

THREE PHASE WIRING FOR **ASCO**® 7000 SERIES AUTOMATIC CLOSED TRANSITION TRANSFER & BYPASS-ISOLATION SWITCHES TYPE 7ACTB RATED 800 - 2000 AMPERES

FEATURES, SETTINGS, OPERATION & 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 AUTOMATIC TRANSFER SWITCHES** USER'S GUIDE (PART NO. 381333-126) PROVIDED WITH EVERY 7000 SERIES AUTOMATIC 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. 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 ITS 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.
- FEAT. 3A – RETRANSFER TO NORMAL DELAY (TEST MODE)
DELAY STARTS WHEN THE "TRANSFER TEST" SWITCH IS RESET TO "AUTO" (FOLLOWING A USER INITIATED TRANSFER TEST) 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).
- 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 WAITS 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.

FAIL 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

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 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, 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 TRANSFER WILL ALSO BE INITIATED DURING A TRANSFER TEST OPERATION CAUSED BY OPERATION OF THE FEATURE 5 TRANSFER TEST SELECTOR SWITCH. RETRANSFER WILL ALSO OCCUR IN A CLOSED TRANSITION MANNER AT THE END OF THE TEST.

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 IN INITIATED.

BASE CATALOG NUMBER				CATALOG NUMBER SUFFIXES			
CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE
7ACTB	A	3	800 1000 1200 1600 2000	A	5	X	C E F G H J K L M N P Q R
				B			
				C			
				D			
				E			
				F			
				G			
				H			
				J			
				K			
				L			
				M			
				N			
				P			
				Q			
				R			
	BLANK FOR NONE				BLANK FOR NONE		BLANK FOR OPEN TYPE

SIGNALS & AUXILIARIES

- A. FEATURES 7 – 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 CLOSURES 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.
FEATURE 7 CONSISTS OF A FORM A CONTACT CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACTS RATED 5 AMPS AT 32VDC/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.
- 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. 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. CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB).

USER CONTROLS AND INDICATIONS

- A. FEATURES 5 & 6B – TRANSFER TEST/RETRANSFER TIME DELAY BYPASS CONTROLS.
TRANSFER TEST:
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 TIME DELAY BYPASS:
OPERATION WILL BYPASS THE FEATURE 3A (RETRANSFER TO NORMAL DELAY).
- 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.

BYPASS SWITCH USER CONTROLS & INDICATIONS

- A. SOURCE AVAILABILITY INDICATORS:
NORMAL SOURCE AVAILABLE: (GREEN LED)
EMERGENCY SOURCE AVAILABLE: (RED LED)
- B. UNIT NOT IN AUTOMATIC INDICATOR: (RED LED, FLASHING)
FLASHES WHEN THE TRANSFER SWITCH IS DISABLED FROM ANY TRANSFER FUNCTIONS DUE TO THE BYPASS SWITCH BEING CLOSED IN EITHER POSITION OR BECAUSE THE TRANSFER SWITCH IS NOT IN THE CONNECTED POSITION.
- C. MANUAL ENGINE START SWITCH:
FOR MANUAL STARTING OF ENGINE–GENERATOR SET WHEN ATS IS IN TEST OR ISOLATED MODE. TWO POSITION SELECTOR SWITCH.
ENGINE START – SIGNALS ENGINE–GENERATOR SET TO START.
AUTO – SIGNALS ENGINE–GENERATOR SET TO START FROM AUTOMATIC TRANSFER SWITCH SIGNAL.
- D. SOLENOID INTERLOCKS –
SL1: INTERLOCKS THE TRANSFER SWITCH ISOLATION CRANK WITH THE TRANSFER SWITCH AND BYPASS SWITCH TO INSURE THAT THE TRANSFER SWITCH CAN NEVER BE DISCONNECTED WITHOUT BEING BYPASSED AND THAT IT CAN NEVER BE RECONNECTED UNLESS IT IS IN THE SAME POSITION AS THE BYPASS SWITCH.
SL2: INTERLOCKS THE BYPASS SWITCH OPERATOR, WHILE IN THE CONNECTED POSITION, SO THAT THE BYPASS SWITCH CAN NEVER BE OPERATED TO THE SOURCE OPPOSITE OF WHICH THE TRANSFER IS CONNECTED.
- E. OPTIONAL ACCESSORY INDICATOR MATRIX
AN OPTIONAL ACCESSORY INDICATION MATRIX IS AVAILABLE TO SHOW, IN A ONE–LINE FORMAT, THE OPERATIONAL STATUS OF THE AUTOMATIC TRANSFER & BYPASS/ISOLATION SWITCH AT A SINGLE LOCATION ON THE UNIT.

GENERAL NOTES

1. SWITCH SHOWN DE-ENERGIZED AND CONNECTED TO THE NORMAL SOURCE. THE BYPASS SWITCH OPERATOR IS IN THE "AUTOMATIC" POSITION (NORMAL & EMERGENCY BYPASS CONTACTS OPEN). THE ISOLATION HANDLE IS IN THE "CLOSED" POSITION (ATS CONNECTED).
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 AUTOMATIC 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 D

PROJECT NAME: _____

WIRING _____ **DIAGRAM** _____

7000 SERIES (S7ACTB) 3PH 800–2000 AMPS

"S" FRAME, GROUP 5 CONTROLS

BY		DATE	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		
CHECKED	MM	02/10/11	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	BK	02/10/11				DWG. NO.	909870	
FINAL APPROVAL			ASCO ® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.			DRAWING REV.	ECN NO. 290885	SHEET 1 OF 10

TECHNICAL DATA

BYPASS SWITCH AUXILIARY CONTACTS

BP AUXILIARY CONTACT	STATUS (*)	BP SWITCH POSITION (AUX3)		
		EMERG	OFF	NORMAL
81-82				NONE
83-84				
85-86	●			
87-88	●			
89-90	●			
91-92				
93-94				
95-96				
97-98				
99-100				
101-102				NONE
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				

BYPASS SWITCH OPERATOR AUXILIARY CONTACTS

BP AUXILIARY CONTACT	STATUS (*)	BP SWITCH POSITION (AUX4)		
		EMERG (PULL)	<>	NORMAL (PUSH)
137-138	●			
137-139				
140-141	●			
140-142				

BYPASS SWITCH OPERATOR AUXILIARY CONTACTS

BP AUXILIARY CONTACT	STATUS (*)	BP SWITCH HANDLE POSITION (AUX5)		
		OFF (90°)	<> (75°)	BYPASS (-90°)
143-144	●			
143-145				
146-147				
146-148	●			

ISOLATION (TRANSFER SWITCH CARRAIAGE POSITION) AUXILIARY CONTACTS

IS AUXILIARY CONTACT	STATUS (*)	TRANSFER SWITCH CARRIAGE POSITION				
		CONNECT	> <	TEST	> <	ISOLATE
1-2	●					
4-5	●					
7-8	●					
10-12	●					
13-14	●					
13-15						
16-17	●					
16-18	●					
19-21	●					
22-23	●					
22-24	●					
25-26	●					
28-29	●					
61-62						

(*) CONTACT AVAILABILITY STATUS:

“●” CONTACT PROVIDED & USED IN CIRCUITRY

“BLANK” CONTACT NOT USED. IF PHYSICALLY AVAILABLE,
CONTACT IS FOR FACTORY USE ONLY!

D

C

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290885

RVP

HSL

08/17/21

SEE ECN

259698

AJ

MM

03/01/16

SEE ECN

236981

TR

BK

05/07/12

SEE ECN

231454

TRD

MM

04/05/11

SEE ECN

230699

TRD

MM

02/10/11

ISSUE

REV. TO SHEET

ECN NO.

BY

APP.

DATE

PROJECT NAME:

WIRING

DIAGRAM

7000 SERIES (S7ACTB) 3PH 800-2000 AMPS

"S" FRAME, GROUP 5 CONTROLS

DRAWN BY

DJB

02/10/11

CHECKED

MM

02/10/11

PROJECT APPROVAL

BK

02/10/11

FINAL APPROVAL

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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ASCO

ASCO POWER TECHNOLOGIES, L.P.

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

COMPUTER GENERATED DRAWING

SCALE

NONE

SIZE

DS

DWG. NO.

909870

DRAWING REV.

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ECN NO.

290885

SHEET

2 OF 10

THIRD ANGLE PROJECTION

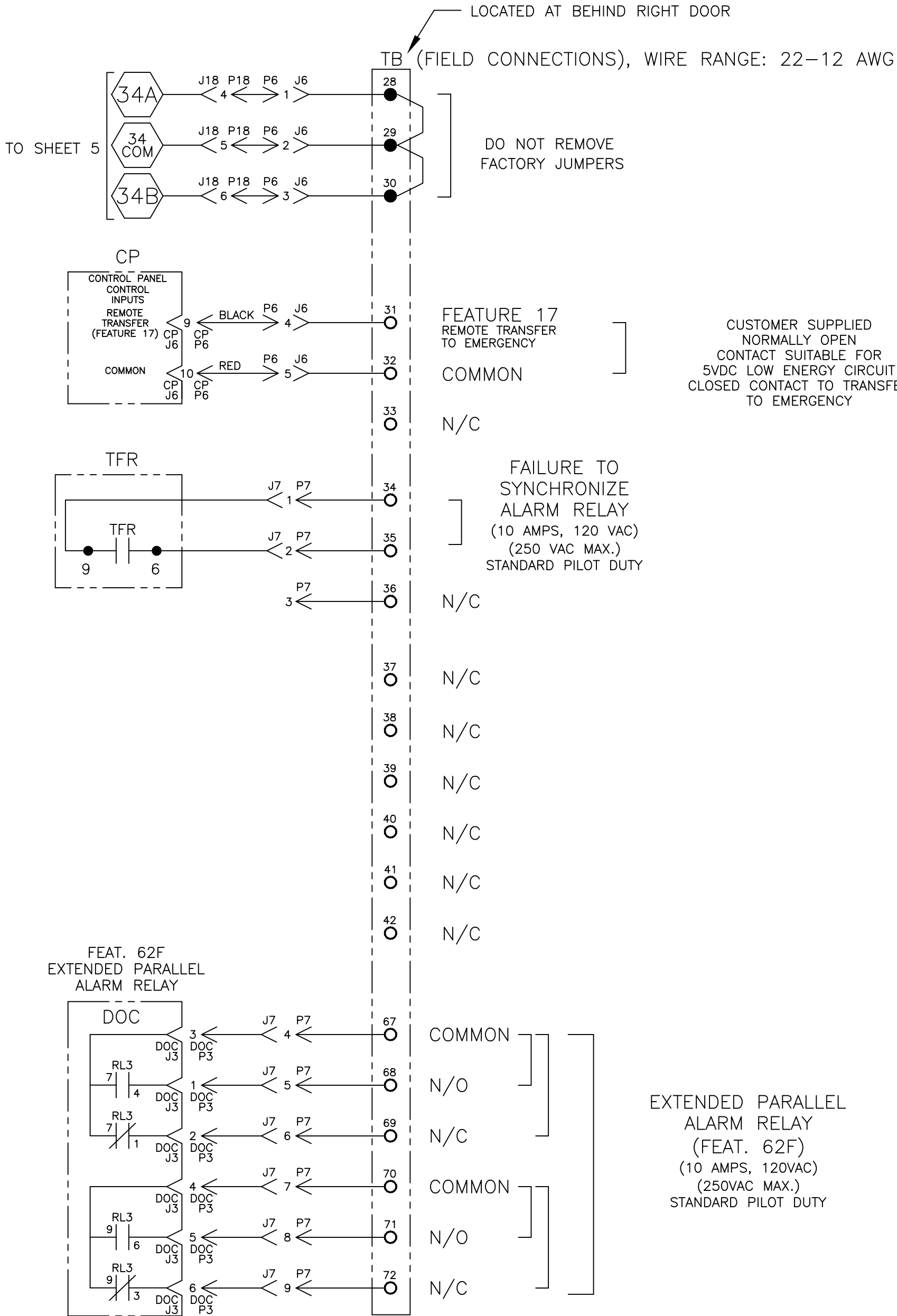
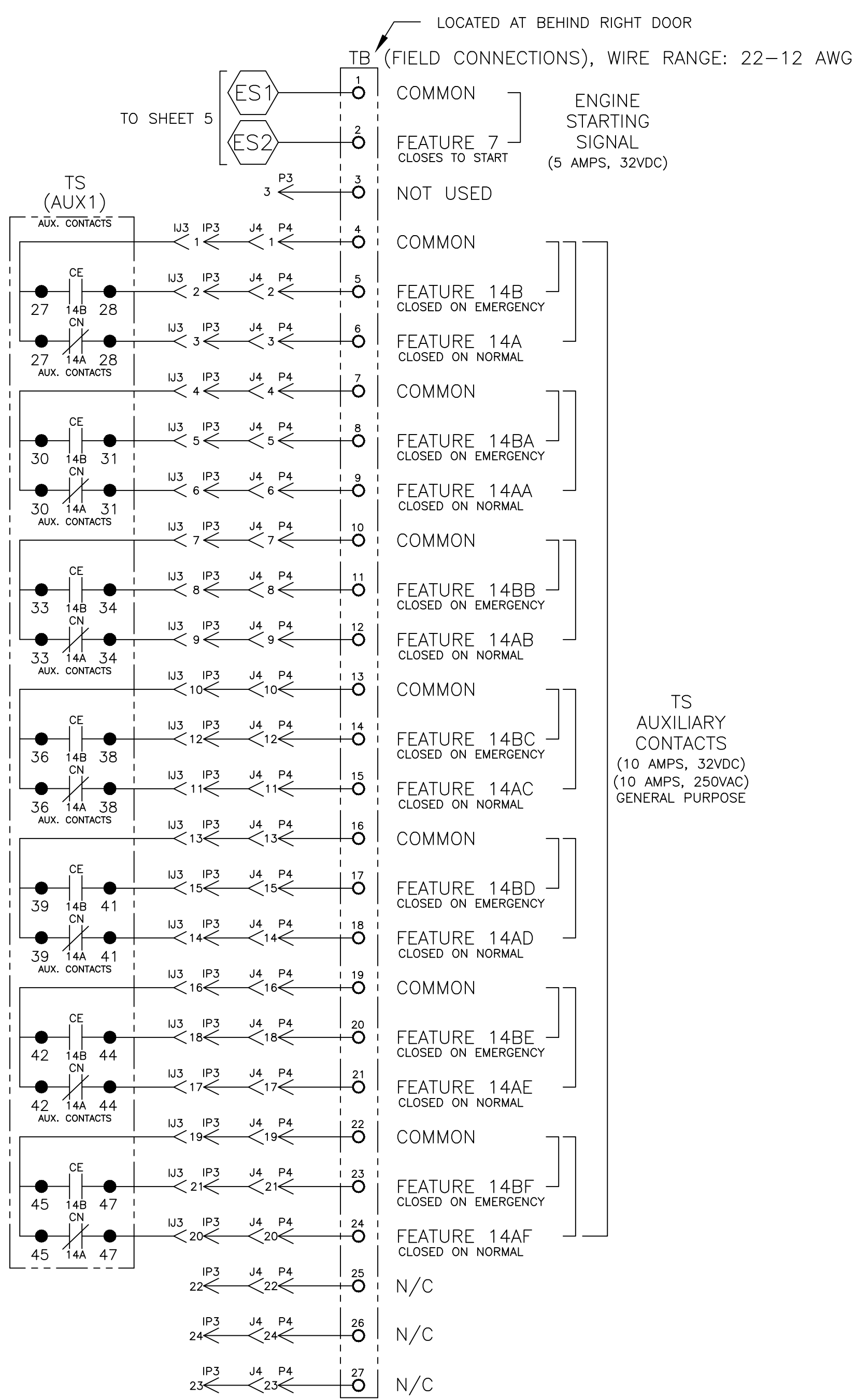
FIELD CONNECTIONS

