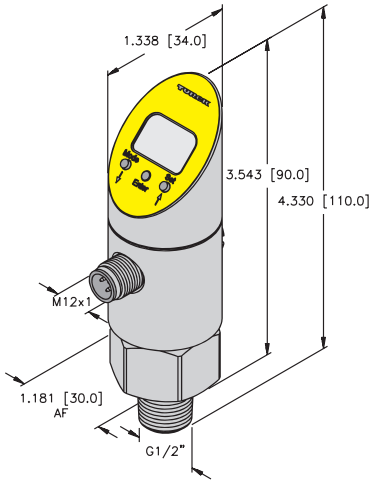
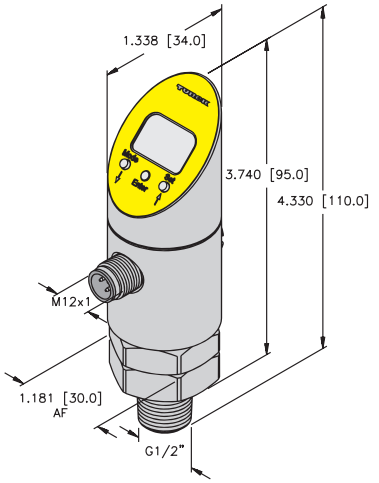
TURCK
Temperature Sensors

Housing	Part Number	ID Number	Temperature Range - Remote	Temperature Range - Direct
	TS-400-2UP8X-H1141	M6840001	-50° to 500°C (-58° to 932°F)	-50° to 150°C (-58° to 302°F)
	TS-400-LIUP8X-H1141	M6840002		
	TS-400-LUUP8X-H1141	M6840003		
	TS-400-2UN8X-H1141	M6840004		
	TS-400-LIUN8X-H1141	M6840005		
	TS-400-LUUN8X-H1141	M6840006		
	TS-400-LI2UPN8X-H1141	M6840007		
	TS-400-LUUPN8X-H1141	M6840008		
	TS-500-2UP8X-H1141	M6840009	-50° to 500°C (-58° to 932°F)	-50° to 150°C (-58° to 302°F)
	TS-500-LIUP8X-H1141	M6840010		
	TS-500-LUUP8X-H1141	M6840011		
	TS-500-2UN8X-H1141	M6840012		
	TS-500-LIUN8X-H1141	M6840013		
	TS-500-LUUN8X-H1141	M6840014		
	TS-500-LI2UPN8X-H1141	M6840015		
	TS-500-LUUPN8X-H1141	M6840016		

For remote probes use cordset RK 4.4T-*-RS 4.4T. * = Length in meters.
See page 21 for additional cordset information.

Description	Mating Cordset	Wiring Diagram #
Fixed processor unit for 4-wire PT100, 2 switching outputs PNP	RK 4.4T-*	1
Fixed processor unit for 4-wire PT100, 1 switching output PNP, 1 analog output (mA)	RK 4.4T-*	2
Fixed processor unit for 4-wire PT100, 1 switching output PNP, 1 analog output (V)	RK 4.4T-*	2
Fixed processor unit for 4-wire PT100, 2 switching outputs NPN	RK 4.4T-*	1
Fixed processor unit for 4-wire PT100, 1 switching output NPN, 1 analog output (mA)	RK 4.4T-*	2
Fixed processor unit for 4-wire PT100, 1 switching output NPN, 1 analog output (V)	RK 4.4T-*	2
Fixed processor unit for 4-wire PT100, 2 programmable outputs in function and logic	RK 4.4T-*	4
Fixed processor unit for 4-wire PT100, 2 programmable outputs in function and logic	RK 4.4T-*	3
Rotatable processor unit for 4-wire PT100, 2 switching outputs PNP	RK 4.4T-*	1
Rotatable processor unit for 4-wire PT100, 1 switching output PNP, 1 analog output (mA)	RK 4.4T-*	2
Rotatable processor unit for 4-wire PT100, 1 switching output PNP, 1 analog output (V)	RK 4.4T-*	2
Rotatable processor unit for 4-wire PT100, 2 switching outputs NPN	RK 4.4T-*	1
Rotatable processor unit for 4-wire PT100, 1 switching output NPN, 1 analog output (mA)	RK 4.4T-*	2
Rotatable processor unit for 4-wire PT100, 1 switching output NPN, 1 analog output (V)	RK 4.4T-*	2
Rotatable processor unit for 4-wire PT100, 2 programmable outputs in function and logic	RK 4.4T-*	4
Rotatable processor unit for 4-wire PT100, 2 programmable outputs in function and logic	RK 4.4T-*	3

Wiring Diagrams

Diagram 1

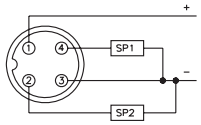


Diagram 2

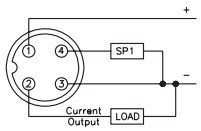


Diagram 3

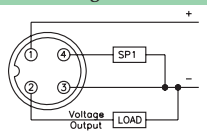
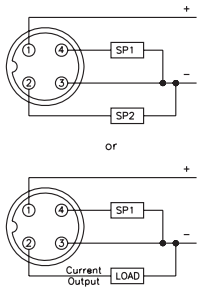


Diagram 4



* Length in meters.

Simple Mounting

After the sensor is mounted, the actual processor unit is attached and fixed using a coupling nut. The sensor can still be rotated and aligned in all directions.

