

Comfort ventilation system with heat recovery



M-WRG



M-WRG-II





Table of contents

Meltem – Your partner for ventilation	3
A healthier living environment	4
Design variants	5
Overview of the comfort ventilation series	6
Installation methods	8
Filter and device technology	10
Control options for the M-WRG-II and M-WRG series	12
Typical applications	16
Outer wall terminals	20
Window reveal solution	21
System solutions	22
Technical data for the M-WRG-II	24
M-WRG-II system overview	28
Technical data for the M-WRG	32
M-WRG system overview	37

Meltem

Your partner for ventilation

You have been depending on us for ventilation solutions for over 45 years, relying on our rigorous use of the latest electronics and high-quality components. The result is individual ventilation solutions for a wide range of construction projects. The quality of our "Made in Germany" comfort ventilation units is demonstrated by various approvals and essential eligibility for grant funding.



MOISTURE PROTECTION

- Protection against moisture damage
- Prevention of mould growth
- Securing the structure



NOISE PROTECTION

- Ventilation without outside noise
- High level of sound insulation
- Virtually noiseless operation



HEALTHY LIVING

- Wellness through clean and pre-heated fresh air
- Hypoallergenic due to high-performance air filters
- No draughts



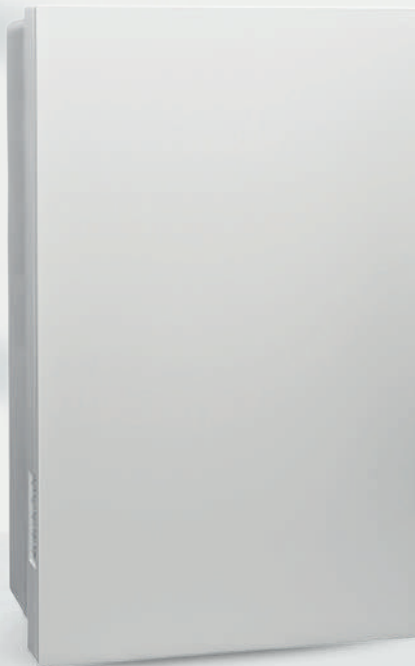
ENERGY CONSERVATION

- Save on heating costs and reduce CO₂ emissions
- Extremely low power consumption
- Cost-effective way to build an "efficiency house"

A healthier living environment



M-WRG



M-WRG-II

Fresh air means more quality of life. It ensures that people feel well in their homes. Raised CO₂ concentrations can lead to fatigue, headaches, problems concentrating and decreased performance. Vapours from cleaning agents, building materials, carpets, furniture, etc. contaminate the air we breathe with additional pollutants. Good ventilation is thus essential for a healthier home.

Quality of life despite allergies

Many people suffer from allergies caused by dust or pollen. With our ventilation units, you can keep these allergens outside – so the quality of the outdoor air filter being used is crucial. The fine particulate filter

(allergy filter) is supplied as standard with the M-WRG-II series. For the M-WRG series it is available as an option. The fine filter medium effectively retains pollen and respirable fine dust particles such as soot and bacteria from dust class PM1. The activated charcoal filter should be used to prevent unpleasant odours and harmful gases.

By choosing a Meltem home ventilation system with heat recovery, you will be able to create a healthier indoor environment and a higher quality of life in your own home. Turn your home into your personal atmospheric health spa.

USES:

- Residential buildings
- Retirement homes
- Halls of residence
- Hotels / boarding houses
- Day-care centres
- Communal facilities
- Office buildings
- Doctor's surgeries
- Modular construction

Design variants

Covers and valves



Transform your home into your personal oasis of well-being. You need optimum air quality, of course, but your visual perceptions are important too. So you can design the perfect unit cover to suit your space and personal taste.

DESIGN COVERS

Available for unit cover and U² cover.

More information about painting the covers and the choice of colours is available upon request.

DESIGN VALVES



Two series of units

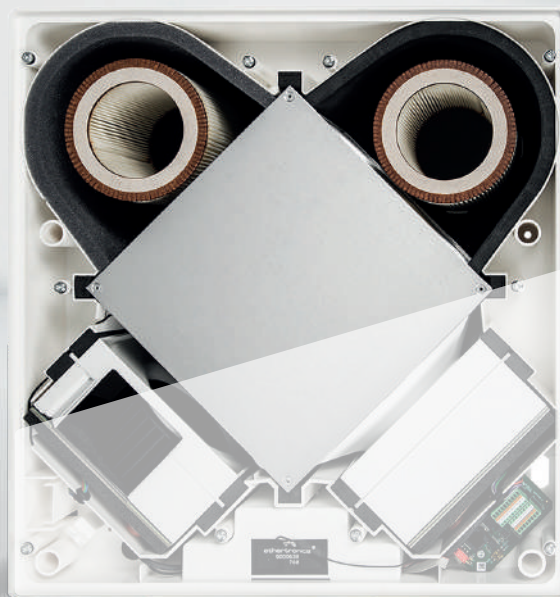
M-WRG

✓ Convenient

✓ Economic

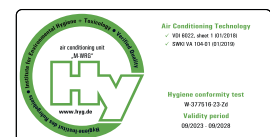
✓ Multi-room solution

✓ Cost-effective



THE CLASSIC

- Up to 71 % heat recovery efficiency
- Cross-flow heat exchanger
- Inherent noise from LpA, 10 m² = 12.4 dB(A)
- Sound insulation D_{n,e,w} up to 56 dB
- Filter class ISO ePM10 65% (G4) as standard
- High air flow 15 – 97 m³/h
- Single or multi-room solution
- Filter class: ISO ePM1 60% (F7) optional
- Tested to VDI 6022 sheet 1 hygiene standards



Which is the
right unit for me?
Scan here to
start the
unit finder.



M-WRG-II



✓ Super-quiet

✓ High heat recovery efficiency

✓ Multi-room solution

✓ Optimum moisture recovery

THE POWERHOUSE

- Up to 94 % heat recovery efficiency
- Cross-counterflow heat exchanger
- Enthalpy heat exchanger with moisture recovery possible
- Constant volume flow rate (suitable for multi-storey buildings)
- Inherent noise from LpA, 10 m² = 6.5 dB
- Sound insulation D_{n,e,w} up to 70 dB
- Filter class ISO ePM1 60% (F7) as standard
- High air flow 10 – 100 m³/h
- Single or multi-room solution
- Passivhaus (PHI)-certified
- Tested to VDI 6022 sheet 1 hygiene standards



Video:
All about our
M-WRG-II



Flexible installation methods for both unit series

Video:
**Air duct system
in the M-WRG-II**



The right installation method for every property

Today, ventilation systems are basic features in the property business. They are just as essential when designing new builds as when renovating and improving the energy efficiency of existing properties. If a decentralised system with individual units is selected, it can be helpful in some construction projects to have the option of using different installation methods. For the units from the M-WRG-II and M-WRG series, Meltem offers an almost invisible integrated into wall (U²), flush-mount and surface-mount installation versions. Ductwork connections can be implemented for all installation methods.

Installation options:

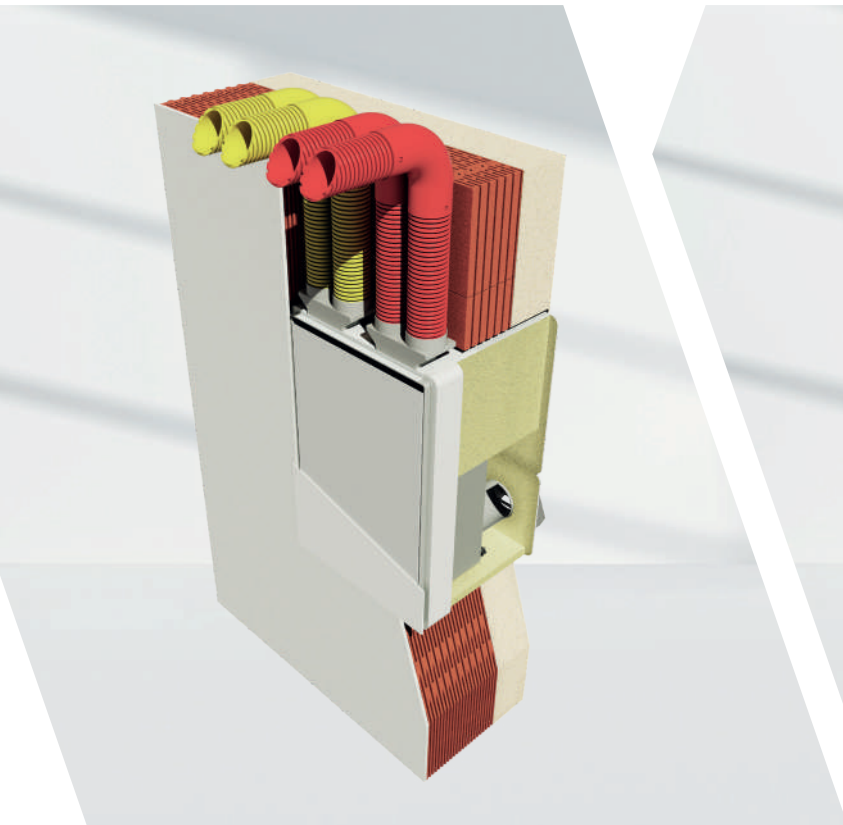
- **Integrated into wall (U²) for new builds and renovations.** This version is particularly attractive, both visually and architecturally. The unit blends totally into the wall; only the elegant cover remains visible. It is primarily used in new builds or extensive renovations, for example when installing a thermal insulation composite system or fitting new windows.
- **Flush-mount for new builds and renovations.**
- **Surface-mount for retrospective installation or renovation.**

Other benefits of the U² solution:

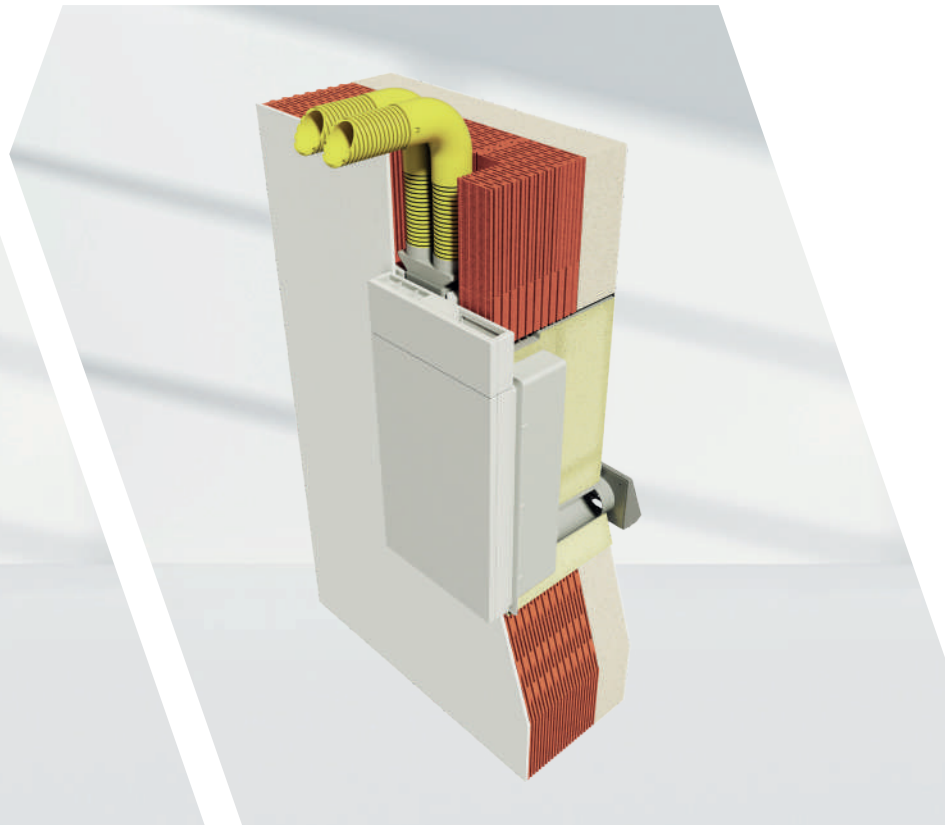
- It greatly reduces the inherent noise level, sound pressure level LpA, 10 m² = 6.5 dB(A).
- At the same time, it offers a very high level of sound insulation up to D_{n,e,w} 70 dB
- Can be used to ventilate multiple rooms at the same time by connecting flexible pipes. The U² version is particularly useful from the architectural and design viewpoints in combination with internal extract air rooms.

Saves money on the ventilation of internal bathrooms and WCs:

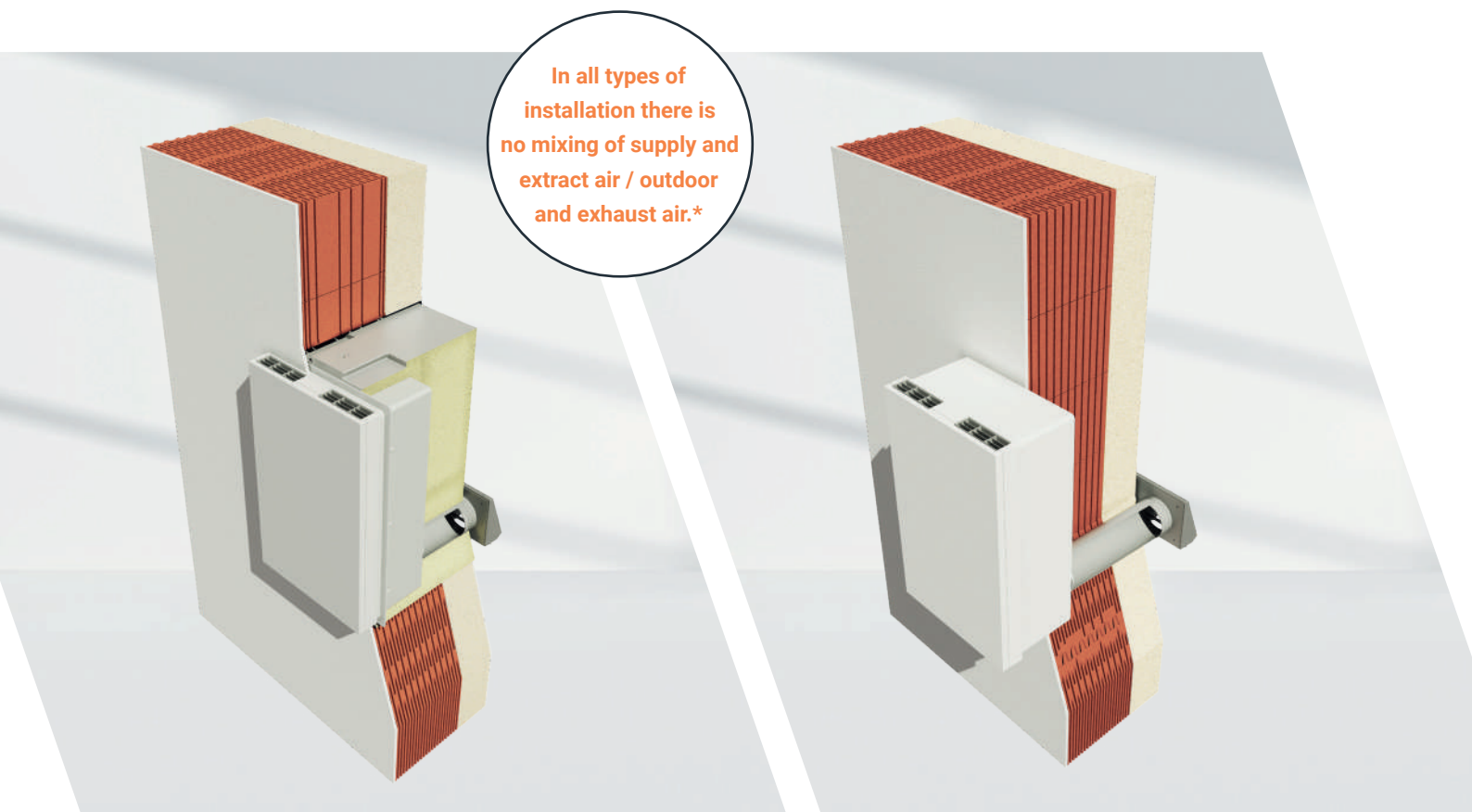
- Another benefit is that there are no extract air pipes running over the roof and none of the fire protection measures normally associated with extract air pipes.
- Installation ducts can be made smaller, which also increases the available living space.



