BRINK

Air for life

Installation regulations

Wireless CO₂ sensor

English

Installation regulations

Wireless CO_2 sensor

$C \epsilon$

Store near the appliance

This appliance may be used by children as of 8 years of age, persons with reduced physical or mental capacities, and persons with limited knowledge and experience if they are supervised or have received instructions on how to use the appliance safely and are aware of the possible dangers.
Children younger than 3 years of age must be kept away from the appliance, unless they are under constant supervision.
Children between the ages of 3 and 8 may switch the appliance on or off, but only if supervised or if they have received clear instructions on the safe use of the appliance and understand the possible dangers, on the condition that the appliance has been placed and installed in the normal position for use. Children between the ages of 3 and 8 may not insert the plug into the socket, nor clean or make changes to the settings of the appliance, nor carry out any maintenance on the appliance that would normally be carried out by the user. Children may not play with the appliance.
If you need a new power cable, always order the replacement from Brink Climate Systems B.V. To prevent dangerous situations, a damaged mains connection must only be replaced by a qualified expert!

Country: GB

Contents

1 User manual

Dear client,

Thank you for purchasing the Wireless CO_2 sensor. This user and installation manual contains all required information to quickly become familiar with the product. We kindly request you to carefully go through this information before using the product. This user's manual is intended for the Wireless CO_2 sensor installer and end user.
Store this user's manual. For more information or ordering manuals, please contact:

Brink Climate Systems B.V.
P.O .Box 11
NL-7950 AA, Staphorst, The Netherlands
T: +31 (0) 522 46 99 44
F. +31 (0) 522 46 94 00
E. info@brinkclimatesystems.nl
www.brinkclimatesystems.nl

1.1 Description Wireless CO$_2$ sensor

Intended and unintended use

This manual is about the Wireless CO$_2$ sensor (See D in the image below).
The Wireless CO$_2$ sensor should only be used in combination with products approved by Brink Climate Systems B.V..

The Wireless CO$_2$ sensor can only be used with a heat recovery unit (HRU) equipped with a USB connection and where the various components are equipped with specific software versions:

- HRU device software version starting with S2 → Version S2.01.24 or higher.
- HRU device software version starting with S3 → Version S3.01.03 or higher.
- Wireless transmitter/receiver and remote controller(s)/sensor(s) software version → S1.01.15 or higher.

Software versions on the HRU device can be checked through the user interface or by consulting the relevant installation manual of the device. The HRU device can be updated using the USB stick and instructions provided with the wireless transmitter/receiver.

Brink Climate Systems B.V. offers a series of remote controllers/sensors that connect to a heat recovery unit (HRU) via a wireless transmitter/receiver (F). This series consists of 5 types of wireless remote controllers/sensors (A-E). The remote controller (A, B, or C) indicates when the filter(s) need to be replaced/cleaned or when there is a malfunction in the ventilation system.

Optionally, a signal amplifier is available. This amplifier is necessary when the signal in the dwelling/house needs to travel a long distance, in very well-insulated homes, or in situations where signal-disruptive materials are used. When designing, provide for provision for this signal booster.

The connected HRU device is operated by pressing one of the buttons on the Wireless CO$_2$ sensor. For explanation of the buttons of the Wireless CO$_2$ sensor see →
The Wireless CO$_2$ sensor must always be used together with a Wireless transmitter/receiver on the HRU appliance; a combination of multiple remote controller(s)/sensor(s) on 1 Wireless transmitter/receiver is possible.
In total, a maximum combination of 12 remote controller(s)/sensor(s) can be paired to 1 transceiver (Max. 4 controllers / max. 4 CO$_2$-sensors and max 4 humidity sensors).

> **ⓘ Note**
> A remote controller with a build in CO$_2$-sensor is seen by the connected HRU appliance as a CO$_2$-sensor and a controller with a build-in humidity sensor is seen as a humidity sensor(RH).

If one or more CO$_2$ sensors are paired with the HRU device, then the device ventilates according to the conditions set in the HRU device by the connected CO$_2$ sensor(s).
If multiple sensors are used, the sensor requesting the highest ventilation level takes priority; if multiple remote controllers are used, the most recently used ventilation level takes precedence.

When the vacation mode (⌂) is activated (if available), the humidity control/CO$_2$ control (if applicable) is not operational! The CO$_2$ control is also not operational in setting 3 of a 3-position switch and in boost mode on a RH sensor with boost function.

