HYDAC INTERNATIONAL

Pressure Switch
EDS 300

Up to 2 switching outputs
Analogue output

Description:

The EDS 300 is a compact, electronic pressure switch with integrated digital display. The integrated pressure sensor is based on a measurement cell with thin-film strain gauge on a stainless steel membrane.
Four different output models are available: with one switch point or with two switch points and both models can also have an additional analogue output signal 4 .. 20 mA.

The switch points and the associated hystereses can be adjusted using the key pad. For optimum adaptation to a particular application, the instrument 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 to indicate pressures and limits in hydraulics and pneumatics and anywhere where high switching frequency or constant switching accuracy would overburden a mechanical pressure switch.

Technical data:

Input data							
Measuring ranges	bar	16	40	100	250	400	600
Overload pressures	bar	32	80	200	500	800	1000
Burst pressure	bar	200	200	500	1000	2000	2000
Mechanical connection				G1/4 A ISO 1179-2			
Tightening torque, recommended				20 Nm			
Parts in contact with fluid				Mech. connection: Stainless steel Seal: FKM			
Output data							
Switching outputs				1 or 2 PNP transistor outputs Switching current: max. 1.2 A per switching output Switching cycles: > 100 million			
Analogue output, permitted load resistance				4 .. 20 mA load resist. max. 400 Ω			
Accuracy acc. to DIN 16086, terminal based				≤ ± 0.5 % FS typ. ≤ ± 1 % FS max.			
Temperature compensation, zero point				≤ ± 0.02 % FS / °C typ. ≤ ± 0.03 % FS / °C max.			
Temperature compensation, span				≤ ± 0.02 % FS / °C typ. ≤ ± 0.03 % FS / °C max.			
Repeatability				≤ ± 0.5 % FS max.			
Reaction time				approx. 10 ms			
Long-term drift				≤ ± 0.3 % FS typ. / year			
Environmental 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 acc. to DIN EN 60068-2-6 at 10 .. 500 Hz				≤ 10 g			
Shock resistance acc. to DIN EN 60068-2-27 (11 ms)				≤ 50 g			
Protection class acc. to DIN EN 60529 [1]				IP 65			
Other data							
Supply voltage				20 .. 32 V DC			
Residual ripple of supply voltage				≤ 5 %			
Current consumption				approx. 100 mA (inactive switching output)			
Display				3-digit, LED, 7 segment, red, height of digits 9.2 mm			
Weight				~ 300 g			

Note: Reverse polarity protection of the supply voltage, overvoltage, override and short circuit protection are provided.
FS (**F**ull **S**cale) = relative to complete measuring range
[1] With mounted mating connector in corresponding protection class

EN 18.056.7/02.18

Setting options:

All settings available on the EDS 300 are grouped in 2 easy-to-navigate menus.
In order to prevent unauthorised adjustment of the device, a programming lock can be set.

Setting ranges for the switching 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 can be adjusted by the increments shown.

Additional functions:

- Switching mode of the switching outputs adjustable (switch point function or window function)
- Switching direction of the switching outputs adjustable (N/C or N/O function)
- Switch-on and switch-off delay adjustable from 0.0 .. 75.0 seconds
- Choice of display (actual pressure, peak value, switch point 1, switch point 2, display off)
- Optional analogue output signal 4 .. 20 mA
- Subsequent correction of zero point in the range ± 3 % FS possible

Pin connections:

