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THREE PHASE WIRING FOR **ASCO**® 300 SERIES MANUALLY OPERATED TRANSFER SWITCH TYPE G3MTQ RATED 1000-3000 AMPERES

FEATURES, OPERATION, ACCESSORIES, & NOTES

STANDARD FEATURE

FEATURE 14A & 14B – TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS. ONE (1) FORM A CONTACT TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO SOURCE 1 (14A) AND ONE (1) FORM A CONTACT TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO SOURCE 2 (14B) AND ONE (1) FROM A CONTACT TO INDICATE TRANSFER SWITCH IN DISCONNECTED POSITION. CONTACTS CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACTS RATED 10 AMPS, 32VDC, 250 VAC.

OPTIONAL ACCESSORIES

ACC. 170B** ONE FORM C CONTACT WIRED TO THE CUSTOMER TERMINAL BLOCK THAT OPERATES WHEN SOURCE 1 AND SOURCE 2 VOLTAGE IS PRESENT AT THE TRANSFER SWITCH TERMINALS. S1A CONTACTS OPERATE WHEN SOURCE 1 AVAILABLE AND S2A CONTACTS OPERATE WHEN SOURCE 2 AVAILABLE. TRANSFER SWITCH AUXILIARY CONTACTS WIRED TO THE TERMINAL BLOCK (TB) TO INDICATE TS POSITIONS (CLOSE ON SOURCE 1, CLOSE SOURCE 2 AND TS DISCONNECTED). THE FOLLOWING INDICATORS ARE PROVIDED:

- PL1: LOAD CONNECTED TO SOURCE 1 (GREEN)
 - PL2: LOAD CONNECTED TO SOURCE 2 (RED)
 - PL3: SOURCE 1 AVAILABLE (GREEN)
 - PL4: SOURCE 2 AVAILABLE (RED)
 - PL5: TS DISCONNECTED (YELLOW)
- ** REFER TO NOTE A

ACC. 170E** ONE FORM C CONTACT WIRED TO THE CUSTOMER TERMINAL BLOCK THAT OPERATES WHEN SOURCE 1 AND SOURCE 2 VOLTAGE IS PRESENT AT THE TRANSFER SWITCH TERMINALS. S1A CONTACTS OPERATE WHEN SOURCE 1 AVAILABLE AND S2A CONTACTS OPERATE WHEN SOURCE 2 AVAILABLE. TRANSFER SWITCH AUXILIARY CONTACTS WIRED TO THE TERMINAL BLOCK (TB) TO INDICATE TS POSITIONS (CLOSE ON SOURCE 1, CLOSE SOURCE 2 AND TS DISCONNECTED). PROVISION FOR CUSTOMER EXTERNAL COMMON ALARM INPUT (FORM A CONTACT) TO THE TERMINAL BLOCK THAT DRIVES A LED AND AN ALARM RELAY TO INDICATE WHEN THE INPUT IS ACTIVE. ONE FORM A CONTACT OF THE ALARM RELAY AND A MANUAL ENGINE START SWITCH ARE WIRED TO THE TERMINAL BLOCK. THE FOLLOWING INDICATORS AND CONTROLS ARE PROVIDED:

- PL1: LOAD CONNECTED TO SOURCE 1 (GREEN)
 - PL2: LOAD CONNECTED TO SOURCE 2 (RED)
 - PL3: SOURCE 1 AVAILABLE (GREEN)
 - PL4: SOURCE 2 AVAILABLE (RED)
 - PL5: TS DISCONNECTED (YELLOW)
 - PL6: EXTERNAL COMMON ALARM ACTIVE (YELLOW)
 - SS1: MANUAL ENGINE START
- ** REFER TO NOTE A

ACC. 170K** ONE FORM C CONTACT WIRED TO THE CUSTOMER TERMINAL BLOCK THAT OPERATES WHEN SOURCE 1 AND SOURCE 2 VOLTAGE IS PRESENT AT THE TRANSFER SWITCH TERMINALS. S1A CONTACTS OPERATE WHEN SOURCE 1 AVAILABLE AND S2A CONTACTS OPERATE WHEN SOURCE 2 AVAILABLE. TRANSFER SWITCH AUXILIARY CONTACTS WIRED TO THE TERMINAL BLOCK (TB) TO INDICATE TS POSITIONS (CLOSE ON SOURCE 1, CLOSE SOURCE 2 AND TS DISCONNECTED). PROVISION FOR CUSTOMER EXTERNAL COMMON ALARM INPUT (FORM A CONTACT) TO THE TERMINAL BLOCK THAT DRIVES A LED AND AN ALARM RELAY TO INDICATE WHEN THE INPUT IS ACTIVE. ONE FORM A CONTACT OF THE ALARM RELAY AND A KEYED MANUAL ENGINE START SWITCH ARE WIRED TO THE TERMINAL BLOCK. THE FOLLOWING INDICATORS AND CONTROLS ARE PROVIDED:

- PL1: LOAD CONNECTED TO SOURCE 1 (GREEN)
 - PL2: LOAD CONNECTED TO SOURCE 2 (RED)
 - PL3: SOURCE 1 AVAILABLE (GREEN)
 - PL4: SOURCE 2 AVAILABLE (RED)
 - PL5: TS DISCONNECTED (YELLOW)
 - PL6: EXTERNAL COMMON ALARM ACTIVE (YELLOW)
 - SS1: MANUAL ENGINE START (KEYED)
- ** REFER TO NOTE A

OPTIONAL ACCESSORIES CONTINUED

NOTE A:



BLANK, WITHOUT MOXA E1212.
1, MOXA E1212 ETHERNET REMOTE I/O SHALL BE POWERED WITH 24VDC THAT IS DERIVED FROM THE BYPASS POWER SUPPLY AND/OR OPTIONAL EXTERNAL 24VDC SOURCE FROM CUSTOMER. PROVISION PROVIDED ON TERMINAL BLOCK (TB) FOR CUSTOMER DC SOURCE. THE MOXA E1212 IS INTER WIRED TO THE DISCRETE INPUTS. CONNECTED TO SOURCE 1, CONNECTED TO SOURCE 2, SOURCE 1 AVAILABLE, SOURCE 2 AVAILABLE, AND TS DISCONNECTED. WIRE THE FOLLOW INPUTS IF PRESENT, COMMON ALARM, ENGINE START AND PHASE OK.

TABLE A. DISCRETE INPUT

NUMBER	LABEL (FACTORY SETTING)	FEATURE	ACCESSORY DESCRIPTION
D10	TS ON S1	N/A	TS CONNECTED TO SOURCE 1
D11	TS ON S2	N/A	TS CONNECTED TO SOURCE 2
D12	TS DISCONNECTED	N/A	TS DISCONNECTED (CENTER OFF POSITION)
D13	S1 AVAILABLE	N/A	SOURCE 1 AVAILABILITY
D14	S2 AVAILABLE	N/A	SOURCE 2 AVAILABILITY
D15	ENGINE START	N/A	WIRED TO ENGINE START SIGNAL TO INDICATE WHEN A MANUAL ENGINE START HAS BEEN INITIATED (IF PRESENT)
D16	COMMON ALARM	N/A	COMMON ALARM ACTIVE (IF PRESENT)
D17	PHASE OK	N/A	PHASE MONITORING (IF PRESENT)

BLANK, WITHOUT PHASE ROTATION MONITOR.

P, PHASES ARE MONITOR FOR ASYMMETRY, FAILURE DETECTION AND ROTATION ON SOURCE 1 OR SOURCE 2 VIA SELECTOR SWITCH (SS2). SELECT "SOURCE 1" ON THE SELECTOR SWITCH (SS2) FOR SOURCE 1 PHASE MONITORING OR SELECT "SOURCE 2" FOR SOURCE 2 PHASE MONITORING. CUSTOMER HAS THE OPTION TO MONITOR THE PHASE FOR EITHER ABC OR CBA ROTATION VIA JUMPERS ON THE CUSTOMER TERMINAL BLOCK (TB). FACTORY DEFAULT TO ABC PHASE ROTATION MONITOR. A LED IS PROVIDED TO INDICATE "PHASE ROTATION OK". ONE SET OF FORM C CONTACT IS WIRED TO THE CUSTOMER TERMINAL BLOCK (TB) FOR PHASE MONITOR. CONTROLS PROVIDED:
SS2: SELECTOR SWITCH SOURCE 1 / SOURCE 2
PL7: PHASE ROTATION OK (GREEN)

NOTE:

PROVISION PROVIDED FOR A CUSTOMER SUPPLIED 24VDC SOURCE TO BACKUP ACCESSORY 170*** WHEN BOTH SOURCES ARE UNAVAILABLE.

