THREE PHASE WIRING FOR ASCO 7000 SERIES AUTOMATIC DELAYED TRANSITION TRANSFER SWITCHES TYPE 7ADTS RATED 1000-3000 AMPERES

FEATURES, SETTINGS, OPERATION, ACCESSORIES & NOTES

THE FOLLOWING FEATURES AND RELATED SETTINGS ARE PART OF THE GROUP 5 CONTROL PANEL'S USER CONFIGURABLE PARAMETERS. FOR DETAILED INFORMATION REGARDING THE CONFIGURATION OF THESE PARAMETERS AND OTHER FEATURES OF THE GROUP 5 CONTROL PANEL, REFER TO THE GROUP 5 CONTROL PANEL FOR ASCO 7000 SERIES AUTOMATIC TRANSFER SWITCHES USER'S GUIDE (PART NO. 381333-126) PROVIDED WITH EVERY 7000 SERIES AUTOMATIC TRANSFER SWITCH.

THE NOMINAL OPERATING VOLTAGE & FREQUENCY IS PRE-PROGRAMMED AT THE FACTORY BASED ON THE NAMEPLATE DATA PRINTED ON THE TRANSFER SWITCH & CONTROL PANEL NAMEPLATES.

VOLTAGE & FREQUENCY SENSING

THE FOLLOWING SETTINGS ARE EXPRESSED AS A PERCENTAGE OF THE CONTROL PANEL'S NOMINAL VOLTAGE SETTING UNLESS STATED OTHERWISE. ALL SETTINGS ARE ADJUSTABLE IN INCREMENTS OF 1%.

A. RMS VOLTAGE SENSING ON ALL PHASES OF THE NORMAL & EMERGENCY SOURCES.

PARAMETER	RANGE OF SETTINGS	DEFAULT SETTING
NORMAL VOLTAGE DROPOUT	70-98%	85%
NORMAL VOLTAGE PICKUP	85-100%	90%
NORMAL OVER VOLTAGE TRIP	102-115%	OFF
NORMAL VOLTAGE UNBALANCE	YES/NO	NO
NORMAL VOLTAGE UNBALANCE DROPOUT	5-20% OF AVG. NORMAL VOLTAGE	20% (if ON)
NORMAL VOLTAGE UNBALANCE PICKUP	3-18% OF AVG. NORMAL VOLTAGE	10% (if ON)
EMERGENCY VOLTAGE DROPOUT	70-98%	75%
EMERGENCY VOLTAGE PICKUP	85-100%	90%
EMERGENCY OVER VOLTAGE TRIP	102-115%	OFF
EMERGENCY VOLTAGE UNBALANCE	YES/NO	NO
EMERGENCY VOLTAGE UNBALANCE DROPOUT	5-20% OF AVG. EMERGENCY VOLTAGE	20% (if ON)
EMERGENCY VOLTAGE UNBALANCE PICKUP	3-18% OF AVG. EMERGENCY VOLTAGE	10% (if ON)

B. FREQUENCY SENSING OF THE NORMAL & EMERGENCY SOURCES.

PARAMETER	RANGE OF SETTINGS	DEFAULT SETTING
NORMAL FREQUENCY DROPOUT	85-98%	90%
NORMAL FREQUENCY PICKUP	90-100%	95%
NORMAL OVER FREQUENCY TRIP	102-110%	OFF
EMERGENCY FREQUENCY DROPOUT	85-98%	90%
EMERGENCY FREQUENCY PICKUP	90-100%	95%
EMERGENCY OVER FREQUENCY TRIP	102-110%	OFF

TIME DELAYS

THE FOLLOWING TIME DELAY SETTINGS ALL HAVE AN ADJUSTABLE RANGE OF 0-60 min 59 sec UNLESS STATED OTHERWISE. ADJUSTABLE IN INCREMENTS OF 1 sec.
NOTE: SOME TIME DELAYS MAY BE EFFECTED BY CUSTOMER REQUESTED ACCESSORIES PROVIDED WITH THE UNIT. REFER TO THE DESCRIPTIONS PROVIDED UNDER THE "ACCESSORIES" NOTES ON THIS PAGE.

FEATURE	NAME	DEFAULT SETTING
1C	NORMAL SOURCE FAILURE TO ENGINE START	1 sec
2B	TRANSFER TO EMERGENCY ON AVAILABILITY OF EMERGENCY SOURCE	0 sec
1F	EMERGENCY SOURCE FAILURE RETRANSFER (NORMAL SOURCE AVAILABLE)	0 sec
2E	ENGINE COOLDOWN FOLLOWING RETRANSFER TO NORMAL	5 min
3A	RETRANSFER TO NORMAL (NORMAL FAILURE MODE)	30 min
3A	RETRANSFER TO NORMAL (TEST MODE)	30 sec
-	DELAYED TRANSFER (LOAD "OFF" TIME), [0-5 min 59 sec]	3 sec

DESCRIPTIONS OF TIME DELAYS:

FEAT. 1C - DELAY ON NORMAL SOURCE OUTAGE. STARTS ON FAILURE OF NORMAL SOURCE. RESETS IF NORMAL SOURCE IS ACCEPTED BEFORE EXPIRATION. INHIBITS ENGINE STARTING AND AUTOMATIC TRANSFER UNTIL EXPIRATION.

FEAT. 2B - DELAY PRIOR TO TRANSFER TO THE EMERGENCY SOURCE. DELAY STARTS ON EXPIRATION OF FEAT. 1C AND WHEN THE EMERGENCY SOURCE HAS BEEN ACCEPTED. DELAY RESETS IF THE EMERGENCY SOURCE FAILS PRIOR TO EXPIRATION. ON EXPIRATION, TRANSFER TO EMERGENCY IS INITIATED UNLESS THE NORMAL SOURCE HAS RECOVERED AND THE "COMMIT TO TRANSFER" FEATURE IS SET TO "NO" COMMIT. PROVIDES A PERIOD FOR EMERGENCY SOURCE STABILIZATION OR STAGING OF MULTIPLE TRANSFER SWITCH CONTROLLED LOADS TO THE EMERGENCY SOURCE.

FEAT. 1F - DELAY ON RETRANSFER TO NORMAL IN THE EVENT OF EMERGENCY SOURCE FAILURE. DELAY BEGINS ON FAILURE OF THE EMERGENCY SOURCE IF THE NORMAL SOURCE IS ACCEPTABLE. ON EXPIRATION, RETRANSFER TO NORMAL WILL BE INITIATED.

FEAT. 2E - DELAY ON ENGINE SHUTDOWN (ENGINE COOL DOWN PERIOD). DELAY STARTS FOLLOWING RETRANSFER TO THE NORMAL SOURCE. PROVIDES A PERIOD FOR THE ENGINE-GENERATOR SET TO RUN UNLOADED PRIOR TO SHUTDOWN.

FEAT. 3A - RETRANSFER TO NORMAL DELAY (NORMAL FAILURE MODE)
DELAY STARTS WHEN NORMAL SOURCE IS ACCEPTED (FOLLOWING IT'S FAILURE) AND WHILE THE LOAD IS CONNECTED TO EMERGENCY. RESETS IF NORMAL FAILS PRIOR TO EXPIRATION OR IF THE EMERGENCY SOURCE FAILS BEFORE EXPIRATION AND FEAT. 1F EXPIRES (AUTOMATIC BYPASS ON EMERGENCY SOURCE FAILURE). PROVIDES A PERIOD FOR THE NORMAL SOURCE TO STABILIZE PRIOR TO RETRANSFER.

