8/S3
v 3.3 (en)

AIR CURTAINS

SONATA EVO

klimaoprema

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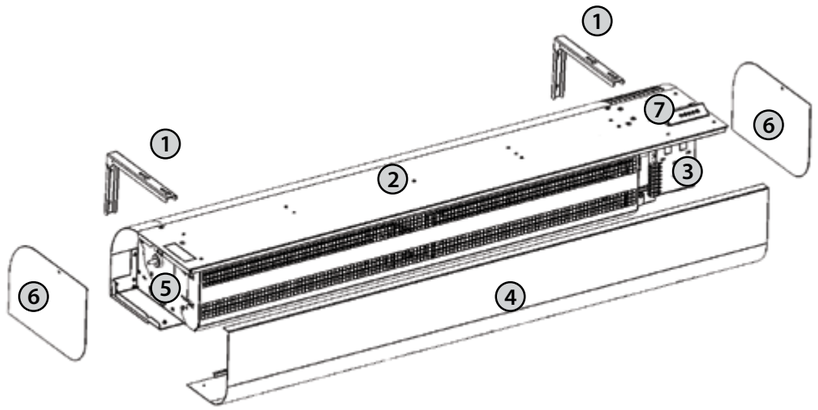
AIR CURTAINS GRAND / SONATA

PRIMARY PARAMETERS

- Air curtains with electric heaters are equiped with an automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW are designed for a maximum operating water temperature of +130 °C and a maximum operating pressure of 1.6 MPa.

MAIN PARTS



1. Mounting brackets (included with delivery)
2. Top cover
3. Connection dock for controls module
4. Intake grill
5. Connection dock for LPHW (only on water versions)
6. Side cover
7. Main power supply connection

Sonata EVO

BASIC FEATURES

- Lengths: 1.0; 1.5; 2.0; 2.5 m
- Air flow up to 5700 m³/h (ISO 27 327-1)
- Straw System – maximized screening effect
- Universal interface for control module connection (BA, CO, SU)
- Low profile design
- Standard colour RAL 9016 (any RAL – based colours may be provided on customer's request)
- The SONATA EVO is low profile design air curtain for use in retail shops, shopping centres, restaurants, administrative buildings and manufacturing facilities with a recommended installation height up to 4 m.
- The air curtain shall be installed indoors in a dry enviroment with ambient temperatures ranging from 0 °C up to +40 °C and relative humidity of up to 80 %. It is designed for conveying air free of fine dust, grease, chemical fumes, and other impurities. IP rating of the air curtain is IP 20. It is recommended that air curtain projects always be developed by an HVAC designer or engineer.

SONATA EVO-32

Type	Recommended installation height [m]	Air output [m³/h] *1			Acoustic pressure at 3m [dB(A)]*2			Sound power [dB(A)]*3
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
SONATA EVO 32 10-E5	3,2	1500	1000	650	53,8	48,9	43,3	71,3
SONATA EVO 32 15-E8	3,2	2250	1650	1200	55,1	50,5	44,3	72,6
SONATA EVO 32 20-E10	3,2	3300	2500	1900	56,8	48,6	41,9	74,3
SONATA EVO 32 25-E12	3,2	3800	3000	2200	58,6	51,2	46,3	76,1
SONATA EVO 32 10-E6	3,2	1500	1000	650	53,8	48,9	43,3	71,3
SONATA EVO 32 15-E10	3,2	2250	1650	1200	55,1	50,5	44,3	72,6
SONATA EVO 32 20-E12	3,2	3300	2500	1900	56,8	48,6	41,9	74,3
SONATA EVO 32 25-E16	3,2	3800	3000	2200	58,6	51,2	46,3	76,1
SONATA EVO 32 10-W	3,2	1500	1000	650	53,8	48,9	43,3	71,3
SONATA EVO 32 15-W	3,2	2250	1650	1200	55,1	50,5	44,3	72,6
SONATA EVO 32 20-W	3,2	3300	2500	1900	56,8	48,6	41,9	74,3
SONATA EVO 32 25-W	3,2	3800	3000	2200	58,6	51,2	46,3	76,1
SONATA EVO 32 10-N	3,2	1500	1000	650	53,8	48,9	43,3	71,3
SONATA EVO 32 15-N	3,2	2250	1650	1200	55,1	50,5	44,3	72,6
SONATA EVO 32 20-N	3,2	3300	2500	1900	56,8	48,6	41,9	74,3
SONATA EVO 32 25-N	3,2	3800	3000	2200	58,6	51,2	46,3	76,1

SONATA EVO-32

Type	Heater power output [kW]		Total consumption [V/A]	Motor consumption [W/A]	Temperature increase Δt [°C]*4	Frequency [Hz]	Weight [kg]*5
	1st level	1st level					
SONATA EVO 32 10-E5	3,2	4,7	400 / 13,7	120 / 0,6	9,3	50	25,5
SONATA EVO 32 15-E8	3,8	7,5	400 / 11,6	200 / 0,9	9,9	50	32,6
SONATA EVO 32 20-E10	4,8	9,5	400 / 14,4	305 / 1,4	8,6	50	39,8
SONATA EVO 32 25-E12	6,9	12,2	400 / 19,4	410 / 2,0	9,6	50	46,9
SONATA EVO 32 10-E6	3,2	6,3	400 / 14,4	120 / 0,6	13,2	50	25,5
SONATA EVO 32 15-E10	5	10	400 / 21,3	200 / 0,9	13,3	50	32,6
SONATA EVO 32 20-E12	6,3	12,6	400 / 27,9	305 / 1,4	12,0	50	39,8
SONATA EVO 32 25-E16	8,2	16,3	400 / 24,7	410 / 2,0	13,1	50	46,9
SONATA EVO 32 10-W	16,9		230 / 0,6	120 / 0,6	33,7	50	26,1
SONATA EVO 32 15-W	24,7		230 / 0,9	200 / 0,9	32,9	50	32,9
SONATA EVO 32 20-W	35,7		230 / 1,4	305 / 1,4	32,5	50	40,1
SONATA EVO 32 25-W	43,3		230 / 2,0	410 / 2,0	34,2	50	47,4
SONATA EVO 32 10-N	-	-	230 / 0,6	120 / 0,6	-	50	24,8
SONATA EVO 32 15-N	-	-	230 / 0,9	200 / 0,9	-	50	31,3
SONATA EVO 32 20-N	-	-	230 / 1,4	305 / 1,4	-	50	38,3
SONATA EVO 32 25-N	-	-	230 / 2,0	410 / 2,0	-	50	45,1

