

Introduction

The GT-AR-2 transducer accepts an analog voltage or current signal and controls two output relays. The input signal has three jumper selectable ranges for either 0-7.5 Vdc, 0-15 Vdc or 0-20 mA. Each relay has an independently adjustable setpoint which is set with a multi-turn trim pot.

Each form-C relay activates when the input signal is equal to the trip setpoint and deactivates when the input signal falls below the setpoint by a deadband amount. The deadband is also jumper selectable for 1,3 or 5 % of the range.

Features include a regulated power output that can be used to power a transducer or a resistance input, top-adjust trim-pots for setpoint adjustment, an LED power indicator, status LEDs for each relay and 10 Amp form-C relays. The product comes with standard snap-track for easy mounting.

Applications

- Analog signal alarms
- Staging and sequencing
- Analog to digital conversion
- Level indication

Before Installation

Read these instructions carefully before installing and commissioning the GT-AR-2 transducer. Failure to follow these instructions may result in product damage. Do not use in an explosive or hazardous environment, with combustible or flammable gases, as a safety or emergency stop device or in any other application where failure of the product could result in personal injury. Take electrostatic discharge precautions during installation and do not exceed the device ratings.

Mounting

The snap-track device may be mounted in any position. Use only fingers to remove the pcb from the snap-track, do not pry on the pcb with tools. Do not flex the pcb during removal or installation. Slide the pcb out of the snap-track or push against one side of the snap-track and lift the pcb out. Ensure any metallic mounting hardware does not contact the underside of the pcb.

Avoid mounting in areas where the transducer is exposed to vibrations or rapid temperature changes.

Wiring

Deactivate the 24 Vac/dc power supply until all connections are made to the device to prevent electrical shock or equipment damage. Follow proper electrostatic discharge (ESD) handling procedures when installing the device or equipment damage may occur.

Use 22 AWG shielded wiring for all connections and do not locate the device wires in the same conduit with wiring used to supply inductive loads such as motors. Make all connections in accordance with national and local codes.

Connect the plus dc or the ac voltage hot side to the **PWR** terminal. The supply common is connected to the **COM** terminal. The device is reverse voltage protected and will not operate if connected backwards. It has a half-wave power supply so the supply common is the same as the input signal common.

Several devices may be connected to one power supply and the output signals all share the same common. Use caution when grounding the secondary of a transformer or when wiring multiple devices to ensure the ground point is the same on all devices and the controller.

Ensure the supplied power is within the device ratings as shown in the *Specifications* section of this document. Power supply voltages outside the ratings may cause over-heating, device damage or un-reliable operation.

The analog input signal is connected to the **IN** terminal and the **COM** terminal.

The **20V** terminal is a regulated power supply output which provides a 20 Vdc power supply at 30 mA maximum that can be used to operate an external sensor, for example.

The relay contacts are labelled R1 and R2 to match the setpoint pots and each relay has both a normally open and normally closed contact. Ensure the load is within the contact specifications.

Factory Configuration

The GT-AR-2 is preset as follows:

- Range is 0-15 Vdc
- R1 is set to 6 Vdc
- R2 is set to 12 Vdc
- Deadband is set to 3%

Calibration and Setup

- Set the INPUT RANGE jumper to the correct position for the signal to be used. For example, if the input signal is 2-10 Vdc, select the 0-15 Vdc range.
- Set the deadband jumper to the desired value. This can be changed at any time with the power on.
- Connect the power supply and the input signal to the correct terminals.
- Turn on the power and the POWER LED will light.
- Apply an input signal equal to the R1 setpoint.
- Adjust the R1 pot clockwise until the RELAY1 LED goes out, then slowly adjust the R1 pot counter-clockwise until the LED just lights.
- Apply an input signal equal to the R2 setpoint and adjust the R2 pot the same as for R1, watching the RELAY2 LED.
- Test the operation by increasing the input signal and watch as R1 and R2 turn on at the selected setpoints. Then decrease the signal and watch as the relays turn off at the selected setpoints minus the deadband.

Input Range	Deadband Values		
	1%	3%	5%
0 – 7.5 Vdc	0.075 Vdc	0.225 Vdc	0.375 Vdc
0 – 15 Vdc	0.15 Vdc	0.45 Vdc	0.75 Vdc
0 – 20 mA	0.2 mA	0.6 mA	1 mA

General Specifications

Power Supply	23 to 30 Vdc, 22 to 27 Vac
Consumption	80 mA maximum at 24 Vdc
Protection Circuitry	Reverse voltage protected overvoltage protected
Operating Conditions	0 to 50 °C (32 to 122 °F) 5 to 95 %RH nc
Storage Conditions	-30 to 70 °C (-22 to 158 °F) 5 to 95 %RH nc
Wiring Connections	Screw terminal block 12 to 24 AWG
Enclosure	Snap track mounting 3.9" L x 3.25" W x 1.25" H 99 x 82.5 x 32 mm
Weight	110 gm (3.88 oz)

Power Output

Regulated Power	20 Vdc \pm 10% @ 30 mA max
Output	to power an external sensor

Input Signal

Input Voltage Range 0 to 7.5 or 0 to 15 Vdc
Input Voltage Impedance > 15 K Ω
Input Current Range 0 to 20 mA
Input Current Impedance 250 Ω

Output Relays

Type	SPDT Form C
Contact Rating	10 Amps at 125 Vac
Contact Resistance	100 mΩ maximum
Electrical Life	100,000 operations
Mechanical Life	10,000,000 operations



