

## HYDAC INTERNATIONAL



### Pressure Switch EDS 4400 Ex series applications

Flameproof enclosure  
**ATEX, CSA, IECEx, triple approval**  
Customised designs thanks to diverse  
electrical and mechanical connections  
Up to 2 switching outputs



#### Description:

The electronic pressure switch EDS 4400 with flameproof enclosure and triple approval acc. to ATEX, CSA and IECEx ensures the instrument is universally suitable for use in potentially explosive atmospheres worldwide.

Each instrument is certified by the three approvals organizations and is labelled accordingly. Therefore there is no longer any need to stock multiple devices with separate individual approvals. The switch point and switch-back point, the function of the switching outputs as N/C or N/O and the switching delay are factory-set acc. to customer requirement (not field-adjustable).

As with the industry model of the EDS 4400, those with triple approval have a proven, fully-welded sensor cell with a thin-film strain gauge on a stainless steel membrane without internal seal.

The main fields of application are in mining and the oil and gas industry, e.g. in underground vehicles, hydraulic assemblies, blow-out preventers (BOPs), drill drives or valve actuation stations and in locations with high dust contamination.

#### Protection types and applications:

##### CSA<sub>US</sub>

Explosionproof - Seal not required  
Class I Group A, B, C, D, T6, T5  
Class II Group E, F, G  
Class III  
Type 4

##### ATEX

Flameproof  
I M2 Ex d I Mb  
II 2G Ex d IIC T6, T5 Gb  
II 2D Ex tb IIIC T110 .. 130 °C Db

##### IECEx

Flameproof  
Ex d I Mb  
Ex d IIC T6, T5 Gb  
Ex tb IIIC T110 .. 130 °C Db

#### Technical data:

##### Input data

Measuring ranges	bar	6	16	40	60	100	250	400	600	1000
Overload pressures	bar	15	32	80	120	200	500	800	1000	1600
Burst pressure	bar	100	200	200	300	500	1000	2000	2000	3000

Mechanical connection G1/4 A ISO 1179-2

Tightening torque, recommended 20 Nm

Parts in contact with fluid Stainless steel: 1.4542; 1.4571; 1.4435; 1.4404; 1.4301, 1.4548  
Seal: FKM

Conduit, housing material 1.4435; 1.4404

##### Output data

Switching output <sup>1)</sup> 1 or 2 PNP transistor outputs:  
PNP  
Switching current:  
max. 1.2 A with 1 switching output  
max. 1 A each with 2 switching outputs  
Switching cycles: > 100 million  
Switch points/hysteresis:  
acc. to customer specification  
Switch-on and switch-off delay:  
32 ms standard  
(8 .. 2000 ms acc. to customer spec.)

Accuracy acc. to DIN 16086, terminal based

≤ ± 0.5 % FS typ.  
≤ ± 1.0 % FS max.

Temperature compensation

≤ ± 0.02 % FS / °C typ.  
≤ ± 0.03 % FS / °C max.

Zero point

≤ ± 0.02 % FS / °C typ.  
≤ ± 0.03 % FS / °C max.

Temperature compensation

≤ ± 0.02 % FS / °C typ.  
≤ ± 0.03 % FS / °C max.

Span

≤ ± 0.1 % FS max.

Repeatability

≤ ± 0.3 % FS typ. / year

Long-term drift

≤ ± 0.3 % FS typ. / year

Environmental conditions

Compensated temperature range -25 .. +85 °C

Operating / ambient temperature range <sup>2)3)</sup> T6, T110 °C: Ta = -40 .. +60 °C / -20 .. +60 °C  
T5: Ta = -40 .. +80 °C / -20 .. +80 °C

Storage temperature range -40 .. +100 °C

Fluid temperature range <sup>2)3)</sup> T6, T110 °C: Ta = -40 .. +60 °C / -20 .. +60 °C  
T5: Ta = -40 .. +80 °C / -20 .. +80 °C

CE mark

EN 61000-6-1 / 2 / 3 / 4  
EN 60079-0 / 1 / 31

Vibration resistance acc. to

DIN EN 60068-2-6 at 10 .. 500 Hz

≤ 10 g

Protection class acc. to DIN EN 60529

IP 65 (Vented Gauge), IP 69 (Sealed Gauge)  
ISO 20653 IP 6K9K (Sealed Gauge)

Other data

Supply voltage 12 .. 30 V DC

Residual ripple of supply voltage ≤ 5 %

Current consumption

≤ 25 mA with inactive switching outputs  
≤ 1.225 A with 1 switching output  
≤ 2.025 A with 2 switching outputs

Weight ~ 300 g

Note: Reverse polarity protection of the supply voltage, overvoltage, override and short circuit protection are provided.

