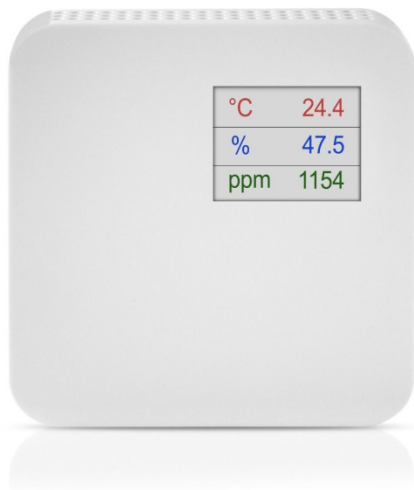


RCD 010 THD 



RCHT 010 THD have colored display  
to show actual value of each parameter  
CO<sub>2</sub>+T+rH.

## Features

- Carbon Dioxide (CO<sub>2</sub>) output 0-10 Vdc
- Humidity (rH) output 0-10 Vdc
- Temperature (T) output 0-10 Vdc
- LCD display (colored)
- Carbon Dioxide (CO<sub>2</sub>) sensor  
NDIR Sensor with auto calibration
- Carbon Dioxide (CO<sub>2</sub>) selectable ranges  
with DIP switches  
0-2000 ppm or 0-5000 ppm
- Carbon Dioxide (CO<sub>2</sub>) accuracy  
±60 ppm for range 0-2000 ppm ± 2% f.s  
±150 ppm for range 0-5000 ppm ± 2% f.s
- Selectable Humidity and Temperature ranges  
with DIP switches
- Temperature (T) accuracy  
± 0.3°K (+5°C to +60°C) +2.5% f.s.
- Humidity (rH) accuracy  
± 2% (20 to 80% rH) +2% f.s.
- DIP switch on pcb to select:
  - Relative Humidity,
  - Absolute Humidity,
  - Dew Point or
  - Enthalpy
- Passive temperature sensing element  
PT1000, PT100, NTC 10K, NTC 20K, NTC 1.8K , NI1000 etc  
as option
- See all the different types on last page.
- VOC sensor output on request

## Technical data

Carbon Dioxide (CO <sub>2</sub> ) output	0-10 Vdc
Humidity output	0-10 Vdc
Temperature output	0-10 Vdc
Power supply with 0-10 Vdc output:	12-24 Vac/dc
Power consumption	40-100 mA
Sensor setting time	60 min.
Display version	LCD
Passive temperature sensing element	PT1000, PT100, NTC 10K, NTC 10K, NTC 1.8K , NI1000 etc (option)
Carbon Dioxide (CO <sub>2</sub> ) sensor	NDIR Sensor with auto calibration
Carbon Dioxide (CO <sub>2</sub> ) accuracy	±60 ppm ± 2% f.s for range 0-2000 ppm ±150 ppm ± 2% f.s for range 0-5000 ppm
Humidity and Temperature sensor	Capacitive
Temperature accuracy	± 0.3°K (+5°C to +60°C) +2.5% f.s.
Humidity accuracy	± 2%. (20 to 80% rH) +2% f.s.
Connection	Screw clamps 1,5 mm <sup>2</sup>
Casing	Material ABS, Colour RAL 9010
Dimensions Housing (L x W x H):	87,5 x 87,5 x 30 mm
Protection class:	IP30
Admissible Environmental conditions	0 to 50°C, 0 to 98% r.H.
Carbon Dioxide (CO <sub>2</sub> ) ranges	see configuration page 4
Temperature ranges	see configuration page 4
Relative humidity measuring range:	see configuration page 4
Absolute humidity measuring ranges:	see configuration page 4
Dew point measuring ranges :	see configuration page 4
Enthalpy range:	see configuration page 4
Directive	
Electromagn. EMC	2014/30/EU
Low voltage LVD	2014/35/EU
Standards	EN 60730-1 2011 EN 60730-2-9 2011 EN14597

## Description

RCD 010 THD is a room combined Carbon Dioxide (CO<sub>2</sub>) + Humidity (rH) + Temperature (T) transmitter with colored LCD display to show actual value of each parameter CO<sub>2</sub>+rH+T.