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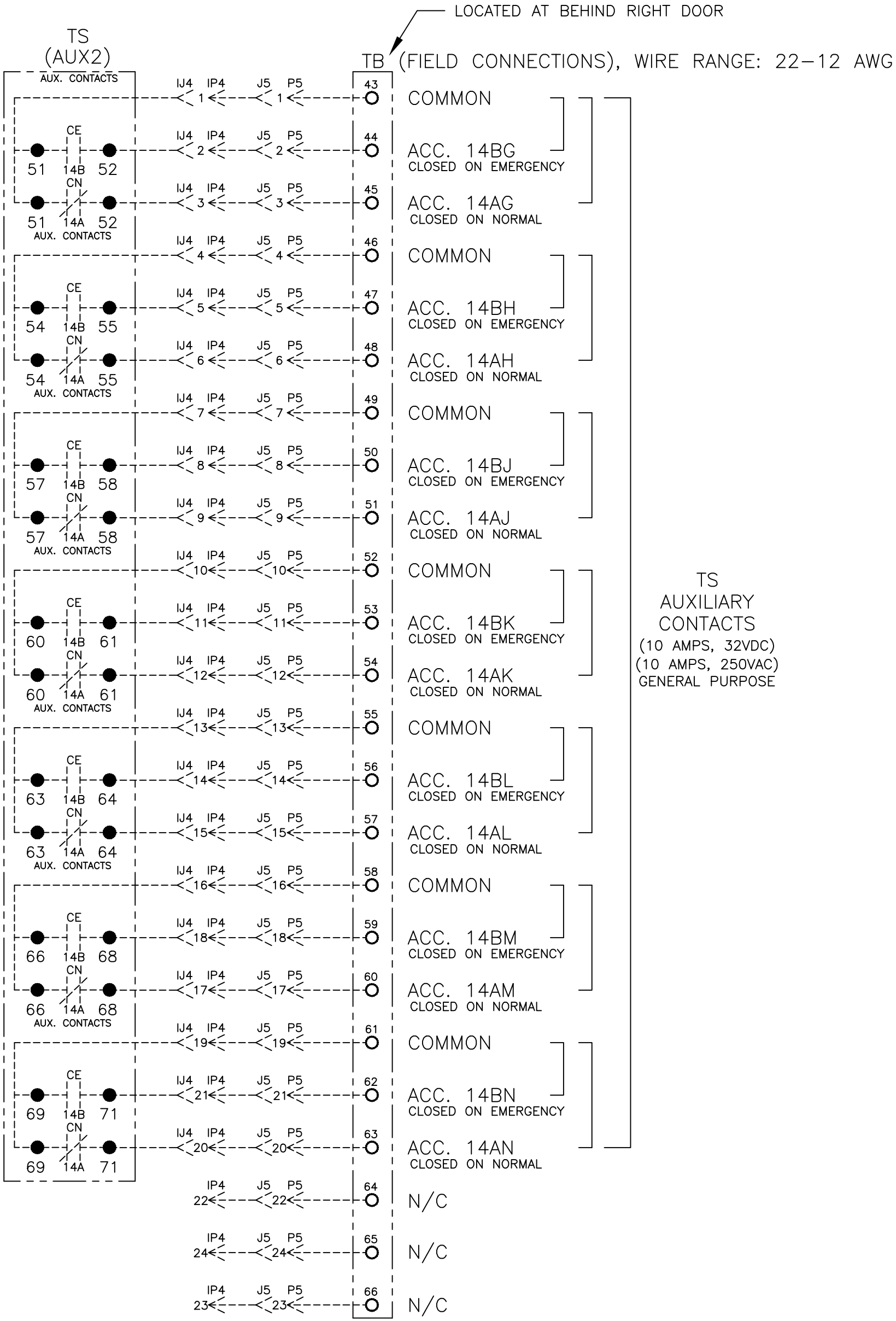
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OPTIONAL ACCESSORY (ACC.) AUXILIARY CONTACTS



D	290885	RVP	HSL	08/17/21
SEE ECN				
C	259698	AJ	MM	03/01/16
SEE ECN				
B	236981	TR	BK	05/07/12
SEE ECN				
A	231454	TRD	MM	04/05/11
SEE ECN				
—	230699	TRD	MM	02/10/11
ISSUE				

PROJECT NAME:				REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING								
7000 SERIES (S7ACTB) 3PH 800-2000 AMPS								
"S" FRAME, GROUP 5 CONTROLS								
DRAWN BY	DJB	DATE	02/10/11	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055		ASSEM. REF. NO.		
CHECKED	MM	DATE	02/10/11	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		COMPUTER GENERATED DRAWING		
PROJECT APPROVAL	BK	DATE	02/10/11			SCALE	NONE	SIZE DS
FINAL APPROVAL						DWG. NO.	909870	
						DRAWING REV.	ECN NO. 290885	SHEET 3 OF 10

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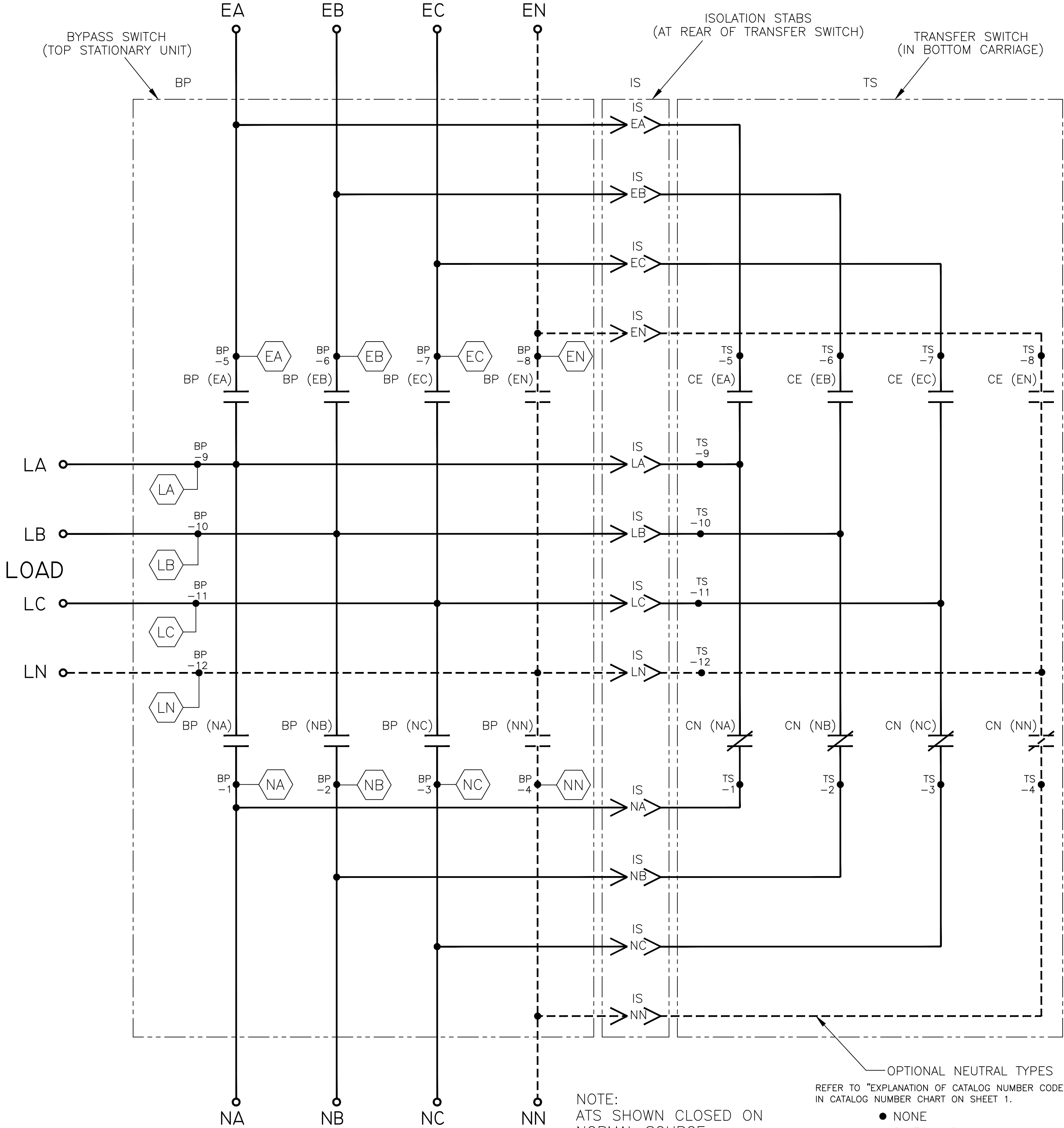
C

