



Rotary heat exchanger for heat recovery



Electric air heater



Conforms to VDI 6022



Filter change



Levelling foot

# Decentralised ventilation

## SCHOOLAIR-V-HV-EH



### Supply and extract air unit with the option of switching to secondary air operation, including rotary heat recovery unit and electric air heater for vertical installation on the façade

Ready-to-operate decentralised ventilation unit that provides good comfort levels and is used for the ventilation of internal spaces such as classrooms, conference rooms and day nurseries

- Acoustically optimised EC fans with low specific fan power, SFP = 0 to EN 16798-3
- Rotary heat recovery unit (75% heat recovery efficiency) with moisture recovery in winter
- Electric air heater with 1500 W max. heating capacity
- Condensate drip tray without condensate drain
- Heat recovery all year round
- Reduced fine dust and pollen contamination due to integral filters that conform to VDI 6022 – filter class ISO ePM1 65% and extract air ISO coarse 50%
- Easy filter change, no tools required
- Motorised shut-off dampers, normally closed (NC)
- Installation without interruption of school operations

Optional equipment and accessories

- Modular control system FSL-CONTROL III, specially for decentralised ventilation systems
- Wood panelling as outer casing in various colours, with TROX ventilation grilles for supply air and extract air (assembly kit)

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## Function

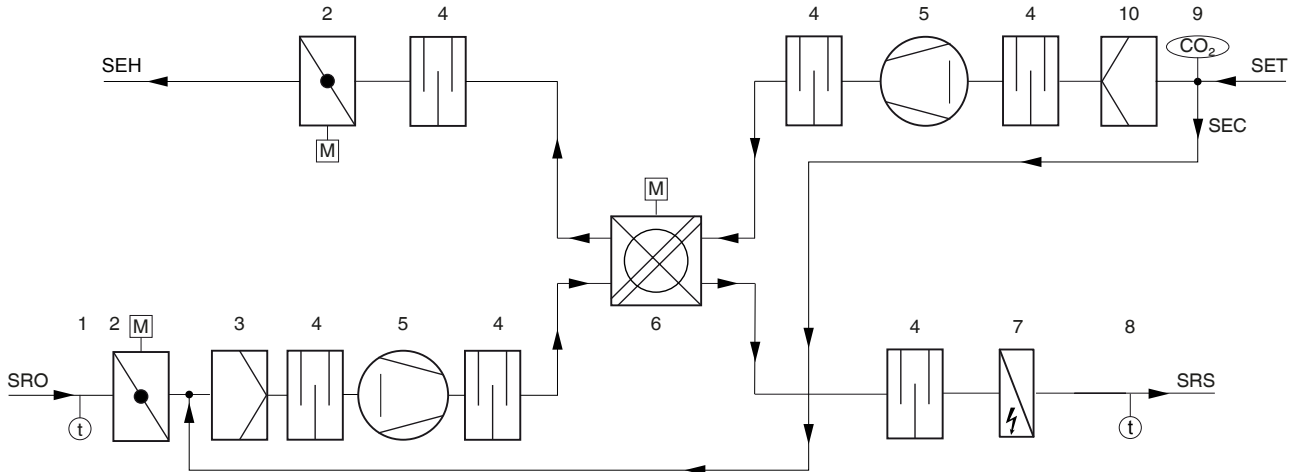
### Functional description

Decentralised supply and extract air units ventilate the room and cover the heating load according to the technical data. An EC centrifugal fan takes in the outdoor air which then flows through the motorised shut-off damper and the outdoor air filter. The outdoor air then flows through the rotary heat recovery unit, which can be switched off in energy efficient operating situations. Before the supply air enters the room as displacement flow, it is heated by the electric heating coil if required. The extract air first passes through the extract air filter, then flows through the heat recovery unit, the extract air fan and the motorised shut-off damper before it is discharged to the outside as exhaust air. If the indoor air quality is sufficient, the FSL-CONTROL III control system switches to energy-efficient secondary air mode by

closing the outdoor air dampers. The control system compares the room air quality setpoint value to the actual value measured by the CO<sub>2</sub> sensor and switches automatically between outdoor air and secondary air operation. In case of a power failure, the outdoor air and exhaust air dampers are closed to ensure fire protection, frost protection and to avoid draughts. This is ensured by a capacitor in each actuator. Near the external wall, the supply air is discharged into the room with a medium velocity between 0.5 and 0.8 m/s. Due to the induction effect, the supply air velocity is rapidly reduced after entering the room. As a result, in cooling mode, the supply air spreads out like displacement flow over the entire floor area. Near heat sources such as people or equipment, a lift current is formed by natural convection, so that the air is exchanged primarily in these areas.

