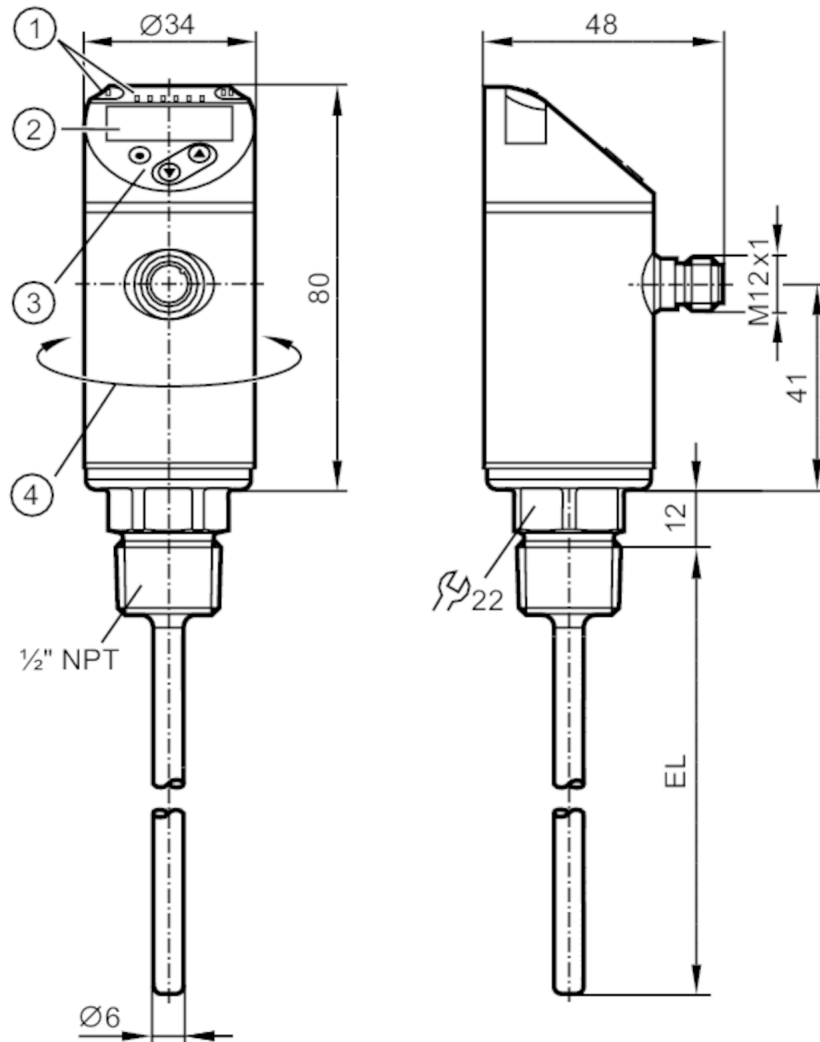


TN2333



Temperature sensor with display

TN-100KLBN12-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 1/2" NPT | |
| Installation length EL [mm] | 100 | |

Application

| | |
|-----------------------|---|
| System | gold-plated contacts |
| Measuring element | 1 x Pt 1000; (to DIN EN 60751, class A) |
| Media | liquids and gases |
| Pressure rating [bar] | 250 |



Temperature sensor with display

TN-100KLBN12-MFRKG/US/

| 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 |
| 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 | | |
| 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) |

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Temperature sensor with display

TN-100KLBN12-MFRKG/US/

| | | |
|---|---|---|
| Temperature coefficient [% of the span / 10 K] | 0,1; (In case of deviation from the reference condition $25 \pm 5 \text{ }^\circ\text{C}$) | |
| 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 | |
| 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] | 207 | |
| UL approval | UL approval number | K015 |
| Mechanical data | | |
| Weight [g] | 300 | |
| Material | stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC | |
| Materials (wetted parts) | stainless steel (1.4404 / 316L) | |
| Process connection | threaded connection 1/2" NPT | |
| Installation length EL [mm] | 100 | |
| 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. | |

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Temperature sensor with display

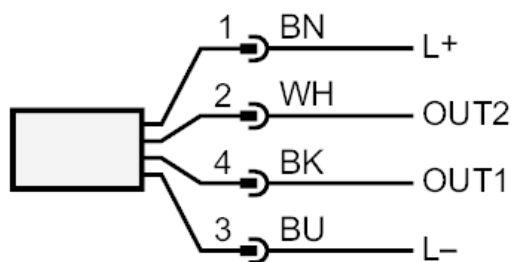
TN-100KLBN12-MFRKG/US/

Electrical connection

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



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