

THREE PHASE WIRING FOR ASCO® 7000 SERIES AUTOMATIC CLOSED TRANSITION TRANSFER SWITCHES TYPE H7ACTS RATED 600, 800, 1000 & 1200 AMPERES

FEATURES, SETTINGS, OPERATION, ACCESSORIES & NOTES

THE FOLLOWING FEATURES AND RELATED SETTINGS ARE PART OF THE GROUP 5 CONTROL PANEL'S USER CONFIGURABLE PARAMETERS. FOR DETAILED INFORMATION REGARDING THE CONFIGURATION OF THESE PARAMETERS AND OTHER FEATURES OF THE GROUP 5 CONTROL PANEL, REFER TO THE GROUP 5 CONTROL PANEL FOR ASCO® 7000 SERIES 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 IT'S FAILURE) AND WHILE THE LOAD IS CONNECTED TO EMERGENCY. RESETS IF NORMAL FAILS PRIOR TO EXPIRATION OR IF THE EMERGENCY SOURCE FAILS BEFORE EXPIRATION AND FEAT. 1F EXPIRES (AUTOMATIC BYPASS ON EMERGENCY SOURCE FAILURE). PROVIDES A PERIOD FOR THE NORMAL SOURCE TO STABILIZE PRIOR TO RETRANSFER.

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 AWAITS AN IN SYNC CONDITION FOR SUBSEQUENT CLOSED TRANSITION TRANSFER.

EXTENDED PARALLEL - EXTENDED PARALLEL TIMER BEGINS WHEN THE SOURCES ARE PARALLELED (CN & CE CLOSED). IF THE TWO SOURCES REMAIN IN PARALLEL WHEN THE DELAY EXPIRES, THE CONTROL LOGIC TAKES THE FOLLOWING ACTIONS:

- THE LOGIC WILL ATTEMPT TO OPERATE THE TRANSFER SWITCH TO A "SAFE" STATE WHERE THE SOURCES WILL NO LONGER BE PARALLELED AND THE LOAD WILL BE SERVICED BY AN AVAILABLE SOURCE.
- THE CONTROL PANEL IS LOCKED OUT FROM ANY FURTHER AUTOMATIC OPERATION.
- THE "TS LOCKED OUT" INDICATOR (RED LED) IS LIT.
- THE UNIT WILL REMAIN LOCKED OUT UNTIL THE "TS LOCKED OUT" PUSH-BUTTON IS DEPRESSED FOR RESET.

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	
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			
TS FRAME	CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE
					C D E F			C E F G H J K L M N P Q
H	7ACTS	A	3	600 800 1000 1200	H J K L M N P Q	5	X	
			B					
							BLANK FOR NONE	BLANK FOR OPEN TYPE

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	208 220 230 240	BLANK C E F	1 2 3R	OPEN TYPE (NO ENCLOSURE) GENERAL PURPOSE, INDOOR INDOOR, WATER & DUST RESISTANT OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT INDOOR/OUTDOOR, WATERTIGHT & DUST TIGHT TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL) TYPE 4 PLUS CORROSION RESISTANCE (FIBERGLASS) EXPLOSION PROOF INDOOR, INDUSTRIAL ENVIRONMENTS, OIL TIGHT & DUST TIGHT			
		H J K L M N P Q R	380 400 415 440 460 480 550 575 600	K L	4X 4X 7 12				
				M N P Q	3R 4 4X 12	(SECURE ENCLOSURES) OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL) INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT			

SIGNALS & AUXILIARIES

A. FEATURES 7 & 8- ENGINE START SIGNAL
SIGNAL INITIATED BY DROPOUT OF CONTROL PANEL RELAY (NR) FOLLOWING EXPIRATION OF THE FEATURE 1C TIME DELAY (DELAY TO OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES). FEATURE 7 CLOSSES TO SIGNAL ENGINE START. FEATURE 8 OPENS TO SIGNAL ENGINE START. ENGINE STARTING SIGNAL RESETS FOLLOWING RETRANSFER TO THE NORMAL SOURCE AND EXPIRATION OF THE FEATURE 2E (ENGINE COOL DOWN) TIME DELAY. FEATURES 7 & 8 ARE PROVIDED AS A SINGLE FORM C CONTACT CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACT RATED 5 AMPS AT 32 VDC/120VAC RESISTIVE.

B. FEATURES 14AG & 14BG - TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS. EIGHT (8) FORM A CONTACTS EACH TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO NORMAL (14A) OR 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. TS LOCKED OUT RESET - ONCE A LOCK OUT CONDITION IS CORRECTED, THE TS LOCKED OUT RESET MAY BE ACTUATED TO RESET THE CONTROL PANEL.

H. ALARM RESET - RESETS FAILURE TO SYNCHRONIZE AND EXTENDED PARALLEL ALARMS.

I. CLOSED TRANSITION BYPASS - BYPASSES CLOSED TRANSITION TRANSFER WHEN ACTUATED 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.

GENERAL NOTES

1. SWITCH SHOWN DE-ENERGIZED AND CONNECTED TO THE NORMAL SOURCE.
2. DEVICE SYMBOLS AND DESIGNATIONS ARE IN ACCORDANCE WITH NEMA PUBLICATION ICS 1-1983, PART 1-101A.
3. ALL WIRING IS #16 AWG, TINNED, STRANDED COPPER UNLESS OTHERWISE INDICATED.
4. ○ ON TERMINAL BLOCKS INDICATES AVAILABLE FIELD CONNECTION POINT.
5. ● ON TERMINAL BLOCKS INDICATES FACTORY CONNECTION POINT.
6. CONTROL AND ACCESSORY WIRING IS ROUTED IN ACCORDANCE WITH ASCO ASSEMBLY PROCEDURE GS451261.
7. AN OPERATOR'S MANUAL IS FURNISHED WITH EACH 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 G

