

# SINGLE PHASE WIRING FOR ASCO® 300 SERIES TRANSFER SWITCHES (D3ATS/D3NTS) 30, 70, 104, 150, 200, & 230 AMPERES WITH GROUP G CONTROLS

## GENERAL INFORMATION

THIS WIRING APPLIES TO 300 SERIES TRANSFER SWITCHES THAT UTILIZE THE "D" FRAME POWER TRANSFER SWITCH RATED 30 - 230 AMPERES.

THE GROUP G CONTROLLER PROVIDES EITHER AUTOMATIC (D3ATS) OR NON-AUTOMATIC [MANUAL] (D3NTS) OPERATION BASED ON ITS FACTORY SETTING ACCORDING TO THE CUSTOMER ORDER REQUIREMENTS.

THE TYPE OF TRANSFER SWITCH PROVIDED CAN BE DETERMINED FROM THE PRODUCT IDENTIFICATION MARKINGS LOCATED ON BOTH THE POWER TRANSFER SWITCH AND THE COVER OF THE GROUP G CONTROLLER.

ALL OPERATIONAL SETTINGS AND SEQUENCES OF THE GROUP G CONTROLLER AND ITS RELATED OPTIONAL ACCESSORIES (1UP, 18RX, 23G) ARE PROVIDED IN THE USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON-AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333-400.

INFORMATION FOR INSTALLATION AND TESTING OF THE TRANSFER SWITCH IS PROVIDED IN THE INSTALLATION MANUAL, ASCO 3ATS & 3NTS, D-DESIGN 30-230 A TRANSFER SWITCHES, PART NUMBER 381333-402.

**COMMON ALARM & NOT IN AUTO SIGNALING FEATURES**

A SET OF FORM C CONTACTS IS PROVIDED ON THE GROUP G CONTROLLER AS "OP1". THE FEATURE SETTING OF "OP1" CAN BE SET TO OPERATE THE CONTACTS AS A "NOT IN AUTO" SIGNAL.

WHEN "OP1" IS SET FOR "NOT IN AUTO", THE OUTPUT CONTACTS CHANGE POSITION WHEN THE TRANSFER IS BEING INHIBITED FROM TRANSFERRING TO THE EMERGENCY SOURCE (FEATURE 34B) OR THE TRANSFER SWITCH HAS BEEN SET FOR NON-AUTOMATIC (MANUAL) OPERATION.

WHEN OPTIONAL ACCESSORY 11BE "SOFTWARE BUNDLE" IS PART OF THE TRANSFER SWITCH ASSEMBLY, "OP1" MAY ALTERNATIVELY SET FOR A "COMMON ALARM" SIGNAL. THE OUTPUT CONTACTS CHANGE POSITION WHEN A "COMMON ALARM" IS NOT PRESENT AND RESET WHEN A "COMMON ALARM" CONDITION IS PRESENT. THE "COMMON ALARM" SIGNAL CONDITIONS ARE SELECTABLE.

ADDITIONAL "COMMON ALARM" AND "NOT IN AUTO" CONTACTS ARE AVAILABLE WHEN OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "OP2 AND/OR "OP3" WILL PROVIDE SIGNAL FUNCTIONS WHEN THE FEATURE SETTING OF EACH IS SET TO OPERATE AS "COMMON ALARM" OR "NOT IN AUTO".

CONTACTS ARE RATED 5 AMPS RESISTIVE AT 30 VDC MAXIMUM, 100 mA AT 5 VDC MINIMUM.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON-AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333-400 FOR SETTING INFORMATION.

**NON-AUTOMATIC (MANUAL) OPERATION**

TRANSFER SWITCH ASSEMBLIES FACTORY SET FOR NON-AUTOMATIC OPERATION PROVIDE USER INITIATED, ELECTRICAL OPERATION OF THE TRANSFER SWITCH TO EITHER AVAILABLE SOURCE. THE TRANSFER SWITCH ASSEMBLY IS PHYSICALLY IDENTICAL TO THAT OF THE AUTOMATIC TYPE.

WHEN THE TRANSFER SWITCH IS SET FOR NON-AUTOMATIC OPERATION, A CUSTOMER PROVIDED SELECTOR SWITCH MAY BE USED TO OPERATE IT FROM A REMOTE LOCATION.

**REMOTE CONTROL FEATURES**

THE FOLLOWING CONTROL PANEL INPUTS PROVIDE REMOTE CONTROL FUNCTIONS FOR THE TRANSFER SWITCH. EACH FUNCTION CAN BE IMPLEMENTED BY THE CUSTOMER PROVIDING THE FORM OF CONTROL DESCRIBED. EACH CONTROL CONTACT MUST BE SUITABLE FOR A 5 VDC LOW ENERGY CIRCUIT.

**EXTERNAL FEATURE 17: REMOTE TRANSFER TO EMERGENCY FEATURE (FOR AUTOMATIC TRANSFER TYPE ONLY)** - REQUIRES A CUSTOMER SUPPLIED, NORMALLY CLOSED CONTACT. OPENING OF THE CONTACT CAUSES ENGINE START AND TRANSFER TO THE EMERGENCY SOURCE. RE-CLOSURE OF THE CONTACT ACTIVATES THE FEATURE 3A "RETRANSFER TO NORMAL (IF JUST TEST) TIME DELAY PRIOR TO RETRANSFER. IN THE EVENT THAT THE EMERGENCY SOURCE FAILS WHILE THE TRANSFER SWITCH IS CONNECTED TO EMERGENCY AND THE CUSTOMER SUPPLIED CONTACT IS OPEN, THE TRANSFER SWITCH WILL AUTOMATICALLY RETRANSFER TO THE NORMAL SOURCE.

**EXTERNAL FEATURE 6B: REMOTE BYPASS OF RETRANSFER TO NORMAL TIME DELAY** - REQUIRES A CUSTOMER SUPPLIED, NORMALLY CLOSED CONTACT. OPENING OF THE CONTACT BYPASSES FEATURE 3A RETRANSFER TO NORMAL DELAY IF ACTIVE.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON-AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333-400 FOR SETTING INFORMATION.

**ENGINE CONTROL CONTACTS**

**FEATURE 7 & FEATURE 8:**

ONE SET OF FORM C CONTACTS "NR" (FEAT. 7 N/C, FEAT. 8 N/O) THAT CHANGE POSITION ON EXPIRATION OF THE FEATURE 1C, OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES TIME DELAY, AND RESET ON EXPIRATION OF THE FEATURE 2E ENGINE COOLDOWN TIME DELAY.

AN AUXILIARY CONTACT THAT IS CLOSED WHEN THE TRANSFER SWITCH IS CONNECTED TO THE EMERGENCY SOURCE, IS CONNECTED ACROSS THE N/C CONTACT (FEATURE 7).

AN ADDITIONAL SET OF ENGINE STARTING CONTACTS ARE AVAILABLE ON THE GROUP G CONTROLLER WHEN THE FEATURE SETTING OF THE CONTROLLER OUTPUT CONTACTS "OP1" IS SET TO OPERATE AS "NR2".

ADDITIONAL, OPTIONAL ENGINE STARTING CONTACTS "NR2" ARE AVAILABLE WHEN OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "OP2" AND/OR "OP3" PROVIDE THE ENGINE STARTING FUNCTION WHEN THE FEATURE SETTING OF EACH IS SET TO OPERATE AS "NR2".

CONTACTS ARE RATED 5 AMPS RESISTIVE AT 30 VDC MAXIMUM, 100 mA AT 5 VDC MINIMUM.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON-AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333-400 FOR SETTING INFORMATION.

**EXTERNAL POWER SUPPLY COMPATIBILITY**

USE OF AN EXTERNAL POWER SUPPLY IS USEFUL WHEN REQUIRED TO EXTEND THE FOLLOWING CONTROLLER TIME DELAYS BEYOND 6 SECONDS;

FEATURE 1C - OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES  
 FEATURE 1F - OVERRIDE MOMENTARY EMERGENCY SOURCE OUTAGES

AN EXTERNAL POWER SUPPLY IS ALSO USEFUL WHEN THE TRANSFER SWITCH IS USED WITH COMMUNICATIONS FEATURES BY ENABLING THE CONTROLLER TO CONTINUE COMMUNICATING.

AN EXTERNAL POWER SOURCE MAY BE PROVIDED TO THE CONTROLLER, UNTIL THE NORMAL SOURCE OR EMERGENCY SOURCE IS AVAILABLE, BY USE OF;

- AN EXTERNAL 24 VDC POWER SUPPLY WITH ACCESSORY 18RX (RELAY EXPANSION MODULE) OR
- OPTIONAL ACCESSORY 1UP (UNINTERRUPTIBLE POWER SUPPLY MODULE)

**EXTERNAL 24 VDC POWER SUPPLY "1G":**

AN EXTERNAL 24 VDC POWER SUPPLY MAY BE USED TO POWER THE CONTROLLER WHEN ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "OP2" WILL PROVIDE EXTERNAL 24 VDC POWER SUPPLY FUNCTIONALITY WHEN ITS FEATURE SETTING IS SET TO OPERATE AS "1G". ADDITIONALLY, JUMPERS MUST BE RECONFIGURED ON ACCESSORY 18RX (RELAY EXPANSION MODULE) TO ENABLE THIS FUNCTION AS FOLLOWS;

REMOVE JUMPERS "J1" 1-2 & "J1" 3-4  
 CONNECT JUMPERS "J1" 5-7 & "J1" 6-8

THE OUTPUT CONTACTS CHANGE POSITION WHEN EITHER THE NORMAL SOURCE OR EMERGENCY SOURCE IS AVAILABLE AND RESET WHEN NEITHER SOURCE IS AVAILABLE. THE "OP2" N/C CONTACT SWITCHES CUSTOMER PROVIDED +24 VDC FROM THE EXTERNAL POWER SUPPLY TO THE CONTROLLER.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON-AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333-400 FOR SETTING INFORMATION.

