

Electronic Pressure Switch

EDS 1700

Application:

The EDS 1700, with its built-in pressure measuring cell, a 4-digit display and the 4 switching outputs, offers the user all the advantages of a modern electronic pressure switch.

4 switching points and switch-back points can be adjusted very simply and independently of each other via a membrane keypad. For optimum incorporation into monitoring systems (eg with PLC), an analogue output is also available (4 .. 20 mA or 0 .. 10 V).

The main applications of the EDS 1700 are in hydraulics and pneumatics. The instrument is ideal for use where frequent switching cycles (several million) require permanent switching point accuracy or simple and precise adjustment.

Special features:

- Built-in pressure sensor with DMS on stainless steel membrane
- Accuracy class 0.5 % or 1 %
- 4-digit digital display
- Simple operation by means of key programming
- 4 critical value relays, switching points and switch-back points can be adjusted independently
- Option for analogue output signal
- Many useful additional functions
- Optional mounting position (pressure connection on the top/bottom, keypad and display can be turned through 180°)
- Adjustment of display ranges to indicate values in, for example, KN, Kg, psi, ...



Setting options:

The heart of the instrument is a microcomputer which provides many useful extra functions in addition to normal pressure switch operation. It is possible, for example, to activate switching delay times to prevent fast pressure peaks from triggering an unwanted switching cycle.

All settings are made via a membrane keypad.

Setting ranges of the switching points:

- Switching point relays 1 to 4:
1.5 % .. 100 % FS
- Switch-back point relays 1 to 4:
1 % .. 99 % FS
or alternatively
switch-back hysteresees 1 to 4:
1 % .. 99 % FS

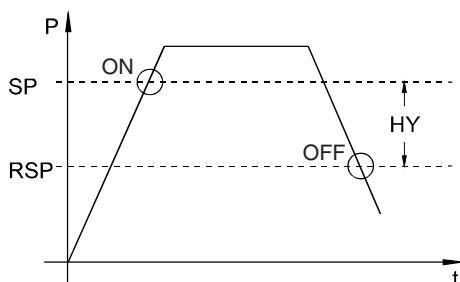
Note: **FS (Full Scale)** = relative to the full measuring range

Additional setting options:

- Switching direction of the relays 1 to 4 (pull-in or release when switching point is reached)
- Switch-on delay relays 1 to 4 in the range 0.00 .. 90 seconds
- Switch-back delay relays 1 to 4 in the range 0.00 .. 90 seconds
- Switch-back mode (alternatively switch-back point or switch-back hysteresis)
- Display of the current pressure, of a switching point or of the peak value
- Display filter (slow, medium, fast)
- Individual scale of the display range (bar, psi, user definable)
- Unit (bar, psi) is displayed
- Analogue output (4 .. 20 mA or 0 .. 10 V)
- Programming disable

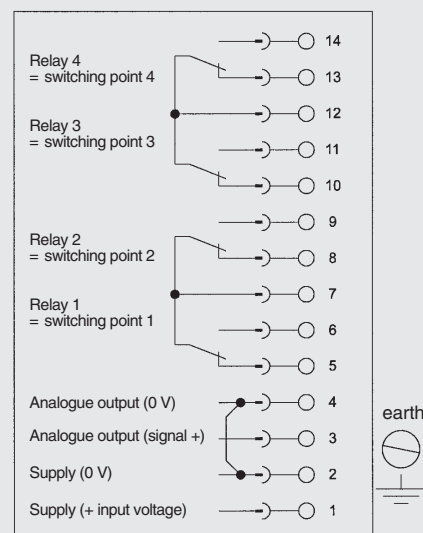
Switching point / switch-back point:

The switching point is defined as being the pressure value, which when it is reached (whilst pressure is increasing) causes a change in the relay state. This output state is maintained until the pressure falls below the switch-back point allocated to the switching point. The switch-back point is the pressure value at which the output relay switches back to its original state. The difference between the switching point and switch-back point is defined as being the switch-back hysteresis.



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

Pin connections:



Assembly:

When used in critical applications (e.g. strong vibrations or knocks) the EDS 1700 must be mounted on rubber buffers (DIN vibration mounts). The pressure connection must be via Minimesse line for mechanical decoupling. The EDS 1700 must not be installed using rigid piping.

When supplied the pressure connection is accessible from the bottom and the electrical connection is accessible from the top. Depending on the application, the front panel of the instrument can be turned through 180° so that the electrical connection can be made from underneath and the pressure connection can be made from the top.

