



INSTRUCTIONS

GEK-65521

RELAYS

PERIODIC TESTING EQUIPMENT
FOR
TYPE PVD OR TYPE SBD RELAYS

GENERAL  **ELECTRIC**

CONTENTS

	<u>PAGE</u>
DESCRIPTION.	3
OPERATION.	3
INSTALLATION	4
CONNECTIONS	4
MOUNTING.	4

PERIODIC TESTING EQUIPMENT
FOR TYPE SBD OR TYPE PVD RELAYS

DESCRIPTION

The equipment necessary to determine whether any one of the bus current transformers is either open circuited or short circuited is supplied as 102L213. This test equipment consists of the following parts:

- 1 - Test Transformer
- 1 - Test Resistor
- 1 - Test Switch
- 1 - Voltmeter
- 1 - Volt-Pac* Variable Transformer

The test transformer has input windings for either 120 or 240 volts. The output windings can also be connected to give 120 or 240 volts.

The test resistor consists of a 75 ohm and a 125 ohm resistor. The ohmic value possible is therefore 47, 75, 125, or 200 ohms.

The test switch is a seven position, spring return, SB-1 switch. The switch is used to apply the test equipment to each of the three phases.

The voltmeter is a 150/300 volt, 1000 ohm per volt meter. It is used to indicate the voltage across the relay or current transformers.

The Volt-Pac* variable transformer allows the test voltage to be varied.

OPERATION

The transformer secondary voltage must be chosen so that the applied voltage is less than 60 percent of the relay pickup and therefore, there will be no danger of false tripping. The value of test resistance to be used should be such that in case of a short circuit the test resistor load will not exceed 100 watts.

To check against the presence of short circuited current transformers, the test switch is turned to either 1-S, 2-S or 3-S to check all phases. This condition impresses a test voltage across the relay and test resistor in series. If there is no shorted CT the impedance across the relay is large compared to the test resistor and most of the applied voltage will appear across the relay terminals. The voltmeter, which is connected across the relay terminals will indicate this. However, if there is a short circuited CT, the drop across the relay will be much lower. Comparison of readings with those taken during installation will show whether an abnormal condition exists.

To check against the presence of open circuited CTs, the test switch is turned to either 1-0, 2-0, or 3-0 to check all phases. This places the voltmeter across the relay. If one of the CTs is open circuited or connected to the wrong number of turns and its primary is carrying load currents less than the pickup of the relay, the remaining CTs will apply a voltage to the relay which can be noted on the voltmeter. If the CTs are correct, a much smaller voltage should be seen at the voltmeter.

The off or OCV position of the test switch connects the voltmeter across the output of the test transformer. This allows a check to be made to insure that the test voltage applied is less than 60 percent of the relay pickup.

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

To the extent required the products described herein meet applicable ANSI, IEEE and NEMA standards; but no such assurance is given with respect to local codes and ordinances because they vary greatly.

*Registered Trademark of General Electric Company.

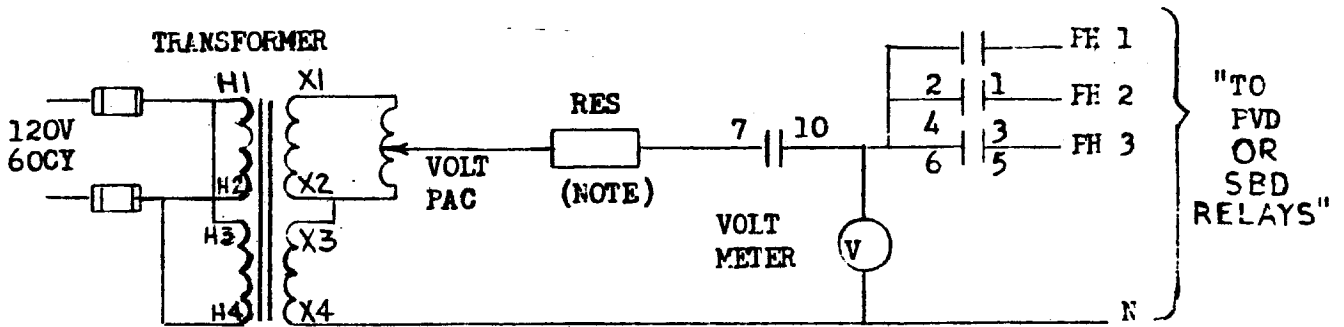
INSTALLATIONCONNECTIONS

The connection diagram for this equipment is shown in Fig. 1.

