
	TI381en	Technical Information	
TP11- Series (T)	Pipe Temperature Sensor with Active Output		

The TP11- Series (T) is designed to measure temperature directly, without Thermowell, in water pipes

The sensor operates with low voltage power supply

The sensor, with narrowed sensor tip, is especially well suited if a fast response of temperature changes is required

The temperature sensor output is active

Several lengths are available to cover all common pipe sizes



USE

Compatible to all common HVAC DDC and Analog Controls systems, with/without Building Automation System

Temperature measuring in water pipes (without accessory)

Used in heating or cooling applications with fast response time

Used in HVAC and Industrial Applications

Features

Sensor with active output

Sensor Output 0...10V and 4...20mA

Multiple (4) measuring ranges on board available

Different immersion lengths for Measuring TIP Lengths & Diameter

Temperature Field calibration potentiometer

Professional and practical product design

Easy to use, install and maintain

Product Range

Type Code	Immersion Pocket Dimensions	Sensor Tip Dimension	Max. Waterflow	Output	Sensor Accuracy	Output	Measuring Ranges	Max. Pressure Rating
TP11.AE	ø4x50mm	ø4x20mm	28m/s	0...10V* or 4...20mA	± 0.5K over full measuring range	0...10V* or 4...20mA	-50...50°C	PN40
TP11.GE	ø6x100mm		11m/s				0...50°C	
TP11.BE	ø6x150mm		7m/s				-20...80°C	
TP11.CE	ø6x200mm		6m/s				0...100°C*	

* default settings

Sensor Specification	Sensor Specification	Measured Sensor Characteristics Sensor Output (s) Output Load 0...10V output 4...20mA output Accuracy Measuring Range (default) Optional Measuring Range (s)	Temperature Active 0...10V and 4...20mA Min. load 5kΩ @ AC/DC 24V Max. load 500Ω @ DC 24V see page 3 0°C...+100°C 0...50°C , -50°C...+50°C ; -20°C...+80°C	
	Electrical Information	Power Supply Frequency Terminal Clarr Power Consumption Type with 0...10V output Type with 4...20mA output	AC/DC 24V (±10%) 50 / 60 Hz at AC 24V Screw terminal, max. 1.5mm² ≤ 0.4W / AC 24V; ≤ 0.85VA / DC 24V ≤ 20mA / DC 24V	
Technical Information	Mechanical Information	Immersion Rod Length & Diameter Measuring TIP Lengths & Diameter Cable Entry Sensing Element Pos	See Product Range, Page 1 See Product Range, Page 1 M16, Ø6...Ø8mm cables external, top of the immersion rod	
	Color and Materials	Housing Cover Housing Botto Lock Screws Lock Nuts Cable Gland Gland Rubber Seal Protection Caps Immersion Rod	White ABS, RAL9001 (Cream White) White ABS, RAL9001 (Cream White) US:AISI 304; EU: EN X 6 CrNi 18 10; GER: W.N. 1.301 Brass White ABS, RAL2002 (Vermilion) White TBS, RAL9010 (Pure White) White ABS, RAL2002 (Vermilion) US:AISI 304; EU: EN X 6 CrNi 18 10; GER: W.N. 1.301	
	Environmental Conditions	Cable Operation Temperature Operation Humidity Transport Temperature Transport Humidity Storage Temperature Storage Humidity	TPEE, (black) -25°C...+70°C 100% r.h., with condensation -35°C...+70°C < 90% r.h. -10°C...+70°C < 85% r.h., no condensation	
	Norms and Directives	IP- Rating Safety Class Product Standard 1 Product Standard 2 CE Conformities to CE Electromagnetic Compatibility Emitted Interference CE Electromagnetic Compatibility Interference resistance RoHS Compatibility Operation Climatic Condition Operation Mechanical Condition Transport to Climatic Condition Transport Mechanical Condition Storage Climatic Condition Storage Mechanical Condition	IP65 to IEC60529 III to EN 60 730 Automatic Electric. Controls for household and similar use 2009/EN 60 730-1 2004/108/EG Electromagnetic Compatibility EMV 2000/EN60730-1 Emitted Interference 2000/EN60730-1 Interference Resistance RoHS 3, Directive 2015/863 IEC 60 721-3-3 IEC 60 721-3-2 to class2M2 IEC 60 721-3-2 IEC 60 721-3-2 to class2M2 IEC 60 721-3-1 IEC 60 721-3-1 to class2M2	
	Miscellaneous	Accessories	Mounting Kit, Included in delivery	none
		Shipping & Handling	Minimum Order	1 box with 2 pieces, multiple of 2 pieces
			Package Material	Rigid Cardboards Packaging
			Order Code	See Product Range, Page 1, e.g. TPI1.AE

