



Description:

The EDS 3300 is a compact electronic pressure switch with integrated digital display for relative pressure measurement in the low-pressure range. It has a ceramic measuring cell with thick-film strain gauge. The instrument can have one or two switching outputs, and there is the option of an additional switchable analogue output signal (4 ... 20 mA or 0 ... 10 V). A special design feature of the EDS 3300 is that the display can be moved in two planes (axes). The instrument can be installed in almost any mounting position and the display can be turned to the optimum position without the usual additional expense of a mechanical adapter. The 4-digit display can indicate the pressure in **bar**, **psi** or **MPa**. The user can select the particular unit of measurement. When changing to a different measurement unit, the instrument automatically converts all the switching settings to the new unit of measurement. In addition, the EDS 3300 is also available in a DESINA®-compliant version. The main applications of the EDS 3300 are primarily in hydraulics and pneumatics, as well as in refrigeration and air conditioning technology.

Special features:

- 1 or 2 PNP transistor switching outputs, up to 1.2 A load per output
- Accuracy $\leq \pm 1\%$ FS
- Optional switchable analogue output (4 ... 20 mA / 0 ... 10 V)
- 4-digit digital display
- Optimum alignment - can be rotated in two axes
- Measured value can be displayed in bar, psi or MPa
- User-friendly due to key programming
- Switching points and switch-back hystereses can be adjusted independently
- Many useful additional functions
- Optional Desina®-compliant pin configuration with diagnostic function



Electronic Pressure Switch EDS 3300

Technical data:

Input data

Measuring ranges	-1 ... 1; 1; 2.5; 6; 10; 16 bar
Overload pressures	3; 3; 8; 18; 30; 48 bar
Burst pressures	5; 5; 12; 30; 50; 80 bar
Mechanical connection	G1/4 A DIN 3852 G1/2 B DIN-EN 837 Threaded port DIN 3852-G1/4
Torque value	20 Nm (G1/4) 45 Nm (G1/2)
Parts in contact with medium	Mech. connection: Stainless steel Sensor cell: Ceramic Seal: copper (G1/2) / FPM / EPDM (as per model code)

Output data

Accuracy to DIN 16086, Max. setting (display, analogue output)	$\leq \pm 0.5\%$ FS typ. $\leq \pm 1\%$ FS max.
Repeatability	$\leq \pm 0.25\%$ FS max.
Temperature drift	$\leq \pm 0.025\%$ FS / °C max. zero point $\leq \pm 0.025\%$ FS / °C max. range

Analogue output (optional)

Signal	selectable: 4 ... 20 mA load resistance max. 500 Ω 0 ... 10 V load resistance min. 1 kΩ
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Switch outputs

Type	PNP transistor output
Switching current	max. 1.2 A
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 _B / LOW: < +0.3 V

Environmental conditions

Compensated temperature range	-10 ... +70 °C
Operating temperature range	-25 ... +80 °C (-25 ... +60 °C acc. to UL spec.)
Storage temperature range	-40 ... +80 °C
Fluid temperature range	-25 ... +80 °C

CE mark

EN 61000-6-1 / 2 / 3 / 4	EN 61000-6-1 / 2 / 3 / 4
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UL mark¹⁾

Certificate No. E318391	Certificate No. E318391
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Vibration resistance to DIN EN 60068-2-6 at 10 ... 500 Hz	≤ 10 g
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Shock resistance to DIN EN 60068-2-29 (11 ms)	≤ 50 g
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Protection class to IEC 60529	IP 67
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Other data

Supply voltage	9 ... 35 V DC without analogue output 18 ... 35 V DC with analogue 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 outputs max. 55 mA with inactive switching outputs and analogue output
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Display	4-digit, LED, 7 segment, red, height of digits 7 mm
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Weight	~ 120 g
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Note: Excess voltage, override and short circuit protection are provided.

FS (Full Scale) = relative to complete measuring range
Environmental conditions according to 1.4.2 UL 61010-1; C22.2 No 61010-1

¹⁾

Setting options:

All settings offered by the EDS 3300 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 switch outputs:

Switching point function

Meas. range in bar	Switch point in bar	Hysteresis in bar	Increment* in bar
-1 .. 1	-0.97 .. 1	-0.99 .. 0.98	0.01
0 .. 1	0.016 .. 1	0.006 .. 0.99	0.002
0 .. 2.5	0.04 .. 2.5	0.015 .. 2.475	0.005
0 .. 6	0.09 .. 6	0.3 .. 5.94	0.01
0 .. 10	0.16 .. 10	0.06 .. 9.9	0.02
0 .. 16	0.25 .. 16	0.1 .. 15.8	0.05

Window function

Meas. range in bar	Lower switch value in bar	Upper switch value in bar	Increment* in bar
-1 .. 1	-0.97 .. 0.96	-0.95 .. 0.98	0.01
0 .. 1	0.016 .. 0.982	0.024 .. 0.99	0.002
0 .. 2.5	0.04 .. 2.455	0.06 .. 2.475	0.005
0 .. 6	0.09 .. 5.89	0.14 .. 5.94	0.01
0 .. 10	0.16 .. 9.82	0.24 .. 9.9	0.02
0 .. 16	0.25 .. 15.7	0.4 .. 15.8	0.05

* 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
- Analogue 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.

EDS 3300 for self diagnostics:



The DESINA®-compliant pressure switch has been specially developed for customers in the machine tool and mechanical engineering sectors and complies with the DESINA® specification. A diagnostic signal enables errors to be detected and an "ERROR" message also appears in the display. The electrical connection is a round 5-pole M12x1 to IP 67 in accordance with DESINA® requirements.

Model code:

EDS 3 3 X X - X - XXXX - 000 - X 1

Mechanical connection

- 1 = G1/2 B DIN-EN 837 (male)
- 4 = G1/4 A DIN 3852 (male)
- 9 = Threaded port DIN 3852-G1/4

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

Pressure ranges in bar

0001 (-1 .. 1); 01.0; 02.5; 06.0; 0010; 0016

Modification number

000 = Standard

Seal material (in contact with fluid)

- F = FPM seal (e.g.: for hydraulic oils)
- E = EPDM seal (e.g.: for water, refrigerants)

Material of connection (in contact with fluid)

- 1 = Stainless steel

Model code:

DESINA®-compliant or can be connected to DESINA®:



EDS 3 3 X X - X - XXXX - D00 - X 1

Mechanical connection

- 1 = G1/2 B DIN-EN 837 (male)
- 4 = G1/4 A DIN 3852 (male)
- 9 = Threaded port DIN 3852-G1/4

Electrical connection

- 8 = Male M12x1, 5 pole

Output

- 1 = 1 switching output
- 3 = 1 switching output and 1 analogue output

Pressure ranges in bar

0001 (-1 .. 1); 01.0; 02.5; 06.0; 0010; 0016

Modification number

D00 = DESINA®-compliant pin configuration for self-diagnostics

Seal material (in contact with fluid)

- F = FPM seal (e.g.: for hydraulic oils)
- E = EPDM seal (e.g.: for water, refrigerants)

Material of connection (in contact with fluid)

- 1 = Stainless steel

Note:

On instruments with a different modification number, please read the label or the technical amendment details supplied with the instrument.

Accessories:

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

