

Description

The RBT 4-Wire RTD Transmitter accepts input from any standard 2-, 3-, or 4-wire (platinum, copper or nickel) RTD. Highly accurate ($\pm 0.1\%$ of span), it converts the RTD input to a proportional current output for interface with a readout device or another process instrument.

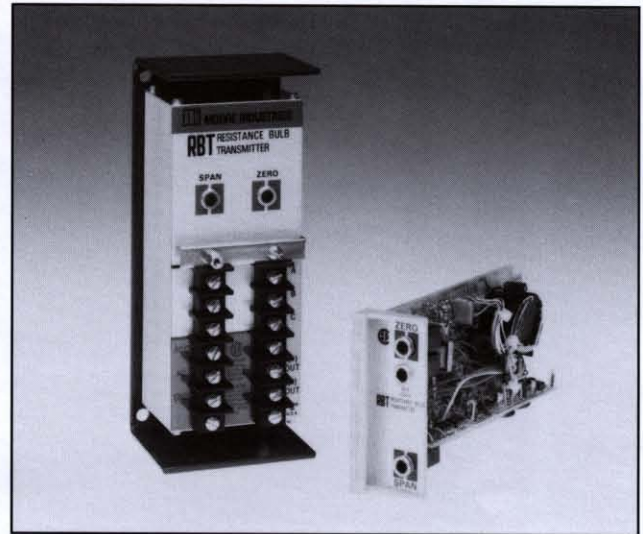
The RBT employs a chopper stabilized amplifier to provide top performance even at low spans. It also offers high input impedance, low transducer excitation, high stability, and immunity to short circuits.

The RBT's high common mode rejection coupled with complete input, output, and power isolation, minimize the unit's susceptibility to electrical interference, even with long input lead runs.

The RBT is offered with a variety of options including the -LNP and -LNN options which eliminate the non-linearities of either platinum or nickel RTDs. Thermistor input may be accommodated by specifying the -RO (Reversed Input/Output Current Relationship) option. For a complete listing of available options, see the back page.

Ordering Specifications

To order, use the bold face data from the Ordering Specifications section of the Specifications table (see back page). For assistance, refer to the model number example located at the bottom of the table.



The RBT is offered in easy-to-install surface-mount and high-density plug-in card housings.

Features

- **$\pm 0.1\%$ of span accuracy.** The RBT's high accuracy makes it ideal for applications where precise measurements are demanded.
- **Input/output/power isolation.** Eliminates signal inaccuracies caused by ground loops, motor noise, and other electrical interference.
- **Linearization option.** When ordered with the -LNP option, the RBT provides a linear output proportional with temperature.
- **RFI/EMI option.** When the -RF option is added, the RBT is resistant to the harmful effects of radio frequency and electromagnetic interference.

Certifications



CSA General Location; Explosion-proof, Division I Groups C and D (in EX enclosure)

City of Los Angeles General Location

RBT

RTD Transmitter

Specifications

Characteristics	Ordering Specifications	Options
<p>Performance</p> <p>Calibration Capability: $\pm 0.1\%$ of span (linearity and repeatability)</p> <p>Frequency Response: 5Hz (3dB point)</p> <p>Isolation: Input, output and power are transformer isolated with no dc connections between them; both ac and dc powered units have this as standard; common mode rejection exceeds 120dB at 60Hz with a limit of 500V rms</p> <p>Ripple: 10mV P/P maximum load and maximum span</p> <p>Load Effect: $\pm 0.01\%$ of span from 0 to maximum load resistance (current output)</p> <p>Line Voltage Effect: ac or dc, $\pm 0.005\%/1\%$ line voltage change</p> <p>Ambient Temperature Range: -29°C to $+82^{\circ}\text{C}$ (-20°F to $+180^{\circ}\text{F}$)</p> <p>Effect: $\pm 0.01\%/^{\circ}\text{C}$ ($\pm 0.005\%/^{\circ}\text{F}$)</p> <p>Adjustments</p> <p>Type: External multturn potentiometers</p> <p>Span: Output fully adjustable over a pre-selected input range</p> <p>Range: Adjustable up to $\pm 20\%$ of selected F.S. span</p> <p>Weight 908 grams (2 lbs.)</p>	<p>Unit RBT RTD Transmitter</p> <p>Input Number of RTD Wires (platinum, copper or nickel):</p> <p>2W 2-wire</p> <p>3W 3-wire</p> <p>4W 4-wire</p> <p>Input Range (listed as minimum and maximum inputs to produce full scale outputs):</p> <p>2-5 0-2 thru 5 ohms change (-LSA option required)</p> <p>5-10 0-5 thru 10 ohms change</p> <p>10-20 0-10 thru 20 ohms change</p> <p>20-40 0-20 thru 40 ohms change</p> <p>40-80 0-40 thru 80 ohms change</p> <p>80-160 0-80 thru 160 ohms change</p> <p>160-320 0-160 thru 320 ohms change</p> <p>320-640 0-320 thru 640 ohms change (sensor current 1mA maximum, 800μA typical)</p> <p>Output Current:</p> <p>1-5MA into 0-4800 ohms</p> <p>4-20MA into 0-1200 ohms</p> <p>10-50MA into 0-480 ohms</p> <p>Voltage:</p> <p>1-5V into 20 kilohms minimum (Operational feedback amplifier current source; output limited to 150% of max. output range value)</p> <p>Power 24DC, $\pm 10\%$</p> <p>45DC, $\pm 10\%$</p> <p>117AC, 50/60Hz, $\pm 10\%$</p> <p>220AC, 50/60Hz, $\pm 10\%$</p> <p>240AC, 50/60Hz, $\pm 10\%$</p>	<p>Options</p> <p>-EZ Elevated zero; required except with -DT option (specify ohm input for 0% output)</p> <p>-LNN Linearizing option, standard 120 nickel</p> <p>-LNP Linearizing option, standard 100 ohm platinum</p> <p>-LSA Low input span (2-5 ohms); consult factory for specification changes</p> <p>-HI High current (20mA) on voltage outputs</p> <p>-RF RFI/EMI protection; Standard housing rates 50V/m - ABC = 0.1% F.S. when tested according to SAMA Standard PMC 33.1</p> <p>-RO Reversed input/output current or voltage relationship</p> <p>Housing</p> <p>STD Standard housing with U-back bracket for surface mounting</p> <p>AB Standard housing with angle flanges for surface mounting or mounting in an enclosure</p> <p>PC Plug-in card for mounting in an RMR or SMR multi-unit rack</p> <p>CP Conduit plate for use with standard units</p> <p>DCM Standard housing with DIN clip for mounting on a G-type rail</p> <p>EX Standard housing mounted in a 2-hub, solid cover, explosion-proof enclosure</p> <p>GP General purpose metal enclosure</p>

To order, specify: Unit / No. of RTD Wires, Range / Output / Power / Options [Housing]
Model number example: RBT / 3W40-80 / 4-20MA / 24DC / -EZ93.03 [PC]



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