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THREE PHASE WIRING FOR ASCO® 7000 SERIES NON-AUTOMATIC CLOSED TRANSITION TRANSFER SWITCHES TYPE 7NCTS RATED 1000-3200 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 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)	5 min
2E	ENGINE COOLDOWN FOLLOWING RETRANSFER TO NORMAL	30 min
3A	RETRANSFER TO NORMAL (NORMAL FAILURE MODE)	3 sec
-	DELAYED TRANSFER (LOAD "OFF" TIME), [0-5 min 59 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.
- IN SYNC - IN SYNC TIME DELAY BEGINS BEFORE A CLOSED TRANSITION TRANSFER FOLLOWING ACCEPTANCE OF THE SOURCE TO WHICH TRANSFER IS BEING MADE. ON EXPIRATION OF THE DELAY, THE LOGIC AWAITS AN IN SYNC CONDITION FOR SUBSEQUENT CLOSED TRANSITION TRANSFER.
- EXTENDED PARALLEL - EXTENDED PARALLEL TIMER BEGINS WHEN THE SOURCES ARE PARALLELED (CN & CE CLOSED). IF THE TWO SOURCES REMAIN IN PARALLEL WHEN THE DELAY EXPIRES, THE CONTROL LOGIC TAKES THE FOLLOWING ACTIONS:
- THE LOGIC WILL ATTEMPT TO OPERATE THE TRANSFER SWITCH TO A "SAFE" STATE WHERE THE SOURCES WILL NO LONGER BE PARALLELED AND THE LOAD WILL BE SERVICED BY AN AVAILABLE SOURCE.
 - THE CONTROL PANEL IS LOCKED OUT FROM ANY FURTHER AUTOMATIC OPERATION.
 - THE "TS LOCKED OUT" INDICATOR (RED LED) IS LIT.
 - THE UNIT WILL REMAIN LOCKED OUT UNTIL THE "TS LOCKED OUT" PUSH-BUTTON IS DEPRESSED FOR RESET.
- FAILURE TO SYNC - FAILURE TO SYNC TIMER BEGINS WHEN THE LOGIC BEGINS TO CHECK FOR AN IN SYNC CONDITION FOR WHICH TO ALLOW CLOSED TRANSITION TRANSFER. IF THE DELAY EXPIRES PRIOR TO AN IN SYNC CONDITION OCCURRING, THE "FAILURE TO SYNCHRONIZE" SIGNAL IS ACTIVATED (RED LED) AND CLOSURE OF THE TFR RELAY CONTACT AVAILABLE AT THE FIELD CONNECTIONS TERMINAL BLOCK (TB).

FEAT. 62F - EXTENDED PARALLEL ALARM TIMER BEGINS TIMING WHEN THE SOURCES ARE PARALLELED (CN & CE CLOSED). THE ENABLING OF THE EXTENDED PARALLEL ALARM TIMER OCCURS AT THE SAME TIME THAT THE CONTROLLER'S EXTENDED PARALLEL TIMER BEGINS.

THE FEATURE 62F EXTENDED PARALLEL ALARM TIMER IS INDEPENDENT OF THE CONTROLLER'S EXTENDED PARALLEL TIMER DESCRIBED UNDER "DESCRIPTION OF TIME DELAYS".

ON EXPIRATION OF THE FEATURE 62F EXTENDED PARALLEL ALARM TIME DELAY, OUTPUT RELAY (RL3) (2) FORM C CONTACTS, CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB), TRANSFER.

THE FEATURE 62F EXTENDED PARALLEL ALARM DELAY IS ADJUSTABLE VIA POTENTIOMETER (P2) LOCATED ON THE DUAL OPERATOR CONTROL (DOC) WHICH IS ADJUSTABLE FROM 0-1 SECOND. FACTORY SET AT 1 SEC.

NOTE: THE TIMER SHOULD BE SET ABOVE 0.7 SECONDS TO PERMIT THE CONTROLLER TO ATTEMPT TO OPERATE THE TRANSFER SWITCH TO A "SAFE" STATE WHERE THE SOURCES WILL NO LONGER BE PARALLELED. THE TIMER CAN BE SET LOWER TO BE USED TO ISOLATE THE TWO SOURCES WITH AN EXTERNALLY CONTROLLED FEEDER CIRCUIT BREAKER. HOWEVER THE CONTROLLER MAY NOT BE ABLE TO PLACE THE TRANSFER SWITCH IN A "SAFE" STATE.

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	Eastern Standard Time
HOUR	0-23	
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

OPERATION

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

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 IN AN OPEN TRANSITION (BREAK BEFORE MAKE) OPERATION TO THE EMERGENCY SOURCE.

WHEN THE NORMAL SOURCE IS RESTORED FOR THE DURATION OF THE FEATURE 3A, RETRANSFER TO NORMAL TIME DELAY SETTING, THE CONTROLS WILL BEGIN MONITORING PHASE, FREQUENCY, AND VOLTAGE DIFFERENTIAL BETWEEN NORMAL AND EMERGENCY SOURCES.

