



ROTARY HEAT RECOVERY
UNIT



ELECTRIC AIR HEATER



TESTED TO VDI 6022

Tested to VDI 6022

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 FACADE

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

- Acoustically optimised EC fans with low specific fan powers, SFP-1 according to EN 13779
- Rotary heat recovery unit (heat recovery efficiency 75 %) with moisture recovery in winter
- Electric air heater with maximum heating capacity of 1500 W
- Condensate drip tray without condensate drain
- Year-round use of heat recovery
- Reduction of 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 to the operations of the respective school

Optional equipment and accessories

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



FILTER CHANGE



LEVELLING FOOT

General information



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

Under sill units for vertical assembly on the façade

Please note:

The described under sill ventilation unit variant is equipped with a single room control system arranged in the unit for autonomous classroom operation. The supplied controllers contain the standard control parameters for operation according to our control system description.

School ventilation unit – vertical installation - master unit

Under sill ventilation unit TROX SCHOOLAIR-V-HV with supply and extract air function, rotary heat recovery unit and switchover option to secondary air operation (air quality dependent), as well as electrical reheating function for vertical installation on the façade:

- Device casing made of galvanised sheet steel, cover and sheet metal connections via deep-drawn threads and stainless steel cross-head screws, all necessary internal air ducts sealed and lined, internal electrical cable penetrations sealed, exposed surfaces powder-coated (RAL 9005, jet black)
- Sound- and heat-insulating lining on intake 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 device meets the hygiene requirements of VDI 6022
- Levelling feet, +40 mm
- Slotted bracket on the side for fastening to the wall
- Connection to the outdoor air and exhaust air openings (provided by others) of the façade by means of perimeter closed cell sealing tape on the rear side of the unit, $d = 10$ mm, the intake and discharge resistance of the construction provided by others should not exceed 20 Pa at a nominal volume flow rate
- Extract air removal on the room side in the upper area of the front of the unit
- Use of 2 plug fans with backward-curved blades, energy-saving EC technology, supply air and extract air fans classified in category SFP 1 (< 500 W/(m³/s)) according to EN 16798-3:2017-11, electrical power consumption of the entire unit at nominal volume flow rate 400 m³/h < 76 W, a power rating of 2247 VA must be taken into account for the connecting cable
- Suitable for 3 speed levels (200, 300 and 400 m³/h as well as boost level with 500 m³/h), signalling via device-internal single room control system, volume flow rate level correction by adjusting the control voltage subsequently possible
- The technical requirements of EU directive 1253/2014 for non-residential ventilation systems are fulfilled and documented in accordance with the directive
- Integral condensation rotary heat exchanger for heat recovery with high efficiency (heat recovery efficiency $> 75\%$), modulating control by device-internal single room control system and moisture recovery in winter (up to 50%)

