THREE PHASE WIRING FOR ASCO 7000 SERIES NON-AUTOMATIC TRANSFER SWITCHES TYPE 7NTS RATED 4000 AMPERE

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 TRANSFER SWITCHES USER'S GUIDE (PART NO. 381333-126) PROVIDED WITH EVERY 7000 SERIES 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
-	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 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.

MOTOR LOAD TRANSFER FEATURE

FEAT. 27 - INPHASE TRANSFER CONTROL LOGIC TO INITIATE AN INPHASE TRANSFER OF LOADS BETWEEN LIVE SOURCES. USED TO PREVENT NUISANCE TRIPPING OF CIRCUIT BREAKERS AND POSSIBLE DAMAGE TO MECHANICAL LOADS CAUSED BY OUT OF PHASE TRANSFER.
ACTIVATED VIA THE GROUP 5 CONTROL PANEL USER INTERFACE (TRANSFER CONTROL CENTER) BY SELECTING "IN-PHASE MONITOR ENABLE" = YES. AN ADJUSTABLE DELAY (0.0-3.0 sec, FACTORY SET TO 1.5 sec, IN INCREMENTS OF 0.1 sec) DELAYS SENSING TO PERMIT STABILIZATION OF THE SOURCES PRIOR TO SENSING. FACTORY SETTING IS DISABLED UNLESS SPECIFIED TO BE FACTORY ACTIVATED AT THE TIME OF ORDER.

ENGINE EXERCISER

THE ENGINE EXERCISER FEATURE PROVIDES A MEANS TO PERFORM AN 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 5 AMPS AT 32 VDC/120VAC RESISTIVE.

B. FEATURES 14AC & 14BC - TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS. FOUR (4) FORM A CONTACTS TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO NORMAL (14A) FOUR (4) FOR EMERGENCY (14B). CONTACTS CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACTS RATED 10 AMPS, 32 VDC, 250 VAC.

OPERATION

ALL TRANSFERS TO AND FROM EMERGENCY ARE PERFORMED MANUALLY WITH THE USE OF A MANUALLY OPERATED SELECTOR SWITCH.

TRANSFER TO EMERGENCY:
IF THE NORMAL SOURCE FAILS, THE TRANSFER SWITCH INITIATES STARTING OF THE ENGINE-GENERATOR SET. WHEN PROPER VOLTAGE AND FREQUENCY HAVE BEEN ATTAINED, AND AFTER THE MANUALLY OPERATED SELECTOR SWITCH HAS BEEN SET TO EMERGENCY, THE LOAD WILL BE TRANSFERRED TO THE EMERGENCY SOURCE.

RETRANSFER TO NORMAL:
1. IF THE MANUAL SELECTOR SWITCH IS SET TO NORMAL PRIOR TO THE NORMAL SOURCE BEING RESTORED, TRANSFER TO NORMAL WILL OCCUR ONLY AFTER THE NORMAL SOURCE IS RESTORED FOR THE DURATION OF THE FEATURE 3A (RETRANSFER TO NORMAL) TIME DELAY SETTING.
2. IF THE NORMAL SOURCE IS RESTORED AND THE MANUAL SELECTOR SWITCH IS THEN SET TO NORMAL, THE LOAD WILL BE TRANSFERRED TO THE NORMAL SOURCE IMMEDIATELY.

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

USER CONTROLS AND INDICATIONS

A. MANUALLY OPERATED SELECTOR SWITCH TO AFFECT TRANSFER TO THE NORMAL OR EMERGENCY SOURCE.

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)

FACTORY CP SETTINGS

PARAMETER	SETTING DEFAULT	SETTING FACTORY
<TEST OR MANUAL MODE INPUT> TEST OPERATION MANUAL OPERATION	"YES" "NO"	"NO" "YES"
TD E>N (TEST MODE)	"30 sec"	"0 sec"

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. ○ 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 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
7NTS	A C	3	4000	A B C D E F G H J K L M N P Q R	5	X	C E F G H J K L M N P Q BLANK FOR OPEN TYPE
						BLANK FOR NONE	