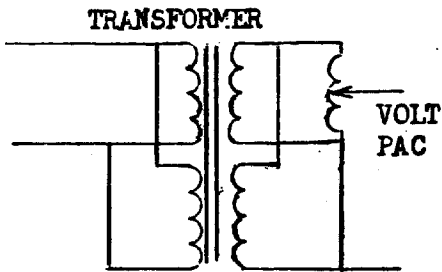
MOUNTING

The following table lists the figure numbers of the outline and panel drilling dimensions for the components of this test equipment.

COMPONENT	FIGURE NUMBER
Test Transformer	2
Volt-Pac* Variable Transformer	3
Test Resistor	4
Test Switch	5
Voltmeter-Flush Mtd.	6
Voltmeter-Surface Mtd.	7



FOR 120-240
VOLT RANGE



FOR 0-120
VOLT RANGE

NOTE: WITH VOLT PAC SET FOR 60% (MAX.) OF PVD VOLT PICKUP SETTING USE LOWEST RESISTANCE THAT WILL NOT EXCEED 100 WATTS LOAD WITH SHORT ON ONE OF CT PHASES. RESISTOR HAS TWO ELEMENTS. ONE 75 OHM AND ONE 120 OHM. USE SEPARATELY OR IN SERIES OR PARALLEL TO GET RESISTANCES OF 47, 75, 120 OR 195 OHMS.

TABULATION OF DEVICES.

TRANSFORMER 9T58B2909 200VA 120/240-120/240 V 60 CY
 VOLT-PAC 9T92A1 0-120V 2.5A
 AC VOLTMETER* DO-91 RECTIFIER TYPE 150/300 V 1000 OHMS/VOLT
 TEST RESISTOR IC9006C202A G5
 TEST SWITCH 16SB1ED710SST(-)K SPECIFY PANEL THICKNESS
 ENGRAVE FRONT VIEW 3-0, 2-0, 1-0, OCV, 1-S, 2-S, 3-S
 * SURFACE MFG 165A7841-15
 SEMI-FLUSH MFG 165A7841-16

SEE INDEX 102L213

CONTACTS HANDLE END		16SB1ED710-FRONT VIEW						
		3-0	2-0	1-0	OCV	1-S	2-S	3-S
1	2			X		X		
○— — —○	2			X		X		
	3		X				X	
○— — —○	4		X				X	
	5	X						X
○— — —○	6	X						X
	7				X	X	X	X
○— —○								
	10				X	X	X	X

Fig. 1 (0178A9194-6) External Connection for Monitoring of Bus Protection Using Types PVD or SBD Relays