TS500 shown.

TS400/TS500 Technical Data

Power Supply

Operating Voltage	15-30 VDC (switching outputs) 18-30 VDC (switching and analog output)
No-Load Current	≤50 mA
SELV. PELV	According to EN 50178
Short-Circuit Protection	Yes
Reverse Polarity Protection	Yes
Insulation Class	III

Switching Output

Switching Frequency	≤180 Hz
Output Function	2 x PNP or NPN, N.C./N.O. programmable
Voltage Drop at I_e	≤2 V
Rated Operational Current	0.2 A
Switching Point Distance	0.2 K -49.8° to +500°C (-58° to +932°F)
Release Points	-50° to +499.8°C (-58° to +932°F)

Analog Current Output

Current Output	4-20 mA, 0-20 mA, 20-4 mA, 20-0 mA programmable
Response Time	<100 ms
Load	≥0.5 kΩ

Analog Voltage Output

Voltage Output	0-10 V, 0-5 V, 1-6 V, 10-0 V, 5-0 V, 6-1 V programmable
Response Time	<100 ms
Load	≥2 kΩ

Temperature Sensor Accuracy

Switching Output

Switching Point Accuracy	≤ ± 0.2 K
Repetition Accuracy	≤ ± 0.1 K

Analog Output

Accuracy (Lin.+Hys.+Rep.)	≤ ± 0.2 K

Temperature Sensor Housing

Housing Material	Stainless steel/plastic 1.4404 (AISI 316L)/PC
Electrical Connection	Connector M12x1 (***eurofast***®), 4-pin with integrated high-speed connection technology.
Sensor Connection	Connector M12x1 (***eurofast***), 4-pin
Coupling Nut Size (with tightening torque)	SW 30 (max. 35 Nm)

Display

Temperature Display	4-digit 7-segment display can be rotated by 180° and switched off
Switch State Display	2 x LED yellow
Measured Value/Programming	Switch/release points; hysteresis/window mode; N.O./N.C.; unit of display; peak value memory
Display of Temperature Unit	4 x LED green (°C, °F, K, Ω)

EMC

EN 61000-4-2	ESD 4 kV CD / 8 kV AD
EN 61000-4-3	HF radiated: 15 V/m^2
EN 61000-4-4	Burst 2 kV
EN 61000-4-5	Surge 1 kV, 42 Ω
EN 61000-4-6	HF conducted: 10 V

Ambient Conditions

Medium Temperature	Directly connected -50° to 150°C (otherwise see temperature probes
Ambient Temperature	-40° to +80°C (-40° to +176°F)
Storage Temperature	-40° to +80°C (-40° to +176°F)
Degree of Protection	IP 67
Vibration Resistance	20 g (10-2000 Hz) according to IEC 68-2-6
Shock Resistance	50 x g (11 ms) according to IEC 68-2-27

TURCK
Temperature Sensors

TS400/TS500 Temperature Sensors - 2 Switching Outputs

TS - 400 - 2U P 8 X - H1141

Style
TS = Temperature Sensor

Housing
400 = Adjustable, with display, non-rotatable
500 = Adjustable, with display, rotatable

Switching Output
2U = 2 x programmable N.O./N.C. mode

Output Logic
P = PNP transistor switching output
N = NPN transistor switching output

Operational Voltage
8 = 15-30 VDC

With LED Display

Connection
H1141 = 4-pin, M12x1, ***eurofast*** ® connector

TS400/TS500 Temperature Sensors - 1 Switching and 1 Analog Output

TS - 400 - LI U P 8 X - H1141

Style
TS = Temperature Sensor

Housing
400 = Adjustable, with display, non-rotatable
500 = Adjustable, with display, rotatable

Analog Output
LI = Current analog output
LU = Voltage analog output

Switching Output
U = 1 x programmable N.O./N.C. mode

Output Logic
P = PNP transistor switching output
N = NPN transistor switching output

Operational Voltage
8 = 18-30 VDC

With LED Display

Connection
H1141 = 4-pin, M12x1, ***eurofast*** connector

TS400/TS500 Temperature Sensors - 1 Switching Output and 1 Multi-Select Output (Programmable)

TS - 400 - LI 2U PN 8 X - H1141

Style
TS = Temperature Sensor

Housing
400 = Adjustable, with display, non-rotatable
500 = Adjustable, with display, rotatable

Analog Output
LI = Current analog output
LU = Voltage analog output

Switching Output
2U = 2 x programmable N.O./N.C. mode

Output Logic
PN = PNP/NPN configurable transistor switching output

Operational Voltage
8 = 15-30 VDC

With LED Display
X

Connection
H1141 = 4-pin, M12x1, ***eurofast***® connector

Temperature Probes

TP - 1 - 03A - G1/8 - H1141 - L013

Style
TP = Temperature Probe

Probe Type
1 = Probe with process connection
2 = Probe for compression fitting or thermowell
3 = Cable sensor

Probe Diameter
03A = 3 mm outer probe diameter
04A = 4 mm outer probe diameter
06A = 6 mm outer probe diameter

Process Connection
G1/8 = G1/8" male thread
TRI3/4 = 3/4" tri-clamp
DN25K = DN25 hygienic fitting DIN11851
CF = Compression fitting

Connection
H1141 = 4-pin, M12x1, ***eurofast*** connector

Insertion Depth