

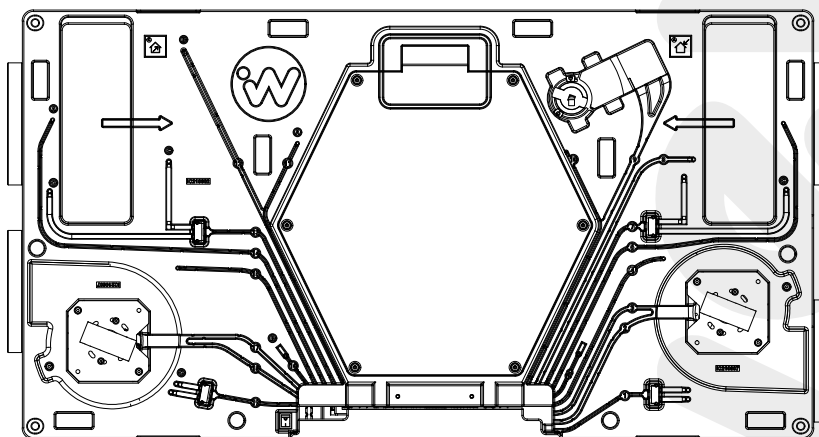
# HEAT RECOVERY UNIT

## WENTILO ICON IC

### Service manual

#### MODELS:

IC120 S1 AA	IC180 S1 AA
IC120 S1 AB	IC180 S1 AB
IC120 E1 AA	IC180 E1 AA
IC120 E1 AB	IC180 E1 AB
IC120 S4 AA	IC180 S4 AA
IC120 S4 AB	IC180 S4 AB
IC120 E4 AA	IC180 E4 AA
IC120 E4 AB	IC180 E4 AB

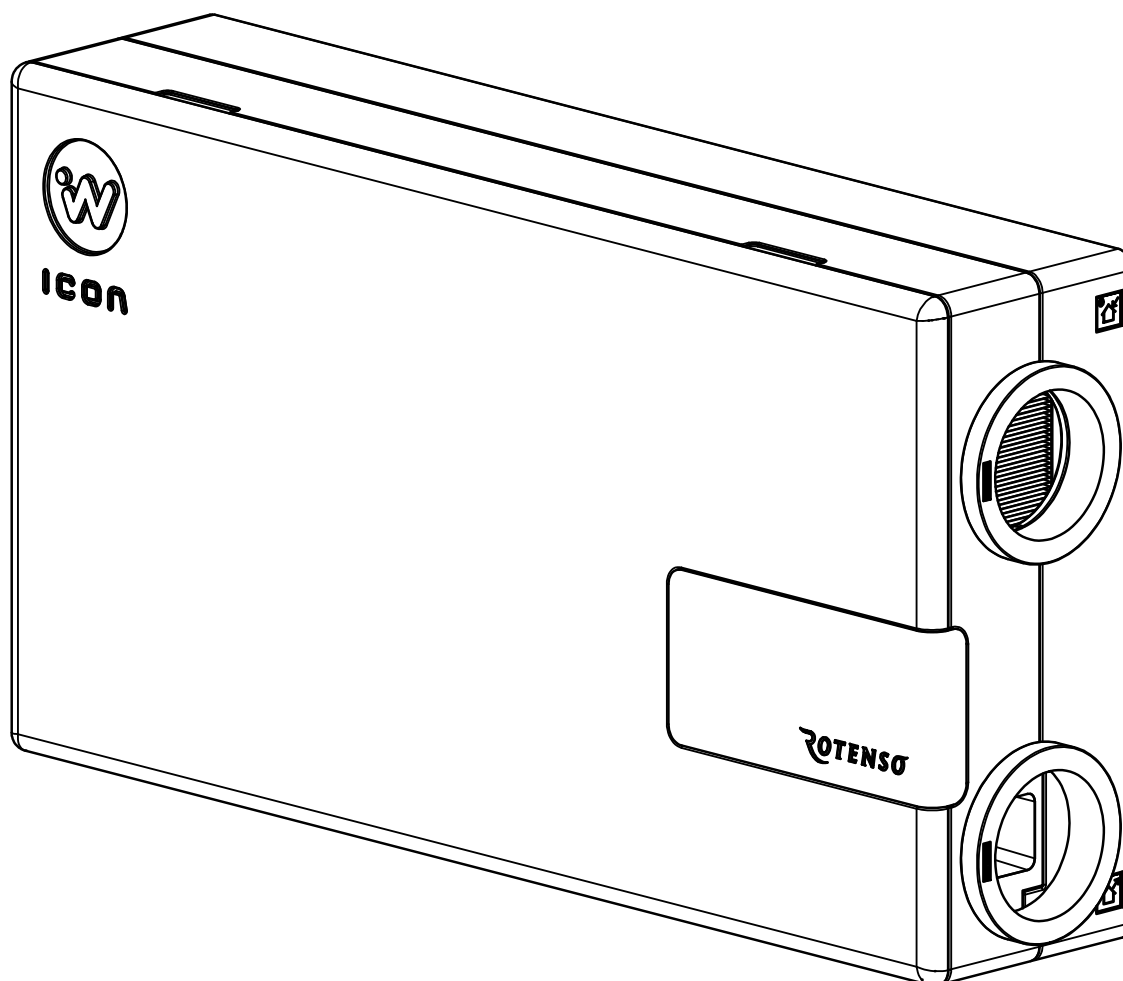


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## HEAT RECOVERY UNIT GENERAL VIEW

General view of Rotenso Wentilo ICON IC heat recovery unit



## 1. Basic Information

### 1.1 General information

The installation and maintenance manual is aimed at installers of the Rotenso Wentilo ICON IC series heat recovery unit. Please read the heat recovery unit assembly and maintenance manual before starting the assembly or maintenance of the unit. The current versions of the installation and maintenance manuals can be found on the [thermosilesia.pl](http://thermosilesia.pl) website.

The heat recovery unit is designed to work in residential and commercial buildings. In order to work properly, the unit should be equipped with an iSWITCH Ti or iSENSE Ti control panel, which must be purchased separately. The heat recovery unit allows communication via Modbus RTU protocol, which can be used to control the unit or monitor the operation of the entire unit from an external building management system.

## 1.2 Precautions

For safe use of the heat recovery unit, please read these installation and service manuals carefully. The heat recovery unit must be installed by a qualified installer in accordance with the installation and maintenance instructions and current legal and safety requirements.

The safety precautions in the installation and maintenance manual must be strictly adhered to, as ignoring these instructions could result in death or serious injury. The precautions listed in the document are divided into the following categories.

Read the instructions carefully before starting the appliance. Keep the manual in an easily accessible place for later reference.

### Meaning of the symbols DANGER, WARNING, CAUTION and NOTE.

#### DANGER

Denotes a dangerous situation, the occurrence of which may result in death or serious injury.

#### WARNING

Denotes a potentially dangerous situation, the occurrence of which may result in death or serious injury.

#### CAUTION

Denotes a potentially dangerous situation, the occurrence of which may result in minor or moderate injury. It also serves as a warning against unsafe practices.

#### NOTE

Indicates situations that may cause accidental damage to equipment or property.

#### DANGER

Before connecting the unit to the mains, ensure that the ventilation ducts are firmly fixed to the heat recovery unit.

## cont. 1.2 Precautions

### **WARNING**

These instructions are intended for a qualified Installer. It is forbidden to install, modify or repair the appliance yourself - only qualified installers may carry out these activities.

### **DANGER**

Before touching parts of the electric connectors, pull the mains plug out of the socket.

### **DANGER**

Never leave the device unattended during installation or maintenance with the protection against access to live parts removed.

### **WARNING**

Incorrect installation of equipment or accessories can cause electric shock, fire, flooding or damage to the equipment. Use only accessories designed for use with the equipment. Have it assembled by a qualified person.

### **WARNING**

Make sure the power cord is not in contact with sharp edges.

### **WARNING**

Do not touch internal parts (fans, regulator, heater, etc.) during work and immediately after switch off. Touching internal parts can cause injury. To avoid injury, wait until the internal parts have cooled down or warmed up, or only touch them wearing protective gloves.


### **CAUTION**

Before installation, check that the user's power supply conditions meet the product's electrical installation requirements (this includes reliable earthing, leakage current, current load, wire diameter, etc.). If the product's electrical installation requirements are not met, the product must not be used until the problems have been rectified.

### 1.3 Technical data of the device

The basic specifications of the heat recovery unit are included on the nameplate, which is located on the heat recovery unit housing, to the right of the control system compartment and on the shipping carton. When contacting the manufacturer's service, indicate the serial number of the appliance, indicated by the SN symbol on the nameplate.

Additional technical data can be found in the product fiche and the data sheet.



**HEAT RECOVERY UNIT WENTILO ICON  
IC180 S4 AB**

Made in Poland  
Thermosilesia Sp. z o.o. Sp.k.  
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41-700 Ruda Śląska

PC/EAN: 5 905567 600135

www.rotenso.com


ECO DESIGN

CE


Power supply	1-230VAC @ 50Hz
Rated current	4.5 A
Net weight	13.7 kg
Gross weight	16.2 kg
Operating temperature	5-45°C
Protection level	IP20
Manufactured	2024

PL Wyrob poddany działaniu produktu biobójczego, zawiera środek konserwujący (szkło srebrowo-fosforanowe), który przeciwdziała rozwojowi mikroorganizmów na powierzchni wyrobu pokrytego farbą o właściwościach biobójczych.

EN Product coated with a biocidal varnish, contains an active ingredient (silver-phosphate glass) that prevents the growth of microorganisms on the surface.



SN: IC180S4AB000001



### 1.4 Operating principle

The heat recovery unit provides a continuous exchange of used air from the building for fresh air drawn from outside with simultaneous heat recovery from the extract air and filtration of the supply air. The unit recovers heat from the extract air with an efficiency of up to 90%, reducing the heating costs of the building and increasing the comfort of the occupants by supplying air at a temperature close to room temperature. Variable speed energy-efficient fans ensure low electricity consumption.

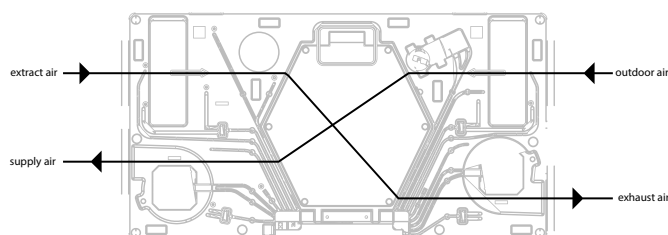
Units equipped with an airENTHALPY heat exchanger additionally recover moisture from the exhaust air, increasing the humidity of the supply air.

#### Supply air quality is ensured by 4 air treatment stages:

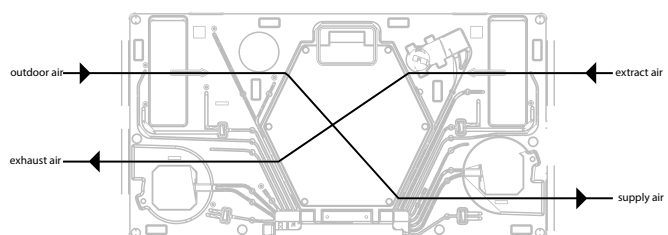
- ① **STAGE 1:** anti-pollen filter iCARE G4 Coarse 75% removes 75 % of particles larger than 10 µm
- ② **STAGE 2:** anti-smog filter iCARE F7 ePM1 70% removes 70% of particles smaller than 1 µm  
removes 80% of particles smaller than 2.5 µm  
removes 93% of particles smaller than 10 µm
- ③ **STAGE 3:** The airCore+ antibacterial coating reduces bacterial growth in the appliance
- ④ **STAGE 4:** airION ioniser

The condensate generated by the heat transfer of the exhaust air is discharged into a condensate drain.

