

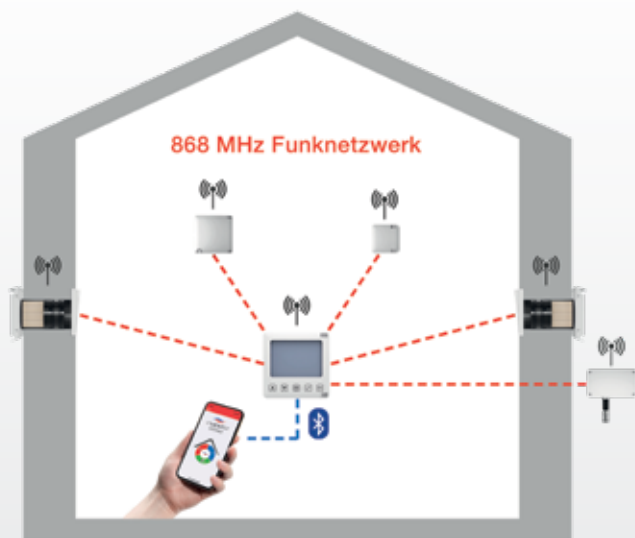


inVENTer



Installation instructions

inVENTer Connect



Controller platform



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Disclaimer

This documentation represents the translation of the original German installation instructions. Once installation is complete, information regarding access to the installation instructions must be passed on to the user (tenant, owner, property management company, etc.). The content of this documentation has been checked for compliance with the described components. Nevertheless deviations may still occur, therefore no guarantee of compliance can be provided.

This documentation describes the functionality of the standard scope. For reasons of clarity, the documentation does not purport to cover all details on all types of the product and cannot cover every conceivable scenario for installation, assembly and commissioning.

The illustrations in this document may differ slightly from the design of the product that you have purchased. The same functionality is ensured despite any design deviations.

This documentation is updated regularly. Necessary corrections and appropriate supplements are always included in subsequent editions. You can also find the latest version at www.inventer.de/downloads.

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1 User and safety instructions

1.1 User information

Safety and warning instructions

The safety instructions in these installation and operating instructions have a uniform structure and are marked with a symbol on the left side of the instruction. A signal word above the text also indicates the hazard level. If several hazard levels exist, the highest level safety instruction is always used.

The safety and warning instructions contain the following information:



SIGNAL WORD: Type and origin of the hazard. Possible consequences of the hazard!
 • Measures to avoid the hazard.

The signal word indicates the severity of the potential hazard unless the preventive measures are taken:



DANGER means: Immediate danger of serious injury or death.



WARNING means: possible danger of serious injury or death.



CAUTION means: Potential risk of mild / moderate physical injury or death.



NOTICE means: Direct or possible risk of property damage due to an adverse event/state.

If you see these signs, ensure you observe the described measures to prevent possible hazards and/or damage.

Other symbols and notices used in this documentation

In addition to the safety instructions, the following symbols are used:



A **TIP** symbol indicates practical and useful tips for handling the devices on the inVENTer Connect controller platform.



Before each installation step, any additional tools and materials required for the activity are listed.



Red bar over a graphic: graphic shows the interior wall.



Blue bar over a graphic: graphic shows the exterior wall.



Action required: This prompts the user to perform a specific action.



Check the results: This requires you to check the results of the action you have performed.



Action focus: To be taken into account in the corresponding assembly step.



Book: refers to another section in this documentation.

1.1 Safety instructions

The installation instructions are part of your inVENTer Connect controller platform and must be available at all times (see www.inventer.de/downloads). When handing the system to a third party, the information regarding access to the installation instructions must be handed over also.

Before performing any work on the system, read the installation instructions carefully and observe all notices that refer to the assembly and installation process in this section. Also note the safety instructions that precede the described handling instructions.

Non-observance of safety instructions could result in injury and/or property damage.

Intended use

The inVENTer Connect controller platform may only be used to control the decentralised iV ventilation devices with heat recovery (iV-Smart+, iV14-Zero, iV-Light or iV-Compact product series, each equipped with the Connect inner cover) from inVENTer GmbH.

Specifically, the following must be used:

- The Easy Connect e16 controller to control the devices included in the system.
- The Connect inner cover controlled by the controller to control the inVENTer ventilation devices with heat recovery.
- The sensor system is paired to the controller (FTS19-Connect Indoor/Outdoor humidity/temperature sensor, CS2-Connect CO₂ sensor and SK19-Connect switching contact) to supply temperature, humidity and CO₂ values to the Easy Connect e16 controller, which in turn uses these values to control the inVENTer ventilation devices with heat recovery.

Requirements for intended use:

- When installing, ensure compliance with the applicable building regulations, fire protection regulations and accident prevention regulations of the relevant professional association.
- Use the devices integrated into the ventilation system only in accordance with the applications that are described in this documentation and only in conjunction with devices that are recommended, approved and named by inVENTer GmbH in this documentation. Changes or modifications to the devices are not permitted.
- In particular, use the FTS19-Connect Indoor humidity/temperature sensor exclusively to measure the humidity and temperature of indoor air, the FTS19-Connect Outdoor humidity/temperature sensor to measure the humidity and temperature of outdoor air, the CO₂ sensor exclusively to measure the carbon dioxide content as well as the temperature and humidity of indoor air and the SK19-Connect switching contact exclusively to integrate safety devices while simultaneously operating the ventilation system with fireplaces and all four only in conjunction with the Easy Connect e16 controller. Changes or modifications to sensors and switching contacts are not permitted.
- Trouble-free and safe operation of the system depends upon proper transportation, proper storage and installation as well as careful operation and maintenance.
- These installation instructions are **only valid in conjunction with the installation and operating instructions of the corresponding ventilation device** with Connect compatibility and supplement these.

All legal notices that are listed in the respective installation instructions also apply without restriction to this document.



- **DANGER: the system may only be installed by a qualified electrician.**
- **DANGER:** when laying the power supply cable, observe the requirements of protection class II. Do not lay live cables. The mains power supply must correspond to the specifications on the device information plate. Before working on electrical installations, disconnect all affected equipment from the power supply. Connect all 230 V devices of the ventilation system to the same circuit breaker.



- **CAUTION:**
The inVENTer Connect controller platform must not be operated by children and/or persons who are not able to do so safely due to their physical, sensory or mental abilities, inexperience or lack of knowledge, unless they are supervised by a person responsible for their safety or have received instructions from them on how to operate the system. Small children must be supervised to ensure that they do not play with the system's devices.



- **NOTE:**
Lay cables without a plaster-resistant cable sheath in the conduit in order to avoid material damage.
- **NOTE:** If the locking arm of the inner cover is in the wrong position, the locking arm can break off. Before the closing cover is (re-)fitted, the locking arm must be swivelled to the right. This is done exclusively using the Easy Connect e16 controller or the "inVENTer Mobile" app. Never swivel the locking arm by hand!

Any kind of use other than the intended use will exclude all liability claims.

Unintended use

The inVENTer Connect controller platform is intended exclusively for the control of the ventilation devices specified in the section on intended use. Any other use is strictly prohibited.

1.1 Qualified personnel

All devices integrated into the inVENTer Connect controller platform comply with technical safety requirements and standards of electrical devices. The controller platform may only be set up and operated in conjunction with this documentation. Installation, electrical connection and commissioning of the system may only be performed by qualified personnel. Qualified personnel within the meaning of the safety notices in this documentation are persons who are authorised to install, put into operation and identify equipment, systems and circuits in accordance with established safety procedures.

2 System overview

The inVENTer Connect controller platform is an innovative control system for decentralised iV ventilation devices with heat recovery featuring the use of the Connect inner cover from inVENTer GmbH. Up to 16 devices or sensors can be integrated into the inVENTer Connect controller platform.

Communication between the control unit and the devices takes place:

- by radio via the RF868MHz network or
- via a RS485 data cable.

The inVENTer Connect controller platform can be assembled with the following devices, depending on structural and individual requirements:

2.1 Easy Connect e16 controller (incl. humidity/temperature sensor)

Construction

The Easy Connect e16 controller (in the following text "controller") is the control centre for the inVENTer Connect controller platform. It is used to control and program the individual devices. The controller also serves as the system interface for the "inVENTer Mobile" app (Android / iOS). Communication between the mobile device and the controller takes place via Bluetooth Low Energy (BLE).

The controller consists of a programming unit and a power supply unit with connecting terminals and a fixing frame for installation on the flush-mounted box. The programming unit contains the controller electronics, the user interface (5 capacitive sensor keys) and the display screen (Liquid Crystal Display). It also has an integrated humidity/temperature sensor.

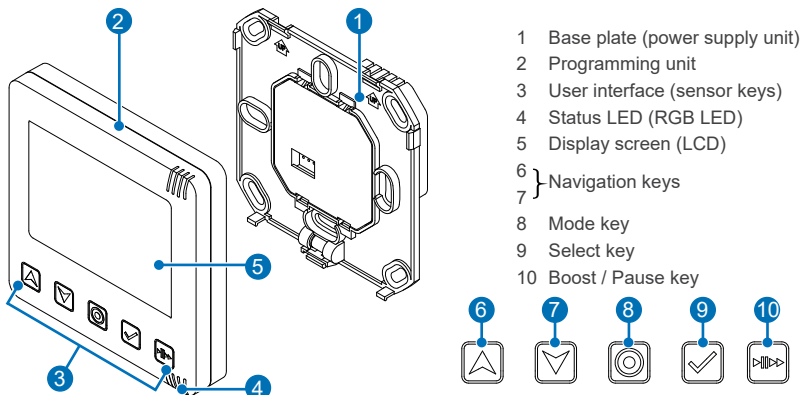


Figure 1: Front view of the Easy Connect e16 controller's programming unit

The capacitive sensor keys available on the programming unit can be used to start up the ventilation system after installation. The status display (LED, multi-coloured) shows the status of the controller by means of lights in various colours.

The following displays are possible:

LED colour	LED state	Status of the controller
WHITE	Solid	Controller in normal ventilation mode
WHITE	Flashing	Controller is ready for pairing with new components (inner covers, sensors)
BLUE	Flashing	Bluetooth connection is being established
BLUE	Solid	Bluetooth connection established
RED / WHITE	Alternate flashing	Error or warning message is displayed
YELLOW	Flashing	An update is being transferred to the controller

Table 1: Status LED display

The mode key can be used to trigger system configurations. The different actions are triggered by holding the mode key for different lengths of time.

The display screen shows all information about the ventilation system (ventilation system in normal operation) or, when changing/manually overriding function-defining settings, setting screens.

For more information on operating the controller or the app, please refer to the separate operating instructions for the Connect controller platform.

Function

The controller is the control centre for the ventilation system and controls all processes according to the settings made. The display screen shows all information about the ventilation system (e.g. ventilation mode, ventilation profile).

After installation and connection to the power supply, the controller starts with the factory settings and the display screen shows the room temperature and humidity, which are transmitted by the sensor integrated into the controller.

The desired devices can then be paired with the controller and thus integrated into the ventilation system (📖 see separate operating instructions).

1.1 Connect inner cover

Construction

The Connect inner cover (in the following text "inner cover") is a network inner cover (radio or RS485 data cable) and replaces the standard inner covers of the iV-Smart+, iV14-Zero, iV-Light and iV-Compact ventilation devices to facilitate integration into the inVENTer Connect network. In addition to the radio interface, the inner covers have local control electronics, a power supply unit and an automatic closing flap.

It controls the speed and direction of each decentralised inVENTer ventilation device with heat recovery connected to it.

Paired (by radio or by cable) with the controller, it is controlled by the latter.

The inner cover is white (RAL 9010) and features a flat, unobtrusive and elegant design. It is available as a flush-mounted (UP) or surface-mounted (AP) inner cover.

The separate housing (240 x 240 x 38 mm) is available in two diameters, depending on the ventilation device:

- Diameter 160 for R-D160 wall sleeve
- Diameter 200 for R-D200 wall sleeve

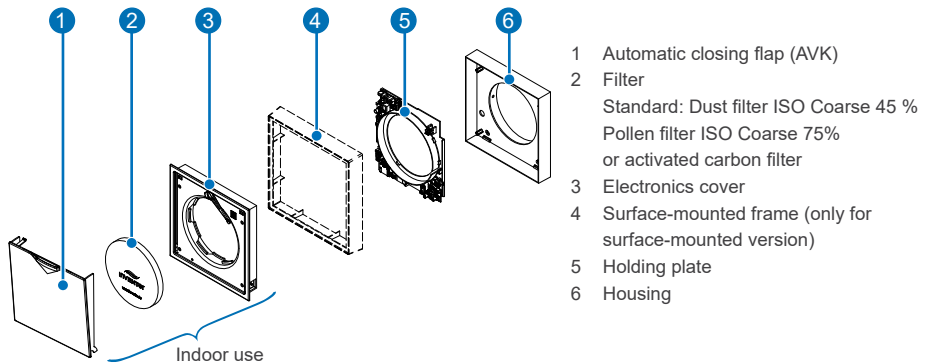
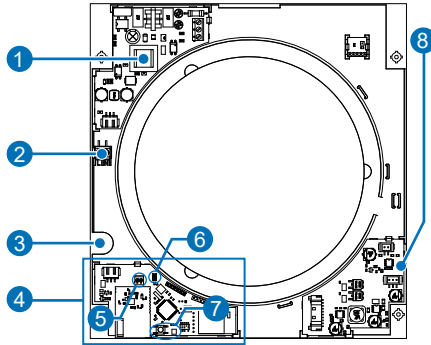


Figure 2: Connect inner cover, construction

The main unit of the inner cover is the holding plate with power supply unit, radio module and control electronics.



- 1 Power supply unit
- 2 Terminal for the mains connection cable
- 3 Cable gland
- 4 Control unit with radio module (RF868MHz interface)
- 5 Terminal for the RS485 data cable (only required for communication via cable)
- 6 Jumper (only required for communication via cable)
- 7 Button and LED (multi-coloured)
- 8 Fan control

Figure 3: Holding plate

In addition to the radio module for communication with the controller, it is also possible to connect an RS485 data cable for information transmission.

For initial commissioning (see operating instructions for Connect controller platform: Commissioning) and to integrate the inner cover into the ventilation system, a button and an associated LED are used to give feedback during commissioning or to display the device status.

The following displays are possible and uniform for all devices to be paired:

LED colour	LED state	Status of the controller
TURQUOISE	Solid	Device not paired
GREEN	Flashing	Devices are paired
GREEN	Solid	Device pairing completed

Table 2: Status LED display of paired devices

Function

If an inner cover is paired to the controller, it controls the associated ventilation device (one ventilation device per inner cover) using the information received from the controller. It controls 4 ventilation modes with different speed levels in which the respective ventilation device then operates.

The inner cover only needs to be operated during commissioning or after restarting the ventilation system. If the inner covers are paired with the controller and thus integrated into the ventilation system, they communicate and/or supply the measured values automatically. No further operation on the devices is required; settings are made via the controller.

1.1 Sensor technology

Different sensors are available in the inVENTer Connect controller platform. These are required to monitor the relevant parameters in the various ventilation zones and to ensure automated ventilation control according to the set profiles. Demand-controlled ventilation is enabled in the ventilation zone assigned to the sensor on the basis of the respective reference variable. The CO₂ sensor also has a humidity/temperature sensor.

For initial commissioning (see operating instructions for Connect controller platform: Commissioning) and to integrate the sensor system into the ventilation system, a button and an associated LED are used in each case.

The following displays are possible and uniform for all devices to be paired:

LED colour	LED state	Status of the controller
TURQUOISE	Solid	Device not paired
GREEN	Flashing	Devices are paired
GREEN	Solid	Device pairing completed

Table 3: Status LED display of paired devices

The data transmission between the sensors and controller takes place at fixed intervals. Depending on the sensor, the value determination is defined as a fixed cycle or as a check cycle:

- Fixed cycle (60 minutes):
Here the sensor system sends a signal to the controller together with the sensor value (temperature, humidity, CO₂ content), thereby reporting its status.
- Check cycle:
Here the sensor values are read periodically and checked whether they correspond to the specified value or are within the tolerance range for this value.
If there are any deviations, the newly measured data is transmitted to the controller.

