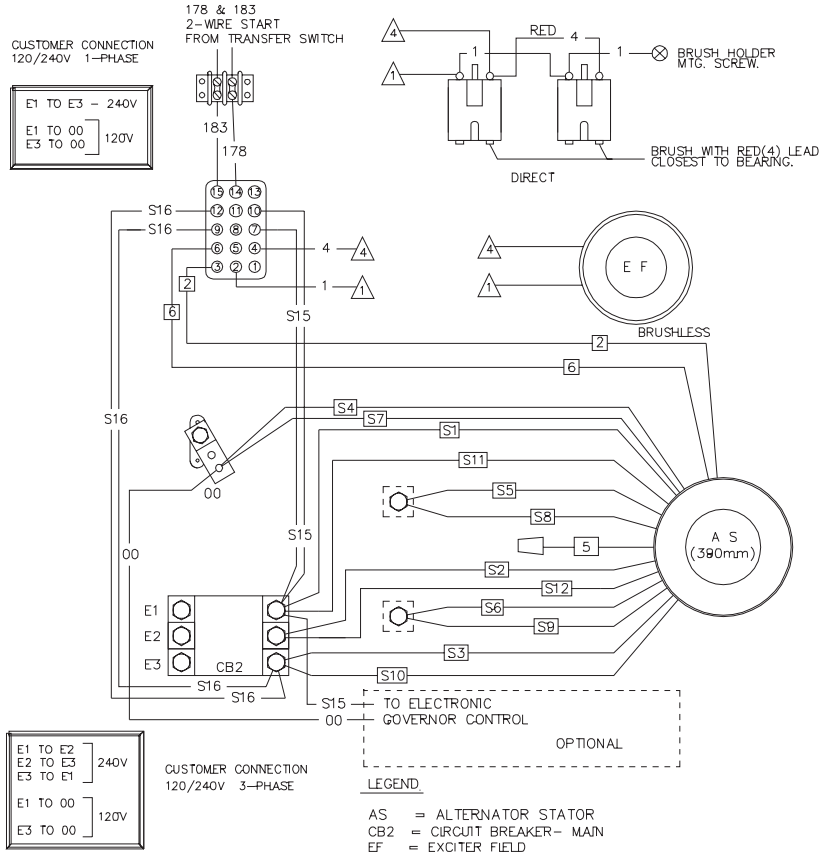
E1 TO E3	240V.
E1 TO 00 E3 TO 00	120V.

CUSTOMER CONNECTION
120/240V. 1-PHASE

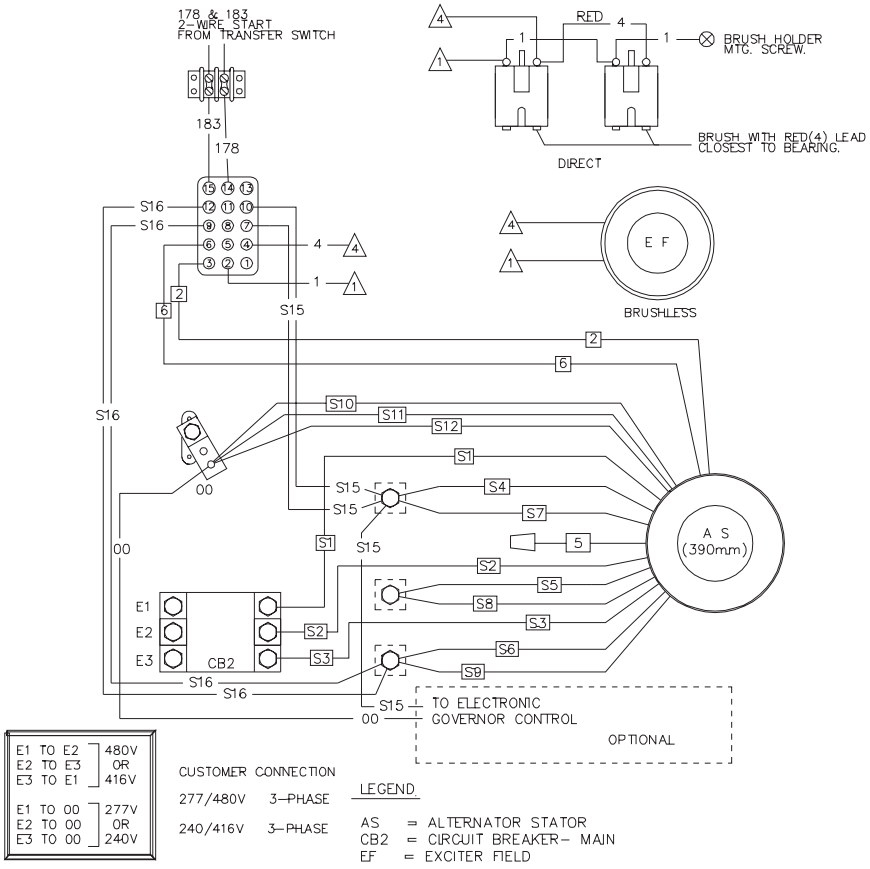
LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD

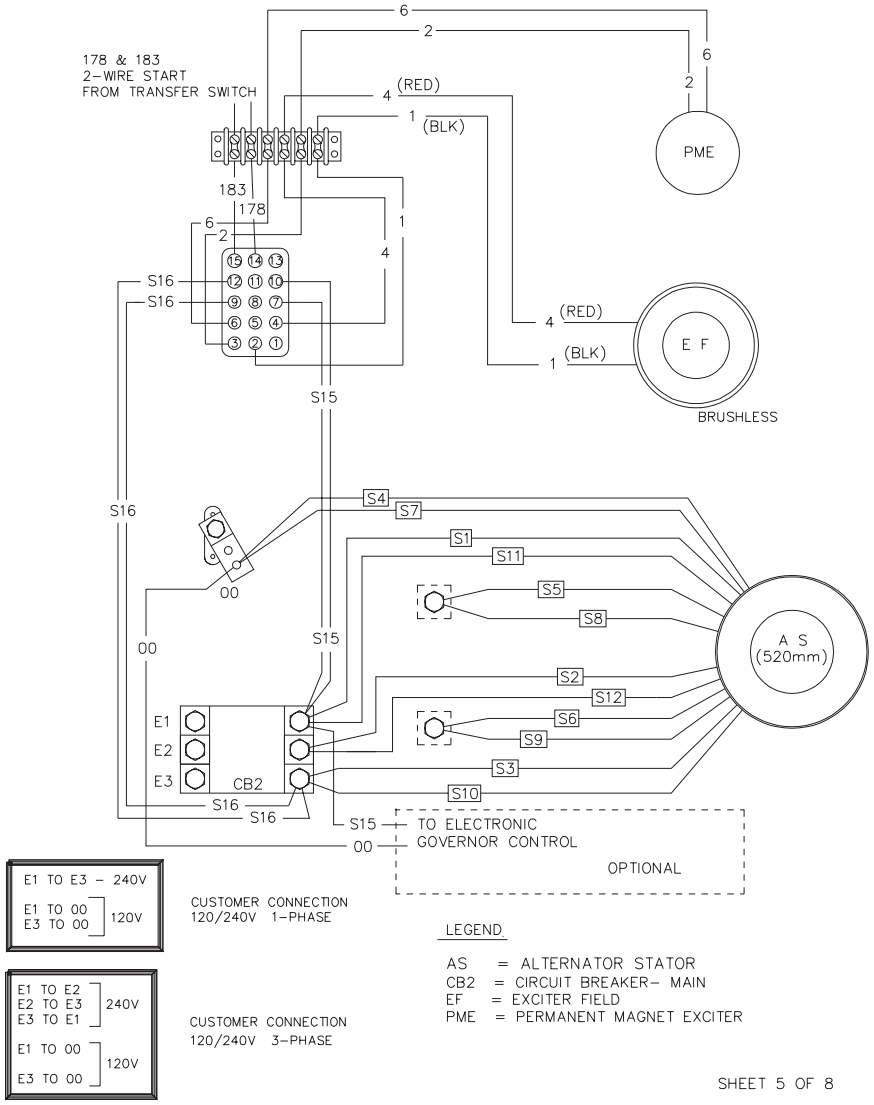
SHEET 1 OF 8



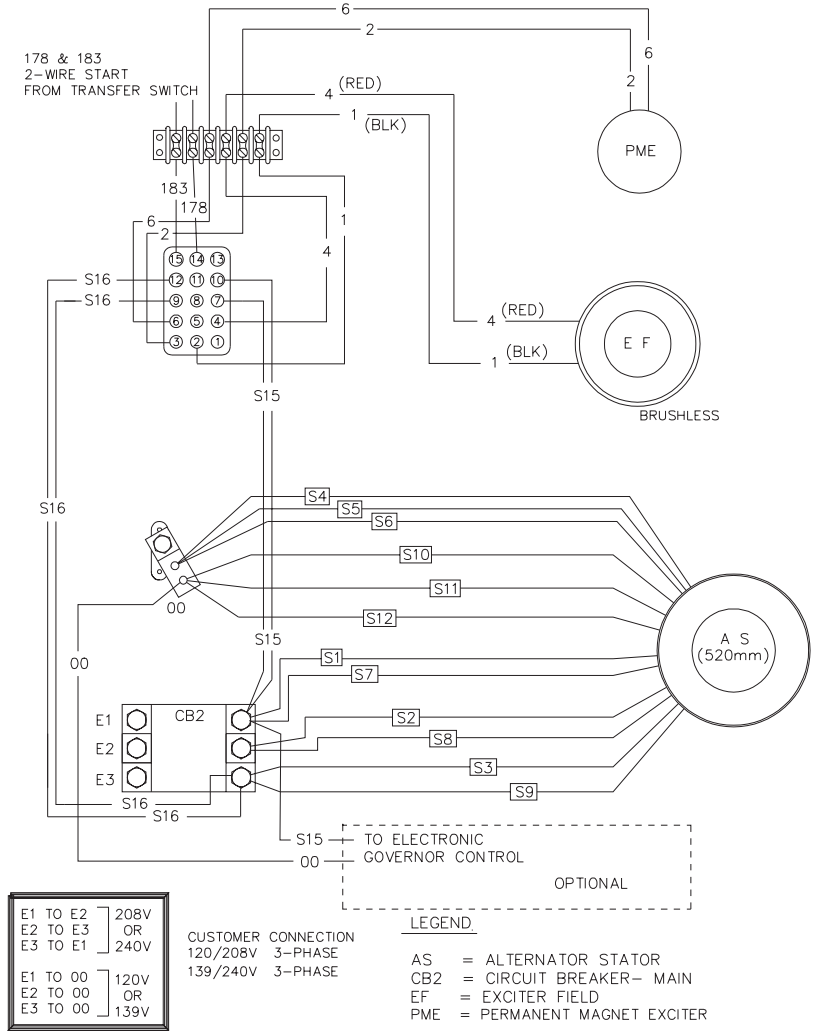
SHEET 3 OF 8



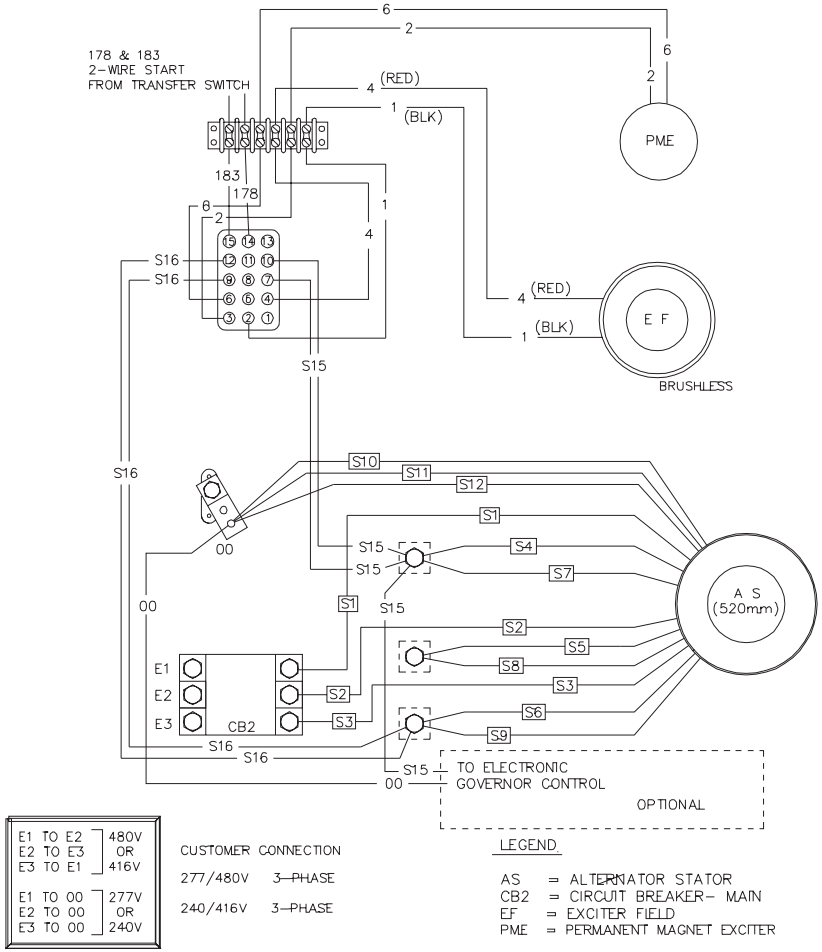
SHEET 4 OF 8



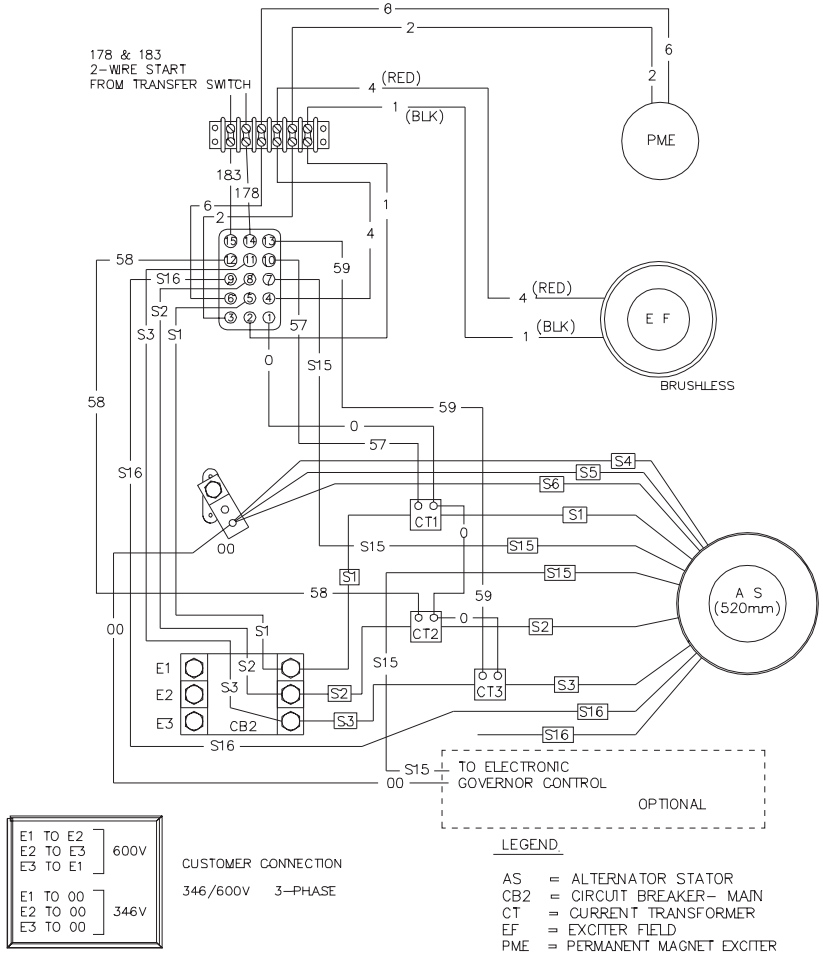
SHEET 5 OF 8



SHEET 6 OF 8

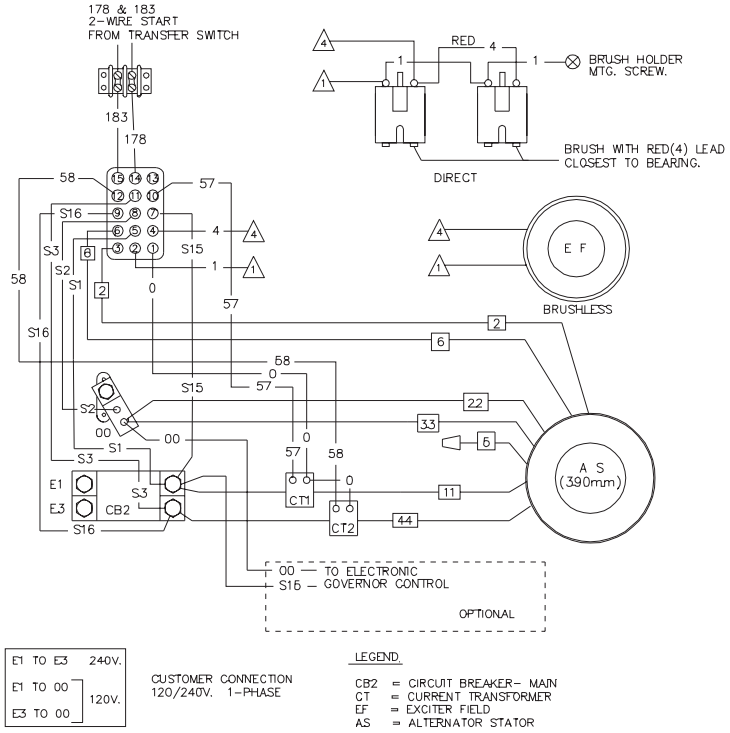


SHEET 7 OF 8



NOTE: 346/600V MAIN ALTERNATOR CONNECTIONS SAME FOR PME, BRUSH OR BRUSHLESS UNITS

SHEET 8 OF 8



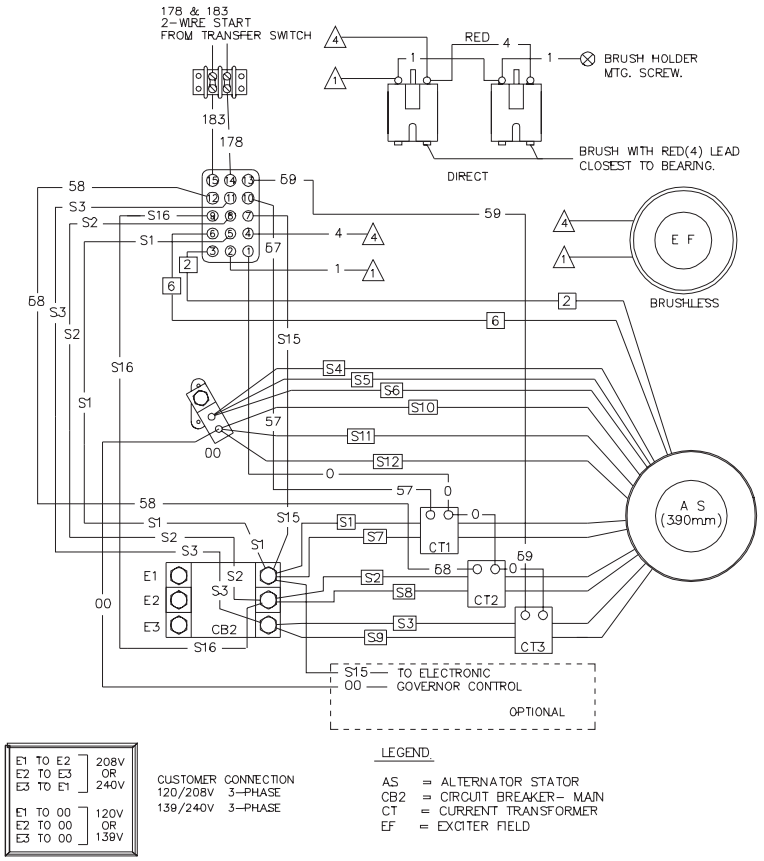
E1 TO E3	240V.
E1 TO 00	120V.
E3 TO 00	

CUSTOMER CONNECTION
120/240V. 1-PHASE

LEGEND

CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
AS = ALTERNATOR STATOR

SHEET 1 OF 8



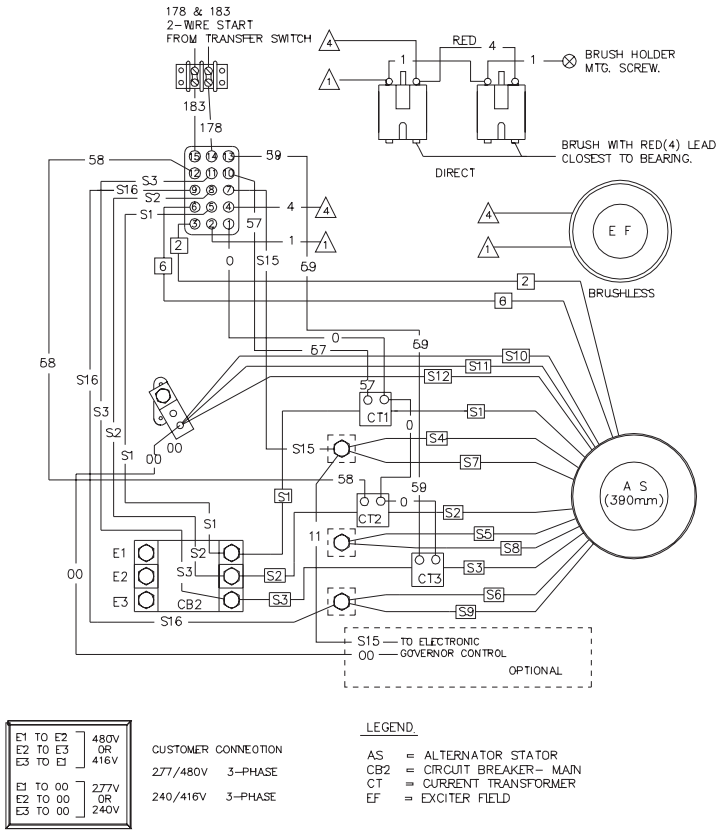
E1 TO E2 E2 TO E3 E3 TO E1	208V OR 240V
E1 TO 00 E2 TO 00 E3 TO 00	120V OR 139V

CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE

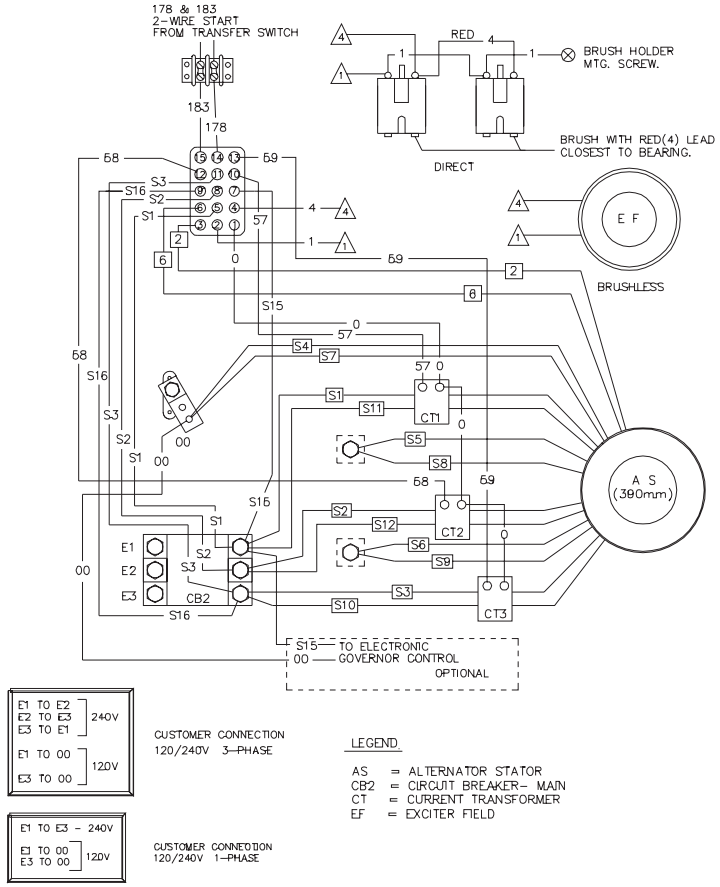
LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD

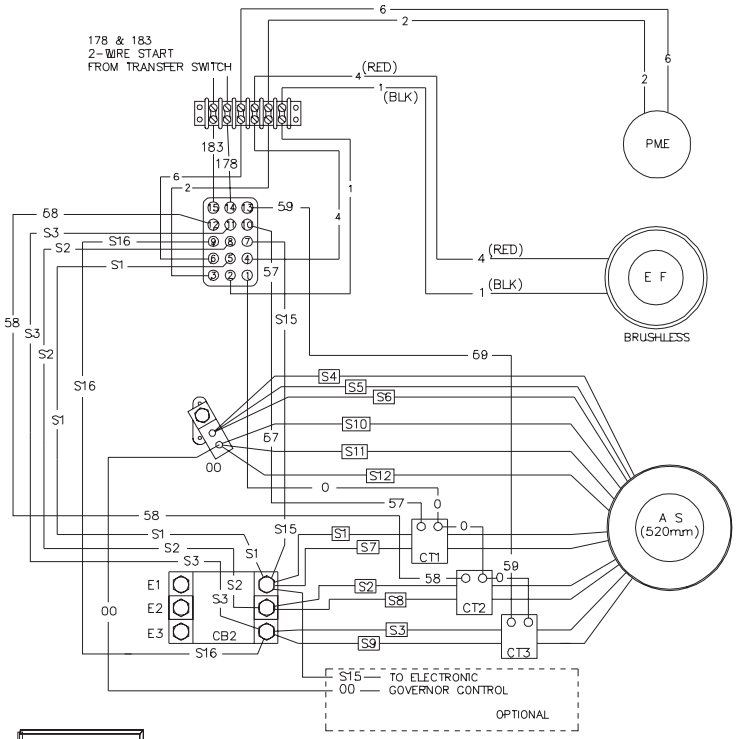
SHEET 2 OF 8



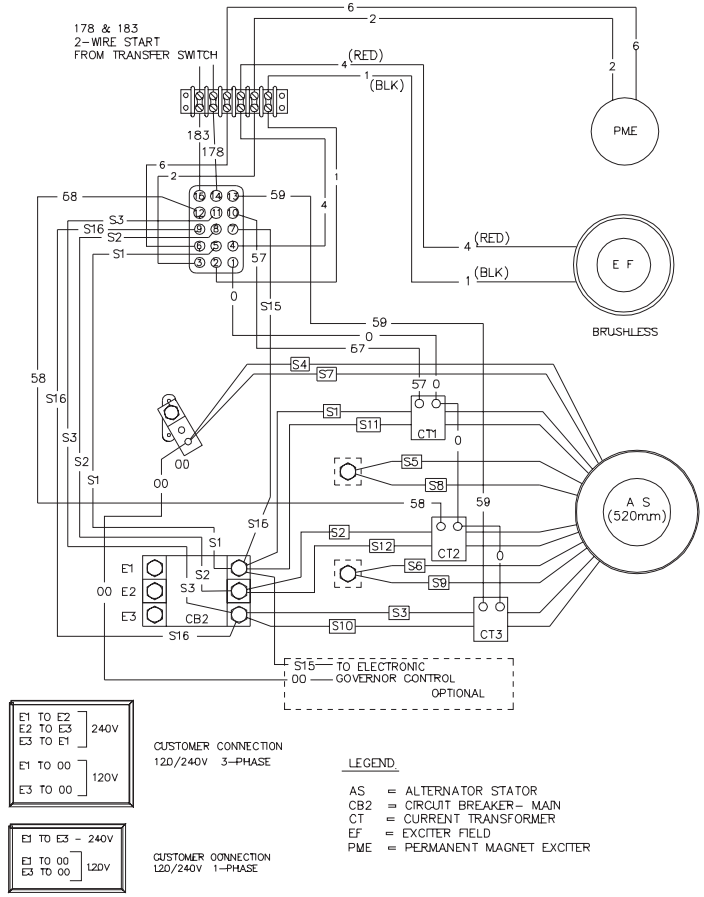
SHEET 3 OF 8



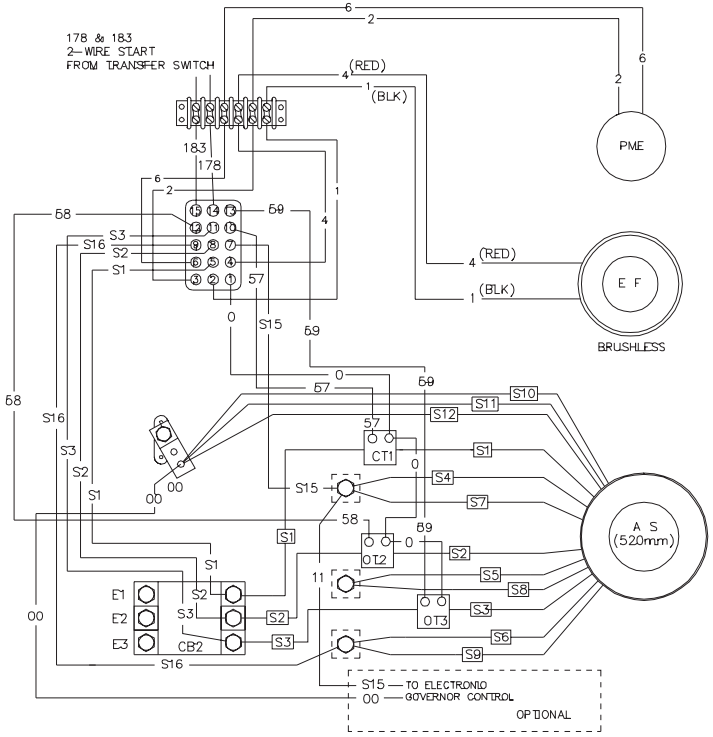
SHEET 4 OF 8



SHEET 5 OF 8



SHEET 6 OF 8

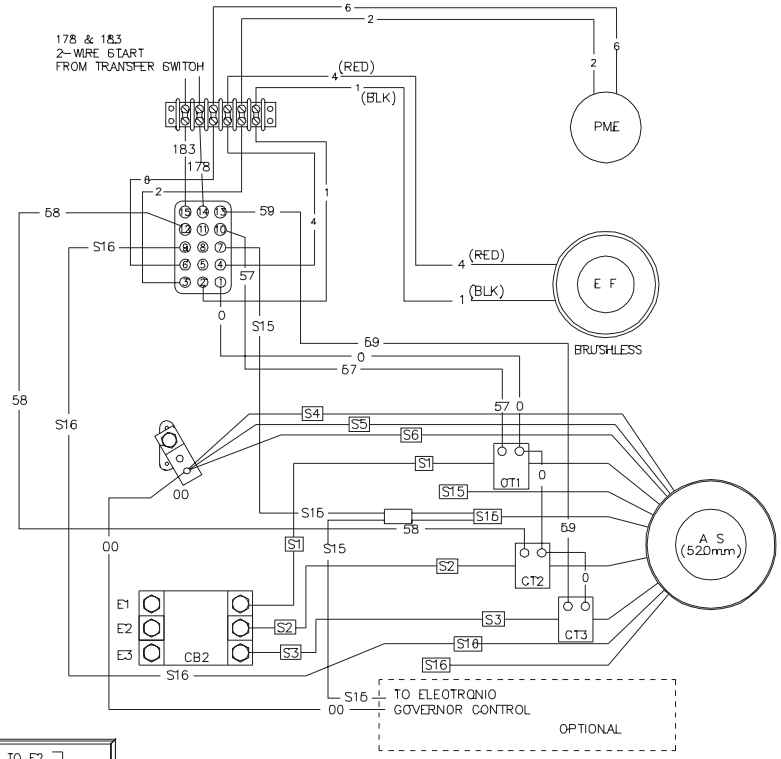


E1 TO E2 E2 TO E3 E3 TO E1	480V OR 416V	CUSTOMER CONNECTION
E1 TO 00 E2 TO 00 E3 TO 00	277V OR 240V	277/480V 3-PHASE 240/416V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
PME = PERMANENT MAGNET EXCITER

SHEET 7 OF 8



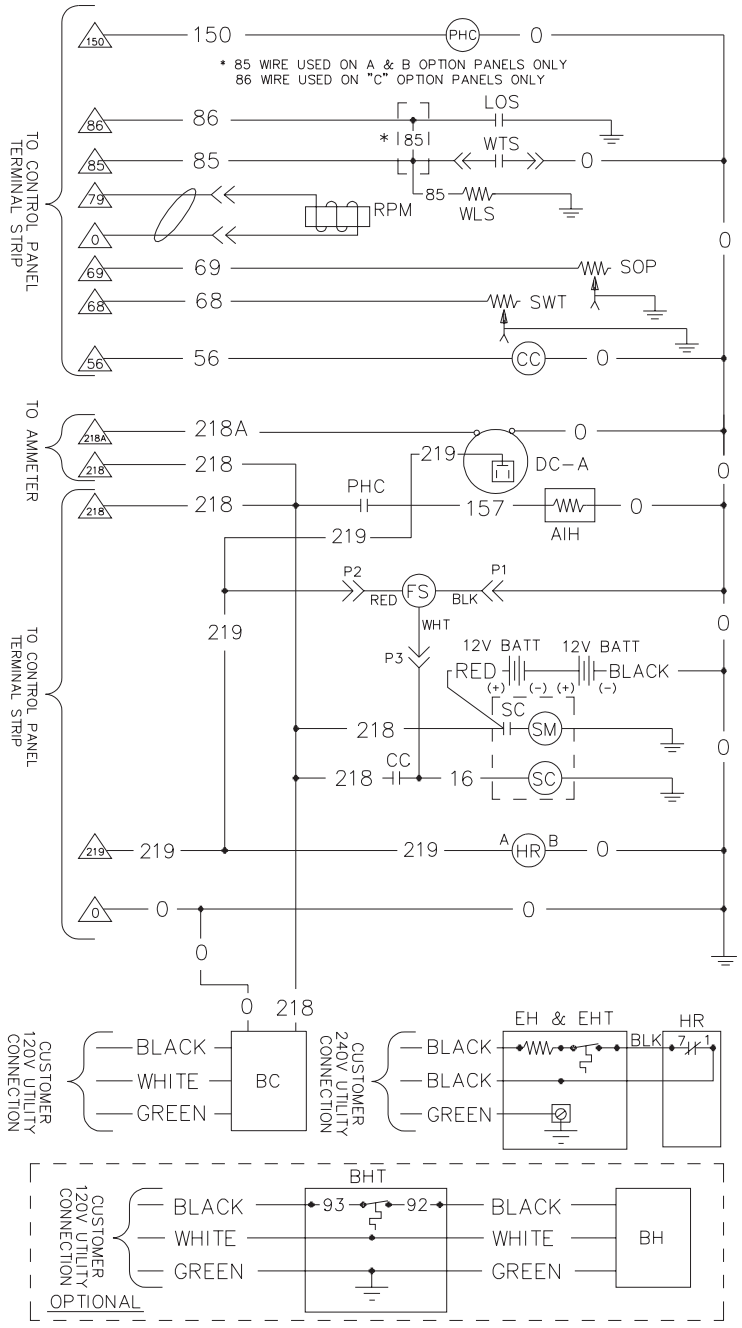
E1 TO E2 E2 TO E3 E3 TO E1	600V	CUSTOMER CONNECTION
E1 TO 00 E2 TO 00 E3 TO 00	346V	346/600V 3-PHASE

NOTE: 346/600V MAIN ALTERNATOR CONNECTIONS SAME FOR PME, BRUSH OR BRUSHLESS UNITS

LEGEND

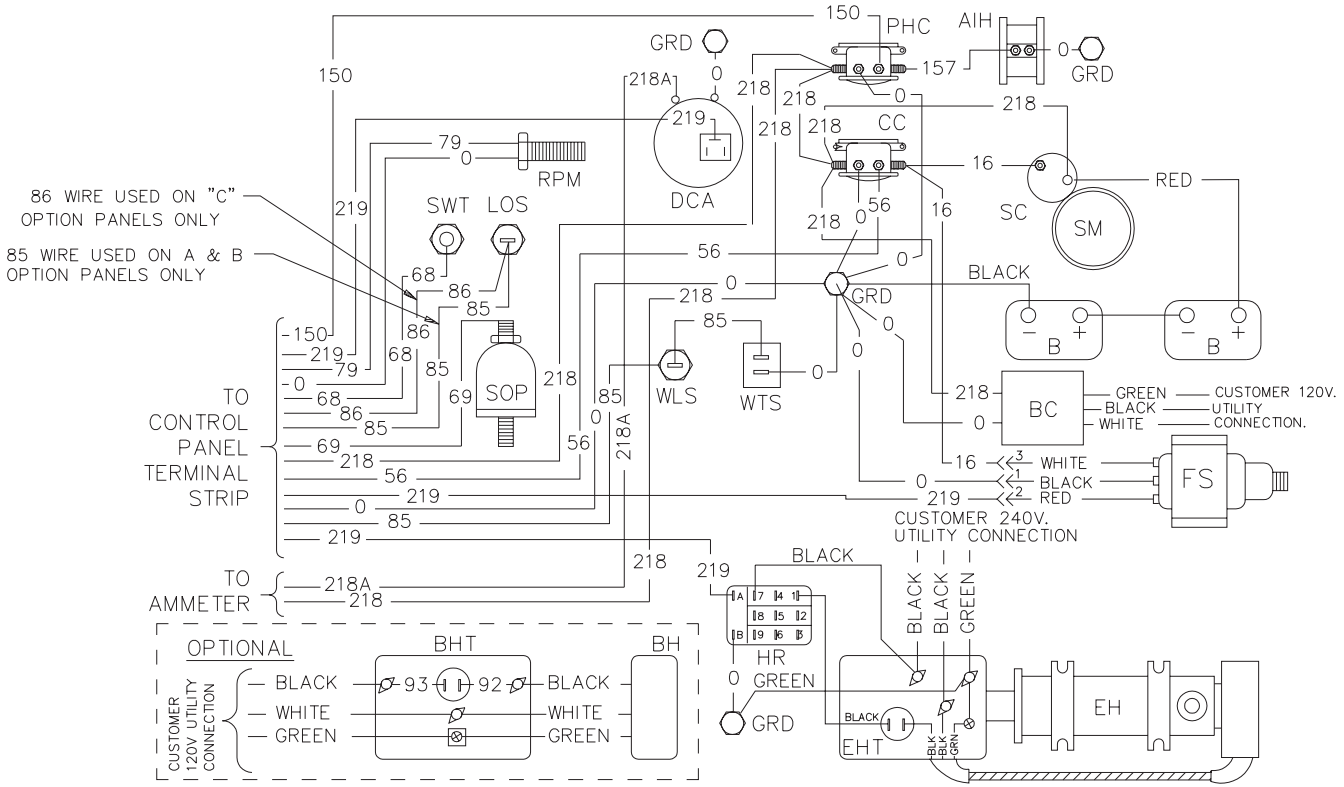
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SHEET 8 OF 8



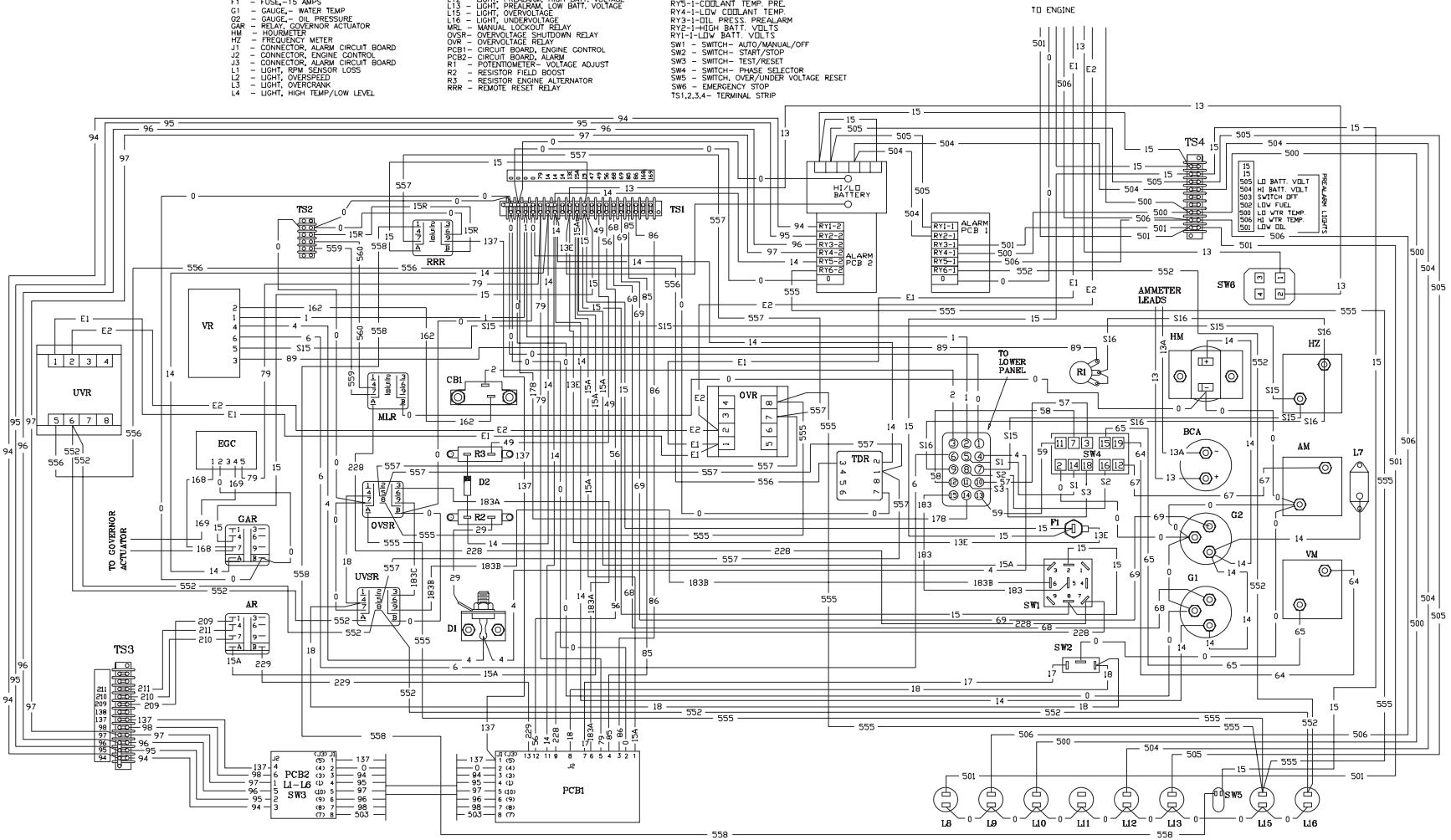
LEGEND

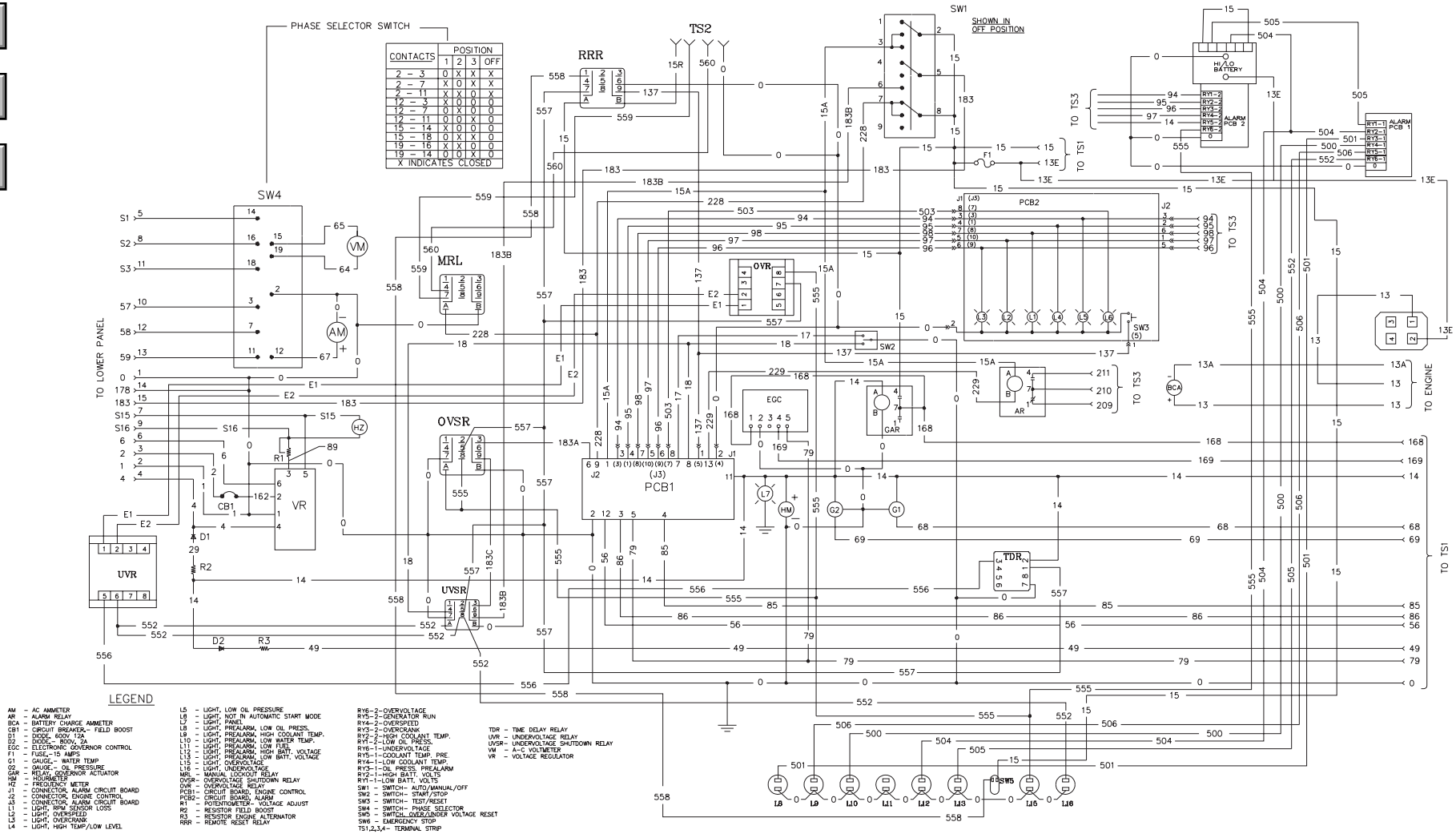
AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD– GROUND
HR – HEATER RELAY ENGINE
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION UNITS ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

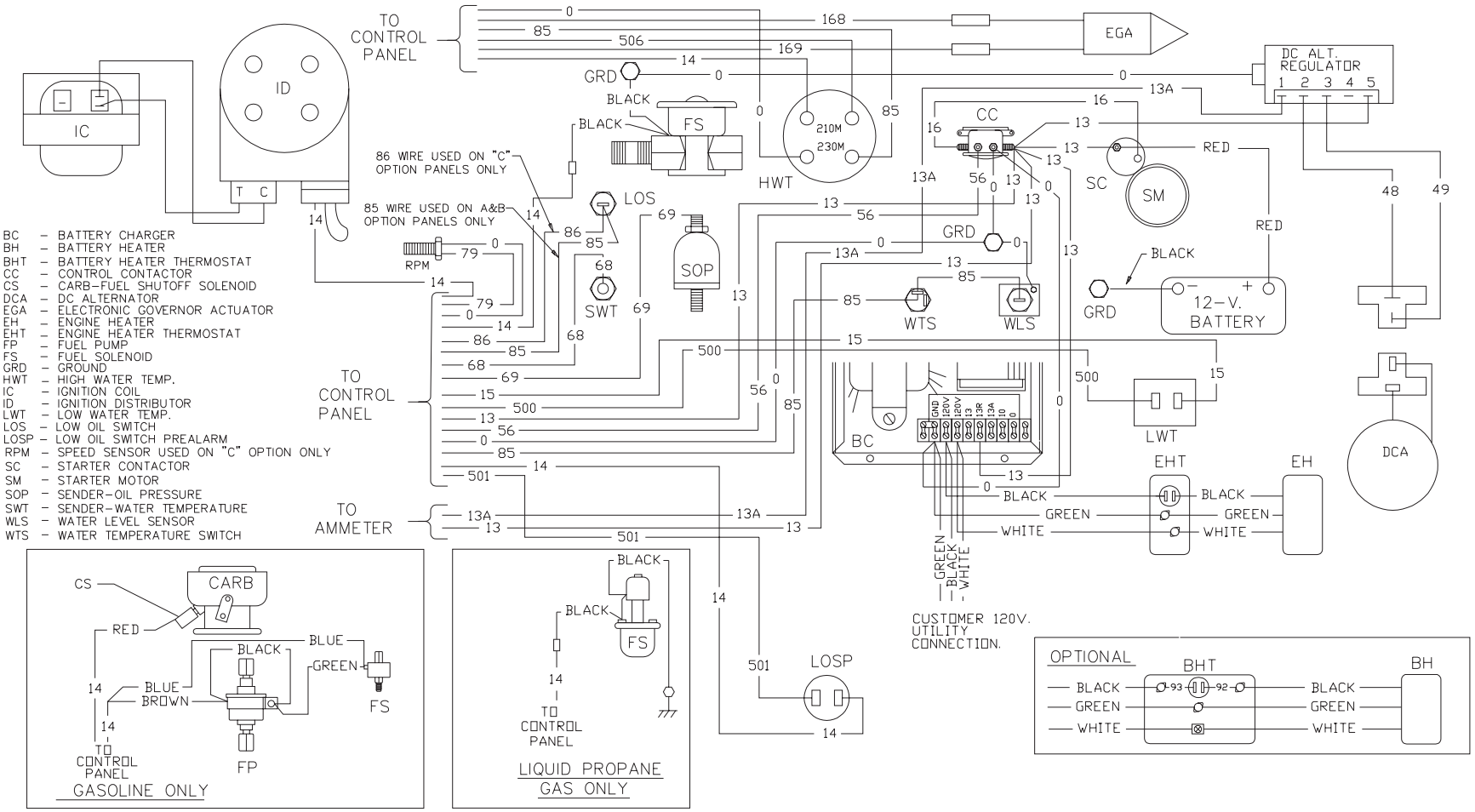


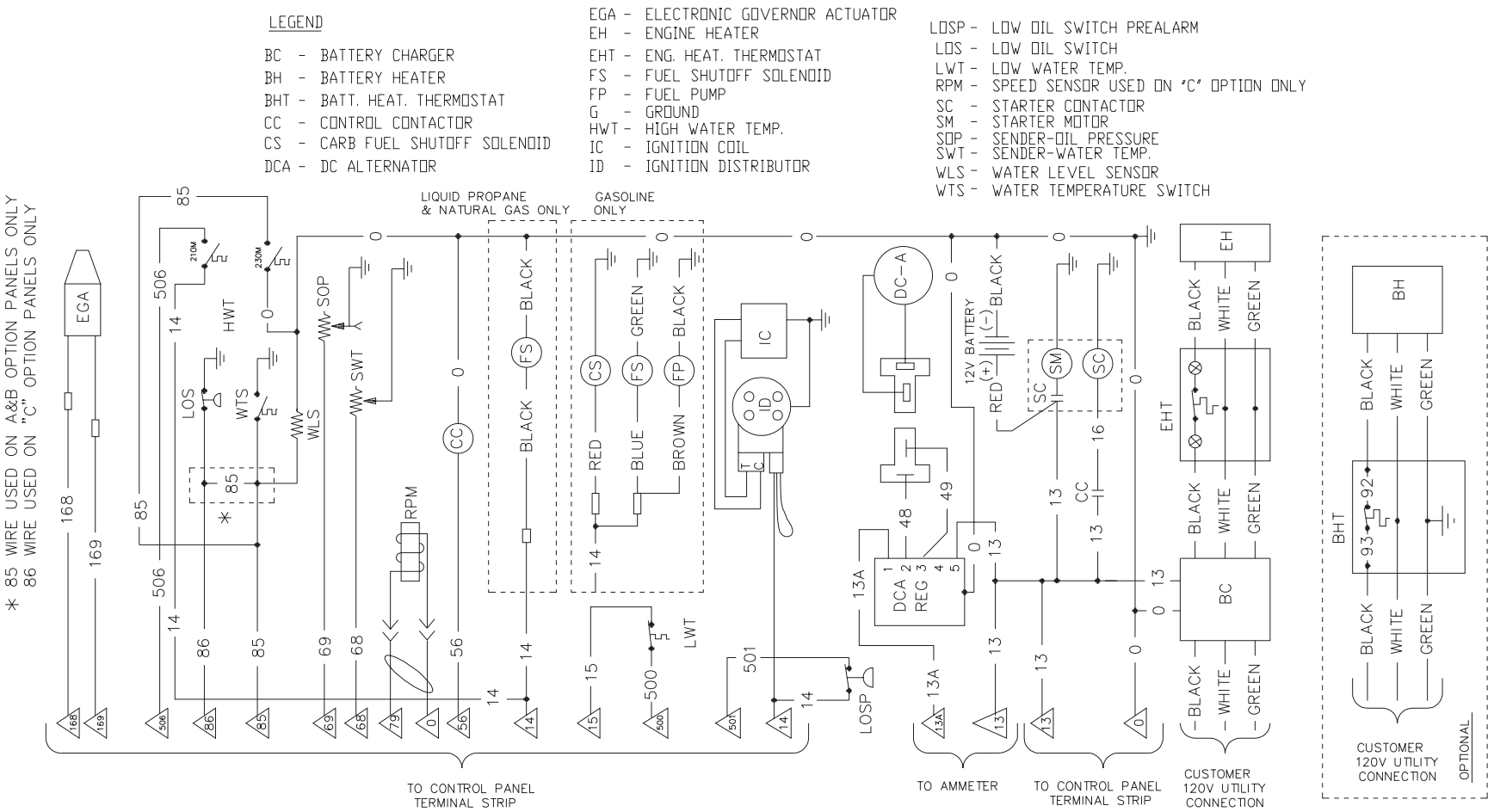
LEGEND

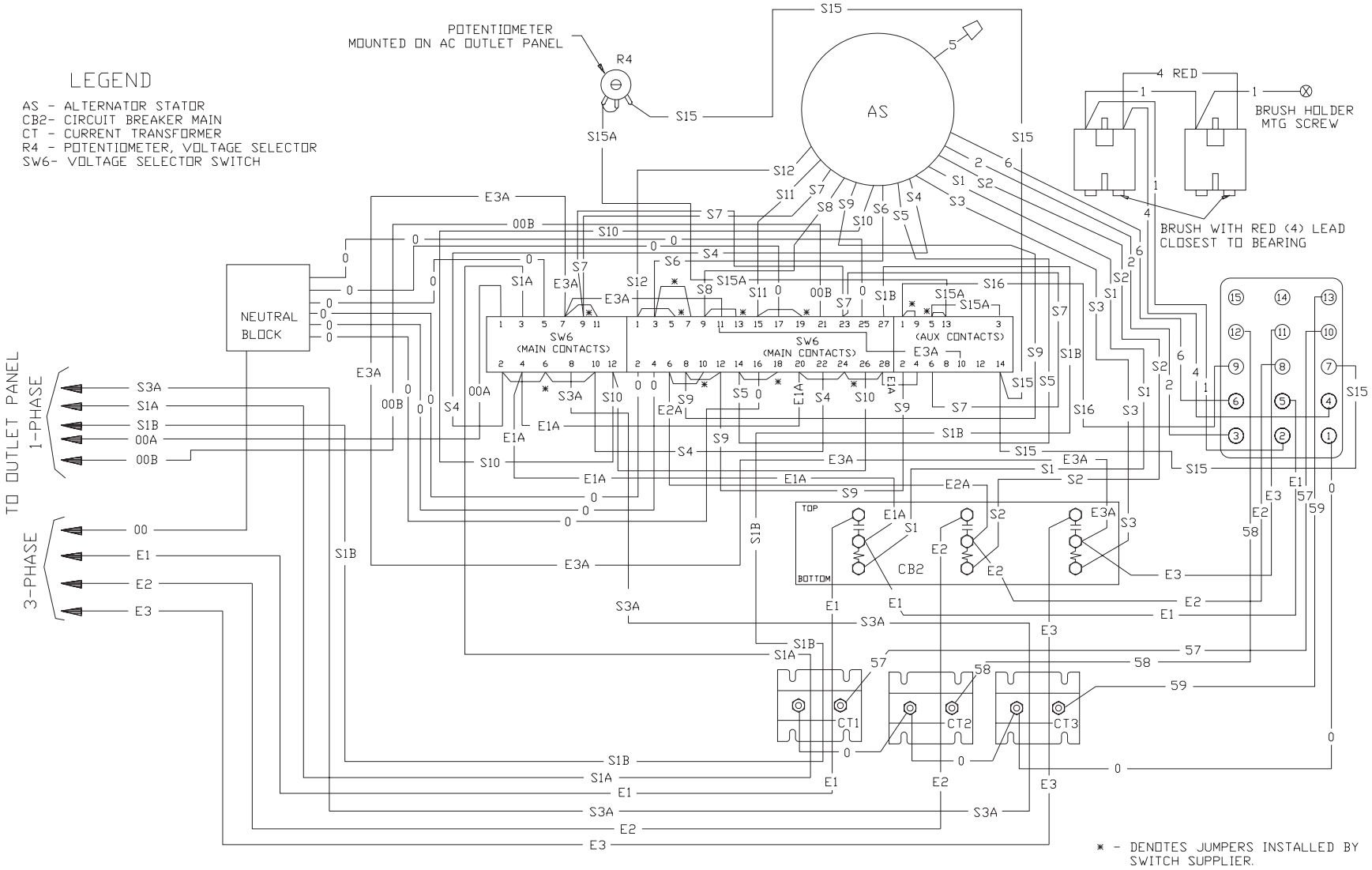
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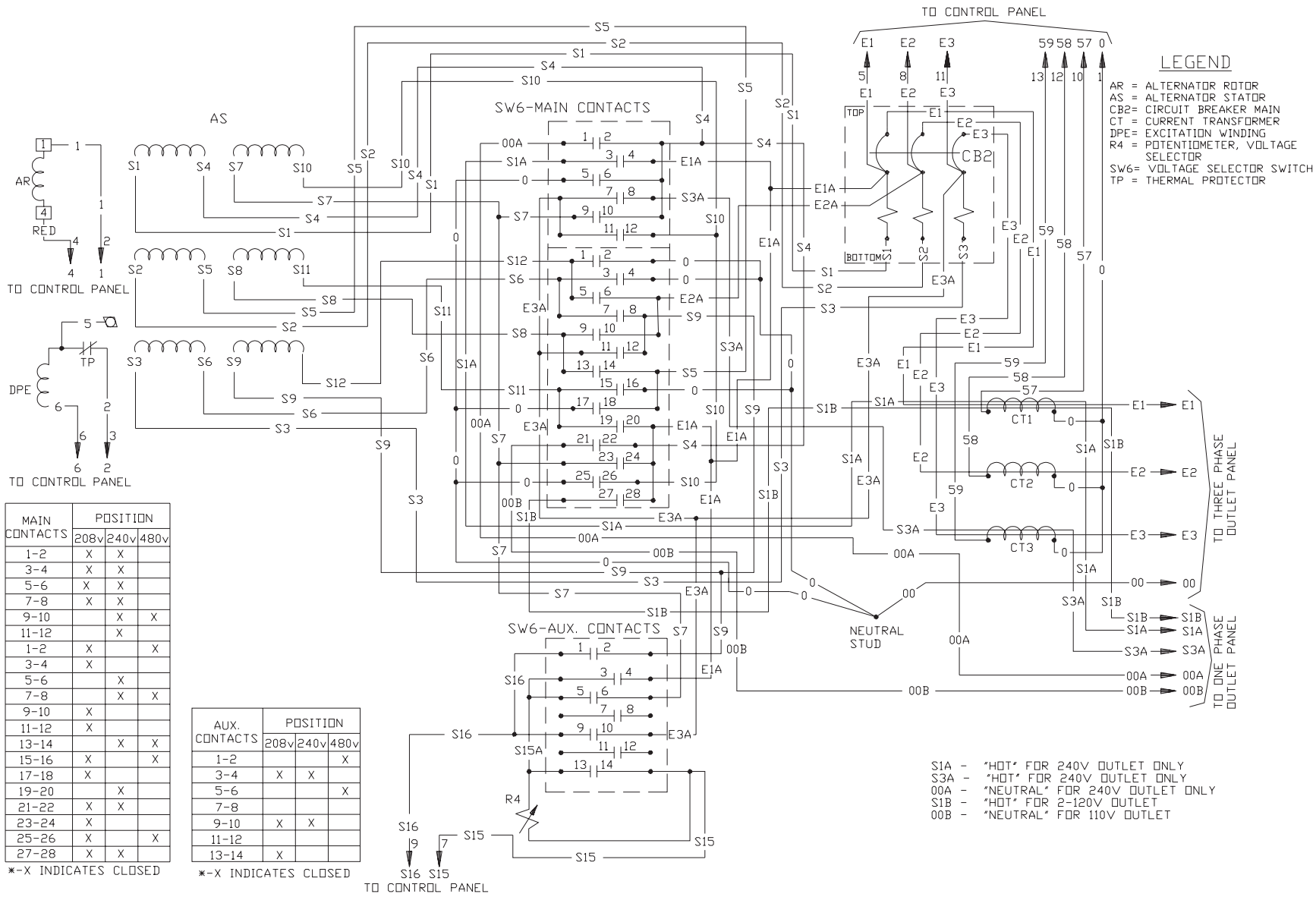

LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER,– FIELD BOOST
D1 – DIODE, 600V 12A
D2 – DIODE,– 800V, 2A
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE,–15 AMPS
G1 – GAUGE,– WATER TEMP
G2 – GAUGE,– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR, ALARM CIRCUIT BOARD
J2 – CONNECTOR, ENGINE CONTROL
J3 – CONNECTOR, ALARM CIRCUIT BOARD
L1 – LIGHT, RPM SENSOR LOSS
L2 – LIGHT, OVERSPEED
L3 – LIGHT, OVERCRANK
L4 – LIGHT, HIGH TEMP/LOW LEVEL
L5 – LIGHT, LOW OIL PRESSURE
L6 – LIGHT, NOT IN AUTOMATIC START MODE
L7 – LIGHT, PANEL
L8 – LIGHT, PREALARM, LOW OIL PRESS.
L9 – LIGHT, PREALARM, HIGH COOLANT TEMP.
L10 – LIGHT, PREALARM, LOW WATER TEMP.
L11 – LIGHT, PREALARM, LOW FUEL
L12 – LIGHT, PREALARM, HIGH BATT. VOLTAGE
L13 – LIGHT, PREALARM, LOW BATT. VOLTAGE
L15 – LIGHT, OVERVOLTAGE
L16 – LIGHT, UNDERVOLTAGE
MRL – MANUAL LOCKOUT RELAY
OVSR– OVERVOLTAGE SHUTDOWN RELAY
OVR – OVERVOLTAGE RELAY
PCB1– CIRCUIT BOARD, ENGINE CONTROL
PCB2– CIRCUIT BOARD, ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
RRR – REMOTE RESET RELAY
RY6-2–OVERVOLTAGE
RY5-2–GENERATOR RUN
RY4-2–OVERSPEED
RY3-2–OVERCRANK
RY2-2–HIGH COOLANT TEMP.
RY1-2–LOW OIL PRESS.
RY6-1–UNDERVOLTAGE
RY5-1–COOLANT TEMP. PRE.
RY4-1–LOW COOLANT TEMP.
RY3-1–OIL PRESS. PREALARM
RY2-1–HIGH BATT. VOLTS
RY1-1–LOW BATT. VOLTS
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
SW5 – SWITCH, OVER/UNDER VOLTAGE RESET
SW6 – EMERGENCY STOP
TS1,2,3,4– TERMINAL STRIP
TDR – TIME DELAY RELAY
UVR – UNDERVOLTAGE RELAY
UVSR– UNDERVOLTAGE SHUTDOWN RELAY
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
TO ENGINE
TO GOVERNOR ACTUATOR
TO LOWER PANEL
AMMETER LEADS
HI/LO BATTERY
ALARM PCB 1
ALARM PCB 2
PCB2 L1–L6 SW3
PCB1
LD BATT. VOLT
HI BATT. VOLT
SWITCH OFF
LOW FUEL
LO WTR TEMP.
HI WTR TEMP.
LOW OIL
PREALARM LIGHTS


PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
SW1
SHOWN IN OFF POSITION
SW4
TS2
RRR
MRL
OVR
OVSR
UVR
UVSR
VR
CB1
EGC
GAR
AR
TDR
PCB1
PCB2
HV/LO BATTERY
ALARM PCB 1
ALARM PCB 2
TO LOWER PANEL
TO TS1
TO TS3
TO ENGINE
LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER,- FIELD BOOST
D1 – DIODE, 600V 12A
D2 – DIODE,- 600V, 2A
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L8 – LIGHT, PREALARM, LOW OIL PRESS.
L9 – LIGHT, PREALARM, HIGH COOLANT TEMP.
L10 – LIGHT, PREALARM, LOW WATER TEMP.
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L12 – LIGHT, PREALARM, HIGH BATT. VOLTAGE
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SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
SW5 – SWITCH,-OVER/UNDER VOLTAGE RESET
SW6 – EMERGENCY STOP
TS1,2,3,4– TERMINAL STRIP
TDR – TIME DELAY RELAY
UVR – UNDERVOLTAGE RELAY
UVSR– UNDERVOLTAGE SHUTDOWN RELAY
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR


BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARB–FUEL SHUTOFF SOLENOID
DCA – DC ALTERNATOR
EGA – ELECTRONIC GOVERNOR ACTUATOR
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
HWT – HIGH WATER TEMP.
IC – IGNITION COIL
ID – IGNITION DISTRIBUTOR
LWT – LOW WATER TEMP.
LOS – LOW OIL SWITCH
LOSP – LOW OIL SWITCH PREALARM
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
TO CONTROL PANEL
TO AMMETER
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A&B OPTION PANELS ONLY
IC
ID
T C
FS
HWT
210M
230M
LOS
SOP
SWT
RPM
WTS
WLS
GRD
12–V. BATTERY
CC
SC
SM
EGA
DC ALT. REGULATOR
1 2 3 4 5
BC
LWT
EHT
EH
DCA
GND 120V 120V 13 13R 13A 10 0
BLACK
GREEN
WHITE
RED
CUSTOMER 120V. UTILITY CONNECTION.
OPTIONAL
BHT
BH
93 92
CARB
CS
RED
BLUE
BLACK
GREEN
BLUE
BROWN
FS
FP
TO CONTROL PANEL
GASOLINE ONLY
LIQUID PROPANE GAS ONLY
LOSP


LEGEND
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
CS - CARB FUEL SHUTOFF SOLENOID
DCA - DC ALTERNATOR
EGA - ELECTRONIC GOVERNOR ACTUATOR
EH - ENGINE HEATER
EHT - ENG. HEAT. THERMOSTAT
FS - FUEL SHUTOFF SOLENOID
FP - FUEL PUMP
G - GROUND
HWT - HIGH WATER TEMP.
IC - IGNITION COIL
ID - IGNITION DISTRIBUTOR
LOSP - LOW OIL SWITCH PREALARM
LOS - LOW OIL SWITCH
LWT - LOW WATER TEMP.
RPM - SPEED SENSOR USED ON "C" OPTION ONLY
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
* 85 WIRE USED ON A&B OPTION PANELS ONLY
86 WIRE USED ON "C" OPTION PANELS ONLY
LIQUID PROPANE & NATURAL GAS ONLY
GASOLINE ONLY
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
TO CONTROL PANEL TERMINAL STRIP
CUSTOMER 120V UTILITY CONNECTION
CUSTOMER 120V UTILITY CONNECTION
OPTIONAL


LEGEND
AS - ALTERNATOR STATOR
CB2- CIRCUIT BREAKER MAIN
CT - CURRENT TRANSFORMER
R4 - POTENTIOMETER, VOLTAGE SELECTOR
SW6- VOLTAGE SELECTOR SWITCH
POTENTIOMETER MOUNTED ON AC OUTLET PANEL
R4
AS
4 RED
BRUSH HOLDER MTG SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING
NEUTRAL BLOCK
SW6 (MAIN CONTACTS)
SW6 (AUX CONTACTS)
TO OUTLET PANEL
1-PHASE
3-PHASE
CB2
CT1
CT2
CT3
* - DENOTES JUMPERS INSTALLED BY SWITCH SUPPLIER.

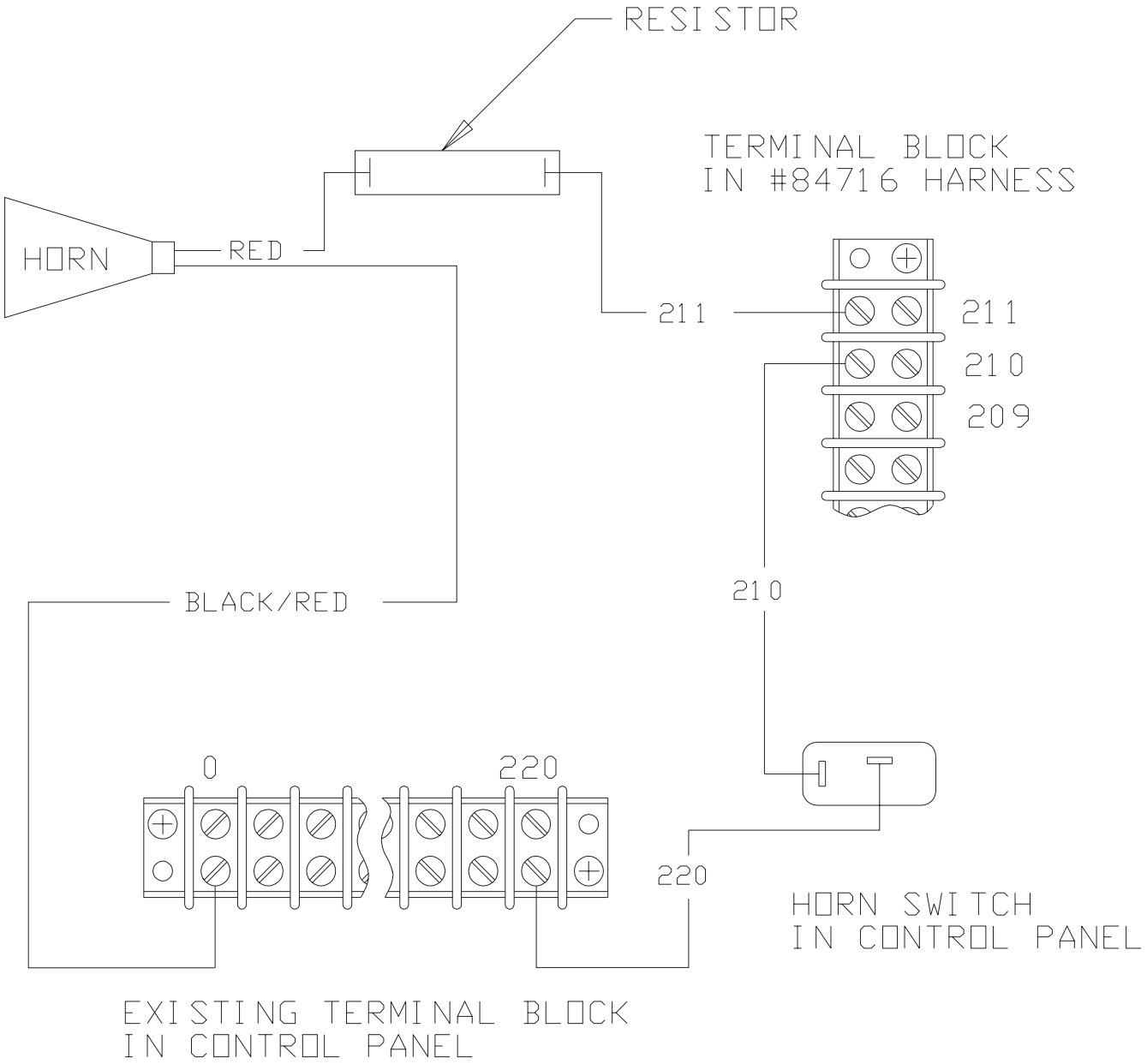


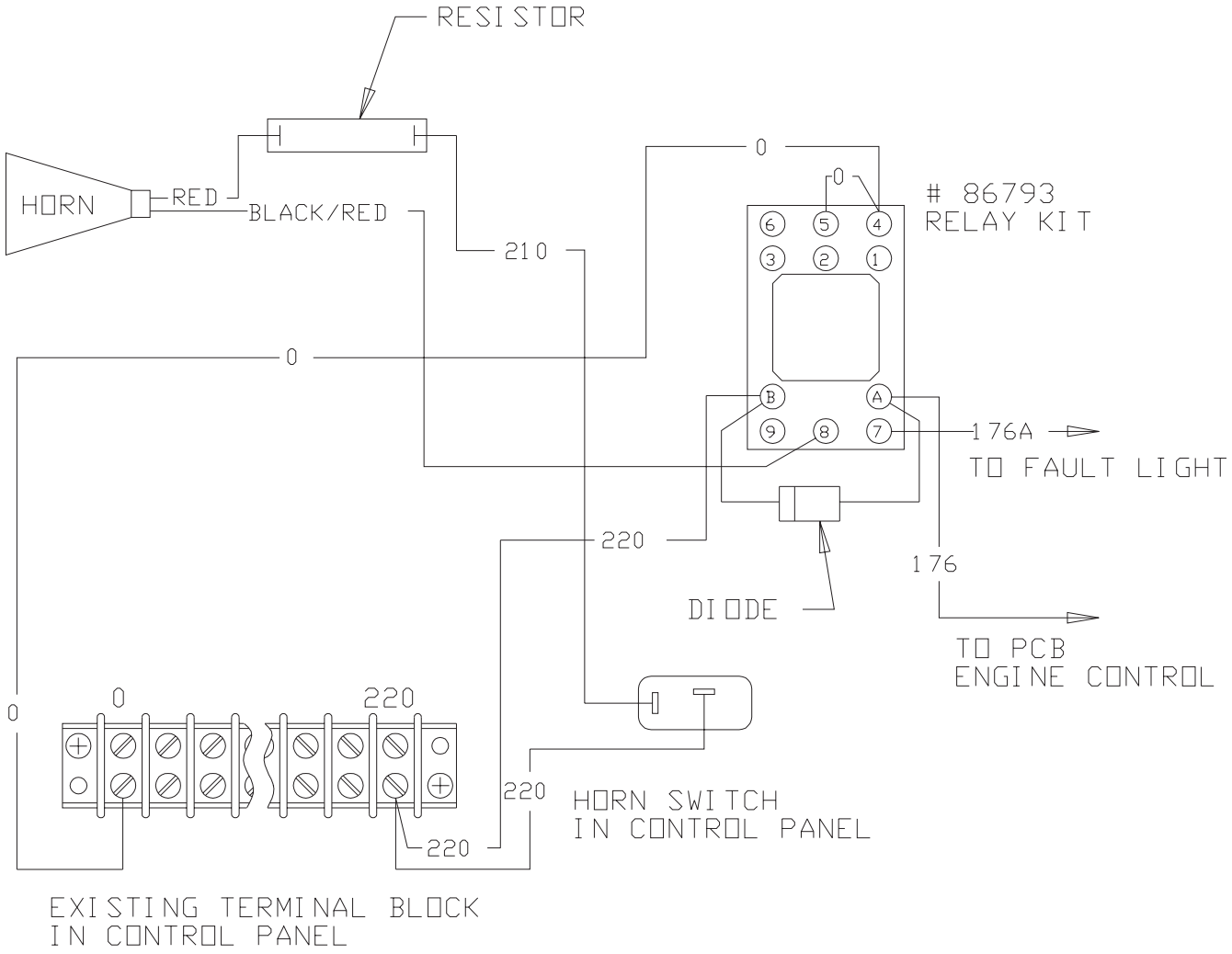
MAIN CONTACTS	POSITION		
	208v	240v	480v
1-2	X	X	
3-4	X	X	
5-6	X	X	
7-8	X	X	
9-10		X	X
11-12		X	
1-2	X		X
3-4	X		
5-6		X	
7-8		X	X
9-10	X		
11-12	X		
13-14		X	X
15-16	X		X
17-18	X		
19-20		X	
21-22	X	X	
23-24	X		
25-26	X		X
27-28	X	X	

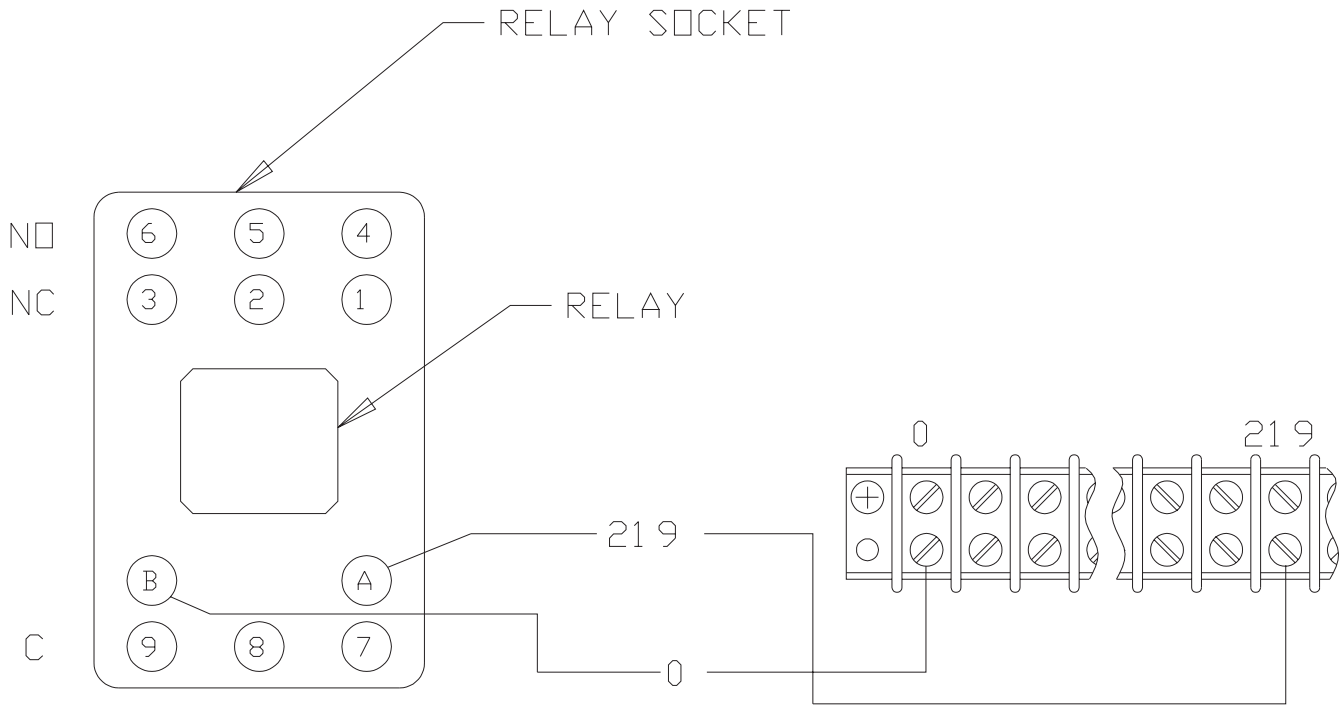
*-X INDICATES CLOSED

AUX. CONTACTS	POSITION		
	208v	240v	480v
1-2			X
3-4	X	X	
5-6			X
7-8			
9-10	X	X	
11-12			
13-14	X		

*-X INDICATES CLOSED

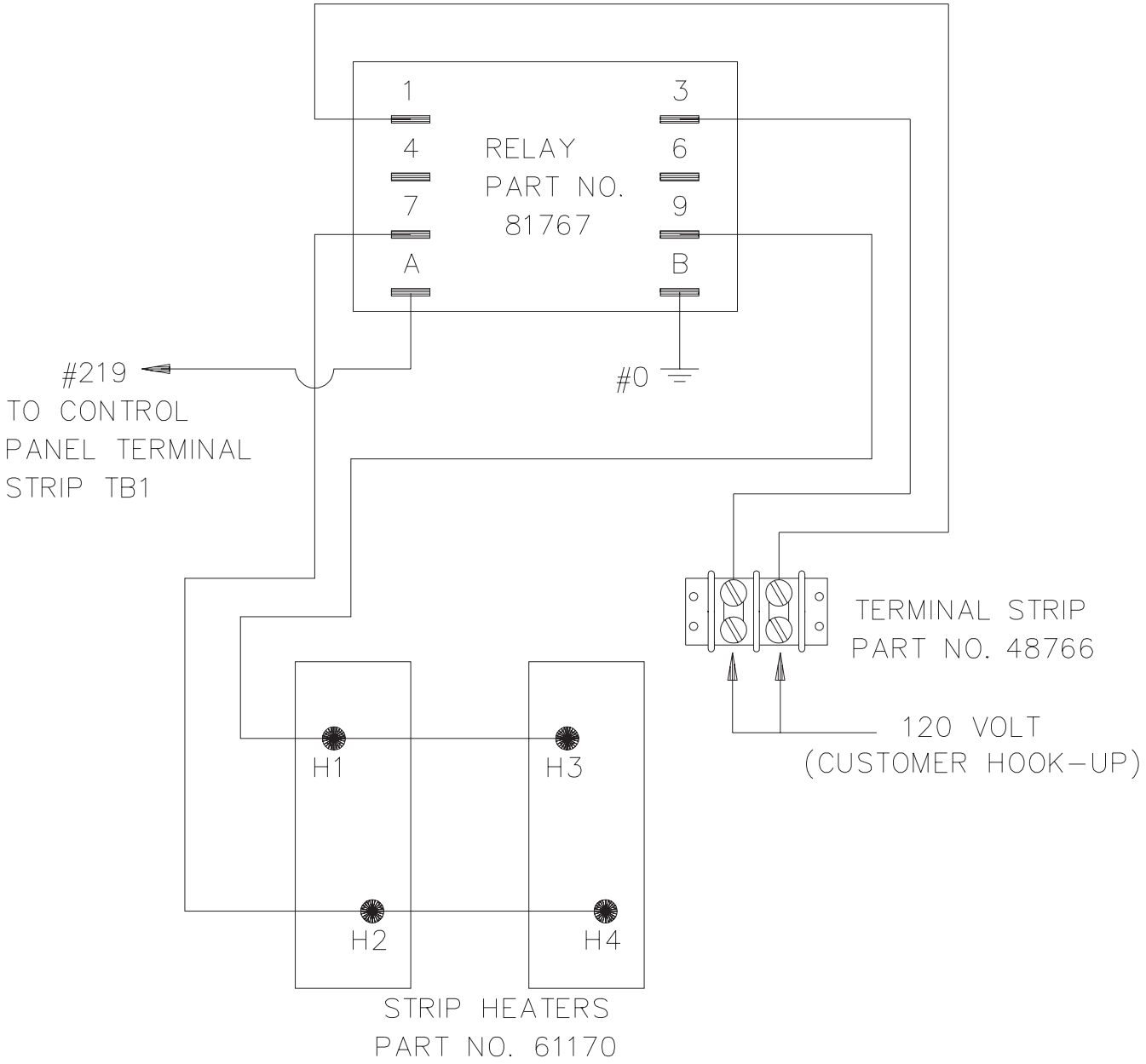

RESISTOR
TERMINAL BLOCK
IN #84716 HARNESS
HORN
RED
211
211
210
209
BLACK/RED
210
0
220
220
HORN SWITCH
IN CONTROL PANEL
EXISTING TERMINAL BLOCK
IN CONTROL PANEL

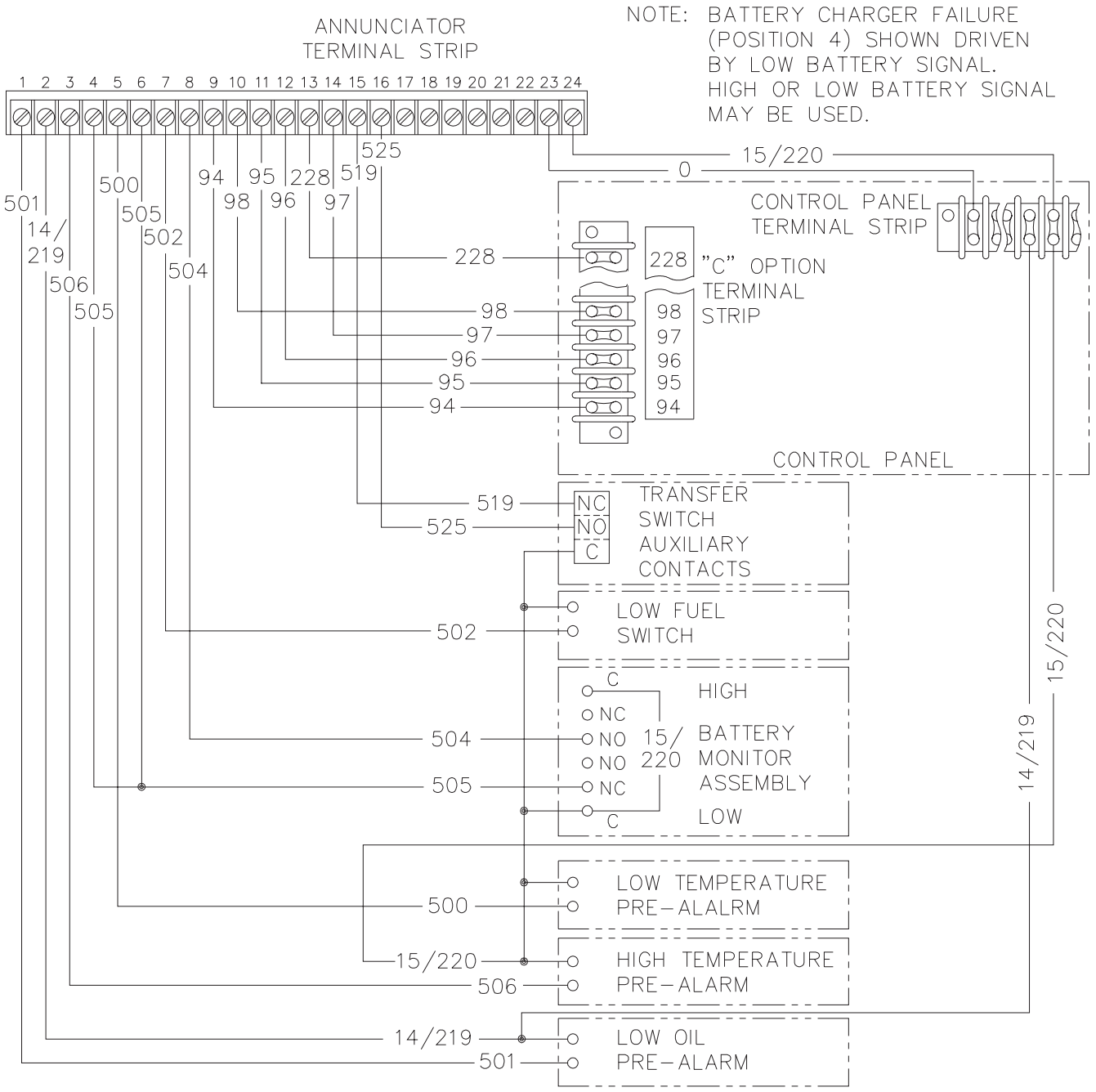

RESISTOR
HORN
RED
BLACK/RED
210
0
0
86793
RELAY KIT
6
5
4
3
2
1
0
B
A
9
8
7
176A
TO FAULT LIGHT
220
176
DIODE
TO PCB
ENGINE CONTROL
0
0
220
220
220
HORN SWITCH
IN CONTROL PANEL
EXISTING TERMINAL BLOCK
IN CONTROL PANEL

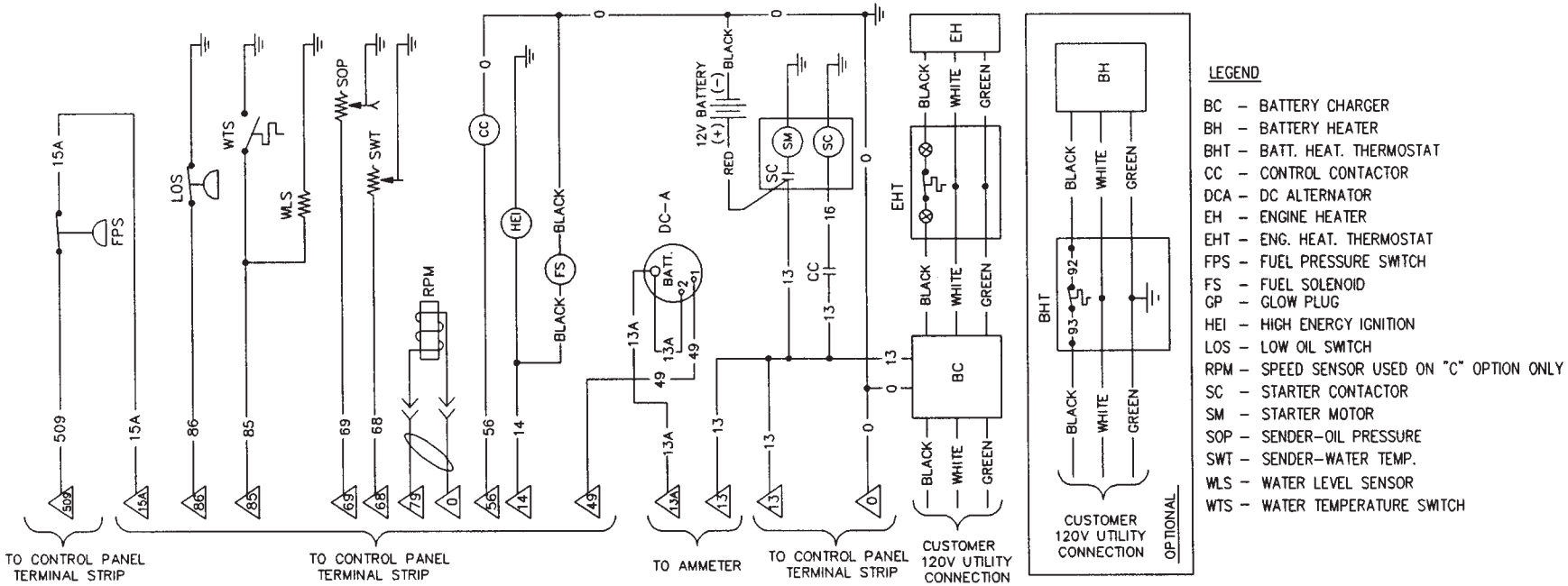


ENGINE RUN RELAY

EXISTING TERMINAL
STRIP IN CONTROL PNL.

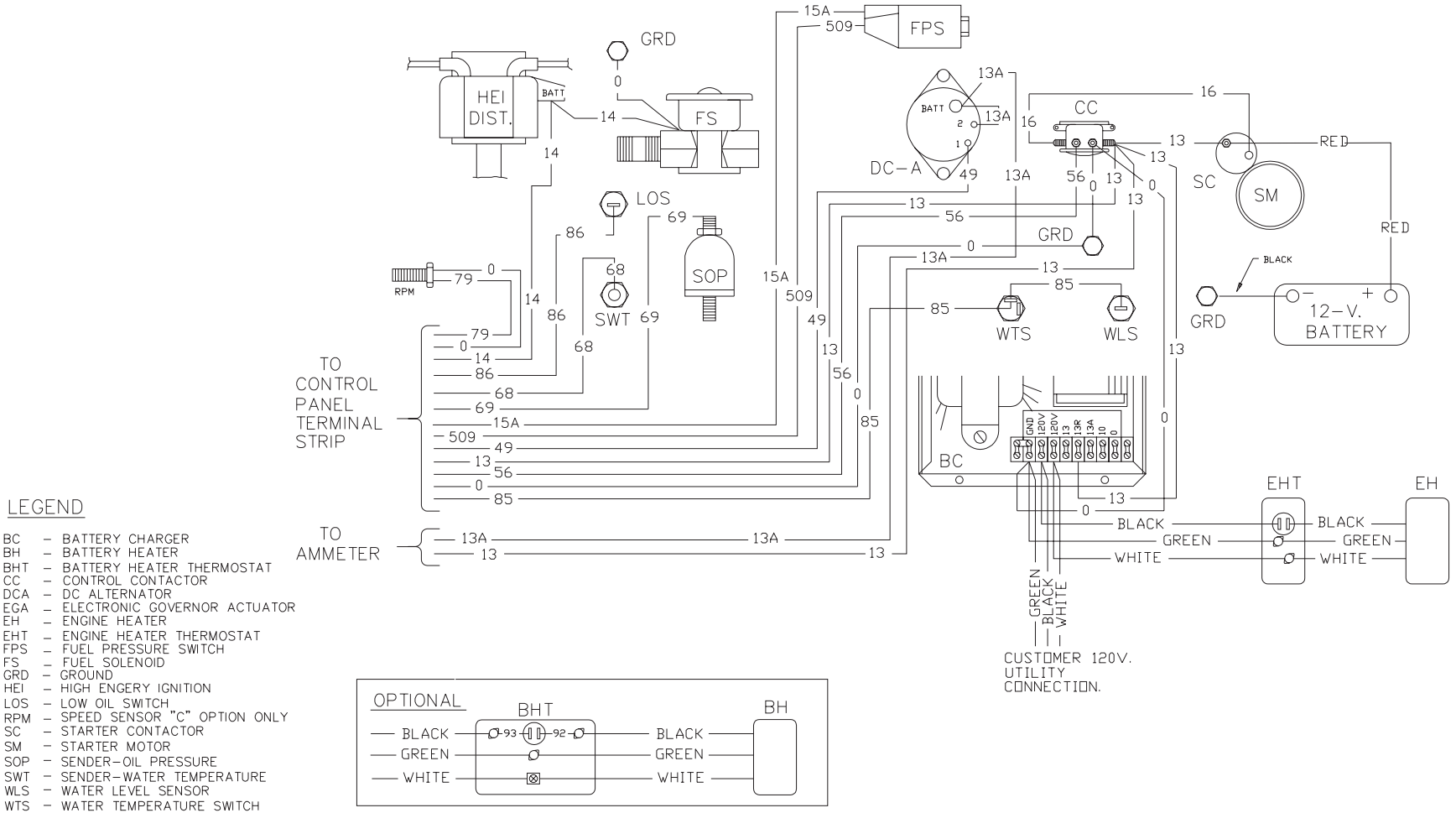

1
3
4
RELAY
PART NO.
81767
6
7
9
A
B
#219
TO CONTROL
PANEL TERMINAL
STRIP TB1
#0
TERMINAL STRIP
PART NO. 48766
120 VOLT
(CUSTOMER HOOK-UP)
H1
H3
H2
H4
STRIP HEATERS
PART NO. 61170


ANNUNCIATOR
TERMINAL STRIP
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
NOTE: BATTERY CHARGER FAILURE (POSITION 4) SHOWN DRIVEN BY LOW BATTERY SIGNAL. HIGH OR LOW BATTERY SIGNAL MAY BE USED.
15/220
0
CONTROL PANEL TERMINAL STRIP
228
"C" OPTION TERMINAL STRIP
98
97
96
95
94
CONTROL PANEL
519
525
NC
NO
C
TRANSFER SWITCH AUXILIARY CONTACTS
LOW FUEL SWITCH
HIGH BATTERY MONITOR ASSEMBLY
LOW
15/220
14/219
LOW TEMPERATURE PRE-ALALRM
HIGH TEMPERATURE PRE-ALARM
LOW OIL PRE-ALARM
501
14/219
500
505
502
504
506



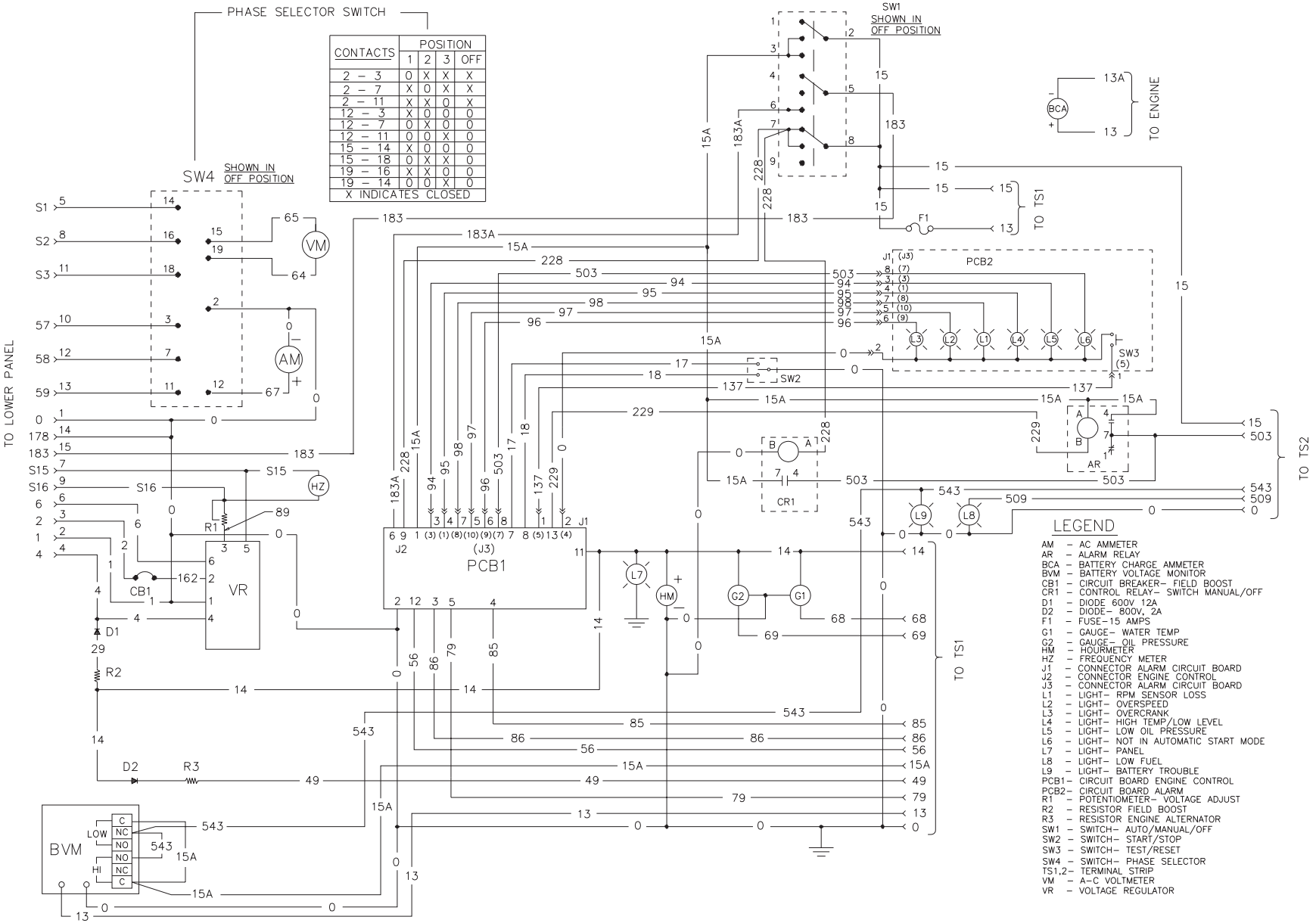
LEGEND

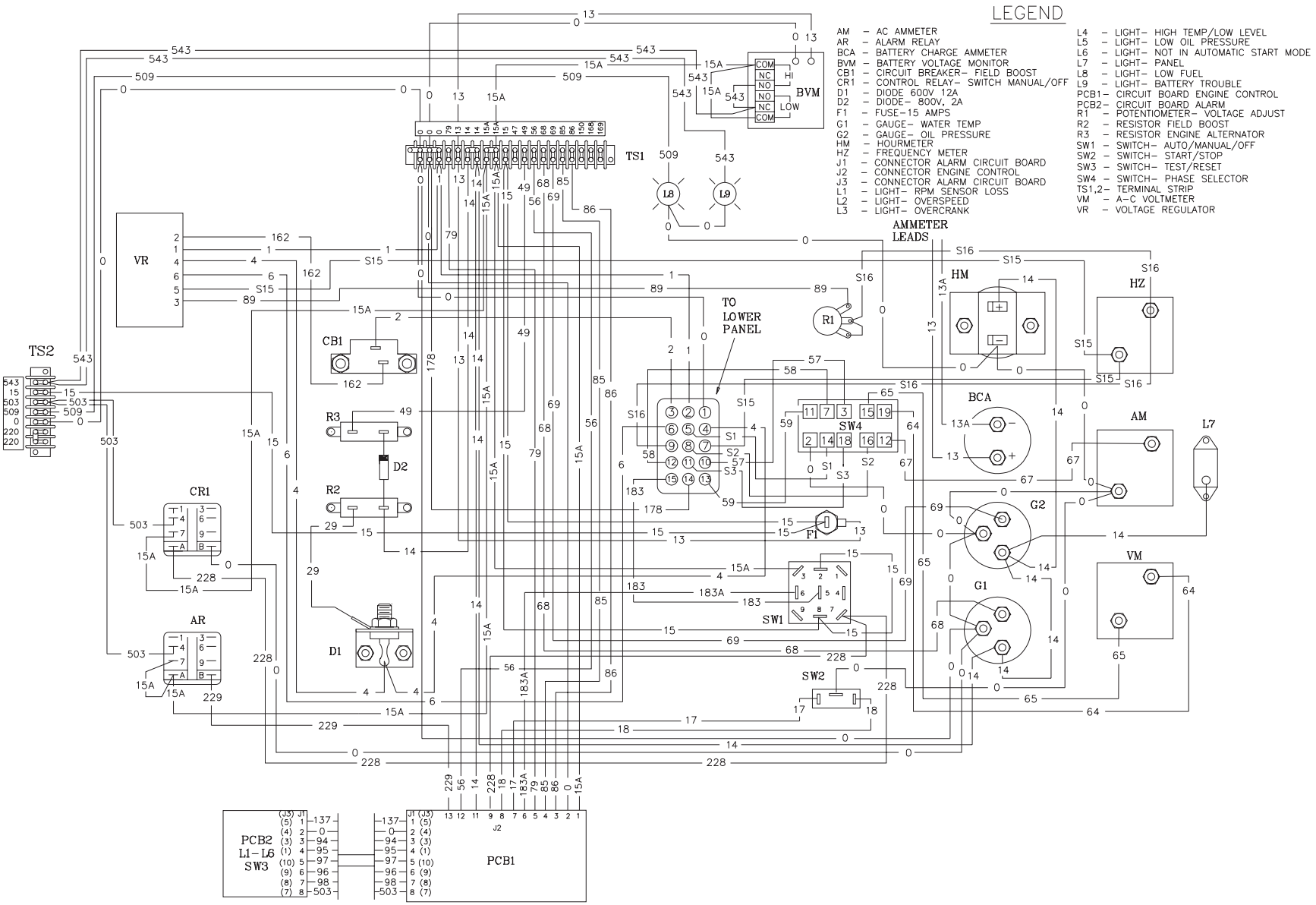
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATT. HEAT. THERMOSTAT
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FPS – FUEL PRESSURE SWITCH
FS – FUEL SOLENOID
GP – GLOW PLUG
HEI – HIGH ENERGY IGNITION
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMP.
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH

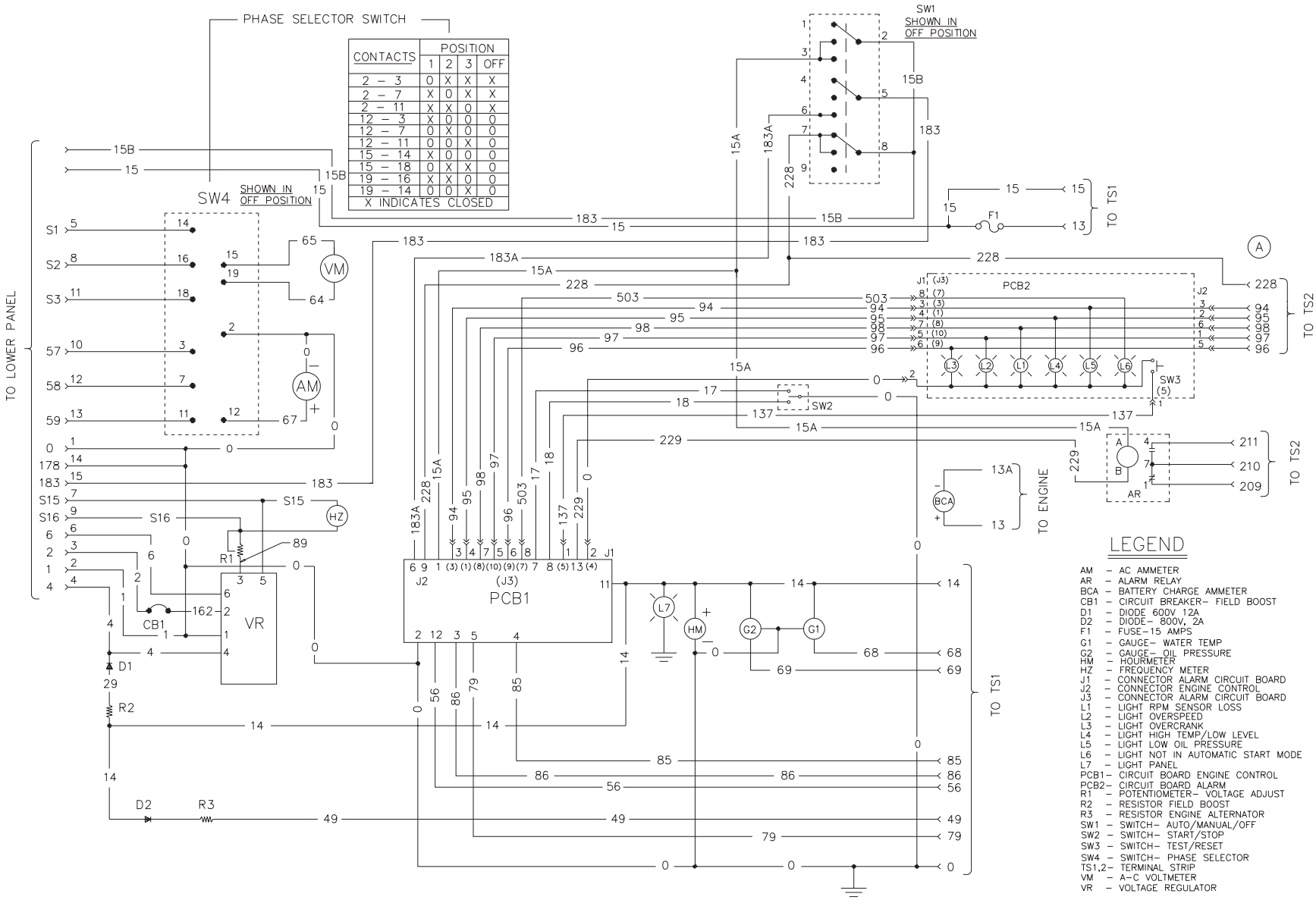


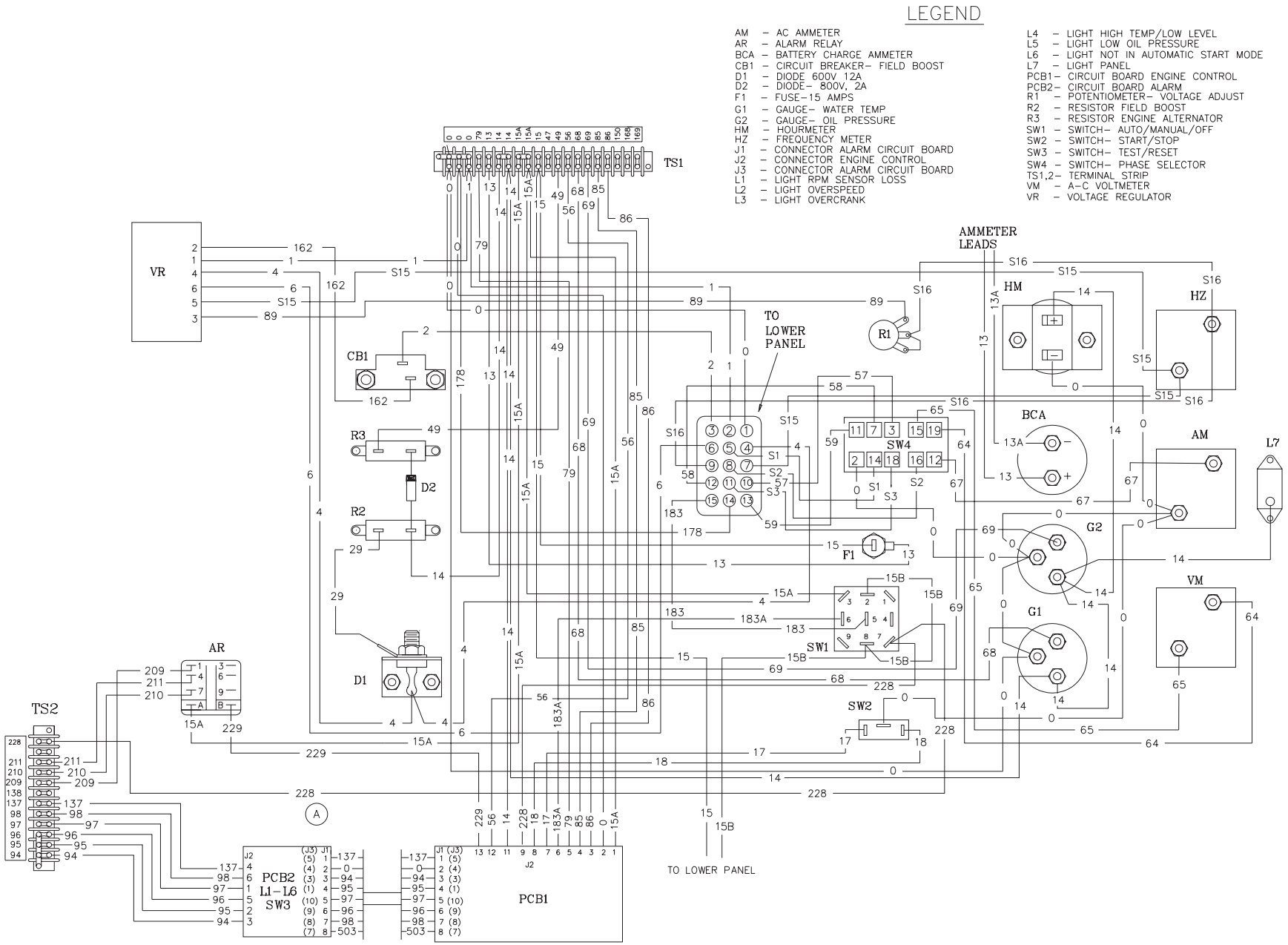
LEGEND

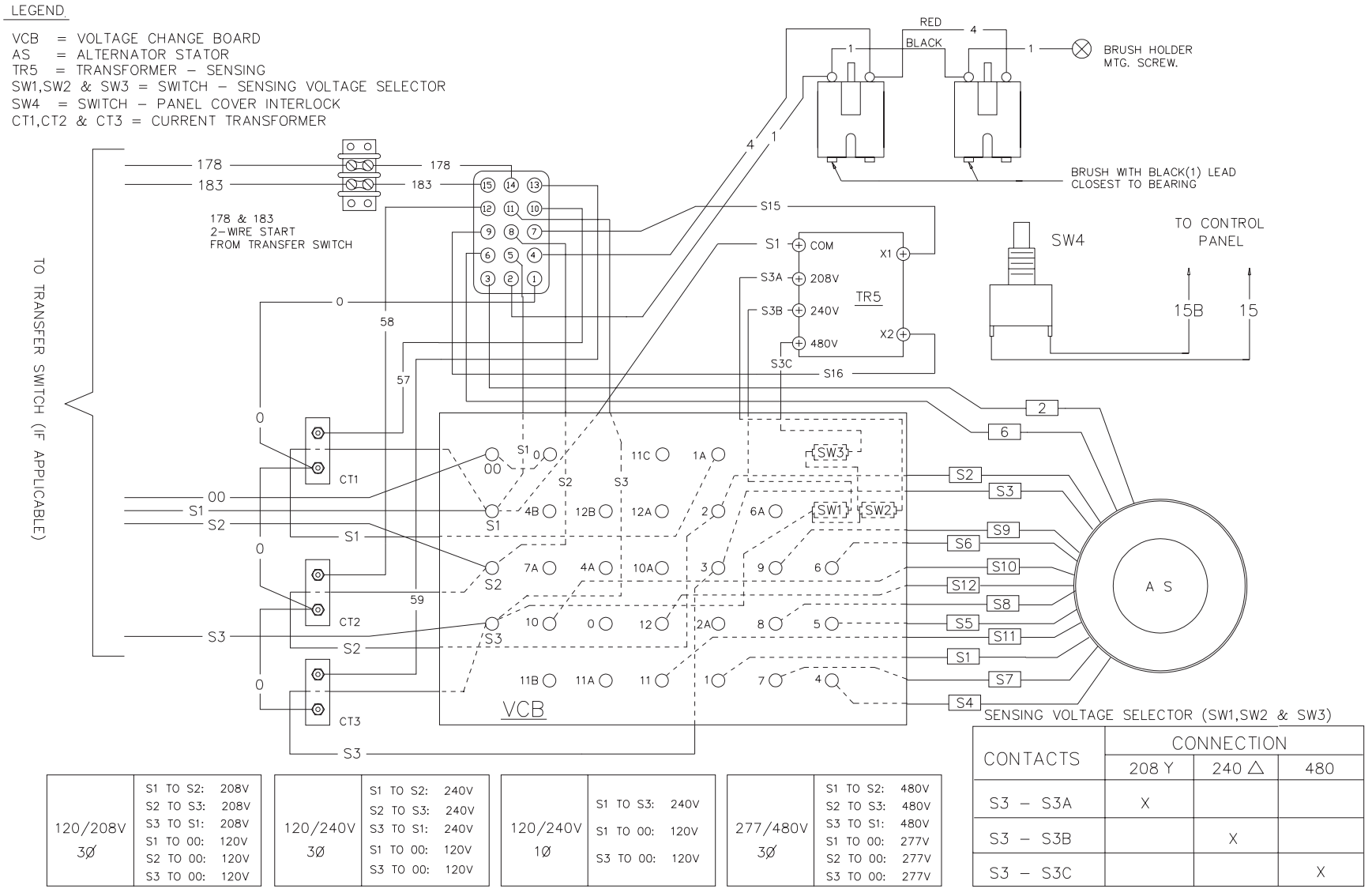
BC	–	BATTERY CHARGER
BH	–	BATTERY HEATER
BHT	–	BATTERY HEATER THERMOSTAT
CC	–	CONTROL CONTACTOR
DCA	–	DC ALTERNATOR
EGA	–	ELECTRONIC GOVERNOR ACTUATOR
EH	–	ENGINE HEATER
EHT	–	ENGINE HEATER THERMOSTAT
FPS	–	FUEL PRESSURE SWITCH
FS	–	FUEL SOLENOID
GRD	–	GROUND
HEI	–	HIGH ENGERY IGNITION
LOS	–	LOW OIL SWITCH
RPM	–	SPEED SENSOR "C" OPTION ONLY
SC	–	STARTER CONTACTOR
SM	–	STARTER MOTOR
SOP	–	SENDER–OIL PRESSURE
SWT	–	SENDER–WATER TEMPERATURE
WLS	–	WATER LEVEL SENSOR
WTS	–	WATER TEMPERATURE SWITCH
⌀	–	WIRE NUT


PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | 0 | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
SW4 SHOWN IN OFF POSITION
SW1 SHOWN IN OFF POSITION
TO LOWER PANEL
TO ENGINE
TO TS1
TO TS2
PCB1
PCB2
VM
AM
HZ
VR
CB1
R1
R2
R3
D1
D2
F1
SW2
SW3
CR1
AR
BCA
HM
BVM
LOW
HI
LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHAARGE AMMETER
BVM – BATTERY VOLTAGE MONITOR
CB1 – CIRCUIT BREAKER– FIELD BOOST
CR1 – CONTROL RELAY– SWITCH MANUAL/OFF
D1 – DIODE 600V 12A
D2 – DIODE– 800v, 2A
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
L7 – LIGHT– PANEL
L8 – LIGHT– LOW FUEL
L9 – LIGHT– BATTERY TROUBLE
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR


LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
BVM – BATTERY VOLTAGE MONITOR
CB1 – CIRCUIT BREAKER– FIELD BOOST
CR1 – CONTROL RELAY– SWITCH MANUAL/OFF
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
L7 – LIGHT– PANEL
L8 – LIGHT– LOW FUEL
L9 – LIGHT– BATTERY TROUBLE
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
AMMETER LEADS
TO LOWER PANEL
BVM
TS1
TS2
VR
CB1
R1
R3
D2
R2
CR1
AR
D1
F1
SW1
SW2
SW4
BCA
HM
HZ
AM
L7
G2
G1
VM
PCB2 L1–L6 SW3
PCB1
J2


PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
SW4 SHOWN IN OFF POSITION
SW1 SHOWN IN OFF POSITION
TO LOWER PANEL
TO TS1
TO TS2
TO ENGINE
PCB1
PCB2
VM
AM
HZ
VR
CB1
F1
SW2
SW3
BCA
AR
R1
R2
R3
D1
D2
L1
L2
L3
L4
L5
L6
L7
HM
G1
G2
LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR


LEGEND
AM – AC AMMETER
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CB1 – CIRCUIT BREAKER– FIELD BOOST
D1 – DIODE 600V 12A
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J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2– TERMINAL STRIP
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
TS1
TS2
VR
CB1
R3
D2
R2
D1
AR
R1
TO LOWER PANEL
AMMETER LEADS
HM
HZ
BCA
AM
L7
G2
G1
VM
F1
SW1
SW2
SW4
PCB2 L1–L6 SW3
PCB1
J2
A



120/208V 3Ø	S1 TO S2: 208V S2 TO S3: 208V S3 TO S1: 208V S1 TO 00: 120V S2 TO 00: 120V S3 TO 00: 120V

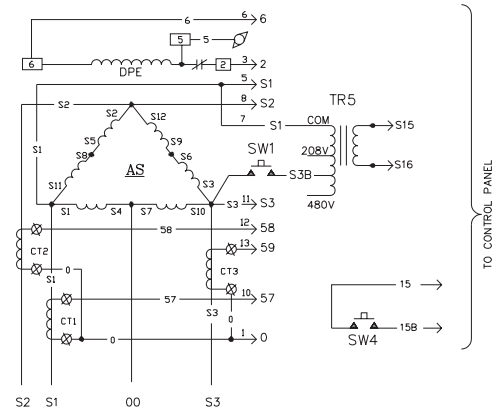
120/240V 3Ø	S1 TO S2: 240V S2 TO S3: 240V S3 TO S1: 240V S1 TO 00: 120V S3 TO 00: 120V

120/240V 1Ø	S1 TO S3: 240V S1 TO 00: 120V S3 TO 00: 120V

277/480V 3Ø	S1 TO S2: 480V S2 TO S3: 480V S3 TO S1: 480V S1 TO 00: 277V S2 TO 00: 277V S3 TO 00: 277V

SENSING VOLTAGE SELECTOR (SW1,SW2 & SW3)

CONTACTS	CONNECTION		
	208 Y	240 △	480
S3 – S3A	X		
S3 – S3B		X	
S3 – S3C			X

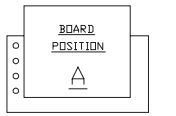


NOTE: THIS CONNECTION USED FOR FULL-CAPACITY SINGLE PHASE WHEN EQUIPPED WITH A BROAD-RANGE STATOR.

