



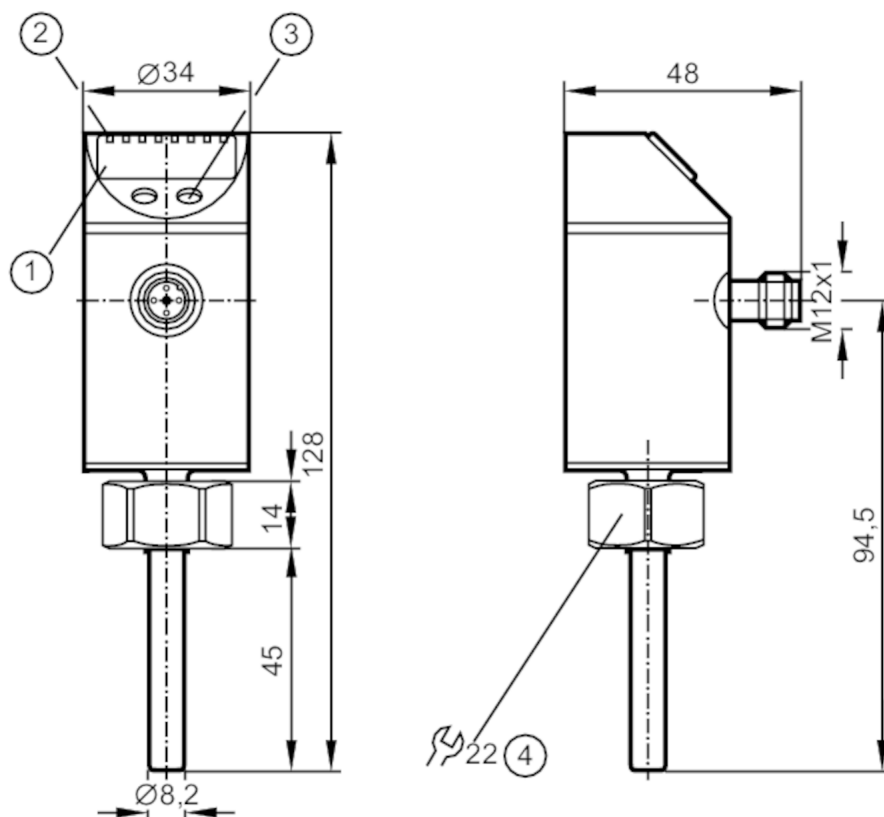
Temperature sensor with display

TN-013KCB10-MFRKG/US/ IV

phase-out article

Alternative articles: TN2511

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: 1; Number of analogue outputs: 1	
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 [bar]	300	
Minimum installation depth [mm]	12	

Electrical data

Operating voltage [V]	18...32 DC; ("supply class 2" to cULus)
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Current consumption [mA]	< 50
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: 1; Number of analogue outputs: 1
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Outputs

Total number of outputs	2
Output signal	switching signal; analogue signal; IO-Link; (configurable)
Electrical design	PNP/NPN
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 V) x 50
Analogue voltage output [V]	0...10
Min. load resistance [Ω]	2000
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]	± 0,3
Precision analogue output [K]	± 0,3
Display accuracy [K]	± 0,3
Temperature drift per 10 K [K]	0.1



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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
Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.0
Operating conditions		
Ambient temperature	[°C]	-25...70
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]	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 (316L/1.4404); O-ring: FKM 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.
Pack quantity		1 pcs.

TN2531



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Electrical connection

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



Connection

