

THREE PHASE WIRING FOR ASCO® 4000 SERIES TRANSFER SWITCHES TYPES G4ATS & G4NTS 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® 4000 SERIES TRANSFER SWITCHES USER'S GUIDE** (PART NO. 381333-126) PROVIDED WITH EVERY 4000 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
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. UPON EXPIRATION, TRANSFER TO EMERGENCY IS INITIATED ON AUTOMATIC UNITS (4ATS) 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, UPON EXPIRATION OF THE DELAY, RETRANSFER TO NORMAL WILL BE INITIATED ON AUTOMATIC UNITS (4ATS).

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 AUTOMATIC (4ATS) OR MANUAL (4NTS) RETRANSFER.

FEAT. 3A - RETRANSFER TO NORMAL DELAY (TEST MODE)
DELAY STARTS FOLLOWING A USER INITIATED "TRANSFER TEST" WHEN THE "RETRANSFER TO NORMAL" KEY PAD IS DEPRESSED ON AUTOMATIC UNITS (4ATS) 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).

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 AUTOMATIC EXERCISING OF THE ENGINE-GENERATOR SET EITHER WITH OR WITHOUT LOAD TRANSFER FOR AUTOMATIC UNITS (4ATS) OR WITHOUT LOAD TRANSFER FOR NON-AUTOMATIC UNITS (4NTS).
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
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 (AUTOMATIC UNITS, 4ATS) OR PERMITTED TO BE MANUALLY TRANSFERRED (NON-AUTOMATIC UNITS, 4NTS) TO THE EMERGENCY SOURCE.

WHEN THE NORMAL SOURCE IS RESTORED FOR THE DURATION OF THE FEATURE 3A (RETRANSFER TO NORMAL TIME DELAY) SETTING AND FOLLOWING OPERATION OF THE "TRANSFER TO NORMAL" KEYPAD ON NON-AUTOMATIC UNITS (4NTS), THE LOAD WILL BE RETRANSFERRED TO THE NORMAL SOURCE.

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

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). THE 1C DELAY IS BYPASSED ON NON-AUTOMATIC UNITS (4NTS), WHEN TRANSFER IS INITIATED BY OPERATION OF THE "TRANSFER TO NORMAL" KEYPAD AND THE NORMAL SOURCE IS AVAILABLE. FEATURE 7 CLOSURES 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) LOCATED ON THE FRONT OF THE TRANSFER SWITCH FRAME. CONTACT RATED 5 AMPS AT 32 VDC/120VAC RESISTIVE.

B. FEATURES 14AA & 14BA - TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS.
TWO (2) FORM C CONTACTS EACH TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO NORMAL (14A) OR EMERGENCY (14B). CONTACTS CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB) LOCATED ON THE FRONT OF THE TRANSFER SWITCH FRAME. 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 ON AUTOMATIC UNITS (4ATS). 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. LOCATED ON TERMINAL BLOCK (TB1) ON THE REAR OF THE OPERATOR INTERFACE MODULE ON THE FRONT DOOR.

USER CONTROLS AND INDICATIONS

A. FEATURES 5 & 6B - "TRANSFER TEST" & "RETRANSFER TO NORMAL" KEYPAD CONTROLS.
STANDARD ON AUTOMATIC UNITS (4ATS).
"TRANSFER TEST" KEYPAD:
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 TO NORMAL" KEYPAD:
OPERATION WILL BYPASS THE FEATURE 3A (RETRANSFER TO NORMAL DELAY) INITIATING RETRANSFER TO THE NORMAL SOURCE.

FEATURE 6Z & 6C - MANUAL TRANSFER CONTROL, "TRANSFER TO EMERGENCY" & "TRANSFER TO NORMAL" KEYPAD CONTROLS. STANDARD ON NON-AUTOMATIC UNITS (4NTS).

"TRANSFER TO EMERGENCY" KEYPAD:
OPERATION CAUSES IMMEDIATE ENGINE START IF NORMAL IS AVAILABLE AND TRANSFER TO THE EMERGENCY SOURCE WHEN THE EMERGENCY SOURCE IS AVAILABLE. TRANSFER SWITCH WILL REMAIN CONNECTED TO THE EMERGENCY SOURCE UNTIL THE UNIT IS MANUALLY RETRANSFERRED TO THE NORMAL SOURCE.

"TRANSFER TO NORMAL" KEYPAD:
OPERATION CAUSES TRANSFER TO THE NORMAL SOURCE IF IT IS AVAILABLE. THE ENGINE START SIGNAL WILL RUN FOR THE ACCESSORY 2E DELAY ON ENGINE SHUTDOWN FOLLOWING TRANSFER. THE TRANSFER SWITCH WILL REMAIN CONNECTED TO THE NORMAL SOURCE UNTIL THE UNIT IS MANUALLY TRANSFERRED TO THE 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)

OPTIONAL ACCESSORIES

A. ACCESSORY 14AC & 14BC - TWO (2) ADDITIONAL TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS EACH TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO NORMAL (14A) OR EMERGENCY (14B). CONTACTS CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB) LOCATED ON THE TRANSFER SWITCH FRAME. CONTACTS RATED 10 AMPS, 32 VDC, 250 VAC.

B. ACCESSORY 18Z & 18Z2 - OPTION RELAY MODULE. PROVIDES A RELAY MODULE ASSEMBLY THAT CONNECTS TO THE REAR OF THE USER INTERFACE MODULE. ACCESSORY 18Z PROVIDES ONE (1) RELAY MODULE & ACCESSORY 18Z2 PROVIDES TWO (2) RELAY MODULES.

EACH RELAY MODULE PROVIDES 4 INDEPENDENT, FORM C RELAY OUTPUTS EACH RATED 2 AMPS, 30 VDC MAX. THE RELAY PROVIDE THE FOLLOWING SIGNALS;

RELAY 1 (RL1) ENERGIZES IF THE EMERGENCY SOURCE HAS BEEN ACCEPTED BY THE CONTROLLER.

RELAY 2 (RL2) ENERGIZES IF THE NORMAL SOURCE HAS BEEN ACCEPTED BY THE CONTROLLER.

RELAY 3 (RL3) ENERGIZES IF THE CONTROLLER'S LOAD DISCONNECT SIGNAL IS ACTIVE. (FEATURE 31, REFER TO THE GROUP 5 CONTROLLER USER'S MANUAL, PN 381333-126).

RELAY 4 (RL4) USER CONFIGURED OUTPUT THAT CAN BE USER DEFINED TO OPERATE AS FOLLOWS;

- SAME AS RELAY 1.
- SAME AS RELAY 2.
- DE-ENERGIZES IF BOTH SOURCES ARE UNACCEPTABLE AND PROVIDES ONBOARD JUMPER TO PERMIT THE RELAY TO BE USED TO ALLOW AN EXTERNAL 24 VDC SOURCE TO POWER THE CONTROLLER FOR EXTENDED ENGINE STARTING TIME DELAY SETTINGS WHEN POWER IS NOT AVAILABLE.