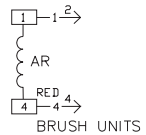
CUSTOMER CONNECTION
120/240-V. 3-PHASE
120/240-V. 1-PHASE

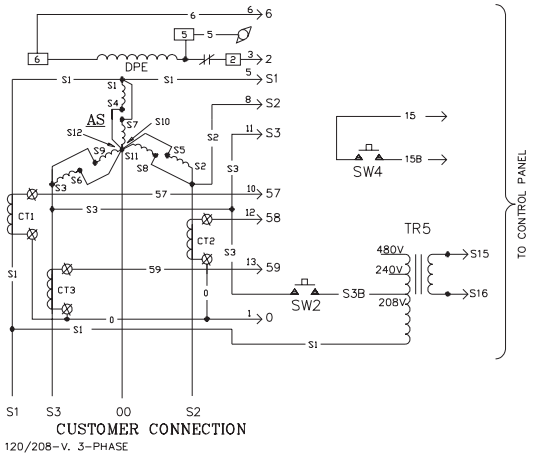
120/240V 1Ø	S1 TO S3: 240V S1 TO 00: 120V S3 TO 00: 120V S2: NOT CONNECTED

VOLTAGE CHANGEOVER



120/240V 3Ø	S1 TO S2: 240V S2 TO S3: 240V S3 TO S1: 240V S1 TO 00: 120V S3 TO 00: 120V

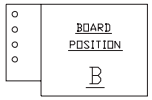


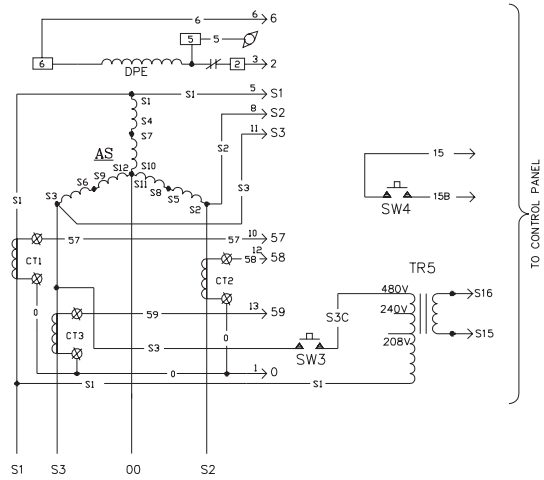


CUSTOMER CONNECTION
120/208-V. 3-PHASE

120/208V 3Ø	S1 TO S2: 208V S2 TO S3: 208V S3 TO S1: 208V S1 TO 00: 120V S2 TO 00: 120V S3 TO 00: 120V

VOLTAGE CHANGEOVER

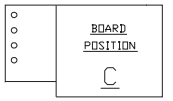




CUSTOMER CONNECTION
277/480-V. 3-PHASE

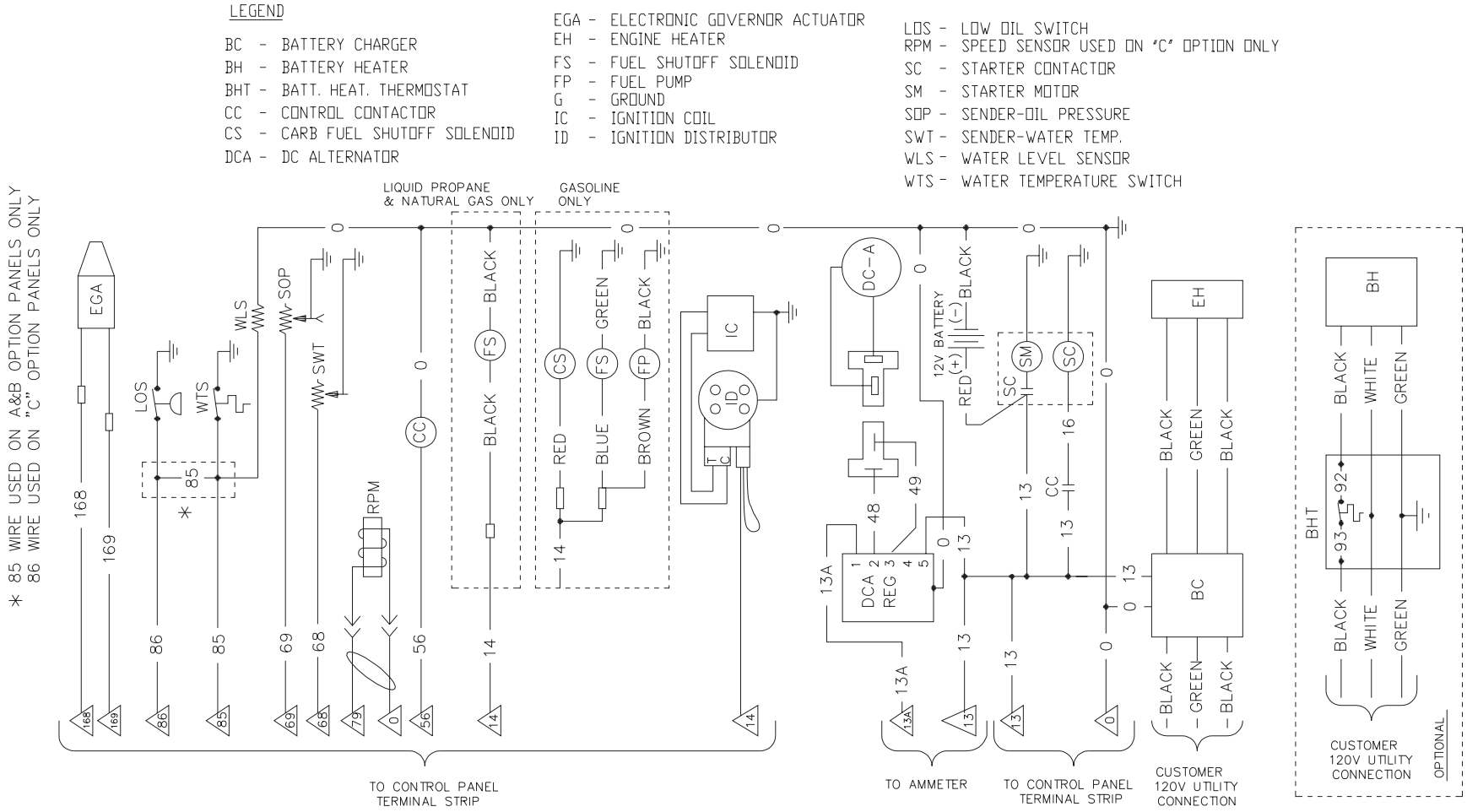
277/480V 3Ø	S1 TO S2: 480V S2 TO S3: 480V S3 TO S1: 480V S1 TO 00: 277V S2 TO 00: 277V S3 TO 00: 277V

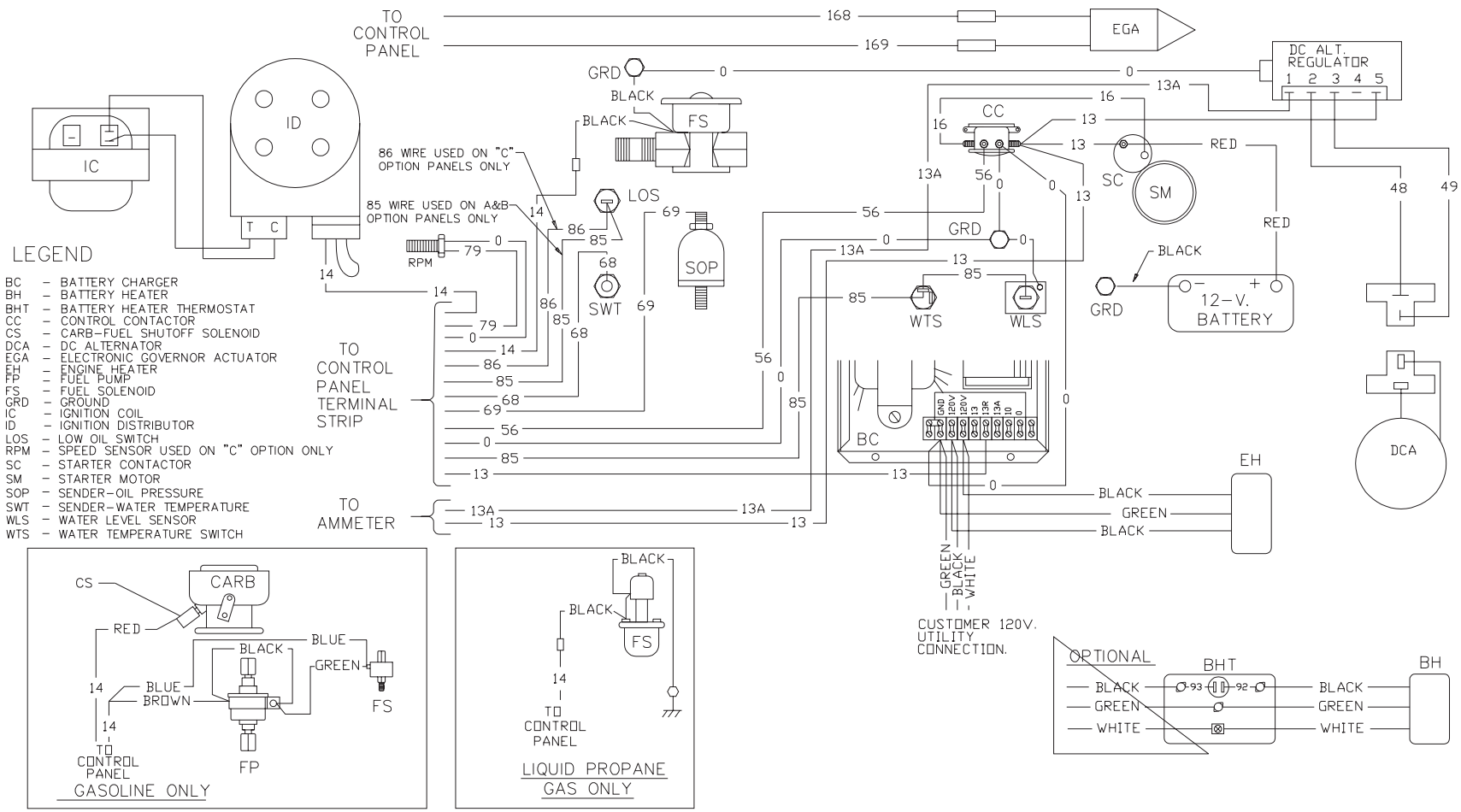
VOLTAGE CHANGEOVER



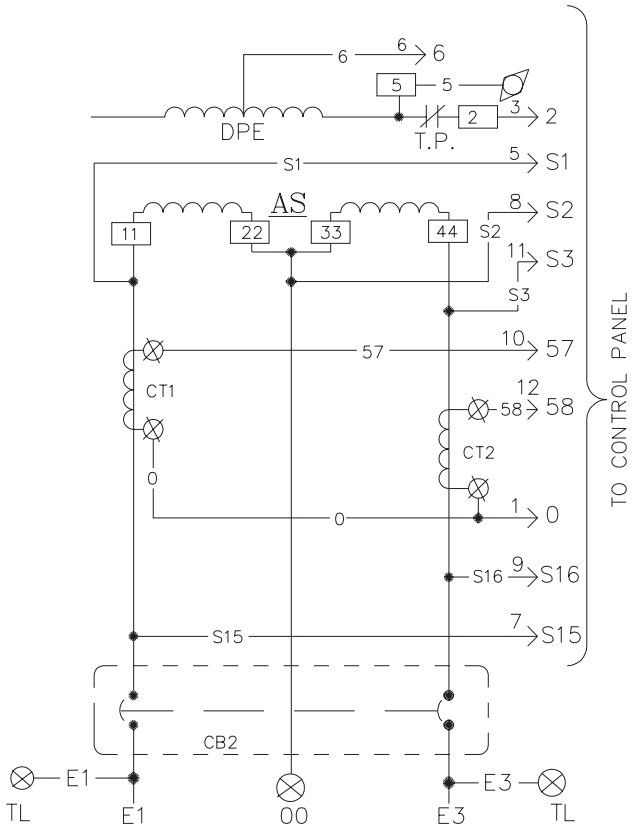
LEGEND

AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
CT – CURRENT TRANSFORMER
DPE – EXCITATION WINDING
SW1 – SWITCH, VOLTAGE SENSING SELECTOR– 240V△
SW2 – SWITCH, VOLTAGE SENSING SELECTOR– 208VY
SW3 – SWITCH, VOLTAGE SENSING SELECTOR– 480VY
SW4 – SWITCH, PANEL COVER INTERLOCK
TR5 – TRANSFORMER, SENSING

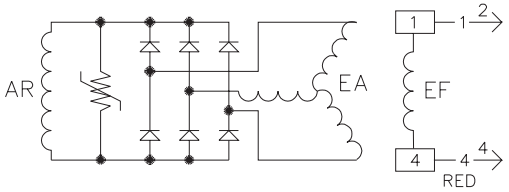

LEGEND
BC - BATTERY CHARGER
BH - BATTERY HEATER
BHT - BATT. HEAT. THERMOSTAT
CC - CONTROL CONTACTOR
CS - CARB FUEL SHUTOFF SOLENOID
DCA - DC ALTERNATOR
EGA - ELECTRONIC GOVERNOR ACTUATOR
EH - ENGINE HEATER
FS - FUEL SHUTOFF SOLENOID
FP - FUEL PUMP
G - GROUND
IC - IGNITION COIL
ID - IGNITION DISTRIBUTOR
LOS - LOW OIL SWITCH
RPM - SPEED SENSOR USED ON "C" OPTION ONLY
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
* 85 WIRE USED ON A&B OPTION PANELS ONLY
86 WIRE USED ON "C" OPTION PANELS ONLY
LIQUID PROPANE & NATURAL GAS ONLY
GASOLINE ONLY
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
TO CONTROL PANEL TERMINAL STRIP
CUSTOMER 120V UTILITY CONNECTION
CUSTOMER 120V UTILITY CONNECTION
OPTIONAL

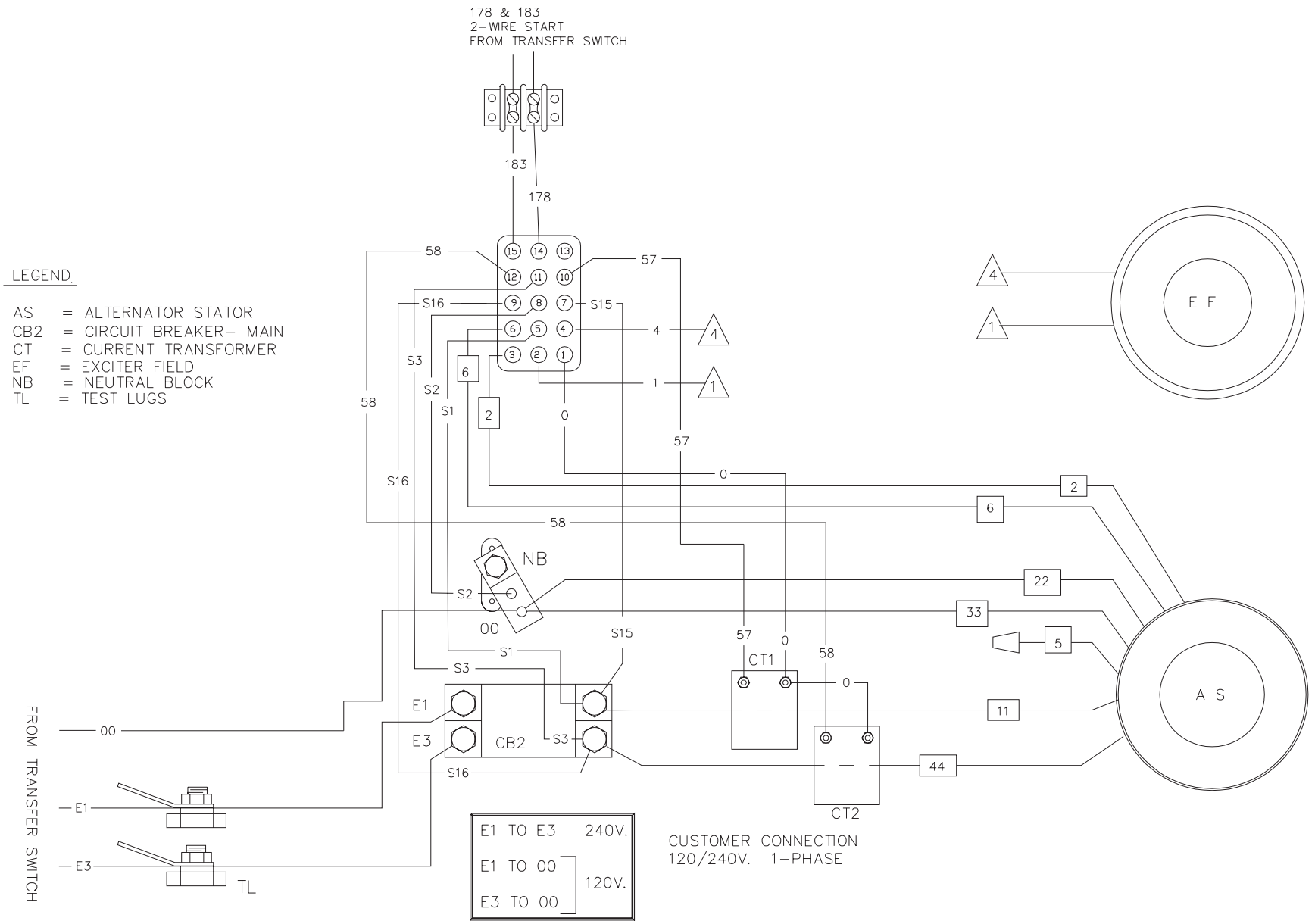

TO CONTROL PANEL
168
169
EGA
GRD
0
BLACK
FS
DC ALT. REGULATOR
1 2 3 4 5
IC
ID
T C
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A&B OPTION PANELS ONLY
LOS
SOP
RPM
SWT
CC
SC
SM
RED
48
49
16
13
13A
56
WTS
WLS
12-V. BATTERY
LEGEND
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARB–FUEL SHUTOFF SOLENOID
DCA – DC ALTERNATOR
EGA – ELECTRONIC GOVERNOR ACTUATOR
EH – ENGINE HEATER
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
ID – IGNITION DISTRIBUTOR
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
BC
GND
120V
120V
13
13R
13A
10
0
EH
DCA
BLACK
GREEN
BLACK
GREEN
BLACK
WHITE
CUSTOMER 120V. UTILITY CONNECTION.
OPTIONAL
BHT
BH
93
92
CS
CARB
RED
BLUE
BLACK
GREEN
BLUE
BROWN
14
FS
FP
TO CONTROL PANEL
GASOLINE ONLY
LIQUID PROPANE GAS ONLY

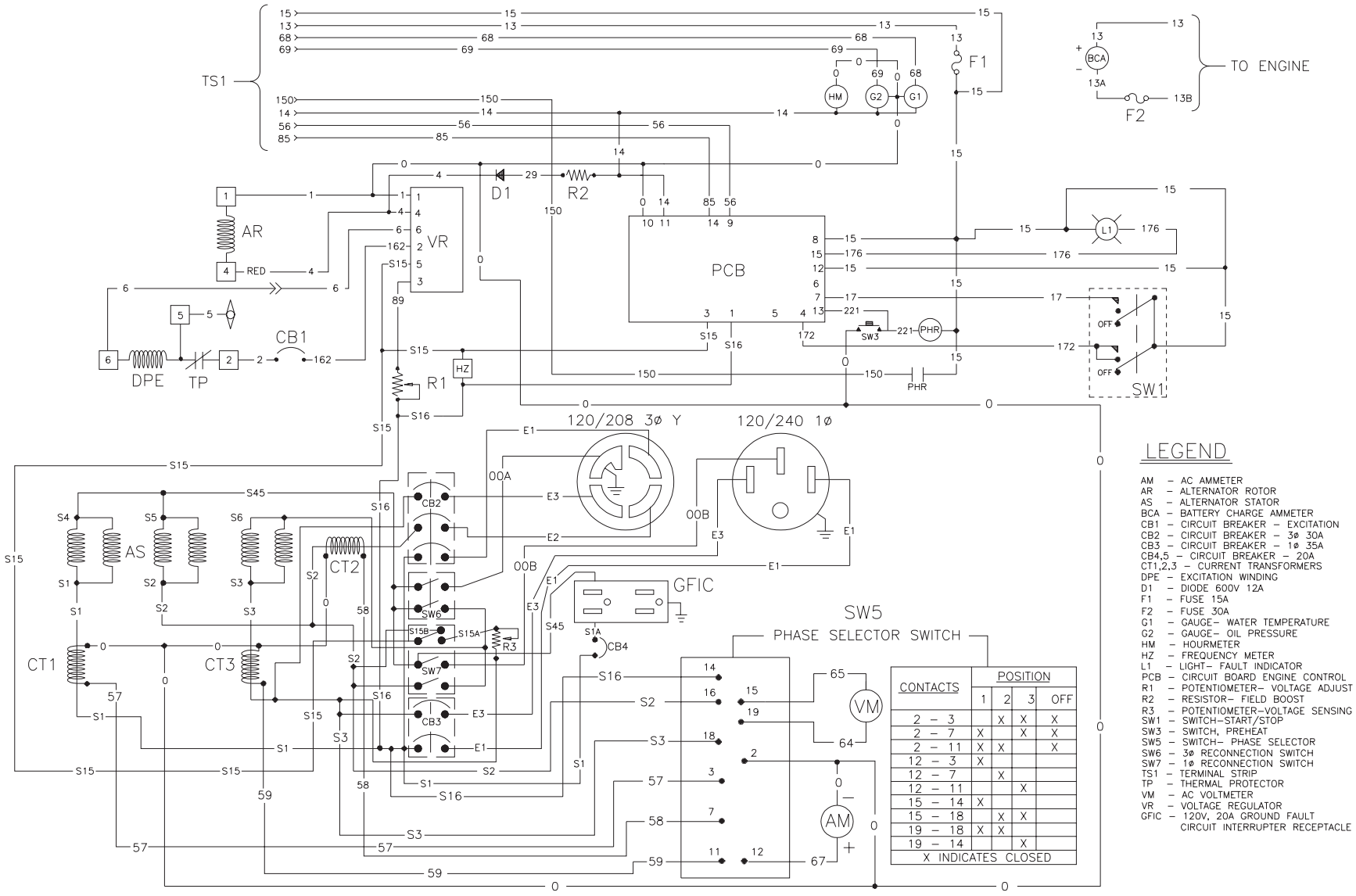
LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER – MAIN
CT = CURRENT TRANSFORMER
DPE = EXCITATION WINDING
EA = EXCITER ARMATURE
EF = EXCITER FIELD
TP = THERMAL PROTECTER
TL = TEST LUGS



CUSTOMER CONNECTION
120/240–V. 1–PHASE




178 & 183
2-WIRE START
FROM TRANSFER SWITCH
183
178
LEGEND
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
NB = NEUTRAL BLOCK
TL = TEST LUGS
58
57
S16
S15
S3
S2
S1
4
1
0
2
6
22
33
5
11
44
NB
00
CT1
CT2
CB2
E1
E3
E F
A S
FROM TRANSFER SWITCH
TL
E1 TO E3 240V.
E1 TO 00 120V.
E3 TO 00
CUSTOMER CONNECTION
120/240V. 1-PHASE

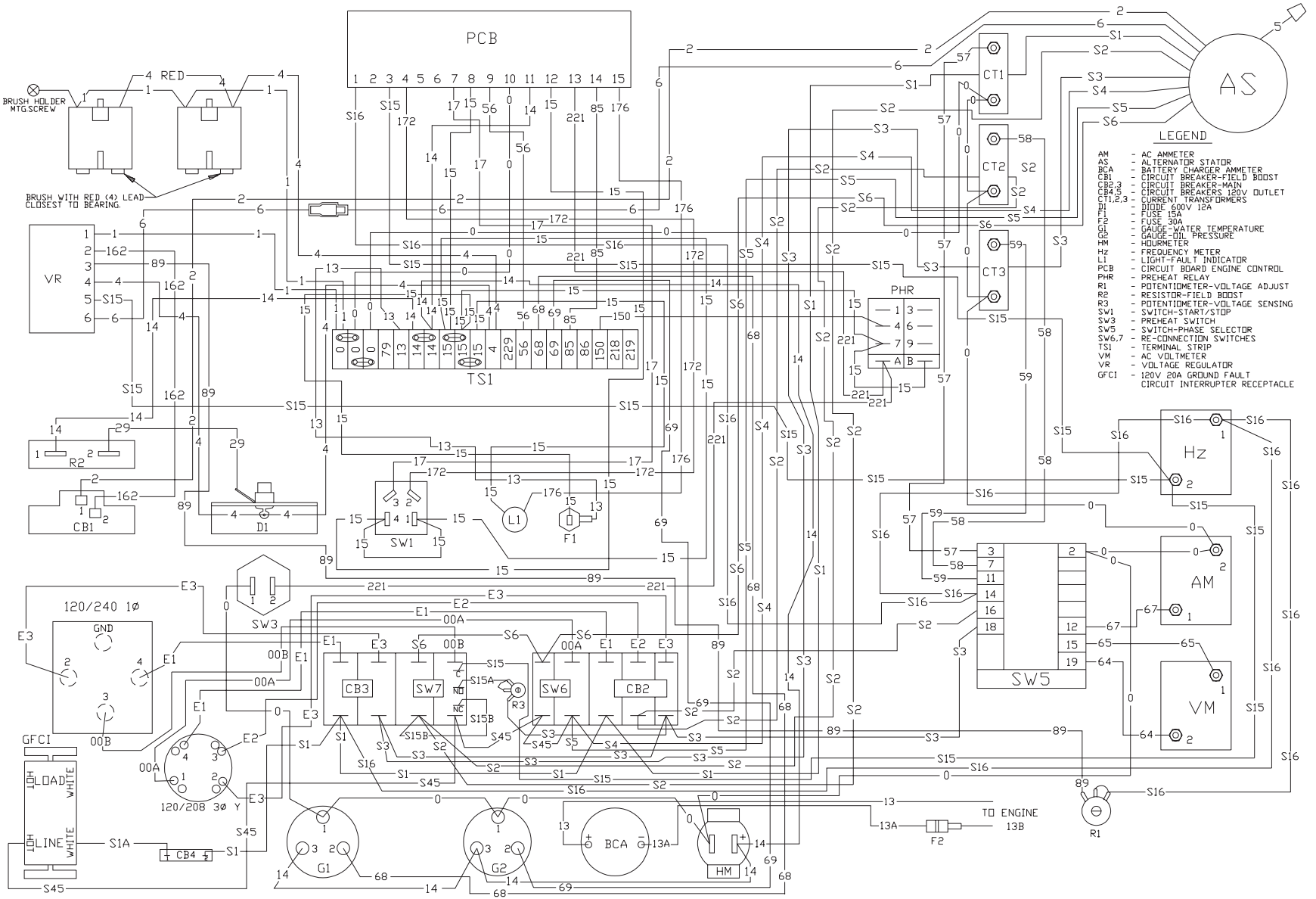


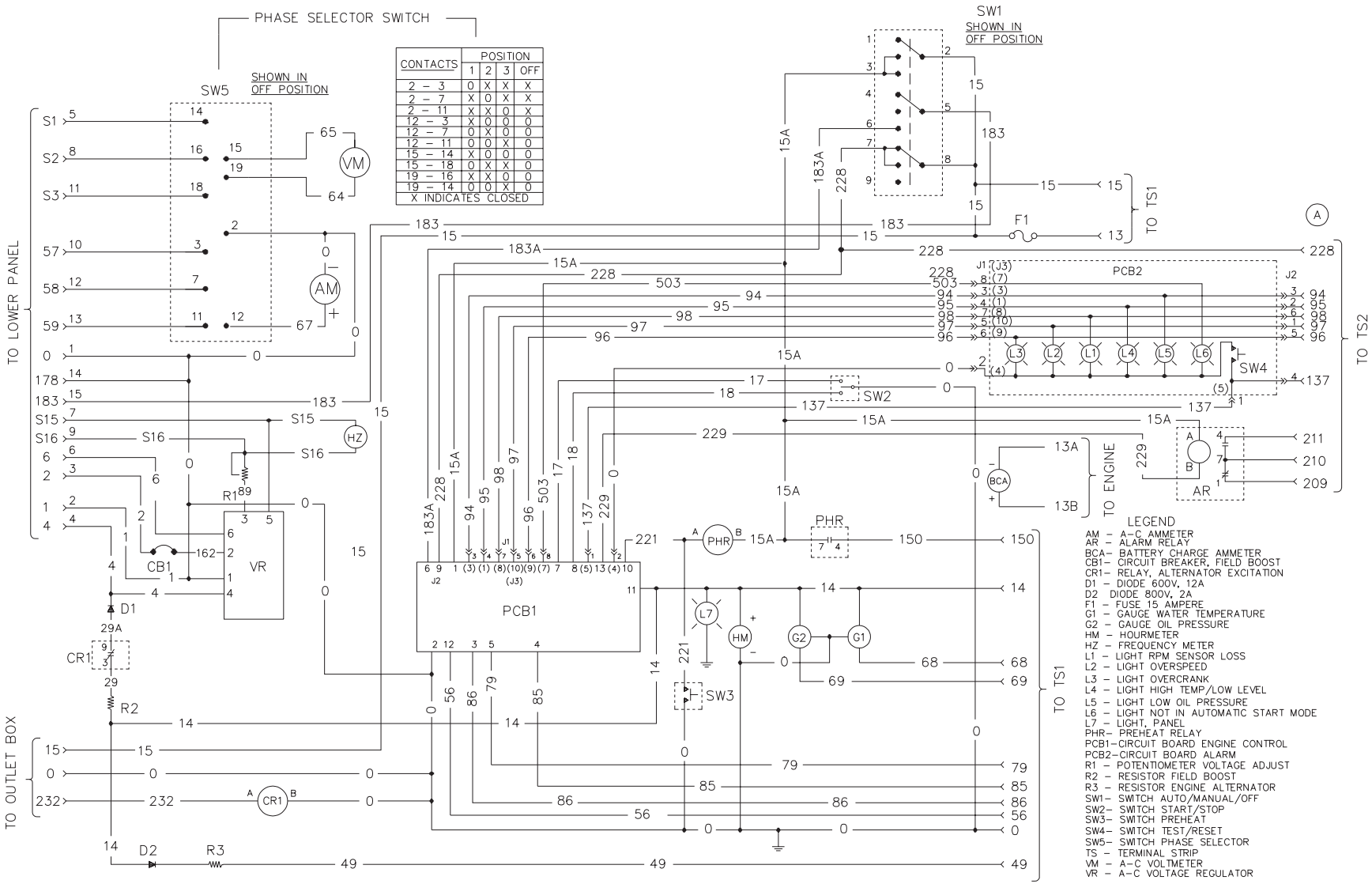
CONTACTS	POSITION			
	1	2	3	OFF
2 – 3		X	X	X
2 – 7	X		X	X
2 – 11	X	X		X
12 – 3	X			
12 – 7		X		
12 – 11			X	
15 – 14	X			
15 – 18		X	X	
19 – 18	X	X		
19 – 14			X	

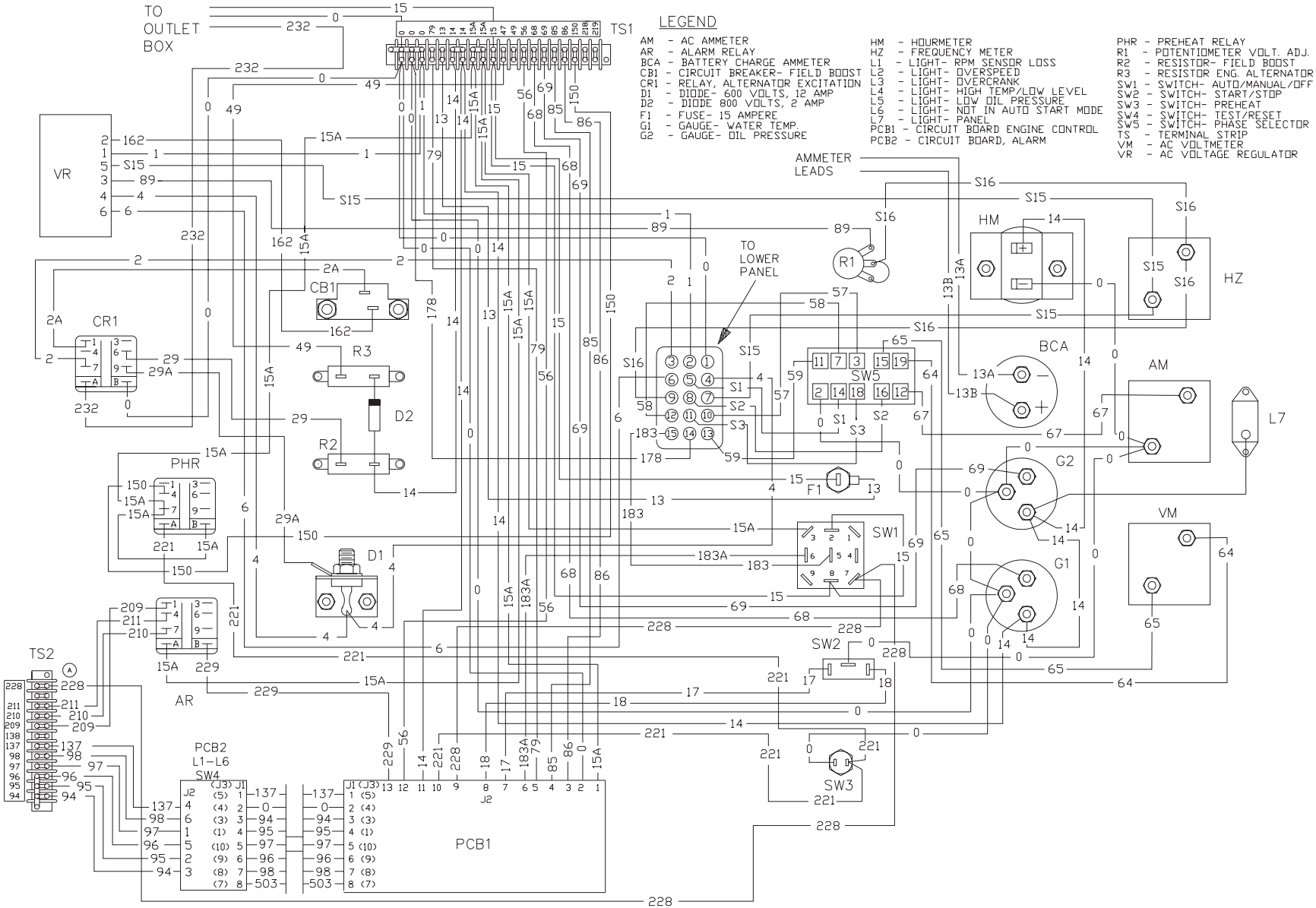
X INDICATES CLOSED

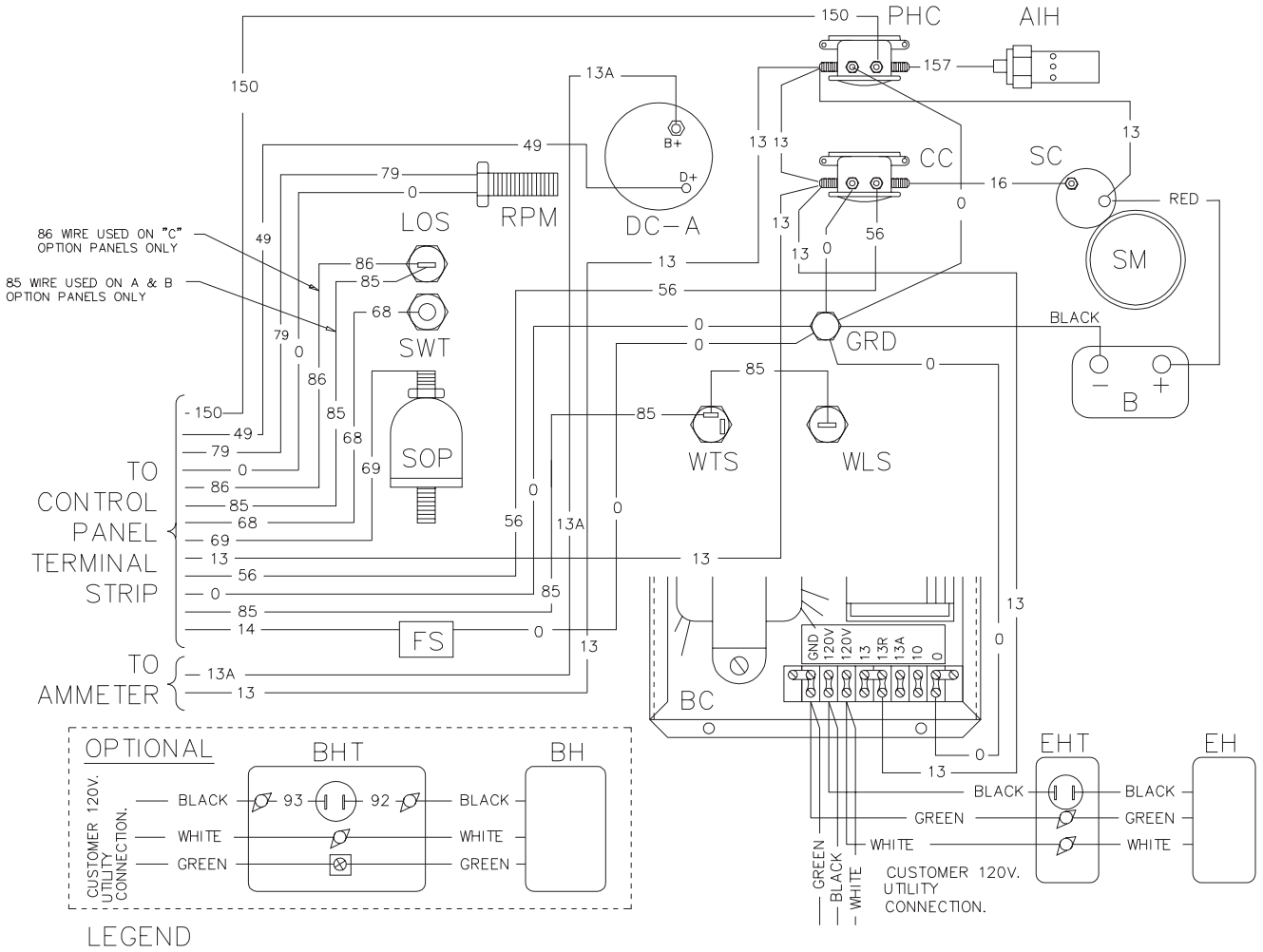
LEGEND

AM – AC AMMETER
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER – EXCITATION
CB2 – CIRCUIT BREAKER – 3ø 30A
CB3 – CIRCUIT BREAKER – 1ø 35A
CB4,5 – CIRCUIT BREAKER – 20A
CT1,2,3 – CURRENT TRANSFORMERS
DPE – EXCITATION WINDING
D1 – DIODE 600V 12A
F1 – FUSE 15A
F2 – FUSE 30A
G1 – GAUGE– WATER TEMPERATURE
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT– FAULT INDICATOR
PCB – CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– FIELD BOOST
R3 – POTENTIOMETER–VOLTAGE SENSING
SW1 – SWITCH–START/STOP
SW3 – SWITCH, PREHEAT
SW5 – SWITCH– PHASE SELECTOR
SW6 – 3ø RECONNECTION SWITCH
SW7 – 1ø RECONNECTION SWITCH
TS1 – TERMINAL STRIP
TP – THERMAL PROTECTOR
VM – AC VOLTMETER
VR – VOLTAGE REGULATOR
GFIC – 120V, 20A GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE


PCB
AS
CT1
CT2
CT3
PHR
VR
TS1
R2
CB1
D1
SW1
L1
F1
SW3
120/240 1Ø
GND
CB3
SW7
SW6
CB2
SW5
AM
VM
Hz
R3
GFC1
LOAD
LINE
WHITE
120/208 3Ø Y
G1
G2
BCA
HM
F2
R1
TO ENGINE
13B
BRUSH HOLDER MTG.SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING.
LEGEND
AM - AC AMMETER
AS - ALTERNATOR STATOR
BCA - BATTERY CHARGER AMMETER
CB1 - CIRCUIT BREAKER-FIELD BOOST
CB2,3 - CIRCUIT BREAKER-MAIN
CB4,5 - CIRCUIT BREAKERS 120V OUTLET
CT1,2,3 - CURRENT TRANSFORMERS
D1 - DIODE 600V 12A
F1 - FUSE 15A
F2 - FUSE 30A
G1 - GAUGE-WATER TEMPERATURE
G2 - GAUGE-OIL PRESSURE
HM - HOURMETER
Hz - FREQUENCY METER
L1 - LIGHT-FAULT INDICATOR
PCB - CIRCUIT BOARD ENGINE CONTROL
PHR - PREHEAT RELAY
R1 - POTENTIOMETER-VOLTAGE ADJUST
R2 - RESISTOR-FIELD BOOST
R3 - POTENTIOMETER-VOLTAGE SENSING
SW1 - SWITCH-START/STOP
SW3 - PREHEAT SWITCH
SW5 - SWITCH-PHASE SELECTOR
SW6,7 - RE-CONNECTION SWITCHES
TS1 - TERMINAL STRIP
VM - AC VOLTMETER
VR - VOLTAGE REGULATOR
GFCI - 120V 20A GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE

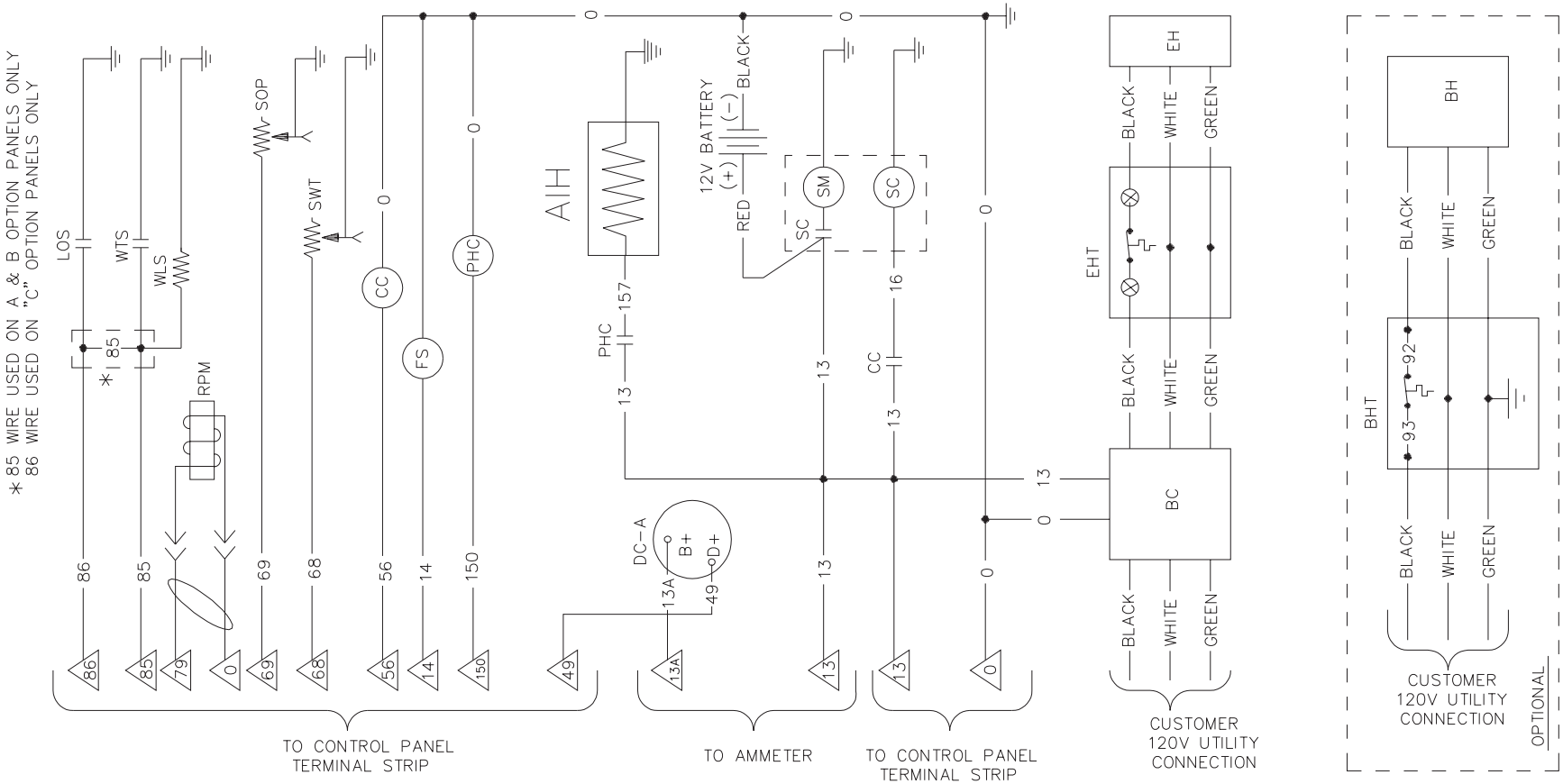

PHASE SELECTOR SWITCH
SW5
SHOWN IN OFF POSITION
CONTACTS
POSITION 1 2 3 OFF
2 – 3 0 X X X
2 – 7 X 0 X X
2 – 11 X X 0 X
12 – 3 X 0 0 0
12 – 7 0 X 0 0
12 – 11 0 0 X 0
15 – 14 X 0 0 0
15 – 18 0 X X 0
19 – 16 X X 0 0
19 – 14 0 0 X 0
X INDICATES CLOSED
SW1
SHOWN IN OFF POSITION
TO LOWER PANEL
TO OUTLET BOX
TO TS1
TO TS2
TO ENGINE
PCB1
PCB2
VM
AM
HZ
VR
CB1
CR1
PHR
AR
BCA
SW2
SW3
SW4
F1
D1
D2
R1
R2
R3
L1
L2
L3
L4
L5
L6
L7
HM
G1
G2
LEGEND
AM – A–C AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER, FIELD BOOST
CR1– RELAY, ALTERNATOR EXCITATION
D1 – DIODE 600V, 12A
D2 DIODE 800V, 2A
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT, PANEL
PHR– PREHEAT RELAY
PCB1–CIRCUIT BOARD ENGINE CONTROL
PCB2–CIRCUIT BOARD ALARM
R1 – POTENTIOMETER VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH PREHEAT
SW4– SWITCH TEST/RESET
SW5– SWITCH PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR


LEGEND
AM - AC AMMETER
AR - ALARM RELAY
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER- FIELD BOOST
CR1 - RELAY, ALTERNATOR EXCITATION
D1 - DIODE- 600 VOLTS, 12 AMP
D2 - DIODE 800 VOLTS, 2 AMP
F1 - FUSE- 15 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LIGHT- RPM SENSOR LOSS
L2 - LIGHT- OVERSPEED
L3 - LIGHT- OVERCRANK
L4 - LIGHT- HIGH TEMP/LOW LEVEL
L5 - LIGHT- LOW OIL PRESSURE
L6 - LIGHT- NOT IN AUTO START MODE
L7 - LIGHT- PANEL
PCB1 - CIRCUIT BOARD ENGINE CONTROL
PCB2 - CIRCUIT BOARD, ALARM
PHR - PREHEAT RELAY
R1 - POTENTIOMETER VOLT. ADJ.
R2 - RESISTOR- FIELD BOOST
R3 - RESISTOR ENG. ALTERNATOR
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/STOP
SW3 - SWITCH- PREHEAT
SW4 - SWITCH- TEST/RESET
SW5 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
TO OUTLET BOX
TS1
TS2
VR
CR1
CB1
R1
R2
R3
D1
D2
F1
PHR
AR
SW1
SW2
SW3
SW4
SW5
PCB1
PCB2
L1-L6
J1
J2
J3
HM
HZ
BCA
AM
VM
G1
G2
L7
AMMETER LEADS
TO LOWER PANEL



LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER THERMOSTAT
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH

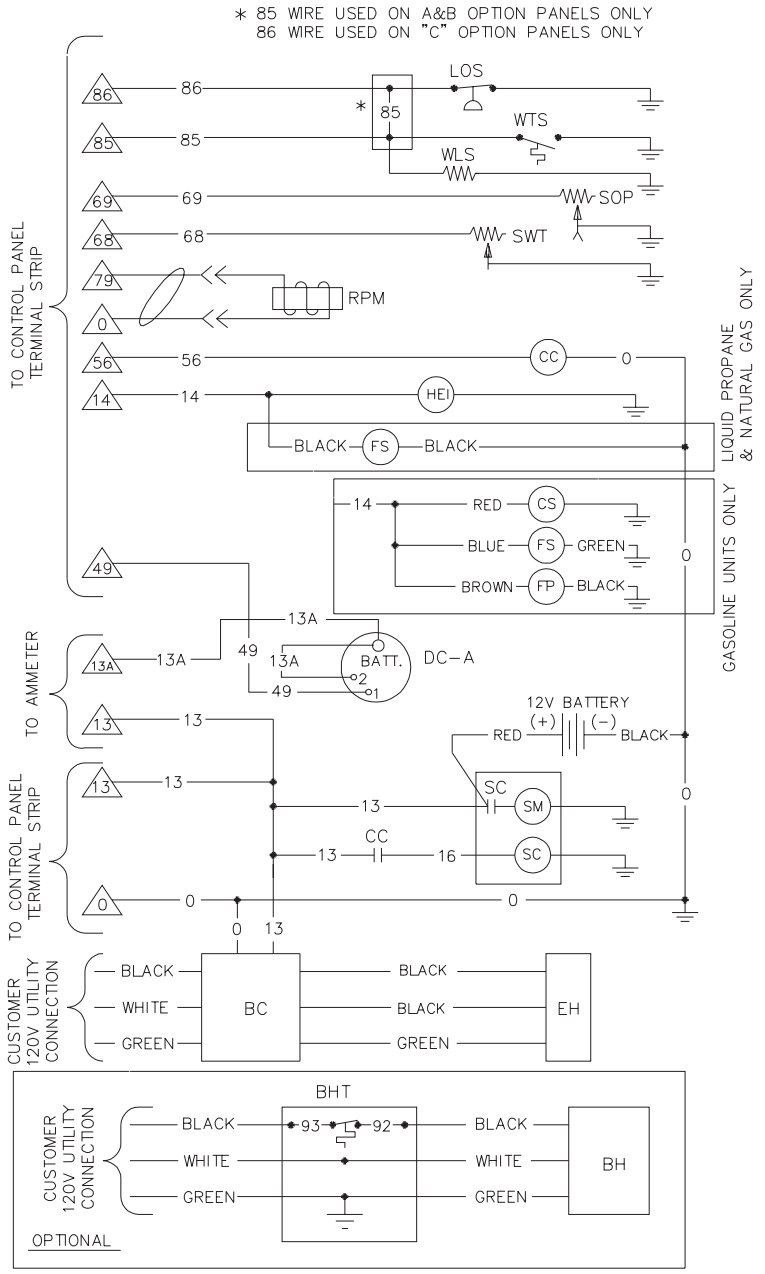


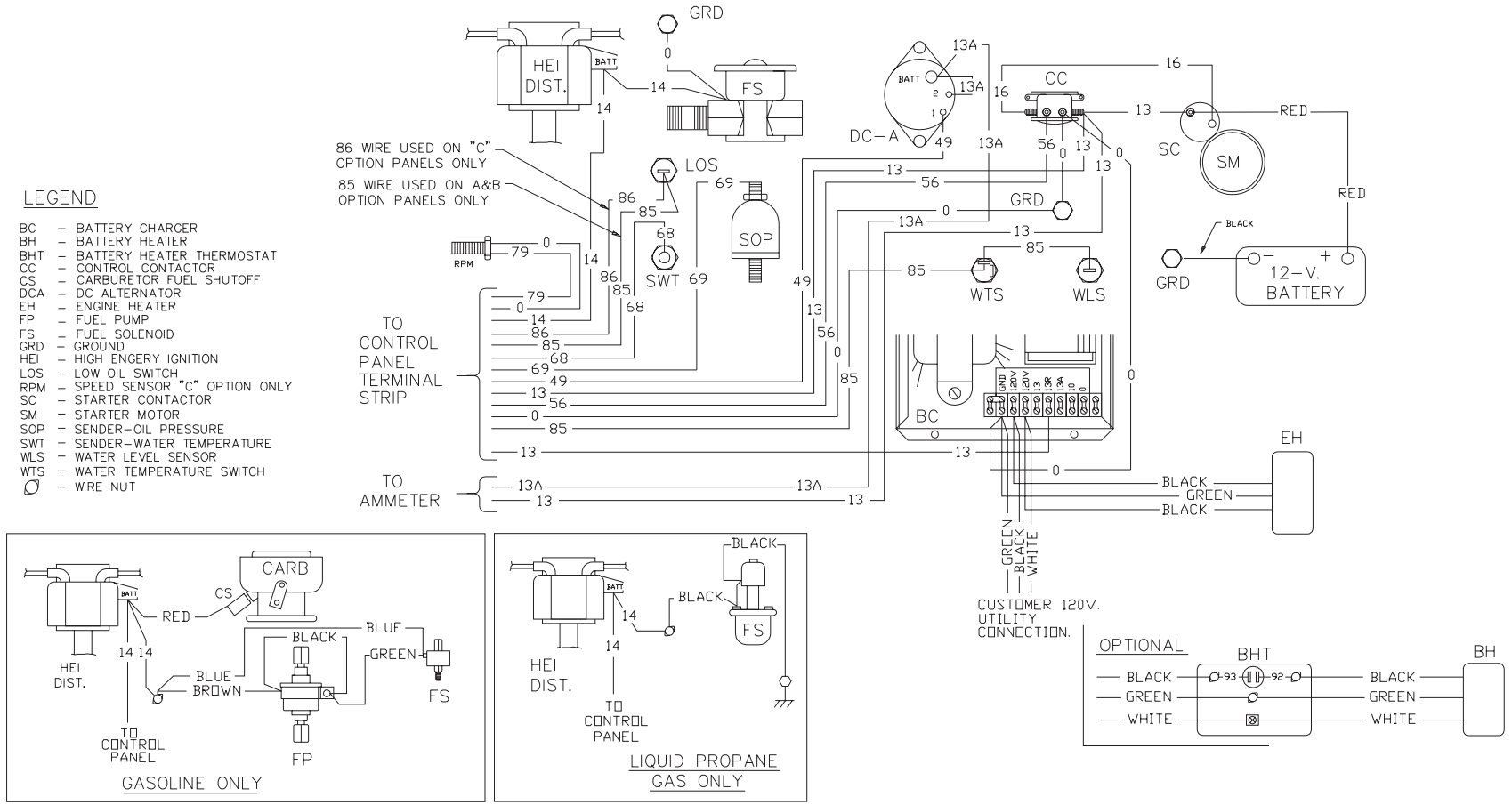
LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

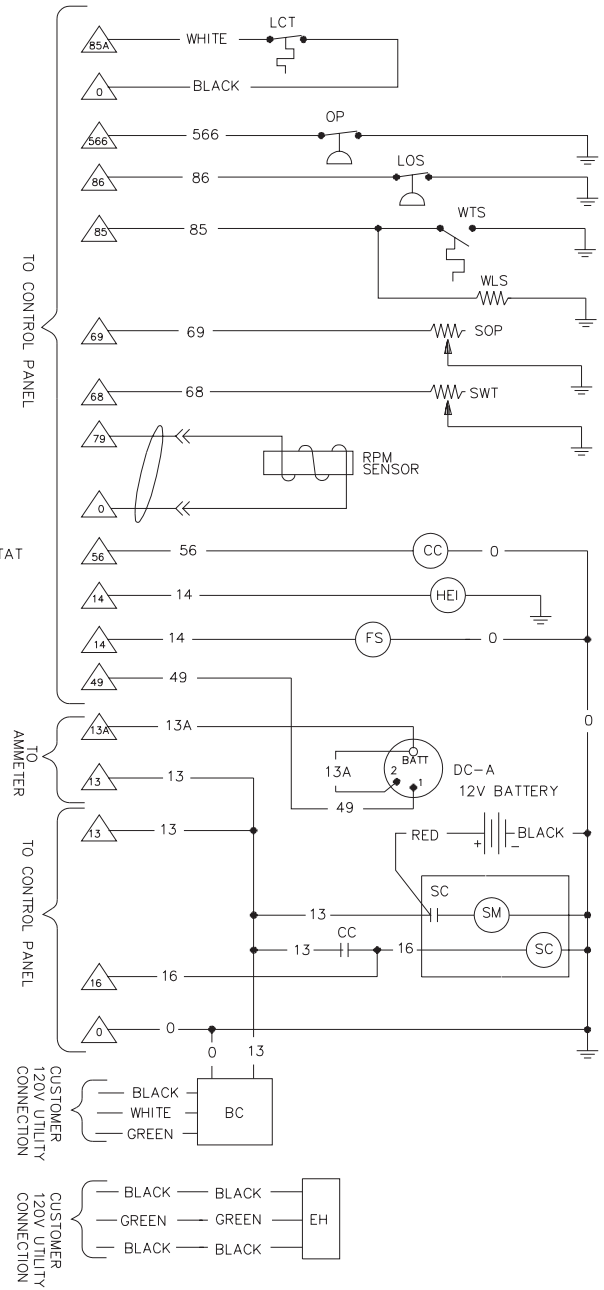
LEGEND

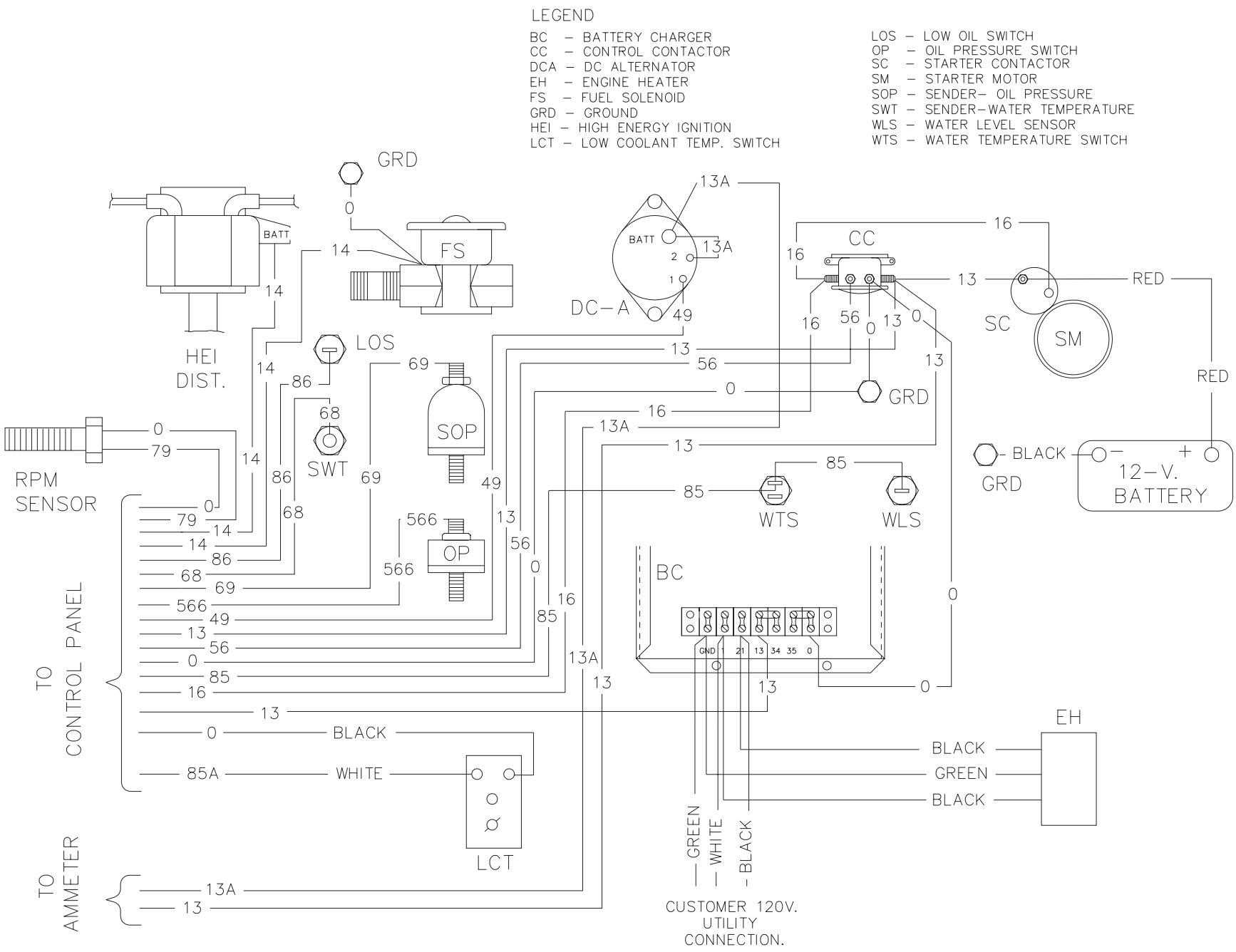
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATT. HEAT. THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARBURETOR FUEL SHUTOFF
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FP – FUEL PUMP
FS – FUEL SOLENOID
GP – GLOW PLUG
HEI – HIGH ENERGY IGNITION
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMP.
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH

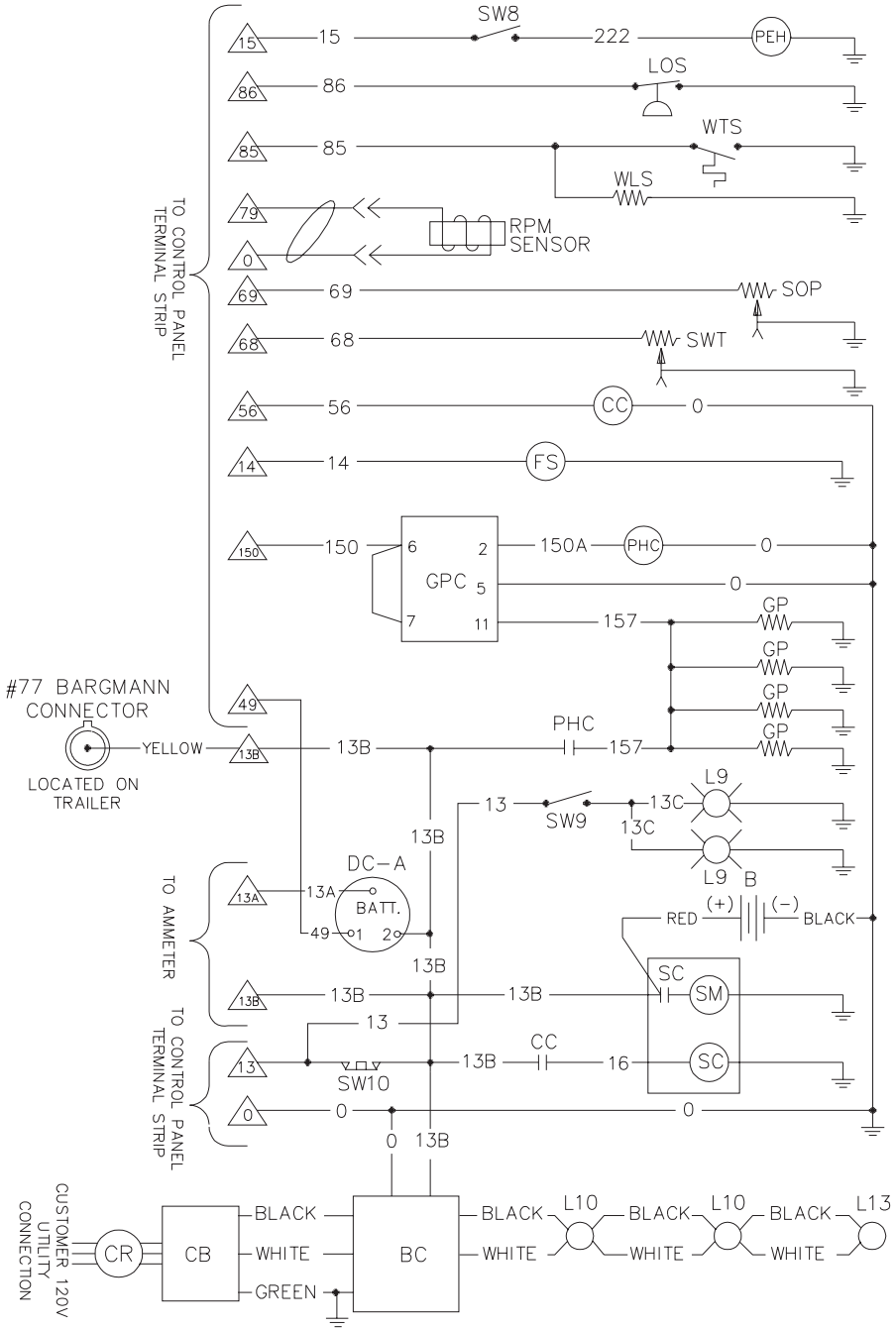



LEGEND
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
CS – CARBURETOR FUEL SHUTOFF
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENGERY IGNITION
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
– WIRE NUT
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A&B OPTION PANELS ONLY
TO CONTROL PANEL TERMINAL STRIP
TO AMMETER
HEI DIST.
FS
LOS
SOP
SWT
RPM
DC–A
CC
SC
SM
WTS
WLS
BC
EH
GRD
12–V. BATTERY
CUSTOMER 120V. UTILITY CONNECTION.
OPTIONAL
BHT
BH
CARB
CS
FP
TO CONTROL PANEL
GASOLINE ONLY
LIQUID PROPANE GAS ONLY

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENERGY IGNITION
LCT – LOW COOLANT TEMP. THERMOSTAT
LOS – LOW OIL SWITCH
OP – OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH




LEGEND
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENERGY IGNITION
LCT – LOW COOLANT TEMP. SWITCH
LOS – LOW OIL SWITCH
OP – OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH
GRD
FS
BATT
HEI
DIST.
DC–A
CC
SC
SM
LOS
SOP
SWT
OP
WTS
WLS
RPM
SENSOR
BC
GRD
12–V.
BATTERY
RED
BLACK
TO
CONTROL PANEL
TO
AMMETER
LCT
EH
BLACK
GREEN
BLACK
WHITE
BLACK
GREEN
WHITE
BLACK
CUSTOMER 120V.
UTILITY
CONNECTION.

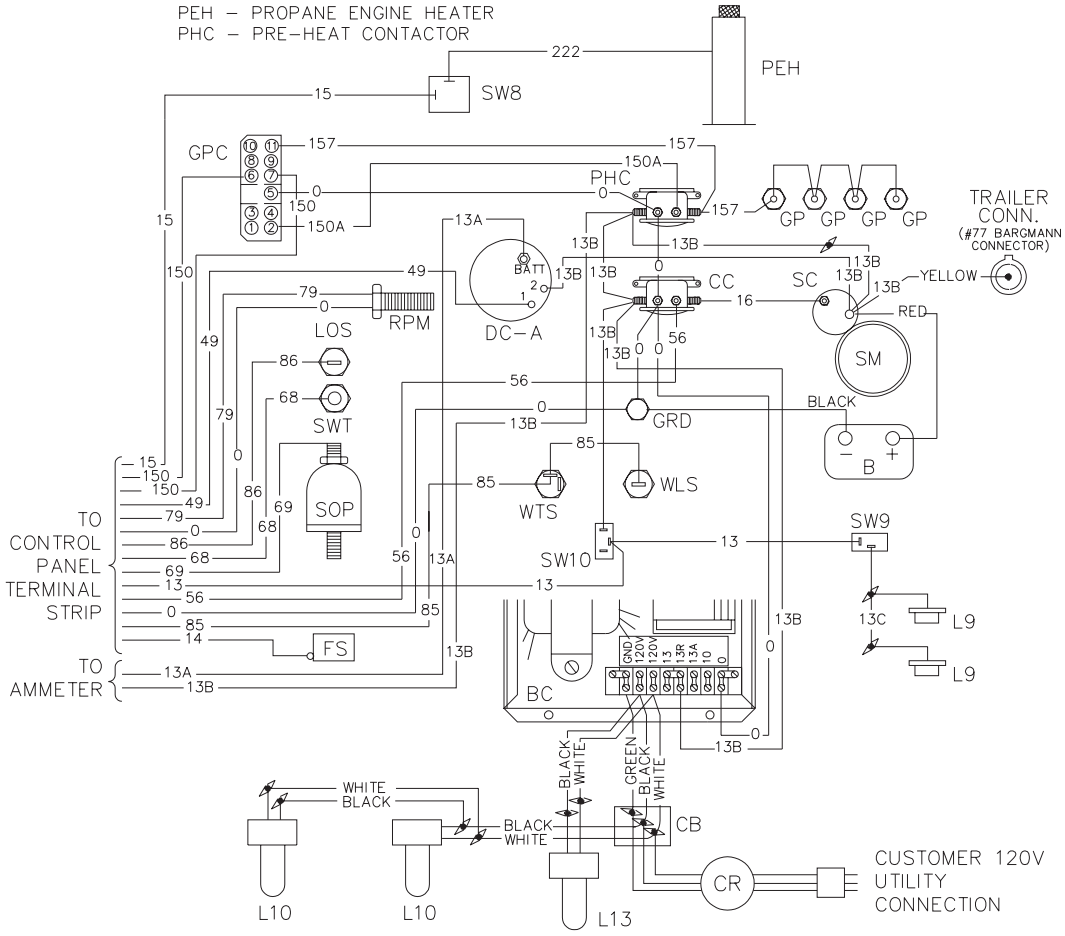


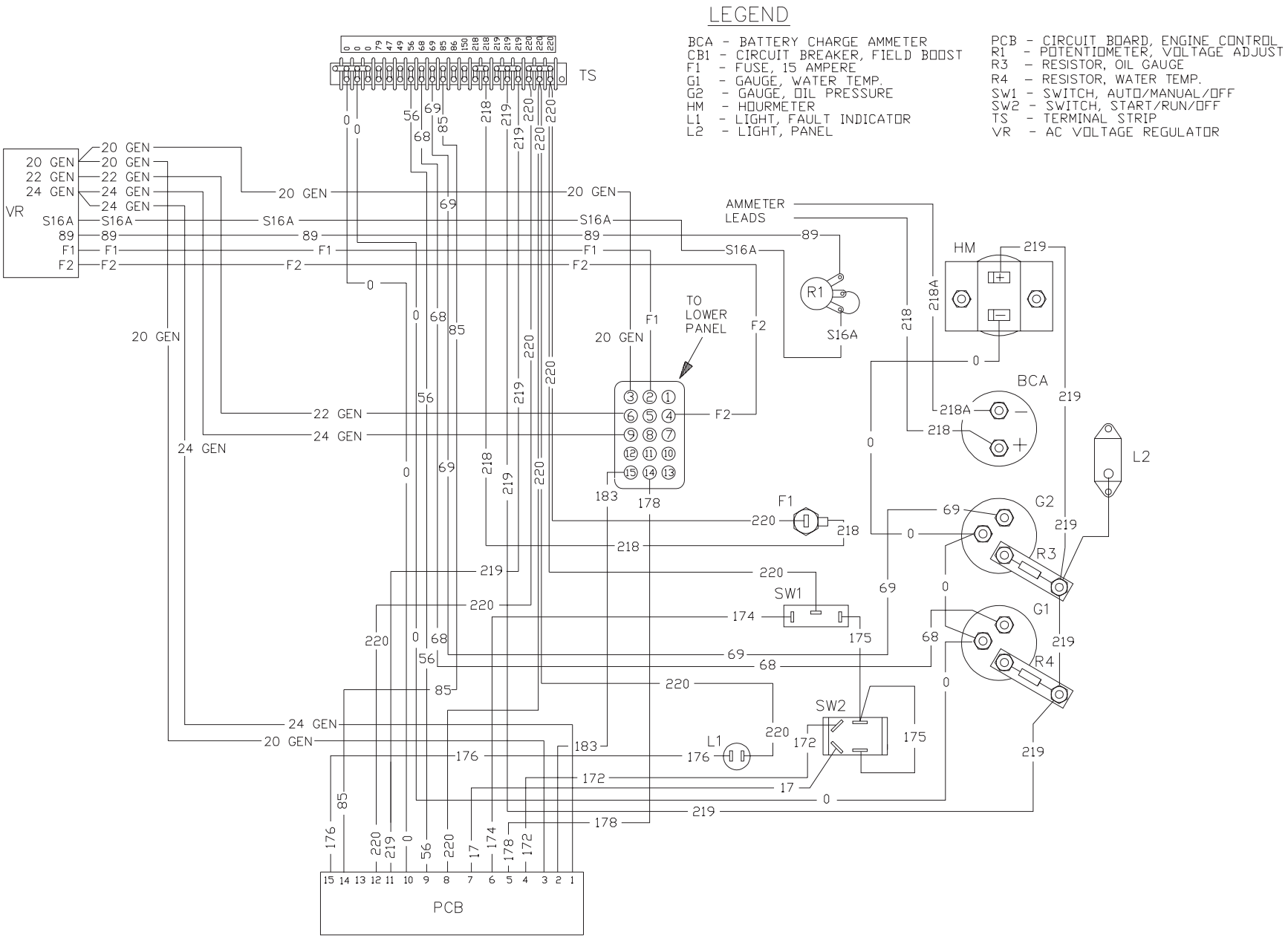
LEGEND

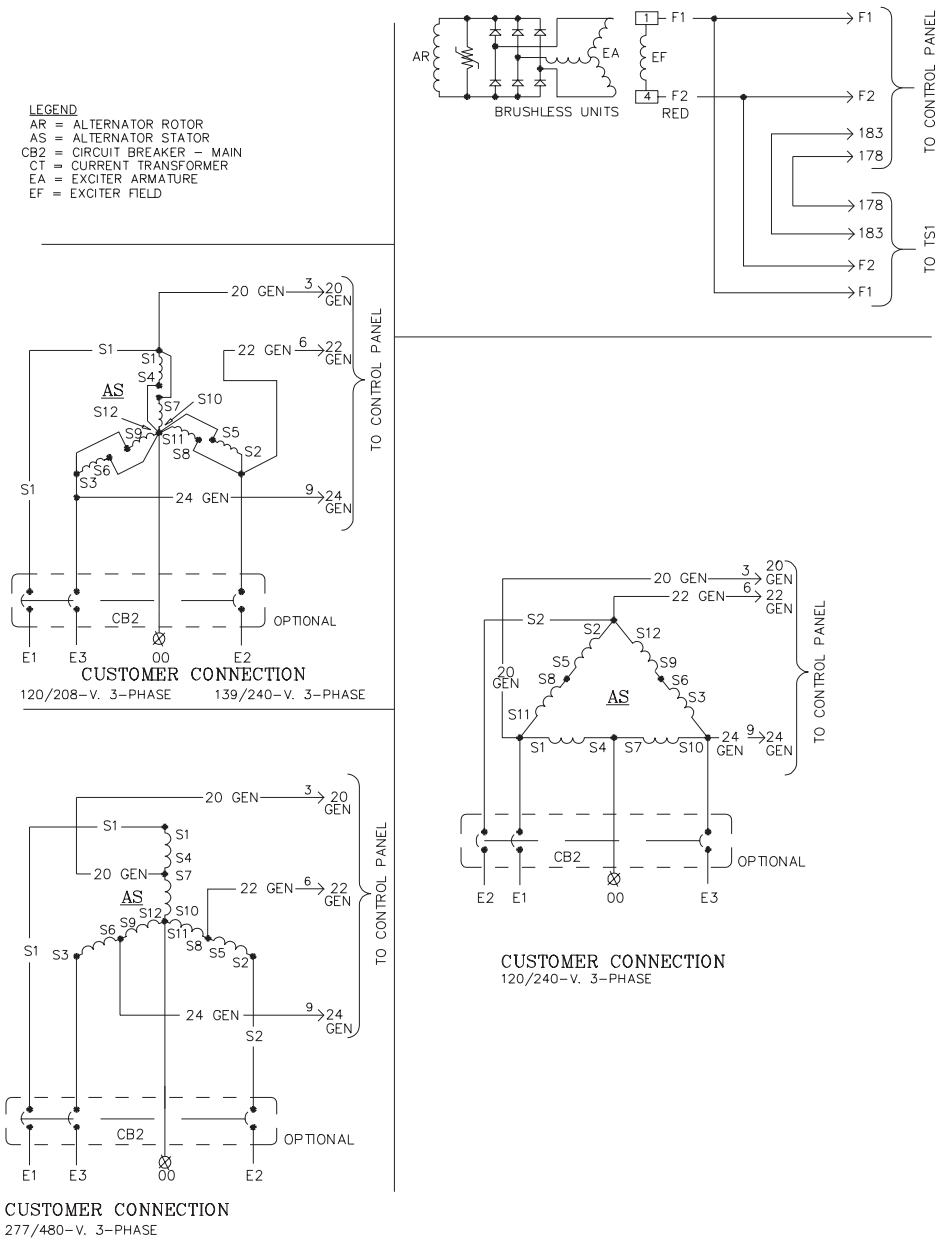
B – BATTERY 12V
BC – BATTERY CHARGER
CB – CONNECTION BOX 120V
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC – GLOW PLUG CONTROLLER
GRD – GROUND
L9 – LAMPS, COMPARTMENT 12VDC
L10 – LAMPS, COMPARTMENT 120VAC
L13 – LAMP, OUTLET BOX 120VAC
LOS – LOW OIL SWITCH
PEH – PROPANE ENGINE HEATER
PHC – PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
SW8 – SWITCH, IGNITOR
SW9 – SWITCH, COMPARTMENT LIGHTS
SW10– SWITCH, RADIATOR SHROUD
TP2 – THERMAL PROTECTOR BATTERY HEATER
WLS – WATER TEMPERATURE SWITCH
WTS – WATER TEMPERATURE SWITCH

LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
CB – CONNECTION BOX 120V
CC – CONTROL CONTACTOR
CR – CORD REEL
DCA – DC ALTERNATOR
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC – GLOW PLUG CONTROLLER
GRD – GROUND
L9 – LAMPS, COMPARTMENT 12VDC
L10 – LAMPS, COMPARTMENT 120VAC
L13 – LAMP, OUTLET BOX 120VAC
LOS – LOW OIL SWITCH
PEH – PROPANE ENGINE HEATER
PHC – PRE-HEAT CONTACTOR
RPM – SPEED SENSOR– "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER–OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
SW8 – SWITCH, IGNITOR
SW9 – SWITCH, RADIATOR SHROUD
SW10– SWITCH, COMPARTMENT LIGHTS
TP2 – THERMAL PROTECTOR BATTERY HEATER
WLS – WATER TEMPERATURE SWITCH
WTS – WATER TEMPERATURE SWITCH
– WIRE NUT

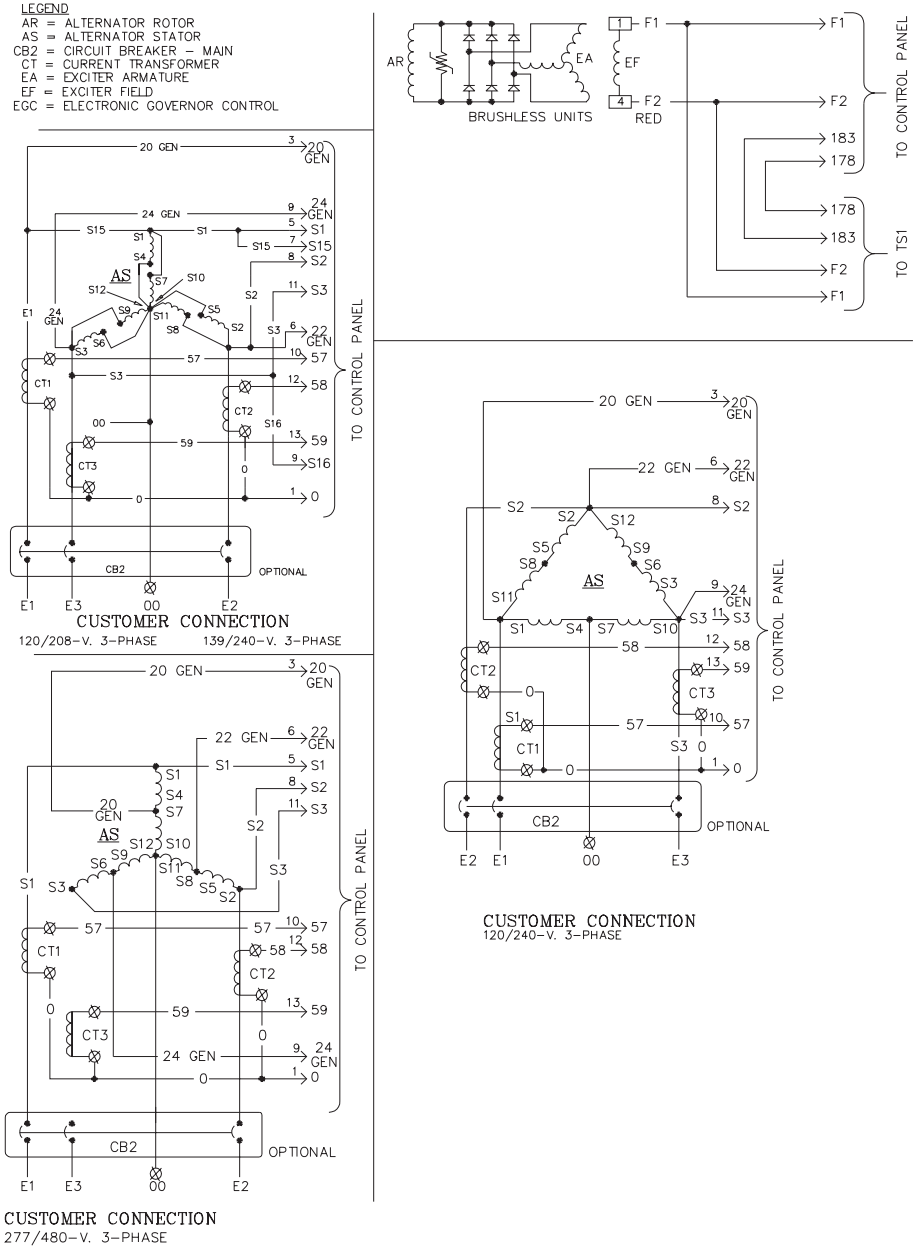



LEGEND
BCA - BATTERY CHARGE AMMETER
CB1 - CIRCUIT BREAKER, FIELD BOOST
F1 - FUSE, 15 AMPERE
G1 - GAUGE, WATER TEMP.
G2 - GAUGE, OIL PRESSURE
HM - HOURMETER
L1 - LIGHT, FAULT INDICATOR
L2 - LIGHT, PANEL
PCB - CIRCUIT BOARD, ENGINE CONTROL
R1 - POTENTIOMETER, VOLTAGE ADJUST
R3 - RESISTOR, OIL GAUGE
R4 - RESISTOR, WATER TEMP.
SW1 - SWITCH, AUTO/MANUAL/OFF
SW2 - SWITCH, START/RUN/OFF
TS - TERMINAL STRIP
VR - AC VOLTAGE REGULATOR
TS
VR
PCB
AMMETER LEADS
TO LOWER PANEL
HM
BCA
R1
SW1
SW2
L1
L2
F1
G1
G2
R3
R4



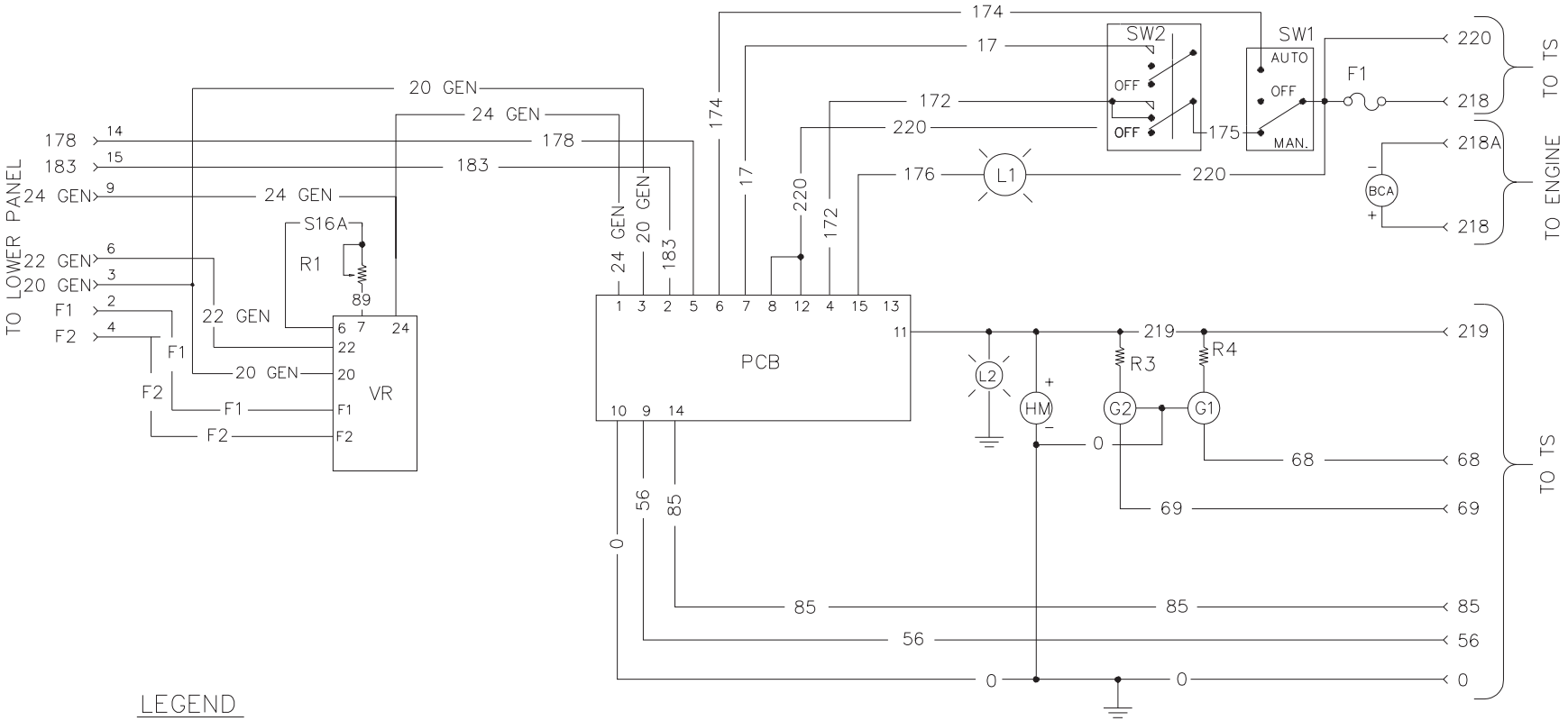
ALTERNATOR AND LOWER PANEL
SCHEMATIC "A" OPTION

SHEET 1 OF 2



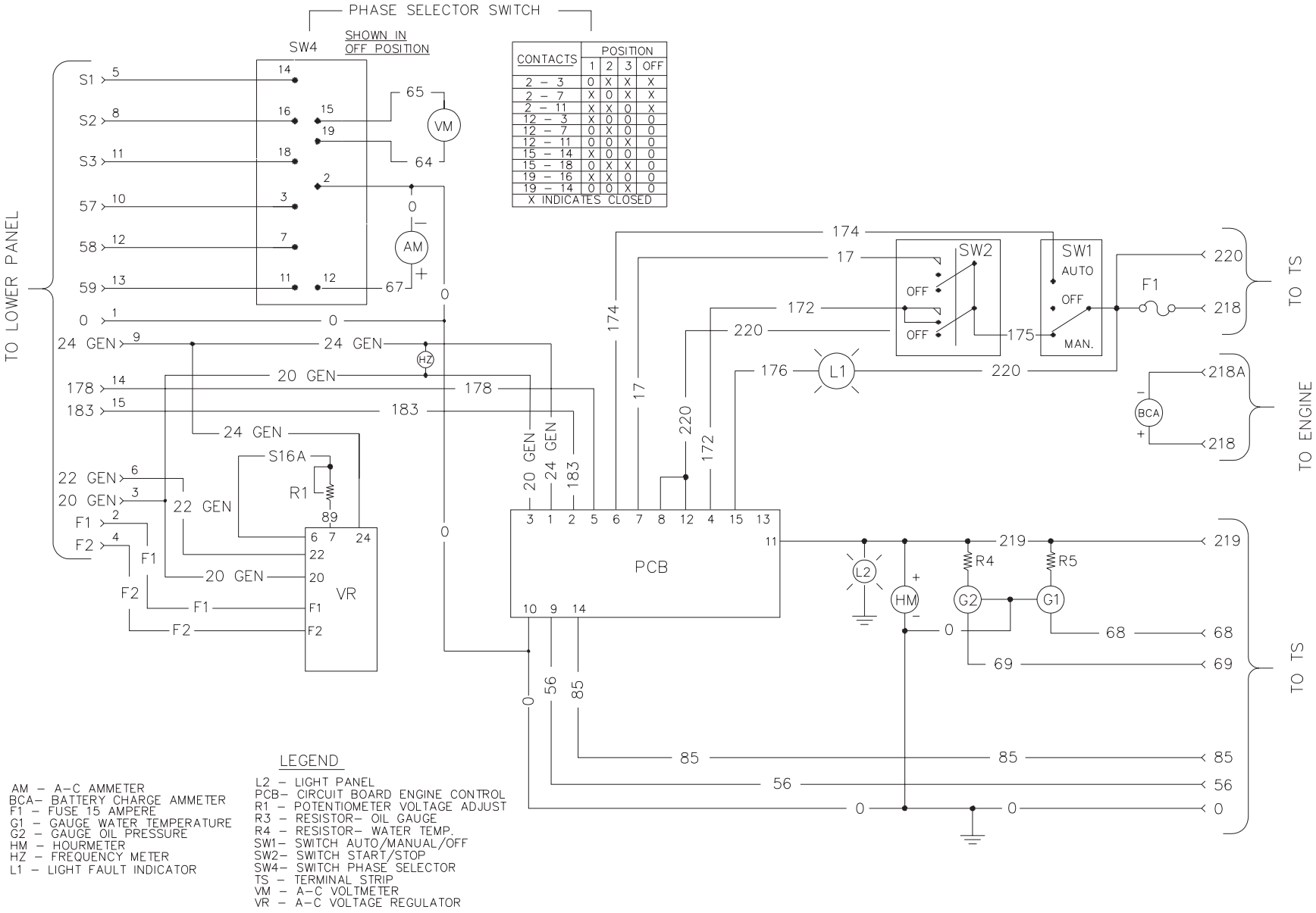
ALTERNATOR AND LOWER PANEL
SCHEMATIC "B" AND "C" OPTION

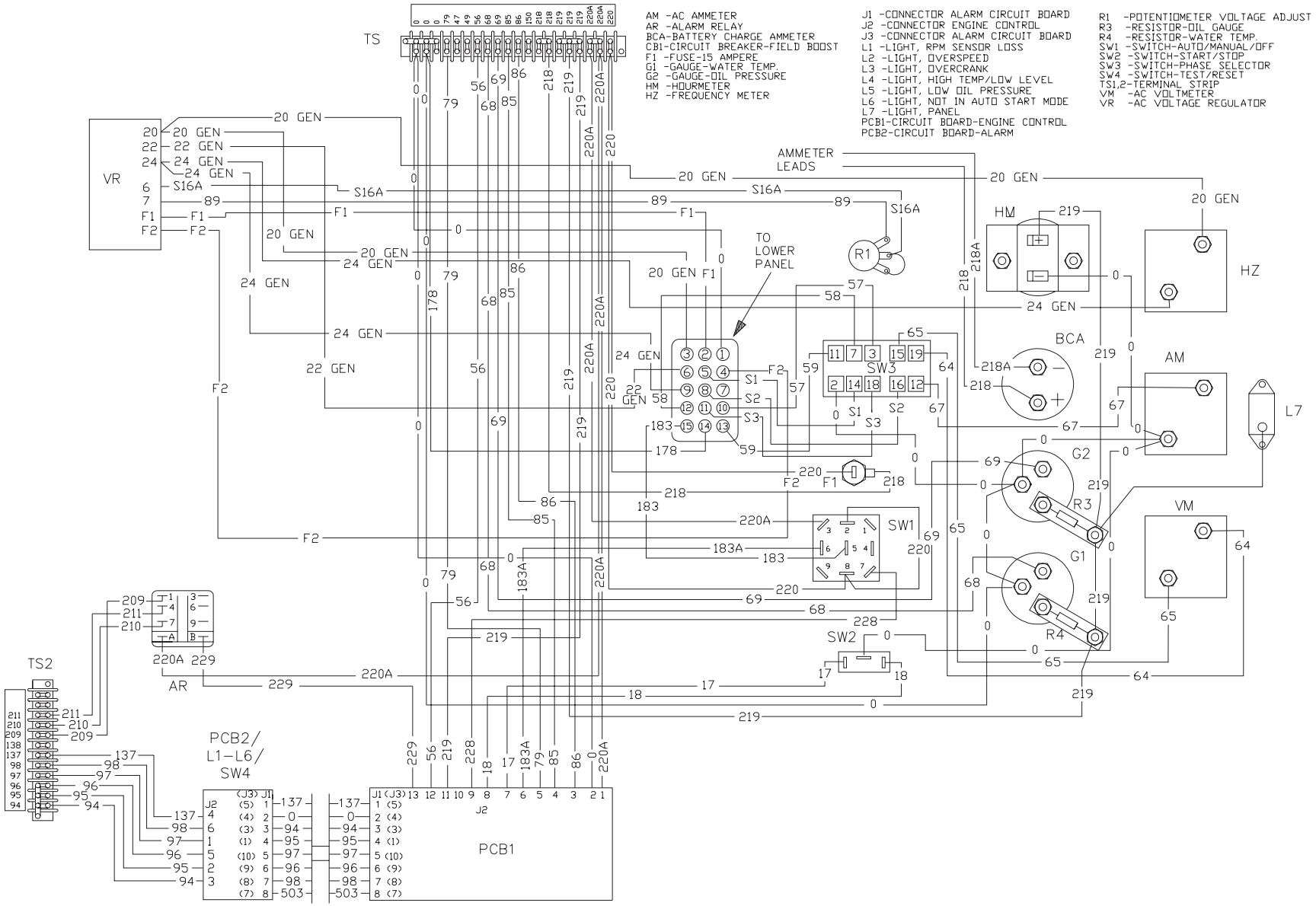
SHEET 2 OF 2

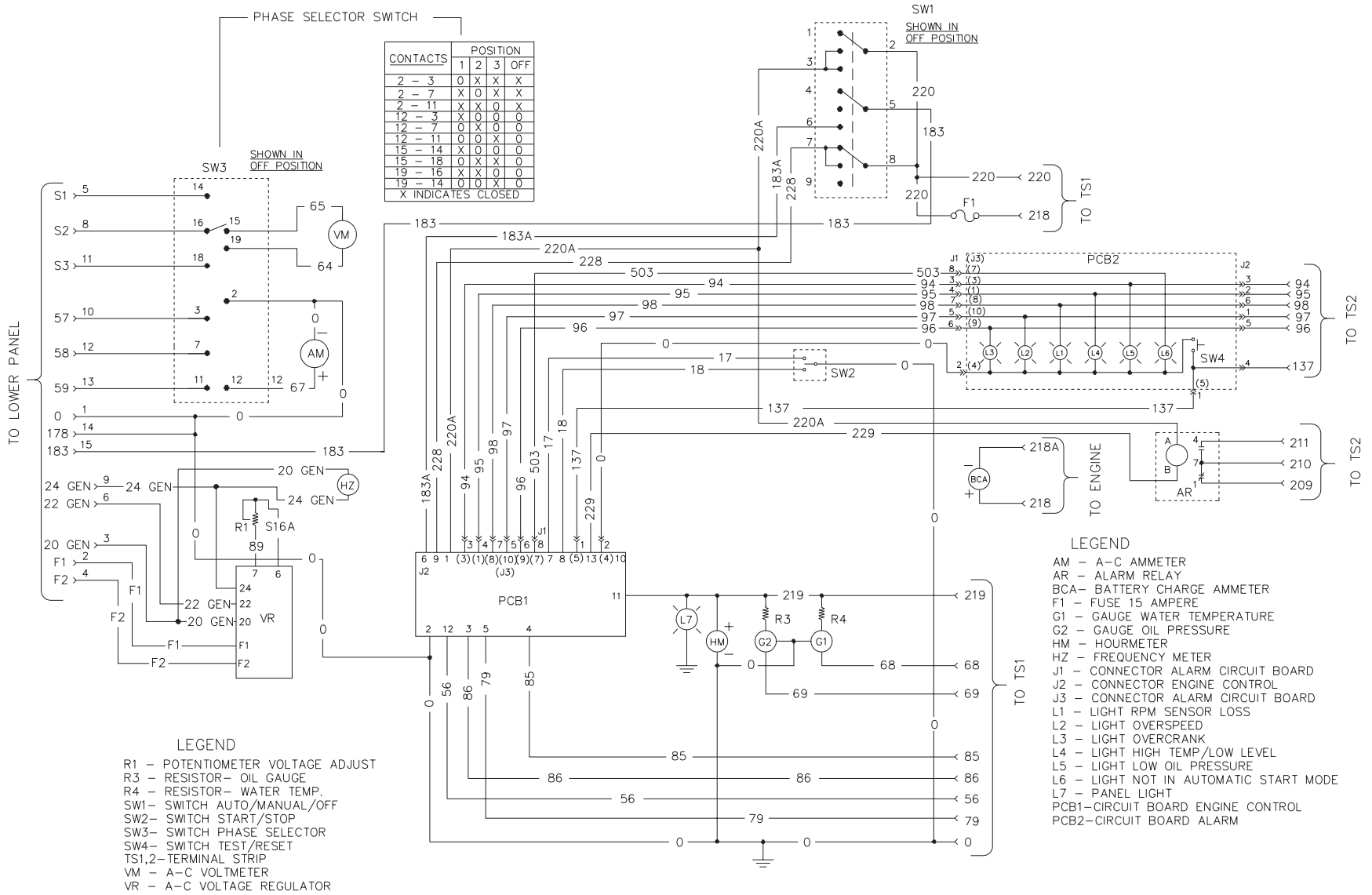


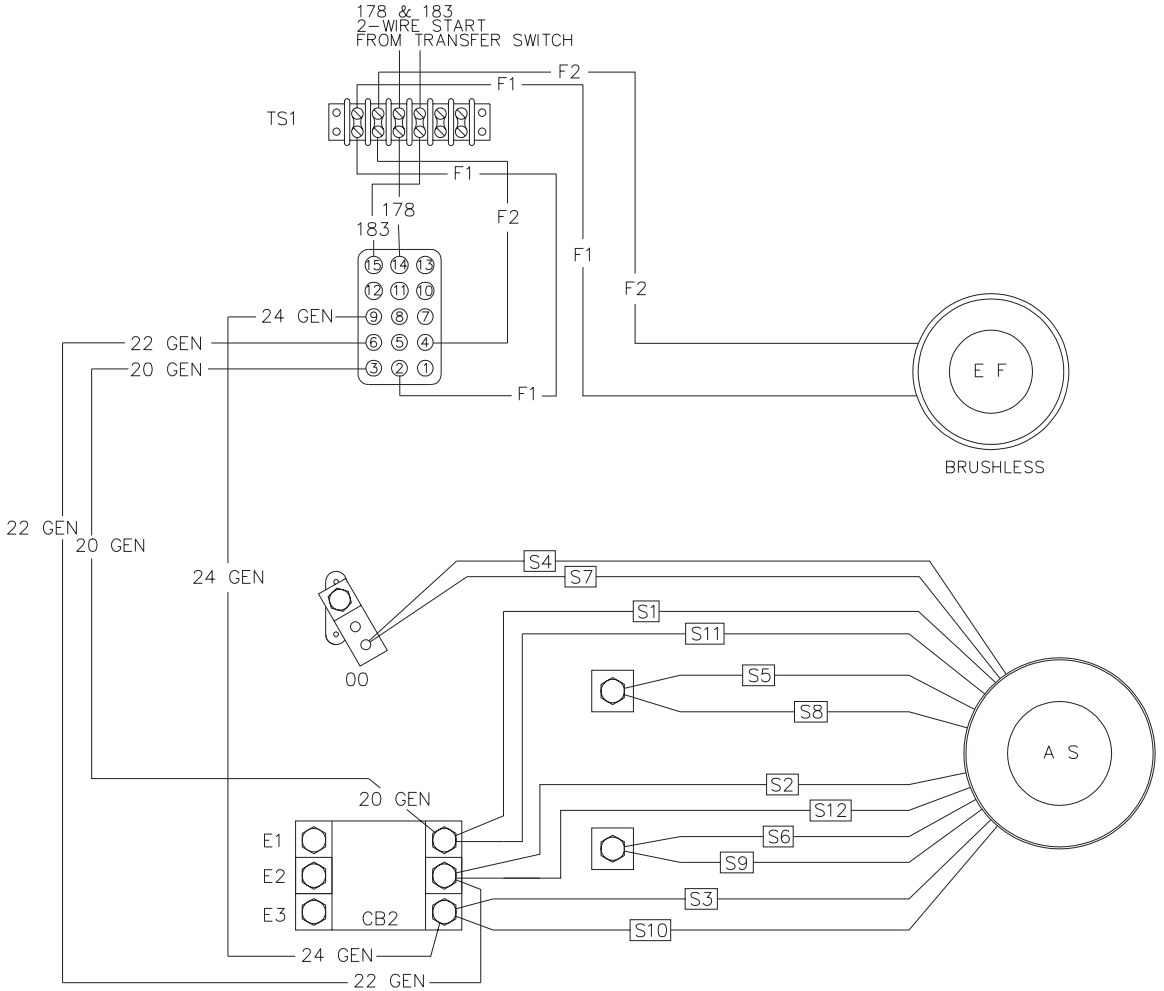
LEGEND

BCA– BATTERY CHARGE AMMETER
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB– CIRCUIT BOARD, ENGINE CONTROL
R1 – POTENTIOMETER VOLTAGE ADJUST
R3 – RESISTOR, OIL GAUGE
R4 – RESISTOR, WATER TEMP.
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
TS – TERMINAL STRIP
VR – A–C VOLTAGE REGULATOR


PHASE SELECTOR SWITCH
SW4
SHOWN IN OFF POSITION
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
TO LOWER PANEL
S1
S2
S3
57
58
59
0
24 GEN
178
183
22 GEN
20 GEN
F1
F2
S16A
R1
89
VR
VM
AM
HZ
65
64
67
SW2
SW1
AUTO
OFF
MAN.
F1
L1
L2
HM
BCA
R4
R5
G1
G2
PCB
TO TS
TO ENGINE
TO TS
174
17
172
220
175
176
218A
218
219
68
69
56
85
LEGEND
AM – A–C AMMETER
BCA– BATTERY CHARGE AMMETER
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LIGHT FAULT INDICATOR
L2 – LIGHT PANEL
PCB– CIRCUIT BOARD ENGINE CONTROL
R1 – POTENTIOMETER VOLTAGE ADJUST
R3 – RESISTOR– OIL GAUGE
R4 – RESISTOR– WATER TEMP.
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW4– SWITCH PHASE SELECTOR
TS – TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR


AM -AC AMMETER
AR -ALARM RELAY
BCA-BATTERY CHARGE AMMETER
CB1-CIRCUIT BREAKER-FIELD BOOST
F1 -FUSE-15 AMPERE
G1 -GAUGE-WATER TEMP.
G2 -GAUGE-OIL PRESSURE
HM -HOURMETER
HZ -FREQUENCY METER
J1 -CONNECTOR ALARM CIRCUIT BOARD
J2 -CONNECTOR ENGINE CONTROL
J3 -CONNECTOR ALARM CIRCUIT BOARD
L1 -LIGHT, RPM SENSOR LOSS
L2 -LIGHT, OVERSPEED
L3 -LIGHT, OVERCRANK
L4 -LIGHT, HIGH TEMP/LOW LEVEL
L5 -LIGHT, LOW OIL PRESSURE
L6 -LIGHT, NOT IN AUTO START MODE
L7 -LIGHT, PANEL
PCB1-CIRCUIT BOARD-ENGINE CONTROL
PCB2-CIRCUIT BOARD-ALARM
R1 -POTENTIOMETER VOLTAGE ADJUST
R3 -RESISTOR-OIL GAUGE
R4 -RESISTOR-WATER TEMP.
SW1 -SWITCH-AUTO/MANUAL/OFF
SW2 -SWITCH-START/STOP
SW3 -SWITCH-PHASE SELECTOR
SW4 -SWITCH-TEST/RESET
TS1,2-TERMINAL STRIP
VM -AC VOLTMETER
VR -AC VOLTAGE REGULATOR
TS
VR
AMMETER LEADS
TO LOWER PANEL
HM
HZ
BCA
AM
L7
G1
G2
R1
R3
R4
SW1
SW2
SW3
TS2
AR
PCB2/ L1-L6/ SW4
PCB1


PHASE SELECTOR SWITCH
CONTACTS
POSITION
1
2
3
OFF
2 – 3
2 – 7
2 – 11
12 – 3
12 – 7
12 – 11
15 – 14
15 – 18
19 – 16
19 – 14
X INDICATES CLOSED
SW1
SHOWN IN OFF POSITION
SW3
SHOWN IN OFF POSITION
TO LOWER PANEL
TO TS1
TO TS2
TO ENGINE
PCB1
PCB2
SW2
SW4
VM
AM
HZ
VR
R1
S16A
F1
BCA
AR
L1
L2
L3
L4
L5
L6
L7
HM
G1
G2
R3
R4
LEGEND
R1 – POTENTIOMETER VOLTAGE ADJUST
R3 – RESISTOR– OIL GAUGE
R4 – RESISTOR– WATER TEMP.
SW1– SWITCH AUTO/MANUAL/OFF
SW2– SWITCH START/STOP
SW3– SWITCH PHASE SELECTOR
SW4– SWITCH TEST/RESET
TS1,2–TERMINAL STRIP
VM – A–C VOLTMETER
VR – A–C VOLTAGE REGULATOR
LEGEND
AM – A–C AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
F1 – FUSE 15 AMPERE
G1 – GAUGE WATER TEMPERATURE
G2 – GAUGE OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – PANEL LIGHT
PCB1–CIRCUIT BOARD ENGINE CONTROL
PCB2–CIRCUIT BOARD ALARM



E1 TO E3 – 240V
E1 TO 00 } 120V
E3 TO 00

CUSTOMER CONNECTION
120/240V 1-PHASE

E1 TO E2
E2 TO E3 } 240V
E3 TO E1
E1 TO 00 } 120V
E3 TO 00

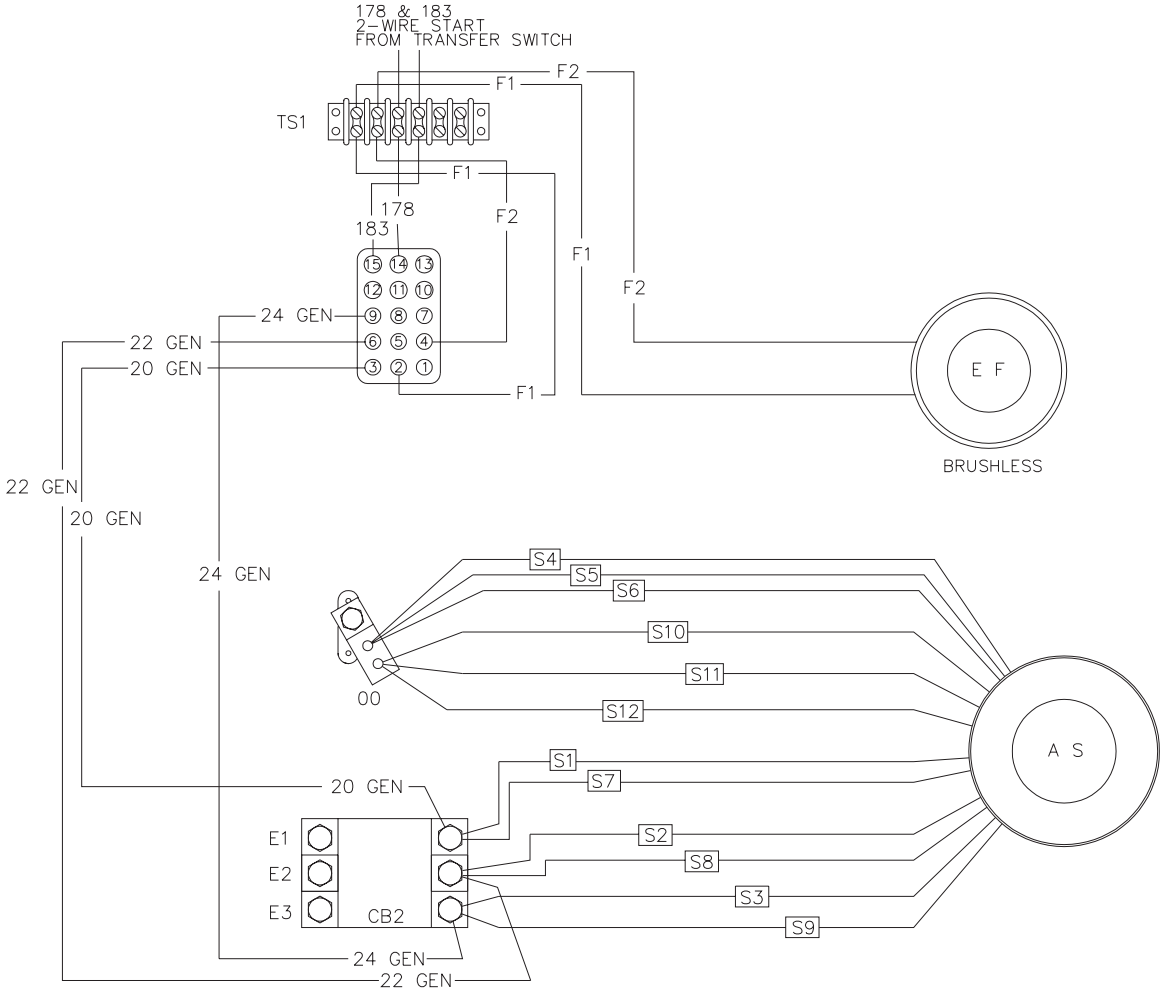
CUSTOMER CONNECTION
120/240V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
TS1 = TERMINAL STRIP

SHEET 1 OF 6

"A" OPTION



E1 TO E2	208V
E2 TO E3	
E3 TO E1	
E1 TO 00	120V
E2 TO 00	
E3 TO 00	

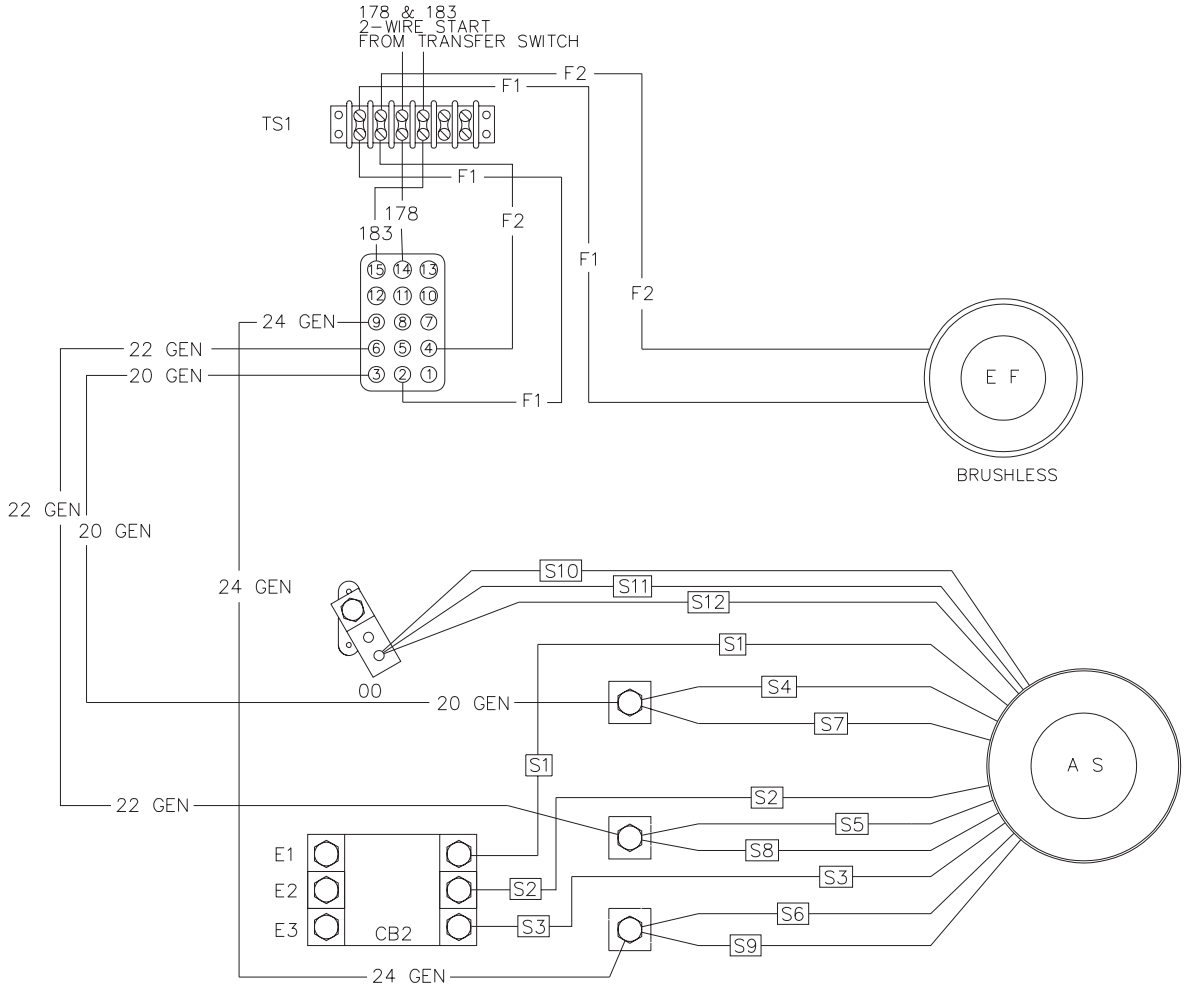
CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
TS1 = TERMINAL STRIP

SHEET 2 OF 6

"A" OPTION



E1 TO E2 E2 TO E3 E3 TO E1	480V
E1 TO 00 E2 TO 00 E3 TO 00	277V

CUSTOMER CONNECTION

277/480V 3-PHASE

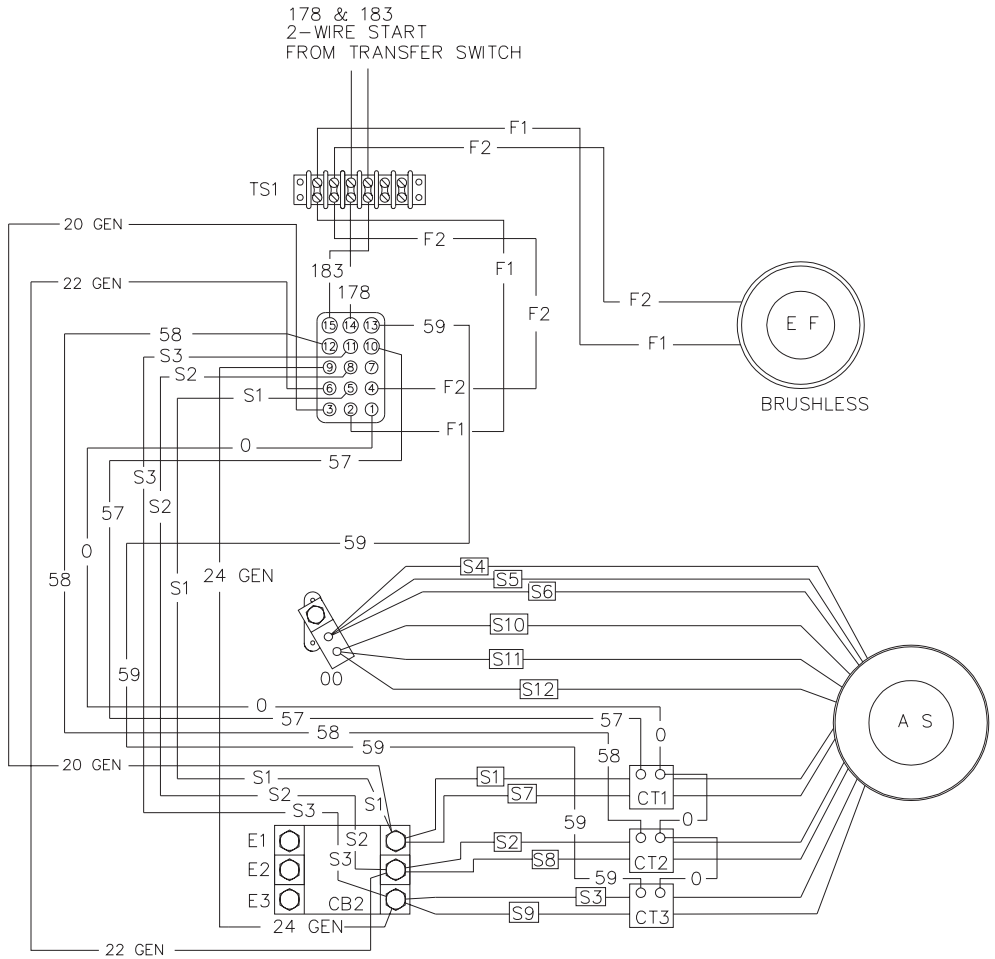
240/416V 3-PHASE

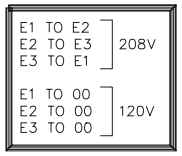
LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
TS1 = TERMINAL STRIP

SHEET 3 OF 6

"A" OPTION

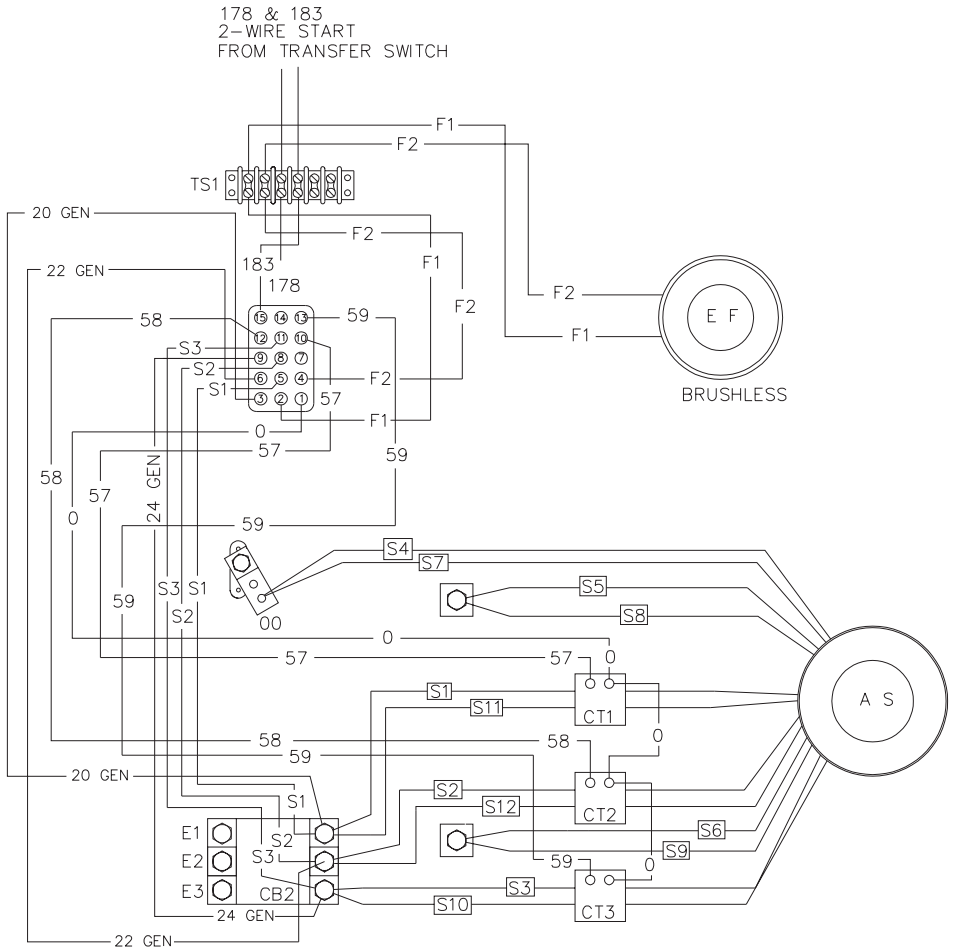


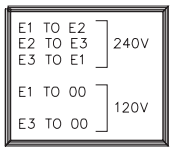


CUSTOMER CONNECTION
120/208V 3-PHASE
139/240V 3-PHASE

LEGEND
AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
TS1 – TERMINAL STRIP

"B" & "C" OPTION SHT 4-6





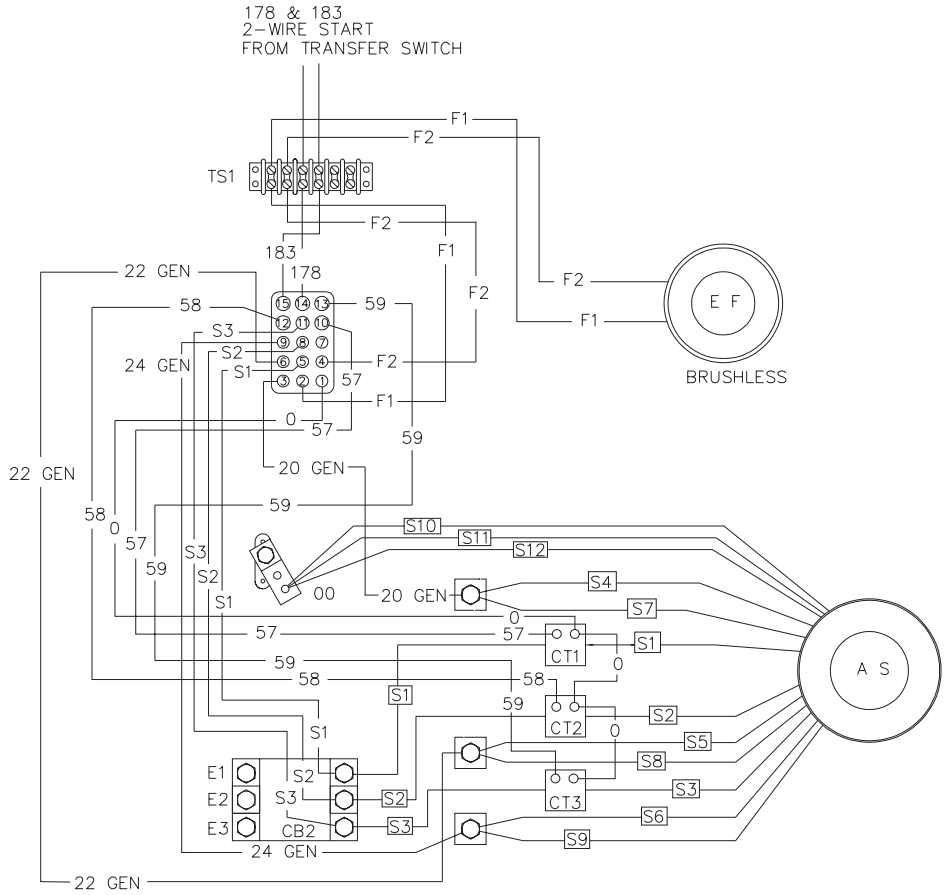
CUSTOMER CONNECTION
120/240V 3-PHASE

LEGEND

AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
TS1 – TERMINAL STRIP

SHT 5-6

"B" & "C" OPTION



E1 TO E2 E2 TO E3 E3 TO E1	480V
E1 TO 00 E2 TO 00 E3 TO 00	277V

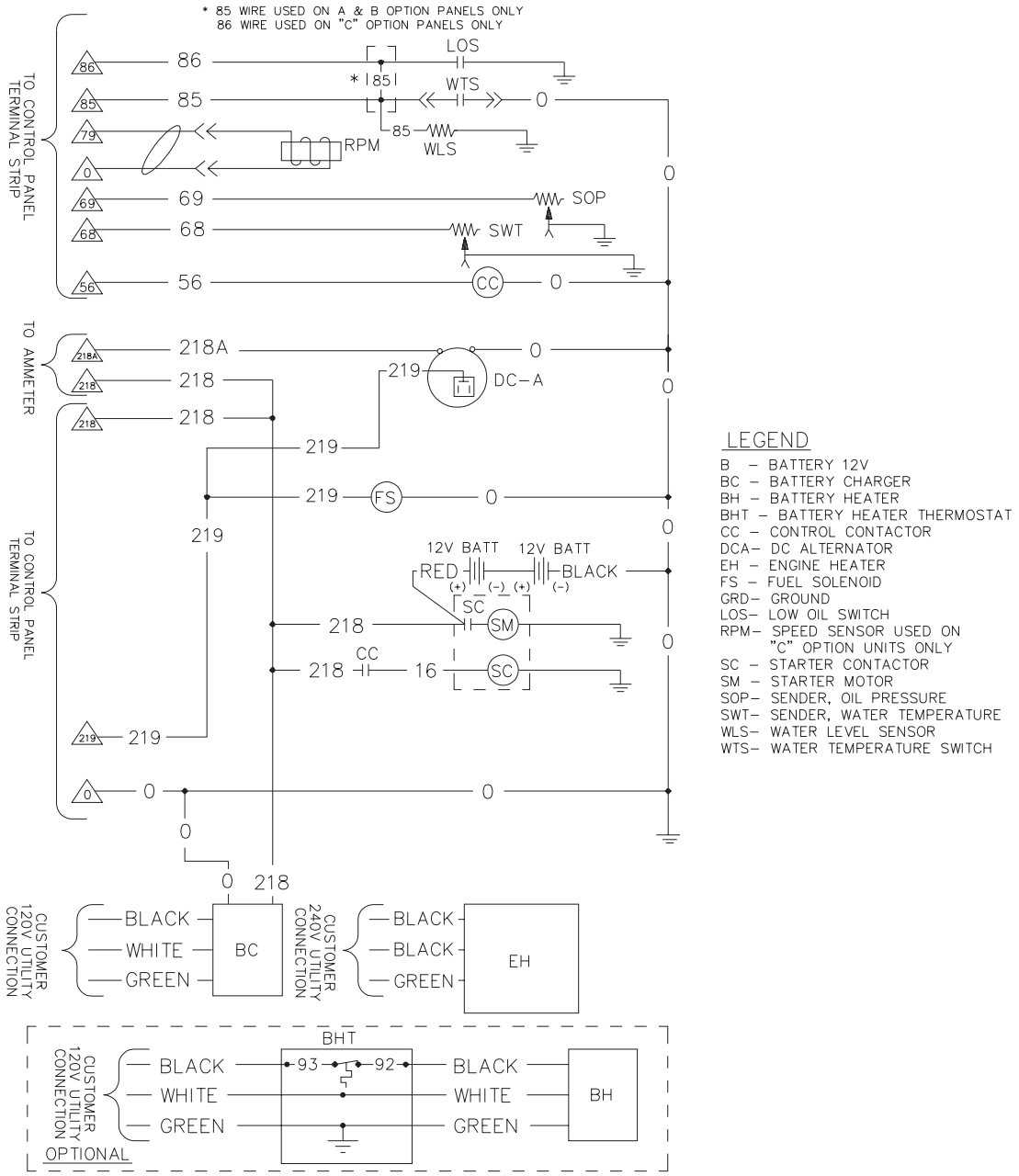
CUSTOMER CONNECTION
277/480V 3-PHASE
240/416V 3-PHASE

LEGEND

AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
TS1 – TERMINAL STRIP

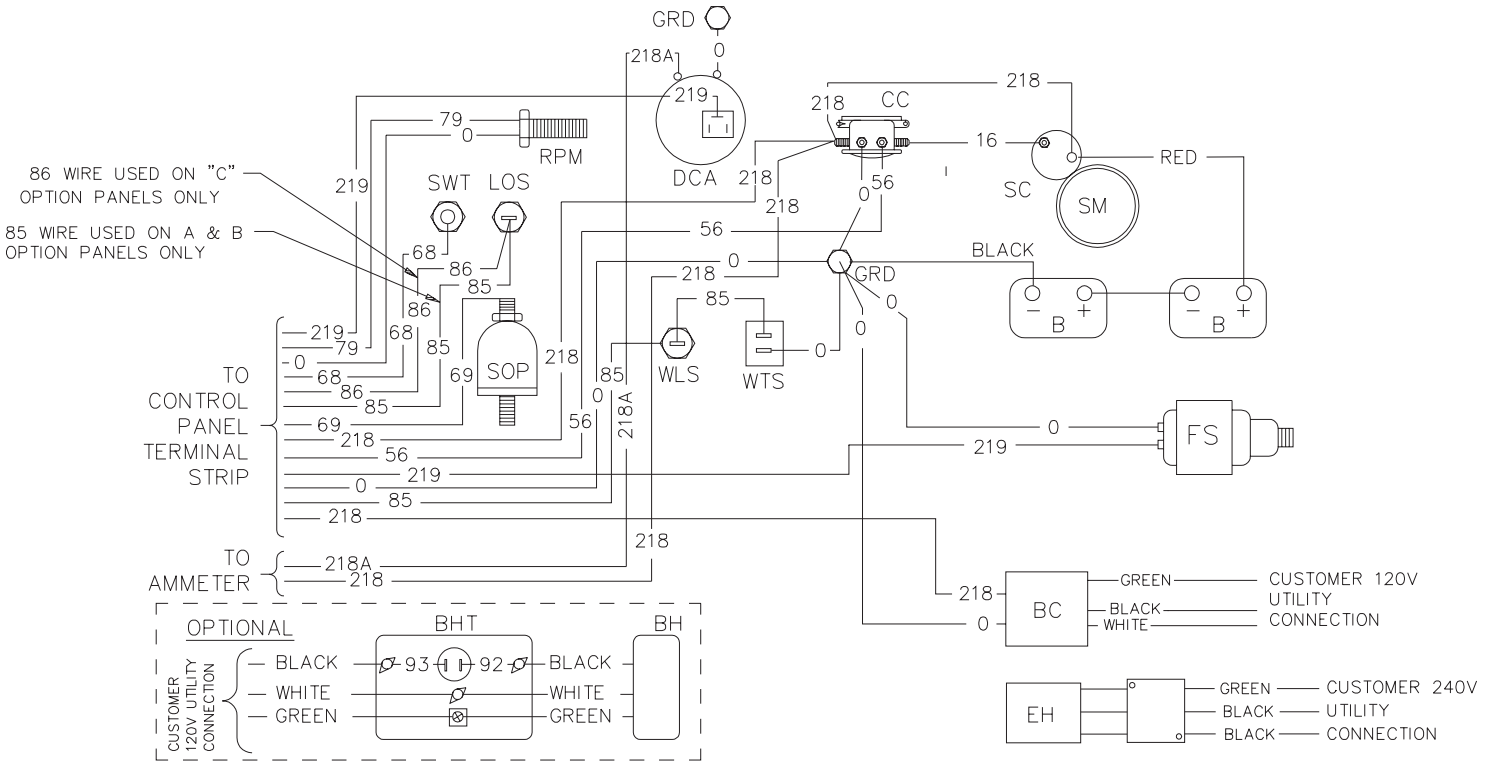
"B" & "C" OPTION

SHT 6-6



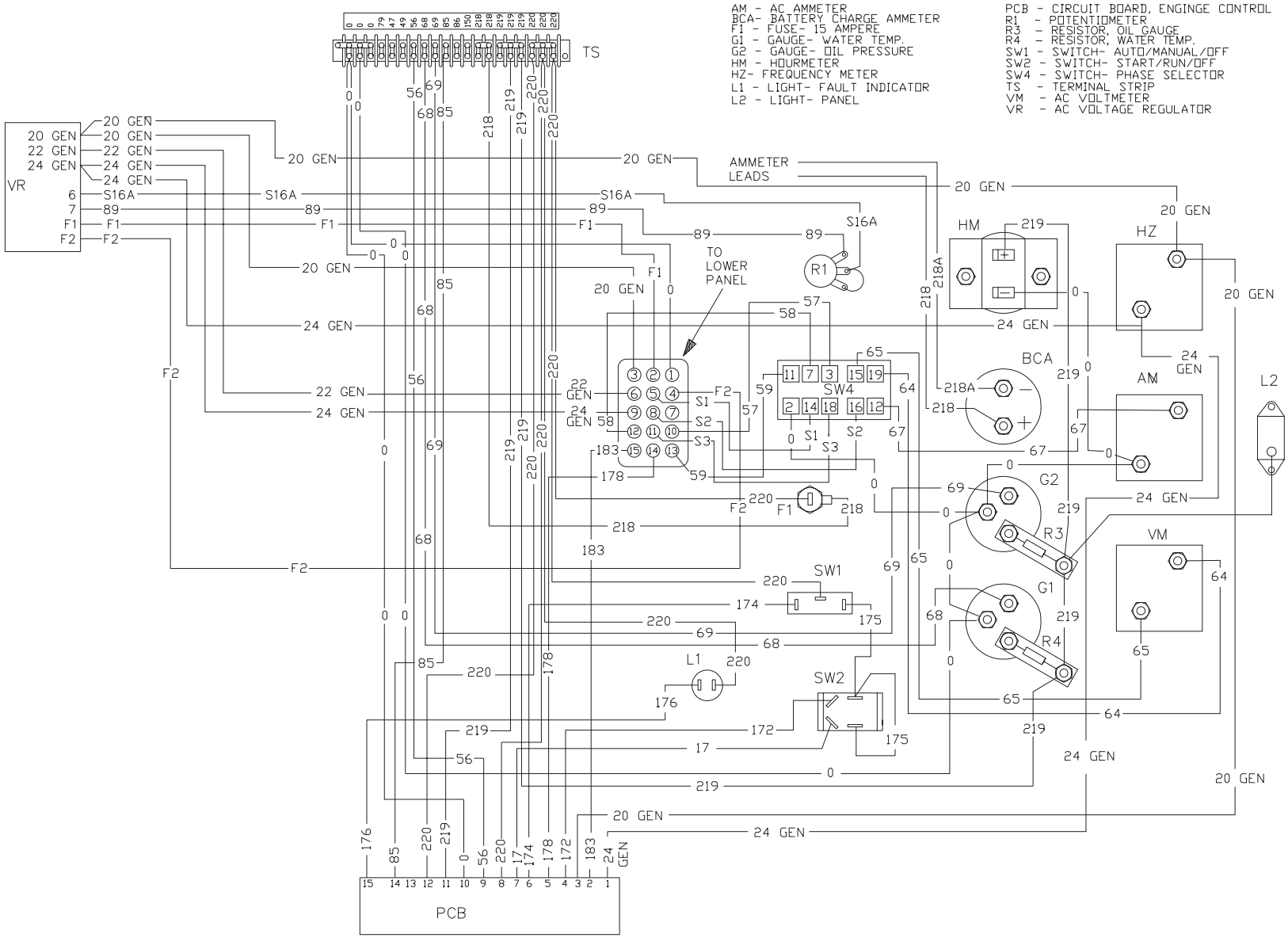
LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
RPM– SPEED SENSOR USED ON "C" OPTION UNITS ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



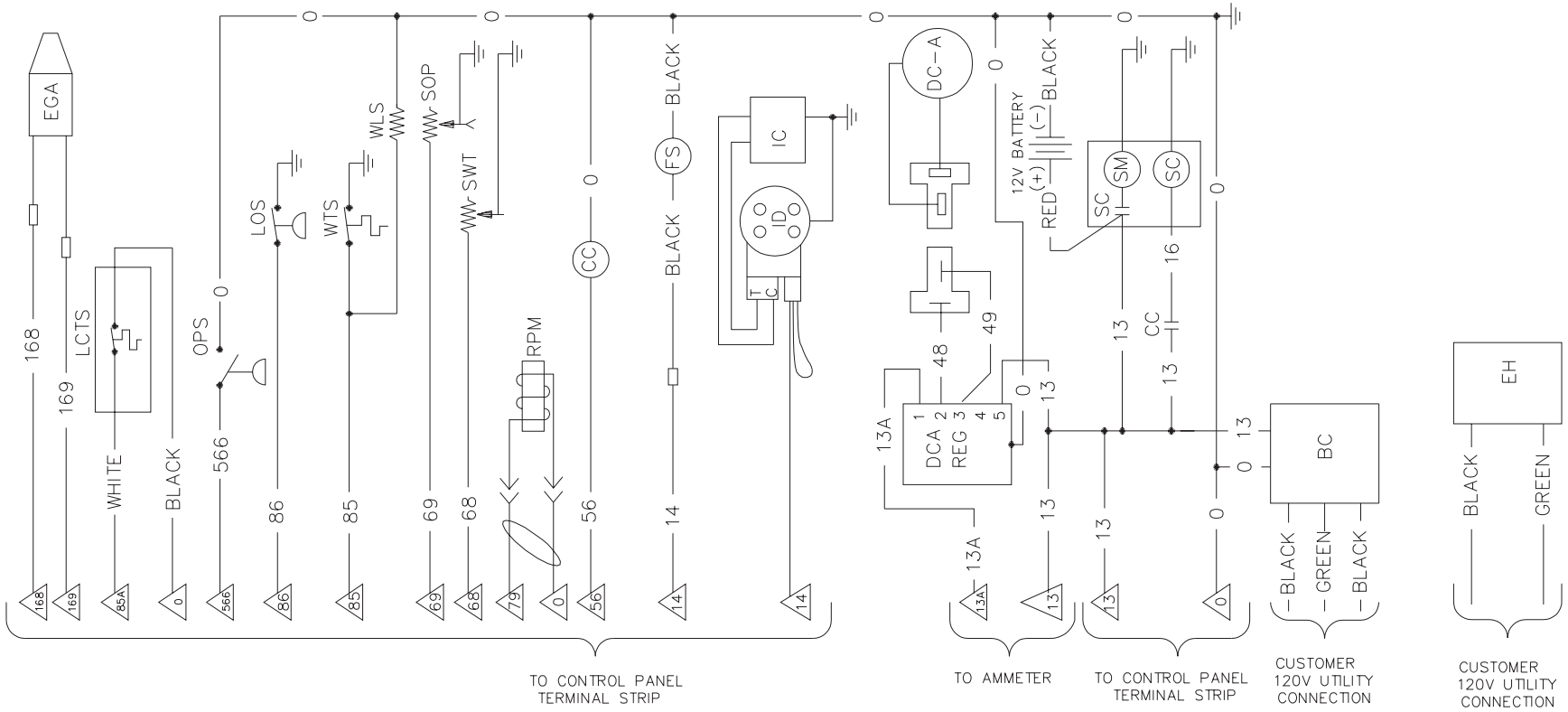
LEGEND

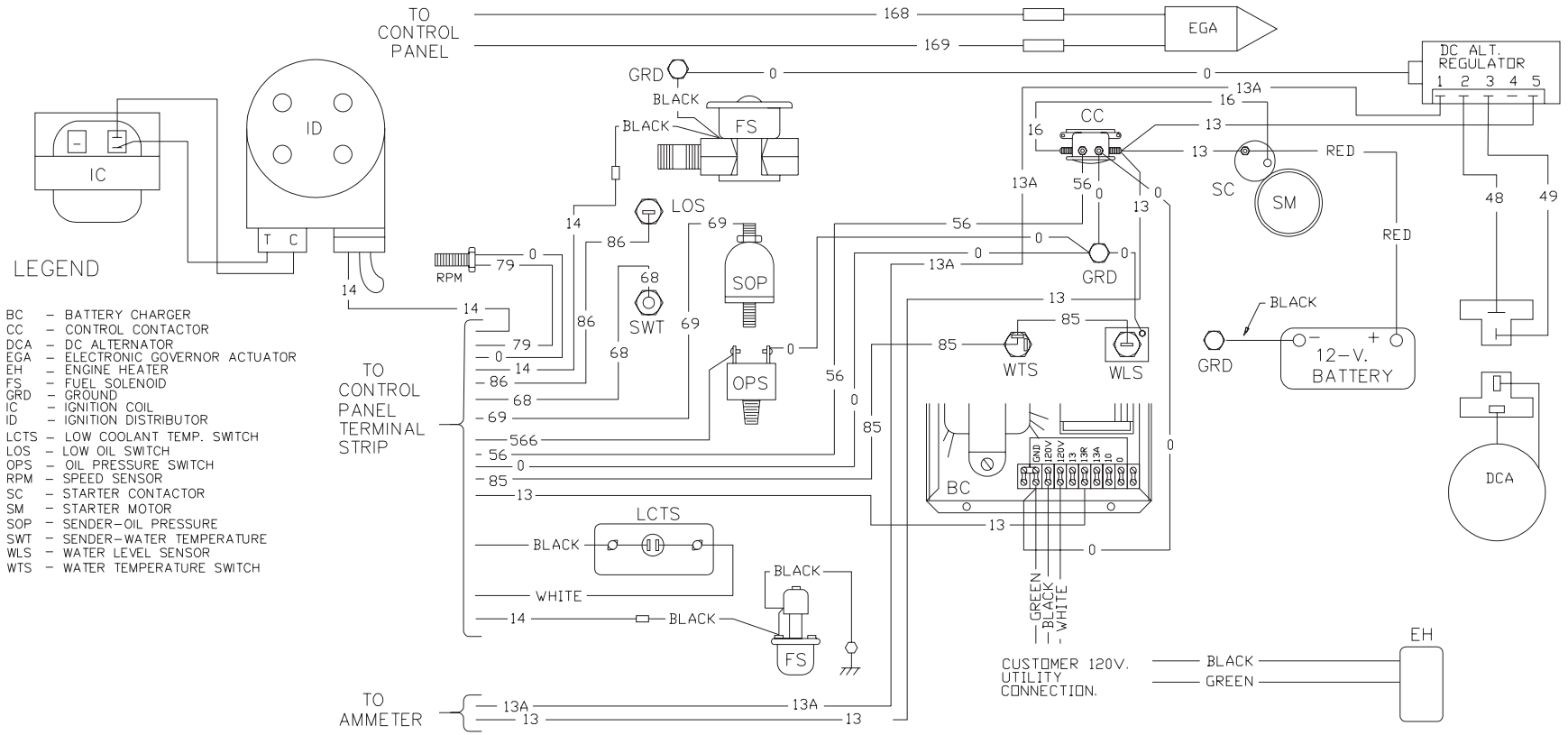
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WTS– WATER TEMPERATURE SWITCH


