

# Pressure switches 30 A/F

Changeover with silver contacts



- Attachment options for wall fitting and block style enable clearly structured, accessible, easy-maintenance installation
- Switching pressure can be adjusted easily by user
- High overpressure safety
- Socket devices enable simple installation on the machine

# Pressure switches 30 A/F

## Technical details

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|                                              |                                                                                                                             |                                          |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Temperature resistance of sealing materials: | NBR (diaphragm pressure switch)                                                                                             | -40 °C ... +100 °C                       |
|                                              | NBR (piston pressure switch)                                                                                                | -30 °C ... +100 °C                       |
|                                              | EPDM                                                                                                                        | -30 °C ... +120 °C                       |
|                                              | FKM (diaphragm pressure switch)                                                                                             | -5 °C ... +120 °C                        |
|                                              | FKM (piston pressure switch)                                                                                                | -15 °C ... +120 °C                       |
| Switching frequency:                         | 200 / min                                                                                                                   |                                          |
| Mechanical life expectancy:                  | 1,000,000 cycles (for diaphragm pressure switches, life expectancy value only applies for switching pressures up to 50 bar) |                                          |
| Pressure rise rate:                          | ≤ 1,000 bar / s                                                                                                             |                                          |
| Hysteresis:                                  | Type 0159:                                                                                                                  | approx. 10 ... 30 % (not adjustable)     |
|                                              | Types 0161, 0162, 0175:                                                                                                     | approx. 10 ... 30 % (factory adjustable) |
| Vibration resistance:                        | 10 g; 5 ... 200 Hz sine wave; DIN EN 60068-2-6                                                                              |                                          |
| Shock resistance:                            | 294 m/s <sup>2</sup> ; 14 ms half sine wave; DIN EN 60068-2-27                                                              |                                          |
| Housing material:                            | Aluminium                                                                                                                   |                                          |
| Protection class:                            | IP65 with Socket device fitted, otherwise IP00                                                                              |                                          |
| Weight                                       | Types 0159, 0161, 0162:                                                                                                     | approx. 240 g                            |
|                                              | Type 0175:                                                                                                                  | approx. 310 g                            |

| Electrical values                           | 0159                          | 0161 / 0162 / 0175 |
|---------------------------------------------|-------------------------------|--------------------|
| Rated working voltage $U_e$ :               | Rated working current $I_e$ : |                    |
| 250 V AC 50 / 60 Hz, AC 12                  | 2.5 A                         | 5 A                |
| 250 V AC 50 / 60 Hz, AC 14                  | 1 A                           | 1 A                |
| 24 V DC, DC 12 / DC 13                      | 2 / 2 A                       | 3.5 / 3.5 A        |
| 50 V DC, DC 12 / DC 13                      | 1 / 0.5 A                     | 2 / 1 A            |
| 75 V DC, DC 12 / DC 13                      | 0.75 / 0.4 A                  | 1 / 0.5 A          |
| 125 V DC, DC 12 / DC 13                     | 0.3 / 0.2 A                   | 0.3 / 0.2 A        |
| 250 V DC, DC 12 / DC 13                     | 0.3 / 0.2 A                   | 0.25 / 0.2 A       |
| Rated insulation voltage $U_i$ :            | 300 V                         |                    |
| Rated impulse withstand voltage $U_{imp}$ : | 2.5 kV                        |                    |
| Conventional thermal current $I_{the}$ :    | 6 A                           |                    |
| Switching overvoltage:                      | < 2.5 kV                      |                    |
| Rated frequency:                            | DC and 50 / 60 Hz             |                    |
| Nominal current of short-circuit mechanism: | to 2.5 A                      | to 6.3 A           |
| Conditional short-circuit current:          | < 350 A                       |                    |
| Tightening torque of terminal screws:       | < 0.35 Nm                     |                    |
| Connector cross-section:                    | 0.5 - 1.5 mm <sup>2</sup>     |                    |