EXPLANATION OF CATALOG NUMBER CODES

NEUTRAL TYPE		VOLTAGE CODES 3 PHASE (3 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
C	OVERLAPPING	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			

*A NOT AVAILABLE ON OPEN TYPE UNITS

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

CHANGE LETTER	ECN NO.	BY	APP.	DATE
F	202286	BK	BK	11/01/04
	SEE ECN			
E	167212	DJB	WK	06/03/04
	SEE ECN			
D	167044	SDH	SDH	05/13/04
	SEE ECN			
C	160460	BK	WK	04/30/02
	SEE ECN			
B	158108	BWM	BK	7/3/01
	SEE ECN			
A	155961	BK	BK	12/00
	SEE ECN			
—	154488	BK	BK	4/28/00
	ISSUE			

PROJECT NAME:
WIRING DIAGRAM
7000 SERIES (7NTS)
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	DJB	4/28/00
CHECKED		
DRAFTING APPROVAL		
FINAL APPROVAL	WK	4/00

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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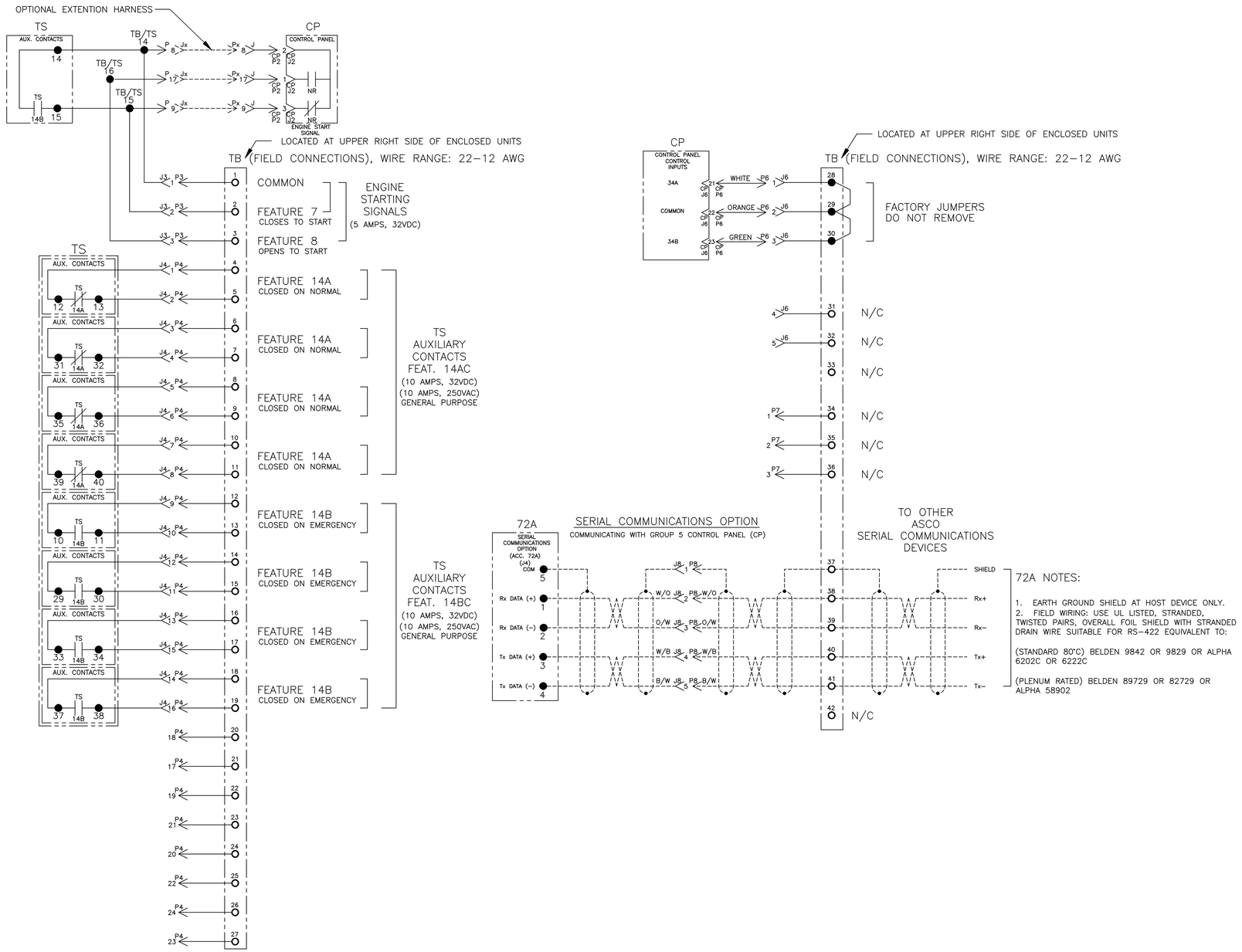
CHANGE LETTER F | ECN NO. 202286 | SHEET 1 OF 6