*1 Airflow volume according ISO27327-1
*2 Acoustic pressure values at 3 and 5 m distance for maximum speed.
Directional factor: Q=2.
*3 Sound power (LWA) measurements according to ISO 27327-2.
*4 Intake air temperature +18°C, at maximum heating level and highest fan speed.
*5 Weight without regulation.

AIR CURTAINS GRAND / SONATA

SONATA EVO-40

Type	Recommended installation height [m]	Air output [m³/h] *1			Acoustic pressure at 3m [dB(A)]*2			Sound power [dB(A)]*3
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
SONATA EVO 40 10-E10	4,0	2300	1750	1300	64,5	59,5	53,5	71,3
SONATA EVO 40 15-E15	4,0	3200	2400	1600	65	60	54	72,6
SONATA EVO 40 20-E19	4,0	4500	3500	2500	64	59	53	74,3
SONATA EVO 40 25-E25	4,0	5700	4600	3500	64,2	59,2	53,2	76,1
SONATA EVO 40 10-W	4,0	2300	1750	1300	64,5	59,5	53,5	71,3
SONATA EVO 40 15-W	4,0	3200	2400	1600	65	60	54	72,6
SONATA EVO 40 20-W	4,0	4500	3500	2500	64	59	53	74,3
SONATA EVO 40 25-W	4,0	5700	4600	3500	64,2	59,2	53,2	76,1
SONATA EVO 40 10-N	4,0	2300	1750	1300	64,5	59,5	53,5	71,3
SONATA EVO 40 15-N	4,0	3200	2400	1600	65	60	54	72,6
SONATA EVO 40 20-N	4,0	4500	3500	2500	64	59	53	74,3
SONATA EVO 40 25-N	4,0	5700	4600	3500	64,2	59,2	53,2	76,1

SONATA EVO-40

Type	Heater power output [kW]		Total consumption [V/A]	Motor consumption [W/A]	Temperature increase Δt [°C]*4	Frequency [Hz]	Weight [kg]*5
	1st level	1st level					
SONATA EVO 40 10-E10	4,7	9,5	400 / 15,1	325 / 1,5	12,3	50	27,3
SONATA EVO 40 15-E15	7,5	15,0	400 / 23,6	420 / 1,9	14,0	50	37,4
SONATA EVO 40 20-E19	9,5	19,0	400 / 30,8	630 / 3,3	12,6	50	47,7
SONATA EVO 40 25-E25	12,2	24,5	400 / 39,0	850 / 4,4	12,8	50	55,8
SONATA EVO 40 10-W	22,4		230 / 1,5	325 / 1,5	29,2	50	27,6
SONATA EVO 40 15-W	31,8		230 / 1,9	420 / 1,9	29,8	50	39,3
SONATA EVO 40 20-W	44,4		230 / 3,3	630 / 3,3	29,6	50	47,6
SONATA EVO 40 25-W	53,7		230 / 4,4	850 / 4,4	28,3	50	55,3
SONATA EVO 40 10-N	-	-	230 / 1,5	325 / 1,5	-	50	26,3
SONATA EVO 40 15-N	-	-	230 / 1,9	420 / 1,9	-	50	35,7
SONATA EVO 40 20-N	-	-	230 / 3,3	630 / 3,3	-	50	45,8
SONATA EVO 40 25-N	-	-	230 / 4,4	850 / 4,4	-	50	53,1

*1 Airflow volume according ISO27327-1
*2 Acoustic pressure values at 3 and 5 m distance for maximum speed.
Directional factor: Q=2.
*3 Sound power (LWA) measurements according to ISO 27327-2.
*4 Intake air temperature +18°C, at maximum heating level and highest fan speed.
*5 Weight without regulation.

Design changes reserved

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

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [Hz]	Water flow [kg]
SONATA EVO 32 10 V	1200	16,85	51,7	13,93	0,74
SONATA EVO 32 15 V	1800	24,7	50,9	10,01	1,09
SONATA EVO 32 20 V	2640	35,74	50,5	14,52	1,57
SONATA EVO 32 25 V	3040	43,26	52,2	22,76	1,91
SONATA EVO 40 10 V	1840	22,35	47,2	23,25	0,99
SONATA EVO 40 15 V	2560	31,81	47,8	15,99	1,4
SONATA EVO 40 20 V	3600	44,41	47,6	21,78	1,96
SONATA EVO 40 25 V	4560	53,73	46,3	33,94	2,37

