



AR200

Recessed air curtain for smaller entrances

- Recommended installation height 2,5 m*
- Recessed mounting
- Lengths: 1, 1,5 and 2 m

☼ Ambient, no heat

⚡ Electrical heat: 3–18 kW

💧 Water heat

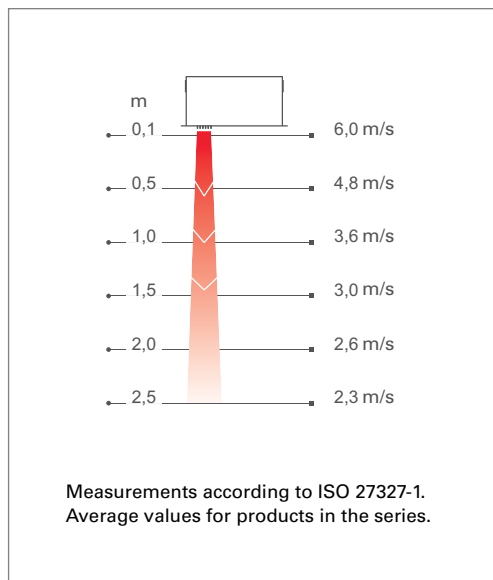
Application

AR200 is a compact air curtain, suitable for most small entrances. A low height makes it possible to install AR200 where ceiling space is limited. The recessed installation and low sound level makes AR200 very discreet.

Design

AR200 is designed for recessed installation and the visible bottom plate may be painted to make it blend in even better with the surroundings.

Air velocity profile



Product specifications

- Just one model per length, but electrical units are convertible between several outputs and 230V~/400V3N~ making it simple and flexible to adapt the output to current need.
- Low unit height (200 mm).
- Bottom plate in white lacquered aluminium.
Colour: RAL 9016, NCS S 0500-N. The bottom plate can easily be removed and painted in an optional colour. Non visible parts made of hot zinc plated steel panels.

*) Recommended installation height varies depending on the relevant premises.

Technical specifications

🌀 Ambient, no heat - AR200 A

Type	Output	Airflow* ¹	Sound level* ²	Voltage	Amperage	Length	Weight
	[kW]	[m ³ /h]	[dB(A)]	[V]	[A]	[mm]	[kg]
AR210A	0	650/1200	34/50	230V~	0,5	1042	18
AR215A	0	950/1750	34/50	230V~	0,6	1552	25
AR220A	0	1300/2400	40/54	230V~	1,0	2042	36

⚡ Electrical heat - AR200 E

Type	Output steps 400V3N~ [kW]	Output steps 230V~ [kW]	Airflow* ¹	Δt * ³	Sound level* ²	Voltage	Amperage 400V3N~ [A]	Amperage 230V~ [A]	Length	Weight
			[m ³ /h]	[°C]	[dB(A)]	[V]			[mm]	[kg]
AR210E09	3	-	650/1200	13/7	34/50	400V3N~	4,3	-	1042	23
	6/9	-	650/1200	41/22	34/50	400V3N~	13	-	1042	23
	-	3	650/1200	13/7	34/50	230V~	-	13	1042	23
	-	3/5	650/1200	23/12	34/50	230V~	-	22	1042	23
AR215E11	4,5	-	950/1750	14/8	34/50	400V3N~	6,5	-	1552	32
	6,8/11,3	-	950/1750	35/20	34/50	400V3N~	16	-	1552	32
	-	4,5	950/1750	14/8	34/50	230V~	-	20	1552	32
	-	4,5/6,8	950/1750	21/12	34/50	230V~	-	30	1552	32
AR220E18	6	-	1300/2400	13/7	40/54	400V3N~	8,7	-	2042	44
	12/18	-	1300/2400	41/22	40/54	400V3N~	26	-	2042	44
	-	6	1300/2400	13/7	40/54	230V~	-	26	2042	44
	-	6/10	1300/2400	23/12	40/54	230V~	-	43	2042	44

💧 Water heat - AR200 W

Type	Output* ⁴	Airflow* ¹	Δt * ^{3,4}	Water volume	Sound level* ²	Voltage	Amperage	Length	Weight
	[kW]	[m ³ /h]	[°C]	[l]	[dB(A)]	[V]	[A]	[mm]	[kg]
AR210W	6,6	700/1000	24/21	0,5	41/49	230V~	0,4	1042	21
AR215W	10,4	1000/1600	24/20	0,9	37/50	230V~	0,6	1552	39
AR220W	13,0	1400/2000	23/20	1,1	44/53	230V~	1,0	2042	42

*¹) Lowest/highest airflow of totally 3 fan steps.

