

VCP Industrial



Water heater



Electric heater



Air only



Opening heights (widths) of up to 3.5m (7m)



Features

- Modular system, for openings of up to 3.5m height and up to 7m width
- 0.55m, 1.5m and 2.0m module lengths
- Warm-water heater, hot-water heater, electric heater or air-only version
- Vertical and horizontal installation
- 24-month guarantee

VCP air curtains are designed for the barrier free separation of two areas with differing climatic conditions.

These air curtains are particularly suitable for installation in warehouses, production halls and so on. The air curtain should be used in an environment free of rough dust, grease, chemical fumes and other impurities.

The VCP air curtain is made of white painted metal plate

(RAL9010 gloss). Alternative RAL colours are available at an extra charge.

Primary Parameters

- The air curtain should be installed indoors in a dry area with ambient temperatures ranging from 0°C up to +40°C with a relative humidity up to 80%.
- The IP rating of the air curtain is IP20.
- All air curtains with electric heaters are fitted with a safety thermostat with automatic reset and an emergency thermostat with a manual reset.
- The warm-water exchangers are designed for a maximum operating temperature of +100°C and a maximum operating pressure of 1.6MPa.

All air curtain projects should be calculated by a HVAC designer.

Air curtain type	Door height*[m] (double sided insulation)	Air capacity [m ³ /h]	Noise** [dB(A)]	Heater power [kW]	Heater voltage /current [V/A]	Fan voltage /current [V/A]	Weight [kg]
VCP-03-055-TO	6.0 (10)	2650	72.0	12.60***	-	400/0.65	37.0
VCP-03-055-TP		2650	72.0	12.60***	-	400/0.65	37.0
VCP-03-055-HO		2650	72.0	11.60****	-	400/0.65	37.0
VCP-03-055-HP		2650	72.0	11.60****	-	400/0.65	37.0
VCP-03-055-EO		3250	70.2	6	400/9	400/0.65	29.5
VCP-03-055-SO		3500	70.5	-	-	400/0.65	25.0
VCP-03-150-TO	6.5 (11)	5250	70.0	23.20***	-	400/1.30	99.0
VCP-03-150-TP		5250	70.0	23.20***	-	400/1.30	99.0
VCP-03-150-HO		5250	70.0	30.43****	-	400/1.30	99.0
VCP-03-150-HP		5250	70.0	30.43****	-	400/1.30	99.0
VCP-03-150-EO		6350	68.0	12	400/18	400/1.30	79.0
VCP-03-150-SO		6600	68.0	-	-	400/1.30	67.0
VCP-03-200-TO	7.0 (11)	8100	69.0	34.90***	-	400/2.00	133.0
VCP-03-200-TP		8100	69.0	34.90***	-	400/2.00	133.0
VCP-03-200-HO		8100	69.0	45.57****	-	400/2.00	133.0
VCP-03-200-HP		8100	69.0	45.57****	-	400/2.00	133.0
VCP-03-200-EO		10000	67.0	18	400/27	400/2.00	106.0
VCP-03-200-SO		10200	67.0	-	-	400/2.00	90.0

* Limited distance when air flow speed decreases to 2m/s. Applies to the highest capacity type under optimum conditions.

** Sound pressure measured 3m from the air curtain intake.

*** At the temperature gradient of 82/71 and temperature of intake air equal to +15 °C.

**** At the temperature gradient of 130/70 and temperature of intake air equal to +15 °C.

Electric heater parameters

Air curtain type	Air capacity [m ³ /h]	Heater power [kW]	Temperature increase* CE t [°C]
VCP-03-055-EO	3250	6	4.5
VCP-03-150-EO	6350	12	4.9
VCP-03-200-EO	10000	18	4.9

- At the maximum air flow and maximum heater power

Water exchanger parameters for water temperature gradient of 80/60 °C

Air curtain type	Air capacity* [m ³ /h]	Heater power* [kW]	Outlet temperature [°C]	Water flow [l/s]	Water pressure loss [kPa]
VCP-03-055-TO	2650	9.01	24.9	0.11	0.98
VCP-03-055-TP	2650	9.01	24.9	0.11	0.98
VCP-03-150-TO	5250	21.31	26.9	0.26	3.72
VCP-03-150-TP	5250	21.31	26.9	0.26	3.72
VCP-03-200-TO	8100	31.97	26.5	0.38	3.33
VCP-03-200-TP	8100	31.97	26.5	0.38	3.33

