

## SC400 / SC410 / SC420

### Electronic pressure switch with a four digit LED display

**SC400 - with two switching outputs**

**SC410 - with one switching output and an analogue output (4...20mA oder 0...10V)**

**SC420 - with two switching outputs and an analogue output (4...20mA)**



### Description

The pressure switches SC400/SC410/SC420 with display provides continuous pressure monitoring and allows the configuration of the set points without pressurising. It is easy to configure the switching point and reset point without pressurising, or to configure the type of contact (NO/NC), damping, delay and n-/p-switching. In addition, authorised personnel can quickly and easily access the user menu to alter the switching points. In series S2410 and S2420 the analogue signal can be scaled from 20% of the span up. Switching currents from a few  $\mu\text{A}$  up to 500mA can be switched by the output transistors.

By the use of time tested ceramic or thin film sensors, this pressure switch features a high level of repeatability and durability, even in the case of a high number of pressure cycles. The turnable display and optional the turnable process connection allows the usage of this pressure switch even under difficult installation conditions.

The high-quality stainless steel housing qualifies the SC400/SC410/SC420 also for the usage under adverse conditions. For the higher pressure ranges all wetted parts are made of stainless steel, therefore working with almost every media. The SC400/SC410/SC420 are multifunctional applicable for measurement tasks within hydraulic and pneumatic applications.

### Features

- Adjustment ranges from -1 up to 700 bar
- Sensing element ceramic or thin-film
- Repeatability 0.2 %
- Switching points, reset points and switching function (NO/NC) and switching output (pnp/npn) configurable
- Configurable analogue output
- Integrated password protection
- Attenuation of the output signals, up to 2000 ms (option)
- Delay of the switching outputs, up to 99.9 s (option)
- Min/Max-memory (option)

### Applications

- Hydraulic power unit
- Mechanical engineering
- Vacuum technology
- Filter monitoring

Sensor element	Adjustment range (bar)	Overload limit (bar)	Burst pressure (bar)
Ceramic cell	-1...2	5	6
	-1...3	5	6
	-1...5	10	12
	-1...10	20	25
	0...2	5	6
	0...5	10	12
	0...10	20	25
	0...20	40	50
Thin film cell	0...50	100	120
	0...100	200	800
	0...160	320	1.000
	0...250	500	1.200
	0...400	800	1.700
	0...600	1200	2.400
	0...700	1200	2.400

