

# SINGLE PHASE WIRING FOR ASCO® 300 SERIES MANUALLY OPERATED TRANSFER SWITCH TYPE J3MTS RATED 150-600 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

### 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 AND ENGINE START SIGNAL.

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)

### OPTIONAL ACCESSORIES CONTINUED

ACC. 73AA\* SECONDARY SURGE SUPPRESSOR (SS1) FURNISHED ON SOURCE 1 AND (SS2) FURNISHED ON SOURCE 2 (ASCO SERIES 510)  
 73AA(\*) - SINGLE PHASE (2) POLES WITH OR WITHOUT NEUTRAL.

- \* - (BLANK) = MODEL 06.
- \* - (8) = MODEL 08.

ACC. 73AA\* SECONDARY SURGE SUPPRESSOR (SS) FURNISHED ON LOAD. (ASCO SERIES 510)  
 73AA(\*) - SINGLE PHASE (2) POLES WITH OR WITHOUT NEUTRAL

- \* - 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.

TRANSFER TO "SOURCE 1" FROM "DISCONNECTED" POSITION.  
 -GRASP MANUAL HANDLE FIRMLY WITH BOTH HANDS, PULL OUT TO MECHANICAL STOP AND ROTATE HANDLE CLOCKWISE.  
 -OBSERVE THE INDICATOR WINDOW TO CONFIRM TRANSFER.

TRANSFER TO "SOURCE 2" FROM "DISCONNECTED" POSITION.  
 -GRASP MANUAL HANDLE FIRMLY WITH BOTH HANDS, PUSH IN TO MECHANICAL STOP AND ROTATE HANDLE COUNTERCLOCKWISE.  
 -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	●			
101-102	●			
103-104	●			
105-106	●			
107-108	●			
109-110	●			
111-112	●			
113-114	●			
115-116	●			
117-118	●			
125-126	●			
127-128	●			

BASE CATALOG NUMBER				CATALOG NUMBER SUFFIXES				EXPLANATION OF CATALOG NUMBER CODES								
TS FRAME	CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE	NEUTRAL TYPE			ENCLOSURE CODES				
									CODE	DESCRIPTION	CODE	NOMINAL VOLTAGE	CODE	TYPE	DESCRIPTION	
J	3MTS	A B	2	150 200 230 260 400 600	C D E F G H J K L M N P Q R		O=NONE X=YES Z=SPECIAL	C M N S V	BLANK A B	NONE SOLID SWITCHING	C	1		1	GENERAL PURPOSE, INDOOR	
		BLANK FOR NONE				BLANK FOR 3MTS										(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 - \_\_\_\_\_

