air-only

water heater

electric wire heater

EC FANS | STRAW SYSTEM | WIRE HEATER | ANTI FREEZE | C4 CLASS

BASIC FEATURES

- Lengths: **1.65**; **2.20** and **2.75** m
- **EC Version**: Air flow up to **19000 m³/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
- In standard available in: **colour RAL 9016**, galvanised casing or **stainless steel C4-resistant casing**; further available in any RAL colour based upon customers

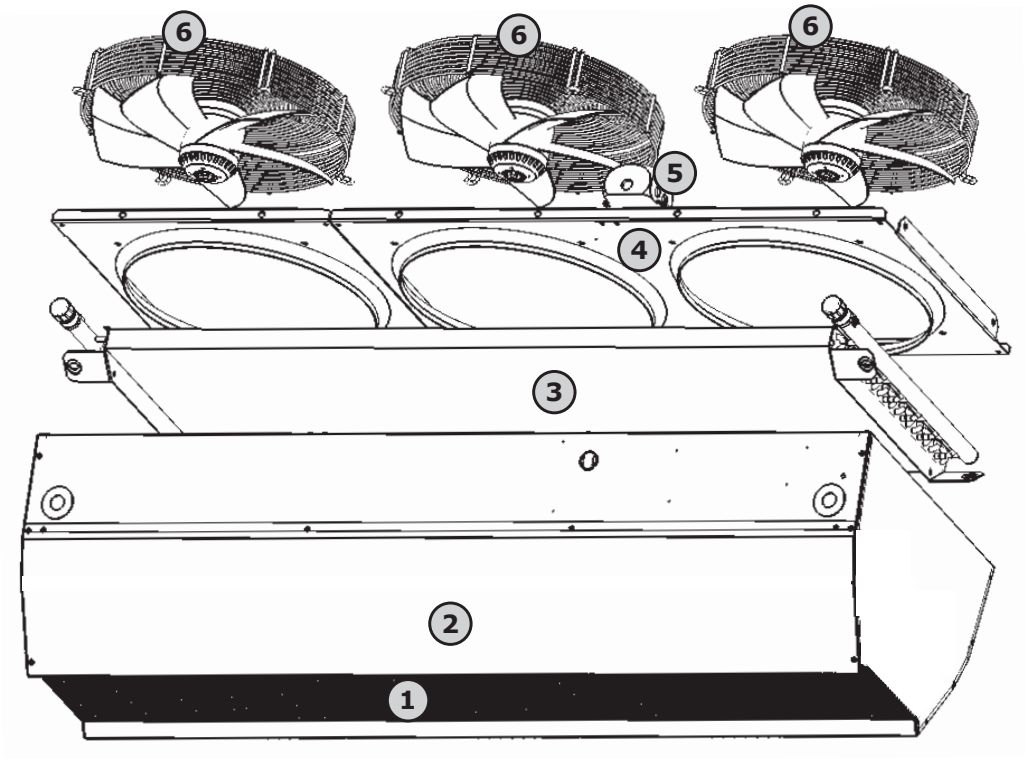
The INDESSE is a high-performance industrial air curtain for vertical and horizontal installation for use in **manufacturing halls, warehouses and other industrial buildings** with a recommended installation height / width up to **8 m**. The air curtain with elctric or LPHW coil shall be installed indoors 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 IP44. The IP rating of the air curtain with the electric heating is IP 20. The fans comply with requirements of IP 54. **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. The LPHW coils 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

Type	Recommended installation height [m]	Air output [m³/h] *1					Acoustic pressure at 3m[dB(A)] *2	Sound power [dB(A)]*3
		100%	80%	60%	40%	20%		
VCIN2A150-S0EC	7,5	11400	9840	8300	6265	4515	68	84
VCIN2A150-V2EC		10500	9055	7640	5760	4150	68	84
VCIN2A150-E1EC		11400	9840	8300	6265	4515	68	84
VCIN2A200-S0EC	8,0	15200	13120	11070	8350	6020	69	86
VCIN2A200-V2EC		14000	12070	10180	7685	5540	68	85
VCIN2A200-E1EC		15200	13120	11070	8350	6020	69	86
VCIN2A250-S0EC	7,5	19000	16400	13830	10440	7520	71	87
VCIN2A250-V2EC		17500	15090	12730	9610	6920	70	87
VCIN2A250-E1EC		19000	16400	13830	10440	7520	71	87

*1 Airflow volume according ISO27327-1
*2 Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.
*3 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]	Temperature increase Δt [°C]	Frequency [Hz]	Weight [kg]
	1st level 1 St.	2st level 2 St.						
VCIN2A150-S0EC	-	-	1	230/ 4,1	230/4,1		50/60	51 / 54*3
VCIN2A150-V2EC	76		1	230/ 4,1	230/4,1	22*2	50/60	60 / 63*3
VCIN2A150-E1EC	12,1	24,3	25,3	400/ 39,1	230/4,1	6,4*	50/60	55
VCIN2A200-S0EC	-	-	1,3	230/5,4	230/5,4		50/60	69 / 72*3
VCIN2A200-V2EC	102		1,3	230/5,4	230/5,4	23*2	50/60	78 / 81*3
VCIN2A200-E1EC	16,2	32,4	33,5	400/ 52,3	230/5,4	6,4*	50/60	74
VCIN2A250-S0EC	-	-	1,6	230/6,8	230/6,8		50/60	83 / 86*3
VCIN2A250-V2EC	129		1,6	230/6,8	230/6,8	23*2	50/60	98 / 101*3
VCIN2A250-E1EC	20,2	40,5	42,1	400/65,3	230/6,8	6,4*	50/60	89

