



## Electronic Temperature Transmitter ETS 4100

### Description:

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

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

The sensor has analogue output signals of 4 .. 20 mA and 0 .. 10 V available as standard for integration into modern control systems. The pressure resistance up to 600 bar and excellent EMC characteristics make the ETS 4100 ideal for use in harsh conditions.

### Special features:

- Accuracy  $\leq \pm 0.8\%$  FS
- Ideal for industrial applications
- Robust design
- Excellent EMC characteristics
- Excellent long term stability
- Standard protection class IP 65 / IP 67

### Technical data:

Input data	
Measuring principle	PT 1000
Measuring range	-25 .. +100 °C
Probe length	6; 50; 100; 250; 350 mm
Probe diameter	4.5; 8; 8; 8; 8 mm
Pressure resistance	600 bar (probe length 6 mm) 125 bar (probe length 50 mm) 125 bar (probe length 100 mm) 125 bar (probe length 250 mm) 125 bar (probe length 350 mm)
Mechanical connection	G1/4 A DIN 3852
Torque value	20 Nm
Parts in contact with medium <sup>1)</sup>	Mech. conn.: Stainless steel Seal: FPM
Output data	
Output signal, permitted load resistance	4 .. 20 mA, 2 conductor $R_{Lmax} = (U_B - 8 V) / 20 \text{ mA}$ [kΩ] 0 .. 10 V, 3 conductor $R_{Lmin} = 2 \text{ kΩ}$
Accuracy (at room temperature)	$\leq \pm 0.4\%$ FS typ. $\leq \pm 0.8\%$ FS max.
Temperature drift (environment)	$\leq \pm 0.01\%$ FS / °C
Rise time to DIN EN 60751	$t_{50}: \sim 4 \text{ s}$ $t_{80}: \sim 8 \text{ s}$
Environmental conditions	
Operating temperature range <sup>2)</sup>	-40 .. +85 °C / -25 .. +85 °C
Storage temperature range	-40 .. +100 °C
Fluid temperature range <sup>2)</sup>	-40 .. +125 °C / -25 .. +125 °C
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	$\leq 25 \text{ g}$
Protection class to IEC 60529	IP 65 (for male EN175301-803 (DIN 43650) and Binder 714 M18) IP 67 (for male M12x1, when an IP 67 connector is used)
Other data	
Electrical connection	M12x1, 4 pole, Binder Series 714 M18, 4 pole, EN 175301-803 (DIN 43650)
Supply voltage	8 .. 32 V DC 2 conductor 12 .. 32 V DC 3 conductor
Residual ripple of supply voltage	$\leq 5\%$
Current consumption 3 conductor	$\sim 25 \text{ mA}$
Weight	$\sim 200 \text{ g}$ (probe length 6 mm) $\sim 215 \text{ g}$ (probe length 50 mm) $\sim 235 \text{ g}$ (probe length 100 mm) $\sim 280 \text{ g}$ (probe length 250 mm) $\sim 315 \text{ g}$ (probe length 350 mm)

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

FS (Full Scale) = relative to complete measuring range

<sup>1)</sup> Other seal materials on request

<sup>2)</sup> -25 °C with FPM seal, -40 °C on request

## Model code:

ETS 4 1 4 X - X - XXX - 000

### Mechanical connection

4 = G1/4 A DIN 3852 (male)

### Electrical connection

- 4 = Male, 4 pole Binder series 714 M18 (connector not supplied)
- 5 = Male, 3 pole + PE, EN 175301-803 (DIN 43650) (connector supplied)
- 6 = Male M12x1, 4 pole (connector not supplied)

### Signal

- A = 4 .. 20 mA, 2 conductor
- B = 0 .. 10 V, 3 conductor

### Probe length

- 006 = 6 mm
- 050 = 50 mm
- 100 = 100 mm
- 250 = 250 mm
- 350 = 350 mm

### Modification number

000 = Standard

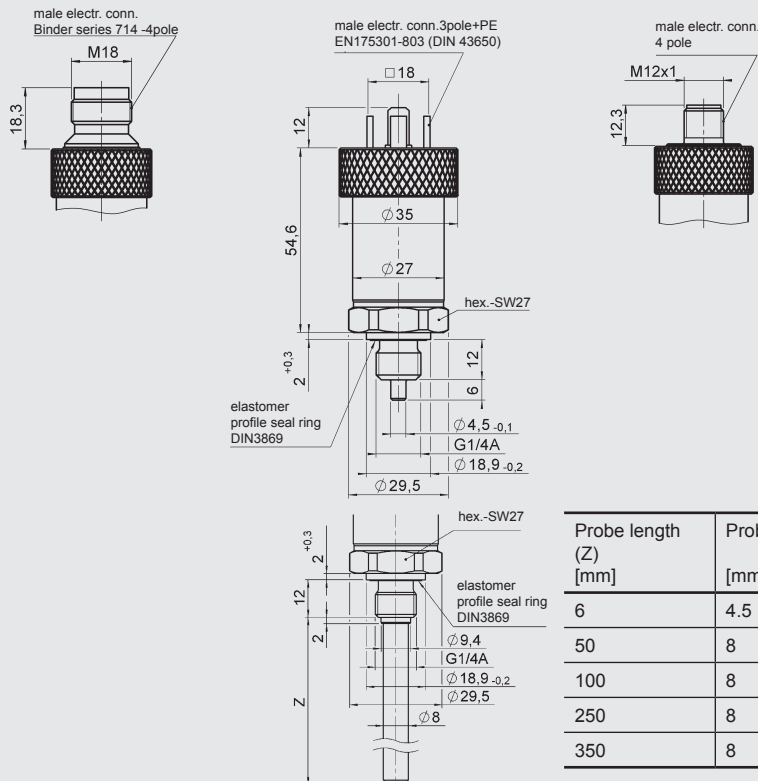
### Note:

On instruments with a different modification number, please read the label or the technical amendment details supplied with the instrument.

### Accessories:

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

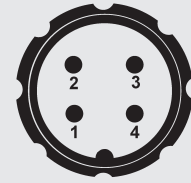
## Dimensions:



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

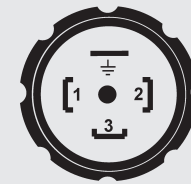
## Pin connections:

Binder series 714 M18



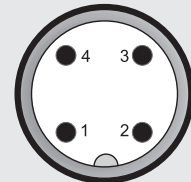
Pin	ETS 4144-A	ETS 4144-B
1	n.c.	+U <sub>B</sub>
2	Signal+	Signal
3	Signal -	0 V
4	n.c.	n.c.

EN175301-803 (DIN 43650)



Pin	ETS 4145-A	ETS 4145-B
1	Signal+	+U <sub>B</sub>
2	Signal-	0V
3	n.c.	Signal
⊥	Housing	Housing

M12x1



Pin	ETS 4146-A	ETS 4146-B
1	Signal+	+U <sub>B</sub>
2	n.c.	n.c.
3	Signal-	0 V
4	n.c.	Signal

### 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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