The airflow rates associated with the ventilation settings must always be set in the paired HRU device. Refer to the installation manual of the connected HRU device for the ventilation settings..
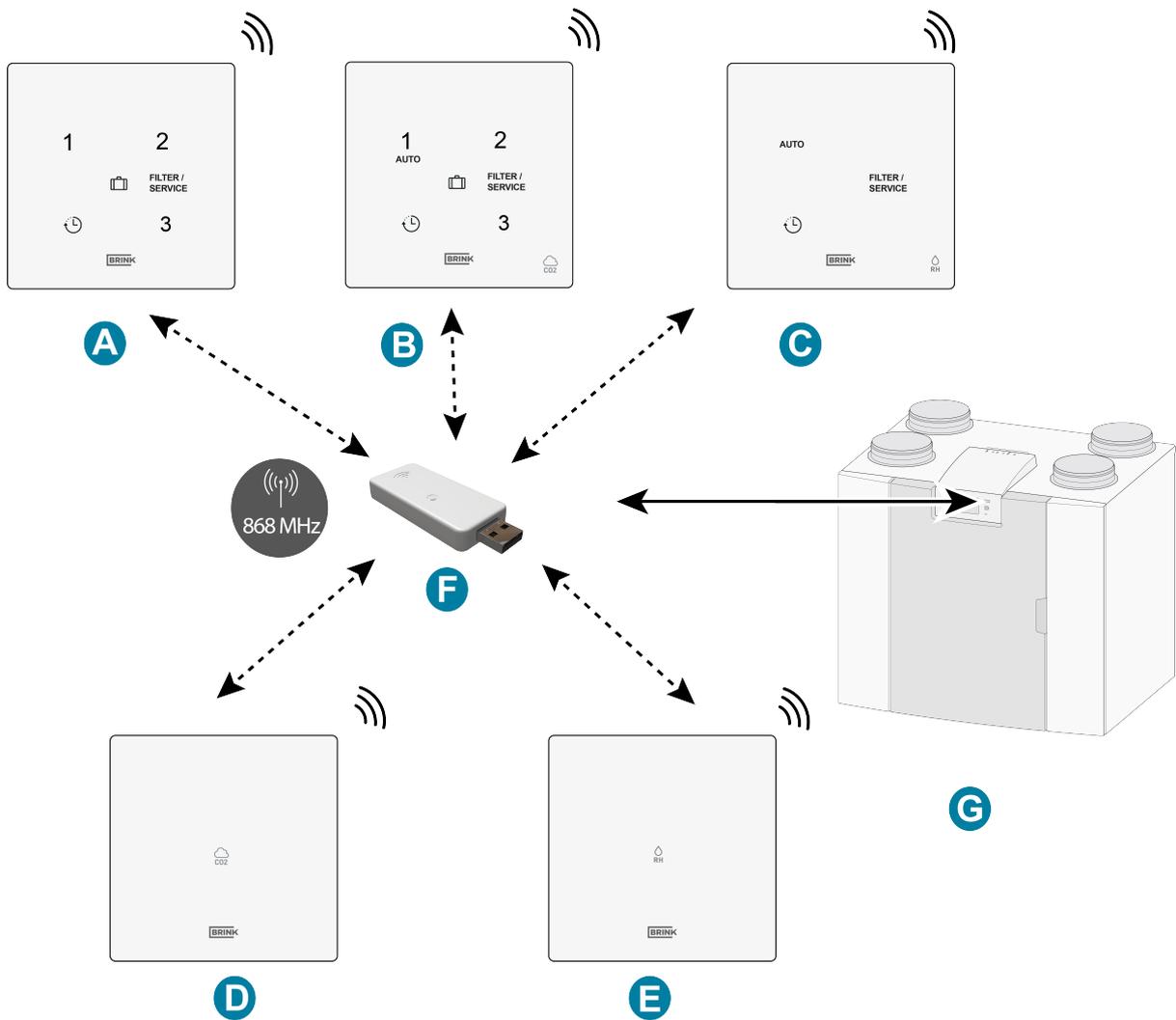
A. Wireless 3-position switch
B. Wireless CO_2 sensor with 3-position switch
C. Wireless RH sensor with boost function
D. Wireless CO_2 sensor
E. Wireless RH sensor
F. Wireless transmitter/receiver
G. Device with USB connection (e.g., HRU device type Flair)

1.2 Delivery content

Check that the delivered Wireless CO_2 sensor is complete and not damaged.

