Meltem®
VENTILATION & HEAT RECOVERY

OPERATING AND INSTALLATION INSTRUCTIONS

HOME VENTILATION WITH HEAT RECOVERY

Ventilation unit
M-WRG-S/Z-T
M-WRG-S/Z-T-F
M-WRG-S/Z-T-FC

Part no. 5255-01 Week 07/2024 EN

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VENTILATION THE RIGHT WAY

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1 Introduction

1.1 Notes on these operating and installation instructions

These original operating and installation instructions contain important information that should be followed when setting up and using the M-WRG-S/Z-T (-F, -FC) ventilation unit and when installing the InControl pushbutton sensor .

- ► Read all the instructions carefully before starting up the ventilation unit to avoid possible risks and mistakes.
- ► When assembly is complete, give these instructions to the home owner, caretaker or property manager.
- ► These instructions are part of the product. Keep the instructions in a safe place for future reference.

⚠ WARNING

- ► Follow ALL danger and warning instructions and notes on precautionary measures.
- ► Read section “2 Safety instructions” on page 12 carefully.

1.2 Description

These instructions describe how to set up and operate the decentralised ventilation unit M-WRG-S/Z-T (-F, -FC) (see Fig. 1). They also explain how to connect the InControl pushbutton sensor electrically to the ventilation unit.

Fig. 1: M-WRG-S/Z-T (-F, -FC) ventilation unit

M-WRG stands for Meltem heat recovery. Home ventilation expertise extending back over 40 years has been incorporated into this product from Meltem Wärmerückgewinnung.

Using windows for ventilation, particularly during periods of cold weather, is now a thing of the past. This ventilation unit brings in outdoor air fully automatically, and heats it by recovering heat from the air that is extracted. Outdoor air and extract air are routed in separate ducts through a cross-flow plate heat exchanger (see section 5.2.2 on page 19). You save on heating costs, increase your living comfort and are kind to the environment by reducing CO_2 emissions. An air filter from dust class PM10 also cleans the outdoor air (e.g. pollen). There is also an optional allergy filter from dust class PM1 available.

The ventilation units are designed to run continuously and can be equipped with sensors for demand-controlled ventilation. They can be surface-mounted, flush-mounted or inte-

grated into the wall (U^2). The ventilation units are low-maintenance, but **regular air filter changes** are important.

The ventilation units from the M-WRG-S/Z-T series are equipped with an interface to which an InControl pushbutton sensor (see Fig. 2) may be connected. This allows the ventilation units to be operated both via the InControl pushbutton sensor or via the step switch on the unit.

The step switch on the side of the unit is used to set four different ventilation levels/ programs, including a time-limited intensive ventilation level. It therefore allows you to adapt the air flow to your needs.

The M-WRG-S/Z-T-F ventilation unit has various ventilation levels/programs, including a humidity control. In addition to the humidity control, the M-WRG-S/Z-T-FC unit has a CO_2 control or an automatic mode (humidity and CO_2 control). The CO_2 value is the most important measurement for assessing the air quality. A microprocessor integrated into the unit calculates the optimum air renewal from the values measured by the relative humidity and CO_2 sensors and sets the correct ventilation level fully automatically.

1.2.1 InControl pushbutton sensor

One to five ventilation units of the same type can be controlled in a room with one InControl pushbutton sensor. Six different ventilation programs can be selected. The LEDs integrated into the pushbutton sensor indicate the currently active ventilation program and whether an air filter replacement is required or a fault message is pending.

Fig. 2: InControl pushbutton sensor M-WRG-T/...

1.2.2 Optional accessories

Part no.	Type	Description
5453-00	M-WRG-GW	The M-WRG-S/Z-T (-F, -FC) ventilation units can be controlled, programmed and the range of functions extended using an app via the gateway. It can also be used to read the number of operating hours.
5478-10	M-WRG-FBH	The wireless remote control is used to control, program and extend the range of functions of the M-WRG-S/Z-T (-F, -FC) units. It can also be used to read the number of operating hours.
5478-20	M-WRG-FT	The 4-way wireless pushbutton switch with LED feedback allows the M-WRG-S/Z-T (-F, -FC) units to be operated wirelessly.
733010	M-WRG-II FSF	The external wireless humidity sensor is a control unit with 5 ventilation levels/programs including humidity sensor for on-demand operation of the M-WRG-S/Z-T (-F, -FC) ventilation units. Allows the sensor to be positioned flexibly within the room or can be retrofitted for units without sensors (battery-operated).
733011	M-WRG-II FSC	The external wireless CO_2 sensor is a control unit with 5 ventilation levels/programs including CO_2 sensor for on-demand operation of the M-WRG-S/Z-T (-F, -FC) ventilation units. Allows the sensor to be positioned flexibly within the room or can be retrofitted for units without sensors (230 V connection required).

Table 1: Optional accessories

1.3 Target group

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

— Chapters “1 Introduction” to “14 Troubleshooting” are intended for users of the ventilation unit. No special prior knowledge is needed.

— The activities described in chapter “15 Installing the InControl pushbutton sensor” 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

1.4 EU declaration of conformity

The M-WRG-S... ventilation units manufactured by

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

1.5 National technical approval (for Germany)

A valid national technical approval from the Deutsches Institut für Bautechnik (DIBt) must be obtained for the ventilation unit before it is installed in Germany. This approval can be provided upon request or can be downloaded from our website at www.meltem.com/service/downloads/ (see also the QR code on the back page of these instructions).

The approval number is Z-51.3-138 (see item 1 in Fig. 4).

► For installation outside Germany, the national regulations applicable in your country should be followed.

1.6 Nameplate

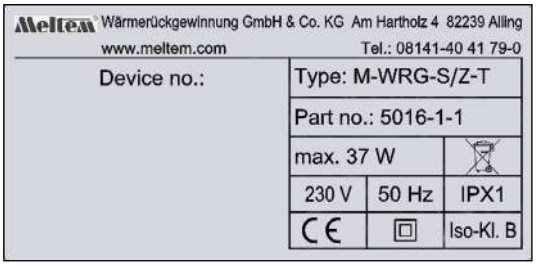

Fig. 3: Nameplate

You will find the nameplate on the intermediate plate on the inside of the housing (see item 2 in 12).

Fig. 4: Position of approval number and nameplate

1.7 Technical data

1.7.1 Electrical connection

Operating voltage	230 V AC (working voltage range: 85 V AC to 265 V AC)
Mains frequency	50 to 60 Hz
Power consumption	2.5 to 37 W
Standby power consumption	approx. 1 W
Maximum current consumption	0.16 A
IP code	— IPX1 — IPX4 with protective cap on mains switch (optional, must be installed at the factory) — IPX5 with Integrated into wall U² installation version
Energy efficiency class (ErP)	B/A*

* In combination with the external wireless humidity and CO_2 sensors or with humidity/CO_2 sensors (F and FC unit variants)

1.7.2 Dimensions and weight

Unit dimensions excluding air connectors (see also Fig. 5 on page 16)	388 x 409 x 196 (W x H x D)
Visible unit depth when surface-mounted	196 mm
Visible unit depth when flush-mounted	66 mm
Visible unit depth when integrated into wall	-
Outdoor air/exhaust air connectors	DN 100
Weight	Approx. 7.3 kg

1.7.3 Noise emission

Sound pressure level $L_{P,A}$ surface-mount	19.0 to 46 dB(A)/A_{eq} 10 m²
Sound pressure level $L_{P,A}$ flush-mount	15.5 to 46.5 dB(A)/A_{eq} 10 m²
Sound pressure level $L_{P,A}$ integrated into wall U² with ductwork connection on extract air side	12.4 to 41.9 dB(A)/A_{eq} 10 m²
Sound insulation $D_{n,e,w}$ unit in use depending on installation version	50 to 56 dB

1.7.4 Ambient conditions

Storage temperature range (in the original packaging in a dry place)	0 °C to +40 °C
Permitted temperature range of outdoor air during operation at a room temperature of at least 20 °C	-22 °C to +40 °C
Permitted ambient air humidity during operation	up to approx. 70 % RH

1.7.5 Unit properties

Type of system	Decentralised, heat recuperation
Air flow	15 to 97 m^3/h
Heat recovery efficiency (max.), η_0, DIN EN 13141-8	71 %
Colour	White similar to RAL 9010
TÜV-tested	Yes
Hygiene tested for conformity with VDI 6022 sheet 1	W-377516-23-Zd*
National technical approval (DIBt)	Z-51.3-138

* With the optional outdoor air filter ISO ePM1 60% (F7)

1.7.6 Unit features

Output control	4-level on the unit, 6-level on the pushbutton sensor, 10-level with accessories or with humidity/CO_2 sensors
Interface for connecting external controls	InControl pushbutton sensor
Supply air / exhaust air fan	EC direct current radial fan
Heat exchanger	Cross-flow plate heat exchanger
Filter monitoring with filter change indicator	Time-dependent, audible or visual via InControl pushbutton sensor
Condensate drain	Via exhaust air pipe/outer wall terminal or condensate connection provided by the customer
Fully automatic cover flap control when switching On / Off, in Standby mode and if the power fails	Yes
Frost protection function	Yes
Operating hours display	Using optional accessories (see section 1.2.2 on page 7)
Humidity control	On F and FC unit variants or using optional accessories (see section 1.2.2 on page 7)
CO_2 control	On FC unit variants or using optional accessories (see section 1.2.2 on page 7)
Automatic mode (humidity and CO_2 control)	Optional on FC unit variants (factory setting or M-WRG-FBH wireless remote control required)
Filter type	Round filter cartridges for outdoor air and extract air

1.7.7 Air filters

Designation	Filter class
Standard filter (for outdoor air and extract air)	ISO ePM10 65% (G4)
Allergy filter (optional, for outdoor air only)	ISO ePM1 60% (F7)
Activated charcoal filter (optional, for outdoor air only)	ISO ePM10 60% (M6)

1.8 Environmentally-friendly disposal

Avoiding waste from electrical and electronic devices makes a significant contribution to environmental protection and the better use of resources. Recycling and other ways of reusing such waste also reduce the amount of waste that needs to be taken away.

► You should dispose of the product in accordance with your applicable national regulations.

1.9 Revision index

Edition	Manual	Date
9th edition	Operating and installation instructions for M-WRG-S/Z-T (-F, -FC) ventilation unit	Week 07/2024 EN

1.10 Explanation of the symbols used

► This symbol indicates an action to be taken.

— This symbol indicates a list.

1.11 Supplementary documents

Manual	Part no.
Installation manual for M-WRG-S... ventilation units	5253-01
Maintenance instructions for M-WRG-S... ventilation units	5303-00-01
User guide for M-WRG-FBH wireless remote control	5302-25-01
Installation instructions and user guide for 4-way wireless pushbutton switch	5301-14-01
Installation instructions and user guide for external wireless humidity sensor	744011EN
Installation instructions and user guide for external wireless CO_2 sensor	744012EN
Installation instructions and user guide for gateway	744013EN
App user guide	744014EN

Table 2: Supplementary documents

You will find further manuals and instructions on our website at www.meltem.com/service/downloads/ (or using the QR code on this page).

