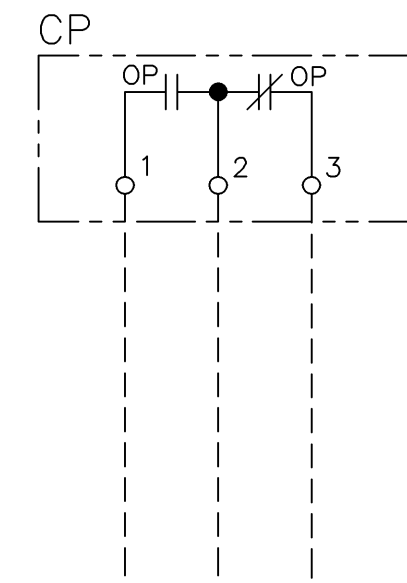
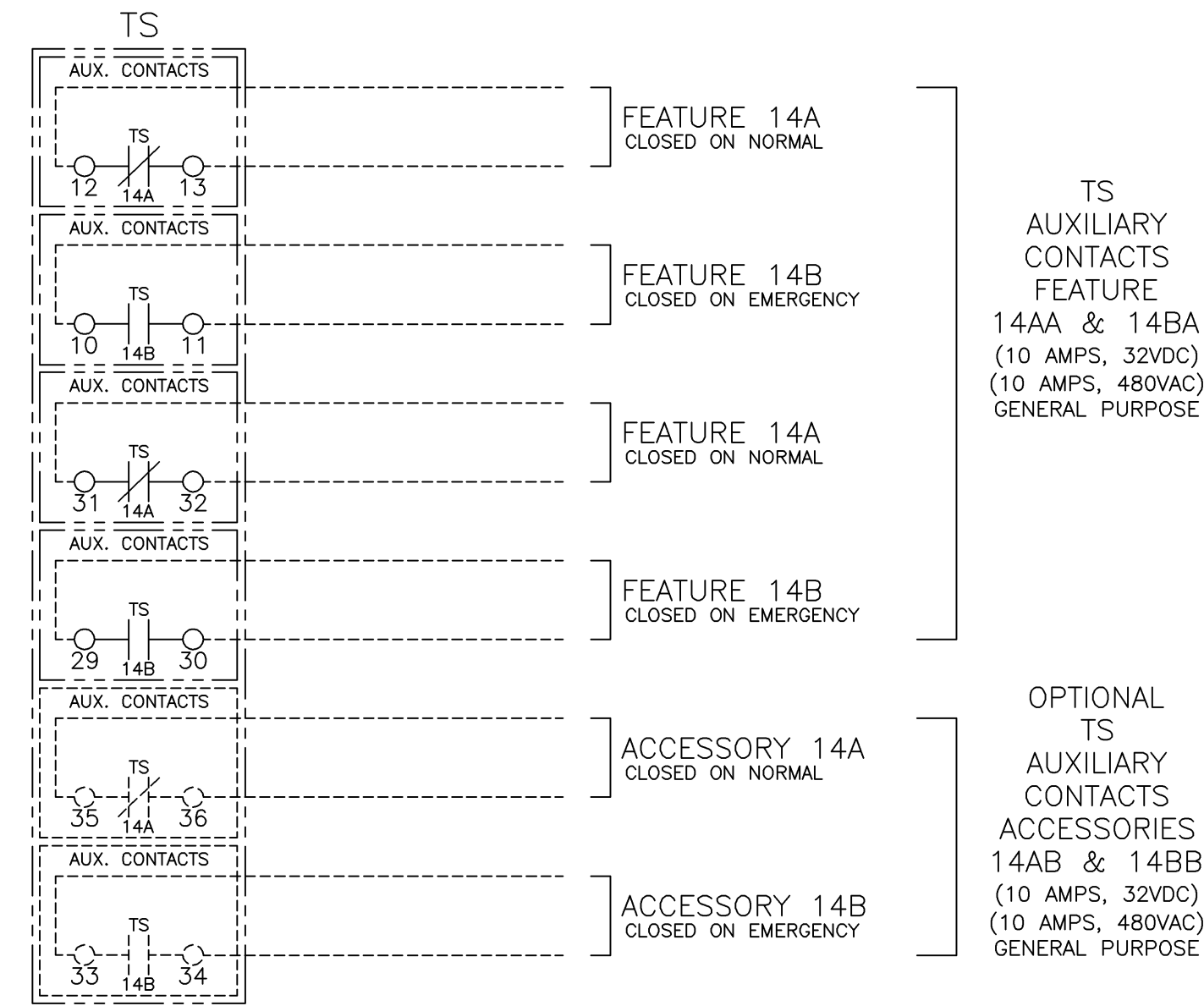