* At the maximum air flow and maximum heater power
*2 Intake air temperature +15°C, water temperature gradient of 90/70 °C and highest fan speed.
*3 Standard / Stainless steel C4 version

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

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	37,9	26,0	8	0,45
VCIN2A200-V2EC	14000	50,8	26,1	7	0,61
VCIN2A250-V2EC	17500	63,6	26,1	5	0,76

* 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]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	50,9	29,9	13	0,61
VCIN2A200-V2EC	14000	68,4	30,1	9	0,82
VCIN2A250-V2EC	17500	85,8	30,1	9	1,03

* 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]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	63,6	33,9	18	0,76
VCIN2A200-V2EC	14000	85,5	34,1	14	1,03
VCIN2A250-V2EC	17500	108	34,2	11	1,29

* 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]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	76,0	37,9	24	0,92
VCIN2A200-V2EC	14000	102	38,2	17	1,24
VCIN2A250-V2EC	17500	129	38,3	15	1,55

* Temperature of intake air: +15 °C

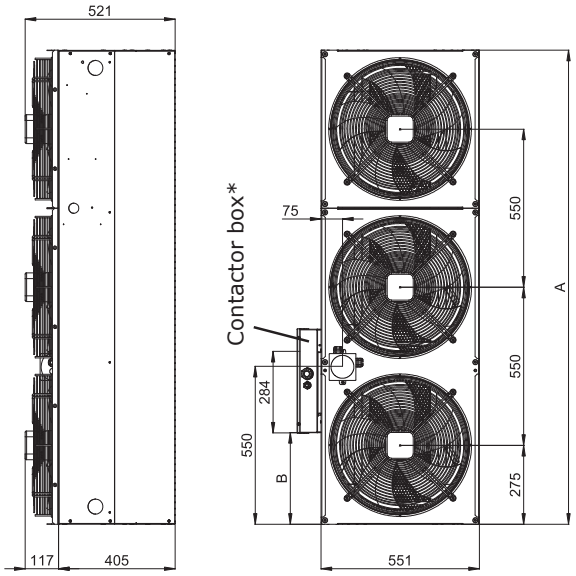
LPHW coil parameters for water temperature gradient of 110/80 °C

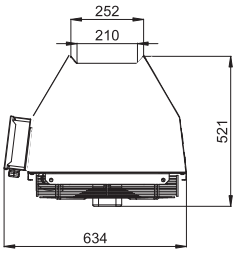
Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	92,2	43,3	16	0,75
VCIN2A200-V2EC	14000	124	43,6	12	1
VCIN2A250-V2EC	17500	156	43,8	10	1,26

* Temperature of intake air: +15 °C

AIR CURTAIN DIMENSIONS

VCIN2A...-E1..

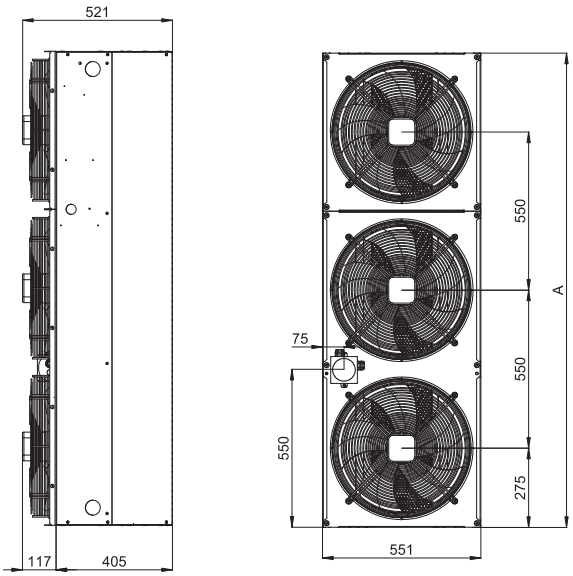


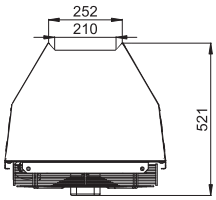


* - Accessories

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

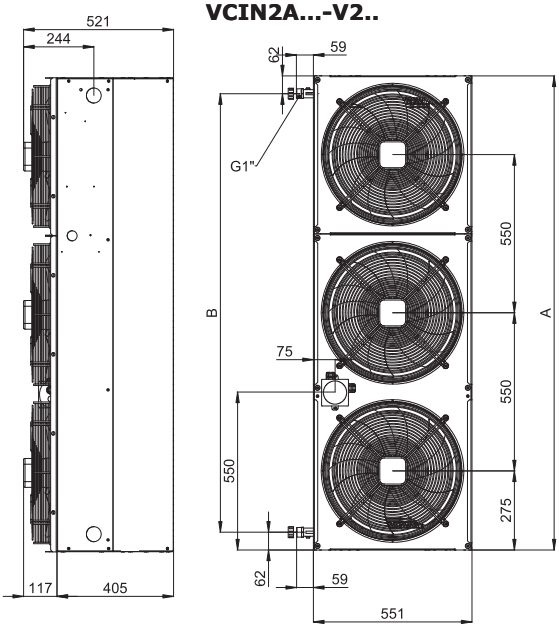
VCIN2A...-S0..

