



Temperature Transmitter ETS 4100

Integrated temperature probe

Accuracy 0.4 %



CAN interface

Description:

The ETS 4100 is a robust electronic temperature transmitter which is particularly suited to measuring temperature in hydraulic applications in industry.

The measured temperature value is digitised and made available to the CAN field bus system via the CANopen protocol or SAE J1939 protocol. The instrument parameters can be viewed and configured by the user using standard CAN software.

The temperature sensor, based on a PT 1000 and corresponding evaluation electronics, is capable of measuring temperatures in the range of -25 °C .. +100 °C.

The pressure resistance up to 600 bar and excellent EMC characteristics make the ETS 4100 ideal for use in harsh conditions.

Technical data:

Input data

Measuring range	-25 .. +100 °C					
Probe length	mm	6	50	100	250	350
Probe diameter	mm	4.5	8	8	8	8
Pressure resistance	bar	600	125	125	125	125
Mechanical connection	G¼ A ISO 1179-2					
Tightening torque, recommended	20 Nm					
Parts in contact with fluid ¹⁾	Mech. connection: Stainless steel Seal: FKM					

Output data

Output signal	CANopen protocol or J1939 protocol, depending on version					
Accuracy (at room temperature)	± 1.0 °C at -10 .. +85 °C ± 1.5 °C at -25 .. +105 °C					
Response time acc. to DIN EN 60751	t ₅₀ : ~4 s t ₉₀ : ~8 s					

Environmental conditions

Operating temperature range ²⁾	-40 .. +85 °C / -25 .. +85 °C					
Storage temperature range	-40 .. +100 °C					
Fluid temperature range ²⁾	-40 .. +125 °C / -25 .. +125 °C					
CE mark	EN 61000-6-1 / 2 / 3 / 4					
Vibration resistance acc. to DIN EN 60068-2-6 at 10 .. 500 Hz	≤ 25 g					
Protection class acc. to DIN EN 60529 ³⁾	IP 67					

Protocol data for CANopen:

Communication profile	CiA DS 301 V4.2					
Device profile	CiA DS 404 V1.3					
Layer setting Services and Protocol	CiA DSP 305 V2.2					
Automatic bit-rate detection	CiA AN 801					
Baud rates	10 kbit .. 1 Mbit corresp. to DS305 V2.2					
Transmission services	- PDO - Transfer					
	Measured value as 16/32 bit and float, status synchronous, asynchronous, cyclical, measured value change, exceeding boundaries					
Node ID/baud rate	Can be set via Manufacturer Specific Profile					

Protocol data for SAE J1939

Data Link Layer	SAE J1939-21					
Network Layer	SAE J1939-31					
Network Management	SAE J1939-81					

Other data

Supply voltage	9 .. 35 V DC					
Residual ripple of supply voltage	≤ 5 %					
Current consumption 3-conductor	~ 25 mA					
Weight	~ 200 g (probe length 6 mm) ~ 215 g (probe length 50 mm) ~ 235 g (probe length 100 mm) ~ 280 g (probe length 250 mm) ~ 315 g (probe length 350 mm)					

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

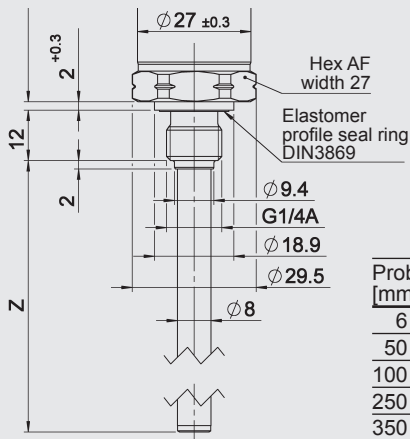
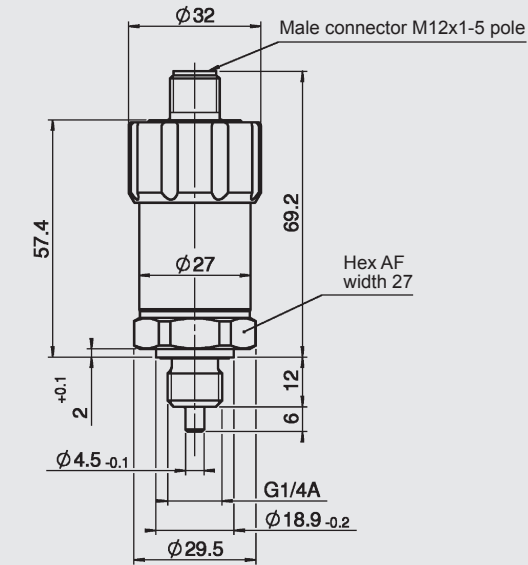
FS (Full Scale) = relative to complete measuring range

¹⁾ Other seal materials on request

²⁾ -25 °C with FKM seal, -40 °C on request

³⁾ With mounted mating connector in corresponding protection class

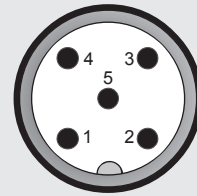
Dimensions:



Probe length (Z) [mm]	Probe diameter [mm]
6	4.5
50	8
100	8
250	8
350	8

Pin connections:

M12x1



Pin	Signal	Description
1	Housing	Shield/housing
2	+U _B	Supply +
3	0 V	Supply -
4	CAN_H	Bus line dominant high
5	CAN_L	Bus line dominant low

Model code:

ETS 4 1 4 8 - F1X - XXX - 000

Mechanical connection

4 = G1/4 A ISO 1179-2

Electrical connection

8 = male M12x1, 5 pole (mating connector not supplied)

Output signal

F11 = CANopen

F12 = CAN SAE J1939

Probe lengths

006 = 6 mm

050 = 50 mm

100 = 100 mm

250 = 250 mm

350 = 350 mm

Modification number

000 = standard

Accessories:

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

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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