



Electronic Pressure Switch EDS 300

Description:

The EDS 300 is a compact electronic pressure switch with digital display. Four different output models are available: with one switching point, with two switching points and both models can also have an additional analogue output signal 4 .. 20 mA.

The switching points and the corresponding hystereses can be adjusted via keys. For optimum adaptation to a particular application, the unit has many additional adjustment parameters, e.g. switching delay times, N/O / N/C function of the outputs.

The main applications of the EDS 300 are pressure and limit indication in hydraulics and pneumatics and anywhere where a high switching frequency or a constant switching accuracy places too high a demand on a mechanical pressure switch. The unit is ideal for the construction of accumulator charging circuits or pump and compressor controls.

Special features:

- Integrated pressure sensor with thin-film strain gauge on stainless steel membrane
- Compact, robust construction
- Accuracy $\leq \pm 1\%$ FS
- 3-digit digital display
- User-friendly due to key programming
- Switching points and switch-back hystereses can be adjusted independently
- Window function
- Many useful additional functions

Technical specifications:

| | | |
|--|---|--------------------------|
| Input data | | |
| Measuring ranges | 16; 40; 100; 250; 400; 600 bar | |
| Overload pressures | 32; 80; 200; 500; 800; 1000 bar | |
| Burst pressure | 200; 200; 500; 1000; 2000; 2000 bar | |
| Mechanical connection | G1/4 A DIN 3852 | |
| Torque value | 20 Nm | |
| Parts in contact with medium | Mech. connection: Stainless steel Seal: FPM | |
| Output data | | |
| Accuracy to DIN 16086, Max. setting (display, analogue output) | ≤ ± 0.5 % FS typ. ≤ ± 1 % FS max. | |
| Repeatability | ≤ ± 0.5 % FS max. | |
| Temperature drift | ≤ ± 0.03 % FS / °C max. zero point ≤ ± 0.03 % FS / °C max. range | |
| Analogue output (optional) | | |
| Signal | 4 .. 20 mA | ohmic resistance ≤ 400 Ω |
| Switching outputs | | |
| Type | PNP transistor output | |
| Switching current | max. 1.2 A per switching output | |
| Switching cycles | > 100 million | |
| Reaction time | approx. 10 ms | |
| Ambient conditions | | |
| Compensated temperature range | -10 .. +70 °C | |
| Operating temperature range | -25 .. +80 °C | |
| Storage temperature range | -40 .. +80 °C | |
| Fluid temperature range | -25 .. +80 °C | |
| CE mark | EN 61000-6-1 / 2 / 3 / 4 | |
| Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz | ≤ 10 g | |
| Shock resistance to DIN EN 60068-2-29 (11ms) | ≤ 50 g | |
| Protection class to DIN 40050 | IP 65 | |
| Other data | | |
| Supply voltage | 20 .. 32 V DC | |
| Current consumption | approx. 100 mA (inactive switch output) | |
| Display | 3-digit, LED, 7 segment, red, height of digits 9.2 mm | |
| Weight | approx. 300 g | |

Note: Reverse polarity protection of the supply voltage, excess voltage, override, short circuit protection are provided.
FS (Full Scale) = relative to the complete measuring range

Setting options:

All the settings available on the EDS 300 are combined in two easy-to-follow menus. To prevent unauthorised adjustment of the unit a program disable can be activated.

Setting ranges for the switch outputs:

Switch point function

| Meas. range in bar | Switch point in bar | Hysteresis in bar | Increment* in bar |
|--------------------|---------------------|-------------------|-------------------|
| 0 .. 16 | 0.3 .. 16 | 0.1 .. 15.8 | 0.1 |
| 0 .. 40 | 0.6 .. 40 | 0.2 .. 39.6 | 0.2 |
| 0 .. 100 | 1.5 .. 100 | 0.5 .. 99.0 | 0.5 |
| 0 .. 250 | 3.0 .. 250 | 1.0 .. 248 | 1.0 |
| 0 .. 400 | 6.0 .. 400 | 2.0 .. 396 | 2.0 |
| 0 .. 600 | 15.0 .. 600 | 5.0 .. 590 | 5.0 |

