EDS 4000 Series

Programmable Pressure Switch CSA explosion Proof, ATEX & IECEx Explosion & Flame Proof

Applications

Description

The EDS 4000 series electronic pressure switch with triple approval *(cCSAus, ATEX Exd, IECExd)* allows installtion world wide in any hazardous environment. This also optimizes spare part stock and prevents technicians to apply the wrong pressure switch to their systems.

The switch is using our highly reliable and proven thin film pressure sensor which is welded to the connection so no internal seal is required. All welded parts as well as the housing is made out of industrial standard stainless steels toprevent corrosion. The triple approval is also available with NACE compliant materials.

The main areas of applications for this pressure switch are oil and gas *(BOP's, top drives, turn tables, control panels)* and mining *(underground vehicles, hydraulic drives)* as well as other hazardous areas.

Special Features

- Accuracy ≤ ±0.5 % BFSL
- Option of PNP or NPN switching outputs
- High switching output capacity
- Very small temperature error
- Excellent EMC characteristics
- Excellent long-term properties

Approvals

cCSAus Explosion Proof *(Seal Not Required)*
Class I Group A, B, C, D
Class II Group E, F, G
Class III
Type 4

ATEX Flame Proof
I M2 Ex d I
II 2G Ex d IIC T6, T5

IECEx Flame Proof
Ex d I Mb
Ex d IIC T6, T5 Gb

Technical Details,

Sensor Specifications		
Measuring ranges - psi	100, 300, 500, 1000, 1500, 3000, 5000, 6000, 9000, 10000, 15000	
Overload pressure - psi	290, 1160, 1160, 2900, 2900, 7250, 11600, 11600, 14500, 14500, 23200	
Burst pressure - psi	1450, 2900, 2900, 7250, 7250, 14500, 29000, 29000, 29000, 29000, 43500	
Mechanical connection	1/4"-18 NPT, male 1/4"-18 NPT, female SAE 6 9/16-UNF 2A G1/4A DIN 3852 *(bar ranges only)* SF 250 CX20, Autoclave (7/16-20 UNF 2B)	
Tightening torque	SAE 6, G1/4: 15 lb-ft (20 Nm) SF 250, 1/4" NPT: 30 lb-ft (40 Nm)	
Material in contact with media	1.4542, 1.4301, 304, 630	
Housing material	1.4404, 1.4435, 316L	
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	≤ ±0.5% BFSL.	
Temperature compensation zero point	≤ ±0.0085% / °F typ.	≤ ±0.017% / °F max.
Temperature compensation over range	≤ ±0.0085% / °F typ.	≤ ±0.017% / °F max.
Long-term drift	≤ ±0.3% FS typ. / year	
Life expectancy	10 million load cycles (0 to 100% FS)	
Weight	Approximately 280 g	
Switching Specifications		
Type	1 or 2 PNP outputs *(NPN upon request)*	
Repeatability	≤ ±0.1% FS max.	
Switching current	1 Switching ouput 2 Switching outputs	1.2A 1.0A each
Set / reset point / NO /NC	Programmed using HPG 3000 Programming Unit	
Set point in psi[2]	5 to 100% of measuring range	
Hysteresis in psi	1 to 96% of measuring range	
Switch on/off delay	8 to 2000 ms programmed using HPG 3000	
Switching cycles	≥ 100 million	
Environmental Condition		
Compensated temperature range	T5: -13° to 176°F (-25° to 80°C) T6: -13° to 140°F (-25° to 60°C)	
Operating temperature range[1]	T5: -40° to 176°F (-25° to 80°C) T6: -40° to 140°F (-40° to 60°C)	
Storage temperature range	-40° to 212°F (-40° to 100°C)	
Media temperature range[1]	-40° to 212°F (-40° to 100°C) -4° to 212°F (-20° to 100°C) with FPM	
CE mark	EN 61000-6-1 / 2 / 3 / 4, IEC 600079-0 / 1	
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g	
Environmental Protection	IP 65 *(vented gauge)* / IP 69K *(sealed gauge)*	
Electrical Specifications		
Supply voltage	12 to 30 VDC	
Residual ripple suppy voltage	≤ 5%	
Current consumption	approximately 25 mA *(inactive switching output)*	
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard	

1) With SAE or G1/4, in combination with FPM seal -4°F (-20°C)
2) Max set point for 10,000 psi = 9980 psi

Model Code

EDS 4 4 X X - XXXX - X P - D X - 000 (PSI) 72 inch

Mechanical Connection
- 4 = G1/4A DIN 3852 male *(bar ranges only)*
- 7 = SAE 6 9/16-18 UNF2A
- 8 = 1/4-18 NPT, male
- F = 1/4-18 NPT, female *(upon request)*
- C = SF 250 CX20, Autoclave (7/16-20 UNF 2B) *Others on request*

Electrical Connection
- 9 = Conduit connection *(1/2-14 NPT male)* with flying leads
- G = Conduit connection *(1/2-14 NPT male)* with open ended cable

Measuring Ranges
0100, 0300, 0500, 1000, 1500, 3000, 6000, 9000

for EDS 44Cx only *(SF 250 CX20, Autoclave)*
10,000*, 15,000 psi

Output
- 1 = 1 Switching Output
- 2 = 2 Switching Outputs

Output Technology
- P = Programmable switching output

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

Gauge Type
- S = Sealed gauge *(ranges 500 psi and higher)*
- V = Vented seal *(ranges lower than 500 psi)*

Modification Number
- 000 = Standard

(psi)
psi version *(Leave blank for bar version)*

Cable length
72 inch = standard
Other lengths upon request

*9980 is the max setpoint

HPG 3000 Programming Unit
Manual available online
Part #00909422

The HPG 3000 is NOT allowed to be used in hazardous environments.

UVM 3000 Adapter Cable
Part# 00909752

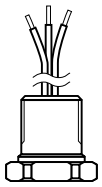
HPG 3000 Power Supply with Connector
Part #02091103

Application Areas

Protection class	$_{c}CSA_{US}$	Explosion Proof Seal Not Required	
	ATEX	Explosion and Flame Proof	
	IECEx	Explosion and Flame Proof	
Certificate number	ATEX KEMA 10ATEX0100 X CSA MC 224264 IECEx KEM 10.0053X		
Zones / Categories	$_{c}CSA_{US}$	Class I Class II Class III Type 4	Group A, B, C, D Group E, F, G
	ATEX	I M2 II 2G	Ex d I Ex d IIC T6, T5
	IECEx	Ex d I Mb Ex d IIC T6, T5 Gb	
Electrical Connection *(see model code)*	9; G		

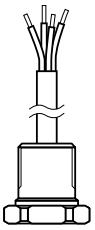
Pin Connections

Conduit Single Leads



Wire	44x9-X-1	44x9-X-2
red	signal +	signal +
white	switch ouput 1	switch ouput 1
black	0 V	0 V
green	program	program*
brown		switch ouput 2

Conduit Jacketed Cable



Wire	44xG-X-1	44xG-X-2
white	SP 1	SP 1
brown	n.c.	SP 2
green	program	program*
yellow	n.c.	n.c.
grey	+ supply	+ supply
pink	0 V	0 V

See Label and instruction manual for detail on wirings.
*The programming wire has to be connected to the ground after programming.

Dimensions