



Superior XL

SUSTAINABLE AIR CURTAIN FOR TALL DOORS

Create the optimum indoor climate and save energy

AIR CURTAINS FOR DOORS AND ENTRANCES

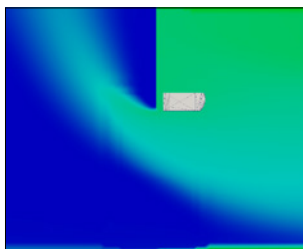
An open door is an inviting entrance for customers and visitors and retailers know this better than anyone. However, an open door also lets in dust, moisture, smells, wind and insects, and you end up with an unnecessarily high energy bill on the door mat. You can solve this problem easily by installing an NHS air curtain. Do you have a specific question about an air curtain in your building? Would you like to talk to an experienced specialist? Please contact us. We will deal with your questions professionally and quickly.

What is an air curtain?

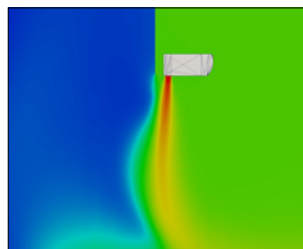
An air curtain is a controlled airflow that reduces the natural air exchange between rooms. An air curtain is situated in a door opening or entrance and keeps rooms with different climates separated when the door is open. For example a cold store of a company or the indoor and outdoor climate of a supermarket, warehouse, bank, hospital or office building.

Why have an air curtain?

The most important objective of an air curtain is to reduce air exchange to create a controlled, healthy and comfortable climate. In addition, you can use a heating or cooling element to heat or cool air locally.



A large amount of heat is often lost near doors without an air curtain.



The airflow of an air curtain works like an invisible door that keeps the climate of two different rooms separate from each other.

How does an air curtain work?

A heated airflow stops the colder air from outside. The airflow also heats the very small amount of cold air that manages to penetrate despite the airflow. This produces a comfortable indoor climate and a thermally neutral climate separation without draught. When it is warmer outside than inside? In those situations it works the other way around - with an unheated or cooled airflow, the air curtain makes sure the warm air stays out.

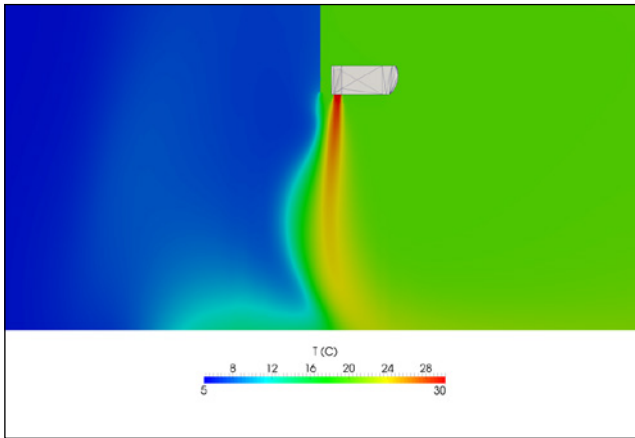
Benefits:

- Minimum energy loss and consumption
- 70% to 80% energy savings compared to open door
- Optimum thermal comfort for a pleasant climate for shopping or other purposes
- Improved air quality for visitors and employees
- Healthier environment and less sickness absence because of protection against draught
- Reduced exchange of dust, moisture, smells and fewer insects inside the building
- Warm, refreshing or cooling airflow