FIELD CONNECTIONS



F	202286	BK	BK	11/01/04
	SEE ECN			
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	SEE ECN			
D	167044	SDH	SDH	05/13/04
	SEE ECN			
C	160460	BK	WK	04/30/02
	SEE ECN			
B	158108	BWM	BK	7/3/01
	SEE ECN			
A	155961	BK	BK	12/00
	SEE ECN			
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WIRING DIAGRAM
7000 SERIES (7NTS)
GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
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DRAFTING APPROVAL		
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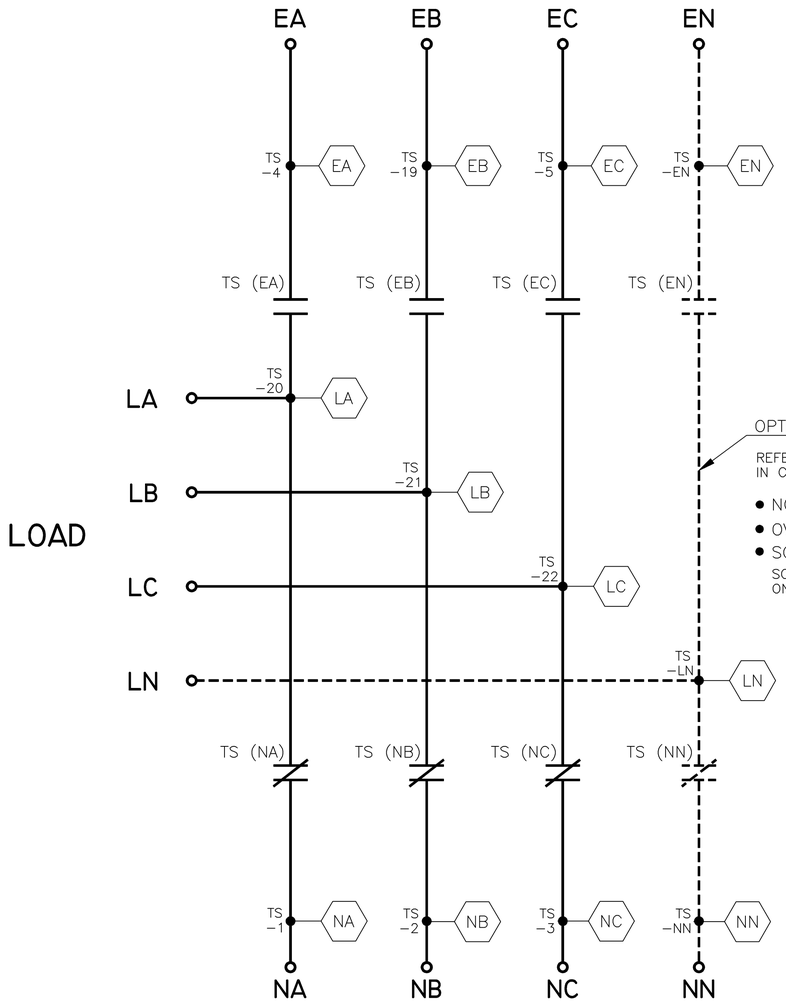
MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY



