

## INSTRUCTIONS FOR TRANQUELL 9L10AA HIGH ENERGY SURGE PROTECTORS

**CAUTION:** THE EQUIPMENT COVERED BY THESE INSTRUCTIONS SHOULD BE INSTALLED AND SERVICED ONLY BY QUALIFIED PERSONNEL FAMILIAR WITH GOOD SAFETY PRACTICES. THIS INSTRUCTION IS WRITTEN FOR SUCH PERSONNEL AND IS NOT INTENDED AS A SUBSTITUTE FOR ADEQUATE TRAINING AND EXPERIENCE IN SAFE PROCEDURES FOR THIS TYPE OF EQUIPMENT.

### GENERAL

The nameplate maximum continuous operating voltage (MCOV) should be checked to establish that the maximum system phase to phase or phase to ground continuous voltage will not exceed the capability of the device. Application of higher voltages may fail the surge protector. There are two possible connection configurations for the equipment covered by this instruction. The TRANQUELL Surge Protector can be installed in series connection on the incoming source power line if the line has overcurrent protection of 100 Amps or less. For systems with maximum continuous currents of over 100 Amperes the device must be connected in "T" configuration. Wiring diagrams are shown in figures 1 through 7. Table 1 lists the standard TRANQUELL Surge Protector model groups and refers to the appropriate circuit applications and wiring diagram figures for each.

**NOTE:** WHEN THE SURGE PROTECTOR IS WIRED IN THE SERIES CONFIGURATION MAXIMUM PROTECTION AGAINST ALL TYPES OF SURGES IS OBTAINED. IF THE DEVICE IS WIRED IN THE "T" CONFIGURATION THEN LEAD LENGTHS SHOULD BE KEPT AS SHORT AS POSSIBLE IN ORDER TO MAXIMIZE PERFORMANCE.

### INSTALLATION

The Surge Protector should be securely mounted as near as possible to the equipment to be protected. Mounting legs are provided for convenient mounting in any orientation. If the device is installed in the "T" configuration, then orient device so that leads connecting it to the power circuit are as short as possible.

Remove the TRANQUELL Protector from its enclosure by removing the four corner mounting screws on the main panel. Mark conduit locations on box and cut appropriate conduit hole(s). For recommended conduit connection locations see figure 8. Remove all metal debris from the enclosure and reinstall the protector unit. Mount the enclosure securely into position and wire the device according to the wiring diagram appropriate for the device and circuit as described in Table 1. When installing the TRANQUELL surge protector outdoors use watertight conduit connections and conduit runs. This device should be installed in accordance with all national and local electrical codes.

**NOTE:** CONSULT YOUR LOCAL GENERAL ELECTRIC COMPANY REPRESENTATIVE FOR APPLICATION OF THIS PRODUCT IN CORROSIVE, EXPLOSIVE, OR HIGH ALTITUDE ENVIRONMENTS. DO NOT INSTALL THE DEVICE WHERE IT WILL BE SUBJECT TO IMMERSION IN LIQUIDS.

## OPERATION

The TRANQUELL surge protector is energized unless disconnected from the line. The enclosure supplied with the device is rainproof, dust and oil tight. Always maintain the unit with all seals in place and with all clamps secure and tight except for service and inspection. In the remote event of device failure the protector will fail as a short circuit thus protecting your equipment from damaging overvoltages until the line circuit breaker or fuse operates. A failed device must be removed from the circuit before reenergizing. If this occurs check system for overvoltage conditions before installing a new surge protector. Do not install a TRANQUELL surge protector on a circuit unless the maximum system voltage is at or below the nameplate maximum continuous operating voltage (MCOV) shown in Table 1.

## STORAGE

The surge protector should be stored in a clean dry location with enclosure clamps secured and tight. If conduit holes are cut prior to storage, plug holes to protect against moisture and dust ingress.

