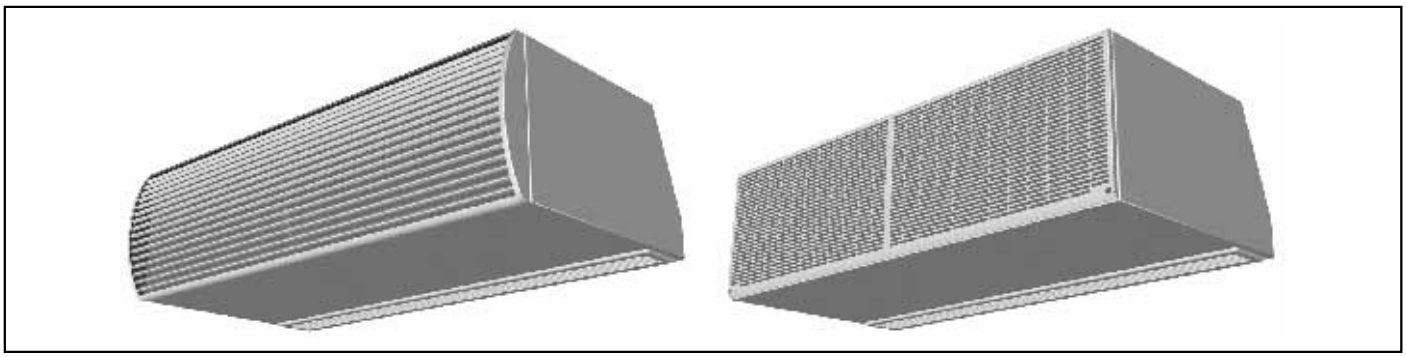
# AIR CURTAINS

## *STANDESSE AIR CURTAINS* ® VCS3



### USE

**STANDESSE VCS3** air curtains serve as a barrier-free partition of two areas with different climatic conditions. The flow of air from above divides the internal clean area from the external environment and prevents loss of heat of cold, markedly restricts draughts in the door opening and prevents dust or insects from entering the protected area. Air curtains can also be used very effectively as a source of heat thus saving you from using other sources. Even in the case of an open door, 85% of the heat output of the air curtain is used for heating of the protected area. **STANDESSE** air curtains are a guarantee of high output as far as screening and heating properties are concerned. These air curtains come into their own in shopping centres, banks, hotels, restaurants, administrative buildings, storerooms and production halls etc. **Proposal for use of an air curtain must always be solved by a designer specialising in air-conditioning and central heating.**

### OPERATING CONDITIONS

The air curtain is intended for operation in an internal and dry environment with an ambient temperature between 0°C and +40°C (regular basic conditions according to ČSN 33 2320) for transfer of air without coarse dust, grease, chemical fumes and other impurities.
The air curtain with a mounted front covering has as a whole, IP 20 electric covering. The air curtain does not require any special maintenance. We recommend a service inspection once every six months, which is to include removal of dust from the filter and removal of dust from the interior of the air curtain. If the surrounding environment is dustier, the filter must be cleaned more regularly.

### DESCRIPTION

**STANDESSE** air curtains offer a wide range of output designs and accessories. The air curtain can be specifically chosen according to customer requirements and conditions of the given application. You can, for example, select the shape of the suction covering, type of hanging, method of operation including the relevant sensors and even choose a specific shade of colour for a supplementary charge. **STANDESSE** air curtains are designed with an emphasis the on quality of all components used, simplicity of mounting and ease of operation. Every air curtain is tested in all operational states before dispatch so that its 100% functioning is ensured. **STANSESSE** air curtains come with a standard **36-month guarantee.**

**SUMMARY OF CHARACTERISTICS**

- **Air curtains are manufactured in four output series, capable of screening openings of up to 10.5 m in height. The air curtain can be 1.0 m, 1.5 m, or 2.0 m in length.**
- **For air heating a water heater can be chosen, electric heater (onephase and threephase) or the design with no heater.**
- **Air curtain regulation allows you to change the air output and output of the electric heater.**
- **A feature of the air curtain is its very quiet running, which is ensured by internal anti-noise isolation.**
- **The exhaust grate allows you to set the direction of air flow (the so-called pre-exhaust).**
- **Easy mounting.**
- **Complex operation of the air curtain allows automatic regulation of air and heating output in connection with the external and internal temperatures, opened doors and time modes (only with DA operation)**
- **It is possible to link up to six Standesse air curtains together in a chain and then use only one controller (only with DM or DA operation).**

**CONSTRUCTION**

The air curtains are manufactured in accordance with the ISO 9001 standard. The casing is manufactured from coated sheet metal, the standard colour being white (RAL9010). On request, other shades can be delivered according to the RAL pattern book. In the upper part of the air curtain there are a total of 4 hanging components with M8 nuts. Ventilators are shouldered to the motors with self-lubricating ball bearings, which guarantees longevity and maintenance-free running. When an electric heater is used, two safety thermostats are set into the air curtain. **An operational one with automatic reset,** which keeps the air temperature at the exhaust at a value lower than or to a maximum of +45°C and an **emergency one with manual reset,** which switches off the whole equipment, if the internal temperature of the air curtain exceeds 90°C. For electric heaters, there is a rustproof impedance heating element. The hot water exchanger made of CU/Al material is intended for a maximum operational temperature of water of +100°C and a maximum corresponding operational pressure of 1,6 MPa (test pressure 3,0 MPa). The air curtain casing with a water exchanger has a pre-prepared well for mounting of a temperature sensor.

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### MAIN PARAMETERS

| Type **** | Max. door height | Volume of air flow [ $m^3.h^{-1}$ ] (revolution level**) | | | Level of acoustic pressure *** [dB(A)] (revolution level**) | | | Power supply to motor 230V/50Hz | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | | DA,DM (3) | DA,DM (2) | DA,DM (1) | DA,DM (3) | DA,DM (2) | DA,DM (1) | Input | Current | |
| | [m] * | SM | SM | SM | SM | SM | SM (2) | [kW] | [ A ] | [ kg ] |
| **VCS3A-10S-** | 2,8 | 1690 | 1140 | 670 | 55,8 | 44 | 29,1 | 0,30 | 1,3 | 27 |
| **VCS3A-15S-** | | 2530 | 1720 | 1010 | 60,6 | 48,8 | 33,9 | 0,45 | 1,95 | 38 |
| **VCS3A-20S-** | | 3380 | 2290 | 1350 | 61,8 | 50 | 35,1 | 0,60 | 2,6 | 50 |
| **VCS3A-10E-** | | 1660 | 1120 | 660 | 55,8 | 44 | 29,1 | 0,30 | 1,3 | 31 |
| **VCS3A-15E-** | | 2490 | 1680 | 990 | 60,6 | 48,8 | 33,9 | 0,45 | 2,0 | 45 |
| **VCS3A-20E-** | | 3310 | 2240 | 1320 | 61,8 | 50,0 | 35,1 | 0,60 | 2,6 | 58 |
| **VCS3A-10W-** | | 1560 | 1060 | 620 | 52,2 | 44,2 | 28,8 | 0,30 | 1,3 | 36 |
| **VCS3A-15W-** | | 2340 | 1590 | 930 | 57 | 49,0 | 33,6 | 0,45 | 2,0 | 52 |
| **VCS3A-20W-** | | 3120 | 2120 | 1240 | 58,2 | 50,2 | 34,8 | 0,60 | 2,6 | 66 |
| **VCS3B-10S-** | 3,9 | 2240 | 1570 | 880 | 56,2 | 51,3 | 35,0 | 0,46 | 2,0 | 28 |
| **VCS3B-15S-** | | 3360 | 2350 | 1320 | 60,8 | 56,1 | 39,8 | 0,69 | 3,0 | 40 |
| **VCS3B-20S-** | | 4480 | 3140 | 1760 | 62,4 | 57,3 | 41,0 | 0,92 | 4,0 | 54 |
| **VCS3B-10E-** | | 2220 | 1560 | 870 | 56,2 | 51,3 | 35,0 | 0,46 | 2,0 | 32 |
| **VCS3B-15E-** | | 3330 | 2330 | 1300 | 60,8 | 56,1 | 39,8 | 0,69 | 3,0 | 47 |
| **VCS3B-20E-** | | 4440 | 3110 | 1740 | 62,4 | 57,3 | 41,0 | 0,92 | 4,0 | 61 |
| **VCS3B-10M-** | | 2220 | 1560 | 870 | 56,2 | 51,3 | 35,0 | 0,46 | 2,0 | 32 |
| **VCS3B-15M-** | | 3330 | 2330 | 1300 | 60,8 | 56,1 | 39,8 | 0,69 | 3,0 | 47 |
| **VCS3B-10W-** | | 2150 | 1510 | 840 | 54,3 | 49,3 | 34,7 | 0,46 | 2,0 | 37 |
| **VCS3B-15W-** | | 3230 | 2260 | 1270 | 59,1 | 52,8 | 39,5 | 0,69 | 3,0 | 54 |
| **VCS3B-20W-** | | 4300 | 3010 | 1690 | 60,3 | 55,3 | 40,7 | 0,92 | 4,0 | 70 |
| **VCS3C-10S-** | 7,0 | 2860 | 2000 | 1070 | 56,6 | 51,4 | 36,6 | 0,69 | 3,0 | 33 |
| **VCS3C-15S-** | | 3990 | 2800 | 1500 | 61 | 54,5 | 38,5 | 0,92 | 4,0 | 46 |
| **VCS3C-20S-** | | 5040 | 3530 | 1890 | 62,8 | 57,1 | 39,5 | 1,38 | 6,0 | 63 |
| **VCS3C-10E-** | | 2790 | 1950 | 1050 | 56,6 | 51,4 | 36,6 | 0,69 | 3,0 | 37 |
| **VCS3C-15E-** | | 3890 | 2730 | 1460 | 61 | 54,5 | 38,5 | 0,92 | 4,0 | 53 |
| **VCS3C-20E-** | | 4920 | 3450 | 1850 | 62,8 | 57,1 | 39,5 | 1,38 | 6,0 | 70 |
| **VCS3C-10M-** | | 2790 | 1950 | 1050 | 56,6 | 51,4 | 36,6 | 0,69 | 3,0 | 37 |
| **VCS3C-15M-** | | 3890 | 2730 | 1460 | 61 | 54,5 | 38,5 | 0,92 | 4,0 | 53 |
| **VCS3C-10W-** | | 2610 | 1830 | 980 | 55,2 | 49,8 | 36,3 | 0,69 | 3,0 | 42 |
| **VCS3C-15W-** | | 3640 | 2550 | 1370 | 59,4 | 52,9 | 38,2 | 0,92 | 4,0 | 60 |
| **VCS3C-20W-** | | 4600 | 3220 | 1730 | 60,4 | 55,3 | 38,4 | 1,38 | 6,0 | 79 |
| **VCS3D-10S-** | 10,5 | 5100 | 4150 | 1940 | 58,9 | 55,2 | 39,0 | 1,52 | 6,6 | 61 |
| **VCS3D-15S-** | | 7650 | 6225 | 2910 | 63,7 | 60,0 | 43,8 | 2,28 | 9,9 | 88 |
| **VCS3D-20S-** | | 10200 | 8300 | 3880 | 64,9 | 61,2 | 45,0 | 3,04 | 13,2 | 116 |
| **VCS3D-10V-** | | 4750 | 3850 | 1800 | 57,9 | 54,4 | 38,7 | 1,47 | 6,4 | 70 |
| **VCS3D-15V-** | | 7125 | 5775 | 2700 | 62,7 | 59,2 | 43,5 | 2,21 | 9,6 | 100 |
| **VCS3D-20V-** | | 9500 | 7700 | 3600 | 63,9 | 60,4 | 44,7 | 2,94 | 12,8 | 132 |

