



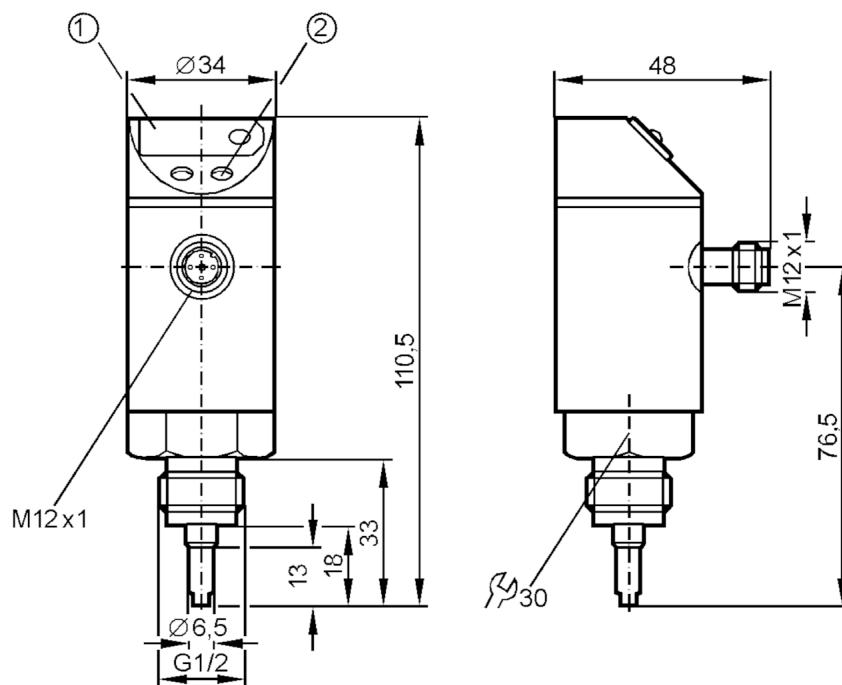
## Temperature sensor with display

TN-013KBBR12-QFPKG/US/ IV

Article no longer available - archive entry

Alternative articles: TN7511 + E40096

When selecting an alternative article and accessories please note that technical data may differ!



- 1 7-segment LED display  
2 programming button



### Product characteristics

|                              |                                           |              |
|------------------------------|-------------------------------------------|--------------|
| Number of inputs and outputs | Number of digital outputs: 2              |              |
| Measuring range              | -40...125 °C                              | -40...257 °F |
| Process connection           | threaded connection G 1/2 external thread |              |

### Application

|                                 |                                         |  |
|---------------------------------|-----------------------------------------|--|
| Special feature                 | Gold-plated contacts                    |  |
| Measuring element               | 1 x Pt 1000; (to DIN EN 60751, class B) |  |
| Media                           | Liquids                                 |  |
| Pressure rating [bar]           | 400                                     |  |
| Minimum installation depth [mm] | 15                                      |  |

### Electrical data

|                                 |                 |
|---------------------------------|-----------------|
| Operating voltage [V]           | 18...30 DC      |
| Current consumption [mA]        | < 50            |
| Min. insulation resistance [MΩ] | 100; (500 V DC) |
| Protection class                | III             |
| Reverse polarity protection     | yes             |
| Power-on delay time [s]         | 1.5             |
| Integrated watchdog             | yes             |



