



TI112en

Technical Information**thermokon**[®]
asia pacific**CRW4- Series (H&T)****Room Humidity and Temperature Sensor with
Active Outputs**

The CRW4- Series (H&T) is designed to measure temperature, relative humidity, absolute humidity,

enthalpy or dew point in rooms or areas

The sensor operates with low power supply

Multiple active measuring ranges on board

Available with passive sensors

The humidity and temperature sensor outputs are active

**Use**

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

Relative humidity, absolute humidity, enthalpy or dew point and temperature measurement in Rooms and Areas

Used in all common HVAC applications

Used in Commercial and Industrial Buildings

Features

Sensor Outputs are active

Sensor outputs 0...10V or 4...20mA, available with PT, NTC and NI passive sensors

Multiple Temperature measuring ranges

High Humidity accuracy

Humidity and Temperature Field calibration potentiometer

Modern and practical product design

Easy to use, install and maintain

Product Range

Order Codes	Power Supply	Humidity / Temperature Active Outputs	Temperature Passive Outputs	Temp. Ranges	Measuring Variable	Measuring Units	Accuracy Temperature	Accuracy Humidity
CRW4.AE	AC/DC 24V ($\pm 10\%$)	0...10V*	n.A.	-50...50°C	rel. humidity*	0...100%	$\pm 0.2K$ between 0°C...+80°C	$\pm 2\%$, Full Scale
CRW4.AJa			PT100	0...50°C*	absolute humidity	0...50gr/m3	$\pm 0.3K$ @ 0°C DIN EN 60751, class B	
CRW4.AKa			PT1000					
CRW4.AMa			or	NTC10k	-20...80°C	dew point	-20...80°C	
CRW4.AOa		NTC10 Pre						
CRW4.ANa		4...20mA	NTC20k	0...100°C	enthalpy	0...85kJ/Kg	$\pm 0.4K$ @ 0°C DIN EN 43760, class B	
CRW4.ALa			NI1000					
CRW4.AWa			LG-NI1000					

* default setting

Sensor Specification	Sensor Specification	Measured Sensor Characteristics H/T Outputs Temperature OFF-set Potentiometer (R1) Humidity OFF-set Potentiometer (R2) Output Load 0...10V 4...20mA Measuring Current Accuracy relative humidity absolute humidity enthalpy dew point Temperature, active Temperature PT100/1000 Temperature NTC10k /10k Pre / 20k Temperature NI1000 IP- Rating sensor element Repeatability (H) Long Term Drift (H) Measuring Range (H) Measuring Range (T), active (default) Measuring Ranges (T), active (optional, on board) Measuring Ranges (T), passive	Temperature & Humidity Active 0...10V ; 0...10V or 4...20mA ; 4...20mA ± 3k ± 5% Min. load 10kΩ @ AC/DC 24V Max. load 500Ω @ DC 24V <1mA ± 2% within 0...100% r.h. ± 2% within 0..100% r.h. ± 2% within 0..100% r.h. ± 2% within 0..100% r.h. see temperature chart, page 3 ± 0.3K @ 0°C DIN EN 60751, class B ±0.25K @ 25°C ± 0.4K @ 0°C DIN EN 43760, class B IP20 to IEC60529 ±0.1°C ; ±0.1% r.h. < 0.04° C / year ; < 0.5% r.h. / year 0...100% 0°C...50°C -20°C...80°C ; -50°C...+50°C ; 0°C...+100°C -50°C...+150°C	
	Technical Information	Electrical Information	Power Supply Frequency Terminal Clamp Power Consumption 0...10V output 4...20mA output	AC/DC 24V (±10%) 50 / 60 Hz at AC 24V Screw terminal, max. 1.5mm ² ≤ 0.4W / AC 24V; ≤ 0.85VA / DC 24V ≤ 20mA / DC 24V
		Mechanical Information	Cable Entry Sensing Element Position	~30x15mm, on the backside of the housing Inside the housing, bottom of the housing
		Color and Materials	Housing Cover Housing Bottom	PC-V0, RAL 9010 (Pure White) PC-V0, RAL 9010 (Pure White)
		Environmental Condition	Operation Temperature	-25°C...+70°C
			Operation Humidity	<85% r.h., no 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	IP20 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 EMV	
		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	Accessory not included in delivery	URA0.B (106mmx106mm backplate)	
	Shipping & Handling	Minimum Order	1 box with 1 piece	
		Package Material	Rigid Cardboards Packaging	
Order Notes	Order Code	e.g. CRW4.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

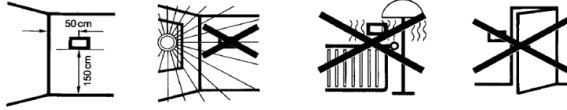
Local electrical supply authority regulation

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

Mounting Advices



Under normal environmental conditions we recommend a recalibration interval of 2 year to maintain the indicated accuracy. Refrain from touching the sensitive sensor. Any touch of the same will result in an expiration of the warranty.

At high ambient temperatures and high humidity, or when use the sensor in aggressive gases, an early recalibration or a change of the sensor can become necessary.

Such a recalibration or a probable sensor change may not come under the general warranty

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

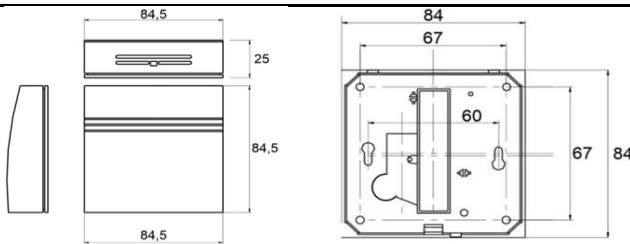
Connections & Settings

T1	T2	T3	T4	T5	T6	Temperature Setting (DIP1 & DIP 2)				Humidity Setting (DIP3 & DIP 4)				DIP5				
UB+	AC/DC 24V	GND	Temperature	Humidity	S+	T passive	S-	T passive	DIP1 DIP2		DIP3 DIP4		DIP3 DIP4		DIP5	DIP5		
									-20...80°C	0...100°C	-50...50°C	0...50°C	rel. H	abs. H	enthalpy	dew point	0...10V	4...20mA

R1- Off-set potentiometer (TE) 0 K
-3 K +3 K

R2- Off-set potentiometer (HU) 0%
-5% +5%

Dimensional Drawing / Mounting Instruction



Accuracy Curves