268581	NS	JPB	05/15/17
ISSUE	BY	APP.	DATE
REV. TO SHEET	ECN NO.		

PROJECT NAME: \_\_\_\_\_

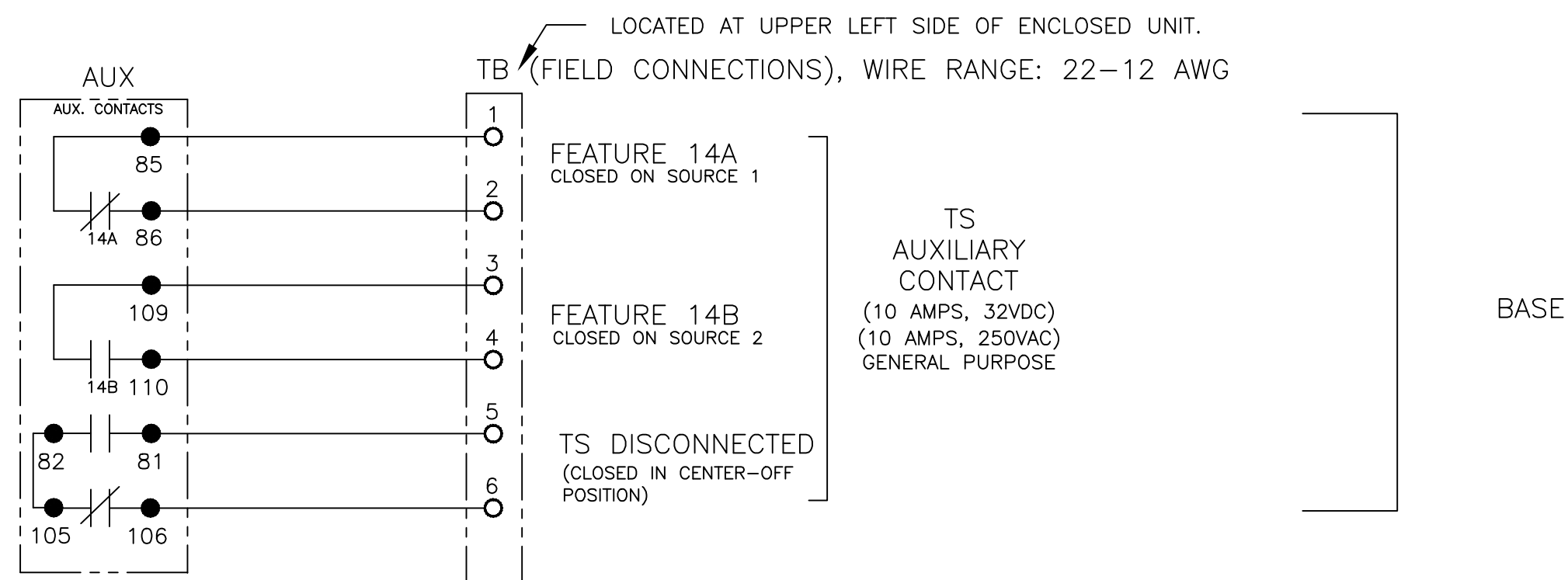
WIRING \_\_\_\_\_ DIAGRAM \_\_\_\_\_

300 SERIES (J3MTS) 1PH 150-600 AMPS  
 "J" FRAME, MANUALLY OPERATED TS

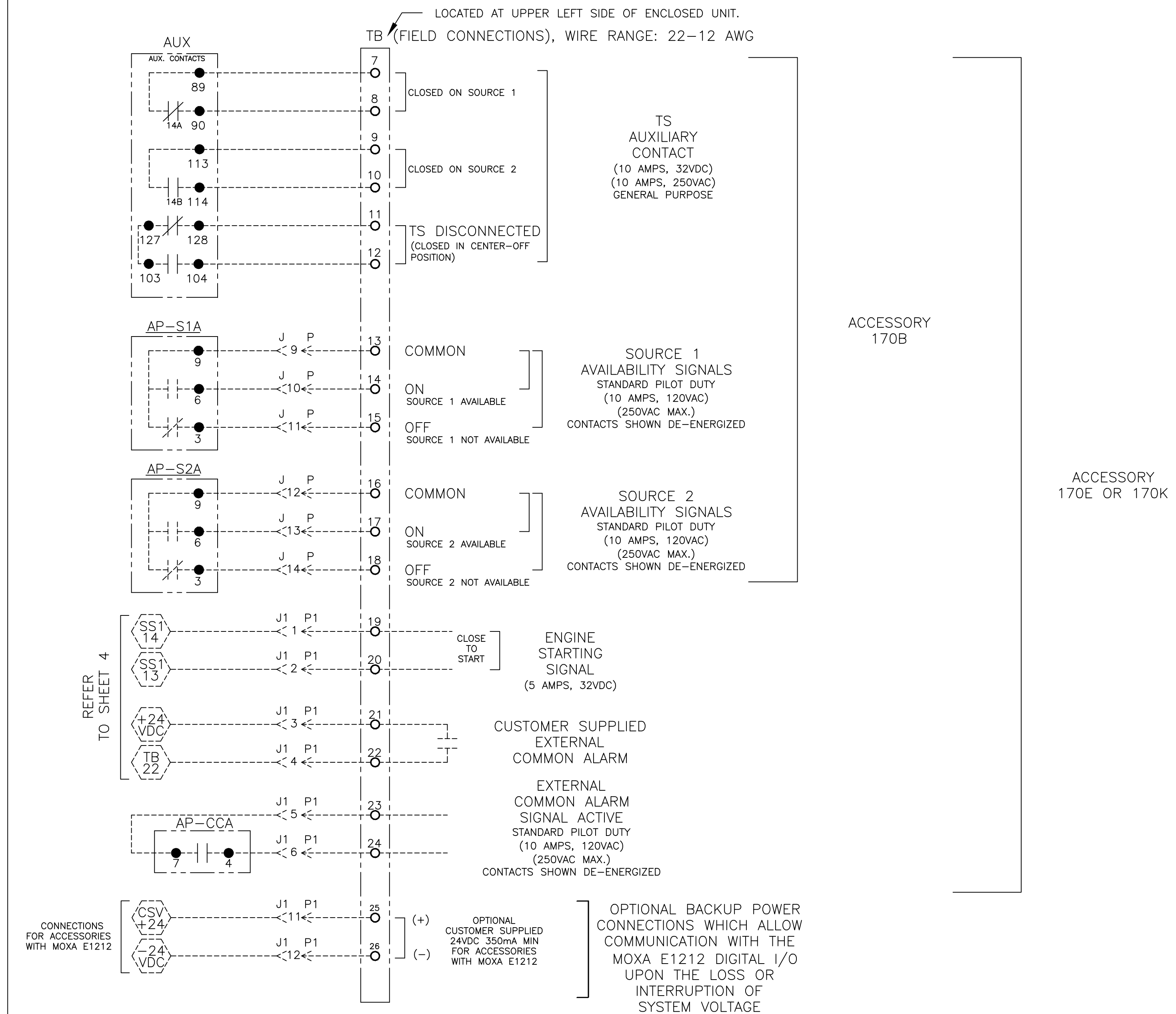
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NS	05/15/17			
CHECKED	JPB	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	SCALE	1:1
PROJECT APPROVAL			SIZE	DS
FINAL APPROVAL			DWG. NO.	1191633
			DRAWING A	REV. _____
			ECN NO.	271997
			SHEET	1 OF 6

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

FIELD CONNECTIONS BASE



FIELD CONNECTIONS FOR OPTIONAL ACCESSORIES



ACCESSORY 170B

ACCESSORY 170E OR 170K

REFER TO SHEET 4

CONNECTIONS FOR ACCESSORIES WITH MOXA E1212

OPTIONAL CUSTOMER SUPPLIED 24VDC 350mA MIN FOR ACCESSORIES WITH MOXA E1212

OPTIONAL BACKUP POWER CONNECTIONS WHICH ALLOW COMMUNICATION WITH THE MOXA E1212 DIGITAL I/O UPON THE LOSS OR INTERRUPTION OF SYSTEM VOLTAGE

REV. TO SHEET	ECN NO.	BY	APP.	DATE
A	271997	NS	JPB	04/13/18
	SEE ECN			
	268581	NS	JPB	05/15/17
	ISSUE			

PROJECT NAME:		DIAGRAM	
300 SERIES (J3MTS) 1PH 150-600 AMPS			
"J" FRAME, MANUALLY OPERATED TS			
BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005	ASSEM. REF. NO.
NS	05/15/17		
CHECKED	DATE	PROPERTY OF ASCO POWER TECHNOLOGIES, USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	SCALE
JPB	05/15/17		1:1
PROJECT APPROVAL			SIZE DS
FINAL APPROVAL			