FEAT. 3A - RETRANSFER TO NORMAL DELAY (TEST MODE)
DELAY STARTS WHEN THE "TRANSFER TEST" SWITCH IS RESET TO "AUTO" (FOLLOWING A USER INITIATED TRANSFER TEST) AND WHILE THE LOAD IS CONNECTED TO EMERGENCY. RESETS IF NORMAL FAILS PRIOR TO EXPIRATION OR IF THE EMERGENCY SOURCE FAILS BEFORE EXPIRATION AND FEAT. 1F EXPIRES (AUTOMATIC BYPASS ON EMERGENCY SOURCE FAILURE).

DELAYED TRANSFER (LOAD "OFF" TIME) -
PROVIDES A USER DEFINABLE PERIOD DURING WHICH THE LOAD IS DISCONNECTED FROM BOTH THE NORMAL AND EMERGENCY SOURCES DURING TRANSFER IN EITHER DIRECTION. THE DELAY ("OFF" PERIOD) BEGINS FOLLOWING THE OPENING OF THE SOURCE CONTACTOR, CN OR CE, CONNECTED TO THE SOURCE FROM WHICH TRANSFER IS BEING MADE. UPON EXPIRATION, CLOSURE OF THE OPPOSITE SOURCE CONTACTOR IS INITIATED.

ENGINE EXERCISER

THE ENGINE EXERCISER FEATURE PROVIDES A MEANS TO PERFORM AUTOMATIC EXERCISING OF THE ENGINE-GENERATOR SET EITHER WITH OR WITHOUT LOAD TRANSFER.
THE USER CAN PROGRAM UP TO SEVEN DIFFERENT EXERCISE ROUTINES. EACH ROUTINE INCLUDES;
1. ENABLE OR DISABLE THE ROUTINE
2. ENABLE OR DISABLE TRANSFER OF THE LOAD DURING THE ROUTINE
3. SET START TIME OF ROUTINE -
   - TIME OF DAY
   - DAY OF WEEK
   - WEEK OF MONTH (1st, 2nd, 3rd, 4th, ALTERNATE OR ALL)
4. SET THE DURATION OF THE ROUTINE

PARAMETER	RANGE OF SETTING	DEFAULT SETTING
MONTH (CLOCK SET)	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	CURRENT DATE
DAY	1-31	
YEAR	00-99	
HOUR	0-23	Eastern Standard Time
MINUTE	0-59	
ENABLE ROUTINE (ROUTINE 1-7)	YES/NO	NO
TRANSFER LOAD	YES/NO	NO
START HOUR	0-23	0
START MINUTE	0-59	0
RUN WEEK	ALL, ALTERNATE, 1st, 2nd, 3rd, 4th, 5th	ALL
RUN DAY	SUN MON TUE WED THU FRI SAT	SUN
DURATION HOURS	0-23	0
DURATION MINUTES	0-59	0

SIGNALS & AUXILIARIES

A. FEATURES 7 & 8- ENGINE START SIGNAL
SIGNAL INITIATED BY DROPOUT OF CONTROL PANEL RELAY (NR) FOLLOWING EXPIRATION OF THE FEATURE 1C TIME DELAY (DELAY TO OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES). FEATURE 7 CLOSES TO SIGNAL ENGINE START. FEATURE 8 OPENS TO SIGNAL ENGINE START. ENGINE STARTING SIGNAL RESETS FOLLOWING RETRANSFER TO THE NORMAL SOURCE AND EXPIRATION OF THE FEATURE 2E (ENGINE COOL DOWN) TIME DELAY. FEATURES 7 & 8 ARE PROVIDED AS A SINGLE FORM C CONTACT CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACT RATED 10 AMPS AT 32 VDC/120 VAC RESISTIVE.

B. FEATURES 14AF & 14BF - TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS.
SEVEN (7) FORM C CONTACTS TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO NORMAL (14A) AND SEVEN (7) FOR EMERGENCY (14B). CONTACTS CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACTS RATED 10 AMPS, 32 VDC, 250 VAC.

C. FEATURE 17 - REMOTE TRANSFER TO EMERGENCY.
REQUIRES A CUSTOMER SUPPLIED NORMALLY OPEN CONTACT. CLOSING OF THE CONTACT CAUSES ENGINE START AND TRANSFER TO THE EMERGENCY SOURCE. OPENING OF THE CONTACT ACTIVATES THE FEATURE 3A (RETRANSFER TO NORMAL) DELAY PRIOR TO RETRANSFER. IN THE EVENT THE EMERGENCY SOURCE FAILS WHILE THE TRANSFER SWITCH IS CONNECTED TO EMERGENCY AND THE REMOTE CONTACT IS CLOSED, THE TRANSFER SWITCH WILL RETRANSFER TO THE NORMAL SOURCE. CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB).

OPERATION

IF THE NORMAL SOURCE FAILS, THE TRANSFER SWITCH INITIATES STARTING OF THE ENGINE-GENERATOR SET. WHEN PROPER VOLTAGE AND FREQUENCY HAVE BEEN ATTAINED, THE LOAD WILL BE TRANSFERRED TO THE EMERGENCY SOURCE BY MEANS OF A DELAYED TRANSITION, (PROGRAMMED LOAD DISCONNECT PERIOD).

DELAYED TRANSITION TRANSFER TO EMERGENCY WILL CAUSE THE NORMAL SOURCE CONTACTOR (CN) TO OPEN. AFTER THE LOAD DISCONNECT DELAY, AS SET VIA THE USER INTERFACE OF THE GROUP 5 CONTROL PANEL, THE EMERGENCY SOURCE CONTACTOR (CE) WILL CLOSE. DURING THE PERIOD THAT BOTH CONTACTORS ARE OPEN AND THE TIME DELAY IS ACTIVE, A "LOAD DISCONNECT ACTIVE" LED WILL BE LIT (AMBER LED).

WHEN THE NORMAL SOURCE IS RESTORED FOR THE DURATION OF THE FEATURE 3A, RETRANSFER TO NORMAL TIME DELAY SETTING, THE LOAD WILL BE RETRANSFERRED TO THE NORMAL SOURCE IN A DELAYED TRANSITION MANNER.

DELAYED TRANSITION RETRANSFER TO NORMAL WILL CAUSE THE EMERGENCY SOURCE CONTACTOR (CE) TO OPEN. AFTER THE LOAD DISCONNECT TIME DELAY EXPIRES, THE NORMAL SOURCE CONTACTOR (CN) WILL CLOSE.

THE ENGINE WILL CONTINUE TO RUN FOR THE ENGINE COOL DOWN PERIOD, FEATURE 2E.

DELAYED TRANSITION TRANSFER WILL ALSO OCCUR DURING TRANSFER TO EMERGENCY BY OPERATING THE TEST SWITCH. RETRANSFER TO NORMAL WILL OCCUR AS PREVIOUSLY DESCRIBED.

USER CONTROLS AND INDICATIONS

A. FEATURES 5 & 6B - TRANSFER TEST/RETRANSFER TIME DELAY BYPASS CONTROLS.
TRANSFER TEST:
OPERATION CAUSES A NORMAL SOURCE FAILURE SEQUENCE. ACTIVATE AND HOLD FOR AT LEAST 15 SECONDS TO ALLOW TIME FOR THE ENGINE-GENERATOR TO START.
RETRANSFER TIME DELAY BYPASS:
OPERATION WILL BYPASS THE FEATURE 3A (RETRANSFER TO NORMAL DELAY).

