

Electronic Pressure Switch

EDS 300

Application:

The EDS 300 is a compact, electronic pressure switch with digital display. Four different output models are available: with one switching point, with two switching points and both models can also have an additional analogue output signal 4 .. 20 mA.

The switching points and the corresponding hystereses can be adjusted via keys. For optimum adaptation to a particular application, the unit has many additional adjustment parameters, e.g. switching delay times, N/O / N/C function of the outputs.

The main applications of the EDS 300 are pressure and critical value indications in hydraulics and pneumatics and anywhere where a high switching frequency or a constant switching accuracy places too high a demand on a mechanical pressure switch. The unit is ideal for the construction of accumulator charging circuits or pump and compressor controls.

Special features:

- Built-in pressure sensor with DMS on stainless steel membrane
- Compact, robust construction
- Accuracy class 1%
- 3-digit digital display
- Simple operation due to key programming
- Switching points and switch-back hystereses can be adjusted independently
- Window function
- Many useful additional functions



Setting options:

All the settings available on the EDS 300 are combined in two easy-to-follow menus. To prevent unauthorised adjustment of the unit, a program disable can be activated.

Setting ranges of the switching points and/or switch-back hystereses:

Measuring range in bar	Switching point in bar	Hysteresis in bar	Increment* in bar
16	0.3 .. 16	0.1 .. 15.8	0.1
40	0.6 .. 40	0.2 .. 39.6	0.2
100	1.5 .. 100	0.5 .. 99.0	0.5
250	3.0 .. 250	1.0 .. 248	1.0
400	6.0 .. 400	2.0 .. 396	2.0
600	15.0 .. 600	5.0 .. 590	5.0

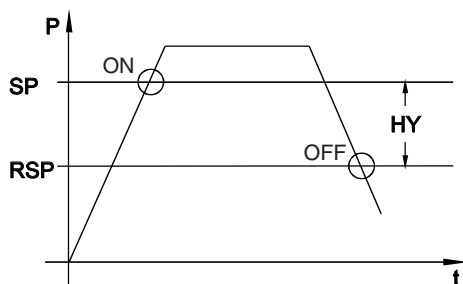
* All ranges given in the table are adjustable by the increments shown.

Additional functions:

- Switching mode of the switching outputs adjustable (switching point function or window function)
- Switching direction of the switching outputs adjustable (N/O or N/C function)
- Switch-on delay adjustable between 0.00 .. 75 seconds
- Switch-back delay adjustable between 0.00 .. 75 seconds
- Choice of display (actual pressure, switching point 1, switching point 2, peak value, display off)
- Subsequent correction of zero point in the range $\pm 3\%$ FS possible

Switching point / switch-back point:

The switching point is defined as being the pressure value, which when reached (whilst pressure is increasing), causes a change in the switching output. This output state is maintained until the pressure falls below the switch-back hysteresis allocated to the switching point. The switch-back point is determined by the switch-back hysteresis which has been set (switching point minus switch-back hysteresis = switch-back point).



SP = switching point

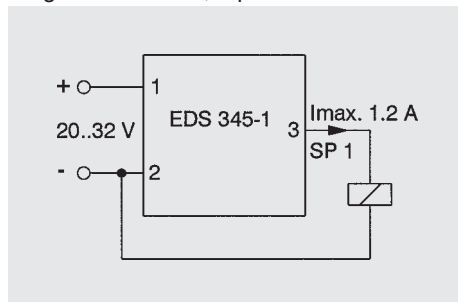
HY = switch-back hysteresis

RSP = switch-back point (switching point minus switch-back hysteresis)

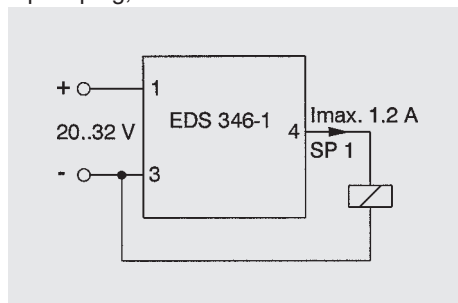
Circuit diagram:

