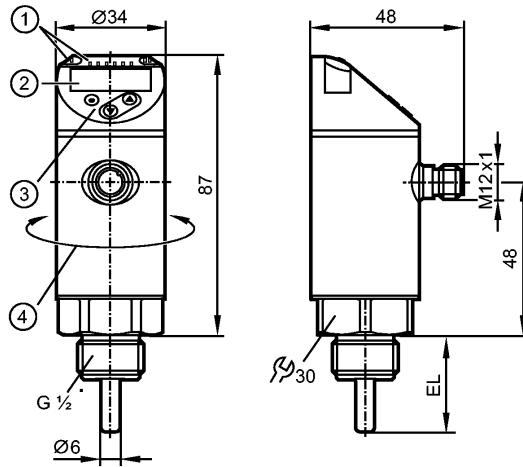


TN2405

TN-030KLBM12-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 1/2
Installation length EL: 30 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]	300

Electrical data

Electrical design	DC PNP/NPN
Operating voltage [V]	18...32 DC; cULus - Class 2 source required
Current consumption [mA]	< 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]	< 2.5
Short-circuit protection	yes (non-latching)
Overload protection	yes



TN2405

TN-030KLBM12-MFRKG/US/

Temperature sensors

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 coefficients (in % of the span per 10 K)		0.1
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		
Process connection		G 1/2
Materials (wetted parts)		stainless steel (316L / 1.4404); O-ring: FKM

TN2405

TN-030KLBM12-MFRKG/US/

Temperature sensors

Installation length EL [mm] 30

Housing materials stainless steel (316L / 1.4404); PBT+PC-GF 30; PBT-GF 20; PC

Displays / operating elements

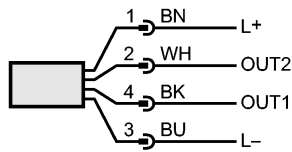
Display Display unit 2 x LED green
 Switching status 2 x LED yellow
 4-digit alphanumeric display / alternating indication
 Measured values of red and green

Electrical connection

Connection M12 connector; gold-plated contacts

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.

Pack quantity [piece] 1