

# Electronic Pressure Switches



- Ceramic sensor with thick film technology for high accuracy (0.5 % full scale)
- Electronic evaluation of switching point permits extremely small or very large hysteresis settings
- Switching point easily set by the user



## Technical data for electronic pressure switches

|                               | 0520   | 0570   |
|-------------------------------|--|--|
| Switching function:           | Normally open / normally closed  | Normally open / normally closed programmable, time-delayed switching, zero-resetting, peak-value memory (within setting range), switching-pointcounter |
| Hysteresis:                   | 2 – 95 % programmable at our works (max. tolerance $\pm 1.0$ % full scale)   | 1 – 99 % programmable using key-pad  |
| Adjustment:                   | Switching point can be set on site by the customer using a screwdriver via setting potentiometer when operating voltage is applied | Programmable using key-pad on front face   |
| Outputs:                      | Transistor output (1.4 A / PNP)  | 2 Transistor outputs (each 1.4 A / PNP)<br>1 analogue output (4–20 mA)   |
| Indication of circuit status: | —  | By 2 LEDs (yellow)   |
| Time-delayed switching:       | —  | Adjustable 0 – 3.0 s   |
| Pressure display:             | —  | Current pressure can be shown in bar or PSI on 3-digit LED-display (red)   |
| Materials:                    | Zinc-plated steel body (CrVI-free)   | Medium-contact parts anodised aluminium, body is zinc die-casting  |
| Access coding:                | —  | The switch can have a number code between 1 and 999  |
| Supply voltage:               | 18 – 36 VDC  | 12 – 30 VDC  |
| Degree of protection:         | IP65   |  |
| Switching time:               | < 4 ms   |  |
| Accuracy:                     | $\pm 0.5$ % (full scale at room temperature)   |  |
| Temperature range:            | NBR, EPDM: -20 °C – +80 °C; FKM: -5 °C – +80 °C  |  |
| Temperature compensation:     | -20 °C – +80 °C, error = 1.5 % overall   |  |
| Temperature drift:            | $\pm 0.2$ % / 10 K   |  |
| Life expectancy:              | 5 x 10 <sup>6</sup> cycles   |  |
| Pressure rise rate:           | $\leq 1$ bar/ms  |  |
| Vibration resistance:         | 10 g at 5 – 2000 Hz sine-wave  |  |
| Shock resistance:             | 294 m/s <sup>2</sup> , 14 ms half-sine-wave to DIN 40046   |  |
| EMC:                          | To EN 50081-1, EN 50081-2, EN 50082-2  |  |

### CE Marking

Directives of the European Council

**Machinery Directive**  
**EMC Directive**  
**Low Voltage Directive**

*Equipment that falls under these directives must have a declaration of conformity and carry the CE marking.*

*SUCO electronic switches comply with the EMC Directive 89/336/EC.*

*An EC Declaration of Conformity has been prepared for all products that fall under these directives and is kept on our premises. The catalogue pages for the relevant switches carry the CE marking.*

# 0520

## Electronic pressure switches

- Zinc-plated steel body (CrVI-free)
- Ceramic sensor with thick film technology
- Supply voltage 18 – 36 VDC
- Overpressure safe to 20/150/500 bar<sup>1)</sup>
- Hysteresis programmable in our works from 2 – 95%



With female thread



- Also available with switching point preset in our works.

| no / nc |       |
|---------|-------|
| ○ 1     | (+)   |
| ○ 2     | (GND) |
| ○ 3     | (OUT) |

- For further technical data, see page 51

- Simple, mechanical adjustment of switching point

### 0520 Electronic pressure switches

| Adjustment range in bar | Hysteresis <sup>2)</sup> in bar | Thread         | P <sub>max.</sub> in bar | Burst pressure in bar | Normally open (no) → : | Normally closed (nc) →: |
|-------------------------|---------------------------------|----------------|--------------------------|-----------------------|------------------------|-------------------------|
| 0 – 10                  | 0.5                             | G 1/4 internal | 20 <sup>1)</sup>         | 25                    | 0520 470 14 001        | 0520 471 14 001         |
| 0 – 100                 | 5                               |                | 150 <sup>1)</sup>        | 175                   | 0520 472 14 001        | 0520 473 14 001         |
| 0 – 250                 | 10                              |                | 500 <sup>1)</sup>        | 600                   | 0520 474 14 001        | 0520 475 14 001         |

**Order number**  
**Add figure for diaphragm/seal material**      0520 XXX XX **X** XXX    0520 XXX XX **X** XXX

|             |   |     |     |
|-------------|---|-----|-----|
| <b>NBR</b>  | Hydraulic / machine oil, turpentine, heating oil, air etc.  | = 1 | = 1 |
| <b>EPDM</b> | Brake fluid, ozone, acetylene, hydrogen etc.                | = 2 | = 2 |
| <b>FKM</b>  | Hydraulic fluids (HFA, HFB, HFC, HFD), petrol/gasoline etc. | = 3 | = 3 |

See page 51 for temperature ranges of diaphragm / seal materials

### Warning!

When using with oxygen, the relevant accident-prevention regulations must be observed. In addition, we recommend that a maximum operating pressure of 10 bar is not exceeded.