The delivery content of the Wireless CO_2 sensor consists of the following components:

1. Wireless CO_2 sensor
2. Frame
3. Wall bracket
4. Mounting screws
5. Permanent power supply (230 VAC/5 VDC)
6. Short information with QR-code to on line manual
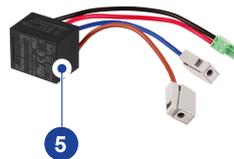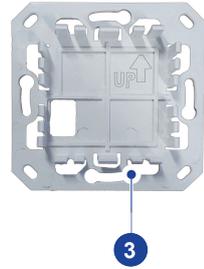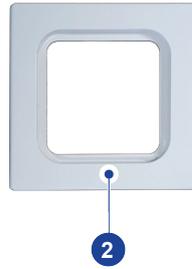
2 Technical specification

2.1 General product specification

Product description

Name:	Wireless CO_2 sensor

Technical product specifications

Operating voltage	5 V
Protection class	IP21
Frequency	868 MHz
Color	RAL 9010 (White)

Ambient conditions

Ambient temperature	0 °C to 50 °C
Storage temperature	-20 °C to 60 °C
Humidity	0% to 90%
Other	For indoor use only
Range	300 m (open field; 1 meter hight

2.2 Environmental influences

For correct functioning, the Wireless CO_2 sensor should be placed and used in a space with the correct ambient conditions for proper operation. The Wireless CO_2 sensor may only be mounted indoors, but not close to a heat source, a radiator or in a extreme humid environment. The Wireless CO_2 sensor may not be exposed to direct radiation heat (sun light). The Wireless CO_2 sensor may not be installed close to a magnetic field. This could damage internal components.

2.3 Overview operational controls

The Wireless CO₂ sensor has four invisible (capacitive) buttons. Each button is equipped with a LED (white).
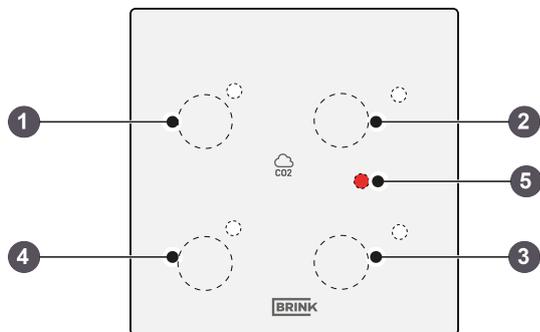
1. *Button 1 - Not visible but available for setting "node ID" during pairing*
2. *Button 2 - Not visible but available forsetting "node ID" during pairing*
3. *Button 3 - Not visible but available for setting "node ID" during pairing*
4. *Button 4 - Not visible but available for setting "node ID" during pairing*
5. *Fault indication LED*

Button 1, 2, 3 & 4
When the (not visible) buttons 1, 2, 3 & 4 are operated for a node ID (see → Connecting with wireless transmitter/receiver (Pairing) -> page 14) the white LED placed next to these buttons will flash once as "button press" confirmation.

Fault LED
This red LED indicates when the filter(s) must be cleaned/replaced (LED lit continuously) or when the connected HR unit malfunctions (LED flashes). This applies to both the battery and 230 V powered sensor/remote controller.

3 Assembly

3.1 Installing Wireless CO$_2$ sensor

Perform **step1** to **step 5** to install the Wireless CO$_2$ sensor.
An example of a wireless 3-position switch is shown in this section, but the Wireless CO$_2$ sensor is installed in the same way.
The Wireless CO$_2$ sensor needs to be installed on a flush mounted electrical wall box (Ø 55 mm).

⚠️ **Danger**

At all times disconnect the 230 V mains supply when connecting the permanent power supply!

Step 1

- Place the permanent power supply (A) in the wall box.
- Connect the 230V mains supply to the factory mounted gray connectors of the power supply. Strip the wire over a length of approx. 7 mm.
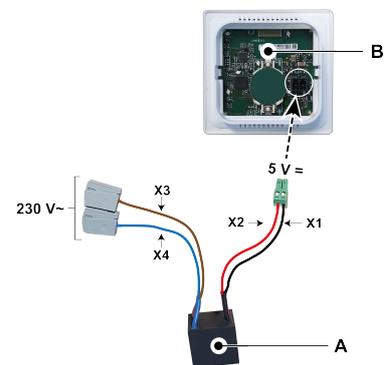
Step 2

- Feed the red and black wires with the green connector through the square hole in the in the wall bracket(C).
- Screw the wall bracket on the wall box.

ℹ️ **Note**

The arrow on the wall bracket must point upwards!

