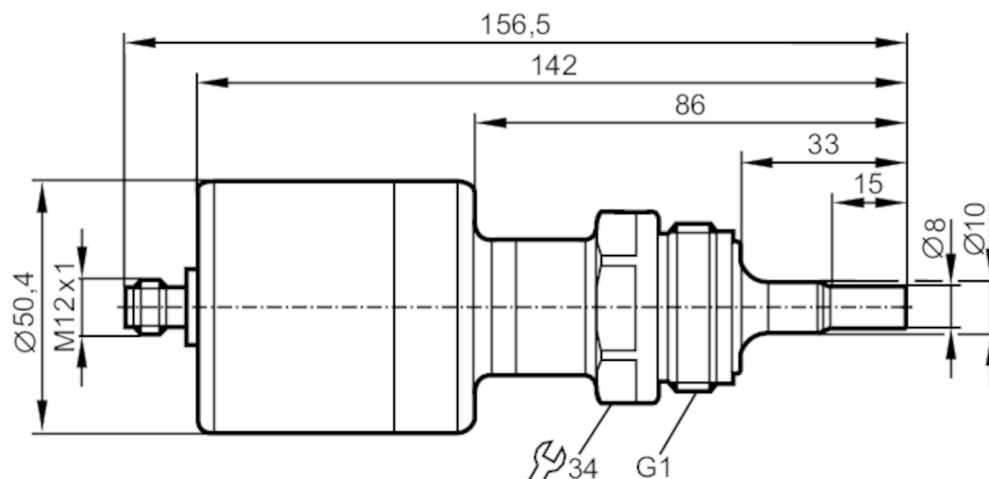


TAD981



Temperature transmitter with drift detection

TAD033KLES30-A-ZKG/US



EC 1935/2004

EHEDG Certified

FCM



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1	
Measuring range	-25...160 °C	-13...320 °F
Communication interface	IO-Link	
Process connection	threaded connection G 1 external thread Aseptoflex Vario	
Installation length EL [mm]	33	

Application

Special feature	gold-plated contacts	
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))	
Media	liquids and gases	
Pressure rating	50 bar	5 MPa
Minimum installation depth [mm]	25	
MAWP (for applications according to CRN) [bar]	50	

Electrical data

Operating voltage [V]	18...32 DC; (cULus - Class 2 source required)	
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 analog outputs: 1
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Outputs

Total number of outputs	2
Output signal	switching signal; analog 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; (configurable)	
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 analog outputs	1	
Analog current output [mA]	4...20	
Max. load [Ω]	(Ub - 15 V) x 50	
Short-circuit protection	yes	
Type of short-circuit protection	yes (non-latching)	
Overload protection	yes	
Measuring/setting range		
Probe length L [mm]	33	
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 analog output [K]	0.05	
Accuracy / deviations		
Precision analog 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 [% of the span / 10 K]	< ± 0,01; (In case of deviation from the reference condition 25 ± 5 °C)	
Reaction 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 analog output; redundancy switching; performance diagnostic output; switching logic; normally open / 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 - SSP 0	Generic Profiled Sensor
	Function	Device identification
	Function	Process data variable
	Function	Device diagnosis
SIO mode	yes	
Required master port class	A	

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Process data analog	1	
Process data binary	1	
Min. process cycle time [ms]	33.6	
Supported DeviceIDs	Type of operation	DeviceID
	default	558

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 [years]	213	
Note on approval	Including free 5-point calibration certificate.	

Mechanical data

Weight [g]	399.5
Housing	tubular
Dimensions [mm]	Ø 50.4 / L = 156.5
Material	stainless steel (1.4435 / 316L); stainless steel (1.4404 / 316L); PEI; FKM
Materials (wetted parts)	stainless steel (1.4435 / 316L); stainless steel (1.4404 / 316L)
Process connection	threaded connection G 1 external thread Aseptoflex Vario
Surface characteristics Ra/Rz of the wetted parts	Ra < 0.6 µm
Probe diameter [mm]	10
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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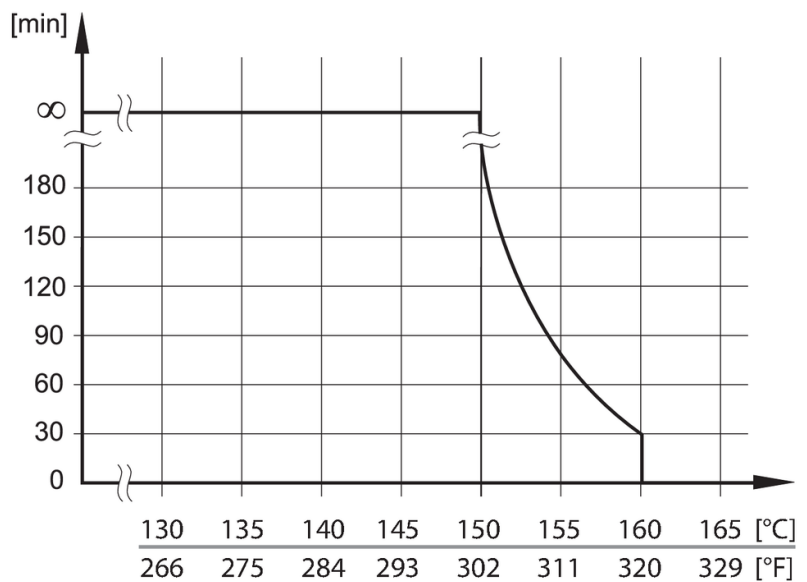
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Connection



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

Diagrams and graphs



Maximum operation time depending on the medium temperature