

# ASCO® 7000 Series Ordering Information

To order an ASCO 7000 Series Automatic Transfer Switch, complete the following catalog number:

7    A                    TS    +    A    +    3    +    400    +    N    +    5X    +    C

|                    |                          | Product                  |     | Neutral Code        |     | Phase Poles | Amperes |     | Voltage Code |         | Grp Code                            | Cabinet           |  |
|--------------------|--------------------------|--------------------------|-----|---------------------|-----|-------------|---------|-----|--------------|---------|-------------------------------------|-------------------|--|
| A<br>Automatic     | TS                       | Conventional 2-Position  | --- | No Neutral          | 2   | 30          | 1000    | A   | 115          | 5<br>5X | ---                                 | No Cabinet        |  |
|                    |                          | Open Transition Bypass   |     | Solid Neutral       | 3   | 70          | 1200    | B   | 120          |         | C                                   | Type 1 enclosure  |  |
| N<br>Non-Automatic | CTS<br>CTB<br>DTS<br>DTB | Closed Transition        | A   | Solid Neutral       | 3   | 100         | 1600    | C   | 208          | 5<br>5X | D                                   | Type 1 gasketed   |  |
|                    |                          | Closed Transition Bypass | B   | Switched Neutral    |     | 150         | 2000    | D   | 220          |         | E                                   | Type 2 enclosure  |  |
|                    |                          | Delayed Transition       | C   | Overlapping Neutral | 260 | 3000        | E       | 230 | F            |         | Type 3R enclosure                   |                   |  |
|                    |                          |                          |     |                     | 400 | 4000        | F       | 240 | G            |         | Type 4 enclosure                    |                   |  |
|                    |                          |                          |     |                     | 600 |             | G       | 277 | H            |         | Type 4X enclosure (stainless steel) |                   |  |
|                    |                          |                          |     |                     | 800 |             | H       | 380 | I            |         | Type 7 enclosure                    |                   |  |
|                    |                          |                          |     |                     |     |             |         | J   | 400          |         | L                                   | Type 12 enclosure |  |
|                    |                          |                          |     |                     |     |             |         | K   | 415          |         |                                     |                   |  |
|                    |                          |                          |     |                     |     |             |         | L   | 440          |         |                                     |                   |  |
|                    |                          |                          |     |                     |     |             |         | M   | 460          |         |                                     |                   |  |
|                    |                          |                          |     |                     |     |             |         | N   | 480          |         |                                     |                   |  |
|                    |                          |                          |     |                     |     |             |         | O   | 550          |         |                                     |                   |  |
|                    |                          |                          |     |                     |     |             |         | P   | 575          |         |                                     |                   |  |
|                    |                          |                          |     |                     |     |             |         | Q   | 600          |         |                                     |                   |  |
|                    |                          |                          |     |                     |     |             |         | R   | 600          |         |                                     |                   |  |

*Note:* Switches rated 30-150, 600-2000 amps available with 2, 3 or either switched neutral (4 poles) or overlapping neutral (optional).  
For 4 pole applications on switches rated 260 to 400 amps and 3000 to 4000 amps specify overlapping switched neutral (optional).  
Overlapping neutral is not available on delayed transition transfer products.

**The Example Catalog Number above is 7ATS A3400N5XC  
(X could be for Accessory 85L ASCO Data Monitor connected to load).**

**7A TS, 7N TS, 7A DTS, 7A CTS,  
7N DTS, 7N CTS**

**Sizes of UL-Listed Solderless Screw-Type  
Terminals for External Power Connections**

| Switch Rating<br>amps  | Max # of Conductors<br>per Terminal | Range of AL-CU<br>Conductor Sizes |
|------------------------|-------------------------------------|-----------------------------------|
| 30, 70, 100            | One                                 | # 14 to 2/0 AWG                   |
| 150                    | One                                 | #8 to 3/0 AWG                     |
| 240-400                | One                                 | #4 AWG to 600 MCM                 |
|                        | Two                                 | #1/0 AWG to 250 MCM               |
| 600-800                | Three                               | #2 AWG to 600 MCM                 |
| 1000-1200 <sup>1</sup> | Four                                | #1/0 AWG to 750 MCM               |
| 1600-2000              | Six                                 | #1/0 AWG to 750 MCM               |
| 3000-4000 <sup>2</sup> | Suitable for Bus Bar Connection     |                                   |

**7A TB, 7N TB, 7A DTB, 7A CTB,  
7N DTB, 7N CTB**

**Sizes of UL-Listed Solderless Screw-Type  
Terminal for External Power Connections**

| Switch Rating<br>amps  | Max # of Conductors<br>per Terminal | Range of AL-CU<br>Conductor Sizes |
|------------------------|-------------------------------------|-----------------------------------|
| 150,260,400            | One                                 | # 4 AWG to 600 MCM                |
|                        | Two                                 | # 1/0 AWG to 250 MCM              |
| 600-800                | Three                               | # 2 AWG to 600 MCM                |
| 1000-1200 <sup>1</sup> | Four                                | # 1/0 AWG to 750 MCM              |
| 1600-2000 <sup>1</sup> | Six                                 | # 1/0 AWG to 750 MCM              |
| 3000 <sup>1</sup>      | Eight                               | # 2 AWG to 600 MCM                |
| 4000 <sup>1</sup>      | Twelve                              | # 2 AWG to 600 MCM                |

