



Active chilled beams

Type DID-E2

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Product overview

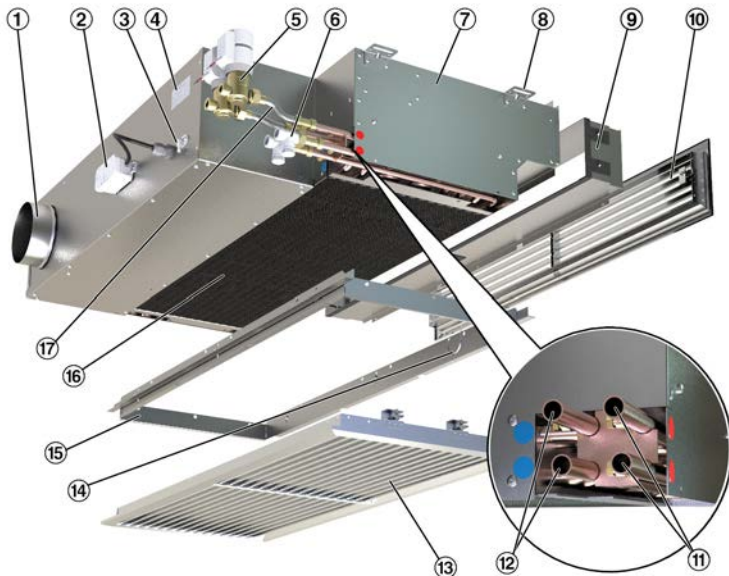


Fig. 1: Schematic illustration DID-E2-VC

- | | | | |
|---|---|----|---|
| 1 | Primary air spigot | 10 | Ventilation grille for supply air (optional) |
| 2 | Terminal box for electrical connection of volume flow controller (only with version VC) | 11 | Hot water circuit |
| 3 | Pressure measurement point (only with version VC) | 12 | Cold water circuit |
| 4 | Rating plate | 13 | Ventilation grille for secondary air (optional) |
| 5 | Water connections, valve with actuator (optional) | 14 | Safety cable for securing the ventilation grille |
| 6 | Water connections, lockshield (optional) | 15 | Installation subframe for ventilation grille for secondary air (optional) |
| 7 | Casing | 16 | Heat exchanger |
| 8 | Hanging brackets (4) | 17 | Pipe connection for direct valve connection (optional) |
| 9 | Extension spigot for supply air (optional) | | |

Important notes

Information on the installation manual

This manual enables operating or service personnel to correctly install the product described below and to use it safely and efficiently.

It is essential that these individuals read and fully understand this manual before starting any work. The basic prerequisite for safe working is to comply with the safety notes and all instructions in this manual.

The local regulations for health and safety at work and general safety regulations also apply.

Qualified staff

Specialist personnel

Specialist personnel are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to carry out their assigned duties, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

Limitation of liability

The information in this manual has been compiled with reference to the applicable standards and guidelines, the state of the art, and our expertise and experience of many years.

The manufacturer does not accept any liability for damages resulting from:

- Non-compliance with this manual
- Incorrect use
- Operation or handling by untrained individuals
- Unauthorised modifications

The actual scope of delivery may differ from the information in this manual for special constructions, additional order options or as a result of recent technical changes.

Personal protective equipment

Personal protective equipment must be worn for any work in order to reduce health or safety hazards to the minimum.

The appropriate protective equipment for a job must be worn for as long as the job takes.

Industrial safety helmet



Industrial safety helmets protect the head from falling objects, suspended loads, and the effects of striking the head against stationary objects.

Protective gloves



Protective gloves protect hands from friction, abrasions, punctures, deep cuts, and direct contact with hot surfaces.

Safety shoes



Safety shoes protect the feet against crushing, falling parts, and slipping on slippery ground.

Correct use

Active chilled beams provide centrally conditioned primary air (fresh air) to the room. Heat exchangers are used for additional cooling and/or heating.

Incorrect use**WARNING!****Danger due to incorrect use!**

Incorrect use of the unit can lead to dangerous situations.

