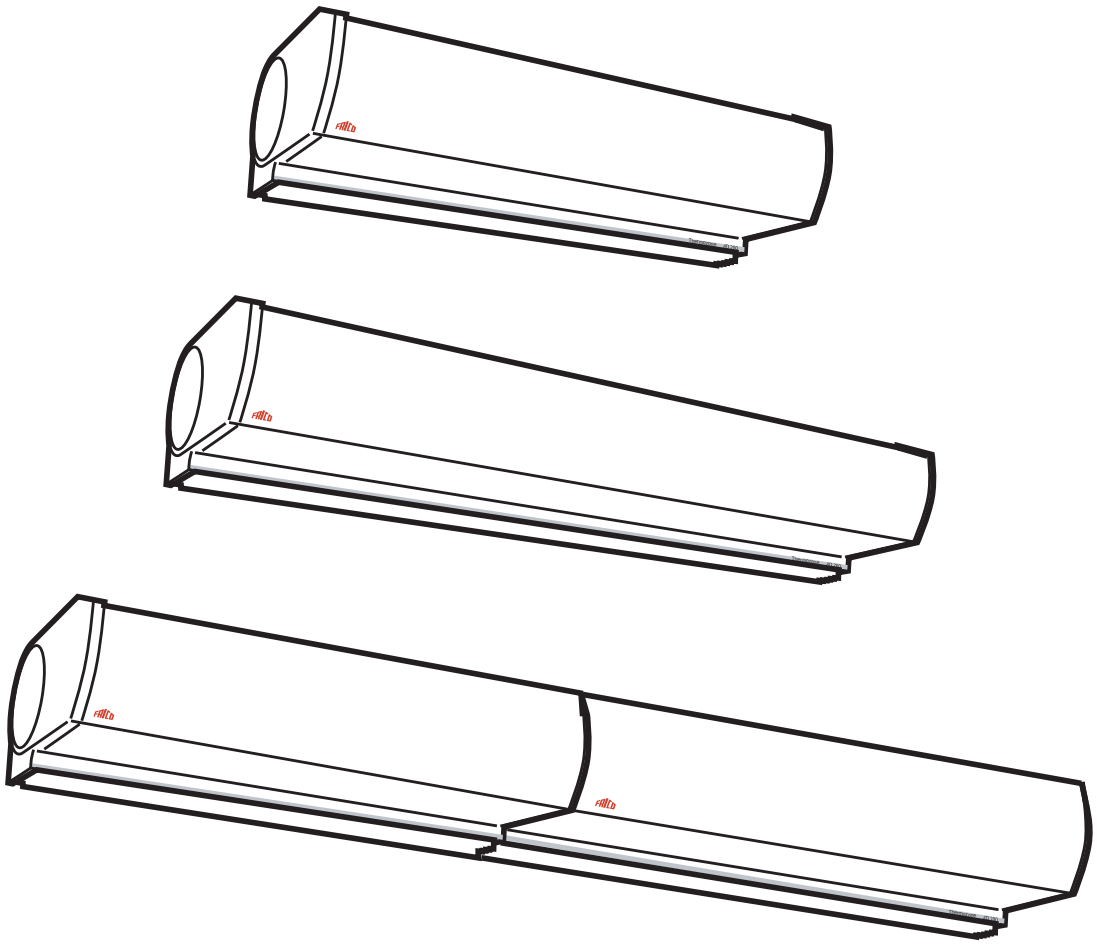
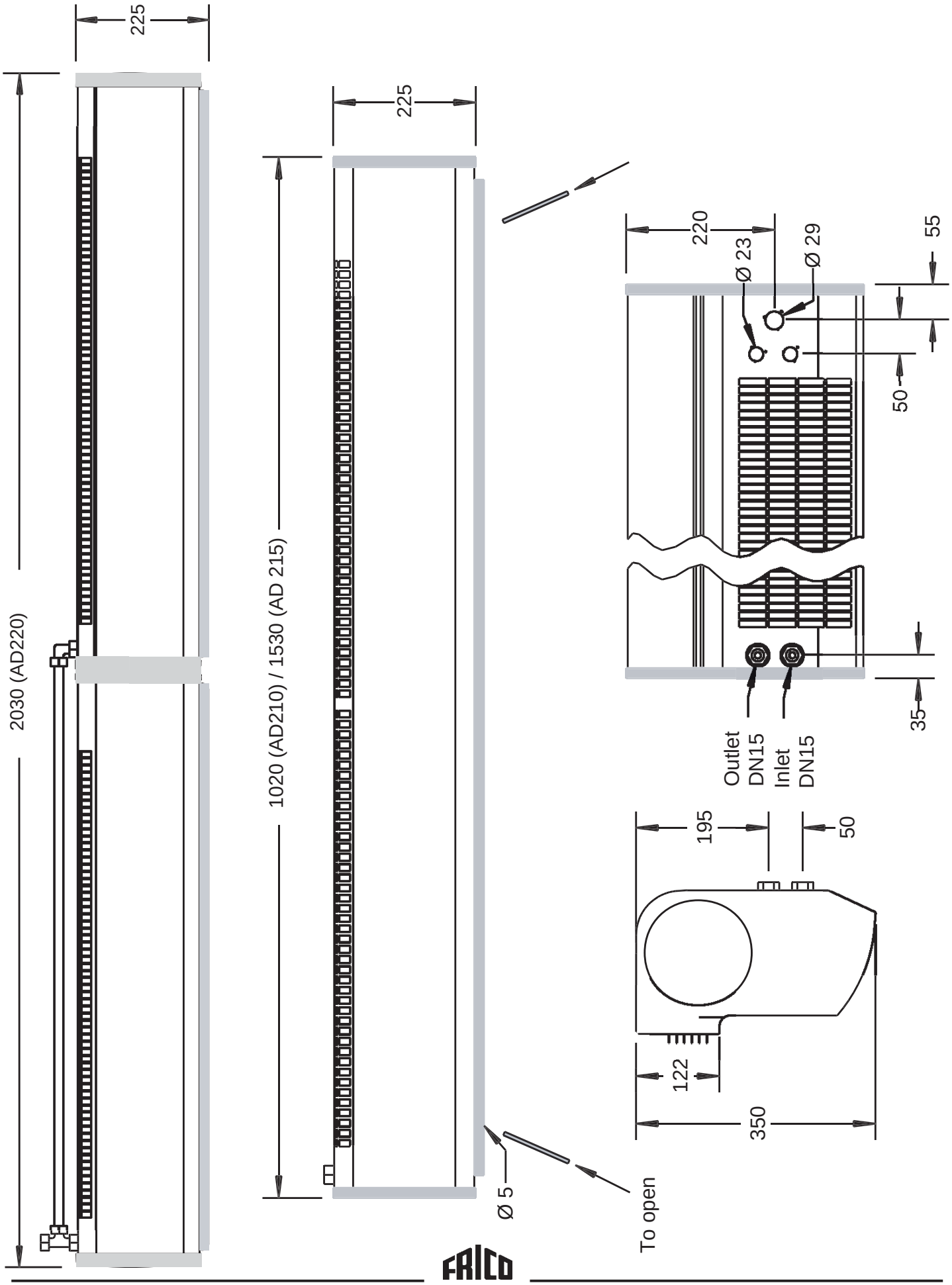
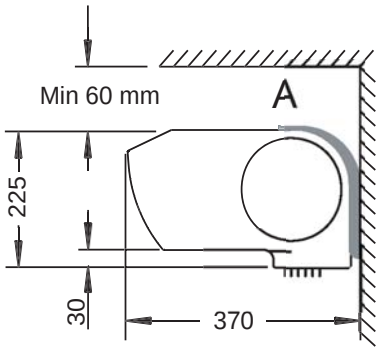
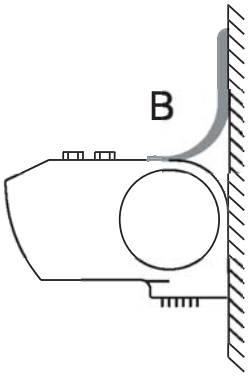
Thermozone
AD210, 215W, 220W

