
 TI2125en	Technical Information	
CRF5- Series (CO2&H&T)	Room Air Quality, Humidity and Temperature Sensor with active Outputs	

The CRF5- Series (H&T) is designed to measure air quality, relative humidity and temperature in rooms or areas

Sensor available with Touch- LED display, showing actual air quality, rel. humidity and temperature values, day and time

Adjustable Air Quality Indication

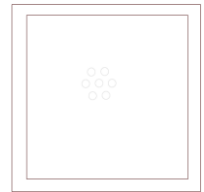
Sensor can be field calibrated

The sensor operates with low power supply

The sensor outputs are active



CRF5.Ax



CRF5.Cx

USE	<p>Compatible to all common HVAC DDC and Analog Controls systems, with/without Building Automation System</p> <p>Relative Humidity and Temperature measurement in Rooms and Areas</p> <p>Flush mounted 2.4" Sensor, with or without display, room sensor</p> <p>Used in all common HVAC applications</p> <p>Used in Commercial and Industrial Buildings</p>
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Features	<p>Sensor Outputs are active</p> <p>Sensor Outputs 0...10V or 4...20mA</p> <p>Air Quality, humidity and temperature field calibration</p> <p>Adjustable Air Quality indication</p> <p>Modern and practical product design</p> <p>Easy to use, install and maintain</p>
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Product Range	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 12.5%;">Order Codes</th> <th style="width: 12.5%;">Power Supply</th> <th style="width: 12.5%;">Display</th> <th style="width: 12.5%;">Sensor Outputs</th> <th style="width: 12.5%;">AQ Indication</th> <th style="width: 12.5%;">Measuring Ranges</th> <th style="width: 12.5%;">Air Quality / Humidity / Temperature Accuracy</th> <th style="width: 12.5%;">Housing Color</th> </tr> </thead> <tbody> <tr> <td>CRF5.AB</td> <td rowspan="4" style="text-align: center; vertical-align: middle;">AC/DC 24V (±10%)</td> <td>Full screen LCD</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">3x 0...10V</td> <td>good/standard/poor</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">0...2000 PPM (CO2)</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">± 50PPM or 3% of reading</td> <td rowspan="4" style="text-align: center; vertical-align: middle;">Signal White RAL 9003*</td> </tr> <tr> <td>CRF5.CB</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>CRF5.AF</td> <td>Full screen LCD</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">3x 4...20mA</td> <td>good/standard/poor</td> <td style="text-align: center; vertical-align: middle;">0...100%, rh</td> <td style="text-align: center; vertical-align: middle;">± 2% within 0-100% r.h.</td> </tr> <tr> <td>CRF5.CF</td> <td>n/a</td> <td>n/a</td> <td style="text-align: center; vertical-align: middle;">0...50°C, temp.</td> <td style="text-align: center; vertical-align: middle;">± 0.5°C F.C.</td> </tr> </tbody> </table>	Order Codes	Power Supply	Display	Sensor Outputs	AQ Indication	Measuring Ranges	Air Quality / Humidity / Temperature Accuracy	Housing Color	CRF5.AB	AC/DC 24V (±10%)	Full screen LCD	3x 0...10V	good/standard/poor	0...2000 PPM (CO2)	± 50PPM or 3% of reading	Signal White RAL 9003*	CRF5.CB	n/a	n/a	CRF5.AF	Full screen LCD	3x 4...20mA	good/standard/poor	0...100%, rh	± 2% within 0-100% r.h.	CRF5.CF	n/a	n/a	0...50°C, temp.	± 0.5°C F.C.
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*different colors are available

Sensor Specification	Sensor Specification	Measured	Air Quality (CO ₂) & Humidity & Temperature	
		Sensor Characteristics QA	NDIR, self calibrating, dual channel	
		Sensor Outputs AQ/H/T (CRF5.xB)	0...10V ; 0...10V ; 0...10V	
		Sensor Outputs AQ/H/T (CRF5.xF)	4...20mA ; 4...20mA; 4...20mA	
		Output Load	Max. load 3W AC 24V / 6VA DC 24V	
		Accuracy		
		Air Quality (CO ₂)	± 50PPM or 3% of reading	
		Relative Humidity	± 2% within 0...100% r.h.	
		Temperature	± 0.5°C	
		Repeatability		
		Air Quality (CO ₂)	1% of Measuring Range	
		Relative Humidity	0.21% r.h.	
		Temperature	0.15°C	
		Response time (t63)		
	Air Quality (CO ₂)	<6 seconds		
	Relative Humidity	<8 seconds		
	Temperature	<2 seconds		
	Measuring Range Air Quality	0...2000PPM (CO ₂)		
	Measuring Range (H)	0...100%		
	Measuring Range (T)	0°C...50°C		
Technical Information	Electrical Information	Power Supply	AC/DC 24V (±10%)	
		Frequency	50 / 60 Hz at AC 24V	
		Terminal Clamp	Screw terminal, max. 1.5mm ²	
		Power Consumption	Max. load 3W AC 24V / 6VA DC 24V	
	Mechanical Information	Cable Connection	terminals with max. 1.5mm ² backside of the housing	
		Sensing Element Position	Inside the housing	
		Display	CRF5.AB / CRF5.AF Touch-LCD with LED-Illumination	
	User Interface	CRF5.AB / CRF5.AF	5 Touch buttons	
		CRF5.AB / CRF5.AF		
	Colour and Materials	Housing Cover	CRF5.AB / CRF5.AF	ABS, scratch resistant acrylic class, white frame
		Housing Cover	CRF5.CB / CRF5.CF	ABS, RAL9003 (Signal White)
		Housing Bottom		ABS, RAL9005 (Traffic Black)
	Environmental Conditions	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		IP30 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 2011/65/EC
		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	
Miscellanies	Accessories	non		
	Shipping & Handling	Minimum Order	1 box with 1 piece	
		Package Material	Rigid Cardboards	
	Order Notes	Order Code	CRF5.AB	

