

Digital transmitter for temperature IO-Link for resistance thermometers Type series PA2530



Application area

- Pharmaceutical industry
- Food industry
- Biotechnology
- General process technology

Features

- Digital transmitter for temperature with IO-Link V1.1 output signal
- Data transmission rate COM 3 (230.4 kBaud)
- Accuracy $\leq \pm 0.1$ % of nominal range
- Input Pt100 per EN 60751
- Nominal range -50...260 °C
- 2 switching outputs maximum

Options

- Accuracy $\leq \pm 0,1$ % in the range 0...150 °C
- As per UKCA regulations

Application

The temperature transmitter PA2530 with IO-Link is suitable for hygienic temperature measurement in connection with the following resistance thermometers

- MiniTherm, Type series GA27
- Clamp-on, Type series GA2610

Due to its compact design the transmitter fulfils the hygienic requirements of plant and machinery engineering.

Technical data

Constructional design

Design:	Hygienic case design
Material:	Stainless steel mat.-no. 1.4301 (304)
Degree of protection per EN 60529:	IP 66
Electrical connection:	Circular connector M12 (4 pin)

Input

Sensor type:	Pt100 per EN 60751
Characteristic curve:	temperature linear
Connection type:	4-wire technology
Measuring current:	≤ 500 µA
Measuring rate:	6 Hz

Output

Accuracy:	$\leq \pm 0.1 \%$ of nominal range (-50...260 °C) Option: Accuracy $\leq \pm 0.1 \%$ (in range 0...150 °C)
Temperature influence ambient:	$\leq 0.0025 \%/K$ referred to nominal range and adjustment point (25°C ± 5 K)
Signal:	■ IO-Link device 1.1 (downward compatible to V 1.0) ■ Conform to IO-Link port class A ■ Data transfer rate COM 3 (230.4 kBaud) ■ Min. cycle time: 2 ms ■ 1 switching output ■ cable length (unshielded) ≤ 20 m ■ Optional: 2 switching outputs

Properties switching output

Switching functions configurable:	■ Hysteresis function or frame function ■ Normally closed or normally opened contact ■ Output PNP/High-side or NPN/Low-side
Switching current:	≤ 100 mA per output

Voltage drop at switching transistor:	≤ 2 V
Short-circuit proof:	Yes (locked)
Reverse polarity protected:	Yes
Current limit:	Yes
Hysteresis for hysteresis function:	Configurable
for frame function:	Fixed settings (symmetrical; ± 0.25 % of the measuring range)
Switch-on, switch-off delay:	0.00 to 100.00 s

Supply voltage

Functional area IO-Link:	18...32 V DC *
Functional area 2 output signals	9.6...32 V DC *
Nominal voltage:	24 V DC

* The auxiliary energy of the pressure sensor must meet SELV requirements; optionally, an energy-limited current circuit according to section 9.3 of EN 610610-1 and UL 61010-1 can be used.

Current consumption:

In idle mode:	≤ 12 mA (at nominal voltage)
IO-Link:	≤ 20 mA (at nominal voltage)
2 switching output:	≤ 200 mA (at nominal voltage)

Temperature ranges

Ambient:	-40...85 °C
Media:	-50...260 °C *
Storage:	-40...85 °C

* Depends on used resistance thermometer.

Tests and certificates

EMC:	EN 61326-2-3
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Parameterisation

Parameterisation

Parameter	Value range	Default setting
IO-Link general		
Languages IODD	Englisch, German	German
Measurement / Output		
Process data format	Floating point, Integer number	Floating point
Unit pressure	°C, °F	°C
Damping	0,00 bis 100,00 s	0,0
Switching outputs		
Switching function	Off, hysteresis function, normally open, hysteresis function, normally closed, frame function, normally open, frame function, normally closed	Off
Switching point / Upper frame limit	-999,00 bis 999,00	0,0
Reset point / Lower frame limit	-999,00 bis 999,00	0,0
Delay switch point	0,00 bis 100,00 s	0,0
Delay reset point	0,00 bis 100,00 s	0,0
Output function	PNP/Highside, NPN/Lowside	PNP/Highside

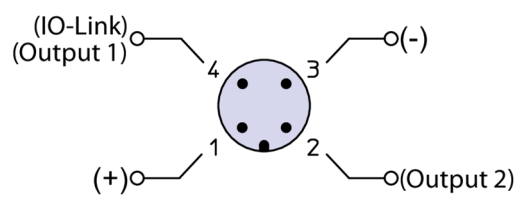
Diagnostic functions

Process values	Description	Value range
Status pressure value	Check of the status of the process values	Process data invalid (upper temperature limit exceeded or lower temperature limit undershot), Parameter memory defective, Device failure (defect in the adjustment data)
Min/Max values		
Min/Max values temperature	Check of minimum and maximum process temperature	/
Device status		
Operation hours counter	Capture of operating hours	/
Error counter	Capture of occurred errors	/
Device status	Check of device status	No error, outside the specification (low voltage)
Detailed device status	According to the IO-Link specification	/
Events		
Events	Events that are triggered as soon as an activated error message occurs. Possible error messages: Process data invalid, lower temperature limit undershot or upper temperature limit exceeded, parameter memory defective, defect in the adjustment data or hardware defective, low voltage, temperature error, overload	/

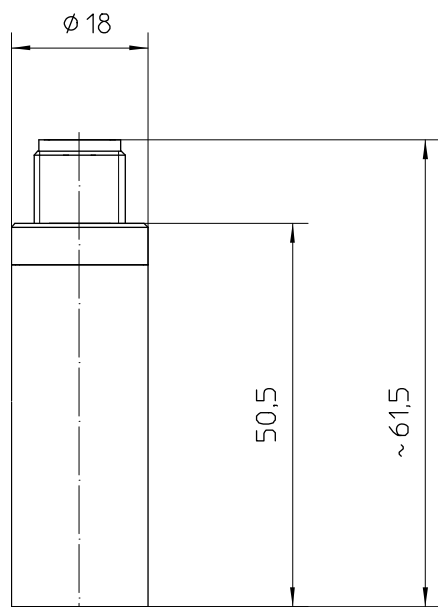
Adjustment

Type	Description
Zero point correction	adjusts reading to zero at ambient temperature
Lower adjustment of characteristic curve	adjusts correction values for lower adjustment point (effects zero point)
Upper adjustment of characteristic curve	adjusts correction values for lower adjustment point (effects span)

Connection diagram



Dimensions



All dimensions are in mm

Order details

Transmitter for temperature IO-Link, for resistance thermometers

Type series PA2530

Order details PA2530		
PA2530	transmitter for temperature, IO-Link	
F11	parameterisation	standard according to data sheet (see parameterisation table)
F19		per customer's specification as in writing
H51	output signal	IO-Link V1.1
Additional features (to be indicated in case of need, only)		
W4129	accuracy $\leq \pm 0,1 \%$ in the range 0...150 °C	
W2660	as per UKCA regulations	

Order code (example): PA2530 - F11 - H51 - ...