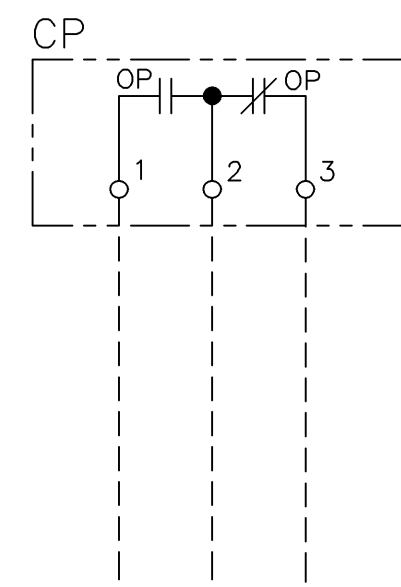
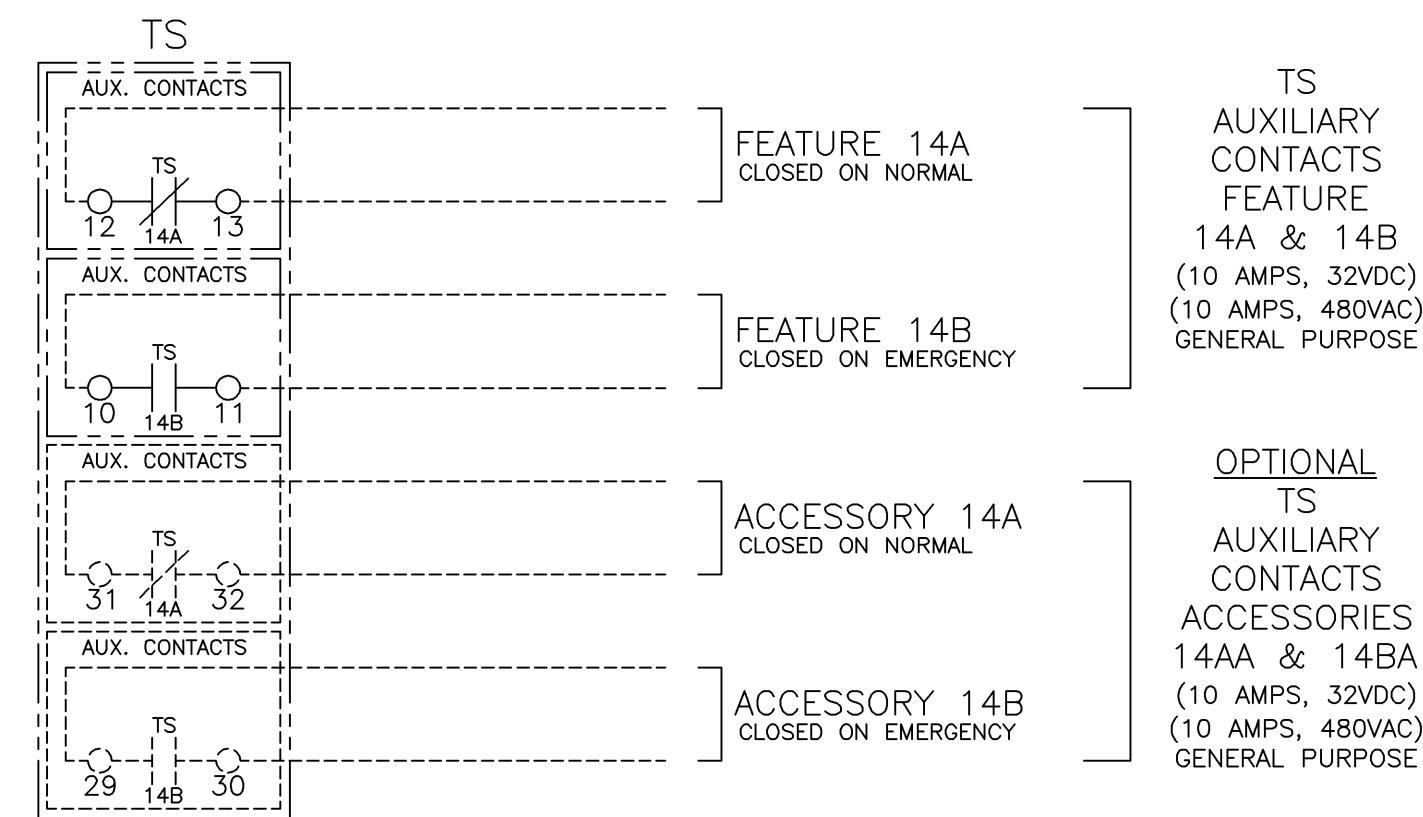


SINGLE PHASE WIRING FOR ASCO® SERIES D386 NON-AUTOMATIC TRANSFER SWITCHES RATED 30, 70, 100, 150, 200, & 230 AMPERES WITH GROUP I CONTROLS