PROJECT NAME: _____

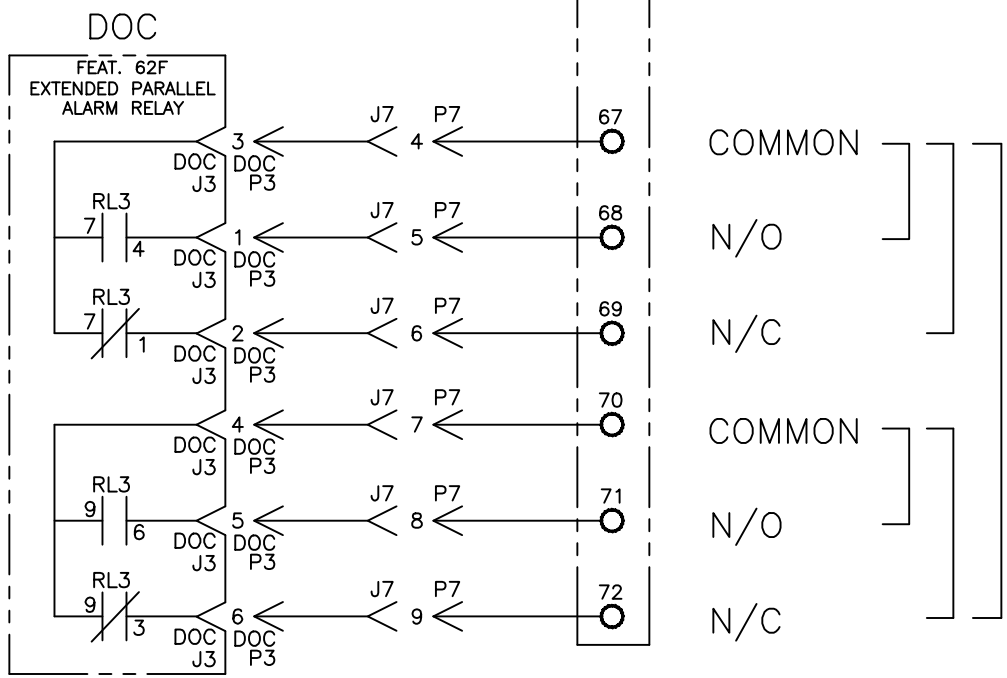
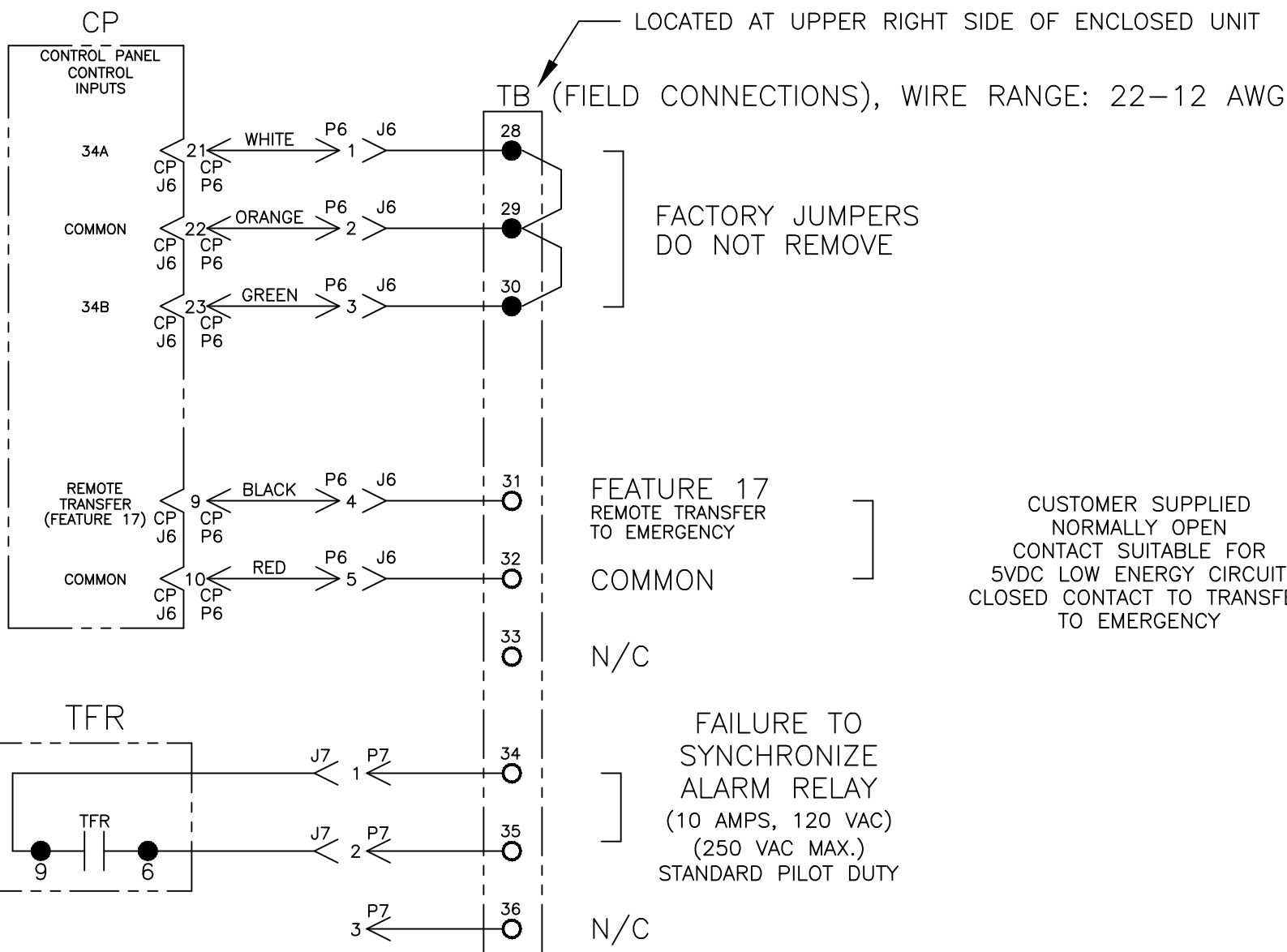