AM - AC AMMETER
BCA- BATTERY CHARGE AMMETER
F1 - FUSE- 15 AMPERE
G1 - GAUGE- WATER TEMP.
G2 - GAUGE- OIL PRESSURE
HM - HOURMETER
HZ- FREQUENCY METER
L1 - LIGHT- FAULT INDICATOR
L2 - LIGHT- PANEL
PCB - CIRCUIT BOARD, ENGINGE CONTROL
R1 - POTENTIOMETER
R3 - RESISTOR, OIL GAUGE
R4 - RESISTOR, WATER TEMP.
SW1 - SWITCH- AUTO/MANUAL/OFF
SW2 - SWITCH- START/RUN/OFF
SW4 - SWITCH- PHASE SELECTOR
TS - TERMINAL STRIP
VM - AC VOLTMETER
VR - AC VOLTAGE REGULATOR
TS
VR
PCB
AMMETER LEADS
TO LOWER PANEL
HM
HZ
BCA
AM
VM
L1
L2
R1
R3
R4
SW1
SW2
SW4
G1
G2
20 GEN
22 GEN
24 GEN
S16A
F1
F2
S1
S2
S3

LEGEND

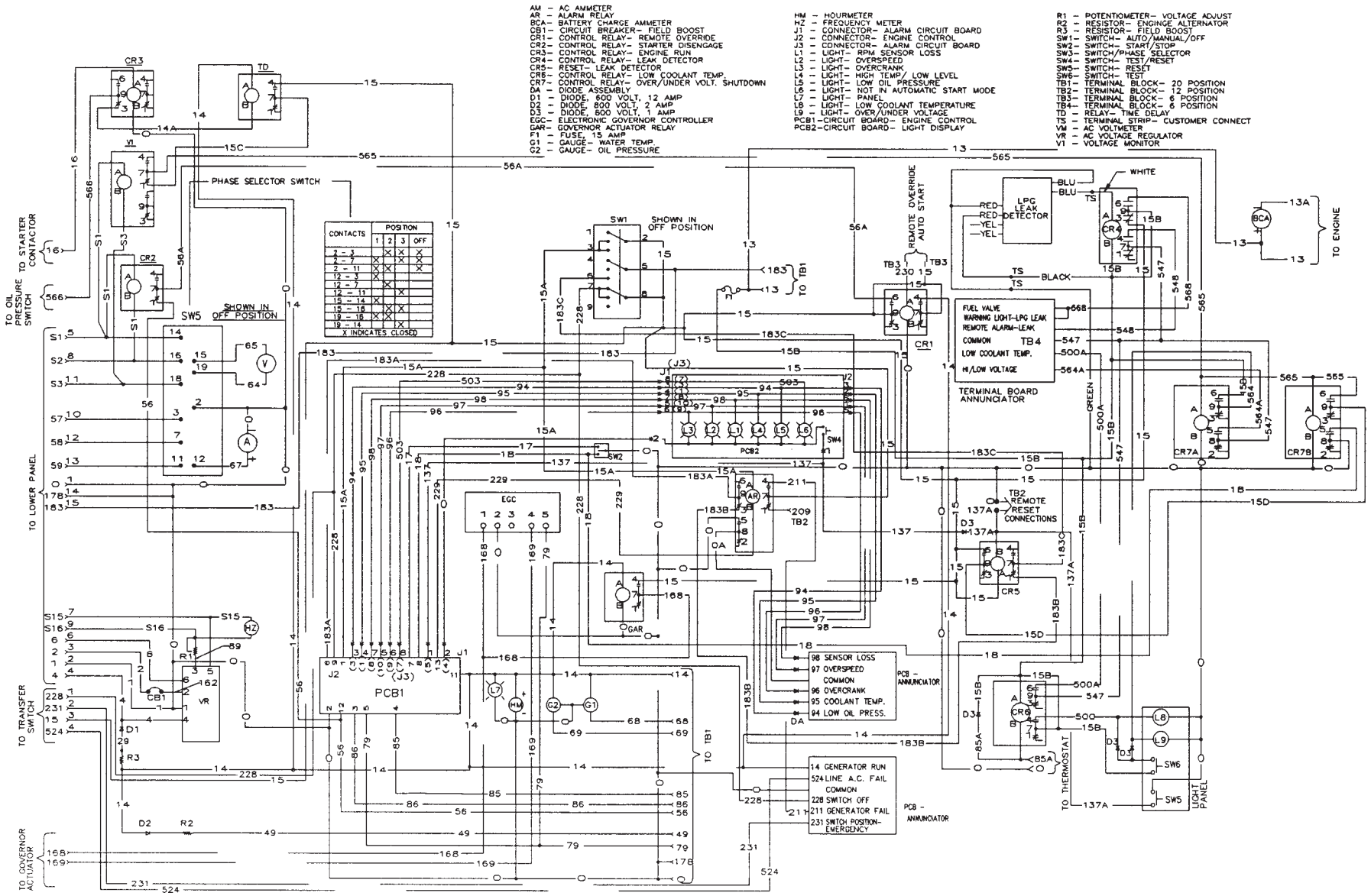
BC - BATTERY CHARGER
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EGA - ELECTRONIC GOVERNOR ACTUATOR
EH - ENGINE HEATER
FS - FUEL SHUTOFF SOLENOID
G - GROUND
IC - IGNITION COIL
ID - IGNITION DISTRIBUTOR
LCTS - LOW COOLANT TEMP. SWITCH
LOS - LOW OIL SWITCH
OPS - OIL PRESSURE SWITCH
RPM - SPEED SENSOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
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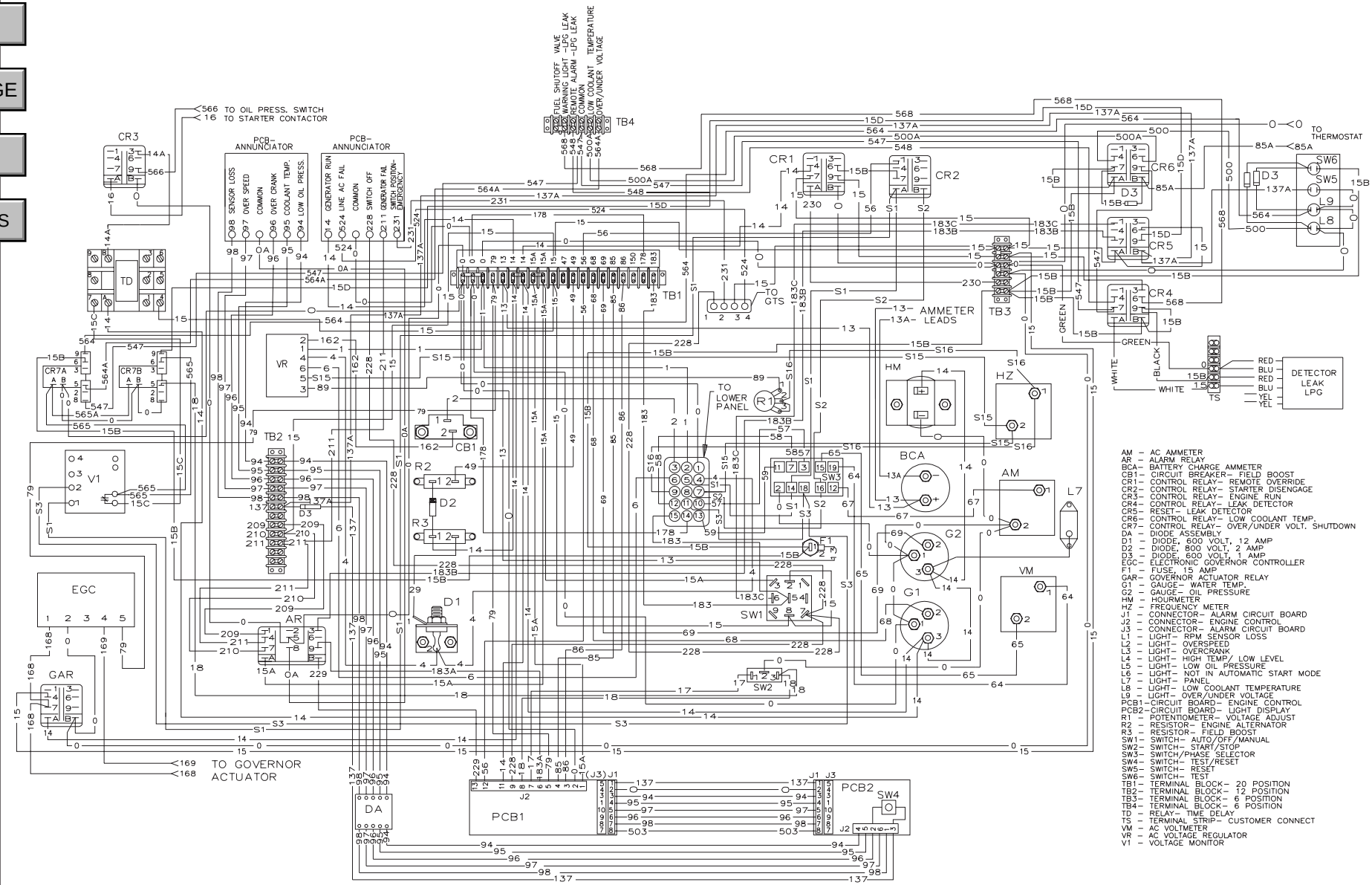




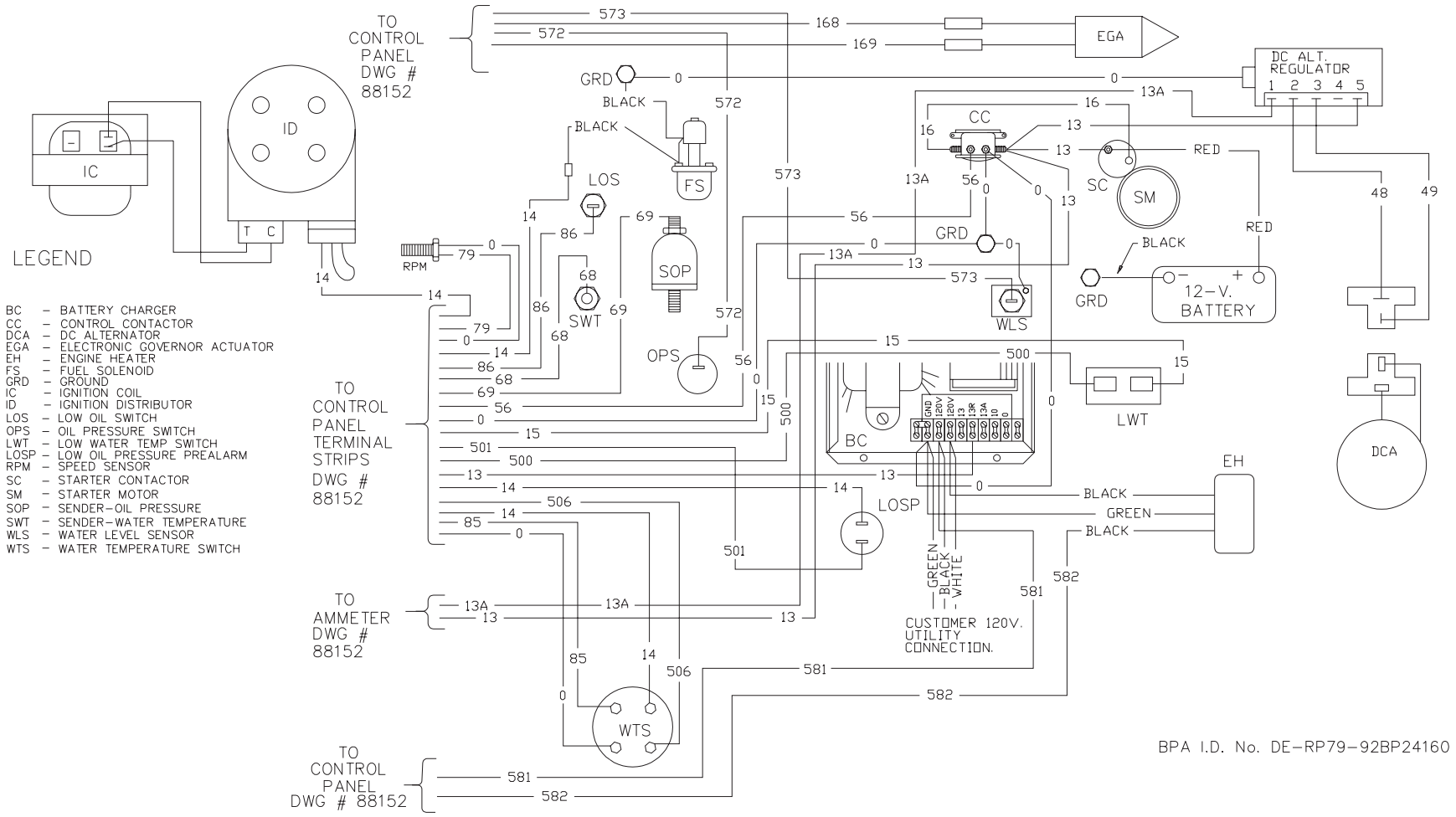
LEGEND

BC – BATTERY CHARGER
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LOS – LOW OIL SWITCH
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RPM – SPEED SENSOR
SC – STARTER CONTACTOR
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SWT – SENDER–WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH


AM – AC AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER– FIELD BOOST
CR1– CONTROL RELAY– REMOTE OVERRIDE
CR2– CONTROL RELAY– STARTER DISENGAGE
CR3– CONTROL RELAY– ENGINE RUN
CR4– CONTROL RELAY– LEAK DETECTOR
CR5– RESET– LEAK DETECTOR
CR6– CONTROL RELAY– LOW COOLANT TEMP.
CR7– CONTROL RELAY– OVER/UNDER VOLT. SHUTDOWN
DA – DIODE ASSEMBLY
D1 – DIODE, 600 VOLT, 12 AMP
D2 – DIODE, 600 VOLT, 2 AMP
D3 – DIODE, 600 VOLT, 1 AMP
EGC– ELECTRONIC GOVERNOR CONTROLLER
GAR– GOVERNOR ACTUATOR RELAY
F1 – FUSE, 15 AMP
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR– ALARM CIRCUIT BOARD
J2 – CONNECTOR– ENGINE CONTROL
J3 – CONNECTOR– ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/ LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
L7 – LIGHT– PANEL
L8 – LIGHT– LOW COOLANT TEMPERATURE
L9 – LIGHT– OVER/UNDER VOLTAGE
PCB1–CIRCUIT BOARD– ENGINE CONTROL
PCB2–CIRCUIT BOARD– LIGHT DISPLAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– ENGINGE ALTERNATOR
R3 – RESISTOR– FIELD BOOST
SW1– SWITCH– AUTO/MANUAL/OFF
SW2– SWITCH– START/STOP
SW3– SWITCH/PHASE SELECTOR
SW4– SWITCH– TEST/RESET
SW5– SWITCH– RESET
SW6– SWITCH– TEST
TB1– TERMINAL BLOCK– 20 POSITION
TB2– TERMINAL BLOCK– 12 POSITION
TB3– TERMINAL BLOCK– 6 POSITION
TB4– TERMINAL BLOCK– 6 POSITION
TD – RELAY– TIME DELAY
TS – TERMINAL STRIP– CUSTOMER CONNECT
VM – AC VOLTMETER
VR – AC VOLTAGE REGULATOR
V1 – VOLTAGE MONITOR
PHASE SELECTOR SWITCH
CONTACTS
POSITION
1 2 3 OFF
X INDICATES CLOSED
SHOWN IN OFF POSITION
REMOTE OVERRIDE AUTO START
LPG LEAK DETECTOR
FUEL VALVE
WARNING LIGHT–LPG LEAK
REMOTE ALARM–LEAK
COMMON
LOW COOLANT TEMP.
HI/LOW VOLTAGE
TERMINAL BOARD ANNUNCIATOR
TB4
TB2 REMOTE RESET CONNECTIONS
98 SENSOR LOSS
97 OVERSPEED COMMON
96 OVERCRANK
95 COOLANT TEMP.
94 LOW OIL PRESS.
PCB – ANNUNCIATOR
14 GENERATOR RUN
524 LINE A.C. FAIL COMMON
228 SWITCH OFF
211 GENERATOR FAIL
231 SWITCH POSITION– EMERGENCY
PCB – ANNUNCIATOR
TO STARTER CONTACTOR
TO OIL PRESSURE SWITCH
TO LOWER PANEL
TO TRANSFER SWITCH
TO GOVERNOR ACTUATOR
TO TB1
TO ENGINE
TO THERMOSTAT
LIGHT PANEL
WHITE
BLACK
GREEN
BLU
RED
YEL



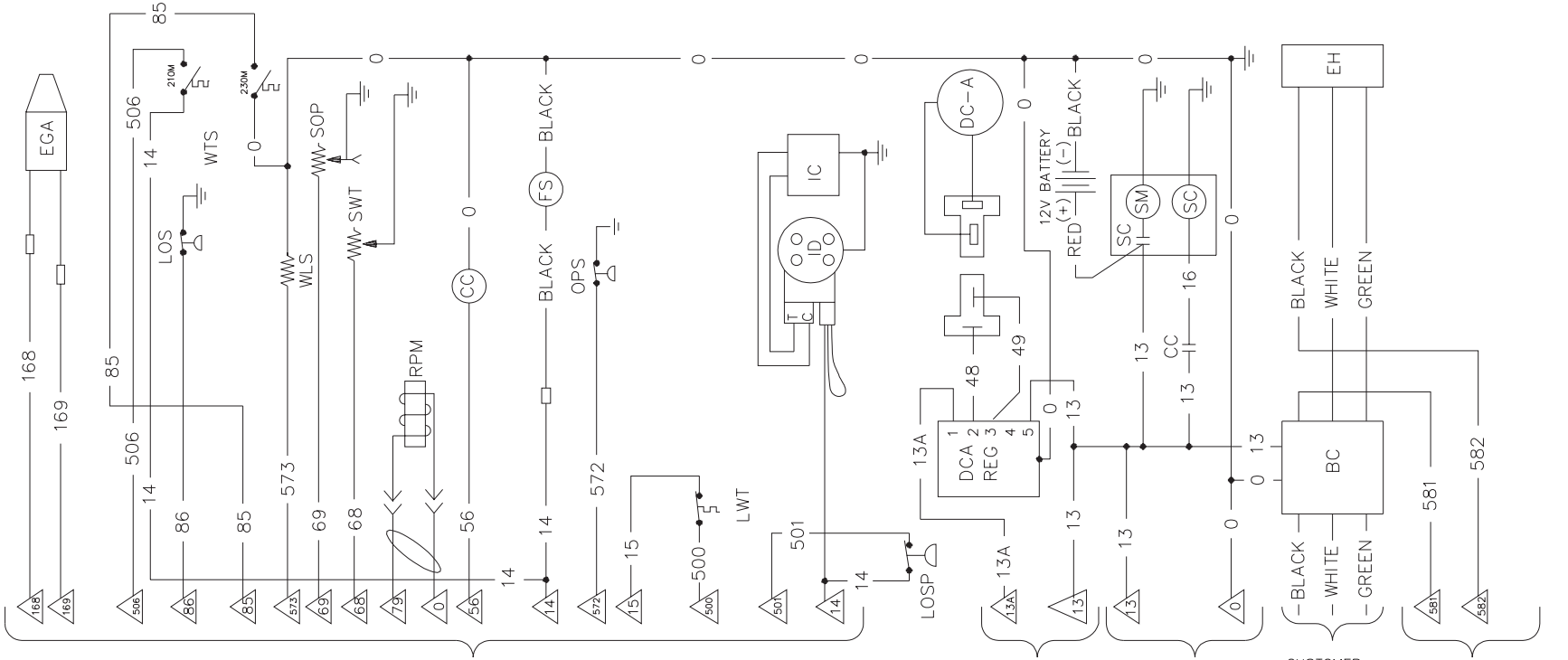
AM – AC AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER– FIELD BOOST
CR1– CONTROL RELAY– REMOTE OVERRIDE
CR2– CONTROL RELAY– STARTER DISENGAGE
CR3– CONTROL RELAY– ENGINE RUN
CR4– CONTROL RELAY– LEAK DETECTOR
CR5– RESET– LEAK DETECTOR
CR6– CONTROL RELAY– LOW COOLANT TEMP.
CR7– CONTROL RELAY– OVER/UNDER VOLT. SHUTDOWN
DA – DIODE ASSEMBLY
D1 – DIODE, 600 VOLT, 12 AMP
D2 – DIODE, 600 VOLT, 2 AMP
D3 – DIODE, 600 VOLT, 1 AMP
EGC– ELECTRONIC GOVERNOR CONTROLLER
F1 – FUSE, 15 AMP
GAR– GOVERNOR ACTUATOR RELAY
G1 – GAUGE– WATER TEMP.
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR– ALARM CIRCUIT BOARD
J2 – CONNECTOR– ENGINE CONTROL
J3 – CONNECTOR– ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/ LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
L7 – LIGHT– PANEL
L8 – LIGHT– LOW COOLANT TEMPERATURE
L9 – LIGHT– OVER/UNDER VOLTAGE
PCB1–CIRCUIT BOARD– ENGINE CONTROL
PCB2–CIRCUIT BOARD– LIGHT DISPLAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– ENGINE ALTERNATOR
R3 – RESISTOR– FIELD BOOST
SW1– SWITCH– AUTO/OFF/MANUAL
SW2– SWITCH– START/STOP
SW3– SWITCH/PHASE SELECTOR
SW4– SWITCH– TEST/RESET
SW5– SWITCH– RESET
SW6– SWITCH– TEST
TB1– TERMINAL BLOCK– 20 POSITION
TB2– TERMINAL BLOCK– 12 POSITION
TB3– TERMINAL BLOCK– 6 POSITION
TB4– TERMINAL BLOCK– 6 POSITION
TD – RELAY– TIME DELAY
TS – TERMINAL STRIP– CUSTOMER CONNECT
VM – AC VOLTMETER
VR – AC VOLTAGE REGULATOR
V1 – VOLTAGE MONITOR



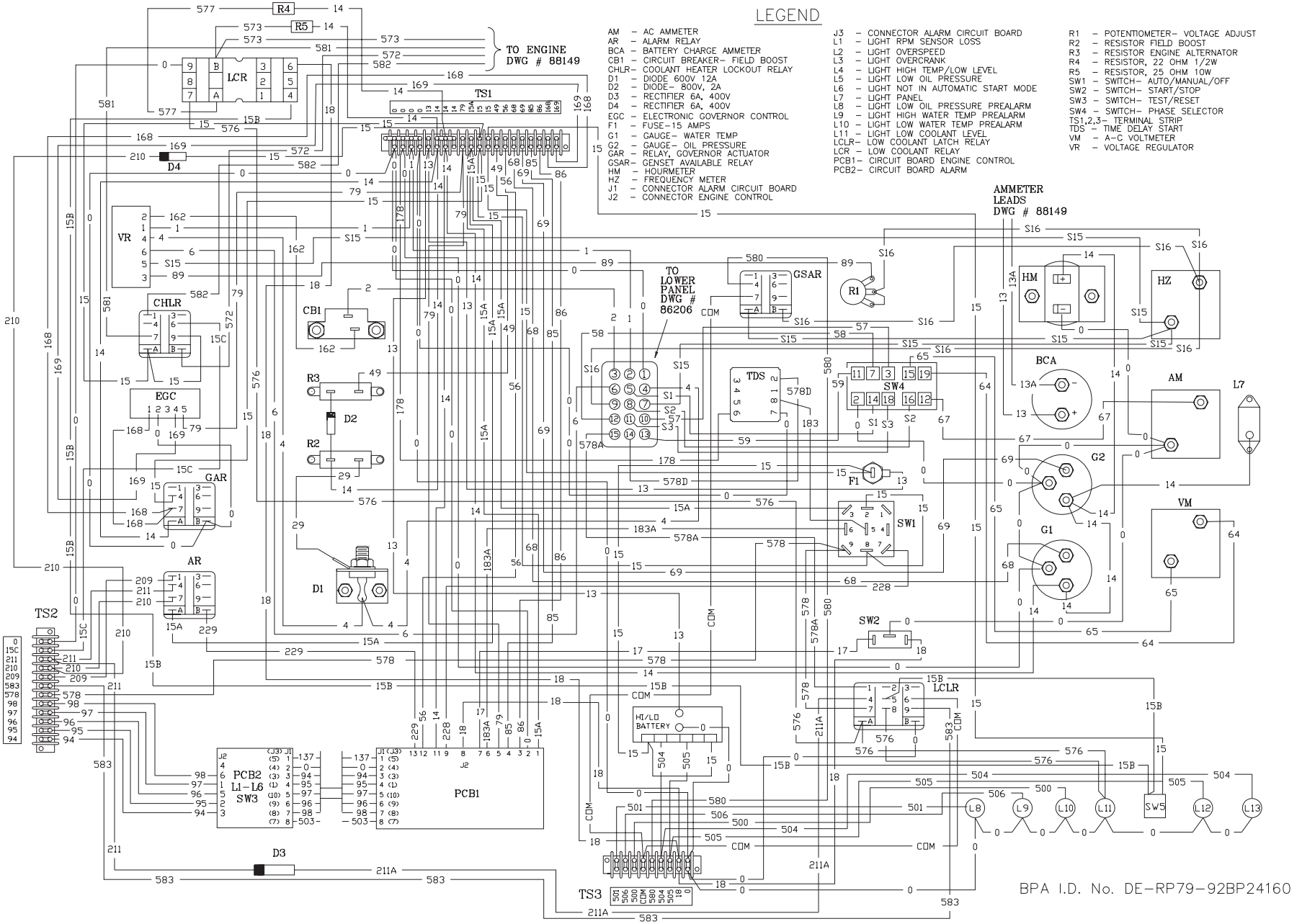
BPA I.D. No. DE–RP79–92BP24160

LEGEND

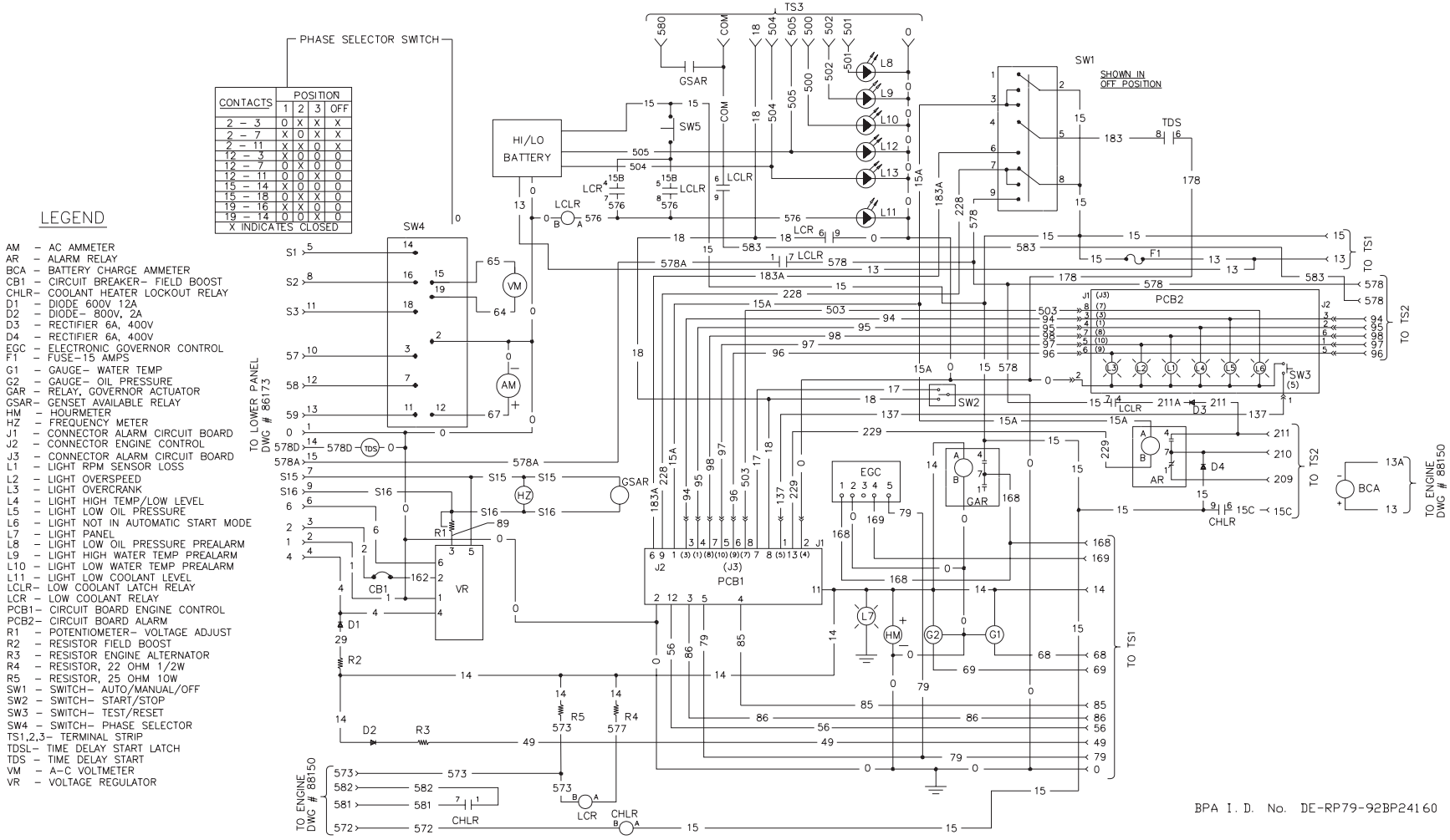
BC - BATTERY CHARGER
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EGA - ELECTRONIC GOVERNOR ACTUATOR
EH - ENGINE HEATER
FS - FUEL SHUTOFF SOLENOID
G - GROUND
IC - IGNITION COIL
ID - IGNITION DISTRIBUTOR
LOS - LOW OIL SWITCH
LWT - LOW WATER TEMP SWITCH
OPS - OIL PRESSURE SWITCH
POP - PREALARM OIL PRESSURE
RPM - SPEED SENSOR
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMP.
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH

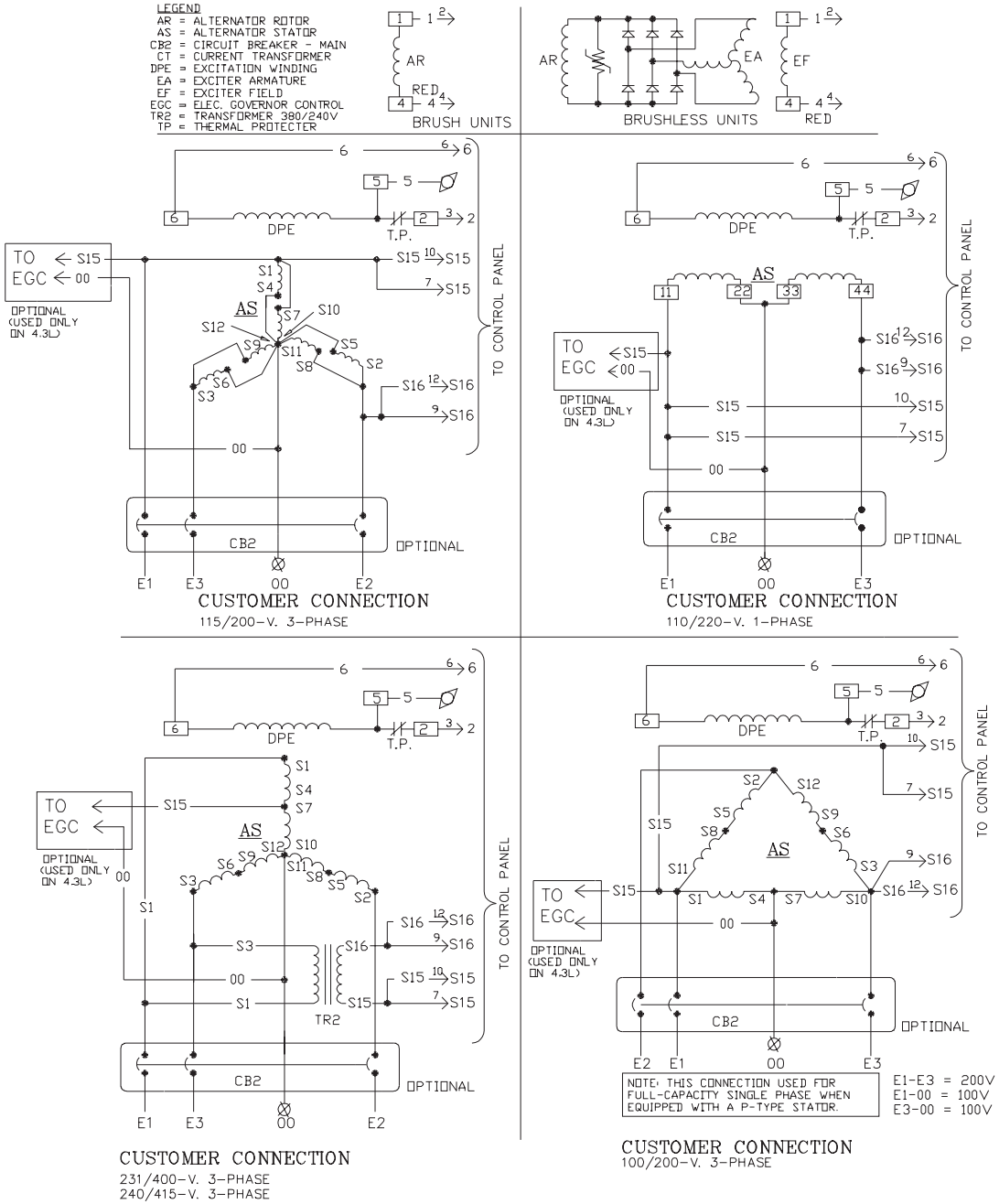


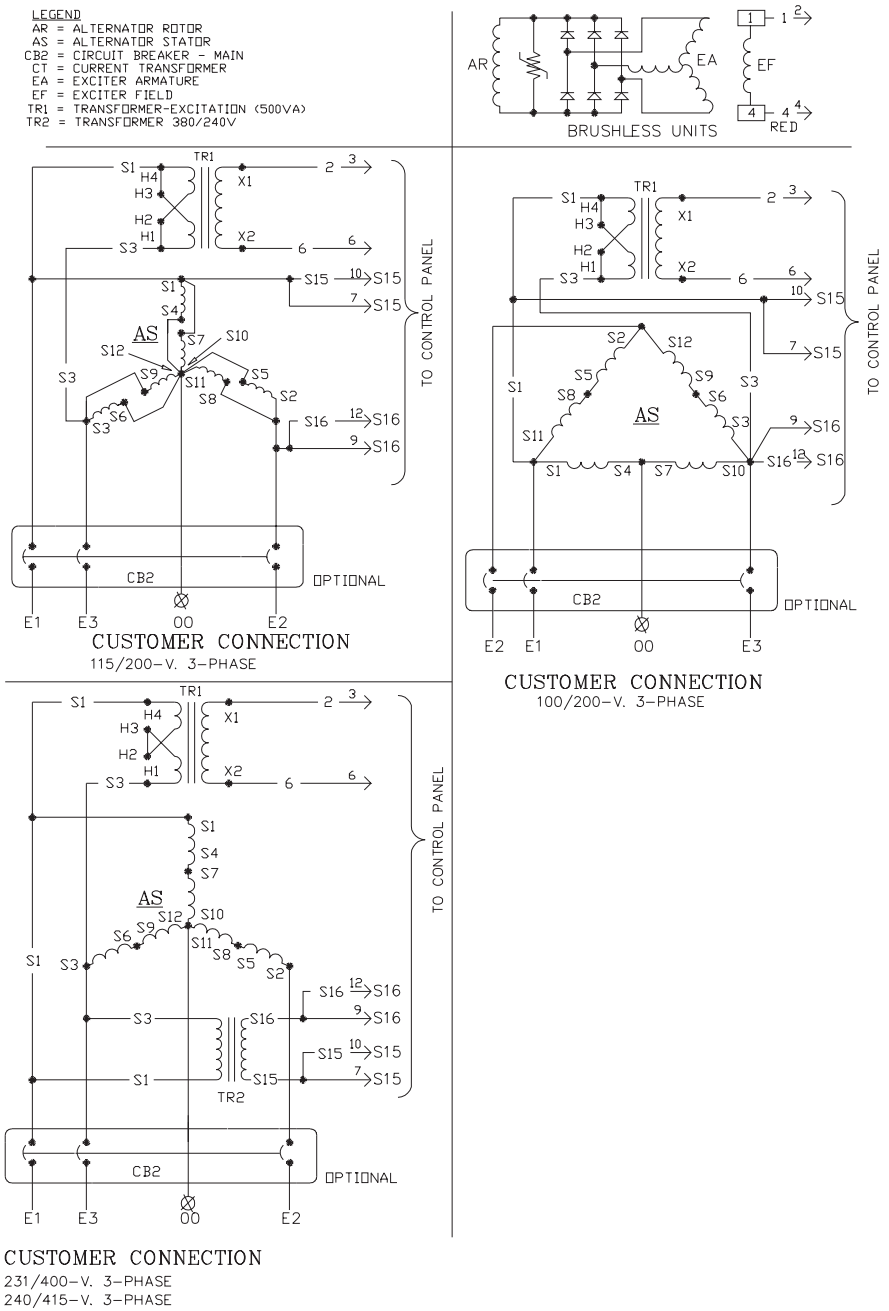
BPA I.D. No. DE-RP79-92BP24160

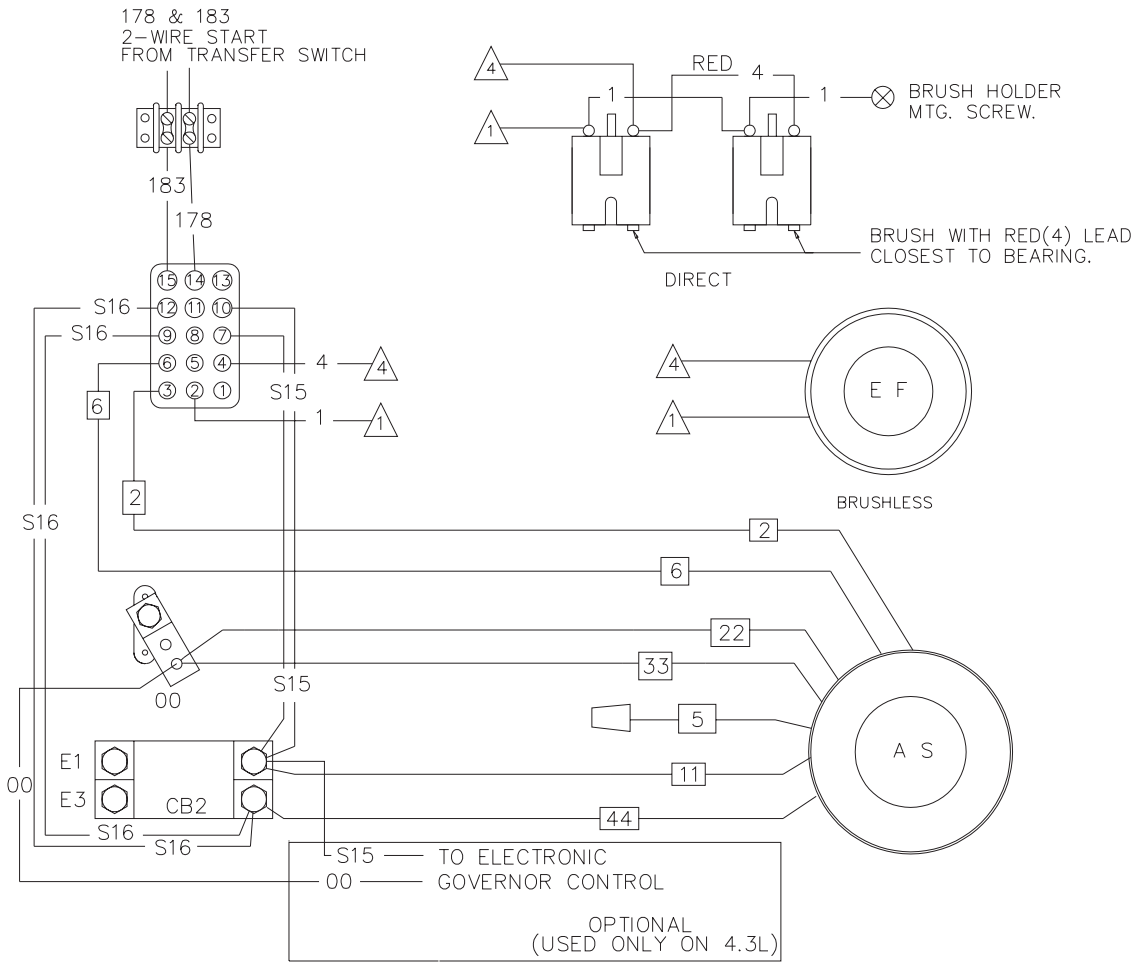


BPA I.D. No. DE–RP79–92BP24160


PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
LEGEND
AM – AC AMMETER
AR – ALARM RELAY
BCA – BATTERY CHARGE AMMETER
CB1 – CIRCUIT BREAKER– FIELD BOOST
CHLR– COOLANT HEATER LOCKOUT RELAY
D1 – DIODE 600V 12A
D2 – DIODE– 800V, 2A
D3 – RECTIFIER 6A, 400V
D4 – RECTIFIER 6A, 400V
EGC – ELECTRONIC GOVERNOR CONTROL
F1 – FUSE–15 AMPS
G1 – GAUGE– WATER TEMP
G2 – GAUGE– OIL PRESSURE
GAR – RELAY, GOVERNOR ACTUATOR
GSAR– GENSET AVAILABLE RELAY
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR ALARM CIRCUIT BOARD
J2 – CONNECTOR ENGINE CONTROL
J3 – CONNECTOR ALARM CIRCUIT BOARD
L1 – LIGHT RPM SENSOR LOSS
L2 – LIGHT OVERSPEED
L3 – LIGHT OVERCRANK
L4 – LIGHT HIGH TEMP/LOW LEVEL
L5 – LIGHT LOW OIL PRESSURE
L6 – LIGHT NOT IN AUTOMATIC START MODE
L7 – LIGHT PANEL
L8 – LIGHT LOW OIL PRESSURE PREALARM
L9 – LIGHT HIGH WATER TEMP PREALARM
L10 – LIGHT LOW WATER TEMP PREALARM
L11 – LIGHT LOW COOLANT LEVEL
LCLR– LOW COOLANT LATCH RELAY
LCR – LOW COOLANT RELAY
PCB1– CIRCUIT BOARD ENGINE CONTROL
PCB2– CIRCUIT BOARD ALARM
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR FIELD BOOST
R3 – RESISTOR ENGINE ALTERNATOR
R4 – RESISTOR, 22 OHM 1/2W
R5 – RESISTOR, 25 OHM 10W
SW1 – SWITCH– AUTO/MANUAL/OFF
SW2 – SWITCH– START/STOP
SW3 – SWITCH– TEST/RESET
SW4 – SWITCH– PHASE SELECTOR
TS1,2,3– TERMINAL STRIP
TDSL– TIME DELAY START LATCH
TDS – TIME DELAY START
VM – A–C VOLTMETER
VR – VOLTAGE REGULATOR
TS3
GSAR
HI/LO BATTERY
SW5
SW1
SHOWN IN OFF POSITION
TDS
SW4
VM
AM
HZ
VR
CB1
R1
R2
R3
R4
R5
D1
D2
LCLR
LCR
F1
PCB2
PCB1
EGC
GAR
SW2
SW3
AR
D3
D4
CHLR
BCA
TO TS1
TO TS2
TO LOWER PANEL DWG # 86173
TO ENGINE DWG # 88150
BPA I. D. No. DE-RP79-92BP24160


LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
DPE = EXCITATION WINDING
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELEC. GOVERNOR CONTROL
TR2 = TRANSFORMER 380/240V
TP = THERMAL PROTECTER
BRUSH UNITS
BRUSHLESS UNITS
RED
DPE
T.P.
AS
TO EGC
OPTIONAL (USED ONLY ON 4.3L)
TO CONTROL PANEL
CB2
OPTIONAL
E1
E3
00
E2
CUSTOMER CONNECTION
115/200-V. 3-PHASE
110/220-V. 1-PHASE
231/400-V. 3-PHASE
240/415-V. 3-PHASE
100/200-V. 3-PHASE
TR2
NOTE: THIS CONNECTION USED FOR FULL-CAPACITY SINGLE PHASE WHEN EQUIPPED WITH A P-TYPE STATOR.
E1-E3 = 200V
E1-00 = 100V
E3-00 = 100V


LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
TR1 = TRANSFORMER-EXCITATION (500VA)
TR2 = TRANSFORMER 380/240V
AR
EA
EF
BRUSHLESS UNITS
RED
TR1
AS
CB2
OPTIONAL
TO CONTROL PANEL
E1
E3
00
E2
CUSTOMER CONNECTION
115/200-V. 3-PHASE
CUSTOMER CONNECTION
100/200-V. 3-PHASE
TR2
CUSTOMER CONNECTION
231/400-V. 3-PHASE
240/415-V. 3-PHASE



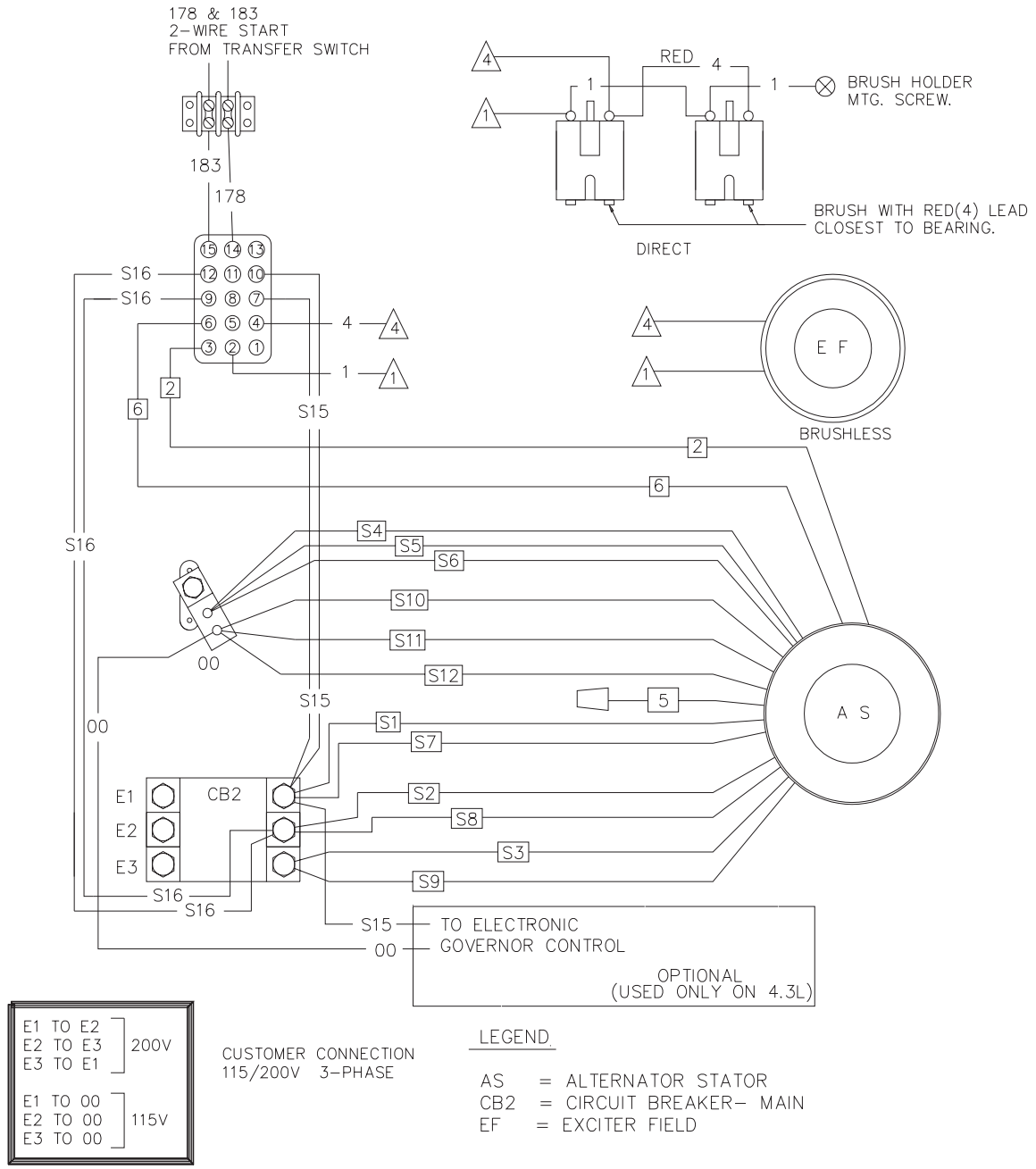
E1 TO E3	220V.
E1 TO 00	110V.
E3 TO 00	

CUSTOMER CONNECTION
110/220V. 1–PHASE

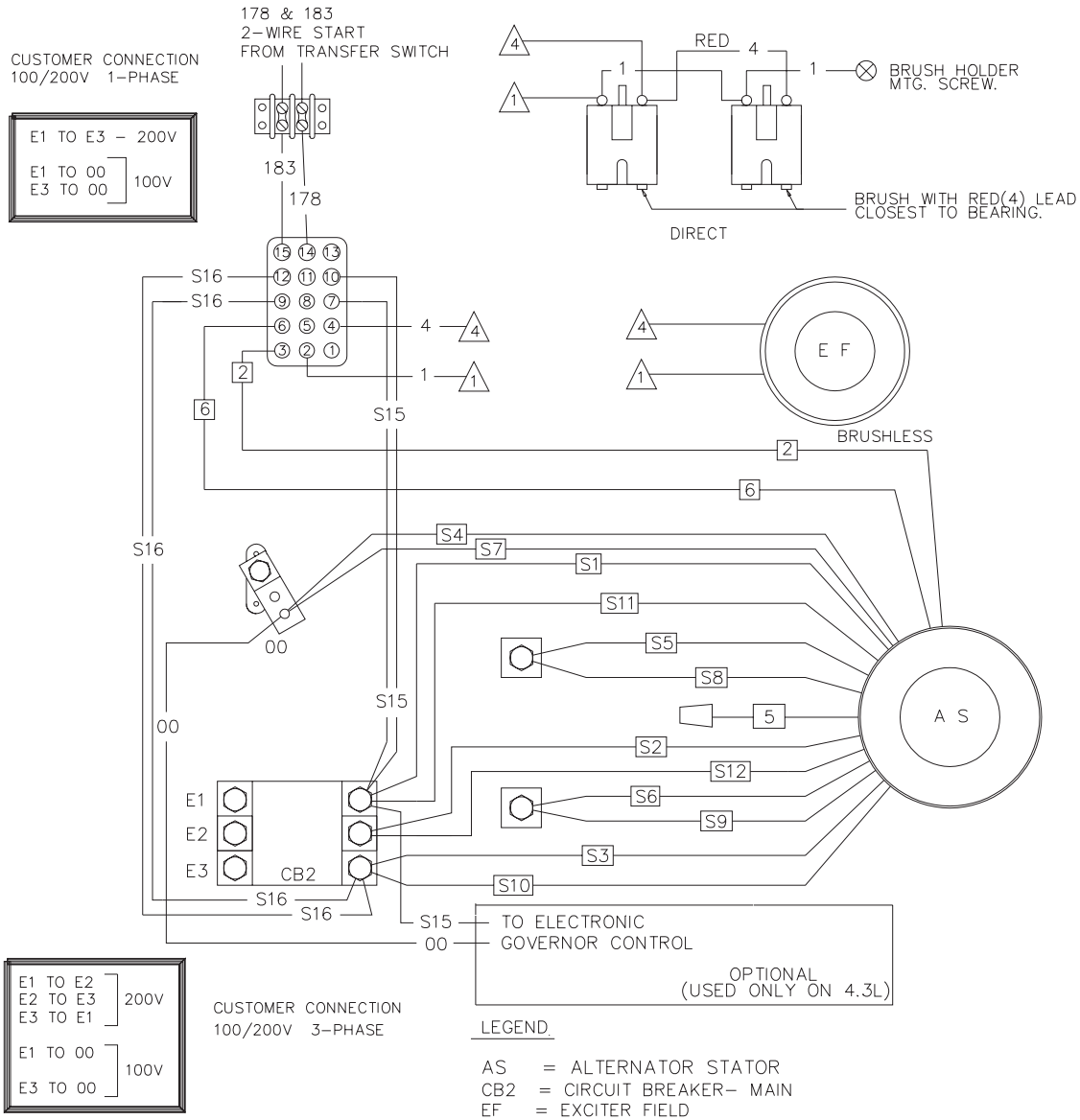
LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER– MAIN
EF = EXCITER FIELD

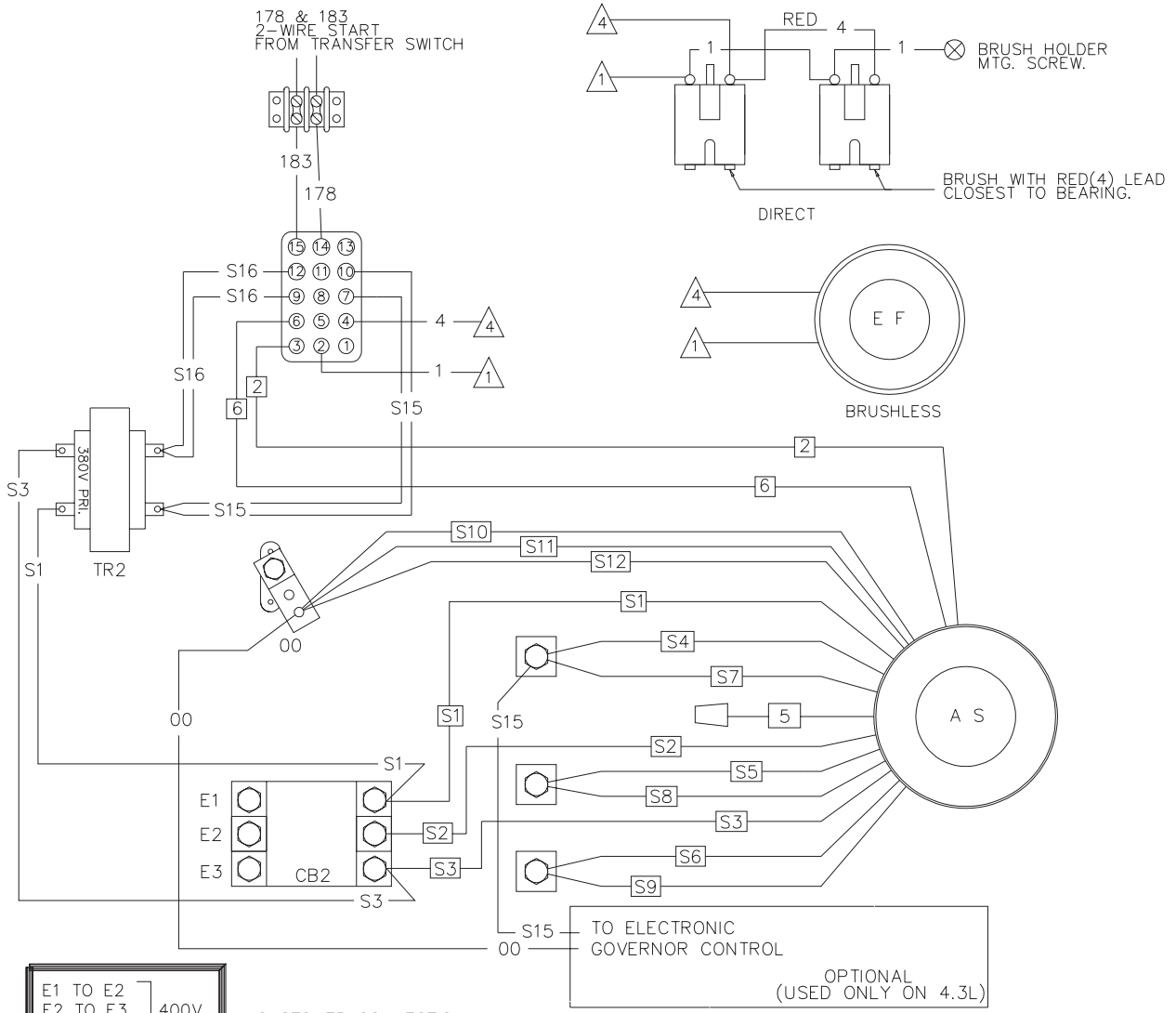
SHEET 1 OF 7


178 & 183
2-WIRE START
FROM TRANSFER SWITCH
183
178
15 14 13
12 11 10
9 8 7
6 5 4
3 2 1
S16
S16
4
1
2
6
S15
S16
S4
S5
S6
S10
S11
S12
00
S15
00
S1
S7
S2
S8
S3
S9
E1
E2
E3
CB2
S16
S16
S15
00
TO ELECTRONIC
GOVERNOR CONTROL
OPTIONAL
(USED ONLY ON 4.3L)
RED
4
1
BRUSH HOLDER
MTG. SCREW.
BRUSH WITH RED(4) LEAD
CLOSEST TO BEARING.
DIRECT
E F
BRUSHLESS
A S
5
E1 TO E2
E2 TO E3
E3 TO E1
200V
E1 TO 00
E2 TO 00
E3 TO 00
115V
CUSTOMER CONNECTION
115/200V 3-PHASE
LEGEND
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD

SHEET 2 OF 7


178 & 183
2-WIRE START
FROM TRANSFER SWITCH
CUSTOMER CONNECTION
100/200V 1-PHASE
E1 TO E3 - 200V
E1 TO 00
E3 TO 00
100V
183
178
RED
BRUSH HOLDER
MTG. SCREW.
BRUSH WITH RED(4) LEAD
CLOSEST TO BEARING.
DIRECT
S16
S15
E F
BRUSHLESS
S4
S7
S1
S11
S5
S8
5
A S
S2
S12
S6
S9
S3
S10
00
E1
E2
E3
CB2
TO ELECTRONIC
GOVERNOR CONTROL
OPTIONAL
(USED ONLY ON 4.3L)
E1 TO E2
E2 TO E3
E3 TO E1
200V
E1 TO 00
E3 TO 00
100V
CUSTOMER CONNECTION
100/200V 3-PHASE
LEGEND
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD

SHEET 3 OF 7



E1 TO E2 E2 TO E3 E3 TO E1	400V
E1 TO 00 E2 TO 00 E3 TO 00	231V

CUSTOMER CONNECTION

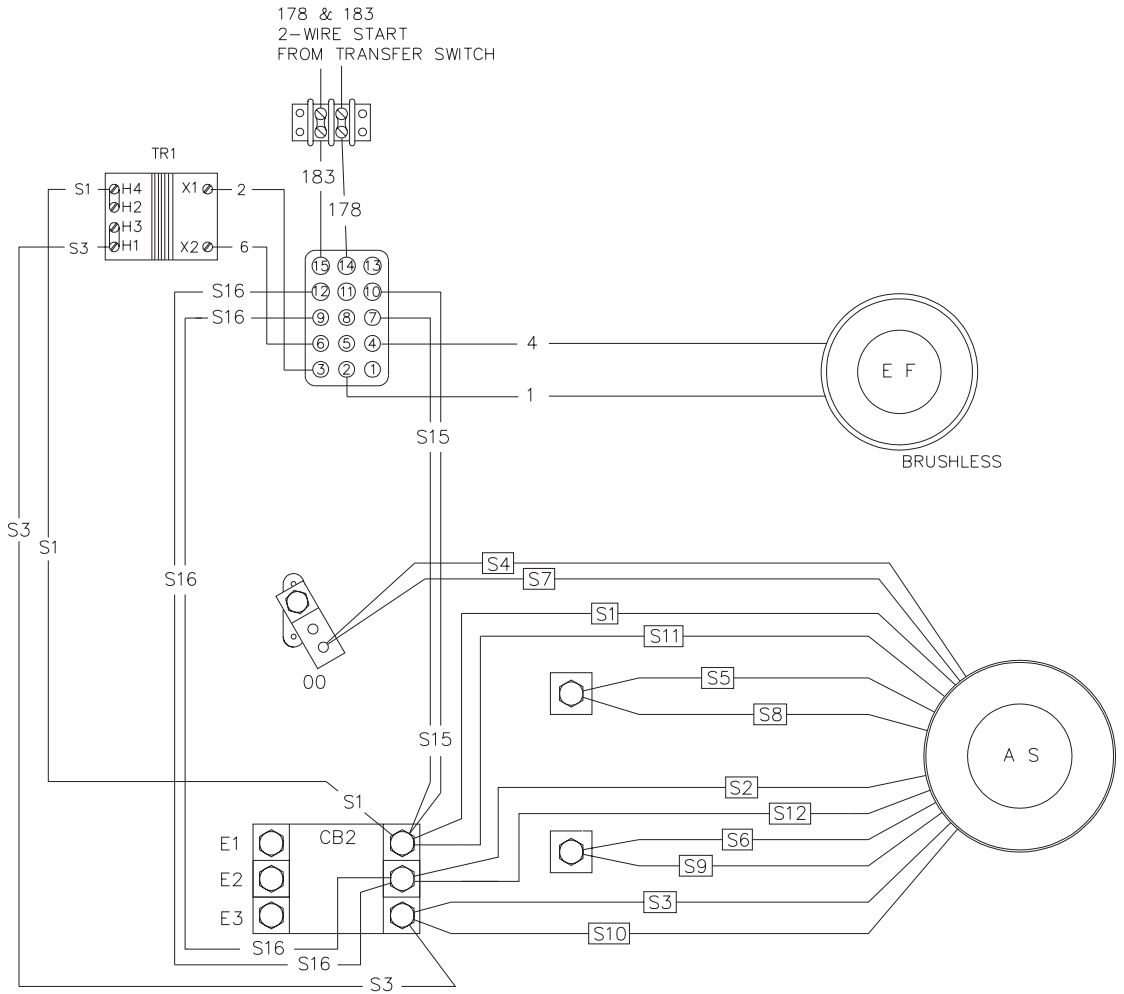
231/400V 3-PHASE

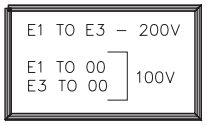
240/415V 3-PHASE

LEGEND

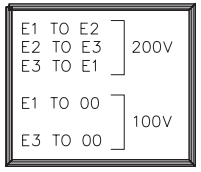
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
TR2 = TRANSFORMER 380/240V

SHEET 4 OF 7





CUSTOMER CONNECTION
100/200V 1–PHASE

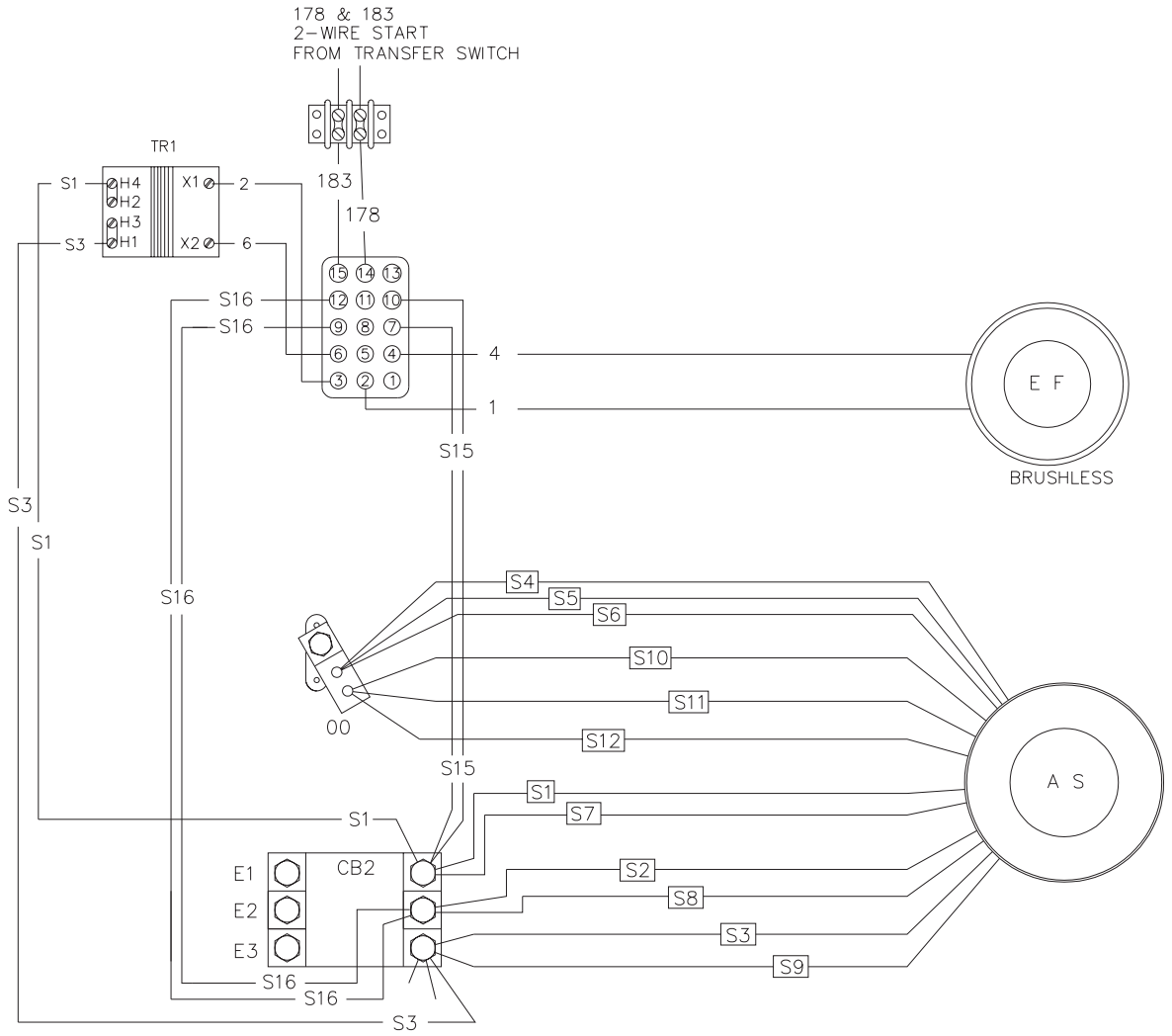


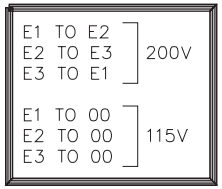
CUSTOMER CONNECTION
100/200V 3–PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER– MAIN
EF = EXCITER FIELD
TR1 = TRANSFORMER– EXCITATION

SHEET 5 OF 7



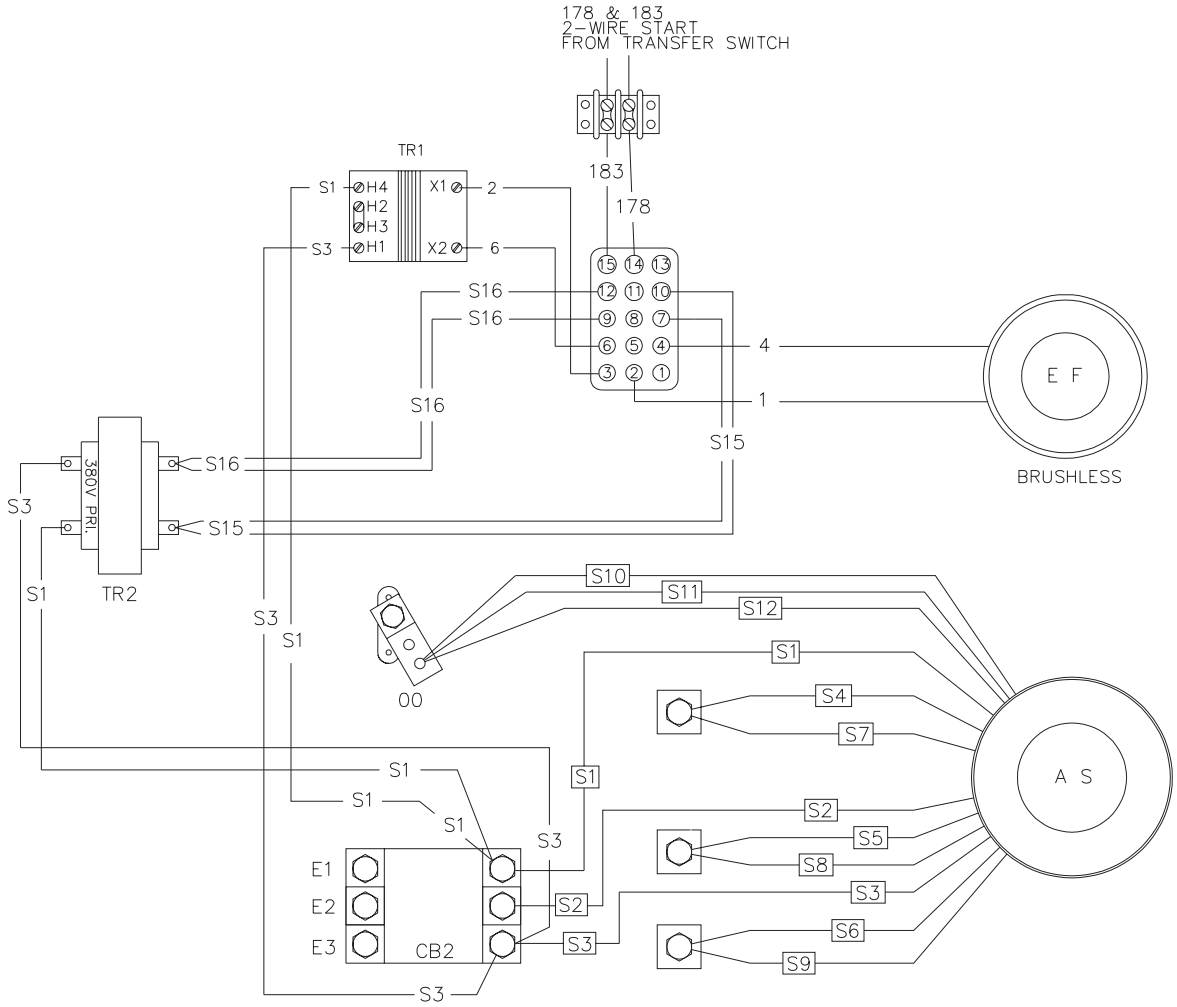


CUSTOMER CONNECTION
115/200V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
TR1 = TRANSFORMER- EXCITATION

SHEET 6 OF 7



E1 TO E2 E2 TO E3 E3 TO E1	400V
E1 TO 00 E2 TO 00 E3 TO 00	231V

CUSTOMER CONNECTION

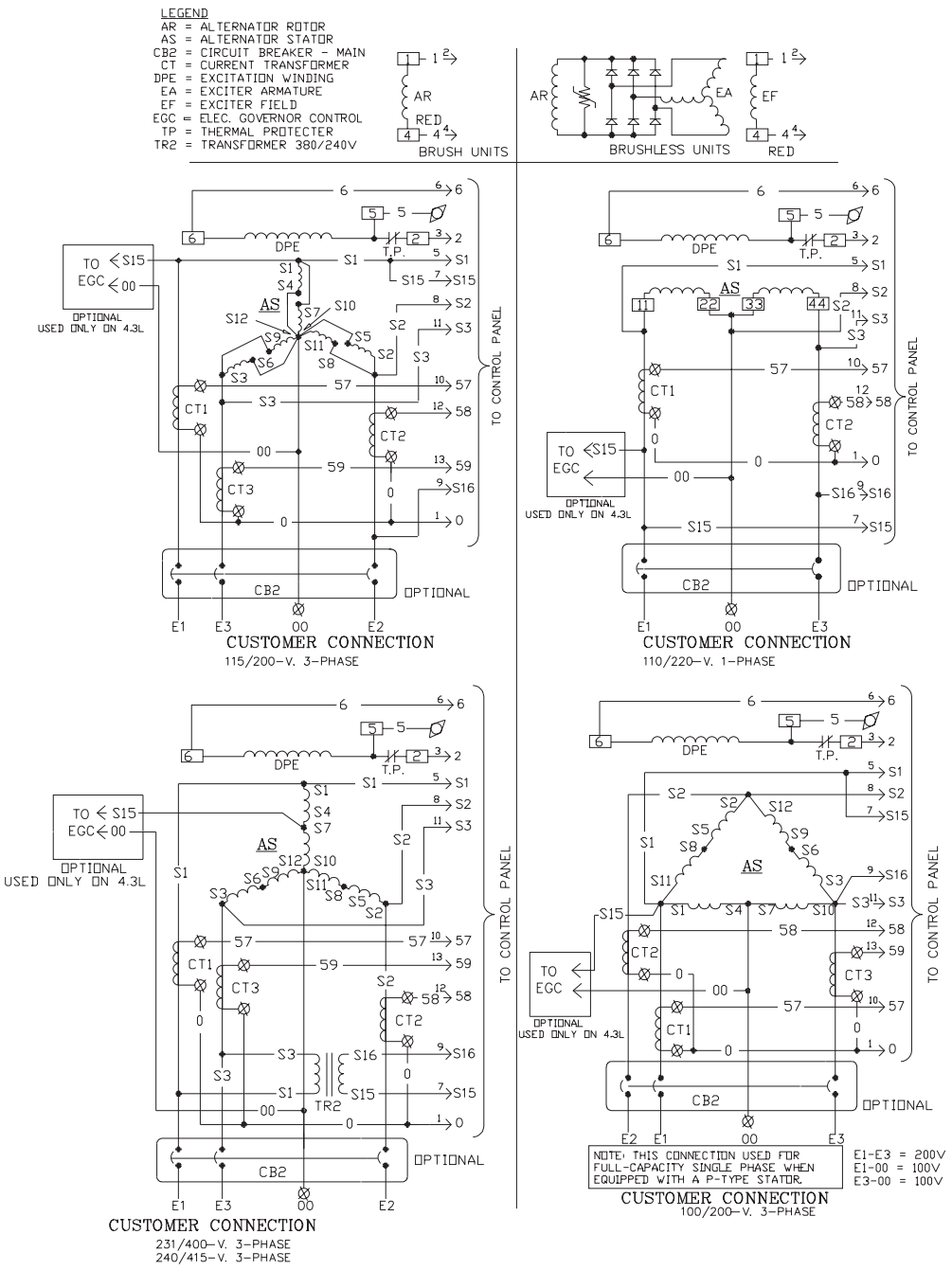
231/400V 3-PHASE

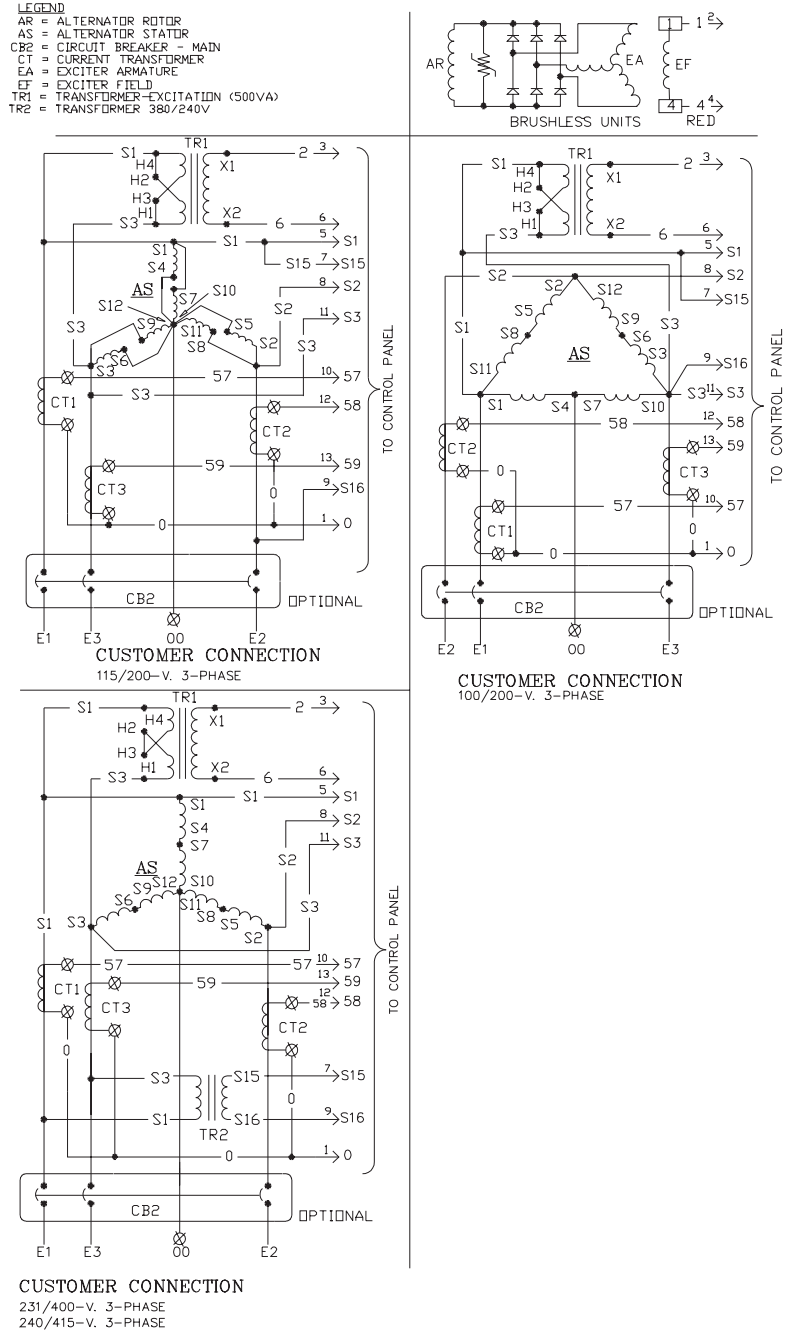
240/415V 3-PHASE

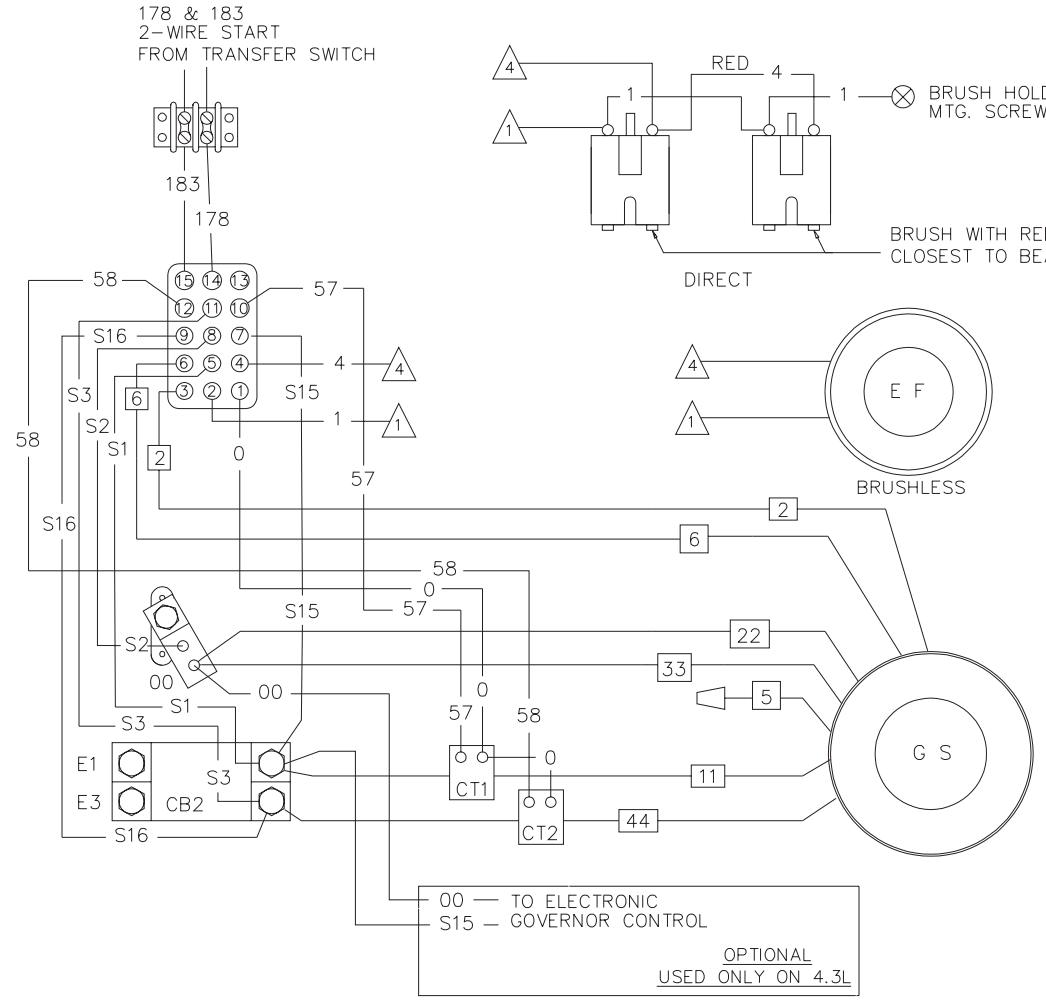
LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
TR1 = TRANSFORMER- EXCITATION
TR2 = TRANSFORMER- 380/240V

SHEET 7 OF 7


LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
DPE = EXCITATION WINDING
EA = EXCITER ARMATURE
EF = EXCITER FIELD
EGC = ELEC. GOVERNOR CONTROL
TP = THERMAL PROTECTER
TR2 = TRANSFORMER 380/240V
BRUSH UNITS
BRUSHLESS UNITS
RED
CUSTOMER CONNECTION
115/200-V. 3-PHASE
CUSTOMER CONNECTION
110/220-V. 1-PHASE
CUSTOMER CONNECTION
231/400-V. 3-PHASE
240/415-V. 3-PHASE
CUSTOMER CONNECTION
100/200-V. 3-PHASE
OPTIONAL
USED ONLY ON 4.3L
TO CONTROL PANEL
NOTE: THIS CONNECTION USED FOR FULL-CAPACITY SINGLE PHASE WHEN EQUIPPED WITH A P-TYPE STATOR.
E1-E3 = 200V
E1-00 = 100V
E3-00 = 100V


LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
TR1 = TRANSFORMER-EXCITATION (500VA)
TR2 = TRANSFORMER 380/240V
BRUSHLESS UNITS
RED
TO CONTROL PANEL
OPTIONAL
CUSTOMER CONNECTION
115/200-V. 3-PHASE
CUSTOMER CONNECTION
100/200-V. 3-PHASE
CUSTOMER CONNECTION
231/400-V. 3-PHASE
240/415-V. 3-PHASE



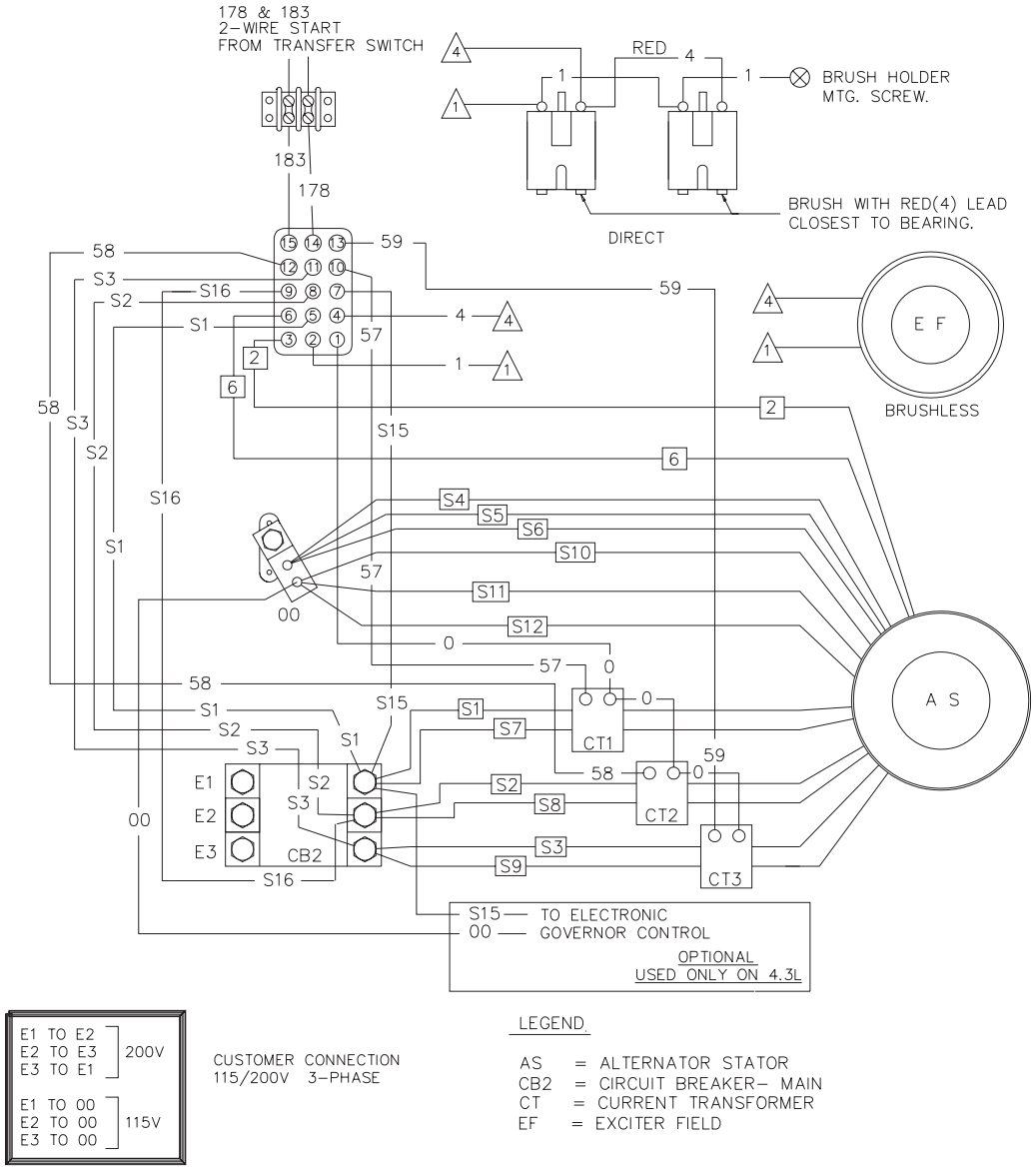
E1 TO E3	220V.
E1 TO 00	110V.
E3 TO 00	

CUSTOMER CONNECTION
110/220V. 1–PHASE

LEGEND

CB2 = CIRCUIT BREAKER– MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
GS = GENERATOR STATOR

SHEET 1 OF 7



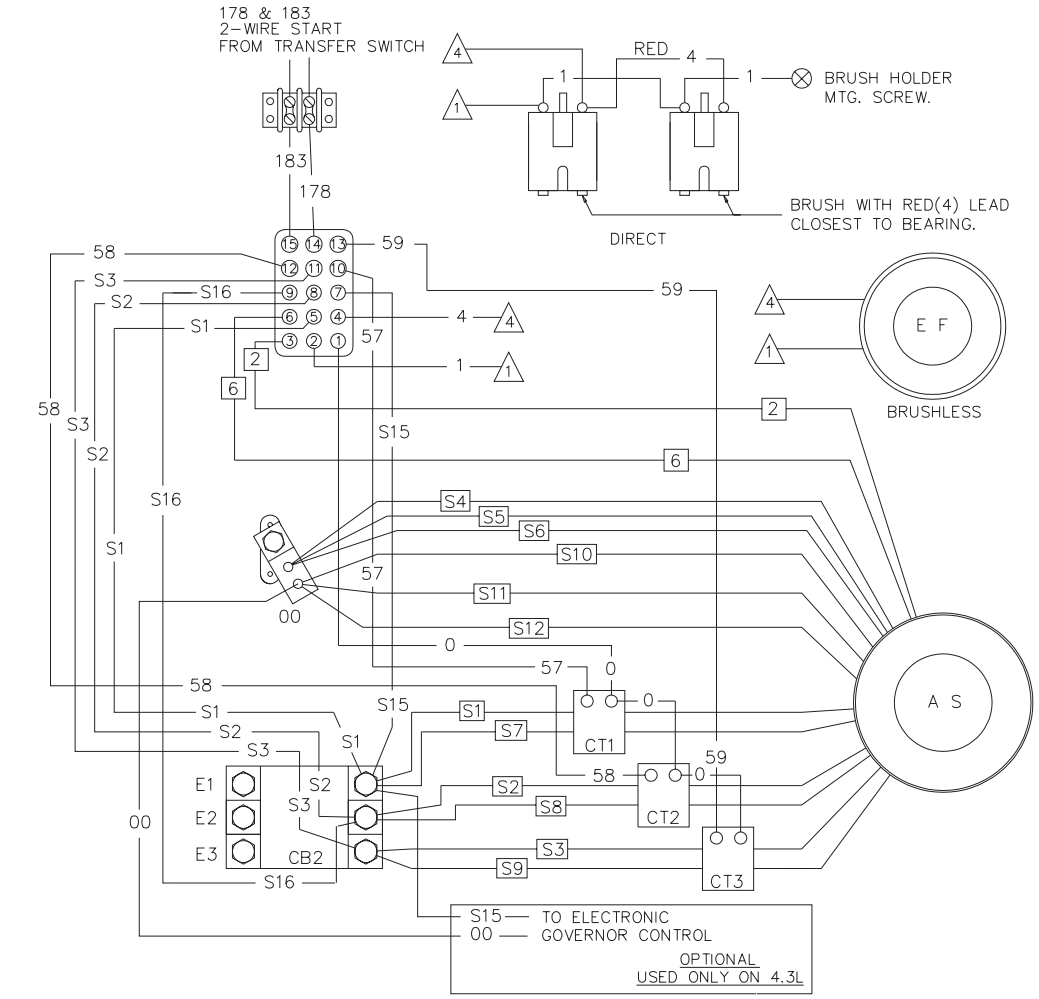
E1 TO E2 E2 TO E3 E3 TO E1	200V
E1 TO 00 E2 TO 00 E3 TO 00	115V

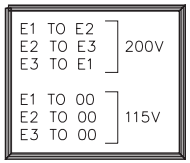
CUSTOMER CONNECTION
115/200V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD

SHEET 2 OF 7



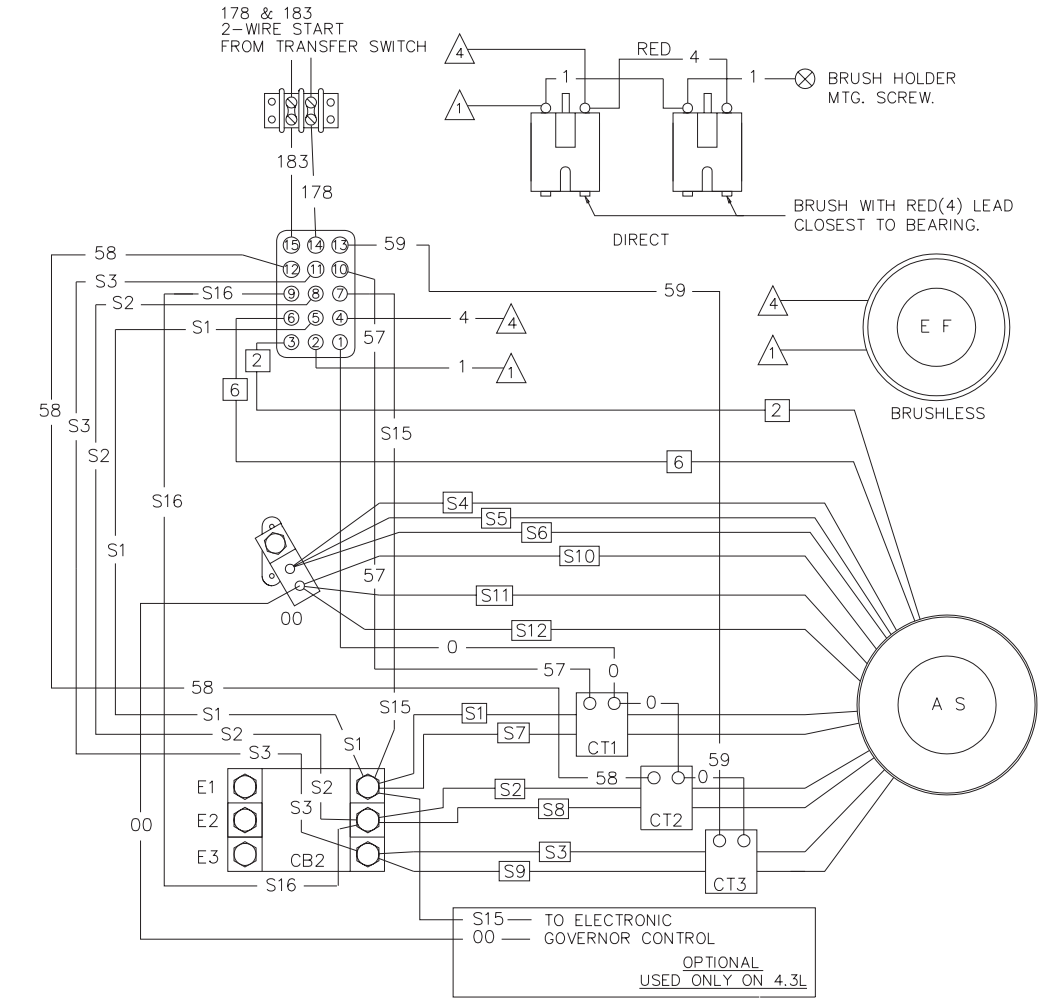


CUSTOMER CONNECTION
115/200V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD

SHEET 2 OF 7



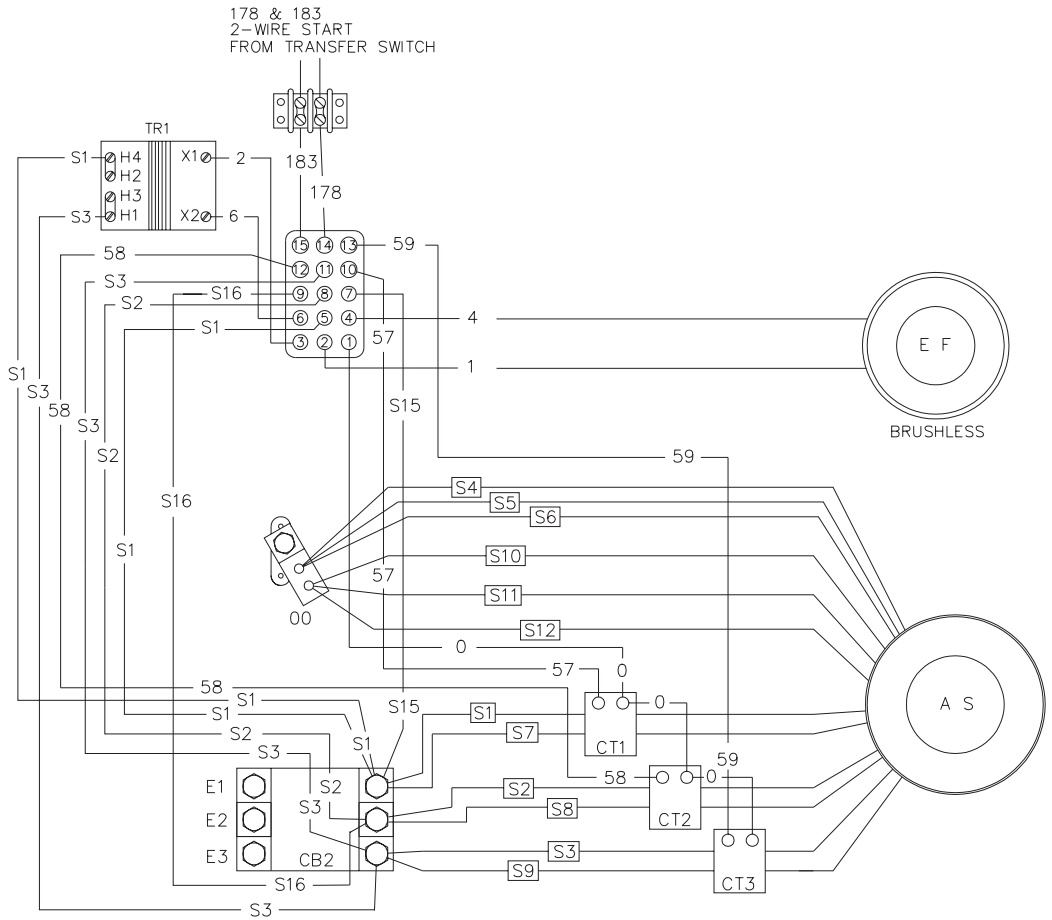
E1 TO E2	200V
E2 TO E3	
E3 TO E1	
E1 TO 00	115V
E2 TO 00	
E3 TO 00	

CUSTOMER CONNECTION
115/200V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD

SHEET 2 OF 7



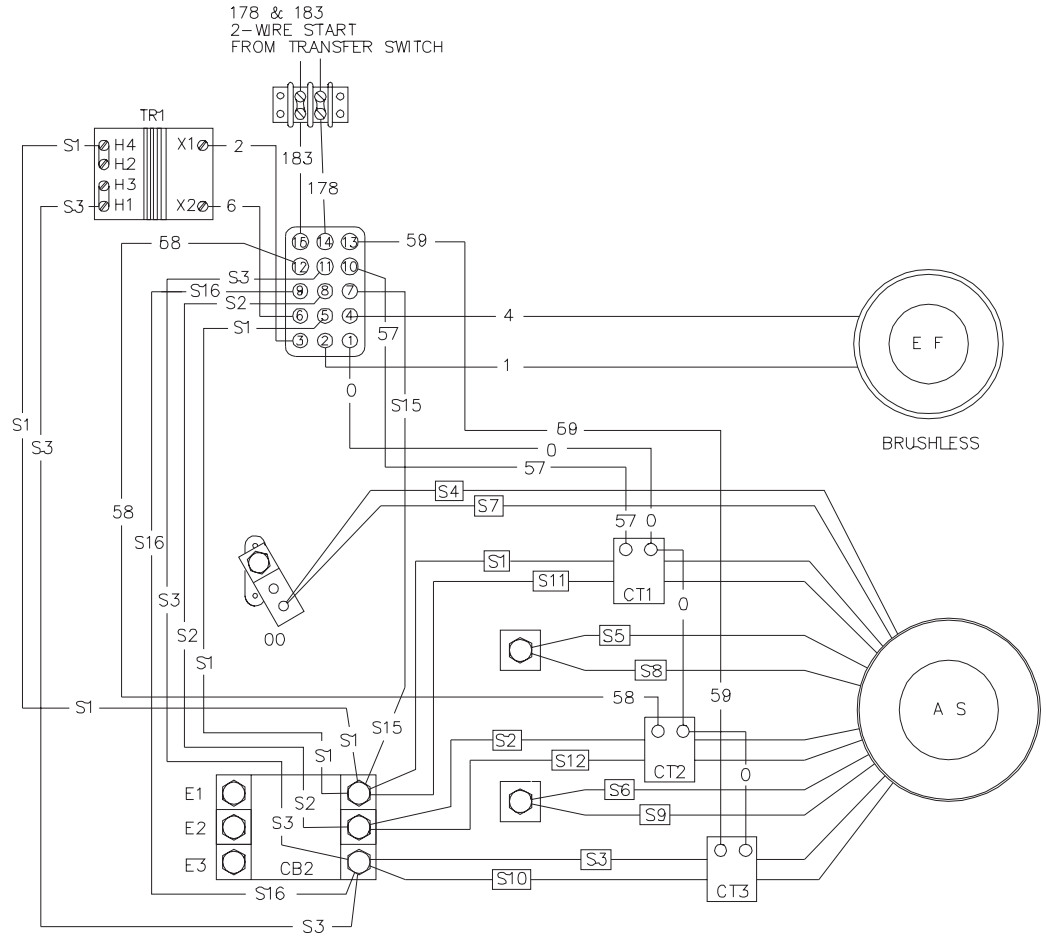
E1 TO E2	200V
E2 TO E3	
E3 TO E1	
E1 TO 00	115V
E2 TO 00	
E3 TO 00	

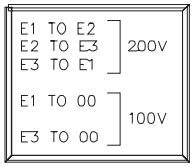
CUSTOMER CONNECTION
115/200V 3-PHASE

LEGEND

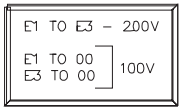
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
TR1 = TRANSFORMER- EXCITATION

SHEET 5 OF 7





CUSTOMER CONNECTION
100/200V 3-PHASE

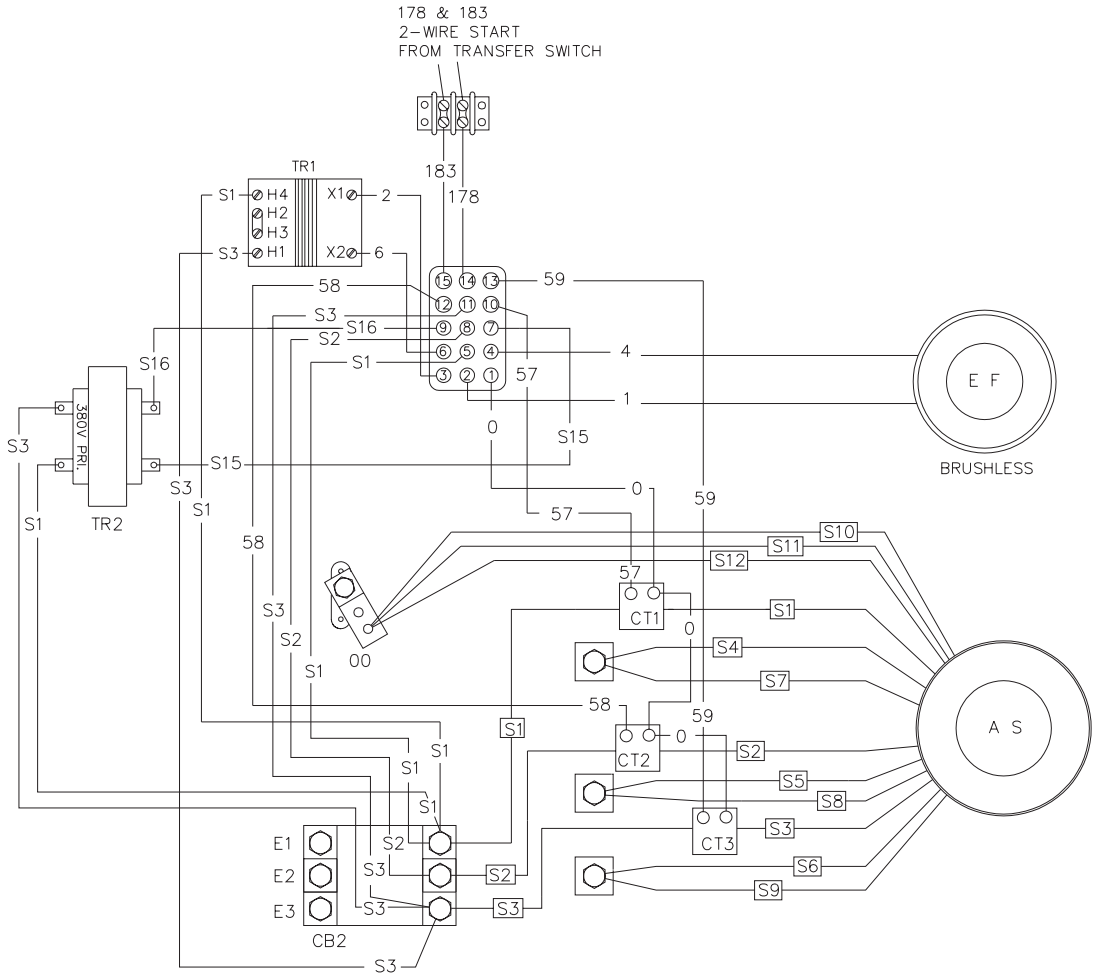


CUSTOMER CONNECTION
100/200V 1-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
TR1 = TRANSFORMER- EXCITATION

SHEET 6 OF 7



E1 TO E2 E2 TO E3 E3 TO E1	400V
E1 TO 00 E2 TO 00 E3 TO 00	231V

CUSTOMER CONNECTION

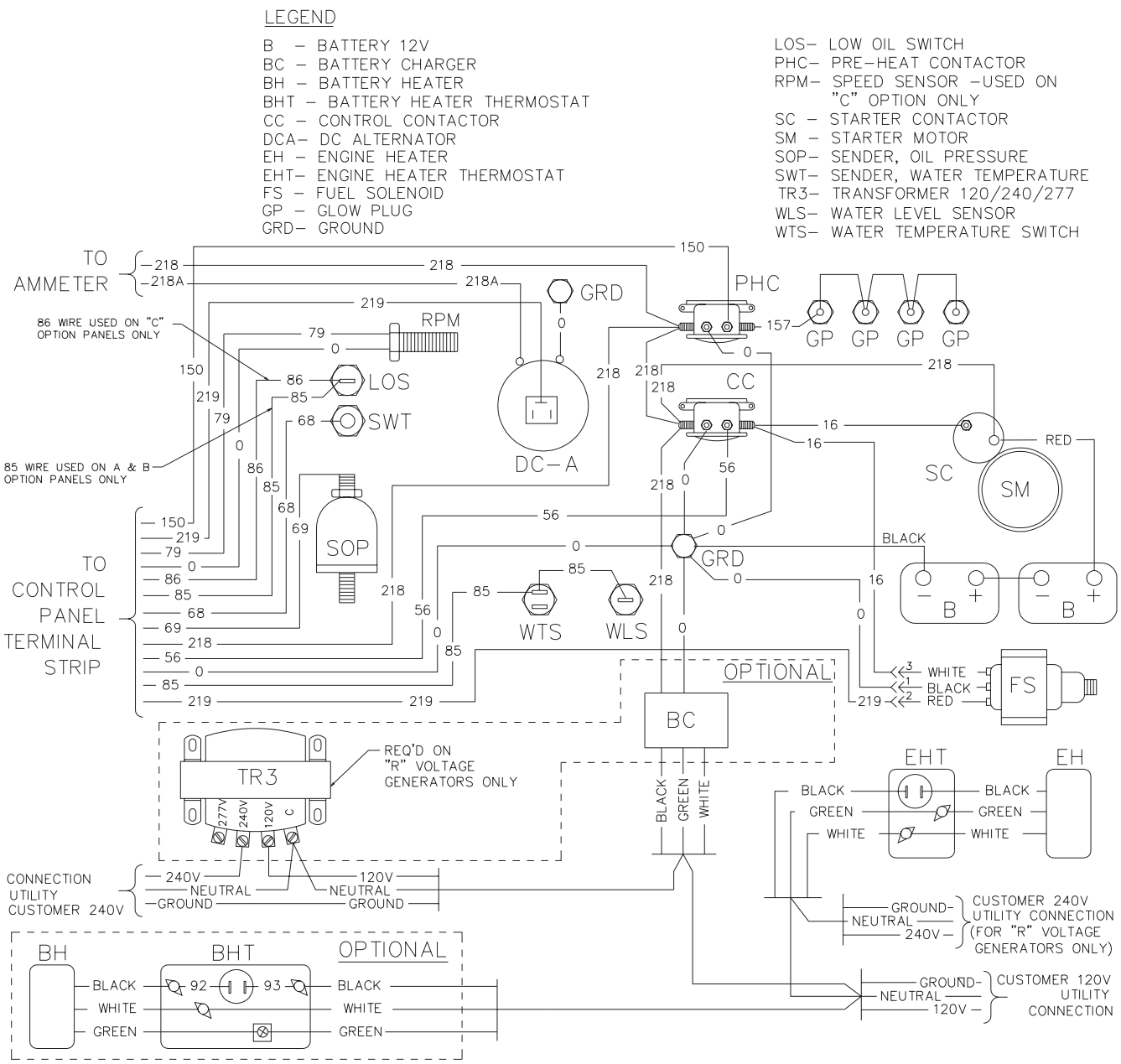
231/400V 3-PHASE

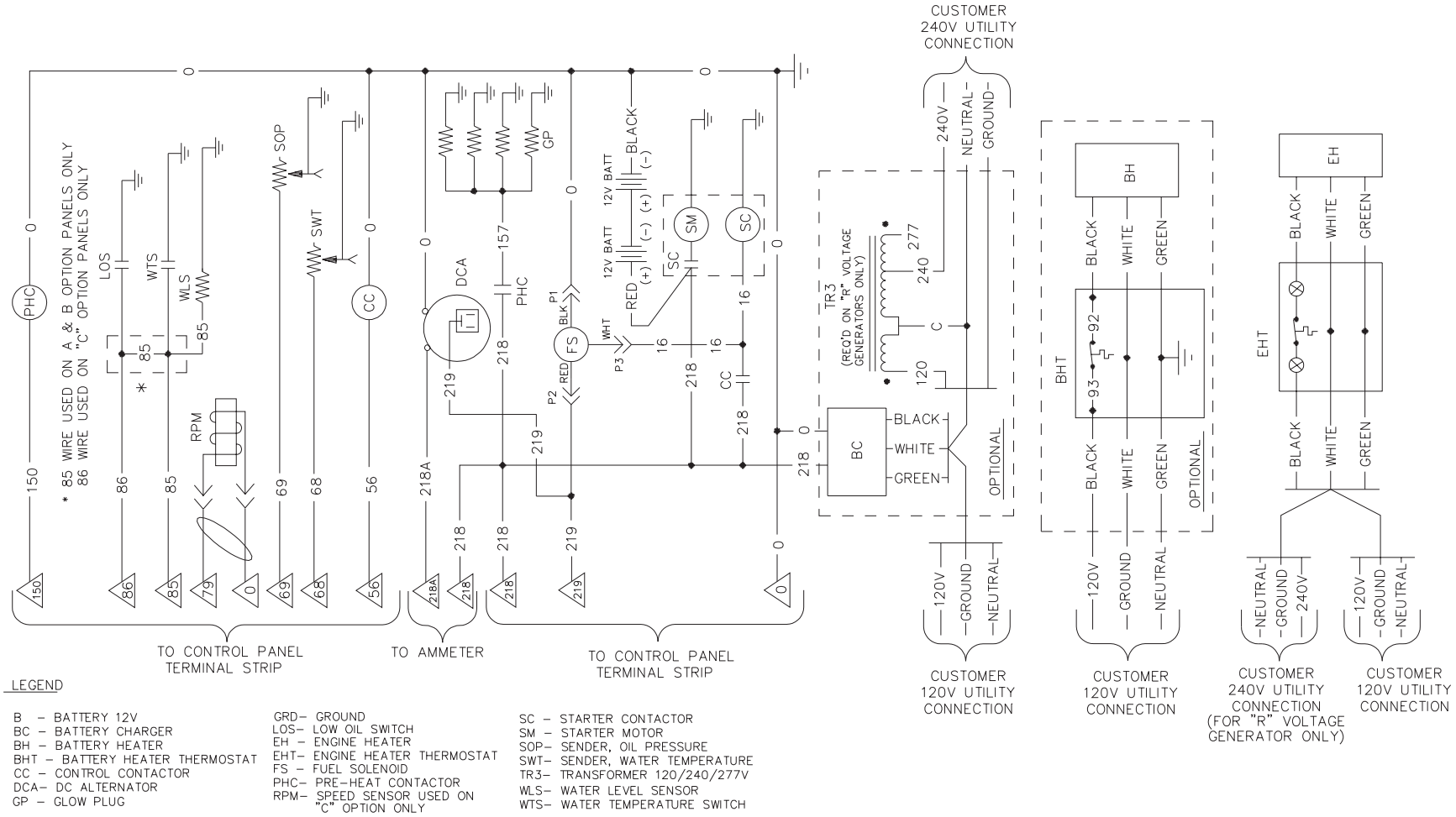
240/415V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
CT = CURRENT TRANSFORMER
EF = EXCITER FIELD
TR1 = TRANSFORMER- EXCITATION
TR2 = TRANSFORMER- 380/240V

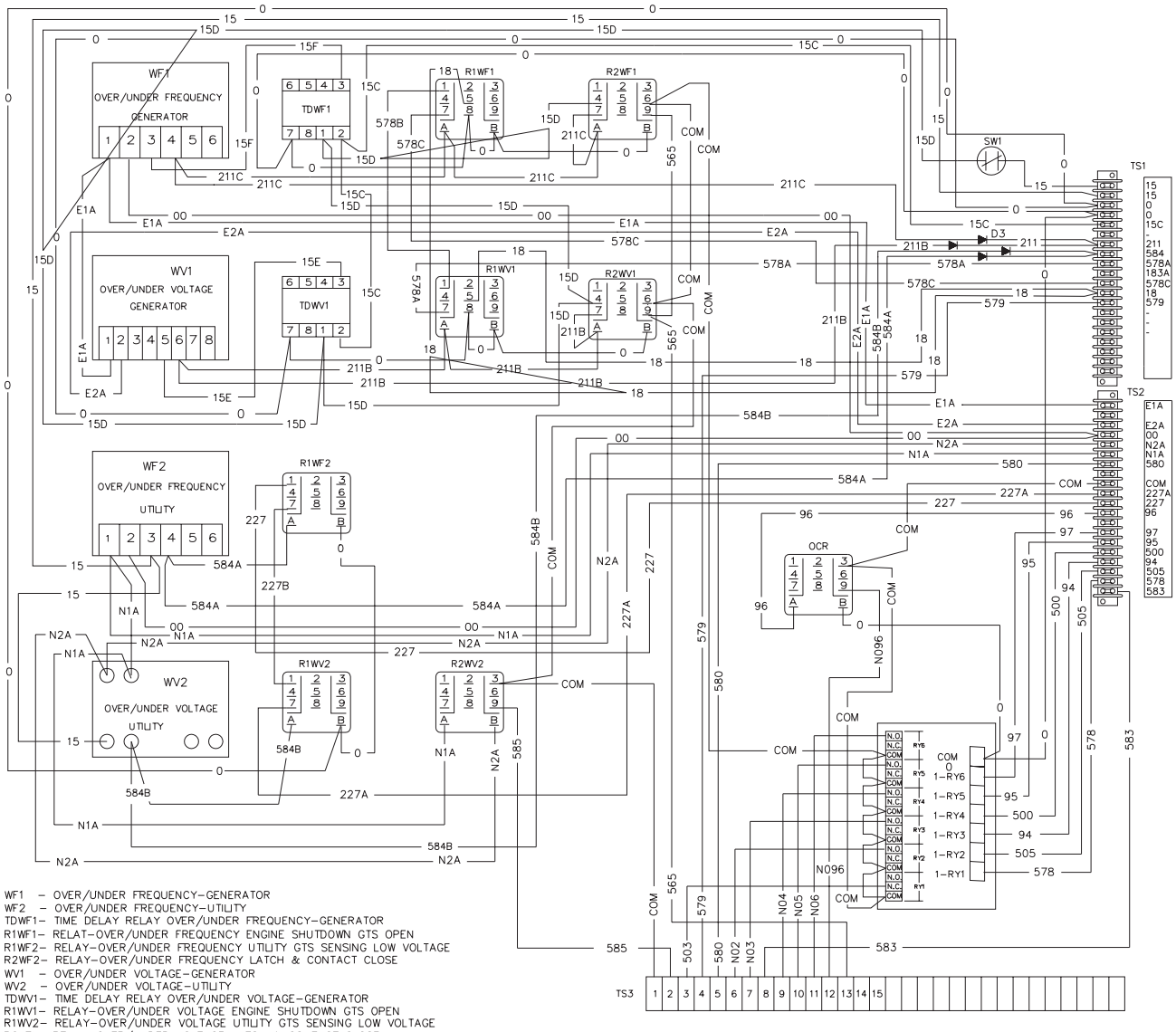
SHEET 7 OF 7


LEGEND
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR –USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
TR3– TRANSFORMER 120/240/277
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH
TO AMMETER
86 WIRE USED ON "C" OPTION PANELS ONLY
85 WIRE USED ON A & B OPTION PANELS ONLY
TO CONTROL PANEL TERMINAL STRIP
RPM
LOS
SWT
SOP
WTS
WLS
DC–A
GRD
PHC
GP GP GP GP
CC
SC
SM
RED
BLACK
B
B
FS
WHITE
BLACK
RED
OPTIONAL
BC
TR3
REQ'D ON "R" VOLTAGE GENERATORS ONLY
277V
240V
120V
C
CONNECTION UTILITY CUSTOMER 240V
240V
NEUTRAL
GROUND
120V
NEUTRAL
GROUND
EHT
EH
BLACK
GREEN
WHITE
GROUND
NEUTRAL
240V
CUSTOMER 240V UTILITY CONNECTION (FOR "R" VOLTAGE GENERATORS ONLY)
GROUND
NEUTRAL
120V
CUSTOMER 120V UTILITY CONNECTION
BH
BHT
OPTIONAL
92
93



LEGEND

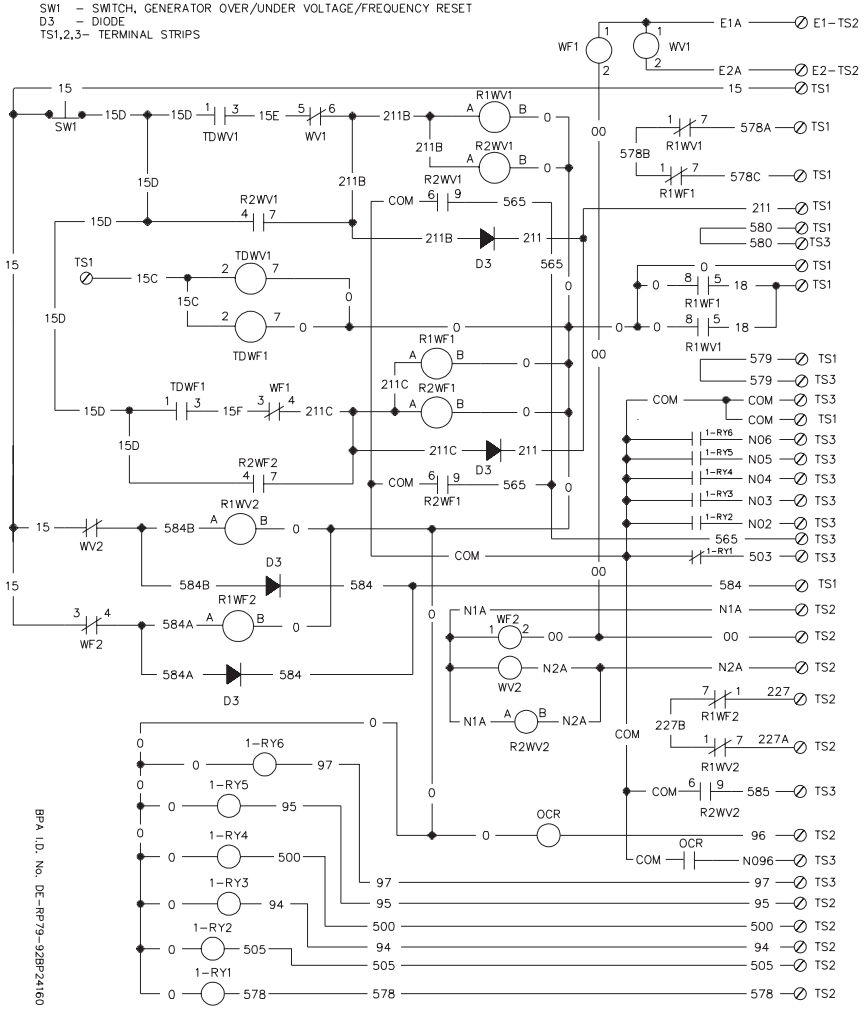
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
TR3– TRANSFORMER 120/240/277V
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

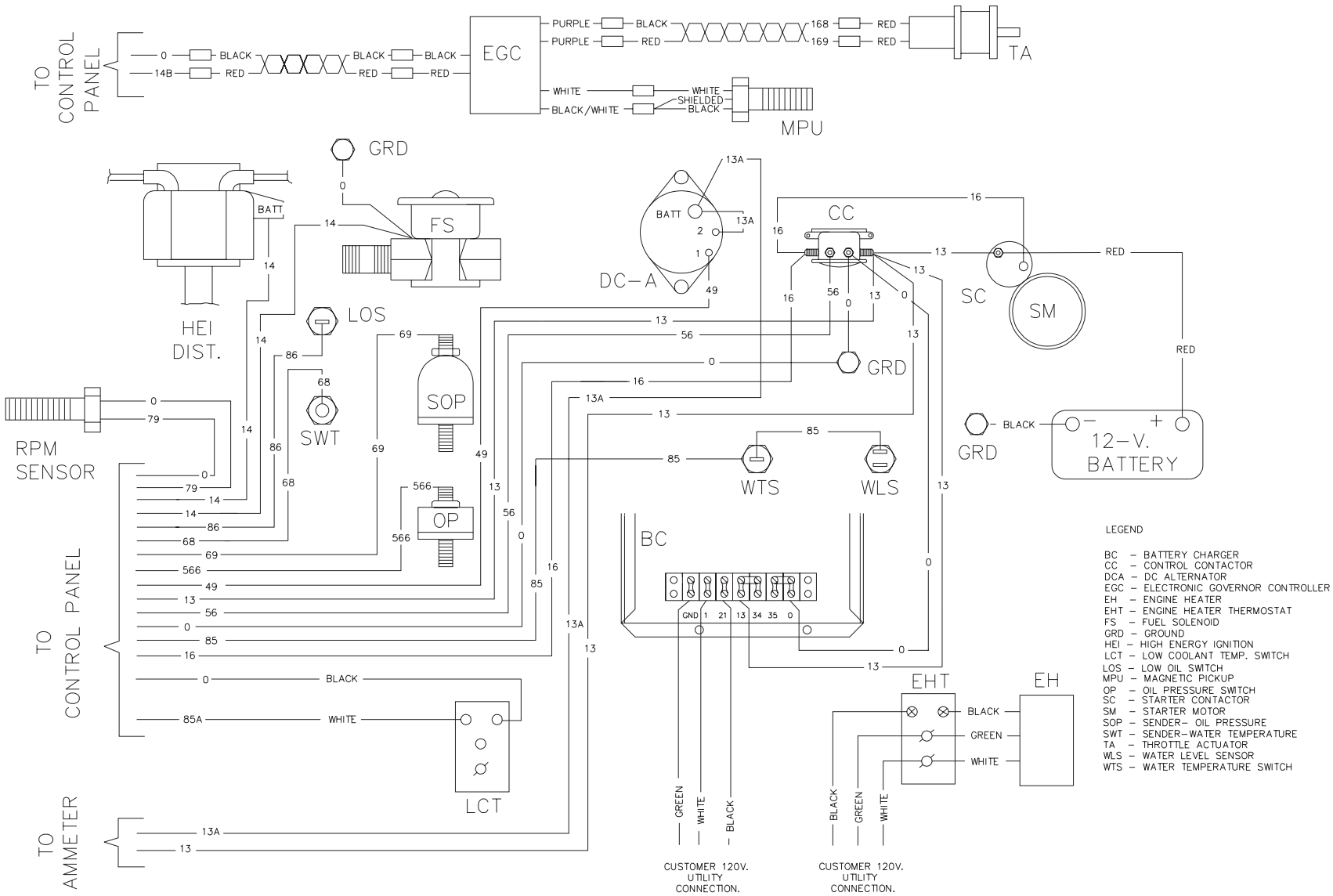


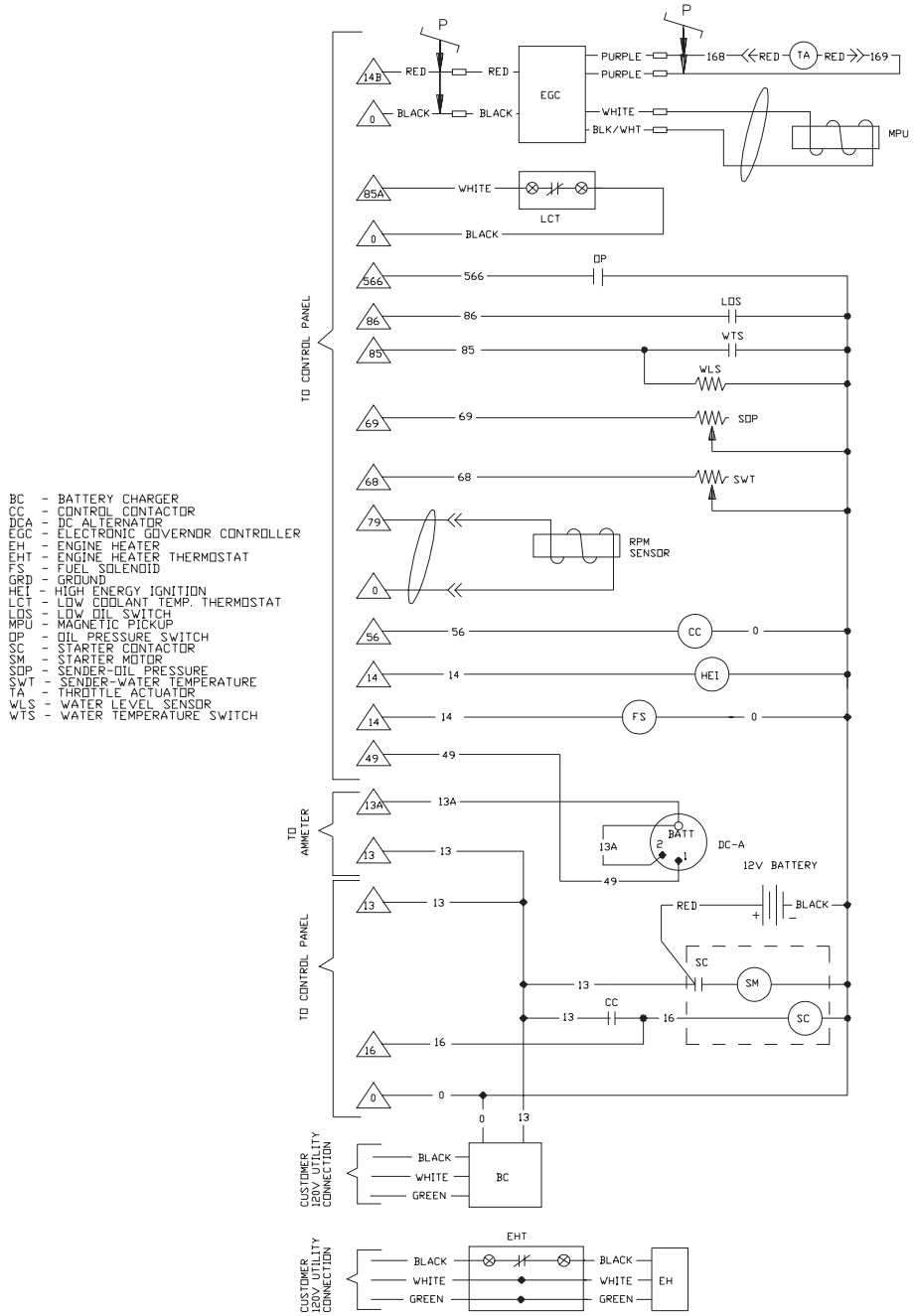
WF1 – OVER/UNDER FREQUENCY–GENERATOR
WF2 – OVER/UNDER FREQUENCY–UTILITY
TDWF1– TIME DELAY RELAY OVER/UNDER FREQUENCY–GENERATOR
R1WF1– RELAT–OVER/UNDER FREQUENCY ENGINE SHUTDOWN GTS OPEN
R1WF2– RELAY–OVER/UNDER FREQUENCY UTILITY GTS SENSING LOW VOLTAGE
R2WF2– RELAY–OVER/UNDER FREQUENCY LATCH & CONTACT CLOSE
WV1 – OVER/UNDER VOLTAGE–GENERATOR
WV2 – OVER/UNDER VOLTAGE–UTILITY
TDWV1– TIME DELAY RELAY OVER/UNDER VOLTAGE–GENERATOR
R1WV1– RELAY–OVER/UNDER VOLTAGE ENGINE SHUTDOWN GTS OPEN
R1WV2– RELAY–OVER/UNDER VOLTAGE UTILITY GTS SENSING LOW VOLTAGE
R2VF1– RELAY–OVER/UNDER VOLTAGE LATCH & CONTACT CLOSE
R2WV2– RELAY–UTILITY LOSS CONTACT CLOSURE
1–RY1– SWITCH NOT IN AUTO
1–RY2– RELAY LOW BATTERY–VOLTS ALARM
1–RY3– LOW OIL PRESSURE
1–RY4– RELAY–LOW WATER TEMPERATURE PREALARM
1–RY5– RELAY HIGH WATER TEMPERATURE
1–RY6– RELAY OVERSPEED
2–RY1– RELAY OVERCRANK CLOSURE
SW1 – SWITCH, GENERATOR OVER/UNDER VOLTAGE/FREQUENCY RESET
D3 – DIODE
TS1,2,3– TERMINAL STRIPS