- Motorised shut-off dampers in the outdoor/exhaust air area, normally closed when there is no power by means of energy storage, actuator 230 V, open/close, signalling via device-internal single room control system
- Automatic switching to secondary air mode (only with an air quality sensor) if the indoor air quality (measured, for example, at the integral CO₂ sensor) lies within the limits defined beforehand. The fresh air damper closes, the self-powered secondary air damper opens and the extract air fan is switched off.
- Electrical components contained in the unit are completely wired with FSL-CONTROL III, control components are integrated in the unit. Cable for connection (connection not supplied by TROX) 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 electrical installation provided by others:
 - Supply voltage (230 V): 3 wires, 3 × 1.5 mm² (L, N, PE)
- Connection possibility for bus communication (optional), connection of control panel, etc. after opening the customer area of the controls. As a transfer point to the controls provided by others:
 - Rail mount terminals type Wago 260 for the connection (provided by others) of
 - Digital inputs DI
 - Digital outputs DO
 - Master-slave connection RS485
 - BMS connection (optional) RS485
 - Control panel
 - RJ45 socket as service access to the user interface
- The following sensors are arranged in the unit to control the single room control system (the actual room temperature is recorded at the control panel):
 - Indoor air quality sensor CO₂
 - 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 ePM1 (fine dust filter):
 - Filter class to ISO16890: ISO ePM1 65 %
 - Eurovent-certified
 - ePM1 filter media made from high-quality, wet-strengthened glass fibre paper are pleated, the spacers are made from thermoplastic hot-melt adhesive and ensure uniform spacing (4 mm) between the pleats
 - The frame is made of moisture-resistant non-woven fibre, with lugs (for pulling it out) and must not reduce the flow cross section (filter size = flow cross section).
 - Filter area >= 3.5 m²
- Extract air filter class G3 (coarse dust filter) as flat filter medium, filter class according to ISO16890: ISO coarse 50%
- Quick change of the filters is possible, since the filter insert can be opened without tools after opening the casing that is provided by others via user-friendly quarter-turn fasteners (accessibility must not be restricted by the under sill trim that is provided by others)
- Monitoring of the filter life by integrated differential pressure monitoring
- Closed cell sealing tapes for sealing and adaptation to the outer casing (by others) are not included in the TROX supply package
- The under sill trim provided by the customer is perforated in areas to be specified for the introduction of supply air, for extract air and secondary air intake, and must not restrict maintenance work and unit installation and removal on the front of the unit
- Clear distance between the front edge of the unit and the inner edge of the under sill trim approx. 30 mm
- The front of the device must be completely accessible after disassembly 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

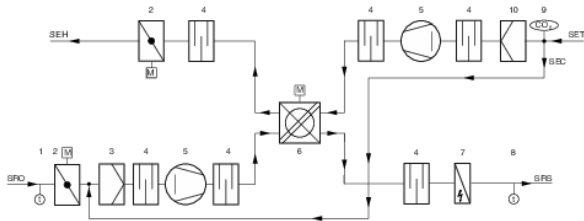
- Heat exchanger designed as electric air heater
 - Maximum performance: 1500 W
 - Max. surface temperature restricted to 60 °C, thus preventing dust smouldering
 - Incl. closed circuit, consisting of temperature sensor, NTC 10 kOhm and power controller
 - Max. supply air temperature 25 °C
 - Incl. safeguards:
 - Safety temperature monitor, mechanical, automatic reset
 - Safety temperature monitor, mechanical, no automatic reset

TECHNICAL INFORMATION

Function, Technical data, Specification text, Order code

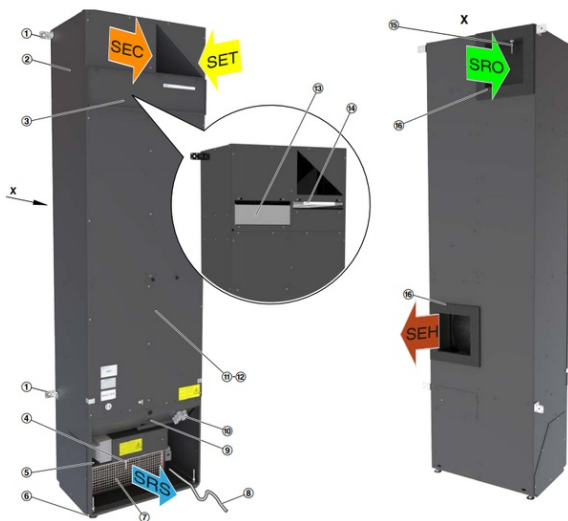


Decentralised supply and extract air units ventilate the room and cover the heating load according to the technical data. An EC centrifugal fan takes in the fresh air, which then flows through the motorised shut-off damper and the fresh air filter. The fresh air then flows through the rotary heat exchanger, which can be switched off when it is sensible with regard to energy efficiency. Before the supply air enters the room as displacement flow, it is heated by the electric air heater 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 room air quality is sufficient, FSL-CONTROL III closes the outdoor air dampers and changes to secondary air operation, which is more energy efficient in any case. Here, the control system compares the setpoint values of the indoor air quality with the actual values measured at the CO₂ sensor and switches automatically between fresh air and secondary air operation. If the power fails, the outdoor air and exhaust air dampers are closed to ensure fire protection and frost protection and to avoid draughts. This is ensured by a capacitor in each actuator. The supply air is discharged near the external wall and with a medium velocity of between 1.0 and 1.5 m/s. Due to the induction effect, the supply air velocity is rapidly reduced after the air enters the room. In cooling mode, the supply air displaces the room air over the entire floor area. The convection from people and other heat sources causes the fresh air from the pool to rise and create comfortable conditions in the occupied zone.



