



GEK-100563

# INSTRUCTIONS

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**TEST PLUGS**

**FOR**

**MOD-10 TYPE RELAYS**

**TYPE: XTM28L1 AND XTM28R1**

**Meter and Control  
Business Department**

General Electric Company  
Protection & Control Division  
205 Great Valley Parkway  
Malvern, PA 19355

*These instructions do not purport to cover all details or variations in equipment nor 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.*

**APPLICATION**

Many MOD-10 relays are equipped with built in test receptacles. The XTM28 test plugs are designed specifically for testing of MOD-10 relays that are equipped with these test receptacles.

Each of these MOD-10 relays has a left-hand and a right-hand fourteen point connection plug on its front panel. For testing purposes, these connection plugs are removed and replaced with the XTM28L1 and XTM28R1 testing plugs, respectively. Each XTM28 testing plug engages all fourteen relay connection points and enables power to be applied to the relay from either a separate source or the source that feeds the equipment.

Both test plugs may be inserted at the same time. If, however, only one test plug is to be used, the connection plug may remain in the other half of the receptacle.

**RATINGS**

	Continuous Voltage	Current	One Second Surge Current, Symmetrical
XTM28R1	600 VAC	15 Amps	240 Amps
XTM28L1	600 VAC	15 Amps	240 Amps

**WARNING**

**IT IS CRITICAL THAT JUMPERS BE INSERTED ON THE SYSTEM-SIDE TEST PLUG TERMINALS THAT ARE CONNECTED TO CT SECONDARIES, PRIOR TO PLACING THE TEST PLUG INTO THE RELAY RECEPTACLE. IF THESE JUMPERS ARE LEFT OUT, THE RESULTING HIGH VOLTAGES DEVELOPED PRESENT A SERIOUS HAZARD TO PERSONNEL AND MAY SEVERELY DAMAGE EQUIPMENT.**

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## CONSTRUCTION

### XTM28R1

The XTM28R1 test plug, shown in Fig. 1, is a fourteen point, twenty-eight contact test plug. It is the right-hand version of the XTM28 type test plug, and can only be inserted into the right-hand connection plug slot of a MOD-10 relay. The test plug contact finger arrangement is keyed to prevent insertion into the left-hand plug slot of the MOD-10 relay, or either slot when the plug is inverted. This is done to aid in the safe and proper wiring of the relay and any CT secondary connections.

This unit provides two sets of test connections to points 15 through 28 of the relay. The fourteen red "S" connection points numbered 15S through 28S on the test connection plug provide access to the equipment case stud connections. The fourteen black "R" connection points numbered 15R through 28R provide access to the relay connections.

The test plug has twenty-eight brush strips that are insulated from each other through the plug spacer and terminate just inside the test plug. From this termination each brush strip is individually hard wired using a locking wire connection terminal. At the other end of the test plug the wire has a second locking wire connection terminal, which is attached to a terminal tab that is riveted to the terminal assembly. At the top of every terminal assembly, on the outside of the test plug, is a number 8 binding head screw that can be used to securely fasten external leads to flat contact plates at the top of the terminal assembly.

The test plug is fitted with a sliding handle that swings out to facilitate wiring to the terminals. The handle has a tab on the outside edge to guide the wire dress of the test leads.

### XTM28L1

The XTM28L1 test plug, shown in Fig. 2, is a fourteen point, twenty-eight contact test plug. It is the left hand version of the XTM28 type test plug, and can only be inserted into the left-hand connection plug slot of a MOD-10 relay. The test plug contact finger arrangement is keyed to prevent insertion into the right-hand plug slot of the MOD-10 relay, or either slot when the plug is inverted. This is done to aid in the safe and proper wiring of the relay and any CT secondary connections.

This unit provides two sets of test connections to points 1 through 14 of the relay. The fourteen red "S" connection points numbered 1S through 14S on the test connection plug provide access to the equipment case stud connections. The fourteen black "R" connection points numbered 1R through 14R provide access to the relay connections.

The test plug has twenty-eight brush strips that are insulated from each other through the plug spacer and terminate just inside the test plug. From this termination each brush strip is individually hard wired using a locking wire connection terminal. At the other end of the test plug the wire has a second locking wire connection terminal, which is attached to a terminal tab that is riveted to the terminal assembly. At the top of every terminal assembly, on the outside of the test plug, is a number 8 binding head screw that can be used to securely fasten external leads to flat contact plates at the top of the terminal assembly.