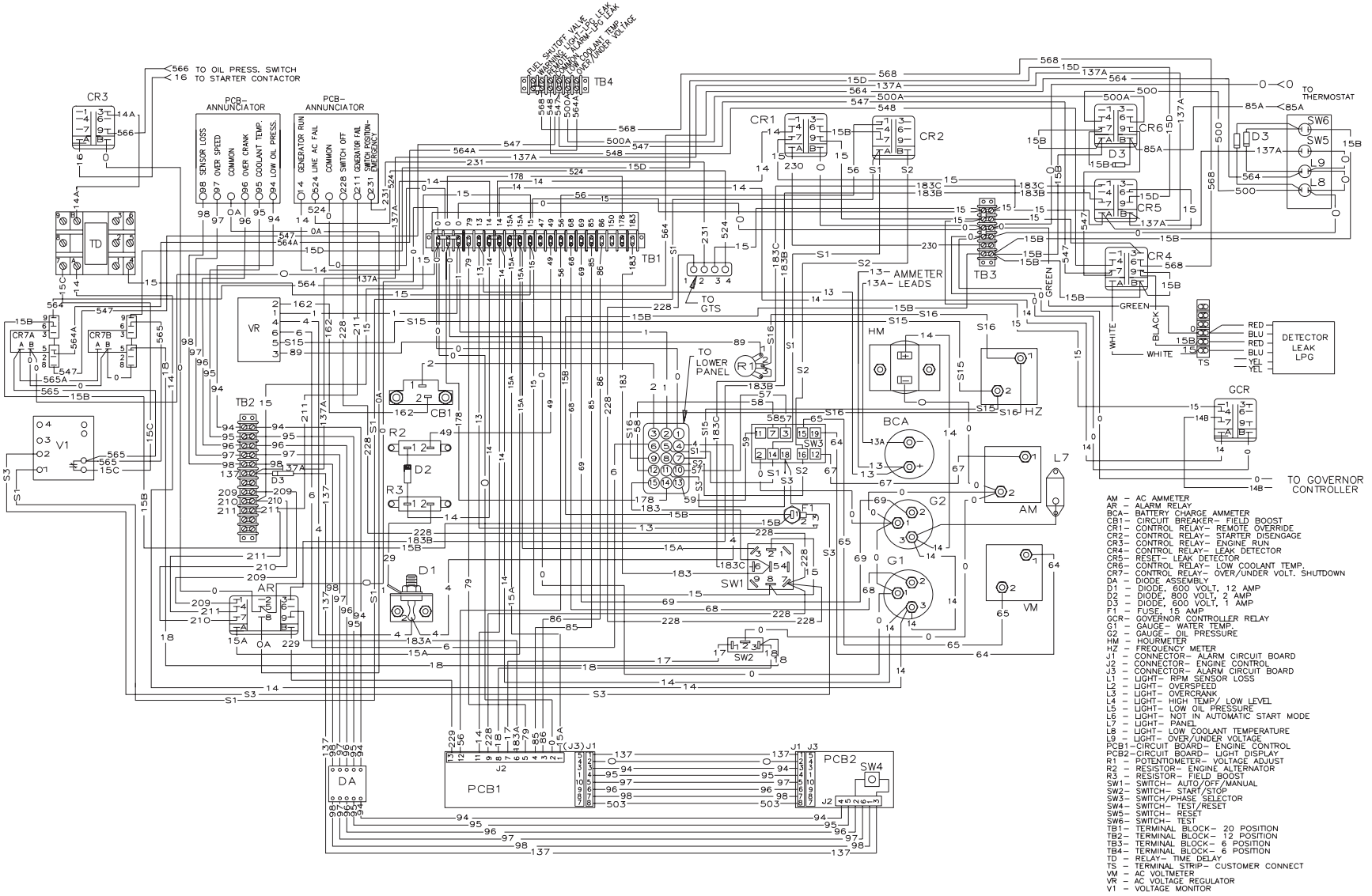
BPA I.D. DE–RP79–92BP24160

WF1 – OVER/UNDER FREQUENCY–GENERATOR
WF2 – OVER/UNDER FREQUENCY–UTILITY
TDWF1– TIME DELAY RELAY OVER/UNDER FREQUENCY–GENERATOR
R1WF1– RELAT–OVER/UNDER FREQUENCY ENGINE SHUTDOWN GTS OPEN
R1WF2– RELAY–OVER/UNDER FREQUENCY UTILITY GTS SENSING LOW VOLTAGE
R2WF2– RELAY–OVER/UNDER FREQUENCY LATCH & CONTACT CLOSE
WV1 – OVER/UNDER VOLTAGE–GENERATOR
WV2 – OVER/UNDER VOLTAGE–UTILITY
TDWV1– TIME DELAY RELAY OVER/UNDER VOLTAGE–GENERATOR
R1WV1– RELAY–OVER/UNDER VOLTAGE ENGINE SHUTDOWN GTS OPEN
R1WV2– RELAY–OVER/UNDER VOLTAGE UTILITY GTS SENSING LOW VOLTAGE
R2VF1– RELAY–OVER/UNDER VOLTAGE LATCH & CONTACT CLOSE
R2WV2– RELAY–UTILITY LOSS CONTACT CLOSURE
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1–RY2– RELAY LOW BATTERY–VOLTS ALARM
1–RY3– LOW OIL PRESSURE
1–RY4– RELAY–LOW WATER TEMPERATURE PREALARM
1–RY5– RELAY HIGH WATER TEMPERATURE
1–RY6– RELAY OVERSPEED
2–RY1– RELAY OVERCRANK CLOSURE
SW1 – SWITCH, GENERATOR OVER/UNDER VOLTAGE/FREQUENCY RESET
D3 – DIODE
TS1,2,3– TERMINAL STRIPS

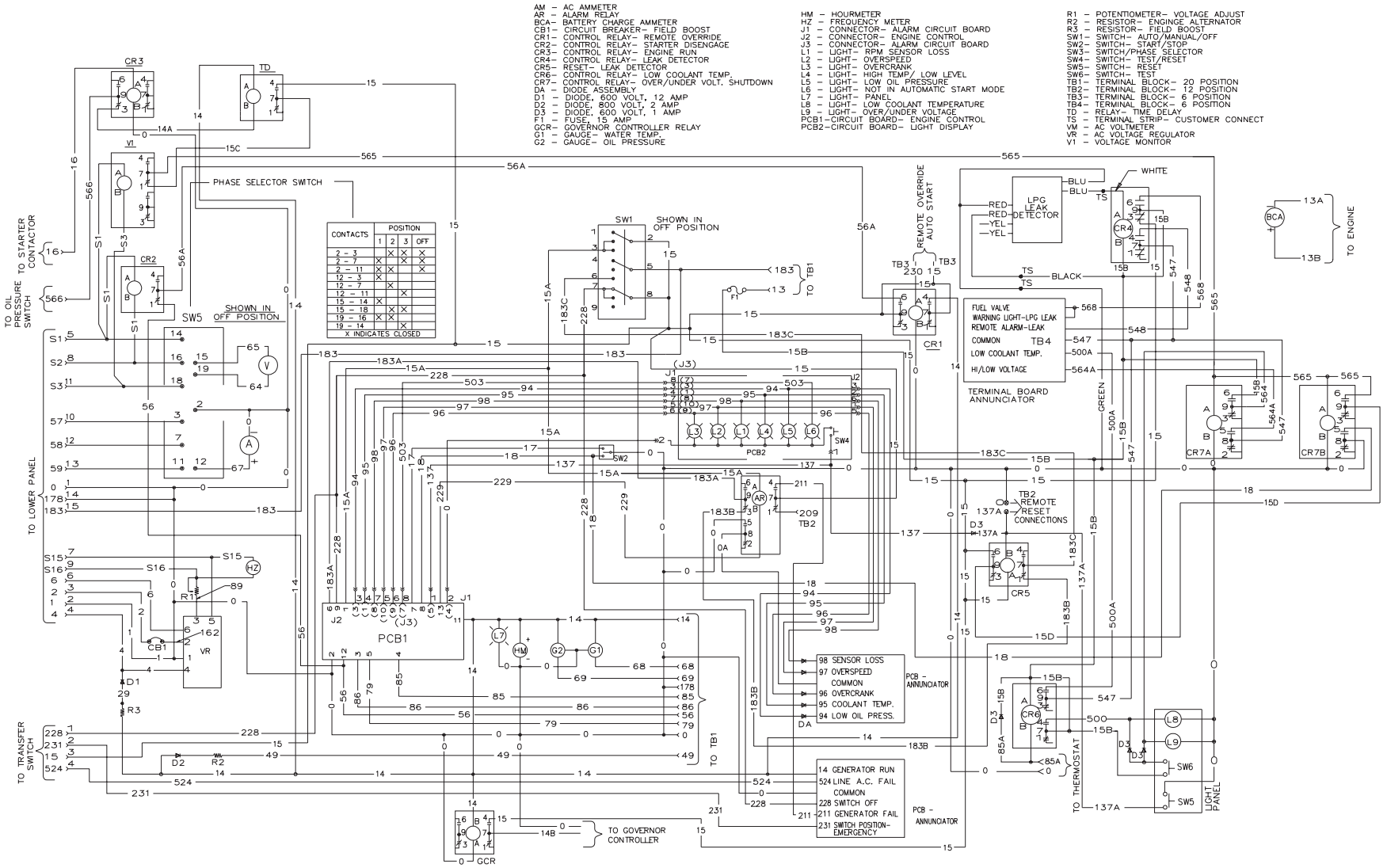



TO CONTROL PANEL
0
14B
BLACK
RED
EGC
PURPLE
PURPLE
WHITE
BLACK/WHITE
168
169
TA
MPU
GRD
FS
BATT
HEI DIST.
DC–A
13A
CC
SC
SM
LOS
SOP
SWT
RPM SENSOR
OP
WTS
WLS
12–V. BATTERY
BC
GND 1 21 13 34 35 0
LCT
TO AMMETER
EHT
EH
CUSTOMER 120V. UTILITY CONNECTION.
LEGEND
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EGC – ELECTRONIC GOVERNOR CONTROLLER
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENERGY IGNITION
LCT – LOW COOLANT TEMP. SWITCH
LOS – LOW OIL SWITCH
MPU – MAGNETIC PICKUP
OP – OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
TA – THROTTLE ACTUATOR
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH


BC - BATTERY CHARGER
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EGC - ELECTRONIC GOVERNOR CONTROLLER
EH - ENGINE HEATER
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SWT - SENDER-WATER TEMPERATURE
TA - THROTTLE ACTUATOR
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
TO CONTROL PANEL
TO AMMETER
TO CONTROL PANEL
CUSTOMER 120V UTILITY CONNECTION
CUSTOMER 120V UTILITY CONNECTION
P
P
14B
0
RED
BLACK
EGC
PURPLE
PURPLE
168
TA
169
WHITE
BLK/WHT
MPU
85A
LCT
566
OP
86
LOS
85
WTS
WLS
69
SOP
68
SWT
79
RPM SENSOR
56
CC
14
HEI
FS
49
13A
BATT
DC-A
12V BATTERY
13
SC
SM
16
BC
EHT
EH
GREEN

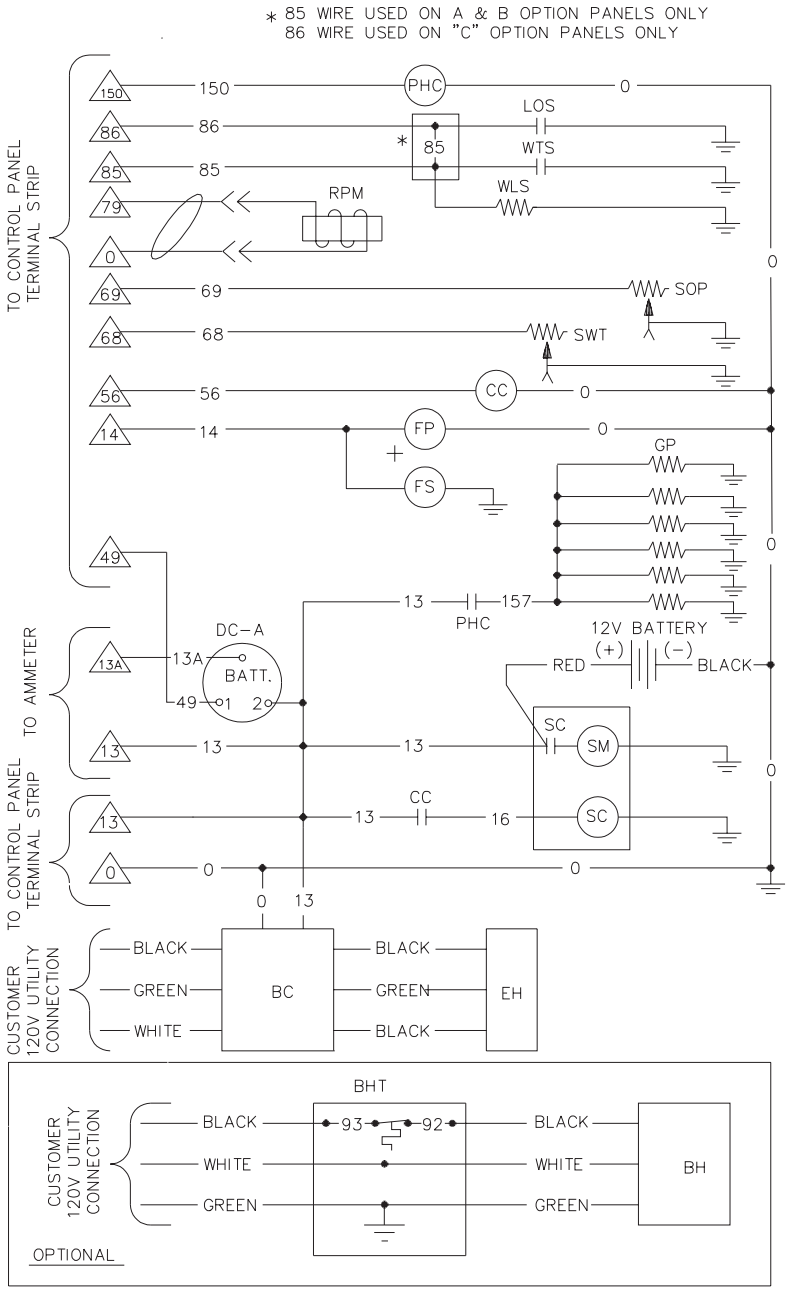


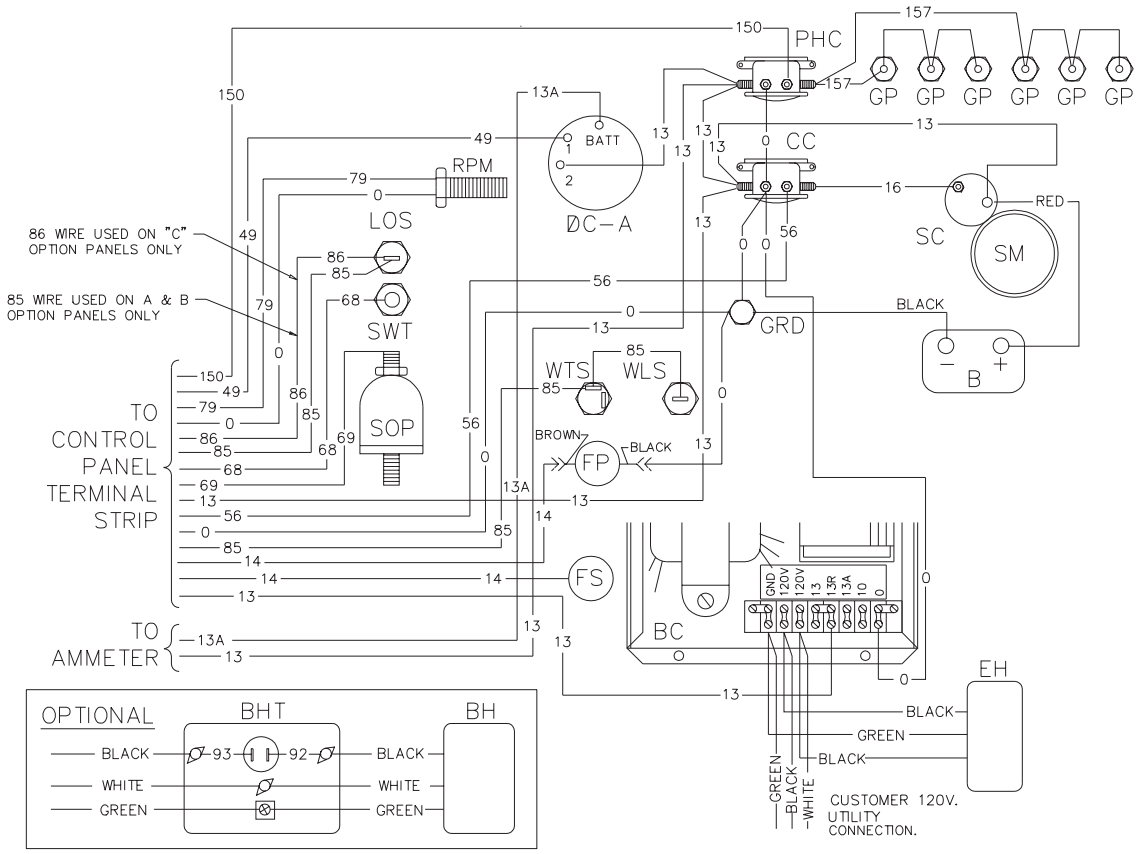
AM – AC AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER– FIELD BOOST
CR1– CONTROL RELAY– REMOTE OVERRIDE
CR2– CONTROL RELAY– STARTER DISENGAGE
CR3– CONTROL RELAY– ENGINE RUN
CR4– CONTROL RELAY– LEAK DETECTOR
CR5– RESET– LEAK DETECTOR
CR6– CONTROL RELAY– LOW COOLANT TEMP.
CR7– CONTROL RELAY– OVER/UNDER VOLT. SHUTDOWN
DA – DIODE ASSEMBLY
D1 – DIODE, 600 VOLT, 12 AMP
D2 – DIODE, 800 VOLT, 2 AMP
D3 – DIODE, 600 VOLT, 1 AMP
F1 – FUSE, 15 AMP
GCR– GOVERNOR CONTROLLER RELAY
G1 – GAUGE– WATER TEMP.
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR– ALARM CIRCUIT BOARD
J2 – CONNECTOR– ENGINE CONTROL
J3 – CONNECTOR– ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/ LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
L7 – LIGHT– PANEL
L8 – LIGHT– LOW COOLANT TEMPERATURE
L9 – LIGHT– OVER/UNDER VOLTAGE
PCB1–CIRCUIT BOARD– ENGINE CONTROL
PCB2–CIRCUIT BOARD– LIGHT DISPLAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– ENGINE ALTERNATOR
R3 – RESISTOR– FIELD BOOST
SW1– SWITCH– AUTO/OFF/MANUAL
SW2– SWITCH– START/STOP
SW3– SWITCH/PHASE SELECTOR
SW4– SWITCH– TEST/RESET
SW5– SWITCH– RESET
SW6– SWITCH– TEST
TB1– TERMINAL BLOCK– 20 POSITION
TB2– TERMINAL BLOCK– 12 POSITION
TB3– TERMINAL BLOCK– 6 POSITION
TB4– TERMINAL BLOCK– 6 POSITION
TD – RELAY– TIME DELAY
TS – TERMINAL STRIP– CUSTOMER CONNECT
VM – AC VOLTMETER
VR – AC VOLTAGE REGULATOR
V1 – VOLTAGE MONITOR


AM – AC AMMETER
AR – ALARM RELAY
BCA– BATTERY CHARGE AMMETER
CB1– CIRCUIT BREAKER– FIELD BOOST
CR1– CONTROL RELAY– REMOTE OVERRIDE
CR2– CONTROL RELAY– STARTER DISENGAGE
CR3– CONTROL RELAY– ENGINE RUN
CR4– CONTROL RELAY– LEAK DETECTOR
CR5– RESET– LEAK DETECTOR
CR6– CONTROL RELAY– LOW COOLANT TEMP.
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DA – DIODE ASSEMBLY
D1 – DIODE, 600 VOLT, 12 AMP
D2 – DIODE, 800 VOLT, 2 AMP
D3 – DIODE, 600 VOLT, 1 AMP
F1 – FUSE, 15 AMP
GCR– GOVERNOR CONTROLLER RELAY
G1 – GAUGE– WATER TEMP.
G2 – GAUGE– OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
J1 – CONNECTOR– ALARM CIRCUIT BOARD
J2 – CONNECTOR– ENGINE CONTROL
J3 – CONNECTOR– ALARM CIRCUIT BOARD
L1 – LIGHT– RPM SENSOR LOSS
L2 – LIGHT– OVERSPEED
L3 – LIGHT– OVERCRANK
L4 – LIGHT– HIGH TEMP/ LOW LEVEL
L5 – LIGHT– LOW OIL PRESSURE
L6 – LIGHT– NOT IN AUTOMATIC START MODE
L7 – LIGHT– PANEL
L8 – LIGHT– LOW COOLANT TEMPERATURE
L9 – LIGHT– OVER/UNDER VOLTAGE
PCB1–CIRCUIT BOARD– ENGINE CONTROL
PCB2–CIRCUIT BOARD– LIGHT DISPLAY
R1 – POTENTIOMETER– VOLTAGE ADJUST
R2 – RESISTOR– ENGINGE ALTERNATOR
R3 – RESISTOR– FIELD BOOST
SW1– SWITCH– AUTO/MANUAL/OFF
SW2– SWITCH– START/STOP
SW3– SWITCH/PHASE SELECTOR
SW4– SWITCH– TEST/RESET
SW5– SWITCH– RESET
SW6– SWITCH– TEST
TB1– TERMINAL BLOCK– 20 POSITION
TB2– TERMINAL BLOCK– 12 POSITION
TB3– TERMINAL BLOCK– 6 POSITION
TB4– TERMINAL BLOCK– 6 POSITION
TD – RELAY– TIME DELAY
TS – TERMINAL STRIP– CUSTOMER CONNECT
VM – AC VOLTMETER
VR – AC VOLTAGE REGULATOR
V1 – VOLTAGE MONITOR
PHASE SELECTOR SWITCH
SHOWN IN OFF POSITION
CONTACTS
POSITION
X INDICATES CLOSED
TO STARTER CONTACTOR
TO OIL PRESSURE SWITCH
TO LOWER PANEL
TO TRANSFER SWITCH
TO GOVERNOR CONTROLLER
TO ENGINE
REMOTE OVERRIDE AUTO START
LPG LEAK DETECTOR
FUEL VALVE
WARNING LIGHT–LPG LEAK
REMOTE ALARM–LEAK
COMMON
LOW COOLANT TEMP.
HI/LOW VOLTAGE
TERMINAL BOARD ANNUNCIATOR
TB2 REMOTE RESET CONNECTIONS
98 SENSOR LOSS
97 OVERSPEED
COMMON
96 OVERCRANK
95 COOLANT TEMP.
94 LOW OIL PRESS.
PCB – ANNUNCIATOR
14 GENERATOR RUN
524 LINE A.C. FAIL
COMMON
228 SWITCH OFF
211 GENERATOR FAIL
231 SWITCH POSITION– EMERGENCY
PCB – ANNUNCIATOR
TO THERMOSTAT
LIGHT PANEL
PCB1
PCB2
WHITE
BLU
RED
YEL
BLACK
GREEN

LEGEND

BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATT. HEAT. THERMOSTAT
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
FP – FUEL PUMP
GP – GLOW PLUG
LOS – LOW OIL SWITCH
PHC – PRE-HEAT CONTACTOR
RPM – SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER-OIL PRESSURE
SWT – SENDER-WATER TEMP.
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH

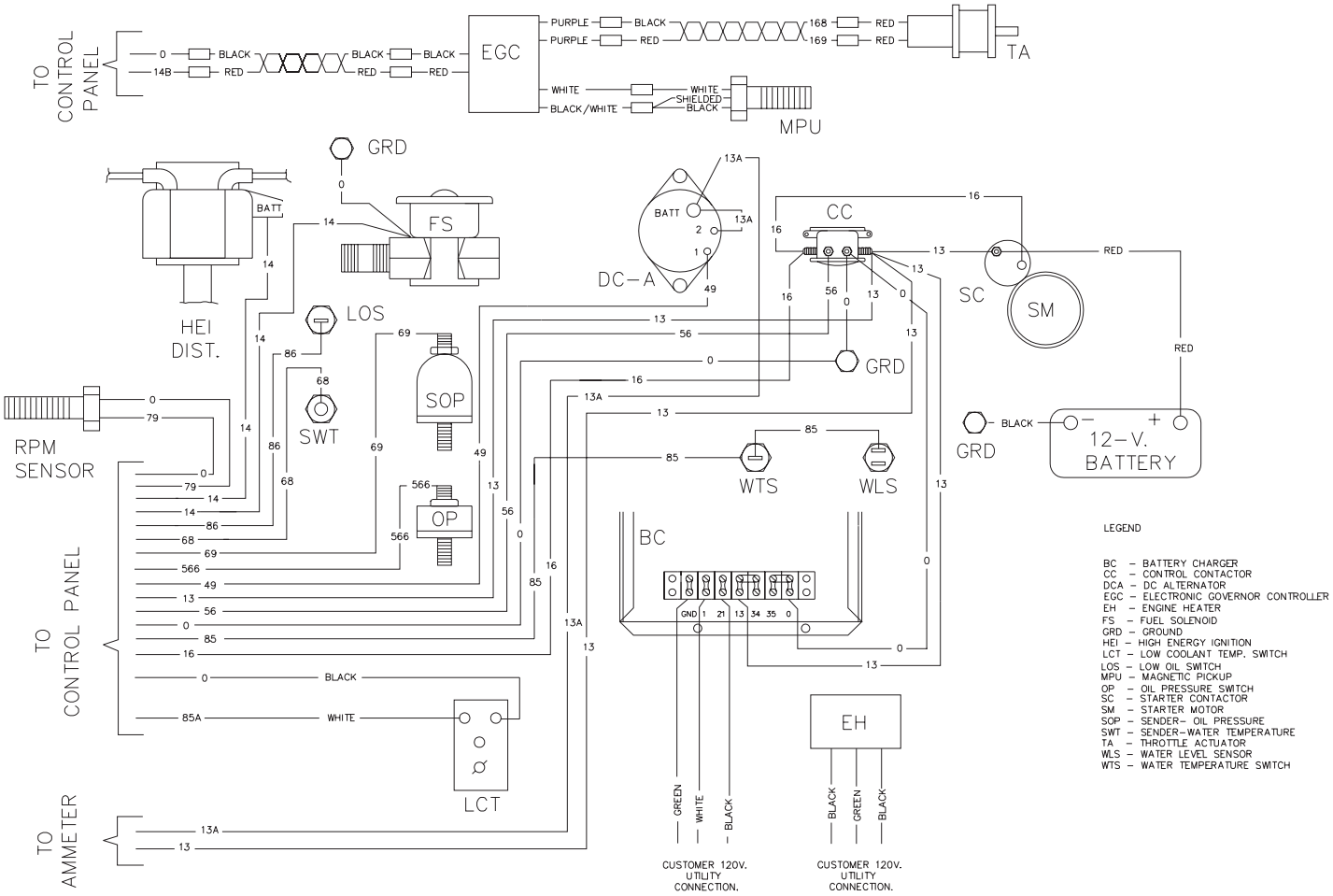


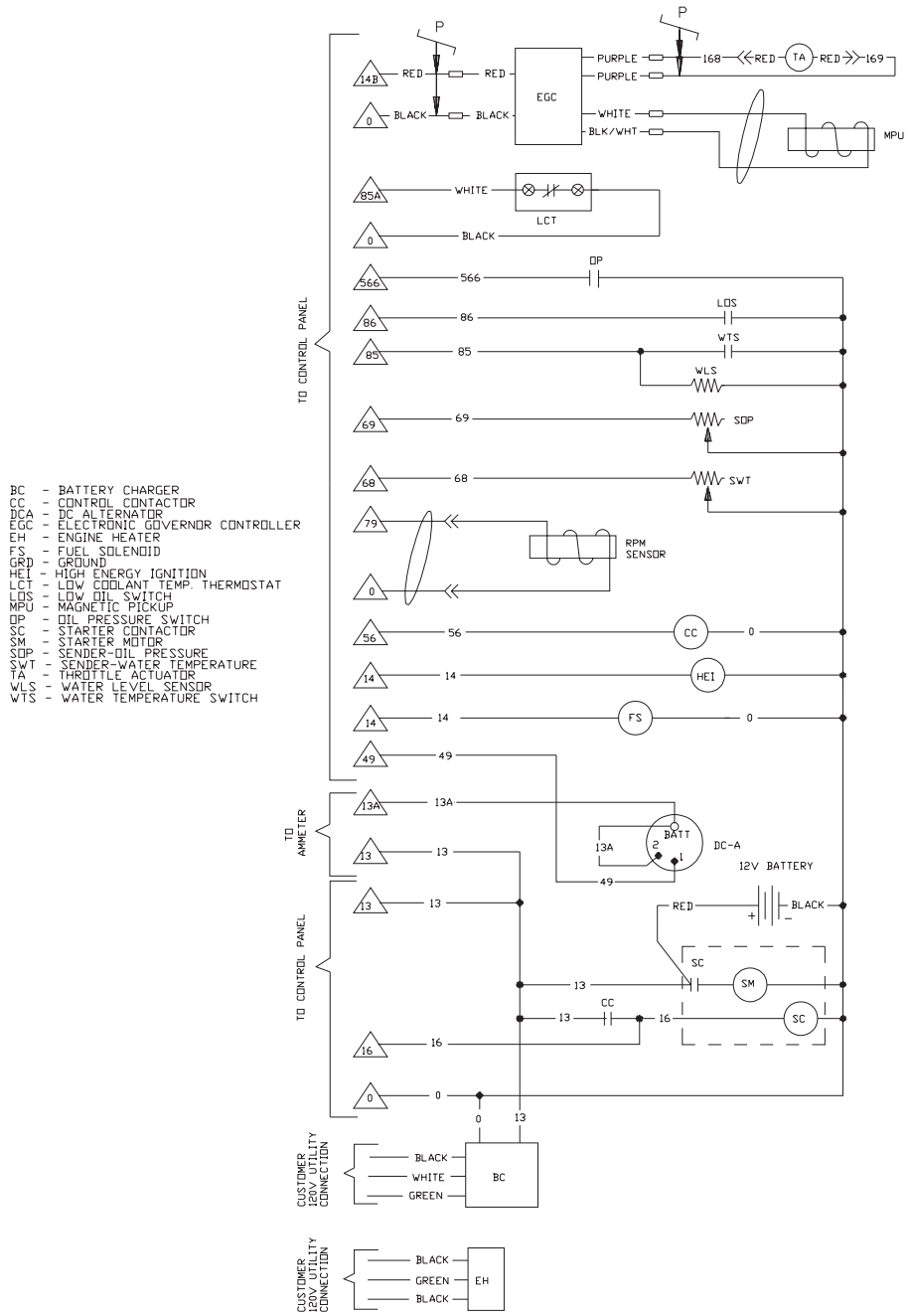


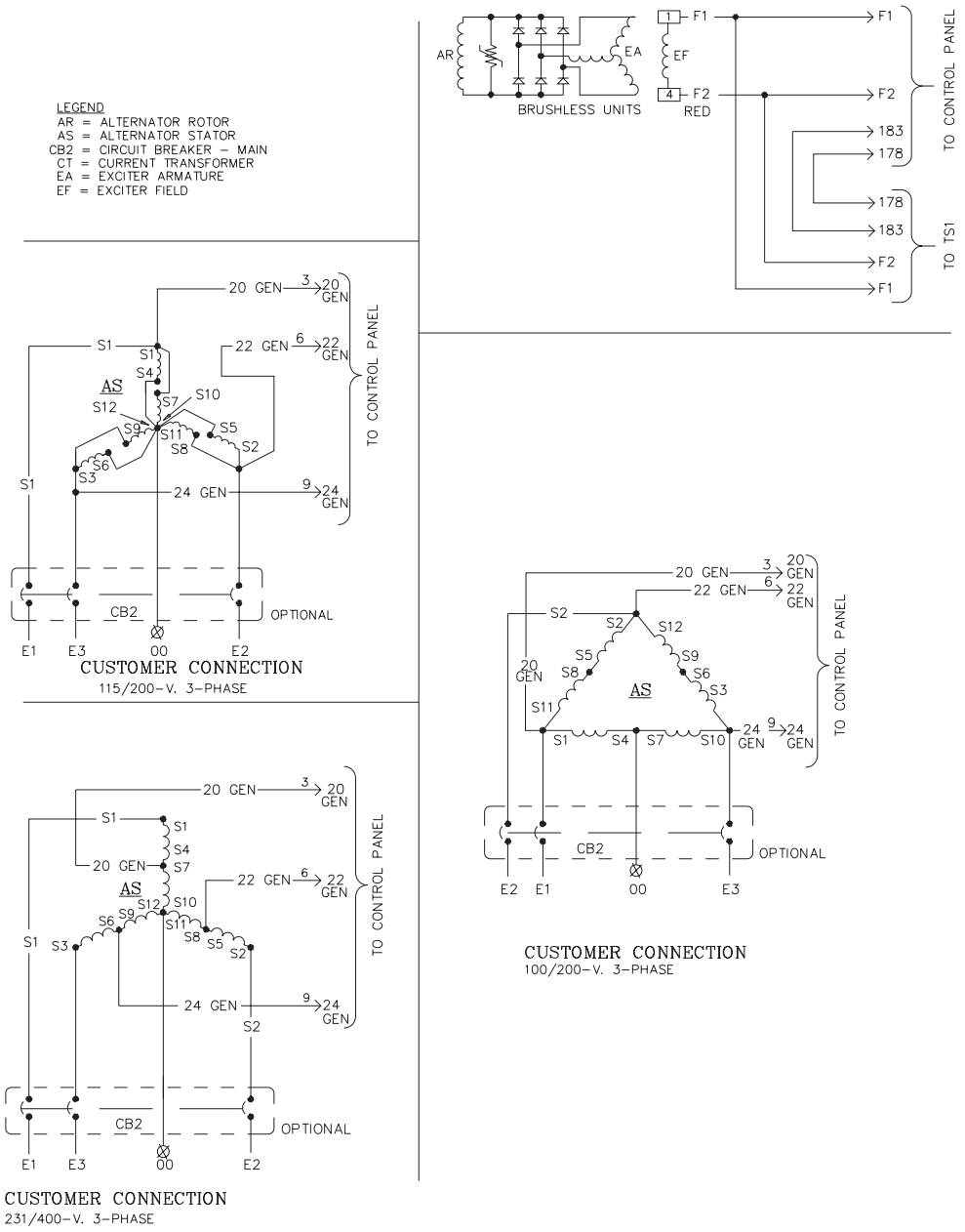
LEGEND

B – BATTERY 12-V.
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATT. HEAT. THERMOSTAT
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
FP – FUEL PUMP
GP – GLOW PLUG

GPC – GLOW PLUG CONTROLLER
GRD – GROUND
LOS – LOW OIL SWITCH
PHC – PRE-HEAT CONTACTOR
RPM – SPEED SENSOR USED ON 'C' OPTION ONLY.
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER-OIL PRESSURE
SWT – SENDER-WATER TEMP.
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH

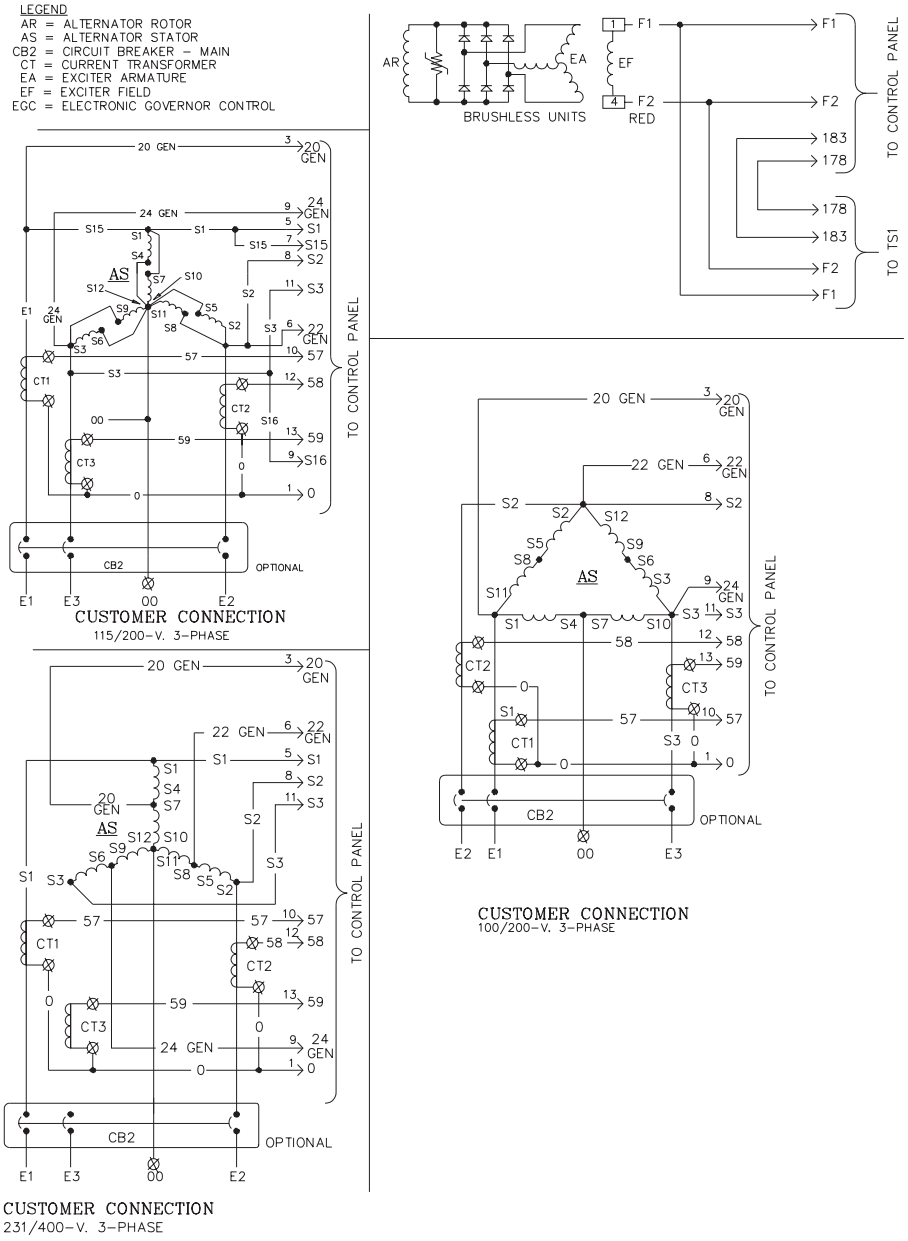

TO CONTROL PANEL
EGC
TA
MPU
GRD
BATT
FS
HEI DIST.
LOS
SOP
SWT
RPM SENSOR
OP
DC–A
CC
SC
SM
GRD
BLACK
12–V. BATTERY
WTS
WLS
BC
EH
LCT
TO AMMETER
CUSTOMER 120V. UTILITY CONNECTION.
CUSTOMER 120V. UTILITY CONNECTION.
LEGEND
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA – DC ALTERNATOR
EGC – ELECTRONIC GOVERNOR CONTROLLER
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD – GROUND
HEI – HIGH ENERGY IGNITION
LCT – LOW COOLANT TEMP. SWITCH
LOS – LOW OIL SWITCH
MPU – MAGNETIC PICKUP
OP – OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER–WATER TEMPERATURE
TA – THROTTLE ACTUATOR
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH


BC - BATTERY CHARGER
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
EGC - ELECTRONIC GOVERNOR CONTROLLER
EH - ENGINE HEATER
FS - FUEL SOLENOID
GRD - GROUND
HEI - HIGH ENERGY IGNITION
LCT - LOW COOLANT TEMP. THERMOSTAT
LOS - LOW OIL SWITCH
MPU - MAGNETIC PICKUP
OP - OIL PRESSURE SWITCH
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SDP - SENDER-OIL PRESSURE
SWT - SENDER-WATER TEMPERATURE
TA - THROTTLE ACTUATOR
WLS - WATER LEVEL SENSOR
WTS - WATER TEMPERATURE SWITCH
TO CONTROL PANEL
TO AMMETER
TO CONTROL PANEL
CUSTOMER 120V UTILITY CONNECTION
CUSTOMER 120V UTILITY CONNECTION
EGC
LCT
MPU
RPM SENSOR
OP
LOS
WTS
WLS
SDP
SWT
CC
HEI
FS
BATT
DC-A
12V BATTERY
SC
SM
TA
BC
EH
RED
BLACK
WHITE
GREEN
PURPLE
BLK/WHT



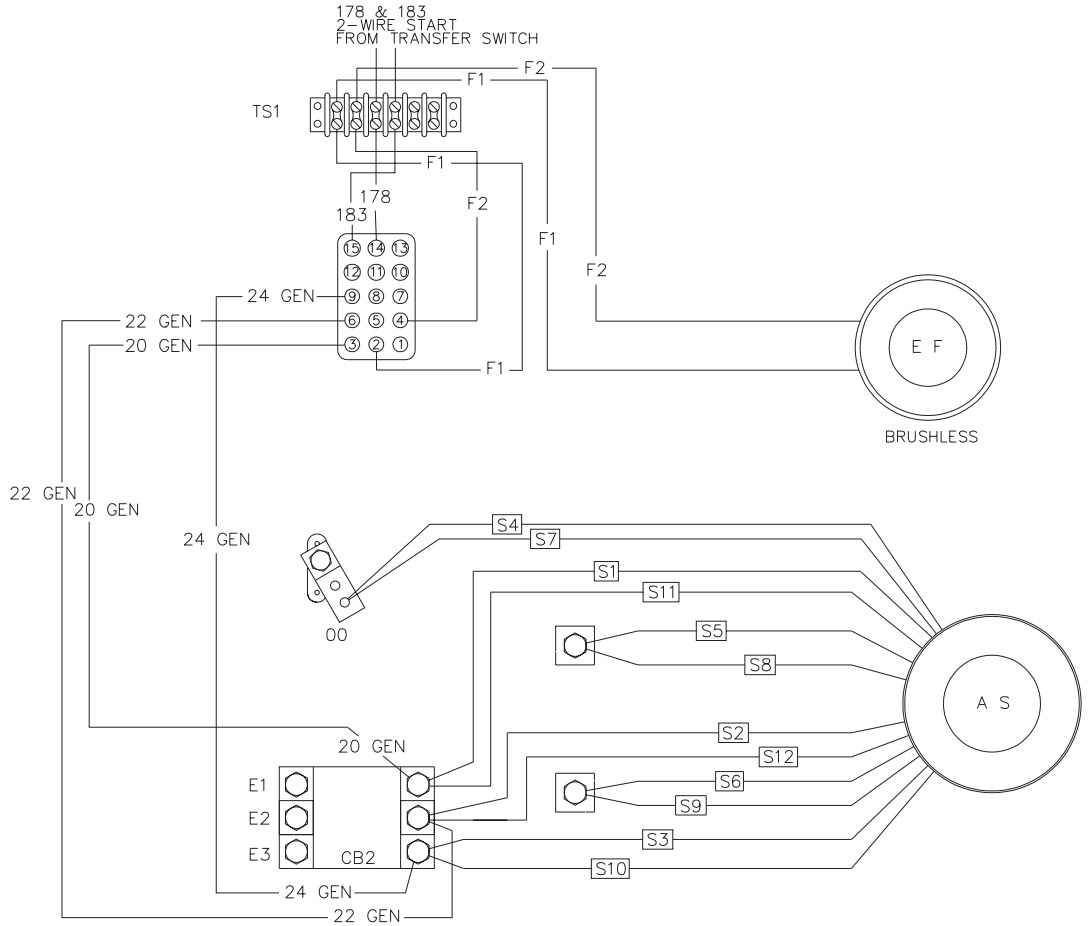
ALTERNATOR AND LOWER PANEL
SCHEMATIC "A" OPTION

SHEET 1 OF 2



ALTERNATOR AND LOWER PANEL
SCHEMATIC "B" AND "C" OPTION

SHEET 2 OF 2



E1 TO E3 – 200V
E1 TO 00, E3 TO 00 – 100V

CUSTOMER CONNECTION
100/200V 1-PHASE

E1 TO E2, E2 TO E3, E3 TO E1 – 200V
E1 TO 00, E3 TO 00 – 100V

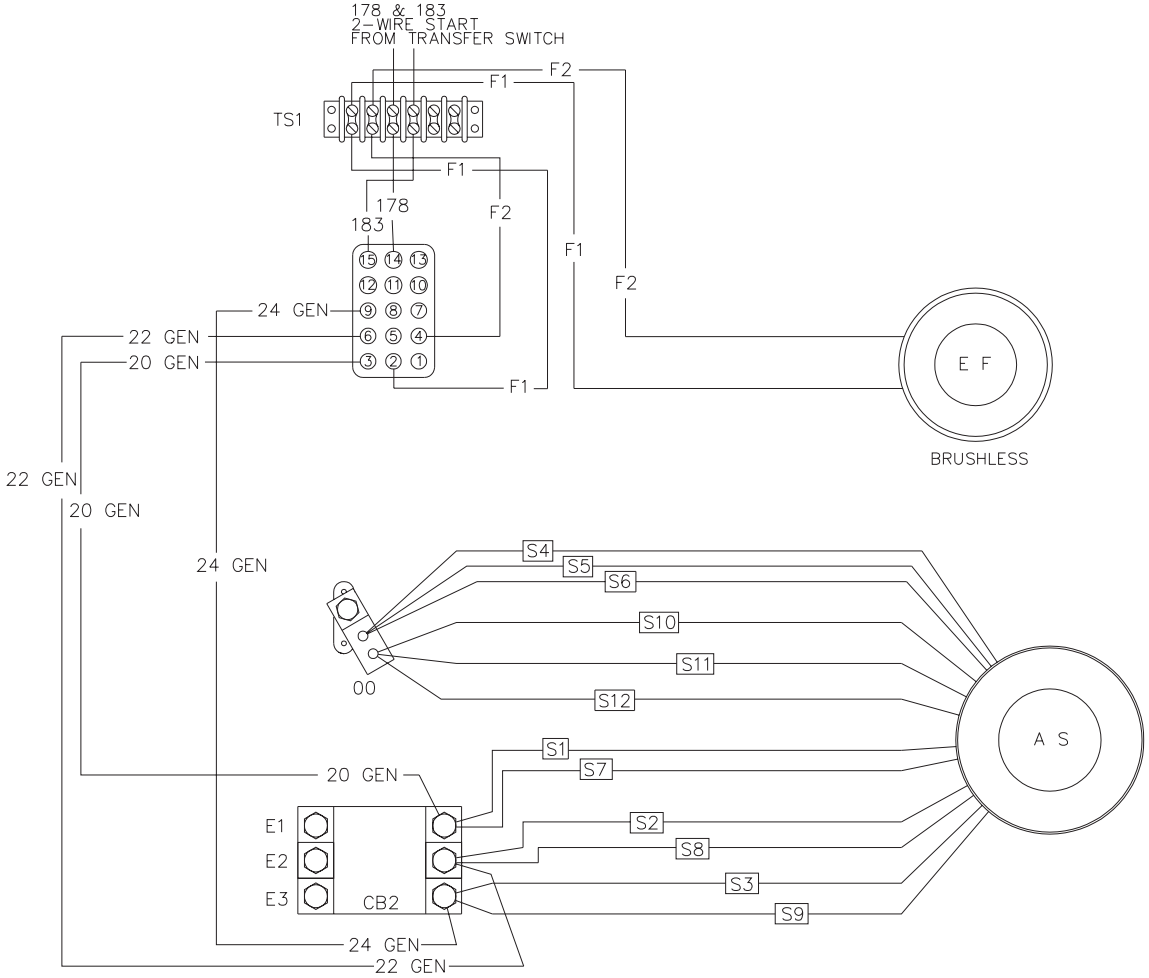
CUSTOMER CONNECTION
100/200V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
TS1 = TERMINAL STRIP

"A" OPTION

SHEET 1 OF 6



E1 TO E2	200V
E2 TO E3	
E3 TO E1	
E1 TO 00	115V
E2 TO 00	
E3 TO 00	

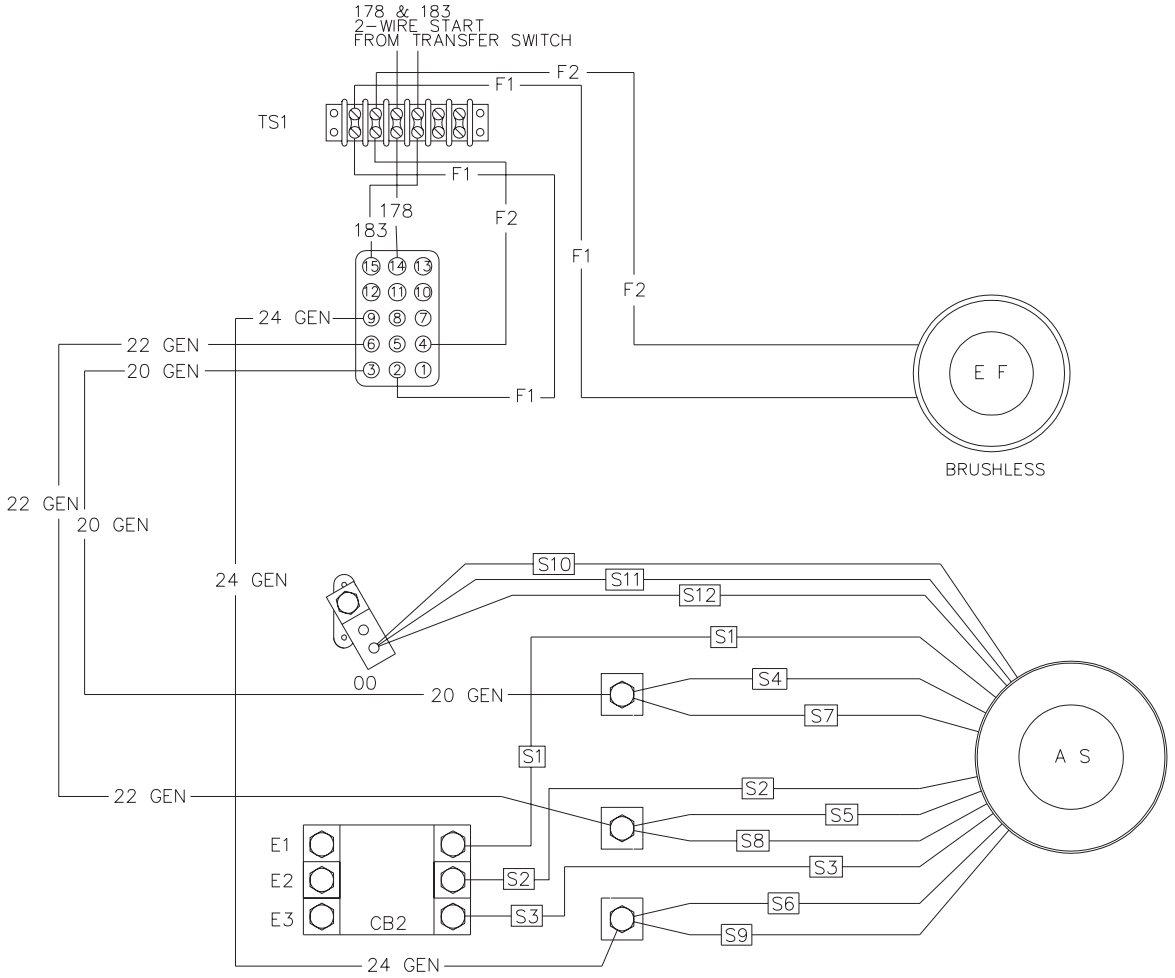
CUSTOMER CONNECTION
115/200V 3-PHASE

LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
TS1 = TERMINAL STRIP

SHEET 2 OF 6

"A" OPTION



E1 TO E2 E2 TO E3 E3 TO E1	400V
E1 TO 00 E2 TO 00 E3 TO 00	231V

CUSTOMER CONNECTION

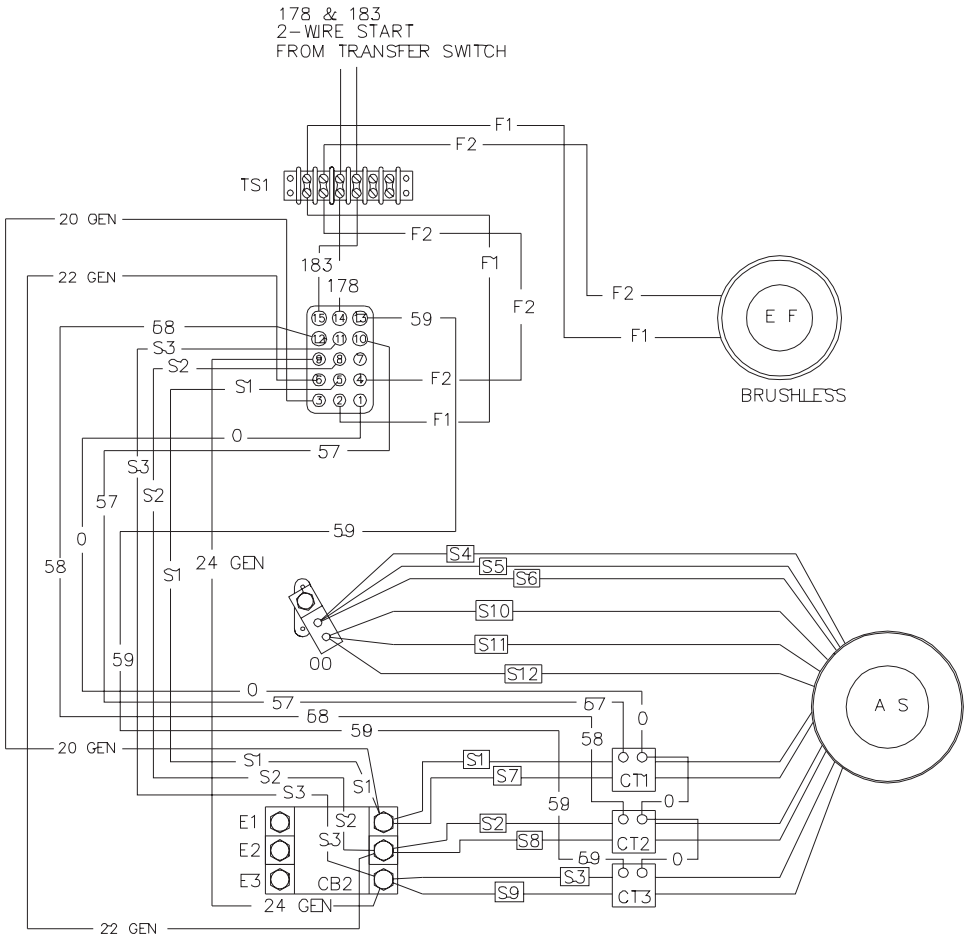
231/400V 3-PHASE

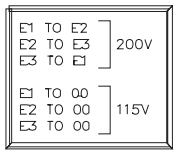
LEGEND

AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER- MAIN
EF = EXCITER FIELD
TS1 = TERMINAL STRIP

SHEET 3 OF 6

"A" OPTION



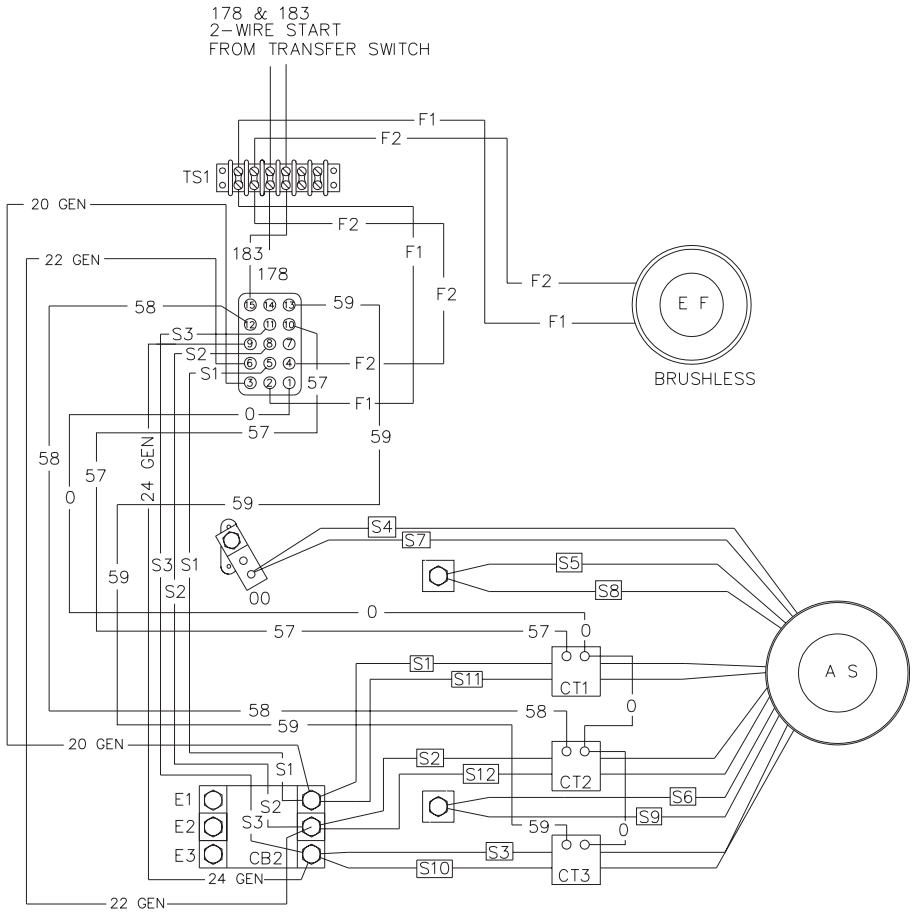


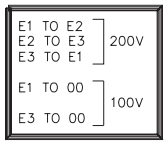
CUSTOMER CONNECTION
115/200V 3-PHASE

LEGEND

AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
TS1 – TERMINAL STRIP

"B" & "C" OPTION SHT 4–6





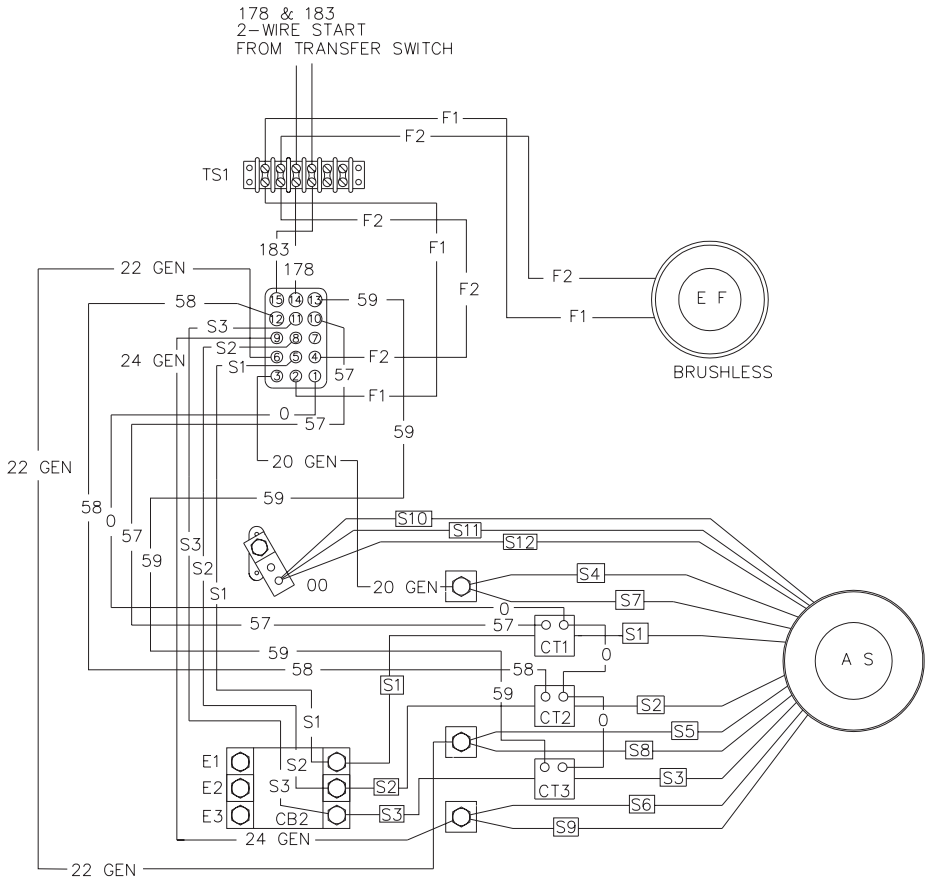
CUSTOMER CONNECTION
100/200V 3-PHASE

LEGEND

AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
TS1 – TERMINAL STRIP

SHT 5-6

"B" & "C" OPTION



E1 TO E2 E2 TO E3 E3 TO E1	400V
E1 TO 00 E2 TO 00 E3 TO 00	231V

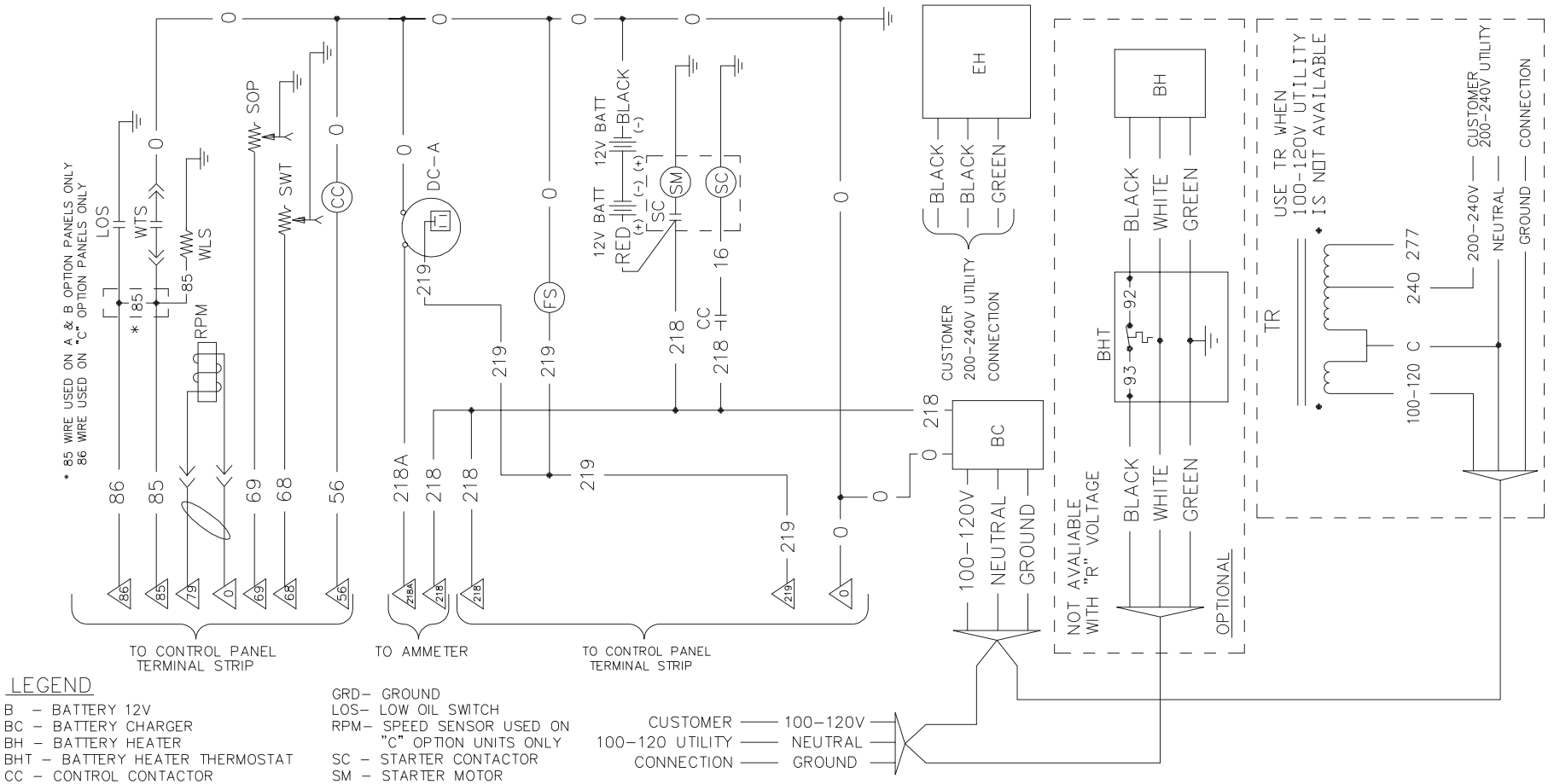
CUSTOMER CONNECTION
231/400V 3–PHASE

LEGEND

AS – ALTERNATOR STATOR
CB2 – CIRCUIT BREAKER – MAIN
CT – CURRENT TRANSFORMER
EF – EXCITER FIELD
TS1 – TERMINAL STRIP

"B" & "C" OPTION

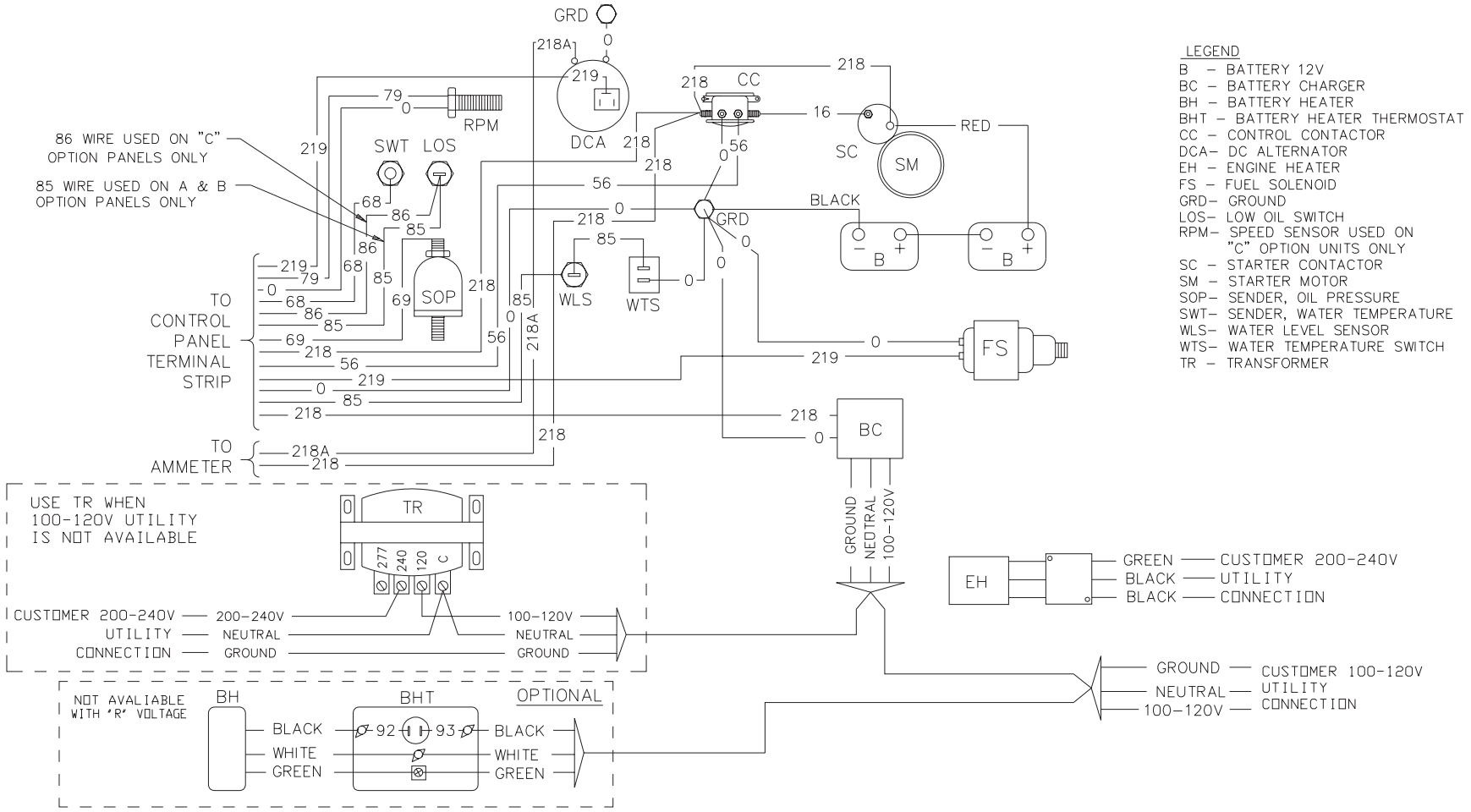
SHT 6–6



LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
WTS– WATER TEMPERATURE SWITCH

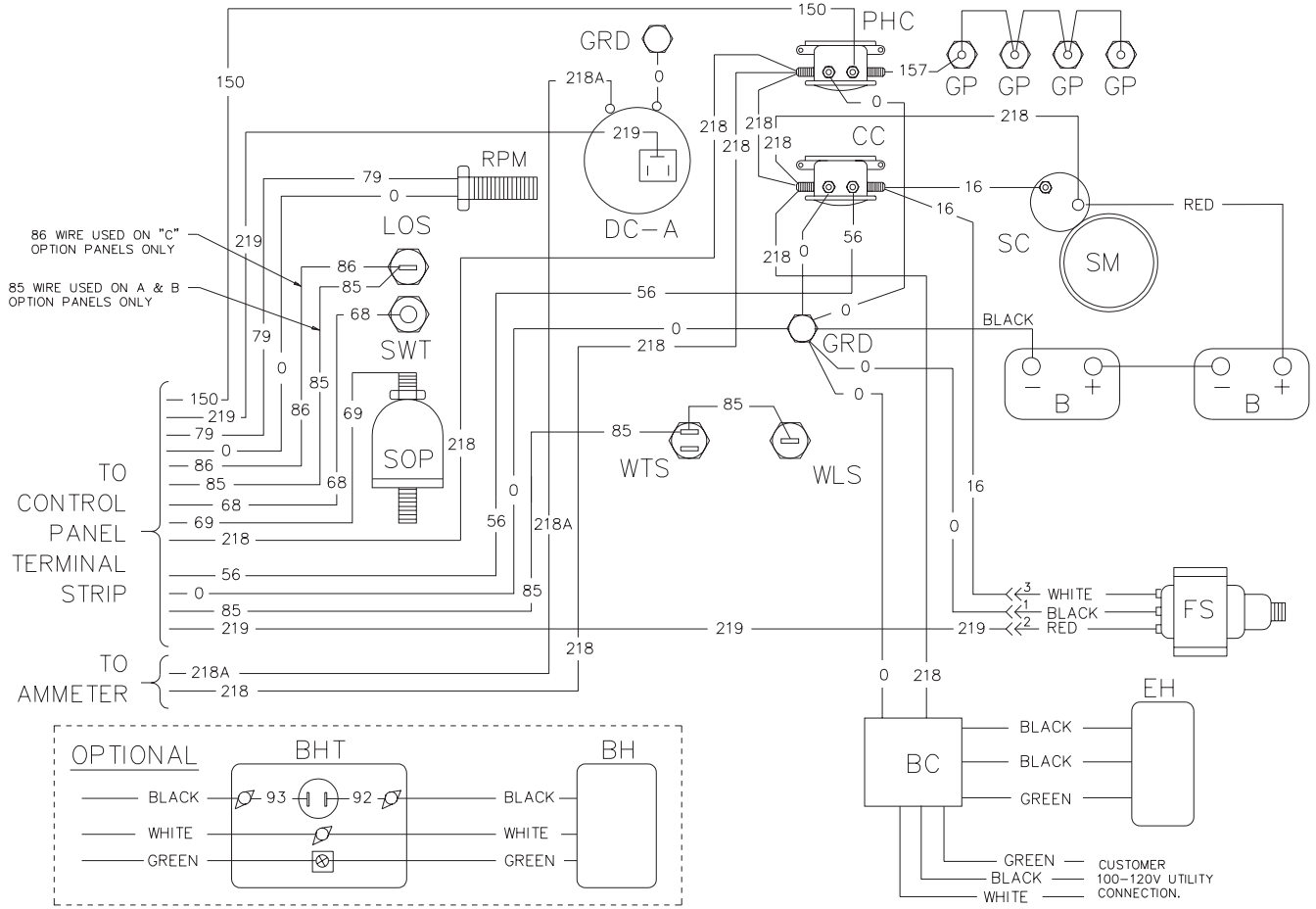
GRD– GROUND
LOS– LOW OIL SWITCH
RPM– SPEED SENSOR USED ON "C" OPTION UNITS ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
TR – TRANSFORMER

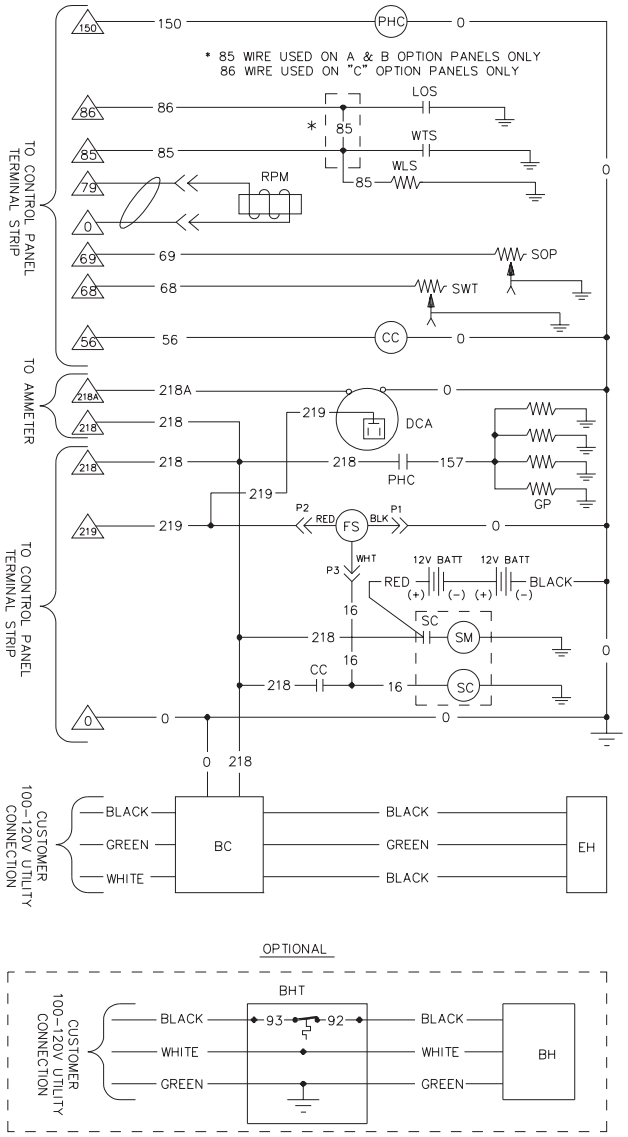


LEGEND
B – BATTERY 12V
BC – BATTERY CHARGER
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BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
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TR – TRANSFORMER

LEGEND

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EH – ENGINE HEATER
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GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR –USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



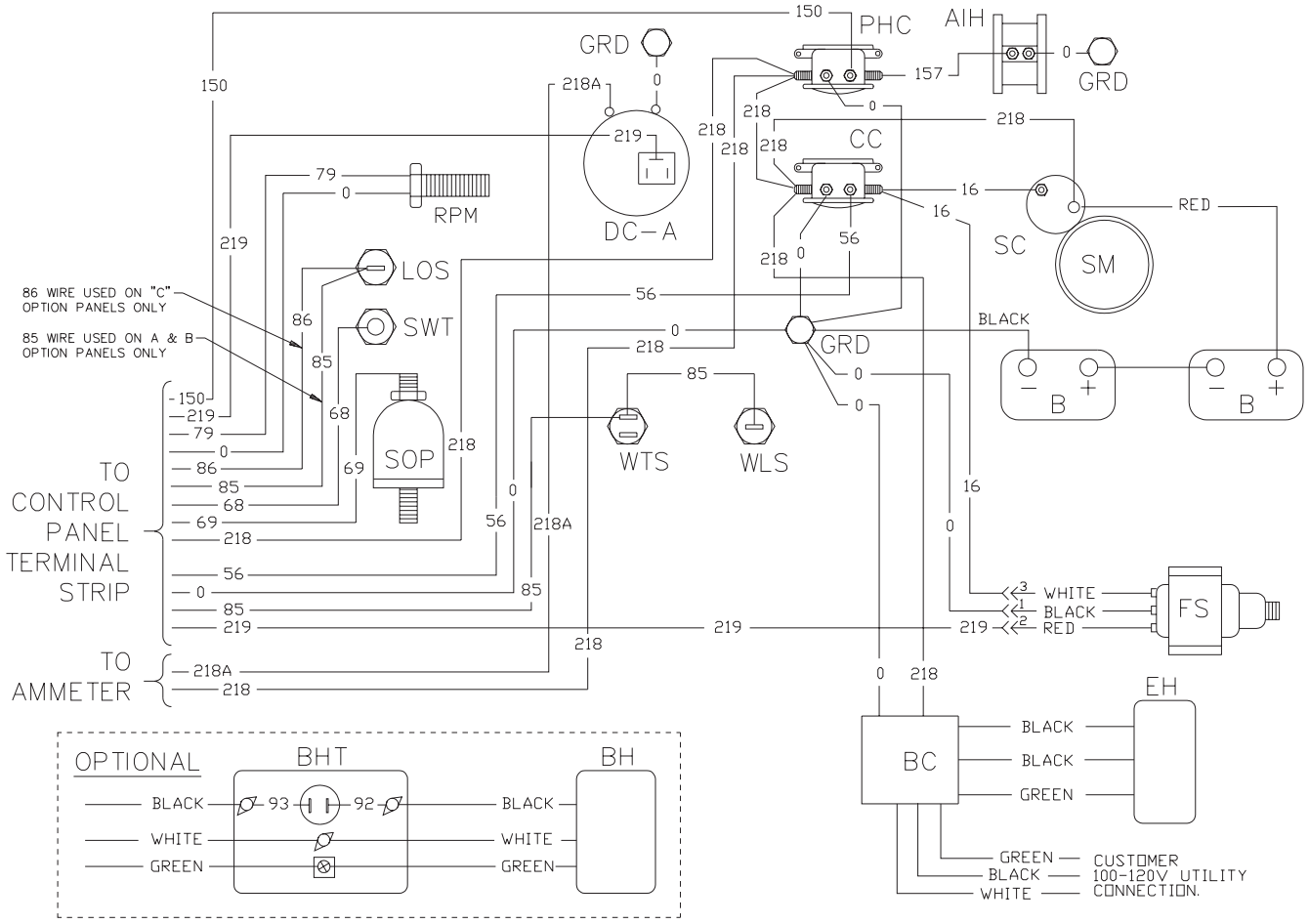


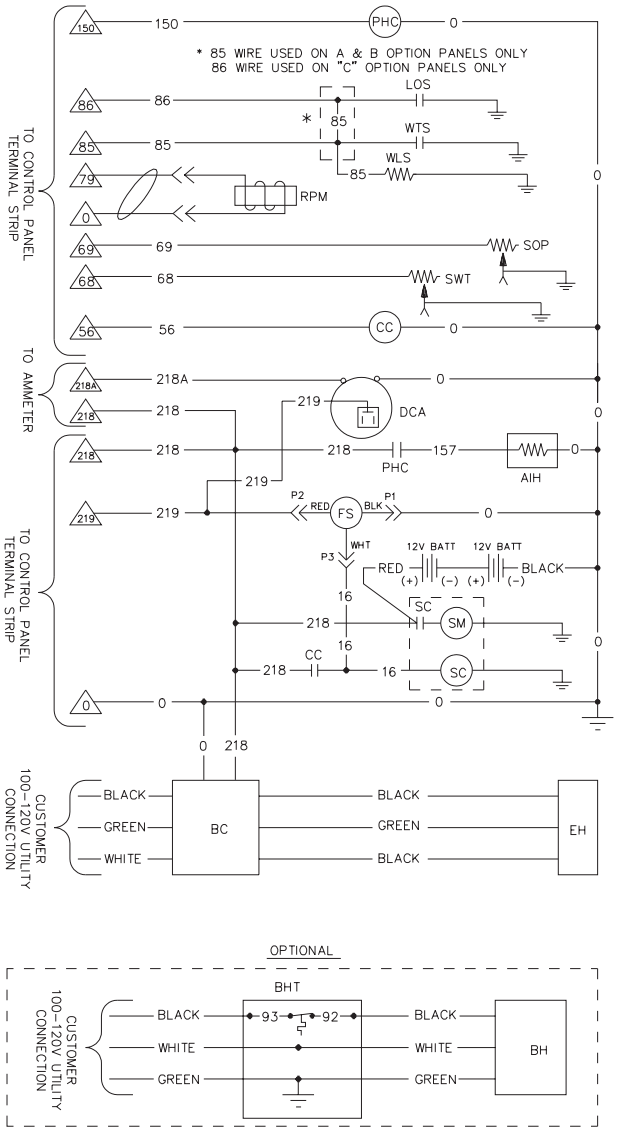
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WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH

LEGEND

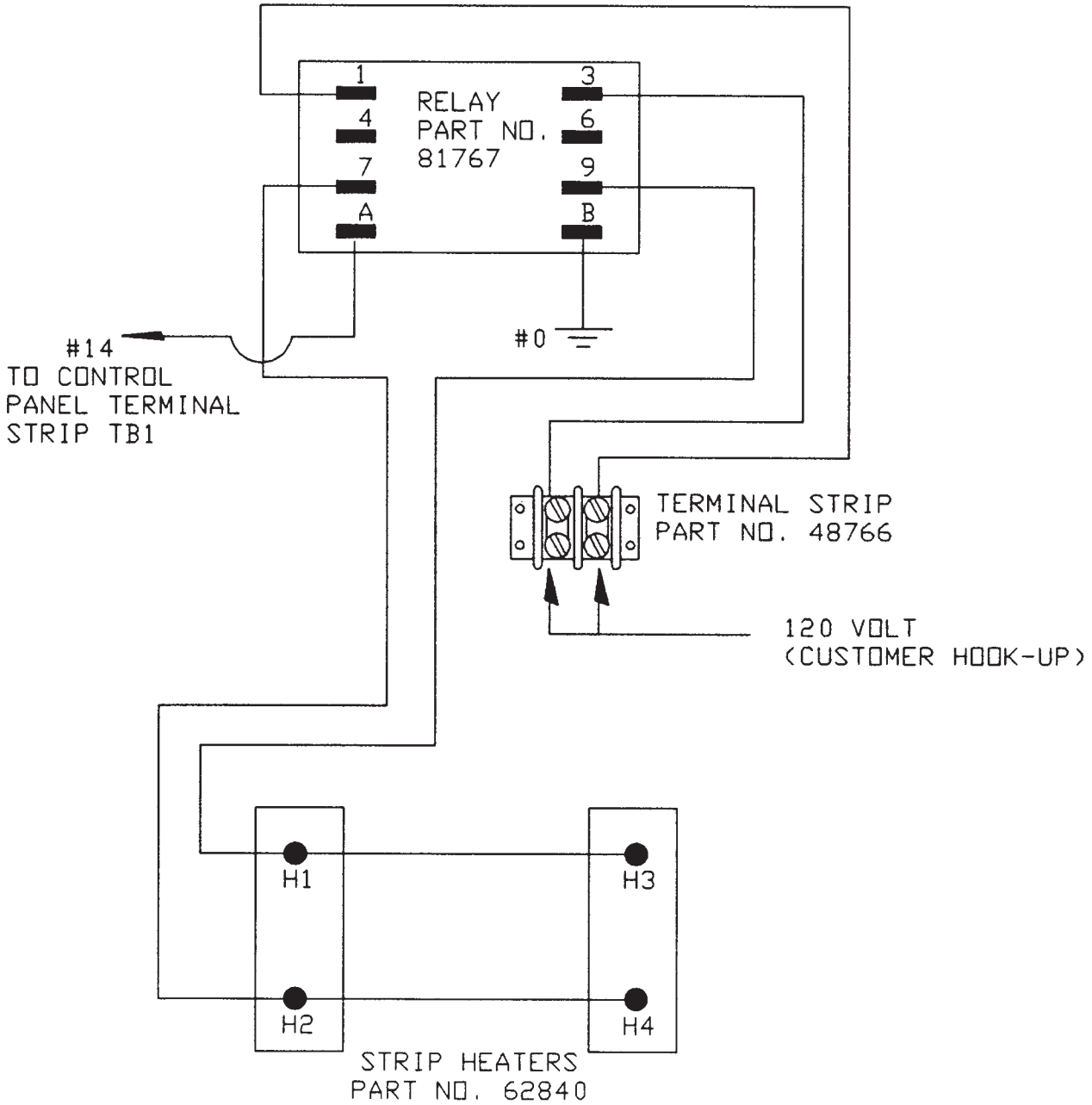
AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EGC– ELECTRONIC GOVERNOR CONTROL
EH – ENGINE HEATER
FS – FUEL SOLENOID
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WTS– WATER TEMPERATURE SWITCH

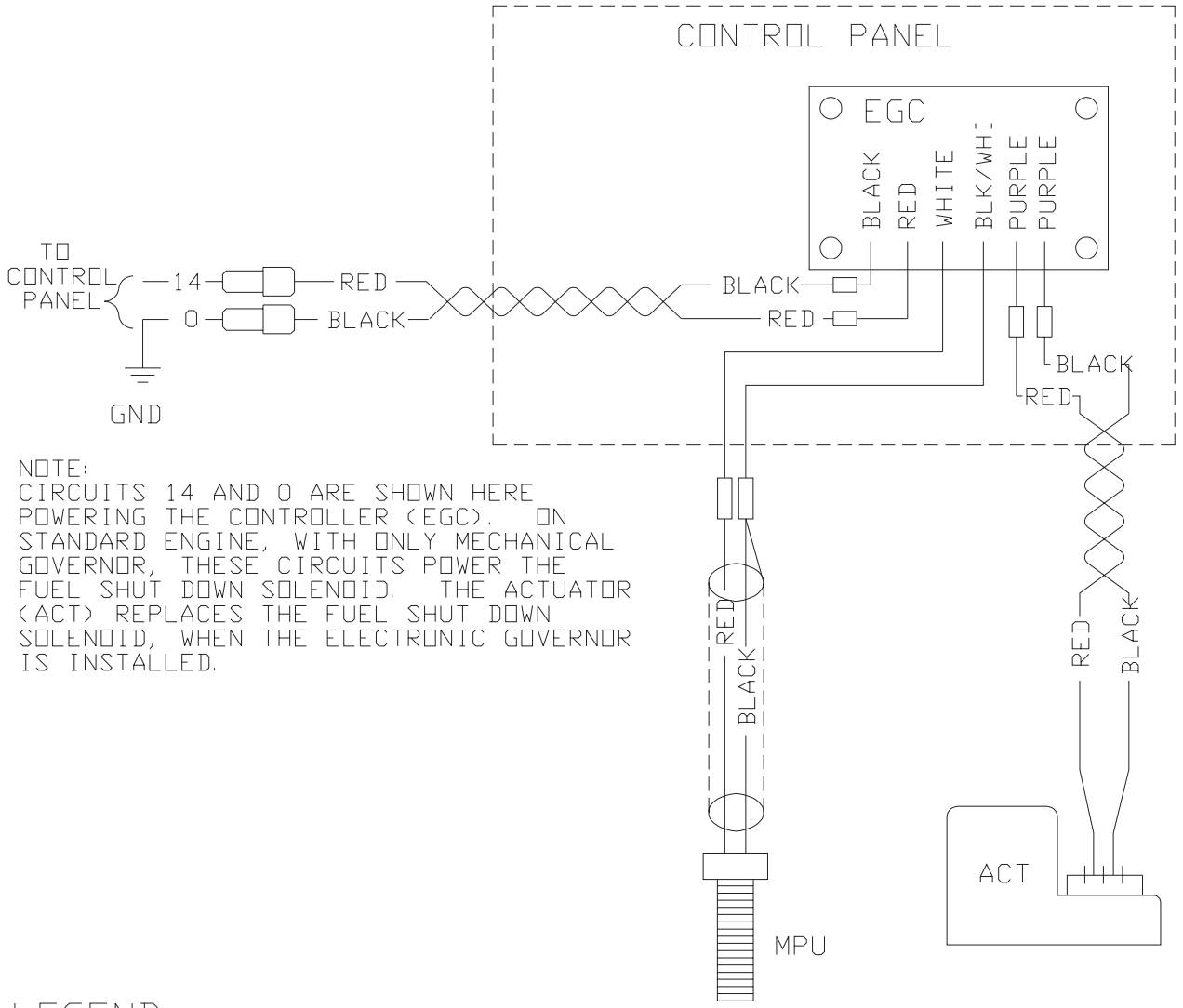




LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
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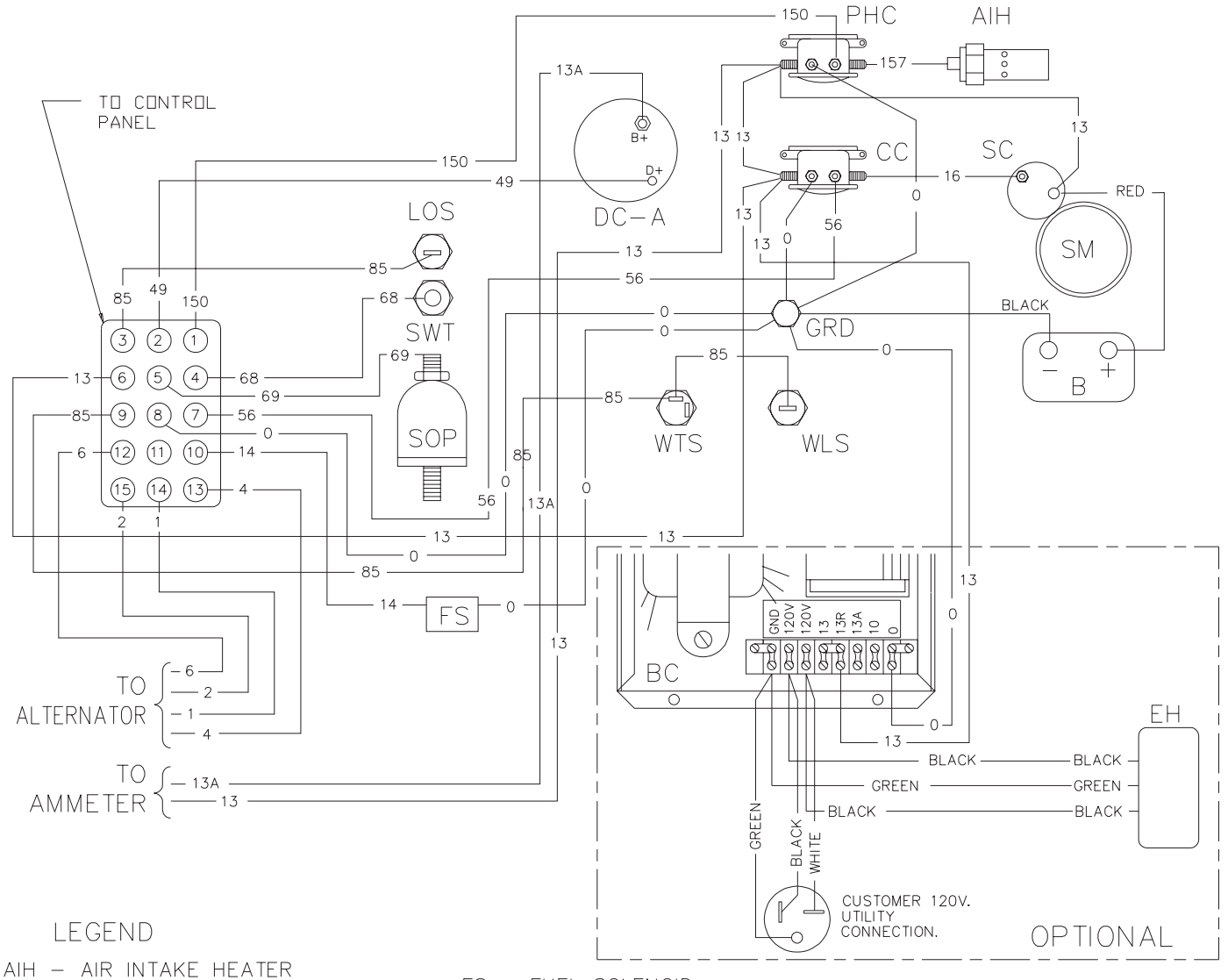

1
3
4
6
7
9
A
B
RELAY
PART NO.
81767
#14
TO CONTROL
PANEL TERMINAL
STRIP TB1
#0
TERMINAL STRIP
PART NO. 48766
120 VOLT
(CUSTOMER HOOK-UP)
H1
H3
H2
H4
STRIP HEATERS
PART NO. 62840



NOTE:
CIRCUITS 14 AND 0 ARE SHOWN HERE POWERING THE CONTROLLER (EGC). ON STANDARD ENGINE, WITH ONLY MECHANICAL GOVERNOR, THESE CIRCUITS POWER THE FUEL SHUT DOWN SOLENOID. THE ACTUATOR (ACT) REPLACES THE FUEL SHUT DOWN SOLENOID, WHEN THE ELECTRONIC GOVERNOR IS INSTALLED.

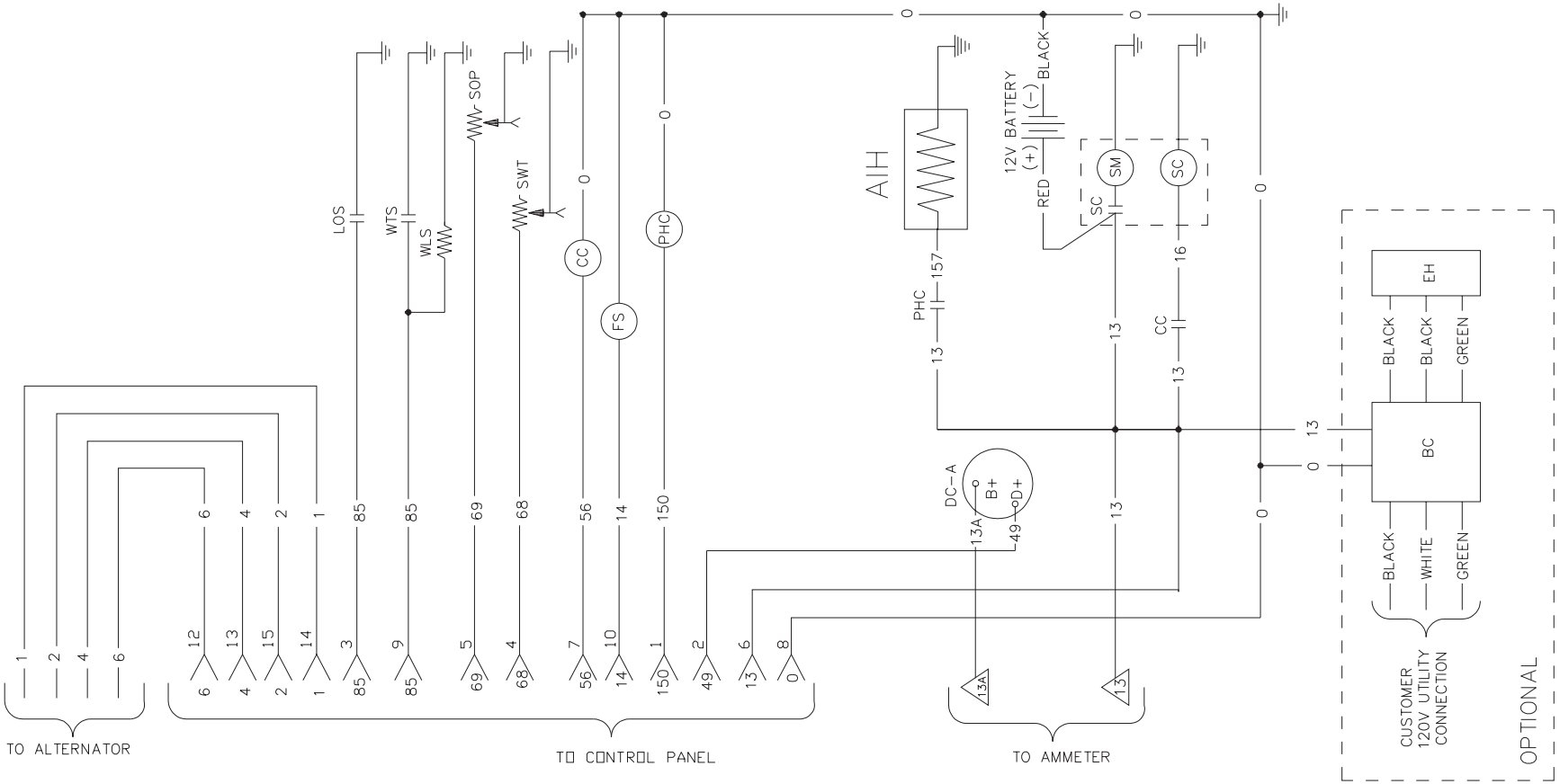
LEGEND

ACT - ACTUATOR
EGC - ELECTRONIC GOVERNOR CONTROLLER
MPU - MAGNETIC PICK-UP



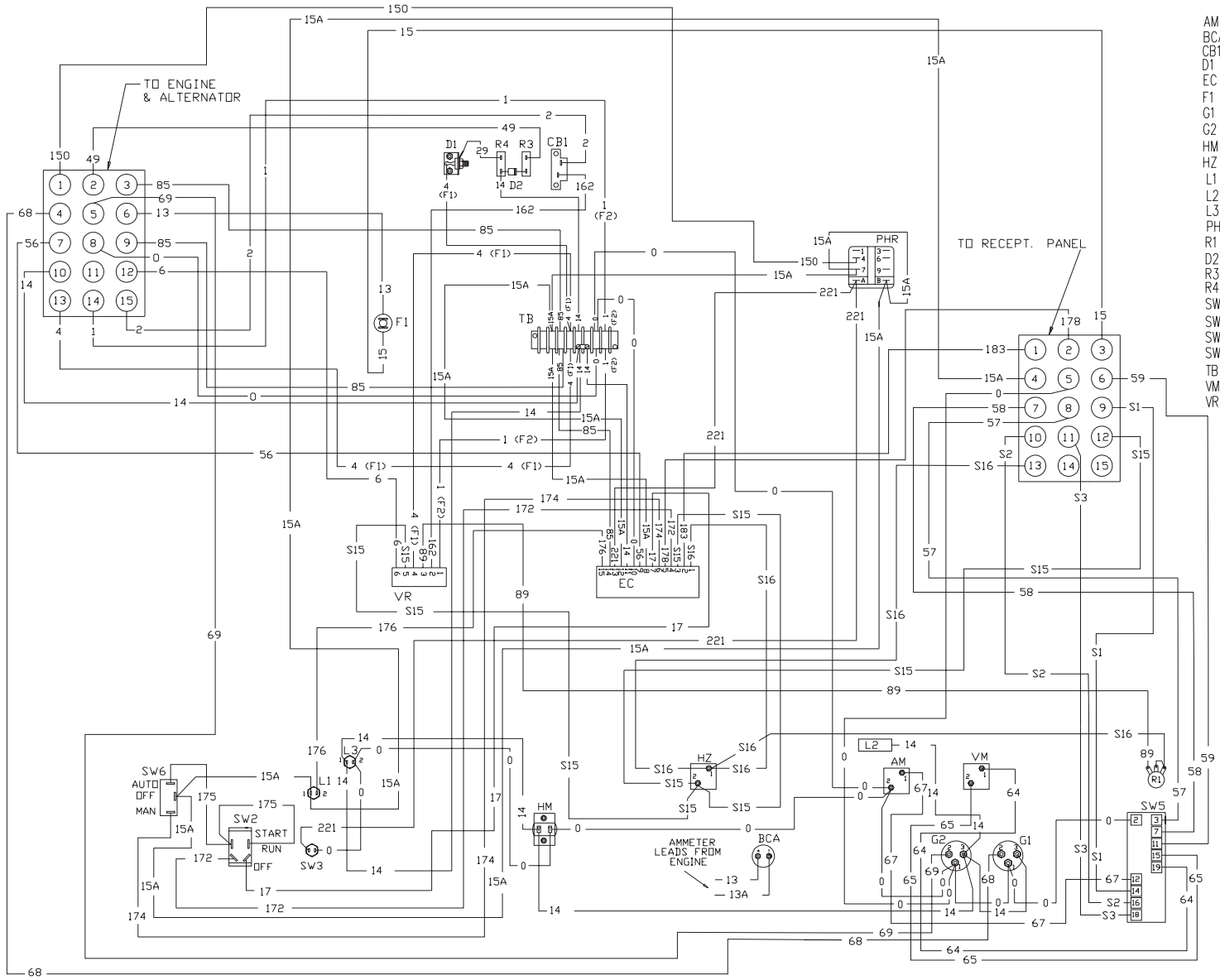
LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12–V
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH

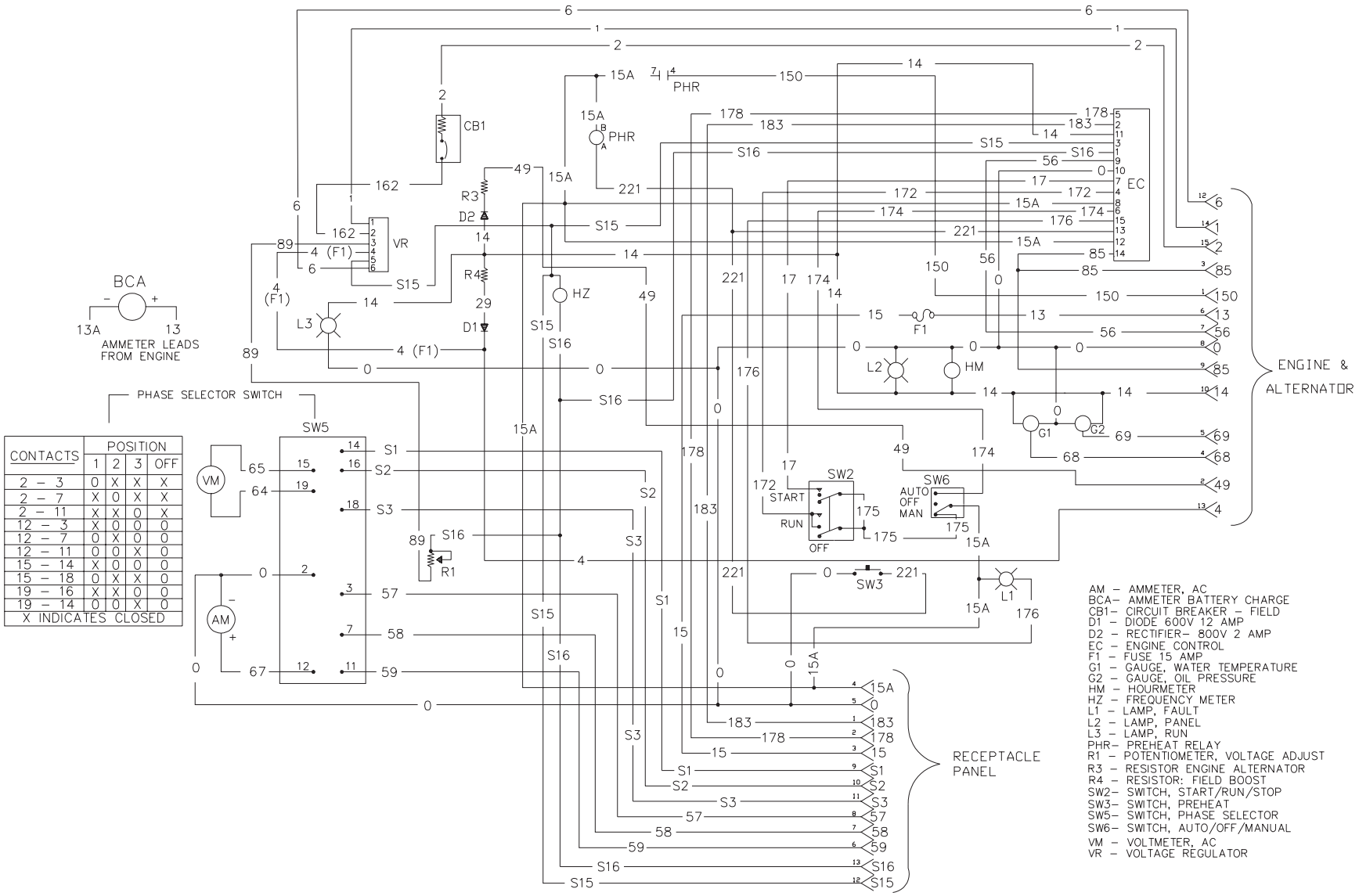


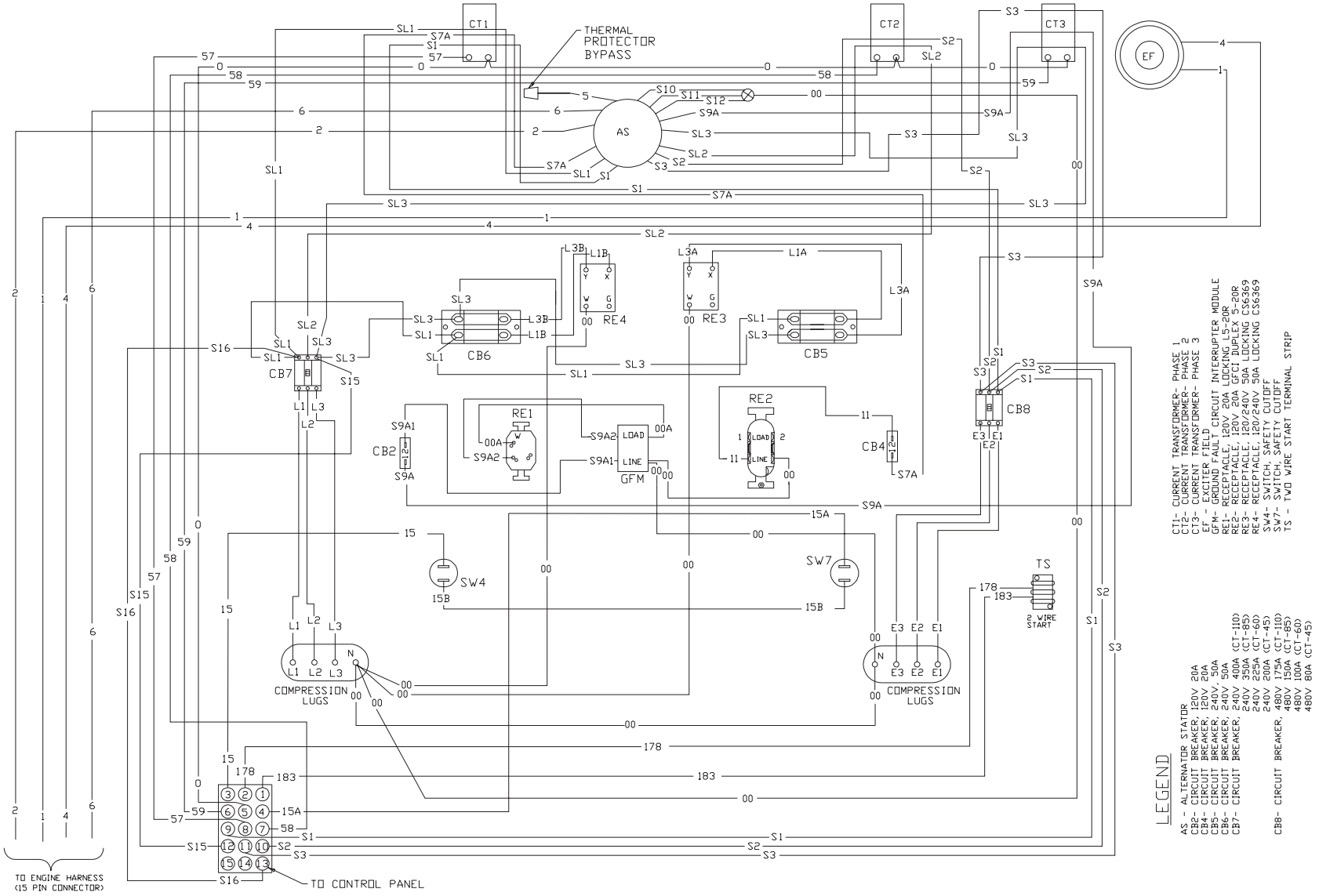
LEGEND

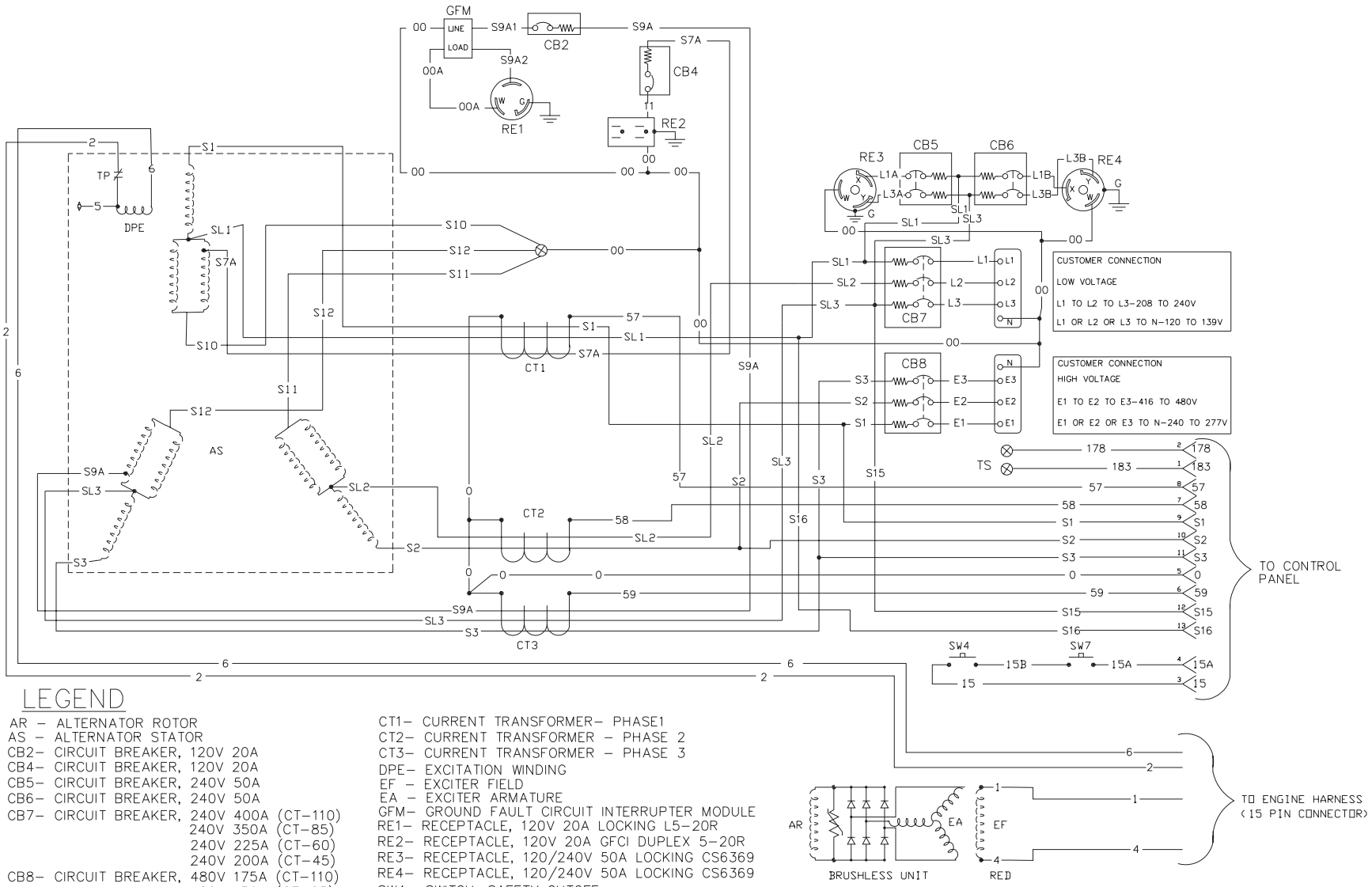
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WTS– WATER TEMPERATURE SWITCH



AM – AMMETER, AC
BCA – AMMETER BATTERY CHARGER
CB1– CIRCUIT BREAKER – FIELD
D1 – DIODE 600V 12 AMP
EC – ENGINE CONTROL
F1 – FUSE 15 AMP
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
D2 – RECTIFIER 800V 2A
R3 – RESISTOR – ENG. ALTERNATOR
R4 – RESISTOR, FIELD BOOST
SW2– SWITCH, START/RUN/STOP
SW3– SWITCH, PREHEAT
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
TB – TERMINAL BLOCK
VM – VOLTMETER, AC
VR – VOLTAGE REGULATOR


BCA
13A
13
AMMETER LEADS FROM ENGINE
PHASE SELECTOR SWITCH
SW5
CONTACTS | POSITION 1 | 2 | 3 | OFF
2 – 3 | 0 | X | X | X
2 – 7 | X | 0 | X | X
2 – 11 | X | X | 0 | X
12 – 3 | X | 0 | 0 | 0
12 – 7 | 0 | X | 0 | 0
12 – 11 | 0 | 0 | X | 0
15 – 14 | X | 0 | 0 | 0
15 – 18 | 0 | X | X | 0
19 – 16 | X | X | 0 | 0
19 – 14 | 0 | 0 | X | 0
X INDICATES CLOSED
CB1
PHR
VR
R3
D2
R4
D1
HZ
L3
F1
L2
HM
G1
G2
SW2
SW3
SW6
L1
R1
VM
AM
ENGINE & ALTERNATOR
RECEPTACLE PANEL
AM – AMMETER, AC
BCA– AMMETER BATTERY CHARGE
CB1– CIRCUIT BREAKER – FIELD
D1 – DIODE 600V 12 AMP
D2 – RECTIFIER– 800V 2 AMP
EC – ENGINE CONTROL
F1 – FUSE 15 AMP
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
R3 – RESISTOR ENGINE ALTERNATOR
R4 – RESISTOR: FIELD BOOST
SW2– SWITCH, START/RUN/STOP
SW3– SWITCH, PREHEAT
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
VM – VOLTMETER, AC
VR – VOLTAGE REGULATOR

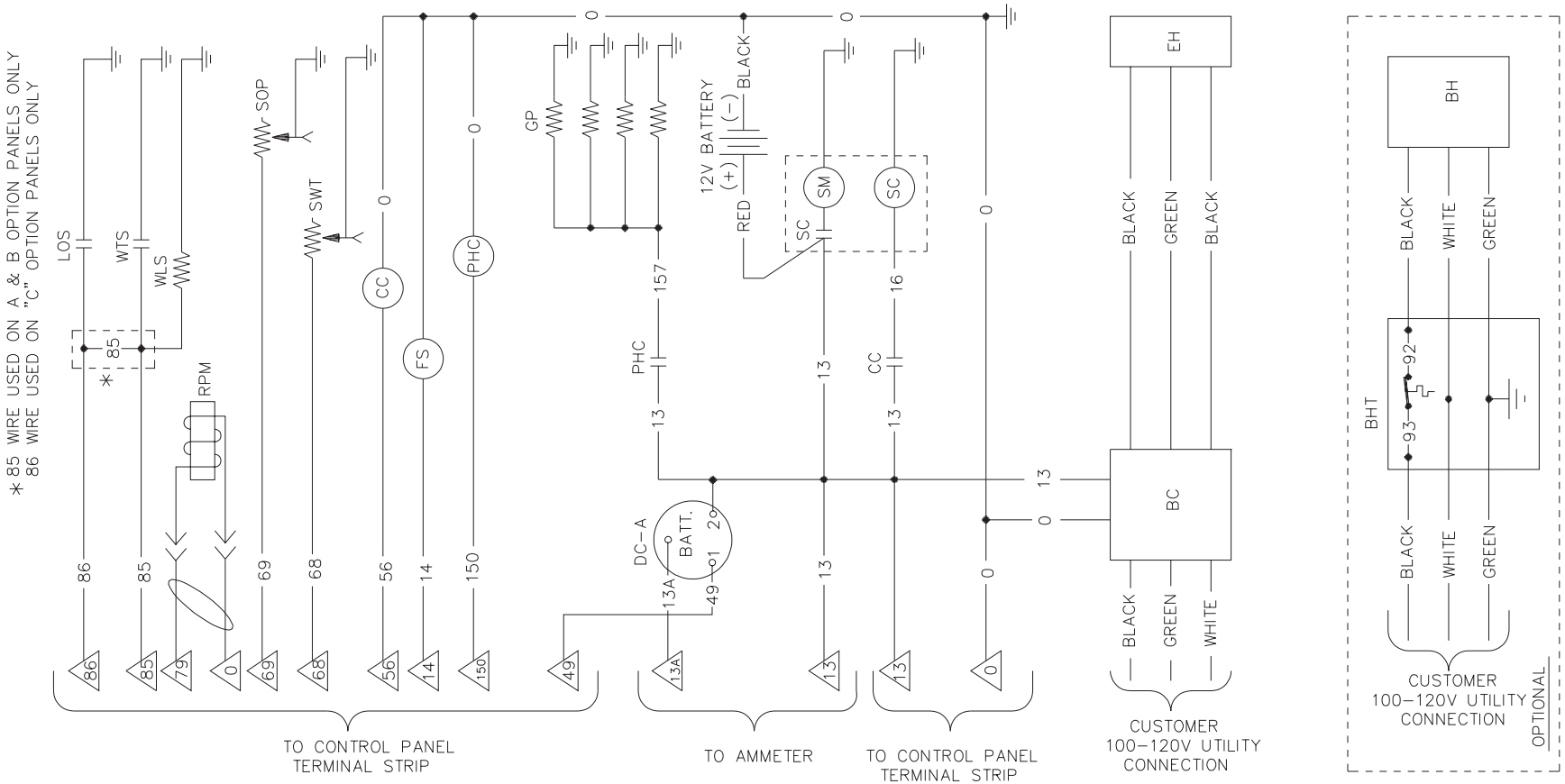

CT1
CT2
CT3
THERMAL PROTECTOR BYPASS
AS
EF
RE1
RE2
RE3
RE4
CB2
CB4
CB5
CB6
CB7
CB8
GFM
SW4
SW7
TS
COMPRESSION LUGS
COMPRESSION LUGS
TO WIRE START
TO ENGINE HARNESS (15 PIN CONNECTOR)
TO CONTROL PANEL
LEGEND
AS - ALTERNATOR STATOR
CB2- CIRCUIT BREAKER, 120V 20A
CB4- CIRCUIT BREAKER, 120V 20A
CB5- CIRCUIT BREAKER, 240V, 50A
CB6- CIRCUIT BREAKER, 240V 60A (CT-11D) 40A (CT-85) 30A (CT-60)
CB7- CIRCUIT BREAKER, 240V 350A (CT-85) 240V 225A (CT-60) 240V 200A (CT-45)
CB8- CIRCUIT BREAKER, 480V 175A (CT-11D) 480V 150A (CT-85) 480V 100A (CT-60) 480V 80A (CT-45)
CT1- CURRENT TRANSFORMER- PHASE 1
CT2- CURRENT TRANSFORMER- PHASE 2
CT3- CURRENT TRANSFORMER- PHASE 3
EF - EXCITER FIELD
GFM- GROUND FAULT CIRCUIT INTERRUPTER MODULE
RE1- RECEPTACLE, 120V 20A LOCKING 5-20R
RE2- RECEPTACLE, 240V 50A DUPLEX CS-20R
RE3- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4- RECEPTACLE, 120/240V 50A LOCKING CS6369
SW4- SWITCH, SAFETY CUTOFF
SW7- SWITCH, SAFETY CUTOFF
TS - TWO WIRE START TERMINAL STRIP



LEGEND

AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
CB2– CIRCUIT BREAKER, 120V 20A
CB4– CIRCUIT BREAKER, 120V 20A
CB5– CIRCUIT BREAKER, 240V 50A
CB6– CIRCUIT BREAKER, 240V 50A
CB7– CIRCUIT BREAKER, 240V 400A (CT–110)
240V 350A (CT–85)
240V 225A (CT–60)
240V 200A (CT–45)
CB8– CIRCUIT BREAKER, 480V 175A (CT–110)
480V 150A (CT–85)
480V 100A (CT–60)
480V 80A (CT–45)

CT1– CURRENT TRANSFORMER– PHASE1
CT2– CURRENT TRANSFORMER – PHASE 2
CT3– CURRENT TRANSFORMER – PHASE 3
DPE– EXCITATION WINDING
EF – EXCITER FIELD
EA – EXCITER ARMATURE
GFM– GROUND FAULT CIRCUIT INTERRUPTER MODULE
RE1– RECEPTACLE, 120V 20A LOCKING L5–20R
RE2– RECEPTACLE, 120V 20A GFCI DUPLEX 5–20R
RE3– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4– RECEPTACLE, 120/240V 50A LOCKING CS6369
SW4– SWITCH, SAFETY CUTOFF
SW7– SWITCH, SAFETY CUTOFF
TP – THERMAL PROTECTION
TS – TWO WIRE START TERMINAL STRIP

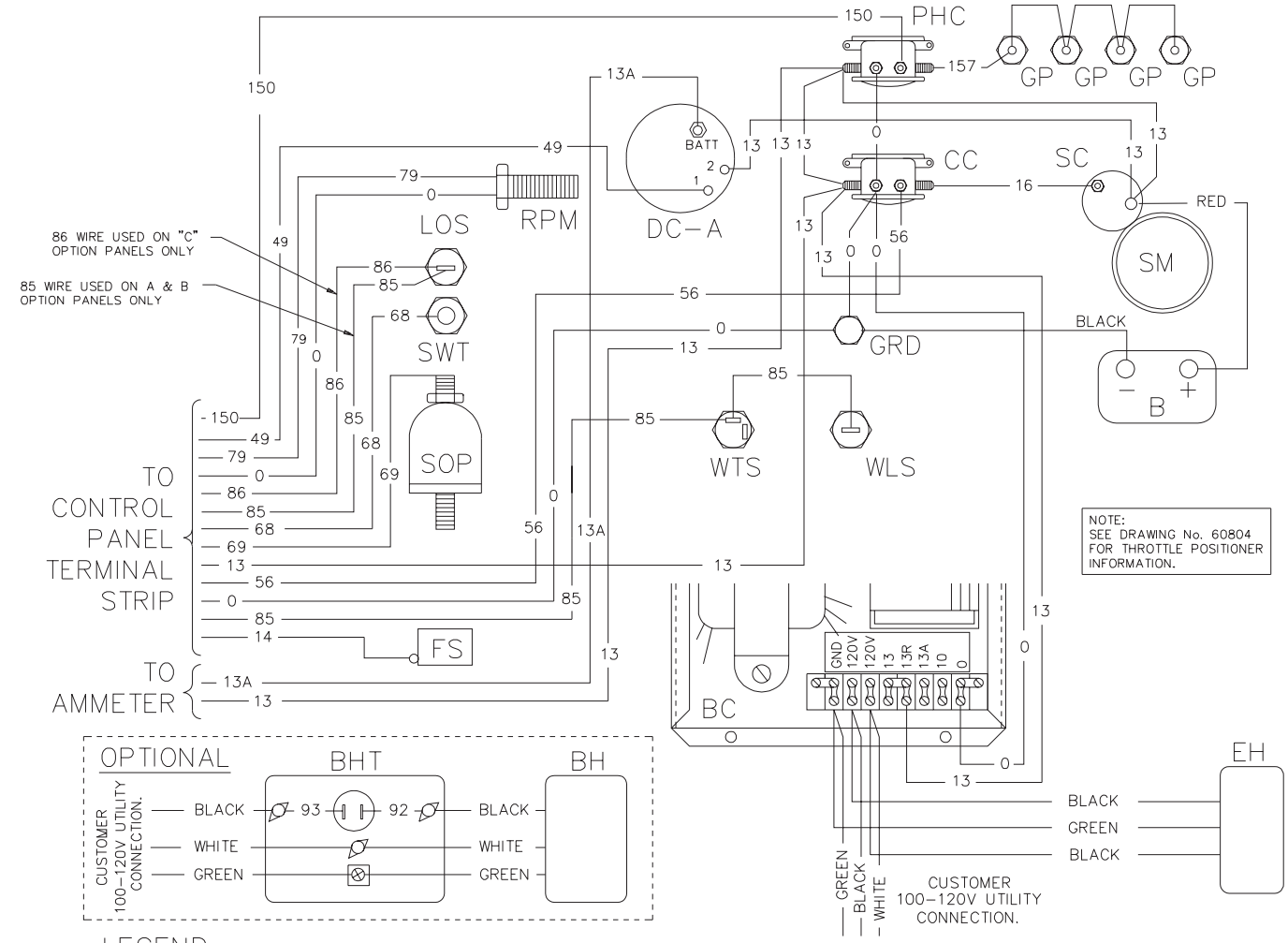


LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR

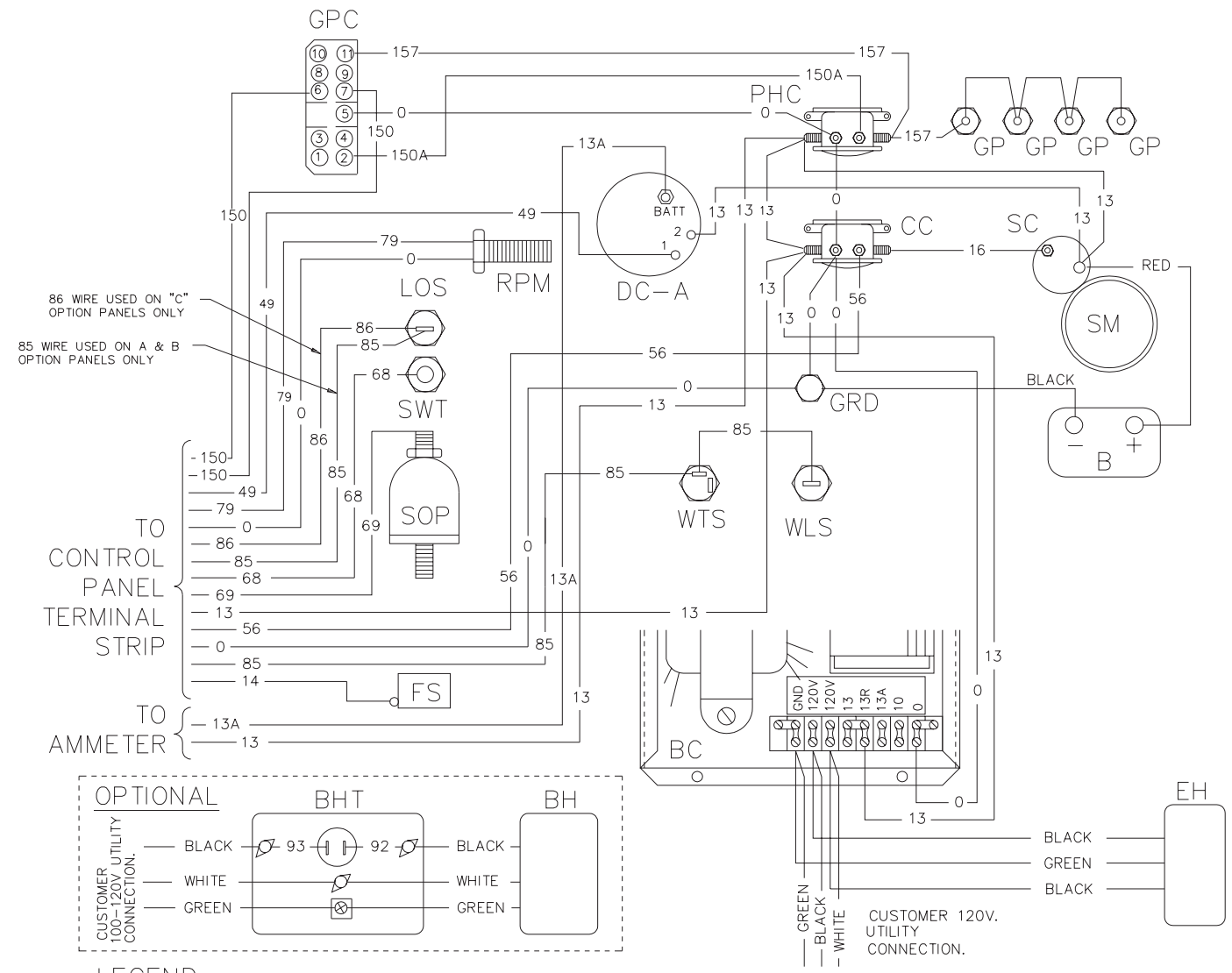
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR

RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



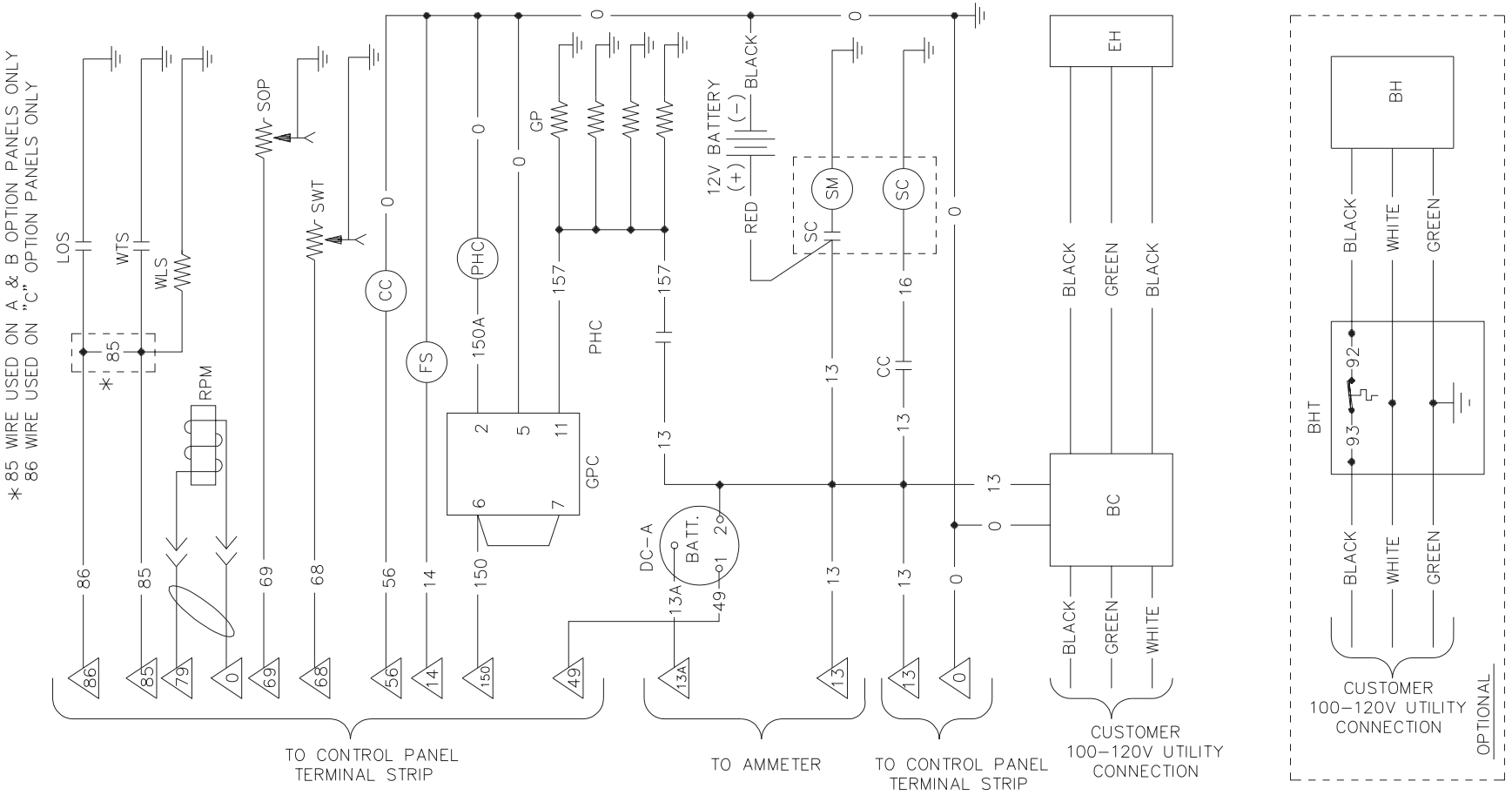
LEGEND

B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER THERMOSTAT
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC– GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH



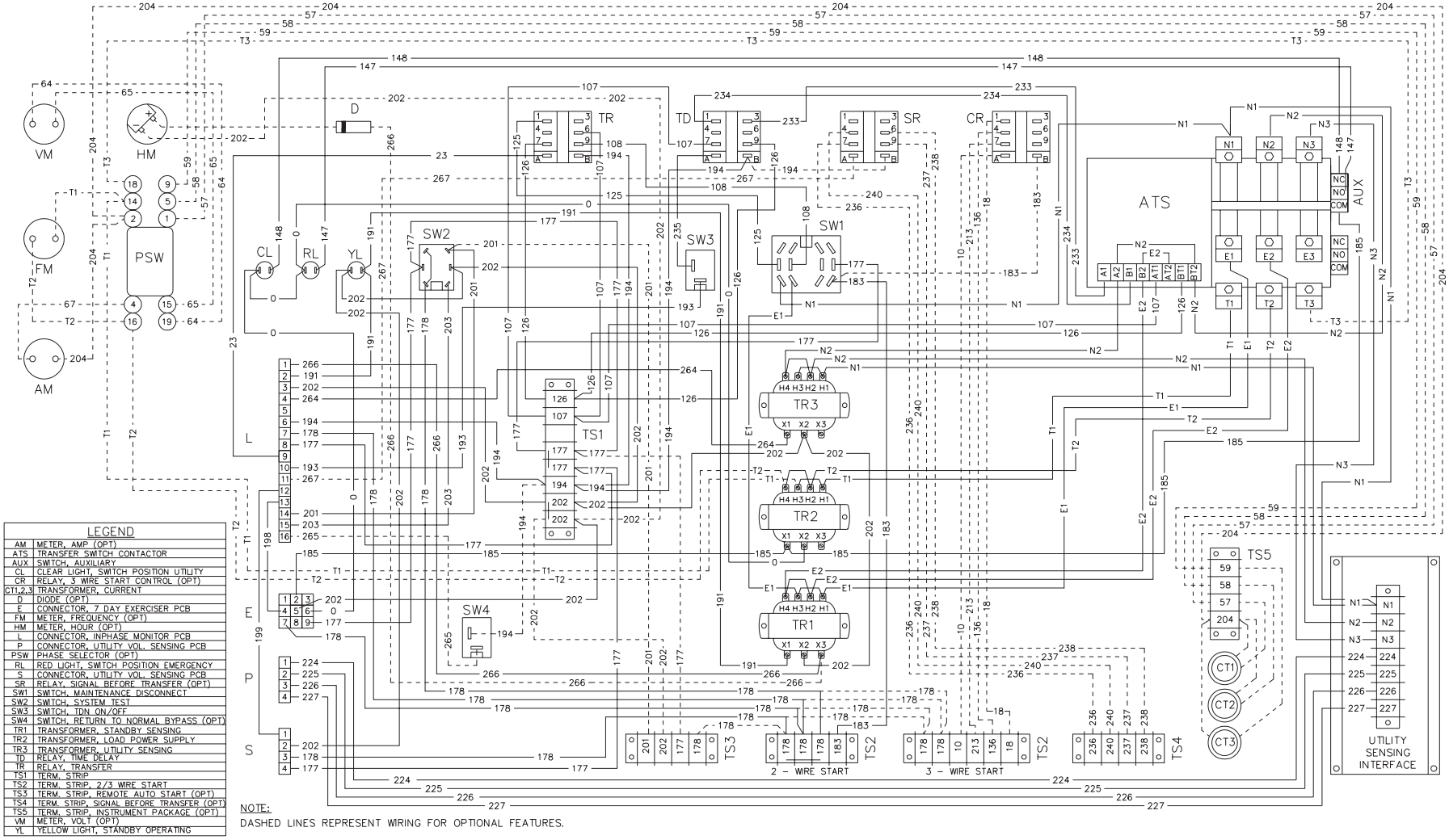
LEGEND

B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER THERMOSTAT
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC– GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH



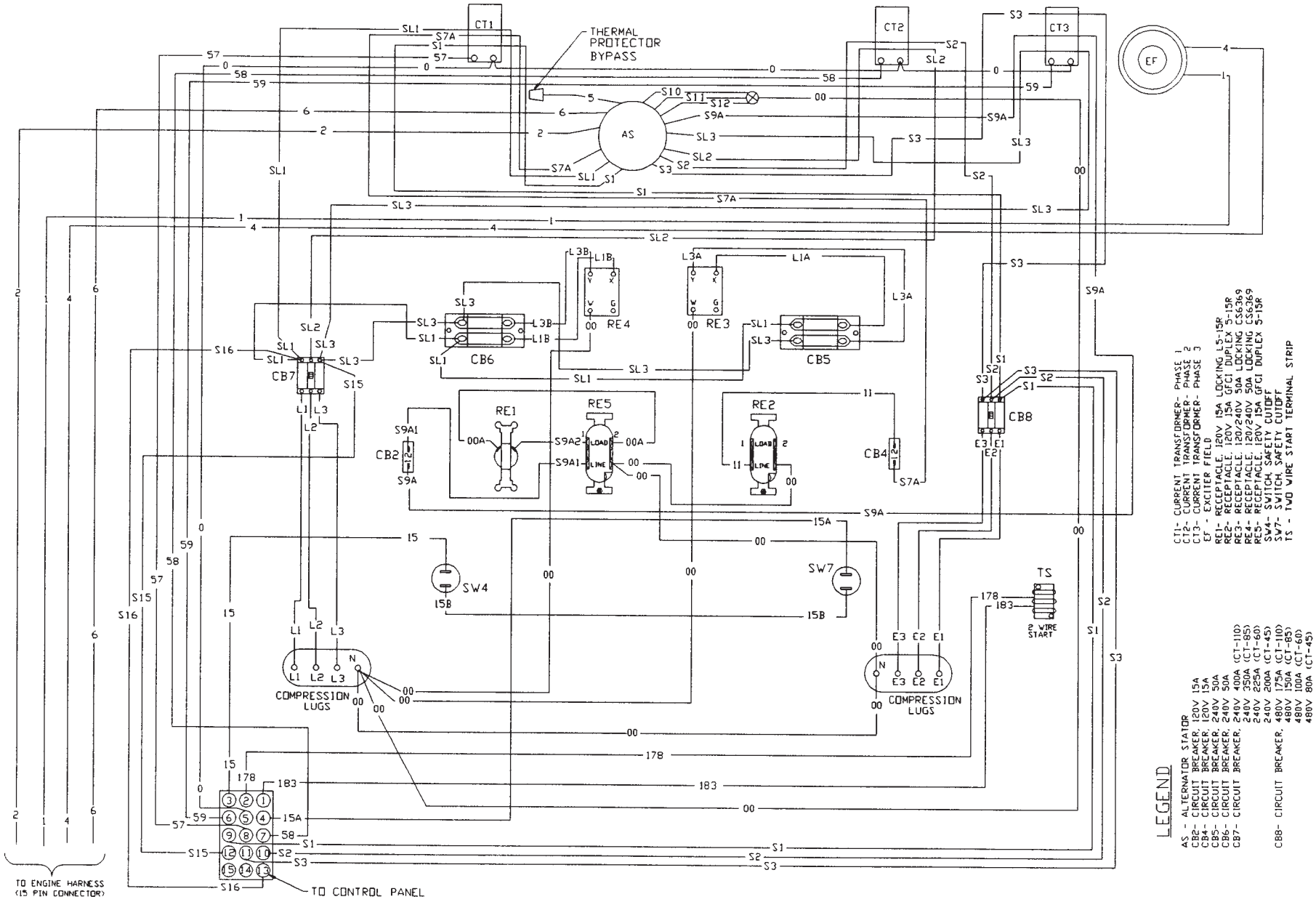
LEGEND

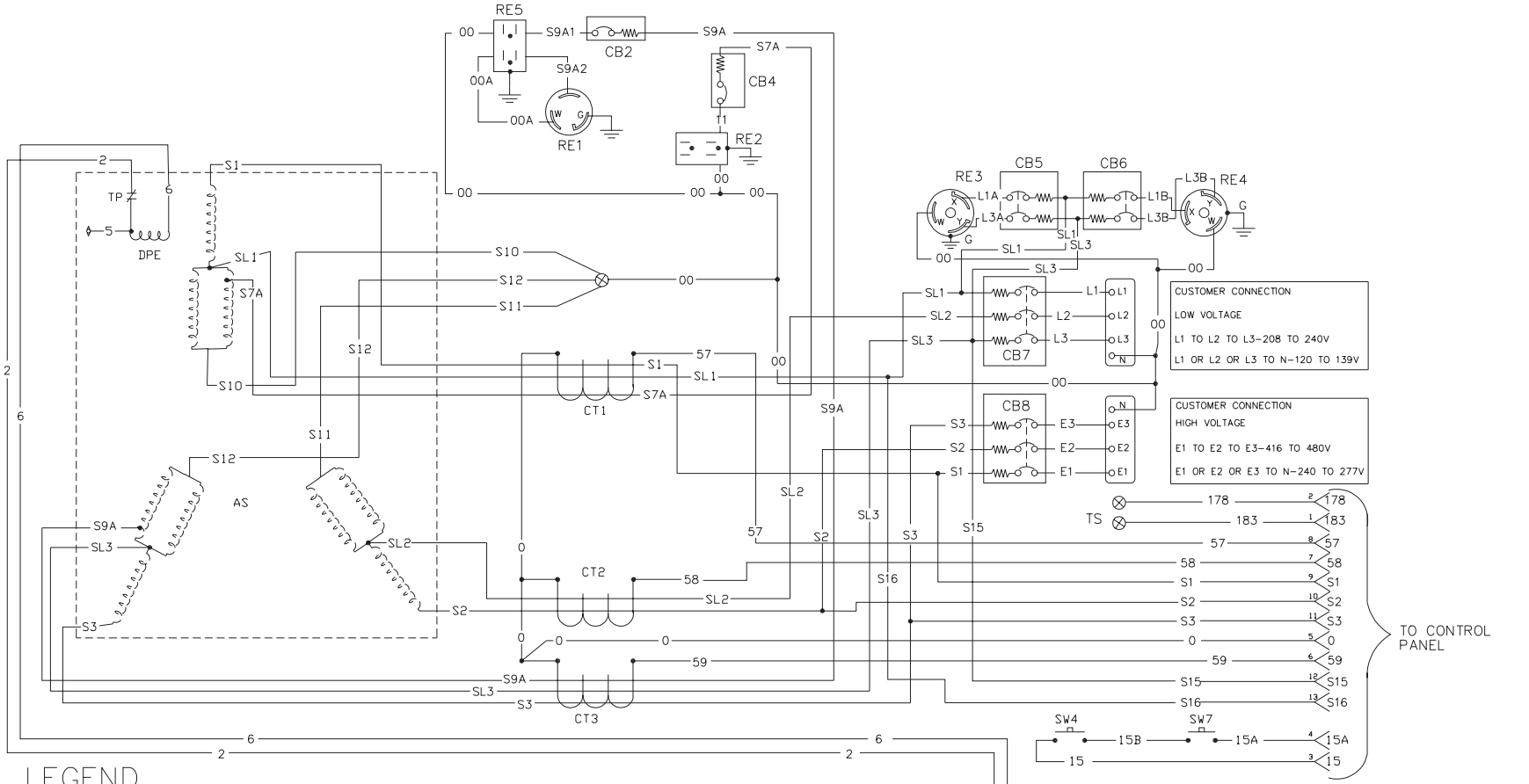
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BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GP – GLOW PLUG
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
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SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



LEGEND	
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3	TRANSFORMER, CURRENT
D	DIODE (OPT)
E	CONNECTOR, 7 DAY EXERCISER PCB
FM	METER, FREQUENCY (OPT)
HM	METER, HOUR (OPT)
L	CONNECTOR, INPHASE MONITOR PCB
P	CONNECTOR, UTILITY VOL. SENSING PCB
PSW	PHASE SELECTOR (OPT)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS1	TERM. STRIP
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, REMOTE AUTO START (OPT)
TS4	TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5	TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

NOTE:
DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.

