



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.



Technical Data

Input		Environmental conditions	
Accuracy		Operating temperature	-40...85°C
Span $\leq 250^\circ\text{C}$:	$< 0.25^\circ\text{C}$ {2}	Storage temperature	-55...90°C
Span $> 250^\circ\text{C}$:	0.1% of span	Humidity	$< 98\%$ RH, cond. (IEC 68-2-38)
Sample time	< 0.7 sec.	Vibrations	GL, test 2 (IEC 68-2-6)
Pt100 Standard	IEC/DIN/EN 60 751-2	Long-term test	IEC 770 6.3.2
RTD measuring current	0.3 mA, continuously	EMC data	
Sensor type	2-, 3- or 4-wires {1}	Generic standards	EN 50081-1, EN 50082-2
Sensor short detection	$< -225^\circ\text{C}$	Product standards	EN 61326
Sensor break detection	$> 875^\circ\text{C}$	NAMUR	NAMUR NE21
Error detection delay	< 10 sec.	Approval (Demko)	
Compensation for cable error	$< 0.02^\circ\text{C}/\text{Ohm}$ (3-wire)	EEx ia IIC T5/T6, ATEX II 1G	
Cable resistance	Max. 20 Ohm /wire {1}	Approval (Barbara)	
Measuring range	-200...850°C {1}	Ex ia IIC T5/T6	
Measuring unit	$^\circ\text{C}$ or $^\circ\text{F}$ {1}	Supply range	8...28 V_{dc}
Minimum span	25°C	Internal inductivity	$L_1 \leq 10$ μH
Protection	$\pm 35 V_{dc}$	Internal capacity	$C_1 \leq 10$ nF
Suppression	50 and 60 Hz	Barrier data	$U \leq 28 V_{dc}$; $I \leq 0.1$ A; $P \leq 0.7$ W
Resolution	14 bit	Temperature class	T1...T5: $-40 < T_{amb} < 85^\circ\text{C}$ T1...T6: $-40 < T_{amb} < 50^\circ\text{C}$
Repeatability	$< 0.1^\circ\text{C}$	Mechanical data	
Ripple immunity	IEC 770 6.2.4.2	Dimensions	$\varnothing 44 \times 19$ mm
Offset Adjustment	Max. $\pm 10^\circ\text{C}$ {1}	Protection class	Housing: IP 40
Output		Other data	
Signal span	4...20 mA, 2-wire	Temperature drift	Typ. 0.003% per $^\circ\text{C}$ Max. 0.01% per $^\circ\text{C}$
Accuracy	$< 0.1\%$ of signal span	Power-on time	10 sec.
Supply range	8...35 V_{dc}	Test conditions	
Ripple immunity	3 V_{rms}	Configuration	0...100°C
Load equation	$R_L \leq (V_{cc} - 8)/23$ [kOhm]	Amb. temperature	23°C $\pm 2^\circ\text{C}$
Up/Down scaling limits	23 mA/3.5 mA {1}	Power supply	24 V_{dc}
Damping	0...30 sec. {1}	Disposal of product and packing	
Protection	Reversed polarity protection	According to national laws or by returning to Bourdon-Haenni	
Resolution	12 bit	Notes	
Effect of variations in supply voltage:		{1}	Configurable
Output current	0.01% per volt	{2}	Lower range limit $\leq 100^\circ\text{C}$
TAG No.	15 characters {1}		