1191633

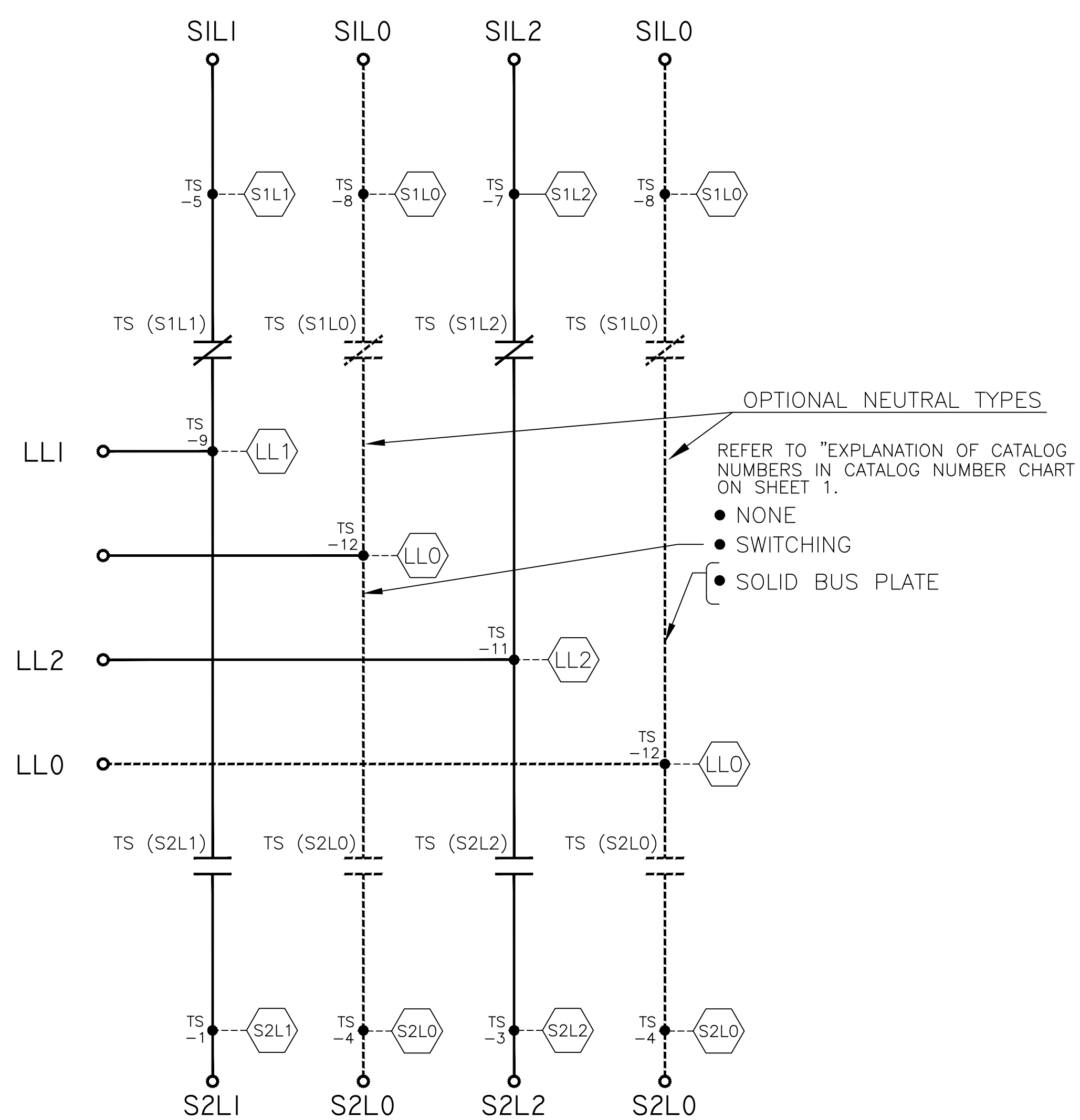
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DRAWING A REV. 271997 SHEET 2 OF 6

