**Centralised ventilation unit WS 300 Flat KBR**

Comfort bypass model, right

Central ventilation unit with two enthalpy heat exchangers, integrated bypass and preheating register. In this way, the room air is optimally cooled at high outside temperatures without draughts occurring and comfortably pre-warmed at low outside temperatures.

Supply and exhaust air on right (in ceiling installation position, view of the electronics compartment).

Brief description

Intelligent ventilation unit with heat and humidity recovery for controlled ventilation and air extraction with an air volume of 80 to 300 m³/h.

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.

KfW and NRW subsidies are available.

High volumetric flow with extremely low installation height of 30 cm and quiet operation. Installation possibilities: Flexibly on the ceiling, wall or in a sloped roof.

No pressure fluctuation sensitivity: The integrated/automatic constant volumetric flow 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.

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

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

ISO Coarse 80 % (G4) filter in the exhaust air and ISO ePM1 60 % (F7) pollen filter in the outside air.

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

The WS 300 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 system update and service.

Combination 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, external 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 constancy control” of the EC fans, zone shutter, 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.

Housing

Powder-coated sheet steel housing, colour: traffic white, similar to RAL 9016.

Simple filter change is possible without tools.

Tight, thermal bridge-free, and sound-insulated inner 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 inner housing are easy to clean.

Filter:

ISO Coarse 80 % (G4) filter in the exhaust air and ISO ePM1 60 % (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 panels 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 panel 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 WS 300 Flat 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 system, www.knx.org.

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

Control system

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 combination 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 display, preheating or supplementary heat register, external 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),

of an air shutter of a zone control,

Switching contact use for external supplementary heat register.

Expandable via optional circuit board ZP 2 for:

Pressure constancy 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.

Test report in accordance with DIN EN 13141-7.

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

Entry in TZWL Bulletin.

Heat exchanger/heat recovery

Two highly efficient enthalpy cross-counterflow heat exchangers.

Heat recovery up to 91 % and humidity recovery up to 82 %.

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

The integrated bypass shutter with demand-driven bypass control makes a continuously variable bypass control possible.

Depending on temperature differences and user settings the room air can be cooled in an optimum manner without draughts.

Frost protection

The performance-controlled electrical preheating register is regulated depending on various parameters recorded in the unit.

The result is an efficient and energy-saving regulation strategy. Ventilation with a heat register therefore does not compromise on comfort even at low outside air temperatures.

Fans

Forward curved centrifugal fans in the outgoing air or supply 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 80 m³/h to 300 m³/h, 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 300 Flat KBR |
| Model: | Comfort bypass model, right |
| Air flow volume: | 80 m³/h - 300 m³/h |
| SEC average: | -39,47 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): | 0,18 Wh/m³ |
| Power consumption in accordance with DIN EN 13141-7 (A7): | 39 W |
| Stand-by power consumption: | < 1 W |
| Imax: | 10,8 A |
| Degree of protection: | IP 00 |
| DIBT approval: | yes |
| PHI certification: | No |
| Installation site: | Wall / ceiling |
| System type: | Centralised |
| Housing material: | Plastic EPP/sheet steel |
| Heat exchanger material: | Synthetic material |
| Inner coating material: | Plastic EPP |
| Colour: | black / traffic white |
| Weight: | 42 kg |
| Weight including packaging: | 46,63 kg |
| Filter class: | ISO Coarse 80 % (G4) / ISO ePM1 60 % (F7) |
| Connection diameter: | 160 mm |
| Width: | 700 mm |
| Height: | 300 mm |
| Depth: | 1.500 mm |
| Width with packaging: | 750 mm |
| Height with packaging: | 305 mm |
| Depth with packaging: | 1.530 mm |
| Airstream temperature at IMax: | -20 °C up to 50 °C |
| Max. degree of heat provision in accordance with DIN EN 13141-7 (A7): | 91 % |
| Heat exchanger construction type: | Enthalpy cross-counterflow |
| Humidity recovery with enthalpy heat exchanger in accordance with DIN EN 13141-7 (A2): | 82 % |
| Power of preheating register: | 1 kW |
| Position – exhaust air: | right |
| Bypass: | yes |
| Frost protection: | integrated |
| 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 (optional): | 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 |
| Packing unit: | 1 piece |
| Range: | K |
| GTIN (EAN): | 4012799951445 |
| Article number: | 0095.0144 |

Manufacturer: MAICO

WS 300 Flat KBR Centralised ventilation unit