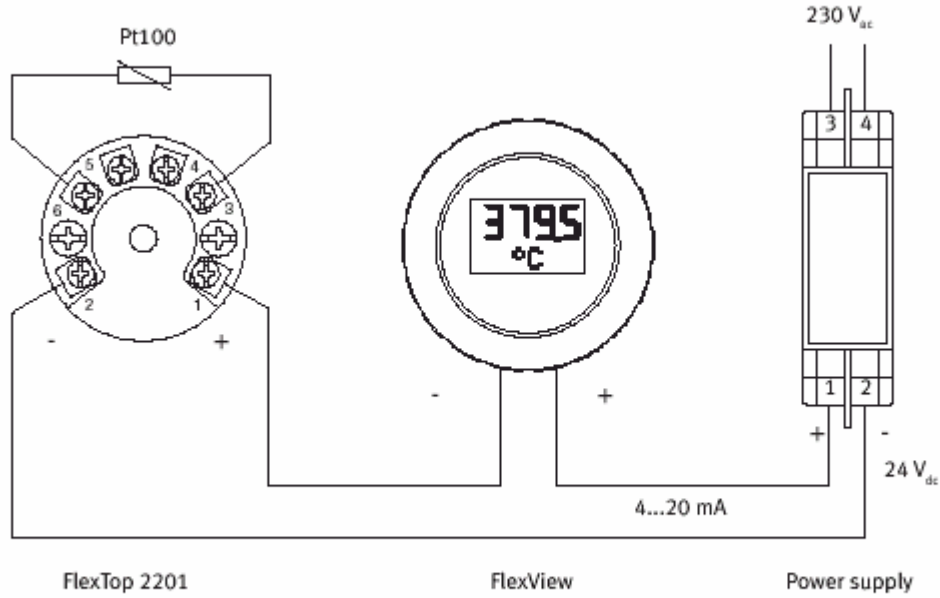
Ordering Details - FlexTop 2201

Type	2201	xxxx	(x)
Not configured, standard safety		0001	
Not configured, Demko EEx ia IIC T5/T6, ATEX II 1G		0002	
Not configured, Barbara Ex ia IIC T5/T6		0003	
Configuration			
Configuration according to customer specifications (default is 0...120°C, 3-wire)			C

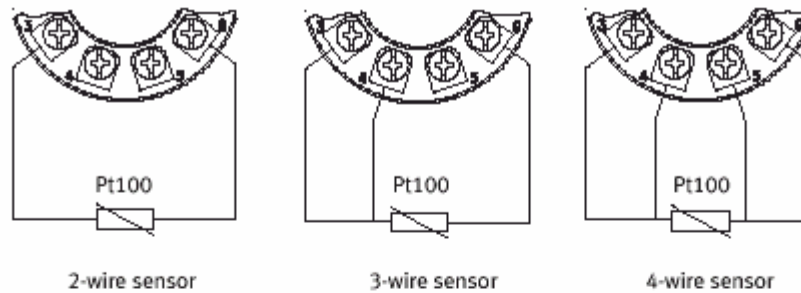
Note: The FlexTop 2201 can be supplied in a 30 pcs. packing.
Please contact Bourdon-Haenni for further information.