B

A

MAIN POWER POLES

EMERGENCY



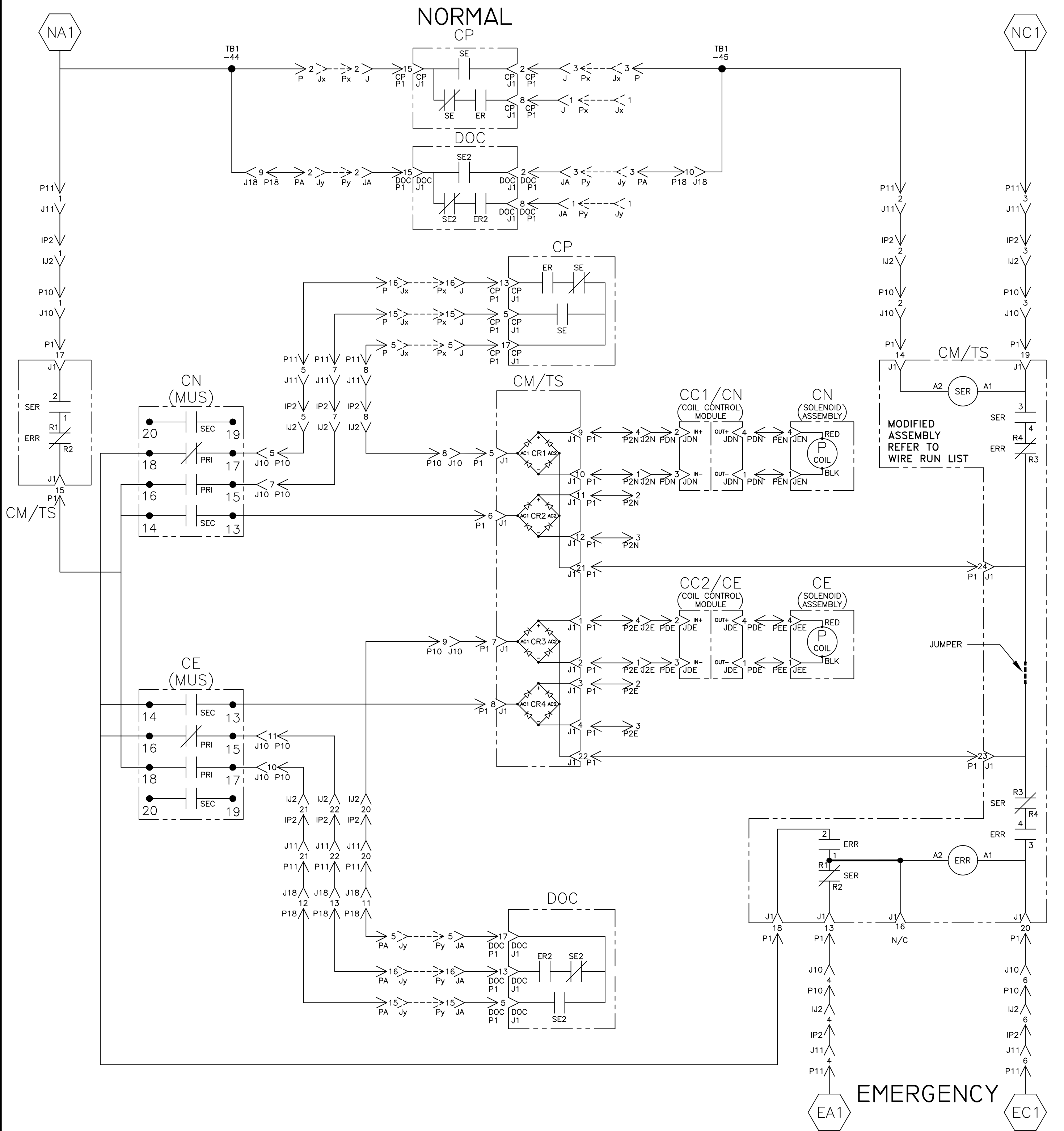
NORMAL

NOTE:
ATS SHOWN CLOSED ON
NORMAL SOURCE.
BYPASS SWITCH IN
(AUTOMATIC) POSITION.

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

- NONE
- SWITCHING
- SOLID BUS PLATE

TS OPERATOR CIRCUIT



EMERGENCY

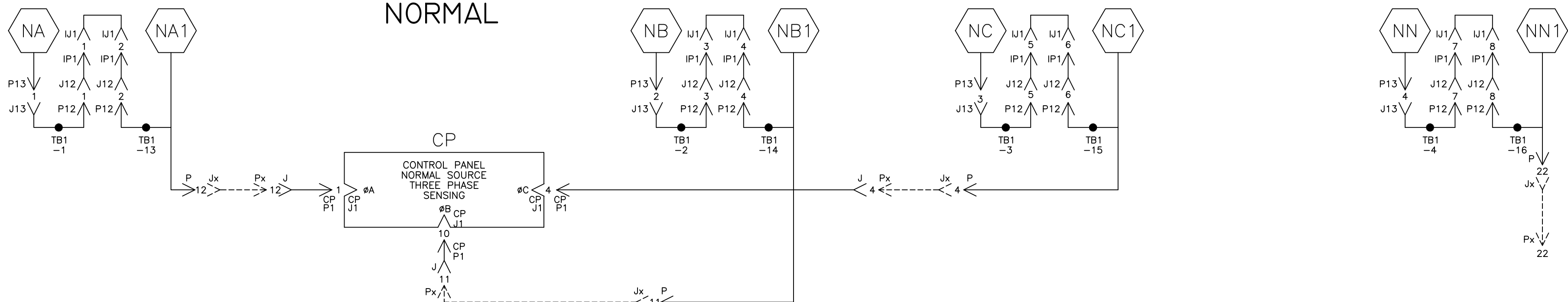
CN (MUS) CONTACTS				
SOLENOID POSITION				
MUS	CLOSED NORMAL	> AFTER TDC *	< OPEN	
13-14				
15-16				
17-18				
19-20				

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

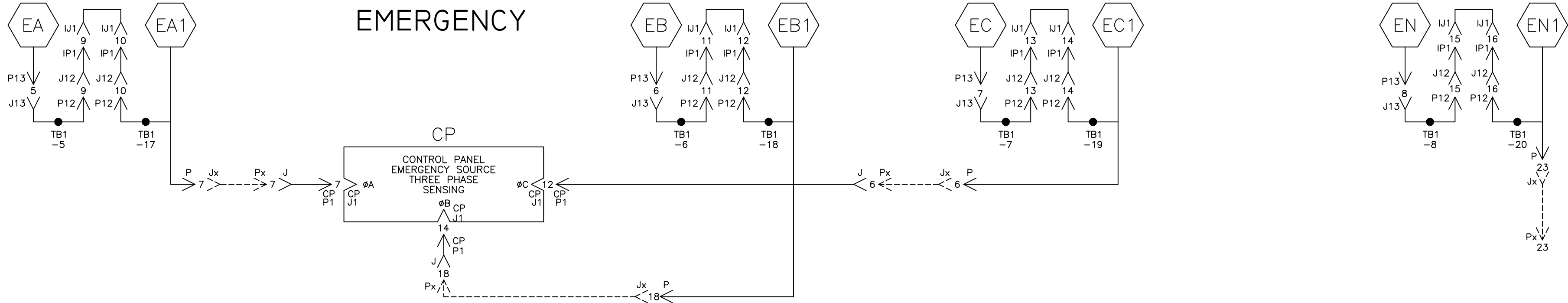
* AFTER SOLENOID CORE PASSES THROUGH TOP DEAD CENTER POSITION.

PROJECT NAME:		WIRING DIAGRAM	
7000 SERIES (S7ACTB) 3PH 800-2000 AMPS		"S" FRAME, GROUP 5 CONTROLS	
DRAWN BY DJB	DATE 02/10/11	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055	ASSEM. REF. NO.
CHECKED MM	02/10/11	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	COMPUTER GENERATED DRAWING
PROJECT APPROVAL BK	02/10/11	SCALE NONE	SIZE DS
FINAL APPROVAL		909870	DWG. NO.
		ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.	DRAWING REV. D
			ECN NO. 290885
			SHEET 4 OF 10

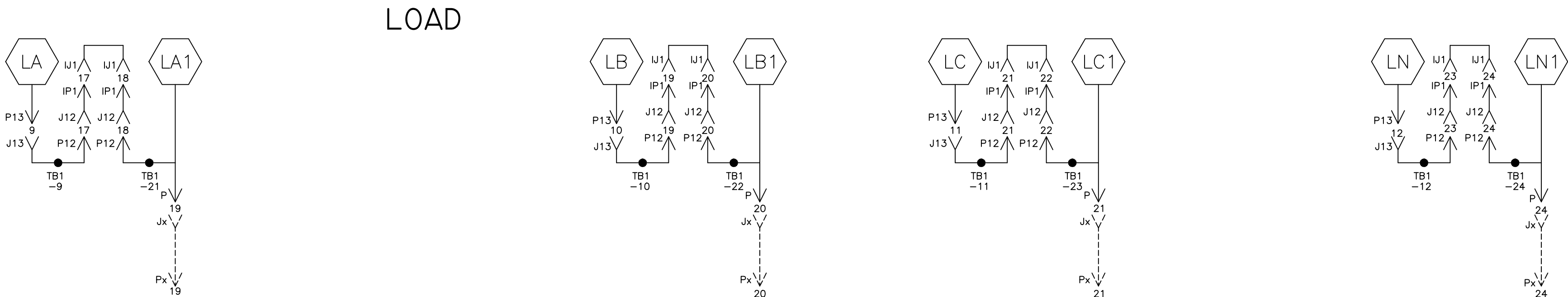
NORMAL SOURCE CIRCUITS



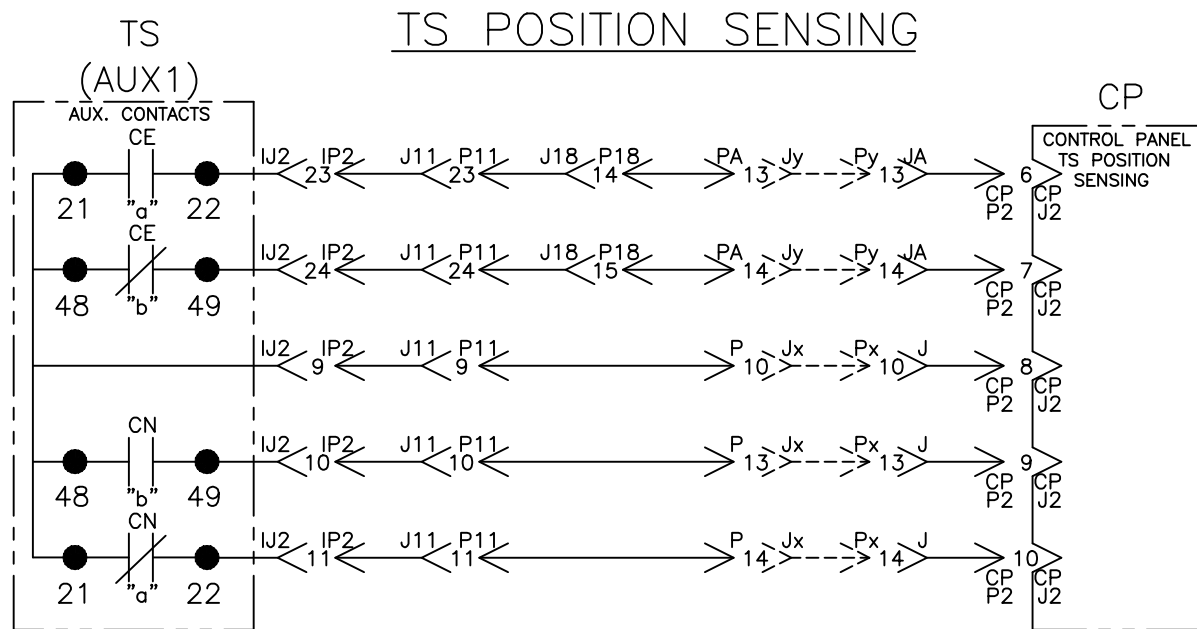
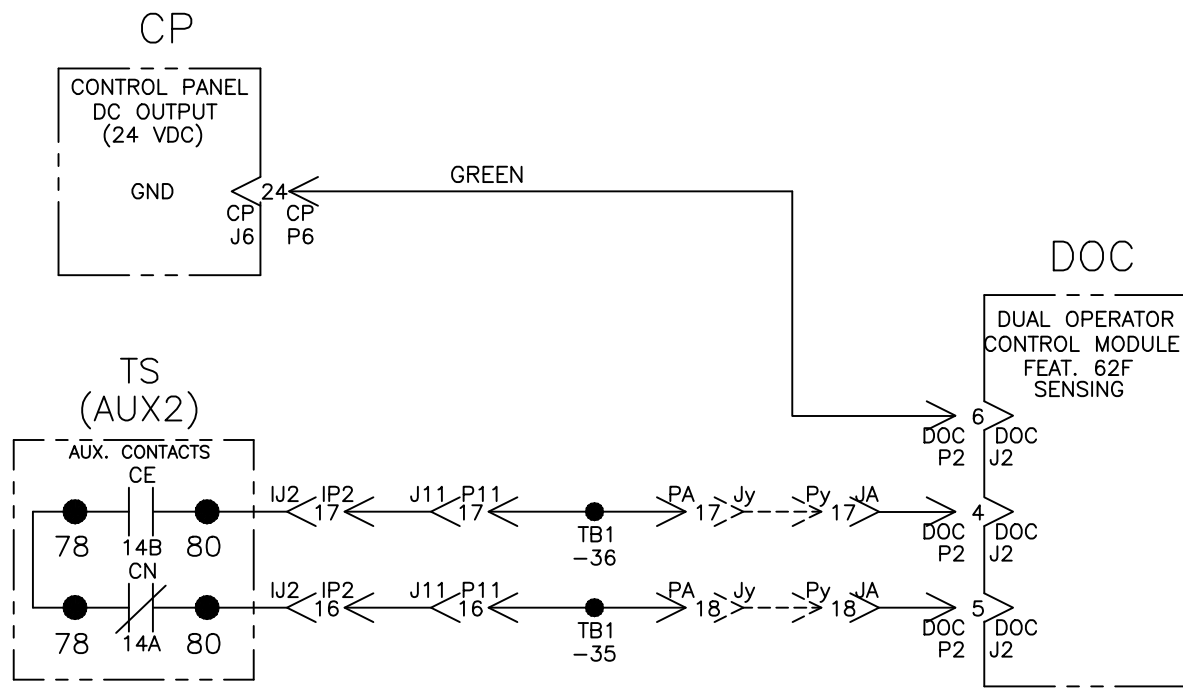
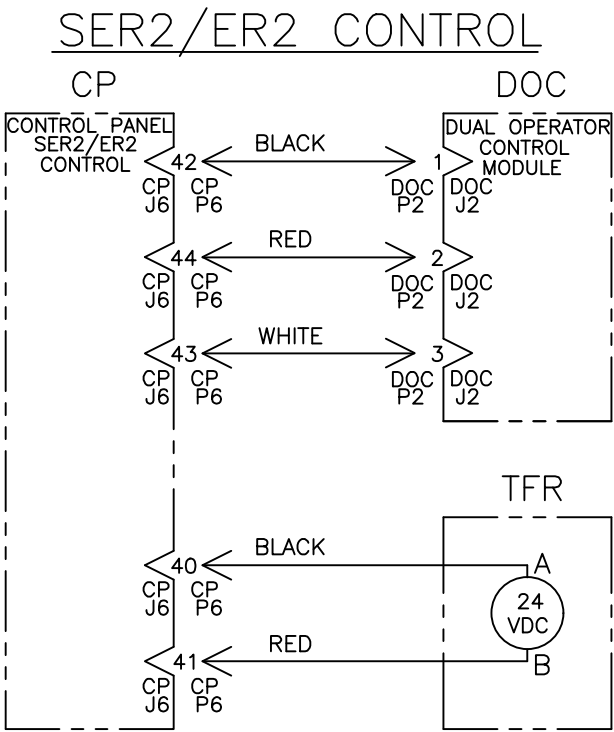
EMERGENCY SOURCE CIRCUITS



