



## Electronic Pressure Switch EDS 3400 with Flush Membrane

### Description:

The electronic pressure switch EDS 3400 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 3400 with flush membrane has a stainless steel measurement cell with a thin film strain gauge for relative pressure measurement in the high 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 hystereses can be adjusted independently
- Many useful additional functions
- Option of Desina<sup>®</sup>-compliant pin configuration with diagnostic function

### Technical data:

Input data	
Measuring ranges	1000, 3000, 6000, 9000 psi
Overload pressures	2900, 7250, 11600, 13050 psi
Burst pressures <sup>1)</sup>	7250, 14500, 29000, 29000 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 <sup>2)</sup>	Mech. conn.: Stainless steel Seal: FPM O-ring: FPM
Output data	
Accuracy to DIN 16086, Max. setting (display, analog output)	$\leq \pm 0.5\%$ FS typ. $\leq \pm 1\%$ 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 $\Omega$ 0 .. 10 V load resistance min. 1 k $\Omega$
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 <sup>®</sup> diagnostic signal (Pin 2)	
Function	OK: HIGH level / not OK: LOW level
Level	HIGH: approx. +U <sub>b</sub> / 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 <sup>3)</sup>	-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
UL mark <sup>4)</sup>	Certificate No. E318391
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	$\leq 10$ g
Shock resistance to DIN EN 60068-2-29 (11 ms)	$\leq 50$ 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 the full measuring range

<sup>1)</sup> G1/2 with additional front O-ring seal max. 21750 psi

<sup>2)</sup> Other seal materials on request

<sup>3)</sup> -13 °F with FPM seal, -40 °F on request

<sup>4)</sup> Environmental conditions according to 1.4.2 UL 61010-1; C22.2 No. 61010-1

## Setting options:

All settings offered by the EDS 3400 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
0 .. 1000	16..1000	6..990	2
0 .. 3000	45..3000	15..2970	5
0 .. 6000	90..6000	30..5940	10
0 .. 9000	140..9000	60..8900	20

Window function

Meas. range in psi	Lower switch value in psi	Upper switch value in psi	Increment* in psi
0 .. 1000	6..990	16..1000	2
0 .. 3000	15..2970	45..3000	5
0 .. 6000	30..5940	90..6000	10
0 .. 9000	60..8900	140..9000	20

\* 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 (current 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 the measurement units bar, psi, MPa. The scaling can also be adapted to indicate force, weight, etc.

## Model code:

EDS 3 4 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

1000, 3000, 6000, 9000

### 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 add. front O-ring seal and cooling section

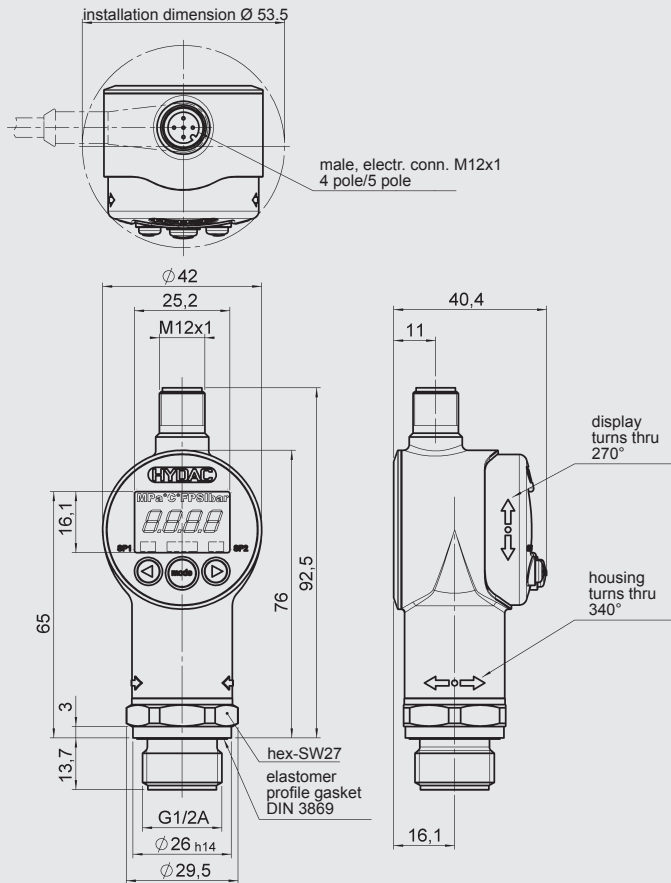
### Modification number

400 = Standard in psi

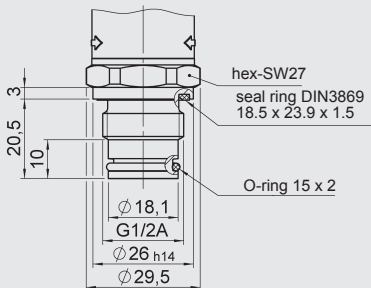
## Accessories:

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

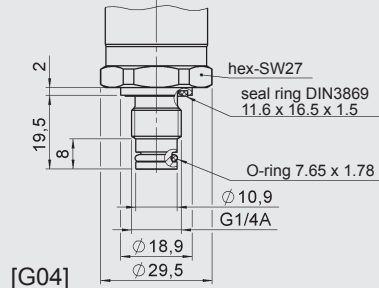
## Dimensions:



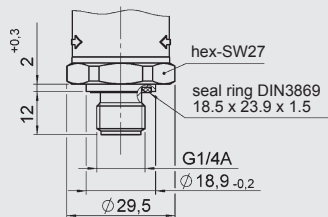
[G01]



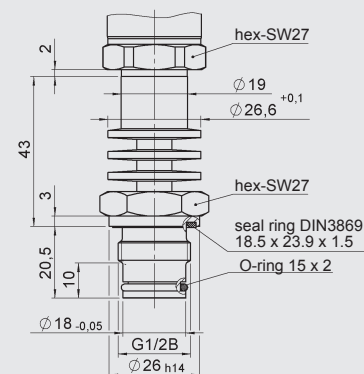
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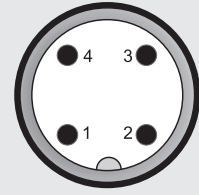
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[G12]

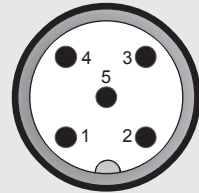
## Pin connections:

M12x1, 4 pole



Pin	EDS 34Z6-1	EDS 34Z6-2	EDS 34Z6-3
1	+U <sub>B</sub>	+U <sub>B</sub>	+U <sub>B</sub>
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 34Z8-5
1	+U <sub>B</sub>
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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