B. FEATURES 9A & 9B - TRANSFER SWITCH POSITION INDICATORS.
FEATURE 9A: TRANSFER SWITCH CLOSED ON NORMAL (GREEN LED)
FEATURE 9B: TRANSFER SWITCH CLOSED ON EMERGENCY (RED LED)

C. FEATURES 9C & 9D - SOURCE ACCEPTANCE INDICATORS.
FEATURE 9C: NORMAL SOURCE ACCEPTED (GREEN LED)
FEATURE 9D: EMERGENCY SOURCE ACCEPTED (RED LED)

D. LOAD DISCONNECT ACTIVE - INDICATES THAT THE TRANSFER SWITCH IS IN THE LOAD DISCONNECTED POSITION (BOTH NORMAL (CN) AND EMERGENCY (CE) CONTACTORS OPEN) (AMBER LED).

GENERAL NOTES

1. SWITCH SHOWN DE-ENERGIZED AND CONNECTED TO THE NORMAL SOURCE.
2. DEVICE SYMBOLS AND DESIGNATIONS ARE IN ACCORDANCE WITH NEMA PUBLICATION ICS 1-1983, PART 1-101A.
3. ALL WIRING IS #16 AWG, TINNED, STRANDED COPPER UNLESS OTHERWISE INDICATED.
4. O ON TERMINAL BLOCKS INDICATES AVAILABLE FIELD CONNECTION POINT.
5. ● ON TERMINAL BLOCKS INDICATES FACTORY CONNECTION POINT.
6. CONTROL AND ACCESSORY WIRING IS ROUTED IN ACCORDANCE WITH ASCO ASSEMBLY PROCEDURE GS451261.
7. AN OPERATOR'S MANUAL IS FURNISHED WITH EACH AUTOMATIC TRANSFER SWITCH. REFER TO THIS PUBLICATION PRIOR TO INSTALLATION AND OPERATION OF THE UNIT.

BASE CATALOG NUMBER				CATALOG NUMBER SUFFIXES			
CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE
7ADTS	A B BLANK FOR NONE	3	1000 1200 1600 2000 2600 3000	A B C D E F G H J K L M N P Q R	5	X BLANK FOR NONE	C E F G H J K L M N P Q BLANK FOR OPEN TYPE

EXPLANATION OF CATALOG NUMBER CODES						
NEUTRAL TYPE		VOLTAGE CODES 3 PHASE (5 OR 4 WIRE) 50 OR 60 Hz		ENCLOSURE CODES		
CODE	DESCRIPTION	CODE	NOMINAL VOLTAGE	CODE	TYPE	DESCRIPTION
BLANK	NONE	A	115	BLANK		OPEN TYPE (NO ENCLOSURE)
A	SOLID	B	120	C	1	GENERAL PURPOSE, INDOOR
B	SWITCHING	C	208	E	2	INDOOR, WATER & DUST RESISTANT
		D	220	F	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT
		E	230	G	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
		F	240	H	4X	TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)
		G	277	J	4X	TYPE 4 PLUS CORROSION RESISTANCE (FIBERGLASS)
		H	380	K	7	EXPLOSION PROOF
		J	400	L	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
		K	415			
		L	440			(SECURE ENCLOSURES)
		M	460	M	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT
		N	480	N	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
		P	550	P	4X	TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)
		Q	575	Q	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
		R	600			

CATALOG NUMBER _____
CERTIFIED TO
ASCO® S.O. _____
BY _____
DATE _____
FORM REV N

CHANGE LETTER	ECN NO.	BY	APP.	DATE
N	202977	CC	WK	01/05
	SEE ECN			
M	166908	SDH	SDH	04/28/04
	SEE ECN			
L	161899	SDH	SDH	10/08/02
	SEE ECN			
K	160160	BK	WK	03/07/02
	SEE ECN			
J	159798	WK	WK	01/25/02
	SEE ECN			
H	157978	WK	BK	6/15/01
	SEE ECN			
G	157620	BWM	BK	5/23/01
	SEE ECN			

PROJECT NAME:
WIRING DIAGRAM
7000 SERIES (7ADTS)
GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

SUBSIDIARY DISTRIBUTION
AE AN AM AJ AL
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	BY	DATE
DRAWN BY	YZ	11/97
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DRAFTING APPROVAL		
FINAL APPROVAL	SDH	11/97

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-055

ASSEM. REF. NO.

