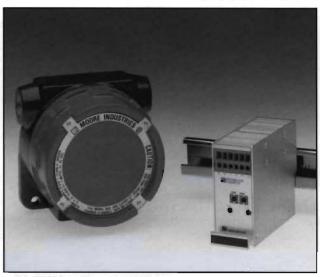## Description

The highly reliable RBX 2-Wire RTD Transmitter accepts direct input from any 2- or 3-wire (platinum, copper, or nickel) RTD. It converts the input to a proportional current output for interface with a readout device (such as an indicator), or a data acquisition/control system.

When ordered with the -LNP option, the RBX provides an output linear with temperature. This is ideal when interfacing with data loggers and recorders, to eliminate the need for special charts or "look-up" tables. This option is recommended for spans exceeding 100 ohm change.

Control Room and Field Housings—The RBX is offered in hockey-puck and DIN-style rail-mounted housings. The hockey-puck housing can be ordered in an explosion-proof housing or with flanges for surface mounting. In addition, a high dome enclosure with a glass window can be ordered which allows a Moore Industries DVX or DSX digital indicator to be mounted in the same enclosure with the RBX for on-site display of temperature readings. At only 1.4 inches (36 mm) wide, the DIN-style RBX is perfect for high-density control room installation.

Complete Temperature Assemblies—Moore Industries offers a complete line of temperature assemblies for use with the RBX including sensors, thermowells, and fittings. For more information, refer to the Temperature Systems data sheet (#3.99).

The RBX is offered in high-density DIN-style and hockey-puck housings. The hocky-puck fits in a variety of explosion-proof housings without tools or drilling.

Features

- Interfaces with standard RTD types. The RBX accepts input from 2-wire or 3-wire, platinum, copper, or nickel RTD types.

- Linearization option. When ordered with the -LNP option, the RBX provides a linear output proportional to temperature.

Ordering

To order, use the bold face data from the Ordering Specifications section of the table on the back of this data sheet to "construct" an RBX model number. Examples of typical model numbers are listed at the bottom of the table.

Installation

For housing dimensions and terminal designations, see the DIN (#13.04), FL/HP (#13.15), HPD (#13.20), and EXPL (#13.12) housing sheets.

Certifications *(see Options listing where applicable)*

CENELEC Intrinsically Safe, EEx ia IIC T4 Flameproof, EExd IIC T6

CSA Explosion-Proof, Division 1, Class I, Groups B, C, & D
Non-Incendive, Division 2, Class I, Group D

FM Explosion-Proof, Division 1, Class I, Groups B, C, & D

SAA Explosion-Proof, Ex d IIC T6 IP66
Instrinsically Safe, Ex ia IIC T4
Type "N", Ex n IIC T6 IP65

RBX

2-Wire RTD Transmitter

Specifications

Performance	Calibration Capability: ±0.1% of span (linearity and repeatability) **Line Voltage Effect:** ±0.002% of span/volt **Over Voltage Protection:** 60Vdc, maximum **Sensor Excitation Current:** 1mA, maximum **Loop Load Capability:** 600Ω @ 24Vdc	Performance (continued) Ambient Temperature	**Linearization:** 0.1% of full scale for spans less than 200Ω (platinum RTD's only) **Range:** –29°C to +82°C (–20°F to +180°F) **Effect:** ±0.02% of span/°F change from 5-10Ω change; ±0.01% of span /°F from 10Ω change upward	Adjustments Weight	External, multi-turn potentiometers **Zero:** Adjustable to ±10% of span **Span:** Output is fully adjustable over a pre-selected input range to 100% of selected input span 142 g (5 oz)

Ordering Information

Unit	Input	Output	Power	Options	Housing
RBX	(Specify TYPE and RANGE, e.g., 3W 20-40) TYPE: **2W** 2-wire **3W** 3-wire RANGE (in Ω): **5 thru 10** 0-5Ω thru 0-10Ω, 10Ω change, maximum **10 thru 20** 0-10Ω thru 0-20Ω, 20Ω change, max. **20 thru 40** 0-20Ω thru 0-40Ω, 40Ω change, max. **40 thru 80** 0-40Ω thru 0-80Ω, 80Ω change, max. **80 thru 160** 0-80Ω thru 0-160Ω, 160Ω change, max. **160 thru 320** 0-160Ω thru 0-320Ω, 320Ω change, max. **320 thru 640** 0-320Ω thru 0-640Ω, 640Ω change, max. EZ must be specified in all valid RBX model numbers.	**4-20MA** (limited to 30mA, max) **10-50MA** (limited to 65mA, max)	**12-42DC** Standard, measured at the input terminals **12-24DC** required for -ISC option **12-28DC** required for -ISB and -SAA options	**-EZ** Elevated zero input* (select Ω input for 0% output, e.g., -EZ100) **-ISB** Unit is BASEEFA-approved** intrinsically safe (12-28DC power required) **-ISC** Unit is CSA approved explosion-proof and non-incendive (12-24DC power required) **-ISF** Unit is FM approved explosion-proof **-SAA** Unit is SAA approved explosion-proof (12-28DC power selection required) **-FA** Front access terminal blocks (DIN only) **-LNP** Linearizing for 100Ω, platinum RTD ranges from 20 to 200Ω; specify temp range (not available with -RO option) **-RF** RFI/EMI protection, 50V/m - ABC = ±0.1% of full scale when tested according to SAMA Standard 33.1 **-RO** Reversed input/output relationship (not available with -LNP option) **-RTB** Removable terminal blocks (DIN only) * Valid -EZ value must be entered in all RBX model numbers ** Consult factory for availability; see CENELEC and ISSEP approvals	**DIN** Aluminum DIN-style, fits G-type, 32 mm rail (EN50035) **HP** Hockey-puck with spring clips mounts in an explosion-proof enclosure **HPD** Hockey-puck with bottom clip for dual mounting in high-cover explosion-proof enclosure **FL** Hockey-puck with flanges for surface or relay track mounting **2LS** Hockey-puck in 2-hub, low, solid cover explosion-proof enclosure **2HS** Hockey-puck in 2-hub, high, solid cover explosion-proof enclosure (for two RBX's in one enclosure) **2HG** Hockey-puck in 2-hub, high, glass cover explosion-proof enclosure (for indicator and RBX in a single enclosure) * Other types of explosion-proof enclosures, such as 3-hub and NEMA rated types, are available. Add F prefix to selection for CENELEC approved intrinsically safe enclosure (e.g., F2HS); Add FM prefix for FM approved explosion-proof (e.g., FM2HG) Add P suffix for mounting hardware to install enclosure on 2-in pipe (e.g., 2LSP) Consult factory for assistance in ordering.

When Ordering, Specify: Unit / Input (# of wires & range) / Output / Power / Option(s) [Housing]

Model Number Examples: RBX / 3W 10-20 / 4-20MA / 12-42DC / -EZ100 -RF -RTB [DIN]

RBX / 2W 20-40 / 10-50MA / 12-24DC/ -EZ100 - LNP -ISC [F2LSP]

Specifications subject to change. Printed in the U.S.A.