FlexTop 2203 Temperature Transmitter

4...20 mA transmitter for T/C sensors

Sensors type B, J, K, N and S

Accuracy 4...5°C

Sensor error detection

**Compensation for "cold junction" (CJC)
Internal, external and fixed.**

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 2203 is a 4...20 mA loop-powered transmitter for T/C sensors type B, J, K, N and S.

Using a PC, the Windows-based Flex-Program and a FlexProgrammer 9701 configuring unit, the following parameters can be configured via the output connectors (2-way communication): TAG no., CJC compensation, 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.

FlexTop 2203 is embedded in silicone which makes it resistant to humid environments.

FlexTop 2203, 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.

Baumer

Technical Data

Input

Digital accuracy	See „Measuring ranges"
CJC-compensation {1}	Internal < 0.5°C
	External < 0.25°C
	Fixed -50...127°C
Sample time	< 1 sec.
Error detection delay	< 10 sec.
Measuring unit	°C or °F {1}
Minimum span	See table
Protection	+/- 35 VDC
Suppression	50 and 60 Hz
Resolution	14 bit
Repeatability	< 0.1°C
Ripple immunity	IEC 770 6.2.4.2
Offset Adjustment	Max. $\pm$ 10°C {1}

Output

Signal span	4...20 mA, 2-wire
Accuracy	< 0.1% of signal span
Supply range	8...35 VDC
Ripple immunity	$3\ V_{rms}$
Load equation	$R_L \le (VCC - 8)/23$ [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}

EMC data

Generic standards	EN 61000-6-3, EN 61000-6-2
Product standards	EN 61326
NAMUR	NAMUR NE21

Environmental conditions

Operating temperature	-40...85°C
Storage temperature	-55...90°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

Approval

Ex ia IIC T5/T6, ATEX II 1G	
Supply range	8...28 VDC
Internal inductivity	$L_i \le 10\ \mu H$
Internal capacity	$C_i \le 10\ nF$
Barrier data	$U \le 28\ VDC$; $I \le 0.1\ A$; $P \le 0.7\ W$
Temperature class	T1...T5: $-40 < T_{amb} < 85°C$
	T6: $-40 < T_{amb} < 50°C$

Mechanical data

Dimensions	ø44 x 19 mm
Protection class	Housing: IP 40

Other data

Temperature drift	Typ. 0.003% per °C
	Max. 0.01% per °C
Power-on time	10 sec.

Test conditions

Configuration	0...100°C
Amb. temperature	23°C $\pm$ 2°C
Power supply	24VDC

Disposal of product and packing

According to national laws or by returning to Baumer

Notes

{1}	Configurable

Measuring Ranges

Type	Standard	Range	Min. span	Accuracy
B(PtRh30-Pt)	IEC 584	100...1820°C	50°C	> 500°C = 5°C
J(Fe-CuNi)	IEC 584	-100...1200°C	50°C	3°C
K(NiCr-Ni)	IEC 584	-100...1370°C	50°C	3°C
N(NiCrSi-NiSi)	IEC 584	-100...1300°C	50°C	4°C
S(PtRh10-Pt)	IEC 584	-50...1750°C	100°C	> 50°C = 5°C
Lin. voltage		-10...100 mV	5 mV	0.2 mV

Ordering details - FlexTop 2203

	2203 000x (x)
Type	**8´ Digit**
Not configured, standard safety	1
Not configured, Ex ia IIC T5/T6, ATEX II 1G	2

	9´ Digit
Configuration	
Configuration according to customer specifications (default is Type K, -250...1370°C, internal CJC)	C

Note: The FlexTop 2203 can be supplied in a 30 pcs. packing.
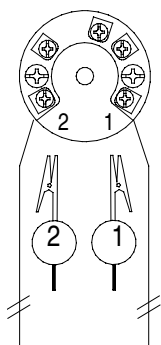Please contact Baumer for further information.

