

## pressure-gauge type TM03



### description:

High quality digital pressure gauge made of stainless steel to control process temperatures. Available with digital electrical evaluator. Convinces by high quality, short response time and precision. Usable in various situations through different neck tube lengths and sensor tube lengths.

### product features:

- to measure temperatures of liquid and gaseous media
- easy handling by sloped display
- rotatable body and display
- protection through password function
- closed design for sanitation applications
- male thread

### connection:

G 1/4" B, G 1/2" B

### temperature:

-99°C bis +500°C –  
depending on design

### sensor length:

50 mm – 200mm – depending on  
design

### design:

### body material:

### sensor:

### process connection:

### supply voltage:

### ripple:

### current consumption:

### error of measurement:

temperature switch in compact design with digital display

Cr-Ni-steel / PC Polycarbonat

Pt100 class A

stainless steel 1.4404 (AISI 316L) / 1.4571 (316TI)

10,5 – 35V DC reverse voltage protected

$\leq 2 \text{ V} / U_{\text{Smin}} \leq U_{\text{S}} \leq U_{\text{Smax}}$

$\leq 60 \text{ mA}$  incl. Analog output with max. 22,5 mA switching output open loop

Display and switching output:

$\leq \pm (0,4 \text{ K} + 0,002 * [t])$  corresponding  $\leq \pm 0,6 \text{ K}$  at  $\pm 100^\circ\text{C}$

with  $[t]$  = process temperature in  $^\circ\text{C}$ , without prefix, with unit K

analog output:

$\leq \pm$  (measurement error display and switching output + 0,1% FS)

$\leq \pm 0,9 \text{ K}$  at  $\pm 100^\circ\text{C}$  / range  $-99,9 - +200^\circ\text{C}$  / TD = 1

$\leq \pm 0,1 \text{ K}$

$\leq \pm 0,1 \text{ K} / \text{year}$

### non-repeatability:

### long-term drift:

### deviation of temperature:

Display and switching output:  $\leq \pm 0,03\% \text{ FS} / 10 \text{ K}$

Analog output:  $\leq \pm 0,08\% \text{ FS} / 10 \text{ K}$

### response time:

$t \leq 10 \text{ s}$  with sensor tube diameter 6 mm

$t \leq 14 \text{ s}$  with sensor tube diameter 8 mm

$t \leq 17 \text{ s}$  with sensor tube diameter 10 mm

### output PNP:

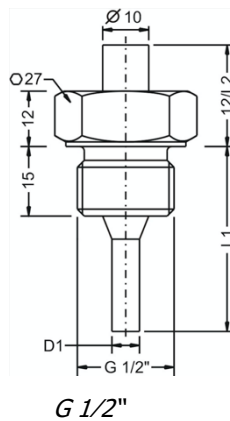
voltage:  $V \geq +V_{\text{S}} - 2 \text{ V}$ , power:  $\leq 200 \text{ mA}$

<b>step response:</b>	rise time: $< 30 \mu s$ $R < 3 k\Omega / I > 4,5 \text{ mA}$
<b>standby time:</b>	$\leq 4 \text{ ms}$ ( $t_d = 0 \text{ s}$ )
<b>cycle of operation:</b>	$\leq 1 \text{ s}$
<b>temperature:</b>	$\geq 100.000.000$
	process: $-99,9^\circ\text{C} \dots +500^\circ\text{C}$
	environment: $-40^\circ\text{C} - +85^\circ\text{C}$
<b>protection class:</b>	IP65/IP67 (EN/IEC 60529)
<b>electrical connection:</b>	plug M12 CrNi fitting, inset PUR, contacts gilded
<b>climate class:</b>	4K4H DIN EN 60721-3-4
<b>shock resistance:</b>	50 g / 11 ms DIN EN 60068-2-27
<b>vibration resistance:</b>	10 g / 10 – 2000 Hz DIN EN 60068-2-6
<b>EM-compatibility:</b>	emitted interference DIN EN 61326-1 means of production class B
	immunity DIN EN 61326-1 industry sector
<b>reference conditions:</b>	DIN EN 60770-1
	T = 25 °C, relative humidity 45 - 75 %
	air-pressure environment 860 - 1060 kPa

