

HYDAC INTERNATIONAL



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 ¹⁾	Mech. conn.: Stainless steel Seal: FPM
Output data	
Output signal, permitted load resistance	4 .. 20 mA, 2 conductor $R_{\text{max}} = (U_s - 8 \text{ V}) / 20 \text{ mA}$ [kΩ] 0 .. 10 V, 3 conductor $R_{\text{min}} = 2 \text{ kΩ}$
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	$t_{90}: \sim 4 \text{ s}$ $t_{90}: \sim 8 \text{ s}$
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 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

¹⁾ Other seal materials on request

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

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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.

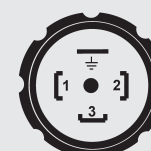
Pin connections:

Binder series 714 M18



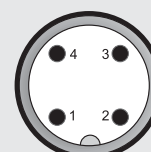
Pin	ETS 4144-A	ETS 4144-B
1	n.c.	+U _B
2	Signal+	Signal
3	Signal -	0 V
4	n.c.	n.c.

EN175301-803 (DIN 43650)



Pin	ETS 4145-A	ETS 4145-B
1	Signal+	+U _B
2	Signal-	0V
3	n.c.	Signal
⊥	Housing	Housing

M12x1



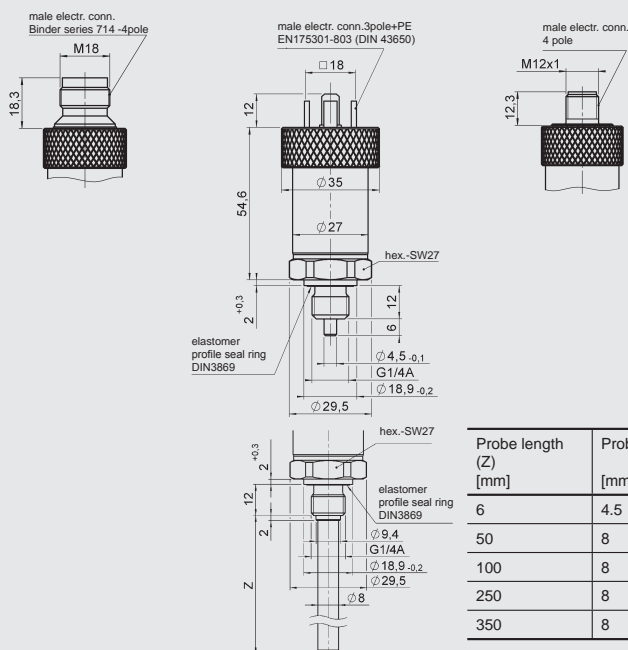
Pin	ETS 4146-A	ETS 4146-B
1	Signal+	+U _B
2	n.c.	n.c.
3	Signal-	0 V
4	n.c.	Signal

Note:

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact HYQUIP. Subject to technical modifications.

Dimensions:



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