* Data for maximum height of door is for reference and corresponds to the flow reach where the medium speed drops to 2 m/s

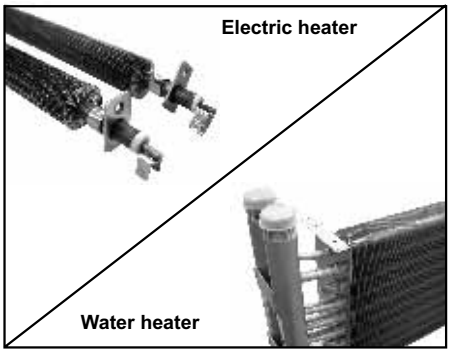
** Revolution level set on the controller. Data stated here concerning volume of air flow corresponds to the air curtain without a filter.

*** Level of acoustic pressure at a distance of 3 m from the air curtain intake according to EN ISO 3743 and EN ISO 3744.

The manufacturer reserves the right to alter the technical parameters of the product.

### Parameters of the electric heater

| Type | Heat output Max. ($2^{nd}$ level) | Heat output 50% ($1^{st}$ level) | Power supply 400V/50Hz *230V/50Hz Current | Increase in air temperature by Δt* (°C) (revolution level) | | |
|---|---|---|---|---|---|---|
| | [kW] | [kW] | [A] | DA,DM (3) SM | DA,DM (2) SM | DA,DM (1) SM |
| **VCS3A-10E-** | 9 | 4,5 | 13 | 15,9 | 23,6 | 40,1 |
| **VCS3A-15E-** | 13,5 | 6,8 | 19,5 | 15,9 | 23,6 | 40,1 |
| **VCS3A-20E-** | 18 | 9 | 26 | 16,0 | 23,6 | 40,1 |
| **VCS3B-10E-** | 9 | 4,5 | 13 | 11,9 | 17,0 | 30,4 |
| **VCS3B-15E-** | 13,5 | 6,8 | 19,5 | 11,9 | 17,0 | 30,5 |
| **VCS3B-20E-** | 18 | 9 | 26 | 11,9 | 17,0 | 30,4 |
| **VCS3B-10M-** | 9 | 4,5 | *39 | 11,9 | 17,0 | 30,4 |
| **VCS3B-15M-** | 9 | 4,5 | *39 | 7,9 | 11,2 | 20,2 |
| **VCS3C-10E-** | 9 | 4,5 | 13 | 9,5 | 13,6 | 25,2 |
| **VCS3C-15E-** | 13,5 | 6,8 | 19,5 | 10,2 | 14,5 | 27,2 |
| **VCS3C-20E-** | 18 | 9 | 26 | 10,8 | 15,3 | 28,6 |
| **VCS3C-10M-** | 9 | 4,5 | *39 | 9,5 | 13,6 | 25,2 |
| **VCS3C-15M-** | 9 | 4,5 | *39 | 6,8 | 9,7 | 18,1 |




* Measured values correspond to a temperature of intake air +18°C. Output air temperature is restricted by the operational thermostat to +45°C. The manufacturer reserves the right to alter the technical parameters of the product.

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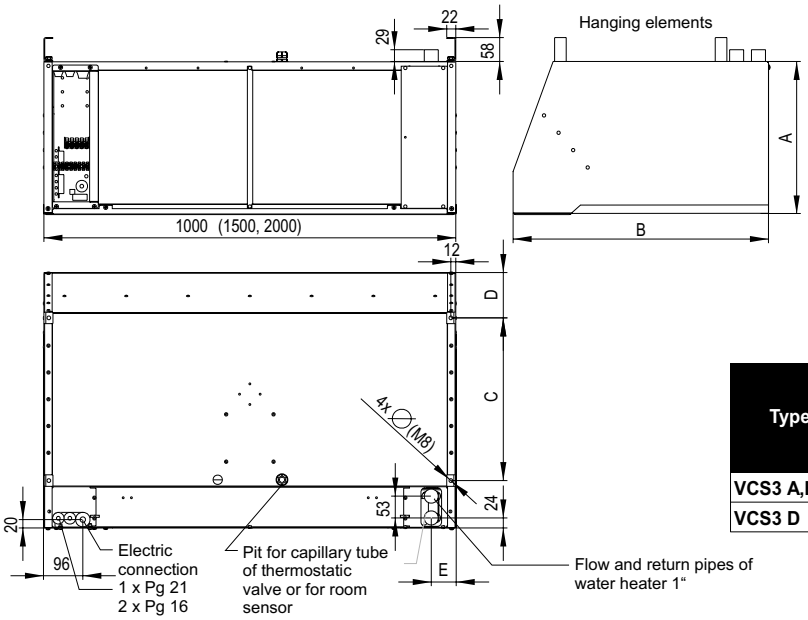
### Parameters for water exchanger (temperature drop 9070° / 80/60°C)

| Type | Water exchanger on temperature drop of 90/70°C | | | | | | | | Water exchanger on temperature drop of 80/60°C | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Increase in air temperature by Δt* [°C] (revolution level) | | | Heat output [kW] (revolution level) | | | Volume of water flow | Water pressure loss | Increase in air temperature by Δt* [°C] (revolution level) | | | Heat output [kW] (revolution level) | | | Volume of water flow | Water pressure loss |
| | DA,DM (3) SM | DA,DM (2) SM | DA,DM (1) SM | DA,DM (3) SM | DA,DM (2) SM | DA,DM (1) SM | [l/s] | [kPa] | DA,DM (3) SM | DA,DM (2) SM | DA,DM (1) SM | DA,DM (3) SM | DA,DM (2) SM | DA,DM (1) SM | [l/s] | [kPa] |
| **VCS3A-10W-** | 38,8 | 44,1 | 51,4 | 20,5 | 15,9 | 10,8 | 0,44 | 1,64 | 31,9 | 36,4 | 42,6 | 16,9 | 13,1 | 9,0 | 0,20 | 1,19 |
| **VCS3A-15W-** | 41,7 | 47,1 | 54,3 | 33,1 | 25,4 | 17,1 | 0,39 | 5,28 | 34,7 | 39,2 | 45,5 | 27,5 | 21,2 | 14,3 | 0,32 | 3,90 |
| **VCS3A-20W-** | 41,8 | 47,2 | 54,4 | 44,2 | 33,9 | 22,9 | 0,52 | 8,79 | 34,7 | 39,3 | 45,5 | 36,7 | 28,3 | 19,1 | 0,43 | 6,49 |
| **VCS3B-10W-** | 34,5 | 39,3 | 47,3 | 25,2 | 20,1 | 13,5 | 0,3 | 2,37 | 28,3 | 32,3 | 39,2 | 20,6 | 16,5 | 11,2 | 0,24 | 1,71 |
| **VCS3B-15W-** | 37,3 | 42,2 | 50,2 | 40,9 | 32,4 | 21,6 | 0,48 | 7,71 | 30,9 | 35,1 | 41,9 | 33,9 | 26,9 | 18,0 | 0,40 | 5,67 |
| **VCS3B-20W-** | 37,4 | 42,3 | 50,3 | 54,5 | 43,2 | 28,8 | 0,65 | 12,83 | 31,0 | 35,1 | 42,0 | 45,2 | 35,9 | 24,1 | 0,53 | 9,42 |
| **VCS3C-10W-** | 32,1 | 36,7 | 45,2 | 28,4 | 22,8 | 15,0 | 0,33 | 2,94 | 26,2 | 30,1 | 37,3 | 23,2 | 18,7 | 12,4 | 0,27 | 2,11 |
| **VCS3C-15W-** | 35,7 | 40,6 | 49,2 | 44,1 | 35,1 | 22,8 | 0,52 | 8,83 | 29,6 | 33,7 | 41,0 | 36,5 | 29,1 | 19,0 | 0,43 | 6,48 |
| **VCS3C-20W-** | 36,5 | 41,4 | 50,0 | 56,9 | 45,2 | 29,3 | 0,68 | 13,86 | 30,2 | 34,4 | 41,7 | 47,1 | 37,5 | 24,5 | 0,56 | 10,18 |
| **VCS3D-10V-** | 16,9 | 18,5 | 25,6 | 27,2 | 24,2 | 15,6 | 0,32 | 2,13 | 13,6 | 15,0 | 20,8 | 21,9 | 19,5 | 12,7 | 0,26 | 1,49 |
| **VCS3D-15V-** | 18,7 | 20,5 | 28,1 | 45,3 | 40,2 | 25,7 | 0,54 | 7,11 | 15,3 | 16,8 | 23,1 | 37,1 | 32,9 | 21,2 | 0,44 | 5,11 |
| **VCS3D-20V-** | 19,2 | 21,0 | 28,8 | 61,9 | 54,9 | 35,1 | 0,73 | 7,14 | 15,7 | 17,2 | 23,7 | 50,7 | 45,0 | 28,9 | 0,60 | 5,14 |