Sensor hierarchy



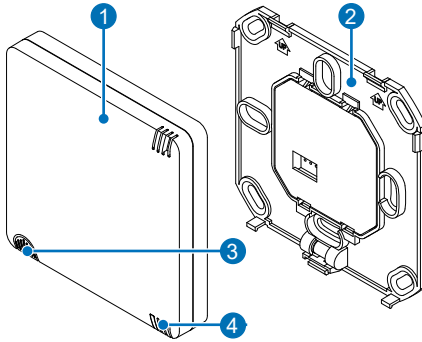
TIP:

Several sensors that perform the same task in a zone can be paired with the controller. The controller then arranges these according to the following sensor hierarchy:

Sensor hierarchy	Sensor type	Component example
Priority 1	Sensor - mains connection	CS2-Connect CO ₂ sensor
Priority 2	Sensor - battery-operated	FTS19-Connect Indoor
Priority 3	Sensor - controller-integrated	Easy Connect e16

Table 4: Sensor hierarchy

CS2-Connect CO₂ sensor (incl. humidity/temperature sensor)



- 1 Housing with sensor electronics
- 2 Base plate (power supply unit)
- 3 Button
- 4 LED (multi-coloured)

Figure 4: CS2-Connect CO₂ sensor

The CS2-Connect CO₂ sensor (in the following text "CO₂ sensor") is a sensor for extended background monitoring of the CO₂ concentration in the indoor air in the respective ventilation zone. It also has a humidity/temperature sensor for monitoring the humidity indoors as well as the indoor temperature.

The CO₂ sensor operates according to the NDIR (non-dispersive, infrared) measuring principle by using an infrared light tuned to the wavelength of CO₂. The attenuation of the infra-red light is detected by the sensor and converted into a processable output signal.

It detects the CO₂ concentration in the ambient air within a range of 400 – 10,000 ppm. The higher the CO₂ content of the air, the worse the room air quality.

It transmits the CO₂ values determined to the controller by radio (RF868MHz network) or RS485 data cable. If the measured CO₂ content of the indoor air exceeds the limit defined via the app (factory setting 1,500 ppm), all ventilation devices assigned to the ventilation zone are switched to ventilation operating mode, level 3.

FTS19-Connect Indoor humidity/temperature sensor

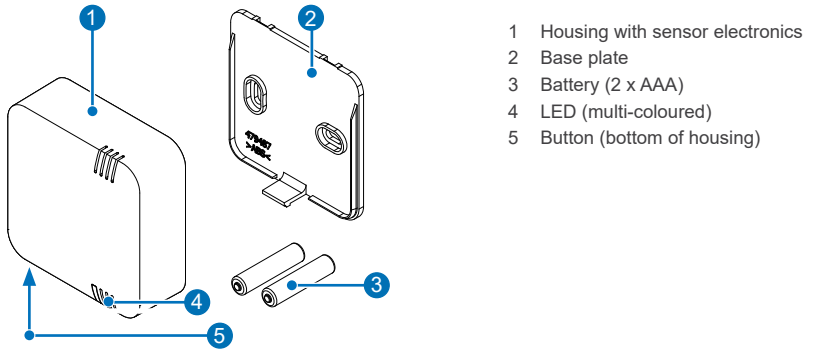


Figure 5: FTS19-Connect Indoor humidity/temperature sensor

The FTS19-Connect Indoor humidity/temperature sensor (in the following text "Indoor humidity/temperature sensor") is a radio sensor for monitoring temperature and humidity levels within a ventilation zone for demand-led ventilation.

Humidity and temperature influence the quality of the indoor air. The Indoor humidity/temperature sensor measures the relative humidity and the temperature in the indoor air, transmits the measured values to the controller by radio (RF868MHz network).

The electrical measuring transducer measures humidity and temperature via a capacitive sensor and converts the measured value into a processable output signal.

The Indoor humidity/temperature sensor measures the relative air humidity in the range 20 – 90 % and the temperature in the range 0 – 60 °C.

If the measured values exceed the limit values stored in the ventilation profile (factory setting 70 %), all ventilation devices assigned to the ventilation zone are switched to ventilation operating mode, level 3.

FTS19-Connect Outdoor humidity/temperature sensor

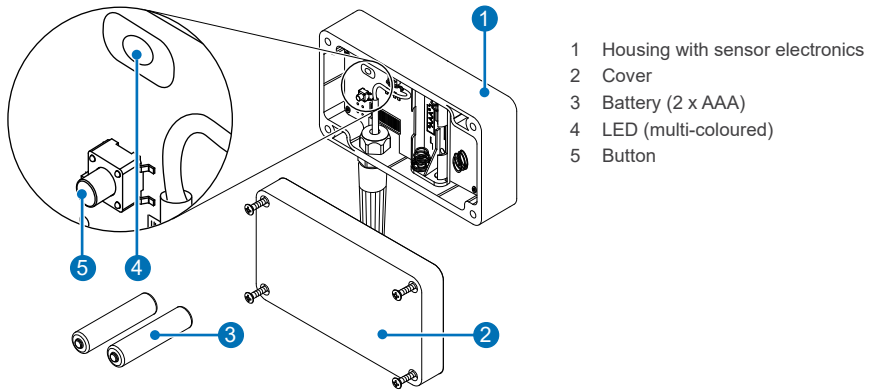


Figure 6: FTS19-Connect Outdoor humidity/temperature sensor

The Outdoor humidity/temperature sensor is a radio sensor for measuring the relative humidity and temperature in the ambient air and sending the measured values to the controller. It serves as an outdoor sensor for all ventilation zones.

Both measured variables (humidity and temperature) are mandatory for the use of automatic ventilation profiles (see Connect controller platform operating instructions).

The electrical measuring transducer measures the humidity and temperature via a capacitive sensor and converts the value into a processable output signal.

The Outdoor humidity/temperature sensor measures the relative air humidity in the range 20 – 90 % and the temperature in the range -20 – 60 °C.

SK19-Connect switching contact

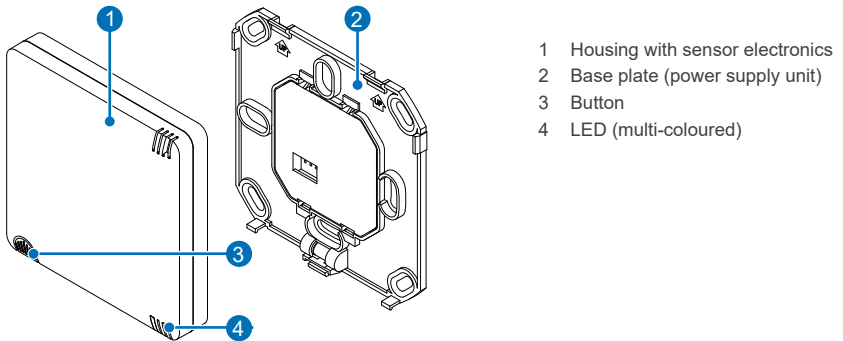


Figure 7: SK19-Connect switching contact

The SK19-Connect switching contact (in the following text "switching contact") is a radio interface and is used to integrate safety devices, e.g. a 4 Pa pressure sensor, into the ventilation system while simultaneously operating the ventilation system with fireplaces.



WARNING:

For joint operation with fireplaces, safety measures must be taken to prevent a negative pressure from developing in the building. The responsible chimney sweep and/or building planner decides which measures need to be carried out.

If this interface is used in conjunction with an external pressure sensor (4 Pa pressure sensor), the air pressure indoors is continuously monitored. As soon as this exceeds the safety-relevant limit value, the sensor transmits this to the controller.

The system reacts as follows:

- The controller switches off all ventilation devices paired with it. The LED on the Easy Connect e16 controller flashes alternately RED and WHITE.
- The closing flaps on the Connect inner covers remain open or are opened. The LED on all Connect inner covers flashes alternately RED and GREEN.
- The LED on the Sk19-Connect switching contact flashes alternately RED and GREEN.

The function remains active until the air pressure drops below the safety-relevant limit again. Then all of the ventilation devices connected to the controller switch back to their originally set operating mode.

If the connection between the switching contact and the controller is interrupted, the system reacts in the same way as when the safety-relevant limit of the air pressure is exceeded.

1.1 "inVENTer Mobile" app

The "inVENTer Mobile" app (in the following text "app") is the free app from inVENTer for Android and iOS operating systems for controlling and programming the system. For a more in-depth setup and full functionality access, a mobile device with the "inVENTer Mobile" app installed is required.

The app can be found on:



The app is used to start up the ventilation system and access the full system control functions. The app has the following menu structure after a connection is made with the controller:

- **Ventilation zone summary**

To view the status of each zone and make quick adjustments (such as changing the ventilation profile, ventilation mode, ventilation level, activating the boost function, etc.)

- **Device summary**

The list of devices paired in the system is displayed, including their names, ventilation zone and status information.

- **Advanced settings**

To make system settings such as adjusting the stored ventilation profiles, defining maintenance intervals and system updates.

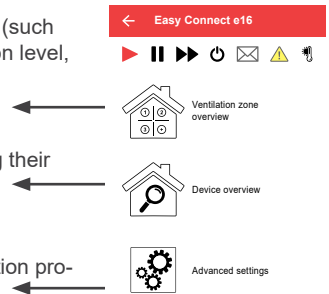


Figure 8: App menu structure

For a detailed description of the control of the ventilation system via the app, see the separate Connect controller platform operating instructions.

3 Electrical connection



DANGER

Exposed electrical components.

Electric shock and injury due to live components (230V, 50Hz)!

- Before working on electrical installations, disconnect all affected equipment from the power supply.
- Observe the requirements for protection class II when laying the power supply cable.
Do not lay live cables.
- Lay the mains connection cables and data cables separately.
- Guide the system components of the ventilation system to the same automatic safety device.

Installation and connection must only be performed by qualified and trained personnel.



NOTE

Insufficient wire cross-section.

Excessive voltage drop and/or contact cannot be guaranteed!

Only use the following cable cross-sections:

- Power cable: 1.5 mm²
- if selected: Connecting cable for e.g. pressure monitor: max. 0.8 mm²
- if selected: RS485 data cable: 0.25 – 0.5 mm², length max. 500 m



TIP:

When laying the cables, make sure that there is sufficient play, and observe the maximum cable length.

The communication of the system components (Easy Connect e16 controller, Connect inner covers, CS2-Connect CO₂ sensor) can be carried out via the 868 MHz radio network or RS485 data cable.

data cable. Accordingly, the following cabling is possible:

A: Connection/communication of the system components via 868 MHz radio network

B: Connection/communication of the system components via RS485 data cable

The combination of both connection types is possible. For example, communication between the inner cover [ventilation device] and the controller can take place via RS485 data cable, while the sensor system communicates with the controller via radio.

The following special features must be taken into account:

The battery-operated FTS19-Connect Indoor/Outdoor humidity/temperature sensors do not require a mains connection. They communicate with the controller exclusively by radio; it is not possible to connect an RS485 data cable.

The SK19-Connect switching contact has a 230 V connection, but also only communicates with the controller by radio. The interface for connecting an RS485 data cable is used here to connect the safety devices, e.g. a 4 Pa pressure sensor.

1.1 A: Connection of the system components via 868 MHz radio network

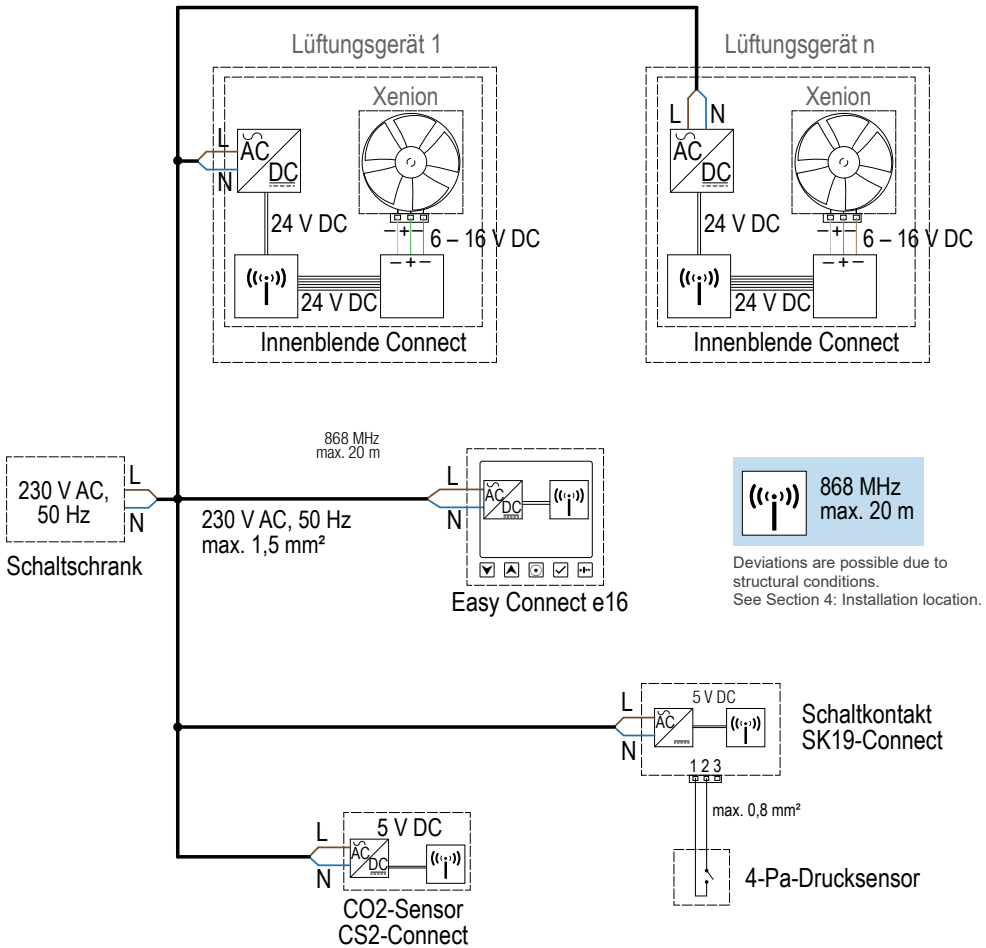
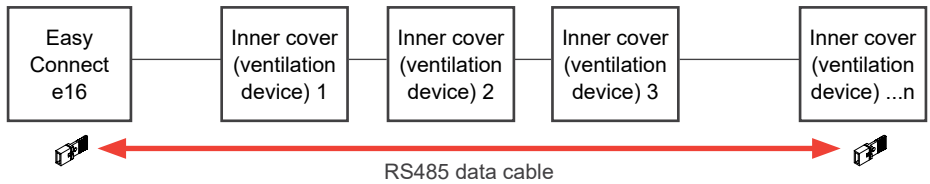


Figure 9: Electrical connection of controller, inner cover and sensors via radio communication

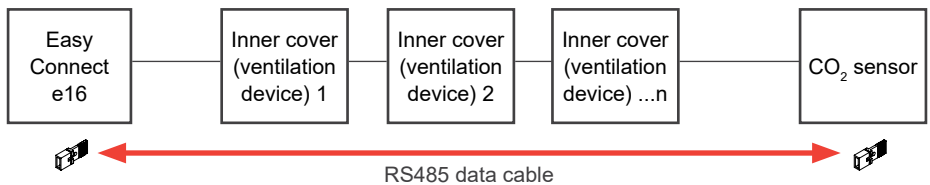
1.1 B: Connection of the system components via RS485 data cable

Possible connections

Scenario 1



Scenario 2



NOTE

Inserting the jumper.

If communication between the controller and the Connect inner cover and/or CO₂ sensor is via an RS485 data cable, a jumper for activating the RS485 data cable must be inserted on the first (Easy Connect e16) and last device in the entire series!