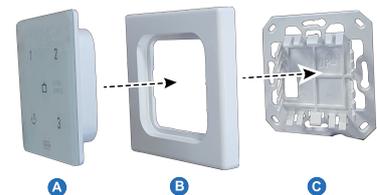A. *Permanent power supply (230 VAC/5 VDC)*

B. *Wireless CO$_2$ sensor*

X1 = Black
X2 = Red
X3 = Brown
X4 = Blue

Step 3

- Feed the red and black wire with the green connector through the frame (B), and connect this to the connector on the back side of the Wireless CO$_2$ sensor (A).
- Click the Wireless CO$_2$ sensor (A) together with connected red and black wires and the frame (B) on the wall bracket (C).

Step 4

- After mounting the Wireless CO_2 sensor on the wall bracket, remove the foil from the front.
- Reconnect the 230 V. mains supply.
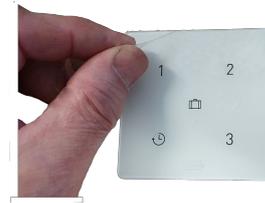
Step 5

When the Wireless CO_2 sensor has been installed on the wall, the Wireless transmitter/receiver* can be placed in the USB port of the HRU appliance that needs to be connected with the Wireless CO_2 sensor. To connect the Wireless transmitter/receiver with HRU appliance see → Connecting with wireless transmitter/receiver (Pairing) -> page 14

The Wireless transmitter/receiver is not included in the scope of delivery of the Wireless CO_2 sensor and must be ordered separately!

i	**Note**

Once the wireless remote control/sensor receives power, all 5 LEDs on the remote control/sensor will start blinking.

3.2 Remove Wireless CO_2 sensor

For removing the Wireless CO_2 sensor from the wall bracket: Grasp the front of the Wireless CO_2 sensor by the edges and gently pull it away from the bracket.

An example of a wireless 3 position switch is shown in this section, but other wireless controllers/sensors are to be removed from the wall bracket in the same way.
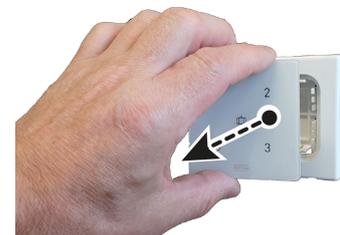
3.3 Using another frame (option)

The Wireless CO_2 sensor consists of a wall bracket (C), a frame (B) and the wireless controller (A). The wall bracket (C) is designed in such a way that a large number of frames from other vendors can be used.

Products are supplied with Brink frame as standard. This frame can be replaced by frames from the other manufacturers and series. Appearance and tolerances vary by manufacturer. The following types of frames can be used instead of the standard frame:
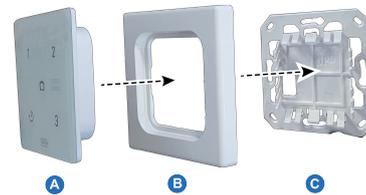
A. Gira - System 55
B. Busch Jaeger Balance/Reflex SI
C. Jung AS
D. Siemens Delta
E. Berker S.1
F. Merten System M
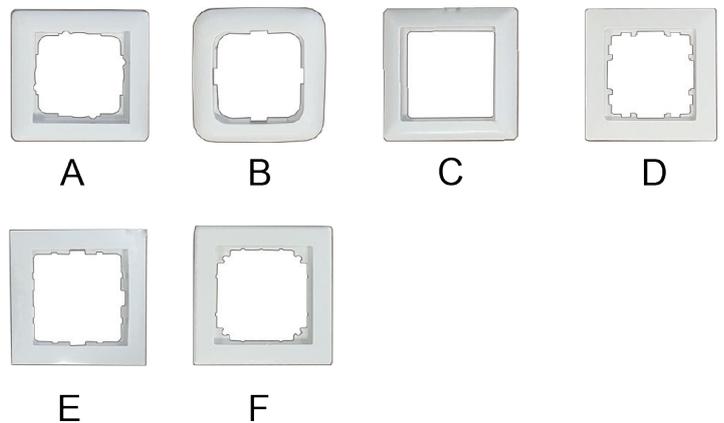
The above mentioned alternative frames are not included in the Brink delivery program!

