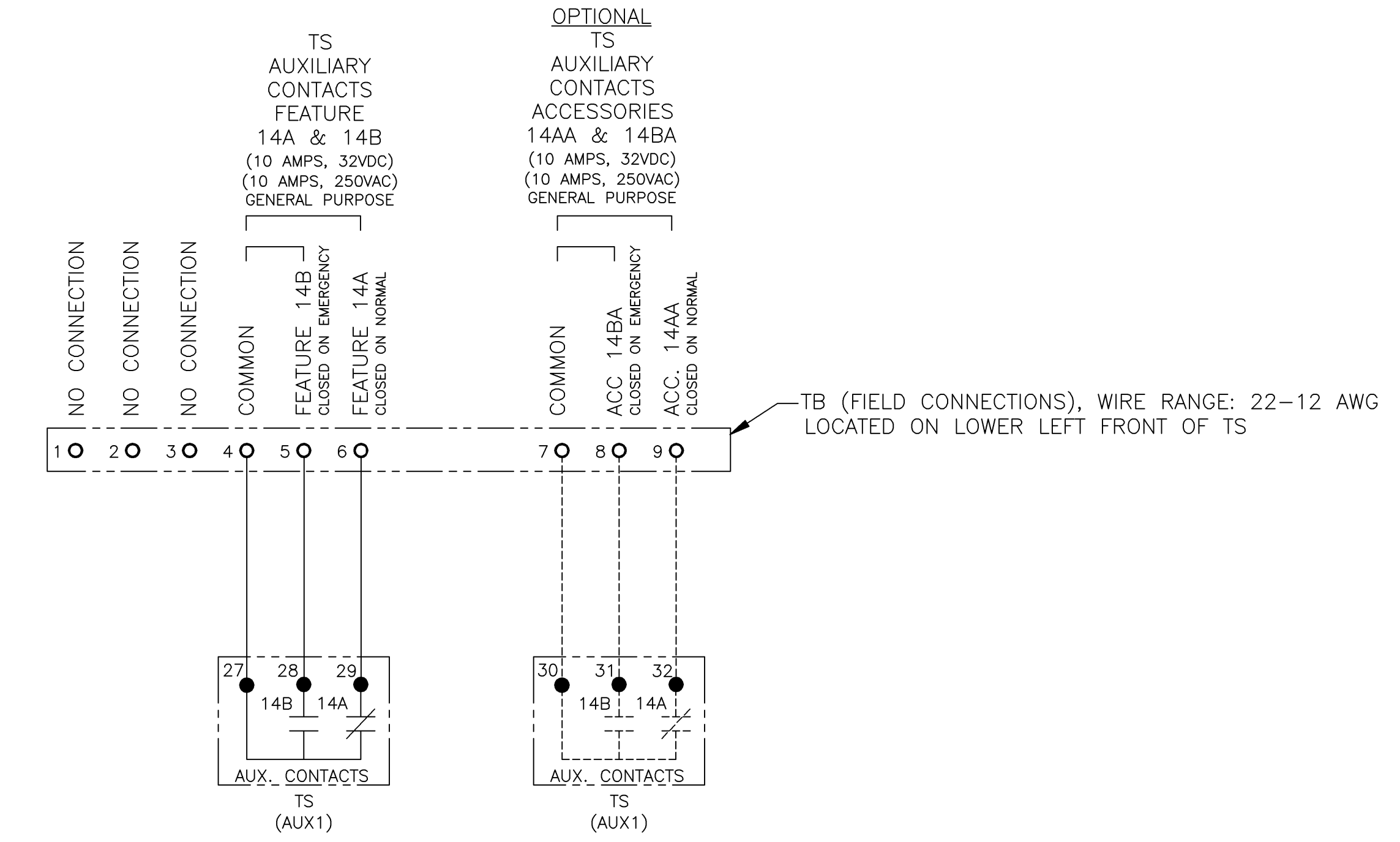
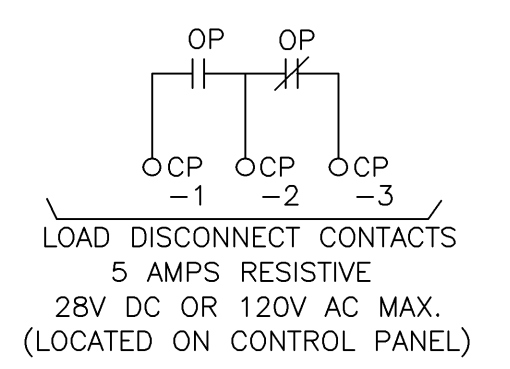