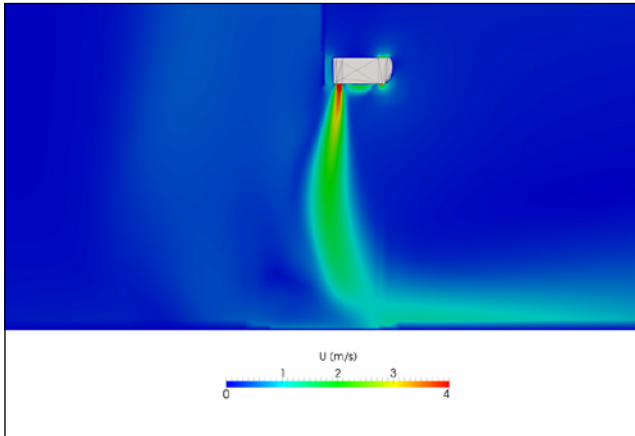
About NHS Air Curtains

NHS Air Curtains produces and supplies a range of low-maintenance and energy-saving air curtains. With customised work from our own production workshop and a wide range of standard products, we create a specific solution for any situation. You can count on short lead times and rapid delivery, often immediately from stock. If you need to talk to us, your dedicated contact person is almost always available. We're pleased to assist!

An image of an air curtain



A thermographic image proves the clear separation of warm and cold air.



A thermographic image shows the progress of the air speed in metres per second.

Why is the right discharge temperature important?

The right discharge temperature produces an efficient and energy-saving climate separation. If the discharge temperature is too high ($>40\text{ }^{\circ}\text{C}$), the airflow struggles to reach floor level and there is still air exchange. Furthermore, an airflow that is too warm also heats up the entrance too much and that disturbs the indoor climate and wastes energy. A discharge temperature that is too low ($<28\text{ }^{\circ}\text{C}$) also disrupts effective operation. Together with an insufficiently strong airflow, it produces a temperature at floor level that is too low, causing a draught.

Extra tips:

- Prevent a discharge temperature that is too high with a discharge-air temperature control. NHS Air Curtains can supply it as an accessory or incorporate it into the air curtain.
- An air curtain works in the best possible way when the effective part of an air curtain, the airflow, has at least the width of the door opening and can be felt right down to floor level. If the airflow does not reach the floor, cold air can enter, whilst warm air escapes outside and that creates a draught.
- Install air curtains flush with the door opening to prevent air exchange and energy loss through the sides.
- Install air curtains exactly above the door opening.
The shorter the distance to the floor, the less energy required.
- Be sure that the airflow is not interrupted by obstacles, such as an automatic door or a roller door.
- Adjust the discharge angle of the air curtain with the settings of the discharge fin. For example when you need to heat during winter, you tilt the discharge fin slightly outwards. When you cool in summer, you tilt it slightly inwards.
- For optimum low-energy consumption, opt for a semi-automatic or fully automatic control. This uses a few parameters to adjust the operation of an air curtain to changing conditions. For example, consider adjusting the size of the airflow during cold weather or putting the air curtain on stand-by or switching it off when the door is closed.



Superior XL

SUSTAINABLE AIR CURTAIN FOR TALL DOORS

You would prefer to have the doors of your shop or workshop wide open, but without losing expensive energy. The solution is a Superior XL NHS air curtain that is intended specifically for tall doors. It means you create a separation between the indoor and outdoor temperature, to ensure your doors are always invitingly open. Your employees and visitors benefit from a healthy and comfortable climate.

Superior XL air curtains

The air curtains of our Superior XL series are extremely suitable for retail or use in an industrial environment because of their enormous capacity and low-maintenance components. We supply air curtains with two different capacities for door heights of up to four metres. Ideal for tall shop doors, industrial doors, overhead doors or sliding doors. The four length sizes are easy to combine, so you can create an effective air curtain for any door width.

Horizontal or vertical installation

Horizontal and vertical installation are possible. Horizontal air curtains are easy to mount to the wall with M10 stud fixings or with brackets that can be ordered separately. For extremely tall doors we recommend vertical installation. Vertical air curtains are supplied with consoles for fixing to the floor or for mounting on top of each other. Due to the risk of tilting, it is important to anchor the top air curtain to the wall or the ceiling.

High quality and low maintenance

All the components of the air curtain, including the front panel, the heating battery and the fans, comply with the highest quality standards and produce an optimum performance. Weekly or monthly time-intensive maintenance is not required. When you purchase a Superior XL air curtain, you receive a standard five-year guarantee.