Go to
Meltem download area

2 Safety instructions

These instructions contain notes that you must follow for your own personal safety and to avoid injury and damage to property. They are highlighted by warning triangles and are shown as follows according to the level of danger.

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 using the ventilation units safely

2.2.1 Fire protection

Follow the generally applicable fire safety requirements when planning and installing the unit.

2.2.2 Operation with fireplaces

— When M-WRG ventilation units are used in conjunction with fireplaces, an additional safety device (underpressure or differential pressure monitor) is needed to monitor operation and to switch off the (230 V) power supply to the units when necessary.
— Follow the requirements of the German Fire Code (FeuVo) when planning and installing the unit.
— Contact the local chimney sweep before the end of the planning phase.
— Have the chimney sweep approve the operation of the ventilation unit.
— Correct use of a ventilation system set up with the decentralised ventilation unit requires the possibility of shutting off combustion air pipes and flue systems for solid fuel fireplaces during periods in which the fireplaces are not in use.

2.2.3 Installation in wet areas

The following rules from DIN VDE 0100-701/702 (IEC 60364-7-701) apply to installation of M-WRG ventilation units in wet areas:

— Protection zone 0: The unit must NOT be installed in this area.

— Protection zone 1: The unit must only be installed with the “integrated into wall” U² variant. The extract and supply air valves must be installed in the top part of the wall or in the ceiling.

— Protection zone 2: The unit may be installed in this area if the mains switch is covered with a protective cap. The protective cap must be installed at the factory.

► You will need to include the mains switch protective cap (M-WRG-SN, part no. 5430) when you order the ventilation unit.

— Other zone: The unit may be installed in this area.

Country-specific standards/regulations on observing the protection zones for installation in rooms with bathtub or shower must also be followed.

2.2.4 Build-up of icicles and ice patches at low temperatures

The heat recovery process in our ventilation units causes condensation. This condensation is dissipated to the outside via the exhaust air pipe. When external temperatures drop below 0 °C this can cause a build-up of icicles at the outer wall terminals and ice patches on the ground.

For this reason, the position of the units and arrangement of the outer wall terminals should be selected to eliminate any risk to people and property.

If such risks cannot be excluded, a condensate connection should be provided (see associated installation manual).

2.2.5 Starting and using the ventilation unit

— Do not start up the ventilation unit until it is fully installed.

— Always operate the ventilation unit with the air filters fitted.

— Always make sure that the cover is closed and locked in place before using the ventilation unit.

— Please note that the ventilation unit must not be used without the outer wall terminal for safety reasons.

2.3 Notes on using the ventilation units

— 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.

► Follow the regulations applicable in your country concerning the age from which people may be permitted to operate the ventilation unit.

— The ventilation unit must always be freely accessible for operation and maintenance.
  ► Make sure that the ventilation unit is not covered or obstructed when the room is subsequently decorated and furnished, otherwise it cannot be operated and it will not be possible to replace the air filters. You should therefore maintain a clearance of at least 15 cm in front of the ventilation unit cover.
  ► Make sure that the supply and extract air openings are not covered when the room is subsequently decorated and furnished, otherwise the ventilation unit's functions may be impaired.

2.4 Note on use in conjunction with room air conditioners

Condensation may form in the ventilation unit if the outdoor air temperature and humidity are high, but the room temperature is cool.

For the M-WRG ventilation units, the room temperature should therefore be set to no more than 8 °C below the external temperature.

M-WRG ventilation units and room air conditioners can be combined very well.

2.5 Intended use

— The ventilation unit is designed to ventilate living spaces and rooms used for quasi-residential purposes. It can also be installed in offices, surgeries, etc. The ventilation unit is installed in a perpendicular position in the external wall. 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 the operating instructions.
— The ventilation unit must not be operated without air filters or outer wall terminal.
— The ventilation unit is intended for use in rooms with normal room air humidity levels of approx. 40 % to 70 % RH. It must not be installed in rooms in which the relative humidity during operation constantly exceeds 80 %.
— The ventilation unit's functions may be impaired or the unit may be damaged in rooms with a lot of dust (e.g. model-making) or corrosive gas emissions (e.g. blueprint shop, cleaning).
— 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 ventilation unit will work perfectly and correctly.

3 Warranty and liability

3.1 Warranty

The following cases shall invalidate the warranty:

— The installation kit was not installed as described in the installation manual.
— The ventilation unit was not installed as described in the installation manual.
— The ventilation unit was flush-mounted without using a flush-mount installation kit.
— Genuine parts/genuine air filters were not replaced with genuine parts.
— Unapproved changes were made to the installation kit or ventilation unit.
— Repairs were not carried out by Meltem or by an authorised specialist company.
— The ventilation unit was operated without air filters and outer wall terminals.
— The warranty does not cover wearing parts such as air filters.

3.2 Liability

The manufacturer’s liability shall not apply in the following cases:

— The installation kit was not installed as described in the installation manual.
— The ventilation unit was not installed as described in the installation manual.
— The ventilation unit was flush-mounted without using a flush-mount installation kit.
— Genuine parts/genuine air filters were not replaced with genuine parts.
— Unapproved changes were made to the installation kit or ventilation unit.
— Repairs were not carried out by Meltem or by an authorised specialist company.
— The ventilation unit was operated without air filters and outer wall terminals.

4 Dimensions

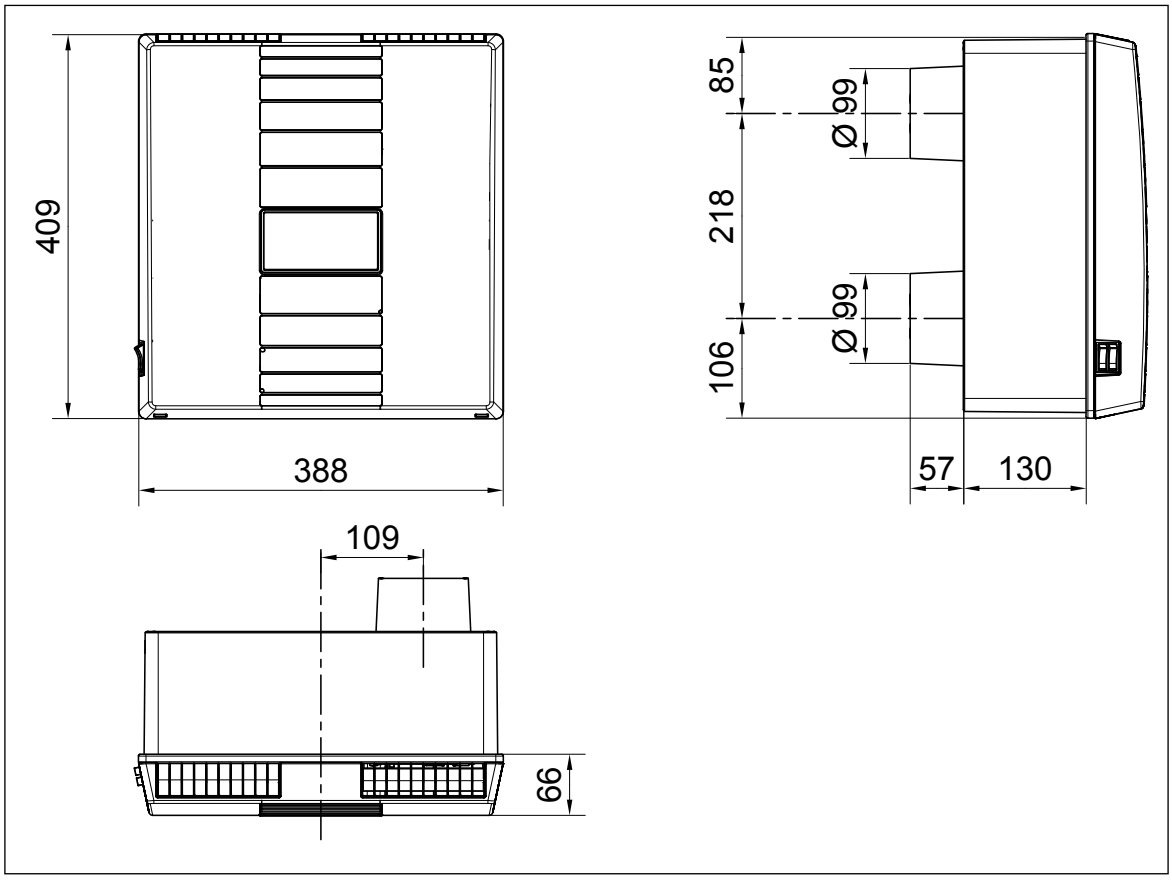

Fig. 5: Dimensions of the ventilation unit M-WRG-S/Z-T (-F, -FC) in millimetres

5 Structure and function

5.1 Overview of the modules

5.1.1 Ventilation unit – unit cover attached

Item in Fig. 6	Designation
1	Housing
2	Unit cover
3	Step switch for four ventilation levels/programs
4	Mains switch “On / Off”

5.1.2 Ventilation unit – unit cover removed

Item in Fig. 7	Designation
1	Supply air opening with air flap
2	Outdoor air filter with filter cover
3	Intermediate plate
4	Network connection cover
5	Supply air hood
6	Extract air filter with filter ring
7	Extract air opening with air flap