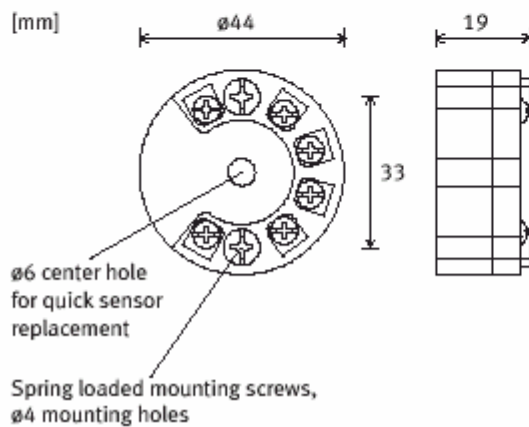
Non-Ex Application



Electrical Installation



Dimensional Drawing



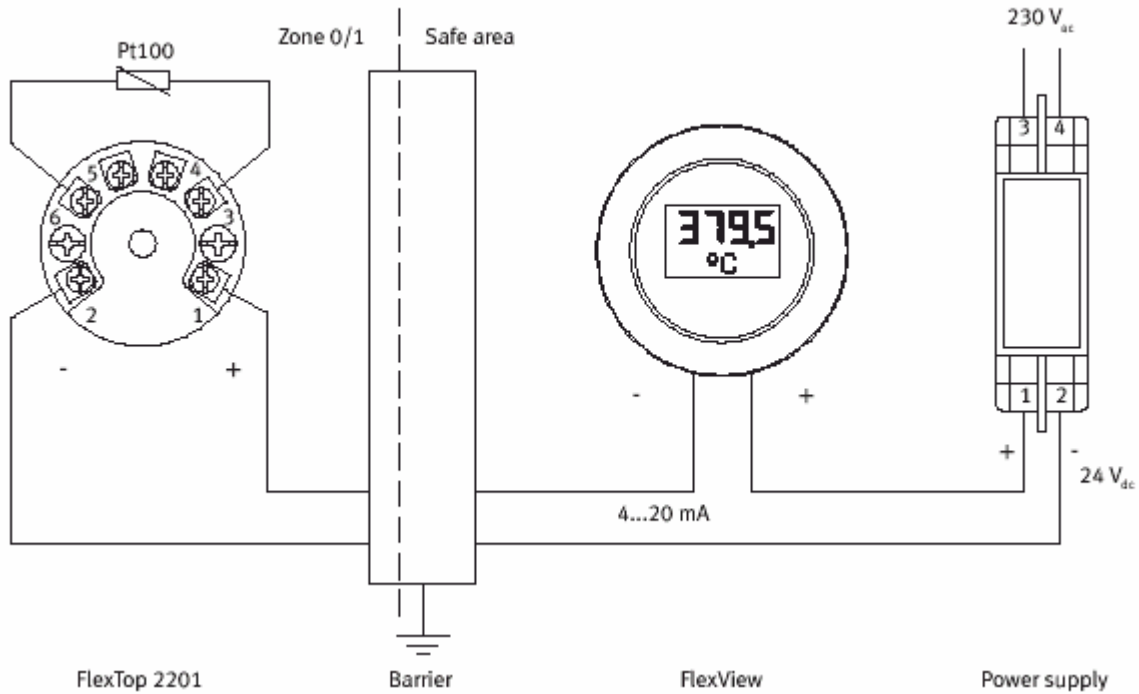
Accessories

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

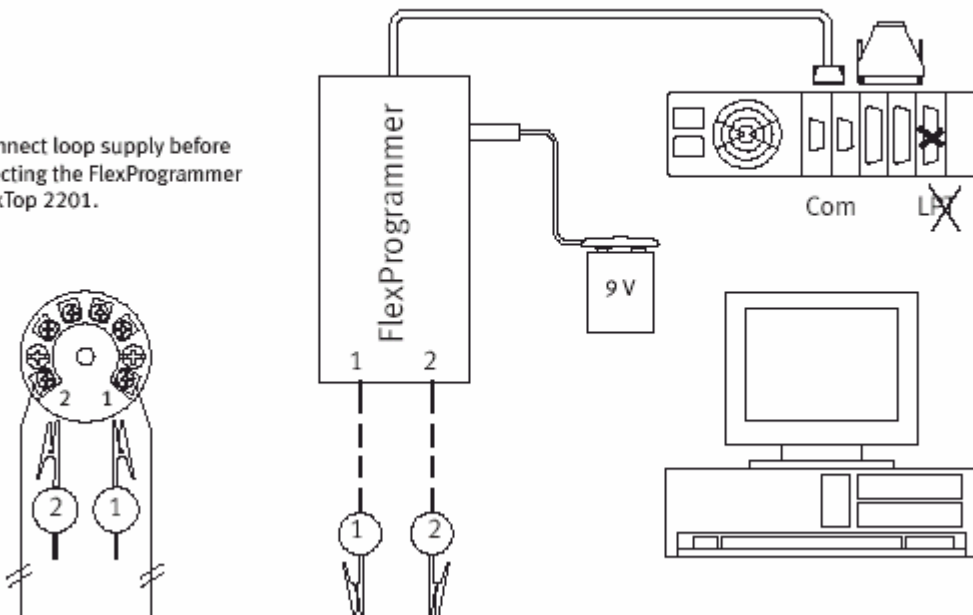


Ex Application



Configuration

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



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