TABLE 1  
TRANQUELL SURGE PROTECTOR MODEL APPLICATION LIST

MODEL GROUP	NOMINAL VOLTAGE & CONFIGURATION (VOLTS RMS)	MAXIMUM CONTINUOUS OPERATING VOLTAGE (VOLTS RMS)	CONNECTION DIAGRAM FIG.
9L10AAA___	120V SINGLE PHASE	LINE-NEUTRAL 132V	FIG. 1
9L10AAB___	208 Y/120	LINE-NEUTRAL 132V LINE-LINE 229V	FIG. 3 & 4
9L10AAC___	120/240 SINGLE PHASE, 2 POLE	LINE-NEUTRAL 132V LINE-LINE 264V	FIG. 2
9L10AAE___	240V SINGLE PHASE	LINE-NEUTRAL 264V	FIG. 1
9L10AAF___	240V DELTA	LINE-LINE 264V	FIG. 5 & 6
9L10AAG___	240 Y/138	LINE-NEUTRAL 152V LINE-LINE 264V	FIG. 3 & 4
9L10AAJ___	480V SINGLE PHASE	LINE-NEUTRAL 528V	FIG. 1
9L10AAK___	480V DELTA	LINE-LINE 528V	FIG. 5 & 6
9L10AAL___	480 Y/277	LINE-NEUTRAL 305V LINE-LINE 528V	FIG. 3 & 4
9L10AAM___	575V DELTA	LINE-LINE 632V	FIG. 5 & 6
9L10AAN___	575 Y/332	LINE-NEURAL 365V LINE-LINE 632V	FIG. 3 & 4

