HYDAC INTERNATIONAL

Electronic Pressure Switch EDS 4400 ATEX Intrinsically Safe

(Minimum order quantity 50 units)

Description:

The pressure switch EDS 4400 in ATEX version, has been specially developed for use in potentially explosive atmospheres, and is based on the EDS 4000 series.

The switching point and switch-back point, the function of the switching outputs as N/C or N/O and the switching delay are factory-set according to customer requirement (not field-adjustable).
As with the industry model, the EDS 4400 in ATEX version has a stainless steel measurement cell with thin-film strain gauge for measuring relative pressure in the high pressure range.

With approval for the following **Protection types and applications:**

I M1	Ex ia I
II 1G	Ex ia IIC T4, T5, T6
II 1/2G	Ex ia IIC T4, T5, T6
II 2G	Ex ia IIC T4, T5, T6
II 1 D	Ex iaD 20 T100°C

almost all requirements are covered regarding ignition group, error class and temperature class.

Versions for other Protection types and applications are available upon request.

Special features:

- Switching point and switch-back point factory-set according to customer specification (not field-adjustable)
- Accuracy ≤ ± 1% FS
- Certificates: DEKRA EXAM BVS 07 ATEX E 041 X
- Various types of electrical connection
- Very small temperature error
- Excellent EMC characteristics
- Excellent durability

Technical data:

Input data		
Measuring ranges	60; 100; 250; 400; 600 bar	
Overload pressures	120; 200; 500; 800; 1000 bar	
Burst pressures	300; 500; 1000; 2000; 2000 bar	
Mechanical connection	G1/4 A DIN 3852	
Torque value	20 Nm	
Parts in contact with medium	Stainless steel: 1.4542; 1.4571; 1.4435; 1.4404; 1.4301 Seal: FPM	
Output data		
Switch output	1 x PNP N/C or N/O	
Output load	during operation: Imax ≤ 34 mA	
Switching point	Factory-set acc. to customer specification	
Switch-back point	Factory-set acc. to customer specification	
Accuracy to DIN 16086, Max. setting	≤ ± 0.5 % FS typ. ≤ ± 1 % FS max.	
Repeatability	≤ ± 0.1 % FS at 25 °C	
Temperature drift	≤ ± 0.03 % FS / °C max. zero point ≤ ± 0.03 % FS / °C max. range	
Rising switch point and falling switch point delay	32 ms standard (8 .. 2000 ms factory-set to customer spec.)	
Long-term drift	≤ ± 0.3 % FS typ. / year	
Environmental conditions		
Storage temperature range	-40 .. +100 °C	
Fluid temperature range	-20 .. +60 °C / +70 °C / +85 °C	
CE mark	EN 61000-6-1 / 2 / 3 / 4 EN 60079-0 / 11 / 26 EN 61241-0 / 11 EN 50303	
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	≤ 20 g	
Protection class to IEC 60529	IP 65 (male to EN175301-803 (DIN 43650)) IP 67 (M12x1 male, when an IP 67 connector is used)	

Relevant data for Ex applications	**I M1 II 1G, 1/2G, 2G**	**II 1 D**
Supply voltage	14 .. 28 V DC	
Compensated temperature range	T6: -20 .. +60 °C T5, T4: -20 .. +70 °C T100: -20 .. +70 °C	
Operating temperature range	T6: -20 .. +60 °C T5, T4: -20 .. +70 °C T100: -20 .. +70 °C	
Max. ambient temperature T_a	T6: +60 °C T5, T4: +70 °C	T100: +70 °C
Max. input current	100 mA	93 mA
Max. input power	0.7 W	0.65 W
Max. internal capacitance	33 nF	33 nF
Max. internal inductance	0 mH	0 mH
Insulation voltage [1]	50 V AC, with integrated overvoltage protection EN 61000-6-2	
Approved intrinsic safety barriers	Pepperl & Fuchs: Z 787 Telematic Ex STOCK: MTL 7087	

Other data	
Residual ripple of supply voltage	≤ 5 %
Life expectancy	> 10 million cycles 0 .. 100 % FS
Weight	~ 150 g

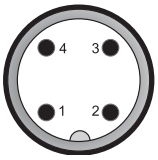
Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.
FS (**F**ull **S**cale) = relative to the full measuring range
[1] 500 V AC on request

Pin connections:

Pin connections are configured according to customer specification.

EN175301-803 (DIN 43650)

M12x1



Areas of application:

Protection Type	I M1 Ex ia I	II 1G Ex ia IIC T4, T5, T6	II 2G Ex ia IIC II 1/2G Ex ia IIC T4, T5, T6	II 1D Ex iaD 20 T100 °C
Certificate	DEKRA EXAM BVS 07 ATEX E 041 X	DEKRA EXAM BVS 07 ATEX E 041 X	DEKRA EXAM BVS 07 ATEX E 041 X	DEKRA EXAM BVS 07 ATEX E 041 X
Zones / Categories	Group I Category M1 Mining Protection class: intrinsically safe ia with barrier	Group II Category 1G Gases Protection class: intrinsically safe ia with barrier For use in Zone 0 T4, T5: T_a = 70 °C T6: T_a = 60 °C	Group II Category 2G, 1/2G Gases Protection class: intrinsically safe ia with barrier For use in Zone 1, 2 For mounting to Zone 0 T4, T5: T_a = 70 °C T6: T_a = 60 °C	Group II Category iD Dusts Protection class: intrinsically safe ia with barrier For use in Zone 20, 21, 22 For mounting to Zone 20 T100: T_a = 70 °C

Instruments for other Protection types and applications are available upon request. Please contact our technical sales department for more information.

Order details:

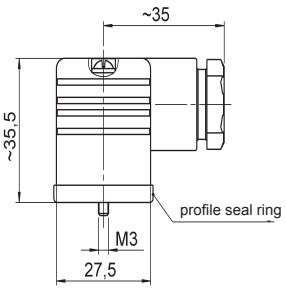
The electronic pressure switch EDS 4400 in ATEX version has been specially developed for OEM customers and is available for minimum order quantities of 50 pieces per type.

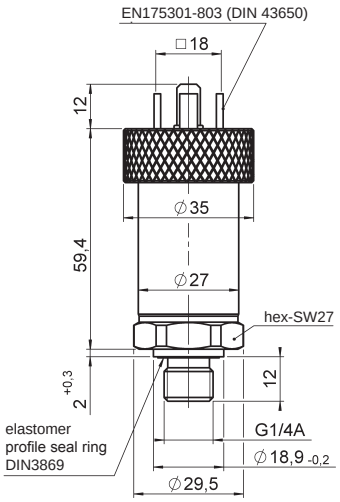
Accessories:
Appropriate accessories, such as electrical connectors can be found in the Accessories brochure.

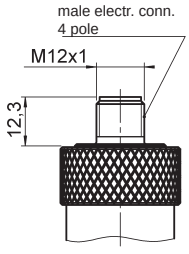
Safety instructions:

- The switching output draws the switching energy from the power supply to the pressure switch. No additional energy is introduced into the electrical circuit from the switching output.
- Dual Zener barriers specified and approved in the technical data must be used to connect the pressure switch. These have a reverse polarity diode to decouple the signal. The signal path may only be passively loaded.
- Ensure that measured fluids in contact with the pressure switch are compatible with the materials used.

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.