CROSS REF
FOR
30100-158-01

Instructions for "GROUNDGARD" Ground-Fault Protection System

THE PROTECTION SYSTEM

The Westinghouse "Groundgard" ground-fault protection system is designed to protect electrical equipment from destructive arcing ground faults. The system consists of a "Groundgard" Sensor and a "Groundgard" Relay. See Table I.

Four types of relays are available. The Type GR (5264C09H02) and Type GR1 (5264C09H04) have four settings, one of which must be selected. See Table IV. As such, they fulfill the basic need for fast ground-fault detection. The Type GRT (5264C09H03) and Type GRT1 (5264C09H05) incorporate an additional time delay that is adjustable. See Table II. All relays employ solid-state circuits and are self powered by fault current.

Current sensors are window-type current transformer devices through which the cables or bus bars of all phases and neutral, if used, are run. Any ground-fault current will be monitored by the sensor and passed on to the "Groundgard" Relay.

The "Groundgard" protection system is not sufficiently sensitive to protect personnel. It is not a Ground-Fault Circuit-Interrupter as defined by the National Electrical Code (NEC). It qualifies as a Class I ground-fault protection device as defined in Underwriters Laboratories, Inc., Standard for Safety, UL 1053, Ground-Fault Sensing and Relaying equipment. As such it is to be used with circuit breakers or in circuits protected by fuses and incorporating an electrically-held or a latched contactor which can interrupt the fault current sensed.

Coordinate the "Groundgard" protection system with the fuses or circuit breakers protecting the circuit so that ground-fault currents greater than ten times the ampere rating of the contactor are cleared by the fuses or circuit breaker. Achieve this coordination by adjusting the trip setting and/or selecting fuses with the necessary clearing time.

The Sensor is so designed that its output is proportional to ground-fault current only. It is not responsive to phase-to-phase or phase-to-neutral current.

Selection of the proper current sensor is dependent upon two factors: the conductor size and the required trip current.

Table I — PROTECTION SYSTEM COMPONENTS

Component	Type	Style Number
Relay with fixed time-delay and mounting bracket	GR	5264C09H02
Relay with fixed time-delay for 30.5 mm hole mounting	GR1	5264C09H04
Relay with adjustable time-delay and mounting bracket	GRT	5264C09H03
Relay with adjustable time-delay for 30.5 mm hole mounting	GRT1	5264C09H05
Sensor (Current transformer), 4 to 12 or 10 to 36 amperes		5264C10H04
Sensor (Current transformer), 9 to 36 amperes		5264C10H08
Sensor (Current transformer), 15 to 65 amperes		5264C10H05