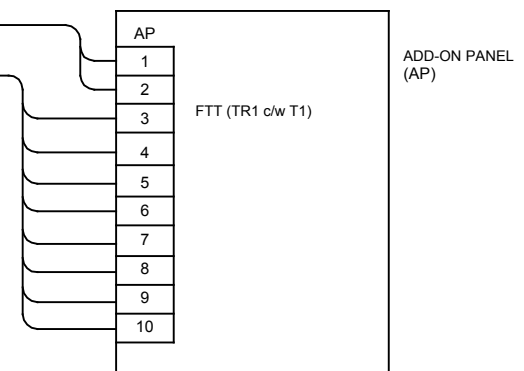
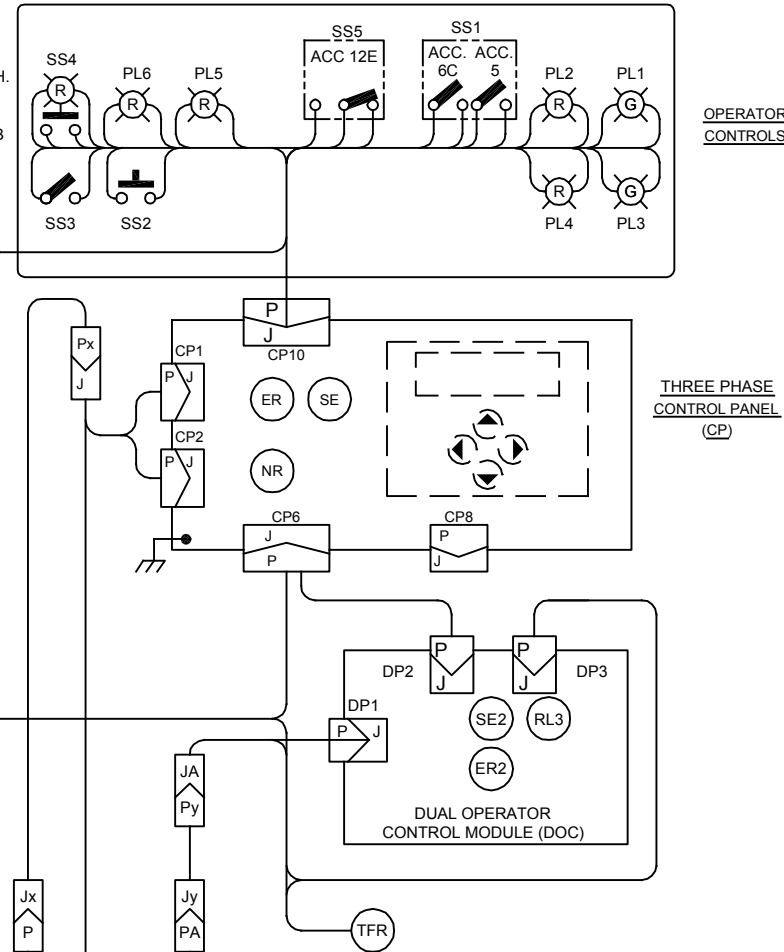
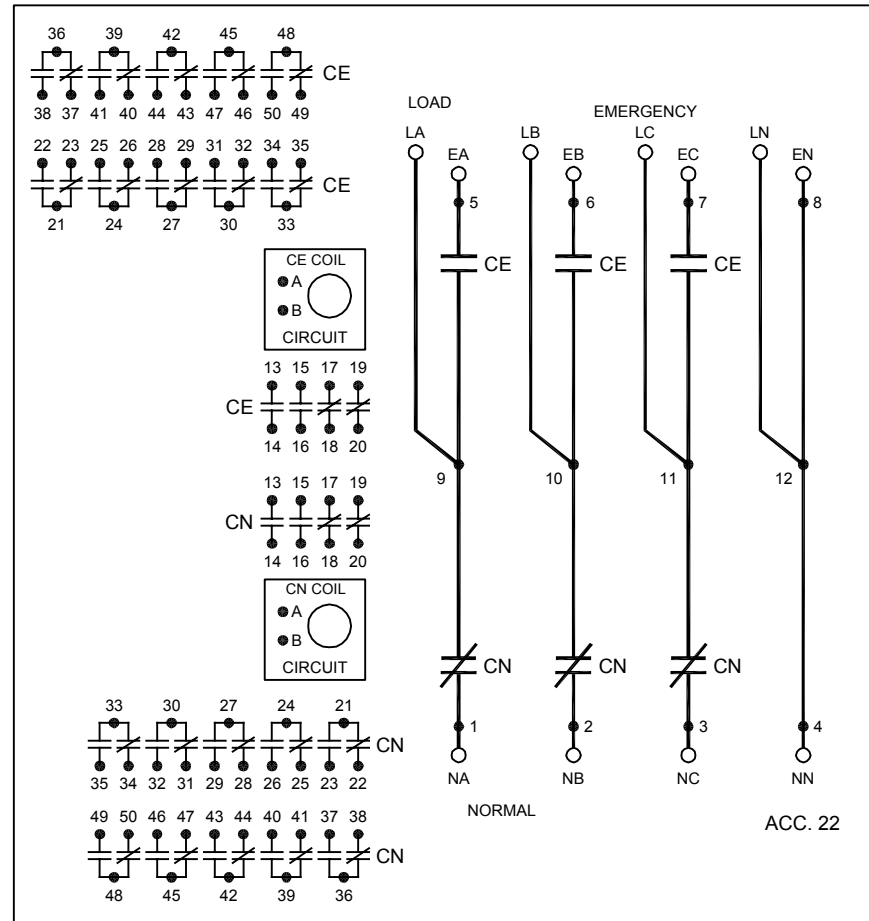
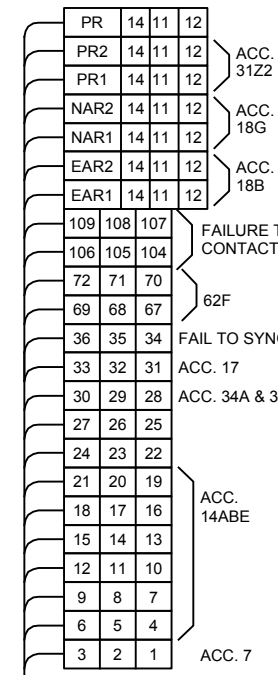
*Notes:* 1. All main terminals are rear connected.

- Notes:*
- Unit is designed for top cable entry of emergency and load and bottom entry of normal. Optionally, the switch may be supplied with reverse source and/or bottom entry load. A cable pull box is also available for all top or bottom cable access (optional).
  - All main terminals are rear connected. 3000 and 4000 amp switches are arranged for bus bar connection. Contact ASCO if provisions for cable connection are required.

**NOTE: UTILITY APPROVAL IS REQUIRED FOR CLOSED TRANSITION OPERATION**

**UNIT CAPABLE OF WITHSTANDING A FAULT CURRENT OF 35,000 AMPS SYMMETRICAL FOR 3 CYCLES WHEN UTILIZED WITH OVER CURRENT PROTECTIVE DEVICE.**

CUSTOMER CONNECTION  
TERMINAL BLOCK TB



**STANDARD FACTORY VOLTAGE & FREQUENCY SENSING SETTINGS**

|                   | NORMAL SOURCE          | EMERGENCY SOURCE       |
|-------------------|------------------------|------------------------|
| NOMINAL VOLTAGE   | 600Y/347V, 60Hz, 3Ø 4W | 600Y/347V, 60Hz, 3Ø 4W |
| VOLTAGE PICKUP    | 540V (90%)             | 540V (90%)             |
| VOLTAGE DROPOUT   | 510V (85%)             | 462V (77%)             |
| OVERVOLTAGE TRIP  | AS SPECIFIED           | AS SPECIFIED           |
| FREQUENCY PICKUP  | 57.0Hz (95%)           | 57.0Hz (95%)           |
| FREQUENCY DROPOUT | 54.0Hz (90%)           | 54.0Hz (90%)           |
| OVER FREQ. TRIP   | AS SPECIFIED           | AS SPECIFIED           |

**STANDARD TIME DELAYS**

-TIME DELAY ON ENGINE START TO OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES, RANGE: 0 to 6 SECONDS, ACCESSORY 1.  
 -TIME DELAY ON TRANSFER TO EMERGENCY, RANGE: 0 SECONDS TO 61 MINUTES, ACCESSORY 2B  
 -TIME DELAY ON RETRANSFER TO NORMAL SOURCE, ACCESSORY 3A.  
 NORMAL FAILURE MODE- RANGE: 0 SECONDS TO 61 MINUTES.  
 TRANSFER TEST MODE- RANGE: 0 SECONDS TO 61 MINUTES.  
 -TIME DELAY ENGINE COOLDOWN, RANGE: 0 SECONDS TO 61 MINUTES, ACCESSORY 2E.