**ACCESSORY 1UP (UNINTERRUPTIBLE POWER SUPPLY):**

WHEN OPTIONAL ACCESSORY 1UP IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY, THE CONTROLLER IS PROVIDED WITH LIMITED RESERVE POWER (APPROXIMATELY 3 MINUTES).

**LOAD DISCONNECT FEATURE**

**FEATURE 31: INCLUDES SUB-FEATURES 31F, 31G, 31M, 31N**

A SET OF FORM C CONTACTS ARE PROVIDED ON THE GROUP G CONTROLLER AS "OP1". WHEN THE FEATURE SETTING OF "OP1" IS SET TO OPERATE THE CONTACTS AS "FEATURE 31", THE TIME DELAY SETTINGS OF THE SUB-FEATURES ARE AVAILABLE.

"OP1" CAN BE SET TO OPERATE TO PROVIDE THE FOLLOWING FUNCTIONS USING THE TIME DELAY SETTINGS ASSOCIATED WITH EACH SUB-FEATURE;

31F - NORMAL TO EMERGENCY PRE-TRANSFER SIGNAL  
 31G - EMERGENCY TO NORMAL PRE-TRANSFER SIGNAL  
 31M - NORMAL TO EMERGENCY POST-TRANSFER SIGNAL  
 31N - EMERGENCY TO NORMAL POST TRANSFER SIGNAL

THE "OP1" OUTPUT CONTACTS CHANGE POSITION FOLLOWING EACH OF THE ABOVE TIME DELAYS.

ADDITIONAL LOAD DISCONNECT CONTACTS, "FEATURE 31" ARE AVAILABLE WHEN OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "OP2 AND/OR "OP3" WILL PROVIDE LOAD DISCONNECT FUNCTIONS WHEN THE FEATURE SETTING OF EACH IS SET TO OPERATE AS "FEATURE 31".

ALL OUTPUT CONTACTS ("OP1", "OP2", "OP3") SET TO OPERATE AS "FEATURE 31", SHARE THE COMMON TIME DELAY SETTINGS OF SUB-FEATURES 31F, 31G, 31M, AND 31N.

CONTACTS ARE RATED 5 AMPS RESISTIVE AT 30 VDC MAXIMUM, 100 mA AT 5 VDC MINIMUM.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON-AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333-400 FOR SETTING INFORMATION.

**LOAD CURRENT METERING**

WHEN OPTIONAL ACCESSORY 23GA IS PART OF THE TRANSFER SWITCH ASSEMBLY, PHASE CURRENT MEASUREMENTS ARE AVAILABLE FOR DISPLAY ON THE GROUP G CONTROLLER.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON-AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333-400 FOR INFORMATION ON USE.

**INPHASE TRANSFER FEATURE FOR LOAD TRANSFER**

INPHASE TRANSFER CONTROL INITIATES AN INPHASE TRANSFER OF LOADS BETWEEN LIVE SOURCES. THIS IS USED TO PREVENT NUISANCE TRIPPING OF DISTRIBUTION CIRCUIT BREAKERS AND POSSIBLE DAMAGE TO MECHANICAL LOADS ASSOCIATED WITH OUT OF PHASE TRANSFER.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON-AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333-400 FOR SETTING INFORMATION.

**FOUR-FUNCTION SOFTWARE BUNDLE**

WHEN OPTIONAL ACCESSORY 11BE IS PART OF THE TRANSFER SWITCH ASSEMBLY, A FOUR-FUNCTION SOFTWARE BUNDLE IS AVAILABLE TO PERFORM THE FOLLOWING FUNCTIONS;

- SERIAL COMMUNICATIONS (RS-485)
- PROGRAMMABLE ENGINE EXERCISER
- EVENT LOG
- COMMON ALARM SIGNAL CAPABILITY ON GROUP G CONTROLLER "OP1" OUTPUT.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON-AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333-400 FOR INFORMATION ON THESE FUNCTIONS.

**SOURCE AVAILABILITY SIGNALS**

SIGNALS INDICATING THE AVAILABILITY OF THE NORMAL & EMERGENCY SOURCES IS PROVIDED WHEN OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "RL5" (EMERGENCY SOURCE AVAILABLE) AND "RL6" (NORMAL SOURCE AVAILABLE) CHANGE POSITION WHEN THE SOURCE IS ACCEPTABLE.

CONTACTS ARE RATED 5 AMPS RESISTIVE AT 30 VDC MAXIMUM, 100 mA AT 5 VDC MINIMUM.

**NOTES**

- SWITCH SHOWN DE-ENERGIZED CONNECTED TO NORMAL SOURCE.
- DEVICE SYMBOLS AND DESIGNATIONS ARE IN ACCORDANCE WITH NEMA PUB. ICS 1, PART 1-101A.
- ALL WIRING IS #16 AWG, TINNED, STRANDED COPPER UNLESS OTHERWISE INDICATED.
- INDICATES CUSTOMER CONNECTION POINTS.
- INDICATES FACTORY CONNECTION POINTS.
- CONNECTION POINTS THAT HAVE BOTH CUSTOMER CONNECTIONS AND FACTORY CONNECTIONS ARE SHOWN OPEN AS CUSTOMER CONNECTION POINTS.
- THE TRANSFER UNIT IS MOUNTED ON THE BACK INSIDE SURFACE OF THE ENCLOSURE. THE CONTROL PANEL AND ANY OPTIONAL ACCESSORIES ARE MOUNTED ON THE INSIDE SURFACE OF THE DOOR.
- AN OPERATOR'S MANUAL IS FURNISHED WITH EACH AUTOMATIC TRANSFER SWITCH. REFER TO THIS PUBLICATION PRIOR TO INSTALLATION AND OPERATION OF THE SWITCH.
- GROUND STRAP ON CONTROL PANEL IS AFFIXED TO CHASSIS (ENCLOSURE) AT LOWER LEFT CONTROL PANEL MOUNTING STUD.

CATALOG NUMBER SUFFIXES									EXPLANATION OF CATALOG NUMBER CODES				
TS FRAME	CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE	NEUTRAL TYPE		ENCLOSURE CODES		
									CODE	DESCRIPTION	CODE	TYPE	DESCRIPTION
D	3ATS 3NTS	A B C	2	30 70 104 150 200* 230*	D E F G H J K L M N P Q R	G	X	C F G H L M N P Q	A	SOLID SWITCHING OVERLAPPING	BLANK C	1	OPEN TYPE (NO ENCLOSURE) GENERAL PURPOSE, INDOOR
									C	208	F	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
									D	220	G	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
									E	230	H	4X	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
									F	240	L	12	
									G	277			
									H	380			(SECURE ENCLOSURES)
									I	415	M	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT
									J	440	N	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
									K	460	4X	4	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
									L	480	Q	12	
									M	550*			
									N	575*			
									P	600*			
									Q				
									R				

NEUTRAL TYPE		VOLTAGE CODES		ENCLOSURE CODES	
CODE	DESCRIPTION	CODE	NOMINAL VOLTAGE	CODE	TYPE
BLANK		BLANK		BLANK	C
A	SOLID SWITCHING OVERLAPPING	C	208	F	3R
B		D	220	G	4
C		E	230	H	4X
		F	240	L	12
		G	277		
		H	380		
		I	415	M	3R
		J	440	N	4
		K	460	4X	4
		L	480	Q	12
		M	550*		
		N	575*		
		P	600*		
		Q			
		R			

CATALOG NUMBER \_\_\_\_\_

**ASCO**® CERTIFIED TO S.O. \_\_\_\_\_

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

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

FORM REV F \_\_\_\_\_

REV. TO SHEET	ECN NO.	BY	APP.	DATE

**WIRING DIAGRAM**

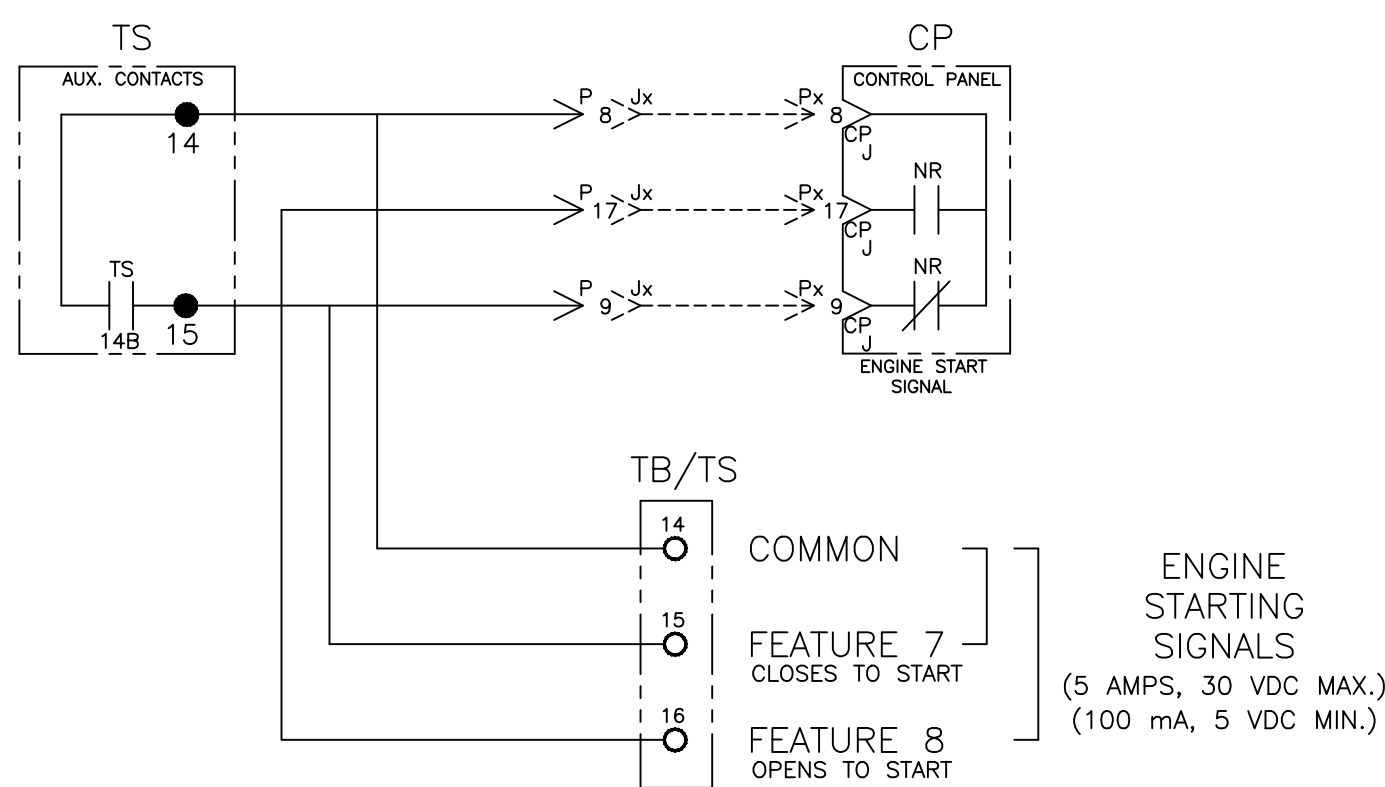
**300 SERIES D3ATS/D3NTS, SINGLE PHASE 30-230 AMPS "D" FRAME, GROUP G CONTROLS**