WHEN THE TWO SOURCES ARE APPROACHING SYNCHRONISM, AND THE MANUALLY OPERATED SELECTOR SWITCH HAS BEEN SET TO NORMAL, A CLOSED TRANSITION (MAKE BEFORE BREAK) TRANSFER TO THE NORMAL SOURCE WILL BE INITIATED. THE NORMAL AND EMERGENCY CONTACTORS (CN & CE) WILL BE IN AN OVERLAP CONDITION FOR LESS THAN 0.1 SECONDS.

CLOSED TRANSITION BYPASS OPERATION: THE "CT BYPASS OPTIONS" DISPLAY OF THE CONTROL PANEL ALLOWS SETTING THE TRANSFER SWITCH'S CLOSED TRANSITION BYPASS BEHAVIOR. CLOSED TRANSITION BYPASS CAUSES THE TRANSFER SWITCH TO INTERRUPT POWER TO THE LOAD DURING TRANSFER. THE AVAILABLE OPTIONS ARE:

- **FAIL TO SYNC AUTO BYPASS ENABLE** - CAUSES A "FAILURE TO SYNCHRONIZE" CONDITION TO RESULT IN AN AUTOMATIC CLOSED TRANSITION BYPASS. DEFAULT SETTING IS NO AUTOMATIC BYPASS.
- **CT BYPASS** - ALLOWS SELECTIONS AS TO WHETHER THE CLOSED TRANSITION BYPASS WILL OCCUR WITH OR WITHOUT A DELAYED TRANSITION (LOAD "OFF" TIME). DEFAULT SETTING IS OPEN TRANSITION (NO DELAY).
- **DT BYPASS** - SETS THE LENGTH OF THE DELAYED TRANSFER (LOAD "OFF" TIME) IF THE PREVIOUS PARAMETER HAS BEEN SELECTED TO OPERATE WITH DELAYED TRANSITION. 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.

BASE CATALOG NUMBER				CATALOG NUMBER SUFFIXES					
CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE	NEUTRAL TYPE	
7NCTS	A	3	1000 1200 1600 2000 2600 3000 3200	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	CODE	DESCRIPTION
	B							BLANK A B	NONE SOLID SWITCHING
								BLANK FOR NONE	

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 CLOSSES 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 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.

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)
- D. EXTENDED PARALLEL TIME - INDICATES THAT THE MAIN CONTACTORS (CN & CE) HAVE BEEN SIMULTANEOUSLY CLOSED FOR A PERIOD EXCEEDING THE TIME ALLOTTED. (RED LED)
- E. FAILURE TO SYNCHRONIZE - INDICATES THE THE TWO SOURCES DID NOT MEET THE PARAMETERS REQUIRED FOR A CLOSED TRANSITION TRANSFER. (RED LED)
- F. TS LOCKED OUT - INDICATES THAT A FAILURE OF THE TRANSFER SWITCH OPERATOR HAS OCCURRED AND THAT THE TRANSFER SWITCH HAS TAKEN CORRECTIVE ACTION AS REQUIRED. ONCE THIS FAILURE RECOVERY OPERATION TAKES PLACE, THE TRANSFER SWITCH IS PREVENTED FROM FURTHER OPERATION UNTIL THE CONDITION IS CORRECTED. ONCE THE CONDITION IS CORRECTED, THE TS LOCKED OUT SWITCH MAY BE DEPRESSED TO RESET THE CONTROL PANEL (RED LED).
- G. ALARM RESET SWITCH - RESETS FAILURE TO SYNCHRONIZE AND EXTENDED PARALLEL ALARMS.
- H. CLOSED TRANSITION BYPASS SWITCH - BYPASSES CLOSED TRANSITION TRANSFER WHEN OPERATED DURING THE PERIOD WHILE THE TRANSFER SWITCH CONTROL PANEL IS MONITORING FOR AN INPHASE CONDITION. CAUSES OPEN TRANSITION TRANSFER TO THE OPPOSITE SOURCE IF CONDITIONS PERMIT.

FACTORY CP SETTINGS

PARAMETER	SETTING	
	DEFAULT	FACTORY
<TEST OR MANUAL MODE INPUT>		
TEST OPERATION	"YES"	"NO"
MANUAL OPERATION	"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.