*²) Conditions: Distance to the unit 5 metres. Directional factor: 2. Equivalent absorption area: 200 m². At lowest/highest airflow.

*³) Δt = temperature rise of passing air at maximum heat output and lowest/highest airflow.

*⁴) Applicable at water temperature 80/60 °C, air temperature, in +18 °C.

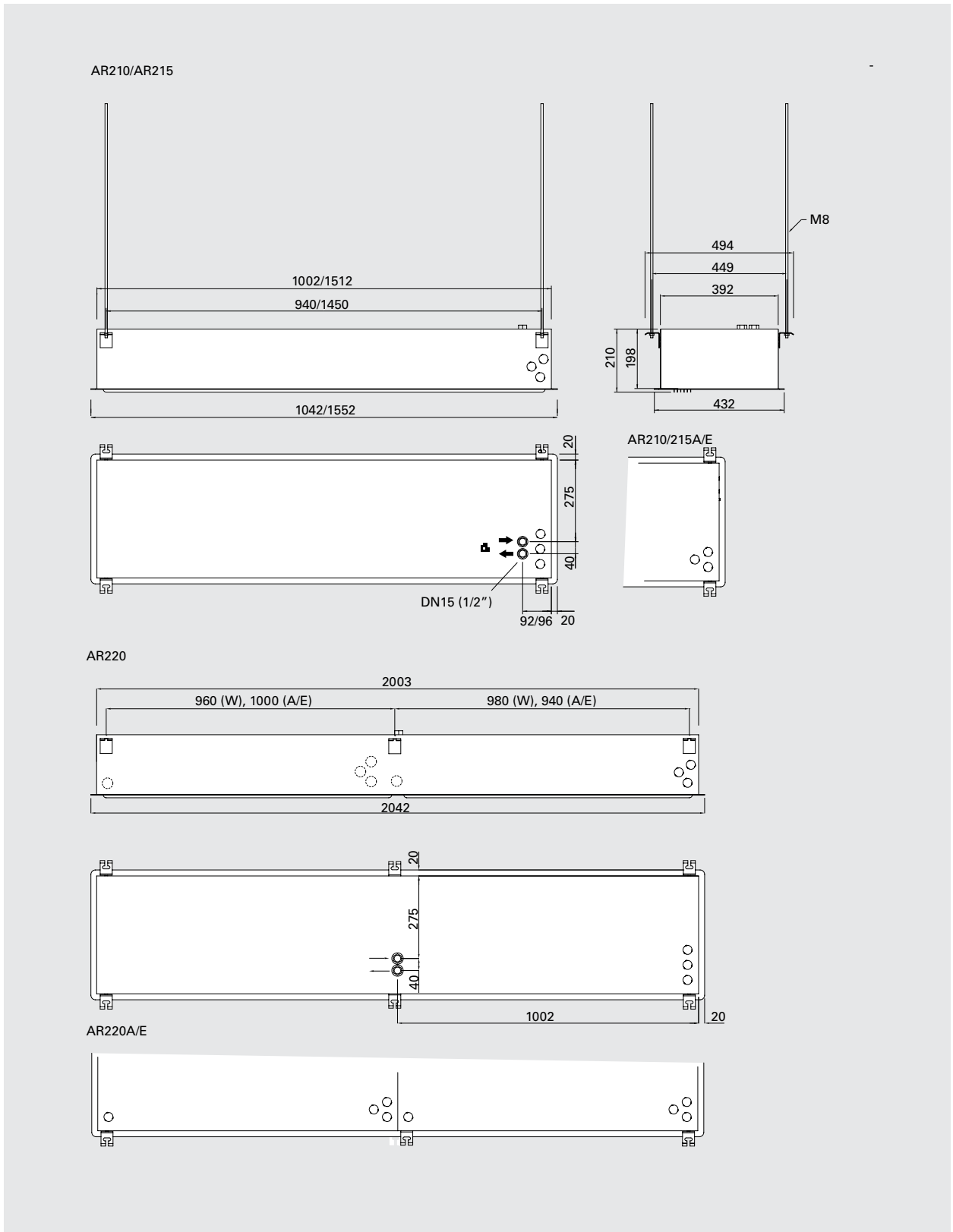
AR200E is delivered as 9 kW, 11 kW and 18 kW (400V3N~) models, but they are convertible to 230V~ and different outputs as shown in above table.