<sup>1)</sup> Static pressure, dynamic pressures should be 30 to 50% lower. These values refer to the hydraulic or pneumatic part of the pressure switch.

<sup>2)</sup> Factory set, if no special customer request.

### Degree of protection IP65

The type approval does not apply without restriction to all environmental conditions. It is the responsibility of the user to check whether the connection complies with regulations other than those stated, and whether it can be used for special applications which could not be foreseen by us in advance.

# 0570

## Electronic pressure switches

Aluminium and zinc die-cast body  
 Ceramic sensor with thick film technology  
 Supply voltage 12 – 30 VDC  
 Overpressure safe to 20/150/600 bar<sup>1)</sup>  
 Programmable using key-pad on front face

- Time delayed switching (adjustable 0 – 3 s)
- Peak-value memory (within setting range)
- Coding to prevent tampering

### 0570 Electronic pressure switches

| Adjustment range in bar | Thread         | p <sub>max.</sub> in bar | Burst pressure in bar | Order number    |
|-------------------------|----------------|--------------------------|-----------------------|-----------------|
| 0 – 10                  | G 1/4 internal | 20 <sup>1)</sup>         | 25                    | 0570 467 14 001 |
| 0 – 100                 |                | 150 <sup>1)</sup>        | 175                   | 0570 468 14 001 |
| 0 – 400                 |                | 600 <sup>1)</sup>        | 700                   | 0570 469 14 001 |

**Order number**  
 Add figure for diaphragm/seal material

0570 XXX XX **X** XXX

|   |   |   |          |
|---|---|---|----------|
| <b>NBR</b>  | Hydraulic / machine oil, turpentine, heating oil, air etc.  | = | <b>1</b> |
| <b>EPDM</b>   | Brake fluid, ozone, acetylene, hydrogen etc.                | = | <b>2</b> |
| <b>FKM</b>  | Hydraulic fluids (HFA, HFB, HFC, HFD), petrol/gasoline etc. | = | <b>3</b> |
| <b>See page 51 for temperature ranges of diaphragm / seal materials</b> |   |   |          |

### Warning!

When using with oxygen, the relevant accident-prevention regulations must be observed. In addition, we recommend that a maximum operating pressure of 10 bar is not exceeded.

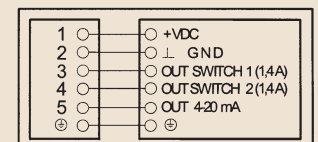
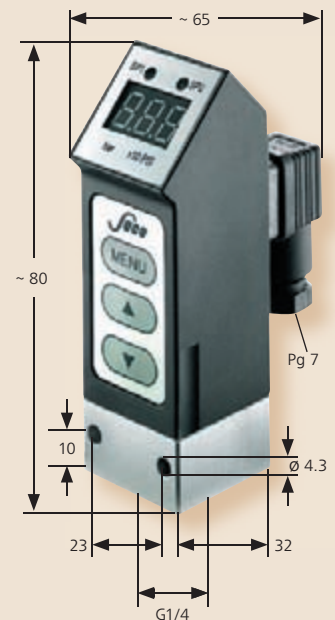
<sup>1)</sup> Static pressure, dynamic pressures should be 30 to 50% lower. These values refer to the hydraulic or pneumatic part of the pressure switch.

### Degree of protection IP65

The type approval does not apply without restriction to all environmental conditions. It is the responsibility of the user to check whether the connection complies with regulations other than those stated, and whether it can be used for special applications which could not be foreseen by us in advance.



