



GE VERNOVA

AC TEST PANEL

TYPE XTC10A

GEK-99335

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.

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AC TEST PANEL TYPE XTC10A

DESCRIPTION

The Type XTC10A AC test panel is designed to provide a means for checking the operability of a current differential relay (DLS). The panel provides a variable voltage supply, a current limiting reactor, trip test and relay status lamps, a six position relay test switch, an XLB connection plug, and a push to trip push-button.

This test panel (four rack units high) is for mounting in a standard 19-inch rack. See Figure 2.

The test panel includes a level selectable source of reactance limited current, determined by tap block selections on the rear of the test panel. The two tap block selections determine the transformer voltage and reactor impedance, resulting in a specific current level to be used in testing. For example, if a transformer voltage of 8 volts and a reactor impedance of 4 ohms are selected, the test current output to the relay will be 2 amps. The test panel can provide various current levels between 0.5 amps and 24 amps with a fixed current-limiting impedance, supplied from the voltage source at 120 volts, 60 cycles.

The test panel is energized by removing the XLB connection plug from the front of the test panel. When removed, this connection plug disengages and shorts out all line CT inputs to the relay. The yellow lamp on the front of the test panel illuminates indicating that the test panel is energized.

Moving the relay test switch out of the NOR (Normal Operation) position opens all breaker trip, channel monitor, channel exalt, transfer trip, and alarm contacts, except for the power supply alarm contact. Moving the switch from the NOR position also energizes the red test lamp on the front of the panel when the panel is energized to indicate that the relay is out of service. Internal connections for the test panel are shown in Figure 1.

Also located on the front of the test panel is a TRIP push button. This button is used to actuate the test current from the test panel to the relay inputs. It controls a normally open contact in series between the test panel current source and each of the three single phase current inputs.

RECEIVING, HANDLING AND STORAGE

The Type XTC10A AC test panel will normally be supplied with the current differential relay equipment, mounted in a rack or cabinet with other relays and test equipment. Immediately upon receipt of the relay equipment, it should be unpacked and examined for any damage sustained in transit. If damage resulting from rough handling is evident, file a damage claim at once with the transportation company and promptly notify the nearest General Electric Sales Office.

Reasonable care should be exercised in unpacking the equipment. If the equipment is not to be installed immediately, it should be stored indoors in a location that is free from moisture, dust, metallic chips and severe atmosphere contaminants.

INSTALLATION TESTS

The Type XTC10A AC test panel is usually supplied from the factory mounted and wired with the relay equipment. It has been wired with the rest of the units at the factory, and will have the same summary number on the unit nameplates.

RATINGS

The XTC10A AC test panel is designed for operation in a maximum ambient air temperature of 65° C. The input voltage to the test panel is 120 volts, 60 hertz.

Transformer secondary taps at block "MJ" should be selected in such a way as to give the best resolution for a given test current. Maximum available relay current is 24 amps.

TEST PROCEDURE

Before the test is begun, the potential transformer and reactor impedance levels to be used must be determined and selected using the taps at the "MJ" block on the rear of the test panel. The current level chosen should be the level just above the current level at which the relay is set to trip.

1. Turn the relay test switch on the test panel to the OFF [2] position.

It should be noted that line protection at this point is not being provided by the relay, and should be delegated to backup relays.

The red indicating lamp will come on indicating that the relay is in the test mode, and is not providing protection to the line.

All targets previously shown on the relay will be reset.

2. Remove the XLB connection plug from the test panel.

This will remove and short out the line CT inputs and replace them at the relay with the test panel inputs. This will also energize the test panel.

The yellow indicating lamp will come on indicating that the test panel is energized.

3. Move the relay test switch to the TRIP-A [3] position.

This closes the normally open contact between the test panel's current source and the relay's phase A current input terminal.

Press the TRIP push-button on the front of the test panel to actuate a relay current differential trip on phase A.

Do not hold the push-button down for any longer than necessary to determine that the relay has operated.

4. Move the relay test switch to the TRIP-B [4] position.

This closes the normally open contact between the test panel's current source and the relay's phase B current input terminal.

Press the TRIP push-button on the front of the test panel to actuate a relay current differential trip on phase B.

Do not hold the push-button down for any longer than necessary to determine that the relay has operated.

