

2-Wire Programmable Transmitter

Model 5333D

- RTD or Ohm Input
- High Measurement Accuracy
- 3-Wire Connection
- Programmable Sensor Error Value
- Complies with European ATEX and CSA/FM Requirements for Hazardous Location Installation



Application:

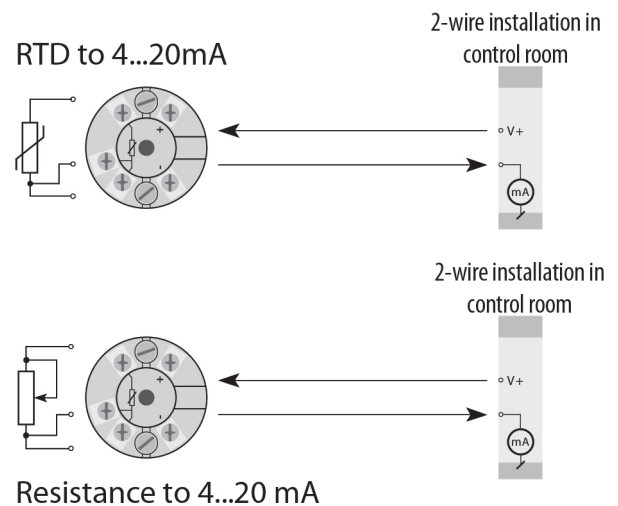
- Linearized temperature measurement with Pt100...Pt1000 or Ni100...Ni1000 sensor.
- Conversion of linear resistance variation to a standard analog current signal.

Technical Characteristics:

- Within seconds the user can program a 5333D to measure temperatures within all standard RTD sensor ranges.
- The RTD and resistance inputs have cable compensation for 3-wire connections.

Mounting/Installation:

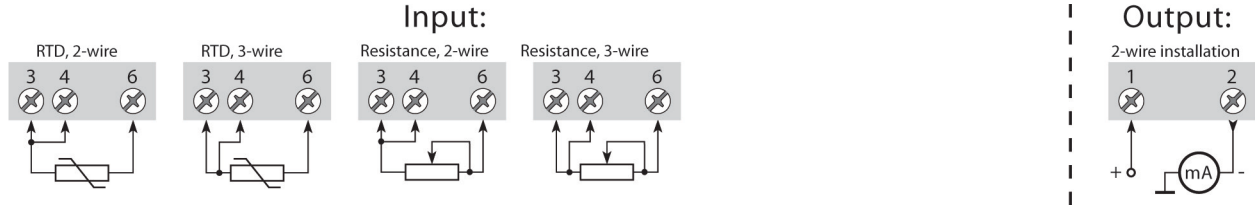
- DIN Form B sensor head compatible.
- Supplied with 2 x M4 screws on a 33 mm (1.3") BC (optional 6-32 screws available).



Ideas. Solutions. Success.

Specifications

Order: 5333D



Electrical Specifications

Specifications Range:

-40°C to +85°C

Common Specifications:

Supply voltage, DC.....8.0...30 V
 Internal consumption25 mW...0.8 W
 Voltage drop8 VDC
 Warm-up time.....5 min.
 Communications interfaceLoop Link
 Signal / noise ratio.....Min. 60 dB
 Response time (programmable).....0.33...60s
 Signal dynamics, input.....19 bit
 Signal dynamics, output.....16 bit
 Calibration temperature20...28°C

Accuracy, the greater of general and basic values:

General Values		
Input Type	Absolute Accuracy	Temperature Coefficient
All	≤ ±0.1% of span	≤ ±0.01% of span / °C

Basic Values		
Input Type	Basic Accuracy	Temperature Coefficient
RTD	≤ ±0.3°C	≤ ±0.01°C / °C
Lin. R	≤ ±0.2 Ω	≤ ±20 mΩ / °C

EMC immunity influence ≤ ±0.5% of span

Effect of supply voltage variation ≤ 0.005% of span / VDC
 Vibration IEC 60068-2-6 Test FC
 Lloyd's specification no. 1 4 g / 2...100 Hz
 Max wire size 1 x 1.5mm² (16 AWG) stranded wire
 Humidity < 95% RH (non-cond.)
 Dimensions Ø 44 x 20.2 mm
 Protection degree (encl. / terminal) IP68 / IP00
 Weight 50 g

Electrical Specifications, Input:

RTD and Linear Resistance Input:

RTD Type	Min. Value	Max. Value	Min. Span	Standard
Pt100	-200°C	+850°C	25°C	IEC 60751
Ni100	-60°C	+250°C	25°C	DIN 43760
Lin. R	0 Ω	10000 Ω	30 Ω	-----

Max. offset 50% of selected max. value
 Cable resistance per wire (max.) 10 Ω
 Sensor current > 0.2 mA, < 0.4 mA
 Effect of sensor cable resistance (3-wire) < 0.002 Ω / °C
 Sensor error detection Yes

Output:

Current Output:

Signal range 4...20 mA
 Min. signal range 16 mA
 Updating time 135 ms
 Load resistance ≤ (Vsupply - 8) / 0.023 [Ω]
 Load stability < ±0.01% of span/100 Ω

Sensor Error Detection:

Programmable 3.5...23 mA
 NAMUR NE43 Upscale 23 mA
 NAMUR NE43 Downscale 3.5 mA

EEx / I.S. Approval*:

KEMA 03ATEX1535 X II 1 GD, T80°C...T105°C
 EEx ia IIC T6 / T4
 Max. amb temperature for T1...T4 85°C
 Max. amb. temperature for T5 and T6 60°C
 ATEX, applicable in zone 0, 1, 2, 20, 21 or 22

Ex / I.S. Data*:

Signal output / supply, terminal 1 to 2:
 U_i :30 VDC
 I_i :120 mADC
 P_i :0.84 W
 L_i :10 µH
 C_i :1.0 nF

Sensor input, terminal 3, 4, and 6:

U_o :27 VDC
 I_o :7 mA
 P_o :45 mW
 L_o :35 mH
 C_o :90 nF
 FM, applicable in* IS, Cl. I, Div1, Gr. A, B, C, D
 IS, Cl. I, Zone 0, AEx ia IIC
 FM Installation Drawing No 5300Q502
 CSA, applicable in* IS, Cl. I, Div. 1, Gr. A, B, C, D
 IS, Cl. I, Zone 0, Ex ia IIC
 CSA Installation Drawing No 533XQC03

Marine Approval*:

Det Norske Veritas, Ships & Offshore Stand. for Certific. No. 2.4

GOST R Approval*:

..... Certificate available upon request.

Observed Authority Requirements:

EMC 2004/108/EC Standard:
 EN 61326-1
 ATEX 94/9/EC EN 50014, EN 50020,
 EN 50281-1-1, EN 50284,
 EN 61241-0, EN 61241-11
 FM 3600, 3611, 3610
 CSA, CAN/CSA C22.2 No. 157,
 E60079-11, UL913

Of Span = Of the presently selected range

Loop Link = PC compatible programming software

IS = Intrinsically Safe

*The transmitter is manufactured by PR electronics. All approvals listed are recognized under the PR name.

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