MAIN POWER POLES

OPTIONAL ACCESSORIES

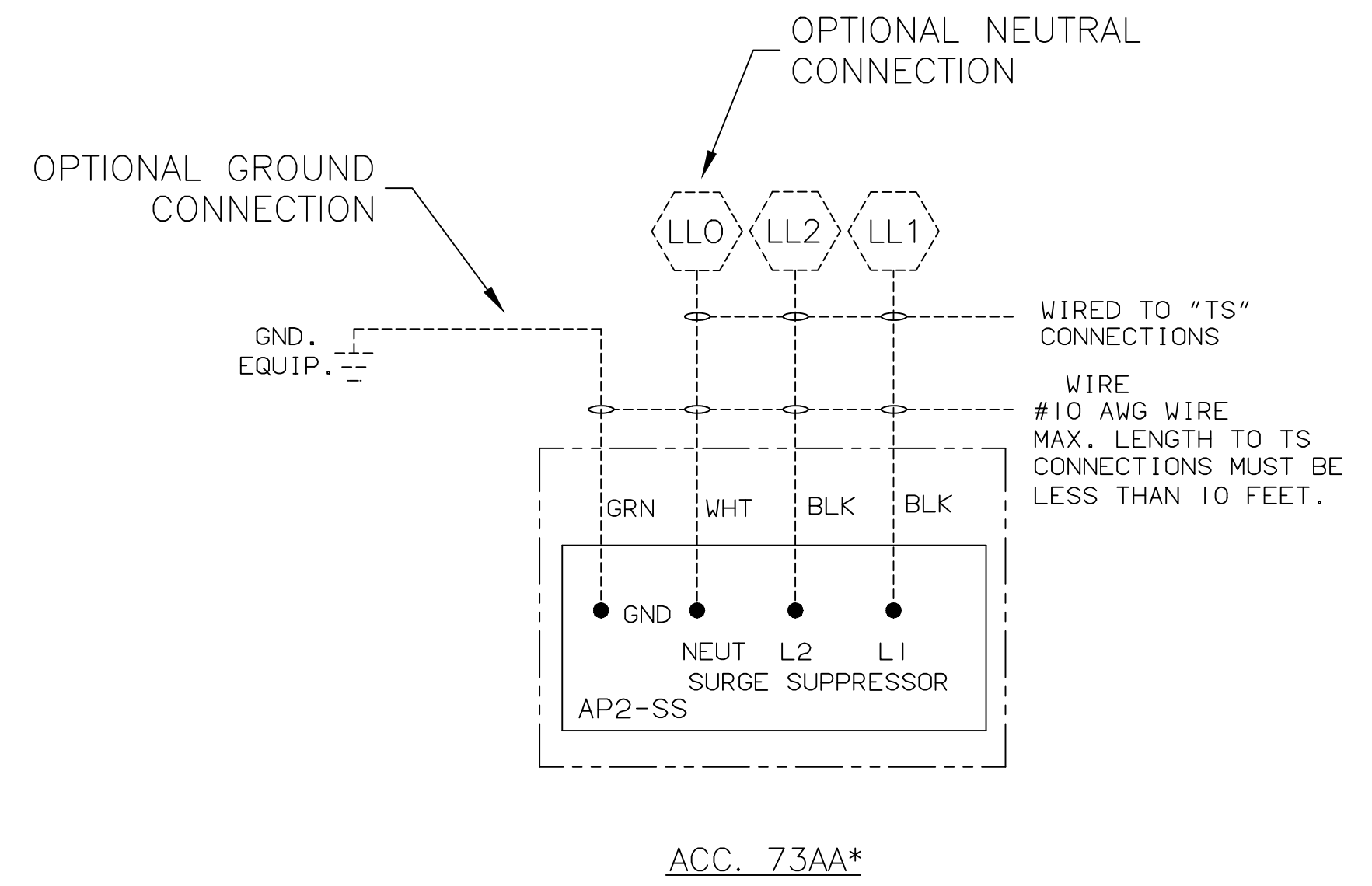
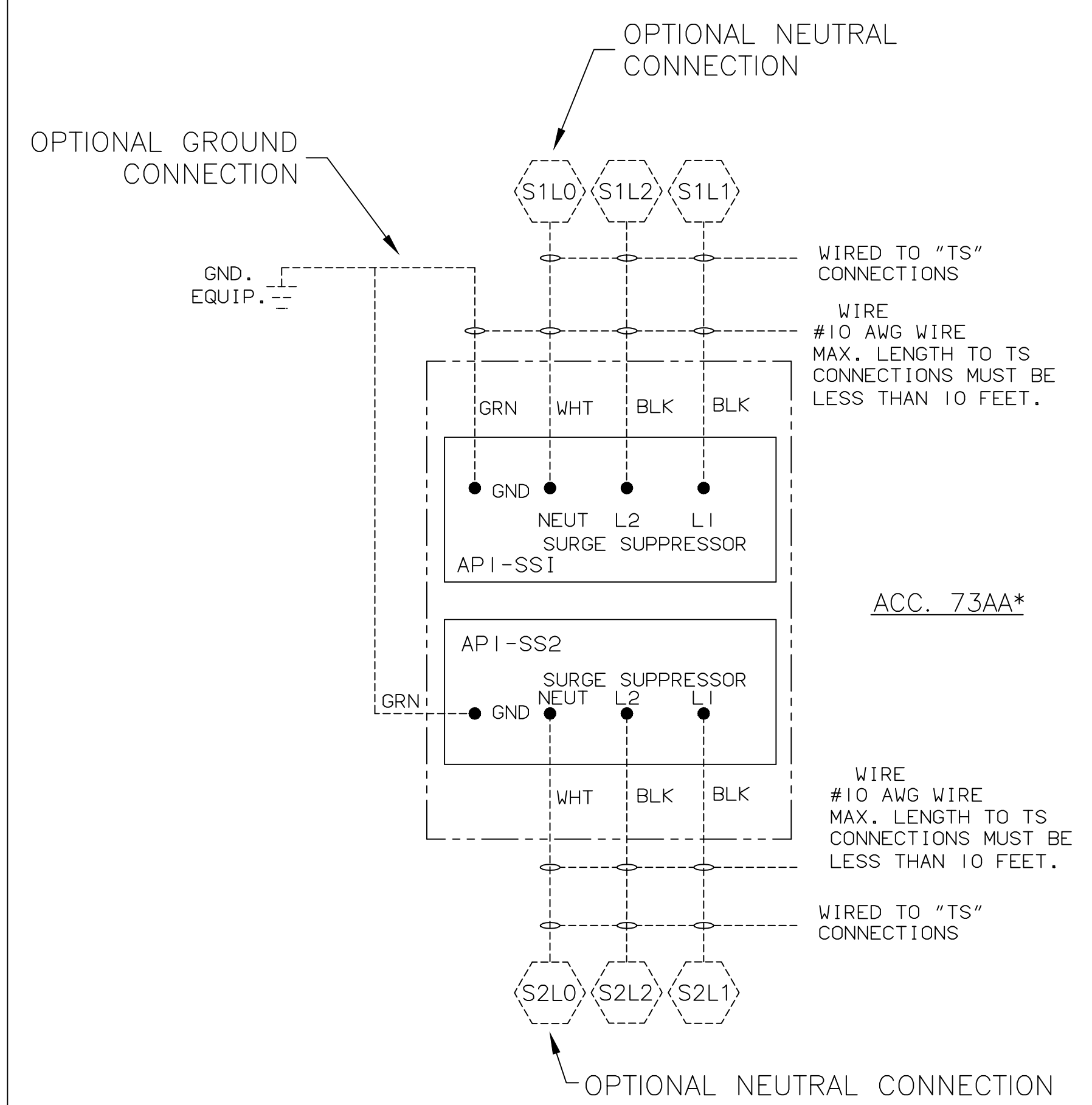
SOURCE 1



NOTE:  
TS SHOWN CLOSED ON SOURCE 1.

73AA\* SOURCE 1(SS1) & SOURCE 2(SS2)

73AA\* LOAD (SS)



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SEE ECN			
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ISSUE			