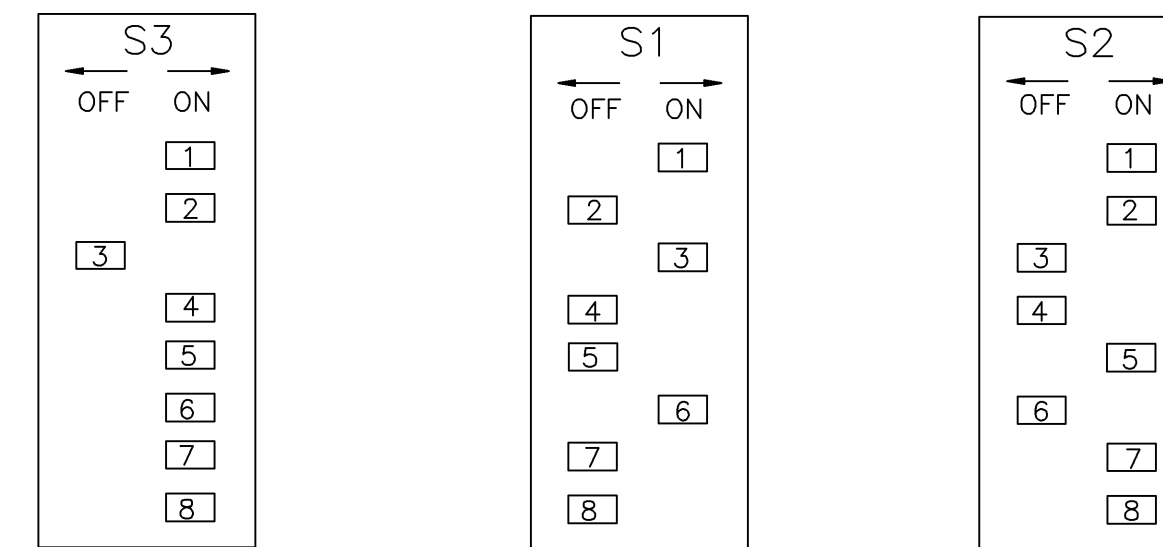
# THREE PHASE WIRING FOR ASCO® SERIES E386 NON-AUTOMATIC TRANSFER SWITCHES RATED 260 & 400 AMPERES WITH GROUP I CONTROLS

## FIELD CONNECTIONS



## STANDARD FACTORY SETTINGS FOR CONTROL PANEL

1. FACTORY SETTINGS FOR DIP SWITCH S1, S2 & S3



2. P1 (TIMER E/N) SET UP FOR FULL CCW.
3. P2 (TIMER N/E) SET UP FOR FULL CCW.
4. NORMAL SOURCE VOLTAGE (PU/N) PICKUP FACTORY SETTING IS 90% (S1-ACTUATOR 3 ON). SETTING S1-ACTUATOR 3 OFF IS FOR 95% NORMAL SOURCE VOLTAGE PICKUP.
5. EMERGENCY SOURCE VOLTAGE PICKUP FACTORY SETTING 90% (NON ADJUSTABLE). EMERGENCY SOURCE VOLTAGE DROPOUT FACTORY SETTING 75% (NON ADJUSTABLE). EMERGENCY SOURCE FREQUENCY PICKUP FACTORY SETTING 95% (NON ADJUSTABLE).

**! WARNING:**  
ANY CHANGE IN THESE SETTINGS MAY AFFECT THE NORMAL OPERATION OF THE TRANSFER SWITCH.

## 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 TRANSFER SWITCH. REFER TO THIS PUBLICATION PRIOR TO INSTALLATION AND OPERATION OF THE UNIT.
8. GROUND STRAP ON CONTROL PANEL IS AFFIXED TO CHASSIS (ENCLOSURE) AT LOWER LEFT CONTROL PANEL MOUNTING STUD.

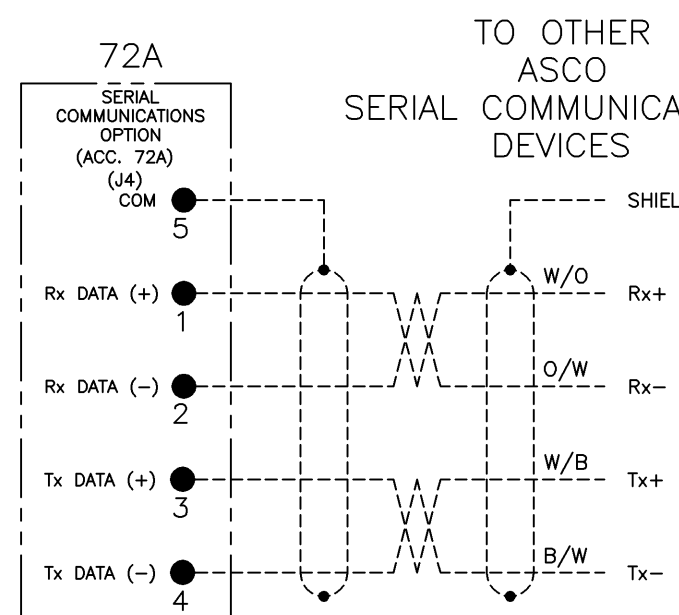
## FEATURES

- A. SELECTOR SWITCH (SS) FOR MANUAL TRANSFER TO NORMAL AND EMERGENCY. THREE POSITION, MOMENTARY, SPRING RETURN TO CENTER SELECTOR SWITCH.
- B. FEATURES 14AA & 14BA - TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS. TWO (2) FORM C CONTACTS TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO NORMAL (14A) AND TWO (2) FOR EMERGENCY (14B). CONTACTS RATED 10 AMPS, 32 VDC, 480 VAC. NOTE: ADDITIONAL AUXILIARY CONTACTS ARE AVAILABLE AS OPTIONS.
- C. SIGNAL LIGHT PL1, (GREEN LED), INDICATES WHEN TRANSFER SWITCH IS CONNECTED TO NORMAL SOURCE. (STD. FEAT. 9A)
- D. SIGNAL LIGHT PL2, (RED LED), INDICATES WHEN TRANSFER SWITCH IS CONNECTED TO EMERGENCY SOURCE. (STD. FEAT. 9B)
- E. ONE SET OF FORM C CONTACTS (1 N/O & 1 N/C) THAT CHANGE POSITION ON EXPIRATION OF THE NORMAL SOURCE OUTAGE DELAY AND RESET ON EXPIRATION OF THE UNLOADED RUNNING (ENGINE COOL DOWN) DELAY. OUTPUT CONTACTS (NR) ARE RATED 5 AMPS RESISTIVE AT 28V DC OR 120V AC MAXIMUM.

