



Electronic Pressure Switch EDS 3300 with Flush Membrane

Description:

The electronic pressure switch EDS 3300 with a flush membrane was designed specifically for applications in which a standard pressure connection could become blocked, clogged or frozen by the particular medium used. Further applications include processes where the medium changes frequently and any residues could cause mixing or contamination of the media.

Like the standard model, the EDS 3300 with flush membrane has a ceramic measurement cell with a thick film strain gauge for relative pressure measurement in a low pressure range.

The pressure connection is achieved with a fully-sealed stainless steel front membrane filled internally with a pressure transfer fluid. The process pressure is transmitted hydrostatically to the measurement cell via the pressure transfer fluid.

Depending on the type, the instrument can have up to 2 switching outputs and a switchable analog output (4 .. 20 mA or 0 .. 10 V).

Special features:

- Pressure connection has a flush membrane
- 1 or 2 PNP transistor switching outputs, up to 1.2 A load per output
- Accuracy $\leq 0.5\%$ FS B.F.S.L.
- Optional analog output selectable (4 .. 20 mA / 0 .. 10 V)
- 4-digit digital display
- Rotation in two planes (axes) for optimum alignment
- Measured value can be displayed in bar, psi or MPa
- Simple operation with key programming
- Switching points and switch-back hysteresis can be adjusted independently
- Many useful additional functions
- Optional Desina®-compliant pin configuration with diagnostic function

Technical data:

Input data		
Measuring ranges	-14.5 to 75, 15, 30, 50, 150, 250, 500 psi	
Overload pressures	290, 45, 100, 150, 450, 725, 1500 psi	
Burst pressures	400, 70, 150, 250, 650, 1000, 2500 psi	
Mechanical connection	G1/2 A DIN 3852 G1/2 with additional front O-ring seal G1/4 with additional front O-ring seal G1/4 A DIN 3852 G1/2 with add. front O-ring seal and cooling section	
Pressure transfer fluid	Silicone-free oil	
Torque value	33lb-ft (45 Nm) for G1/2, G1/2 A 15lb-ft (20 Nm) for G1/4	
Parts in contact with medium ¹⁾	Mech. conn.:	Stainless steel
	Seal:	FPM
	O-ring:	FPM
Output data		
Accuracy to DIN 16086,	$\leq \pm 0.5\%$ FS typ.	
Max. setting (display, analog output)	$\leq \pm 1\%$ FS max.	
Repeatability	$\leq \pm 0.25\%$ FS max.	
Temperature drift	$\leq \pm 0.017\%$ / °F max zero point $\leq \pm 0.017\%$ / °F max. range	
Analog output (optional)		
Output signal (selectable)	4 .. 20 mA	load resistance max. 500 Ω
	0 .. 10 V	load resistance min. 1 k Ω
Switch outputs		
Type	PNP transistor output	
Switching current	max. 1.2 A per output	
Switching cycles	> 100 million	
Reaction time	< 10 ms	
Long-term drift	$\leq \pm 0.3\%$ FS typ. / year	
DESINA® diagnostic signal (Pin 2)		
Function	OK: HIGH level / not OK: LOW level	
Level	HIGH: approx. +U _g / LOW: < +0.3 V	
Environmental conditions		
Compensated temperature range	14..158°F, 14..+140°F for UL spec.	
Operating temperature range	-13..+176°F, -13..+140°F for UL spec	
Storage temperature range	-40..176°F	
Fluid temperature range ²⁾	-40..+176°F/-13..+176°F -40..+302°F/ -13..+302°F for G1/2 with cooling section	
CE mark	EN 61000-6-1 / 2 / 3 / 4	
RoHS mark ³⁾	Certificate No. E318391	
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	≤ 10 g	
Shock resistance to DIN EN 60068-2-29 (11 ms)	≤ 50 g	
Protection class to IEC 60529	IP 67	
Other data		
Supply voltage	9 .. 35 V DC without analog output 18 .. 35 V DC with analog output - limited energy - according to 9.3 UL 61010; Class 2; UL 1310/1585; LPS UL 60950	
for use acc. to UL spec.		
Current consumption	max. 2,455 A total max. 35 mA with inactive switching output max. 55 mA with inactive switching output and analog output	
Display	4-digit, LED, 7 segment, red, height of digits 7 mm	
Weight	~ 120 g	