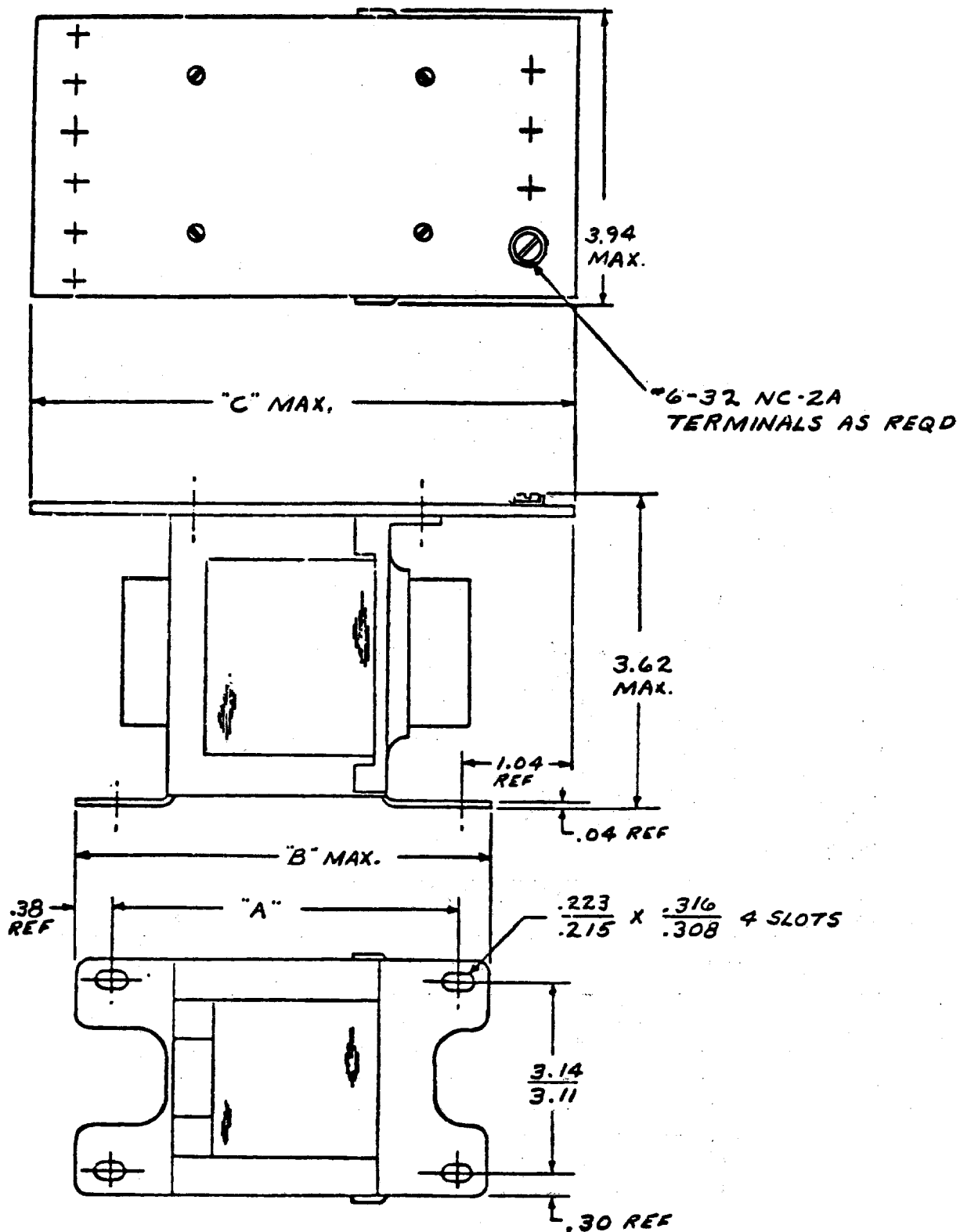
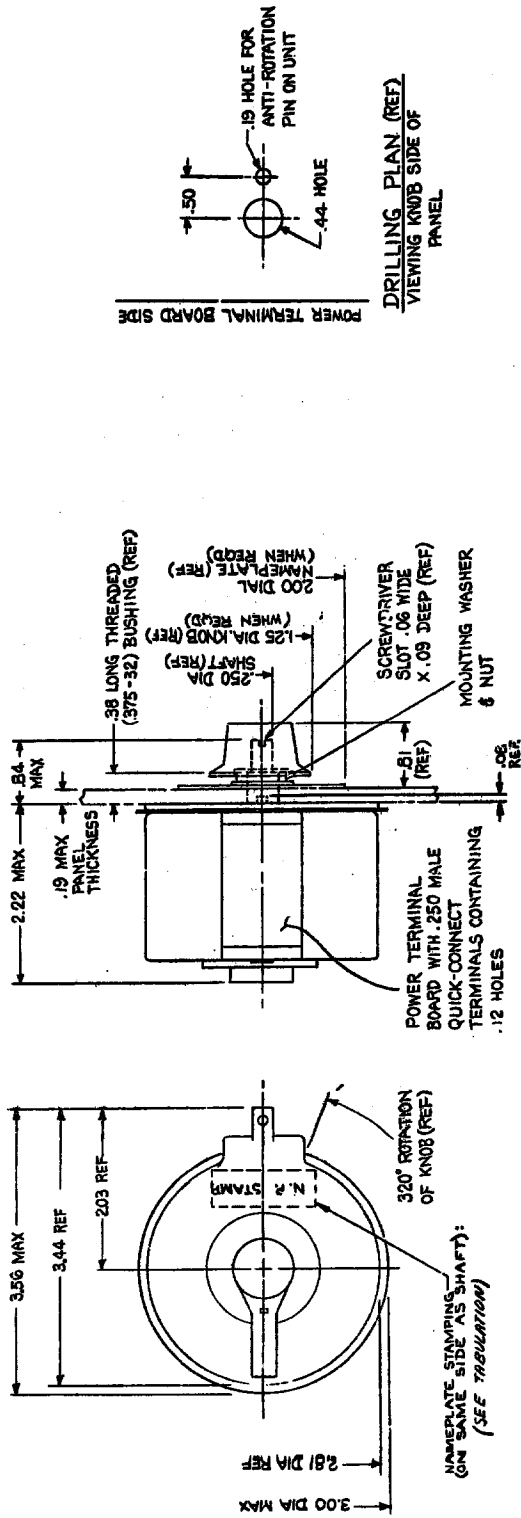


Fig. 2 (467A716AA-7) Outline of Test Transformer (9T58B2909)



APPROX - WT - 2.0 LB.