**INDICATING LIGHTS**

PL1 -GREEN, INDICATES TRANSFER SWITCH CONNECTED TO NORMAL. ACC. 9A  
 PL2 -RED, INDICATES TRANSFER SWITCH CONNECTED TO EMERGENCY. ACC. 9B  
 PL3 -GREEN, INDICATES NORMAL SOURCE ACCEPTED. ACC. 9C  
 PL4 -RED, INDICATES EMERGENCY SOURCE ACCEPTED. ACC. 9D  
 PL5 -RED, INDICATES EXTENDED PARALLEL TIME.  
 PL6 -RED, INDICATES FAILURE TO SYNCHRONIZE.  
 SS4 -RED, INDICATES TS LOCKED OUT.

**ACCESSORY REFERENCE DESCRIPTIONS**

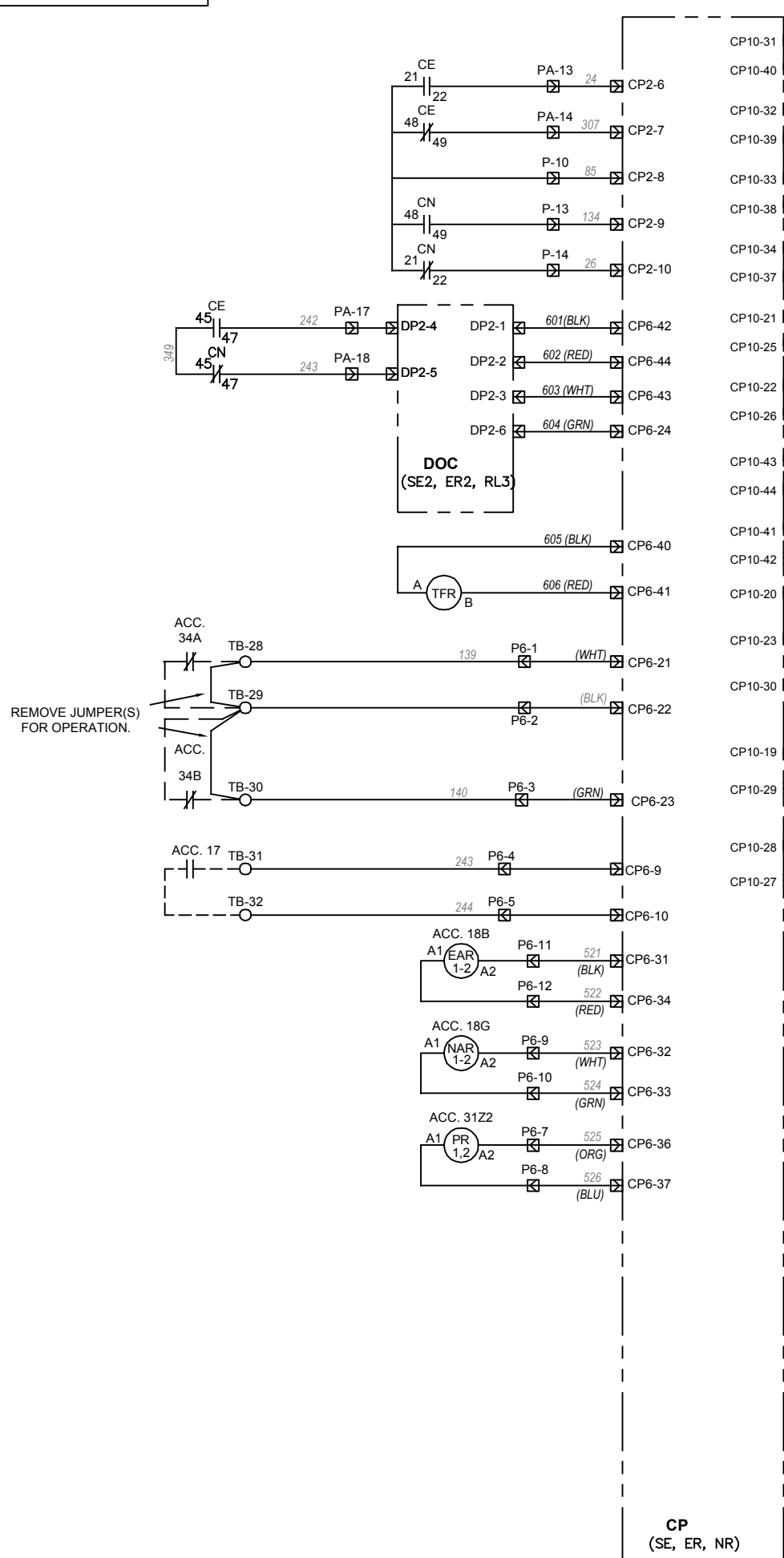
ACC. 5 -TRANSFER TEST SWITCH, MOMENTARY TYPE, (SS1).  
 ACC. 6C -MANUAL RETRANSFER TO NORMAL RESET SWITCH, (SS1). (AUTOMATIC RETRANSFER IF EMERGENCY SOURCE FAILS).  
 ACC. 7 -ENGINE START CONTACT, CLOSURES TO START ENGINE.  
 ACC. 11C -WEEKLY ENGINE PLANT EXERCISER WITH LOAD / WITHOUT SELECTION.  
 ACC. 12E -THREE POSITION ENGINE MODE SELECTOR SWITCH. POSITIONS - MANUAL / AUTO / ENGINE START. (SS2)  
 ACC. 14ABE -QTY 6 AUXILIARY FORM-C CONTACTS THAT INDICATE ATS POSITION, CLOSED ON THE NORMAL SOURCE, (14A) OR CLOSED ON THE EMERGENCY SOURCE (14B).  
 ACC. 17 -CUSTOMER CONTACT CLOSURES TO TRANSFER LOAD TO EMERGENCY.  
 ACC. 18B -EMERGENCY AVAILABLE CONTACTS, TWO FORM-C.  
 ACC. 18G -NORMAL AVAILABLE CONTACTS, TWO FORM-C.  
 ACC. 22 -SOLID NEUTRAL BLOCK.  
 ACC. 27 -INPHASE MONITOR FOR TRANSFER OF MOTOR LOADS.  
 ACC. 31Z2 -PRE/POST-TRANSFER CONTACTS, TWO FORM-C, FACTORY SET AT (PRE) 0 SECONDS, RESETS (POST) 0 SECOND AFTER TRANSFER.  
 ACC. 34A -REMOTE CUSTOMER CONTACT OPENS TO INHIBIT TRANSFER TO NORMAL SOURCE.  
 ACC. 34B -REMOTE CUSTOMER CONTACT OPENS TO INHIBIT TRANSFER TO EMERGENCY SOURCE.  
 ACC. 37B -SIX FOOT EXTENSION HARNESS.  
 ACC. 62F -EXTENDED PARALLEL ALARM CONTACTS.  
 FTT -FAILURE TO TRANSFER CONTACTS, TWO FORM C, FACTORY SET AT 15 SECONDS.  
 TFR -FAILURE TO SYNCHRONIZE ALARM CONTACT.  
 SS2 -ALARM RESET  
 SS3 -SELECTOR SWITCH WIRED TO OPERATE OPEN OR CLOSE TRANSITION MODE.  
 SS4 -TS LOCKED OUT RESET.