NORMAL

OPTIONAL NEUTRAL TYPES

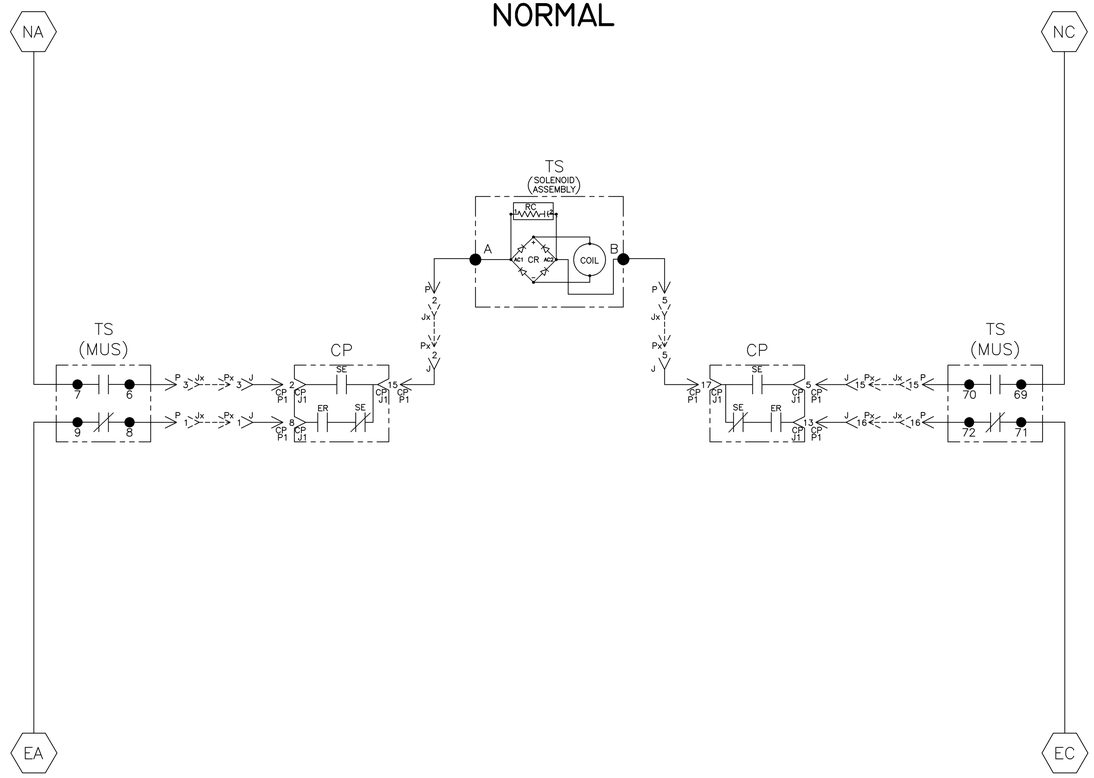
REFER TO "EXPLANATION OF CATALOG NUMBER CODES" IN CATALOG NUMBER CHART ON SHEET 1.

- NONE
- OVERLAPPING CONTACTS
- SOLID BUS PLATE

SOLID BUS IS NOT AVAILABLE ON OPEN TYPE UNITS

NOTE:
TS SHOWN CLOSED ON NORMAL SOURCE.

