

FlexTop 2201 Temperature Transmitter

4...20 mA transmitter for Pt100 sensors

2-, 3- or 4-wire sensors

Accuracy better than 0.25°C

Sensor offset correction

Automatic/configurable cable resistance compensation (2-wire)

Sensor error detection

2-way configuration (Windows)

Configurable damping and status indication

Engineering unit °C or °F

PC datalogging

Excellent temperature stability

Demko EEx ia IIC T5/T6, ATEX II 1G

Barbara Ex ia IIC T5/T6



Description

FlexTop 2201 is a 4...20 mA loop-powered transmitter for Pt100 sensors.

Either 2-, 3- or 4-wire sensors can be used. For 2-wire sensors an automatic balancing of the sensor cable resistance is possible with shorted sensor cable. The cable resistance can be manually configured as well.

Using a PC, the Windows-based Flex-program and a FlexProgrammer configuring unit, the following parameters can be configured via the output connectors (2-way communication): TAG no., number of wires, cable resistance, error detection level, measuring range/unit, damping, offset and status indication.

The Flex-program has a datalogging facility enabling the user to monitor measuring results or calibrate the measuring setup.

FlexTop 2201 is embedded in silicone which makes it resistant to humid environments.

FlexTop 2201, fitting into the DIN B housing, has a 6 mm center hole for quick sensor replacement. The spring loaded mounting screws ensure a safe fastening even in vibrating environments.



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Technical Data

Input

Accuracy	
Span $\leq 250^{\circ}\text{C}$:	$< 0.25^{\circ}\text{C}$ {2}
Span $> 250^{\circ}\text{C}$:	0.1% of span
Sample time	< 0.7 sec.
Pt100 Standard	IEC/DIN/EN 60 751-2
RTD measuring current	0.3 mA, continuously
Sensor type	2-, 3- or 4-wires {1}
Sensor short detection	$< -225^{\circ}\text{C}$
Sensor break detection	$> 875^{\circ}\text{C}$
Error detection delay	< 10 sec.
Compensation for cable error	$< 0.02^{\circ}\text{C}/\text{Ohm}$ (3-wire)
Cable resistance	Max. 20 Ohm /wire {1}
Measuring range	$-200\dots 850^{\circ}\text{C}$ {1}
Measuring unit	$^{\circ}\text{C}$ or $^{\circ}\text{F}$ {1}
Minimum span	25°C
Protection	$\pm 35 V_{\text{dc}}$
Suppression	50 and 60 Hz
Resolution	14 bit
Repeatability	$< 0.1^{\circ}\text{C}$
Ripple immunity	IEC 770 6.2.4.2
Offset Adjustment	Max. $\pm 10^{\circ}\text{C}$ {1}

Output

Signal span	4...20 mA, 2-wire
Accuracy	$< 0.1\%$ of signal span
Supply range	8...35 V_{dc}
Ripple immunity	3 V_{rms}
Load equation	$R_L \leq (V_{\text{cc}} - 8)/23$ [kOhm]
Up/Down scaling limits	23 mA/3.5 mA {1}
Damping	0...30 sec. {1}
Protection	Reversed polarity protection
Resolution	12 bit
Effect of variations in supply voltage:	
Output current	0.01% per volt
TAG No.	15 characters {1}

Environmental conditions

Operating temperature	$-40\dots 85^{\circ}\text{C}$
Humidity	$< 98\%$ RH, cond. (IEC 68-2-38)
Vibrations	GL, test 2 (IEC 68-2-6)
Long-term test	IEC 770 6.3.2

EMC data

Generic standards	EN 50081-1, EN 50082-2
Product standards	EN 61326
NAMUR	NAMUR NE21

Approval (Demko) EEx ia IIC T5/T6, ATEX II 1G Approval (Barbara) Ex ia IIC T5/T6

Supply range	8...28 V_{dc}
Internal inductivity	$L_i \leq 10 \mu\text{H}$
Internal capacity	$C_i \leq 10 \text{nF}$
Barrier data	$U \leq 28 V_{\text{dc}}$; $I \leq 0.1 \text{A}$; $P \leq 0.7 \text{W}$
Temperature class	T1...T5: $-40 < T_{\text{amb}} < 85^{\circ}\text{C}$ T1...T6: $-40 < T_{\text{amb}} < 50^{\circ}\text{C}$

Mechanical data

Dimensions	$\varnothing 44 \times 19 \text{ mm}$
Protection class	Housing: IP 40

Other data

Temperature drift	Typ. 0.003% per $^{\circ}\text{C}$ Max. 0.01% per $^{\circ}\text{C}$
Power-on time	10 sec.