THIRD ANGLE PROJECTION

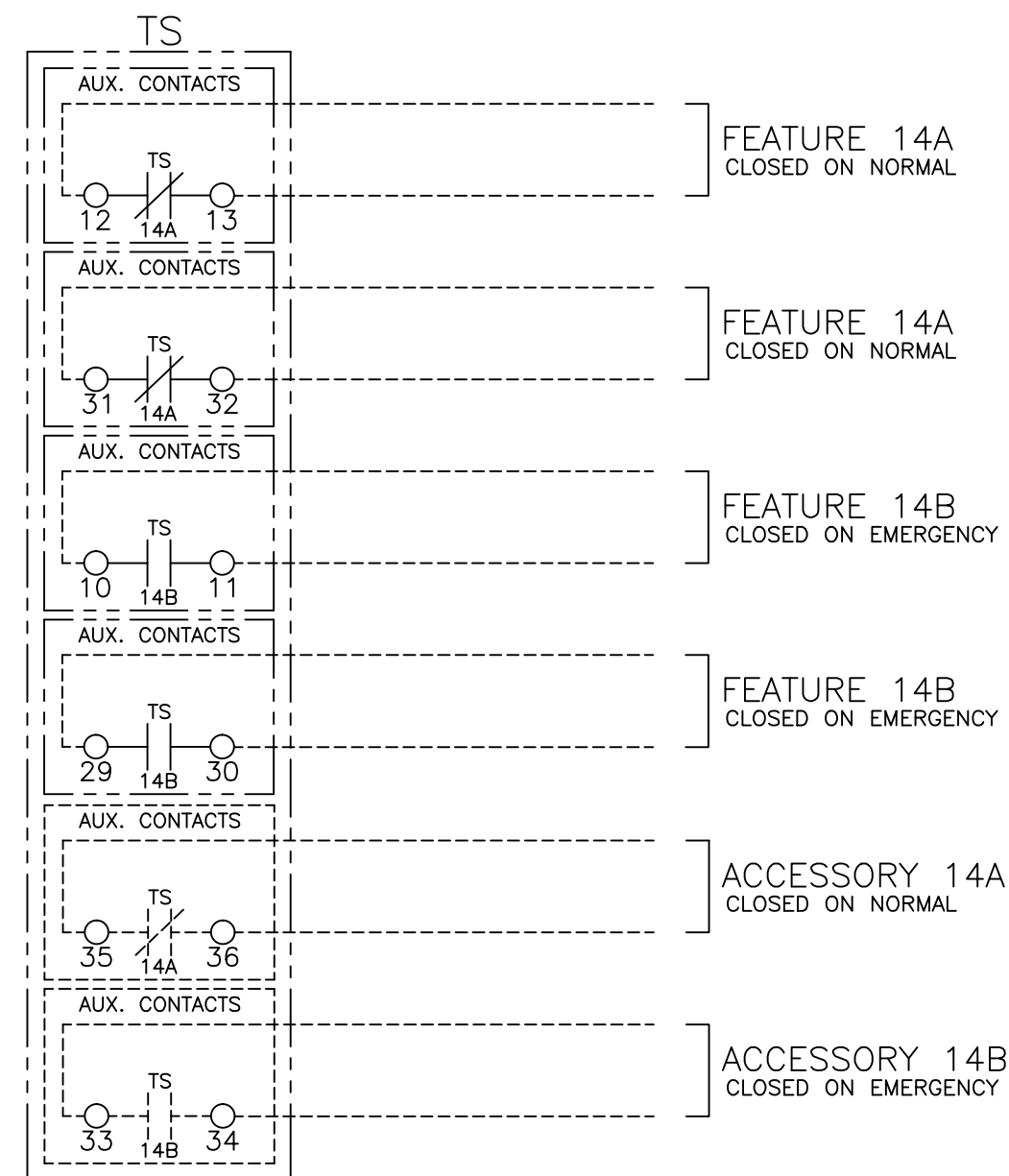
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CHECKED	SDH	5/6/13			SCALE NO. SIZE DS
PROJECT APPROVAL			PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		DWG. NO. 978739
FINAL APPROVAL	SDH	5/6/13			DRAWING F REV. ECN NO. 251413 SHEET 1 OF 6

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

# FIELD CONNECTIONS



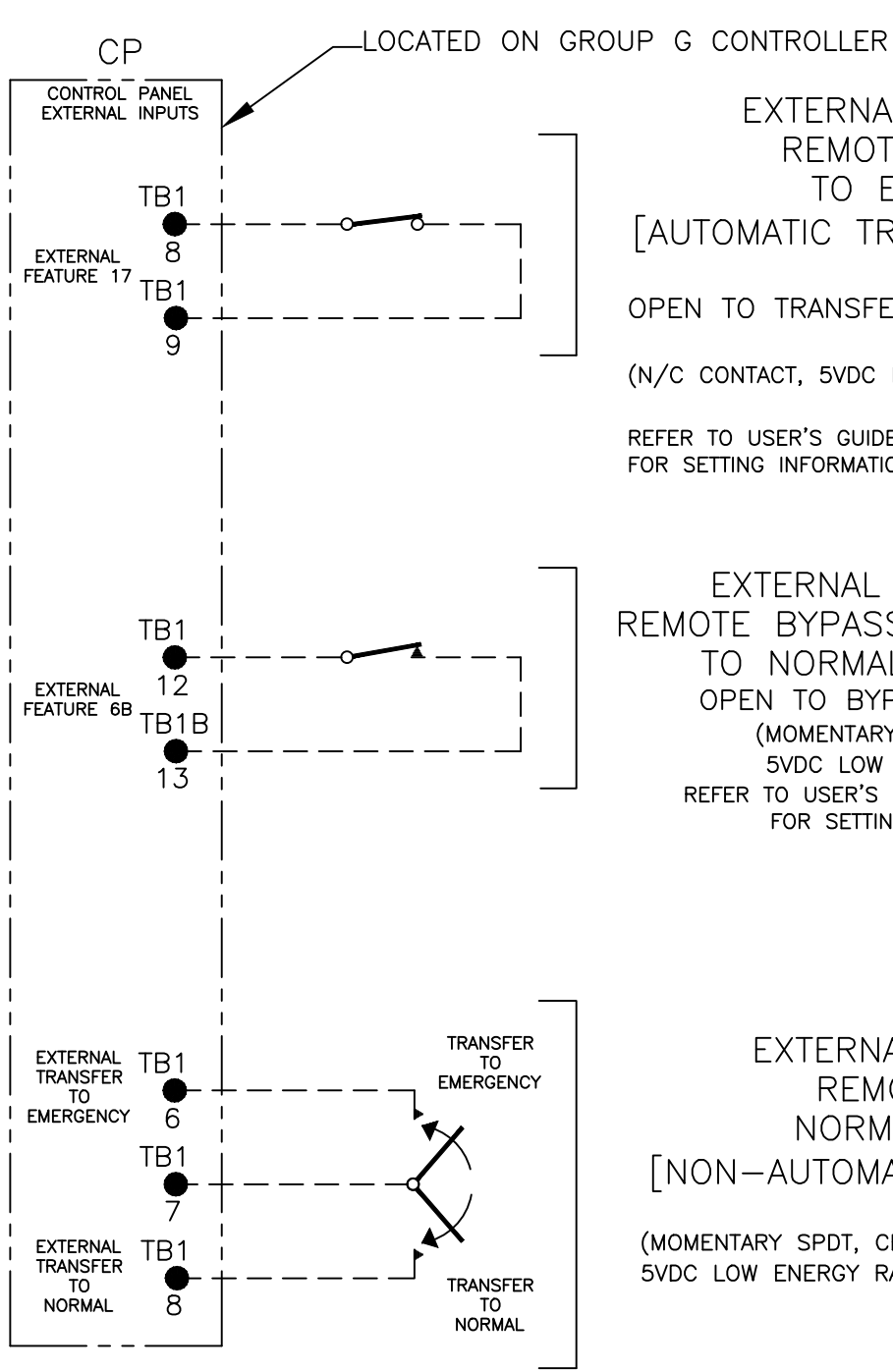
ENGINE STARTING SIGNALS  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)