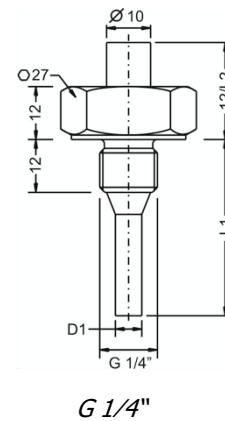
**diameter:**



connection



G 1/2"

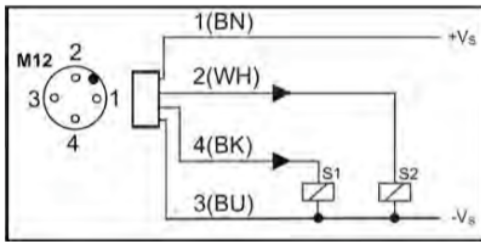


G 1/4"

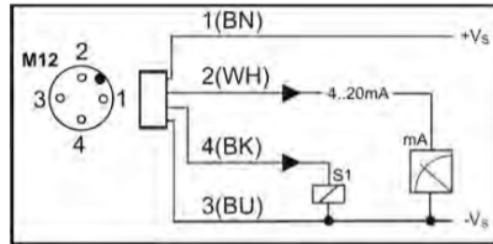
**output:**

**explanation:**

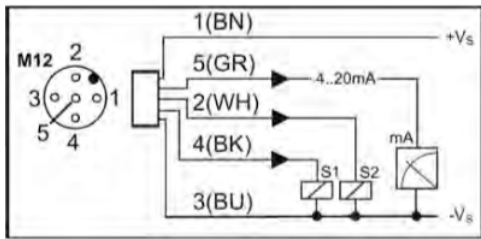
Core color standard connection cable M12:  
 BN = brown, GR = green, WH = white, BK = black, BU = blue  
 The connection cable is not included.



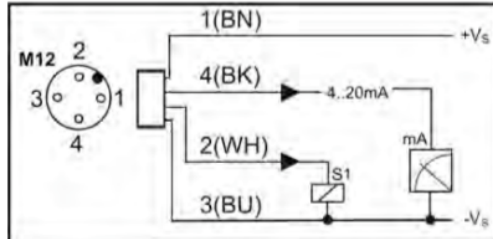
2x PNP



1x PNP, 1X analog



2x PNP, 1x analog



1x PNP, 1x analog, Desina design

article number:

type	range of temperature	sensor length	electrical output	connection	sensor-diameter
TM03	00 – -99 – +200°C	0 – 50 mm	0 – 2x PNP	02 – G 1/4" B	.6 – 6 mm
	01 – -99 – +500°C	1 – 100 mm	1 – 1x PNP, 1x 4 – 20mA	03 – G 1/2" B	.8 – 8 mm
		2 – 150 mm	2 – 2x PNP, 1x 4 – 20mA		.10 – 10 mm
	3 – 200 mm	3 – 1x PNP, 1x 4 – 20mA Desina			

example:

TM03000103.6

Digital thermometer in compact design made of stainless steel **without neck tube**

output: Pt100, 1x PNP, 1x 4 – 20mA  
 sensor length: 50 mm  
 sensor diameter: 6 mm  
 range of temperature: -99 – +200°C  
 connection: G 1/2" B

Note:

If process temperatures increase 100°C, a neck tube is recommended to protect the electrical devices. The neck tube is available with a standard length of 100 mm or individual lengths. Depending on the length, an extra charge will be calculated. Please order as followed:

TM03000103.6HS – for standard length of 100mm

TM03000103.6Hxxx – for individual lengths of xxx mm

Image similar, subject change without notice.