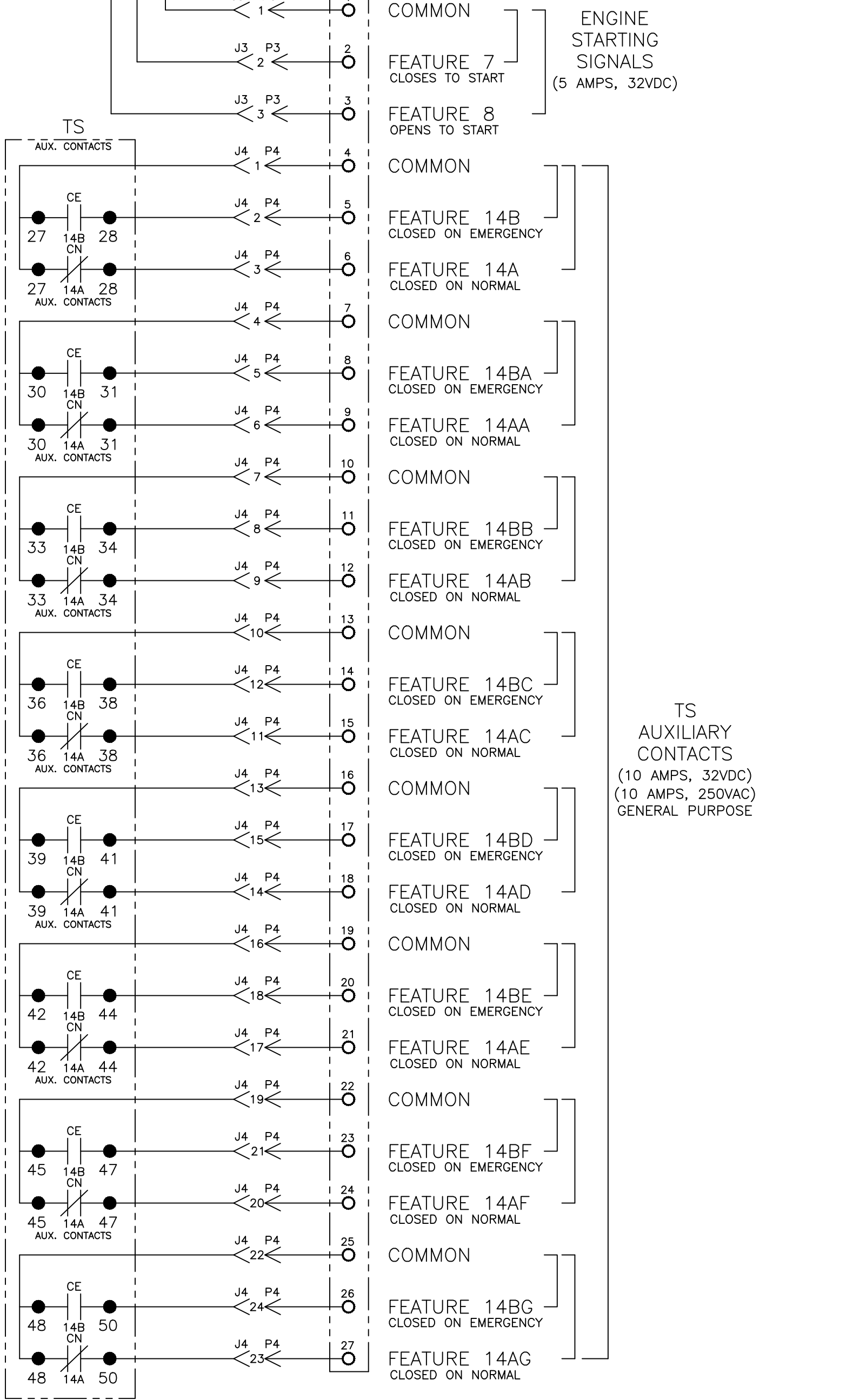
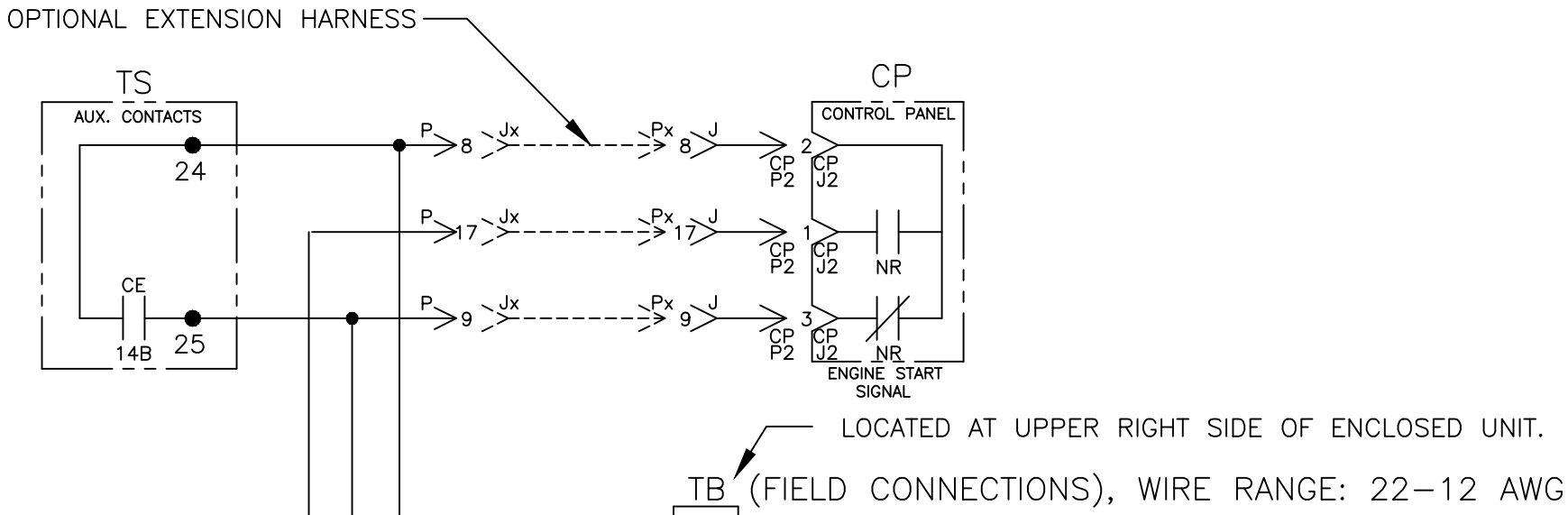
WIRING _____