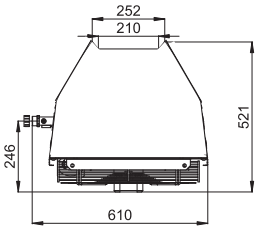




VCIN	A [mm]
150	1650
200	2200
250	2750

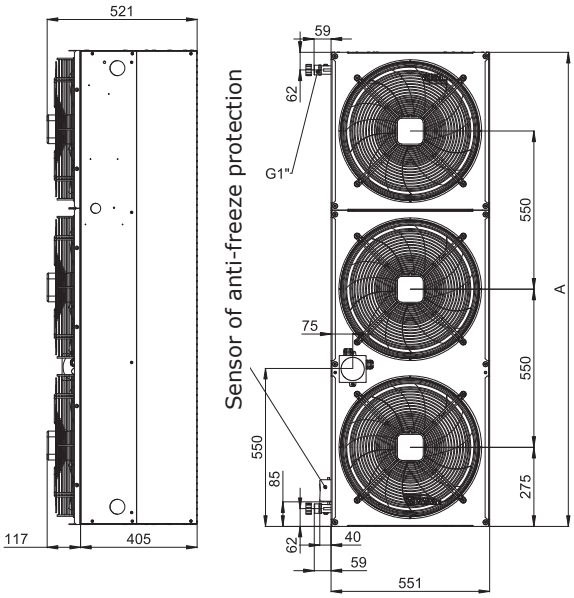
VCIN2A...-V2..

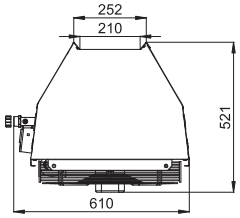




VCIN	A [mm]	B [mm]
150	1650	1526
200	2200	2076
250	2750	2626

VCIN2A...-P2..



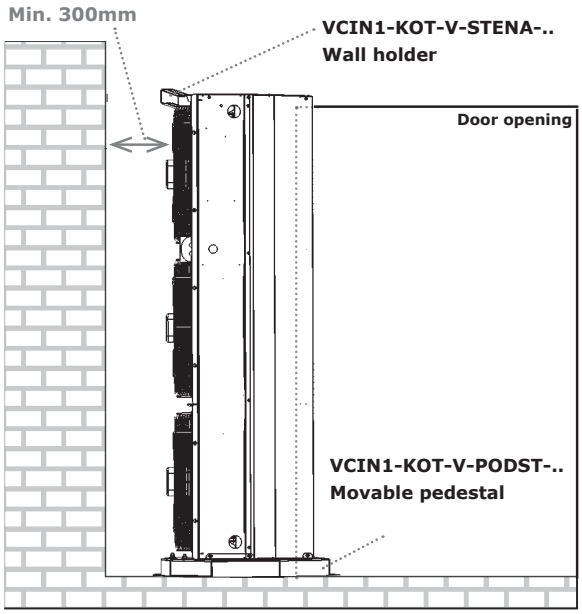


VCIN	A [mm]
150	1650
200	2200
250	2750

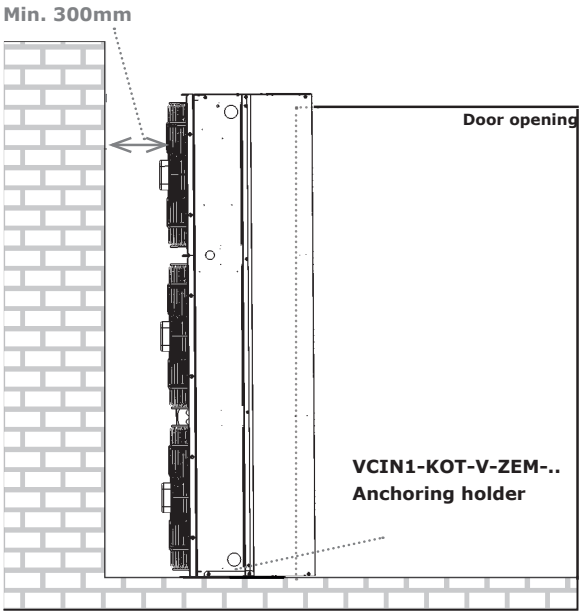
INSTALLATION AND ASSEMBLY

- 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.

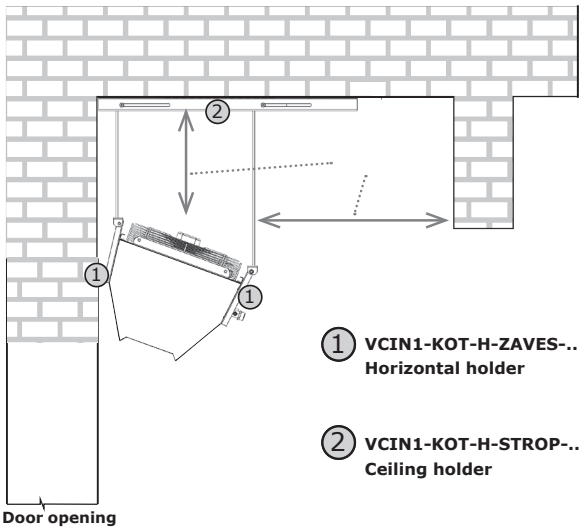
Vertical installation, side view, movable pedestal



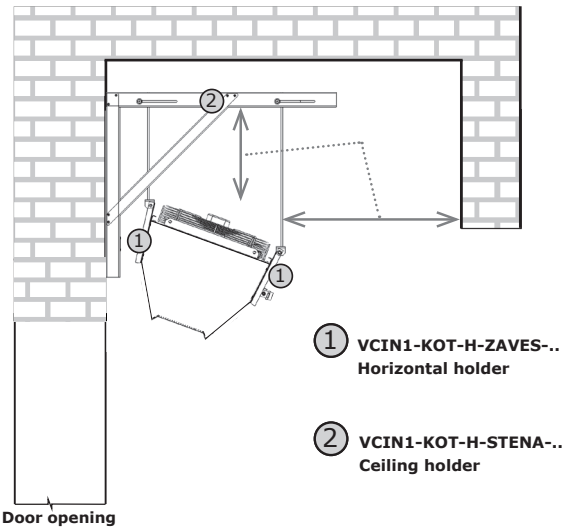
Vertical installation, side view, fixed



Horizontal installation, side view



Horizontal installation, side view



CONTROL

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

AirGENIO BASIC EC control
AGBA1-M-ECX-XX-xx-0A0

AirGENIO BASIC EC control is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating.

