

FlexTop 2204 Temperature Transmitter

4...20 mA transmitter for Pt500 sensors and Resistance input

2-, 3- or 4-wire sensors

Accuracy better than 0.25°C (Pt500)

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

Ex nA II T5, ATEX II 3G



Description

FlexTop 2204 is a 4...20 mA loop-powered transmitter for Pt500 sensors and resistance inputs.

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 2204 is embedded in silicone which makes it resistant to humid environments.

FlexTop 2204, 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	< 0.25°C {2}	Operating temperature	-40...85°C
Sample time	< 0.7 sec.	Storage temperature	-55...90°C
Pt500 Standard	IEC/DIN/EN 60 751-2	Humidity	< 98% RH, cond. (IEC 68-2-38)
RTD measuring current	0.15 mA, continuously	Vibrations	GL, test 2 (IEC 68-2-6)
Sensor type	2-, 3- or 4-wires {1}	Long-term test	IEC 770 6.3.2
Sensor short detection	< -108°C	EMC data	
Sensor break detection	> 211°C	Generic standards	EN 61000-6-3, EN 61000-6-2
Error detection delay	< 10 sec.	Product standards	EN 61326
Compensation for cable error	< 0.02°C/Ohm (3-wire) {2}	NAMUR	NAMUR NE21
Cable resistance	Max. 20 Ohm /wire {1}	Approval Ex ia IIC T5/T6, ATEX II 1G	
Measuring unit	°C or °F {1}	Supply range	8...28 VDC
Protection	+/- 35 VDC	Internal inductivity	$L_i \leq 10 \mu\text{H}$
Suppression	50 and 60 Hz	Internal capacity	$C_i \leq 10 \text{ nF}$
Resolution	14 bit	Barrier data	$U \leq 28 V_{dc}; I \leq 0.1 \text{ A}; P \leq 0.7 \text{ W}$
Repeatability	< 0.1°C {2}	Temperature class	T1...T5: $-40 < T_{amb} < 85^\circ\text{C}$ T6: $-40 < T_{amb} < 50^\circ\text{C}$
Ripple immunity	IEC 770 6.2.4.2	Mechanical data	
Offset Adjustment	Max. $\pm 10^\circ\text{C}$ {1} {2}	Dimensions	$\varnothing 44 \times 19 \text{ mm}$
Output		Protection class	Housing: IP 40
Signal span	4...20 mA, 2-wire	Other data	
Accuracy	< 0.1% of signal span	Temperature drift	Typ. 0.003% per °C Max. 0.01% per °C
Supply range	8...35 VDC	Power-on time	10 sec.
Ripple immunity	$3 V_{rms}$	Test conditions	
Load equation	$R_L \leq (V_{cc} - 8)/23$ [kOhm]	Configuration	0...100°C
Up/Down scaling limits	23 mA/3.5 mA {1}	Amb. temperature	23°C +/- 2°C
Damping	0...30 sec. {1}	Power supply	24 VDC
Protection	Reversed polarity protection	Disposal of product and packing	
Resolution	12 bit	According to national laws or by returning to Baumer	
Effect of variations in supply voltage:		Notes	
Output current	0.01% per volt	{1}	Configurable
TAG No.	15 characters {1}	{2}	Pt500

Measuring Ranges

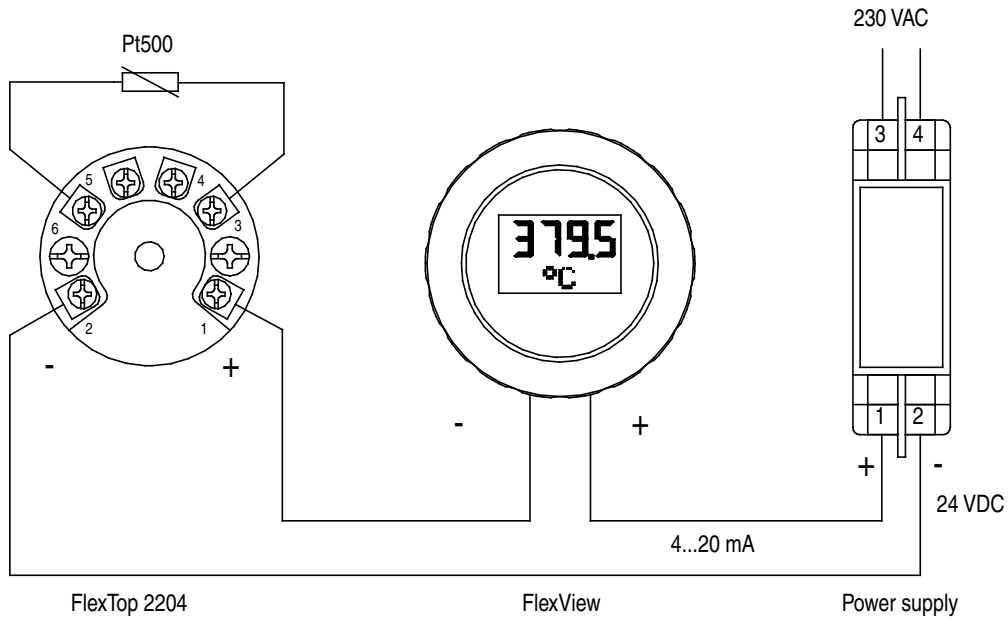
Type	Standard	Range	Min. span	Accuracy
Pt500	DIN/EN/IEC 60751	-100...160°C {2}	25°C	0.25°C
Lin. resistance		0...1000 Ohm	5 Ohm	1 Ohm