Model with 1 switching output

Plug to DIN 43650, 3 pole + earth

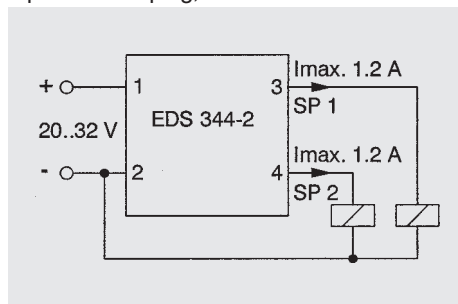


4 pole plug, M12x1

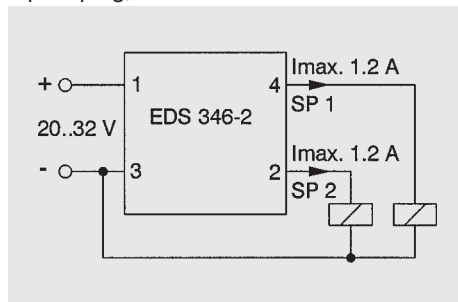


Model with 2 switching outputs

4 pole Binder plug, series 714 M18

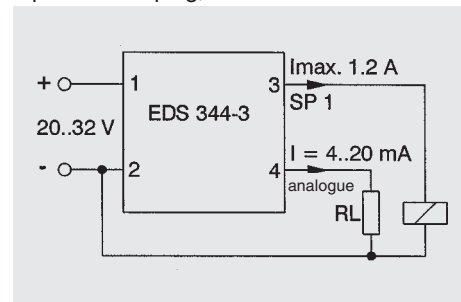


4 pole plug, M12x1

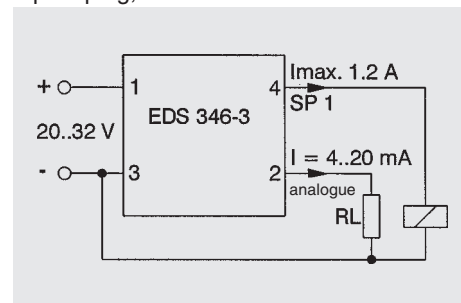


Model with 1 switching output and 1 analogue output

4 pole Binder plug, series 714 M18

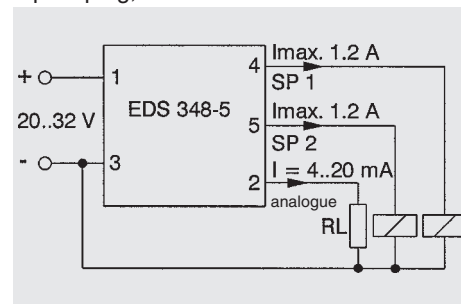


4 pole plug, M12x1



Model with 2 switching outputs and 1 analogue output:

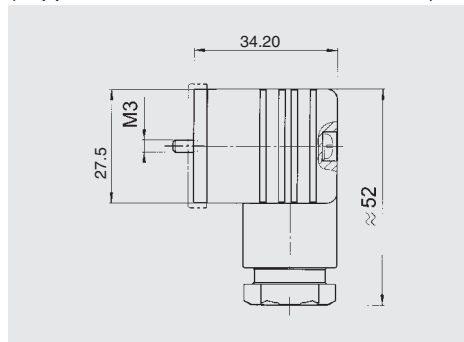
5 pole plug, M12x1



Electrical accessories:

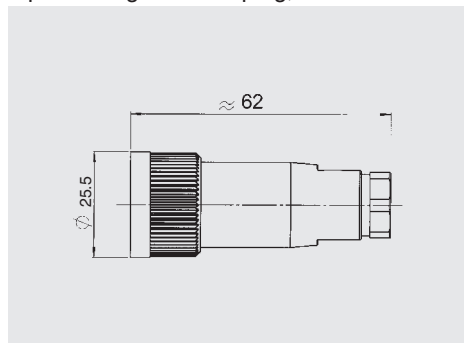
ZBE 01

Right-angled plug (3 pole + earth)
to DIN 43650/ISO 4400
(supplied with the EDS 345 as standard)



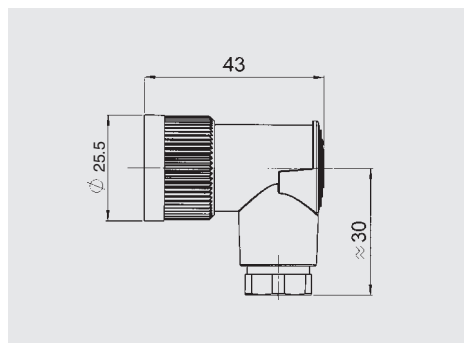
ZBE 02 (for EDS 344)

4 pole straight Binder plug, series 714 M18



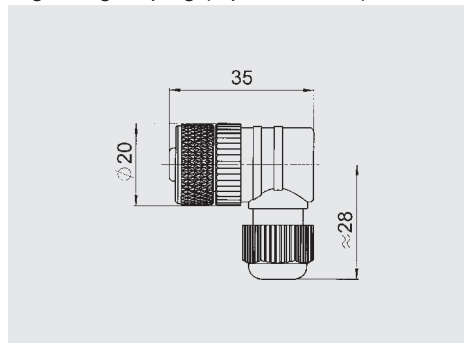
ZBE 03 (for EDS 344)