Principle diagram of the counterflow exchanger for Standard (A) version.



Principle diagram of the counterflow exchanger for Alternative (B) version.



### 1.5 Scope of responsibility

Thermosilesia Sp. z o.o. Sp. k. is not liable for damages resulting from the use of the equipment not in compliance with the user manual and the assembly and maintenance manual.

## 2. Transport and storage

### 2.1 Packaging and storage

Before unpacking the unit, note the condition of the packaging, in particular signs of mechanical damage or indications of flooding. The heat recovery unit must be transported and stored in its original packaging. The unit must be stored at temperatures between 0°C and 45°C, in dry, clean and weatherproof rooms.

### 2.2 Transport conditions

The weight and dimensions of the heat recovery unit allow it to be transported manually without a trolley, preferably by two people. Caution should be taken to ensure that the packaging is undamaged and that the original seals are intact. Dispose packaging materials according to local waste segregation rules.

## 2.3 Scope of delivery

Check the contents of the packaging before starting installation work.

Scope of delivery	unit	quantity
Wentilo ICON IC heat recovery unit	pc.	1
User manual	pc.	1
Condensate drain connection	pc.	1
Mounting template	pc.	1
Energy label	pc.	1

\* Control panel - available separately

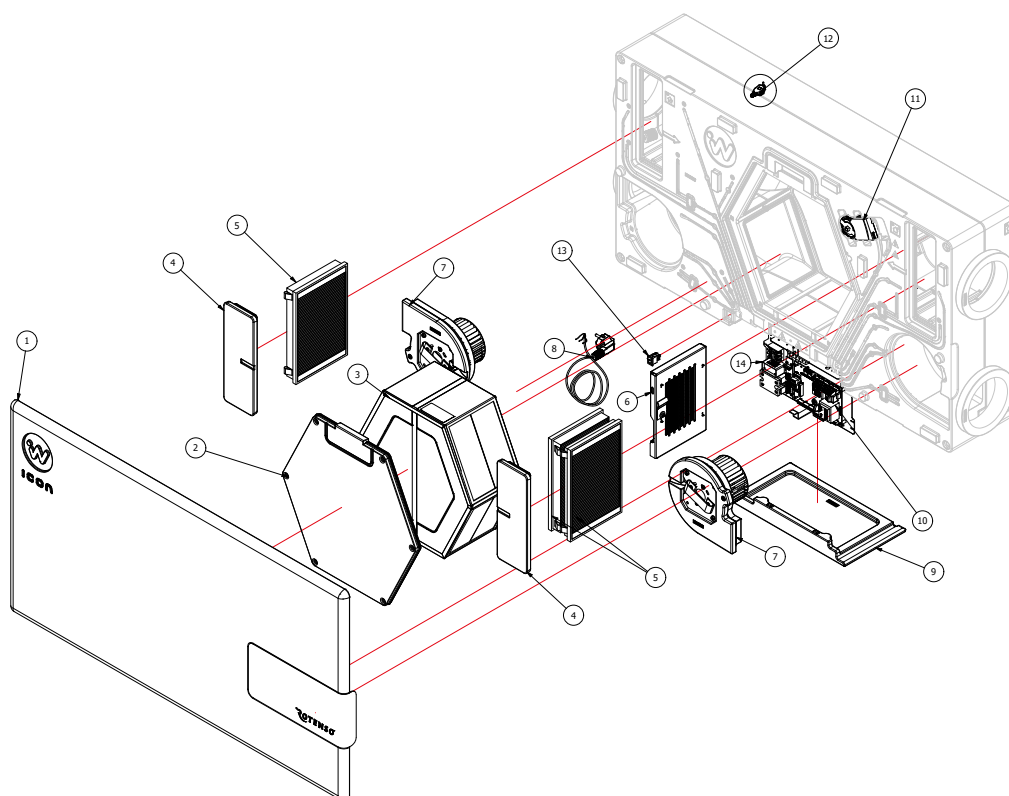
\* Condensate drain trap - available separately

\* Installation kit - available separately

## 3. Assembly of the device

### 3.1 Construction of the Rotenso Wentilo ICON IC heat recovery unit

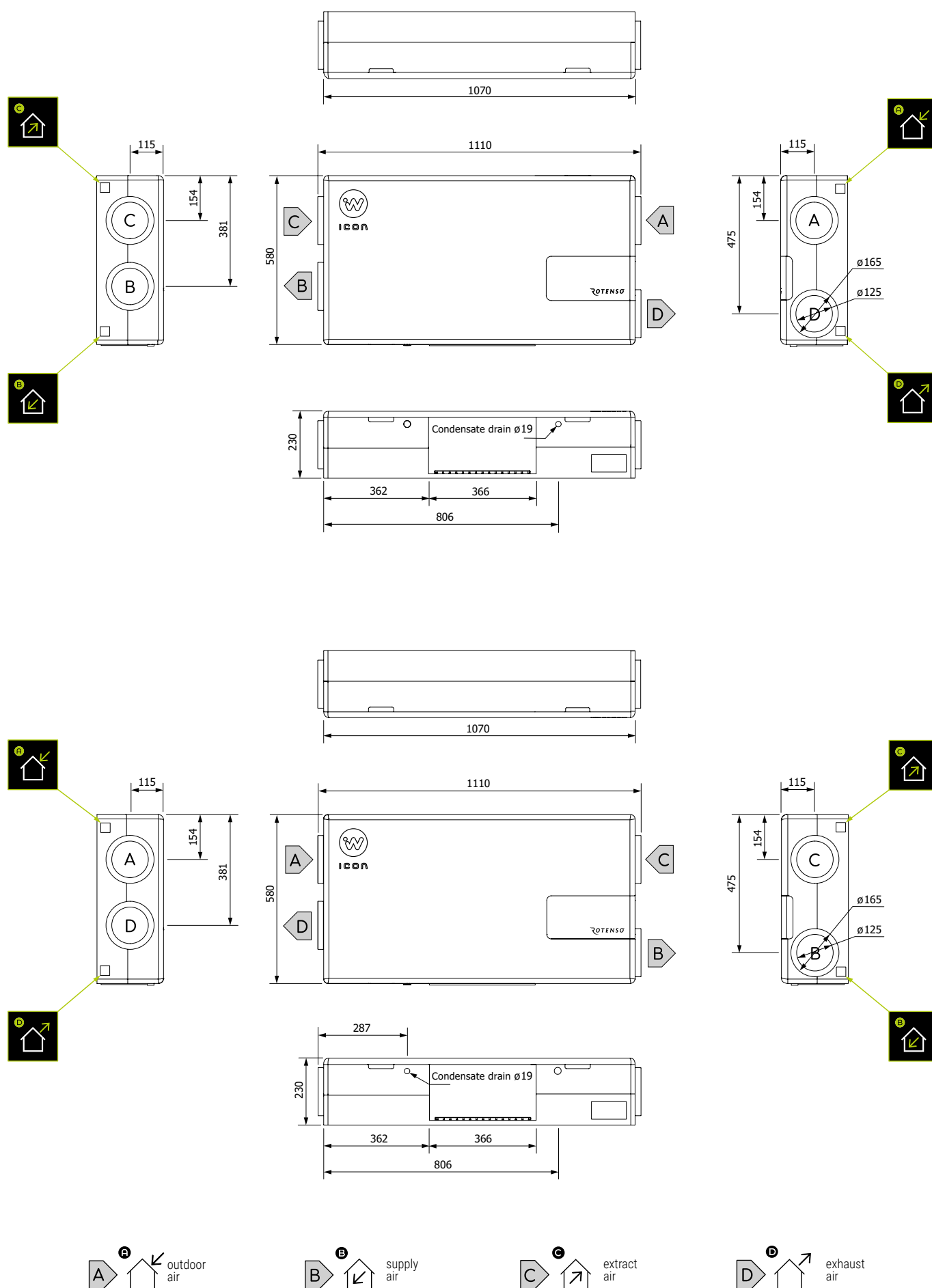
Construction of the Rotenso Wentilo ICON IC heat recovery unit



- ① Decorative cover
- ② Heat exchanger cover
- ③ Heat exchanger
- ④ Air filter covers
- ⑤ Air filters
- ⑥ Preheater
- ⑦ Fans assembly

- ⑧ Power cable
- ⑨ Control system cover
- ⑩ Control system
- ⑪ Bypass actuator
- ⑫ CO<sub>2</sub> sensor
- ⑬ Power switch
- ⑭ Ioniser