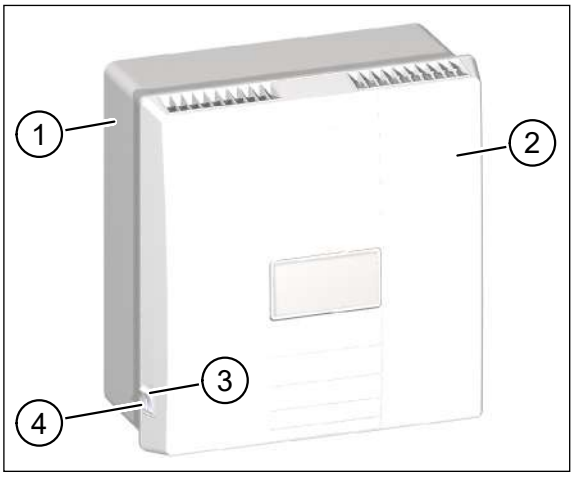

Fig. 6: Ventilation unit – unit cover attached

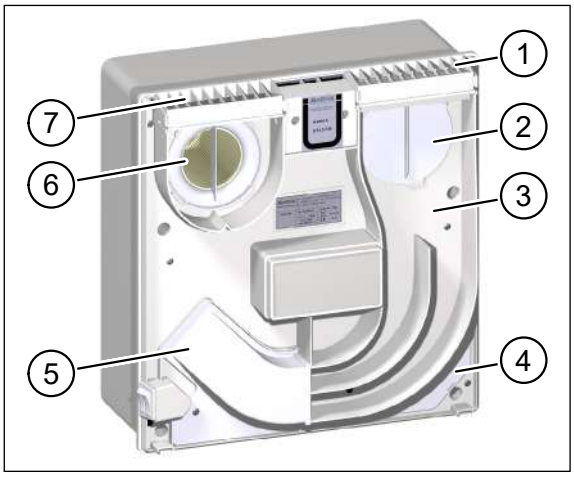

Fig. 7: Ventilation unit – unit cover removed

5.2 Description of the functions

5.2.1 How the M-WRG ventilation unit works

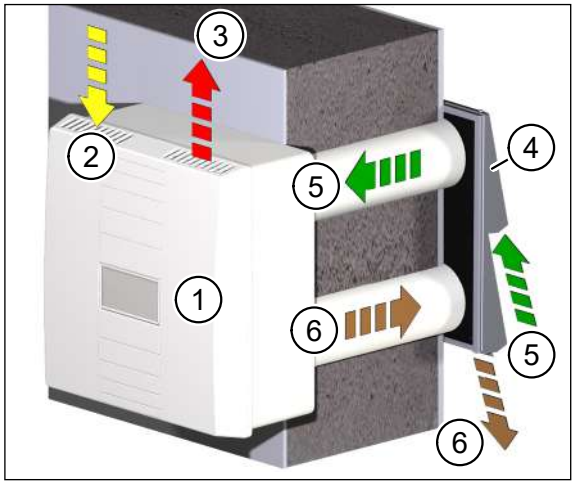

Fig. 8: How the ventilation unit works

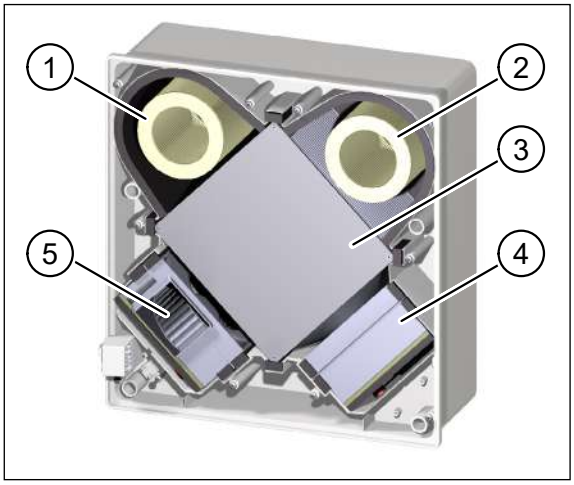

Fig. 9: Components for air exchange

Item in Fig. 8	Designation
1	M-WRG ventilation unit
2	Extract air
3	Supply air
4	Outer wall terminal
5	Outdoor air
6	Exhaust air

Item in Fig. 9	Designation
1	Extract air filter
2	Outdoor air filter
3	Cross-flow plate heat exchanger
4	Exhaust air fan
5	Supply air fan

The ventilation unit operates continuously, transports outdoor air and extract air at the same time and guides and filters the outdoor air and extract air separately.

The fans are arranged on the supply air and exhaust air sides. The supply air fan (item 5 in Fig. 9) transports outdoor air (item 5 in Fig. 8) through the outdoor air filter (item 2 in Fig. 9) and cross-flow plate heat exchanger (item 3 in Fig. 9) into the interior as supply air (item 3 in Fig. 8). The exhaust air fan (item 4 in Fig. 9) extracts the extract air (item 2 in Fig. 8) from the interior. In the extract air filter (item 1 in Fig. 9), the extract air is cleaned, guided through the cross-flow plate heat exchanger and carried outside as exhaust air (item 6 in Fig. 8).

The supply air and exhaust air fans each transport the same volume of air. The pressure in the interior remains practically constant.

5.2.2 How the cross-flow plate heat exchanger works

The warm extract air (item 5 in Fig. 10) drawn in from the interior is routed through the chambers of the cross-flow plate heat exchanger (item 1 in Fig. 10) and heats them.

The cooled extract air is carried to the outside as exhaust air (item 3 in Fig. 10).

At the same time, the cold outdoor air that is drawn in (item 2 in Fig. 10) is routed through the chambers of the cross-flow plate heat exchanger, which are separate from the extract air, and is heated. The separate chambers prevent the outdoor air and extract air from mixing.

The heated outdoor air is routed into the interior as supply air (item 4 in Fig. 10).

Item	Designation
1	Cross-flow plate heat exchanger
2	Outdoor air
3	Exhaust air
4	Supply air
5	Extract air

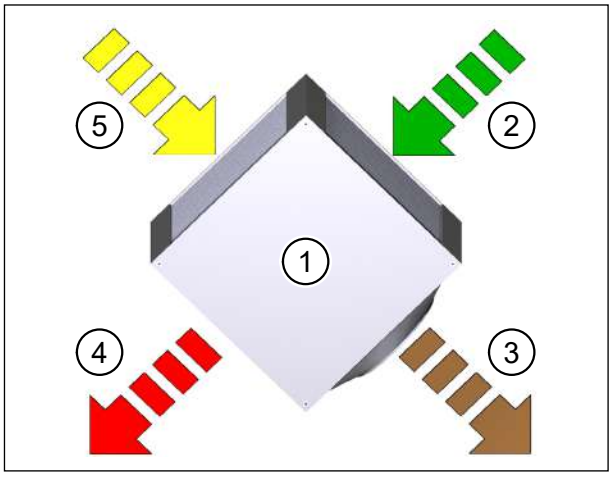

Fig. 10: How the cross-flow plate heat exchanger works

6 Rules for correct usage

6.1 General

- ► Always operate the ventilation unit with the unit cover attached.
- ► Run the ventilation unit either in continuous mode or on-demand via humidity or CO_2 sensors (appropriate sensors required). While continuous mode constantly ensures a good and healthy atmosphere in the room, on-demand ventilation uses sensors to provide particularly energy-efficient ventilation that is tailored precisely to requirements.
- ► Adapt the air flow through the ventilation unit to take account of the air load created by cooking, washing, ironing, visitors, showers, sauna, etc.
- ► Set the ventilation unit so that the relative humidity ranges between 40 % and 65 %. People feel most comfortable within this range.

6.2 Seasonal operation

6.2.1 Operation at cold times of year

- ► During cold times of year, run the ventilation unit in continuous mode or on-demand via humidity or CO_2 sensors (appropriate sensors required).
  - — Energy-saving motors and an innovative controller ensure a very low power consumption, even in continuous mode.
  - — Continuous removal of moisture from the interior is only guaranteed while the unit is in operation.
- ► Run the intensive ventilation program in the following cases:
  - — regularly if there is high atmospheric humidity in the interior
  - — if you need to switch off the ventilation unit.

  This will remove any condensate that is present in the ventilation unit.
- ► Maintain the temperature in bedrooms at 16 °C to 18 °C or more. This temperature is also more healthy for the people in the bedrooms. Do not run the ventilation unit at room temperatures below 15 °C, and particularly not at low external temperatures below -5 °C. Otherwise the ventilation unit will constantly activate the frost protection function or switch off altogether. The higher the interior temperature, the bigger the buffer for operating the ventilation unit and for heat recovery.

NOTICE

Supply air or exhaust air operation alone is not recommended. Firstly because the unit is often in the unbalanced frost protection mode and secondly because the incoming flow of cold outdoor air causes the rooms to cool down.

6.2.2 Summer mode

On hot summer days, the heat recovery effect can be utilized the opposite way around during the day by correcting the temperature of the supplied hot outdoor air with the removed cooler extract air.

At night, when the outdoor air temperature is lower than the interior temperature, the ventilation unit can be set to allow supply air or extract air operation, with the effect that there is only limited heat recovery. In addition, a cross-ventilation effect can be created by setting one ventilation unit to supply air operation and the other to extract air operation.

In supply air mode, the exhaust air fan switches to the lowest ventilation level, i.e. considerably more supply air is transported. The necessary extract air flow rate must be guaranteed by arrangements in the building (e.g. tilted window) or a second unit.

The supply air or extract air mode program can be implemented using the optional controller options (app, wireless remote control, 4-way wireless pushbutton switch, the wireless humidity/CO_2 sensors) or using special factory settings.

NOTICE

► In the summer months, ventilate cellars and similar rooms only during the night or using a dew point ventilation controller (provided by the customer). Otherwise condensation from the atmospheric humidity can cause damage due to damp on the cold walls.

6.3 Air filters

— Never run the ventilation unit without air filters.

— Always use genuine Meltem filters. These are precisely matched to your M-WRG ventilation units, ensure minimal pressure losses and will ensure a long service life from your ventilation units.

— DIN 1946-6 “Ventilation for residential buildings” recommends changing air filters every six months. The air filters for outdoor air and extract air should be replaced at least once a year on hygiene grounds, ideally before the cold weather starts.

— In high levels of air pollution (e.g. from road traffic or industry, rooms with high dust levels) change the air filters **every six months**.

— Always replace air filters in pairs. The permeability of both air filters affects the efficiency and power consumption of the ventilation unit.

— Observe the filter change indicator (see chapter 12 on page 32) and replace the air filters as necessary.

NOTICE

An outdoor air filter from filter class ISO ePM1 ≥50% (F7) is needed to fulfil the hygiene requirements defined in VDI 6022 and DIN 1946-6 (category H). This is available as an option.

7 Controls and indicators

The ventilation units from the M-WRG-S/Z-T series can be operated both via the step switch on the unit and via the InControl pushbutton sensor.

NOTICE

The optional control variants (app and wireless remote control) are used to control, program and extend the range of functions of the M-WRG-S/Z-T (-F, -FC) units. The functionality of the ventilation levels on the step switch or buttons on the InControl push-button sensor can thus be adapted to suit the customer's requirements. You will find more details in the associated user guide (see section 1.11 on page 11).

7.1 Controls on the ventilation unit

Item	Designation
1	Mains switch O = Ventilation unit "Off" I = Ventilation unit "On"
2	Step switch for 4 ventilation levels/programs

The step switch (item 2 in Fig. 11) is used to set four different ventilation levels/programs (see section 10 on page 28); the maximum ventilation level is activated using a switching sequence and is time-limited.

