



**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.

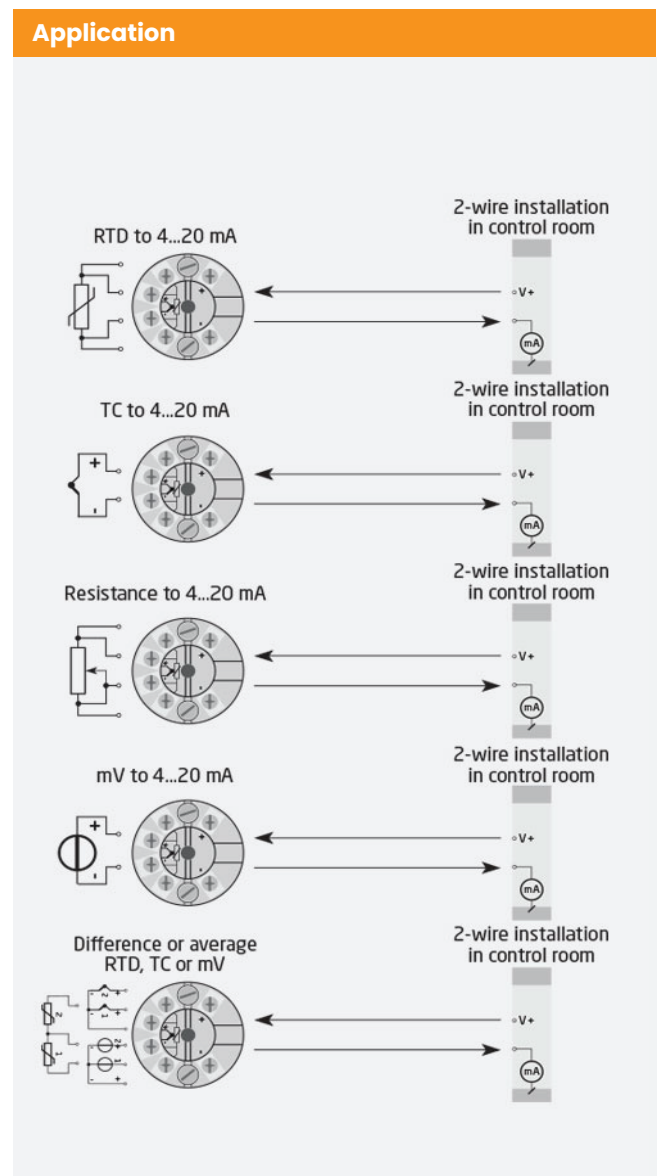
**Technical characteristics**

- 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 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.

**Application**



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**Order**

Type	Version
5335	Zone 2 /DIV. 2, :A

**Environmental Conditions**

Operating temperatur : -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<sup>2</sup> stranded wire  
 Screw terminal torque : 0.4 Nm  
 Vibration : IEC 60068-2-6  
 2...25 Hz : ±1,6 mm  
 25...100 Hz : ±4 g

**Common specifications**

**Supply**

Supply voltage : 8.0...35 VDC

**Isolation voltage**

Isolation voltage, test / workin : 1.5 kVAC / 50 VAC

**Response time**

Response time (programmable) : 1...60 s

Warm-up time : 30 s  
 Programming : Loop Link & HART  
 Signal / noise ratio : Min. 60 dB  
 EProm error check : < 3.5 s  
 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 : < ±0.5% of span  
 Extended EMC immunity : NAMUR  
 NE21, A criterion, burst : < ±1% of span

**Input specifications**

**Common input specifications**

Max. offset : 50% of selected max. value

**RTD input**

RTD type : Pt100, Ni100, lin. R  
 Cable resistance per wire : 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-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 detecting / else. : When : 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 NE43 Upscale/Downscale of span : 23 mA / 3.5 mA : = of the presently selected range

**I.S. / Ex marking**

ATEX : II 3 G Ex nA [ic] IIC T6...T4 Gc, II 3 G Ex ec [ic] IIC T6...T4 Gc, II 3 G Ex ic IIC T6...T4 Gc, II 3 D Ex ic IIIC Dc  
 IECEx : Ex nA [ic] IIC T6...T4 Gc, Ex ec [ic] IIC T6...T4 Gc, Ex ic IIC T6...T4 Gc, Ex ic IIIC Dc  
 CSA : Cl. I, Div. 2, Gp. A, B, C, D T6...T4, Ex nA[ic] IIC T6...T4 Gc  
 INMETRO : Ex nA [ic] IIC T6...T4 Gc, Ex ic IIIC Dc

**Observed authority requirements**

EMC : 2014/30/EU & UK SI 2016/1091  
 ATEX : 2014/34/EU & UK SI 2016/1107  
 RoHS : 2011/65/EU & UK SI 2012/3032  
 EAC : TR-CU 020/2011  
 EAC Ex : TR-CU 012/2011

**Approvals**

ATEX : DEKRA 20ATEX0109X  
 IECEx : DEK 20.0063X  
 CSA : 1125003  
 INMETRO : DEKRA 18.0002X  
 DNV Marine : TAA0000101  
 SIL : Hardware assessed for use in SIL applications