TS AUXILIARY CONTACTS FEATURE  
14AA & 14BA  
(10 AMPS, 32VDC)  
(10 AMPS, 480VAC)  
GENERAL PURPOSE

OPTIONAL TS AUXILIARY CONTACTS ACCESSORY  
14AB & 14BB  
(10 AMPS, 32VDC)  
(10 AMPS, 480VAC)  
GENERAL PURPOSE

### CONTROLLER REMOTE CONTROL FEATURES

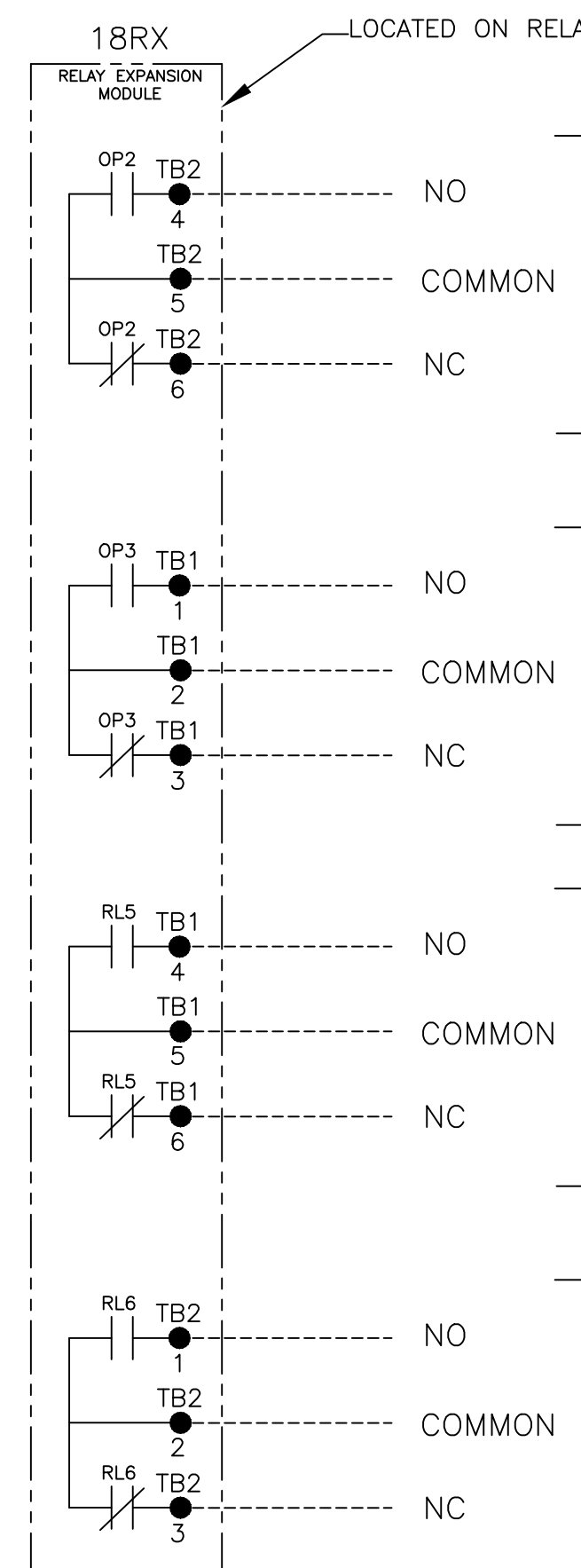


EXTERNAL FEATURE 17  
REMOTE TRANSFER TO EMERGENCY  
[AUTOMATIC TRANSFER TYPE ONLY]  
OPEN TO TRANSFER TO EMERGENCY  
(N/C CONTACT, 5VDC LOW ENERGY RATING)  
REFER TO USER'S GUIDE PN 381333-400 FOR SETTING INFORMATION.

EXTERNAL FEATURE 6B  
REMOTE BYPASS OF RETRANSFER TO NORMAL TIME DELAY  
OPEN TO BYPASS TIME DELAY  
(MOMENTARY N/C CONTACT, 5VDC LOW ENERGY RATING)  
REFER TO USER'S GUIDE PN 381333-400 FOR SETTING INFORMATION.

EXTERNAL MANUAL TRANSFER  
REMOTE TRANSFER TO NORMAL OR EMERGENCY  
[NON-AUTOMATIC TRANSFER TYPE ONLY]  
(MOMENTARY SPDT, CENTER-OFF CONTACTS, 5VDC LOW ENERGY RATING)

### OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE)



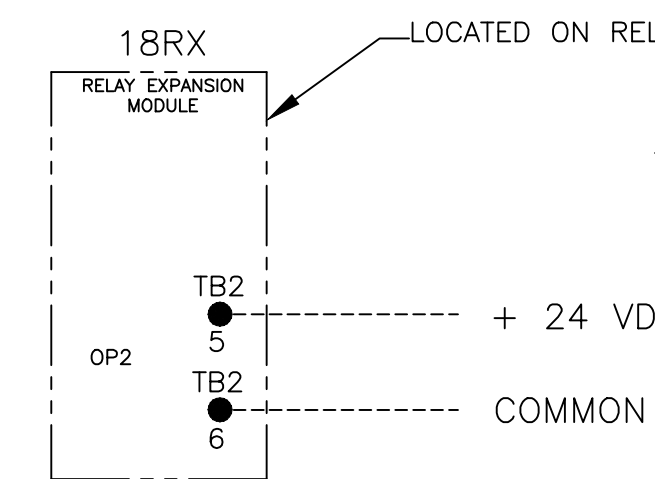
OPTION RELAY "OP2"  
AS  
OUTPUT RELAY  
SET JUMPERS  
J1: 1-2 & 3-4  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)  
REFER TO USER'S GUIDE  
PN 381333-400  
FOR SETTING INFORMATION.

OPTION RELAY "OP3"  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)  
REFER TO USER'S GUIDE  
PN 381333-400  
FOR SETTING INFORMATION.

EMERGENCY SOURCE  
ACCEPTABLE  
SIGNAL  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)

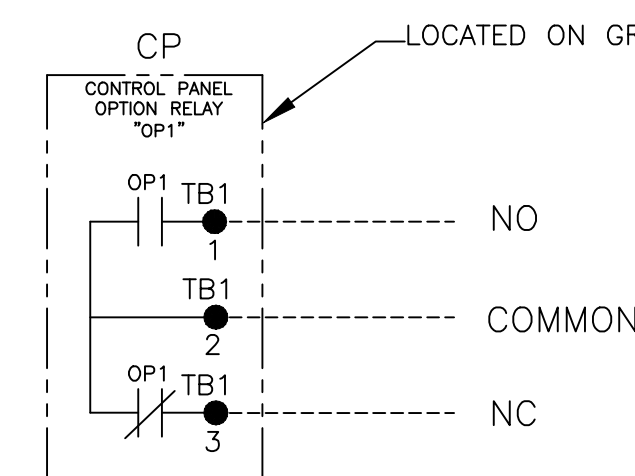
NORMAL SOURCE  
ACCEPTABLE  
SIGNAL  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)

"OP2"  
OPTIONAL  
USES



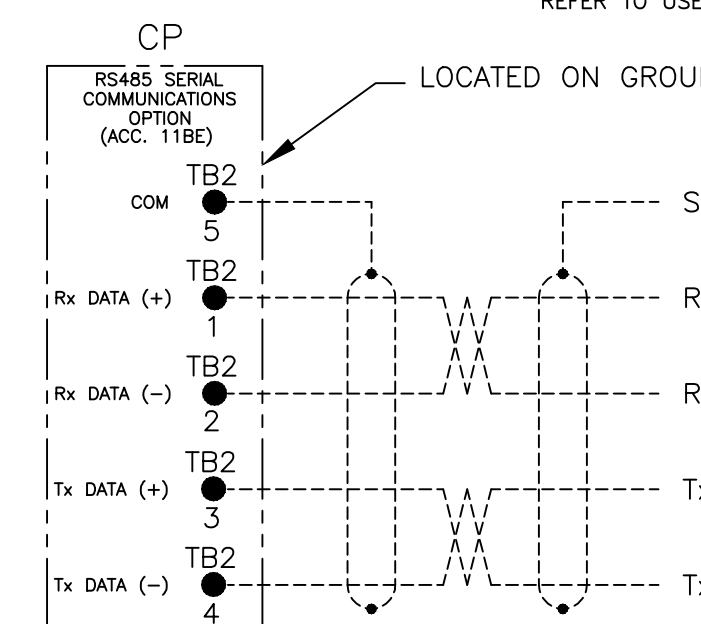
OPTION RELAY "OP2"  
AS  
EXTERNAL POWER  
SUPPLY INPUT  
"1G"  
SET JUMPERS AS FOLLOWS:  
REMOVE JUMPERS "J1" 1-2 & "J1" 3-4  
CONNECT JUMPERS "J1" 5-7 & "J1" 6-8  
(24 VDC NOM., 15 W MAX.)  
INPUT RANGE: 21.6 VDC MIN.  
27.6 VDC MAX.  
REFER TO USER'S GUIDE PN 381333-400  
FOR SETTING INFORMATION.

### CONTROLLER OPTION RELAY "OP1" (STANDARD)



OPTION RELAY "OP1"  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)  
REFER TO USER'S GUIDE  
PN 381333-400  
FOR SETTING INFORMATION.