The test plug is fitted with a sliding handle that swings out to facilitate wiring to the terminals. The handle has a tab on the outside edge to guide the wire dress of the test leads.

## SHIPPING-UNPACKING

Immediately upon receipt of the test plug, an examination should be made for any damage sustained in transit. If injury or rough handling is evident, a damage claim should be filed at once with the transportation company and the nearest General Electric Sales Office should be notified.

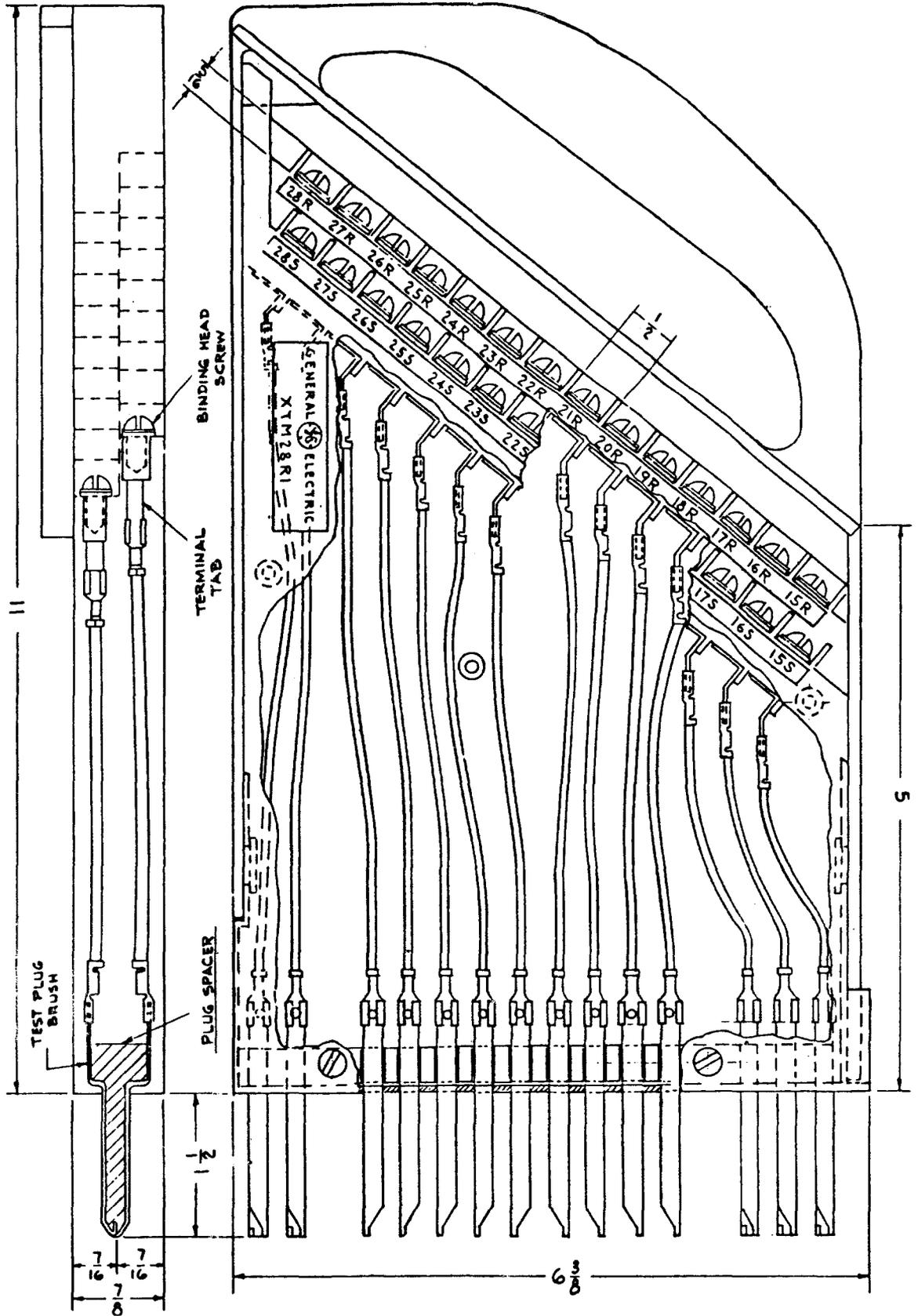


Figure 1 (0285A5404) XTM28R1 Cross Section and Outline

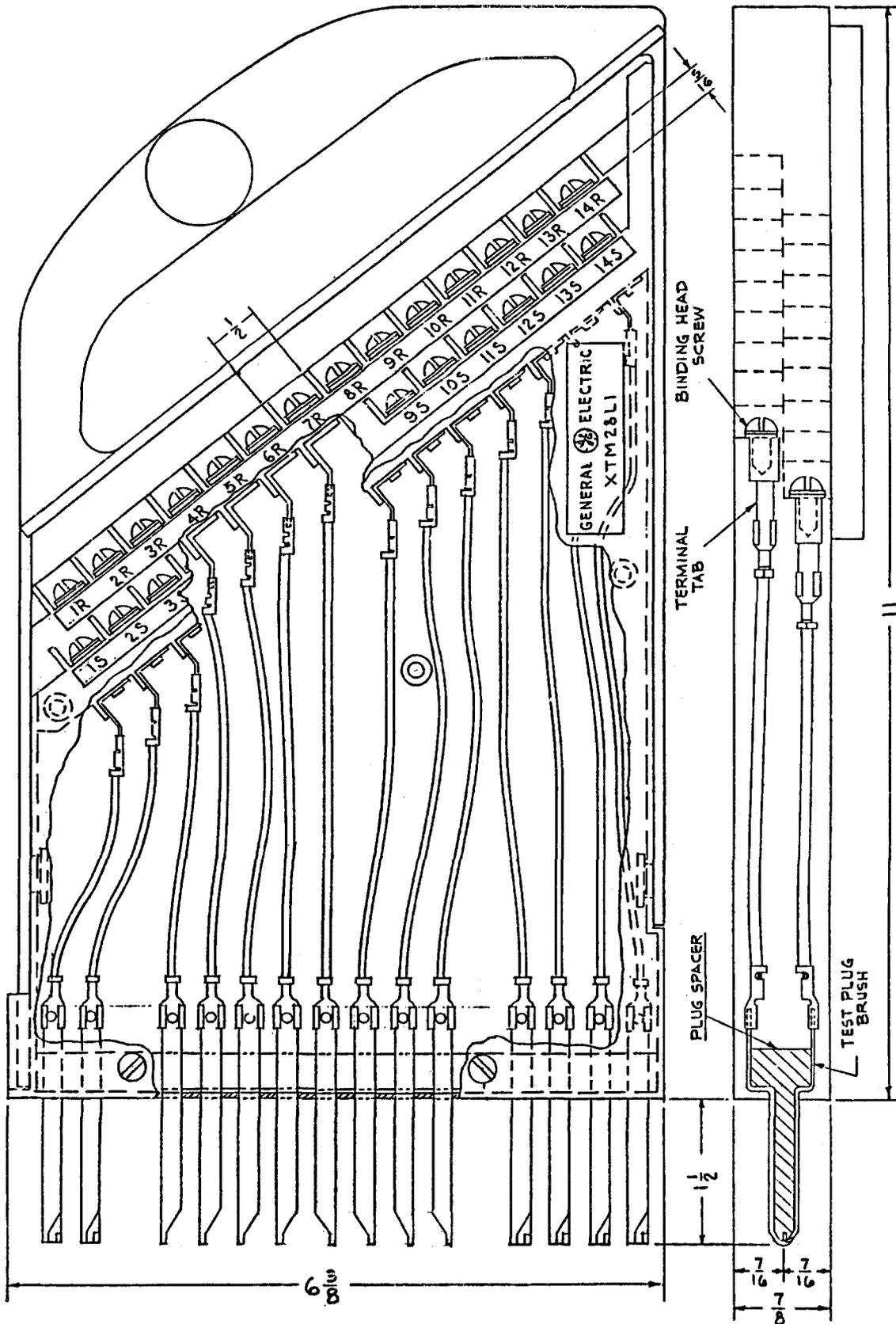


Figure 2 (0285A5403) XTM28L1 Cross Section and Outline