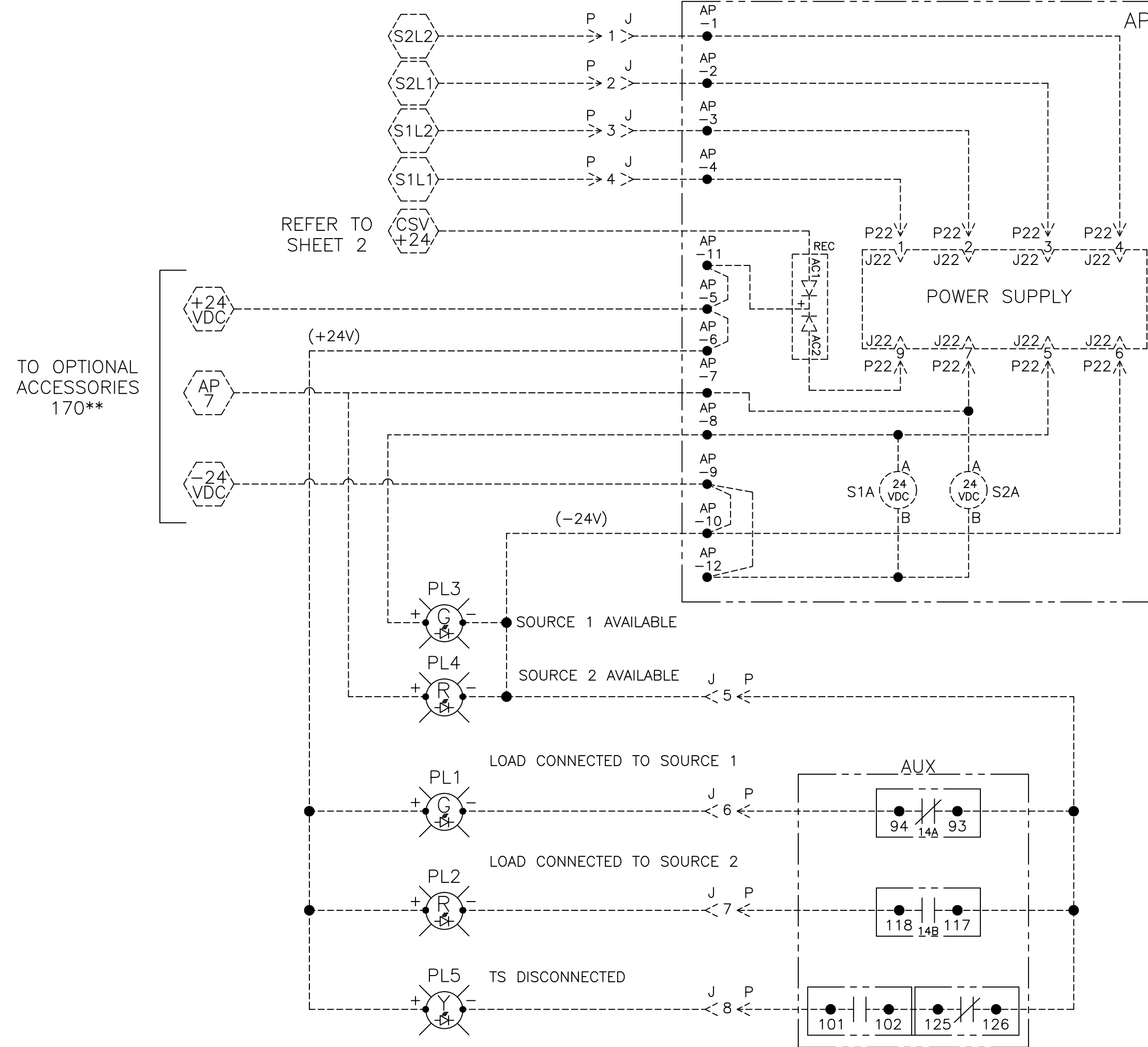
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300 SERIES (J3MTS) 1PH 150-600 AMPS			
"J" FRAME, MANUALLY OPERATED TS			
BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005	ASSEM. REF. NO.
NS	05/15/17		
CHECKED	DATE	PROPERTY OF ASCO POWER TECHNOLOGIES, USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	SCALE
JPB	05/15/17		1:1
PROJECT APPROVAL			SIZE DS
			1191633
FINAL APPROVAL			DRAWING A
			ECN 271997
			SHEET 3 OF 6