Configuration

RS485 data cable	Data
Starting point	Jumper setting 120 Ω
End point	Jumper setting 120 Ω
Cable type	Shielded cable with twisted wire pairs, e.g. CAT 5 network cable
Max. recommended distance	500 m with fully equipped system
Transmission rate	38,400 bps

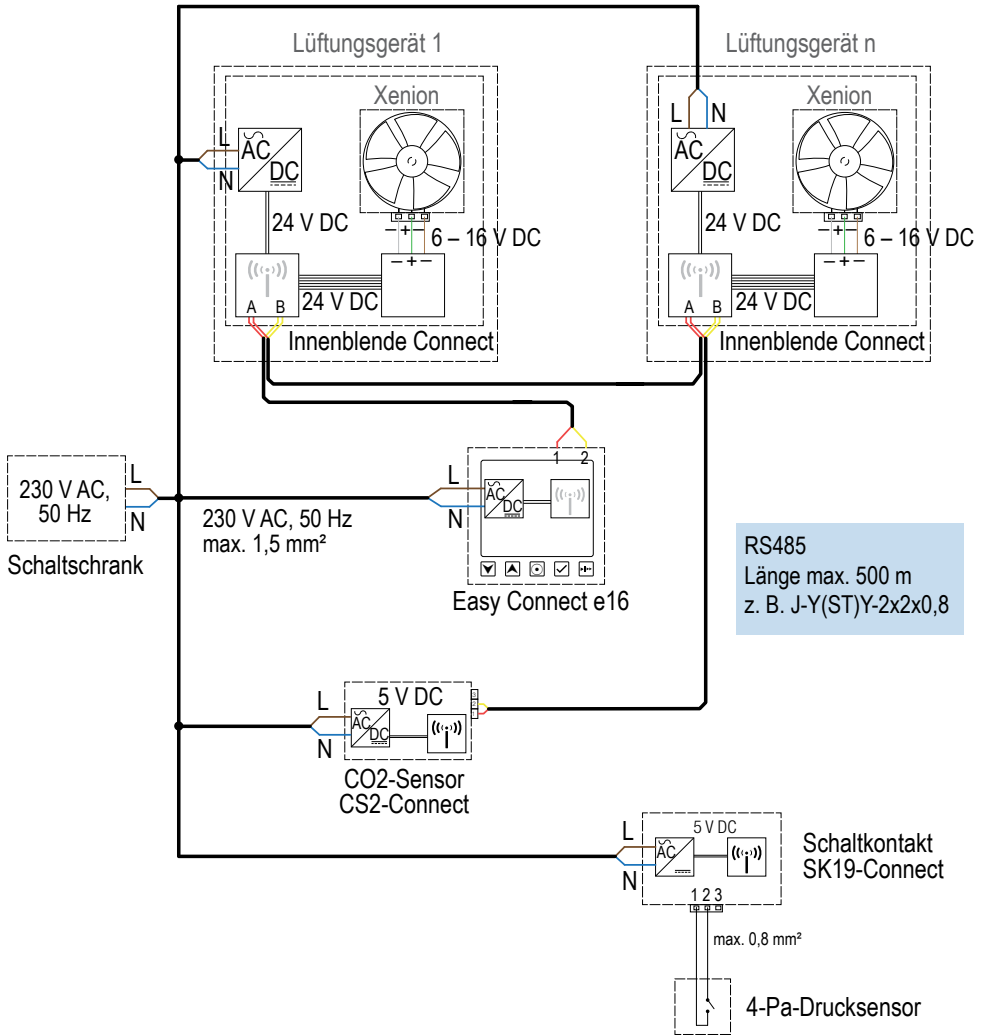
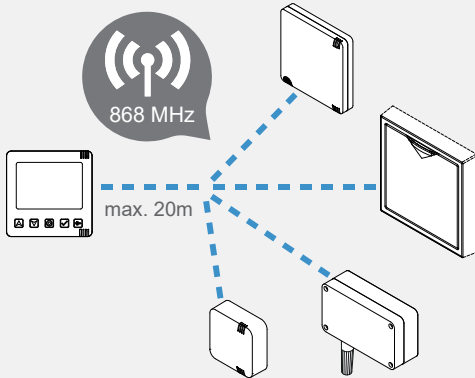


Figure 10: Electrical connection of the controller, inner cover and sensors via data cable communication

4 Preparing for installation

- Read the "Installation" and "Electrical connection" sections carefully before installation to avoid installation errors. The installation and connection of the entire ventilation system must be carried out by qualified and trained personnel.
- Please observe the following procedure before installation:
 Step 1: Disconnect all affected electrical components from the power supply.
 Step 2: Secure all affected electrical components against being switched on again.
 Step 3: Check that all electrical components concerned are voltage-free.
- Check the delivery for completeness and transport damage upon receipt using the delivery note. Report missing items immediately.

Installation location



NOTE: Unstable radio connection due to obstacles.

- Mount all devices in the ventilation system at a distance from the controller of no more than 20 m.

Mount the controller in a central location within the utilisation unit. All components of inVENTer Connect should be approximately equidistant from the controller. Pay attention to structural conditions that may limit the radio range (e.g. thick walls with steel beams, underfloor heating or solid concrete ceilings, etc.). The controller must be freely accessible at all times!

- Only install all ventilation system devices intended for indoors
 - on finished and flat interior walls.
 - in rooms which are free from aggressive or corrosive gases and extreme dust exposure.
- Only install the Outdoor humidity/temperature sensor
 - on completed exterior walls.
 - out of direct sunlight.
- The devices in the inVENTer Connect controller platform are mounted differently on interior or exterior walls:
 - Inner cover: using wall sleeves
 The installation of the wall sleeve is not included in this document, see: 5040 - 0029 (flush-mounted), 5040 - 0035 (surface-mounted), and the installation instructions for the respective ventilation device.
 - Controller, CO₂ sensor and switching contact: by means of the junction box
 - Indoor / Outdoor humidity/temperature sensors: directly on the wall

1.1 Junction boxes | Connect inner cover housing

Junction boxes

Two junction box variants are available for mounting the controller, CO₂ sensor and switching contact:

- Flush-mounted box
- Flush-mounted plasterboard box

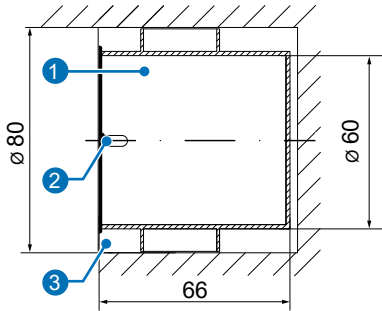
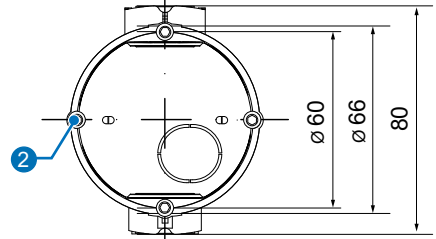


Figure 11: Flush-mounted box 60x66



- 1 Flush-mounted box 60x66
- 2 Base plate fixing points (2 x)
- 3 Wall opening

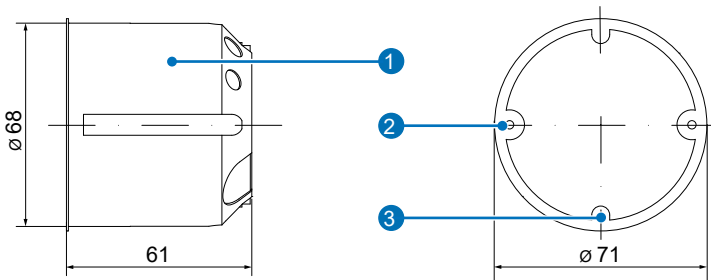


Figure 12: Flush-mounted plasterboard box 61x68

- 1 Flush-mounted plasterboard box 61x68
- 2 Plasterboard box fixing points (2 x)
- 3 Base plate fixing points (2 x)

Connect inner cover housing

For mounting the Connect inner cover, two housing variants are available to accommodate the holding plate including electronics:

- R-D160 housing (flush or surface-mounted)
- R-D200 housing (flush or surface-mounted)

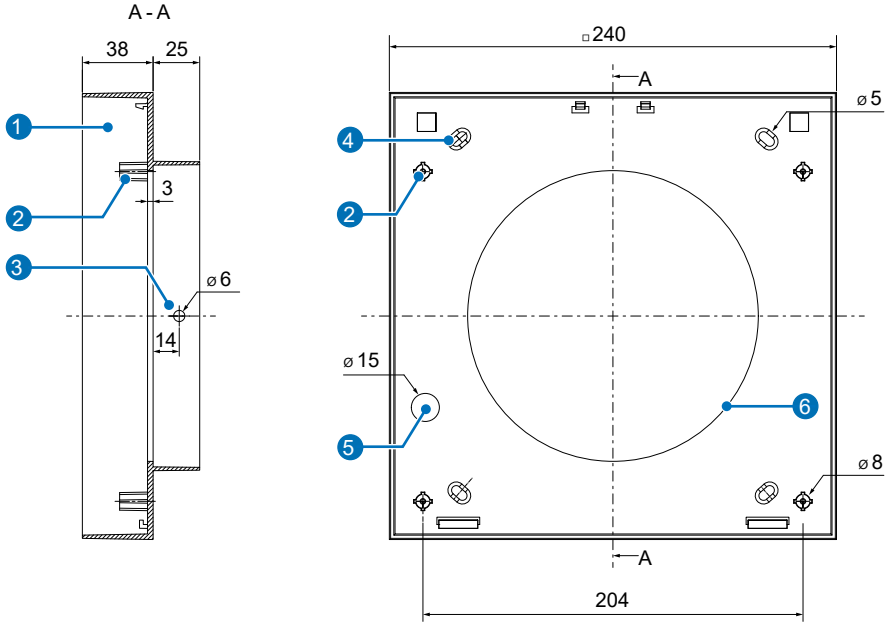


Figure 13: Connect inner cover housing

- | | |
|---|-----------------------------------|
| 1 Inner cover housing | 4 Interior wall fixing hole (4 x) |
| 2 Electronics cover fixing points (4 x) | 5 Cable gland |
| 3 Wall sleeve fixing hole (2 x) | 6 Opening for wall sleeve |

Installation dimensions

Designation	Width [mm]	Height [mm]	Depth [mm]	Ø [mm]
Junction boxes Mounting enclosure				
Wall opening for flush-mounted box 60x66	–	–	66	82
Wall opening for plasterboard wall box 68x61	–	–	61	68
Housing for Connect flush-mounted / wall-mounted inner cover	240	240	38	–
Devices				
Base plate of controller, CO ₂ sensor and switching contact	86	86	30	–

Table 5: Installation accessories and installation dimensions

4.1 Creating a wall opening



DANGER

The wall contains electrical cables.

Electric shock and injury due to live components (230V, 50Hz)!

- Before installing the wall openings, check for the presence of cables in the drilling area.




CAUTION

Falling masonry when fitting the wall opening.

Injury to persons and/or damage to property/flooring!

- Protect flooring against falling masonry.
- Remove objects from the immediate vicinity of the drilling area in the interior.

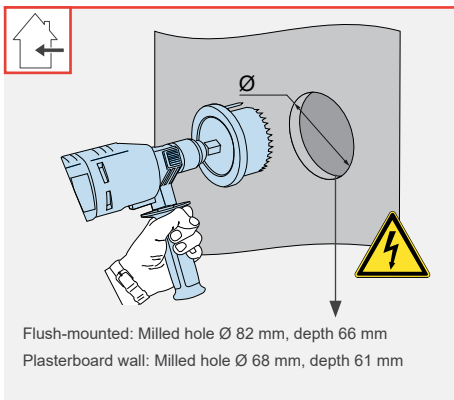


- The controller must be located in a central position in the dwelling unit.
(See  4: Installation location).
Ideally create the milling hole for the junction box for installing the controller at a height of 1.50 m from the floor or at the height of other existing light switches (accessibility for operation).
- Create the milling hole for the junction box for installing the CO₂ sensor or the switching contact no more than 20 m away from where the controller is installed.
Select the installation location of the CO₂ sensor in the air flow of the room at medium room height and install the wall opening there. The measured values at the installation site must correspond to those in the room in order to obtain accurate measurement results.
- The wall opening for mounting the Connect inner cover is also the mounting location of the ventilation device. This can be taken from the ventilation concept.

Creating wall openings for junction boxes (controller, CO₂ sensor, switching contact)





Milling drill



Requirements:

- The masonry must be dry and in a load-bearing condition.
- Plasterboard wall is completed.
- No lintels in the location of the planned milled holes.

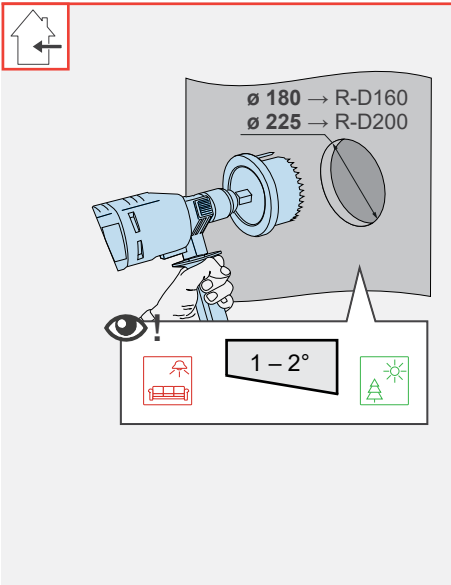
► Cut a milled hole in the interior wall for the components' junction box:

- Controller programming unit,
 - switching contact,
 - CO₂ sensor.
-  **!** Be aware of the maximum cable lengths ( 3: Electrical connection).

⇒ The wall opening for the box is created.

Creating a wall opening for the Connect inner cover

The wall opening for the Connect inner cover is also the wall opening in which the ventilation device is installed. The Connect inner cover replaces the inner cover of the respective ventilation device. The exact installation position can be found in the ventilation concept. Consult your planner before installation if you are at all uncertain. The installation of the other components of the ventilation device is not part of this documentation. This can be found in the separate installation instructions for the respective ventilation device.



Requirements:

- The masonry must be dry and in a load-bearing condition.
- No load-bearing elements in the position of the drill hole.



NOTE:

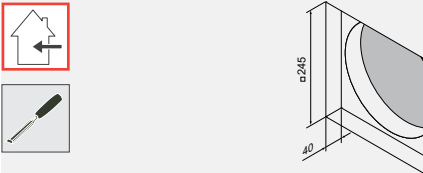
Accumulation of condensate in the wall sleeve leads to damage to the brickwork and exterior wall!

- Create the wall opening with a slope of 1° to 2° to the exterior wall.

- ▶ Make the wall opening (core hole) for the ventilation device for mounting the Connect inner cover (for position, see separate installation instructions for the respective ventilation device and concept).
- ▶ Drill a wall opening
 - Ø 225 mm for wall sleeve R-D200
 - Ø 180 mm for wall sleeve R-D160
 with a slope of 1° to 2° to the exterior wall.

⇒ The wall opening for the ventilation device has been created.

Additionally for installation of the ventilation device with flush-mounted Connect UP inner cover:



- ▶ Create an opening for the flush-mounted housing on the inside wall, centred on the core drill hole, for installing the inner cover.
Dimensions: 245 x 245 x 40 (W x H x D, mm)

Then mount the wall sleeve in the wall opening. The installation of the wall sleeve is not included in this document. It can be found in the installation instructions for your specific ventilation device.

1.1 Laying the cables



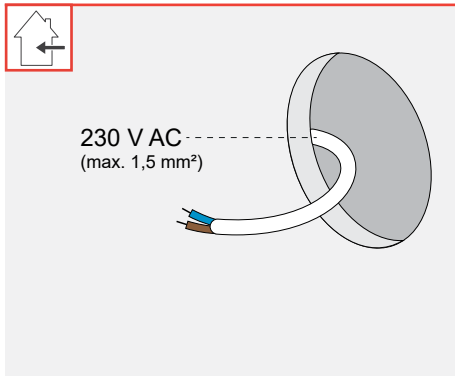
DANGER

Exposed electrical components. Electric shock and injury due to live components (230V, 50Hz)!

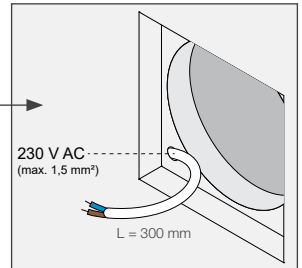
- Before working on electrical installations, disconnect all affected equipment from the power supply.
- Observe the requirements for protection class II when laying the power supply cable. Do not lay live cables.
- Lay the mains connection cables and data cables separately.
- Lead all components of the ventilation system to a circuit breaker.