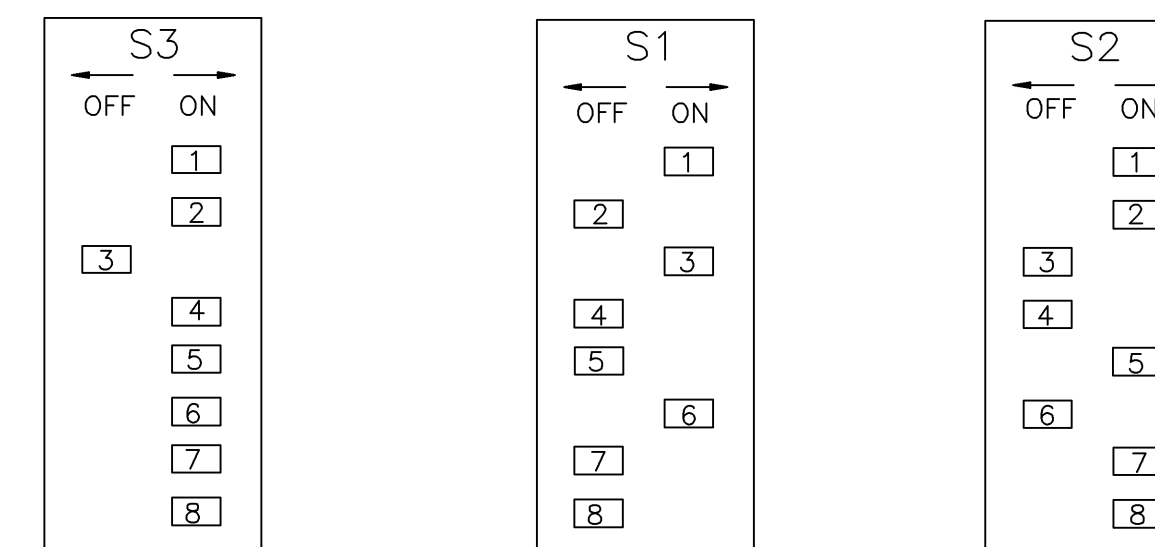
FIELD CONNECTIONS



LOAD DISCONNECT CONTACTS
5 AMPS RESISTIVE
28 VDC OR 120 VAC MAX.
(LOCATED ON CONTROL PANEL)

STANDARD FACTORY SETTINGS FOR CONTROL PANEL

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



- P1 (TIMER E/N) SET UP FOR FULL CCW.
- P2 (TIMER N/E) SET UP FOR FULL CCW.
- 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.
- 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

- SWITCH SHOWN DE-ENERGIZED AND CONNECTED TO THE NORMAL SOURCE.
- 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.
- O 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.
- GROUND STRAP ON CONTROL PANEL IS AFFIXED TO CHASSIS (ENCLOSURE) AT LOWER LEFT CONTROL PANEL MOUNTING STUD.