- Temperature of intake air: +18 °C

Water exchanger parameters for water temperature gradient of 82/71 °C

Air curtain type	Air capacity* [m ³ /h]	Heater power* [kW]	Outlet temperature [°C]	Water flow [l/s]	Water pressure loss [kPa]
VCP-03-055-TO	2650	12.6	14.1	0.27	14.8
VCP-03-055-TP	2650	12.6	14.1	0.27	14.8
VCP-03-150-TO	5250	23.2	13.0	0.50	15
VCP-03-150-TP	5250	23.2	13.0	0.50	15
VCP-03-200-TO	8100	34.9	12.7	0.75	17.2
VCP-03-200-TP	8100	34.9	12.7	0.75	17.2

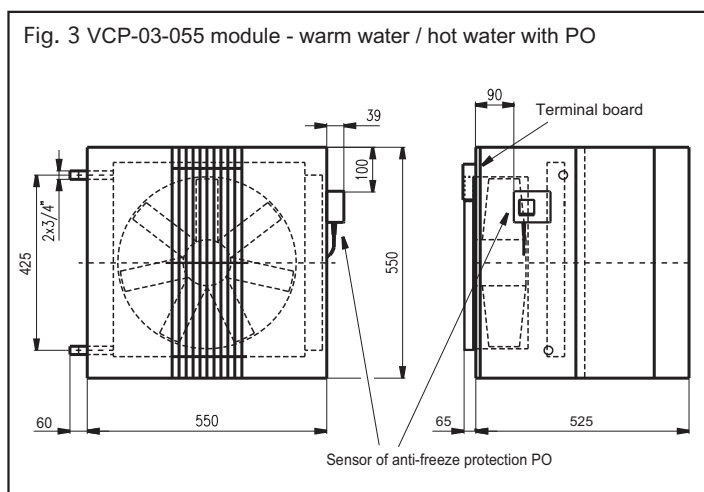
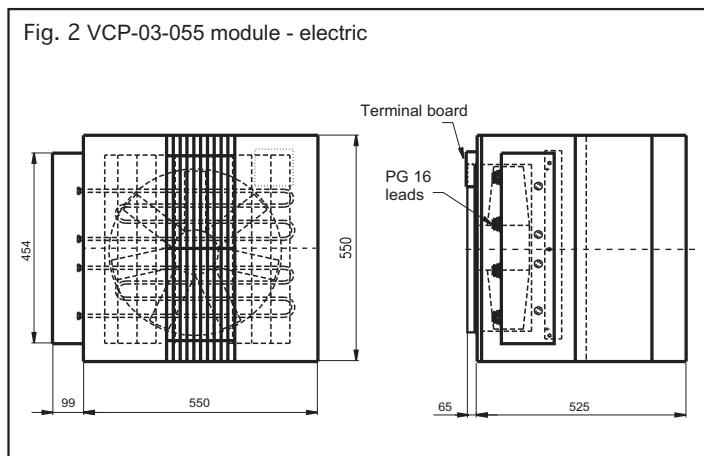
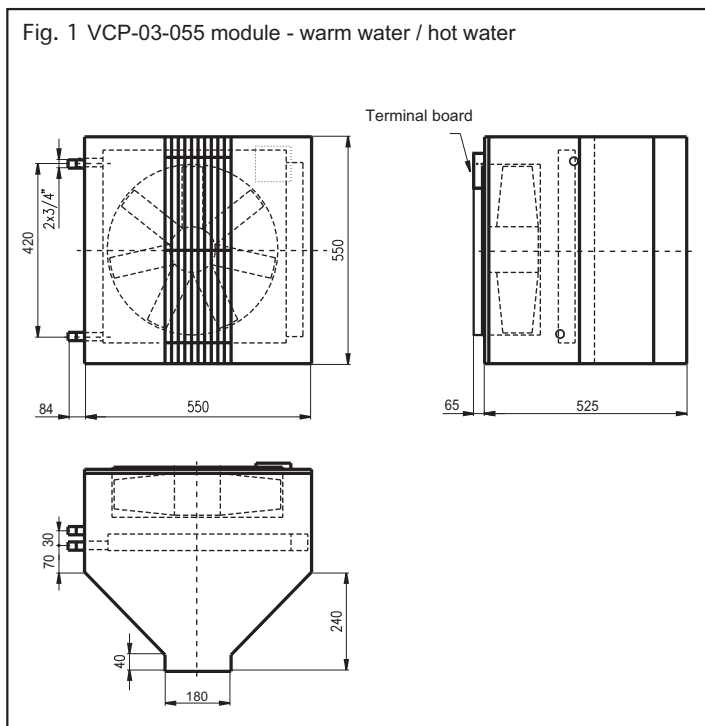
- Temperature of intake air: +18 °C