## OPTIONAL ACCESSORIES

- ACC. 6Q- KEY OPERATED TRANSFER CONTROL SWITCH. FOR SPERRING TO NORMAL OR EMERGENCY. THREE POSITION MOMENTARY SPRING RETURN TO CENTER. KEY REMOVABLE IN CENTER POSITION.
- ACC. 9C- SIGNAL LIGHT (PL3 GREEN LED) INDICATES NORMAL SOURCE AVAILABLE.
- ACC. 9D- SIGNAL LIGHT (PL4 RED LED) INDICATES EMERGENCY SOURCE AVAILABLE.
- ACC. 27 - INPHASE TRANSFER CONTROL LOGIC TO INITIATE AN INPHASE TRANSFER OF LOADS BETWEEN LIVE SOURCES. USED TO PREVENT NUISANCE TRIPPING OF CIRCUIT BREAKERS AND POSSIBLE DAMAGE TO MECHANICAL LOADS CAUSED BY OUT OF PHASE TRANSFER. ACTIVATED BY SETTING A DIP SWITCH ON THE CONTROL PANEL. (FACTORY SET AS DISABLED). (REFER TO OPERATOR'S MANUAL FURNISHED WITH EACH TRANSFER SWITCH REGARDING CONTROL PANEL SETTINGS).
- ACC. 31 - ONE SET OF FORM C CONTACTS (1 N/O & 1 N/C) THAT CHANGE POSITION ON ACTIVATION OF A SELECTABLE TIME DELAY BEFORE TRANSFER (LD TDBT) AND RESET EITHER IMMEDIATELY FOLLOWING TRANSFER OR FOR THE SAME DELAYS SET FOR PRE-SIGNAL BEFORE TRANSFER. SELECTABLE AS 0, 3, 10 OR 20 SECONDS. FACTORY SET AT 0. (REFER TO THE OPERATOR'S MANUAL FURNISHED WITH EACH TRANSFER SWITCH REGARDING CONTROL PANEL SETTINGS). OUTPUT CONTACTS (OP) ARE RATED 5 AMPS RESISTIVE AT 28V DC OR 120V AC MAXIMUM.
- ACC. 37B- EXTENSION HARNESS FOR UNITS SHIPPED OPEN TO ACCOMMODATE CUSTOMER MOUNTING OF CONTROLS AND SWITCH. EXTENSION IS 72IN (1828mm) LONG.
- ACC. 43M- PROVISIONS FOR CUSTOMER SUPPLIED 3-POSITION SELECTOR SWITCH. POSITION 1- LOCAL CONTROL ENABLE POSITION 2- REMOTE CONTROL TRANSFER TO NORMAL POSITION 3- REMOTE CONTROL TRANSFER TO EMERGENCY
- ACC. 72A- SERIAL COMMUNICATIONS INTERFACE. RS-485 SERIAL INTERFACE TO CONTROL PANEL FOR REMOTE MONITORING AND CONTROL FROM ASCO COMMUNICATIONS BASED PRODUCTS.

### ACC. 72A SERIAL COMMUNICATIONS OPTION COMMUNICATING WITH GROUP 1 CONTROL PANEL (CP)



#### 72A NOTES:

1. EARTH GROUND SHIELD AT HOST DEVICE ONLY.
2. FIELD WIRING: USE UL LISTED, STRANDED, TWISTED PAIRS, OVERALL FOIL SHIELD WITH STRANDED DRAIN WIRE SUITABLE FOR RS-422 EQUIVALENT TO: (STANDARD 80°C) BELDEN 9842 OR 9829 OR ALPHA 6202C OR 6222C (PLENUM RATED) BELDEN 89729 OR 82729 OR ALPHA 58902

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	VOLTAGE CODES	ENCLOSURE CODES		
									CODE	DESCRIPTION	CODE	TYPE	DESCRIPTION
E	386	A C	3	260 400	H J K L M N P Q R	1	X	F G	BLANK A C	NONE SOLID OVERLAPPING	C D E F	1 3R 4	OPEN TYPE (NO ENCLOSURE) GENERAL PURPOSE, INDOOR OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
		BLANK FOR NONE					BLANK FOR NONE	BLANK FOR OPEN TYPE			H J K L M N P Q R	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT

**ASCO** CERTIFIED TO S.O.

BY: \_\_\_\_\_ DATE: \_\_\_\_\_

FORM REV D

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

**WIRING DIAGRAM**

**SERIES E386 TS,3PH, 260-400 AMPS**  
**"E" FRAME, GROUP 1 CONTROLS**

DRAWN BY: BWM	DATE: 1/03	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005	ASSEM. REF. NO.	COMPUTER GENERATED DRAWING
CHECKED BY: BK	DATE: 1/03	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	SCALE: 1:1	SIZE: DS
FINAL APPROVAL: WK	DATE: 1/03	<b>ASCO</b> ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DWG. NO.: 733603
				DRAWING D ECN NO. 212659 SHEET 10F.4