### Temperature drop 70/50°C / 60/40°C

| Type | Water exchanger on temperature drop of 70/50°C | | | | | | | | Water exchanger on temperature drop of 60/40°C | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Increase in air temperature by Δt* [°C] (revolution level) | | | Heat output [kW] (revolution level) | | | Volume of water flow | Water pressure loss | Increase in air temperature by Δt* [°C] (revolution level) | | | Heat output [kW] (revolution level) | | | Volume of water flow | Water pressure loss |
| | DA,DM (3) SM | DA,DM (2) SM | DA,DM (1) SM | DA,DM (3) SM | DA,DM (2) SM | DA,DM (1) SM | [l/s] | [kPa] | DA,DM (3) SM | DA,DM (2) SM | DA,DM (1) SM | DA,DM (3) SM | DA,DM (2) SM | DA,DM (1) SM | [l/s] | [kPa] |
| **VCS3A-10W-** | 24,9 | 28,6 | 33,8 | 13,2 | 10,3 | 7,1 | 0,15 | 0,78 | 17,9 | 20,7 | 24,7 | 9,5 | 7,4 | 5,2 | 0,11 | 0,44 |
| **VCS3A-15W-** | 27,5 | 31,3 | 36,5 | 21,8 | 16,9 | 11,5 | 0,26 | 2,65 | 20,3 | 23,2 | 27,3 | 16,1 | 12,5 | 8,6 | 0,19 | 1,58 |
| **VCS3A-20W-** | 27,6 | 31,3 | 36,5 | 29,2 | 22,5 | 15,4 | 0,34 | 4,42 | 20,3 | 23,2 | 27,4 | 21,5 | 16,7 | 11,5 | 0,25 | 2,63 |
| **VCS3B-10W-** | 22,1 | 25,3 | 30,9 | 16,1 | 12,9 | 8,8 | 0,19 | 1,12 | 15,7 | 18,1 | 22,4 | 11,5 | 9,3 | 6,4 | 0,13 | 0,63 |
| **VCS3B-15W-** | 24,5 | 27,9 | 33,5 | 26,8 | 21,3 | 14,4 | 0,31 | 3,84 | 17,9 | 20,5 | 24,9 | 19,6 | 15,7 | 10,7 | 0,23 | 2,27 |
| **VCS3B-20W-** | 24,5 | 27,9 | 33,6 | 35,7 | 28,5 | 19,2 | 0,42 | 6,38 | 17,9 | 20,5 | 25,0 | 26,2 | 21,0 | 14,3 | 0,31 | 3,77 |
| **VCS3C-10W-** | 20,4 | 23,5 | 29,4 | 18,0 | 14,6 | 9,8 | 0,21 | 1,38 | 14,5 | 16,8 | 21,3 | 12,8 | 10,4 | 7,1 | 0,15 | 0,77 |
| **VCS3C-15W-** | 23,4 | 26,7 | 32,8 | 28,8 | 23,1 | 15,2 | 0,34 | 4,39 | 17,1 | 19,6 | 24,3 | 21,1 | 17,0 | 11,3 | 0,25 | 2,58 |
| **VCS3C-20W-** | 23,9 | 27,2 | 33,3 | 37,3 | 29,7 | 19,5 | 0,44 | 6,87 | 17,5 | 20,0 | 24,8 | 27,3 | 21,9 | 14,5 | 0,32 | 4,05 |
| **VCS3D-10V-** | 10,3 | 11,4 | 15,9 | 16,6 | 14,8 | 9,7 | 0,19 | 0,93 | 7,0 | 7,8 | 11,0 | 11,3 | 10,2 | 6,7 | 0,13 | 0,48 |
| **VCS3D-15V-** | 11,9 | 13,1 | 18,1 | 28,8 | 25,6 | 16,6 | 0,13 | 3,34 | 8,5 | 9,3 | 13,0 | 20,4 | 18,2 | 11,9 | 0,24 | 1,87 |
| **VCS3D-20V-** | 12,2 | 13,4 | 18,5 | 39,4 | 35,0 | 22,6 | 0,47 | 3,37 | 8,7 | 9,6 | 13,3 | 28,0 | 25,0 | 16,3 | 0,43 | 1,89 |

* Measured values correspond to a temperature of intake air +18°C. The manufacturer reserves the right to alter the technical parameters of the product.




| Type | Height [A] [mm] | Depth [B] [mm] | Spacing of installation holes [C] [mm] | Distance of installation hole from rear wall | Distance of flow/return connectors of water heater |
|---|---|---|---|---|---|
| **VCS3 A,B,C** | 270 | 450 | 250 | 85 | 60 |
| **VCS3 D** | 370 | 620 | 395 | 110 | 61 |

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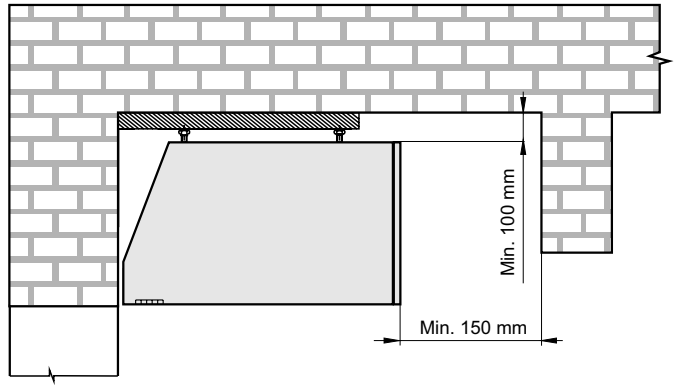
### MOUNTING AND INSTALLATION

On installation of the air curtain, it is essential to observe some important rules for correct functioning:

- You must place the air curtain as near as possible to the upper edge of the door opening.
- The air curtain should be wider than the door opening (optimally by 100 mm on both sides)-
- Distance of the air curtain from the ceiling must be a minimum of 100 mm in order to make it possible to connect the air curtain and heater to the heating water inflow and to the electricity supply line.
  Air curtain intake must be a minimum of 150 mm from a fixed wall, so that the inflow of air to the air curtain is not restricted see picture.

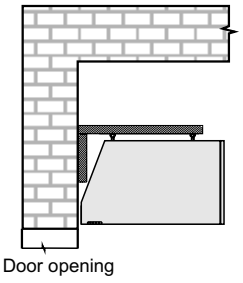
If there is an entrance hall in front of the protected area, it is better to place the air curtain in the protected area. Temperature savings would be much lower if it were placed in the entrance hall and you would not be able to use the air curtain for heating of the protected area.

**Minimum distance from solid construction**



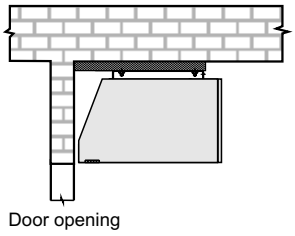

**Hanging the air curtain with the aid of the VCS3-SKD wall bracket.**

*Installation in the case of a high ceiling and supporting wall.*



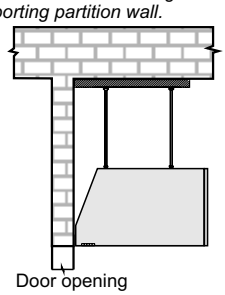

**Hanging the air curtain with the aid of the VCS3-SD ceiling bracket.**

*Installation in the case of a low ceiling*




**Hanging of the air curtain with the aid of threaded screws and the VCS3-SD ceiling bracket.**

*Installation in the case of a high ceiling and non-supporting partition wall.*



# AIR CURTAINS

## *STANDESSE AIR CURTAINS* ® VCS3

### CONTROL

**STANDESSE** air curtains are operated using a remote control, which is connected to the air curtain with a cable. Choice of specific controller depends on the type of heater with which the air curtain is equipped and on the requirements, which the user needs from operation of the air curtain. Features of the controller are simple and quick installation, economic and optimum operation of the air curtain, which leads to operational savings on energy and retention of heat/cold, ease of operation and a large degree of variability. Basic differences between individual types of controller are stated in the table below.