All Information and technical data are subject to alteration

Actual Weekdays
Actual Time

Actual Room Temperature

Commission Button



Air Quality Indication
Actual Room Humidity
Actual Air Quality

Value Button (-)

Date / Time Button Value Button (+)
Screen ON/OFF Button

Entering the Commissioning Screen:

Press for approximately 5 sec, until the commissioning screen appears.

Commissioning Screen



Change Commissioning Parameters

- 1) Press until the desired Parameter number appears
- 2) Press or until desired value appears
- 3) Press to confirm the selected value, the program goes to the next Parameter or press the button to leave the Commissioning Screen

Entering the Date/Time Screen:

Press for approximately 5 sec, until the Date / Time screen appears.

Date / Time Screen



Change Date / Time

- 1) Press or until the desired Weekday appears
 - 2) Press to confirm the selected day
 - 3) Press or until the desired hour appears
 - 4) Press to confirm the selected hour
 - 5) Press or until the desired minute appears
- Date / Time screen will disappear and the standard display will appear

PARA	Name	Parameter	Description	Default
P01	Display standard setting	1	Standard Display	1
		2	Only Temperature & Humidity Values	
P02	Display during Screen saver operation	1	Temperature & Humidity values & ON/OFF button (50%)	1
		2	ON/OFF button only (50%)	
P03	Screen Saver Mode	1	Screen Saver not active	10
		2...60	Screen Saver delay time (2...60min)	
P04	Displayed Temperature Unit	1	Displayed Unit °C	1
		2	Displayed Unit °F	
P05	Time Format	1	European Time Format	1
		2	American Time Format	
P06	Room Humidity Calibration	-5...+5	Adjustment of room temperature sensor value (-5...5% rel. humidity)	0
P07	Room Temperature Calibration	-5...+5	Adjustment of room temperature sensor value (-5...5K)	0
P08	Room Air Quality Calibration	-99...+99	Adjustment of room temperature sensor value (-99...+99 PPM CO2)	0
P09	CO2 Indication threshold limit value "Good -> Standard"	4...20	in steps of 100PPM (4= 400PPM)	8
P08	CO2 Indication threshold limit value "Standard -> Poor"	8...20	in steps of 100PPM (10= 1000PPM)	12

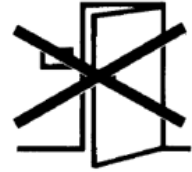
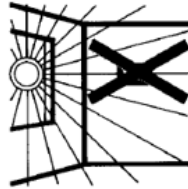
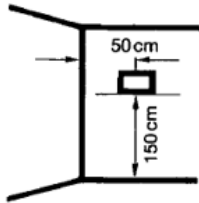
Installation Notes



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



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

Disposal Notes

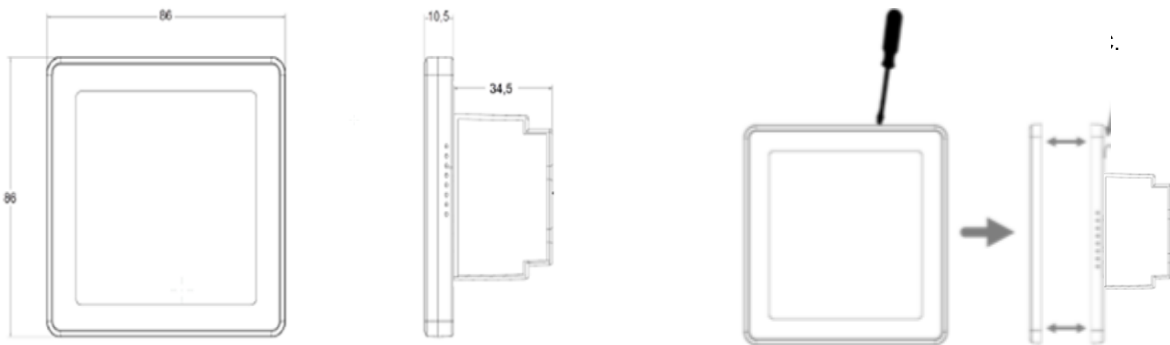


The device is considered an electronic device for disposal in terms of the EUROPEAN DIRECTIVE 2012/19/EU.
 The device may not be disposed as domestic garbage.
 The device must be disposed through channels provided for this purpose.
 It is mandatory to complying with local currently applying laws and regulations.

Connection

Power Supply		Sensor Outputs		
UB+	G	Temperature	Humidity	Air Quality
T1	T2	T3	T4	T5

Dimensional Drawing / Mounting Instruction



Accuracy