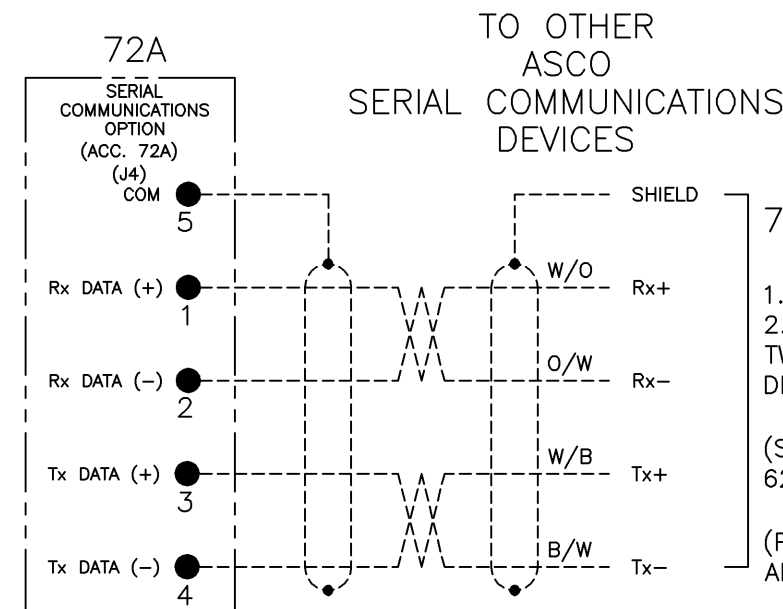
FEATURES

- SELECTOR SWITCH (SS) FOR MANUAL TRANSFER TO NORMAL AND EMERGENCY. THREE POSITION, MOMENTARY, SPRING RETURN TO CENTER SELECTOR SWITCH.
- FEATURES 14A & 14B - TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS. ONE (1) FORM C CONTACT TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO NORMAL (14A) AND ONE (1) FOR EMERGENCY (14B). CONTACTS RATED 10 AMPS, 32 VDC, 480 VAC. NOTE: ADDITIONAL AUXILIARY CONTACTS ARE AVAILABLE AS OPTIONS.
- SIGNAL LIGHT PL1, (GREEN LED), INDICATES WHEN TRANSFER SWITCH IS CONNECTED TO NORMAL SOURCE. (STD. FEAT. 9A)
- SIGNAL LIGHT PL2, (RED LED), INDICATES WHEN TRANSFER SWITCH IS CONNECTED TO EMERGENCY SOURCE. (STD. FEAT. 9B)
- 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 TRANSFERRING 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:**
- EARTH GROUND SHIELD AT HOST DEVICE ONLY.
 - 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

* 200 & 230 AMP SIZES ARE 480V MAX.

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				
					A B C D E F				CODE	DESCRIPTION	CODE	NOMINAL VOLTAGE	CODE	TYPE	DESCRIPTION
D	386	A B C	2	30 70 100 150 200* 230*	H J K L M N P Q R	1	X	C F G L	BLANK	NONE	A	115	BLANK	1	OPEN TYPE (NO ENCLOSURE) GENERAL PURPOSE, INDOOR
									B	SOLID SWITCHING	B	120	F	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
									C	OVERLAPPING	C	208	G	4	
									D		D	220	L	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
									E		E	230			
									F		F	240			
									H		H	380			
									J		J	400			
									K		K	415			
									L		L	440			
									M		M	460			
									N		N	480			
									P		P	550*			
									Q		Q	575*			
									R		R	600*			

CATALOG NUMBER _____
ASCO CERTIFIED TO S.O. _____
 BY _____
 DATE _____

FORM REV E

PROJECT NAME: _____

WIRING _____ DIAGRAM _____

SERIES D386 TS,1PH, 30-230 AMPS
 "D" FRAME, GROUP 1 CONTROLS

DRAWN BY: BWM 8/02	CHECKED: SDH 8/02	PROJECT APPROVAL: SDH 8/02	FINAL APPROVAL: _____
MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-055		ASSEM. REF. NO. _____	
PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		COMPUTER GENERATED DRAWING	
SCALE: 1:1 SIZE: DS		DWG. NO. 733600	
DRAWING E		SHEET 10F.4	