* Temperature of intake air: +18 °C

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

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [Hz]	Water flow [kg]
SONATA EVO 32 10 V	1200	14,1	46,2	10,3	0,62
SONATA EVO 32 15 V	1800	20,58	45,4	7,26	0,9
SONATA EVO 32 20 V	2640	29,79	45,1	10,59	1,31
SONATA EVO 32 25 V	3040	36,22	46,6	16,68	1,59
SONATA EVO 40 10 V	1840	18,59	42,2	16,97	0,82
SONATA EVO 40 15 V	2560	26,36	42,7	11,48	1,16
SONATA EVO 40 20 V	3600	36,93	42,6	15,79	1,62
SONATA EVO 40 25 V	4560	44,8	41,6	24,72	1,97

* Temperature of intake air: +18 °C

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

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [Hz]	Water flow [kg]
SONATA EVO 32 10 V	1200	11,23	40,5	6,97	0,49
SONATA EVO 32 15 V	1800	16,34	39,8	4,91	0,72
SONATA EVO 32 20 V	2640	23,65	39,5	6,97	1,04
SONATA EVO 32 25 V	3040	28,93	40,8	11,18	1,27
SONATA EVO 40 10 V	1840	14,74	37,2	11,38	0,65
SONATA EVO 40 15 V	2560	20,75	37,5	7,55	0,91
SONATA EVO 40 20 V	3600	29,14	37,4	10,3	1,28
SONATA EVO 40 25 V	4560	35,62	36,7	16,38	1,56

* Temperature of intake air: +18 °C

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

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [Hz]	Water flow [kg]
SONATA EVO 32 10 V	1200	8,27	34,5	4,12	0,36
SONATA EVO 32 15 V	1800	11,86	33,8	2,75	0,52
SONATA EVO 32 20 V	2640	17,26	33,7	4,02	0,75
SONATA EVO 32 25 V	3040	21,33	34,8	6,47	0,93
SONATA EVO 40 10 V	1840	10,71	32,0	6,57	0,47
SONATA EVO 40 15 V	2560	14,97	32,0	4,22	0,65
SONATA EVO 40 20 V	3600	21,06	32,0	5,79	0,92
SONATA EVO 40 25 V	4560	26,03	31,7	9,42	1,14

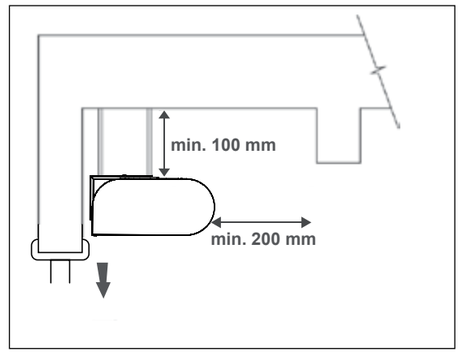
* Temperature of intake air: +18 °C

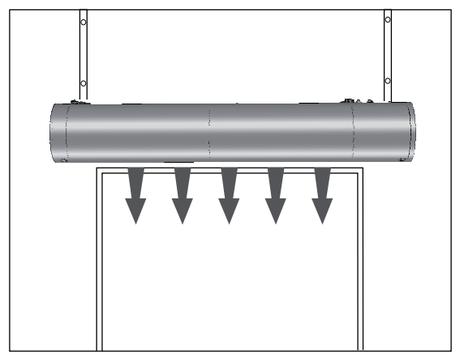
Recommended mixing points for LPHW

Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
SONATA EVO 32 10 V	SONATA EVO-BA	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-CO	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-SU	ZV-3-24V-04,0	ZV-3-24V-04,0	ZV-3-24V-02,5	ZV-3-24V-01,6
SONATA EVO 32 15 V	SONATA EVO-BA	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-CO	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-SU	ZV-3-24V-06,3	ZV-3-24V-04,0	ZV-3-24V-04,0	ZV-3-24V-02,5
SONATA EVO 32 20 V	SONATA EVO-BA	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-CO	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-SU	ZV-3-24V-06,3	ZV-3-24V-06,3	ZV-3-24V-06,3	ZV-3-24V-04,0
SONATA EVO 32 25 V	SONATA EVO-BA	RT-3-15	RT-3-15	RT-3-15	RT-3-15
	SONATA EVO-CO	RT-3-15	RT-3-15	RT-3-15	RT-3-15
	SONATA EVO-SU	ZV-3-24V-12,0	ZV-3-24V-06,3	ZV-3-24V-06,3	ZV-3-24V-04,0
SONATA EVO 40 10 V	SONATA EVO-BA	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-CO	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-SU	ZV-3-24V-06,3	ZV-3-24V-04,0	ZV-3-24V-04,0	ZV-3-24V-02,5
SONATA EVO 40 15 V	SONATA EVO-BA	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-CO	ZV-3	ZV-3	ZV-3	ZV-3
	SONATA EVO-SU	ZV-3-24V-06,3	ZV-3-24V-06,3	ZV-3-24V-04,0	ZV-3-24V-04,0
SONATA EVO 40 20 V	SONATA EVO-BA	RT-3-15	RT-3-15	RT-3-15	RT-3-15
	SONATA EVO-CO	RT-3-15	RT-3-15	RT-3-15	RT-3-15
	SONATA EVO-SU	ZV-3-24V-12,0	ZV-3-24V-06,3	ZV-3-24V-06,3	ZV-3-24V-04,0
SONATA EVO 40 20 V	SONATA EVO-BA	RT-3-15	RT-3-15	RT-3-15	RT-3-15
	SONATA EVO-CO	RT-3-15	RT-3-15	RT-3-15	RT-3-15
	SONATA EVO-SU	ZV-3-24V-12,0	ZV-3-24V-12,0	ZV-3-24V-06,3	ZV-3-24V-06,3