**Possibilities of individual types of controller**

| | |  SM |  DM |  DA |
|---|---|---|---|---|
| | Type of controller | Manual | Manual | Manual/Automatic |
| | Regulation of air output | 3 speeds | 3 speeds | 3 speeds |
| | Regulation of electric heater | 2 levels | 2 levels | 2 levels |
| | Possibility of connecting a door contact | YES (Only one of the mentioned items) | YES (Only one of the mentioned items) | YES |
| °C | Connection of a special thermostat | | | YES |
| | Connection of a timer | | | YES |
| °C | External temperature sensor | NO | NO | YES (Standard) |
| FILTER | Indication of blocked filter (differential pressure switch) | NO | NO | YES |
| ALARM | Indication of overheating of the electric heater | NO | NO | YES |
| s | Cooling of the electric heater | NO | 30 s | 30 s |
| 1 2.. | Possibility of joining air curtains together | NO | Up to 6 | Up to 6 |
| s | Delayed cut off by external sensor | - | 30 s | 30 s |
| | Light indication of selected function | NO | YES | YES |
| | Controller connection to air curtain | Power cable with max. length of 100 m | Low-voltage cable (12V) with max. length of 50 m | Low-voltage cable (12V) with max. length of 50 m |

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## *STANDESSE AIR CURTAINS* ® VCS3

**SM - OPERATION (this part of the air curtain, does not need to be ordered)**
The simplest form of operation offers a choice of 3 levels of air and 2 levels of electric output (for the version with an electric heater). This controller can only be used to operate one air curtain. The design for the air curtain with an electric heater has one rotating and one rocker switch. The rotating switch is used to select ventilator rotations at three levels and also shuts off the air curtain and the electric heater. The rocker switch is used to select the output of the electric heater (between I - 50% or II - 100% heating output) or to switch off the heater (O). Design for air curtains with a water heater has only one rotating switch, which is used to select ventilator rotations at three levels and to switch of the air curtain.

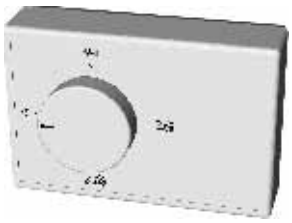
On use of a door switch (DS), this switch takes over the function of switching the device on and off. When the door is opened, the air curtain is switched on (if the rotating switch is set to any position other than "O") and the air output corresponds to the setting on the rocker switch. If the heating function switch is in the "I" or "II" position, the air curtain will also heat the air. When the door is closed the air curtain will switch off. Two other possible switch elements have the same function as the door switch the timer switch (SH) and the special thermostat (TER-P). The switch used must have at least the same or greater allowed current load, than the air curtain motor current. When using V/SM for control of the air curtain with water heater any method of heating output regulation may be used that is described in the "REGULATION" paragraph. The controller is small and can be mounted on the wall.

**Controller for air curtains with electric heating**

**Key to symbols**

| | |
|---|---|
| **0** | Off |
| **1** | Air output level 1 (min.) |
| **2** | Air output level 2 |
| **3** | Air output level 3 (max.) |
| **I** | Heater output 50% |
| **II** | Heater output 100% |

**Controller for air curtains with water heater/without heater**



**Key to symbols**

| | |
|---|---|
| **0** | Off |
| **1** | Air output level 1 (min.) |
| **2** | Air output level 2 |
| **3** | Air output level 3 (max.) |

**DM - OPERATION (code 2 when ordering the air curtain)**
DM operation is a more comfortable method of control, additionally equipped with electronics and a microprocessor. The DM controller allows you to select 3 levels of ventilator rotation and 2 levels of electric heater output. Switching on the air curtain, selection of ventilator rotation level and level of electric heater output is indicated by LED above each button. The controller version for air curtains with electric heating also has an in-built "after cooling" function. This means that after sending the "switch off" signal, only the electric heater in the air curtain is switched off. The ventilators switch off after a period of about 30 seconds, in order for the heating elements to cool down. This type of controller allows connection of one external switch element (the TER-P spatial thermostat, the SH timer or the DK door switch). If an external switch element is used, the air curtain switches on and off at in the pre-set mode. Operational modes of the air curtain are selected using the relevant buttons marked with symbols. The processor program does not however allow reaction to an unsuitable combination. Output of the water heater must be regulated by one of the methods mentioned in the "REGULATION" chapter. Output of the water heater cannot be regulated using the DM controller !

**E-DM controller for air curtains with an electric heater**

**Key to button symbols**

| |
|---|
| On/Off |
| Heater output level 1 (min.) |
| Heater output level 2 (max.) |
| Air output level 1 (min.) |
| Air output level 2 |
| Air output level 3 (max.) |

**V-DM controller for air curtains with water heater or without heater**

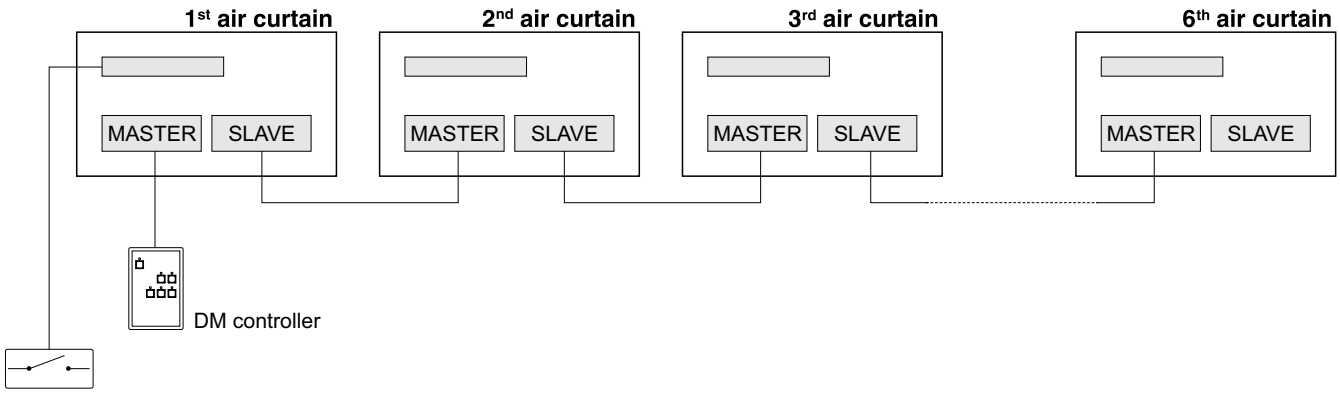
**Key to button symbols**

| |
|---|
| On/Off |
| Air output level 1 (min.) |
| Air output level 2 |
| Air output level 3 (max.) |

# AIR CURTAINS

## *STANDESSE AIR CURTAINS* ® VCS3

**Chain linked air curtains using he DM controller**
The DM controller allows the so-called chain linking of air curtains, where one controller can be used to operate a maximum of 6 air curtains at once in the same mode. In practice, this means that an air curtain of your choice is connected to the controller as the main unit (Master). The other air curtains are connected to this using communication cables and are then under its control (slave). For connection of air curtains and connection of the controller, the same type of cable is used. This is fitted with telephone connectors at both ends, so connection is a matter of seconds and also there is no danger of incorrect connection. Chain-linked air curtains can be controlled by an external switch element. If this is used, it must be connected to the controlling air curtain. The external switch element controls all linked air curtains at the same time. If any one of the motors overheats and the thermal fuse switches it off, the other motors continue to run. If any of the electric heaters overheats, the safety thermostat will disconnect it. All other heaters will continue to run. Linking of air curtains is depicted in the following picture.




**DA-OPERATION (code 3 when ordering the air curtain)**
As opposed to the DM controller, this allows air curtain operation in automatic mode. This type of controller can also be connected to up to three external and independent switch elements (the DK door switch, the SH timer and the TER-P spatial thermostat). These switch elements only affect the running of the air curtain in automatic mode. An external temperature sensor is a standard part of the delivery (with a standard 5m cable), information from which serves the electronics on selection of optimal air and electrical output. An air curtain with this type of controller on using all three optional external switches, selects suitable ventilator rotations and electric heater output with a view to internal and external temperatures, on opening and closing of doors and even on a timed program. The DA controller is equipped with and indicator to show if the filter is blocked ("FILTER" is indicated) and for versions with electric heaters, overheating is indicated (("ALARM" is indicated). Diode on the electronic board signalise supply condition and air curtain and controller communication.

**E-DA controller for air curtains with an electric heater**

**Key to button symbols**

| | |
|---|---|
| ON/OFF | On/Off |
| AUT | Automatic mode |
| MAN | Manual mode |
| ALARM | Heater overheating |
| | Heater output level 1 (min.) |
| | Heater output level 2 (max.) |
| FILTER | Filter blocked |
| | Air output level 1 (min.) |
| | Air output level 2 |
| | Air output level 3 (max.) |

**V-DA controller for air curtains with water heater or without heater**

**Key to button symbols**

| | |
|---|---|
| ON/OFF | On/Off |
| AUT | Automatic mode |
| MAN | Manual mode |
| FILTER | Filter blocked |
| | Air output level 1 (min.) |
| | Air output level 2 |
| | Air output level 3 (max.) |

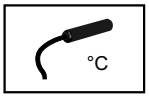
# AIR CURTAINS

## *STANDESSE AIR CURTAINS* ® VCS3

**Manual mode**
In manual mode ("MAN" button) the individual functions of the air curtain are selected by the buttons marked with symbols. In this mode, the external switch and external integrated temperature sensor are connected. The processor program does not however allow reaction to an unsuitable combination. The DA controller allows three level setting of the ventilator rotations and two levels of output for the electric heater. Switching on the air curtain, selection of ventilator rotation level and level of electric heater output is indicated by LED above each button. The controller version for air curtains with electric heating also has an in-built "after cooling" function. This means that after sending the "switch off" signal, only the electric heater in the air curtain is switched off. The ventilators are switched off after around 30 seconds in order for the heating rods to cool down. Output of the water heater can only be regulated by the method set out in the "REGULATION" chapter. The DA controller cannot be used to regulate the output of the water heater!

**Automatic mode**
In automatic mode ("AUT" button), running of the air curtain depends on the sensors/switches, which are connected. Dependence of the automatic functions for the air curtain with an electric heater is set out in the following tables. When using a water heater, the table the tables are still valid but only for the air output of the air curtain.

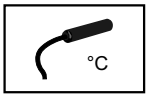
**Air curtain functioning when connected to an external temperature sensor and without connection to an external switch.** Here, the electronics control the ventilators and the output of the electric heater depending on the external temperature - see table. Sensing accuracy is +/- 3°C.