Description of AirGENIO BASIC EC control

- Manual control
- Stepless control of airflow
- ON/OFF control of valve actuator for LPHW coil
- 2 steps control of electric heater
- Possibility of connecting a door contact and external switch
- Possibility of connecting a room thermostat (turn OFF the heater after contact opening)

AirGENIO IC-C control unit

The AirGENIO IC-CONTROL unit is designed primarily for controlling industrial air curtains. In addition, the unit may also be used for controlling devices comprising a voltage controlled EC fan and heating units.

Description of AirGENIO IC-C control unit

- Touch screen display
- Manual / Auto control mode
- Stepless control of airflow
- 0-10V or ON/OFF control of valve actuator for LPHW coil
- Integrated antifreeze protection of LPHW coil
- Possibility of connecting a door contact and external switch
- Integrated timer
- Temperature measurement (All temperature NTC sensors included, temperature shown on display)
- Chaining air curtains 1+10 (Master-Slave air curtains)
- Self learning mode
- BMS connection - Modbus RTU,TCP, BACnet
- Error contact
- 2nd control panel ready

Overview of the AirGENIO IC3-C smart functions

Modes:

Heating boost
- immediate start of heating at max output when doors are open to keep comfortable heat inside

Self-Learning function
- self learning mode ensuring smooth air curtain running without useless start-ups at frequent door openings. Saves energy and prolongs the air curtain´s working life.

Night mode
- during the pre-set night period air curtain can be switched off completelly, or used to heat up the room. Possibility to set lower requested temperature for the night regime.

Summer mode
- to avoid waste of energy for heating, within a pre-set „summer season", the heating is alowed only if the difference between the outside and inner temperature is higher than pre-set scale.

Auto-stop control
- air curtain evaluates its own temperature on outlet and the temperature outside and inside the room. The air speed and heating output is modified according to the required temperature, time programme and open/closed door. All parameters are evaluated in order to get the maximal output at the lowest possible operating costs.

KEY TO CODING

AGBA1-M-ECx-xx-V1-0A0

- **S0** - Without heating
- **V1** - Water heating (ON/OFF)
- **E2** - Electric heating (2steps)
- **EC** - For EC fans
- **AGBA1-M** - BASIC EC control unit

IC3-C-AC5-16

- **04** – max load 4A
- **07** – max load 7A
- **16** – max load 16A
- **AC5** - For AC fans with 5-speed
- **EC** - For EC fans
- **C** - Master
- **S** - Slave
- **IC3-C** - Control unit

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

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-EC-C controllers.

Controller type	AGBA1-M	IC3-C-EC	IC3-S-EC
Maximum number of fans connected	10	10	5

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					
	1			2		
	K_{vs}	Water flow (m^3/h)	Min. pump pressure (kPa)	K_{vs}	Water flow (m^3/h)	Min. pump pressure (kPa)
VCIN2A150-V2EC	11	2,8	28,5	22	5,5	28,5
VCIN2A200-V2EC	11	3,7	29,0	22	7,4	29,0
VCIN2A250-V2EC	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-V2EC	**AGBA1-M** (ON-OFF)	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	IC3-C-EC (ON-OFF)	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	IC3-C-EC (0-10V)	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25
VCIN2A200-V2EC	**AGBA1-M** (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C-EC (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C-EC (0-10V)	ZV2-024-16,0-25	ZZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25
VCIN2A250-V2EC	**AGBA1-M** (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C-EC (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C-EC (0-10V)	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-V2EC	**AGBA1-M** (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (0-10V)	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25
VCIN2A200-V2EC	**AGBA1-M** (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (0-10V)	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32
VCIN2A250-V2EC	**AGBA1-M** (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (0-10V)	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.**