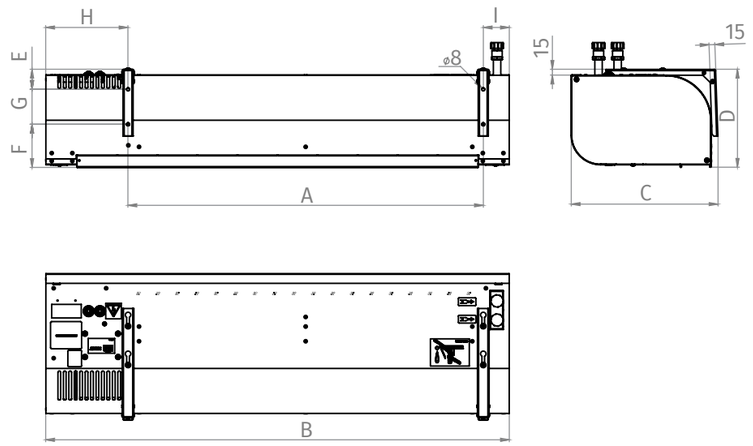
INSTALLATION AND ASSEMBLY

- The air curtain must be installed in a horizontal position only.
- The air curtain shall be located as close as possible to the top edge of the doorway, and a distance from walls that is in accordance with fre safety and building codes of the country where unit is installed. For manufacturer recommended distance see fgures below.
- To ensure proper function it is recommended that the air curtain overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specifed distances from the surrounding objects are observed, see fIgure.
- Please take note of water and power supply connections when installing air curtain.
- The air curtain shall be installed using supplied brackets.





DIMENSIONS



Type	A	B	C	D	E	F	G	H	I
SONATA EVO 32 10	913	1190	377	252	51	111	90	211	67
SONATA EVO 40 10	913	1190	377	252	51	111	90	211	67
SONATA EVO 32 15	1321	1600	377	252	51	111	90	211	67
SONATA EVO 40 15	1321	1600	377	252	51	111	90	211	67
SONATA EVO 32 20	1822	2100	377	252	51	111	90	211	67
SONATA EVO 40 20	1822	2100	377	252	51	111	90	211	67
SONATA EVO 32 25	2232	2510	377	252	51	111	90	211	67
SONATA EVO 40 25	2232	2510	377	252	51	111	90	211	67

CONTROL

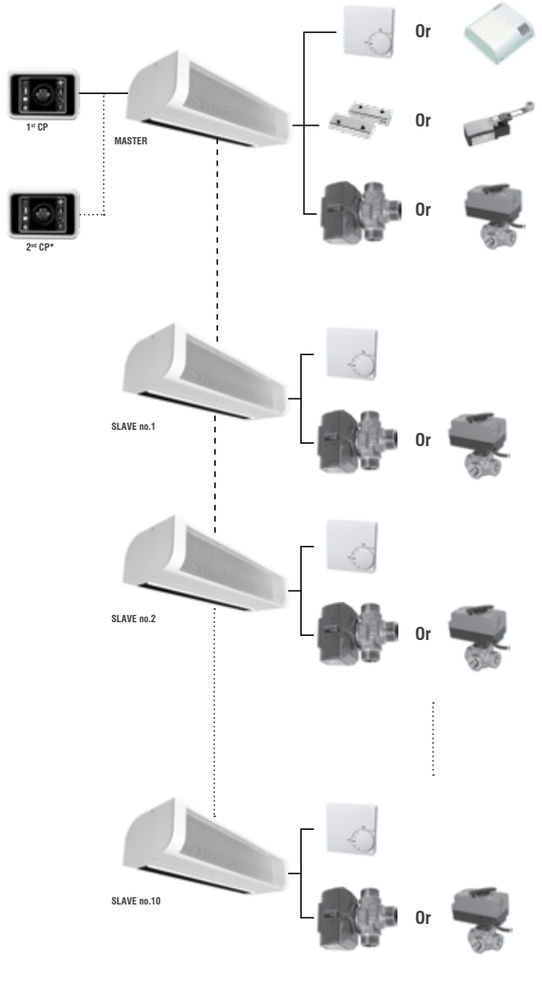
	BASIC SONATA EVO-BA	COMFORT SONATA EVO-CO	SUPERIOR SONATA EVO-SU
Type of controller / Mode	Manual / Manual	Touch screen / Manual or Auto*	Touch screen / Manual or Auto
Regulation of air output	3 speeds	3 speeds	3 speeds (AC) 10 speeds (EC)
Regulation of electric heater	OFF / Level1 / Level2	OFF / Level1 / Level2	YES (PWM)
Regulation of water heater	ON/OFF	ON/OFF	0-10V
Antifreeze protection of LPHW	NO	NO	YES
Possibility of connecting a door contact	YES (230V)	YES (12V)	YES (12V)
External control	NO	YES	YES
Temperature measurement	YES (Room thermostat)	YES (Room thermostat)	Yes (NTC)**
Chaining air curtains	NO	YES – max 10+1 pcs	YES – max 10+1 pcs
Indication of selected function	YES	YES (Display)	YES (Display)
Controller connection to air curtain	Power wire	Communication cable (UTP)	Communication cable (UTP)
Self learning mode	NO	NO	YES
BMS connection	NO	Modbus RTU	Modbus RTU, Modbus TCP
Error contact	NO	YES	YES
2nd control panel ready	NO	YES	YES

*) Auto mode only ON/OFF with connected Room thermostat
**) Temperature sensor included in standard. Temperature shown on display

