



TI306en

## Technical Information

**thermokon**<sup>®</sup>  
asia pacific

TUS1- Series (T)

**Universal Surface Temperature Sensor  
with Active Output**

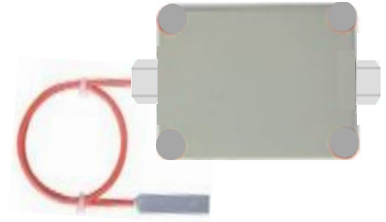
The TUS1- Series (T) is designed to measure temperature on universal surfaces

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 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	Sensor Accuracy	Power Supply	Output	Temperature Ranges	Sensor Shape	Cable Length	Protection
TUS1.AE	± 0.5K over full measuring range	AC/DC 24V (±10%)	0...10V*	-50...50°C	Aluminum Plate 10 x 35 x 6 mm	1m	IP65 to IEC60529
TUS1.BE			or 4...20mA	-20...80°C* 0...100°C		2m	

\*default values

All Information and technical data are subject to alteration

<b>Sensor Specification</b>	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)	-20°C...+80°C	
Optional Measuring Range (s)	-50°C...+50°C ; 0°C...+50°C ; 0°C...+100°C			
<b>Technical Information</b>	Electrical Information	Power Supply	AC/DC 24V (±10%)	
		Frequency	50 / 60 Hz at AC 24V	
		Terminal Clamp	Screw terminal, max. 1.5mm <sup>2</sup>	
		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	Aluminum Plate, 10 x 35 x 6 mm	
		Cable length	See Product Range, Page 1	
		Cable Entry	M16, Ø6...Ø8mm cables	
		Sensing Element Position	external, top of the aluminum plate	
	Color and Materials	Housing Cover	White ABS, RAL9001 (Cream White)	
		Housing Bottom	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)	
		Cable	Silicon, (red)	
		Environmental Conditions	Operation Temperature	-25°C...+70°C
			Operation Humidity	100% r.h., with condensation
	Transport Temperature		-35°C...+70°C	
	Transport Humidity		< 90% r.h.	
	Storage Temperature		-10°C...+70°C	
	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		
<b>Miscellaneous</b>	Accessories	Mounting Kit, Included in delivery	UUK0.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. TUS1.AE	

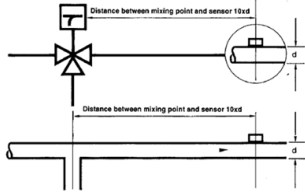
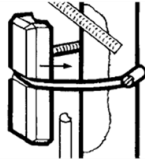
### Installation Notes



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

### Advices



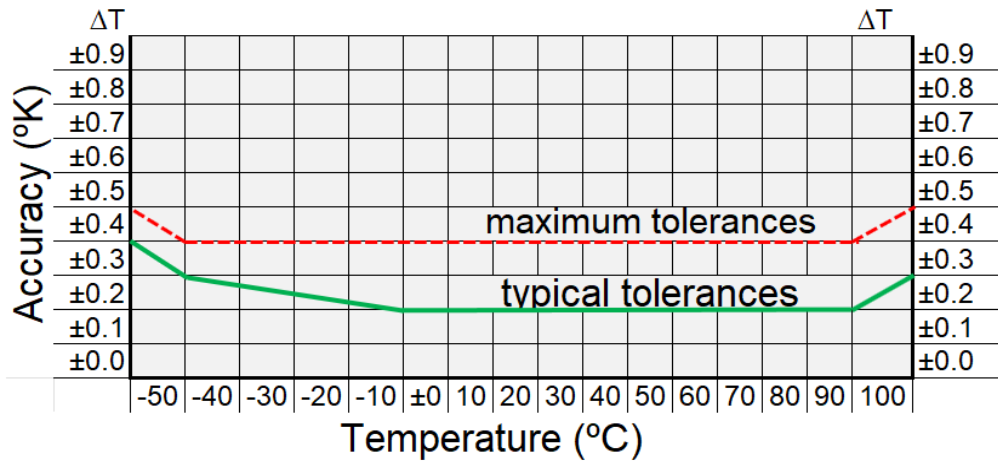
### Disposal Notes

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 TUS1.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 TUS1.xE											
Temperature Setting (DIP1 & DIP2)								DIP3 / DIP4		DIP5	
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...50C°		0...50C°		-20...80C°		0...100C°		not used		0...10V 4...20mA	

### Dimensional Drawing

