TI301en	Technical Information	thermokon asia pacific
TPS1- Series (T)	Pipe Surface Temperature Sensor	
	with Active Output	

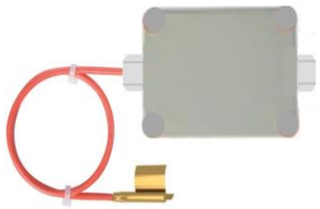
The TPS1- Series (T) is designed to measure temperature on pipes surfaces

The sensor operates with low voltage power supply

Several cable lengths are available to fit all common applications

Multiple measuring ranges on board available

The temperature sensor output is active



USE

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

Temperature measuring on pipe surfaces

Used in all common HVAC applications

Used in Commercial and Industrial Buildings

Features

Sensor with active output

Sensor Output 0…10V and 4…20mA

Multiple (4) measuring ranges on board available

Multiple cable lengths available for all common applications

Temperature Field calibration potentiometer

Professional and practical product design

Easy to use, install and maintain

Product Range

Order Code	Power Supply	Sensor Accuracy	Output	Temperature Ranges	Sensor Shape	Cable Length	Protection
TPS1.AE	AC/DC 24V (±10%)	± 0.5K over full measuring range	0…10V* or 4…20mA	-50...50ºC 0...50ºC -20…80ºC* 0…100ºC	Copper plate (30x34mm,R=23mm)	1m	IP65 to IEC60529
TPS1.BE						2m	

*default values

Sensor Specification	Sensor Specification	Measured	Temperature
		Sensor Characteristics	Active
		Sensor Output (s)	0…10V and 4…20mA
		Output Load	
		0…10V output	Min. load 5kΩ @ AC/DC 24V
		4…20mA output	Max. load 500Ω @ DC 24V
		Accuracy	see page 3
		Measuring Range (s)	-20ºC…+80ºC
		Optional Measuring Range (s)	-50ºC…+50ºC ; 0ºC…+50ºC ; 0ºC…+100ºC ;
Technical Information	Electrical Information	Power Supply	AC/DC 24V (±10%)
		Frequency	50 / 60 Hz at AC 24V
		Terminal Clamp	Screw terminal, max. 1.5mm²
		Power Consumption	
		Type with 0…10V output	≤ 0.4W / AC 24V; ≤ 0.85VA / DC 24V
		Type with 4…20mA output	≤ 20mA / DC 24V
	Mechanical Information	Sensor shape	Copper plate (30x34mm,R=23mm)
		Cable length	See Product Range, Page 1
		Cable Entry	M16, Ø6...Ø8mm cables
		Sensing Element Positi	external, top of the copper plate
	Color and Materials	Housing Cover	White ABS, RAL9001 (Cream White)
		Housing Botton	White ABS, RAL9001 (Cream White)
		Lock Screws	US:AISI 304; EU: EN X 6 CrNi 18 10; GER: W.N. 1.301
		Lock Nuts	Brass
		Cable Gland	White ABS, RAL2002 (Vermilion)
		Gland Rubber Seal	White TBS, RAL9010 (Pure White)
		Protection Caps	White ABS, RAL2002 (Vermilion)
		Immersion Rod	US:AISI 304; EU: EN X 6 CrNi 18 10; GER:
		Cable	Silicon, (red)
	Environmental Conditions	Operation Temperature	-25ºC...+70ºC
		Operation Humidity	100% r.h., with condensation
		Transport Temperature	-35ºC...+70ºC
		Transport Humidity	< 90% r.h.
		Storage Temperature	-10ºC...+70ºC
		Storage Humidity	< 85% r.h., no condensation
	Norms and Directives	IP- Rating	IP65 to IEC60529
		Safety Class	III to EN 60 730
		Product Standard 1	Automatic Electric. Controls for household and similar use
		Product Standard 2	2009/EN 60 730-1
		CE Conformities to	2004/108/EG Electromagnetic Compatibility
		CE Electromagnetic Compatibility Emitted Interference	2000/EN60730-1 Emitted Interference
		CE Electromagnetic Compatibility Interference resistance	2000/EN60730-1 Interference Resistance
		RoHS Compatibility	RoHS 3, Directive 2015/863
		Operation Climatic Condition	IEC 60 721-3-3
		Operation Mechanical Condition	IEC 60 721-3-2 to class2M2
		Transport to Climatic Condition	IEC 60 721-3-2
		Transport Mechanical Condition	IEC 60 721-3-2 to class2M2
		Storage Climatic Condition	IEC 60 721-3-1
		Storage Mechanical Condition	IEC 60 721-3-1 to class2M2
Miscellaneous	Accessories	Mounting Kit, Included in delivery	UUK0.A & TPK0.A
	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. TPS1.AE

