ETS 4500 Series

Temperature Transducer CSA Explosion Proof, ATEX & IECEx Explosion & Flame Proof

Applications

Description

The temperature transmitter ETS 4500 series with its pressure proof hpusing and threefold approval for ATEX, CSA, and IECEx, make it universally suitable for worldwide usage in potentially explosive atmoshere applications.

All temperature transmitters are supplied and labeled with triple certification. The requirement to stock teperature transmitters for separate approvals is no longer necessary.

Based on a silicon semiconductor temperature sensor element and evaluation electronics, the temperature sensor can measure in th erange of -4° to 212°F (-20° to 100°C).

The main areas of applications for this transmitter 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 ≤ ±0.25% BFSL
- Output signal 4 to 20 mA
- Very small temperature error
- Excellent EMC characteristics
- Excellent long-term properties

Approvals

$_{C}$CSA$_{US}$ 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	
Sensing technology	Silicon semiconductor device
Measuring range	-13° to 212°F (-25° to 100°C)
Sensor length - inch (mm)	0.42 (10.7), 3.94 (100), 9.84 (250), 13.8 (350)
Pressure rating psi (bar) / inch (mm)	SAE 6: 8700 (600) / 0.42 (10.7) 1/4" NPT: 1800 (125) / 3.94 (100) 1/4" NPT: 1800 (125) / 9.84 (250) 1/4" NPT: 1800 (125) / 13.8 (350)
Mechanical Connection	1/4"-18 NPT, male SAE 6 9/16-UNF 2A
Tightening Torque	SAE 6, G1/4: 15 lb-ft (20 Nm) 1/4" NPT: 30 lb-ft (40 Nm)
Parts in Contact with media	1.4571, 1.4301 (316Ti, 304) Seal: FPM (SAE 6)
Housing material	1.4404, 1.4435 (316L)
Weight	280 g / 0.42 (10.7 mm) 315 g/ 3.94 (100 mm) 350 g / 9.84 (250 mm) 385 g / 13.8 (350 mm)
Output Data	
Output Signal[1)] permitted resistance	4 to 20 mA, 2 wire, $R_{Lmax} = (U_B - 8V) / 20 mA$ [kΩ]
Accuracy	≤ ±3.0% FS max. ≤ ±1.5% FS typ.
Rise time to DIN EN 60751	T_{50}: 10s / T_{90}: 15s
Environmental Condition	
Operating temperature range[1)]	T5: -40° to 176°F (-40° 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)]	T5: -40° to 176°F (-40° to 80°C) T6: -40° to 140°F (-40° to 60°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4, EN 60079-0 / 1
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g
Environmental Protection to DIN 40050	IP 69K
Electrical Specifications	
Supply voltage	8 to 30V
Residual ripple suppy voltage	≤ 5%
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)

Model Code

ETS 4 5 X X - A - D - XXX - 000 72 inch

Mechanical Connection
7 = SAE 6, 9/16-18 UNF 2A male
(probe length "010" only)
8 = 1/4-18 NPT, male
(probe lengths "100-350" only)

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

Signal
A = 4 to 20 mA *(2-conductor)*

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

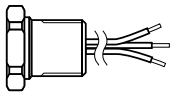
Gauge Type
010 = 0.42" (10.7 mm) *(SAE 6 only)*
100 = 3.94" (100 mm) *(1/4 NPT only)*
250 = 9.84" (250 mm) *(1/4 NPT only)*
350 = 13.8" (350 mm) *(1/4 NPT only)*

Modification Number
000 = Standard

Cable length
72 inch = standard
Other lengths upon request

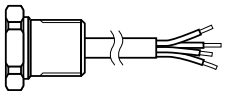
Pin Connections

Conduit



Wire	45x9-A
red	signal +
black	signal -
green/ yellow	PE/GND

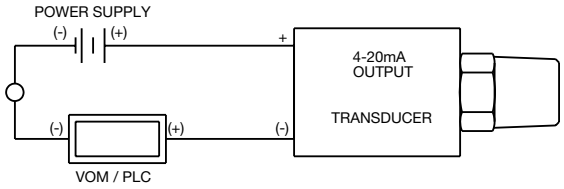
DIN 43650



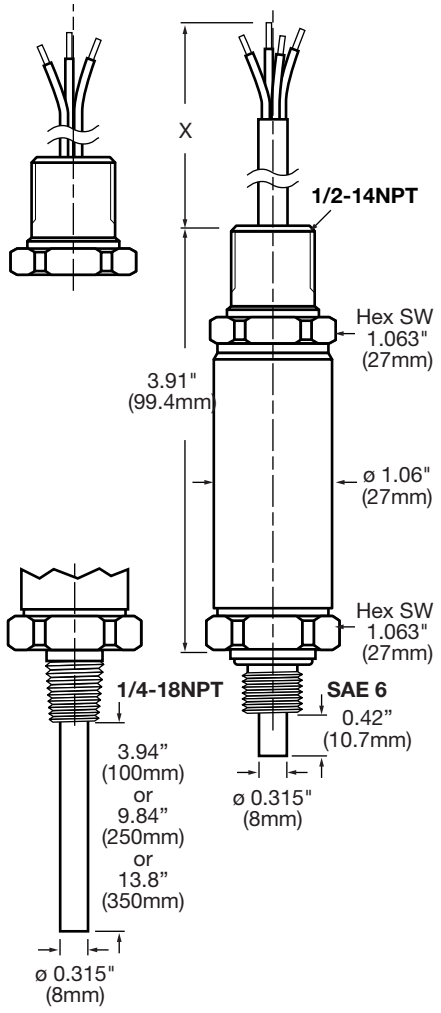
Wire	45xG-A
white	signal -
brown	signal +
green	n.c.
yellow	n.c.

See Label and instruction manual for detail on wirings.

Circuit Diagram



Dimensions



Application Areas

Protection class	$_{c}CSA_{US}$	Explosion Proof Seal Not Required	
	ATEX	Flame Proof	
	IECEx	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		