Installation and connection must only be performed by qualified and trained personnel.

Laying the mains connection cable

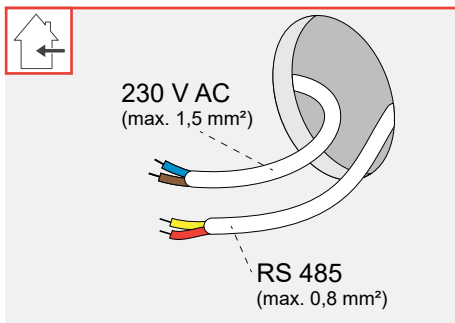


- ▶ Lay the 230 V AC mains connection cable to the wall opening for connecting the
 - controller,
 - CO₂ sensor,
 - switching contact,
 - inner cover.



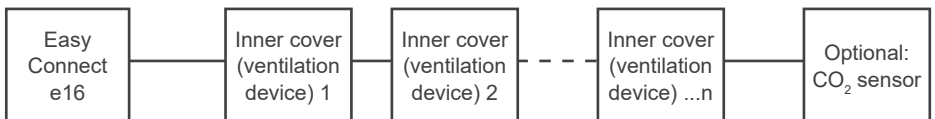
⇒ You have laid the mains connection cable.

Laying the data cable (only if the system devices communicate by cable)



- ▶ Lay the RS485 data cable between the components' wall openings:
 - The first device connected is **always** the controller.
 - The other system components are connected in series (see principle sketch below).

⇒ You have laid the RS485 data cable.

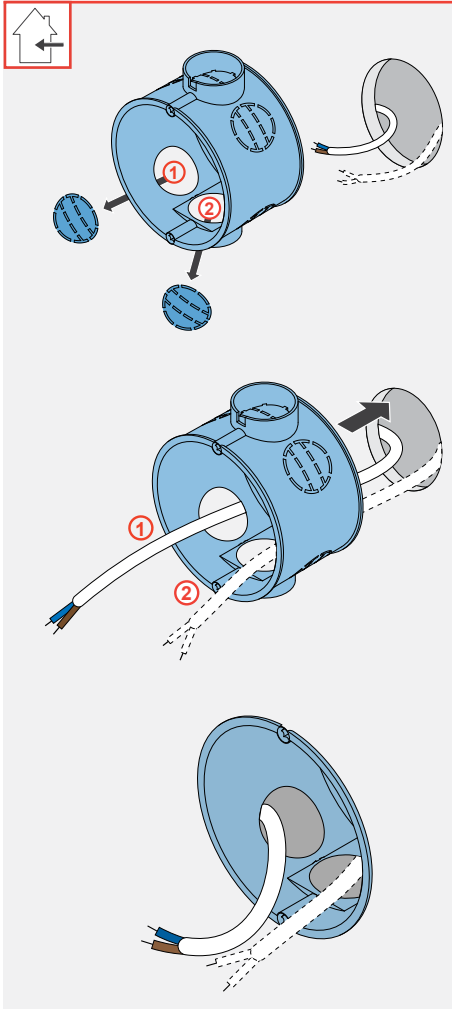


4.2 Junction box | Mounting the inner panel housing

Inserting the junction box

When installing the controller, CO₂ sensor or switching contact, the base plate of the respective device is mounted on a flush-mounted or flush-mounted plasterboard box. The mains connection cable is fed through the box and connected to this base plate.

If the connection to the ventilation device is to be made via RS485 data cable, this is also fed through the box and connected to the base plate of the controller and/or CO₂ sensor. Make sure that the box is sufficiently deep to accommodate the cables.



Requirements:

- The wall openings have been created.
 - The cables are laid.
- Break one cable gland each
- for the mains connection cable (1) and if the connection to devices of the ventilation system is made by cable
 - for the connecting cable to the device (2) out of the box.
- Lay
- the mains connection cable (1) and if the connection to devices of the ventilation system is made by cable
 - the connecting cable (RS485 data cable) to the device (2), or if a switching contact is connected
 - the connecting cable for e.g. a pressure monitor (2) through the break-outs.
- Insert the prepared box into the wall opening.
- Fill the space between the interior wall and the box with a suitable filler.
- ⇒ The junction box is inserted.

Installing the inner cover housing

The installation of the housing is described here on the basis of the flush-mounted housing. The surface-mounted housing is mounted on the inside wall in the same way.



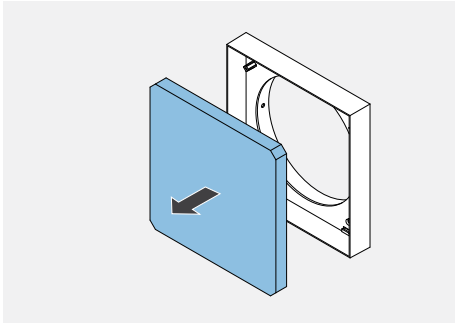
DANGER

Exposed electrical components. Electric shock and injury due to live components (230V, 50Hz)!

- Before working on electrical installations, disconnect all affected equipment from the power supply.
- Secure the system against being switched on again.

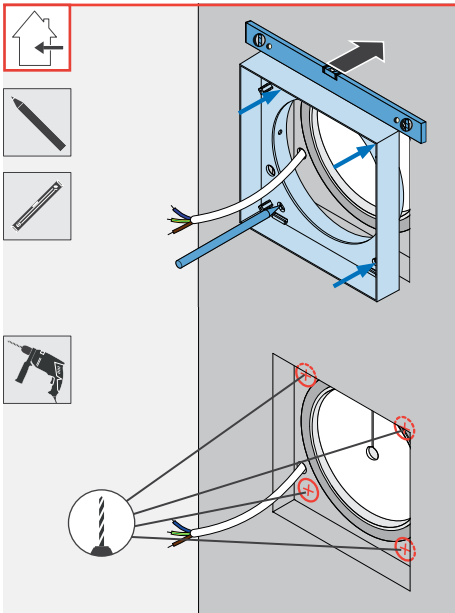


Spirit level, pencil, drill, cordless screwdriver, screws, dowels

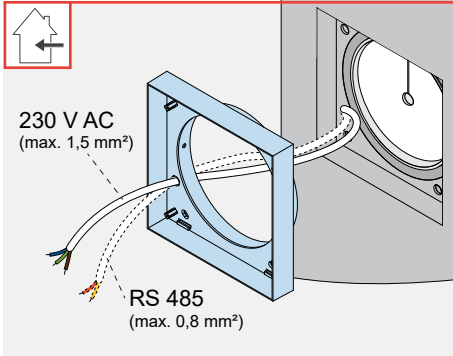


Requirements:

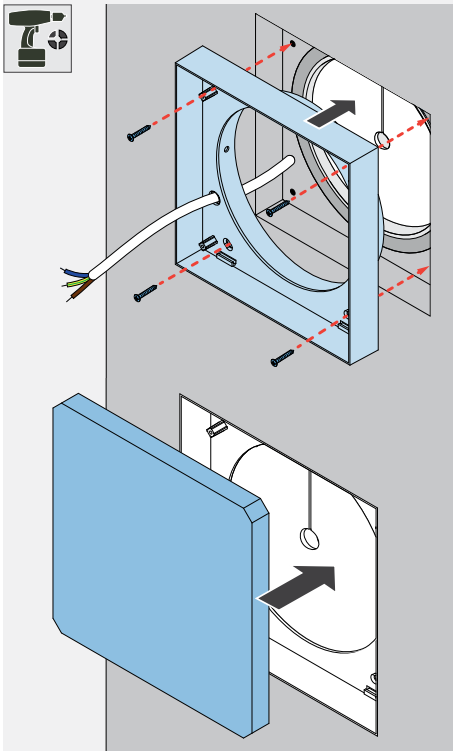
- The wall sleeve is installed.
 - The cables are laid.
- ▶ Remove the protective cover from the housing.



- ▶ Place the housing centred around the wall sleeve on the inside wall.
- 👁️ **!** The centring spigot of the flush-mounted box is inserted over the wall sleeve and lies flush against the stop.
- ▶ Align the housing using a spirit level.
- ▶ Mark the four corner drill holes.
- ▶ Drill the four holes with \varnothing 6 mm, min. 40 mm deep.
- ▶ Insert the dowels into the holes.



- ▶ Lay
 - the mains connection cable (230 V AC)
 - the RS485 data cable, if available from the rear through the cable gland of the housing.



- ▶ Screw the housing into the dowels using the screws.
 - 👁️! The centring spigot of the flush-mounted box is inserted over the wall sleeve and lies flush against the stop.



NOTE: If the housing is soiled, e.g. by plaster residue, it is no longer possible to attach the inner cover electronics!

- Seal the housing dust-tight during the entire construction process.

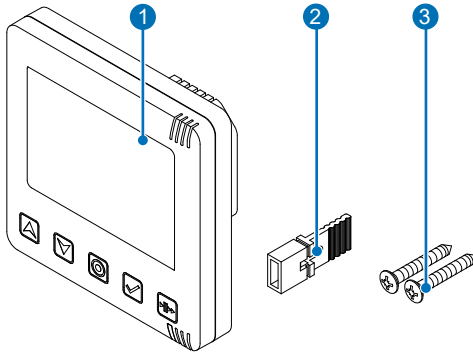
- ▶ Reinsert the plaster protector into the housing.

⇒ The Connect inner cover housing is installed.

5 Installing the devices

5.1 Easy Connect e16 controller

Scope of supply, dimensions and fixing elements



- 1 Controller, consisting of:
 - Programming unit
 - Base plate with power supply unit
- 2 Jumper (attached)
- 3 Fixing screws (2x)

Picture instructions (not shown here)

Figure 14: Scope of supply

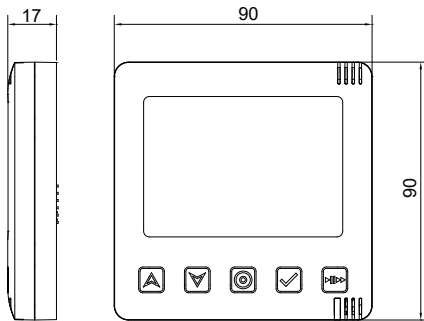
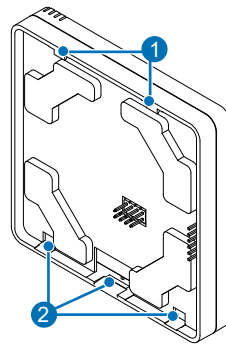


Figure 15: Dimensions of the programming unit



- 1 Hooks for hanging in the eyelets on the base plate
- 2 Cut-out for engaging the locking hooks of the base plate

Figure 16: Rear view of the programming unit

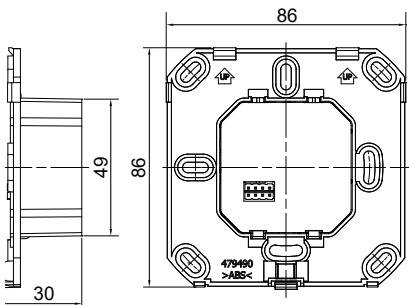
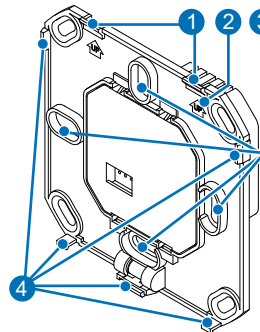


Figure 17: Dimensions of the base plate



- 1 Eyelets for hanging the programming unit
- 2 Flush-mounted installation marking (top)
- 3 Fixing points for box (4x)
- 4 Locking hooks for snapping into the programming unit

Figure 18: Front view of the base plate

Installation accessories and installation dimensions

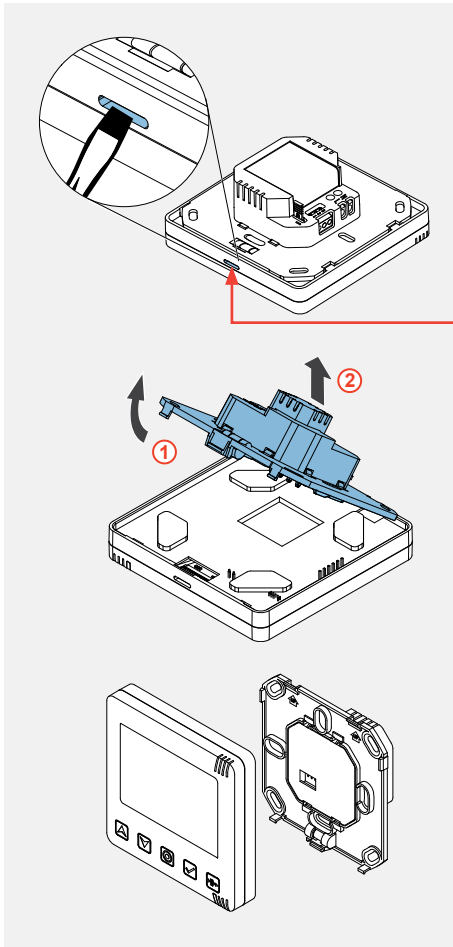
Designation	Width [mm]	Height [mm]	Depth [mm]
Easy Connect e16 controller			
Base plate	86	86	30
Programming unit	90	90	17

Disconnecting the base plate from the programming unit

First remove the base plate from the programming unit. To do this, unlock the snap-in connection.



Small slotted screwdriver



Requirements:

- The controller is unpacked and shows no signs of transport or other damage.

▶ Insert a small screwdriver into the narrow opening on the bottom of the controller.

▶ Carefully press the locking hook that can be reached in this way downwards.

▶ Swivel the base plate upwards (①) and unhook it from the upper eyelets (②).

⇒ The programming unit and base plate are separate.

Connecting cables

The mains connection cable and, if necessary, the RS485 data cable are connected to the rear of the base plate of the controller's programming unit.



DANGER

Exposed electrical components. Electric shock and injury due to live components (230V, 50Hz)!

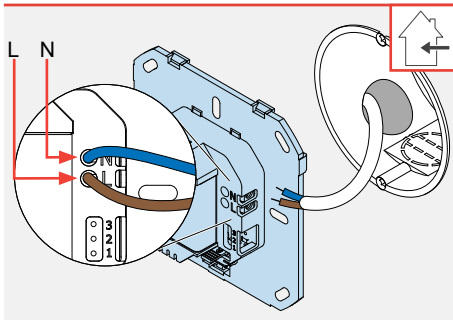
- Before working on electrical installations, disconnect all affected equipment from the power supply.
- Observe the requirements for protection class II when laying the power supply cable.
Do not lay live cables.
- Lay the mains connection cables and data cables separately.

Installation and connection must only be performed by qualified and trained personnel.



Stripping tool, small slotted screwdriver

Connecting the mains connection cable



Requirements:

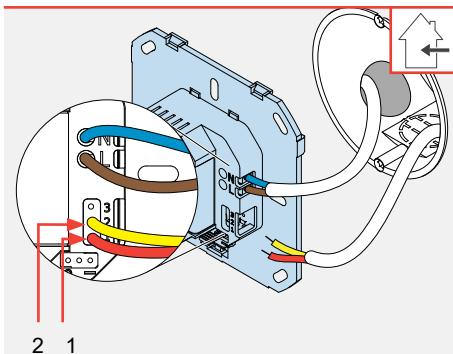
- The box is fitted.
- The cable has been laid.
- The power supply is disconnected.

- ▶ Strip approx. 8.5 mm of the mains connection cable with the stripping tool.
- ▶ Fix this cable (blue/brown) in the screw terminal on the programming unit's base plate:
 - Connect the phase conductor with cable L (brown).
 - Connect the neutral conductor with cable N (blue).

- ▶ Push the mains connection cable into the box.

⇒ The mains connection cable is installed.

Connecting the data cable (only if the system devices communicate via cable)



- ▶ Strip approx. 8.5 mm of the RS485 data cable with the stripping tool.

- ▶ Secure the RS485 data cable (red/yellow) into the screw terminal on the programming unit's base plate:
 - Signal cable A (red) to "1".
 - Signal cable B (yellow) to "2".

- ▶ Push the RS485 data cable into the box.