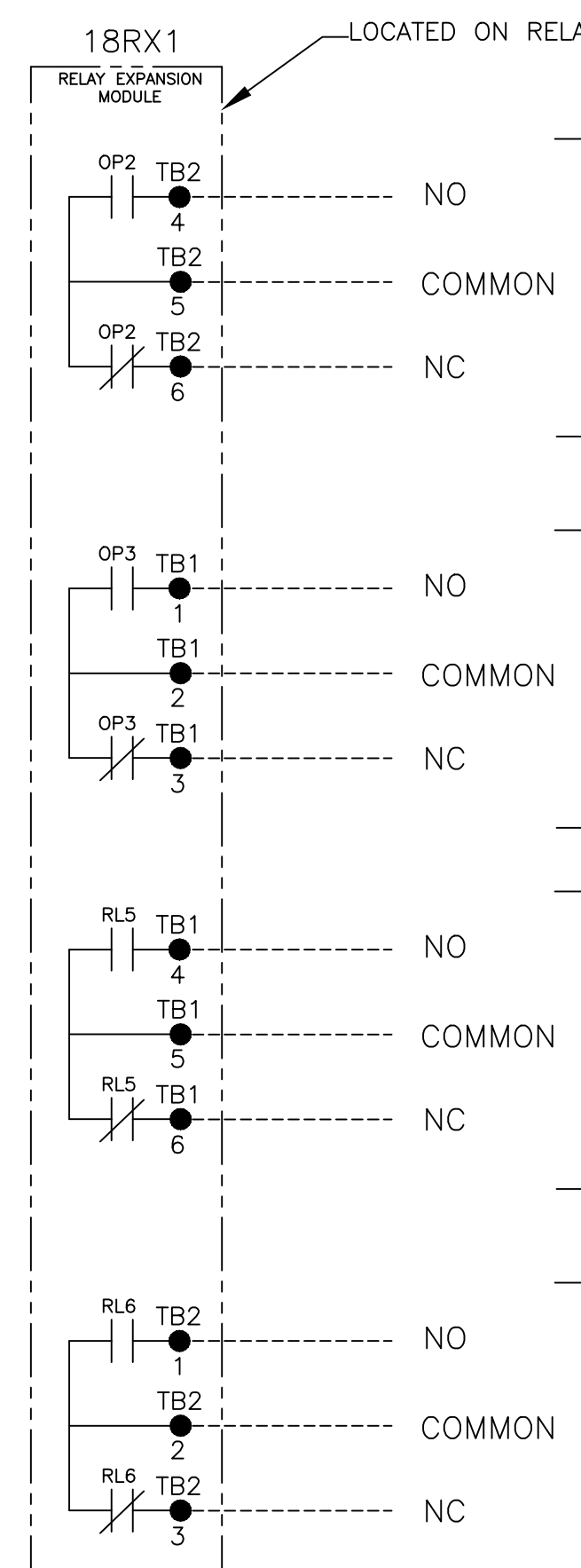
### RS485 SERIAL COMMUNICATIONS OPTION AVAILABLE WITH OPTIONAL ACCESSORY 11BE: FOUR-FUNCTION SOFTWARE BUNDLE REFER TO USER'S GUIDE PN 381333-400 FOR SETTING INFORMATION.



TO OTHER ASCO SERIAL COMMUNICATIONS DEVICES

- 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 RS422 EQUIVALENT TO:  
(STANDARD 80°C) BELDEN 9842 OR 9829 OR ALPHA 6202C OR 6222C  
(PLENUM RATED) BELDEN 89729 OR 82729 OR ALPHA 56902

### OPTIONAL ACCESSORY 18RX1 (SECOND RELAY EXPANSION MODULE)



OPTION RELAY "OP2"  
SET JUMPERS  
J1: 1-2 & 3-4  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)  
REFER TO USER'S GUIDE  
PN 381333-400  
FOR SETTING INFORMATION.

OPTION RELAY "OP3"  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)  
REFER TO USER'S GUIDE  
PN 381333-400  
FOR SETTING INFORMATION.

EMERGENCY SOURCE  
ACCEPTABLE  
SIGNAL  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)

NORMAL SOURCE  
ACCEPTABLE  
SIGNAL  
(5 AMPS, 30 VDC MAX.)  
(100 mA, 5 VDC MIN.)

F	251413	TR	BK	10/27/14
	SEE ECN			
E	247954	TR	BK	4/23/14
	SEE ECN			
D	247770	SDH	SDH	2/14/14
	SEE ECN			
C	246358	AE	BK	01/27/14
	SEE ECN			
B	243244	DL	JPB	07/10/13
	SEE ECN			
A	242580	SDH	SDH	5/24/13
	SEE ECN			
-	242255	SDH	SDH	5/6/13
	ISSUE			

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
300 SERIES D3ATS/D3NTS, SINGLE PHASE 30-230 AMPS "D" FRAME, GROUP G CONTROLS						
DRAWN BY	SDH	DATE	5/6/13	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				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	5/6/13			DWG. NO.	978739
					ECN NO.	251413
					SHEET	2 OF 6

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

MAIN POWER POLES

TS OPERATOR CIRCUIT

D

D

C

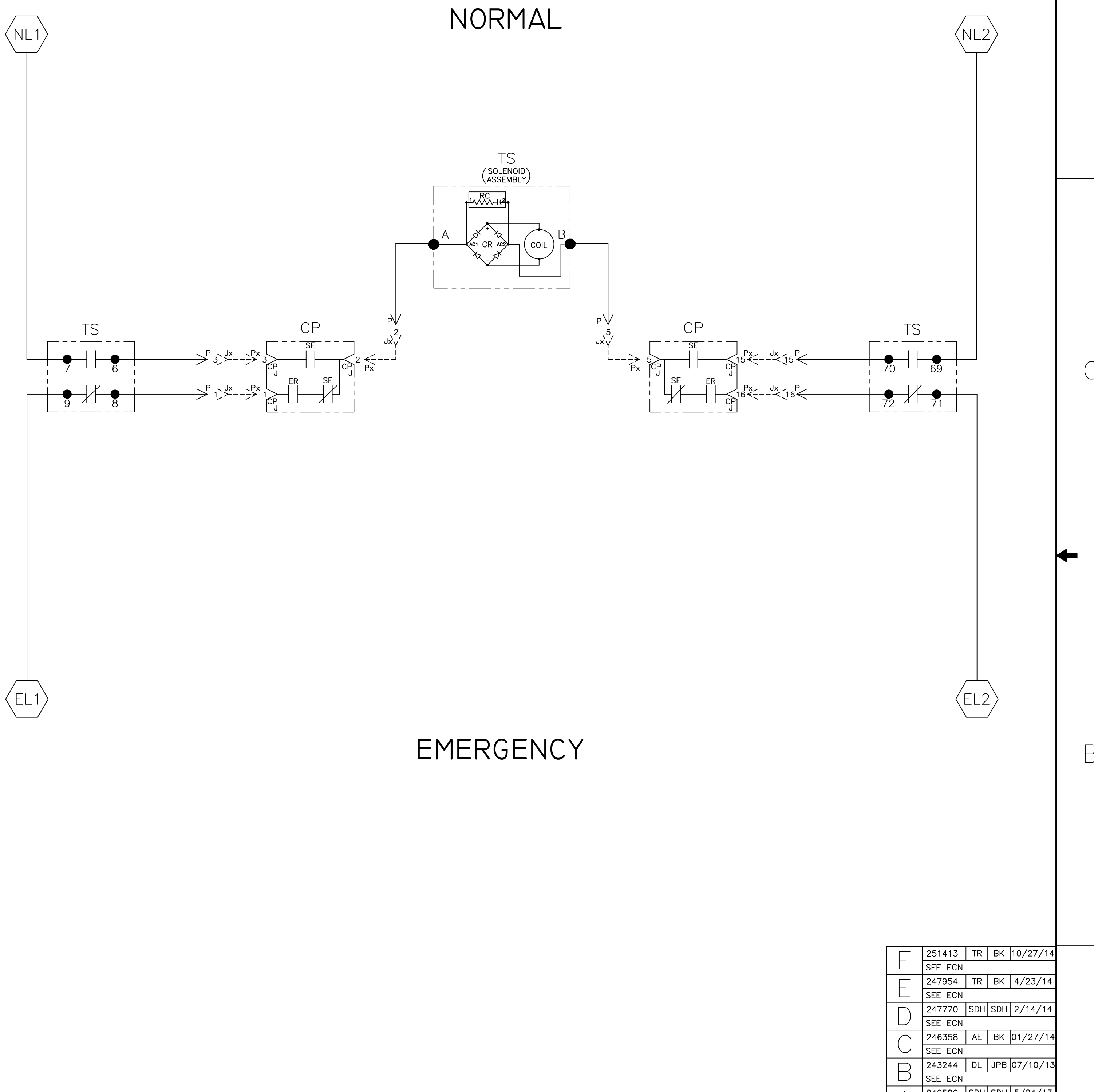
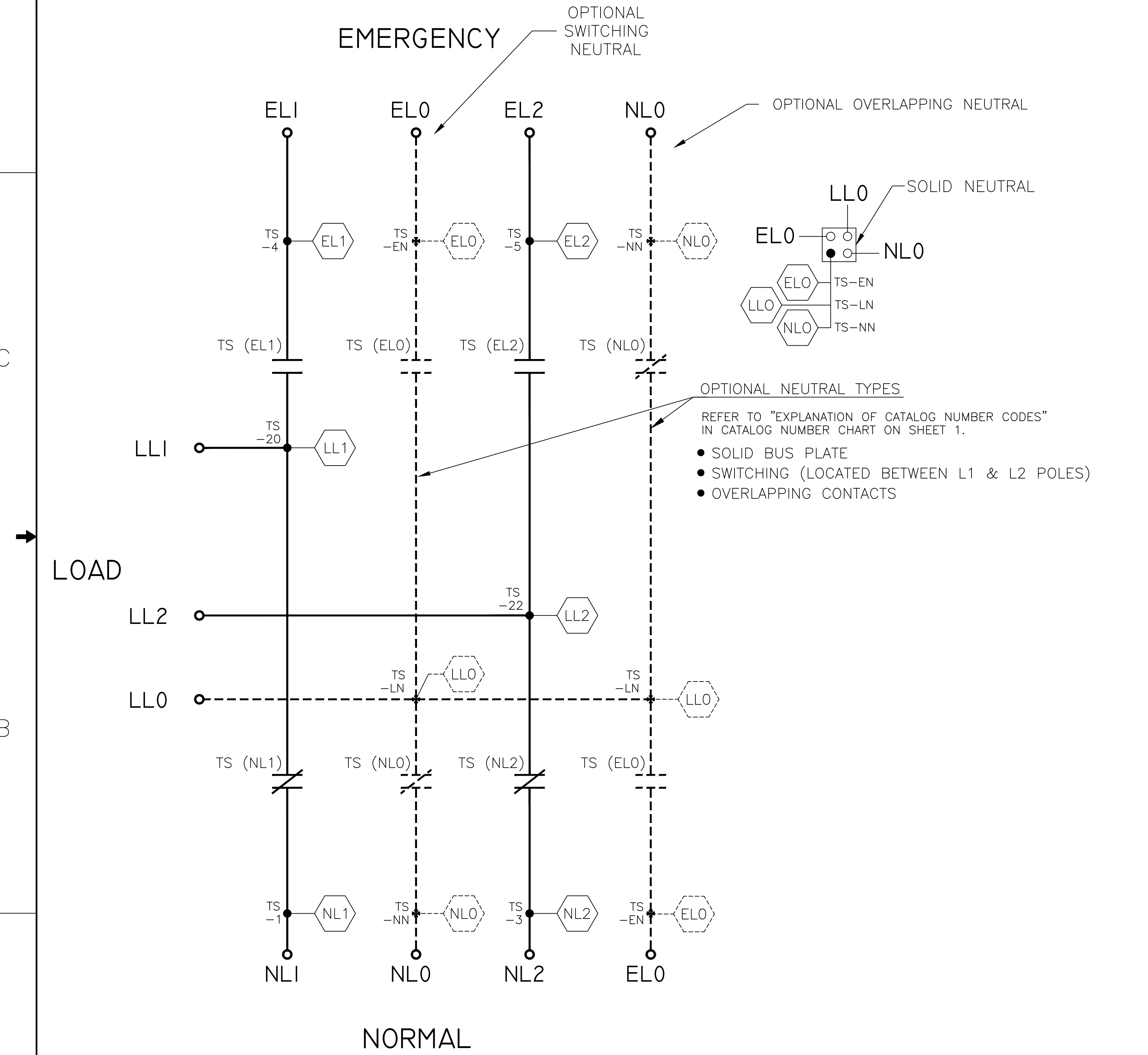
C