Ordering details - FlexTop 2204

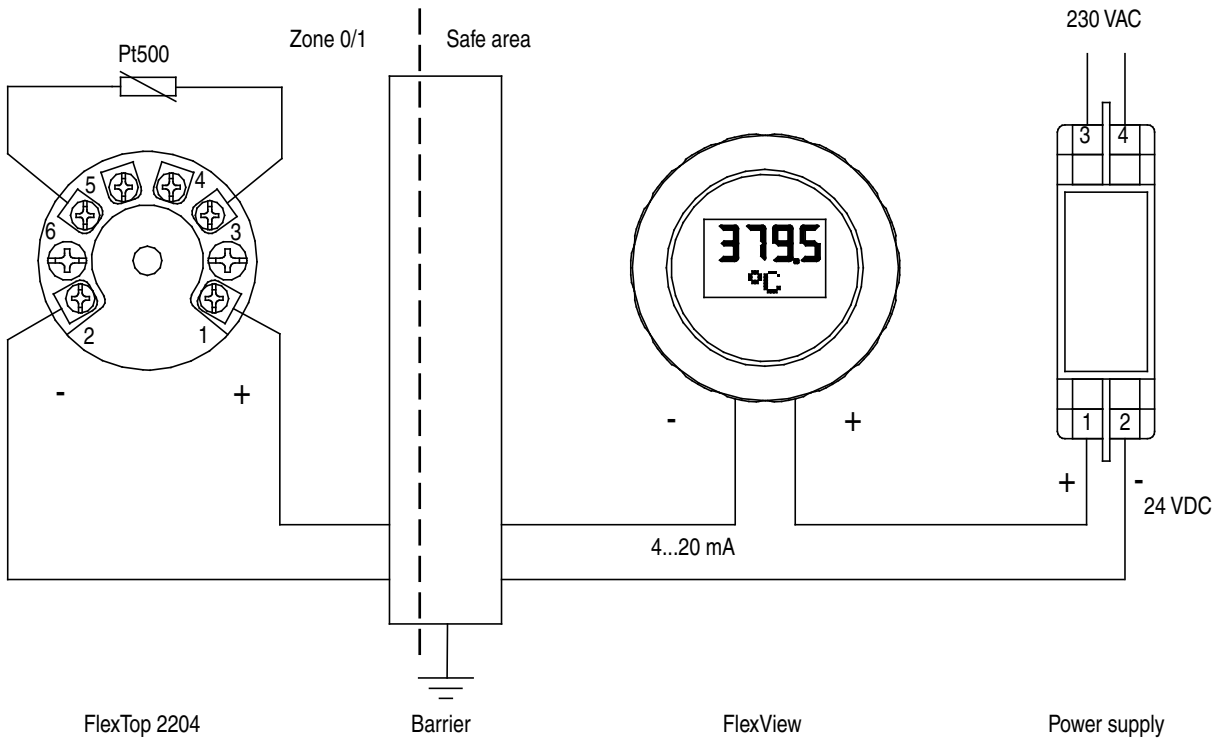
		2204 000x (x)	
Type		8' Digit	
Not configured, standard safety		1	
Not configured, Ex ia IIC T5/T6, ATEX II 1G		2	
Not configured, Ex nA II 3G		3	
Configuration		9' Digit	
Configuration according to customer specifications (default is 0...120°C, 3-wire)		C	

Note: The FlexTop 2204 can be supplied in a 30 pcs. packing.
Please contact Baumer for further information.