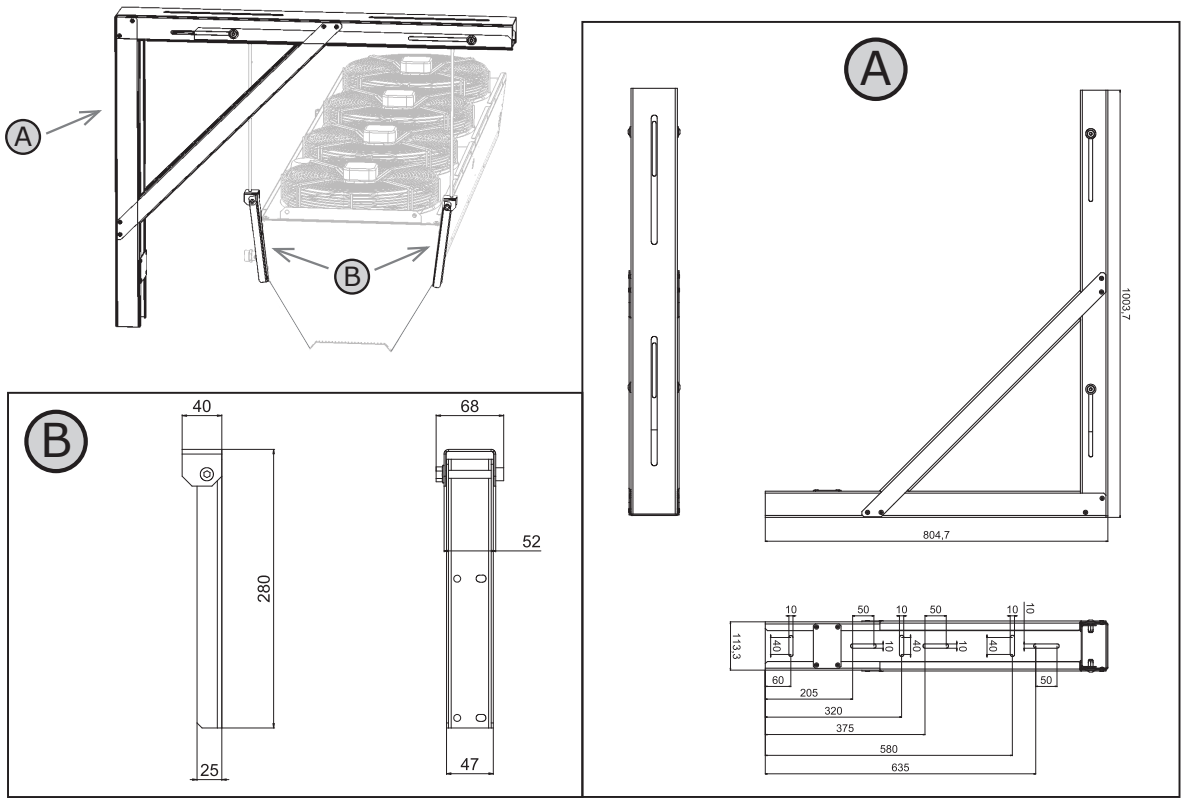
Optional accessories

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

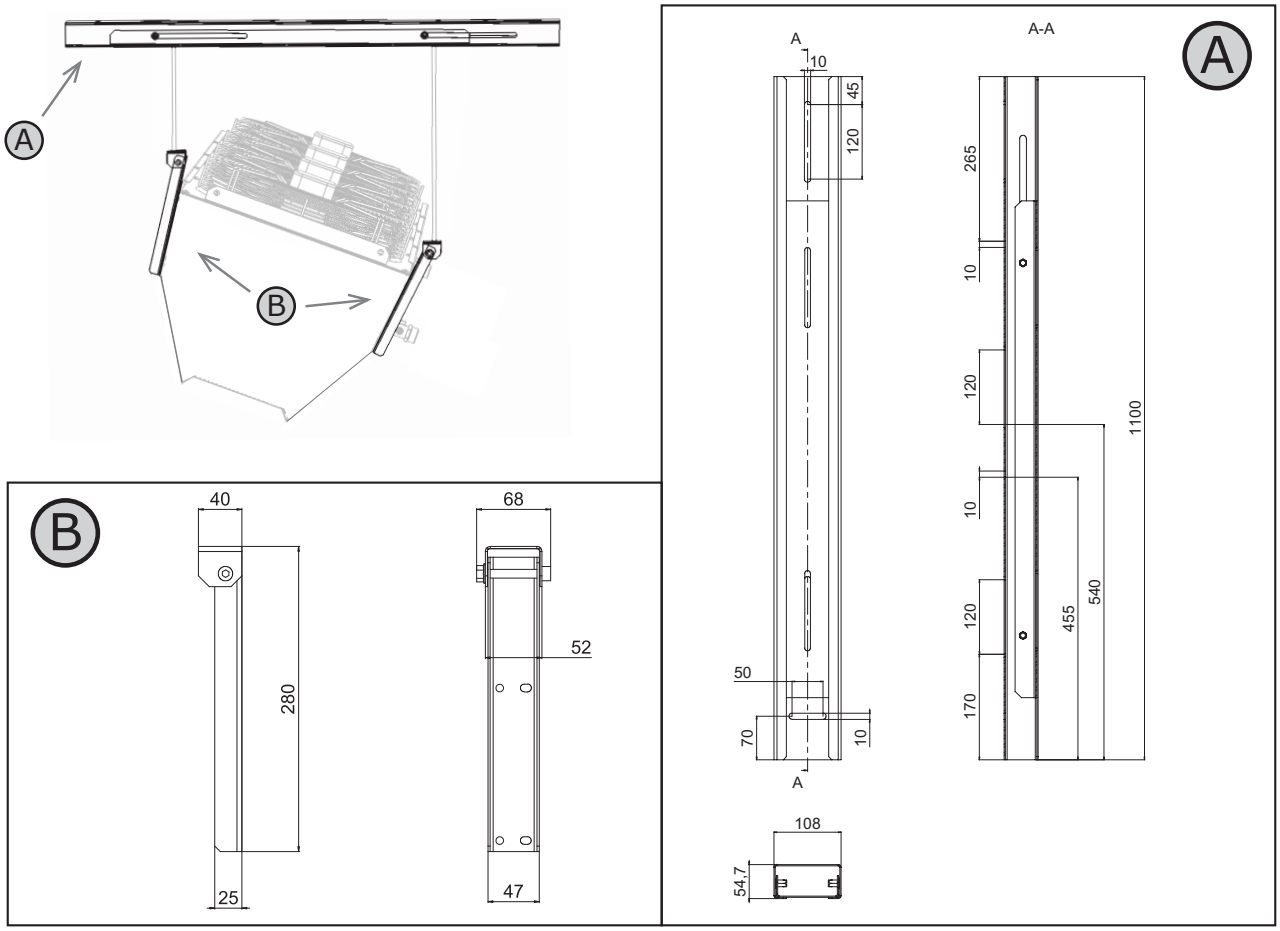
Optional accessories

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)