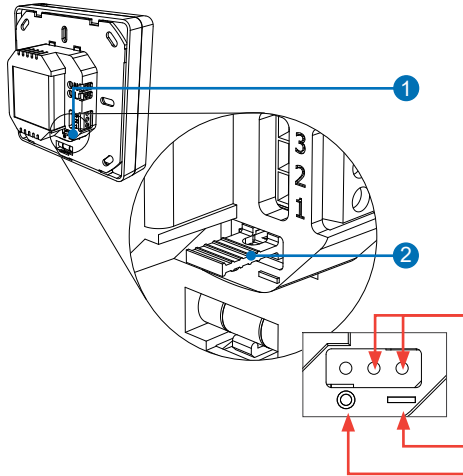
⇒ The RS485 data cable is installed.

Only when using an RS485 data cable

If an RS485 data cable is used for communication between the controller and the ventilation devices and/or CO₂ sensor, the jumpers must be set **for the first and last devices in the line** as shown below.

Position of the pin connectors for the jumper

Easy Connect e16 controller and CS2-Connect CO₂ sensor jumpers



- 1 Slot for the jumper
- 2 Jumper connected

The 3-pin connector for the jumper is located on the rear of the programming unit. On delivery, the jumper is plugged into the first two pins from the left (RS485 deactivated).

Use the first two pins from the right to activate the RS485 data cable connection.

The marking on the housing also serves as a guide:

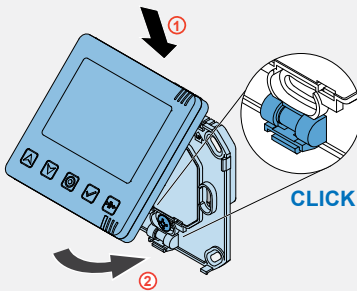
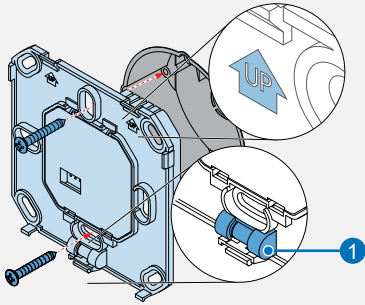
- I = RS485 activated
- O = RS485 deactivated

Installing the programming unit

The programming unit's base plate is installed on a flush-mounted or plasterboard wall box. The programming unit is then hooked into the installed base plate using a snap-in connection. The mains connection and RS485 data cables are located in the box and are distributed in the box.



Phillips screwdriver



Requirements:

- The box is fitted.
- The mains connection cables and, if necessary, the RS485 data cable are connected to the base plate.

- ▶ Turn the connected base plate by 180°.
- ▶ Align the base plate horizontally in front of the box using the built-in spirit level (1).
 - 👁️ ! The installation marking, arrow with lettering UP (top), is directed upwards.
- ▶ Screw the programming unit's base plate to the box using fixing screws.

⇒ The base plate is installed.

- ▶ Hold the programming unit at a slight angle and hook the upper hooks of the programming unit into the eyelets on the base plate (1).
- ▶ Swivel the programming unit towards the base plate and then press it onto the base plate (2).

⇒ The programming unit should snap audibly into place.

⇒ The controller is installed.

1.1 Connect inner cover

Scope of supply, dimensions and fixing elements

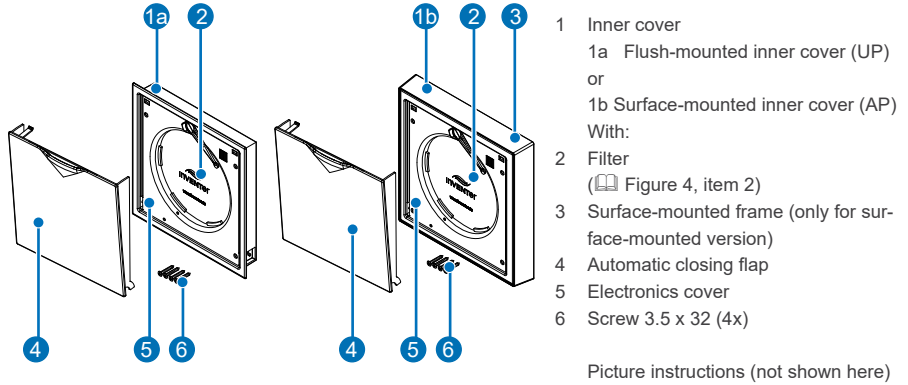
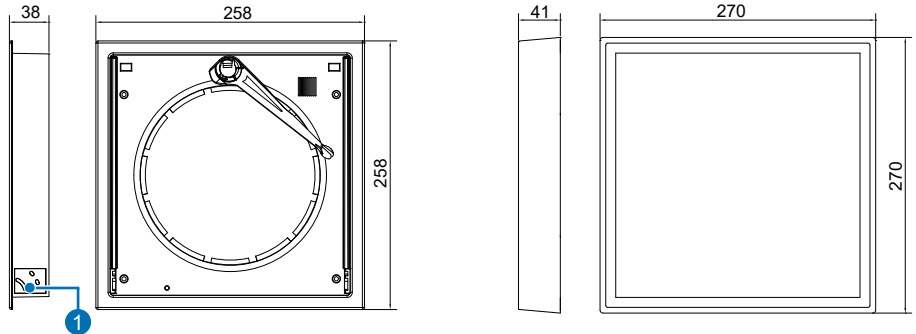


Figure 19: Scope of supply

The housing (Figure 4, item 6) is supplied separately and installed depending on the ventilation device.



1 Guide for hooking in the closing flap

Figure 21: Dimensions of the surface-mounted frame

Figure 20: Dimensions of the electronics cover

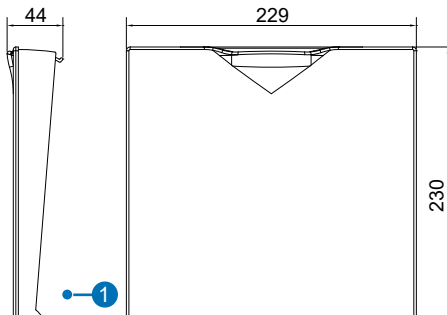


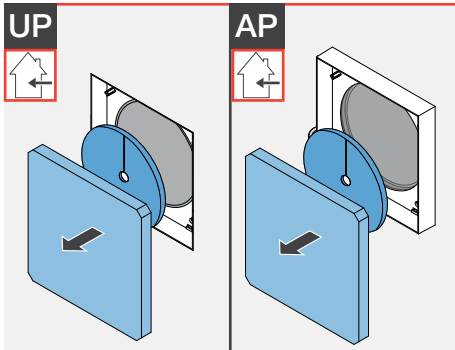
Figure 22: Dimensions of the closing flap

1 Lug for hooking into the guide of the electronics cover

In order to be able to mount the inner cover, the wall sleeve and housing must be installed:

- Wall sleeve: The installation of the corresponding wall sleeve is not part of this documentation. It can be found in the installation instructions for the respective ventilation device.
- Inner cover housing: See Section 4.4 of this documentation.

All work steps are identical for the flush-mounted (UP) and surface-mounted (AP) variants. Unless otherwise described, the surface-mounted variant is shown.

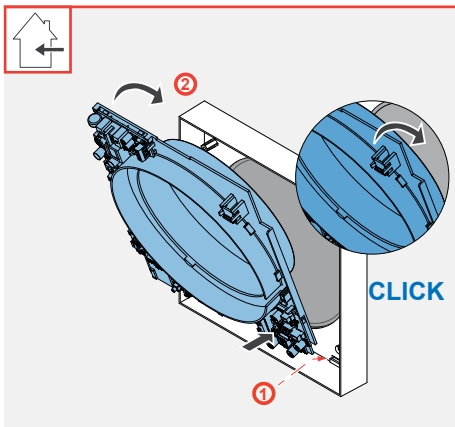


Requirements:

- The wall sleeve and housing are installed and provided with protective covers.
 - Connect R-D160 UP/AP inner cover housing 2003-0245
 - Connect R-D200 UP/AP inner cover housing 2003-0246
- ▶ Remove the protective cover from the housing and from the wall sleeve.

⇒ Access to the installation site is clear.

Snapping the holding plate with the electronics into the housing



Requirements:

- The housing and wall sleeve are freely accessible.



NOTE: Malfunction of the ventilation device due to damage to the electronics.

- Do not damage the electronic components when inserting the holding plate!

- ▶ Hold the holding plate at a slight angle and slide it downwards into the guide provided in the housing (①).
- ▶ Swivel the holding plate towards the housing and then gently press it into it (②).

⇒ The holding plate should snap audibly into place.

Connecting the mains cable and fan cable

The mains connection cable, fan cable (fan BUS connecting cable, 3-wire) and the motor cable for the locking arm are connected to the holding plate of the inner cover.



DANGER

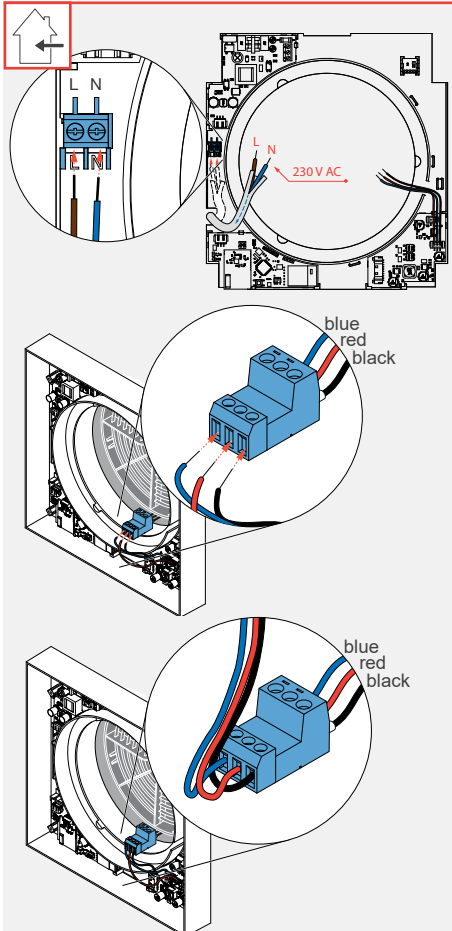
Exposed electrical components. Electric shock and injury due to live components (230V, 50Hz)!

- Before working on electrical installations, disconnect all affected equipment from the power supply.
- Observe the requirements for protection class II when laying the power supply cable.
Do not lay live cables.
- Lay the mains connection cables and data cables separately.

Installation and connection must only be performed by qualified and trained personnel.



Stripping tool, small slotted screwdriver



Requirements:

- The holding plate is mounted in the housing.
- ▶ Shorten the mains connection cable to the required length and strip approx. 7 mm of insulation with the stripping tool.
- ▶ Fix this cable (blue/brown) in the screw terminal on the electronics of the holding plate:
 - Connect the phase conductor with cable L (brown).
 - Connect the neutral conductor with cable N (blue).

⇒ The mains connection cable is installed.

Requirements:

- A thermal accumulator insert of the inVENTer ventilation system is mounted in the wall sleeve according to the corresponding installation instructions.
- ▶ Connect the cables (blue, red, black) to the plug-in connector of the ventilation device.



NOTE: Fan cable connection.

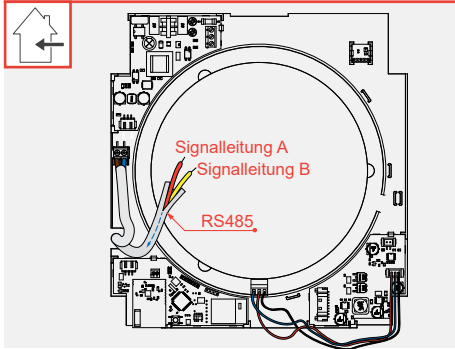
- When connecting, always make sure that the cable with the colour coding corresponding to the assignment is inserted into the corresponding socket!

⇒ The fan cable is installed.

Connecting the data cable (only for communication between system devices by cable)

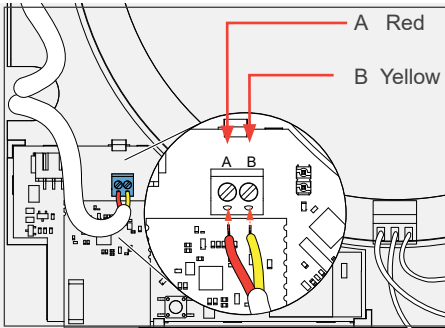


Stripping tool, small slotted screwdriver



Requirements:

- An RS485 data cable has been laid.
 - The holding plate is mounted in the housing.
 - The mains cable and fan cable are connected.
- ▶ Shorten the RS485 data cable to the required length and strip approx. 7 mm of insulation with the stripping tool.

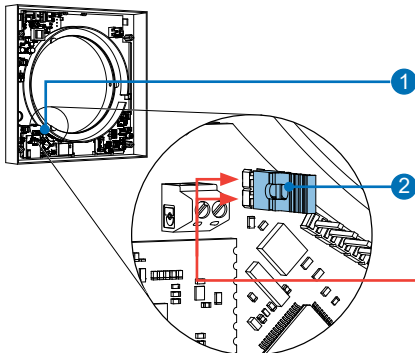


- ▶ Connect this cable (red/yellow) to the holding plate:
- Signal cable A (red) to "A".
 - Signal cable B (yellow) to "B"

⇒ The RS485 data cable is installed.

If an RS485 data cable is used for communication between the controller and the ventilation devices and/or CO₂ sensor, the jumpers for the **first (Easy Connect e16) and last devices in the line** must be set as shown below.

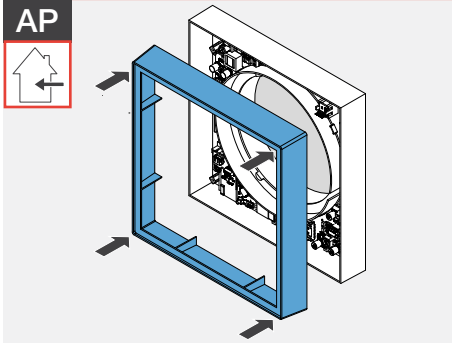
Position of jumper on the Connect inner cover



- 1 Slot for the jumper
- 2 Jumper connected

The 2-pin connector for the jumper is located on the holding plate of the inner cover. On delivery, the jumper is only plugged into one pin (deactivated) or is included as an accessory. Use the two pins to activate the connection with the RS485 data cable.

Mounting the frame



This step only needs to be carried out for the surface-mounted version. The frame can be installed before or after the cable connection.

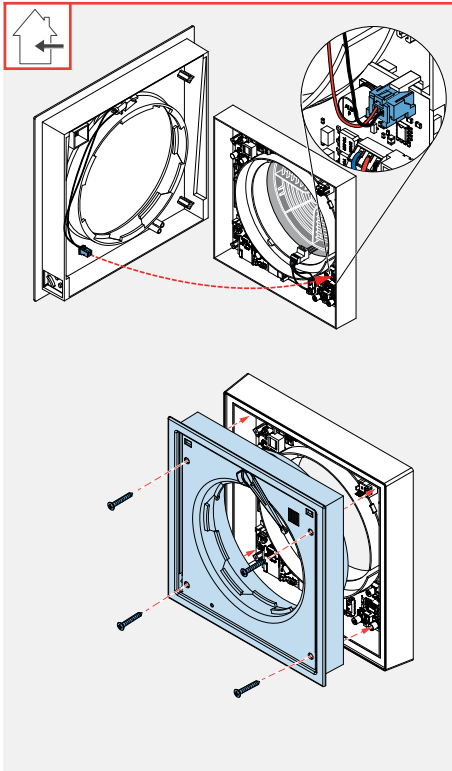
► Slide the frame onto the housing.

⇒ The frame for the surface-mounted version is installed.

Connecting the motor for the locking arm and fitting the electronics cover



Phillips screwdriver



The motor for the locking arm is located on the back of the electronics cover and is connected to the holding plate before the electronics cover is installed.

► Insert the connector of the motor cable into the socket provided on the holding plate.

⇒ The motor cable is connected.



NOTE: Cable break on the mounted motor cable.

- Push the electronics cover carefully into the housing so that the plug connections do not become loose. Do not pinch the mounted motor cable and the fan connection cable!

