**Centralised ventilation unit WS 160 Flat ET**

Standard model

Central unit with enthalpy heat exchanger

Expandable via optional additional circuit board ZP 1 for the control of an air shutter of a zone control, for example.

Brief description

Intelligent ventilation unit with heat and humidity recovery for controlled ventilation and air extraction with an air volume of 40 to 160 m³/h.

Two supply air sockets (left and right) and one exhaust air socket (centre) allow the supply air lines to be routed without crossing.

Complete separation of exhaust air/supply air ducts throughout the unit. This prevents unwanted recirculation of air. Viruses (e.g. Corona virus) and bacteria are therefore not transmitted. Hygiene certificate according to VDI 6022, sheet 1 available.

Compact and highly efficient – energy efficiency class A. Sound and energy-optimised fans in EC technology.

Eligible for KfW funding: Especially suitable for modern new buildings or redevelopments.

Mounting options: ceiling mounted or in a sloped roof.

No pressure fluctuation sensitivity: The integrated/automatic volumetric flow constancy control ensures permanent compliance with the set volumetric flow under all operating conditions (e.g. filter contamination, air valve settings). This also results in easier commissioning/air volume measurement at the valves. The volumetric flows do not require any adjustment.

Very quiet unit with extremely low installation height (23 cm): This makes it particularly suitable for installation in suspended ceilings. In addition, also suitable for installation in a sloped roof.

Various operating modes: Off, Manual, Auto Sensor, ECO exhaust air, ECO supply air.

RLS 1 WR room air control included in the scope of delivery.

ISO Coarse 80 % (G4) filter in the exhaust air and ISO ePM1 55 % (F7) pollen filter in the outside air. A filter cascade (ISO Coarse 80 % / ISO ePM1 55 %) in the outside air is possible to increase the filter service life.

The ventilation unit is equipped with a state-of-the-art enthalpy heat exchanger with hygiene certificate according to VDI 6022, sheet 1.

The WS 160 Flat can be controlled via the APP (air@home) and the browser-based web tool (www.air-home.de) using an integrated LAN interface.

Plug & Play: Easy commissioning thanks to free commissioning software and standard USB connection for commissioning, control update and service.

Combi sensor (humidity/temperature) integrated as standard in the exhaust air enables demand-driven ventilation operation as well as an intelligent dehumidification strategy (excess humidity protection). Furthermore, the unit is characterized by a frost protection strategy adapted to the real demand.

The heat recovery unit has a multifunction contact for the control of, e.g., brine earth heat exchanger (unregulated pump), operation and fault display, pre-heating or supplementary heat register, shutters or cooling.

Two input contacts (12 V and 230 V) are available for, e.g., safety shutdown.

Various inputs/outputs enable a control connection to other building service installations, e.g., the heat pump.

Integrated MODBUS interface (TCP/IP and RTU) enables integration in the building control system.

The optional K-SM plug-in module enables integration into KNX building control systems.

The optional E-SM plug-in module enables integration into EnOcean systems.

Optional additional circuit boards ZP 1 and ZP 2 for expansion functions such as “pressure consistency control” of the EC fans, zone damper, brine earth heat exchanger (regulated pump), filter differential pressure measurement.

Maximum unit flexibility thanks to a wide range of equipment/connection options.

Modern unit module technology enables a high degree of user-friendliness for service and maintenance.

Features

Housing

Powder-coated sheet steel housing.

Simple filter change is possible without tools.

Tight, thermal bridge-free, and sound-insulated internal housing made of temperature-resistant, sound-absorbing and heat-insulating EPP material.

EPP housing with very good hygienic/non-hygroscopic properties.

Unit surface and unit’s internal housing are easy to clean.

Filter:

ISO Coarse 80 % (G4) filter in the exhaust air and ISO ePM1 55 % (F7) pollen filter in the outside air.

Filter change without tools.

Operation

Ready for service with on/off switch.

RLS 1 WR control panel included in the scope of delivery, 4 air levels, filter change indicator, fault display.

Other control units can be connected in parallel.

Mobile operation via APP (air@home) or browser-based web tool (www.air-home.de) via smartphone, laptop or PC enables, e.g.,

live reporting, user management

Demand-driven automatic operation / time-controlled automatic operation

Manual operation / OFF

ECO mode supply air or ECO mode exhaust air

Filter queries, error messages

Optional RLS T2 WS touchscreen control unit for the setting of:

2 automatic operating modes (Auto Sensor / Auto Time)

4 manual operating modes (ECO exhaust air / ECO supply air / MANUAL / OFF)

complete commissioning of the Trio LZ possible

Optional RLS G1 WS design control panel:

ON/OFF

5 levels

Automatic operation

ECO supply air, ECO exhaust air

Filter change and fault display

USB connection for service/commissioning – free MAICO commissioning software.

Network integration via integrated LAN interface.

Smart-Home ready (e.g. Loxone via Modbus TCP/IP).

Modbus TCP/IP and RTU integrated as a standard feature.

Optional KNX plug-in module K-SM for integration into building control technology, www.knx.org.

Optional EnOcean plug-in module E-SM for integrating the unit into the “EnOcean world”, www.enocean-alliance.org.

Control

Standard demand-driven volumetric flow regulation (“decisive humidity value”).

Continuously variable demand-driven adaptation of air volumes.

Integrated excess humidity protection function.

3 temperature sensors in outside, outgoing and supply air.

1 combi sensor (temperature and humidity) in exhaust air socket.

