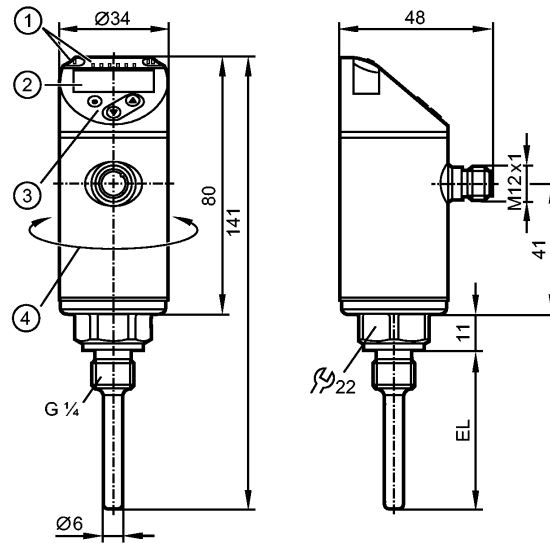


**TN2115**

TN-050KLBM14-MFRKG/US/

**Temperature sensors**

- 1: LEDs (display unit / switching status)
- 2: 4-digit alphanumeric display / alternating indication of red and green
- 3: Programming buttons
- 4: Upper part of the housing can be rotated by 345°

**Product characteristics**

Electronic temperature sensor

Process connection: G 1/4

Installation length EL: 50 mm

2 outputs

OUT1 = switching output

OUT2 = switching output or analog output

4-digit alphanumeric display

Measuring range: -50...150 °C / -58...302 °F

Measuring element: 1 x Pt 1000, to DIN EN 60751, class A

Factory setting: -50...150 °C

**Application**

Application: liquids and gases

Pressure rating [bar]: 400

**Electrical data**

Electrical design: DC PNP/NPN

Operating voltage [V]: 18...32 DC; cULus - Class 2 source required

Current consumption [mA]: &lt; 50

Protection class: III

Reverse polarity protection: yes

**Outputs**

Output: 2 outputs  
 OUT1 = switching output  
 OUT2 = switching output or analog output

Output function: 2 x normally open / closed programmable or 1 x normally open / closed programmable  
 + 1 x analogue (4...20 mA / 0...10 V)

Current rating [mA]: 250

Voltage drop [V]: &lt; 2.5



# TN2115

TN-050KLBM14-MFRKG/US/



Temperature sensors

Short-circuit protection	yes (non-latching)
Overload protection	yes
Max. load [Ω]	4...20 mA: 500
Min. load [Ω]	0...10 V: 2000

Measuring / setting range		
Measuring range	-50...150 °C	-58...302 °F
Factory setting	-50...150 °C	
Setting range		
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, ASP	-50...145 °C	-58...293 °F
Analog end point, AEP	-45...150 °C	-49...302 °F
in steps of	0.1 °C	0.1 °F
Resolution		
Switching output [K]	0.1	
Analog output [K]	MS / 4096 *)   MS / 3561 **)	
Display [K]	0.1	

Accuracy / deviations		
Switch point accuracy [K]	± 0.3 + (± 0.1 % MS)	
Analog output [K]	± 0.3 + (± 0.1 % MS)	
Display [K]	± 0.3 + (± 0.1 % MS)	
Temperature drift ( / 10 K)	0.1 % MS	

Reaction times		
Power-on delay time [s]	1	
Dynamic response T05 / T09 [s]	1 / 3 ***)	
Integrated watchdog	yes	

Software / programming	
Programming options	hysteresis / window function; NO / NC; output polarity; on delay, off delay; damping; display unit; current / voltage output

Interfaces	
IO-Link Device	
Transfer type	COM2 (38.4 kBaud)
IO-Link revision	1.1

Environment	
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 number	K015

Mechanical data	
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# TN2115

TN-050KLBM14-MFRKG/US/

Temperature sensors

Process connection	G 1/4
Materials (wetted parts)	stainless steel (316L / 1.4404); O-ring: FKM
Installation length EL [mm]	50
Housing materials	stainless steel (316L / 1.4404); PBT+PC-GF 30; PBT-GF 20; PC

### Displays / operating elements

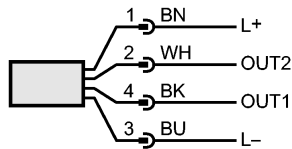
Display	Display unit 2 x LED green Switching status 2 x LED yellow 4-digit alphanumeric display / alternating indication Measured values of red and green
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### Electrical connection

Connection	M12 connector; gold-plated contacts
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#### Wiring

Core colors  
 BK black  
 BN brown  
 BU blue  
 WH white



OUT1: switching output or IO-Link  
 OUT2: switching output or 4...20 mA / 0...10 V  
 Colours to DIN EN 60947-5-2

### Remarks

Remarks	*) current output **) voltage output ***) according to DIN EN 60751 MS = set measuring span The values for accuracy apply to flowing water.
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Pack quantity [piece]	1
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