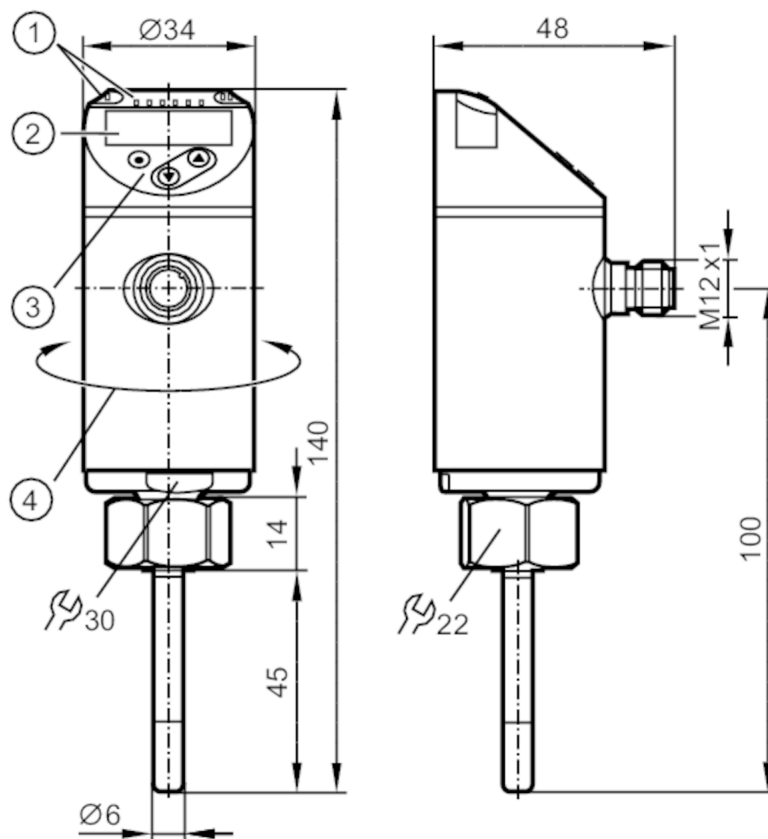


Temperature sensor with display

TN-045KCB18-QFPKG/US/



- 1 LEDs Display unit / switching status
- 2 alphanumeric display 4-digit red/green
- 3 programming buttons
- 4 upper part of the housing can be rotated 345°



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2	
Measuring range	-50...150 °C	-58...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 A)	
Media	liquids and gases	
Pressure rating [bar]	300	
Pressure rating [MPa]	30	
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	



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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]	2.5
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		-50...150 °C -58...302 °F
Set point SP		-49.8...150 °C -57.6...302 °F
Reset point rP		-50...149.8 °C -58...301.6 °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 + (± 0,1 % MS)
Display accuracy	[K]	± 0,3 + (± 0,1 % MS)
Temperature coefficient [% of the span / 10 K]		0,1; (in case of deviation from the reference condition 25 ± 5 °C)
Response times		
Dynamic response T05 / T09	[s]	1 / 3; (to DIN EN 60751)
Software / programming		
Parameter setting options		hysteresis / window; normally open / normally closed; switch-on/switch-off delay; Damping; Display unit; current/voltage output
Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1
Operating conditions		
Ambient temperature	[°C]	-25...80

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Temperature sensor with display

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

Tests / approvals

EMC	DIN EN 61000-6-2	
	DIN EN 61000-6-3	
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]	254
UL approval	UL Approval no.	K014

Mechanical data

Weight	[g]	204
Housing		cylindrical
Dimensions	[mm]	Ø 34 / L = 140
Materials		stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC
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]	6
Installation length EL	[mm]	45

Displays / operating elements

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

Remarks

Remarks	MS = set measuring span
	The values for accuracy apply to flowing water.
	operating voltage "supply class 2" according to cULus
Pack quantity	1 pcs.

Electrical connection

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



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Temperature sensor with display

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Connection



OUT1: switching output / IO-Link

OUT2: switching output

colours to DIN EN 60947-5-2

Core colours :

BK = black
BN = brown
BU = blue
WH = white