Electronic Pressure Switch
EDS 3400

Description:

The EDS 3400 is a compact, electronic pressure switch with an integral digital display for measuring relative pressure in the high pressure range.
The unit has a stainless steel measurement cell with thin-film strain gauge. The unit can have one or two switching outputs and there is the option of an additional analogue output signal (4 .. 20 mA or 0 .. 10 V selectable).
A special design feature of the EDS 3400 is that the display can be moved in two planes. The unit 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 digital display can indicate the pressure in **bar, psi** or **MPa**. The user can select the particular measurement unit. When changing to a different unit of measurement, the EDS 3400 converts all the switching settings to the new measurement unit. In addition the EDS 3400 is also available in a DESINA® version.

The main applications of the EDS 3400 are primarily in hydraulics, pneumatics and in refrigeration & air conditioning technology.

Special features:

- 1 or 2 PNP transistor switching outputs, up to 1.2 A load per output
- Accuracy ≤ ± 1 % FS
- Optional analogue output selectable (4 .. 20 mA / 0 .. 10 V)
- 4-digit digital display
- Optimum alignment - can be rotated in two planes (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
- Option of Desina® version with diagnostic function

Technical specifications:

Input data	
Measuring ranges	40; 100; 250; 400; 600 bar
Overload pressures	80; 200; 500; 800; 1000; bar
Burst pressure	200; 500; 1000; 2000; 2000 bar
Mechanical connection	G1/4 A DIN 3852 Threaded port DIN 3852-G1/4
Torque value	20 Nm
Parts in contact with medium	Mech. connection: Stainless steel Seal: FPM (G1/4 A DIN 3852)
Output data	
Accuracy to DIN 16086, Max. setting (display, analogue output)	≤ ± 0.5 % FS typ. ≤ ± 1 % FS max.
Repeatability	≤ ± 0.25 % FS max.
Temperature drift	≤ ± 0.025 % FS / °C max. zero point ≤ ± 0.025 % FS / °C max. range
Analogue output (optional)	
Signal	selectable: 4 .. 20 mA ohmic resistance max. 500 Ω 0 .. 10 V ohmic resistance min. 1 kΩ
Switching outputs	
Type	PNP transistor output
Switching current	max. 1.2 A
Switching cycles	> 100 million
Reaction time	approx. 10 ms
Long-term drift	≤ ± 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
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 (11 ms)	≤ 50 g
Protection class to DIN 40050	IP 67
Other data	
Supply voltage	9 .. 35 V DC without analogue output 18 .. 35 V DC with analogue output
Current consumption	max. 35 mA (inactive switch output)
Display	4-digit, LED, 7 segment, red, height of digits 7 mm
Weight	approx. 120 g

Note: Reverse polarity protection of the supply voltage, excess voltage, override, short circuit protection are provided.
FS (**F**ull **S**cale) = relative to the complete measuring range

Setting options:

All the settings available on the EDS 3400 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	Incre-ment* in bar
0 .. 40	0.6 .. 40	0.2 .. 39.6	0.1
0 .. 100	1.6 .. 100	0.6 .. 99.0	0.2
0 .. 250	4.0 .. 250	1.5 .. 247.5	0.5
0 .. 400	6.0 .. 400	2.0 .. 396	1
0 .. 600	9.0 .. 600	3.0 .. 594	1

Window function

Meas. range in bar	Lower switch value in bar	Upper switch value in bar	Incre-ment* in bar
0 .. 40	0.6 .. 39.2	0.9 .. 39.6	0.1
0 .. 100	1.6 .. 98.2	2.4 .. 99	0.2
0 .. 250	4.0 .. 245.5	6.0 .. 247.5	0.5
0 .. 400	6.0 .. 392	9.0 .. 396	1
0 .. 600	9.0 .. 589	14 .. 594	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-back delay adjustable from 0.00 .. 99.99 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)
- Pressure can be displayed in measurement units bar, psi, MPa. Other units of force, weight, etc. can also be set by the user.