Never use the unit:

- in areas with potentially explosive atmospheres
- in humid rooms
- in rooms with aggressive or dust-laden air

Technical data

Description	Value
Primary air volume flow rate	8 – 57 l/s, 29 – 205 m³/h
Output, cooling	Up to 1600 W
Heating capacity	Up to 1000 W
Max. operating pressure, water side	10 bar (6 bar in combination with connection hoses)
Max. operating temperature	75 °C (55 °C when using flexible connecting hoses)
Minimum operating temperature	6 °C

**NOTICE!****Water damage to property caused by condensate!**

An undershooting of the dew point temperature causes water damage to the device or building due to condensate.

The chilled water flow temperature must be adjusted so that an undershooting of the dew point is excluded.

Dimensions and weight

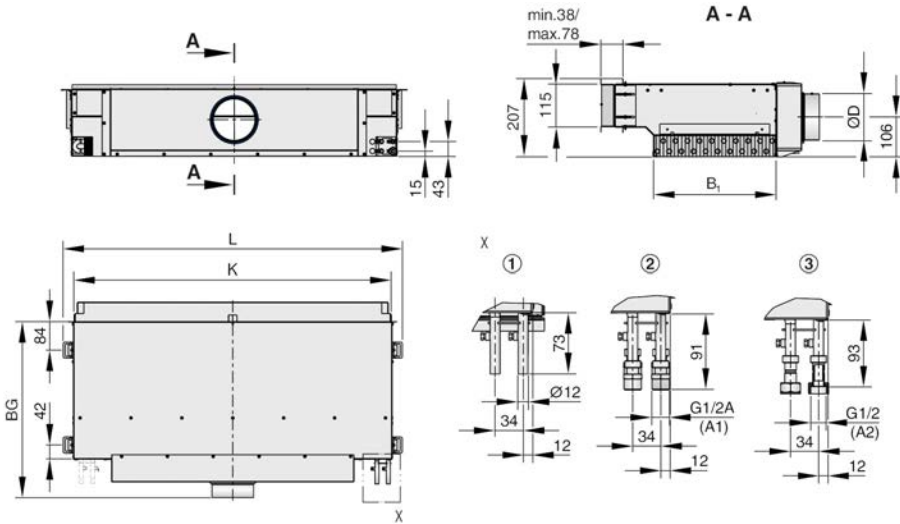


Fig. 2: Dimension drawing DID-E2 with supply air spigot (-Z) and without volume flow controller, labelled DID-E2-4

- 1 Ø12 mm pipe, plain tails
- 2 G1/2" external thread and flat seal
- 3 G1/2" union nut and flat seal

Weights (4L, 123, R+L) [kg]

Nominal length (LN)	1000 x 320	1000 x 512	1125 x 320	1125 x 512	1250 x 320	1250 x 512
DID-E2	15.5	20.5	17.0	23.0	19.0	25.0
Supply air spigot Z	1.7	1.7	1.9	1.9	2.1	2.1
Installation subframe ERS	1.4	1.5	1.6	1.7	1.8	1.9
Contained water WÜ	1.5	2.5	1.8	3.0	2.1	3.5

Dimensions [mm]

LN	L	K
1000	1000	940
1125	1125	1065
1250	1250	1190

Dimensions [mm]

BG	Width of heat exchanger B ₁
519	320
711	512

Dimensions [mm]

