



Temperature Transmitter ETS 4500 Ex applications

Integrated temperature probe

Accuracy 1 %

Flameproof enclosure
ATEX, CSA, IECEx, triple approval



Description:

The temperature transmitter series ETS 4500 with flameproof enclosure has triple approval according to ATEX, CSA and IECEx which ensures that the device 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.

Based on a silicon semiconductor device and corresponding evaluation electronics, the temperature sensor is designed to measure temperatures within a range of -25 °C .. +100 °C.

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 dust contamination.

Protection types and applications:

cCSA_{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 range	-25 .. +100 °C
Probe length	10.7; 100; 250; 350 mm
Pressure resistance	600 bar (probe length 10.7 mm) 125 bar (probe length 100 mm) 125 bar (probe length 250 mm) 125 bar (probe length 350 mm)
Mechanical connection	G1/4 A ISO 1179-2
Tightening torque, recommended	20 Nm
Parts in contact with fluid	Stainless steel: 1.4571; 1.4301 Seal: FKM
Conduit, housing material	1.4435; 1.4404
Output data	
Output signal ¹⁾ permitted load resistance	4 .. 20 mA, 2-conductor $R_{Lmax} = (U_B - 8 V) / 20 mA [k\Omega]$
Accuracy (at room temperature)	$\leq \pm 1.0 \% FS$ typ. $\leq \pm 2.0 \% FS$ max.
Temperature drift (environment)	$\leq 0.02 \% FS / ^\circ C$
Response time acc. to DIN EN 60751	$t_{50}: \sim 10 s$ $t_{90}: \sim 15 s$
Environmental conditions	
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	$\leq 10 g$
Protection class acc. to DIN EN 60529 ISO 20653	IP 69 IP 6K9K
Other data	
Supply voltage	8 .. 30 V DC
Residual ripple of supply voltage	$\leq 5 \%$
Current consumption	$\leq 25 mA$
Weight	$\sim 280 g$ (probe length 10.7 mm) $\sim 315 g$ (probe length 100 mm) $\sim 350 g$ (probe length 250 mm) $\sim 385 g$ (probe length 350 mm)

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⁾ Other output signals on request

²⁾ -20 °C with FKM seal, -40 °C on request

³⁾ T130 °C with Ta = : -40 .. +80 °C / -20 .. +80 °C with electr. connection single leads possible

Fields of application:

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

Model code:

ETS 4 5 4 X - A - D - XXX - 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

Output signal

A = 4 .. 20 mA, 2-conductor

Approval

D = CSA Explosionproof – Seal not required
ATEX Flameproof
IECEX Flameproof

Probe length

010 = 10.7 mm
100 = 100 mm
250 = 250 mm
350 = 350 mm

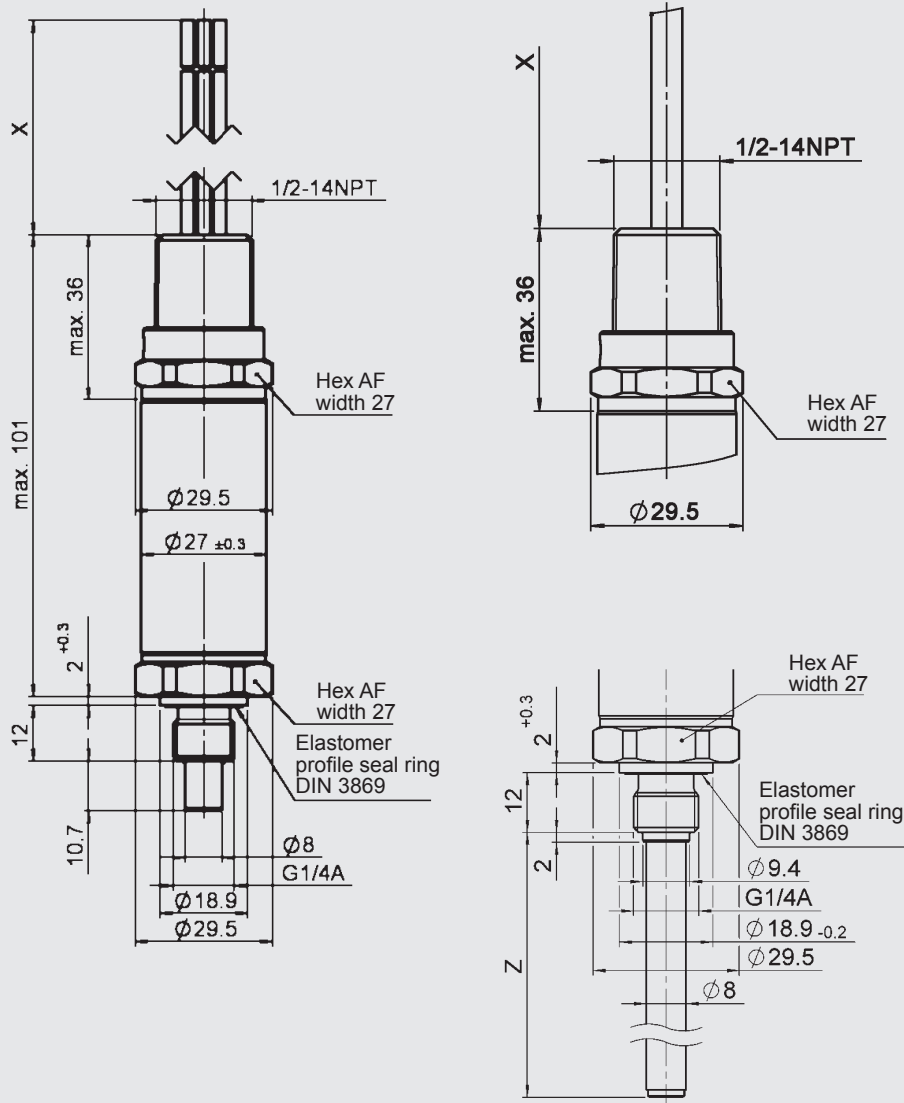
Modification number

000 = standard

Cable length in m

Standard = 2 m

Dimensions:

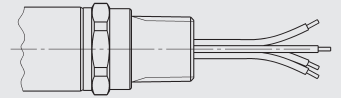


Probe length (Z)

10.7 mm
100 mm
250 mm
350 mm

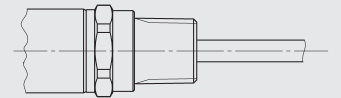
Pin connections:

Conduit (single leads)



Lead	ETS 4549-A
red	Signal +
black	Signal -
green-yellow	Housing

Conduit (jacketed cable)



Lead	ETS 454G-A
white	Signal +
brown	Signal -
green	n.c.
yellow	n.c.

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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