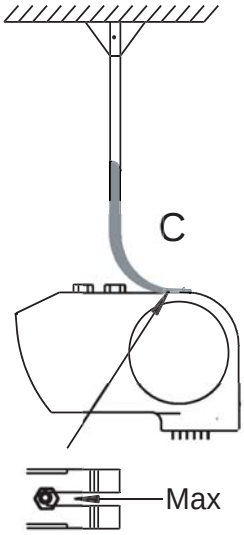


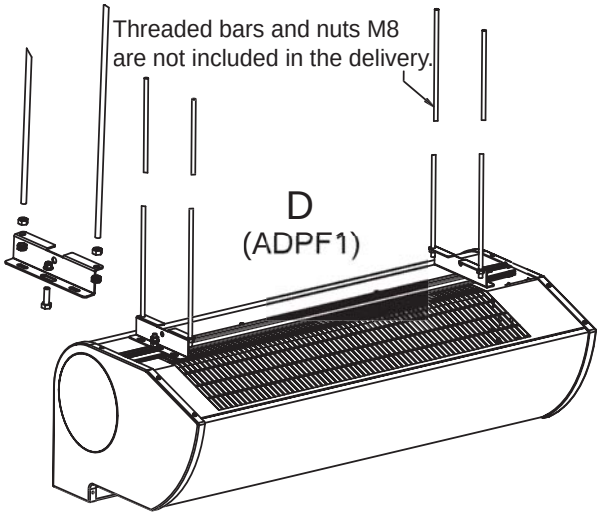
Thermozone AD210W, 215W, 220W

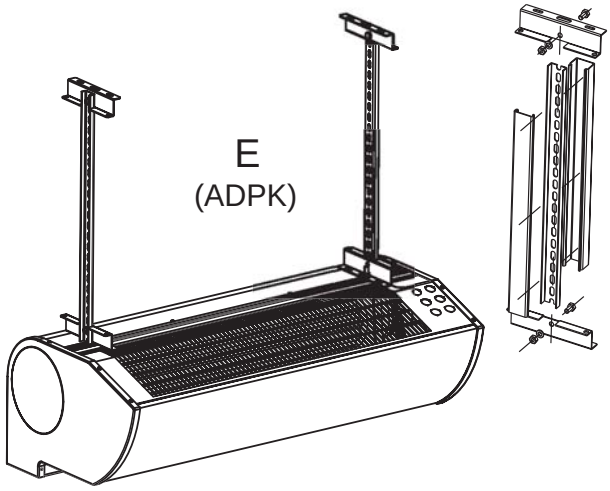


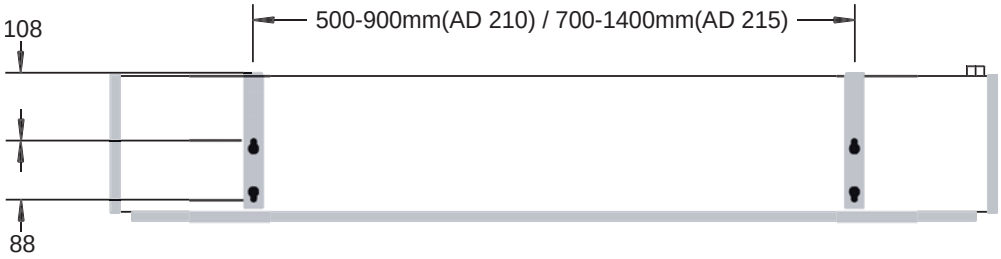

Min 60 mm
A
225
30
370

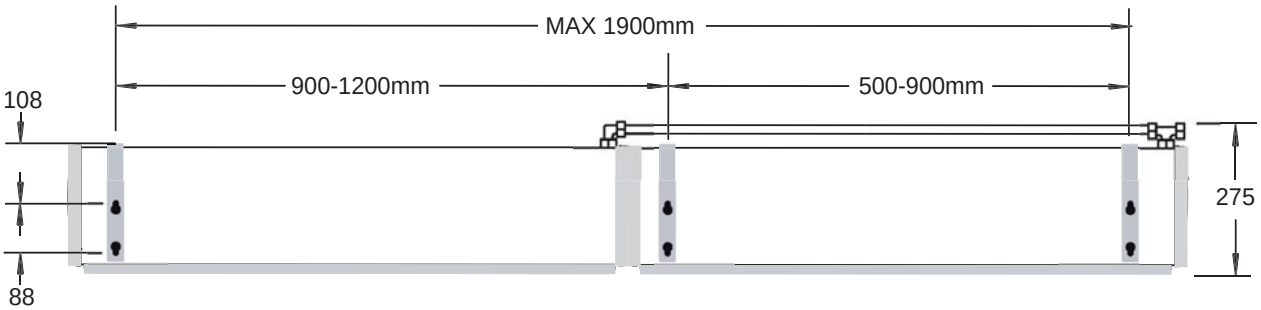

B


C
Max