THREE PHASE WIRING FOR ASCO® SERIES G386 NON-AUTOMATIC TRANSFER SWITCHES RATED 1600-3000 AMPERES WITH GROUP I CONTROLS

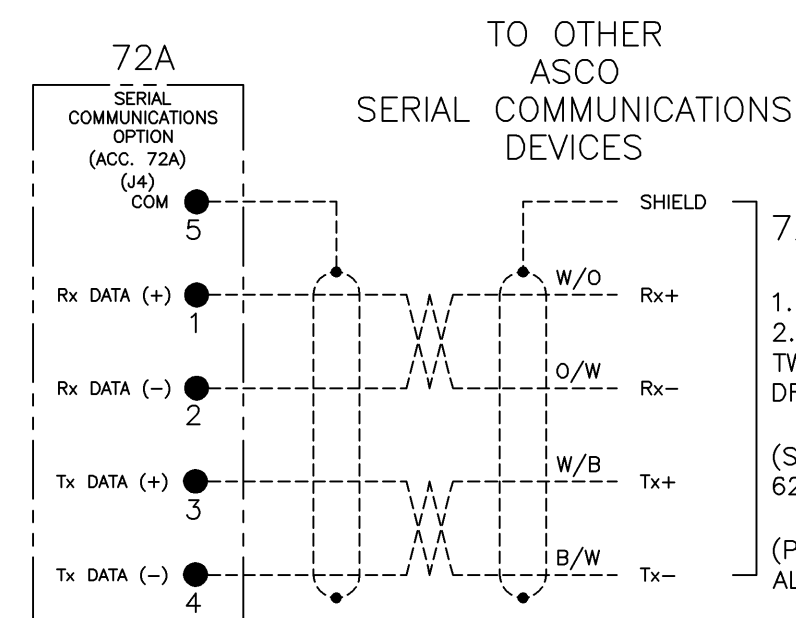
FIELD CONNECTIONS



TB (FIELD CONNECTIONS), WIRE RANGE: 22-12 AWG LOCATED ON LOWER LEFT FRONT OF TS



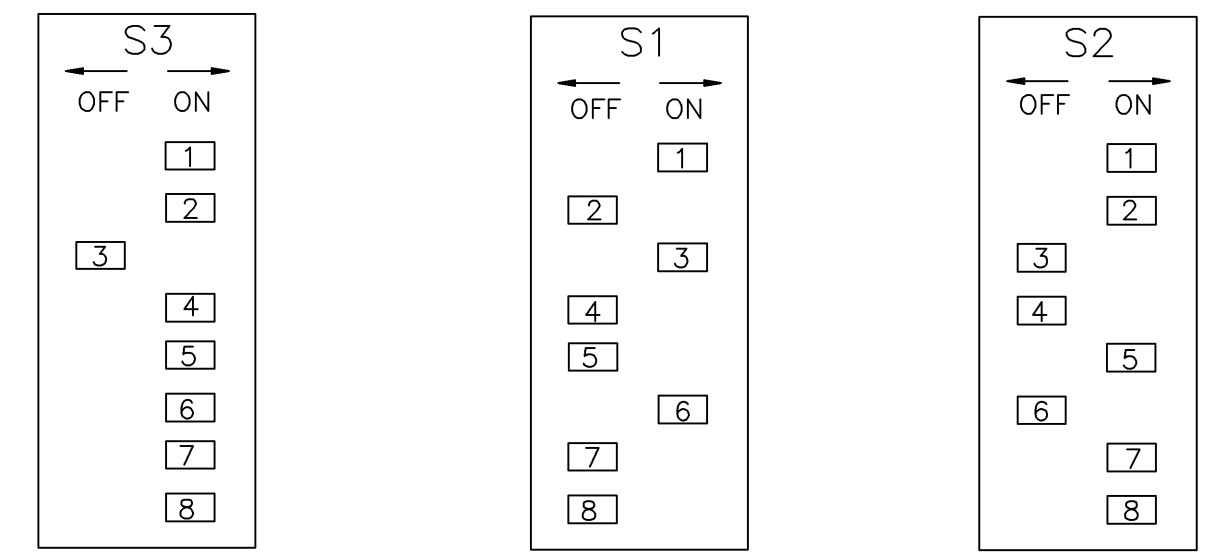
ACC. 72A SERIAL COMMUNICATIONS OPTION COMMUNICATING WITH GROUP 1 CONTROL PANEL (CP)



- 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

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.
- 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). CONTACT CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACTS RATED 10 AMPS, 32 VDC, 250 VAC.
- 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 6 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. 14AA (2) AUXILIARY CONTACT CLOSED ON NORMAL.
- ACC. 14BA (2) AUXILIARY CONTACT CLOSED ON EMERGENCY.
- 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.

| 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 | NOMINAL VOLTAGE | CODE | TYPE | DESCRIPTION | | | |
| G | 386 | A B C | 3 | 1600 2000 2600 3000 | H J K L M N P Q R | 1 | X | C F G | BLANK A B C | NONE SOLID SWITCHING OVERLAPPING | C D E F | 208 220 230 240 | BLANK C | 1 | OPEN TYPE (NO ENCLOSURE) GENERAL PURPOSE, INDOOR | | | |
| | | BLANK FOR NONE | | | | | BLANK FOR NONE | BLANK FOR OPEN TYPE | | | H J K L M N P Q R | 380 400 415 440 460 480 550 575 600 | L | 12 | INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT | | | |

CATALOG NUMBER _____

ASCO CERTIFIED TO S.O. _____

BY _____

DATE _____

FORM REV D _____

PROJECT NAME: _____

WIRING _____ DIAGRAM _____

SERIES G386 TS,3PH, 1600-3000 AMPS

"G" 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-1-055 | 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 |
| PROJECT APPROVAL | | | | | DWG. NO. | 733605 |
| FINAL APPROVAL | WK | DATE | 1/03 | | DRAWING D | ECN NO. 212659 |