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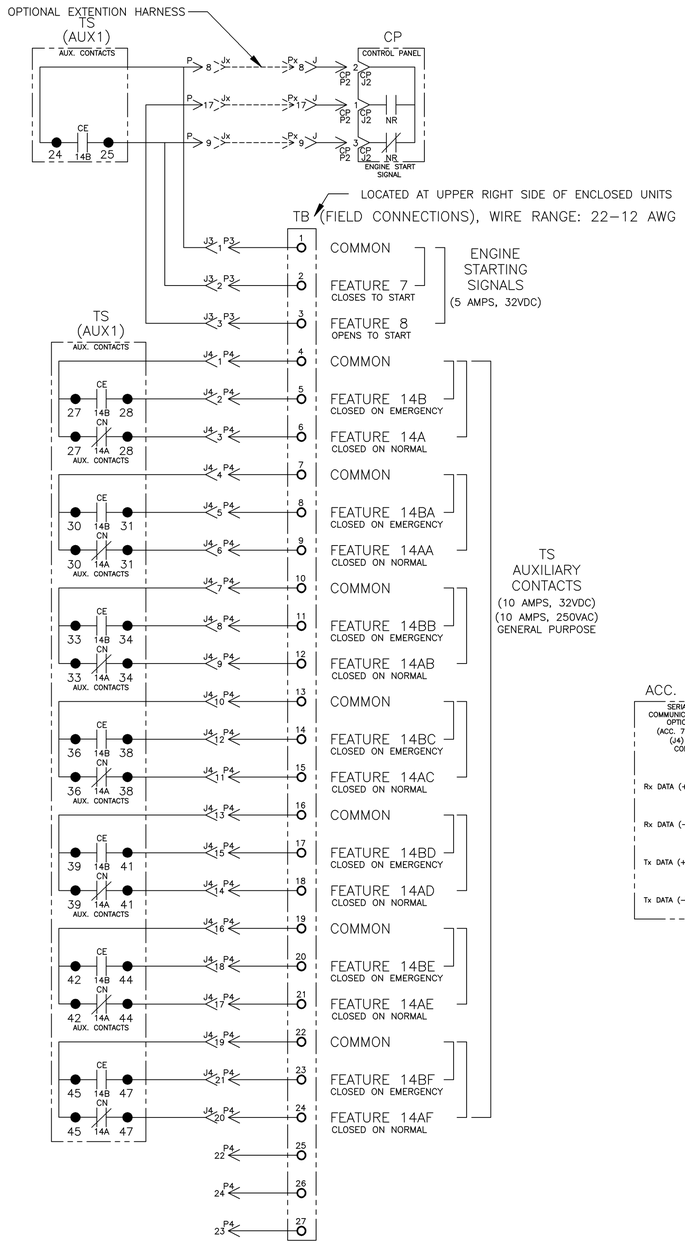
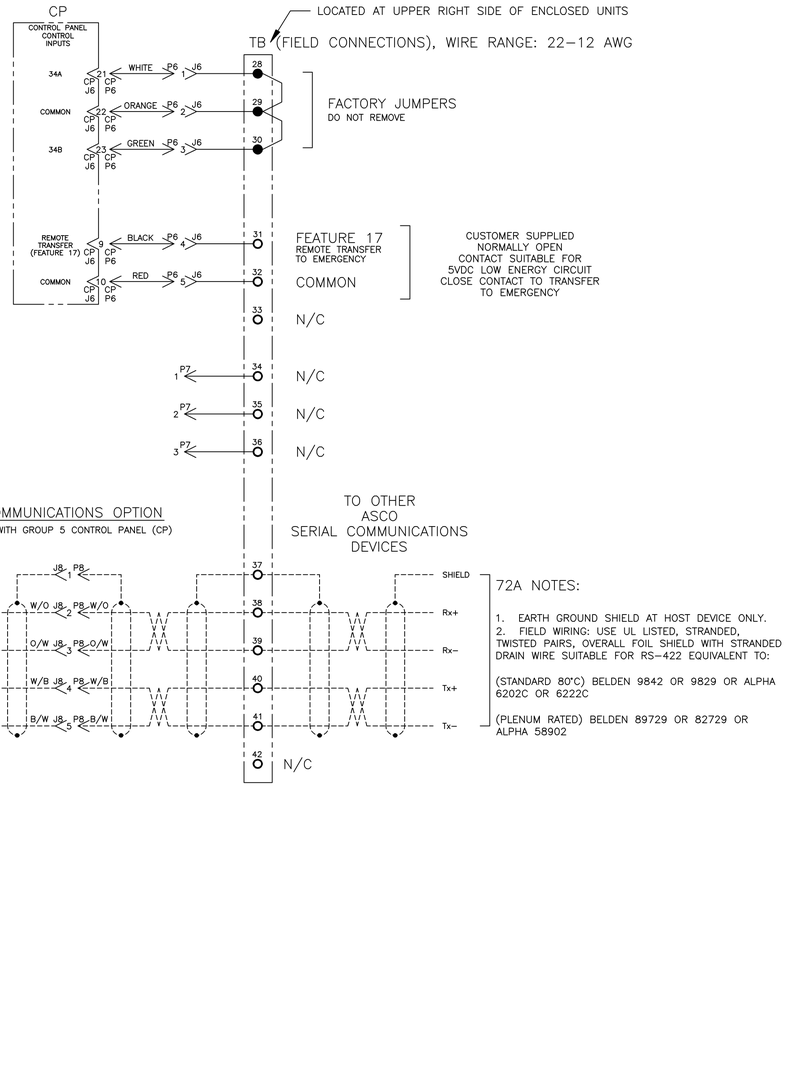
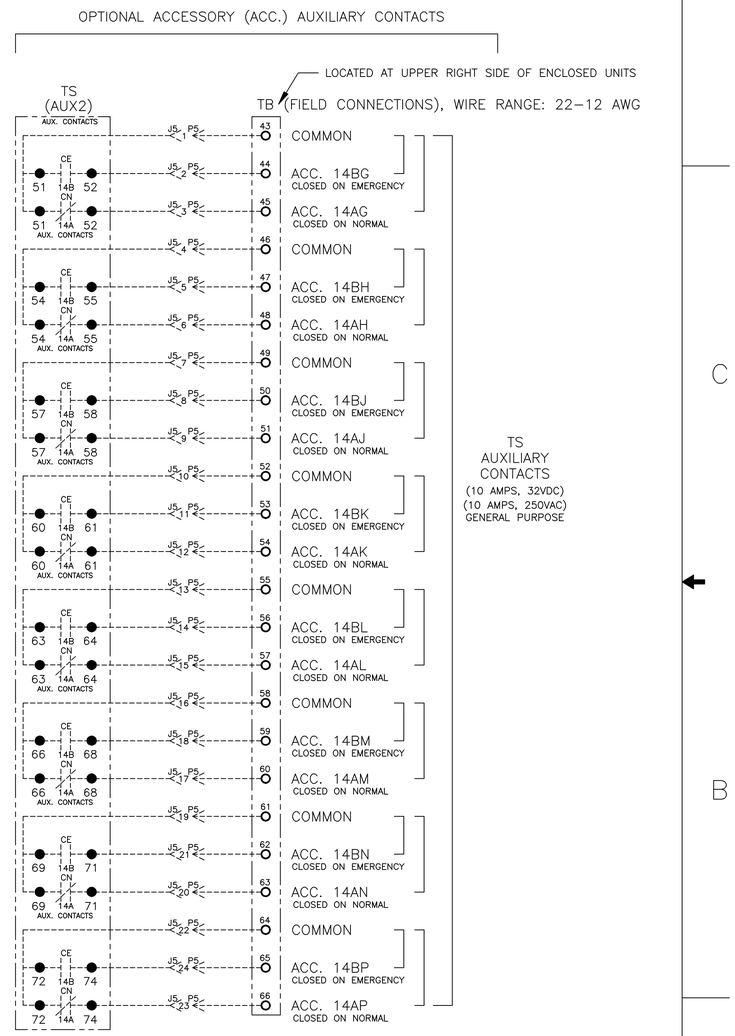
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

COMPUTER GENERATED DRAWING
SCALE 1:1 | ACAD | FILE
SIZE | DWG. NO. | DS617417
CHANGE LETTER N | ECN NO. 202977 | SHEET 1 OF 6

FIELD CONNECTIONS







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N	202977	CC	WK	01/05
	SEE ECN			
M	166908	SDH	SDH	04/28/04
	SEE ECN			

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WIRING DIAGRAM
7000 SERIES (7ADTS)
GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

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AG		AP		AC		AS					

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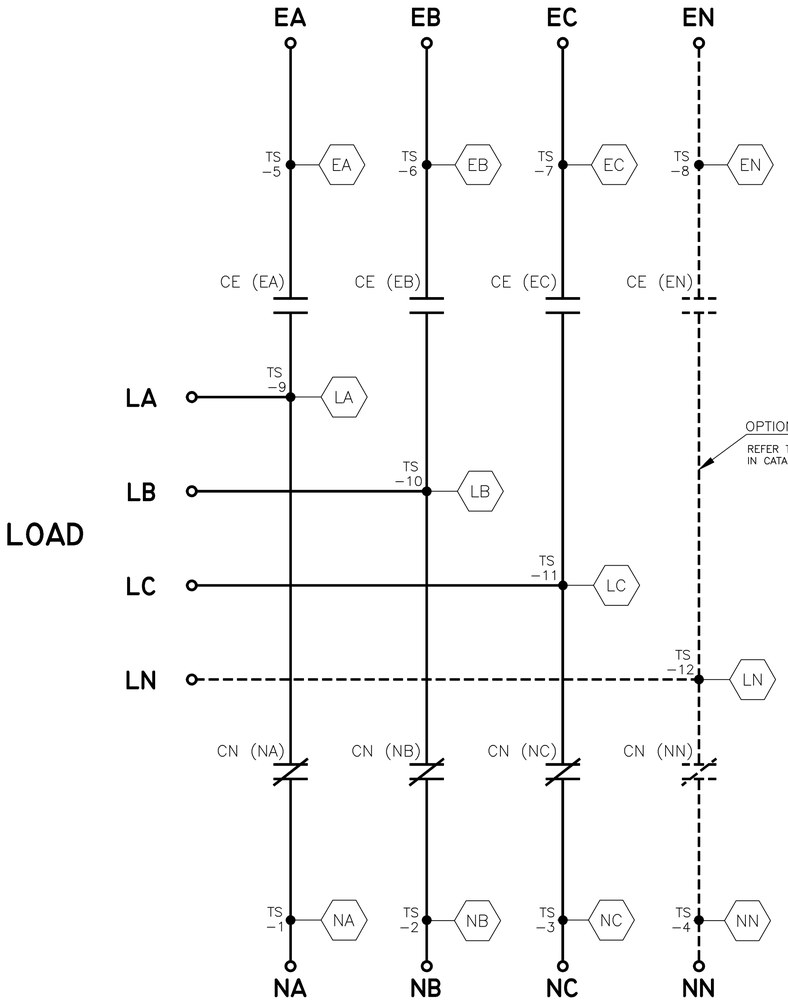
MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY



OPTIONAL NEUTRAL TYPES

REFER TO "EXPLANATION OF CATALOG NUMBER CODES" IN CATALOG NUMBER CHART ON SHEET 1.