NORMAL



EMERGENCY

TS (MUS) CONTACTS					
MUS	SOLENOID POSITION				
	CLOSED NORMAL	BEFORE TDC>	>	<	BEFORE <TDC	OPEN
7–6					X	X
69–70					X	X
8–9	X	X				
71–72	X	X				

F	202286	BK	BK 11/01/04
	SEE ECN		
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	SEE ECN		
C	160460	BK	WK 04/30/02
	SEE ECN		
B	158108	BWM	BK 7/3/01
	SEE ECN		
A	155961	BK	BK 12/00
	SEE ECN		
—	154488	BK	BK 4/28/00
	ISSUE		

PROJECT NAME:

WIRING DIAGRAM
7000 SERIES (7NTS)
GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

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FINAL APPROVAL	WK	4/00

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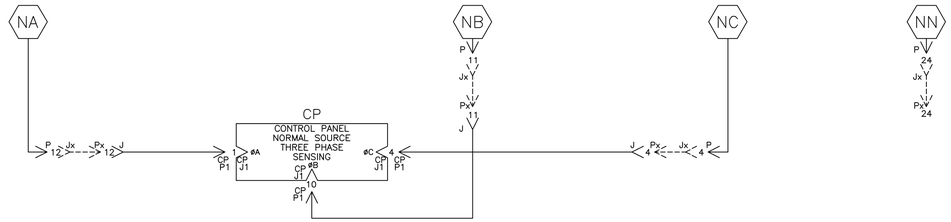
NORMAL SOURCE CIRCUITS

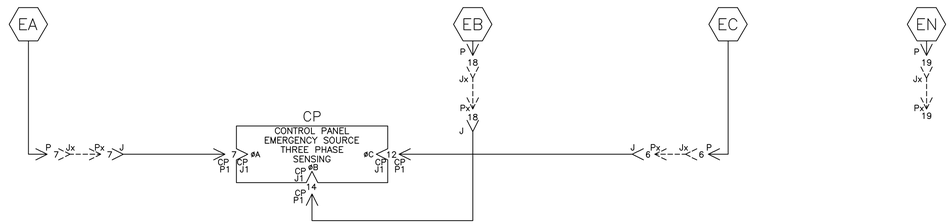
ADDITIONAL CIRCUITS

NORMAL



EMERGENCY SOURCE CIRCUITS

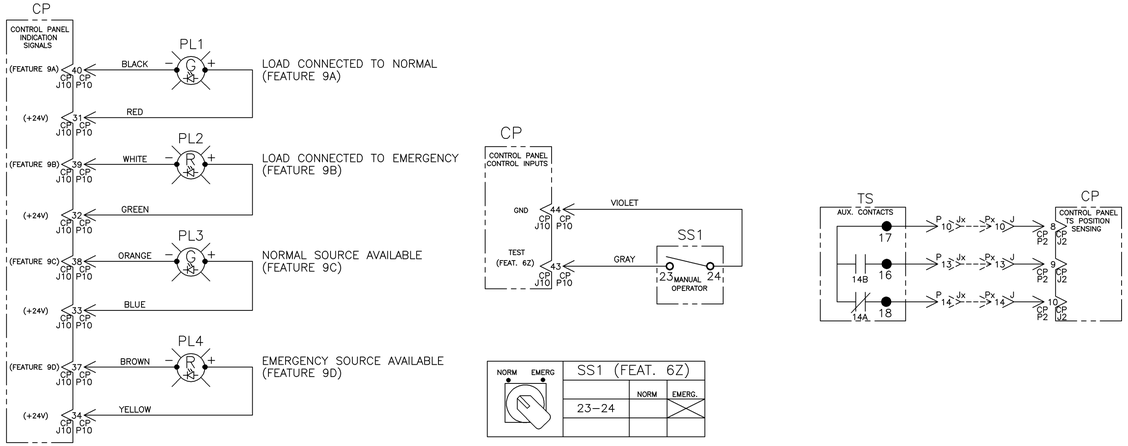
EMERGENCY



LOAD TERMINAL CIRCUITS

LOAD

CONTROL SIGNALS & INDICATION



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WIRING DIAGRAM

7000 SERIES (7NTS)
GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

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FINAL APPROVAL	WK	4/00

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055

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CHANGE LETTER F | ECN NO. 202286 | SHEET 4 OF 6

PHYSICAL DIAGRAM

DOOR LEFT (INSIDE)