ØD
123
158

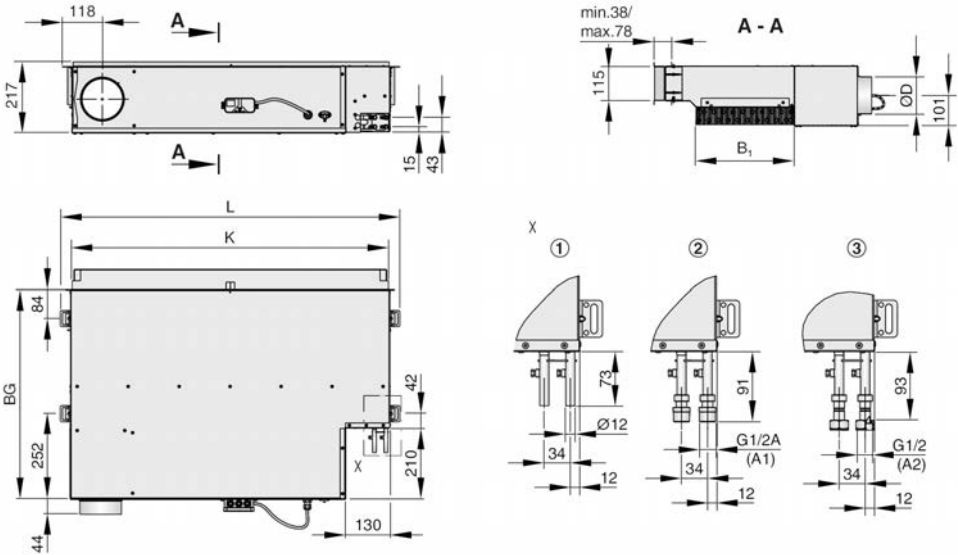


Fig. 3: Dimension drawing DID-E2 with supply air spigot (-Z) and with volume flow controller (-VC), DID-E2-4 shown

- 1 Ø12 mm pipe, plain tails
- 2 G½" external thread and flat seal
- 3 G½" union nut and flat seal

Weights (4L, 123, R+L) [kg]

Nominal length (LN)	1000 x 320	1000 x 512	1125 x 320	1125 x 512	1250 x 320	1250 x 512
DID-E2-*-VC	21.5	26.5	24.0	29.5	26.0	32.0
Supply air spigot Z	1.7	1.7	1.9	1.9	2.1	2.1
Installation subframe ERS	1.4	1.5	1.6	1.7	1.8	1.9
Contained water WÜ	1.5	2.5	1.8	3.0	2.1	3.5

Dimensions [mm]

LN	L	K
1000	1000	940
1125	1125	1065
1250	1250	1190

Dimensions [mm]

ØD
123
158

Dimensions [mm]

BG	Width of heat exchanger B ₁
616	320
808	512

Transport and storage

Transport

⚠ CAUTION!

Danger of injury from sharp edges, sharp corners and thin sheet metal parts!

Sharp edges, sharp corners and thin sheet metal parts may cause cuts or grazes.

- Be careful when carrying out any work.
- Wear protective gloves, safety shoes and a hard hat.

! NOTICE!

Carry the unit in pairs in order to prevent any damage.

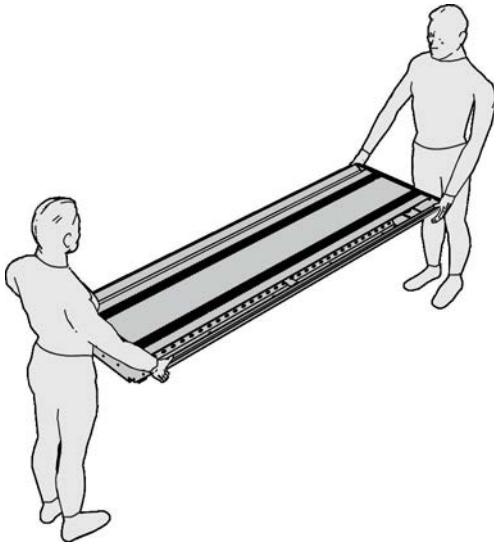


Fig. 4: Carrying the unit in pairs

Use only lifting and transport gear designed for the required load. Always secure the load against tipping and falling.

Upon delivery, carefully remove the packaging and check the unit for transport damage and completeness.

Storage

Please note:

- Store the unit only in its original packaging
- Protect the unit from the effects of weather
- Protect the unit from humidity, dust and contamination
- Storage temperature: -10 to 50 °C
- Relative humidity: 95 % max., non-condensing

Fasten the device

Personnel:

- Specialist personnel

Protective equipment:

- Industrial safety helmet
- Safety shoes
- Protective gloves

Assemble the device before attaching the plaster-board bulkhead!

Only work in pairs; preferably use a lift.



DANGER!