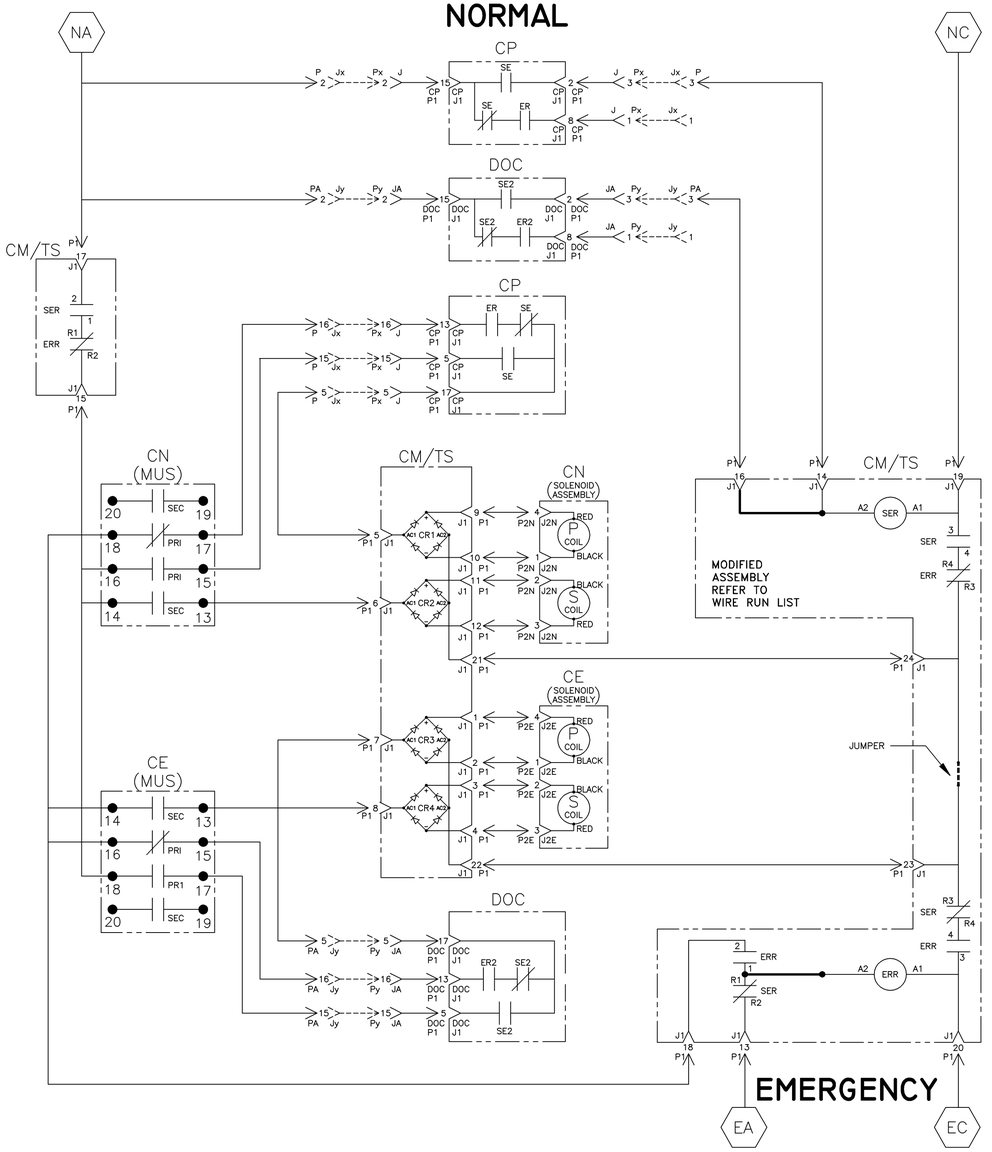
- NONE
- SWITCHING
- SOLID BUS PLATE

NORMAL

NOTE:

ATS SHOWN CLOSED ON NORMAL SOURCE.

NORMAL



CN (MUS) CONTACTS						
MUS	SOLENOID POSITION					
	NORM	>	AFTER TDC *	<	OPEN	
13–14						
15–16						
17–18						
19–20						

CE (MUS) CONTACTS					
MUS	SOLENOID POSITION				
	OPEN	>	AFTER TDC *	<	EMER
13–14					
15–16					
17–18					
19–20					

* AFTER SOLENOID CORE PASSES THROUGH TOP DEAD CENTER POSITION.

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	SEE ECN			
M	166908	SDH	SDH	04/28/04
	SEE ECN			

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PROJECT NAME:

WIRING DIAGRAM

7000 SERIES (7ADTS)

GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

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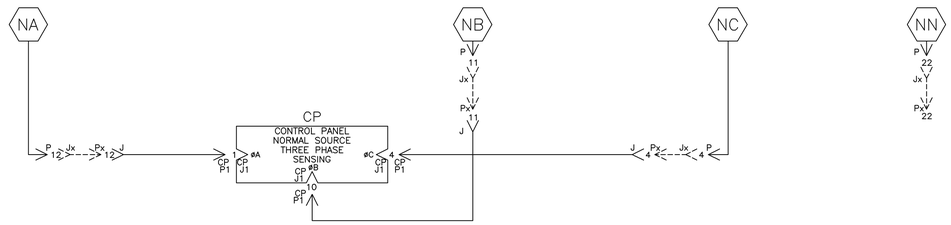
CHANGE LETTER N | ECN NO. 202977 | SHEET 3 OF 6

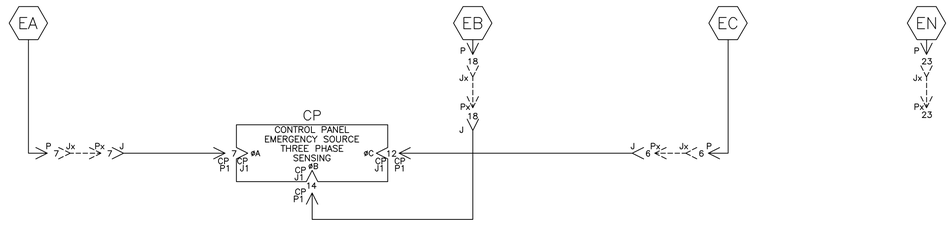
NORMAL SOURCE CIRCUITS

NORMAL



EMERGENCY SOURCE CIRCUITS

EMERGENCY

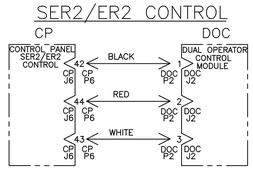


LOAD TERMINAL CIRCUITS

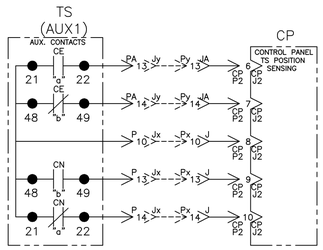
LOAD

CONTROL SIGNALS & INDICATION

SER2/ER2 CONTROL



TS POSITION SENSING



ADDITIONAL CIRCUITS

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THIRD ANGLE PROJECTION

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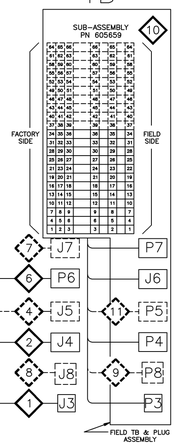
PHYSICAL DIAGRAM