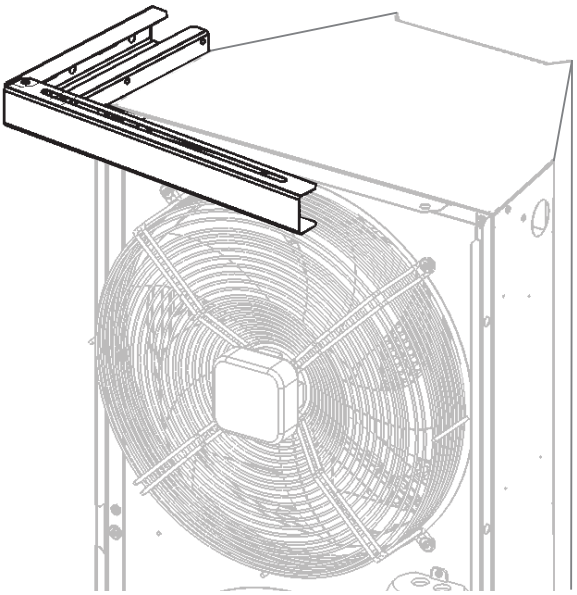
Ceiling holder set (1 set (A+2xB))

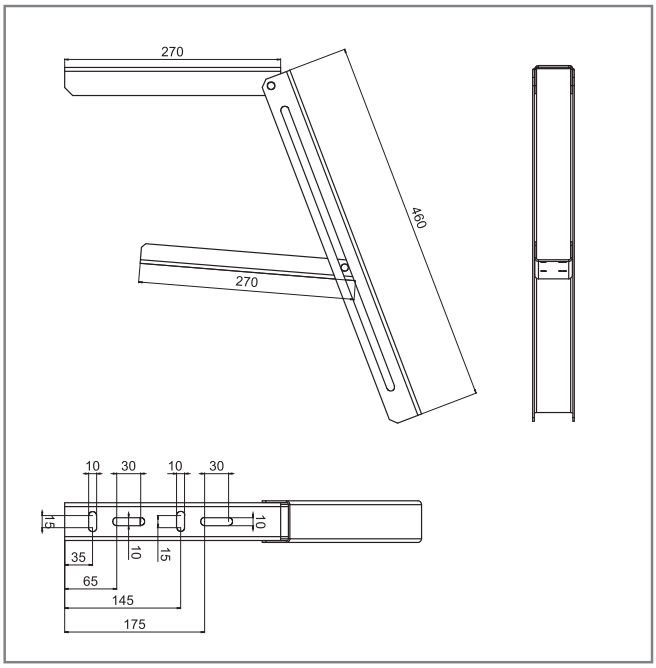
	Number of INDESSE air curtain modules connected								
	1	2	3	4	5	6	7	...	n
No. of holders	2	3	4	5	6	7	8	...	n + 1

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

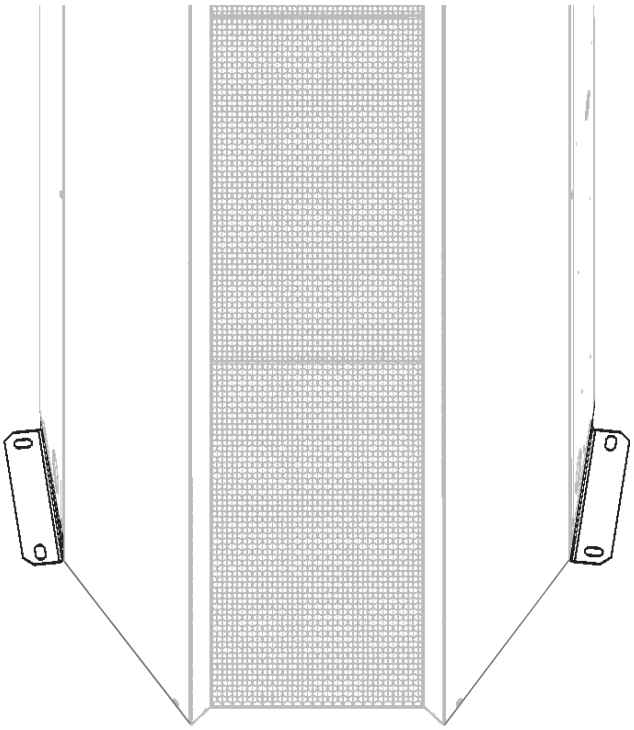
*** - This holder is not needed up to a height of 4 m, but we recommend to using it.**

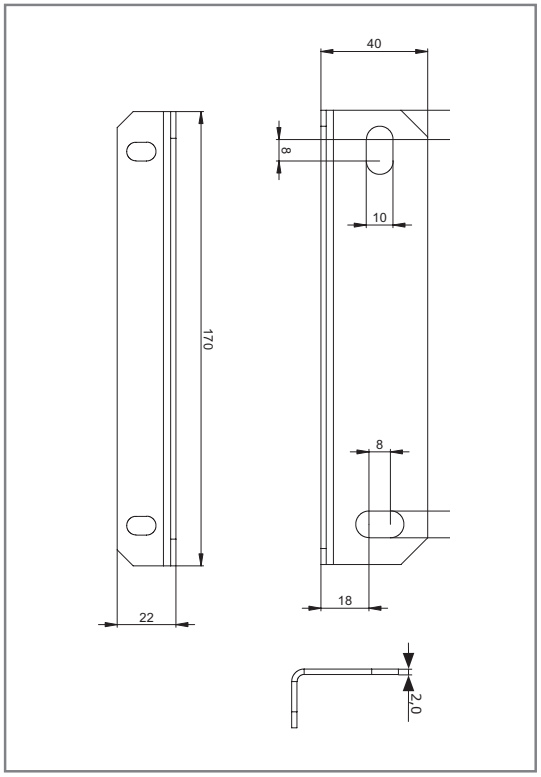
**** - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m. If you need a higher distance, then an additional supporting system must be made (not available in 2VV accessories).**

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)