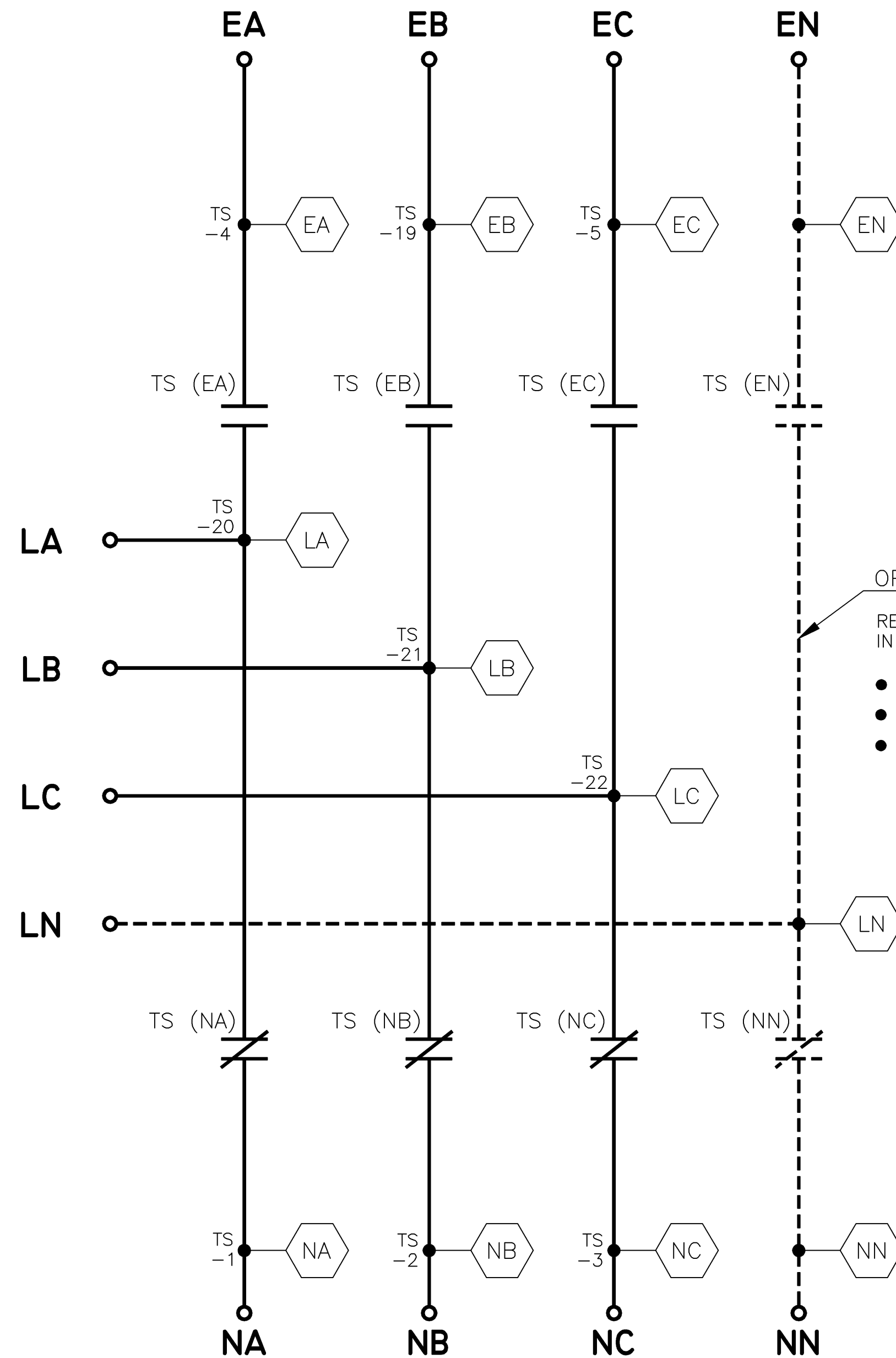
D	212659	WK	BK	03/29/07
C	202482	WK	WK	11/18/04
B	167059	SDH	SDH	05/17/04
A	163080	AJM	WK	03/11/03
	162479	BWM	WK	1/03