Protection class: IP20.

CE compliant.

AR200

Dimensions



Mounting and connection

Mounting

The air curtain is installed horizontally with the supply air grille facing downwards as close to the door as possible, concealed in the false ceiling. The only visible part of the unit is the underside which is level with the ceiling. The bottom plate must be accessible, nothing should prevent it being fully opened.

The unit is ready for suspension with threaded rods.

For the protection of wider doorways, several units can be mounted next to each other. Minimum distance from outlet to floor for electrically heated units is 1800 mm.

Connection

Unit without heating

The electrical connection is made on the side or on the top of the unit. Control (230V~) should be connected to a terminal block in the terminal box. See wiring diagrams.

Unit with electrical heating

The electrical connection is made on the side or on the top of the unit. The units are convertible between different output and 230V~/400V3N~. Control (230V~) and power supply for heat (230V~/400V3N~) should be connected to a terminal block in the terminal box. 2-metre and longer units require dual power supplies. See wiring diagrams.

Unit with water heating

The electrical connection is made on the side or on the top of the unit. Control (230V~) should be connected to a terminal block in the terminal box. See wiring diagrams.

The water coil is connected on top of the unit via connections DN15 (1/2"), internal thread.



AR200

Control options

✿ Unit without heating

Level 1

Airflow is set manually.

Control kit:

- CB30N, control box, 3 fan steps.

Level 2

Airflow is set manually. The door contact controls the airflow on/off.

Control kit:

- CB30N, control box, 3 fan steps
- MDC, magnetic door contact with a time relay

⚡ Unit with electrical heating

Level 1

Airflow is set manually. The room thermostat controls the heat output in two steps.

Control kit:

- CB32N, control box, 3 fan steps and 2 heating steps.
- RTI2, electronic 2-step thermostat

Level 2

Airflow and heat output are controlled automatically based on the opening of the door and the room temperature. When the door is open the fan runs at high speed, when the door closes the fan will continue to run at high speed for the desired time (2s–10 min.) set on MDC. When the door is closed the fan runs at low speed if there is a need for heating, if not the fan is switched off.

The room thermostat controls the heat output. E.g. the thermostat is set on 23 °C and the difference between the steps 4 °C. The thermostat will activate below 19 °C when the door is closed. When the door opens, the thermostat will activate below 23 °C and normally the heat is switched on.

Control kit:

- CB32N, control box, 3 fan steps and 2 heating steps.
- MDC, magnetic door contact with a time relay.
- RTI2, electronic 2-step thermostat

💧 Unit with water heating

Level 1

Airflow is set manually. Room thermostat controls the heat output via actuator/valve on/off.

Control kit:

- CB30N, control box, 3 fan steps.
- T10S, room thermostat IP30.

Note! A valve set VRS20/25 (option: TVVS20/25 with SD20) should be added for a complete control kit.

Level 2

Airflow and heat output are controlled automatically based on the opening of the door and the room temperature. When the door is open the fan runs at high speed, when the door closes the fan will continue to run at high speed for the desired time (2s–10 min.) set on MDC. When the door is closed the fan runs at low speed if there is a need for heating, if not the fan is switched off.

The room thermostat controls the heat output on/off. E.g. the thermostat is set on 23 °C and the difference between the steps 4 °C. The thermostat will activate below 19 °C when the door is closed. When the door opens, the thermostat will activate below 23 °C and normally the heat is switched on.

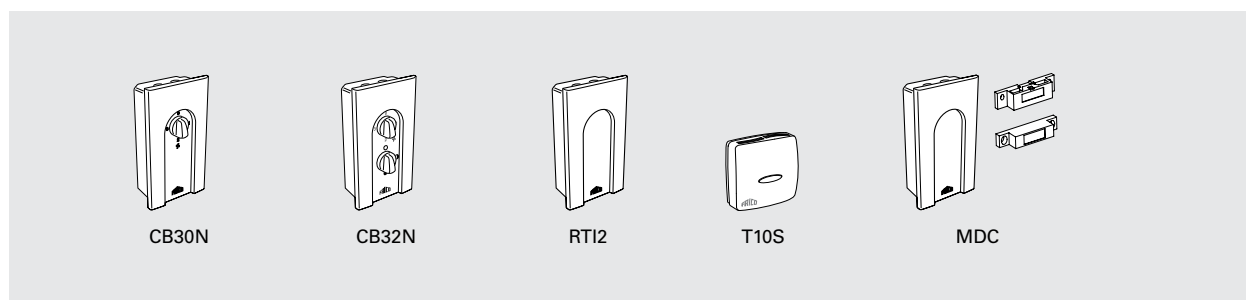
Control kit:

- CB30N, control box, 3 fan steps.
- MDC, magnetic door contact with a time relay.
- RTI2, electronic 2-step thermostat

Note! A valve set VRS20/25 (option: TVVS20/25 with SD20) should be added for a complete control kit.