Ultra-low energy consumption, long lifespan and silent fans

The fans of the Superior XL air curtains are equipped with advanced EC technology. This technology has three important benefits - the air curtains are silent, have an ultra-low energy consumption and the fans have a long lifespan.

Ultramodern discharge system

The discharge opening is equipped with a special pressure chamber jet system that produces up to 30% energy savings compared to conventional fin discharge systems. This modern system also produces an even, stable airflow. The discharge opening has continuously variable settings from 30 degrees inwards to 30 degrees outwards.

Attractive design

The air intake of the Superior XL air curtain is hidden behind a beautifully designed front panel that - if fitted the other way around - takes in air from below. This makes it possible to mount the air curtain flush against the ceiling. Besides the Superior XL series for fitting in plain view, we also have models that can be recessed into a suspended ceiling. Take a look at all our models on page 6 of this brochure. You determine the colour of your air curtain. The most common colour is traffic white (RAL9016), but we can supply the product in any RAL colour of your choice upon request.



Heating methods

Hot water

Air curtains that are heated by hot water have a heat exchanger that is connected to the central-heating network. We equip air curtains with a heating battery as standard, which is suitable for hot water of 60/40 °C (W). Air curtains are also available with a heating battery for low temperatures of 45/35 °C (LW).

For optimum energy savings it is always important to adjust your air curtains properly with your central-heating boiler, city or district heating, heat pump or other sources of sustainable energy. The hot-water air curtains are secured against loosening by metal plates around the connections.

Electric

Our electric air curtains (E) automatically adjust the control of heat and ventilation. It goes without saying that these air curtains have a safety circuit.

Hybrid

Air curtains with hybrid heating (H) are suitable when the temperature of the hot water is low compared to the required heating capacity. These air curtains have an electric heating element that automatically heats up the airflow to the required discharge temperature.

Ambient

Our air curtains that screen off cold areas such as cold stores do not have a heating battery (A).

Good to know!

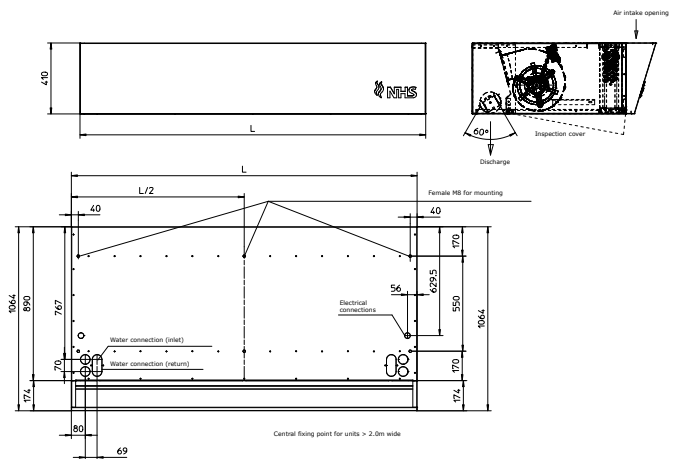
- An air curtain with a heat pump is the most energy-efficient heating method. It is approximately 73% more efficient than an air curtain with electric heating.
- The energy costs of an electric air curtain are around 53% higher than those of an air curtain that works on the basis of hot water from a central-heating boiler.



Models

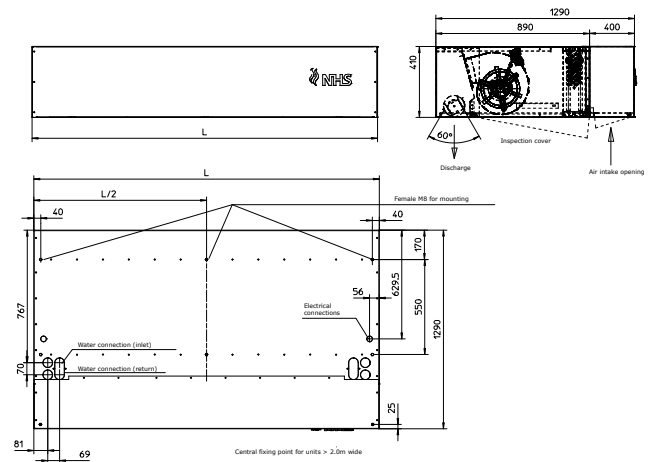
Superior XL

Wall or ceiling mounted in plain view with air intake top and bottom.