OPTIONAL ACCESSORIES CONTINUED

ACC. 73A** SECONDARY SURGE SUPPRESSOR (SS1) FURNISHED ON SOURCE 1 AND (SS2) FURNISHED ON SOURCE 2 (ASCO SERIES 510)
73AB* – THREE (3) POLES WITHOUT NEUTRAL (DELTA OR WYE CONFIGURATION)
73AC* – THREE (3) POLES WITH NEUTRAL (WYE CONFIGURATION)
73AD* – THREE (3) POLES WITH NEUTRAL (DELTA CONFIGURATION)
↓
* – (BLANK) = MODEL 06.
* – (8) = MODEL 08.

ACC. 73A** SECONDARY SURGE SUPPRESSOR (SS) FURNISHED ON LOAD. (ASCO SERIES 510)
73AB* – THREE (3) POLES WITHOUT NEUTRAL (DELTA OR WYE CONFIGURATION)
73AC* – THREE (3) POLES WITH NEUTRAL (WYE CONFIGURATION)
73AD* – THREE (3) POLES WITH NEUTRAL (DELTA CONFIGURATION)
↓
* – 3 = MODEL 06.
* – 6 = MODEL 08.

CONFIGURATION OF SHIPPED EQUIPMENT

TRANSFER SYSTEM IS SHIPPED CONNECTED IN THE "DISCONNECTED" POSITION, INDICATOR SHOWS "YELLOW". IN "DISCONNECTED" POSITION BOTH "SOURCE 1" AND "SOURCE 2" SWITCH CONTACTS ARE OPEN.

OPERATION

OBSERVE THE INDICATOR WINDOW. IF WINDOW SHOWS "YELLOW" UNDER "SOURCE 1" THE TRANSFER SWITCH IS CONNECTED TO SOURCE 1. "YELLOW" UNDER "SOURCE 2" INDICATES THE TRANSFER SWITCH IS CONNECTED TO THE SOURCE 2. "YELLOW" UNDER "DISCONNECTED" INDICATES THE TRANSFER SWITCH IS IN THE DISCONNECTED POSITION.

TO DISCONNECT:

- GRASP THE MANUAL HANDLE FIRMLY WITH BOTH HANDS AND ROTATE HANDLE COUNTER–CLOCKWISE.
- OBSERVE THE INDICATOR WINDOW TO CONFIRM TRANSFER.

TRANSFER TO "SOURCE 1" FROM DISCONNECTED POSITION

- GRASP THE MANUAL HANDLE FIRMLY WITH BOTH HANDS, PULL OUT TO A MECHANICAL STOP AND ROTATE HANDLE CLOCKWISE.
- OBSERVE THE INDICATOR WINDOW TO CONFIRM TRANSFER.

TRANSFER TO "SOURCE 2" FROM DISCONNECTED POSITION

- GRASP THE MANUAL HANDLE FIRMLY WITH BOTH HANDS, PUSH IN TO A MECHANICAL STOP AND ROTATE HANDLE CLOCKWISE.
- OBSERVE THE INDICATOR WINDOW TO CONFIRM TRANSFER.

GENERAL NOTES

- SWITCH SHOWN DE–ENERGIZED AND CONNECTED TO THE SOURCE 1.
- 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.
- 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.

TECHNICAL DATA

AUXILIARY CONTACTS

AUXILIARY CONTACT	STATUS (*)	SWITCH POSITION (AUX)		
		SOURCE 1	OFF	SOURCE 2
81–82	●			
83–84	●			
85–86	●			
87–88	●			
89–90	●			
91–92	●			
93–94	●			
95–96	●			
97–98	●			
99–100	●			
101–102	●			
103–104	●			
105–106	●			
107–108	●			
109–110	●			
111–112	●			
113–114	●			
115–116	●			
117–118	●			
119–120	●			
121–122	●			
123–124	●			
125–126	●			
127–128	●			

BASE CATALOG NUMBER						CATALOG NUMBER SUFFIXES		
TS FRAME	CATALOG SERIES	CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY
G	03=300	MTDQ	A B	3	1000 1200 1600 2000 2600 3000	C D E F G H J K L M N P Q R		O=NONE X=YES Z=SPECIAL
			BLANK FOR NONE				BLANK FOR 3MTS	C M N S V

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 A B	NONE SOLID SWITCHING	C D E F G H J K L M N P Q R	208 220 230 240 277 380 400 415 440 460 480 550 575 600	C M N S V	1 3R 3RX 4X	GENERAL PURPOSE, INDOOR (SECURE ENCLOSURES) OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT TYPE 3R PLUS CORROSION RESISTANCE (STAINLESS STEEL) TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)

CATALOG NUMBER _____

ASCO® CERTIFIED TO S.O. _____

BY: _____

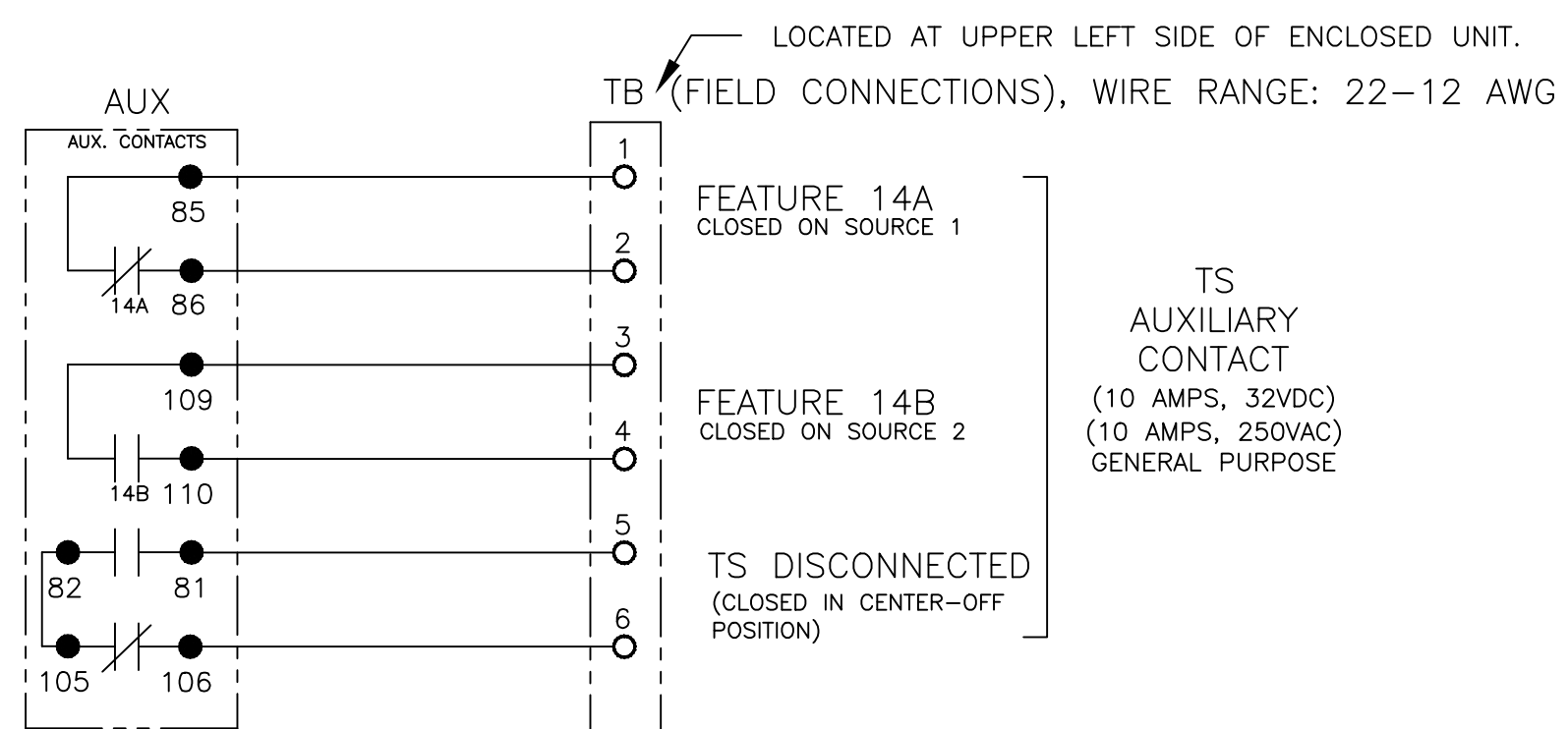
DATE _____

FORM REV –	284094	JPB	JPB	04/02/20
PROJECT NAME:	REV. TO SHEET	ECN NO.	BY	APP.
WIRING		DIAGRAM		
300 SERIES (G3MTDQ) 3PH 1000–3000 AMPS				
"G" FRAME, MANUALLY OPERATED TS				
DRAWN BY	BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP–1–003. FOR PLASTIC PARTS SEE MP–1–005.	
CHECKED	JPB	04/02/20	ASSEM. REF. NO.	
PROJECT APPROVAL			COMPUTER GENERATED DRAWING	
FINAL APPROVAL	JPB	04/02/20	SCALE 1:1 SIZE DS	
DRAWING —			DWG. NO. 1191600–007	
REV.			ECN NO. 284094 SHEET 1 OF 7	