SEH Single room exhaust air
 SET Single room extract air
 SRO Single room fresh air
 SRS Single room supply air
 SEC Secondary air (optional)

- 1 Fresh air temperature sensor (optional)
- 2 Shut-off damper with actuator (exhaust air and fresh air)
- 3 Fresh 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 CO₂ sensor (optional)
- 10 Extract air filter ISO coarse 50 %



SEH Single room exhaust air
 SET Single room extract air

SRO Single room fresh 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 Fresh air filter ISO ePM1 65 %
- 14 Extract air filter ISO coarse 50 %
- 15 Fresh air temperature sensor (optional)
- 16 Seal on the wall side

Width [mm]	605 mm
Height [mm]	2200 mm
Depth	413 mm
Volume flow rate	200, 300, 400 m³/h (Boost 600 m³/h)
Nominal volume flow rate	400 m³/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

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

Under sill units for vertical assembly on the facade

Please note:

The described under sill ventilation unit variant is equipped with a single room control system arranged in the unit for autonomous classroom operation. The supplied controllers contain the standard control parameters for operation according to our control system description.

School ventilation unit – vertical installation - master unit

Under sill ventilation unit TROX SCHOOLAIR-V-HV with supply and extract air function, rotary heat recovery unit and switchover option to secondary air operation (air quality dependent), as well as electrical reheating function for vertical installation on the façade:

- Device casing made of galvanised sheet steel, cover and sheet metal connections via deep-drawn threads and stainless steel cross-head screws, all necessary internal air ducts sealed and lined, internal electrical cable penetrations sealed, exposed surfaces powder-coated (RAL 9005, jet black)
- Sound- and heat-insulating lining on intake 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 device meets the hygiene requirements of VDI 6022
- Levelling feet, +40 mm
- Slotted bracket on the side for fastening to the wall