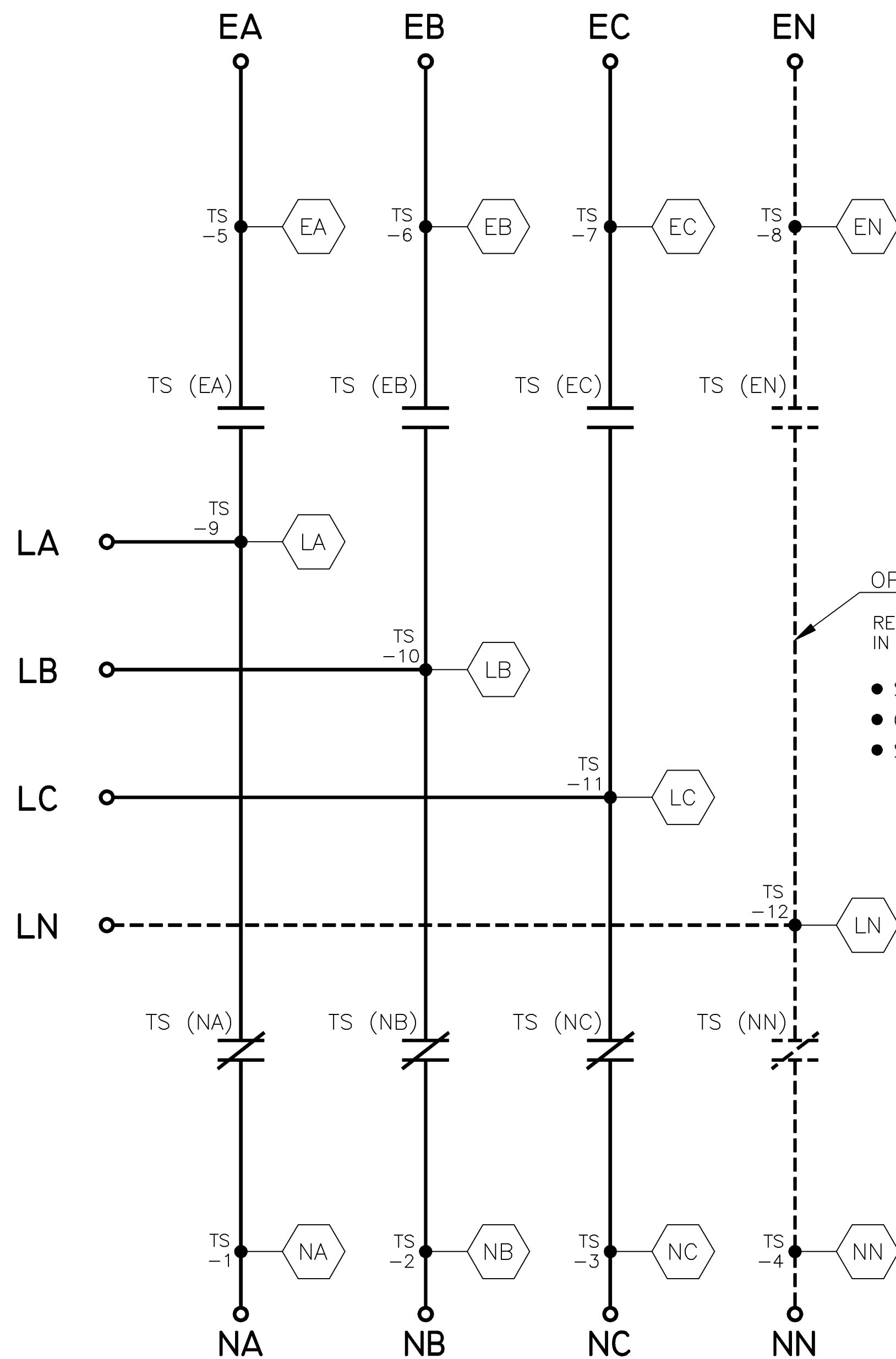
SHEET 10F4

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY

NORMAL

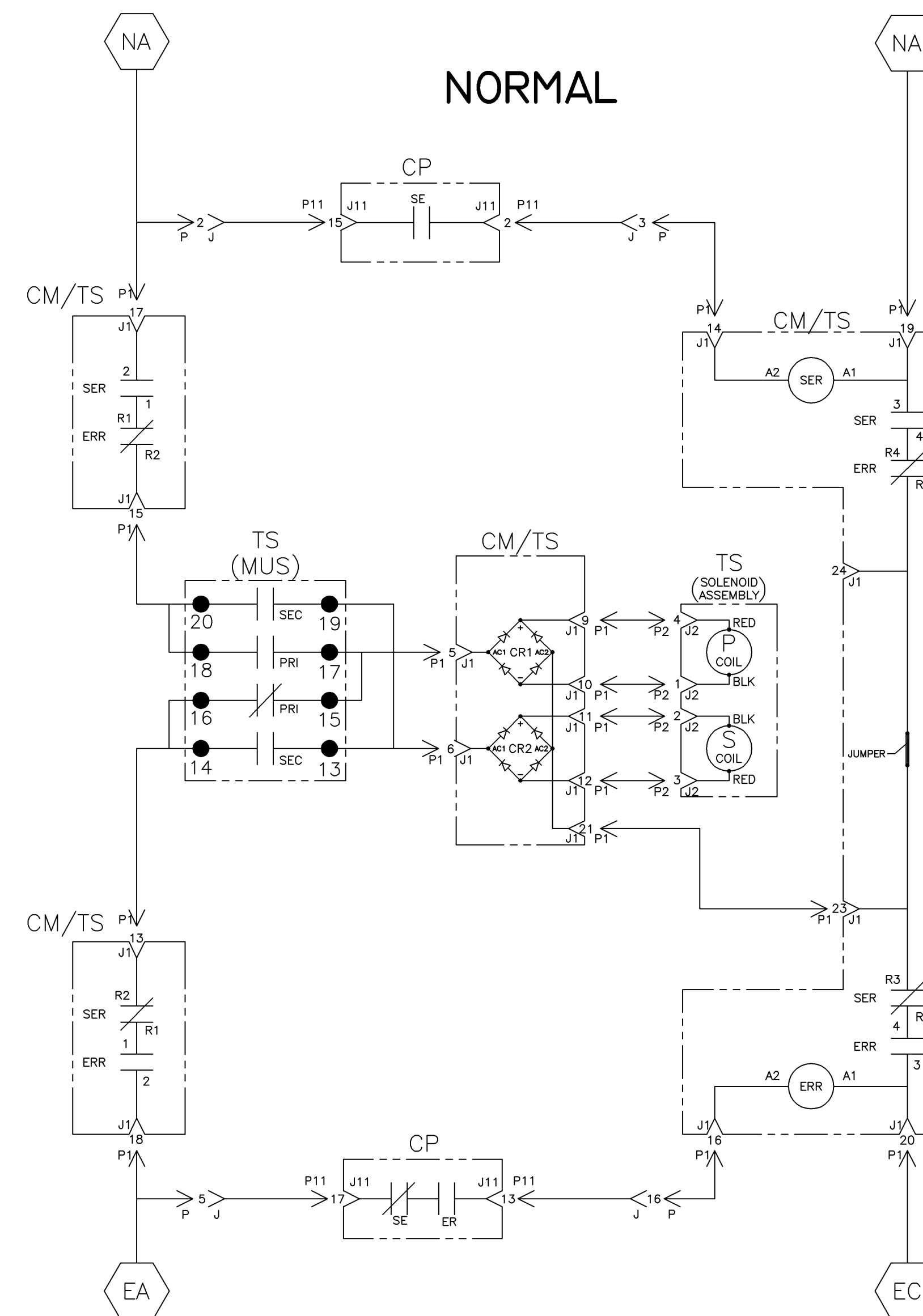


OPTIONAL NEUTRAL TYPES
 REFER TO "EXPLANATION OF CATALOG NUMBER CODES"
 IN CATALOG NUMBER CHART ON SHEET 1.

- SWITCHING CONTACTS
- OVERLAPPING CONTACTS
- SOLID BUS PLATE

NORMAL

NOTE:
 ATS SHOWN CLOSED ON NORMAL SOURCE.



EMERGENCY

| TS (MUS) CONTACTS | | SOLENOID POSITION | | | | |
|-------------------|--|-------------------|---|-----------|---|------|
| MUS | | NORM | > | AFTER TDC | < | EMER |
| 13-14 | | | | | | |
| 15-16 | | | | | | |
| 17-18 | | | | | | |
| 19-20 | | | | | | |

* AFTER SOLENOID PASSES THROUGH TOP DEAD CENTER POSITION.

| | | | | |
|---------|--------|-----|-----|----------|
| D | 212659 | WK | BK | 03/29/07 |
| SEE ECN | | | | |
| C | 167230 | DJB | WK | 06/04/04 |
| SEE ECN | | | | |
| B | 167059 | SDH | SDH | 05/25/04 |
| SEE ECN | | | | |
| A | 166172 | AJM | BK | 02/17/04 |
| SEE ECN | | | | |
| - | 162494 | BWM | WK | 1/03 |
| ISSUE | | | | |

PROJECT NAME: WIRING DIAGRAM

SERIES G386 TS,3PH, 1600-3000 AMPS
 "G" FRAME, GROUP 1 CONTROLS

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055.