Test conditions

Configuration	0...100 $^{\circ}\text{C}$
Amb. temperature	$23^{\circ}\text{C} \pm 2^{\circ}\text{C}$
Power supply	24 V_{dc}

Disposal of product and packing

According to national laws or by returning to Bourdon-Haenni

Notes

- {1} Configurable
- {2} Lower range limit $\leq 100^{\circ}\text{C}$

Ordering Details

FlexTop 2201

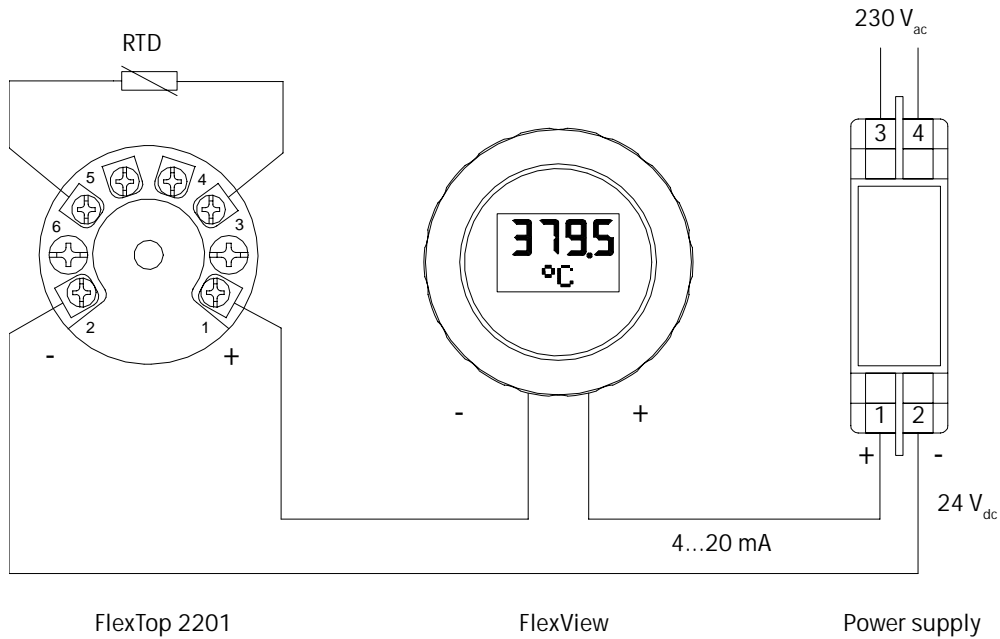
2201 xxxx	Type
0001	Not configured, standard safety
0002	Not configured, Demko EEx ia IIC T5/T6, ATEX II 1G
0003	Not configured, Barbara Ex ia IIC T5/T6

Configuration

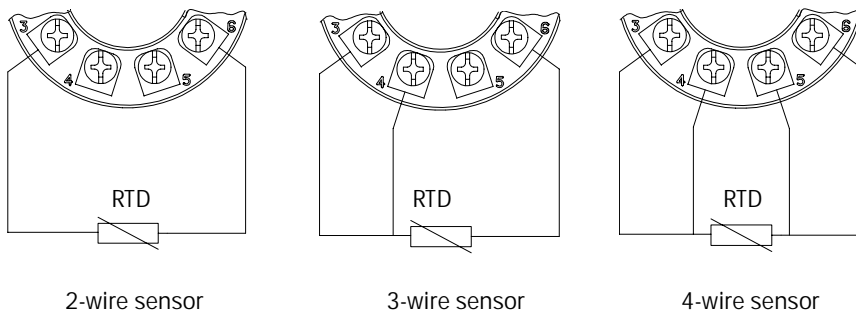
2201 9900	Configuration according to customer specifications
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Note: The FlexTop 2201 can be supplied in a 30 pcs. packing. Please contact Bourdon-Haenni for further information.