Water exchanger parameters for water temperature gradient of 130/70°C

Air curtain type	Air capacity* [m ³ /h]	Heater power* [kW]	Outlet temperature [°C]	Water flow [l/s]	Water pressure loss [kPa]
VCP-03-055-HO	2650	11.60	27.8	0.04	0.2
VCP-03-055-HP	2650	11.60	27.8	0.04	0.2
VCP-03-150-HO	5250	30.43	32.0	0.12	1.0
VCP-03-150-HP	5250	30.43	32.0	0.12	1.0
VCP-03-200-HO	8100	45.57	31.5	0.18	0.9
VCP-03-200-HP	8100	45.57	31.5	0.18	0.9

- Temperature of intake air: +18 °C





Installation and assembly

- The air curtain can be installed both in vertical and horizontal positions.
- The air curtain shall be located as close to the top (side) edge of the doorway as possible.
- To ensure a correct function it is recommended that the air curtain is located 100mm above the doorway or overlaps the doorway by 100mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see over the page.
- Suspension holders are used for installing (hanging) the air curtain, see ACCESSORIES.

Fig. 4 VCP-03-150 module - warm water exchanger

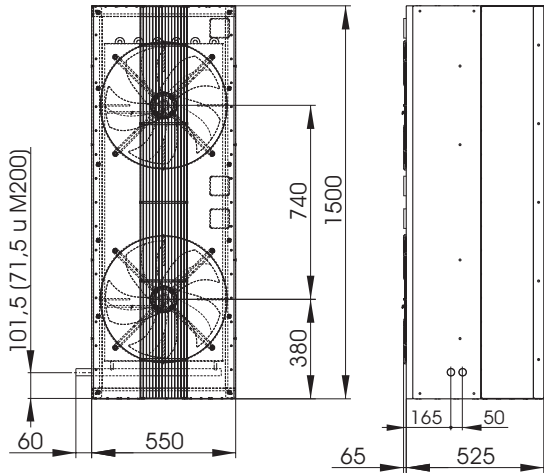
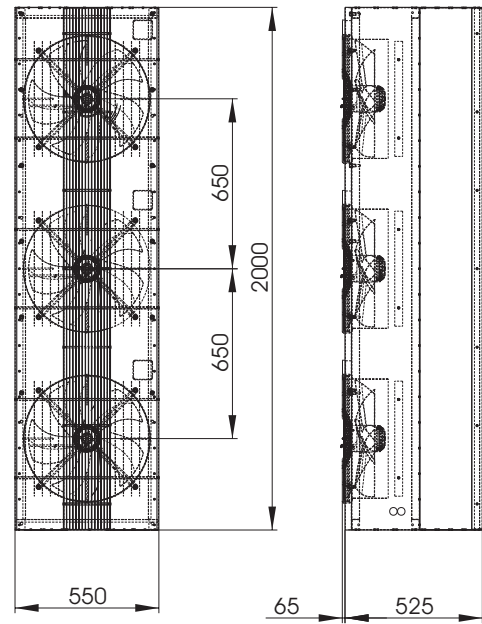
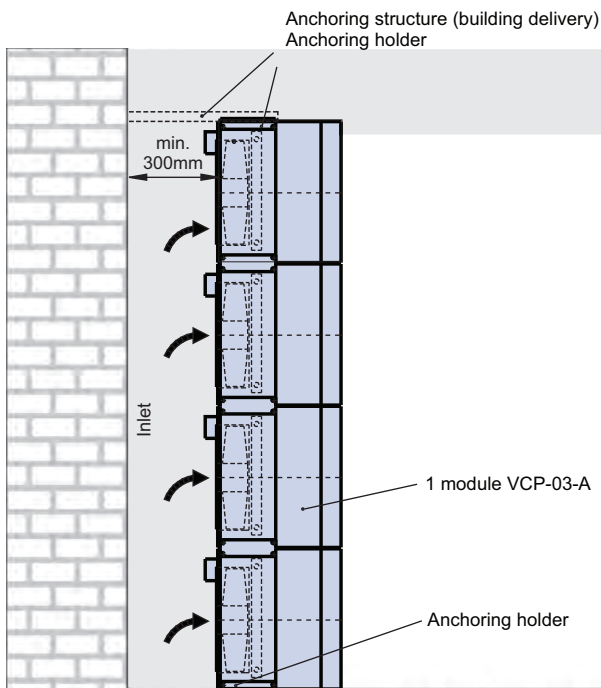