- Connection to the outdoor air and exhaust air openings (provided by others) of the façade by means of perimeter closed cell sealing tape on the rear side of the unit, $d = 10$ mm, the intake and discharge resistance of the construction provided by others should not exceed 20 Pa at a nominal volume flow rate
- Extract air removal on the room side in the upper area of the front of the unit
- Use of 2 plug fans with backward-curved blades, energy-saving EC technology, supply air and extract air fans classified in category SFP 1 (< 500 W/(m³/s)) according to EN 16798-3:2017-11, electrical power consumption of the entire unit at nominal volume flow rate 400 m³/h < 76 W, a power rating of 2247 VA must be taken into account for the connecting cable
- Suitable for 3 speed levels (200, 300 and 400 m³/h as well as boost level with 500 m³/h), signalling via device-internal single room control system, volume flow rate level correction by adjusting the control voltage subsequently possible
- The technical requirements of EU directive 1253/2014 for non-residential ventilation systems are fulfilled and documented in accordance with the directive
- Integral condensation rotary heat exchanger for heat recovery with high efficiency (heat recovery efficiency $> 75\%$), modulating control by device-internal single room control system and moisture recovery in winter (up to 50%)
- Motorised shut-off dampers in the outdoor/exhaust air area, normally closed when there is no power by means of energy storage, actuator 230 V, open/close, signalling via device-internal single room control system
- Automatic switching to secondary air mode (only with an air quality sensor) if the indoor air quality (measured, for example, at the integral CO₂ sensor) lies within the limits defined beforehand. The fresh air damper closes, the self-powered secondary air damper opens and the extract air fan is switched off.
- Electrical components contained in the unit are completely wired with FSL-CONTROL III, control components are integrated in the unit. Cable for connection (connection not supplied by TROX) 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 electrical installation provided by others:
 - Supply voltage (230 V): 3 wires, 3×1.5 mm² (L, N, PE)
- Connection possibility for bus communication (optional), connection of control panel, etc. after opening the customer area of the controls. As a transfer point to the controls provided by others:
 - Rail mount terminals type Wago 260 for the connection (provided by others) of
 - Digital inputs DI
 - Digital outputs DO
 - Master-slave connection RS485
 - BMS connection (optional) RS485
 - Control panel
 - RJ45 socket as service access to the user interface
- The following sensors are arranged in the unit to control the single room control system (the actual room temperature is recorded at the control panel):
 - Indoor air quality sensor CO₂
 - 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 ePM1 (fine dust filter):
 - Filter class to ISO16890: ISO ePM1 65 %
 - Eurovent-certified
 - ePM1 filter media made from high-quality, wet-strengthened glass fibre paper are pleated, the spacers are made from thermoplastic hot-melt adhesive and ensure uniform spacing (4 mm) between the pleats
 - The frame is made of moisture-resistant non-woven fibre, with lugs (for pulling it out) and must not reduce the flow cross section (filter size = flow cross section).
 - Filter area ≥ 3.5 m²
- Extract air filter class G3 (coarse dust filter) as flat filter medium, filter class according to ISO16890: ISO coarse 50%
- Quick change of the filters is possible, since the filter insert can be opened without tools after opening the casing that is provided by others via user-friendly quarter-turn fasteners (accessibility must not be restricted by the under sill trim that is provided by others)
- Monitoring of the filter life by integrated differential pressure monitoring
- Closed cell sealing tapes for sealing and adaptation to the outer casing (by others) are not included in the TROX supply package
- The under sill trim provided by the customer is perforated in areas to be specified for the introduction of supply air, for extract air and secondary air intake, and must not restrict maintenance work and unit installation and removal on the front of the unit
- Clear distance between the front edge of the unit and the inner edge of the under sill trim approx. 30 mm
- The front of the device must be completely accessible after disassembly 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

- Heat exchanger designed as electric air heater
- Maximum performance: 1500 W
- Max. surface temperature restricted to 60 °C, thus preventing dust smouldering
- Incl. closed circuit, consisting of temperature sensor, NTC 10 kOhm and power controller
- Max. supply air temperature 25 °C
- Incl. safeguards:
- Safety temperature monitor, mechanical, automatic reset
- Safety temperature monitor, mechanical, no automatic reset

FSL-CONTROL III controller

Including control system FSL-CONTROL III, as described below:

FSL-CONTROL III is described as stand-alone single room control equipment with a simple timer. Optional expansions, such as connection to the central BMS provided by others via Modbus TCP / Modbus RTU, BACnet MS/TP or BACnet IP, humidity sensors, return flow temperature sensors, electromotive valve actuators or pressure-independent control valves are included in the product range, but must be replaced with the standard components in the following description. A room temperature signal is also required. Various room control panels and sensors are available for this purpose. The corresponding optional equipment text modules can be found in the appendix of the following standard equipment for room-autonomous operation. We recommend commissioning by our technical service. You will find related text modules below.

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

- Single room controller for mounting on DIN mounting rail in the unit or in a separate control casing
- 42 digital or analogue inputs and outputs
- A micro SD card with up to 2 GB storage space is integrated as a flash storage medium. The trend data is stored here and can be accessed via the RJ45 service socket.
- Equipped at the factory 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 modulating bypass damper or supply air temperature control for isothermal ventilation
- CO₂-guided air quality control
- Year-round heat recovery use
- Filter monitoring
- Configurable DI, e.g. for connection (by others) of PIR sensors, window contacts, holiday switching, etc.
- Alarm signals type A (= switch-offs) 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

