

	TI450en	Technical Information		
TOW2- Series (T)	Outdoor Temperature with Passive Output			

The TOW2- Series (T) is designed to measure temperature in outdoor areas,

plant rooms, cold stores, greenhouses, production plants and warehouses



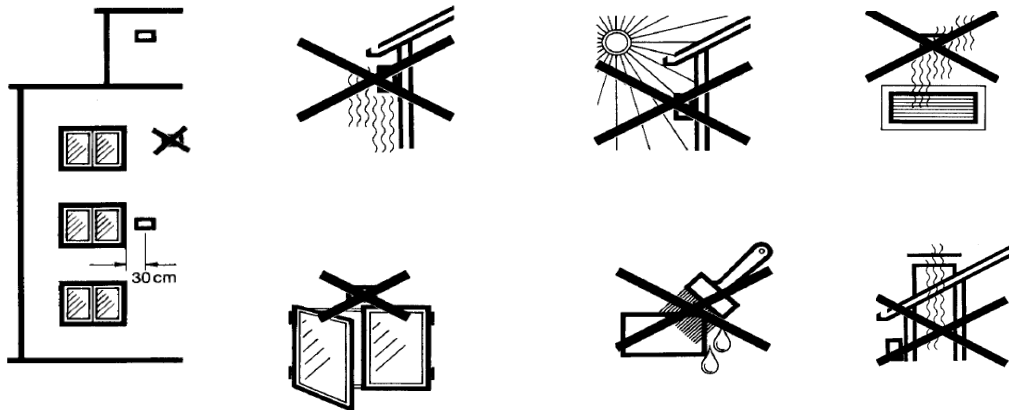
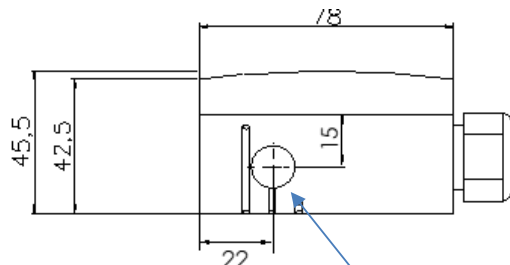
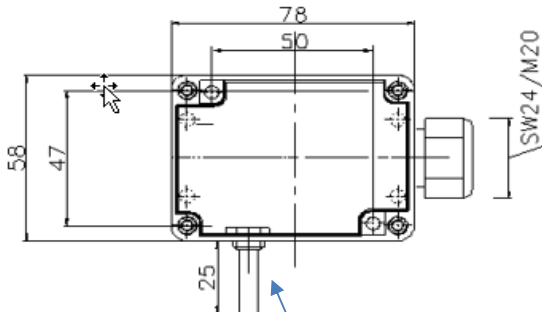
The Temperature sensor with internal or external sensor