Integrated into wall U² version with ductwork connection



Flush-mount version with ductwork connection



In all types of installation there is no mixing of supply and extract air / outdoor and exhaust air.*

Flush-mount version

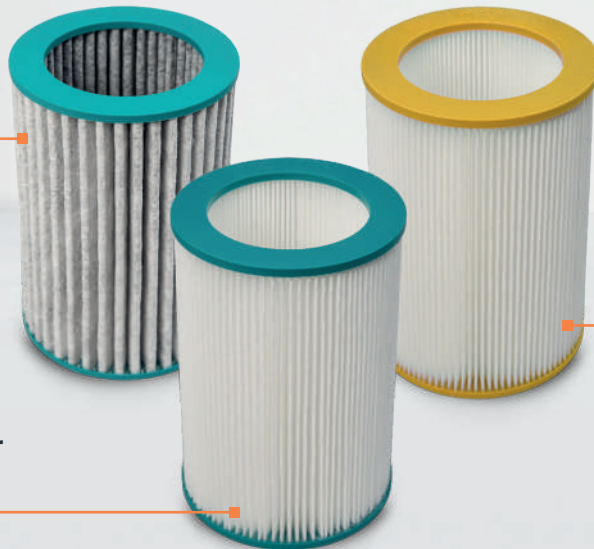
Surface-mount version

* The outdoor and indoor mixing as defined in DIN EN 13141-8:2014-09 was 0 % for the M-WRG-II series.

Perfection at work

Sophisticated technology

Activated charcoal filter
ISO ePM2.5 55 % (F7)



Coarse particulate filter
ISO Coarse 60 % (G4)

Fine particulate filter
ISO ePM1 60 % (F7)

Air filters from the M-WRG-II series

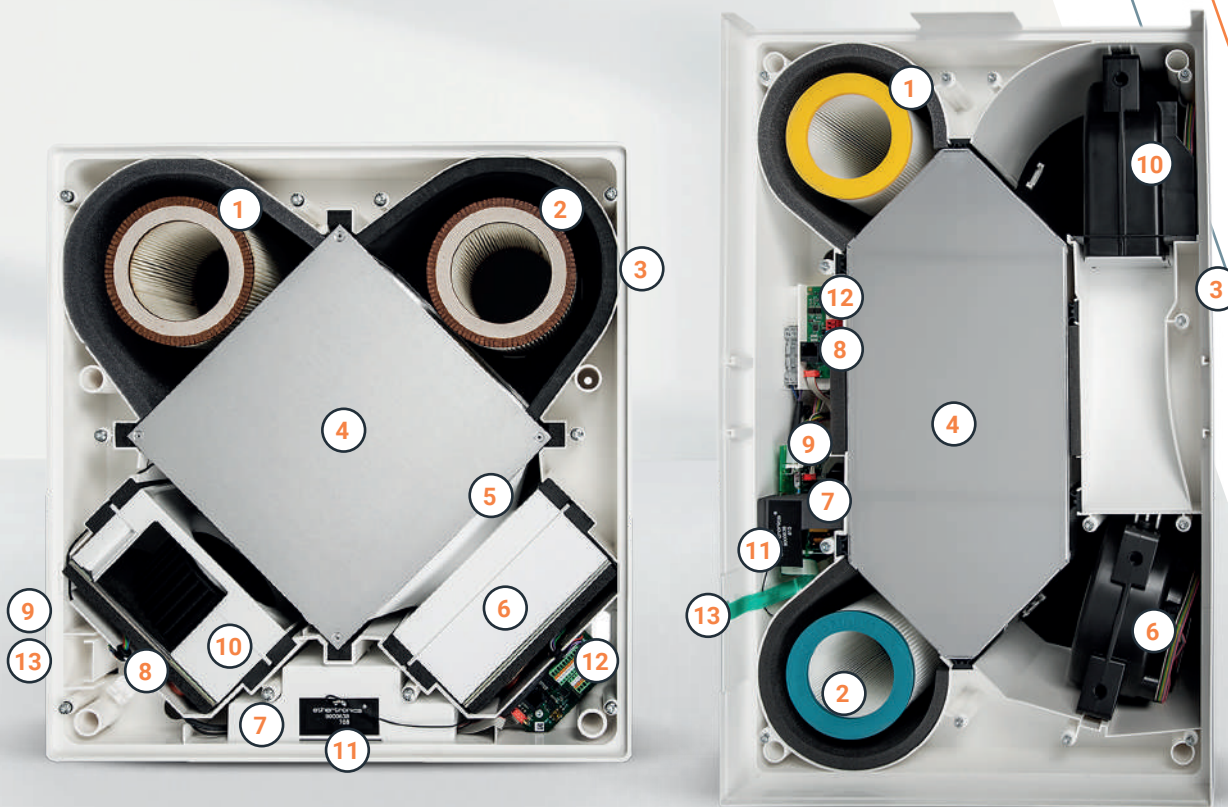
Video:
Fast and straightforward air filter changes in next to no time



High-performance air filters

We have paid particular attention to the filters we use. Only a high performance air filter can safely protect people and the rooms to be ventilated against pollutants such as dust, dirt, pollen or insects. Both unit series offer hygienic air renewal by separately filtering the outdoor air and extract air. A round filter cartridge is available for each air flow. This means that there is no reciprocal contamination of the air filter medium as occurs with reversing ventilation units. This creates protected spaces that benefit all people – not only those allergic to pollen or respirable dust. The air filters of the two series essentially differ in terms of the filter height (M-WRG-II: 150 mm, M-WRG: 124 mm). While the fine

particulate filter (allergy filter) for the outdoor air is an option for the M-WRG series, it is supplied as standard with the M-WRG-II series. The fine filter medium effectively retains respirable dust particles such as pollen, soot and bacteria from dust class PM1. For unpleasant odours or harmful gases (such as fuels, nitrogen oxides, ozone and solvents), we recommend using the activated charcoal filter. The extract air from the room is also filtered to prevent contamination of the ventilation unit components such as heat exchanger, fans or electronics. The unit has an automatic filter change indicator. A pending filter change is signalled visually (M-WRG-II series) or audibly / visually (M-WRG series).



High air flow

Two radial fans are used to ensure a high air throughput even under unfavourable pressure conditions (e.g. wind). They are powered by high performance and energy-efficient EC direct current motors. Motors and the unit itself are controlled by the most advanced electronics, which ensure that your ventilation unit is not only extremely efficient, but also performs well. The units are also virtually noiseless, which means there are no problems using them in bedrooms. The constant volume flow rate enables the M-WRG-II unit to be used without restriction in multi-storey buildings.

- | | |
|----------------------------------|------------------------------|
| 1. Extract air filter | 8. Electrical connection |
| 2. Outdoor air filter | 9. Mains switch position |
| 3. Housing | 10. Supply air fan |
| 4. Heat exchanger | 11. Radio antenna |
| 5. Condensate drainage | 12. Interface board |
| 6. Exhaust air fan | 13. Position of user control |
| 7. Power and control electronics | |



Versatile control options



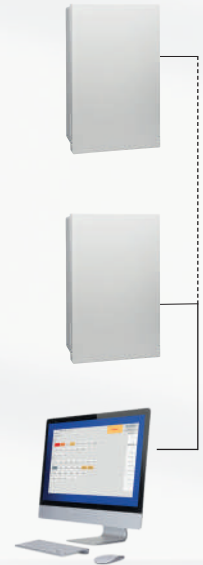
**Operation
at the unit**



**Operation
via cable**



**Wireless operation
via radio / app**



**Bus
systems**

“Unit OFF” input option (M-WRG-II O/EGG-AUS)

The ventilation unit is equipped at the factory with a “Unit OFF” input and a potential-free fault indicator output. A smoke detector or window contact may be connected to the input, for example. For M-WRG-II units only.

Minimum ventilation option to DIN 18017-3 (M-WRG-II O/MVS or M-WRG-O/MVS)

Allows a minimum ventilation level to DIN 18017-3. From 8:00 – 20:00, the unit ventilates at 40 m³/h, dropping to 20 m³ between 20:00 – 8:00. The function is activated at the factory, cannot be switched off by the user and has priority over all other settings, apart from the frost protection function.

Ventilation for moisture protection option (M-WRG-II O/LFS or M-WRG-O/LFS)

Used to set fixed, minimum ventilation levels for day and night (20 m³/h for both 08:00 – 20:00 and 20:00 – 08:00). A humidity program that runs at the same time in the background increases the air flow as required. The option is activated at the factory and cannot be switched off by the user (who can only set higher ventilation levels). Only for M-WRG-II or M-WRG-S/Z-T units with humidity or/and CO₂ sensors.

Summer mode cross-ventilation

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 only. With two units, one is set to supply air operation and the other to extract air operation, which creates a cross-ventilation effect. “Supply air or exhaust air operation” can optionally be implemented via InControl pushbutton sensor, Modbus, app or wireless remote control.

Convenient and individually controllable



App

Convenient control of M-WRG-II and M-WRG ventilation units. Offers maximum flexibility with respect to all the control options.



4-way wireless pushbutton switch

With LED feedback for wireless operation of the ventilation unit. The wireless pushbutton switch is ideal for retrospective installation or for barrier-free living.



External wireless humidity sensor

Control unit with 5 ventilation levels/programs including humidity sensor for on-demand operation of the ventilation units. Allows the battery operated sensor to be arranged flexibly within the room or can be retrofitted for units without sensors.



External wireless CO₂ sensor

Control unit with 5 ventilation levels/programs including CO₂ sensor for on-demand operation of the ventilation units. Allows the sensor to be arranged flexibly within the room (230 V connection required) or can be retrofitted for units without sensors.



M-WRG-FBH wireless remote control

Convenient operation of up to six ventilation units in one room. This solution is useful for new builds and retrospective installation in renovations where time-consuming and expensive cable runs need to be avoided as far as possible.



InControl pushbutton sensor

Convenient buttons and ease of use for up to five M-WRG-II P-T/E-T or M-WRG-S/Z-T units in one room. Fixed values for humidity and CO₂. Hard-wired solution for new builds.



The Meltem app

Convenient cloud-based control

Control by app for comfort ventilation units

The new Meltem app can be used for bidirectional control, programming and reading of ventilation units from the M-WRG-II and M-WRG series. It can be used decentrally, centrally on site or online from anywhere in the world. It allows time programs to be saved for different controllers according to the unit configuration. And, of course, the user can also program various unit functions and sensors. Top priority is given to data protection; your data is fully encrypted and can only be released by the user. Naturally all Meltem ventilation units can also be controlled without the app.

YOU WILL NEED:

- The Meltem app
- Meltem Gateway with cable and mains plug
- Ventilation units from the M-WRG-II and M-WRG series constructed 2020 or later
- Router with Internet access
- Smartphone or tablet, iOS or Android operating system

The benefits to you

with the Meltem app

User / tenant

- Selecting and setting various program functions
- Displaying operating statuses
- Variable program settings for specific uses
- Optimum ventilation guaranteed even when building is unoccupied
- Online support possible via remote maintenance
- Fault messages and filter change indicator

Property owner

- The property owner purchases the units and allows the tenants to use the app.
- Options such as ventilation for moisture protection (to preserve the building structure), minimum ventilation level to DIN 18017-3 standard (partly implemented in the building regulations) or the external control inputs cannot be changed by the user.
- When the tenant changes, simply disconnect the gateway from the Internet and press the Reset button if necessary.
- The new tenant can link the units to the app and has the sole access.

Student housing manager

- In every room, the units are equipped and can be operated with a simple controller.
- The manager has access to the app and so can make basic settings and display fault messages at a central location.

If users request changes to the settings, the manager can again implement these centrally.

The benefits to you

- The M-WRG ventilation units can be quickly and simply linked to the app.
- Clear and simple displays and operator input
- Display of air quality and comfort parameters (e.g. humidity, CO₂ and temperature)
- The ventilation solution can be customised to match user behaviour.
- Access rights allow remote maintenance to be carried out online.
- Central controller for the units with individual parameters for each room, residential unit or building
- Multiple buildings can be linked into the app
- Can be retrofitted without having to adapt the units (M-WRG from 2020)

Retrofitting

An M-WRG-II/M-WRG standard unit without sensors can be subsequently equipped and operated with an app via a gateway; this has the following benefits:

- Central controller for the units with individual parameters for each room, residential unit or building, with up to 10 ventilation levels/programs (rather than 3-5)
- Supply air operation, extract air operation
- Use of time programs for various modes
- Visual filter change indicator in text form and option of ordering filters online
- No accessories needed to read operating hours
- Display of fault messages
- Fast and straightforward online support possible for maintenance or repair if enabled
- In addition, all unit functions can be programmed individually as required.



Video:
All about our app

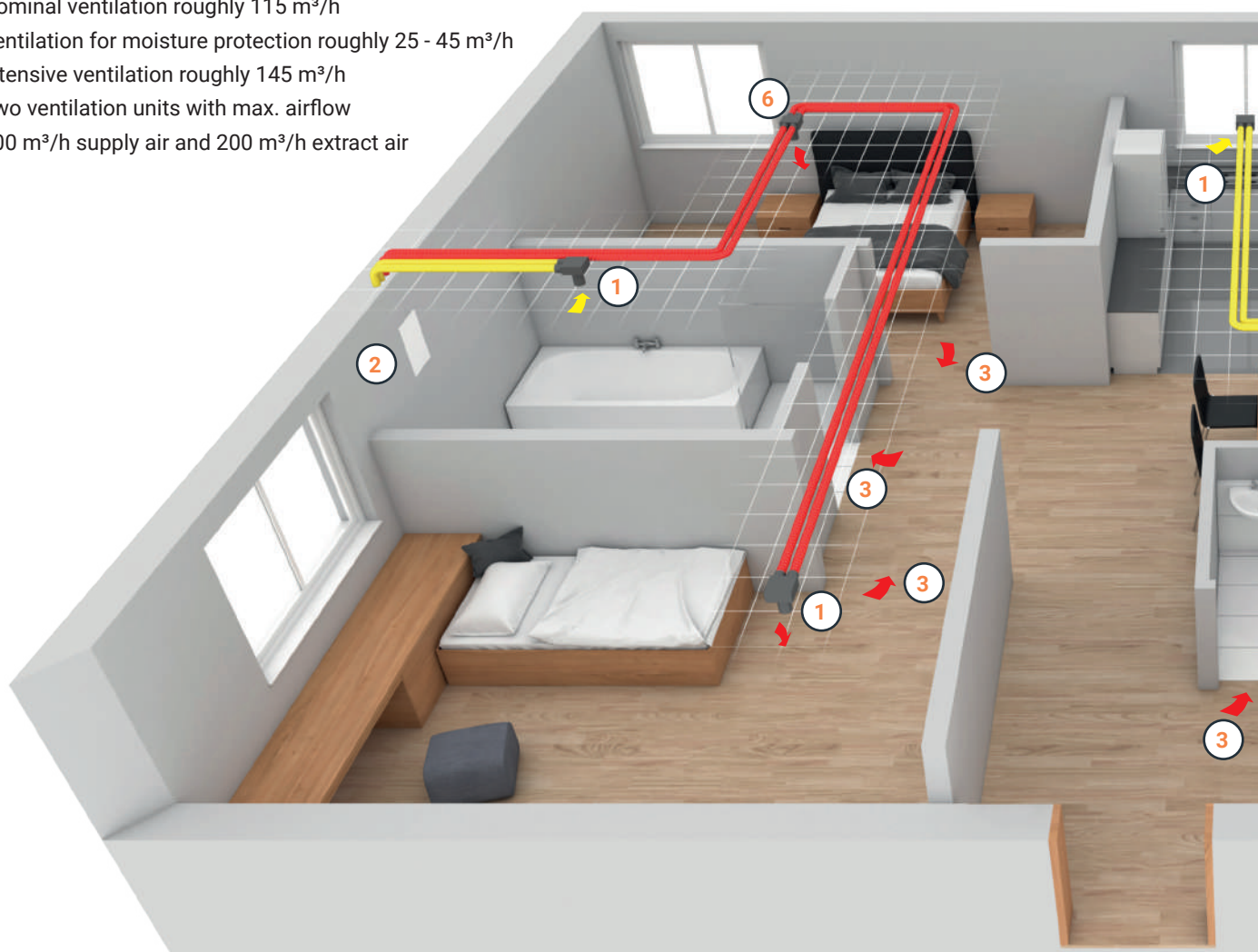


Combination

options

4-room apartment, roughly 110 m²

- Nominal ventilation roughly 115 m³/h
- Ventilation for moisture protection roughly 25 - 45 m³/h
- Intensive ventilation roughly 145 m³/h
- Two ventilation units with max. airflow 200 m³/h supply air and 200 m³/h extract air



①

Ceiling box, flexible pipe connection 2 x 75 mm to DN 100

②

M-WRG-II ventilation unit for integrated into wall installation (U²) with ductwork connection and protection class IPX5, with minimum ventilation option to DIN 18017-3. Alternatively, M-WRG units can also be used.