Danger of death from the fall of a suspended unit!

- Only use fixing materials designed for the required load.
- Use all hanging brackets supplied.
- Stand clear of suspended loads, unless properly secured.
- Check secure fixing after installation.

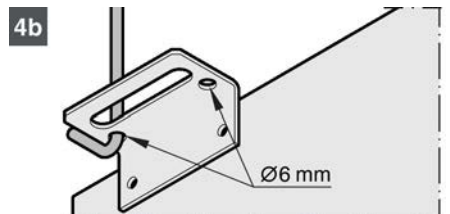
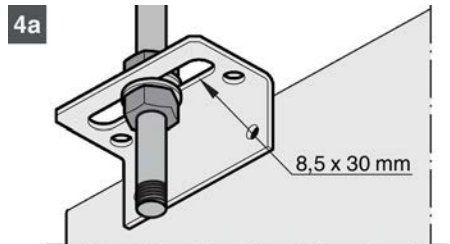
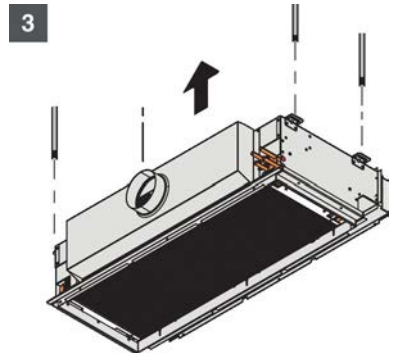
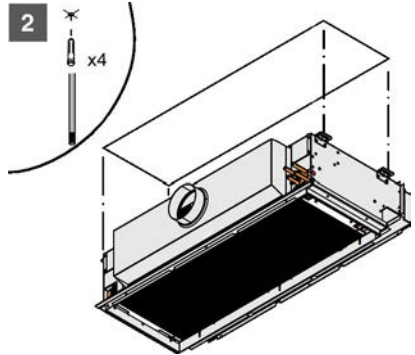
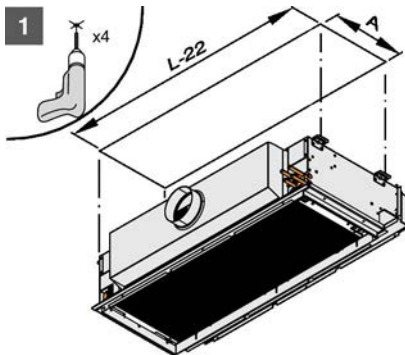


Fig. 5: Dimensions 4 / 5

1. ▶	Width of heat exchanger B ₁	A
	320	280
	512	427

Installing the plasterboard bulkhead

The DID-E2 active chilled beams must be clad with a plasterboard bulkhead provided by others after attachment to the ceiling. When doing so, the following points must be observed:

- The plasterboard bulkhead and material are provided by others.
- The plasterboard bulkhead must be self-supporting; the device may not bear any static loads of the plasterboard bulkhead.
- Install the plasterboard bulkhead so that the air distribution of the device is not affected.
- Remove extension spigot for supply air (optionally available)



Hygiene VDI6022

If there is a connection between the secondary air and the plasterboard bulkhead (e.g. the VDI6022 must be observed, e.g. provide a cleaning option for the plasterboard bulkhead and for the heat exchanger of the ventilation device.

We therefore recommend direct secondary air intake through the ventilation grille into the ventilation device .

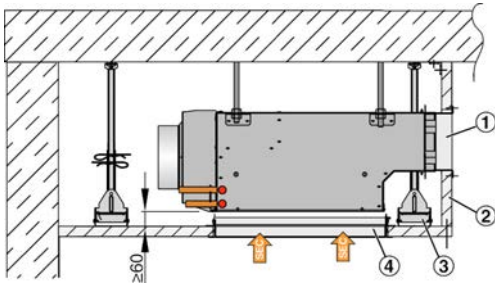


Fig. 6: DID-E2 installation example without grille

- 1 Extension spigot for supply air (optional)
- 2 Plasterboard bulkhead (provided by others)
- 3 Suspension (provided by others)
- 4 Installation subframe for secondary air grille (optional)