CHAINING EXAMPLE

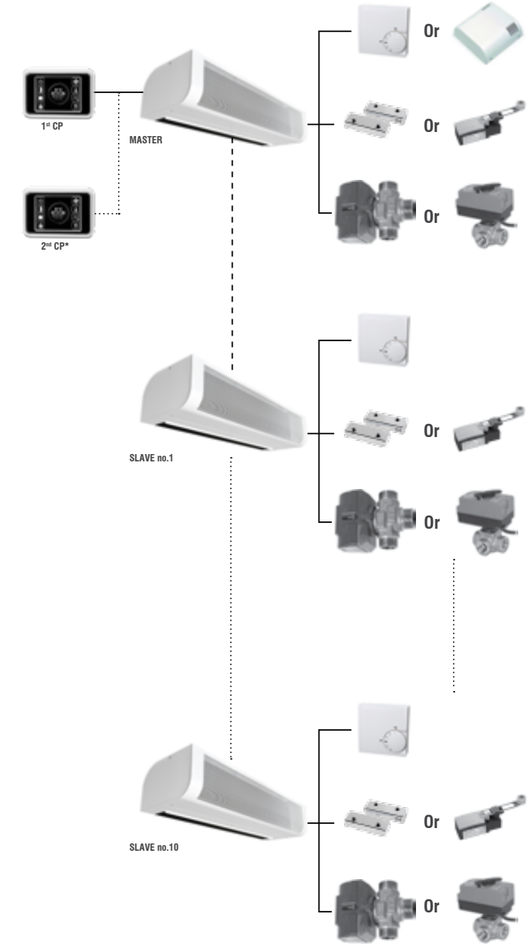
COMFORT / SUPERIOR

- Global Door contact function active



COMFORT / SUPERIOR

- Global Door contact function not active



*) Optional accessories

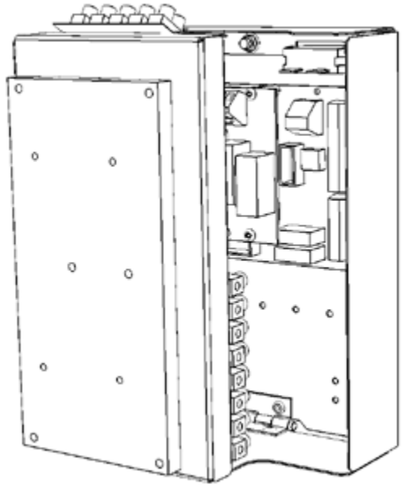
ACCESSORIES

REQUIRED ACCESSORIES

These accessories are required to make the curtain functional.

Control module

- A control module is a required accessory for SONATA EVO air curtain and are required for each air curtain.
- A control panel is included in the delivery with the control module. The ordering key for control modules is provided below. The control panel of Basic control module is connected using common wiring cable (230 V control voltage). A suitable cross-Nection of the cable shall be determined based on the particular installation conditions. This cable should be provided by a company performing the air curtain electrical wiring. The control panel of Comfort/Superior module is connected using UTP communication cable (not included).



ORDERING KEY

Air curtain	SONATA EVO	- BA	- E	- MA	- 1	- AC
BA – Basic control (mechanical) **CO** – Comfort control (touch screen) **SU** – Superior control (touch screen)						
S – without heating regulation **E** – with electric heater regulation **V** – with water heater regulation						
SL – SLAVE (only for CO, SU) **MA** – MASTER (only for CO, SU)						
1 – only for E versions, air curtain lenght 100, 150 **2** – only for E versions, air curtain lenght 200, 250						
AC – AC motor						

AIR CURTAINS GRAND / SONATA

OTHER ACCESSORIES

Thermostatic valve TV-1-1/1
TV-1-1/1

Zone valve with servo drive ZV-3
ZV-3 (for control BA, CO)

Water valve
RT-3-11 (KVS 11)
RT-3-15 (KVS 15)
(for control BA, CO)

Water valve (0-10V)
ZV-3-24V-XX
(für Steuerung SU)

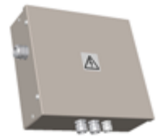
Mixing node
SMU2-230-xx (for control BA, CO)
SMU2-024-xx (for control SU)

Mechanical door switch (230V)
DS

Magnetic door contact (12V)
DK-1

Magnetic door contact (12V) in a metal housing
with higher protection against mechanical damage
DK-B-3

Timer with a weekly program
SH-TM-848



OpenEnd module (Control module for BMS)
OE-M-AC3 (for control BA)

Room thermostat
TER-P

Room thermostat
TER-P

Room temperature sensor
CT-ROOM (for control SU)