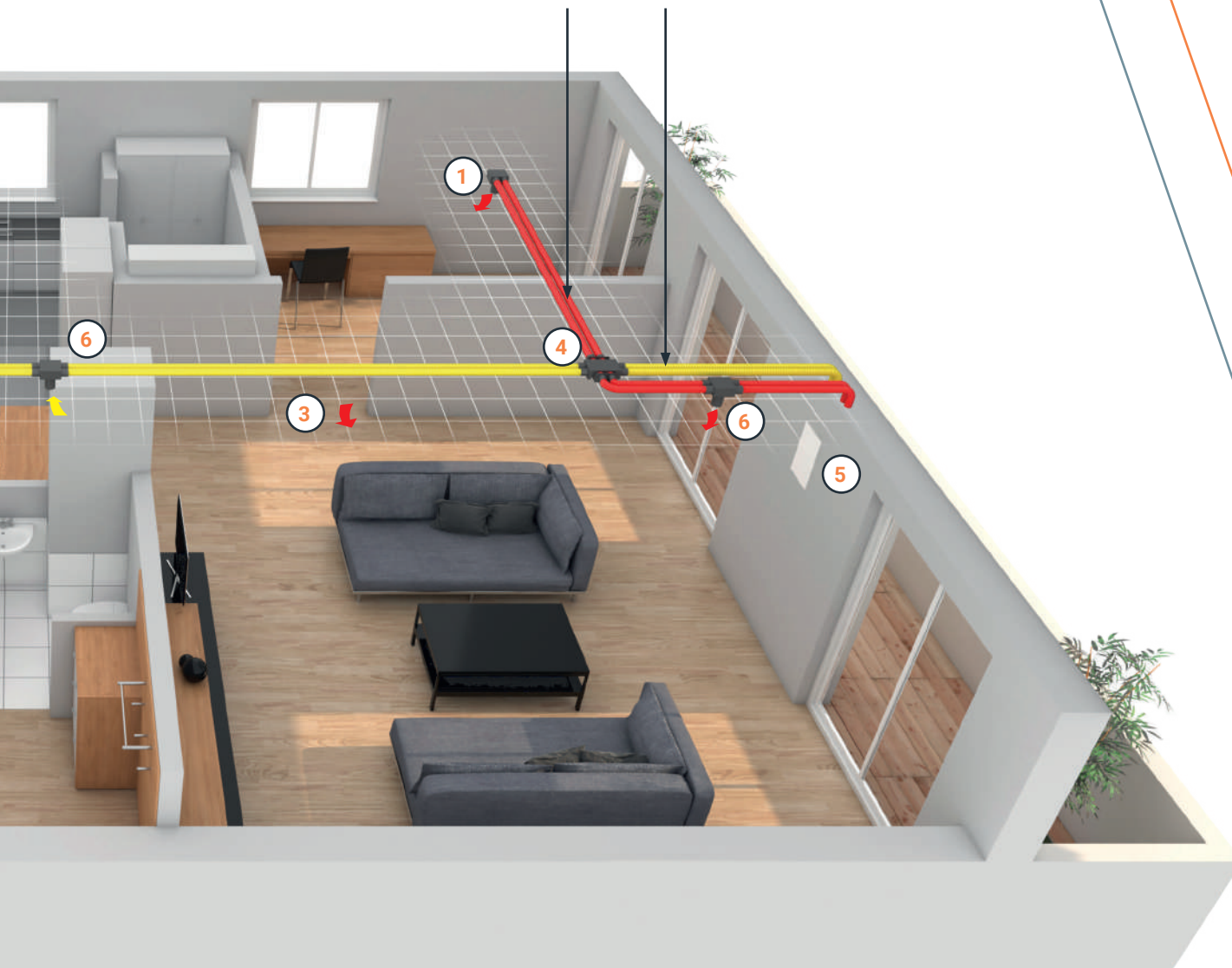
③

Non-closeable overflow openings must be provided in the internal doors between the supply air and extract air rooms, such as a door undercut.

→ Extract air 2 x 75 mm

→ Supply air 2 x 75 mm

Flexible pipe, 2 x 75 mm, each flexible pipe max. 10 m length between ceiling box and M-WRG unit. Always run 2 flexible pipes in the supply air or extract air room.



4

Crosspiece, top part and bottom part both with 4 x 75 mm connections for flexible pipe.

5

M-WRG-II ventilation unit for integrated into wall installation (U²) with ductwork connection and minimum ventilation option to DIN 18017-3. Alternatively, M-WRG units can also be used.

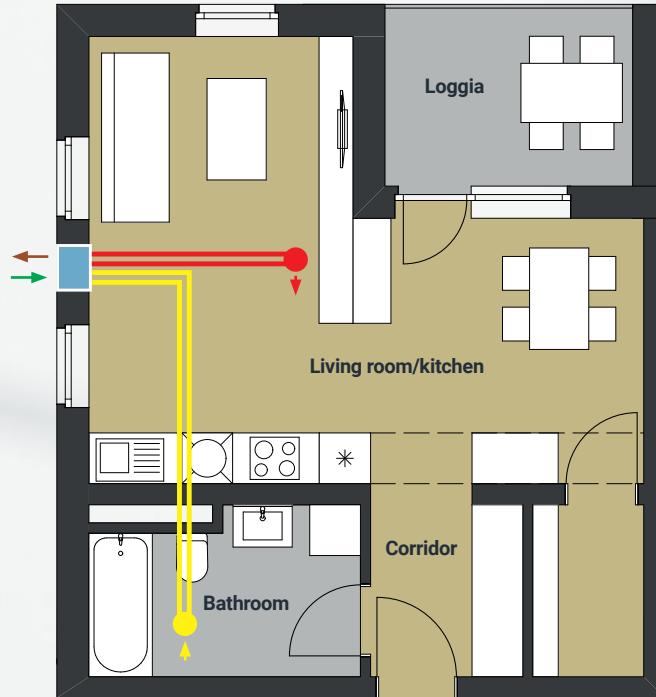
6

Ceiling box with distributor, flexible pipe connection 4 x 75 mm to DN 100

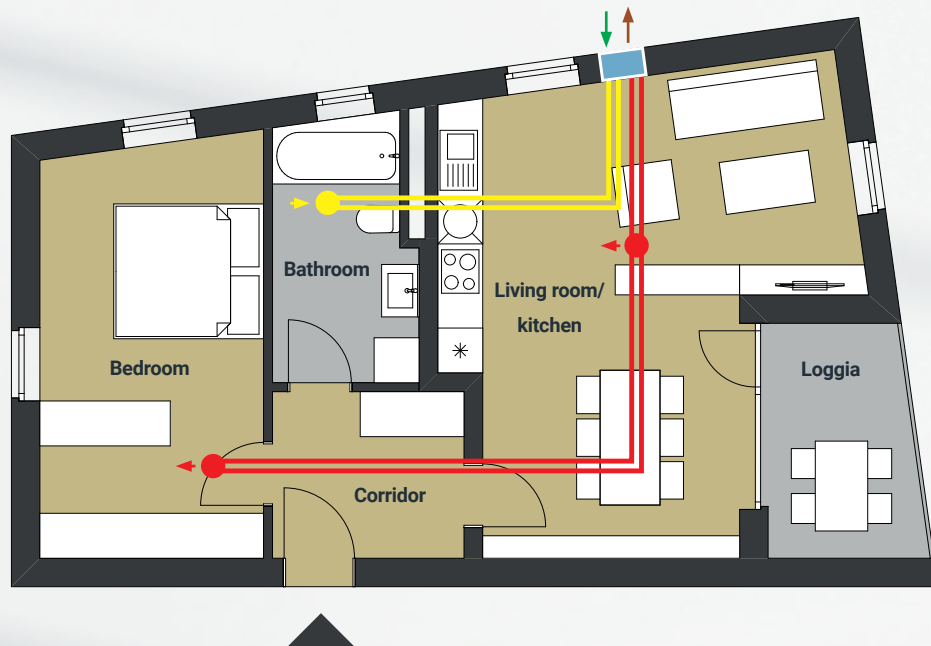
Typical applications

M-WRG-II and M-WRG

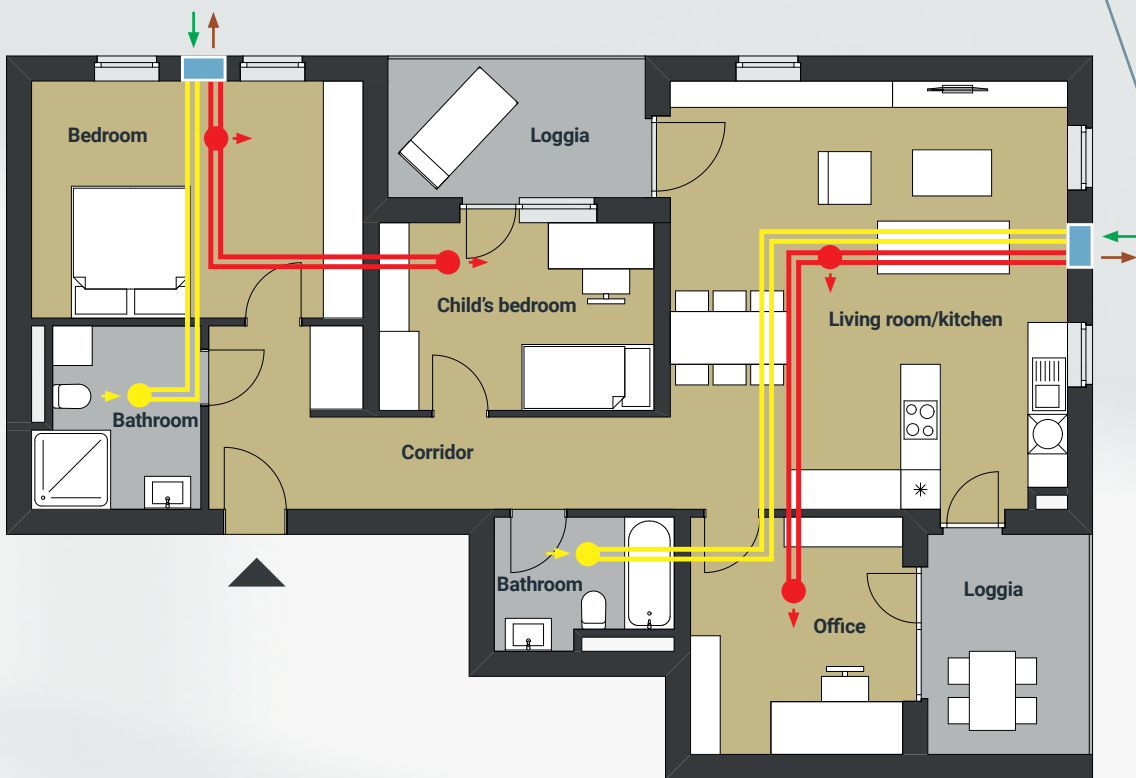
1-room apartment, roughly 50 m²
 Integrated into wall U²
 with ductwork connection



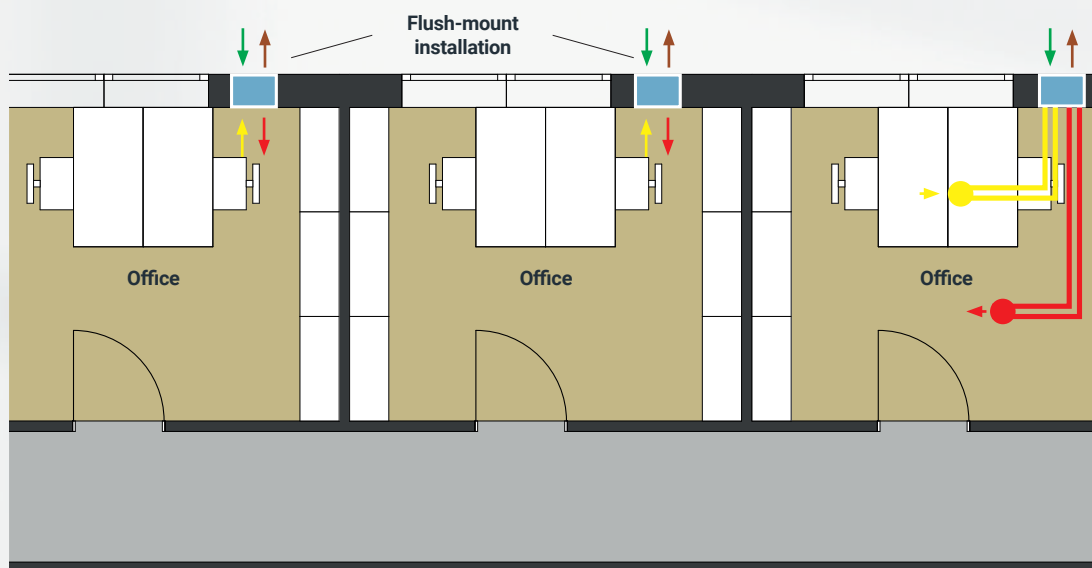
2-room apartment, roughly 50 m²
 Integrated into wall U²
 with ductwork connection



4-room apartment, roughly 110 m²
 Integrated into wall U² with ductwork connection



Office
 Integrated into wall U² with ductwork connection and flush-mount installation





Outer wall terminals

High-quality and value for money



Stainless steel pod
for M-WRG-II series



Stainless steel pod
for M-WRG series



Plastic pipe for
M-WRG-II & M-WRG series



Window reveal solution

Practically invisible

Hidden outer wall terminal using the window reveal solution for the M-WRG-II and M-WRG series

In addition to the visible outer wall terminal with small pods, an outer wall terminal can also be hidden in the window reveal in order to meet the most stringent architectural requirements. With this solution, the pod on the outer wall is replaced by extremely discrete outlets installed in the window reveal. These are finished with an elegant stainless steel faceplate.

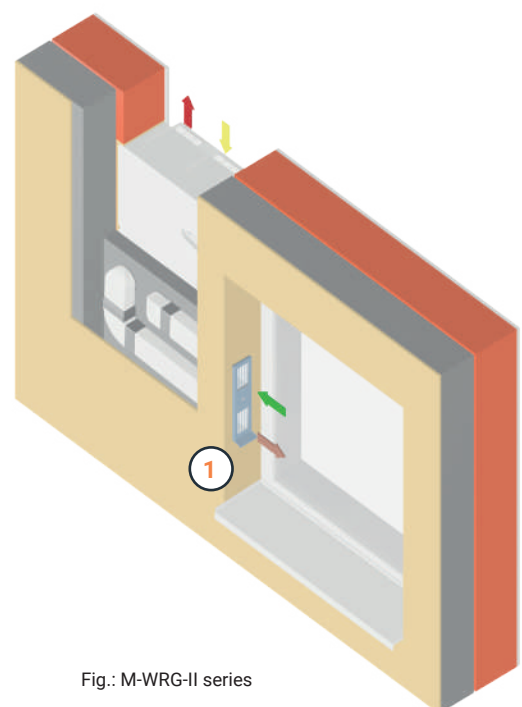


Fig.: M-WRG-II series

Flexible system solutions

for your project

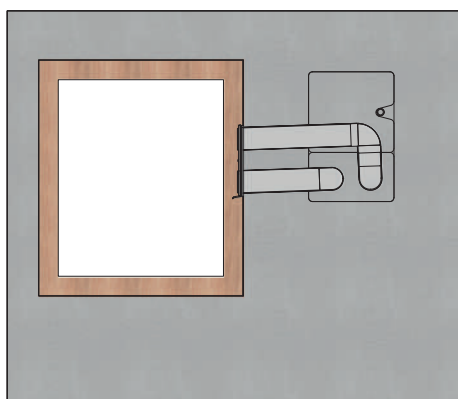
Our comfort ventilation units provide fresh and healthier air throughout the house. Even if the unit cannot be installed conventionally in the external wall, there need be no compromises in terms of air quality. Our system solutions for installation in the roof, basement and on internal walls make this possible. If you would like to know more about our flexible system solutions, our planning experts will be happy to advise you. You will also find detailed data sheets about each of our solutions on our website.



1

OUTER WALL TERMINALS

Meltem has a range of different outer wall terminals to suit every architectural requirement and taste. You can choose from discreet ventilation pods and pipes, or the almost invisible window reveal solution.