Binder series 714 M18

Pin	EDS 344-2	EDS 344-3
1	+U_B	+U_B
2	0 V	0 V
3	SP1	SP1
4	SP2	Analogue

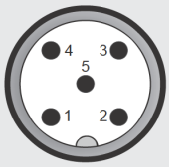
EN175301-803

Pin	EDS 345-1
1	+U_B
2	0 V
3	SP1
⊥	Housing

M12x1, 4 pole

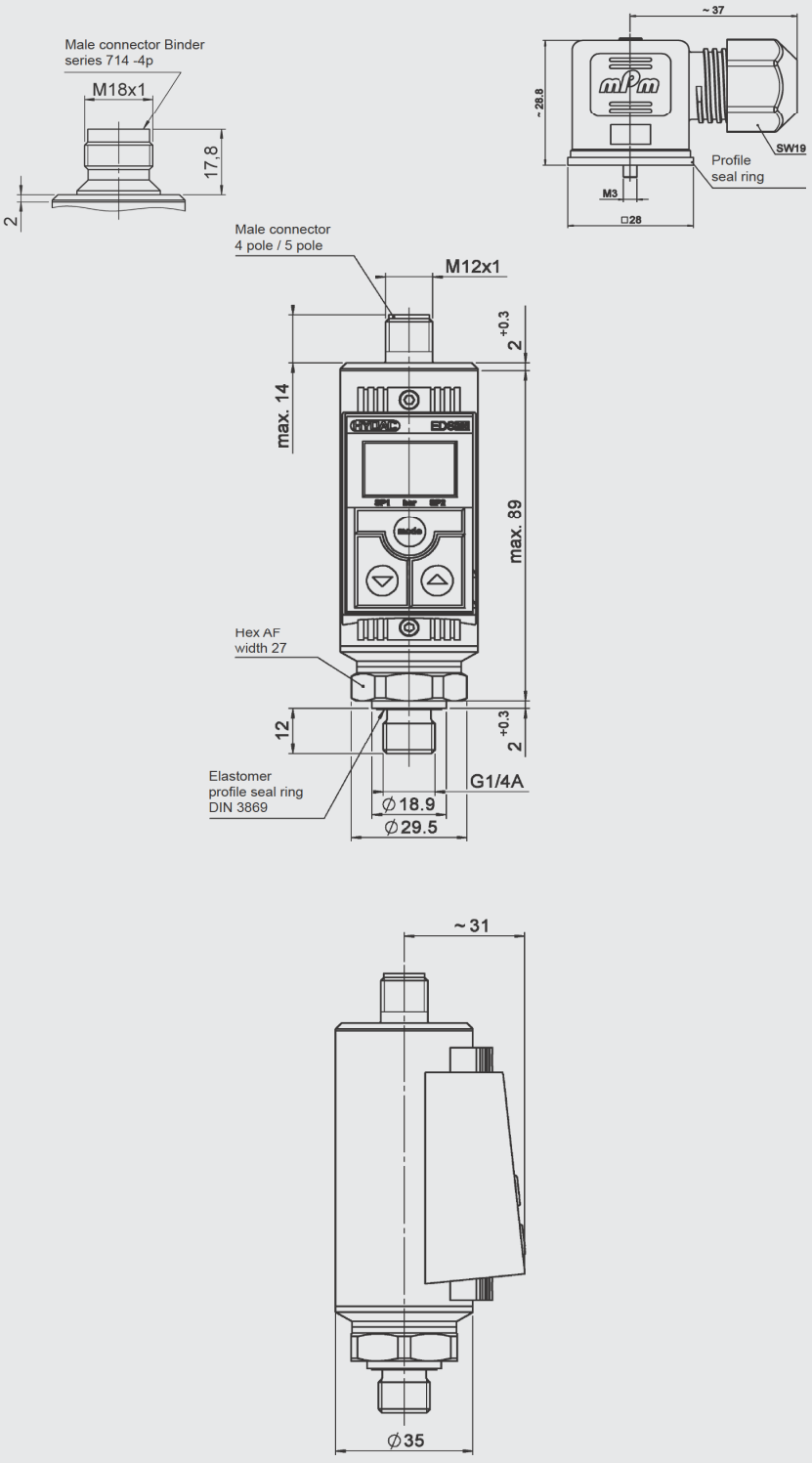
Pin	EDS 346-1	EDS 346-2	EDS 346-3
1	+U_B	+U_B	+U_B
2	n.c.	SP2	Analogue
3	0 V	0 V	0 V
4	SP1	SP1	SP1

M12x1, 5 pole



Pin	EDS 348-5
1	+U_B
2	Analogue
3	0 V
4	SP1
5	SP2

Dimensions:


Male connector Binder
series 714 -4p
M18x1
17,8
2
~ 37
~ 28.8
SW19
Profile
seal ring
M3
□28
Male connector
4 pole / 5 pole
M12x1
2 +0.3
max. 14
max. 89
Hex AF
width 27
12
2 +0.3
Elastomer
profile seal ring
DIN 3869
G1/4A
∅18.9
∅29.5
~ 31
∅35

Model code:

EDS 3 4 X – X – XXX – 000

Mechanical connection
4 = G1/4 A ISO 1179-2

Electrical connection
4 = male, Binder series 714 M18, 4 pole
only possible on output models "2" and "3"
(mating connector not supplied)
5 = male, EN175301-803, 3 pole + PE
only possible on output model "1"
(mating connector supplied)
6 = male M12x1, 4 pole
only possible on output models "1", "2" and "3"
(mating connector not supplied)
8 = male M12x1, 5 pole
only possible on output model "5"
(mating 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 type "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"

Measuring ranges in bar
016; 040; 100; 250; 400; 600

Modification number
000 = standard

Accessories:
Appropriate accessories, such as mating connectors, mechanical adapters, splash guards and clamps for wall-mounting etc, can be found in the Accessories brochure.

Note:

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.