Non-Ex Application

FlexTop 2203   FlexView   Power Supply

Ex Application

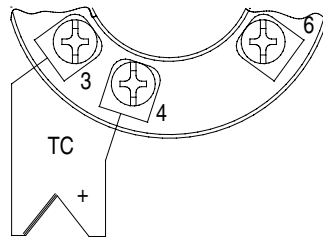FlexTop 2203   Barrier   FlexView   Power supply
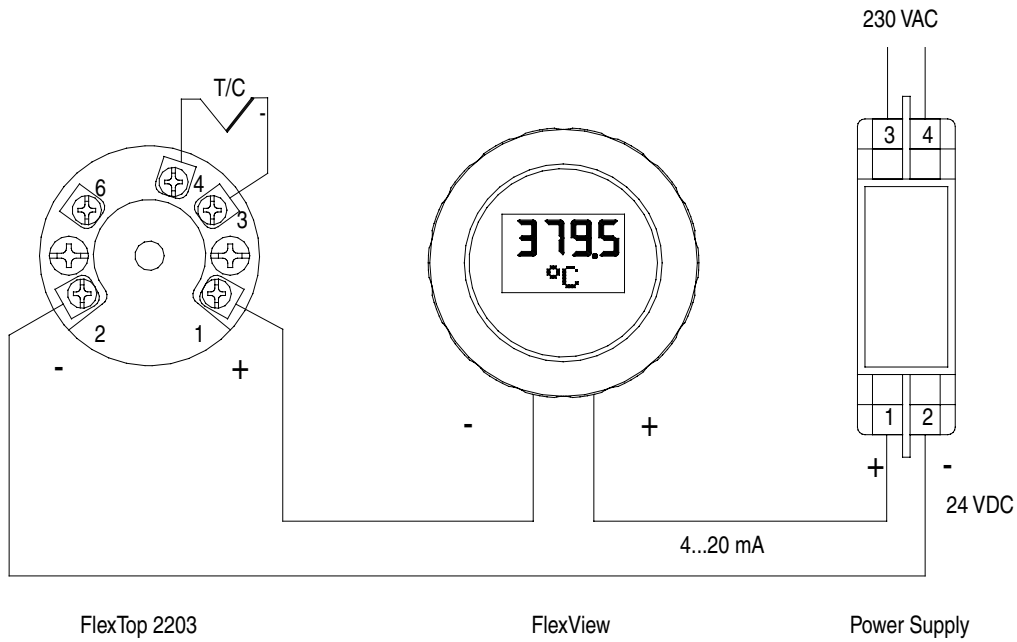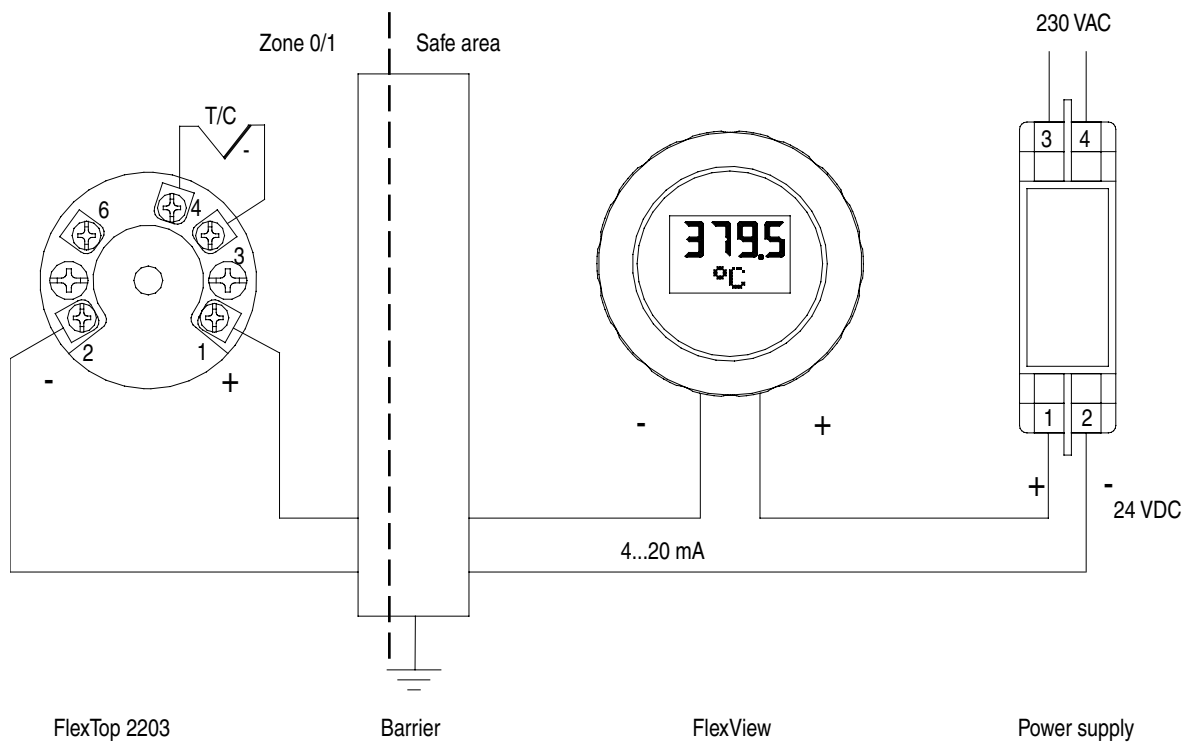
Configuration

Note:
Disconnect loop supply before
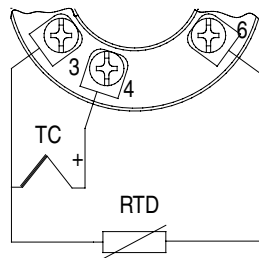connecting the FlexProgrammer
to FlexTop 2203.

Electrical Installation
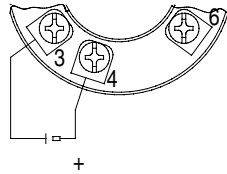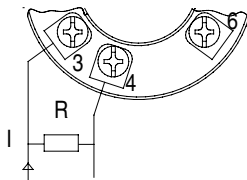
T/C

Internal CJC-
compensation

T/C

External CJC-compensation
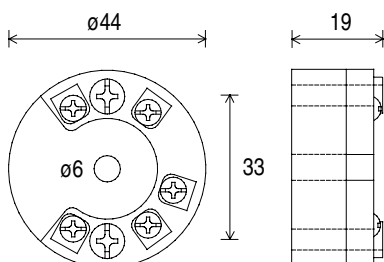No cable compensation {3}

Current measurement	Voltage measurement	Notes

{3} Configurable compensation for cable resistance

Accessories

Dimensional drawing

ø44   19   [mm]

ø4 mounting hole.
Spring loaded
mounting screws.

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

Type No. 9701-0001 comprises:
FlexProgrammer interface unit
CD with the FlexProgram software and product drivers (DTM)
USB cable
Cable with 2 alligator clips