CO₂ sensor

CO₂ 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 as sensing element, resistance 10 kΩ at 25 °C, measuring range 0 – 50 °C
- Especially fast 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 as sensing element, resistance 10 kΩ at 25 °C, measuring range -30 – 50 °C

Water side components

Water-side components (order code .../HV-R-.../KV-R-...):

- Valve actuator: 1 × thermoelectric actuator for opening and closing valves, with position indicator, including pluggable power rating, supply voltage 24 V DC, control voltage 0 – 10 V DC, power consumption 1 W, degree of protection: IP 54
- Straight-way valve: 1 × small straight-way valve ½" as standard, pre-assembled hand-tight, PN 16, nominal width 10, k_{VS} 0.4 (alternatively: 0.25, 0.63 or 1.0 m³/h – please specify the required k_{VS} value), threaded connection G 1/2B, fluid temperature 1 - 110 °C
- Lockshields: 1x lockshield on both sides ½", manually pre-assembled, nominal width DN 15; ½ inch, valve body straight through with male thread on both sides, flat seal, for flow restriction and shut-off, operating temperature maximal 120 °C

Optional control accessories

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

TROX control panels for FSL-CONTROL III

- At least one room temperature signal is required per room. There are different variants of TROX control panels available, optionally with or without step switching. Additionally we offer a room temperature sensor RTF without control elements. Alternative control panels provided by the customer must be connected via bus communication:

Control panels with selector switch for surface mounting:

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

- Supplied loose as accessory, with room temperature sensor, setpoint adjuster (blue or white), override button, LED and 3-step switch as well as off and automatic, assembly on 60 mm flush box or directly on the wall, NTC thermistor as sensor element, resistance 20 kΩ at 25 °C, dimensions (B x H x T): 99 x 104 x 30 mm, operating temperature: 6 - 40 °C

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

- Supplied loose as an accessory, with room temperature sensor, setpoint adjuster (blue or white), override button, LED and 3-step switch as well as off and automatic, casing made from pure white PVC0 (RAL 9010) assembly on 60 mm flush box or directly on the wall, NTC thermistor as sensor element, resistance

20 kΩ at 25 °C, dimensions (B x H x T): 84.5 x 84.5 x 25 mm, operating temperature: -35 – 70 °C

Control panels without selector switch for surface mounting:

Control panel without selector switch, for surface mounting, type Schneider

- Supplied loose as additional part, with mode display, push button and setpoint adjustment, sensor NTC 10 kΩ, protection level: IP 20, wall mounting or on 70 mm flush-mounted box, dimensions (B x H x T) 84 x 116 x 24 mm, colour light grey/white

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

- Supplied loose as additional part, with mode display, push button and setpoint adjustment, sensor NTC 20 kΩ, protection level: IP 20, dimensions (B x H x T) 84.5 x 84.5 x 25 mm

Room temperature sensor for surface mounting:

Room temperature sensor TROX RTF, surface mounting

- Supplied loose as additional part, room sensor without control elements, measuring range: -35...- 70 °C, sensor NTC 10 kΩ, screw terminal, d = 1.5 mm, protection level IP 20, for mounting on the face of the wall or on 70 mm flush-mounted box, dimensions (B x H x T) 85 x 85 x 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 frame from a wide range of switch ranges, the unit is suitable for particularly design-oriented facilities.

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

- Supplied loose as additional part, with mode display, push button and setpoint adjustment, sensor NTC 20 kΩ, protection level: IP 20

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

- Supplied loose as additional part, with mode display, push button and setpoint adjustment, sensor NTC 20 kΩ, protection level: IP 20

Control panel without selector switch, for flush mounting, type Thermokon, switch from Busch Jäger future linear range, white

- Supplied loose as additional part, with mode display, push button and setpoint adjustment, sensor NTC 20 kΩ, protection level: IP 20

Further 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, for flush mounting, type Thermokon, switch from Gira E2 range

- Supplied loose as additional part, with mode display and button, sensor NTC 20 kΩ, protection class: IP 20

Further switch programmes on request

Electromotive valve actuator:

As an alternative to the standard installed thermoelectric actuator

- 1 x electromotive actuator for opening and closing valves, supply voltage AC/DC 24 V, maximum power consumption 2.5 VA, signalling of control signal 3-point DC 0...10 V, permissible fluid temperature 1...110 °C

Pressure independent control valve:

As an alternative to the standard installed straight-way small valve

- 1 x pressure-independent control valve, manually pre-assembled with modulating open and close control in combination with an externally adjustable dynamic volume flow controller, with full valve authority, nominal width DN 10, ½ inch, valve casing straight through with male thread on both ends, flat seal, fluid temperature 0...120 °C

Interface for connection to central building management system (BMS) provided by others:

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

To increase comfort, we recommend integration into a central building management system provided by others. FSL-CONTROL III offers the possibility to be connected to a central BMS provided by others using Modbus TCP protocol. Additionally incl. web server for simplified configuration, commissioning and remote monitoring of the device. The central BMS is not included in the supply package from TROX, only the interfaces listed above are available here.

- Modbus TCP interface (Ethernet)

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

To increase comfort, we recommend integration into a central building management system provided by others. FSL-CONTROL III offers the possibility to be connected to a central BMS provided by others using BACnet IP protocol. Additionally incl. web server for simplified configuration, commissioning and remote monitoring of the device. The central BMS is not included in the supply package from TROX, only the interfaces listed above are available here.

- BACnet IP interface (Ethernet)

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

To increase comfort, we recommend integration into a central building management system provided by others. FSL-CONTROL III offers the possibility to be connected to a central BMS provided by others using Modbus RTU protocol. The central BMS is not included in the supply package from TROX, only the interfaces listed above are available here.

- Modbus RTU interface (RS485)

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

To increase comfort, we recommend integration into a central building management system provided by others. FSL-CONTROL III offers the possibility to be connected to a central BMS provided by others using BACnet MS/TP. The central BMS is not included in the supply package from TROX, only the interfaces listed above are available here.

- BACnet MS/TP interface (RS485)

Commissioning of the decentralised ventilation units

Commissioning / parameter setting of decentralised ventilation units without connection to the central building management system

- Visual inspection of the unit connections carried out by others for compliance with the respective installation specifications from the installation and configuration instructions: air connections, heating/cooling connection, electrical connections, integration into the installed unit casing, connections of external participants.
- 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 (actuators, fans, valves, dampers, sensors)
- Checking the project-specific control functions including any special functions such as potential-free switch contacts
- Documentation of the device settings, as well as their use in a service report. The service report must be signed by your company as the customer or your representative
- The invoice is made as a flat rate, derived from the number of devices and distance

Commissioning / parameter setting of decentralised ventilation units with connection to the central building management system

- Visual inspection of the unit connections carried out by others for compliance with the respective installation specifications from the installation and configuration instructions: air connections, heating/cooling connection, electrical connections, integration into the installed unit casing, connections of external participants, central building management system connections
- 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 (actuators, fans, valves, dampers, sensors)
- Checking the project-specific control functions including any special functions such as potential-free switch contacts

- Function test of the communication to the central BMS in cooperation with the ordered controls company:
- Check that the settings that are provided by others comply with the specifications in the installation and configuration instructions
- Input test of the data points sent by the customer
- Output test of the output data points
- Trial operation of the operating conditions switchable by the central BMS
- Documentation of the device settings, as well as their use in a service report. The service report must be signed by your company as the customer or your representative
- The invoice is made as a flat rate, derived from the number of devices and distance

Instruction in operation and maintenance

- One-off 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 maintenance work
- The invoice is a flat rate and is carried out by the responsible sales representative

SCHOOLAIR-V - 0 - 2 / KM / 397 × 2160 × 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

1 Type

SCHOOLAIR-V vertical under sill ventilation unit

2 Variant

No entry required: standard

HE high heat recovery percentage

HV high volume flow rate and rotary heat exchanger for heat recovery

3 Heat exchanger

2 2-pipe

4 4-pipe

EH Electric air heater (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 on the right when viewed from the room (SCHOOLAIR-V-HE)