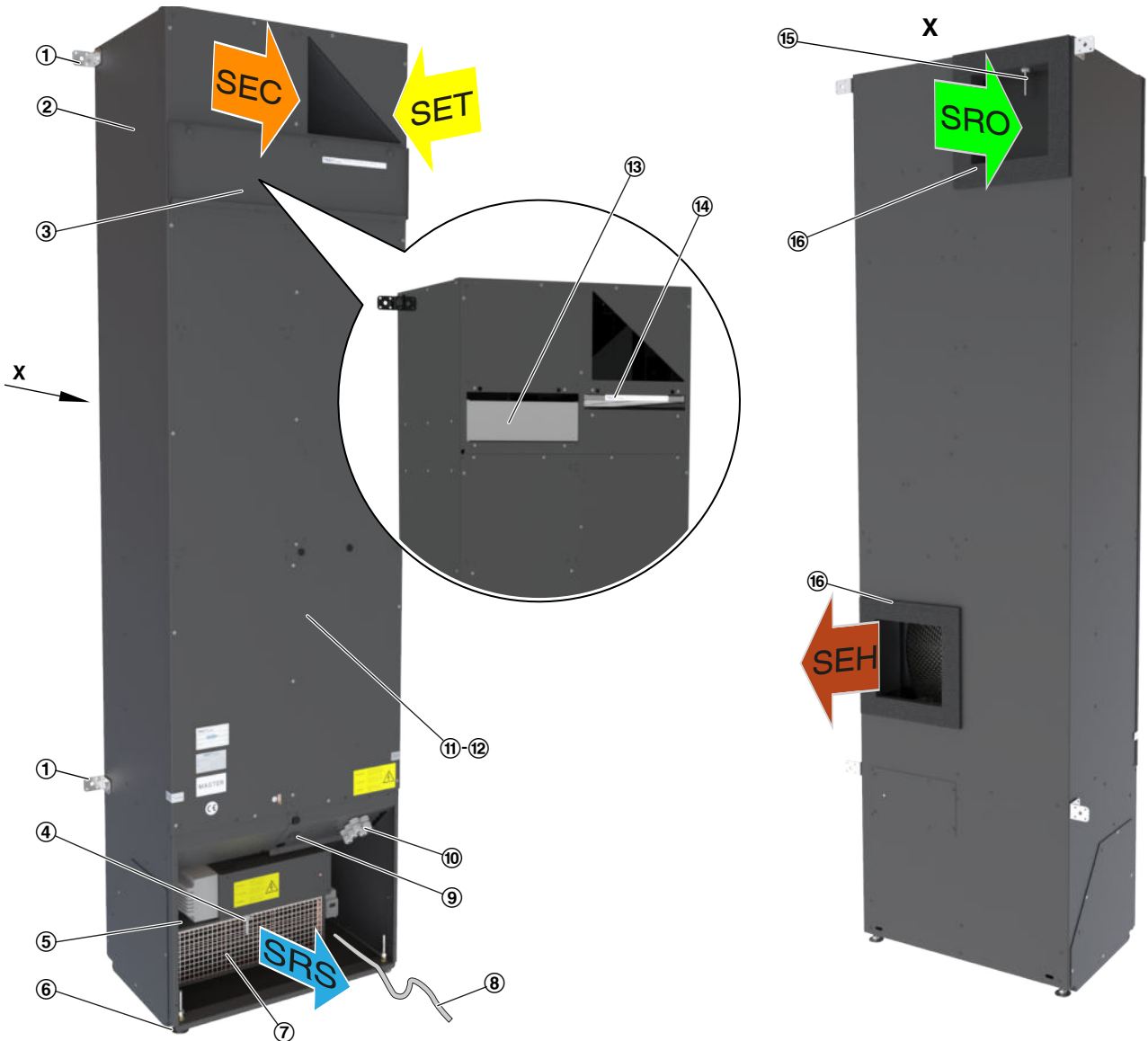
Function

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- SEH Single room exhaust air
- SET Single room extract air
- SRO Single room outdoor air
- SRS Single room supply air
- SEC Secondary air (optional)
- 1 Outdoor air temperature sensor (optional)
- 2 Shut-off damper with actuator (exhaust air and outdoor air)
- 3 Outdoor air filter ISO ePM1 65 %
- 4 Sound attenuator
- 5 Fan (supply air and extract air)
- 6 Rotary heat exchanger for heat recovery
- 7 Electric air heater
- 8 Supply air temperature sensor
- 9 CO<sub>2</sub> sensor (optional)
- 10 Extract air filter ISO coarse 50 %