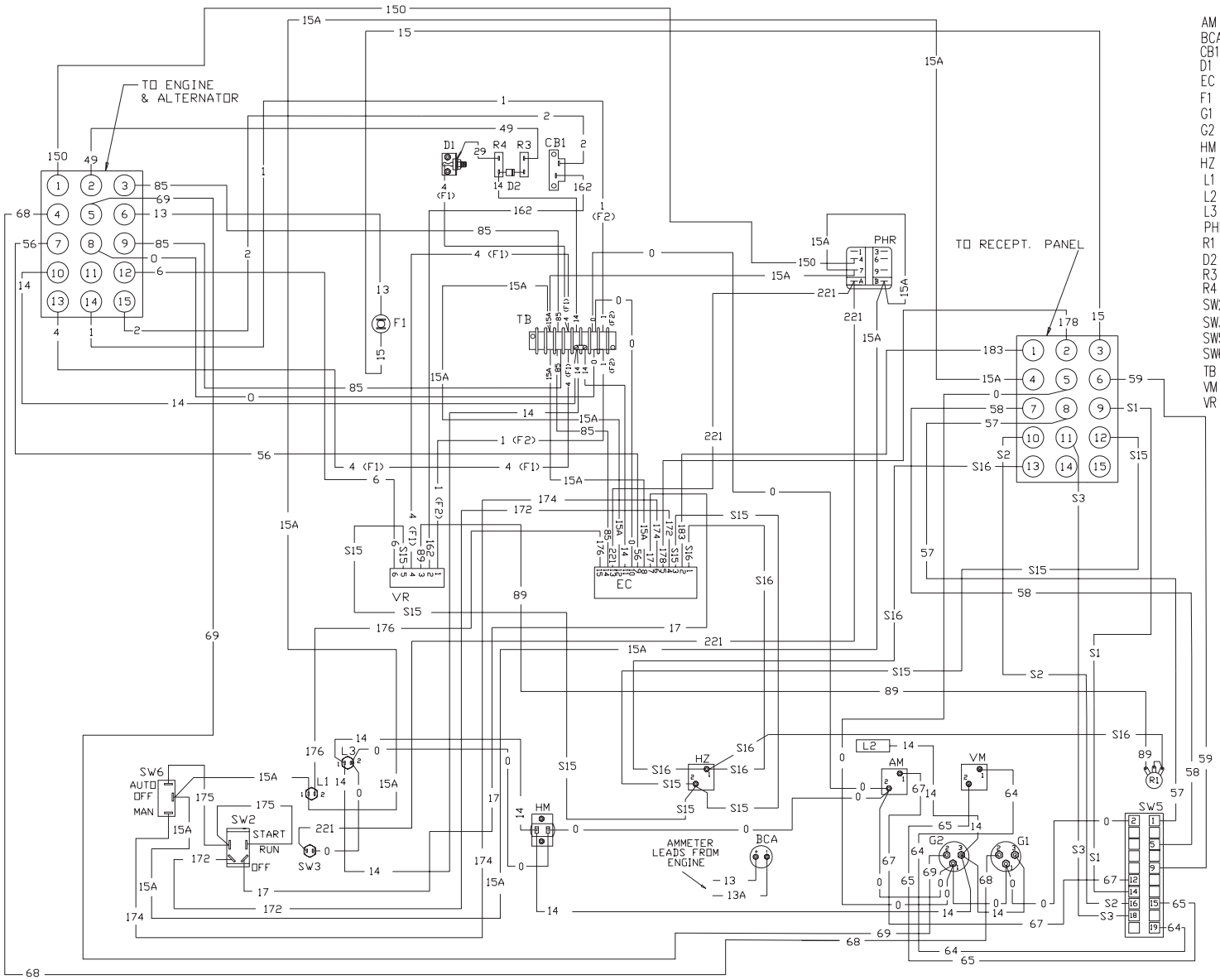

CT1
CT2
CT3
THERMAL PROTECTOR BYPASS
AS
EF
RE1
RE2
RE3
RE4
RE5
CB2
CB4
CB5
CB6
CB7
CB8
SW4
SW7
TS
2 WIRE START
COMPRESSION LUGS
COMPRESSION LUGS
TO ENGINE HARNESS (15 PIN CONNECTOR)
TO CONTROL PANEL
CT1- CURRENT TRANSFORMER- PHASE 1
CT2- CURRENT TRANSFORMER- PHASE 2
CT3- CURRENT TRANSFORMER- PHASE 3
EF - EXCITER FIELD
RE1- RECEPTACLE, 120V 15A LOCKING L5-15R
RE2- RECEPTACLE, 120V 15A GFCI DUPLEX 5-15R
RE3- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4- RECEPTACLE, 120/240V 50A LOCKING CS6369
RE5- RECEPTACLE, 120V 15A GFCI DUPLEX 5-15R
SW4- SWITCH, SAFETY CUTOFF
SW7- SWITCH, SAFETY CUTOFF
TS - TWO WIRE START TERMINAL STRIP
LEGEND
AS - ALTERNATOR STATOR
CB2- CIRCUIT BREAKER, 120V 15A
CB4- CIRCUIT BREAKER, 120V 15A
CB5- CIRCUIT BREAKER, 240V 50A
CB6- CIRCUIT BREAKER, 240V 400A (CT-110)
240V 350A (CT-85)
CB7- CIRCUIT BREAKER, 240V 225A (CT-60)
240V 200A (CT-45)
CB8- CIRCUIT BREAKER, 480V 175A (CT-110)
480V 150A (CT-85)
480V 100A (CT-60)
480V 80A (CT-45)



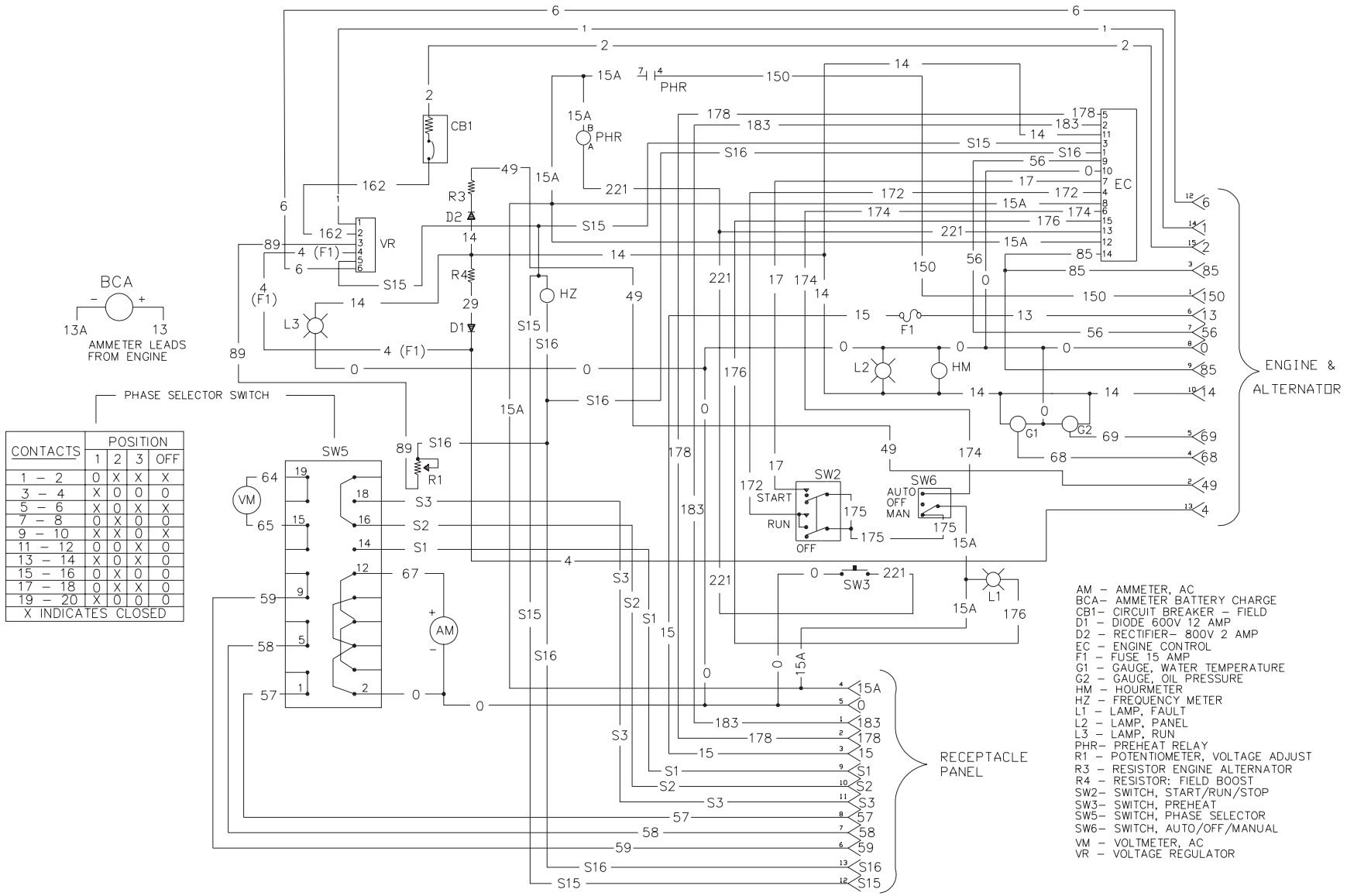
LEGEND

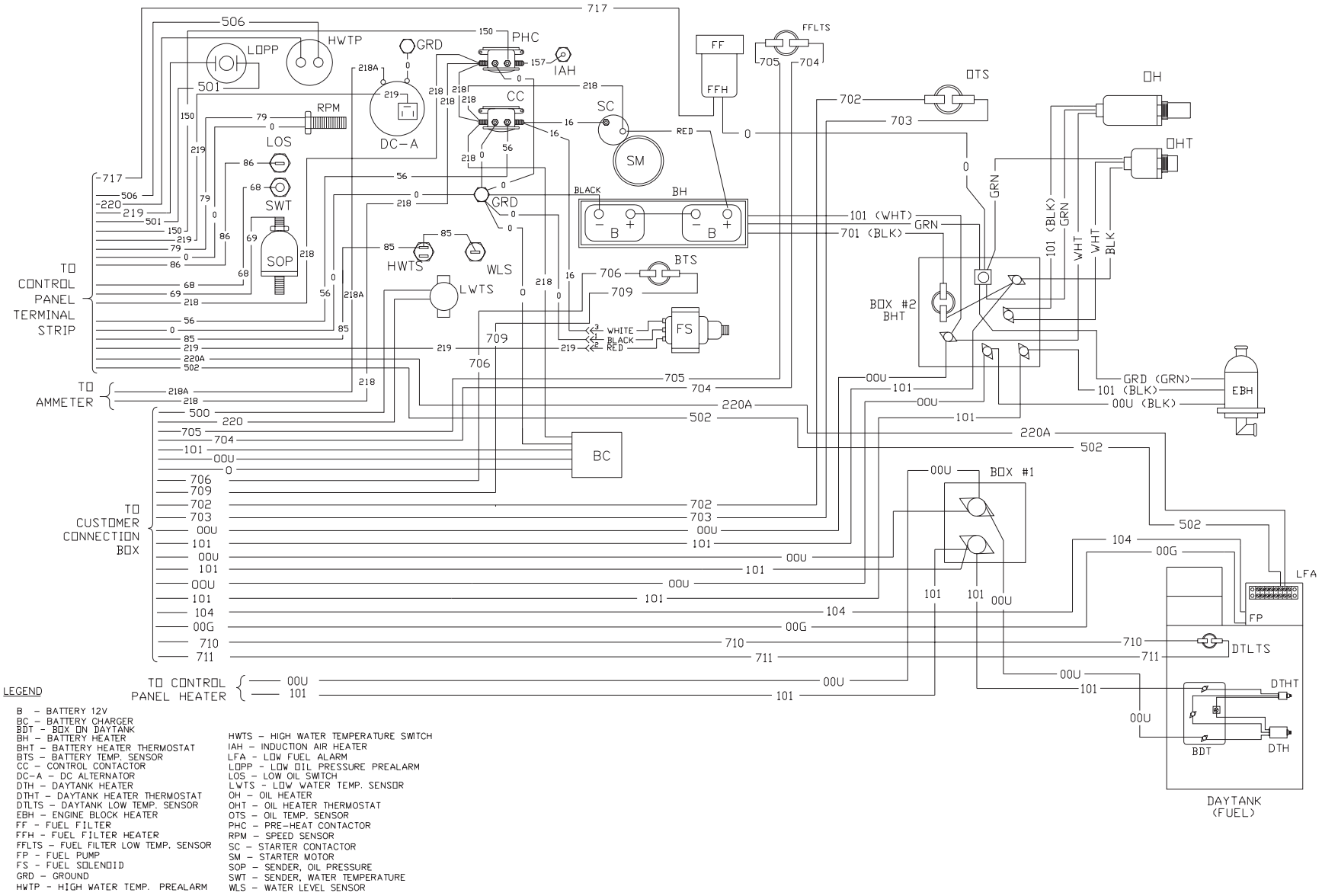
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
CB2– CIRCUIT BREAKER, 120V 15A
CB4– CIRCUIT BREAKER, 120V 15A
CB5– CIRCUIT BREAKER, 240V 50A
CB6– CIRCUIT BREAKER, 240V 50A
CB7– CIRCUIT BREAKER, 240V 400A (CT–110)
240V 350A (CT–85)
240V 225A (CT–60)
240V 200A (CT–45)
CB8– CIRCUIT BREAKER, 480V 175A (CT–110)
480V 150A (CT–85)
480V 100A (CT–60)
480V 80A (CT–45)

CT1– CURRENT TRANSFORMER– PHASE1
CT2– CURRENT TRANSFORMER – PHASE 2
CT3– CURRENT TRANSFORMER – PHASE 3
DPE– EXCITATION WINDING
EF – EXCITER FIELD
EA – EXCITER ARMATURE
RE1– RECEPTACLE, 120V 15A LOCKING L5–15R
RE2– RECEPTACLE, 120V 15A GFCI DUPLEX 5–15R
RE3– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4– RECEPTACLE, 120/240V 50A LOCKING CS6369
RE5– RECEPTACLE, 120V 15A GFCI DUPLEX 5–15R
SW4– SWITCH, SAFETY CUTOFF
SW7– SWITCH, SAFETY CUTOFF
TP – THERMAL PROTECTION
TS – TWO WIRE START TERMINAL STRIP



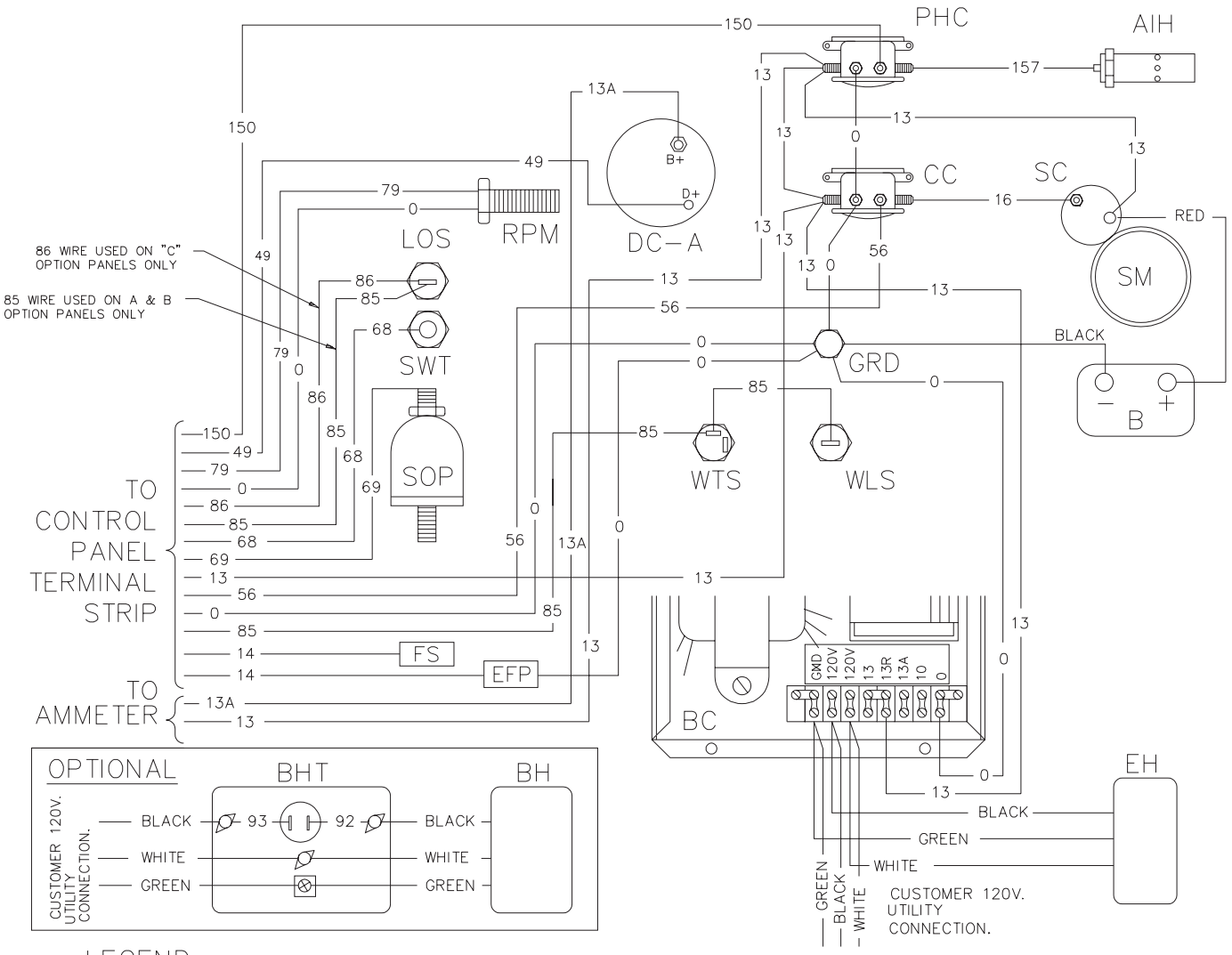
AM – AMMETER, AC
BCA – AMMETER BATTERY CHARGER
CB1– CIRCUIT BREAKER – FIELD
D1 – DIODE 600V 12 AMP
EC – ENGINE CONTROL
F1 – FUSE 15 AMP
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
D2 – RECTIFIER 800V 2A
R3 – RESISTOR – ENG. ALTERNATOR
R4 – RESISTOR, FIELD BOOST
SW2– SWITCH, START/RUN/STOP
SW3– SWITCH, PREHEAT
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
TB – TERMINAL BLOCK
VM – VOLTMETER, AC
VR – VOLTAGE REGULATOR


BCA
13A
13
AMMETER LEADS FROM ENGINE
PHASE SELECTOR SWITCH
CONTACTS | POSITION 1 | 2 | 3 | OFF
1 – 2 | 0 | X | X | X
3 – 4 | X | 0 | 0 | 0
5 – 6 | X | 0 | X | X
7 – 8 | 0 | X | 0 | 0
9 – 10 | X | X | 0 | X
11 – 12 | 0 | 0 | X | 0
13 – 14 | X | 0 | X | 0
15 – 16 | 0 | X | 0 | 0
17 – 18 | 0 | X | X | 0
19 – 20 | X | 0 | 0 | 0
X INDICATES CLOSED
SW5
CB1
R3
R4
D1
D2
VR
HZ
L3
F1
L2
HM
G1
G2
SW2
START
RUN
OFF
SW6
AUTO
OFF
MAN
SW3
L1
R1
VM
AM
PHR
EC
ENGINE & ALTERNATOR
RECEPTACLE PANEL
AM – AMMETER, AC
BCA– AMMETER BATTERY CHARGE
CB1– CIRCUIT BREAKER – FIELD
D1 – DIODE 600V 12 AMP
D2 – RECTIFIER– 800V 2 AMP
EC – ENGINE CONTROL
F1 – FUSE 15 AMP
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
HZ – FREQUENCY METER
L1 – LAMP, FAULT
L2 – LAMP, PANEL
L3 – LAMP, RUN
PHR– PREHEAT RELAY
R1 – POTENTIOMETER, VOLTAGE ADJUST
R3 – RESISTOR ENGINE ALTERNATOR
R4 – RESISTOR: FIELD BOOST
SW2– SWITCH, START/RUN/STOP
SW3– SWITCH, PREHEAT
SW5– SWITCH, PHASE SELECTOR
SW6– SWITCH, AUTO/OFF/MANUAL
VM – VOLTMETER, AC
VR – VOLTAGE REGULATOR



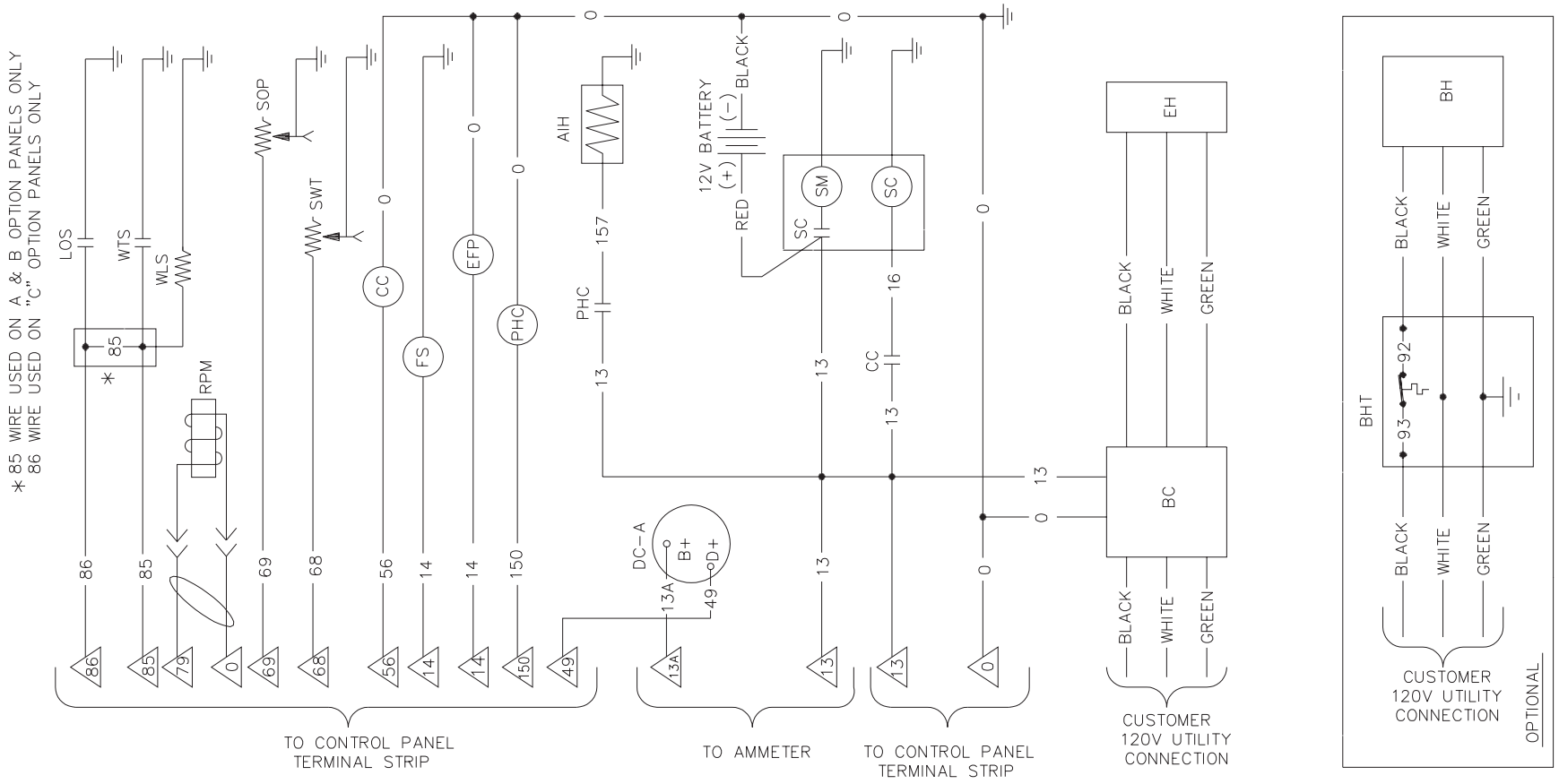
LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BDT – BOX ON DAYTANK
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
BTS – BATTERY TEMP. SENSOR
CC – CONTROL CONTACTOR
DC-A – DC ALTERNATOR
DTH – DAYTANK HEATER
DTHT – DAYTANK HEATER THERMOSTAT
DTLTS – DAYTANK LOW TEMP. SENSOR
EBH – ENGINE BLOCK HEATER
FF – FUEL FILTER
FFH – FUEL FILTER HEATER
FFLTS – FUEL FILTER LOW TEMP. SENSOR
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
HWTP – HIGH WATER TEMP. PREALARM
HWTS – HIGH WATER TEMPERATURE SWITCH
IAH – INDUCTION AIR HEATER
LFA – LOW FUEL ALARM
LOPP – LOW OIL PRESSURE PREALARM
LOS – LOW OIL SWITCH
LWTS – LOW WATER TEMP. SENSOR
OH – OIL HEATER
OHT – OIL HEATER THERMOSTAT
OTS – OIL TEMP. SENSOR
PHC – PRE-HEAT CONTACTOR
RPM – SPEED SENSOR
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP – SENDER, OIL PRESSURE
SWT – SENDER, WATER TEMPERATURE
WLS – WATER LEVEL SENSOR



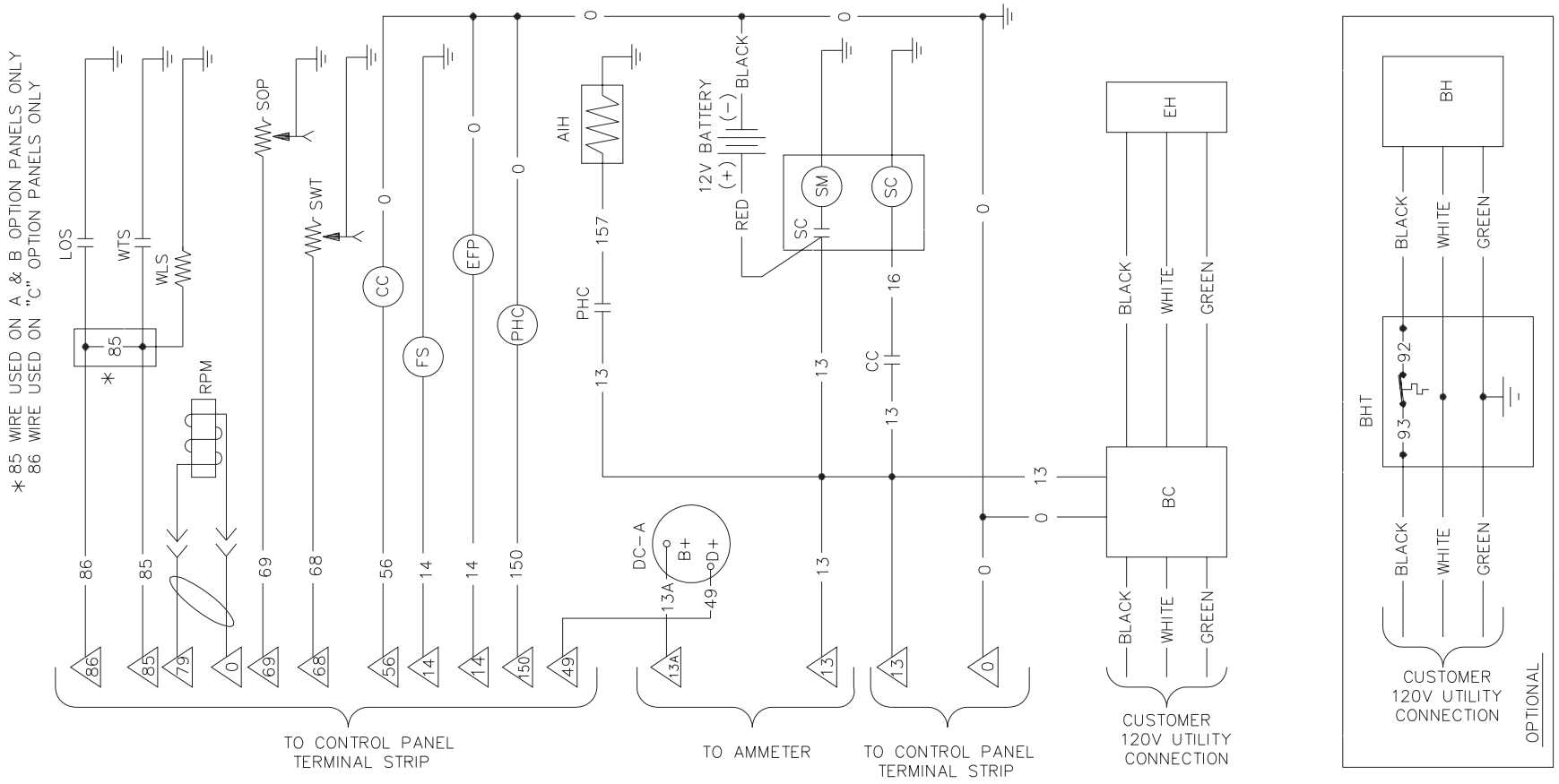
LEGEND

AIH– AIR INTAKE HEATER
B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EFP– ELECTRIC FUEL PUMP
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH



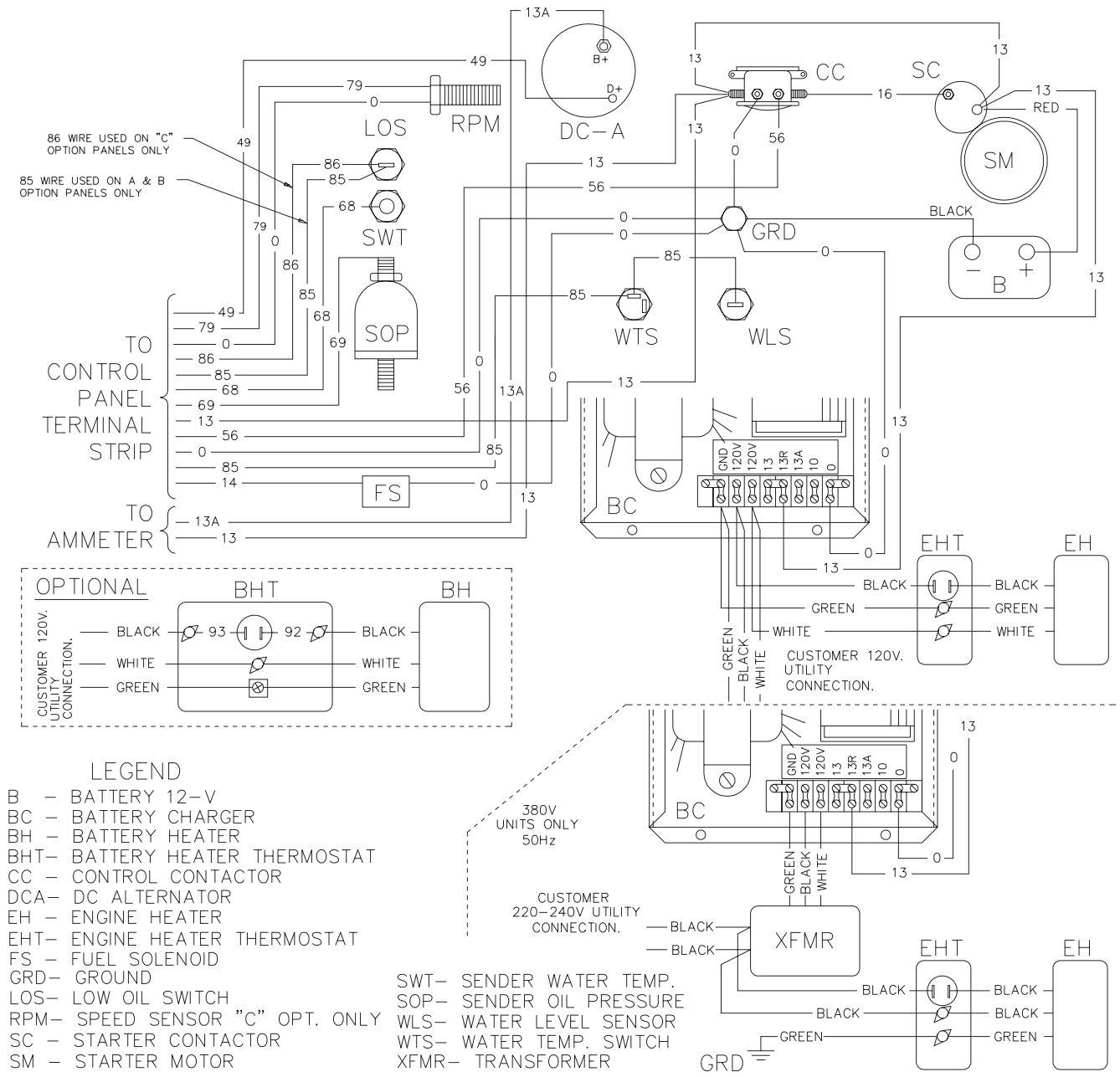
LEGEND

AIH– AIR INTAKE HEATER
B – BATTERY 12V
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BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
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DCA– DC ALTERNATOR
GRD– GROUND
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EFP– ELECTRIC FUEL PUMP
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PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
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SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



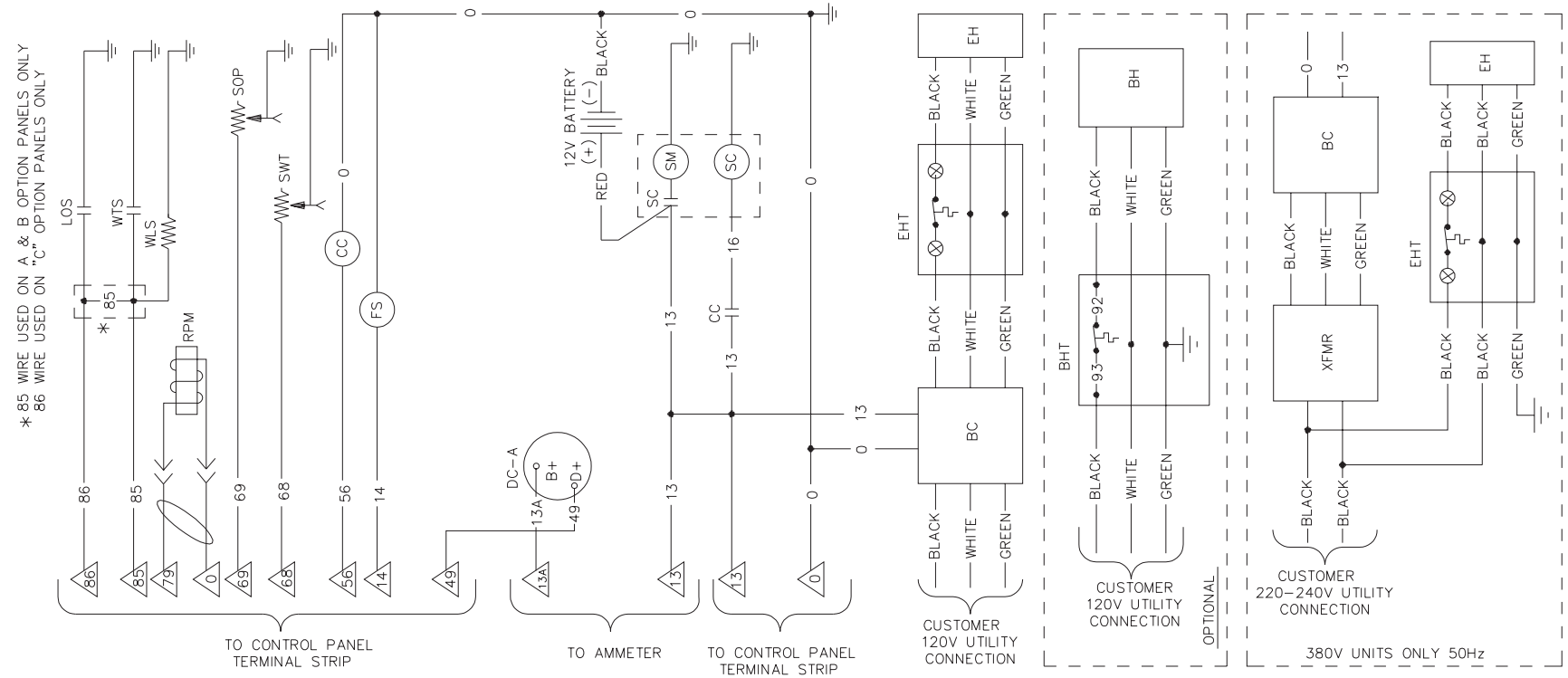
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AIH– AIR INTAKE HEATER
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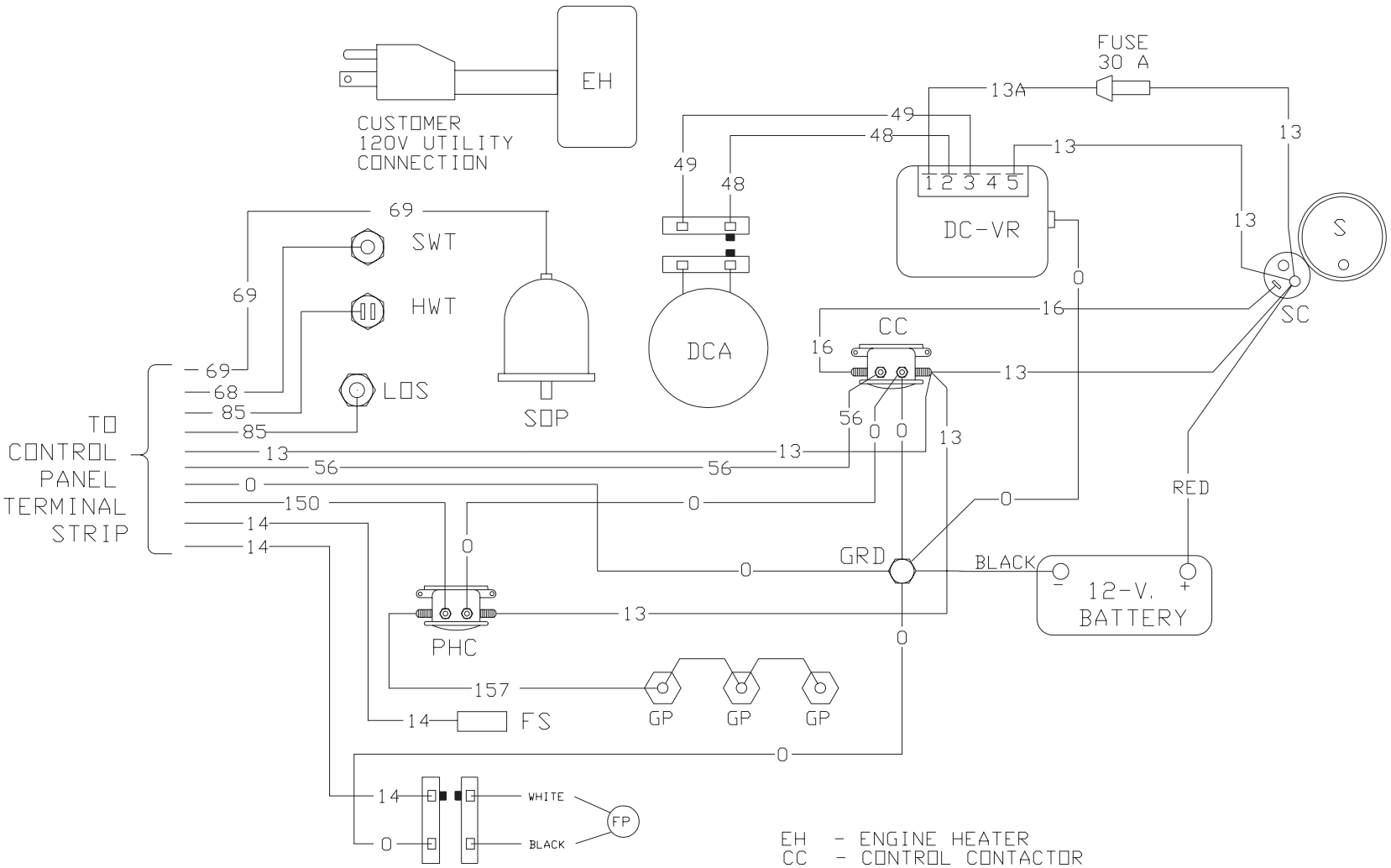
LEGEND

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BC – BATTERY CHARGER
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BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
RPM– SPEED SENSOR "C" OPT. ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH
XFMR– TRANSFORMER

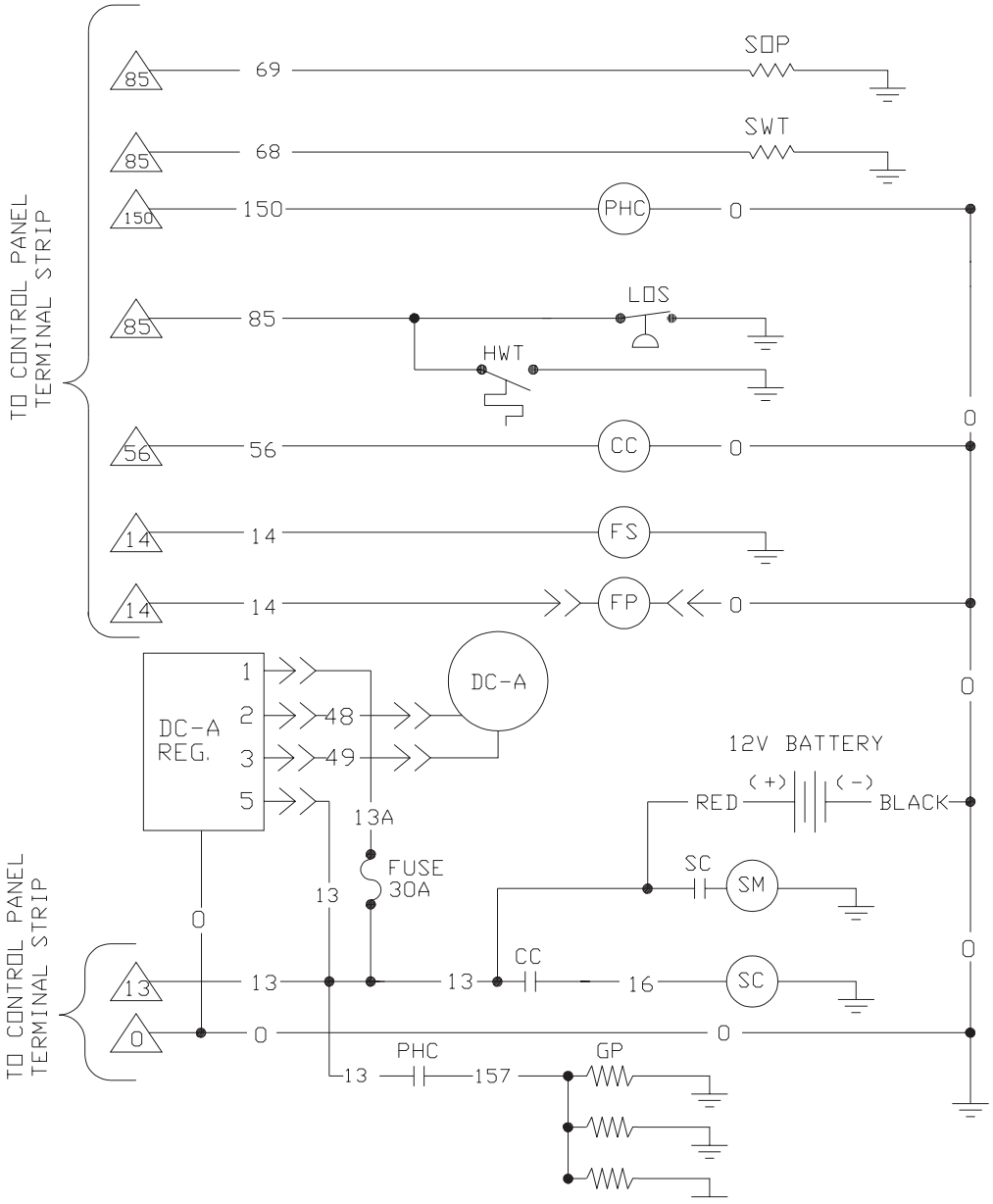


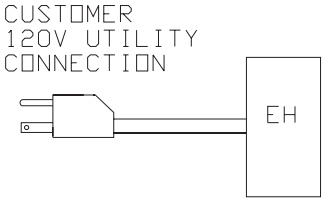
LEGEND

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BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
XFMR– TRANSFORMER
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
RPM– SPEED SENSOR "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
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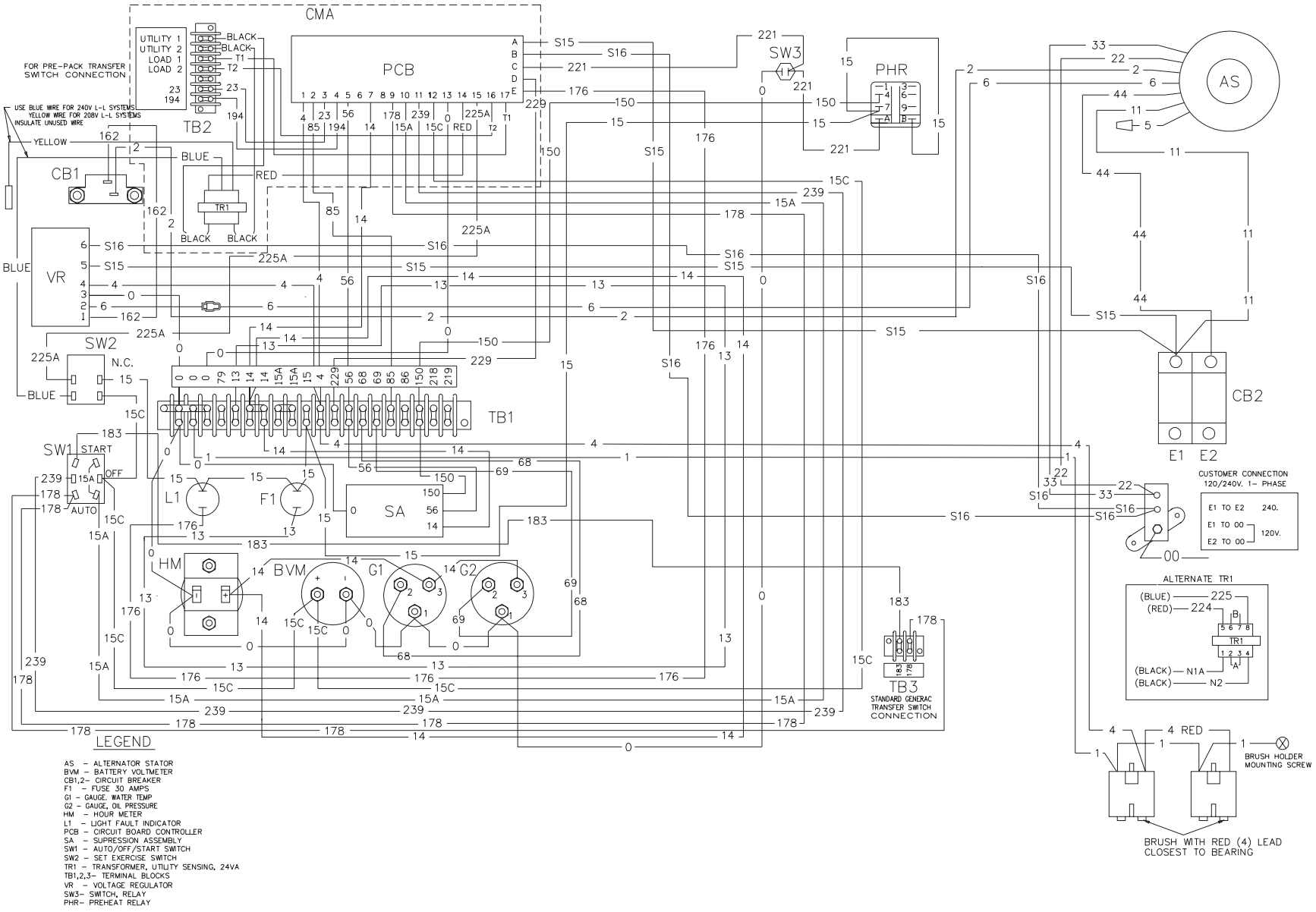


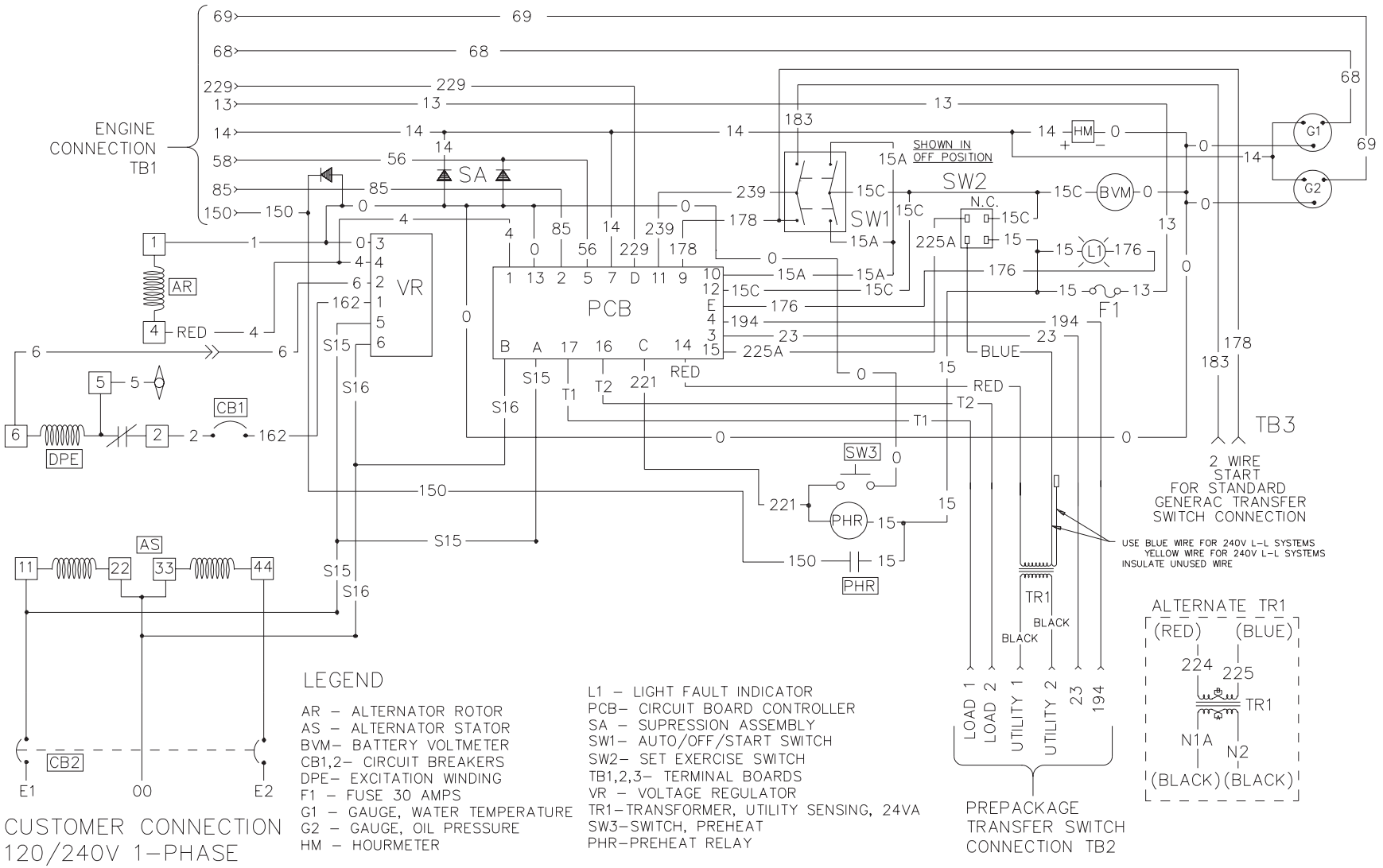
EH - ENGINE HEATER
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
FS - FUEL SHUTOFF
FP - FUEL PUMP
GRD - GROUND
LOS - SWITCH, LOW OIL PRESSURE
HWT - SWITCH, HIGH WATER TEMP.
PHC - PRE-HEAT CONTACTOR
GP - GLOW PLUGS
S - STARTER
SC - STARTER CONTACTOR
SOP - SENDER, OIL PRESSURE
SWT - WATER TEMP. SENDER





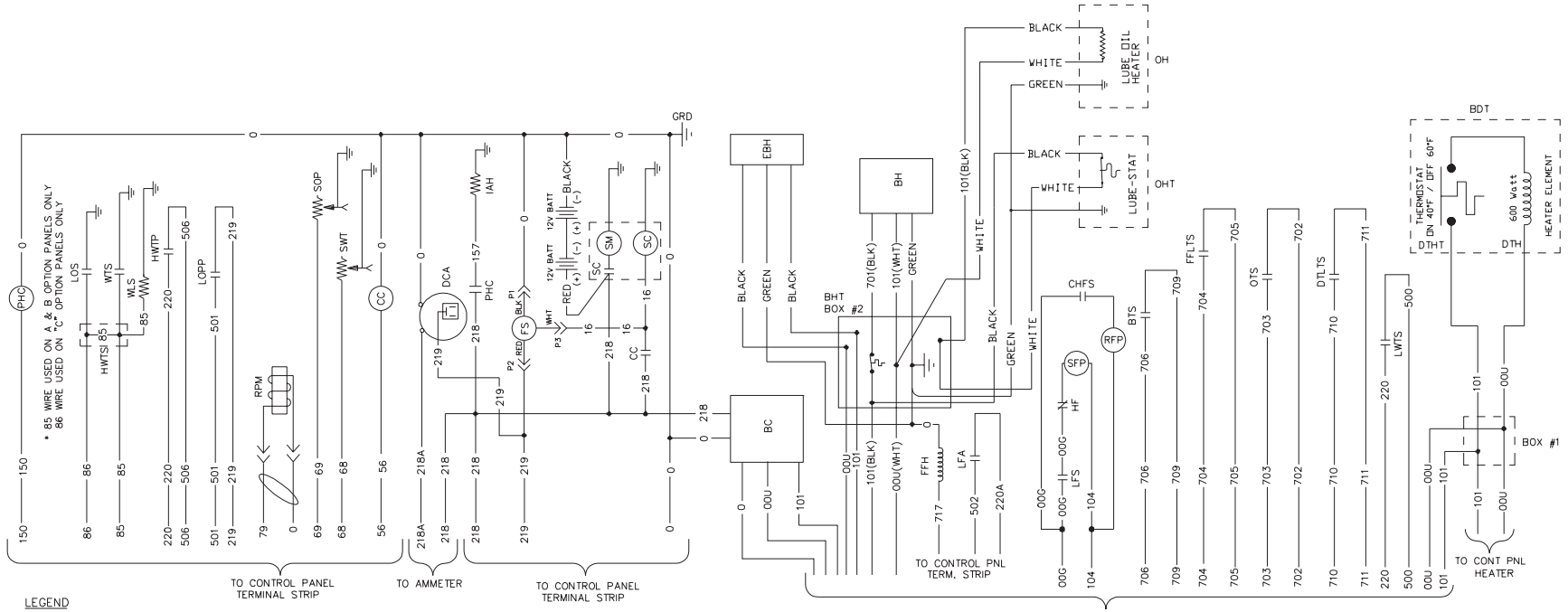
CC - CONTROL CONTACTOR
DCA - DC ALTERNATOR
DC-VR - DC VOLTAGE REGULATOR
EH - ENGINE HEATER
FS - FUEL SHUTOFF SOLENOID
FP - FUEL PUMP
HWT - SWITCH, HIGH WATER TEMP.
LOS - SWITCH, LOW OIL PRESSURE
SC - STARTER CONTACTOR
SM - STARTER MOTOR
PHC - PRE-HEAT CONTACTOR
GP - GLOW PLUG
SOP - SENDER, OIL PRESSURE
SWT - SENDER, WATER TEMP


CMA
PCB
TB2
TB1
TB3
CB1
CB2
SW1
SW2
SW3
PHR
VR
TR1
AS
HM
BVM
G1
G2
L1
F1
SA
FOR PRE-PACK TRANSFER SWITCH CONNECTION
UTILITY 1
UTILITY 2
LOAD 1
LOAD 2
USE BLUE WIRE FOR 240V L-L SYSTEMS
YELLOW WIRE FOR 208V L-L SYSTEMS
INSULATE UNUSED WIRE
CUSTOMER CONNECTION
120/240V. 1- PHASE
E1 TO E2 240.
E1 TO 00 120V.
E2 TO 00
ALTERNATE TR1
(BLUE) 225
(RED) 224
(BLACK) N1A
(BLACK) N2
4 RED
BRUSH HOLDER MOUNTING SCREW
BRUSH WITH RED (4) LEAD CLOSEST TO BEARING
STANDARD GENERAC TRANSFER SWITCH CONNECTION
LEGEND
AS - ALTERNATOR STATOR
BVM - BATTERY VOLTMETER
CB1,2- CIRCUIT BREAKER
F1 - FUSE 30 AMPS
G1 - GAUGE, WATER TEMP
G2 - GAUGE, OIL PRESSURE
HM - HOUR METER
L1 - LIGHT FAULT INDICATOR
PCB - CIRCUIT BOARD CONTROLLER
SA - SUPRESSION ASSEMBLY
SW1 - AUTO/OFF/START SWITCH
SW2 - SET EXERCISE SWITCH
TR1 - TRANSFORMER, UTILITY SENSING, 24VA
TB1,2,3- TERMINAL BLOCKS
VR - VOLTAGE REGULATOR
SW3- SWITCH, RELAY
PHR- PREHEAT RELAY



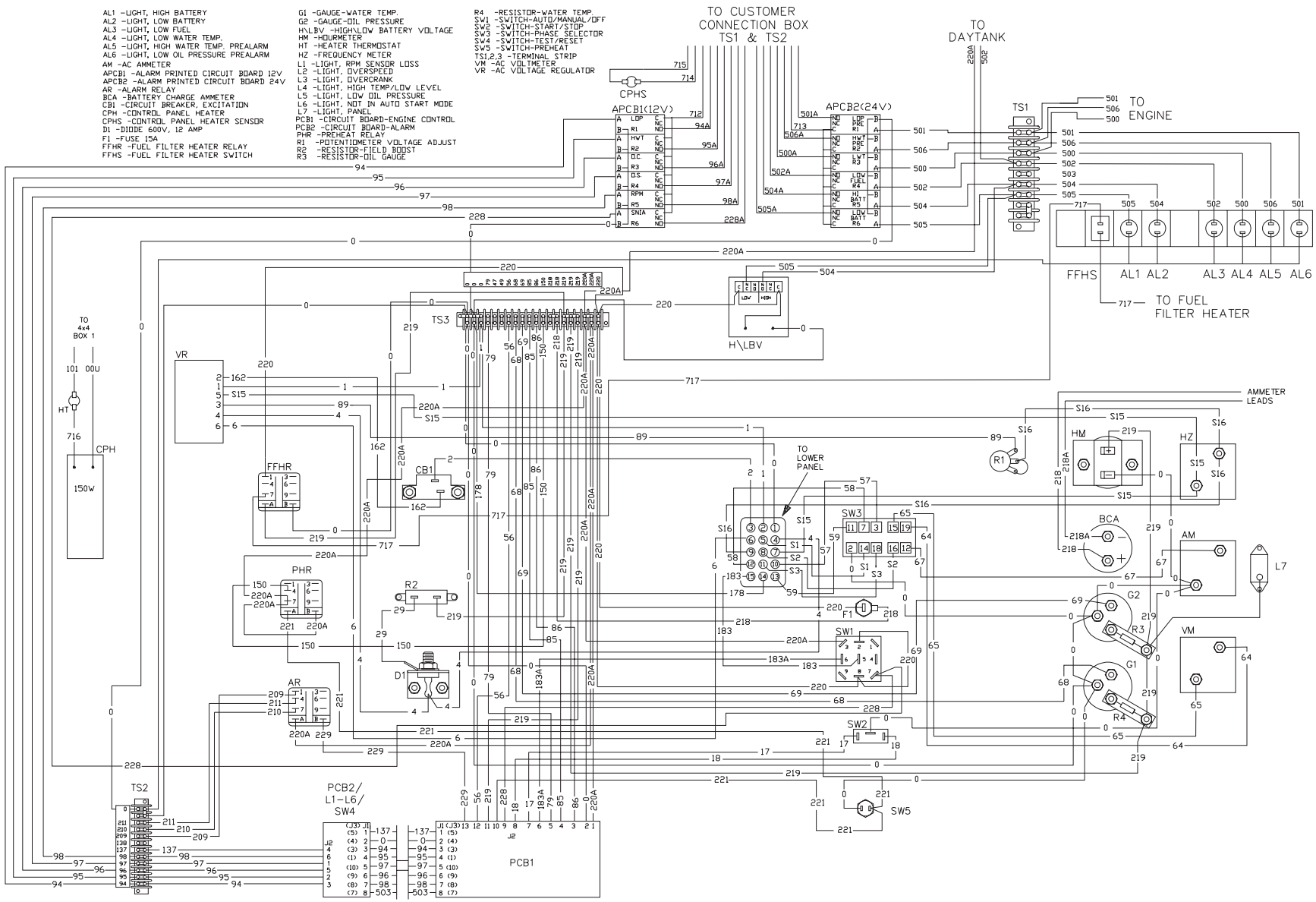
LEGEND

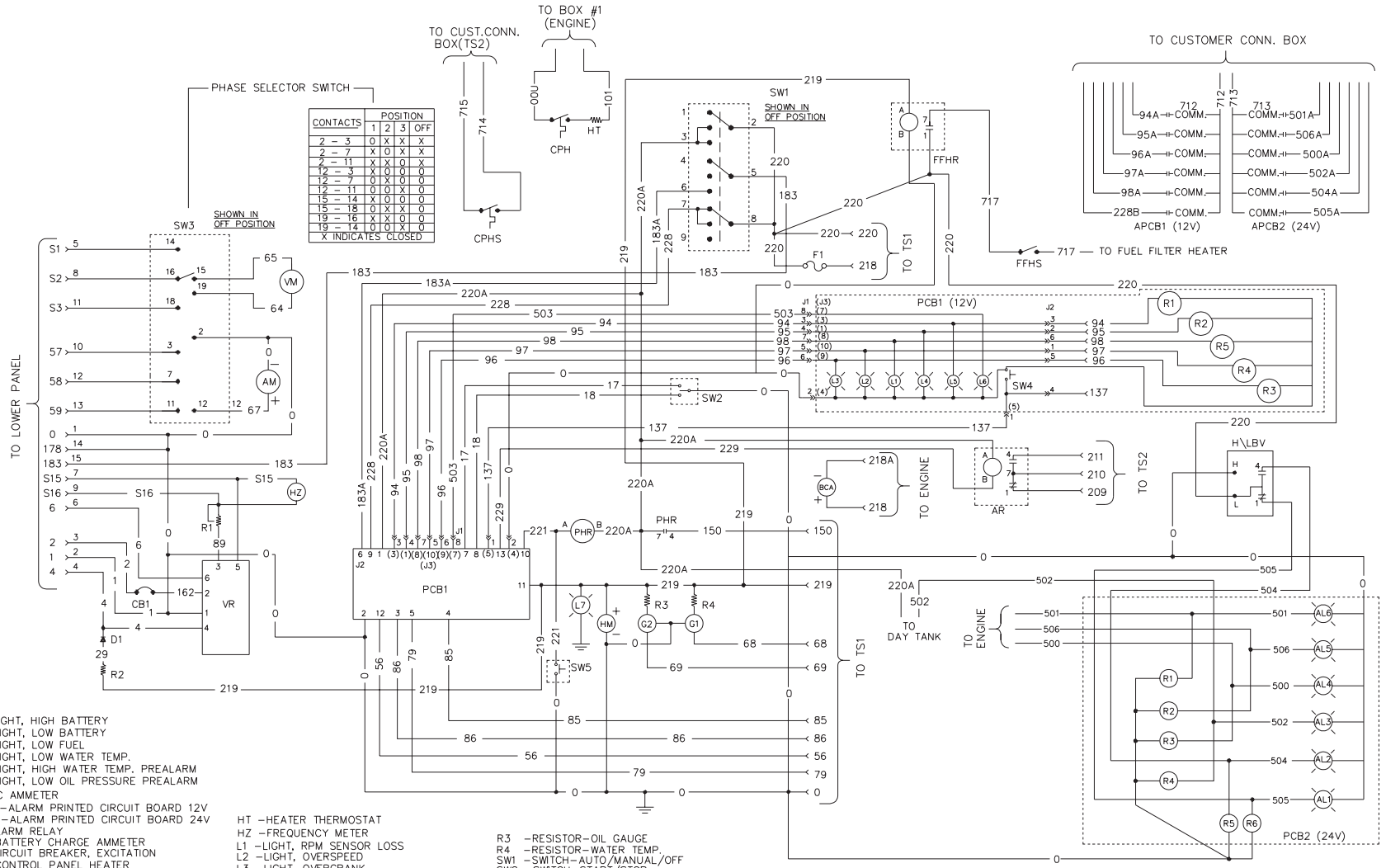
AR – ALTERNATOR ROTOR
AS – ALTERNATOR STATOR
BVM– BATTERY VOLTMETER
CB1,2– CIRCUIT BREAKERS
DPE– EXCITATION WINDING
F1 – FUSE 30 AMPS
G1 – GAUGE, WATER TEMPERATURE
G2 – GAUGE, OIL PRESSURE
HM – HOURMETER
L1 – LIGHT FAULT INDICATOR
PCB– CIRCUIT BOARD CONTROLLER
SA – SUPRESSION ASSEMBLY
SW1– AUTO/OFF/START SWITCH
SW2– SET EXERCISE SWITCH
TB1,2,3– TERMINAL BOARDS
VR – VOLTAGE REGULATOR
TR1–TRANSFORMER, UTILITY SENSING, 24VA
SW3–SWITCH, PREHEAT
PHR–PREHEAT RELAY



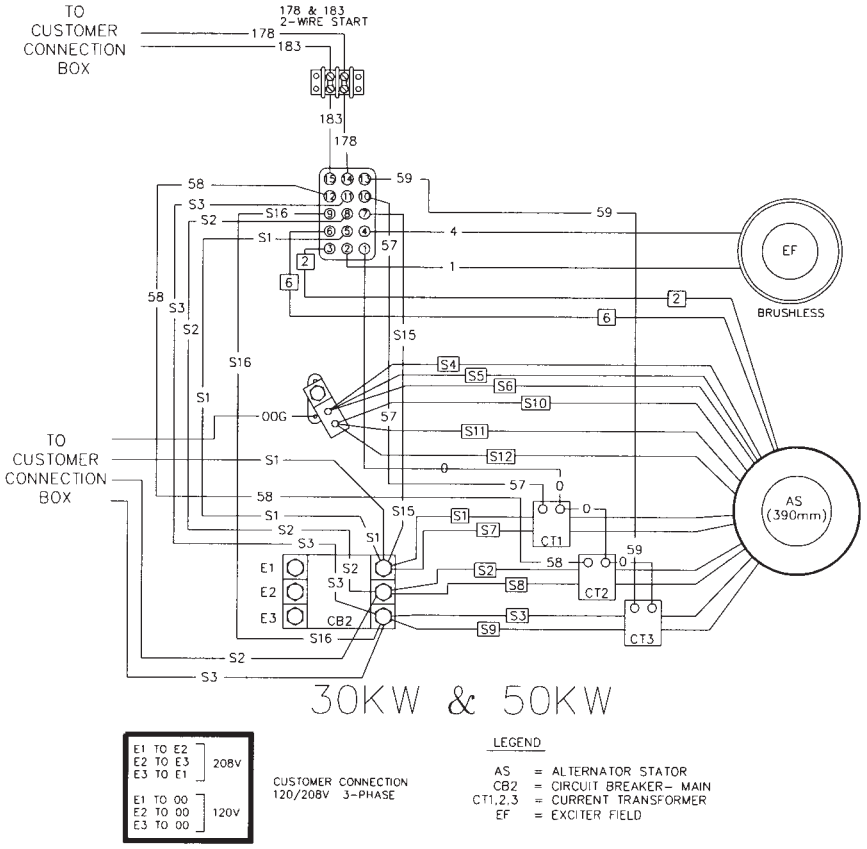
LEGEND

BATT – BATTERY 12V
BC – BATTERY CHARGER
BDT – BOX ON DAYTANK
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
BTS – BATTERY TEMP. SENSOR
CC – CONTROL CONTACTOR
CHFS – CRITICAL HIGH FUEL SWITCH
DC–A – DC ALTERNATOR
DTH – DAYTANK HEATER
DTHT – DAYTANK HEATER THERMOSTAT
DTLTS – DAYTANK LOW TEMP. SENSOR
EBH – ENGINE BLOCK HEATER
FFH – FUEL FILTER HEATER
FFLTS – FUEL FILTER LOW TEMP. SENSOR
FS – FUEL SOLENOID
GRD – GROUND
HF – LOW FUEL
HWTP – HIGH WATER TEMP. PREALARM
HWTS – HIGH WATER TEMPERATURE SWITCH
IAH – INDUCTION AIR HEATER
LFA – LOW FUEL ALARM
LFS – LOW FUEL SWITCH
LOPP – LOW OIL PRESSURE PREALARM
LOS – LOW OIL SWITCH
LWTS – LOW WATER TEMP. SENSOR
OH – OIL HEATER
OHT – OIL HEATER THERMOSTAT
OTS – OIL TEMP. SENSOR
PHC – PRE–HEAT CONTACTOR
RFP – RETURN FUEL PUMP
RPM – SPEED SENSOR
SC – STARTER CONTACTOR
SFP – SUPPLY FUEL PUMP
SM – STARTER MOTOR
SOP – SENDER, OIL PRESSURE
SWT – SENDER, WATER TEMPERATURE
WLS – WATER LEVEL SENSOR
WTS – WATER TEMPERATURE SWITCH

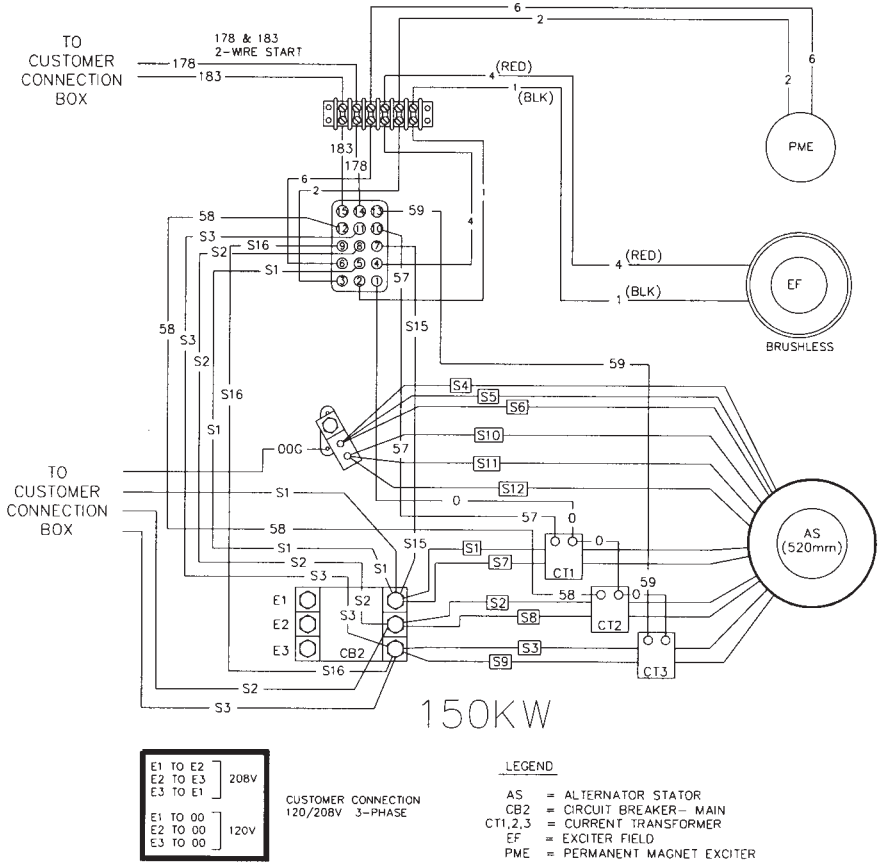

AL1 -LIGHT, HIGH BATTERY
AL2 -LIGHT, LOW BATTERY
AL3 -LIGHT, LOW FUEL
AL4 -LIGHT, LOW WATER TEMP.
AL5 -LIGHT, HIGH WATER TEMP. PREALARM
AL6 -LIGHT, LOW OIL PRESSURE PREALARM
AM -AC AMMETER
APCB1 -ALARM PRINTED CIRCUIT BOARD 12V
APCB2 -ALARM PRINTED CIRCUIT BOARD 24V
AR -ALARM RELAY
BCA -BATTERY CHARGE AMMETER
CB1 -CIRCUIT BREAKER, EXCITATION
CPH -CONTROL PANEL HEATER
CPHS -CONTROL PANEL HEATER SENSOR
D1 -DIODE 600V, 12 AMP
F1 -FUSE 15A
FFHR -FUEL FILTER HEATER RELAY
FFHS -FUEL FILTER HEATER SWITCH
G1 -GAUGE-WATER TEMP.
G2 -GAUGE-OIL PRESSURE
H\LBV -HIGH\LOW BATTERY VOLTAGE
HM -HOURMETER
HT -HEATER THERMOSTAT
HZ -FREQUENCY METER
L1 -LIGHT, RPM SENSOR LOSS
L2 -LIGHT, OVERSPEED
L3 -LIGHT, OVERCRANK
L4 -LIGHT, HIGH TEMP/LOW LEVEL
L5 -LIGHT, LOW OIL PRESSURE
L6 -LIGHT, NOT IN AUTO START MODE
L7 -LIGHT, PANEL
PCB1 -CIRCUIT BOARD-ENGINE CONTROL
PCB2 -CIRCUIT BOARD-ALARM
PHR -PREHEAT RELAY
R1 -POTENTIOMETER VOLTAGE ADJUST
R2 -RESISTOR-FIELD BOOST
R3 -RESISTOR-OIL GAUGE
R4 -RESISTOR-WATER TEMP
SW1 -SWITCH-AUTO/MANUAL/OFF
SW2 -SWITCH-START/STOP
SW3 -SWITCH-PHASE SELECTOR
SW4 -SWITCH-TEST/RESET
SW5 -SWITCH-PREHEAT
TS1,2,3 -TERMINAL STRIP
VM -AC VOLTMETER
VR -AC VOLTAGE REGULATOR
TO CUSTOMER CONNECTION BOX TS1 & TS2
TO DAYTANK
TO ENGINE
TO FUEL FILTER HEATER
TO LOWER PANEL
TO 4x4 BOX 1
CPHS
APCB1(12V)
APCB2(24V)
TS1
TS2
TS3
H\LBV
FFHS
AL1 AL2
AL3 AL4 AL5 AL6
AMMETER LEADS
FFHR
PHR
AR
VR
CB1
R1
R2
SW1
SW2
SW3
SW4
SW5
HM
HZ
BCA
AM
VM
G1
G2
R3
R4
F1
D1
CPH
150W
HT
PCB1
PCB2/ L1-L6/ SW4



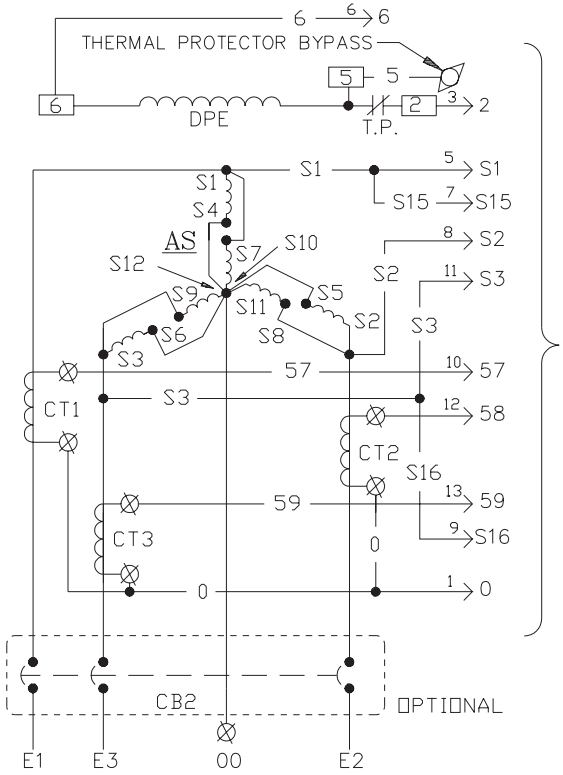
AL1 –LIGHT, HIGH BATTERY
AL2 –LIGHT, LOW BATTERY
AL3 –LIGHT, LOW FUEL
AL4 –LIGHT, LOW WATER TEMP.
AL5 –LIGHT, HIGH WATER TEMP. PREALARM
AL6 –LIGHT, LOW OIL PRESSURE PREALARM
AM –AC AMMETER
APCB1 –ALARM PRINTED CIRCUIT BOARD 12V
APCB2 –ALARM PRINTED CIRCUIT BOARD 24V
AR –ALARM RELAY
BCA –BATTERY CHARGE AMMETER
CB1 –CIRCUIT BREAKER, EXCITATION
CPH –CONTROL PANEL HEATER
CPHS –CONTROL PANEL HEATER SENSOR
D1 –DIODE 600V, 12 AMP
F1 –FUSE 15A
FFHR –FUEL FILTER HEATER RELAY
FFHS –FUEL FILTER HEATER SWITCH
G1 –GAUGE–WATER TEMP.
G2 –GAUGE–OIL PRESSURE
H\LBV –HIGH\LOW BATTERY VOLTAGE
HM –HOURMETER
HT –HEATER THERMOSTAT
HZ –FREQUENCY METER
L1 –LIGHT, RPM SENSOR LOSS
L2 –LIGHT, OVERSPEED
L3 –LIGHT, OVERCRANK
L4 –LIGHT, HIGH TEMP/LOW LEVEL
L5 –LIGHT, LOW OIL PRESSURE
L6 –LIGHT, NOT IN AUTO START MODE
L7 –LIGHT, PANEL
PCB1 –CIRCUIT BOARD–ENGINE CONTROL
PCB2 –CIRCUIT BOARD–ALARM
PHR –PREHEAT RELAY
R1 –POTENTIOMETER VOLTAGE ADJUST
R2 –RESISTOR–FIELD BOOST
R3 –RESISTOR–OIL GAUGE
R4 –RESISTOR–WATER TEMP.
SW1 –SWITCH–AUTO/MANUAL/OFF
SW2 –SWITCH–START/STOP
SW3 –SWITCH–PHASE SELECTOR
SW4 –SWITCH–TEST/RESET
SW5 –SWITCH–PREHEAT
TS1,2,3 –TERMINAL STRIP
VM –AC VOLTMETER
VR –AC VOLTAGE REGULATOR



30KW & 50KW



150KW



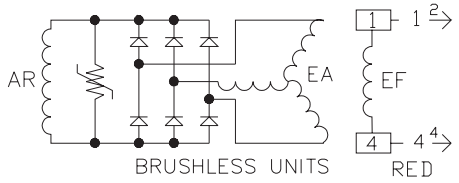
CUSTOMER CONNECTION

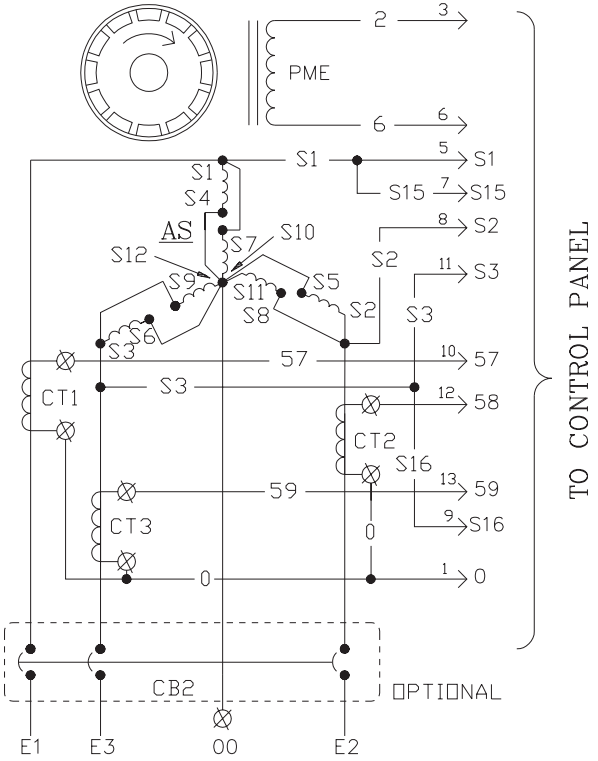
120/208-V. 3-PHASE

30KW AND 50KW

LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
DPE = EXCITATION WINDING
EA = EXCITER ARMATURE
EF = EXCITER FIELD
TP = THERMAL PROTECTER

LEGEND
AR = ALTERNATOR ROTOR
AS = ALTERNATOR STATOR
CB2 = CIRCUIT BREAKER - MAIN
CT = CURRENT TRANSFORMER
EA = EXCITER ARMATURE
EF = EXCITER FIELD
PME = PERMANENT MAGNET EXCITER

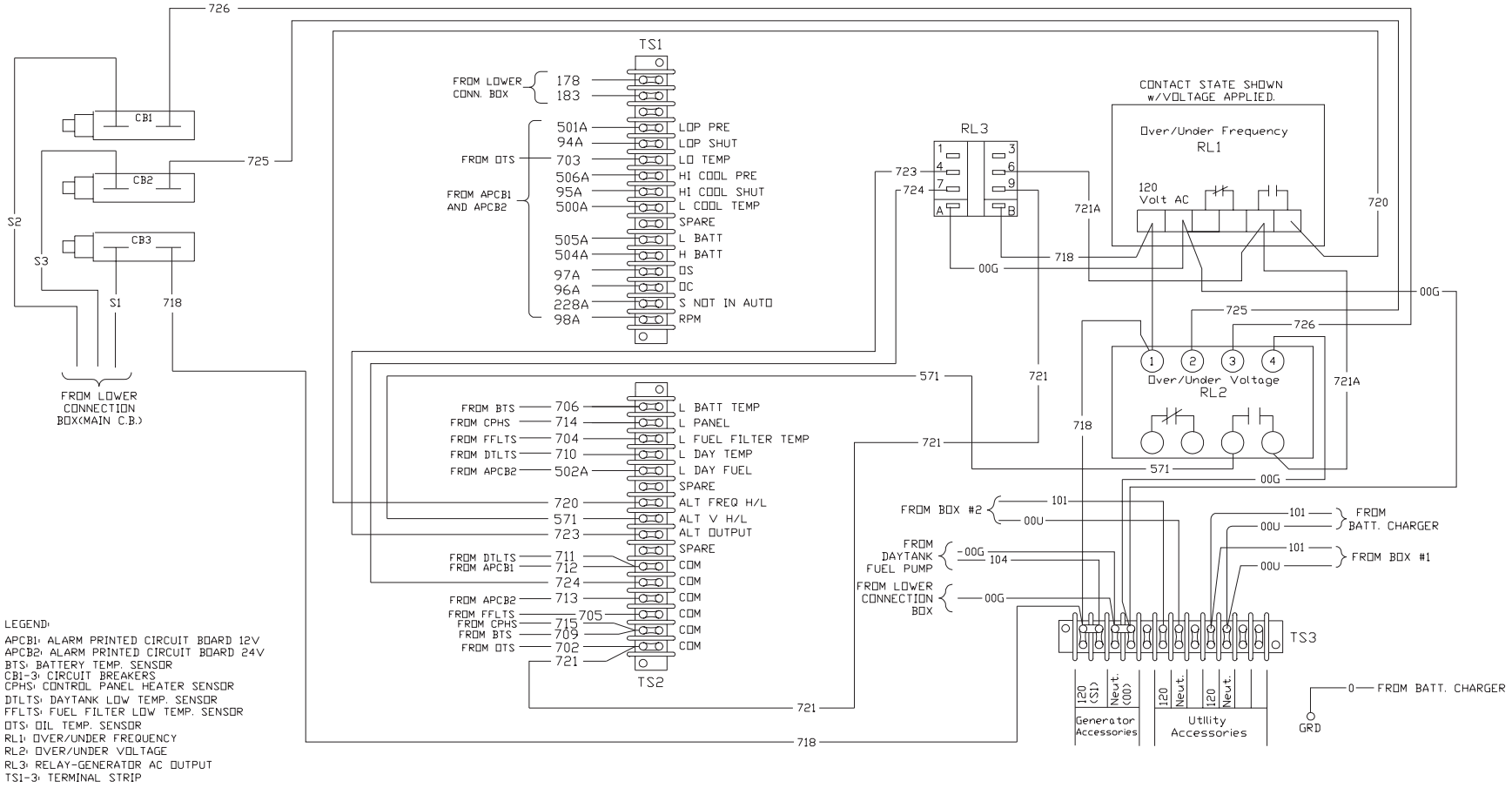


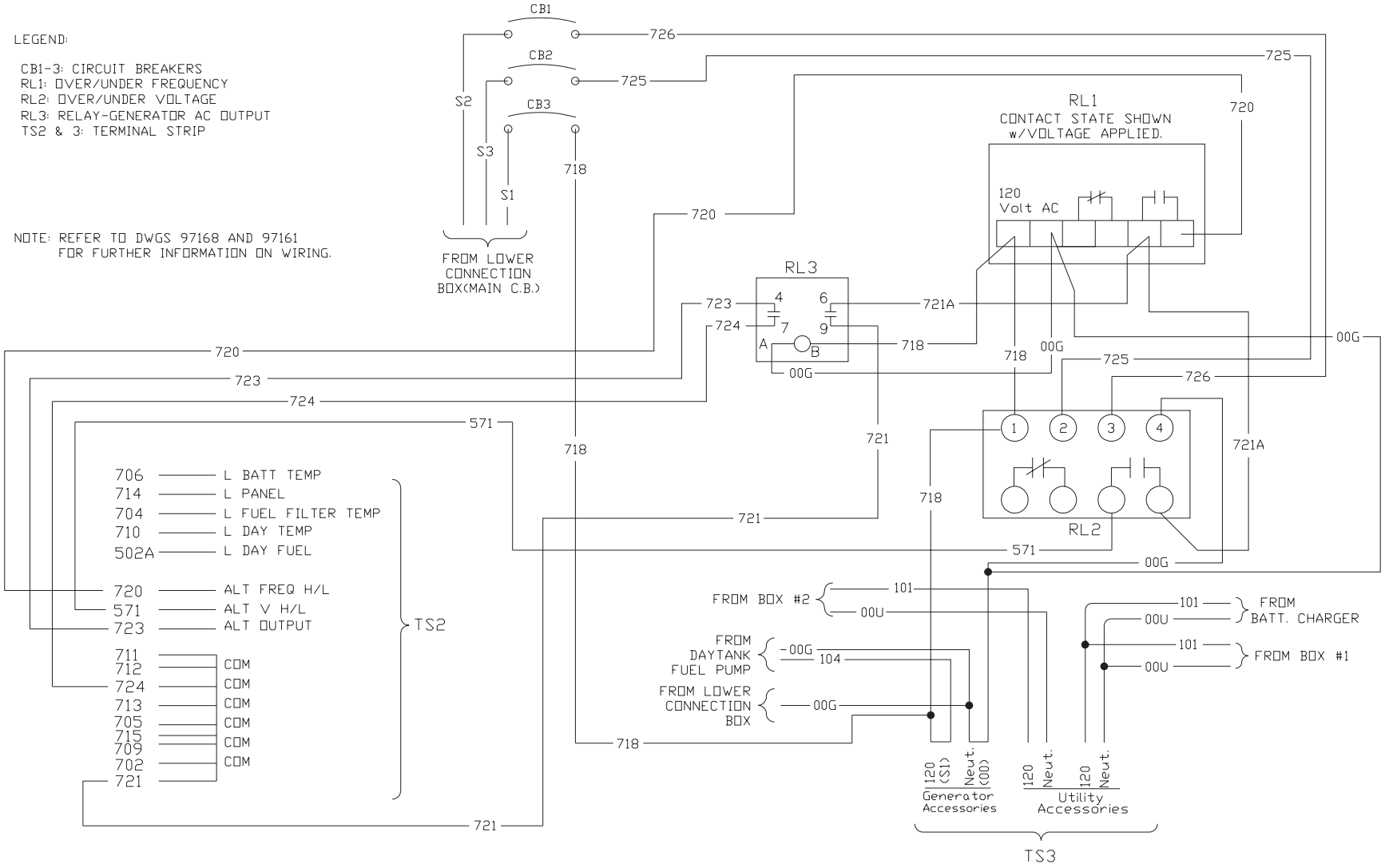


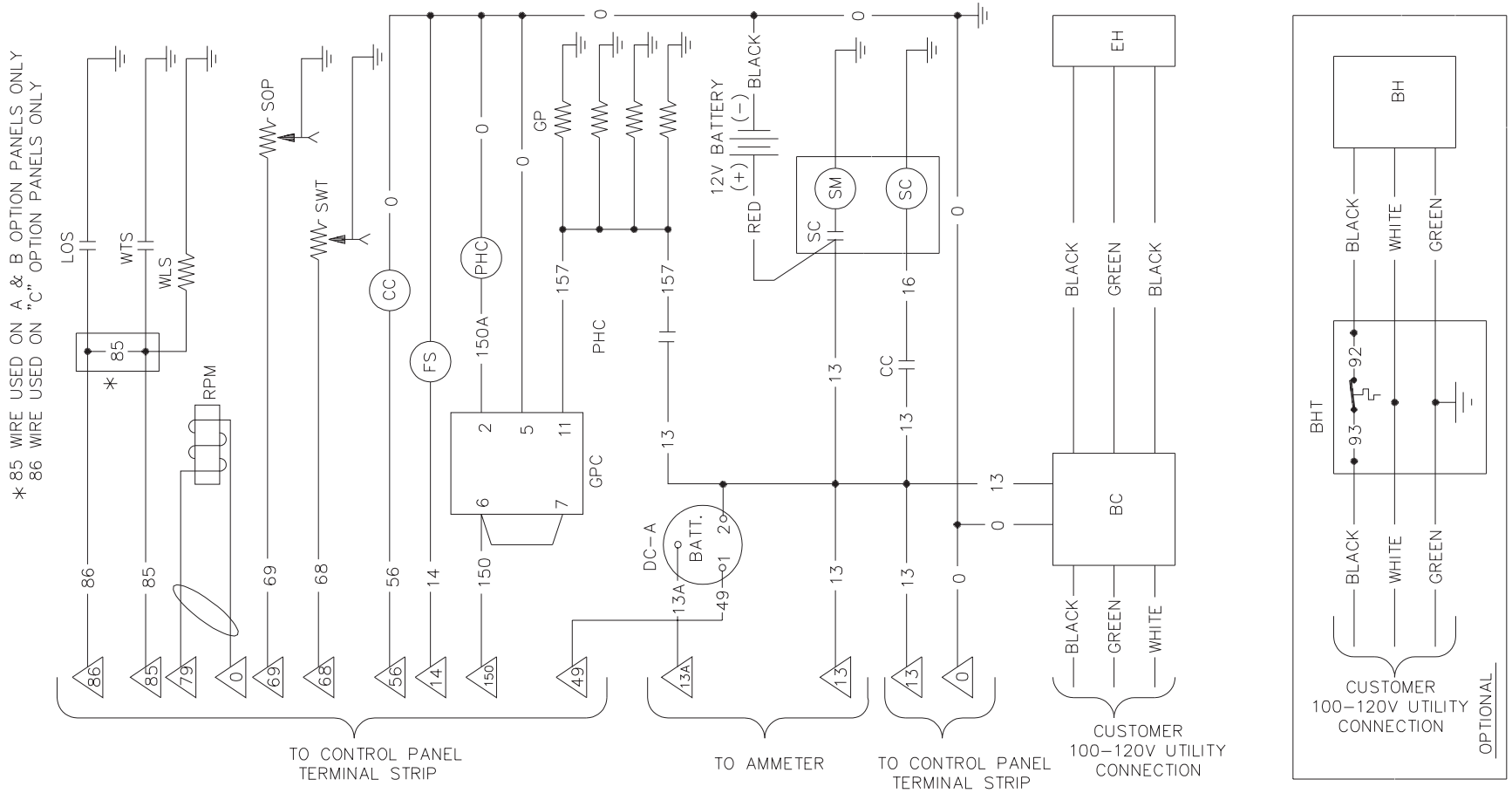
CUSTOMER CONNECTION

120/208-V. 3-PHASE

150KW

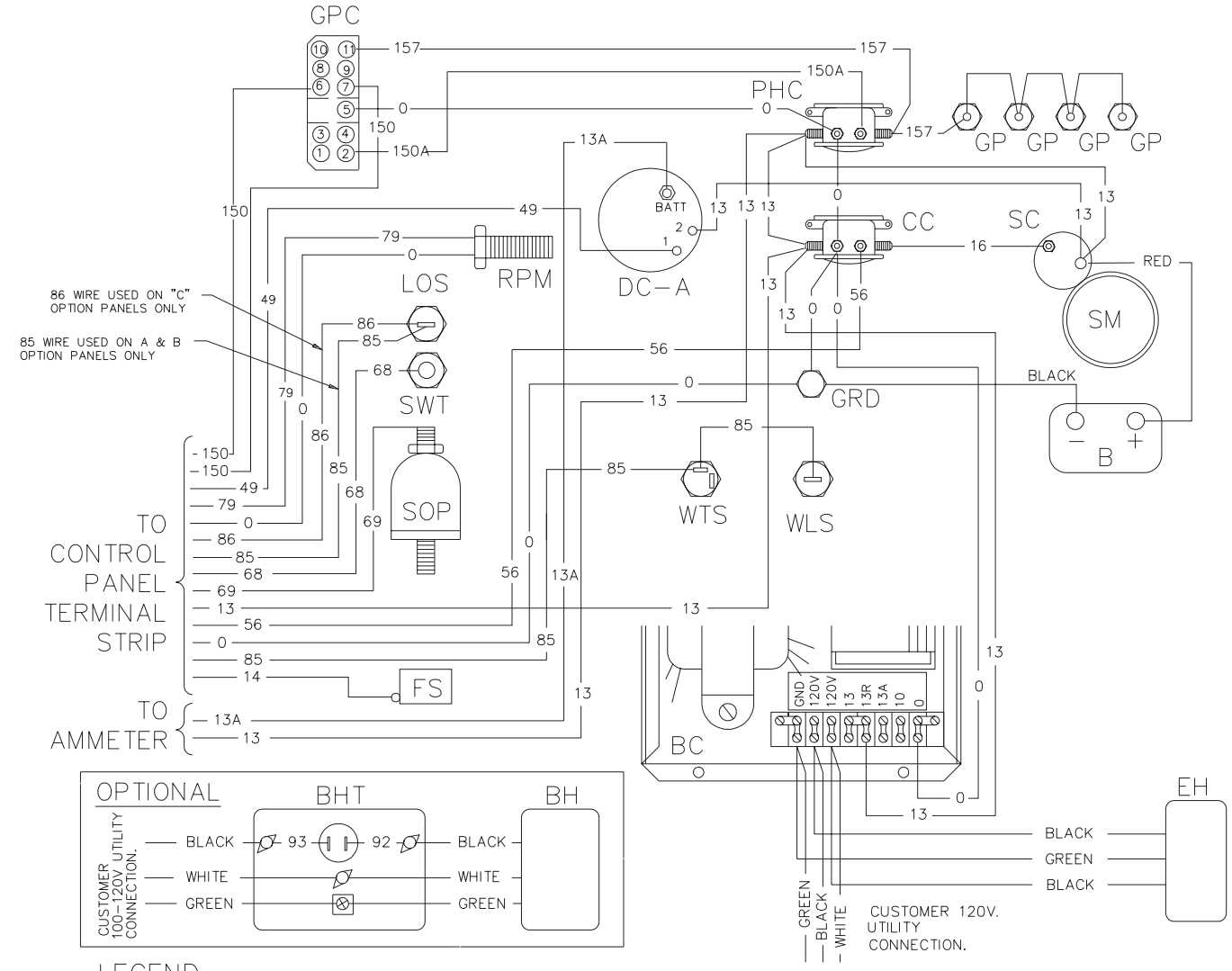

726
CB1
CB2
CB3
725
S2
S3
S1
718
FROM LOWER CONNECTION BOX(MAIN C.B.)
TS1
FROM LOWER CONN. BOX
178
183
501A
94A
FROM OTS
703
506A
FROM APCB1 AND APCB2
95A
500A
505A
504A
97A
96A
228A
98A
LOP PRE
LOP SHUT
LO TEMP
HI COOL PRE
HI COOL SHUT
L COOL TEMP
SPARE
L BATT
H BATT
OS
OC
S NOT IN AUTO
RPM
RL3
723
724
721A
718
00G
CONTACT STATE SHOWN w/VOLTAGE APPLIED.
Over/Under Frequency RL1
120 Volt AC
720
725
726
00G
Over/Under Voltage RL2
721
571
FROM BTS
706
FROM CPHS
714
FROM FFLTS
704
FROM DTLTS
710
FROM APCB2
502A
L BATT TEMP
L PANEL
L FUEL FILTER TEMP
L DAY TEMP
L DAY FUEL
SPARE
720
571
723
ALT FREQ H/L
ALT V H/L
ALT OUTPUT
FROM DTLTS
FROM APCB1
711
712
724
FROM APCB2
713
FROM FFLTS
FROM CPHS
FROM BTS
FROM OTS
705
715
709
702
721
COM
TS2
FROM BOX #2
101
00U
FROM BATT. CHARGER
FROM DAYTANK FUEL PUMP
-00G
104
FROM BOX #1
FROM LOWER CONNECTION BOX
00G
TS3
120 (S1)
Neut. (00)
Generator Accessories
120
Neut.
120
Neut.
Utility Accessories
0
FROM BATT. CHARGER
GRD
LEGEND:
APCB1: ALARM PRINTED CIRCUIT BOARD 12V
APCB2: ALARM PRINTED CIRCUIT BOARD 24V
BTS: BATTERY TEMP. SENSOR
CB1-3: CIRCUIT BREAKERS
CPHS: CONTROL PANEL HEATER SENSOR
DTLTS: DAYTANK LOW TEMP. SENSOR
FFLTS: FUEL FILTER LOW TEMP. SENSOR
OTS: OIL TEMP. SENSOR
RL1: OVER/UNDER FREQUENCY
RL2: OVER/UNDER VOLTAGE
RL3: RELAY-GENERATOR AC OUTPUT
TS1-3: TERMINAL STRIP


LEGEND:
CB1-3: CIRCUIT BREAKERS
RL1: OVER/UNDER FREQUENCY
RL2: OVER/UNDER VOLTAGE
RL3: RELAY-GENERATOR AC OUTPUT
TS2 & 3: TERMINAL STRIP
NOTE: REFER TO DWGS 97168 AND 97161 FOR FURTHER INFORMATION ON WIRING.
CB1
CB2
CB3
S1
S2
S3
FROM LOWER CONNECTION BOX(MAIN C.B.)
RL1
CONTACT STATE SHOWN w/VOLTAGE APPLIED.
120 Volt AC
RL2
RL3
TS2
706 L BATT TEMP
714 L PANEL
704 L FUEL FILTER TEMP
710 L DAY TEMP
502A L DAY FUEL
720 ALT FREQ H/L
571 ALT V H/L
723 ALT OUTPUT
711 COM
712 COM
724 COM
713 COM
705 COM
715 COM
709 COM
702 COM
721 COM
FROM BOX #2
FROM DAYTANK FUEL PUMP
FROM LOWER CONNECTION BOX
FROM BATT. CHARGER
FROM BOX #1
120 (S1)
Neut. (00)
120
Neut.
120
Neut.
Generator Accessories
Utility Accessories
TS3
726
725
720
718
723
724
721A
721
571
00G
101
00U
104



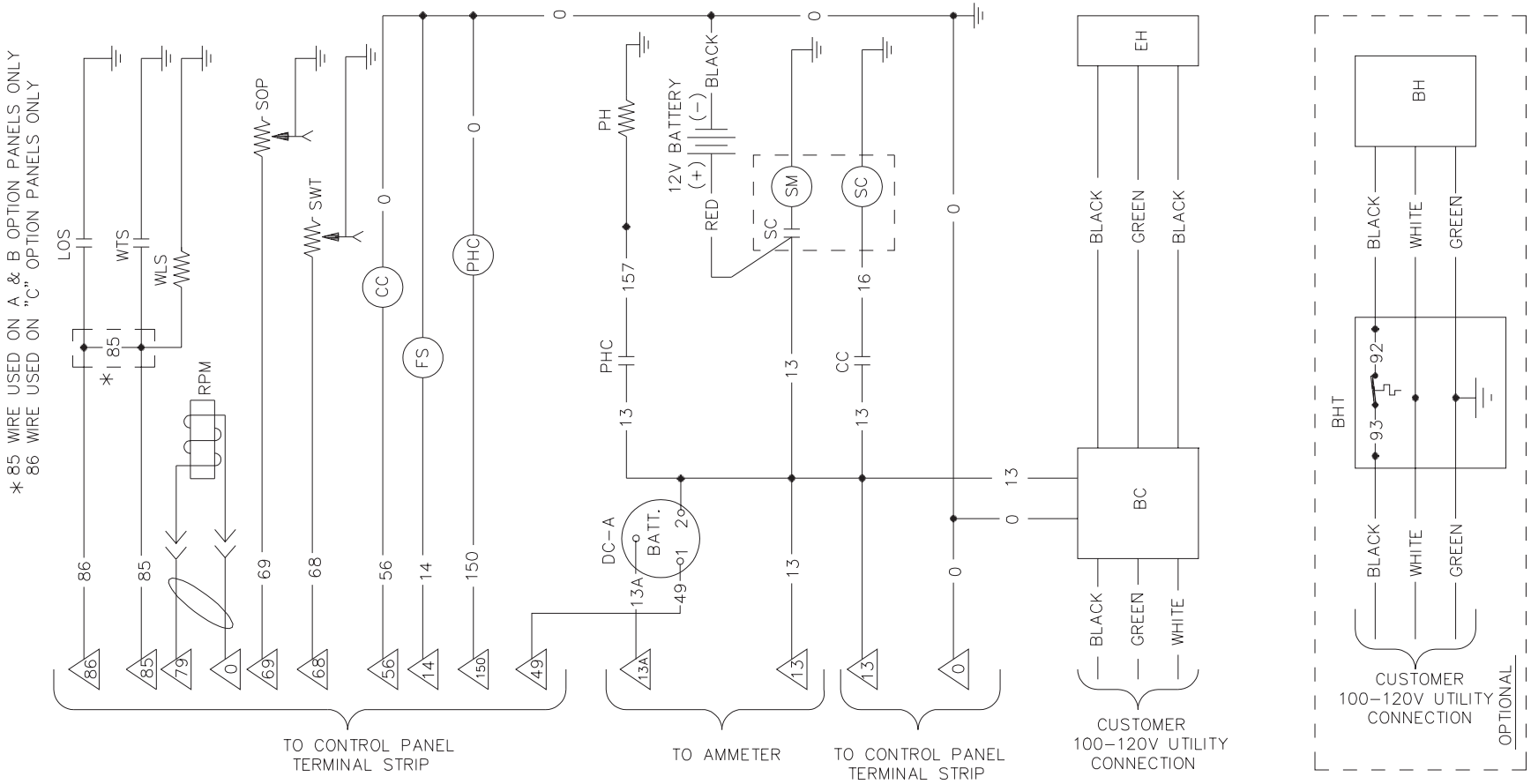
LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GP – GLOW PLUG
GPC–GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



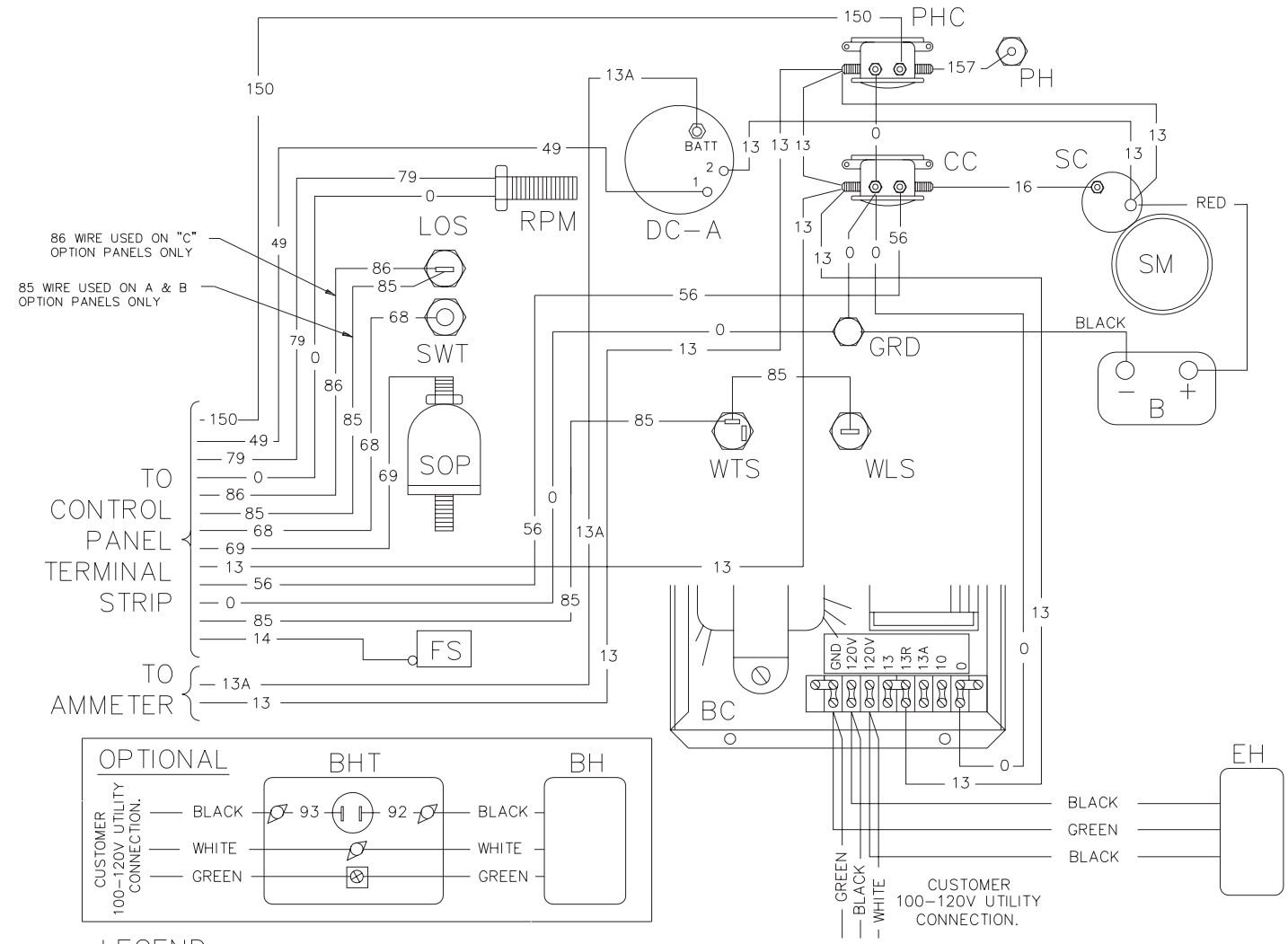
LEGEND

B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GP – GLOW PLUG
GPC– GLOW PLUG CONTROLLER
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH



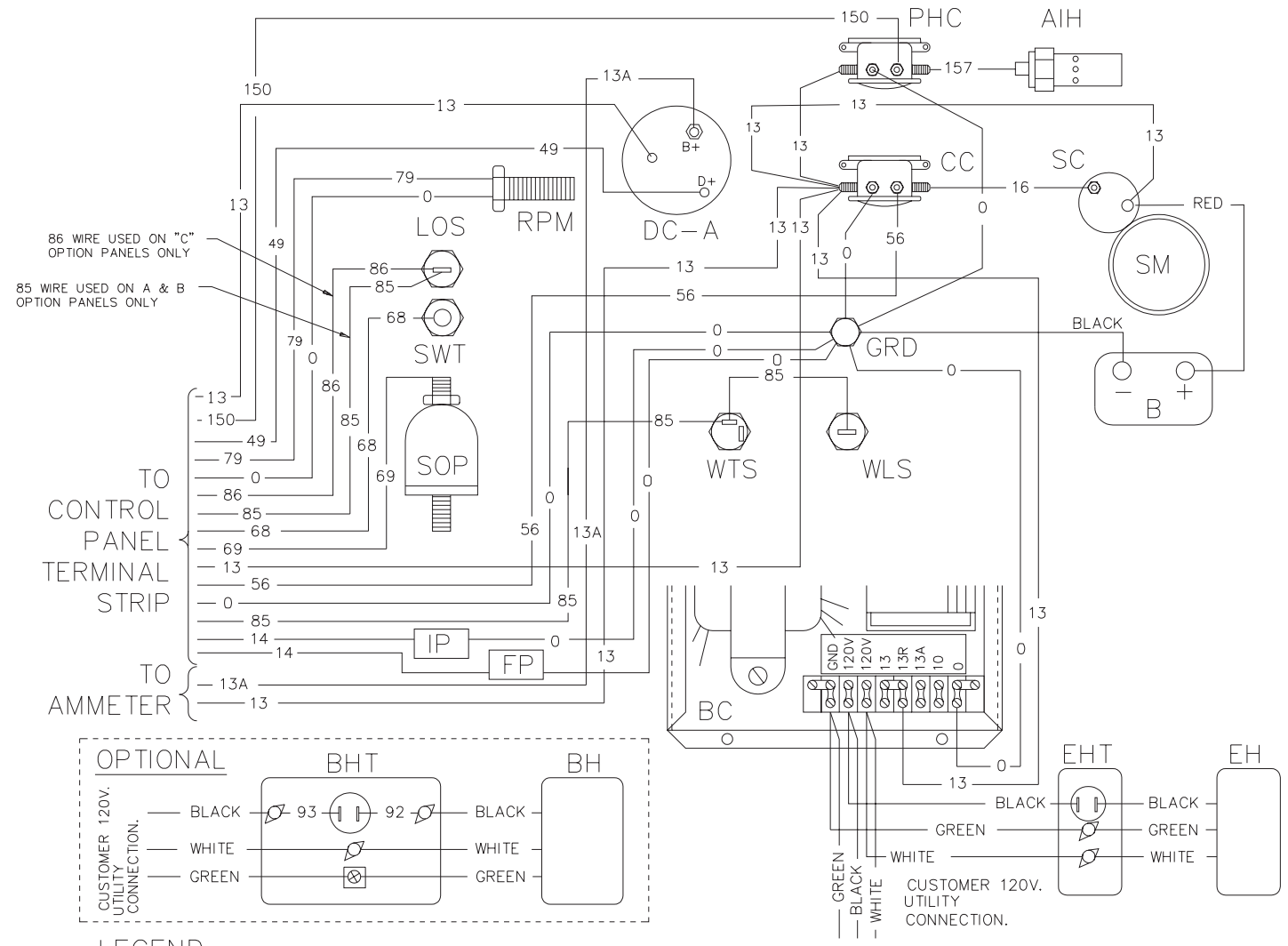
LEGEND

B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GRD– GROUND
LOS– LOW OIL SWITCH
EH – ENGINE HEATER
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR
PH – PREHEATER
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



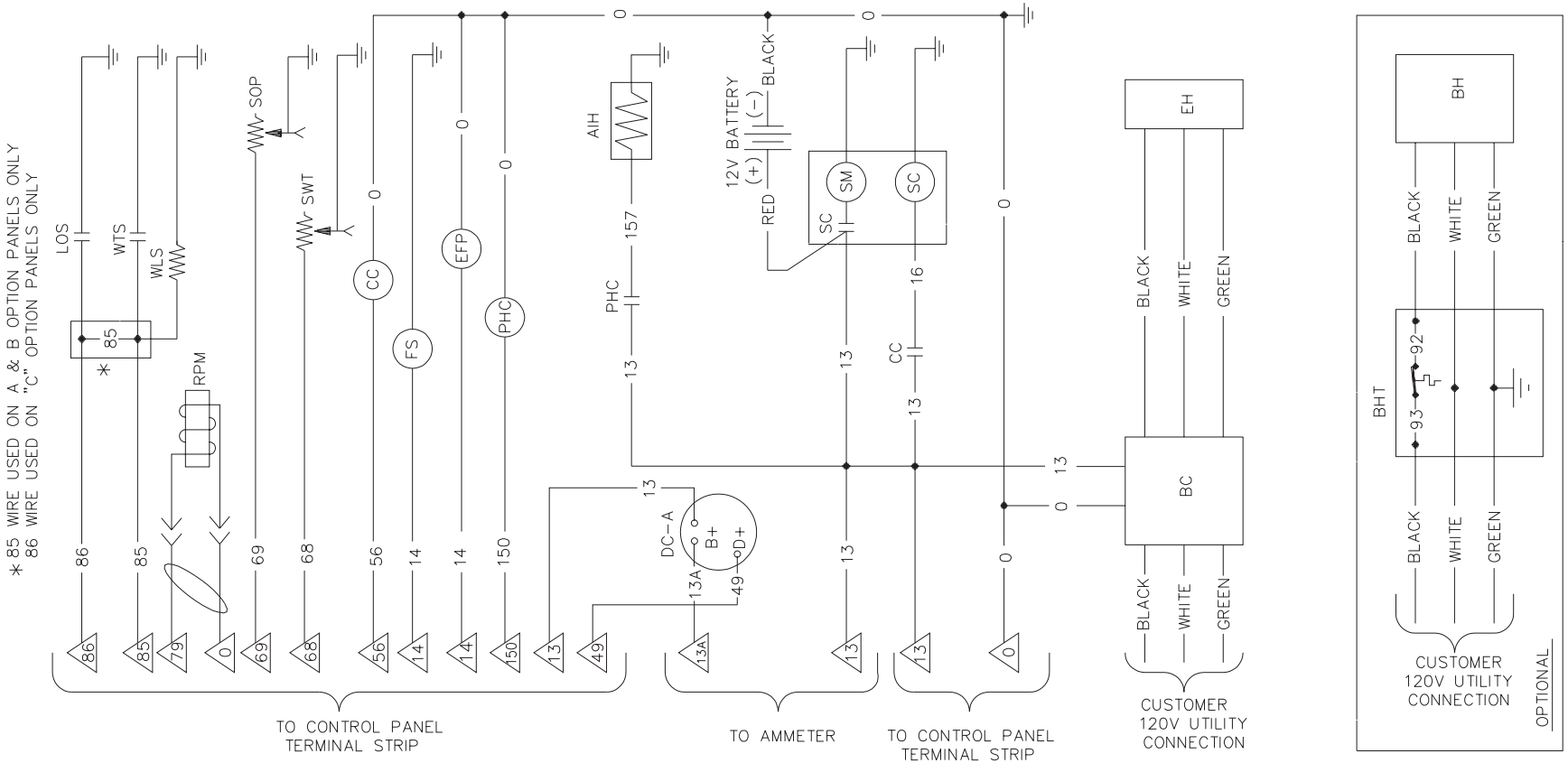
LEGEND

B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER THERMOSTAT
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
PH – PRE–HEATER
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH



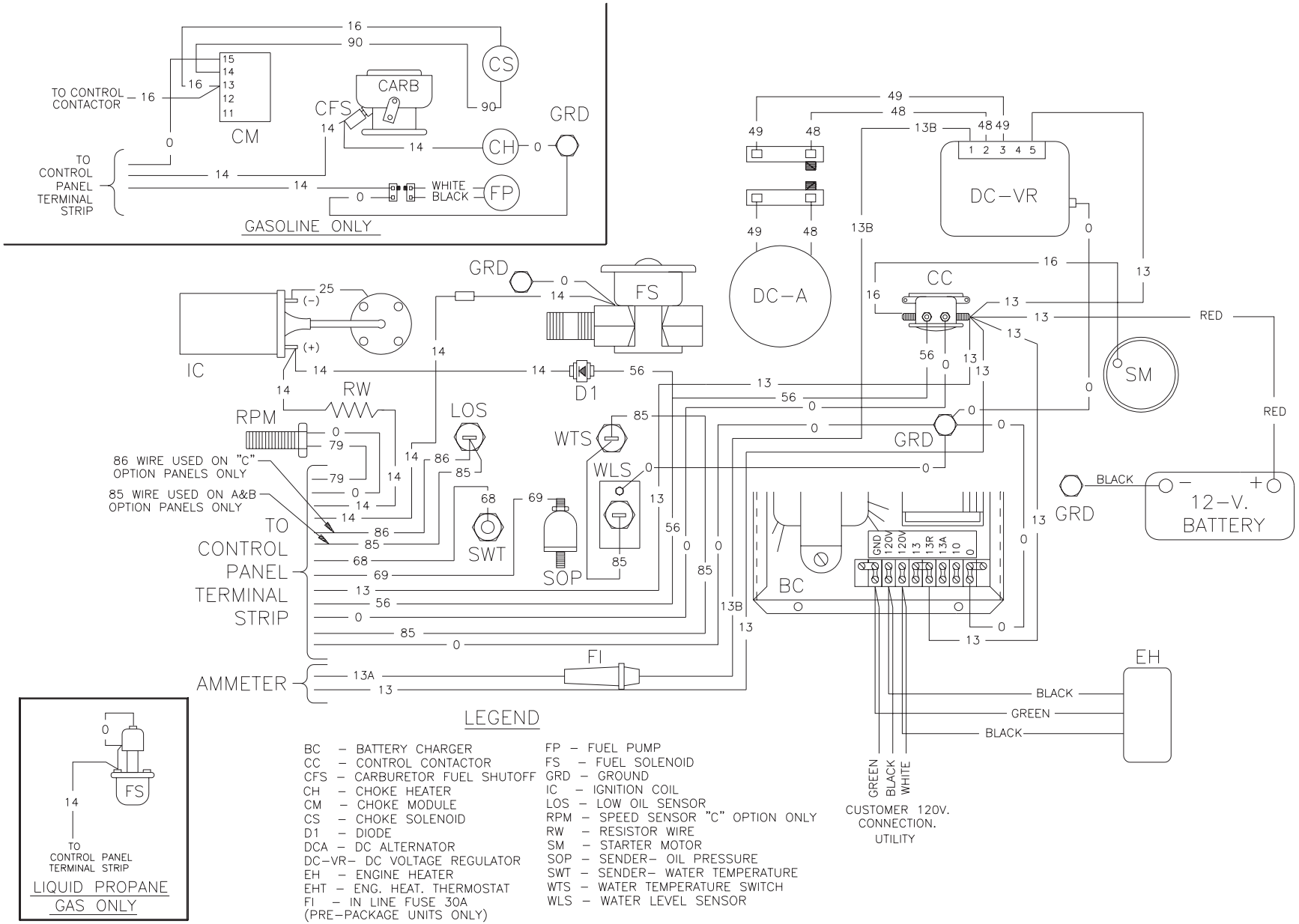
LEGEND

AIH – AIR INTAKE HEATER
B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
EHT– ENGINE HEATER THERMOSTAT
FP – FUEL PUMP
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH
IP–INJECTION PUMP



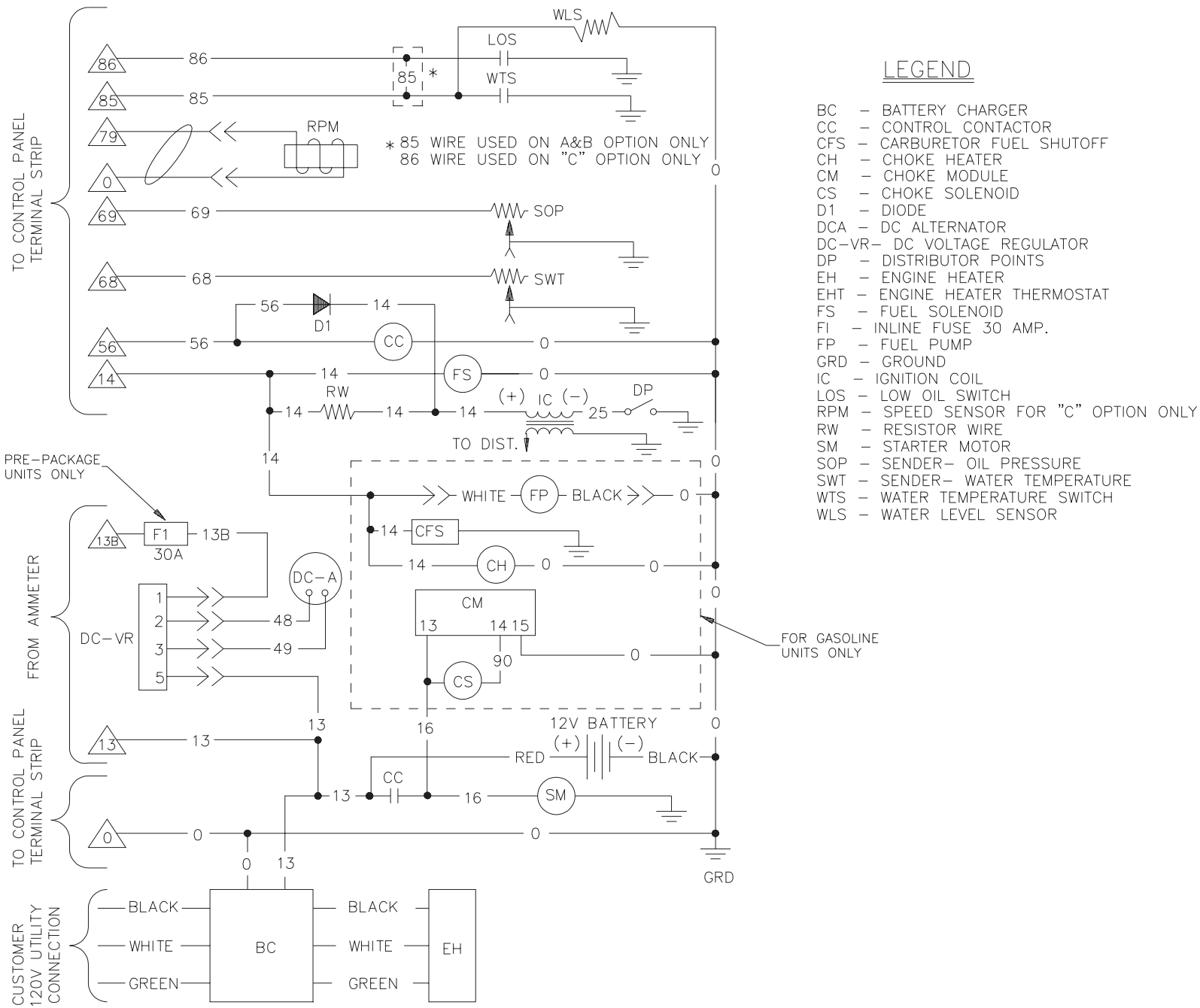
LEGEND

AIH– AIR INTAKE HEATER
B – BATTERY 12V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT – BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
GRD– GROUND
LOS– LOW OIL SWITCH
EFP– ELECTRIC FUEL PUMP
EH – ENGINE HEATER
FS – FUEL SOLENOID
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SOP– SENDER, OIL PRESSURE
SWT– SENDER, WATER TEMPERATURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMPERATURE SWITCH



LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC–VR– DC VOLTAGE REGULATOR
EH – ENGINE HEATER
EHT – ENG. HEAT. THERMOSTAT
FI – IN LINE FUSE 30A (PRE–PACKAGE UNITS ONLY)
FP – FUEL PUMP
FS – FUEL SOLENOID
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL SENSOR
RPM – SPEED SENSOR "C" OPTION ONLY
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR



LEGEND

BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
CFS – CARBURETOR FUEL SHUTOFF
CH – CHOKE HEATER
CM – CHOKE MODULE
CS – CHOKE SOLENOID
D1 – DIODE
DCA – DC ALTERNATOR
DC–VR– DC VOLTAGE REGULATOR
DP – DISTRIBUTOR POINTS
EH – ENGINE HEATER
EHT – ENGINE HEATER THERMOSTAT
FS – FUEL SOLENOID
FI – INLINE FUSE 30 AMP.
FP – FUEL PUMP
GRD – GROUND
IC – IGNITION COIL
LOS – LOW OIL SWITCH
RPM – SPEED SENSOR FOR "C" OPTION ONLY
RW – RESISTOR WIRE
SM – STARTER MOTOR
SOP – SENDER– OIL PRESSURE
SWT – SENDER– WATER TEMPERATURE
WTS – WATER TEMPERATURE SWITCH
WLS – WATER LEVEL SENSOR

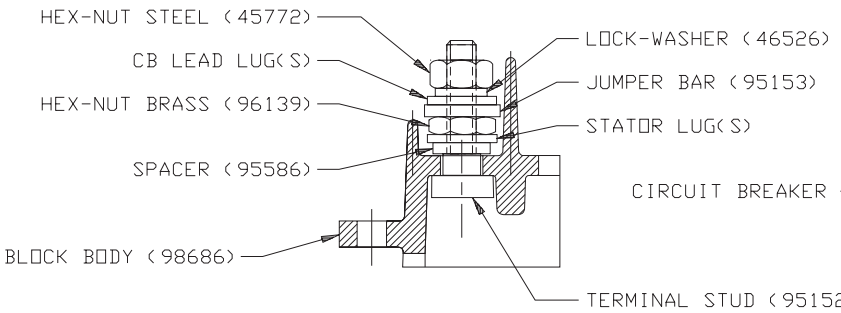
POINT TO POINT CONNECTIONS FOR 390mm PME STATORS WITH CONFIGURABLE TERMINAL BLOCKS

VOLTAGE CODE	D, J + P (SERIES DELTA)	G & N (PARALLEL WYE)	K & R (SERIES WYE)	A & M (PARALLEL ZIG-ZAG)
FIT JUMPER BAR(S) AS FOLLOWS	-	LINK 8 TO 4	LINK 8 TO 4	LINK 8 TO 4
	-	LINK 7 TO 3	-	LINK 7 TO 3
	-	LINK 6 TO 2	-	LINK 6 TO 2
	-	LINK 5 TO 1	-	LINK 5 TO 1
FIT WIRE LINKS AS FOLLOWS	TB7 TO CB E1	TB7 TO CB E1	TB7 TO CB E1	TB8 TO CB E1
	TB6 TO CB E2	TB6 TO CB E2	TB6 TO CB E2	TB5 TO CB E3
	TB5 TO CB E3	TB5 TO CB E3	TB5 TO CB E3	-
LOCATION OF NEUTRAL	TB3	LINK BETWEEN TB8 + TB4	LINK BETWEEN TB8 + TB4	LINK BETWEEN TB7 + TB3
CONNECT STATOR LEADS AS FOLLOWS	S6 + S9 TO TB1	S9 TO TB1	S6 + S9 TO TB1	S9 TO TB1
	S5 + S8 TO TB2	S8 TO TB2	S5 + S8 TO TB2	S6 + S8 TO TB2
	S4 + S7 TO TB3	S7 TO TB3	S4 + S7 TO TB3	S4 + S5 TO TB3
	S3 + S10 TO TB5	S4, S5 + S6 TO TB4	S3 TO TB5	S7 TO TB4
	S2 + S12 TO TB6	S3 TO TB5	S2 TO TB6	S3 TO TB5
	S1 + S11 TO TB7	S2 TO TB6	S1 TO TB7	S2 + S12 TO TB6
	-	S1 TO TB7	S10, S11+S12 TO TB8	S10 + S11 TO TB7
	-	S10, S11+S12 TO TB8	-	S1 TO TB8

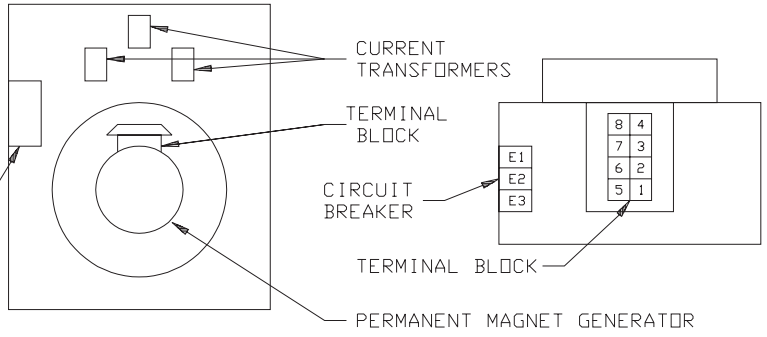
WIRE SIZES AND PART NUMBERS FOR TERMINAL BLOCK TO CIRCUIT BREAKER CONNECTION

VOLTAGE CODE	D, J + P (SERIES DELTA)		G & N (PARALLEL WYE)		K & R (SERIES WYE)		A & M (PARALLEL ZIG-ZAG)		
POWER	P/N (SIZE)	QTY	P/N (SIZE)	QTY	P/N (SIZE)	QTY	P/N (SIZE)	QTY	
20kW 50Hz TO 35kW 60Hz	115-44114 (6)	1	118-44114 (4)	1	121-44114 (10)	1	124-44114 (2)	1	T1
	116-44114 (6)	1	119-44114 (4)	1	122-44114 (10)	1	-	-	T2
	117-44114 (6)	1	120-44114 (4)	1	123-44114 (10)	1	126-44114 (2)	1	T3
32kW 50Hz TO 50kW 60Hz	118-44114 (4)	1	124-44114 (2)	1	127-44114 (8)	1	130-44114 (2/0)	1	T1
	119-44114 (4)	1	125-44114 (2)	1	128-44114 (8)	1	-	-	T2
	120-44114 (4)	1	126-44114 (2)	1	129-44114 (8)	1	132-44114 (2/0)	1	T3
48kW 50Hz TO 80kW 60Hz	130-44114 (2/0)	1	130-44114 (2/0)	1	121-44114 (10)	2	124-44114 (2)	2	T1
	131-44114 (2/0)	1	131-44114 (2/0)	1	122-44114 (10)	2	-	-	T2
	132-44114 (2/0)	1	132-44114 (2/0)	1	123-44114 (10)	2	126-44114 (2)	2	T3
80kW 50Hz TO 125kW 60Hz	136-44114 (3/0)	1	133-44114 (1)	2	124-44114 (2)	1	136-44114 (3/0)	2	T1
	137-44114 (3/0)	1	134-44114 (1)	2	125-44114 (2)	1	-	-	T2
	138-44114 (3/0)	1	135-44114 (1)	2	126-44114 (2)	1	138-44114 (3/0)	2	T3

SECTIONAL VIEW OF TERMINAL BLOCK ASSY.



