

### External wireless CO<sub>2</sub> sensor M-WRG-II FSC

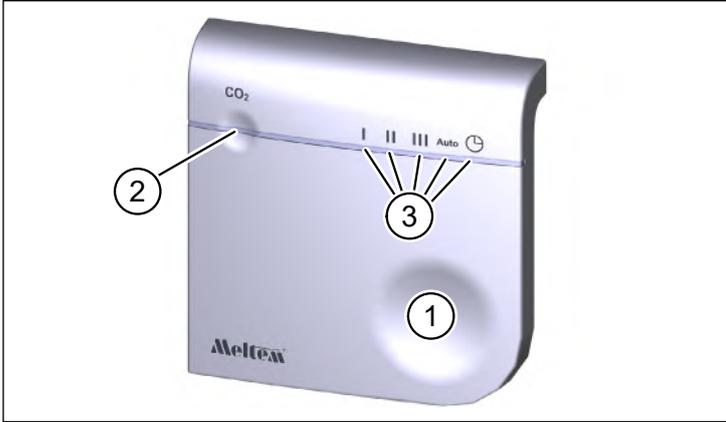


Fig. 1: External wireless CO<sub>2</sub> sensor

Item in Fig. 1	Description
1	Control button (touch-sensitive)
2	Status LED
3	Mode LEDs (5x)

## 1 Introduction

### 1.1 Notes on these instructions



These instructions contain important information that should be followed when installing and using the wireless CO<sub>2</sub> sensor.

- ▶ Read all the instructions carefully to avoid possible risks and mistakes.
- ▶ These instructions are part of the product. Keep the instructions in a safe place for future reference.

### NOTICE

- ▶ When operating the ventilation unit, also follow the operating instructions that were supplied with your unit.

### 1.2 Description

The wireless CO<sub>2</sub> sensor is used for wireless operation of ventilation units from the M-WRG-II and M-WRG series constructed from 2020 onwards (all excluding RS-485 types). It can also be used to determine the CO<sub>2</sub> concentration at an installation location selected by you, provided that it is within the wireless range. The “CO<sub>2</sub> control” and “Automatic mode” ventilation programs use the transmitted values to automatically adjust the unit’s air flow to the required ventilation level. One wireless CO<sub>2</sub> sensor may be linked to each ventilation unit. If the ventilation unit has an internal CO<sub>2</sub> sensor, it will be automatically disabled. The wireless CO<sub>2</sub> sensor incorporates the CO<sub>2</sub> control function into ventilation units without an internal CO<sub>2</sub> sensor. The control button (item 1 in Fig. 1) is used to activate five different ventilation levels/programs. The current selection is indicated by one of the five green mode LEDs (item 3 in Fig. 1). The multi-coloured status LED (item 2 in Fig. 1) signals the wireless sensor and ventilation unit operating statuses. If the CO<sub>2</sub> concentration exceeds 800 ppm (factory setting) in the “CO<sub>2</sub> control” or “Automatic mode” ventilation program, the ventilation level is increased continuously up to max. 60 m<sup>3</sup>/h until the CO<sub>2</sub> concentration in the room drops back below 800 ppm. When it is started for the first time, the wireless CO<sub>2</sub> sensor takes 2 minutes to calibrate itself so that it can return stable values.

The wireless sensor is fixed to the wall with the dowels and screws provided (see section 4.1). A 230 V connection is needed for operation.

The optional M-WRG-FBH wireless remote control, part no. 5478-10, can be used to program the functions of the wireless sensor. You will find more details in the “User guide for wireless remote control M-WRG-FBH”. The wireless CO<sub>2</sub> sensor can also be used in parallel with the M-WRG-FBH wireless remote control, M-WRG-FT 4-way wireless pushbutton switch and M-WRG-II FSF wireless humidity sensor and in conjunction with the U<sup>2</sup> installation version and all M-WRG-II and M-WRG covers.

### 1.3 Target group

These installation and operating instructions are aimed at two target groups:

The activities described in chapter “4 Installation and set-up” must only be carried out by specialised personnel with the following qualifications:

- Training in the installation and commissioning of electrical devices
- Training in electrical hazards and the local safety requirements
- Knowledge of the relevant standards and directives
- Knowledge and observance of this document and all the safety instructions

The other chapters of this document are intended for users of the wireless CO<sub>2</sub> sensor. No special prior knowledge is needed.