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY

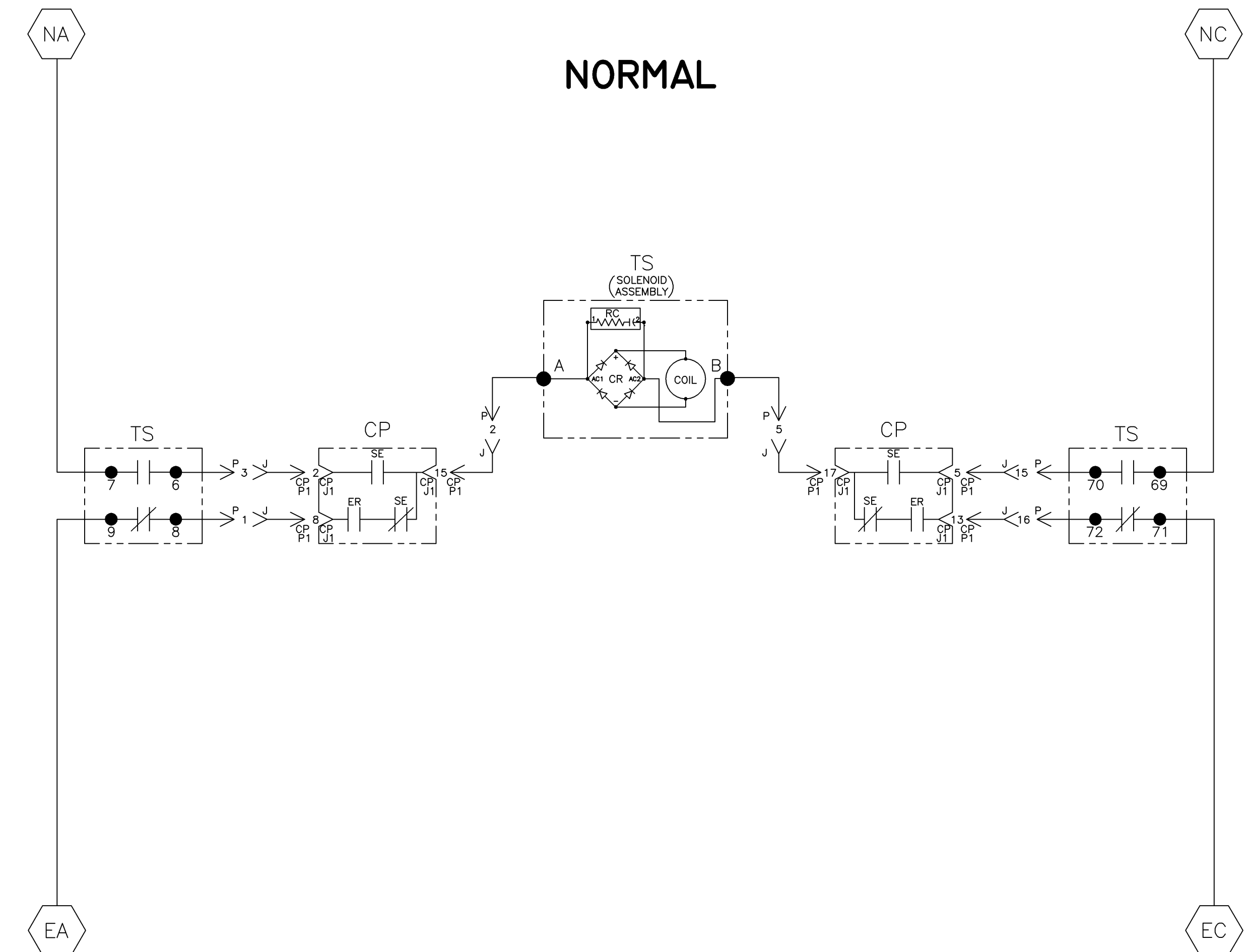
NORMAL



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

- NONE
- SOLID BUS PLATE
- OVERLAPPING CONTACTS

NOTE:  
 TS SHOWN CLOSED ON NORMAL SOURCE.



EMERGENCY

TS	TS (MUS) CONTACTS			
	SOLENOID POSITION			
	NORM	BEFORE TDC>	< BEFORE STDC	EMER
7-6				
69-70				
8-9				
71-72				

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

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

SERIES E386 TS,3PH, 260-400 AMPS

"E" FRAME, GROUP 1 CONTROLS

DRAWN BY	BWM	DATE	1/03	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	BK	DATE	1/03	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE 1:1 SIZE DS
APPROVAL		DATE	1/03			DWG. NO. 733603
REV.						DRAWING D ECN NO. 212659 SHEET 2 OF 4

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

D	212659	WK	BK	03/29/07
SEE ECN				
C	202482	WK	WK	11/18/04
SEE ECN				
B	167059	SDH	SDH	05/17/04
SEE ECN				
A	163080	AJM	WK	03/11/03
SEE ECN				
-	162479	BWM	WK	1/03
ISSUE				

WIRE RUN LISTING

FOR 260-400 AMPS

WIRE No.	HARNESS 337012 (P) MAIN TS	CLR	AWG
1	TS-8,P-1		16
2	TS-A,P-2		
3	TS-6,P-3		
4	TS-3,P-4		
5	TS-B,P-5		
6	TS-5,P-6		
7	TS-4,P-7		
8	TB-14,P-8		
9	TB-15,P-9		
10	TS-17,P-10		
11	TS-2,P-11		
12	TS-1,P-12		
13	TS-16,P-13		
14	TS-18,P-14		
15	TS-70,P-15		
16	TS-72,P-16		
17	TS-4,TS-9		
18	TS-7,TS-1		
20	TS-3,TS-69		
21	TS-5,TS-71		
8	TS-14,TB-14		
9	TS-15,TB-15		
24	TB-16,P-17		
25	TS-19,P-18		
26	TS-20,P-20		
27	TS-21,P-21		
28	TS-22,P-22		
29	TS-NN,P-24		
30	TS-EN,P-19		
31	TS-LN,P-23		

WIRE No.	HARNESS 483763 (J,CP-P1,CP-P2) CONTROL PANEL	CLR	AWG
1	J-1,CP-P1-8		16
2	J-2,CP-P1-15		
3	J-3,CP-P1-2		
4	J-4,CP-P1-4		
5	J-5,CP-P1-17		
6	J-6,CP-P1-12		
7	J-7,CP-P1-7		
8	J-8,CP-P2-2		
9	J-9,CP-P2-3		
10	J-10,CP-P2-8		
11	J-11,CP-P1-10		
12	J-12,CP-P1-1		
13	J-13,CP-P2-9		
14	J-14,CP-P2-10		
15	J-15,CP-P1-5		
16	J-16,CP-P1-13		
24	J-17,CP-P2-1		
25	J-18,CP-P1-14		

ADD WIRES

26	J-19		
27	J-20		
28	J-21		
29	J-22		
30	J-23		
31	J-24		

WIRE No.	HARNESS 619510-037 (P3) DOOR CONTROLS & INDICATORS	CLR	AWG
140	P3-5,PL1(-)		22
141	P3-8,PL1(+)		
142	P3-6,PL2(-)		
143	P3-7,PL2(+)		
144	P3-9,PL3(-) * SEE NOTE		
145	P3-10,PL4(-) *		
146	P3-11,PL3(+)		
146	PL3(+),PL4(+)		
147	CP-6,SS-13		
148	CP-10,SS-23		
149	CP-7,SS-14		
149	SS-14,SS-24		

\* NOTE: CONNECTIONS ARE OPTIONAL FOR ACC. 9C, 9D.