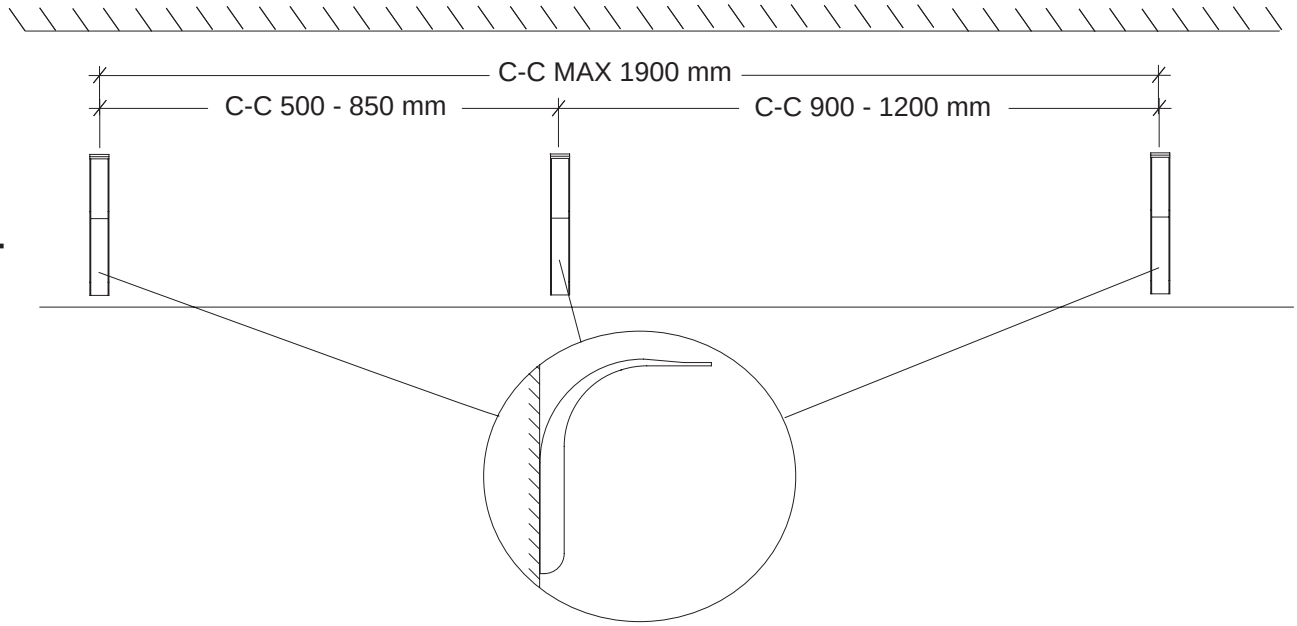

Threaded bars and nuts M8
are not included in the delivery.
D
(ADPF1)


E
(ADPK)


108
500-900mm(AD 210) / 700-1400mm(AD 215)
88


MAX 1900mm
900-1200mm
500-900mm
108
275
88

1



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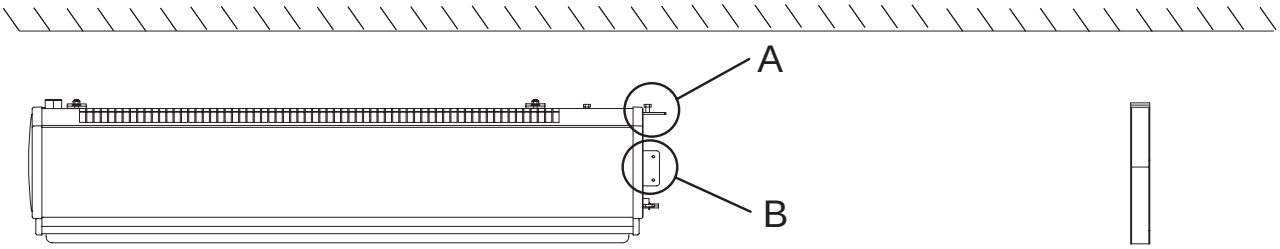