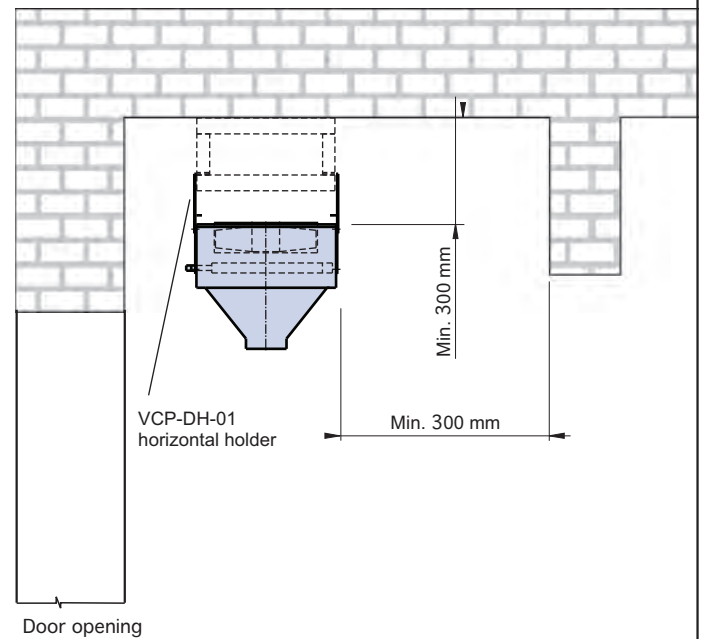
Fig. 5 VCP-03-200 module - air-only



Vertical installation, side view



Horizontal installation, side view



Control















The VCP INDUSTRIAL air curtains are shipped without integrated control system. The following accessories are recommended to allow their regulation.



RO



RB

	Control type	Manual	Manual
	Air capacity control	5 speeds	3 speeds
	Electric heater control	NO	2 levels
	Water heater control	NO	Open/Closed
	Door contact connection		YES
	Thermostat connection	YES (Only one of the mentioned items)	YES
	Timer connection		YES
 SERVICE	Service interval indication	NO	YES
 DOOR	Open door indication	NO	YES
	Electric heater aftercooling	NO	YES
 ALARM	Antifreeze protection	NO	YES
	Chaining air curtains	NO	Up to 6
	Light indication of selected function	Operation only	YES
	Controller-air curtain connection	Power cable (400V)	Power cable (400V)

Fan speed control

The RO five-speed controller should be used for controlling the fan speed. Required speed is selected manually by a switch located on the controller housing. This controller may also be complimented with a TER-P room thermostat for activating the fan depending on the room temperature or with the DS door switch activating the fan according to the door position. Multiple fans can be connected to a single RO controller at the same time; however, the sum of motor currents should not exceed the maximum admissible loading of the RO controller.

Water heater output control

The air curtain is not equipped with an integrated water control, this needs to be designed separately.

Basic – by throttling.

TV1 Thermostatic Valve - The valve controls the flow of the warm water supply into the air curtain depending on the temperature of air leaving the air curtain. One valve is required for each air curtain.

Economical – by diverting.

ZV3 Three Way Zone Valve (open/closed) with servo drive - Each ZV3 Zone valve should be selected with either a TER-K (channel thermostat) or TER-P (room thermostat).

The valve switches the warm water supply in to the air curtain and back towards the heat source depending on the temperature of the air leaving the air curtain or depending on the room temperature. One valve is required per air curtain.

Precise – by mixing.

SMU Mixing Point, OSMU-01-6A mixing point controller (max temperature 110°C), P12L1000 channel sensor or P10L1000 room sensor.

The mixing system controls the ratio of supply and return

The following table states the number of fans in individual modules of the indesse air curtain

Module type	VCP-03-055	VCP-03-150	VCP-03-200
Number of fans in module	1	2	3

The following table indicates the maximum number of fans for the VCP Industrial air curtains that can be connected to the individual types of the RO controllers

Controller type	RODB2	RODB4	RODB7	RODB9
Maximum number of fans connected	3	6	10	13

The following table indicates the number of modules of the VCP Industrial air curtains that should be connected to the individual types of the SMU mixing point

Mixing point type	VCP-03-055	VCP-03-150	VCP-03-200
SMU-6,3-60	1 - 3	1 - 2	1
SMU-12-60	2 - 6	2 - 3	2
SMU-12-70	6	3	2

Suitable combinations of the INDESSE modules and the SMU mixing nodes apply at the water temperature gradient of 80/60 and the inlet air temperature of 15 °C

heated water into the air curtain depending on the temperature of air leaving the air curtain and/or depending on the room temperature.