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- SEH Single room exhaust air
- SET Single room extract air
- SRO Single room outdoor air
- SRS Single room supply air
- SEC Secondary air (optional)
- 1 Fixing bracket (supplied separately)
- 2 Casing
- 3 Inspection access panel
- 4 Supply air temperature sensor (optional)
- 5 Control unit for electric air heater
- 6 Levelling feet
- 7 Electric air heater
- 8 Power cable
- 9 Controls inspection access panel
- 10 Cable entry for on-site connection
- 11 Cover plate
- 12 Rotary heat exchanger (inside)
- 13 Outdoor air filter ISO ePM1 65 %
- 14 Extract air filter ISO coarse 50 %
- 15 Outdoor air temperature sensor (optional)
- 16 Seal on the wall side



## Technical data

Width	605 mm
Height	2200 mm
Depth	413 mm
Volume flow rate	200, 300, 400 m <sup>3</sup> /h (Boost 600 m <sup>3</sup> /h)
Nominal volume flow rate	400 m <sup>3</sup> /h
Sound power level	31 – 49 dB(A)
Heat recovery efficiency	75 %
Maximum heating capacity (electrical)	1500 W
Supply voltage	230 V AC ±10 %, 50/60 Hz
Power rating	2247 VA
Weight	145 kg

## Quick sizing

Supply air flow rate	m <sup>3</sup> /h	200	300	400	600
Sound power level L <sub>WA</sub>	dB(A)	31	37	42	49
Sound pressure level with 8 dB system attenuation	dB(A)	23	29	34	41
Active power P <sub>el</sub>	W	30	50	76	205

## Specification text

Supply and extract air unit with heat exchanger and heat recovery unit, secondary air option (based on air quality), for vertical installation on an external wall, e.g. adjacent to a window.

### SCHOOLAIR-V-HV-EH/KO/605x2200x413/C3

Under sill units for vertical installation on the façade

Please note: The under sill ventilation unit variant described has an integrated single room control system for autonomous classroom operation. The supplied controllers contain the parameters for standard operation according to our control description.

Ventilation unit for schools – vertical installation - master unit TROX X-CUBE/SCHOOLAIR-V-HV under sill ventilation unit with supply and extract air function, rotary heat recovery unit and switchover option to secondary air mode (depending on air quality) as well as electrical reheating function, for vertical installation on the façade:

- Unit casing made of galvanised sheet steel, cover and sheet metal connections with deep-drawn threads and stainless steel cross-head screws, all internal air ducts sealed and lined as required, internal cable penetrations sealed, exposed surface powder-coated (RAL 9005, jet black)
- Sound and heat-insulating lining on suction and discharge side made of mineral wool faced with glass fibre scrim (material classification A, non-combustible according to DIN 4102, T1), erosion resistant up to air velocities of 20 m/s, or closed cell insulation material
- The unit meets the hygiene requirements of VDI 6022
- Height-adjustable levelling feet (+40 mm) to compensate for structural tolerances
- Slotted bracket on the side for fastening to the wall
- Connection to the on-site outdoor air and exhaust air openings of the façade by means of circumferential closed-pore sealing tape on the rear of the unit,  $d = 10$  mm. The suction and discharge resistance of the on-site construction should not exceed 20 Pa at nominal volume flow rate
- Extract air removal at the top front of the unit
- Use of 2 free-running wheels with backward curved blades, energy-saving EC technology, supply and extract air fan classified in category SFP 0 ( $< 300$  W/(m<sup>3</sup>/s)) according to DIN EN 16798-3:2017-11, electrical power consumption of the entire unit at nominal volume flow 400 m<sup>3</sup>/h  $< 76$  W, a connected load of 2247 VA must be taken into account when dimensioning the connection cable
- Suitable for 3 speed levels (200, 300 and 400 m<sup>3</sup>/h as well as boost level of 500 m<sup>3</sup>/h), signalling by means of integrated single room control system. The volume flow rate can be corrected at a later stage by adjusting the control voltage
- The technical requirements of EU directive 1253/2014 for non-residential ventilation systems are fulfilled and documented in accordance with the directive
- Integrated condensation rotary heat exchanger for heat recovery with high efficiency (heat recovery efficiency  $> 75\%$ ), continuously controlled by integrated single room control system and humidity recovery in winter (up to 50%)
- Motorised shut-off dampers in the outdoor air and exhaust air area, normally closed in inactive state via energy storage, actuator 230 V, open/closed, signalling via integrated single room control system
- Automatic switching to secondary air mode (only with an air quality sensor) if the room air quality (measured with the integrated CO<sub>2</sub> sensor) is within the defined limits. For this purpose, the shut-off dampers are closed, the self-powered secondary air damper opens and the extract air fan is switched off
- Integral electrical components are completely wired with FSL-CONTROL III, control components are integrated in the unit. Cable for connection (connection not in the TROX supply package) of the power supply (L, N, PE) with wire end ferrules led approx. 1 m out of the unit: As a transfer point to the on-site electrical installation:
  - Supply voltage (230 V): 3 wires,  $3 \times 1.5$  mm<sup>2</sup> (L, N, PE)
- Connection option for bus communication (optional), connection of room control panel etc. after opening the customer area of the control unit. As a transfer point to the on-site measurement/control/regulation system:
  - Rail mount terminals type Wago 260 for the on-site connection of
    - Digital inputs DI
    - Digital outputs DO
    - Master-slave connection RS485
    - Optional integration in MCE/BACS via RS485 (Modbus/BACnet)
    - Room control panel
    - RJ45 socket as service access to the user interface
    - Optional integration into an on-site MCE/BACS via Ethernet (Modbus/BACnet)
- The following sensors are included in the unit as part of the single room control system (the actual room temperature is captured at the room control panel):
  - Room air quality sensor CO<sub>2</sub>
  - Supply air temperature measurement downstream of the heat exchanger
  - Outdoor air temperature measurement in the outdoor air intake
- Outdoor air filter as Mini Pleat filter, class ePM1 (fine dust filter):
  - Filter class according to ISO 16890: ISO ePM1 65%
  - Eurovent-certified
  - ePM1 filter media are made of high-quality, wet-strength glass fibre paper and laid in tight pleats. The spacers are made of thermoplastic hot melt adhesive to ensure uniform spacing (4mm) between the pleats.
  - The frame is made of moisture-resistant non-woven fibre with pull-out brackets and must not reduce the flow cross-section (filter size = flow cross-section)
  - Filter area  $\geq 3.5$  m<sup>2</sup>