**OPEN STYLE OUTLINE DRAWINGS GS JATSCA & GS 481-751**

**GENERAL NOTES**

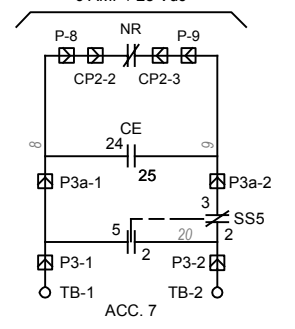
- SWITCH SHOWN DE-ENERGIZED, CONNECTED TO NORMAL SOURCE.
- ALL WIRES ARE NO. 16 A.W.G. STRANDED COPPER UNLESS OTHERWISE SPECIFIED.
- INDICATES CUSTOMER CONNECTIONS.
- INDICATES FACTORY CONNECTIONS.
- CONNECTION POINTS THAT HAVE BOTH FACTORY AND CUSTOMER CONNECTIONS ARE SHOWN AS CUSTOMER CONNECTIONS.
- INDICATES WIRE NUMBER OF ADDITIONAL WIRES TO HARNESSES.
- INDICATES INLINE HARNESS DISCONNECT PLUG.
- MATING PLUG & JACK TERMINAL NUMBERS MATCH WHEN PLUGGED TOGETHER.
- OPERATOR'S MANUAL IS SUPPLIED WITH EACH AUTOMATIC TRANSFER SWITCH. REFER TO THIS MANUAL PRIOR TO INSTALLATION AND OPERATION OF THIS SWITCH.

|  |                |               |            |
|--|----------------|---------------|------------|
| PHYSICAL WIRING DIAGRAM, 7000 SERIES<br>3 POLE 200 AMP AUTOMATIC CLOSED TRANSITION<br>TRANSFER SWITCH CATALOG NO. J7ACTSA30200R5   |                |               |            |
| AUTOMATED DRAWING PROGRAM  |                |               |            |
| PROPERTY OF ASCO POWER TECHNOLOGIES CANADA.<br>USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS<br>OF DESIGN OR INVENTION ARE RESERVED. |                |               |            |
| REV.   | BY             | DATE          | APP. DATE  |
| -  |                | 10/19/11      | NEW ISSUE  |
| DWG NO. <b>802082CAN</b>   |                |               |            |
| ENTERED BY: K.C.   | DATE: 10/19/11 | CHANGE LETTER | SHT 1 OF 3 |



CP  
(SE, ER, NR)

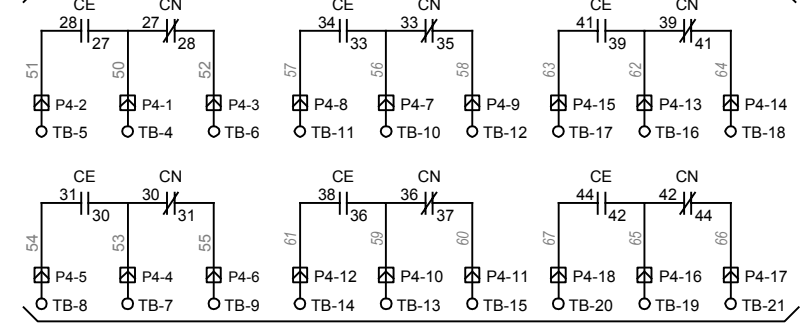
ENGINE CONTROL CONTACTS  
6 AMP / 28 Vdc



SS5 (ACC. 12E) TARGET TABLE

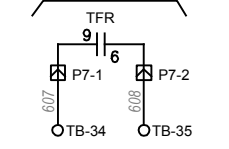
| CONT. | MAN. | AUTO | ENG. START |
|-------|------|------|------------|
| 2-3   | O    | X    | O          |
| 2-5   | O    | O    | X          |

ACC. 14ABE

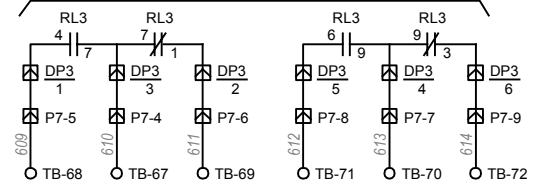


T.S. AUXILIARY CONTACTS  
10 AMPS / 250 Vac.

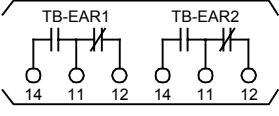
FAILURE TO SYNCHRONIZE  
ALARM RELAY  
10 AMP / 120 Vac



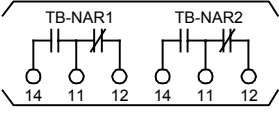
ACC. 62F  
EXTENDED PARALLEL ALARM CONTACTS  
10 AMP / 120 Vac



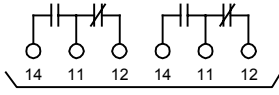
ACC. 18B  
EMERGENCY AVAILABLE  
CONTACTS  
6 AMP / 120 Vac



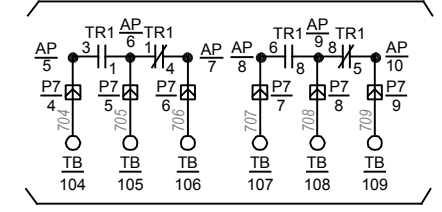
ACC. 18G  
NORMAL AVAILABLE  
CONTACTS  
6 AMP / 120 Vac