REFER TO INSTRUCTION SHEET PN 381339-260 FOR INSTRUCTIONS.

GENERAL NOTES

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

NTS 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"

BASE CATALOG NUMBER				CATALOG NUMBER SUFFIXES				EXPLANATION OF CATALOG NUMBER CODES						
TS	CATALOG NEUTRAL PHASE	FRAME	TYPE	TYPE	POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE	CATALOG TYPE	NEUTRAL TYPE	VOLTAGE CODES (3 OR 4 WIRE) 90, 100, 120, 240 Hz	ENCLOSURE CODES
				A		1000	C					A	208	BLANK
				B	3	1200	D	5	X			B	220	1
				C		1600	E					C	230	2
						2000	F					D	240	3R
						2600	G					E	380	G
						3000	H					F	400	H
							J					G	415	J
							K					H	440	K
							L					I	460	L
							M					J	480	M
							N					K	550	N
							P					L	575	P
							Q					M	600	3R
							R					N		4
												P		4X
												Q		12

CATALOG NUMBER _____

ASCO® CERTIFIED TO S.O. _____

BY _____

DATE _____

FORM REV C _____

PROJECT NAME: _____

WIRING _____

4000 SER (G4A/NTS) 3PH 1000-3000 AMPS

"G" FRAME, GROUP 5 CONTROLS

COMPUTER GENERATED DRAWING

SCALE 1:1 SIZE DS

DWG. NO. 766498

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

DRAWING C EON NO. 214285 SHEET 1 OF 6

C 214285 BWM/BWM 08/01/07

SEE ECN

B 206774 BK JPB 11/29/05

SEE ECN

A 205151 JPB JPB 7/13/05

SEE ECN

204825 BWM SDH 6/05

ISSUE

REV. TO SHEET

ECN NO. BY APP. DATE

THIRD ANGLE PROJECTION

DRAWN BY BWM 6/05

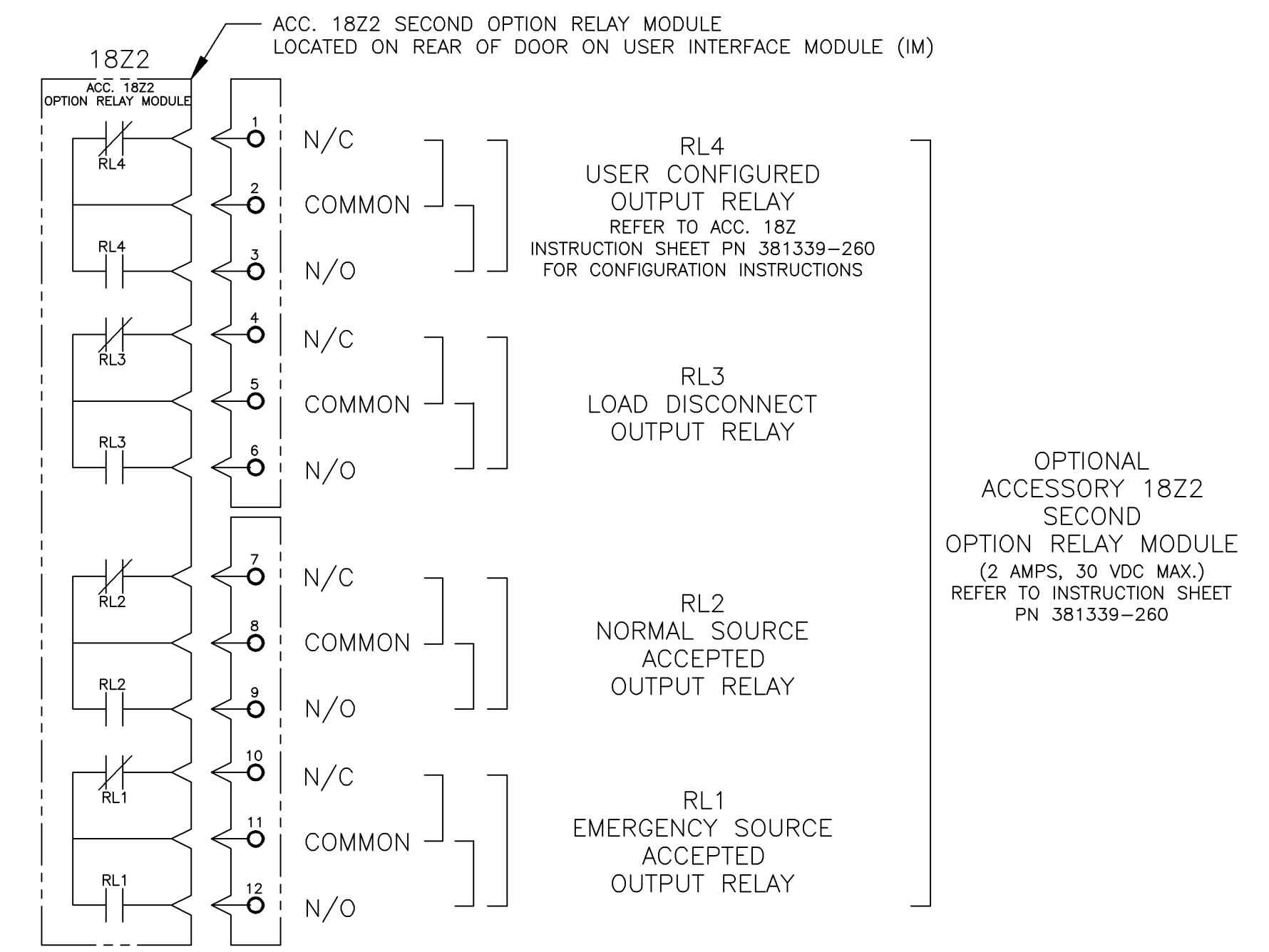
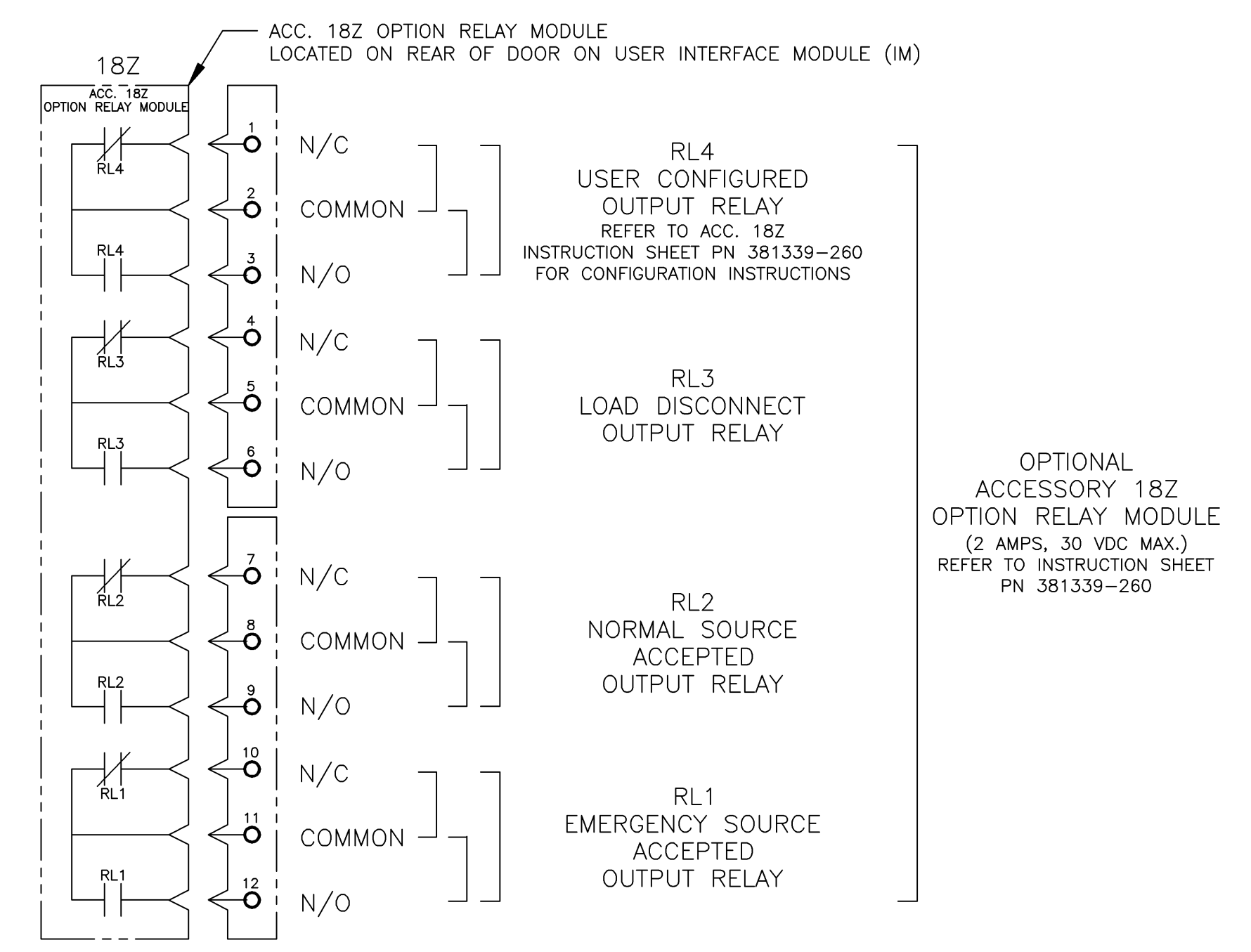
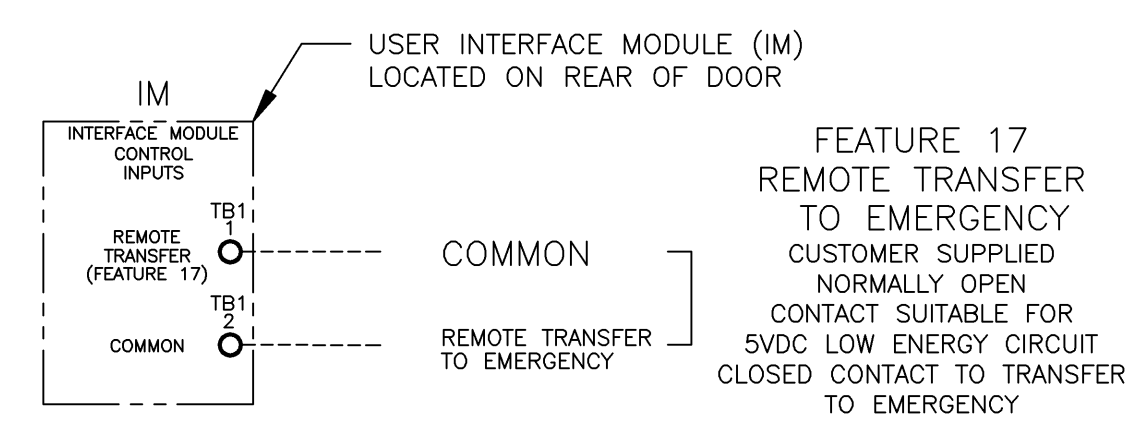
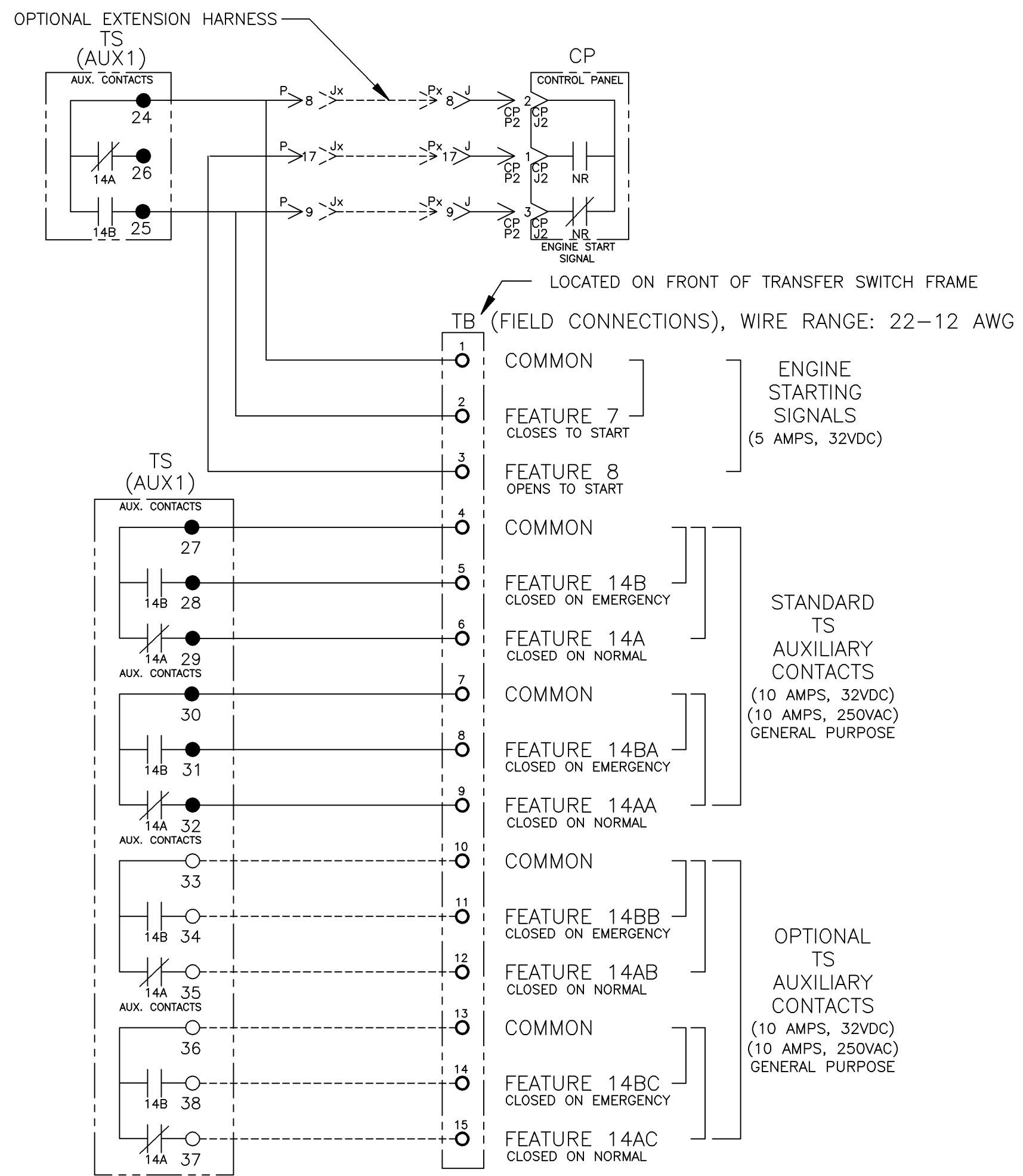
MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055.