### 1.4 EU declaration of conformity

The wireless CO<sub>2</sub> sensor described below

Type: M-WRG-II FSC

Part number: 733011

manufactured by

Meltem Wärmerückgewinnung GmbH & Co. KG

Am Hartholz 4

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conforms to the regulations and standards listed in the EU Declaration of Conformity.

### 1.5 Technical data

Product characteristics	
Dimensions (W x H x D)	100 mm x 100 mm x 25 mm
Weight	approx. 125 g
Colour	white, similar to RAL 9010
Material of the plastic parts	ABS
Ambient conditions	
Ambient temperature during operation	0 °C to 40 °C
Ambient temperature for storage and shipping	-20 °C to 55 °C
Relative humidity	0 % to 90 %, non-condensing
IP code (IEC 60529)	IP30
Electrical connection	
Operating voltage	195 V AC to 253 V AC
Mains frequency	50 Hz
Maximum power consumption	4 W
Cable cross-section	0.25 mm <sup>2</sup> to 2.5 mm <sup>2</sup>
Wireless connection	
Communication frequency	868.3 MHz
Output power	at least 0 dBm
Data logging	
Measurement range	400 ppm to 2,000 ppm
Measurement accuracy (within the measurement range, >10 minutes after switching on)	40 ppm + 2 % of the measured value at 20 °C
Time taken to achieve measurement stability after switching on	2 min

## 1.6 Environmentally-friendly disposal

The components of the wireless CO<sub>2</sub> sensor must not be disposed of in the residual waste bin.

- ▶ In Germany, metal and plastic components should be disposed of at the local recycling centre. The national regulations in other EU states should also be followed.
- ▶ In Germany, electrical components should be disposed of in accordance with the Electrical and Electronic Equipment Act (ElektroG). In other EU states, the national implementation of the Waste Electrical and Electronic Equipment Directive 2012/19/EU (WEEE) should be followed.
- ▶ The regulations and statutory requirements in your own country concerning disposal should also be followed.

## 1.7 Explanation of the symbols used

- ▶ This symbol indicates an action to be taken.
- This symbol indicates a list.

## 2 Safety

The wireless CO<sub>2</sub> sensor is approved only for use in dry interior areas and must be protected against humidity and moisture to prevent short-circuits. Parts of the wireless CO<sub>2</sub> sensor carry potentially fatal voltages.

### 2.1 Hazard classification

#### **⚠ DANGER**

The signal word designates a hazard with a **high** degree of risk which, if it is not avoided, will result in death or severe injury.

#### **⚠ WARNING**

The signal word designates a hazard with a **medium** degree of risk which, if it is not avoided, will result in death or severe injury.

#### **⚠ CAUTION**

The signal word designates a hazard with a **low** degree of risk which, if it is not avoided, could result in minor or moderate injury.

#### **NOTICE**

A note as used in this manual contains important information about the product or about a part of the manual to which particular attention should be paid.

### 2.2 Notes on operation

This unit may be used by children from 8 years old and by persons of restricted physical, sensory or mental abilities or persons lacking experience and knowledge if they are supervised or have been instructed in how to use the unit safely and understand the associated hazards. Do not allow children to play with the unit. Cleaning and user maintenance must not be carried out by children unless they are supervised.

### 2.3 Intended use

The wireless CO<sub>2</sub> sensor must only be used to operate M-WRG-II and M-WRG ventilation units. Any different or more extensive usage will be regarded as contrary to the intended use. The intended use also includes compliance with all the notes in these instructions. For any use contrary to the intended use, Meltem Wärmerückgewinnung GmbH & Co. KG shall accept no liability for any damage that may occur and offers no warranty that the components will work perfectly and correctly.

## 3 Items supplied

- Wireless CO<sub>2</sub> sensor M-WRG-II FSC
- 2x screws and dowels

## 4 Installation and set-up

#### **⚠ DANGER**

The activities described in this chapter must only be carried out by specialised personnel (see section 1.3).