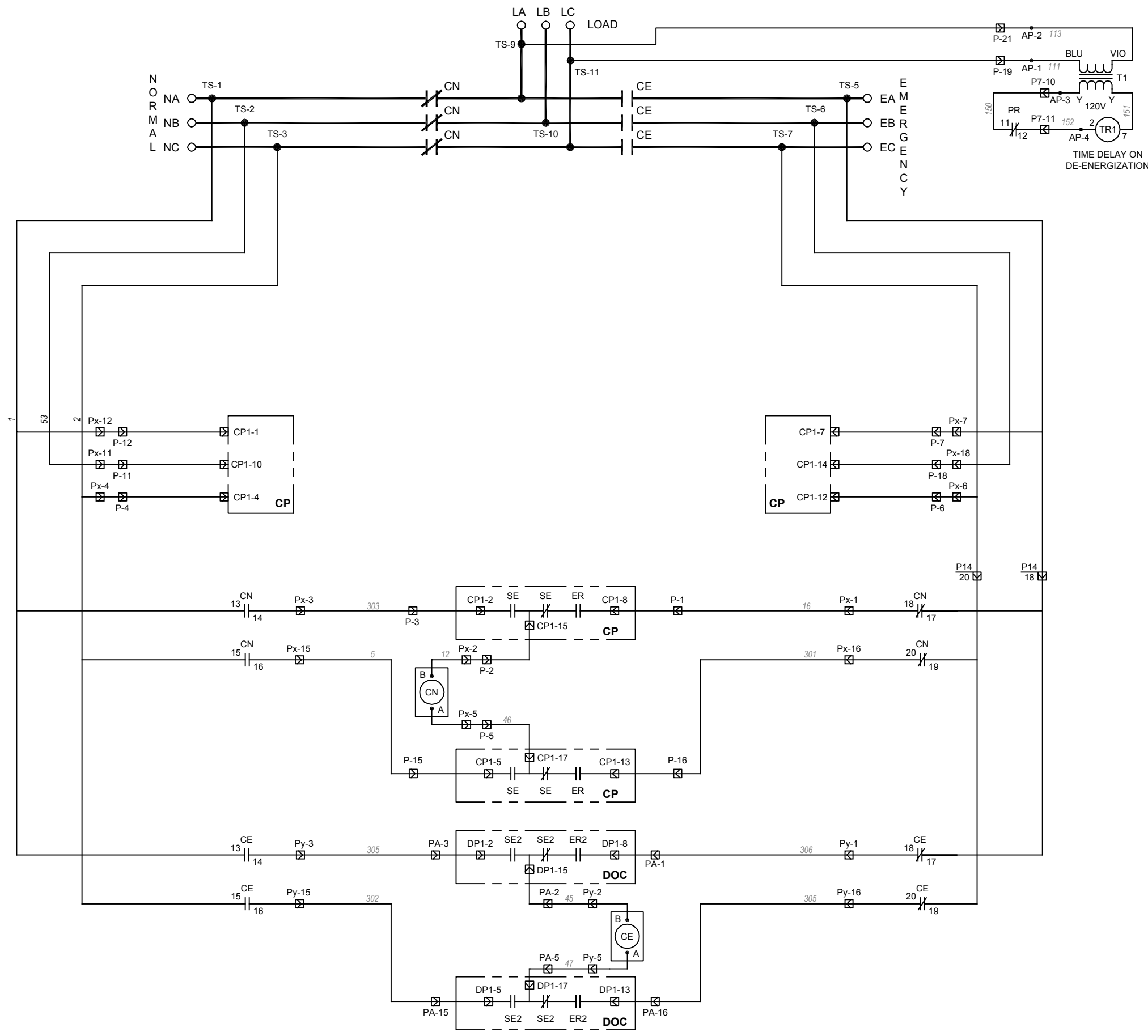
ACC. 31Z2  
PRETRANSFER CONTACTS  
6 AMP / 120 Vac



FAILURE TO TRANSFER CONTACTS  
6 AMP / 120 Vac



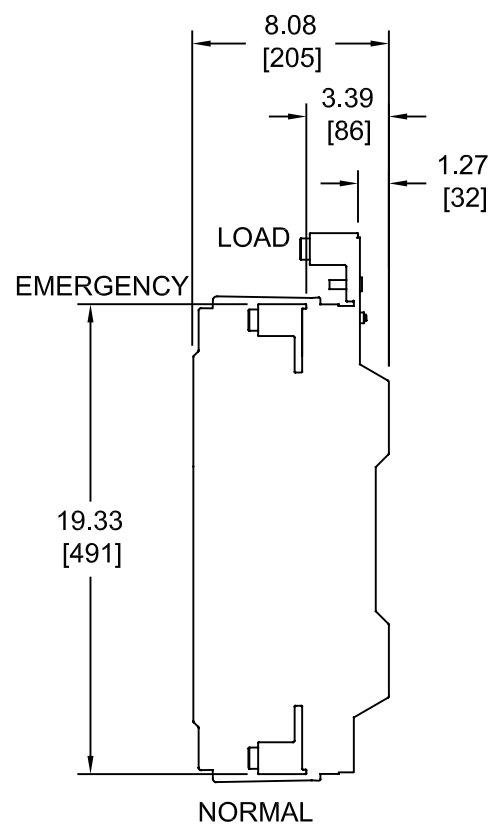
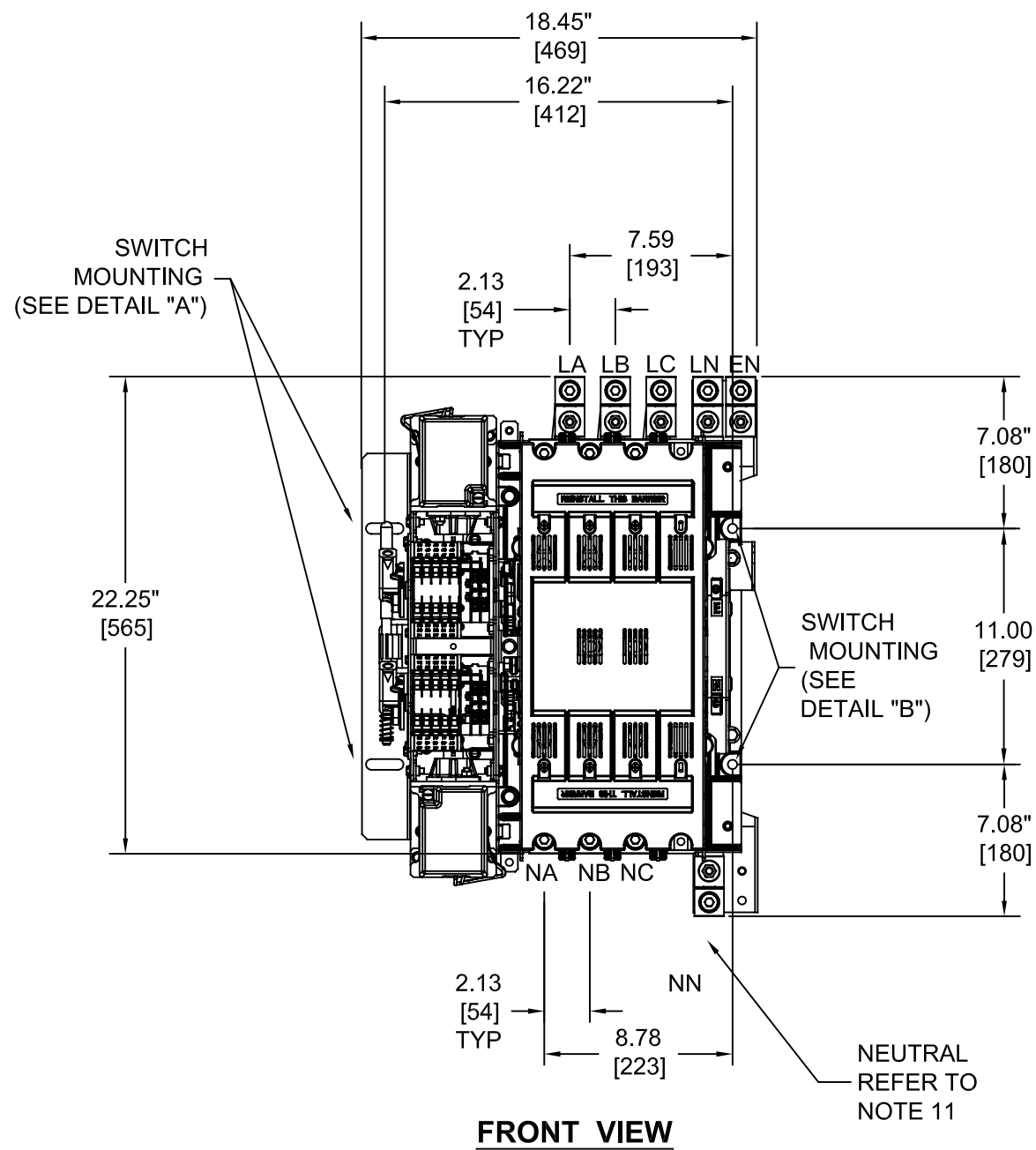
|  |                 |                  |  |                  |            |
|--|-----------------|------------------|--|------------------|------------|
| ELEMENTARY WIRING DIAGRAM<br>AUTOMATIC CLOSED TRANSITION<br>TRANSFER SWITCH CATALOG NO. J7ACTSA30200R5                             |                 |                  |  |                  |            |
| COIL VOLTAGE RATING  |                 |                  |  |                  |            |
| CP- 24 VOLT dc   | TFR- 24 VOLT dc |                  |  |                  |            |
| DOC- 24 VOLT dc  |                 |                  |  |                  |            |
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|  |                 |                  |  | K.C.             | 10/19/11   |
|  |                 |                  |  | REV.             | DATE       |
|  |                 |                  |  | BY               | DATE       |
|  |                 |                  |  | APP.             | DATE       |
|  |                 |                  |  | DWG NO.          |            |
| <b>ASCO</b> Power Technologies®  |                 | BRANTFORD CANADA |  | <b>802082CAN</b> |            |
| CHANGE LETTER  |                 |                  |  |                  | SHT 2 OF 3 |