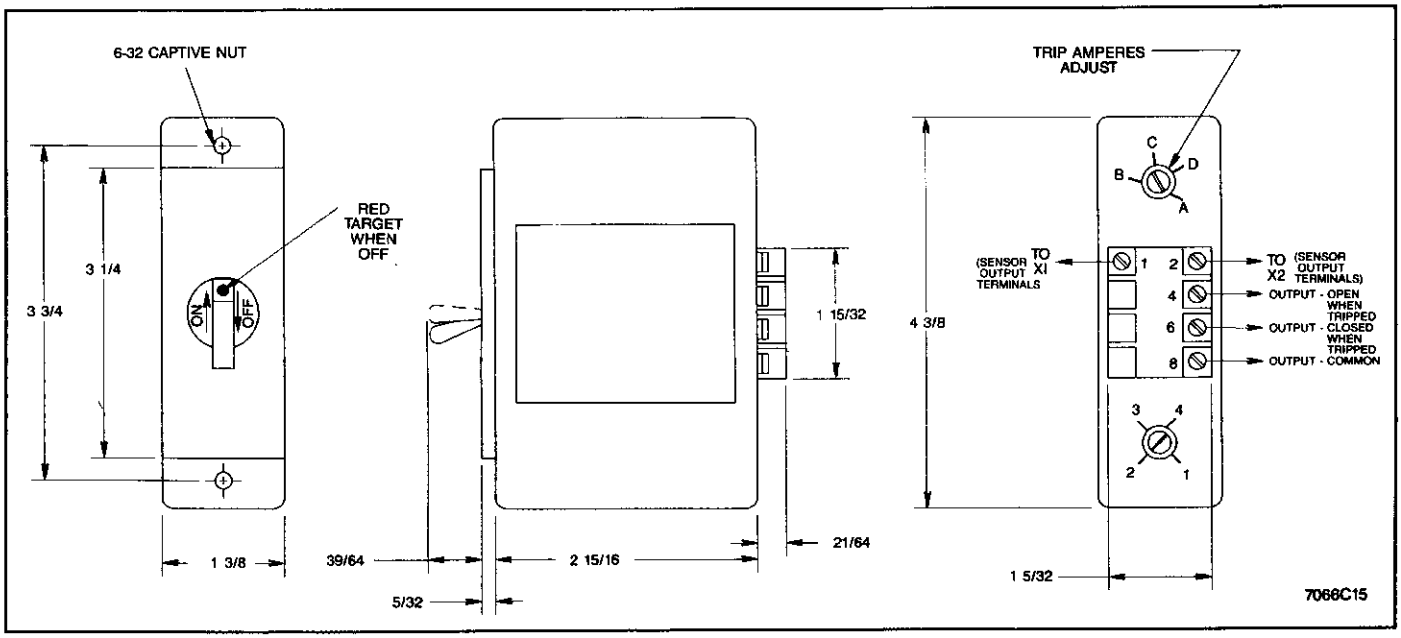

Fig. 1 "Groundgard" Relay, Type GRT (Dimensions in inches)

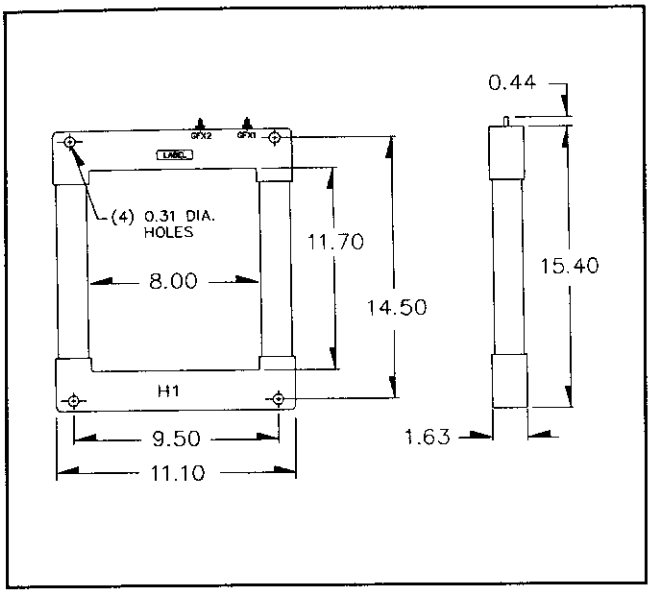

Fig. 3 5264C10H05 Sensor (Dimensions in inches)

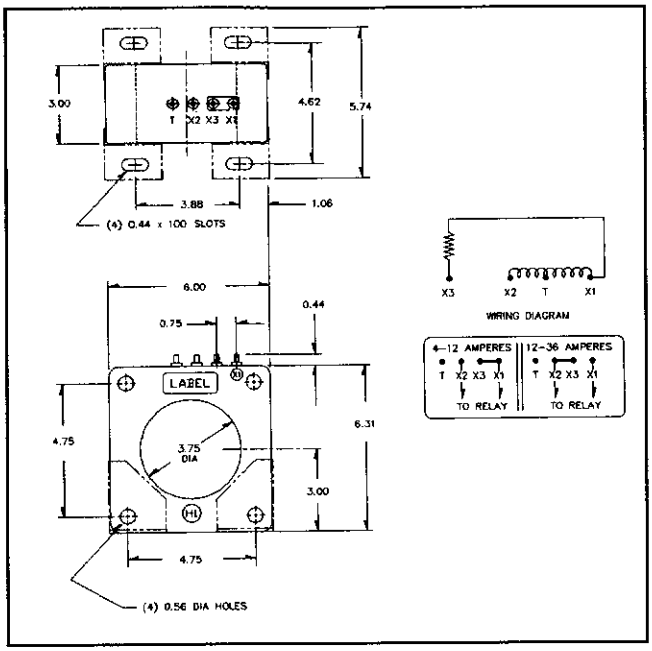

Fig. 4 5264C10H04 Sensor (Dimensions in inches)

30.5mm ($1\frac{3}{16}$" dia.) mounting hole (same as used for oil-tight pushbutton operators) on the enclosure door.