5. Move the relay test switch to the TRIP-C [5] position.

This closes the normally open contact between the test panel's current source and the relay's phase C current input terminal.

Press the TRIP push-button on the front of the test panel to actuate a relay current differential trip on phase C.

Do not hold the push-button down for any longer than necessary to determine that the relay has operated.

6. To key the DTT contact of the DLS relay and initiate a transfer trip signal, move the relay test switch on the test panel to the TT [6] (transfer trip) position. This switch position energizes Contact Converter 1 (CC1) on the DLS relay and activates the key DTT circuit.

When testing is completed, the relay test switch should be moved to the OFF [2] position and the XLB connection plug should be replaced. This should de-energize the test panel, return the phase current inputs to the line CT's and deactivate the yellow indicator lamp.

When this is complete, place the relay back in service by moving the relay test switch to the NOR [1] position. The red indication lamp should deactivate, indicating that the relay is no longer in test mode.

MAINTENANCE

Other than normal adjustments of the percent pickup meter, and choosing the desired voltage at the "MJ" block, no other adjustments or maintenance are required.

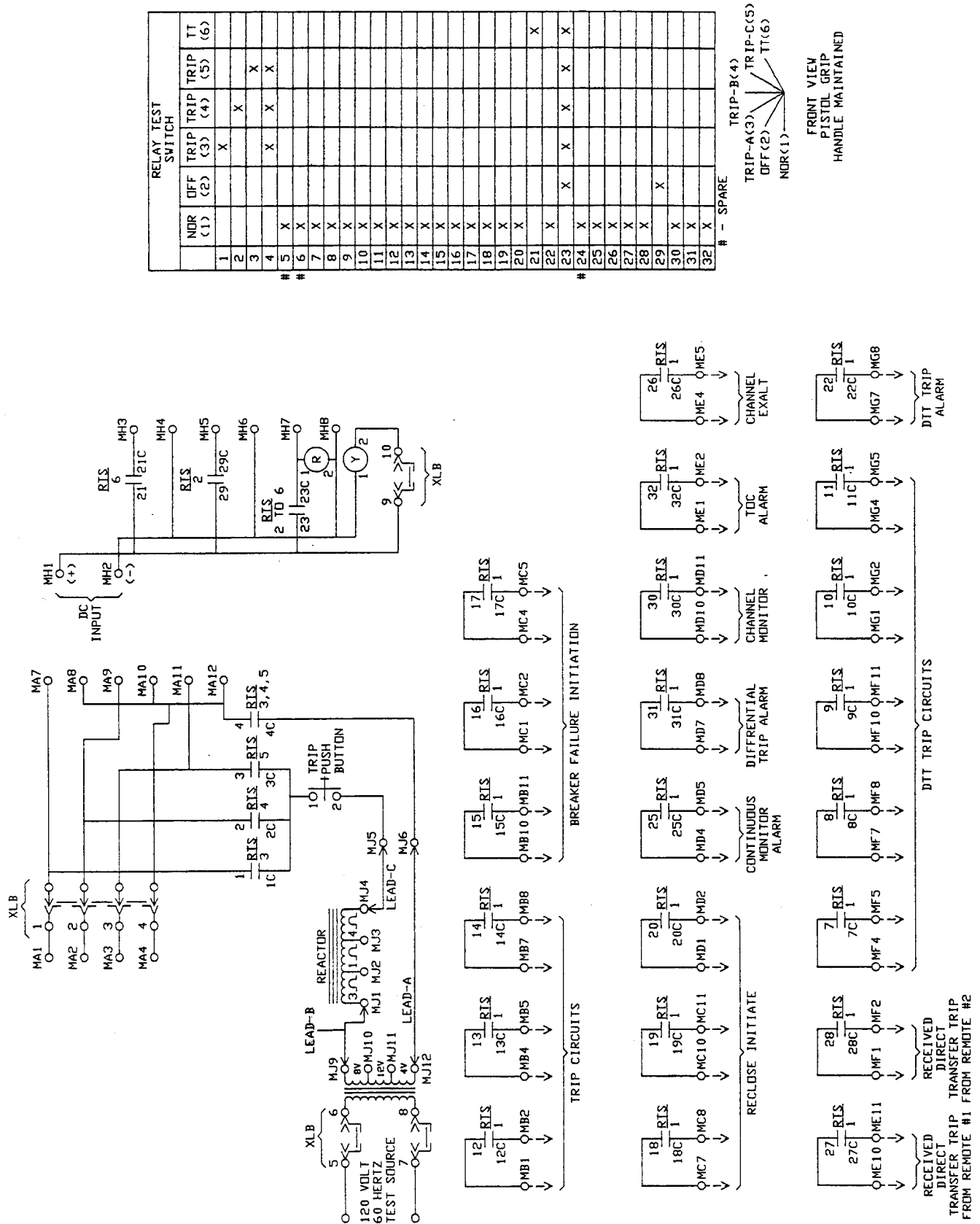


Figure 1 (0179C7789) XTC10A Internal Connections

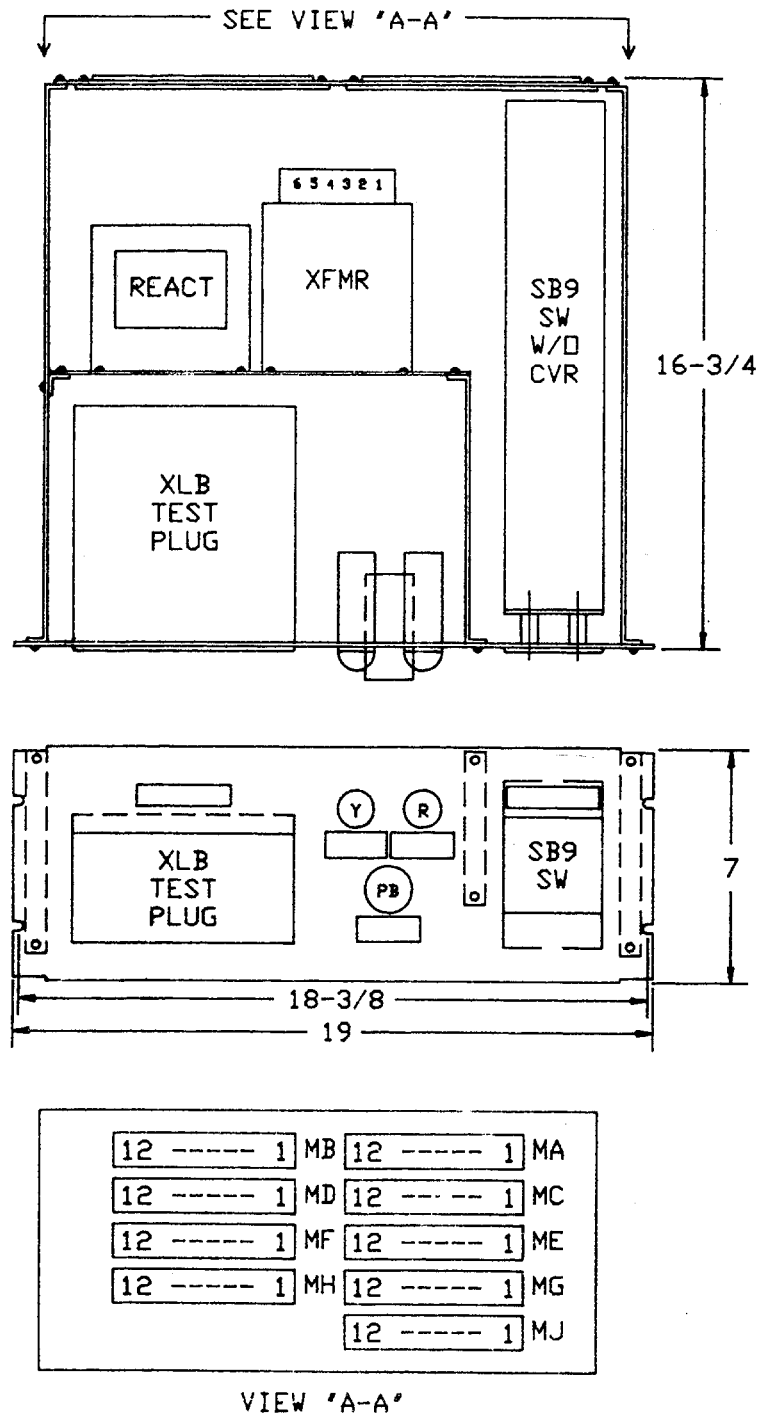


Figure 2 (0286A2953) XTC10A Outline