

## Electronic temperature switch TC400 with LED-display

two switching outputs

or

with one programmable switching output and one programmable 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 simple to adjust via two buttons. All these features and the measuring range between  $-200$  and  $+600^{\circ}\text{C}$  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. The housing and the replaceable measuring insert are screwed together. This allows the exchange of the measuring insert without opening the connection to the process.

### Features

- compact dimensions
- simple handling
- cost-effective
- short delivery times
- service-friendly
- customized solutions

### Temperatur ranges

- $-50$  to  $+125^{\circ}\text{C}$
- $-50$  to  $+200^{\circ}\text{C}$
- $-0$  to  $+400^{\circ}\text{C}$
- $-0$  to  $+600^{\circ}\text{C}$
- $-200$  to  $+600^{\circ}\text{C}$

### Applications

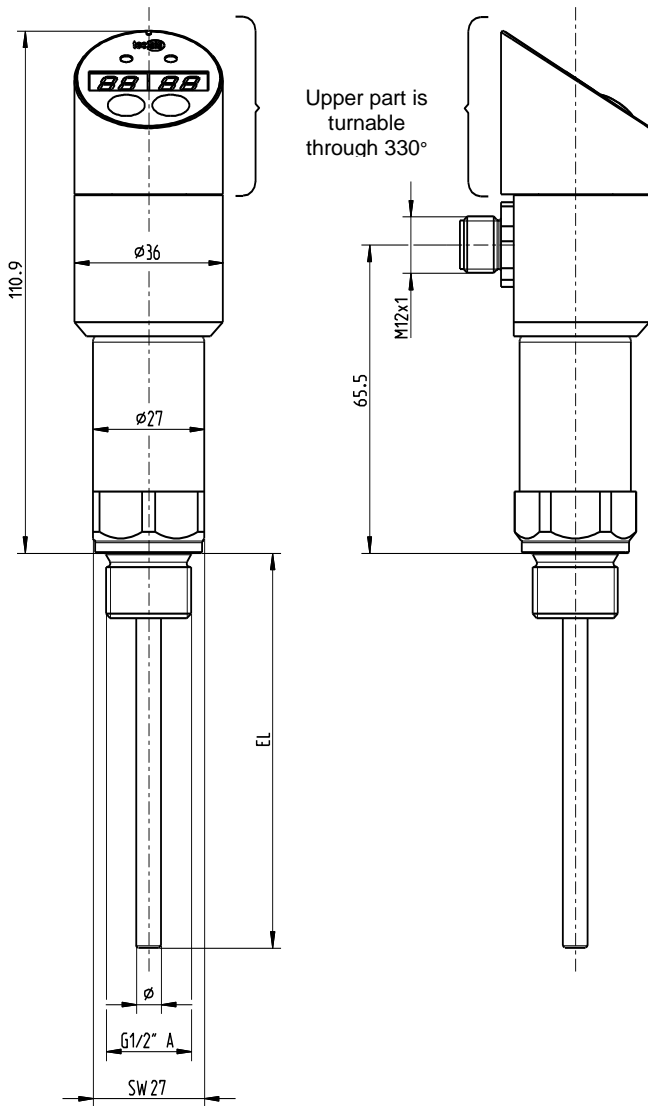
- mechanical engineering
- heating and cooling circuits
- air conditioning technology
- plant construction

Models: S5400, S5410

## Technical data

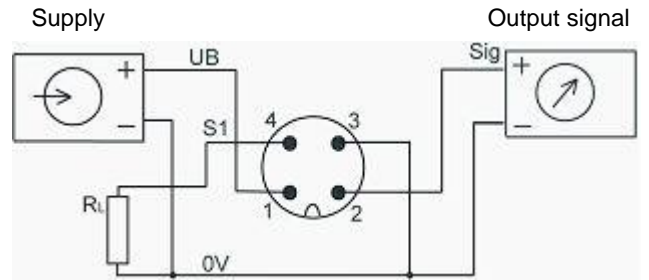
	<b>TC400</b>
<b>Model No.</b>	<b>S5400</b> – PT100 2-wire with two switch outputs <b>S5410</b> – PT100 2-wire with one switch output and one analogue output
<b>Temperature ranges</b>	-50 to +125°C ( standard ) -50 to +200°C -0 to +400°C -0 to +600°C -200 to +600°C
<b>Measurement units</b>	°C or F (selectable)
<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>	≤ 50mA, 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 cover plastic
<b>Stem and working pressure</b> Standard Optional  Fast response time version with tapered stem for up to 12bar	from stem length (EL) 50mm: Ø6 x 0.75mm (up to 40bar) from EL 50mm: Ø8 x 1.75mm (up to 100bar) from EL 50mm: Special parts made of solid material (up to 500bar) EL 25mm: Ø3 x 0.25mm EL up to 100mm: Ø6 x 0.25mm with taper to Ø3 x 0.25mm from EL 100mm: Ø8 x 1.75mm with taper to Ø6 x 0.25mm with taper to Ø3 x 0.25mm
<b>Outputs</b>	2 switch outputs PNP or 1 switch output PNP and 1 x analogue output 4-20mA:
<b>Switched outputs</b> Switching function Switching rating Adjustment - Set point - Reset point	adjustable normally closed (NC) or normally open (NO) contact 100mA 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...20mA 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, 7.6mm high
<b>Accuracy</b>	Switching output, analogue output and display: Accuracy of PT100 + 0.1% 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 10K
<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. 0.3kg depending on stem

## Dimension drawing:

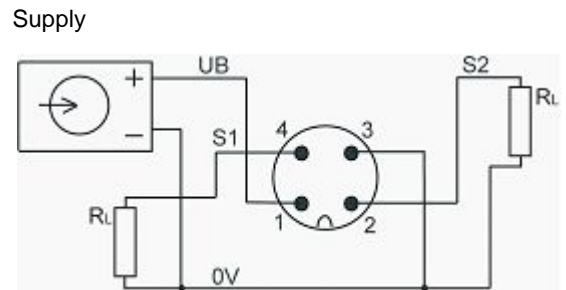


## Electrical connection

TC400 with one switching output and one analogue output



TC400 with two switching outputs

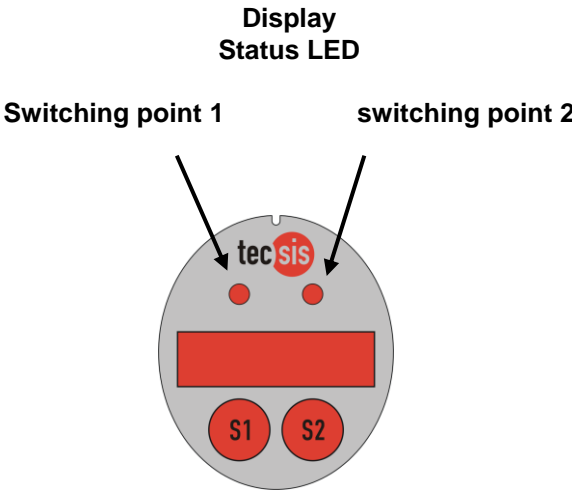


Signal	Plug	Colour cable (optional)
Supply: UB	1	Brown
Supply: 0V	3	Blue
Switching output 1	4	Black
Switching output 2 or analogue output	2	White

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

# Programming

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



Subject to technical alterations