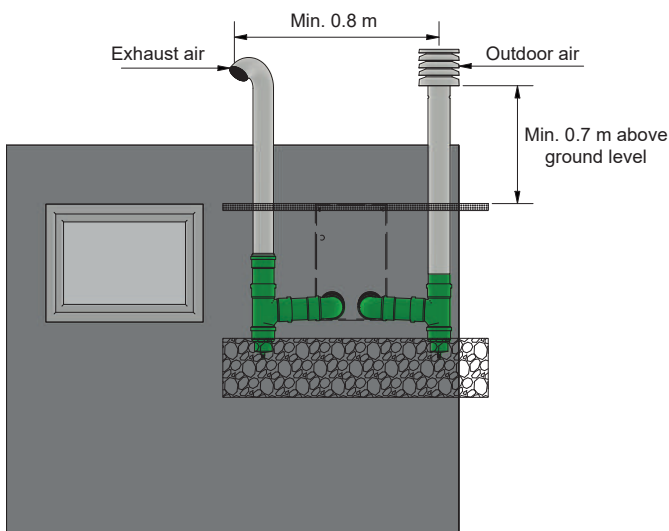


Example of M-WRG-II

2

BASEMENT VENTILATION

Basements have long been used as living spaces, so they need appropriate ventilation too. Naturally we have the perfect solution for this situation. Please contact us if you are interested in a dew point controller for your basement.



Example of M-WRG-II



3

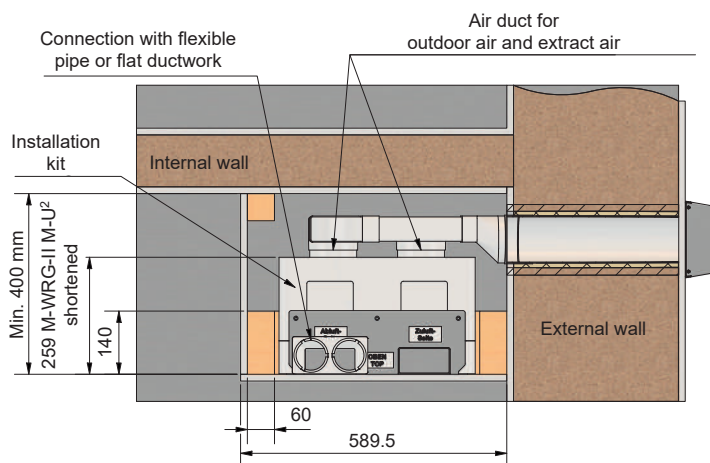
UNIT INSTALLED ON THE INTERNAL WALL

It is not always possible to install ventilation units on the external wall – there may be insufficient space available on the wall, for example. With our solution, the planning options remain flexible.

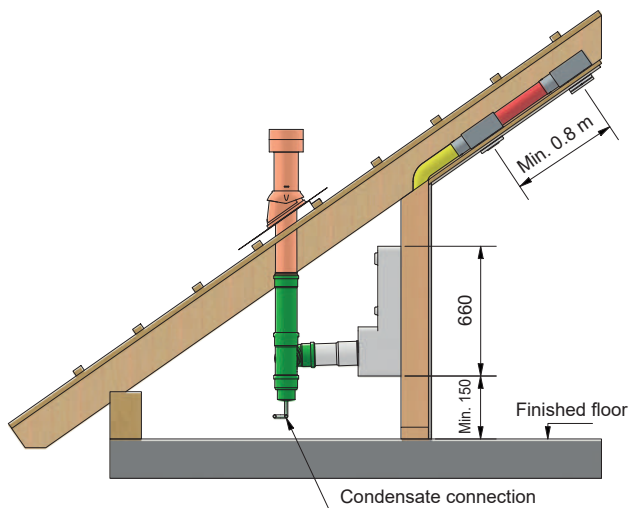
4

AIR DUCT SYSTEM THROUGH THE ROOF

Lofts provide valuable living space. To be able to use all this potential space, comfort ventilation is naturally an essential feature. So we have developed a system that will allow you to easily route outdoor and exhaust air through the roof.



Example of M-WRG-II



Example of M-WRG-II

Technical data for the M-WRG-II

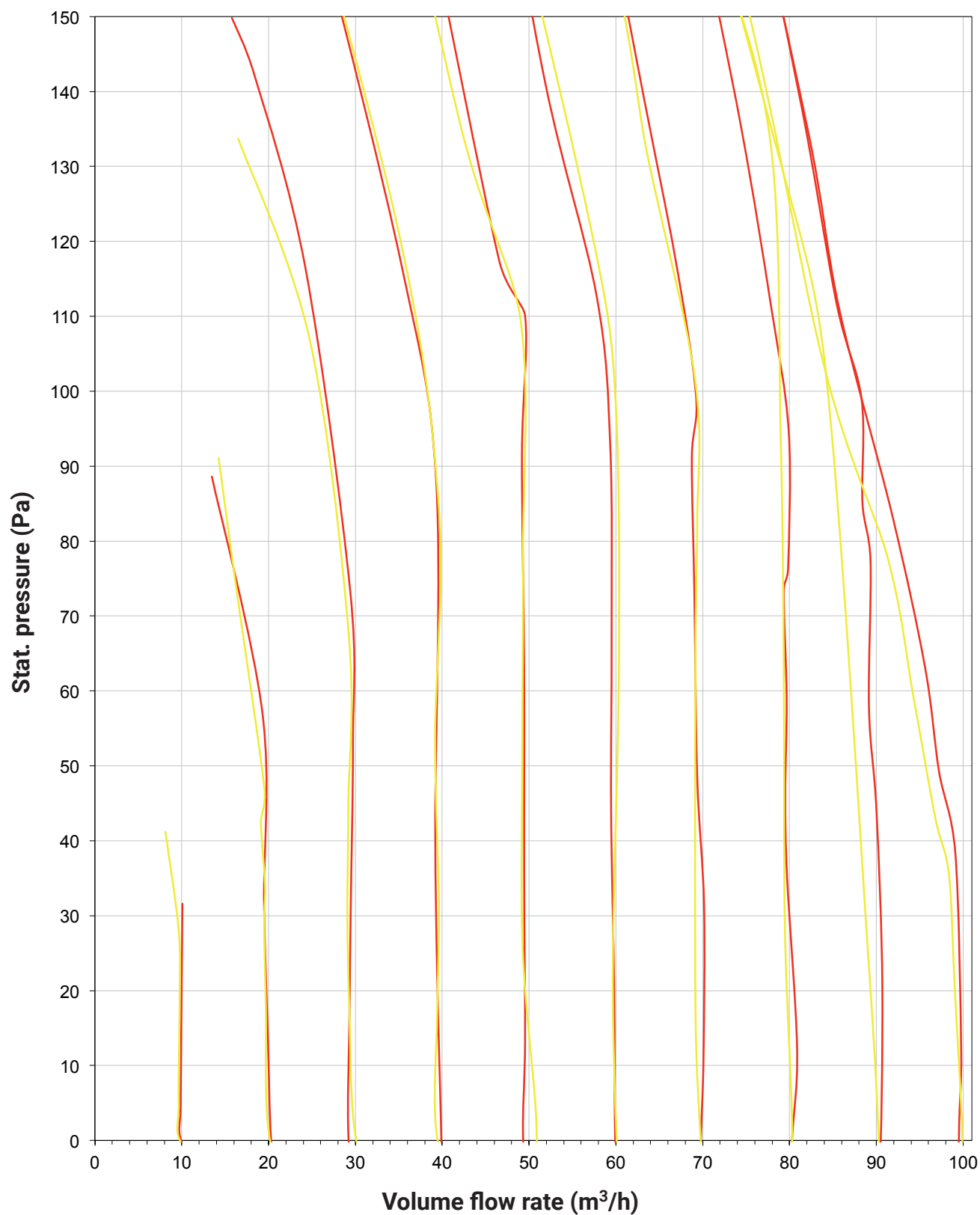
Unit types	M-WRG-II P / M-WRG-II E	M-WRG-II P (F, FC) / M-WRG-II E (F, FC)
Type of system	Decentralised, heat recuperation	
Air flow (m³/h)	10 to 100	
Output control	5-level on the unit, 10-level with accessories	5-level on the unit, 10-level with accessories, infinitely variable with humidity/CO ₂ sensors
Heat exchanger	Cross-counterflow / enthalpy cross-counterflow	
Max. heat recovery efficiency, η_0 , DIN EN 13141-8 (%)	94 / 87	
Effective heat recovery PHI (%), U ² version with ductwork connection	82 / 78	
Moisture recovery η_x PHI (%)	No / 55	
Motor / supply air fan / extract air fan	EC direct current, radial	
Electrical power consumption (W), free blowing	4.6 to 52.4 / 4.5 to 51.2	
Standby power consumption (W)	0.8	
Specific electrical power consumption of the fans (W/m³/h) at ref. vol. flow rate 70 m³/h, free blowing	0.33 / 0.31	
Constant volume flow rate, balanced ventilation	Yes	
Max. current consumption (A)	0.41 / 0.42	
Operating voltage (V) / mains frequency (Hz)	85 – 265 / 50 – 60	
Sound pressure level surface-mount (LpA in dB, 10 m²)	17.5 to 48.1 / 11.6 to 46.7	
Sound pressure level flush-mount (LpA in dB, 10 m²)	13.0 to 47.5 / 12.3 to 46.1	
Sound pressure level flush-mount with ductwork connection on extract air side (LpA in dB, 10 m²)	12.6 to 46.4 / 12.3 to 44.6	
Sound pressure level for integrated into wall U ² with ductwork connection on extract air side (LpA in dB, 10 m²)	6.5 to 42.1 / 11.3 to 42.6	
Sound insulation for weighted standardised sound level difference, unit in use, depending on installation version (D _{n,e,w} in dB)	51 to 70	
Permitted temperature range of outdoor air during operation at a room temperature of at least 20 °C (in °C)	-18 to +40	
Permitted ambient air humidity during operation (% RH)	Up to approx. 70	
Weight (kg)	8.4 / 9.4	
Colour	White similar to RAL 9010	
Outdoor air / exhaust air connection (DN)	100	
Dimensions (W x H x D) in mm	364 x 590 x 218	
Possible installation methods	Surface-mount, flush-mount, integrated into wall U ²	
Ductwork connection possible?	Yes, with accessories	
Visible unit depth surface-mount/flush-mount/integrated into wall U ² (mm)	218 / 58 / -	
Filter type	Round filter cartridges for outdoor air and extract air	
Outdoor air / extract air filter class, optional activated charcoal filter for outdoor air (ISO 16890-1:2016-12 or EN 779: 2012-10)	ISO ePM1 60 % (F7) / ISO Coarse 60 % (G4), ISO ePM2.5 55 % (F7)	
Filter monitoring with filter change indicator	Runtime-controlled, audible and visual	
Condensate drain	Via condensate connection / not required ¹	
Fully automatic cover flap control (when switching On / Off, in Standby mode and if the power fails)	Yes	
"Unit OFF" input (smoke detector, window contact)	Yes, optional	
IP code (standard / with integrated into wall U ² installation version)	IPX4 / IPX5	
Humidity control	Optional with accessories	Yes
CO ₂ control	Optional with accessories	Yes, with -FC unit version
Automatic mode (humidity and CO ₂ control)	Optional with accessories	Yes, with -FC unit version
TÜV-tested	Yes	
Tested to/compliant with VDI 6022 sheet 1	W-377517-23-Zd	
Passivhaus certificate (PHI)	1327vs03 / 1328vs03	
National technical approval (DIBt)	Z-51.3-431	
Energy efficiency class	B/A ²	A

24 ¹ If used for the intended use as described in the operating instructions and if not exposed to excessive humidity

² In combination with the external wireless humidity or CO₂ sensor

Pressure-volume flow rate characteristics

Supply air / extract air



— Supply air — Extract air

Variable unit functions

Functions \ Unit types without and with enthalpy		M-WRG-II functions																	
		Central																	
		Decentralised																	
		Operation at the unit			4-way wireless pushbutton switch			Wireless remote control			InControl pushbutton sensor			App			Modbus (BMS, Loxone and KNX) ¹		
		M-WRG-II E	M-WRG-II EF	M-WRG-II EFC	M-WRG-II E...	M-WRG-II E...F	M-WRG-II E...FC	M-WRG-II E...	M-WRG-II E...F	M-WRG-II E...FC	M-WRG-II ET	M-WRG-II ETf	M-WRG-II ETFC	M-WRG-II ET	M-WRG-II ETf	M-WRG-II ETFC	M-WRG-II EM	M-WRG-II EM-F	M-WRG-II EM-FC
10 ventilation levels							X	X	X					X	X	X	X	X	X
5 ventilation levels		X																	
4 ventilation levels			X	X	X	X	X				X	X	X						
Extract air operation											X			X	X	X			
Supply air operation											X	X		X	X	X			
Variable extract air operation							X	X	X					X	X	X	X	X	X
Variable supply air operation							X	X	X					X	X	X	X	X	X
Humidity control (RH)			X			X					X	X							
Variable humidity control (RH)								X	X					X	X			X	X
CO ₂ control													X						
Variable CO ₂ control										X						X			X
Automatic mode RH + CO ₂				X		X													
Variable automatic mode RH + CO ₂										X						X			X
Temporary intensive ventilation		X	X	X	X	X	X				X	X	X						
Variable temporary intensive ventilation							X	X	X					X	X	X	X	X	X
Variable timer program														X	X	X	X	X	X
Control input		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Optional unit OFF input (smoke detector, 24 V window contact)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Minimum ventilation program to DIN 18017-3, factory setting, CANNOT BE SWITCHED OFF, optional		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ventilation for moisture protection with humidity control, CANNOT BE SWITCHED OFF, optional			X	X		X	X		X	X		X	X		X	X		X	X
Visual and audible filter change indicator		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Reading the operating hours							X	X	X					X	X	X	X	X	X
Reading the operating hours with accessories		X	X	X	X	X					X	X	X						
Sensor values display							X	X	X					X	X	X	X	X	X
RH supply air > RH extract air display			X	X								X	X		X	X		X	X
Visual fault indicator LED / symbol		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Operating status							X	X	X					X	X	X	X	X	X
Operating status LED		X	X	X	X	X					X	X	X						
Frost protection function		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

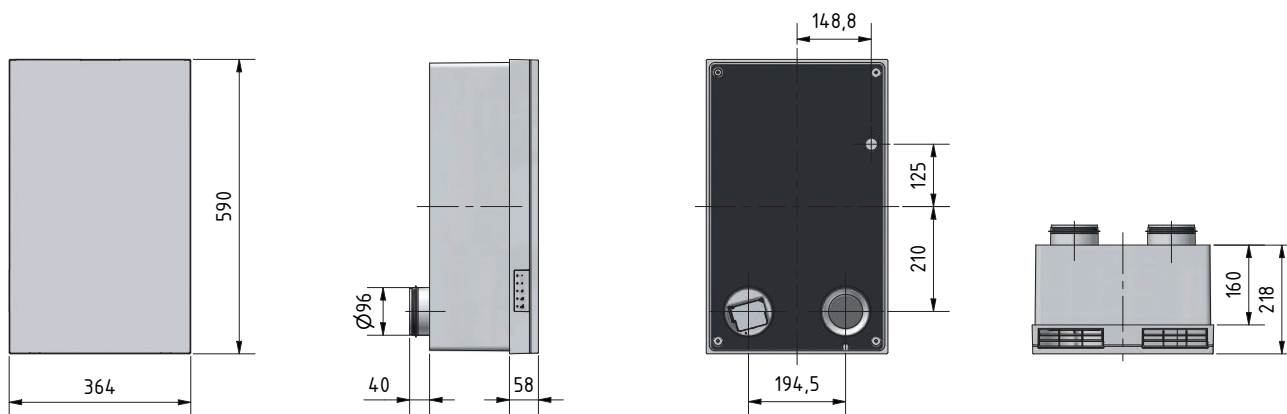
¹ An M-WRG-KNX-GW (part no. 200273) is needed for KNX. For Loxone and other system suppliers, the bus cable must be installed as a Modbus RTU. You will find further details in the Modbus operating and installation instructions.