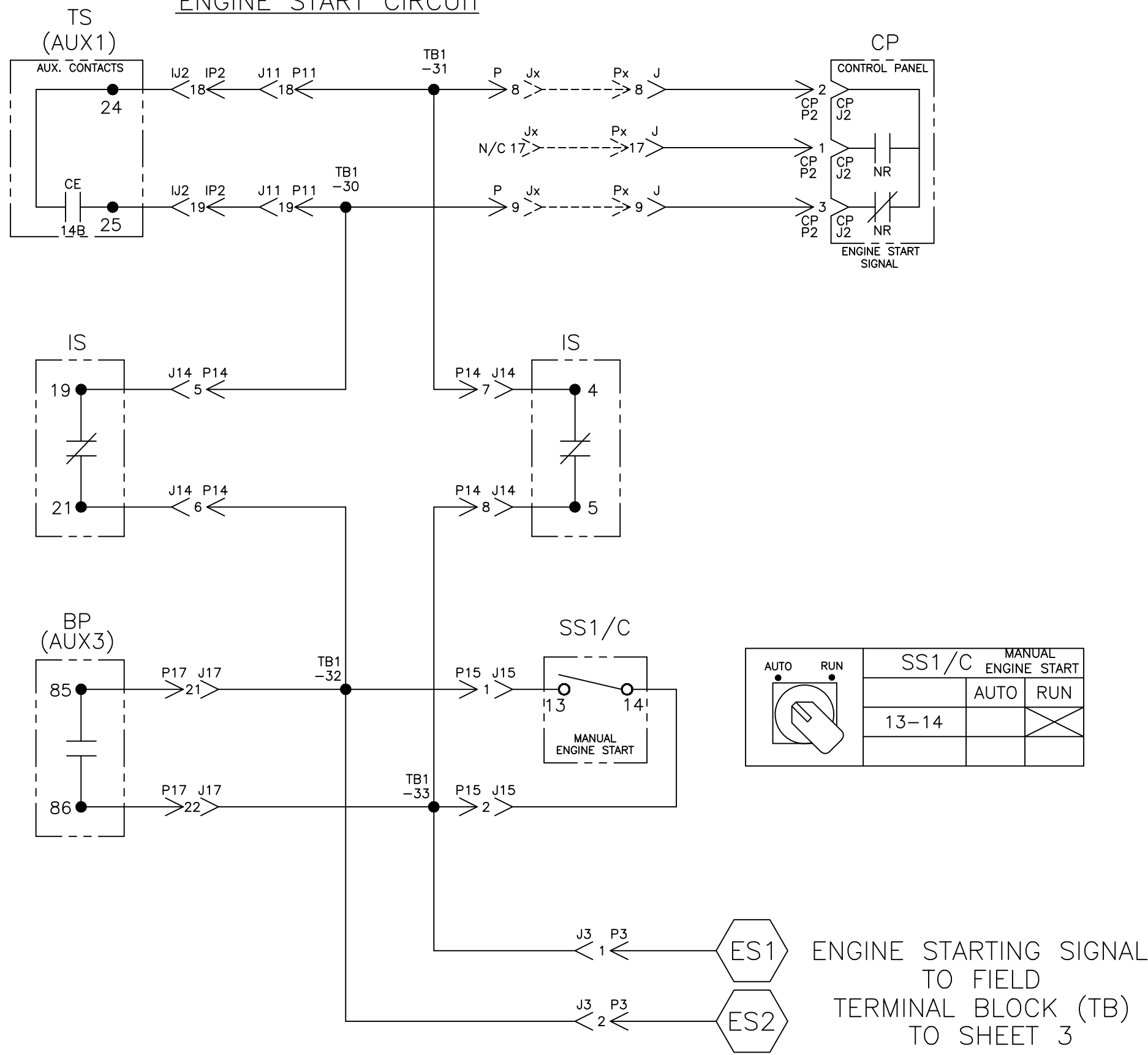
LOAD TERMINAL CIRCUITS



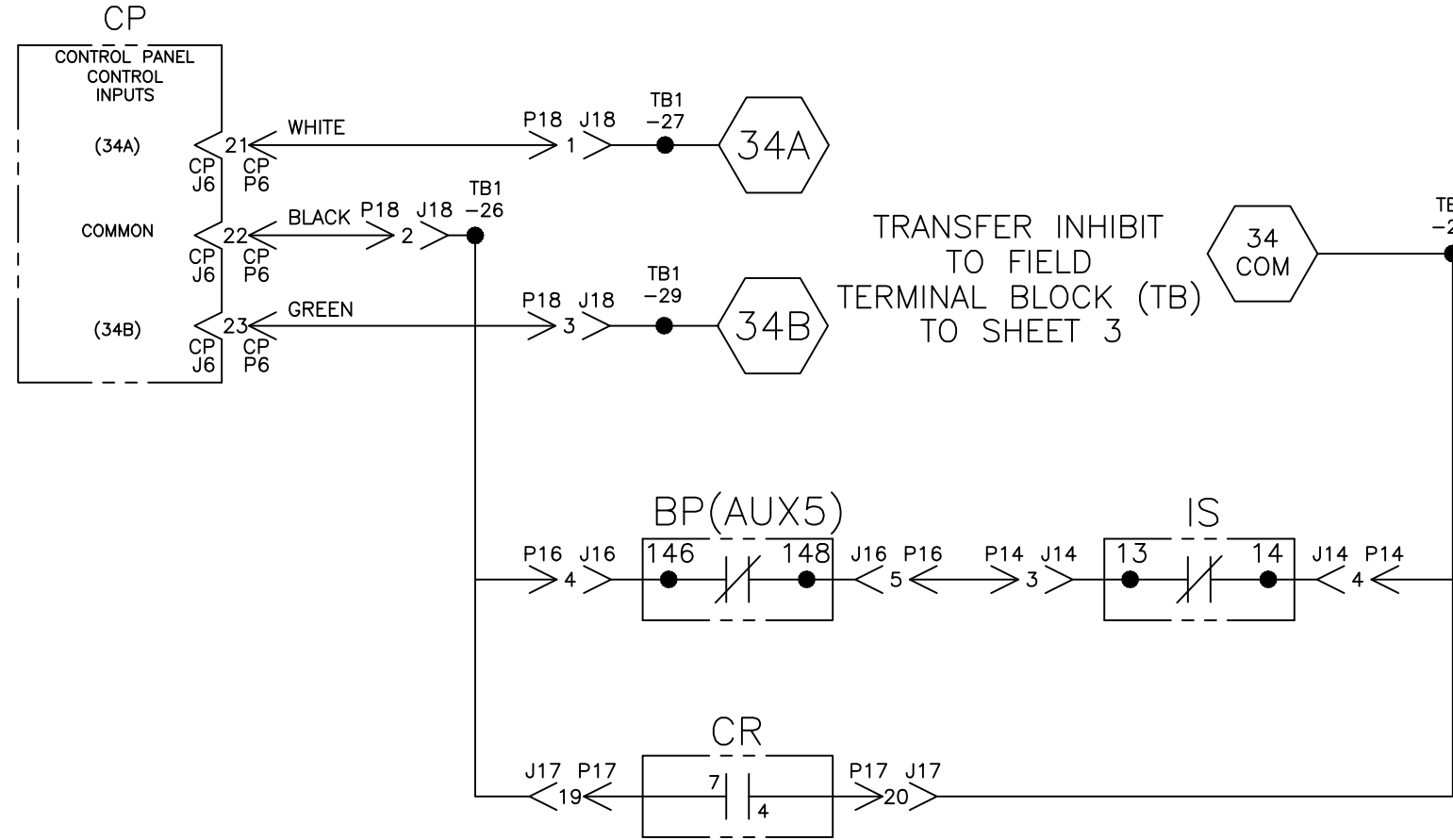
CONTROL SIGNALS & INDICATION



ENGINE START CIRCUIT



CONTROL PANEL/BYPASS-ISOLATION INTERLOCKS



PROJECT NAME:		REV. TO SHEET	BY	APP.	DATE
WIRING		DIAGRAM			
7000 SERIES (S7ACTB) 3PH 800-2000 AMPS					
"S" 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-1-055		ASSEM. REF. NO.
CHECKED	MM	02/10/11	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		
PROJECT APPROVAL	BK	02/10/11			
FINAL APPROVAL					
COMPUTER GENERATED DRAWING		SCALE	None	SIZE	DS
DWG. NO. 909870		REV. D		SHEET 5 OF 10	
D		290885		RVP	
C		259698		AJ	
B		236981		TR	
A		231454		TRD	
		230699		TRD	

D

C

B

A

D

C

B

A

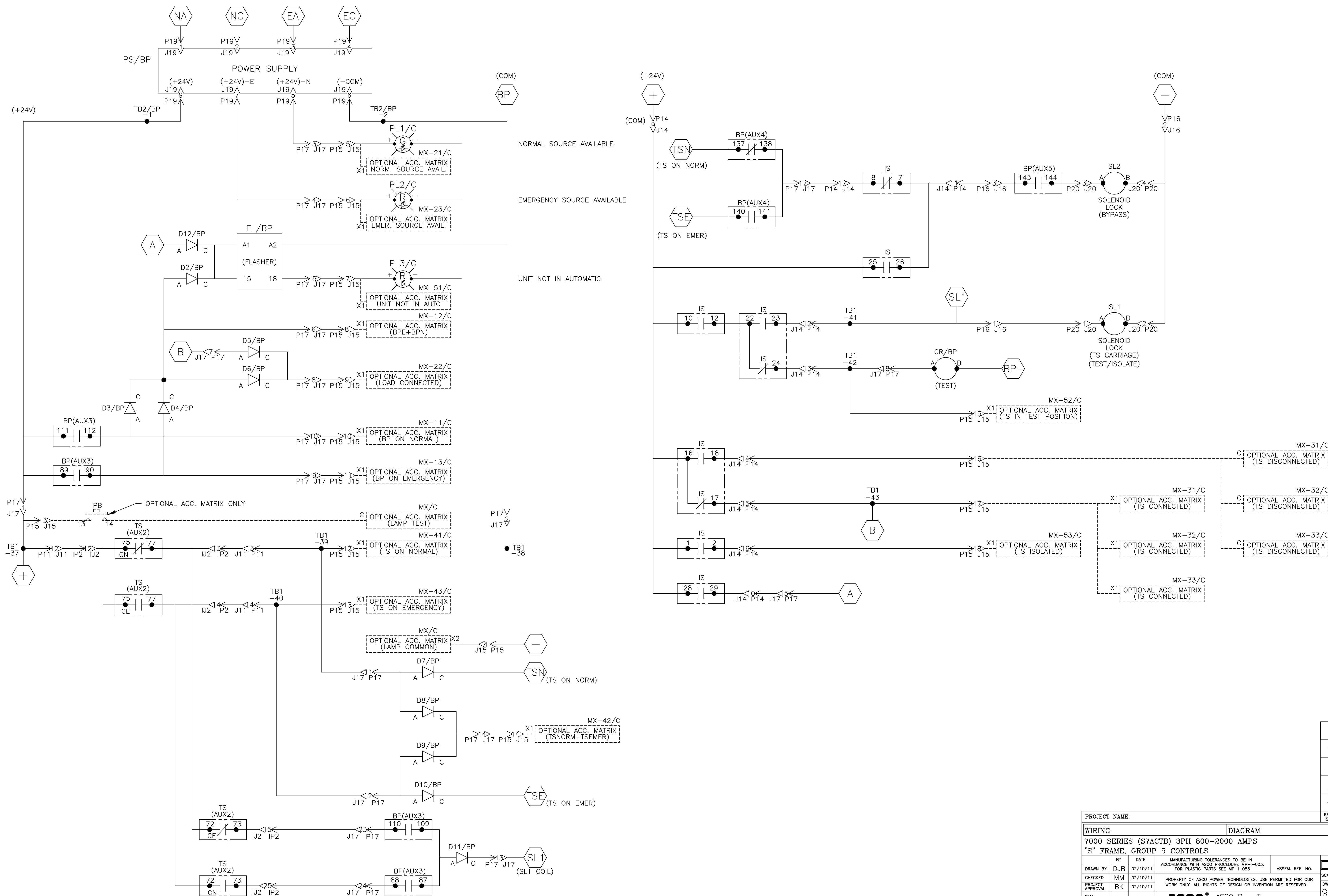
ADDITIONAL CIRCUITS



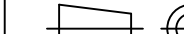
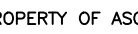
D	290885	RVP	HSL	08/17/21
SEE ECN				
C	259698	AJ	MM	03/01/18
SEE ECN				
B	236981	TR	BK	05/07/12
SEE ECN				
A	231454	TRD	MM	04/05/11
SEE ECN				
—	230699	TRD	MM	02/10/11
ISSUE				