The combined Carbon Dioxide (CO<sub>2</sub>) + Humidity (rH) + Temperature (T) transmitter RCD 010 THD have 3 analogue outputs, i.e. one 0-10 Vdc output for each parameter CO<sub>2</sub>+rH+T.

The RCD 010 THD combined Carbon Dioxide (CO<sub>2</sub>) + Humidity (rH) + Temperature (T) transmitter to be used in air conditioning, ventilation and clean room technology, interior rooms such as residential rooms, offices, hotels, technical rooms, meeting rooms and convention centres.

RCD 010 THD can be connected with DDC/PLC controller or other automation system such BAS, BMS, BEMS etc

.

## Configuration

### RCD 010 T / RCD 420 T (with and without display)

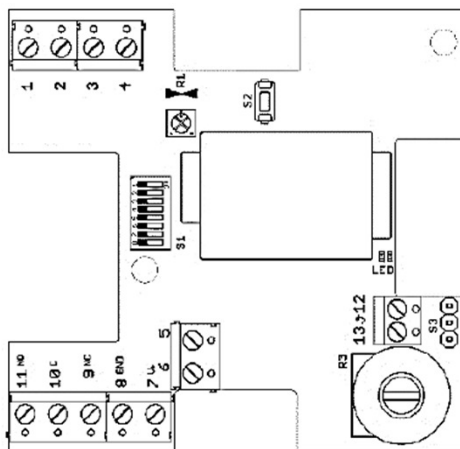
Temperature-Ranges	Range	1	2	3	4	5	6	Setting	7	8
	-100... 50 °C	OFF	OFF	OFF	OFF	OFF	OFF		NA	Range CO2
-50...0 °C	ON	OFF	OFF	OFF	OFF	OFF	NA	0... 2000 ppm	OFF	
-50...50 °C	OFF	ON	OFF	OFF	OFF	OFF	NA	0... 5000 ppm	ON	
-50... 150 °C	ON	ON	OFF	OFF	OFF	OFF	NA	Auto-Calibration		
-30... 20 °C	OFF	OFF	ON	OFF	OFF	OFF	NA	OFF		ON
-30...60 °C	ON	OFF	ON	OFF	OFF	OFF	NA	ON		OFF
-30...70 °C	OFF	ON	ON	OFF	OFF	OFF	NA			
-20...50 °C	ON	ON	ON	OFF	OFF	OFF	NA			
-20...80 °C	OFF	OFF	OFF	ON	OFF	OFF	NA			
-20...120 °C	ON	OFF	OFF	ON	OFF	OFF	NA			
-20...150 °C	OFF	ON	OFF	ON	OFF	OFF	NA			
-10...15 °C	ON	ON	OFF	ON	OFF	OFF	NA			
Setting CO2-Ranges	Range	1	2	3	4	5	6			
	-10...120 °C	OFF	OFF	ON	ON	OFF	NA			
0...40 °C	ON	OFF	ON	ON	OFF	NA				
0...50 °C	OFF	ON	ON	ON	OFF	NA				
0...70 °C	ON	ON	ON	ON	OFF	NA				
0...100 °C	OFF	OFF	OFF	OFF	ON	NA				
0...150 °C	ON	OFF	OFF	OFF	ON	NA				
0...160 °C	OFF	ON	OFF	OFF	ON	NA				
0...200 °C	ON	ON	OFF	OFF	ON	NA				
0...250 °C	OFF	OFF	ON	OFF	ON	NA				
0...400 °C	ON	OFF	ON	OFF	ON	NA				
0...600 °C	OFF	ON	ON	OFF	ON	NA				
10...35 °C	ON	ON	ON	OFF	ON	NA				