Valve set VRS20 is recommended for water flow rates up to 0.2 l/s. VRS25 is recommended for 0.2-0.6 l/s.

Controls



CK01E, control kit
Contains control box CB32N and thermostat RTI2.

CB30N, control box
Controls the airflow in 3 steps. Can control several units. Max input 10 A. IP44.

CK02E, control kit
Contains control box CB32N, thermostat RTI2 and door contact MDC.

CB32N, control box
Controls the airflow in 3 steps and heat output in 2 steps. Can control several units. Max input 10 A. IP44.

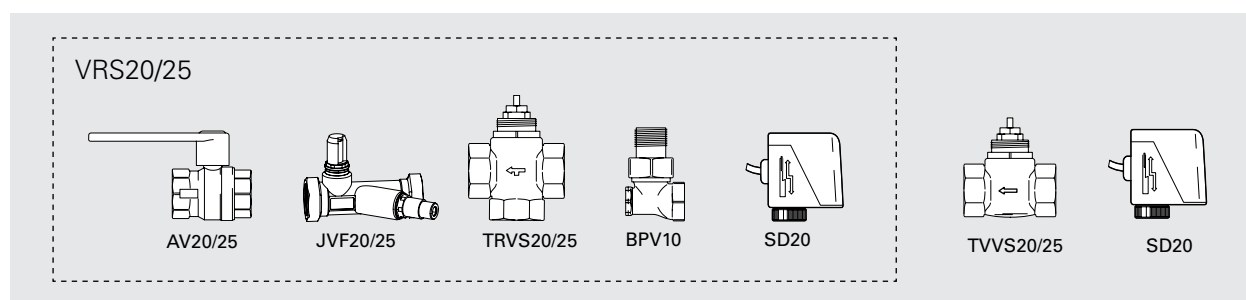
CK01W, control kit
Contains control box CB30N and thermostat T10S.

CK02W, control kit
Contains control box CB30N, thermostat RTI2 and door contact MDC.

For further information and options, see the "Controls" section.

Type	Description	HxWxD [mm]
CK01E	Control kit Electric level 1 (CB32N, RTI2)	
CK02E	Control kit Electric level 2 (CB32N, RTI2, MDC)	
CK01W	Control kit Water level 1 (CB30N, T10)	
CK02W	Control kit Water level 2 (CB30N, RTI2, MDC)	
CB30N	Control box AR200A/W, IP44	155x87x43
CB32N	Control box AR200E, IP44	155x87x43
T10S	Electronic thermostat, IP30	80x80x31
RTI2	Electronic 2-step room thermostat, IP44	155x87x43
MDC	Magnetic door contact with time relay, IP44	155x87x43
MDCDC	Magnetic door contact	

Water control



Type	Description
VRS20	Valve set DN 20 mm
VRS25	Valve set DN 25 mm
TVVS20	2-way control valve, DN 20 mm
TVVS25	2-way control valve, DN 25 mm
SD20	Actuator 230V~

For further information and options regarding our water controls, see the "Controls" section.

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Output charts water

			Supply water temperature: 110 °C Room temperature: +18 °C Outlet air temperature: +35 °C*1				Water temperature: 110/80 °C Room temperature: +18 °C			
Type	Fan position	Airflow [m³/h]	Output [kW]	Return water temp. [°C]	Water flow [l/s]	Pressure drop [kPa]	Output *2 [kW]	Outlet air temp. [°C]	Water flow [l/s]	Pressure drop [kPa]
AR210W	max	1000	5,8	44,1	0,02	1,6	9,8	46,9	0,08	15,6
	min	700	4,0	38,7	0,01	0,7	7,9	51,3	0,06	10,5
AR215W	max	1600	9,2	45,8	0,04	0,9	15,6	46,8	0,13	8,3
	min	1000	5,8	39,6	0,02	0,3	11,7	52,5	0,10	5,0
AR220W	max	2000	11,5	44,3	0,04	1,4	19,5	46,7	0,16	14,2
	min	1400	8,1	39,0	0,03	0,7	15,7	51,0	0,13	9,6

