



air-only



water heater



electric wire heater

STRAW  
SYSTEMWIRE  
HEATERANTI  
FREEZEC4  
CLASS**BASIC FEATURES**

- Lengths: **1.65; 2.20** and **2.75** m
- **AC Version:** Air flow up to **18500 m<sup>3</sup>/h** (ISO 27 327-1)
- **Straw System exhaust** with maximized screening effect thanks to the compact and laminar airflow
- **Horizontal and vertical** installation; exhaust direction to be adjusted by air curtain holders
- Fast and easy connection of individual modules
- Maintenance-free air curtain with a long service life
- Possibility to choose from various control types
- In standard available in: **colour RAL 9016**, galvanised casing and **stainless steel C4-resistant casing**; further available in any RAL colour based upon customers

The INDESSE is a high-performance industrial air curtain for vertical and horizontal installation for use in **manufacturing halls, warehouses and other industrial buildings** with a recommended installation height / width up to **8 m**. The air curtain shall be installed indoors in a dry area with ambient temperatures ranging from (+5 °C)\* up to +40 °C and relative humidity of up to 80 %. Ambient air curtains (with no LPHW or electric coil) are able to be installed indoors with an ambient temperatures ranging from -10 °C up to +40 °C but only with dry cold air. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities. The IP rating of air curtains without a heater and with water heating is IP 44. The IP rating of the air curtain with the electric heating is IP 20. The fans comply with requirements of IP 44. **The air curtain project shall always be developed by the HVAC designer.**

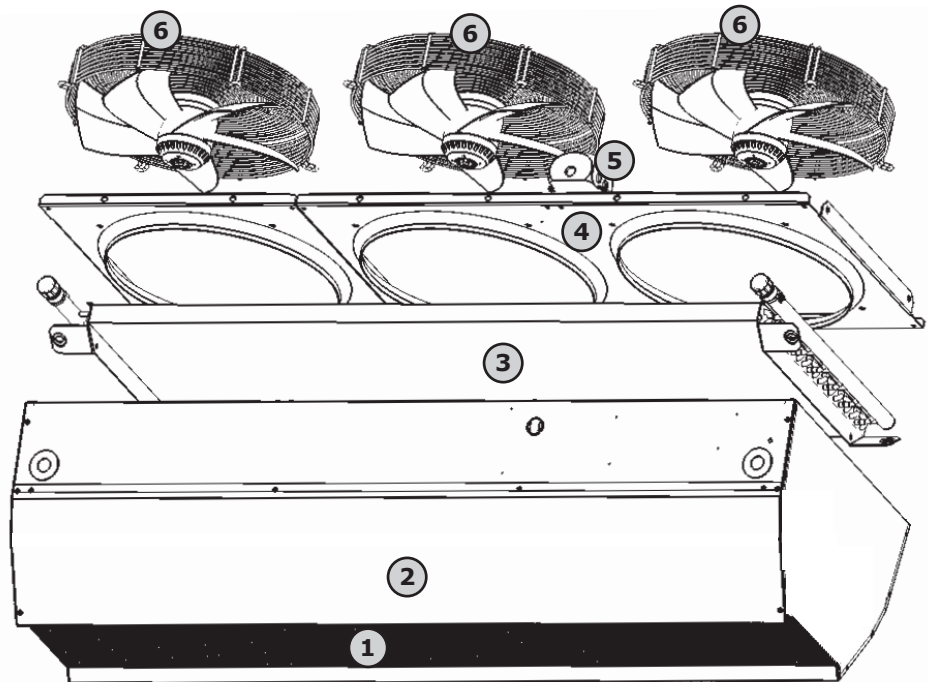


**PRIMARY PARAMETERS**

Air curtains with an electric heater are fitted with safety thermostats. Fan motors are equipped with thermal contacts, which can be used to turn off the air curtain in case of the overheating of the motor. Air curtains with LPHW coil are designed for maximum operating water temperature of **+110 °C** and a maximum operation pressure of 1.6 MPa. Stainless steel C4 air curtains are equipped with LPHW coils specially treated with LCE hydrophobic coating.

**MAIN PARTS**

- ① Exhaust (Straw system)
- ② Main body
- ③ LPHW
- ④ Back side
- ⑤ Motor connection box
- ⑥ Motor



**PRIMARY PARAMETERS**

**Motor 50Hz**

Type	Recommended installation height [m]	Air output [m <sup>3</sup> /h] <sup>*1</sup>			Acoustic pressure at 5m[dB(A)] <sup>*2</sup>			Sound power [dB(A)] <sup>*3</sup>
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCIN2A150-S0AC	7,5	11550	9170	5600	63	58	45	85
VCIN2A150-V2AC		10300	7900	4600	63	57	46	85
VCIN2A150-E1AC		11550	9170	5600	63	58	45	85
VCIN2A200-S0AC	8,0	15100	12600	7700	65	60	47	87
VCIN2A200-V2AC		13700	10350	6000	64	58	48	86
VCIN2A200-E1AC		15100	12600	7700	65	60	47	87
VCIN2A250-S0AC	7,5	18500	15600	9500	67	62	50	89
VCIN2A250-V2AC		17000	12900	7500	65	59	49	87
VCIN2A250-E1AC		18500	15600	9500	67	62	50	89

<sup>\*1</sup> Airflow volume according ISO27327-1

<sup>\*2</sup> Acoustic pressure values at 5 m distance for maximum speed. Directional factor: Q=2.

<sup>\*3</sup> Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW]		Total power input [kW]	Total voltage/current [V/A] <sup>*3</sup>	Motor voltage/current [V/A] <sup>*4</sup>	Frequency [Hz]	Weight [kg]
	1st level	2st level					
VCIN2A150-S0AC	-	-	0,9	230/4,1	230/4,1	50	51 / 54 <sup>*5</sup>
VCIN2A150-V2AC	75,2 <sup>*2</sup>		0,9	230/4,1	230/4,1		60 / 63 <sup>*5</sup>
VCIN2A150-E1AC	12,1*	24,3*	25,1	400/39,3	230/4,1		55
VCIN2A200-S0AC	-	-	1,2	230/5,5	230/5,5		69 / 72 <sup>*5</sup>
VCIN2A200-V2AC	101 <sup>*2</sup>		1,2	230/5,5	230/5,5		78 / 81 <sup>*5</sup>
VCIN2A200-E1AC	16,2*	32,4*	33,5	400/52,5	230/5,5		74
VCIN2A250-S0AC	-	-	1,4	230/6,8	230/6,8		83 / 86 <sup>*5</sup>
VCIN2A250-V2AC	127 <sup>*2</sup>		1,4	230/6,8	230/6,8		98 / 101 <sup>*5</sup>
VCIN2A250-E1AC	20,2*	40,5*	41,9	400/65,5	230/6,8		89

