

## Electronic temperature switch TC400 with LED-display

two switching outputs or  
with one switching and one analogue output



### Description

The temperature switch TC400 measures and displays temperature and has one or two switching outputs as well as an optional analogue output. The temperature set points, the reset points, the switching functions and the measuring range of the optional analogue output are easy to adjust via two buttons. All these features and the wide range of measuring ranges between  $-200$  and  $+600$  °C cover the majority of temperature measuring and switching tasks.

Different process connections, which are also available as adjustable screw connections, underline the variability of the TC400. For fast response times a version with tapered stem is also available.

All wetted parts as well as the housing are made of stainless steel. If used outdoors, we recommend the optional cap AZM90X101010.

### Features

- Compact dimensions
- Simple handling
- Short delivery times
- Service-friendly
- Customized solutions

### Temperatur ranges

- $-50$  to  $+125$  °C
- $-50$  to  $+200$  °C
- $0$  to  $+400$  °C
- $0$  to  $+600$  °C
- $-200$  to  $+600$  °C

### Applications

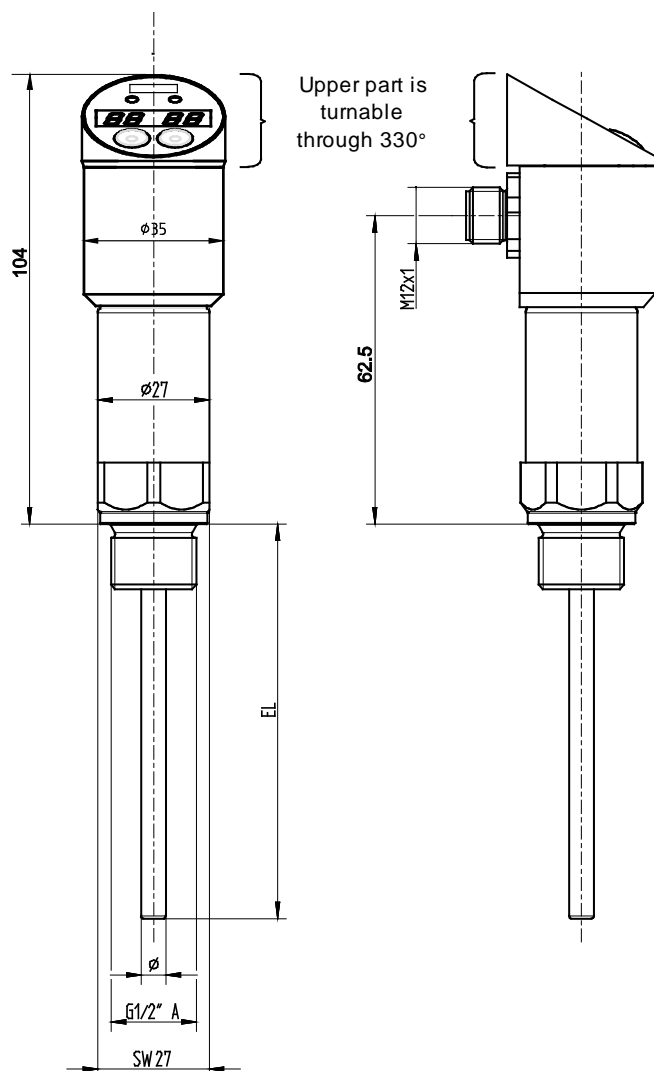
- Mechanical engineering
- Heating and cooling circuits
- Air conditioning technology
- Plant construction