Fig. 3 (278C990AA-7) Outline of Volt-Pac* Variable Transformer (9T92A1)

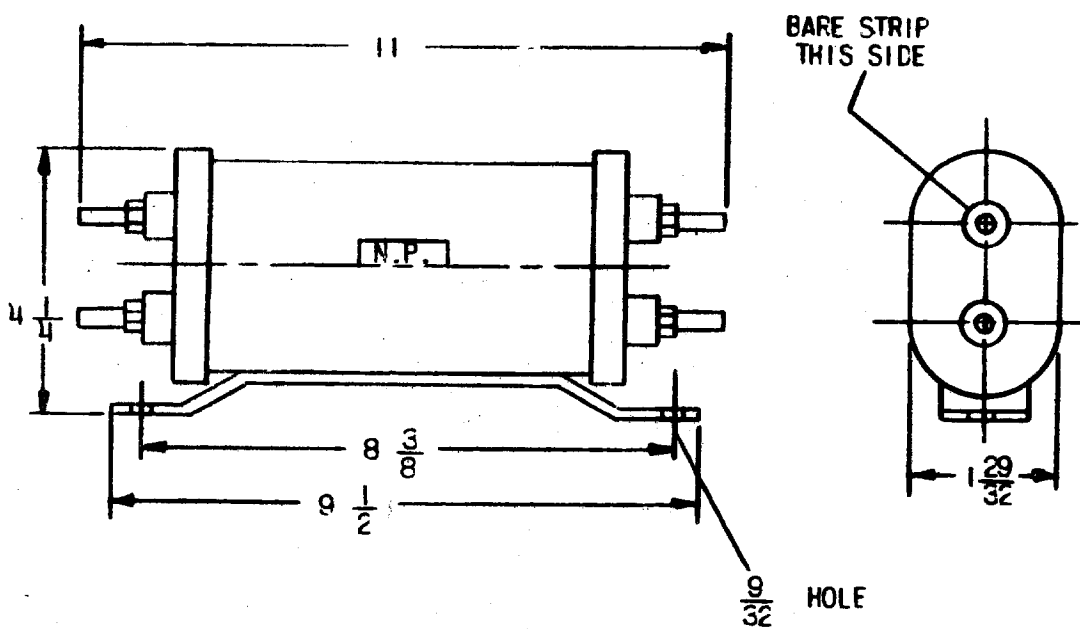


Fig. 4 (403A119-1) Outline of Test Resistor

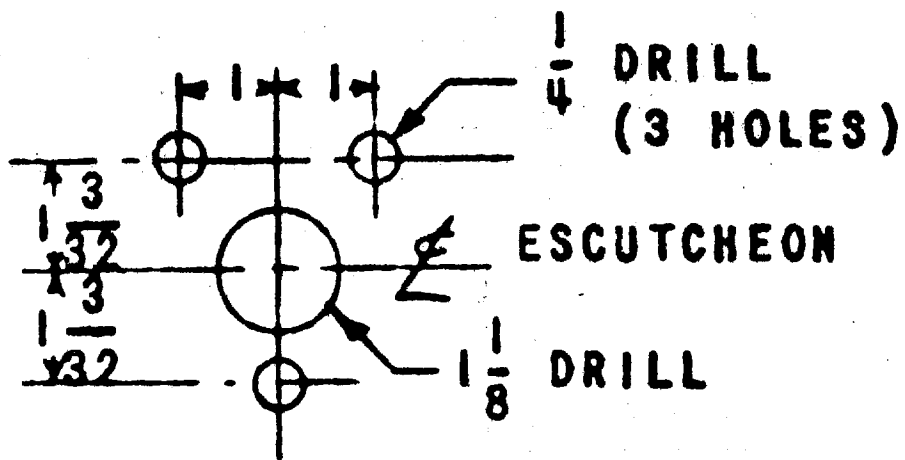
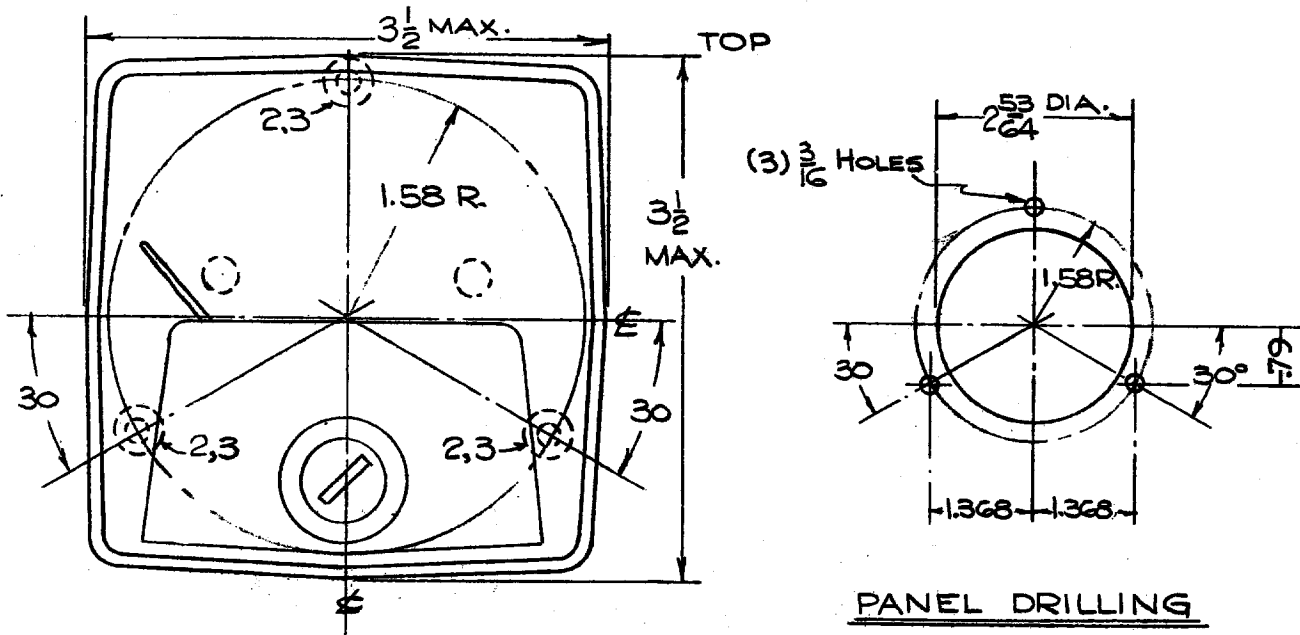


