Electrical 2-wire temperature switch clamp-on technology

for food/pharmaceutical/biotechnology, measurement of pipe surface, Type Series GP2610

Features

- Electrical 2-wire temperature switch for connecting to a digital PLC I/O
- Various clamping elements for process connection:
  - clamping block (for pipe-Ø 4...17.2 mm)
  - clamping shoe (for pipe-Ø 10...300 mm)
  - clamping bracket (for pipe-Ø 4...17.2 mm)
- Hygienic temperature measurement for pipe diameters of 4…300 mm
- Measuring system patented
- High accuracy, fast response
- Easy installation
- No welding, no process interruption
- No additional isolation required
- Measuring insert can be recalibrated
- Temperature switch with output signal 4 or 33 mA, 2-wire technology,
  switching functionality (max. makers):
  OFF = 4 mA
  ON = 33 mA
- Switch point setting by using a magnet;
  range from -40 to +150 °C
- Switching point accuracy ± 0,5 K
- Switching delay: 0 sec
- Hysteresis 0.1 K
- Switch state indicator with 2 LEDs (green light)
- Electrical connection M12

Optionen

- Continuous flashing of the LEDs indicating:
  sensor break or short circuit
- Switching point accuracy ± 0.1 K (factory calibration)
- Switching delay 0…99 sec (factory calibration)
- Hysteresis > 0.1 K

Application area

· Food industry
· Pharmaceuticals
· Biotechnology

Applications

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 port.

Technical Data

Case design

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

Temperature detecting element

Measuring insert	material stainless steel Ø 6 mm, screwed into the connection head under spring tension measuring insert can re recalibrate, though replaceable. Installation arrangements are unchanged. Measuring element from silver, thermally isolated with plastic insert
Measuring resistor	Pt 100 in thin layer technology

Temperature ranges

Ambient temperature	-20...85 °C
Process temperature	-40...150 °C
Allowed storage temperature	-40...100 °C

other temperature ranges upon request

Pipe collar

Material	temperature-resistant high performance plastics with integrated isolating system
Degree of protection	IP 65 per DIN EN 60529

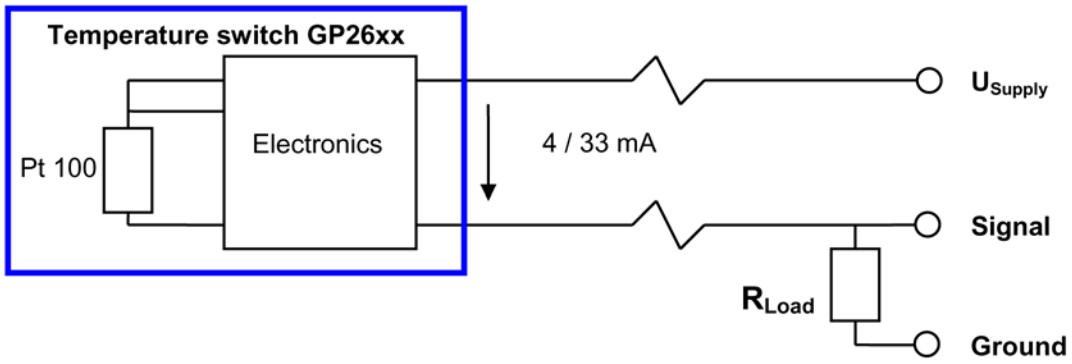
Pipe nominal sizes

Suited for all standard nominal sizes. Dimensions see order code.

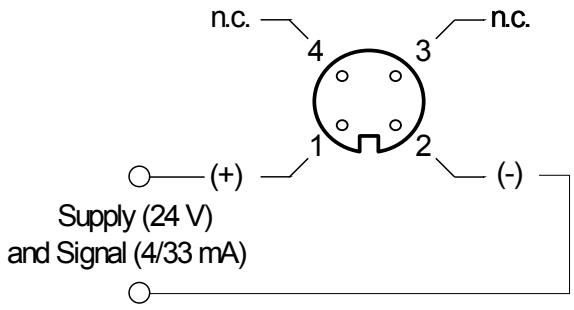
Switching output	
Type	Electrical 2-wire temperature switch, output signal 4 or 33 mA OFF: 4 mA ON: 33 mA
Switch point setting	range from -40 to +150 °C (factory settings, re-adjustable by customer by holding a magnet to the setting point)
Switching function	max. makers
Switching delay	0 s, optional 0...99,9 s
Output state indicator	green LED per switching output, 360° light
Supply	24 V DC -0V + 6 V DC
Switching cycles	> 10 millions
Switching accuracy	± 0.5 K; optional ± 0.1 K after calibration
Hysteresis	0.1 K (higher on request)

Functional description

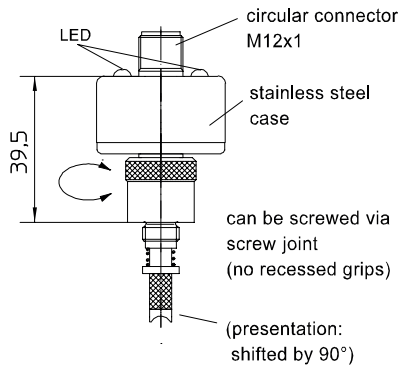
The device converts a temperature signal into a high/low information. Above the switch-point the device generates a current of 33 mA, below the switch-point of 4 mA. You can use a digital PLC input to convert the current into an on/off signal with an appropriate load resistor R_{Load} as shown below.

