

5331D

Temperature Transmitter



The 5331D is a high accuracy head-mounted programmable transmitter suitable for RTD and Thermocouple inputs. The transmitter is loop powered and converts the input signal into a 4 to 20mA current output. The 5331D is also Namur NE43 compliant and can be programmed for Upscale or Downscale sensor error detection. The RTD and resistance inputs have cable compensation for 2-, 3- and 4-wire connection.

Connections:

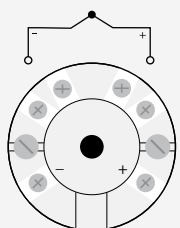
Linear Resistance Input:

Type	Min. Value	Max. Value	Min. Span
Pt100	-200°C	+850°C	10°C
Ni100	-60°C	+250°C	10°C
Lin. R	0 Ω	7000 Ω	10 Ω

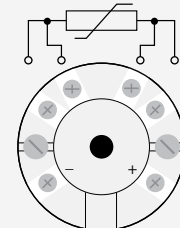
Thermocouple Input:

Type	Min. Temp.	Max. Temp.	Min. Span
B	0°C	+1820°C	100°C
E	-100°C	+1000°C	50°C
J	-100°C	+1200°C	50°C
K	-180°C	+1372°C	50°C
L	-200°C	+900°C	50°C
Lr	-200°C	+800°C	50°C
N	-180°C	+1300°C	50°C
R	-50°C	+1760°C	100°C
S	-50°C	+1760°C	100°C
T	-200°C	+400°C	50°C
U	-200°C	+600°C	50°C
W3	0°C	+2300°C	100°C
W5	0°C	+2300°C	100°C

TC to 4...20 mA

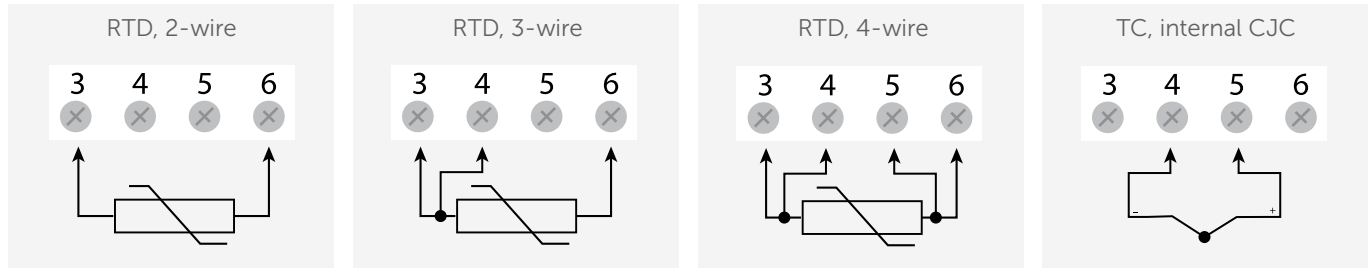


RTD to 4...20 mA



5331D

Temperature Transmitter



Environmental Conditions

Specifications range	-40°C to +85°C
Calibration temperature	+20°C to +28°C
Relative humidity	< 95% RH (non-cond.)
Protection degree (enclosure/terminal)	IP68 / IP00

Mechanical Specifications

Dimensions	Ø44 mm 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 Test FC
Lloyd's specification no. 1	4 g / 2...100 Hz

Common Specifications

Supply voltage	7.2...30 VDC
Internal consumption	25 mW...0.8W
Voltage drop	7.2 VDC
Isolation voltage, test / working	1.5kVAC / 50 VAC
Warm-up time	5 min.
Communications interface	Loop Link
Signal / noise ratio	Min. 60 dB
Response time (programmable)	1...60 s
EEProm error check	< 3.5 s
Signal dynamics, input	20 bit
Signal dynamics, output	16 bit
Effect of supply voltage change	< 0.005% of span / VDC
EMC immunity influence	< ±0.5% of span
Extended EMC immunity:	
NAMUR NE21, A criterion, burst	< ±1% of span

Input Specifications

Maximum offset	50% of selected max. value
RTD input	Pt100...Pt1000, Ni100, Lin. R
Cable resistance per wire (max.), RTD	5 Ω
Sensor current, RTD	Nom. 0.2 mA
Effect of sensor cable resistance (3-/4), RTD	< 0.002 Ω/ Ω
Sensor error detection, RTD	Yes
TC input:	
Thermocouple type	B, E, J, K, L, N, R, S, T, U, W3, W5, LR
Cold junction compensation (CJC)	< ±1.0°C
Sensor error detection, TC	Yes
Sensor error current:	
When detecting / else	Nom. 33 µA / 0 µA

Output Specifications

Current output: Signal range	4...20 mA
Minimum signal range	16 mA
Updating time	440 ms
Load resistance, current output	≤ (Vsupply - 7.2) / 0.023 [Ω]
Load stability, current output	≤ 0.01% of span/100 Ω
Sensor error detection, current output	Programmable 3.5...23 mA
NAMUR NE 43 Upscale/Downscale	23 mA / 3.5 mA

Approvals

EMC	EN 61326-1
ATEX	KEMA 03ATEX1537
FM	2D5A7
CSA	1125003
GOST R	Yes
GOST Ex	Yes
DNV Marine	Stand. f. Certific. No. 2.4