Fig. 5 (0116A0130-7) Panel Drilling Dimensions Diagram for Test Switch (Type SB-1 Switch)



1

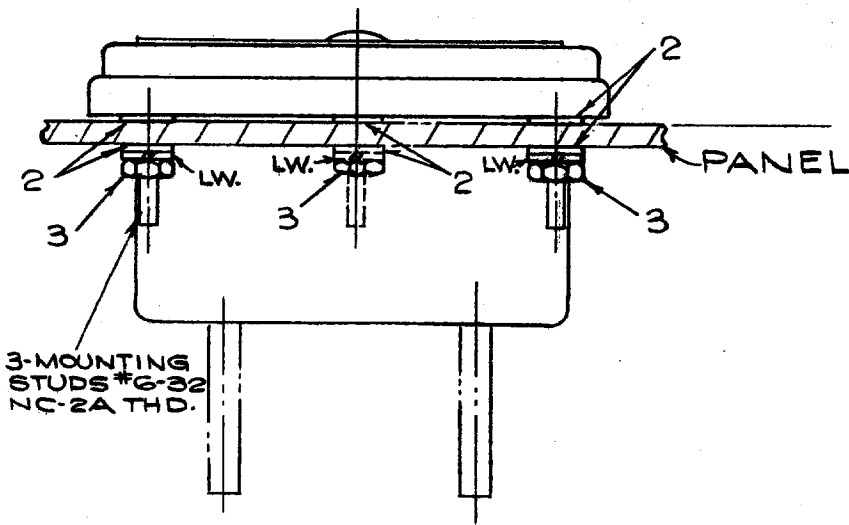


Fig. 6 (381A128-0) Outline and Panel Drilling for Semi-flush Mounted Meter (Type D0-91)