Use of customer's own three-step rotary switch, functions as for 4-way wireless pushbutton switch apart from LED display

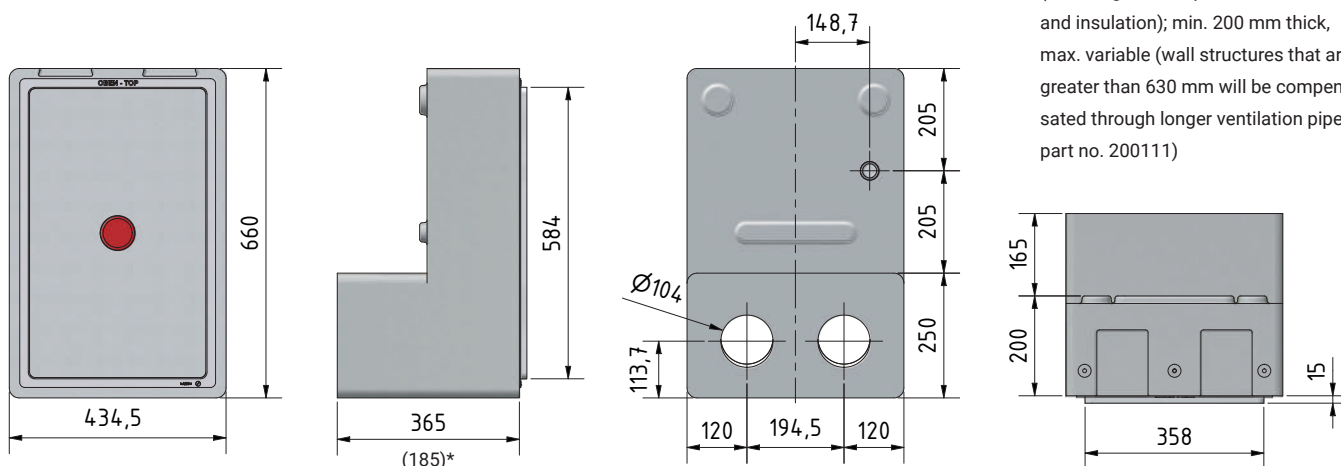
26 App works in combination with operation on the unit, 4-way wireless pushbutton switch, wireless remote control, InControl pushbutton sensor

Dimensions

VENTILATION UNIT



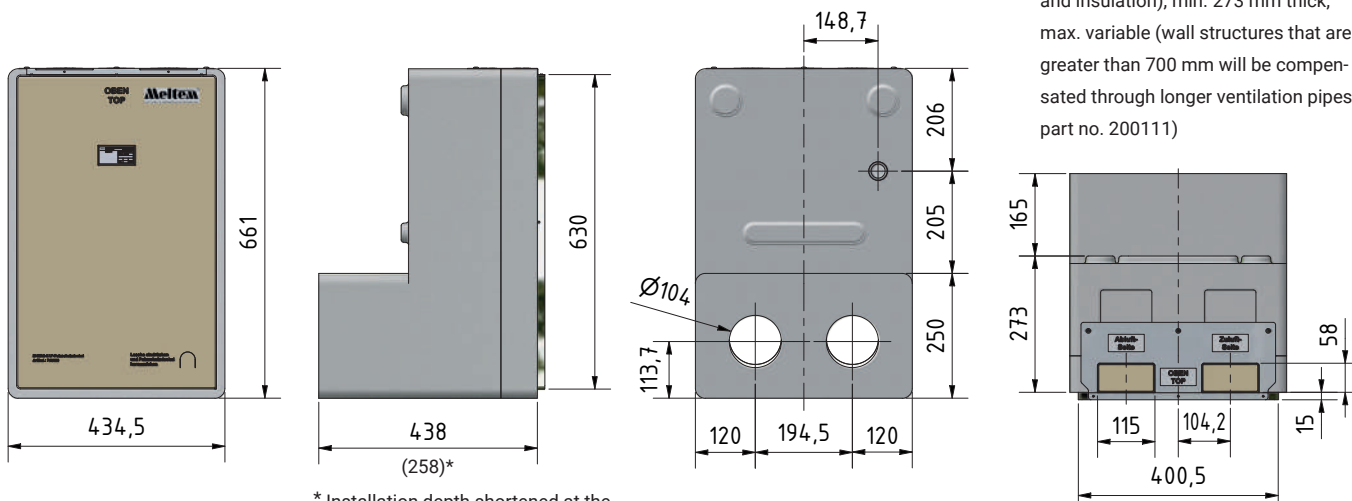
FLUSH-MOUNT INSTALLATION KIT FRAME CONSTRUCTION / SOLID CONSTRUCTION



Dimension 365 mm is variable, can be cut to length according to the wall structure (including internal plaster, external render and insulation); min. 200 mm thick, max. variable (wall structures that are greater than 630 mm will be compensated through longer ventilation pipes, part no. 200111)

* Installation depth shortened at the factory to minimum dimension of 185 mm without plastering trim

FLUSH-MOUNT INSTALLATION KIT INTEGRATED INTO WALL U²

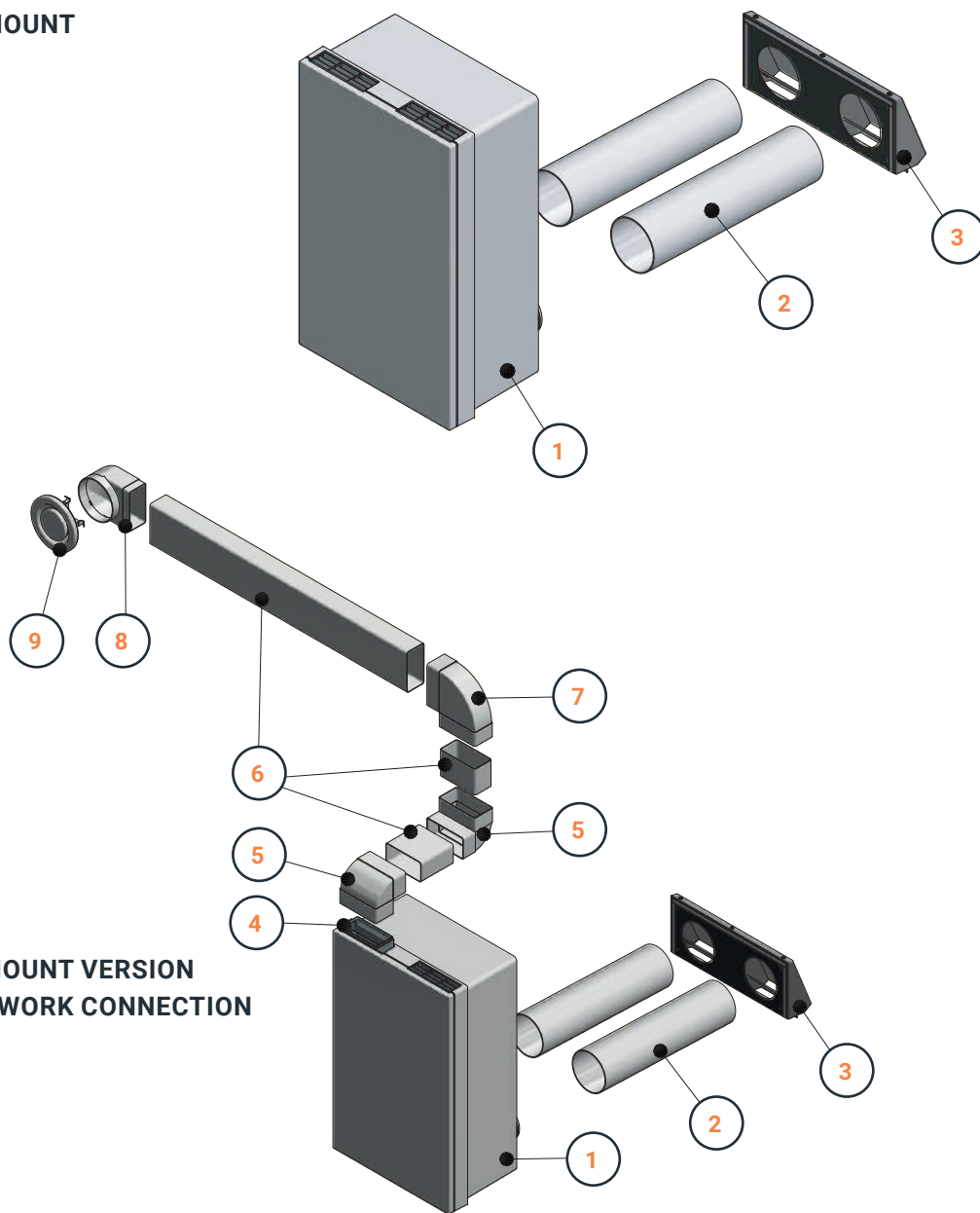


Dimension 438 mm is variable, can be cut to length according to the wall structure (including internal plaster, external render and insulation); min. 273 mm thick, max. variable (wall structures that are greater than 700 mm will be compensated through longer ventilation pipes, part no. 200111)

* Installation depth shortened at the factory to minimum dimension of 258 mm without plastering trim

System overview

SURFACE-MOUNT VERSION



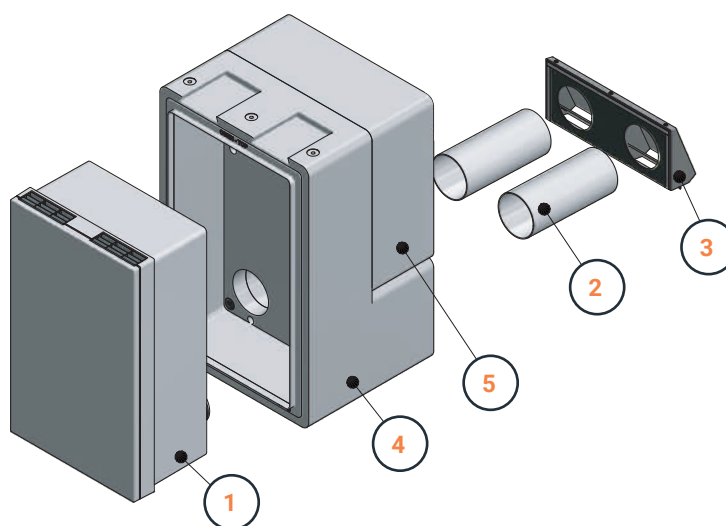
SURFACE-MOUNT VERSION WITH DUCTWORK CONNECTION

List of components

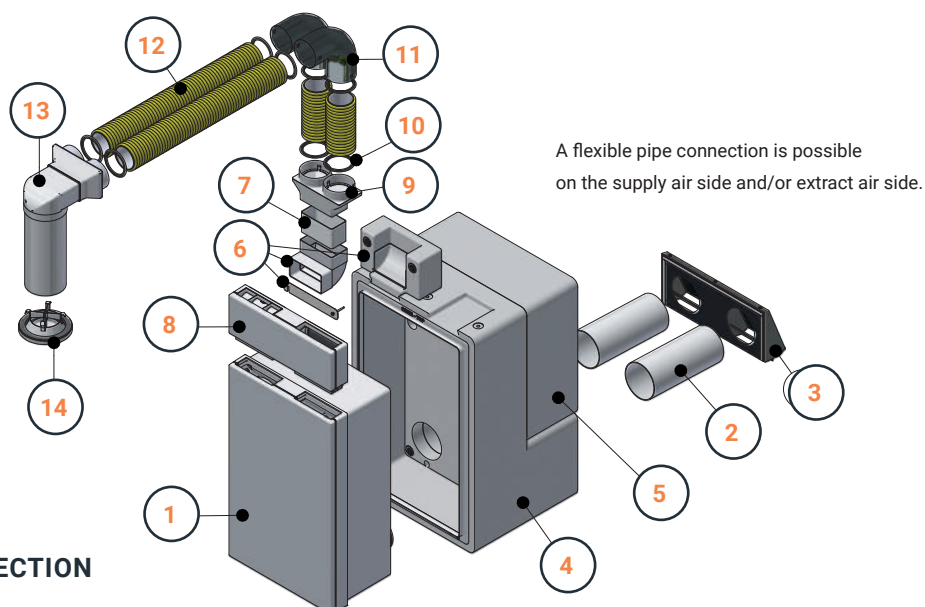
Part no.	Type	Description
1	Unit type	M-WRG-II ventilation unit (no condensate connection needed for enthalpy heat exchanger)
2	200407	M-WRG-II M/AP
3	200313	M-WRG-II ES
4	200314	M-WRG-II KA
5	200247	M-WRG-FK-W
6	200104	M-WRG-FK-F
7	200115	M-WRG-FK-B
8	200101	M-WRG-RR-FK
9	200031	M-WRG-FR-TVA

* For wall structures (including internal plaster, external render and insulation) that are more than 470 mm thick, use longer ventilation pipes, part no. 200111.

FLUSH-MOUNT VERSION



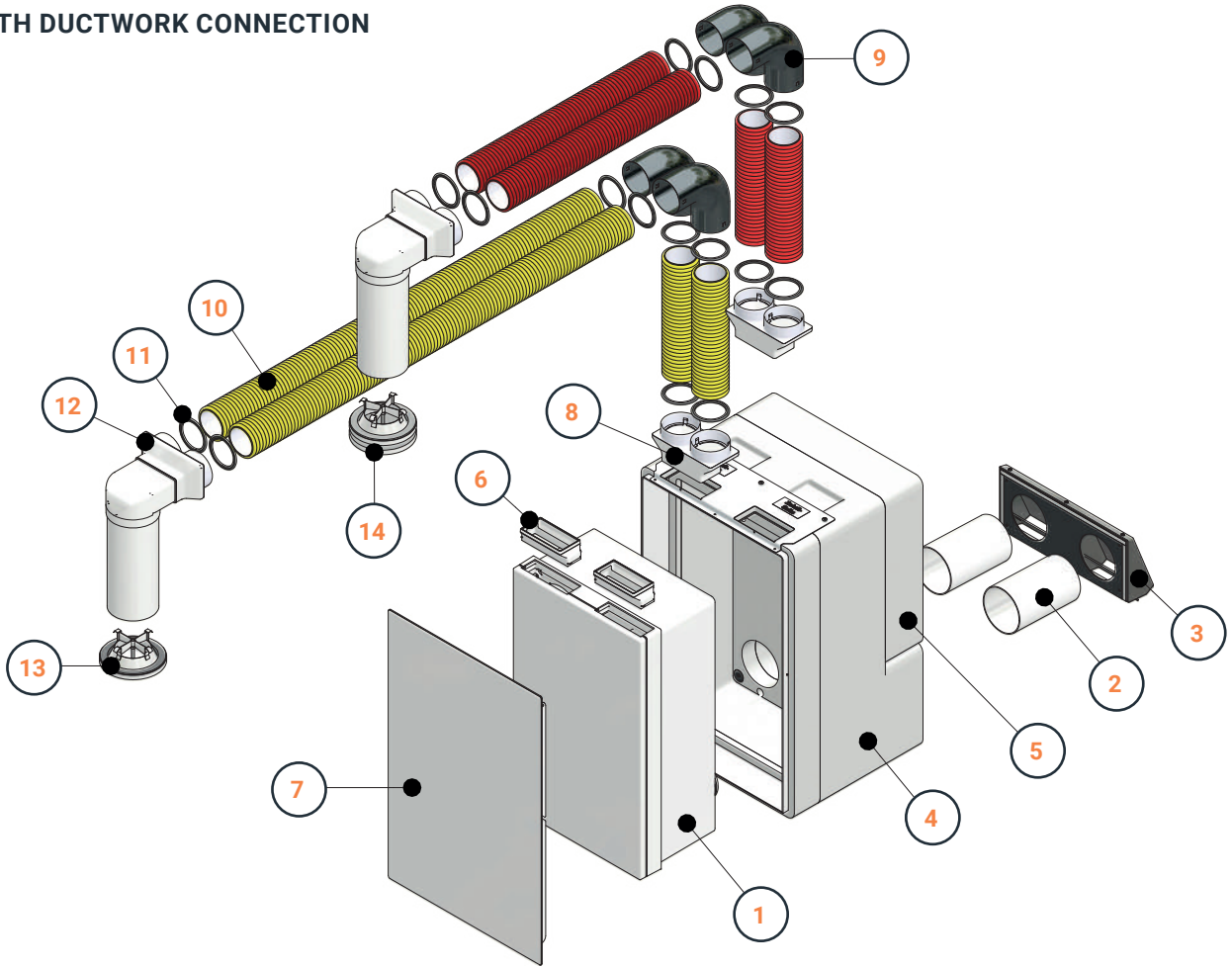
FLUSH-MOUNT VERSION WITH DUCTWORK CONNECTION



List of components

	Part no.	Type	Description
1		Unit type	M-WRG-II ventilation unit (no condensate connection needed for enthalpy heat exchanger)
2	200304	M-WRG-LR 50	Outdoor air and exhaust air pipe DN 100 - 2 x 0.5 m
3	200313	M-WRG-II ES	Outer wall terminal stainless steel pod
4	200116 200126	M-WRG-II M M-WRG-II M/MB	Flush-mount installation kit for frame construction Flush-mount installation kit for solid construction
5	200245	M-WRG-II M/FÜ	Filler piece installation kit
6	200128	M-WRG-II AD-UP	Ductwork connection adapter for flush-mount installation kit, includes flat ductwork elbow 90°
7	200104	M-WRG-FK-F	Flat ductwork 110 x 54 mm, alternatively M-WRG-FSA fitting adapter
8	200404	M-WRG-II KA-UP	Duct adapter for flush-mount M-WRG-II units
9	200020	M-WRG-FRA75	Flexible pipe adapter 75 mm to flat ductwork system 110 x 54 mm
10	200023	M-WRG-FR-DR75	Flexible pipe sealing ring DN 75
11	200034	M-WRG-FR-B75	Flexible pipe 90° bend DN 75
12	200226	M-WRG-FR75	Flexible pipe 75 mm
13	200030	M-WRG-DK 2x75/100	Ceiling box, flexible pipe connection 2 x 75 mm to DN 100, alternatively as steel sheet version
14	200031	M-WRG-FR-TVA	Poppet valve, extract air DN 100, alternatively as a plastic version