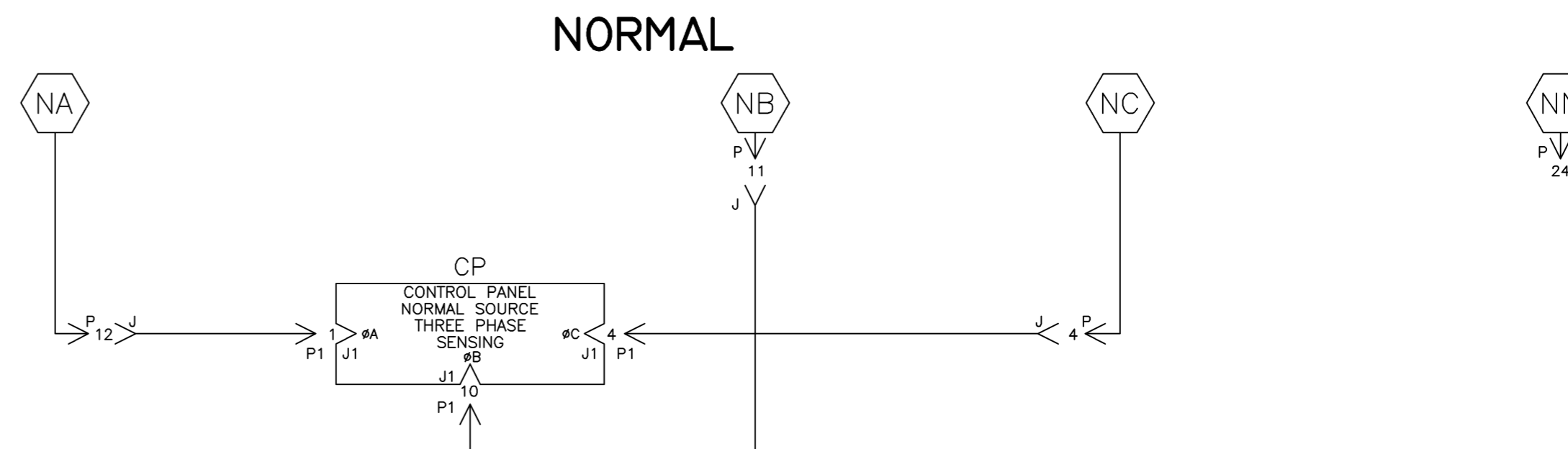
OPTIONAL ACC. 6Q

WIRE No.	HARNESS 619510-037 WITH 6Q KEY OPTION REMOVE WIRES
147	CP-6,SS-13
148	CP-10,SS-23
149	CP-7,SS-14
149	SS-14,SS-24