ASCO®

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

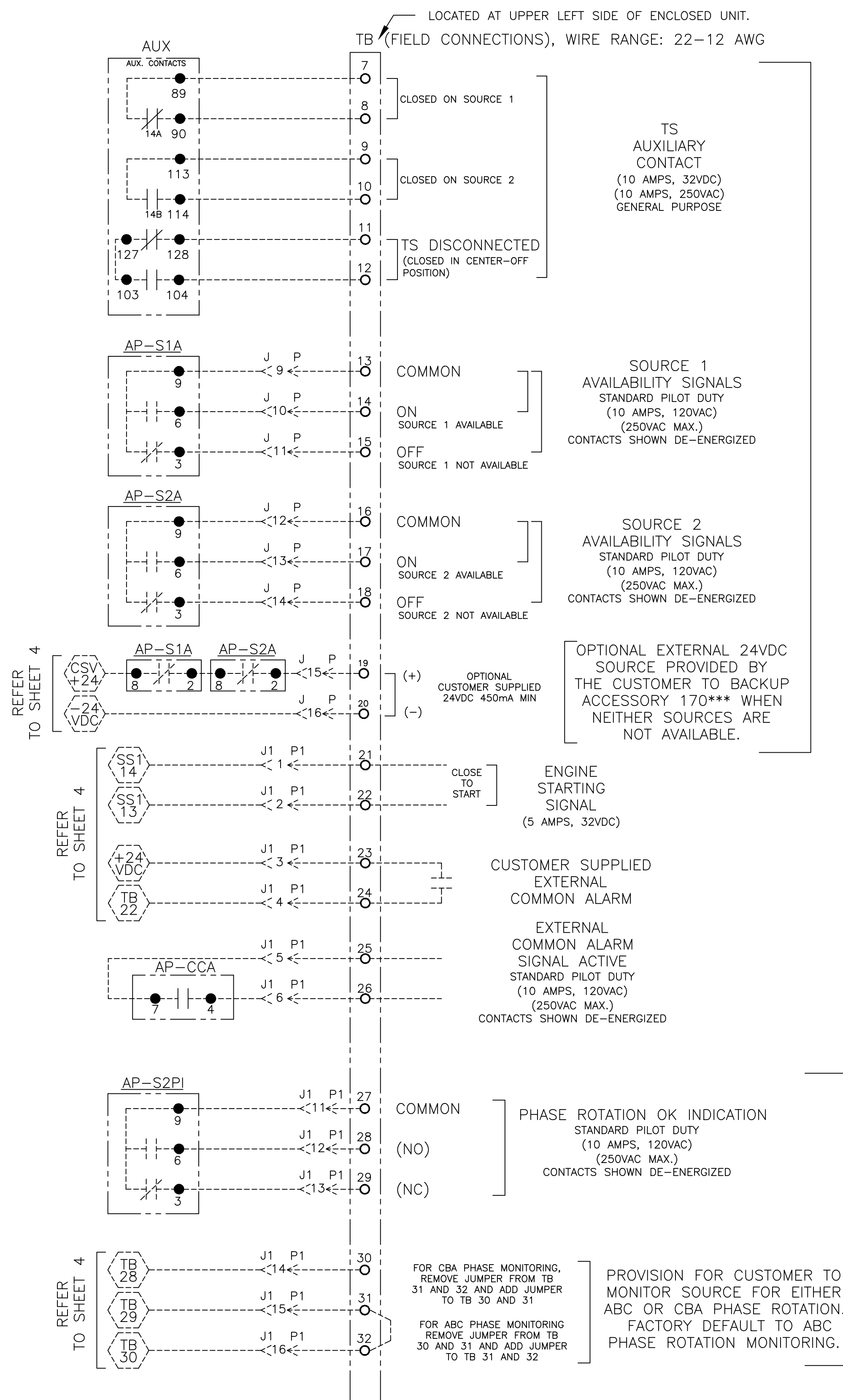
FIELD CONNECTIONS BASE



TS
AUXILIARY
CONTACT
(10 AMPS, 32VDC)
(10 AMPS, 250VAC)
GENERAL PURPOSE

BASE

FIELD CONNECTIONS FOR OPTIONAL ACCESSORIES



ACCESSORY
170B

ACCESSORY
170E OR 170K

NOTE B:

ACCESSORIES

170BP INCLUDE 170B PLUS 170*P
170EP INCLUDE 170E PLUS 170*P
170KP INCLUDE 170K PLUS 170*P

ACCESSORY
170*P
REFER TO NOTE B

PROJECT NAME:				REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING				DIAGRAM		 THIRD ANGLE PROJECTION		
300 SERIES (G3MTDQ) 3PH 1000-3000 AMPS "G" FRAME, MANUALLY OPERATED TS								
BY		DATE		MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASQC PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055		ASSEM. REF. NO.		COMPUTER GENERATED DRAWING
DRAWN BY		JPB		04/02/20				SCALE 1:1
CHECKED								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.
FINAL APPROVAL		JPB		04/02/20				1191600-007
				 ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DRAWING NO.		ECN 284094
						SHEET		2 OF 7

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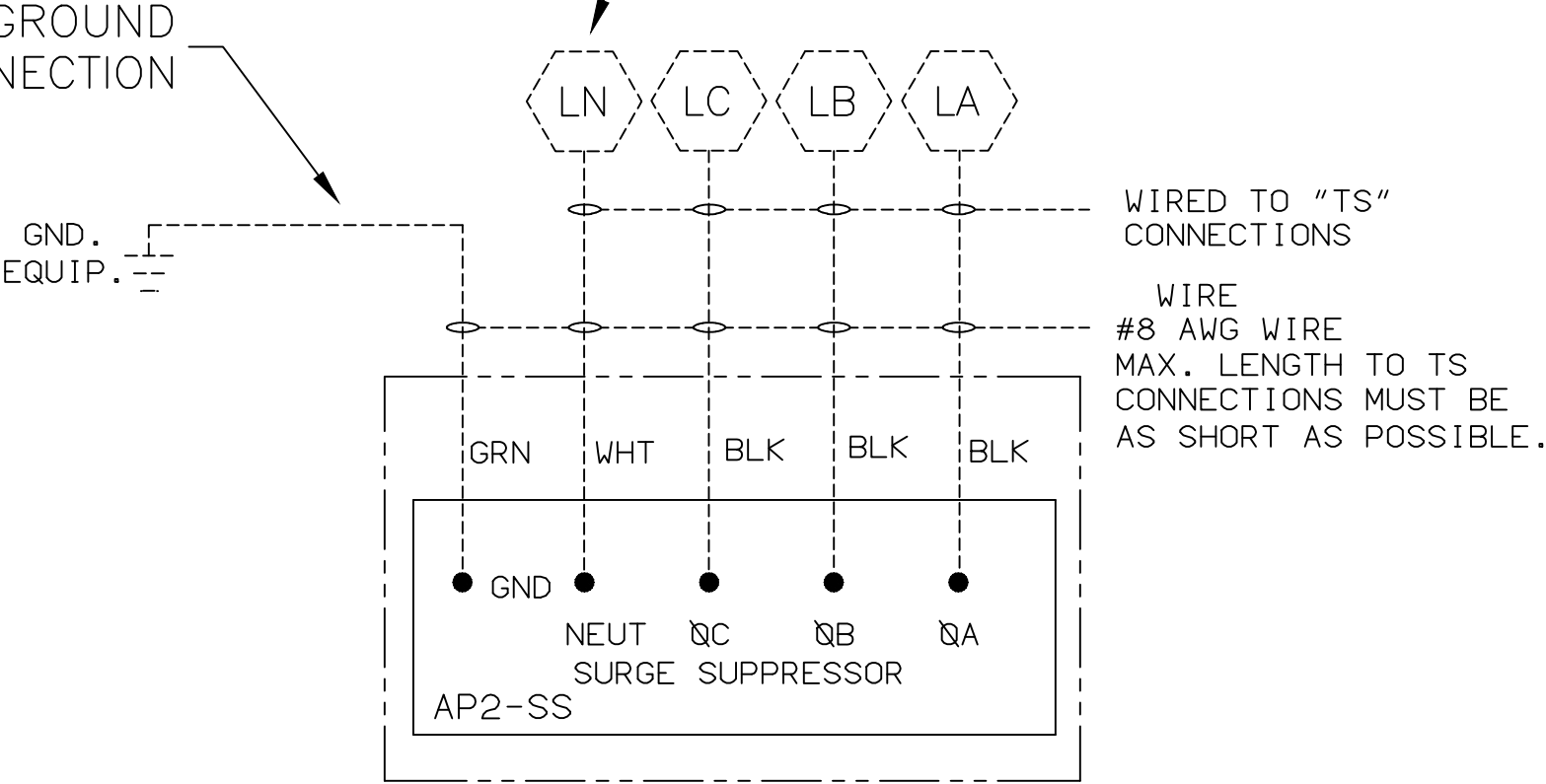
A