Up to four external sensors of different types (CO2, VOC, humidity) can be connected.

Multifunction contact for the control of, e.g., brine earth heat exchanger (unregulated pump), operation and fault indicator, preheating or supplementary heat register, shutters or cooling.

Inputs for safety shutdown via 12V contact or 230V contact (e.g. smoke detector, fire alarm, differential pressureless fireplace).

Additional pushbutton input for triggering time-limited intensive ventilation (intermittent ventilation).

Expandable via optional additional circuit board ZP 1 for the control of:

3-way shutter (e.g. earth-air heat exchanger)

a regulated pump (e.g. brine earth heat exchanger)

Switching contact use for external supplementary heat register

Expandable via optional circuit board ZP 2 for:

Pressure consistency of the EC fans

Differential pressure controlled filter monitoring

Various inputs and outputs enable a control connection of the ventilation unit with another service installation, such as a heat pump.

Approvals and certificates

DiBt approval.

PHI certificate.

Test report in accordance with DIN EN 13141-7.

Certificate according to Swiss “energie-cluster.ch”.

Hygiene certificates for housing material (EPP) and heat exchanger.

Heat exchanger/heat recovery

Highly efficient enthalpy cross-counterflow heat exchanger.

Heat recovery up to 84 % and humidity recovery up to 53 %.

Hygiene certificate (no bacteria, virus growth/virus transfer) according to VDI 6022, sheet 1.

Heat exchanger can be cleaned with water, antimicrobial.

No condensation connection required.

Bypass

Eco mode: ECO supply air, ECO exhaust air for passive summer night cooling.

Frost protection

Prevention of heat exchanger freezing at low temperatures by monitoring the outgoing air temperature.

If there is a risk of frost, the outside air volumetric flow rate is gradually reduced.

Fans

Forward curved centrifugal fans in the outgoing air or outside air.

Energy-efficient EC direct current motors with integrated volumetric flow consistency control.

Possibility of pressure consistency control via the optional additional circuit board ZP 2.

4 ventilation levels from 40 m³ to 160 m³, can be adjusted continuously.

Installation information

Easy, very time-saving installation by screwing the unit directly to the ceiling/wall.

Housing cover is easy to remove via screws.

Technical data

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| Article: | WS 160 Flat ET |
| Model: | Standard model |
| Number of ventilation levels: | 4 |
| Air flow volume: | 40 m³/h - 160 m³/h |
| Volumetric flow constant: | yes |
| SEC average: | -34,1 kWh/(m²\*a) |
| Energy efficiency class: | A |
| Type of voltage: | Alternating current |
| Rated voltage: | 230 V |
| Frequency: | 50 Hz/60 Hz |
| SPI value in accordance with DIN EN 13141-7 (A7): | 0,34 Wh/m³ |
| Power consumption in accordance with DIN EN 13141-7 (A7): | 36 W |
| Stand-by power consumption: | < 1 W |
| Imax: | 1,1 A |
| Degree of protection: | IP 00 |
| DIBT approval: | yes |
| PHI certification: | yes |
| Installation site: | Wall / ceiling |
| Installation site: | Bathroom / Kitchen / Cellar / Storage tank / Jamb wall / Utility room / Heating room / Hall |
| System type: | Centralised |
| Housing material: | Plastic EPP/sheet steel |
| Heat exchanger material: | Synthetic material |
| Inner coating material: | Plastic EPP |
| Colour: | black / traffic white |
| Weight: | 26,5 kg |
| Weight including packaging: | 32 kg |
| Filter class: | ISO Coarse 80 % (G4) / ISO ePM1 55 % (F7) |
| Connection diameter: | 125 mm / 160 mm |
| Connection diameter of condensation drain: | not required |
| Width: | 582 mm |
| Height: | 230 mm |
| Depth: | 1.260 mm |
| Width with packaging: | 710 mm |
| Height with packaging: | 245 mm |
| Depth with packaging: | 1.365 mm |
| Airstream temperature at IMax: | -20 °C up to 50 °C |
| Degree of heat provision: | 84 % |
| Max. degree of heat provision in accordance with DIN EN 13141-7 (A7): | 76 % |
| Heat exchanger construction type: | Enthalpy cross-counterflow |
| Humidity recovery with enthalpy heat exchanger in accordance with DIN EN 13141-7 (A2): | 53 % |
| Position – exhaust air: | left/right |
| Bypass: | No |
| Frost protection: | No |
| Zone shutter: | No |
| Enthalpy heat exchanger: | yes |
| Antifreeze circuit: | yes |
| Summer circuit: | ECO exhaust air / ECO supply air |
| Filter monitoring: | time-controlled (controlled by differential pressure as option) |
| Humidity control: | integrated |
| CO2regulation: | SKD |
| Air quality control (optional): | EAQ 10/3 |
| KNX connection (optional): | K-SM |
| MODBUS interface: | integrated |
| Control unit included in scope of delivery.: | RLS 1 WR, App |
| Control unit (optional): | RLS T2 WS, RLS G1 WS |
| EnOcean wireless integration (optional): | E-SM |
| Mobile control: | yes |
| Housing emission sound pressure level: | 37 dB(A) Spacing 1m, sound absorption 10 m² |
| Approval number: | Z-51.4-376 |
| Packing unit: | 1 piece |
| Range: | K |
| GTIN (EAN): | 4012799950905 |
| Article number: | 0095.0090 |

Manufacturer: MAICO

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