#### **NOTICE**

Never install the wireless CO<sub>2</sub> sensor in a metal enclosure, otherwise wireless communication between the wireless sensor and ventilation unit will not be possible.

### 4.1 Removing the cover and safety cover plate

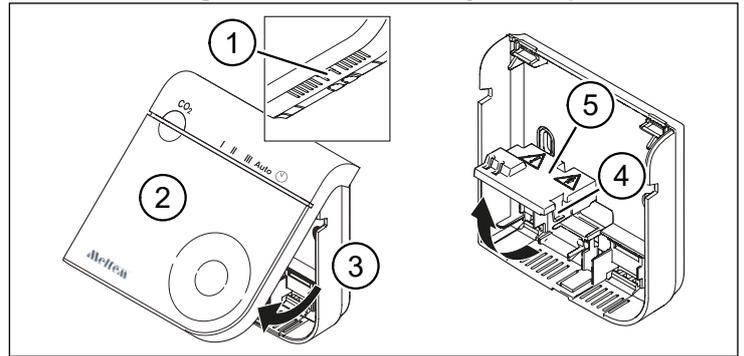


Fig. 2: Removing the cover and safety cover plate

- ▶ Press the tab (item 1 in Fig. 2) on the underside of the housing (item 3 in Fig. 2) and pull the cover (item 2 in Fig. 2) away from the housing.
- ▶ Use a small flat-bladed screwdriver to press the latch (item 4 in Fig. 2) and lift up the safety cover plate (item 5 in Fig. 2).

### 4.2 Introducing the mains cable and fixing the housing to the wall

#### **⚠ DANGER**

##### **Potentially fatal voltages**

- The electrical installation work must only be carried out by a qualified electrician.
- The VDE regulations or any special safety regulations applicable in your country apply to the electrical installation work.
- ▶ Before starting installation or maintenance work, disconnect the mains cable for connecting to the wireless CO<sub>2</sub> sensor on all poles from the mains supply.
- ▶ Observe the five safety rules (DIN VDE 0105-100, EN 50110-1) for working on electrical systems:
  - Disconnect from mains (all-pole disconnection of a system from live parts)
  - Secure against reconnection
  - Check that the system is voltage-free
  - Earth and short-circuit
  - Cover or block off access to adjacent live parts

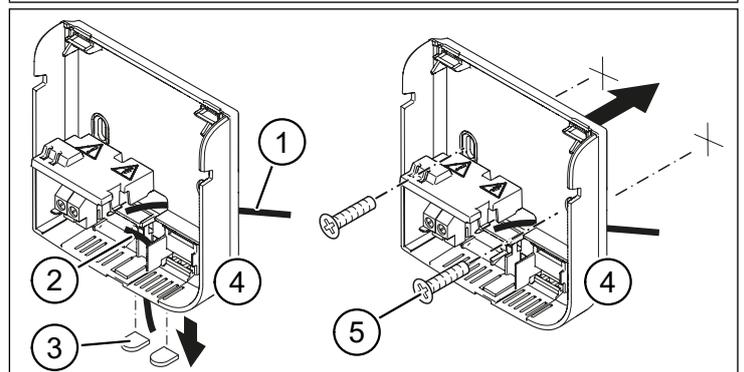


Fig. 3: Introducing the mains cable and fixing the housing to the wall

- ▶ Introduce the mains cable into the housing (item 4 in Fig. 3) from behind (item 1 in Fig. 3) or from below (item 2 in Fig. 3). If appropriate, break out the plastic tabs (item 3 in Fig. 3) on the bottom cable inlet.
- ▶ Use the screws and dowels provided (item 5 in Fig. 3) to fix the housing in the desired position.