MAIN POWER POLES

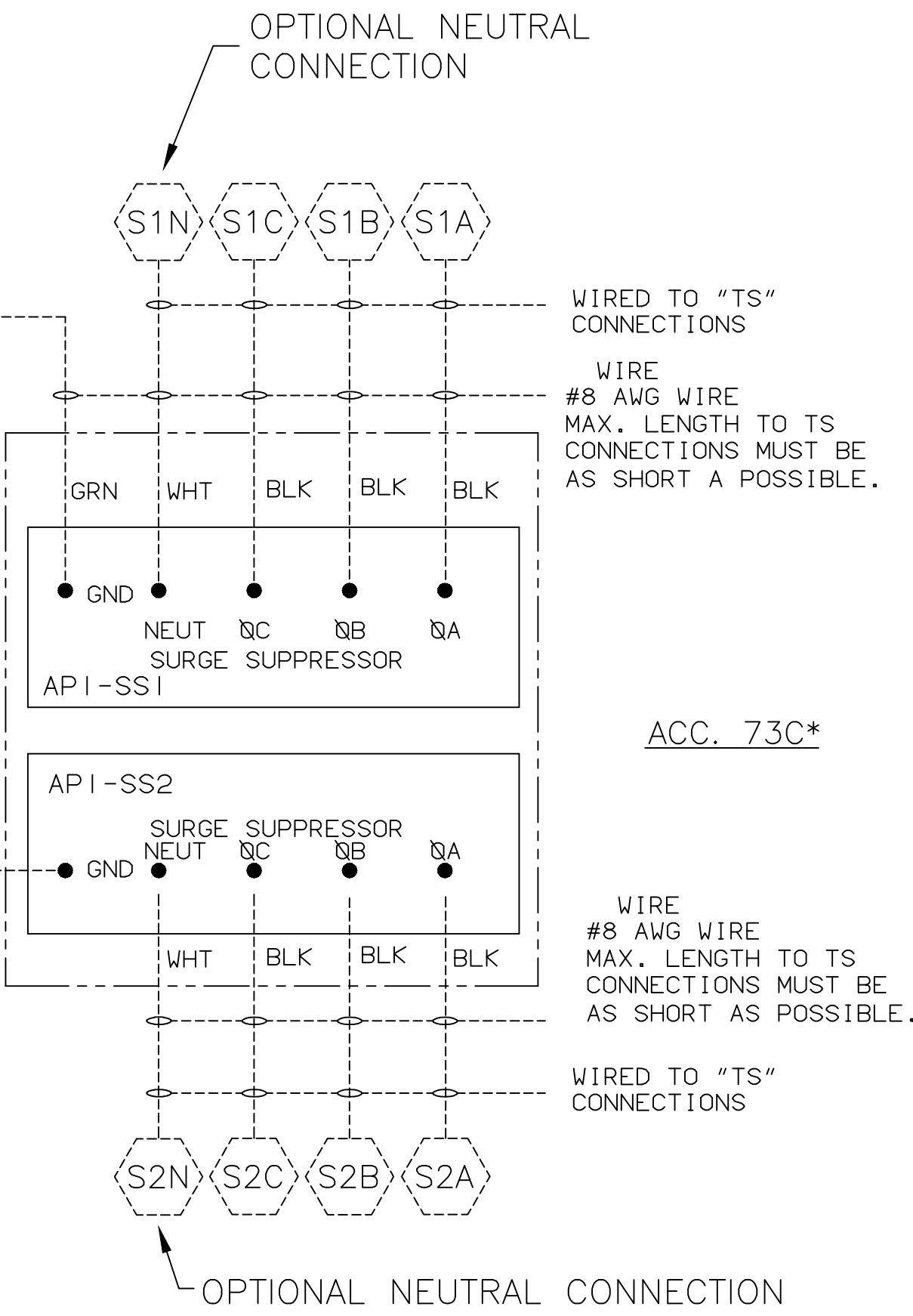
OPTIONAL ACCESSORIES

73C** LOAD (SS)

OPTIONAL NEUTRAL CONNECTION

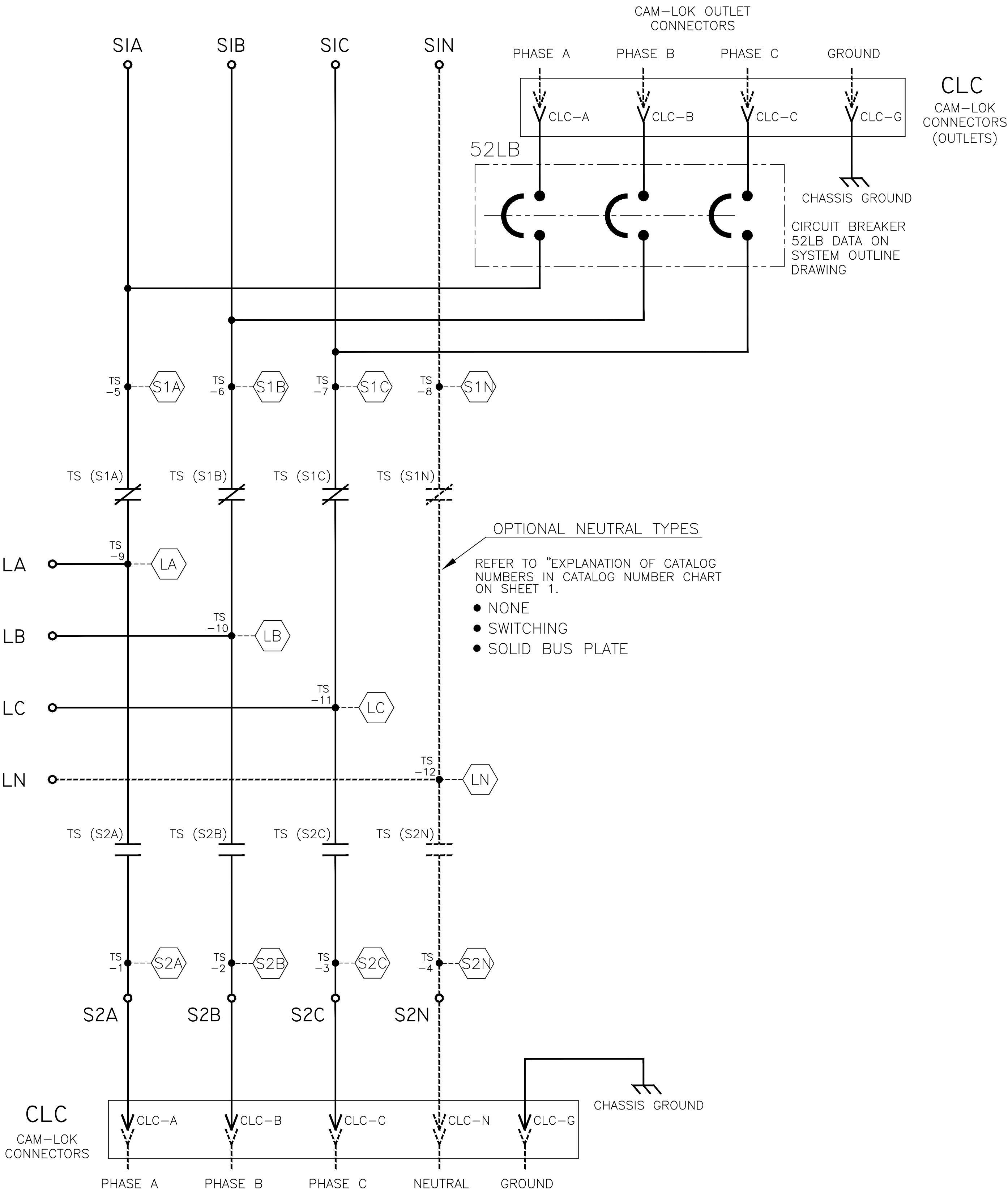


73C* SOURCE 1(SS1) & SOURCE 2(SS2)



SOURCE I

SOURCE I



NOTE:
TS SHOWN CLOSED ON SOURCE 1.