- Extract air filter class G3 (coarse dust filter) as flat filter medium, filter class according to ISO 16890: ISO coarse 50%
- Filters can be changed quickly, as the filter insert can be opened without tools after opening the on-site casing using user-friendly quarter-turn fasteners (accessibility must not be restricted by the on-site under sill trim)
- Monitoring of the filter life by integrated differential pressure monitoring
- Closed cell sealing tapes for sealing and adaptation to the outer casing are not included in the TROX supply package
- The on-site under sill trim has perforations in areas to be specified for the supply air entry, for extract air intake and secondary air intake and must not restrict installation, removal, or maintenance work on the front of the unit
- Clear distance of approx. 30 mm between the front edge of the unit and the inner edge of the under sill trim
- The front of the unit must be completely accessible after removal of the outer casing

Units - dimensions and weight: Width: approx. 605 mm (without fixing brackets) Height: approx. 2200 mm (without levelling feet, without fixing brackets) Depth: approx. 413 mm (incl. façade sealing) Weight: approx. 145 kg

- The heat exchanger is an electric air heater
  - Maximum output: 1500 W
  - Maximum surface temperature restricted to 60°C, thus preventing dust smouldering
  - Including control circuit, consisting of temperature sensor, NTC 10 kOhm and power controller
  - Supply air temperature: 25 °C max.
  - Including safeguards:
    - Safety temperature limiter, mechanical, automatically resetting
    - Safety temperature monitor, mechanical, no auto reset

### FSL-CONTROL III controller

Including control system FSL-CONTROL III, as described below: FSL-CONTROL III is described as a stand-alone single room control system with a simple timer. Optional expansions, such as integration into an on-site MCE/BACS via Modbus TCP, Modbus RTU, BACnet MS/TP or BACnet IP, humidity sensors, return temperature sensors, electromotive valve actuators or pressure-independent control valves, are included in the delivery programme, but must be exchanged for the standard components in the following description. A room temperature signal is also required. Various room control panels and sensors are available to provide this signal. Suitable optional equipment can be found after the following standard equipment for stand-alone operation. - please refer to: **Optional control accessories**. We recommend commissioning by TROX. You will find related text modules below.

TROX control module FSL-CONTROL III (order code ...-C3-MA ...):

- Single room controller to be mounted on a DIN mounting rail in the unit or in a separate control equipment box
- 42 digital or analogue inputs and outputs
- A MicroSD card (at least 2 GB storage space) is integrated as a flash memory medium. The trend data are stored there and can be retrieved via the RJ45 socket
- Factory-equipped with a software package for master units specially developed for decentralised ventilation units. The

software enables simple master-slave communication via Modbus RTU

- Up to 10 slave devices can be connected to one master device
- The software provides 3 types of operation (Off, Automatic and Manual), 3 operating modes (Occupied, Unoccupied and Standby) and 4 operating mode overrides (Boost, Class, Night Ventilation and Fan Forced Circuit)
- Basic distinction between room temperature control by controlling heating and cooling valves or continuous bypass damper or supply air temperature control for isothermal ventilation operation
- CO<sub>2</sub> guided air quality control
- Heat recovery all year round
- Filter monitoring
- Configurable DI for on-site connection of presence detectors, window contacts, holiday switching, etc.
- Alarm messages: Type A (shutdowns) and Type B (notifications)

