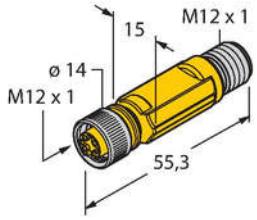
TTM-100-LIUPN-H1140
Temperature Detection – With Current Output and PNP/NPN Transistor Switching Output



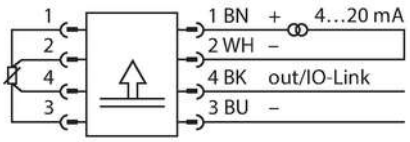
Technical data

Type	TTM-100-LIUPN-H1140
ID no.	9910632
Temperature range	
Measuring range	-210…650 °C
Temperature operating range	-346…1202 °F
Factory setting	0…150 °C
	32…302 °F
Measuring element	for connection to probes of the TP series
Response time	depending on connected temperature probe
Power supply	
Operating voltage	15…30 VDC
Current consumption	≤ 20 mA
Short-circuit/reverse polarity protection	yes / yes
Insulation class	III
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
Switching point accuracy	± 0.3 K
Rated operational current	0.15 A
Release position	-210…+640 °C
Switching point	-200…+650 °C
Switching cycles	≥ 100 mil.

Features

- Miniature design
- Parameterizable via IO-Link
- Analog output 4…20 mA (2-wire)
- Switching output
- For connection to external temperature probes

Wiring diagram



Functional principle

TP temperature probes (PT100 4-wire) can be plugged directly or via cable to the M12 connection at the TTM-100 temperature transmitter.

The measured temperature is transformed into an analog output signal (2-wire 4…20mA) and a switching signal. IO-Link is available for communication and programming.

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Technical data

Analog output	
Current output	4…20 mA
Load	≤ [(Vsupply - 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
IO-Link	
IO-Link specification	Specified acc. to version 1.1
Transmission physics	corresponds to 3-wire physics (PHY2)
Frame type	2.2
Transmission rate	COM 2 / 38.4 kbps
Process data width	16 bit
Measured value information	15 bit
Switchpoint information	1 bit
Programming	FDT / DTM
Genauigkeit	± 0.2 K
Included in the SIDI GSDML	Yes
Housing material	Stainless-steel/Plastic, 1.4404 (AISI 316L)
Process connection	M12 × 1
Electrical connection	Connectors, M12 × 1
Protection class	IP67
Ambient temperature	-40…+80 °C
Storage temperature	-40…+80 °C
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
Temperature behaviour	
Temperature coefficient span T_{kS}	± 0.1 % of full scale/10 K
Temperature coefficient zero point Tk0	± 0.1 % of full scale/10 K
MTTF	541 years acc. to SN 29500 (Ed. 99) 40 °C

Technical data

Type	TTM-100-LIUPN-H1140
ID no.	9910632
Temperature range	
Measuring range	-210…650 °C
Temperature operating range	-346…1202 °F

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Technical data

Factory setting	0…150 °C
	32…302 °F
Note	Max. temperature of electronics: 80 °C/176 °F
Measuring element	for connection to probes of the TP series
Response time	depending on connected temperature probe
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	
Communication protocol	IO-Link
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	
Current output	4…20 mA
Load	≤ [(Vsupply - 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
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
Included in the SIDI GSDML	Yes

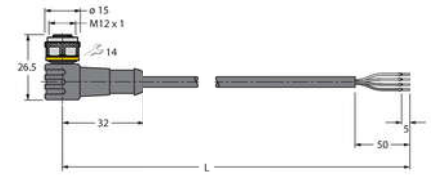
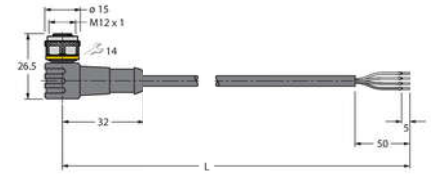
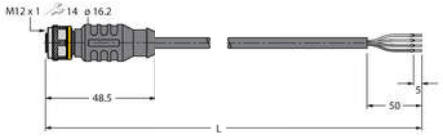
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Technical data

Temperature behaviour	
Temperature coefficient zero point Tk0	± 0.1 % of full scale/10 K
Temperature coefficient span T_{kS}	± 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, 1.4404 (AISI 316L)
Process connection	M12 × 1
Electrical connection	Connectors, 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
MTTF	541 years acc. to SN 29500 (Ed. 99) 40 °C

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Accessories

Dimension drawing	Type	ID no.	
	WKC4.4T-2/TEL	6625025	Connection cable, female M12, angled, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com
	RKC4.4T-2/TEL	6625013	Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com
	RKC4.4T-2/TXL	6625503	Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PUR, black; cULus approval; other cable lengths and qualities available, see www.turck.com
	WKC4.4T-2/TXL	6625515	Connection cable, female M12, angled, 4-pin, cable length: 2 m, sheath material: PUR, black; cULus approval; other cable lengths and qualities available, see www.turck.com
	RKC4.4T-P7X2-10/TXL	6626184	Connection cable, female M12, angled, 4-pin, cable length: 10m, sheath material: PUR, black; cULus approval; other cable lengths and qualities available, see www.turck.com

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