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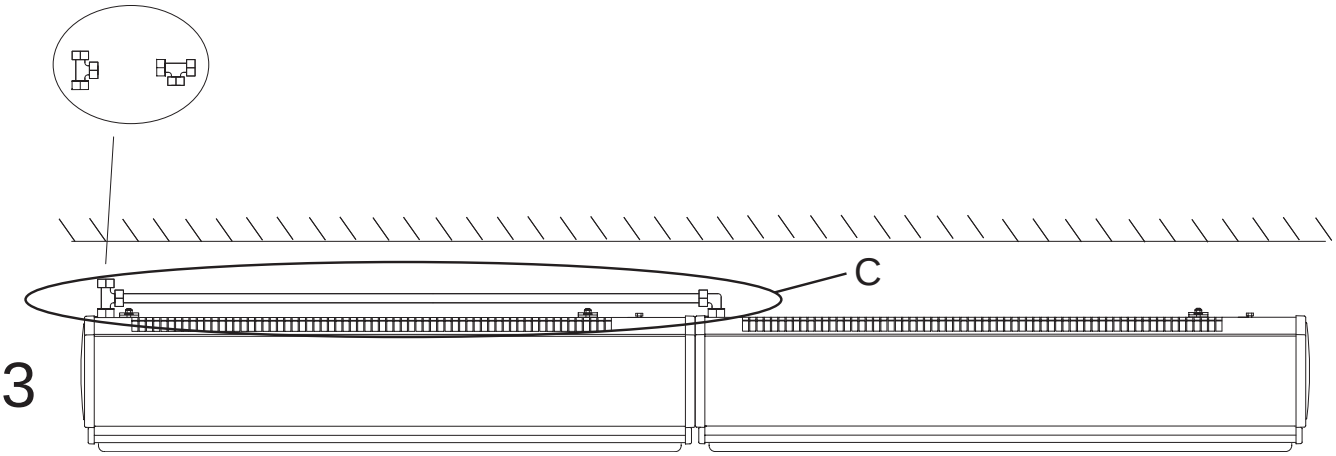

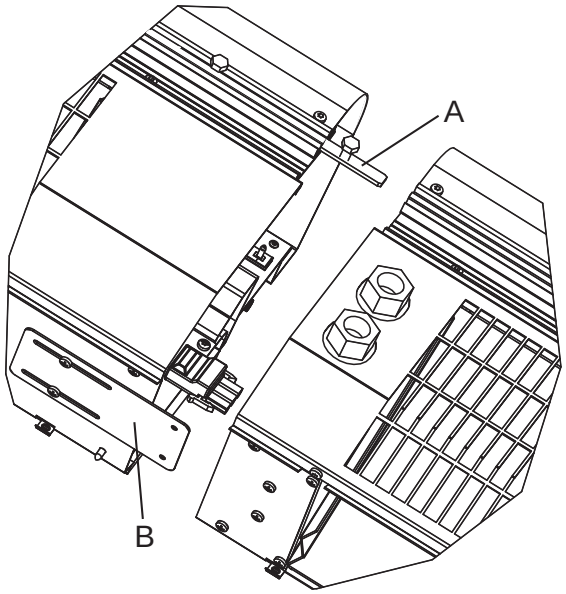

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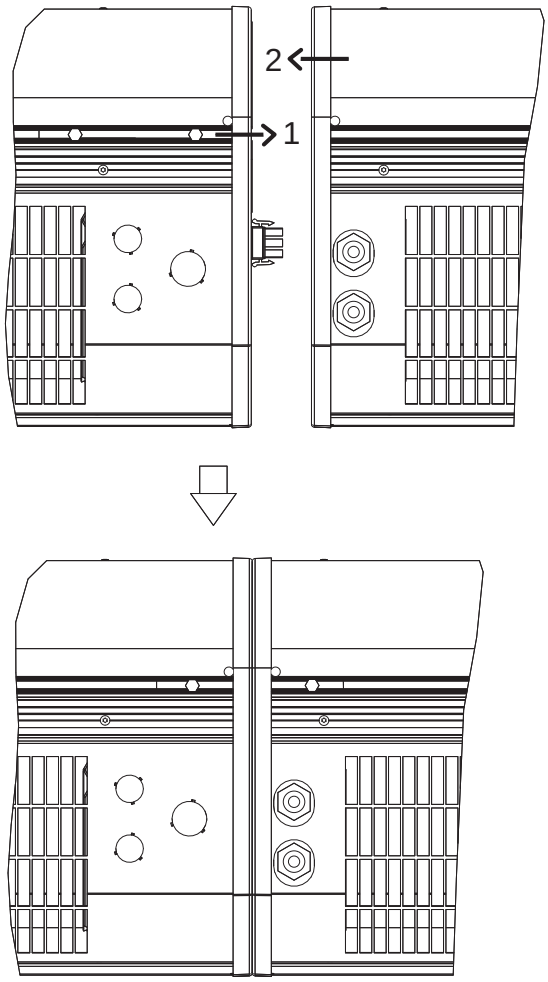