END AND PLAN VIEWS OF GENERATOR LOWER PANEL



TRANSFER SWITCH DRAWINGS

INDEX TO TRANSFER SWITCH DRAWINGS

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BOOKMARKS

NO BOOKMARKS

DRAWING NUMBER	DRAWING TYPE			DESCRIPTION OF DRAWING	REV. DATE
A8047	Schematic			W Type Transfer Switch with Neutral	08/21/98
A8834	Wiring Diagram			208/240 VDC Transfer Switch with Inphase Monitor	08/25/98
A8835	Schematic			208/240 VDC Transfer Switch with Inphase Monitor	08/25/98
A8836	Wiring Diagram			416 VDC 3-Pole Transfer Switch with Inphase Monitor	08/25/98
A8837	Schematic			416 VDC 3-Pole Transfer Switch with Inphase Monitor	08/25/98
A8838	Wiring Diagram			416 VDC 4-Pole Transfer Switch with Inphase Monitor	08/25/98
A8839	Schematic			416 VDC 4-Pole Transfer Switch with Inphase Monitor	08/25/98
A8840	Wiring Diagram			480/600 VDC Transfer Switch with Inphase Monitor	08/25/98
A8841	Schematic			480/600 VDC Transfer Switch with Inphase Monitor	08/25/98
64135	Wiring Diagram			3 and 4 Pole Transfer Switch	08/07/90
64142	Wiring Diagram			2 Pole Transfer Switch	08/07/90
71324	Schematic			Mervyn's Transfer Switch	04/20/89
72214	WD & Sch.			Y Type Transfer Switch	03/23/90
72446	Schematic			Transfer Switch	05/29/87
72447	Wiring Diagram			Transfer Switch	05/29/87
73658	Schematic			Wn Type Transfer Switch	09/29/87
74324	Wiring Diagram			240 VDC WN Type Transfer Switch with CPU and TDC	12/02/87
74325	Schematic			240 VDC WN Type Transfer Switch with CPU and TDC	12/02/87
74328	Wiring Diagram			416 VDC WN Type Transfer Switch with CPU and TDC	12/03/87
74329	Schematic			416 VDC WN Type Transfer Switch with CPU and TDC	12/03/87
74332	Wiring Diagram			480/600 VDC WN Type Transfer Switch with CPU and TDC	08/19/96
74333	Schematic			480/600 VDC WN Type Transfer Switch with CPU and TDC	08/20/96
74497	Sch & WD			100 Amp 2-Pole Transfer Switch	07/28/89
74498	Sch & WD			200 Amp 2-Pole Transfer Switch	07/28/89
74499	Sch & WD			100 and 200 Amp 3-Pole Transfer Switch	07/28/89
74699	Wiring Diagram			240 VDC Y Type 3 &4 PoleTransfer Switch with TDN	03/03/88
75017	Schematic			240 VDC Y Type Transfer Switch with CPU and TDN	03/08/88
75018	Sch & WD			GTS — Y-Type — 240 Volt with TDN	11/27/90
75018A	Sch & WD			GTS — Y-Type — 208/240 Volt with TDN and Logic	11/27/90
76964	Wiring Diagram			3-Pole Wn Type Multi Volt Transfer Switch with TDN and Logic	01/30/92
76965	Schematic			3 & 4-Pole Wn Type Multi Volt Transfer Switch with TDN and Logic	01/30/92
80653	Schematic			Y-Type 208/240/ Volt Single Phase — MCI	07/12/90
81222	WD & Sch.			UL Switch — 100 AZP	01/31/91
83594	Wiring Diagram			Wn Type Transfer Switch — Dayton	01/10/92
83595	Schematic			Wn Type Transfer Switch — Dayton	11/25/91
86160	WD & Sch.			100 and 200 Amp, 3-Pole Transfer Switch	05/14/93

INDEX TO TRANSFER SWITCH DRAWINGS

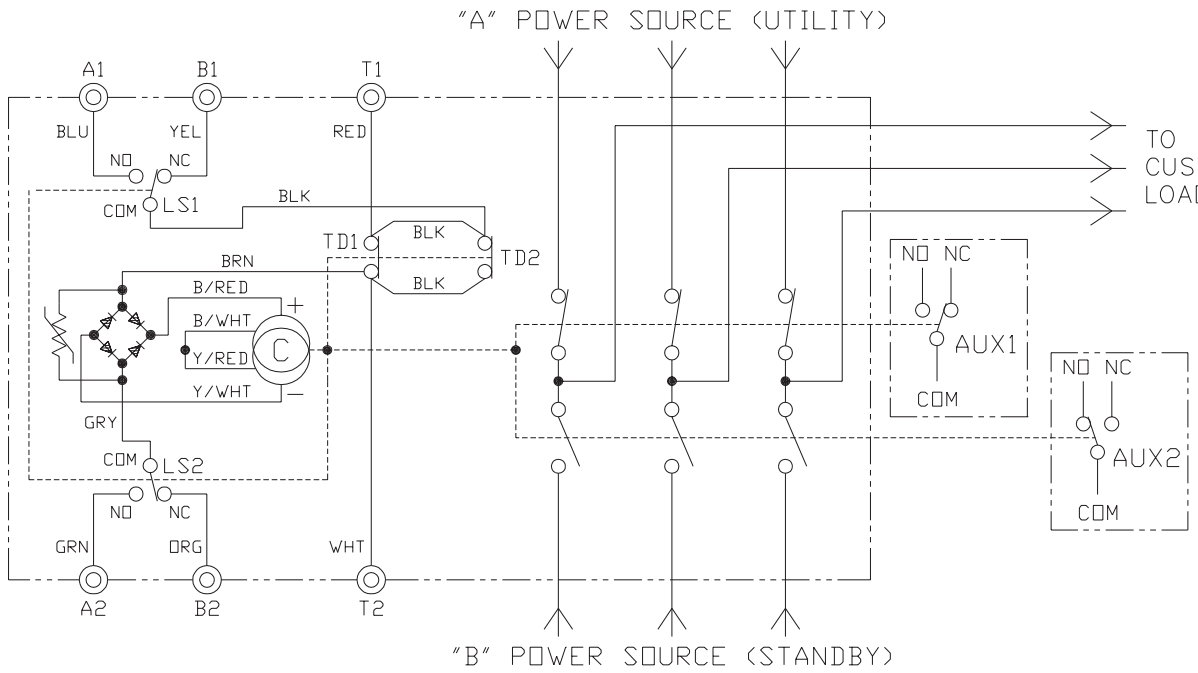
NEXT PAGE

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BOOKMARKS

NO BOOKMARKS

DRAWING NUMBER	DRAWING TYPE			DESCRIPTION OF DRAWING	REV. DATE
86161	WD & Sch.			200 Amp, 2-Pole Transfer Switch	07/09/92
88660	Wiring Diagram			ATS — Bonnaville Power	03/01/93
88661	Schematic			ATS — Bonnaville Power	03/01/93
88788	Wiring Diagram			416 VDC 4-Pole Wn Type with DCI and TDN	03/29/93
88789	Schematic			416 VDC 4-Pole Wn Type with DCI and TDN	03/29/93
88790	Wiring Diagram			416 VDC 4-Pole Wn Type with CPU and TDN	03/29/93
88791	Schematic			416 VDC 4-Pole Wn Type with CPU and TDN	03/29/93
89528	Schematic			Multi Volt 400 Amp 3-Pole with CPU	05/14/93
89529	Wiring Diagram			Multi Volt 400 Amp 3-Pole with CPU	05/14/93
91286	Schematic			240 Volt Y-Type Transfer Switch with Inphase Monitor	10/18/93
91287	Schematic			208/240 Volt 3 & 4 Pole Wn Type 1 and 3 Phase Transfer Switch	10/18/93
91288	Schematic			416 Volt 3 Pole Wn Type Transfer Switch	10/18/93
91289	Schematic			416 Volt 4 Pole Wn Type Transfer Switch	10/18/93
91290	Schematic			480/600 Volt 3 & 4 Pole Wn Type Transfer Switch	12/06/93
91397	Wiring Diagram			2, 3, & 4 Pole Y-Type Transfer Switch	10/18/93
91398	Wiring Diagram			208/240 Volt 3 & 4 Pole Wn Type 1 & 3 Phase Transfer Switch	11/29/93
91399	Wiring Diagram			416 Volt 3 Pole Wn Type Transfer Switch	11/29/93
91400	Wiring Diagram			480/600 Volt 4 Pole Wn Type Transfer Switch	12/06/93
91401	Wiring Diagram			416 Volt 4 Pole Wn Type Transfer Switch	11/29/93
97169	Wiring Diagram			2, 3, and 4 Pole Y-Type	08/14/95
97170	Schematic			240 VDC with Inphase Monitor	08/14/95
700-67617	Schematic			Utility Interface — GTS	10/02/85



LEGEND

C = CLOSING COIL (DUAL COIL BOBBIN)
LS1, LS2 = SOURCE SELECTING LIMIT SWITCH
TD1, TD2 = POWER SWITCHING CONTACTS
AUX1, AUX2 = AUXILIARY SWITCHES

WIRE COLORS

BLU = BLUE WIRE
YEL = YELLOW WIRE
RED = RED WIRE
BLK = BLACK WIRE
BRN = BROWN WIRE
GRY = GREY WIRE
GRN = GREEN WIRE
ORN = ORANGE WIRE
WHT = WHITE WIRE
B/RED = BLUE INSUL. ON TER./ WITH RED WIRE
B/WHT = BLUE INSUL. ON TER./ WITH WHITE WIRE
Y/RED = YELLOW INSUL. ON TER./ WITH RED WIRE
Y/WHT = YELLOW INSUL. ON TER./ WITH WHITE WIRE

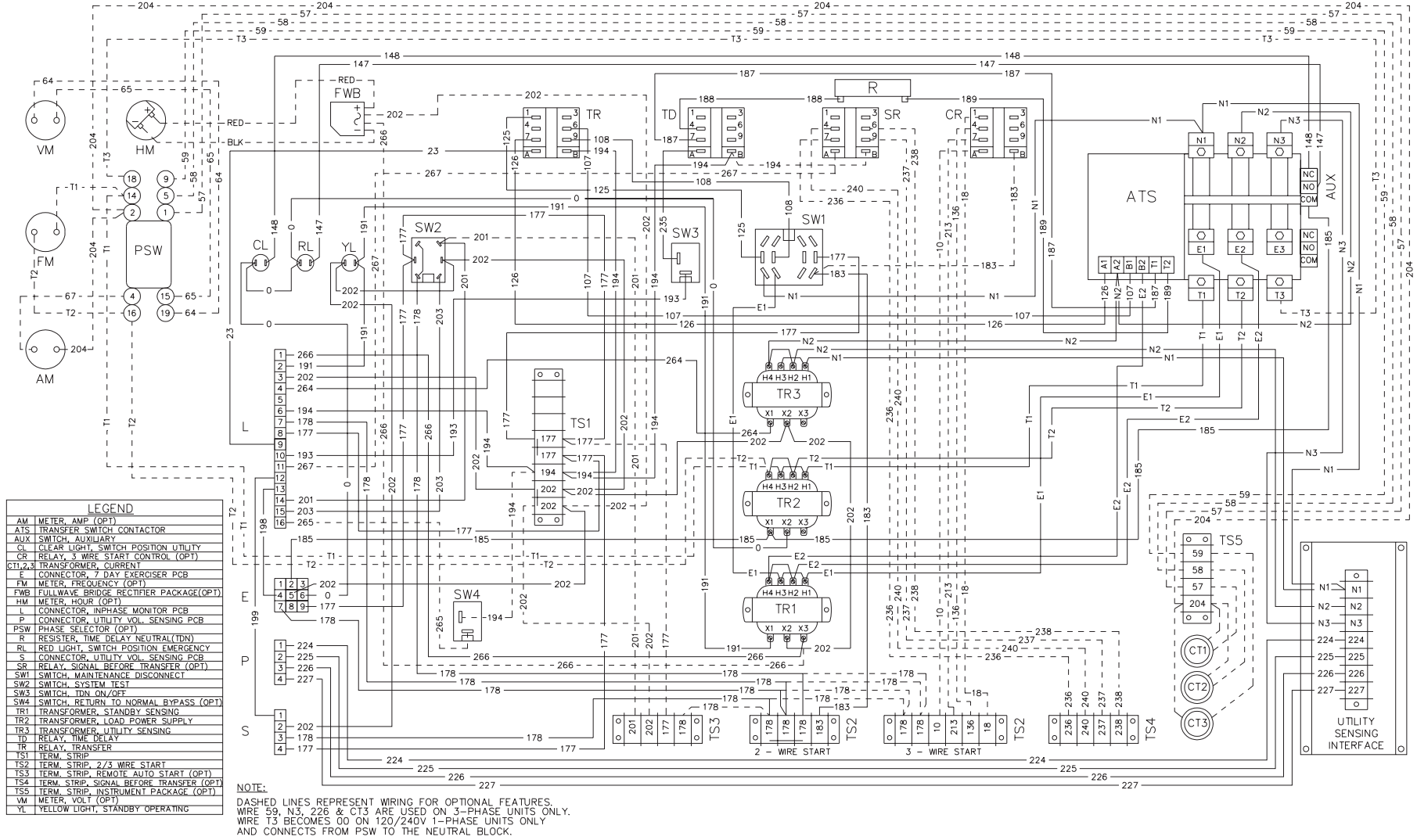
SWITCH POSITION		UTILITY	NEUTRAL	STANDBY
AUX. 1	COM-NC	X	0	0
	COM-NO	0	X	X
AUX. 2	COM-NC	0	0	X
	COM-NO	X	X	0

X = CLOSED 0 = OPEN

NOTE:
ALL CONTACTS SHOWN WITH MAIN POWER CONTACTS CLOSED IN UTILITY POSITION

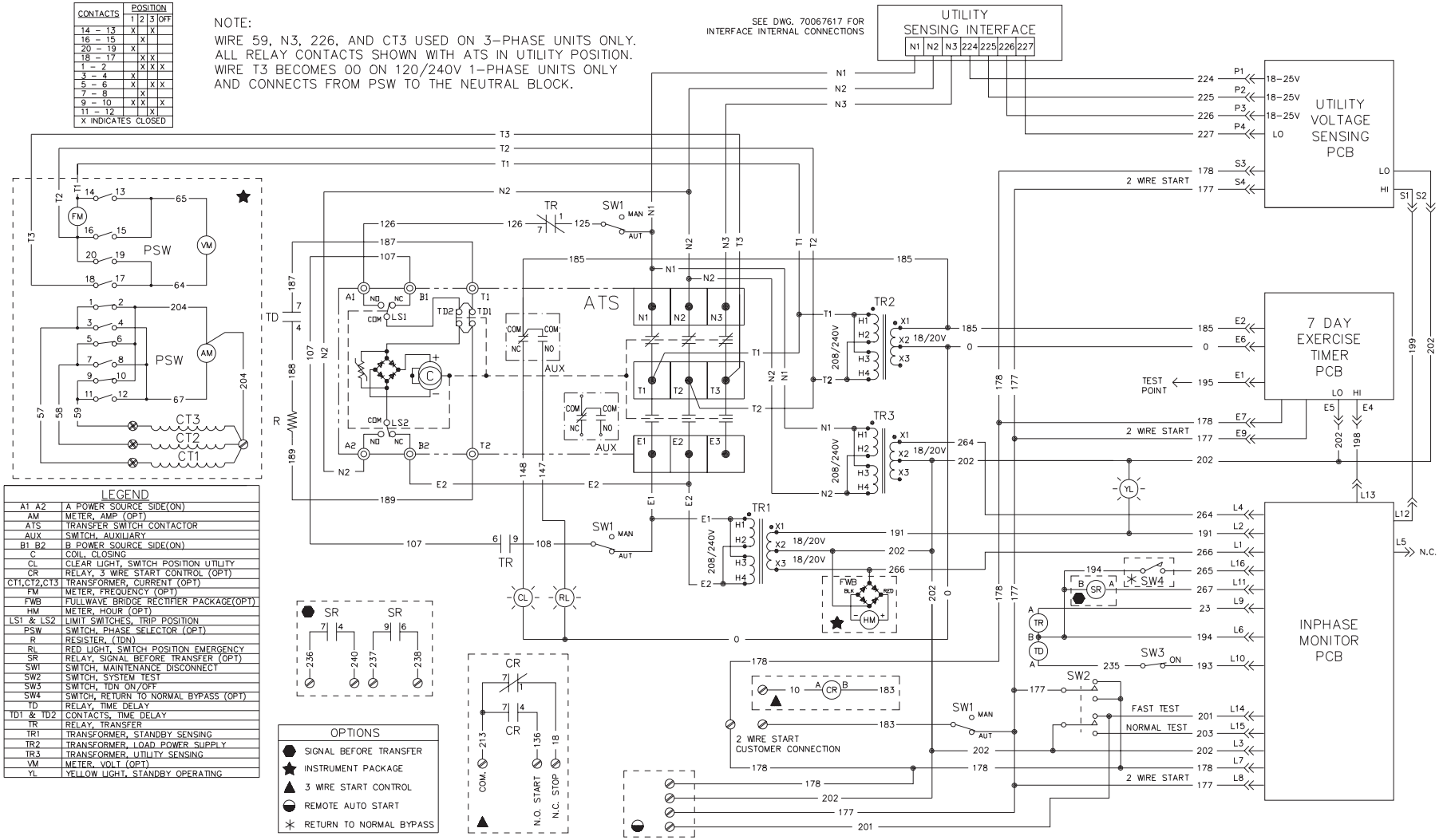
Drawing No. A8834 | Wiring Diagram | 208/240 VDC Transfer Switch with Inphase Monitor

Revised: 08/25/98



LEGEND	
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3	TRANSFORMER, CURRENT
E	CONNECTOR, 7 DAY EXERCISER PCB
FM	METER, FREQUENCY (OPT)
FWB	FULLWAVE BRIDGE RECTIFIER PACKAGE(OPT)
HM	METER, HOUR (OPT)
L	CONNECTOR, INPHASE MONITOR PCB
P	CONNECTOR, UTILITY VOL. SENSING PCB
PSW	PHASE SELECTOR (OPT)
R	RESISTER, TIME DELAY NEUTRAL(TDN)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS1	TERM. STRIP
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, REMOTE AUTO START (OPT)
TS4	TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5	TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

NOTE:
DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.
WIRE 59, N3, 226 & CT3 ARE USED ON 3-PHASE UNITS ONLY.
WIRE T3 BECOMES 00 ON 120/240V 1-PHASE UNITS ONLY
AND CONNECTS FROM PSW TO THE NEUTRAL BLOCK.

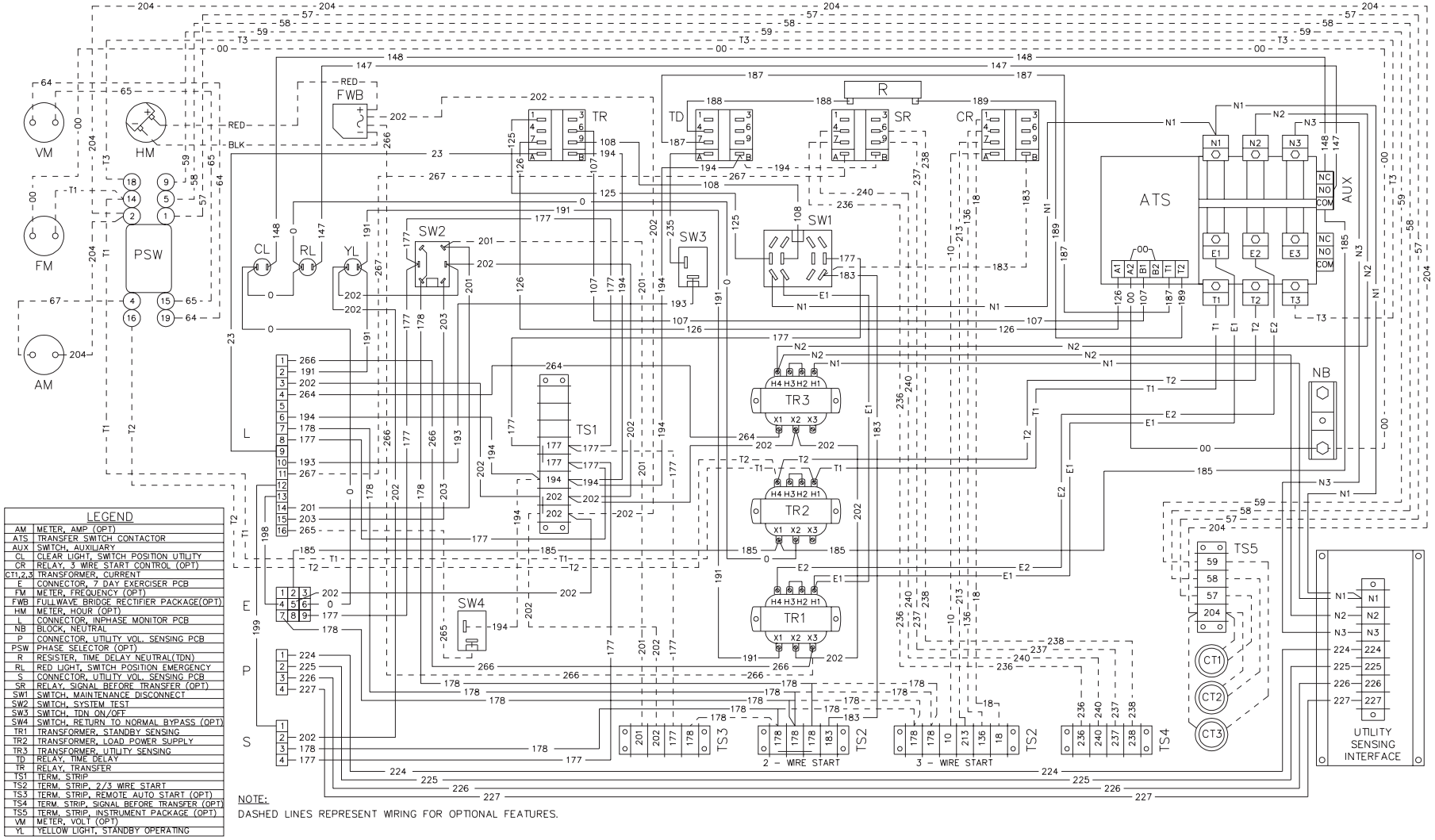


CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

X INDICATES CLOSED

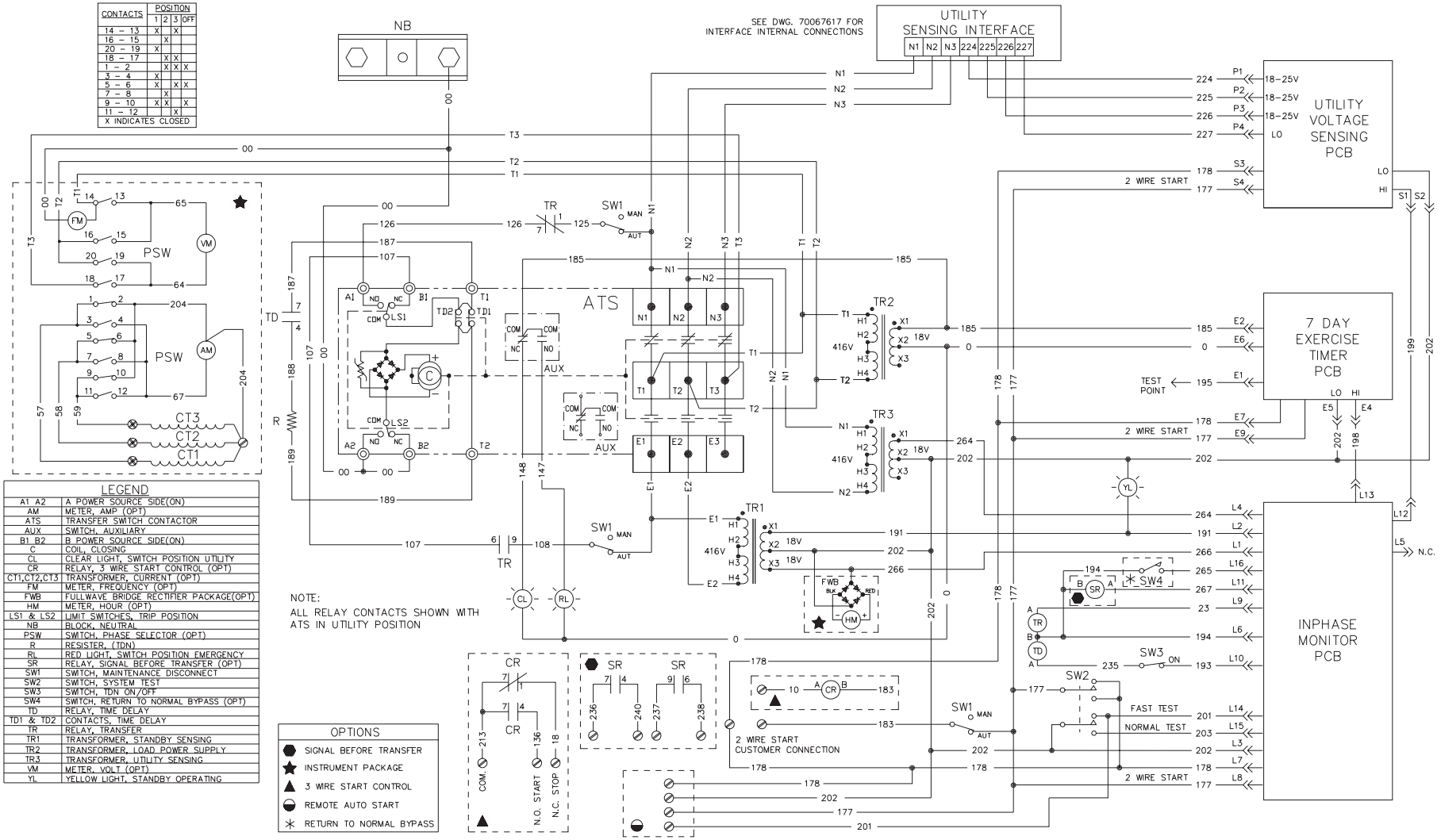
LEGEND	
A1 A2	A POWER SOURCE SIDE(ON)
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
B1 B2	B POWER SOURCE SIDE(ON)
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,CT2,CT3	TRANSFORMER, CURRENT (OPT)
FM	METER, FREQUENCY (OPT)
FWB	FULLWAVE BRIDGE RECTIFIER PACKAGE(OPT)
HM	METER, HOUR (OPT)
LS1 & LS2	LIMIT SWITCHES, TRIP POSITION
PSW	SWITCH, PHASE SELECTOR (OPT)
R	RESISTER, (TDN)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TD	RELAY, TIME DELAY
TD1 & TD2	CONTACTS, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

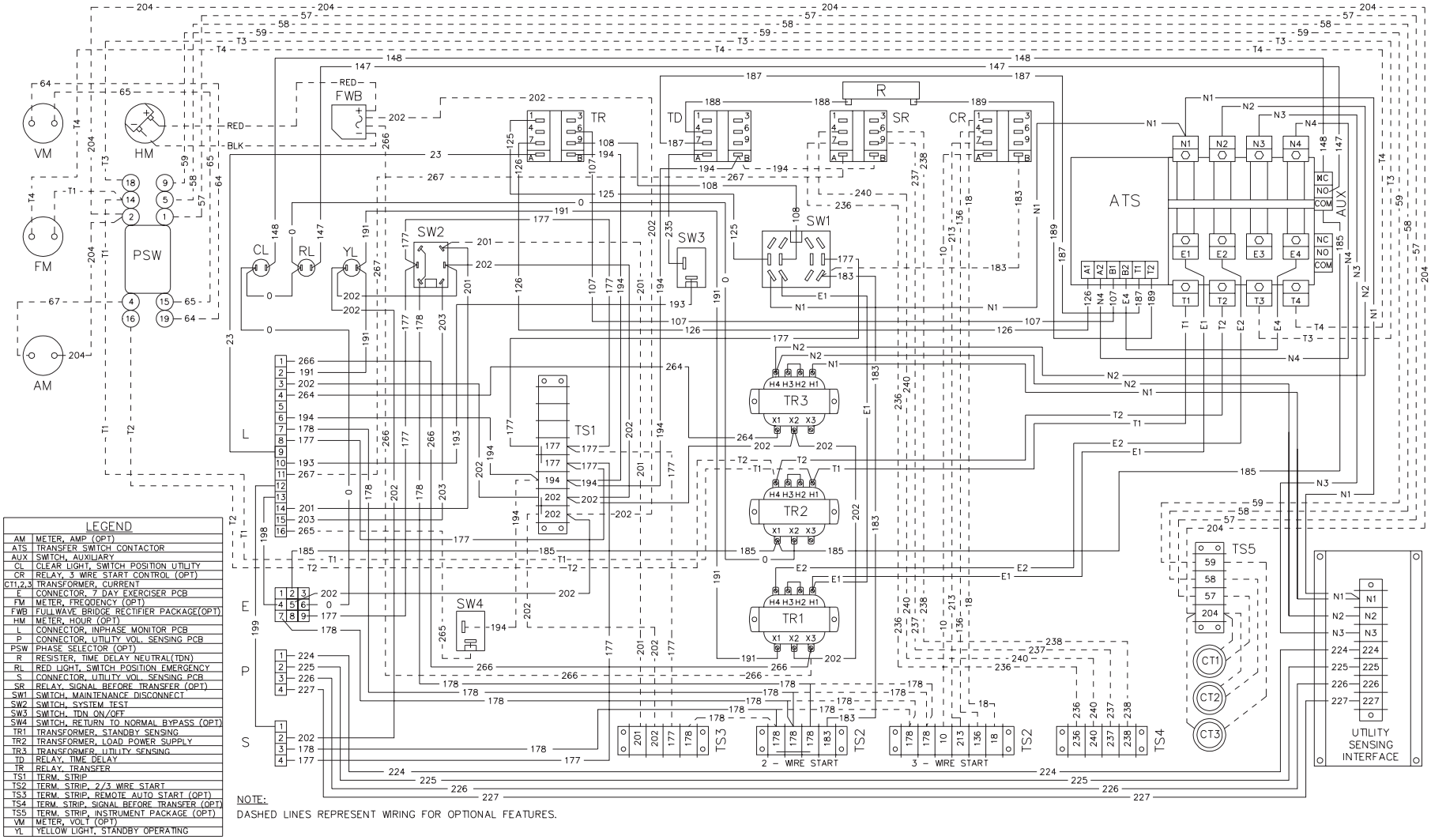
OPTIONS
- SIGNAL BEFORE TRANSFER
- INSTRUMENT PACKAGE
- 3 WIRE START CONTROL
- REMOTE AUTO START
- RETURN TO NORMAL BYPASS



LEGEND	
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3	TRANSFORMER, CURRENT
E	CONNECTOR, 7 DAY EXERCISER PCB
FM	METER, FREQUENCY (OPT)
FWB	FULLWAVE BRIDGE RECTIFIER PACKAGE(OPT)
HM	METER, HOUR (OPT)
L	CONNECTOR, INPHASE MONITOR PCB
NB	BLOCK, NEUTRAL
P	CONNECTOR, UTILITY VOL. SENSING PCB
PSW	PHASE SELECTOR (OPT)
R	RESISTER, TIME DELAY NEUTRAL(TDN)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS1	TERM. STRIP
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, REMOTE AUTO START (OPT)
TS4	TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5	TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

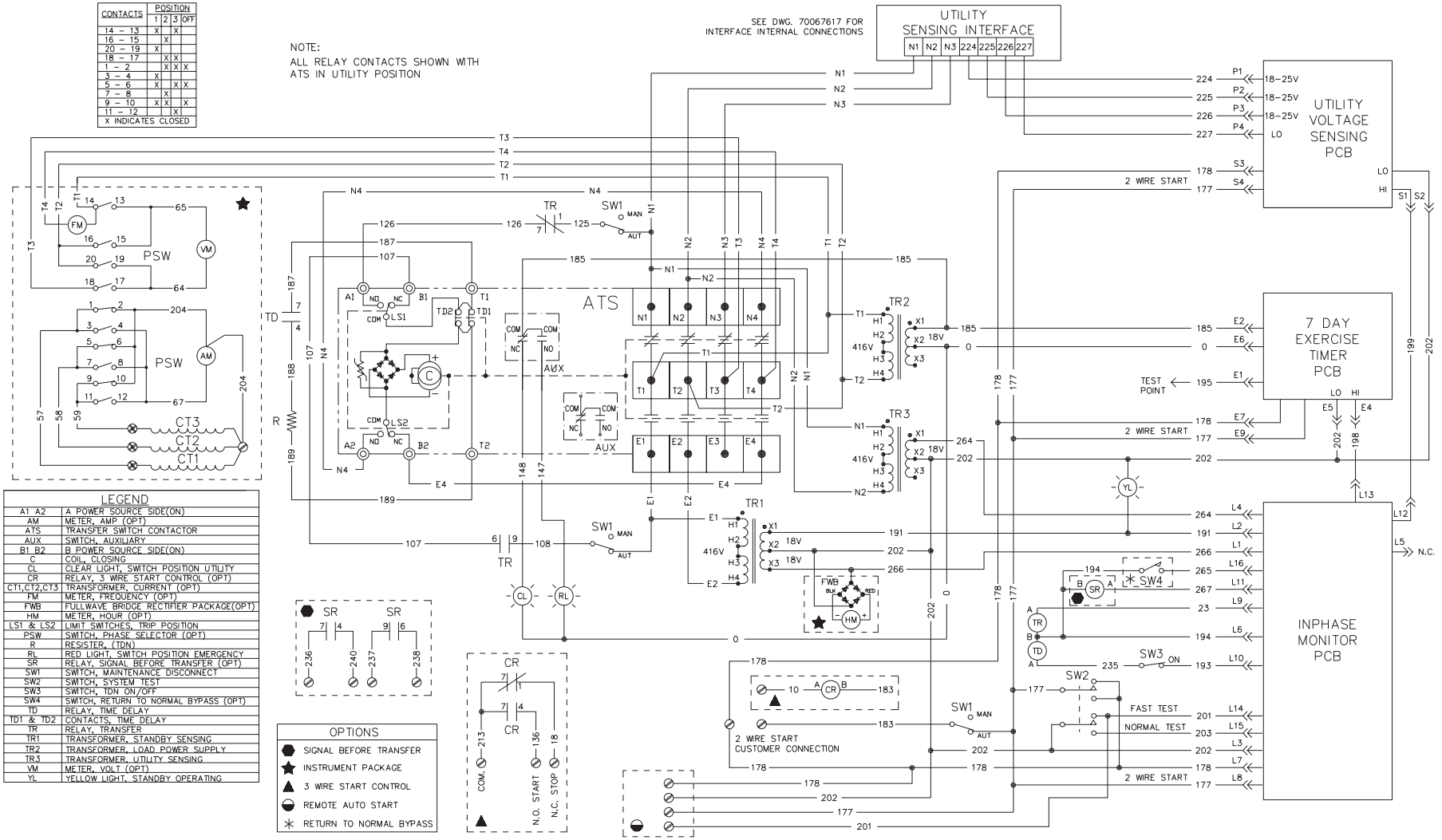
NOTE:
DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.

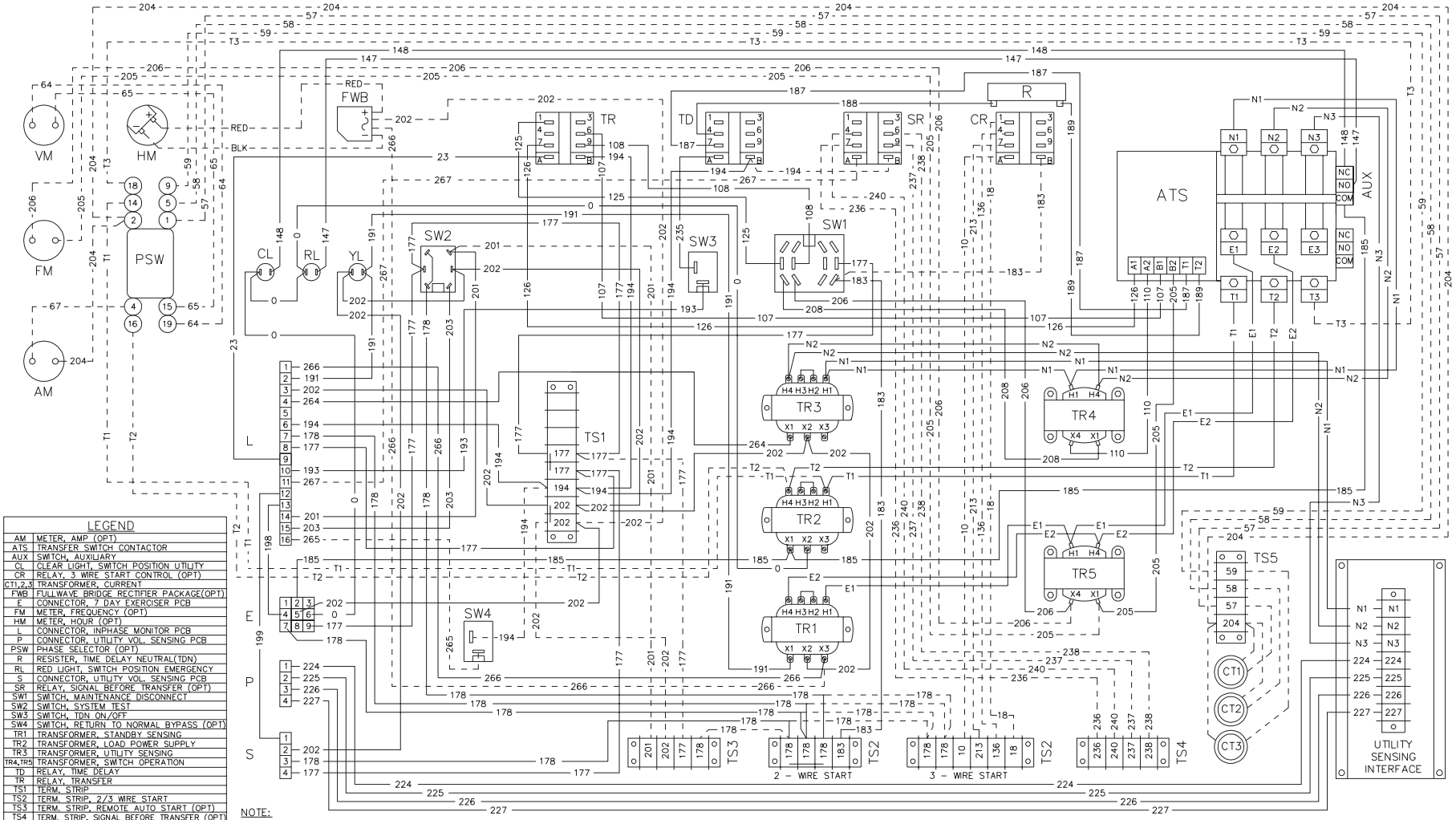

CONTACTS | POSITION 1 2 3 OFF
14 – 13 | X X
16 – 15 | X
20 – 19 | X
18 – 17 | X X
1 – 2 | X X X
3 – 4 | X
5 – 6 | X X X
7 – 8 | X
9 – 10 | X X X
11 – 12 | X
X INDICATES CLOSED
NB
SEE DWG. 70067617 FOR INTERFACE INTERNAL CONNECTIONS
UTILITY SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY VOLTAGE SENSING PCB
7 DAY EXERCISE TIMER PCB
INPHASE MONITOR PCB
PSW
ATS
TR1
TR2
TR3
TR
SW1 MAN AUT
SW2
SW3 ON
SW4
FM
VM
AM
CT1
CT2
CT3
LS1
LS2
CL
RL
HM
FWB
YL
SR
CR
TD
TD1
TD2
AUX
2 WIRE START
FAST TEST
NORMAL TEST
TEST POINT
2 WIRE START CUSTOMER CONNECTION
NOTE:
ALL RELAY CONTACTS SHOWN WITH ATS IN UTILITY POSITION
LEGEND
A1 A2 | A POWER SOURCE SIDE(ON)
AM | METER, AMP (OPT)
ATS | TRANSFER SWITCH CONTACTOR
AUX | SWITCH, AUXILIARY
B1 B2 | B POWER SOURCE SIDE(ON)
C | COIL, CLOSING
CL | CLEAR LIGHT, SWITCH POSITION UTILITY
CR | RELAY, 3 WIRE START CONTROL (OPT)
CT1,CT2,CT3 | TRANSFORMER, CURRENT (OPT)
FM | METER, FREQUENCY (OPT)
FWB | FULLWAVE BRIDGE RECTIFIER PACKAGE(OPT)
HM | METER, HOUR (OPT)
LS1 & LS2 | LIMIT SWITCHES, TRIP POSITION
NB | BLOCK, NEUTRAL
PSW | SWITCH, PHASE SELECTOR (OPT)
R | RESISTER, (TDN)
RL | RED LIGHT, SWITCH POSITION EMERGENCY
SR | RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1 | SWITCH, MAINTENANCE DISCONNECT
SW2 | SWITCH, SYSTEM TEST
SW3 | SWITCH, TDN ON/OFF
SW4 | SWITCH, RETURN TO NORMAL BYPASS (OPT)
TD | RELAY, TIME DELAY
TD1 & TD2 | CONTACTS, TIME DELAY
TR | RELAY, TRANSFER
TR1 | TRANSFORMER, STANDBY SENSING
TR2 | TRANSFORMER, LOAD POWER SUPPLY
TR3 | TRANSFORMER, UTILITY SENSING
VM | METER, VOLT (OPT)
YL | YELLOW LIGHT, STANDBY OPERATING
OPTIONS
SIGNAL BEFORE TRANSFER
INSTRUMENT PACKAGE
3 WIRE START CONTROL
REMOTE AUTO START
RETURN TO NORMAL BYPASS
COM. 213
N.O. START 136
N.C. STOP 18



LEGEND	
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3	TRANSFORMER, CURRENT
E	CONNECTOR, 7 DAY EXERCISER PCB
FM	METER, FREQUENCY (OPT)
FWB	FULLWAVE BRIDGE RECTIFIER PACKAGE(OPT)
HM	METER, HOUR (OPT)
L	CONNECTOR, INPHASE MONITOR PCB
P	CONNECTOR, UTILITY VOL. SENSING PCB
PSW	PHASE SELECTOR (OPT)
R	RESISTER, TIME DELAY NEUTRAL(TDN)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS1	TERM. STRIP
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, REMOTE AUTO START (OPT)
TS4	TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5	TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

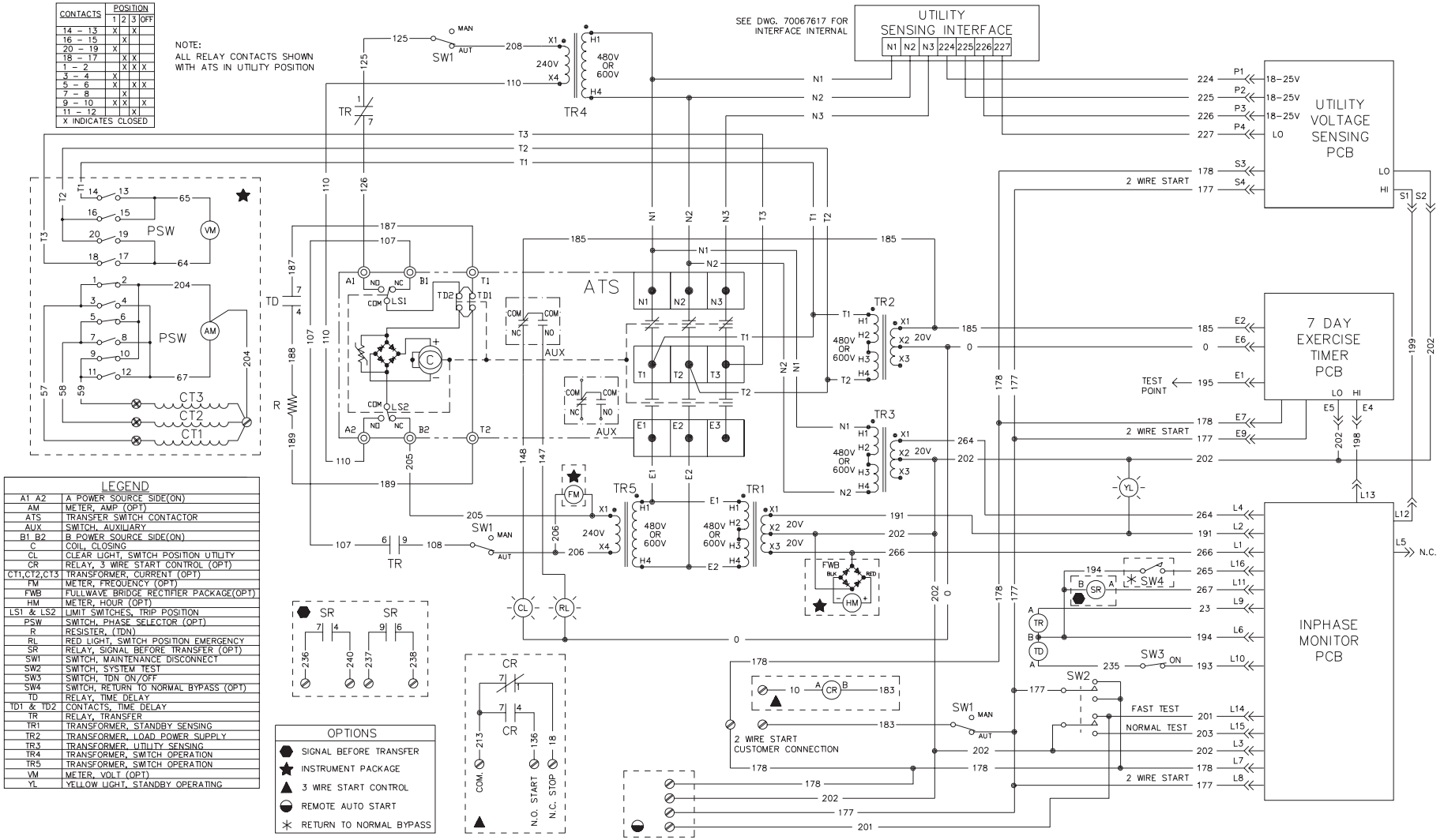
NOTE:
DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.

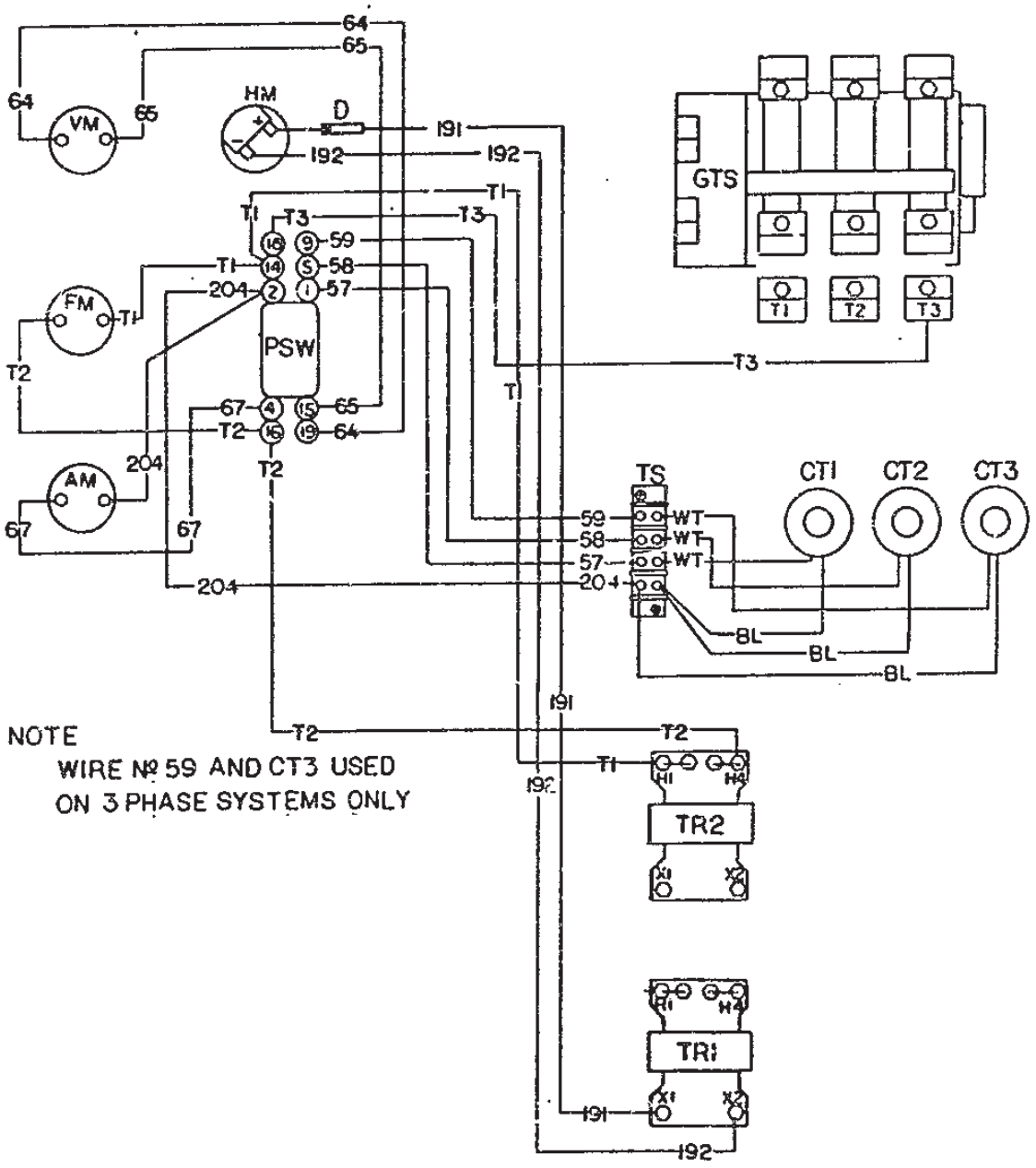

CONTACTS
POSITION
1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
NOTE:
ALL RELAY CONTACTS SHOWN WITH ATS IN UTILITY POSITION
SEE DWG. 70067617 FOR INTERFACE INTERNAL CONNECTIONS
UTILITY SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY VOLTAGE SENSING PCB
7 DAY EXERCISE TIMER PCB
INPHASE MONITOR PCB
ATS
PSW
TR
SW1
SW2
SW3
SW4
TR1
TR2
TR3
2 WIRE START
TEST POINT
FAST TEST
NORMAL TEST
2 WIRE START CUSTOMER CONNECTION
LEGEND
A1 A2 A POWER SOURCE SIDE(ON)
AM METER, AMP (OPT)
ATS TRANSFER SWITCH CONTACTOR
AUX SWITCH, AUXILIARY
B1 B2 B POWER SOURCE SIDE(ON)
C COIL, CLOSING
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CR RELAY, 3 WIRE START CONTROL (OPT)
CT1,CT2,CT3 TRANSFORMER, CURRENT (OPT)
FM METER, FREQUENCY (OPT)
FWB FULLWAVE BRIDGE RECTIFIER PACKAGE(OPT)
HM METER, HOUR (OPT)
LS1 & LS2 LIMIT SWITCHES, TRIP POSITION
PSW SWITCH, PHASE SELECTOR (OPT)
R RESISTER, (TDN)
RL RED LIGHT, SWITCH POSITION EMERGENCY
SR RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
SW4 SWITCH, RETURN TO NORMAL BYPASS (OPT)
TD RELAY, TIME DELAY
TD1 & TD2 CONTACTS, TIME DELAY
TR RELAY, TRANSFER
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TR3 TRANSFORMER, UTILITY SENSING
VM METER, VOLT (OPT)
YL YELLOW LIGHT, STANDBY OPERATING
OPTIONS
SIGNAL BEFORE TRANSFER
INSTRUMENT PACKAGE
3 WIRE START CONTROL
REMOTE AUTO START
RETURN TO NORMAL BYPASS
COM. N.O. START N.C. STOP

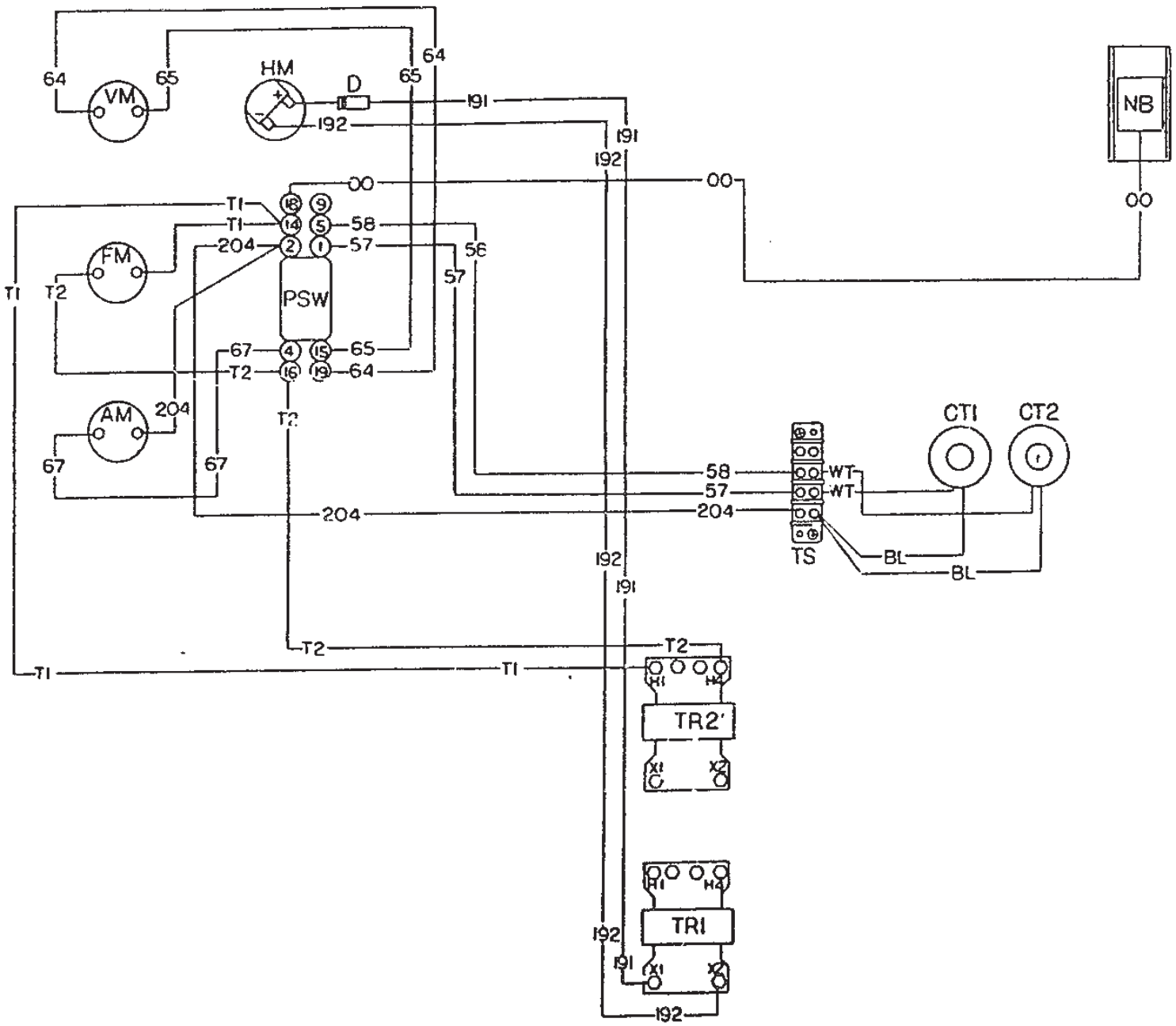


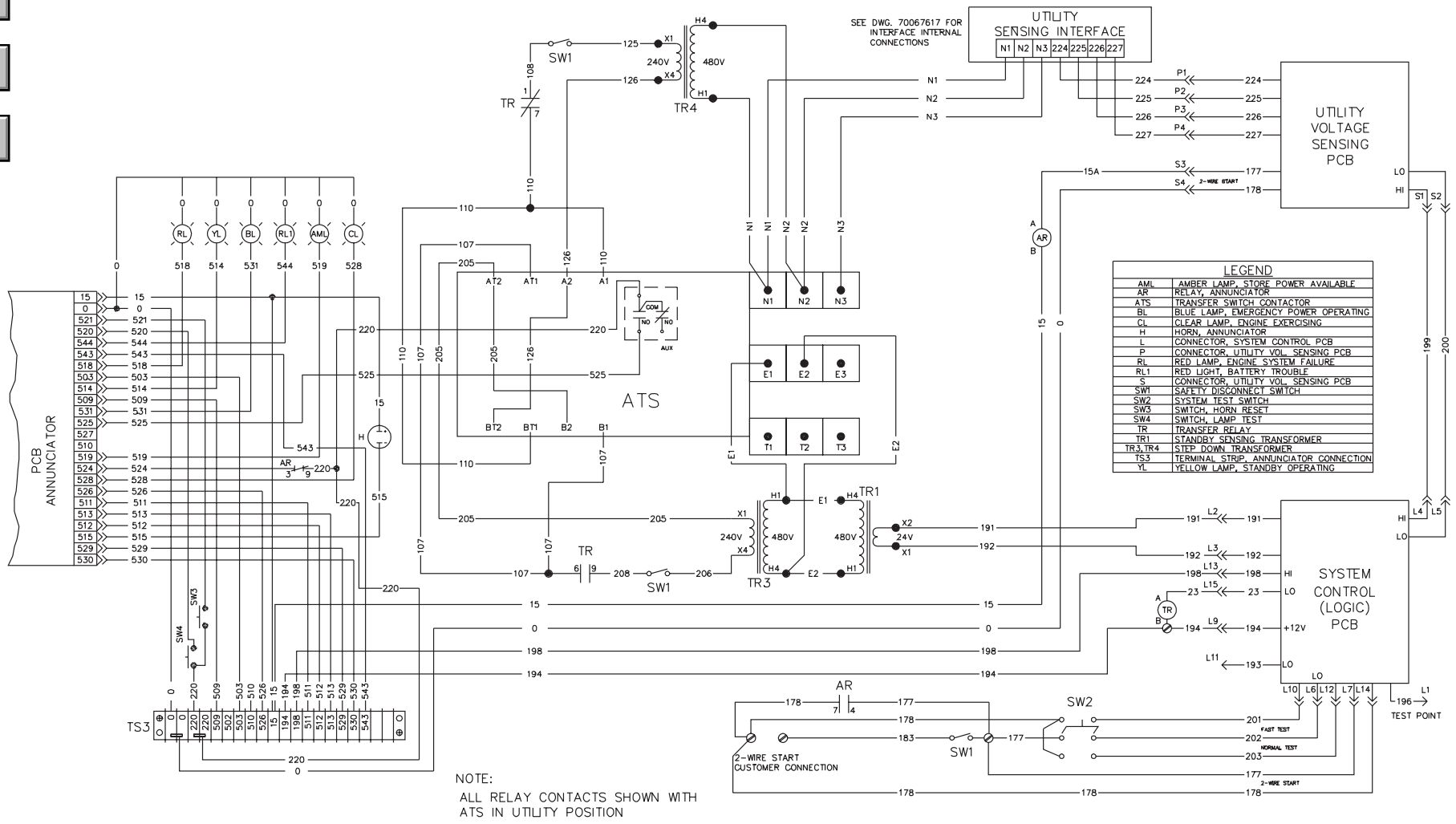
LEGEND	
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3	TRANSFORMER, CURRENT
FWB	FULLWAVE BRIDGE RECTIFIER PACKAGE(OPT)
E	CONNECTOR, 7 DAY EXERCISER PCB
FM	METER, FREQUENCY (OPT)
HM	METER, HOUR (OPT)
L	CONNECTOR, INPHASE MONITOR PCB
P	CONNECTOR, UTILITY VOL. SENSING PCB
PSW	PHASE SELECTOR (OPT)
R	RESISTER, TIME DELAY NEUTRAL(TDN)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TR4,TR5	TRANSFORMER, SWITCH OPERATION
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS1	TERM. STRIP
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, REMOTE AUTO START (OPT)
TS4	TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5	TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

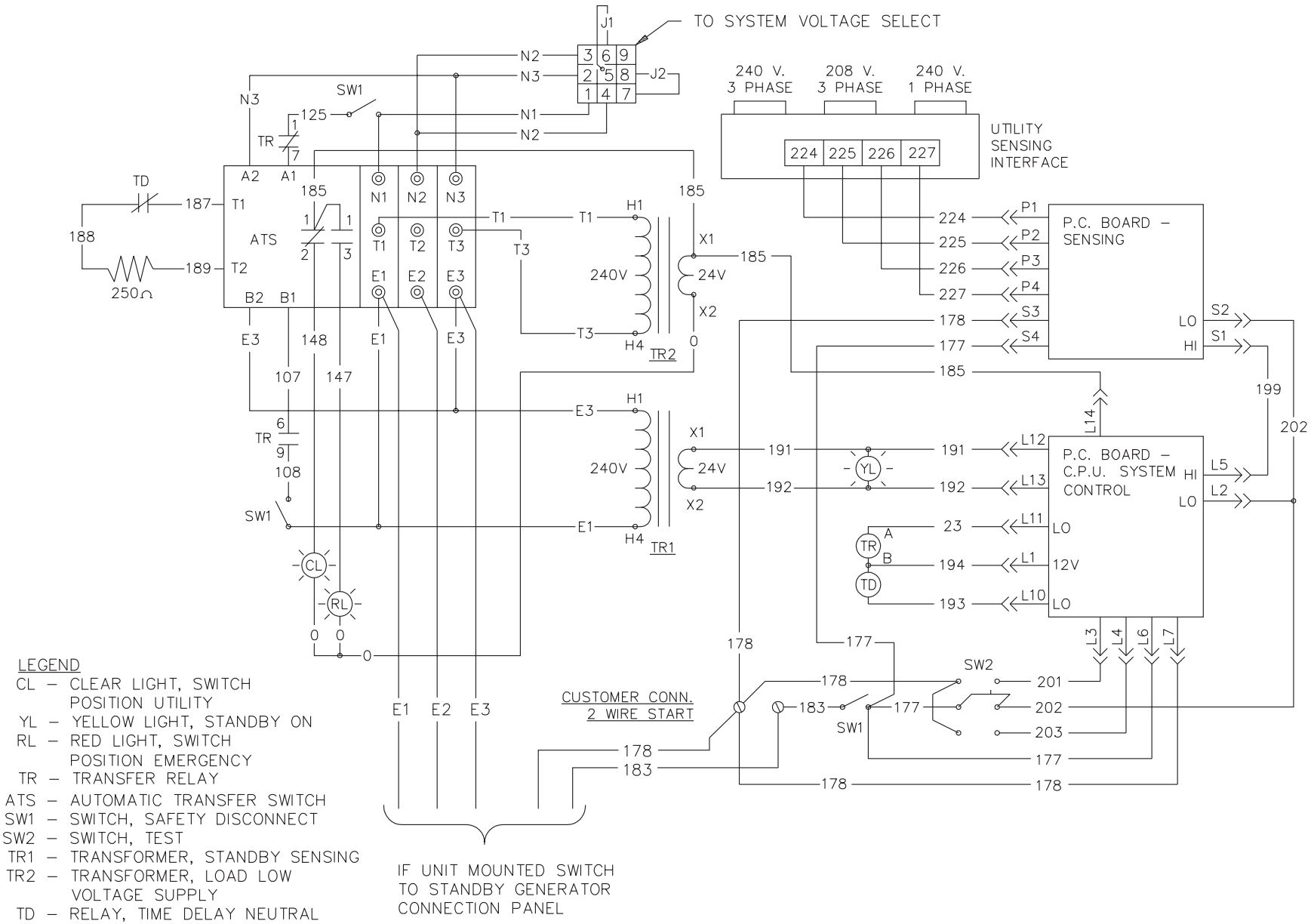
NOTE:
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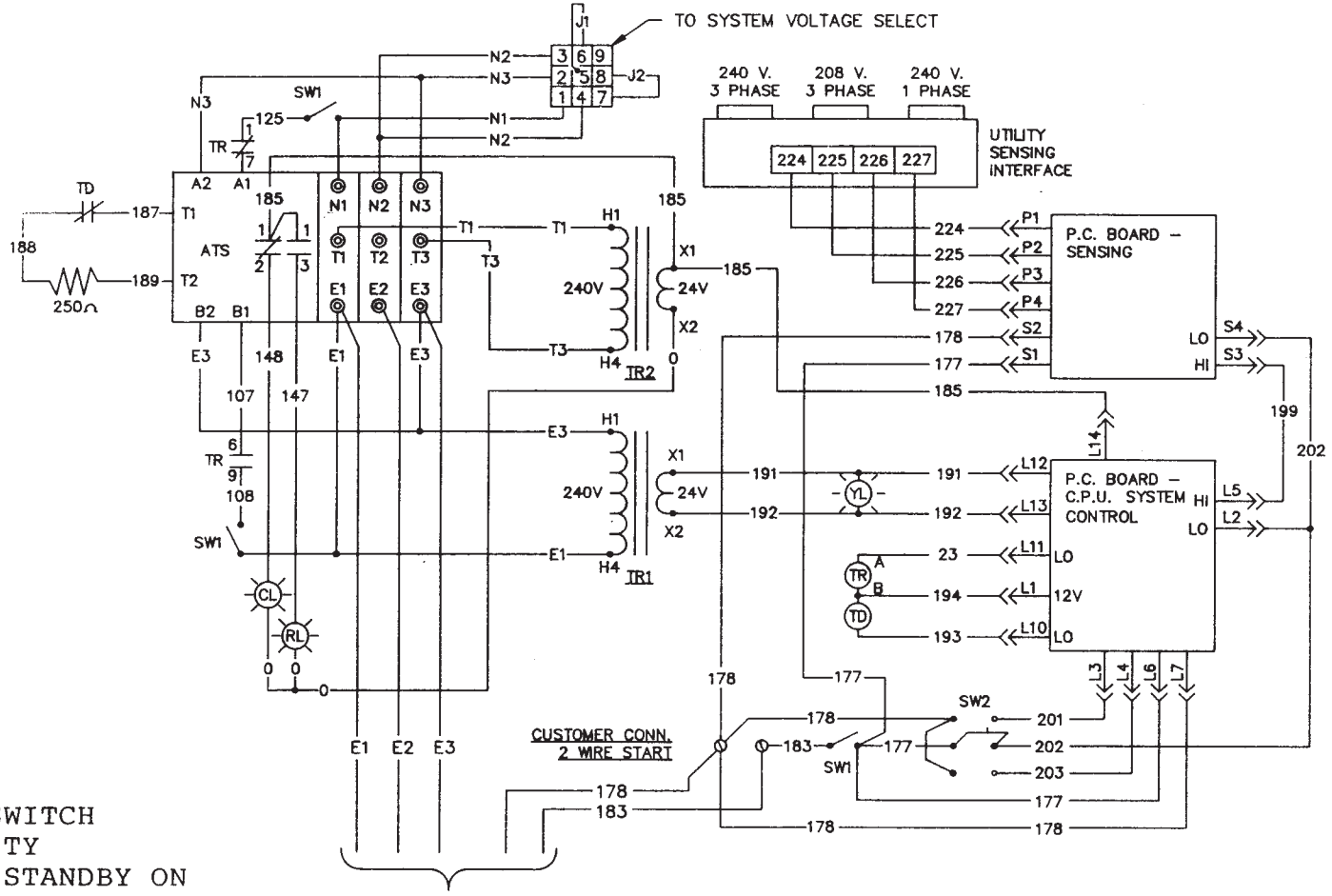

CONTACTS
POSITION
1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
NOTE:
ALL RELAY CONTACTS SHOWN
WITH ATS IN UTILITY POSITION
SEE DWG. 70067617 FOR
INTERFACE INTERNAL
UTILITY
SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY
VOLTAGE
SENSING
PCB
18-25V
LO
HI
2 WIRE START
7 DAY
EXERCISE
TIMER
PCB
TEST
POINT
INPHASE
MONITOR
PCB
ATS
PSW
TR1
TR2
TR3
TR4
TR5
SW1
SW2
SW3
SW4
FAST TEST
NORMAL TEST
2 WIRE START
CUSTOMER CONNECTION
CT1
CT2
CT3
LEGEND
A1 A2 A POWER SOURCE SIDE(ON)
AM METER, AMP (OPT)
ATS TRANSFER SWITCH CONTACTOR
AUX SWITCH, AUXILIARY
B1 B2 B POWER SOURCE SIDE(ON)
C COIL, CLOSING
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CR RELAY, 3 WIRE START CONTROL (OPT)
CT1,CT2,CT3 TRANSFORMER, CURRENT (OPT)
FM METER, FREQUENCY (OPT)
FWB FULLWAVE BRIDGE RECTIFIER PACKAGE(OPT)
HM METER, HOUR (OPT)
LS1 & LS2 LIMIT SWITCHES, TRIP POSITION
PSW SWITCH, PHASE SELECTOR (OPT)
R RESISTER, (TDN)
RL RED LIGHT, SWITCH POSITION EMERGENCY
SR RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
SW4 SWITCH, RETURN TO NORMAL BYPASS (OPT)
TD RELAY, TIME DELAY
TD1 & TD2 CONTACTS, TIME DELAY
TR RELAY, TRANSFER
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TR3 TRANSFORMER, UTILITY SENSING
TR4 TRANSFORMER, SWITCH OPERATION
TR5 TRANSFORMER, SWITCH OPERATION
VM METER, VOLT (OPT)
YL YELLOW LIGHT, STANDBY OPERATING
OPTIONS
SIGNAL BEFORE TRANSFER
INSTRUMENT PACKAGE
3 WIRE START CONTROL
REMOTE AUTO START
RETURN TO NORMAL BYPASS
N.O. START
N.C. STOP
COM.
N.C.


64
65
VM
HM
D
191
192
GTS
T1
T2
T3
PSW
59
58
57
204
67
65
64
FM
AM
TS
CT1
CT2
CT3
WT
BL
NOTE
WIRE № 59 AND CT3 USED
ON 3 PHASE SYSTEMS ONLY
TR2
TR1
H1
H4
X1
X2


64
65
VM
HM
D
65
64
191
192
191
192
NB
00
00
00
T1
T1
204
58
57
56
57
FM
T1
T2
PSW
67
65
T2
64
AM
204
67
67
T2
58
57
204
WT
WT
CT1
CT2
TS
BL
BL
192
191
T2
T2
T1
T1
H1
H4
TR2
X1
X2
H1
H4
TR1
192
191
X1
X2
192

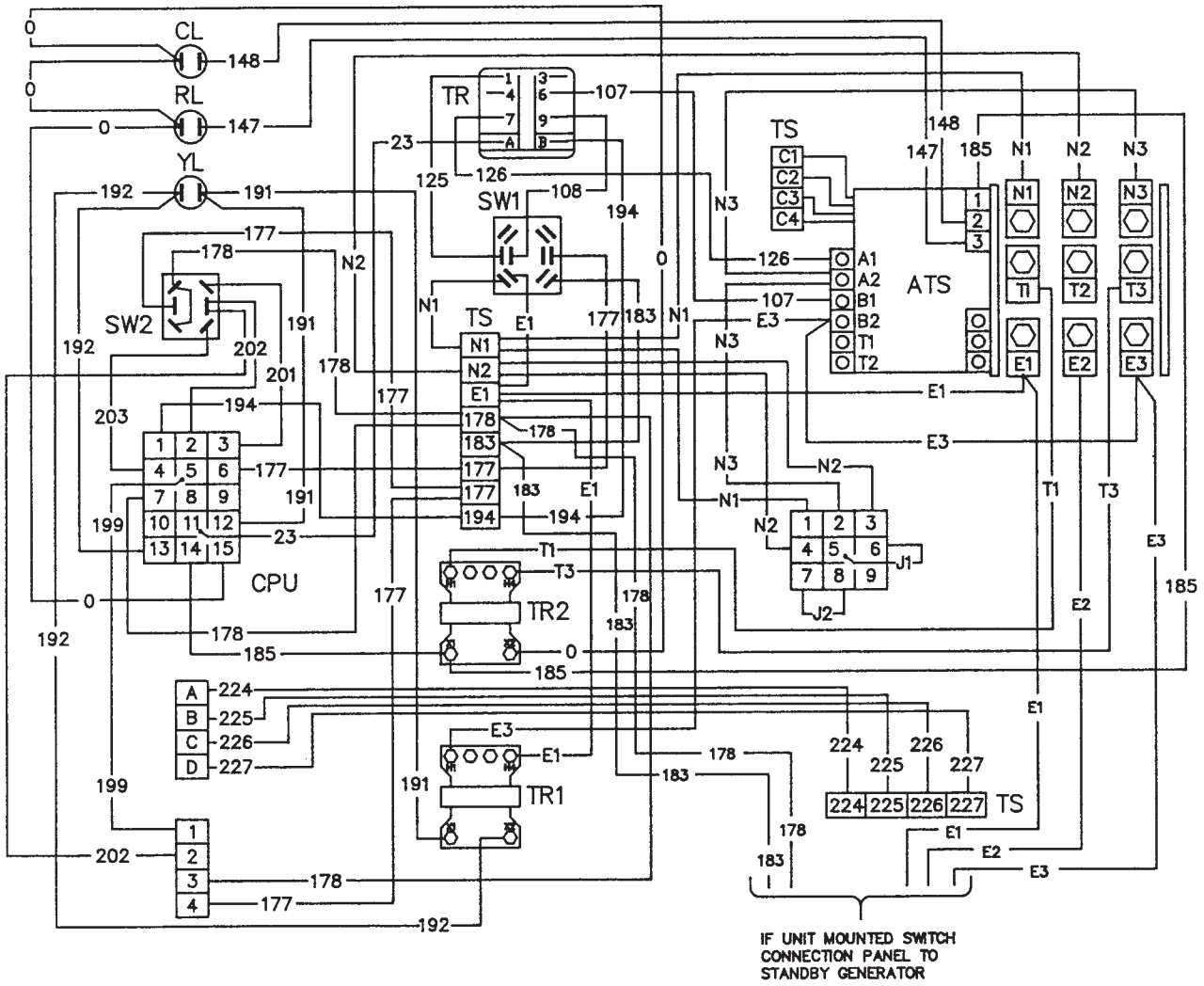

SEE DWG. 70067617 FOR INTERFACE INTERNAL CONNECTIONS
UTILITY SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY VOLTAGE SENSING PCB
SYSTEM CONTROL (LOGIC) PCB
ATS
TR4
TR3
TR1
TR
SW1
SW2
SW3
SW4
AR
PCB ANNUNCIATOR
TS3
RL YL BL RL1 AML CL
2-WIRE START CUSTOMER CONNECTION
FAST TEST
NORMAL TEST
TEST POINT
NOTE:
ALL RELAY CONTACTS SHOWN WITH ATS IN UTILITY POSITION
LEGEND
AML AMBER LAMP, STORE POWER AVAILABLE
AR RELAY, ANNUNCIATOR
ATS TRANSFER SWITCH CONTACTOR
BL BLUE LAMP, EMERGENCY POWER OPERATING
CL CLEAR LAMP, ENGINE EXERCISING
H HORN, ANNUNCIATOR
L CONNECTOR, SYSTEM CONTROL PCB
P CONNECTOR, UTILITY VOL. SENSING PCB
RL RED LAMP, ENGINE SYSTEM FAILURE
RL1 RED LIGHT, BATTERY TROUBLE
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SAFETY DISCONNECT SWITCH
SW2 SYSTEM TEST SWITCH
SW3 SWITCH, HORN RESET
SW4 SWITCH, LAMP TEST
TR TRANSFER RELAY
TR1 STANDBY SENSING TRANSFORMER
TR3,TR4 STEP DOWN TRANSFORMER
TS3 TERMINAL STRIP, ANNUNCIATOR CONNECTION
YL YELLOW LAMP, STANDBY OPERATING


TO SYSTEM VOLTAGE SELECT
J1
J2
3 6 9
2 5 8
1 4 7
N1
N2
N3
SW1
125
TR
1
7
240 V. 3 PHASE
208 V. 3 PHASE
240 V. 1 PHASE
UTILITY SENSING INTERFACE
224 225 226 227
TD
187
188
189
250Ω
T1
T2
A2 A1
B2 B1
185
ATS
1
2
3
N1 N2 N3
T1 T2 T3
E1 E2 E3
H1
H4
240V
24V
X1
X2
TR2
0
148
107
147
199
202
L14
P.C. BOARD – SENSING
P1
P2
P3
P4
S1
S2
S3
S4
LO
HI
178
177
191
192
YL
P.C. BOARD – C.P.U. SYSTEM CONTROL
L12
L13
L5
L2
L11
L1
L10
12V
23
194
193
TR
TD
A
B
6
9
108
TR1
CL
RL
L3
L4
L6
L7
SW2
201
202
203
CUSTOMER CONN. 2 WIRE START
183
LEGEND
CL – CLEAR LIGHT, SWITCH POSITION UTILITY
YL – YELLOW LIGHT, STANDBY ON
RL – RED LIGHT, SWITCH POSITION EMERGENCY
TR – TRANSFER RELAY
ATS – AUTOMATIC TRANSFER SWITCH
SW1 – SWITCH, SAFETY DISCONNECT
SW2 – SWITCH, TEST
TR1 – TRANSFORMER, STANDBY SENSING
TR2 – TRANSFORMER, LOAD LOW VOLTAGE SUPPLY
TD – RELAY, TIME DELAY NEUTRAL
IF UNIT MOUNTED SWITCH TO STANDBY GENERATOR CONNECTION PANEL



LEGEND

CL - CLEAR LIGHT, SWITCH POSITION UTILITY
YL - YELLOW LIGHT, STANDBY ON
RL - RED LIGHT, SWITCH POSITION EMERGENCY
TR - TRANSFER RELAY
ATS - AUTOMATIC TRANSFER SWITCH
SW1 - SWITCH, SAFETY DISCONNECT
SW2 - SWITCH, TEST
TR1 - TRANSFORMER, STANDBY SENSING
TR2 - TRANSFORMER, LOAD LOW VOLTAGE SUPPLY
TD - RELAY, TIME DELAY NEUTRAL

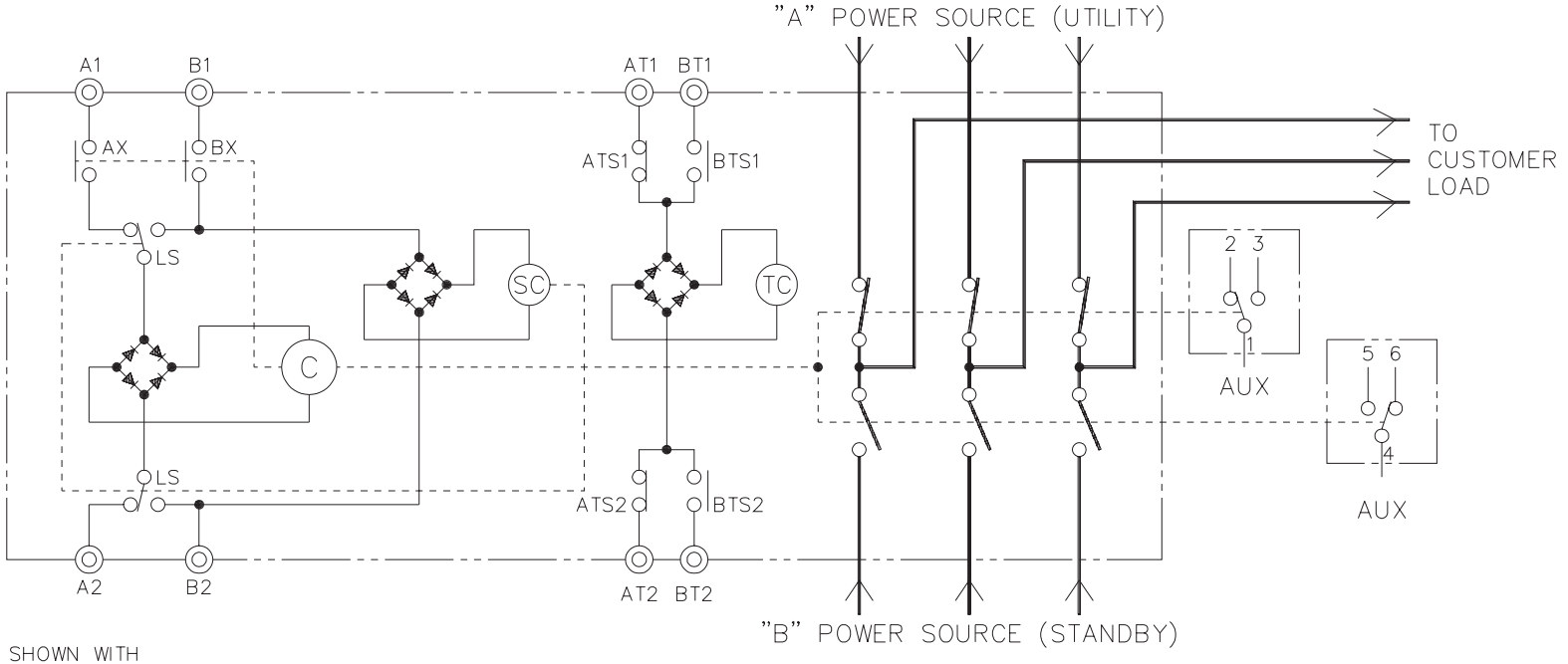


LEGEND

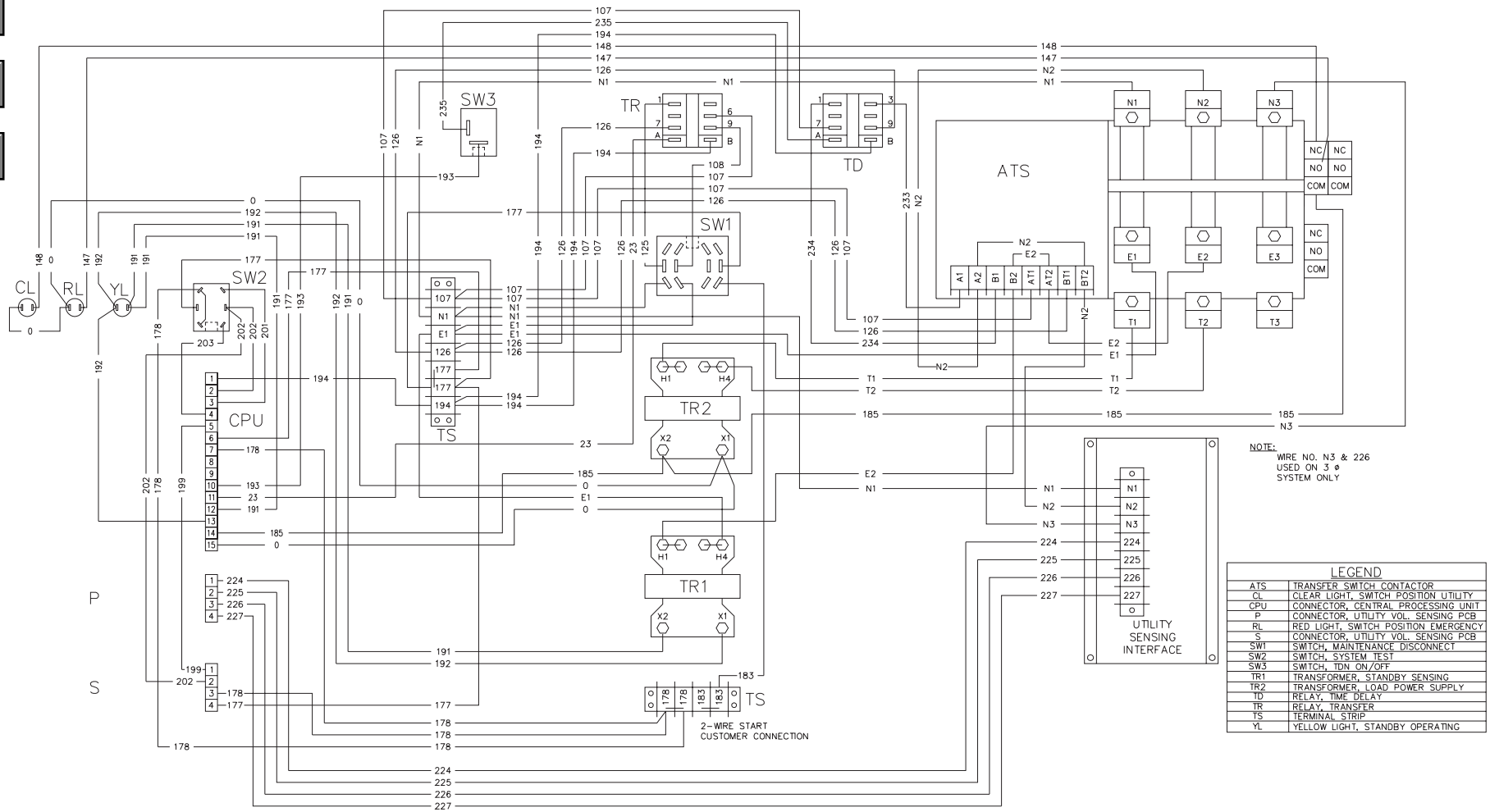
ATS – AUTOMATIC TRANSFER SWITCH
CL – CLEAR LIGHT
SWITCH POSITION UTILITY
RL – RED LIGHT
SWITCH POSITION EMERGENCY
SW1 – SWITCH SAFTY DISCONNECT
SW2 – SWITCH SYSTEM TEST
TR1 – TRANSFORMER STANDBY
VOLTAGE SENSING
TR2 – TRANSFORMER LOAD
LOW VOLTAGE SUPPLY
TS – TERMINAL STRIP
TD – RELAY TIME DELAY
NEUTRIL
TR – RELAY TRANSFER
YL – YELLOW LIGHT
STANDBY ON

C = Closing coil
LS = Selective switch
Ax Bx = Control switch
SC = Selective coil
TC = Trip coil
AUX = Auxiliary switch

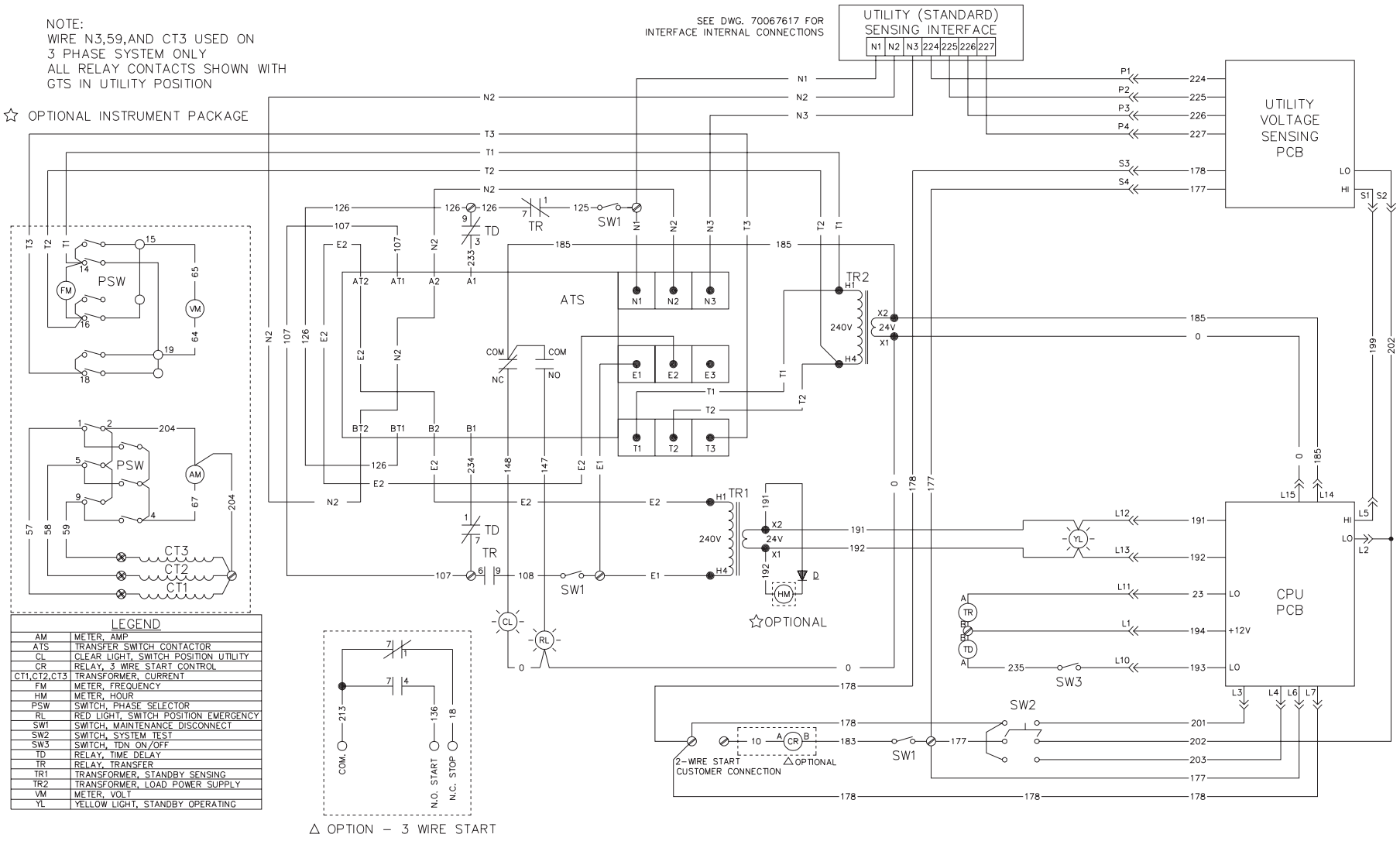
ATS1 ATS2
BTS1 BTS2 = Trip control switch
A1 A2 = A Power Source Side(ON)
B1 B2 = B Power Source Side(ON)
AT1 AT2 = A Power Source Side(Trip)
BT1 BT2 = B Power Source Side(Trip)



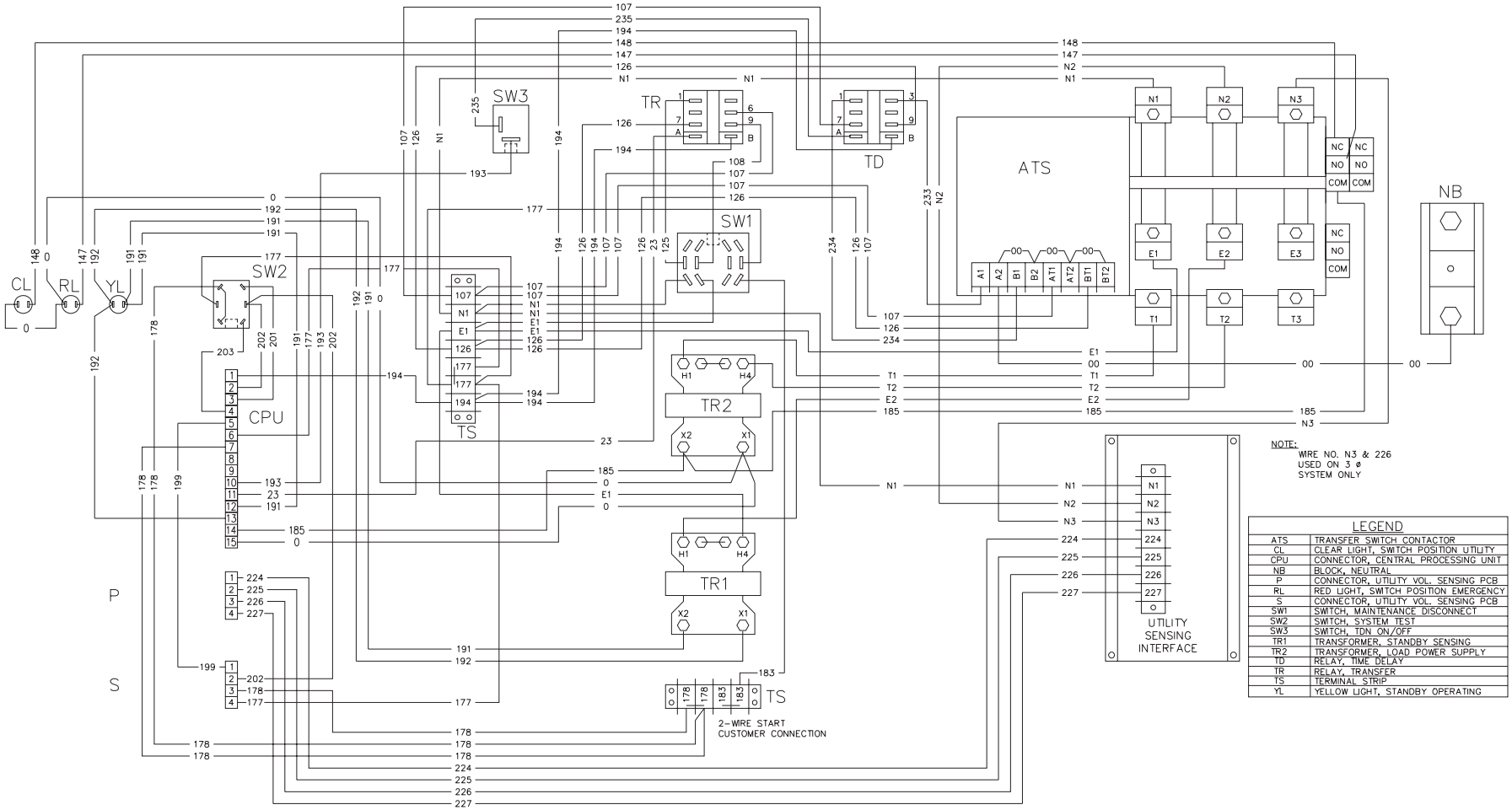
NOTE:
ALL CONTACTS SHOWN WITH MAIN POWER CONTACTS CLOSED IN UTILITY POSITION

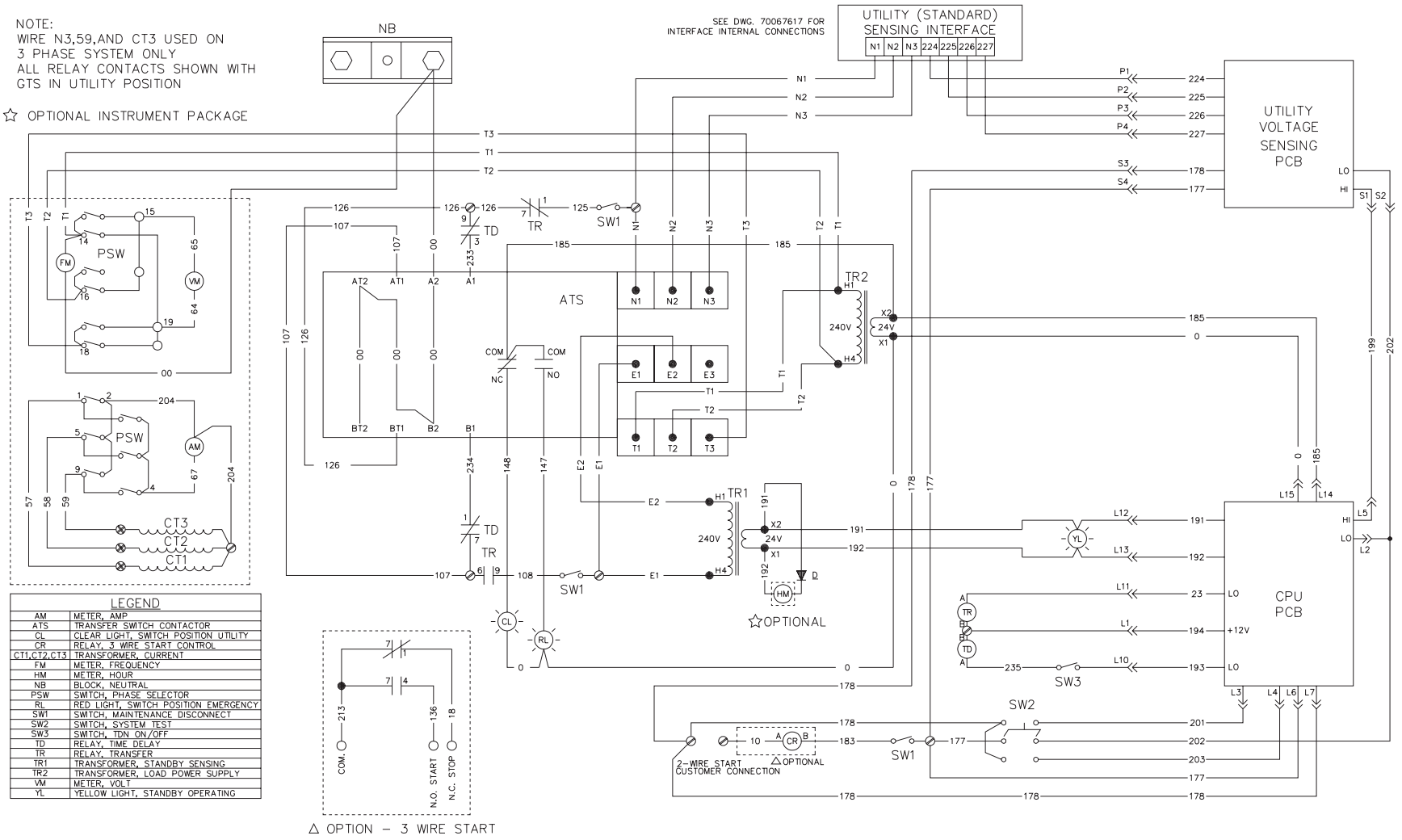


LEGEND	
ATS	TRANSFER SWITCH CONTACTOR
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CPU	CONNECTOR, CENTRAL PROCESSING UNIT
P	CONNECTOR, UTILITY VOL. SENSING PCB
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS	TERMINAL STRIP
YL	YELLOW LIGHT, STANDBY OPERATING

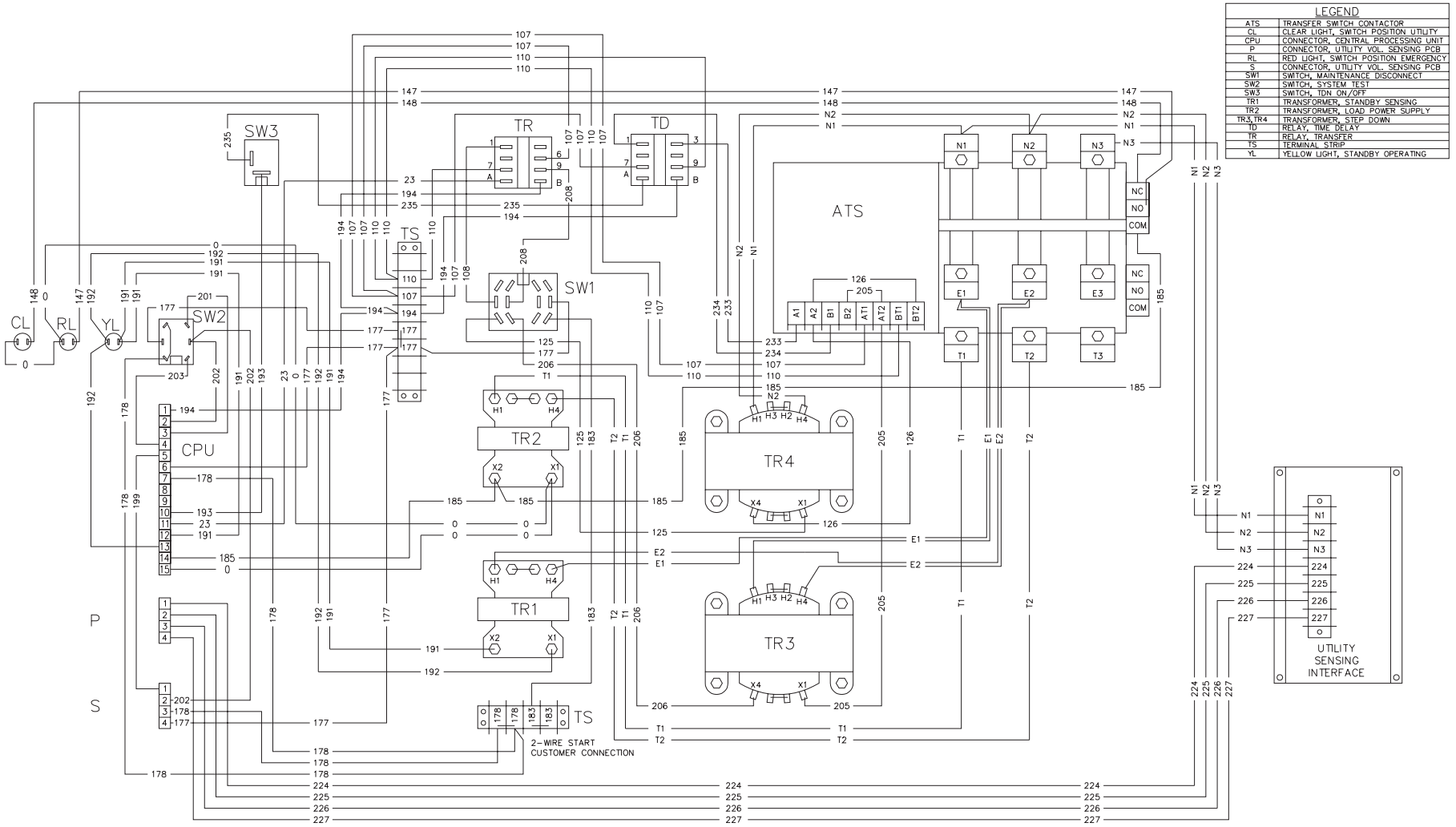


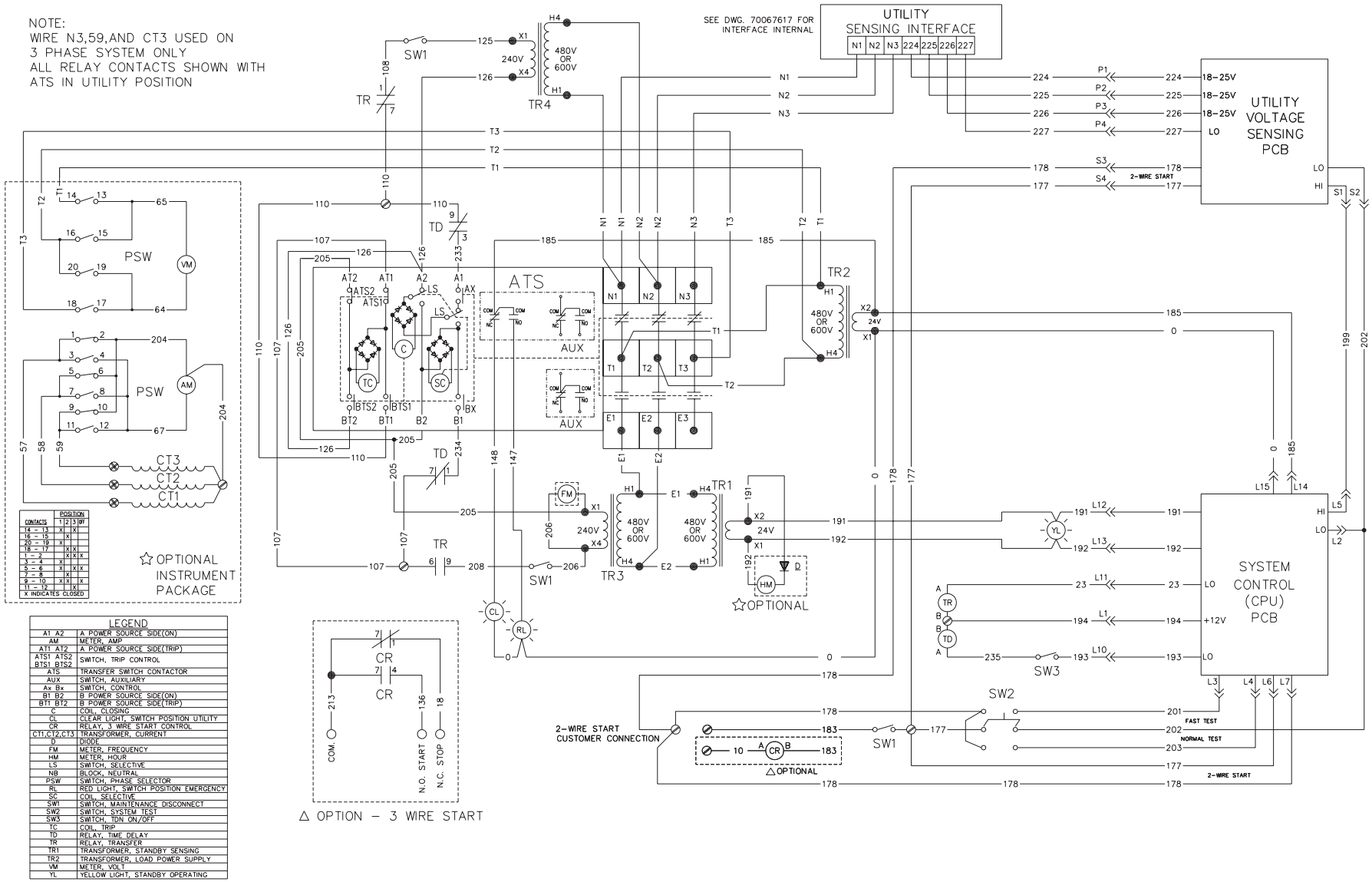
LEGEND	
AM	METER, AMP
ATS	TRANSFER SWITCH CONTACTOR
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL
CT1,CT2,CT3	TRANSFORMER, CURRENT
FM	METER, FREQUENCY
HM	METER, HOUR
PSW	SWITCH, PHASE SELECTOR
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
VM	METER, VOLT
YL	YELLOW LIGHT, STANDBY OPERATING


SW3
TR
TD
ATS
NB
SW2
SW1
CL
RL
YL
CPU
TS
TR2
TR1
P
S
2-WIRE START
CUSTOMER CONNECTION
UTILITY
SENSING
INTERFACE
NOTE:
WIRE NO. N3 & 226
USED ON 3 ø
SYSTEM ONLY
LEGEND
ATS TRANSFER SWITCH CONTACTOR
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CPU CONNECTOR, CENTRAL PROCESSING UNIT
NB BLOCK, NEUTRAL
P CONNECTOR, UTILITY VOL. SENSING PCB
RL RED LIGHT, SWITCH POSITION EMERGENCY
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TS TERMINAL STRIP
YL YELLOW LIGHT, STANDBY OPERATING



LEGEND	
AM	METER, AMP
ATS	TRANSFER SWITCH CONTACTOR
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL
CT1,CT2,CT3	TRANSFORMER, CURRENT
FM	METER, FREQUENCY
HM	METER, HOUR
NB	BLOCK, NEUTRAL
PSW	SWITCH, PHASE SELECTOR
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
VM	METER, VOLT
YL	YELLOW LIGHT, STANDBY OPERATING


LEGEND
ATS TRANSFER SWITCH CONTACTOR
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CPU CONNECTOR, CENTRAL PROCESSING UNIT
P CONNECTOR, UTILITY VOL. SENSING PCB
RL RED LIGHT, SWITCH POSITION EMERGENCY
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TR3, TR4 TRANSFORMER, STEP DOWN
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TS TERMINAL STRIP
YL YELLOW LIGHT, STANDBY OPERATING
ATS
CPU
TR
TD
TS
SW1
SW2
SW3
TR1
TR2
TR3
TR4
CL
RL
YL
P
S
UTILITY SENSING INTERFACE
2-WIRE START CUSTOMER CONNECTION

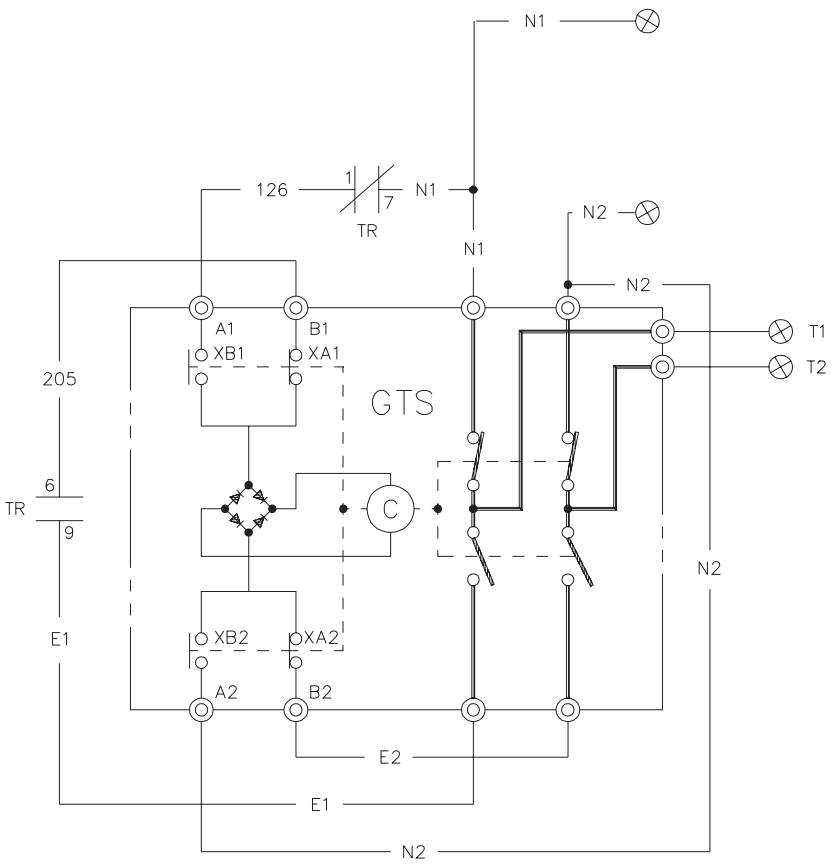


CONTACTS	POSITION 1	2	3	RF
14 – 13	X		X	
16 – 15	X			
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8	X			
9 – 10	X	X		X
11 – 12		X		

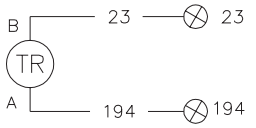
X INDICATES CLOSED

LEGEND	
A1 A2	A POWER SOURCE SIDE(ON)
AM	METER, AMP
AT1 AT2	A POWER SOURCE SIDE(TRIP)
ATS1 ATS2 BTS1 BTS2	SWITCH, TRIP CONTROL
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
Ax Bx	SWITCH, CONTROL
B1 B2	B POWER SOURCE SIDE(ON)
BT1 BT2	B POWER SOURCE SIDE(TRIP)
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL
CT1,CT2,CT3	TRANSFORMER, CURRENT
D	DIODE
FM	METER, FREQUENCY
HM	METER, HOUR
LS	SWITCH, SELECTIVE
NB	BLOCK, NEUTRAL
PSW	SWITCH, PHASE SELECTOR
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SC	COIL, SELECTIVE
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TC	COIL, TRIP
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
VM	METER, VOLT
YL	YELLOW LIGHT, STANDBY OPERATING

SCHEMATIC DIAGRAM

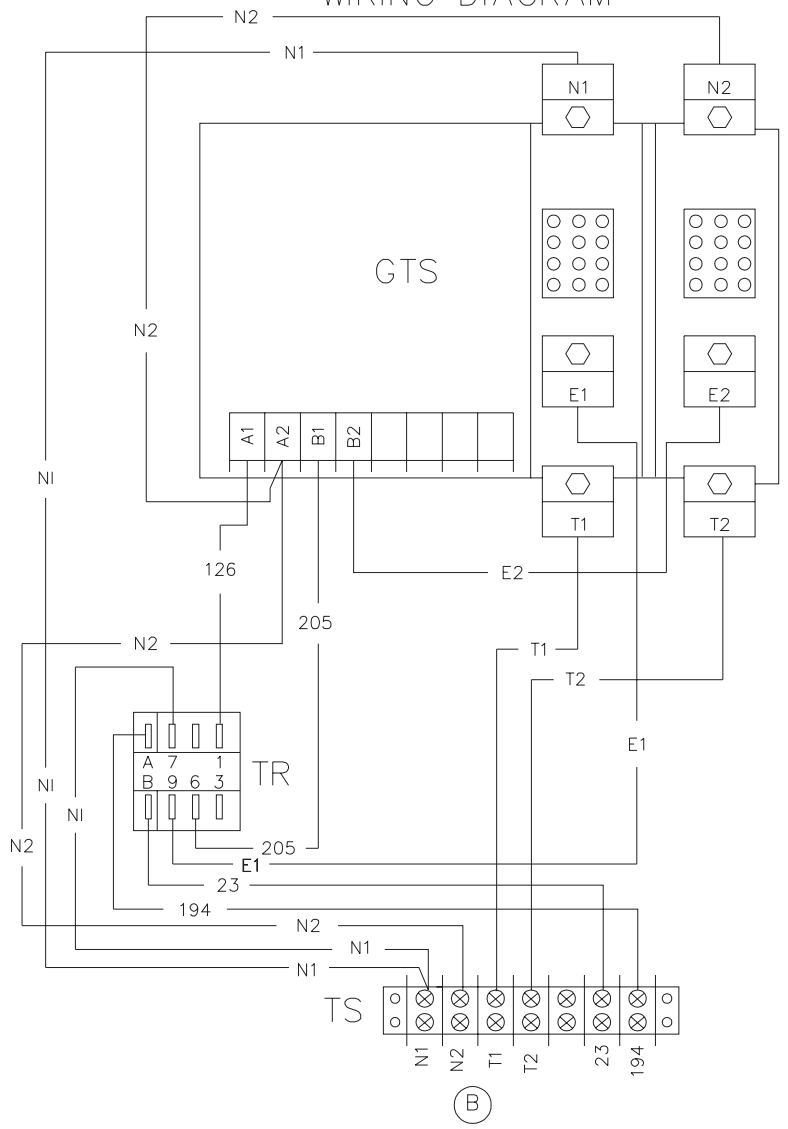


LEGEND
XA1,XA2,XB1,XB2 – LIMIT SWITCHES, ACTUATOR
C – CONTACTOR ACTUATING COIL
GTS – TRANSFER SWITCH CONTACTOR
TR – RELAY, TRANSFER
TS – TERMINAL STRIP (CUSTOMER CONNECTION)

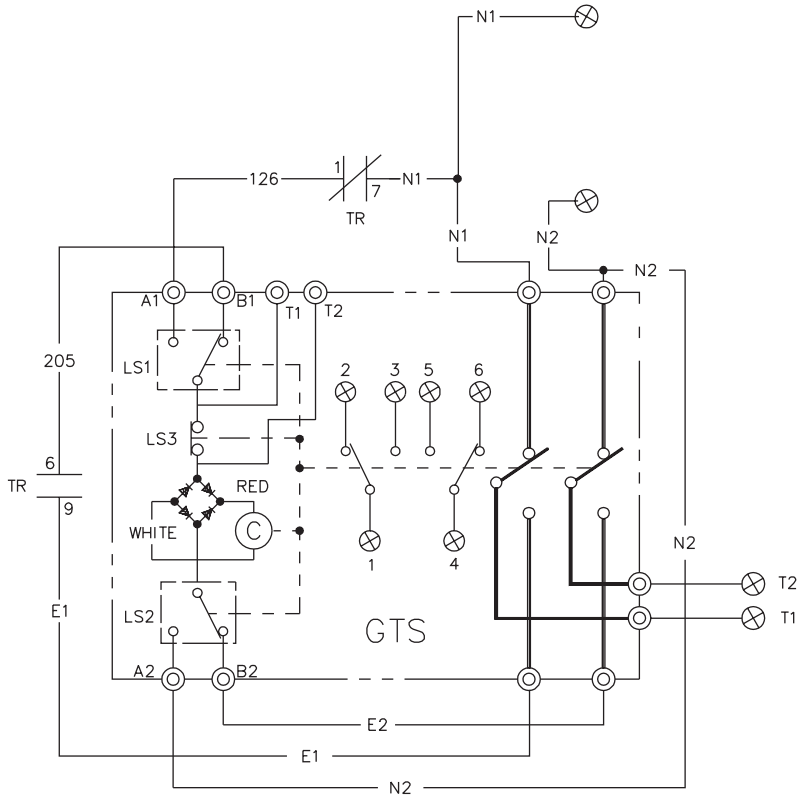


NOTE:
ALL CONTACTS SHOWN WITH TRANSFER SWITCH IN UTILITY POSITION.

