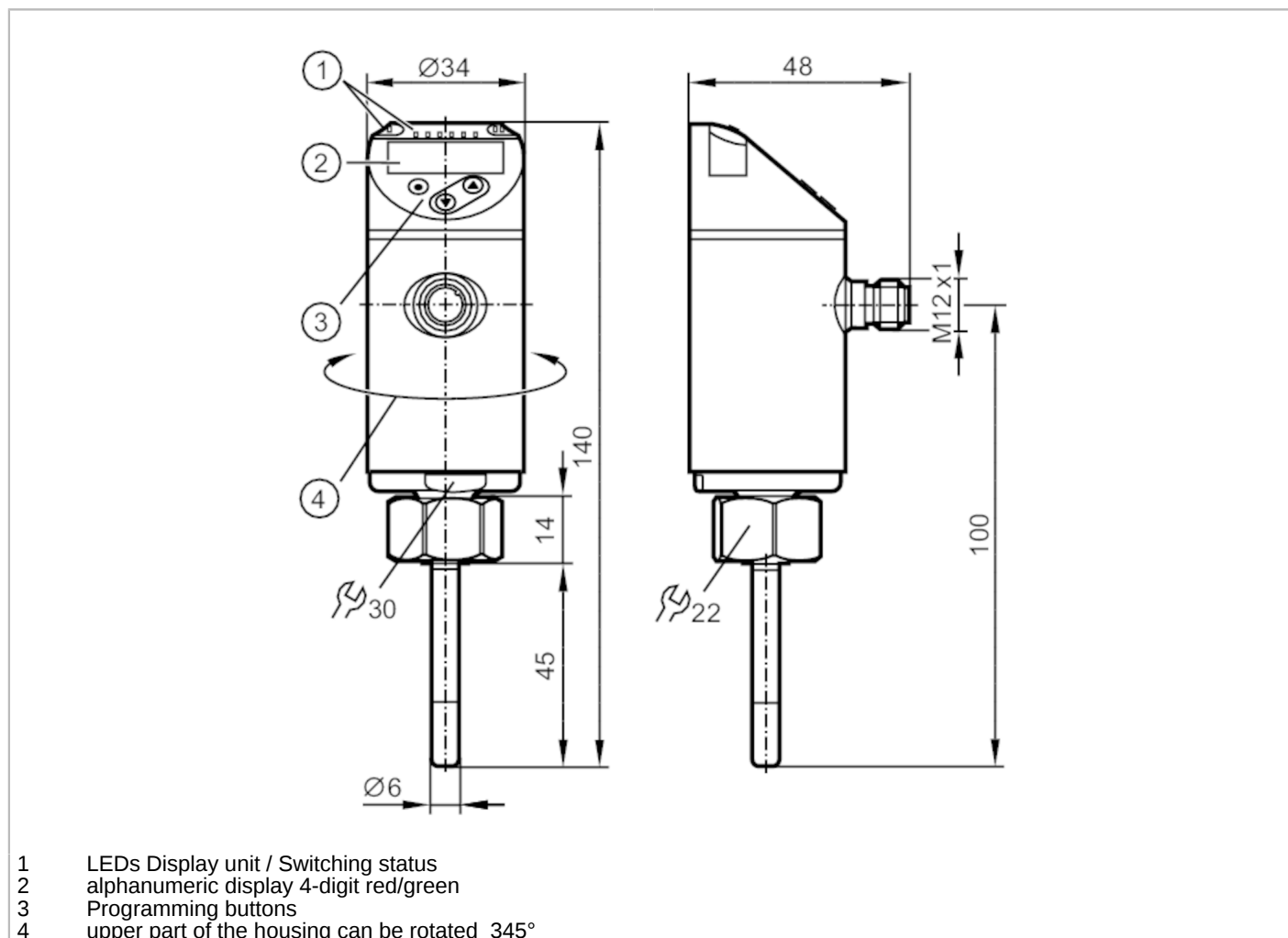


TN2511



Temperature sensor with display

TN-045K CBD18-MFPKG/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: 1; Number of analog outputs: 1	
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

System	gold-plated contacts
Measuring element	1 x Pt 1000; (to DIN EN 60751, class A)
Media	liquids and gases
Pressure rating [bar]	300
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

TN2511



Temperature sensor with display

TN-045K CBD18-MFPKG/US/

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

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1	
------------------------------	---	--

Outputs

Total number of outputs		2
Output signal		switching signal; analog signal; IO-Link; (configurable)
Electrical design		PNP/NPN
Number of digital outputs		1
Output function		normally open / closed; (configurable)
Max. voltage drop switching output DC	[V]	2.5
Permanent current rating of switching output DC	[mA]	250
Number of analog outputs		1
Analog current output	[mA]	4...20
Max. load	[Ω]	500
Analog voltage output	[V]	0...10
Min. load resistance	[Ω]	2000
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
Factory setting		-40...150 °C / -40...302 °F	
Set point SP		-49.8...150 °C	-57.6...302 °F
Reset point rP		-50...149.8 °C	-58...301.6 °F
Analog start point		-50...145 °C	-58...293 °F
Analog end point		-45...150 °C	-49...302 °F
In steps of		0.1 °C	0.1 °F

Resolution

Resolution of switching output	[K]	0.1
Resolution of analog output	[K]	current output: MS / 4096; voltage output: MS / 3561
Resolution of display	[K]	0.1

Accuracy / deviations

Switch point accuracy	[K]	± 0,3 + (± 0,1 % MS)
Precision analog output	[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)

Reaction times


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

TN2511



Temperature sensor with display

TN-045K CBD18-MFPKG/US/

Software / programming		
Parameter setting options	hysteresis / window; normally open / closed; switching logic; switch-on/switch-off delay; Damping; Display unit	
Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
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]	470
UL approval	UL approval number	K013
Mechanical data		
Weight	[g]	207
Housing	Compact type for adapter	
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	
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.	
Pack quantity	1 pcs.	
Electrical connection		
Connector: 1 x M12; coding: A; Contacts: gold-plated		
		

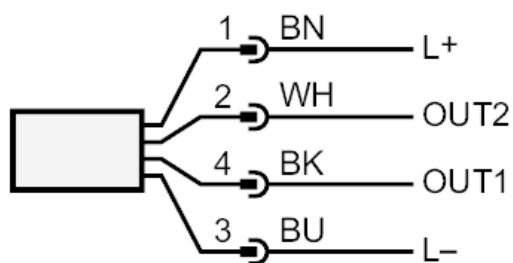
TN2511



Temperature sensor with display

TN-045K CBD18-MFPKG/US/

Connection



OUT1: Switching output / IO-Link
OUT2: analog output
Colors to DIN EN 60947-5-2

Core colors :

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