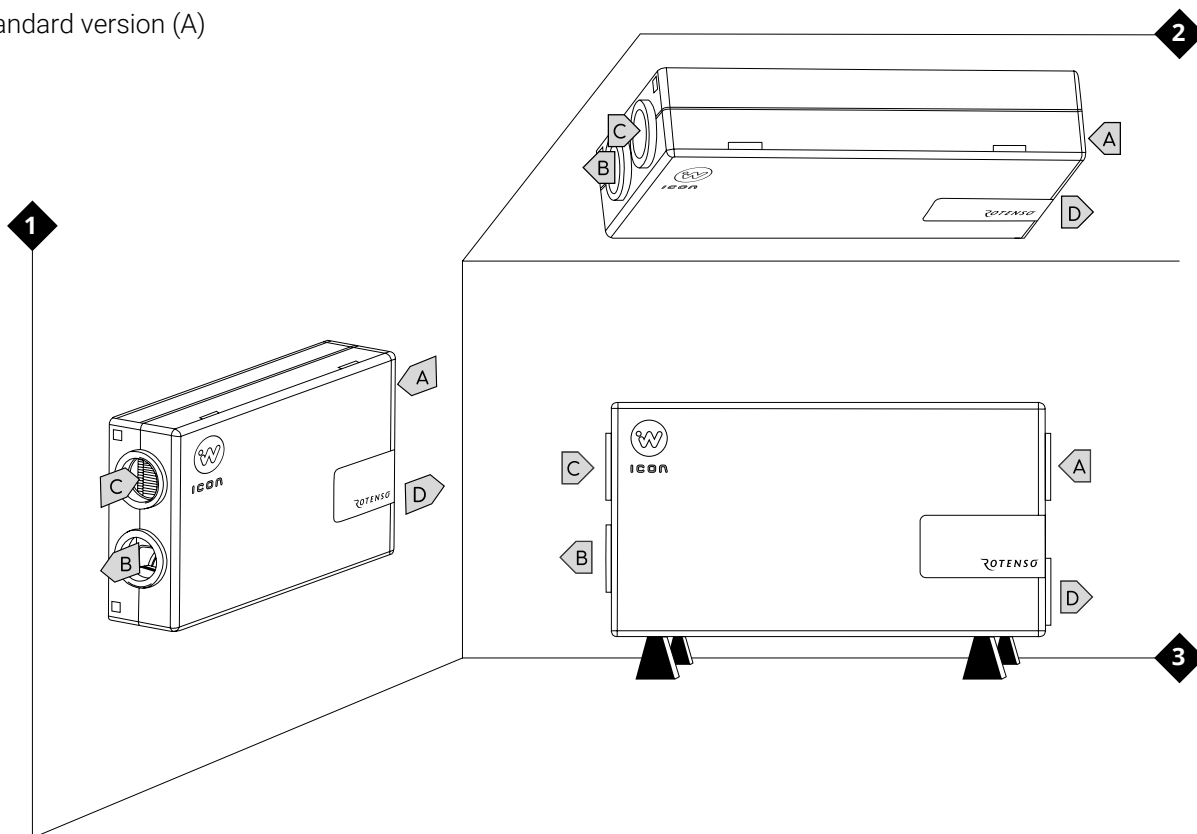
## 3.2 Device dimensions



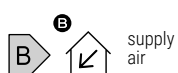
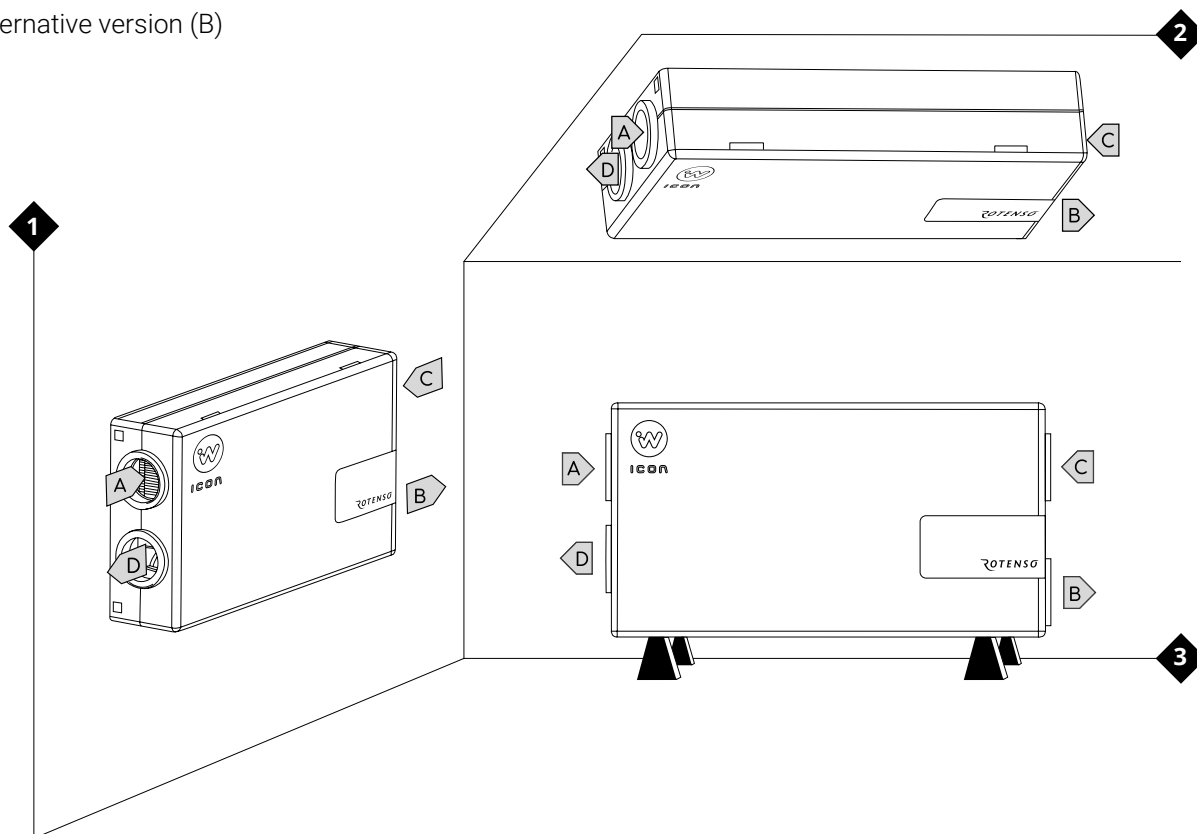


### 3.3 Mounting options

For the standard version (A)



For the alternative version (B)



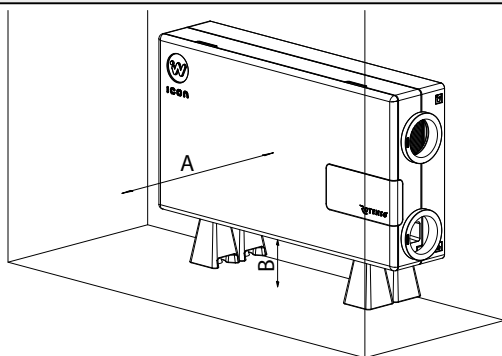
Ensure the minimum service spaces necessary to replace the filters, remove the heat recovery unit, install the heat recovery unit and access the control system compartment.

Use the appropriate mounting kit (available separately) to mount the heat recovery unit in the selected position.

### The heat recovery unit can be installed in 3 methods of assembly:

- standing
- under ceiling
- wall-mounted

Mounting option - standing

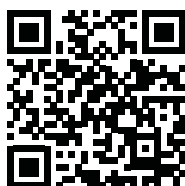


Required minimum distances to ensure free access to the heat recovery unit during maintenance and operation work.

**A** - minimum **400 mm**

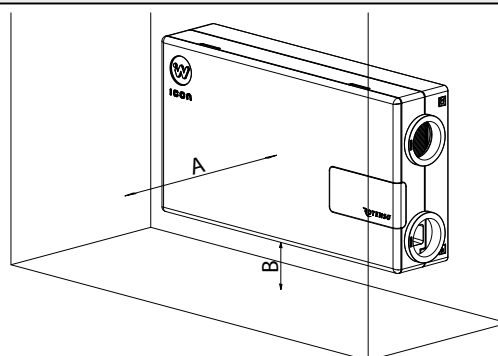
**B** - minimum **150 mm**

The standing installation should be done with the iFOOT mounting system.



QR: iFOOT mounting system installation manual

Mounting option - wall-mounted



Required minimum distances to ensure free access to the heat recovery unit during maintenance and operation work.

**A** - minimum **400 mm**

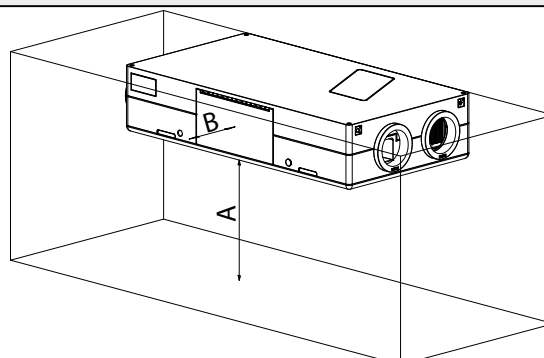
**B** - minimum **150 mm**

Installation in the hanging position should be carried out using the iPIN IC/IS mounting system.



QR: iPIN IC/IS mounting system installation manual

Mounting option - under ceiling



Required minimum distances to ensure free access to the heat recovery unit during maintenance and operation work.

**A** - minimum **500 mm**

**B** - minimum **150 mm**

Installation in a under ceiling position should be carried out using the iPIN IC/IS mounting system.



QR: iPIN IC/IS mounting system installation manual

### 3.4 Requirements for the installation area

The heat recovery unit must be installed in a room where the air temperature is maintained between +5°C and +45°C.

The relative humidity of the air in the room where the heat recovery unit is installed should be maintained at a level that ensures no condensation on the surface of the housing and on the surfaces of the unit's components. Unit must not be exposed to precipitation or direct sunlight. The air supplied to the heat recovery unit should not contain hazardous substances, i.e. chemical fumes, flammable, explosive mixtures, coarse dust.

In the working environment, there should be a grounded power supply with socket type CEE 7/3 or CEE 7/5 connected to an electrical installation that meets the rated current requirements specified on the unit's nameplate and in the **Electrical connection conditions** section.

Ensure proper drainage of condensate from the unit, for example by connecting a condensate drain to the drainage system.

### 3.5 Connection of ventilation ducts

#### DANGER

Before connecting the unit to the mains, ensure that the ventilation ducts are firmly fixed to the heat recovery unit.

#### CAUTION

The ventilation ducts connected to the heat recovery unit must have their own fixing system.

#### CAUTION

Once the ventilation ducts are connected to the heat recovery unit, they must be secured to prevent them from falling out.

#### NOTE

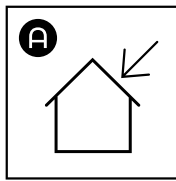
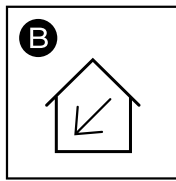
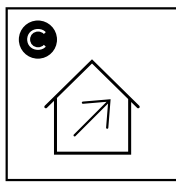
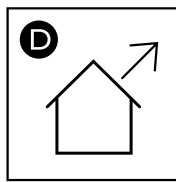
The heat recovery unit should be connected to a ventilation system that complies with building regulations and the relevant subject standards.

The heat recovery unit is equipped with spigots to which ventilation ducts with a diameter of **125 mm** must be connected.

#### Connection description:

- **SUPPLY AIR** - fresh air supplied to the rooms,
- **EXTRACT AIR** - stale extract air from the room,
- **OUTDOOR AIR** - fresh air drawn from outside,
- **EXHAUST AIR** - stale air exhausted to the outside.

Graphic marking of the ventilation ducts.

	
OUTDOOR AIR	SUPPLY AIR
	
EXTRACT AIR	EXHAUST AIR

### 3.6 Connection of condensate drain

#### CAUTION

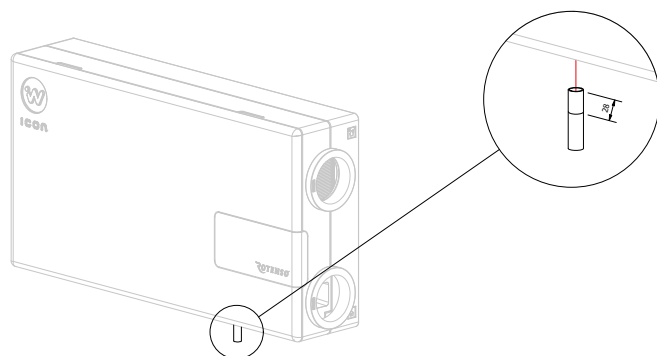
The condensate drain installation must have a minimum of 1 support point for every 1 metre of installation.

#### NOTE

The condensate drain system must be equipped with an anti-odor trap

Ensure proper drainage of condensate from the unit, for example by connecting a condensate drain to the drainage system. The condensate drain connection kit includes a condensate drain connection to be installed in the condensate drain hole located near the exhaust fan on the left or right side - depending on the choice of installation side.

## Installation of condensate drain connection



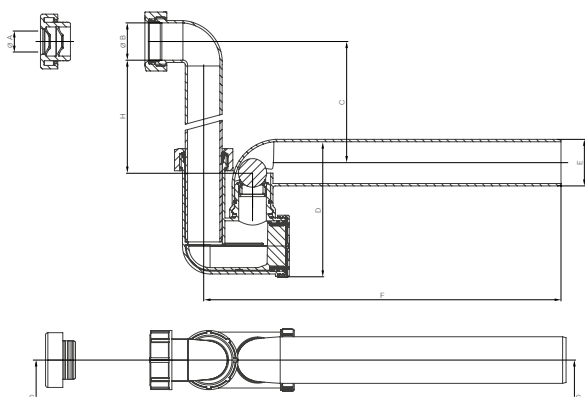
- **Insert** the condensate drain tube to a depth of **28 mm** until contact with the insertion depth stop.

## Siphon installation:

The installation of one of the following siphons (available separately) is recommended.