**Operational state parameters**

| Outside temperature | | | | |
|---|---|---|---|---|
| < 5 °C | 5 ÷ 10 °C | 10 ÷ 15 °C | 15 ÷ 20 °C | > 20 °C |
| Ventilator revolution level/Electric heater output level | | | | |
| 3rd / 2nd | 2nd / 2nd | 2nd / 1st | 1st / 0 | 2nd / 0 |

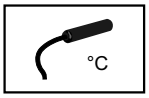
**Air curtain functioning when connected to an external temperature sensor and door switch.**
When using a door switch, the electronics respect the fact whether the door is open or closed. When the doors are closed, the electronics set the lowest air and heating output. On opening the door, the ventilator rotations and electric heater output are immediately increased according to the outside temperature. On closing the door, the automatic mode switches the ventilators back to the original revolution level with a delay of around 30 seconds. If at any time during this interval the door is opened again, the delay function is cancelled and set into action again after the door is closed. If the equipment is set in manual mode, the door switch and external temperature sensor are ignored. Sensing accuracy is ±3°C.

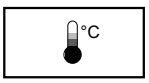



**Operational state parameters with a door switch connected**

| State of door | Outside temperature | | | | |
|---|---|---|---|---|---|
| | < 5 °C | 5 ÷ 10 °C | 10 ÷ 15 °C | 15 ÷ 20 °C | > 20 °C |
| | Ventilator revolution level/Electric heater output level | | | | |
| Door open | 3rd / 2nd | 2nd / 2nd | 2nd / 1st | 1st / 0 | 2nd / 0 |
| Door closed | 2nd / 2nd | 1st / 1st | 1st / 1st | 1st / 1st | 0 / 0 |

**Air curtain functioning when connected to an external temperature sensor and door switch and room thermostat.**
When using a door switch in combination with a room thermostat and external temperature sensor, optimal functioning of the air curtain and energy saving is guaranteed. The thermostat can also be used for air curtains with water heaters, the output of which they do not regulate, but they do ensure switching off of the air curtain when the required temperature in the area is reached. Air output and output of the electric heater are regulated by the electronics, which evaluate information from the external switches and sensors. Sensing accuracy is ±3°C.

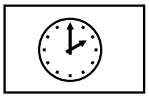



**Operational state parameters with a door switch and room thermostat connected**

| Temperature set on thermostat | Door | Outside temperature | | | | |
|---|---|---|---|---|---|---|
| | | < 5 °C | 5 ÷ 10 °C | 10 ÷ 15 °C | 15 ÷ 20 °C | > 20 °C |
| | | Ventilator revolution level/Electric heater output level | | | | |
| Reached | Open | 3rd / 1st | 2nd / 1st | 2nd / 1st | 1st / 0 | 2nd / 0 |
| Not reached | Open | 3rd / 2nd | 2nd / 2nd | 2nd / 1st | 1st / 0 | 2nd / 0 |
| Reached | Closed | 0 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 0 / 0 |
| Not reached | Closed | 2nd / 2nd | 1st / 1st | 1st / 1st | 1st / 1st | 0 / 0 |

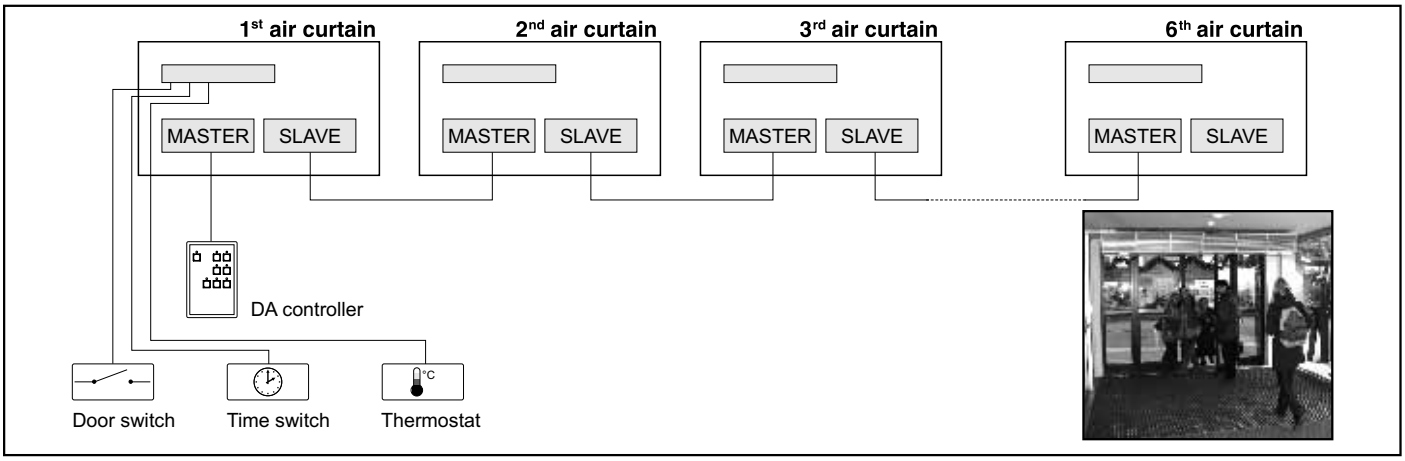
**Air curtain functioning when connected to a timer switch**
It is also possible to connect the air curtain to a timer switch (marked SH) together with any of the above-mentioned combinations. This switches the running of the air curtain on and off at pre-set time intervals. This schedule can be set for the whole week.



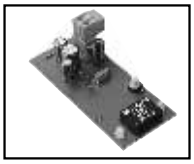
# AIR CURTAINS

## *STANDESSE AIR CURTAINS* ® VCS3

**Chain-linked air curtains using a DA controller**
With a DA controller, it is possible to link air curtains in the same manner as for DM control. Connection of chain-linked air curtains is shown in the following picture.




**Lonworks system:**
For air curtains with DA operation, it is possible to order and extra module, which allows the air curtain to be linked to the central control system of the building. The international standard **LonWorks** module has been chosen for STANDESSE air curtains, which uses the standard **LonTalk** protocol and thanks to which the air curtain is able to function with modules, which support LonWorks anywhere in the world. For further information and documentation important for integration into the system, contact your supplier In the case of chain-linked air curtains, it is enough to equip the MASTER air curtain with the LonWorks module.



**REGULATION OF THE WATER HEATER**

The second important function of the air curtain apart from air screening of two areas is the heating function. For this reason, the air curtain should be included in any project for heating of a building processed by a professional company. On design of the air curtain operation it is also important to correctly choose the regulation of heating output. Individual possibilities mentioned below show examples of how the output of the air curtain can be regulated. Use of each depends on many conditions and so for certain applications, one solution may be better than another and vice-versa. On proposal for use of air curtains, regulations for heating and regulation should be adhered to.

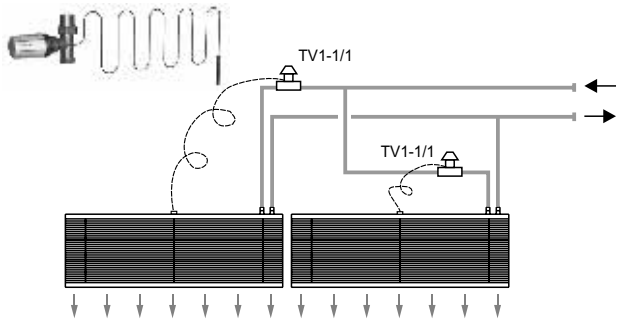
**Regulation of heating output of the air curtain should be solved in one of the following ways:**

**1) By throttling -** setting of a thermostatic valve on the heating water supply line. A capillary sensor is placed into the well, which is a standard part of the air curtain with water heater and is situated in the space behind the heater (so if monitors the exhaust air temperature). You must use one valve for each air curtain. Use of this method is not suitable if the air curtain is connected to existing central heating mains, which are not usually prepared for connection to additional output. The valve exhibits a marked pressure loss in almost closed position and thus changes the pressure ratio within the system. For installation example, see picture. The thermostatic valve is part of the optional accessories available for the air curtain, marked with the TV1-1/1 code (in the "Accessories" chapter).

**2) By distribution (open/closed) -** using the ZV-3 three-way zonal valve with servo-drive and TER-P spatial thermostat. Simple automatic regulation of the output temperature using a spatial thermostat, on which it is possible to continuously change the required temperature in the room. Regulation is not fluent, but is does allow automatic regulation of the supply of water to the heater. Installation of the valve must be carried out according to the technical documentation provided.

**3) By mixing -** of the incoming and outgoing water using a mixing junction optimal type of regulation. See picture for installation example. The mixing junction is part of the optional accessories for the air curtain marked with the SMU marking. It is equipped with its own pump for coverage of pressure loss in the heater circuit and reacts quickly enough and precisely to sensed changes in temperature. This regulation allows you to regulate the output of the exchanger either according to output air temperature (if a channel sensor is set into the well of the exchanger space), or according to the temperature of the area (if a spatial sensor is placed at a suitable position in the room). This second possibility is especially suitable if the air curtain is used for heating. The mixing junction can be operated using the OSMU controller. One mixing junction can be used for more than one air curtain or for parallel connection to the central heating mains. Channel and spatial sensors are both part of the optional accessories. The "Accessories" chapter contains a description of function of all optional accessories.