AP1
OPTIONAL
ACCESSORY ADD-ON PANEL
MOUNTING

AP2
OPTIONAL
ACCESSORY ADD-ON PANEL
MOUNTING

AP3
OPTIONAL
ACCESSORY ADD-ON PANEL
MOUNTING

ENCLOSURE

BONDING STRAP
PN 098323-019

TB
SUB-ASSEMBLY
PN 605659
FACTORY SIDE
FIELD SIDE
FIELD TB & PLUG ASSEMBLY
J7 P7
J6 P6
J5 P5
J4 P4
J8 P8
J3 P3

4000 AMP

EMERGENCY
EA EB EC
LOAD LA LB LC
NA NB NC
EN LN NN
NORMAL
TB/TS
TS COIL
A B
CKT

OPTIONAL OVERLAPPING NEUTRAL
(REFER TO SHEET 1 "EXPLANATION
OF CATALOG NO. CODES")

(OPTIONAL)
SOLID BUS PLATE
NEUTRAL
NOT AVAILABLE ON
OPEN TYPE UNITS

DOOR RIGHT (INSIDE)

BONDING STRAP
PN 098323-019

OPTIONAL
POWERMANAGER
OR ADDITIONAL
OPERATOR CONTROLS
ESCUTCHEON MOUNTING

OPERATOR CONTROLS
ESCUTCHEON MOUNTING
SS1 PL2 PL1
PL4 PL3
DC

CP-P10
CP-J10
CP
SE ER
GROUP 5 CONTROL PANEL
CP-P1 CP-J1
CP-P2 CP-J2
NR
CP-J6 CP-J8 CP-J7
CP-P6
CABLE
PN 629798-001
CP-P7

72A-P1
72A-J1 72A-J2
ACC. 72A
SERIAL
COM
MODULE
OPTION
J4
12345

J
Px
Jx
P

AP
OPTIONAL
ACCESSORY ADD-ON PANEL
MOUNTING

OPERATOR CONTROLS

ID	DESCRIPTION
PL1	TS CONNECTED TO NORMAL (GREEN)
PL2	TS CONNECTED TO EMERGENCY (RED)
PL3	NORMAL SOURCE ACCEPTED (GREEN)
PL4	EMERGENCY SOURCE ACCEPTED (RED)
SS1	MANUAL TRANSFER OPERATON
	NORMAL EMERGENCY

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	SEE ECN			
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A	155961	BK	BK	12/00
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PROJECT NAME:
WIRING DIAGRAM
7000 SERIES (7NTS)
GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

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

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	BY	DATE
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CHECKED		
DRAFTING APPROVAL		
FINAL APPROVAL	WK	4/00

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

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SIZE F | DWG. NO. DS710795
CHANGE LETTER F | ECN NO. 202286 | SHEET 5 OF 6

WIRE RUN LISTING

1 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

HARNESS 309297 (P) MAIN TS

WIRE No.		CLR	AWG
1	TS-8,P-1		16
2	TS-A,P-2		
3	TS-6,P-3		
4	TS-3,P-4		
5	TS-B,P-5		
6	TS-5,P-6		
7	TS-4,P-7		
8	TB/TS-14,P-8		
9	TB/TS-15,P-9		
10	TS-17,P-10		
11	TS-2,P-11		
12	TS-1,P-12		
13	TS-16,P-13		
14	TS-18,P-14		
15	TS-70,P-15		
16	TS-72,P-16		
17	TS-4,TS-9		
18	TS-7,TS-1		
20	TS-3,TS-69		
21	TS-5,TS-71		
8	TS-14,TB/TS-14		
9	TS-15,TB/TS-15		
24	TB/TS-16,P-17		
25	TS-19,P-18		
26	TS-EN,P-19		
27	TS-20,P-20		
28	TS-21,P-21		
29	TS-22,P-22		
30	TS-LN,P-23		
31	TS-NN,P-24		