### Real time clock (RTC)

Real Time Clock (RTC/real time clock) (order code ...-T/...):

- Component of the Master Software Package
- Enables a simple timer
  - 7 days with 10 switching points each
  - Automatic summer / winter time changeover
  - Temporal activation of night purge

### CO<sub>2</sub> sensor

CO<sub>2</sub> sensor (order code .../C/...):

- Sensor arranged in the extract air intake of the master unit for recording the indoor air quality and corresponding control of the outdoor air flow rate
- Measurement via an NDIR sensor, which works on an infrared basis and compensates for any contamination by its 2-beam measurement principle
- Measuring range 0 – 2000 ppm

### Supply air temperature sensor

Supply air temperature sensor (order code .../Z/...):

- Supply air temperature sensor with NTC thermistor, 10 kΩ at 25 °C, measuring range -35 to 105 °C
- Very short response time due to perforated measuring tip

### Outdoor air temperature sensor

Outdoor air temperature sensor (order code .../A/...):

- Outdoor air temperature sensor with NTC thermistor, 10 kΩ at 25 °C, measuring range -35 to 105 °C

### Optional control accessories

Optional equipment to increase the comfort of the FSL-CONTROL III:

TROX room control panels for FSL-CONTROL III

At least one room temperature signal is required per room.

There are several variants of TROX room control panels available, optionally with or without selector switch. Additionally, we offer a room temperature sensor RTF without control elements. Alternative on-site room control panels must be connected via bus communication.

Digital room control panels for surface mounting:

For operation and adjustment of the ventilation units.

- Supplied loose as an accessory. Connection to the master unit via Modbus serial line. Project-specific software including setpoint value adjuster, various status displays, selector switch, CO<sub>2</sub> indicator. Touch-sensitive colour display 3.5" 320 × 240 pixels. Sensor: NTC 10 kΩ. Degree of protection: IP 20. Type: Schneider TM172DCLWT. Dimensions (H × B × T): 120 × 86 × 25 mm. Weight: 340 g, colour: white. Installation: Surface mounting or on a standard flush-mounted box. Power supply: 24 V DC (including suitable switching power supply unit for flush-mounted installation). Power consumption: 3.2 VA/1.3 W. Other design frames are available upon request and for a surcharge.

Control panels with selector switch for surface mounting:

Control panel with selector switch, for surface mounting, type Thermokon

- Supplied loose as an accessory, with room temperature sensor, setpoint adjuster, override button, LED and 3-step switch as well as Off and Automatic, casing made of PVC0, pure white (RAL 9010), for mounting on a 60 mm flush box or for surface mounting, NTC thermistor as sensor, resistance 20 kΩ at 25 °C, dimensions (B × H × T): 84.5 × 84.5 × 25 mm, operating temperature: -35 to 70 °C

Control panels without selector switch for surface mounting:

Control panel without selector switch, type Thermokon, for surface mounting:

- Supplied loose as an accessory, with mode display, push button and setpoint adjuster, NTC thermistor as sensor, 20 kΩ, protection level IP 20, dimensions (B × H × T): 84.5 × 84.5 × 25 mm

Room temperature sensor for surface mounting:

Room temperature sensor TROX RTF, surface mounting

- Supplied loose as an accessory, room temperature sensor without any control elements, measuring range -35 to 70 °C, sensor NTC 10 kΩ, connection terminal screw terminal, d = 1.5 mm, protection level IP 20, surface mounting or on a 70 mm flush-mounted box, dimensions (B × H × T): 85 × 85 × 30 mm, casing ABS, in RAL 9010

Control panels without selector switch for flush mounting:

For manual operation of the ventilation units with a high-quality look and the matching design from a wide range of switch programmes, the unit is suitable for particularly design-oriented facilities.

Control panel without selector switch, type Thermokon, for flush mounting, switch from Berker S.1 range, polar white

- Supplied loose as an accessory, with mode display, push button and setpoint adjuster, NTC sensor 20 kΩ, protection level: IP 20

Control panel without selector switch, type Thermokon, for flush mounting, switch programme Berker Q.3, white

- Supplied loose as an accessory, with mode display, push button and setpoint adjuster, NTC sensor 20 kΩ, protection level: IP 20

Control panel without selector switch, type Thermokon, for flush mounting, switch programme Busch-Jäger future® linear, white

- Supplied loose as an accessory, with mode display, push button and setpoint adjuster, NTC sensor 20 kΩ, protection level: IP 20

- Other switch programmes on request

Control panels without selector switch and without setpoint value adjuster, for flush mounting:

Control panel without selector switch and without setpoint value adjuster, type Thermokon, for flush mounting, switch from Gira E2 range

- Supplied loose as an accessory, with mode display and push button, NTC sensor 20 kΩ, protection level: IP 20
- Other switch programmes on request

Interface for integration into an on-site MCE/BACS:

Modbus TCP interface including web server (order code .../MT/...)