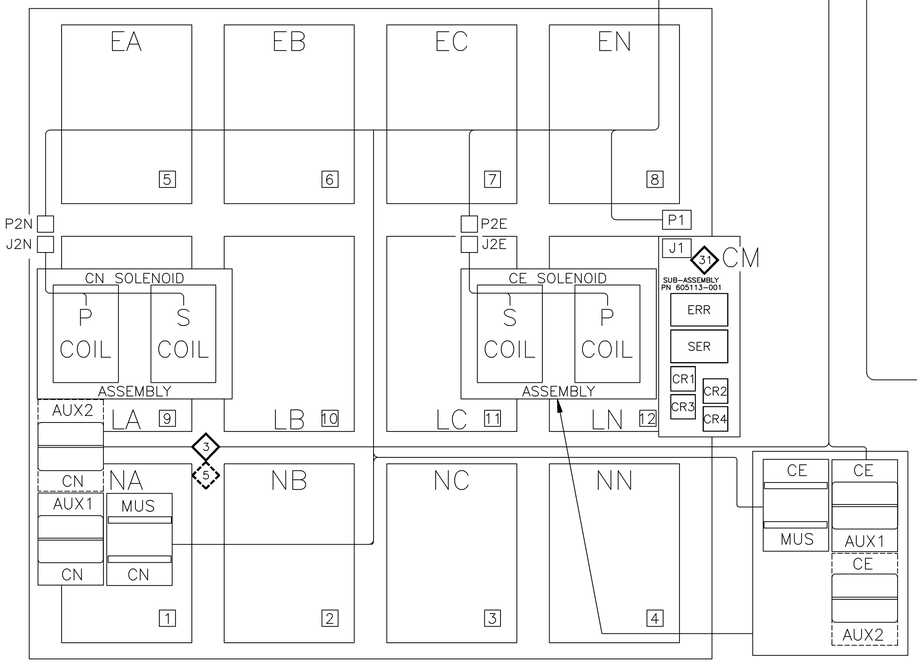
ENCLOSURE

TB



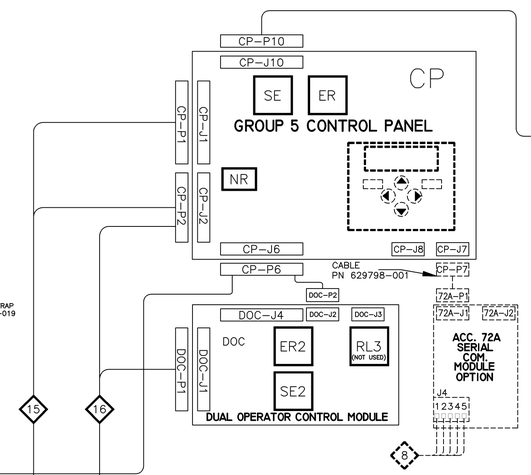
BONDING STRAP
PN 098323-019

TS (TRANSFER SWITCH)



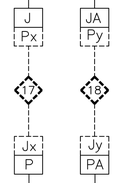
DOOR HINGE

DOOR, INSIDE (PANEL "R")



OPERATOR CONTROLS
ESCUTCHEON MOUNTING
PN 613655-001
(REFER TO ASSEMBLY DRAWING FOR WIRING)

OPTIONAL
POWERMANAGER
OR ADDITIONAL
OPERATOR CONTROLS
ESCUTCHEON MOUNTING



AP

OPTIONAL
ACCESSORY ADD-ON PANEL
MOUNTING

AP2

OPTIONAL
ACCESSORY ADD-ON PANEL
MOUNTING

AP1

OPTIONAL
ACCESSORY ADD-ON PANEL
MOUNTING

AP3

OPTIONAL
ACCESSORY ADD-ON PANEL
MOUNTING

CHANGE LETTER	ECN NO.	BY	APP.	DATE
N	202977	CC	WK	01/05
	SEE ECN			
M	166908	SDH	SDH	04/28/04
	SEE ECN			

PROJECT NAME:

WIRING DIAGRAM
7000 SERIES (7ADTS)
GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

SUBSIDIARY DISTRIBUTION

AE	AN	AM	AJ	AL				
CH	AV	AA	PS	AR				
AG	AP	AC	AS					

	BY	DATE
DRAWN BY	YZ	11/97
CHECKED		
DRAFTING APPROVAL		
FINAL APPROVAL	SDH	11/97

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-056

ASSEM. REF. NO.

ASCO® ASCO POWER TECHNOLOGIES, L.P.
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

COMPUTER GENERATED DRAWING

SCALE 1:1 | ACAD | FILE

SIZE D | DWG. NO. DS617417

CHANGE LETTER N | ECN NO. 202977 | SHEET 5 OF 6

WIRE RUN LISTING

1 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☒)
HARNESS 619510-026 (P,P1,P2N,P2E,J3,) MAIN TS

WIRE No.		CLR	AWG
1	P-2,TS-1		16
1	P1-17,TS-1		
1	PA-2,TS-1		
2	P-3,P1-14		
3	P-4,TS-3		
3	P1-19,TS-3		
22	P-5,P1-5		
5	P-6,TS-7		
5	P1-20,TS-7		
4	P-7,TS-5		
4	P1-13,TS-5		
6	P-8,CE(AUX1)-24		
6	CE(AUX1)-24,J3-1		
7	P-9,CE(AUX1)-25		
7	CE(AUX1)-25,J3-2		
8	P-10,CE(AUX1)-21		
8	CE(AUX1)-21,CN(AUX1)-21		
8	CN(AUX1)-21,CN(AUX1)-48		
9	P-11,TS-2		
10	P-12,TS-1		
11	P-13,CN(AUX1)-49		
12	P-14,CN(AUX1)-22		
200	P-15,CN(MUS)-15		
13	P-16,CN(MUS)-17		
14	P-17,J3-3		
15	P-18,TS-6		
16	P-19,TS-9		
17	P-20,TS-10		
18	P-21,TS-11		
19	P-22,TS-4		
20	P-23,TS-8		
21	P-24,TS-12		
31	P1-1,P2E-4		
32	P1-2,P2E-1		
33	P1-3,P2E-2		
34	P1-4,P2E-3		
23	P1-6,CN(MUS)-13		
39	P1-8,CE(MUS)-13		
24	P1-9,P2N-4		
25	P1-10,P2N-1		
26	P1-11,P2N-2		
27	P1-12,P2N-3		
29	P1-15,CE(MUS)-18		
29	CE(MUS)-18,CN(MUS)-14		
29	CN(MUS)-14,CN(MUS)-16		
28	P1-18,CE(MUS)-16		
28	CE(MUS)-16,CE(MUS)-14		
28	CE(MUS)14,CN(MUS)-18		
30	P1-21,P1-24		
35	P1-22,P1-23		
202	PA-3,P1-16		
38	PA-5,P1-7		
211	PA-13,CE(AUX1)-22		
212	PA-14,CE(AUX1)-49		
213	PA-15,CE(MUS)-17		
214	PA-16,CE(MUS)-15		
215	PA-17,CE(AUX2)-80		
216	PA-18,CN(AUX2)-80		
223	CE(AUX2)-78,CN(AUX2)-78		
	REMOVE WIRES		
215	PA-17,CE(AUX2)-80		
216	PA-18,CN(AUX2)-80		
223	CE(AUX2)-78,CN(AUX2)-78		
	ADD WIRES		
199	J3-4		
300	P-1		
201	PA-1		
203	PA-4		
204	PA-6		
205	PA-7		
206	PA-8		
207	PA-9		
208	PA-10		
209	PA-11		
210	PA-12		
217	PA-19		
218	PA-20		
219	PA-21		
220	PA-22		
221	PA-23		
222	PA-24		

2 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☒)
HARNESS 609051-001 (J4) TS STD. AUX. CONTACTS