Mounting installation subframe for concealed screw fixing from supplied parts kit (optional)

- Folding of the brackets (5) provided along the perforation by 90°, so that narrow bends point outwards.
- Join the installation subframe with a plug connection so that insertion tabs hook in.
- Create an assembly opening in accordance with nominal size of the secondary air grille or pre-assembled installation subframe.
- The installation subframe should be assembled under the device (area of the heat exchanger) or at a distance from the device. The VDI 6022 must be observed here, e.g. provide cleaning option for plasterboard bulkhead.
- Fasten by clamping to the plasterboard bulkhead (clamping range 9-30 mm)
- Place one L-bracket (4) per long side above the ceiling in the opening
- Push the installation subframe from below through the opening and place the bend underneath the ceiling, at the same time press the L-bracket ((4) above) against the installation subframe (5) and fix it with screws (2). Assemble opposite L-brackets in the same way.
- Before installing the grille, install 2 diagonally offset safety cables (3) with securing sheets (1) on the installation subframe and grille.

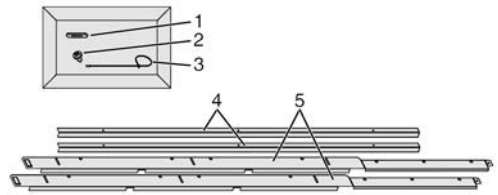


Fig. 7: Installation subframe individual parts

- 1 Securing sheet
- 2 Screw
- 3 Safety cable
- 4 L-bracket
- 5 Installation subframe

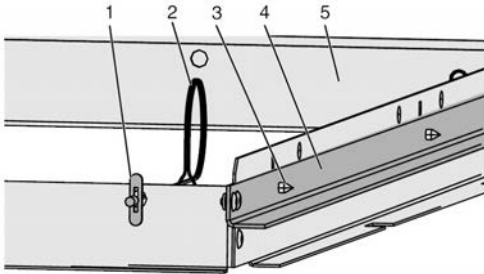


Fig. 8: Installation subframe mounted

- 1 Securing sheet
- 2 Safety cable
- 3 Screw
- 4 L-bracket
- 5 Installation subframe

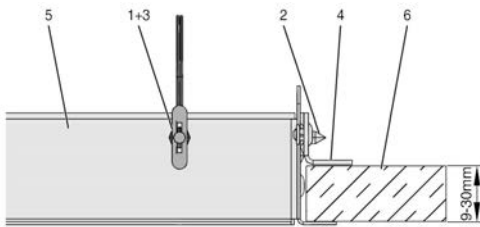


Fig. 9: Installation subframe clamping area

- 1 Securing sheet
- 2 Screw
- 3 Safety cable
- 4 L-bracket
- 5 Installation subframe
- 6 Plasterboard bulkhead

⚠ CAUTION!

Risk of injury from a falling secondary air grille

If the secondary air grille is not secured, there is a risk of injury from the grille falling.

Safety cables are provided on the optional installation subframe for securing the grille. When adjusting the grille, attach the safety cables to the grille.

If an installation subframe is not being used, the grille must be secured on site against falling.

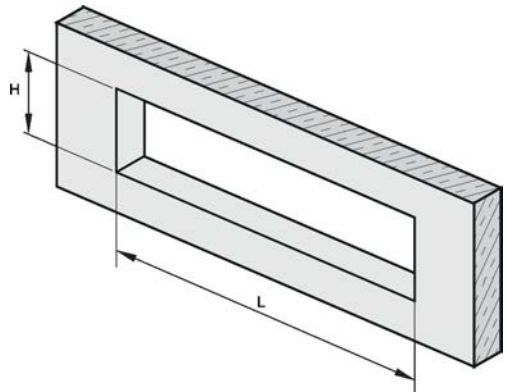


Fig. 10: Installation opening for ventilation grille and ventilation grille

Installation opening with installation subframe

L = Grille length to be ordered

H = Grille height to be ordered

Installation opening without installation subframe

L = Grille length to be ordered - L= 15 mm

H = Grille height to be ordered - H= 15 mm

Assembly of extension spigot for supply air (optional)

- Remove spigot from the device (keep screws)
- Create an assembly opening in accordance with the nominal size of the supply air grille / make extension spigot.
- Take into account the mounting range of the supply air sliding spigot. Range min. 38 mm / max. 78 mm from edge of the unit (supply air outlet of the unit) to room-side mounting opening.
- Push in the spigot from the outside through the plasterboard bulkhead into the device, and attach it on the inside to the device with screws (6x).