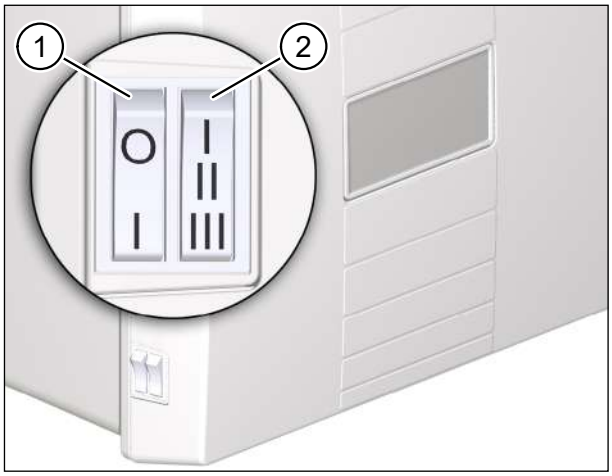

Fig. 11: Controls on the ventilation unit

Switch position	Ventilation level/program	Air flow
I	Reduced ventilation (people absent)	15 m³/h
II	Normal ventilation (people present)	30 m³/h
III	Increased ventilation	60 m³/h
Switching sequence I-II-I	Intensive ventilation (15 min)	97 m³/h

NOTICE

- Selecting switching sequence I-II-I on the step switch within two seconds results in 15 minutes of intensive ventilation at maximum ventilation level (97 m³/h). The ventilation unit then resumes operation at the previously set ventilation level.
- You can cancel intensive ventilation while it is running by selecting switching sequence I-II-I again.
- The power level selected on the stepping switch (item 2 in Fig. 11) is also signalled by the associated LED on the InControl pushbutton sensor.

7.2 Controls and indicators on the InControl pushbutton sensor

The InControl pushbutton sensor allows you to select one of six different ventilation programs. The available ventilation programs depend on the type of ventilation unit. Every button has an LED that indicates the currently selected ventilation program.

7.2.1 InControl pushbutton sensor for the type M-WRG-S/Z-T ventilation unit

Fig. 12: InControl pushbutton sensor for the type M-WRG-S/Z-T ventilation unit

7.2.2 InControl pushbutton sensor for the type M-WRG-S/Z-T-F ventilation unit

Fig. 13: InControl pushbutton sensor for the type M-WRG-S/Z-T-F ventilation unit

7.2.3 InControl pushbutton sensor for the type M-WRG-S/Z-T-FC ventilation unit

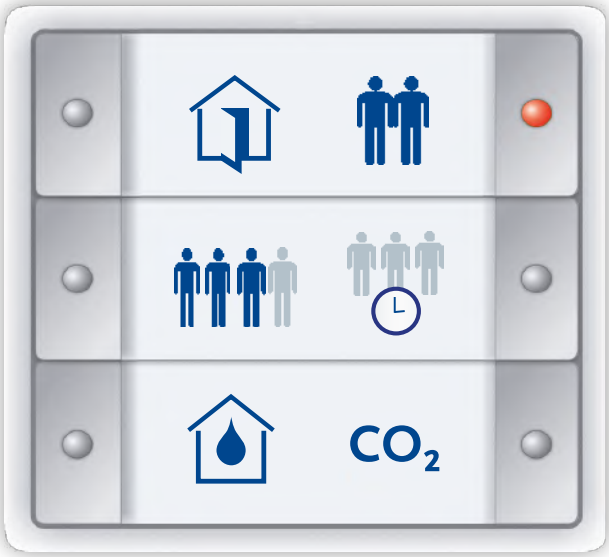

Fig. 14: InControl pushbutton sensor for the type M-WRG-S/Z-T-FC ventilation unit

7.2.4 Status indicators on the InControl pushbutton sensor

A flashing LED indicates one of the following ventilation unit states:

Ventilation program LED	**Status**
“Reduced ventilation (people absent)” LED flashes (see Fig. 12, Fig. 13 and Fig. 14)	Unit fault (e.g. faulty sensor or motor)
“Normal ventilation (people present)” LED flashes (see Fig. 12, Fig. 13 and Fig. 14)	Air filter change required
“Humidity control” LED flashes (see Fig. 13 and Fig. 14)	The absolute atmospheric humidity of the supply air is greater than the absolute atmospheric humidity of the extract air

8 Starting up

8.1 Checking the ventilation unit before switching on for the first time

► Check the ventilation unit for damage.

► Check that the openings for extract air and supply air (see Fig. 15 and Fig. 16) are unobstructed.

8.2 Switching on the ventilation unit

► Switch the ventilation unit on at the mains switch (item 1 in Fig. 11 on page 22).

After approx. 10 s, the air flaps on the extract air and supply air openings open.

8.3 Check position of air flaps

► Check the position of the air flaps (see Fig. 15 and Fig. 16) on the extract air and supply air openings.

— Both air flaps will be closed if the ventilation unit is switched off or without power (see item 1 in Fig. 15).

— Both air flaps open when you switch on (see item 1 in Fig. 16).

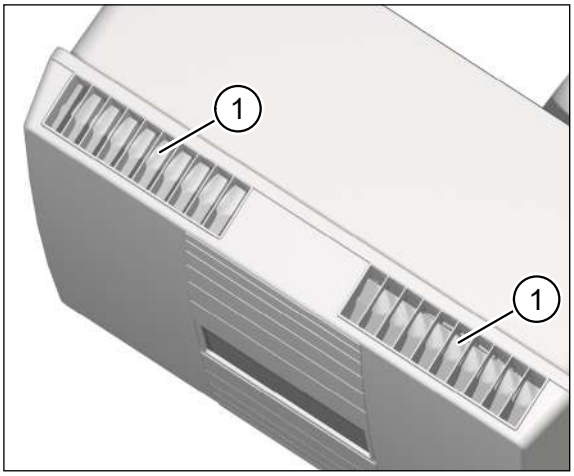

Fig. 15: Air flaps closed

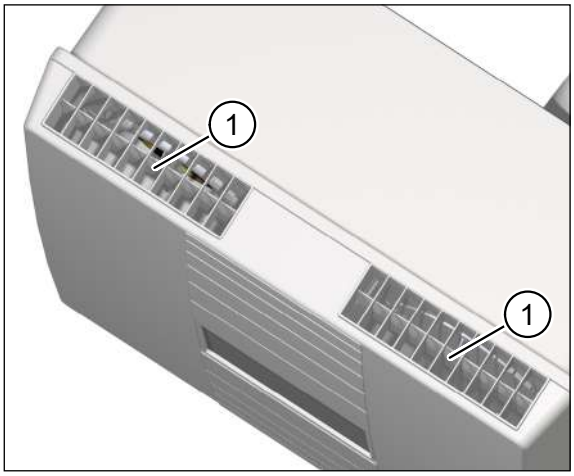

Fig. 16: Air flaps open

NOTICE

If the air flaps do not open fully after switching on for the first time or after a longer stoppage, follow the steps below:

► Switch the ventilation unit off.

► Wait at least 15 s.

► Switch the ventilation unit on again.

The air flaps should open fully. If this is not the case, repeat the above steps.

9 Operating the ventilation unit

9.1 Selecting the ventilation level/program

There are various ways to select a ventilation level or ventilation program:

— using the step switch (item 2 in Fig. 11 on page 22) on the ventilation unit (see section 7.1 on page 22)

— using the InControl pushbutton sensor (see section 7.2 on page 23)

NOTICE

— If there are multiple ventilation units of the same type connected to an InControl pushbutton sensor, the same ventilation program is activated for all the ventilation units.

— If there are multiple ventilation units of the same type with humidity and/or CO_2 control/automatic mode connected to an InControl pushbutton sensor, each ventilation unit regulates the air exchange on the basis of its own measured values.

The ventilation unit always carries out the most recently made selection.

9.2 Setting the ventilation unit to Standby mode

► Hold down the button for the “Reduced ventilation (people absent)” program on the InControl pushbutton sensor (see section 7.2 on page 23) for at least 3 seconds.

This triggers the following actions:

— The current ventilation mode is ended.

— The ventilation unit continues to be supplied with power.

— The air flaps close.

Simply activate the desired ventilation program again to leave Standby mode.

NOTICE

— It is not a good idea to leave the ventilation unit in Standby mode for long periods (see chapter “6 Rules for correct usage” on page 20).

— Standby mode is disabled at the factory in association with the “Mains switch without function” option, type: M-WRG-O/NOF. In this case, Standby mode cannot be activated using the InControl pushbutton sensor.

9.3 Frost protection function

The ventilation unit is equipped with a frost protection function. In low outdoor temperatures, the ventilation unit automatically switches to frost protection mode.

► Do not switch the ventilation unit off in the winter. Note chapter “6 Rules for correct usage” on page 20.

How it works:

To prevent the heat exchanger from icing up, there is a temperature sensor fitted on the exhaust air side for constantly monitoring the temperature. If the exhaust air temperature drops below 2 °C, the motor controller gradually changes the supply air and/or extract air volume flow according to the fan level so that the proportion of extract air is increased. This causes the temperature to rise on the exhaust air side. When an exhaust air temperature of 4 °C is maintained for a period of 3 minutes, the unit switches back to the previous operating state. If a temperature of 2 °C is not achieved on the exhaust air side, despite increasing the proportion of extract air, e.g. because the room has cooled down, the extract air and supply air fans are switched off. As soon as a value of 4 °C is identified at the exhaust air temperature sensor, Ventilation mode is resumed at the fan level that was set before it was switched off.

10 Ventilation levels/programs

There are different ventilation programs/levels available for selection, depending on the type of ventilation unit (see chapter 7 from page 22).

10.1 “Reduced ventilation (people absent)”

The ventilation unit runs at the lowest ventilation level (15 m^3/h). This operating mode can be selected when the occupier is absent (e.g. on holiday) to ensure a minimum level of air renewal. This includes ventilation for moisture protection.

10.2 “Normal ventilation (people present)”

The ventilation unit runs at the middle ventilation level (30 m^3/h). This is the normal mode used to achieve the ventilation needed to meet hygiene and health requirements when the users are present.

10.3 “Increased ventilation”

The ventilation unit runs at a higher ventilation level (60 m^3/h) in order to dissipate load peaks, e.g. when there are multiple people present or increased odour nuisance.

10.4 “Intensive ventilation (temporary 15 min)”

The ventilation unit runs at maximum ventilation level (97 m^3/h). After roughly 15 minutes or when another button is pressed or the I-II-I switching sequence is repeated on the step switch (item 2 in Fig. 11 on page 22), the intensive ventilation is ended and the previously set ventilation program is resumed.

10.5 “Supply air operation (summer mode)”

The ventilation unit runs in supply air operation with limited heat recovery. This operating mode allows the cooler outdoor air to be routed into the building on summer nights, for example (supply air 50 m^3/h, extract air 15 m^3/h).

NOTICE

Avoid using this ventilation program at cold times of year. Otherwise the ventilation unit will constantly activate the frost protection function or switch off altogether.

10.6 “Extract air operation”

The ventilation unit runs in extract air operation with limited heat recovery. This operating mode can be selected to route used air to the outside (extract air 50 m^3/h, supply air 15 m^3/h).

Cross-ventilation: If there are two ventilation units present, cross-ventilation can be achieved on one level by setting one ventilation unit to supply air operation and the other to exhaust air operation.

