



## Pressure Switch EDS 3400

Relative pressure

Display

IO-Link

UL US

IO-Link

### Description:

The EDS 3400 with IO-Link communication interface is a compact electronic pressure switch with integrated digital display for relative pressure measurement in the high-pressure range.

The instrument has a switching output and an additional output that can be configured as switching or analogue output (4 ... 20 mA or 0 ... 10 V).

IO-Link is the communication between the sensor/actuator (IO-Link device) and an IO-Link master based on a point-to-point interface.

The advantages:

Process data, parameters and diagnostic information of the pressure switch can be transmitted via a standard cable (SDCI mode). The integrated LED display provides information on the operating mode and the switching statuses.

Simple exchange, the IO-Link master saves the parameters of the connected pressure switch and transmits them to the newly connected pressure transmitter when replaced. Thus, time-consuming new parameterisations will no longer be required.

If IO-Link is not used, the sensor still functions as a pressure switch with two switching outputs (SIO mode).

To create customer-specific small series or to duplicate sensor settings across the system, the sensor can also be easily adjusted outside the system to suit the particular application, with the HYDAC Programming Device HPG P1-000, the HYDAC Programming Adapter ZBE P1-000 or by means of the Portable Data Recorder HMG 4000.

Typical fields of application for EDS 3400 IO-Link are machine tools, handling and assembly automation, intralogistics or the packaging industry.

### Technical data:

#### Input data

|                                |     |     |     |      |      |      |      |
|--------------------------------|-----|-----|-----|------|------|------|------|
| Measuring ranges <sup>1)</sup> | bar | 40  | 100 | 250  | 400  | 600  | 1000 |
| Overload pressures             | bar | 80  | 200 | 500  | 800  | 1000 | 1600 |
| Burst pressure                 | bar | 200 | 500 | 1000 | 2000 | 2000 | 3000 |

|                                |  |
|--------------------------------|--|
| Mechanical connection          | See model code                                 |
| Tightening torque, recommended | 20 Nm  |
| Parts in contact with fluid    | Mech. connection: Stainless steel<br>Seal: FKM |

#### Output data

|  |   |
|--|---|
| Switching outputs                          | PNP transistor outputs<br>Switching current: max. 250 mA per switching output           |
| Analogue output, permitted load resistance | Selectable:<br>4 ... 20 mA load resist. max. 500 Ω<br>0 ... 10 V load resist. min. 1 kΩ |
| Accuracy acc. to DIN 16086, terminal based | ≤ ± 0.5 % FS typ.<br>≤ ± 1 % FS max.  |
| Temperature compensation, zero point       | ≤ ± 0.015 % FS / °C typ.<br>≤ ± 0.025 % FS / °C max.                                    |
| Temperature compensation, span             | ≤ ± 0.015 % FS / °C typ.<br>≤ ± 0.025 % FS / °C max.                                    |
| Repeatability                              | ≤ ± 0.25 % FS max.  |
| Reaction time                              | < 10 ms   |
| Long-term drift                            | ≤ ± 0.3 % FS typ. / year  |

#### Environmental conditions

|                               |  |
|-------------------------------|--|
| Compensated temperature range | -10 ... +70 °C                               |
| Operating temperature range   | -25 ... +80 °C (-25 ... +60 °C for UL spec.) |
| Storage temperature range     | -40 ... +80 °C                               |
| Fluid temperature range       | -25 ... +80 °C                               |

CE mark EN 61000-6-1 / 2 / 3 / 4

UL mark <sup>2)</sup> Certificate-No.: E318391

Vibration resistance acc. to DIN EN 60068-2-6 (0 ... 500 Hz) ≤ 10 g

Shock resistance acc. to DIN EN 60068-2-27 (11 ms) ≤ 50 g

Protection class acc. to DIN EN 60529 <sup>3)</sup> IP 67

#### IO-Link specific data

|  |  |
|--|--|
| IO-Link revision                           | V1.1 / support V1.0  |
| Transmission rate, baud rate <sup>4)</sup> | 38.4 kBaud * (COM2)  |
| Minimum cycle time                         | 2.5 ms   |
| Process data width                         | 16 bit   |
| SIO mode supported                         | Yes  |
| M-sequence capability                      | PREOPERATE: TYPE_0<br>OPERATE: TYPE_2_2<br>ISDU: Supported |

IO Device Description (IODD) download at: <https://ioddfinder.io-link.com/#/>

#### Other data

|  |  |
|--|--|
| Supply voltage                         | 9 ... 35 V DC, if PIN 2 = SP2<br>18 ... 35 V DC, if PIN 2 = analogue output  |
| when applied acc. to UL specifications | - limited energy – acc. to 9.3 UL 61010; Class 2;<br>UL 1310 / 1585; LPS UL 60950  |
| Residual ripple of supply voltage      | ≤ 5 %  |
| Current consumption                    | ≤ 0.535 A with active switching outputs<br>≤ 35 mA with inactive switching outputs<br>≤ 55 mA with inactive switching output and analogue output |
| Display                                | 4-digit, LED, 7-segment, red,<br>height of digits 7 mm   |
| Weight                                 | ~ 120 g  |

Note: Overvoltage, override protection and short circuit protection are provided.  
FS (Full Scale) = relative to complete measuring range

<sup>1)</sup> 1000 bar only with mechanical connection G 1/4 A ISO 1179-2

<sup>2)</sup> Environmental conditions acc. to 1.4.2 UL 61010-1; C22.2 No. 61010-1

<sup>3)</sup> With mounted mating connector in corresponding protection class

<sup>4)</sup> Connection with unshielded standard sensor line possible up to a maximum line length of 20 m.

