



Electronic Temperature Transmitter ETS 4500 ATEX, CSA, IECEx Flameproof Enclosure



Description:

The electronic 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 environments around the world.

Each device is certified by the three approval organizations and is labelled accordingly. Therefore it is no longer necessary 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 in the range -25 to +100 °C.

Its main applications are in mining and the oil and 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 $\leq \pm 1.5\%$ FS typ.
- Certificates:
 - ATEX KEMA 10ATEX100 X
 - CSA MC 224264
 - IECEx KEM 10.0053X
- Robust design
- Pressure resistant to 600 bar (depending on model)
- Excellent EMC characteristics
- Excellent durability

Technical data:

Input data	
Measuring principle	Silicon semiconductor device
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 (torque value)	G1/4 A DIN 3852 (20 Nm)
Parts in contact with medium	Stainless steel: 1.4571; 1.4301 (316Ti; 304) Seal: FPM
Conduit and housing material	1.4404; 1.4435 (316L)
Output data	
Output signal ¹⁾	4 .. 20 mA, 2 conductor $R_{Lmax} = (U_B - 8 V) / 20 \text{ mA} [k\Omega]$
Accuracy	$\leq \pm 1.5\%$ FS typ. $\leq \pm 3.0\%$ FS max.
Rise time to DIN EN 60751	$t_{50} \sim 10 \text{ s}$ $t_{90} \sim 15 \text{ s}$
Environmental conditions	
Operating temperature range ²⁾	T5, T130 °C: -40 .. +80 °C/-20 .. +80 °C T6, T110 °C: -40 .. +60 °C/-20 .. +60 °C
Storage temperature range	-40 .. +100 °C
Fluid temperature range ²⁾	T5, T130 °C: -40 .. +80 °C/-20 .. +80 °C T6, T110 °C: -40 .. +60 °C/-20 .. +60 °C
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	$\leq 20 \text{ g}$
Protection class to ISO 20653	IP 69K
Other data	
Voltage supply	8 .. 30 V DC
Residual ripple of supply voltage	$\leq 5\%$
Life expectancy	> 10 million cycles 0 .. 100 % FS
Weight	$\sim 280 \text{ g}$ (probe length 10.7 mm) $\sim 315 \text{ g}$ (probe length 100 mm) $\sim 350 \text{ g}$ (probe length 250 mm) $\sim 385 \text{ g}$ (probe length 350 mm)

Note: Reverse polarity protection of the supply voltage, excess voltage and override short circuit protection are provided.

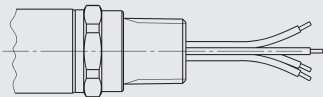
FS (Full Scale) = relative to the complete measuring range

¹⁾ Other output signals on request

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

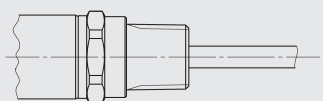
Pin connections:

Conduit (single cores)



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

Conduit (flying leads)



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

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	cCSAus: 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:

ETS 4 5 4 X - A - D - XXX - 000 (2m)