WIRE No.		CLR	AWG
50	J4-1,CE(AUX1)-27		16
51	J4-2,CE(AUX1)-28		
52	J4-3,CN(AUX1)-28		
53	J4-4,CE(AUX1)-30		
54	J4-5,CE(AUX1)-31		
55	J4-6,CN(AUX1)-31		
56	J4-7,CE(AUX1)-33		
57	J4-8,CE(AUX1)-34		
58	J4-9,CN(AUX1)-34		
59	J4-10,CE(AUX1)-36		
60	J4-11,CN(AUX1)-38		
61	J4-12,CE(AUX1)-38		
62	J4-13,CE(AUX1)-39		
63	J4-14,CN(AUX1)-41		
64	J4-15,CE(AUX1)-41		
65	J4-16,CE(AUX1)-42		
66	J4-17,CN(AUX1)-44		
67	J4-18,CE(AUX1)-44		
68	J4-19,CE(AUX1)-45		
69	J4-20,CN(AUX1)-47		
70	J4-21,CE(AUX1)-47		
71	J4-22,CE(AUX1)-48		
72	J4-23,CN(AUX1)-50		
73	J4-24,CE(AUX1)-50		
	REMOVE WIRES		
71	J4-22,CE(AUX1)-48		
72	J4-23,CN(AUX1)-50		
73	J4-24,CE(AUX1)-50		

3 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☐)
HARNESS 609051-001-A TS STD. AUX. CONTACTS

WIRE No.		CLR	AWG
50	CE(AUX1)-27,CN(AUX1)-27		16
53	CE(AUX1)-30,CN(AUX1)-30		
56	CE(AUX1)-33,CN(AUX1)-33		
59	CE(AUX1)-36,CN(AUX1)-36		
62	CE(AUX1)-39,CN(AUX1)-39		
65	CE(AUX1)-42,CN(AUX1)-42		
68	CE(AUX1)-45,CN(AUX1)-45		
8	CE(AUX1)-48,CN(AUX1)-48		

4 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☐)
HARNESS 609051-002 (J5) TS OPT. AUX. CONTACTS

WIRE No.		CLR	AWG
230	J5-1,CE(AUX2)-51		16
231	J5-2,CE(AUX2)-52		
232	J5-3,CN(AUX2)-52		
233	J5-4,CE(AUX2)-54		
234	J5-5,CE(AUX2)-55		
235	J5-6,CN(AUX2)-55		
236	J5-7,CE(AUX2)-57		
237	J5-8,CE(AUX2)-58		
238	J5-9,CN(AUX2)-58		
239	J5-10,CE(AUX2)-60		
240	J5-11,CE(AUX2)-61		
241	J5-12,CN(AUX2)-61		
242	J5-13,CE(AUX2)-63		
243	J5-14,CE(AUX2)-64		
244	J5-15,CN(AUX2)-64		
245	J5-16,CE(AUX2)-66		
246	J5-17,CN(AUX2)-68		
247	J5-18,CE(AUX2)-68		
248	J5-19,CE(AUX2)-69		
249	J5-20,CN(AUX2)-71		
250	J5-21,CE(AUX2)-71		
251	J5-22,CE(AUX2)-72		
252	J5-23,CN(AUX2)-74		
253	J5-24,CE(AUX2)-74		

5 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☐)
HARNESS 609051-002-A TS OPT. AUX. CONTACTS

WIRE No.		CLR	AWG
230	CE(AUX2)-51,CN(AUX2)-51		16
233	CE(AUX2)-54,CN(AUX2)-54		
236	CE(AUX2)-57,CN(AUX2)-57		
239	CE(AUX2)-60,CN(AUX2)-60		
242	CE(AUX2)-63,CN(AUX2)-63		
245	CE(AUX2)-66,CN(AUX2)-66		
248	CE(AUX2)-69,CN(AUX2)-69		
251	CE(AUX2)-72,CN(AUX2)-72		

6 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☒)
HARNESS 619510-005 (P6) FIELD INPUTS

WIRE No.		CLR	AWG
100	P6-1,CP-P6-21	WHT	22 (12 COND)
101	P6-2,CP-P6-22	ORG	
102	P6-3,CP-P6-23	GRN	
103	P6-4,CP-P6-9	BLK	
104	P6-5,CP-P6-10	RED	
	ADD WIRES		
254	CP-P6-42,DOC-P2-1	BLK	22 (4 COND)
255	CP-P6-43,DOC-P2-3	WHT	
256	CP-P6-44,DOC-P2-2	RED	
105	P6-6		
106	P6-7		
107	P6-8		
108	P6-9		
109	P6-10		
110	P6-11		
111	P6-12		
112	P6-13		
113	P6-14		
114	P6-15		
115	P6-16		
116	P6-17		
117	P6-18		
118	P6-19		
119	P6-20		
120	P6-21		
121	P6-22		
122	P6-23		
123	P6-24		

7 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☐)
HARNESS (J7) FIELD OUTPUTS

WIRE No.		CLR	AWG
130	J7-1		16
131	J7-2		
132	J7-3		
133	J7-4		
134	J7-5		
135	J7-6		
136	J7-7		
137	J7-8		
138	J7-9		
139	J7-10		
140	J7-11		
141	J7-12		
142	J7-13		
143	J7-14		
144	J7-15		
145	J7-16		
146	J7-17		
147	J7-18		
148	J7-19		
149	J7-20		
150	J7-21		
151	J7-22		
152	J7-23		
153	J7-24		

8 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☐)
HARNESS 605454-005 (J8) OPTIONAL SERIAL I/O

WIRE No.		CLR	AWG
160	J8-1,72A-5	SHLD	22 (4 COND)
161	J8-2,72A-1	WHT/ORG	
162	J8-3,72A-2	ORG/WHT	
163	J8-4,72A-3	WHT/BLU	
164	J8-5,72A-4	BLU/WHT	
165	J8-6		
166	J8-7		
167	J8-8		
168	J8-9		

9 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☐)
HARNESS 605454-007 (P8,TB) OPTIONAL SERIAL I/O

WIRE No.		CLR	AWG
160	P8-1,TB-37	SHLD	22 (4 COND)
161	P8-2,TB-38	WHT/ORG	
162	P8-3,TB-39	ORG/WHT	
163	P8-4,TB-40	WHT/BLU	
164	P8-5,TB-41	BLU/WHT	
165	P8-6		
166	P8-7		
167	P8-8		
168	P8-9		

10 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☐)
SUB-ASSEMBLY 605659 (P3,P4,J6,P7,TB) STD. FIELD TB

WIRE No.		CLR	AWG
6	TB-1,P3-1		16
7	TB-2,P3-2		
14	TB-3,P3-3		
50	TB-4,P4-1		
51	TB-5,P4-2		
52	TB-6,P4-3		
53	TB-7,P4-4		
54	TB-8,P4-5		
55	TB-9,P4-6		
56	TB-10,P4-7		
57	TB-11,P4-8		
58	TB-12,P4-9		
59	TB-13,P4-10		
61	TB-14,P4-12		
60	TB-15,P4-11		
62	TB-16,P4-13		
64	TB-17,P4-15		
63	TB-18,P4-14		
65	TB-19,P4-16		
67	TB-20,P4-18		
66	TB-21,P4-17		
68	TB-22,P4-19		
70	TB-23,P4-21		
69	TB-24,P4-20		
71	TB-25,P4-22		
73	TB-26,P4-24		
72	TB-27,P4-23		
100	TB-28,J6-1		
101	TB-29,J6-2		
102	TB-30,J6-3		
103	TB-31,J6-4		
104	TB-32,J6-5		
130	TB-34,P7-1		
131	TB-35,P7-2		
132	TB-36,P7-3		
	JUMPERS		
	TB-28,TB-29		
	TB-29,TB-30		
	ADD WIRES		
199	P3-4		
105	J6-6		
106	J6-7		
107	J6-8		
108	J6-9		
109	J6-10		
110	J6-11		
111	J6-12		
112	J6-13		
113	J6-14		
114	J6-15		
115	J6-16		
116	J6-17		
117	J6-18		
118	J6-19		
119	J6-20		
120	J6-21		
121	J6-22		
122	J6-23		
123	J6-24		
133	P7-4		
134	P7-5		
135	P7-6		
136	P7-7		
137	P7-8		
138	P7-9		
139	P7-10		
140	P7-11		
141	P7-12		
142	P7-13		
143	P7-14		
144	P7-15		
145	P7-16		
146	P7-17		
147	P7-18		
148	P7-19		
149	P7-20		
150	P7-21		
151	P7-22		
152	P7-23		
153	P7-24		