CATALOG NUMBER _____

ASCO® CERTIFIED TO S.O. _____

BY: _____

DATE: _____

FORM REV C

PROJECT NAME: _____

WIRING _____

7000 SERIES (G7NCTS) 3PH 1000-3200 AMPS

"G" FRAME, GROUP 5 CONTROLS

DRAWN BY: DJB DATE: 06/16/04

CHECKED: BK DATE: 06/16/04

PROJECT APPROVAL: WK DATE: 06/16/04

FINAL APPROVAL: _____

ASCO®

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

C 238548 TR BK 09/05/12

B 236802 TR BK 04/27/12

A 221252 BK MM 01/05/08

- 167255 TR WK 06/16/04

ISSUE

REV. TO SHEET

ECN NO. BY APP. DATE

THIRD ANGLE PROJECTION

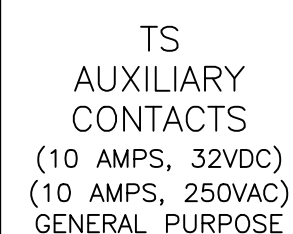
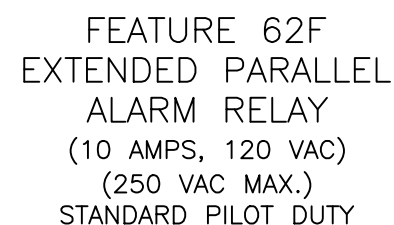
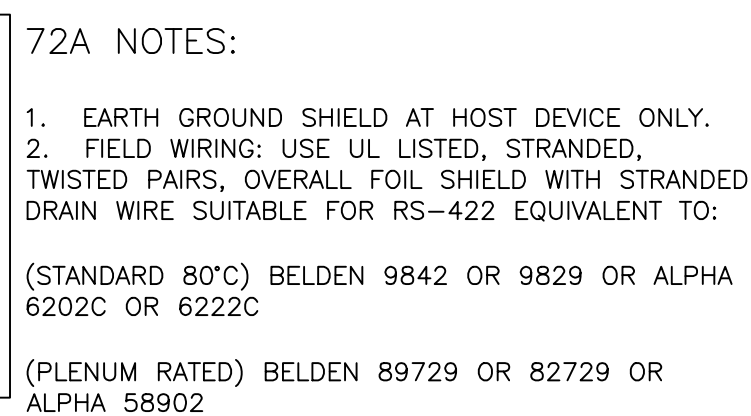
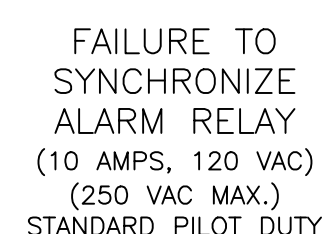
COMPUTER GENERATED DRAWING

SCALE NONE SIZE DS

DWG. NO. 627258

DRAWING C ECU NO. 238548

SHEET 1 OF 6

AA

D

C

B

A

D

C

B

A

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY

NORMAL

LOAD

EMERGENCY

NORMAL

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

- NONE
- SWITCHING
- SOLID BUS PLATE

NOTE:
TS SHOWN CLOSED ON
NORMAL SOURCE.

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

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

* AFTER SOLENOID CORE PASSES THROUGH
TOP DEAD CENTER POSITION.

PROJECT NAME:		WIRING		DIAGRAM	
7000 SERIES (G7NCTS) 3PH 1000-3200 AMPS					
"G" FRAME, GROUP 5 CONTROLS					
DRAWN BY	BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005	ASSEM. REF. NO.	COMPUTER GENERATED DRAWING
CHECKED	BK	06/16/04	PROPERTY OF ASCO POWER TECHNOLOGIES, USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	SCALE	NO. SIZE DS
PROJECT APPROVAL	WK	06/16/04		DWG. NO.	627258
FINAL APPROVAL				DRAWING C	ECN NO. 238548
				REV.	3 OF 6