			Supply water temperature: 90 °C Room temperature: +18 °C Outlet air temperature: +35 °C*1				Water temperature: 90/70 °C Room temperature: +18 °C			
Type	Fan position	Airflow [m³/h]	Output [kW]	Return water temp. [°C]	Water flow [l/s]	Pressure drop [kPa]	Output *2 [kW]	Outlet air temp. [°C]	Water flow [l/s]	Pressure drop [kPa]
AR210W	max	1000	5,8	49,4	0,03	3,7	8,0	41,5	0,10	23,0
	min	700	4,0	43,1	0,02	1,6	6,4	45,0	0,08	15,5
AR215W	max	1600	9,2	50,5	0,06	2,1	12,7	41,4	0,16	12,3
	min	1000	5,8	43,1	0,03	0,7	9,5	46,1	0,12	7,3
AR220W	max	2000	11,5	49,7	0,07	3,4	15,8	41,3	0,19	20,3
	min	1400	8,1	43,4	0,04	1,4	12,7	44,8	0,16	14

			Supply water temperature: 80 °C Room temperature: +18 °C Outlet air temperature: +35 °C*1				Water temperature: 80/60 °C Room temperature: +18 °C			
Type	Fan position	Airflow [m³/h]	Output [kW]	Return water temp. [°C]	Water flow [l/s]	Pressure drop [kPa]	Output *2 [kW]	Outlet air temp. [°C]	Water flow [l/s]	Pressure drop [kPa]
AR210W	max	1000	5,8	52,6	0,05	7,6	6,6	37,3	0,08	16,5
	min	700	4,0	45,8	0,03	2,7	5,3	40,2	0,06	11,1
AR215W	max	1600	9,2	53,3	0,08	4,2	10,4	37,2	0,13	8,7
	min	1000	5,8	45,3	0,04	1,2	7,0	41,0	0,10	5,2
AR220W	max	2000	11,5	52,9	0,10	7,0	13	37,2	0,16	15
	min	1400	8,1	46,1	0,06	2,5	10,4	40,0	0,13	10,1

			Supply water temperature: 60 °C Room temperature: +18 °C Outlet air temperature: +35 °C*1				Water temperature: 60/40 °C Room temperature: +18 °C			
Type	Fan position	Airflow [m³/h]	Output [kW]	Return water temp. [°C]	Water flow [l/s]	Pressure drop [kPa]	Output *2 [kW]	Outlet air temp. [°C]	Water flow [l/s]	Pressure drop [kPa]
AR210W	max	1000	–	–	–	–	3,7	28,8	0,04	6,3
	min	700	4,0	52,6	0,01	43,9	3,0	30,5	0,04	4,3
AR215W	max	1600	–	–	–	–	5,8	28,6	0,07	3,2
	min	1000	5,8	50,8	0,15	12,8	4,3	30,7	0,05	1,9
AR220W	max	2000	–	–	–	–	7,3	28,8	0,09	5,7
	min	1400	8,1	53,0	0,28	43,5	5,9	30,4	0,07	3,8

– = at the current water temperatures and airflows, the air outlet temperature will be less than 35 °C.

*1) Recommended outlet air temperature for good comfort and optimized output.

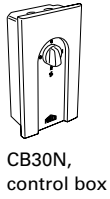
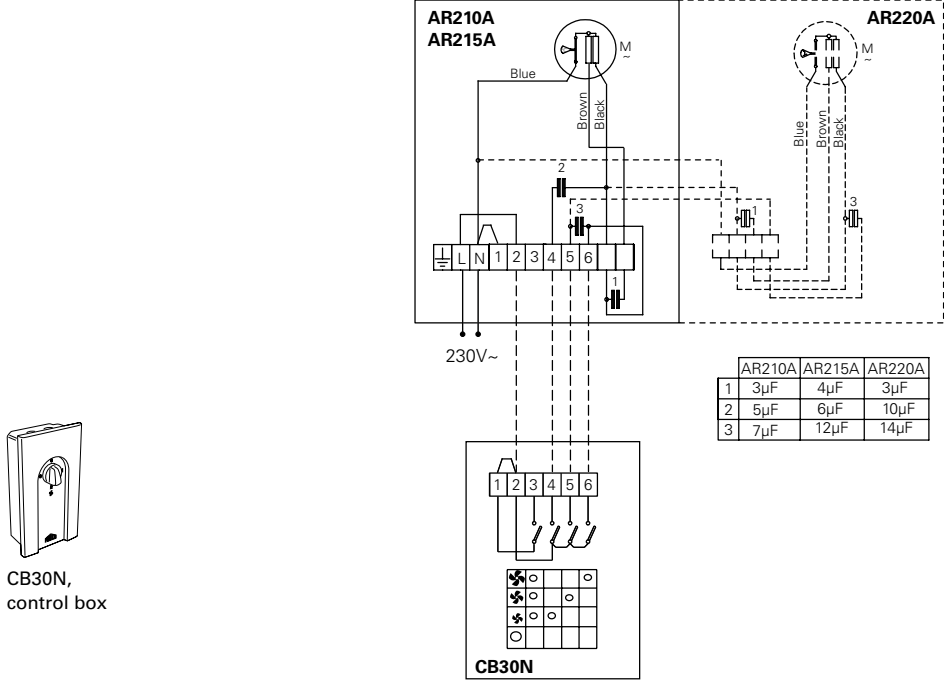
*2) Nominal output at given supply and return water temperature.