NOTICE
Cross-ventilation must not be used in sub-zero temperatures. Otherwise the ventilation unit that is set to supply air operation will constantly activate the frost protection function or switch off altogether.

10.7 “Humidity control”

The ventilation unit runs constantly at the lowest ventilation level (15 m^3/h). If the relative room air humidity exceeds 60 % RH, the ventilation level is increased continuously up to max. 60 m^3/h until the humidity in the room drops back below 60 % RH.

NOTICE
To ensure dehumidification, the ventilation unit compares the humidity of the supply air and extract air. The associated LED on the InControl pushbutton sensor flashes when the humidity of the supply air is greater than that of the extract air, which means that dehumidification is not possible.

10.8 “CO_2 control” or “Automatic mode” as an option

CO_2 control (default):

The ventilation unit runs constantly at the lowest ventilation level (15 m^3/h). A CO_2 sensor monitors the air quality in the room. If the limit of 600 ppm is exceeded, the ventilation unit calculates the optimum air renewal and sets the required ventilation level in the range from 15 - 60 m^3/h fully automatically.

Automatic mode (as an option):

For the M-WRG-S/Z-T-FC unit type, the “Automatic mode” ventilation program can be assigned to the “CO_2” program button on the InControl pushbutton sensor, either at the factory or using the optional wireless remote control M-WRG-FBH. In this case, the relative room air humidity is monitored in addition to the CO_2 concentration (see section 10.7). The CO_2 sensor and the humidity sensor both send feedback to the ventilation unit, indicating the ventilation level at which it should work. The ventilation unit automatically assumes the higher of the two suggested ventilation levels and thus ensures the priority.

11 Options for ventilation mode

11.1 External control input

11.1.1 Description

With the external control input supplied as standard, the M-WRG unit has an additional input terminal for 230 V AC (working voltage range: 85 V AC to 265 V AC / 50 - 60 Hz) to which a switch, time switch, motion detector or similar may be connected.

The external control input is equipped with a time-delay relay that can be used to set a switch-on delay and a run-on time:

— Switch-on delay:
the M-WRG unit does not start until the set time has elapsed.

— Run-on time:
the M-WRG unit does not switch to the previously active ventilation program until the set time has elapsed.

Windowless rooms can be ventilated in accordance with DIN 18017-3 in combination with the M-WRG-O/NOF option, part no. 5046-10.

11.1.2 Factory defaults and possible adjustment ranges

Parameter	Factory defaults	Possible adjustment ranges
Air flow	60 m^3/h	15 to 97 m^3/h
Switch-on delay	1 min	0 to 240 min
Run-on time	15 min	0 to 240 min

NOTICE

The above parameters can be changed either at the factory or using the optional wireless remote control M-WRG-FBH.

11.1.3 M-WRG-O/EST-1, part no. 5046-31, and M-WRG-O/EST-2, part no. 5046-32

The following options may be selected in addition to the external control input which is supplied as standard:

— M-WRG-O/EST-1: without switch-on delay, needs to be fitted at the factory

— M-WRG-O/EST-2: without run-on time, needs to be fitted at the factory

11.2 Parameter settings for special air outputs for all M-WRG units, M-WRG-O/PARM, part no. 5046-00

This option is used to set special air output parameters for all M-WRG units. It needs to be fitted at the factory.

11.3 Minimum ventilation to DIN 18017-3, M-WRG-O/MVS, part no. 5046-11

This option guarantees a minimum ventilation level to DIN 18017-3. Between 08:00 and 20:00, the unit ventilates at 40 m^3/h, dropping to 20 m^3/h between 20:00 and 08:00. The function is activated at the factory, cannot be switched off by the user and has priority over all other settings. It includes the mains switch without function so that the user cannot easily switch the unit off (it can be switched off via the building's fuse box, for example). This option changes the level assignment on the control units for the ventilation unit: switch position I, II, III: 20, 40, 60 m^3/h.

11.4 Mains switch without function, M-WRG-O/NOF, part no. 5046-10

The mains switch on the ventilation unit is deactivated with this option. The user can only change the unit's ventilation levels / programs. However it must be ensured that the ventilation unit(s) can be switched off by other means (e.g. via the fuse box in the apartment or house). This option must be fitted at the factory.

11.5 Ventilation for moisture protection, M-WRG-O/LFS, part no. 5046-12

11.5.1 Description

The "ventilation for moisture protection" option is used to set fixed, minimum ventilation levels for day and night. The function is activated at the factory and cannot be switched off by the user (who can only set higher ventilation levels). A humidity program which increases the air flow as required runs continuously in background mode. This option includes the mains switch without function so that the user cannot easily switch the unit off (it can be switched off via the building's fuse box, for example).
This option changes the level assignment on the control units for the ventilation unit: switch position I, II, III: 20, 40, 60 m^3/h.

It may be combined with the external wireless sensor for humidity or CO_2.

NOTICE

— This option can only be selected in conjunction with M-WRG-S/Z-T-F and M-WRG-S/Z-T-FC units constructed from 2020 onwards with humidity and/or CO_2 control.

— It needs to be fitted at the factory.

11.5.2 Factory defaults

Time	Air flow
08:00 - 20:00	20 m^3/h
20:00 - 08:00	20 m^3/h

11.6 Allergy filter replacement, M-WRG-O/Filter-FA, part no. 5046-50

The standard filter M-WRG-FS has been replaced with the allergy filter M-WRG-FA (for outdoor air only). The fine filter medium effectively retains pollen and respirable fine dust particles such as soot and bacteria from dust class PM1.

12 Filter maintenance

The ventilation unit has a runtime-controlled filter monitoring function with audible and visual (via InControl pushbutton sensor, see section 7.2.4 on page 24) indicators. It monitors the time since the last air filter change. If the last air filter change was more than one year ago, the filter change indicator is activated and a pending air filter change is signalled.

As the time for the air filter change approaches, the intervals between the audible warnings shorten over a period of two to three weeks. The air filters must be changed when the warning signal occurs every hour and lasts for one second. This long warning period allows the user to order replacement filters in good time.

No tools are needed to change the air filters.

NOTICE

► Follow the instructions for changing the air filters in section 6.3 on page 21.

12.1 Choice of filter

The following air filters may be used or are available for selection for the M-WRG-S/Z-T (-F, -FC) ventilation unit:

Part no.	Designation	Filter type	Filter class	Application
5571	M-WRG-FS	Standard filter (for outdoor air and extract air)	ISO ePM10 65% (G4)	Effectively retains coarse dust particles from dust class PM10 such as dust, pollen and fungal spores.
5572	M-WRG-FA	Allergy filter (for outdoor air only)	ISO ePM1 60% (F7)	Effectively filters out respirable particulates such as pollen, soot and bacteria from dust class PM1
5573	M-WRG-FK	Activated charcoal filter (for outdoor air only)	ISO ePM10 60% (M6)	Effectively retains coarse dust particles from dust class PM10 such as pollen and fungal spores, and the activated charcoal layer absorbs odours and harmful gases such as propellants, nitrogen oxides and ozone.

Table 3: Choice of filter

12.2 Ordering filters

Please contact your local or regional dealer for information on ordering filters. You will find the contact details on our website at www.meltem.com (or using the QR code on this page).

Go to
www.meltem.com

12.3 Changing the air filters

NOTICE

► Always switch the ventilation unit off at the mains switch (item 1 in Fig. 11 on page 22) for the filter change. On ventilation units with the M-WRG-O/NOF option, power to the unit must be switched off using the building's miniature circuit breaker. Otherwise the open air flaps (see Fig. 16 on page 25) will make it impossible to remove and insert the filter cartridges.

12.3.1 Removing the unit cover from the ventilation unit

► Using both thumbs, press the two latches (item 1 in Fig. 17) on the bottom of the ventilation unit. The unit cover will come away.

► At the same time, push your index fingers into the gap between the unit cover and housing, and lift the unit cover up and away from the housing.

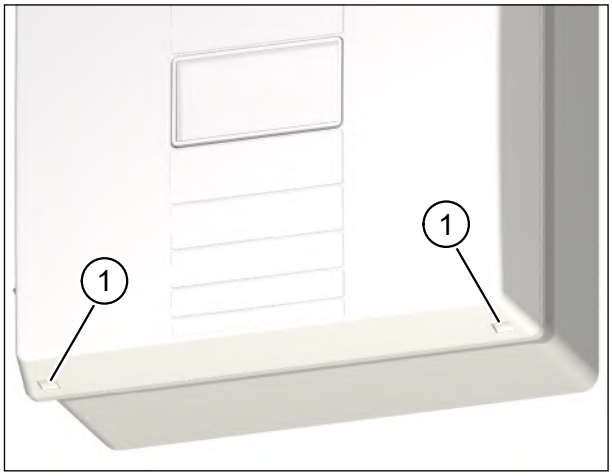

Fig. 17: Removing the unit cover from the ventilation unit

12.3.2 Remove air filters

► Turn the filter ring (item 1 in Fig. 18) using the hand grip (item 2 in Fig. 18) anti-clockwise until the arrow on the filter ring (item 3 in Fig. 18) lines up with the arrow at the removal position (item 4 in Fig. 18).

► Pull the filter ring together with the extract air filter out of the ventilation unit.

► Turn the filter cover (item 6 in Fig. 18) using the hand grip (item 7 in Fig. 18) anti-clockwise until the arrow (item 8 in Fig. 18) on the filter cover lines up with the arrow at the removal position (item 9 in Fig. 18).

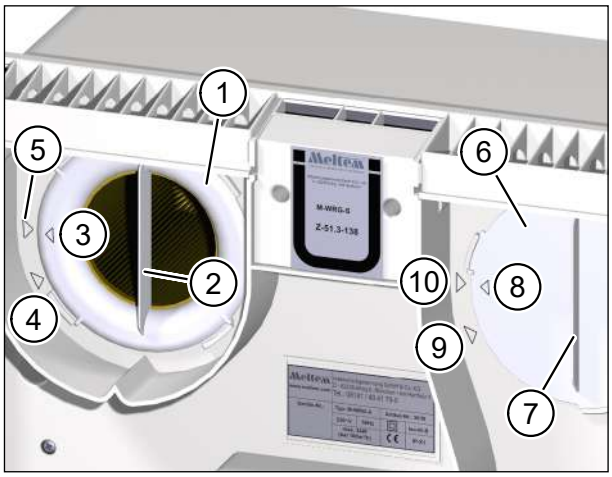

Fig. 18: Remove air filters

► Pull the filter cover together with the outdoor air filter out of the ventilation unit.

► Detach the extract air filter from the filter ring.

► Detach the outdoor air filter from the filter cover.

- ► Clean the filter ring and filter cover with a damp cloth if they are dirty (see chapter 13 on page 36).
- ► Dispose of the used air filters in the non-recyclable waste or as required by your country's disposal regulations.