7000 SERIES (H7ACTS) 3PH 600-1200 AMPS

"H" 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		
DRAWN BY	SDH	01/01				SCALE	None	SIZE DS
CHECKED			PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.			DWG. NO.	713503	
PROJECT APPROVAL						DRAWING NO.	290886	SHEET 1 OF 6
FINAL APPROVAL	SDH	01/01						

FIELD CONNECTIONS



G	290886	RVP	HSL	08/17/21					
	278704	TR	BK	05/09/19					
	236784	TR	BK	04/24/12					
F	278704	TR	BK	05/09/19					
E	236784	TR	BK	04/24/12					
PROJECT NAME:					REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING					DIAGRAM				
7000 SERIES (H7ACTS) 3PH 600-1200 AMPS					THIRD ANGLE PROJECTION				
"H" FRAME, GROUP 5 CONTROLS									
DRAWN BY	SDH	DATE	01/01	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				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						DWG. NO. 713503			
FINAL APPROVAL	SDH	01/01		ASCO® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DRAWING REV.	G	ECN NO.	290886
						SHEET 2 OF 6			

D

C

B

A

D

C

B

A

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY

NORMAL

LOAD

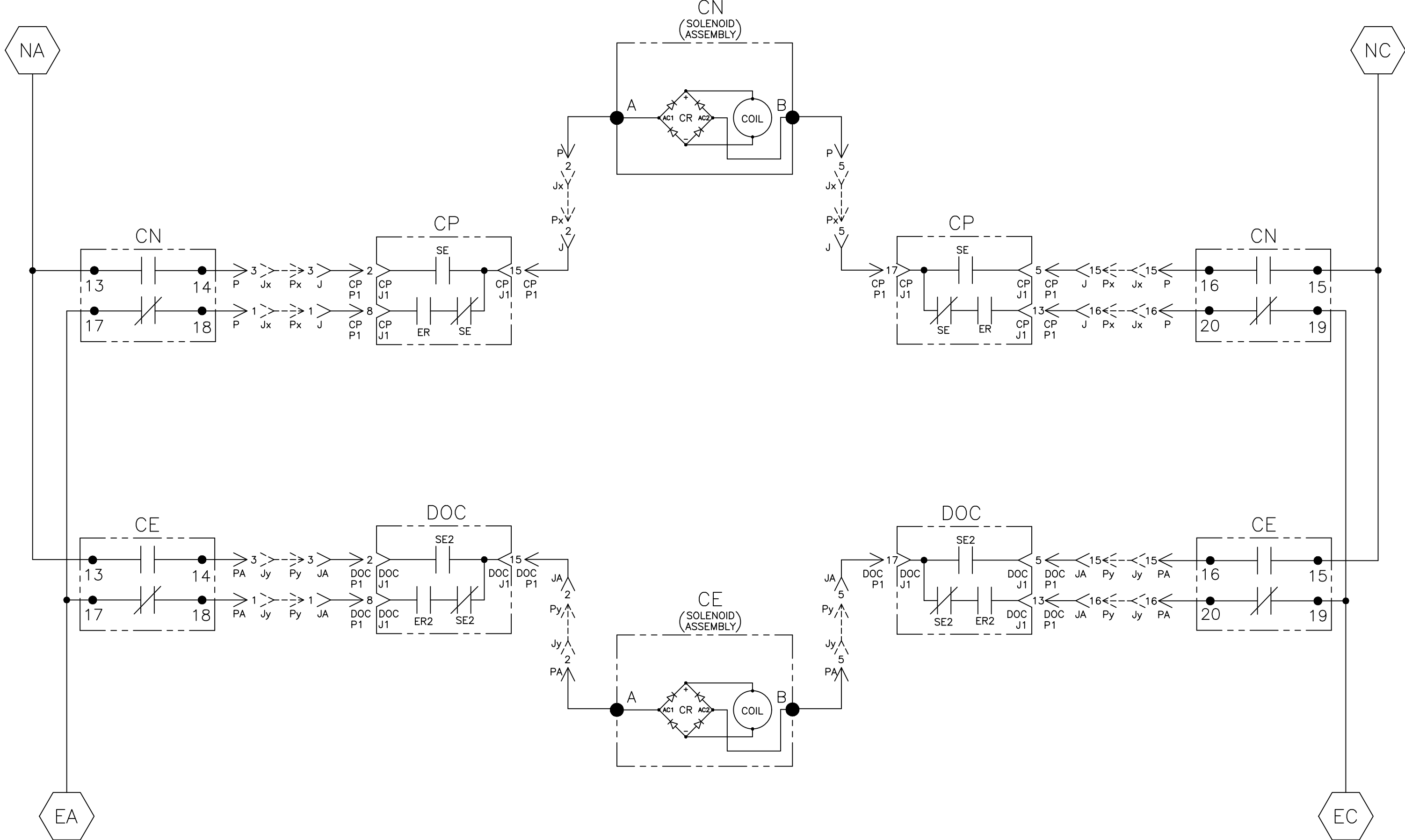
EMERGENCY

NORMAL

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

- NONE
- SWITCHING
- SOLID BUS PLATE

NOTE:
ATS SHOWN CLOSED ON
NORMAL SOURCE.