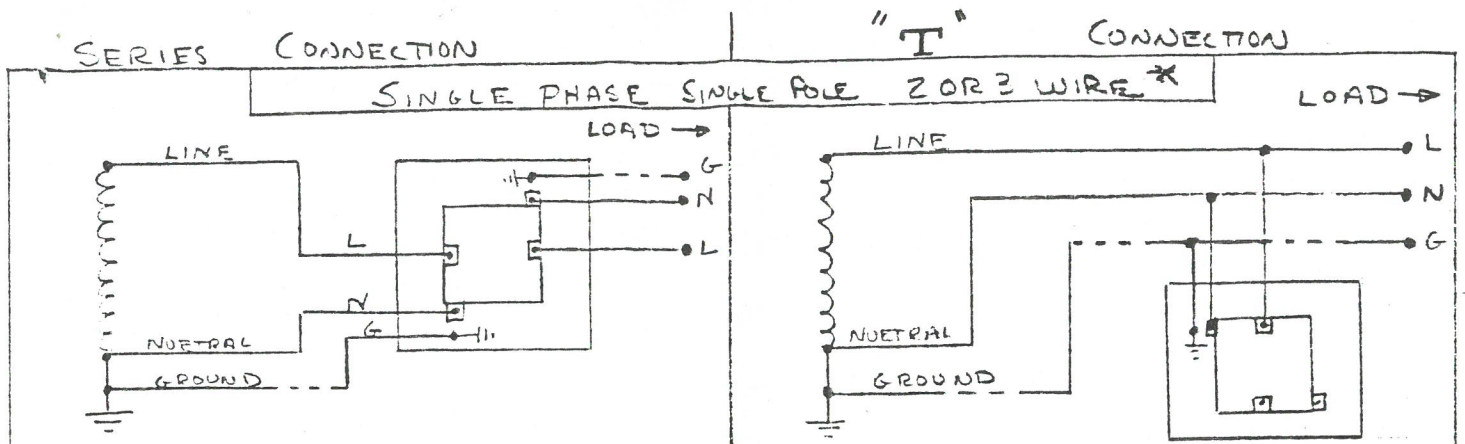


FIG. 1A MAX. CONTINUOUS CURRENT 100A

FIG. 1B MAX. CONTINUOUS CURRENT UNLIMITED

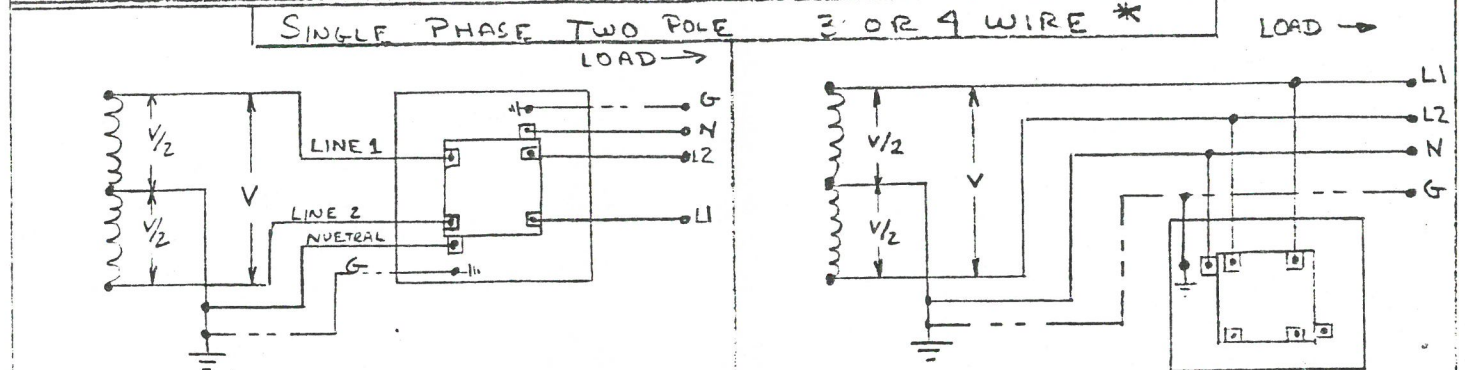


FIG. 2A MAX. CONTINUOUS CURRENT 100A/LINE

FIG. 2B MAX. CONTINUOUS CURRENT UNLIMITED

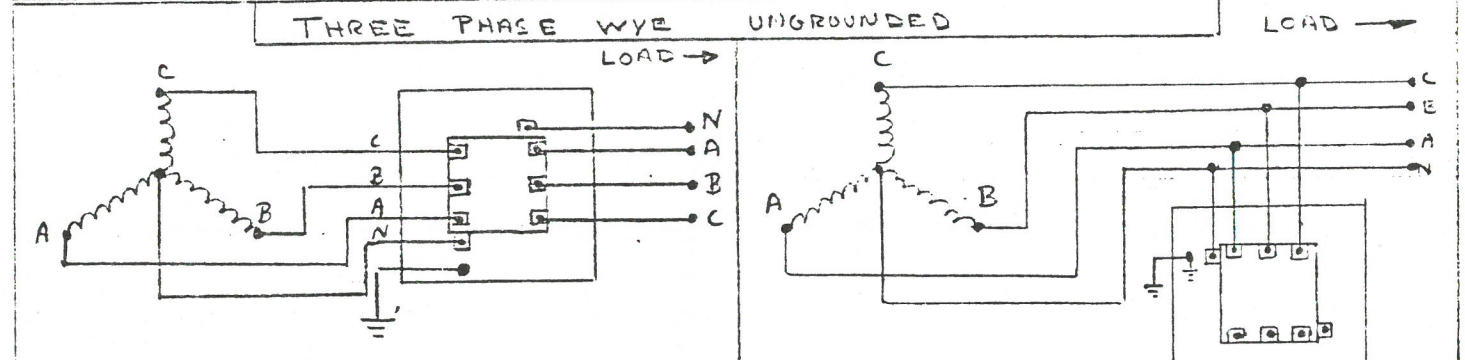


FIG. 3A MAX. CONTINUOUS CURRENT 100A/φ

FIG. 3B MAX. CONTINUOUS CURRENT UNLIMITED

TRANQUELL 9L10AA SURGE PROTECTOR CONNECTION DIAGRAMS

NOTES:

FIGURES WITH AN "A" SUFFIX SHOW THE PROTECTOR WIRED IN SERIES.  
 FIGURES WITH A "B" SUFFIX SHOW THE PROTECTOR WIRED IN "T".  
 FOR MAXIMUM PROTECTION AGAINST FAST FRONT SURGES WIRE THE DEVICE IN THE SERIES CONFIGURATION. IF THE CIRCUIT OVERCURRENT PROTECTION IS GREATER THAN THE MAXIMUM CONTINUOUS CURRENT/POLE SHOWN IN THE DIAGRAM THEN THE DEVICE MUST BE WIRED IN "T" USING 12 AWG TO 8 AWG CONDUCTORS. KEEP THESE WIRES AS SHORT AS POSSIBLE IN ORDER TO MAXIMIZE PERFORMANCE!

SEE TABLE 1 FOR CROSS REFERENCE LISTING OF TRANQUELL MODELS & WIRING DIAGRAMS.

\*WHEN THE CIRCUIT DOES NOT HAVE SEPARATE GROUND AND NEUTRAL WIRES GROUND THE ENCLOSURE TO AN EXTERNAL GROUND.

