STRUCTURE GROUND RELAY
PART SPECIFICATION

Part/Drawing No's:

Part No. - BG 5620 0002-A

Assembly - BG 5620 0002-B

Circuit Schematic - BG 5620 0002-C

Description:

The Structure Ground Relay is intended for application in traction systems to detect the accidental grounding of ungrounded structures such as a rectifier enclosure. It can also detect if the structure becomes "hot" through accidental connection to either the AC or DC bus.

If a ground structure fault is detected, the two sets of 64G contact will change state which can initiate alarm or trip functions, annunciation, etc. Similarly, for a hot structure fault, the two 64 contacts will change state.

On the front of the relay module are LED indications of control power status (green LED) and two trip status lights (red LED's) for ground or hot structure fault. Faults are cleared through a manual reset pushbutton on the front of the relay module.

Operation:

The relay is connected as shown in figure 1 with two separate connections to the protected structure and two separate connections to earth ground. With the control voltage applied, a DC voltage is generated at terminals 2(+) and 9(-). When properly connected and with no fault conditions, a current of known level will flow from terminal 1 to 10 through an optical-coupler device. The isolated

The output relay contacts can be set so that the 64 and/or 64G relay coils are normally energized or de-energized. This is done by positioning straps on the internal P.C. board. If a short time delay is desired (150 msec) before fault indication, this is strap selectable for either or both fault types as well.

Operating Characteristics:

Input Power:	120/240 VAC (reconnectable with internal straps), 50/60 Hz, 70-110% of nominal, 8 VA max.

Contact Ratings: DPDT (2 Form C) for each fault type,

	125 VDC	120 VAC
Tripping Duty*	30 A	30 A
Continuous	5 A	5 A
Opening, Resistive	1 A	3 A
Opening, Inductive	0.3 A	2 A

Dielectric Withstand:	4000 VAC_{RMS} between circuits
Operating Temp:	-20°C to +55°C

* A clearing contact is required with 30 A tripping devices

Construction:

The components of the relay are mounted on a printed circuit board located inside a drawout case. By removing the clear front cover, the internal circuit assembly can be removed for inspection or selecting strap settings, etc. by untightening two thumb screws and pulling the unit out.

The relay is intended to be flush mounted through a control door with external connections made to the rear of the unit to two ten-point terminal blocks.

Refer to figure 2 for case outline dimensions and panel mounting dimensions.