To increase convenience, we recommend integration into an on-site MCE/BACS or visualisation with X-TAIRMINAL. FSL-CONTROL III can be integrated into an on-site MCE/BACS via the Modbus TCP protocol. Additionally including web server for simplified configuration, commissioning and remote monitoring of the unit. The MCE/BACS is not included in the supply package from TROX GmbH, only the interfaces listed above are available here.

- Modbus TCP interface (Ethernet)

BACnet IP interface including web server (order code .../BI/...)

To increase convenience, we recommend integration into an on-site MCE/BACS. FSL-CONTROL III offers the option of being integrated into an on-site MCE/BACS via the BACnet IP protocol. Additionally including web server for simplified configuration, commissioning and remote monitoring of the unit. The MCE/BACS is not included in the supply package from TROX GmbH, only the interfaces listed above are available here.

- BACnet IP interface (Ethernet)

Modbus RTU (order code .../MR/...)

To increase convenience, we recommend integration into an on-site MCE/BACS. FSL-CONTROL III offers the option of being integrated into an on-site MCE/BACS via Modbus RTU. The MCE/BACS is not included in the supply package from TROX GmbH, only the interfaces listed above are available here.

- Modbus RTU interface (RS485)

BACnet MS/TP (order code .../BM/...)

To increase convenience, we recommend integration into an on-site MCE/BACS. FSL-CONTROL III offers the option of being integrated into an on-site MCE/BACS via BACnet MS/TP. The MCE/BACS is not included in the supply package from TROX GmbH, only the interfaces listed above are available here.

- BACnet MS/TP interface (RS485)

#### Version as SLAVE DEVICE

Identical to the MASTER DEVICE, as described above, but with the following deviations:

- No room air quality measurement in the unit
- No connection option for room control panels
- No outdoor temperature detection in the outdoor air
- No connection to on-site bus communication possible
- Pre-assembled self-sufficient control system for decentralised façade ventilation units in SLAVE construction

#### Commissioning of the decentralised ventilation units

Commissioning/parameterisation of the decentralised ventilation units without integration into an on-site MCE/BACS

- Visual inspection of the device connections on site for compliance with the respective installation specifications from the installation and configuration instructions: air connections, heating/cooling connection, electrical connections, integration into the installed outer casing, connections of external components



- Checking and, if necessary, adapting the project parameters pre-set in the factory with regard to customer-specific adaptations
- Functional test of the individual components (control elements, fans, valves, dampers, sensors)
- Checking the project-specific control functions including any special functions such as volt-free switch contacts
- Documentation of the device settings and service work in a service report. The service report must be signed by your company or representative as the client.
- Invoicing is done as a flat rate, derived from the number of units and distance.

#### Commissioning/parameterisation of the decentralised ventilation units with integration into an on-site MCE/BACS

- Visual inspection of the device connections on site for compliance with the respective installation specifications from the installation and configuration instructions: air connections, heating/cooling connection, electrical connections, integration into the installed outer casing, connections of external components, connections of MCE/BACS
- Checking and, if necessary, adapting the project parameters pre-set in the factory with regard to customer-specific adaptations
- Functional test of the individual components (control elements, fans, valves, dampers, sensors)

- Checking the project-specific control functions including any special functions such as volt-free switch contacts
- Function test of the communication to the MCE/BACS in cooperation with the controls provider:
  - Checking that the on-site settings comply with the specifications in the installation and configuration instructions
  - Input test of the data points sent on site
  - Output test of the output data points
  - Trial operation of the operating states that can be switched by the MCE/BACS
- Documentation of the device settings and service work in a service report. The service report must be signed by your company or representative as the client.
- Invoicing is done as a flat rate, derived from the number of units and distance.

#### Instruction in operation and maintenance

- One-time instruction for the operation of the decentralised ventilation units consisting of:
  - Description of the equipment functions on the unit that has already been put into operation
  - Description of the room control panel and the room conditions that can be influenced by it
  - Description of the maintenance work
- Invoicing is done on a flat-rate basis. The instruction is carried out by the responsible sales representative

Order code

SA-V-0-4-1/KM/397 × 2350 × 359/C3/MA-T/MR/C/Z/A/HV-R-0.4/KV-R-0.4  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

