



2-wire transmitter with HART[®] protocol

5335A

- RTD, TC, Ohm, or mV input
- Extremely high measurement accuracy
- HART[®] 5 protocol
- Programmable sensor error value
- For DIN form B sensor head mounting



Application

- Linearized temperature measurement with Pt100...Pt1000, Ni100...Ni1000, or TC sensor.
- Difference or average temperature measurement of 2 resistance or TC sensors.
- Conversion of linear resistance variation to a standard analog current signal, for instance from valves or Ohmic level sensors.
- 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.

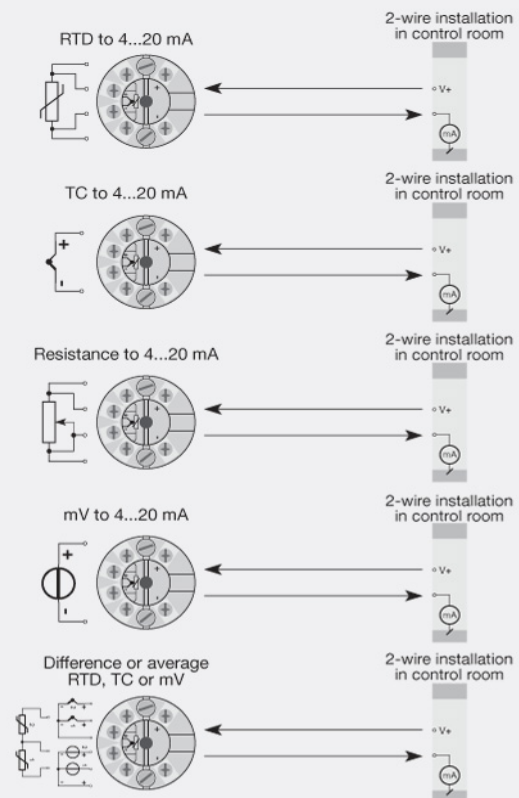
Technical characteristics

- Within a few seconds the user can program PR5335A to measure temperatures within all ranges defined by the norms.
- The RTD and resistance inputs have cable compensation for 2-, 3- and 4-wire connection.
- The 5335A has been designed according to strict safety requirements and is therefore suitable for application in SIL 2 installations.
- Continuous check of vital stored data for safety reasons.
- Sensor error detection according to the guidelines in NAMUR NE89.

Mounting / installation

- For DIN form B sensor head or DIN rail mounting with the PR fitting type 8421.

Connections



Order:

Type
5335A

Environmental Conditions

Specifications range.....	-40°C to +85°C
Calibration temperature.....	20...28°C
Relative humidity.....	< 95% RH (non-cond.)
Protection degree (encl./terminal).....	IP68 / IP00

Mechanical specifications

Dimensions.....	Ø 44 x 20.2 mm
Weight approx.....	50 g
Wire size.....	1 x 1.5 mm ² stranded wire
Screw terminal torque.....	0.4 Nm
Vibration.....	IEC 60068-2-6 : 2007
Vibration: 2...25 Hz.....	±1.6 mm
Vibration: 25...100 Hz.....	±4 g

Common specifications

Supply

Supply voltage.....	8.0...35 VDC
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Isolation voltage

Isolation voltage, test / working.....	1.5 kVAC / 50 VAC
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Response time

Response time (programmable).....	1...60 s
Warm-up time.....	30 s
Programming.....	Loop Link & HART®
Signal / noise ratio.....	Min. 60 dB
Accuracy.....	Better than 0.05% of selected range
Signal dynamics, input.....	22 bit
Signal dynamics, output.....	16 bit
Effect of supply voltage change.....	< 0.005% of span / VDC
EMC immunity influence.....	< ±0.1% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span

Input specifications

Common input specifications

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

RTD type.....	Pt100, Ni100, lin. R
Cable resistance per wire (max.).....	5 Ω (up to 50 Ω per wire is possible with reduced measurement accuracy)
Sensor current.....	Nom. 0.2 mA
Effect of sensor cable resistance (3-/4-wire).....	< 0.002 Ω / Ω
Sensor error detection.....	Yes

TC input

Thermocouple type.....	B, E, J, K, L, N, R, S, T, U, W3, W5
Cold junction compensation (CJC).....	< ±1.0°C
Sensor error detection.....	Yes
Sensor error current: When detecting / else.....	Nom. 33 µA / 0 µA

Voltage input

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

Output specifications

Current output

Signal range.....	4...20 mA
Min. signal range.....	16 mA
Load (@ current output).....	≤ (Vsupply - 8) / 0.023 [Ω]
Load stability.....	≤0.01% of span / 100 Ω
Sensor error indication.....	Programmable 3.5...23 mA
NAMUR NE 43 Upscale/Downscale.....	23 mA / 3.5 mA

*of span..... = of the presently selected range

Observed authority requirements

EMC.....	2014/30/EU
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Approvals

ATEX 2014/34/EU.....	KEMA 03ATEX1508 X
IECEX.....	KEM 10.0083X
INMETRO.....	NCC 12.0844 X
EAC.....	TR-CU 020/2011
DNV Marine.....	Stand. f. Certific. No. 2.4
SIL.....	Hardware assessed for use in SIL applications