



Pressure Switch EDS 3100

Absolute pressure

Display

IO-Link

UL US

IO-Link

Description:

The EDS 3100 with IO-Link communication interface is a compact electronic pressure switch with integrated digital display for absolute pressure measurement in the low 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 3100 IO-Link are machine tools, handling and assembly automation, intralogistics or the packaging industry.

Technical data:

Input data			
Measuring ranges	bar	1	2.5
Overload pressures	bar	3	8
Burst pressure	bar	5	12
Mechanical connection	G1/4 A ISO 1179-2 Threaded port DIN 3852-G1/4		
Tightening torque, recommended	20 Nm		
Parts in contact with fluid	Mech. connection: Stainless steel Sensor cell: Ceramic Seal: FKM / EPDM (as per model code)		
Output data			
Switching outputs	PNP transistor outputs Switching current: max. 250 mA per switching output		
Analogue output, permitted load resistance	Selectable: 4 ... 20 mA load resist. max. 500 Ω 0 ... 10 V load resist. min. 1 kΩ		
Accuracy acc. to DIN 16086, terminal based	≤ ± 0.5 % FS typ. ≤ ± 1 % FS max.		
Temperature compensation, zero point	≤ ± 0.015 % FS / °C typ. ≤ ± 0.025 % FS / °C max.		
Temperature compensation, span	≤ ± 0.015 % FS / °C typ. ≤ ± 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 ¹⁾	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 ²⁾	IP 67		
IO-Link specific data			
IO-Link revision	V1.1 / support V1.0		
Transmission rate, baud rate ³⁾	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	
	OPERATE:	TYPE_2_2	
	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 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; UL 1310 / 1585; LPS UL 60950		
Residual ripple of supply voltage	≤ 5 %		
Current consumption	≤ 0.535 A with active switching outputs ≤ 35 mA with inactive switching outputs ≤ 55 mA with inactive switching output and analogue output		
Display	4-digit, LED, 7-segment, red, 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

¹⁾ Environmental conditions acc. to 1.4.2 UL 61010-1; C22.2 No. 61010-1

²⁾ With mounted mating connector in corresponding protection class

³⁾ 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 3100 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 .. 1	0.010	1.000
0 .. 2.5	0.025	2.500

Measuring range in bar	Min. difference betw. RP and SP & FL and FH in bar	Increment* in bar
0 .. 1	0.010	0.002
0 .. 2.5	0.025	0.005

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

SP = switch point

RP = switch-back point

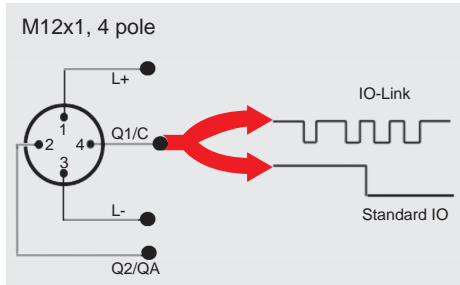
FL = pressure window lower value

FH = pressure window upper value

Additional functions:

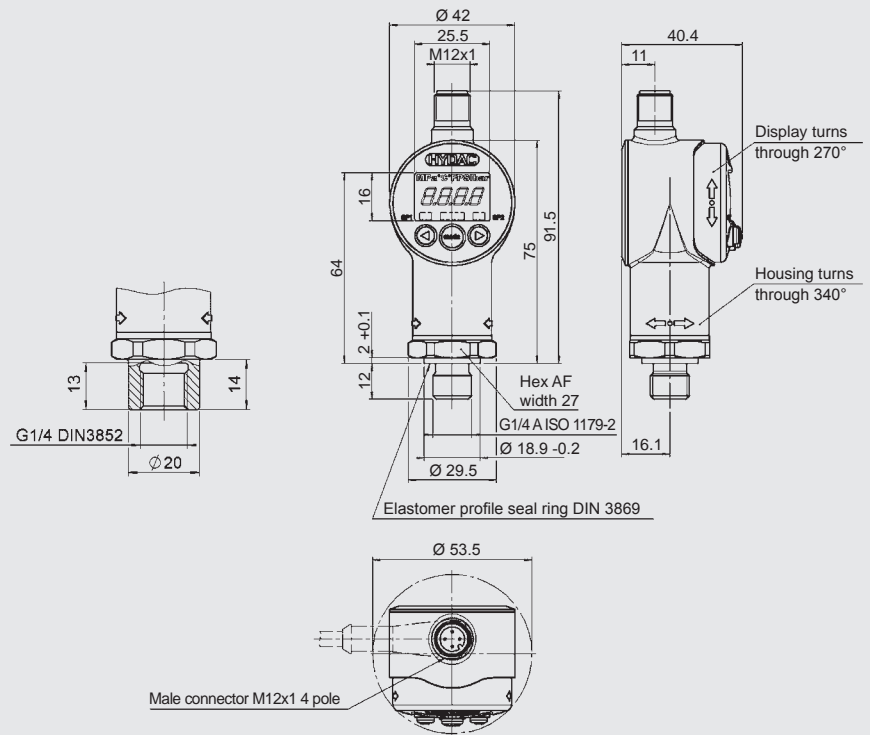
- Switching mode of the switching outputs adjustable (switch point function or window function)
- Switching direction of the switching outputs adjustable (N/C or N/O function)
- Switch-on and switch-off delay adjustable from 0.00 .. 99.99 seconds
- Analogue output signal selectable 4 .. 20 mA or 0 ..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

Pin connections:



Pin	Signal	Description
1	L+	+U _B
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 1 X 6 - F31 - XXXX - 000 - X 1

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

- 01.0; 02.5

Modification Number

- 000 = standard

Seal material (parts in contact with fluid)

- F = FKM seal (e.g. for hydraulic oils)
- E = EPDM seal (e.g. for water, refrigerants)

Connection material (parts in contact with fluid)

- 1 = stainless steel

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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