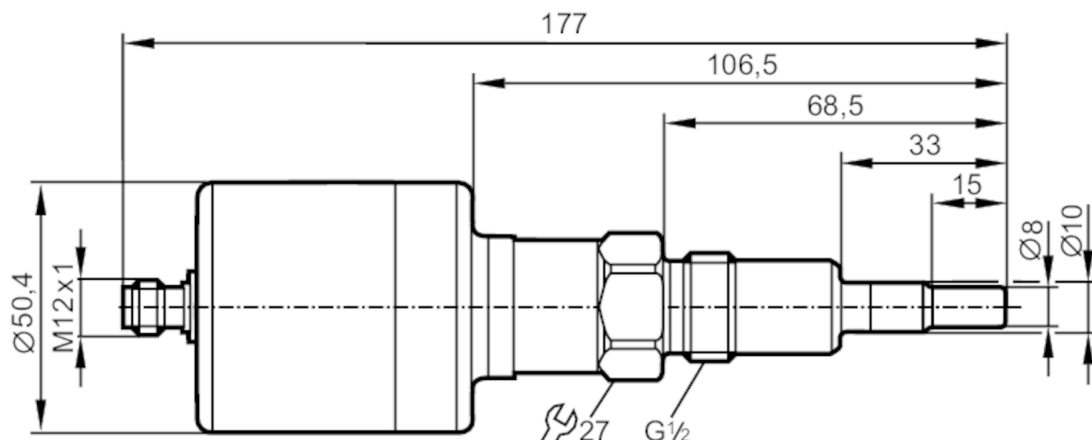


TAD991



Temperature transmitter with drift detection

TAD033KLER12-A-ZKG/US



CE CRN cUL^{US} LISTED EC 1935/2004 EHEDG Tested FCM FDA IO-Link

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1	
Measuring range	-25...160 °C	-13...320 °F
Communication interface	IO-Link	
Process connection	G 1/2 sealing cone	
Installation length EL [mm]	33	

Application

Special feature	Gold-plated contacts	
Measuring element	1 x Pt 1000 + 1 x NTC; (thermally coupled, with backup function (temperature measuring even if one element fails))	
Media	liquids and gases	
Pressure rating [bar]	50	
Minimum installation depth [mm]	25	
MAWP (for applications according to CRN) [bar]	50	

Electrical data

Operating voltage [V]	18...32 DC; ("supply class 2" to cULus)	
Current consumption [mA]	6; (24 V)	
Protection class	III	
Reverse polarity protection	yes	
Power-on delay time [s]	8	
Integrated watchdog	yes	

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1
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Outputs

Total number of outputs	2
Output signal	switching signal; analogue signal; IO-Link; (configurable)
Electrical design	PNP/NPN



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Number of digital outputs	1	
Output function	normally open / normally closed / diagnostic signal; (parameterisable)	
Max. voltage drop switching output DC [V]	2	
Permanent current rating of switching output DC [mA]	150; (200 (...60°C); 250 (...40 °C))	
Diagnostic output	Drift monitoring; fault monitoring	
Number of analogue outputs	1	
Analogue current output [mA]	4...20	
Max. load [Ω]	(Ub - 15 V) x 50	
Short-circuit protection	yes	
Type of short-circuit protection	pulsed	
Overload protection	yes	
Measuring/setting range		
Measuring range	-25...160 °C	-13...320 °F
Note on measuring range	scalable	
Factory setting	0...150 °C / 32...302 °F	
Drift warning	0.2...5 °C	0.4...9 °F
Drift alarm	0.2...5 °C	0.4...9 °F
In steps of	0.05 °C	0.1 °F
Resolution		
Resolution of analogue output [K]	0.05	
Accuracy / deviations		
Precision analogue output [K]	± 0,2 (-10...130°C); ± 0,3 (130...140°C); ± 0,3 ± 0,1% MS (-25...-10/140...160°C); (probe completely inserted into the measured medium up to the sealing chamfer)	
Temperature coefficient [X22]	< ± 0,01; (in case of deviation from the reference condition 25 ± 5 °C)	
Response times		
Dynamic response T05 / T09 [s]	3 / 6	
Software / programming		
Parameter setting options	drift warning/drift alarm threshold; Fail-Safe; Display unit; scaling of the analogue output; redundancy switching; performance diagnostic output; switching logic; normally open / normally closed	
Interfaces		
Communication interface	IO-Link	
Transmission type	COM1 (4,8 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9 CDV	
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis	
SIO mode	yes	
Required master port type	A	
Process data analogue	1	
Process data binary	1	
Min. process cycle time [ms]	18.8	

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Supported DeviceIDs	Type of operation	DeviceID
	default	323

Operating conditions		
Ambient temperature	[°C]	-25...70
Storage temperature	[°C]	-40...85
Protection		IP 68; IP 69K

Tests / approvals		
EMC	DIN EN 61000-6-2	
	DIN 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	[ANN]	213
Note on approval	Including free 5-point calibration certificate.	

Mechanical data		
Weight	[g]	335
Materials		stainless steel (1.4404 / 316L); PEI; FKM
Materials (wetted parts)		stainless steel (1.4404 / 316L)
Tightening torque	[Nm]	30...50
Process connection		G 1/2 sealing cone
Surface characteristics Ra/Rz of the wetted parts		Ra: < 0.6
Installation length EL	[mm]	33

Remarks		
Remarks		MS = set measuring span
Pack quantity		1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



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Connection



OUT: connection for 2-wire operation
analogue output
OUT2: connection for 3-wire operation
analogue output
OUT1: diagnosis / IO-Link

Diagrams and graphs



maximum operating time depending on the medium temperature