- \* At the maximum air flow and maximum heater power
- <sup>\*2</sup> Intake air temperature +15°C, water temperature gradient of 90/70 °C and highest fan speed.
- <sup>\*3</sup> Value with motor voltage 230 V.
- <sup>\*4</sup> The current is for 230 V, currents for other voltages are in a separate table.
- <sup>\*5</sup> Standard / Stainless steel C4 version

**Motor 60Hz**

Type	Recommended installation height [m]	Air output [m³/h] <sup>*1</sup>			Acoustic pressure at 5m[dB(A)] <sup>*2</sup>			Sound power [dB(A)] <sup>*3</sup>
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCIN2A150-S0AC	7,5	11520	9140	5570	64	58	46	85
VCIN2A150-V2AC		10270	7870	4570	63	58	46	85
VCIN2A200-S0AC	8,0	15070	12570	7670	65	60	48	87
VCIN2A200-V2AC		13670	10320	5970	64	58	48	86
VCIN2A250-S0AC	7,5	18470	15570	9470	67	62	50	89
VCIN2A250-V2AC		16970	12870	7470	66	60	49	87

- <sup>\*1</sup> Airflow volume according ISO27327-1
- <sup>\*2</sup> Acoustic pressure values at 5 m distance for maximum speed. Directional factor: Q=2.
- <sup>\*3</sup> Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW]		Total power input [kW]	Total voltage/current [V/A]	Motor voltage/current [V/A]	Frequency [Hz]	Weight [kg]
	1st level	2st level					
VCIN2A150-S0AC	-	-	0,9	230/4	230/3,9	60	51
VCIN2A150-V2AC	75,2*		0,9	230/4	230/3,9		60
VCIN2A200-S0AC	-	-	1,1	230/5,1	230/5,1		69
VCIN2A200-V2AC	101*		1,2	230/5,4	230/5,4		78
VCIN2A250-S0AC	-	-	1,4	230/6,5	230/6,5		83
VCIN2A250-V2AC	127*		1,5	230/6,7	230/6,7		98

- \* Intake air temperature +15°C, water temperature gradient of 90/70 °C and highest fan speed.

**LPHW coil parameters for water temperature gradient of 60/40 °C**

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	37,6	26,1	0,45	8
VCIN2A200-V2AC	13700	50,2	26,2	0,61	7
VCIN2A250-V2AC	17000	62,7	26,2	0,76	5

\* Temperature of intake air: +15 °C

**LPHW coil parameters for water temperature gradient of 70/50 °C**

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	50,4	30,1	0,61	13
VCIN2A200-V2AC	13700	67,6	30,2	0,82	9
VCIN2A250-V2AC	17000	84,5	30,4	1,03	9

\* Temperature of intake air: +15 °C

**LPHW coil parameters for water temperature gradient of 80/60 °C**

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	62,9	34,1	0,76	18
VCIN2A200-V2AC	13700	84,6	34,3	1,03	14
VCIN2A250-V2AC	17000	106	34,5	1,29	11

\* Temperature of intake air: +15 °C

**LPHW coil parameters for water temperature gradient of 90/70 °C**

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	75,2	38,1	0,92	24
VCIN2A200-V2AC	13700	101	38,4	1,24	17
VCIN2A250-V2AC	17000	127	38,7	1,55	15

\* Temperature of intake air: +15 °C

**LPHW coil parameters for water temperature gradient of 110/80 °C**

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	91,3	43,6	0,75	16
VCIN2A200-V2AC	13700	123	43,9	1	12
VCIN2A250-V2AC	17000	154	44,3	1,26	10

\* Temperature of intake air: +15 °C

**Electric heater parameters**

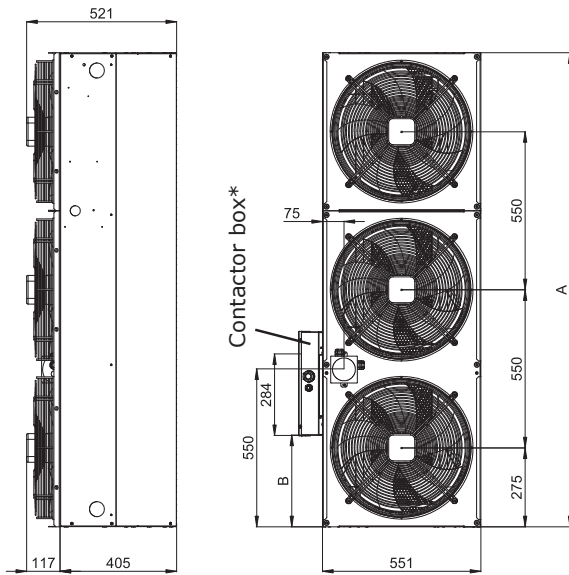
Air curtain type	Air flow volume [m³/h]	Heater power [kW]	Electric heater consumption [V/A]	Temperature increase* Δt [°C]
VCIN2A150-E1AC	11550	24,3	400 / 35,2	6,3
VCIN2A200-E1AC	15100	32,4	400 / 47,0	6,4
VCIN2A250-E1AC	18500	40,5	400 / 58,6	6,5

\* At the maximum air flow and maximum heater power



**DIMENSIONS**

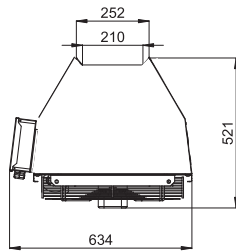
**VCIN2A...-E1..**



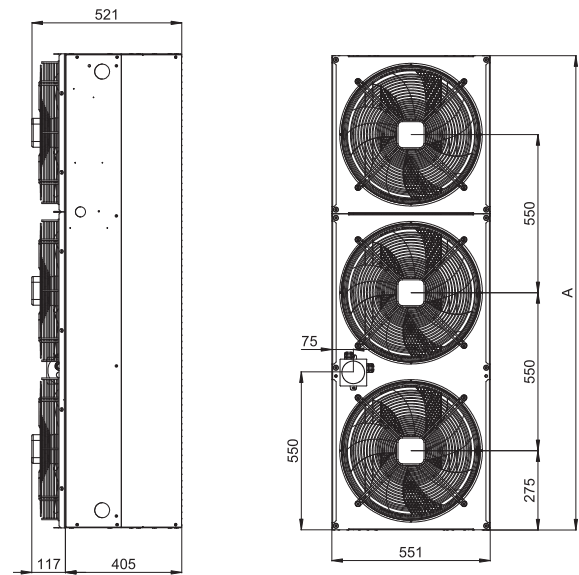
Contactor box\*

\* - Accessories

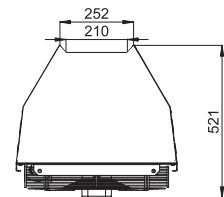
VCIN	A [mm]	B [mm]
150	1650	320
200	2200	870
250	2750	870



