2-Wire Transmitter with HART® Protocol

Model 5335A

- RTD, TC, Ohm, or mV Input
- Extremely High Measurement Accuracy
- HART® Communication
- 1.5 kVAC Galvanic Isolation
- Complies with European ATEX Requirements for Hazardous Location Installation

Application:

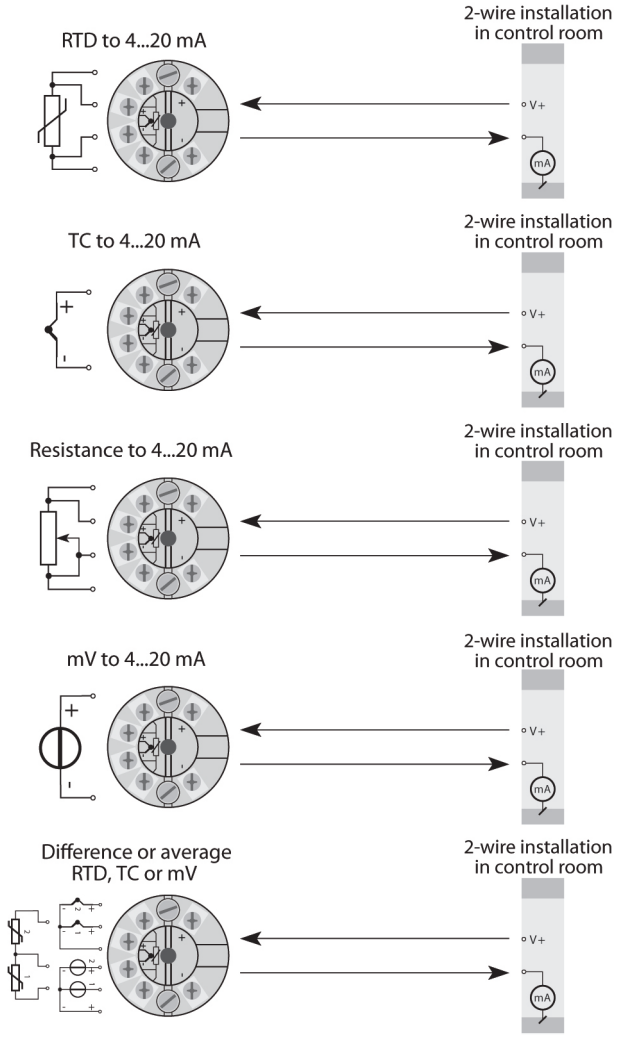
- Linearized temperature measurement with Pt100...Pt1000, Ni100...Ni1000, or TC sensor.
- Difference or average temperature measurement of 2 sensor inputs.
- Conversion of linear resistance variation to a standard analog current signal.
- Amplification of a bipolar mV signal to a standard 4...20 mA current signal.
- Connection of up to 15 transmitters to a digital 2-wire signal with HART® communication.

Technical Characteristics:

- Within seconds the user can program a 5335A to measure temperatures within all standard ranges.
- The RTD and resistance inputs have cable compensation for 2-, 3- and 4-wire connection.
- Continuous check of vital stored data.
- Sensor error detection according to the guidelines in NAMUR NE 89.

Mounting/Installation:

- DIN Form B sensor head compatible.
- Supplied with 2 x M4 screws on a 33 mm (1.3") BC (optional 6-32 screws available).



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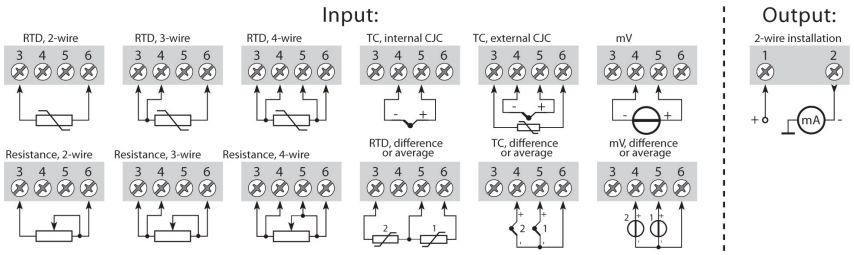
Specifications