See www.frico.se for additional calculations.

Wiring diagrams

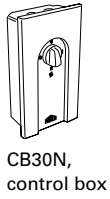
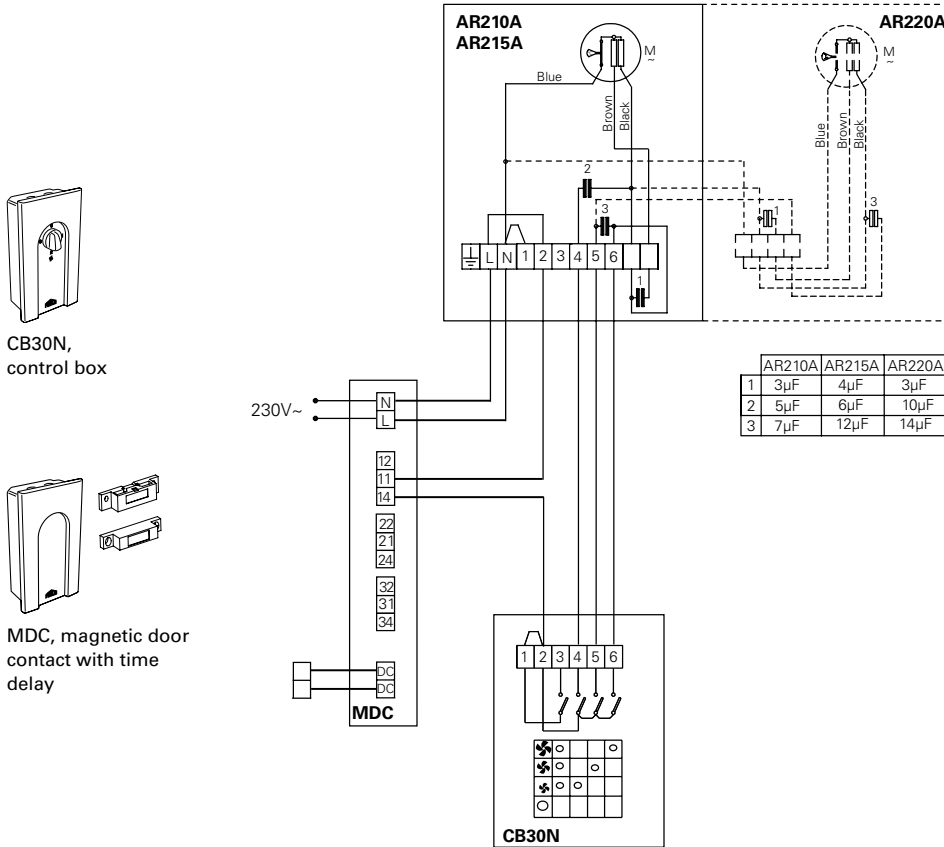
Control options for units without heat