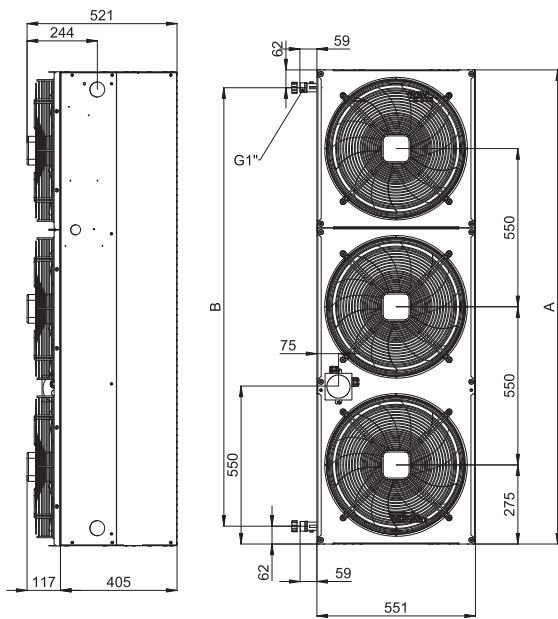
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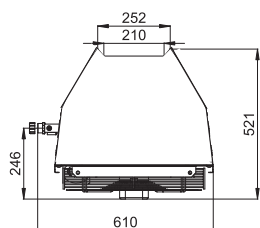
VCIN	A [mm]
150	1650
200	2200
250	2750



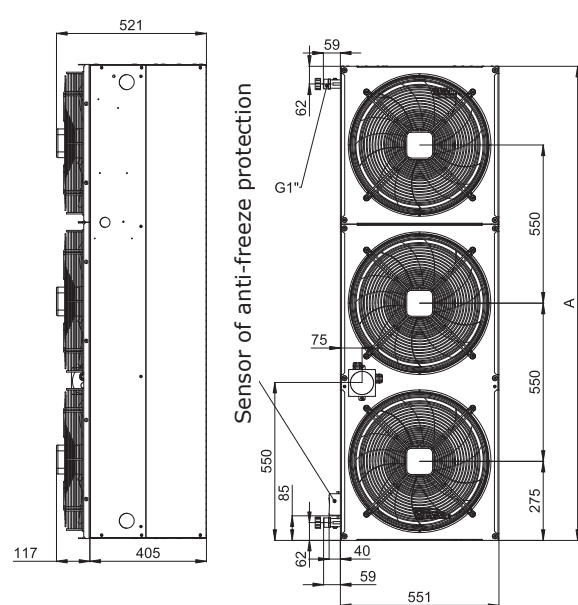
**VCIN2A...-V2..**



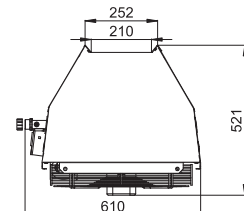
VCIN	A [mm]	B [mm]
150	1650	1526
200	2200	2076
250	2750	2626



**VCIN2A...-P2..**



VCIN	A [mm]
150	1650
200	2200
250	2750

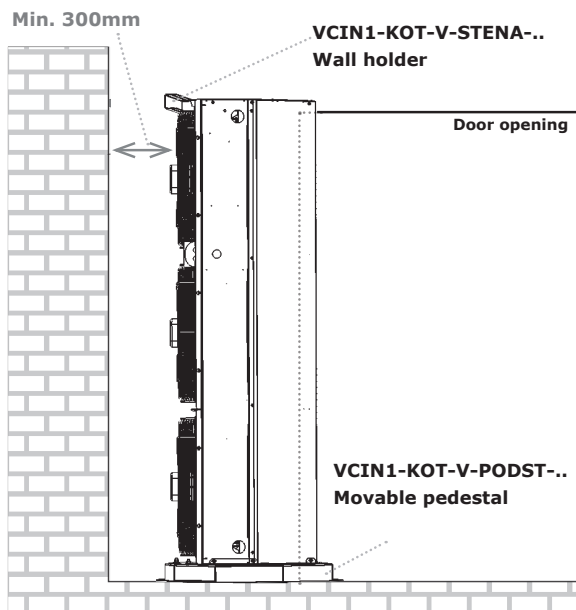




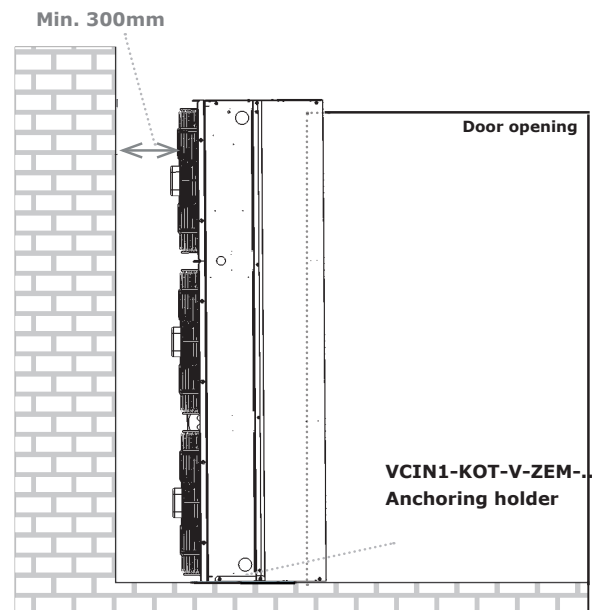
**INSTALLATION AND ASSEMBLY**

- 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 correct function it is recommended that the air curtain is located 100 mm above the doorway or overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Suspension holders are used for installing (hanging) the air curtain see ACCESSORIES.

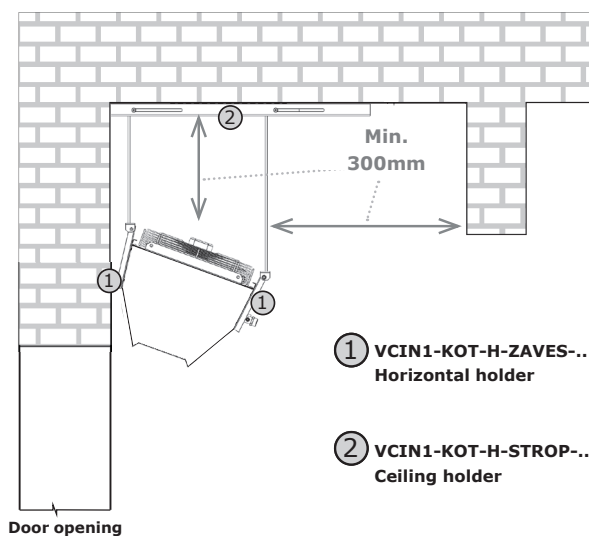
**Vertical installation, side view, movable pedestal**