## Setting options:

All terms and symbols used for setting the EDS 3400 as well as the menu structure comply with the specifications in the VDMA Standard for pressure switches.

## Setting ranges for the switching outputs:

| Measuring range in bar | Lower limit of RP / FL in bar | Upper limit of SP / FH in bar |
|------------------------|-------------------------------|-------------------------------|
| 0 .. 40                | 0.4                           | 40.0                          |
| 0 .. 100               | 1.0                           | 100.0                         |
| 0 .. 250               | 2.5                           | 250.0                         |
| 0 .. 400               | 4                             | 400.0                         |
| 0 .. 600               | 6                             | 600.0                         |
| 0 .. 1000              | 10                            | 1000.0                        |

| Measuring range in bar | Min. difference betw. RP and SP & FL and FH | Incre-ment* in bar |
|------------------------|---|--------------------|
| 0 .. 40                | 0.4   | 0.1                |
| 0 .. 100               | 1.0   | 0.2                |
| 0 .. 250               | 2.5   | 0.5                |
| 0 .. 400               | 4   | 1                  |
| 0 .. 600               | 6   | 1                  |
| 0 .. 1000              | 10  | 2                  |

\*All ranges given in the table can be adjusted by the increments shown.

SP = switch point

RP = switch-back point

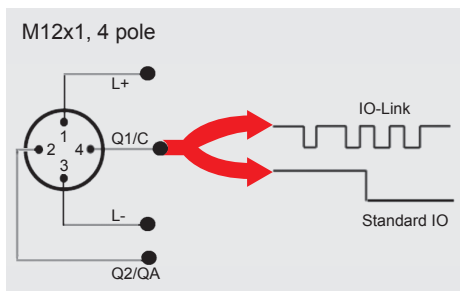
FL = pressure window lower value

FH = pressure window upper value

## Additional functions:

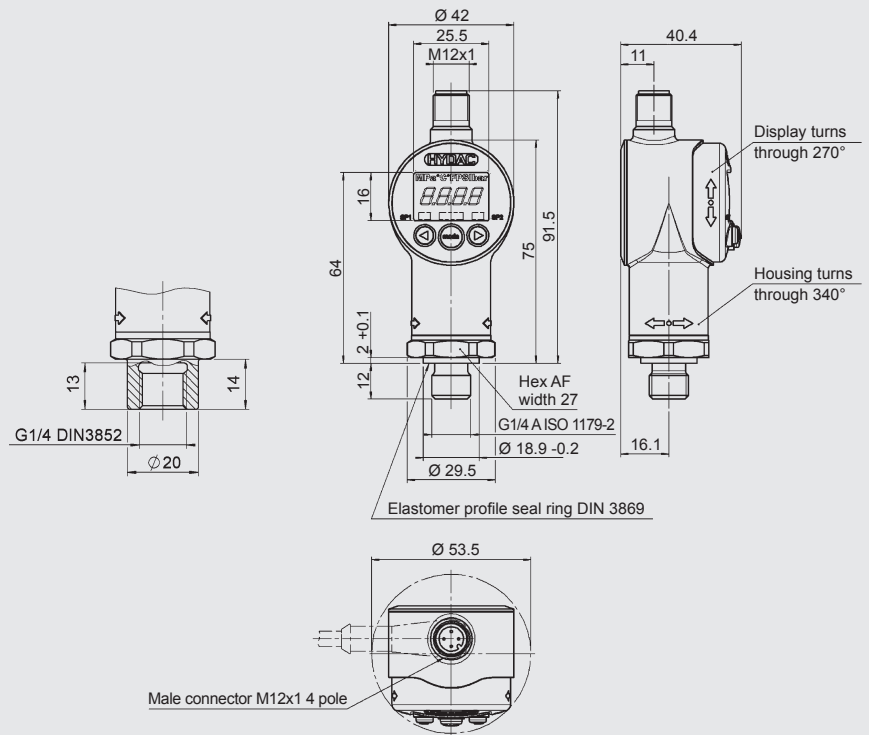
- Switching mode of the switching outputs adjustable (switch point function or window function)
- Switching direction of the switching outputs adjustable (N/C or N/O function)
- Switch-on and switch-off delay adjustable from 0.00 .. 99.99 seconds
- Analogue output signal selectable 4 .. 20 mA or 0 .. 10 V
- Pressure can be displayed in bar, psi, MPa.

## Pin connections:



| Pin | Signal | Description                                    |
|-----|--------|--|
| 1   | L+     | +U <sub>B</sub>                                |
| 2   | Q2/QA  | Switching output (SP2) / analogue output       |
| 3   | L-     | 0 V  |
| 4   | Q1/C   | IO-Link communication / switching output (SP1) |

## Dimensions:



## Model code:

**EDS 3 4 X 6 - F31 - XXXX - 000**

### Mechanical connection

- 4 = G1/4 A ISO 1179-2
- 9 = threaded port DIN 3852-G1/4

### Electrical connection

- 6 = male M12x1, 4 pole (mating connector not supplied)

### Output

F31 = IO-Link interface

### Measuring ranges in bar

- 0040; 0100; 0250; 0400; 0600
- 1000 (only with mechanical connection code "4")

### Modification number

000 = standard

### Accessories:

Appropriate accessories, such as mating connectors, mechanical adapters, splash guards, clamps for wall-mounting and programming units, can be found in the Accessories brochure.

## 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.

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