	BASIC SONATA EVO-BA	COMFORT SONATA EVO-CO	SUPERIOR SONATA EVO-SU
DS	●	●	●
DK-1	●	●	●
DK-B-3	●	●	●

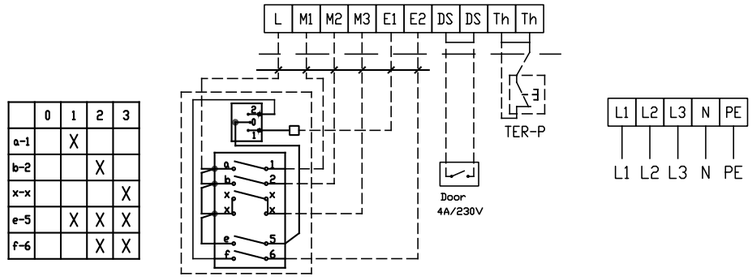
* Recommended for industry use

WIRING DIAGRAMS

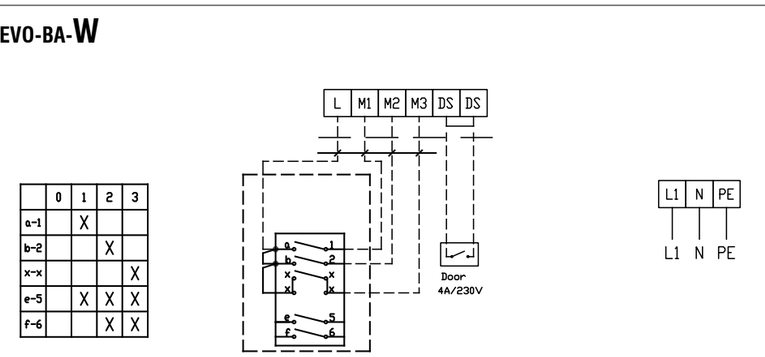
- Air curtains with electric heaters are equiped with an automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW are designed for a maximum operating water temperature of +130 °C and a maximum operating pressure of 1.6 MPa.

BASIC

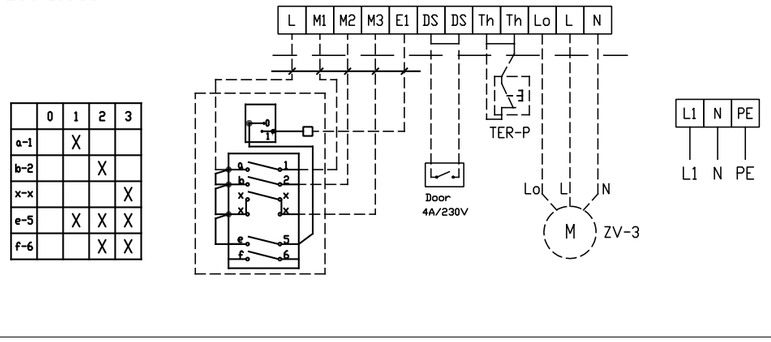
SONATA EVO-BA-E



SONATA EVO-BA-W



SONATA EVO-BA-N

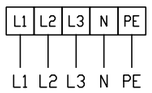


AIR CURTAINS GRAND / SONATA

WIRING DIAGRAMS

COMFORT MASTER

SONATA EVO-CO-*-E



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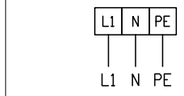
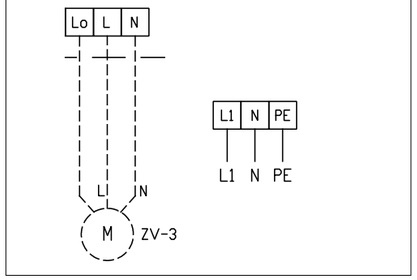
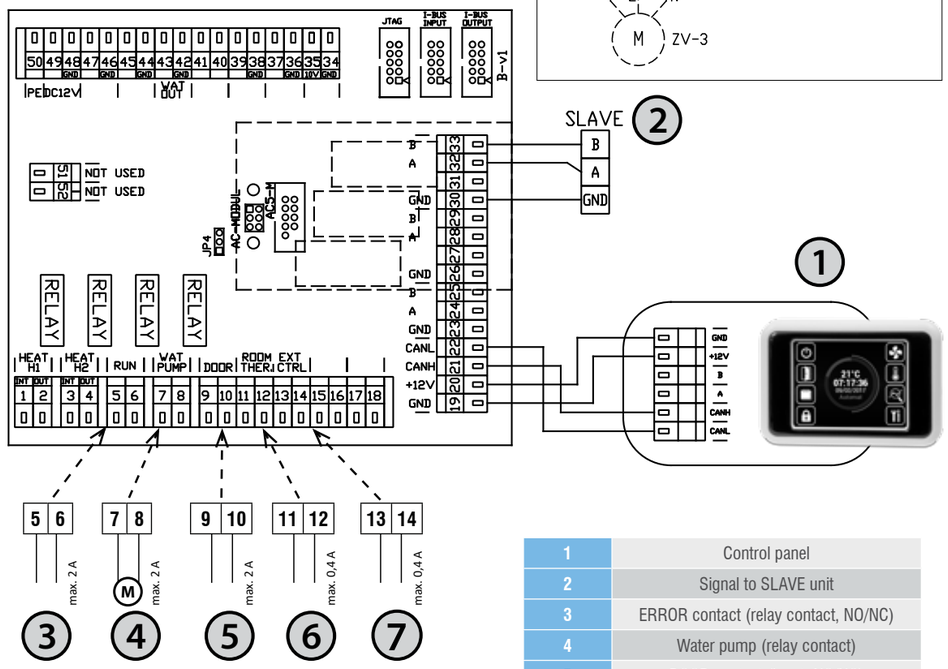


SONATA EVO-CO-*-W



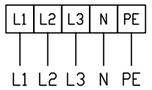


1	Control panel
2	Signal to SLAVE unit
3	ERROR contact (relay contact, NO/NC)
4	Water pump (relay contact)
5	DOOR contact (input, NO/NC)
6	Room thermosat (input, NO/NC)
7	External control (input, NO/NC)

