



SCHOOLAIR-V-1800



TESTED TO VDI 6022

Conforms to VDI 6022



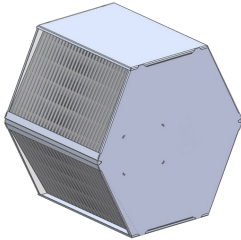
LEVELLING FOOT

Levelling foot



SCHOOLAIR-V, FILTER

Filter change



## KREUZ-GEGENSTROM WÄRMERÜCKGEWINNER

Kreuz-Gegenstrom-  
Wärmerückgewinner

## X-CUBE SCHOOLAIR-V

### SUPPLY AND EXTRACT AIR UNIT WITH HEAT EXCHANGER AND HEAT RECOVERY UNIT, SECONDARY AIR OPTION, FOR VERTICAL INSTALLATION ON AN EXTERNAL WALL, E.G. ADJACENT TO A WINDOW

Ready-to-operate decentralised ventilation unit that provides good comfort levels, used for the ventilation and extract ventilation of rooms such as classrooms in schools

- Acoustically optimised EC fans with low specific fan powers, SFP-1 according to EN 13779
- Recuperative plate heat exchanger (air/air), including bypass damper with electric actuator (open-close)
- Alternatively: Rotary heat exchanger for heat recovery (air/air), including bypass with electric actuator (modulating or open-close)
- Heat exchanger for heating and cooling as 2-pipe or 4-pipe system
- Unit base of approx. 0.24 m<sup>2</sup>
- Easy filter change, no tools required
- Condensate drip tray with or without condensate drain
- Motorised shut-off dampers, normally closed (NC)
- Automatic switching to secondary air mode (based on air quality)

#### Optional equipment and accessories

- Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
- Demand-based fresh air volume, free cooling and night purge, depending on control strategy
- Variable heat recovery
- Powder-coated RAL 9005 (black)

## Application



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### Application

- Ventilation and extract ventilation of rooms with a depth up to approx. 6 m
- 2-pipe or 4-pipe heat exchangers enable good comfort levels
- Inducing displacement flow
- Energy-efficient solution since water is used for heating and cooling
- For new buildings, refurbishment projects and revitalisation projects
- Vertical installation on the façade system or an external wall
- Typical applications include classrooms in schools, playrooms in daycare facilities, meeting rooms and offices with a high air change rate

#### Special characteristics

- Decentralised ventilation unit for high volume flow rates
- Motorised shut-off dampers for fresh air and exhaust air, normally closed (NC) in order to prevent uncontrolled airflows
- Demand-based ventilation and extract ventilation is possible by means of monitoring the room air quality and with dedicated control equipment
- The type of heat recovery unit depends on the unit variant: cross flow plate heat exchanger, cross counter flow plate heat exchanger including bypass damper with electric actuator (open-close or modulating) or rotary heat exchanger
- Heat exchanger as 2-pipe or 4-pipe system, with G $\frac{1}{2}$ " union nuts and flat seals
- Meets the hygiene requirements of VDI 6022
- Filter class: F7 for fresh air, G3 for extract air
- Easy filter change with quick release fasteners, no tools required
- Condensate drip tray with or without condensate drain
- Compact construction, hence particularly suitable for refurbishment projects
- Automatic switching to secondary air mode (only with an air quality sensor) if the room air quality (measured with the integral VOC sensor, for example) is between the previously defined range. The unit always starts in secondary air mode, which is more energy efficient.
- Depending on the unit, an enthalpy heat recovery unit may be used

#### Nominal sizes

- SCHOOLAIR-V 2-pipe system: 397 × 2160 × 359 mm (B × H × T)
- SCHOOLAIR-V 4-pipe system: 397 × 2350 × 359 mm (B × H × T)
- SCHOOLAIR-V-1800 2-pipe system, 4-pipe system: 600 × 1800 × 359 mm (B × H × T)
- SCHOOLAIR-V-HE 2-pipe system, 4-pipe system: 600 × 2000 × 408 mm (B × H × T)
- SCHOOLAIR-V-HV 2-pipe system, 4-pipe system: 600 × 2200 × 408 mm (B × H × T)

## TECHNICAL INFORMATION

Function, Technical Data, Specification Text, Order Code



#### Functional description

Decentralised supply and extract air units for room ventilation and for dissipating cooling loads and heat loads.

An EC centrifugal fan takes in the fresh air which then flows through the motorised shut-off damper and the F7 filter.