**1 Type**

**SA-V** vertical decentralised ventilation unit X-CUBE/SCHOOLAIR-V

**2 Variant**

No entry: Standard

**HE** high degree of heat recovery

**HV** high volume flow rate and rotary heat recovery unit

**3 Heat exchanger**

**2** 2-pipe

**4** 4-pipe

**EH** Electric heating coil (SCHOOLAIR-V-HV)

**4 Construction**

**KO** without condensate drain

**KM** with condensate drain (SCHOOLAIR-V, SCHOOLAIR-V-1800, SCHOOLAIR-V-HV)

**KR** with condensate drain, extract air opening on the right when seen from the room (SCHOOLAIR-V-HE)

**KL** with condensate drain, extract air opening on the left when seen from the room (SCHOOLAIR-V-HE)

**5 Dimensions [mm]**

B × H × T

**397 × 2160 × 359** (2-pipe)

**397 × 2350 × 359** (4-pipe)

**604 × 1800 × 370** (2-pipe or 4-pipe, version 1800)

**600 × 2000 × 408** (2-, 4-pipe, HE version)

**605 × 2200 × 413** (2-, or 4-pipe, HV version)

**6 Control system**

**OR** without control system

**C3** with FSL-CONTROL III

**7 Control function**

**MA** Master

**SL** Slave

**8 Real time clock, master only**

No entry: none

**T** with

**9 Interface**

No entry: none

**Order example: SA-V-HV-EH/KO/605x2200x413/C3-MA-T/C/Z/A**

<b>SA-V</b>	vertical decentralised ventilation unit X-CUBE/SCHOOLAIR-V
<b>HV</b>	high volume flow rate and rotary heat recovery unit
<b>EH</b>	with electric air heater
<b>KO</b>	without condensate drain
<b>C3</b>	with FSL-CONTROL III
<b>MA</b>	in Master construction
<b>T</b>	with real time clock
<b>C</b>	with CO <sub>2</sub> sensor
<b>Z</b>	with supply air temperature sensor
<b>A</b>	with outdoor air temperature sensor

**MT** with Modbus TCP

**MR** with Modbus RTU (only with control function MA)

**BI** with BACnet IP

**BM** with BACnet MS/TP (only with control function MA)

**10 Air quality sensor, master only**

No entry: none

**C** with CO<sub>2</sub> sensor

**V** with VOC sensor

**11 Supply air temperature sensor**

**Z** with

**12 Outdoor air temperature sensor, master only**

No entry: none

**A** with

**13 Heating valve**

Only 2-pipe systems

**HV** with

**14 Lockshield – heating circuit**

**R** with

**15 k<sub>vs</sub> value – heating valve**

**0.25** Straight-way valve

**0.40** Straight-way valve

**0.63** Straight-way valve

**1.00** Straight-way valve

**F0.50** pressure-independent control valve

**16 Cooling valve**

Only 4-pipe systems

**KV** with

**17 Lockshield – cooling circuit**

**R** with

**18 k<sub>vs</sub> value – cooling valve**

**0.25** Straight-way valve

**0.40** Straight-way valve

**0.63** Straight-way valve

**1.00** Straight-way valve

**F0.50** pressure-independent control valve



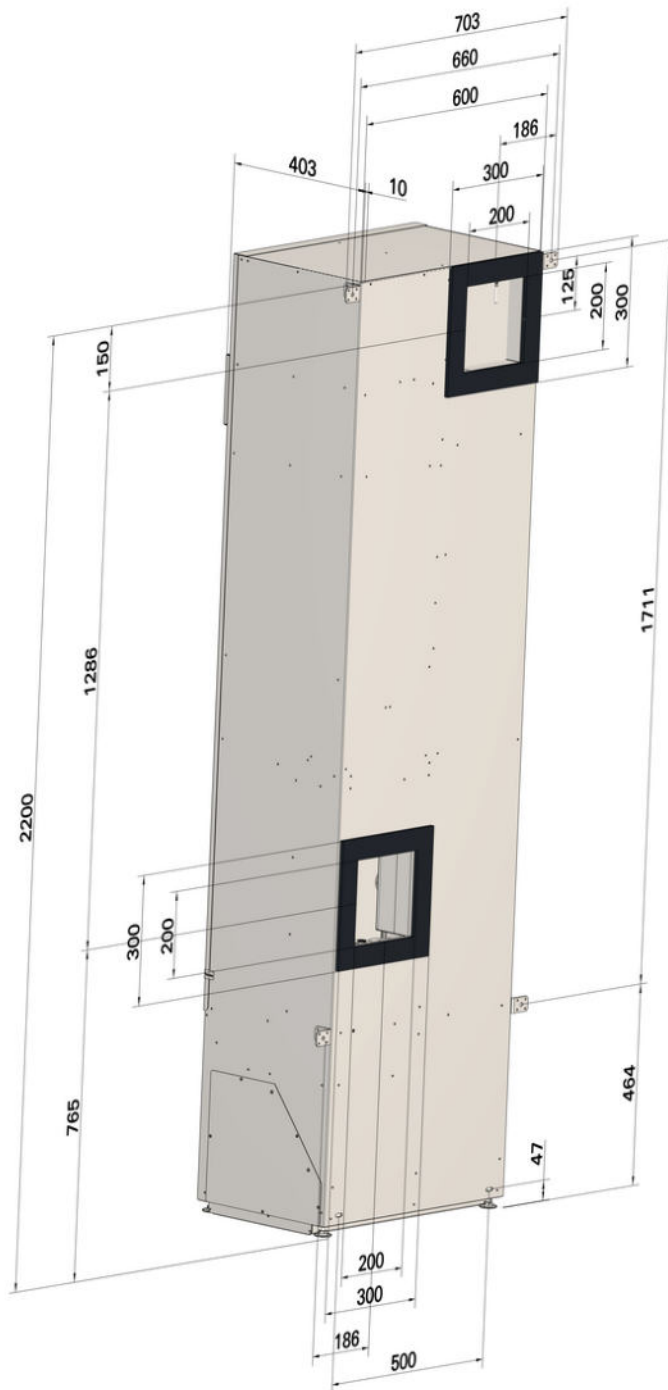
**Order example: SA-V-HV-EH/KO/605x2200x413/C3-SL-Z**

