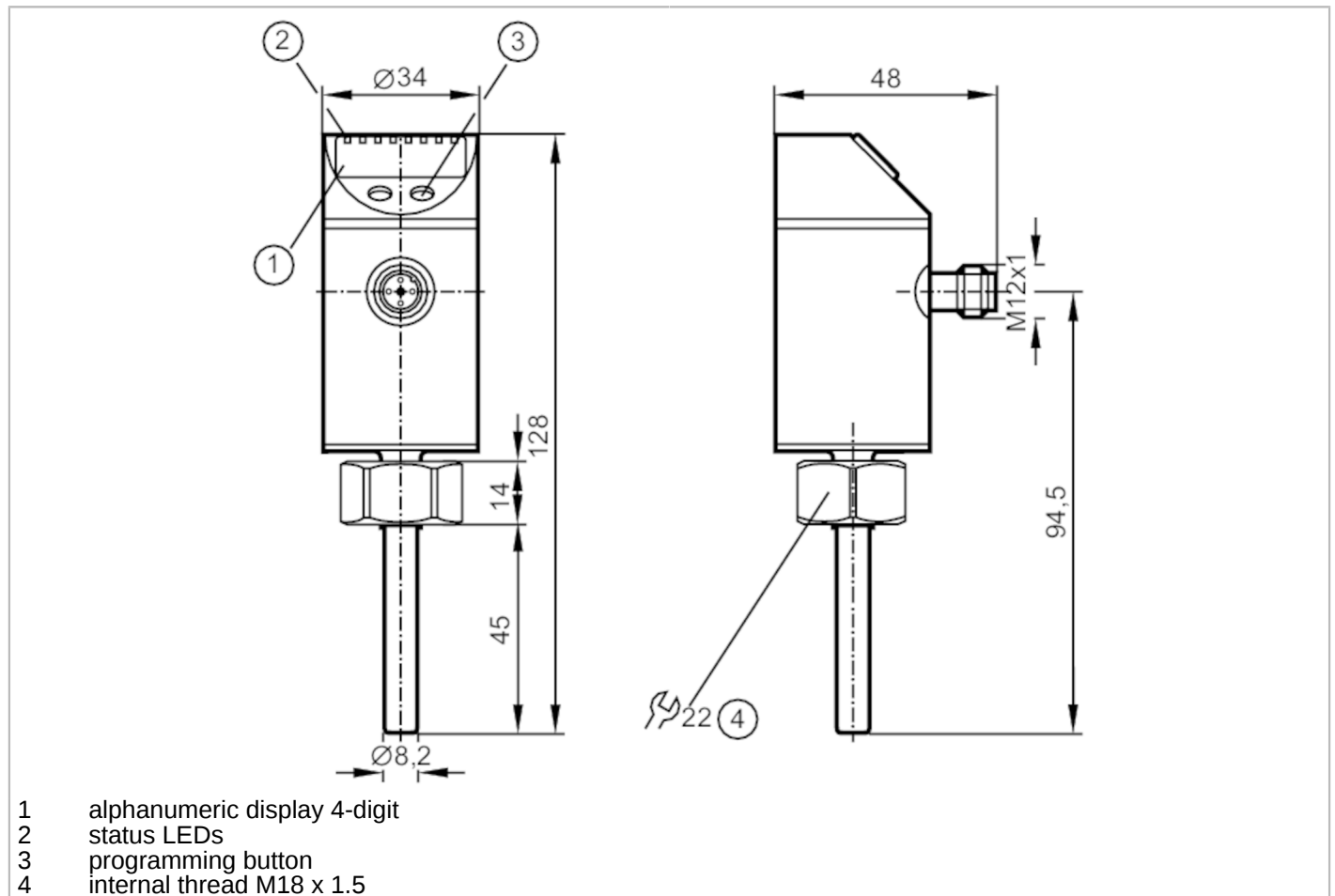


TN2531



Temperature sensor with display

TN-013K CBD10-MFRKG/US/ IV



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



Made in United States

Application

Measuring element	1 x Pt 1000; (to DIN EN 60751, class B)
Media	liquids and gases
Pressure rating [bar]	300
Minimum installation depth [mm]	12

Electrical data

Operating voltage [V]	18...32 DC; ("supply class 2" to cULus)
Current consumption [mA]	< 50
Protection class	III
Reverse polarity protection	yes
Power-on delay time [s]	1
Integrated watchdog	yes



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Outputs	
Total number of outputs	2
Output signal	switching signal; analogue signal; IO-Link; (configurable)
Number of digital outputs	1
Output function	normally open / normally closed; (parameterisable)
Max. voltage drop switching output DC [V]	2
Permanent current rating of switching output DC [mA]	250
Number of analogue outputs	1
Analogue current output [mA]	4...20
Max. load [Ω]	$(U_b - 10 \text{ V}) \times 50$
Analogue voltage output [V]	0...10
Min. load resistance [Ω]	2000
Electrical design	PNP/NPN
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
Analogue start point	-40...145 °C -40...293 °F
Analogue end point	-35...150 °C -31...302 °F
In steps of	0.1 °C 0.1 °F
Resolution	
Resolution of switching output [K]	0.1
Resolution of analogue output [K]	0.1
Resolution of display [K]	0.1
Accuracy / deviations	
Switch point accuracy [K]	$\pm 0,3$
Precision analogue output [K]	$\pm 0,3$
Display accuracy [K]	$\pm 0,3$
Temperature drift per 10 K [K]	0.1
Response times	
Dynamic response T05 / T09 [s]	1 / 3; (to DIN EN 60751)
Max. measuring/display cycle [ms]	200
Software / programming	
Adjustment of the switch point	programming button

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Interfaces		
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.0	
Operating conditions		
Ambient temperature	-25...70 °C	
Storage temperature	-40...100 °C	
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]	209
Mechanical data		
Weight	[g]	202.8
Housing	compact type for adapter	
Materials	stainless steel (1.4301 / 304); PBT; PC; EPDM/X; FKM	
Materials (wetted parts)	stainless steel (1.4404 / 316L); O-ring: FKM 8 x 1.5 gr 80° Shore A	
Process connection	threaded connection M18 x 1,5 internal thread	
Installation length EL	[mm]	45
Displays / operating elements		
Display	Display unit	2 x LED, green
	switching status	LED, yellow
	measured values	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit
Remarks		
Remarks	The values for accuracy apply to flowing water.	
Notes	discontinued article	
Pack quantity	1 pcs.	
Electrical connection		
Connector: 1 x M12; Contacts: gold-plated		
		

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Connection