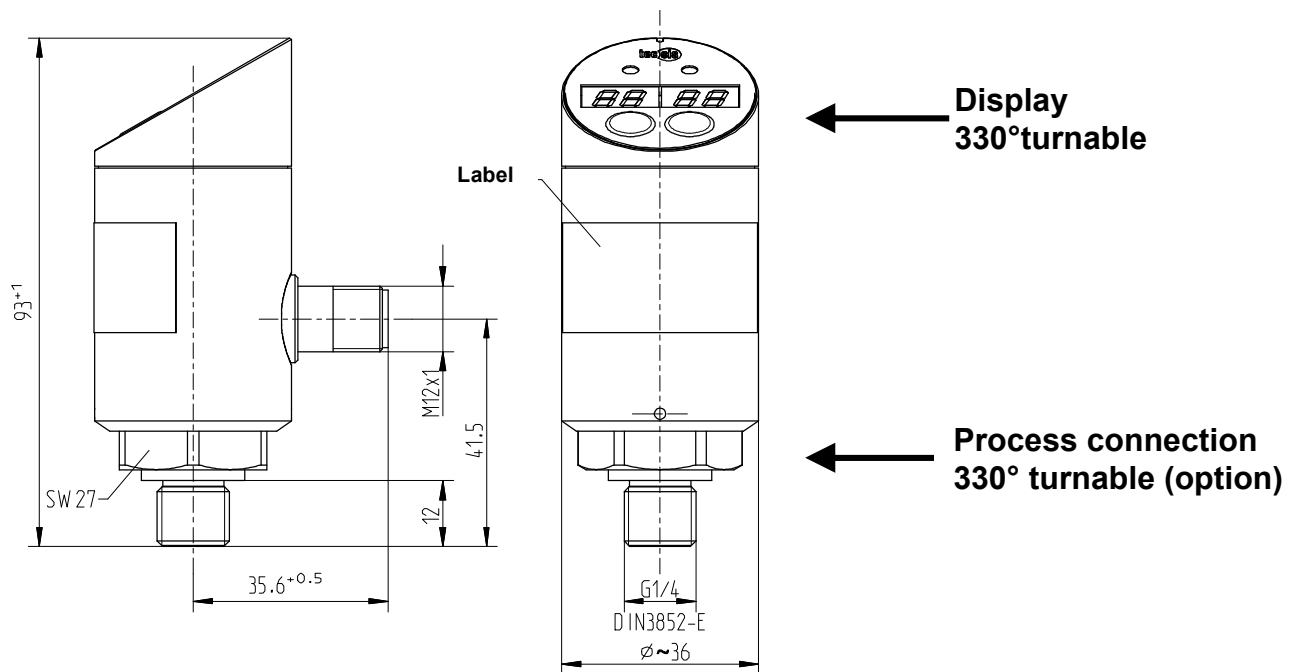
Model: S2400, S2410, S2420

## Technical data

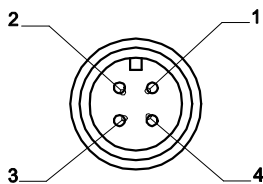
	SC400	SC410	SC420
<b>Model No.</b>	S2400 – two switching outputs	S2410 – one switching output and an analogue output	S2420 – two switching output and an analogue output
<b>Version</b> Pressure type Pressure resistance (neg.)	gauge pressure, positive or negative all switches are resistant down to -1bar negative gauge pressure		
<b>Units</b>	bar or psi		
<b>Process connection</b> Standard Option	G1/4 DIN 3852-E G1/4 I, 1/4NPT, others on request		
<b>Materials</b> Measuring element Pressure connection Housing	100 bar and more stainless steel, up to 50 bar ceramic with NBR -O-ring stainless steel stainless steel, top with display of plastic		
<b>Load cycles</b>	> 10 M. pressure cycles		
<b>Supply voltage</b>	12... 30 VDC, reverse polarity protected and overload-proof, ripple < 10%		
<b>Power consumption</b>	≤ 25 mA, without load current		
<b>Outputs</b>	configurable via the display		
<b>Switching outputs</b> Number  Switching function Damping ( option ) Delay ( option ) Power rating  Adjustment - set point - reset point  Response time	model S2400 two switching outputs	model S2410 one switching output and an analogue output	model S2420 two switching output and an analogue output
	normally close (NC) or normally open (NO) 0...2,000 ms 0...99.99 s max. 0.5 A p- or n-switching   n-switching		
	1 ... 100% of span 0 ... 99% of span		
	≤ 6 ms		
<b>Analogue output</b> - Standard - Option - Scaling Load resistance  Hysteresis		4...20 mA; 3-wire 0...10 V; 3-wire 20...100 % of span Current output: $R < (U_b - 8) / I_{max}$ Current output: 0...10V min 10kOhm 0,3 % of span for ceramic cell 0,2 % of span for thin film cell	on request   on request
<b>Display</b>	7-segments-LED-Display, red, 7.6 mm high 4-digits (-999... 9999)		
<b>Accuracy*</b>	1% of span ± 1 Digit		
<b>Repeatability</b>	0.2 % of span		
<b>Temperature ranges</b> Storage Media Ambient T <sub>k</sub>	-30... + 80 °C -20... + 80 °C -20... + 70 °C 0.3 % per 10 K		
<b>Electrical connection</b>	round connector M 12x1; 4-pin		M 12x1; 5-pin
<b>Protection class</b>	IP 65 according to IEC 529		
<b>CE-sign</b>	emission and interference according to EN 61 326, declaration of conformity on request		
<b>Electrical protection</b>	reverse polarity and over voltage protection		
<b>Loading capacity</b> Shock (mechanical) Vibration (under resonance)	50 g according to IEC 60068-2-27 10 g according to IEC 60068-2-6		
<b>Weight</b>	approx. 0.3 kg		

\* Accuracy including hysteresis, non-repeatability, zero point- and final value deviation

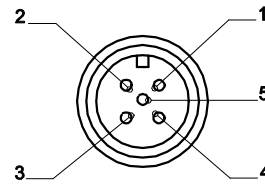
## Dimensions



## Electrical connection



Round connector M 12 x 1 (4-pin)



Round connector M 12 x 1 (5-pin)

Signal	Pin
Supply: UB	1
Supply: 0V	3
Switching output: S 1	4
Switching output: S 2 or analogue output	2
S+ (4...20 mA)	5

Colour of optional wires
Brown
Blue
Black
White
Grey

We recommend our accessories:

### M12x1 cable socket, 4-pin with 2m wire

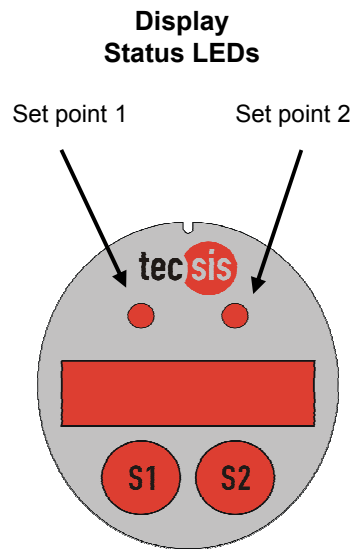
- Straight version, order no.: EZE53X011010
- Angled version, order no.: EZE53X011011

### M12x1 cable socket, 5-pin with 2m wire

- Angled version, order no.: EZE53X011045

The operating instructions attached to the device contain connection examples.

## Configuration



### **Switching on:**

On power on the switch performs an initialisation routine. The display and the status LEDs are switched on. The nominal pressure is displayed for a short time. During this routine the outputs are not active.

### **Operating mode:**

After this initialisation the switch is in normal operation mode. The pressure is displayed, the switching outputs are active and the LEDs display the status.

### **Functioning of keys S1 and S2:**

#### **Simultaneous pressing of keys S1 and S2**

- < 3 sec. - Brief pressing of keys S1+S2 takes you into the user menu.  
The switching points can be altered here.
- > 3 sec. - Sustained pressing of keys S1+S2 takes you into the set-up menu.  
The device can be configured here.

#### **Pressing the S1 key in the menu**

- The separate menu items are stepped through here
- The settings are changed

#### **Pressing the S2 key in the menu**

- You enter the menu item
- Entries are confirmed – Return to the menu item

### **Adjusting the switching points:**

By briefly pressing S1 or S2 the programmed switching points are displayed. For this time the status LEDs are flashing.

A longer push (press the button until the display shows “Stor”) sets the switching point to the actual pressure. The hysteresis (span) remains unchanged. You need to confirm the new switching point (S2, S1, S2).

A detailed explanation of configuration is part of the operating instructions, which is attached to every device.

Subject to technical alterations