

## Room Pendulum Sensor TH-CO2-RPFF



### 1. Device Description

The room pendulum sensors TH-CO2-RPFF and TH-CO2-RPFF-MMF are sensors for detecting the air parameters temperature, humidity, and CO2 content in high indoor spaces. The TH-CO2-RPFF-MMF sensor with a metal sinter filter can also be used under impending condensation conditions. Both sensors are used together with the KNX coupling modules SK10-THC or SK07-THC.

## 1.1 Short Description :

### **Measurement and control unit with room pendulum sensor for temperature, humidity, and CO2, protection class IP65 (SK10) / IP54 (sensor)**

- Room pendulum sensor for suspending from the room ceiling
- Measured values:
  - Air temperature, can be weighted with an external temperature.
  - Relative humidity
  - CO2 concentration in ppm
- Calculated values
  - Absolute humidity
  - Dew point temperature with alarm / control in case of condensation danger
  - Energy content (Enthalpy)
- Control functions for heating and cooling applications (also combinable)
- Target temperatures for comfort, standby, economy, and protection mode, selectable via KNX HVAC objects
- Recording of the minimum and maximum temperature
- Heat and frost alarm
- Limits for temperatures and humidity
- Fan control via humidity limits and external inputs
- Tracking functions and setpoint changes for set and limit temperatures
- Controller output 0..100% or configurable PWM for thermal actuators
- Valve flush function
- Second temperature controller as auxiliary controller
- Four logic blocks for the logical combination of internal and external signals
  - 10 assigned logic inputs / outputs
  - Heating request and cooling request also available as signals
  - Functions "AND, OR, NOT, XOR" for binary logic
  - Functions "+ - \*" for 8-bit values
  - Function '=' for conditional event forwarding



For the exact functionality of the coupling module, see description "Manual ETS-App HLK305"

## 2. Data Room Pendulum Sensor TH-CO2-RPFF(-MMF)

<b>Room Pendulum Sensor TH-CO2-RPFF</b>	
Operating voltage	3.3 VDC
Power consumption	50mW Ø / 100mW peak
Connection	4-core GND / VCC / SCL / SDA
Ambient temperature	Storage -25 .. +85°C
Ambient humidity	0% to 100% non-condensing
Measured value range temperature	-25 .. +80°C
Resolution	0.02°C
Accuracy	± 0.4°C (5..60°C), otherwise ± 0.8°C
Humidity measurement range	0 .. 100% r.H.
Resolution	0.02% r.H.
Accuracy	± 3% r.H. (20..80%) at +20°C, otherwise ± 5%
CO2 measurement range	0 .. 40000 ppm
Resolution	1ppm
Accuracy	50ppm +5% from reading ( at 400 .. 2000ppm )
CO2 response time (63%)	120s
Protection class	IP54
Installation type	Suspended from the ceiling
Housing	Aluminum/Brass/Plastic
Dimensions	( 20 x 120 ) mm ( D x L )
Cable length	2m (Standard, custom lengths available on request)
Article number	<b>90100064</b>

<b>Room Pendulum Sensor TH-CO2-RPFF-MMF</b>	
Operating voltage	3.3 VDC
Power consumption	50mW Ø / 100mW peak
Connection	4-core GND / VCC / SCL / SDA
Ambient temperature	Storage -25 .. +85°C
Ambient humidity	0% to 100% non-condensing
Measured value range temperature	-25 .. +80°C
Resolution	0.02°C
Accuracy	± 0.4°C (5..60°C), otherwise ± 0.8°C
Humidity measurement range	0 .. 100% r.H.
Resolution	0.02% r.H.
Accuracy	± 3% r.H. (20..80%) at +20°C, otherwise ± 5%
CO2 measurement range	0 .. 40000 ppm
Resolution	1ppm
Accuracy	50ppm +5% from reading ( 400 .. 2000ppm )
CO2 response time (63%)	120s
Protection class	IP54
Installation type	Suspended from the ceiling
Housing	Aluminum/Brass
Dimensions	( 20 x 120 ) mm ( D x L )
Cable length	2m (Standard, custom lengths available on request)
Article number	<b>90100066</b>

### 3. Device Combinations

SK10-THC-CO2-RPFF	SK10-THC-CO2-RPFF-MMF
	
SK10-THC-CO2-RPFF	
Module Ambient Temperature	Storage -25 .. +80°C Operation -25 .. +80°C
Module Ambient Humidity	0% to 100% non-condensing
Bus coupler	Integrated
Auxiliary voltage	Not required
Commissioning with ETS from version 4	HLK305
Connections	KNX-2-pole terminal ( red / black )
Power consumption	240mW (10mA at 24V bus voltage)
Protection class (SK10)	IP65
Housing KNX module (SK10)	Plastic
Dimensions KNX module (SK10)	(72 x 64 x 40) mm
Article number	<b>30532064</b>

<b>SK10-THC-CO2-RPFF-MMF</b>	
Module Ambient Temperature	Storage -25 .. +80°C Operation -25 .. +80°C
Module Ambient Humidity	0% to 100% non-condensing
Bus coupler	Integrated
Auxiliary voltage	Not required
Commissioning with ETS from version 4	HLK305
Connections	KNX-2-pole terminal ( red / black )
Power consumption	240mW (10mA at 24V bus voltage)
Protection class (SK10)	IP65
Housing KNX module (SK10)	Plastic
Dimensions KNX module (SK10)	(72 x 64 x 40) mm
Article number	<b>30532066</b>

On request, the sensors can also be supplied with an in-wall module SK07-THC.

## 4. Imprint

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