**Model: S5400, S5410**

## Technical data

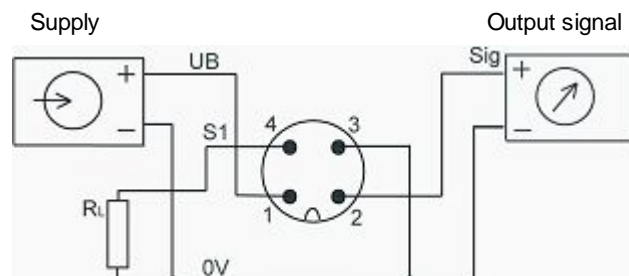
	<b>TC400</b>	
<b>Model No.</b>	<b>S5400</b> – PT100 2-wire with two switching outputs <b>S5410</b> – PT100 2-wire with one switching output and one analogue output	
<b>Temperature ranges</b>	-50 to +125 °C ( standard ) -50 to +200 °C 0 to +400 °C 0 to +600 °C -200 to +600 °C	
<b>Measurement units</b>	°C or F (selectable)	
<b>Sensor</b>	PT100 class B (standard) PT100 class A	
<b>Supply voltage</b>	12 ... 30 V DC, overload and reverse polarity protection ripple < 10%	
<b>Power consumption</b>	≤ 50 mA, without load current	
<b>Process connections</b> Fixed thread Compression fitting	G1/2 A, G1/4 A, G3/8 A, G3/4 A, 1/2NPT, 1/4NPT G1/2 A, G3/8 A, G1/4 A, 1/2NPT other connections on request	
<b>Materials</b> Process connection Housing	Stainless steel 1.4571 (316Ti); other materials or coatings on request Stainless steel, display unit: plastics	
<b>Stem and working pressure</b> Standard Optional  Fast response time version with tapered stem for up to 12 bar and temperature ≤ 400 °C	stem length (EL) ≥ 25 mm: EL ≥ 25 mm: EL ≥ 25mm:  EL = 25 mm: EL: 50 ... 100 mm: EL > 100 mm:	Ø6 x 0.75 mm (up to 40 bar) Ø8 x 1.75 mm (up to 100 bar) Special parts made of solid material (up to 500 bar)  Ø3 x 0.25 mm Ø6 x 0.25 mm with taper to Ø3 x 0.25 mm Ø8 x 1.75 mm with taper to Ø6 x 0.25 mm and taper to Ø3 x 0.25 mm
<b>Outputs</b>	2 switch outputs PNP or 1 switch output PNP and 1 x analogue output 4-20 mA	
<b>Switched outputs</b> Switching function Switching rating Adjustment - Set point - Reset point	adjustable normally closed (NC) or normally open (NO) contact 100 mA per switch output programmable via the display 0.1 ° steps within temperature range 0.1 ° steps from beginning temperature range until (set point – 0.1 °)	
<b>Analogue output</b> Signal Load resistance	4...20 mA programmable in 0.1 ° steps, span at least 20 % of the temp.-range Dependent on the supply voltage; the relevant formula is $R = \frac{U_{\text{Supply}} - 7 \text{ V}}{0.022 \text{ A}}$	
<b>Display</b>	4 digit 7-segment LED display, red, 7.6 mm high	
<b>Accuracy</b>	Switching output, analogue output and display: Accuracy of PT100 + 0.25 % of the temperature range	
<b>Reproducibility</b>	0.05 %	
<b>Electrical connection</b>	Round connector M12x1; 4-pin gold-plated contacts	
<b>Temperature ranges</b> Storage Ambient T <sub>K</sub>	-30 ... +80 °C -25 ... +70 °C 0.1 % of measuring range per 10 K	
<b>EMC to IEC / EN 61 326</b>	IEC 61000 / 4 / 2 ESD: B IEC 61000 / 4 / 3 HF radiated: A IEC 61000 / 4 / 4 Burst: A IEC 61000 / 4 / 5 Surge: A IEC 61000 / 4 / 6 HF mains borne: A	
<b>Protection class</b>	IP65 according to IEC 529	
<b>Weight</b>	Approx. 0.3 kg depending on stem	

## Dimension drawing

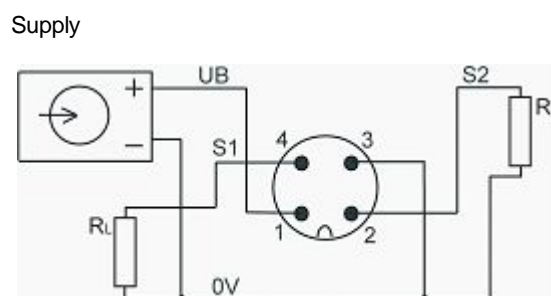


## Electrical connection

TC400 with one switching output and one analogue output



TC400 with two switching outputs

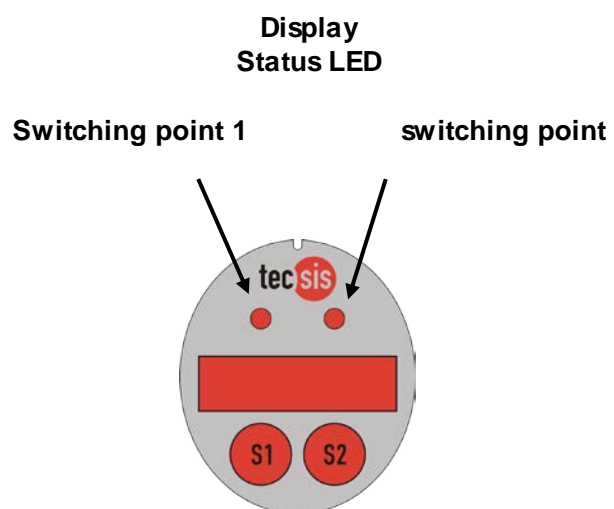


Signal	Plug	Colour cable (optional)
Supply: UB	1	Brown
Supply: 0V	3	Blue
Switching output 1	4	Black
Switching output 2 or analogue output	2	White

For media temperatures higher than 125 °C, we recommend a min. extension length of 50 mm or an adjustable screw connection. For the temperature range up to 400 °C the extension length is min. 50 mm and for the temperature range up to 600 °C the extension length is min. 100 mm.

## Programming

You will find a detailed programming description in the operating instructions, which are enclosed to each product.



Subject to technical alterations