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): | EDS 1700-P: $\leq \pm 0.5$ % FS EDS 1700-N: $\leq \pm 1.0$ % FS |
| Repeatability: | EDS 1700-P: $\leq \pm 0.25$ % FS EDS 1700-N: $\leq \pm 0.5$ % FS |
| Temperature drift: | EDS 1700-P: $\leq \pm 0.2$ % / 10 K zero point $\leq \pm 0.2$ % / 10 K range EDS 1700-N: $\leq \pm 0.3$ % / 10 K zero point $\leq \pm 0.3$ % / 10 K range |

Analogue output:

| | |
|---------|--|
| Signal: | 4 .. 20 mA, ohmic resistance $\leq 400 \Omega$ 0 .. 10 V, ohmic resistance $\geq 2 K\Omega$ |
|---------|--|

Switching outputs:

| | |
|---|--|
| Type: | 4 relays with change-over contacts in 2 groups (common supply of each group connected) |
| Switching voltage: | 0.1 .. 250 VAC / VDC |
| Switching current: | 0.009 .. 2 A |
| Switching capacity: | 400 VA, 50 W (for inductive load, use varistors) |
| Life expectancy of contacts: | ≥ 20 million min. load ≥ 1 million max. load |
| Reaction time: | approx. 20 ms |
| Switching point setting range: | 1.5 .. 100 % FS |
| Setting range of switch-back hystereses / switch-back points: | 1 .. 99 % FS |

Ambient conditions:

| | |
|------------------------------|----------------|
| Temperature range of medium: | -25 .. + 80 °C |
| Ambient temperature range: | -25 .. + 60 °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. 5 g |
| Shock resistance: | approx. 10 g |

Other data:

| | |
|-------------------------------|---|
| Hydraulic connection: | Threaded port to DIN 3852 - G $\frac{1}{4}$ Torque rating 20 .. 25 Nm |
| Electrical connection: | 14 pole, terminal block Cross-section of connection max. 1.5 mm ² |
| Supply voltage: | 22 .. 32 VDC residual ripple ≤ 10 % |
| Current consumption: | approx. 200 mA |
| Display: | 4-digit, 7 segment LED display, red height of digits: 13 mm |
| Safety type: | IP 65 |
| Weight: | approx. 800 g |
| Parts in contact with medium: | stainless steel |

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

Model code

EDS 17 9 X - X - XXX - 000

Series no. _____
(determined by manufacturer)

Type of connection, mechanical _____
9 = threaded port to DIN 3852 - G $\frac{1}{4}$

Display _____
1 = 4 digit bar
2 = 4 digit psi

Accuracy _____
P = 0.5 %
N = 1 %

Pressure ranges in bar _____
016, 040, 100, 250, 400, 600

Modification number _____
000 = standard (determined by manufacturer)

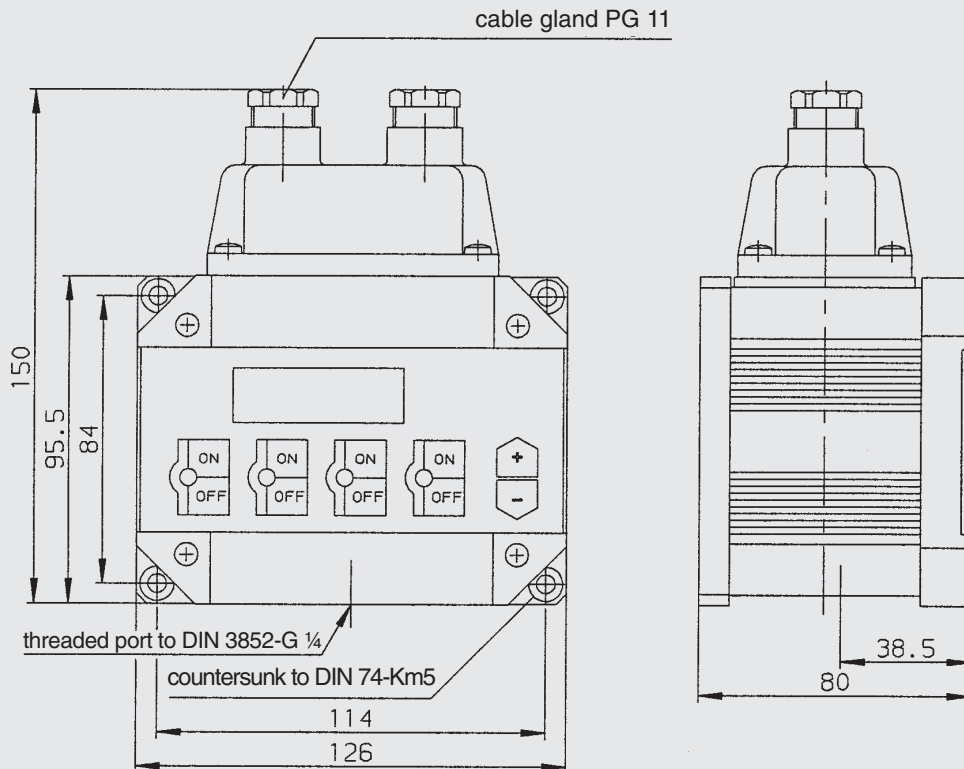
Accessories supplied with the unit:

PG 11 cable glands
4 mounting screws M5 x 20 mm

Other accessories:

Mounting kit (4 vibration mounts,
4 screws M5 x 6 mm)

Dimensions



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.