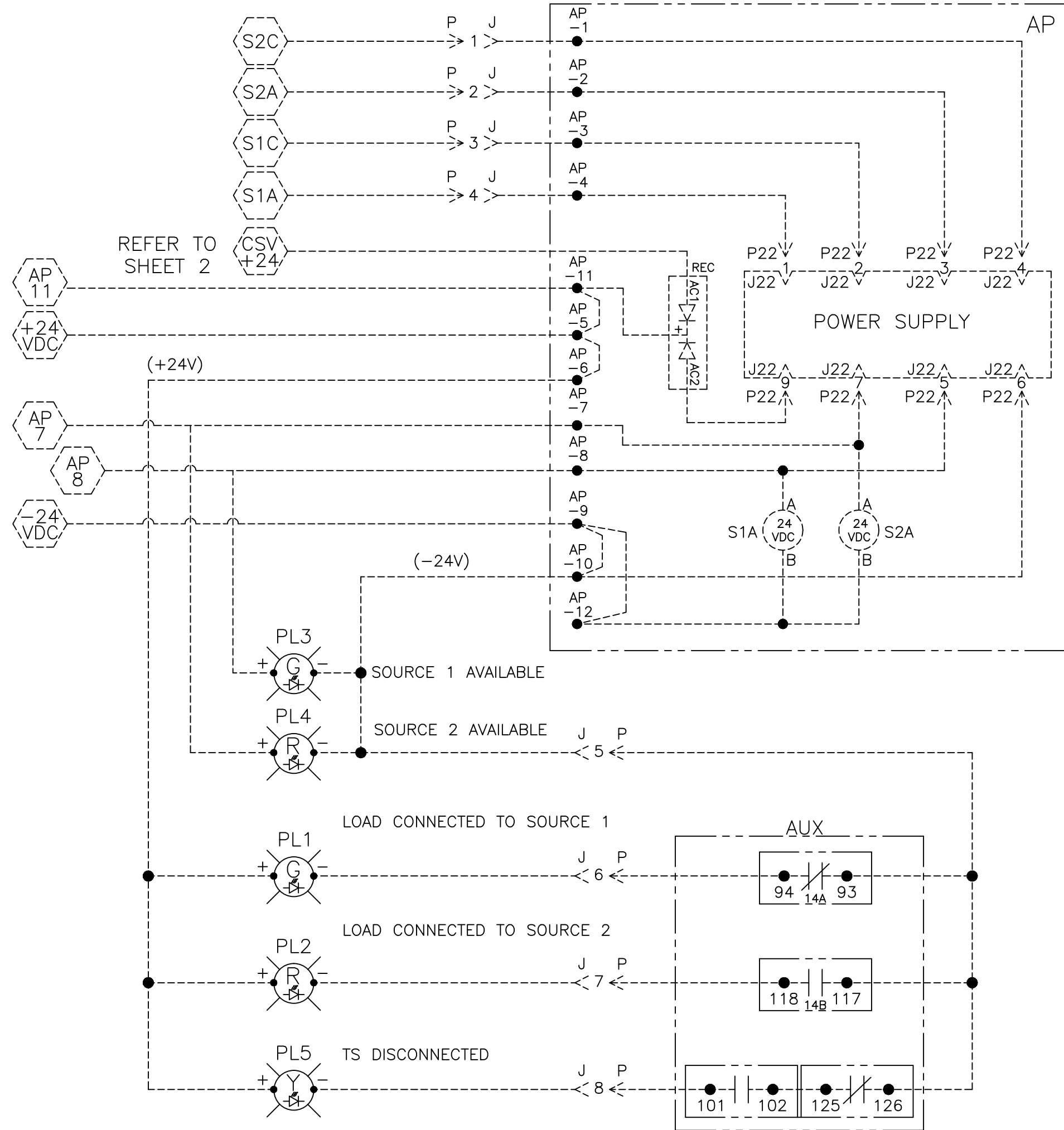
PROJECT NAME:					REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING					DIAGRAM				
300 SERIES (G3MTDQ) 3PH 1000-3000 AMPS									
"G" FRAME, MANUALLY OPERATED TS									
					THIRD ANGLE PROJECTION				
BY DATE MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005					ASSEM. REF. NO.				
DRAWN BY JPB		04/02/20		COMPUTER GENERATED DRAWING					
CHECKED				SCALE 1:1 SIZE DS					
PROJECT APPROVAL				DWG. NO. 1191600-007					
FINAL APPROVAL JKPB		04/02/20		DRAWING REV. ECN 284094 SHEET 3 OF 7					
ASCO® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.									

OPTIONAL ACCESSORIES CONTINUED

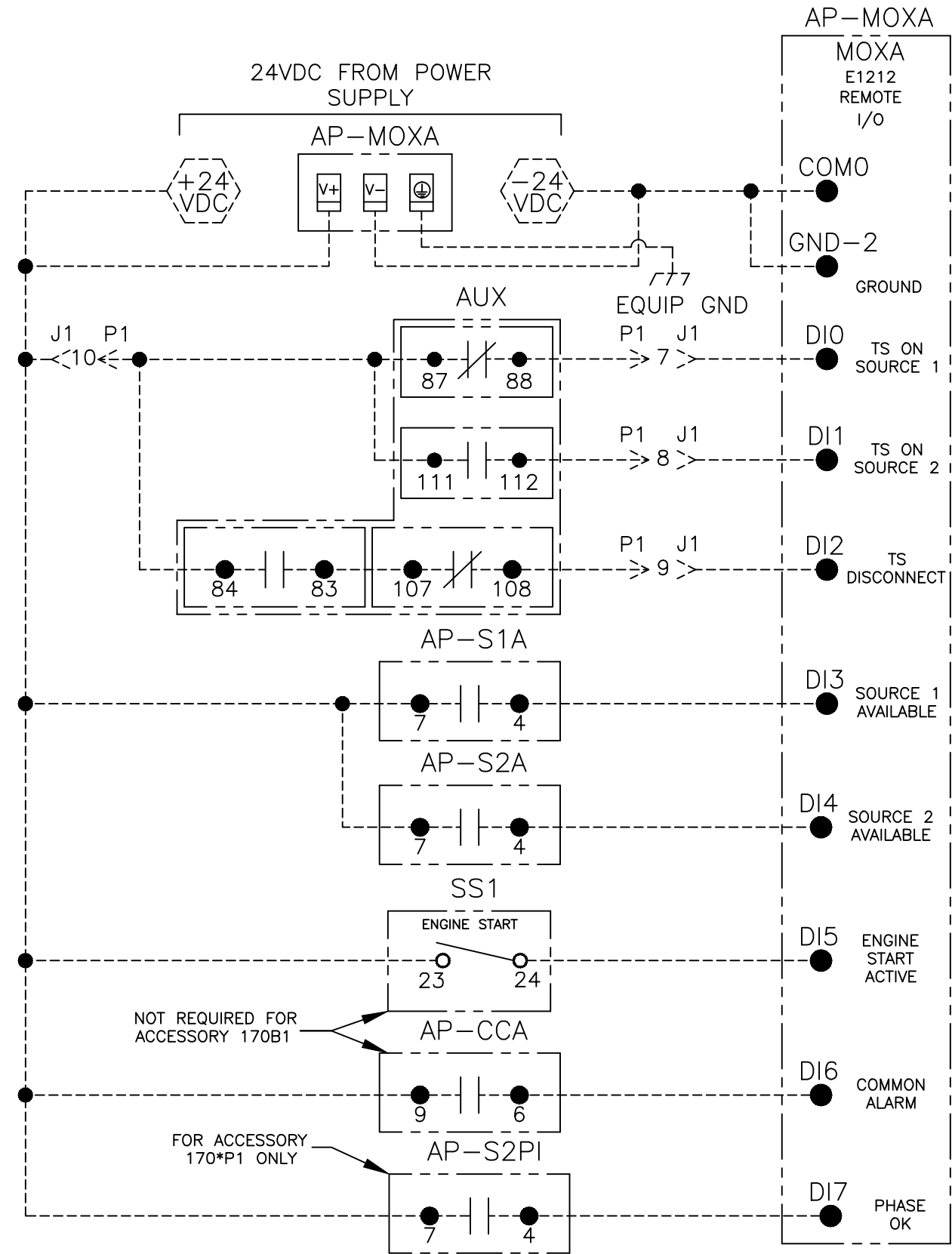
ACCESSORIES CIRCUIT MATRIX

ACCESSORY	CIRCUITS
170B(*)	170B
170E(*)	170B + 170E
170K(*)	170B + 170K
170BP(*)	170B + 170*P
170EP(*)	170B + 170E + 170*P
170KP(*)	170B + 170K + 170*P
(*) = 1	+ 170**1

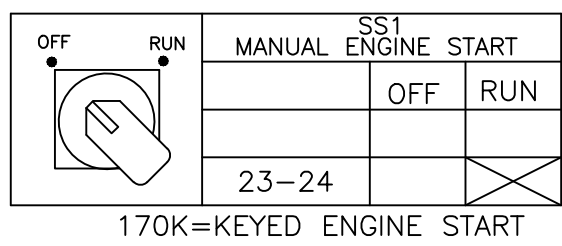
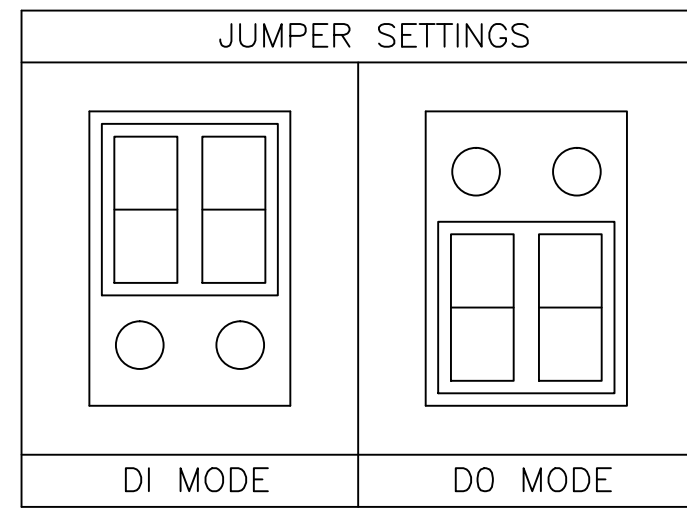
170B CIRCUIT