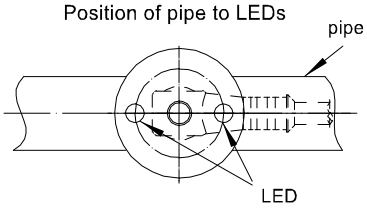


Connection diagram

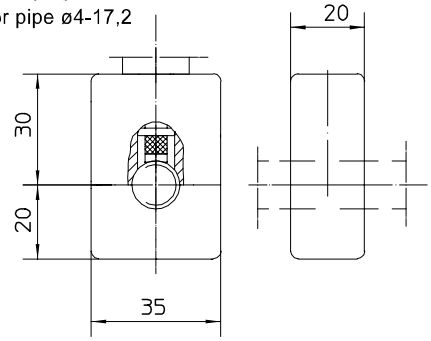


Dimensions

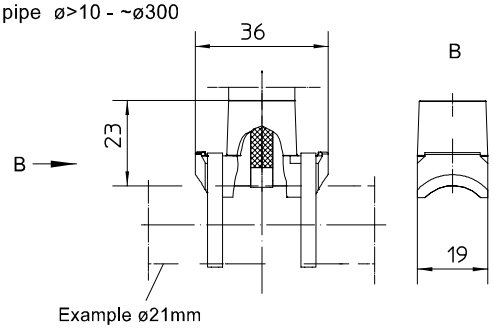




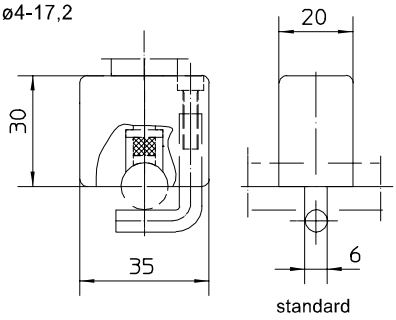
Clamping block
for pipe ø4-17,2



Clamping shoe
for pipe ø>10 - ~ø300



Clamping bracket
for pipe ø4-17,2



Order Details - please give additional specifications for models not listed -

Electrical 2-wire temperature switch Clamp-on technology						GP2610	
clamping elements	· clamping block installation						A4 . . .
	· clamping shoe installation with hose clamps for pipe Ø 10 mm or bigger						B5 . . .
	· clamping bracket installation	· clamping bracket standard					C3 . . .
		· clamping bracket flat					C4 . . .
pipe external diameter mm	pipe external diameter	collar size					
		50 x 35 x 20 **A4 . . .**	23 x 36 x 19 **B5 . . .**	30 x 35 x 20 **C3 . . .**			
	4	x	-	x			040
	6	x	-	x			060
	6.35	x	-	x			063
	8	x	-	x			080
	9.35	x	-	x			093
	10	x	x	x			100
	10.2	x	x	x			102
	10.3	x	x	x			103
	12	x	x	x			120
	12.7	x	x	x			127
	13	x	x	x			130
	13.5	x	x	x			135
	13.7	x	x	x			137
	14	x	x	x			140
	15.88	x	x	x			158
	16	x	x	x			160
	17.2	x	x	x			172
	different Ø 4.0 - 17.2	x	-	x			997
	18.0	-	x	-			180
	19.0	-	x	-			190
	19.05	-	x	-			195
	20.0	-	x	-			200
	21.3	-	x	-			213
	22.0	-	x	-			220
	23.0	-	x	-			230
	24.0	-	x	-			240
	25.0	-	x	-			250
	25.4	-	x	-			254
	26.7	-	x	-			267
	26.9	-	x	-			269
	28.0	-	x	-			280
	29.0	-	x	-			290
	30.0	-	x	-			300
	31.8	-	x	-			318
	32.0	-	x	-			320
	33.4	-	x	-			334
	33.7	-	x	-			337
	34.0	-	x	-			340
	35.0	-	x	-			350
	36.0	-	x	-			360
	38.0	-	x	-			380
	38.1	-	x	-			381
	41.0	-	x	-			410
	42.4	-	x	-			424
	44.5	-	x	-			445
	48.3	-	x	-			483
	50.8	-	x	-			508
	53.0	-	x	-			530
	54.0	-	x	-			540
	57.0	-	x	-			570
	different 10.0-300 mm	-	x	-			991
process temperature	· -40...+150 °C					M23	
	· as in writing					M99	
switching output	supply	· 24 V DC - 0 V + 6 V DC					
	switching functions	max. function	output signal	· OFF = 4 mA		F1 . . .	
				· ON = 33 mA			
	switch point setting	· 121 °C, standard				2	
		· factory settings in the range -40.0...150.0°C, as in writing				9	
	switching delay	· 0 s, standard				3	
		· upon request				9	
	hysteresis	· 0.1 K, standard				4	
		· upon request				9	
switching point accuracy	· ± 0.5 K, standard					G1	
	· ± 0.1 K					G2	
switch state indicator	green LED, 360° light	· LEDs off, switching status OFF				L10	
sensor break signal	· without					K1	
	· continuous flashing off the LEDs indicating: sensor break or short circuit					K2	
electrical connection	· circular connector M12x1 (4 pin). IP 67					T30	
additonal features (to be indicated in case of need, only)							
reverse voltage protection	· without						V2
order code (example):						GP2610	A4040 M23 F1234 G1 L10 K1 T30

LABOM Mess- und Regeltechnik GmbH · Im Gewerbepark 13 · 27798 Hude · Germany
Tel. +49 4408 804-0 · Fax +49 4408 804-100 · e-mail: info@labom.com · www.labom.com