► Slide the electronics cover into the housing.

► Fasten the electronics cover to the housing with the 4 screws from the accessory pack.

⇒ The electronics cover is installed.

Inserting the filter and mounting the automatic closing flap

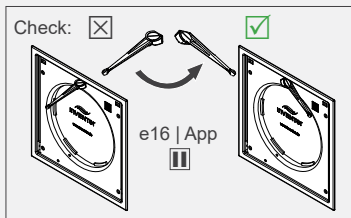


NOTE: Locking arm in wrong position. Breakage of the locking arm.

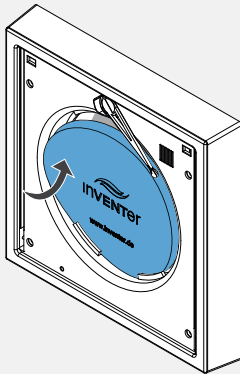
Before the closing flap is fitted, the locking arm must be swivelled to the right (delivery state). This is done exclusively via the controller or the app.


To do this, **switch all devices to pause** (see operating instructions for the Connect controller platform: Chapter 4.2 - Pairing System Components).

Never swivel the locking arm by hand!

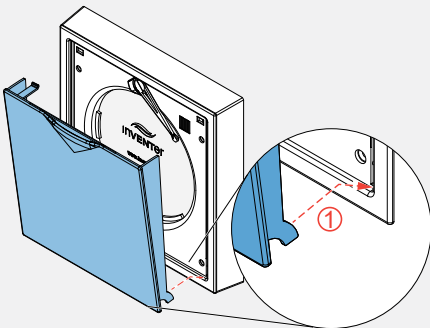


- ▶ Check the position of the locking arm: it must be swivelled to the right.
If necessary, correct the position on the controller/ via the “inVENTer Mobile” app (see operating instructions for the Connect controller platform).

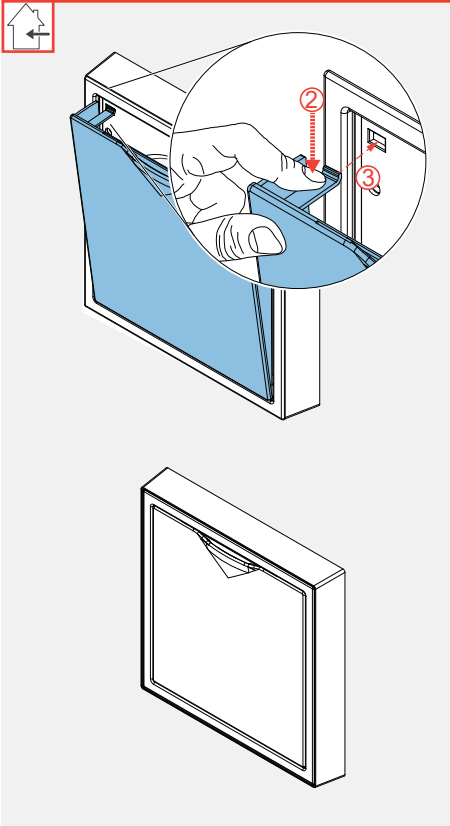


- ▶ Push the filter (standard dust filter, alternatively pollen or activated carbon filter) behind the provided guides (filter holder) into the electronics cover and insert it in this way.
 **!** Position the filter firmly between the filter holders.

⇒ The filter is installed.



- ▶ Hook the lugs of the closing flap into the electronics cover at the bottom (①).

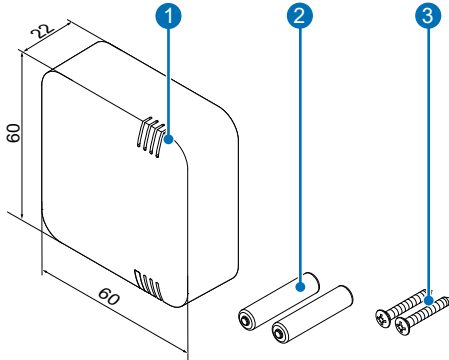


- ▶ Press the spring clip at the top slightly downwards (2).
- ▶ Guide the closing flap to the top of the electronics cover (3), pushing the slightly depressed spring clip into the opening provided in the electronics cover. The spring clip engages and the closing flap is pulled and held by the installed magnets on the electronics cover.

- ⇒ Magnets hold the closing flap in the closed position.
- ⇒ The engaged spring clip prevents possible falling off when opening/closing the closing flap.
- ⇒ The closing flap is installed.

1.1 FTS19-Connect Indoor humidity/temperature sensor

Scope of supply, dimensions and fixing elements



- 1 Indoor humidity/temperature sensor, comprising:
 - Housing with sensor electronics
 - Base plate
- 2 Battery (2 x AAA)
- 3 Fixing screws (2x)

Picture instructions (not shown here)

Figure 23: Scope of supply

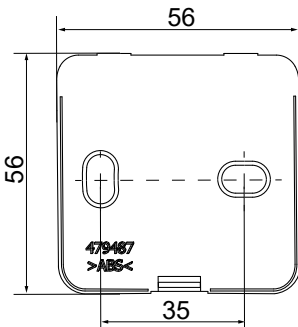
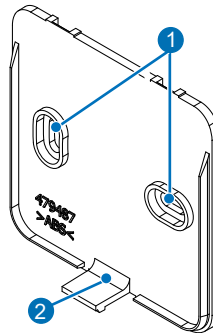


Figure 24: Base plate



- 1 Hole for wall mounting
- 2 Hook to snap into the housing

Figure 25: Base plate fixing elements

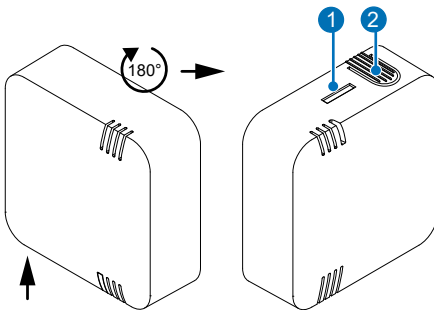


Figure 26: FTS19-Connect Indoor humidity/temperature sensor control element



TIP:

The controls are located on the underside of the Indoor humidity/temperature sensor.

- 1 Opening for snap-in connection
- 2 Button

Installation accessories and installation dimensions

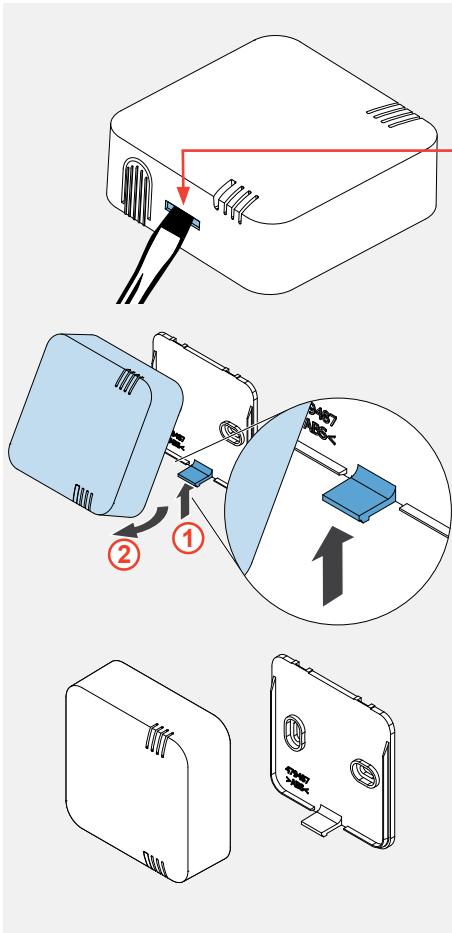
Designation	Width [mm]	Height [mm]	Depth [mm]
FTS19-Connect Indoor humidity/temperature sensor			
Base plate	56	56	2
Housing	60	60	22

Separating the base plate from the housing

First separate the base plate from the housing. To do this, unlock the snap-in connection.



Small slotted screwdriver



Requirements:

- The Indoor humidity/temperature sensor is unpacked and shows no signs of transport or other damage.
- ▶ Insert a small screwdriver into the narrow opening on the underside of the Indoor humidity/temperature controller.
- ▶ Carefully press the locking hook that can be reached in this way upwards (1) until it disengages from its anchorage.
- ▶ Swivel the housing away from the base plate (2) and lift the upper hooks of the housing out of the eyelets on the base plate.
- ▶ Remove the housing from the base plate.
- ⇒ The housing and base plate are separate.

Installing the FTS19-Connect Indoor Humidity/Temperature Sensor

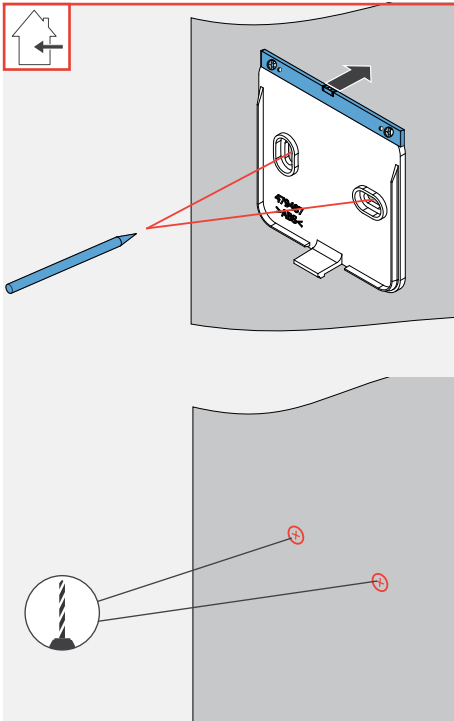
The base plate of the Indoor humidity/temperature sensor is mounted directly on the wall. The batteries are then inserted into the housing and the housing is hooked into the installed base plate by means of a snap-in connection.

Select the installation location of the Indoor humidity/temperature sensor at medium room height. The measured values at the installation site must correspond to those of the room in order to obtain accurate measurement results. The sensor must not be exposed to direct sunlight.

Ensure that the installation location of the Indoor humidity/temperature sensor is no more than 20 m from the controller.



Spirit level, pencil, drill with 6 mm drill bit, dowels (2x)



Requirements:

- The masonry must be dry and in a load-bearing condition.
 - Plasterboard wall is completed.
 - No lintels in the location of the planned drill holes.
- ▶ Hold the base plate at the installation location and level it with a spirit level.
- ▶ Mark the drill holes.

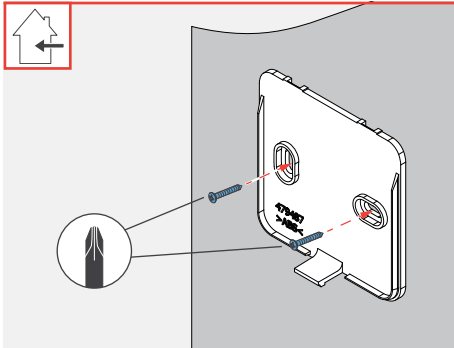
⇒ The drilling template is prepared.

- ▶ Drill the dowel holes at the markings.
- ▶ Insert the dowels.

⇒ The wall is prepared for screwing on the base plate.



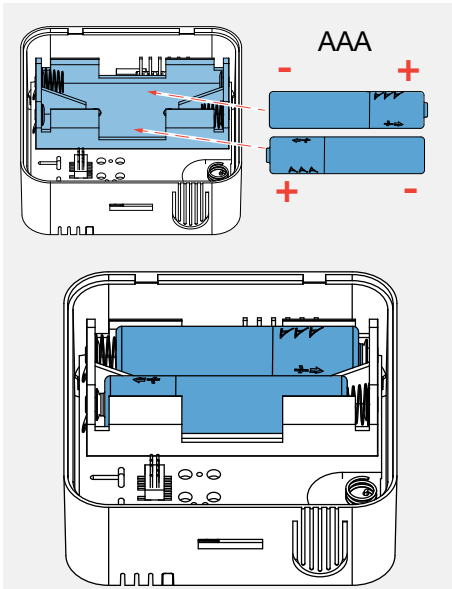
Cordless screwdriver with Phillips head or Phillips screwdriver, screws (2x) from the accessory pack



▶ Hold the holes in the base plate so that they align with the screw holes.

▶ Screw the screws into the screw holes.

⇒ The base plate is installed on the wall.

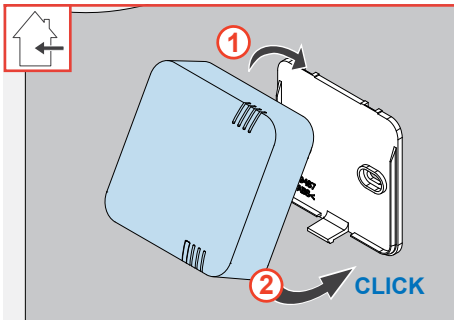


NOTE: Incorrect polarity of the batteries.

• Insert the batteries according to the polarity marked in the housing.

▶ Insert the batteries into the battery compartment in the housing.

⇒ The batteries are inserted and the housing is ready for mounting on the base plate.



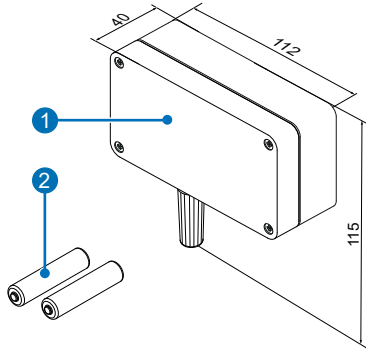
▶ Slide the housing from above onto the base plate and hook the hooks of the housing back into the eyelets of the base plate.

▶ At the bottom, slide the housing over the locking hook and press it gently onto the base plate until it clicks into place.

⇒ The Indoor humidity/temperature sensor is installed.

1.1 FTS19-Connect Outdoor humidity/temperature sensor

Scope of supply, dimensions and fixing elements



- 1 Outdoor humidity/temperature sensor, comprising:
 - Housing with sensor electronics
 - Cover
- 2 Battery (2 x AAA)

Picture instructions (not shown here)

Figure 27: Scope of supply

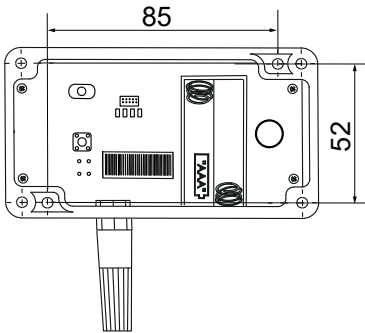
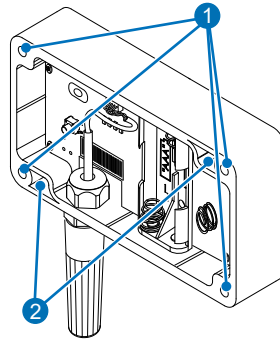


Figure 29: Dimensions of the installation holes



- 1 Threaded hole for fixing the cover
- 2 Hole for wall mounting

Figure 28: Holes in the housing

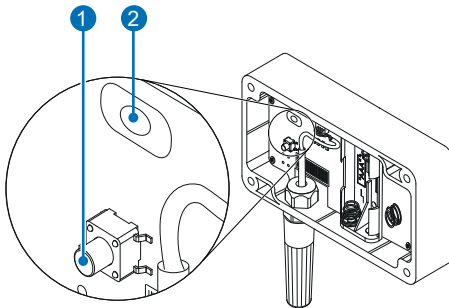


Figure 30: Controls in the housing



TIP:

The controls are located in housing of the Outdoor humidity/temperature sensor.

