

## 2-wire HART transmitter

### 6335A

- RTD, TC, Ohm, or mV input
- Extremely high measurement accuracy
- HART 5 protocol
- Galvanic isolation
- 1- or 2-channel version



#### 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 channels to a digital 2-wire signal with HART communication.

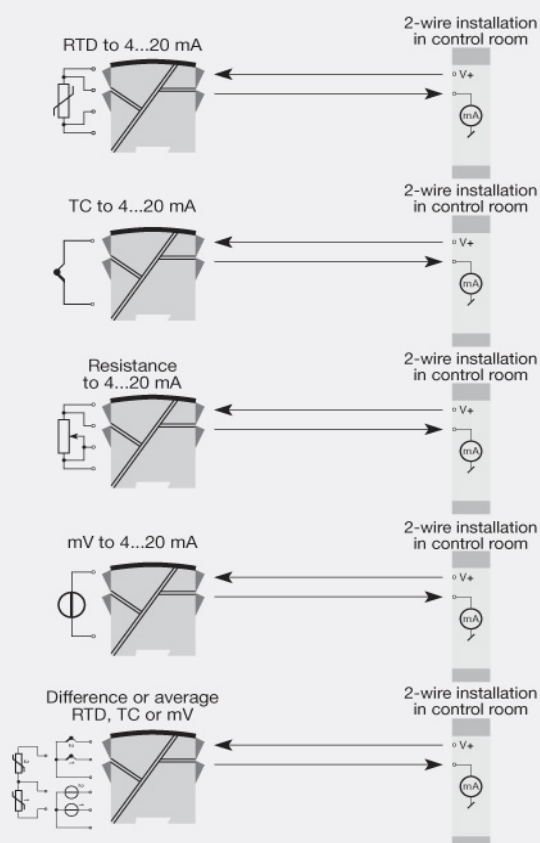
#### Technical characteristics

- Within a few seconds the user can program PR6335A 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 6335A has been designed according to strict safety requirements and is thus suitable for application in SIL installations.
- A limit can be programmed on the output signal.
- Continuous check of vital stored data for safety reasons.
- Sensor error detection according to the guidelines in NAMUR NE89.

#### Mounting / installation

- Mounted vertically or horizontally on a DIN rail. Using the 2-channel version up to 84 channels per metre can be mounted.
- Configuration via standard HART communication interfaces or by PR 5909 Loop Link.
- The 6335A can be mounted in zone 2, 22 / Class I, Division 2, Groups A, B, C, D.

#### Applications



## Order

| Type | Version                 | Galvanic isolation | Channels                 |
|------|-------------------------|--------------------|--------------------------|
| 6335 | Zone 2, 22 / Div. 2 : A | 1500 VAC : 2       | Single : A<br>Double : B |

NB! Please remember to order CJC connectors type 5910 (channel 1) and 5913 (channel 2) for TC inputs with an internal CJC.

## Environmental Conditions

|                              |                      |
|------------------------------|----------------------|
| Operating temperature.....   | -40°C to +85°C       |
| Storage temperature.....     | -40°C to +85°C       |
| Calibration temperature..... | 20...28°C            |
| Relative humidity.....       | < 95% RH (non-cond.) |
| Protection degree.....       | IP20                 |

## Mechanical specifications

|                              |                                                       |
|------------------------------|-------------------------------------------------------|
| Dimensions (HxWxD).....      | 109 x 23.5 x 104 mm                                   |
| Weight (1 / 2 channels)..... | 145 / 185 g                                           |
| DIN rail type.....           | DIN EN 60715/35 mm                                    |
| Wire size.....               | 0.13...2.08 mm <sup>2</sup> AWG 26...14 stranded wire |
| Screw terminal torque.....   | 0.5 Nm                                                |

## Common specifications

### Supply

|                                              |                     |
|----------------------------------------------|---------------------|
| Supply voltage.....                          | 8.0...35 VDC        |
| Internal power dissipation,<br>1 / 2 ch..... | 19 mW...0.8 / 1.6 W |

### Isolation voltage

|                                           |                   |
|-------------------------------------------|-------------------|
| Isolation voltage, test /<br>working..... | 1.5 kVAC / 50 VAC |
|-------------------------------------------|-------------------|

### Response time

|                                                               |                                     |
|---------------------------------------------------------------|-------------------------------------|
| Response time (programmable).....                             | 1...60 s                            |
| Voltage drop.....                                             | 8.0 VDC                             |
| 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<br>NE21, A criterion, burst..... | < ±1% of span                       |

## Input specifications

### Common input specifications

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

### RTD input

|                                                       |                                                                         |
|-------------------------------------------------------|-------------------------------------------------------------------------|
| RTD type.....                                         | Pt100...1000, Ni100...1000, 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<br>(3-/4-wire)..... | < 0.002 Ω / Ω                                                           |
| Sensor error detection.....                           | Yes                                                                     |

### Linear resistance input

|                                   |              |
|-----------------------------------|--------------|
| Linear resistance min....max..... | 0 Ω...7000 Ω |
|-----------------------------------|--------------|

### TC input

|                                                     |                                      |
|-----------------------------------------------------|--------------------------------------|
| Thermocouple type.....                              | B, E, J, K, L, N, R, S, T, U, W3, W5 |
| Cold junction compensation<br>(CJC).....            | < ±1.0°C                             |
| Sensor error detection.....                         | Yes                                  |
| Sensor error current: When<br>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 NE43 Upscale/Downscale..... | 23 mA / 3.5 mA              |

### Common output specifications

|                    |                                   |
|--------------------|-----------------------------------|
| Updating time..... | 440 ms                            |
| of span.....       | = of the presently selected range |

## 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                                       |
| FM.....     | FM17US0013X                                   |
| EAC Ex..... | RU C-DK.HA65.B.00355/19                       |
| SIL.....    | Hardware assessed for use in SIL applications |