Window function

| Meas. range in bar | Lower switch value in bar | Upper switch value in bar | Increment* in bar |
|--------------------|---------------------------|---------------------------|-------------------|
| 0 .. 16 | 0.2 .. 15.9 | 0.3 .. 16 | 0.1 |
| 0 .. 40 | 0.4 .. 39.8 | 0.6 .. 40 | 0.2 |
| 0 .. 100 | 1.0 .. 99.5 | 1.5 .. 100 | 0.5 |
| 0 .. 250 | 2.0 .. 249.0 | 3.0 .. 250 | 1.0 |
| 0 .. 400 | 4.0 .. 398.0 | 6.0 .. 400 | 2.0 |
| 0 .. 600 | 10.0 .. 595.0 | 15.0 .. 600 | 5.0 |

* All ranges given in the table are adjustable by the increments shown.

Additional functions:

- Switching mode of the switching outputs adjustable (switching point function or window function)
- Switching direction of the switching outputs adjustable (N/C or N/O function)
- Switch-on and switch-back delay adjustable from 0.0 .. 75.0 seconds
- Choice of display (actual pressure, peak value, switching point 1, switching point 2, display off)
- Display filter for smoothing the display value during pressure pulsations
- Analogue output signal selectable 4 .. 20 mA or 0 .. 10 V (optional)
- Subsequent correction of zero point in the range $\pm 3\%$ FS possible

Model code:

EDS 3 4 X - X - XXX - 000

Mechanical connection

4 = G1/4 A DIN 3852 (male)

Electrical connection

- 4 = 4 pole Binder series 714 M18
only possible on output models "2" and "3"
(connector not supplied)
- 5 = 3 pole + PE, DIN 43650
only possible on output model "1"
(connector supplied)
- 6 = M12x1, 4 pole
only possible on output models "1", "2" and "3"
(connector not supplied)
- 8 = M12x1, 5 pole
only possible on output model "5"
(connector not supplied)

Output

- 1 = 1 switching output
only in conjunction with electrical connection type "5" or "6"
- 2 = 2 switching outputs
only in conjunction with electrical connection "4" or "6"
- 3 = 1 switching output and 1 analogue output
only in conjunction with electrical connection type "4" or "6"
- 5 = 2 switching outputs and 1 analogue output
only in conjunction with electrical connection type "8"

Pressure ranges in bar

016; 040; 100; 250; 400; 600

Modification number

000 = Standard

Notes:

