Electrical 2-wire temperature switch clamp-on technology

measurement of pipe surface

Type series GP2610

Application area

- Pharmaceutical industry
- Food industry
- Biotechnology

Features

- Electrical 2-wire temperature switch for connecting to a digital PLC I/O
- Patented measuring system for hygienic temperature measurement without contact to media, for pipe diameter 4…300 mm
- Measuring insert can be recalibrated and is replaceable; the installation arrangements are unchanged
- High accuracy, fast response
- Quick and cost efficient installation, also for subsequent installation
- No welding, no process interruption
- No additional isolation required
- Temperature switch with output signal 4 und 33 mA, 2-wire technology, switch function (makers)
  - OFF = 4 mA
  - ON = 33 mA
- Switch point setting by using a magnet, range from -40...150 °C
- Switch point accuracy ± 0.5 K
- Hysteresis 0.1 K
- Switch state indicator with 2 green LEDs
- Electrical connection M12

Options

- Switch point accuracy ± 0.1 K (factory calibration)
- Hysteresis > 0.1 K

Application

The temperature switch GP2610 in clamp-on technology is intended for measuring the surface temperature of pipes, especially in food/pharmaceutical/biotechnology applications.The output signal is connected to a digital PLC I/O

Technical data

Constructional design

Design:	Fully encapsulated electronics unit Material case: Stainless steel mat.-no. 1.4301 (304)
Degree of protection per EN 60529:	IP 67
Electrical connection:	circular connector M12, 4-pin

Measuring insert

Design:	Special measuring insert: Ø 6 mm; hygienic design. Measuring insert screwed into the clamping element under spring tension.
Material:	Stainless steel Measuring element from silver, thermally isolated via PEEK element.
Measuring resistor:	Pt100 per EN 60751, in thin layer technology

Process connection

Design:	Clamping element designed for installation with : ■ Clamping block for pipes Ø 4...17.2 mm ■ Clamping shoe for pipes Ø 10...300 mm ■ Clamping bracket for pipes Ø 4...17.2 mm
Material:	Temperature resistant plastics (PVDF) with integrated isolation system, hygienic design
Degree of protection per EN 60529:	IP 65
Pipe diameter:	See order code

Switching output

Type:	Electrical 2-wire temperature switch
Output signal:	OFF: 4 mA ON: 33 mA
Switch point setting:	Range from -40…150 °C (factory settings, re-adjustable by customer by holding a magnet to the setting point)
Output state indicator:	2 green LEDs, 360° light
Switch function:	makers
Switching delay:	0 s
Supply:	24...30 V DC
Switching cycles:	> 10 millions
Switching accuracy:	± 0.5 K optional ± 0.1 K after calibration
Hysteresis:	0.1 K (higher upon request)

Temperature ranges

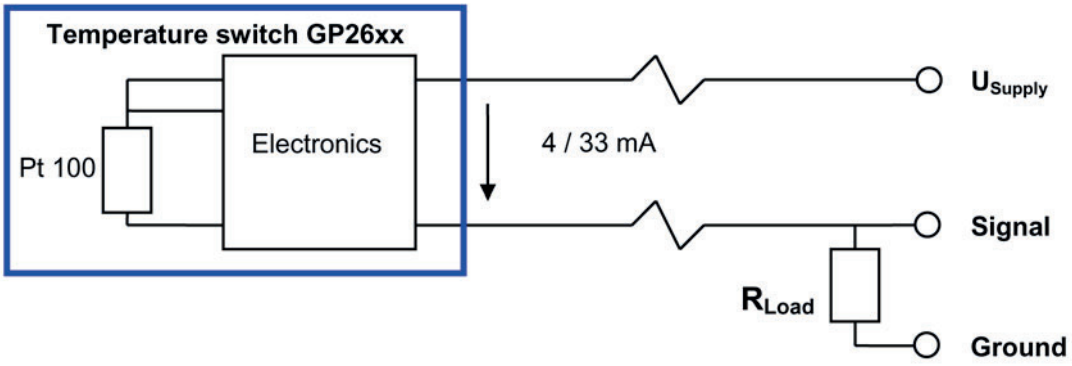
Ambient:	-20…85°C
Media:	-40…150°C
Storage:	-40…100°C

Extended temperature ranges upon request.

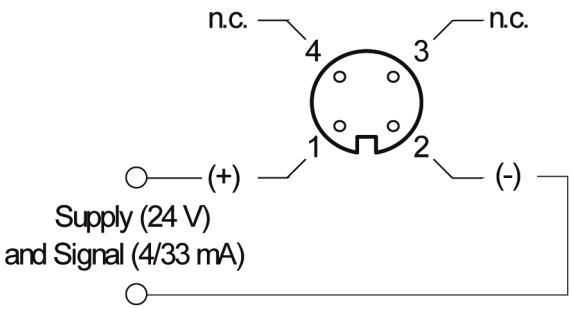
Functional description

The device converts a temperature signal into a high/low information. Above the switch point the device generates a current of 33 mA, below the switch point of 4 mA.

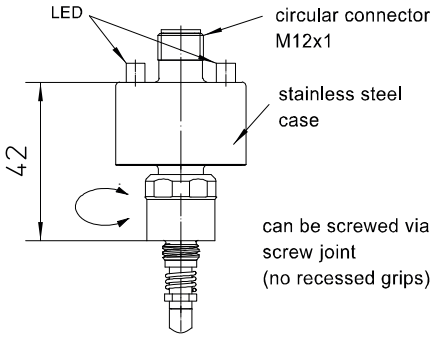
You can use a digital PLC input to convert the current into an on/off signal with an appropriate load resistor R_{Load} as shown below.