- 1 Button
- 2 LED (multi-coloured)

Installation accessories and installation dimensions

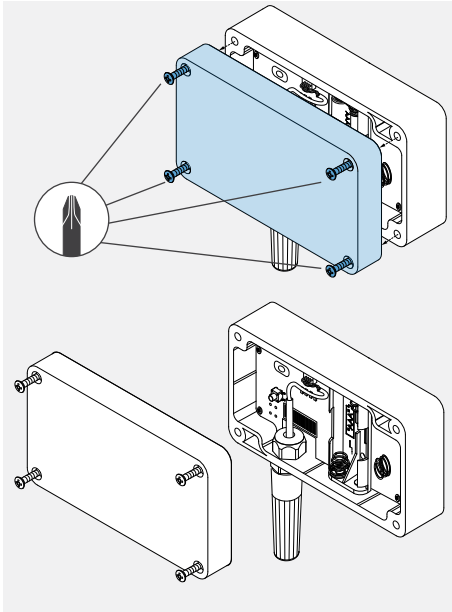
Designation	Width [mm]	Height [mm]	Depth [mm]
FTS19-Connect Outdoor humidity/temperature sensor			
Housing	112	115	25
Cover	112	65	15

Removing the cover from the housing

The cover must first be disconnected from the housing. To do this, loosen the four fixing screws.



Phillips screwdriver



Requirements:

- The Outdoor humidity/temperature sensor is unpacked and shows no signs of transport or other damage.
- ▶ Use a screwdriver to loosen the 4 fixing screws on the housing of the Outdoor humidity/temperature sensor.
- ▶ Remove the cover from the housing.

⇒ The cover and housing are separate.

Installing the Outdoor humidity/temperature sensor

The housing of the Outdoor humidity/temperature sensor is mounted directly on the wall. The batteries are then inserted into the housing and the cover is screwed back on to the housing.



NOTE

Faulty readings due to direct sunlight.

Direct sunlight can damage the electronics and lead to incorrect measured values. Select the Outdoor humidity/temperature sensor installation location so that it is not exposed to direct sunlight.

Incorrect measured values can impair the system function, e.g. by reacting too strongly to heat sources.

It is recommended to install it in a shady place in a northern orientation.

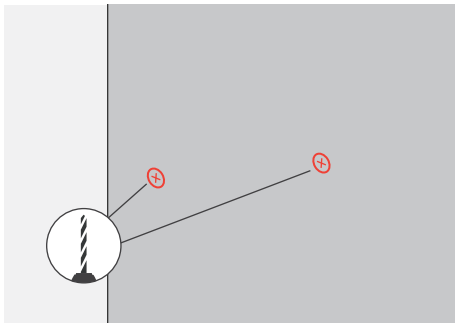
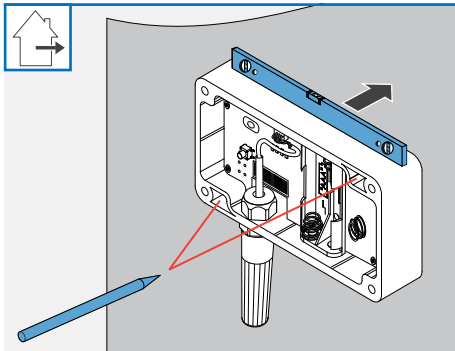
During installation, chimneys, canopies, windows and doors must be avoided in addition to heat sources. Do not install the outdoor sensor in the immediate vicinity of the ventilation devices.

To change the battery, the outdoor sensor must be easily accessible even after installation.

Ensure that the installation location of the Outdoor humidity/temperature sensor is no more than 20 m from the controller.



Spirit level, pencil, drill with 6 mm drill bit, dowels (2x)



Requirements:

- The masonry must be dry and in a load-bearing condition.
- No lintels in the location of the planned drill holes.

▶ Hold the housing at the installation location and level it with a spirit level.

▶ Mark the drill holes.

⇒ The drilling template is prepared.

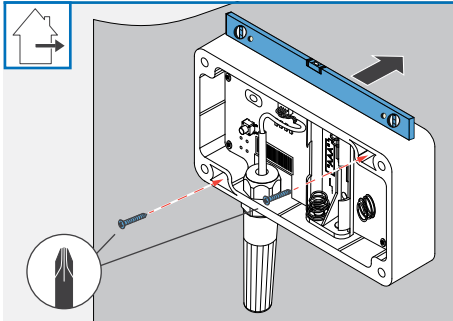
▶ Drill the dowel holes at the markings.

▶ Insert the dowels.

⇒ The wall is prepared for screwing on the housing.

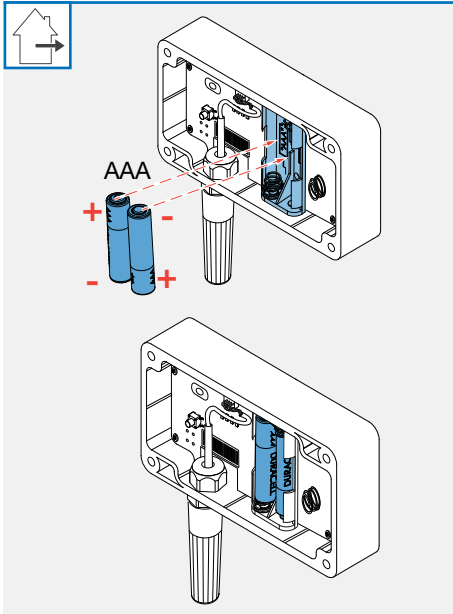


Cordless screwdriver with Phillips head or Phillips screwdriver, screws (2x) from the accessory pack



- ▶ Hold the holes in of the housing so that they align with the screw holes.
Check the horizontal alignment with the spirit level.
- ▶ Screw the screws into the screw holes.

⇒ The housing is mounted on the wall.



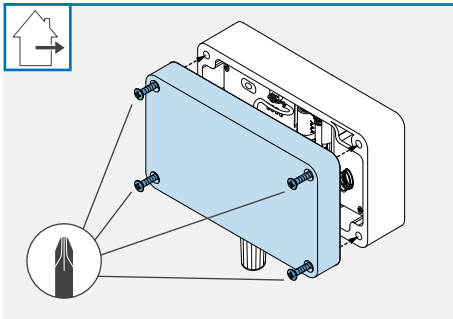
- ▶ Insert the batteries into the battery compartment in the housing.



NOTE: Incorrect polarity of the batteries.

- Insert the batteries according to the polarity marked in the housing.

⇒ Once the batteries are inserted, the housing can be closed again with the cover

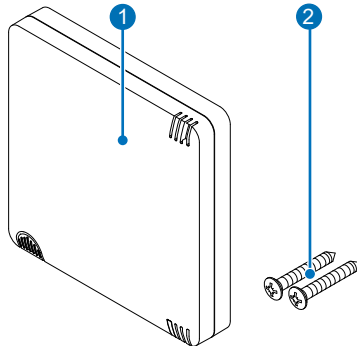


- ▶ Slide the cover onto the housing.
- ▶ Screw the 4 screws back in to fix the cover to the housing.

⇒ The Outdoor humidity/temperature sensor is installed.

1.1 CS2-Connect CO₂ sensor (incl. humidity/temperature sensor)

Scope of supply, dimensions and fixing elements



- 1 CO₂ sensor comprising:
 - Housing
 - Base plate
- 2 Fixing screws (2x)

Picture instructions (not shown here)

Figure 31: Scope of supply

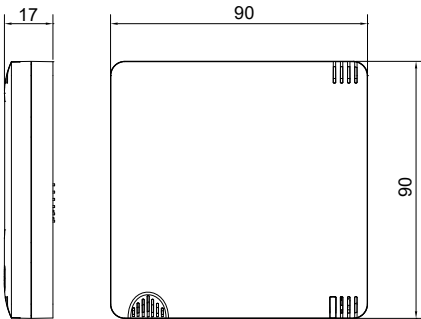
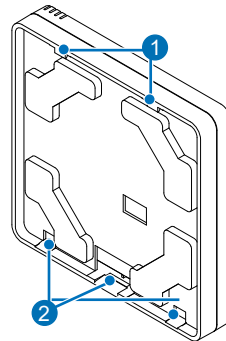


Figure 32: Dimensions of the housing



- 1 Hooks for hanging in the eyelets on the base plate
- 2 Cut-out for engaging the locking hooks of the base plate

Figure 33: Rear view of the housing

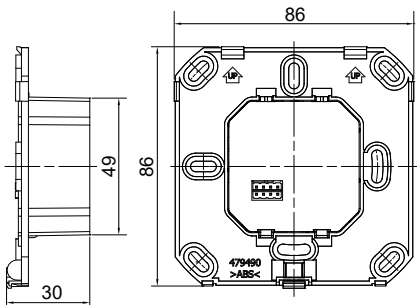
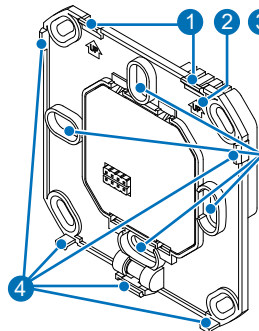


Figure 34: Dimensions of the base plate



- 1 Eyelets for hanging the CO₂ sensor
- 2 Installation marking up arrow
- 3 Fixing points for box (4x)
- 4 Locking hooks for snapping into the CO₂ sensor

Figure 35: Front view of the base plate

Installation accessories and installation dimensions

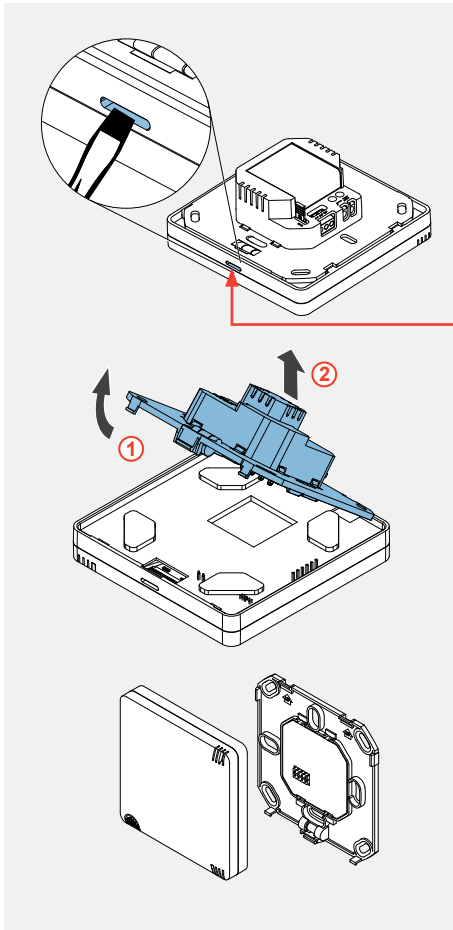
Designation	Width [mm]	Height [mm]	Depth [mm]
CS2-Connect CO ₂ sensor			
Base plate	86	86	30
Housing	90	90	17

Separating the base plate from the housing

First separate the base plate from the housing. To do this, unlock the snap-in connection.



Small slotted screwdriver



Requirements:

- The CO₂ sensor is unpacked and shows no signs of transport or other damage.
- ▶ Insert a small screwdriver into the narrow opening on the underside of the CO₂ sensor.
 - ▶ Carefully press the locking hook that can be reached in this way downwards.
 - ▶ Swivel the base plate upwards (①) and unhook it from the upper eyelets (②)

⇒ The housing and base plate are separate.

Connecting the mains connection cable

The mains connection cable is connected to the back of the CO₂ sensor's base plate.



DANGER

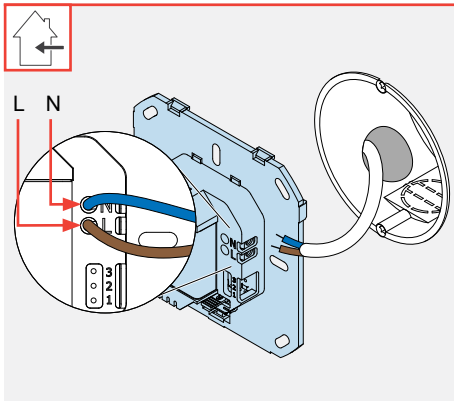
Exposed electrical components. Electric shock and injury due to live components (230V, 50Hz)!

- Before working on electrical installations, disconnect all affected equipment from the power supply.
- Observe the requirements for protection class II when laying the power supply cable. Do not lay live cables.
- Lay the mains connection cables and data cables separately.

Installation and connection must only be performed by qualified and trained personnel.



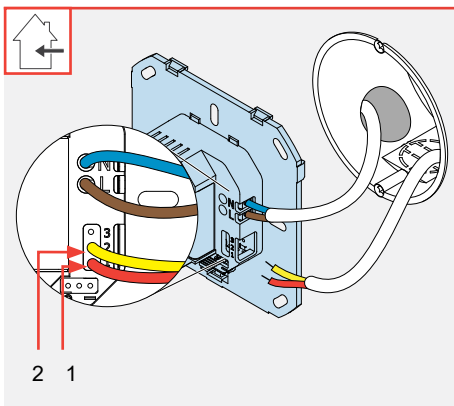
Stripping tool, small slotted screwdriver



Requirements:

- The box is fitted.
 - The power supply is disconnected.
- ▶ Strip approx. 8.5 mm of the mains connection cable with the stripping tool.
- ▶ Fix this cable (blue/brown) in the screw terminal on the programming unit's base plate:
- Connect the phase conductor with cable L (brown).
 - Connect the neutral conductor with cable N (blue).
- ▶ Push the mains connection cable into the box.
- ⇒ The mains connection cable is installed.

Connecting the data cable (only if the system devices communicate via cable)



Requirements:

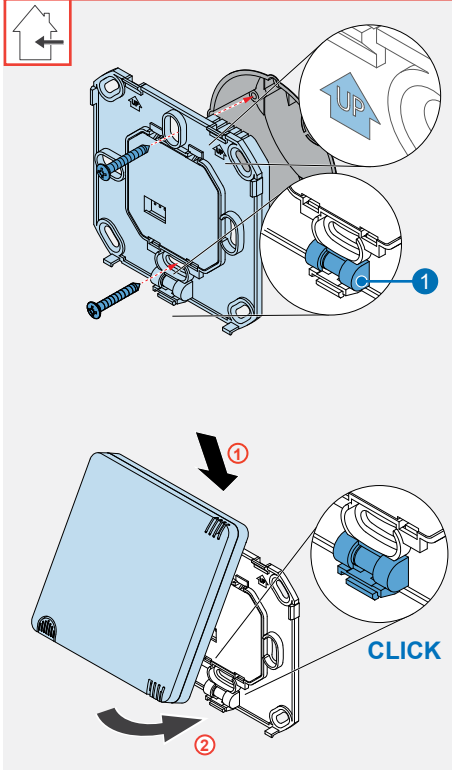
- An RS485 data cable has been laid.
 - The mains connection cable is connected.
- ▶ Strip approx. 8.5 mm of the RS485 data cable with the stripping tool.
- ▶ Secure the RS485 data cable (red/yellow) into the screw terminal on the programming unit's base plate:
- Signal cable A (red) to "1".
 - Signal cable B (yellow) to "2".
- ▶ Push the RS485 data cable into the box.
- ⇒ The RS485 data cable is installed.

Mounting the base plate and housing

The CO₂ sensor's base plate is installed on a flush-mounted or plasterboard wall box. The mains connection cable is located in the box. The installed base plate is then hung in using a snap-in connection.



Phillips screwdriver

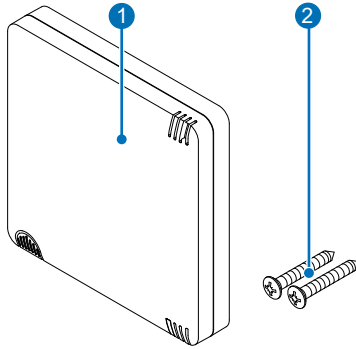


Requirements:

- The mains connection cable is connected to the base plate.
- ▶ Turn the connected base plate by 180°.
 - ▶ Align the base plate horizontally in front of the box using the built-in spirit level (1).
 - 👁️! The installation marking, arrow with lettering UP (top), is directed upwards.
 - ▶ Screw the CO₂ sensor's base plate to the box using fixing screws.
 - ⇒ The base plate is installed.
 - ▶ Hold the housing at a slight angle and hook the upper hooks of the housing into the eyelets on the base plate (1).
 - ▶ Swivel the housing towards the base plate and then gently press it onto it (2).
 - ⇒ The housing clicks audibly into place.
 - ⇒ The CO₂ sensor is installed.