MODIFIED ASSEMBLY
REFER TO
WIRE RUN LIST

THIRD ANGLE
PROJECTION

C	238548	TR	BK	09/05/12
B	236802	TR	BK	04/27/12
A	221252	BK	MM	01/05/08
—	167255	TR	WK	06/16/04
	ISSUE			

D

C

B

A

D

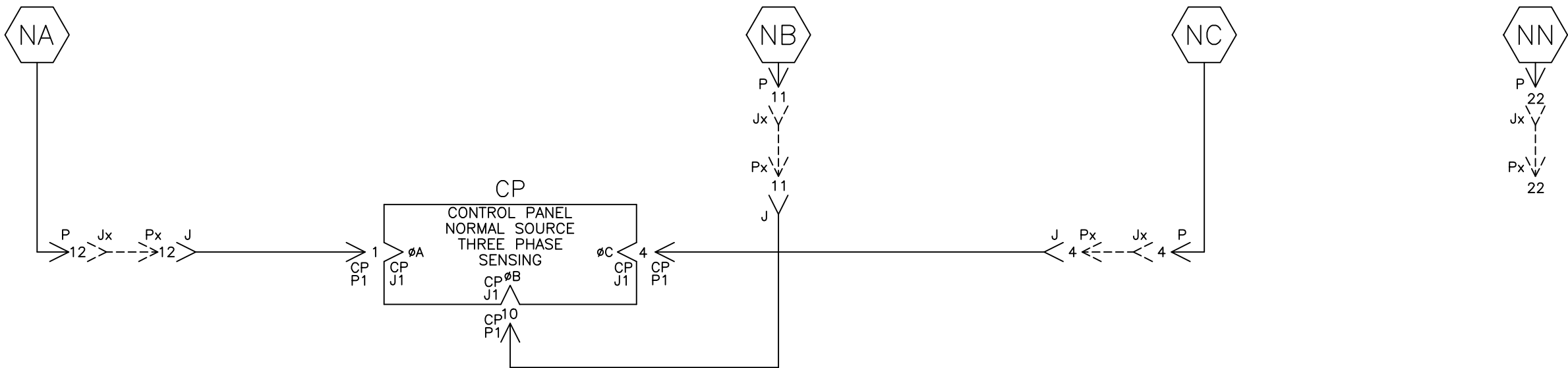
C

B

A

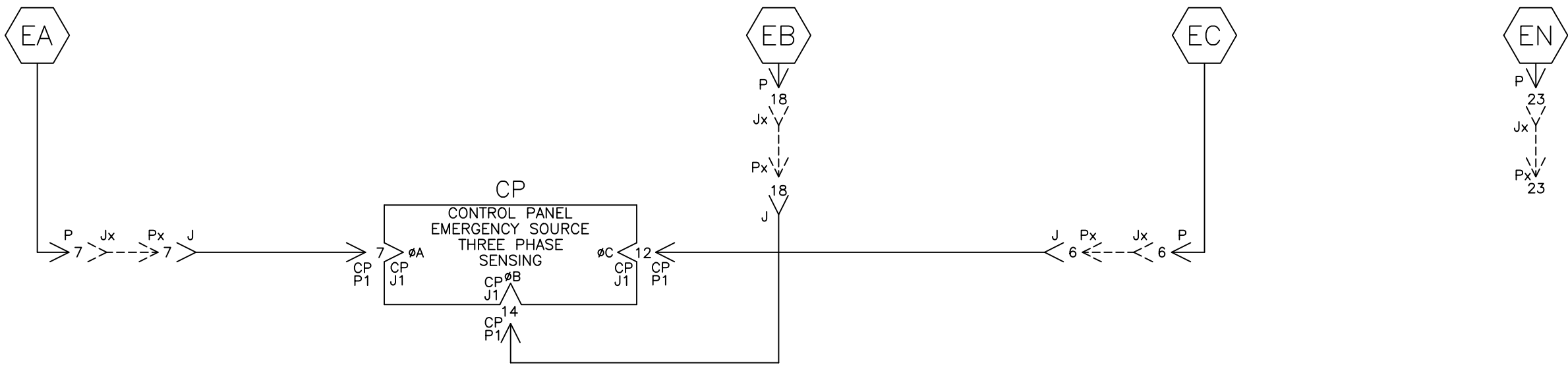
NORMAL SOURCE CIRCUITS

NORMAL



EMERGENCY SOURCE CIRCUITS

EMERGENCY



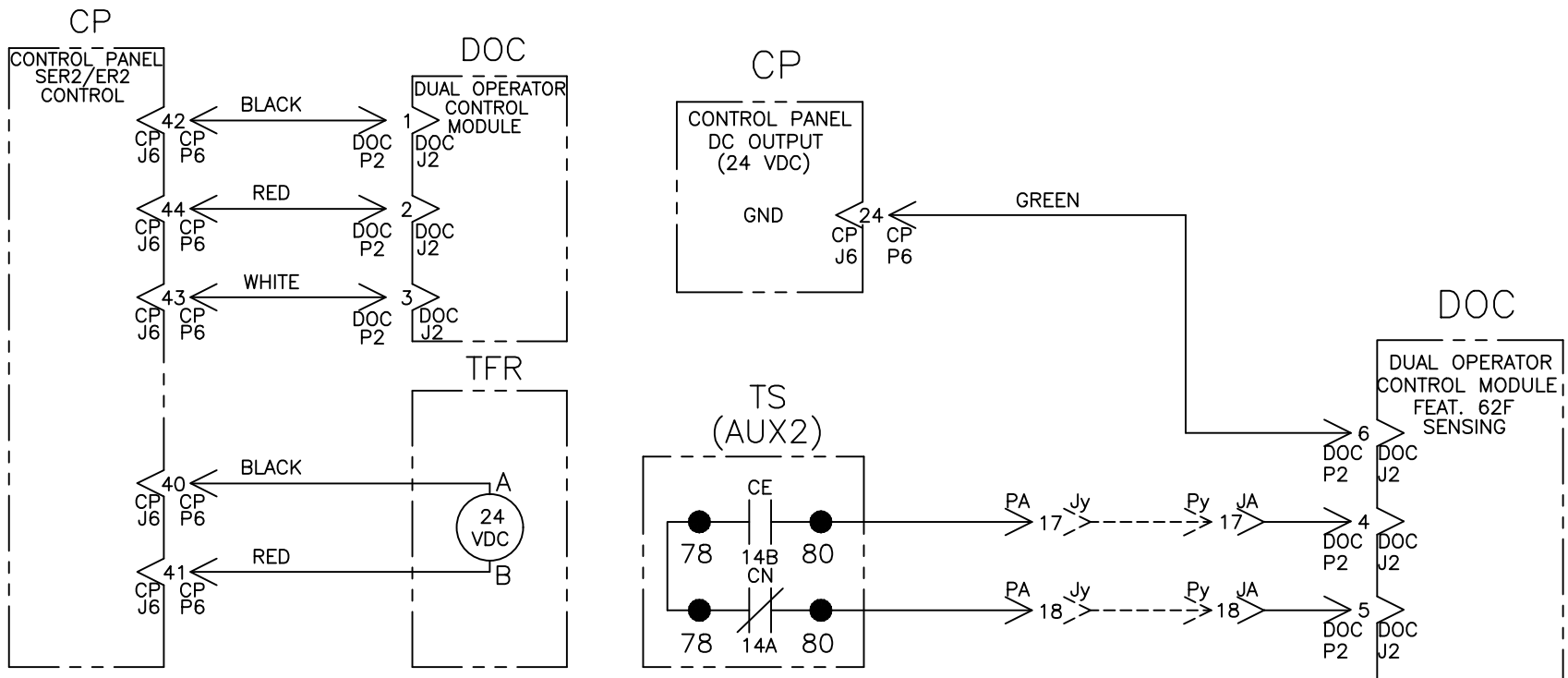
LOAD TERMINAL CIRCUITS

LOAD

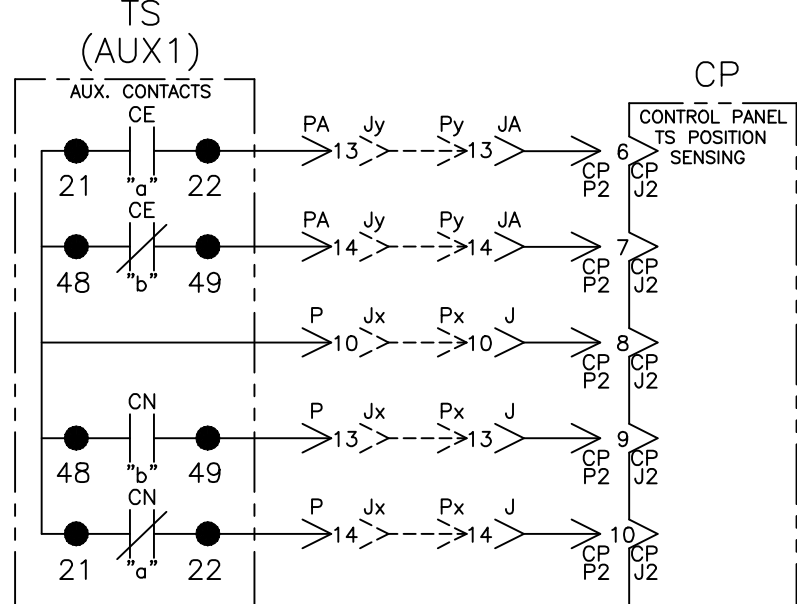