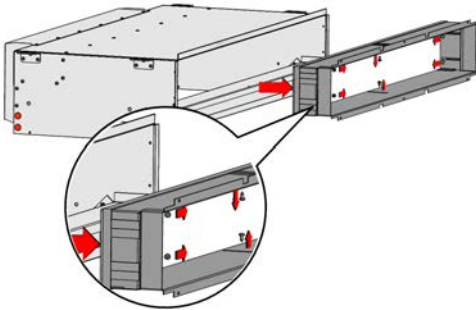


Fig. 11: Disassembly of installation subframe

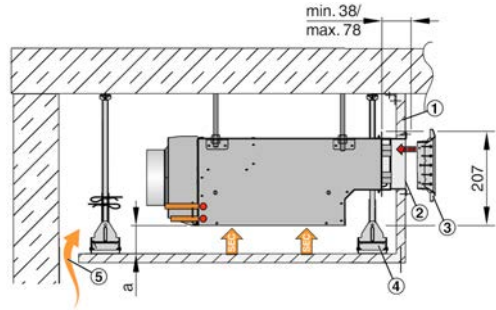


Fig. 12: DID-E2 plasterboard bulkhead – air intake through open shadow gaps

- a Minimum distance 50 mm, for distances between 50 and 150 mm, a reduction in performance of approx. 10% is expected, recommended distance ≥ 150 mm.
- 1 Plasterboard bulkhead (provided by others)
- 2 Extension spigot for supply air
- 3 Ventilation grille for supply air (optional)
- 4 Suspension (provided by others)
- 5 Air intake through open shadow gaps

Connecting heat exchanger

Personnel:

- Specialist personnel

Protective equipment:

- Industrial safety helmet
- Safety shoes
- Protective gloves

Heat exchanger variants

- **2-pipe system**
 - 2 water connections for connection to the hot or cold water circuit
 - Operating mode: either cooling or heating
 - A changeover valve allows for changing over between heating and cooling in changeover mode.
- **4-pipe system**
 - 4 water connections for connection to the hot and cold water circuit
 - 2 operating modes: cooling and heating

Marking of the water connections

- (blue) - Cold water circuit
- (red) - Hot water circuit

Water flow and return flow can be selected (in the respective circuit)

Make sure that the water temperature does not fall below the dew point.

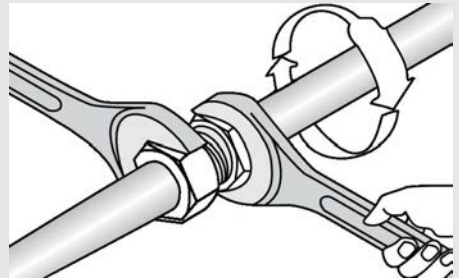
Pipe connection on the unit	SW	Type of connection
Copper tubes 12 × 1 mm	–	Soldered (rigid) Flexible hoses
G 1/2" external thread and flat seal	22	Screw connection (rigid) Flexible hoses
G 1/2" union nut and flat seal	24	Screw connection (rigid) Flexible hoses

We recommend connecting with flexible hoses (accessories)

Screw connection (flexible hoses or screw connection)

- Ensure that the surfaces are clean
- Insert seal and tighten screw connection by hand.

There is a risk of damage to the heat exchanger if it is not installed correctly!



Always use a suitable tool to counter the tightening force in order to prevent any damage.

Soldered joint

Clean the pipe ends and make a proficient solder joint.

Filling the heat exchanger

! NOTICE!

Subzero temperatures will damage the heat exchanger!

Only fill the heat exchanger if there is no danger of freezing.

