

CO2 multi-sensor
Art.-No.: CO2 .. 2178 ..

Operating instructions

1 Safety instructions

Electrical equipment may only be installed and fitted by electrically skilled persons.

Failure to observe the instructions may cause damage to the device and result in fire and other hazards.

Do not use for safety-related gas measurements.

During renovation work, protect the device against soiling through paint, wallpaper paste, dust, etc. Device can be damaged.

Only operate the device with cover. Device fault possible due to electrostatic discharge.

Do not clean or store the device with organic solvents or expose it to their vapours. Do not stick any adhesive labels. Do not store device in packaging or environments that contain softening agents, e.g. bubble wrap or polystyrene. Before starting renovation work, remove the device from the system and store it in a suitable place. The function of the humidity sensor may be permanently impaired.

Danger of electric shock on the KNX installation. Do not connect any external voltage to the inputs. Doing so may damage the device(s), and the SELV potential on the KNX bus line will no longer be available.

These instructions are an integral part of the product, and must remain with the end customer.

2 Device components

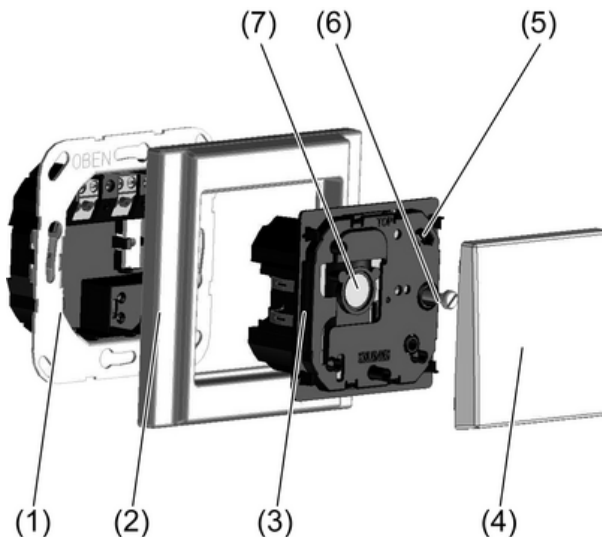


Figure 1: Device overview

- (1) Terminal insert
- (2) Design frame
- (3) Electronics cover
- (4) Cover
- (5) Programming button and LEDs
- (6) Locking screw (plastic)
- (7) Sensor window CO2 sensor

3 Function

System information

This device is a product of the KNX system and complies with the KNX directives. Detailed technical knowledge obtained in KNX training courses is a prerequisite to proper understanding.

The function of this device depends upon the software. Detailed information on loadable software and attainable functionality as well as the software itself can be obtained from the manufacturer's product database. Planning, installation and commissioning of the device are carried out with the aid of KNX-certified software. The latest versions of product database and the technical descriptions are available on our website.

Intended use

- Measurement of CO₂ concentration, relative air humidity and air temperature
- Output of the measured values as telegram to the bus, e.g. for controlling fans or window drives via KNX telegrams
- Single-room temperature control in KNX installations
- Installation in appliance box to DIN 49073

Product characteristics

- Limit value monitoring for CO₂ concentration and air humidity
- Dew point alarm for, for example, cooling blankets and conservatories, to avoid possible mould formation
- Two binary inputs for connection of potential-free contacts e.g. buttons, switches, window contacts
- Logic gates for simple gating functions

Function CO₂ sensor:

- Max of 4 different adjustable threshold values
 - Adaptation to current elevation above sea level (asl)
- i** After switch-on, the CO₂ sensor requires a warm-up period of up to 5 minutes, until normal operation is reached.

Function Room temperature controller:

- Measurement of room temperature and comparison with setpoint temperature
- Setpoint setting by selection of the operating mode
- Operating modes Comfort, Standby, Night operation, Frost/heat protection
- Heating and cooling mode with basic and auxiliary level

Function of humidity sensor:

- Max of 2 adjustable threshold values
- i** The device contains a sensitive, integrated humidity/temperature sensor. Longer storage at a higher or lower temperature or humidity leads to inaccuracies of the humidity reading. This difference is rectified again after a few days in operation.

Function Binary inputs:

- Functions: dimming, shutter control, light scene extension unit, brightness or temperature value transmitter.
- Inputs lockable in operation

4 Information for electrically skilled persons

4.1 Fitting and electrical connection



DANGER!

Electrical shock on contact with live parts in the installation environment.

Electrical shocks can be fatal.

Before working on the device, disconnect the power supply and cover up live parts in the working environment.

Mounting and connecting the device

Do not use the device in multiple combinations with electrical devices. Their heat generation influences the temperature and humidity reading of the controller.

Do not mount the device near sources of interference such as electric cookers, refrigerators, draughts or direct sunlight. This influences the temperature and humidity reading of the controller.

Observe routing conditions for SELV.

Do not route input cables parallel to mains cables. Otherwise there might be EMC interference.

Recommendation: Use deep accessory sockets.

The optimum installation height is approx. 1.5 m.

- Removing the cover (4).
- Isolate terminal insert (1) from electronic insert (3).
- Connect the bus line to the connection terminal (9) in the terminal insert.
- Binary inputs: Connect window contacts, NO contact or NC contact button to terminals 4, 5 and 6 of the connecting strip (8) (figure 3).
- Insert terminal insert (1) in appliance box. Note label **OBEN / TOP**. The bus connection must be to the right and below.
- Fit the Design frame (2) on terminal insert (1).
- Insert the electronics cover (3) into the terminal insert in the correct orientation.



DANGER!

When mounting with 230 V devices under a common cover, e.g. socket outlets, there is a danger of electrical shocks in the event of a fault!

Electrical shocks can be fatal.