Advices

Installation Notes



Observe the following general regulation for engineering and implementation:

All relevant national and heavy power regulation

Other country specific regulations

Country-specific regulations

Local electrical supply authority regulation

Schematics, cable listings, dispositions, specification and arrangements from the customer or engineering office in charge

Third party specifications, e.g. general contractors or constructors

Mounting Advices



Disposal Notes



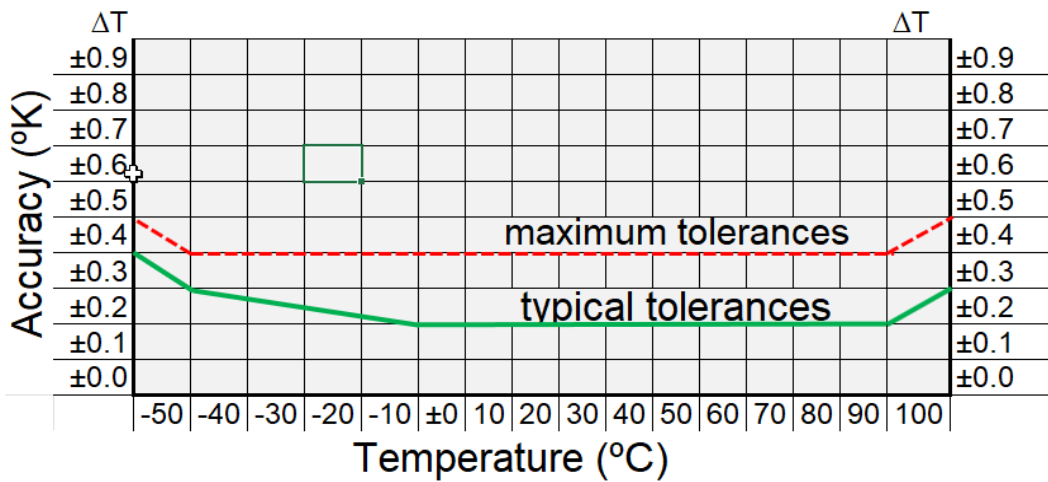
The device is considered an electronic device for disposal in terms of the EUROPEAN DIRECTIVE 2012/19/EU.

The device may not be disposed as domestic garbage.

The device must be disposed through channels provided for this purpose.

It is mandatory to comply with local currently applying laws and regulations.

Accuracy Curves



Connections & Settings

Terminals TPI.xE					
T1	T2	T3	T4	T5	T6
UB+	24V AC/DC	GND	Temperature	not in use	T passive
				S+	T passive
				S-	T passive

R1- Off-set potentiometer (TE)



DIP Settings TPI1.xE											
Temperature Setting (DIP1 & DIP 2)						DIP3 / DIP4		DIP 5			
DIP1	DIP2	DIP1	DIP2	DIP1	DIP2	DIP1	DIP2	DIP3	DIP4	DIP5	DIP5
Black	White	Black	White	Black	White	Black	White	Black	White	Black	White
-50...50°C		0...50°C		-20...80°C		0...100°C		not used		0...10V	4...20mA

Dimensional Drawing