### 1) Ivensis HL136N

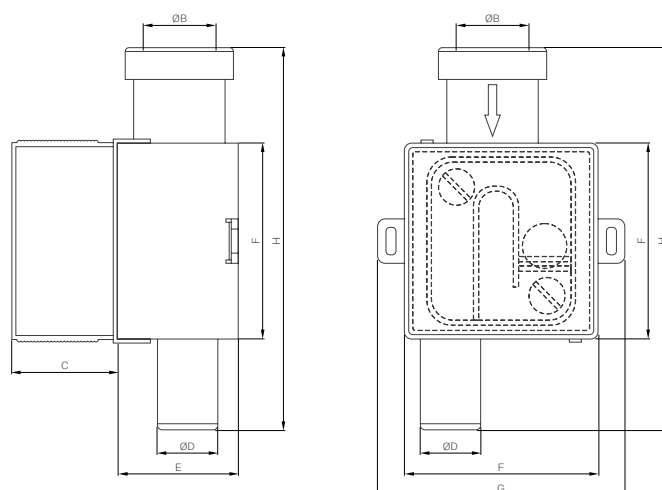
Technical drawing of the Ivensis HL136N siphon.



Condensate trap with mechanical odour blocker and cleaner.

## 2) Ivensis ISN32

Technical drawing of the Ivensis HL136N siphon.



Flush-mounted siphon with mechanical anti-odor lock with adjustable mounting housing.

## 3.7 Electrical connection conditions

### ⚠ DANGER

Before connecting the unit to the mains, ensure that the ventilation ducts are firmly fixed to the heat recovery unit.

### ⚠ WARNING

Incorrect installation of equipment or accessories can cause electric shock, fire, flooding or damage to the equipment. Use only accessories designed for use with the equipment. Have it assembled by a qualified person.

### ⚠ WARNING

Connection of any complementary equipment must be carried out by an installer in accordance with current regulations. The safety principles relating to protection against electric shock must be applied

### **WARNING**

The device must be connected to a grounded power socket.

### **WARNING**

The device is compatible with power supply sockets of type CEE 7/3 and CEE 7/5. Attempting to connect the device to another type of socket may damage the power supply plug.

### **CAUTION**

No damaged power cord, power cord plug or loose electric socket may be used. Failure to do so risks electric shock or fire.

Electrical connection conditions	Rotenso Wentilo ICON IC	
Model	IC120 S1 AA	IC180 S1 AA
	IC120 S1 AB	IC180 S1 AB
	IC120 E1 AA	IC180 E1 AA
	IC120 E1 AB	IC180 E1 AB
	IC120 S4 AA	IC180 S4 AA
	IC120 S4 AB	IC180 S4 AB
	IC120 E4 AA	IC180 E4 AA
	IC120 E4 AB	IC180 E4 AB
Power supply	230 V, 50 Hz	230 V, 50 Hz
Rated current	4,0 A	4,5 A

## 3.8 Initial check

After all the installation steps have been completed, check before the first start-up that:

- there are no loose parts inside the heat recovery unit,
- filters are properly inserted according to the flow direction,
- all covers have been properly fitted,
- the ventilation ducts are firmly installed,
- grilles and anemostats are open,
- condensate drain is tight.

Once you are sure that the unit and all system components have been connected and set up correctly, you can connect the heat recovery unit to the mains for a test run, which should take approx. 20-30 min. Make sure the heat recovery unit is working without any disturbance and note whether:

- heat recovery unit does not emit disturbing sounds,
- there are no excessive vibrations,
- unit reacts to control panel commands,
- preheater heats the air,
- condensate drain has been connected correctly.

If any of the above-mentioned anomalies occurred during the test start-up or the unit is not operating correctly, turn it off immediately. Then, if possible, eliminate the cause of the malfunction or contact the manufacturer's service department.

## 4. Control panel installation

### **CAUTION**

Control panel should be installed by a trained installer.

### **NOTE**

Control panel is designed for wall mounting, in dry rooms only. The panel must not be used in condensation conditions and must be protected from water.

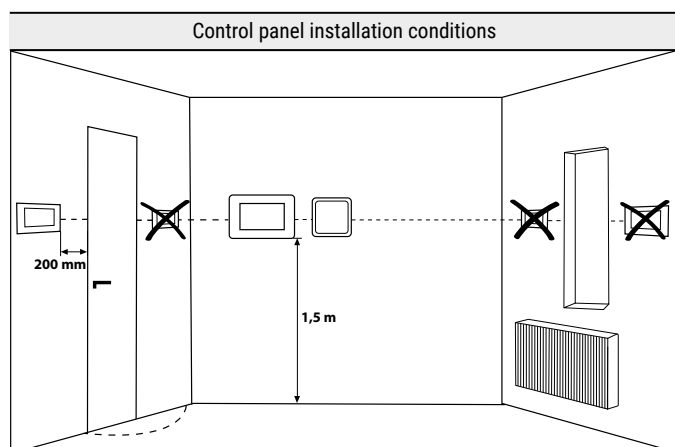
### **NOTE**

When selecting the cable connecting the control panel to the main board, make sure that the resistance of one wire in the cable is not greater than 8Ω and the total length of the cable is not greater than 100 m. As the length of the cable increases, its cross-section should be increased.

### **NOTE**

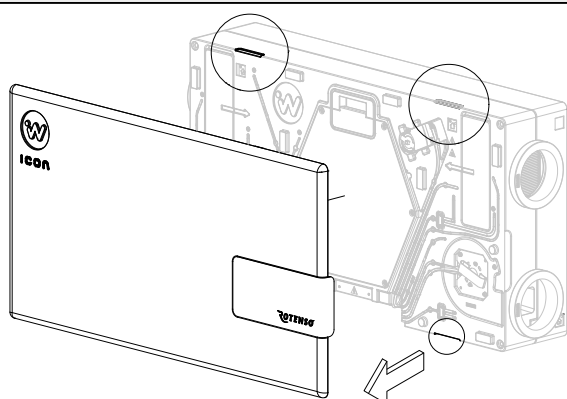
The cable connecting the control panel to the main board must not be run together with the building's mains cables. No cable should run in the vicinity of devices emitting strong electromagnetic fields either.

Control panel should be mounted at a height that allows comfortable operation, typically **1.5 m** above the floor. In order to reduce interference of temperature measurement by the control panel, avoid places with strong sunlight, poor air circulation, close to heating devices, directly next to doors and windows (typically min. **200 mm** from the edge of the door).



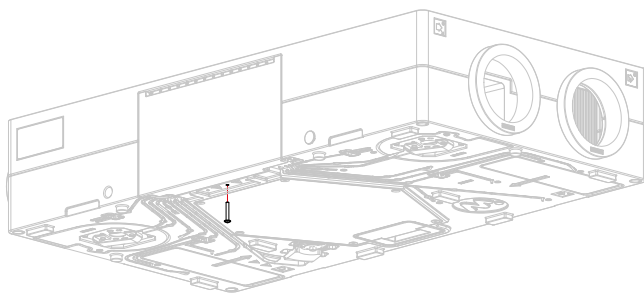
## 4.1 Connection of the communication cable to the motherboard

### 1 Removing the decorative cover



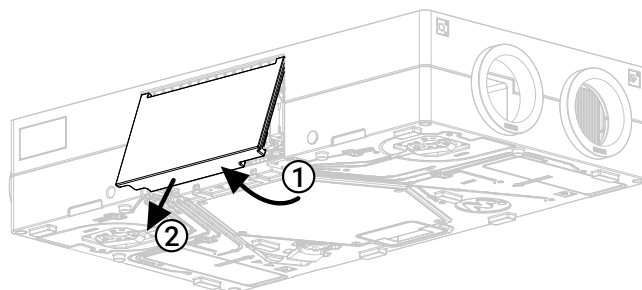
- **Remove** the decorative cover using the recesses marked in the drawing.

### 2 Removal of the control system cover bolt



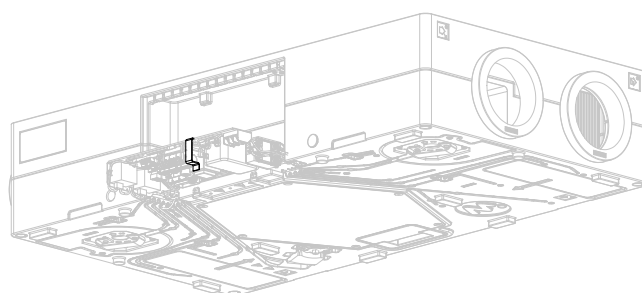
- Using a 3 mm allen key, **unscrew** the bolt holding the control system cover.

### 3 Removing the control system cover



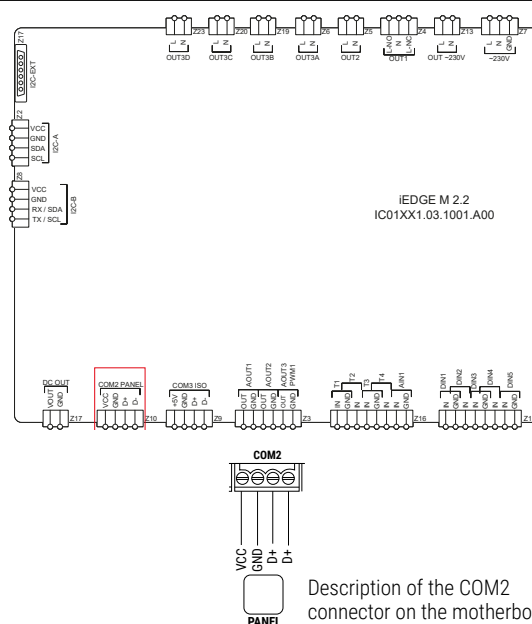
- 1 **Open** the control system cover
- 2 **Slide out** the control system cover

### 4 Deflection of the control system board



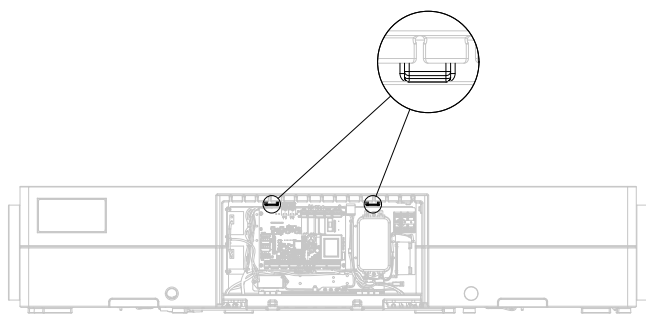
- For easy access to the main board, the entire control system board can be **tilted** by **pulling** the handle.

### 5 Connection of communication cable



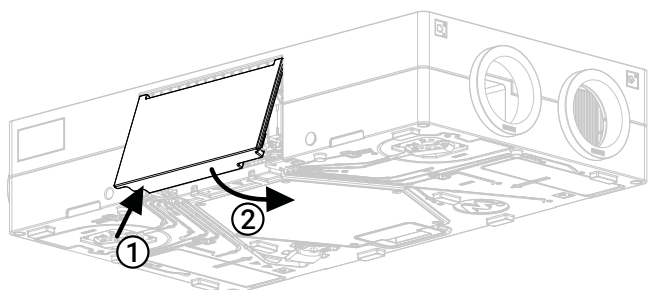
- **Connect** the communication cable to the Z10(COM2 Panel) connector according to the diagram above.

## 6 Installation of the control system board



- **Press** the control system board against the wall of the control system compartment until it clicks into place.

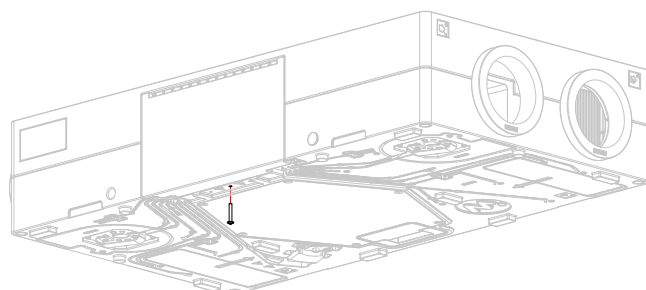
## 7 Assembly of the control system cover



- 1 Insert** the control system cover making sure that the lower catches are hooked into the cable grommet ridge.
- 2 Press down** on the upper part of the control system cover.

