Electronic Pressure Switch

EDS 4400 Programmable
ATEX, CSA, IECEx
Flameproof Enclosure

Description:

The programmable electronic pressure switch EDS 4400 with flameproof enclosure has triple approval according to ATEX, CSA and IECEx which ensures the instrument is universally suitable for use in potentially explosive environments around the world.
Each instrument is certified by the three approval organizations and is labelled accordingly. Therefore there is no longer any need to stock multiple devices with separate individual approvals.

As with the industrial version of the EDS 4400, those with triple approval have a proven, fully-welded stainless steel measurement cell with thin film strain gauge without internal seals.

The instrument is programmed conveniently and simply using the HPG 3000 HYDAC programming unit.

The main areas 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 areas with high dust loads.

Protection types and applications:

cCSAus Explosion Proof - Seal Not Required
Class I Group A, B, C, D, T6, T5
Class II Group E, F, G
Class III
Type 4

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

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

Special features:

- Accuracy ≤ ± 0.5% FS B.F.S.L.
- Certificates:
  ATEX KEMA 10ATEX100 X
  CSA MC 224264
  IECEx KEM 10.0053X
- Robust design
- Very small temperature error
- Excellent EMC characteristics
- Excellent durability

Technical data:

Input data	
Measuring ranges	100, 300, 500, 1000, 1500, 3000, 5000, 6000, 9000, 10000, 15000, 20000, 30000 psi
Overload pressures	290, 1160, 1160, 2900, 2900, 7250, 11600, 11600, 14500, 14500, 23200, 38400, 43500 psi
Burst pressure	1450, 2900, 2900, 7250, 7250, 14500, 29000, 29000, 29000, 29000, 43500, 43500, 58000 psi
Mechanical connection[1] (torque value)	1/4-18 NPT, male 1/4-18 NPT, female SAE 6 9/16-18 UNF 2A SF 250 CX20, Autoclave(7/16-20-UNF 2B) SAE 6: 15lb-ft(20Nm) SF 250 CX20, 1/4 NPT: 30lb-ft(40Nm)
Parts in contact with medium	Stainless steel: 1.4542; 1.4571; 1.4435; 1.4404; 1.4301 Seal: FPM
Conduit and housing material	1.4404; 1.4435 (316L)
Output data	
Accuracy to DIN 16086, Max. setting	≤ ± 0.5 % FS typ. ≤ ± 1.0 % FS max.
Repeatability	≤ ± 0.1 % FS max.
Temperature drift	≤ ± 0.017% FS/°F max. zero point ≤ ± 0.017% FS/°F max. range
Switch output [2]	1 or 2 PNP transistor switch outputs
Output load	max. 1.2 A on version with 1 switch output max. 1 A each on version with 2 switch outputs
Switch points / hysteresis / N/C or N/O function	user-programmable with HYDAC Programming Unit HPG 3000
Rising switch point and falling switch point delay	8 .. 2000 ms; User-programmable with HYDAC Programming Unit HPG 3000
Long-term drift	≤ ± 0.3 % FS typ. / year
Environmental conditions	
Compensated temperature range	T5, T130 °C: -13..+176°F T6, T110 °C: -13..+140°F
Operating temperature range[3]	T5, T130 °C: -40..+176°F / -4..+176°F T6, T110 °C: -40..+140°F / -4..+140°F
Storage temperature range	-40..+212°F
Fluid temperature range[3]	T5, T130 °C: -40..+176°F / -4..+176°F T6, T110 °C: -40..+140°F / -4..+140°F
CE mark	EN 61000-6-1 / 2 / 3 / 4 EN 60079-0 / 1 / 31
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	≤ 20 g
Protection class to IEC 60529 to ISO 20653	IP 65 (Vented Gauge) IP 69K (Sealed Gauge)
Other data	
Voltage supply	12 .. 30 V DC
Current consumption	~ 25 mA (plus switching current)
Residual ripple of supply voltage	≤ 5 %
Life expectancy	> 10 million cycles 0 .. 100 % FS
Weight	~ 300 g