With female thread



# Electrical Data

| Rated operating voltage $U_e$                    | Rated operating current $I_e$    | Utilisation category | Model ranges:  |
|--|----------------------------------|----------------------|--|
| 250 volt AC 50 / 60 Hz                           | 4 amp (2 amp)*                   | AC 12                | <p><b>0140</b></p> <p><b>0141</b></p> <p><b>0180</b></p> <p><b>0181</b></p> <p><b>0183</b></p> <p><b>0184</b></p> <p><b>0185</b></p> <p><b>0186</b></p> <p><b>0187</b></p> <p>* Figures in brackets apply to types 0140 and 0141</p> |
| 250 volt AC 50 / 60 Hz                           | 1 amp                            | AC 14                |  |
| 24 volt DC                                       | 4 / 2 amp (2 / 1 amp)*           | DC 12 / DC 13        |  |
| 50 volt DC                                       | 2 / 1 amp (1 / 0.5 amp)*         | DC 12 / DC 13        |  |
| 75 volt DC                                       | 1 / 0.5 amp (0.5 / 0.25 amp)*    | DC 12 / DC 13        |  |
| 125 volt DC                                      | 0.3 / 0.2 amp (0.2 / 0.1 amp)*   | DC 12 / DC 13        |  |
| 250 volt DC                                      | 0.25 / 0.2 amp (0.15 / 0.1 amp)* | DC 12 / DC 13        |  |
| Rated insulation voltage $U_i$ :                 | 300 volt                         |                      |  |
| Rated surge capacity $U_{imp}$ :                 | 2.5 kV (4 kV)*                   |                      |  |
| Rated thermal current $I_{the}$ :                | 5 amp                            |                      |  |
| Switching overvoltage:                           | < 2.5 kV                         |                      |  |
| Rated frequency:                                 | DC und 50 / 60 Hz                |                      |  |
| Rated current of short-circuit protection:       | Up to 5 amp (up to 3.5 amp)*     |                      |  |
| Conditional short-circuit current:               | < 350 amp                        |                      |  |
| IP degree of protection to EN60529:1991+A1:1999: | IP65 with plug                   |                      |  |
| Tightening torque of terminal screws:            | < 0.35 Nm                        |                      |  |
| Conductor cross-section:                         | 0.5 – 1.5 mm <sup>2</sup>        |                      |  |
| Rated operating voltage $U_e$                    | Rated operating current $I_e$    | Utilisation category | Model ranges:  |
| 250 volt AC 50 / 60 Hz                           | 5 amp                            | AC 12                | <p><b>0150</b></p> <p><b>0161</b></p> <p><b>0162</b></p> <p><b>0175</b></p>  |
| 250 volt AC 50 / 60 Hz                           | 1 amp                            | AC 14                |  |
| 30 volt DC                                       | 3.5 / 3.5 amp                    | DC 12 / DC 13        |  |
| 50 volt DC                                       | 2 / 1 amp                        | DC 12 / DC 13        |  |
| 75 volt DC                                       | 1 / 0.5 amp                      | DC 12 / DC 13        |  |
| 125 volt DC                                      | 0.3 / 0.2 amp                    | DC 12 / DC 13        |  |
| 250 volt DC                                      | 0.35 / 0.2 amp                   | DC 12 / DC 13        |  |
| Rated insulation voltage $U_i$ :                 | 300 volt                         |                      |  |
| Rated surge capacity $U_{imp}$ :                 | 2.5 kV                           |                      |  |
| Rated thermal current $I_{the}$ :                | 6 amp                            |                      |  |
| Switching overvoltage:                           | < 2.5 kV                         |                      |  |
| Rated frequency:                                 | DC and 50 / 60 Hz                |                      |  |
| Rated current of short-circuit protection:       | Up to 6.3 amp                    |                      |  |
| Conditional short-circuit current:               | < 350 amp                        |                      |  |
| IP degree of protection to EN60529:1991+A1:1999: | IP65 with plug                   |                      |  |
| Tightening torque of terminal screws:            | < 0.35 Nm                        |                      |  |
| Conductor cross-section:                         | 0.5 – 1.5 mm <sup>2</sup>        |                      |  |
| Rated operating voltage $U_e$                    | Rated operating current $I_e$    | Utilisation category | Model ranges:  |
| 250 volt AC 50 / 60 Hz                           | 2.5 amp                          | AC 12                | <p><b>0159</b></p>   |
| 250 volt AC 50 / 60 Hz                           | 1 amp                            | AC 14                |  |
| 30 volt DC                                       | 2 / 2 amp                        | DC 12 / DC 13        |  |
| 50 volt DC                                       | 1 / 0.5 amp                      | DC 12 / DC 13        |  |
| 75 volt DC                                       | 0.75 / 0.4 amp                   | DC 12 / DC 13        |  |
| 125 volt DC                                      | 0.3 / 0.2 amp                    | DC 12 / DC 13        |  |
| 250 volt DC                                      | 0.3 / 0.2 amp                    | DC 12 / DC 13        |  |
| Rated insulation voltage $U_i$ :                 | 300 volt                         |                      |  |
| Rated surge capacity $U_{imp}$ :                 | 2.5 kV                           |                      |  |
| Rated thermal current $I_{the}$ :                | 6 amp                            |                      |  |
| Switching overvoltage:                           | < 2.5 kV                         |                      |  |
| Rated frequency:                                 | DC and 50 / 60 Hz                |                      |  |
| Rated current of short-circuit protection:       | Up to 2.5 amp                    |                      |  |
| Conditional short-circuit current:               | < 350 amp                        |                      |  |
| IP degree of protection to EN60529:1991+A1:1999: | IP65 with plug                   |                      |  |
| Tightening torque of terminal screws:            | < 0.5 Nm                         |                      |  |
| Conductor cross-section:                         | 0.5 – 1.5 mm <sup>2</sup>        |                      |  |

|  |
|--|
| The utilisation category describes among other things the voltages and currents and the way of load for our pressure switches according DIN EN 60947-5-1 |
| AC 12 : Drive of resistive loads and semiconductor input circuits of optoelectronic couplers (e.g. PLC inputs)   |
| AC 14 : Drive of electromagnetic loads up to 72 VA   |
| DC 12 : Drive of resistive loads and semiconductor input circuits of optoelectronic couplers (e.g. PLC inputs)   |
| DC 13 : Drive of electromagnet   |

## Utilisation category