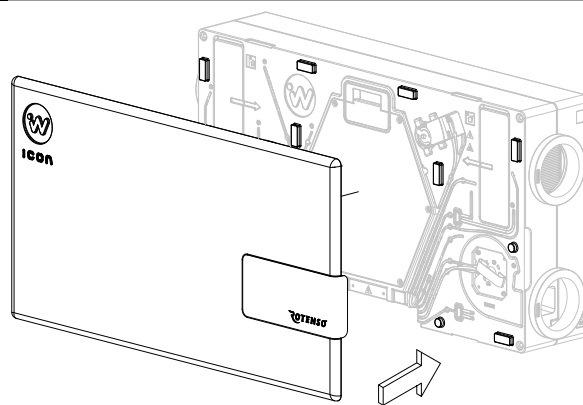
**CAUTION:** Before installing the control system cover, place the wires coming out of the control system compartment in the cable grommets.

## 8 Installation of the control system cover bolt



- Using a **3 mm** allen key, **tighten** the bolt securing the control system cover.

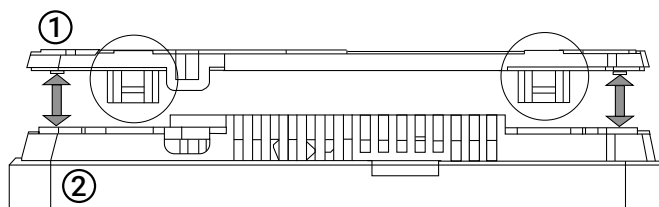
## 9 Installation of a decorative cover.



- **Fit** the decorative cover to the mounting pins.

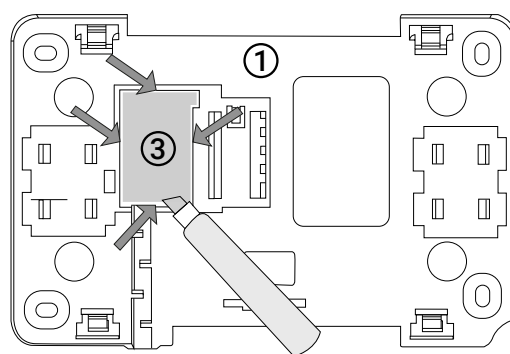
## 4.2 iSENSE 5i control panel

### 1 Detachment of the mounting frame

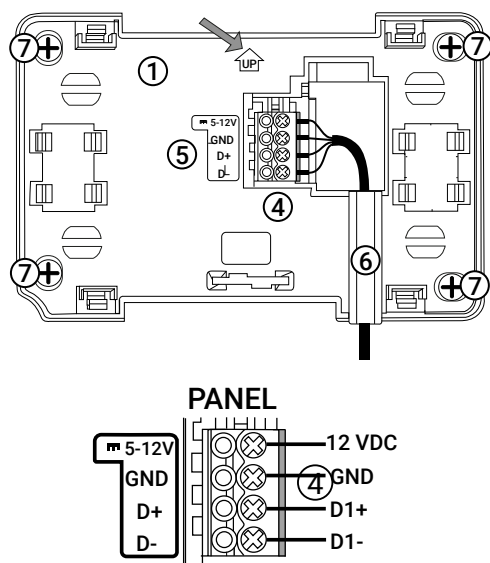


- Detach the mounting frame **1** from the rear housing of the control panel **2**.
- The frame is attached to the control panel housing by snaps.
- A flat screwdriver can be used to detach the frame.

### 2 Cover cut-out

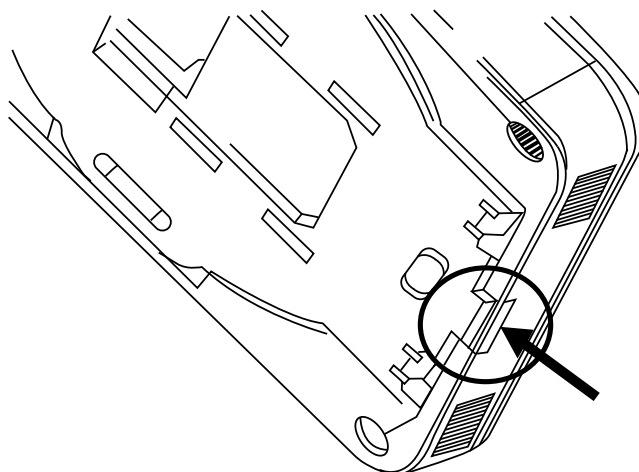


- Cut out the screw clamp hole cover **3** in four places using a sharp tool.



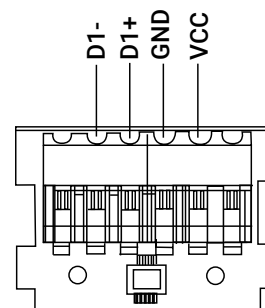
- ▶ Connect the wires of the transmission cable ④ connecting the control panel to the main board to the screw terminal ⑤, as described.
- ▶ The cable connecting the control panel to the main board may be recessed in the wall or run along the wall surface, in which case the cable must additionally be placed in the cable channel ⑥ of the mounting frame.
- ▶ No cable connecting the control panel to the main board may be run together with the building mains cables. No cable should run in the vicinity of devices emitting strong electromagnetic fields.
- ▶ **Drill** holes in the wall (drilling locations marked with ⑦) and, using screws, **fix** the mounting frame in the selected place on the wall, keeping its position (↑ marker). Then fix the control panel to the mounting frame using the clips.

## 1 Detachment of the mounting frame



- **Detach** the mounting frame from the rear panel housing. The mounting frame is attached to the panel housing by snaps. A flathead screwdriver can be used to detach the mounting frame.

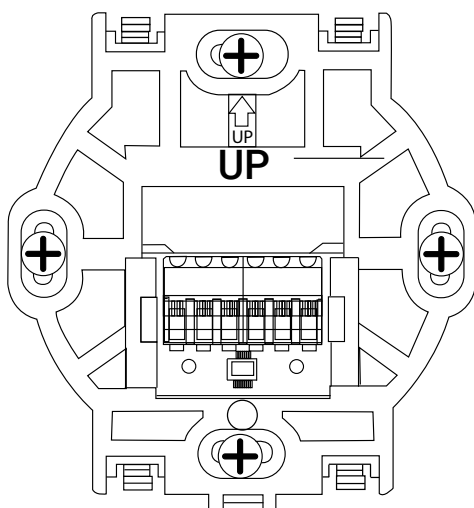
## 2 Connection to self-clamp




- **Connect** the wires of the transmission cable connecting the panel to the regulator to the panel's self-clamp. The cable connecting the panel to the regulator must be recessed in the wall.

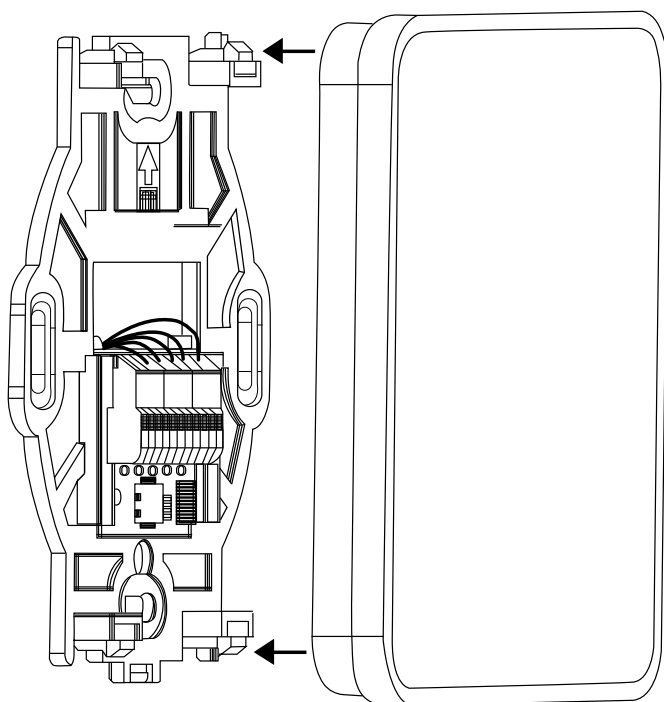


### 3 Mounting the frame on the wall



- ▶ **Drill** holes in the wall and using screws, **fix** the mounting frame in the desired position on the wall, observing the correct position (marker ).

### 4 Panel attachment to the mounting frame



- ▶ **Attach** the panel to the mounting frame using the clips.

## 5. Control panel and motherboard service

### 5.1 Control panel cleaning and maintenance

#### External surface and maintenance of control panel screen.

- ▶ Clean the appliance with a soft, dry cloth.
- ▶ No flammable substance (e.g. benzene or solvent) or damp cloth should be used to clean the unit. This may cause problems with the device.
- ▶ No nails or sharp objects should be used to scratch the screen. This could cause damage to the device.
- ▶ No cleaning of the device by spraying it with water or other liquids is allowed. If liquid were to get inside the device, it could cause a short circuit and damage the device.

### 5.2 Electrical connections



#### WARNING

Incorrect installation of equipment or accessories can cause electric shock, fire, flooding or damage to the equipment. Use only accessories designed for use with the equipment. Have it assembled by a qualified person.



#### WARNING

Connection of any complementary equipment must be carried out by an Installer in accordance with current regulations. The safety principles relating to protection against electric shock must be applied



#### WARNING

When the heat recovery unit is switched off using the control panel, dangerous voltage may be present at the terminals of the main board. It is essential to unplug the power cord from the socket before working.

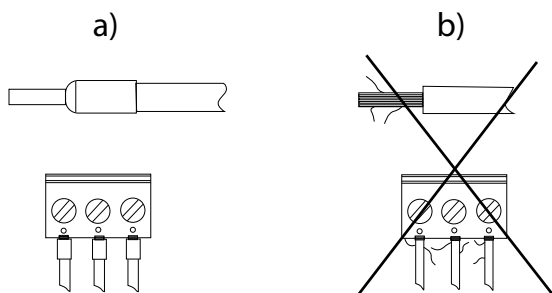


#### CAUTION

Connecting mains voltage to the digital input connectors, analogue and control outputs will damage the motherboard and risk electric shock.

The main board is equipped with plug-in screw terminal connectors suitable for accepting the cable with a sleeve end. Ends of cables, especially those with mains voltage, must be protected against unravelling e.g. with insulated crimp sleeves. Use the cable diameters and screw terminal tightening torques specified in the technical data.

Figure showing correct  
and incorrect preparation of cable ends.