|  |                 |           |          |            |  |
|--|-----------------|-----------|----------|------------|--|
| ELEMENTARY WIRING DIAGRAM<br>AUTOMATIC CLOSED TRANSITION<br>TRANSFER SWITCH CATALOG NO. J7ACTSA30200R5                             |                 |           |          |            |  |
| CN- 600 Volt dc  | CP- 600 Volt ac |           |          |            |  |
| CE- 600 Volt dc  |                 |           |          |            |  |
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| REV  | BY              | DATE      | APP      | DATE       |  |
| DWG NO.  |                 | 802082CAN |          |            |  |
| CHANGE LETTER  |                 |           |          | SHT 3 OF 3 |  |

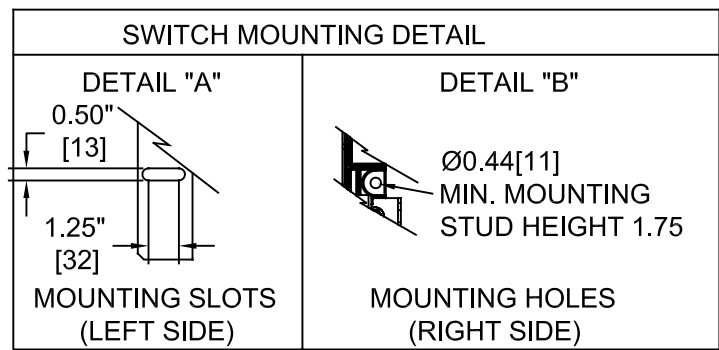
**ASCO** Power Technologies®

BRANTFORD  
CANADA



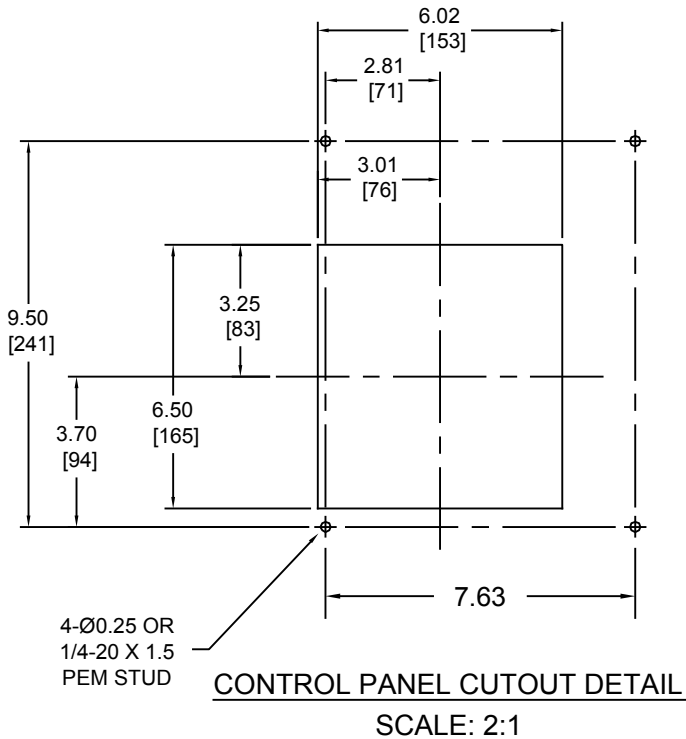
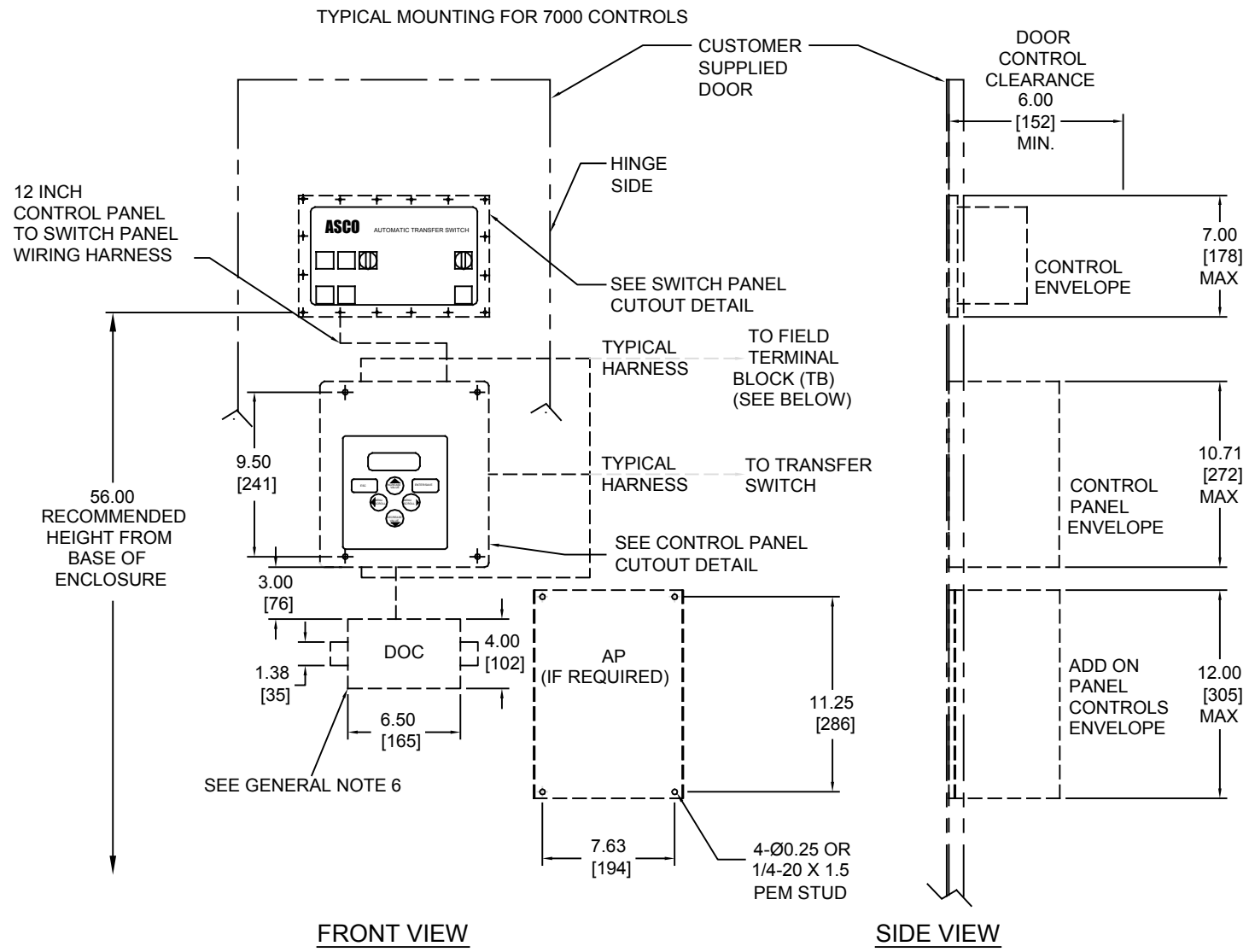
**NOTES**