12.3.3 Insert new air filters

- ► Carefully guide the extract air filter into the ventilation unit.
- ► Make sure that the air filter slides into the four retaining tabs (item 1 in Fig. 19) on the back wall of the ventilation unit.
- ► Place the filter ring on the extract air filter. Make sure that the filter ring lies flat on the intermediate plate (item 2 in Fig. 19).
- ► Make sure that the filter ring is oriented so that the arrow on the filter ring (item 3 in Fig. 18 on page 33) lines up with the arrow for the removal position (item 4 in Fig. 18 on page 33).

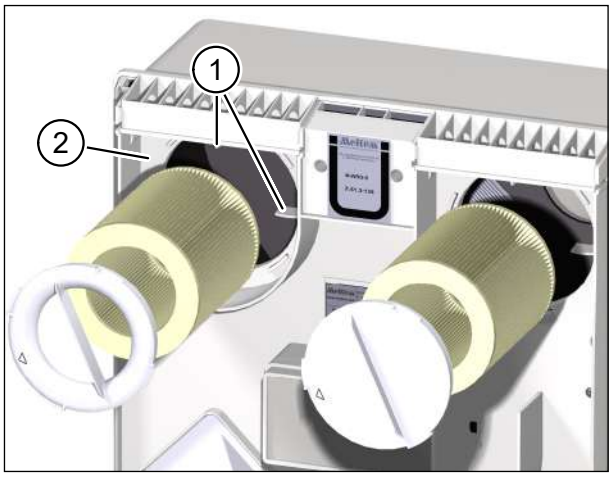

Fig. 19: Insert air filters

- ► Turn the filter ring clockwise until the arrow on the filter ring (item 3 in Fig. 18 on page 33) lines up with the arrow for the locking position (item 5 in Fig. 18 on page 33).
- ► Insert the new outdoor air filter. Repeat the steps described for the extract air filter.
- ► Check the position of the filter ring and filter cover. The hand grips must be vertical and the arrows on the filter ring and filter cover must line up with the arrows for the locking position (see Fig. 18 on page 33).

NOTICE

— The ventilation unit will not work as well if the filter ring or filter cover is not inserted correctly.
— Allergy filters and activated charcoal filters may only be used as outdoor air filters.

12.3.4 Attaching the unit cover to the ventilation unit and switching on the ventilation unit

- ► Hold the cover (item 1 in Fig. 20) of the ventilation unit with both hands and tilt the top edge of the cover towards the ventilation unit.
- ► Insert the tabs (item 2 in Fig. 20) of the unit cover into the openings (item 3 in Fig. 20) on the top of the ventilation unit.
- ► Lightly press the bottom edge of the cover against the ventilation unit until you hear the cover snap in place.
- ► Switch the ventilation unit on at the mains switch (item 1 in Fig. 11 on page 22).

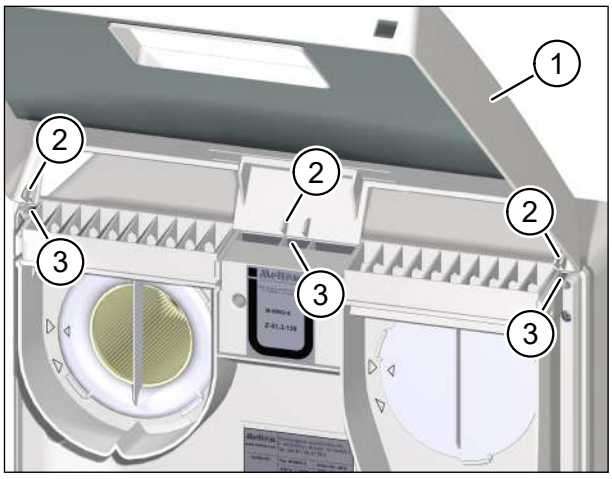

Fig. 20: Attaching the unit cover to the ventilation unit

12.3.5 Resetting the filter change indicator

NOTICE

The filter change indicator must be reset on ventilation units built from 06/2017.

After every air filter change, the filter change indicator must be reset in order to restart monitoring of the period since the last air filter change. The procedure is as follows:

- ► Within three seconds, select the ventilation levels **I-II-III-II-I** one after the other on the step switch (item 1 in Fig. 21).
  The ventilation unit will beep as confirmation.
- ► Within three seconds, while the ventilation unit is beeping, again select the ventilation levels **I-II-III-II-I** one after the other on the step switch (item 1 in Fig. 21).
  The ventilation unit will beep three times as confirmation. Monitoring of the period since the last air filter change is now restarted.

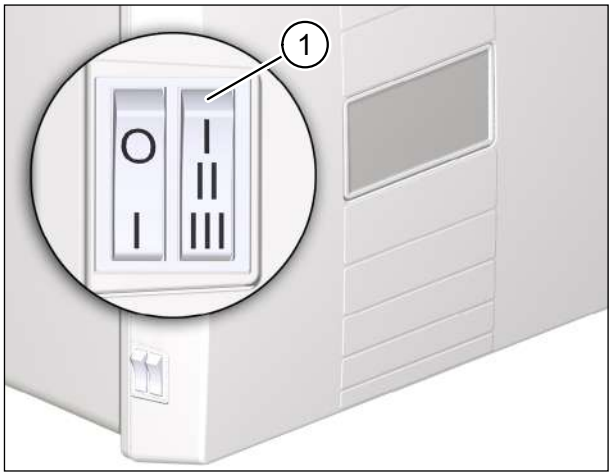

Fig. 21: Resetting the filter change indicator

13 Cleaning and maintenance

⚠ WARNING

- ► Switch off the power to the ventilation unit before cleaning.
- ► When cleaning, make sure that no moisture penetrates into the inside of the housing.
- ► Never use a high pressure cleaner, steam cleaner or steam jet.

The ventilation unit is made of high quality plastic and requires little care.

- ► Wipe the outer surfaces from time to time with a soft, damp cloth. Use mild soapy water. A commercially available plastic cleaner can be used for particularly stubborn dirt.

NOTICE

- ► Never use acidic, corrosive or abrasive cleaning agents.

Maintenance of the M-WRG series of units is described in separate maintenance instructions (see section “1.11 Supplementary documents” on page 11).

14 Troubleshooting

Error	Cause	Remedy
Ventilation unit is not running	Ventilation unit is in safe mode after an EMC fault	Switch the ventilation unit off, wait 15 seconds, then switch on
	Installation error	Have the wiring checked by a qualified electrician
	Faulty switch, motor or controller	Check by a qualified electrician
Air flaps do not open after switching on	After a long stoppage or when starting up for the first time, the servomotor is not powered by the electronic circuit.	Switch the ventilation unit off and on again
	Air flap range of motion is blocked by foreign bodies (plaster, polystyrene, etc.)	Carefully remove the foreign bodies, remove the unit cover if necessary (see “12.3.1 Removing the unit cover from the ventilation unit” on page 33)
Ventilation unit starts to beep at intervals	— Filter change interval exceeded — The air filter is very dirty (in areas with highly polluted outdoor air this can occur even before the filter change interval has elapsed)	Change air filters (see “12.3 Changing the air filters” on page 33)
The ventilation unit frequently activates the frost protection function		
Operating noise of the ventilation unit increases in volume		

Table 4: Troubleshooting

15 Installing the InControl pushbutton sensor

This section describes how to connect the InControl pushbutton sensor electrically to the ventilation unit.

⚠ WARNING

The activities described in this chapter must only be carried out by technicians 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 (see chapter “2 Safety instructions” on page 12)

NOTICE

— The ventilation unit may be damaged if the control cable is connected incorrectly. This will also invalidate the warranty.
— Also follow the installation manual for the M-WRG ventilation units.
— The installation must be carried out in accordance with the generally acknowledged rules of technology.

15.1 Switching off power to the ventilation unit

⚠ 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 ventilation unit 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

15.2 Removing the unit cover from the ventilation unit

- ► Using both thumbs, press the two latches (item 1 in Fig. 22) on the bottom of the ventilation unit. The unit cover will come away.
- ► At the same time, push your index fingers into the gap between the unit cover and housing, and lift the unit cover up and away from the housing.

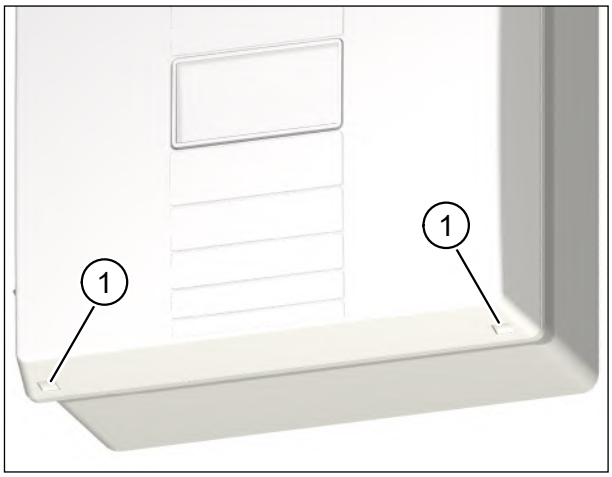

Fig. 22: Removing the unit cover from the ventilation unit

15.3 Removing the network connection cover

- ► Press the latch (item 1 in Fig. 23) of the network connection cover (item 2 in Fig. 23) gently towards the middle of the unit, and lift up the network connection cover.