**SERIES CONNECTION**

**"T" CONNECTION**

THREE PHASE WYE 4 OR 5 WIRE GROUND NEUTRAL \*

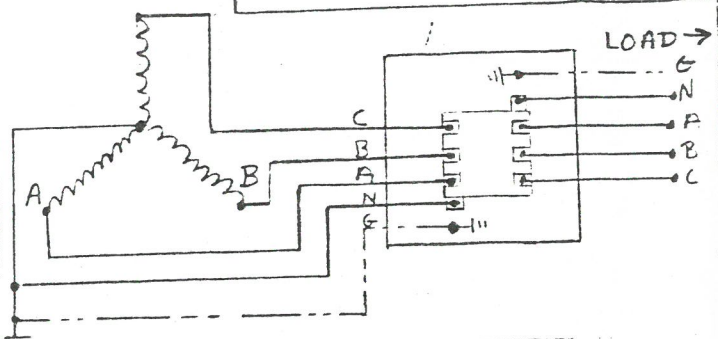


FIG. 4A MAX. CONTINUOUS CURRENT: 100A/ϕ

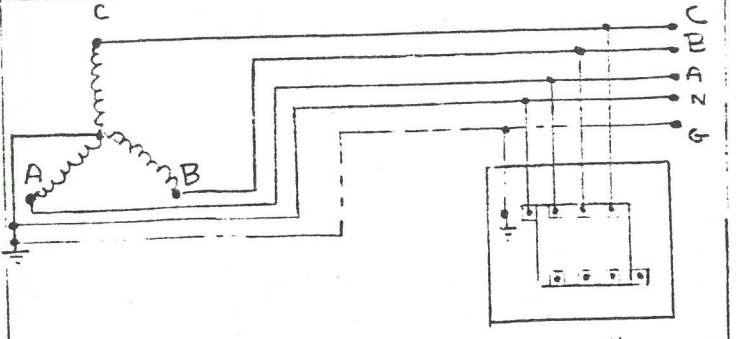


FIG. 4B MAXIMUM CONTINUOUS CURRENT UNLIMITED

THREE PHASE DELTA

UNGROUNDED

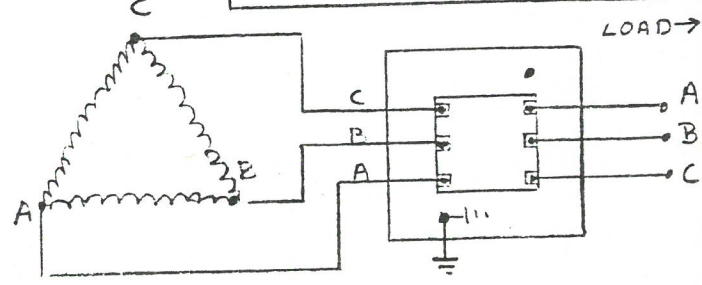


FIG. 5A MAX. CONTINUOUS CURRENT: 100A/ϕ

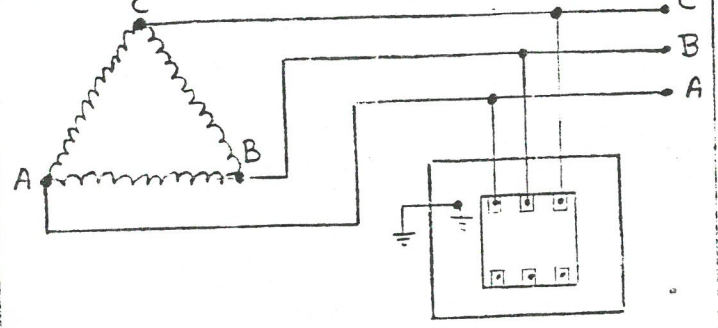


FIG. 5B MAX. CONTINUOUS CURRENT UNLIMITED

THREE PHASE DELTA ONE PHASE GROUND \* \*