### 4.3 Connecting the mains cable and attaching the cover

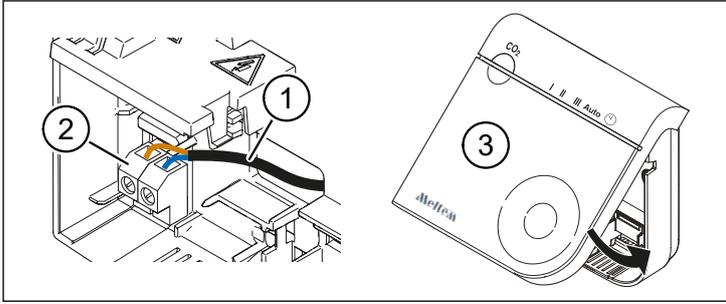


Fig. 4: Connecting the mains cable and attaching the cover

- ▶ Connect the mains cable (item 1 in Fig. 4) to the terminals (item 2 in Fig. 4).
- ▶ Lower the safety cover plate (item 5 in Fig. 2) until you hear it latch into place.
- ▶ Insert the tabs on the cover (item 3 in Fig. 4) into the cutouts in the housing.
- ▶ Swivel the cover down until you hear it snap into place in the housing (see Fig. 3).

### 4.4 Connecting to the ventilation unit for the first time

- ▶ Re-establish the 230 V power supply to the wireless sensor. All the LEDs light up for 3 seconds. The wireless sensor then switches automatically to connection mode and the status LED flashes green-red.
- ▶ Switch the ventilation unit on. It remains in connection mode for 2 minutes.
- ▶ Tap the control button (item 1 in Fig. 1). The ventilation unit gives an audible signal when the connection is established and the status LED flashes green.

## 5 Operation

### 5.1 Checking the status / Selecting the ventilation level/program

- ▶ Tap the control button (item 1 in Fig. 1) to check the current status. This is signalled by the status LED (item 2 in Fig. 1) and the mode LEDs (item 3 in Fig. 1).
- ▶ Tap the control button again while the status and mode LEDs are lit to switch between the different ventilation levels/programs. Your current selection is indicated by the mode LED beneath the **I, II, III, Auto** or  symbol.

### 5.2 Status LED

The status LED (item 2 in Fig. 1) provides the following feedback when the control button (item 1 in Fig. 1) is pressed:

LED colour	LED state	Description
Green	Flashes 1x	The ventilation unit has received and is carrying out the command
Green	Lights up	CO <sub>2</sub> concentration below 800 ppm
Yellow	Lights up	CO <sub>2</sub> concentration between 800 ppm and 1900 ppm
Red	Lights up	CO <sub>2</sub> concentration above 1900 ppm
Red	Flashes 1x	No wireless connection to the ventilation unit
Red	Flashes 2x	The air filters in the ventilation unit need to be changed
Red	Flashes 3x	Error message from the ventilation unit
Red	Flashes 4x	The wireless sensor is faulty

### 5.3 Mode LEDs

The green mode LEDs (item 3 in Fig. 1) indicate which ventilation level or ventilation program is selected.

Mode LED	Ventilation levels/programs (factory default settings)	
	M-WRG-II	M-WRG
I	Vent. level I: 10 / 20* m <sup>3</sup> /h	Vent. level I: 15 / 20* m <sup>3</sup> /h
II	Vent. level II: 30 / 40* m <sup>3</sup> /h	Vent. level II: 30 / 40* m <sup>3</sup> /h
III	Vent. level III: 50 / 60* m <sup>3</sup> /h	Vent. level III: 60 m <sup>3</sup> /h
Auto	CO <sub>2</sub> control or automatic mode (only for units with humidity sensor)	
	Intensive ventilation 100 m <sup>3</sup> /h for 15 min	

\* Options M-WRG-II O/LFS, M-WRG-II O/MVS or M-WRG O/LFS, M-WRG O/MVS change the button assignment

### 5.4 Connecting to the ventilation unit again

- ▶ Switch the ventilation unit on. It remains in connection mode for 2 minutes.
- ▶ Tap the control button (item 1 in Fig. 1) several times until the green **Auto** mode LED lights up.
- ▶ Hold down the control button until the status LED (item 2 in Fig. 1) flashes white.
- ▶ Release the control button. The wireless sensor switches to connection mode and the status LED flashes green-red.
- ▶ Tap the control button again. The ventilation unit gives an audible signal when the connection is established and the status LED flashes green.

## 6 Cleaning

Wipe the outer surfaces from time to time with a soft, damp cloth. Use mild soapy water. Never use acidic, corrosive or abrasive cleaning agents.