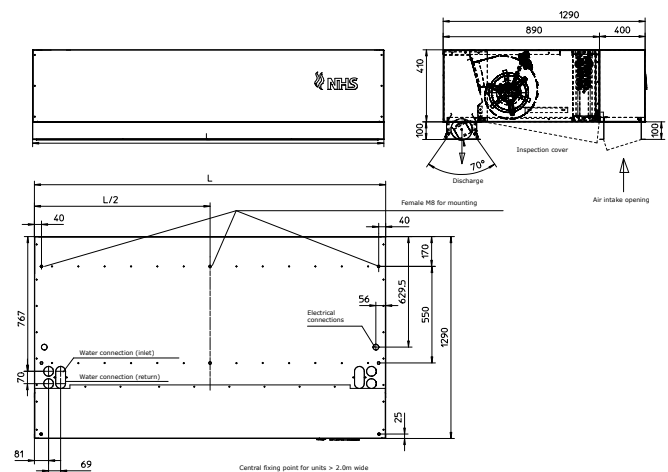
Superior XL GVP

For mounting in plain sight or for recessing into a suspended ceiling (GVP), with visible bottom and air intake from below.



Superior XL BVP

Built-in above the suspended ceiling (BVP), with just the air intake and discharge opening visible and with air intake from below.



Control

Manual operation

With manual operation you select the speed of the airflow. However, there is a chance that your air curtain does not operate properly in line with the conditions at that time. The air that you have heated or cooled may still flow away through doors and entrances.

Standard functions:

- Five settings for the airflow speed.
- Three settings for the heating capacity of an electric air curtain.
- Summer-winter function (230 V) with control by a magnetic valve or pump.
- You can use one control to control several air curtains. Convenient for large and wide entrances where several air curtains are required.
- Partial or full integration into a building-management system or retail scheme. For example, switch the air curtain on or off through the building-management system or operate it with a 0-10 V signal.



Automatic or semi-automatic

Do you want to be sure of the correct settings? You prefer not to worry about your air curtain?

NHS Air Curtains has developed an innovative control - automatic or semi-automatic depending on the accessories you choose. It is a complete control system, suitable for all types of air curtains - from hot water and electric to hybrid and unheated. Depending on your choice of air curtain and accessories, different additional functions are available.



Additional functions (accessories):

- To be used with an outside temperature sensor. On the basis of the outside temperature, the control automatically determines the correct setting. An air curtain is only used when it is really necessary.
- To be connected to a door contact or sensor, which ensures that an air curtain only works when the door is opened or when movement is detected. After an adjustable period of time, it is switched off automatically.
- To be used with an integrated or external room thermostat. A water-heated air curtain requires a magnetic valve for this purpose. With automatic control of the heat supply and the room temperature, ensuring the room temperature remains constant.
- Control with fully integrated control of heat pump and air curtain, in function of the chosen heat pump. This can be in our control or in the control of the heat-pump manufacturer.
- Frost-protection thermostat in case of partial outside air intake to prevent the heating battery from freezing.
- With a timer, the air curtain switches on or off automatically.



