

TN7531



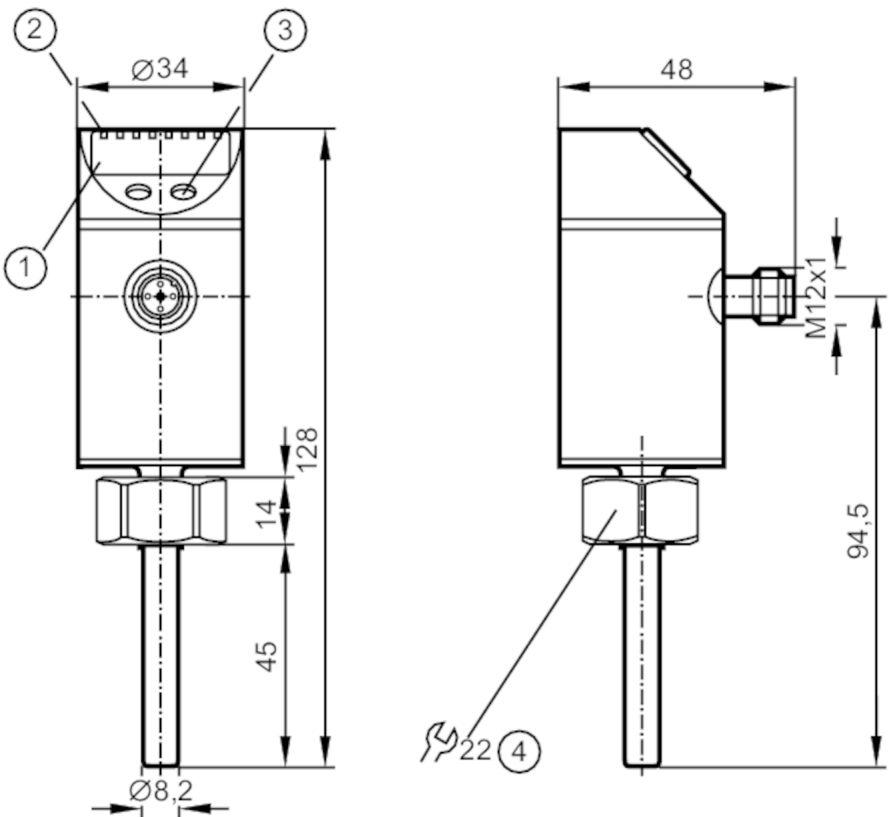
Temperature sensor with display

TN-013KBBD10-QFPKG/US/ IV

phase-out article

Alternative articles: TN7511

When selecting an alternative article and accessories please note that technical data may differ!



- 1 alphanumeric display 4-digit
- 2 status LEDs
- 3 programming button
- 4 internal thread M18 x 1.5



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2	
Measuring range	-40...150 °C	-40...302 °F
Communication interface	IO-Link	
Process connection	threaded connection M18 x 1,5 internal thread	
Installation length EL [mm]	45	

Application

Special feature	Gold-plated contacts	
Measuring element	1 x Pt 1000; (to DIN EN 60751, class B)	
Media	liquids and gases	
Pressure rating	300 bar	30 MPa
Minimum installation depth [mm]	12	

Electrical data

Operating voltage [V]	18...32 DC; ("supply class 2" to cULus)	
Current consumption [mA]	< 50	



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Protection class	III	
Reverse polarity protection	yes	
Power-on delay time [s]	1	
Integrated watchdog	yes	
Inputs / outputs		
Number of inputs and outputs	Number of digital outputs: 2	
Outputs		
Total number of outputs	2	
Output signal	switching signal; IO-Link; (configurable)	
Electrical design	PNP/NPN	
Number of digital outputs	2	
Output function	normally open / normally closed; (parameterisable)	
Max. voltage drop switching output DC [V]	2	
Permanent current rating of switching output DC [mA]	250	
Short-circuit protection	yes	
Type of short-circuit protection	pulsed	
Overload protection	yes	
Measuring/setting range		
Probe length L [mm]	45	
Measuring range	-40...150 °C	-40...302 °F
Set point SP	-39.5...150 °C	-39...302 °F
Reset point rP	-40...149.5 °C	-40...301 °F
In steps of	0.1 °C	0.1 °F
Resolution		
Resolution of switching output [K]	0.1	
Resolution of display [K]	0.1	
Accuracy / deviations		
Switch point accuracy [K]	± 0,3	
Display accuracy [K]	± 0,3	
Temperature drift per 10 K [K]	0.1	
Response times		
Dynamic response T05 / T09 [s]	1 / 3; (to DIN EN 60751)	
Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.0	
Min. process cycle time [ms]	2.3	
Supported DeviceIDs	Type of operation	DeviceID
	default	88
Operating conditions		
Ambient temperature [°C]	-25...70	

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Storage temperature	[°C]	-40...100
Protection		IP 67

Tests / approvals

EMC	DIN EN 61000-4-2 ESD	4 kV CD / 8 kV AD
	EN 61000-4-3 HF radiated	10 V/m
	DIN EN 61000-4-4 Burst	2 kV
	DIN EN 61000-4-5 Surge	1 kV
	EN 61000-4-6 HF conducted	10 V
Shock resistance	DIN IEC 68-2-27	50 g (11 ms)
Vibration resistance	DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF	[years]	242

Mechanical data

Weight	[g]	212.6
Housing		cylindrical
Dimensions	[mm]	Ø 34 / L = 128
Materials		stainless steel (304/1.4301); EPDM/X; CO-PC; PBT; FKM; PA
Materials (wetted parts)		stainless steel (316L/1.4404); O-ring: FKM 80 Shore A
Process connection		threaded connection M18 x 1,5 internal thread
Probe diameter	[mm]	8.2
Installation length EL	[mm]	45

Displays / operating elements

Display	Display unit	2 x LED, green
	switching status	2 x LED, yellow
	measured values	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit

Remarks

Remarks	The values for accuracy apply to flowing water.
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



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Connection