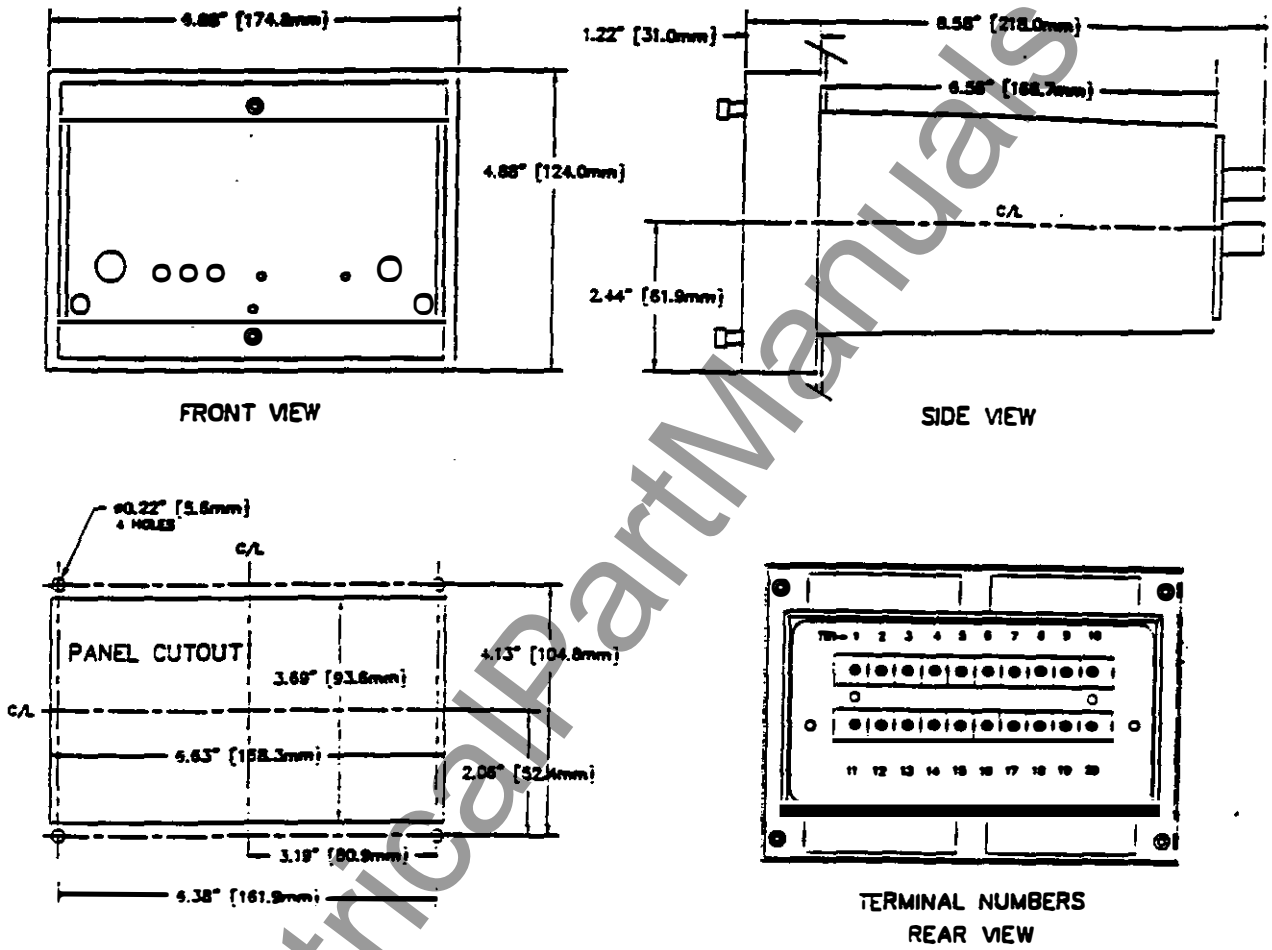

Figure 2. Relay Outline

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Doc type : Part Specification Range : Structure Ground Relay Section : High Resistance Type Plant :	Drwg no : BG 5620 0001-2 :
ABB Drives inc	Language : E Rev ind : 2 Sheet : 5

VOLTAGE MONITOR RELAY
PART SPECIFICATION

Part/Drawing No's:

Part No. - BG 5620 0002-D

Assembly - BG 5620 0002-B

Circuit Schematic - BG 5620 0002-E

Description:

The Voltage Monitor Relay is intended for application in traction systems to monitor the output of signal transducers. It will determine if the transducer output exceeds a maximum preset level and/or falls below a minimum preset level.

If during normal operation the transducer signal level falls below an adjustable preset level, the VML relay will change state which can initiate alarm or trip functions, annunciation, etc. Similarly, if the signal exceeds another adjustable preset level, the VMH relay will change state.

On the front of the relay module are LED indications of control power status (green LED) and two trip status lights (red LED's) for a low or high input signal fault. Faults are cleared through a manual reset push-button on the front of the relay module or through a remote input.

Operation:

The relay is connected as shown in figure 1 with the signal transducer output connected to terminals 1 and 10. This is for a current output type transducer such as 0-10 mA, 0-20 mA or 4-20 mA. If a voltage output type transducer is used such as 0-10 V or 0-20 V, the series resistor between terminals 2 and 9 can be used to convert the voltage to a current input as shown in figure 2.

The fault level adjustments are normally set at the factory. This is because the normal input signal level needs to be optimized through an internal adjustment. Final trip level adjustments can be modified by adjusting the "High" and "Low" potentiometers which are accessible through the front cover of the relay.

The output relay contacts can be set so that the VML and/or VMH relay coils are normally energized or de-energized. This is done by positioning straps on the internal P.C. board. It should be noted that if the relay coils are set so that they are normally de-energized, if a fault occurs, the reset button (or remote reset) cannot clear a fault as long as the fault condition is present. However, if the coils are set to be normally energized and a fault occurs, the reset will clear or override the fault condition as long as the pushbutton is held. This feature can be used as a "disable" input to the relay. Therefore, if terminals 17 and 18 are shorted, there will be no fault indication by the relays, i.e. they will continue to be energized as normal. The fault LED's would still continue to indicate a high or low condition.

If a short time delay is desired (150 msec) before fault indication, this is strap selectable for either or both fault types as well. With this option selected, short term "faults" of less than 100 msec approximately are ignored and will not cause the relays to trip. This can be used to provide noise immunity on the input signal or to avoid nuisance trips.

