2-wire HART transmitter

6335D

- RTD, TC, Ohm, or mV input
- Extremely high measurement accuracy
- HART 5 protocol
- Can be installed in Ex zone 0
- 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 PR6335D 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 6335D has been designed according to strict safety requirements and is therefore 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 6335D can be mounted in zone 0, 1, 2 and zone 20, 21, 22 including M1 / Class I/II/ III, Division 1, Groups A, B, C, D.
Environmental Conditions
Operating temperature: -40°C to +85°C
Storage temperature: -40°C to +85°C
Calibration temperature: 20°C ± 28°C
Relative humidity: < 95% RH (non-cond.)
Protection degree: IP20

Mechanical specifications
Dimensions (HxWxD): 109 x 23.5 x 104 mm
Weight: 145 / 185 g
DIN rail type: DIN EN 60715/35 mm
Wire size: 0.13...2.06 mm² AWG 26...14 stranded wire
Screw terminal torque: 0.5 Nm

Common specifications
Supply
Supply voltage: 8.0...30 VDC
Internal power dissipation, 1 / 2 ch: 19 mW...0.7 / 1.4 W
Isolation voltage
Isolation voltage, test / 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: 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

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 (3/4-wire): < 0.002 Ω / Ω
Sensor error detection: Yes
Linear resistance input
Linear resistance min...max: 0 Ω...7000 Ω
TC input
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

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
ATEX: 2014/34/EU
RoHS: 2011/65/EU
EAC: TR-CU 020/2011
EAC Ex: TR-CU 012/2011

Approvals
ATEX: KEMA 09ATEX0148 X
IECEx: KEM 10.0084X
CSA: 1125003
c FM us: FM17US0013X
EAC Ex: RU C-DK-HA65.B.00355/19
SIL: Hardware assessed for use in SIL applications

SIL applications
RU C-DK-HA65.B.00355/19