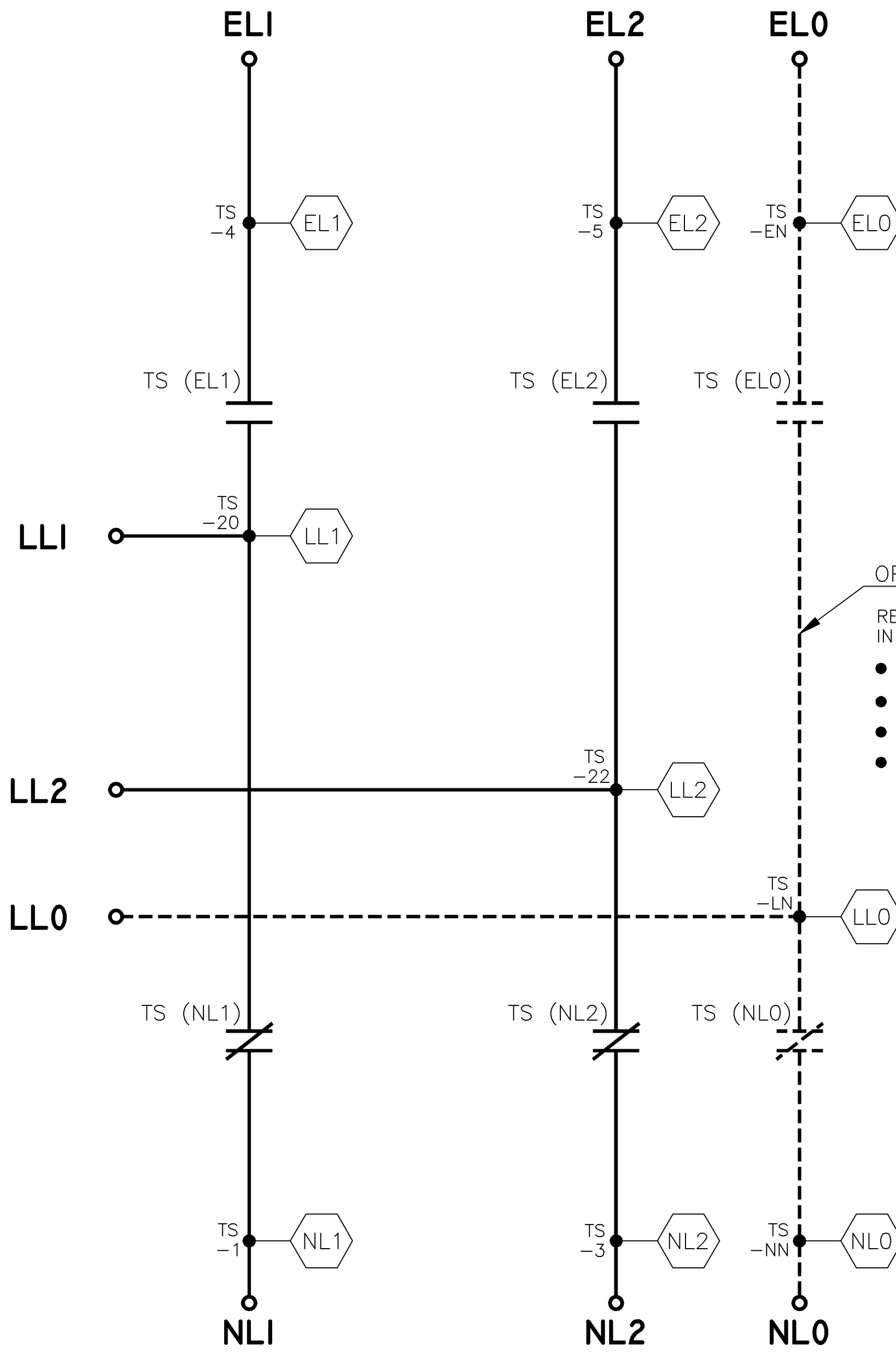
REV. TO SHEET ECN NO. BY APP. DATE

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY

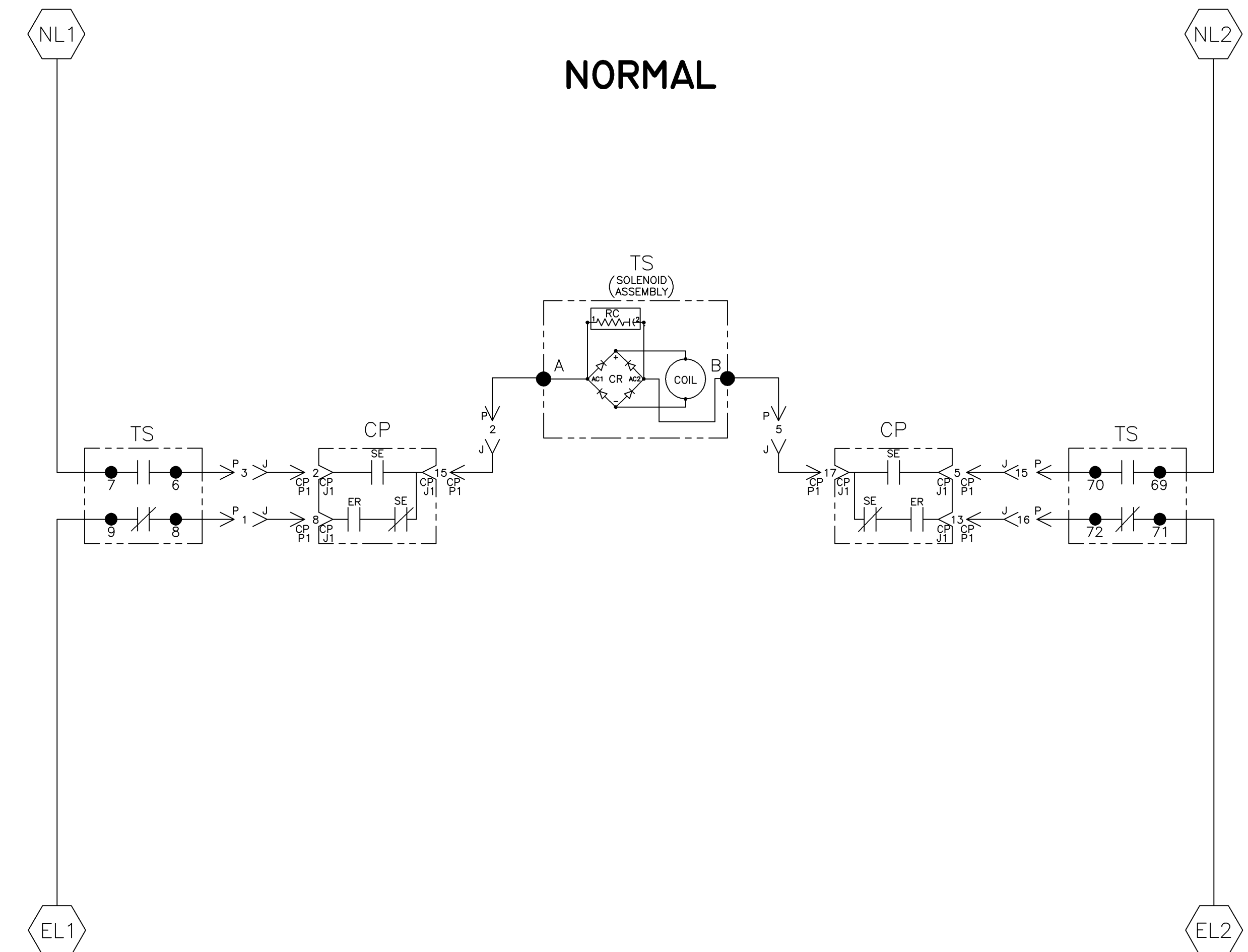
NORMAL



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

- NONE
- SWITCHING CONTACTS
- OVERLAPPING CONTACTS
- SOLID BUS PLATE

NOTE:
 ATS SHOWN CLOSED ON NORMAL SOURCE.



EMERGENCY

TS	SOLENOID POSITION			
	CLOSED BEFORE NORMAL	BEFORE TDC	BEFORE CLOSED	CLOSED EMERG
6-7				
69-70				
8-9				
71-72				

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

E	212659	WK	BK	03/29/07
D	167059	SDH	SDH	05/17/04
C	166172	AJM	BK	02/17/04
B	165132	BWM	WK	10/03
A	164537	BWM	WK	08/08/03
-	161395	BWM	SDH	8/02

PROJECT NAME: **WIRING DIAGRAM**

SERIES D386 TS,1PH, 30-230 AMPS
 "D" FRAME, GROUP 1 CONTROLS

DRAWN BY	BWM	DATE	8/02	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	SDH	DATE	8/02	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	SDH	DATE	8/02	ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.	DWG. NO.	733600
REV.	E	REV.			ECN NO.	212659
					SHEET	20F4

WIRE RUN LISTING

NORMAL SOURCE CIRCUITS

FOR 30-230 AMPS

← HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	CLR	AWG
WIRE No.	HARNESS 337782-003 (P) MAIN TS	<input checked="" type="checkbox"/>		20
1	TS-8,P-1			
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-19			
27	TS-21,P-20			
28	TS-22,P-21			
29	TS-NN,P-22			
30	TS-EN,P-23			
31	TS-LN,P-24			
DEAD END WIRES				
11	TS-2,P-11			
25	TS-19,P-18			
27	TS-21,P-20			

← HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	CLR	AWG
WIRE No.	HARNESS 483763 (J,CP-P1,CP-P2) CONTROL PANEL	<input type="checkbox"/>		16
1	J-1,CP-P1-8			
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			

OPTIONAL ACC. 11CD

OPTIONAL ACC. 11CD CKTS.		CLR	AWG
WIRE No.			16
28	CP-4,TMR-3		
29	CP-5,TMR-5		
30	CP-14,TMR-2		
31	CP-15,TMR-1		

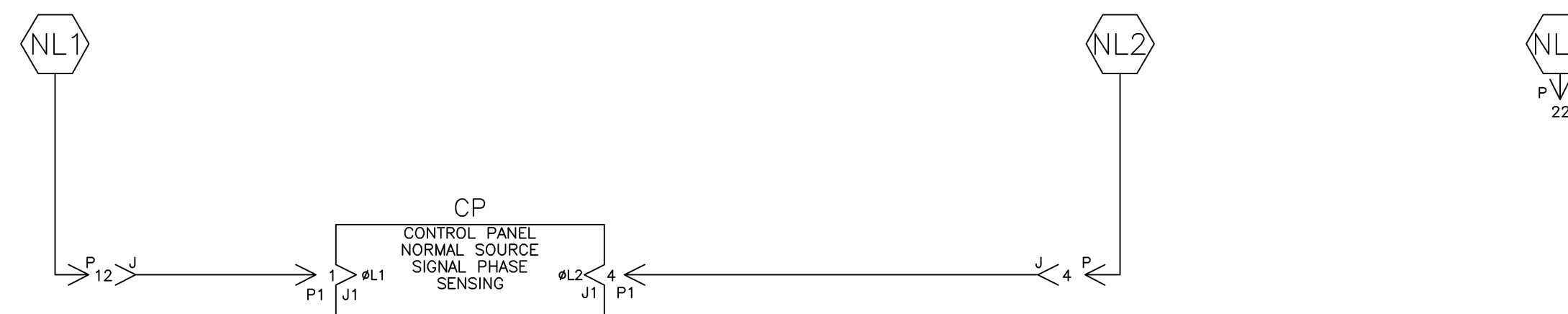
← HARNESS LOCATOR		BOX CHECKED IF HARNESS IS MODIFIED	CLR	AWG
WIRE No.	HARNESS 619510-037 (P3) DOOR CONTROLS & INDICATORS	<input type="checkbox"/>		22
140	P3-5,PL1(-)			
141	P3-8,PL1(+)			
142	P3-6,PL2(-)			
143	P3-7,PL2(+)			
144	P3-9,PL3(-) * SEE NOTE			
145	P3-10,PL4(-) *			
146	P3-11,PL3(+)			
146	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