CN CONTROL CONTACTS			
SOLENOID POSITION			
CN	CLOSED BEFORE NORMAL TDC	BEFORE TDC	OPEN
13-14			
15-16			
17-18			
19-20			

CE CONTROL CONTACTS			
SOLENOID POSITION			
CE	BEFORE OPEN	BEFORE TDC	CLOSED EMERG.
13-14			
15-16			
17-18			
19-20			

TDC (TOP DEAD CENTER)
TRANSFER SWITCH TEST & ADJUSTMENT PROCEDURE
SPECIFIES CONTROL CUT-OFF (CONTACT OPENING)
SETTING.

G		290886	RVP	HSL	08/17/21
F		278704	TR	BK	05/09/19
E		236784	TR	BK	04/24/12
REV. TO SHEET		ECN NO.	BY	APP.	DATE
PROJECT NAME: 7000 SERIES (H7ACTS) 3PH 600-1200 AMPS "H" FRAME, GROUP 5 CONTROLS					
WIRING DIAGRAM					
COMPUTER GENERATED DRAWING					
SCALE NONE SIZE DS					
DWG. NO. 713503					
DRAWING REV. G ECN NO. 290886 SHEET 3 OF 6					

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

D

C

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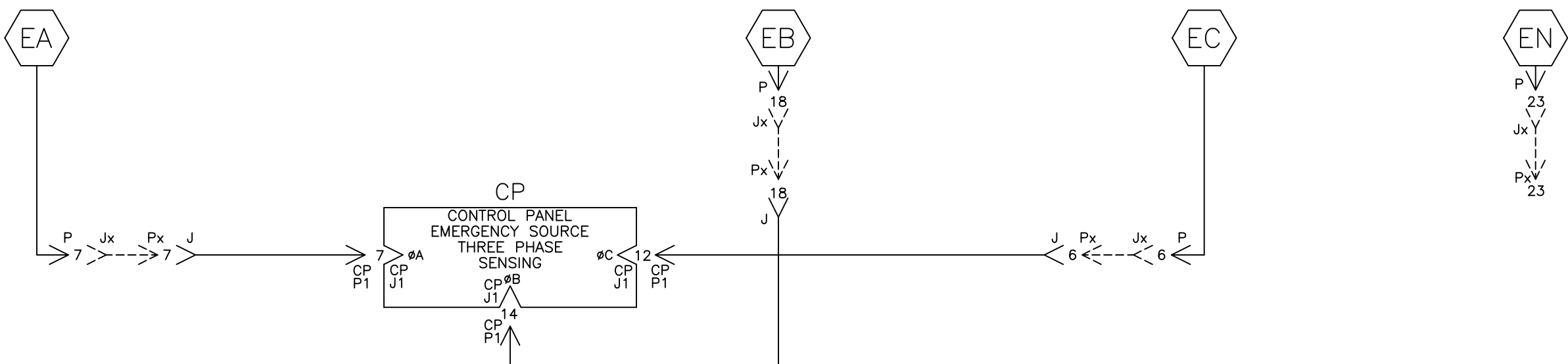
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B