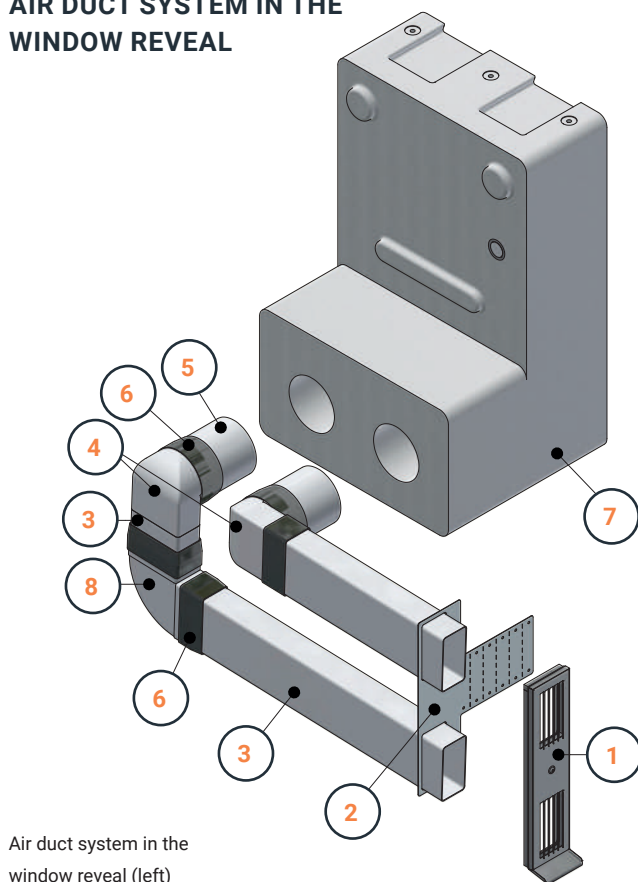
**INTEGRATED INTO WALL U²
WITH DUCTWORK CONNECTION**



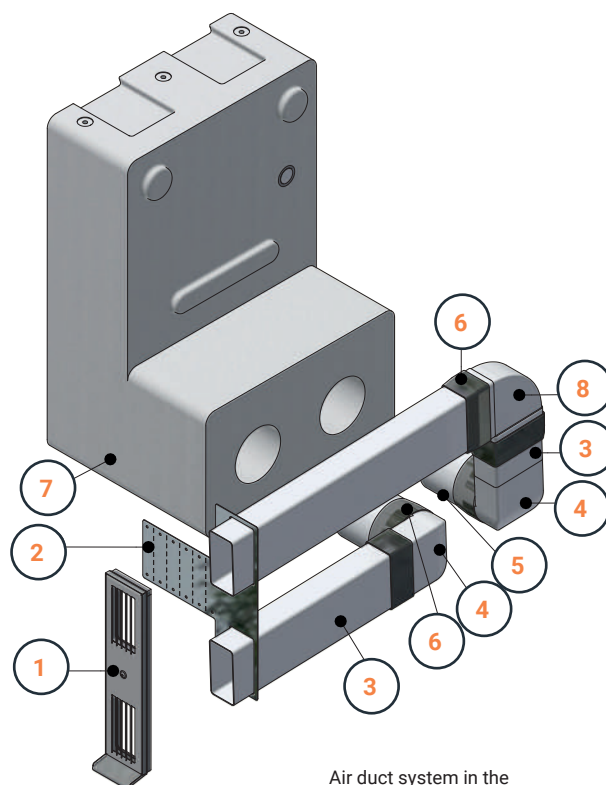
List of components

Part no.	Type	Description
1	Unit type	All M-WRG-II units with external control unit or central controller (no condensate connection needed for enthalpy heat exchanger)
2	200304 M-WRG-LR 50	Outdoor air and exhaust air pipe DN 100 - 2 x 0.5 m
3	200313 M-WRG-II ES	Outer wall terminal stainless steel pod
4	200127 M-WRG-II M-U ²	Integrated into wall U ² installation kit
5	200245 M-WRG-II M/FÜ	Filler piece installation kit
6	200252 M-WRG-II U ² AK	U ² adapter kit
7	200147 M-WRG-II U ² AD/WS	U ² cover
8	200020 M-WRG-FRA75	Flexible pipe adapter 75 mm to flat ductwork system 110 x 54 mm
9	200034 M-WRG-FR-B75	Flexible pipe 90° bend DN 75
10	200226 M-WRG-FR75	Flexible pipe 75 mm
11	200023 M-WRG-FR-DR75	Flexible pipe sealing ring DN 75
12	200030 M-WRG-DK 2x75/100	Ceiling box, flexible pipe connection 2 x 75 mm to DN 100, alternatively as steel sheet version
13	200031 M-WRG-FR-TVA	Poppet valve, extract air DN 100, alternatively as a plastic version
14	200279 M-WRG-FR-TVZ	Poppet valve, supply air DN 100, alternatively as a plastic version

AIR DUCT SYSTEM IN THE WINDOW REVEAL



Air duct system in the window reveal (left)



Air duct system in the window reveal (right)

No condensate connection needed for enthalpy heat exchanger.

List of components

	Part no.	Type	Description
1	200042	M-WRG-EFL/AP	Outer wall terminal for window reveal, surface-mount
2	200077	M-WRG-EFL/MHL	Assembly aid for window reveal
3	200104	M-WRG-FK-F	Flat ductwork 110 x 54 mm
4	200101	M-WRG-RR-FK	Adapter 90° DN 100 to flat ductwork 110 x 54 mm
5	200304	M-WRG-LR 50	Outdoor air and exhaust air pipe DN 100 - 2 x 0.5 m
6	200107	M-WRG-BB	Butyl tape (20 m/roll)
7	200116	M-WRG-II M	Flush-mount installation kit for frame construction
	200126	M-WRG-II M/MB	Flush-mount installation kit for solid construction
	200127	M-WRG-II M-U ²	Integrated into wall U ² flush-mount installation kit
8	200115	M-WRG-FK-B	Flat ductwork 90° bend, horizontal, sleeves on both sides

Technical data for the M-WRG

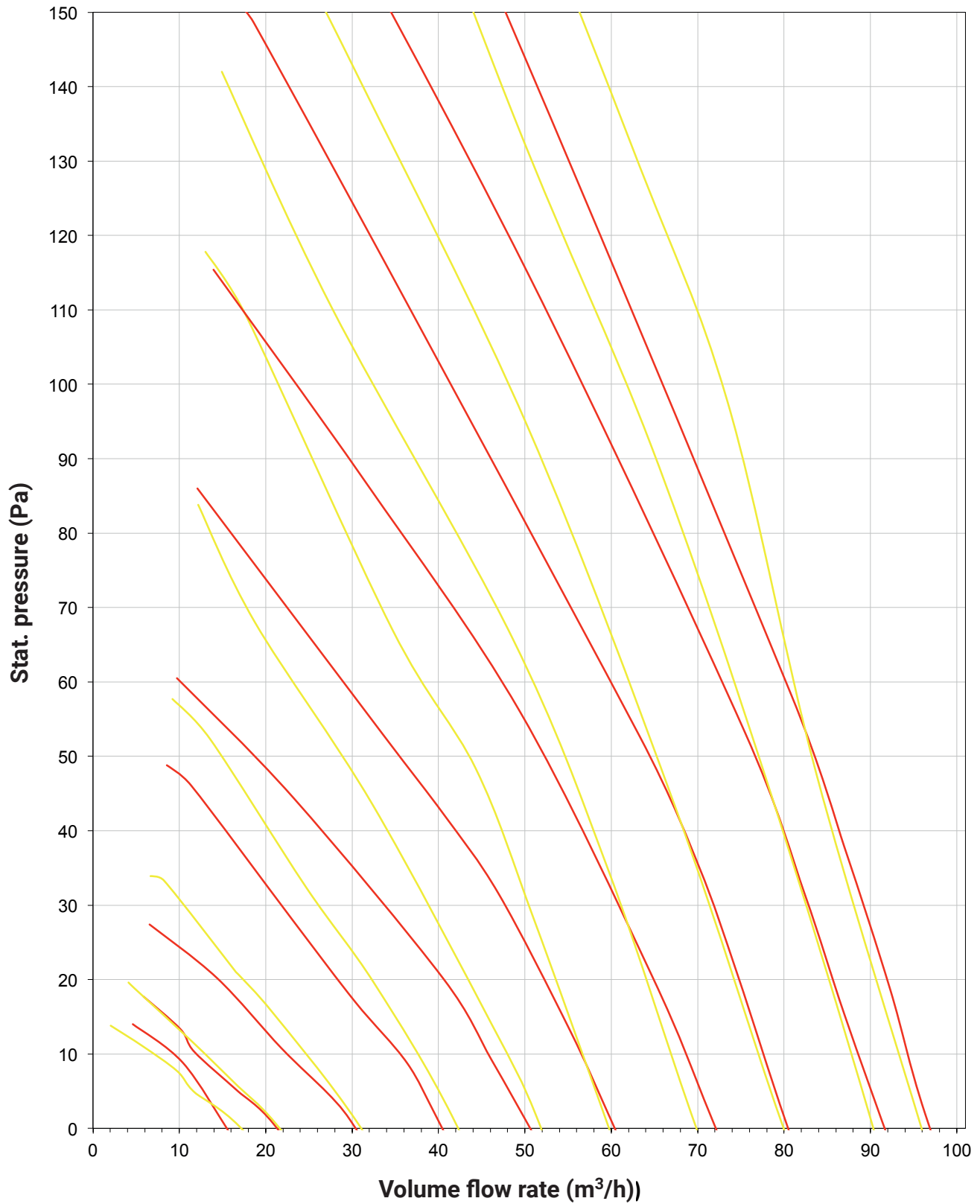
Unit types	M-WRG-S	M-WRG-S/Z-T (F, FC)
Type of system	Decentralised, heat recuperation	
Air flow (m ³ /h)	15 to 97	
Output control	4-level on the unit, 10-level with accessories	6-level on the pushbutton sensor or via three-step rotary switch (provided by customer), 10-level with accessories or with humidity/CO ₂ sensors
Heat exchanger	Cross-flow	
Max. heat recovery efficiency, η_0 , DIN EN 13141-8 (%)	71	
Moisture recovery η_x (%)	No	
Motor / supply air fan / extract air fan	EC direct current, radial	
Electrical power consumption (W), free blowing	2.5 to 37	
Standby power consumption (W)	Roughly 1 W (according to manufacturer)	
Specific electrical power consumption of the fans (W/m ³ /h) at 40 m ³ /h / ref. vol. flow rate 69 m ³ /h, free blowing	0.14 / 0.24	
Constant volume flow rate / balanced ventilation	No / Yes	
Max. current consumption (A)	0.16	
Operating voltage (V) / mains frequency (Hz)	85 – 265 / 50 – 60	
Sound pressure level surface-mount (LpA in dB, 10 m ²)	19.0 to 46	
Sound pressure level flush-mount (LpA in dB, 10 m ²)	15.5 to 46.5	
Sound pressure level for integrated into wall U ² with ductwork connection on extract air side (LpA in dB, 10 m ²)	12.4 to 41.9	
Sound insulation for weighted standardised sound level difference, unit in use, depending on installation version (D _{n,e,w} in dB)	50 to 56	
Permitted temperature range of outdoor air during operation at a room temperature of at least 20 °C (in °C)	-22 to +40	
Permitted ambient air humidity during operation (% RH)	Up to approx. 70	
Weight (kg)	7.3	
Colour	White similar to RAL 9010	
Outdoor air / exhaust air connection (DN)	100	
Dimensions (W x H x D) in mm	388 x 409 x 196	
Possible installation methods	Surface-mount, flush-mount, integrated into wall U ²	
Ductwork connection possible?	Yes, with accessories	
Visible unit depth surface-mount/flush-mount/integrated into wall U ² (mm)	196 / 66 / -	
Filter type	Round filter cartridges for outdoor air and extract air	
Outdoor air / extract air filter class, optional allergy filter/activated charcoal filter for outdoor air (ISO 16890-1:2016-12 or EN 779: 2012-10)	ISO ePM10 65 % (G4) / ISO ePM10 65 % (G4), ISO ePM1 60 % (F7) / ISO ePM10 60 % (M6)	
Filter monitoring with filter change indicator	Time-dependent, audible	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	
"Unit OFF" input (smoke detector, window contact)	No	
IP code (standard/with protective cap for mains switch/ with integrated into wall U2 installation version)	IPX1 / IPX4 / IPX5	
Humidity control	Optional with accessories	Optional with accessories or with F unit version
CO ₂ control	Optional with accessories	Optional with accessories or with FC unit version
Automatic mode (humidity and CO ₂ control)	Optional with accessories	Optional with accessories or with FC unit version
TÜV-tested	Yes	
Tested to/compliant with VDI 6022 sheet 1	W-377516-23-Zd ¹	
Passivhaus certificate (PHI)	No	
National technical approval (DIBt)	Z-51.3-138	
Energy efficiency class	B/A ²	B/A ²

¹ With the optional outdoor air filter ISO ePM1 60% (F7)

² In combination with the external wireless humidity / CO₂ sensor or with humidity / CO₂ sensors (F, FC unit version)

Pressure-volume flow rate characteristics

Supply air / extract air



Variable unit functions

Unit types Functions		M-WRG functions														
		Central														
		Decentralised														
		Operation at the unit	4-way wireless push-button switch			Wireless remote control			InControl push-button sensor			App			Modbus (BMS, Loxone and KNX) ¹	
M-WRG-S	M-WRG-S...-S/Z-T	M-WRG-S/Z-TF	M-WRG-S/Z-TFC	M-WRG-S/...S/Z-T	M-WRG-S/Z-TF	M-WRG-S/Z-TFC	M-WRG-S/Z-T	M-WRG-S/Z-TF	M-WRG-S/Z-TFC	M-WRG-S/Z-S...-S/Z-T	M-WRG-S/Z-TF	M-WRG-S/Z-TFC	M-WRG-S M	M-WRG-S M-F	M-WRG-S M-FC	
10 ventilation levels					X	X	X				X	X	X	X	X	X
4 ventilation levels	X	X	X	X				X	X	X						
Extract air operation								X								
Supply air operation								X	X							
Variable extract air operation					X	X	X				X	X	X	X	X	X
Variable supply air operation					X	X	X				X	X	X	X	X	X
Humidity control (RH)			X						X	X						
Variable humidity control (RH)							X	X				X	X		X	X
CO ₂ control										X						
Variable CO ₂ control							X						X			X
Automatic mode RH + CO ₂				X												
Variable automatic mode RH + CO ₂							X						X			X
Temporary intensive ventilation	X	X	X	X				X	X	X						
Variable temporary intensive ventilation					X	X	X				X	X	X	X	X	X
Variable timer program											X	X	X	X	X	X
Control input	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Minimum ventilation program to DIN 18017-3, factory setting, CANNOT BE SWITCHED OFF, optional	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ventilation for moisture protection with humidity control, CANNOT BE SWITCHED OFF, optional			X	X		X	X		X	X		X	X		X	X
Audible/visual filter change indicator	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Reading the operating hours					X	X	X				X	X	X	X	X	X
Reading the operating hours with accessories	X	X	X	X				X	X	X						
Sensor values display						X	X				X	X	X	X	X	X
RH supply air > RH extract air display									X	X		X	X		X	X
Visual fault indicator LED / symbol		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Operating status					X	X	X				X	X	X	X	X	X
Operating status LED		X	X	X				X	X	X						
Frost protection function	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

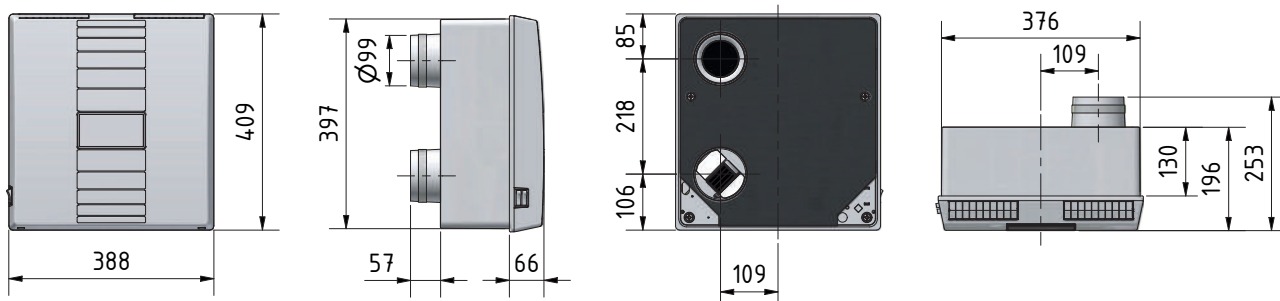
¹ An M-WRG-KNX-GW (part no. 200273) is needed for KNX. For Loxone and other system suppliers, the bus cable must be installed as a Modbus RTU. You will find further details in the Modbus operating and installation instructions.