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

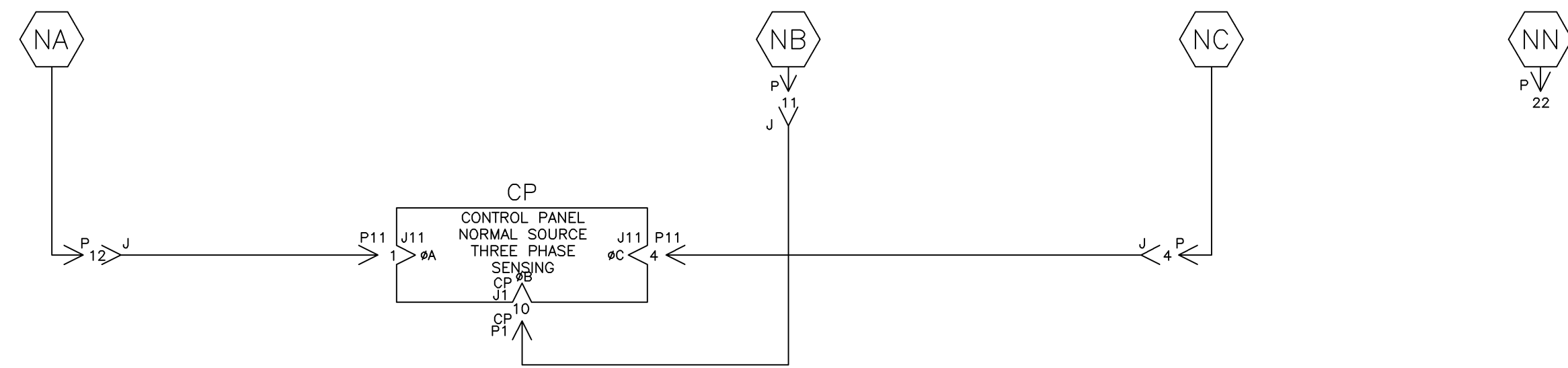
SCALE: 1:1 SIZE: DS

DWG. NO: 733605

DRAWING D ECN NO. 212659 SHEET 2 OF 4

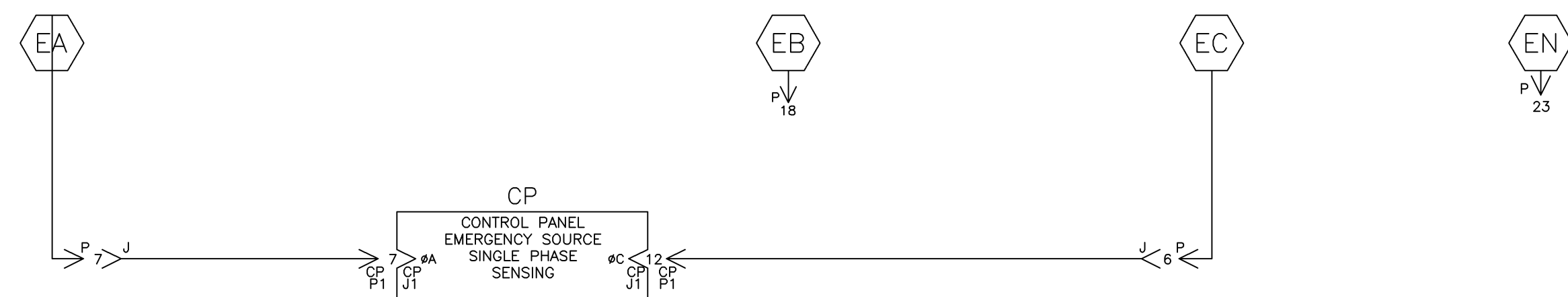
NORMAL SOURCE CIRCUITS

NORMAL



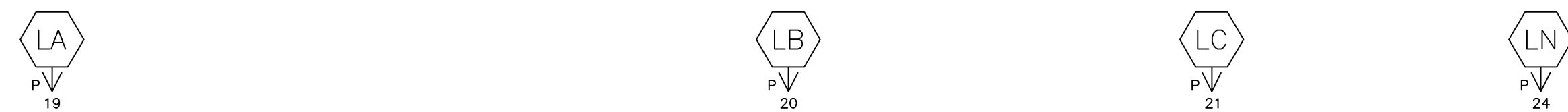
EMERGENCY SOURCE CIRCUITS

EMERGENCY

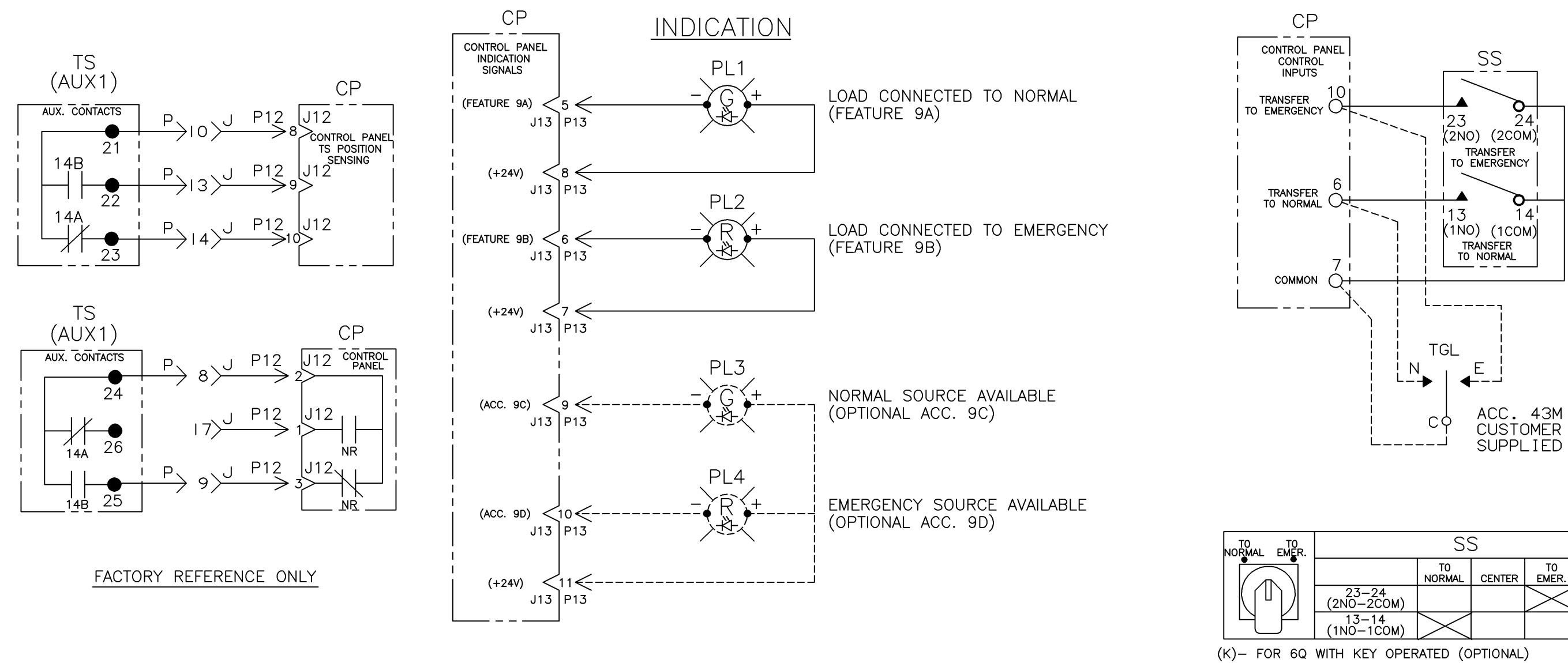


LOAD TERMINAL CIRCUITS

LOAD



CONTROL SIGNALS & INDICATION



| ← HARNESS LOCATOR | | BOX CHECKED IF HARNESS IS MODIFIED |
|-------------------------------------|-----|------------------------------------|
| HARNESS 605454 (P,P1,P2,J3) MAIN TS | | |
| WIRE No. | CLR | AWG |
| 1 P-2,TS-1 | | 16 |
| 2 P-3,P1-14 | | |
| 3 P-4,TS-3 | | |
| 4 P-5,TS-9 | | |
| 5 P-6,TS-7 | | |
| 6 P-7,TS-5 | | |
| 6 P-8,TS(AUX1)-24 | | |
| 6 TS(AUX1)-24,J3-1 | | |
| 7 P-9,TS(AUX1)-25 | | |
| 7 TS(AUX1)-25,J3-2 | | |
| 8 P-10,TS(AUX1)-21 | | |
| 9 P-11,TS-2 | | |
| 10 P-12,TS-1 | | |
| 11 P-13,TS(AUX1)-22 | | |
| 12 P-14,TS(AUX1)-23 | | |
| 13 P-16,P1-16 | | |
| 14 P-17,J3-3 | | |
| 15 P-18,TS-6 | | |
| 16 P-19,TS-9 | | |
| 17 P-20,TS-10 | | |
| 18 P-21,TS-11 | | |
| 19 P-22,TS-4 | | |
| 20 P-23,TS-8 | | |
| 21 P-24,TS-12 | | |
| 22 P1-5,TS(MUS)-17 | | |
| 22 TS(MUS)-17,TS(MUS)-15 | | |
| 23 P1-6,TS(MUS)-19 | | |
| 23 TS(MUS)-19,TS(MUS)-13 | | |
| 24 P1-9,P2-4 | | |
| 25 P1-10,P2-1 | | |
| 26 P1-11,P2-2 | | |
| 27 P1-12,P2-3 | | |
| 28 P1-13,TS(MUS)-16 | | |
| 28 TS(MUS)-16,TS(MUS)-14 | | |
| 29 P1-15,TS(MUS)-20 | | |
| 29 TS(MUS)-20,TS(MUS)-18 | | |
| 1 P1-17,TS-1 | | |
| 4 P1-18,TS-5 | | |
| 3 P1-19,TS-3 | | |
| 5 P1-20,TS-7 | | |
| 30 P1-21,P1-23 | | |
| REMOVE WIRES | | |
| 6 TS(AUX1)-24,J3-1 | | |
| 7 TS(AUX1)-25,J3-2 | | |
| 14 P-17,J3-3 | | |

| ADDITIONAL WIRE CONNECTIONS | | | |
|-----------------------------|-----|-----|------------------|
| WIRE No. | CLR | AWG | |
| 31 | | 16 | TS(AUX1)-27,TB-4 |
| 32 | | | TS(AUX1)-28,TB-5 |
| 33 | | | TS(AUX1)-29,TB-6 |

| OPTIONAL ACCESSORIES | | | |
|----------------------|-----|-----|---------------------------|
