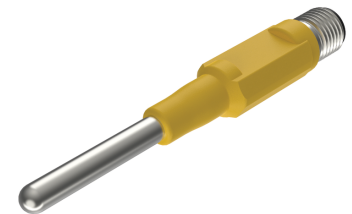
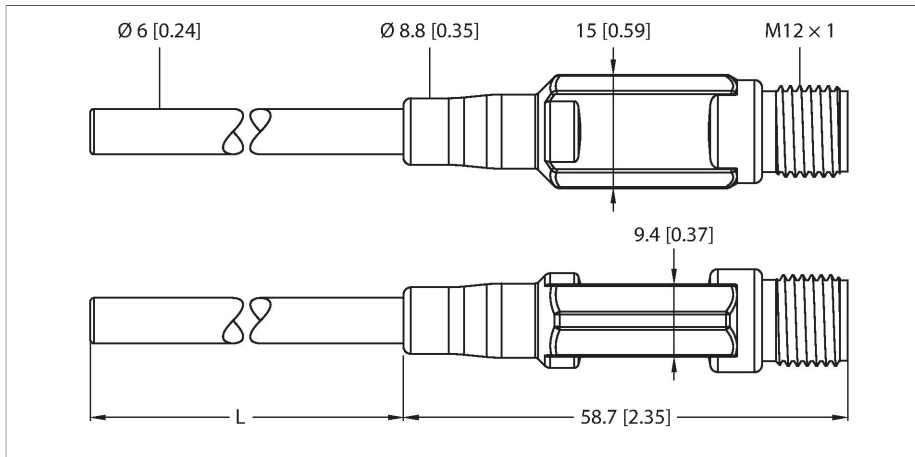


TTM-206A-CF-LIUPN-H1140-L100

Temperature Detection – With Current Output and PNP/NPN Transistor Switching Output



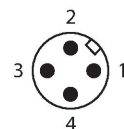
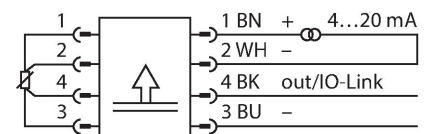
Technical data

Type	TTM-206A-CF-LIUPN-H1140-L100
ID	9910624
Temperature range	
Measuring range	-70...500 °C -94...662 °F
Factory setting	0...150 °C 32...302 °F
Note	Max. temperature of electronics: 80 °C/176 °F
Accuracy	$\pm 0.15 \text{ K} + 0.002 \cdot t $ (-30...300 °C)
Measuring element	Pt100, DIN EN 60751, class A
Response time	$t_{05} = 1.5 \text{ s} / t_{09} = 6.0 \text{ s}$ in water @ 0.2 m/s
Immersion depth L	100 mm
Outer diameter	6 mm
Power supply	
Operating voltage U_B	8...32 VDC (UL: Class 2) 18...32 VDC (IO-Link mode)
Current consumption	$\leq 20 \text{ mA}$
Voltage drop at I_e	$\leq 2 \text{ V}$
Short-circuit/reverse polarity protection	yes / yes
Protection class	IP67
Insulation class	III

Features

- Miniature design
- Factory setting 0...150 °C
- Parameterizable via IO-Link
- Analog output 4...20 mA (2-wire)
- Switching output
- Compression fitting process connection
- Bendable probe (min. bending radius: 3x outer diameter; excluding 30-mm probe tip)

Wiring diagram



Functional principle

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.

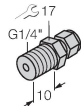
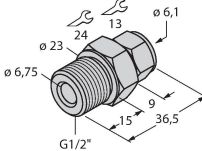
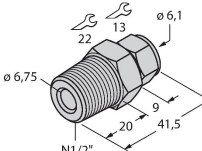
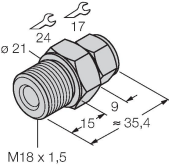
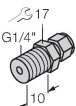
Technical data

Outputs	
Output 1	Switching output or IO-Link mode
Output 2	Analog output
Switching output	
Communication protocol	IO-Link
Output function	NO/NC programmable, PNP/NPN
Note	Connection to PIN 1+3+4. Please use a 3-wire cable for operation on a Turck TBEN IO-Link master.
Switching point accuracy	$\pm 0.3 \text{ K}$
Rated operational current	0.15 A
Switching cycles	$\geq 100 \text{ mil.}$
Release position	-210...+640 °C
Switching point	-200...+650 °C
Analog output	
Current output	4...20 mA
Note	Connection to PIN 1+2
Load	$\leq [(V_{\text{supply}} - 10 \text{ V})/21 \text{ mA}] \text{ k}\Omega$
Accuracy (Lin. + Hys. + Rep.)	$\pm 0.3 \text{ K}$
Remark	0.1 % of full scale applies to temperatures > +300 °C
Repeatability	0.1 K
IO-Link	
IO-Link specification	V 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	$\pm 0.2 \text{ K}$
Included in the SIDI GSDML	Yes
Temperature behaviour	
Temperature coefficient zero point TK_0	$\pm 0.1 \text{ \% of full scale/10 K}$
Temperature coefficient range TK_s	$\pm 0.1 \text{ \% of full scale/10 K}$
Environmental conditions	
Ambient temperature	-40...+80 °C
Storage temperature	-40...+80 °C
Mechanical data	
Housing material	Stainless-steel/Plastic, 1.4404 (AISI 316L)

Technical data

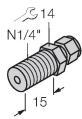
Sensor material	Stainless steel, 1.4404 (AISI 316L)
Process connection	For compression fittings, thermowell or direct mounting
Pressure resistance	100 bar
Electrical connection	Connector, M12 × 1
Reference conditions acc. to IEC 61298-1	
Temperature	15...+25 °C
Atmospheric pressure	860...1060 hPa abs.
Humidity	45...75 % rel.
Auxiliary power	24 VDC
Tests/approvals	
Approvals	cULus
UL registration number	E345414
MTTF	541 years acc. to SN 29500 (Ed. 99) 40 °C

Accessories

CF-M-6-G1/4-A4	9910483	CF-M-6-G1/2-A4	9910530
	Compression fitting for direct mounting of temperature sensors; sensor diameter 6 mm; process connection G1/4" male thread		Compression fitting for direct mounting of temperature sensors; sensor diameter 6 mm; process connection G1/2" male thread
CF-M-6-N1/4-A4	9910484	CF-M-6-N1/2-A4	9910529
	Compression fitting for direct mounting of temperature sensors; sensor diameter 6 mm; process connection 1/4" NPT male thread		Compression fitting for direct mounting of temperature sensors; sensor diameter 6 mm; process connection 1/2" NPT male thread
CF-M-6-M18-A4	9910525	CF-P-6-G1/4-A4	9910485
	Compression fitting for direct mounting of temperature sensors; sensor diameter 6 mm; process connection M18 × 1 male thread		Compression fitting for direct mounting of temperature sensors; sensor diameter 6 mm; process connection G1/4" male thread

CF-P-6-N1/4-A4 9910486

Compression fitting for direct mounting of temperature sensors; sensor diameter 6 mm; process connection 1/4" NPT male thread



Accessories

Dimension drawing	Type	ID	
	WKC4.4T-2/TEL	6625025	Connection cable, M12 female connector, angled, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval
	RKC4.4T-2/TEL	6625013	Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval
	RKC4.4T-2/TXL	6625503	Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval
	WKC4.4T-2/TXL	6625515	Connection cable, M12 female connector, angled, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval
	RKC4.4T-P7X2-10/TXL	6626184	Connection cable, M12 female connector, straight, 4-pin, LED, cable length: 10 m, jacket material: PUR, black; cULus approval