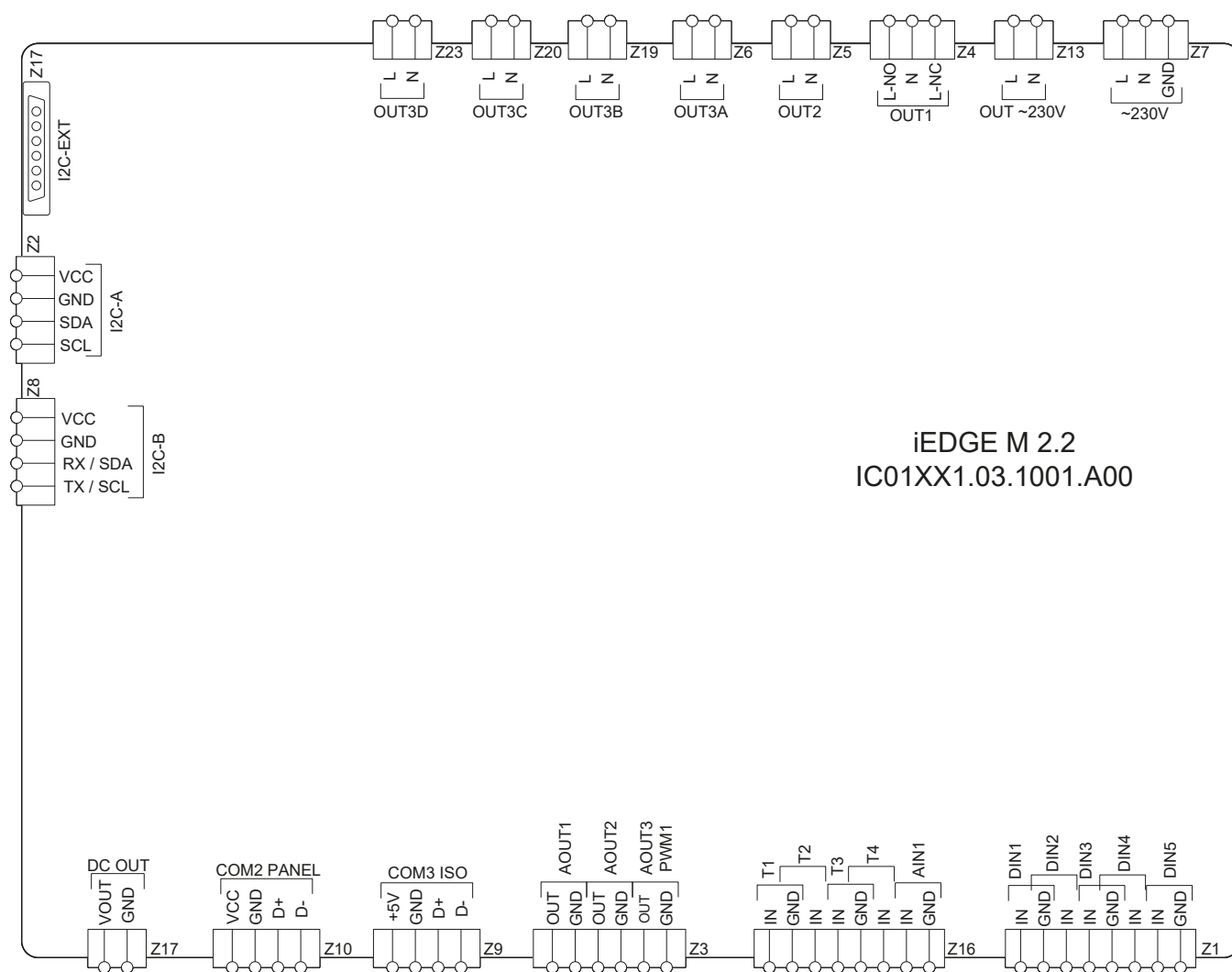


#### Securing the ends of cables:

- a) correct
- b) incorrect

## Electrical diagram of main module iEDGE M 2.2

Electrical diagram of main module iEDGE M 2.2



### Input/Output configuration:

#### Analogue inputs

- Z16(T1)** - supply air temperature sensor
- Z16(T2)** - extract air temperature sensor
- Z16(T3)** - outdoor air temperature sensor
- Z16(T4)** - exhaust air temperature sensor
- Z16(AIN1)** - analogue air quality sensor

#### Analogue outputs

- Z3(AOUT1)** - supply air fan control
- Z3(AOUT2)** - extract air fan control
- Z3(AOUT3/PWM1)** - control of pre-heater

#### Digital inputs

- Z1(DIN1)** - secondary heater thermostat (normally open)
- Z1(DIN2)** - "FIREPLACE" function (normally open)
- Z1(DIN3)** - "HOOD" function (normally open)

- Z1(DIN4)** - "EMPTY HOUSE" function (normally open)
- Z1(DIN5)** - "AIRING" function (normally open)

#### Relay outputs

- Z4(OUT1)** - bypass actuator
- Z5(OUT2)** - ioniser
- Z6(OUT3A)** - not used
- Z6(OUT3B)** - supply air fan power supply
- Z6(OUT3C)** - extract air fan power supply

#### Data connections

- Z2(I2C-A)** - air quality sensor MULTI-PROBE D2.2
- Z8(I2C-B)** - iEDGE S 2.2 module
- Z9(COM3 ISO)** - RS485 data transmission connector
- Z10(COM2 PANEL)** - control panel

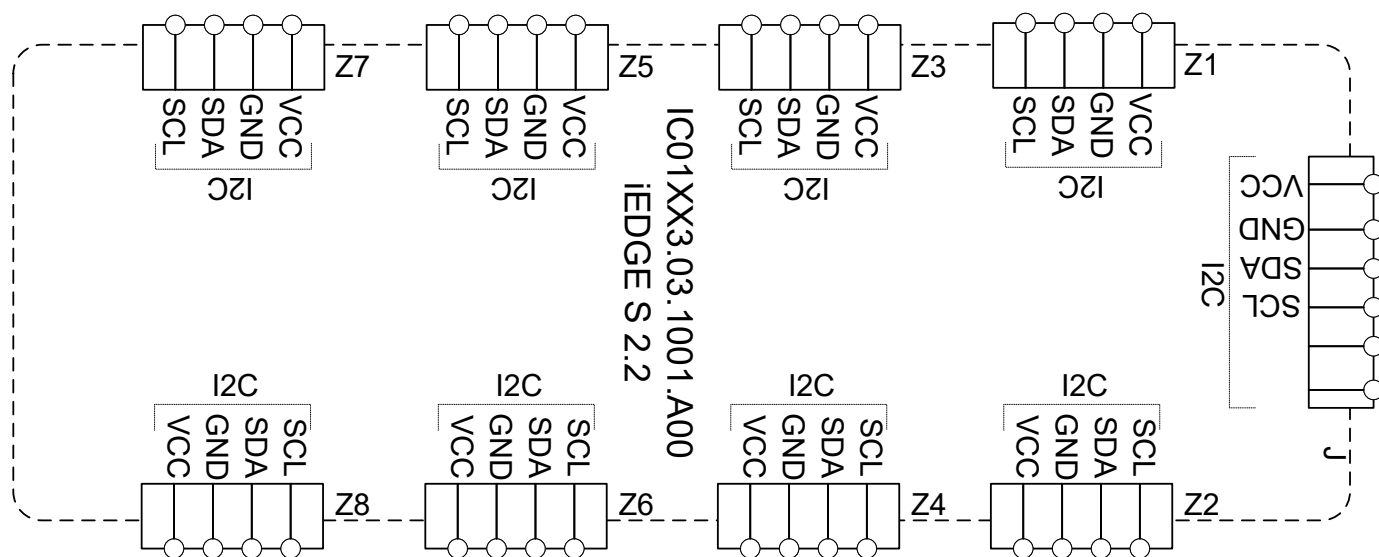
Power inputs/outputs

**Z7(~230V)** - power supply to iEDGE M 2.2 motherboard

**Z13(OUT~230VAC)** - power supply to expansion module  
iEDGE E2.2

**Z17(DC OUT)** - not used

Electrical diagram of the iEDGE S 2.2 module



## Input/Output configuration:

**J** - iEDGE M 2.2 module

**Z1-Z4** - differential pressure sensors

**Z5-Z8** - not used

Connector	standard version (A)	alternative version (B)
Z1	iBALANCE supply air	iBALANCE extract air
Z2	iBALANCE extract air	iBALANCE supply air
Z3	iPURE outdoor air	iPURE extract air
Z4	iPURE extract air	iPURE outdoor air

## 5.3. Software update

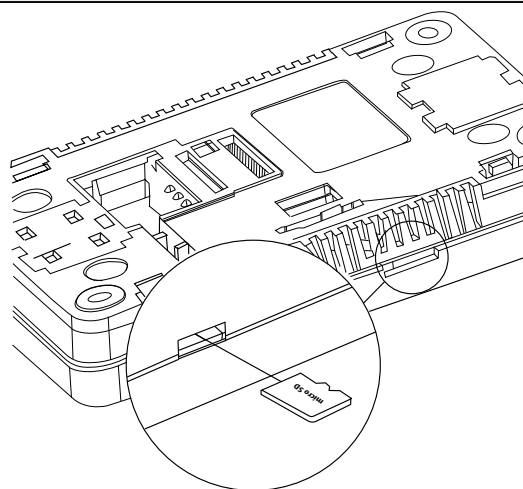
### ⚠ CAUTION

All complementary equipment working with the heat recovery unit must be disconnected from the heat recovery unit before changing the main board programme.

### ⚠ CAUTION

The incompatibility of the motherboard programme and the control panel programme may cause unforeseen errors. No responsibility is assumed by the manufacturer for failures caused by the end customer using incompatible programs.

Memory slot location



- **Insert** the memory card into the control panel slot indicated. After inserting the card, the update window will be displayed.

### Panel software update:

Follow the instructions of the update window

### 5.3.1 iSENSE 5i control panel

#### Memory card update

The memory card must meet the following requirements:

- card type: microSDHC
- file format: FAT32
- maximum capacity: 32 GB

#### Memory card preparation

Save the new software on the memory card in \*.pfc format for the panel. Place the new software directly on the memory card without saving the data in a subdirectory and there must be no other files or folders on the card.

## 5.4. Save/read configuration

It is also possible to dump/load the configuration of the motherboard parameters into the memory of the mobile device after entering the password for the manufacturer's or installer's parameter level.

## 5.5. Unlocking the device

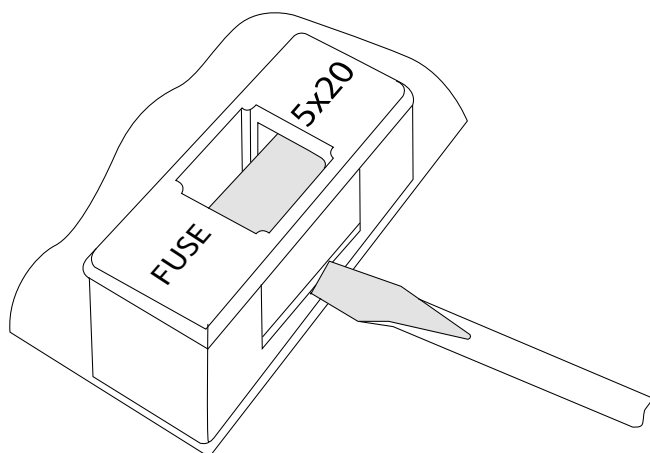
If the work of the motherboard is blocked, e.g. by unauthorised start-up, enter the menu: Service Settings and enter the special password unlocking the device.

## 5.6. Replacement of mains fuse

### ⚠ WARNING

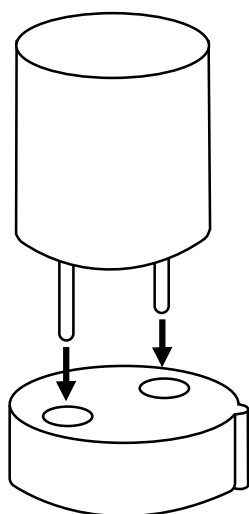
Before replacing the fuse, unplug the power cord from the socket.