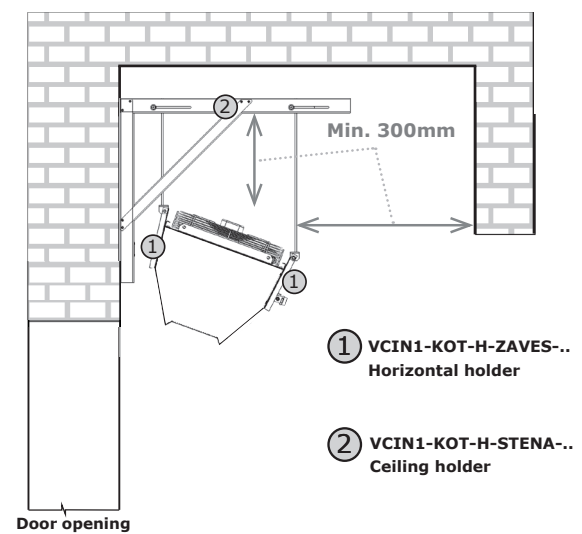
**Vertical installation, side view, fixed**



**Horizontal installation, side view**



**Horizontal installation, side view**





**CONTROL**

The **INDESSE** air curtains are shipped without an integrated control system. The following accessories are recommended to allow their control.

**Possibilities of individual control types:**



		STRA1	IC3-C
	Type of controller	Manual	Manual / Auto control
	Control of air output	5 speeds	5 speeds
	Control of electric heater	NO	YES
	Control of water heater	NO	Open / Closed / 0-10V
	Possibility of connecting a door contact	YES	YES
	Temperature measurement	NO	YES
	External control	YES	YES
	Integrated Timer	NO	YES
	Open door indication	NO	YES
	Electric heater aftercooling	NO	YES
	Antifreeze protection	NO	YES
	Chaining of controllers	NO	YES
	Run indication	YES	YES
	Control panel lock	NO	YES
	BMS capability	NO	YES ModBUS RTU, TCP, BACnet

The following table states the number of fans in the individual modules of the *INDESSE* air curtain.

Module type	VCIN2A150	VCIN2A200	VCIN2A250
Number of fans in module	3	4	5

Table with current for different voltages.

Type	Motor voltage [V]	Motor current [A]	Frequency [Hz]
VCIN2A150	125	4.4	50
	150	<b>4.7</b>	
	170	4.4	
	190	4.1	
	230	4.1	
VCIN2A200	125	5.8	
	150	<b>6.2</b>	
	170	5.8	
	190	5.4	
	230	5.4	
VCIN2A250	125	7.3	
	150	<b>7.8</b>	
	170	7.3	
	190	6.8	
	230	6.8	

The following table indicates the maximum number of fans for the *INDESSE* air curtains that can be connected to the individual types of the STRA1 controllers.

Controller type	STRA1-050L22	STRA1-075L22	STRA1-160L20
Maximum number of fans connected	3	4	10

The following table indicates the maximum number of fans for the *INDESSE* air curtains that can be connected to the individual types of the AirGENIO IC-C controllers.

Controller type	IC3-C AC5-7	IC3-C AC5-16
Maximum number of fans connected	4	10

**Water heater output control**

**Precise by mixing**

The following table indicates the number of modules of the **INDESSE** air curtains that should be connected to the individual types of the mixing point.

Type	Number of modules of VCIN / Anzahl der Module von VCIN					
	1			2		
	$K_{vs}$	Water flow (m <sup>3</sup> /h)	Min. pump pressure (kPa)	$K_{vs}$	Water flow (m <sup>3</sup> /h)	Min. pump pressure (kPa)
VCIN2A150	11	2,8	28,5	22	5,5	28,5
VCIN2A200	11	3,7	29,0	22	7,4	29,0
VCIN2A250	11	4,7	34,7	22	9,3	34,7

Suitable combinations of the **INDESSE** modules and the mixing nodes apply at a water temperature gradient of 80/60, and an inlet air temperature of 15 °C and pressure difference at connection point 5 kPa.

**Recommended mixing points for LPHW coil 2-way valve**



Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCIN2A150-V2	<b>STRA1</b>	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	<b>IC3-C (ON-OFF)</b>	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	<b>IC3-C (0-10V)</b>	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25
VCIN2A200-V2	<b>STRA1</b>	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	<b>IC3-C (ON-OFF)</b>	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	<b>IC3-C (0-10V)</b>	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25
VCIN2A250-V2	<b>STRA1</b>	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	<b>IC3-C (ON-OFF)</b>	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	<b>IC3-C (0-10V)</b>	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25

**Recommended mixing points for LPHW coil 3-way valve**



Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCIN2A150-V2	<b>STRA1</b>	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	<b>IC3-C (ON-OFF)</b>	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	<b>IC3-C (0-10V)</b>	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25
VCIN2A200-V2	<b>STRA1</b>	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	<b>IC3-C (ON-OFF)</b>	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	<b>IC3-C (0-10V)</b>	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32
VCIN2A250-V2	<b>STRA1</b>	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	<b>IC3-C (ON-OFF)</b>	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	<b>IC3-C (0-10V)</b>	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32



**ACCESSORIES**

**REQUIRED 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 the "Wiring diagrams" chapter. A suitable cross-section of the cables, protection of the unit, and utilization of other wiring materials shall be determined based on the particular installation conditions.