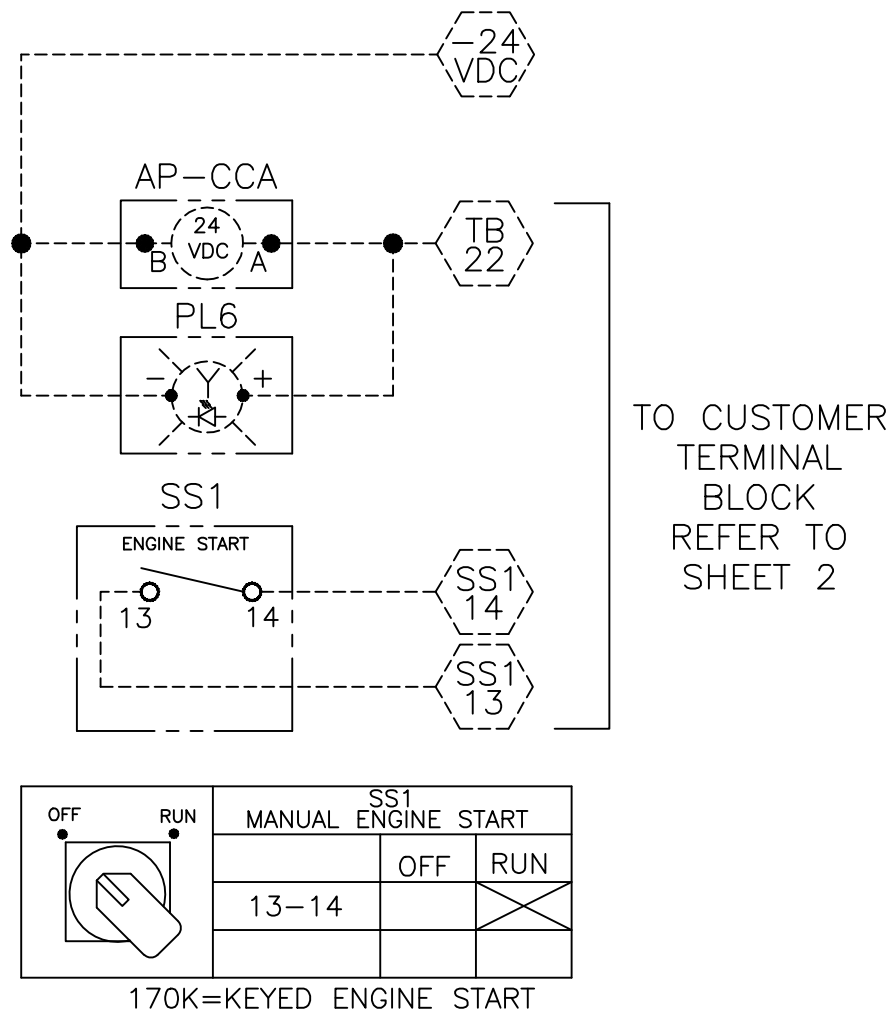
170**1 CIRCUIT



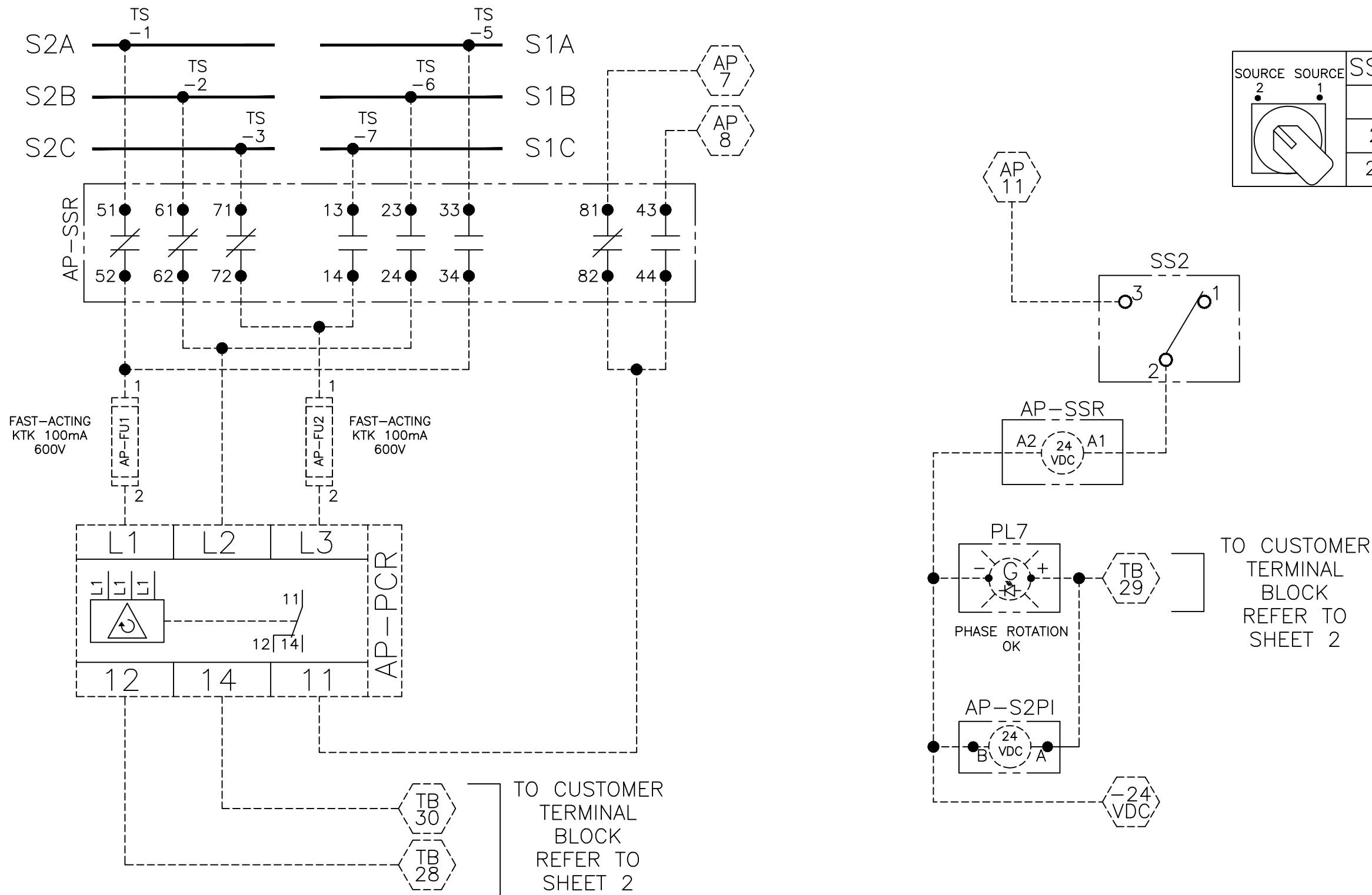
MOXA ioLogik E1212 WIRING NOTES:
DIO'S REQUIRE CONFIGURING THE JUMPERS INSIDE THE ENCLOSURE. REMOVE SCREW LOCATED ON THE BACK PANEL AND OPEN THE COVER TO CONFIGURE THE JUMPERS.
DEFAULT IS DO MODE