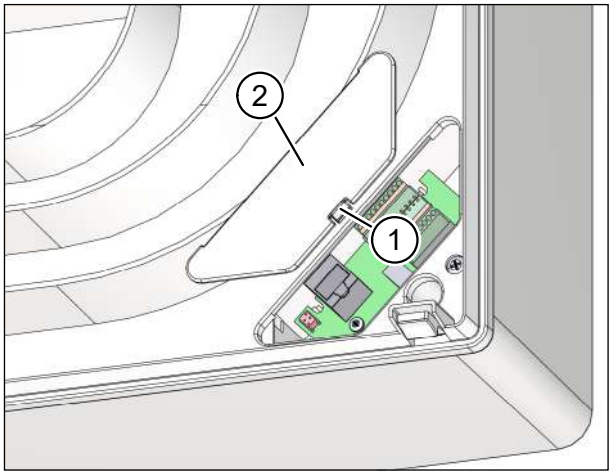

Fig. 23: Removing the network connection cover

15.4 Overview of the modules

15.4.1 Connection board in the ventilation unit with terminal assignment

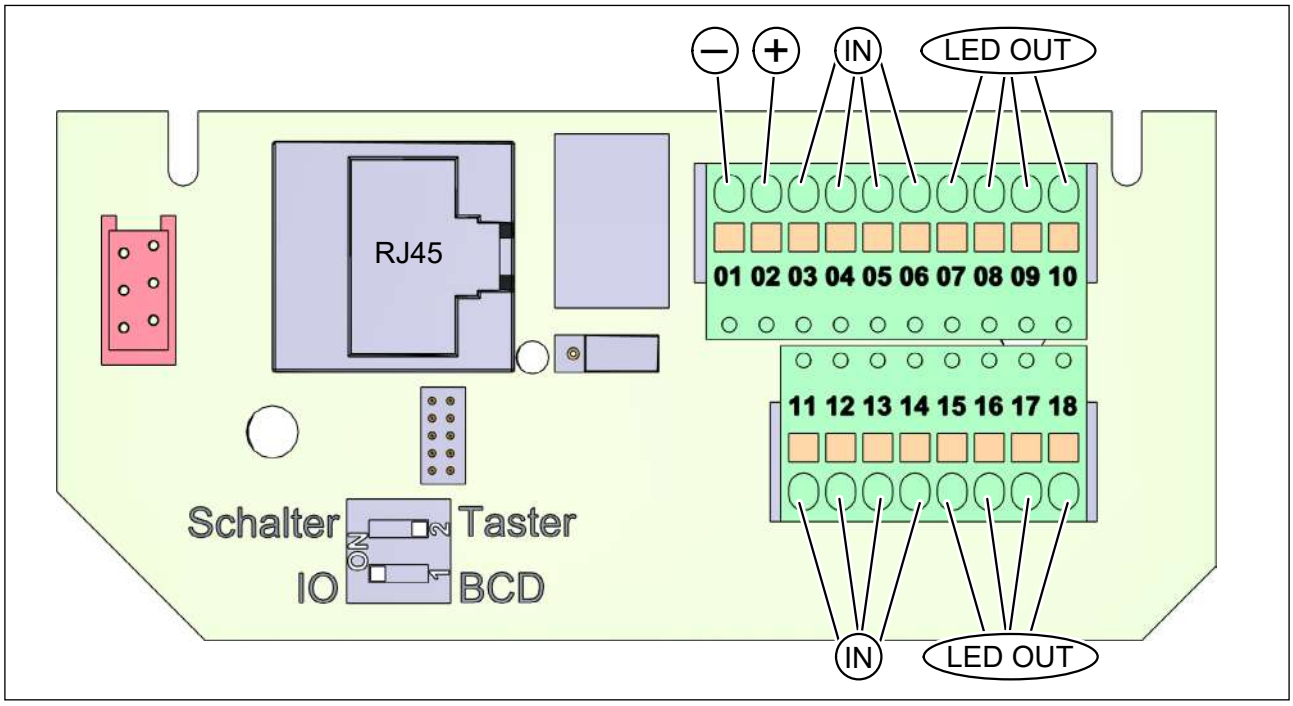

Fig. 24: Connection board in the ventilation unit with terminal assignment

NOTICE

The DIP switches and jumpers on the board are preset at the factory. Do not change the position of any DIP switches or jumpers.

15.4.2 InControl pushbutton sensor

15.4.2.1 Terminal assignment

Item in Fig. 25	Designation
1	Terminal block for pushbuttons
2	Terminal block for LEDs
3	Smiley on the side of the terminal block for LEDs

NOTICE

Use the smiley (item 3 in Fig. 25) as an orientation guide. It is only in this position that the connections on the terminal blocks agree with the connections identified in the connection diagram (Fig. 26).

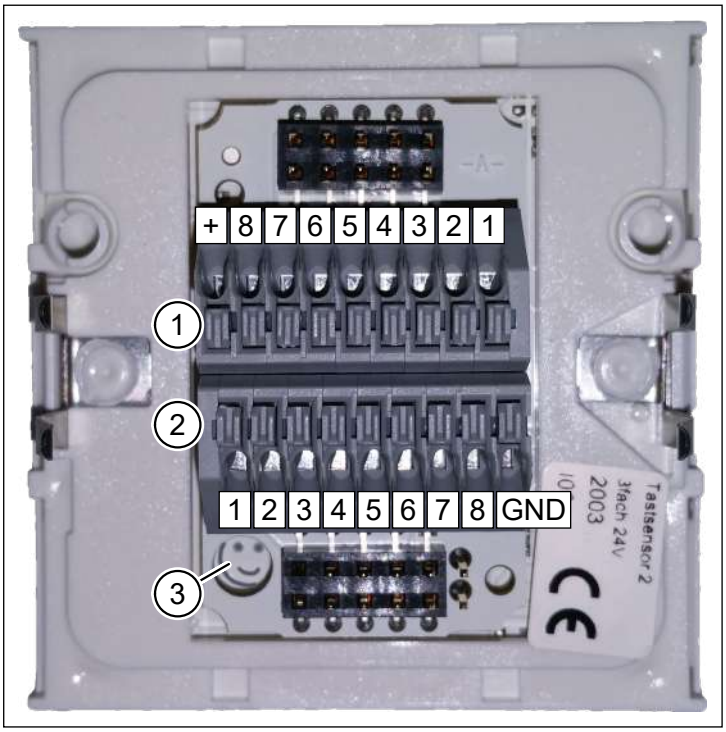

Fig. 25: InControl pushbutton sensor with terminal assignment

15.4.3 Connection diagram

Item in Fig. 26	Designation
1	Terminal block for pushbuttons
2	Terminal block for LEDs
3	Optional bridge for backlight

NOTICE

The InControl pushbutton sensor has a backlight that can be activated if required. Place a bridge (item 3 in Fig. 26) across terminals 7 and 8 of the terminal block for LEDs to supply 24 V DC to the backlight.

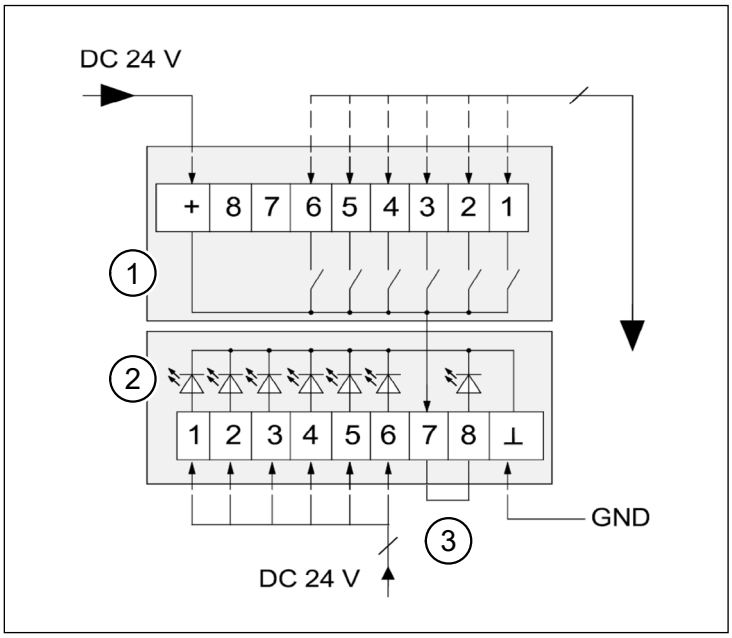

Fig. 26: InControl pushbutton sensor connection diagram

15.5 Connection of 1 ventilation unit

15.5.1 Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T

► Use J-Y (St) Y 10x2x0.6 mm² / J-Y (St) Y 10x2x0.8 mm² for the wiring.

► After wiring, place the insert sheet (Fig. 27) in the InControl pushbutton sensor.

Terminal M-WRG-S/Z-T	Terminal blocks InControl pushbutton sensor		Wire colour	Function
	Pushbutton	LED		
1		GND		GND
2	+			+24 V DC
3	1			Reduced ventilation
4	2			Normal ventilation
5	3			Increased ventilation
6	4			Intensive ventilation
7		1		LED 1: reduced ventilation (*)
8		2		LED 2: normal ventilation (*)
9		3		LED 3: increased ventilation
10		4		LED 4: intensive ventilation
11	5			Supply air operation
12	6			Extract air operation
13				Unused
14				Unused
15		5		LED 5: supply air operation
16		6		LED 6: extract air operation
17				Unused
18				Unused

Table 5: Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T ventilation unit

(*) Section 7.2.4 on page 24 explains what a flashing LED means.

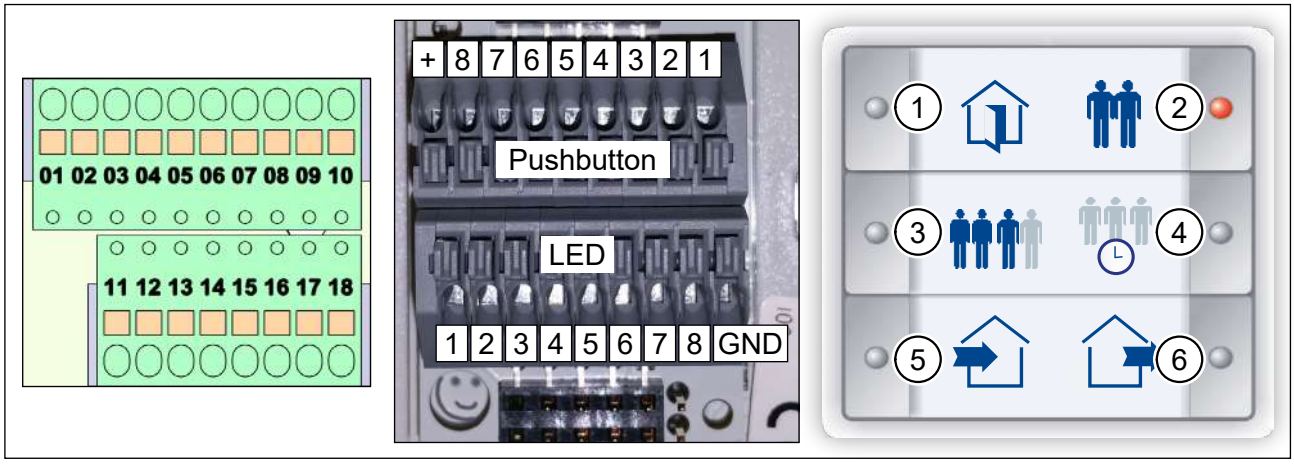

Fig. 27: Terminal blocks on ventilation unit, terminal blocks on InControl pushbutton sensor, insert sheet

15.5.2 Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T-F

► Use J-Y (St) Y 10x2x0.6 mm² / J-Y (St) Y 10x2x0.8 mm² for the wiring.

► After wiring, place the insert sheet (Fig. 28) in the InControl pushbutton sensor.

Terminal M-WRG-S/Z-T-F	Terminal blocks InControl pushbutton sensor		Wire colour	Function
	Pushbutton	LED		
1		GND		GND
2	+			+24 V DC
3	1			Reduced ventilation
4	2			Normal ventilation
5	3			Increased ventilation
6	4			Intensive ventilation
7		1		LED 1: reduced ventilation (*)
8		2		LED 2: normal ventilation (*)
9		3		LED 3: increased ventilation
10		4		LED 4: intensive ventilation
11	6			Supply air operation
12				Unused
13	5			Humidity control
14				Unused
15		6		LED 6: supply air operation
16				Unused
17		5		LED 5: humidity control (*)
18				Unused

Table 6: Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T-F ventilation unit

(*) Section 7.2.4 on page 24 explains what a flashing LED means.

