

FlexTop 2202 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

Configurable damping and status indication

Engineering unit °C or °F

PC datalogging

Excellent temperature stability

Ex ia IIC T5/T6, ATEX II 1G



Description

FlexTop 2202 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 2202 is embedded in silicone which makes it resistant to humid environments.

FlexTop 2202, 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

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	$-200\dots850^{\circ}\text{C}$ {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	$-40\dots85^{\circ}\text{C}$
Storage temperature	$-55\dots90^{\circ}\text{C}$
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 61000-6-3, EN 61000-6-2
Product standards	EN 61326
NAMUR	NAMUR NE21

Approval

Ex ia IIC T5/T6, ATEX II 1G

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: $-40 < T_{\text{amb}} < 85^{\circ}\text{C}$ T6: $-40 < T_{\text{amb}} < 50^{\circ}\text{C}$

Mechanical data

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

Other data

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

Notes

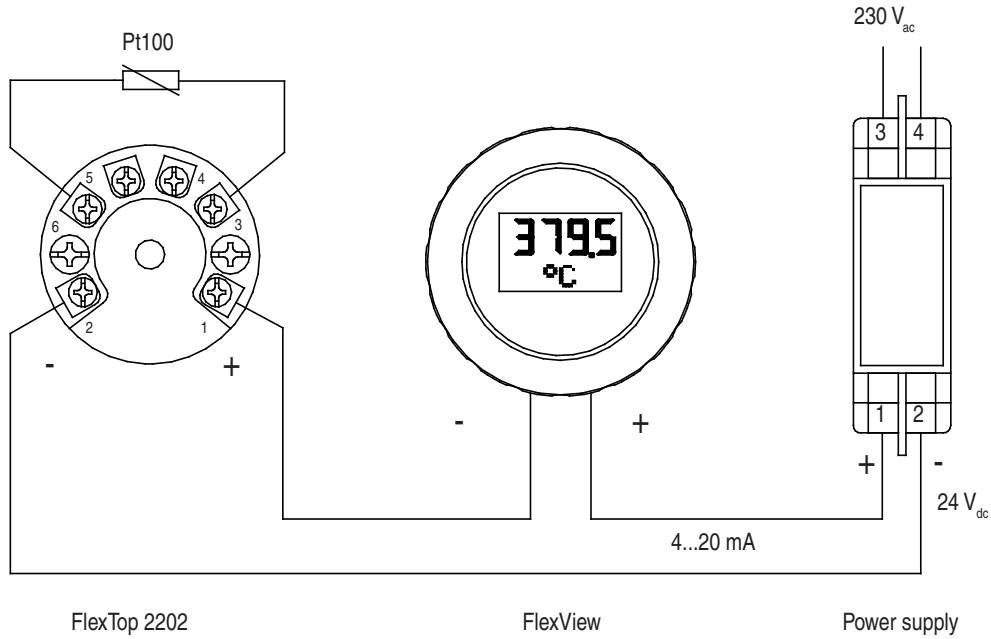
{1}	Configurable
{2}	Lower range limit $\leq 100^{\circ}\text{C}$

Ordering details - FlexTop 2202

		2202 000x (x)	
Type		8' Digit	
Not configured, standard safety		1	
Not configured, Ex ia IIC T5/T6, ATEX II 1G		2	
Configuration		9' Digit	
Configuration according to customer specifications (default is 0...120 $^{\circ}\text{C}$, 3-wire)		C	

Note: The FlexTop 2202 can be supplied in a 30 pcs. packing.
Please contact Baumer for further information.