One mixing point may be used for multiple air curtains provided they are an identical length and that the exchangers are connected in a parallel arrangement.

Water heater and fan speed control

A common control of the fan speed and the water exchanger output is facilitated by the RB control unit. Manual remote controller can be used for changing the fan speed in three levels. The water exchanger output can be controlled by switching the ZV-3 two-position (open/closed) three-way valve.

The following external switching elements may be connected to the control unit:

- TER-P room thermostat or TER-K channel thermostat for automatic switching of the ZV-3 three-way valve.
- DS door switch activating and controlling the air curtain depending on the door position. The controller allows selecting one of the operating modes with the door in closed position:
 - Complete air curtain switches off.
 - Air curtain operates at the first fan speed level, heater remains in the same condition as when the door was open (default factory setting).
 - Air curtain runs at the second fan speed level. The heater remains in the same condition as when the door was open.
- Antifreeze protection sensor installed in the VCP-03-xxx-TP module connected through the RB-S relay; deactivates fans and opens the ZV-3 three-way valve.
- SH-TM-848 timer for activating and deactivating a complete unit at the preset intervals.

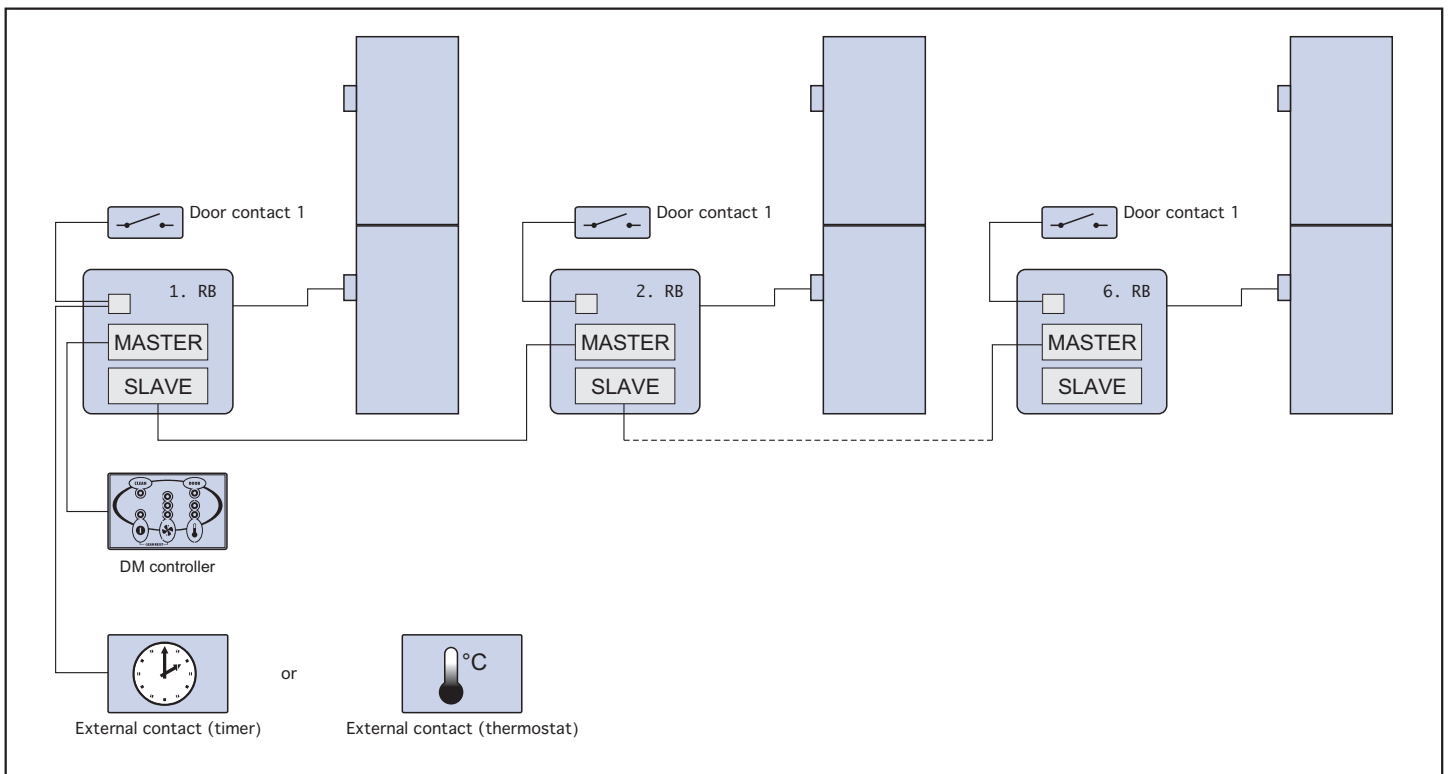
A maximum of six fans for the VCP Industrial air curtains can be connected to the RB control unit. In addition, the RB control units can be interconnected up to the maximum of six units. The door switch function under such layout remains independent each contact controls the connected unit only.