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

5 Dimensions [mm]

B × H × T

397 × 2160 × 359 (2-pipe)

397 × 2350 × 359 (4-pipe)

600 × 1800 × 359 (2- or 4-pipe, length 1800)

600 × 2000 × 408 (2- or 4-pipe, construction HE)

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

6 Control system

OR without control

C3 with FSL-CONTROL III

7 Control function

MA Master

SL Slave

8 Real-time clock, only master
No entry required: none
T with

9 Interface
No entry required: none
MT with Modbus TCP
MR with Modbus RTU
BI with BACnet IP
BM with BACnet MS/TP

10 Air quality sensor, only master
No entry required: none
C with CO₂ sensor
V with VOC sensor

11 Supply air temperature sensor
Z with

12 Fresh air temperature sensor, only master
No entry required: none
A with

13 Heating valve
Only 2-pipe systems
HV with

14 Lockshield - heating circuit
R with

15 kVS valve - 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

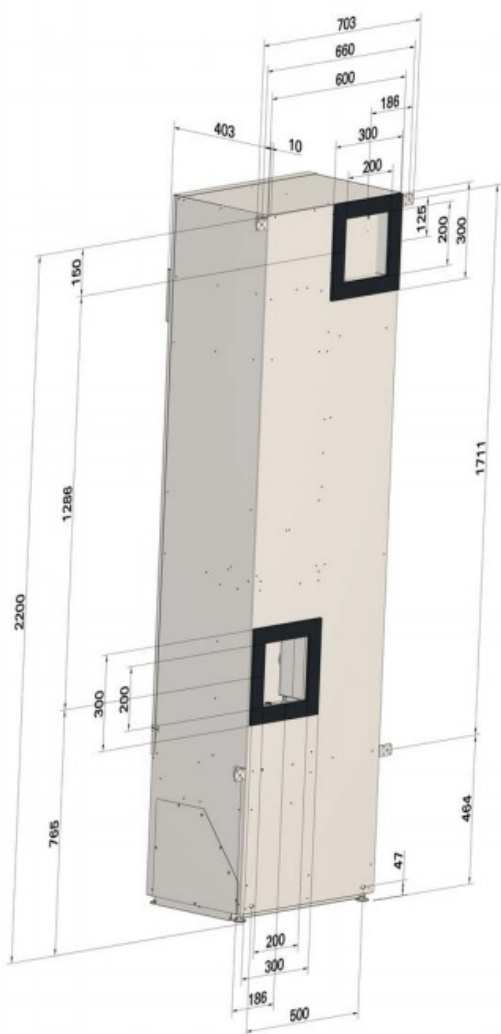
17 Lockshield - cooling circuit
R with

18 kVS valve - 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: SCHOOLAIR-V-HV-EH/KO/605x2200x413/C3-MA-T/C/Z/A

SCHOOLAIR-V Vertical under sill ventilation unit

HV	High volume flow rate and rotary heat recovery unit
EH	With electric air heater
KO	Without condensate drain
C3	With FSL-CONTROL III
MA	Master construction
T	With real time clock
C	With CO ₂ sensor
Z	With supply air temperature sensor
A	With fresh air temperature sensor



Installation and commissioning

- Under installation, floor-standing
- Level adjustment using the 4 levelling feet (+40 mm)
- 4 fixing brackets (supplied separately) for screw-fixing the unit to the wall 2 fixing points below the heat exchanger can be used
- Fresh air and exhaust air openings (2) have to be provided by others; the openings should preferably be sloping towards the outside

- Weather protection for the fresh air and exhaust air openings to be provided by others
- Installation and connections to be performed by others; fixing, connection and sealing material to be provided by others
- The electrical connection is on the right-hand side of the unit when seen from the room
- The under sill trim (by others) must not obstruct installation or deinstallation of the unit and maintenance access on the front of the unit

Installation example



Installation example



Installation example

TROX[®] TECHNIK
The art of handling air