Use of customer's own three-step rotary switch, functions as for 4-way wireless pushbutton switch apart from LED display

App works in combination with operation on the unit, 4-way wireless pushbutton switch, wireless remote control, InControl pushbutton sensor

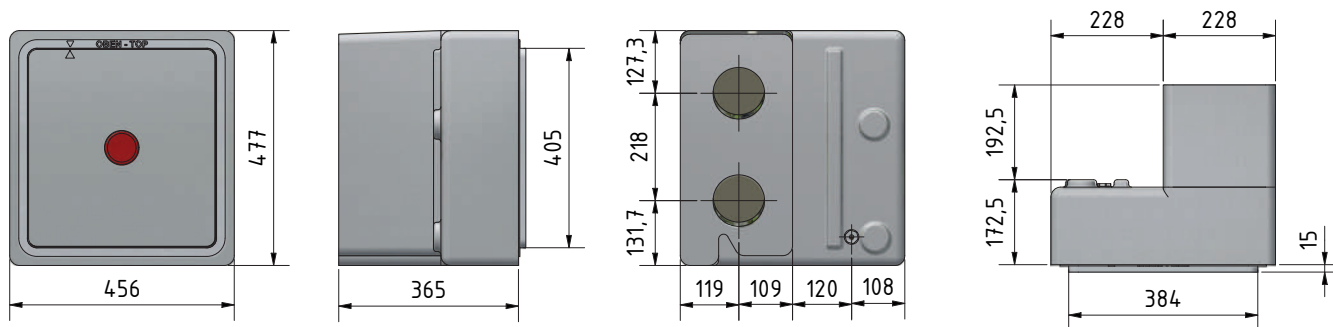
Dimensions

VENTILATION UNIT



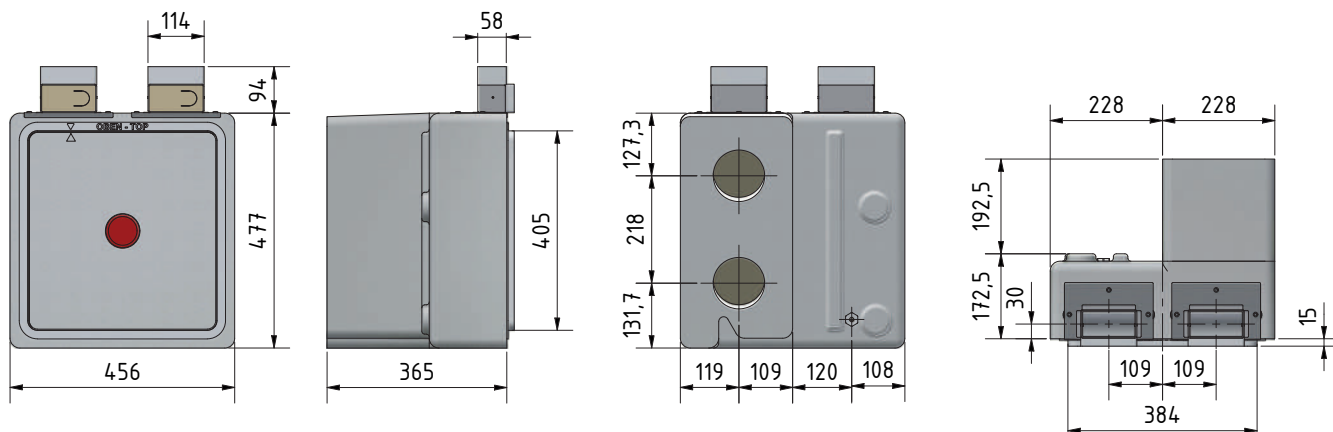
FLUSH-MOUNT INSTALLATION KIT FRAME CONSTRUCTION / SOLID CONSTRUCTION

Dimension 365 mm is variable, can be cut to length according to the wall structure (including internal plaster, external render and insulation); min. 175 mm thick, max. variable (wall structures that are greater than 600 mm will be compensated through longer ventilation pipes, part no. 200111)



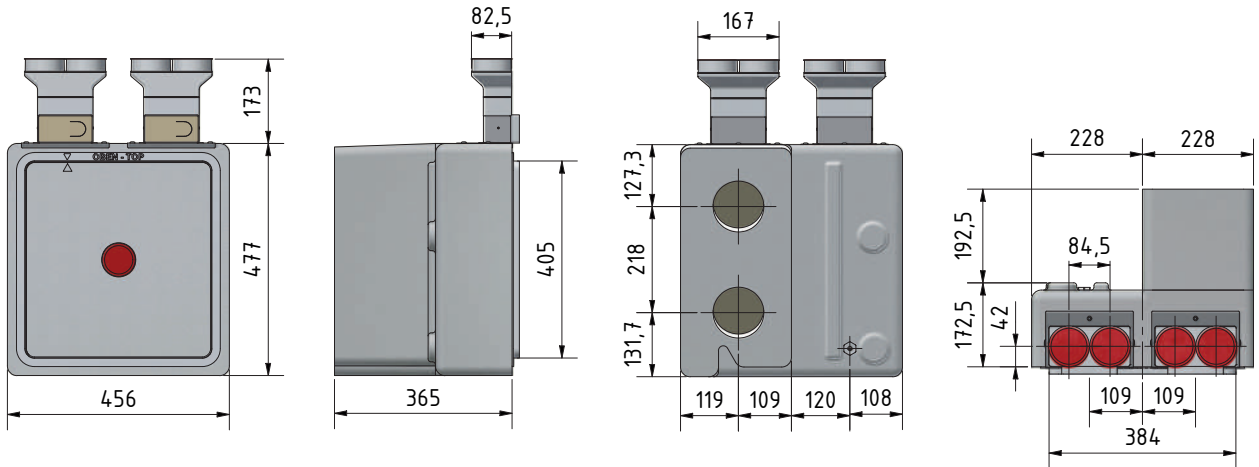
Installation depth with plastering trim at least 187.5 mm (solid construction only)

FLUSH-MOUNT INSTALLATION KIT WITH FLAT DUCTWORK CONNECTION



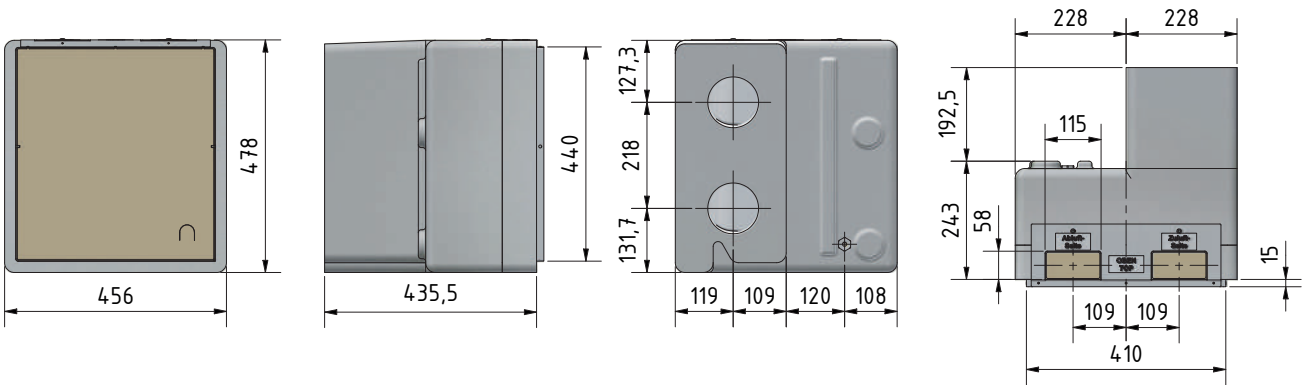
Installation depth with plastering trim at least 187.5 mm (solid construction only)

FLUSH-MOUNT INSTALLATION KIT WITH FLEXIBLE PIPE CONNECTION



Installation depth with plastering trim at least 187.5 mm (solid construction only)

U² FLUSH-MOUNT INSTALLATION KIT

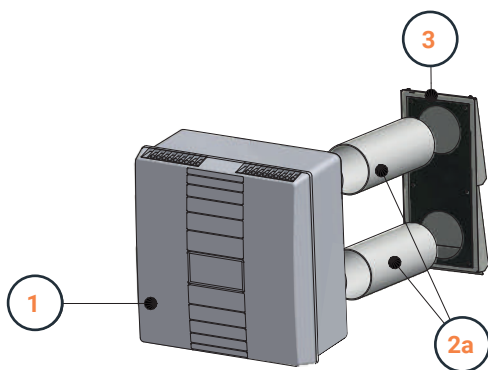


Dimension 435.5 mm is variable, can be cut to length according to the wall structure (including internal plaster, external render and insulation); min. 243 mm thick, max. variable (wall structures that are greater than 670 mm will be compensated through longer ventilation pipes, part no. 200111)

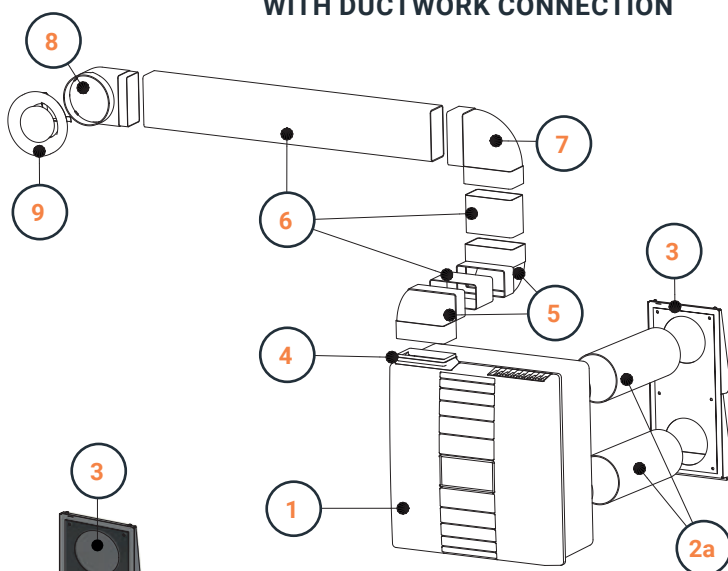
Installation depth with plastering trim at least 258 mm (solid construction only)

System overview

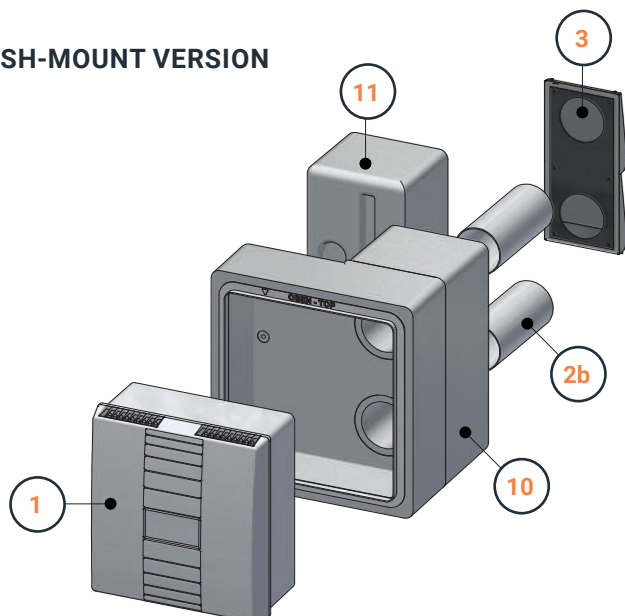
SURFACE-MOUNT VERSION



SURFACE-MOUNT VERSION WITH DUCTWORK CONNECTION



FLUSH-MOUNT VERSION

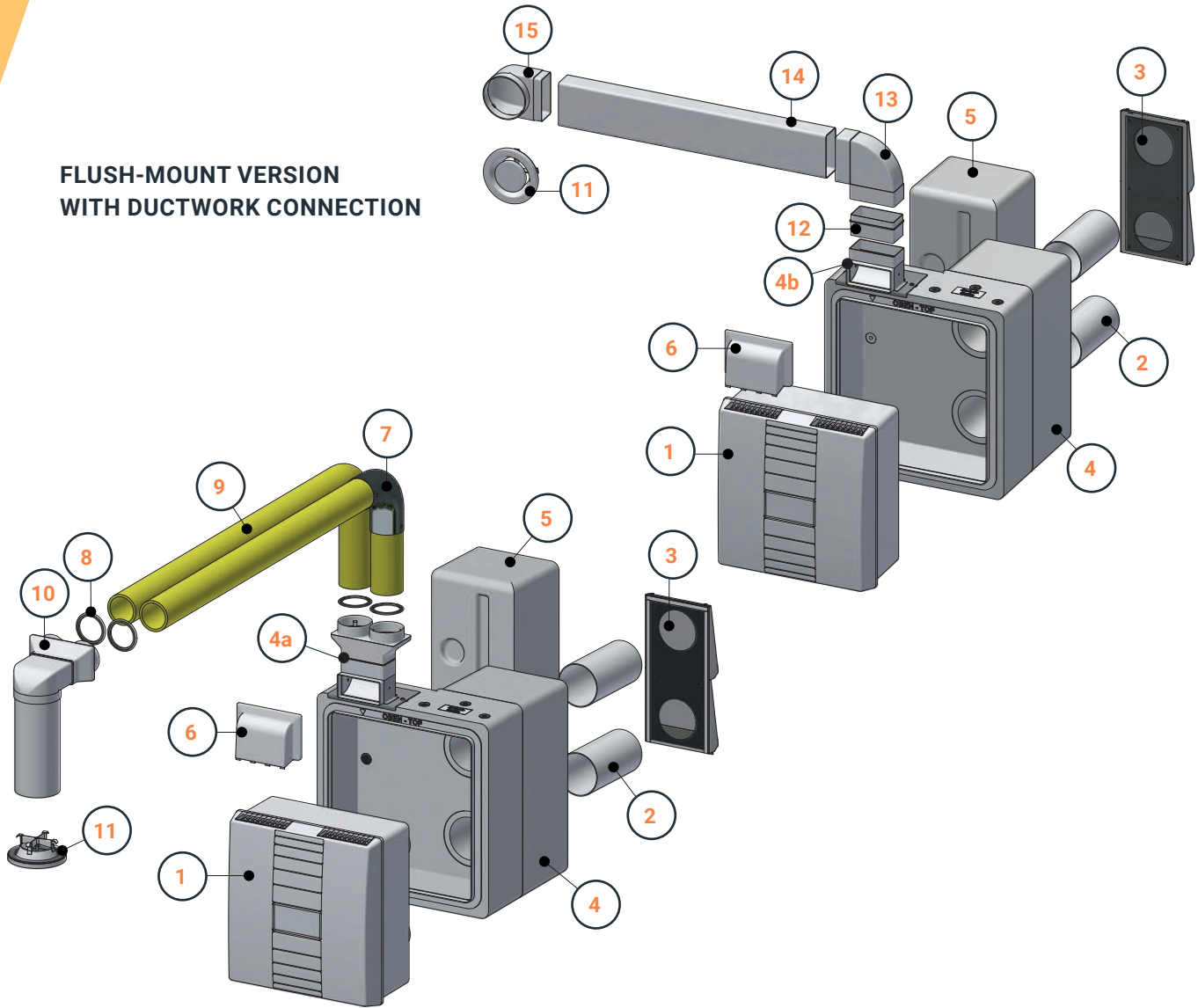


List of components

	Part no.	Type	Description
1		Unit type	All M-WRG units
2a	200371	M-WRG-M/AP	Surface-mount installation kit*
2b	200304	M-WRG-LR 50	Outdoor air and exhaust air pipe DN 100 - 2 x 0.5 m*
3	200029	M-WRG-ES	Outer wall terminal stainless steel pod
4	200380	M-WRG-KA	Duct adapter when running surface-mount flat ductwork
5	200247	M-WRG-FK-W	Flat ductwork elbow 90° vertical, sleeves on both sides
6	200104	M-WRG-FK-F	Flat ductwork 110 x 54 mm
7	200115	M-WRG-FK-B	Flat ductwork 90° bend, horizontal, sleeves on both sides
8	200101	M-WRG-RR-FK	Adapter 90° DN 100 to flat ductwork 110 x 54 mm
9	200031	M-WRG-FR-TVA	Poppet valve, extract air DN 100, alternatively as a plastic version
10	200015	M-WRG-M-F	Flush-mount installation kit for frame construction
	200019	M-WRG-M/MB-F	Flush-mount installation kit for solid construction
11	200440	M-WRG-M/FÜ	Filler piece installation kit

* For wall structures (including internal plaster, external render and insulation) that are more than 470 mm thick, use longer ventilation pipes, part no. 200111.

