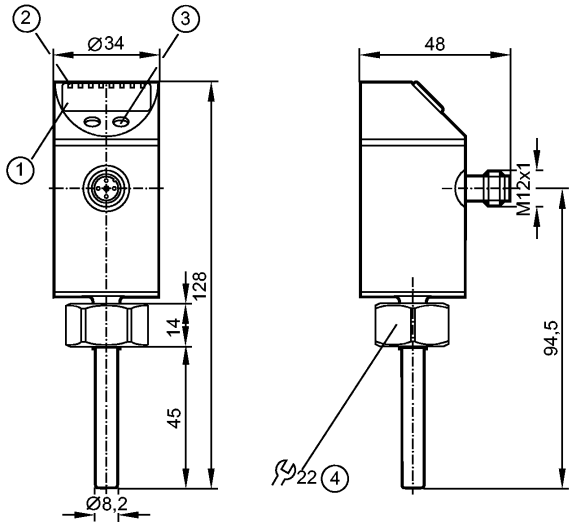
TN2531

TN-013KCBD10-MFRKG/US/ /V

Temperature sensors

New generation available: TN2511
When selecting an alternative article and accessories please note that technical data may differ!



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

Product characteristics		
Electronic temperature sensor		
Compact type for adapter		
Quick disconnect		
Process connection: internal thread M18 x 1.5 for adapter		
Installation length EL: 45 mm		
Switching output, analog output 4...20 mA or 0...10 V		
4-digit alphanumeric display		
Measuring range: -40...150 °C / -40...302 °F		
Measuring element: 1 x Pt 1000, to DIN EN 60751, class B		
Application		
Application		liquids and gases
Pressure rating	[bar]	300
Minimum installation depth	[mm]	12
Electrical data		
Electrical design		DC PNP/NPN
Operating voltage	[V]	18...32 DC; cULus - Class 2 source required
Current consumption	[mA]	< 50
Protection class		III
Reverse polarity protection		yes
Outputs		
Output		Switching output, analog output 4...20 mA or 0...10 V
Output function		1 x normally open / closed programmable + 1 x analog (4...20 mA / 0...10 V, scalable)
Current rating	[mA]	250
Voltage drop	[V]	< 2
Short-circuit protection		yes (non-latching)

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Overload protection		yes	
Analog output		4...20 mA / 0...10 V	
Measuring / setting range			
Measuring range		-40...150 °C	-40...302 °F
Analog start point, ASP	°C / °F	-40.0...145.0 / -40.0...293.0	
Analog end point, AEP	°C / °F	-35.0...150.0 / -31.0...302.0	
Setting range			
Set point, SP		-39.5...150.0 °C	-39.0...302.0 °F
Reset point, rP		-40.0...149.5 °C	-40.0...301.0 °F
in steps of		0.1 °C	0.1 °F
Resolution			
Switching output	[K]	0.1	
Analog output	[K]	< 0.1	
Display	[K]	0.1	
Accuracy / deviations			
Switch point accuracy	[K]	± 0.3	
Analog output	[K]	± 0.3	
Display	[K]	± 0.3	
Temperature drift (/ 10 K)	[K]	0.1	
Reaction times			
Power-on delay time	[s]	1	
Dynamic response	T05 / T09 [s]	1 / 3 *)	
Measuring / display cycle	[ms]	200	
Integrated watchdog		yes	
Software / programming			
Adjustment of the switch point		Programming button	
Interfaces			
IO-Link Device			
Transfer type		COM2 (38.4 kBaud)	
IO-Link revision		1.0	
Environment			
Ambient temperature	[°C]	-25...70	
Storage temperature	[°C]	-40...100	
Protection		IP 67	
Tests / approvals			
EMC		EN 61000-4-2 ESD: EN 61000-4-3 HF radiated: EN 61000-4-4 Burst: EN 61000-4-5 Surge: EN 61000-4-6 HF conducted:	4 kV CD / 8 kV AD 10 V/m 2 kV 1 kV 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]	209	
Mechanical data			
Process connection		internal thread M18 x 1.5 for adapter	
Materials (wetted parts)		stainless steel (316L / 1.4404); O-ring: FKM 8 x 1.5 gr 80° Shore A	

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Probe length L	[mm]	45
Installation length EL	[mm]	45
Housing materials		304 / 1.4301 (V2A); PBT (Pocan); PC (Makrolon); EPDM/X (Santoprene); FPM (Viton)
Weight	[kg]	0.203

Displays / operating elements

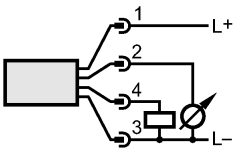
Display	Display unit 2 x LED green Switching status LED yellow Measured values 4-digit alphanumeric display Programming 4-digit alphanumeric display

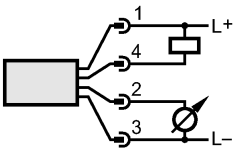
Electrical connection

Connection	M12 connector; gold-plated contacts

Wiring

Programming of the output function:
Hno = hysteresis / N.O.
Hnc = hysteresis / N.C.
Fno = window function / N.O.
Fnc = window function / N.C.





Remarks

Remarks	*) according to DIN EN 60751 The values for accuracy apply to flowing water. load for current output: Rmax [Ω]: (Ub - 10 V) x 50 / for voltage output: Rmin [Ω]: 2000
Pack quantity [piece]	1

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