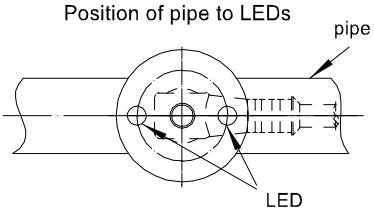


Connection diagram

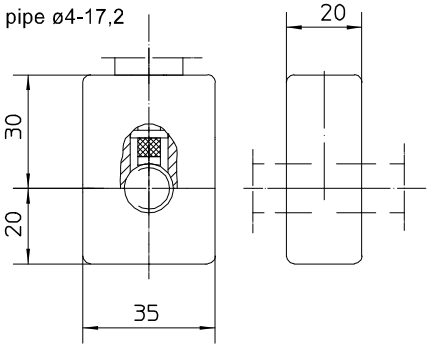


Dimensions

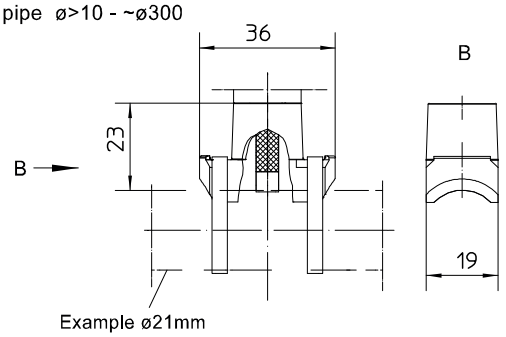




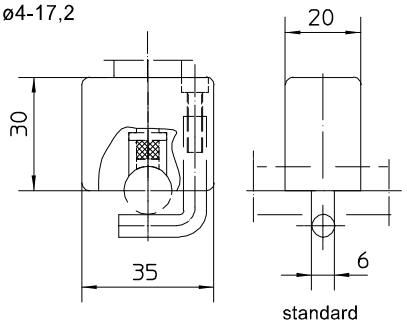
Clamping block
for pipe ø4-17,2



Clamping shoe
for pipe ø>10 - ~ø300



Clamping bracket
for pipe ø4-17,2



Order details

Electrical 2-wire temperature switch, clamp-on techology for measurement of pipe surface
Type series GP2610

Order details GP2610			
GP2610	Electrical 2-wire temperature switch clamp-on techology		
A4	clamping elements	for clamping block installation	
B5		for clamping shoe installation	with hose clamps for pipe Ø 10 mm or bigger
C3		for clamping bracket installation	standard

			collar size		
			50 x 35 x 20	23 x 36 x 19	30 x 35 x 20
			A4 . . .	**B5 . . .**	**C3 . . . .**
040	outside pipe diameter [mm]	4.0	**x**	-	**x**
060		6.0	**x**	-	**x**
063		6.35	**x**	-	**x**
080		8.0	**x**	-	**x**
093		9.35	**x**	-	**x**
100		10.0	**x**	**x**	**x**
102		10.2	**x**	**x**	**x**
103		10.3	**x**	**x**	**x**
120		12.0	**x**	**x**	**x**
127		12.7	**x**	**x**	**x**
130		13.0	**x**	**x**	**x**
135		13.5	**x**	**x**	**x**
137		13.7	**x**	**x**	**x**
140		14.0	**x**	**x**	**x**
158		15.88	**x**	**x**	**x**
160		16.0	**x**	**x**	**x**
172		17.2	**x**	**x**	**x**
997		different Ø 4.0-17.9	**x**	-	**x**
180		18.0	-	**x**	-
190		19.0	-	**x**	-
195		19.5	-	**x**	-
200		20.0	-	**x**	-
213		21.3	-	**x**	-
220		22.0	-	**x**	-
230		23.0	-	**x**	-
240		24.0	-	**x**	-
250		25.0	-	**x**	-
254		25.4	-	**x**	-
267		26.7	-	**x**	-
269		26.9	-	**x**	-
280		28.0	-	**x**	-
290		29.0	-	**x**	-
300		30.0	-	**x**	-
318		31.8	-	**x**	-
320		32.0	-	**x**	-
334		33.4	-	**x**	-
337		33.7	-	**x**	-
340		34.0	-	**x**	-
350		35.0	-	**x**	-
360		36.0	-	**x**	-
380		38.0	-	**x**	-
381		38.1	-	**x**	-

			collar size		
			50 x 35 x 20	23 x 36 x 19	30 x 35 x 20
			A4 . . .	**B5 . . .**	**C3 . . .**
410	outside pipe diameter [mm]	41.0	**-**	x	**-**
424		42.4	**-**	x	**-**
445		44.5	**-**	x	**-**
483		48.3	**-**	x	**-**
508		50.8	**-**	**x**	**-**
530		53.0	**-**	**x**	**-**
540		54.0	**-**	**x**	**-**
570		57.0	**-**	**x**	**-**
991		different Ø 10.0-300	**-**	**x**	**-**

M23	process temperature	-40..150 °C (material PVDF)			
M99		as in writing			
F1 . . .	switching output	supply	24...30 V DC		
		switch function	makers	output signal	OFF = 4 mA
					ON = 33 mA
2		switch point setting	121 °C, standard		
9			factory settings in the range -40...150 °C, as in writing		
3		switching delay	0 s		
4		hysteresis	0.1 K, standard		
9			upon request		
G1	switch point accuracy	± 0.5 K, standard			
G2		± 0.1 K			
L10	switch state indicator	green LED, 360° light	LED off, switching status off		
K1	sensor break signal	without			
T30	electrical connection	circular connector M12, 4 pin, IP 67			

Order code (example): GP2610 - A4060 - M23 - F1234 - G1 - L10 - K1 - T30