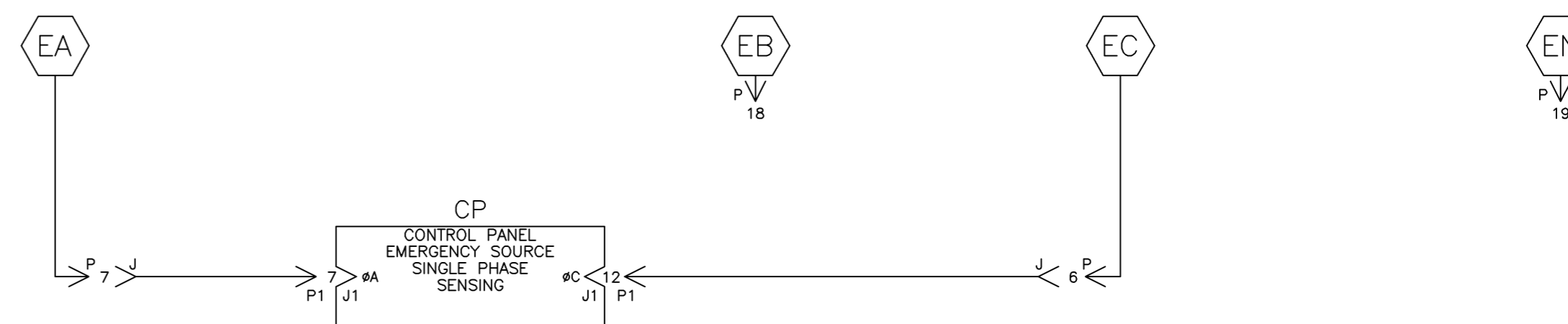
ADD WIRES

147	CP-6,SS-1NO
148	CP-10,SS-2NO
149	CP-7,SS-1COM
149	SS-1COM,SS-2COM

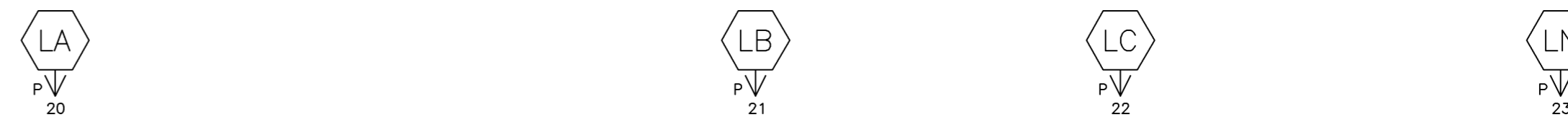
NORMAL SOURCE CIRCUITS



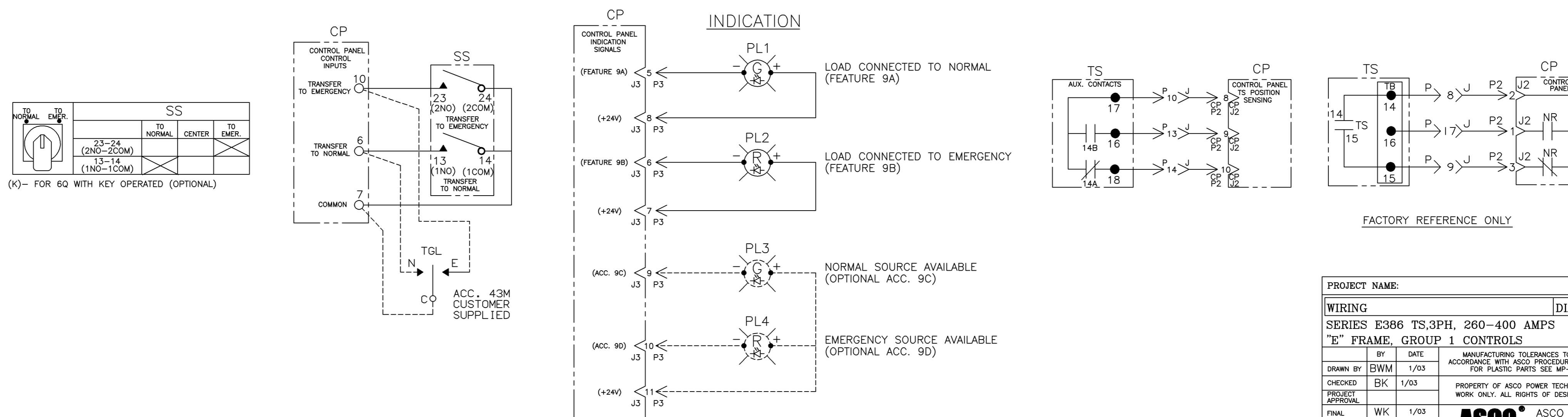
EMERGENCY SOURCE CIRCUITS



LOAD TERMINAL CIRCUITS



CONTROL SIGNALS & INDICATION

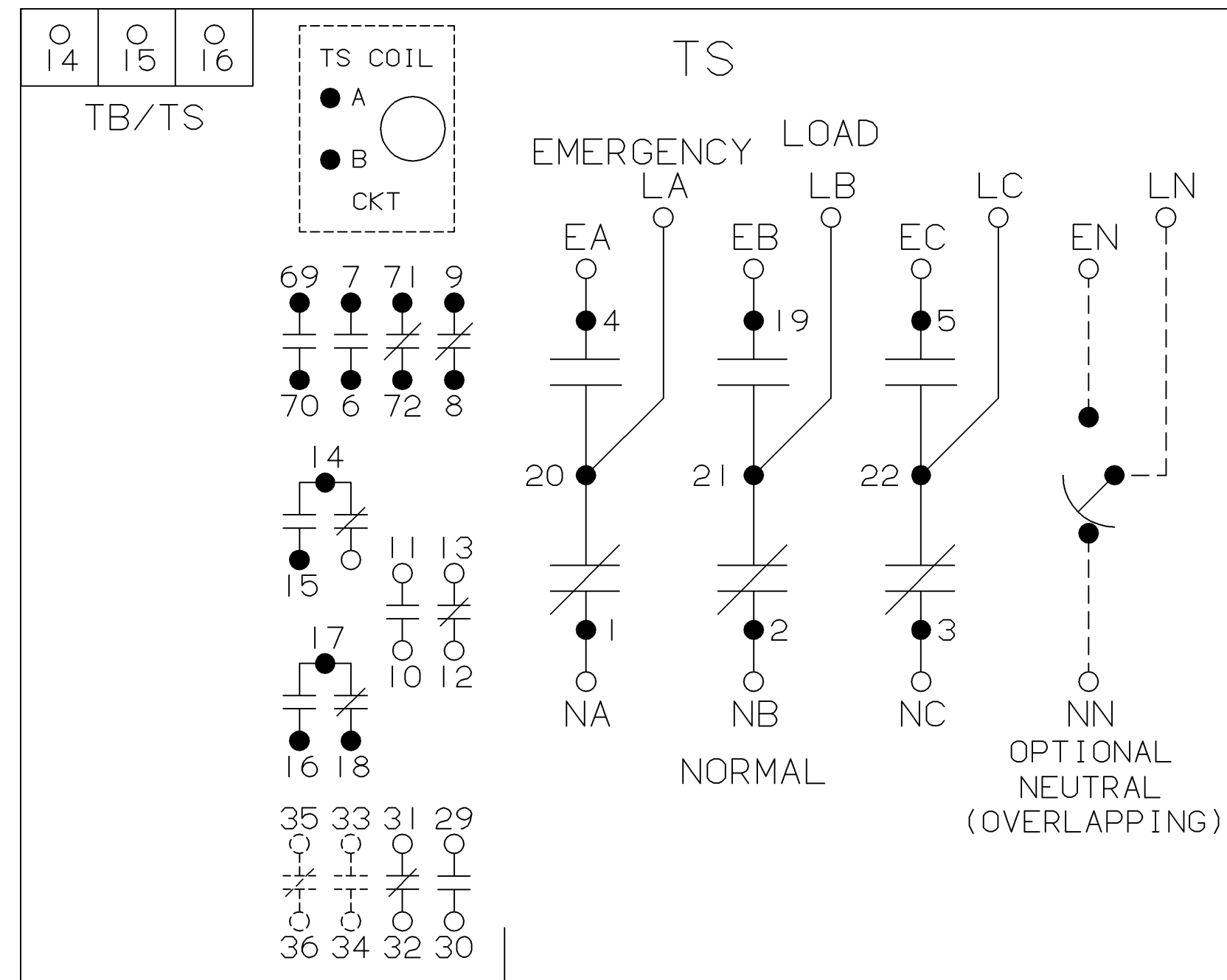


D	212659	WK	BK	03/29/07
SEE ECN				
C	202482	WK	WK	11/18/04
SEE ECN				
B	167059	SDH	SDH	05/17/04
SEE ECN				
A	163080	AJM	WK	03/11/03
SEE ECN				
-	162479	BWM	WK	1/03
ISSUE				

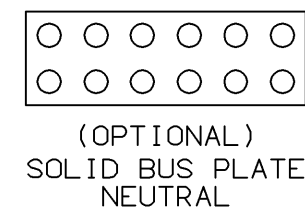
PROJECT NAME:		ECN NO.		BY	APP.	DATE
WIRING DIAGRAM						
SERIES E386 TS,3PH, 260-400 AMPS						
"E" FRAME, GROUP 1 CONTROLS						
DRAWN BY		BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055		
CHECKED		BK	1/03	ASSEM. REF. NO.		COMPUTER GENERATED DRAWING
PROJECT APPROVAL		WK	1/03	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE 1:1 SIZE DS
FINAL APPROVAL				ASCO POWER TECHNOLOGIES, L.P.		DWG. NO. 733603
				FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DRAWING D ECN NO. 212659 SHEET 30F4