Fill the heat exchanger and vent it. To fill the system, use clean tap water (pH value 6.5 to 9) or a water glycol mixture (max. 30% glycol).

Check the system for leaks immediately after installation and then at regular intervals.

Connecting the ductwork

DID-E2 active chilled beams are fitted with a primary air spigot.

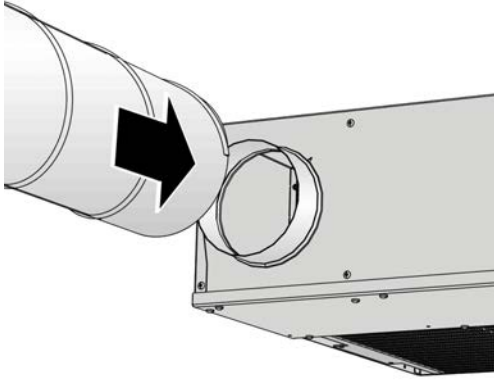


Fig. 13: DID-E2 duct connection

Spigots are suitable for circular ducts to EN 1506 or EN 13180.

Electrical connection

For ventilation devices with volume flow controller (VC), the electrical connection must be made once assembly is complete. Wiring is done in the terminal box ↪ Fig. 1/2.

- 24 V supply voltage only via safety transformer.

Terminal connections

no.	Description	Wire colour	Function
1	⊥ / -	Black	24 V AC/DC supply voltage
2	~ / +	Red	
3	Y	White	Control signal / force / sensor
5	U	orange	-Actual value signal -MP bus connection

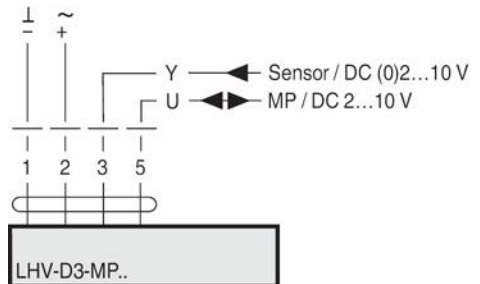


Fig. 14: Circuit diagram for volume flow controller

Commissioning

Before you start commissioning:

- Check active chilled beams for correct position
- Remove protective films, if any
- Ensure that all connections are correct
- Ensure that all active chilled beams are clean and free from residues and foreign matter
- Ensure that the water system including the heat exchanger has been filled and vented

Commissioning

Carry out the following steps for commissioning:

- Switch on the ventilation system.
- Switch on the supply voltage (for devices with volume flow controller).
- Check the cooling and/or heating operating modes (open/close valves).
- Set the airflow direction on the ventilation grille.

Cleaning

Cleaning the casing

The casing may be cleaned with a damp cloth. Sticky dirt or contamination may be removed with a commercial, non-aggressive cleaning agent. Cleaning agents that contain chlorine must not be used.

Cleaning the heat exchanger

Personnel:

- Specialist personnel

Protective equipment:

- Industrial safety helmet
- Safety shoes
- Protective gloves



Hot surface!

Danger of burn or scald injuries when working on the hot water system.

Before working on the unit, shut down the system, depressurise it and let it cool down.



Danger of cutting your fingers on the fins of the heat exchanger

The heat exchanger has thin fins, which are very sharp; when you touch them, there is a danger of your cutting your fingers.

To avoid injuries, proceed carefully and wear protective gloves when you work on the heat exchanger.

1. ▶ To clean the heat exchanger, depending on the installation situation, disassemble the secondary air grille or open the cleaning opening.
2. ▶ Carefully clean the heat exchanger with an industrial vacuum cleaner. Be careful to not damage the fins. We recommend using a soft brush with the suction inlet.
3. ▶ After cleaning, screw-fix the grille and close the cleaning opening.

**CAUTION!****Risk of injury from a falling secondary air grille**

If the secondary air grille is not secured, there is a risk of injury from the grille falling.

Safety cables are provided on the optional installation subframe for securing the grille. When adjusting the grille, attach the safety cables to the grille.

If an installation subframe is not being used, the grille must be secured on site against falling.