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EMERGENCY SOURCE CIRCUITS

EMERGENCY



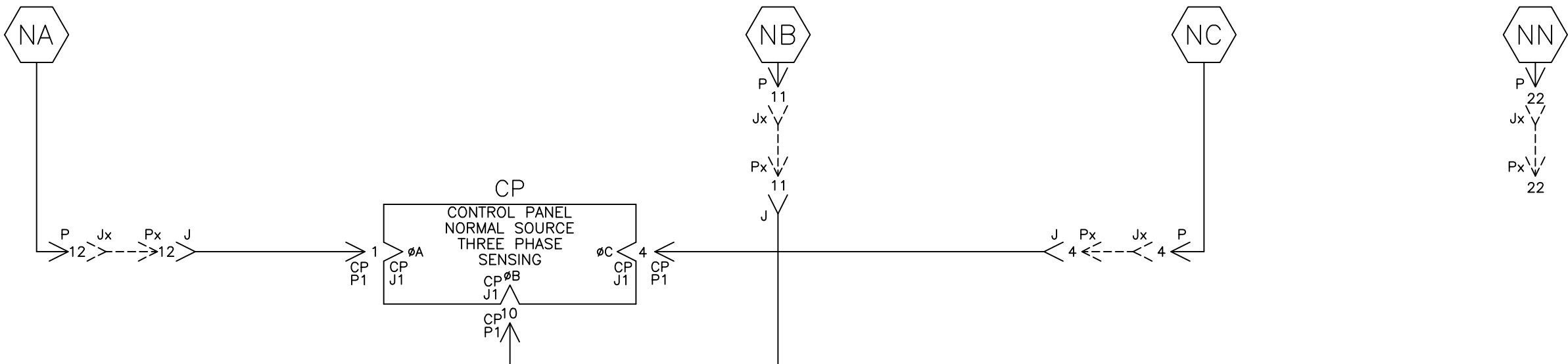
LOAD TERMINAL CIRCUITS

LOAD



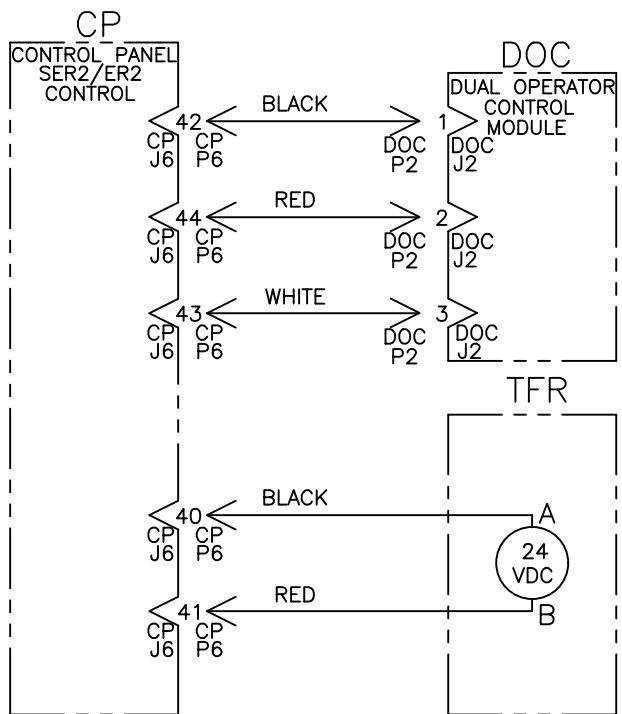
NORMAL SOURCE CIRCUITS

NORMAL

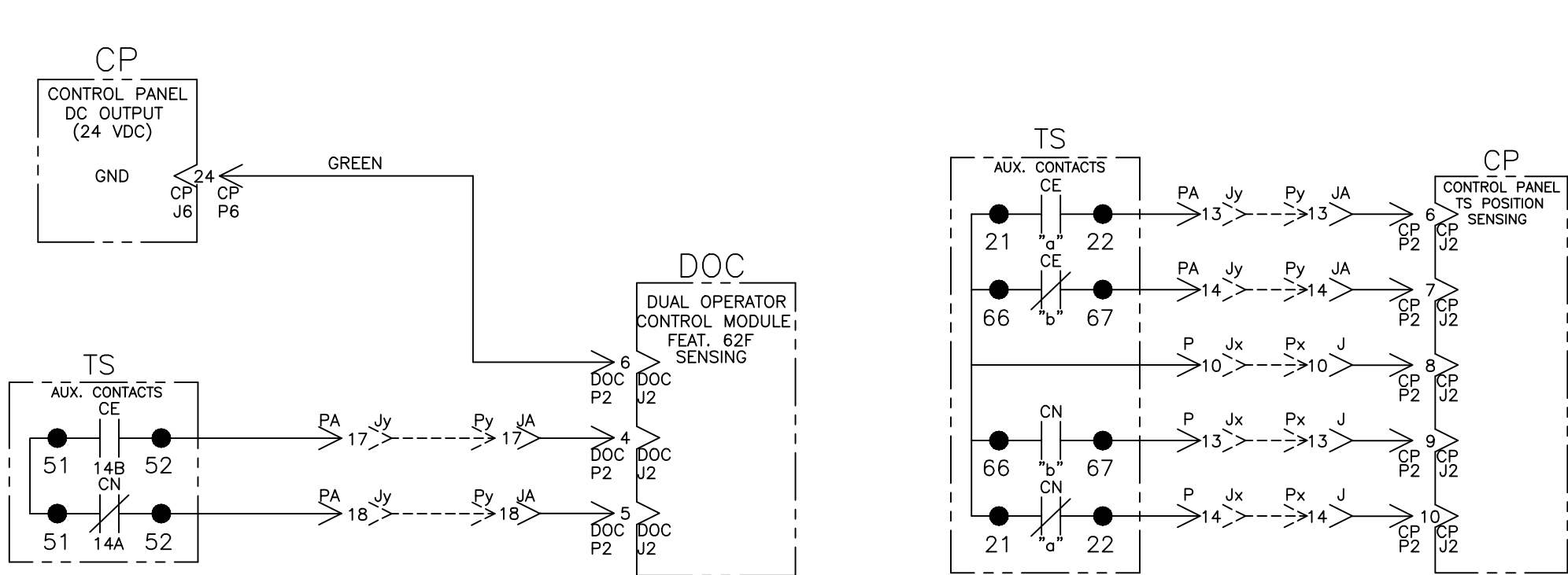


CONTROL CIRCUITS

SER2/ER2 CONTROL

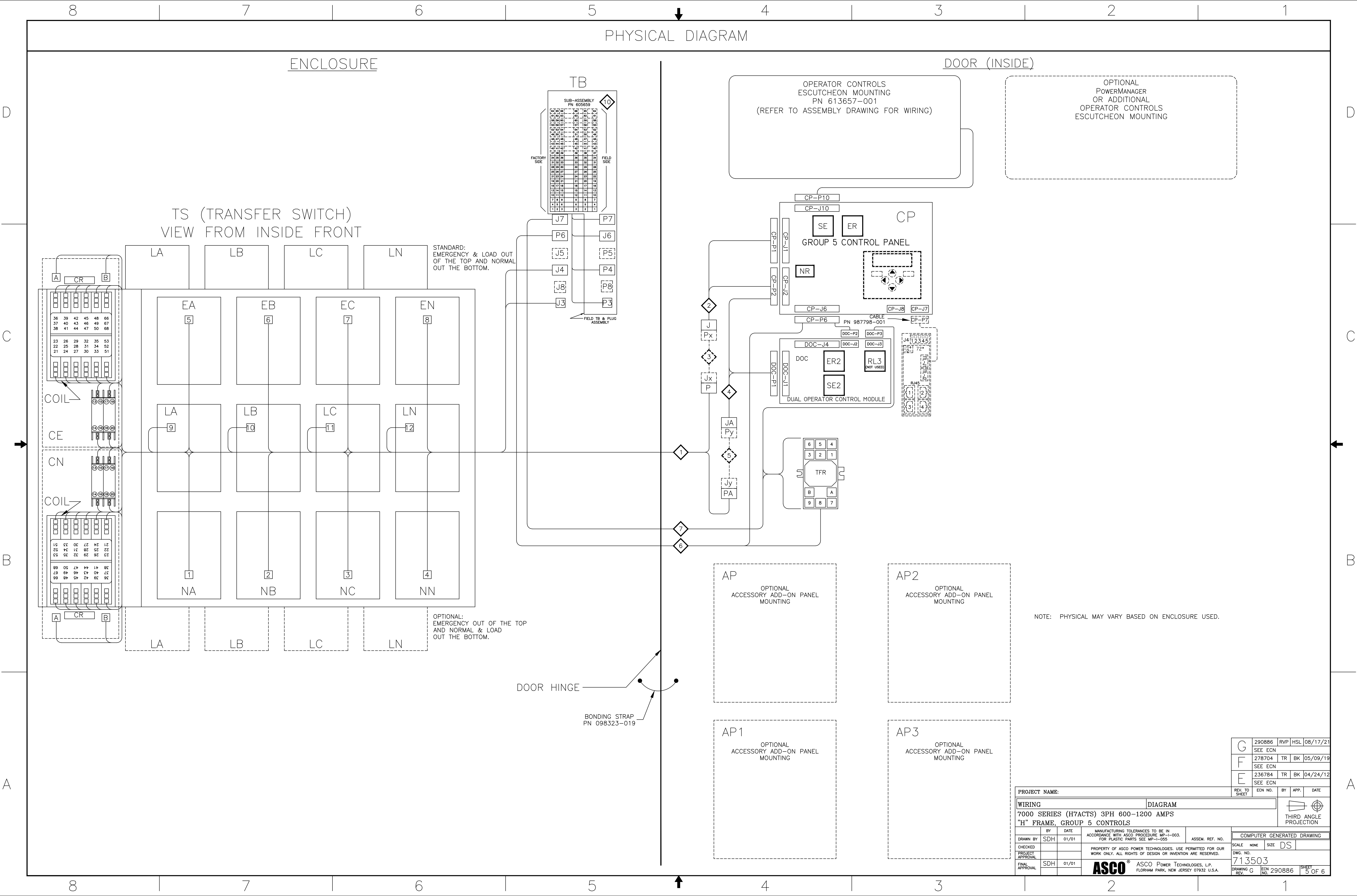


TS POSITION SENSING



ADDITIONAL CIRCUITS

PROJECT NAME:				REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING				DIAGRAM				
7000 SERIES (H7ACTS) 3PH 600-1200 AMPS								
"H" FRAME, GROUP 5 CONTROLS								
DRAWN BY	SDH	DATE	01/01	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				PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE		NONE
PROJECT APPROVAL						SIZE		DS
FINAL APPROVAL	SDH	01/01		ASCOPower Technologies, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DWG. NO.		713503
						DRAWING REV.		ECN NO. 290886
								SHEET 4 OF 6



WIRE RUN LISTING

1	← HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	☐
WIRE No.	HARNESS 713081 (P,PA,J3,J4) MAIN TS		CLR	AWG
1	P-1,CN-18			16
2	P-2,CN-A			
3	P-3,CN-14			
4	P-4,TS-3			
4	TS-3,CN-15			
4	CN-15,CE-15			
5	P-5,CN-B			
6	P-6,TS-7			
6	TS-7,CN-19			
6	CN-19,CE-19			
7	P-7,TS-5			
7	TS-5,CN-17			
7	CN-17,CE-17			
8	P-8,CE-24			
8	CE-24,J3-1			
9	P-9,CE-25			
9	CE-25,J3-2			
