

HYDAC INTERNATIONAL


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)	$\leq \pm 0.5\%$ FS typ. $\leq \pm 1\%$ FS max.
Repeatability	$\leq \pm 0.5\%$ FS max.
Temperature drift	$\leq \pm 0.03\%$ FS / °C max. zero point $\leq \pm 0.03\%$ FS / °C max. range
Analogue output (optional)	
Signal	4 .. 20 mA ohmic resistance $\leq 400 \Omega$
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:

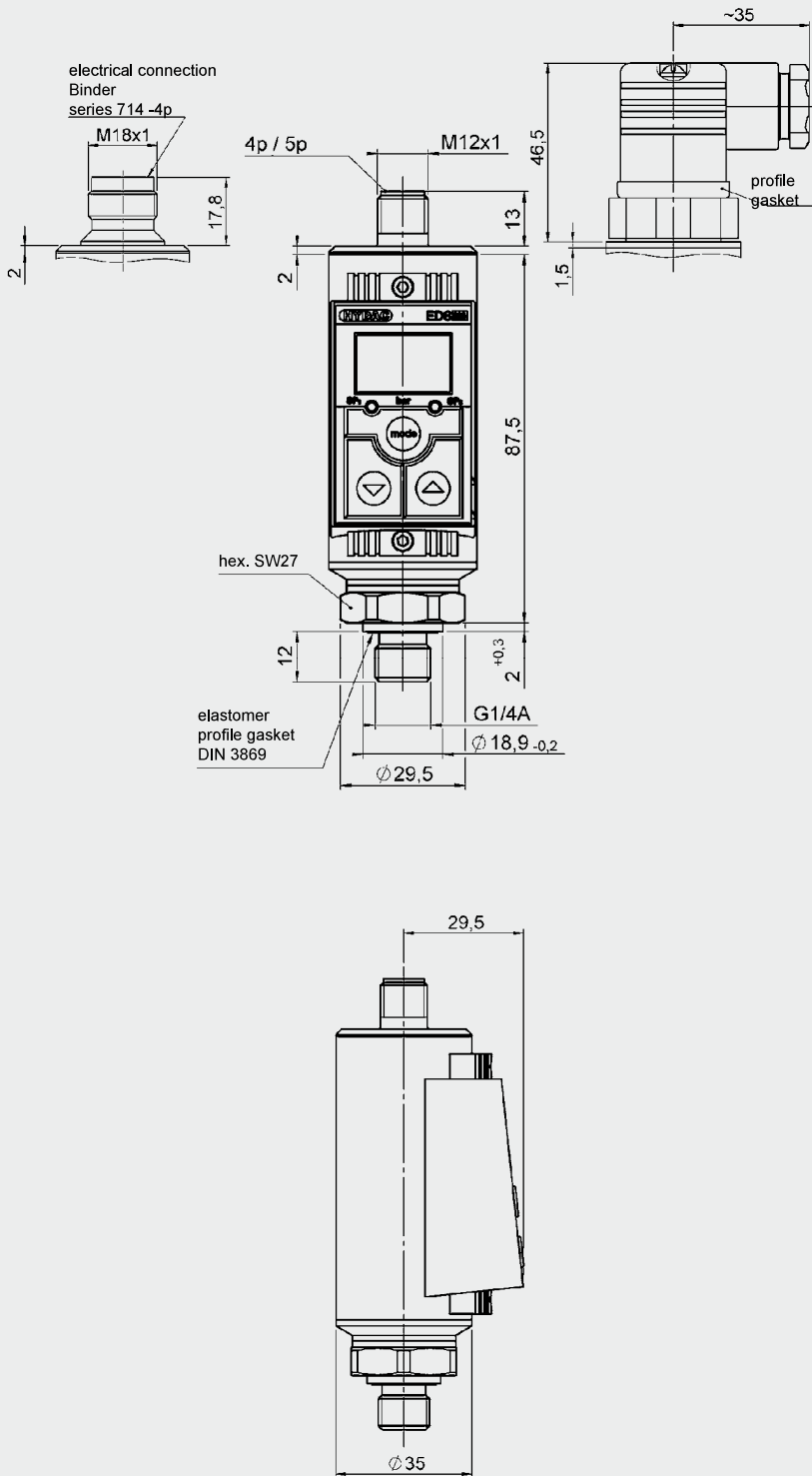
Special models on request.
For units with a different modification number, please read the label or the technical amendment details supplied with the unit.

Accessories:

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

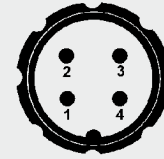


Dimensions:



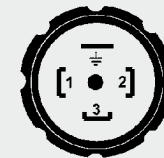
Pin connections:

Binder series 714 M18



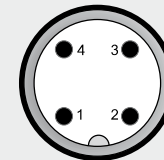
Pin	EDS 344-2	EDS 344-3
1	+U _B	+U _B
2	0 V	0 V
3	SP 1	SP 1
4	SP 2	analogue

DIN 43650



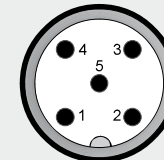
Pin	EDS 345-1
1	+U _B
2	0 V
3	SP 1
⊥	PE

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

Note:

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

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