A   B   C   D

E   F

4 Setting to work

4.1 Connecting with wireless transmitter/receiver (Pairing)

When the Wireless CO$_2$ sensor is installed and the Wireless transmitter/receiver is placed in the HRU appliance (see image on the right), the two can be connected (pairing).
For a HRU appliance equipped with a display, the USB symbol (⬛▤) is visible as confirmation that the Wireless transmitter/receiver has been "recognised"; for a HRU appliance without a display, this USB symbol will be visible in the app. If the USB symbol is not visible, your HRU appliance is probably equipped with a software version before July 2022 and it is not possible to connect the Wireless CO$_2$ sensor.

Follow the steps as described below:

Step 1
Apply mains to the HRU appliance.

Step 2
Press and hold the pairing button of the USB transceiver between 3 and 10 seconds.
The green LED on the USB transceiver starts flashing (1x per second).

The pairing mode will be active for 10 minutes.

Step 3
Press and hold the pairing button between 3 seconds 10 seconds on the bottom of the controller (through a small hole), for example with the end of a paper clip. When pressing the button a ''click'' should be noticeable.

Pairing is enabled when four Led lights illuminate in turn (0.5 sec ON, the next one comes on when the previous one is off).

Pairing is disabled when Filter/service LED is ON for two seconds; go back to step 3.
If pairing fails, reset the Wireless CO$_2$ sensor to factory settings and try pairing again. Or see → Signal amplifier -> page 21
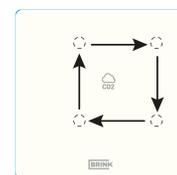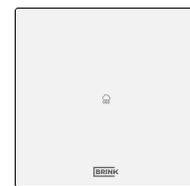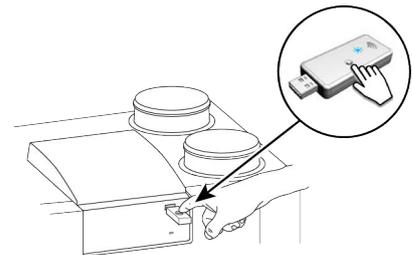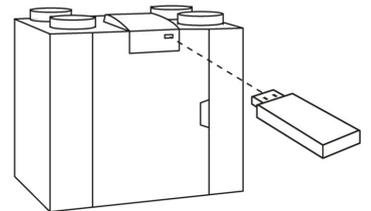
Step 4

Choose under which number the Wireless CO_2 sensor should be registered by configuring a "NODE ID"; press any of the four buttons on the Wireless CO_2 sensor (do not use the holiday button ⬚). For example press button 2; LED 2 will flash once.

When pairing multiple sensors/remote controllers with the HRU device, press a button for NODE ID that has not been paired yet. This ID must be unique for each sensor. The button number corresponds to the number of the paired accessory in the HRU device menu.
If pairing is unsuccessful, return to step 3. Also, check the wireless transmitter/receiver.

To stop the pairing mode: Briefly press and hold the pairing button of the wireless transmitter/receiver (1 second). The green LED on the wireless transmitter/receiver will stop flashing.

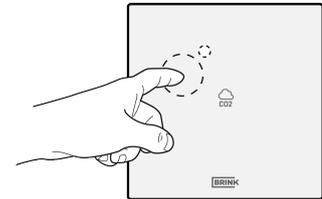For settings of the CO_2-sensor(s) see → <u>Settings</u> -> page 19

ⓘ	**Note**
	Always deactivate the pairing mode on the wireless transmitter/receiver immediately after pairing.

| ⓘ	**Note**
	If a wireless remote controller/sensor is registered with an existing NODE ID, the first registered remote controller/sensor will be overwritten. Please ensure that all paired remote controllers/sensors have their own unique NODE ID.

The activation of the remote controller/sensor and the airflow rates associated with the ventilation settings must always be set on the paired HRU device. This cannot be done on the Wireless CO_2 sensor.
Refer to the installation manual of the connected HRU device for further instructions.

4.2 Factory reset Wireless CO_2 sensor

It is possible to reset the wireless transmitter/receiver and remote controller(s)/sensor(s) back to factory settings:

Factory resetting controller

- Press the pairing button (for example with end of a paperclip) for more than 20 seconds. When the pairing button is properly pressed , one feels a "click".
- To confirm this reset all 5 LED's will flash two times (0,5 second on and 5 seconds off).
- All the pairing information has been deleted from the Wireless CO_2 sensor.
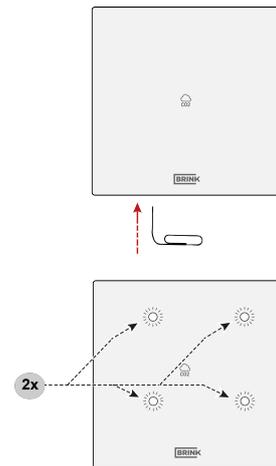
Factory resetting USB transceiver