CONTROL SIGNALS & INDICATION

SER2/ER2 CONTROL

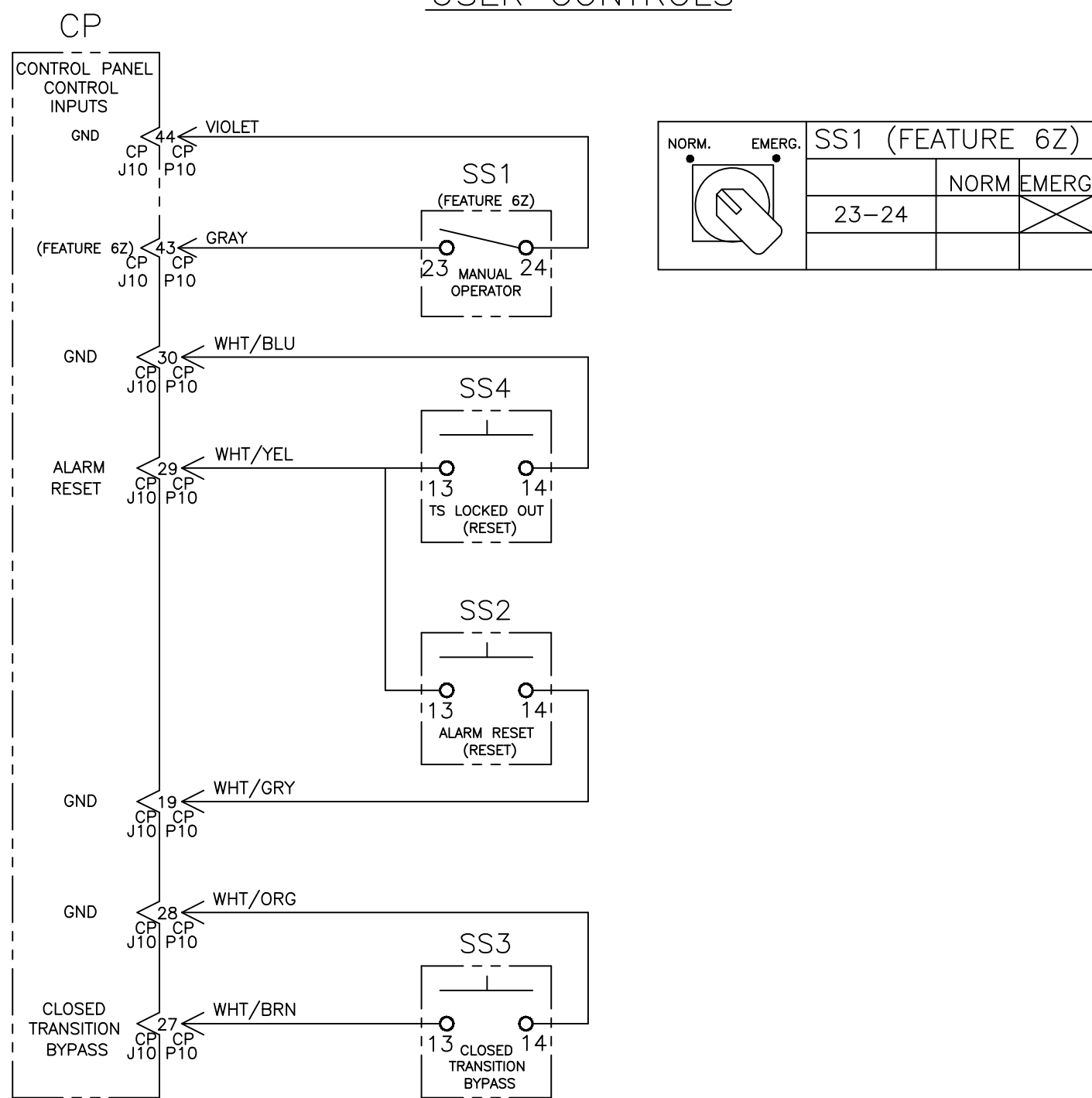


TS POSITION SENSING

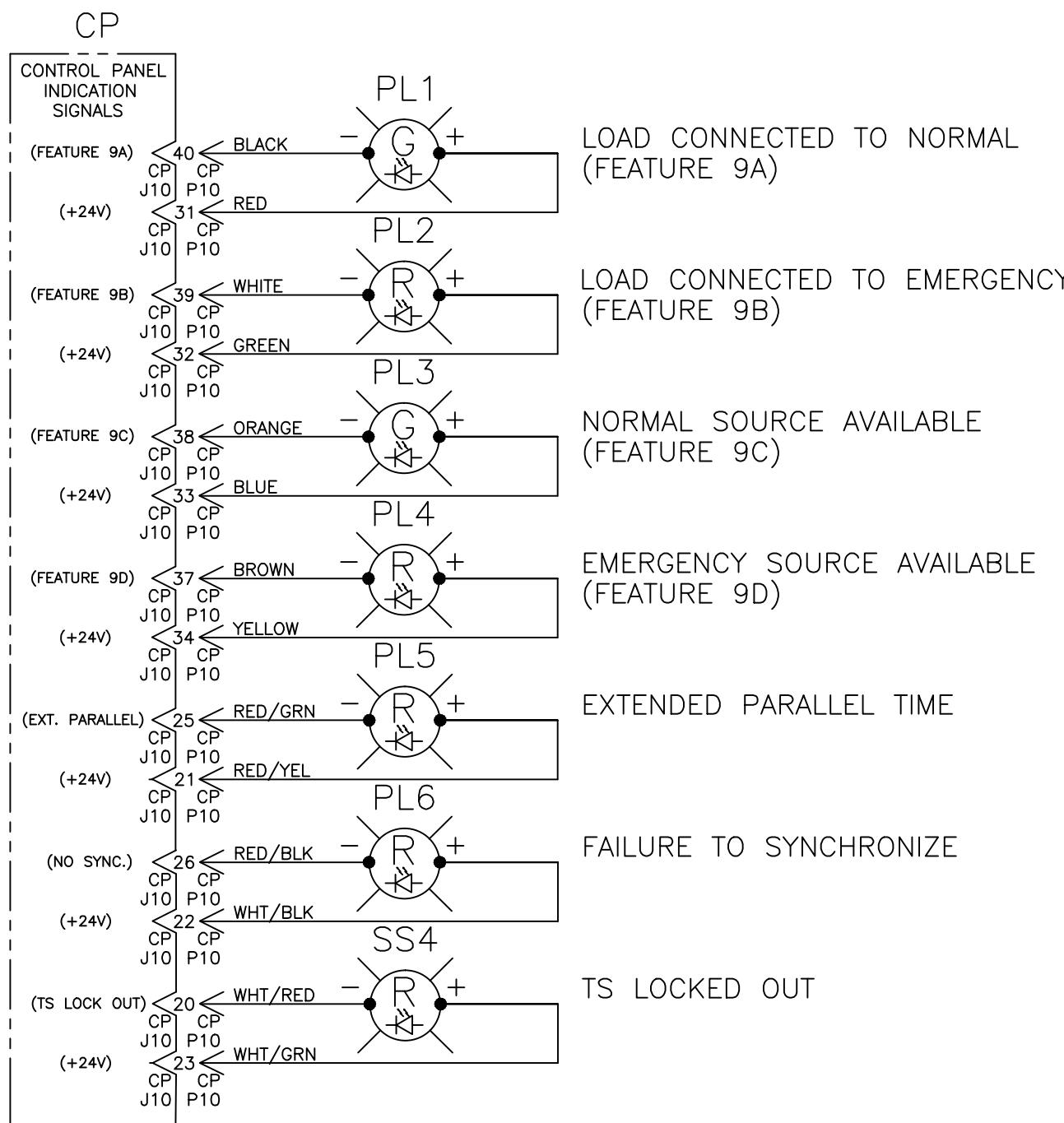


CONTROL SIGNALS & INDICATION

USER CONTROLS



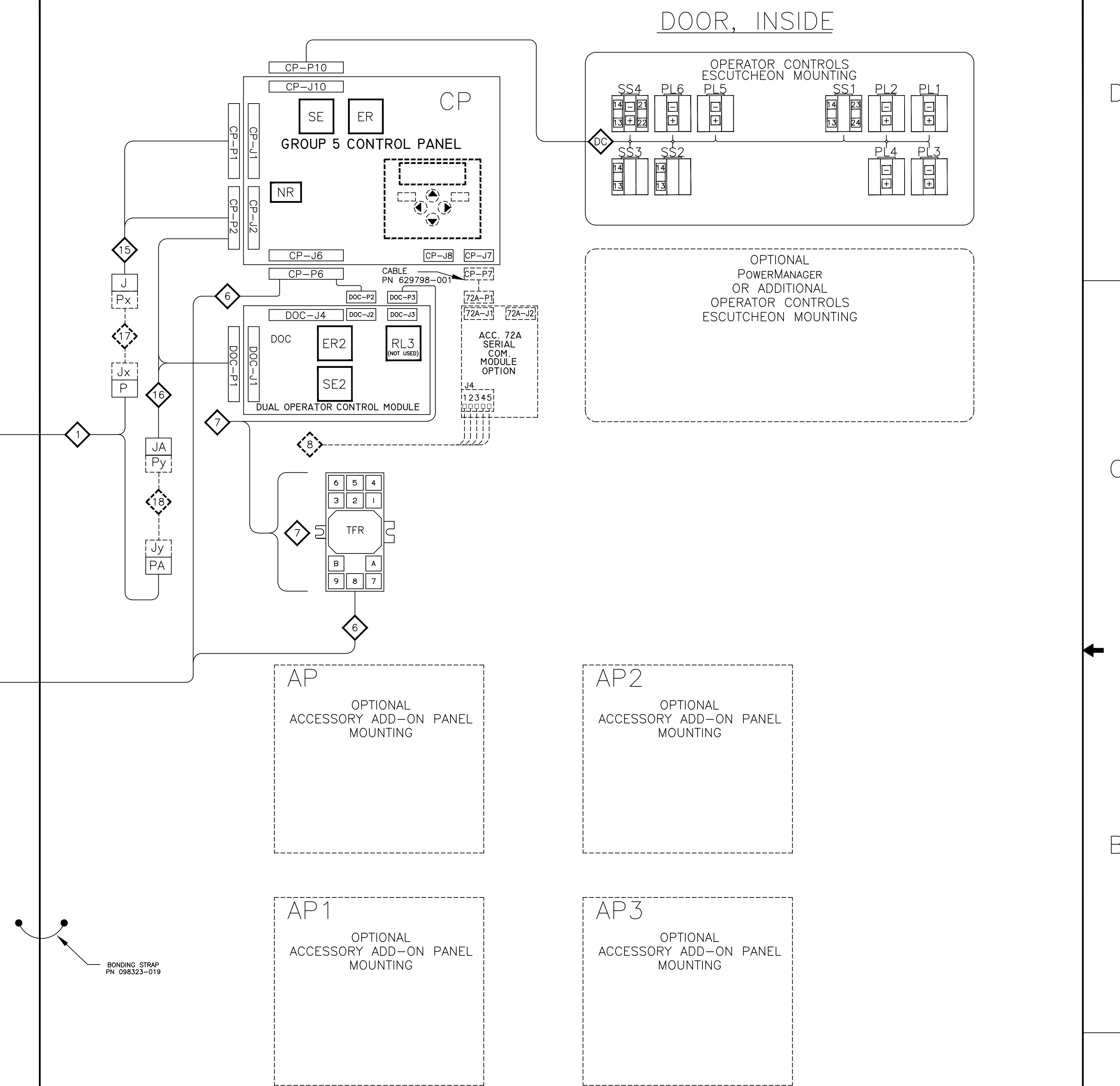
INDICATION



PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING		DIAGRAM				
7000 SERIES (G7NCTS) 3PH 1000-3200 AMPS						
"G" FRAME, GROUP 5 CONTROLS						
DRAWN BY	DJB	DATE	06/16/04	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005	ASSEM. REF. NO.	COMPUTER GENERATED DRAWING
CHECKED	BK	DATE	06/16/04	PROPERTY OF ASCO POWER TECHNOLOGIES, USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE NONE SIZE DS
PROJECT APPROVAL	WK	DATE	06/16/04			DWG. NO. 627258
FINAL APPROVAL						ECN NO. 238548 SHEET 4 OF 6

ASCO

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



PROJECT NAME: WIRING DIAGRAM 7000 SERIES (G7NCTS) 3PH 1000-3200 AMPS "G" FRAME, GROUP 5 CONTROLS				C		238548		TR	BK	09/05/12	
				B		236802		TR	BK	04/27/12	
				A		221252		BK	MM	01/05/08	
				—		167255		TR	WK	06/16/04	
				ISSUE							
REV. TO SHEET				ECN NO.		BY		APP.		DATE	
THIRD ANGLE PROJECTION COMPUTER GENERATED DRAWING											
DRAWN BY		DJB		06/16/04		MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055		ASSEM. REF. NO.			
CHECKED		BK		06/16/04		PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.					
PROJECT APPROVAL		WK		06/16/04							
FINAL APPROVAL											