PROJECT NAME:				REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING				DIAGRAM				
7000 SERIES (S7ACTB) 3PH 800–2000 AMPS								
"S" FRAME, GROUP 5 CONTROLS				THIRD ANGLE PROJECTION				
DRAWN BY	DJB	02/10/11	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I–003. FOR PLASTIC PARTS SEE MP-I–055		ASSEM. REF. NO.		COMPUTER GENERATED DRAWING	
CHECKED	MM	02/10/11	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE		NONE	SIZE
PROJECT APPROVAL	BK	02/10/11			DWG. NO.		909870	
FINAL APPROVAL					DRAWING REV.		D	ECN NO. 290885
							SHEET	6 OF 10

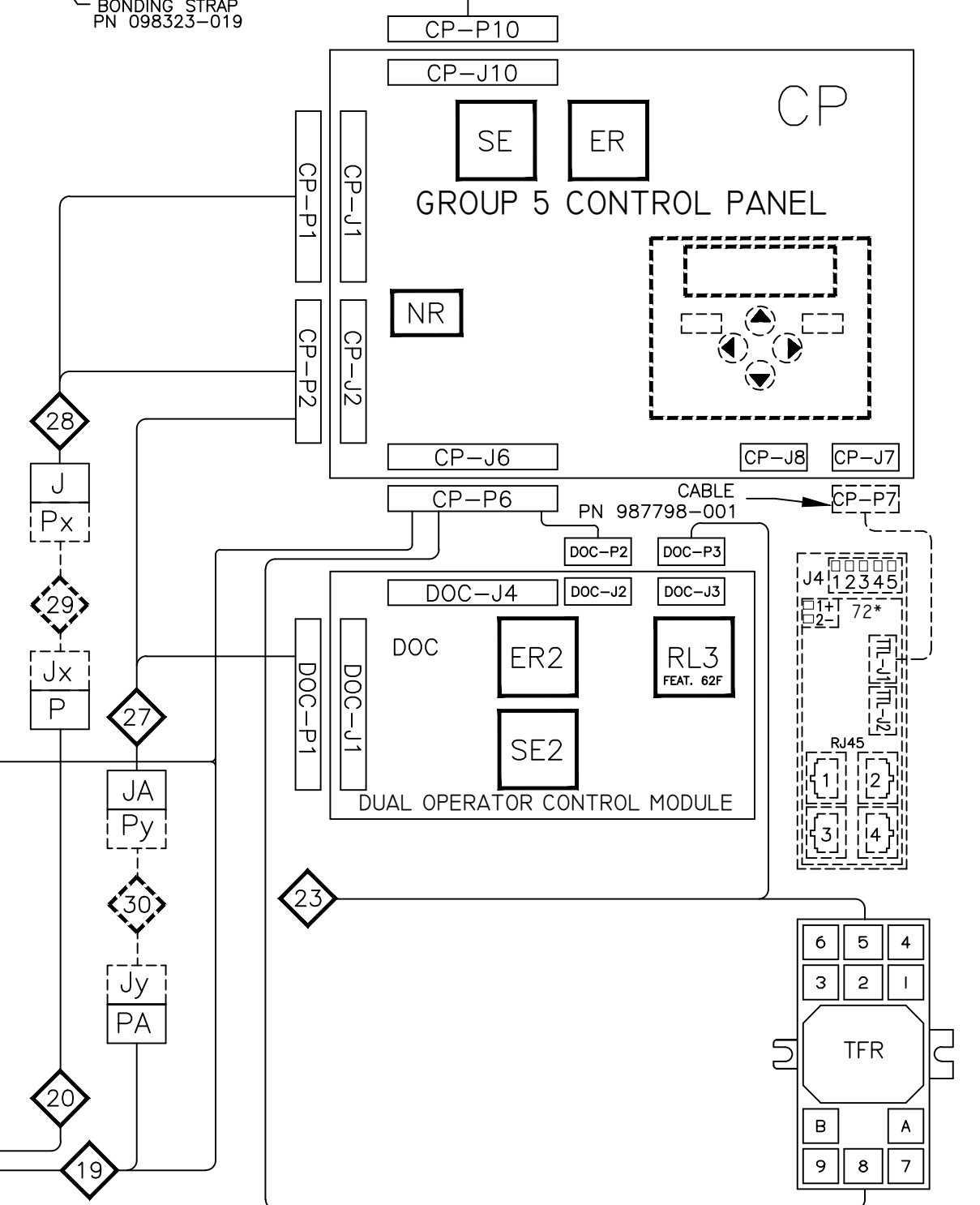
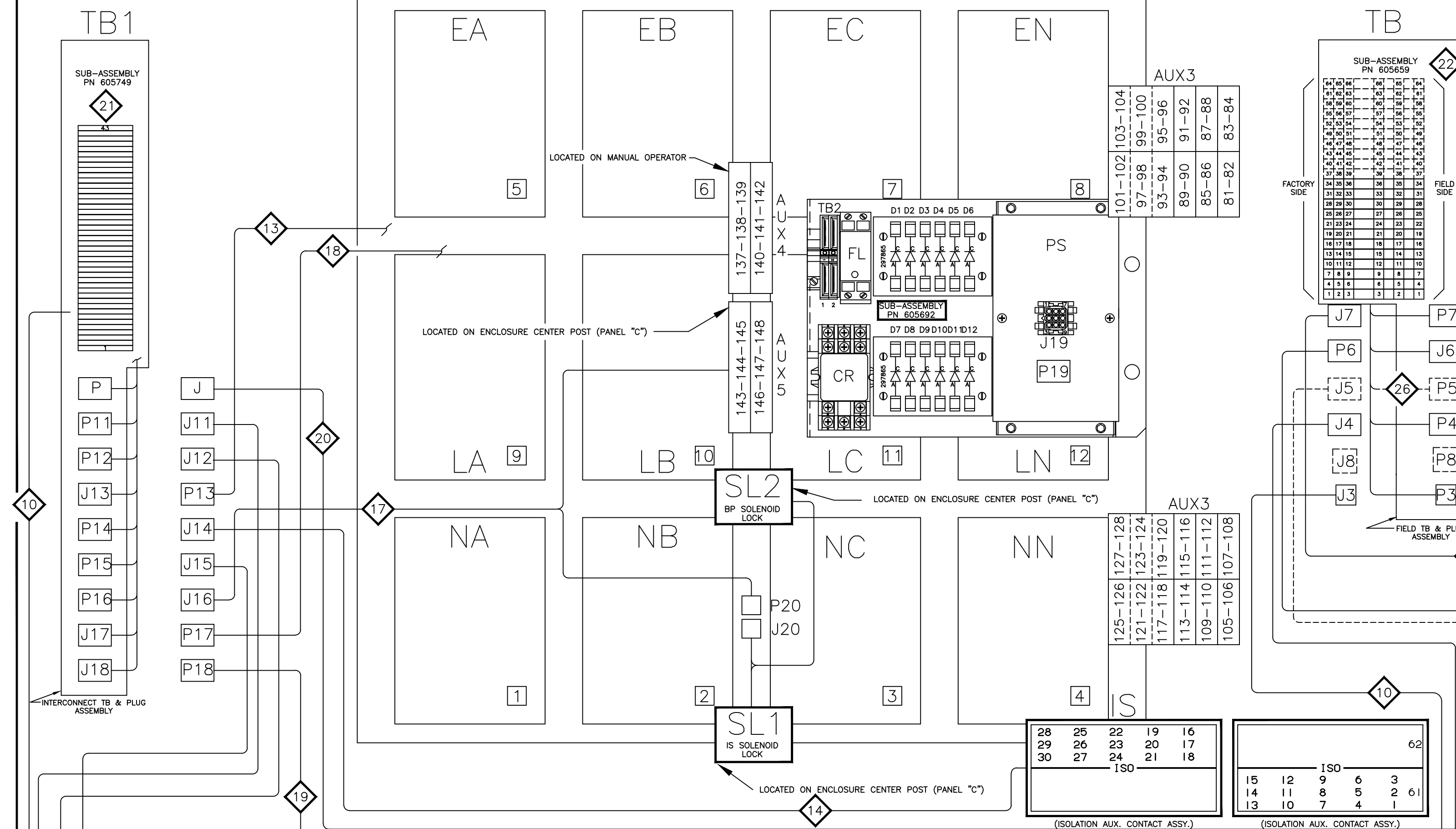
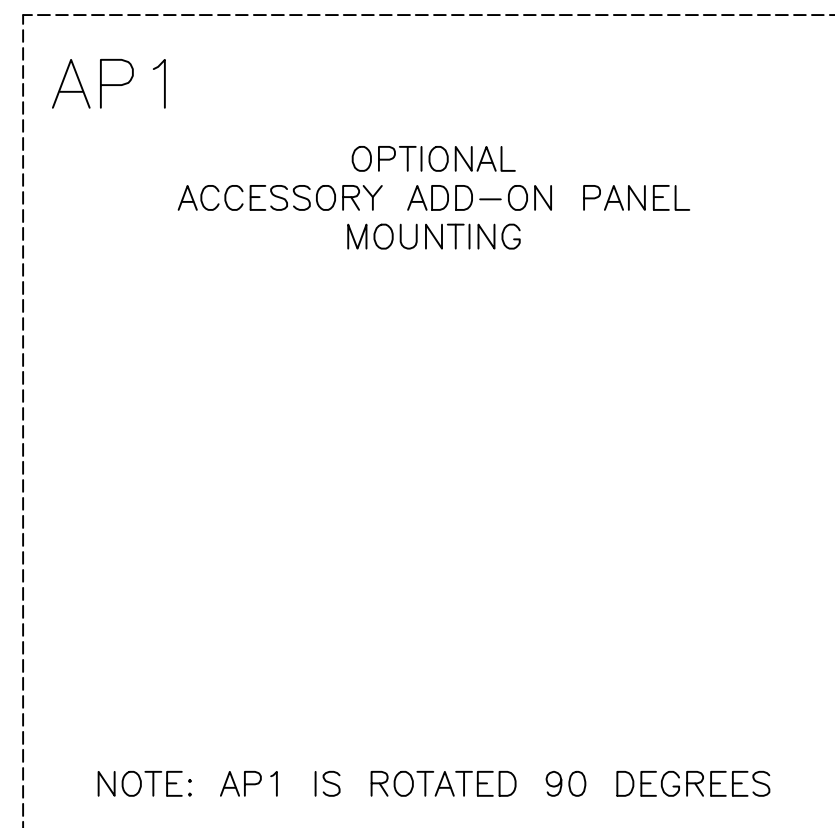
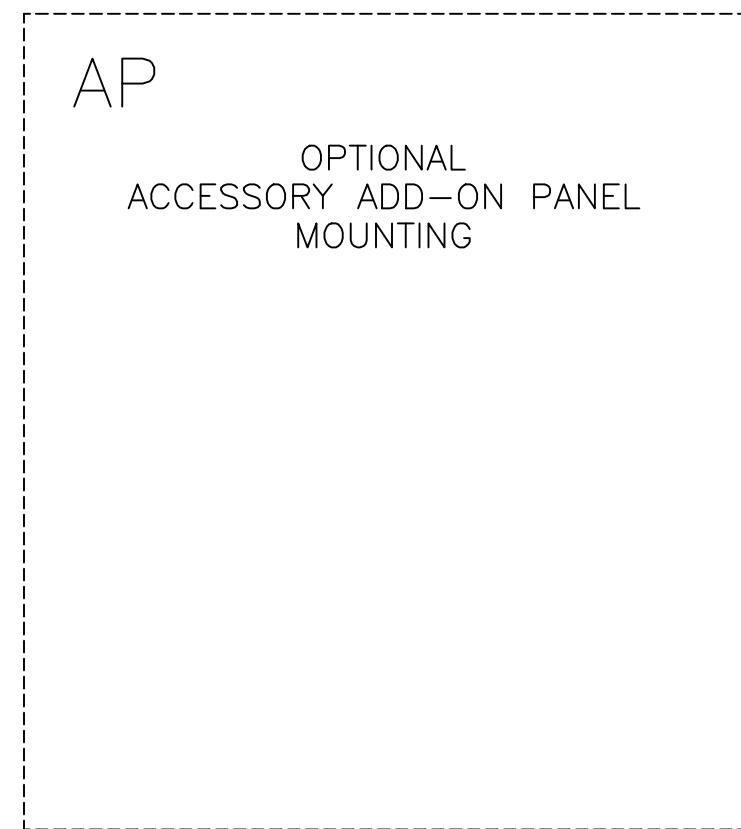
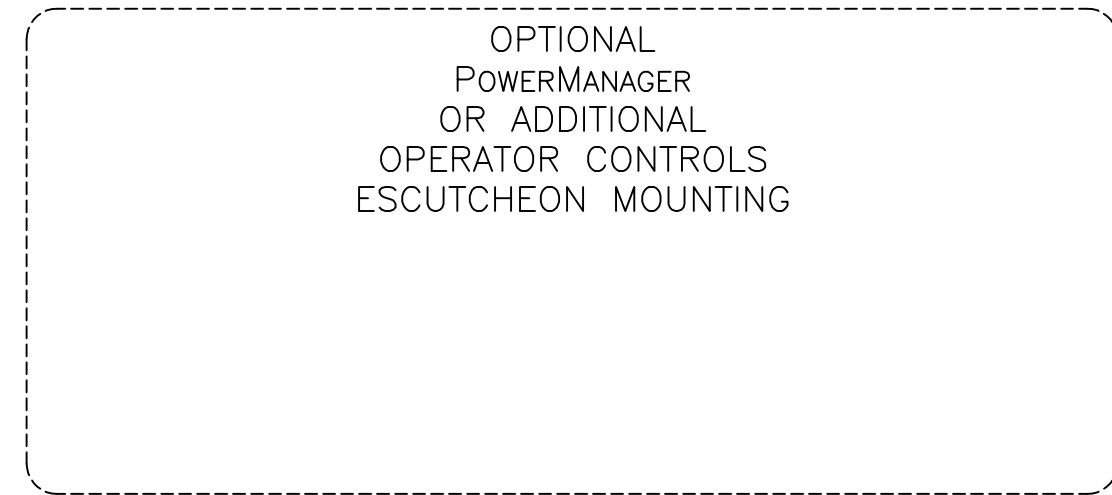
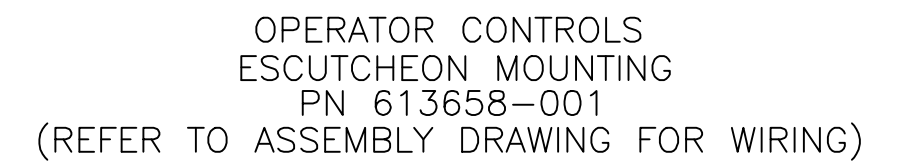
BYPASS / ISOLATION INTERLOCKING & INDICATION