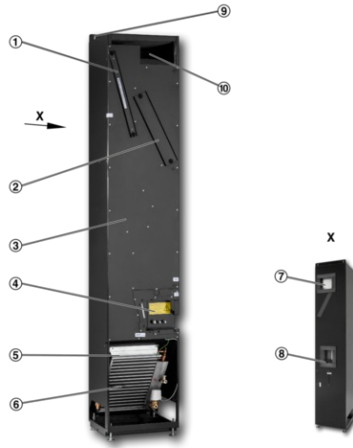
Once the fresh air has passed the fan, it flows through the heat exchanger for heat recovery; it is possible to bypass the heat exchanger in order to pre-heat it, or when it is sensible with regard to energy efficiency.

If necessary, the air is heated or cooled by the heat exchanger before it is discharged to the room as a displacement flow.

The extract air first passes a G3 filter, then flows through the heat exchanger, the extract air fan and the motorised shut-off damper before it is discharged to the outside as exhaust air.

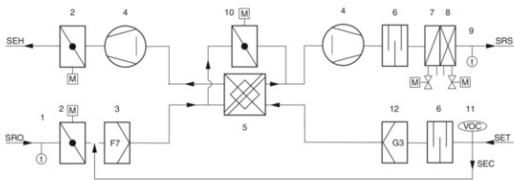
If the room air quality is good, the unit can be operated in secondary mode only.

#### Schematic illustration of SCHOOLAIR-V



- ① Cover of G3 coarse dust filter chamber
- ② Cover of F7 fine dust filter chamber
- ③ Casing
- ④ Cover of control equipment
- ⑤ Heat exchanger
- ⑥ Supply air temperature sensor (optional)
- ⑦ Fresh air opening with fresh air temperature sensor (optional)
- ⑧ Exhaust air opening
- ⑨ Mounting bracket (sliding)
- ⑩ Extract air opening

**Ventilation diagram for SCHOOLAIR-V (optional control equipment)**



- SEH Single room exhaust air
- SRO Single room fresh air
- SRS Single room supply air
- SET Single room extract air
- SEC Secondary air cellular office
- 1 Fresh air temperature sensor (optional)
- 2 Shut-off damper
- 3 Fine dust filter F7
- 4 EC fan
- 5 Heat recovery
- 6 Sound attenuator
- 7 Heating coil
- 8 Cooling coil
- 9 Supply air temperature sensor (optional)
- 10 Bypass damper with actuator
- 11 Air quality sensor (optional)
- 12 G3 coarse dust filter

Width	397 mm (2-pipe or 4-pipe), 600 mm (2-pipe or 4-pipe, 1800, HE and HV)
Height	1800 mm (2-pipe or 4-pipe, 1800 version), 2000 mm (HE version), 2160 mm (2-pipe), 2200 mm (HV version), 2350 mm (4-pipe)
Depth	359 mm (2-pipe or 4-pipe, 1800 version) 408 mm (2-pipe or 4-pipe HE and HV versions)
Fresh air flow rate	Up to 500 m <sup>3</sup> /h
Supply air flow rate	Up to 500 m <sup>3</sup> /h
Cooling capacity	Up to 1685 W
Heating capacity	Up to 6020 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C
Sound power level	31 – 50 dB(A)
Supply voltage	230 V AC ±10 %, 50/60 Hz
Weight	From 80 kg

#### Special features

- Dezentrales Lüftungsgerät mit hohen Volumenströmen
- Motorisierte Absperrklappen für Außen- und Fortluft, stromlos geschlossen, um unkontrollierte Luftströmungen und Verschleppung von Rauch zu verhindern
- Bedarfsabhängige Be- und Entlüftung durch Überwachung der Raumluftqualität mit entsprechender Regelung möglich
- Verwendung zur bedarfsabhängigen Lüftung
- Ganzjährige rekuperative Wärmerückgewinnung mit motorisch betriebem Bypass oder Rotationswärmeübertrager mit Feuchterückgewinnung
- Wärmeübertrager als 2- oder 4-Leiter-System mit Überwürfen G½", flachdichtend
- Entspricht den hygienischen Anforderungen der VDI 6022
- Filterklasse: Außenluft ePM1 60 % und Abluft ISO Coarse<sup>60</sup>
- Werkzeugloser Filterwechsel mit Schnellverschlüssen
- Kondensatwanne mit Kondensatanschluss
- Durch die kompakte Bauweise für Sanierungsprojekte besonders gut geeignet