- Press the button on the Wireless transmitter/receiver for more than 20 seconds.
- To confirm this reset, the green LED on the Wireless transmitter/receiver will flash two times.
- All the pairing information has been deleted from the Wireless transmitter/receiver.
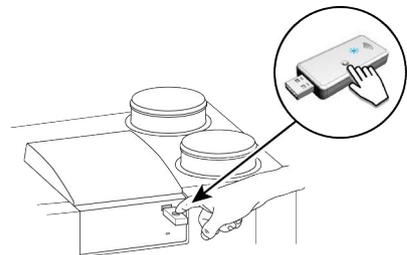
4.3 Pairing multiple systems

When pairing multiple installations/residences, be sure to complete the pairing of the wireless transmitters per installation/residence, and ensure that only one (1) wireless transmitter/receiver is in pairing mode at a time.
It is possible for a Wireless transmitter/receiver in pairing mode to detect and pair with wireless transmitter/receiver(s), wireless controller(s), and/or sensor(s) from different installations/residences.
To stop the pairing mode on a Wireless transmitter/receiver: Press the pairing button on the wireless transmitter/receiver (1 second). The Green LED on the device will stop flashing.

> **i** | **Note**
> Always deactivate the pairing mode on the wireless transmitter/receiver immediately after pairing.

5 Information additional Wireless CO₂ sensor

5.1 Pairing additional remote controller/sensor

For connecting extra remote controllers or sensors to the HRU appliance follow the steps as described below.

A wireless 3-position switch is shown as an example.

Step 1
Apply mains power to the HRU appliance.

Step 2
Press and hold the pairing button on the Wireless transmitter/receiver (between 3 and 10 seconds).
The green LED on the Wireless transmitter/receiver starts flashing (1x per second). The pairing mode is active for 10 minutes.
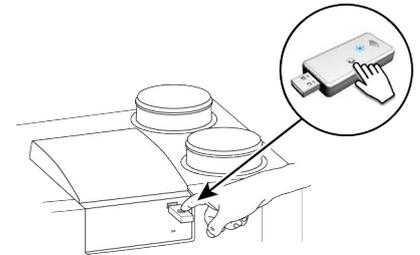
Step 3
Press and hold the pairing button between 3 seconds 10 seconds on the bottom of the controller (through a small hole), for example with the end of a paper clip. When pressing the button a ''click'' should be noticeable.

Pairing is enabled when four Led lights illuminate in turn (0.5 sec ON, the next one comes on when the previous one is off).
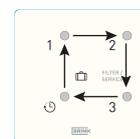
Pairing disabled when the red LED is ON for two seconds.
If pairing fails, reset Wireless CO₂ sensor to factory setting and try to pair Wireless CO₂ sensor again.Or see →

Step 4

Choose under which number the sensor should be registered by configuring a "NODE ID"; press any of the four buttons on the Wireless CO_2 sensor (do not use the holiday button ⬚). For example press button 2; LED 2 will flash once.

When pairing multiple sensors/remote controllers with the HRU device, press a button for NODE ID that has not been paired yet. This ID must be unique for each sensor. The button number corresponds to the number of the paired accessory in the HRU device menu.
If pairing is unsuccessful, return to step 3. Also, check the wireless transmitter/receiver.

To stop the pairing mode: Briefly press and hold the pairing button of the wireless transmitter/receiver (1 second). The green LED on the wireless transmitter/receiver will stop flashing.

ℹ	**Note**
	Always deactivate the pairing mode on the wireless transmitter/receiver immediately after pairing.

ℹ	**Note**
	If a wireless remote controller/sensor is registered with an existing NODE ID, the first registered remote controller/sensor will be overwritten. Please ensure that all paired remote controllers/sensors have their own unique NODE ID.

6 Settings

6.1 Wireless CO₂ sensor functioning general

The Wireless CO₂ sensor(es) ensure optimum ventilation in the dwelling by automatically adjusting the air flow rate on the basis of the CO$_2$ level. When multiple Wireless CO₂ sensors are installed the air flow rate is determined by the Wireless CO₂ sensor that requests the highest level.
Depending on the minimum and maximum (set) PPM value, the Wireless CO₂ sensor adjusts the air flow proportionally between the setting 1 (set low) and setting 3 (set high).