Only use the preassembled plastic screw as locking screw!

- Fasten the electronics cover with the locking screw (6).
- Reattach the cover (4)

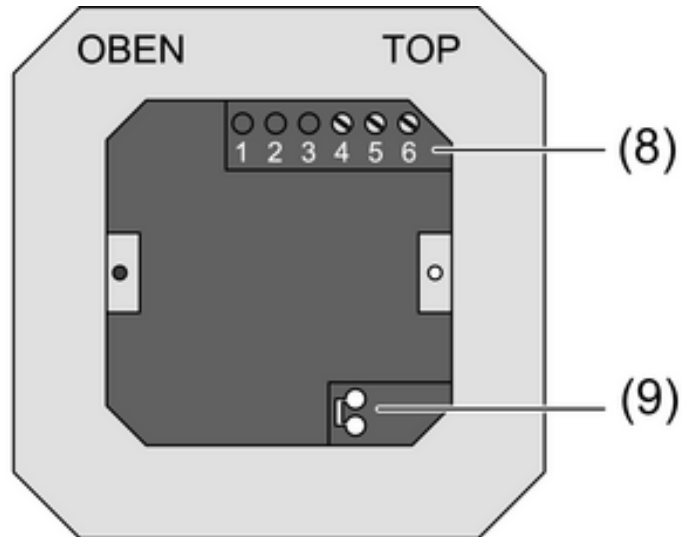


Figure 2: Terminal insert with connections

- (8) Connecting strip binary inputs
- (9) KNX connection

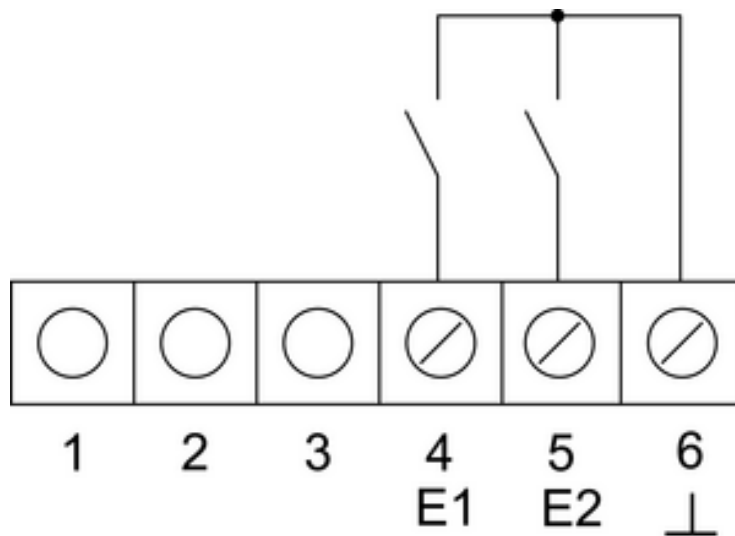


Figure 3: Connection of binary inputs

- 1..3 Not assigned
- 4 Connection binary input E1
- 5 Connection binary input E2
- 6 Reference potential E1, E2

Dismantling the device

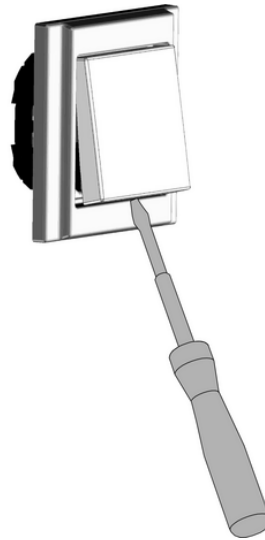


Figure 4: Remove cover

Design cover and electronics cover should be dismantled during painting and decorating work.

- Insert screwdriver in slot on the bottom (figure 4) and raise cover (4) carefully.
- ❗ Do not damage cover (4) and design frame (2).
- Slacken screw (6).
- Remove electronics cover (3) from insert.
- ❗ During later assembly, the cover must be placed on the correct insert again. Already pay attention to correct labelling of insert and cover during disassembly, label accordingly now if necessary.

4.2 Commissioning

Loading the physical address and application software

- Removing the cover (4).
- Press the programming button (5).
The programming LED (5) is illuminated.
- Assign physical address.
The programming LED ceases to be illuminated
- Record the physical address on the terminal insert and on the back of the electronics cover.
- ❗ Observe the correct assignment of inserts and covers when assembling after painting or wallpapering work.
- Reattach the cover (4).
- Load application software, parameters, etc.

5 Appendix

5.1 Technical data

KNX
KNX medium
Commissioning mode
Rated voltage KNX
Current consumption KNX
Current consumption KNX

TP 1
S-mode
DC 21 ... 32 V SELV
typical 12.5 mA
max. 25 mA (4 s/15 s as a cycle)

Connection mode KNX	Connection terminal
Ambient conditions	
Safety class	III
Ambient temperature	-5 ... +45 °C
Binary inputs	
Cable length	max. 5 m
Cable type	J-Y(St)Y 2 x 2 x 0.8 mm
CO ₂ sensor	
Measuring range	0 ... 2000 ppm
Humidity sensors	
Measuring range	10 ... 95 % rel. humidity
Temperature sensors	
Measuring range	-5 ... +45 °C

5.2 Warranty

We reserve the right to make technical and formal changes to the product in the interest of technical progress.

We provide a warranty as provided for by law.

Please send the unit postage-free with a description of the defect to our central customer service office:

ALBRECHT JUNG GMBH & CO. KG

Service Center
Kupferstr. 17-19
D-44532 Lünen
Service-Line: +49 (0) 23 55 . 80 65 51
Telefax: +49 (0) 23 55 . 80 61 89
mail.vki@jung.de

General equipment

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KNX equipment

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