# Temperature sensor TF with IO-Link

Fluidcontrol

IO-Link

The temperature-based change in the viscosity of hydraulic and lubricating oils requires closely monitoring and stabilising the operating temperature.

Furthermore, close temperature monitoring impacts the life of the oils. The oil tank is typically accepted as the control point for the oil temperature, which generally provides an informative mean value. It may further be helpful to also monitor segments or individual devices in a system.

The IO-Link compatible TF series sensors are suitable to ensure cost-effective and efficient temperature monitoring in hydraulic and lubrication oil tanks IO-Link.

The digital, bidirectional communication of these sensors meets all requirements of modern plant automation, reduces acquisition and installation costs, and improves system availability. Their robust design makes them suitable for virtually any liquid properties, allowing a wide range of applications.

**TF-M-G1/2-xx-M12-TD-1D1S**

| |
|---|
| IO-Link and 1 x programmable switching output |
| Continuous temperature measurement |
| Brass or stainless steel housing |
| Sensor length up to 1 m |
| Connecting flange G1/2 |

OIL SOLUTIONS
1800-OILSOL
1800-645765
https://oilsolutions.com.au/
sales@oilsolutions.com.au

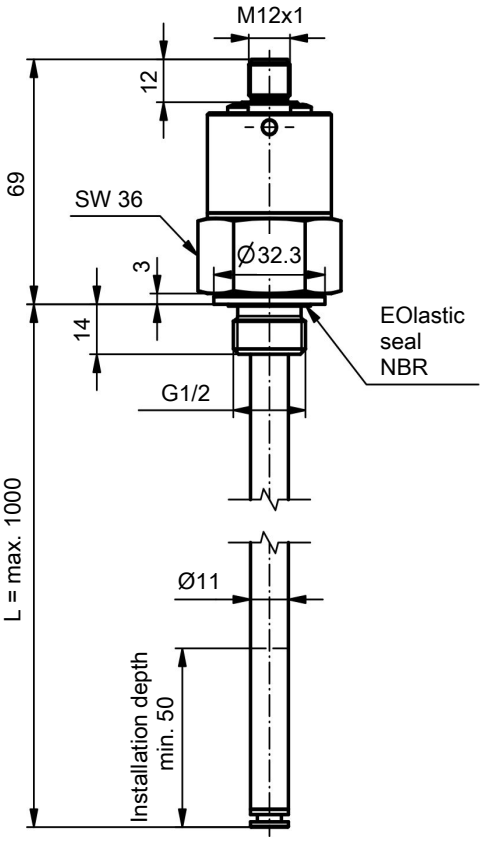


Bühler Technologies GmbH, Harkortstr. 29, D-40880 Ratingen
Tel. +49 (0) 21 02 / 49 89-0, Fax: +49 (0) 21 02 / 49 89-20
E-Mail: fluidcontrol@buehler-technologies.com
Internet: www.buehler-technologies.com

## Technical Data

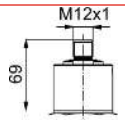
| TF-M-G1/2-xx-M12-TD-1D1S | | |
|---|---|---|
| | **TF-M-G1/2** | **TF-E-G1/2** |
| Version: | MS | VA |
| Probe material: | Brass | 1.4571 |
| Max. operating pressure: | 5 bar | 10 bar |
| Connection: | G1/2 | G1/2 |
| Medium temperature: | -20 °C to +80 °C | |
| Ambient temperature: | -20 °C to +70 °C | |
| Lengths: | 280, 370, 500 (standard)<br>variable to max. 1000 mm | |
| **Input value** | | |
| Sensor element: | Pt100 Class B DIN EN 60751 | |
| Tolerance Pt100: | ±0.8 °C | |
| Operating voltage ($U_B$): | 18 - 30 VDC | |
| Measuring range: | -20 °C to +120 °C | |
| Output: | IO-Link | |
| **IO-Link** | **Revision 1.1** | |
| Baudrate: | COM3 (230.4 k) | |
| SIO Mode: | Yes | |
| Min. Time Period | 10 ms | |

**Dimensions**



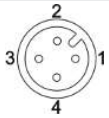

## Standard pin assignment

### Connector

| | **M12** |
|---|---|
| Dimensions |  |
| Number of pins | 4-pin |
| DIN EN | 61076-2-101 |
| IP rating | IP67* |



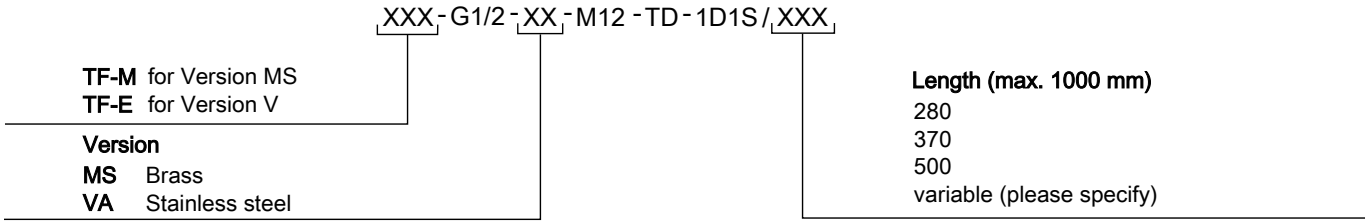
*with IP67 cable box attached

| **Version** | **1D1S** |
|---|---|
| Plug | M12 4-pin |
| Connection schematic |  |
| **Pin** | |
| 1 | +24 V DC |
| 2 | S2 (PNP max. 200 mA) |
| 3 | GND |
| 4 | C/Q (IO-Link) |



OIL SOLUTIONS
1800-OILSOL
1800-645765
https://oilsolutions.com.au/
sales@oilsolutions.com.au

## Model key




## Ordering example

| | |
|---|---|
| You require: | Brass temperature sensor with M12 plug, IO-Link output, length L= 520 mm, operating pressure 5 bar |
| Order: | TF–M-G1/2-MS-M12-TD-1D1S/520 |

OIL SOLUTIONS
1800-OILSOL
1800-645765
https://oilsolutions.com.au/
sales@oilsolutions.com.au