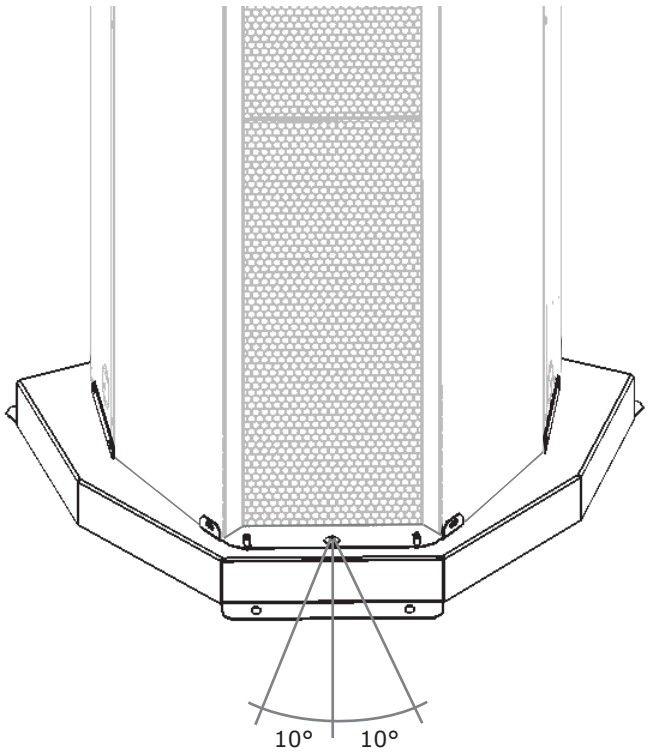
	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of sets of holders	1	1	1	1

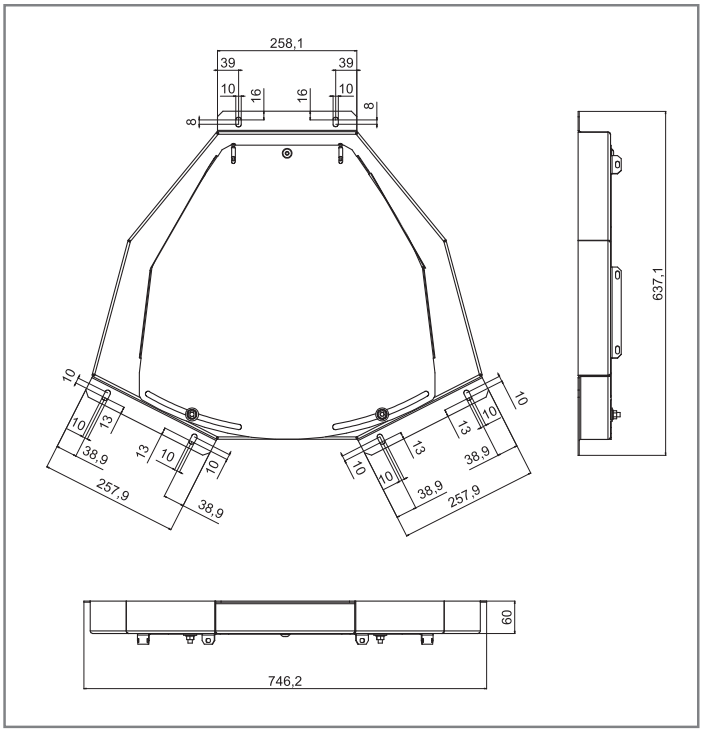
*** - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m. If you need a higher distance, then an additional supporting system must be made (not available in 2VV accessories).**

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)

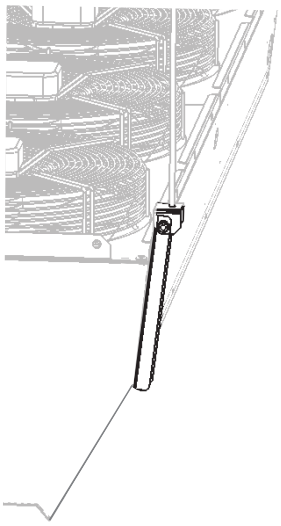
Movable pedestal (1 pcs)

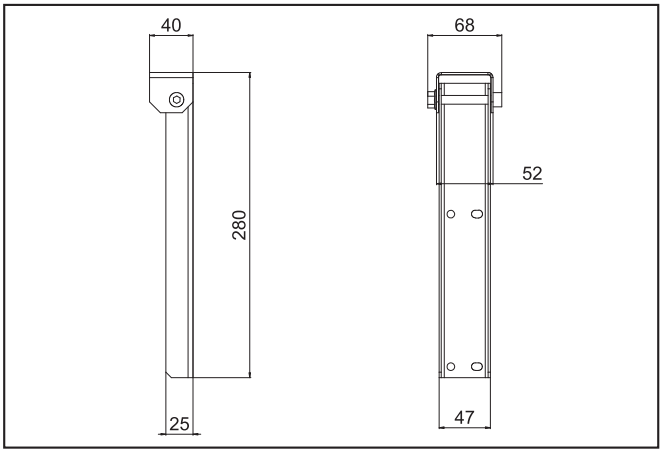
	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of holders	1	1	1	1

*** - 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 available in 2VV accessories).**

Optional accessories

Threaded bar holder - HORIZONTAL





VCIN1-KOT-H-ZAVES-0

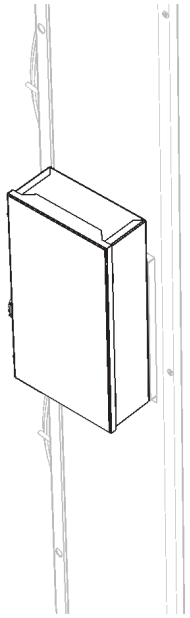
Color
- **0** Standard (RAL9016)
- **1** Galvanized steel
- **9** Atyp RAL
- **N** Stainless steel version (C4)