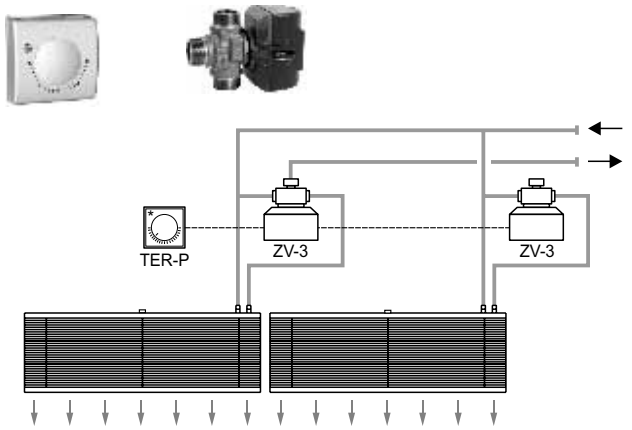
**Example of regulation of heating output of two air curtains by throttling.**



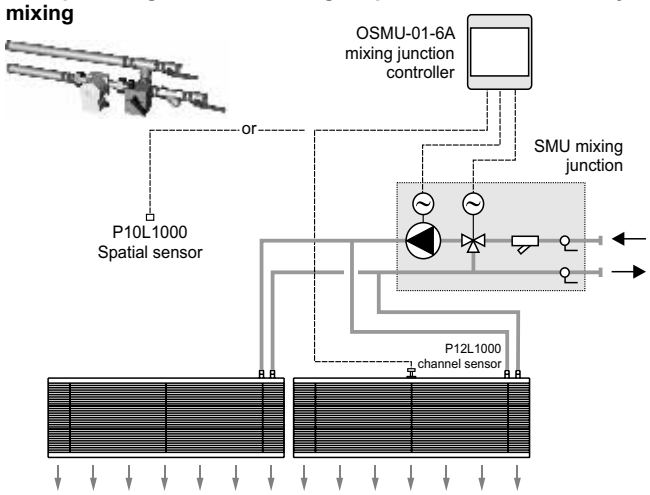
# AIR CURTAINS

## *STANDESSE AIR CURTAINS* ® VCS3

**Example of regulation of heating output of two air curtains by open/closed**

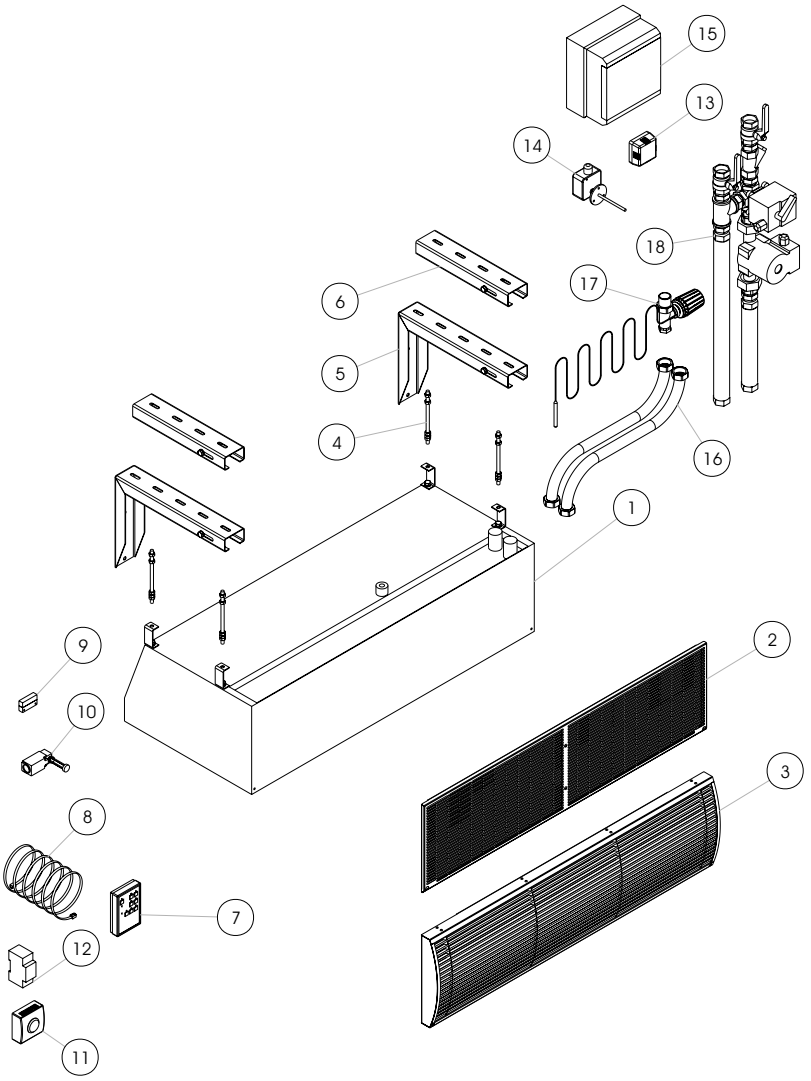



**Example of regulation of heating output of two air curtains by mixing**




### ACCESSORIES

1 - VCS3 air curtain
2 - VCS3-NKD flat suction covering
3 - VCS3-NKZ rounded suction covering
4 - ZTZ-M8 threaded bar
5 - VCS3-SKD wall bracket
6 - VCS3-SD ceiling bracket
7 - PANEL-x/DM,DA control panel
8 - KABEL 05 connection cable
9 - DS door switch (SM controlled)
10 - DK1 door switch (DM and DA controlled)
11 - TER-P room thermostat
12 - SH timer switch
13 - P10L1000 spatial temperature sensor
14 - P12L1000 channel temperature sensor
15 - OSMU mixing junction controller
16 - OH-01 flexible pipe
17 - TV1-1/1 thermostatic valve
18 - SMU mixing junction



# AIR CURTAINS

## *STANDESSE AIR CURTAINS* ® VCS3

With a view to the fact, that STANDESSE air curtains are designed as a constructional system, you must always order the basic accessories essential for correct functioning of the air curtain. Further to this, it is possible to order optional accessories.

**BASIC ACCESSORIES**

- **The control panel** is intended for control of the air curtain output and is essential for all air curtains! Possibilities provided by individual control panels and their description can be found in the "OPERATION" chapter. The panel is fixed to the wall and connected to the air curtain via a cable (the cable is not a part of the panel) according to the relevant connection diagram.

PANEL-V/DM

- Controller
  - DM
  - DA
- Heater
  - V-for air curtains with water heater or without heater
  - E-for air curtains with an electric heater

* The SM control panel is provided with the air curtain as standard and does not have to be ordered.

- **Connection cable** (used for air curtains with DM and DA controllers)
  The 6-wire low-current 12V fitted with telephone connectors is essential for connection of DM and DA controllers or for chain-linking of more than one air curtain together. Only cables supplied by the manufacturer may be used.

KABEL-05

- Length (unless otherwise stated in the order, the cable is a standard 5m)
  - 5,10,12,15,20,25,30,35m cable length, Maximum cable length is 50m.
- Connection cable

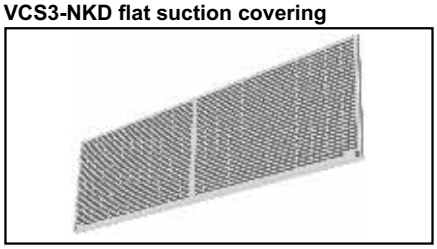
* The SM control panel is connected to the air curtain using a regular electric installation cable (see electric diagram stated in the air curtain instructions) and not supplied as accessories.

- Suction coverings for the air curtain come in two designs (D and Z).

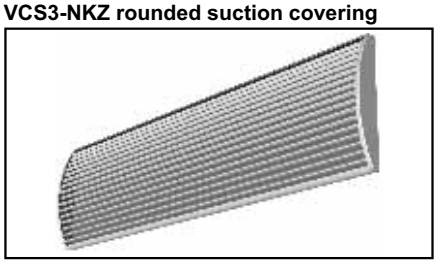
VCS3-NKD-10 A-0

- Colour (surface treatment)
  - 0-White RAL 9010
  - 1-other according to RAL (state specific colour number extra to the code)
- Output series
  - A-for A, B and C air curtains
  - D-for D air curtains
- Air curtain width
  - 10-1000 mm
  - 15-1500 mm
  - 20-2000 mm
- Design
  - D-flat perforated cover with filter
  - Z-rounded cover with filter

**VCS3-NKD flat suction covering**



**VCS3-NKZ rounded suction covering**



# AIR CURTAINS

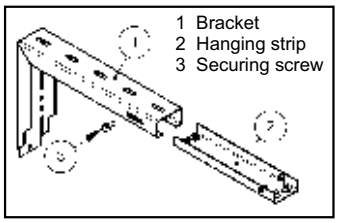
## *STANDESSE AIR CURTAINS* ® VCS3

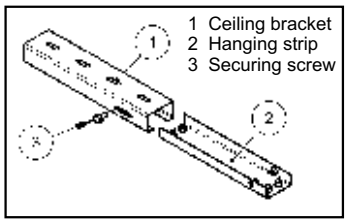
### OPTIONAL ACCESSORIES

- **HANGING ELEMENTS**
  For easy hanging of the air curtain under various conditions, the following hanging elements can be supplied: threaded bars or ceiling and wall brackets. Number of hanging elements required for hanging one or more air curtains side by side is stated in the following table:

| Number of hanging elements according to number of air curtain modules in the chain | Number of air curtain modules (in chain) | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | n |
| Number of VCS3-SKD-x brackets | 2 | 3 | 4 | 5 | N+1 |
| Number of VCS3-SD-x ceiling brackets | 2 | 3 | 4 | 5 | N+1 |
| Number of ZTZ-M8 threaded bars | 4 | 8 | 12 | 16 | 4xn |

- **Threaded bar with M8 threading, length 1m ZTZ-M8/1,0.**
  The air curtain is hung at a total of four hanging points