| WIRE No. | CLR | AWG | |
| 39 | | 16 | OPTIONAL ACC. 14AA & 14BA |
| 40 | | | TS(AUX1)-30,TB-7 |
| 41 | | | TS(AUX1)-31,TB-8 |
| | | | TS(AUX1)-32,TB-9 |

| ← HARNESS LOCATOR | | BOX CHECKED IF HARNESS IS MODIFIED | |
|--|-----|------------------------------------|-------------|
| HARNESS 483763 (J, P11, P12) TS-CP HARNESS | | | |
| WIRE No. | CLR | AWG | |
| 170 | | 16 | J-1,P11-8 |
| 171 | | | J-2,P11-15 |
| 172 | | | J-3,P11-2 |
| 173 | | | J-4,P11-4 |
| 174 | | | J-5,P11-17 |
| 175 | | | J-6,P11-12 |
| 176 | | | J-7,P11-7 |
| 177 | | | J-8,P12-2 |
| 178 | | | J-9,P12-3 |
| 179 | | | J-10,P12-8 |
| 180 | | | J-11,P11-10 |
| 181 | | | J-12,P11-1 |
| 182 | | | J-13,P12-9 |
| 183 | | | J-14,P12-10 |
| 184 | | | J-15,P11-5 |
| 185 | | | J-16,P11-13 |
| 186 | | | J-17,P12-1 |

| ← HARNESS LOCATOR | | BOX CHECKED IF HARNESS IS MODIFIED | |
|--|-----|------------------------------------|-------------------------|
| HARNESS 619510-037 (P3) DOOR CONTROLS & INDICATORS | | | |
| WIRE No. | CLR | AWG | |
| 140 | | 22 | P13-5,PL1(-) |
| 141 | | | P13-8,PL1(+) |
| 142 | | | P13-6,PL2(-) |
| 143 | | | P13-7,PL2(+) |
| 144 | | | P13-9,PL3(-) * SEE NOTE |
| 145 | | | P13-10,PL4(-) * |
| 146 | | | P13-11,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 | | | |
| 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-13 |
| 148 | | | CP-10,SS-23 |
| 149 | | | CP-7,SS-14 |
| 149 | | | SS-14,SS-24 |

| | | | | |
|---|--------|-----|-----|----------|
| D | 212659 | WK | BK | 03/29/07 |
| C | 167230 | DJB | WK | 06/04/04 |
| B | 167059 | SDH | SDH | 05/25/04 |
| A | 166172 | AJM | BK | 02/17/04 |
| - | 162494 | BWM | WK | 1/03 |
| - | | | | ISSUE |

PROJECT NAME: **WIRING DIAGRAM**

SERIES G386 TS,3PH, 1600-3000 AMPS

"G" FRAME, GROUP 1 CONTROLS

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

733605

SCALE: 1:1 SIZE: DS

COMPUTER GENERATED DRAWING

DATE: 1/03

BY: BWM

CHECKED: BK

PROJECT APPROVAL: WK

FINAL APPROVAL: WK

REV. TO SHEET: ECN NO. 212659

BY: APP. DATE

ASSEM. REF. NO.