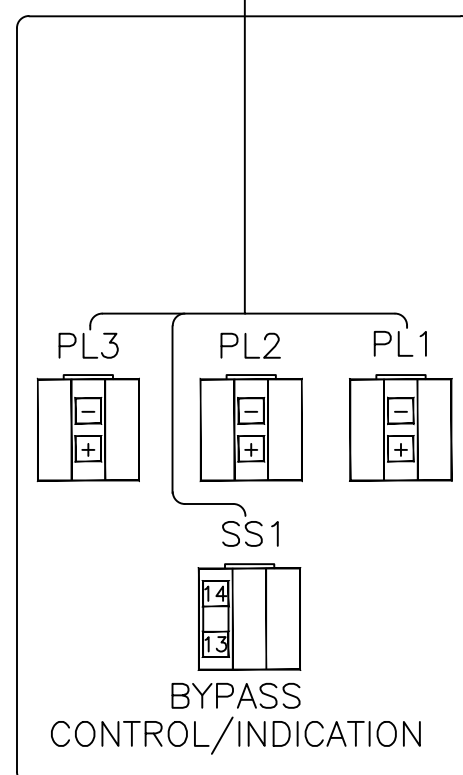
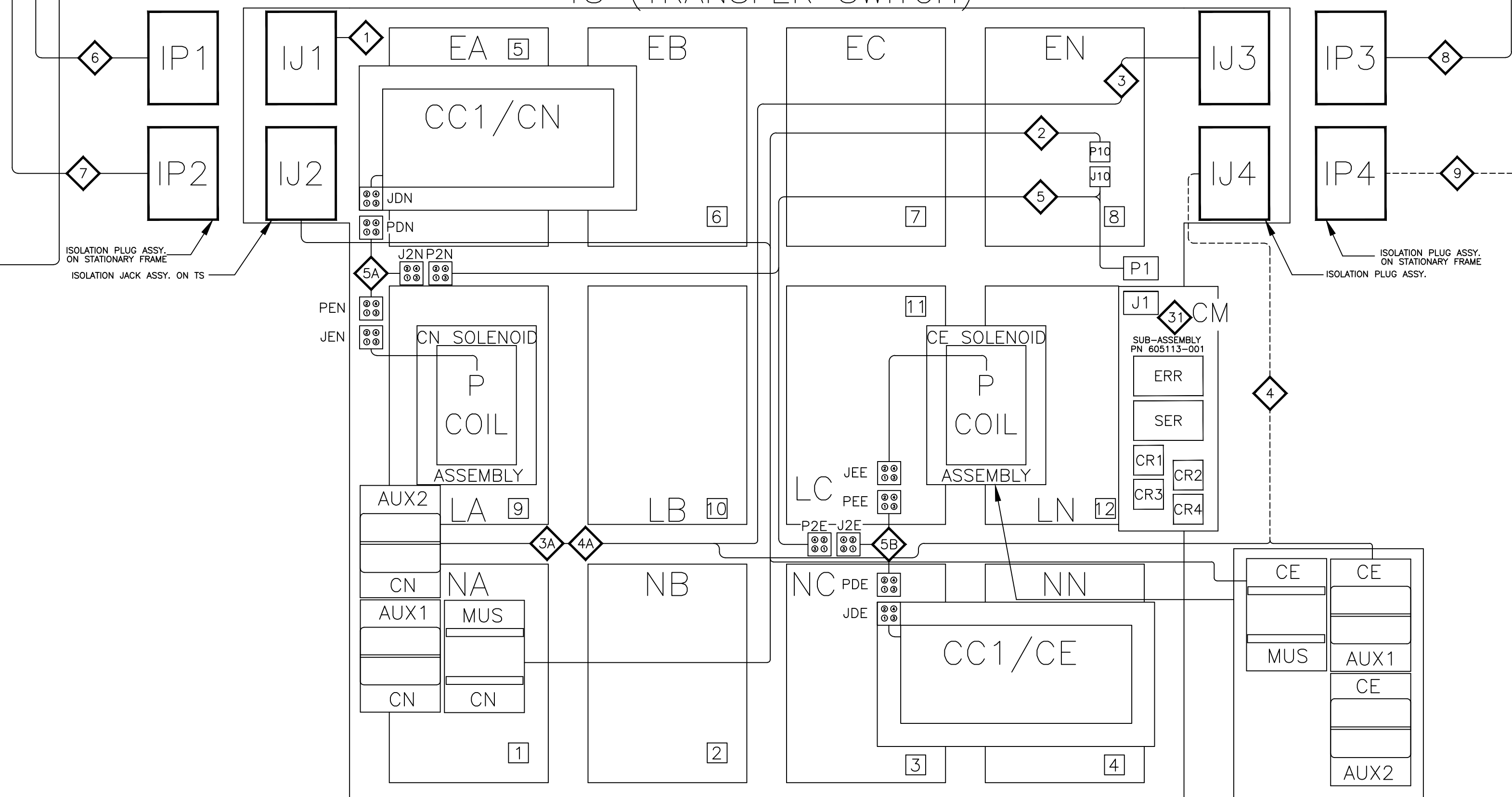
D	290885	RVP	HSL	08/17/21
	SEE ECN			
C	259698	AJ	MM	03/01/16
	SEE ECN			
B	236981	TR	BK	05/07/12
	SEE ECN			
A	231454	TRD	MM	04/05/11
	SEE ECN			
—	230699	TRD	MM	02/10/11
	ISSUE			

PROJECT NAME:					REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING					DIAGRAM				
7000 SERIES (S7ACTB) 3PH 800-2000 AMPS									
"S" FRAME, GROUP 5 CONTROLS					THIRD ANGLE PROJECTION				
DRAWN BY		DATE		MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055		ASSEM. REF. NO.			
CHECKED		DATE		PROPERTY OF ASCO POWER TECHNOLOGIES, USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.					
PROJECT APPROVAL		DATE							
FINAL APPROVAL				 ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.				COMPUTER GENERATED DRAWING	
								SCALE NAME SIZE DS	
				DWG. NO.				909870	
				DRAWING REV.		ECN 290885		SHEET 7 OF 10	

PHYSICAL DIAGRAM



TS (TRANSFER SWITCH)

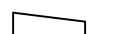


OPERATOR CONTROLS	
ID	DESCRIPTION
PL1	NORMAL SOURCE AVAILABLE
PL2	EMERGENCY SOURCE AVAILABLE
PL3	CONTROLS NOT IN AUTO
SS1	ENGINE START

NOTES:

- 1) ADDITIONAL ACCESSORY ADD-ON PANELS MAY BE MOUNTED IN UPPER COMPARTMENT OF ENCLOSED TYPE UNITS. THESE ARE SHOWN ON THE NEXT SHEET IF APPLICABLE.
- 2) PHYSICAL DIAGRAM MAY VARY BASED ON THE ENCLOSURE USED.

D	290885	RVP	HSL	08/17/21
	SEE ECN			
C	259698	AJ	MM	03/01/16
	SEE ECN			
B	236981	TR	BK	05/07/12
	SEE ECN			
A	231454	TRD	MM	04/05/11
	SEE ECN			
—	230699	TRD	MM	02/10/11
	ISSUE			

PROJECT NAME:				REV. TO SHEET		ECN NO.	BY	APP.	DATE
WIRING				DIAGRAM		 THIRD ANGLE PROJECTION			
7000 SERIES (S7ACTB) 3PH 800-2000 AMPS									
"S" FRAME, GROUP 5 CONTROLS									
DRAWN BY	DJB	DATE	02/10/11		MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055		ASSEM. REF. NO.		
CHECKED	MM	DATE	02/10/11		PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.				
FINAL APPROVAL	BK	DATE	02/10/11		 ASCO ® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.				
					COMPUTER GENERATED DRAWING SCALE NONE SIZE DS DWG. NO. 909870 DRAWING NO. D ECN 290885 SHEET 8 OF 10				

WIRE RUN LISTING

1 HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MOFFED				
WIRE No.		HARNESS 605674-001 (J1) TS			CLR	AWG
1	J1-1, J1-2					16
2	J1-3, J1-4					
3	J1-5, J1-6					
4	J1-7, J1-8					
5	J1-9, J1-10					
6	J1-11, J1-12					
7	J1-13, J1-14					
8	J1-15, J1-16					
9	J1-17, J1-18					
10	J1-19, J1-20					
11	J1-21, J1-22					
12	J1-23, J1-24					

2		← HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	☐
WIRE No.	HARNESS 619510-022 (J2,P10) TS	CLR	AWG		
1	J2-1,P10-1		16		
21	J2-2,P10-2				
4	J2-3,P10-3				
23	J2-4,P10-4				
24	J2-5,P10-5				
25	J2-6,P10-6				
26	J2-7,P10-7				
27	J2-8,P10-8				
28	J2-9,CE(AUX1)-21				
28	CE(AUX1)-21,CN(AUX1)-21				
28	CN(AUX1)-21,CN(AUX1)-48				
30	J2-10,CN(AUX1)-49				
29	J2-11,CN(AUX1)-22				
31	J2-12,CE(AUX2)-75				
31	CE(AUX2)-75,CN(AUX2)-75				
32	J2-13,CN(AUX2)-77				
32	CN(AUX2)-77,CE(AUX2)-72				
33	J2-14,CE(AUX2)-77				
33	CE(AUX2)-77,CN(AUX2)-72				
34	CN(AUX2)-78,CE(AUX2)-78				
506	J2-15,CE(AUX2)-73				
35	J2-16,CN(AUX2)-80				
36	J2-17,CE(AUX2)-80				
37	J2-18,CE(AUX1)-24				
38	J2-19,CE(AUX1)-25				
39	J2-20,P10-9				
40	J2-21,P10-10				
41	J2-22,P10-11				
42	J2-23,CE(AUX1)-22				
43	J2-24,CE(AUX1)-49				
507	J2-25,CN(AUX2)-73				
REMOVE WIRES					
ADD WIRES					
520	P10-12				
521	P10-13				
522	P10-14				
523	P10-15				
524	P10-16				
525	P10-17				
526	P10-18				
527	P10-19				
528	P10-20				
529	P10-21				
530	P10-22				
531	P10-23				
532	P10-24				

[illegible]

 HARNESS LOCATOR	BOX CHECKED IF HARNESS IS WORN? ☐	
	WIRE No.	CLR
HARNESS 609051-001-A TS STD. AUX. CONTACTS		AWG
50 CE(AUX1)-27, CN(AUX1)-27		16
53 CE(AUX1)-30, CN(AUX1)-30		
56 CE(AUX1)-33, CN(AUX1)-33		
59 CE(AUX1)-36, CN(AUX1)-36		
62 CE(AUX1)-39, CN(AUX1)-39		
65 CE(AUX1)-42, CN(AUX1)-42		
68 CE(AUX1)-45, CN(AUX1)-45		
28 CE(AUX1)-48, CN(AUX1)-48		