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

¹⁾ Other seal materials on request

²⁾ -13 °F with FPM seal, -40 °F on request

³⁾ Environmental conditions according to 1.4.2 UL 61010-1; C22.2 No. 61010-1

Setting options:

All settings offered by the EDS 3300 are grouped in 2 easy-to-navigate menus. In order to prevent unauthorized adjustment of the device, a programming lock can be set.

Setting ranges for the switch outputs:

Switching point function

Meas. range in psi	Switch point in psi	Hysteresis in psi	Increment* in psi
-14 .. 75	-12.6 .. 75	0.6 .. 74.0	0.2
0 .. 15	0.25 .. 15	0.10 .. 14.85	0.05
0 .. 30	0.45 .. 30	0.15 .. 29.70	0.05
0 .. 50	0.8 .. 50	0.3 .. 79.5	0.1
0 .. 150	2.5 .. 150	1.0 .. 148.5	0.5
0 .. 250	4.0 .. 250	1.5 .. 247.5	0.5
0 .. 500	8 .. 500	3 .. 495	1

Window function

Meas. range in psi	Lower switch value in psi	Upper switch value in psi	Increment* in psi
-14 .. 75	0.6 .. 74.0	-12.6 .. 75	0.2
0 .. 15	0.10 .. 14.85	0.25 .. 15	0.05
0 .. 30	0.15 .. 29.70	0.45 .. 30	0.05
0 .. 50	0.3 .. 79.5	0.8 .. 50	0.1
0 .. 150	1.0 .. 148.5	2.5 .. 150	0.5
0 .. 250	1.5 .. 247.5	4.0 .. 250	0.5
0 .. 500	3 .. 495	8 .. 500	1

* 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-off delay adjustable from 0.00 .. 99.99 seconds
- Choice of display (actual pressure, peak value, switch point 1, switch point 2, display off)
- Display filter for smoothing the display value during pressure pulsations
- Analog output signal selectable 4 .. 20 mA or 0 .. 10 V
- Pressure can be displayed in measurement units bar, psi or MPa. The scaling can also be adapted to indicate force, weight, etc.

Model code:

EDS 3 3 Z X - X - XXXX - XXX - 400

Mechanical process connection

Z = Flush membrane

Electrical connection

6 = Male M12x1, 4 pole

only possible on output models "1", "2" and "3"

8 = Male M12x1, 5 pole

only possible on output model "5"

Output

1 = 1 switching output

only in conjunction with electrical connection type "6"

2 = 2 switching outputs

only in conjunction with electrical connection type "6"

3 = 1 switching output and 1 analog output

only in conjunction with electrical connection type "6"

5 = 2 switching outputs and 1 analog output

only in conjunction with electrical connection type "8"