Technical data

Hot water 80/60 and 60/40 °C (W)

Type	Nominal airflow	Effective airflow	Heating capacity 80/60 °C	Water-side resistance 80/60 °C	Amount of water	Heating capacity 60/40 °C	Water-side resistance 60/40 °C	Amount of water	Discharge temperature	Water connections	Electrical connections fans (rated power)			Weight
	m³/h	m³/h	kW ¹	kPa	m³/h	kW	kPa	m³/h	°C ²	"	Volt	kW	A	kg
maximum recommended fitting height 3,5 m*														
4-100 W	6.450	4.000	23,0	1,9	0,50	20,5	6,1	0,9	35,3	1	230	1,50	6,60	101
4-150 W	6.450	5.400	31,2	2,8	0,60	30,7	7,4	1,3	37,0	1	230	1,50	6,60	122
4-200 W	9.675	8.000	46,7	3,9	0,80	45,5	12,6	2,0	37,0	1 1/4	230	2,25	9,90	160
4-250 W	12.900	10.500	59,5	4,5	1,10	59,9	17,5	2,6	37,0	1 1/4	230	3,00	13,20	227
maximum recommended fitting height 4,0 m*														
5-100 W	6.450	4.900	27,8	2,8	0,60	23,3	7,6	1,0	34,2	1	230	1,50	6,60	114
5-150 W	9.675	7.350	42,0	5,2	0,80	37,5	10,6	1,6	35,2	1	230	2,25	9,90	135
5-200 W	12.900	9.800	56,7	6,0	1,10	51,9	15,9	2,3	35,8	1 1/4	230	3,00	13,20	173
5-250 W	16.125	12.250	70,3	6,5	1,30	66,2	21,0	2,9	36,1	1 1/4	230	3,75	16,50	240

Electrical (E)

Type	Nominal airflow	Effective airflow	Heating capacity electric 400V3~	Max. current consumption 3-phase incl. fans	Discharge temperature	Electrical connections fans (rated power)			Weight
	m³/h	m³/h	kW	A	°C ²	Volt	kW	A	kg
maximum recommended fitting height 3,5 m*									
4-100 E	6.450	4.000	5/10/15	21,7	31,2	230	1,50	6,60	101
4-150 E	6.450	5.400	7.5/15/22.5	32,5	32,4	230	1,50	6,60	122
4-200 E	9.675	8.000	10/20/30	43,3	31,2	230	2,25	9,90	160
4-250 E	12.900	10.500	12/24/36	51,9	30,2	230	3,00	13,20	227
maximum recommended fitting height 4,0 m*									
5-100 E	6.450	4.900	5/10/15	21,7	29,2	230	1,50	6,60	114
5-150 E	9.675	7.350	7.5/15/22.5	32,5	29,2	230	2,25	9,90	135
5-200 E	12.900	9.800	10/20/30	43,3	29,2	230	3,00	13,20	173
5-250 E	16.125	12.250	12/24/36	51,9	28,8	230	3,75	16,50	240

Hybrid (H)

Type	Nominal airflow	Effective airflow	Heating capacity 40/30 °C	Water-side resistance 40/30 °C	Amount of water	Water connec- tions	Heating ca- pacity electric 400V3~	Max. current consumption 3-phase incl. fans	Electrical connections fans (rated power)			Weight
	m³/h	m³/h	kW ²	kPa	m³/h	"	kW	A	Volt	kW	A	kg
maximum recommended fitting height 3,5 m*												
4-100 H	6.450	4.000	9,7	4,2	0,80	1	3/6/9	19,6	230	1,50	6,60	116
4-150 H	6.450	5.400	15,0	7,5	1,30	1	4/8/12	23,9	230	1,50	6,60	142
4-200 H	9.675	8.000	22,3	12,8	1,90	1 1/4	6/12/18	35,9	230	2,25	9,90	185
4-250 H	12.900	10.500	29,4	17,9	2,60	1 1/4	6/12/18	39,2	230	3,00	13,20	257
maximum recommended fitting height 4,0 m*												
5-100 H	6.450	4.900	11,0	5,3	1,00	1	5/10/15	28,2	230	1,50	6,60	129
5-150 H	9.675	7.350	18,3	10,7	1,60	1	7,5/15/22,5	42,3	230	2,25	9,90	155
5-200 H	12.900	9.800	25,5	16,2	2,20	1 1/4	10/20/30	56,5	230	3,00	13,20	195
5-250 H	16.125	12.250	32,6	21,5	2,80	1 1/4	12/24/36	68,4	230	3,75	16,50	270