1.1 SK19-Connect switching contact

Scope of supply, dimensions and fixing elements



- 1 Switching contact comprising:
 - Housing
 - Base plate
- 2 Fixing screws (2x)

Picture instructions (not shown here)

Figure 36: Scope of supply

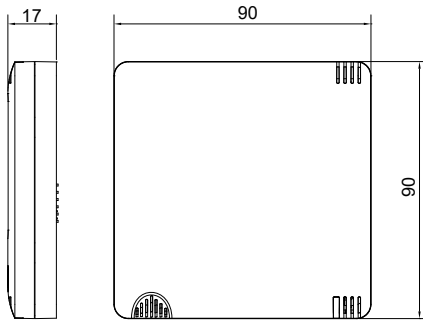
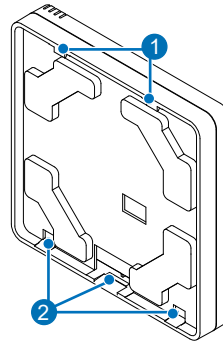


Figure 37: Dimensions of the housing



- 1 Hooks for hanging in the eyelets on the base plate
- 2 Cut-out for engaging the locking hooks of the base plate

Figure 38: Rear view of the housing

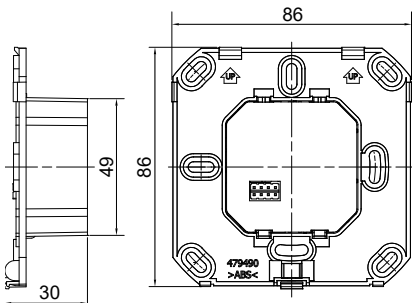
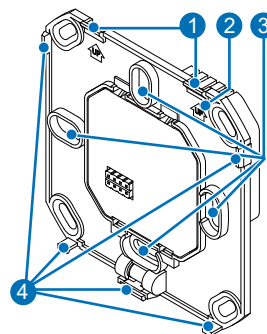


Figure 39: Dimensions of the base plate



- 1 Eyelets for hanging the switching contact
- 2 Installation marking up arrow
- 3 Fixing points for box (4x)
- 4 Snap-in hooks for snapping into the switching contact

Figure 40: Front view of the base plate

Installation accessories and installation dimensions

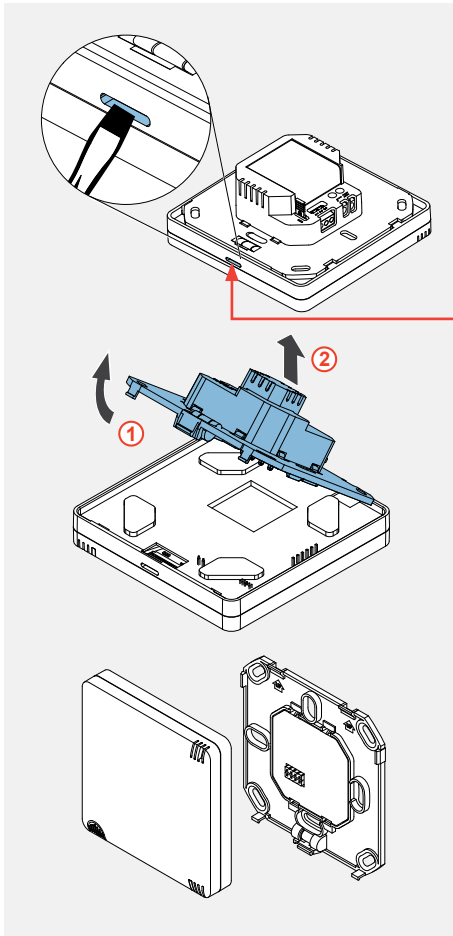
Designation	Width [mm]	Height [mm]	Depth [mm]
SK19-Connect switching contact			
Base plate	86	86	30
Housing	90	90	17

Separating the base plate from the housing

First separate the base plate from the housing. To do this, unlock the snap-in connection.



Small slotted screwdriver



Requirements:

- The switching contact is unpacked and shows no signs of transport or other damage.
- ▶ Insert a small screwdriver into the narrow opening on the underside of the switching contact.
 - ▶ Carefully press the locking hook that can be reached in this way downwards.
 - ▶ Swivel the base plate upwards (①) and unhook it from the upper eyelets (②).

⇒ The housing and base plate are separate.

Connecting cables

The mains connection cable and the connecting cable for e.g. a pressure monitor are connected on the back of the base plate of the switching contact.



DANGER

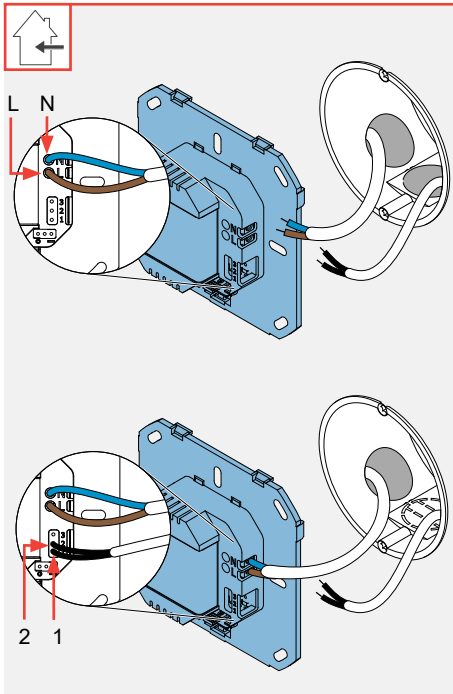
Exposed electrical components. Electric shock and injury due to live components (230V, 50Hz)!

- Before working on electrical installations, disconnect all affected equipment from the power supply.
- Observe the requirements for protection class II when laying the power supply cable.
Do not lay live cables.
- Lay the mains connection cables and data cables separately.

Installation and connection must only be performed by qualified and trained personnel.



Stripping tool, small slotted screwdriver



Requirements:

- The box is fitted.
 - The power supply is disconnected.
- ▶ Strip approx. 8.5 mm of insulation from the mains connection cable and the connecting cable for a pressure monitor, for example, using the stripping tool.
- ▶ Fix the mains connection cable (blue/brown) in the screw terminal on the base plate of the programming unit:
- Connect the phase conductor with cable L (brown).
 - Connect the neutral conductor with cable N (blue).
- ⇒ The mains connection cable is installed.
- ▶ Fix the connecting cable for e.g. a pressure monitor (black/black) to terminal blocks 1 and 2 on the base plate:
- ▶ Slide the mains connection cable and connecting cable for e.g. the pressure monitor into the box.

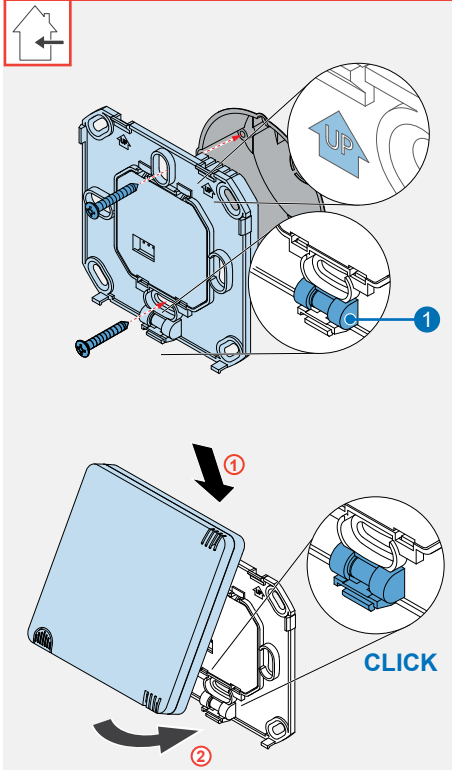
⇒ The mains connection cable and the connecting cable for e.g. the pressure monitor are installed.

Mounting the base plate and housing

The switching contact's base plate is installed on a flush-mounted or plasterboard wall box. The mains connection cable is located in the box. The installed base plate is then hung in using a snap-in connection.



Phillips screwdriver



Requirements:

- The mains connection cable and connecting cable for e.g. a pressure monitor are connected to the base plate.
- ▶ Turn the connected base plate by 180°.
 - ▶ Align the base plate horizontally in front of the box using the built-in spirit level (1).
 - 👁️! The installation marking, arrow with lettering UP (top), is directed upwards.
 - ▶ Screw the switching contact's base plate to the box using fixing screws.
 - ⇒ The base plate is installed.
 - ▶ Hold the housing at a slight angle and hook the upper hooks of the housing into the eyelets on the base plate (1).
 - ▶ Swivel the housing towards the base plate and then press it onto it (2).
 - ⇒ The housing clicks audibly into place.
- ⇒ The switching contact is installed.

6 Technical data

1.1 Easy Connect e16 controller


Feature	Value
Protection class (EN 61140)	II
Type of protection (DIN EN 60529)	IP31
Input voltage mains voltage [V AC] [Hz]	230 / 50
Operating voltage [V DC]	5
Power consumption [W]	0.6
Power consumption in standby [W]	0.4
Radio frequency [MHz]	868
Radio network range [m]	Free field: 100
Bluetooth radio frequency [GHz]	2.4
Bluetooth range [m]	5
Temperature measuring range [°C]	0 – 60
Air humidity measuring range [%]	20 – 90
Dimensions [H x W x D in mm]	90 x 90 x 17
Conformity	

Table 6: Technical data - controller

1.2 Connect inner cover


Feature	Value
Protection class (DIN EN 61140)	II
Type of protection (DIN EN 60529)	IP21
Input voltage mains voltage [V AC] [Hz]	230 / 50
Operating voltage [V DC]	18 – 24
Fan voltage [V DC]	6 – 16
Power consumption [W]	5
Power consumption in standby [W]	0.8
Radio frequency [MHz]	868
Radio network range [m]	Free field: 100
Extract air/outdoor air	Free from aggressive gases, dust and oils
Housing dimensions [H x W x D in mm]	Flush-mounted: 258 x 258 x 41 Surface-mounted: 271 x 271 x 41
Installation depth, flush [mm]	+ 38
Standard filter filter class (DIN EN ISO 16890)	ISO Coarse 45 % (G3 according to EN779)
Conformity	

Table 7: Technical data - inner cover

1.1 Sensor technology

FTS19-Connect Indoor humidity/temperature sensor


Feature	Value
Protection class (EN 61140)	II
Type of protection (DIN EN 60529)	IP31
Input voltage [V DC]	3 (2 x AAA)
Radio frequency [MHz]	868
Radio network range [m]	Free field: 100
Temperature measuring range [°C]	0 – 60
Air humidity measuring range [%]	20 – 90
Dimensions [H x W x D in mm]	60 x 60 x 22
Conformity	

Table 8: Technical data - Indoor humidity/temperature sensor

FTS19-Connect Outdoor humidity/temperature sensor


Feature	Value
Protection class (EN 61140)	II
Type of protection (DIN EN 60529)	IP 67
Input voltage [V DC]	3 (2 x AAA)
Radio frequency [MHz]	868
Radio network range [m]	Free field: 100
Temperature measuring range [°C]	-20 – 60
Air humidity measuring range [%]	20 – 90
Dimensions [H x W x D in mm]	65 x 112 x 40 (housing only) 115 x 112 x 40 (with measuring sensor)
Conformity	

Table 9: Technical data - Outdoor humidity/temperature sensor

CS2-Connect CO₂ sensor


Feature	Value
Protection class (EN 61140)	II
Type of protection (DIN EN 60529)	IP31
Input voltage mains voltage [V AC] [Hz]	230 / 50
Operating voltage [V DC]	5
Power consumption [W]	0.6
Power consumption in standby [W]	0.4
Radio frequency [MHz]	868
Radio network range [m]	Free field: 100
Temperature measuring range [°C]	0 – 60
Air humidity measuring range [%]	20 – 90
Measuring range [ppm]	400 – 10,000
Dimensions [H x W x D in mm]	90 x 90 x 17
Conformity	

Table 10: Technical data - CO₂ sensor**SK19-Connect switching contact**


Feature	Value
Protection class (EN 61140)	II
Type of protection (DIN EN 60529)	IP31
Input voltage mains voltage [V AC] [Hz]	230 / 50
Operating voltage [V DC]	5
Power consumption [W]	0.6
Power consumption in standby [W]	0.4
Radio frequency [MHz]	868
Radio network range [m]	Free field: 100
Dimensions [H x W x D in mm]	90 x 90 x 17
Conformity	

Table 11: Technical data - switching contact

7 Scope of supply

Check the delivery for completeness and transport damage upon receipt using the delivery note. Report missing items immediately.

To order components for your controller, contact your nearest factory representative or our service staff.

1.1 Easy Connect e16 controller

Device/component	Item number
Easy Connect e16 controller, white	1003-0123
Jumper (2 x) (Only if the ventilation device/CO ₂ sensor is to be connected to the controller via an RS-485 cable)	Accessories kit

Table 12: Easy Connect e16 scope of delivery

1.2 Connect inner cover

Device/component	Item number
Connect V-240x240 inner cover, white	
• Connect V-240x240 inner cover, surface-mounted, R-D160	1505-0041
• Connect V-240x240 inner cover, flush-mounted, R-D160	1505-0042
• Connect V-240x240 inner cover, surface-mounted, R-D160	1505-0043
• Connect V-240x240 inner cover, flush-mounted, R-D200	1505-0044

Table 13: Connect inner cover scope of delivery

1.3 Sensor technology

Depending on your order, all four listed devices may be part of your delivery, or they can be individual sensors selected by you.

Device/component	Item number
FTS19-Connect Indoor humidity/temperature sensor including batteries (2x AAA)	1003-0125
FTS19-Connect Outdoor humidity/temperature sensor including batteries (2x AAA)	1003-0126
CS2-Connect CO ₂ sensor	1003-0127
SK19-Connect switching contact	1003-0129

Table 14: Sensor technology scope of delivery

8 Troubleshooting

Overview

Fault	Possible cause	Remedy
Easy Connect e16 controller		
Fans not working	Devices were not recognised/ paired by the controller.	Pair the device again.
Controller does not function	Programming unit is incorrectly/not connected.	Check wiring.
	No electrical contact.	Check cables. Ensure cables are stripped sufficiently (approx. 8.5 mm).
Indicator lights do not light up	Faulty controller.	Replace controller.
	There is no power.	Check power supply.
Connect inner cover		
Fans not working	Inner cover not connected to the controller.	Start device pairing.
	Fan cable not connected.	Connect the fan cable
Indicator lights do not light up	Inner cover faulty.	Replace the inner cover.
	There is no power.	Check power supply.
LED flashes RED	Error in the system	Restart device pairing.
Sensor technology		
No measured values	Sensors not paired	Start device pairing.
With: Indoor / Outdoor humidity / temperature sensor		
RED LED flashes on the Easy Connect e16	Battery level low	Change the batteries

If you cannot eliminate the fault, please contact our technical customer service. You can find information on how to do this in the following section (📖 10: Service).

List of error codes

Error code	Description
F 01	Time and date on the controller not set or not confirmed
F 02	At least one ventilation device/sensor is no longer reachable
F 03	Firmware update failed
F 04	Battery status of the Indoor/Outdoor humidity/temperature sensors is low
F 05	Switching contact triggered or switching contact is out of operation
F 06	Filter change required
F 07	Ventilation system must be cleaned

9 Warranty and guarantee

Warranty

The warranty refers to the defect-free condition of the product at the time of purchase and covers all defects that were present at the time of purchase. Failure to observe the intended use will invalidate all warranty claims.

Outside Germany, the national warranty provisions of the country in which the system is sold apply. Please contact the distributor for your country.

Manufacturer guarantee

inVENTer GmbH provides a five-year guarantee for electronic components. This covers premature product wear.

Further information about the guarantee is available at www.inventer.de/garantie.

10 Service

Claims

Check the delivery for completeness and transport damage upon receipt using the delivery note. Report missing items immediately, and at the latest within 14 days to your supplier, distributor or factory representative.

Warranty and guarantee claims

In the case of a warranty or guarantee claim, contact your local distributor or factory representative.

In all cases, please return the complete device to the manufacturer. The warranty is an additional offering by the manufacturer and in no way affects the applicable law.

Accessories and spare parts

To order components for your devices (controller, inner cover, sensor technology, switching contact), contact your factory representative or our service staff.

Technical customer service

For technical support, contact our service staff.



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