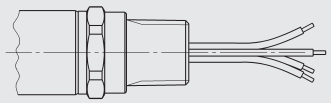
Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.
FS (**F**ull **S**cale) = relative to complete measuring range
[1] Other mechanical connection options available on request
[2] NPN switching outputs upon request
[3] -4 °F with FPM seal, -40 °F on request

Setting ranges for the switch outputs:

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

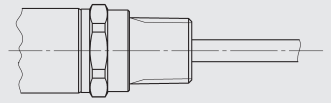
Pin connections:

Conduit (single cores)



Core	EDS 44x9-*-1P	EDS 44x9-*-2P
red	+U_B	+U_B
white	Switch output 1	Switch output 1
brown	---------	Switch output 2
black	0 V	0 V
green	SDA[1)]	SDA[1)]

Conduit (flying leads)



Core	EDS 44xG-*-1P	EDS 44xG-*-2P
white	Switch output 1	Switch output 1
brown	n.c.	Switch output 2
green	SDA[1)]	SDA[1)]
yellow	0 V	0 V
grey	+U_B	+U_B

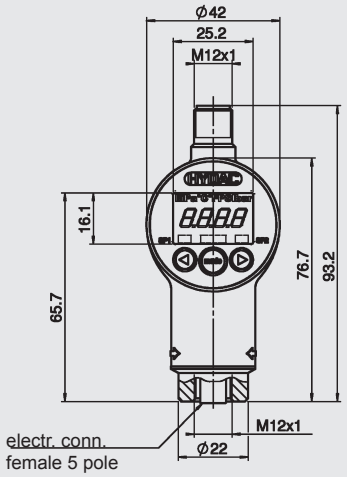
1) Programming line

Programming Unit:

(must be ordered separately)

HPG 3000 – 000
Portable Programming Unit
Part. No. 909 422

HPG 3000 Power Supply with connector:
Part #02091103



The pressure switch can be connected to the HPG 3000 very simply by using the **UVM 3000 Connection Adapter** (see Accessories Brochure).

CAUTION!
The HPG 3000 Programming Unit may only be used outside the potentially explosive area.

Areas of application:

Approvals	cCSAus: Explosion Proof - Seal not required ATEX: Flame Proof IECEx: Flame Proof
Certificate	ATEX KEMA 10ATEX100X CSA MC 224264 IECEx KEM 10.0053X
Applications / Protection types	c**CSA**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 2G Ex d IIC T6, T5 Gb II 2D Ex tb IIIC T110 .. 130 °C Db **IECEx**: Ex d I Mb Ex d IIC T6, T5 Gb Ex tb IIIC T110 .. 130 °C Db

Model code:

EDS 4 4 X X –XXXX – X P – D X – 000 (PSI) 72in

Mechanical connection
7 = SAE 6, 9/16-18 UNF 2A male
8 = 1/4-18 NPT, male
F = 1/4-18 NPT, female
C = SF 250 CX20, Autoclave (7/16-20 UNF2B)
B = F 250 C, Autoclave (9/16-18 UNF 2B, female)
Others on request

Electrical connection
9 = 1/2-14 NPT Conduit (male thread), single cores
G = 1/2-14 NPT Conduit (male thread), flying leads

Pressure ranges in psi
0100, 0300, 0500, 1500, 3000, 5000, 6000, 9000
10000, 15000 (only with mechanical connection “C”)
20000, 30000 (only with mechanical connection “B”)

Number of switch outputs
1 = 1 switch output
2 = 2 switch outputs

Output type
P = Programmable

Approval
D = CSA Explosion Proof - Seal not required
ATEX Flame Proof
IECEx Flame Proof