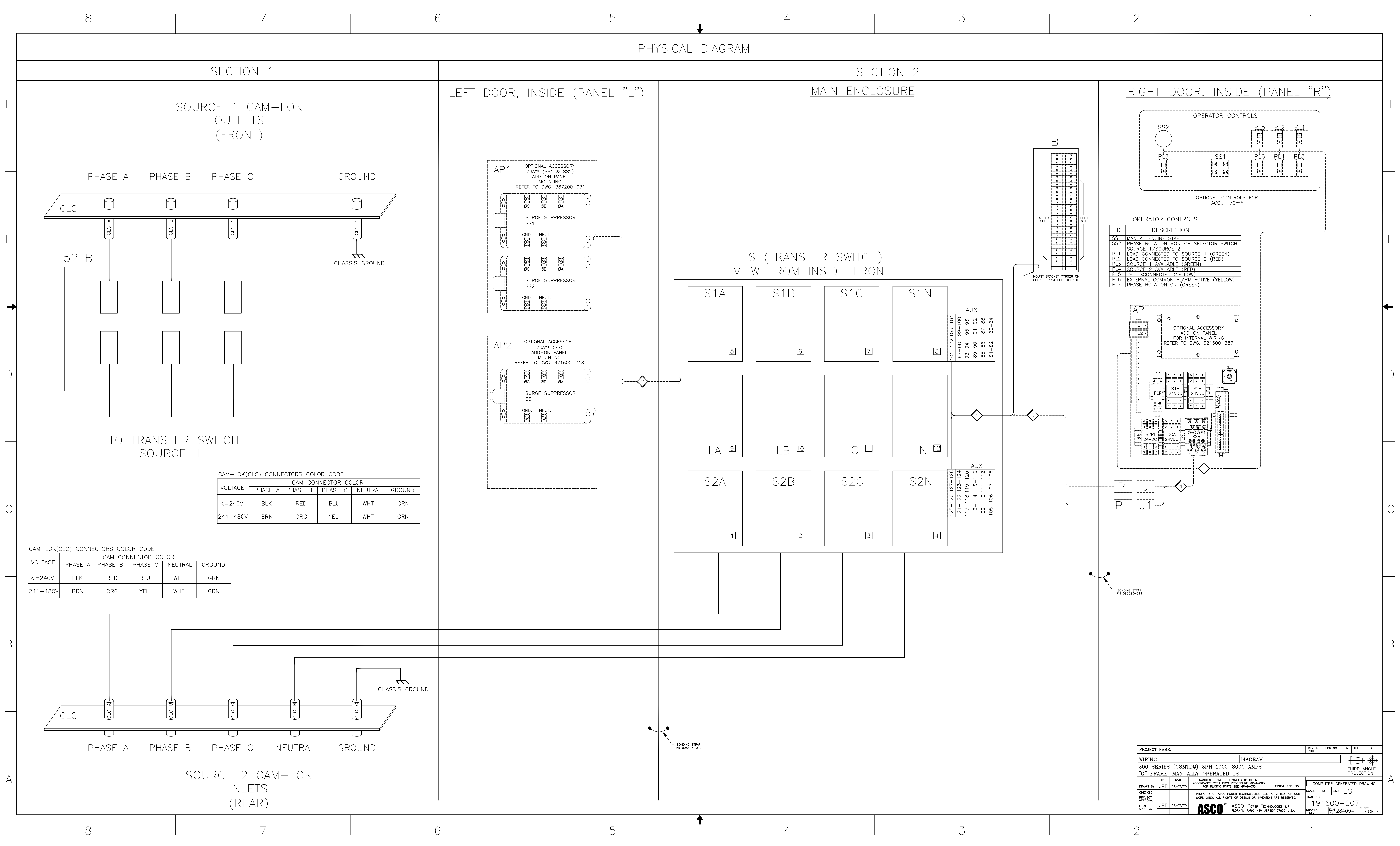
170E OR 170K CIRCUIT



170*P CIRCUIT

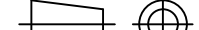


PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING		DIAGRAM				
300 SERIES (G3MTDQ) 3PH 1000-3000 AMPS						
"G" FRAME, MANUALLY OPERATED TS						
DRAWN BY	JPB	DATE	04/02/20	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005	ASSEM. REF. NO.	COMPUTER GENERATED DRAWING
CHECKED				PROPERTY OF ASCO POWER TECHNOLOGIES, L.P. WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE 1:1 SIZE DS
PROJECT APPROVAL						DWG. NO. 1191600-007
FINAL APPROVAL	JPB	04/02/20		ASCO® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DRAWING REV. ECN NO. 284094 SHEET 4 OF 7



PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING						
500 SERIES (G3MTDQ) 3PH 1000-3000 AMPS						
"G" FRAME, MANUALLY OPERATED TS						
						THIRD ANGLE PROJECTION
DRAWN BY	JPB	DATE	04/02/20	PROPERTY OF ASCO POWER TECHNOLOGIES, USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		
CHECKED				ASSEM. REF. NO.		
PROJECT APPROVAL				COMPUTER GENERATED DRAWING		
FINAL APPROVAL	JPB	04/02/20		SCALE 1:1 SIZE S		
ASCO		ASC POWER TECHNOLOGIES, L.P.		DRAWING NO. 1191600-007		
		FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DRAWING REV. ECN 284094		
				SHEET 5 OF 7		

[illegible]

PROJECT NAME:				REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING				DIAGRAM				
300 SERIES (G3MTDQ) 3PH 1000-3000 AMPS "G" FRAME, MANUALLY OPERATED TS				 THIRD ANGLE PROJECTION				
BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-1003. FOR PLASTIC PARTS SEE MP-I-055		ASSEM. REF. NO.		COMPUTER GENERATED DRAWING		
DRAWN BY	JPB	04/02/20				SCALE	1:1	SIZE DS
CHECKED			PROPERTY OF ASCO POWER TECHNOLOGIES, USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.			DWG. NO.		
PROJECT APPROVAL						11916000-007		
FINAL APPROVAL	JPB	04/02/20	 ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.			DRAWING REV.	ECN 284094	SHEET 6 OF 7

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WIRE RUN LISTING

170BP

170BP1

170EP OR 170KP

170EP1 OR 170KP1

4 ← HARNESS LOCATOR			
WIRE No.	JACK J,J1	CLR	AWG
15	J-1,AP-1		16
16	J-2,AP-2		
17	J-3,AP-3		
18	J-4,AP-4		
19	J-5,AP-10		
20	J-6,PL1-(-)		
21	J-7,PL2-(-)	BLK	22
22	J-8,PL5-(-)		
23	J-9,AP-S1A-9		16
24	J-10,AP-S1A-6		
25	J-11,AP-S1A-3		
26	J-12,AP-S2A-9		
27	J-13,AP-S2A-6		
28	J-14,AP-S2A-3		
500	J-15,AP-S2A-2		
19	J-16,AP-12		
52	J1-11,AP-S2PI-9		
53	J1-12,AP-S2PI-6		
54	J1-13,AP-S2PI-3		
55	J1-14,AP-PCR-12		
56	J1-15,AP-S2PI-A		
57	J1-16,AP-PCR-14		

3 ← HARNESS LOCATOR			
WIRE No.	PLUG P,P1	CLR	AWG
15	P-1,TS-3		16
16	P-2,TS-1		
17	P-3,TS-7		
18	P-4,TS-5		
19	P-5,AUX-117		
20	P-6,AUX-94		
21	P-7,AUX-118		
22	P-8,AUX-101		
23	P-9,TB-13		
24	P-10,TB-14		
25	P-11,TB-15		
26	P-12,TB-16		
27	P-13,TB-17		
28	P-14,TB-18		
500	P-15,TB-19		
19	P-16,TB-20		
52	P1-11,TB-27		
53	P1-12,TB-28		
54	P1-13,TB-29		
55	P1-14,TB-30		
56	P1-15,TB-31		
57	P1-16,TB-32		

1 ← HARNESS LOCATOR			
WIRE No.	WIRING (TB, AUX)	CLR	AWG
19	AUX-117,AUX-93		16
19	AUX-93,AUX-126		
47	AUX-102,AUX-125		
8	TB-7,AUX-89		
9	TB-8,AUX-90		
10	TB-9,AUX-113		
11	TB-10,AUX-114		
12	TB-11,AUX-128		
13	TB-12,AUX-104		
14	AUX-127,AUX-103		
59	TB-31,TB-32	JUMPER	

5 ← HARNESS LOCATOR			
WIRE No.	WIRING (AP)	CLR	AWG
35	AP-6,PL1-(+)		22
35	PL1-(+),PL2-(+)	RED	
35	PL2-(+),PL5-(+)		
36	AP-7,PL4-(+)		
37	AP-8,PL3-(+)		
19	AP-10,PL3-(-)	BLK	
19	PL3-(-),PL4-(-)		
56	AP-S2PI-A,PL7-(+)	RED	
19	AP-S2PI-B,PL7-(-)	BLK	
19	AP-12,AP-SSR-A2		16
19	AP-SSR-A2,AP-S2PI-B		
36	AP-7,AP-SSR-81		
200	AP-FU1-1,AP-SSR-52		
201	AP-FU2-1,AP-SSR-72		
202	AP-PCR-L2,AP-SSR-62		
200	AP-SSR-52,AP-SSR-34		
201	AP-SSR-72,AP-SSR-14		
202	AP-SSR-62,AP-SSR-24		
62	AP-PCR-L1,AP-FU1-2		
63	AP-PCR-L3,AP-FU2-2		
16	AP-SSR-51,TS-1		
205	AP-SSR-61,TS-2		
15	AP-SSR-71,TS-3		
17	AP-SSR-13,TS-7		
206	AP-SSR-23,TS-6		
18	AP-SSR-33,TS-5		
207	AP-SSR-82,AP-SSR-44		
207	AP-SSR-82,AP-PCR-11		
37	AP-SSR-43,AP-8		
35	AP-11,SS2-3		
208	AP-SSR-A1,SS2-2		
501	AP-S1A-2,AP-S2A-8		
500	AP-S1A-8,AP-REC-AC1		