Operating Characteristics:

Input Power: 120/240 VAC (reconnectable with internal straps), 50/60 Hz, 70-110% of nominal, 4 VA max.

Contact Ratings: DPDT (2 Form C) for each fault type,

	125 VDC	120 VAC
Tripping Duty*	30 A	30 A
Continuous	5 A	5 A
Opening, Resistive	1 A	3 A
Opening, Inductive	0.3 A	2 A

* A clearing contact is required with 30 A tripping devices

Dielectric Withstand: 4000 VAC_{RMS} between circuits

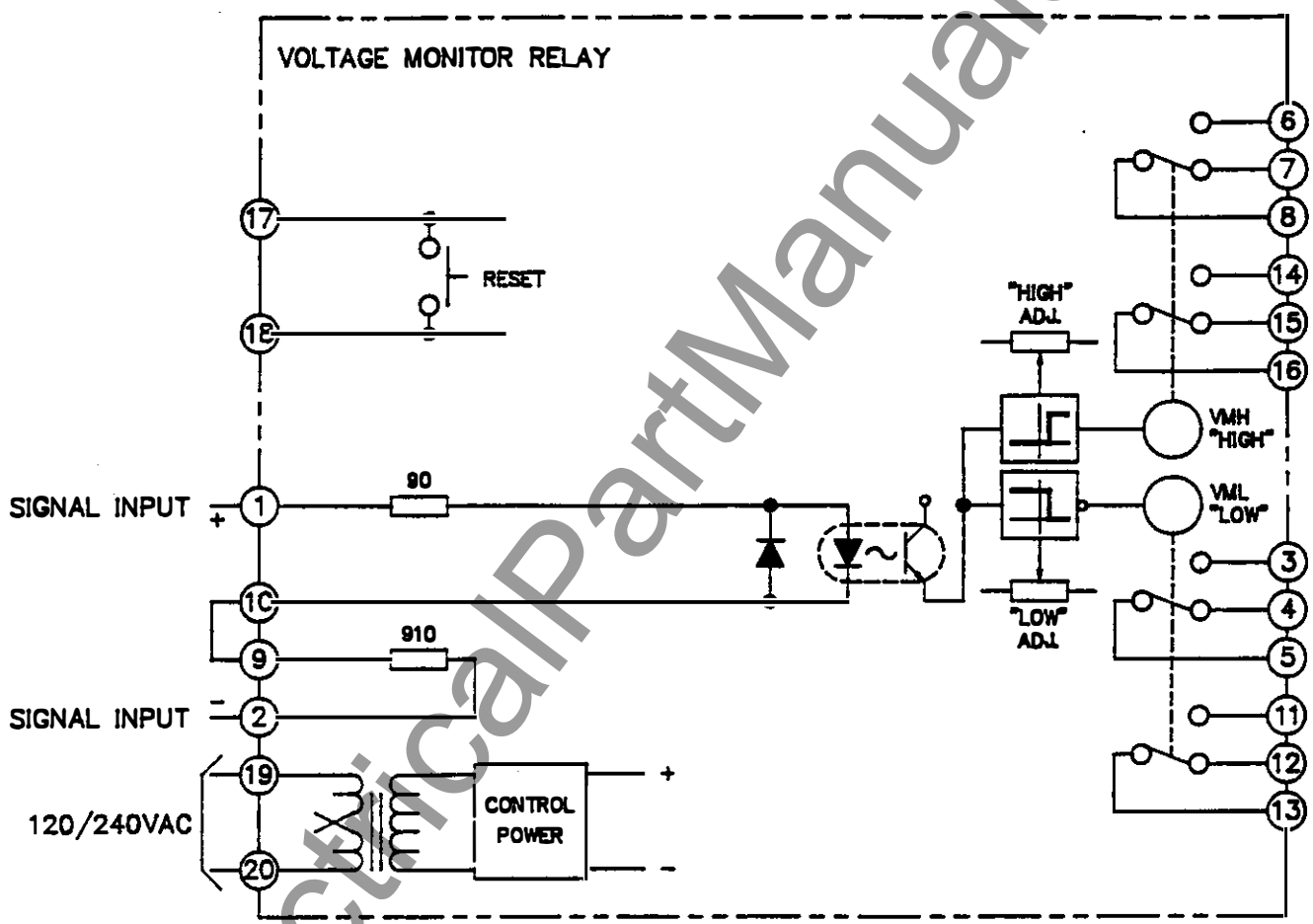

Figure 2. Simplified schematic and connection diagram for voltage signal input.

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