Mechanical connection

4 = G1/4 A DIN 3852

Electrical connection

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

G = 1/2-14 NPT Conduit (male thread), flying leads

Signal

A = 4 .. 20 mA, 2 conductor

Approval

D = CSA Explosion Proof - Seal not required
ATEX Flame Proof
IECEX Flame Proof

Probe length

010 = 10.7 mm

100 = 100 mm

250 = 250 mm

350 = 350 mm

Modification number

000 = Standard

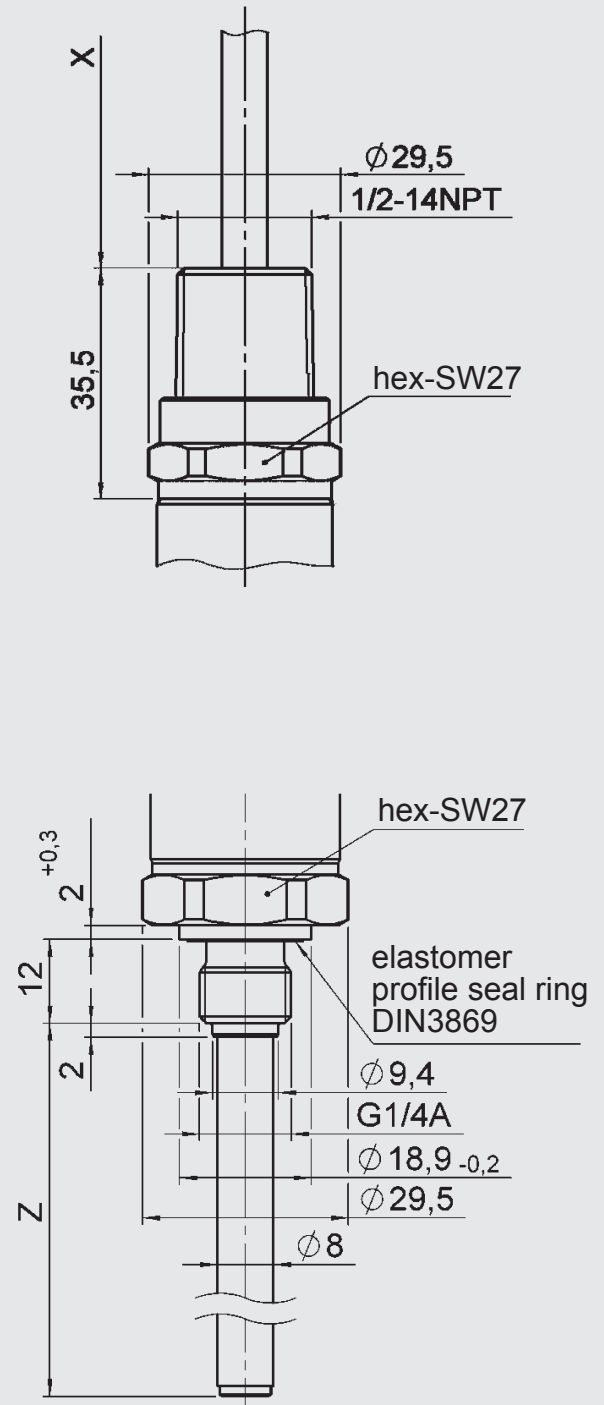
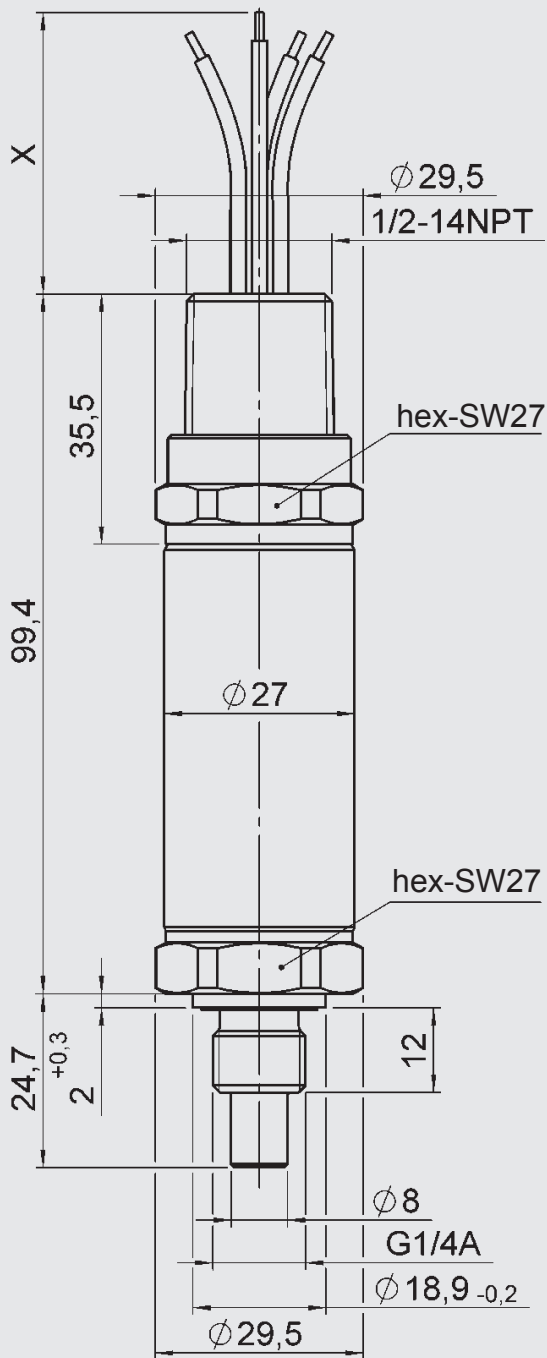
Cable length in m

Standard = 2 m

Accessories:

Appropriate accessories, such as electrical female 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 and operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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