OPTIONAL ACCESSORIES CONTINUED

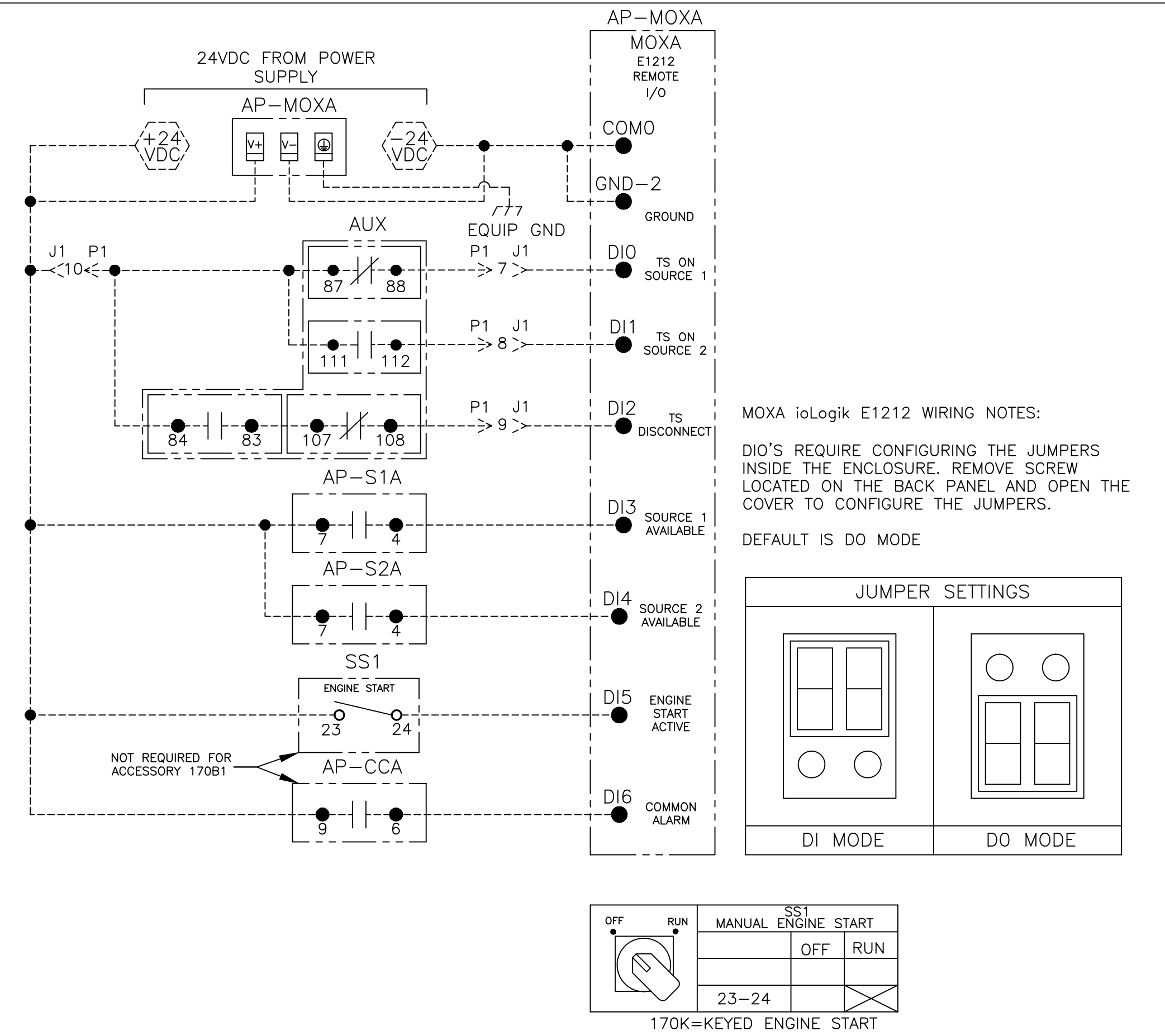
ACCESSORIES CIRCUIT MATRIX

ACCESSORY	CIRCUITS
170B(*)	170B
170E(*)	170B + 170E
170K(*)	170B + 170K
(*) = 1	+ 170*1

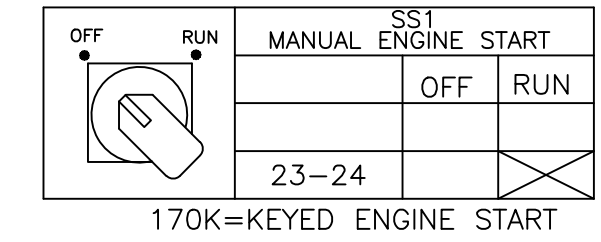
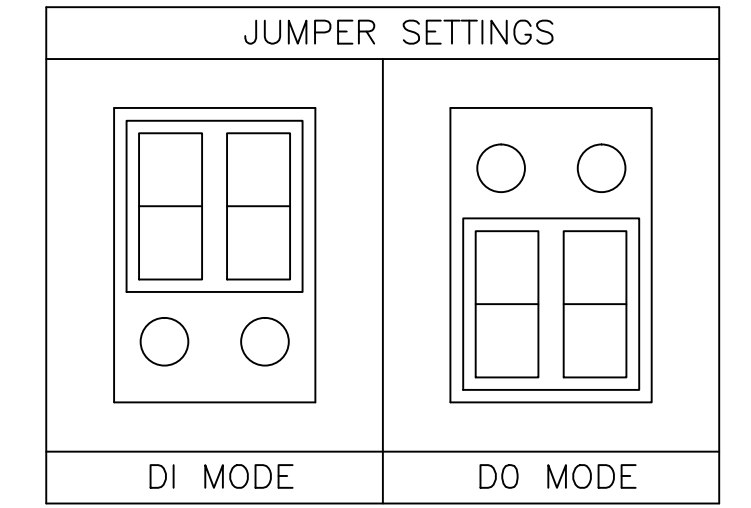
170B CIRCUIT



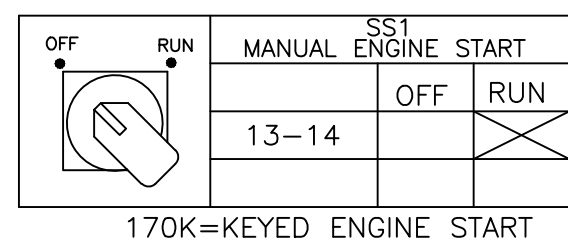
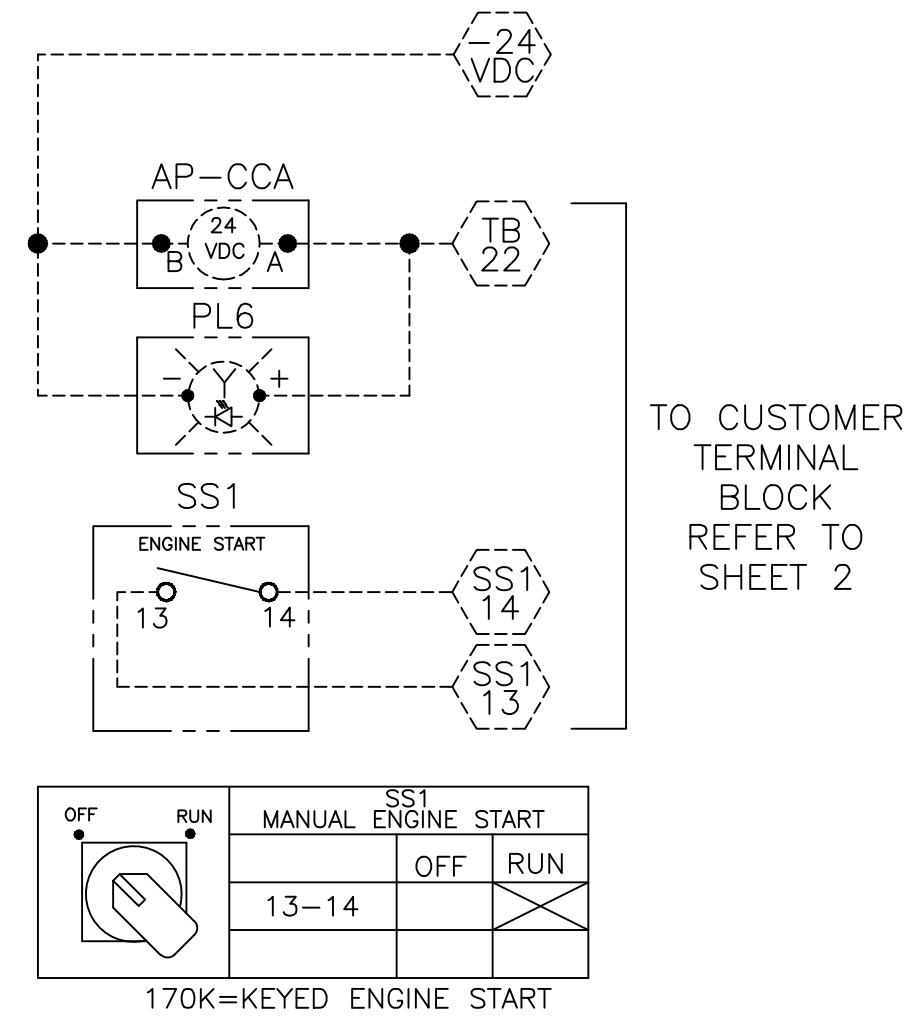
170\*1 CIRCUIT



MOXA iLogic E1212 WIRING NOTES:  
 DI0'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