ⓘ **Note**
The CO$_2$ control is only active when the HRU appliance is in ventilation mode 1 or 2.
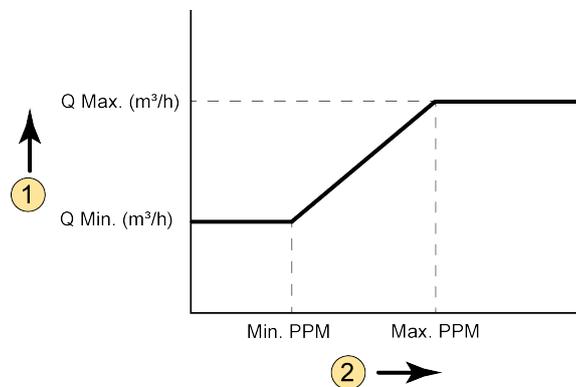
1	=	Air flow rate
2	=	Amount of CO₂ in area where Wireless CO₂ sensor is situated
Q Min	=	Minimum air flow setting 1
		For example Wireless CO₂ sensor factory setting step no. 1.2 (in Flair appliance) = 100 m^3/h
Q Max	=	Maximum air flow setting 3
		For example Wireless CO₂ sensor factory setting step no. 1.4 (in Flair appliance) = 250 m^3/h
Min. PPM	=	Minimum (set) PPM value
		For example Wireless CO₂ sensor factory setting step no. 6.2 (in Flair appliance) = 400 PPM
Max. PPM	=	Maximum (set) PPM value
		For example Wireless CO₂ sensor factory setting step no. 6.3 (in Flair appliance) = 1200 PPM

6.2 Wireless CO_2 sensor settings

To activate the connected Wireless CO_2 sensor, the setting of the Wireless CO_2 sensor must be set to "ON" in the settings menu of the relevant HRU appliance. To change settings in the settings menu, see the installation instructions for the appliance in question. When desired, the minimum and maximum PPM values on which the Wireless CO_2 sensor are controlled can also be set in the settings menu.

CO_2- settings at Flair appliance				
Step no.	Description	Factory setting	Setting range	Step
6	Wireless CO_2 sensor			
6.1	Switching ON and OFF Wireless CO_2 sensor	OFF	ON - OFF	-
6.2	Minimum PPM Wireless CO_2 sensor 1	400		
6.3	Maximum PPM Wireless CO_2 sensor 1	1200		
6.4	Minimum PPM Wireless CO_2 sensor 2	400		
6.5	Maximum PPM Wireless CO_2 sensor 2	1200	400 - 1200	25
6.6	Minimum PPM Wireless CO_2 sensor 3	400		
6.7	Maximum PPM Wireless CO_2 sensor 3	1200		
6.8	Minimum PPM Wireless CO_2 sensor 4	400		
6.9	Maximum PPM Wireless CO_2 sensor 4	1200		

6.3 CO_2 values check on ventilation appliance

In the information menu (for all Flair appliances) the values of the connected Wireless CO_2 sensor(es) can be read out. With this you can also check the proper operation of the connected Wireless CO_2 sensor(es). Values can only be read in this information menu; changing of settings is not possible. For more information regarding the information menu, see the installation instructions for the appliance in question.

Information menu at Flair appliances:
Press the info button ⓘ on the display and use the ∧ and ∨ button o go to the reading values of the Wireless CO_2 sensor(es).

You can consult the user interface or the display of the HRU appliance device to see which remote controller/sensor the HRU Appliance controls.

ℹ	**Note**
	It may take up to 48 hours for the Wireless CO_2 sensor to measure and display the correct value.

7 Signal amplifier

An optional signal amplifier is available. This amplifier is necessary when the signal needs to cover a long distance in the house , in very well-insulated homes, or in situations where signal-disrupting materials are used.

If a sensor/remote controller is out of range of the wireless transmitter/receiver and cannot be paired (red LED on controller or sensor); remove the wireless transmitter/receiver from the Brink device and connect it to a smartphone adapter or laptop (to provide power to the wireless transmitter/receiver). Now locate the wireless transmitter/receiver in the same room as the controller or sensor to be paired.

Restart the pairing procedure. If pairing is successful, a signal amplifier needs to be installed to extend the signal range of the wireless transmitter/receiver to the location of the controllers and/or sensors.

The signal amplifier can be ordered at Brink under article code 532715.

ⓘ	**Note**
	The signal amplifier requires a fixed 230 V power supply.