Level 1

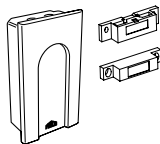


CB30N,
control box

Level 2



CB30N,
control box



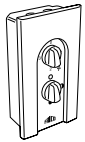
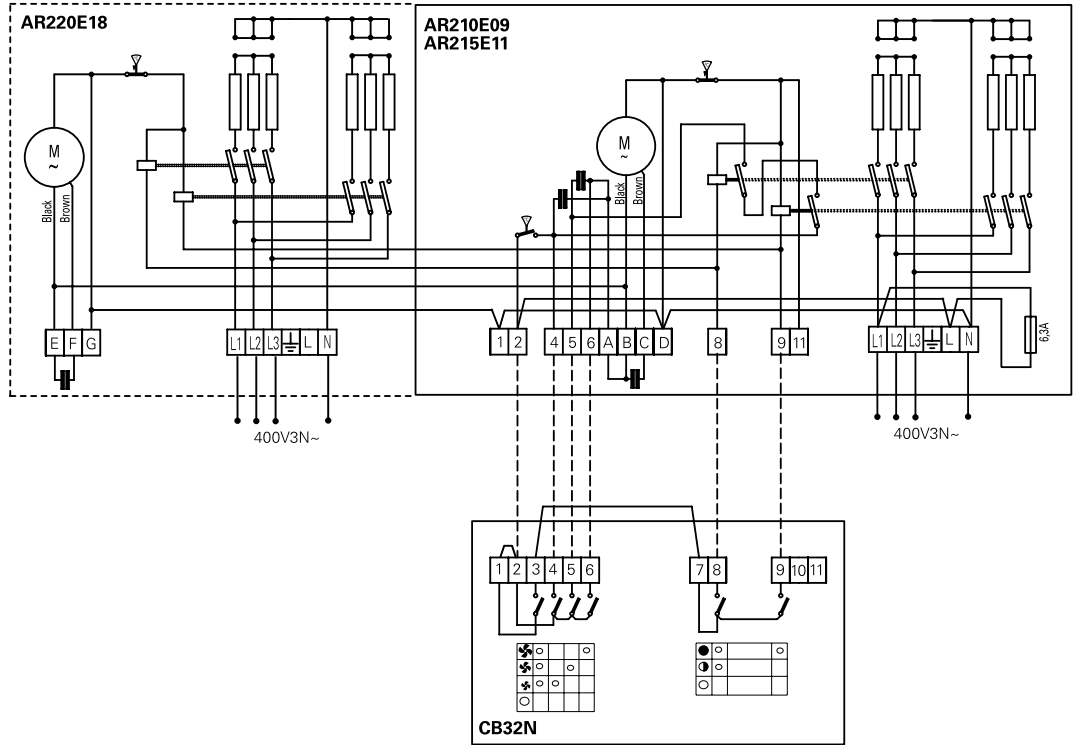
MDC, magnetic door
contact with time
delay

