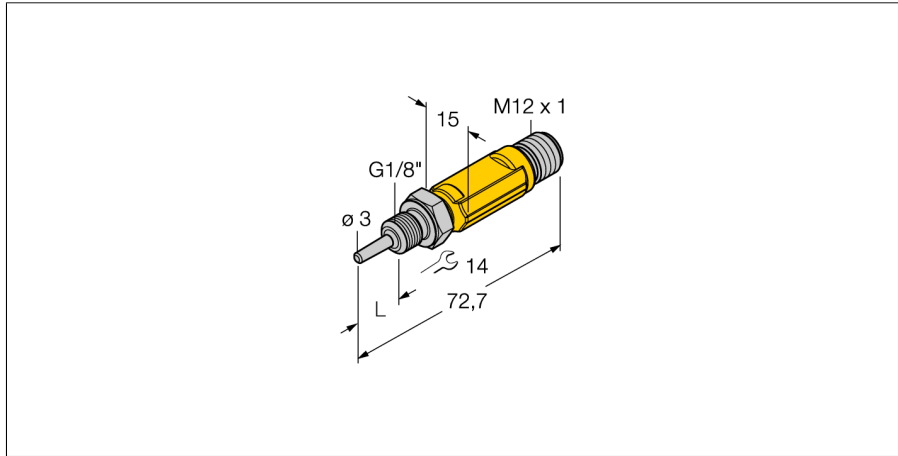
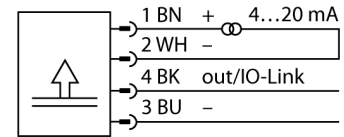


**Temperature measurement
with current output and PNP/NPN transistor switching output
TTM-103A-G1/8-LIUPN-H1140-L013**



- Miniature design
- Factory setting 0...150 °C
- Parameterizable via IO-Link
- Analog output 4...20 mA (2-wire)
- Switching output
- Process connection G1/8" male thread

Wiring Diagram



Type designation	TTM-103A-G1/8-LIUPN-H1140-L013
Ident-No.	9910628
Temperature range	
Measuring range	-50...120 °C
Temperature operating range	-58...248 °F
Factory setting	0...150 °C 32...302 °F
Note	Max. temperature of electronics: 80 °C/176 °F
Accuracy	0.15 °C + 0.002 · t (-30 ...350 °C)
Measuring element	Pt-100 probe, DIN EN 60751, class A
Response time	t 0.5 = 1.5 s / t 0.9 = 6.0 s in water at 0.2 m/s
Immersion depth (L)	13 mm
Power supply	
Operating voltage	15...30 VDC
Current consumption	≤ 20 mA
Voltage drop at I _e	≤ 2 V
Short-circuit/reverse polarity protection	yes / yes
Protection type and class	IP67 / III
Outputs	
Output 1	Switching output or IO-Link mode
Output 2	analog output
Switching output	
Output function	NO/NC programmable, PNP/NPN
Switching point accuracy	± 0.3 K
Rated operational current	0.15 A
Switching cycles	≥ 100 mil.
Release position	-210...+640 °C
Switching point	-200...+650 °C
Analog output	
Operating range	4...20 / 20...4 mA (2-wire)
Load	≤ [(V _{supply} - 10 V)/21 mA] kΩ
Accuracy (Lin. + Hys. + Rep.)	± 0.3 K
Remark	0.1 % of full scale applies to temperatures > +300 °C
Repeatability	0.1 K

General description

The TTM miniature transmitters are available with integrated probe.

Due to the integrated electronics, the limited temperature range must be observed, especially in the area of the M12 connector.

Temperature measurement with current output and PNP/NPN transistor switching output TTM-103A-G1/8-LIUPN-H1140-L013

IO-Link

IO-Link Specification	Specified acc. to version 1.1
Programming	FDT / DTM
Transmission physics	corresponds to 3-wire physics (PHY2)
Transmission rate	COM 2 / 38.4 kbps
Process data width	16 bit
Measured value information	15 bit
Switchpoint information	1 bit
Frame type	2.2
Genauigkeit	± 0.2 K

Temperature behaviour

Temperature coefficient zero point T_{k0}	± 0.1 % of full scale/10 K
Temperature coefficient span T_{Δ}	± 0.1 % of full scale/10 K

Ambient conditions

Ambient temperature	-40...+80 °C
Storage temperature	-40...+80 °C

Housing

Housing material	Stainless-steel/Plastic, V4A (1.4404)
Sensor material	Stainless steel, V4A (1.4404)
Process connection	G $\frac{1}{8}$ " male thread
Electrical connection	Connector, M12 × 1
Pressure resistance	100 bar

Reference conditions acc. to IEC 61298-1

Temperature	15...+25 °C
Atmospheric pressure	860...1060 hPa abs.
Humidity	45...75 % rel.
Auxiliary power	24 VDC