B

B

A

A



NOTE:  
ATS SHOWN CLOSED ON NORMAL SOURCE.

TS	SOLENOID POSITION			
	CLOSED BEFORE NORMAL	BEFORE TDC	BEFORE CLOSED <TDC	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.

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

WIRING DIAGRAM

300 SERIES D3ATS/D3NTS, SINGLE PHASE 30-230 AMPS

"D" FRAME, GROUP G 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.	SCALE	NO.	SIZE	DS
SDH	5/6/13						

COMPUTER GENERATED DRAWING

978739

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REV. TO SHEET: \_\_\_\_\_

ECN NO.: 251413

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

APP.: \_\_\_\_\_

DATE: 10/27/14

THIRD ANGLE PROJECTION

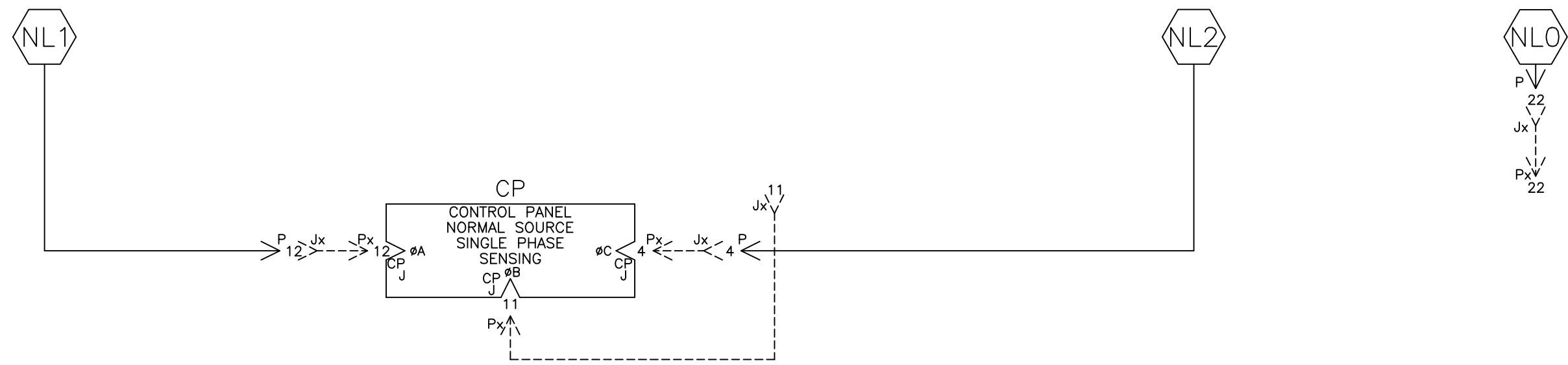
DWG. NO. 978739

SHEET 3 OF 6

F	251413	TR	BK	10/27/14
	SEE ECN			
E	247954	TR	BK	4/23/14
	SEE ECN			
D	247770	SDH	SDH	2/14/14
	SEE ECN			
C	246358	AE	BK	01/27/14
	SEE ECN			
B	243244	DL	JPB	07/10/13
	SEE ECN			
A	242580	SDH	SDH	5/24/13
	SEE ECN			
-	242255	SDH	SDH	5/6/13
	ISSUE			