AR200

Wiring diagrams

Control options for electrically heated units

Internal wiring diagram



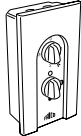
CB32N,
control box

Wiring diagrams


Control options for electrically heated units

Level 1

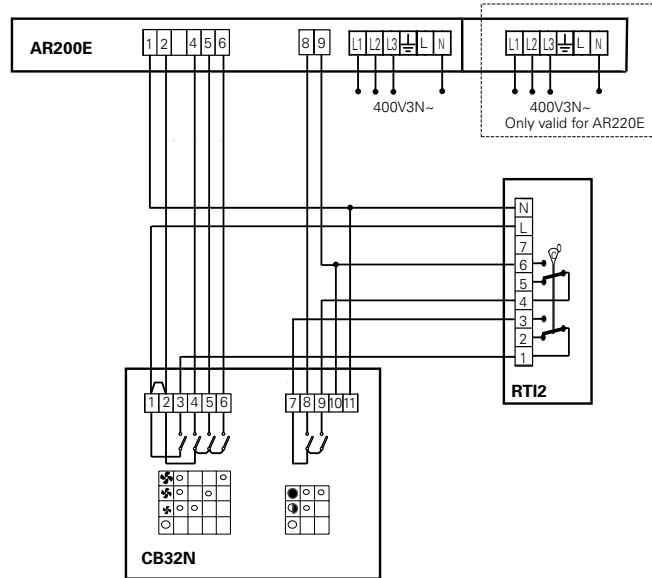
CK01E



CB32N,
control box

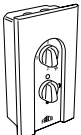


RTI2,
electronic 2-step
thermostat

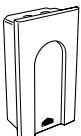


Level 2

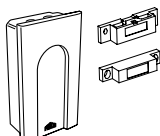
CK02E



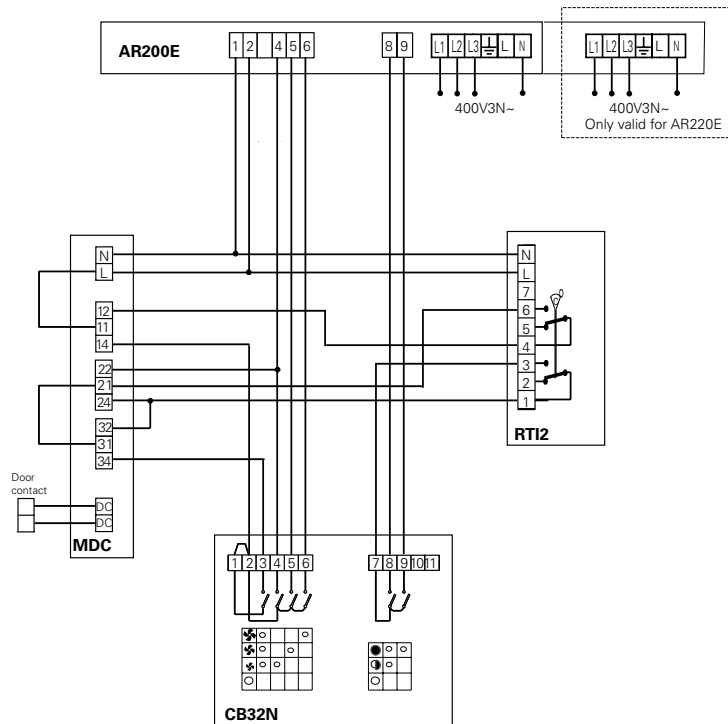
CB32N,
control box



RTI2,
electronic 2-step
thermostat



MDC, magnetic door
contact with time delay

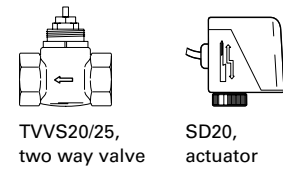
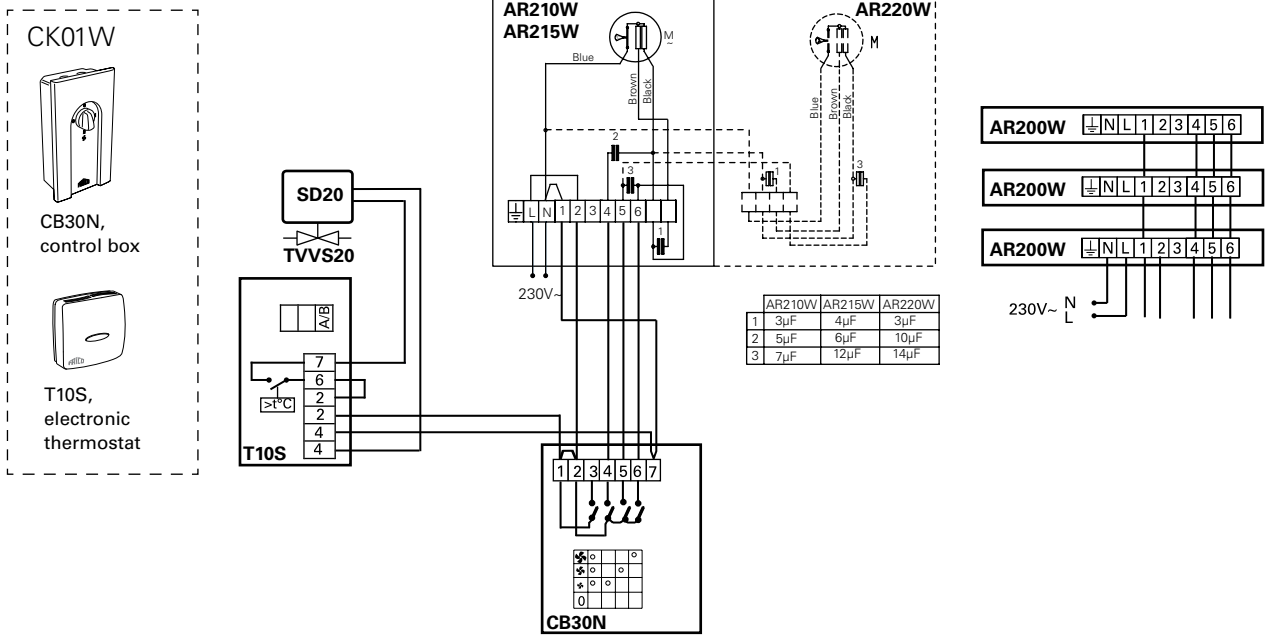


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Wiring diagrams

Control options for water heated units

Level 1



TVVS20/25, two way valve

SD20, actuator