10	P-10,CN-66			
10	CN-66,CN-21			
10	CN-21,CE-21			
10	CE-21,CE-66			
11	P-11,TS-2			
12	P-12,TS-1			
12	TS-1,CN-13			
12	CN-13,CE-13			
13	P-13,CN-67			
14	P-14,CN-22			
15	P-15,CN-16			
16	P-16,CN-20			
17	P-17,J3-3			
18	P-18,TS-6			
19	P-19,TS-9			
20	P-20,TS-10			
21	P-21,TS-11			
22	P-22,TS-4			
23	P-23,TS-8			
24	P-24,TS-12			
25	J4-1,CN-27			
25	CN-27,CE-27			
26	J4-2,CE-28			
27	J4-3,CN-28			
28	J4-4,CN-30			
28	CN-30,CE-30			
29	J4-5,CE-31			
30	J4-6,CN-31			
31	J4-7,CN-33			
31	CN-33,CE-33			
32	J4-8,CE-34			
33	J4-9,CN-34			
34	J4-10,CN-36			
34	CN-36,CE-36			
35	J4-11,CN-38			
36	J4-12,CE-38			
37	J4-13,CN-39			
37	CN-39,CE-39			
38	J4-14,CN-41			
39	J4-15,CE-41			
40	J4-16,CN-42			
40	CN-42,CE-42			
41	J4-17,CN-44			
42	J4-18,CE-44			
43	J4-19,CN-45			
43	CN-45,CE-45			
44	J4-20,CN-47			
45	J4-21,CE-47			
46	J4-22,CN-48			
46	CN-48,CE-48			
47	J4-23,CN-50			
48	J4-24,CE-50			
107	PA-1,CE-18			
108	PA-2,CE-A			
109	PA-3,CE-B			
111	PA-5,CE-B			
119	PA-15,CE-22			
120	PA-14,CE-67			
121	PA-15,CE-16			
122	PA-16,CE-20			
123	PA-17,CE-52			
124	PA-18,CN-52			
131	CN-51,CE-51			

REMOVE WIRES

ADD WIRES

110	PA-4		
112	PA-6		
113	PA-7		
114	PA-8		
115	PA-9		
116	PA-10		
117	PA-11		
118	PA-12		
125	PA-19		
126	PA-20		
127	PA-21		
128	PA-22		
129	PA-23		
130	PA-24		

[illegible][illegible]