- FOR 2 POLE SWITCH OMIT CENTER POLE.
- ALL INTERNAL CONNECTIONS ARE MADE AT THE FACTORY.
- WHEN INSTALLING, CONNECT NORMAL, EMERGENCY AND LOAD CONDUCTORS TO CLEARLY MARKED TERMINALS.
- WHEN OPEN TYPE ATS'S ARE INTENDED FOR ENCLOSURE TYPE MOUNTING BY OTHERS, MOUNT THE TRANSFER SWITCH UNIT ON THE INSIDE BACK SURFACE AND THE CONTROL PANEL(S) ON THE INSIDE DOOR SURFACE.
- THE CONTROL PANEL IS CONNECTED TO THE TRANSFER SWITCH PANEL BY TWO WIRE HARNESSES IN A COMMON INLINE QUICK DISCONNECT PLUG. TOTAL HARNESS LENGTH - 60.00 (1524.0) MM. CONSULT FACTORY FOR AVAILABLE EXTENSION HARNESSES.
- COMPLETE WIRING DIAGRAM AND INSTALLATION AND MAINTENANCE INSTRUCTIONS ACCOMPANY EVERY SWITCH.
- MAINTAIN ELECTRICAL CLEARANCE OF 1" (25.4) MINIMUM BETWEEN LIVE ELECTRICAL PARTS AND GROUNDED METAL.
- INCHES, (MILLIMETERS).
- SWITCH IS EQUIPPED WITH SOLDERLESS SCREW TYPE TERMINALS FOR EXTERNAL POWER CONNECTIONS. RANGE OF AL-CU WIRE SIZE:  
400 AMP SWITCH USES: ONE #4 AWG TO 600 MCM OR TWO #1/0 AWG TO 250 MCM.
- REFER TO DRAWING GS 481750 FOR GROUP 1 CONTROL ASSEMBLY OUTLINE. REFER TO DRAWING GS 481751 FOR GROUP 5 CONTROL ASSEMBLY OUTLINE. REFER TO DRAWING GS 481752 FOR GROUP 6, 7, 8, 9, CONTROL ASSEMBLY OUTLINE.
- SOLID NEUTRAL (ACC. 22) IF SPECIFIED IS MOUNTED AS SHOWN.

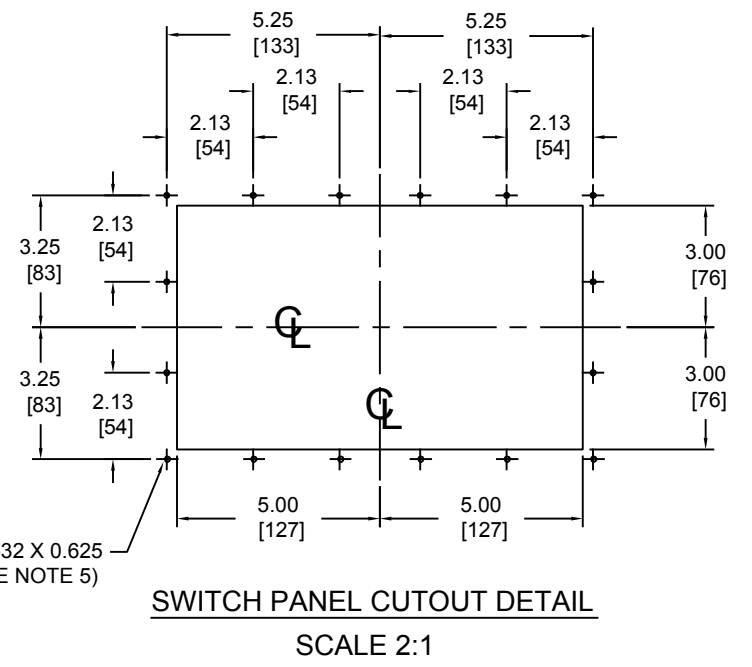


| OUTLINE AND MOUNTING DIMENSIONS<br>BULL JATS/JCTS/JDTS, 150-400 AMP<br>AUTOMATIC TRANSFER SWITCH<br>OPEN STYLE |          |  |                  |               |  |
|--|----------|--|------------------|---------------|--|
| DRAWN  | DATE     | TOLERANCE IN ACCORDANCE WITH<br>ASCO PROCEDURE MP-1-003  | JATSCA           | A             | MCA 03/31/09                             |
| C.R.   | 02/06/07 |  |                  |               | WIDTH DIM INCLUD. ACC. 22 CHG'D TO 18.45 |
| CHKD.  | DATE     | PROPERTY OF ASCO POWER TECHNOLOGIES CANADA.<br>USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS<br>OF DESIGN OR INVENTION ARE RESERVED. | FILE NO.         | REV           | 02/06/07                                 |
| B.B.   | 02/06/07 |  |                  |               | NEW ISSUE                                |
| DFT. APP.  | SCALE    |  | BRANTFORD CANADA | DWG. NO.      |  |
| C.R.   | 1:1      |  |                  | GS JATSCA     |  |
|  |          |  |                  | CHANGE LETTER | A  |
|  |          |  |                  | SHT 1 of 1    |  |