FS (Full Scale) = relative to complete measuring range

<sup>1)</sup> NPN switching outputs on request

<sup>2)</sup> T130 °C with Ta = -40 .. +80 °C / -20 .. +80 °C with electrical connection

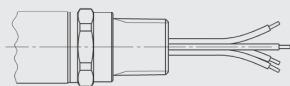
single leads possible

<sup>3)</sup> -20 °C with FKM seal, -40 °C on request

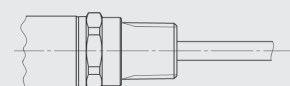
## Pin connections:

Pin connections are configured acc. to customer specification.

Conduit (single leads)



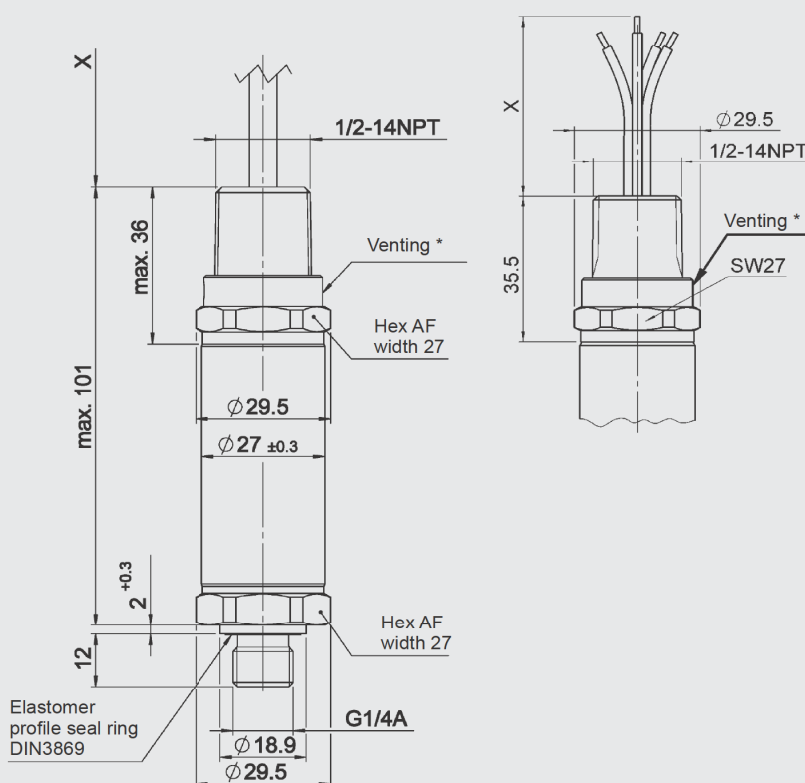
Conduit (jacketed cable)



## Fields of application:

	Single leads Electrical connection "9"	Jacketed cable Electrical connection "G"
CSA	Explosionproof (seal not required)	
ATEX	Flameproof	
IECEX	Flameproof	
cCSA <sub>us</sub>	Class I Group A, B, C, D, T6, T5 Class II Group E, F, G Class III Type 4	
ATEX	I M2 Ex d I Mb	II 2D Ex tb IIIC T110 °C Db
	II 2G Ex d IIC T6, T5 Gb	
IECEX	Ex d I Mb Ex d IIC T6, T5 Gb	Ex tb IIIC T110 °C Db
	Ex tb IIIC T110 .. 130 °C Db	

## Dimensions:



\* Optional depending on type "Sealed Gauge" / "Vented Gauge"

## Order details:

The electronic pressure switch EDS 4400 with triple approval has been specially developed for OEM customers and is available for minimum order quantities of 50 units per type. For precise specifications, please contact the Sales Department of HYDAC ELECTRONIC.

## 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.