

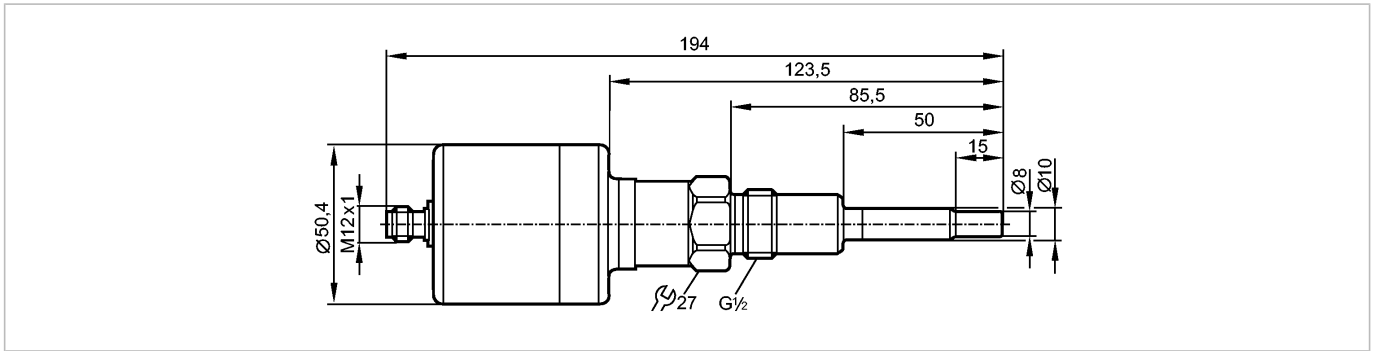


TAD091

TAD050KLER12-A-ZKG/US



Temperature sensors



IO-Link

Including free 5-point calibration certificate.

Product characteristics

Temperature transmitter
with diagnostic output

Process connection: G 1/2 A

Installation length EL: 50 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, thermally 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; R_{max} [Ω]: (U_b - 15 V) x 50

Measuring / setting range



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Temperature sensors

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	
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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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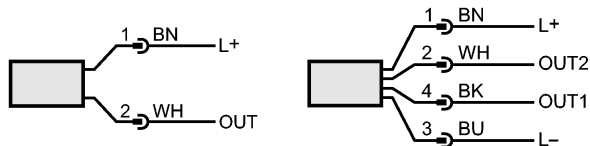
Temperature sensors

Process connection	G ½ A	
Materials (wetted parts)	stainless steel 316L / 1.4404; surface characteristics Ra: < 0.6	
Probe length L [mm]	50	
Installation length EL [mm]	50	
Housing materials	stainless steel 316L / 1.4404; PEI; FPM	
Tightening torque [Nm]	30...50	
Weight [kg]	0.36	

Electrical connection

Connection	M12 connector; gold-plated contacts
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Wiring



connection for 2-wire operation
 OUT: Analog output

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
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Pack quantity [piece]	1
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Other data

Function class	Process Data Variables
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