**These components shall be delivered by a company performing the air curtain electrical wiring.**



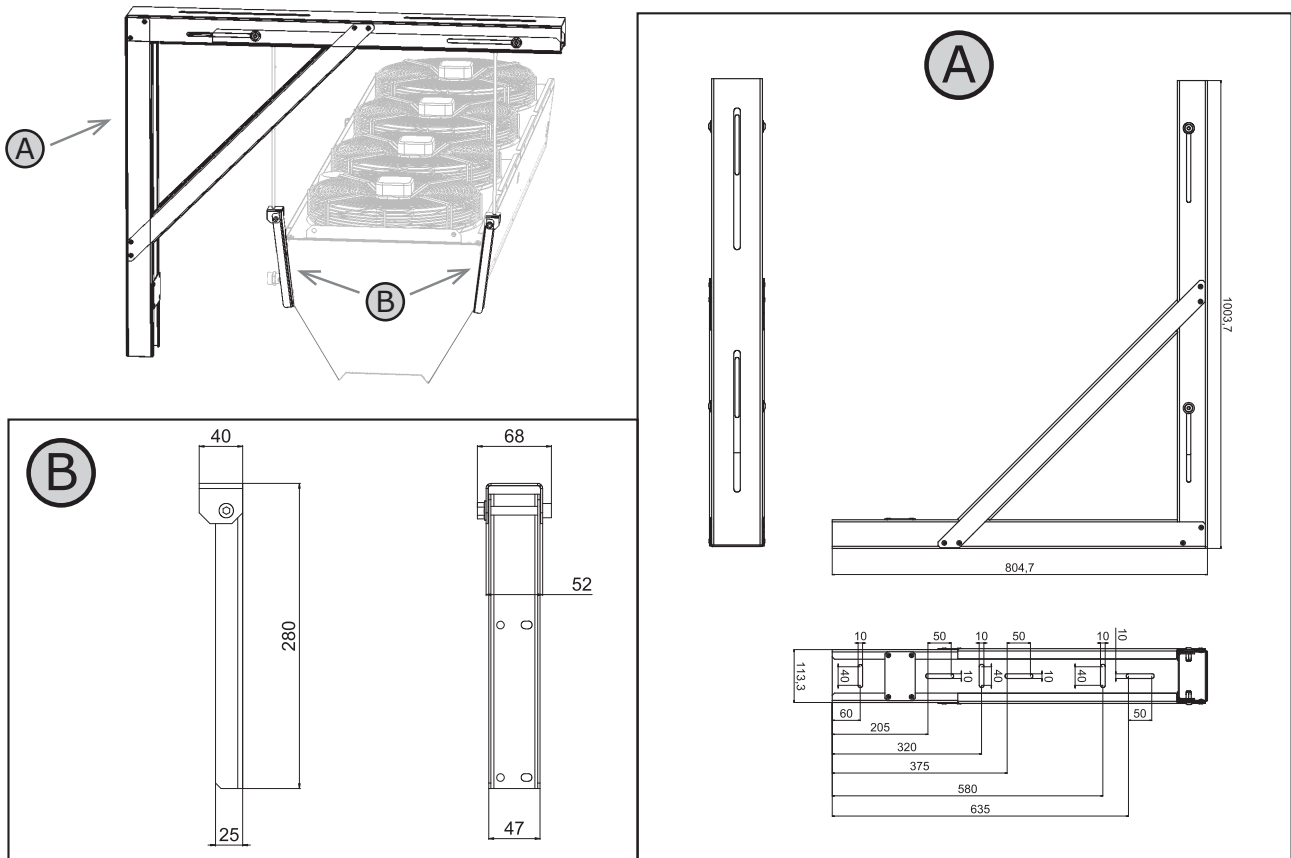
**OPTIONAL ACCESSORIES**

**WALL holder set - HORIZONTAL**

This set includes:

A part - Wall holder (1 pcs)

B part - Air curtain holder (2 pcs)



**VCIN1-KOT-H-STENA-0**

- Color**
- 0** Standard (RAL9016)
  - 1** Galvanized steel
  - 9** Atyp RAL
  - N** Stainless steel version (C4)

**Wall holder set (1 set)**

	Number of INDESSE air curtain modules connected								
	1	2	3	4	5	6	7	...	n
No. of holders	2	3	4	5	6	7	8	...	n + 1



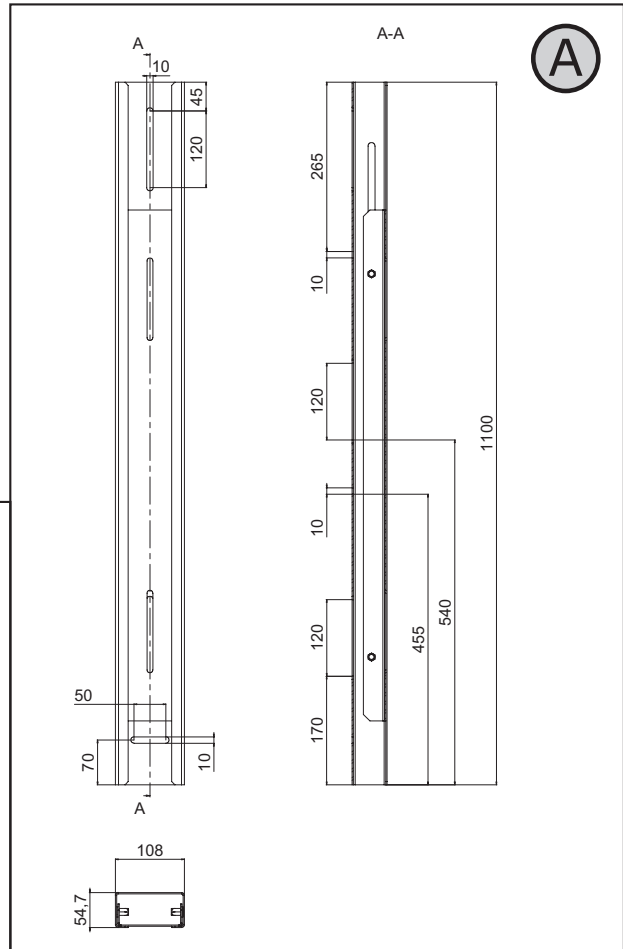
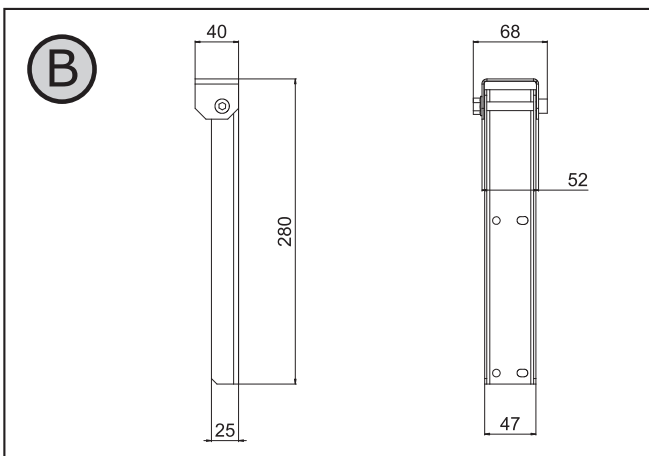
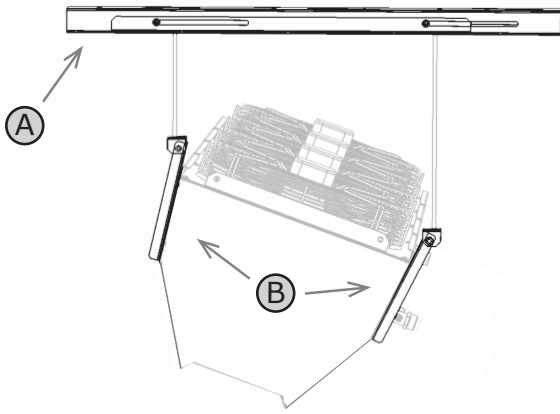
**OPTIONAL ACCESSORIES**

**CEILING holder set - HORIZONTAL**

This set includes:

A part - Ceiling holder (1 pcs)

B part - Air curtain holder (2 pcs)



**VCIN1-KOT-H-STROP-0**

**Color**

- 0** Standard (RAL9016)
- 1** Galvanized steel
- 9** Atyp RAL
- N** Stainless steel version (C4)