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# 0161 / 0162

## Diaphragm / piston pressure switch up to 250 V

- Aluminium housing
- Changeover with silver contacts
- Overpressure safety up to 200 / 600 bar<sup>1)</sup>
- Socket device similar to DIN EN 175301 (DIN 43650)
- Hysteresis adjustable at factory

| $p_{max}$<br>in bar | Adjustment<br>range in bar | Tolerance at room<br>temperature in bar | Dimension A<br>in mm | Article number |
|---------------------|----------------------------|-----------------------------------------|----------------------|----------------|
|---------------------|----------------------------|-----------------------------------------|----------------------|----------------|

### With female G 1/4 thread

#### 0161 Diaphragm pressure switches

|                   |          |             |    |                         |
|-------------------|----------|-------------|----|-------------------------|
| 200 <sup>1)</sup> | 0.5 – 1  | ± 0.2       | 15 | 0161 - 436 14 - X - 001 |
|                   | 0.5 – 5  | ± 0.2 – 0.5 |    | 0161 - 437 14 - X - 001 |
|                   | 1 – 10   | ± 0.5       |    | 0161 - 438 14 - X - 001 |
|                   | 10 – 50  | ± 1.0       |    | 0161 - 439 14 - X - 001 |
|                   | 50 – 100 | ± 3.0 – 5.0 |    | 0161 - 440 14 - X - 001 |

#### 0161 Piston pressure switches

|                   |           |             |  |                         |
|-------------------|-----------|-------------|--|-------------------------|
| 600 <sup>1)</sup> | 100 - 400 | ± 5.0 - 9.0 |  | 0161 - 441 14 - X - 001 |
|-------------------|-----------|-------------|--|-------------------------|

### Block style (with O-ring NBR 5 x 1.5 mm)

#### 0162 Diaphragm pressure switches

|                   |          |             |    |                         |
|-------------------|----------|-------------|----|-------------------------|
| 200 <sup>1)</sup> | 0.5 – 1  | ± 0.2       | 15 | 0162 - 436 14 - X - 001 |
|                   | 0.5 – 5  | ± 0.2 – 0.5 |    | 0162 - 437 14 - X - 001 |
|                   | 1 – 10   | ± 0.5       |    | 0162 - 438 14 - X - 001 |
|                   | 10 – 50  | ± 3.0       |    | 0162 - 439 14 - X - 001 |
|                   | 50 – 100 | ± 3.0 – 5.0 |    | 0162 - 440 14 - X - 001 |

#### 0162 Piston pressure switches

|                   |           |             |      |                         |
|-------------------|-----------|-------------|------|-------------------------|
| 600 <sup>1)</sup> | 100 - 400 | ± 5.0 - 9.0 | 19.5 | 0162 - 441 14 - X - 001 |
|-------------------|-----------|-------------|------|-------------------------|

### Seal material – Application areas

|      |                                                         |   |
|------|---------------------------------------------------------|---|
| NBR  | Hydraulic/machine oil, air, nitrogen, etc.              | 1 |
| EPDM | Brake fluid, water, hydrogen, oxygen, acetylene, etc.   | 2 |
| FKM  | Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc. | 3 |

Refer to page 75 for the temperature range and application thresholds of sealing materials.

Article number: 016X - XXX 14 - X - 001

### 1 Adjusting the set point

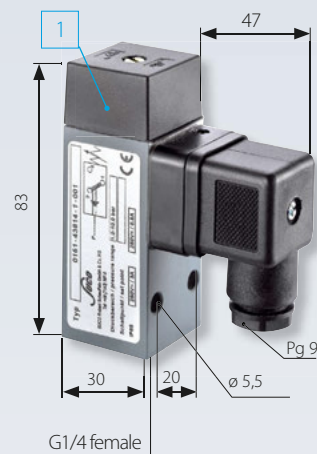
To adjust the set point, undo the locknut and adjust the set screw M16 using a screwdriver. Clockwise screwing increases the switching pressure. After adjusting, tighten the locknut again.

<sup>1)</sup> Static value. Dynamic value is 30-50 % lower. Values pertain to the hydraulic/pneumatic part of the pressure switch.

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### 0161 with female thread



### 0162 Block style