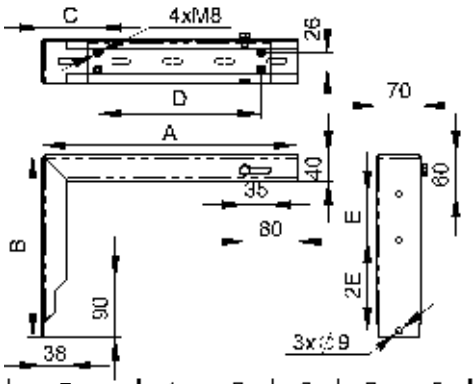



**Wall bracket**
VCS3-SK D-A
- Output series
  - A-for A,B and C air curtains
  - D-for D air curtains

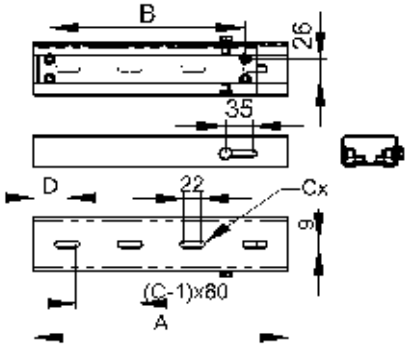
**Ceiling bracket**
VCS3-SD-A
- Output series
  - A-for A,B and C air curtains
  - D-for D air curtains

**Dimensions of VCS3- SKD bracket**




| Type | A | B | C | D | E |
|---|---|---|---|---|---|
| VCS3-SKD-A | 390 | 280 | 85 | 250 | 70 |
| VCS3-SKD-D | 560 | 350 | 110 | 395 | 90 |

**Dimensions of the ceiling holder VCS3-SD**




| Type | A | B | C | D |
|---|---|---|---|---|
| VCS3-SD-A | 325 | 250 | 4 | 42,5 |
| VCS3 SD D | 470 | 395 | 6 | 35,0 |

### ACCESSORIES FOR AIR CURTAINS WITH WATER HEATER

- **TV1-1/1 Thermostatic valve**
  The straight 1"(DN 25) thermostatic valve with capillary serves for simple regulation of the heat output by throttling. It is fitted to the heating medium intake, the capillary sensor is placed into the well, which is a standard part of air curtains with water heaters. The valve has CEN certification and is tested according to DIN EN 215.

- **ZV-3-Three-way valve with servo-drive, 1" (DN25)**
  The spatial thermostat controls opening and closing of the three-way valve. If no heating is required, the thermostat switches off the electricity supply to the valve, which disconnects the zone and the water is returned to the boiler. Re-circulation should be balanced in order to avoid changes in flow in the mains of other zones during valve switching.

- **Mixing junction**
  Setting of type of mixing junction must be carried out by a central heating designer on the basis of information concerning pressure loss of water in the water heater. The mixing junction is intended for regulation of the heating output of the incoming and outgoing heating water. It is made up of a three-speed circulatory pump, a three-way mixing valve with servo-power, a water filter, 2 closing ball taps and two connecting flexible pipes. All components have an inside diameter of 1" (DN 25). A detailed description of the SMU can be found on the individual catalogue page. If you need to cover water pressure loss of up to 40 kPA, please order the SMU-01-40 mixing junction. For coverage of pressure loss of 80 kPA the SMU-01-80 mixing junction should be used.

SMU-01-40
- Maximum pump pressure in the mixing junction in kPA (40 or 80 kPA)
- Type

# AIR CURTAINS

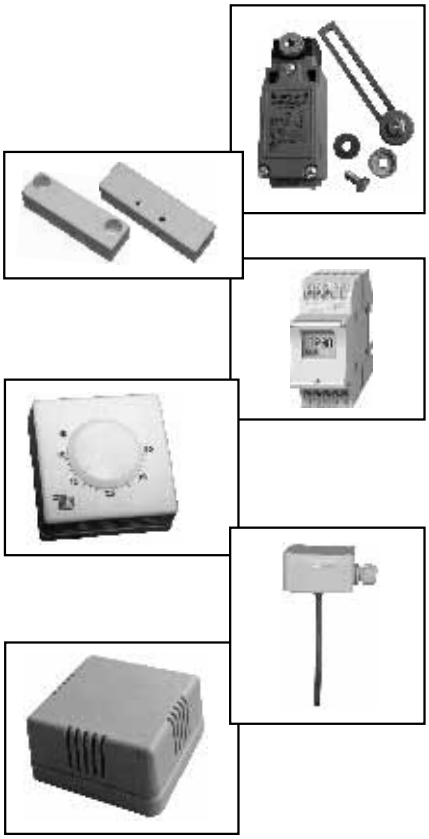
## *STANDESSE AIR CURTAINS* ® VCS3

- **OSMU-01-6A mixing junction controller**
  This equipment is intended for operation of the SMU mixing junction. It is possible to connect several mixing junctions to the controller-they will however then be controller in the same way according to the required temperature. For correct functioning of the controller, connection to a channel (P12L1000) or spatial (P10L1000) sensor is essential in order to scan the air temperature (sensors must be ordered separately). A detailed description of the OSMU controller can be found on the individual catalogue page.

- **OH-01 flexible connection pipe**
  Using these pipes, it is possible to install hot water mains independently from the air curtain mounting, thus negating the need for precision when fitting branch pipes from the central heating mains (an attempt at fixed connection often causes big problems, even leading to damage of the heater). The pipes are made of stainless steel (DIN 17440, with TÜV certification) with PE foam thermal isolation 15 mm thick. Range of operational temperatures is 0 to +110°C, max. operational pressure is 1 MPa. Inside diameter of the pipes is 3/4" (DN20), both ends of the pipe are fitted with covered 1" nuts (DN25). They are supplied at lengths of 300 and 500 mm. A detailed description of the pipes can be found on the individual catalogue page.
  OH-01-1/1-300
  - 300 (500) length of pipe in mm
  - Internal diameter of connection threading in inches

- **OH-02-1/1-xxx - Flexible connection hoses type 02**
  Use of the hoses - see above. Hoses are made from non-toxic rubber (DIN 7715) with steel galvanised braiding. Maximum work temperature is 100°C, maximum work overpressure 0,6 MPa. Inner diameter if the hoses is 3/4" (DN 20), the both ends of the hose are fitted with 1" (DN 15) cap nuts. Hoses are supplied in lengths 300 and 500 mm. For detailed description of the hoses see its own data sheet.
  OH-02-1/1-300
  - 300 (500) length of pipe in mm
  - Internal diameter of connection threading in inches

- **The DS door switch -** serves to switch the running of the air curtain on and off with the SM controller in relation to opening and closing of the door. It is an end switch with a swivelling arm of variable length with a blocked end (max. radius 80 mm). Dimensions are 31x31x81 mm, maximum current load is 10A, maximum voltage is 600V/AC15;IP 66 shielding; operational temperature 25 to +85°C.
- **The DK1 door switch -** serves to switch the running of the air curtain on and off with the DM controller in relation to opening and closing of the door. Max. contact load is 12V/30mA.
- **The SH timer switch -** serves to switch the running of the air curtain on and off at pre-set time intervals. Max. contact load is 250V/16A, induction load is 2.5A, and the switch has 20 memory positions.
- **The TER-P room thermostat -** in connection with the SM or DM controller, serves to switch the running of the air curtain on and off in relation to the set values required. In connection with the DA controller, it regulates air output of the air curtain and output of the electric exchanger according to the table in the section concerning DA controller operation. The thermostat can also be used for air curtains with water exchangers although it can not regulate their output, only ensure switching off of the air curtain if the required temperature is reached in the area. Setting range is +5 to +30°C. Max. contact load is 250V/10A ad an induction load of 2A. A detailed description of the thermostat can be found on the individual catalogue page.
- **The P12L1000 channel sensor -** serves to sense temperature and is used in connection with a mixing junction. It is positioned in place of the well at the top of the air curtain. This is part of the air curtain. The well must be removed and a plastic sensor holder fitted in its place after pre-drilling the necessary hole (the holder and template for precise drilling are part of the delivery). A detailed description of the sensor can be found on the individual catalogue page.
- **The P1OL1000 spatial sensor -** serves to sense temperature and is used in connection with a mixing junction. It is positioned on a wall inside the screened area. A detailed description of the sensor can be found on the individual catalogue page.