### F1 fuse replacement



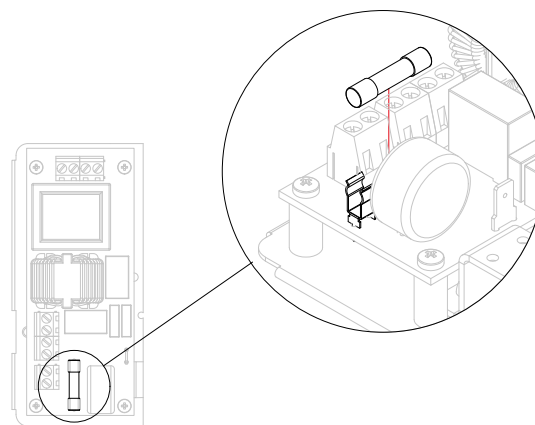
- ▶ To remove the F1 fuse, **lift** the fuse holder with a flathead screwdriver and **slide** the fuse **out**.
- ▶ **Fit** a new delayed porcelain mains fuse with the following parameters:
  - rated voltage: 250 VAC
  - current rating: 6.3 A
  - dimension:  $\varnothing 5\text{mm} \times 20\text{ mm}$

### F2 fuse replacement



An additional fuse F2 is used in the device. It is essential to use a miniature, delayed fuse 630 mA/ 250VAC, TR5, in accordance with IEC 60127, e.g. manufactured by Schurter.

### Fuse replacement B1



**CAUTION:** applies to devices with serial number: ICxxxxxAAAxxxxx

- ▶ To remove fuse B1, **lift it up** with a flathead screwdriver and **slide it out**.
- ▶ **Fit** a new delayed porcelain mains fuse with the following parameters:
  - rated voltage: 250 VAC
  - current rating: 6.3 A
  - dimension:  $\varnothing 5\text{mm} \times 20\text{ mm}$

## 5.7. Replacement of the control panel

Follow the panel installation instructions in **Chapter 4**. If the control panel itself needs to be replaced, check the compatibility of the new panel's software with the main module's software.

## 6. Installer menu

The iSENSE Panel 5i, the iCONNECT mobile app and the iCONNECT WEB service allow access to the Installer menu.

**The menu can be accessed by entering the following password:**

**2 5 8 9**

Some menu parameters may not be available depending on the configuration of the unit and whether the unit is turned on or off. These are marked with **\***.

## 6.1. Installer menu structure

### Regulation lead sensor

### Changing the function of the supply sensor

### Manual control\*

#### Momentary modes

Airing

- Duration of airing
- Ventilation intensity

Empty house

- Time control
- Start day
- Start month
- Start year
- End day
- End month
- End year

Open window

- Duration of mode Open window
- Exhaust fan speed

Fireplace

- Duration of Fireplace mode duration
- Supply fan speed

Kitchen hood

- Kitchen hood mode duration
- Supply air speed (increase)
- Extract speed (reduction)

#### Fan settings

Type of control:

- Constant fan control
- Constant flow

Constant flow - control calibration\*

Gears adjustment:

- Gear 1
- Gear 2
- Gear 3

#### Filter settings

Dirt detection mechanism - supply

Dirt detection mechanism - extraction

Filter replacement by the user

Days to alert

Days to emergency mode

Alert of upcoming replacement time

Filter class parameters\*

#### - iCARE M5

- Final pressure drop
- Dirt alarm
- Unit emergency mode
- Filter's lower range
- Filter's upper range

#### - iCARE F7

- Final pressure drop
- Dirt alarm
- Unit emergency mode
- Filter's lower range
- Filter's upper range

#### - iCARE G4 + F7

- Final pressure drop
- Dirt alarm
- Unit emergency mode
- Filter's lower range
- Filter's upper range

Resetting filter runtime

Dirty filter test settings

- Start day of dirt test
- Start time of dirt test
- Frequency of dirt tests
- Forcing a dirt test
- Delayed dirt test
- Dirt test display

#### Auto mode settings

CO<sub>2</sub> sensor

- CO<sub>2</sub> sensor signal source
- Normal CO<sub>2</sub> level
- CO<sub>2</sub> level hysteresis
- CO<sub>2</sub> sensor range

Humidity sensor

- Humidity sensor signal source
- Normal humidity level
- Humidity level hysteresis

#### Ionizer

Ionizer\*

#### Condensing unit 0-10V

Condensing unit 0-10V

Condensing unit heating mode

Condensing unit cooling mode

**Secondary heater settings**

Secondary heater
Secondary heater type
- None,
- Electric (ON / OFF)
- Electric (0 - 100 %)
- Water (ON / OFF)
- Water (0 - 100 %)
Secondary heater control mode
Actuator full open time
Maximum heating temperature of the heater
Heater start delay
Supply fan stop delay
Extraction fan stop delay

**Cooler settings**

Water cooler
Actuator full open time
Cooling blockade time

**GHE settings**

GHE
Sensor ground heat exchanger

**Exchanger drainage settings**

Operation of the exchanger drainage mechanism
Manual activation of exchanger drainage
Duration of phase 1
Duration of phase 2
Start time of exchanger drainage
Every how many days to run

**Temperature correction**

T1 - supply air temperature
T2 - extract air temperature
T3 - intake air temperature
T4 - exhaust air temperature
T15 - temperature behind the secondary heater
T16 - GHE temperature

**Modbus settings**

Modbus address
Transmission speed 9600, 19200, 115200
Number of stop bits 1 stop bit, 2 stop bits
Modbus activation Yes, No
Edit parameters Yes, No
Heat recovery unit control Yes, No

**Current configuration - Connection information**



## 6.2 Parameter description of the Installer menu

<b>Lead sensor</b>	Selectable lead sensor of the installation. The algorithm will aim at the setpoint temperature relative to this sensor.
<b>Change function Supply sensor</b>	Allows you to change the sensor against which inlet air algorithms are performed. Should be changed if a temperature control booster is connected. (e.g. Secondary heater)
<b>Manual control</b>	Manual control allows the manual setting of individual relay outputs. <b>Caution:</b> this menu should be used with caution and the outputs should be switched on consciously so as not to damage the heat recovery unit.
<b>Momentary operation modes</b>	Menu containing settings for Instantaneous time modes.
Airing	Menu containing settings for the "Airing" mode.
- Duration of airing	Airing mode duration. After this time the heat recovery unit will return to standard operation.
- Ventilation intensity	Ventilation intensity in "Ventilation" mode
Empty house	Menu containing "Empty house" mode settings
- Time control	Mode activation. Once activated, the parameters for setting the start date of the time mode appear.
- Start day	Start day of the "Empty house" time mode
- Start month	Start month of the "Empty house" time mode
- Start year	Start year of the "Empty house" time mode
- End day	End day of the "Empty house" time mode
- End month	End month of the "Empty house" time mode
- End year	End year of the "Empty house" time mode
Open window	Menu containing "Open window" mode settings
- Duration of Open window mode	Duration of "Open window" mode. After this time, the heat recovery unit will return to standard operation.
- Supply fan speed	Supply fan control level during the "Open window" momentary mode. The exhaust fan is turned off
Fireplace	Menu containing "Fireplace" mode settings
- Duration of Fireplace mode	Duration of "Fireplace" mode. After this time, the heat recovery unit will return to standard operation.
- Supply fan speed	Increase value of Supply fan control during "Fireplace" momentary mode. Supply fan control remains unchanged.
Kitchen hood	Menu containing "Kitchen hood" mode settings
- Duration of the Hood mode duration	Duration of "Kitchen hood" mode. After this time, the heat recovery unit will return to standard operation.
- Supply fan speed	Supply fan control increase value during the "Kitchen hood" momentary mode.
- Extract fan speed (reduction)	Extraction fan control reduction value during the "Kitchen hood" momentary mode.
<b>Fan settings</b>	Menu containing Fan settings.
Type of fan control	Selection of type of fan control.
- Constant fan control	With this option, the set "Ventilation intensity" is expressed in % and translates directly into Fan control.
- Constant flow	This option causes the set "Ventilation intensity" to be expressed in m3/h and activates the automatic Fans control algorithm to achieve the set value of m3/h flow rate. The option requires pressure sensors to be connected for correct operation.
Constant flow - Calibration*	A function that allows automatic calibration of the Fans in relation to the flow capacity of the ventilation system.
Gears adjustment	Menu with settings for individual gears
- Gear 1	Option to specify a predefined "Ventilation intensity" value for Gear 1
- Gear 2	Option to specify a predefined "Ventilation intensity" value for Gear 2
- Gear 3	Option to specify a predefined "Ventilation intensity" value for Gear 3

<b>Filter settings</b>	Menu containing filter settings.
Dirt detection mechanism - supply*	Choice of detection mechanism for dirty filters on the supply. Selectable options: - None - Time - Pressure sensor
Dirt detection mechanism - extraction*	Choice of detection mechanism for dirty filters on the extract. Selectable options: - None - Time - Pressure sensor
Filter replacement by the user	Option to make the filter replacement procedure available to the User.
Days to the alarm*	Time determining the need for filter replacement.
Days to emergency mode	Time after which a dedicated heat recovery unit operation will be forced when the filters are dirty.
Alert of upcoming replacement time	Time after which a note is displayed that the filters are about to be replaced.
Filter class parameters	Menu containing the settings for the individual filters.
- iCARE G4 filter	Menu containing the iCARE G4 filter settings: - Final pressure drop - Dirt alarm - Unit emergency mode - Filter's lower range - Filter's upper range
- iCARE M5 filter	Menu containing iCARE F7 filter settings (Same as "iCare G4")
- iCARE G4 + F7 filter	Menu containing iCARE G4 + F7 filter settings (Same as "iCare G4")
Resetting the runtime	Restore the initial conditions of the time mechanism.
Dirty filter test settings	Menu containing Dirt test settings. Active when "Pressure sensor" is selected.
- Start day of dirt test	The day of the week on which dirt filter test will be performed.
- Start time of dirt test	Time at which the dirty filter test will be performed.
- Frequency of dirt tests	Parameter specifies every how often the dirty filter test will be performed.
- Forcing a dirt test	Force the dirty filter test immediately.
- Delayed dirt test	Time to allow all questionable conditions to return to basic operation before performing a dirty filter test
- Dirt test display	Fan control values during the dirty filter test.
<b>AUTO mode settings</b>	Menu with AUTO mode settings
CO <sub>2</sub> sensor	Menu containing CO <sub>2</sub> sensor settings
- CO <sub>2</sub> sensor signal source	Determination of the input to which the CO <sub>2</sub> sensor is connected. Possible options: - none - Input AIN - SCO <sub>2</sub> sensor
- Normal CO <sub>2</sub> level	Determination of the normal CO <sub>2</sub> level.
- CO <sub>2</sub> level hysteresis	Parameter that defines the inertia of the algorithm so that heat recovery unit operation is smooth
- CO <sub>2</sub> sensor range	Maximum sensor reading.
Humidity sensor	Menu containing Humidity sensor settings.
- Humidity sensor signal source	Determination of the input to which the humidity sensor is connected. Possible options: - none - Input AIN - SRHT sensor - SCO <sub>2</sub> sensor
- Normal humidity level	Determination of normal humidity level.
- Humidity level hysteresis	Parameter that defines the inertia of the algorithm so that timing of the heat recovery unit operations is avoided.
<b>Ioniser</b>	Menu containing ioniser settings.
Ioniser	Parameter allows you to turn on the ioniser operation.