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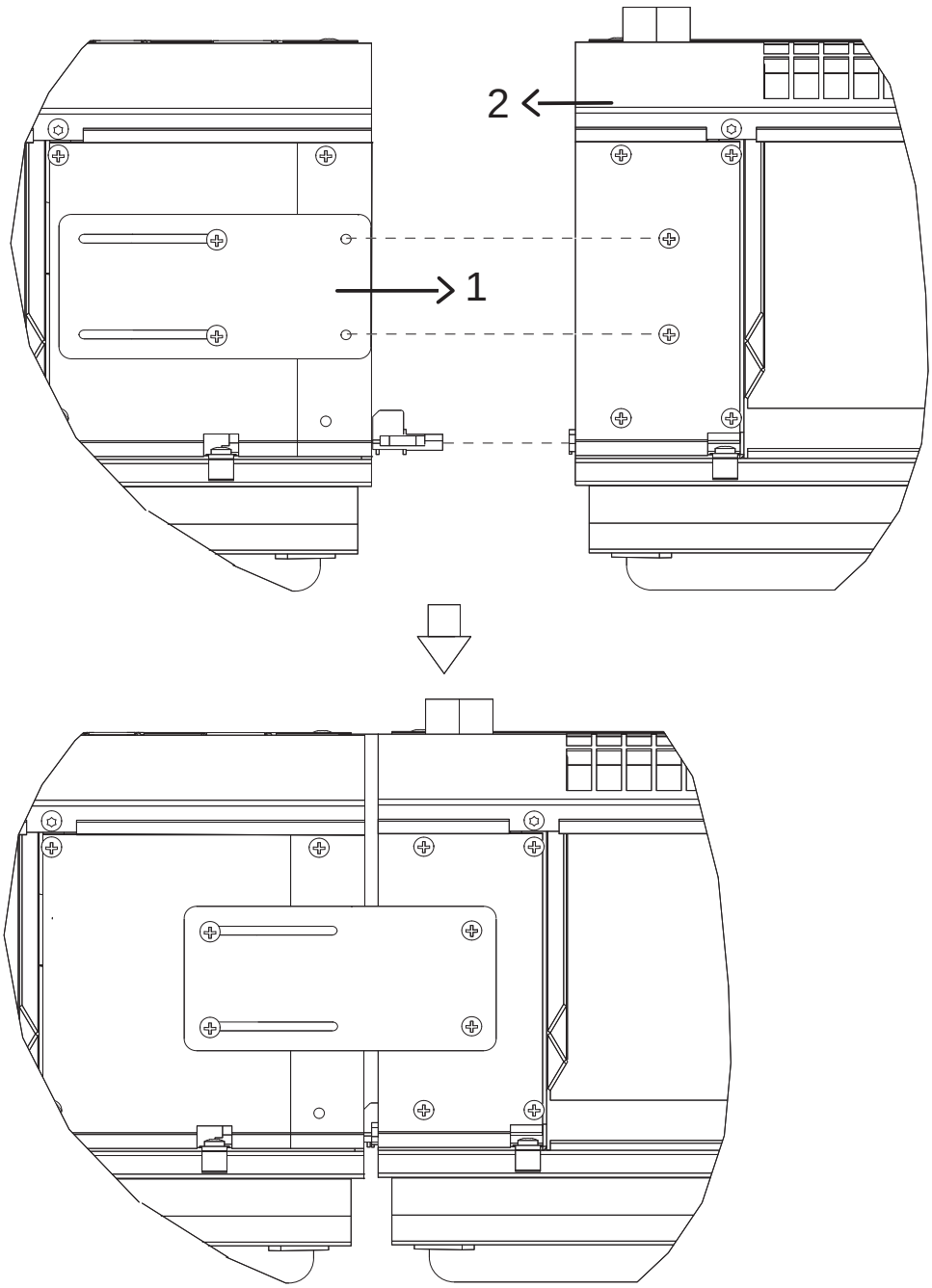

