



Temperature transmitters

ETS 4100S smart

IO-Link interface

Temperature probes

Accuracy 0.4 %

smart



IO-Link

Features

- IO-Link interface
- Robust design
- Integrated temperature sensor
- Device temperature monitoring
- Added value thanks to:
 - Process data
 - Condition data
 - Smart data

Description

The new generation of smart sensors is designed to generate further relevant information in addition to the operation data. This ensures the support of dynamic, real-time optimized and self-organising processes, which optimises the availability as well as resource consumption and reduces operating costs.

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 is designed to measure temperatures in the range between -25 °C and +100 °C.

IO-Link is the communication between a sensor / actuator (IO-Link device) and an IO-Link master based on a point-to-point interface. Process data, parameters and diagnostic information of the temperature sensor can be transmitted via a standard cable (SDCI mode).

In addition, the ETS 4100S provides a wide range of additional smart information.




Fields of application

Wide range of applications within the mechanical engineering sector, such as:

- Hydraulics
- Pneumatics
- Cooling power units
- Compressors
- and much more

The temperature sensor is used particularly in systems requiring a continuous, intelligent monitoring.

Technical details

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	G1/4 A ISO 1179-2 / external					
Tightening torque, recommended	20 Nm					
Parts in contact with fluid ¹⁾	Connector: Stainless steel Seal ring: FKM					
Output data						
Output signal	IO-Link V1.1					
Accuracy (at room temperature)	≤ ± 0.4 % FS typ. ≤ ± 0.8 % FS max.					
Rise time acc. to DIN EN 60751	t ₅₀ : ~ 4 s t ₉₀ : ~ 8 s					
Temperature drift	≤ ± 0.01 % FS / °C					
Smart functions						
Operating data recording (resettable as well as persistent throughout the entire life cycle)	Temperature (min / max / average values) Operating time, i.e. -General (hours counter) -Arrhenius value (Temp., weighted operating time)					
Measurement channel-related events	General measurement channel-related operating times Event counter Statistics for the actual use (operation per measuring range segment / over/undershooting, overload, etc.)					
Environmental conditions / Approvals / Tests						
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					
EMC	EN 61000-6-1/ 2/ 3/ 4					
  conformity	Provided					
 approval ³⁾	Provided					
Vibration resistance acc. to DIN EN 60068-2at 0 .. 500 Hz	≤ 25 g					
Shock resistance acc. to DIN EN 60068-2-27	20 g at 6 mm probe length < 20 g for all probe lengths					
Protection type acc. to DIN EN 60529 ⁴⁾	IP 67					
IO-Link specific data						
IO-Link Revision	V1.1					
Transmission Rate, Baud Rate	38.4 kBaut (COM2)					
Minimum Cycle Time	2.5 ms					
Process data width	16 bit					
SIO Mode Supported	yes					
Sensorprofil	GPS					
M-Sequence Capability	PREOPERATE = TYPE_1_V (8 Bytes) OPERATE = TYPE_2_2 ISDU supported					
Download the IO Device Description (IODD) from: https://ioddfinder.io-link.com/#/						
Other data						
Supply voltage	9 .. 35 V DC (8 .. 30 V DC for communication operation)					
Supply voltage when applied acc. to UL specifications	- limited energy – acc. to 9.3 UL 61010; Class 2 UL 1310/1585; LPS UL 60950					
Residual ripple of supply voltage	≤ 5 %					
Current consumption	≤ 25 mA					
Weight (without connection head)	~ 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, override and short circuit protection are provided.

FS (Full Scale) = relative to complete measuring range

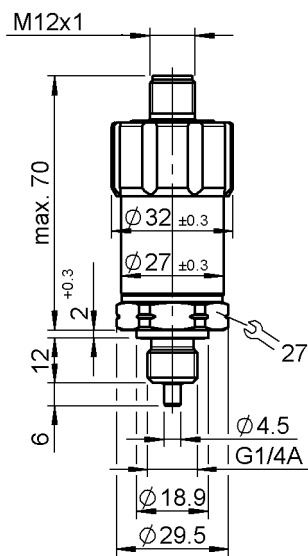
¹⁾ Other seal materials on request

²⁾ In the standard up to -25 °C with FKM seal, -40 °C on request

³⁾ Environmental conditions acc. to 1.4.2 UL 61010-1; C22.2 no. 61010-1

⁴⁾ With mounted mating connector in corresponding protection type

Dimensions



Probe length	Probe diameter
6 mm	4.5 mm
50 mm	8 mm
100 mm	8 mm
250 mm	8 mm
350 mm	8 mm

Pin connections

M12x1, 4 pole	Pin	Output signal: F31	
		Signal	Description
	1	L+	+U _B
	2		n.c.
	3	L-	0V
	4	Q1/C	Switching output (SP1) / IO-Link communication

Model code

ETS 4 1 4 6 S - F31 - XXX - 000

Mechanical connection

4 = G1/4 A ISO 1179-2

Electrical connection

6 = Connector male M12x1, 4 pole

Enhanced functions

S = Smart

Output signal

F31 = IO-Link

Probe lenght

- 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 and operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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