WIRING DIAGRAMS

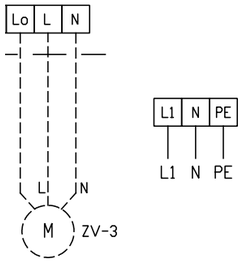
COMFORT SLAVE

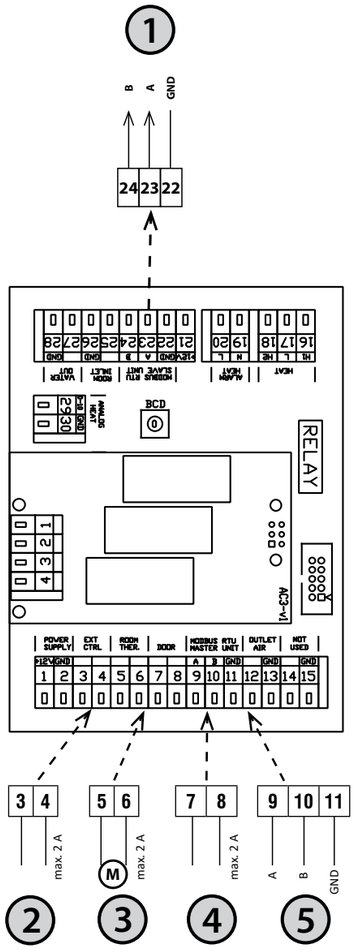
SONATA EVO-CO-*-E



SONATA EVO-CO-*-N

SONATA EVO-CO-*-W

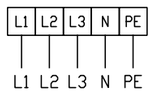




1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit

WIRING DIAGRAMS

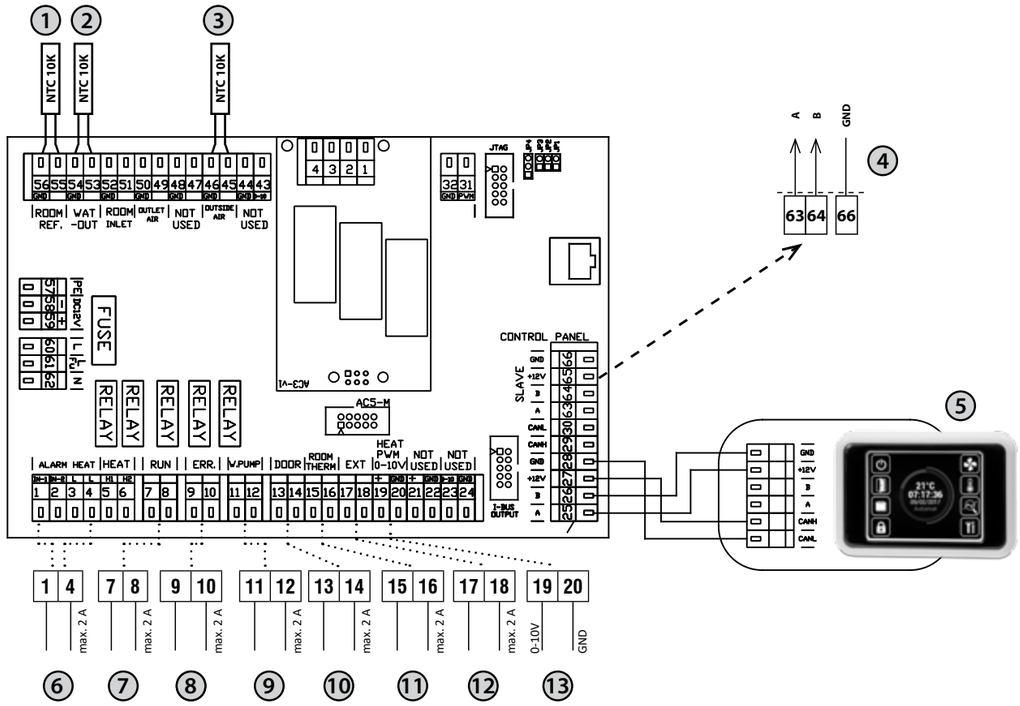
SONATA EVO-CO-*-E



SONATA EVO-CO-*-N

SONATA EVO-CO-*-W

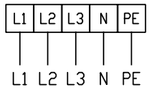
SUPERIOR MASTER



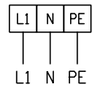
1	Room sensor (accessories)
2	LPHW out sensor (included in delivery)
3	Outside air sensor (included in delivery)
4	Signal to SLAVE unit
5	Control panel
6	Antifreeze thermostat (NC)
7	RUN contact (relay contact, NO/NC)
8	ERROR contact (relay contact, NO/NC)
9	Water pump (relay contact)
10	DOOR contact (input, NO/NC)
11	Room thermosat (input, NO/NC)
12	External control (input, NO/NC)
13	Water valve control (0-10V)