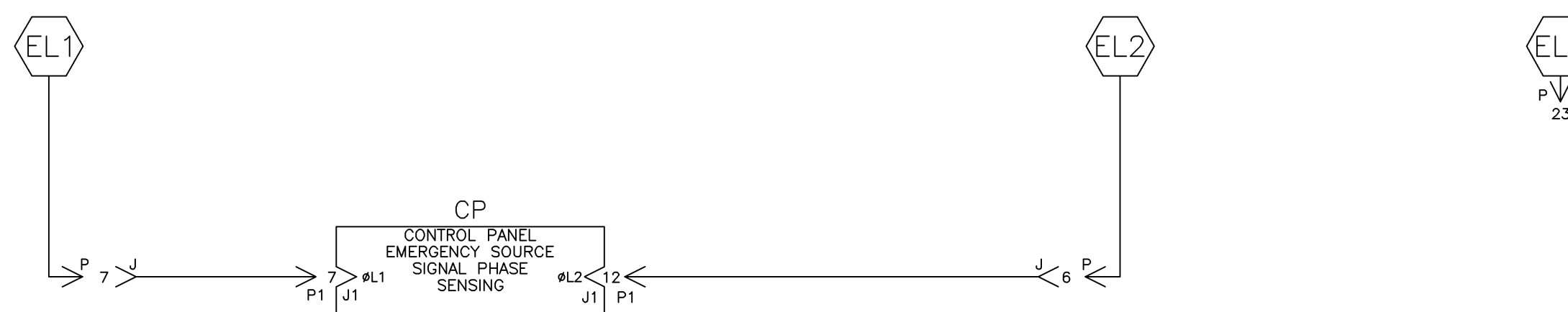
HARNESS 619510-037 WITH 6Q KEY OPTION REMOVE WIRES		CLR	AWG
147	CP-6,SS-13		
148	CP-10,SS-23		
149	CP-7,SS-14		
149	SS-14,SS-24		
ADD WIRES			
147	CP-6,SS-1NO		
148	CP-10,SS-2NO		
149	CP-7,SS-1COM		
149	SS-1COM,SS-2COM		

NORMAL



EMERGENCY SOURCE CIRCUITS

EMERGENCY

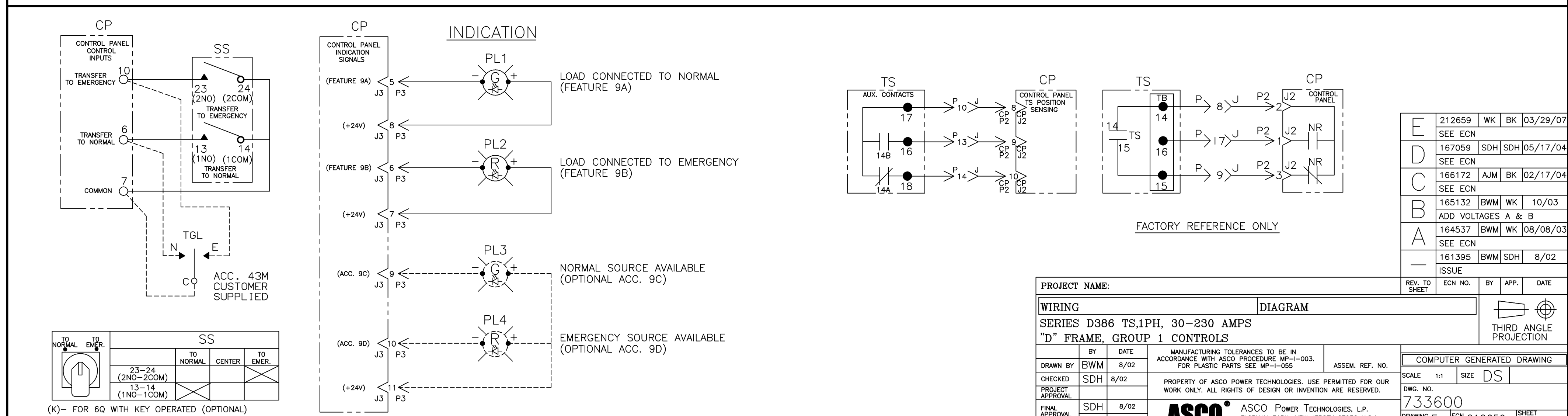


LOAD TERMINAL CIRCUITS

LOAD



CONTROL SIGNALS & INDICATION



E	212659	WK	BK	03/29/07
D	167059	SDH	SDH	05/17/04
C	166172	AJM	BK	02/17/04
B	165132	BWM	WK	10/03
A	164537	BWM	WK	08/08/03
-	161395	BWM	SDH	8/02
-				ISSUE

PROJECT NAME: **WIRING** **DIAGRAM**

SERIES D386 TS,1PH, 30-230 AMPS

"D" FRAME, GROUP 1 CONTROLS

ASCO POWER TECHNOLOGIES, L.P.

