

## EDS 3100 Series Absolute Pressure Electronic Switch

CE US



### Description

The EDS 3100 is a compact electronic pressure switch with digital display for absolute pressure measurement in the low pressure range. It has a ceramic measuring cell with thick-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).

A special feature of the EDS 3100 is that the display can be moved in 2 planes. The unit can be installed in almost any mounting position and the display can be turned to the optimum position without the additional expense of a mechanical adapter. The 4-digit digital display can indicate the pressure in bar, psi or MPa. The user can choose between the individual measurement units.

When changing to a different measurement unit, the EDS 3100 automatically converts all the switching settings to the new unit of measurement. In addition, the EDS 3100 is also available in a DESINA® version.

The main applications of the EDS 3100 are primarily in hydraulics, pneumatics and in refrigeration and air conditioning technology.

### Special Features

- 1 or 2 PNP transistor switching outputs, up to 1.2 A load per output
- Accuracy  $\leq \pm 0.5\%$  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
- Set point and reset point can be adjusted independently
- Many useful additional functions
- Option of Desina® version with diagnostic function

### Approvals

**CE** CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

### Applications



### Technical Details

Sensor Specifications	
Measuring ranges - psi	15, 50
Overload pressure - psi	45, 150
Burst pressure - psi	70, 250
Mechanical connection	G1/4A DIN 3852 male (standard for bar ranges only) 1/4"-18 NPT male (standard for psi ranges only)
Tightening torque	G1/4: 15 lb-ft (20 Nm) 1/4" NPT: 30 lb-ft (40 Nm)
Parts in contact with media	Stainless steel, ceramic, FPM seal
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.5\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.0085\%/^{\circ}\text{F}$ typ. $\leq \pm 0.017\%/^{\circ}\text{F}$ max.
Temperature compensation over range	$\leq \pm 0.0085\%/^{\circ}\text{F}$ typ. $\leq \pm 0.017\%/^{\circ}\text{F}$ 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, $R_{\text{max}} = 500 \Omega$ 0 to 10 VDC, $R_{\text{min}} = 1 \text{ k}\Omega$
Switching Specifications	
Type	PNP transistor output
Repeatability	$\leq \pm 0.25\%$ FS max.
Switching current	Max. 1.2 A per switching output
Switching cycles	$\geq 100$ million
Reaction time	$< 10$ ms
Environmental Conditions	
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
CE 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	$\leq 10\text{g}$
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 1 X X - X - XXXX - 400 - X1

### Mechanical Connection\*

- 4 = G1/4A DIN 3852 male (bar ranges only)
- 8 = 1/4"-18 NPT (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 318X only (1/4"-18 NPT)  
0015, 0050 psi

### Modification Number

400 = Standard in psi

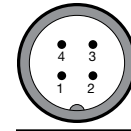
### Seal Material

- F1 = FPM Seal (hydraulic oil)
- E1 = EPDM Seal (coolant, ammonia, water)

\*Other options available upon request

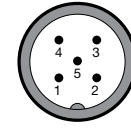
## Pin Connections

### M12x1, 4 pole



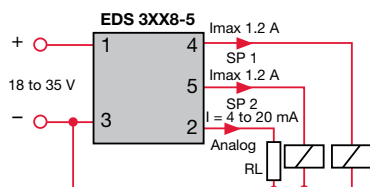
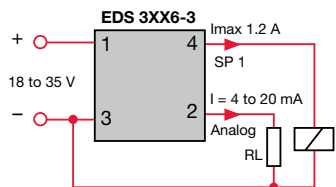
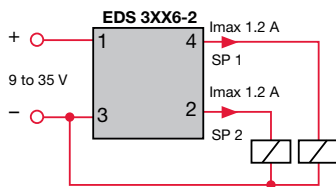
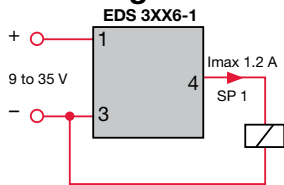
Pin	31X6-1	31X6-2	31X6-3
1	+U <sub>B</sub>	+U <sub>B</sub>	+U <sub>B</sub>
2	nc	SP 2	analog
3	0 V	0 V	0 V
4	SP 1	SP 1	SP 1

### M12x1, 5 pole



Pin	31X8-5
1	+U <sub>B</sub>
2	analog
3	0 V
4	SP 1
5	SP 2

## Circuit Diagram



## Dimensions