2 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

HARNESS 483763 (J,CP-P1,CP-P2) CONTROL PANEL

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

3 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

HARNESS 309320-005 (Px,Jx) OPTIONAL 8" EXTENSION HARNESS

WIRE No.		CLR	AWG
1	Px-1,Jx-1		16
2	Px-2,Jx-2		
3	Px-3,Jx-3		
4	Px-4,Jx-4		
5	Px-5,Jx-5		
6	Px-6,Jx-6		
7	Px-7,Jx-7		
8	Px-8,Jx-8		
9	Px-9,Jx-9		
10	Px-10,Jx-10		
11	Px-11,Jx-11		
12	Px-12,Jx-12		
13	Px-13,Jx-13		
14	Px-14,Jx-14		
15	Px-15,Jx-15		
16	Px-16,Jx-16		
24	Px-17,Jx-17		
25	Px-18,Jx-18		
26	Px-19,Jx-19		
27	Px-20,Jx-20		
28	Px-21,Jx-21		
29	Px-22,Jx-22		
30	Px-23,Jx-23		
31	Px-24,Jx-24		

4 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

HARNESS (J4) STANDARD AUX. CONTACTS

WIRE No.		CLR	AWG
40	J4-1,TS-12		16
41	J4-2,TS-13		
42	J4-3,TS-31		
43	J4-4,TS-32		
44	J4-5,TS-35		
45	J4-6,TS-36		
46	J4-7,TS-39		
47	J4-8,TS-40		
48	J4-9,TS-10		
49	J4-10,TS-11		
50	J4-11,TS-30		
51	J4-12,TS-29		
52	J4-13,TS-33		
53	J4-14,TS-37		
54	J4-15,TS-34		
55	J4-16,TS-38		
	ADD WIRES		
56	J4-17		
57	J4-18		
58	J4-19		
59	J4-20		
60	J4-21		
61	J4-22		
62	J4-23		
63	J4-24		

5 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☒

HARNESS 619510-005 (P6) FIELD INPUTS

WIRE No.		CLR	AWG
70	P6-1,CP-P6-21	WHT	22 (12 COND)
71	P6-2,CP-P6-22	ORG	
72	P6-3,CP-P6-23	GRN	
73	P6-4,CP-P6-9	BLK	
74	P6-5,CP-P6-10	RED	
	REMOVE WIRES		
73	P6-4,CP-P6-9	BLK	
74	P6-5,CP-P6-10	RED	
	ADD WIRES		
75	P6-6		
76	P6-7		
77	P6-8		
78	P6-9		
79	P6-10		
80	P6-11		
81	P6-12		
82	P6-13		
83	P6-14		
84	P6-15		
85	P6-16		
86	P6-17		
87	P6-18		
88	P6-19		
89	P6-20		
90	P6-21		
91	P6-22		
92	P6-23		
93	P6-24		

6 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☒

HARNESS (J3,TB/TS) ENGINE START

WIRE No.		CLR	AWG
24	J3-3,TB/TS-16		16
8	J3-1,TB/TS-14		
9	J3-2,TB/TS-15		
	ADD WIRES		
23	J3-4		

8 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

HARNESS 605454-005 (J8) OPTIONAL SERIAL I/O

WIRE No.		CLR	AWG
120	J8-1,72A-5	SHLD	22 (4 COND)
121	J8-2,72A-1	WHT/ORG	
122	J8-3,72A-2	ORG/WHT	
123	J8-4,72A-3	WHT/BLU	
124	J8-5,72A-4	BLU/WHT	
125	J8-6		
126	J8-7		
127	J8-8		
128	J8-9		

9 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

HARNESS 605454-007 (P8,TB) OPTIONAL SERIAL I/O

WIRE No.		CLR	AWG
120	P8-1,TB-37	SHLD	22 (4 COND)
121	P8-2,TB-38	WHT/ORG	
122	P8-3,TB-39	ORG/WHT	
123	P8-4,TB-40	WHT/BLU	
124	P8-5,TB-41	BLU/WHT	
125	P8-6		
126	P8-7		
127	P8-8		
128	P8-9		