Ambient (A)

Type	Nominal airflow	Effective airflow	Electrical connections fans (rated power)			Weight
	m³/h	m³/h	Volt	kW	A	kg
maximum recommended fitting height 3,5 m*						
4-100 A	6.450	4.000	230	1,50	6,60	101
4-150 A	6.450	5.400	230	1,50	6,60	122
4-200 A	9.675	8.000	230	2,25	9,90	160
4-250 A	12.900	10.500	230	3,00	13,20	227
maximum recommended fitting height 4,0 m*						
5-100 A	6.450	4.900	230	1,50	6,60	114
5-150 A	9.675	7.350	230	2,25	9,90	135
5-200 A	12.900	9.800	230	3,00	13,20	173
5-250 A	16.125	12.250	230	3,75	16,50	240

* A building with balanced ventilation and a protected location.

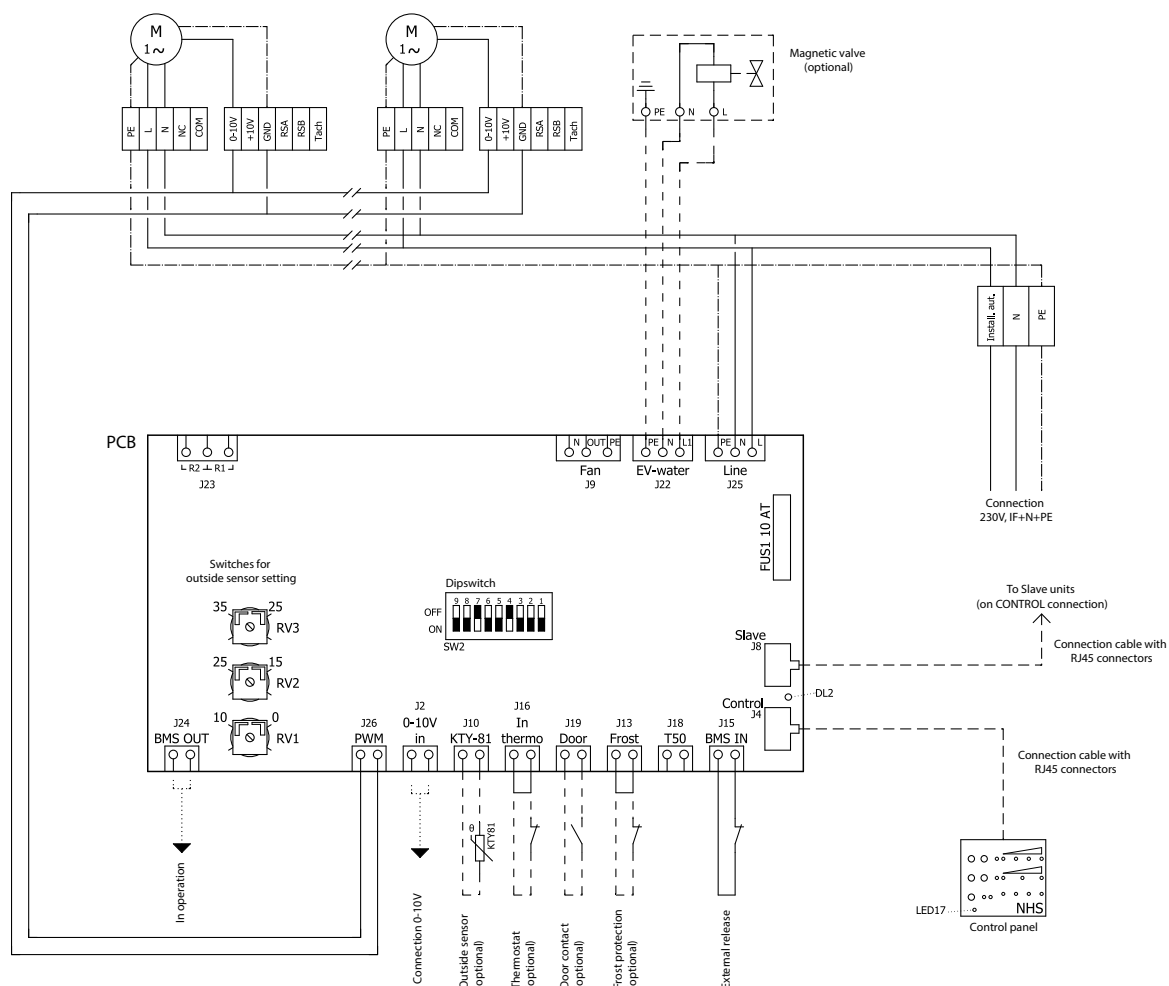
¹ At a discharge temperature of 37 °C and an air intake temperature of 20 °C.