11 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☐)
HARNESS 605454-008 (P5,TB) OPT. AUX. CONTACTS

WIRE No.		CLR	AWG
230	TB-43,P5-1		16
231	TB-44,P5-2		
232	TB-45,P5-3		
233	TB-46,P5-4		
234	TB-47,P5-5		
235	TB-48,P5-6		
236	TB-49,P5-7		
237	TB-50,P5-8		
238	TB-51,P5-9		
239	TB-52,P5-10		
240	TB-53,P5-11		
241	TB-54,P5-12		
242	TB-55,P5-13		
243	TB-56,P5-14		
244	TB-57,P5-15		
245	TB-58,P5-16		
247	TB-59,P5-18		
246	TB-60,P5-17		
248	TB-61,P5-19		
250	TB-62,P5-21		
249	TB-63,P5-20		
251	TB-64,P5-22		
253	TB-65,P5-24		
252	TB-66,P5-23		

15 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS ☐)
HARNESS 483763 (J,CP-P1,CP-P2) CONTROL PANEL

WIRE No.		CLR	AWG
257	J-1,CP-P1-8		18
1	J-2,CP-P1-15		
2	J-3,CP-P1-2		
3	J-4,CP-P1-4		
22	J-5,CP-P1-17		
5	J-6,CP-P1-12		
4	J-7,CP-P1-7		
6	J-8,CP-P2-2		
7	J-9,CP-P2-3		
8	J-10,CP-P2-8		
9	J-11,CP-P1-10		
10	J-12,CP-P1-1		
11	J-13,CP-P2-9		
12	J-14,CP-P2-10		
200	J-15,CP-P1-5		
13	J-16,CP-P1-13		
14	J-17,CP-P2-1		
15	J-18,CP-P1-14		
	ADD WIRES		
16	J-19		
17	J-20		
18	J-21		
19	J-22		
20	J-23		
21	J-24		

16 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☐)
HARNESS 619385 (JA,CP-P2,CP-P6) CONTROL MODULE

WIRE No.		CLR	AWG
1	JA-2,DOC-P1-15		16
202	JA-3,DOC-P1-2		
201	JA-1,DOC-P1-8		
214	JA-16,DOC-P1-13		
213	JA-15,DOC-P1-5		
38	JA-5,DOC-P1-17		
211	JA-13,CP-P2-6	PIN	
212	JA-14,CP-P2-7	PIN	
	ADD WIRES		
203	JA-4		
204	JA-6		
205	JA-7		
206	JA-8		
207	JA-9		
208	JA-10		
209	JA-11		
210	JA-12		
215	JA-17		
216	JA-18		
217	JA-19		
218	JA-20		
219	JA-21		
220	JA-22		
221	JA-23		
222	JA-24		

17 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS ☐)
HARNESS 309320-005 OPTIONAL 8 IN. EXTENSION HARNESS

WIRE No.		CLR	AWG
257	Jx-1,Px-1		16
1	Jx-2,Px-2		
2	Jx-3,Px-3		
3	Jx-4,Px-4		
22	Jx-5,Px-5		
5	Jx-6,Px-6		
4	Jx-7,Px-7		
6	Jx-8,Px-8		
7	Jx-9,Px-9		
8	Jx-10,Px-10		
9	Jx-11,Px-11		
10	Jx-12,Px-12		
11	Jx-13,Px-13		
12	Jx-14,Px-14		
200	Jx-15,Px-15		
13	Jx-16,Px-16		
14	Jx-17,Px-17		
15	Jx-18,Px-18		
16	Jx-19,Px-19		
17	Jx-20,Px-20		
18	Jx-21,Px-21		
19	Jx-22,Px-22		
20	Jx-23,Px-23		
21	Jx-24,Px-24		

18 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS ☐)
HARNESS 309320-005 OPTIONAL 8 IN. EXTENSION HARNESS

WIRE No.		CLR	AWG
201	Jy-1,Py-1		16
1	Jy-2,Py-2		
202	Jy-3,Py-3		
203	Jy-4,Py-4		
38	Jy-5,Py-5		
204	Jy-6,Py-6		
205	Jy-7,Py-7		
206	Jy-8,Py-8		
207	Jy-9,Py-9		
208	Jy-10,Py-10		
209	Jy-11,Py-11		
210	Jy-12,Py-12		
211	Jy-13,Py-13		
212	Jy-14,Py-14		
213	Jy-15,Py-15		
214	Jy-16,Py-16		
215	Jy-17,Py-17		
216	Jy-18,Py-18		
217	Jy-19,Py-19		
218	Jy-20,Py-20		
219	Jy-21,Py-21		
220	Jy-22,Py-22		
221	Jy-23,Py-23		
222	Jy-24,Py-24		

31 — HARNESS LOCATOR (BOX CHECKED IF HARNESS IS MODIFIED ☒)
SUB-ASSEMBLY 605113-001 (J1,CM) DUAL SOLENOID UNIT CONTROL MODULE ASSEMBLY

WIRE No.		CLR	AWG
	J1-1,CR3-(+)		16
	J1-2,CR3-(-)		
	J1-3,CR4-(+)		
	J1-4,CR4-(-)		
	J1-5,CR1-AC1		
	J1-6,CR2-AC1		
	J1-7,CR3-AC1		
	J1-8,CR4-AC1		
	J1-9,CR1-(+)		
	J1-10,CR1-(-)		
	J1-11,CR2-(+)		
	J1-12,CR2-(-)		
	J1-13,SER-R2		
	J1-14,SER-A2		
	J1-15,ERR-R2		
	J1-16,ERR-A2		
	J1-17,SER-2		
	J1-18,ERR-2		
	J1-19,SER-A1		
	SER-A1,SER-3		
	ERR-A1,ERR-3		
	J1-21,CR1-AC2		
	CR1-AC2,CR2-AC2		
	J1-22,CR3-AC2		
	CR3-AC2,CR4-AC2		
	J1-23,SER-R3		
	J1-24,ERR-R3		
	SER-R3,ERR-R3		
	SER-1,ERR-R1		
	SER-R1,ERR-1		
	SER-4,ERR-R4		
	SER-R4,ERR-4		
	NOTE: SUB-ASSEMBLY NO WIRE NUMBERS NEEDED		
	REMOVE WIRES		
	J1-16,ERR-A2		
	ADD WIRES		
	J1-16,SER-A2		
	ERR-1,ERR-A2		

WIRE No.	ADDITIONAL WIRING	CLR	AWG
			16

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GROUP 5 CONTROLS

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AE AN AM AJ AL
CH AY AA PS AR
AG AP AC AS

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MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-055

ASSEM. REF. NO.

ASCO® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.

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SIZE | DWG. NO. DS617417
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