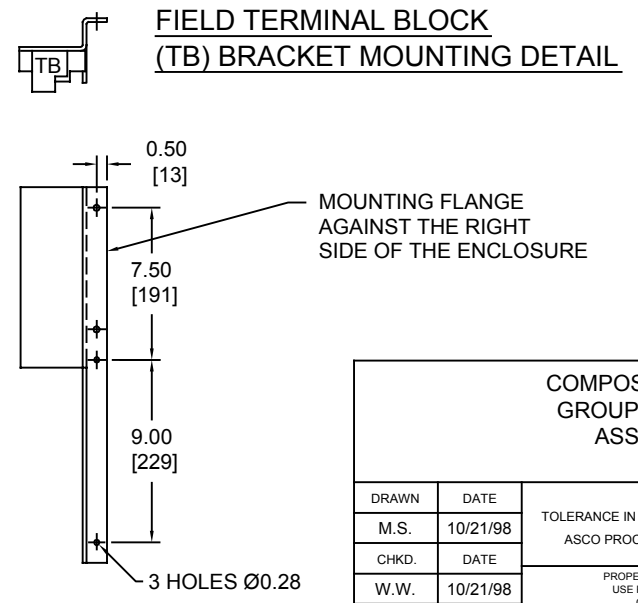
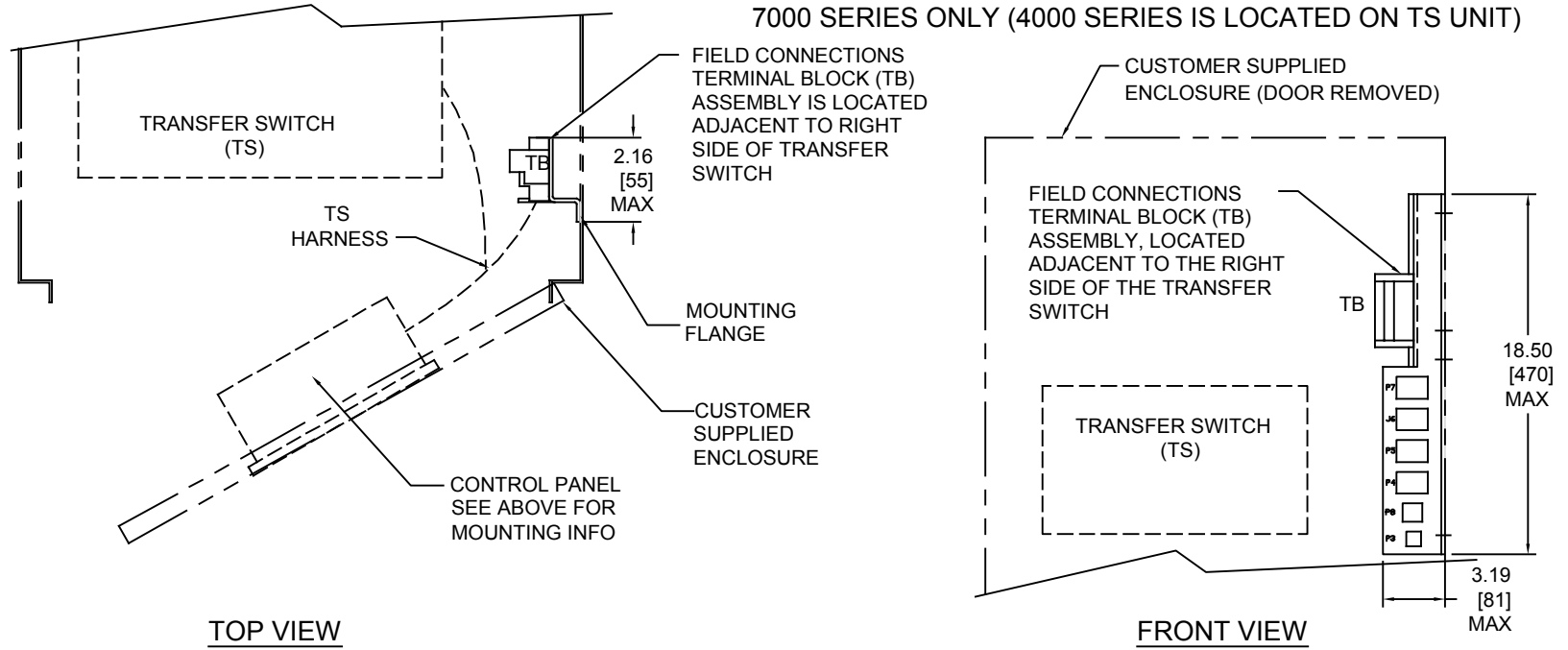
**MOUNTING OF GROUP 5 CONTROL ASSEMBLIES**



- GENERAL NOTES**
1. MAINTAIN ELECTRICAL CLEARANCE OF 1 INCH (25.4 mm) BETWEEN LIVE METAL PARTS AND GROUNDED METAL
  2. WHEN MOUNTING THE TRANSFER SWITCH IN THE ENCLOSURE THE CONTROL PANEL(S) AND OPERATOR CONTROLS SHOULD BE MOUNTED ON THE INSIDE, REAR SURFACE OF THE DOOR
  3. THE CONTROL PANEL(S) IS CONNECTED TO THE TRANSFER SWITCH BY A HARNESS WITH A QUICK DISCONNECT PLUG(S) THE HARNESS EXITS THE TRANSFER SWITCH ON THE RIGHT SIDE AND IS APPROXIMATELY 60 INCHES (1.5M) LONG CONSULT FACTORY FOR EXTENSION HARNESS.
  4. OPTIONAL ACCESSORY ADD-ON PANELS.
  5. FOR TYPE 1 USE THE (4) CLEARANCE CORNER HOLES AS REQUIRED. FOR TYPE 3R, 4 & 12 USE ALL STUDS OR HOLES
  6. DOC REQUIRED FOR CLOSED & DELAYED TRANSION. DOC IS MOUNTED 1 3/8" WIDE DIN RAIL.



**MOUNTING OF FIELD TERMINAL BLOCK ASSEMBLY (TB)  
7000 SERIES ONLY (4000 SERIES IS LOCATED ON TS UNIT)**



**COMPOSITE OUTLINE GROUP 5 CONTROL ASSEMBLIES**

|           |          |  |        |
|-----------|----------|--|--------|
| DRAWN     | DATE     | TOLERANCE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003   | 481751 |
| M.S.      | 10/21/98 |  |        |
| CHKD.     | DATE     | FILE NO.   | REV    |
| W.W.      | 10/21/98 |  | BY     |
| DFT. APP. | SCALE    | PROPERTY OF ASCO POWER TECHNOLOGIES CANADA. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED. | DATE   |
|           | 4-5      | <b>ASCO Power Technologies</b>   | APP.   |
|           |          | BRANTFORD CANADA   | DATE   |

|   |      |          |  |
|---|------|----------|--|
| I | A.L. | 10/29/09 | DOC LOCATION ADDED                                     |
| H | P.H. | 02/19/08 | CONTROL PANEL CUTOUT ENLARGE QTY 4 Ø.190 HOLES REMOVED |
| G | C.R. | 10/26/06 | 7000/4000 SERIES NOTES ADDE                            |
| F | MCA  | 06/27/05 | NEW CO. LOGO ADD.                                      |
| E | K.C. | 02/27/04 | DOOR CLEARANCE DIM. CHG!                               |
| D | C.R. | 10/02/01 | NEW COMPANY NAME                                       |
| C | M.S. | 02/14/01 | LIMITED REMOVED  |
| B | M.S. | 09/25/00 | DIMENSION CORRECTION                                   |
| A | C.R. | 03/20/00 | METRIC ADDED   |
|   |      | 10/21/98 | NEW ISSUE  |

**DWG. NO. GS 481-751**