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

733600

SCALE: 1:1 SIZE: DS

COMPUTER GENERATED DRAWING

REV. TO SHEET: E ECN NO. 212659 BY: SDH APP. DATE: 8/02

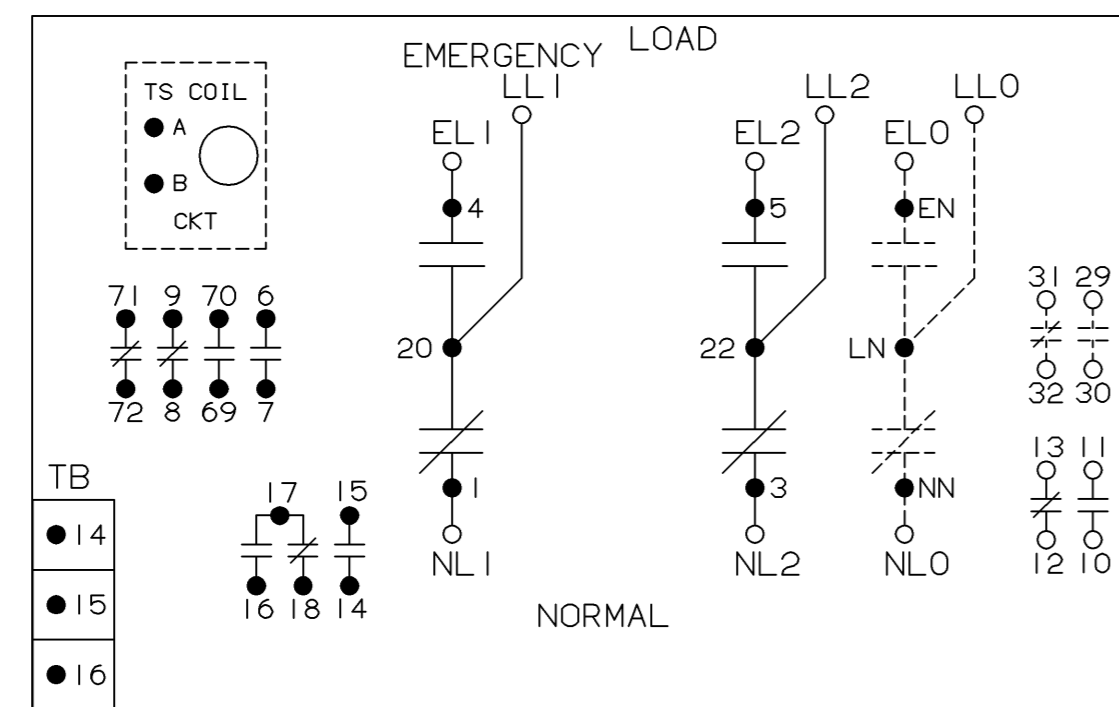
SHEET 3 OF 4

PHYSICAL DIAGRAM

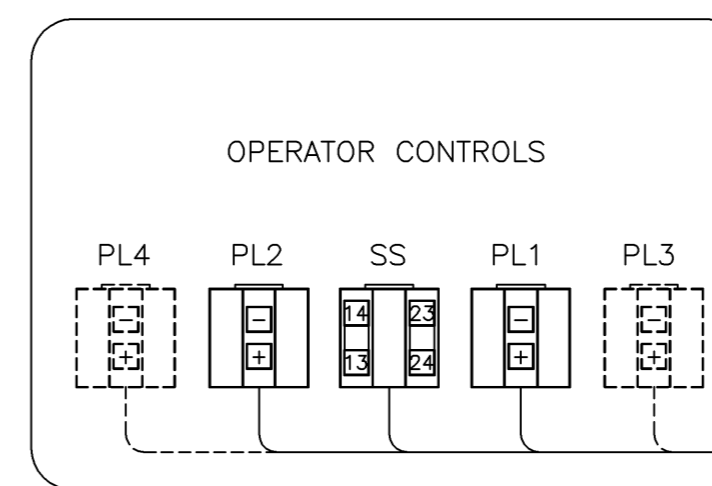
ENCLOSURE

DOOR (INSIDE)