WIRING DIAGRAMS

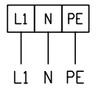
SONATA EVO-CO-*-E



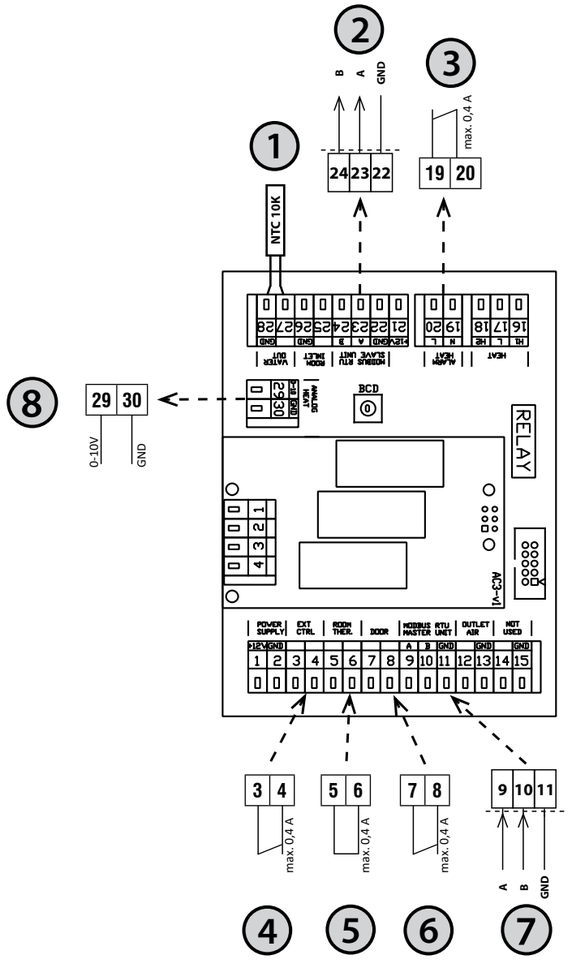
SONATA EVO-CO-*-N



SONATA EVO-CO-*-W



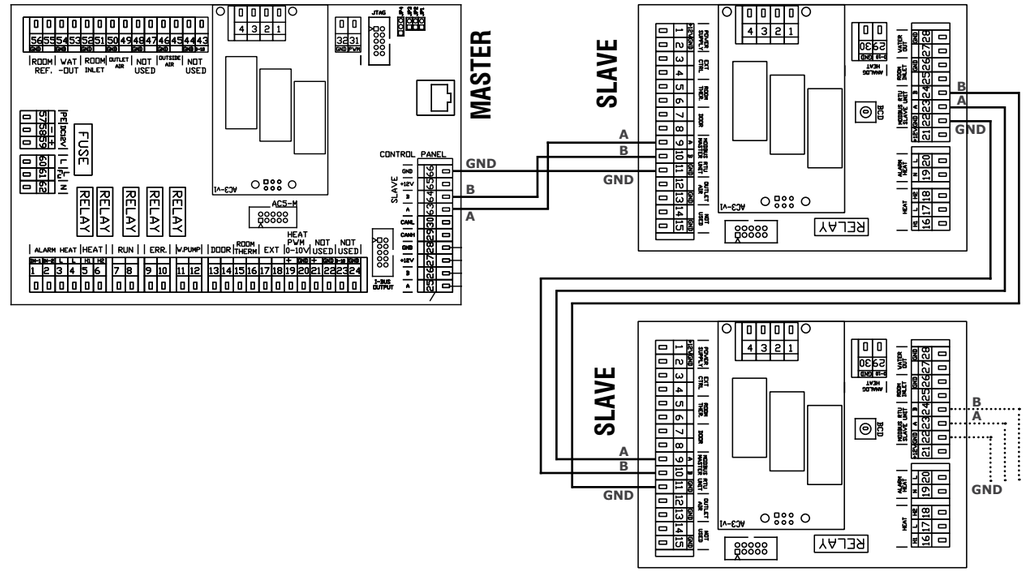
SUPERIOR SLAVE



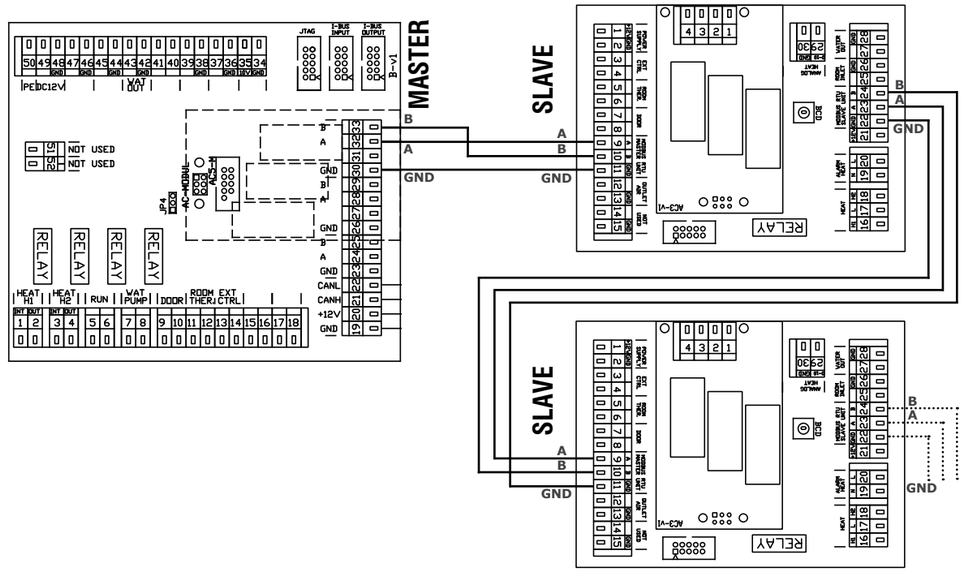
1	LPHW out sensor (included in delivery)
2	Signal to SLAVE unit
3	Antifreeze thermostat (NC)
4	External control - ON/OFF
5	Room thermostat (input)
6	DOOR contact (input)
7	Signal from MASTER unit
8	Water valve control (0-10V)

WIRING DIAGRAMS

SUPERIOR



COMFORT



ORDERING KEY

Air curtain	**SONATA EVO**	**- E**	**- 10**	**- 32**

E – Electric heater with 10kW power
V – Water heater
S – Air-only (ambient)

10 – Nominal width 1000 mm
15 – Nominal width 1500 mm
20 – Nominal width 2000 mm
25 – Nominal width 2500 mm

32 – Output series (3,2m)
40 – Output series (4,0m)

AIR CURTAINS GRAND / SONATA

NOTES:

Design changes reserved