ASSEM. REF. NO.

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FINAL APPROVAL SDH 6/05

FIELD CONNECTIONS



C	214285	BWM	BWM	08/01/07
B	206774	BK	JPB	11/29/05
A	205151	JPB	JPB	7/13/05
-	204825	BWM	SDH	6/05
-				ISSUE

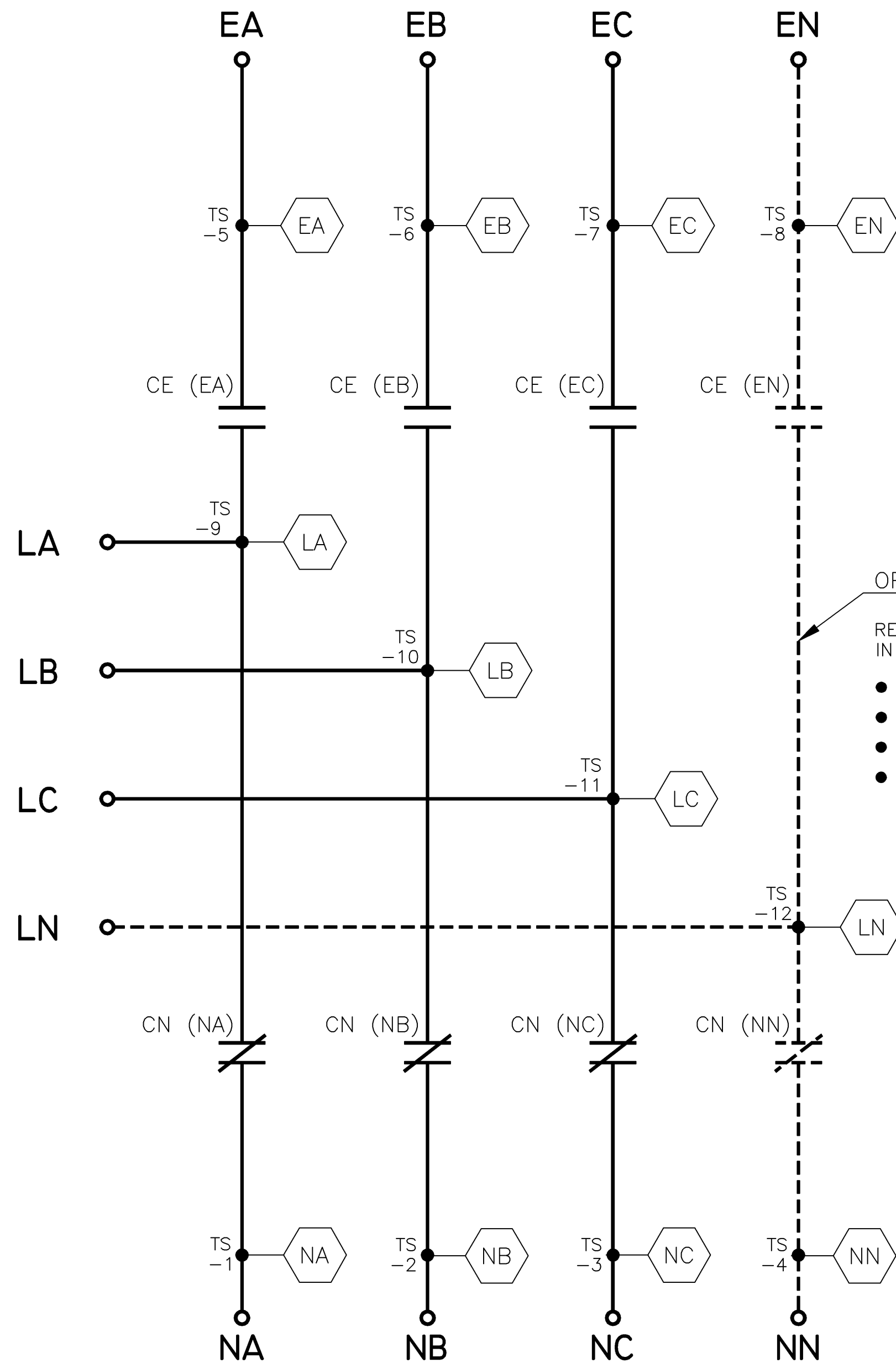
PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
4000 SER (G4A/NTS) 3PH 1000-3000 AMPS						
"G" FRAME, GROUP 5 CONTROLS						
DRAWN BY	BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005	ASSEM. REF. NO.	COMPUTER GENERATED DRAWING	
CHECKED	BWM	6/05			SCALE	1:1 SIZE DS
PROJECT APPROVAL			PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		DWG. NO. 766498	
FINAL APPROVAL	SDH	6/05	ASCO	ASCO POWER TECHNOLOGIES, L.P.	DRAWING C	ECN NO. 214285 SHEET 2 OF 6
			FLORHAM PARK, NEW JERSEY 07932 U.S.A.			

