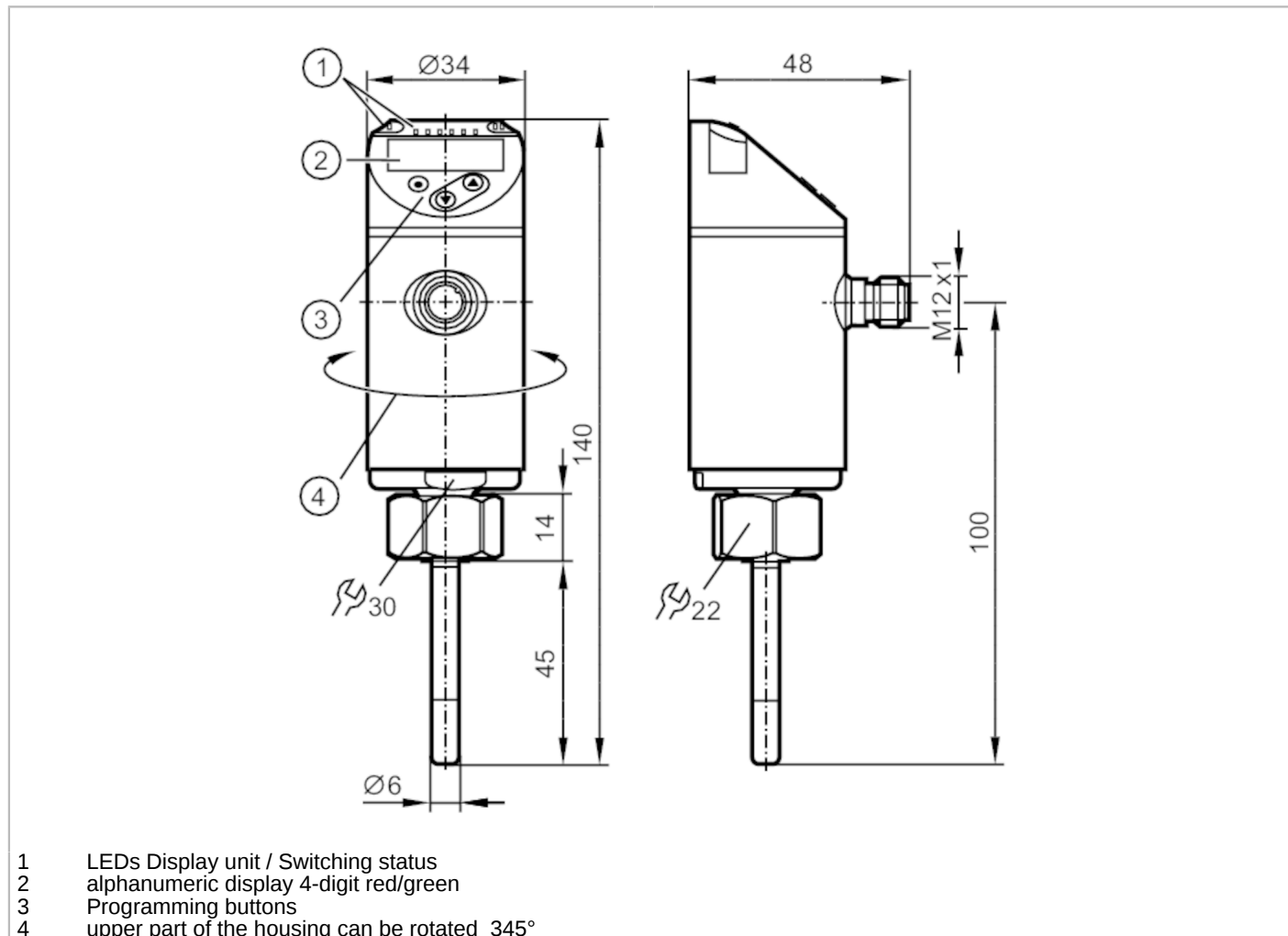


TN7511



Temperature sensor with display

TN-045K CBD18-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	300 bar	30 MPa
Minimum installation depth [mm]	12	

Electrical data

Operating voltage [V]	18...32 DC; (cULus - Class 2 source required)	
Current consumption [mA]	< 50	
Protection class	III	
Reverse polarity protection	yes	

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Power-on delay time	[s]	1
Integrated watchdog		yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 2	
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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 / closed; (configurable)	
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	yes (non-latching)	
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]	$\pm 0,3 + (\pm 0,1 \% MS)$	
Display accuracy	[K]	$\pm 0,3 + (\pm 0,1 \% MS)$	
Temperature coefficient [% of the span / 10 K]		0,1; (In case of deviation from the reference condition $25 \pm 5 \text{ °C}$)	

Reaction times

Dynamic response T05 / T09	[s]	1 / 3; (according to DIN EN 60751)
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Software / programming

Parameter setting options	hysteresis / window; normally open / closed; switch-on/ switch-off delay; Damping; Display unit; current/voltage output	
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Interfaces

Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
Profiles	Smart Sensor - SSP 0	Generic Profiled Sensor
	Function	Device identification
	Function	Process data variable
	Function	Device diagnosis

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Min. process cycle time	[ms]	2.3
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Supported DeviceIDs	Type of operation	DeviceID
	default	583

Operating conditions

Ambient temperature	[°C]	-25...80
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 number	K014

Mechanical data

Weight	[g]	204
Housing		tubular
Dimensions	[mm]	Ø 34 / L = 140
Material		stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC
Materials (wetted parts)		stainless steel (1.4404 / 316L); 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. cULus - Class 2 source required
Pack quantity	1 pcs.

Electrical connection

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



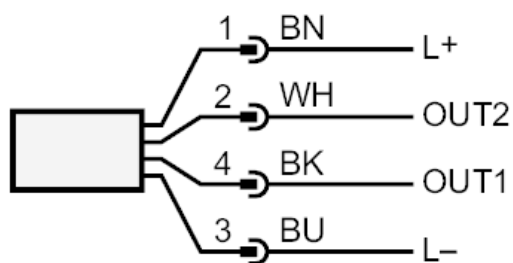
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Temperature sensor with display

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Connection



OUT1: Switching output / IO-Link

OUT2: Switching output

Colors to DIN EN 60947-5-2

Core colors :

BK = black

BN = brown

BU = blue

WH = white