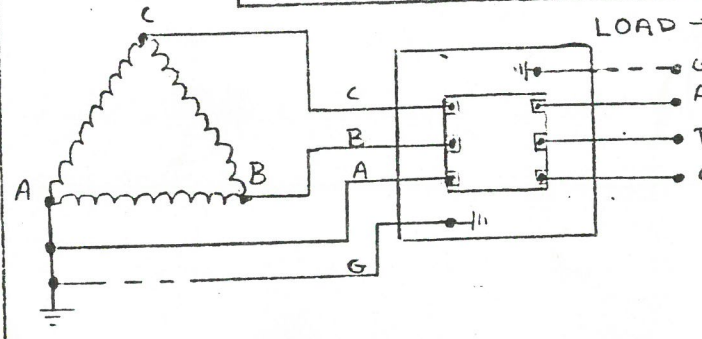


FIG. 6A MAX. CONTINUOUS CURRENT: 100A/ϕ

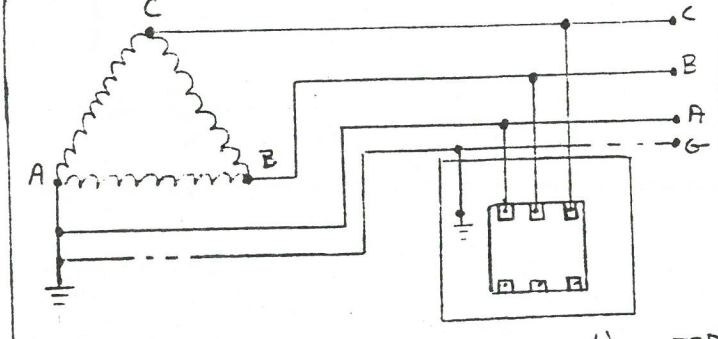


FIG. 6B MAX. CONTINUOUS CURRENT UNLIMITED

THREE PHASE DELTA ONE PHASE CENTER TAP GROUND \* \*

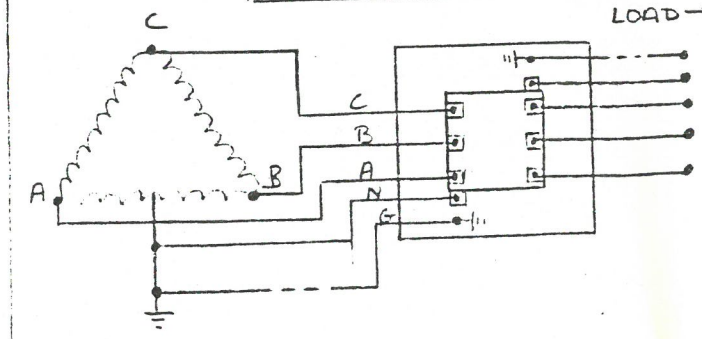


FIG. 7A

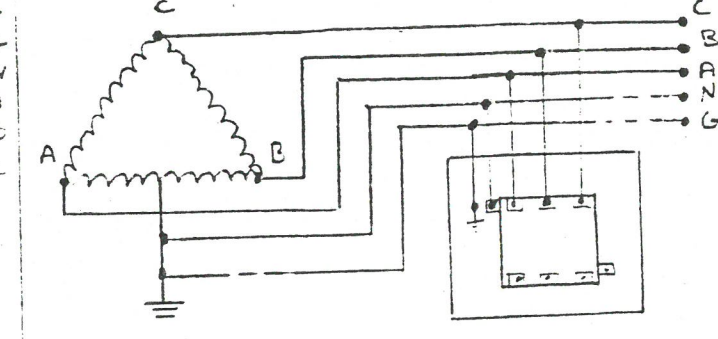


FIG. 7B

**CONNECTION DIAGRAMS (CONTINUED)**

\*WHEN THE CIRCUIT DOES NOT HAVE SEPARATE GROUND AND NEUTRAL WIRES GROUND THE ENCLOSURE TO AN EXTERNAL GROUND.