EDS 3400 for self diagnostics:

The pressure switch which conforms to the DESINA® standard has been specially developed for customers in the machine tool and mechanical engineering sectors and corresponds to 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 4 X X – X – XXXX – 000

Mechanical connection
4 = G1/4 A DIN 3852 (male)
9 = threaded port DIN 3852-G1/4

Electrical connection
6 = M12x1, 4 pole
only possible on output models "1", "2" and "3"
8 = 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
0040; 0100; 0250; 0400; 0600

Modification number
000 = Standard

Model code: Conforms to DESINA® or can be connected to DESINA®:

EDS 3 4 X 8 – X – XXXX – D00

Mechanical connection
4 = G1/4 A DIN 3852 (male)
9 = threaded port DIN 3852-G1/4

Electrical connection
8 = M12x1, 5 pole

Output
1 = 1 switching output
3 = 1 switching output and 1 analogue output

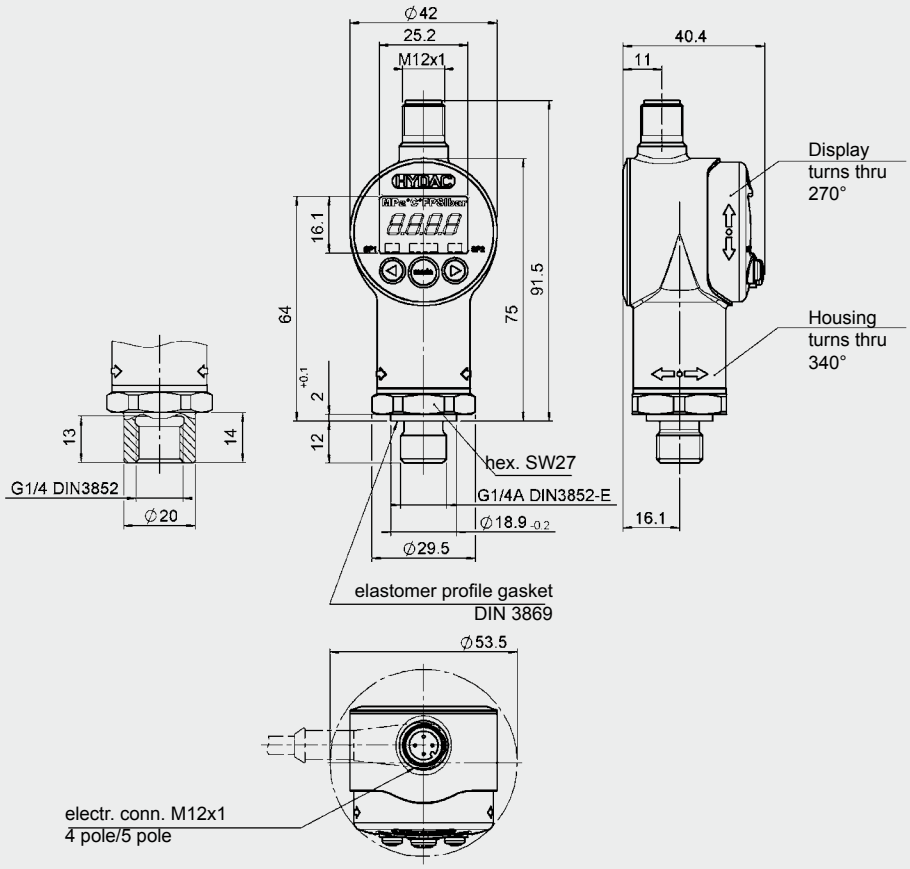
Pressure ranges in bar
0040; 0100; 0250; 0400; 0600

Modification number
D00 = pin configuration conforms to DESINA® standard for self-diagnostics

Note:
For units with a different modification number, please read the label or the technical amendment details supplied with the unit.

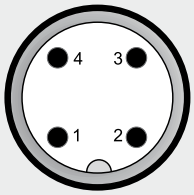
Accessories:
Appropriate accessories, such as electrical connectors, mechanical connection adaptors, splash guards, clamps for wall-mounting etc can be found in the Accessories section.

Dimensions:



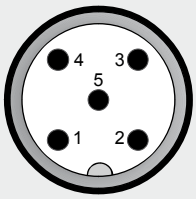
Pin connections:

M12x1, 4 pole



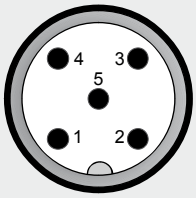
Pin	EDS 34X6-1	EDS 34X6-2	EDS 34X6-3
1	$+U_B$	$+U_B$	$+U_B$
2	n.c.	SP 2	analogue
3	0 V	0 V	0 V
4	SP 1	SP 1	SP 1

M12x1, 5 pole



Pin	EDS 34X8-5
1	$+U_B$
2	analogue
3	0 V
4	SP 1
5	SP 2

M12x1, 5 pole



	Conforms to DESINA®	Can be connected to DESINA®
Pin	EDS 34X8-1	EDS 34X8-3
1	$+U_B$	$+U_B$
2	diagnostics	diagnostics
3	0 V	0 V
4	SP 1	SP 1
5	n.c.	analogue

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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