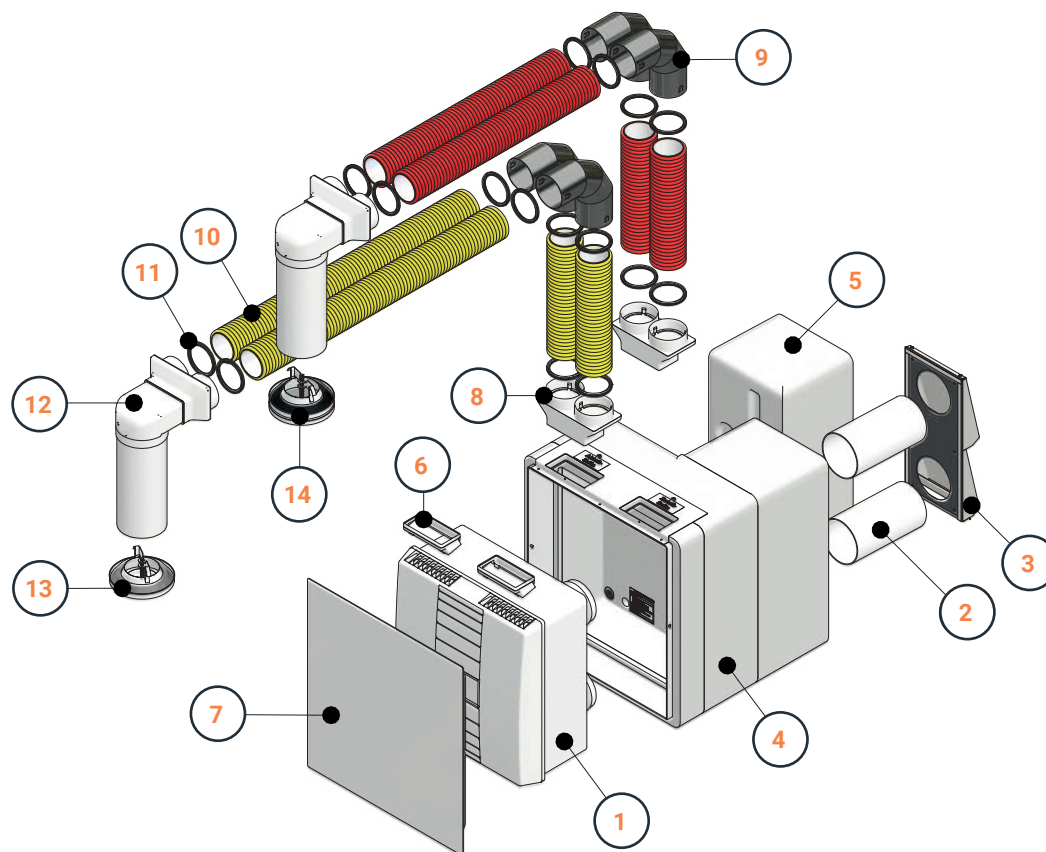
**FLUSH-MOUNT VERSION
WITH DUCTWORK CONNECTION**



List of components

	Part no.	Type	Description
1		Unit type	All M-WRG units
2	200304	M-WRG-LR 50	Outdoor air and exhaust air pipe DN 100 - 2 x 0.5 m
3	200029	M-WRG-ES	Outer wall terminal stainless steel pod
4	200015 200019	M-WRG-M-F M-WRG-M/MB-F	Flush-mount installation kit for frame construction Flush-mount installation kit for solid construction
4a	200037	M-WRG-MB/FRA75	Adapter for 75 mm flexible pipe connection
4b	200036	M-WRG-MB/FKA	Adapter for 110 x 54 mm flat ductwork connection
5	200440	M-WRG-M/FÜ	Filler piece installation kit
6	200288	M-WRG-KA/UP	Duct adapter when running flush-mount flat ductwork or flexible pipe
7	200034	M-WRG-FR-B75	Flexible pipe 90° bend DN 75 (sealing rings needed)
8	200023	M-WRG-FR-DR75	Flexible pipe sealing ring DN 75
9	200226	M-WRG-FR75	Flexible pipe 75 mm
10	200030	M-WRG-DK 2x75/100	Ceiling box flexible pipe connection 2 x 75 mm to DN 100
11	200031 (200369)	M-WRG-FR-TVA	Poppet valve, extract air, DN 100
12	200234 or 200104	M-WRG-FSA lang or M-WRG-FK-F	Fitting adapter, long – for connecting two flat ductwork fittings or flat ductwork 110 x 54 mm, 1 m long
13	200115	M-WRG-FK-B	Flat ductwork 90° bend, horizontal, sleeves on both sides
14	200104	M-WRG-FK-F	Flat ductwork 110 x 54 mm
15	200101	M-WRG-RR-FK	Adapter 90° DN 100 to flat ductwork 110 x 54 mm

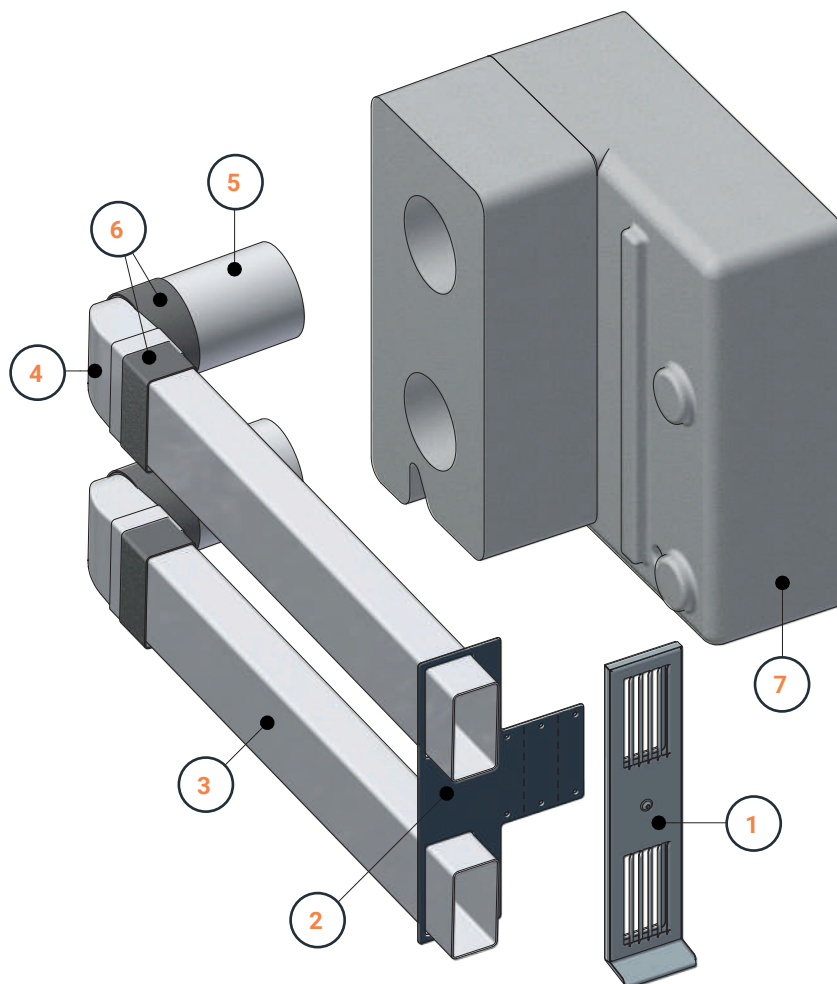
U² INTEGRATED INTO WALL SOLUTION WITH DUCTWORK CONNECTION



List of components

Part no.	Type	Description
1	Unit type	All M-WRG units with external control unit or central controller
200304	M-WRG-LR 50	Outdoor air and exhaust air pipe DN 100 - 2 x 0.5 m
200029	M-WRG-ES	Outer wall terminal stainless steel pod
200276	M-WRG-M/MB-U ²	U ² flush-mount installation kit
200440	M-WRG-M/FÜ	Filler piece installation kit
200025	M-WRG-U ² AK	U ² adapter kit
200343	M-WRG-U ² AD/WS-2	U ² cover
200020	M-WRG-FRA-75	Flexible pipe adapter 75 mm to flat ductwork system 110 x 54 mm
200034	M-WRG-FR-B75	Flexible pipe 90° bend DN 75 (sealing rings needed)
200226	M-WRG-FR75	Flexible pipe 75 mm
200023	M-WRG-FR-DR75	Flexible pipe sealing ring DN 75
200030	M-WRG-DK 2x75/100	Ceiling box flexible pipe connection 2 x 75 mm to DN 100
200031	M-WRG-FR-TVA	Poppet valve, extract air, DN 100
200279	M-WRG-FR-TVZ	Poppet valve, supply air, DN 100

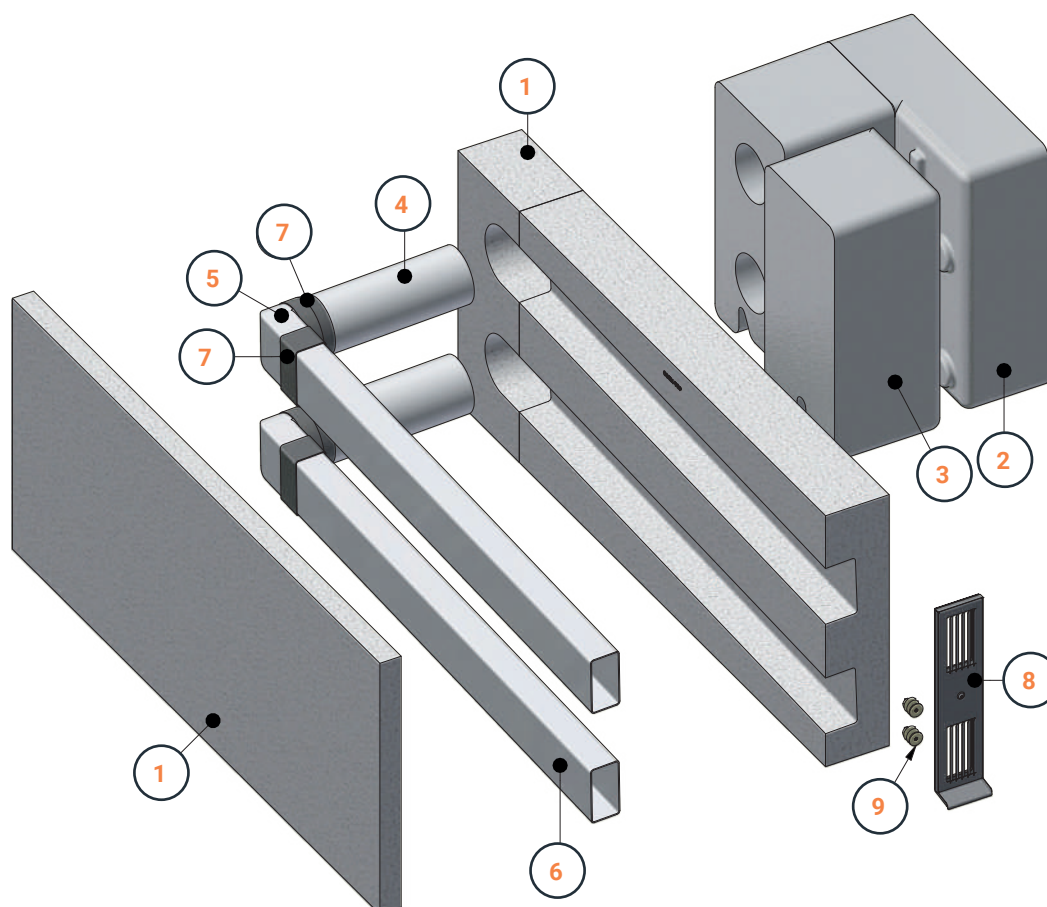
AIR DUCT SYSTEM IN THE WINDOW REVEAL



List of components

	Part no.	Type	Description
1	200042	M-WRG-EFL/AP	Surface-mount outer wall terminal
2	200077	M-WRG-EFL/MHL	Assembly aid for window reveal
3	200104	M-WRG-FK-F	Flat ductwork 110 x 54 mm
4	200101	M-WRG-RR-FK	Adapter 90° DN 100 to flat ductwork 100 x 54 mm
5	200304	M-WRG-LR 50	Outdoor air and exhaust air pipe DN 100 - 2 x 0.5 m
6	200107	M-WRG-BB	Butyl tape (20 m roll)
7	200005...	M-WRG-M...	Flush-mount installation kit
	200018...	M-WRG-M/MB...	
	200276	M-WRG-M/MB-U ²	

WINDOW REVEAL SOLUTION WITH ETICS INSTALLATION KIT



List of components

	Part no.	Type	Description
1	200433	M-WRG-MSF-W-re	Window reveal installation kit M-WRG-MSF right (for ETICS)
	200277	M-WRG-MSF-W-li	Window reveal installation kit M-WRG-MSF left (for ETICS)
2	200005...	M-WRG-M...	Flush-mount installation kit
	200018...	M-WRG-M/MB...	
	200276	M-WRG-M/MB-U ²	
3	200440	M-WRG-M/FÜ	Filler piece installation kit
4	200304	M-WRG-LR 50	Outdoor air and exhaust air pipe DN 100 - 2 x 0.5 m
5	200101	M-WRG-RR-FK	Adapter 90°, DN 100 to flat ductwork 110 x 54 mm
6	200104	M-WRG-FK-F	Flat ductwork 110 x 54 mm, 1 m long
7	200107	M-WRG-BB	Butyl tape, 20 m roll, one roll sufficient for roughly 10 installation kits
8	200042	M-WRG-EFL/AP	Outer wall terminal for window reveal
	200373	M-WRG-EFL/AP-P	
9	-	-	e.g. Würth insulation anchors W-ID 50, part no. 090350050 (provided by the customer)

Space for your notes

A large, empty grid area for writing notes, consisting of a 20x20 grid of small squares. The grid is positioned in the center of the page, with a white background behind it.



In print or online – sustainability is key

CERTIFIED CLIMATE-NEUTRAL PRINTED MATTER

Sadly we cannot avoid printed documents entirely, but we can ensure that our printing is as environmentally-friendly as possible. Our printed matter is therefore certified as climate-neutral by ClimatePartner. This means that only recycled papers and organic printing inks are used and all machines needed for printing run on 100 % green electricity. And at the finishing stage we place great emphasis on the environmental sustainability and biodegradability of the materials used. We also support climate protection projects such as plasticbank, which campaigns to protect the seas and for sustainable power generation.

CO₂-NEUTRAL WEBSITE

Even running and using a website creates CO₂. Indeed this now represents a considerable proportion of the world's emissions. We can clearly see there is a need for action, so we are affiliated with the CO₂ Neutral Website initiative. We use known values and a tool to calculate the power consumption and resulting CO₂ emissions created by our meltem.com website.

To compensate we make appropriate contributions to projects that are able to demonstrate a high level of CO₂ neutralisation.





Ventilation.

As simple as it should be.

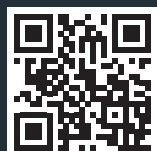
Meltem is a leading manufacturer in the field of comfort ventilation systems. Meltem creates innovative solutions to provide fresh and clean air so that you can feel happy and healthy at home or in your professional environment.

For planning and installation, please read our installation manuals which are available on our website. All information in this brochure is supplied without guarantee. Subject to technical modifications and misprints.

Meltem GmbH

Am Hartholz 4 · D-82239 Alling
Tel.: +49 8141 36 90 - 0

info@meltem.com
www.meltem.com



Distribution partner:

