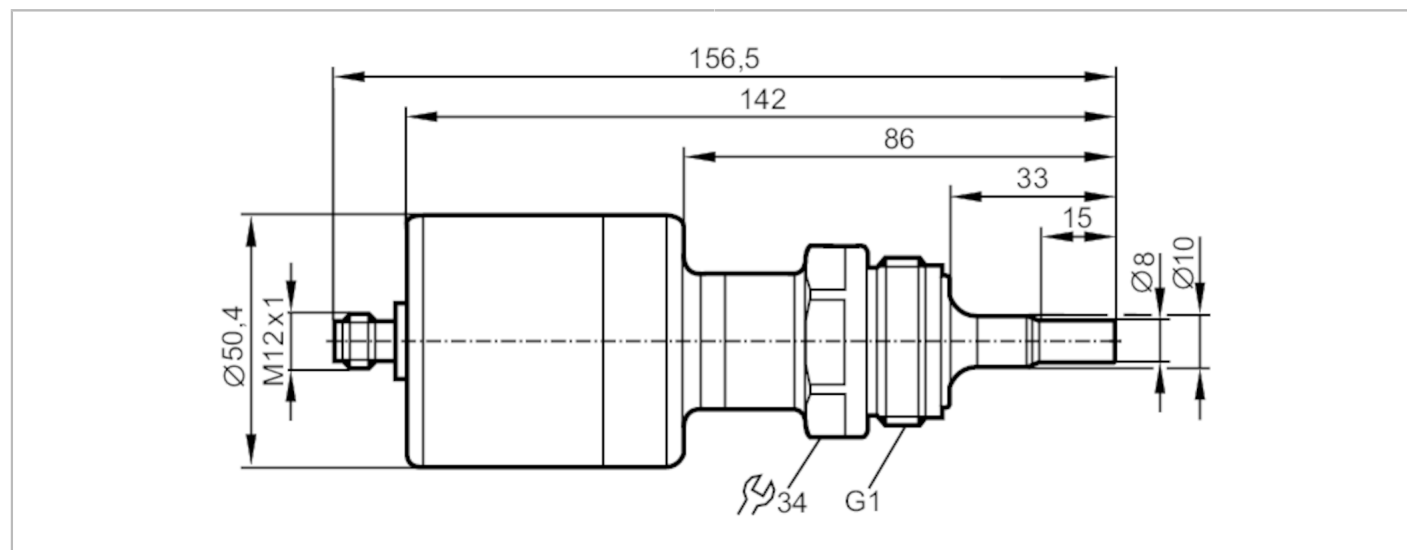


# TAD981



## Temperature transmitter

TAD033KLES30-A-ZKG/US



EC 1935/2004 EHEDG Certified



### Application

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 [bar]	50
Minimum installation depth [mm]	25

### 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	
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	diagnostic output for drift and 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		
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	

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### Interfaces

Communication interface	IO-Link
Transmission 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: Process Data Variable; Device Identification, 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

### 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

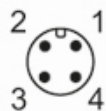
Weight [g]	399
Material	stainless steel (1.4404 / 316L); PEI; FKM
Materials (wetted parts)	stainless steel (1.4404 / 316L)
Process connection	threaded connection G 1 external thread Aseptoflex Vario
Surface characteristics Ra/Rz of the wetted parts	Ra: < 0.6
Installation length EL [mm]	33

### Remarks

Remarks	MS = set measuring span
Pack quantity	1 pcs.

### Electrical connection

Connector: 1 x M12; Contacts: gold-plated



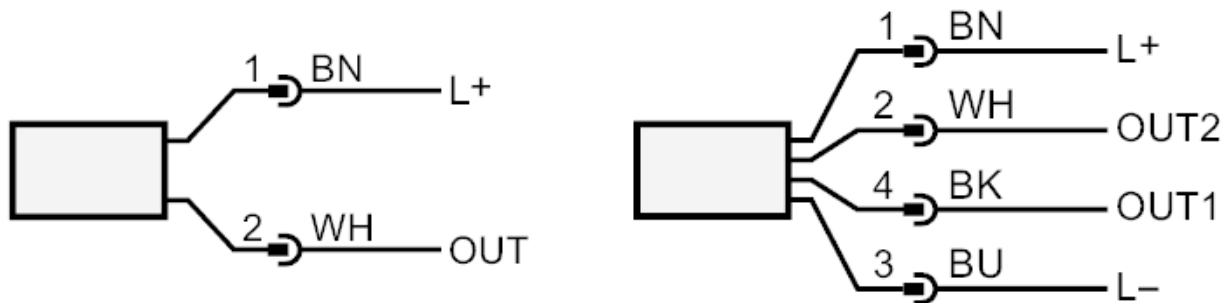
# TAD981



## Temperature transmitter

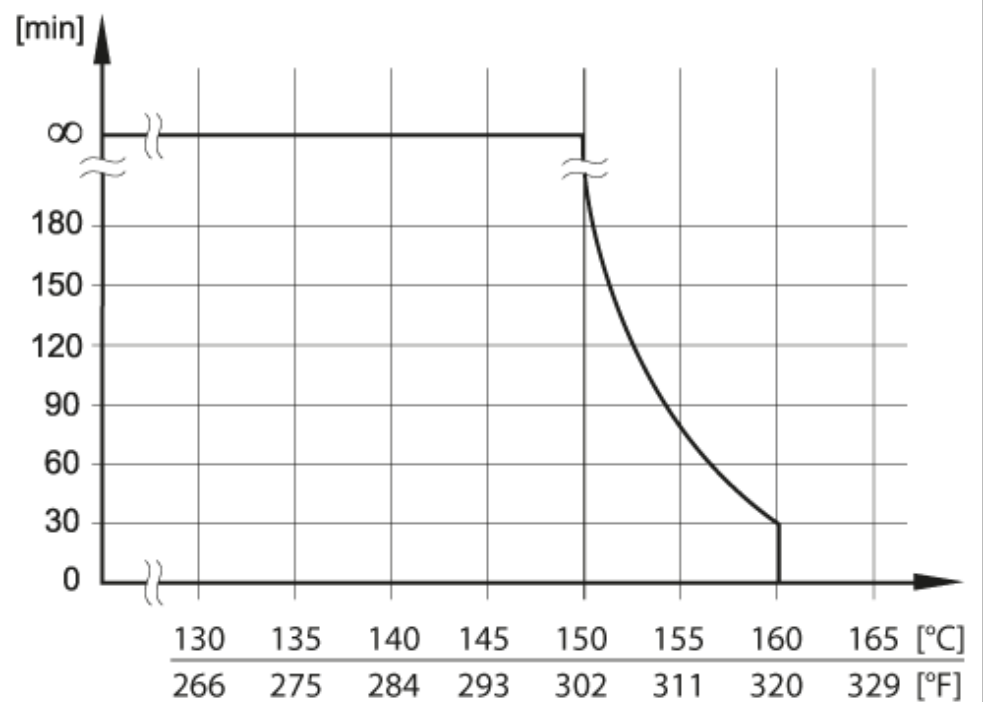
TAD033KLES30-A-ZKG/US

### Connection



	connection for 2-wire operation
OUT:	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