Electric heater and fan speed control

The same RB control unit as for the water heater control is used for the common control of the fan speed and the electric heater output. The capacity of the electric heater can be adjusted in two levels by the remote controller using two STYKAC-20-LC1 contactors. Other functions and accessories are identical.

Maximum number of fans for the VCP Industrial air curtains that can be connected to the RB controllers

Controller type	RB-3-4A
Maximum number of fans connected	6



Accessories

No special accessories are needed to ensure a proper function of the stand-alone air curtain. If the air curtain is fitted with the control system, the control system is connected using common wiring cables, see “Wiring diagrams”. A suitable cross-section of the cables, protection of the unit, and utilization of other wiring materials should be determined based on the particular installation conditions. These components should be delivered by a company performing the air curtain electrical wiring.

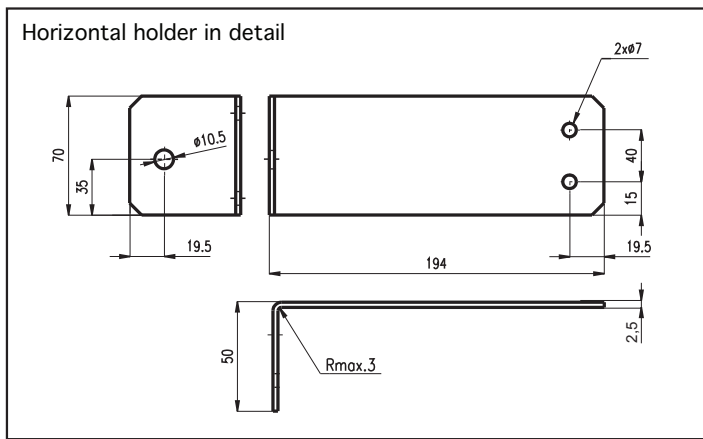
Optional accessories

Horizontal holder

VCP-DH-01 - for suspending the air curtain under ceiling.
 Suitable number of holders per air curtain is specified in table below.

VCP-DH-01

1 ceiling holder



Number of Indesse air curtain modules connected

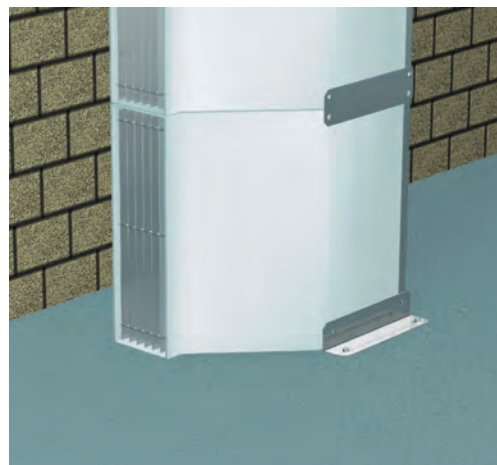
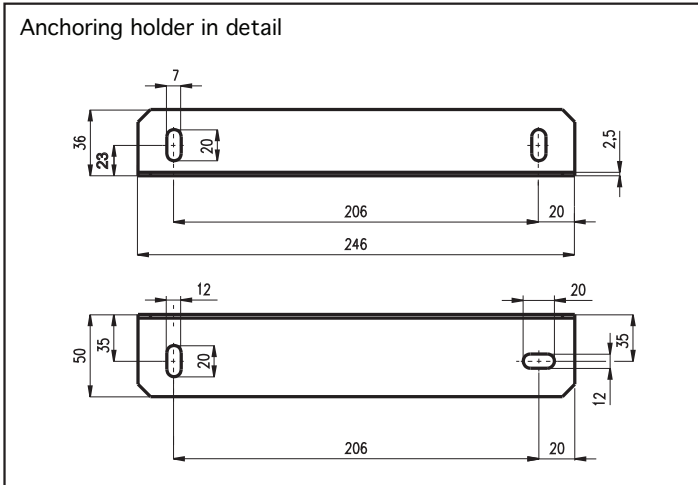
	1	2	3	4	5	6	7	8	9	n
No of DH holders	4	6	8	10	12	14	16	18	20	$2 \times n + 2$