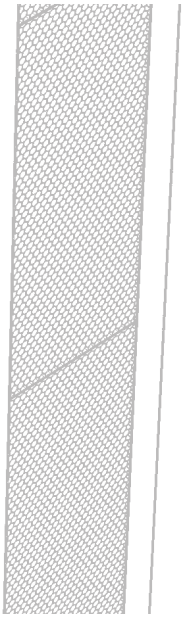
Air curtain holder (1pcs only)

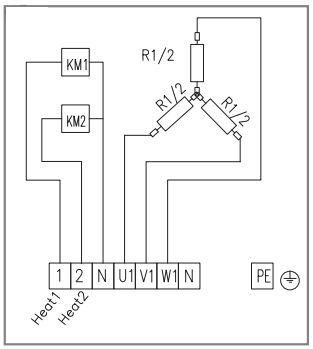
	Number of INDESSE air curtain modules connected				
	1	2	3	...	n
No. of holders	4	6	8	...	n*2 + 2

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)

AirGENIO BASIC EC controller
AGBA1-M-ECX-XX-V1-0A0

AirGENIO BASIC EC controller is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating. In addition, the unit may be used for manual control of devices comprising a voltage controlled EC fans.

Control unit
AirGENIO IC3-C-EC

The IC - CONTROL unit is designed primarily for controlling industrial air curtains. In addition, the unit may also be used for controlling devices comprising a voltage controlled EC fan and heating units.

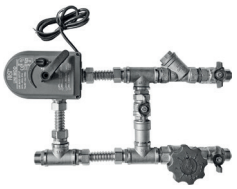
2-way or 3-way valve with servo drive
ZV2-230-xx,x-xx (230V, ON/OFF)
ZV3-230-xx,x-xx (230V, ON/OFF)

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

3-way valve with servo drive RT
RT-3-11

Mixing node
SMU2-xx-xx

Mixing node without pump for continuous regulation of the heat power of exchanger.



Room thermostat
TER-P
Spatial thermostat

Room temperature sensor
CT-ROOM

Flexible connection hoses
OH-01-1/1-300
OH-01-1/1-500

Door switch – industrial
DS

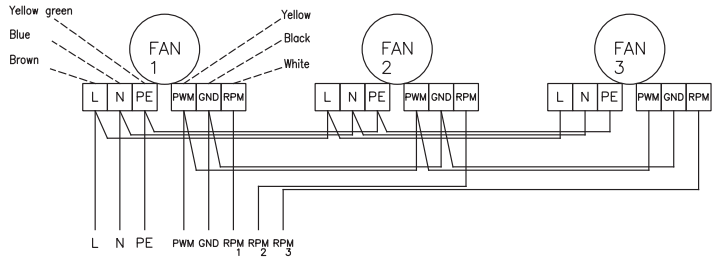
Magnetic door contact in a metal housing
with higher protection against mechanical damage
DK-B-3

Motor filter (1 pcs) - class Coarse 40% (G2)
FI-PYTEL-KRUH-G2-SAV-4

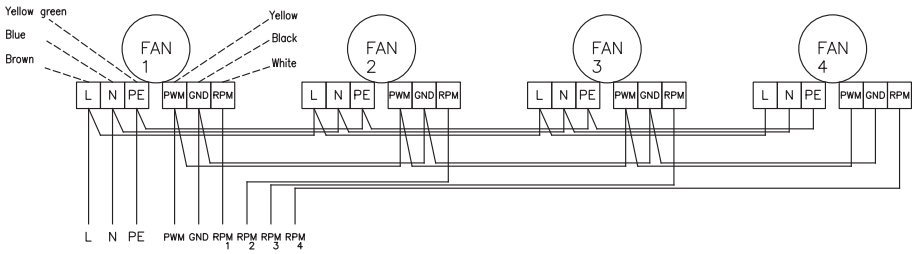
WIRING DIAGRAMS

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.

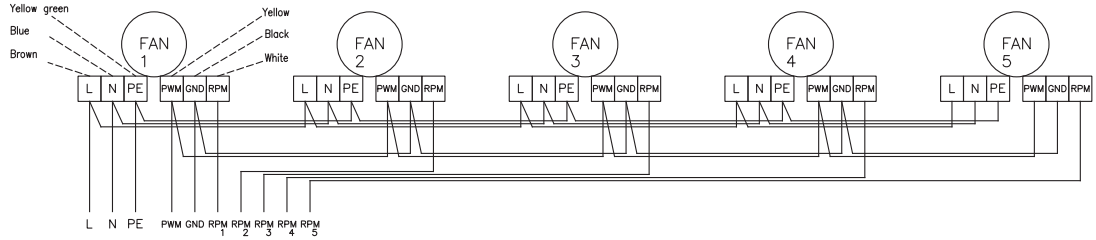
VCIN2A150-xx-EC



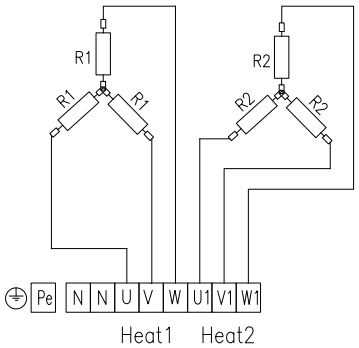
VCIN2A200-xx-EC



VCIN2A250-xx-EC



VCIN2Axxx-E1-EC



KEY TO CODING

VCIN2A 150-E1 EC-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 only for S0, V2, P2)

XX – No control

EC – EC motors

S0 – Air-only (ambient)
E1 – Electric heater
V2 – 2-row LPHW coil
P2 – 2-row LPHW coil with antifreeze protection

150 – length **1650mm**
200 – length **2200mm**
250 – length **2750mm**

VCIN2A – Industrial air curtain ***INDESSE***