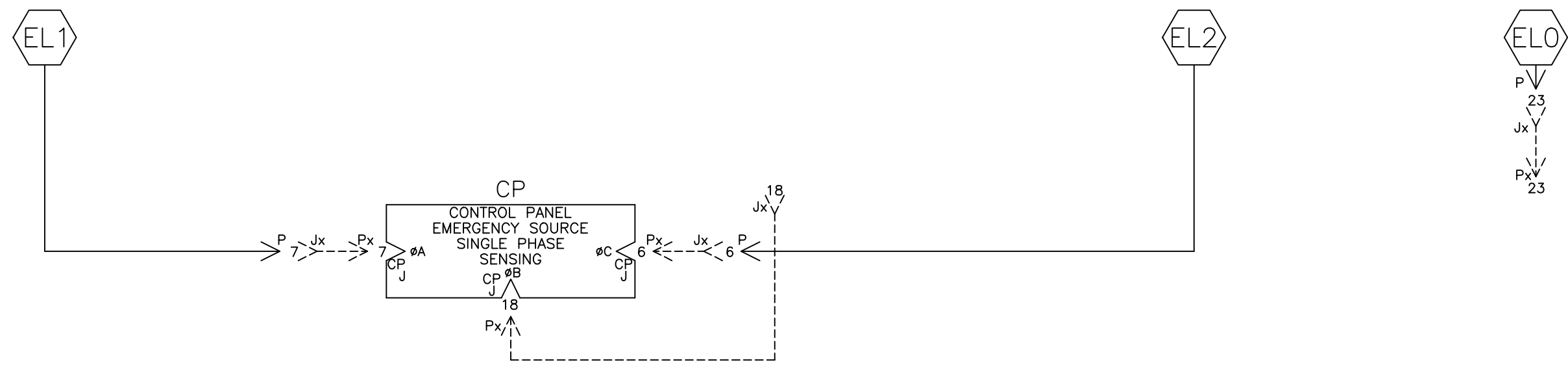
NORMAL SOURCE CIRCUITS

NORMAL



EMERGENCY SOURCE CIRCUITS

EMERGENCY

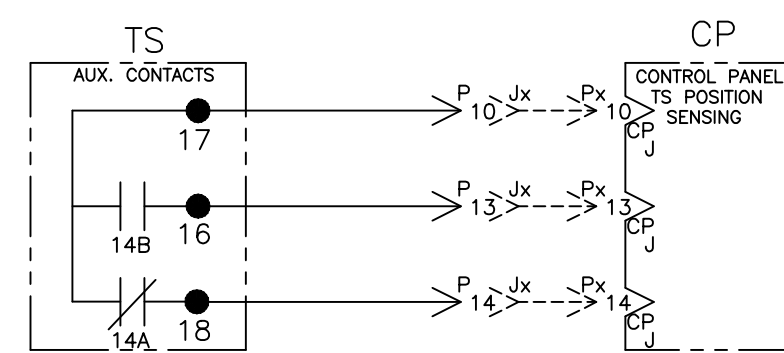


LOAD TERMINAL CIRCUITS

LOAD



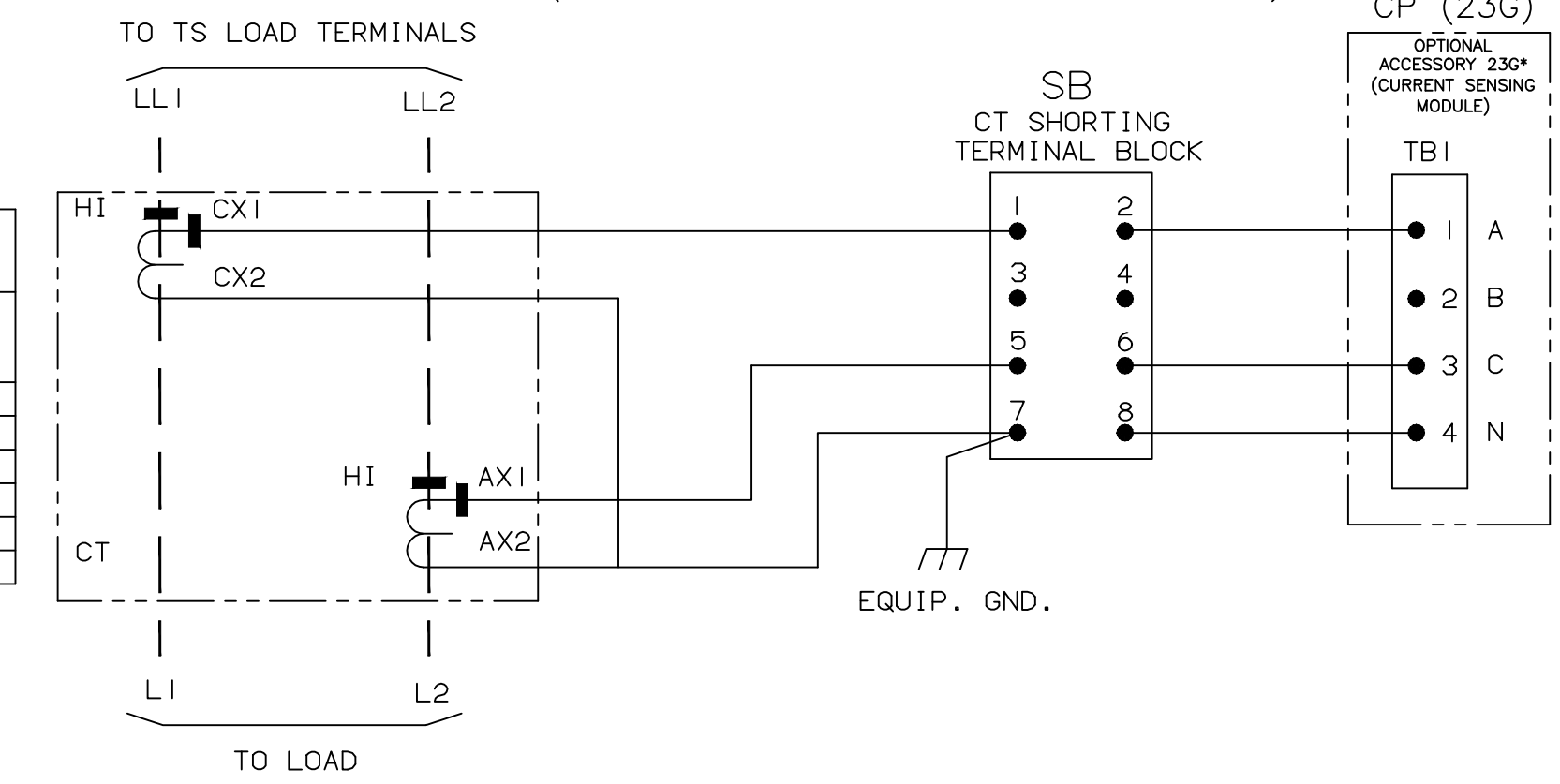
CONTROL SIGNALS & INDICATION



ADDITIONAL CIRCUITS

OPTIONAL ACCESSORY 23GA (LOAD CURRENT METERING)

SWITCH RATING	CT RATIO
30A	50:5A
70A	75:5A
100A	100:5A
150A	150:5A
200A	200:5A
230A	250:5A



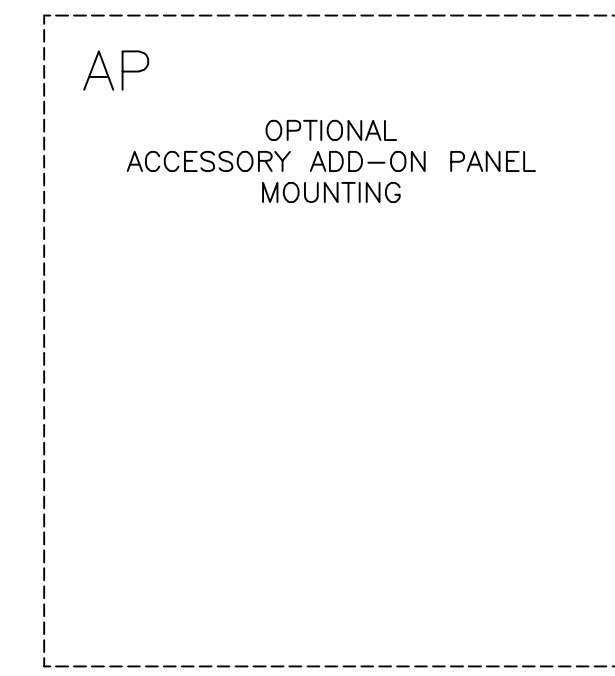
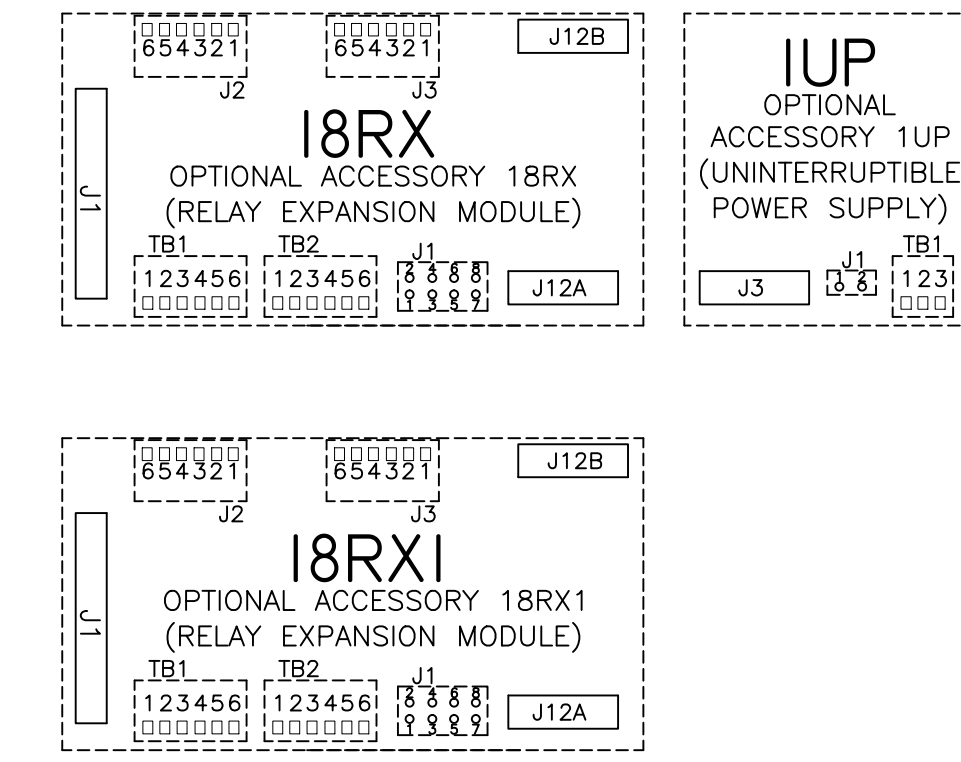
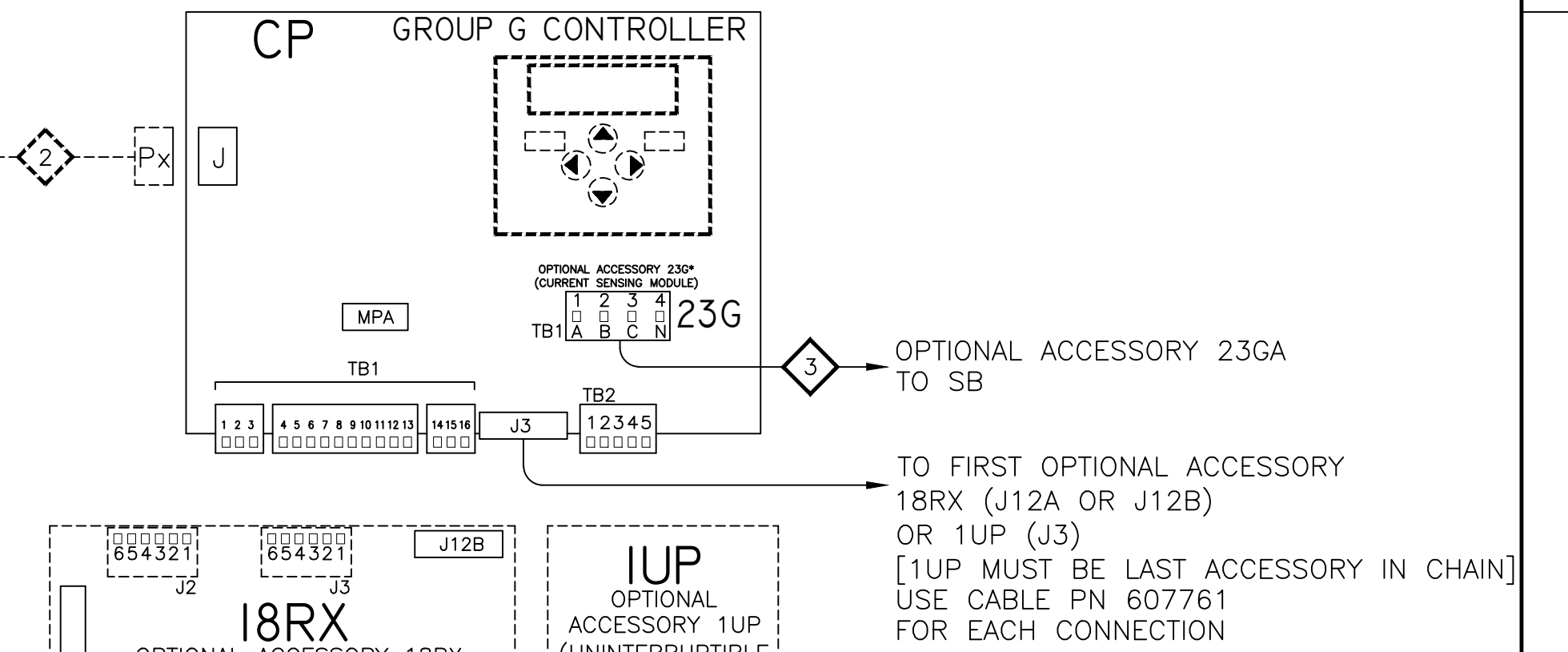
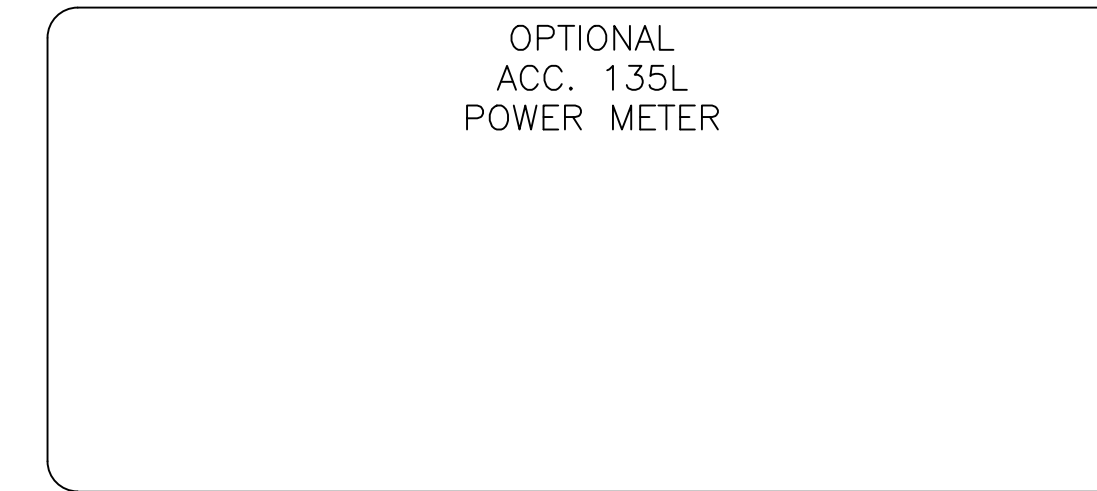
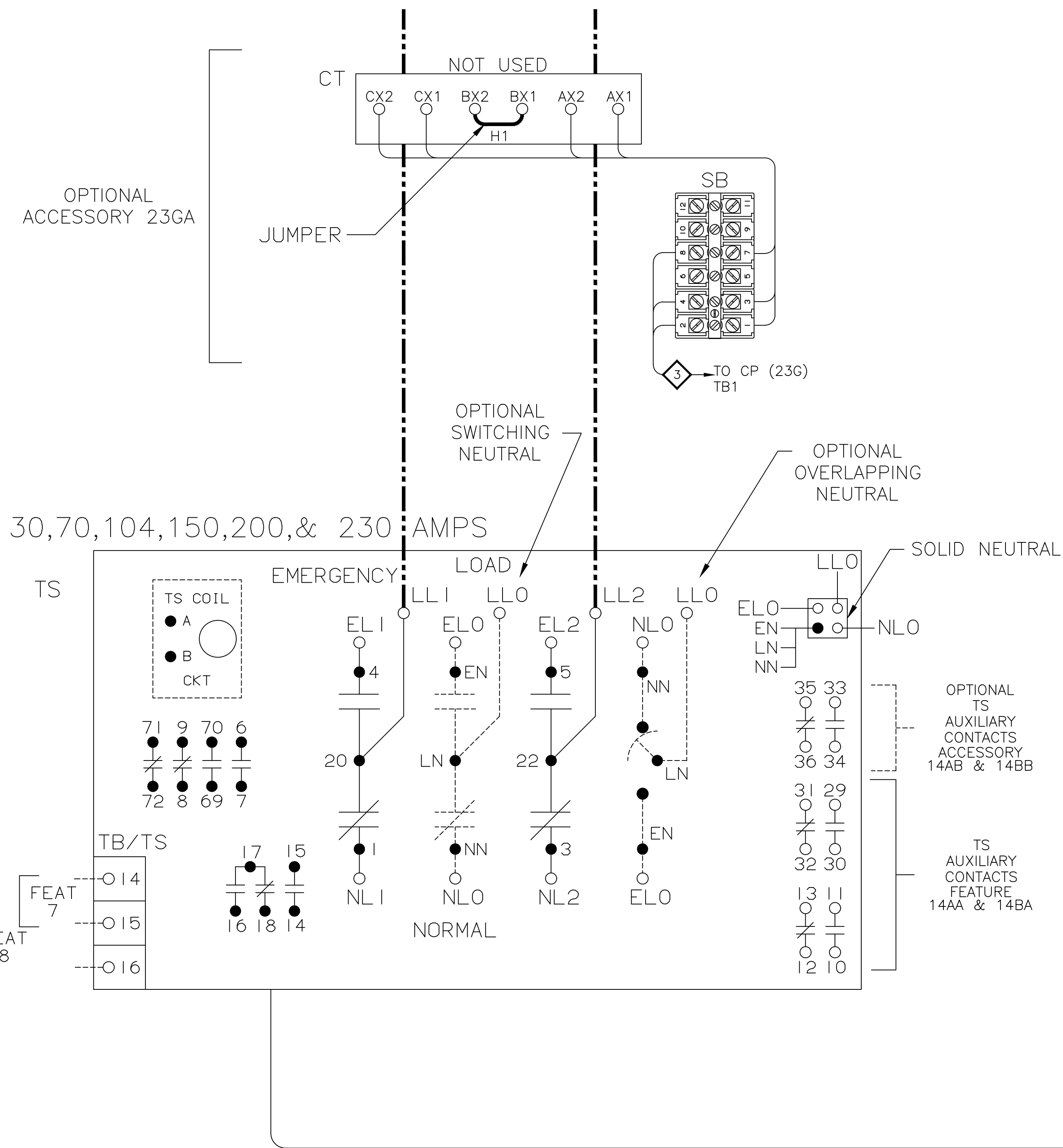
F	251413	TR	BK	10/27/14
	SEE ECN			
E	247954	TR	BK	4/23/14
	SEE ECN			
D	247770	SDH	SDH	2/14/14
	SEE ECN			
C	246358	AE	BK	01/27/14
	SEE ECN			
B	243244	DL	JPB	07/10/13
	SEE ECN			
A	242580	SDH	SDH	5/24/13
	SEE ECN			
-	242255	SDH	SDH	5/6/13
	ISSUE			