Anchoring holder

VCP-DK-01 - for anchoring the air curtain to the floor. If the air curtain is higher than 4 meters, we recommend fixing the air curtain at its upper section using two holders.

VCP-DK-01

1 Anchoring holder



VCP Industrial

Speed controller
RO



Mixing point
SMU-xx-xx



Thermostatic valve
TV1-1/1



Flexible connection hoses
OH-01-1/1-xxx



Three-way valve with servo drive
ZV-3



Control unit
RB-3-4A

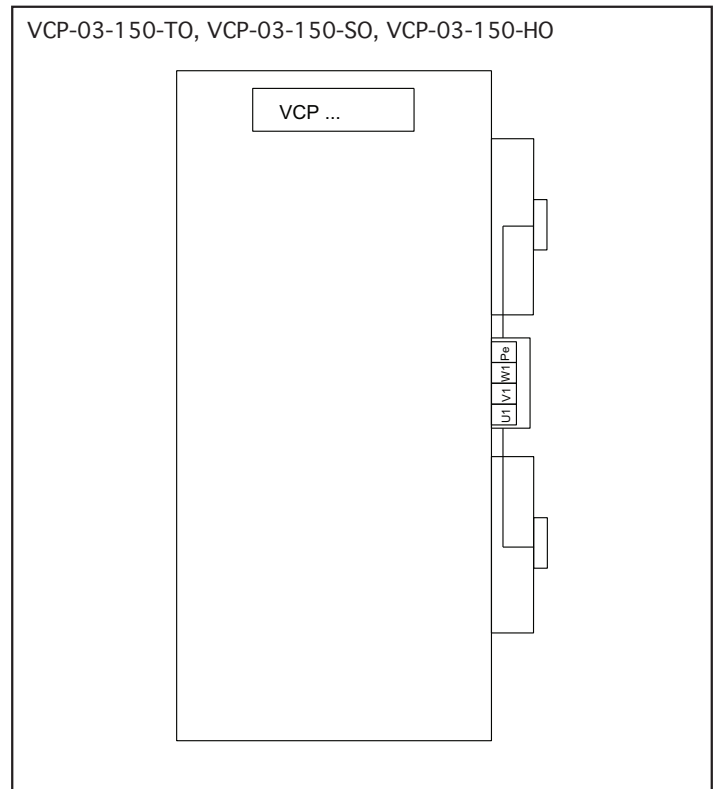
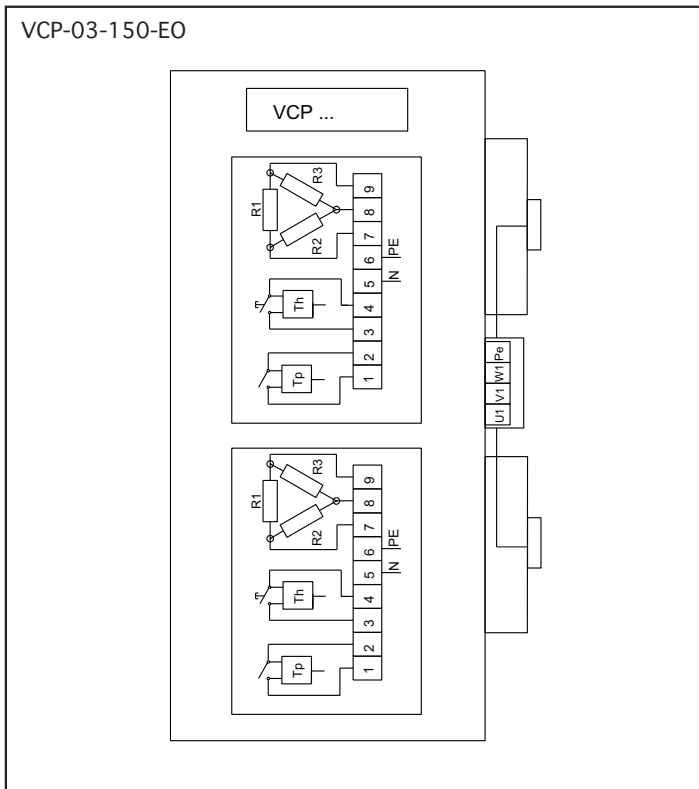