<b>SA-V</b>	vertical decentralised ventilation unit X-CUBE/SCHOOLAIR-V
<b>HV</b>	<b>high volume flow rate and rotary heat recovery unit</b>
<b>EH</b>	with electric air heater
<b>KO</b>	without condensate drain
<b>C3</b>	with FSL-CONTROL III
<b>SL</b>	in slave construction
<b>Z</b>	with supply air temperature sensor

**Order example: SA-V-HV-EH/KO/605x2200x413/C3-MA-BI/C/Z**

<b>SA-V</b>	vertical decentralised ventilation unit X-CUBE/SCHOOLAIR-V
<b>HV</b>	high volume flow rate and rotary heat recovery unit
<b>EH</b>	with electric air heater
<b>KO</b>	without condensate drain
<b>C3</b>	with FSL-CONTROL III
<b>MA</b>	in Master construction
<b>BI</b>	with BACnet IP interface
<b>C</b>	with CO <sub>2</sub> sensor
<b>Z</b>	with supply air temperature sensor

## Dimensions

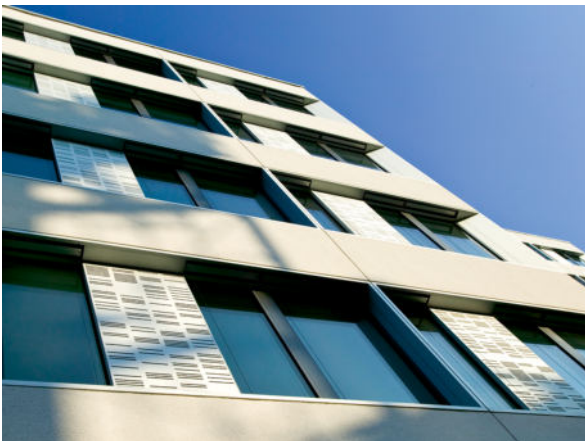


## Product details

### Installation example



### Installation example



### Installation and commissioning

- Installation on the floor in front of the outside wall
- Level adjustment using the 4 levelling feet (+40 mm)
- 4 side fixing brackets (supplied loose) for screwing to the building structure, alternatively 2 fixing points below the heat exchanger can be used
- The outdoor air intake or exhaust air discharge takes place via 2 façade openings. The façade openings must be provided professionally by the customer and ideally have a slope to the outside
- Free area of ventilation openings: 0.05 m<sup>2</sup> for each outdoor air opening and exhaust air opening, and 0.16 m<sup>2</sup> for each supply air opening and extract air opening
- Weather protection for the outdoor air and exhaust air openings to be provided by others
- Installation and connections to be performed by others. Fixing, connecting and sealing material not included
- The electrical connection is on the right-hand side of the unit when seen from the room
- The under sill trim provided by others must not obstruct maintenance access at the front of the unit or installation and removal of the unit.

## Explanation

<b>MBE</b> Management and control equipment (MCE)	<b>Total heating capacity</b> Heat flow supplied by a heat exchanger of the appliance. The proportion for heating the outdoor air is taken into account
<b>BACS</b> Building automation and control systems (BACS)	<b>Room heating capacity</b> Proportion of the total heating output to cover the heating load of a room
<b>Total cooling capacity</b> Heat flow that is dissipated by a heat exchanger of the appliance. The proportion for cooling the outdoor air is taken into account	<b>Heat recovery</b> Heat recovery system (HRS)
<b>Room cooling capacity</b> Proportion of the total cooling capacity to cover the relevant cooling load of a room	<b>Lengths</b> All lengths are given in millimetres [mm] unless stated otherwise.