Order: 5335A



Electrical Specifications

Specifications Range:
-40°C to +85°C

Common Specifications:

Supply voltage, DC.....8.0...35 VDC
Voltage drop.....8.0 VDC
Isolation voltage, test / operation .....1.5 kVAC / 50 VAC
Warm-up time.....5 min.
Communications interface .....Loop Link & HART®
Signal / noise ratio.....Min. 60 dB
Signal dynamics, input.....22 bit
Signal dynamics, output.....16 bit
Calibration temperature .....20...28°C

Accuracy, the greater of general and basic values:

General Values		
Input Type	Absolute Accuracy	Temperature Coefficient
All	≤ ±0.05% of span	≤ ±0.005% of span / °C

Basic Values		
Input Type	Basic Accuracy	Temperature Coefficient
Pt100 and Pt1000	≤ ± 0.1°C	≤ ±0.005°C/°C
Ni100	≤ ± 0.2°C	≤ ±0.005°C / °C
Lin. R	≤ ± 0.1 Ω	≤ ± 5 mΩ/°C
Volt	≤ ±10 µV	≤ ± 0.5 µV/°C
TC type: E, J, K, L, N, T, U	≤ ±0.5°C	≤ ±0.025°C/°C
TC type: B, R, S, W3, W5	≤ ±1°C	≤ ±0.1°C/°C

EMC immunity influence ..... < ±0.1% of span
Extended EMC immunity:
NAMUR NE 21, A criterion, burst ..... < ±1% of span

Vibration.....IEC 60068-2-6 Test FC
Lloyd's specification no. 1.....4 g / 2...100 Hz
Max. wire size .....1 x 1.5 mm² (16 AWG) stranded wire
Humidity.....< 95% RH (non-cond.)
Dimensions.....Ø 44 x 20.2 mm
Protection degree (encl. / terminal).....IP68 / IP00

Electrical Specifications, Input:

Max. offset.....50% of selected max. value

RTD and Linear Resistance Input:

RTD Type	Min. Value	Max. Value	Min. Span	Standard
Pt100	-200°C	+850°C	10°C	IEC 60751
Ni100	-60°C	+250°C	10°C	DIN 43760
Lin. R	0 Ω	7000 Ω	25 Ω	------

Cable resistance per wire (max.) .....5 Ω
Sensor current.....Nom. 0.2 mA

TC Input:

Type	Min. Temperature	Max. Temperature	Min. Span	Standard
B	+400°C	+1820°C	200°C	IEC584
E	-100°C	+1000°C	50°C	IEC584
J	-100°C	+1200°C	50°C	IEC584
K	-180°C	+1372°C	50°C	IEC584
L	-100°C	+900°C	50°C	DIN 43710
N	-180°C	+1300°C	100°C	IEC584
R	-50°C	+1760°C	200°C	IEC584
S	-50°C	+1760°C	200°C	IEC584
T	-200°C	+400°C	50°C	IEC584
U	-200°C	+600°C	75°C	DIN 43710
W3	0°C	+2300°C	200°C	ASTM E988-90
W5	0°C	+2300°C	200°C	ASTM E988-90

Cold junction compensation.....< ±1.0°C

Voltage Input:

Measurement range .....-800...+800 mV
Min. span .....2.5 mV
Input resistance.....10 MΩ

Current Output:

Signal range .....4...20 mA
Min. signal range.....16 mA
Updating time .....440 ms
Load resistance.....≤ (Vsupply - 8) / 0.023 [Ω]

Sensor Error Detection:

Programmable .....3.5...23 mA

Ex Approval*:

KEMA 03ATEX1508 X..... ⟨Ex⟩ II 3 GD
EEx nA [L] II C T4 or T6

Marine Approval*:

Det Norske Veritas, Ships & Offshore.....Stand. for Cert. No. 2.4

Observed Authority Requirements:	Standard:
EMC 2004/108/EC	EN 61326-1
ATEX 94/9/EC	EN 60079-15

Of span = Of the presently selected range
Loop Link = PC compatible programming software

*The transmitter is manufactured by PR electronics. All approvals listed are recognized under the PR name.

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