Version without temperature output DIP 1 ... 6 are N/A

### RCD 010 TH / RCD 420 TH (with and without display, for example the RCD 010 THD)

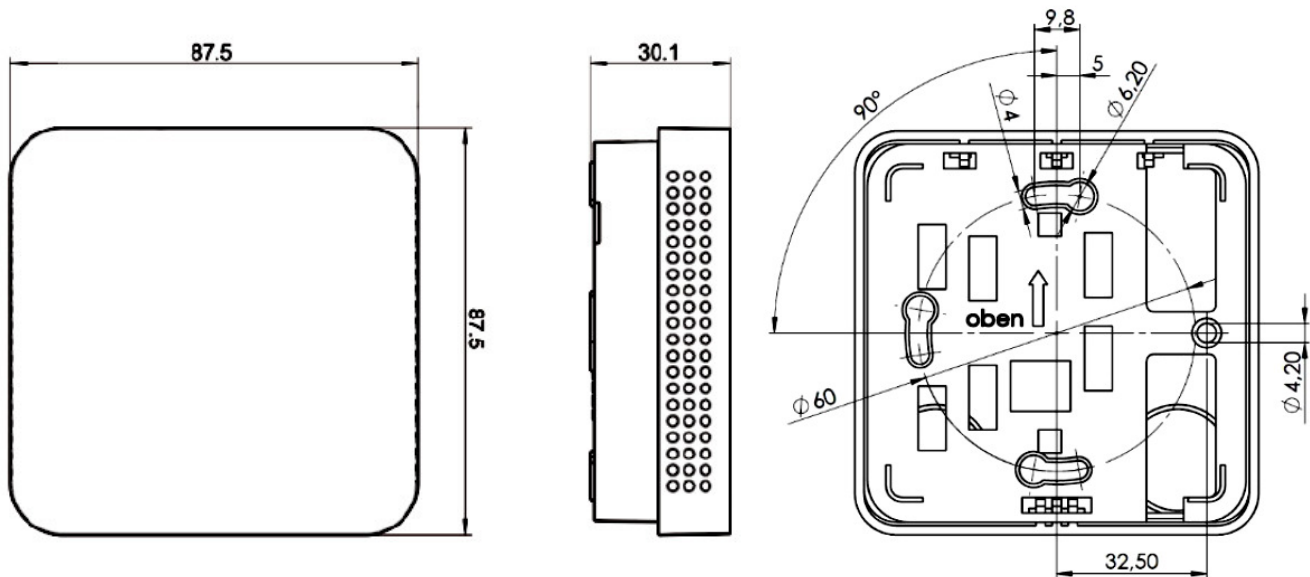
Temperature-ranges	Range	1	2	Humidity-Ranges	Range	3	4	5	6	Setting	7	8
	0°C ... +50°C	OFF	OFF		Relative humidity				Range CO2			
0°C ... +100°C	ON	OFF	0 % ... 100%				0... 2000 ppm			OFF		
-20°C ... +80°C	OFF	ON	Absolute humidity				0... 5000 ppm			ON		
-30°C ... +70°C	ON	ON	0 g/m <sup>3</sup> ... 30g/m <sup>3</sup>				Auto-Calibration					
			0 g/m <sup>3</sup> ... 50g/m <sup>3</sup>				OFF			ON		
			0 g/m <sup>3</sup> ... 80g/m <sup>3</sup>				ON			OFF		
			Mix ratio									
			0 g/kg ... 30g/kg				OFF	OFF	OFF	ON		
			0 g/kg ... 50g/kg				OFF	OFF	ON	ON		
			0 g/kg ... 80g/kg				OFF	ON	ON	ON		
			Dew point									
			0°C ... +50°C				OFF	ON	ON	OFF		
			-50°C ... +100°C				ON	OFF	OFF	ON		
			-20°C ... +80°C				OFF	ON	OFF	ON		
			Enthalpy									
			0 kJ/kg ... 85kJ/kg				ON	ON	ON	ON		

