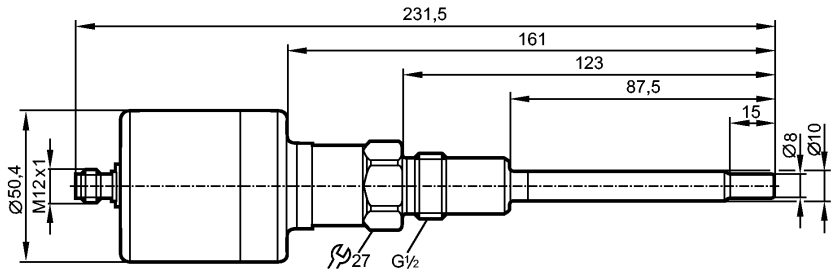
TAD191

TAD088KLER12-A-DKG/US

Temperature sensors



EC 1935/2004 EHEDG Certified

IO-Link

Including free 5-point calibration certificate.

Product characteristics

Temperature transmitter
with diagnostic output

Process connection: G ½ A

Installation length EL: 87.5 mm

Redundant sensor elements
with backup function

Analog output 4...20 mA
(NAMUR NE43, NE89)
Diagnostic output for drift and fault monitoring

Measuring range: -25...160 °C / -13...320 °F

Measuring element: 1 x Pt 1000 + 1 x NTC, thermically coupled, with backup function (temperature measuring even if one of the two sensor elements fails)

Factory setting: 0...150 °C / 32...302 °F

Application

Application		liquids and gases
Pressure rating	[bar]	50
Minimum installation depth	[mm]	25

Electrical data

Electrical design		DC PNP/NPN
Operating voltage	[V]	18...32
Current consumption	[mA]	6 (24 V)
Protection class		III
Reverse polarity protection		yes

Outputs

Output		Analog output 4...20 mA (NAMUR NE43, NE89) Diagnostic output for drift and fault monitoring
Output function		normally open / normally closed / heartbeat programmable, 4...20 mA analog
Current rating	[mA]	250
Voltage drop	[V]	< 2
Short-circuit protection		yes (non-latching)
Overload protection		yes
Analog output		4...20 mA; Rmax [Ω]: (Ub - 15 V) x 50

Measuring / setting range

efector600

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Measuring range, (scalable)		-25...160 °C	-13...320 °F
Factory setting		0...150 °C / 32...302 °F	
Drift warning	°C / °F	0.20...5.00 / 0.4...9.0	
Drift alarm	°C / °F	0.20...5.00 / 0.4...9.0	
Setting range			
in steps of		0.05 °C	0.1 °F
Resolution			
Analog output	[K]	0.05	
Accuracy / deviations			
Analog output	[K]	± 0.2 (-10...100°C); ± 0.3 (-25...-10/100...150°C); ± 0.5 (150...160°C) *)	
Temperature coefficients (in % of the span per 10 K)		< ± 0.01 **)	
Drift monitoring	[K]	± 0.2 (-10...100°C); ± 0.3 (-25...-10/100...150°C); ± 0.5 (150...160°C) *)	
Reaction times			
Power-on delay time	[s]	8	
Dynamic response	T05 / T09 [s]	3 / 6	
Integrated watchdog		yes	
Software / programming			
Programming options		Drift warning / drift alarm threshold; Fail-Safe; display unit; scaling of the analog output; redundancy switching; behaviour of the diagnostic output; output polarity; normally open / normally closed	
Interfaces			
IO-Link Device			
Transfer type		COM1 (4.8 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9 CDV	
IO-Link Device ID		323 d / 00 01 43 h	
Profiles		Smart Sensor	
Function class		Device Identification	
Function class		Device Diagnosis	
SIO mode		yes	
Required master port class		A	
Process data analogue		1	
Process data binary		1	
Min. process cycle time	[ms]	18.8	
Environment			
Ambient temperature	[°C]	-25...70	
Storage temperature	[°C]	-40...85	
Protection		IP 68 / IP 69K	
Tests / approvals			
EMC		EN 61000-6-2 EN 61000-6-3	
Shock resistance		DIN EN 68000-2-27:	50 g (11 ms)
Vibration resistance		DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF	[Years]	213	
Mechanical data			

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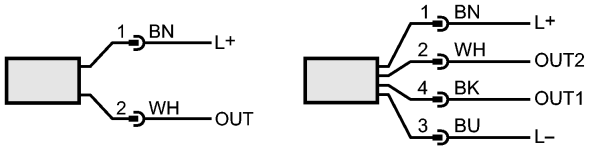
Process connection		G ½ A
Materials (wetted parts)		stainless steel 316L / 1.4404; surface characteristics Ra: < 0.6
Probe length L	[mm]	87.5
Installation length EL	[mm]	87.5
Housing materials		stainless steel 316L / 1.4404; PEI; FPM
Tightening torque	[Nm]	30...50
Weight	[kg]	0.374

Electrical connection

Connection	M12 connector; gold-plated contacts

Wiring





connection for 2-wire operation
OUT: Analog output
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connection for 3-wire operation
OUT2: Analog output
OUT1: Diagnosis / IO-Link

Remarks

Remarks		cULus - Class 2 source required *) probe completely inserted into the measured medium up to the sealing chamfer **) In case of deviation from the reference condition 25 ± 5 °C
Pack quantity	[piece]	1

Other data

Function class	Process Data Variables