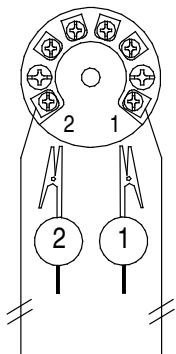
Non-Ex Application



Ex Application

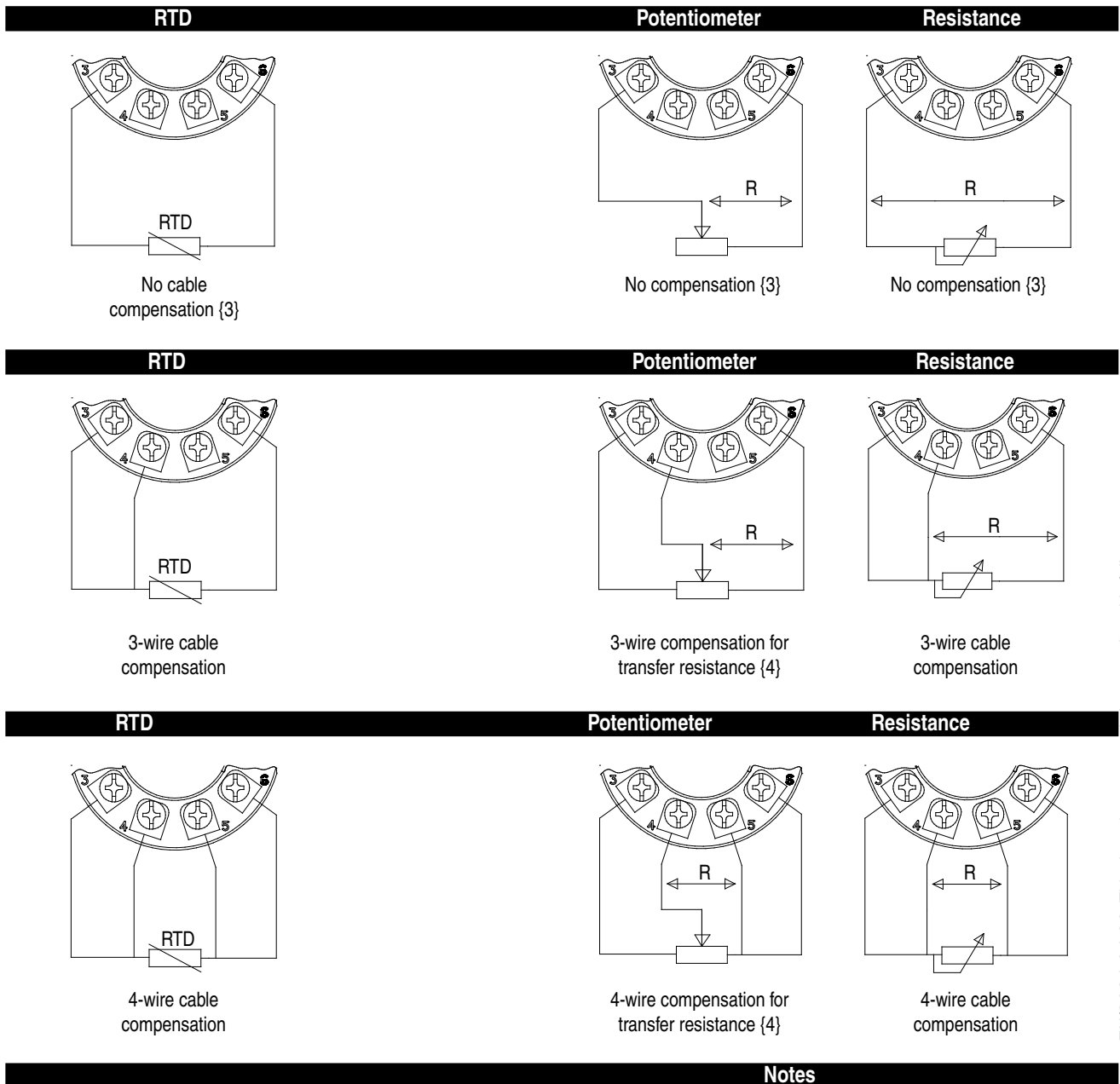


Configuration



Note:
Disconnect loop supply before connecting the FlexProgrammer to FlexTop 2204.

Electrical Installation



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Notes

- {3} Configurable compensation for cable resistance
- {4} Transfer resistance between element and wiper

Accessories



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

Type No. 9701-0001 comprises:

- FlexProgrammer
- Cable with 2 alligator clips
- Cable from FlexProgrammer to M12 plug for TE2
- Cable from FlexProgrammer to M12 Plug for LFFS, LBFS, CPX
- USB cable
- CD with the FlexProgram software

Dimensional drawing

