

EDS 3400 Series High Pressure Electronic Switch



Applications



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 gauges. The unit can have one or two switching outputs and there is the option of an additional analog output signal (4 to 20 mA or 0 to 10 V selectable).

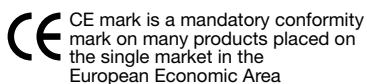
A special design feature of the EDS 3400 is that the display can be moved in two planes. The unit can be installed in almost any mounting position and the display can be turned to the optimum position without the usual additional expense of a mechanical adapter. The 4-digit digital display can indicate 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 $\pm 0.5\%$ BFSL
- Optional analog output selectable (4 to 20 mA / 0 to 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

Approvals



Technical Details

Sensor Specifications	
Measuring ranges - psi	1000, 3000, 6000, 9000
Overload pressure - psi	2900, 7250, 11600, 11600
Burst pressure - psi	7250, 14500, 29000, 29000
Mechanical connection	G1/4A DIN 3852 male (standard for bar ranges only) SAE 6 9/16-18 UNF 2A (standard for psi ranges only)
Tightening torque	15 lb-ft (20 Nm)
Parts in contact with media	Stainless steel, FPM seal
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.5\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.0085\%$ / °F typ. $\leq \pm 0.017\%$ / °F max.
Temperature compensation over range	$\leq \pm 0.0085\%$ / °F typ. $\leq \pm 0.017\%$ / °F max.
Long-term drift	$\leq \pm 0.3\%$ FS typ. / year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 120 g
Output signal	4 to 20 mA, $R_{i\max} = 500 \Omega$ 0 to 10 VDC, $R_{i\min} = 1 \text{ k}\Omega$
Switching Specifications	
Type	PNP transistor output
Repeatability	$\leq \pm 0.25\%$ FS max.
Switching current	Max. 1.2 A per switching output
Switching cycles	≥ 100 million
Reaction time	< 10 ms
Environmental Condition	
Compensated temperature range	14° to 158°F (-10° to 70°C) 14° to 140°F (-10 to 60°C) with UL rating
Operating temperature range	-13° to 176°F (-25° to 80°C) -13° to 140°F (-25° to 60°C) with UL rating
Storage temperature range	-40° to 176°F (-40° to 80°C)
Media temperature range	-13° to 176°F (-25° to 80°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
cULus mark (Environmental conditions to 1.4.2 UL 61010-1; C22.2 No. 61010-1)	Certificate no. E318391
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	$\leq 10g$
Environmental protection	IP 67 (molded M12x1 connector is used)
Electrical Specifications	
Supply voltage -limited energy- according to:	9 to 35 VDC without analog output 18 to 35 VDC with analog output 9.3 UL 61010; Class 2; UL 1310/1585; LPS UL 60950
Residual ripple supply voltage	$\leq 5\%$
Current consumption	max. 2.455 A total max. 35 mA with inactive switching outputs max. 55 mA with analog output and inactive switching outputs
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

Model Code

EDS 3 4 X X - X - XXXX - 400

Mechanical Connection*

- 4 = G1/4A DIN 3852 male (bar ranges only)
- 7 = SAE 6 9/16-18 UNF 2A (psi ranges only)

Electrical Connection*

- 6 = M12x1 plug, 4 pole (connector not included)
- 8 = M12x1 plug, 5 pole (connector not included)

Output

- 1 = 1 Switching Output (only with electrical connection 6)
- 2 = 2 Switching Outputs (only with electrical connection 6)
- 3 = 1 Switching Output with 1 analog output (only with electrical connection 6)
- 5 = 2 Switching Outputs with 1 analog output (only with electrical connection 8)

Pressure Range

For EDS 347X only (SAE 6 9/16-18 UNF2A)
1000, 3000, 6000, 9000 psi

Modification Number

400 = Standard in psi

*Other options available upon request

Pin Connections

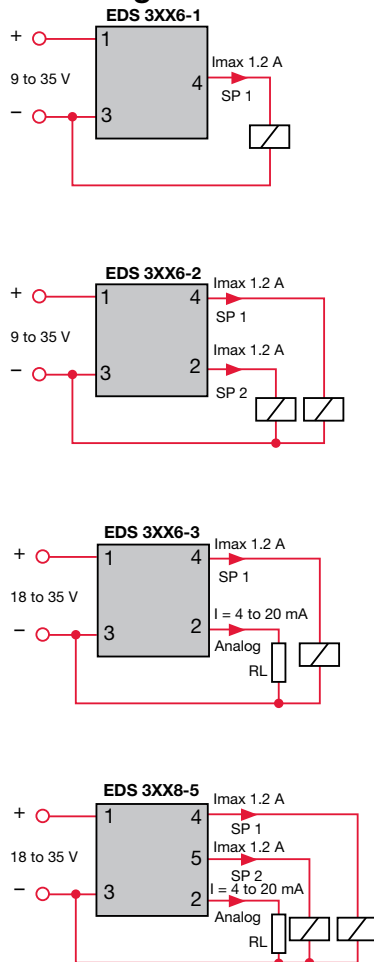
M12x1, 4 pole

Pin	34X6-1	34X6-2	34X6-3
1	+U _B	+U _B	+U _B
2	nc	SP 2	analog
3	0 V	0 V	0 V
4	SP 1	SP 1	SP 1

M12x1, 5 pole

Pin	34X8-5
1	+U _B
2	analog
3	0 V
4	SP 1
5	SP 2

Circuit Diagram



Dimensions