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY

NORMAL



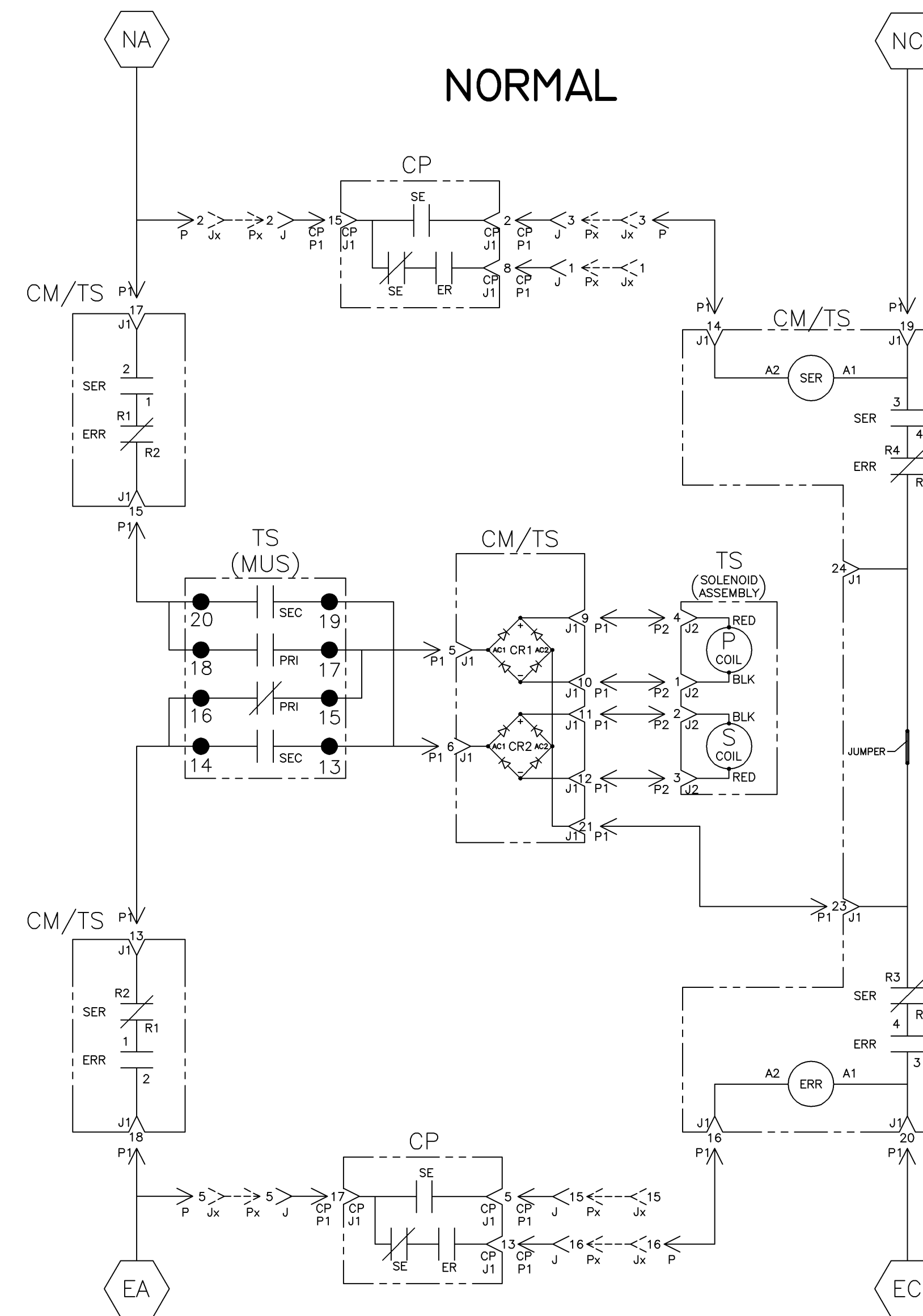
OPTIONAL NEUTRAL TYPES

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

- NONE
- SWITCHING
- OVERLAPPING CONTACTS
- SOLID BUS PLATE

NORMAL

NOTE:
ATS/NTS SHOWN CLOSED ON NORMAL SOURCE.



EMERGENCY

TS (MUS) CONTACTS		SOLENOID POSITION				
MUS		NORM	>	AFTER TDC	<	EMER
13-14						
15-16						
17-18						
19-20						

* AFTER SOLENOID PASSES THROUGH TOP DEAD CENTER POSITION.

C	214285	BWM	BWM	08/01/07
B	206774	BK	JPB	11/29/05
A	205151	JPB	JPB	7/13/05
-	204825	BWM	SDH	6/05

PROJECT NAME: **WIRING DIAGRAM**
4000 SER (G4A/NTS) 3PH 1000-3000 AMPS
"G" FRAME, GROUP 5 CONTROLS

REV. TO SHEET: **C** ECN NO. **214285** BY **BWM** APP. **BWM** DATE **08/01/07**

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055. ASSEM. REF. NO. **766498**

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SCALE: 1:1 SIZE: DS

COMPUTER GENERATED DRAWING

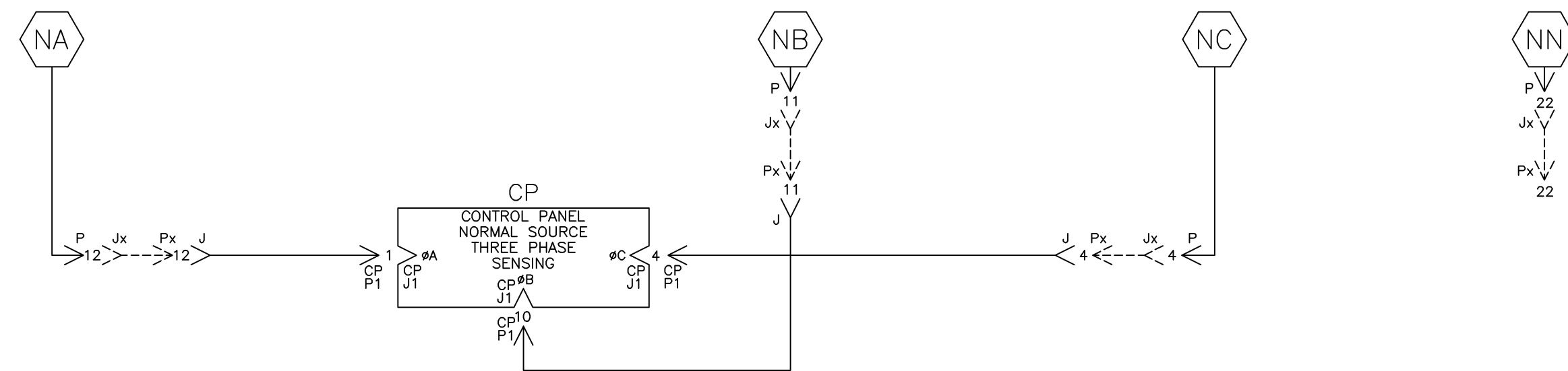
ASCOSCO POWER TECHNOLOGIES, L.P.
 FLORHAM PARK, NEW JERSEY 07932 U.S.A.