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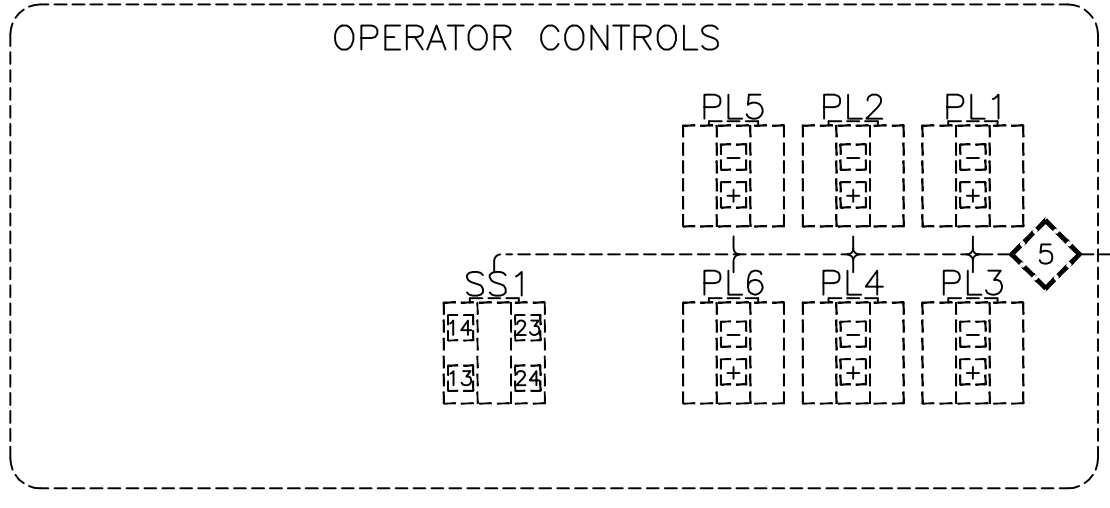
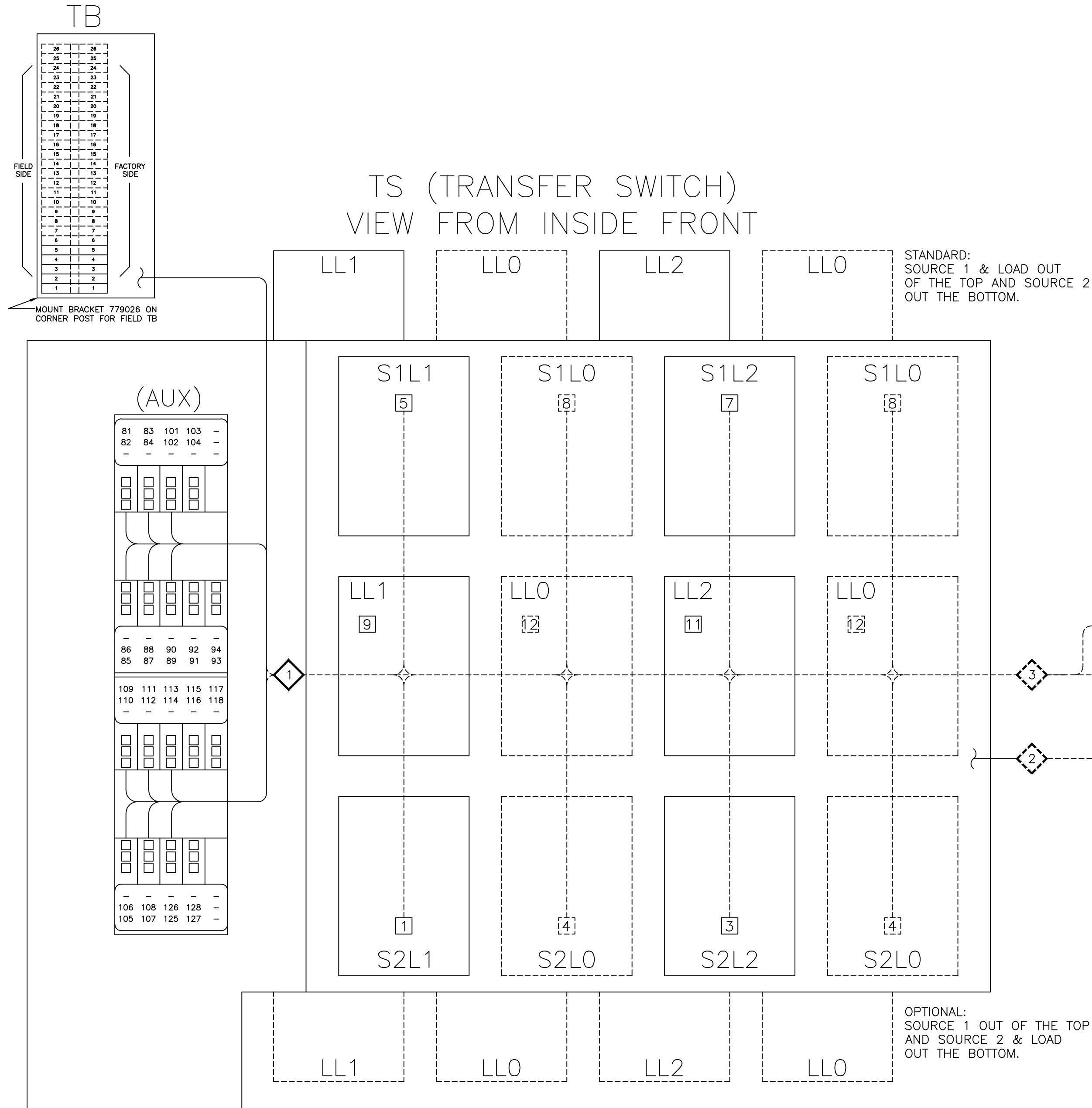
PROJECT NAME:		DIAGRAM	
300 SERIES (J3MTS) 1PH 150-600 AMPS			
"J" FRAME, MANUALLY OPERATED TS			
BY	DATE	ASSEM. REF. NO.	SCALE
NS	05/15/17		1:1
CHECKED	DATE	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	SIZE
JPB	05/15/17		DS
PROJECT APPROVAL			DWG. NO.
			1191633
FINAL APPROVAL			DRAWING A
			ECN NO. 271997
			SHEET 4 OF 6