Pressure ranges in psi

0089(-14.5..75), 0015, 0030, 0050, 0150, 0250, 0500

Mechanical connection

G01 = G1/2 A DIN 3852

G02 = G1/2 with additional front O-ring seal

G04 = G1/4 with additional front O-ring seal

G05 = G1/4 A DIN 3852

G12 = G1/2 with additional front O-ring seal and cooling section

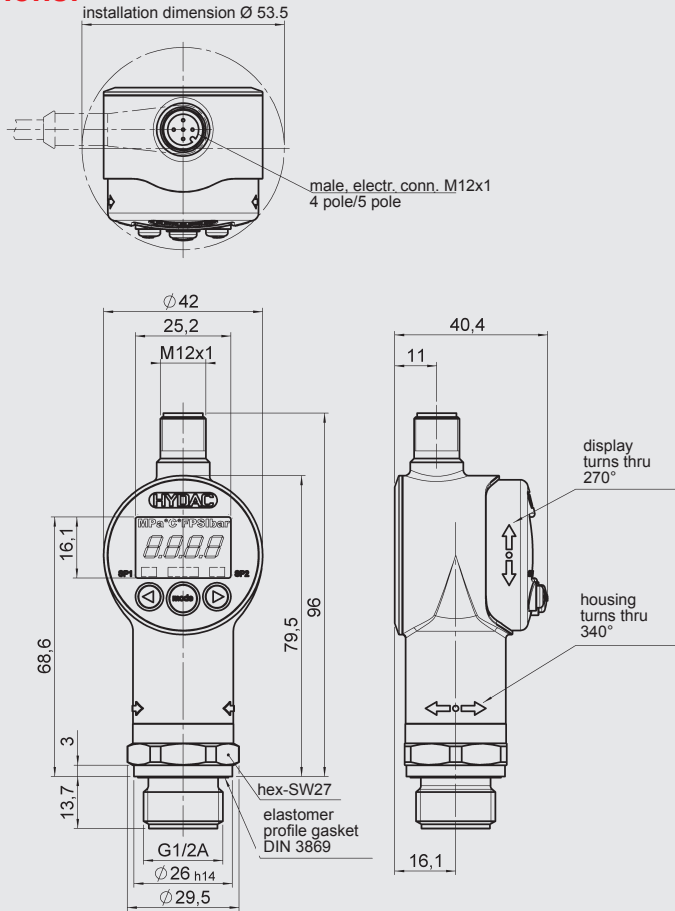
Modification number

400 = Standard in psi

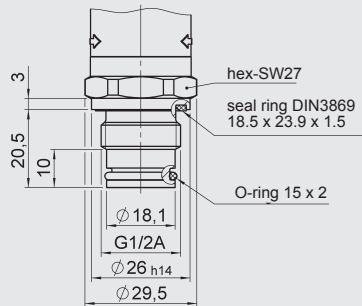
Accessories:

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

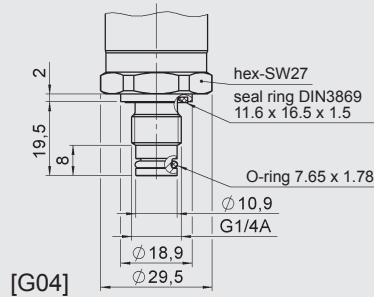
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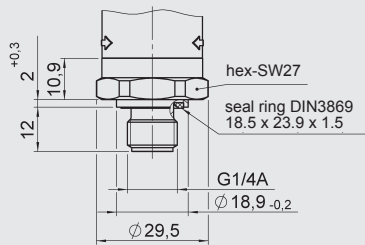
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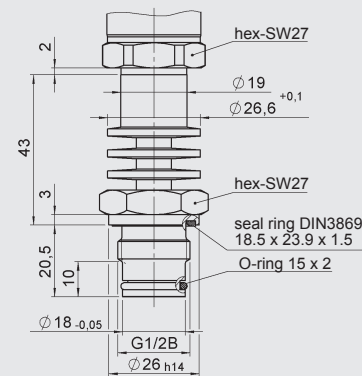
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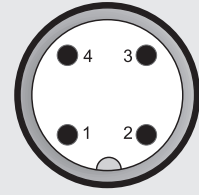
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[G12]

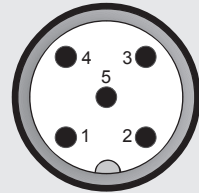
Pin connections:

M12x1, 4 pole



Pin	EDS 33Z6-1	EDS 33Z6-2	EDS 33Z6-3
1	+U _B	+U _B	+U _B
2	n.c.	SP 2	Analog
3	0 V	0 V	0 V
4	SP 1	SP 1	SP 1

M12x1, 5 pole



Pin	EDS 33Z8-5
1	+U _B
2	Analog
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.

For bar ranges see European Catalog

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