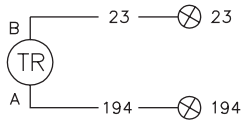
WIRING DIAGRAM



SCHEMATIC DIAGRAM

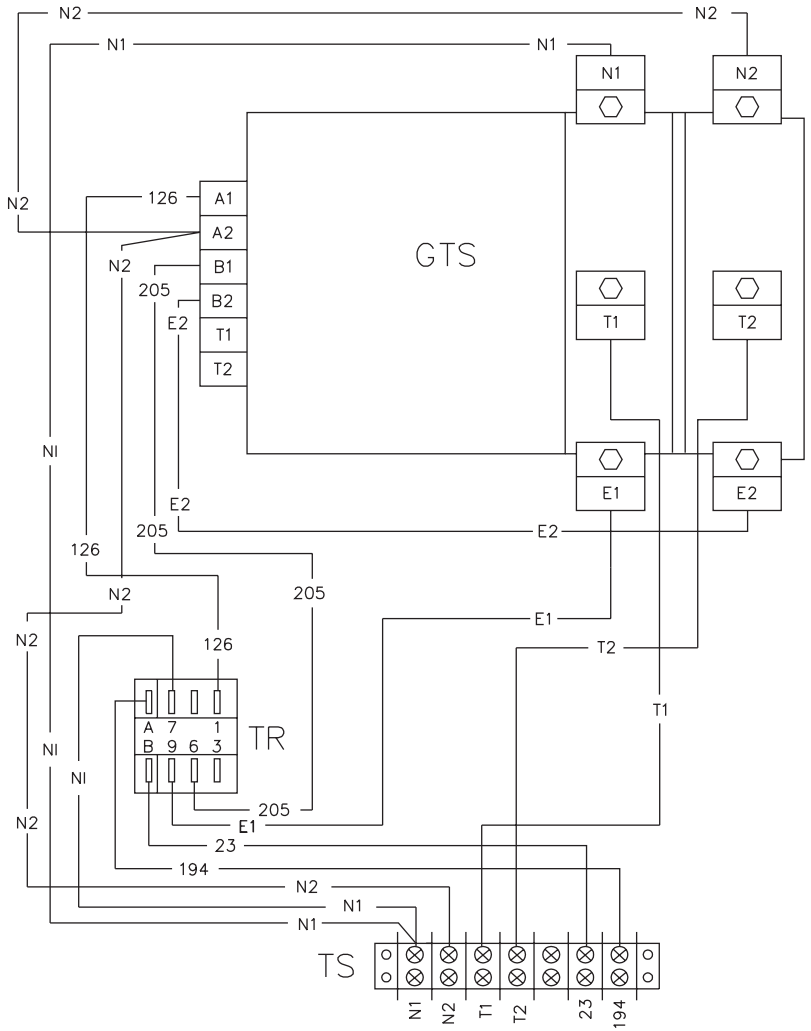


LEGEND
C – CONTACTOR ACTUATING COIL
GTS – TRANSFER SWITCH CONTACTOR
LS1,LS2,LS3 – LIMIT SWITCHES, ACTUATOR
TR – RELAY, TRANSFER
TS – TERMINAL STRIP (CUSTOMER CONNECTION)

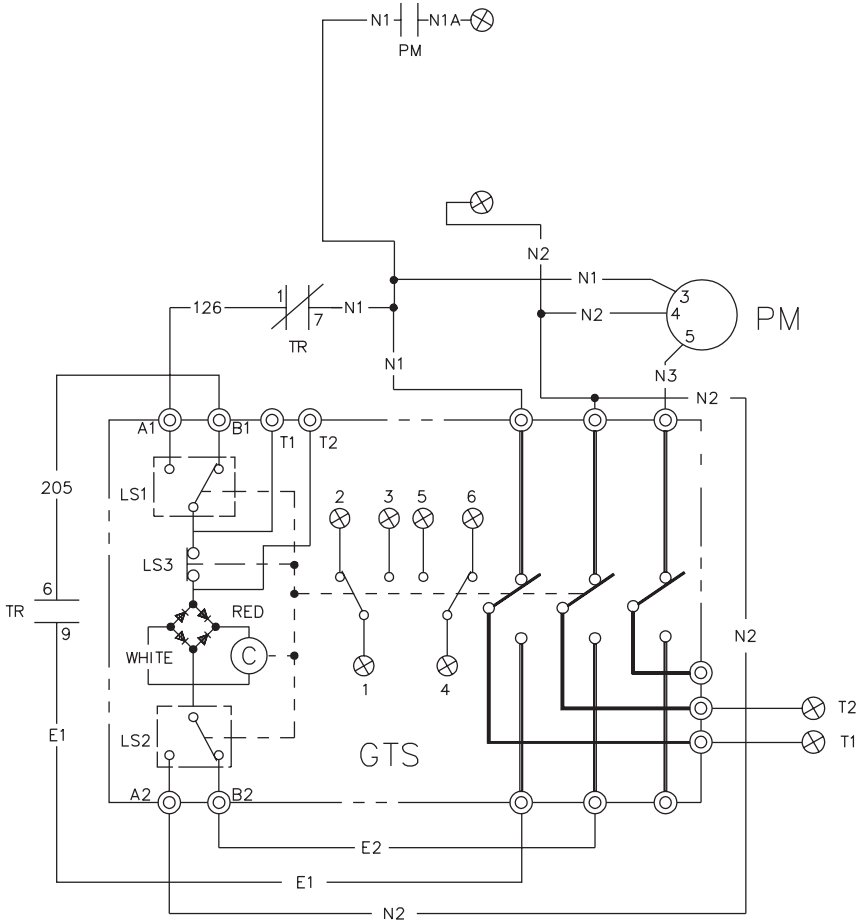


NOTE:
ALL CONTACTS SHOWN WITH TRANSFER SWITCH IN UTILITY POSITION.

WIRING DIAGRAM

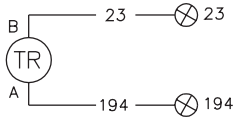


SCHEMATIC DIAGRAM



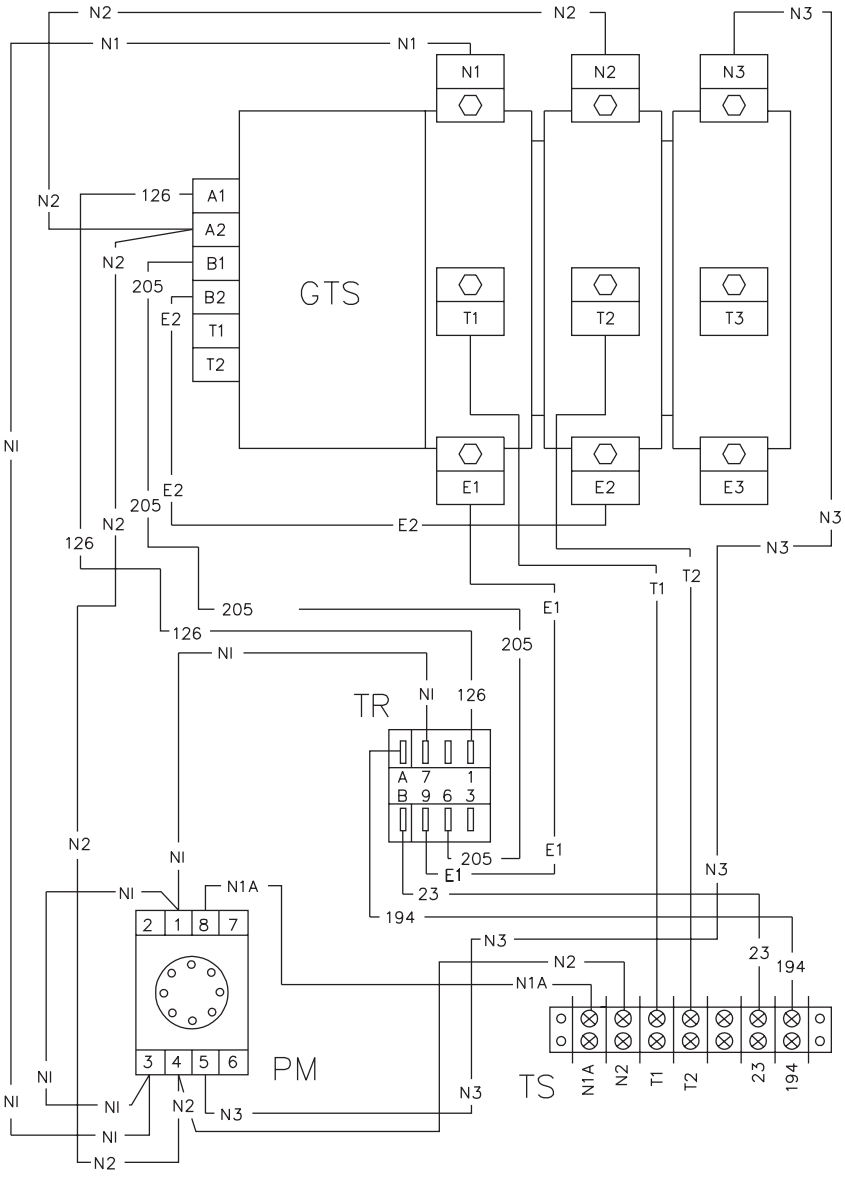
LEGEND

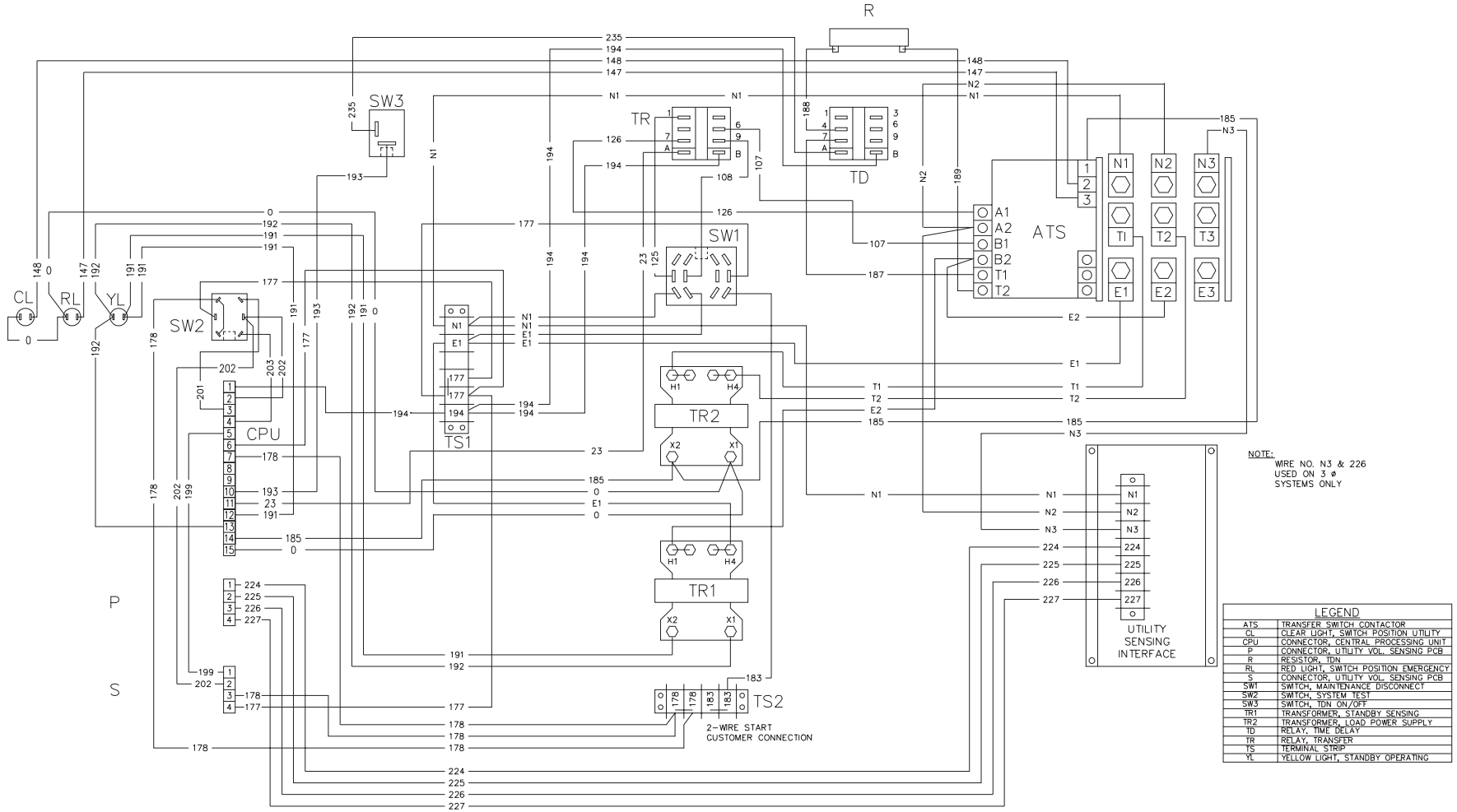
C – CONTACTOR ACTUATING COIL
GTS – TRANSFER SWITCH CONTACTOR
LS1,LS2,LS3 – LIMIT SWITCHES, ACTUATOR
PM – POWER MONITOR, 3 PHASE UTILITY
TR – RELAY, TRANSFER
TS – TERMINAL STRIP (CUSTOMER CONNECTION)



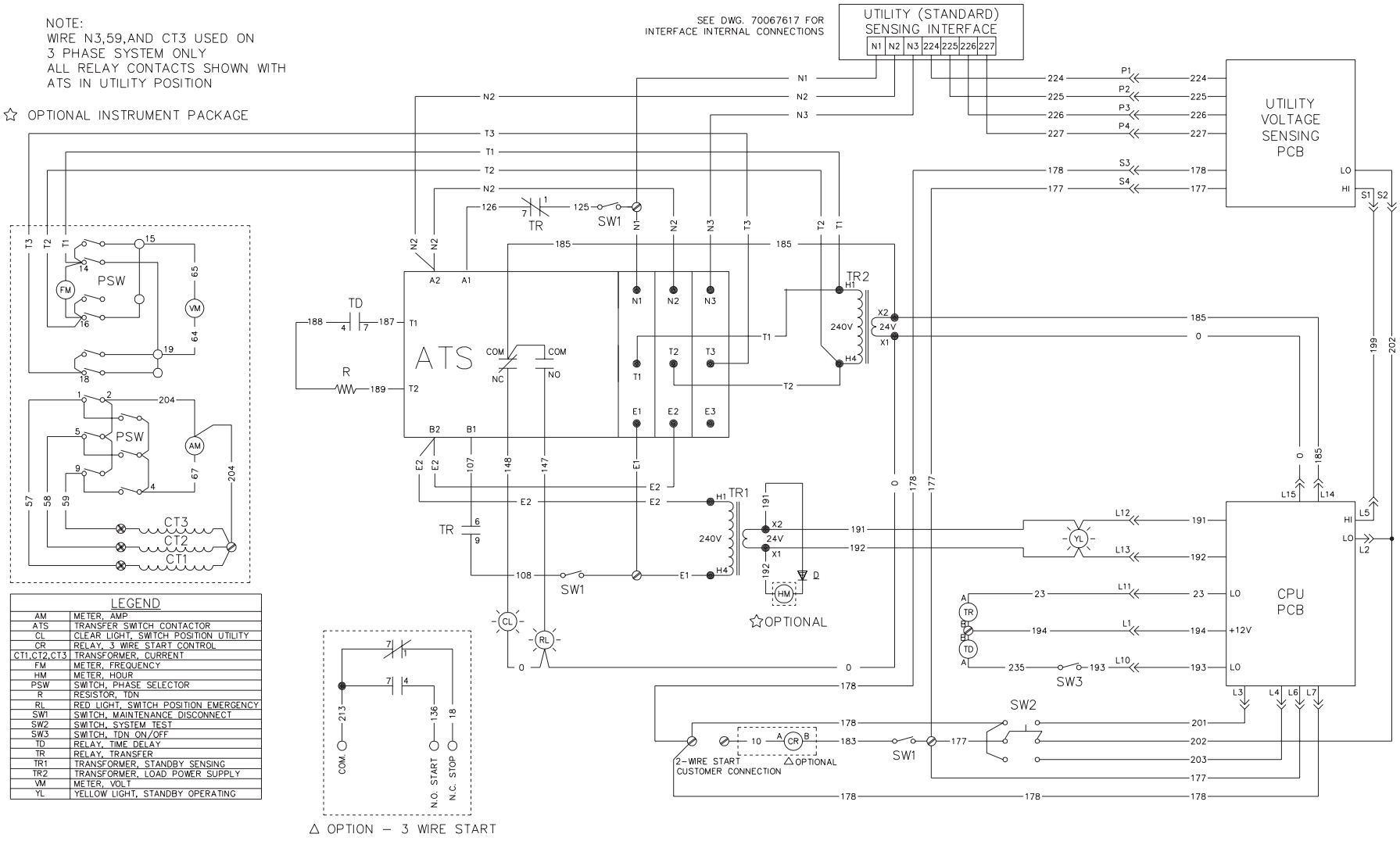
NOTE:
ALL CONTACTS SHOWN WITH TRANSFER SWITCH IN UTILITY POSITION.

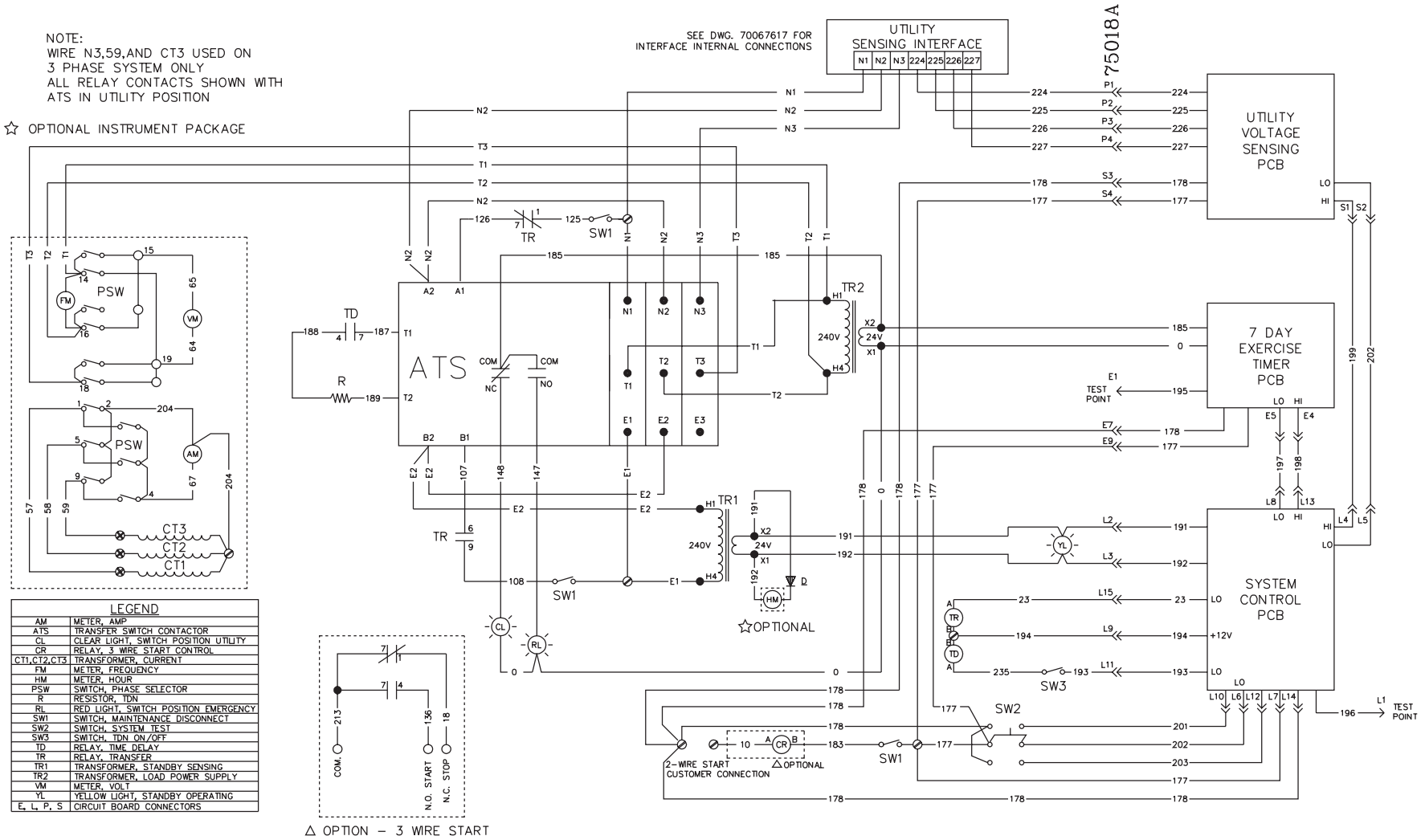
WIRING DIAGRAM



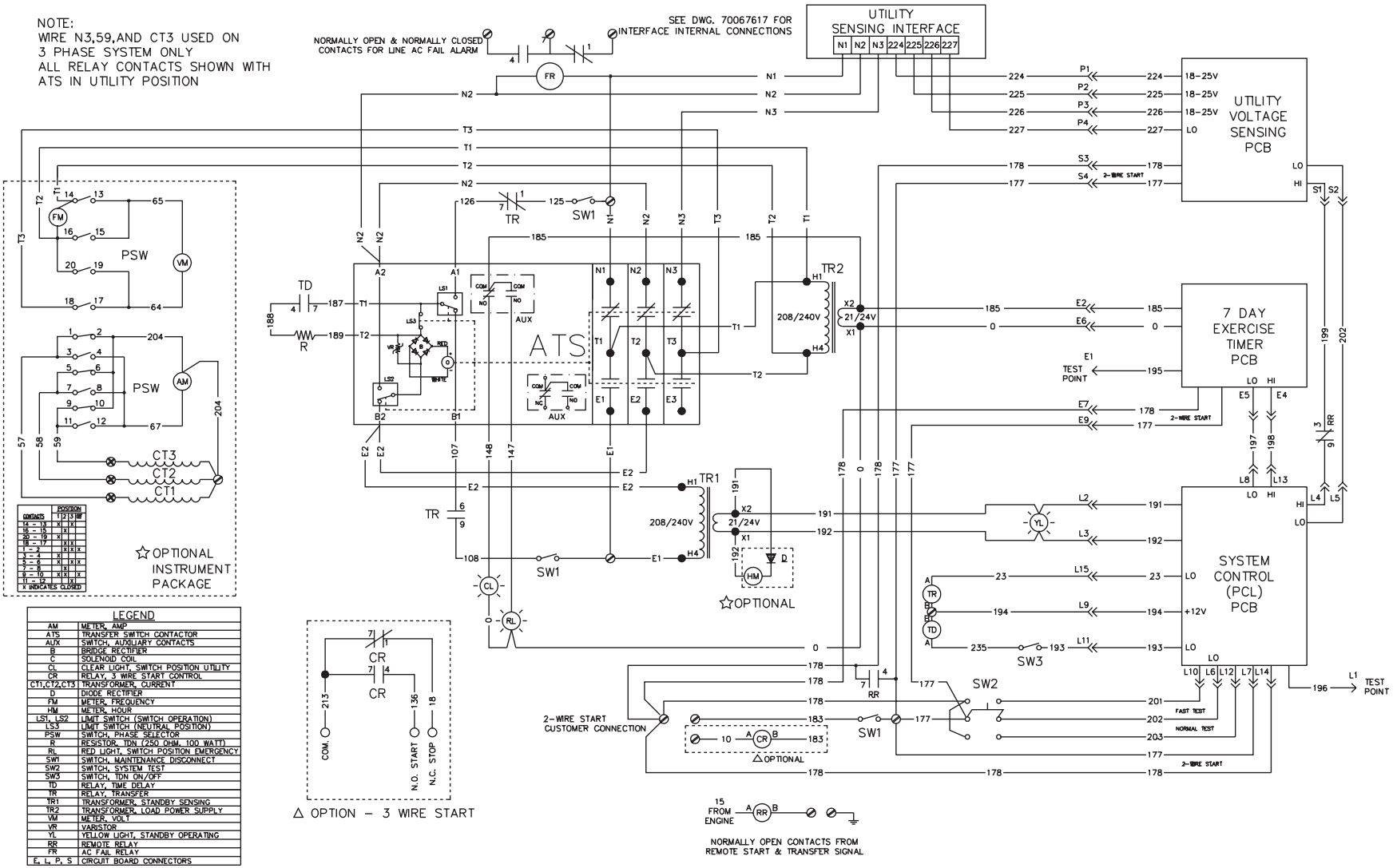


LEGEND	
ATS	TRANSFER SWITCH CONTACTOR
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CPU	CONNECTOR, CENTRAL PROCESSING UNIT
P	CONNECTOR, UTILITY VOL. SENSING PCB
R	RESISTOR, TDN
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS	TERMINAL STRIP
YL	YELLOW LIGHT, STANDBY OPERATING

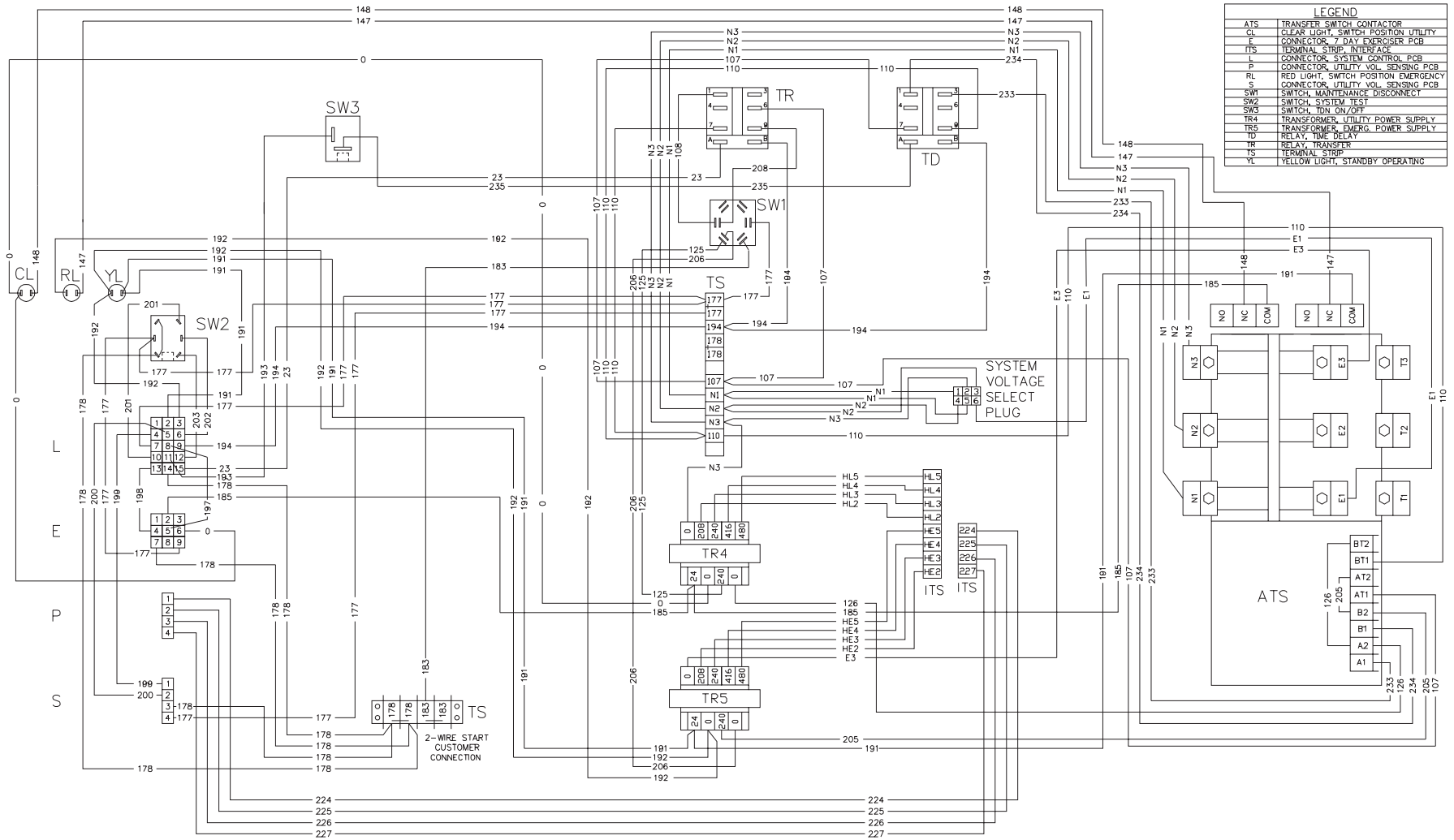

NOTE:
WIRE N3,59,AND CT3 USED ON
3 PHASE SYSTEM ONLY
ALL RELAY CONTACTS SHOWN WITH
ATS IN UTILITY POSITION
☆ OPTIONAL INSTRUMENT PACKAGE
SEE DWG. 70067617 FOR
INTERFACE INTERNAL CONNECTIONS
UTILITY (STANDARD)
SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY
VOLTAGE
SENSING
PCB
CPU
PCB
ATS
TR
TR1
TR2
TD
SW1
SW2
SW3
PSW
CT1
CT2
CT3
CL
RL
HM
CR
YL
☆OPTIONAL
△ OPTION – 3 WIRE START
2-WIRE START
CUSTOMER CONNECTION
LEGEND
AM METER, AMP
ATS TRANSFER SWITCH CONTACTOR
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CR RELAY, 3 WIRE START CONTROL
CT1,CT2,CT3 TRANSFORMER, CURRENT
FM METER, FREQUENCY
HM METER, HOUR
PSW SWITCH, PHASE SELECTOR
R RESISTOR, TDN
RL RED LIGHT, SWITCH POSITION EMERGENCY
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
VM METER, VOLT
YL YELLOW LIGHT, STANDBY OPERATING

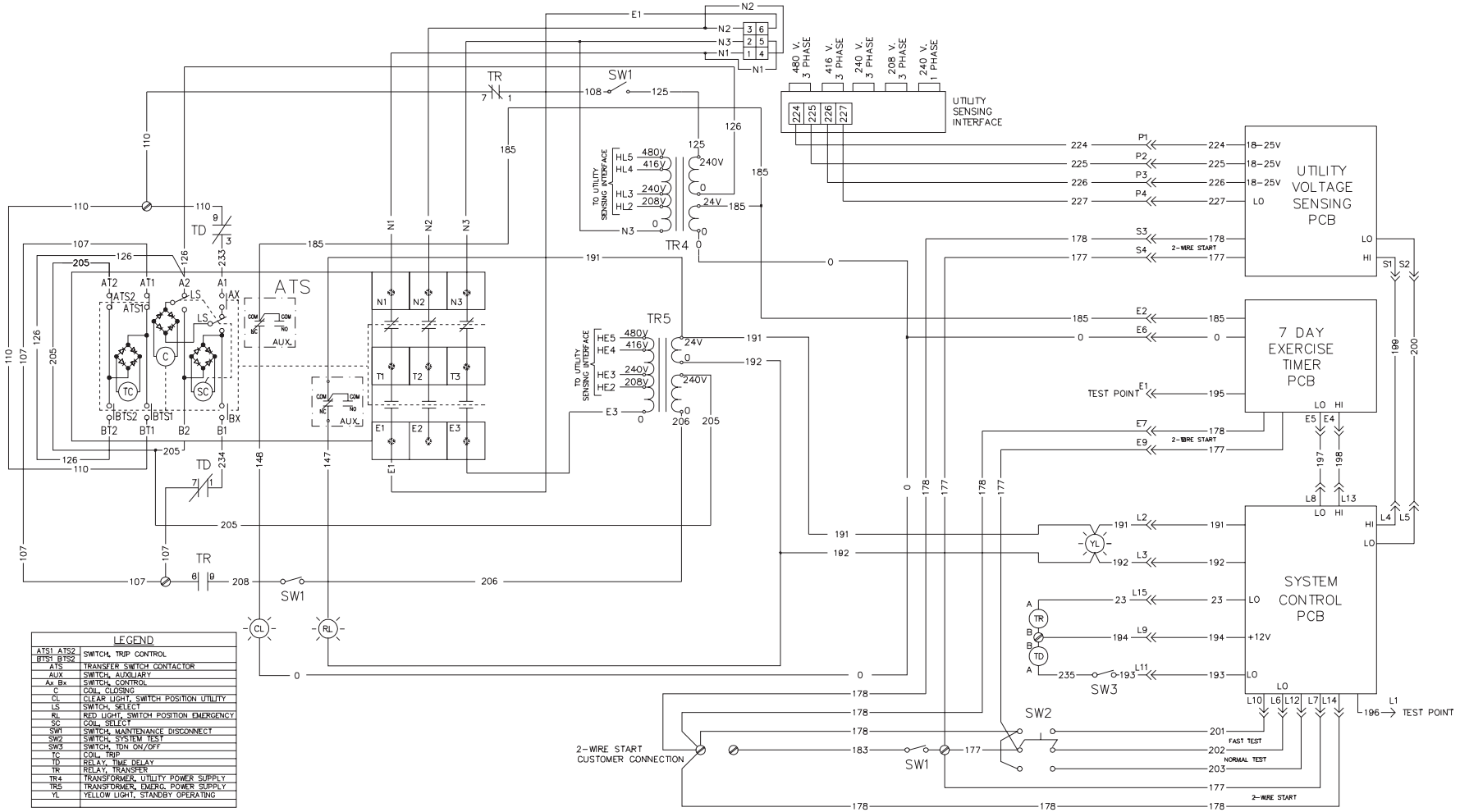


LEGEND	
AM	METER, AMP
ATS	TRANSFER SWITCH CONTACTOR
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL
CT1,CT2,CT3	TRANSFORMER, CURRENT
FM	METER, FREQUENCY
HM	METER, HOUR
PSW	SWITCH, PHASE SELECTOR
R	RESISTOR, TDN
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
VM	METER, VOLT
YL	YELLOW LIGHT, STANDBY OPERATING
E, L, P, S	CIRCUIT BOARD CONNECTORS

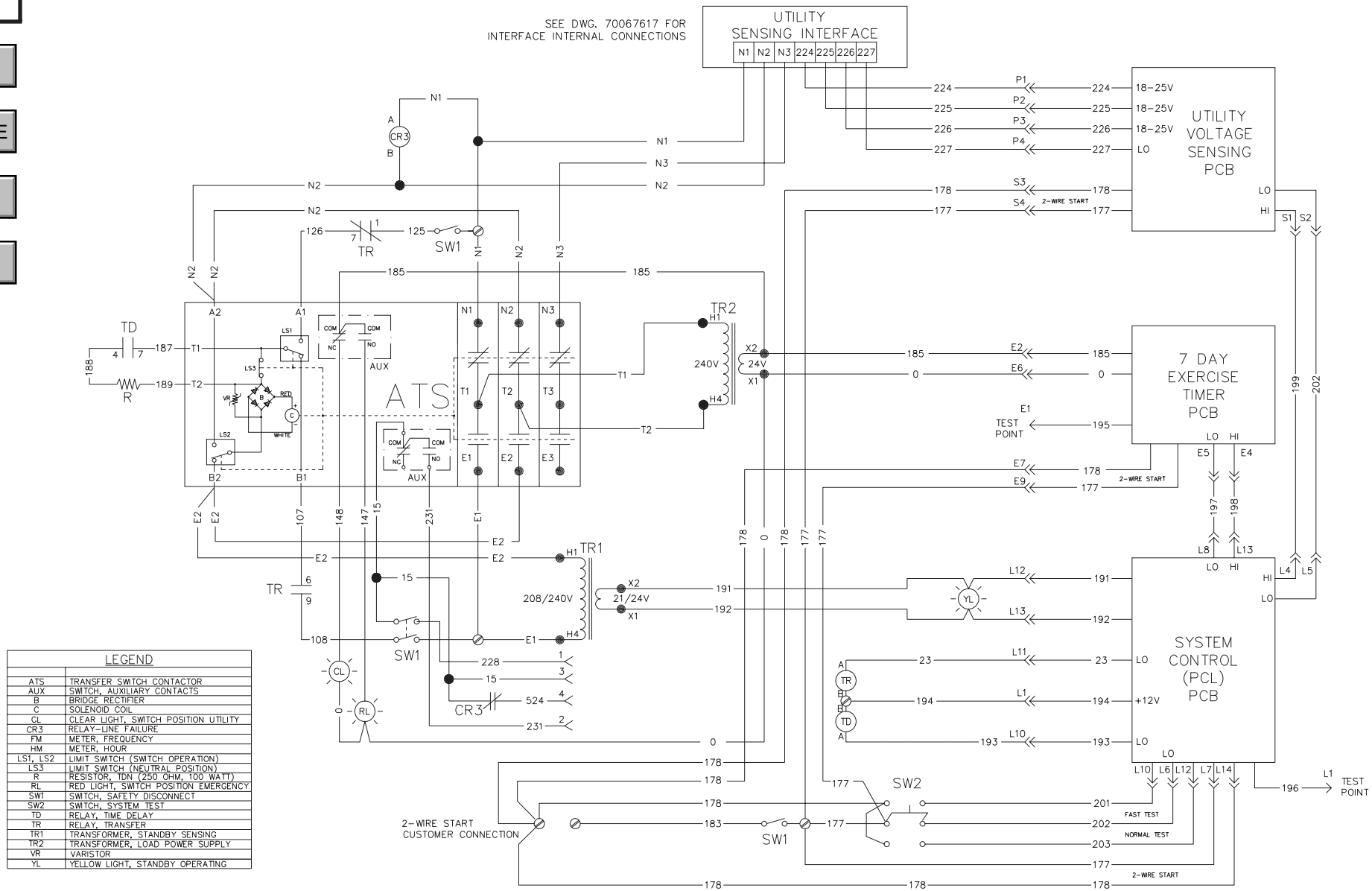


LEGEND	
AM	METER, AMP
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY CONTACTS
B	BRIDGE RECTIFIER
C	SOLENOID COIL
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL
CT1,CT2,CT3	TRANSFORMER, CURRENT
D	DIODE RECTIFIER
FM	METER, FREQUENCY
HM	METER, HOUR
LS1, LS2	LIMIT SWITCH (SWITCH OPERATION)
LS3	LIMIT SWITCH (NEUTRAL POSITION)
PSW	SWITCH, PHASE SELECTOR
R	RESISTOR, TDN (250 OHM, 100 WATT)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
VM	METER, VOLT
VR	VARISTOR
YL	YELLOW LIGHT, STANDBY OPERATING
RR	REMOTE RELAY
FR	AC FAIL RELAY
E, L, P, S	CIRCUIT BOARD CONNECTORS


LEGEND
ATS TRANSFER SWITCH CONTACTOR
CL CLEAR LIGHT, SWITCH POSITION UTILITY
E CONNECTOR, 7 DAY EXERCISER PCB
ITS TERMINAL STRIP, INTERFACE
L CONNECTOR, SYSTEM CONTROL PCB
P CONNECTOR, UTILITY VOL. SENSING PCB
RL RED LIGHT, SWITCH POSITION EMERGENCY
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
TR4 TRANSFORMER, UTILITY POWER SUPPLY
TR5 TRANSFORMER, EMERG. POWER SUPPLY
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TS TERMINAL STRIP
YL YELLOW LIGHT, STANDBY OPERATING
SW3
SW1
SW2
TR
TD
TS
TR4
TR5
ITS
ATS
CL
RL
YL
L
E
P
S
SYSTEM VOLTAGE SELECT PLUG
2-WIRE START CUSTOMER CONNECTION
NO
NC
COM
BT2
BT1
AT2
AT1
B2
B1
A2
A1
T3
T2
T1
E3
E2
E1
N3
N2
N1
HL5
HL4
HL3
HL2
HE5
HE4
HE3
HE2
E3

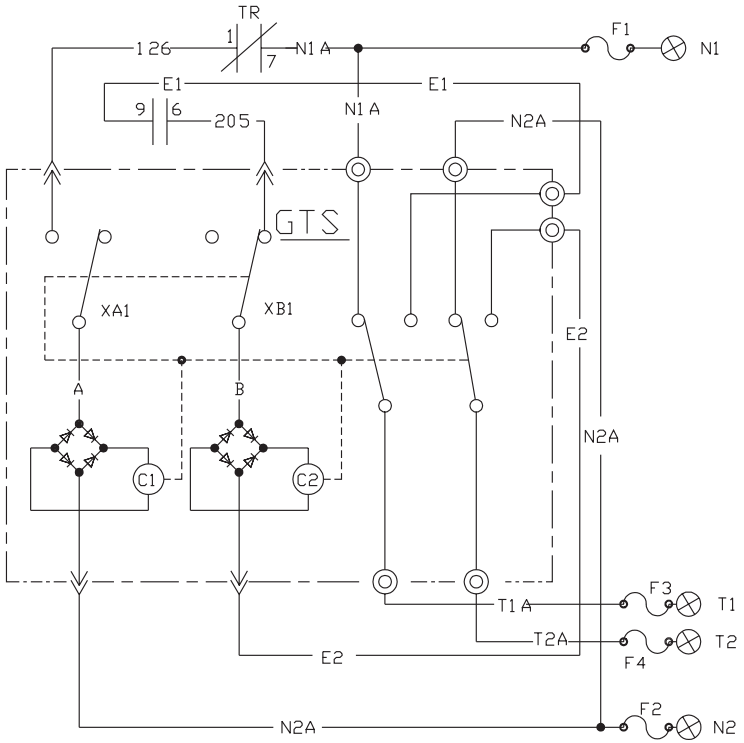


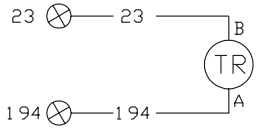
LEGEND	
ATS1 ATS2 BTS1 BTS2	SWITCH, TRIP CONTROL
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
Ax Bx	SWITCH, CONTROL
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
LS	SWITCH, SELECT
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SC	COIL, SELECT
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TC	COIL, TRIP
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR4	TRANSFORMER, UTILITY POWER SUPPLY
TR5	TRANSFORMER, EMERG. POWER SUPPLY
YL	YELLOW LIGHT, STANDBY OPERATING



LEGEND	
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY CONTACTS
B	BRIDGE RECTIFIER
C	SOLENOID COIL
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR3	RELAY–LINE FAILURE
FM	METER, FREQUENCY
HM	METER, HOUR
LS1, LS2	LIMIT SWITCH (SWITCH OPERATION)
LS3	LIMIT SWITCH (NEUTRAL POSITION)
R	RESISTOR, TDN (250 OHM, 100 WATT)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SW1	SWITCH, SAFETY DISCONNECT
SW2	SWITCH, SYSTEM TEST
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
VR	VARISTOR
YL	YELLOW LIGHT, STANDBY OPERATING

SCHEMATIC DIAGRAM

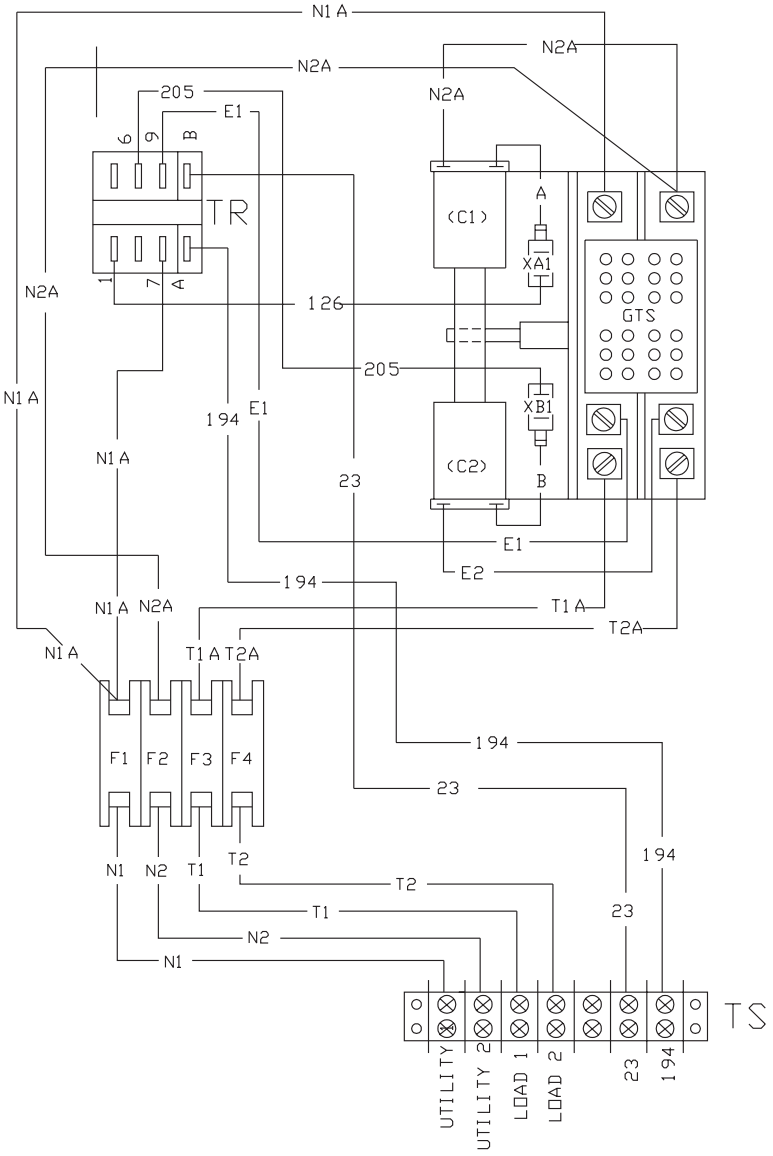


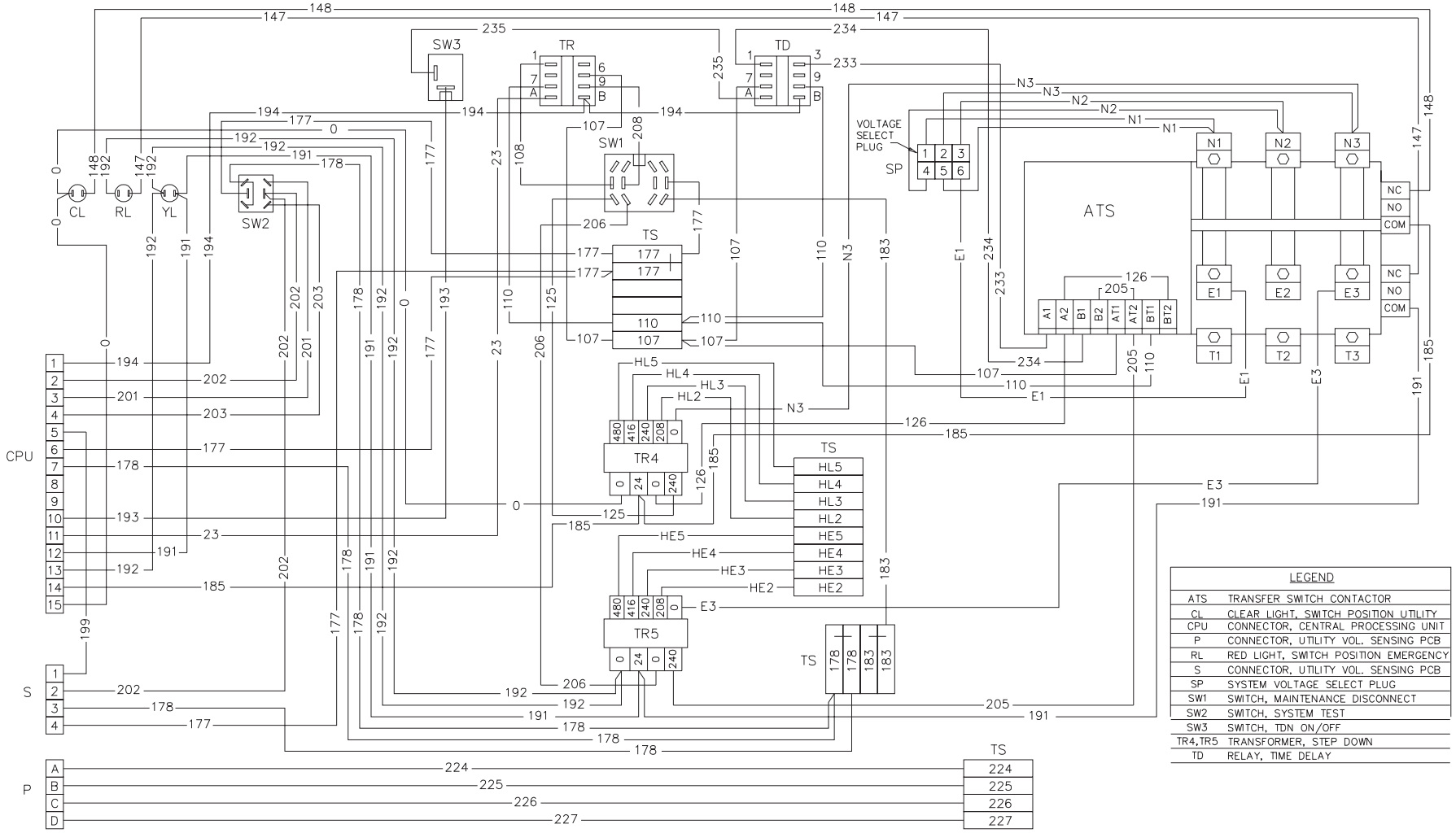


NOTE:
ALL CONTACTS SHOWN WITH TRANSFER SWITCH IN UTILITY POSITION.

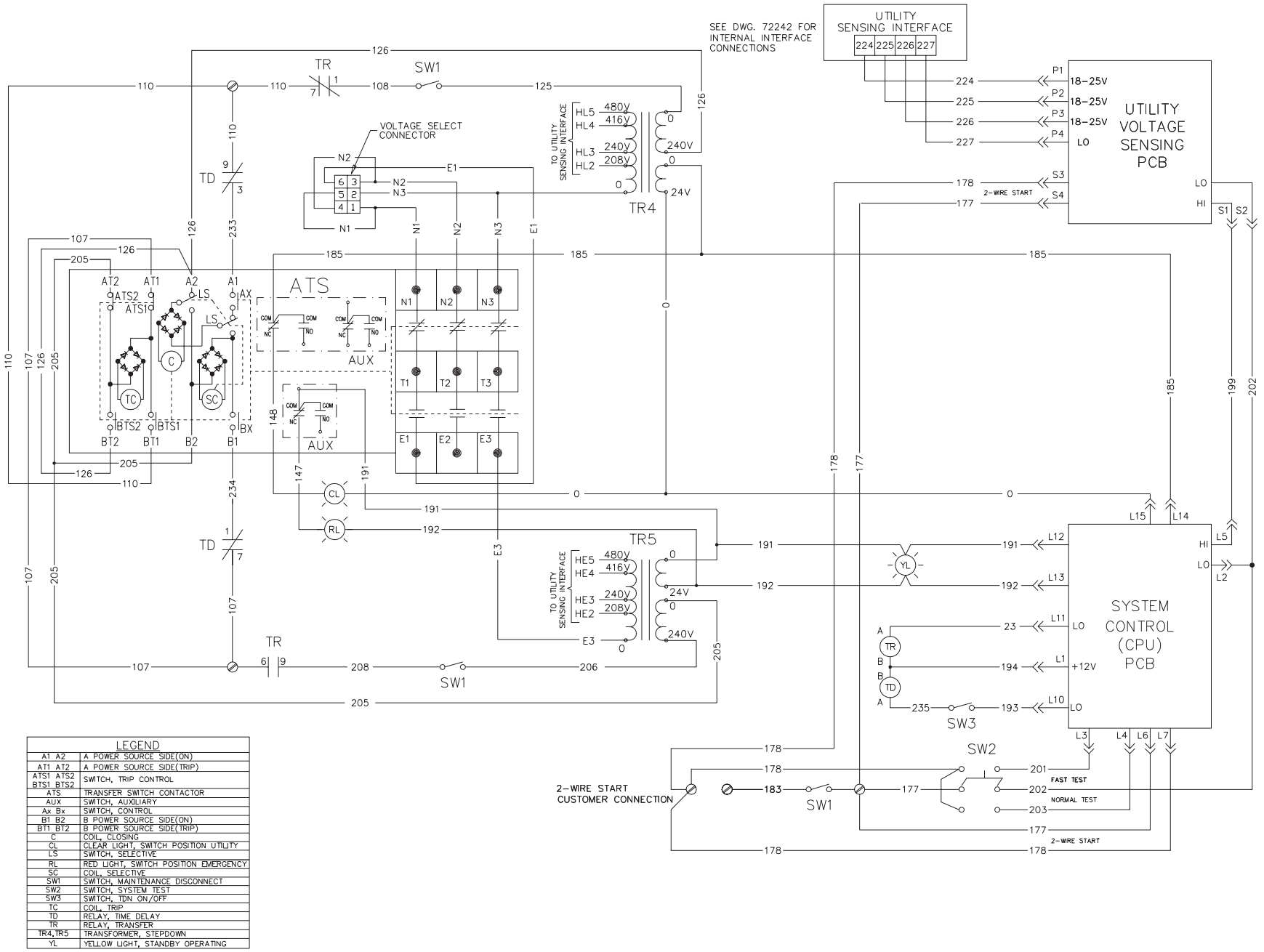
LEGEND
C1- SOLENOID COIL (UTILITY CLOSING)
C2- SOLENOID COIL (STANDBY CLOSING)
GTS - TRANSFER SWITCH CONTACTOR
TR - RELAY, TRANSFER
TS - TERMINAL STRIP (CUSTOMER CONNECTION)
XA1, XB1- LIMIT SWITCHES, ACTUATOR
F1, F2, F3, F4-FUSE, 2A SENSING

WIRING DIAGRAM



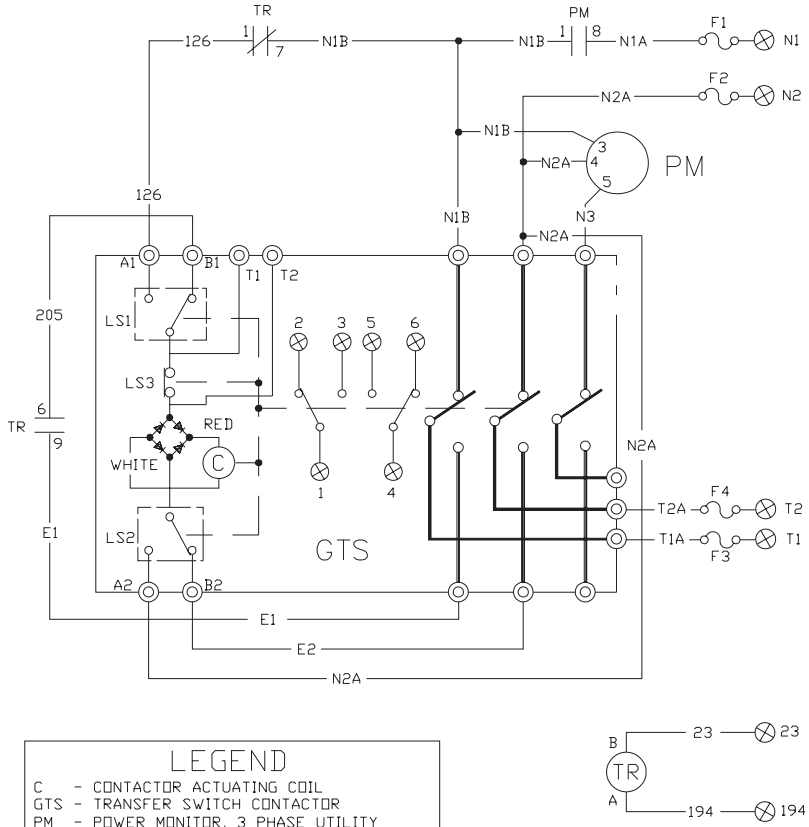


LEGEND	
ATS	TRANSFER SWITCH CONTACTOR
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CPU	CONNECTOR, CENTRAL PROCESSING UNIT
P	CONNECTOR, UTILITY VOL. SENSING PCB
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SP	SYSTEM VOLTAGE SELECT PLUG
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TR4,TR5	TRANSFORMER, STEP DOWN
TD	RELAY, TIME DELAY



LEGEND	
A1 A2	A POWER SOURCE SIDE(ON)
AT1 AT2	A POWER SOURCE SIDE(TRIP)
ATS1 ATS2 BTS1 BTS2	SWITCH, TRIP CONTROL
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
Ax Bx	SWITCH, CONTROL
B1 B2	B POWER SOURCE SIDE(ON)
BT1 BT2	B POWER SOURCE SIDE(TRIP)
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
LS	SWITCH, SELECTIVE
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SC	COIL, SELECTIVE
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TC	COIL, TRIP
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR4,TR5	TRANSFORMER, STEPDOWN
YL	YELLOW LIGHT, STANDBY OPERATING

SCHEMATIC DIAGRAM



LEGEND

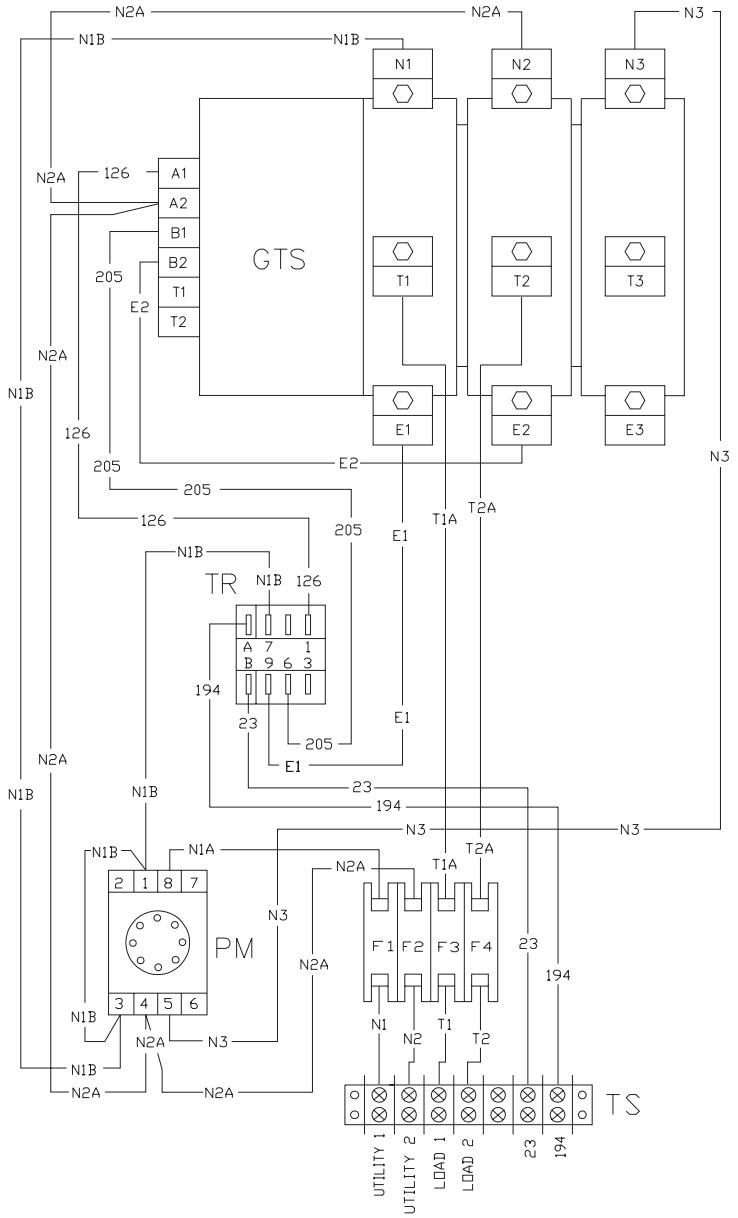
C - CONTACTOR ACTUATING COIL
GTS - TRANSFER SWITCH CONTACTOR
PM - POWER MONITOR, 3 PHASE UTILITY
TR - RELAY, TRANSFER
TS - TERMINAL STRIP (CUSTOMER CONNECTION)
LS1,LS2,LS3 - LIMIT SWITCHES, ACTUATOR
F1,F2,F3,F4 - FUSE 2A SENSING

NOTES:

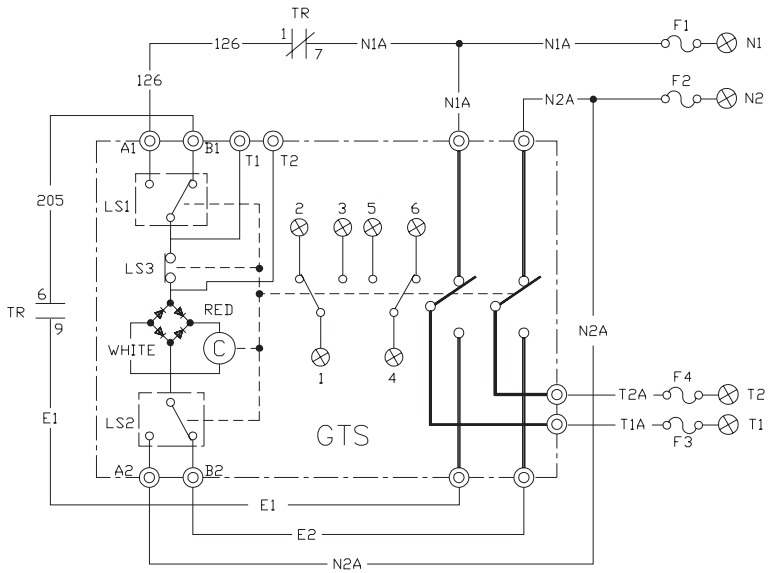
1.) ALL CONTACTS SHOWN WITH TRANSFER SWITCH IN UTILITY POSITION.

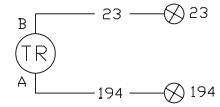
2.) FOR SINGLE PHASE OPERATION, ADD JUMPER WIRE FROM PM TERMINALS 1 TO 8.

WIRING DIAGRAM



SCHEMATIC DIAGRAM



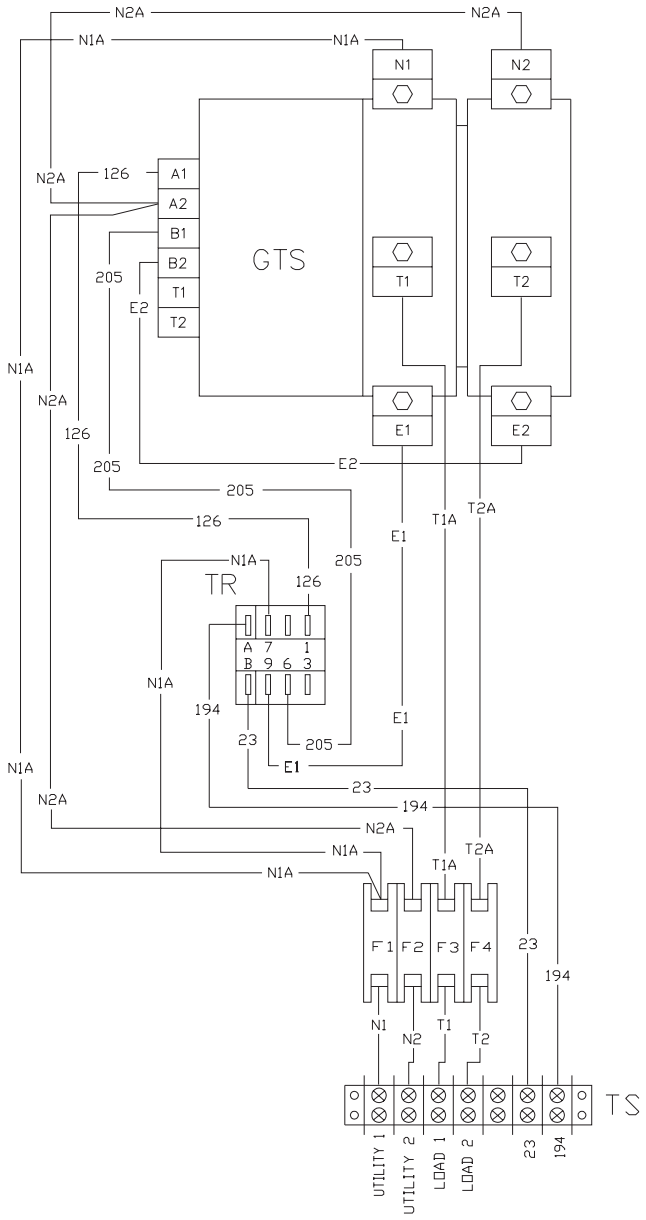


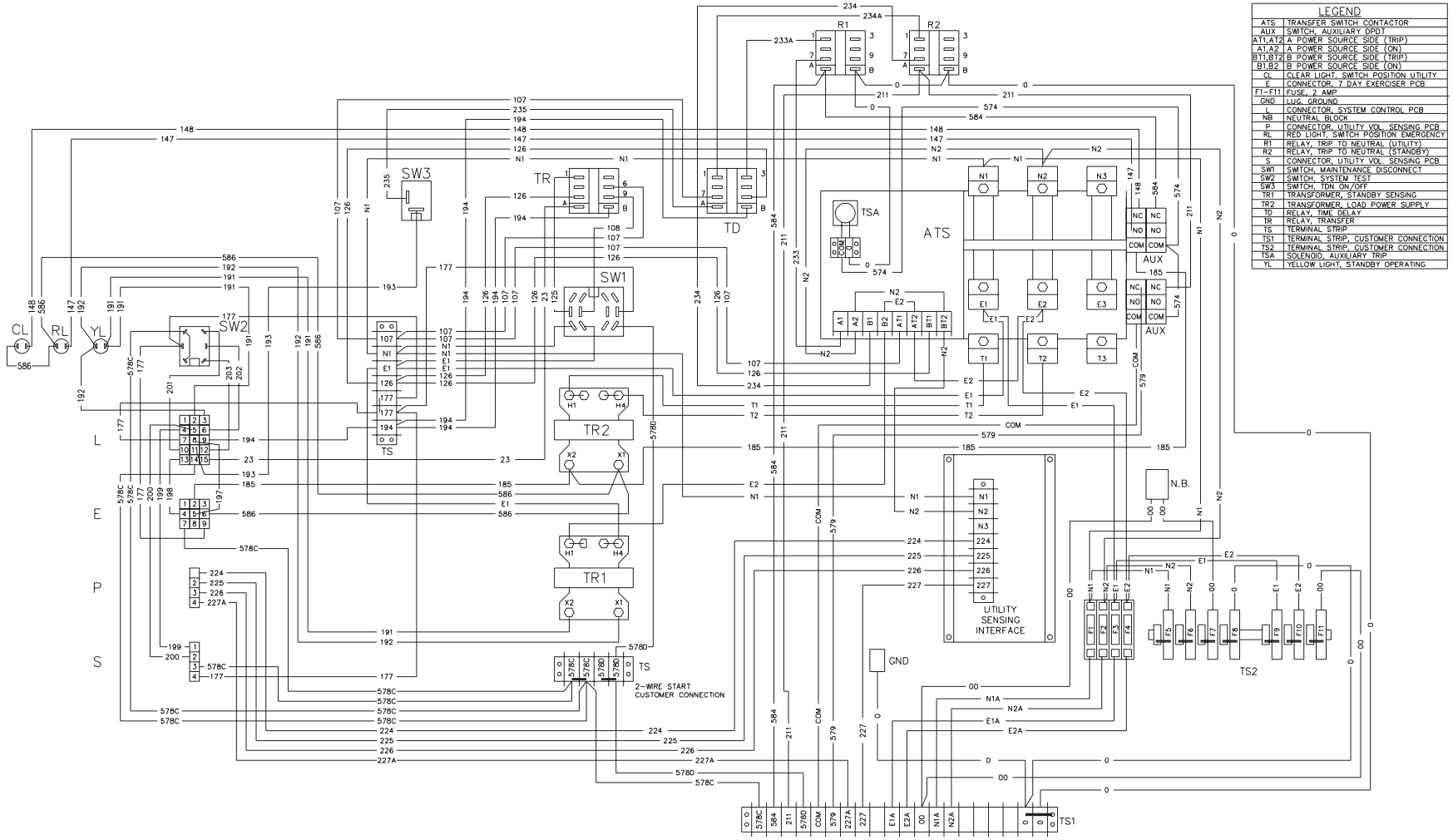
LEGEND

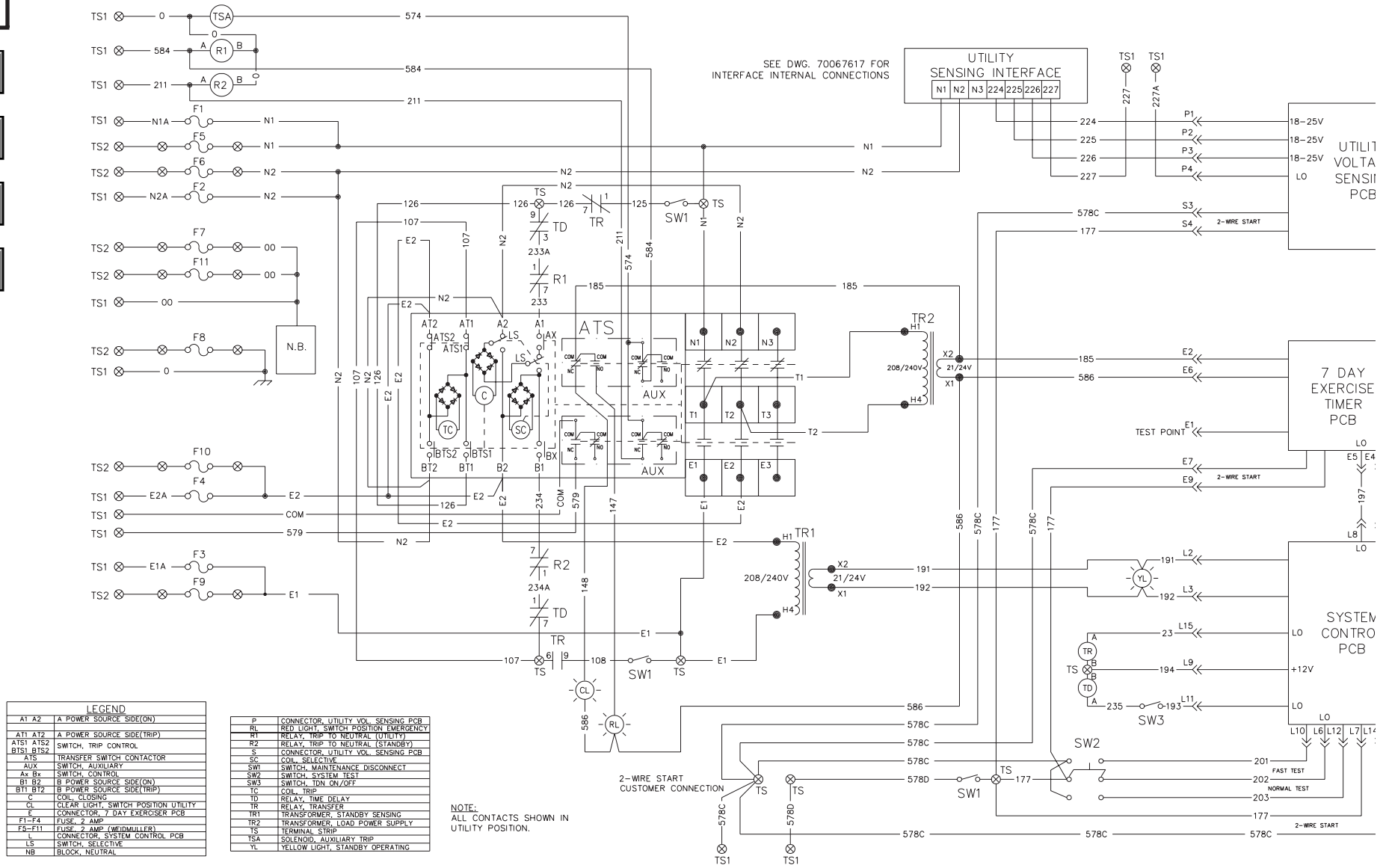
C - CONTACTOR ACTUATING COIL
GTS - TRANSFER SWITCH CONTACTOR
TR - RELAY, TRANSFER
TS - TERMINAL STRIP (CUSTOMER CONNECTION)
LS1,LS2,LS3 - LIMIT SWITCHES, ACTUATOR
F1,F2,F3,F4 - FUSE 2A SENSING

NOTE:
ALL CONTACTS SHOWN WITH TRANSFER SWITCH IN UTILITY POSITION.

WIRING DIAGRAM

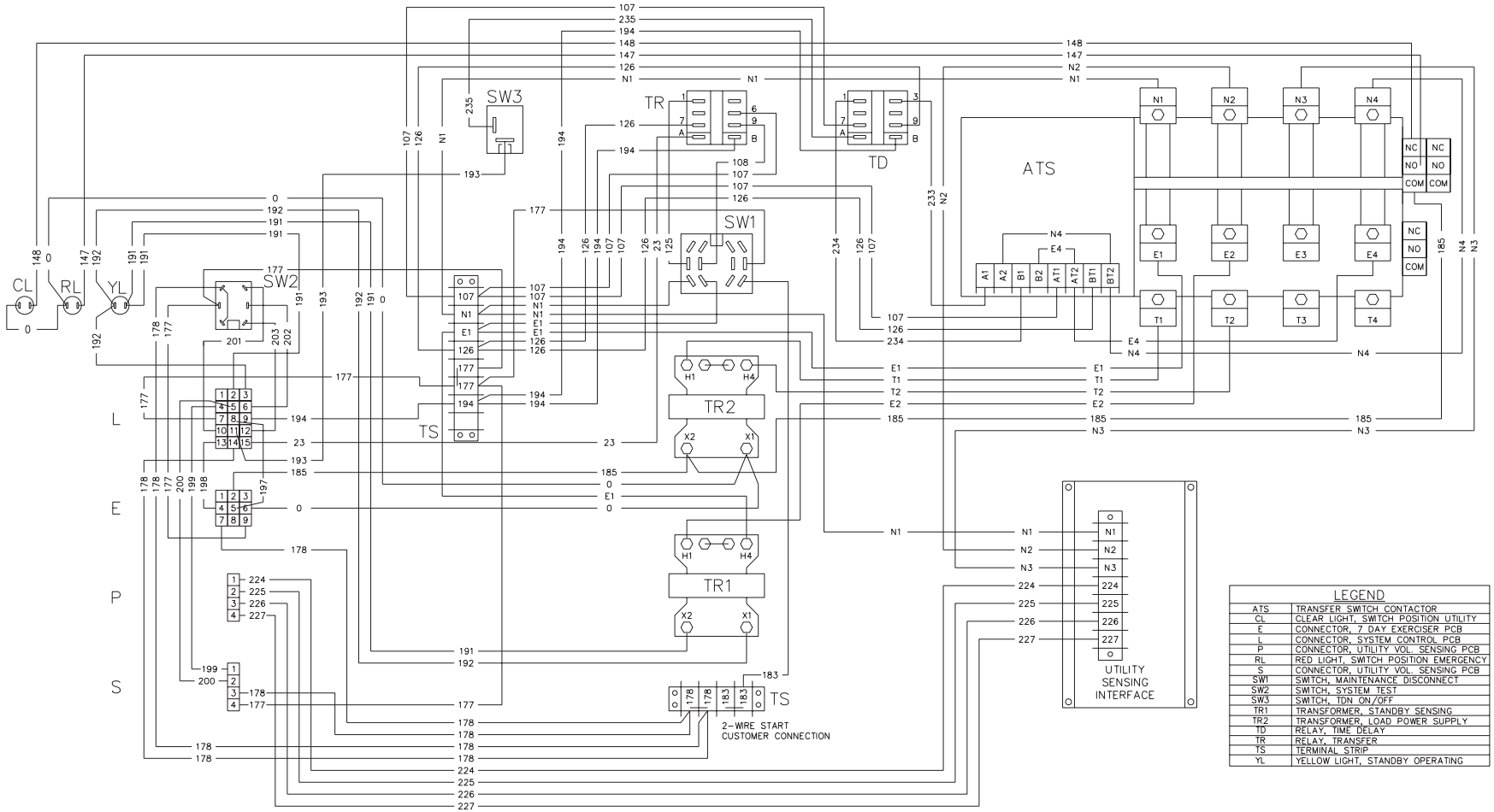



LEGEND
ATS TRANSFER SWITCH CONTACTOR
AUX SWITCH, AUXILIARY DPDT
A1,A2 A POWER SOURCE SIDE (TRIP)
A1,A2 A POWER SOURCE SIDE (ON)
B1,B2 B POWER SOURCE SIDE (TRIP)
B1,B2 B POWER SOURCE SIDE (ON)
CL CLEAR LIGHT, SWITCH POSITION UTILITY
E CONNECTOR, 7 DAY EXERCISER PCB
F1-F11 FUSE, 2 AMP
GND LUG, GROUND
L CONNECTOR, SYSTEM CONTROL PCB
NB NEUTRAL BLOCK
P CONNECTOR, UTILITY VOL. SENSING PCB
RL RED LIGHT, SWITCH POSITION EMERGENCY
R1 RELAY, TRIP TO NEUTRAL (UTILITY)
R2 RELAY, TRIP TO NEUTRAL (STANDBY)
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TS TERMINAL STRIP
TS1 TERMINAL STRIP, CUSTOMER CONNECTION
TS2 TERMINAL STRIP, CUSTOMER CONNECTION
TSA SOLENOID, AUXILIARY TRIP
YL YELLOW LIGHT, STANDBY OPERATING
R1
R2
TR
TD
TSA
ATS
SW3
SW1
SW2
CL
RL
YL
TR2
TR1
TS
TS1
TS2
AUX
N.B.
GND
UTILITY SENSING INTERFACE
2-WIRE START CUSTOMER CONNECTION
L
E
P
S

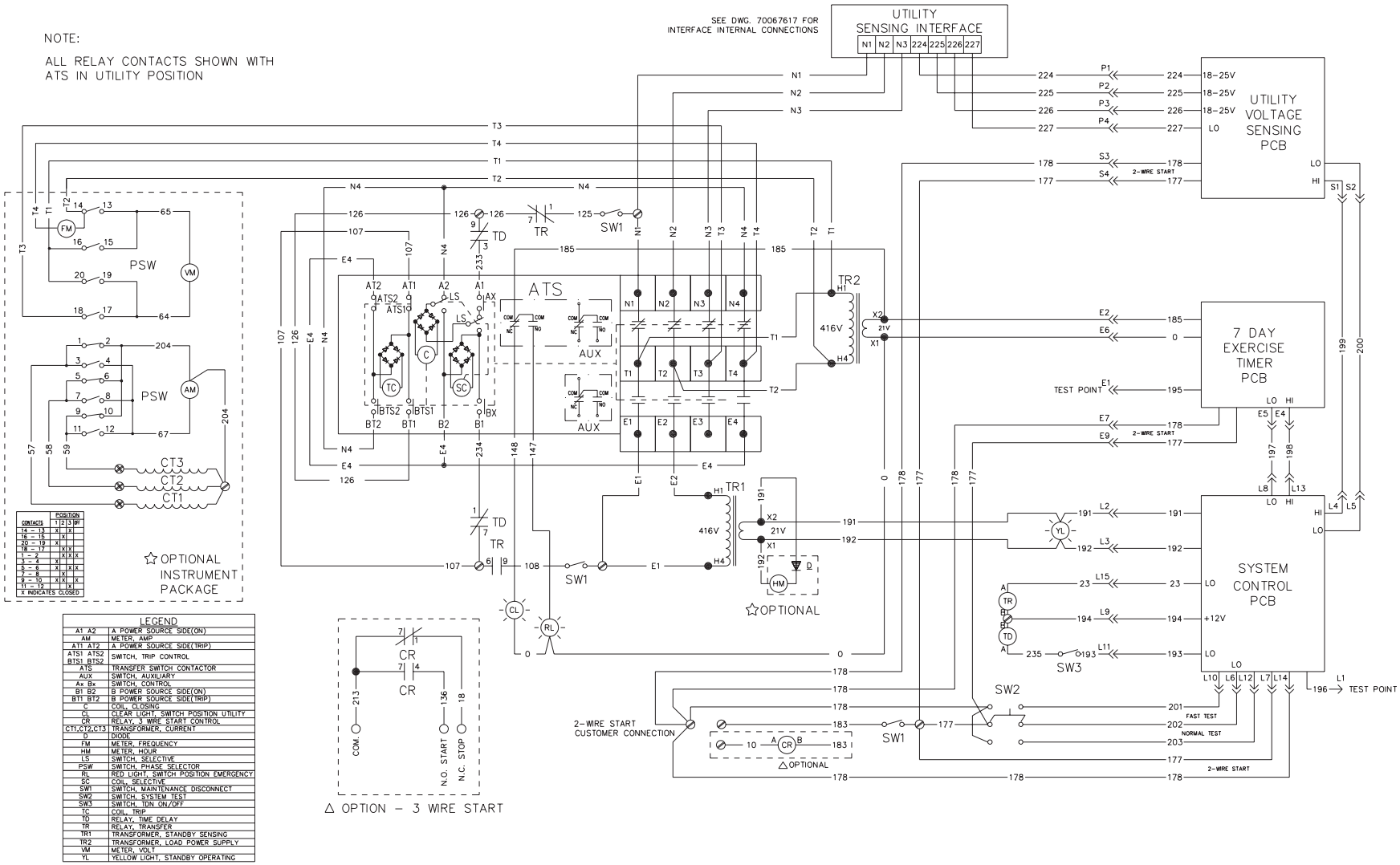


LEGEND	
A1 A2	A POWER SOURCE SIDE(ON)
AT1 AT2	A POWER SOURCE SIDE(TRIP)
ATS1 ATS2 BTS1 BTS2	SWITCH, TRIP CONTROL
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
Ax Bx	SWITCH, CONTROL
B1 B2	B POWER SOURCE SIDE(ON)
BT1 BT2	B POWER SOURCE SIDE(TRIP)
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
E	CONNECTOR, 7 DAY EXERCISER PCB
F1-F4	FUSE, 2 AMP
F5-F11	FUSE, 2 AMP (WEIDMULLER)
L	CONNECTOR, SYSTEM CONTROL PCB
LS	SWITCH, SELECTIVE
NB	BLOCK, NEUTRAL

P	CONNECTOR, UTILITY VOL. SENSING PCB
RL	RED LIGHT, SWITCH POSITION EMERGENCY
R1	RELAY, TRIP TO NEUTRAL (UTILITY)
R2	RELAY, TRIP TO NEUTRAL (STANDBY)
S	CONNECTOR, UTILITY VOL. SENSING PCB
SC	COIL, SELECTIVE
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TC	COIL, TRIP
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TS	TERMINAL STRIP
TSA	SOLENOID, AUXILIARY TRIP
YL	YELLOW LIGHT, STANDBY OPERATING



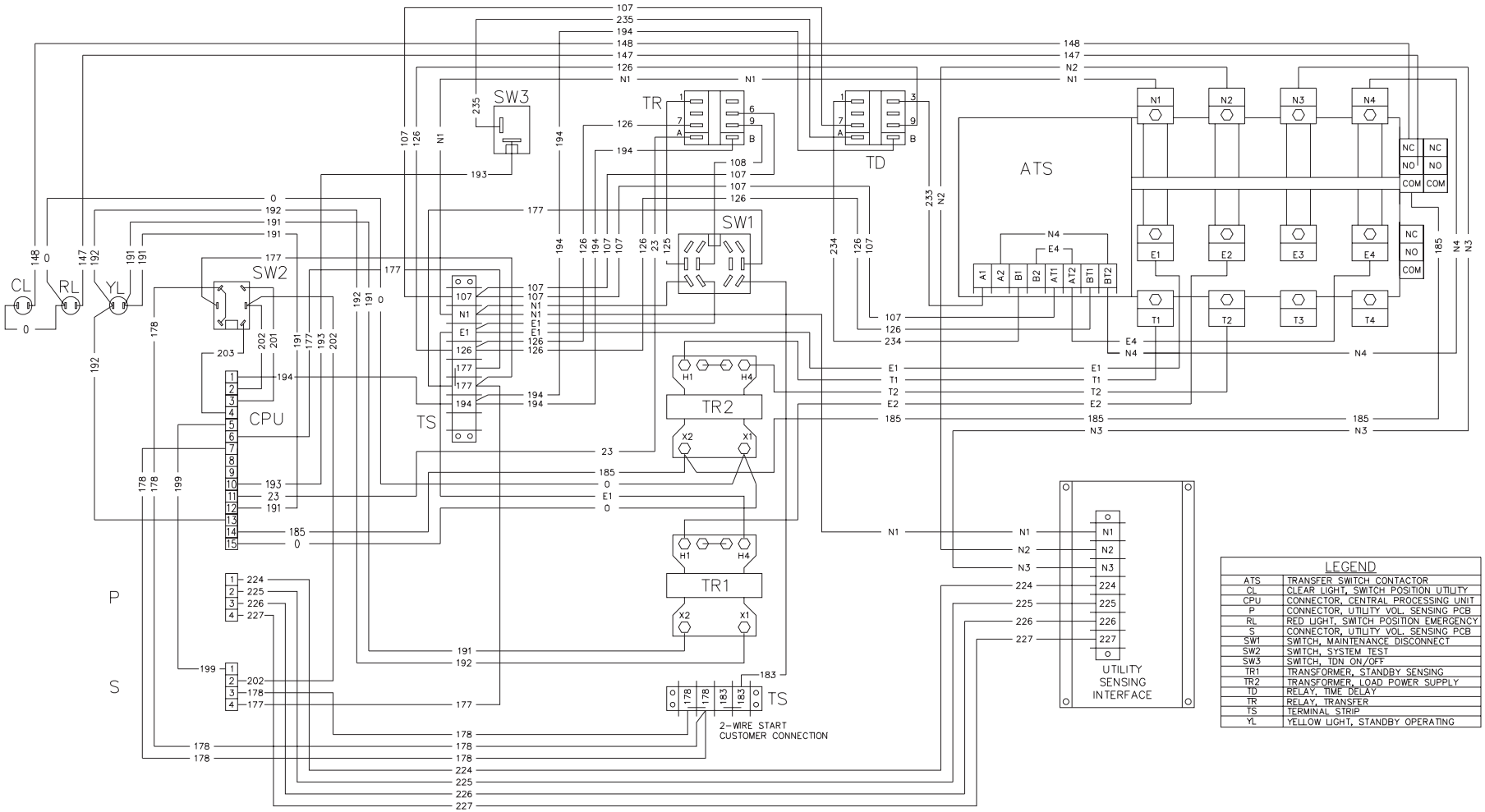
LEGEND	
ATS	TRANSFER SWITCH CONTACTOR
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
E	CONNECTOR, 7 DAY EXERCISER PCB
L	CONNECTOR, SYSTEM CONTROL PCB
P	CONNECTOR, UTILITY VOL. SENSING PCB
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS	TERMINAL STRIP
YL	YELLOW LIGHT, STANDBY OPERATING

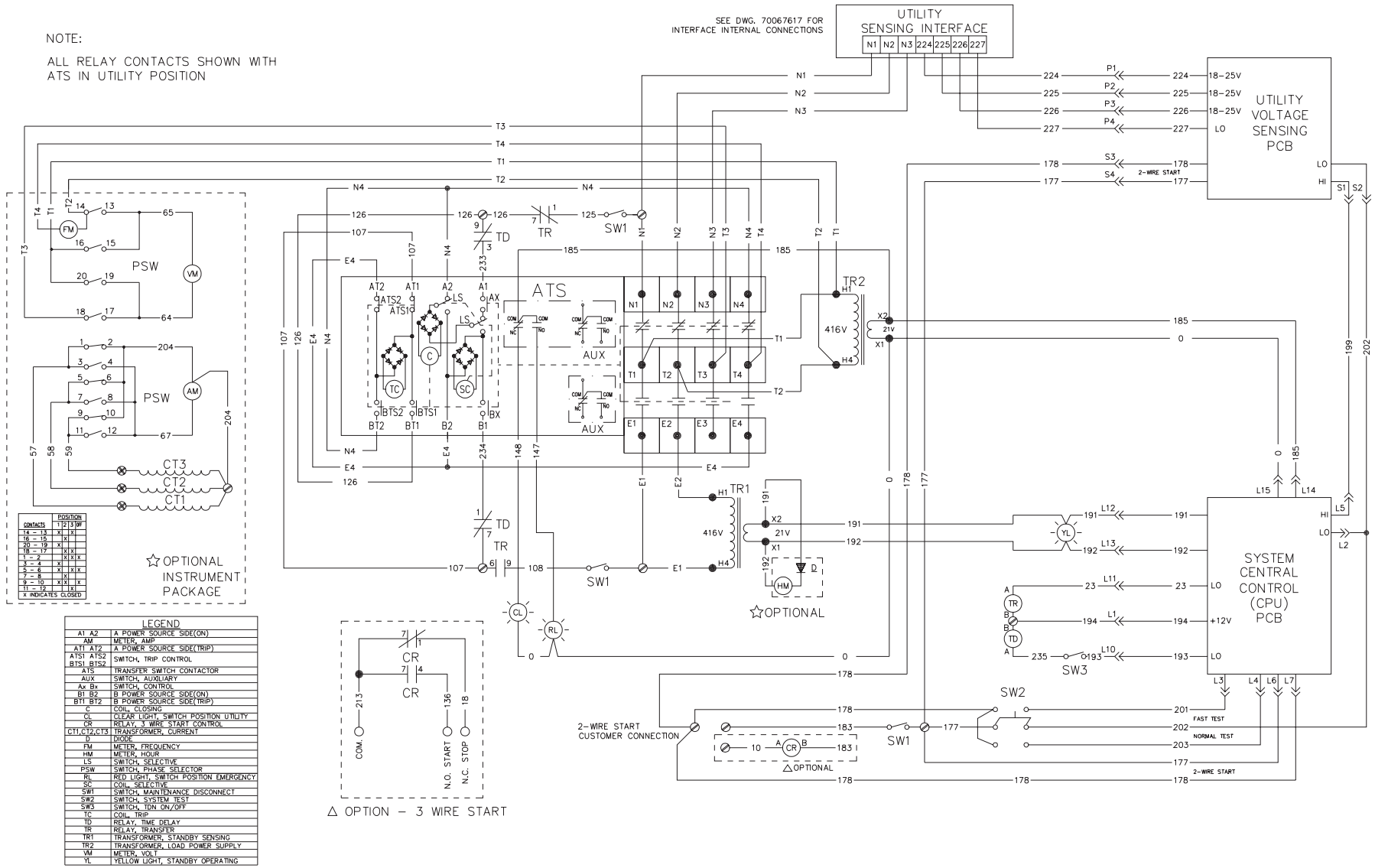


CONTACTS	POSITION 1	2	3	OFF
14 – 13	X			X
16 – 15				X
20 – 19	X			
18 – 17				X
1 – 2			X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8			X	
9 – 10	X	X		X
11 – 12			X	

X INDICATES CLOSED

LEGEND	
A1 A2	A POWER SOURCE SIDE(ON)
AM	METER, AMP
AT1 AT2	A POWER SOURCE SIDE(TRIP)
ATS1 ATS2 BTS1 BTS2	SWITCH, TRIP CONTROL
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
A1 B1	SWITCH, CONTROL
B1 B2	B POWER SOURCE SIDE(ON)
BT1 BT2	B POWER SOURCE SIDE(TRIP)
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL
CT1,CT2,CT3	TRANSFORMER, CURRENT
D	DIODE
FM	METER, FREQUENCY
HM	METER, HOUR
LS	SWITCH, SELECTIVE
PSW	SWITCH, PHASE SELECTOR
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SC	COIL, SELECTIVE
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TC	COIL, TRIP
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
VM	METER, VOLT
YL	YELLOW LIGHT, STANDBY OPERATING

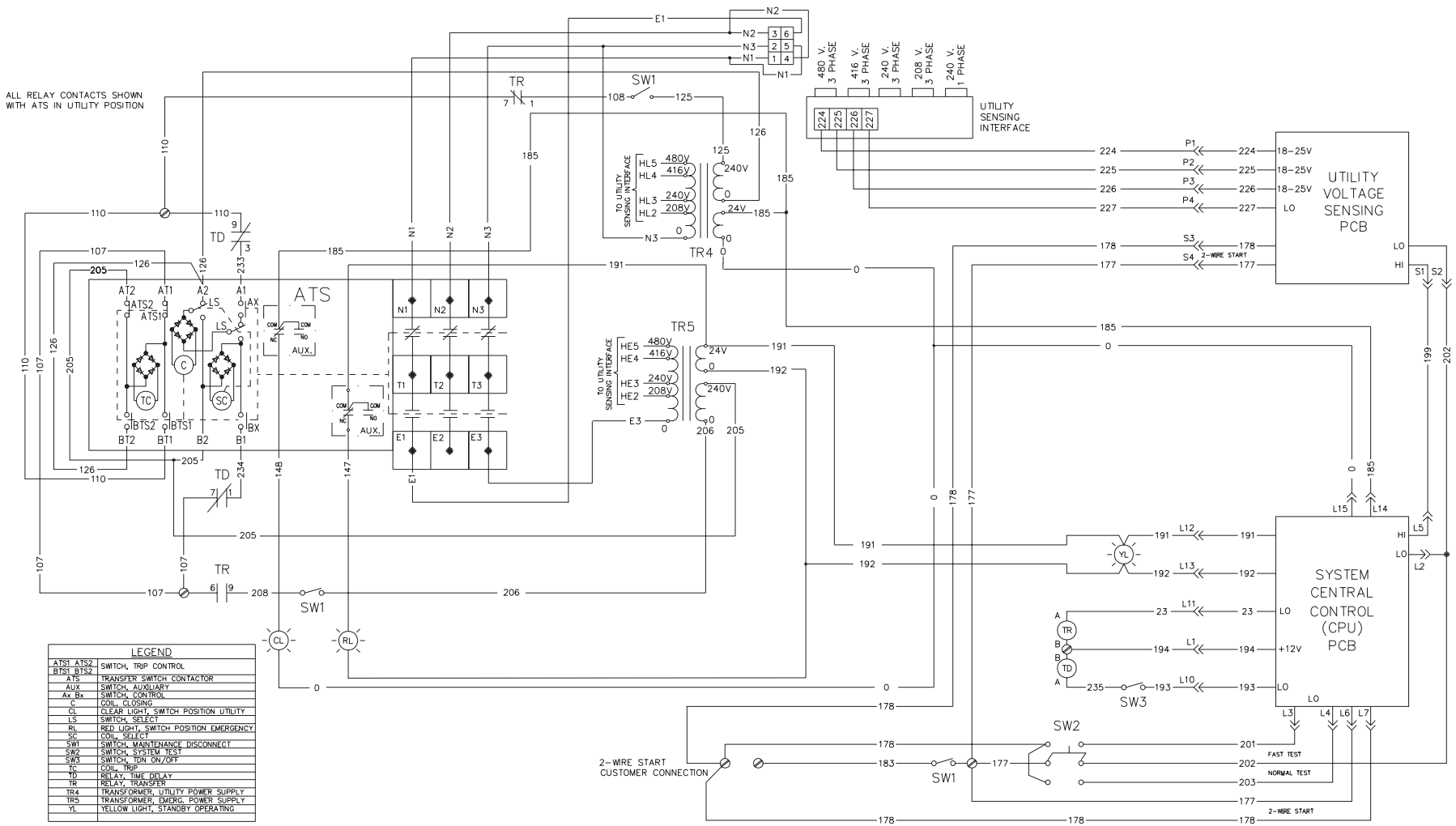

SW3
TR
TD
ATS
SW1
SW2
CL
RL
YL
CPU
TS
TR2
TR1
P
S
UTILITY SENSING INTERFACE
2-WIRE START CUSTOMER CONNECTION
LEGEND
ATS TRANSFER SWITCH CONTACTOR
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CPU CONNECTOR, CENTRAL PROCESSING UNIT
P CONNECTOR, UTILITY VOL. SENSING PCB
RL RED LIGHT, SWITCH POSITION EMERGENCY
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TS TERMINAL STRIP
YL YELLOW LIGHT, STANDBY OPERATING



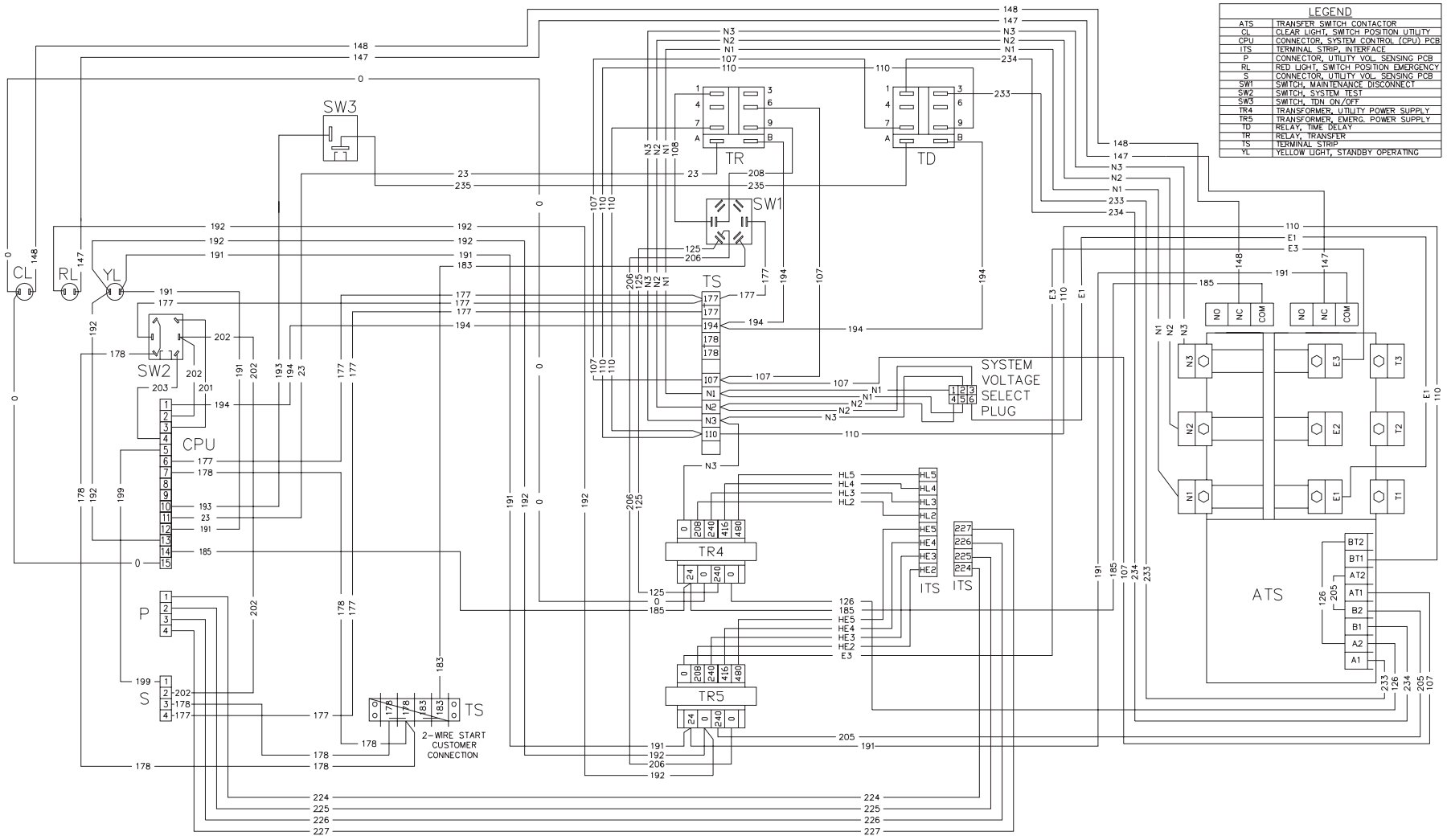
CONTACTS	POSITION 1	2	3 OFF
14 – 13	X		X
16 – 15		X	
20 – 19	X		
18 – 17		X	X
1 – 2		X	X
3 – 4	X		
5 – 6	X		X
7 – 8	X		
9 – 10	X	X	
11 – 12		X	

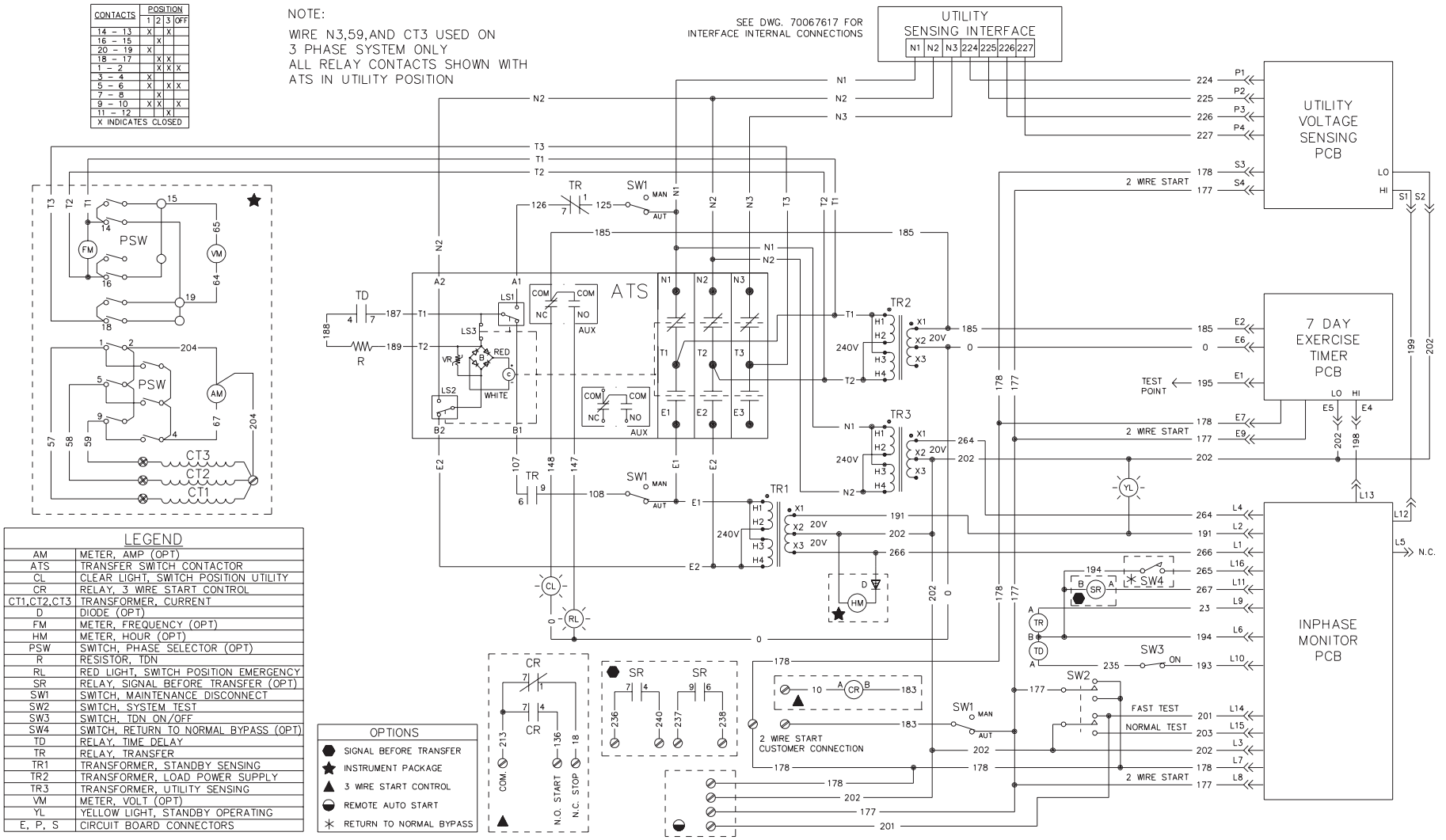
X INDICATES CLOSED

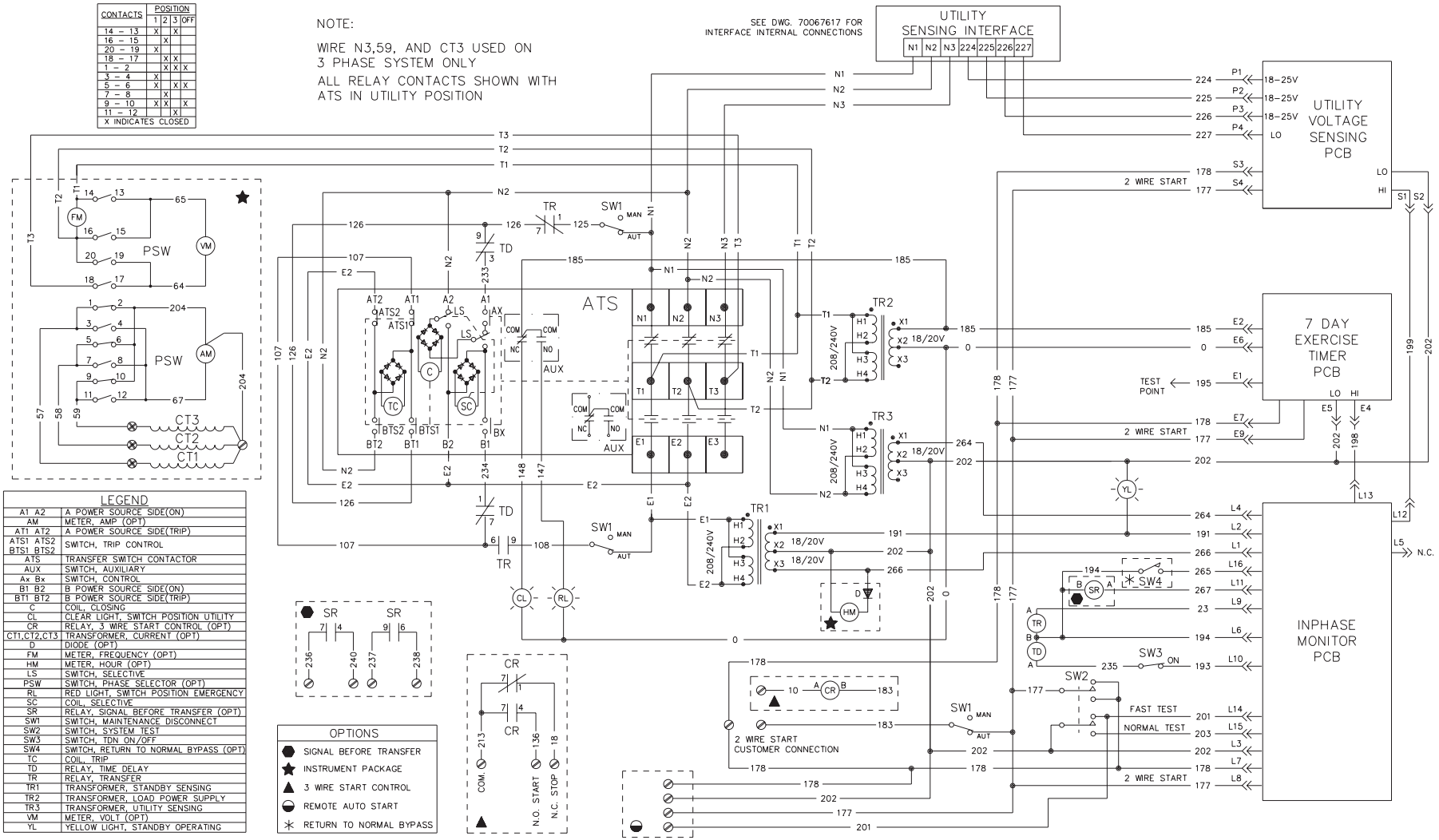
LEGEND	
A1 A2	A POWER SOURCE SIDE(ON)
AM	METER, AMP
AT1 AT2	A POWER SOURCE SIDE(TRIP)
ATS1 ATS2 BTS1 BTS2	SWITCH, TRIP CONTROL
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
Ax Bx	SWITCH, CONTROL
B1 B2	B POWER SOURCE SIDE(ON)
BT1 BT2	B POWER SOURCE SIDE(TRIP)
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL
CT1,CT2,CT3	TRANSFORMER, CURRENT
D	DIODE
FM	METER, FREQUENCY
HM	METER, HOUR
LS	SWITCH, SELECTIVE
PSW	SWITCH, PHASE SELECTOR
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SC	COIL, SELECTIVE
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TC	COIL, TRIP
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
VM	METER, VOLT
YL	YELLOW LIGHT, STANDBY OPERATING



LEGEND	
ATS1 ATS2	SWITCH, TRIP CONTROL
BTS1 BTS2	
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
Ax Bx	SWITCH, CONTROL
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
LS	SWITCH, SELECT
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SC	COIL, SELECT
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
TC	COIL, TRIP
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR4	TRANSFORMER, UTILITY POWER SUPPLY
TR5	TRANSFORMER, EMERG. POWER SUPPLY
YL	YELLOW LIGHT, STANDBY OPERATING


LEGEND
ATS TRANSFER SWITCH CONTACTOR
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CPU CONNECTOR, SYSTEM CONTROL (CPU) PCB
ITS TERMINAL STRIP, INTERFACE
P CONNECTOR, UTILITY VOL. SENSING PCB
RL RED LIGHT, SWITCH POSITION EMERGENCY
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
TR4 TRANSFORMER, UTILITY POWER SUPPLY
TR5 TRANSFORMER, EMERG. POWER SUPPLY
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TS TERMINAL STRIP
YL YELLOW LIGHT, STANDBY OPERATING
SYSTEM VOLTAGE SELECT PLUG
2-WIRE START CUSTOMER CONNECTION
ATS
CPU
ITS
TR
TD
TS
SW1
SW2
SW3
TR4
TR5

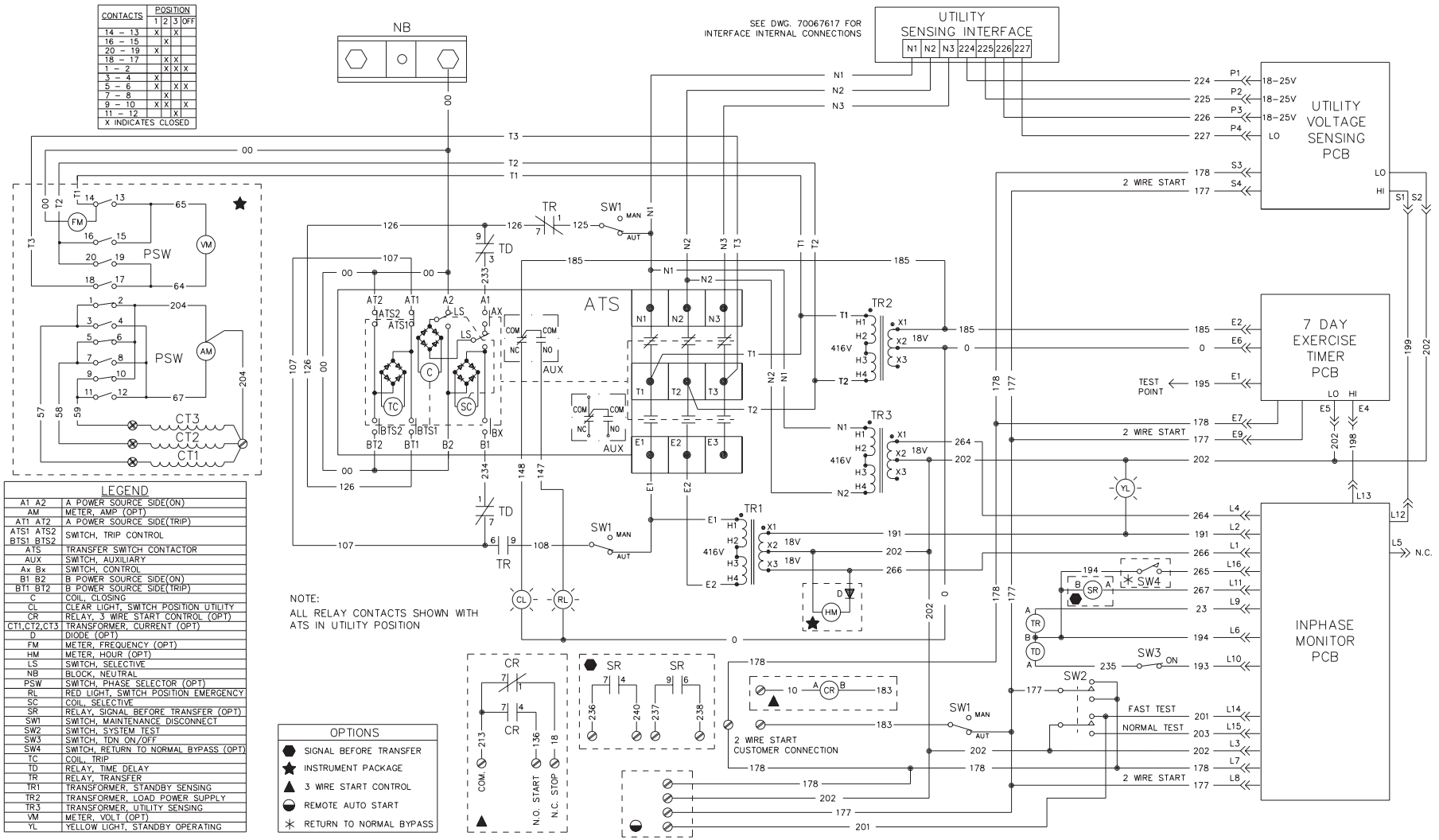

CONTACTS
POSITION
1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
NOTE:
WIRE N3,59,AND CT3 USED ON 3 PHASE SYSTEM ONLY
ALL RELAY CONTACTS SHOWN WITH ATS IN UTILITY POSITION
SEE DWG. 70067617 FOR INTERFACE INTERNAL CONNECTIONS
UTILITY SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY VOLTAGE SENSING PCB
7 DAY EXERCISE TIMER PCB
INPHASE MONITOR PCB
PSW
ATS
TR
TR1
TR2
TR3
SW1
SW2
SW3
SW4
TD
CR
SR
CT1
CT2
CT3
2 WIRE START
TEST POINT
FAST TEST
NORMAL TEST
2 WIRE START CUSTOMER CONNECTION
N.C.
LEGEND
AM METER, AMP (OPT)
ATS TRANSFER SWITCH CONTACTOR
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CR RELAY, 3 WIRE START CONTROL
CT1,CT2,CT3 TRANSFORMER, CURRENT
D DIODE (OPT)
FM METER, FREQUENCY (OPT)
HM METER, HOUR (OPT)
PSW SWITCH, PHASE SELECTOR (OPT)
R RESISTOR, TDN
RL RED LIGHT, SWITCH POSITION EMERGENCY
SR RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
SW4 SWITCH, RETURN TO NORMAL BYPASS (OPT)
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TR3 TRANSFORMER, UTILITY SENSING
VM METER, VOLT (OPT)
YL YELLOW LIGHT, STANDBY OPERATING
E, P, S CIRCUIT BOARD CONNECTORS
OPTIONS
SIGNAL BEFORE TRANSFER
INSTRUMENT PACKAGE
3 WIRE START CONTROL
REMOTE AUTO START
RETURN TO NORMAL BYPASS
COM. N.O. START N.C. STOP



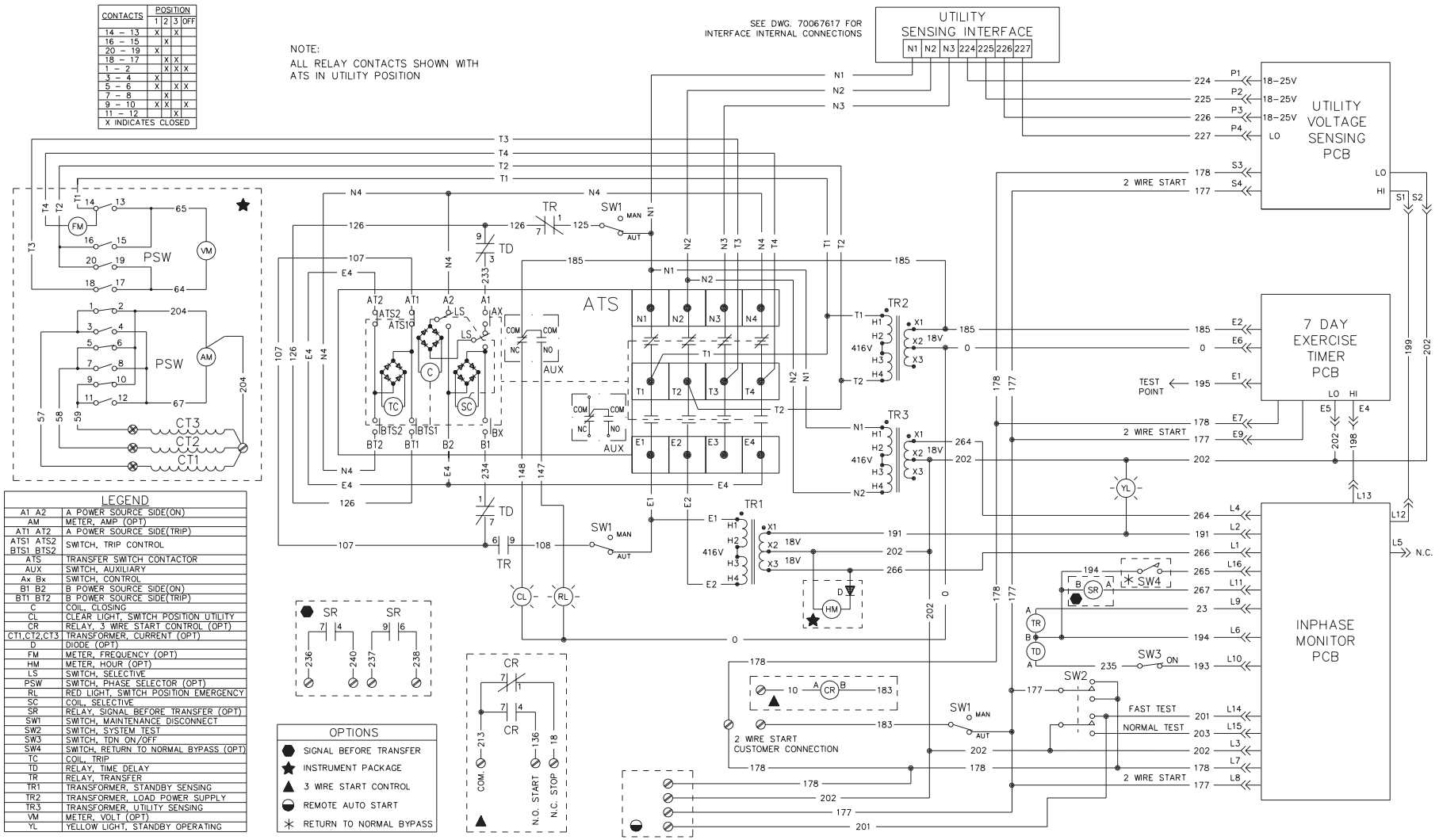
CONTACTS	POSITION 1	2	3	OFF
14 – 13	X		X	
16 – 15		X		
20 – 19	X			
18 – 17		X	X	
1 – 2		X	X	X
3 – 4	X			
5 – 6	X		X	X
7 – 8		X		
9 – 10	X	X		X
11 – 12			X	

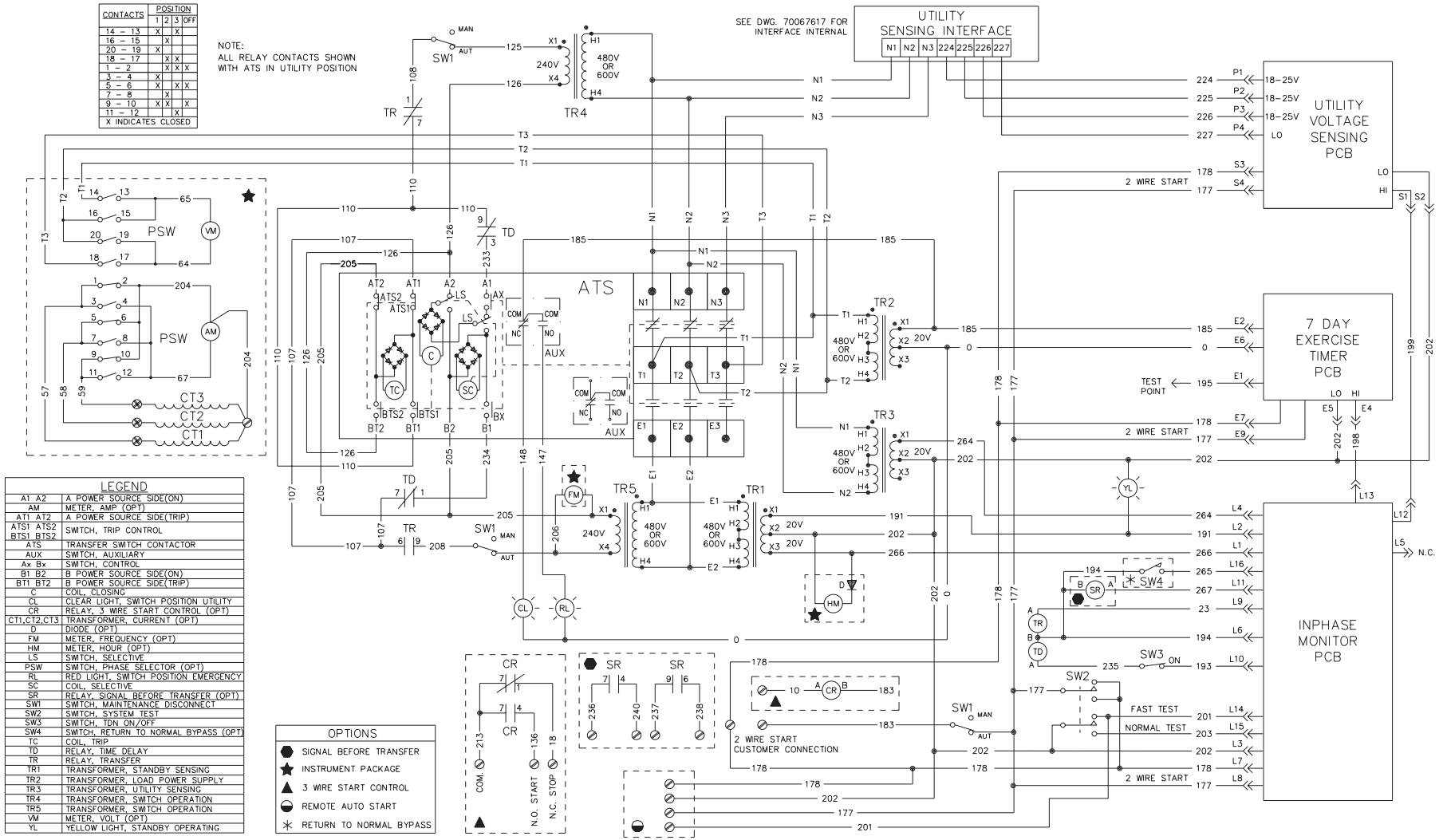
X INDICATES CLOSED

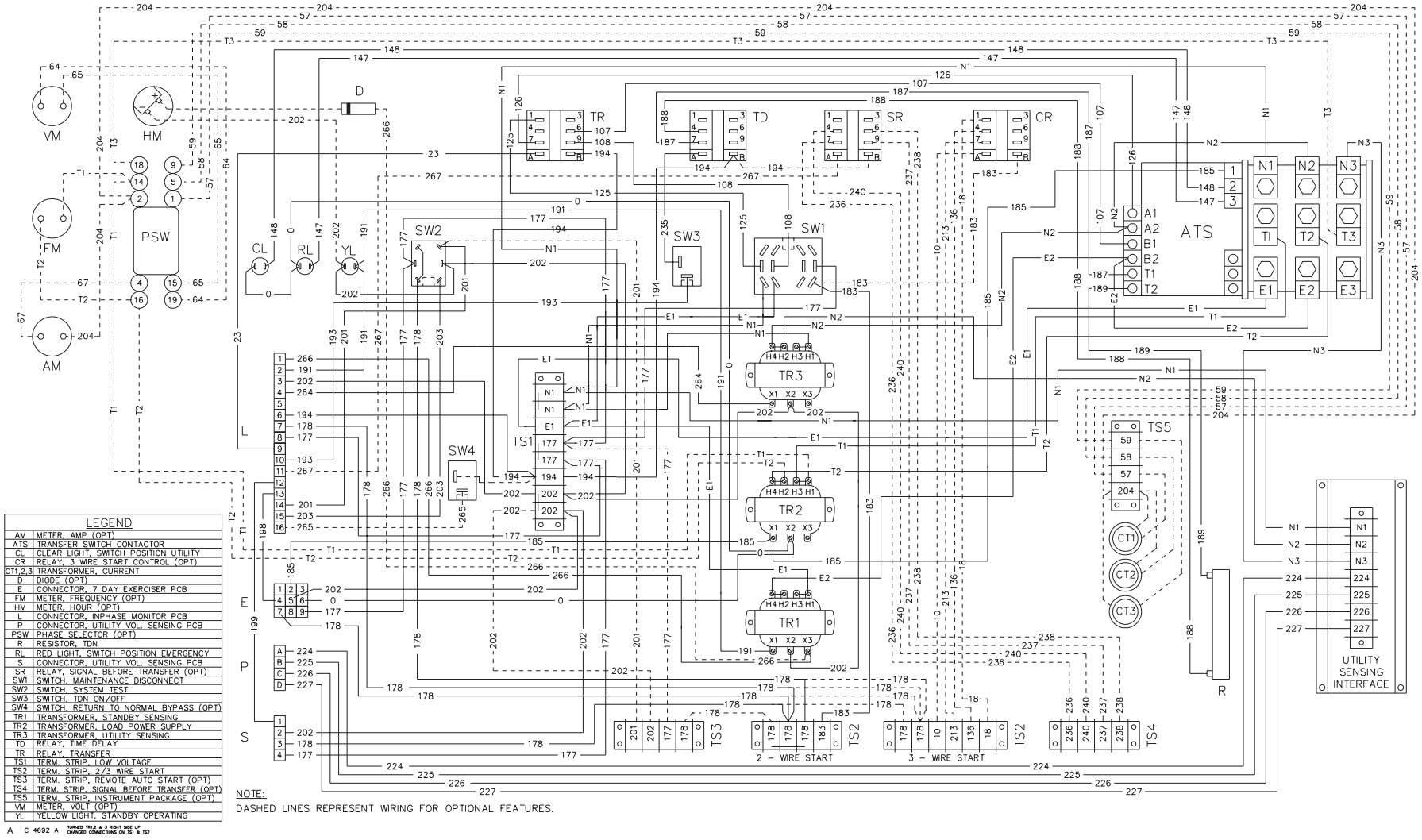
LEGEND	
A1 A2	A POWER SOURCE SIDE(ON)
AM	METER, AMP (OPT)
AT1 AT2	A POWER SOURCE SIDE(TRIP)
ATS1 ATS2 BTS1 BTS2	SWITCH, TRIP CONTROL
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
Ax Bx	SWITCH, CONTROL
B1 B2	B POWER SOURCE SIDE(ON)
BT1 BT2	B POWER SOURCE SIDE(TRIP)
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,CT2,CT3	TRANSFORMER, CURRENT (OPT)
D	DIODE (OPT)
FM	METER, FREQUENCY (OPT)
HM	METER, HOUR (OPT)
LS	SWITCH, SELECTIVE
PSW	SWITCH, PHASE SELECTOR (OPT)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SC	COIL, SELECTIVE
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TC	COIL, TRIP
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING



LEGEND	
A1 A2	A POWER SOURCE SIDE(ON)
AM	METER, AMP (OPT)
AT1 AT2	A POWER SOURCE SIDE(TRIP)
ATS1 ATS2 BTS1 BTS2	SWITCH, TRIP CONTROL
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
Ax Bx	SWITCH, CONTROL
B1 B2	B POWER SOURCE SIDE(ON)
BT1 BT2	B POWER SOURCE SIDE(TRIP)
C	COIL, CLOSING
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,CT2,CT3	TRANSFORMER, CURRENT (OPT)
D	DIODE (OPT)
FM	METER, FREQUENCY (OPT)
HM	METER, HOUR (OPT)
LS	SWITCH, SELECTIVE
NB	BLOCK, NEUTRAL
PSW	SWITCH, PHASE SELECTOR (OPT)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
SC	COIL, SELECTIVE
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TC	COIL, TRIP
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING


CONTACTS
POSITION
1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
NOTE:
ALL RELAY CONTACTS SHOWN WITH ATS IN UTILITY POSITION
SEE DWG. 70067617 FOR INTERFACE INTERNAL CONNECTIONS
UTILITY SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY VOLTAGE SENSING PCB
7 DAY EXERCISE TIMER PCB
INPHASE MONITOR PCB
ATS
PSW
TR
TD
SW1
SW2
SW3
SW4
TR1
TR2
TR3
CT1
CT2
CT3
2 WIRE START
TEST POINT
FAST TEST
NORMAL TEST
2 WIRE START CUSTOMER CONNECTION
LEGEND
A1 A2 A POWER SOURCE SIDE(ON)
AM METER, AMP (OPT)
AT1 AT2 A POWER SOURCE SIDE(TRIP)
ATS1 ATS2 BTS1 BTS2 SWITCH, TRIP CONTROL
ATS TRANSFER SWITCH CONTACTOR
AUX SWITCH, AUXILIARY
Ax Bx SWITCH, CONTROL
B1 B2 B POWER SOURCE SIDE(ON)
BT1 BT2 B POWER SOURCE SIDE(TRIP)
C COIL, CLOSING
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CR RELAY, 3 WIRE START CONTROL (OPT)
CT1,CT2,CT3 TRANSFORMER, CURRENT (OPT)
D DIODE (OPT)
FM METER, FREQUENCY (OPT)
HM METER, HOUR (OPT)
LS SWITCH, SELECTIVE
PSW SWITCH, PHASE SELECTOR (OPT)
RL RED LIGHT, SWITCH POSITION EMERGENCY
SC COIL, SELECTIVE
SR RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
SW4 SWITCH, RETURN TO NORMAL BYPASS (OPT)
TC COIL, TRIP
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TR3 TRANSFORMER, UTILITY SENSING
VM METER, VOLT (OPT)
YL YELLOW LIGHT, STANDBY OPERATING
OPTIONS
SIGNAL BEFORE TRANSFER
INSTRUMENT PACKAGE
3 WIRE START CONTROL
REMOTE AUTO START
RETURN TO NORMAL BYPASS
COM. N.O. START N.C. STOP

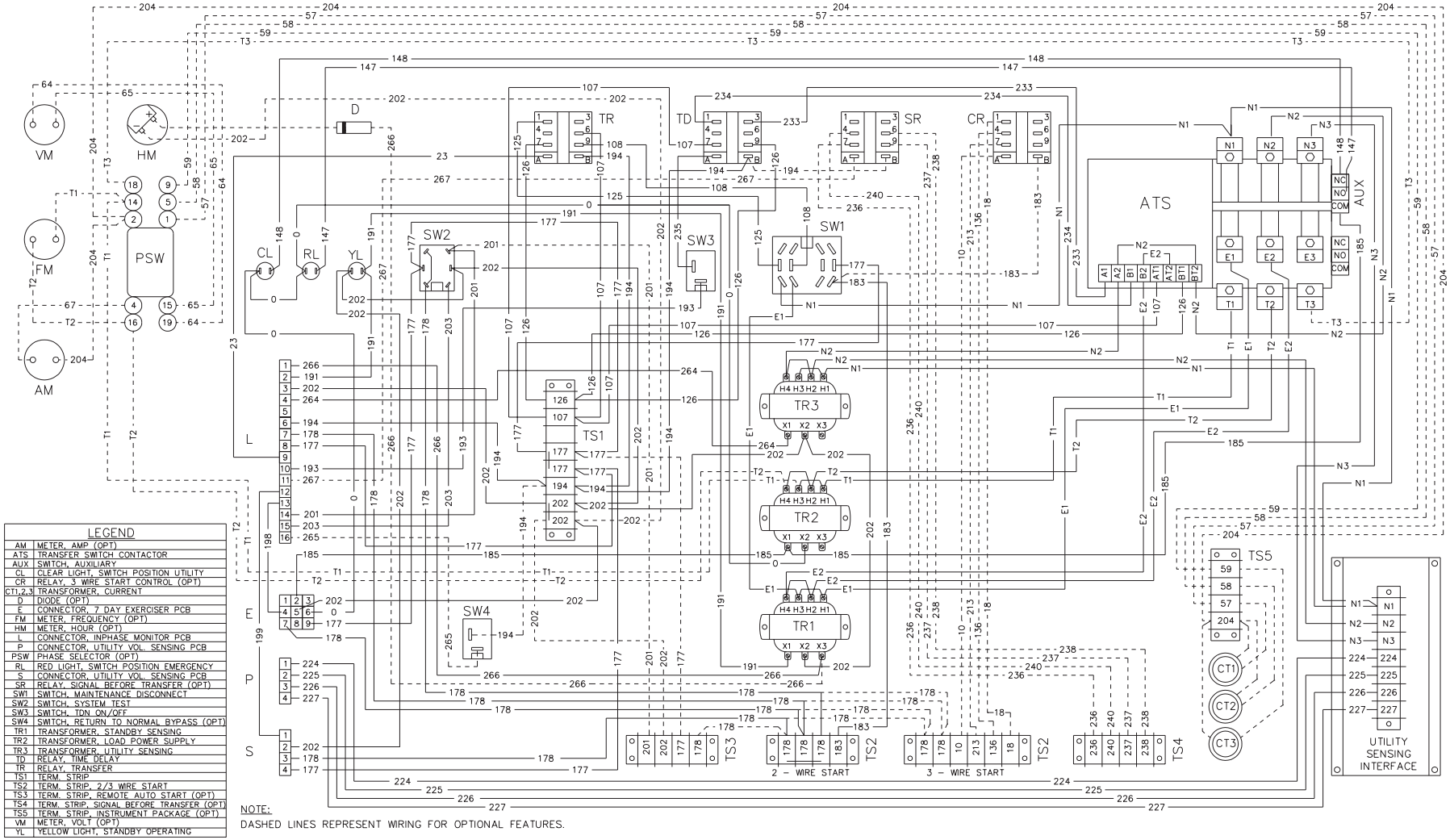

CONTACTS
POSITION
1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
NOTE:
ALL RELAY CONTACTS SHOWN
WITH ATS IN UTILITY POSITION
SEE DWG. 70067617 FOR
INTERFACE INTERNAL
UTILITY
SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY
VOLTAGE
SENSING
PCB
7 DAY
EXERCISE
TIMER
PCB
INPHASE
MONITOR
PCB
ATS
PSW
TD
TR
TR1
TR2
TR3
TR4
TR5
SW1
SW2
SW3
SW4
2 WIRE START
TEST
POINT
FAST TEST
NORMAL TEST
2 WIRE START
CUSTOMER CONNECTION
LEGEND
A1 A2 A POWER SOURCE SIDE(ON)
AM METER, AMP (OPT)
AT1 AT2 A POWER SOURCE SIDE(TRIP)
ATS1 ATS2
BTS1 BTS2 SWITCH, TRIP CONTROL
ATS TRANSFER SWITCH CONTACTOR
AUX SWITCH, AUXILIARY
Ax Bx SWITCH, CONTROL
B1 B2 B POWER SOURCE SIDE(ON)
BT1 BT2 B POWER SOURCE SIDE(TRIP)
C COIL, CLOSING
CL CLEAR LIGHT, SWITCH POSITION UTILITY
CR RELAY, 3 WIRE START CONTROL (OPT)
CT1,CT2,CT3 TRANSFORMER, CURRENT (OPT)
D DIODE (OPT)
FM METER, FREQUENCY (OPT)
HM METER, HOUR (OPT)
LS SWITCH, SELECTIVE
PSW SWITCH, PHASE SELECTOR (OPT)
RL RED LIGHT, SWITCH POSITION EMERGENCY
SC COIL, SELECTIVE
SR RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH, TDN ON/OFF
SW4 SWITCH, RETURN TO NORMAL BYPASS (OPT)
TC COIL, TRIP
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TR3 TRANSFORMER, UTILITY SENSING
TR4 TRANSFORMER, SWITCH OPERATION
TR5 TRANSFORMER, SWITCH OPERATION
VM METER, VOLT (OPT)
YL YELLOW LIGHT, STANDBY OPERATING
OPTIONS
SIGNAL BEFORE TRANSFER
INSTRUMENT PACKAGE
3 WIRE START CONTROL
REMOTE AUTO START
RETURN TO NORMAL BYPASS
COM
N.O. START
N.C. STOP



LEGEND	
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3	TRANSFORMER, CURRENT
D	DIODE (OPT)
E	CONNECTOR, 7 DAY EXERCISER PCB
FM	METER, FREQUENCY (OPT)
HM	METER, HOUR (OPT)
L	CONNECTOR, INPHASE MONITOR PCB
P	CONNECTOR, UTILITY VOL. SENSING PCB
PSW	PHASE SELECTOR (OPT)
R	RESISTOR, TDN
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS1	TERM. STRIP, LOW VOLTAGE
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, REMOTE AUTO START (OPT)
TS4	TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5	TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

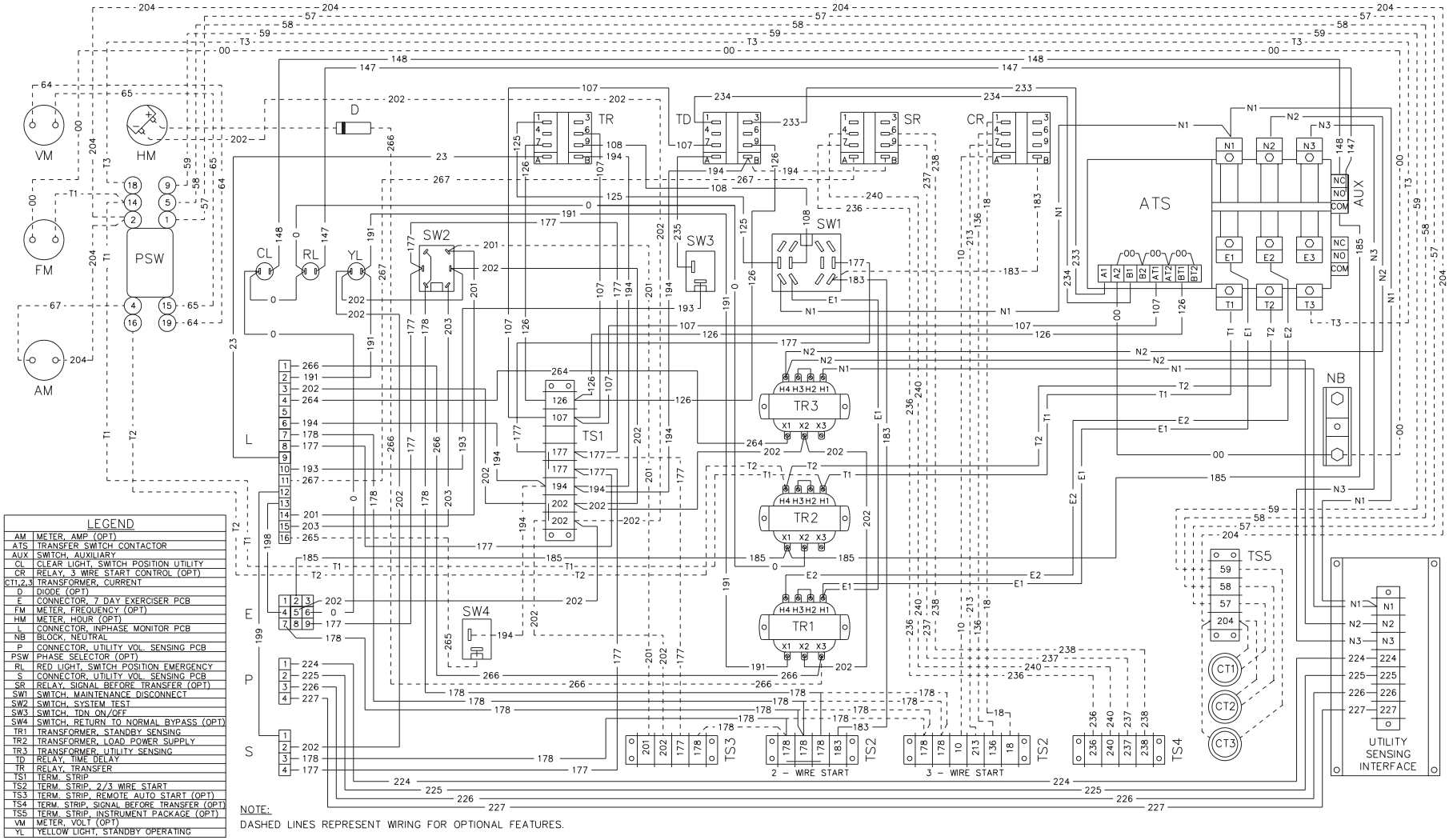
A C 4692 A TURNED TR1,2 & 3 RIGHT SIDE UP CHANGED CONNECTIONS ON TS1 & TS2

NOTE:
DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.