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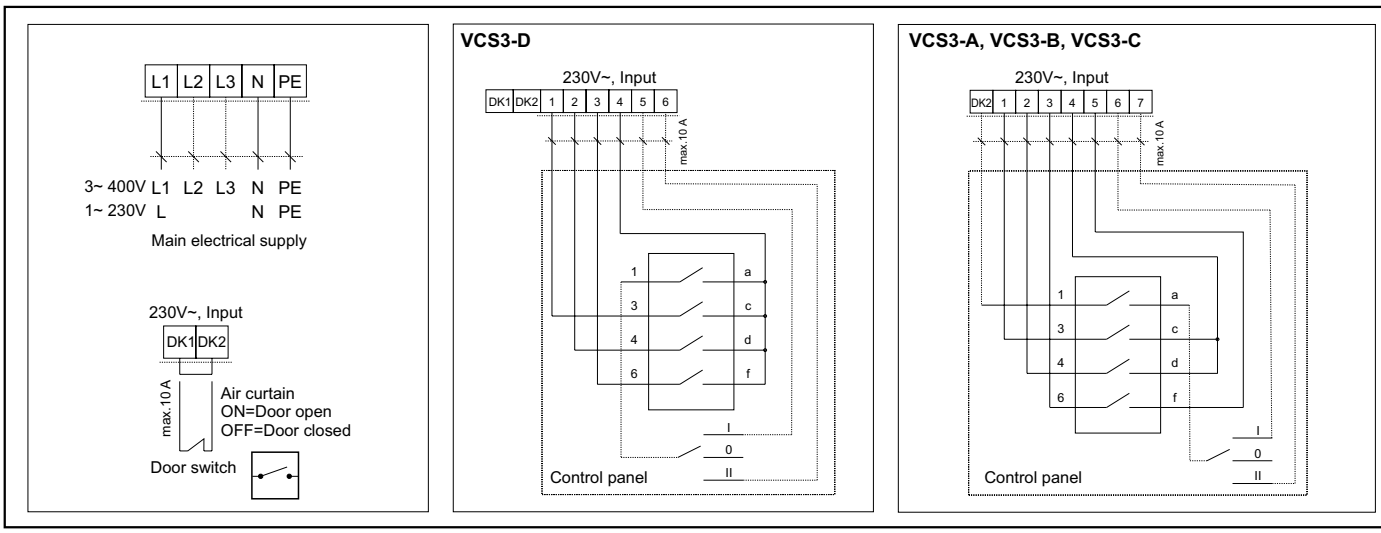
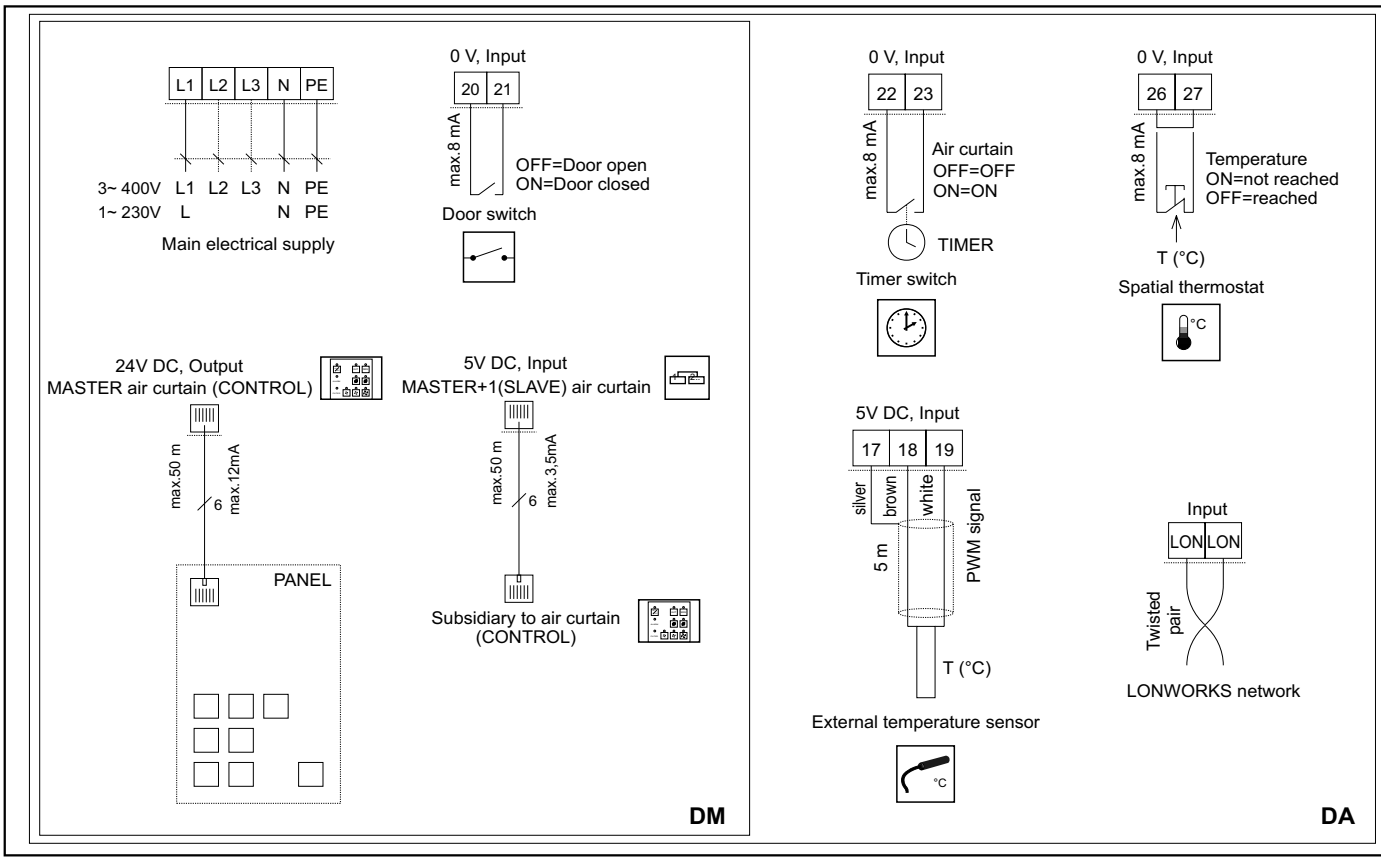
### ELECTRICAL DIAGRAMS




List of cables used for the main power (number of wires (pieces) x diameter of wire ($mm^2$)

| Type of air curtain | Version | | | |
|---|---|---|---|---|
| | A | B | C | D |
| **VCS3x-10S,V,W-** | 3 x 0,5 | 3 x 0,5 | 3 x 0,5 | 3 x 0,75 |
| **VCS3x-15S,V,W-** | 3 x 0,5 | 3 x 0,5 | 3 x 0,5 | 3 x 1,5 |
| **VCS3x-20S,V,W-** | 3 x 0,5 | 3 x 0,5 | 3 x 0,75 | 3 x 2,5 |
| **VCS3x-10E- (10M-)** | 5 x 2,5 | 5 x 2,5 (3 x 10) | 5 x 2,5 (3 x 10) | - |
| **VCS3x-15E- (15M-)** | 5 x 4 | 5 x 6 (3 x 10) | 5 x 6 (3 x 10) | - |
| **VCS3x-20E-** | 5 x 6 | 5 x 6 | 5 x 6 | - |

# AIR CURTAINS

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### EXAMPLE OF MARKING

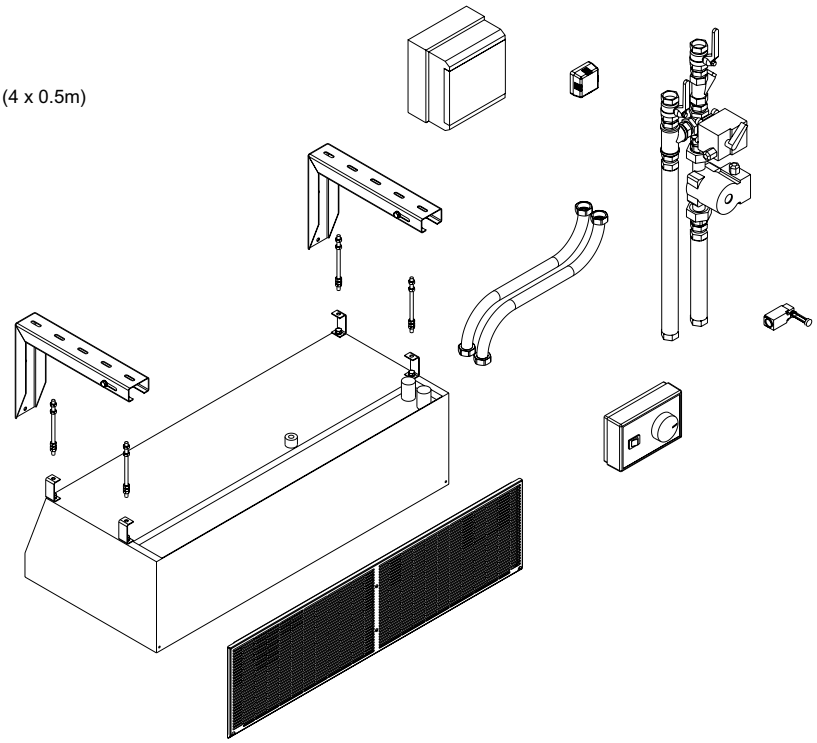
**VCS3 A - 10 V - 1 - L 0**

Colour (surface treatment)
**0** - White RAL 9010
**1** - other according to RAL (state specific colour number extra to the code)
Position of electric power supply (water heater supply) facing suction vent
**L** - el. power supply from left, water heater outlet on the right (standard)
**P** - el. power supply from right, water heater outlet on the left
Type of controller (air curtain connection)
**1** - SM
**2** - DM
**3** - DA
**4** - Lonworks
Type of heater
**V** - two level water heater
**W** - more than two level water heater (only for A,B and C output series)
**M** - Electrical 1-phase 230 V (only types B and C, DM,DA control, lengths 1 and 1,5m)
**E** - Electrical 3-phase 400 V (only types A, B and C)
**S** - without heater
Nominal width of air curtain
**10** - width 1000 mm
**15** - width 1500 mm
**20** - width 2000 mm
Output series
**A** - lowest air output
**B** - ...
**C** - ...
**D** - ...
**STANDESSE** air curtain (3rd generation).

### EXAMPLE OF ORDER

The air curtain must be ordered as individual parts of a modular design, this means the body of the air curtain + accessories. The example mentioned below stems from the coded accessories (see “ACCESSORIES”). Standesse door curtain, output series C, width 2000 mm, with water heater and manual SM operation (controller is a standard part of the delivery). Perforated suction covering. Connection of water intake and outflow using flexible pipes 500 mm in length. Regulation of heating output of the air curtain is carried out with the aid of a mixing junction and its controller on the basis of a spatial sensor. The air curtain is hung using threaded bars of 0.5 m in length and a wall bracket.

| | |
|---|---|
| VCS3C-20V-1-L0 | 1 item |
| VCS3-NKD-20A-0B | 1 item |
| VCS3-SK D-A | 2 items |
| DS-2 | 1 item |
| ZTZ-M8/1,0 | 2 items (4 x 0.5m) |
| OH-01-1/1-500 | 2 items |
| SMU-01-40 | 1 item |
| OSMU-01-6A | 1 item |
| P12L1000 | 1 item |



# AIR CURTAINS

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### TRANSPORTATION AND STORAGE

The air curtains are packed onto wooden palettes. The ordered amount is strapped onto the palette. On transportation and handling, the air curtains must be treated with care. During transportation, the air curtains must be secured against shock, impact and tilting. Air curtains may only be transported in their own palettes. During transportation and storage, the air curtains may be stacked to a maximum of 1.5 m on top of each other. The air curtains must be stored in a closed, dry and clean area.