PHYSICAL DIAGRAM

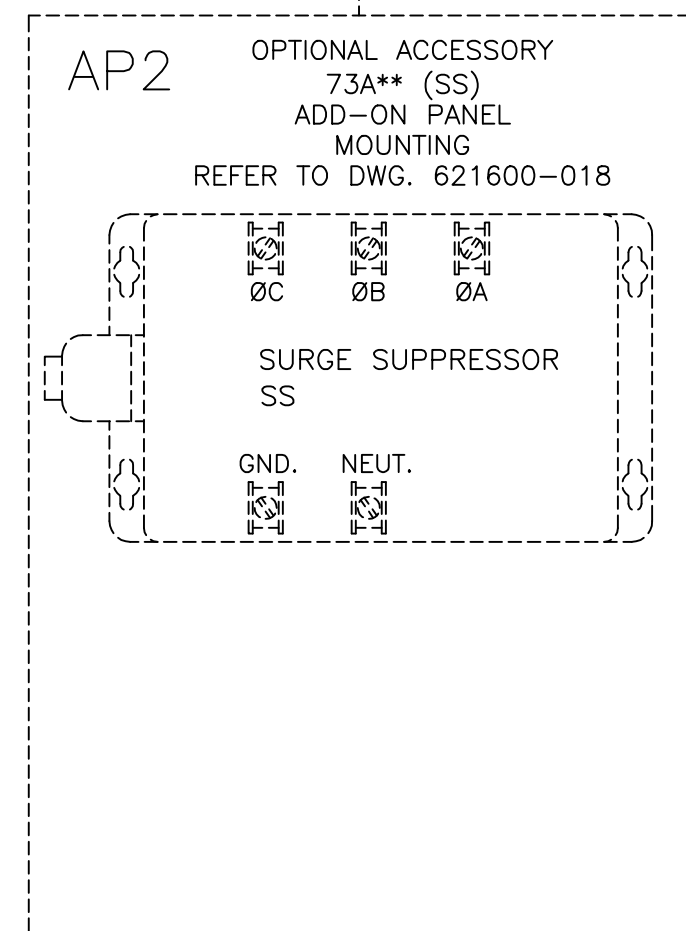
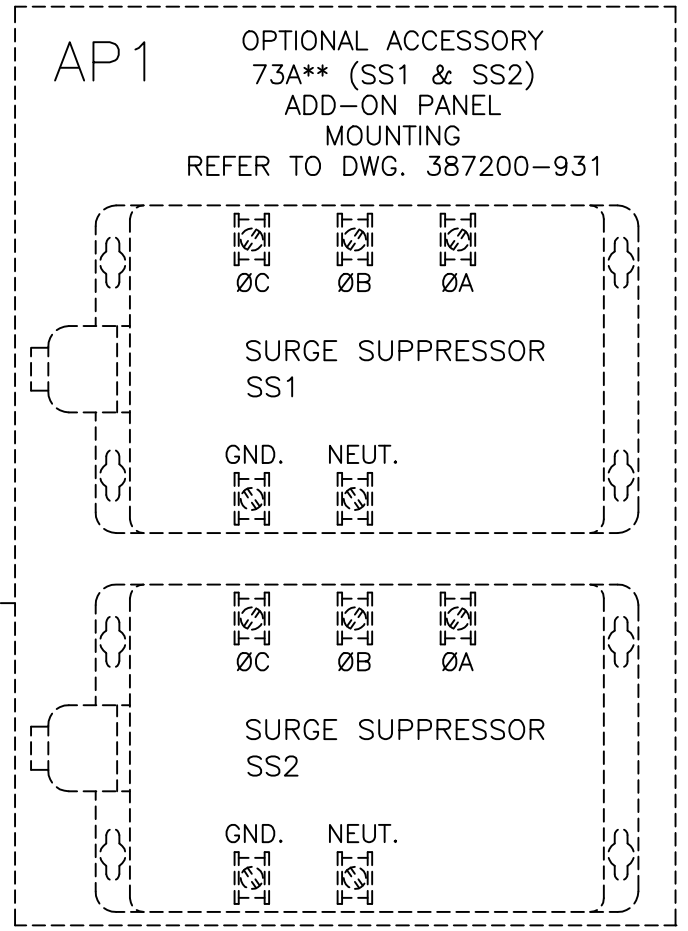
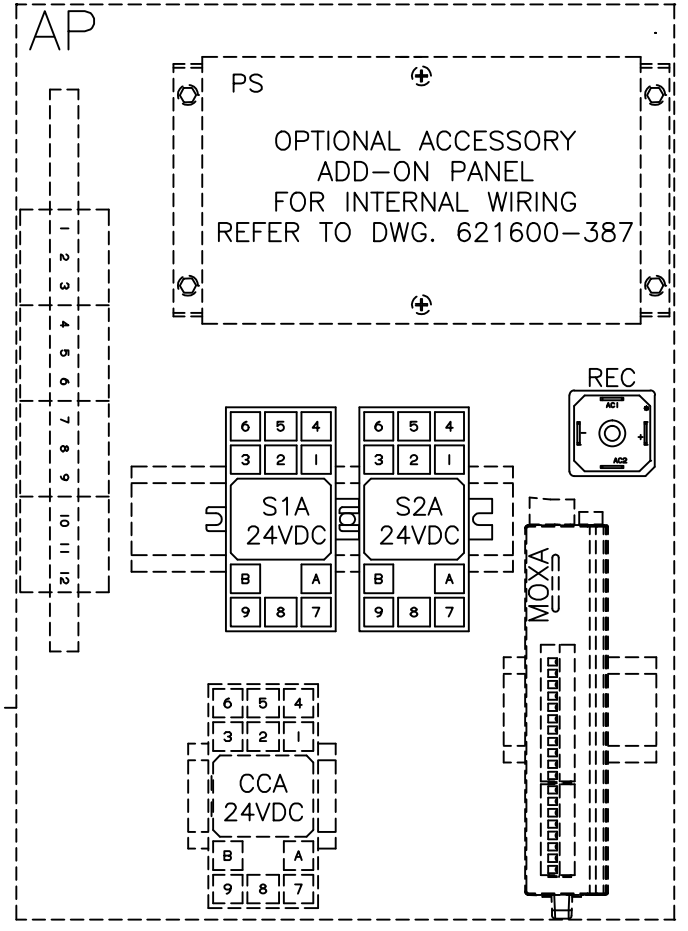
ENCLOSURE

DOOR, INSIDE

TS (TRANSFER SWITCH)  
VIEW FROM INSIDE FRONT



ID	DESCRIPTION
SS1	MANUAL ENGINE START
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)



DOOR HINGE

BONDING STRAP PN 098323-019

271997	NS	JPB	04/13/18
268581	NS	JPB	05/15/17

PROJECT NAME:		DIAGRAM	
300 SERIES (J3MTS) 1PH 150-600 AMPS			
"J" FRAME, MANUALLY OPERATED TS			
BY	DATE	ASSEM. REF. NO.	SCALE
NS	05/15/17		1:1
CHECKED	DATE	ASSEM. REF. NO.	SIZE
JPB	05/15/17		DS
DWG. NO.		1191633	
DRAWING A		ECON 271997	
REV.		SHEET 5 OF 6	

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