

> CO₂, humidity and temperature sensors for wall mounting

Sensors - room



Characteristics

- various versions
- accurate, even in the long term
- NDIR CO₂ sensor with automatic calibration
- temperature compensation
- easy installation

Various versions

The sensors are available in various versions. This means that a suitable version is available for every application.

- temperature, CO₂ and/or relative air humidity
- analogue outputs or digital RS485 output
- digital RS485 output for BACnet or Modbus
- with or without LCD screen

Specifications

Articles with analogue output			
Article description	Combined CO ₂ and room temperature sensor	Combined CO ₂ and room temperature sensor with LCD	Wall mounted room sensor for CO ₂ , temperature and relative humidity 3x0-10V
Article number	111240	111242	111243
Analogue outputs	0 ... 10 V output 1: temperature (°C) output 2: CO ₂	0 ... 10 V output 1: temperature (°C) output 2: CO ₂	0 ... 10 V output 1: temperature (°C) output 2: CO ₂ output 3: relative humidity (% RH)

LCD screen

The LCD screen displays the various measured values in turn.

Digital RS485 output

The versions with a digital RS485 output are available with a BACnet or Modbus interface. The measured values can be shared within a BACnet or Modbus interface via the RS485 output.

Accurate

The CO₂ measuring cell is based on Dual Wavelength Nondispersive Infrared (NDIR) technology, automatically compensates for ageing phenomena and is insensitive to contamination. Manual or factory calibration is not required. This guarantees a high level of accuracy, even in the long term.

Installation

The sensor can be screwed directly onto a wall or a standard flush-fit box. The front can be detached by clicking so that wiring can easily be connected.

Low maintenance

The measuring sensors do not require any maintenance.

In a dusty environment, the air inlet grid of the housing can become clogged, as a result of which the measurement works less accurately. Cleaning the grid now and again with a dry brush of a light damp cloth (water only) is sufficient to prevent this problem.

Articles with digital output Modbus RTU

Article description	Room sensor for CO ₂ and temperature, Modbus	Room sensor for CO ₂ , temperature and relative humidity, Modbus
Article number	111340 ¹	111342 ¹
Digital output	RS485	
Protocol	Modbus RTU	

¹ Can only be ordered for projects in quantities of more than 100 pieces.

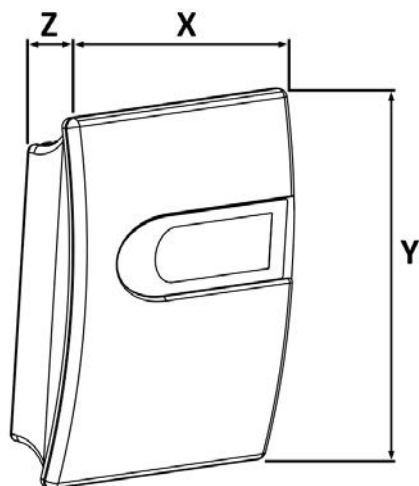
Articles with digital output BACnet

Article description	Room sensor for CO ₂ and temperature, BACnet	Room sensor for CO ₂ , temperature and relative humidity, BACnet
Article number	111341 ¹	111343 ¹
Digital output	RS485	
Protocol	BACnet	

¹ Can only be ordered for projects in quantities of more than 100 pieces.

General

Dimensions (XYZ)	85 x 100 x 26 mm
Weight	88 grams (without LCD) 96 grams (with LCD)
Housing	polycarbonate, UL94HB approved
Housing colour	cover: RAL 9003 (signal white) back: RAL 7035 (light grey)
IP code	IP30
Supply voltage	24 VAC ±20% 15 ... 35 VDC
Power consumption (analogue)	typical: 14 mA peak: 0.3 A for 0.3 s
Power consumption (digital)	typical: 11 mA (15 ... 35 VDC) 30 mA (24 VAC ±20%) peak: 150 mA (15 ... 35 VDC and 24 VAC ±20%)
Electrical connection	screw connector max. 1.5 mm ² (AWG16)
Permitted temperature during storage and use	-20 ... 60 °C
Permitted air humidity during storage and use	0 ... 90 % (non-condensing)



Measured values - CO ₂	
Measuring principle	Dual Wavelength Nondispersive Infrared technology (NDIR)
Measurement range	0 ... 2000 ppm
Accuracy at 25°C and 1013 mbar	< ± (50ppm +2% of the measured value)
Reaction time t63	typ. 110 s
Temperature dependency	typ. (1 + CO ₂ concentration [ppm]/ 1000) ppm / °C (-20 ... 45°C)
Calibration interval ¹	>5 years

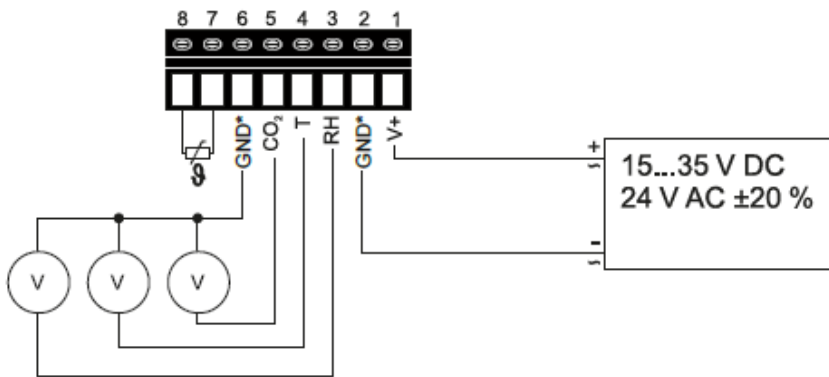
¹ Under normal operating conditions.

Measured values - Temperature	
Measurement range	0 ... 50 °C
Accuracy at 23°C	±0.3°C (both analogue output and digital RS485 output)

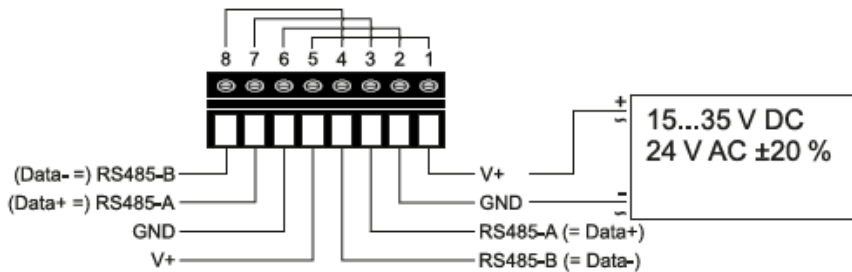
Measured values - Relative humidity	
Measurement range	0 ... 100%
Accuracy at 23°C	±5% RH

Protocol settings for digital output	
Baud rate	38400
Parity (Modbus)	none
Stop bit (Modbus)	1 stop bit
Measurement system	metric SI

Wiring diagram



Analogue output



Digital output

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