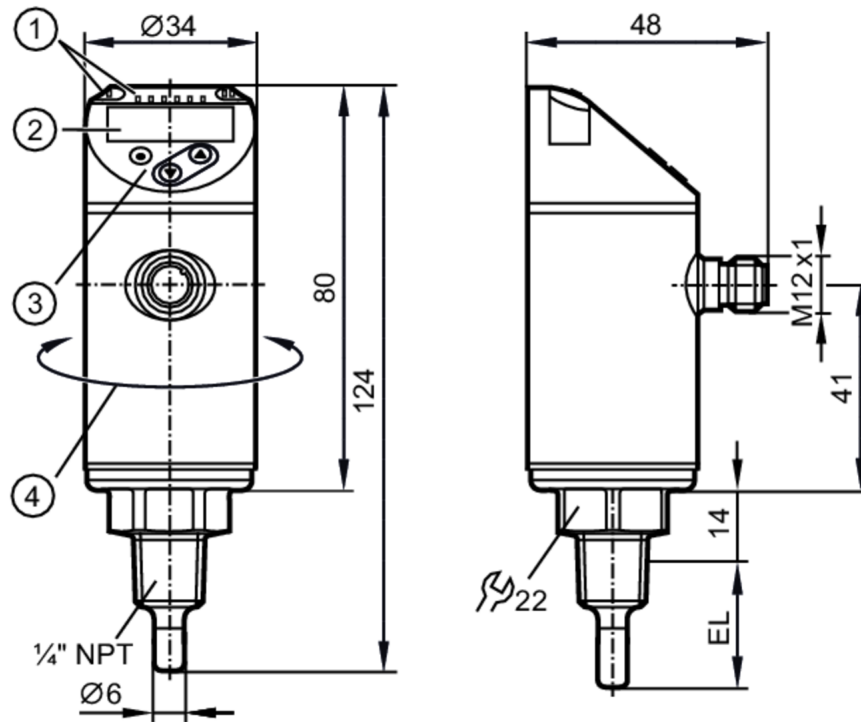


# TN2603



## Temperature sensor with display

TN-025KLB14-MFRKG/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; Number of analog outputs: 1	
Measuring range	-50...150 °C	-58...302 °F
Communication interface	IO-Link	
Process connection	threaded connection 1/4" NPT external thread	
Installation length EL [mm]	25	

### Application

Special feature	gold-plated contacts	
Measuring element	1 x Pt 1000; (to DIN EN 60751, class A)	
Media	liquids and gases	
Pressure rating	400 bar	40 MPa

### Electrical data

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

# TN2603



## Temperature sensor with display

TN-025KLBN14-MFRKG/US/

Inputs / outputs	
Number of inputs and outputs	Number of digital outputs: 2; 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	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
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]	12
Measuring range	-50...150 °C   -58...302 °F
Factory setting	0...300 °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)
Software / programming	
Parameter setting options	hysteresis / window; normally open / closed; switching logic; switch-on/switch-off delay; Damping; Display unit; current/voltage output

# TN2603



## Temperature sensor with display

TN-025KLBN14-MFRKG/US/

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	
Min. process cycle time [ms]	2.3	
Supported DeviceIDs	<b>Type of operation</b>	
	<b>DeviceID</b>	
default	707	

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]	207	
UL approval	UL approval number	K015

Mechanical data	
Weight [g]	205
Housing	tubular
Dimensions [mm]	Ø 34 / L = 124
Material	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC
Materials (wetted parts)	stainless steel (1.4404 / 316L)
Process connection	threaded connection 1/4" NPT external thread
Probe diameter [mm]	6
Installation length EL [mm]	25

Displays / operating elements		
Display	Display unit	2 x LED, green
	Switching status	2 x 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



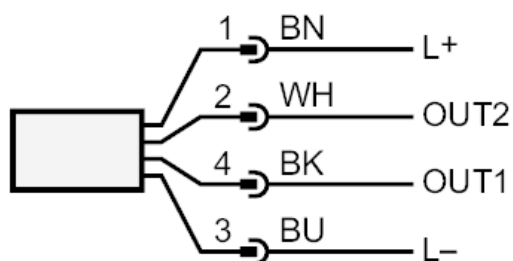
# TN2603



## Temperature sensor with display

TN-025KLBN14-MFRKG/US/

### Connection



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

Core colors :

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