The temperature output is passive

Use	Compatible to all common HVAC DDC and Analog Controls systems, with/without Building Automation System Temperature measuring in outdoor areas, stores, warehouses, production plants and greenhouses Used in all common HVAC applications Used in Commercial and Industrial Buildings																																																					
Features	Sensor with passive output All Sensors with upgraded accuracy Sensor in external stainless steel sensor pocket or internal Professional and practical product design, withstands rough environmental conditions Easy to use, install and maintain																																																					
Product Range	<table><tr><th>Order Code</th><th>Sensor Output</th><th>Sensor Accuracy</th><th>Measuring Element</th><th>Measuring Range</th><th>IP Rating</th><th>Product Dimension</th></tr><tr><td>TOW2.AF</td><td>PT100</td><td rowspan="2">± 0.15K @ 0°C DIN EN 60751, class A</td><td rowspan="7">Inside the Housing</td><td rowspan="7">-50...150°C</td><td rowspan="14">IP65 to IEC60529</td><td rowspan="14">78x58x45mm</td></tr><tr><td>TOW2.AG</td><td>PT1000</td></tr><tr><td>TOW2.AP</td><td>NTC10k</td><td rowspan="3">± 0.25K @ 25°C</td></tr><tr><td>TOW2.AQ</td><td>NTC10k Pre</td></tr><tr><td>TOW2.AR</td><td>NTC20k</td></tr><tr><td>TOW2.AK</td><td>NI1000</td><td rowspan="2">± 0.4K @ 0°C DIN EN 43760, class B</td></tr><tr><td>TOW2.AL</td><td>LG-NI1000</td></tr><tr><td>TOW2.BF</td><td>PT100</td><td rowspan="2">± 0.15K @ 0°C DIN EN 60751, class A</td><td rowspan="7">External Sensing pocket</td><td rowspan="7">-50...150°C</td></tr><tr><td>TOW2.BG</td><td>PT1000</td></tr><tr><td>TOW2.BP</td><td>NTC10k</td><td rowspan="3">± 0.25K @ 25°C</td></tr><tr><td>TOW2.BQ</td><td>NTC10k Pre</td></tr><tr><td>TOW2.BR</td><td>NTC20k</td></tr><tr><td>TOW2.AK</td><td>NI1000</td><td rowspan="2">± 0.4K @ 0°C DIN EN 43760, class B</td></tr><tr><td>TOW2.BL</td><td>LG-NI1000</td></tr></table>							Order Code	Sensor Output	Sensor Accuracy	Measuring Element	Measuring Range	IP Rating	Product Dimension	TOW2.AF	PT100	± 0.15K @ 0°C DIN EN 60751, class A	Inside the Housing	-50...150°C	IP65 to IEC60529	78x58x45mm	TOW2.AG	PT1000	TOW2.AP	NTC10k	± 0.25K @ 25°C	TOW2.AQ	NTC10k Pre	TOW2.AR	NTC20k	TOW2.AK	NI1000	± 0.4K @ 0°C DIN EN 43760, class B	TOW2.AL	LG-NI1000	TOW2.BF	PT100	± 0.15K @ 0°C DIN EN 60751, class A	External Sensing pocket	-50...150°C	TOW2.BG	PT1000	TOW2.BP	NTC10k	± 0.25K @ 25°C	TOW2.BQ	NTC10k Pre	TOW2.BR	NTC20k	TOW2.AK	NI1000	± 0.4K @ 0°C DIN EN 43760, class B	TOW2.BL	LG-NI1000
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Sensor Specification	Sensor Specification	Measured	Temperature
		Sensor Characteristics	Passive
		Sensor Output (s)	See Product Range, Page 1
		Measuring Current	<1mA
		Accuracy	
		PT100 / PT1000	± 0.15K @ 0°C DIN EN 60751, class A
		NTC10k / NTC10k Pre / NTC20k	± 0.25K @ 25°C
		NI1000 / LG-NI1000	± 0.4K @ 0°C DIN EN 43760, class B
		Measuring Range (s)	-50°C...+150°C
Technical Information	Electrical Information	Terminal Clamp	Screw terminal, max. 1.5mm²
	Mechanical Information	Sensor Pocket Diameter	6mm
		Sensor Pocket Length	35mm
		Cable Entry	M16, Ø6...Ø8mm cables
		Sensing Element Position	external or internal
	User Interface	None	
	Color and Materials	Housing Cover	White ABS, RAL9001 (Cream White)
		Housing Bottom	White ABS, RAL9001 (Cream White)
		Lock Screws	Metal screws
		Cable Gland	White PA6, RAL9001 (Cream White)
	Environmental Conditions	Gland Rubber Seal	White TBS, RAL9010 (Pure White)
		Sensor Pocket (TOW2.Bx)	US: AISI 304; EU: EN X 6 CrNi 18 10; GER: W.N. 1.301
		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
		RoHS Compatibility	RoHS 3, Directive 2015/863
		Operation Climatic Condition	IEC 60 721-3-4
		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		n.a.
	Shipping & Handling	Minimum Order	1 box with 2 pieces, multiple of 2 pieces
	Order Notes	Order Code	See Product Range, Page 1, e.g. TOW2.AF

All Information and technical data are subject to alteration

Installation Notes									
Advices	 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.								
	Connections <table><tr><td>1</td><td>1</td><td>2</td><td>2</td></tr><tr><td>Optional 3-wire</td><td>Sensor +</td><td>Sensor -</td><td>Optional 4-wire</td></tr></table> 3- wire connection 2- wire connection 4- wire connection optional standard optional	1	1	2	2	Optional 3-wire	Sensor +	Sensor -	Optional 4-wire
	1	1	2	2					
	Optional 3-wire	Sensor +	Sensor -	Optional 4-wire					
Dimensional Drawing  TOW2.Ax without the hole  TOW2.Ax without the pocket									
Thermokon Asia Pacific All Information and technical data are subject to alteration TOW2- Series (T) V23.1 Page 3/3									