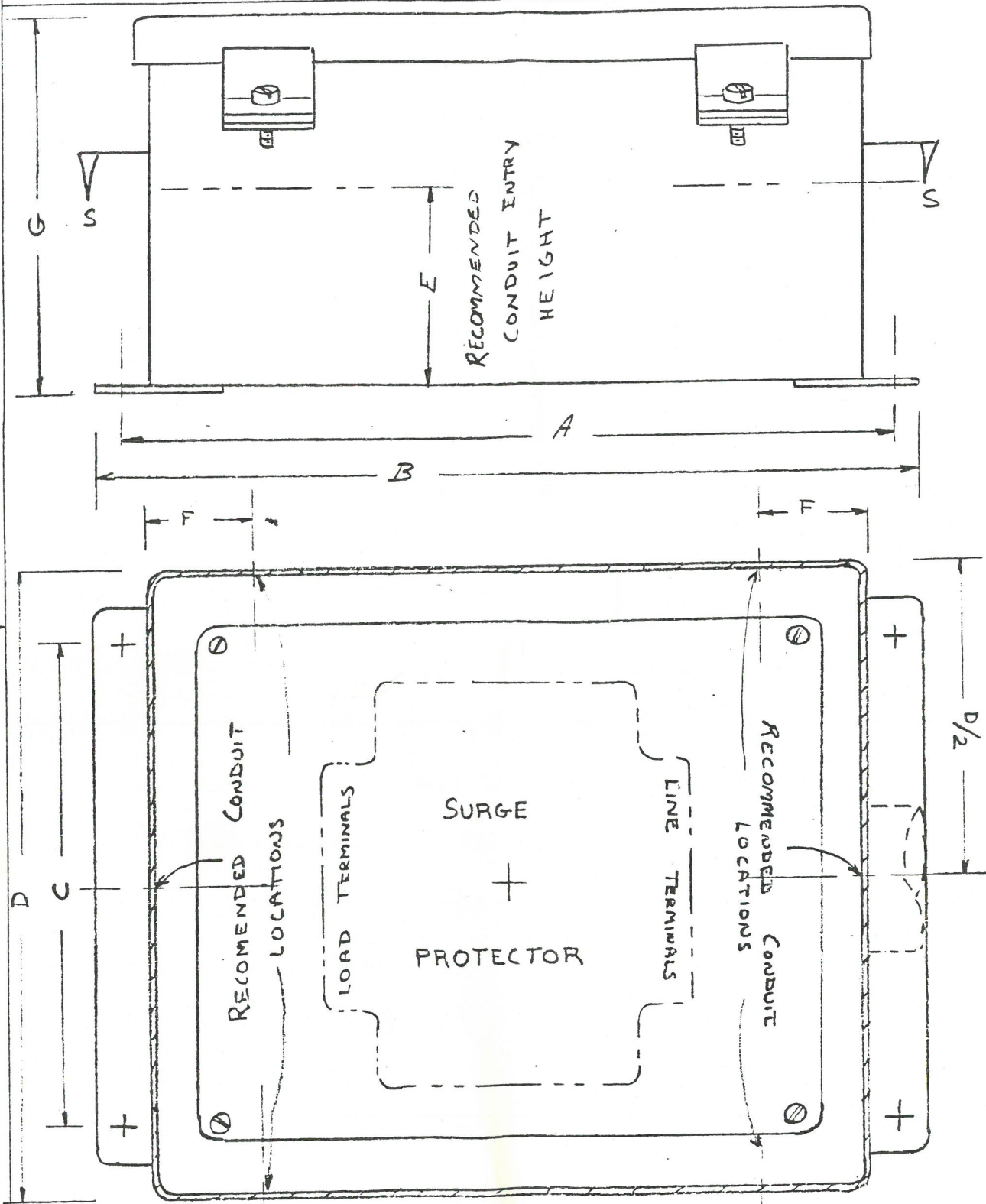
CONSULT GENERAL ELECTRIC FOR DEVICES DESIGNED TO PROTECT CIRCUITS SHOWN IN FIGURE 7.

REV NO.  
CONT ON SHEET SH NO.

TITLE  
OUTLINE SKETCH

FIRST MADE FOR 9L10A SURGE PROTECTORS

REVISIONS



S-S

MADE BY DS.B.

APPROVALS CPPO

DIV OR DEPT.

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LOCATION CONT ON SHEET

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PRINTS TO

CODE IDENT NO.



FIG. 8 CONTINUED

TRANQUELL SURGE PROTECTOR OUTLINE DIMENSIONS

MODEL NO. 9L10AA----	DIMENSIONS (INCHES)						
	A	B	C	D	E	F	G
A112, A122, & A132	10.75	11.5	6.0	8.0	2.125	1.5	4.125
B314, B324, & B334 C113, C123, & C133	12.75	13.5	8.0	10.0	2.75	2.0	5.125
E112, E122, & E132	10.75	11.5	6.0	8.0	2.125	1.5	4.125
F313, F323, & F333 G314, G324, & G334	12.75	13.5	8.0	10.0	2.75	2.0	5.125
J112, J122, & J132	10.75	11.5	6.0	8.0	2.125	1.5	4.125
K313, K323, & K333 L314, L324, & L334 M313, M323, & M333 N314, N324, & N334	12.75	13.5	8.0	10.0	2.75	2.0	5.125
SPECIALS: 9L10SAA----							