<b>Condensing unit 0-10V</b>	Menu with condensing unit settings 0-10V
Condensing unit 0-10V	Parameter allows the condensing unit operation to be enabled.
Condensing unit heating mode	Parameter allows the condensing unit heating operation to be enabled.
Condensing unit cooling mode	Parameter allows the condensing unit cooling operation to be enabled.
<b>Secondary heater settings</b>	Menu containing settings for the secondary heater.
Secondary heater	Parameter allows the operation of the secondary heater.
Secondary heater type	Selection of the type of heater installed. Options to choose from: - none - Electric (ON/OFF) - Electric (0 - 100%) - Water (ON/OFF) - Water (0 - 100%)
Secondary heater control mode*	Electric secondary heater control mode. Selectable: - Normal - SSR
Actuator full open time*	Time of full opening of the solenoid valve for the water heater.
Minimum supply control with secondary heater	Supply fan value below which the secondary heater will be switched off after it has cooled down.
Maximum heating temperature of the heater	Supply air temperature above which the heater will be switched off.
Heater start delay	Control delay of the heater when conditions for activation occur.
Supply fan stop delay	Parameter responsible for cooling down the heater. When the heater is switched off, the supply fan will run for a minimum of this time.
Extraction fan stop delay	Parameter responsible for cooling down the heater. When the heater is switched off, the Extract fan will run for a minimum of this time.
<b>Cooler settings</b>	Menu containing the cooler settings.
Water cooler	Parameter allows cooler operation.
Actuator full open time	Time of full opening of the solenoid valve for the water cooler.
Cooling blockade time	Time for which the cooler cannot start after the bypass is opened.
<b>GHE settings</b>	Menu containing GHE settings.
GHE	Parameter allows the operation of the ground heat exchanger.
Sensor ground heat exchanger	Parameter allows the operation of the ground heat exchanger.
<b>Exchanger drainage settings</b>	Menu containing Exchanger drainage settings.
Operation of the exchanger drainage mechanism	Parameter allows operation of the exchanger drainage mechanism to be enabled.
Manual activation of exchanger drainage	Parameter allows to force the activation of the exchanger drainage mechanism.
Duration of phase 1	Time at which the supply fan is turned on to maximum speed.
Duration of phase 2	Time at which the extraction fan is turned on to maximum speed.
Start time of exchanger drainage	Time at which the exchanger drainage mechanism will be performed.
Every how many days to run	Frequency of the exchanger drainage mechanism expressed in days.
<b>Temperature correction</b>	Menu containing parameters that allow the temperature reading to be corrected.
T1 - supply air temperature	Parameter responsible for T1 sensor correction
T2 - extract air temperature	Parameter responsible for T2 sensor correction
T3 - intake air temperature	Parameter responsible for T3 sensor correction
T4 - exhaust air temperature	Parameter responsible for T4 sensor correction
T15 - temperature behind the secondary heater	Parameter responsible for T15 sensor correction
T16 - GHE temperature	Parameter responsible for T16 sensor correction
<b>Modbus settings</b>	Menu with modbus settings
Modbus address	Settings related to Modbus address.
Transmission speed	Transmission speed for Modbus communication.
Number of stop bits	Settings related to the number of stop bits.
Modbus activation	Settings related to parity.

Edit parameters	Turn on and off Modbus protocol support.
Heat recovery unit control	Permission to edit parameters via Modbus protocol.
<b>Current configuration - Connection information</b>	Menu describing the current readings from the controller

## 7. Faults and operating indications

### 7.1 Faults without indication

The table shows possibly occurring faults without indication on the display and their description and solution.

FAULT	CAUSE	SOLUTION
Device does not switch on	Heat recovery unit is not plugged in	Insert the power cord plug of the appliance into the socket
	The power button under the decorative cover is in the "O" position.	Switch the power button to the "I" position
Noisy work	Dirty air filters	Change the air filters
	Contaminated or damaged fan	Contact the service
	Defective bypass system	Contact the service
Heat recovery unit does not reach the desired flow rate	Dirty air filters	Change the air filters
	Contaminated or damaged fan	Contact the service
	Dirty heat exchanger	Clean the heat exchanger
	Leaks in the system	Contact the Installer
Water leaks from the unit	Leaky drain connection	Correct the seating of the water trap in the heat recovery unit outlet
	Clogged trap	Clear the trap
	Defective siphon	Replace the water trap
Mainboard not connected to control panel	Heat recovery unit communication cable discontinuity between mainboard and control panel	Contact the service
Heat recovery unit has no air supply to the heat recovery unit	Dirty intake	Clean the intake
	Dirty exhaust	Clean the exhaust

### 7.2 Faults with indication

ALARMS	POSSIBLE CAUSE	ALARM SIGNAL	DISPLAY
Damaged supply temperature sensor.	The sensor has been damaged, incorrectly connected or unconfigured.	Alarm signalling, ALARM output active, Heat recovery unit stopped.	Continuously since the cause was noted.
Damaged additional temperature sensor.			
Damaged exhaust temperature sensor.			
Intake temperature sensor damaged.			
Extract temperature sensor damaged.			
Sensor ground heat exchanger temperature defective.			
Temperature sensor damaged.	Regulation lead sensor has been damaged, incorrectly connected or unconfigured.	Alarm signalling, ALARM output active, Heat recovery unit stopped.	Continuously since the cause was noted.
FAS alarm - Heat recovery unit stopped due to external signal.	Active signal from fire alarm system.	Alarm signalling, ALARM output active, FAS operating procedure.	Continuously after the cause has been noted.
Periodic inspection is coming up.	Periodic inspection is coming up - contact service.	Alarm signalling.	Less than 3 days to periodic inspection deadline.
General inspection by the manufacture's service is required	General inspection required - contact the service centre.	Alarm signalling, ALARM output active.	Until a new inspection is entered by the service.

## cont. 7.2 Faults with indication

ALARMS	POSSIBLE CAUSE	ALARM SIGNAL	DISPLAY
Too high supply air temperature.	Room supply air temperature noted to be too high.	Alarm signalling, ALARM output active, Over-temperature protection procedure.	Continuously since the cause was noted.
Too low supply air temperature	Room supply air temperature noted to be too low.	Alarm signalling, ALARM output active, protection procedure against Under-temperature protection.	Continuously since the cause was noted.
Active Secondary heater thermostat. Warm-up procedure.	A low temperature or signal from the secondary heater thermostat of the water heater was noted - the warm-up procedure was initiated.	Alarm signalling, ALARM output active, warm-up procedure.	Continuously since the cause was noted.
Possible overheating of the pre-heater.	Primary heater thermostat activation has been noted. It may require resetting.	Alarm signalling, ALARM output active, Electric heater alarm procedure.	Continuously since the cause was noted.
Electric preheater overheating - 3x thermostat tripping	High temperature of the electric preheater - triple trigger of the thermostat. Airflow too low, heater thermostat may require Alarms confirmation.	Alarm signalling, ALARM output active, Electric heater cyclic alarm procedure.	Continuously since the cause was noted.
Possible overheating of the secondary heater	Secondary heater thermostat activation was noted. It may require resetting.	Alarm signalling, ALARM output active, Electric heater alarm procedure.	Continuously since the cause was noted.
Secondary heater overheating - 3x thermostat tripping	Secondary heater high temperature - triple trigger of the heater thermostat. Airflow too low, heater thermostat may require Alarms confirmation.	Alarm signalling, ALARM output active, Electric heater alarm procedure.	Continuously since the cause was noted.
Heater thermostat activation	The thermostat of one of the electric heaters was activated. It may need to be reset.	Alarm signalling, ALARM output active, Electric heater cyclic alarm procedure	Continuously since the cause was noted.
Triple activation of the heaters thermostat - confirmation required	High temperature of one of the electric heaters - triple trigger of the thermostat. Airflow too low, heater thermostat may alarm acknowledgement.	Alarm signalling, electric heater cyclic alarm procedure.	Continuously since the cause was noted.
Error in heat recovery unit manufacturer's settings. Possible resetting of settings	Confirmation of Producer's configuration in the Producer's menu deleted or missing.	Alarm signalling, ALARM output active, heat recovery unit stopped.	Continuously since the cause was noted.
Unauthorized start - device locked	Unauthorised attempt to start the device. Contact service to remove the lock.	Alarm signalling, heat recovery unit is stopped and locked	Continuously since. noting of the cause.

ALARMS	POSSIBLE CAUSE	ALARM SIGNAL	DISPLAY
No communication with control panel	Possible damage to the transmission cable connecting the panel's mounting frame to the control panel itself.	Alarms signalling, further heat recovery unit operation.	Continuously since the cause was noted.
Communication error from supply air pressure sensor/flow sensor for supply air	Error in communication between control panel and supply air pressure sensor. Possible damage to or incorrect connection of sensor.	Alarm signalling, ALARM output active, further heat recovery unit operation.	Continuously since the cause was noted.
Communication error from extract air pressure sensor/flow sensor for extract air	Error in communication between control panel and extract air pressure sensor. Possible damage or incorrect connection of the sensor.	Alarm signalling, ALARM output active, further heat recovery unit operation.	Continuously since the cause was noted.
The deadline for replacing extract air filter is coming	The deadline for replacing the filter is approaching - depending on your heat recovery unit settings, purchase the filters or contact the service department.	Alarms signalling.	Continuously after the cause is noted, ceasing when the Alarm is accepted.
The deadline for replacing the extract air filter is coming	The deadline for replacing the filter is approaching - depending on your heat recovery unit settings, purchase the filters or contact the service department.	Alarms signalling.	Continuously after the cause is noted, ceasing when the Alarm is accepted.
Dirty supply air filter. Turn off the unit and replace the filter	Dirty filter on the supply duct. Disable the heat recovery unit and replace the corresponding filter.	Alarm signalling, ALARM output active	Continuously after the cause is noted. Once the Alarm is accepted, the Filter replacement procedure proceeds.
Dirty extract air filter. Disable the heat recovery unit and replace the filter	Dirty filter on the extract duct. Disable the heat recovery unit and replace the corresponding filter.	Alarm signalling, ALARM output active	Continuously after the cause is noted. Once the Alarm is accepted, the Filter replacement procedure proceeds
Dirty supply air filter. Call service	Dirty filter on the supply air duct. Call for service to replace air filters.	Alarm signalling, ALARM output active	Continuously after the cause has been noted.
Dirty extract air filter. Call service	Dirty filter on the extract air duct. Call for service to replace air filters.	Alarm signalling, ALARM output active	Continuously after the cause has been noted.
Filter replacement procedure	Filter replacement procedure is active which has stopped the heat recovery unit.	Alarm signalling, Heat recovery unit stopped.	Continuously after the cause has been noted.
Emergency mode - worn filters	The contamination of one of the filters has exceeded the alarm condition. It should be replaced immediately.	Alarm signalling, ALARM output active; alarm procedure for dirty filters	Continuously after the cause has been noted.

## cont. 7.2 Faults with indication

ALARMS	POSSIBLE CAUSE	ALARM SIGNAL	DISPLAY
No confirmation of supply fan operation	Possible mechanical failure of the supply fan. Disable the heat recovery unit and contact the service department.	Alarm signalling, ALARM output active.	Continuously after the cause has been noted.
No confirmation of extract fan operation	Possible mechanical failure of the extract fan. Disable the heat recovery unit and contact the service department.	Alarm signalling, ALARM output active.	Continuously after the cause has been noted.
Dirty filters test Do not turn off the heat recovery unit.	Dirty filter test is active. Heat recovery unit must not be switched off until the procedure is complete.	Alarms signalling.	Continuously after the cause has been noted.

## 8. Disposal and recycling

Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary. Do not dispose of electrical appliances as municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available.

If electrical appliances are disposed of in landfills or dumps, hazardous substance can leak into the groundwater and get into the food chain, damaging your health and well-being.

Proper disposal recovers raw materials from used equipment and promotes a circular economy.

## 9. Spare parts

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