## Electrical connection

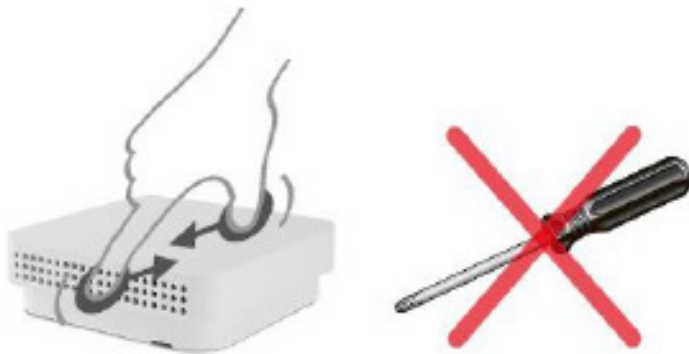


Pin	(0-10 V)			(4-20 mA)		
	CO2	CO2/°C	CO2/°C/rF	CO2/°C	CO2	CO2/rF
1	ppm	temp	temp	-	-	-
2	(VOC)	ppm	humidity	-	-	-
3	-	(VOC)	ppm	temp	ppm	humidity
4	-	-	(VOC)	ppm	(VOC)	ppm
5	(passive poti)					
6	(passive poti)					
7	V+					
8	GND					
9	(relay NC)					
10	(relay C)					
11	(relay NO)					
12	(passive sensor)					
13	(passive sensor)					
R1	temp. Adjustment					
S3	polarity R3					
S2	CO2 Manual adjustment to 400 ppm					

## Dimensions



## Mounting



The convection must be aligned at the bottom to ensure a flow of air up (see marking back of the housing).

The sensor should always be mounted on the opposite wall of the radiator.

Ideal mounting height: 1.5 m above the floor.

The heating-up phase takes about 15 minutes, until the sensor emits a signal. Meanwhile the sensor should be exposed to fresh air, since it takes this as a reference. If you take away the supply voltage, described process repeats.

Generally the sensor should at least once per day to be supplied with fresh air, as he regularly calibrates itself to this. This procedure prevents a long-term drift whereby the sensor is very stable.

The RCD sensor unit is designed for normal ambient conditions (ambient air), aggressive gases can destroy the RCD sensor unit.

The location has a decisive effect on the measurement accuracy. Windows (cold outer wall) or near door (drafts) should be avoided

## Ordering

Type no.	CO <sub>2</sub> Output	Temperature Output	Humidity Output	Display	Direct Temp. Temperature
RCD 010	0-10 Vdc	No	No	No	No
RCD 010 T	0-10 Vdc	0-10 Vdc	No	No	No
RCD 010 TH	0-10 Vdc	0-10 Vdc	0-10 Vdc	No	No
RCD 010 D	0-10 Vdc	No	No	Yes	No
RCD 010 TD	0-10 Vdc	0-10 Vdc	No	Yes	No
RCD 010 THD	0-10 Vdc	0-10 Vdc	0-10 Vdc	Yes	No
RCD 010 XXX	0-10 Vdc	No	No	No	Yes
RCD 010 T XXX	0-10 Vdc	0-10 Vdc	No	No	Yes
RCD 010 TH XXX	0-10 Vdc	0-10 Vdc	0-10 Vdc	No	Yes
RCD 010 D XXX	0-10 Vdc	No	No	Yes	Yes
RCD 010 TD XXX	0-10 Vdc	0-10 Vdc	No	Yes	Yes
RCD 010 THD XXX	0-10 Vdc	0-10 Vdc	0-10 Vdc	Yes	Yes
RCD 420	4-20 mA	No	No	No	No
RCD 420 T	4-20 mA	4-20 mA	No	No	No
RCD 420 D	4-20 mA	No	No	Yes	No
RCD 420 TD	4-20 mA	4-20 mA	No	Yes	No
RCD 420 XXX	4-20 mA	No	No	No	Yes
RCD 420 T XXX	4-20 mA	4-20 mA	No	No	Yes
RCD 420 D XXX	4-20 mA	No	No	Yes	Yes
RCD 420 TD XXX	4-20 mA	4-20 mA	No	Yes	Yes

XXX = Passive sensor  
PT100, PT100 1/3 DIN,  
PT1000, PT1000 1/3 DIN,  
NI1000, NI1000/TK5000,  
NTC 1.8K, NTC 5K, NTC 10K, NTC 20K, KTY81-210

Example: RCD 010 THD PT1000

**RCD 010 THD is the standard type,  
all other types are manufactured  
and supplied on request**

**LED display on request  
Green 0-800 ppm  
Orange 800-1600 ppm  
Red 1600-2000 ppm**

**VOC sensor output on request**

We reserve the right to make changes in our products without any notice which may effect the accuracy of the information contained in this leaflet.