Non-Ex Application

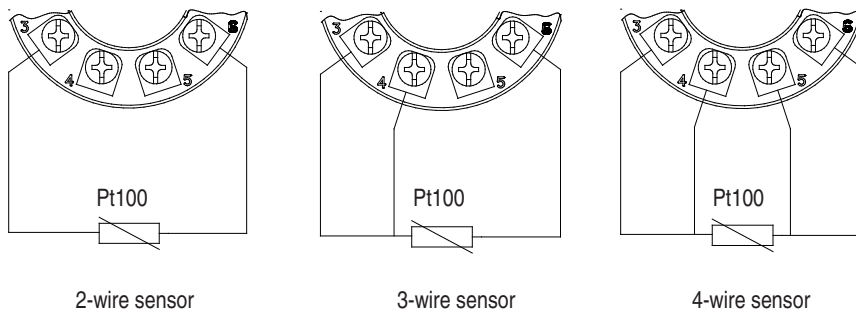


FlexTop 2202

FlexView

Power supply

Electrical Installation

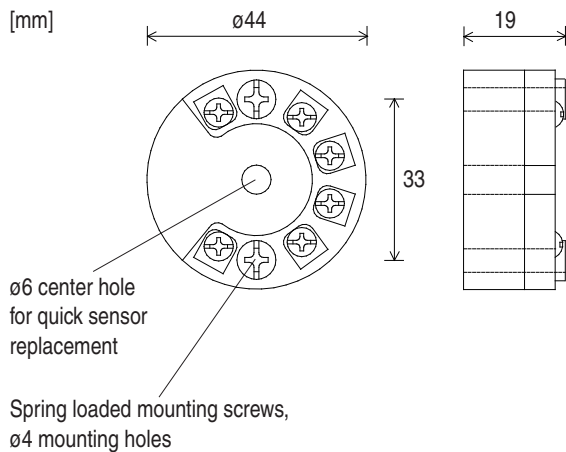


2-wire sensor

3-wire sensor

4-wire sensor

Dimensional Drawing



ø6 center hole
for quick sensor
replacement

Spring loaded mounting screws,
ø4 mounting holes

Accessories

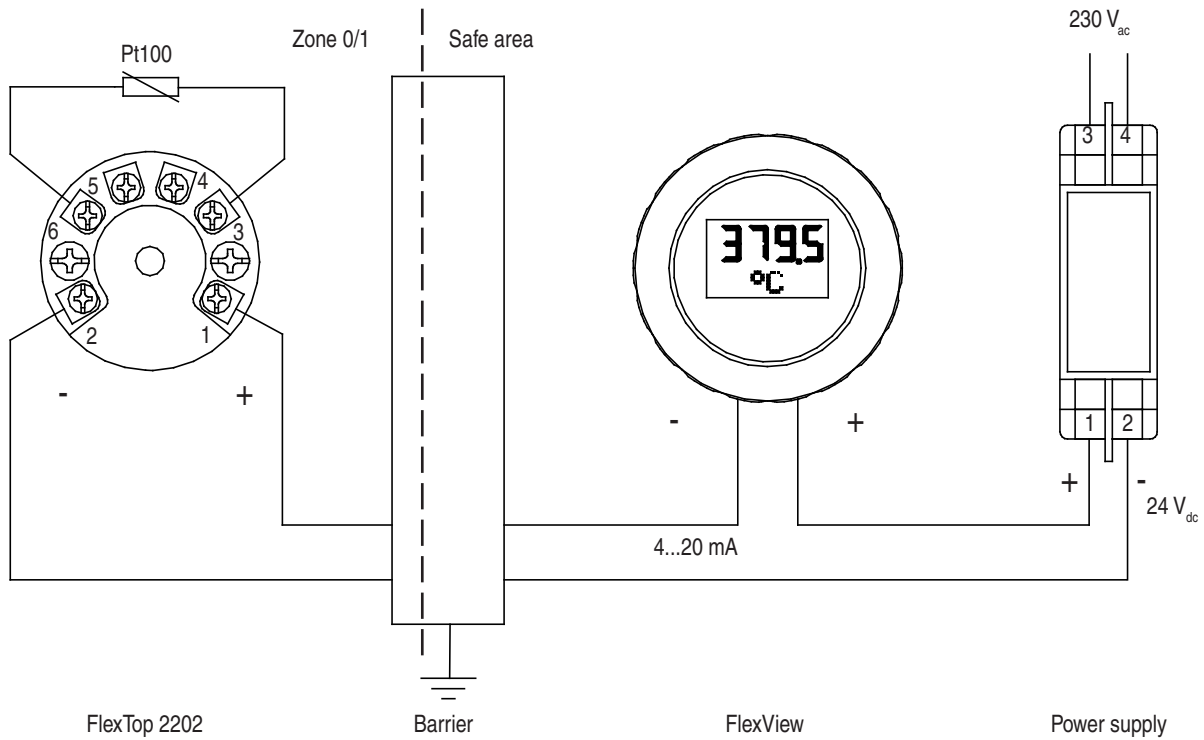


The FlexProgrammer 9701 is a dedicated tool to configure all Baumer configurable products.

Type No. 9701-0001 complies:

- FlexProgrammer interface unit
- CD with the FlexProgram software and product drivers (DTM)
- USB cable
- Cable with 2 alligator clips

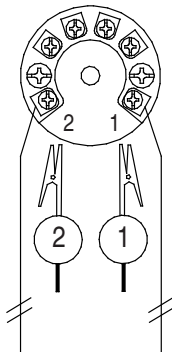
Ex Application



Configuration

Note:

Disconnect loop supply before connecting the FlexProgrammer to FlexTop 2202.



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P.O. box 73
 2640 AB Pijnacker, The Netherlands
 Phone: +31 15 362 12 00
 Fax: +31 15 369 40 82
 E-mail: mail@thermo.nl
 Internet: www.thermo-electra.com