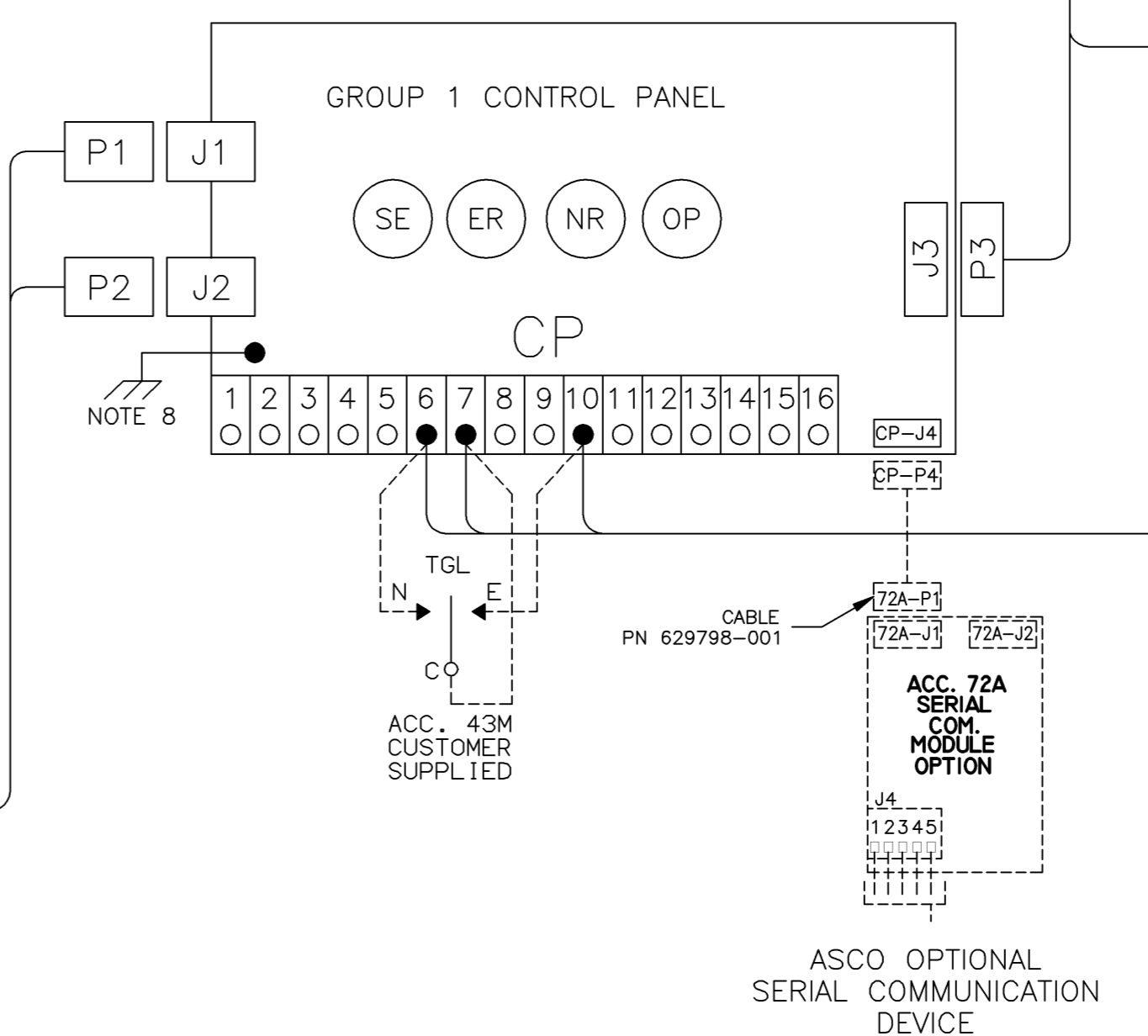
TS (TRANSFER SWITCH)
VIEW FROM INSIDE FRONT
30, 70, 100, 150, 200, & 230 AMPS



STANDARD TRANSFER SWITCH HARNESS
(TYPICAL ALL SWITCHES)



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)



DOOR HINGE

BONDING STRAP
PN 098323-019

E	212659	WK	BK	03/29/07
D	167059	SDH	SDH	05/17/04
C	166172	AJM	BK	02/17/04
B	165132	BWM	WK	10/03
A	164537	BWM	WK	08/08/03
-	161395	BWM	SDH	8/02

REV. TO SHEET		ECN NO.	BY	APP.	DATE
PROJECT NAME: WIRING DIAGRAM					
SERIES D386 TS, 1PH, 30-230 AMPS					
"D" FRAME, GROUP 1 CONTROLS					
DRAWN BY	BWM	DATE	8/02	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-055	ASSEM. REF. NO.
CHECKED	SDH	DATE	8/02	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	SDH	DATE	8/02		DWG. NO. 733600
FINAL APPROVAL					ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.

THIRD ANGLE PROJECTION

DRAWING E CON NO. 212659 SHEET 4 OF 4