



Pressure Switch EDS 4400 Ex applications

Relative pressure

Programmable

Flameproof enclosure
ATEX, CSA, IECEx, triple approval
Up to 2 switching outputs



Description:

The programmable electronic pressure switch EDS 4400 with flameproof enclosure has triple approval acc. to ATEX, CSA and IECEx which 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.

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 instrument is programmed conveniently and simply using the HYDAC Programming Unit HPG 3000.

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

Protection types and applications:

CSA_{US}

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 ¹⁾	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: user-programmable with HYDAC Programming Unit HPG 3000 Switch-on and switch-off delay: 8 .. 2000 ms; User-programmable with HYDAC Programming Unit HPG 3000
Accuracy acc. to DIN 16086, terminal based	≤ ± 0.5 % FS typ. ≤ ± 1.0 % FS max.
Temperature compensation Zero point	≤ ± 0.02 % FS / °C typ. ≤ ± 0.03 % FS / °C max.
Temperature compensation Span	≤ ± 0.02 % FS / °C typ. ≤ ± 0.03 % FS / °C max.
Repeatability	≤ ± 0.1 % FS max.
Long-term drift	≤ ± 0.3 % FS typ. / year

Environmental conditions

Compensated temperature range	-25 .. +85 °C
Operating / ambient temperature range ²⁾³⁾	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 ²⁾³⁾	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 ISO 20653	IP 65 (Vented Gauge), IP 69 (Sealed Gauge) 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

¹⁾ NPN switching outputs on request

²⁾ T130 °C with Ta = -40 .. +80 °C / -20 .. +80 °C with electrical connection
single leads possible

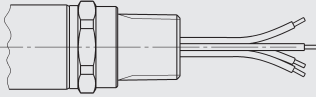
³⁾ -20 °C with FKM seal, -40 °C on request

Setting ranges for the switching outputs:

- Switch point or upper switch value 5 % .. 100 % of the measurement range
- Hysteresis or lower switch value 1 % .. 96 % of the measurement range

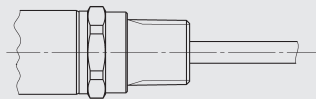
Pin connections:

Conduit (single leads)



Lead	EDS 44x9-*-1P	EDS 44x9-*-2P
red	+U _B	+U _B
white	Switching output 1	Switching output 1
brown	-----	Switching output 2
black	0 V	0 V
green	SDA ¹⁾	SDA ¹⁾

Conduit (jacketed cable)



Lead	EDS 44xG-*-1P	EDS 44xG-*-2P
white	Switching output 1	Switching output 1
brown	n.c.	Switching output 2
green	SDA ¹⁾	SDA ¹⁾
yellow	0 V	0 V
grey	+U _B	+U _B

¹⁾ Programming line

Fields of application:

	Single leads Electrical connection "9"	Jacketed cable Electrical connection "G"
CSA	Explosionproof (seal not required)	
ATEX	Flameproof	
IECEX	Flameproof	
cCSA_{US}	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 Mb
	II 2G Ex d IIC T6, T5 Gb	II 2D Ex tb IIC T110 °C Db
IECEX	Ex d I Mb Ex d IIC T6, T5 Gb	
	Ex tb IIC T110 .. 130 °C Db	Ex tb IIC T110 °C Db

Model code:

EDS 4 4 X X - XXXX - X P - D X - 000 (2m)