**Ceiling holder set (1 set (A+2xB))**

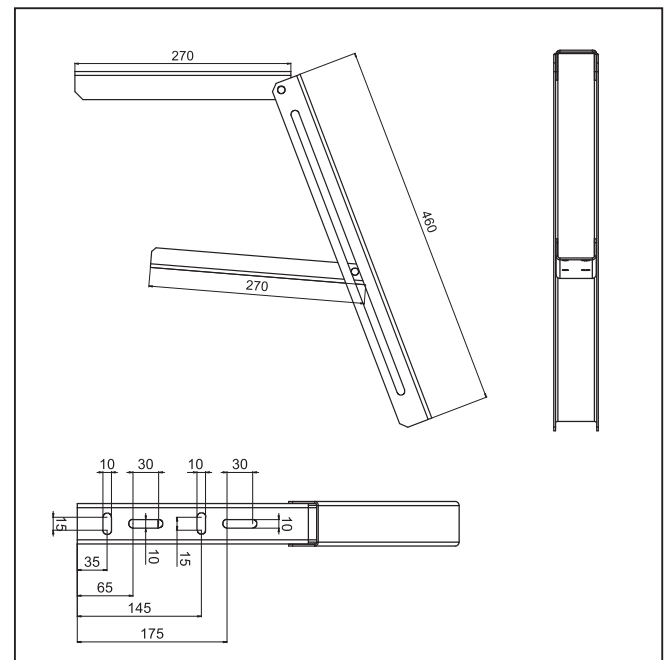
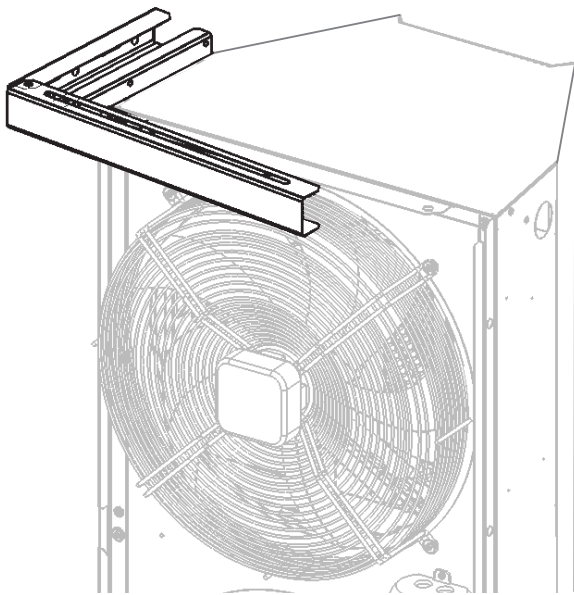
	Number of INDESSE air curtain modules connected								
	1	2	3	4	5	6	7	...	n
No. of holders	2	3	4	5	6	7	8	...	n + 1



**OPTIONAL ACCESSORIES**

**Wall holder - VERTICAL**

For anchoring the air curtain to the wall



**VCIN1-KOT-V-STENA-0**

- Color**
- 0** Standard (RAL9016)
  - 1** Galvanized steel
  - 9** Atyp RAL
  - N** Stainless steel version (C4)

**Wall holder (1 pcs)**

	Number of INDESSE air curtain modules connected			
	1	2	3**	4**
No. of holders	1*	1*	2	3

\* - This holder is not needed up to a height of 4 m, but we recommend to using it.

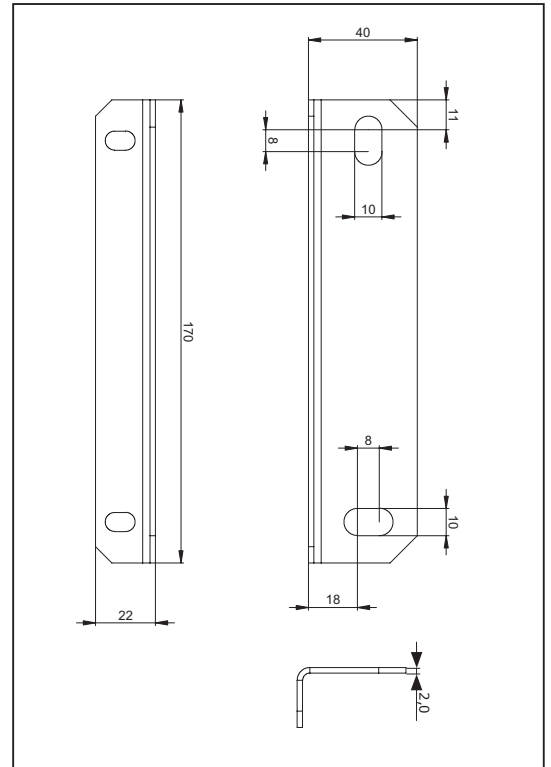
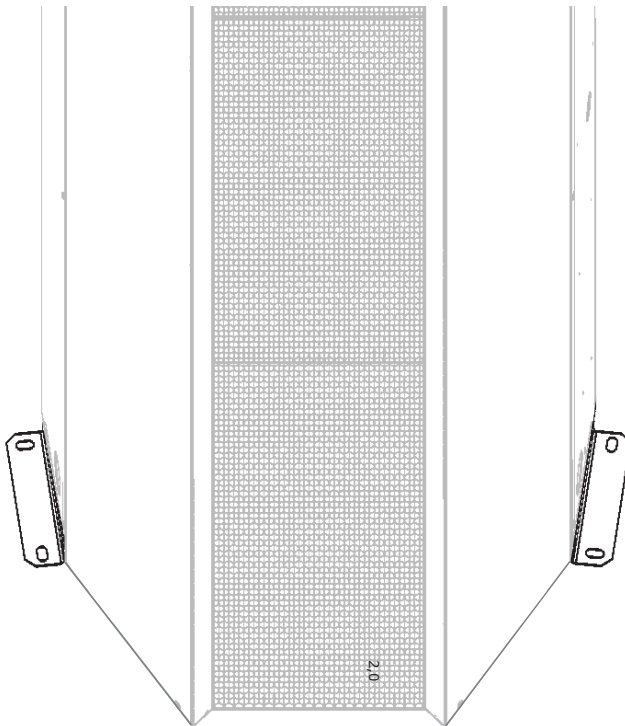
\*\* - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m. If you need a higher distance, then an additional supporting system must be made (not supplied by 2VV).