5	HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MOUNTED	
WIRE No.	HARNESS 619510-023 (P1,P2N,P2E,J10) TS CONTROL	CLR	AWG	
310	P1-1,P2E-4		16	
311	P1-2,P2E-1			
312	P1-3,P2E-2			
313	P1-4,P2E-3			
27	P1-5,J10-8			
117	P1-6,CN(MUS)-13			
39	P1-7,J10-9			
317	P1-8,CE(MUS)-13			
110	P1-9,P2N-4			
111	P1-10,P2N-1			
112	P1-11,P2N-2			
113	P1-12,P2N-3			
23	P1-13,J10-4			
21	P1-14,J10-2			
114	P1-15,CE(MUS)-18			
114	CE(MUS)-18,CN(MUS)-14			
14	CN(MUS)-14,CN(MUS)-16			
20	P1-17,J10-1			
115	P1-18,CE(MUS)-14			
115	CE(MUS)-14,CE(MUS)-16			
115	CE(MUS)-16,CN(MUS)-18			
22	P1-19,J10-3			
25	P1-20,J10-6			
314	P1-21,P1-24			
315	P1-22,P1-23			
26	J10-7,CN(MUS)-15			
24	J10-5,CN(MUS)-17			
41	J10-11,CE(MUS)-15			
40	J10-10,CE(MUS)-17			
REMOVE WIRES				
ADD WIRES				
520	J10-12			
521	J10-13			
522	J10-14			
523	J10-15			
524	J10-16			
525	J10-17			
526	J10-18			
527	J10-19			
528	J10-20			
529	J10-21			
530	J10-22			
531	J10-23			
532	J10-24			

5A HARNESS LOCATOR BOX CHECKED IF HARNESS IS MODIFIED ☐					
WIRE No.	HARNESS 619510-070 (J2E,PDN,PEN) CM,CC,COIL			CLR	AWG
155	PDN-1,PEN-1				16
110	PDN-2,J2N-4				
111	PDN-3,J2N-1				
154	PDN-4,PEN-4				

5B ← HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED ☐	
WIRE No.	HARNESS 619510-070 (J2E,PDE,PEE) CM,CC,COIL	CLR	AWG
157	PDE-1,PEE-1		16
310	PDE-2,J2E-4		
311	PDE-3,J2E-1		
156	PDE-4,PEE-4		

4	HARNES LOCATOR			BOX CHECKED IF HARNES IS MODIFIED	☒
WIRE No.	HARNES 605674-004-A (J4) TS OPT. AUX.	CON-	CLR	AWG	
80	J4-1,CE(AUX2)-51				16
81	J4-2,CE(AUX2)-52				
82	J4-3,CN(AUX2)-52				
83	J4-4,CE(AUX2)-54				
84	J4-5,CE(AUX2)-55				
85	J4-6,CN(AUX2)-55				
86	J4-7,CE(AUX2)-57				
87	J4-8,CE(AUX2)-58				
88	J4-9,CN(AUX2)-58				
89	J4-10,CE(AUX2)-60				
90	J4-11,CE(AUX2)-61				
91	J4-12,CN(AUX2)-61				
92	J4-13,CE(AUX2)-63				
93	J4-14,CE(AUX2)-64				
94	J4-15,CN(AUX2)-64				
95	J4-16,CE(AUX2)-66				
96	J4-17,CN(AUX2)-68				
97	J4-18,CE(AUX2)-68				
98	J4-19,CE(AUX2)-69				
99	J4-20,CN(AUX2)-71				
100	J4-21,CE(AUX2)-71				
101	J4-22,CE(AUX2)-72				
102	J4-23,CN(AUX2)-74				
103	J4-24,CE(AUX2)-74				

	REMOVE WIRES	
101	IJ4-22,CE(AUX2)-72	
102	IJ4-23,CN(AUX2)-74	
103	IJ4-24,CE(AUX2)-74	

4A	← HARNESS LOCATOR		BOX CHECKED F. HARNESS IS MODIFIED	☒
WIRE	HARNESS 609051-002-A		CLR	AWG
80	TS OPT. AUX. CONTACTS			
80	CE(AUX2) - 51.CN(AUX2) - 51			16
83	CE(AUX2) - 54.CN(AUX2) - 54			
86	CE(AUX2) - 57.CN(AUX2) - 57			
89	CE(AUX2) - 60.CN(AUX2) - 60			
92	CE(AUX2) - 63.CN(AUX2) - 63			
95	CE(AUX2) - 66.CN(AUX2) - 66			
98	CE(AUX2) - 69.CN(AUX2) - 69			
101	CE(AUX2) - 72.CN(AUX2) - 72			
REMOVE WIRES				
101	CE(AUX2) - 72.CN(AUX2) - 72			

6	— HARNESS LOCATOR	BOX CHECKED IF HARNESS IS MOUNTED	☐
WIRE No.	HARNESS 605674—006 (PI1,J12) STATIONARY FRAME	CLR	AWG
1	IP1-1,J12-1		16
2	IP1-2,J12-2		
3	IP1-3,J12-3		
4	IP1-4,J12-4		
3	IP1-5,J12-5		
3	IP1-6,J12-6		
4	IP1-7,J12-7		
4	IP1-8,J12-8		
5	IP1-9,J12-9		
5	IP1-10,J12-10		
6	IP1-11,J12-11		
6	IP1-12,J12-12		
7	IP1-13,J12-13		
7	IP1-14,J12-14		
8	IP1-15,J12-15		
8	IP1-16,J12-16		
9	IP1-17,J12-17		
9	IP1-18,J12-18		
10	IP1-19,J12-19		
10	IP1-20,J12-20		
11	IP1-21,J12-21		
11	IP1-22,J12-22		
12	IP1-23,J12-23		
12	IP1-24,J12-24		

 — HARNESS LOCATOR		☐ BOX CHECKED ☒ F. HARNESS IS MOORFED	
WIRE No.	HARNESS 605674—006 (IP2,J11) STATIONARY FRAME	CLR	AWG
1	IP2-1,J11-1		16
21	IP2-2,J11-2		
4	IP2-3,J11-3		
23	IP2-4,J11-4		
24	IP2-5,J11-5		
25	IP2-6,J11-6		
26	IP2-7,J11-7		
27	IP2-8,J11-8		
28	IP2-9,J11-9		
30	IP2-10,J11-10		
29	IP2-11,J11-11		
31	IP2-12,J11-12		
32	IP2-13,J11-13		
33	IP2-14,J11-14		
42	IP2-15,J11-15		
35	IP2-16,J11-16		
36	IP2-17,J11-17		
37	IP2-18,J11-18		
38	IP2-19,J11-19		
39	IP2-20,J11-20		
40	IP2-21,J11-21		
41	IP2-22,J11-22		
42	IP2-23,J11-23		
43	IP2-24,J11-24		
	REMOVE WIRES		
42	IP2-15,J11-15		
	ADD WIRES		
506	IP2-15,J17-23		
507	IP2-25,J17-24		

8	— HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	☐
WIRE No.	HARNESS 605674—006 (IP3,J4) STATIONARY FRAME		CLR	AWG
50	IP3—1,J4—1			16
51	IP3—2,J4—2			
52	IP3—3,J4—3			
53	IP3—4,J4—4			
54	IP3—5,J4—5			
55	IP3—6,J4—6			
56	IP3—7,J4—7			
57	IP3—8,J4—8			
58	IP3—9,J4—9			
59	IP3—10,J4—10			
60	IP3—11,J4—11			
61	IP3—12,J4—12			
62	IP3—13,J4—13			
63	IP3—14,J4—14			
64	IP3—15,J4—15			
65	IP3—16,J4—16			
66	IP3—17,J4—17			
67	IP3—18,J4—18			
68	IP3—19,J4—19			
69	IP3—20,J4—20			
70	IP3—21,J4—21			
71	IP3—22,J4—22			
72	IP3—23,J4—23			
73	IP3—24,J4—24			

9	◆ HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MOUNTED	☐
WIRE No.	HARNESS 605674-006 (IP4,J5) STATIONARY FRAME(OPT.)	CLR	AWG	
80	IP4-1,J5-1		16	
81	IP4-2,J5-2			
82	IP4-3,J5-3			
83	IP4-4,J5-4			
84	IP4-5,J5-5			
85	IP4-6,J5-6			
86	IP4-7,J5-7			
87	IP4-8,J5-8			
88	IP4-9,J5-9			
89	IP4-10,J5-10			
90	IP4-11,J5-11			
91	IP4-12,J5-12			
92	IP4-13,J5-13			
93	IP4-14,J5-14			
94	IP4-15,J5-15			
95	IP4-16,J5-16			
96	IP4-17,J5-17			
97	IP4-18,J5-18			
98	IP4-19,J5-19			
99	IP4-20,J5-20			
100	IP4-21,J5-21			
101	IP4-22,J5-22			
102	IP4-23,J5-23			
103	IP4-24,J5-24			

 HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED ☐	
WIRE	HARNESS 605674-007 (J3,IB1) ENGINE START	CLR	AWG
120	J3-1,IB1-33		16
121	J3-2,IB1-32		
ADD WIRES			
122	J3-3		
123	J3-4		

[illegible]

ADD WIRES		
26	P13-13	
140	P13-14	
27	P13-15	
210	P13-16	
211	P13-17	
212	P13-18	
213	P13-19	
214	P13-20	
215	P13-21	
216	P13-22	
217	P13-23	
218	P13-24	

4	HARNESS LOCATOR		BOX CHECKED IF HARNESS IS WOFFED	☒
WIRE No.	HARNESS 605674-011 (J14,IS) ISOLATION AUX. CONTACTS		CLR	AWG
140	J14-1,IS-61			16
27	J14-2,IS-62			
150	J14-3,IS-13			
151	J14-4,IS-14			
38	J14-5,IS-19			
121	J14-6,IS-21			
37	J14-7,IS-4			
120	J14-8,IS-5			
31	J14-9,IS-10			
152	J14-10,IS-29			
153	J14-11,IS-26			
154	J14-12,IS-23			
155	J14-13,IS-24			
156	J14-14,IS-18			
157	J14-15,IS-17			
158	J14-16,IS-2			
190	J14-17,IS-8			
31	IS-10,IS-1			
31	IS-1,IS-16			
31	IS-16,IS-25			
31	IS-25,IS-28			
159	IS-12,IS-22			
153	IS-7,IS-26			
REMOVE WIRES				
140	J14-1,IS-61			
27	J14-2,IS-62			
ADD WIRES				
140	J14-1			
27	J14-2			
161	J14-18			
162	J14-19			
163	J14-20			
164	J14-21			
165	J14-22			
166	J14-23			
167	J14-24			

[illegible][illegible]

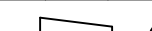
 — HARNESS LOCATOR	BOX CHECKED IF HARNESS IS MODIFIED	
WIRE No.	HARNESS 605674-014 (J16,SL1,SL2,BP(AUX5)) BP/IS INTERLOCKS	CLR AWG
154	J16-1,P20-1	16
170	J16-2,P20-2	
153	J16-3,BP(AUX5)-143	
191	J16-4,BP(AUX5)-146	
150	J16-5,BP(AUX5)-148	
170	P20-2,P20-4	
192	BP(AUX5)-144,P20-3	
	ADD WIRES	
154	J20-1,SL1-A	
170	J20-2,SL1-B	
192	J20-3,SL2-A	
170	J20-4,SL2-B	
481	J16-6	
482	J16-7	
483	J16-8	
484	J16-9	
485	J16-10	
486	J16-11	
487	J16-12	
488	J16-13	
489	J16-14	
490	J16-15	
491	J16-16	
492	J16-17	
493	J16-18	
494	J16-19	
495	J16-20	
496	J16-21	
497	J16-22	
498	J16-23	
499	J16-24	

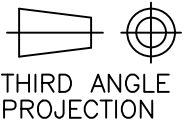
18	← HARNESS LOCATOR	BOY CHECKED IF HARNESS IS MODIFIED	☒
WIRE No.	HARNESS 605674-015 (P17,BP) BP LOW VOLTAGE	CLR	AWG
31	P17-1,TB2-1		16
170	P17-2,TB2-2		
171	P17-3,P19-5		
172	P17-4,P19-7		
173	P17-5,FL-H		
174	P17-6,D2-A		
157	P17-7,D5-A		
175	P17-8,D6-C		
177	P17-9,D4-A		
176	P17-10,D3-A		
33	P17-11,D7-A		
32	P17-12,D9-A		
154	P17-13,D11-C		
178	P17-14,D8-C		
152	P17-15,D12-A		
190	P17-17,BP(AUX4)-138		
155	P17-18,CR-A		
191	P17-19,CR-7		
151	P17-20,CR-4		
121	P17-21,BP(AUX3)-85		
120	P17-22,BP(AUX3)-86		
31	TB2-1,P19-9		
31	TB2-1,BP(AUX3)-111		
31	BP(AUX3)-111,BP(AUX3)-89		
170	TB2-2,P19-6		
170	TB2-2,CR-B		
170	CR-B,FL-C		
174	D2-A,D6-A		
174	D6-A,D3-C		
174	D3-C,D4-C		
175	D6-C,D5-C		
177	D4-A,BP(AUX3)-90		
176	D3-A,BP(AUX3)-112		
33	D7-A,D8-A		
33	D8-A,BP(AUX3)-110		
32	D9-A,D10-A		
32	D10-A,BP(AUX3)-88		
178	D8-C,D9-C		
153	D10-C,BP(AUX3)-140		
190	BP(AUX4)-138,BP(AUX4)-141		
200	D2-C,D12-C		
200	D12-C,FL-D		
200	D2-C,FL-E		
201	D11-A,BP(AUX3)-109		
201	D11-A,BP(AUX3)-87		
202	D7-C,BP(AUX4)-137		
	REMOVE WIRES		
33	D8-A,BP(AUX3)-110		
32	D10-A,BP(AUX3)-88		
173	P17-5,FL-H		
170	CR-B,FL-C		
200	D12-C,FL-D		
200	D2-C,FL-E		
	ADD WIRES		
470	P17-16		
507	P17-24,BP(AUX3)-88		
506	P17-23,BP(AUX3)-110		
173	P17-5,FL-18		
170	CR-B,FL-A2		
200	D12-C,FL-A1		
200	D2-C,FL-15		

