5335D

2-WIRE PROGRAMMABLE TRANSMITTER

WITH HART PROTOCOL

- **RTD, TC, Ohm, or mV input**
- **Extremely high measurement accuracy**
- **HART® communication**
- **Galvanic isolation**
- **For DIN form B sensor head mounting**

Application:

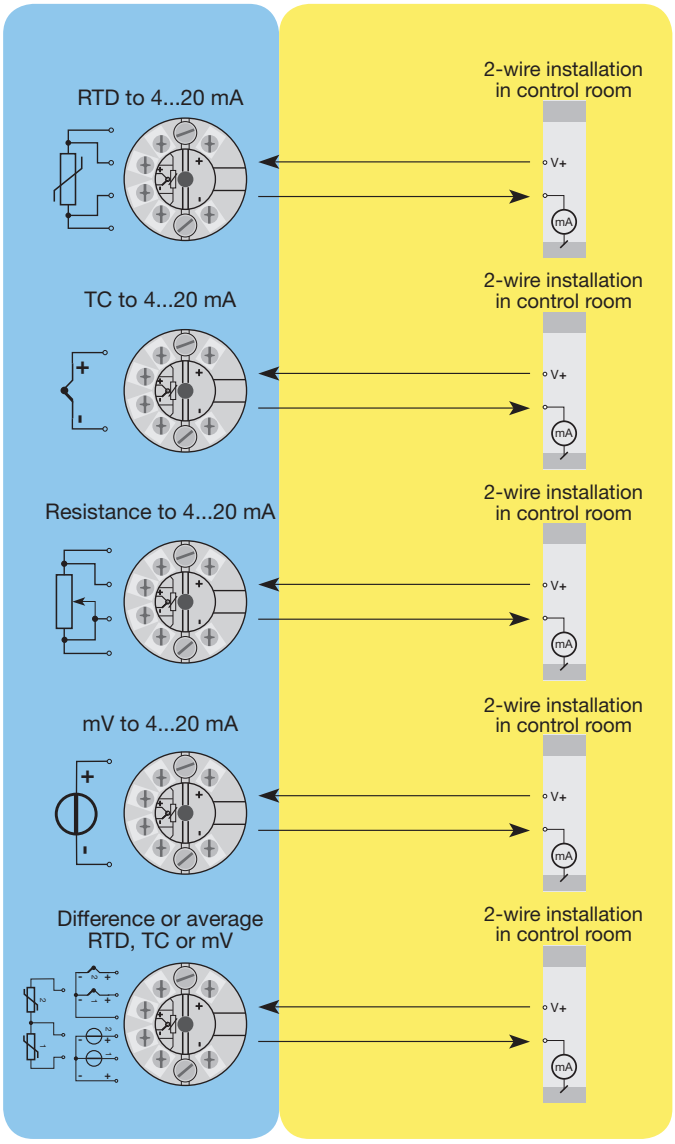
- Linearised temperature measurement with Pt100...Pt1000, Ni100...Ni1000, or TC sensor.
- Difference or average temperature measurement of 2 resistance or TC sensors.
- Conversion of linear resistance variation to a standard analogue current signal, for instance from valves or Ohmic level sensors.
- 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 5335D 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.
- IETH135 has been designed according to strict safety requirements and is thus 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 NE 89.

Mounting / installation:

- For DIN form B sensor head mounting.



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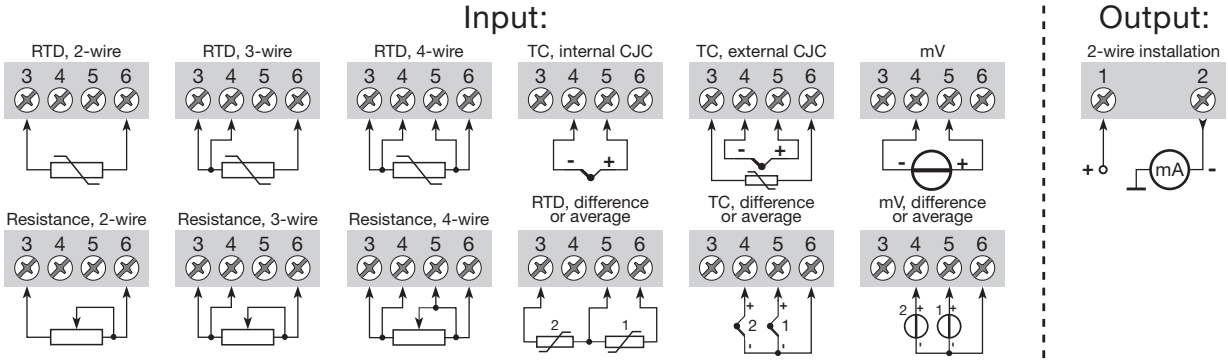
Order: 5335D

Type	Version
5335	D

Connections:



Electrical specifications:

Specifications range:
-40°C to +85°C

Common specifications:

Supply voltage..... 8.0...30 VDC
Voltage drop ..... 8.0 VDC
Isolation voltage, test / operation..... 1.5 kVAC / 50 VAC
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
Humidity ..... < 95% RH (non-cond.)
Dimensions..... Ø 44 x 20.2 mm
Protection degree (encl. / terminals)... IP68 / IP00

Electrical specifications, input:

Max. offset..... 50% of select. 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
(up to 50 Ω per wire is possible with reduced measurement accuracy)
Sensor current..... Nom. 0.2 mA

Voltage input:

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

TC input:

Type	Min. temperature	Max. temperature	Min. span	Standard
B	+400°C	+1820°C	100°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	50°C	IEC584
R	-50°C	+1760°C	100°C	IEC584
S	-50°C	+1760°C	100°C	IEC584
T	-200°C	+400°C	50°C	IEC584
U	-200°C	+600°C	50°C	DIN 43710
W3	0°C	+2300°C	100°C	ASTM E988-90
W5	0°C	+2300°C	100°C	ASTM E988-90

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

Current output:

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

Sensor error detection:

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

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