Right-angled, 4 pole Binder plug,
series 714 M18



ZBE 06 (for EDS 346)

Right-angled plug (4 pole, M12x1)

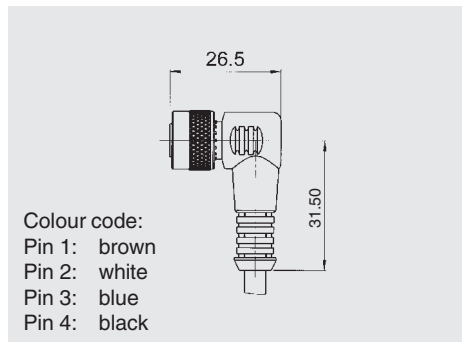


ZBE 06-02 (for EDS 346)

Right-angled plug (4 pole, M12x1)
with 2 m lead

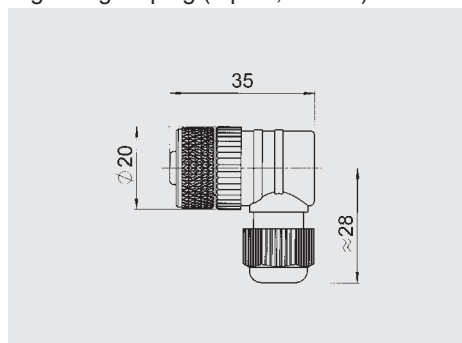
ZBE 06-05 (for EDS 346)

Right-angled plug (4 pole, M12x1)
with 5 m lead



ZBE 08 (for EDS 348)

Right-angled plug (5 pole, M12x1)

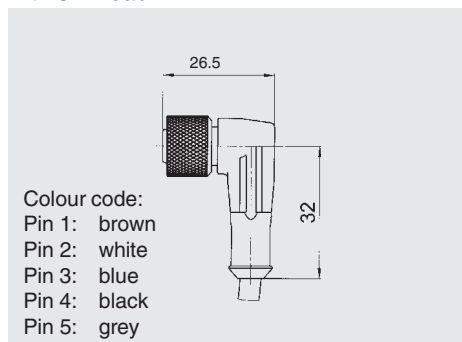


ZBE 08-02 (for EDS 348)

Right-angled plug (5 pole, M12x1)
with 2 m lead

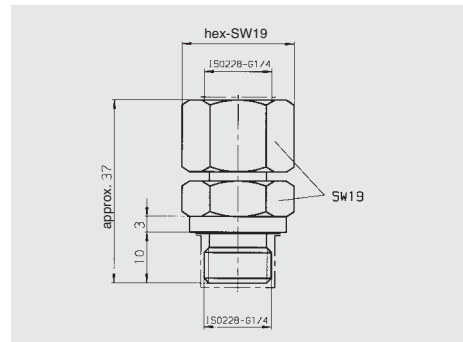
ZBE 08-05 (for EDS 348)

Right-angled plug (5 pole, M12x1)
with 5 m lead



Mechanical accessories:

ZBM 14 connection adaptor G $\frac{1}{4}$ female
thread - G $\frac{1}{4}$ male thread for optimum
alignment of the pressure switch

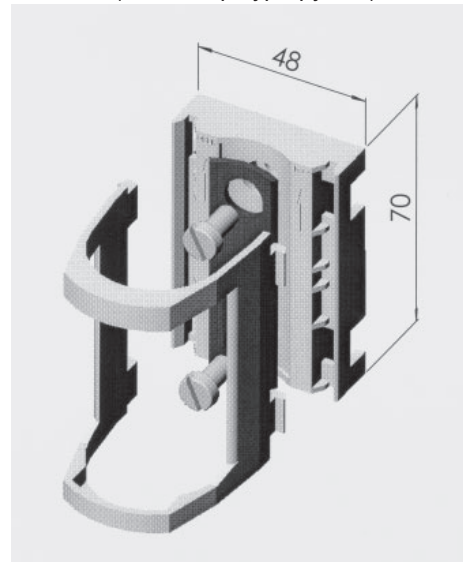


Seals:

Female thread: NBR

Male thread: NBR

ZBM 300 clamp for wall-mounting the
EDS 300 (material: polypropylene)



Technical specifications:

Input data:	
Measuring ranges:	16, 40, 100, 250, 400, 600 bar
Overload pressures:	32, 80, 200, 500, 800, 900 bar
Burst pressure:	300 % FS
Output data:	
Accuracy (display, analogue output):	$\leq \pm 1 \%$ FS
Repeatability:	$\leq \pm 0.5 \%$ FS
Temperature drift:	$\leq \pm 0.3 \%$ / 10 K zero point $\leq \pm 0.3 \%$ / 10 K range
Analogue output:	
Signal:	4 .. 20 mA, ohmic resistance $\leq 400 \Omega$
Switching outputs:	
Type:	PNP transistor output
Switching current:	max. 1.2 A
Switching cycles:	> 100 million
Reaction time:	approx. 10 ms
Ambient conditions:	
Temperature range of medium:	-25 .. + 80 °C
Ambient temperature range:	-25 .. + 80 °C
Storage temperature range:	-40 .. + 80 °C
Nominal temperature range:	-10 .. + 70 °C
CE mark:	EN 50081-1, EN 50081-2 EN 50082-1, EN 50082-2
Vibration resistance:	approx. 10 g / 0 .. 500 Hz
Shock resistance:	approx. 50 g / 1 ms
Other data:	
Supply voltage:	20 .. 32 VDC
Current consumption:	approx. 100 mA
Safety type:	IP 65
Hydraulic connection	G $\frac{1}{4}$ A to DIN 3852, torque rating 17 .. 20 Nm
Parts in contact with medium:	stainless steel, Viton seal
Material of housing:	tube: stainless steel keypad housing: PA6.6 Gf30
Display:	3-digit, 7 segment LED, red height of digits: 9.2 mm
Weight:	approx. 300 g

Note: **FS** (Full Scale) = relative to the full measuring range

Mounting:

The EDS 300 pressure switch has a pressure connection with a G $\frac{1}{4}$ A male thread (DIN 3852). It is therefore possible to mount the pressure switch directly inline or onto a hydraulic block.

When used in critical applications (e.g. strong vibrations or knocks) the EDS 300 must be mechanically decoupled. A clamp (ZBM 300) is therefore available for wall-mounting. In this case the pressure connection must be by means of a Minimesse line.

Using the ZBM 14 connection adaptor ensures that the display is visible to the user.

Model code:

EDS 3 4 X - X - XXX - 000

Series no.

(determined by manufacturer)

Type of connection, mechanical

4 = G $\frac{1}{4}$ A male thread

Type of connection, electrical

4 = 4 pole Binder plug, series 714 M18
only available for output models "2" and "3"
(plug not included)

5 = plug to DIN 43650, 3 pole + earth
only available for output model "1"
(plug ZBE 01 included)

6 = 4 pole plug, M12x1
only available for output models "1", "2" and "3"
(plug not included)

8 = 5 pole plug, M12x1
only available for output model "5"
(plug not included)

Output

1 = 1 switching output
(only in conjunction with electrical connection type "5" or "6")

2 = 2 switching outputs
(only in conjunction with electrical connection type "4" or "6")

3 = 1 switching output and 1 analogue output
(only in conjunction with electrical connection type "4" or "6")

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

Pressure ranges in bar

016, 040, 100, 250, 400, 600

Modification number

000 = standard

Note

Special models on request

Note:

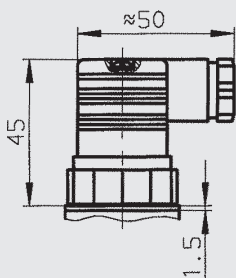
The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

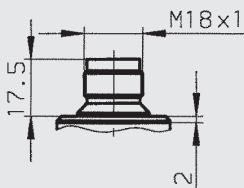
Subject to technical modifications.

Dimensions:

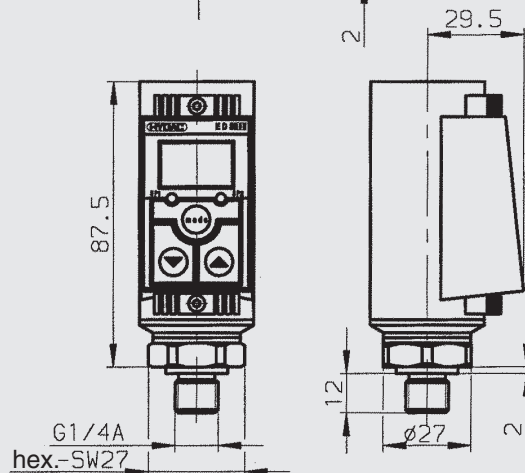
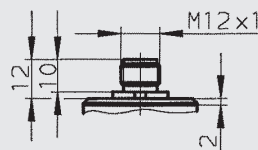
Plug to DIN 43650
3 pole + earth



Binder plug, 4 pole
series 714 M18



Plug, M12x1
4 pole / 5 pole



required mounting radius R36