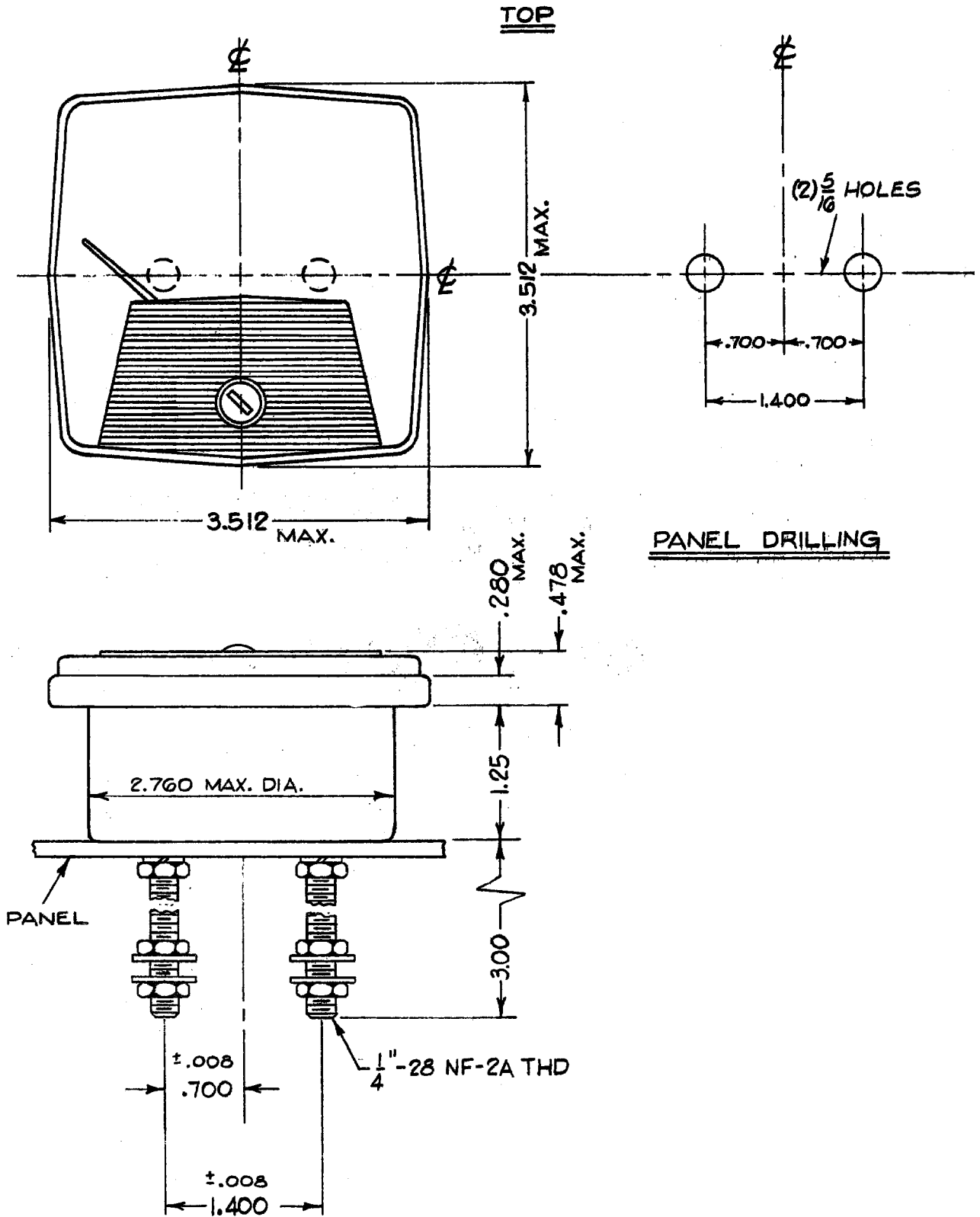


Fig. 7 (0148A3872-0) Outline and Panel Drilling for Surface Mounted Meter (Type D0-91)



GE Power Management

215 Anderson Avenue
Markham, Ontario
Canada L6E 1B3
Tel: (905) 294-6222
Fax: (905) 201-2098
www.GEindustrial.com/pm