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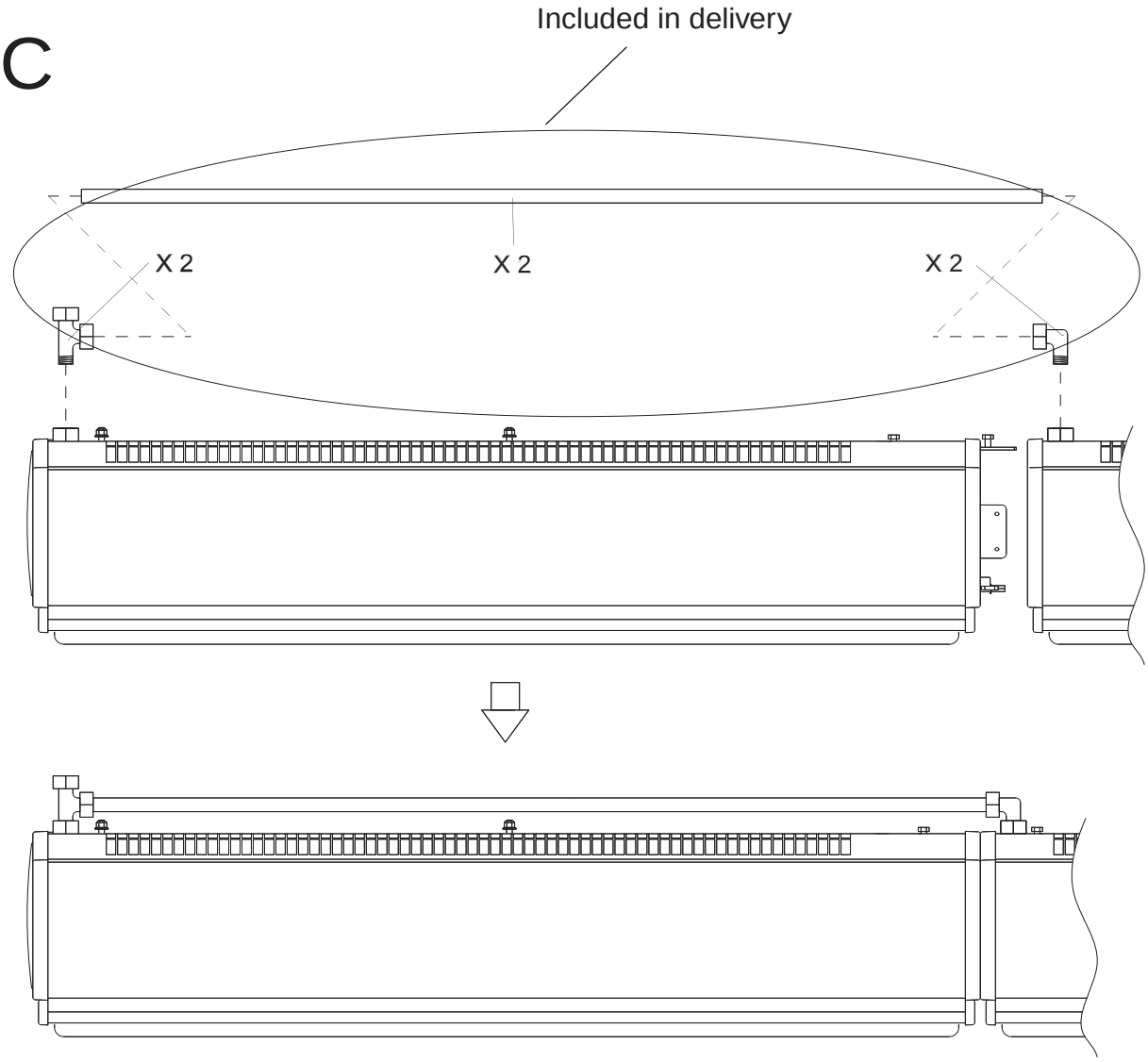
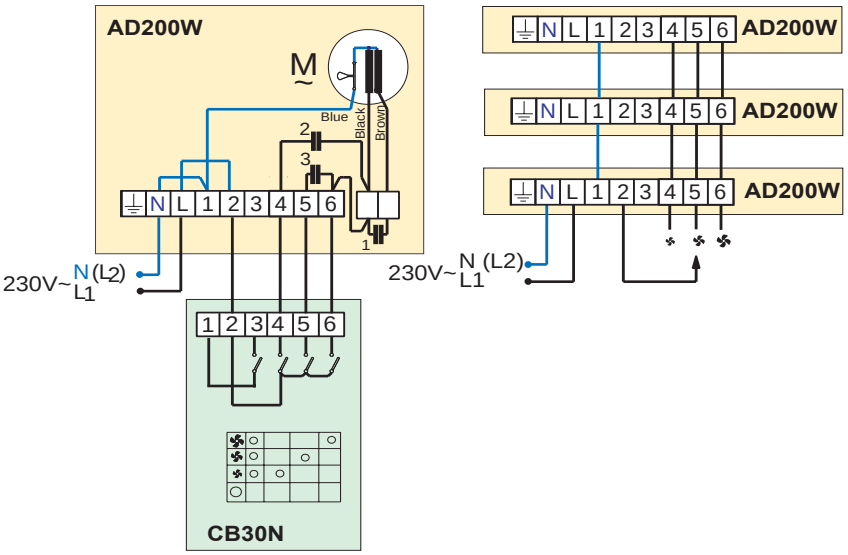
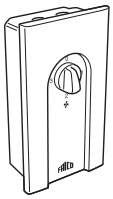
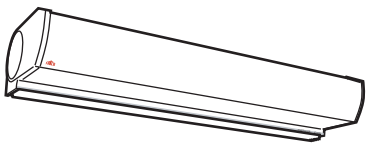


Thermozone AD210W, 215W, 220W

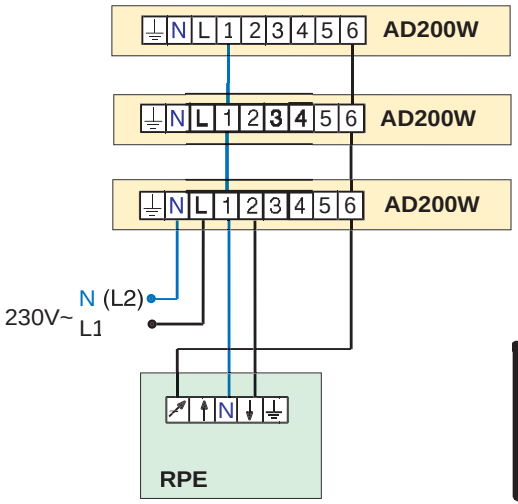


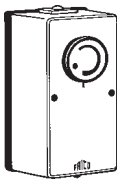


CB30N



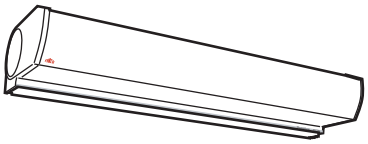
AD200W





RPE06G

Thermozone AD210W, 215W, 220W



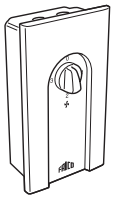
AD200W

SD20

TVV20/25

RTE

KRT1900



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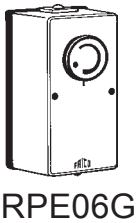