**OPTIONAL ACCESSORIES**

**Anchoring holder - VERTICAL**

For anchoring the air curtain to the floor



**VCIN1-KOT-V-ZEM-0**

**Color**

- 0** Standard (RAL9016)
- 1** Galvanized only
- 9** Atyp RAL
- N** Stainless steel version (C4)

**Floor holder set (2 pcs)**

	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of sets of holders	1	1	1	1

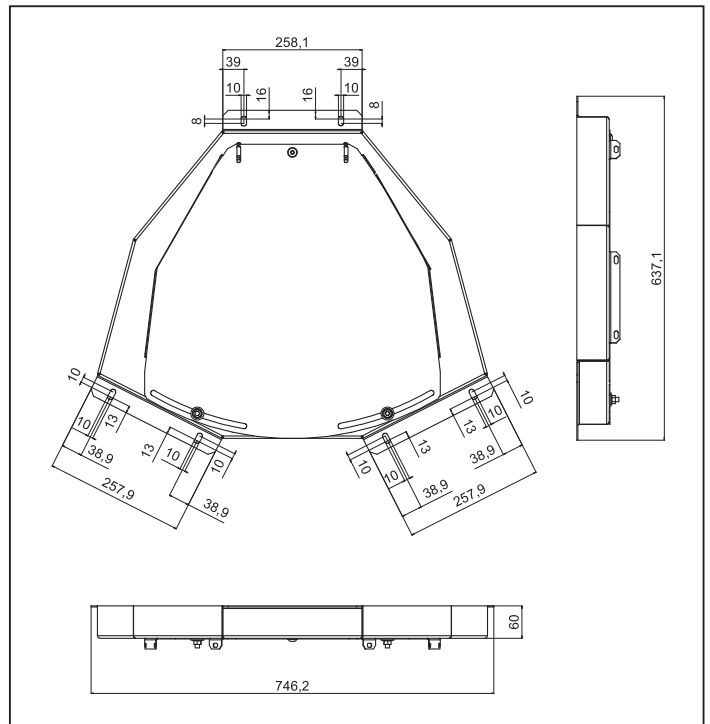
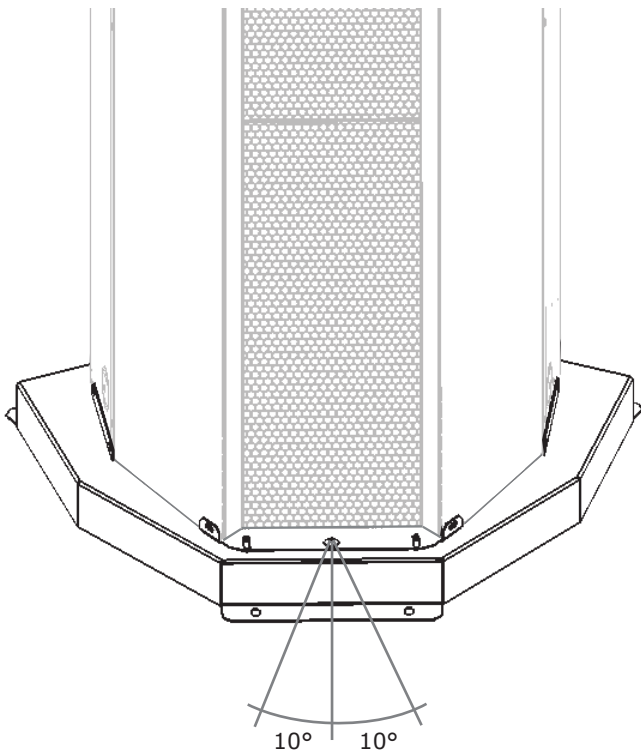
\* - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m. If you need a higher distance, then an additional supporting system must be made (not supplied by 2VV).



**OPTIONAL ACCESSORIES**

**Adjustable anchoring holder - VERTICAL**

For anchoring the air curtain to the floor with the possibility of moving (20° max)



**VCIN1-KOT-V-PODST-0**

**Color**

- 0** Standard (RAL9016)
- 1** Grey colour (RAL9006) (optimal for Galvanized air curtain)
- 9** Atyp RAL
- N** Stainless steel version (C4)

**Movable pedestal (1 pc)**

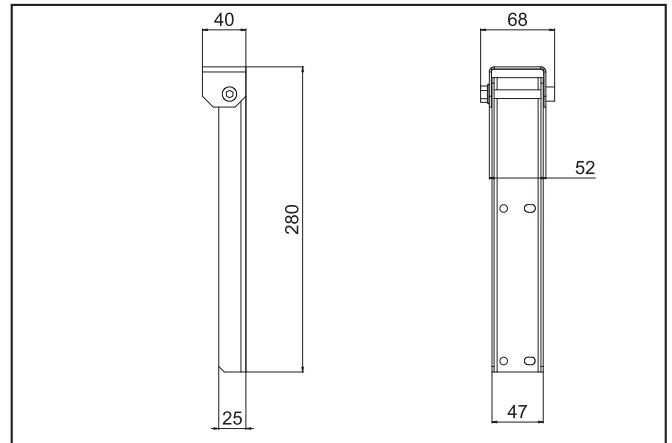
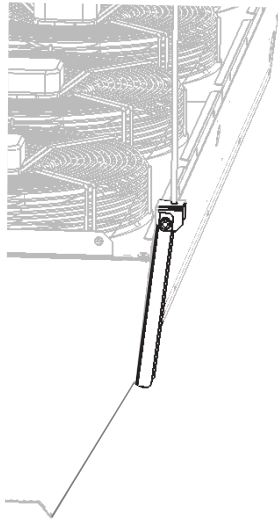
	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of holders	1	1	1	1

\* - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m. If you need a higher distance, then an additional supporting system must be made (not supplied by 2VV).



OPTIONAL ACCESSORIES

Threaded bar holder - HORIZONTAL



**VCIN1-KOT-H-ZAVES-0**

**Color**

- 0** Standard (RAL9016)
- 1** Galvanized steel
- 9** Atyp RAL
- N** Stainless steel version (C4)

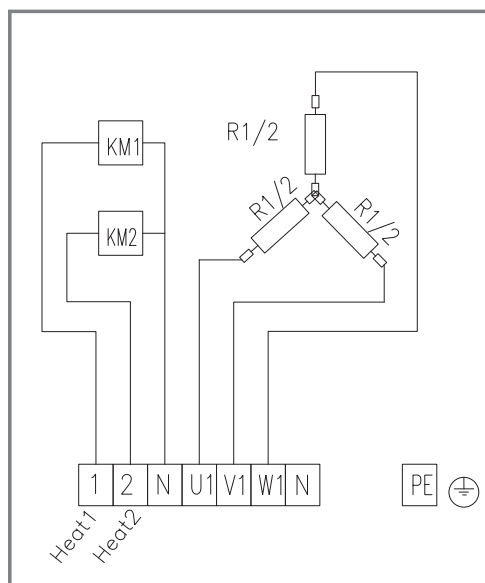
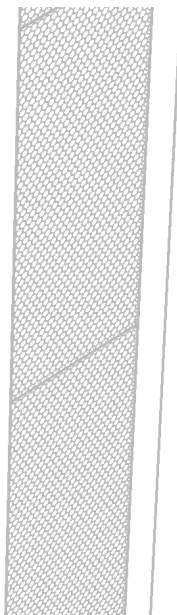
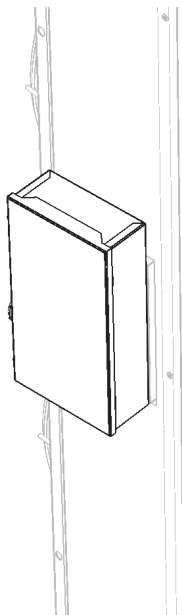
**Air curtain holder (1 pc only)**