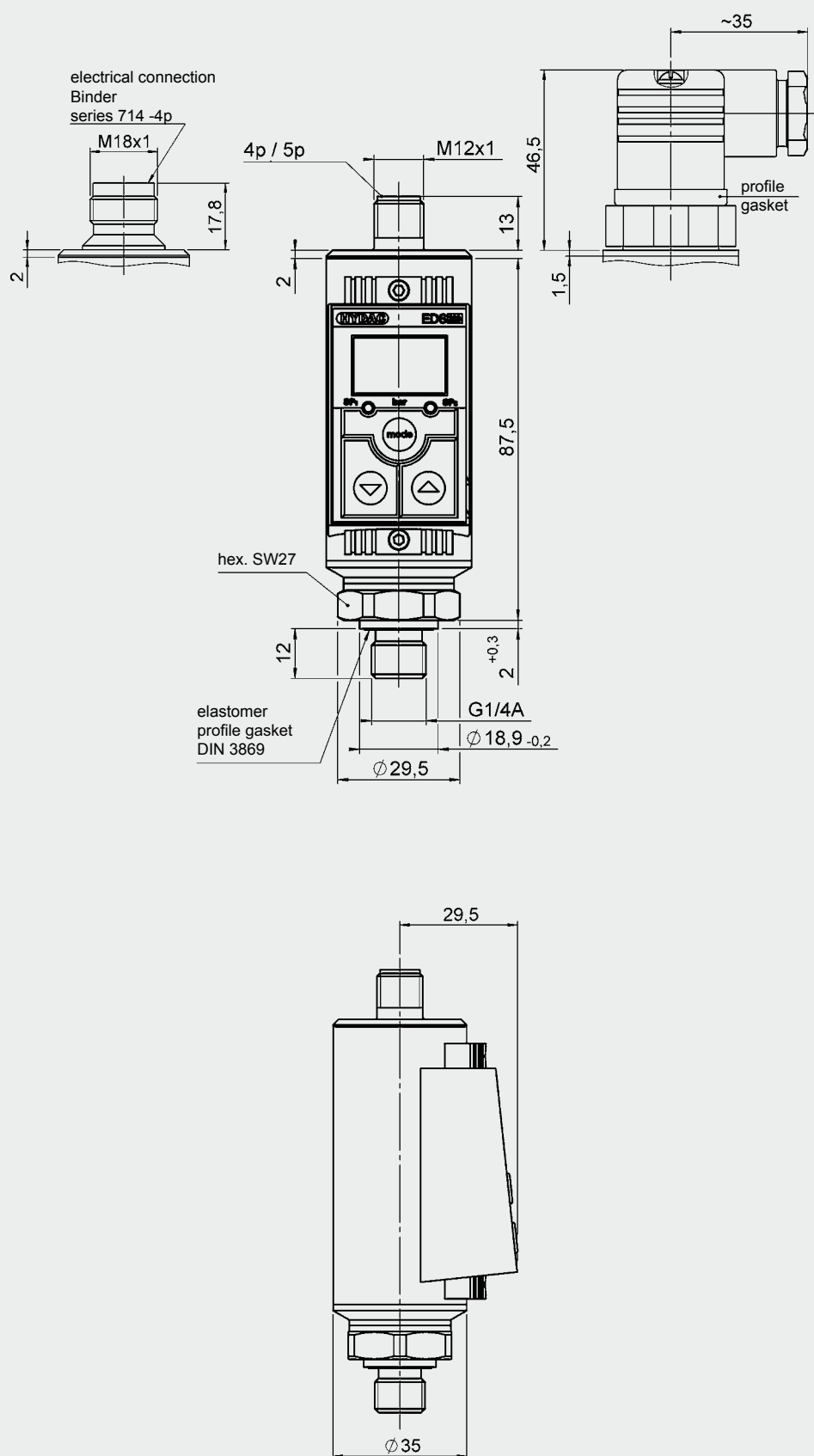
Special models on request.

For units with a different modification number, please read the label or the technical amendment details supplied with the unit.

Accessories:

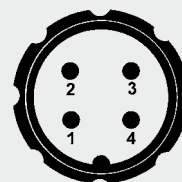
Appropriate accessories, such as electrical connectors, mechanical connection adaptors, splash guards, clamps for wall-mounting etc can be found in the Accessories section.

Dimensions:



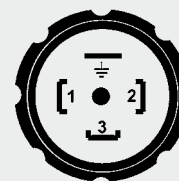
Pin connections:

Binder series 714 M18



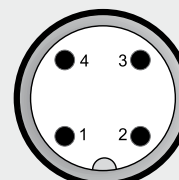
| Pin | EDS 344-2 | EDS 344-3 |
|-----|-----------|-----------------|
| 1 | +UB | +U _B |
| 2 | 0 V | 0 V |
| 3 | SP 1 | SP 1 |
| 4 | SP 2 | analogue |

DIN 43650



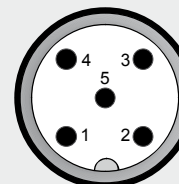
| Pin | EDS 345-1 |
|-----|-----------------|
| 1 | +U _B |
| 2 | 0 V |
| 3 | SP 1 |
| ⊥ | PE |

M12x1, 4 pole



| Pin | EDS 346-1 | EDS 346-2 | EDS 346-3 |
|-----|-----------------|-----------------|-----------------|
| 1 | +U _B | +U _B | +U _B |
| 2 | n.c. | SP 2 | analogue |
| 3 | 0 V | 0 V | 0 V |
| 4 | SP 1 | SP 1 | SP 1 |

M12x1, 5 pole



| Pin | EDS 348-5 |
|-----|-----------------|
| 1 | +U _B |
| 2 | analogue |
| 3 | 0 V |
| 4 | SP 1 |
| 5 | SP 2 |