² Air intake temperature of 20 °C.

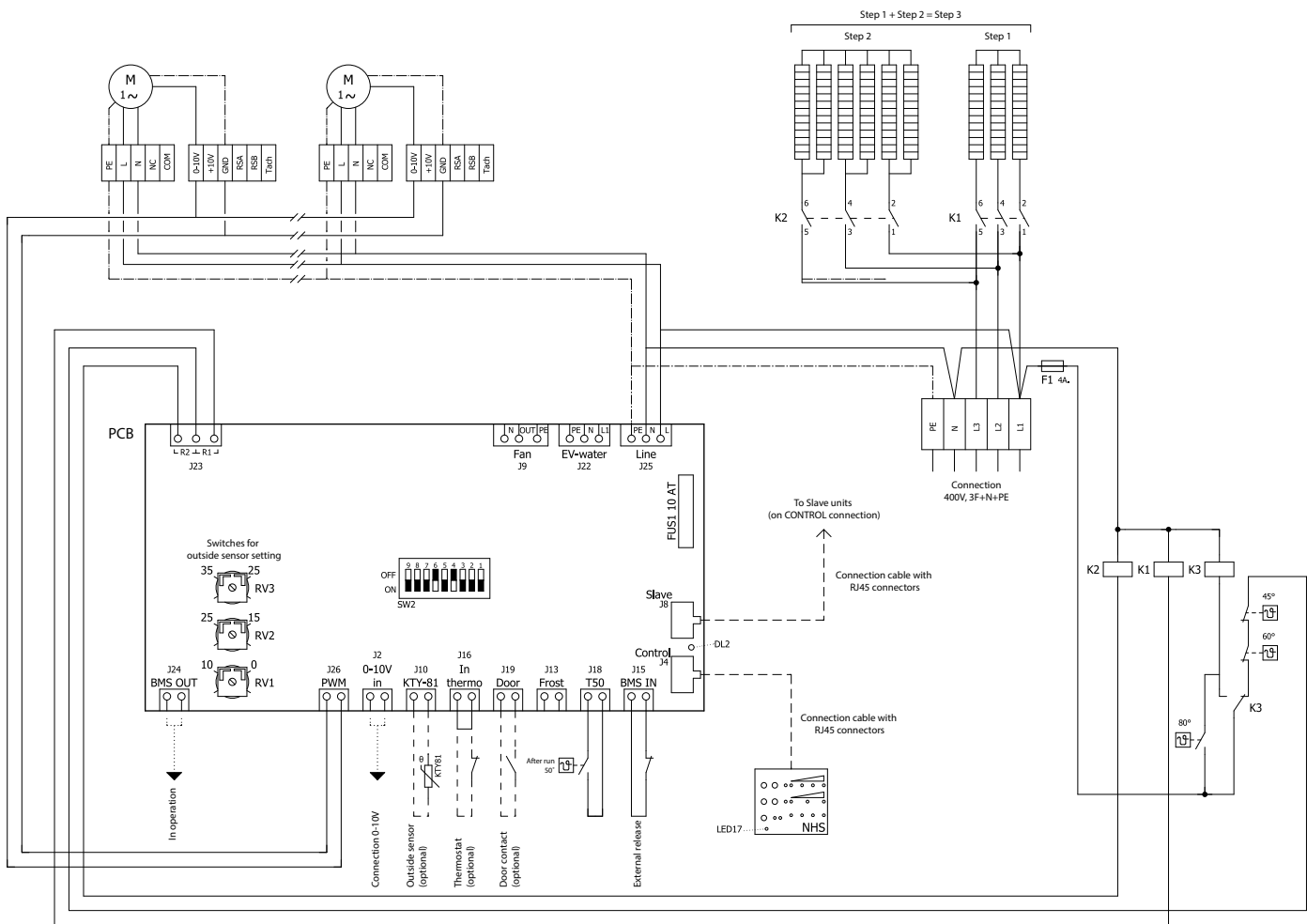
Subject to technical changes.