#### Construction features

- Pulverbeschichtet RAL 9005, schwarz

#### Technical data

- Breite: 397 mm (2- bzw. 4-Leiter), 600 mm (2- bzw. 4-Leiter, 1800, HE und HV)
- Höhe: 1800 mm (2- bzw. 4-Leiter, 1800-Version), 2000 mm (HE-Version), 2160 mm (2-Leiter), 2200 mm (HV-Version), 2350 mm (4-Leiter)
- Tiefe: 359 mm (2- bzw. 4-Leiter, 1800-Version) 408 mm (2- bzw. 4-Leiter HE- und HV-Version)
- Außenluftvolumenstrom: Bis 500 m<sup>3</sup> /h
- Zuluftvolumenstrom: Bis 500 m<sup>3</sup> /h
- Kühlleistung: Bis 1685 W
- Heizleistung: Bis 6020 W
- Maximaler Betriebsdruck: 6 bar
- Maximale Betriebstemperatur: 75 °C
- Schallleistungspegel: 31 – 50 dB(A)
- Versorgungsspannung: 230 V AC ±10 %, 50/60 Hz
- Gewicht: Ab 80 kg
- Elektrische Dimensionierung: SCHOOLAIR-V-2L: 136 VA, SCHOOLAIR-V-4L: 117 VA, SCHOOLAIR-V-1800: 141 VA, SCHOOLAIR-V-HE: 208 VA, SCHOOLAIR-V-HV: 495 VA
- Leistungsaufnahme bei Nennluftmenge: SCHOOLAIR-V-2L: 44 W, SCHOOLAIR-V-4L: 45 W, SCHOOLAIR-V-1800: 46 W, SCHOOLAIR-V-HE: 42 W, SCHOOLAIR-V-HV: 147 W

SA-V - 0 - 4 / 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

1 TypeSA-V vertical decentralised ventilation unit X-CUBE/SCHOOLAIR-V 2 VariantNo entry: StandardHE high degree of heat recoveryHV high volume flow rate and rotary heat recovery unit 3 Heat exchanger2 2-pipe4 4-pipeEH Electric heating coil (only with variant HV) 4 ConstructionKO without condensate drainKM 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]Width × height × depth397 × 2160 × 359 (with heat exchanger 2)397 × 2350 × 359 (with heat exchanger 4)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 systemOR without control systemC3 with FSL-CONTROL III 7 Control functionMA MasterSL Slave 8 Real time clockOnly with control function MANo entry: without real time clockT with real time clock 9 InterfaceNo entry: noneMT with Modbus TCPMR with Modbus RTU (only with control function MA)BI with BACnet IPBM with BACnet MS/TP (only with control function MA) 10 Air quality sensorOnly with control function MANo entry: without air quality sensorC with CO<sub>2</sub>-sensorV with VOC sensor 11 Supply air temperature sensorZ with supply air temperature sensor 12 Outdoor air temperature sensorOnly with control function MANo entry: without outdoor air temperature sensorA with outdoor air temperature sensor 13 Heating valve With heat exchanger '2' onlyHV with heating valve 14 Lockshield – heating circuitR with lockshield 15 kVS value – heating valve 0.25 Straight-way valve0.40 Straight-way valve0.63 Straight-way valve1.00 Straight-way valveF0.50 Pressure-independent control valve 16 Cooling valveWith heat exchanger '4' onlyKV with cooling valve 17 Lockshield – cooling circuitR with lockshield 18 kVS value – cooling valve0.25 Straight-way valve0.40 Straight-way valve0.63 Straight-way valve1.00 Straight-way valveF0.50 Pressure-independent control valve

Variants, Produktdetails, Dimentions



SCHOOLAIR-V-1800



Installation and commissioning

- Vertical installation (floor standing) on the façade system or an external wall, e.g. adjacent to a window
- Level adjustment using the 4 levelling feet (+40 mm)
- 1 adjustable mounting bracket to screw-fix the unit to the wall
- Weather protection for the fresh air and exhaust air openings to be provided by others
- The fresh air connection is provided by two ventilation openings in the façade system or external wall (to be provided by others), preferably sloping towards the outside
- Free area of ventilation openings: 0.05 m<sup>2</sup> for each opening
- Installation and connections to be performed by others; fixing, connection and sealing material to be provided by others
- The water flow and return connections are on the right-hand side of the unit when seen from the room
- Vents and drainage by others
- The electrical connection is on the lower left when seen from the room
- The under sill trim must not obstruct installation or deinstallation of the unit or maintenance access on the front of the unit

SCHOOLAIR-V-2350 4L FSL-CONTROL II