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SCALE: 1:1 SIZE: DS

DWG. NO. 733605

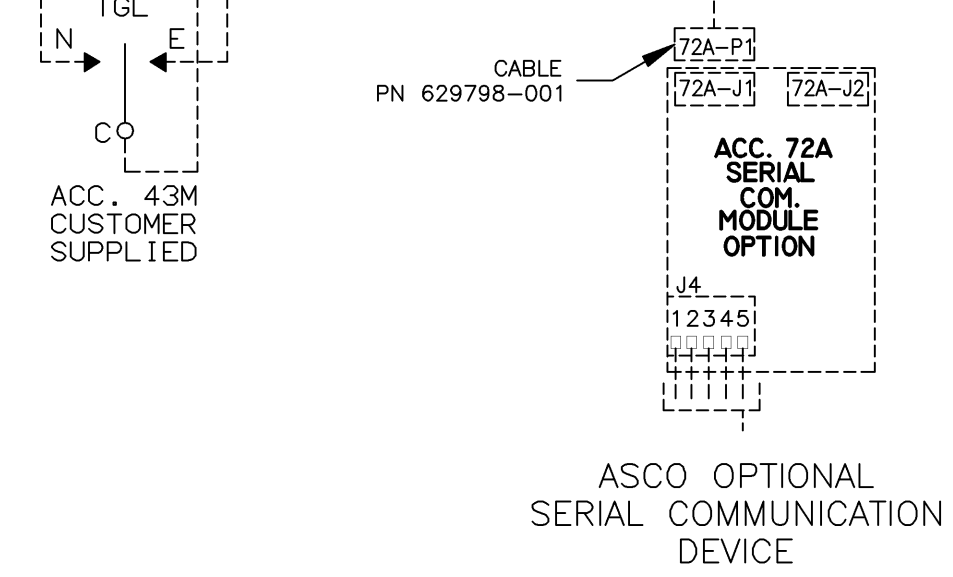
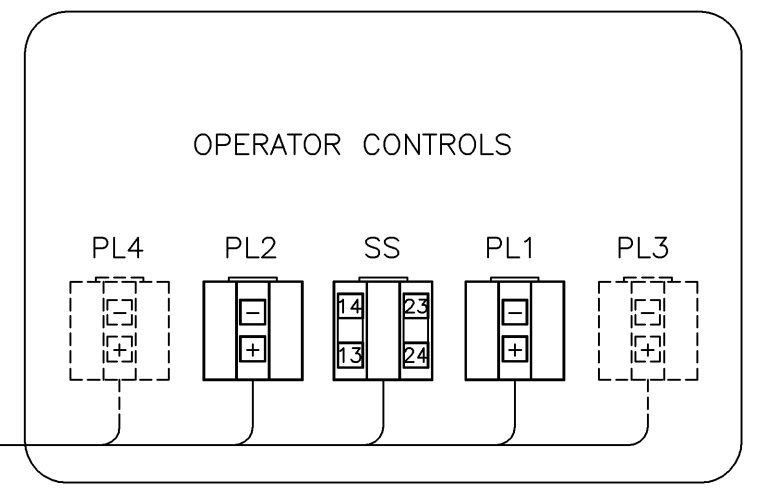
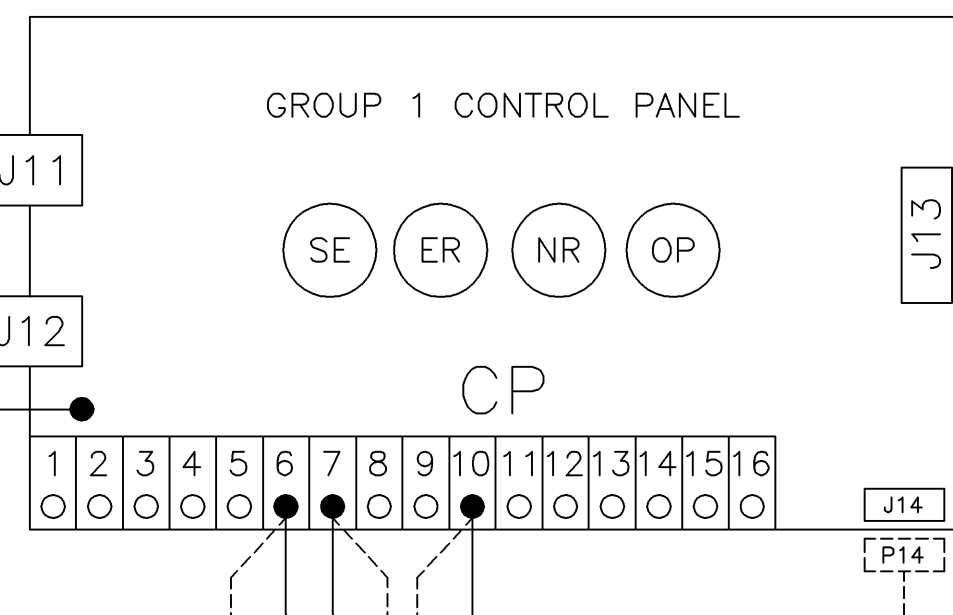
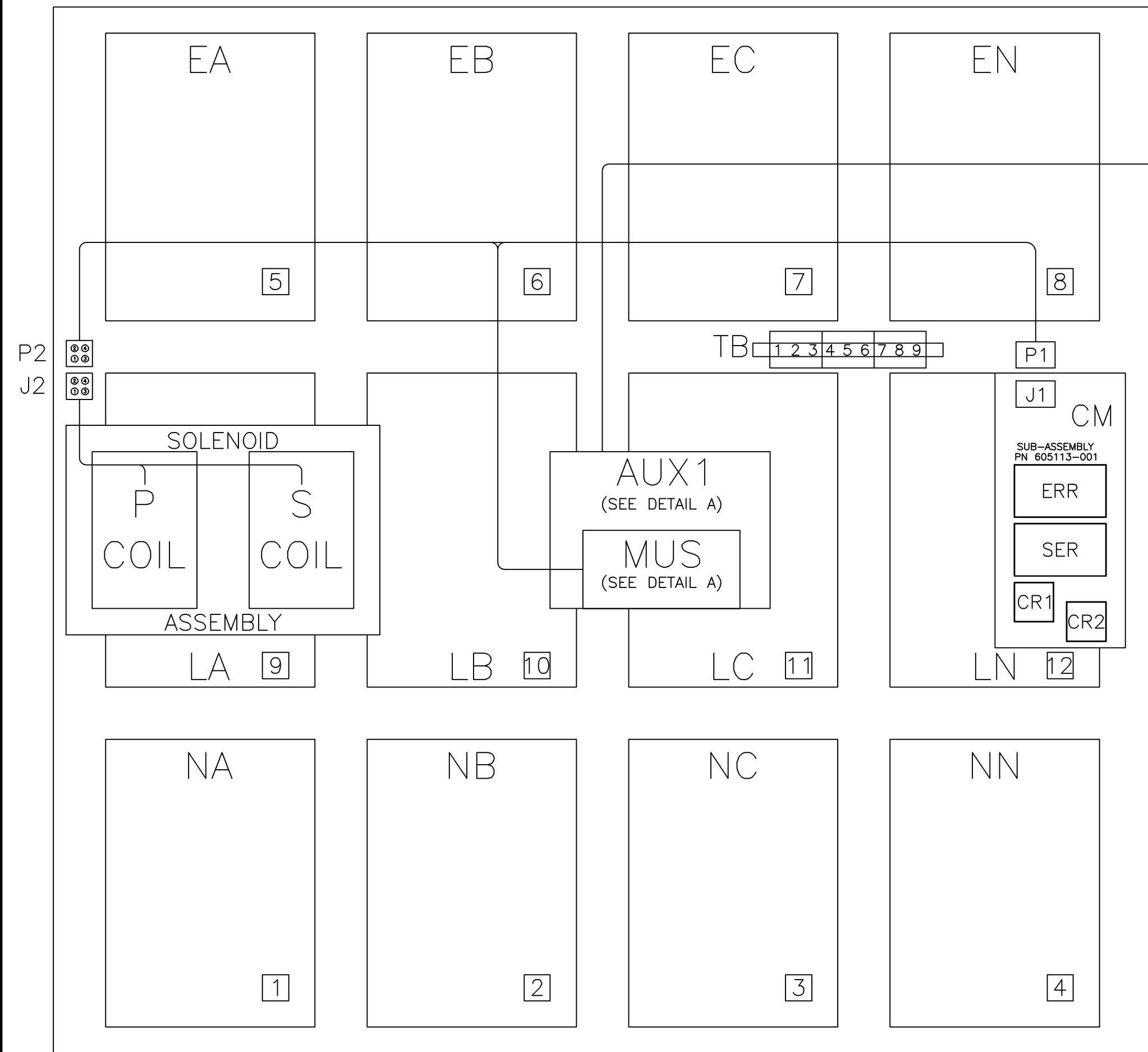
DRAWING D ECN NO. 212659 SHEET 3 OF 4