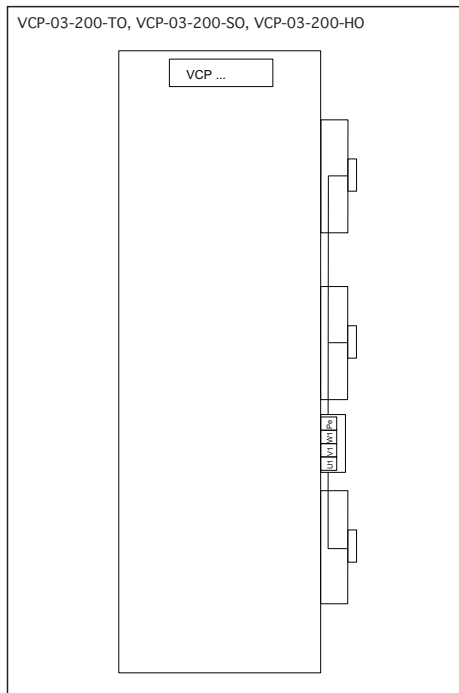
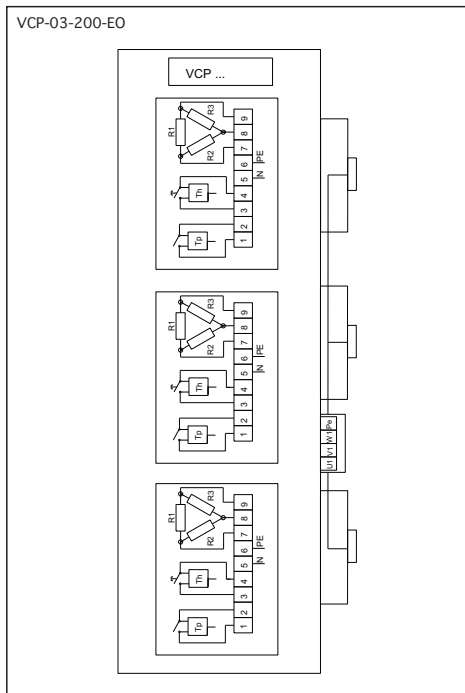
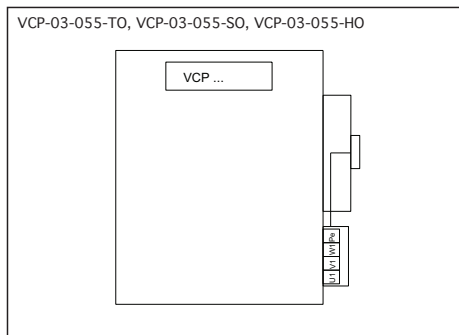
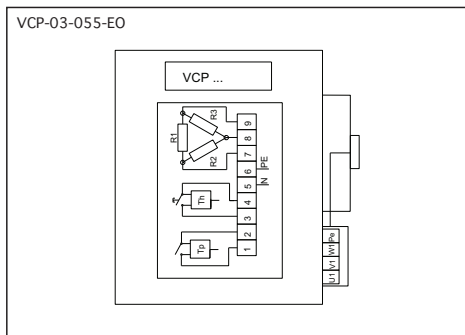
Door switch - industrial
DS



Wiring diagrams

The recommended cross-section of the main power supply cables is stated in the Instruction Manual. All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.





Key to coding

VCP-03 - 055 - S O

- O - Heat exchanger without antifreeze protection
 - P - Heat exchanger with antifreeze protection
 - T - warm water heater max. 100 °C
 - H - hot water heater max. 130 °C
 - E - electric heater
 - S - air-only
- 055, 150, 200 - height of the module 550, 1500, 2000 mm
- VCP-03 - industrial air curtain
VCP Industrial

www.jsaircurtains.com

JS has a policy of continually improving products and performance. Actual specifications might vary from those shown.

JS Air Curtains

Artex Avenue, Rustington, LITTLEHAMPTON,
West Sussex, BN16 3LN, UK.

Tel: +44 (0)1903 858656 • Fax: +44 (0)1903 850345

Email: sales@jsaircurtains.com



Part of the JS Humidifiers Group