4	HARNESS LOCATOR		BOX CHECKED F HARNESS IS MODIFIED	☒
WIRE No.	HARNESS 619385 (JA,CP-P2,DOC-P1)	CONTROL MODULE	CLR	AWG
107	JA-1,DOC-P1-8			16
108	JA-2,DOC-P1-15			
109	JA-3,DOC-P1-2			
111	JA-5,DOC-P1-17			
119	JA-13,CP-P2-6			
120	JA-14,CP-P2-7			
121	JA-15,DOC-P1-5			
122	JA-16,DOC-P1-13			
	ADD WIRES			
110	JA-4			
112	JA-6			
113	JA-7			
114	JA-8			
115	JA-9			
116	JA-10			
117	JA-11			
118	JA-12			
123	JA-17,DOC-P2-4			
124	JA-18,DOC-P2-5			
125	JA-19			
126	JA-20			
127	JA-21			
128	JA-22			
129	JA-23			
130	JA-24			

[illegible]

6	HARNES LOCATOR		BOX CHECKED IF HARNES IS WORTED	☐
WIRE No.	HARNES 619510-005 (P6) FIELD INPUTS		CLR	AWG
49	P6-1,CP-P6-21		WHT	22 (12 COND)
50	P6-2,CP-P6-22		ORG	
51	P6-3,CP-P6-23		GRN	
52	P6-4,CP-P6-9		BLK	
53	P6-5,CP-P6-10		RED	
ADD WIRES				
54	P6-6			16
55	P6-7			
56	P6-8			
57	P6-9			
58	P6-10			
59	P6-11			
60	P6-12			
61	P6-13			
62	P6-14			
63	P6-15			
64	P6-16			
65	P6-17			
66	P6-18			
67	P6-19			
68	P6-20			
69	P6-21			
70	P6-22			
71	P6-23			
72	P6-24			

7 HARNESS LOCATOR		BOX CHECKED IF HARNESS 6 X		
WIRE No.	HARNESS (J7) OPTIONAL FIELD ADD WIRES	CLR	AWG	
73	J7-1,TFR-9			16
74	J7-2,TFR-6			
75	J7-3			
76	J7-4,D0C-P3-3			
77	J7-5,D0C-P3-1			
78	J7-6,D0C-P3-2			
79	J7-7,D0C-P3-4			
80	J7-8,D0C-P3-5			
81	J7-9,D0C-P3-6			
82	J7-10			
83	J7-11			
84	J7-12			
85	J7-13			
86	J7-14			
87	J7-15			
88	J7-16			
89	J7-17			
90	J7-18			
91	J7-19			
92	J7-20			
93	J7-21			
94	J7-22			
95	J7-23			
96	J7-24			

10 HARNESS LOCATOR		BOX CHECKED IF HARNESS MODIFIED	☒
WIRE No.	SUB-ASSEMBLY 605659 (P3,P4,P6,P7,TB) STD. FIELD TB	CLR	AWG
8	TB-1,P3-1		16
9	TB-2,P3-2		
17	TB-3,P3-3		
25	TB-4,P4-1		
26	TB-5,P4-2		
27	TB-6,P4-3		
28	TB-7,P4-4		
29	TB-8,P4-5		
30	TB-9,P4-6		
31	TB-10,P4-7		
32	TB-11,P4-8		
33	TB-12,P4-9		
34	TB-13,P4-10		
36	TB-14,P4-12		
35	TB-15,P4-11		
37	TB-16,P4-13		
39	TB-17,P4-15		
38	TB-18,P4-14		
40	TB-19,P4-16		
42	TB-20,P4-18		
41	TB-21,P4-17		
43	TB-22,P4-19		
45	TB-23,P4-21		
44	TB-24,P4-20		
46	TB-25,P4-22		
48	TB-26,P4-24		
47	TB-27,P4-23		
49	TB-28,J6-1		
50	TB-29,J6-2		
51	TB-30,J6-3		
52	TB-31,J6-4		
53	TB-32,J6-5		
73	TB-34,P7-1		
74	TB-35,P7-2		
75	TB-36,P7-3		

JUMPERS

ADD WIRES

54	J6-6		
55	J6-7		
56	J6-8		
57	J6-9		
58	J6-10		
59	J6-11		
60	J6-12		
61	J6-13		
62	J6-14		
63	J6-15		
64	J6-16		
65	J6-17		
66	J6-18		
67	J6-19		
68	J6-20		
69	J6-21		
70	J6-22		
71	J6-23		
72	J6-24		
73			
74			
75			
76	P7-4, TB-67		
77	P7-5, TB-68		
78	P7-6, TB-69		
79	P7-7, TB-70		
80	P7-8, TB-71		
81	P7-9, TB-72		
82	P7-10		
83	P7-11		
84	P7-12		
85	P7-13		
86	P7-14		
87	P7-15		
88	P7-16		
89	P7-17		
90	P7-18		
91	P7-19		
92	P7-20		
93	P7-21		
94	P7-22		
95	P7-23		
96	P7-24		

WIRE No.	ADDITIONAL WIRING	CLR	AWG
132	CP-P6-40,TFR-A	BLK	22
133	CP-P6-41,TFR-B	BLK	(2 COND)
134	CP-P6-42,DOC-P2-1	RED	
135	CP-P6-43,DOC-P2-3	WHT	22
136	CP-P6-44,DOC-P2-2	RED	(4 COND)
137	CP-P6-24,DOC-P2-6	GRN	

G F E	290886	RVP	HSL	08/17/21					
	278704	TR	BK	05/09/19					
	236784	TR	BK	04/24/12					
	SEE ECN								
PROJECT NAME:					REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING					DIAGRAM				
7000 SERIES (H7ACTS) 3PH 600-1200 AMPS									
"H" FRAME, GROUP 5 CONTROLS									
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		SDH		01/01					
CHECKED				PROPERTY OF ASCO POWER TECHNOLOGIES, USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.					
PROJECT APPROVAL									
FINAL APPROVAL		SDH		01/01					
ASCO® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.									
COMPUTER GENERATED DRAWING					SCALE NONE SIZE DS				
DWG. NO.					713503				
DRAWING G					ECN NO. 290886				
					SHEET 6 OF 6				
 THIRD ANGLE PROJECTION									