PHYSICAL DIAGRAM

ENCLOSURE

DOOR, INSIDE (PANEL)

TS (TRANSFER SWITCH)



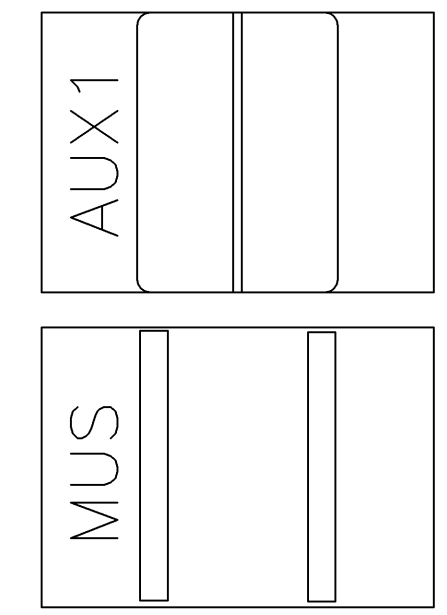
BONDING STRAP
PN 098323-019

DOOR HINGE

OPERATOR CONTROLS

| ID | DESCRIPTION |
|-----|---------------------------------|
| PL1 | TS CONNECTED TO NORMAL (GREEN) |
| PL2 | TS CONNECTED TO EMERGENCY (RED) |
| PL3 | NORMAL SOURCE ACCEPTED (GREEN) |
| PL4 | EMERGENCY SOURCE ACCEPTED (RED) |
| SS | TRANSFER TO NORMAL OR EMERGENCY |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

DETAIL A
MUS, AUX1
TOP VIEW



| | | | | |
|---|--------|-----|-----|----------|
| D | 212659 | WK | BK | 03/29/07 |
| | | | | SEE ECN |
| C | 167230 | DJB | WK | 06/04/04 |
| | | | | SEE ECN |
| B | 167059 | SDH | SDH | 05/25/04 |
| | | | | SEE ECN |
| A | 166172 | AJM | BK | 02/17/04 |
| | | | | SEE ECN |
| - | 162494 | BWM | WK | 1/03 |
| | | | | ISSUE |

PROJECT NAME: **WIRING DIAGRAM**

SERIES G386 TS, 3PH, 1600-3000 AMPS
"G" FRAME, GROUP 1 CONTROLS

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-055.

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

| | |
|------------------|--------|
| DWG. NO. | 733605 |
| DRAWING REV. | D |
| ECN NO. | 212659 |
| BY | BWM |
| DATE | 1/03 |
| CHECKED | BK |
| DATE | 1/03 |
| PROJECT APPROVAL | |
| FINAL APPROVAL | WK |
| DATE | 1/03 |

SCALE: 1:1 SIZE: DS

COMPUTER GENERATED DRAWING

THIRD ANGLE PROJECTION

SHEET 4 OF 4