Wiring diagrams

Warm water and Ambient



Electric and Hybrid



Accessories

Control valves, shut-off valves and magnetic valves



Thermostatic control valve type CITR with TWV DN25/32

Thermostatic control valve (two-way valve) CITR with thermostatic head. To control a constant discharge temperature, included separately. Special control valve for maximum flow. Capillary tube length 2 m, DN 25 kvs 5.1, DN 32 kvs 6.7.



Thermostatic control valve type CITR with DWV DN25/32

Thermostatic control valve (three-way valve) CITR with thermostatic head. To control a constant discharge temperature, included separately. Special control valve for maximum flow. Capillary tube length 2 m, DN 25 kvs 6.27, DN 32 kvs 6.44.



Thermo-electric shut-off valve type MV with TWV DN25/32

230 V, current-free closed, included separately. For the water cut-off via summer-winter switch or to control the water-flow amounts for building-side control. Special control valve for maximum flow. DN 25 kvs 5.1, DN 32 kvs 6.7.

Door contacts



Door contact MDC

Magnetic switches NO & NC. Screw fitting or fixed with double-sided tape. Dimensions 64 x 15 x 13.8 mm. Temperature range: -20 to 65 °C. Housing ABS, white.



Door contact RDC

Protection class IP67, end switch with roller lever. Dimensions 31 x 96 mm. Temperature range: -25 to 70 °C. Housing cube: plastic.

Remote control



Infra-red remote control

Infra-red remote control for use with the control panel. For the remote control of the air volume and the summer-winter function of an air curtain. Only possible for warm-water air curtains.

Thermostats



Outside sensor BS

Sensor range from -55 to 150 °C. Protection class IP65. Housing polyamide, colour white.



Electromechanical room thermostat RT

Protection class IP30, setting range 5 – 30 °C with bimetal, pure white (comparable RAL 9010). Dimensions: 78.3 x 83.4 x 25.5 mm



Frost-protection thermostat VBT, built-in

To protect hot-water heating batteries, with one temperature sensor with a length of 6 metres with a potential-free change-over contact, settings from -10 °C to 12 °C. Protection class IP40.

Cables

VBK05

Protected connection cable 5 m with RJ45 connectors to connect the controller to the PCB or to connect a master and a slave air curtain.



VBK50

Protected connection cable 50 m with RJ45 connectors to connect the controller to the PCB or to connect a master and a slave air curtain.

Mountings



Ceiling mounting PB

Comprising:

- Threaded rod: steel, wire gauge M10, electrogalvanised (1 m).
- Solid vibration attenuation suspension: steel, wire gauge M10, electrogalvanised, attenuation 20 dB.

Four required for units of up to 1.5 m and six for units of up to 2.5 m.



Wall mounting MB

Bracket, length 800 mm, profile 40/60, galvanised.

Two required for units of up to 1.5 m and three for units of up to 2.5 m.



Operating switch

Operating switch WKS-3

3-pin operating switch in surface mounting, included separately. For building-side installation in the supply pipe to the unit.



This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



New Heating Solutions BV

De Dieze 24G, 5684 PT Best, The Netherlands, **T** +31 (0)499 870 027, **E** info@nhs-luchtgordijnen.nl

www.nhs-luchtgordijnen.nl