4 ← HARNESS LOCATOR			
WIRE No.	JACK J,J1	CLR	AWG
15	J-1,AP-1		16
16	J-2,AP-2		
17	J-3,AP-3		
18	J-4,AP-4		
19	J-5,AP-10		
20	J-6,PL1-(-)		
21	J-7,PL2-(-)	BLK	22
22	J-8,PL5-(-)		
23	J-9,AP-S1A-9		16
24	J-10,AP-S1A-6		
25	J-11,AP-S1A-3		
26	J-12,AP-S2A-9		
27	J-13,AP-S2A-6		
28	J-14,AP-S2A-3		
500	J-15,AP-S2A-2		
19	J-16,AP-12		
44	J1-7,AP-MOXA-DI0		
45	J1-8,AP-MOXA-DI1		
46	J1-9,AP-MOXA-DI2		
35	J1-10,AP-S1A-7		
52	J1-11,AP-S2PI-9		
53	J1-12,AP-S2PI-6		
54	J1-13,AP-S2PI-3		
55	J1-14,AP-PCR-12		
56	J1-15,AP-S2PI-A		
57	J1-16,AP-PCR-14		

3 ← HARNESS LOCATOR			
WIRE No.	PLUG P,P1	CLR	AWG
15	P-1,TS-3		16
16	P-2,TS-1		
17	P-3,TS-7		
18	P-4,TS-5		
19	P-5,AUX-117		
20	P-6,AUX-94		
21	P-7,AUX-118		
22	P-8,AUX-101		
23	P-9,TB-13		
24	P-10,TB-14		
25	P-11,TB-15		
26	P-12,TB-16		
27	P-13,TB-17		
28	P-14,TB-18		
500	P-15,TB-19		
19	P-16,TB-20		
44	P1-7,AUX-88		
45	P1-8,AUX-112		
46	P1-9,AUX-108		
35	P1-10,AUX-111		
52	P1-11,TB-27		
53	P1-12,TB-28		
54	P1-13,TB-29		
55	P1-14,TB-30		
56	P1-15,TB-31		
57	P1-16,TB-32		

1 ← HARNESS LOCATOR			
WIRE No.	WIRING (TB, AUX)	CLR	AWG
19	AUX-117,AUX-93		16
19	AUX-93,AUX-126		
47	AUX-102,AUX-125		
35	AUX-111,AUX-87		
35	AUX-87,AUX-84		
64	AUX-83,AUX-107		
8	TB-7,AUX-89		
9	TB-8,AUX-90		
10	TB-9,AUX-113		
11	TB-10,AUX-114		
12	TB-11,AUX-128		
13	TB-12,AUX-104		
14	AUX-127,AUX-103		
59	TB-31,TB-32	JUMPER	

5 ← HARNESS LOCATOR			
WIRE No.	WIRING (AP)	CLR	AWG
35	AP-6,PL1-(+)		22
35	PL1-(+),PL2-(+)	RED	
35	PL2-(+),PL5-(+)		
36	AP-7,PL4-(+)		
37	AP-8,PL3-(+)		
19	AP-10,PL3-(-)	BLK	
19	PL3-(-),PL4-(-)		
56	AP-S2PI-A,PL7-(+)	RED	
19	AP-S2PI-B,PL7-(-)	BLK	
35	AP-S1A-7,AP-S2A-7		16
35	AP-S2A-7,AP-MOXA-(V+)		
35	AP-MOXA-(V+),AP-5		
48	AP-S1A-4,AP-MOXA-DI3		
49	AP-S2A-4,AP-MOXA-DI4		
100	AP-MOXA-GND,EQUIP. GND		
19	AP-MOXA-(V-),AP-9		
19	AP-MOXA-(V-),AP-MOXA-COMO	BLK	22
19	AP-MOXA-COMO,AP-MOXA-GND-2		
35	AP-11,AP-S2PI-7		16
60	AP-S2PI-4,AP-MOXA-DI7		
19	AP-12,AP-SSR-A2		
19	AP-SSR-A2,AP-S2PI-B		
36	AP-7,AP-SSR-81		
200	AP-FU1-1,AP-SSR-52		
201	AP-FU2-1,AP-SSR-72		
202	AP-PCR-L2,AP-SSR-62		
200	AP-SSR-52,AP-SSR-34		
201	AP-SSR-72,AP-SSR-14		
202	AP-SSR-62,AP-SSR-24		
62	AP-PCR-L1,AP-FU1-2		
63	AP-PCR-L3,AP-FU2-2		
16	AP-SSR-51,TS-1		
205	AP-SSR-61,TS-2		
15	AP-SSR-71,TS-3		
17	AP-SSR-13,TS-7		
206	AP-SSR-23,TS-6		
18	AP-SSR-33,TS-5		
207	AP-SSR-82,AP-SSR-44		
207	AP-SSR-82,AP-PCR-11		
37	AP-SSR-43,AP-8		
35	AP-S2PI-7,SS2-3		
208	AP-SSR-A1,SS2-2		
501	AP-S1A-2,AP-S2A-8		
500	AP-S1A-8,AP-REC-AC1		

4 ← HARNESS LOCATOR			
WIRE No.	JACK J,J1	CLR	AWG
15	J-1,AP-1		16
16	J-2,AP-2		
17	J-3,AP-3		
18	J-4,AP-4		
19	J-5,AP-10		
20	J-6,PL1-(-)		
21	J-7,PL2-(-)	BLK	22
22	J-8,PL5-(-)		
23	J-9,AP-S1A-9		16
24	J-10,AP-S1A-6		
25	J-11,AP-S1A-3		
26	J-12,AP-S2A-9		
27	J-13,AP-S2A-6		
28	J-14,AP-S2A-3		
500	J-15,AP-S2A-2		
19	J-16,AP-12		
38	J1-1,SS1-14		22
39	J1-2,SS1-13		
35	J1-3,AP-5		16
41	J1-4,AP-CCA-A		
42	J1-5,AP-CCA-7		
43	J1-6,AP-CCA-4		
45	J1-7,AP-S2PI-9		
53	J1-12,AP-S2PI-6		
54	J1-13,AP-S2PI-3		
55	J1-14,AP-PCR-12		
56	J1-15,AP-S2PI-A		
57	J1-16,AP-PCR-14		

3 ← HARNESS LOCATOR			
WIRE No.	PLUG P,P1	CLR	AWG
15	P-1,TS-3		16
16	P-2,TS-1		
17	P-3,TS-7		
18	P-4,TS-5		
19	P-5,AUX-117		
20	P-6,AUX-94		
21	P-7,AUX-118		
22	P-8,AUX-101		
23	P-9,TB-13		
24	P-10,TB-14		
25	P-11,TB-15		
26	P-12,TB-16		
27	P-13,TB-17		
28	P-14,TB-18		
500	P-15,TB-19		
19	P-16,TB-20		
38	P1-1,TB-21		
39	P1-2,TB-22		
35	P1-3,TB-23		
41	P1-4,TB-24		
42	P1-5,TB-25		
43	P1-6,TB-26		
52	P1-11,TB-27		
53	P1-12,TB-28		
54	P1-13,TB-29		
55	P1-14,TB-30		
56	P1-15,TB-31		
57	P1-16,TB-32		

1 ← HARNESS LOCATOR			
WIRE No.	WIRING (TB, AUX)	CLR	AWG
19	AUX-117,AUX-93		16
19	AUX-93,AUX-126		
47	AUX-102,AUX-125		
8	TB-7,AUX-89		
9	TB-8,AUX-90		
10	TB-9,AUX-113		
11	TB-10,AUX-114		
12	TB-11,AUX-128		
13	TB-12,AUX-104		
14	AUX-127,AUX-103		
59	TB-31,TB-32	JUMPER	

5 ← HARNESS LOCATOR			
WIRE No.	WIRING (AP)	CLR	AWG
35	AP-6,PL1-(+)		22
35	PL1-(+),PL2-(+)	RED	
35	PL2-(+),PL5-(+)		
36	AP-7,PL4-(+)		
37	AP-8,PL3-(+)		
19	AP-10,PL3-(-)	BLK	
19	PL3-(-),PL4-(-)		
56	AP-S2PI-A,PL7-(+)	RED	
19	AP-S2PI-B,PL7-(-)	BLK	
41	AP-CCA-A,PL6-(+)	RED	
19	AP-CCA-B,PL6-(-)	BLK	
19	AP-CCA-B,AP-9		16
19	AP-12,AP-SSR-A2		
19	AP-SSR-A2,AP-S2PI-B		</