DWG. NO. **766498** SHEET **3** OF **6**

EMERGENCY SOURCE CIRCUITS

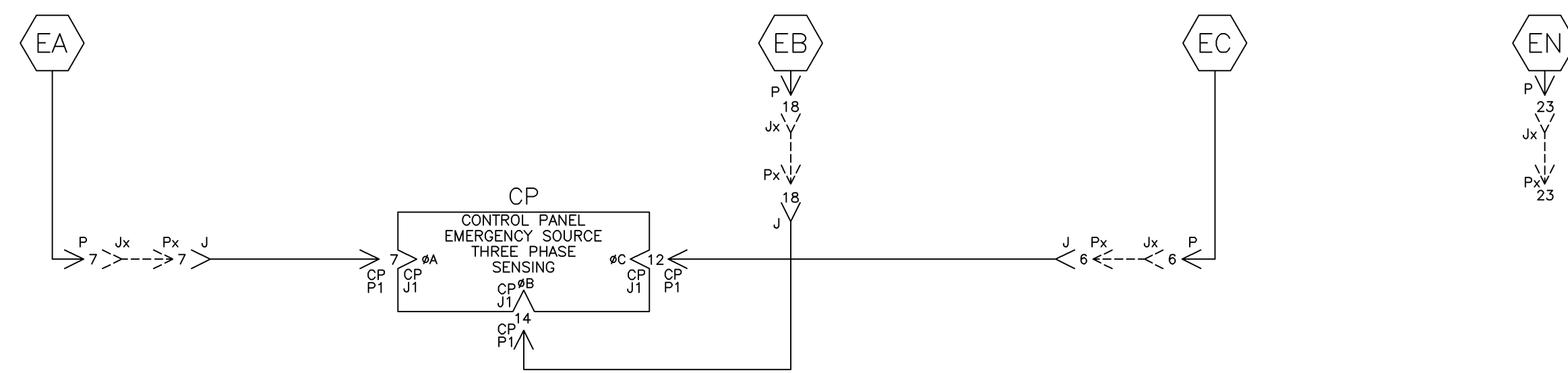
ADDITIONAL CIRCUITS

NORMAL



EMERGENCY SOURCE CIRCUITS

EMERGENCY

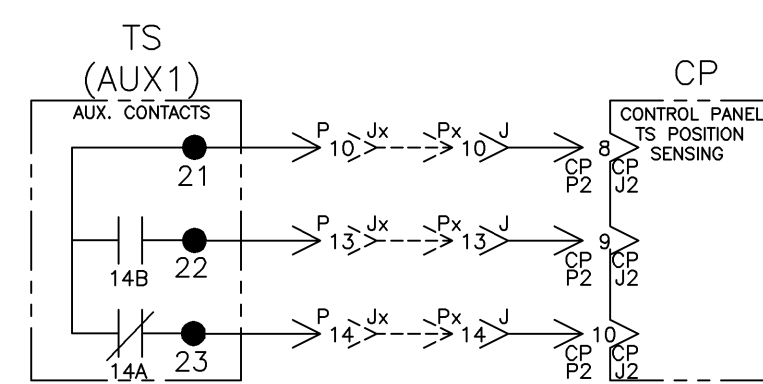


LOAD TERMINAL CIRCUITS

LOAD



CONTROL SIGNALS & INDICATION



C	214285	BWM	BWM	08/01/07
B	206774	BK	JPB	11/29/05
A	205151	JPB	JPB	7/13/05
-	204825	BWM	SDH	6/05
-				ISSUE

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
4000 SER (G4A/NTS) 3PH 1000-3000 AMPS		MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055.		ASSEM. REF. NO.		COMPUTER GENERATED DRAWING
"G" FRAME, GROUP 5 CONTROLS		PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE 1:1 SIZE DS		DWG. NO. 766498
DRAWN BY	BWM	DATE	6/05	ASCOS		REV. C
CHECKED				ASCOS		ECN NO. 214285
PROJECT APPROVAL				ASCOS		SHEET 4 OF 6
FINAL APPROVAL	SDH	DATE	6/05	ASCOS		