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
300 SERIES D3ATS/D3NTS, SINGLE PHASE 30-230 AMPS "D" FRAME, GROUP G 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.	SCALE	
SDH	5/6/13				SIZE DS	
CHECKED		PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		COMPUTER GENERATED DRAWING		
PROJECT APPROVAL				DWG. NO.		
FINAL APPROVAL	SDH	5/6/13	ASCO Power Technologies, L.P.		978739	
		FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DRAWING F		
				ECN NO. 251413		
				SHEET 4 OF 6		

PHYSICAL DIAGRAM

ENCLOSURE

DOOR (INSIDE)



BONDING STRAP PN 098323-019

F	251413	TR	BK	10/27/14
E	247954	TR	BK	4/23/14
D	247770	SDH	SDH	2/14/14
C	246358	AE	BK	01/27/14
B	243244	DL	JPB	07/10/13
A	242580	SDH	SDH	5/24/13
-	242255	SDH	SDH	5/6/13
				ISSUE

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
300 SERIES D3ATS/D3NTS, SINGLE PHASE 30-230 AMPS "D" FRAME, GROUP G CONTROLS						
DRAWN BY	SDH	DATE	5/6/13	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055.	ASSEM. REF. NO.	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. 978739
PROJECT APPROVAL						ECN NO. 251413
FINAL APPROVAL	SDH	5/6/13		ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.		SHEET 5 OF 6

## WIRE RUN LISTING

1 ← HARNESS LOCATOR			BOX CHECKED IF HARNESS IS MODIFIED <input checked="" type="checkbox"/>	
WIRE No.	HARNESS (P) MAIN TS	CLR	AWG	
1	TS-8,P-1		20	
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/TS-14,P-8			
9	TB/TS-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/TS-14			
9	TS-15,TB/TS-15			
24	TB/TS-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			
REMOVE WIRES				
ADD WIRES				

2 ← HARNESS LOCATOR			BOX CHECKED IF HARNESS IS MODIFIED <input type="checkbox"/>		
WIRE No.	HARNESS (Px,Jx) OPTIONAL 8" EXTENSION HARNESS	CLR	AWG		
1	Px-1,Jx-1		16		
2	Px-2,Jx-2				
3	Px-3,Jx-3				
4	Px-4,Jx-4				
5	Px-5,Jx-5				
6	Px-6,Jx-6				
7	Px-7,Jx-7				
8	Px-8,Jx-8				
9	Px-9,Jx-9				
10	Px-10,Jx-10				
11	Px-11,Jx-11				
12	Px-12,Jx-12				
13	Px-13,Jx-13				
14	Px-14,Jx-14				
15	Px-15,Jx-15				
16	Px-16,Jx-16				
24	Px-17,Jx-17				
25	Px-18,Jx-18				
26	Px-19,Jx-19				
27	Px-20,Jx-20				
28	Px-21,Jx-21				
29	Px-22,Jx-22				
30	Px-23,Jx-23				
31	Px-24,Jx-24				
REMOVE WIRES					
ADD WIRES					

3 ← HARNESS LOCATOR			BOX CHECKED IF HARNESS IS MODIFIED <input type="checkbox"/>	
WIRE No.	OPTIONAL ACCESSORY 23GA (CT,SB,CP(23G)-TB1)	CLR	AWG	
300	CT-CX1,SB-1		16	
302	CT-AX1,SB-5			
300	SB-2,CP(23G)-TB1-1			
302	SB-6,CP(23G)-TB1-3			
303	CT-AX2,CT-CX2	GRN		
303	CT-CX2,SB-7	GRN		
303	SB-7,EQUIP-GND	GRN		
303	SB-8,CP(23G)-TB1-4	GRN		
305	CT-BX2,CT-BX1			

WIRE No.	ADDITIONAL WIRES	CLR	AWG	
			16	

F	251413	TR	BK	10/27/14
	SEE ECN			
E	247954	TR	BK	4/23/14
	SEE ECN			
D	247770	SDH	SDH	2/14/14
	SEE ECN			
C	246358	AE	BK	01/27/14
	SEE ECN			
B	243244	DL	JPB	07/10/13
	SEE ECN			
A	242580	SDH	SDH	5/24/13
	SEE ECN			
—	242255	SDH	SDH	5/6/13
	ISSUE			

PROJECT NAME:				REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING				DIAGRAM				
300 SERIES D3ATS/D3NTS, SINGLE PHASE 30-230 AMPS "D" FRAME, GROUP G CONTROLS								
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	BY	DATE	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.			SCALE	NO.	SIZE
PROJECT APPROVAL	SDH	5/6/13	<b>ASCO</b> ® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.			DWG. NO.	978739	DS
FINAL APPROVAL	SDH	5/6/13				DRAWING F. REV.	ECN NO. 251413	SHEET 6 OF 6

D

C

B

A

D

C

B

A