Mechanical connection

4 = G1/4 A ISO 1179-2

Electrical connection

9 = 1/2-14 NPT Conduit (male thread), single leads

G = 1/2-14 NPT Conduit (male thread), jacketed cable

Measuring ranges in bar

0006; 0016; 0040; 0060; 0100; 0250; 0400; 0600; 1000

Number of switching outputs

1 = 1 switching output

2 = 2 switching outputs

Output technology

P = programmable

Approval

D = CSA Explosionproof - Seal not required

ATEX Flameproof

IECEX Flameproof

Type of measurement cell

S = Sealed Gauge (sealed to atmosphere) ≥ 40 bar

V = Vented Gauge (vented to atmosphere) < 40 bar

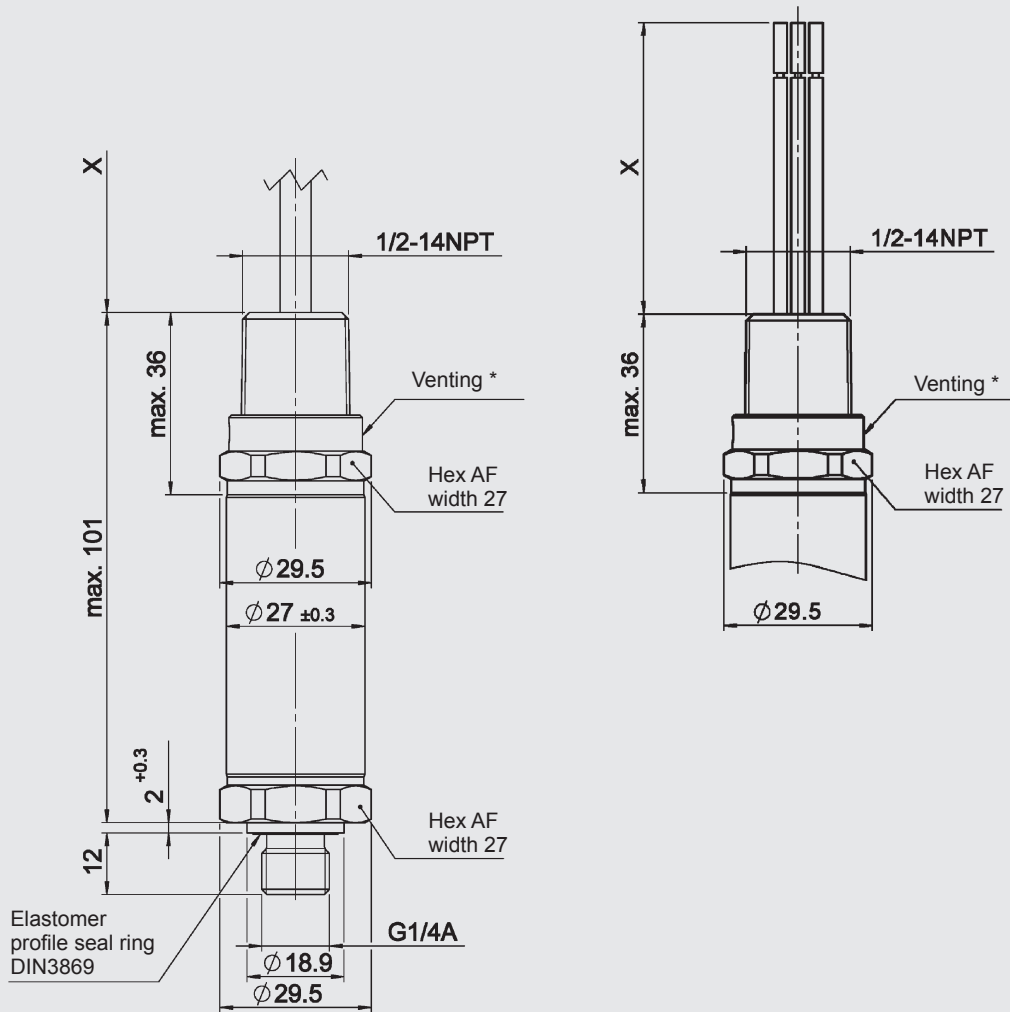
Modification number

000 = standard

Cable length in m

Standard = 2 m

Dimensions:



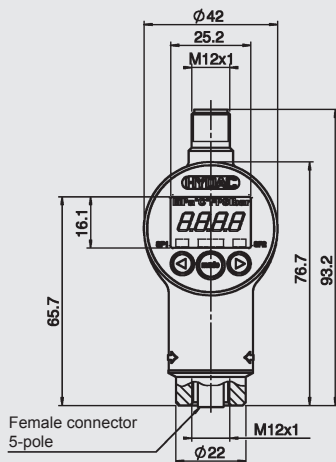
* Optional depending on type "Sealed Gauge" / "Vented Gauge"

Programming Unit:

(to be ordered separately)

HPG 3000 – 000

Portable Programming Unit
Part No. 909 422



For simple connection of the pressure switch to the HPG 3000, please use the **UVM 3000 Connection Adapter** (see Accessories Brochure).

CAUTION!

The HPG 3000 Programming Unit may only be used outside the explosion risk zone.

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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