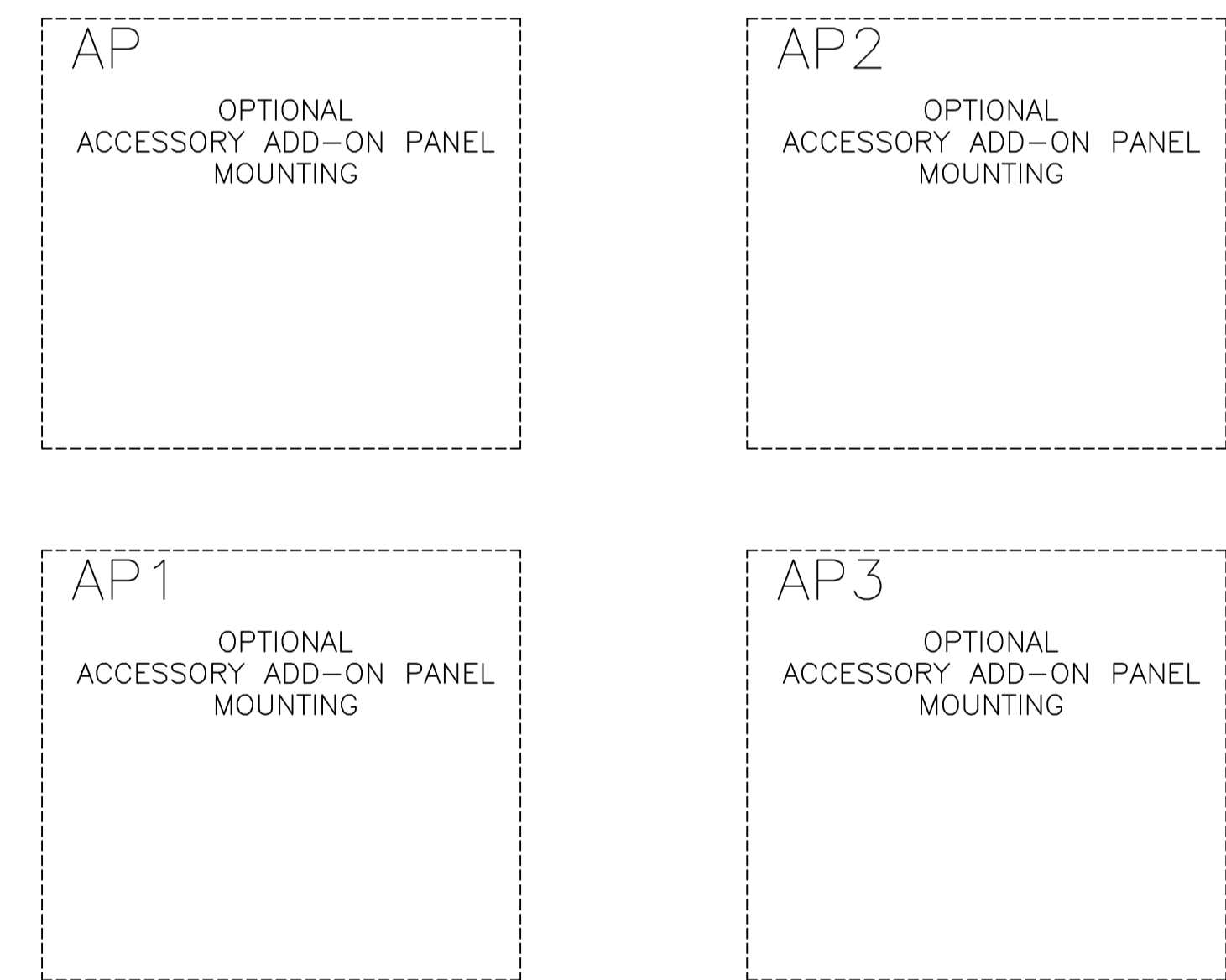
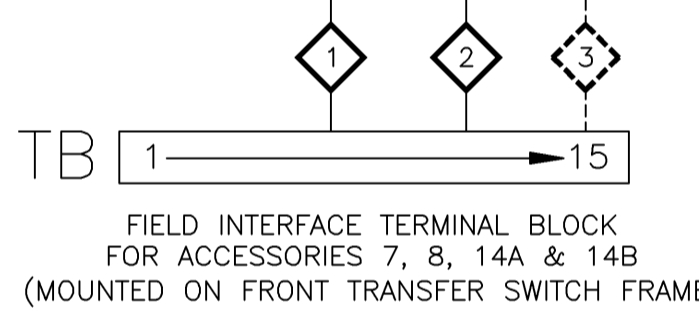
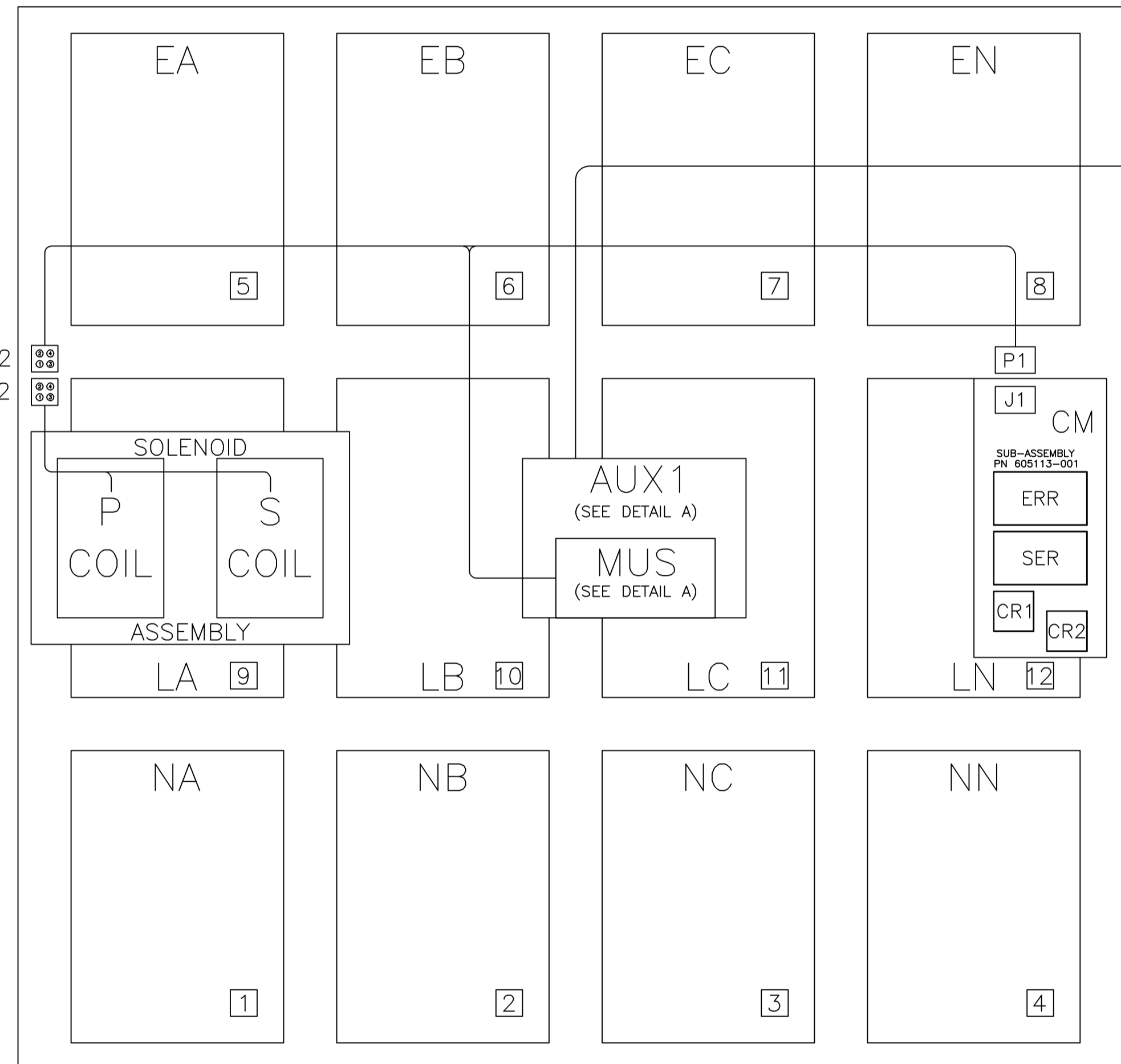
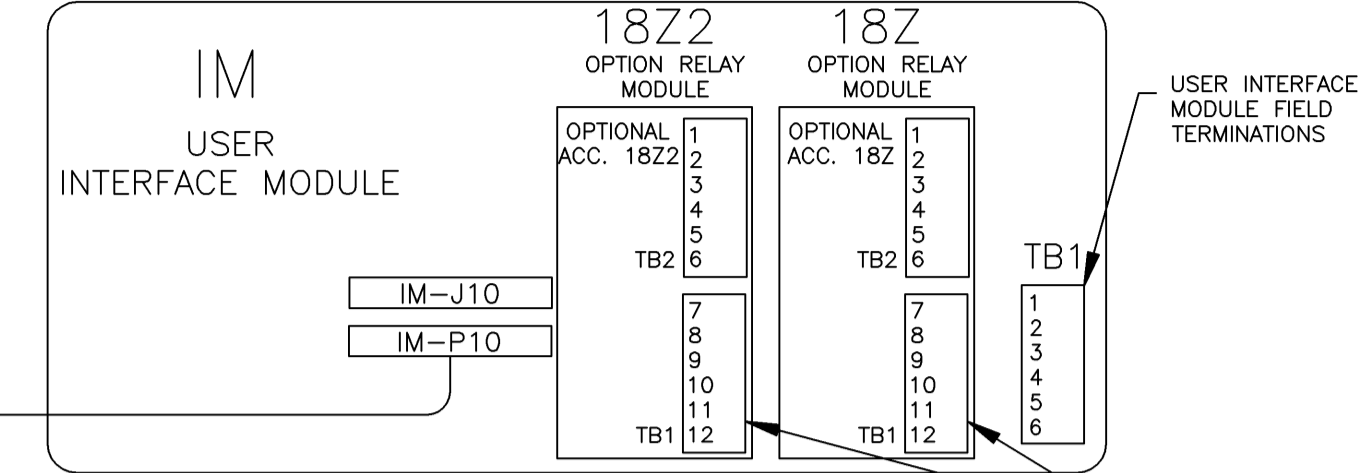
PHYSICAL DIAGRAM