PHYSICAL DIAGRAM

ENCLOSURE  
TS (TRANSFER SWITCH)  
VIEW FROM INSIDE FRONT  
260 & 400 AMPS



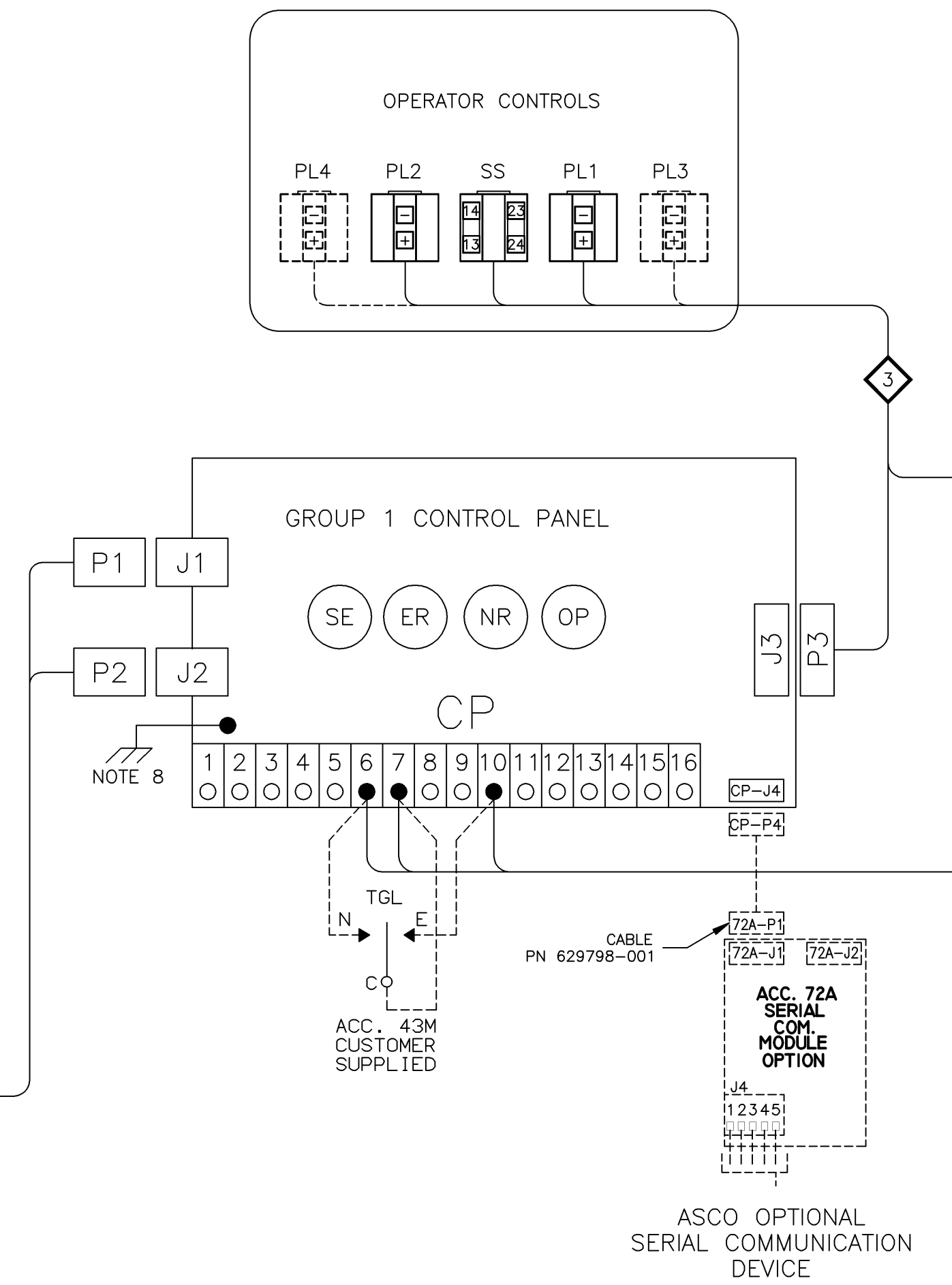
STANDARD TRANSFER SWITCH HARNESS  
(TYPICAL ALL SWITCHES)



DOOR HINGE

BONDING STRAP  
PN 098323-019

DOOR (INSIDE)



OPERATOR CONTROLS

ID	DESCRIPTION
PL1	TS CONNECTED TO NORMAL (GREEN)
PL2	TS CONNECTED TO EMERGENCY (RED)
PL3	NORMAL SOURCE AVAILABLE (GREEN)
PL4	EMERGENCY SOURCE AVAILABLE (RED)
SS	TRANSFER CONTROL (TEST - TD BYPASS)

D	212659	WK	BK	03/29/07
SEE ECN				
C	202482	WK	WK	11/18/04
SEE ECN				
B	167059	SDH	SDH	05/17/04
SEE ECN				
A	163080	AJM	WK	03/11/03
SEE ECN				
-	162479	BWM	WK	1/03
ISSUE				

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
SERIES E386 TS,3PH, 260-400 AMPS						
"E" FRAME, GROUP 1 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.	COMPUTER GENERATED DRAWING	
CHECKED	BK	1/03	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE	1:1 SIZE DS
PROJECT APPROVAL					DWG. NO.	733603
FINAL APPROVAL	WK	1/03			DRAWING REV.	D ECN NO. 212659 SHEET 4 OF 4
			ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.			