	Number of INDESSE air curtain modules connected				
	1	2	3	...	n
No. of sets of holders	4	6	8	...	$n*2 + 2$



Optional accessories

Contactors box



**VCIN1-KRAB-EL-STYKAC-25-0**

**Color**

- 0** Standard (RAL9016)
- 1** Galvanized steel
- 9** Atyp RAL

**Max current load**

- 25** 25A - suitable for: VCIN1A150 or VCIN1A200
- 40** 40A- suitable for: VCIN1A250

**Contactors box (IP20)**

**Motor filter (1 pcs) - class Coarse 40% (G2)**

**FI-PYTEL-KRUH-G2-SAV-4**



**Flexible connection hoses**

**OH-01-1/1-300**

**OH-01-1/1-500**





**Speed controller**  
**STRA1**



**AirGENIO control unit**  
**IC3-C**



**Door switch – industrial**  
**DS**



**2-way or 3-way valve with servo drive**  
**ZV2-230-xx,x-xx (230V, ON/OFF)**  
**ZV3-230-xx,x-xx (230V, ON/OFF)**

**ZV2-24V-xx,x-xx (24V, 0-10V)**  
**ZV3-24V-xx,x-xx (24V, 0-10V)**



**3-way valve with servo drive RT**  
**RT-3-xx**



**Mixing node**  
**SMU2-xx-xx**



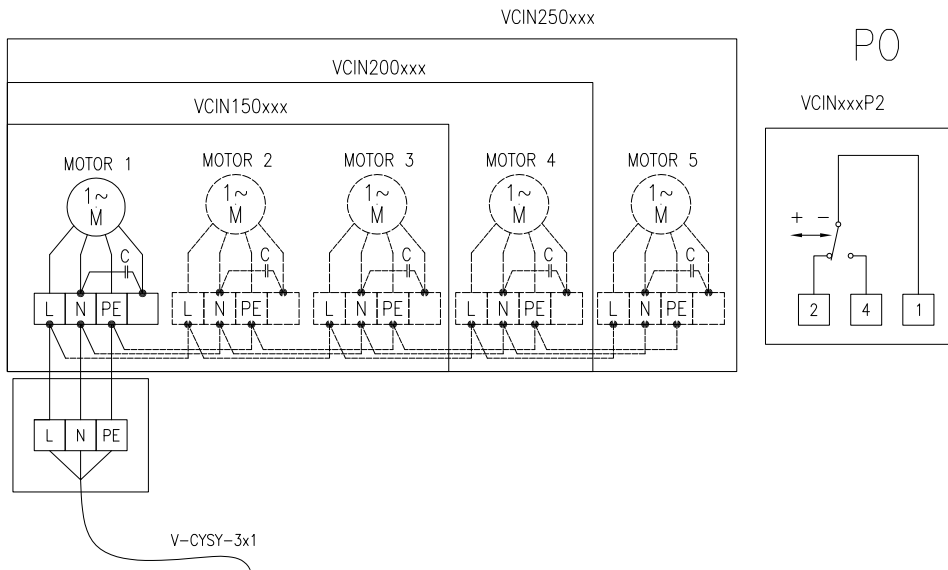


**WIRING DIAGRAMS**

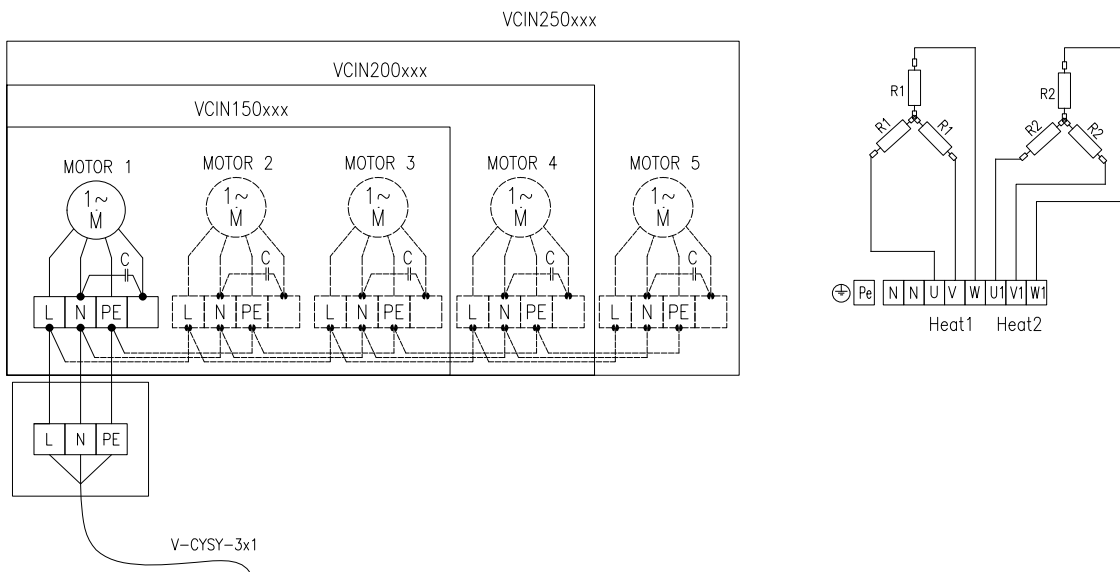
The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

**All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, strictly observe the nameplate ratings as well as the directions and diagrams affixed directly to the product or enclosed with the product.**

**VCIN2Axxx-S0AC / VCIN2Axxx-V2AC**



**VCIN2Axxx-E1AC**





**KEY TO CODING**

**VCIN2A 150-E1 AC-XX-0 B 0**

- 0** – Reserve
- A** – Packed horizontally (standard for VCIN2A250)  
(non standard for VCIN2A150,200)
- B** – Packed vertically (standard for VCIN2A150,200)
- 0** – Standard (RAL9016)
- 1** – Galvanized steel
- 9** – Atyp RAL
- N** – Stainless steel version C4 with hydrophobic coating on water coil (available for S0, V2, P2)
- XX** – No control
- AC** – AC motors
- A6** – 60Hz motors (available only for S0, V2, P2, not available for stainless steel C4 version)
- S0** – Air-only (ambient)
- E1** – Electric heater
- V2** – 2-row LPHW (2row; 110°C)
- P2** – 2-row LPHW with antifreeze protection
- 150** – length **1650mm**
- 200** – length **2200mm**
- 250** – length **2750mm**
- VCIN2A** – Industrial air curtain **INDESSE**