ENCLOSURE

DOOR, INSIDE

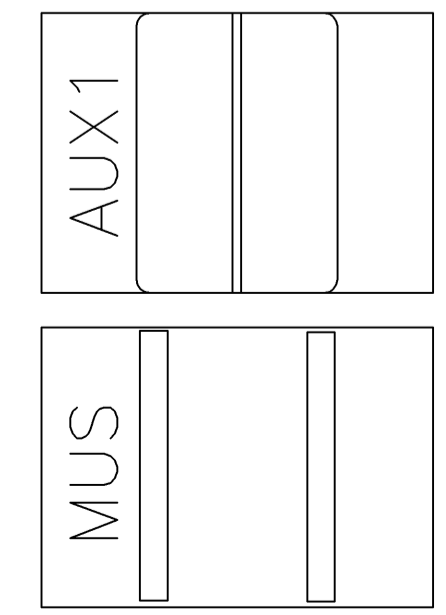
TS (TRANSFER SWITCH)

GROUP 5 CONTROL PANEL



BONDING STRAP PN 098323-019

DETAIL A
MUS & AUX1
TOP VIEW



C	214285	BWM/BWM	08/01/07
SEE ECN			
B	206774	BK JPB	11/29/05
SEE ECN			
A	205151	JPB JPB	7/13/05
SEE ECN			
-	204825	BWM/SDH	6/05
ISSUE			

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
4000 SER (G4A/NTS) 3PH 1000-3000 AMPS						
"G" FRAME, GROUP 5 CONTROLS						
DRAWN BY	BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-005	ASSEM. REF. NO.	COMPUTER GENERATED DRAWING	
CHECKED	BWM	6/05			SCALE	1:1
PROJECT APPROVAL					SIZE	DS
FINAL APPROVAL	SDH	6/05			DWG. NO.	766498
					DRAWING C	ECN NO. 214285
					REV.	SHEET 5 OF 6

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

WIRE RUN LISTING

HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 605454 (P,P1,P2,J3) MAIN TS	CLR	AWG
1	P-2,TS-1		16
2	P-3,P1-14		
3	P-4,TS-3		
4	P-5,TS-5		
5	P-6,TS-7		
4	P-7,TS-5		
6	P-8,TS(AUX1)-24		
6	TS(AUX1)-24,J3-1		
7	P-9,TS(AUX1)-25		
7	TS(AUX1)-25,J3-2		
8	P-10,TS(AUX1)-21		
9	P-11,TS-2		
10	P-12,TS-1		
11	P-13,TS(AUX1)-22		
12	P-14,TS(AUX1)-23		
13	P-16,P1-16		
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		
22	P1-5,TS(MUS)-17		
22	TS(MUS)-17,TS(MUS)-15		
23	P1-6,TS(MUS)-19		
23	TS(MUS)-19,TS(MUS)-13		
24	P1-9,P2-4		
25	P1-10,P2-1		
26	P1-11,P2-2		
27	P1-12,P2-3		
28	P1-13,TS(MUS)-16		
28	TS(MUS)-16,TS(MUS)-14		
29	P1-15,TS(MUS)-20		
29	TS(MUS)-20,TS(MUS)-18		
1	P1-17,TS-1		
4	P1-18,TS-5		
3	P1-19,TS-3		
5	P1-20,TS-7		
30	P1-21,P1-23		
REMOVE WIRES			
6	TS(AUX1)-24,J3-1		
7	TS(AUX1)-25,J3-2		
14	P-17,J3-3		
ADD WIRES			
6	TS(AUX1)-24,TB-1		
7	TS(AUX1)-25,TB-2		
200	P-1		
14	P-17,TB-3		
222	P-15		
201	P1-1		
202	P1-2		
203	P1-3		
204	P1-4		
205	P1-7		
206	P1-8		
207	P1-16		
208	P1-22		
209	P1-24		

HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	TS STD. AUX. CONTACTS	CLR	AWG
40	TB-4,TS(AUX1)-27		16
41	TB-5,TS(AUX1)-28		
42	TB-6,TS(AUX1)-29		
43	TB-7,TS(AUX1)-30		
44	TB-8,TS(AUX1)-31		
45	TB-9,TS(AUX1)-32		

HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	OPTIONAL AUX. CONTACTS	CLR	AWG
46	TB-10,TS(AUX1)-33		16
47	TB-11,TS(AUX1)-34		
48	TB-12,TS(AUX1)-35		
49	TB-13,TS(AUX1)-36		
50	TB-14,TS(AUX1)-38		
51	TB-15,TS(AUX1)-37		

HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 483763 (J,CP-P1,CP-P2) CONTROL PANEL	CLR	AWG
350	J-1,CP-P1-8		18
1	J-2,CP-P1-15		
2	J-3,CP-P1-2		
3	J-4,CP-P1-4		
4	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		

HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 309320-005 OPTIONAL 8 IN. EXTENSION HARNESS	CLR	AWG
350	Jx-1,Px-1		16
1	Jx-2,Px-2		
2	Jx-3,Px-3		
3	Jx-4,Px-4		
4	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		

WIRE No.	ADDITIONAL WIRING	CLR	AWG
			16

C	214285	BWM/BWM	08/01/07
B	206774	BK JPB	11/29/05
A	205151	JPB JPB	7/13/05
-	204825	BWM/SDH	6/05
-	ISSUE		

PROJECT NAME:		DIAGRAM	
4000 SER (G4A/NTS) 3PH 1000-3000 AMPS			
"G" FRAME, GROUP 5 CONTROLS			
REV. TO SHEET	ECN NO.	BY	APP. 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 BY	DATE	SCALE	1:1 SIZE DS
PROJECT APPROVAL	6/05	766498	
FINAL APPROVAL	SDH 6/05	ASC POWER TECHNOLOGIES, L.P.	DRAWING C ECN NO. 214285 SHEET 6 OF 6