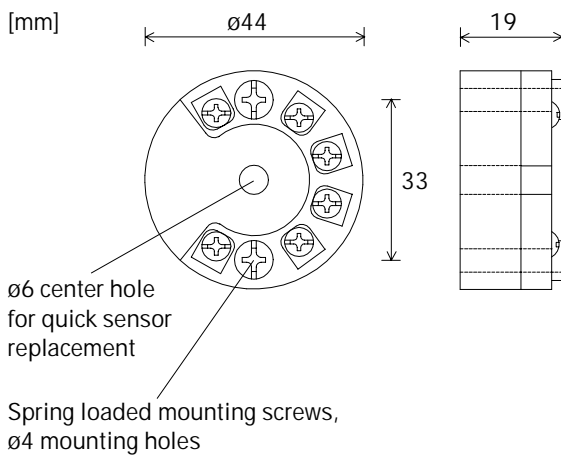
Non-Ex-application



Electrical Installation



Dimensional Drawing



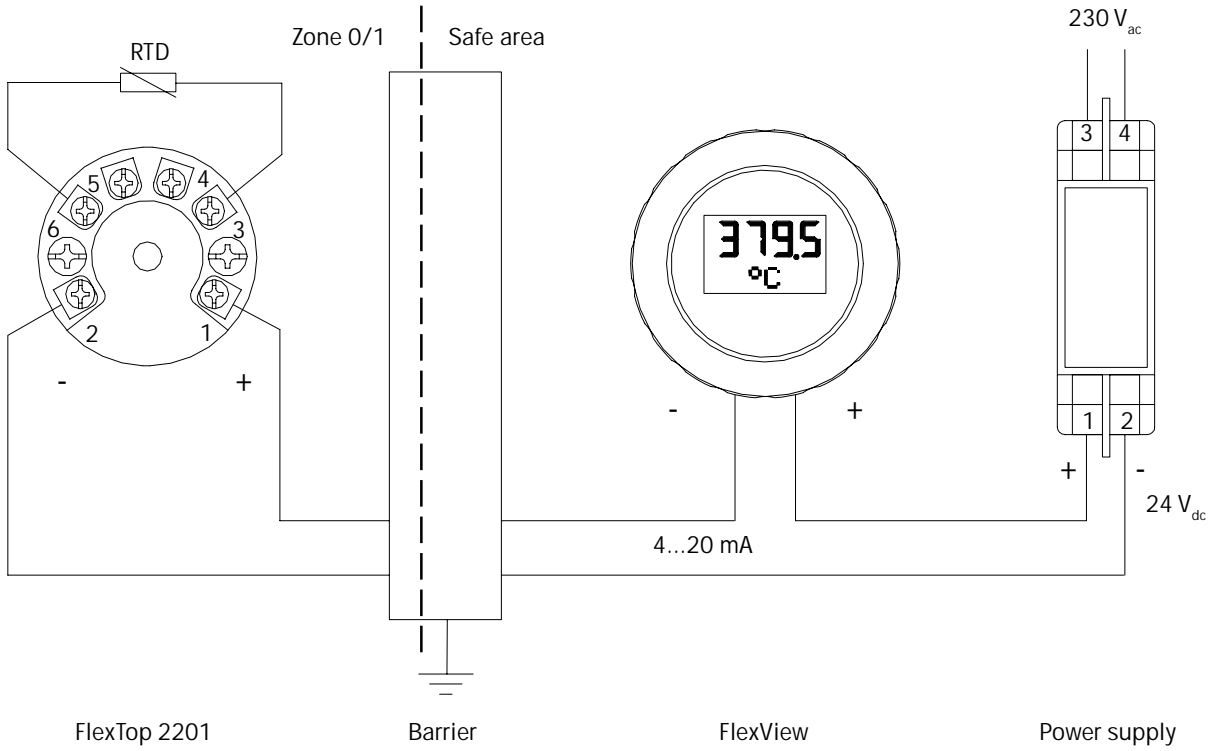
Accessories

FlexProgrammer configuration set, type number 82 23-903 comprises:

FlexProgrammer with 9 pole RS232C cable
 3.5" Program diskettes
 Battery plug
 Cable with test plugs



Ex-application



Configuration

Note:
Disconnect loop supply before
connecting the FlexProgrammer
to FlexTop 2201.

