



2-wire programmable transmitter

5333D

- RTD or Ohm input
- High measurement accuracy
- 3-wire connection
- Programmable sensor error value
- For DIN form B sensor head mounting



Application

- Linearized temperature measurement with Pt100...Pt1000 or Ni100...Ni1000 sensor.
- Conversion of linear resistance variation to a standard analog current signal, for instance from valves or Ohmic level sensors.

Technical characteristics

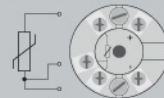
- Within a few seconds the user can program PR5333D to measure temperatures within all RTD ranges defined by the norms.
- The RTD and resistance inputs have cable compensation for 3-wire connection.

Mounting / installation

- For DIN form B sensor head mounting.

Applications

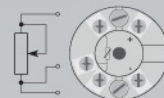
RTD to 4...20 mA



2-wire installation
in control room



Resistance to 4...20 mA



2-wire installation
in control room



Order

Type	Version
5333	Zone 0, 1, 2, Z1, Z2, M1 / DIV. 1, DIV. 2 : D

Environmental Conditions

Operating temperature.....	-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 ² 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...30 VDC
Internal power dissipation.....	25 mW...0.7 W

Response time

Response time (programmable).....	0.33...60 s
Voltage drop.....	8.0 VDC
Warm-up time.....	5 min.
Programming.....	Loop Link
Signal / noise ratio.....	Min. 60 dB
Accuracy.....	Better than 0.1% of sel. range
Signal dynamics, input.....	19 bit
Signal dynamics, output.....	16 bit
Effect of supply voltage change.....	< 0.005% of span / VDC
EMC immunity influence.....	< ±0.5% of span

Input specifications

Common input specifications

Max. offset.....	50% of selected max. value
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RTD input

RTD type.....	Pt100, Ni100, lin. R
Cable resistance per wire.....	10 Ω (max.)
Sensor current.....	> 0.2 mA, < 0.4 mA
Effect of sensor cable resistance (3-wire).....	< 0.002 Ω / Ω
Sensor error detection.....	Yes

Linear resistance input

Linear resistance min....max.....	0 Ω...10000 Ω
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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.....	135 ms
of span.....	= of the presently selected range

I.S. / Ex marking

ATEX.....	II 1 G Ex ia IIC T6...T4 Ga, II 2 D Ex ia IIIC Db, I M1 Ex ia I Ma
IECEX.....	Ex ia IIC T6...T4 Ga, Ex ia IIIC Db, Ex ia I Ma
FM, US.....	Cl. I, Div. 1, Gp. A, B, C, D T4/T6; Cl. I Zone 0, AEx ia IIC T4/T6; Cl. 1, Div. 2, Gp. A, B, C, D, T4/T6
CSA.....	Cl. I, Div. 1, Gp. A, B, C, D Ex ia IIC, Ga
INMETRO.....	Ex ia IIC T6...T4 Ga, Ex ia IIIC Da

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

DNV Marine.....	TAA0000101
ATEX.....	DEKRA 20ATEX0105X
IECEX.....	DEK 20.0062X
FM.....	FM17US0013X
CSA.....	1125003
INMETRO.....	DEKRA 16.0014 X
EAC Ex.....	RU C-DK.HA65.B.00355/19