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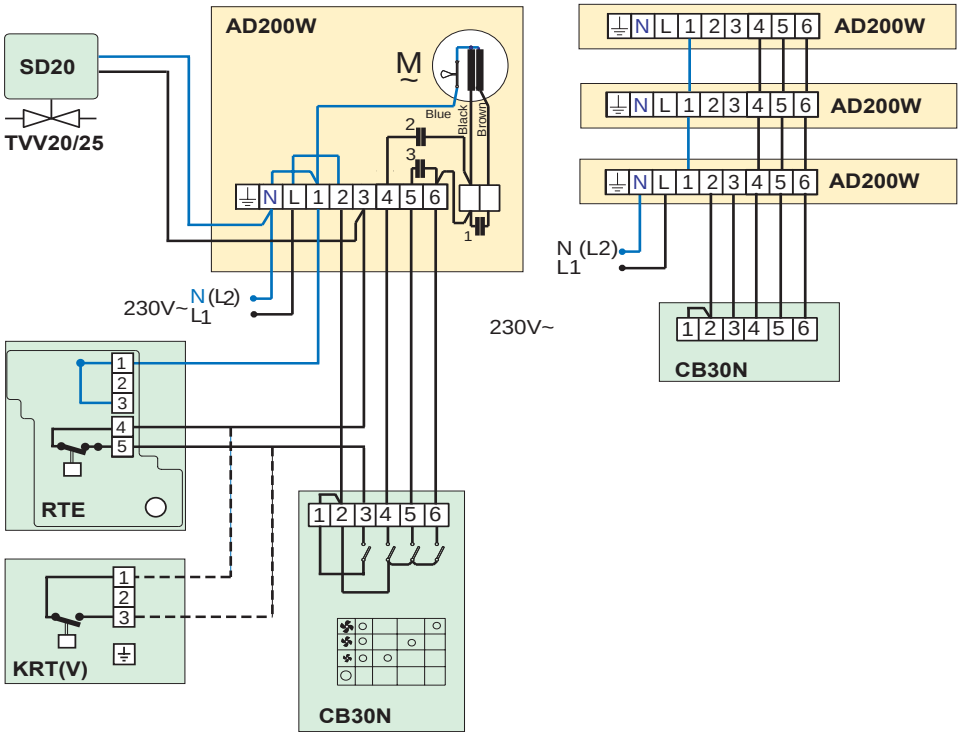
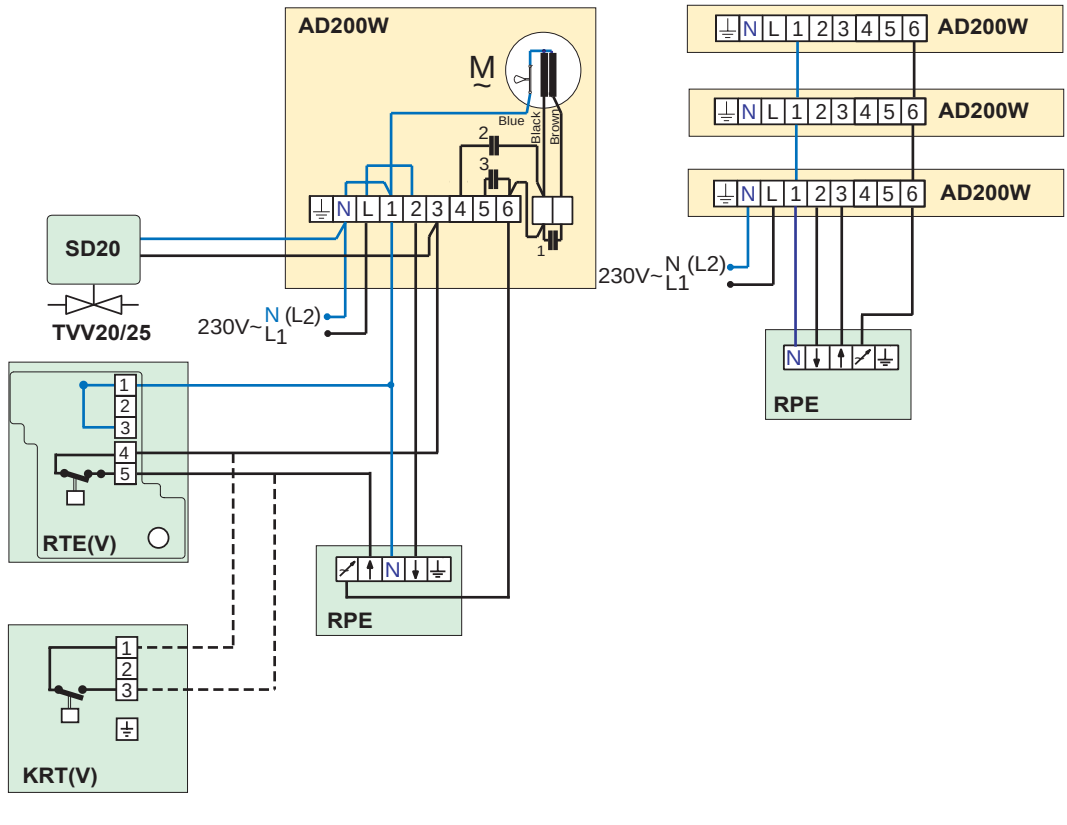
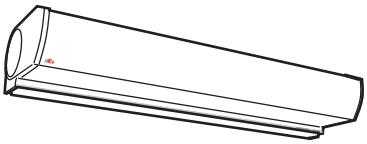