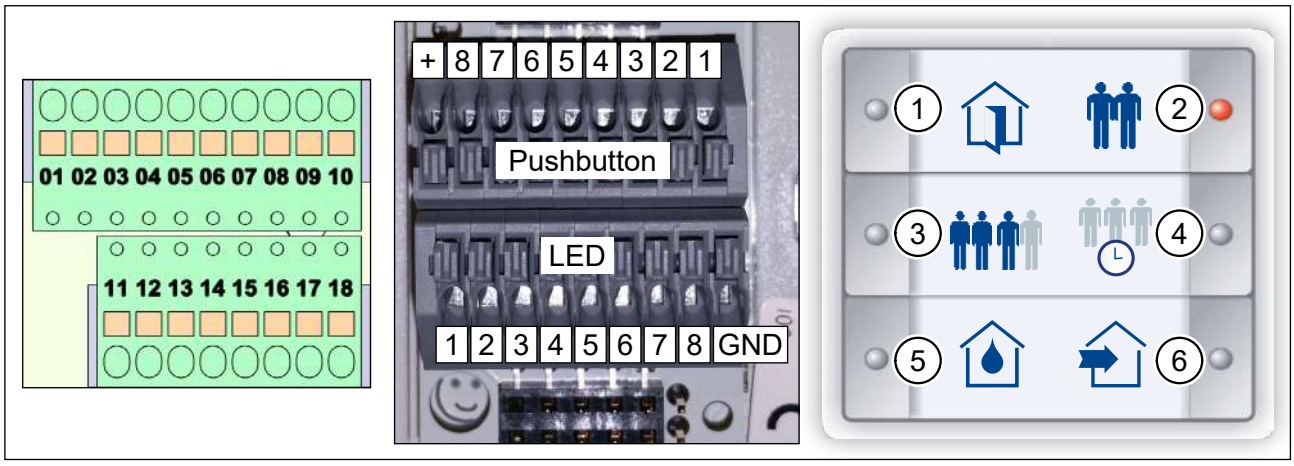

Fig. 28: Terminal blocks on ventilation unit, terminal blocks on InControl pushbutton sensor, insert sheet

15.5.3 Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T-FC

► Use J-Y (St) Y 10x2x0.6 mm² / J-Y (St) Y 10x2x0.8 mm² for the wiring.

► After wiring, place the insert sheet (Fig. 29) in the InControl pushbutton sensor.

Terminal M-WRG-S/Z-T-FC	Terminal blocks InControl pushbutton sensor		Wire colour	Function
	Pushbutton	LED		
1		GND		GND
2	+			+24 V DC
3	1			Reduced ventilation
4	2			Normal ventilation
5	3			Increased ventilation
6	4			Intensive ventilation
7		1		LED 1: reduced ventilation (*)
8		2		LED 2: normal ventilation (*)
9		3		LED 3: increased ventilation
10		4		LED 4: intensive ventilation
11				Unused
12				Unused
13	5			Humidity control
14	6			CO_2 control or automatic mode
15				Unused
16				Unused
17		5		LED 5: humidity control (*)
18		6		LED 6: CO_2 control or automatic mode

Table 7: Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T-FC ventilation unit

(*) Section 7.2.4 on page 24 explains what a flashing LED means.

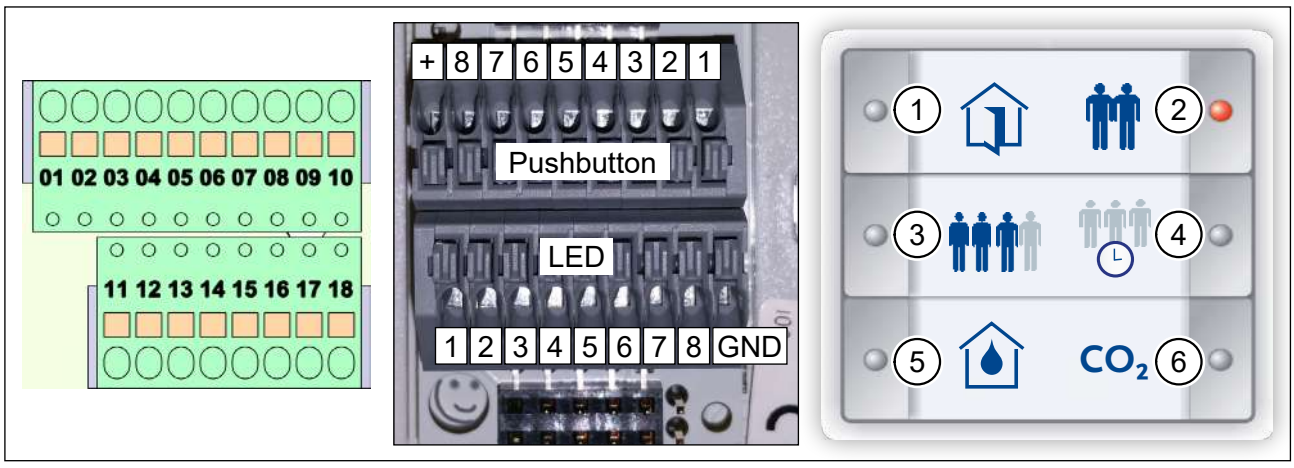

Fig. 29: Terminal blocks on ventilation unit, terminal blocks on InControl pushbutton sensor, insert sheet

15.6 Connection of 2 to 5 ventilation units

Up to five ventilation units can be controlled with one InControl pushbutton sensor. The following conditions must be met:

— The ventilation units must all be of the same type.

— All the ventilation units that are connected to the same InControl pushbutton sensor should be located in the same room.

— If possible, the control cables should be arranged and connected in a star configuration (see Fig. 30) from the ventilation units to the InControl pushbutton sensor.

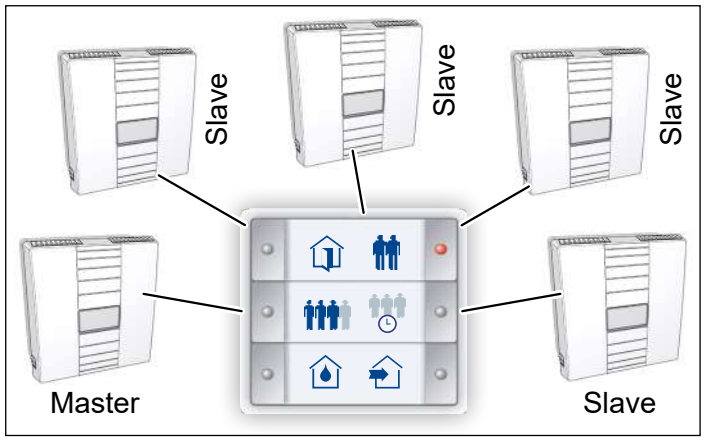

Fig. 30: Connecting the ventilation units in a star configuration

— The cable between the ventilation unit and InControl pushbutton sensor should be no more than 15 m long.

— Ventilation unit 1 (master) must always be switched on. It generates the feedback for the LED on the InControl pushbutton sensor. Ventilation units 2 to 5 (slaves) only respond to switching commands from the InControl pushbutton sensor.

NOTICE

— Connect “+” only to the first ventilation unit (master).

— Connect “GND” to all the ventilation units (master + slaves).

15.6.1 Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T

Terminal blocks InControl pushbutton sensor		**Number M-WRG-S/Z-T ventilation unit**				
Pushbutton	**LED**	**1 (master)**	**2 (slave)**	**3 (slave)**	**4 (slave)**	**5 (slave)**
+		2				
1		3	3	3	3	3
2		4	4	4	4	4
3		5	5	5	5	5
4		6	6	6	6	6
5		11	11	11	11	11
6		12	12	12	12	12
	GND	1	1	1	1	1
	1	7				
	2	8				
	3	9				
	4	10				
	5	15				
	6	16				

Table 8: Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T

15.6.2 Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T-F

Terminal blocks InControl pushbutton sensor		Number M-WRG-S/Z-T-F ventilation unit				
Pushbutton	**LED**	**1 (master)**	**2 (slave)**	**3 (slave)**	**4 (slave)**	**5 (slave)**
+		2				
1		3	3	3	3	3
2		4	4	4	4	4
3		5	5	5	5	5
4		6	6	6	6	6
5		13	13	13	13	13
6		11	11	11	11	11
	GND	1	1	1	1	1
	1	7				
	2	8				
	3	9				
	4	10				
	5	17				
	6	15				

Table 9: Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T-F

15.6.3 Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T-FC

Terminal blocks InControl pushbutton sensor		Number M-WRG-S/Z-T-FC ventilation unit				
Pushbutton	**LED**	**1 (master)**	**2 (slave)**	**3 (slave)**	**4 (slave)**	**5 (slave)**
+		2				
1		3	3	3	3	3
2		4	4	4	4	4
3		5	5	5	5	5
4		6	6	6	6	6
5		13	13	13	13	13
6		14	14	14	14	14
	GND	1	1	1	1	1
	1	7				
	2	8				
	3	9				
	4	10				
	5	17				
	6	18				

Table 10: Connecting the InControl pushbutton sensor to the M-WRG-S/Z-T-FC

15.7 Final tasks

- ► Place the network connection cover (item 1 in Fig. 31) over the opening (item 2 in Fig. 31) and lock it in place.
- ► Close the ventilation unit with the unit cover (see section 12.3.4 on page 35).

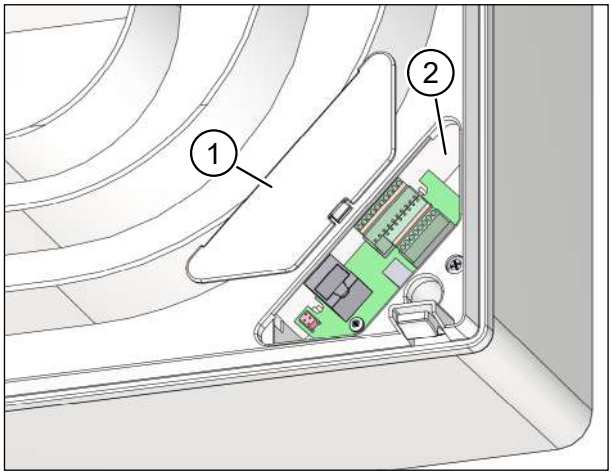

Fig. 31: Attaching the network connection cover

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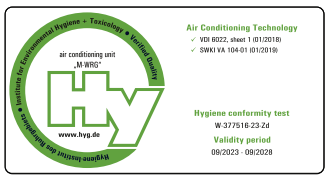

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