LEGEND	
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3	TRANSFORMER, CURRENT
D	DIODE (OPT)
E	CONNECTOR, 7 DAY EXERCISER PCB
FM	METER, FREQUENCY (OPT)
HM	METER, HOUR (OPT)
L	CONNECTOR, INPHASE MONITOR PCB
P	CONNECTOR, UTILITY VOL. SENSING PCB
PSW	PHASE SELECTOR (OPT)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS1	TERM. STRIP
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, REMOTE AUTO START (OPT)
TS4	TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5	TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

NOTE:
DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.



LEGEND	
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3	TRANSFORMER, CURRENT
D	DIODE (OPT)
E	CONNECTOR, 7 DAY EXERCISER PCB
FM	METER, FREQUENCY (OPT)
HM	METER, HOUR (OPT)
L	CONNECTOR, INPHASE MONITOR PCB
NB	BLOCK, NEUTRAL
P	CONNECTOR, UTILITY VOL. SENSING PCB
PSW	PHASE SELECTOR (OPT)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS1	TERM. STRIP
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, REMOTE AUTO START (OPT)
TS4	TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5	TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

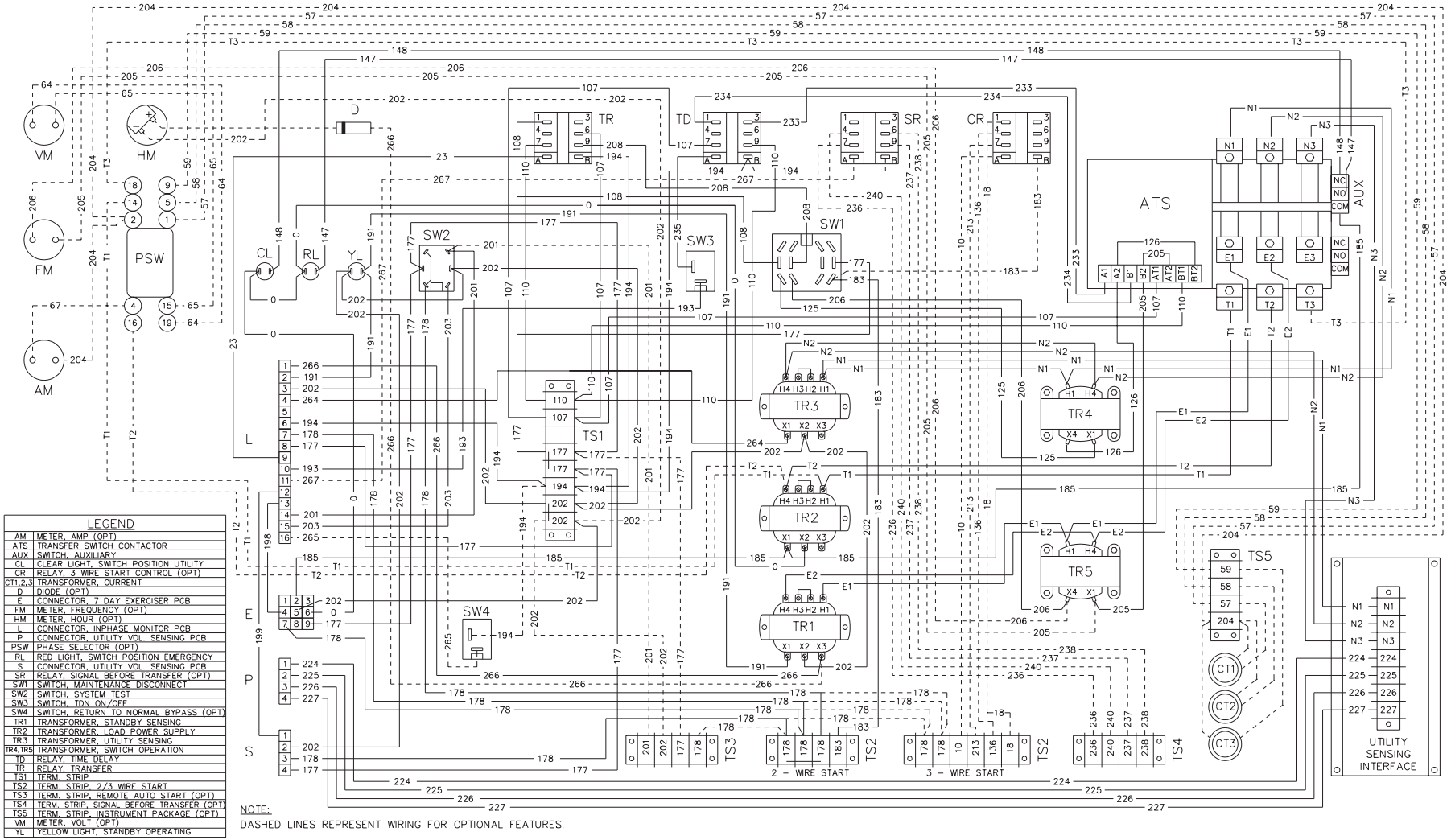
NOTE:
DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.

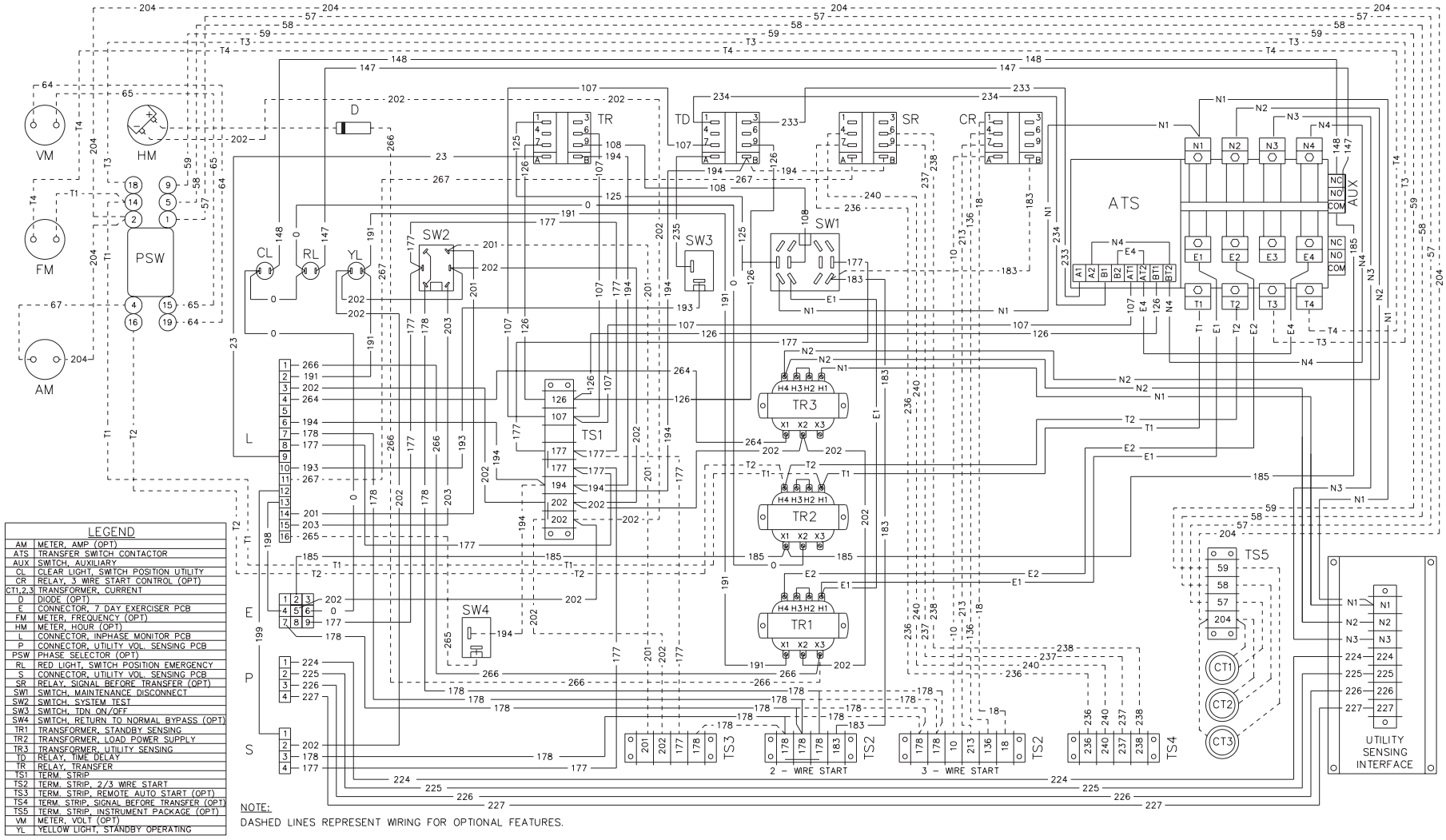
Drawing No. 91400

Revised: 12/06/93

Wiring Diagram

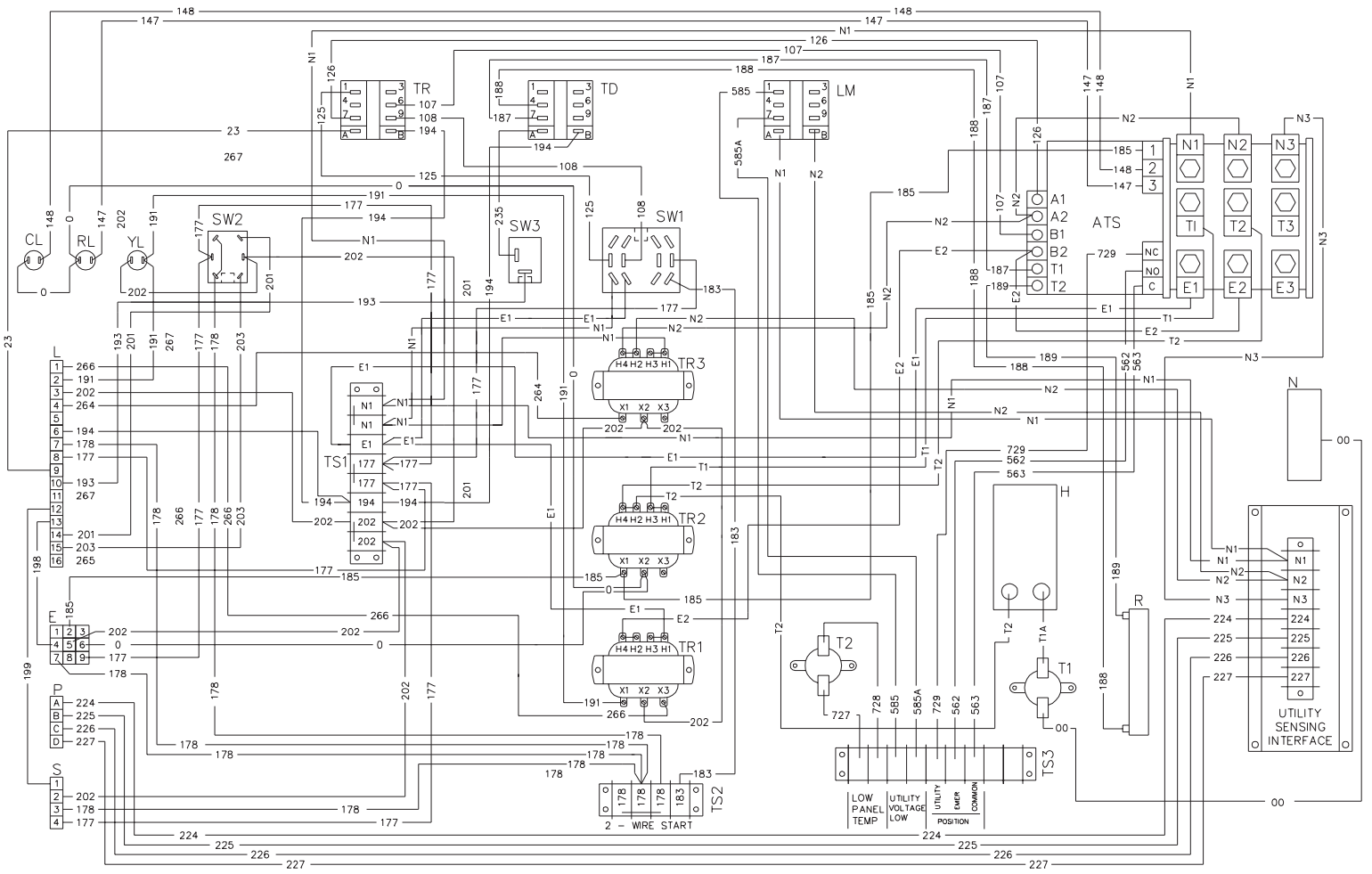
480/600 Volt 4 Pole Wn Type Transfer Switch



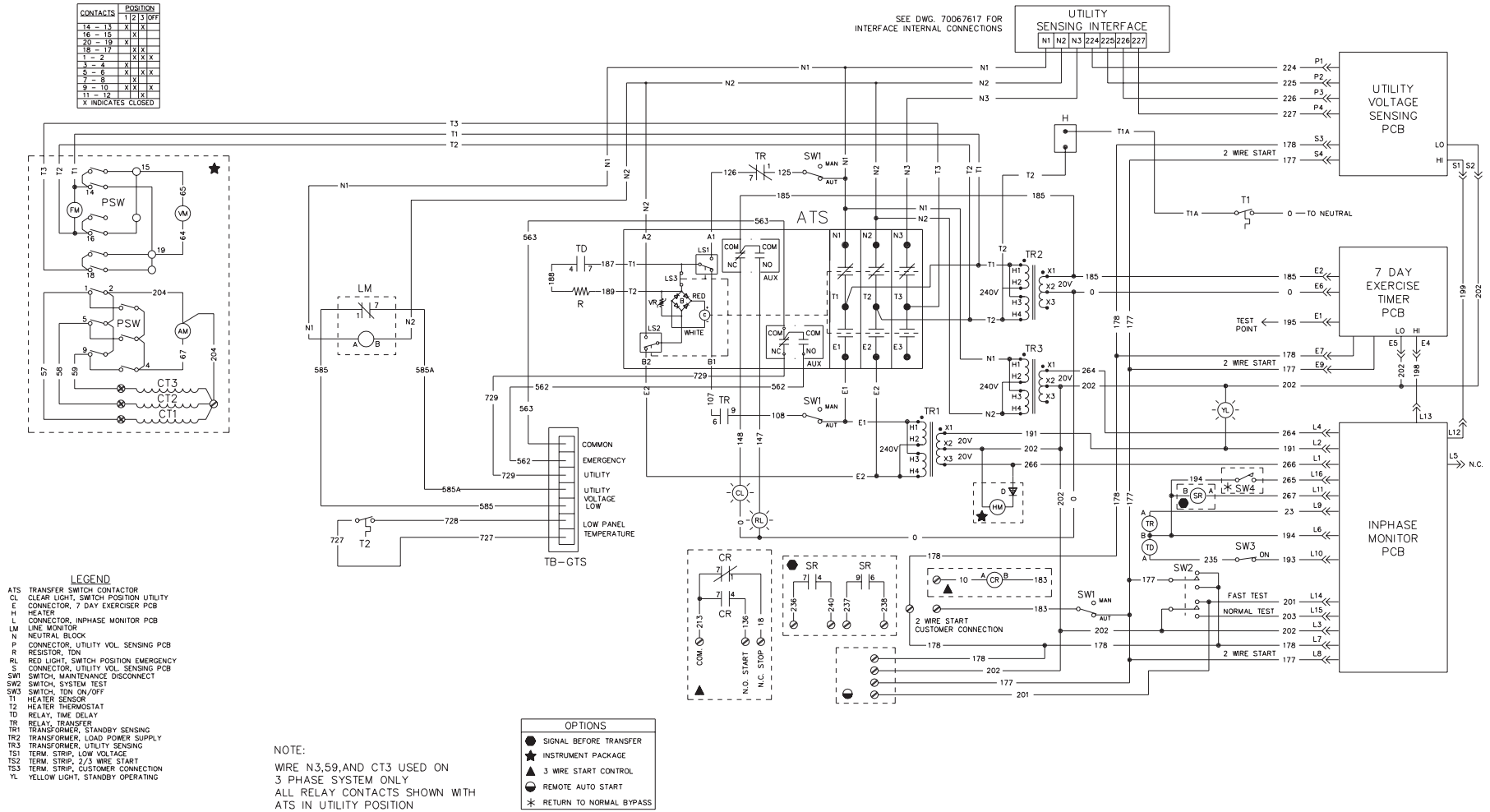


LEGEND	
AM	METER, AMP (OPT)
ATS	TRANSFER SWITCH CONTACTOR
AUX	SWITCH, AUXILIARY
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
CR	RELAY, 3 WIRE START CONTROL (OPT)
CT1,2,3	TRANSFORMER, CURRENT
D	DIODE (OPT)
E	CONNECTOR, 7 DAY EXERCISER PCB
FM	METER, FREQUENCY (OPT)
HM	METER, HOUR (OPT)
L	CONNECTOR, INPHASE MONITOR PCB
P	CONNECTOR, UTILITY VOL. SENSING PCB
PSW	PHASE SELECTOR (OPT)
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SR	RELAY, SIGNAL BEFORE TRANSFER (OPT)
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
SW4	SWITCH, RETURN TO NORMAL BYPASS (OPT)
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TS1	TERM. STRIP
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, REMOTE AUTO START (OPT)
TS4	TERM. STRIP, SIGNAL BEFORE TRANSFER (OPT)
TS5	TERM. STRIP, INSTRUMENT PACKAGE (OPT)
VM	METER, VOLT (OPT)
YL	YELLOW LIGHT, STANDBY OPERATING

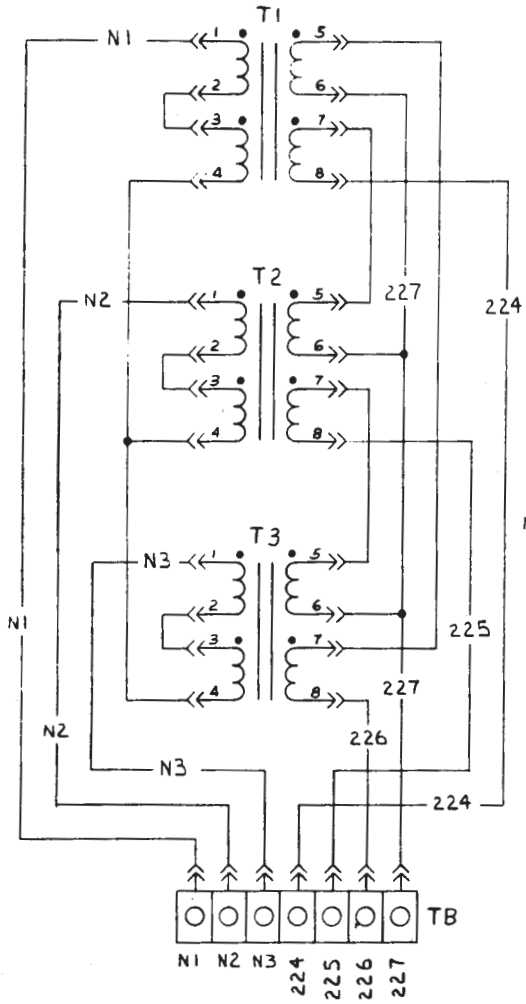
NOTE:
DASHED LINES REPRESENT WIRING FOR OPTIONAL FEATURES.



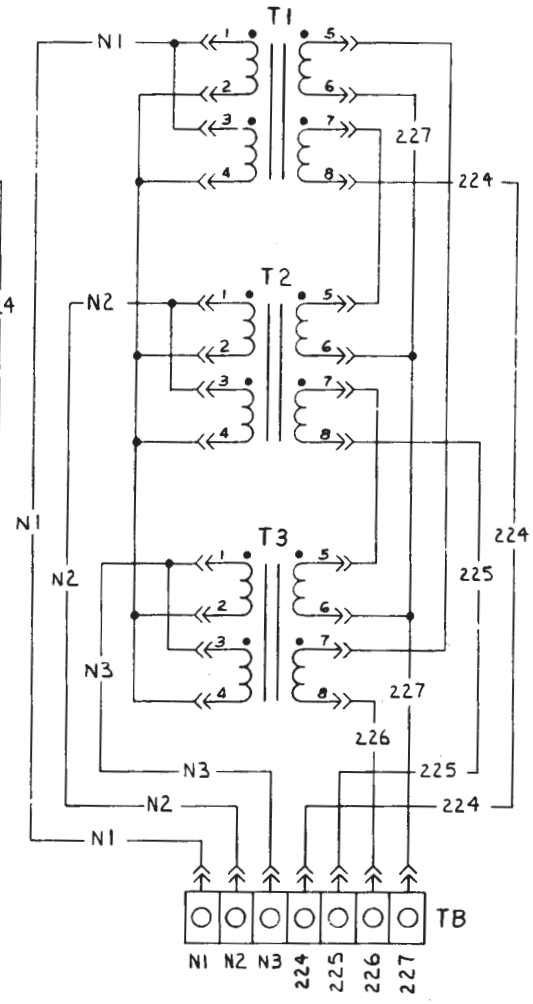
LEGEND	
ATS	TRANSFER SWITCH CONTACTOR
CL	CLEAR LIGHT, SWITCH POSITION UTILITY
E	CONNECTOR, 7 DAY EXERCISER PCB
H	HEATER
L	CONNECTOR, INPHASE MONITOR PCB
LM	LINE MONITOR
N	NEUTRAL BLOCK
P	CONNECTOR, UTILITY VOL. SENSING PCB
R	RESISTOR, TDN
RL	RED LIGHT, SWITCH POSITION EMERGENCY
S	CONNECTOR, UTILITY VOL. SENSING PCB
SW1	SWITCH, MAINTENANCE DISCONNECT
SW2	SWITCH, SYSTEM TEST
SW3	SWITCH, TDN ON/OFF
T1	HEATER SENSOR
T2	HEATER THERMOSTAT
TD	RELAY, TIME DELAY
TR	RELAY, TRANSFER
TR1	TRANSFORMER, STANDBY SENSING
TR2	TRANSFORMER, LOAD POWER SUPPLY
TR3	TRANSFORMER, UTILITY SENSING
TS1	TERM. STRIP, LOW VOLTAGE
TS2	TERM. STRIP, 2/3 WIRE START
TS3	TERM. STRIP, CUSTOMER CONNECTION
YL	YELLOW LIGHT, STANDBY OPERATING


CONTACTS
POSITION
1 2 3 OFF
14 – 13 X X
16 – 15 X
20 – 19 X
18 – 17 X X
1 – 2 X X X
3 – 4 X
5 – 6 X X X
7 – 8 X
9 – 10 X X X
11 – 12 X
X INDICATES CLOSED
SEE DWG. 70067617 FOR INTERFACE INTERNAL CONNECTIONS
UTILITY SENSING INTERFACE
N1 N2 N3 224 225 226 227
UTILITY VOLTAGE SENSING PCB
7 DAY EXERCISE TIMER PCB
INPHASE MONITOR PCB
ATS
PSW
LM
TD
TR
TR1
TR2
TR3
SW1
SW2
SW3
SW4
CT1
CT2
CT3
TB-GTS
COMMON
EMERGENCY
UTILITY
UTILITY VOLTAGE LOW
LOW PANEL TEMPERATURE
2 WIRE START
TEST POINT
FAST TEST
NORMAL TEST
2 WIRE START CUSTOMER CONNECTION
TO NEUTRAL
N.C.
LEGEND
ATS TRANSFER SWITCH CONTACTOR
CL CLEAR LIGHT, SWITCH POSITION UTILITY
E CONNECTOR, 7 DAY EXERCISER PCB
H HEATER
L CONNECTOR, INPHASE MONITOR PCB
LM LINE MONITOR
N NEUTRAL BLOCK
P CONNECTOR, UTILITY VOL. SENSING PCB
R RESISTOR, TDN
RL RED LIGHT, SWITCH POSITION EMERGENCY
S CONNECTOR, UTILITY VOL. SENSING PCB
SW1 SWITCH, MAINTENANCE DISCONNECT
SW2 SWITCH, SYSTEM TEST
SW3 SWITCH; TDN ON/OFF
T1 HEATER SENSOR
T2 HEATER THERMOSTAT
TD RELAY, TIME DELAY
TR RELAY, TRANSFER
TR1 TRANSFORMER, STANDBY SENSING
TR2 TRANSFORMER, LOAD POWER SUPPLY
TR3 TRANSFORMER, UTILITY SENSING
TS1 TERM. STRIP, LOW VOLTAGE
TS2 TERM. STRIP, 2/3 WIRE START
TS3 TERM. STRIP, CUSTOMER CONNECTION
YL YELLOW LIGHT, STANDBY OPERATING
NOTE:
WIRE N3,59,AND CT3 USED ON 3 PHASE SYSTEM ONLY
ALL RELAY CONTACTS SHOWN WITH ATS IN UTILITY POSITION
OPTIONS
SIGNAL BEFORE TRANSFER
INSTRUMENT PACKAGE
3 WIRE START CONTROL
REMOTE AUTO START
RETURN TO NORMAL BYPASS

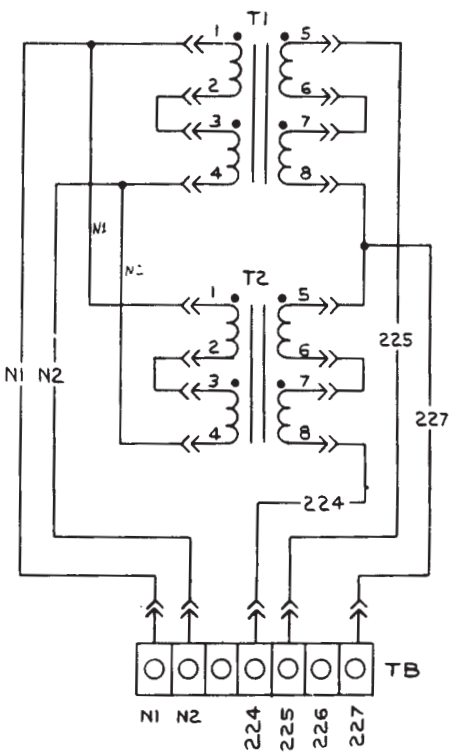
A
for
416/480/600 VOLT
THREE PHASE
OPERATION



B
for
208/240 VOLT
THREE PHASE
OPERATION



C
for
240 VOLT
SINGLE PHASE
OPERATION



STANDBY SYSTEM INTERCONNECTION DIAGRAMS

INDEX TO STANDBY SYSTEMS INTERCONNECTION DIAGRAMS

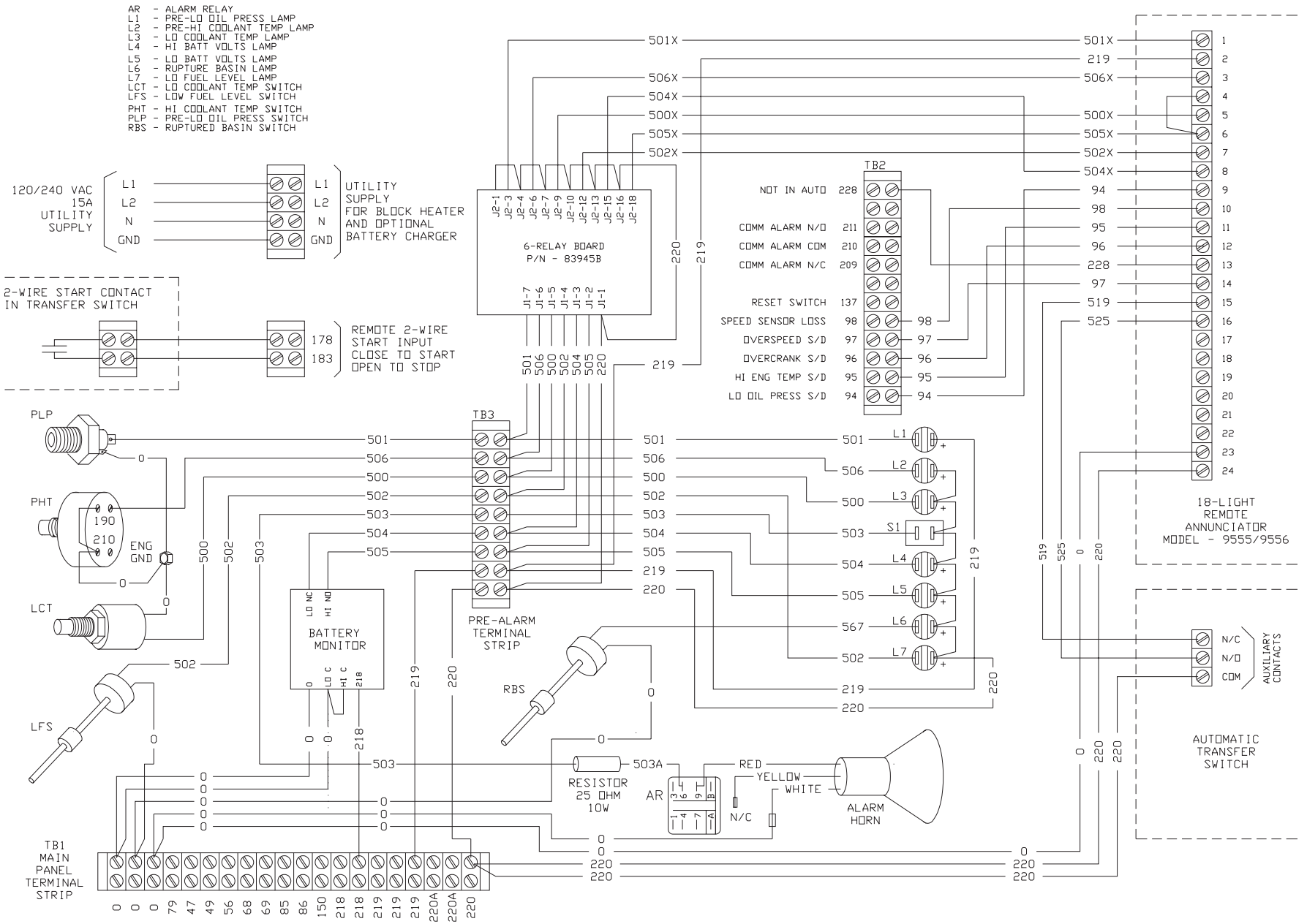
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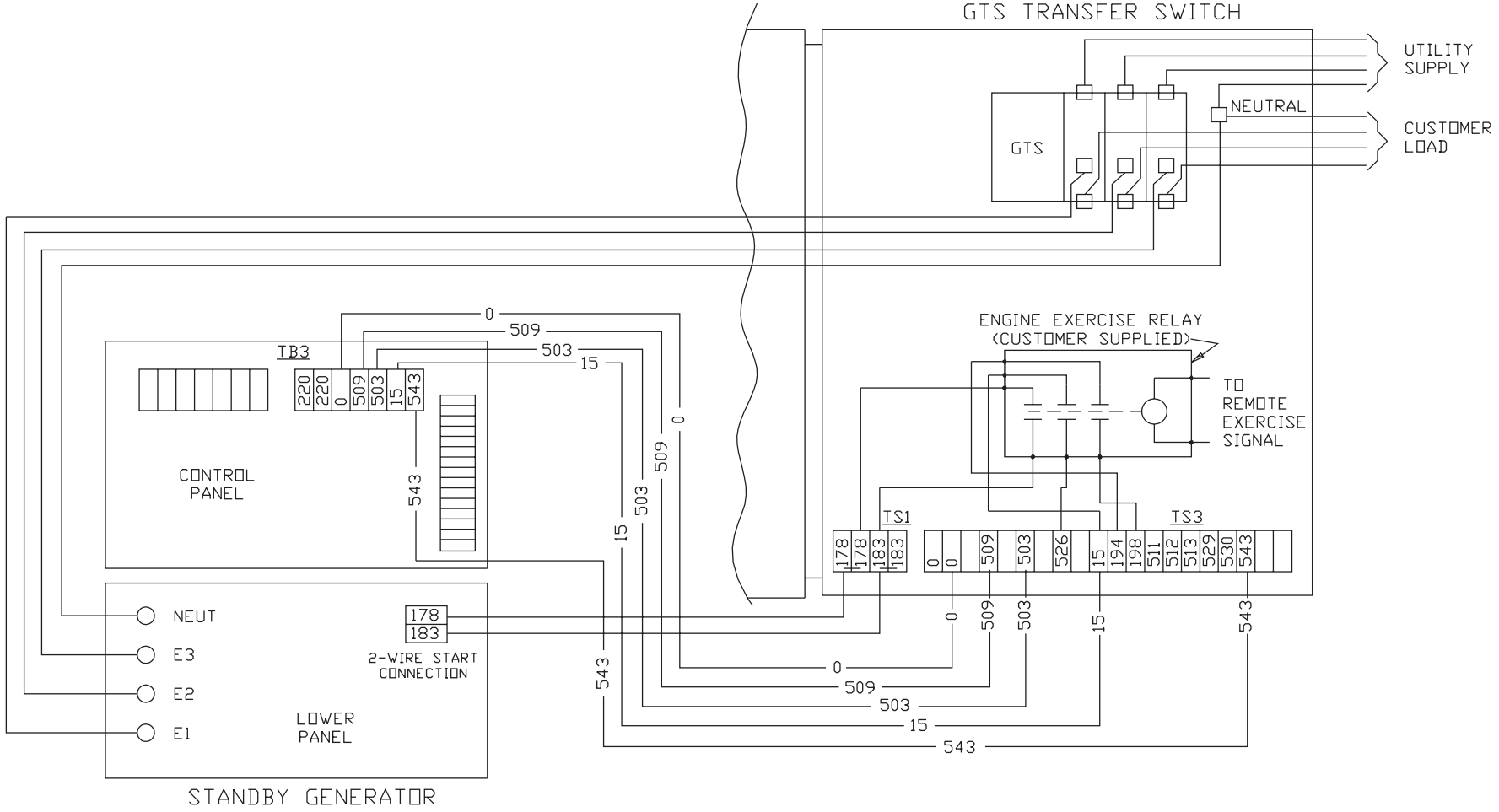
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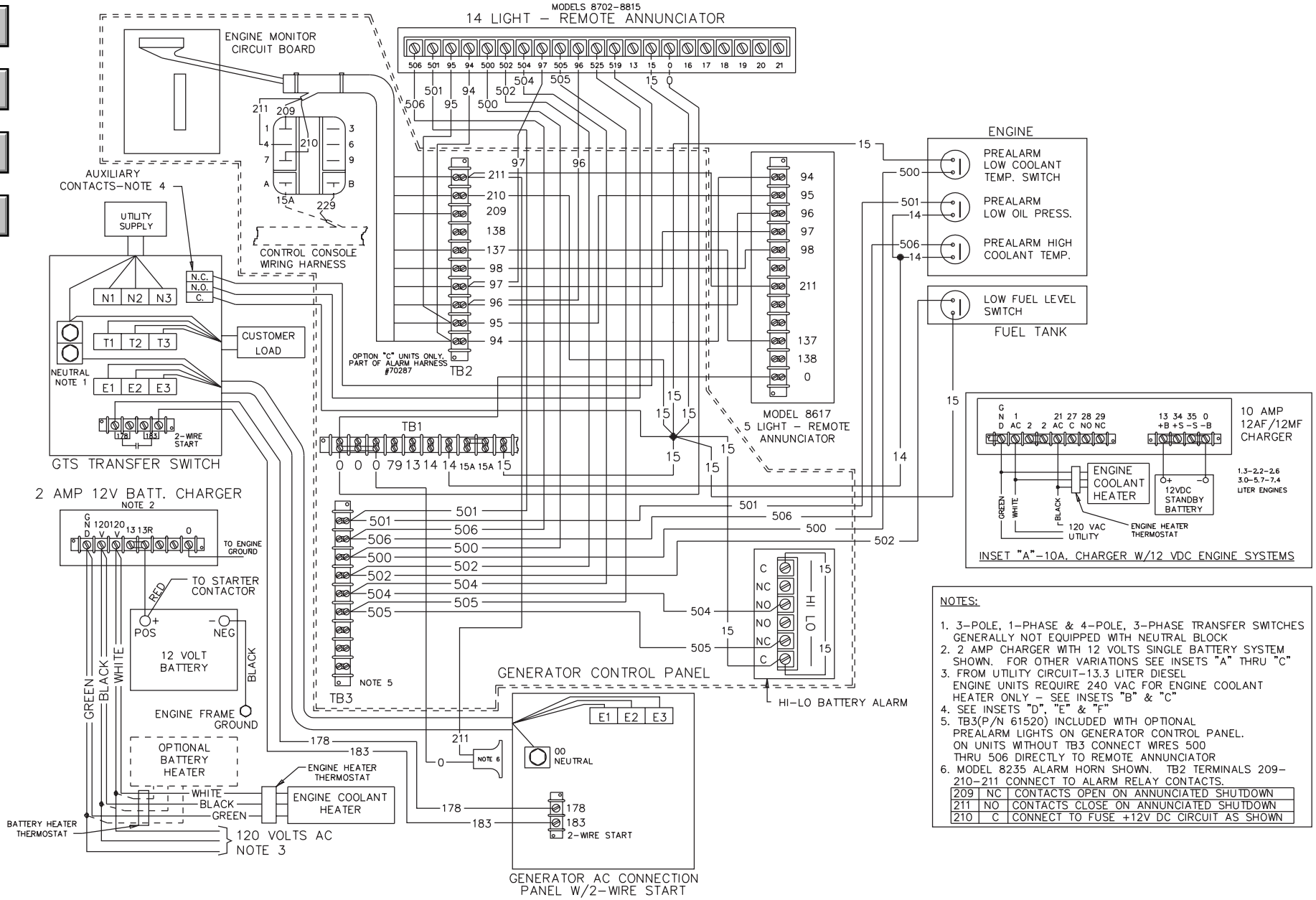
BOOKMARKS

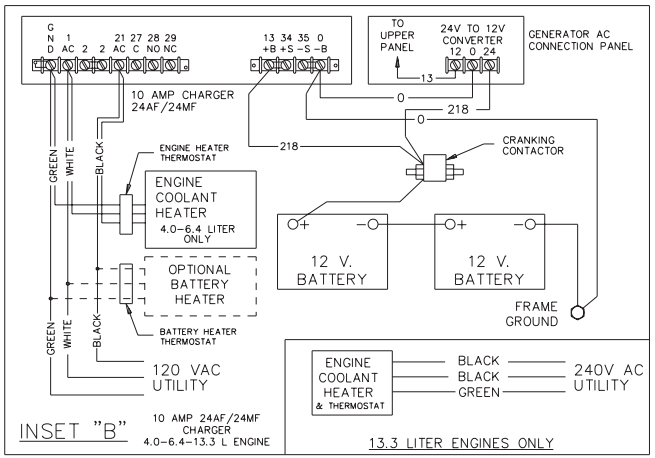
NO BOOKMARKS

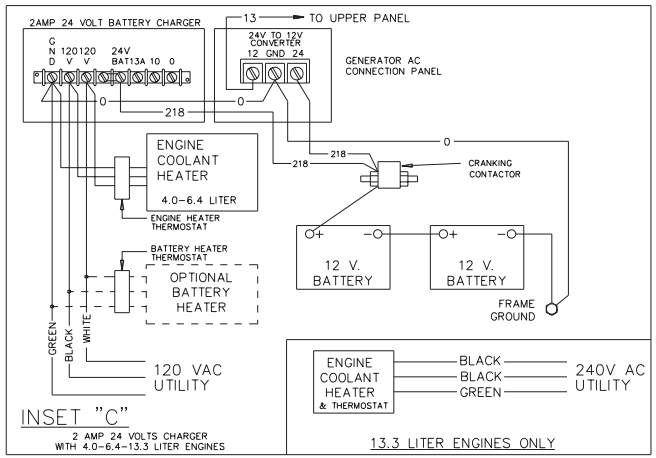
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A7296	Diagram			Interconnection Diagram — 24V 400-1000kW)	
69132	Diagram			Interconnection Diagram	07/03/91
71897	Diagram			Interconnection Diagram	06/01/91
72299	Diagram			Mervyn's Interconnection Diagram	08/28/90
73327	Diagram	1 of 2		Interconnection — Standby System	11/10/87
73327	Diagram	2 of 2		Interconnection — Standby System	11/10/87
80614	Diagram			Interconnection Diagram	
80696	Diagram			Interconnection Diagram	01/28/91
87623	Diagram	1 of 2		Interconnection — 12 Volt	12/08/92
87623	Diagram	2 of 2		Interconnection — 12 Volt	12/08/92
87624	Diagram	1 of 2		Interconnection — 24 Volt	12/08/92
87624	Diagram	2 of 2		Interconnection — 24 Volt	12/08/92
87625	Diagram	1 of 2		Interconnection — 12 Volt	12/08/92
87625	Diagram	2 of 2		Interconnection — 12 Volt	12/08/92
87626	Diagram	1 of 2		Interconnection — 24 Volt	12/08/92
87626	Diagram	2 of 2		Interconnection — 24 Volt	12/08/92

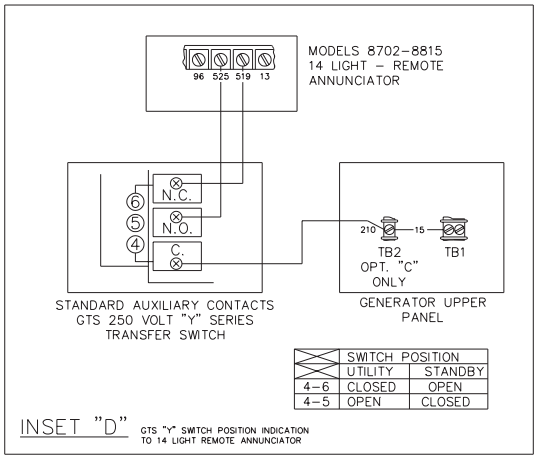

AR - ALARM RELAY
L1 - PRE-LO OIL PRESS LAMP
L2 - PRE-HI COOLANT TEMP LAMP
L3 - LO COOLANT TEMP LAMP
L4 - HI BATT VOLTS LAMP
L5 - LO BATT VOLTS LAMP
L6 - RUPTURE BASIN LAMP
L7 - LO FUEL LEVEL LAMP
LCT - LO COOLANT TEMP SWITCH
LFS - LOW FUEL LEVEL SWITCH
PHT - HI COOLANT TEMP SWITCH
PLP - PRE-LO OIL PRESS SWITCH
RBS - RUPTURED BASIN SWITCH
120/240 VAC 15A UTILITY SUPPLY
L1
L2
N
GND
UTILITY SUPPLY FOR BLOCK HEATER AND OPTIONAL BATTERY CHARGER
2-WIRE START CONTACT IN TRANSFER SWITCH
178
183
REMOTE 2-WIRE START INPUT CLOSE TO START OPEN TO STOP
6-RELAY BOARD P/N - 83945B
TB2
NOT IN AUTO 228
COMM ALARM N/O 211
COMM ALARM COM 210
COMM ALARM N/C 209
RESET SWITCH 137
SPEED SENSOR LOSS 98
OVERSPEED S/D 97
OVERCRANK S/D 96
HI ENG TEMP S/D 95
LO OIL PRESS S/D 94
TB3
PRE-ALARM TERMINAL STRIP
PLP
PHT
190
210
ENG GND
LCT
LFS
RBS
BATTERY MONITOR
LO NC
HI NO
LO C
HI C
RESISTOR 25 OHM 10W
503A
AR
RED
YELLOW
WHITE
N/C
ALARM HORN
S1
L1
L2
L3
L4
L5
L6
L7
18-LIGHT REMOTE ANNUNCIATOR MODEL - 9555/9556
AUXILIARY CONTACTS
N/C
N/O
COM
AUTOMATIC TRANSFER SWITCH
TB1 MAIN PANEL TERMINAL STRIP

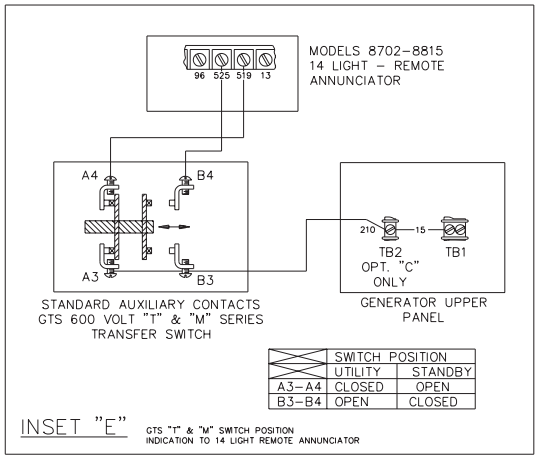

GTS TRANSFER SWITCH
UTILITY SUPPLY
NEUTRAL
CUSTOMER LOAD
GTS
ENGINE EXERCISE RELAY (CUSTOMER SUPPLIED)
TO REMOTE EXERCISE SIGNAL
TB3
220
220
0
509
503
15
543
CONTROL PANEL
TS1
178
178
183
183
TS3
0
0
509
503
526
15
194
198
511
512
513
529
530
543
NEUT
E3
E2
E1
178
183
2-WIRE START CONNECTION
LOWER PANEL
STANDBY GENERATOR
0
509
503
15
543

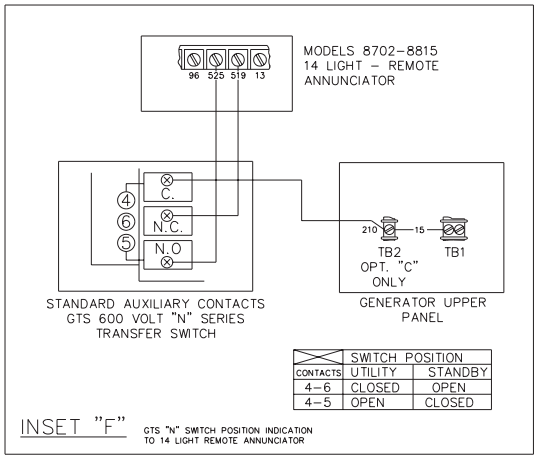

MODELS 8702-8815
14 LIGHT – REMOTE ANNUNCIATOR
ENGINE MONITOR CIRCUIT BOARD
AUXILIARY CONTACTS–NOTE 4
UTILITY SUPPLY
CONTROL CONSOLE WIRING HARNESS
N.C.
N.O.
C.
N1 N2 N3
T1 T2 T3
NEUTRAL NOTE 1
E1 E2 E3
2-WIRE START
GTS TRANSFER SWITCH
CUSTOMER LOAD
OPTION "C" UNITS ONLY. PART OF ALARM HARNESS #70287
TB2
TB1
MODEL 8617 5 LIGHT – REMOTE ANNUNCIATOR
ENGINE
PREALARM LOW COOLANT TEMP. SWITCH
PREALARM LOW OIL PRESS.
PREALARM HIGH COOLANT TEMP.
LOW FUEL LEVEL SWITCH
FUEL TANK
10 AMP 12AF/12MF CHARGER
ENGINE COOLANT HEATER
12VDC STANDBY BATTERY
120 VAC UTILITY
ENGINE HEATER THERMOSTAT
1.3-2.2-2.6 3.0-5.7-7.4 LITER ENGINES
INSET "A"–10A. CHARGER W/12 VDC ENGINE SYSTEMS
2 AMP 12V BATT. CHARGER
NOTE 2
TO ENGINE GROUND
TO STARTER CONTACTOR
POS
NEG
12 VOLT BATTERY
ENGINE FRAME GROUND
OPTIONAL BATTERY HEATER
ENGINE HEATER THERMOSTAT
ENGINE COOLANT HEATER
BATTERY HEATER THERMOSTAT
120 VOLTS AC NOTE 3
NOTE 5
TB3
HI-LO BATTERY ALARM
GENERATOR CONTROL PANEL
00 NEUTRAL
NOTE 6
GENERATOR AC CONNECTION PANEL W/2-WIRE START
NOTES:
1. 3-POLE, 1-PHASE & 4-POLE, 3-PHASE TRANSFER SWITCHES GENERALLY NOT EQUIPPED WITH NEUTRAL BLOCK
2. 2 AMP CHARGER WITH 12 VOLTS SINGLE BATTERY SYSTEM SHOWN. FOR OTHER VARIATIONS SEE INSETS "A" THRU "C"
3. FROM UTILITY CIRCUIT–13.3 LITER DIESEL ENGINE UNITS REQUIRE 240 VAC FOR ENGINE COOLANT HEATER ONLY – SEE INSETS "B" & "C"
4. SEE INSETS "D", "E" & "F"
5. TB3(P/N 61520) INCLUDED WITH OPTIONAL PREALARM LIGHTS ON GENERATOR CONTROL PANEL. ON UNITS WITHOUT TB3 CONNECT WIRES 500 THRU 506 DIRECTLY TO REMOTE ANNUNCIATOR
6. MODEL 8235 ALARM HORN SHOWN. TB2 TERMINALS 209-210-211 CONNECT TO ALARM RELAY CONTACTS.
209 NC CONTACTS OPEN ON ANNUNCIATED SHUTDOWN
211 NO CONTACTS CLOSE ON ANNUNCIATED SHUTDOWN
210 C CONNECT TO FUSE +12V DC CIRCUIT AS SHOWN

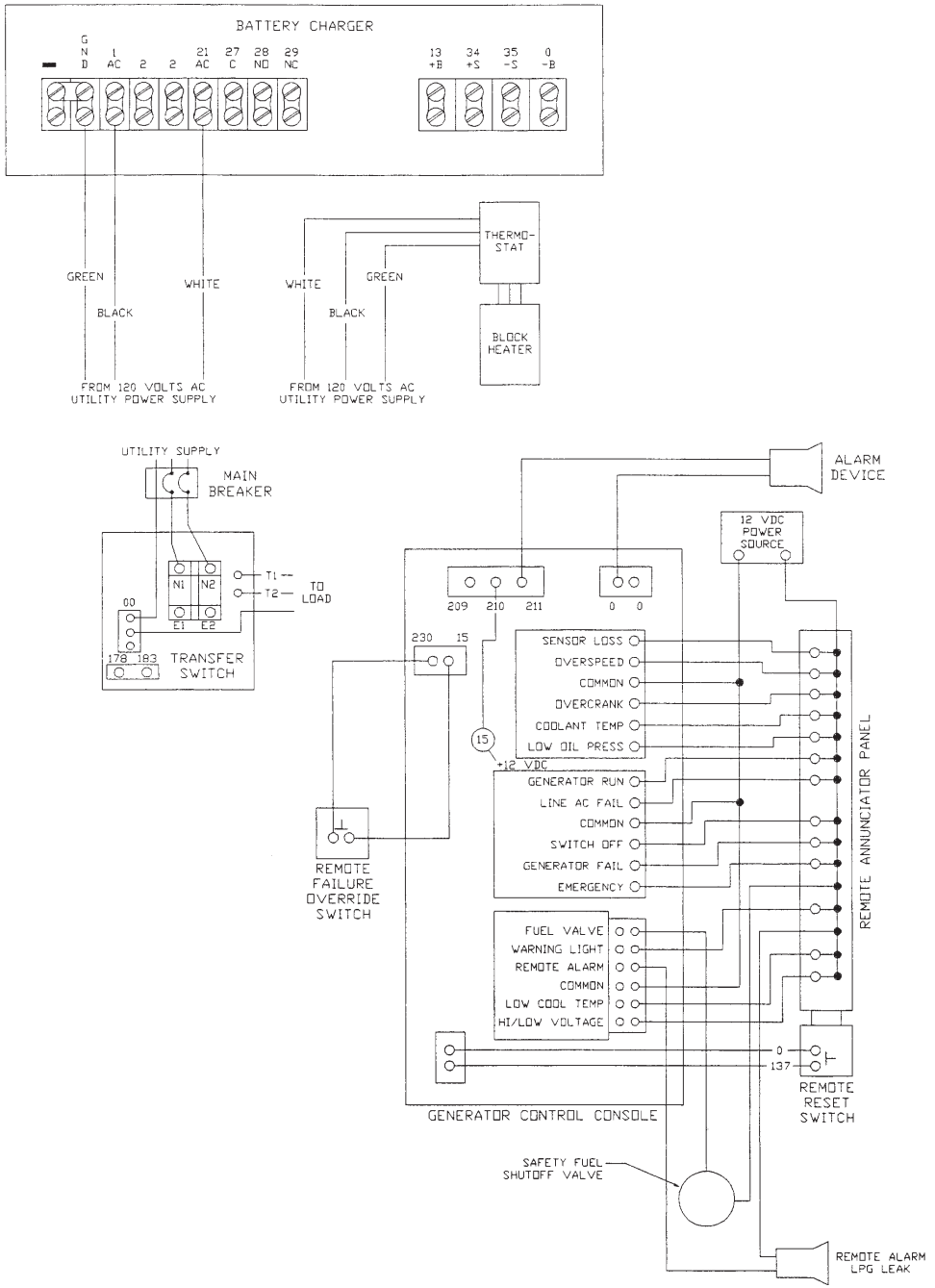

G N 1 D AC 2 2 21 27 28 29 AC C NO NC
13 34 35 0 +B +S -S -B
TO UPPER PANEL
24V TO 12V CONVERTER 12 0 24
GENERATOR AC CONNECTION PANEL
10 AMP CHARGER 24AF/24MF
ENGINE HEATER THERMOSTAT
ENGINE COOLANT HEATER 4.0-6.4 LITER ONLY
CRANKING CONTACTOR
OPTIONAL BATTERY HEATER
BATTERY HEATER THERMOSTAT
12 V. BATTERY
12 V. BATTERY
FRAME GROUND
GREEN
WHITE
BLACK
120 VAC UTILITY
ENGINE COOLANT HEATER & THERMOSTAT
BLACK
BLACK
GREEN
240V AC UTILITY
INSET "B"
10 AMP 24AF/24MF CHARGER 4.0-6.4-13.3 L ENGINE
13.3 LITER ENGINES ONLY

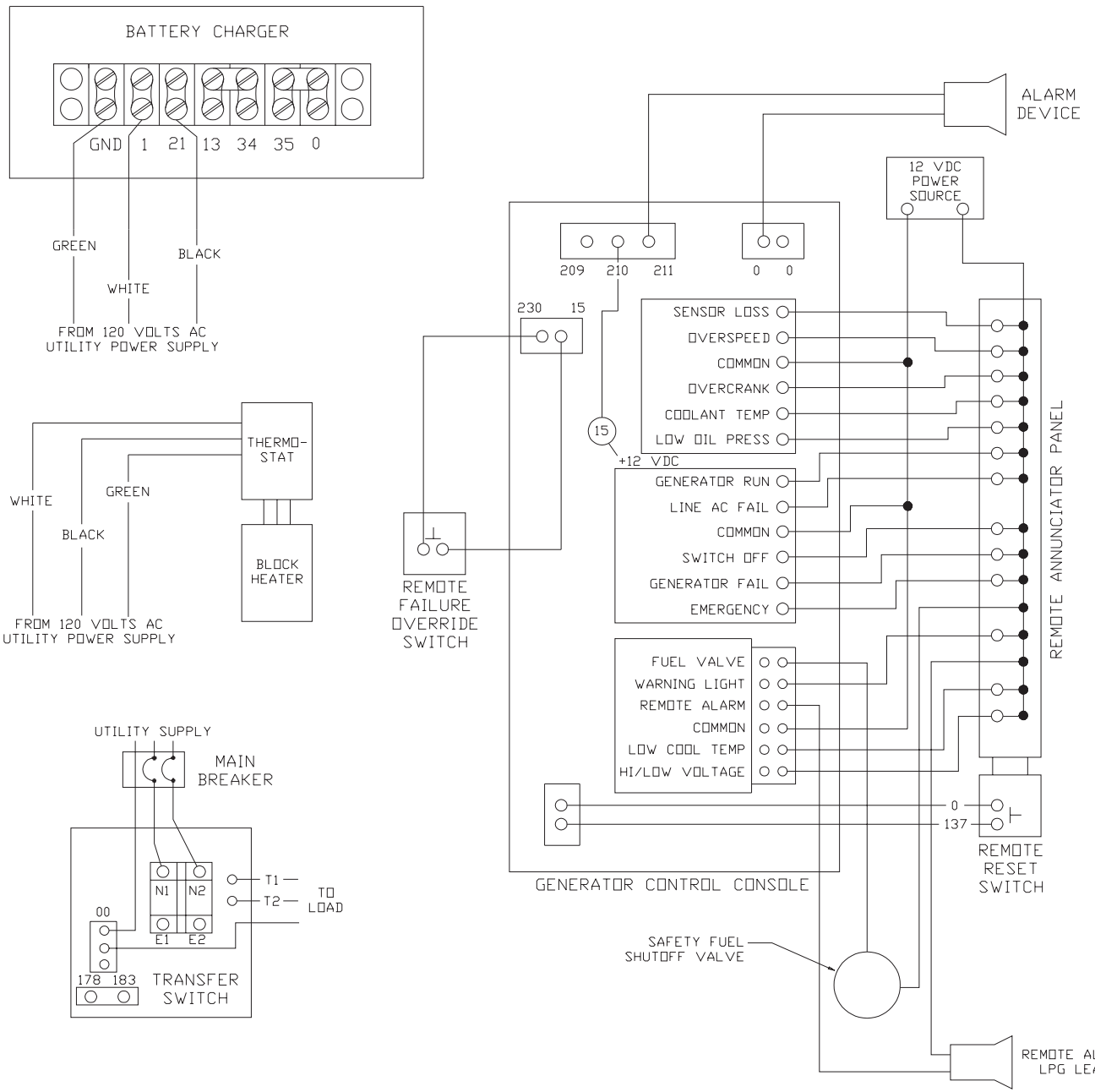

2AMP 24 VOLT BATTERY CHARGER
G N 120120 D V V 24V BAT13A 10 0
13 TO UPPER PANEL
24V TO 12V CONVERTER 12 GND 24
GENERATOR AC CONNECTION PANEL
ENGINE COOLANT HEATER 4.0-6.4 LITER
ENGINE HEATER THERMOSTAT
CRANKING CONTACTOR
BATTERY HEATER THERMOSTAT
OPTIONAL BATTERY HEATER
12 V. BATTERY
12 V. BATTERY
FRAME GROUND
GREEN
BLACK
WHITE
120 VAC UTILITY
ENGINE COOLANT HEATER & THERMOSTAT
BLACK
BLACK
GREEN
240V AC UTILITY
INSET "C"
2 AMP 24 VOLTS CHARGER WITH 4.0-6.4-13.3 LITER ENGINES
13.3 LITER ENGINES ONLY

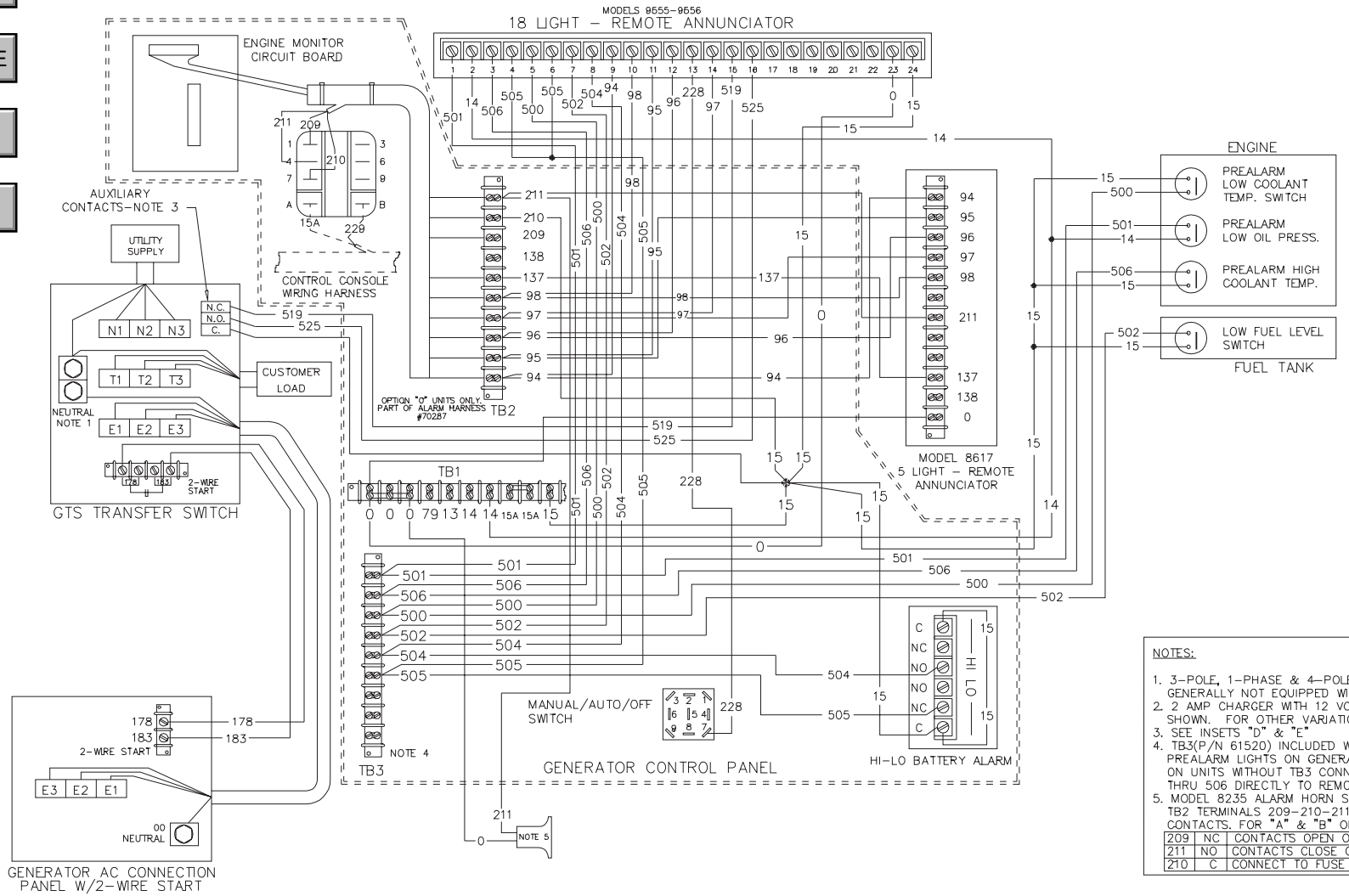

96 525 519 13
MODELS 8702-8815 14 LIGHT - REMOTE ANNUNCIATOR
N.C.
N.O.
C.
TB2 OPT. "C" ONLY
TB1
STANDARD AUXILIARY CONTACTS GTS 250 VOLT "Y" SERIES TRANSFER SWITCH
GENERATOR UPPER PANEL
SWITCH POSITION
UTILITY STANDBY
4-6 CLOSED OPEN
4-5 OPEN CLOSED
INSET "D"
GTS "Y" SWITCH POSITION INDICATION TO 14 LIGHT REMOTE ANNUNCIATOR


96 525 519 13
MODELS 8702-8815 14 LIGHT - REMOTE ANNUNCIATOR
A4
B4
A3
B3
TB2 OPT. "C" ONLY
TB1
STANDARD AUXILIARY CONTACTS GTS 600 VOLT "T" & "M" SERIES TRANSFER SWITCH
GENERATOR UPPER PANEL
SWITCH POSITION
UTILITY STANDBY
A3-A4 CLOSED OPEN
B3-B4 OPEN CLOSED
INSET "E"
GTS "T" & "M" SWITCH POSITION INDICATION TO 14 LIGHT REMOTE ANNUNCIATOR


96 525 519 13
MODELS 8702-8815 14 LIGHT - REMOTE ANNUNCIATOR
C.
N.C.
N.O
TB2 OPT. "C" ONLY
TB1
STANDARD AUXILIARY CONTACTS GTS 600 VOLT "N" SERIES TRANSFER SWITCH
GENERATOR UPPER PANEL
SWITCH POSITION
CONTACTS UTILITY STANDBY
4-6 CLOSED OPEN
4-5 OPEN CLOSED
INSET "F"
GTS "N" SWITCH POSITION INDICATION TO 14 LIGHT REMOTE ANNUNCIATOR


BATTERY CHARGER
G N D
L AC
2
2
21 AC
27 C
28 NO
29 NC
13 +B
34 +S
35 -S
0 -B
GREEN
BLACK
WHITE
FROM 120 VOLTS AC UTILITY POWER SUPPLY
THERMO-STAT
WHITE
GREEN
BLACK
BLOCK HEATER
FROM 120 VOLTS AC UTILITY POWER SUPPLY
UTILITY SUPPLY
MAIN BREAKER
N1
N2
T1
T2
TO LOAD
00
E1
E2
178
183
TRANSFER SWITCH
ALARM DEVICE
12 VDC POWER SOURCE
209
210
211
0
0
230
15
SENSOR LOSS
OVERSPEED
COMMON
OVERCRANK
COOLANT TEMP
LOW OIL PRESS
15
+12 VDC
GENERATOR RUN
LINE AC FAIL
COMMON
SWITCH OFF
GENERATOR FAIL
EMERGENCY
REMOTE ANNUNCIATOR PANEL
REMOTE FAILURE OVERRIDE SWITCH
FUEL VALVE
WARNING LIGHT
REMOTE ALARM
COMMON
LOW COOL TEMP
HI/LOW VOLTAGE
0
137
REMOTE RESET SWITCH
GENERATOR CONTROL CONSOLE
SAFETY FUEL SHUTOFF VALVE
REMOTE ALARM LPG LEAK


BATTERY CHARGER
GND 1 21 13 34 35 0
GREEN
WHITE
BLACK
FROM 120 VOLTS AC
UTILITY POWER SUPPLY
THERMO-
STAT
WHITE
GREEN
BLACK
BLOCK
HEATER
FROM 120 VOLTS AC
UTILITY POWER SUPPLY
UTILITY SUPPLY
MAIN
BREAKER
N1
N2
T1
T2
TO
LOAD
00
E1
E2
178 183
TRANSFER
SWITCH
ALARM
DEVICE
12 VDC
POWER
SOURCE
209 210 211
0 0
230 15
SENSOR LOSS
OVERSPEED
COMMON
OVERCRANK
COOLANT TEMP
LOW OIL PRESS
15
+12 VDC
GENERATOR RUN
LINE AC FAIL
COMMON
SWITCH OFF
GENERATOR FAIL
EMERGENCY
REMOTE
FAILURE
OVERRIDE
SWITCH
FUEL VALVE
WARNING LIGHT
REMOTE ALARM
COMMON
LOW COOL TEMP
HI/LOW VOLTAGE
REMOTE ANNUNCIATOR PANEL
0
137
REMOTE
RESET
SWITCH
GENERATOR CONTROL CONSOLE
SAFETY FUEL
SHUTOFF VALVE
REMOTE ALARM
LPG LEAK

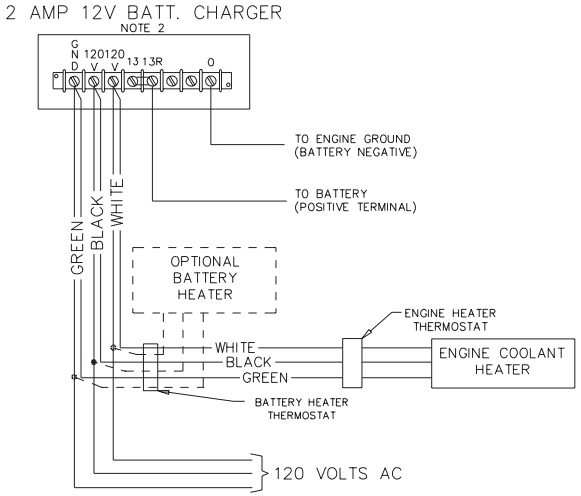


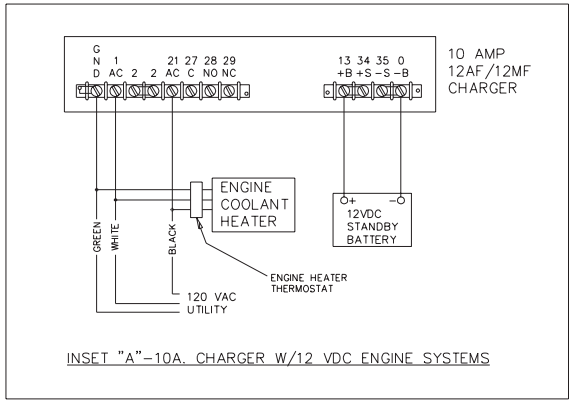
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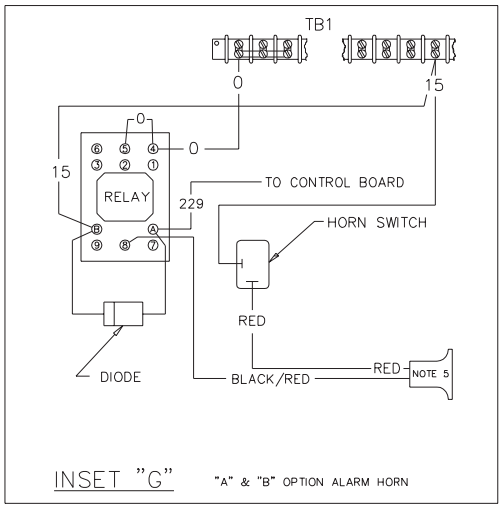
1. 3-POLE, 1-PHASE & 4-POLE, 3-PHASE TRANSFER SWITCHES GENERALLY NOT EQUIPPED WITH NEUTRAL BLOCK
2. 2 AMP CHARGER WITH 12 VOLTS SINGLE BATTERY SYSTEM SHOWN. FOR OTHER VARIATION SEE INSET "A"
3. SEE INSETS "D" & "E"
4. TB3(P/N 61520) INCLUDED WITH OPTIONAL PREALARM LIGHTS ON GENERATOR CONTROL PANEL. ON UNITS WITHOUT TB3 CONNECT WIRES 500 THRU 506 DIRECTLY TO REMOTE ANNUNCIATOR
5. MODEL 8235 ALARM HORN SHOWN FOR "C"-OPTION UNITS. TB2 TERMINALS 209-210-211 CONNECT TP ALARM RELAY CONTACTS. FOR "A" & "B" OPTION UNITS, SEE INSET "G".

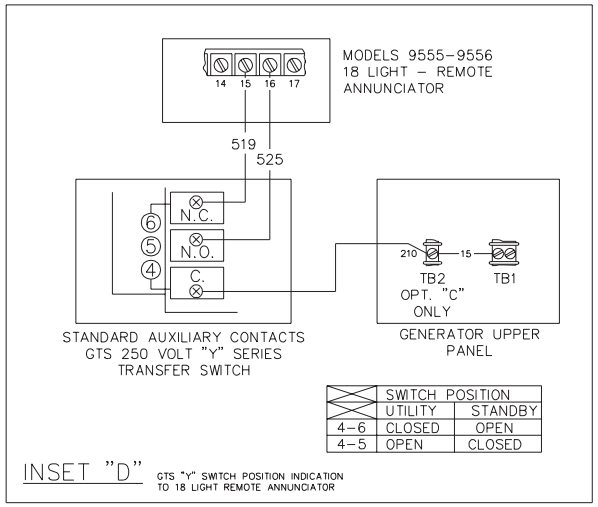
209	NC	CONTACTS OPEN ON ANNUNCIATED SHUTDOWN
211	NO	CONTACTS CLOSE ON ANNUNCIATED SHUTDOWN
210	C	CONNECT TO FUSE +12V DC CIRCUIT AS SHOWN

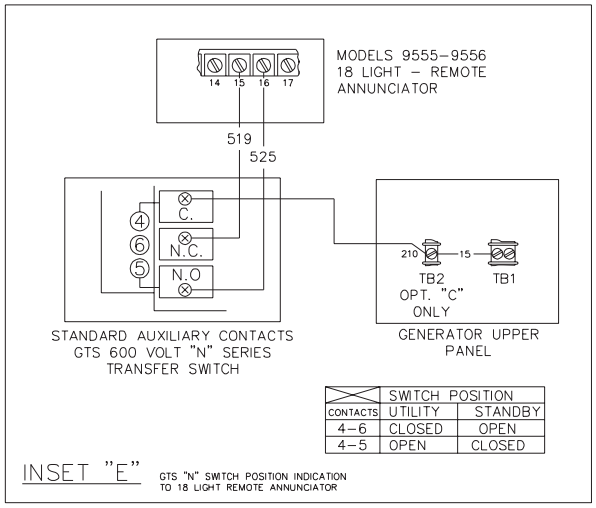
SHEET 1 OF 2

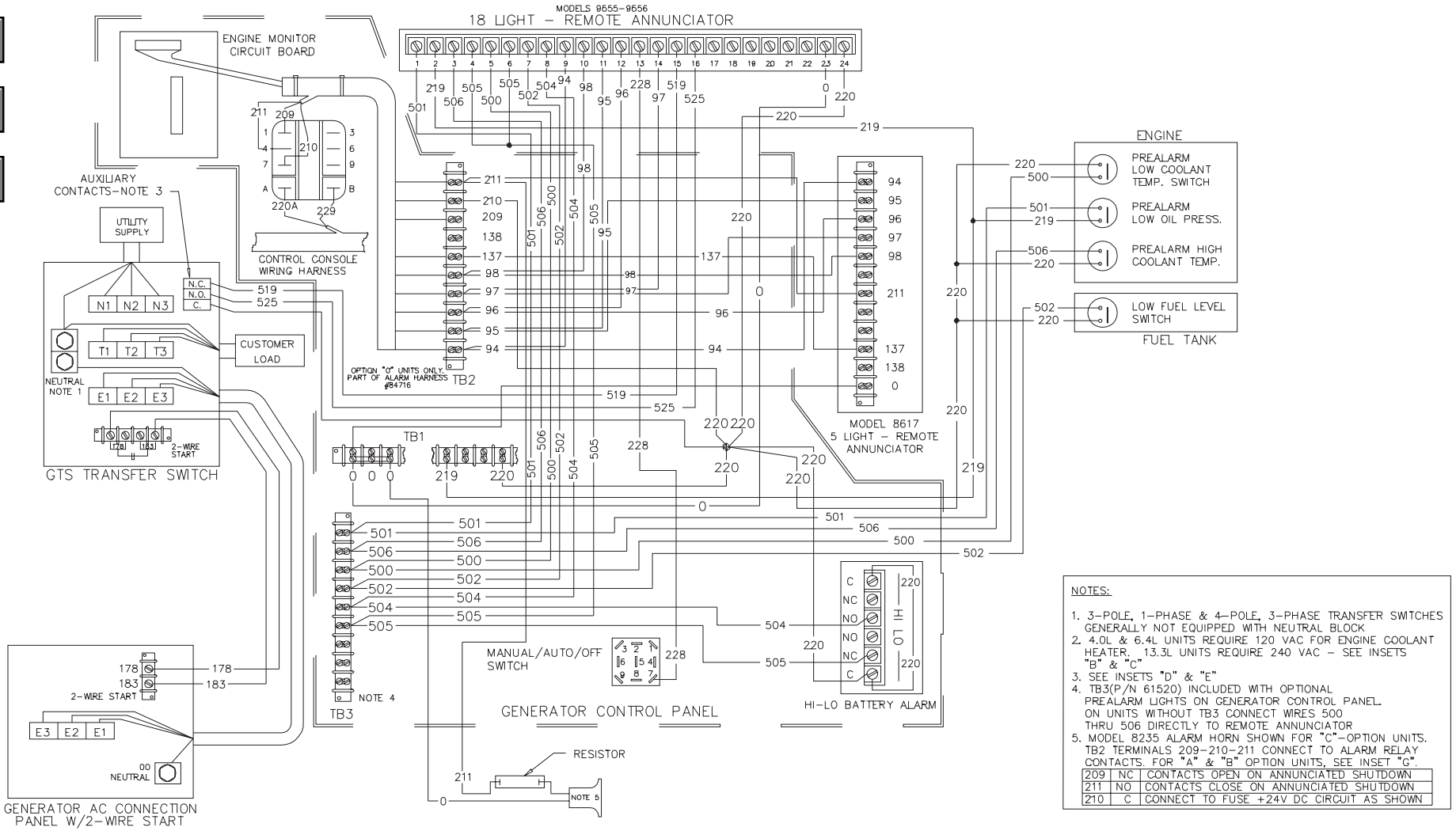

2 AMP 12V BATT. CHARGER
NOTE 2
G N D
120120
V V
13 13R
0
TO ENGINE GROUND (BATTERY NEGATIVE)
TO BATTERY (POSITIVE TERMINAL)
GREEN
BLACK
WHITE
OPTIONAL BATTERY HEATER
ENGINE HEATER THERMOSTAT
WHITE
BLACK
GREEN
ENGINE COOLANT HEATER
BATTERY HEATER THERMOSTAT
120 VOLTS AC


G N D
1 AC
2 2
21 27 28 29 AC C NO NC
13 34 35 0 +B +S -S -B
10 AMP 12AF/12MF CHARGER
ENGINE COOLANT HEATER
12VDC STANDBY BATTERY
GREEN
WHITE
BLACK
ENGINE HEATER THERMOSTAT
120 VAC UTILITY
INSET "A"–10A. CHARGER W/12 VDC ENGINE SYSTEMS


TB1
0
15
0
15
RELAY
229
TO CONTROL BOARD
HORN SWITCH
RED
DIODE
BLACK/RED
RED
NOTE 5
INSET "G"
"A" & "B" OPTION ALARM HORN


14 15 16 17
MODELS 9555–9556 18 LIGHT – REMOTE ANNUNCIATOR
519
525
N.C.
N.O.
C.
210
15
TB2 OPT. "C" ONLY
TB1
STANDARD AUXILIARY CONTACTS GTS 250 VOLT "Y" SERIES TRANSFER SWITCH
GENERATOR UPPER PANEL
SWITCH POSITION
UTILITY
STANDBY
4–6 CLOSED OPEN
4–5 OPEN CLOSED
INSET "D"
GTS "Y" SWITCH POSITION INDICATION TO 18 LIGHT REMOTE ANNUNCIATOR

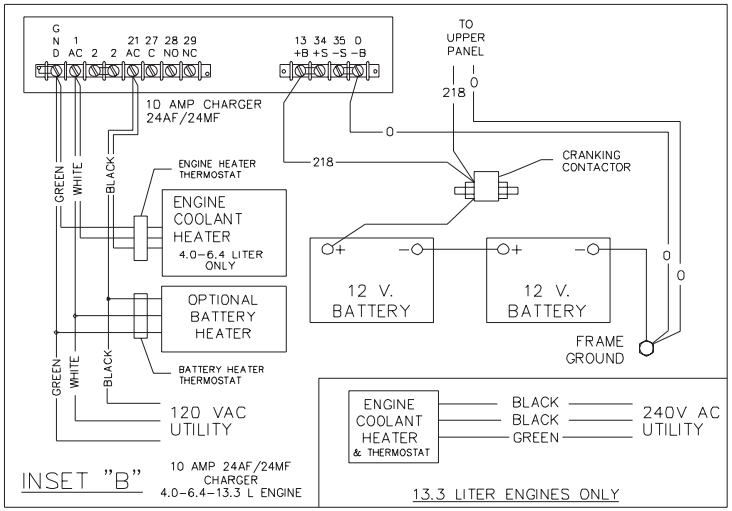

14 15 16 17
MODELS 9555–9556 18 LIGHT – REMOTE ANNUNCIATOR
519
525
C.
N.C.
N.O
210
15
TB2 OPT. "C" ONLY
TB1
STANDARD AUXILIARY CONTACTS GTS 600 VOLT "N" SERIES TRANSFER SWITCH
GENERATOR UPPER PANEL
CONTACTS
SWITCH POSITION
UTILITY
STANDBY
4–6 CLOSED OPEN
4–5 OPEN CLOSED
INSET "E"
GTS "N" SWITCH POSITION INDICATION TO 18 LIGHT REMOTE ANNUNCIATOR

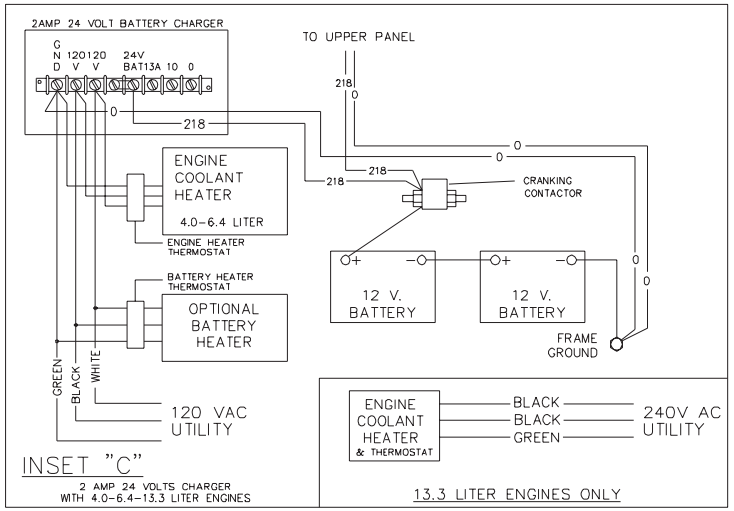


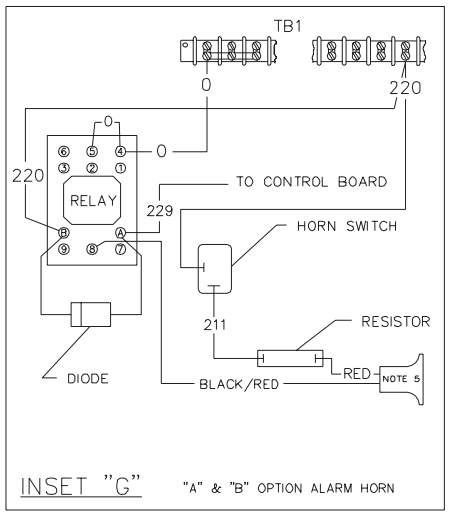
NOTES:

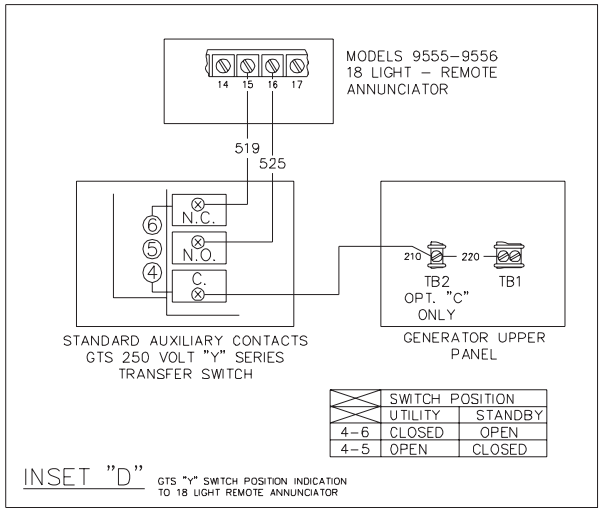
1. 3-POLE, 1-PHASE & 4-POLE, 3-PHASE TRANSFER SWITCHES GENERALLY NOT EQUIPPED WITH NEUTRAL BLOCK
2. 4.0L & 6.4L UNITS REQUIRE 120 VAC FOR ENGINE COOLANT HEATER. 13.3L UNITS REQUIRE 240 VAC – SEE INSETS "B" & "C"
3. SEE INSETS "D" & "E"
4. TB3(P/N 61520) INCLUDED WITH OPTIONAL PREALARM LIGHTS ON GENERATOR CONTROL PANEL. ON UNITS WITHOUT TB3 CONNECT WIRES 500 THRU 506 DIRECTLY TO REMOTE ANNUNCIATOR
5. MODEL 8235 ALARM HORN SHOWN FOR "C"-OPTION UNITS. TB2 TERMINALS 209-210-211 CONNECT TO ALARM RELAY CONTACTS. FOR "A" & "B" OPTION UNITS, SEE INSET "G".

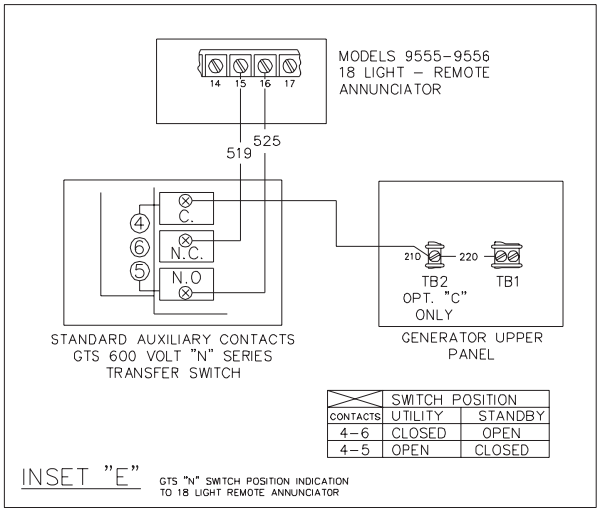
209	NC	CONTACTS OPEN ON ANNUNCIATED SHUTDOWN
211	NO	CONTACTS CLOSE ON ANNUNCIATED SHUTDOWN
210	C	CONNECT TO FUSE +24V DC CIRCUIT AS SHOWN

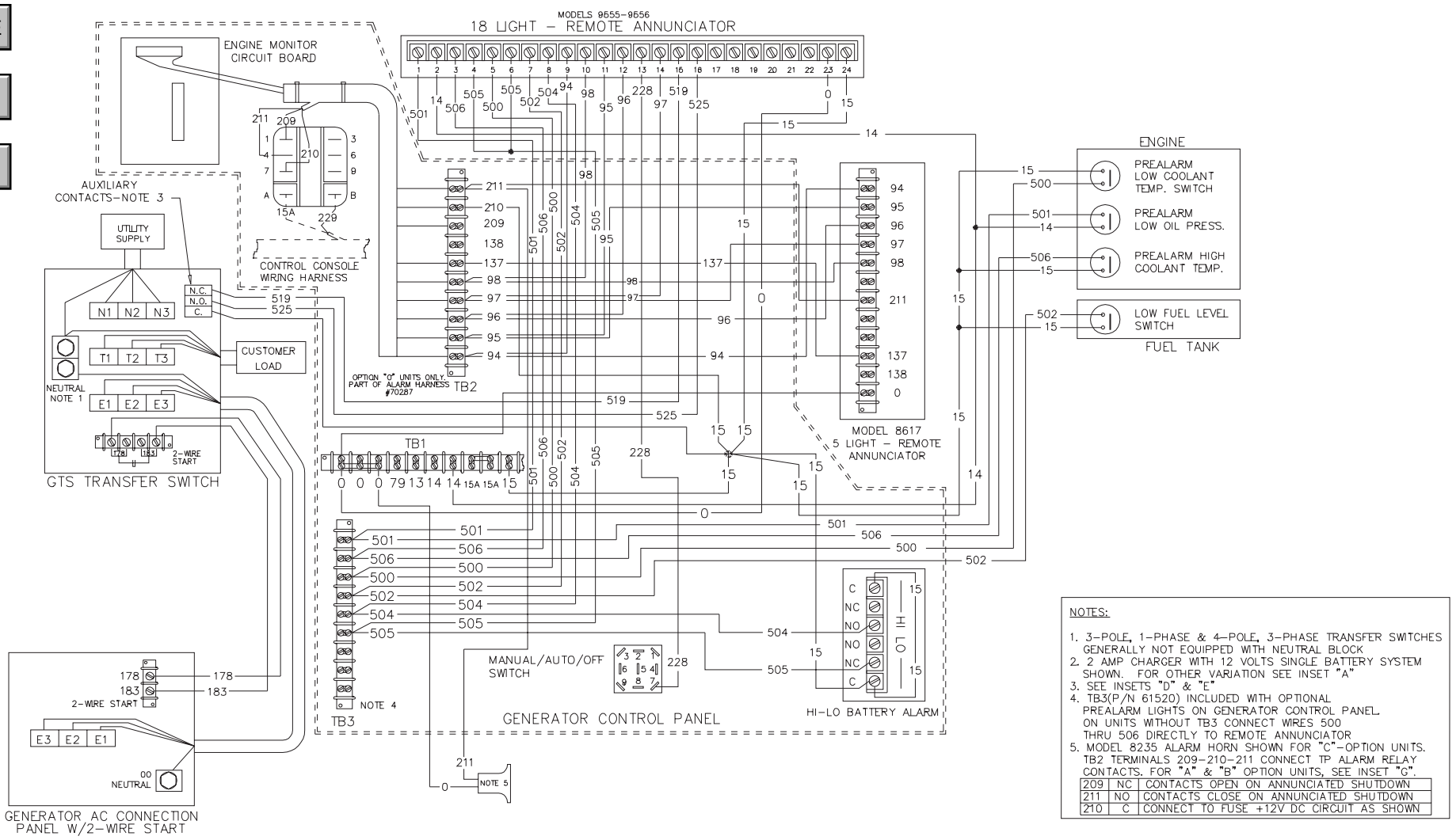

G N 1 21 27 28 29 13 34 35 0
D AC 2 2 AC C NO NC +B +S -S -B
10 AMP CHARGER 24AF/24MF
TO UPPER PANEL
218
0
CRANKING CONTACTOR
ENGINE HEATER THERMOSTAT
ENGINE COOLANT HEATER 4.0-6.4 LITER ONLY
OPTIONAL BATTERY HEATER
BATTERY HEATER THERMOSTAT
12 V. BATTERY
12 V. BATTERY
FRAME GROUND
GREEN
WHITE
BLACK
120 VAC UTILITY
ENGINE COOLANT HEATER & THERMOSTAT
BLACK
BLACK
GREEN
240V AC UTILITY
INSET "B"
10 AMP 24AF/24MF CHARGER 4.0-6.4-13.3 L ENGINE
13.3 LITER ENGINES ONLY


2AMP 24 VOLT BATTERY CHARGER
G N 120120 24V
D V V BAT13A 10 0
TO UPPER PANEL
218
0
ENGINE COOLANT HEATER 4.0-6.4 LITER
ENGINE HEATER THERMOSTAT
BATTERY HEATER THERMOSTAT
OPTIONAL BATTERY HEATER
CRANKING CONTACTOR
12 V. BATTERY
12 V. BATTERY
FRAME GROUND
GREEN
BLACK
WHITE
120 VAC UTILITY
ENGINE COOLANT HEATER & THERMOSTAT
BLACK
BLACK
GREEN
240V AC UTILITY
INSET "C"
2 AMP 24 VOLTS CHARGER WITH 4.0-6.4-13.3 LITER ENGINES
13.3 LITER ENGINES ONLY


TB1
0
220
RELAY
TO CONTROL BOARD
229
HORN SWITCH
211
RESISTOR
DIODE
BLACK/RED
RED
NOTE 5
INSET "G"
"A" & "B" OPTION ALARM HORN


14 15 16 17
MODELS 9555-9556 18 LIGHT - REMOTE ANNUNCIATOR
519
525
N.C.
N.O.
C.
210
220
TB2 OPT. "C" ONLY
TB1
STANDARD AUXILIARY CONTACTS GTS 250 VOLT "Y" SERIES TRANSFER SWITCH
GENERATOR UPPER PANEL
SWITCH POSITION
UTILITY
STANDBY
4-6 CLOSED OPEN
4-5 OPEN CLOSED
INSET "D"
GTS "Y" SWITCH POSITION INDICATION TO 18 LIGHT REMOTE ANNUNCIATOR

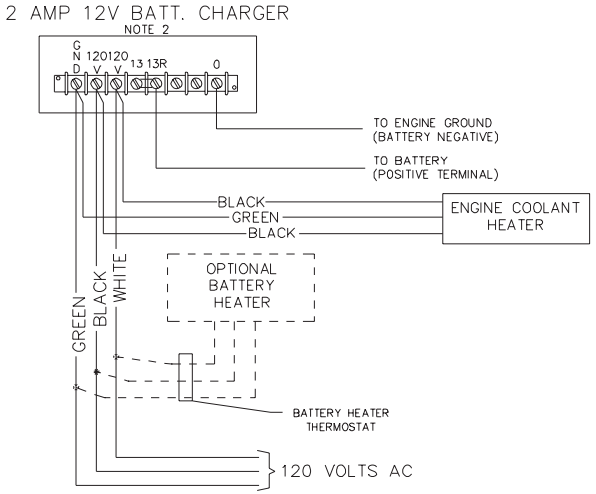

14 15 16 17
MODELS 9555-9556 18 LIGHT - REMOTE ANNUNCIATOR
519
525
C.
N.C.
N.O
210
220
TB2 OPT. "C" ONLY
TB1
STANDARD AUXILIARY CONTACTS GTS 600 VOLT "N" SERIES TRANSFER SWITCH
GENERATOR UPPER PANEL
SWITCH POSITION
CONTACTS UTILITY STANDBY
4-6 CLOSED OPEN
4-5 OPEN CLOSED
INSET "E"
GTS "N" SWITCH POSITION INDICATION TO 18 LIGHT REMOTE ANNUNCIATOR

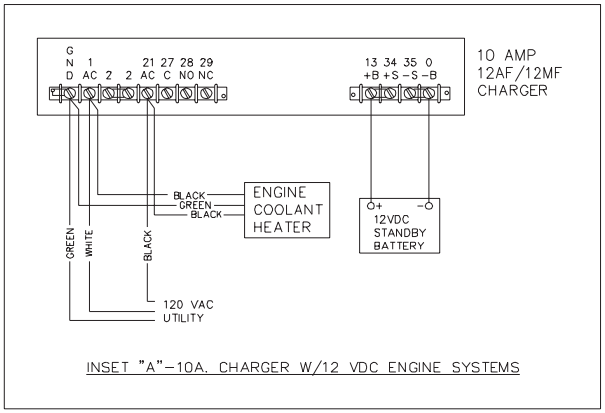


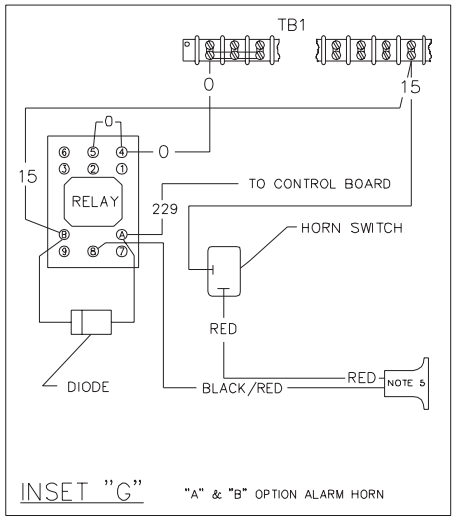
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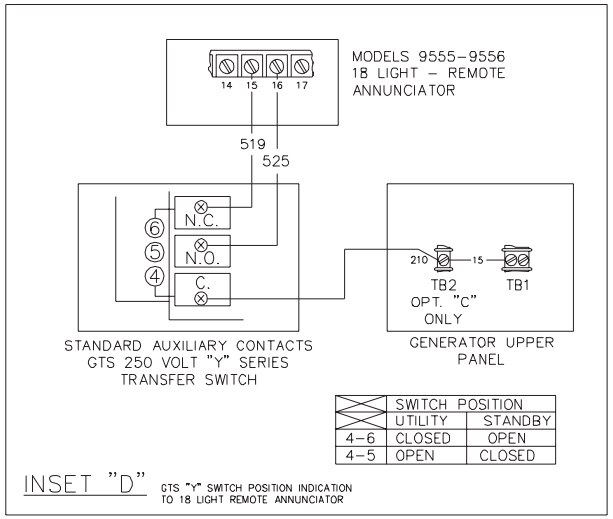
1. 3-POLE, 1-PHASE & 4-POLE, 3-PHASE TRANSFER SWITCHES GENERALLY NOT EQUIPPED WITH NEUTRAL BLOCK
2. 2 AMP CHARGER WITH 12 VOLTS SINGLE BATTERY SYSTEM SHOWN. FOR OTHER VARIATION SEE INSET "A"
3. SEE INSETS "D" & "E"
4. TB3(P/N 61520) INCLUDED WITH OPTIONAL PREALARM LIGHTS ON GENERATOR CONTROL PANEL. ON UNITS WITHOUT TB3 CONNECT WIRES 500 THRU 506 DIRECTLY TO REMOTE ANNUNCIATOR
5. MODEL 8235 ALARM HORN SHOWN FOR "C"-OPTION UNITS. TB2 TERMINALS 209-210-211 CONNECT TP ALARM RELAY CONTACTS. FOR "A" & "B" OPTION UNITS, SEE INSET "G".

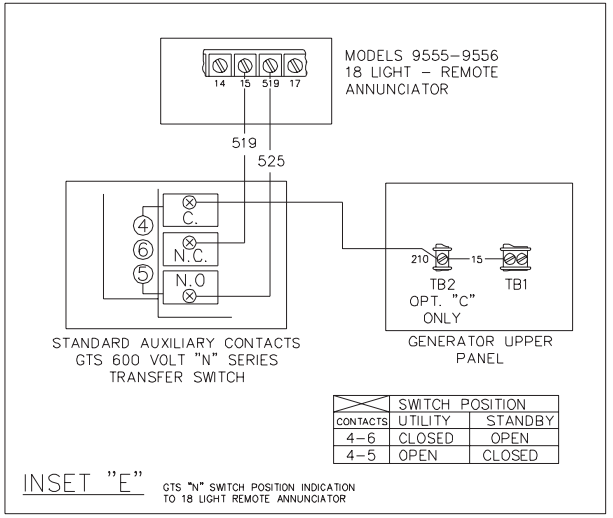
209	NC	CONTACTS OPEN ON ANNUNCIATED SHUTDOWN
211	NO	CONTACTS CLOSE ON ANNUNCIATED SHUTDOWN
210	C	CONNECT TO FUSE +12V DC CIRCUIT AS SHOWN

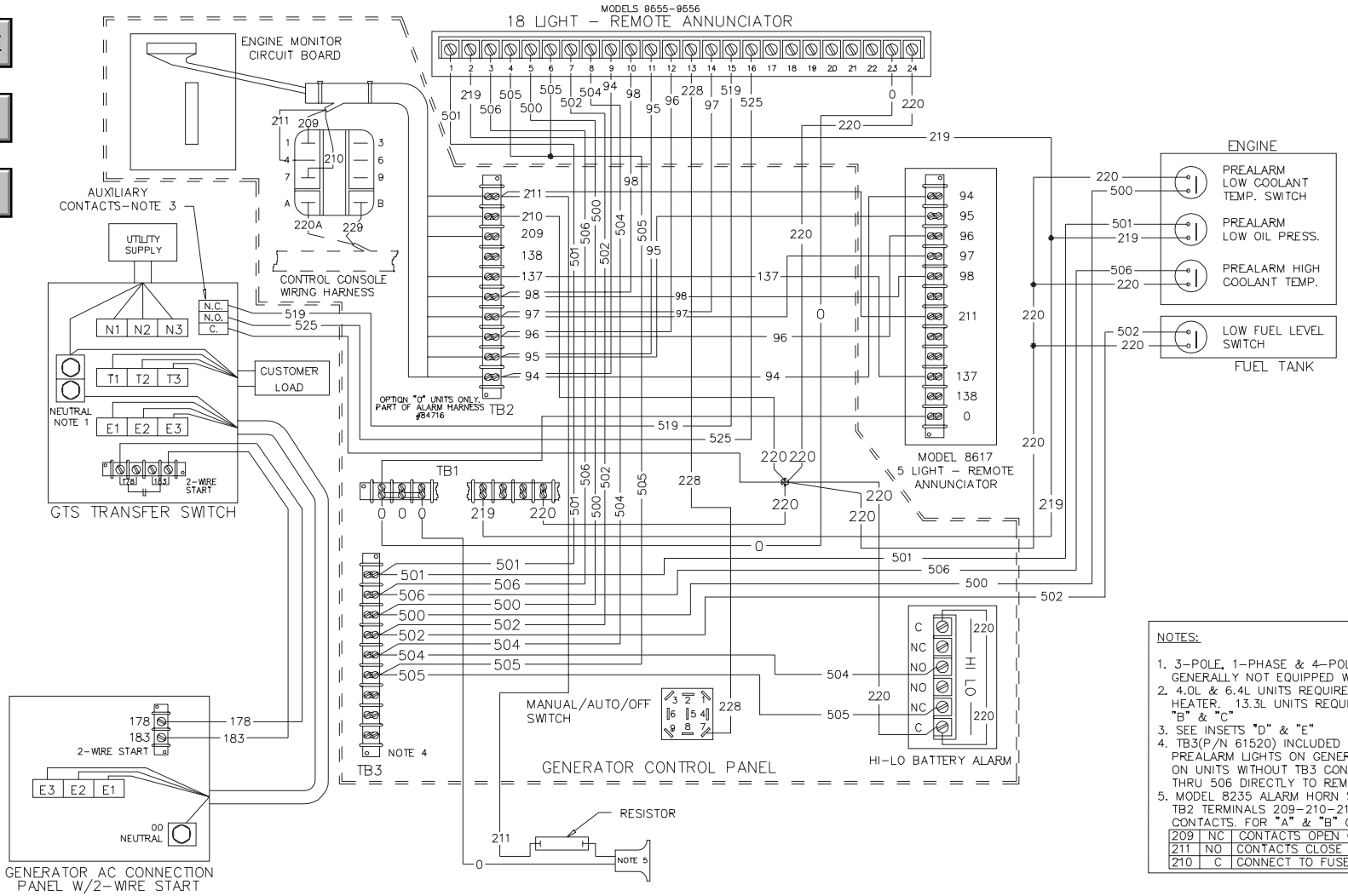

2 AMP 12V BATT. CHARGER
NOTE 2
G
N 120120 13 13R
D V V
0
TO ENGINE GROUND
(BATTERY NEGATIVE)
TO BATTERY
(POSITIVE TERMINAL)
BLACK
GREEN
BLACK
ENGINE COOLANT
HEATER
GREEN
BLACK
WHITE
OPTIONAL
BATTERY
HEATER
BATTERY HEATER
THERMOSTAT
120 VOLTS AC


G
N 1 21 27 28 29
D AC 2 2 AC C NO NC
13 34 35 0
+B +S −S −B
10 AMP
12AF/12MF
CHARGER
BLACK
GREEN
BLACK
ENGINE
COOLANT
HEATER
O+ −O
12VDC
STANDBY
BATTERY
GREEN
WHITE
BLACK
120 VAC
UTILITY
INSET "A"−10A. CHARGER W/12 VDC ENGINE SYSTEMS


TB1
0
15
0
0
15
RELAY
TO CONTROL BOARD
229
HORN SWITCH
RED
DIODE
BLACK/RED
RED
NOTE 5
INSET "G"
"A" & "B" OPTION ALARM HORN


14 15 16 17
MODELS 9555−9556
18 LIGHT − REMOTE
ANNUNCIATOR
519
525
N.C.
N.O.
C.
210
15
TB2
OPT. "C"
ONLY
TB1
STANDARD AUXILIARY CONTACTS
GTS 250 VOLT "Y" SERIES
TRANSFER SWITCH
GENERATOR UPPER
PANEL
SWITCH POSITION
UTILITY STANDBY
4−6 CLOSED OPEN
4−5 OPEN CLOSED
INSET "D"
GTS "Y" SWITCH POSITION INDICATION
TO 18 LIGHT REMOTE ANNUNCIATOR


14 15 519 17
MODELS 9555−9556
18 LIGHT − REMOTE
ANNUNCIATOR
519
525
C.
N.C.
N.O
210
15
TB2
OPT. "C"
ONLY
TB1
STANDARD AUXILIARY CONTACTS
GTS 600 VOLT "N" SERIES
TRANSFER SWITCH
GENERATOR UPPER
PANEL
SWITCH POSITION
CONTACTS UTILITY STANDBY
4−6 CLOSED OPEN
4−5 OPEN CLOSED
INSET "E"
GTS "N" SWITCH POSITION INDICATION
TO 18 LIGHT REMOTE ANNUNCIATOR

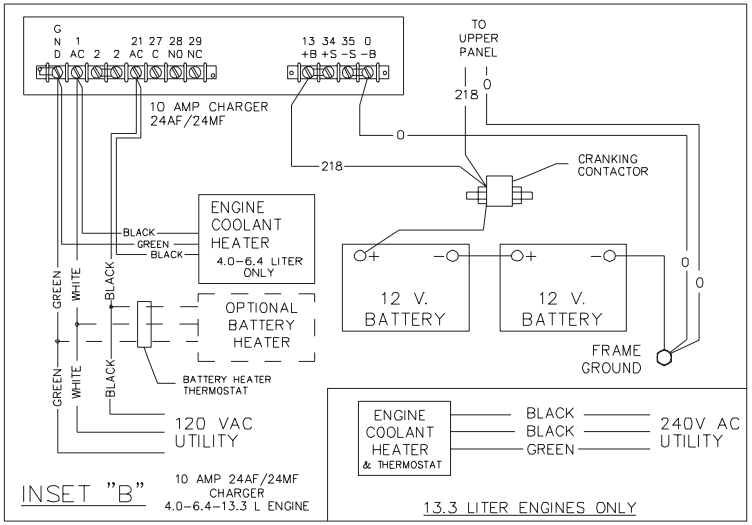


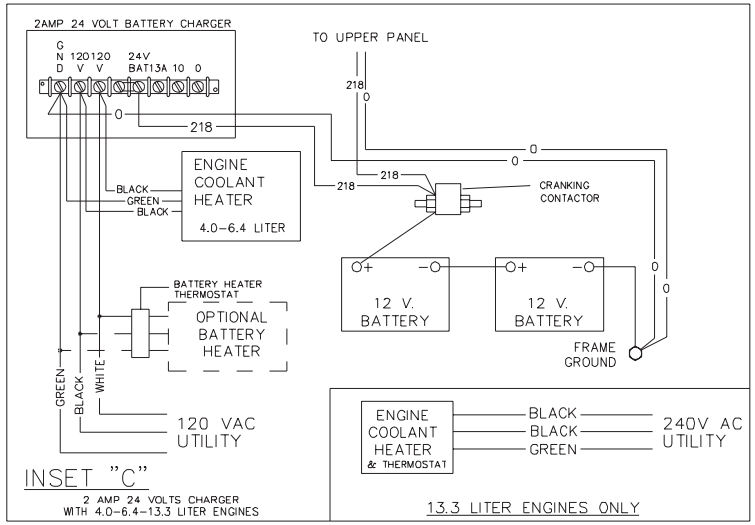
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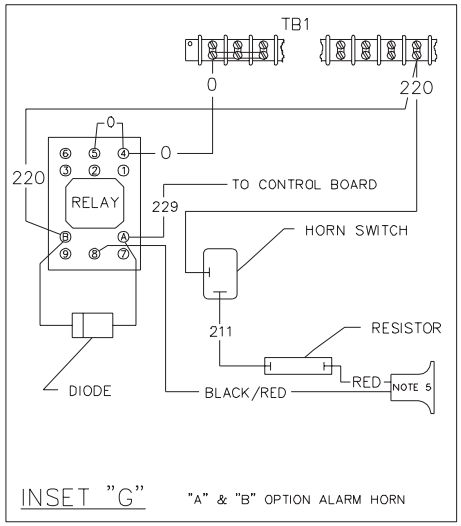
1. 3-POLE, 1-PHASE & 4-POLE, 3-PHASE TRANSFER SWITCHES GENERALLY NOT EQUIPPED WITH NEUTRAL BLOCK
2. 4.0L & 6.4L UNITS REQUIRE 120 VAC FOR ENGINE COOLANT HEATER. 13.3L UNITS REQUIRE 240 VAC - SEE INSETS "B" & "C"
3. SEE INSETS "D" & "E"
4. TB3(P/N 61520) INCLUDED WITH OPTIONAL PREALARM LIGHTS ON GENERATOR CONTROL PANEL. ON UNITS WITHOUT TB3 CONNECT WIRES 500 THRU 506 DIRECTLY TO REMOTE ANNUNCIATOR
5. MODEL 8235 ALARM HORN SHOWN FOR "C"-OPTION UNITS. TB2 TERMINALS 209-210-211 CONNECT TO ALARM RELAY CONTACTS. FOR "A" & "B" OPTION UNITS, SEE INSET "G".

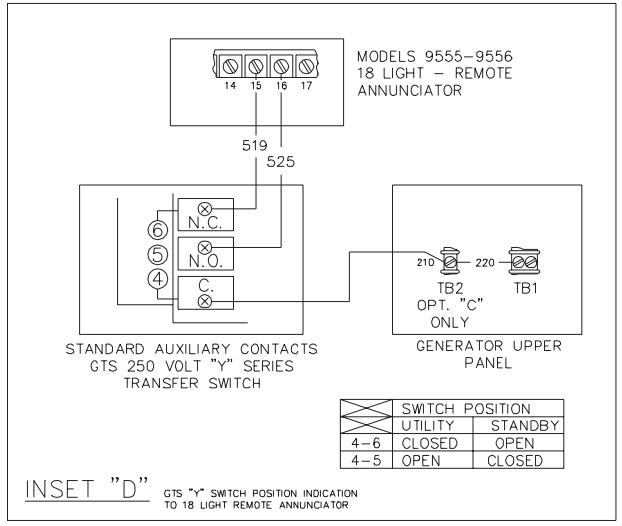
209	NC	CONTACTS OPEN ON ANNUNCIATED SHUTDOWN
211	NO	CONTACTS CLOSE ON ANNUNCIATED SHUTDOWN
210	C	CONNECT TO FUSE +24V DC CIRCUIT AS SHOWN

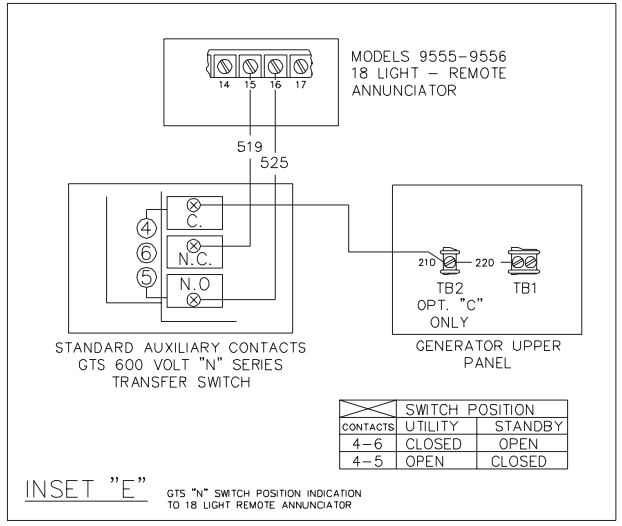
SHEET 1 OF 2


10 AMP CHARGER
24AF/24MF
TO UPPER PANEL
CRANKING CONTACTOR
ENGINE COOLANT HEATER
4.0–6.4 LITER ONLY
OPTIONAL BATTERY HEATER
BATTERY HEATER THERMOSTAT
12 V. BATTERY
12 V. BATTERY
FRAME GROUND
120 VAC UTILITY
ENGINE COOLANT HEATER & THERMOSTAT
240V AC UTILITY
INSET "B"
10 AMP 24AF/24MF CHARGER 4.0–6.4–13.3 L ENGINE
13.3 LITER ENGINES ONLY


2AMP 24 VOLT BATTERY CHARGER
TO UPPER PANEL
ENGINE COOLANT HEATER
4.0–6.4 LITER
CRANKING CONTACTOR
BATTERY HEATER THERMOSTAT
OPTIONAL BATTERY HEATER
12 V. BATTERY
12 V. BATTERY
FRAME GROUND
120 VAC UTILITY
ENGINE COOLANT HEATER & THERMOSTAT
240V AC UTILITY
INSET "C"
2 AMP 24 VOLTS CHARGER WITH 4.0–6.4–13.3 LITER ENGINES
13.3 LITER ENGINES ONLY


TB1
RELAY
TO CONTROL BOARD
HORN SWITCH
RESISTOR
DIODE
BLACK/RED
RED
NOTE 5
INSET "G"
"A" & "B" OPTION ALARM HORN


MODELS 9555–9556
18 LIGHT – REMOTE ANNUNCIATOR
STANDARD AUXILIARY CONTACTS GTS 250 VOLT "Y" SERIES TRANSFER SWITCH
TB2 OPT. "C" ONLY
TB1
GENERATOR UPPER PANEL
SWITCH POSITION
UTILITY
STANDBY
4–6 CLOSED OPEN
4–5 OPEN CLOSED
INSET "D"
GTS "Y" SWITCH POSITION INDICATION TO 18 LIGHT REMOTE ANNUNCIATOR

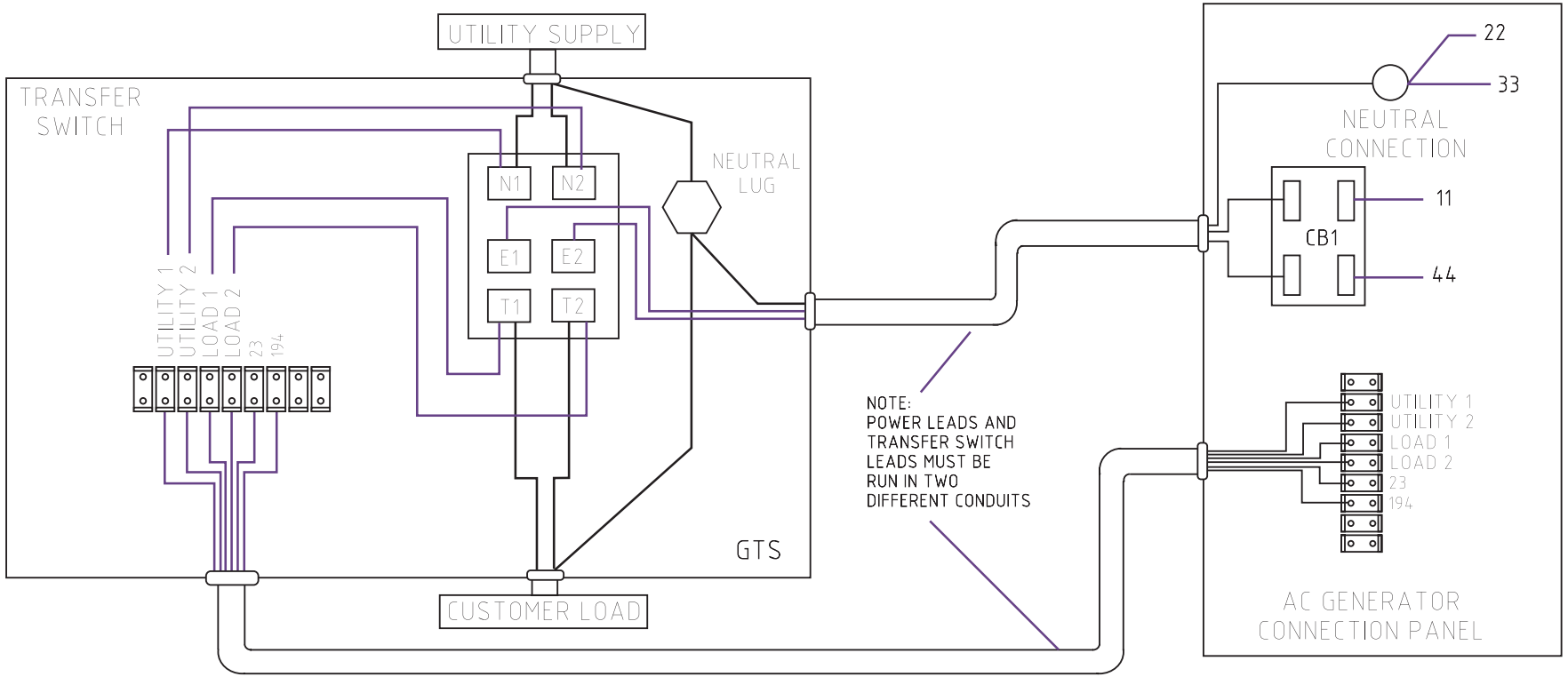

MODELS 9555–9556
18 LIGHT – REMOTE ANNUNCIATOR
STANDARD AUXILIARY CONTACTS GTS 600 VOLT "N" SERIES TRANSFER SWITCH
TB2 OPT. "C" ONLY
TB1
GENERATOR UPPER PANEL
SWITCH POSITION
CONTACTS
UTILITY
STANDBY
4–6 CLOSED OPEN
4–5 OPEN CLOSED
INSET "E"
GTS "N" SWITCH POSITION INDICATION TO 18 LIGHT REMOTE ANNUNCIATOR

Prepackaged Standby System Interconnection Diagrams

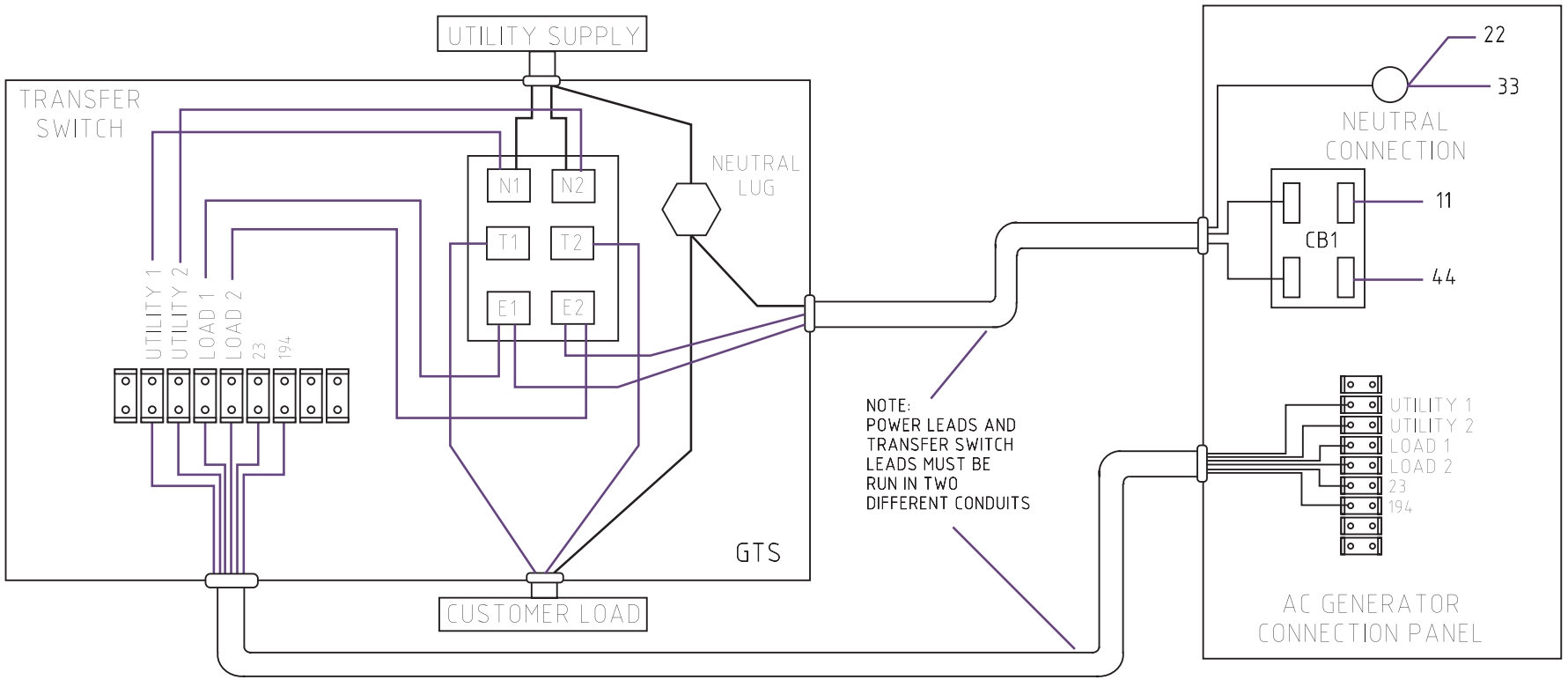
V-Type

Y-Type

V-TYPE


UTILITY SUPPLY
TRANSFER SWITCH
N1
N2
E1
E2
T1
T2
NEUTRAL LUG
UTILITY 1
UTILITY 2
LOAD 1
LOAD 2
23
194
GTS
CUSTOMER LOAD
NOTE:
POWER LEADS AND TRANSFER SWITCH LEADS MUST BE RUN IN TWO DIFFERENT CONDUITS
22
33
NEUTRAL CONNECTION
CB1
11
44
UTILITY 1
UTILITY 2
LOAD 1
LOAD 2
23
194
AC GENERATOR CONNECTION PANEL

Y-TYPE


UTILITY SUPPLY
TRANSFER SWITCH
N1
N2
T1
T2
E1
E2
NEUTRAL LUG
UTILITY 1
UTILITY 2
LOAD 1
LOAD 2
23
194
GTS
CUSTOMER LOAD
NOTE:
POWER LEADS AND TRANSFER SWITCH LEADS MUST BE RUN IN TWO DIFFERENT CONDUITS
22
33
NEUTRAL CONNECTION
11
CB1
44
UTILITY 1
UTILITY 2
LOAD 1
LOAD 2
23
194
AC GENERATOR CONNECTION PANEL