ⓘ	**Note**
	Always pair remote controllers and sensors directly to the wireless transmitter/receiver and not through the signal amplifier. The signal amplifier cannot be used for pairing.
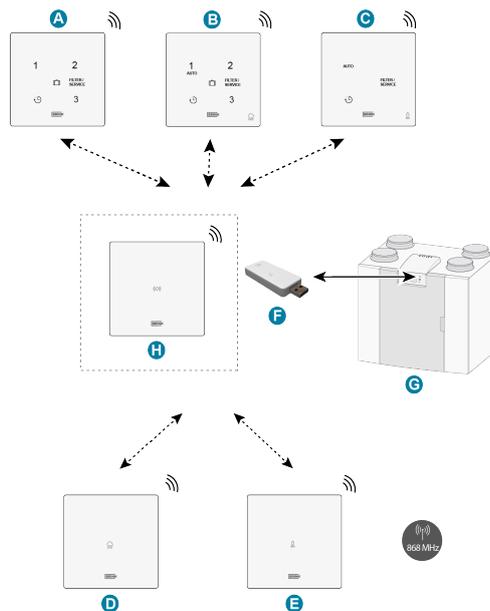
A. Wireless 3-position switch

B. Wireless CO_2 sensor with 3-position switch

C. Wireless RH sensor with boost function

D. Wireless CO_2 sensor

E. Wireless RH sensor

F. Wireless transmitter/receiver

G. Device with USB connection (e.g., HRU device type Flair)

H. (Optional) Signal amplifier

8 Troubleshooting and warranty

8.1 Failure

- When using battery-powered remote controllers/sensors, the HRU device will go into a fault state when the battery is low. The fault will disappear automatically after replacing the battery.
- Check if the HRU device is in vacation mode if wireless CO_2 or RH sensors are not functioning.
- If there are issues with pairing, see → Signal amplifier -> page 21
- Refer to the installation manual of the connected HRU device for other errors.

8.2 Warranty

"The Wireless CO_2 sensor has been carefully manufactured by Brink Climate Systems B.V. and meets high-quality standards. The functionality of the Wireless CO_2 sensor is guaranteed for a period of two years from the moment of delivery. This warranty is provided in accordance with Brink Climate Systems B.V.'s General Terms and Conditions, which you can find on www.brinkclimatesystems.nl. In case of incorrect or improper use of the Wireless CO_2 sensor and failure to follow the instructions in this user manual, your right to warranty is void.

If you wish to claim warranty:
You must make this known in writing via:
Brink Climate Systems B.V.
P.O .Box 11
NL-7950 AA, Staphorst, The Netherlands

ⓘ	**Note**
	It is not allowed to make any changes to the hardware or software of the Wireless CO_2 sensor. This can affect the proper functioning of the Wireless CO_2 sensor, and in that case, all warranties will be void."

9 Maintenance

9.1 Maintenance

Clean the Wireless CO$_2$ sensor regularly with a soft cloth.

	Note
[i]	Never apply water and/or (cleaning) liquid to the Wireless CO$_2$ sensor.

10 Declaration of Conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Manufacturer: **Brink Climate Systems B.V.**

Address: **P.O. Box 11**
NL-7950 AA, Staphorst, The Netherlands

Product: **Wireless CO$_2$ sensor**

The product described above complies with the following directives:

♦ 2014/53/EU (EMC directive)

The product described above has been tested according to the following standards:

♦ EN 301 489-3: V2.1.1:2019-03

♦ EN 300 220-2: V3.2.1:2018-06

♦ ETSI EN 300 220-1: V3.1.1 (2017-02)

♦ EN 62479: 2010

♦ EN 60669-2-5: 2016

♦ EN 60669-2-1: 2004 + A1:2009

♦ EN 50428: 2005 + A1:2007 + A2:2009

EU-Type Examination Certificate 40056587; VDE Testing and Certification Institute (0366).

Staphorst, 15-04-2023

A. Hans
Managing Director

11 Recycling and disposal

 Do not dispose of as household waste!

In accordance with the Waste Disposal Act, the following components must be disposed of or recycled in an environmentally compatible manner by means of appropriate collection points:

- Old appliance
- Wearing parts
- Defective components
- Electrical or electronic waste
- Environmentally hazardous liquids and oils

Environmentally compatible means separated by material groups to ensure the greatest possible recyclability of the basic materials with the minimum environmental impact.

1. Dispose of packaging made of cardboard, recyclable plastics and synthetic filler materials in an environmentally compatible manner through appropriate recycling systems or a recycling centre.
2. Please observe the applicable national and local regulations.