Advices

Installation Notes

Caution

Observe the following general regulation for engineering and implementation:

All relevant national and heavy power regulations

Other country specific regulations

Country-specific regulations

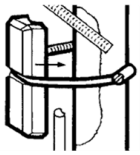
Local electrical supply authority regulation

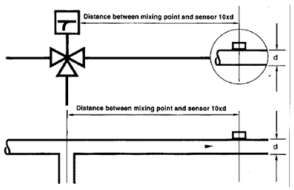
Schematics, cable listings, dispositions, specification and arrangements from the customer or engineering office in charge

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

Mounting Advices

Caution





Disposal Notes

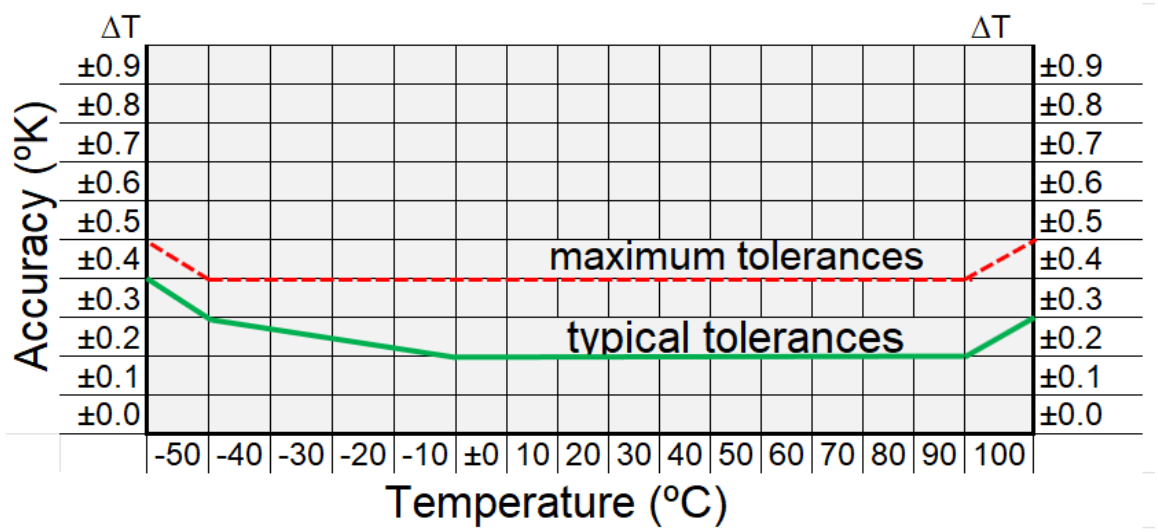
The device is considered an electronic device for disposal in terms of the EUROPEAN DIRECTIVE 2012/19/EU.

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.

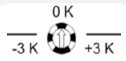
Accuracy Curves



Connections & Settings

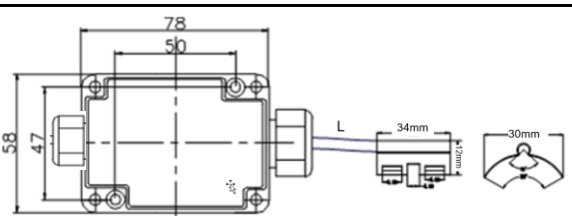
Terminals TPS.xE								
T1		T2	T3	T4	T5		T6	
UB+	24V AC/DC	GND	Temperature	not in use	S+	T passive	S-	T passive

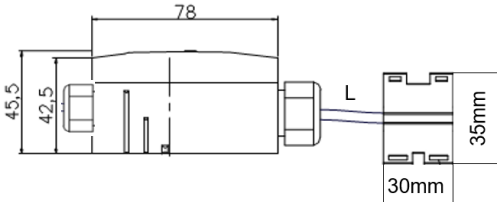
R1- Off-set potentiometer (TE)



DIP Settings TPS1.xE												
Temperature Setting (DIP1 & DIP 2)								DIP3 / DIP4		DIP 5		
DIP1	DIP2	DIP1	DIP2	DIP1	DIP2	DIP1	DIP2	DIP3	DIP4	DIP5	DIP5	
-50...50C°		0....50C°		-20...80C°		0...100C°		not used		0...10V		4...20mA

Dimensional Drawing





Fastener Strap L=240mm