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| Inputs / outputs                                     |                                                                                                                   |                   |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------|
| Number of inputs and outputs                         | Number of digital outputs: 2                                                                                      |                   |
| Outputs                                              |                                                                                                                   |                   |
| Total number of outputs                              | 2                                                                                                                 |                   |
| Output signal                                        | switching signal                                                                                                  |                   |
| Electrical design                                    | PNP                                                                                                               |                   |
| Number of digital outputs                            | 2                                                                                                                 |                   |
| Output function                                      | normally open / normally closed; (parameterisable)                                                                |                   |
| Max. voltage drop switching output DC [V]            | 2                                                                                                                 |                   |
| Permanent current rating of switching output DC [mA] | 250                                                                                                               |                   |
| Short-circuit protection                             | yes                                                                                                               |                   |
| Type of short-circuit protection                     | pulsed                                                                                                            |                   |
| Overload protection                                  | yes                                                                                                               |                   |
| Measuring/setting range                              |                                                                                                                   |                   |
| Measuring range                                      | -40...125 °C                                                                                                      | -40...257 °F      |
| Set point SP                                         | -39.5...125 °C                                                                                                    | -39...257 °F      |
| Reset point rP                                       | -40...124.5 °C                                                                                                    | -40...256 °F      |
| In steps of                                          | 0.5 °C                                                                                                            | 1 °F              |
| Resolution                                           |                                                                                                                   |                   |
| Resolution of switching output [K]                   | 0.5                                                                                                               |                   |
| Resolution of display [K]                            | 0.5                                                                                                               |                   |
| Accuracy / deviations                                |                                                                                                                   |                   |
| Switch point accuracy [K]                            | ± (Pt 1000 + 0,2 K)                                                                                               |                   |
| Display accuracy [K]                                 | ± (Pt 1000 + 0,2 K + ½ Digit)                                                                                     |                   |
| Temperature drift per 10 K [K]                       | 0.1                                                                                                               |                   |
| Response times                                       |                                                                                                                   |                   |
| Dynamic response T05 / T09 [s]                       | 5 / 20; (to DIN EN 60751)                                                                                         |                   |
| Software / programming                               |                                                                                                                   |                   |
| Adjustment of the switch point                       | programming button                                                                                                |                   |
| Parameter setting options                            | hysteresis / window; normally open / normally closed; min/ max memory reset; Display unit; zero-point calibration |                   |
| Operating conditions                                 |                                                                                                                   |                   |
| Ambient temperature [°C]                             | -25...70                                                                                                          |                   |
| Storage temperature [°C]                             | -40...100                                                                                                         |                   |
| Protection                                           | IP 67                                                                                                             |                   |
| Tests / approvals                                    |                                                                                                                   |                   |
| EMC                                                  | DIN EN 61000-4-2 ESD                                                                                              | 4 kV CD / 8 kV AD |
|                                                      | EN 61000-4-3 HF radiated                                                                                          | 10 V/m            |
|                                                      | DIN EN 61000-4-4 Burst                                                                                            | 2 kV              |
|                                                      | EN 61000-4-6 HF conducted                                                                                         | 10 V              |
| Shock resistance                                     | DIN IEC 68-2-27                                                                                                   | 50 g (11 ms)      |

# TN7430



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|                      |                  |                     |
|----------------------|------------------|---------------------|
| Vibration resistance | DIN EN 60068-2-6 | 20 g (10...2000 Hz) |
|----------------------|------------------|---------------------|

### Mechanical data

|                          |                                                             |
|--------------------------|-------------------------------------------------------------|
| Materials                | stainless steel (1.4301 / 304); EPDM/X; CO-PC; PBT; FKM; PA |
| Materials (wetted parts) | stainless steel (1.4305 / 303)                              |
| Process connection       | threaded connection G 1/2 external thread                   |

### Displays / operating elements

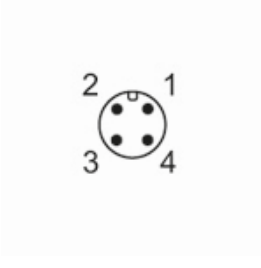
|         |                  |                       |
|---------|------------------|-----------------------|
| Display | switching status | 2 x LED, red          |
|         | function display | 7-segment LED display |
|         | measured values  | 7-segment LED display |

### Remarks

|               |                                                 |
|---------------|-------------------------------------------------|
| Remarks       | The values for accuracy apply to flowing water. |
| Pack quantity | 1 pcs.                                          |

### Electrical connection

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



### Connection