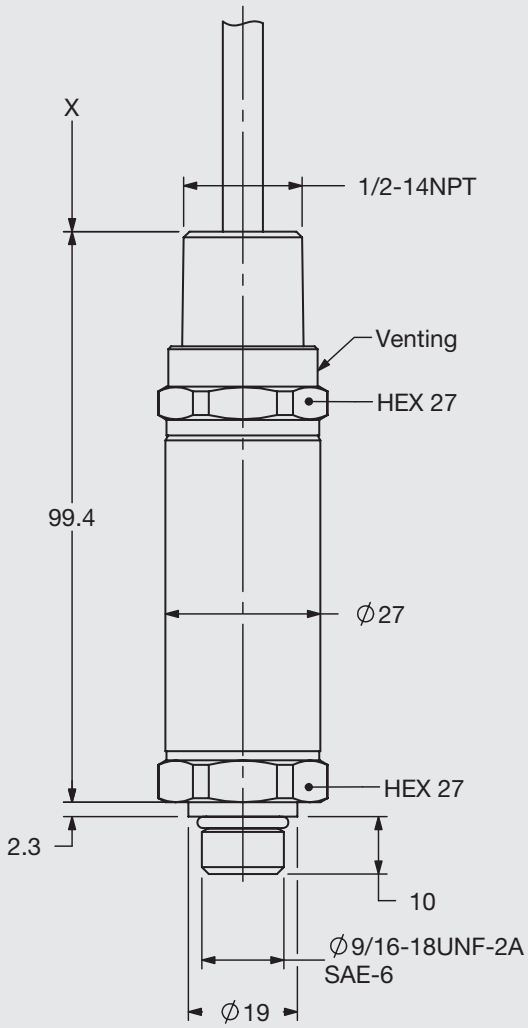
Type of measurement cell
S = Sealed Gauge (sealed to atmosphere) ≥ 500 psi
V = Vented Gauge (vented to atmosphere) ≤ 300 psi

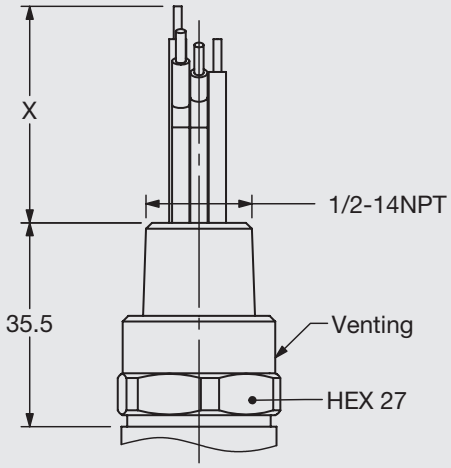
Modification number
000 = Standard

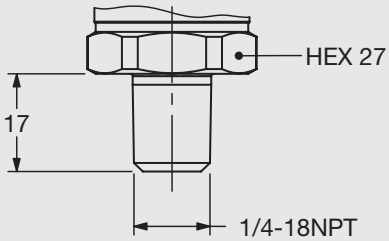
Cable length in inches
Standard = 72 inches

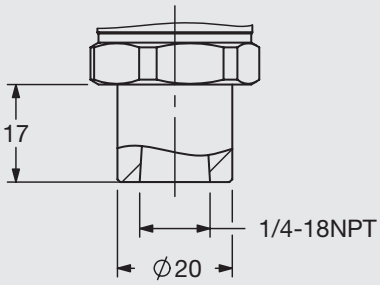
Accessories:
Appropriate accessories, such as electrical connectors, can be found in the Accessories brochure.

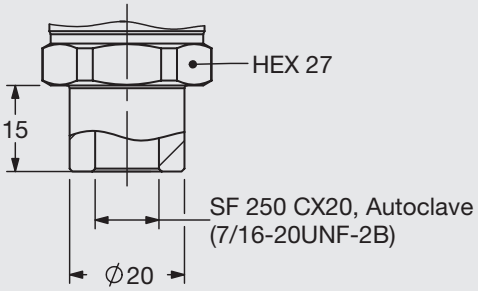
Dimensions:

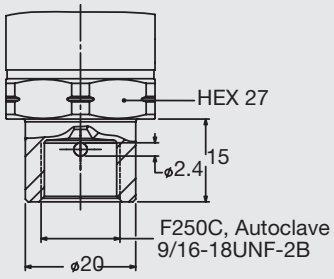












Note:

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.
For European mechanical connection and bar ranges see European Catalog

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