REMOVE WIRES		
33	D8-A,BP(AUX3)-110	
32	D10-A,BP(AUX3)-88	
173	P17-5,FL-H	
170	CR-B,FL-C	
200	D12-C,FL-D	
200	D2-C,FL-E	
ADD WIRES		
470	P17-16	
507	P17-24,BP(AUX3)-88	
506	P17-23,BP(AUX3)-110	
173	P17-5,FL-18	
170	CR-B,FL-A2	
200	D12-C,FL-A1	
200	D2-C,FL-15	

9		HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED		☒	
WIRE No.	HARNESS 605674-016 (P6,P18) INTERNAL CONTROL & FIELD INPUTS				CLR	AWG	
210	P18-1,CP-28					16	
191	P18-2,CP-29						
211	P18-3,CP-30						
210	P18-4,P6-1						
151	P18-5,P6-2						
211	P18-6,P6-3						
243	P6-4,CP-25						
244	P6-5,CP-26						
REMOVE WIRES							
210	P18-1,CP-28						
191	P18-2,CP-29						
211	P18-3,CP-30						
243	P6-4,CP-25						
244	P6-5,CP-26						
ADD WIRES							
210	P18-1,CP-P6-21				WHT	22	
191	P18-2,CP-P6-22				BLK	(4 CON)	
211	P18-3,CP-P6-23				GRN		
216	P18-7					16	
216	P18-8						
217	P18-9,PA-2						
218	P18-10,PA-3						
39	P18-11,PA-5						
40	P18-12,PA-15						
41	P18-13,PA-16						
42	P18-14,PA-13						
43	P18-15,PA-14						
224	P18-16						
225	P18-17						
226	P18-18						
227	P18-19						
228	P18-20						
229	P18-21						
230	P18-22						
231	P18-23						
232	P18-24						
243	P6-4,CP-P6-9				BLK	22	
244	P6-5,CP-P6-10				RED	(2 CON)	
245	P6-6					16	
246	P6-7						
247	P6-8						
248	P6-9						
249	P6-10						
250	P6-11						
251	P6-12						
252	P6-13						
253	P6-14						
254	P6-15						
255	P6-16						
256	P6-17						
257	P6-18						
258	P6-19						
259	P6-20						
260	P6-21						
261	P6-22						
262	P6-23						
263	P6-24						
342	PA-1						
600	PA-4						
601	PA-6						
602	PA-7						
603	PA-8						
604	PA-9						
605	PA-10						
606	PA-11						
607	PA-12						
36	PA-17,TB1-36						
35	PA-18,TB1-35						
608	PA-19						
609	PA-20						
610	PA-21						
611	PA-22						
612	PA-23						
613	PA-24						
333	CP-P6-40,IFR-A				BLK	22	
334	CP-P6-41,IFR-B				RED	(2 CON)	
337	CP-P6-42,DOC-P2-1				BLK		
338	CP-P6-44,DOC-P2-2				RED	22	
339	CP-P6-43,DOC-P2-3				WHT	(4 CON)	
451	CP-P6-24,DOC-P2-6				GRN		

333	CP-P6-40,TFR-A	BLK	22
334	CP-P6-41,TFR-B	RED	(2 COND)
337	CP-P6-42,DOC-P2-1	BLK	22
338	CP-P6-44,DOC-P2-2	RED	(4 COND)
339	CP-P6-43,DOC-P2-3	WHT	
451	CP-P6-24,DOC-P2-6	GRN	

PROJECT NAME:				REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING  THIRD ANGLE PROJECTION				DIAGRAM				
7000 SERIES (S7ACTB) 3PH 800-2000 AMPS "S" FRAME, GROUP 5 CONTROLS								
DRAWN BY		DATE		MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055		ASSEM. REF. NO.		
CHECKED		DATE		PROPERTY OF ASCO POWER TECHNOLOGIES, USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.				
PROJECT APPROVAL		DATE						
FINAL APPROVAL				COMPUTER GENERATED DRAWING SCALE NONE SIZE DS DWG. NO. 909870 DRAWING REV D ECN NO. 290885 SHEET 9 OF 10				
 ASCO POWER TECHNOLOGIES, L.P. FLORENCE PARK, NEW JERSEY 07932 U.S.A.								



WIRE RUN LISTING

 HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	☐
WIRE No.	HARNESS 605674-017 (P.J.) CONTROL PANEL EXTENSION	CLR	AWG
310	P-1,J-1		16
1	P-2,J-2		
21	P-3,J-3		
3	P-4,J-4		
23	P-5,J-5		
7	P-6,J-6		
5	P-7,J-7		
37	P-8,J-8		
38	P-9,J-9		
28	P-10,J-10		
2	P-11,J-11		
1	P-12,J-12		
30	P-13,J-13		
29	P-14,J-14		
311	P-15,J-15		
24	P-16,J-16		
312	P-17,J-17		
6	P-18,J-18		
9	P-19,J-19		
10	P-20,J-20		
11	P-21,J-21		
4	P-22,J-22		
8	P-23,J-23		
12	P-24,J-24		

2		HARNESS LOCATOR		BOX CHECKED IF HARNESS WOFFED			
WIRE No.	SUB-ASSEMBLY 605749 (TB1-P,P11,P12,J13,P14,P15,P16,J17,J18) MAIN INTERCONNECT ASSEMBLY			CLR	AWG		
1	P-2,TB1-13				16		
21	P-3,P11-2						
3	P-4,TB1-15						
23	P-5,TB1-17						
7	P-6,TB1-19						
5	P-7,TB1-17						
37	P-8,TB1-31						
38	P-9,TB1-30						
28	P-10,P11-9						
2	P-11,TB1-14						
1	P-12,TB1-13						
30	P-13,P11-10						
29	P-14,P11-11						
24	P-16,P11-5						
6	P-18,TB1-18						
9	P-19,TB1-21						
10	P-20,TB1-22						
11	P-21,TB1-23						
4	P-22,TB1-16						
8	P-23,TB1-20						
12	P-24,TB1-24						
1	P11-1,TB1-13						
3	P11-3,TB1-15						
5	P11-4,TB1-17						
7	P11-6,TB1-19						
26	P11-7,J13-13						
27	P11-8,TB1-25						
31	P11-12,TB1-37						
32	P11-13,TB1-39						
33	P11-14,TB1-40						
42	P11-15,TB1-34						
35	P11-16,TB1-35						
36	P11-17,TB1-36						
37	P11-18,TB1-31						
38	P11-19,TB1-30						
1	P12-1,TB1-11						
1	P12-2,TB1-13						
2	P12-3,TB1-2						
2	P12-4,TB1-14						
3	P12-5,TB1-3						
3	P12-6,TB1-15						
4	P12-7,TB1-4						
4	P12-8,TB1-16						
5	P12-9,TB1-5						
5	P12-10,TB1-17						
6	P12-11,TB1-6						
6	P12-12,TB1-18						
7	P12-13,TB1-7						
7	P12-14,TB1-19						
8	P12-15,TB1-8						
8	P12-16,TB1-20						
9	P12-17,TB1-9						
9	P12-18,TB1-21						
10	P12-19,TB1-10						
10	P12-20,TB1-22						
11	P12-21,TB1-11						
11	P12-22,TB1-23						
12	P12-23,TB1-12						
12	P12-24,TB1-24						
1	J13-1,TB1-1						
2	J13-2,TB1-2						
3	J13-3,TB1-3						
4	J13-4,TB1-4						
5	J13-5,TB1-5						
6	J13-6,TB1-6						
7	J13-7,TB1-7						
8	J13-8,TB1-8						
9	J13-9,TB1-9						
10	J13-10,TB1-10						
11	J13-11,TB1-11						
12	J13-12,TB1-12						
140	J13-14,P14-1						
27	J13-15,TB1-25						
27	P14-2,TB1-25						
150	P14-3,P16-5						
151	P14-4,TB1-28						
38	P14-5,TB1-30						
121	P14-6,TB1-32						

 — HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	☒	
WIRE No.	SUB-ASSEMBLY 605749 (TB1,P,P11,P12,J13,P14,P15,P16,J17,J18) MAIN INTERCONNECT ASSEMBLY (CONTINUED....)	CLR	AWG	
121	P15-1,TB1-32		16	
120	P15-2,TB1-33			
51	P15-3,TB1-37			
170	P15-4,TB1-38			
171	P15-5,J17-3			
172	P15-6,J17-4			
173	P15-7,J17-5			
174	P15-8,J17-6			
175	P15-9,J17-8			
176	P15-10,J17-10			
177	P15-11,J17-9			
33	P15-12,TB1-39			
32	P15-13,TB1-40			
178	P15-14,J17-14			
155	P15-15,TB1-42			
157	P15-17,TB1-43			
154	P16-1,TB1-41			
170	P16-2,TB1-38			
191	P16-4,TB1-26			

[illegible][illegible][illegible]

 HARNESS LOCATOR		☐ BOX CHECKED ☐ HARNESS IS ☐ MODIFIED	☐
WIRE No.	HARNESS (J7) FIELD OUTPUTS	CLR	AWG
270	J7-1, IFR-9		16
271	J7-2, IFR-6		
272	J7-3		
273	J7-4, DOC-P3-3		
274	J7-5, DOC-P3-1		
275	J7-6, DOC-P3-2		
276	J7-7, DOC-P3-4		
277	J7-8, DOC-P3-5		
278	J7-9, DOC-P3-6		
279	J7-10		
280	J7-11		
281	J7-12		
282	J7-13		
283	J7-14		
284	J7-15		
285	J7-16		
286	J7-17		
287	J7-18		
288	J7-19		
289	J7-20		
290	J7-21		
291	J7-22		
292	J7-23		
293	J7-24		

[illegible][illegible][illegible][illegible][illegible]

 HARNESS LOCATOR		 BOX CHECKED IF HARNESS IS WORKED	
WIRE No.	SUB-ASSEMBLY 605113-001 (J1,CM) DUAL SOLENOID UNIT CONTROL MODULE ASSEMBLY	CLR	AWG
	J1-1,CR3-(+)		16
	J1-2,CR3-(-)		
	J1-3,CR4-(+)		
	J1-4,CR4-(-)		
	J1-5,CR1-AC1		
	J1-6,CR2-AC1		
	J1-7,CR3-AC1		
	J1-8,CR4-AC1		
	J1-9,CR1-(+)		
	J1-10,CR1-(-)		
	J1-11,CR2-(+)		
	J1-12,CR2-(-)		
	J1-13,SER-R2		
	J1-14,SER-A2		
	J1-15,ERR-R2		
	J1-16,ERR-A2		
	J1-17,SER-2		
	J1-18,ERR-2		
	J1-19,SER-A1		
	SER-A1,SER-3		
	J1-20,ERR-A1		
	ERR-A1,ERR-3		
	J1-21,CR1-AC2		
	CR1-AC2,CR2-AC2		
	J1-22,CR3-AC2		
	CR3-AC2,CR4-AC2		
	J1-23,SER-R3		
	J1-24,ERR-R3		
	SER-R3,ERR-R3		
	SER-1,ERR-R1		
	SER-R1,ERR-1		
	SER-4,ERR-R4		
	SER-R4,ERR-4		
	NOTE: SUB-ASSEMBLY NO WIRE NUMBERS NEEDED		
	ADD WIRES		
	ERR-1,ERR-A2		

[illegible]

D C B A —	290885	RVP	HSL	08/17/21
	259698			
	236981	TR	BK	05/07/12
	231454	TRD	MM	04/05/11
	230699	TRD	MM	02/10/11
ISSUE				

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING 7000 SERIES (S7ACTB) 3PH 800-2000 AMPS "S" FRAME, GROUP 5 CONTROLS DIAGRAM THIRD ANGLE PROJECTION		COMPUTER GENERATED DRAWING SCALE NONE SIZE DS DWG. NO. 909870 DRAWING REV. D ECN NO. 290885 ASSEM. REF. NO. PROPERTY OF ASCO POWER TECHNOLOGIES, L.P. FOR PLASTIC PARTS SEE MP-1-055 FLORHAM PARK, NEW JERSEY 07932 U.S.A. SHEET 10 OF 10				

DRAWN BY DUB CHECKED MM PROJECT APPROVAL BK FINAL APPROVAL	DATE 02/10/11 02/10/11 02/10/11	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055 PROPERTY OF ASCO POWER TECHNOLOGIES, L.P. FOR PLASTIC PARTS SEE MP-1-055
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ASCO POWER TECHNOLOGIES, L.P.

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