WIRE RUN LISTING

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 619510-026 (P,P1,P2N,P2E,J3,) MAIN TS	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					
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				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 609051-001 (J4) TS STD. AUX. CONTACTS	CLR	AWG		
40	J4-1,CE(AUX1)-27		16		
41	J4-2,CE(AUX1)-28				
42	J4-3,CN(AUX1)-28				
43	J4-4,CE(AUX1)-30				
44	J4-5,CE(AUX1)-31				
45	J4-6,CN(AUX1)-31				
46	J4-7,CE(AUX1)-33				
47	J4-8,CE(AUX1)-34				
48	J4-9,CN(AUX1)-34				
49	J4-10,CE(AUX1)-36				
50	J4-11,CN(AUX1)-38				
51	J4-12,CE(AUX1)-38				
52	J4-13,CE(AUX1)-39				
53	J4-14,CN(AUX1)-41				
54	J4-15,CE(AUX1)-41				
55	J4-16,CE(AUX1)-42				
56	J4-17,CN(AUX1)-44				
57	J4-18,CE(AUX1)-44				
58	J4-19,CE(AUX1)-45				
59	J4-20,CN(AUX1)-47				
60	J4-21,CE(AUX1)-47				
61	J4-22,CE(AUX1)-48				
62	J4-23,CN(AUX1)-50				
63	J4-24,CE(AUX1)-50				
REMOVE WIRES					
61	J4-22,CE(AUX1)-48				
62	J4-23,CN(AUX1)-50				
63	J4-24,CE(AUX1)-50				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 609051-001-A TS STD. AUX. CONTACTS	CLR	AWG		
40	CE(AUX1)-27,CN(AUX1)-27		16		
43	CE(AUX1)-30,CN(AUX1)-30				
46	CE(AUX1)-33,CN(AUX1)-33				
49	CE(AUX1)-36,CN(AUX1)-36				
52	CE(AUX1)-39,CN(AUX1)-39				
55	CE(AUX1)-42,CN(AUX1)-42				
58	CE(AUX1)-45,CN(AUX1)-45				
8	CE(AUX1)-48,CN(AUX1)-48				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 609051-002 (J5) TS OPT. AUX. CONTACTS	CLR	AWG		
70	J5-1,CE(AUX2)-51		16		
71	J5-2,CE(AUX2)-52				
72	J5-3,CN(AUX2)-52				
73	J5-4,CE(AUX2)-54				
74	J5-5,CE(AUX2)-55				
75	J5-6,CN(AUX2)-55				
76	J5-7,CE(AUX2)-57				
77	J5-8,CE(AUX2)-58				
78	J5-9,CN(AUX2)-58				
79	J5-10,CE(AUX2)-60				
80	J5-11,CE(AUX2)-61				
81	J5-12,CN(AUX2)-61				
82	J5-13,CE(AUX2)-63				
83	J5-14,CE(AUX2)-64				
84	J5-15,CN(AUX2)-64				
85	J5-16,CE(AUX2)-66				
86	J5-17,CN(AUX2)-68				
87	J5-18,CE(AUX2)-68				
88	J5-19,CE(AUX2)-69				
89	J5-20,CN(AUX2)-71				
90	J5-21,CE(AUX2)-71				
91	J5-22,CE(AUX2)-72				
92	J5-23,CN(AUX2)-74				
93	J5-24,CE(AUX2)-74				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 609051-002-A TS OPT. AUX. CONTACTS	CLR	AWG		
70	CE(AUX2)-51,CN(AUX2)-51		16		
73	CE(AUX2)-54,CN(AUX2)-54				
76	CE(AUX2)-57,CN(AUX2)-57				
79	CE(AUX2)-60,CN(AUX2)-60				
82	CE(AUX2)-63,CN(AUX2)-63				
85	CE(AUX2)-66,CN(AUX2)-66				
88	CE(AUX2)-69,CN(AUX2)-69				
91	CE(AUX2)-72,CN(AUX2)-72				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 619510-005 (P6) FIELD INPUTS	CLR	AWG		
100	CP-P6-21,P6-1	WHT	22		
101	CP-P6-22,P6-2	ORG			
102	CP-P6-23,P6-3	GRN	(12 COND)		
103	CP-P6-9,P6-4	BLK			
104	CP-P6-10,P6-5	RED			
REMOVE WIRES					
103	CP-P6-9,P6-4	BLK			
104	CP-P6-10,P6-5	RED			
ADD WIRES					
305	CP-P6-40,TFR-A	BLK	22		
306	CP-P6-41,TFR-B	RED	(2 COND)		
307	CP-P6-42,DOC-P2-1	BLK			
308	CP-P6-43,DOC-P2-3	WHT	(4 COND)		
309	CP-P6-44,DOC-P2-2	RED			
310	CP-P6-24,DOC-P2-6	GRN			
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				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 619510-005 (P6) FIELD INPUTS	CLR	AWG		
105	J6-6		16		
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				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 619510-005 (J7) FIELD OUTPUTS	CLR	AWG		
130	J7-1,TFR-9		16		
131	J7-2,TFR-6				
132	J7-3				
133	J7-4,DOC-P3-3				
134	J7-5,DOC-P3-1				
135	J7-6,DOC-P3-2				
136	J7-7,DOC-P3-4				
137	J7-8,DOC-P3-5				
138	J7-9,DOC-P3-6				
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				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 605454-005 (J8) OPTIONAL SERIAL I/O	CLR	AWG		
160	J8-1,72A-5	SHLD	22		
161	J8-2,72A-1	WHT/ORG	(4 COND)		
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				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 605454-007 (P8,TB) OPTIONAL SERIAL I/O	CLR	AWG		
160	P8-1,TB-37	SHLD	22		
161	P8-2,TB-38	WHT/ORG	(4 COND)		
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				

HARNESS LOCATOR				BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	SUB-ASSEMBLY 605659 (P3,P4,J6,P7,TB) STD. FIELD TB	CLR	AWG		
6	TB-1,P3-1		16		
7	TB-2,P3-2				
14	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				