This industrial type control is designed to be installed, operated, and maintained by adequately trained workmen. These instructions do not cover all details, variations, or combinations of the equipment, its storage, delivery, installation, check out, safe operation, or maintenance. Care must be exercised to comply with local, state, and national regulations, as well as safety practices, for this class of equipment.

TESTING

An additional single conductor connected to a source of test current may be inserted through the sensor window to simulate a ground-fault current. In the case of sensor 5264C10H04, a test terminal is provided to accept a test current input. See Figure 4 and Table V.

TABLE V — SENSOR STYLE 5264C10H04

WIRING THE SENSOR TEST TERMINAL

Wiring Steps	For Trip Current 4 to 12A	For Trip Current 10 to 36A
1. Connect test unit to sensor: 2. Connect relay to sensor: 3. Jumper sensor terminals:	T and X1 X1 and X2 X1 and X3	
1. Connect test unit to sensor: 2. Connect relay to sensor: 3. Jumper sensor terminals:		T and X1 X1 and X2 X2 and X3

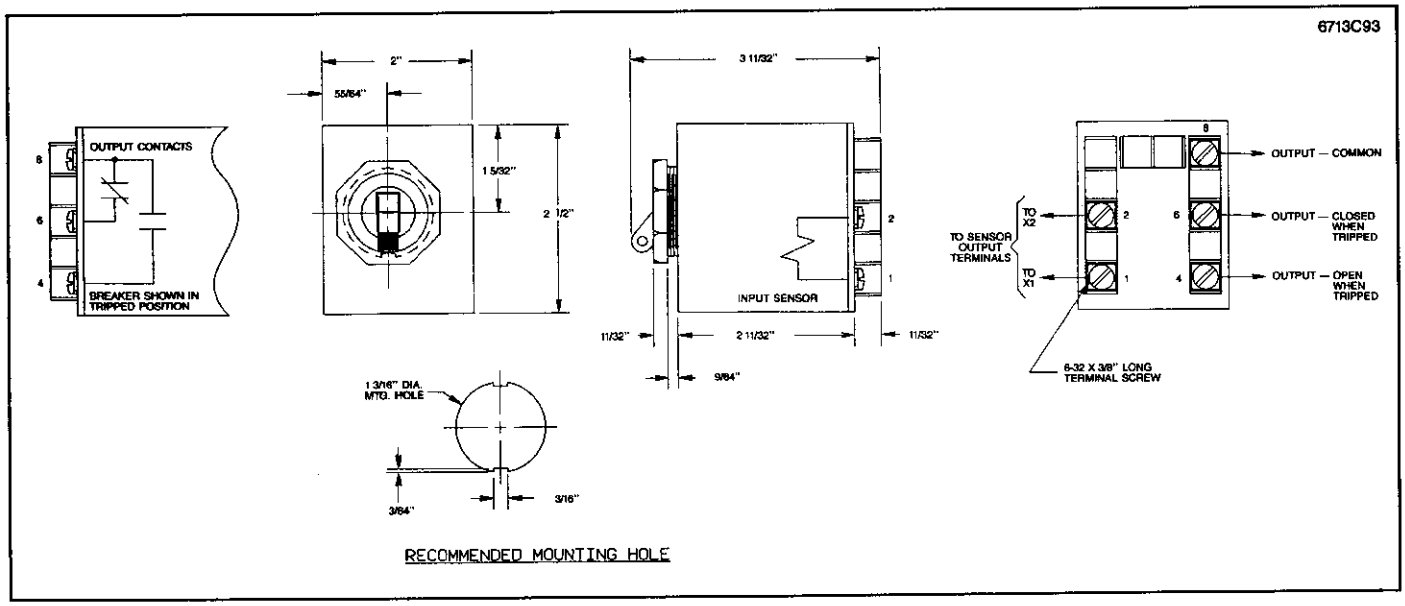

Fig. 5 Outline Dimension Drawing, Type GR1 and Type GRT1 (Dimensions in inches)