10 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

HARNESS (J7) OPTIONAL FIELD OUTPUTS

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

DC ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☒

HARNESS 713083-001 (CP-P10) DOOR CONTROLS & INDICATORS

WIRE No.		CLR	AWG
100	CP-P10-31,PL1(+)	RED	22 (12 COND)
101	CP-P10-42,SS1-14	TAN	
102	CP-P10-40,PL1(-)	BLK	
103	CP-P10-39,PL2(-)	WHT	
104	CP-P10-38,PL3(-)	ORG	
105	CP-P10-37,PL4(-)	BRN	
106	CP-P10-43,SS1-23	GRY	
107	CP-P10-41,SS1-13	PNK	
108	CP-P10-32,PL2(+)	GRN	
109	CP-P10-33,PL3(+)	BLU	
110	CP-P10-34,PL4(+)	YEL	
111	CP-P10-44,SS1-24	VIO	
	REMOVE WIRES		
110	CP-P10-41,SS1-13	PNK	
111	CP-P10-42,SS1-14	TAN	
	ADD WIRES		

11 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

SUB-ASSEMBLY 605659 (P3,P4,J6,P7,TB) STD. FIELD TB

WIRE No.		CLR	AWG
8	TB-1,P3-1		16
9	TB-2,P3-2		
24	TB-3,P3-3		
40	TB-4,P4-1		
41	TB-5,P4-2		
42	TB-6,P4-3		
43	TB-7,P4-4		
44	TB-8,P4-5		
45	TB-9,P4-6		
46	TB-10,P4-7		
47	TB-11,P4-8		
48	TB-12,P4-9		
49	TB-13,P4-10		
51	TB-14,P4-12		
50	TB-15,P4-11		
52	TB-16,P4-13		
54	TB-17,P4-15		
53	TB-18,P4-14		
55	TB-19,P4-16		
57	TB-20,P4-18		
56	TB-21,P4-17		
58	TB-22,P4-19		
60	TB-23,P4-21		
59	TB-24,P4-20		
61	TB-25,P4-22		
63	TB-26,P4-24		
62	TB-27,P4-23		
70	TB-28,J6-1		
71	TB-29,J6-2		
72	TB-30,J6-3		
73	TB-31,J6-4		
74	TB-32,J6-5		
131	TB-34,P7-1		
132	TB-35,P7-2		
133	TB-36,P7-3		
	JUMPERS		
	TB-28,TB-29		
	TB-29,TB-30		
	ADD WIRES		
23	P3-4		
75	J6-6		
76	J6-7		
77	J6-8		
78	J6-9		
79	J6-10		
80	J6-11		
81	J6-12		
82	J6-13		
83	J6-14		
84	J6-15		
85	J6-16		
86	J6-17		
87	J6-18		
88	J6-19		
89	J6-20		
90	J6-21		
91	J6-22		
92	J6-23		
93	J6-24		
134	P7-4		
135	P7-5		
136	P7-6		
137	P7-7		
138	P7-8		
139	P7-9		
140	P7-10		
141	P7-11		
142	P7-12		
143	P7-13		
144	P7-14		
145	P7-15		
146	P7-16		
147	P7-17		
148	P7-18		
149	P7-19		
150	P7-20		
151	P7-21		
152	P7-22		
153	P7-23		
154	P7-24		

WIRE No.	ADDITIONAL WIRING	CLR	AWG

CHANGE LETTER	ECN NO.	BY	APP.	DATE
F	202286 SEE ECN	BK	BK	11/01/04
E	167212 SEE ECN	DJB	WK	06/03/04
D	167044 SEE ECN	SDH	SDH	05/13/04
C	160460 SEE ECN	BK	WK	04/30/02
B	158108 SEE ECN	BWM	BK	7/3/01
A	155961 SEE ECN	BK	BK	12/00
—	154488 ISSUE	BK	BK	4/28/00

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