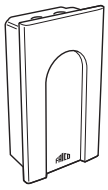
Thermozone AD210W, 215W, 220W



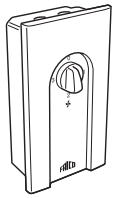
AD200W

SD20

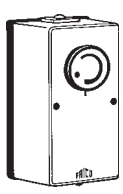
TVV20/25



RTI2



CB30N



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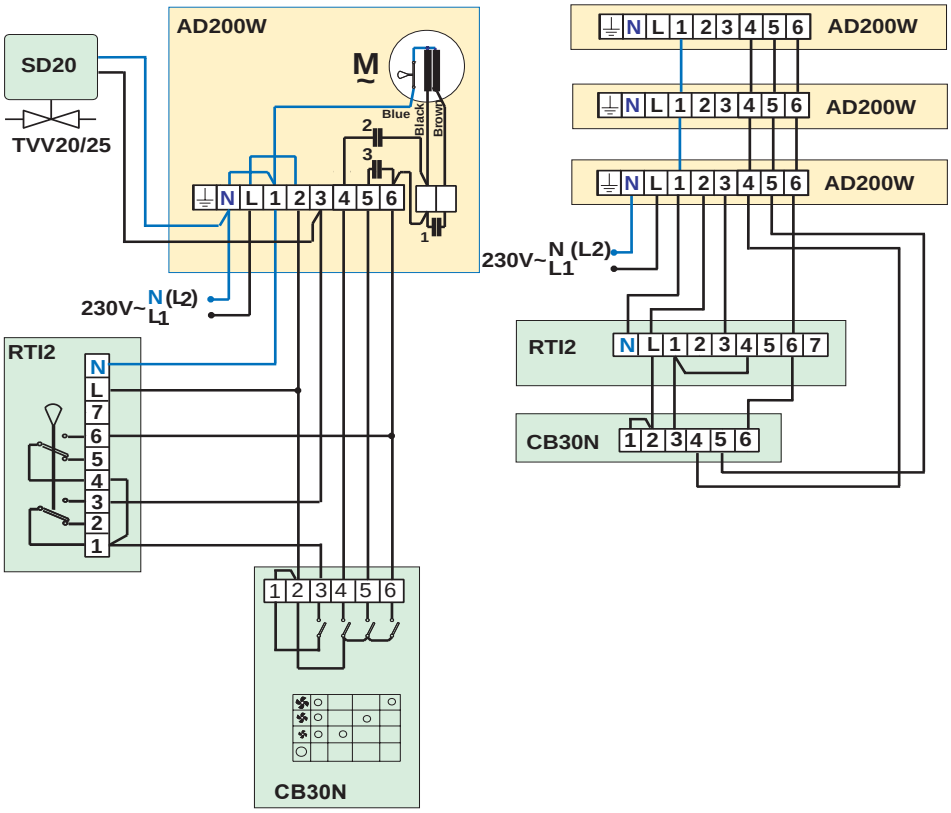
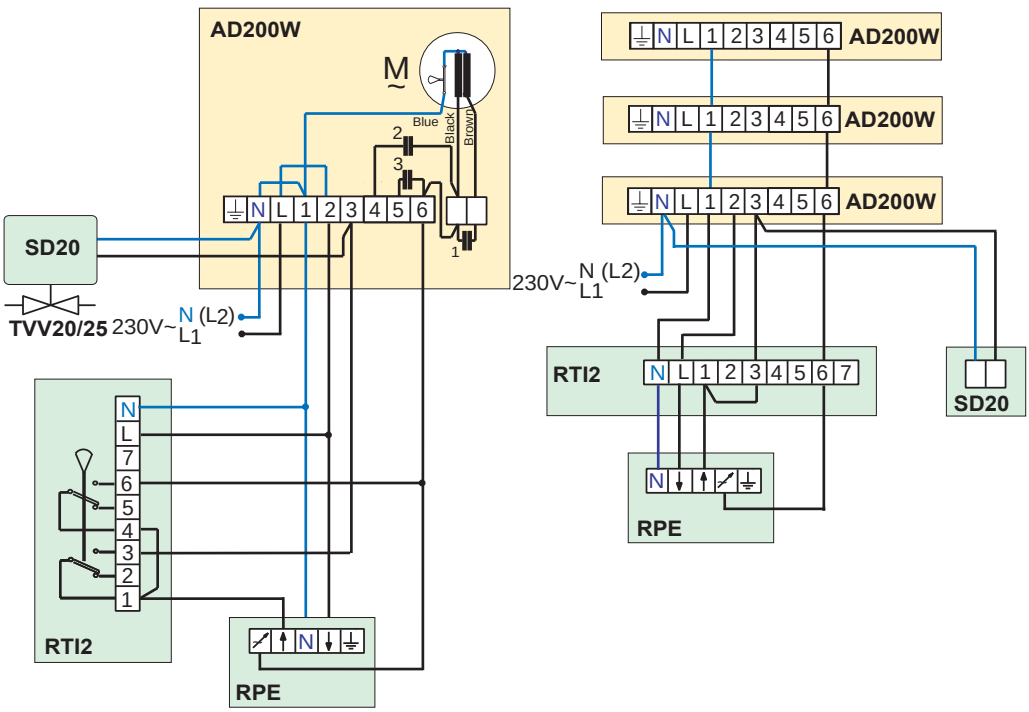




Thermozone AD210W, 215W, 220W

Water 80/60°C

			Air in = +15°C			Air in = +20°C		
Typ	**Fan-speed**	**Air-flow [m³/h]**	**Power [kW]**	**Air out [°C]**	**Water flow [l/s]**	**Power [kW]**	**Air out [°C]**	**Water flow [l/s]**
AD210W	max	1200	7,7	34	0,09	7,0	37	0,08
	min	750	6,0	38	0,07	5,4	41	0,06
AD215W	max	1800	12,4	35	0,14	11,2	38	0,13
	min	1100	9,4	40	0,11	8,5	43	0,10
AD220W	max	2400	15,4	34	0,18	14,0	37	0,16
	min	1500	12,0	38	0,14	10,8	41	0,12

Water 60/40°C

			Air in = +15°C			Air in = +20°C		
Typ	**Fan-speed**	**Air flow [m³/h]**	**Power [kW]**	**Air out [°C]**	**Water flow [l/s]**	**Power [kW]**	**Air out [°C]**	**Water-flow [l/s]**
AD210W	max	1200	4,6	26	0,05	3,8	29	0,04
	min	750	3,6	29	0,04	3,0	32	0,03
AD215W	max	1800	7,6	27	0,09	6,4	30	0,07
	min	1100	5,8	30	0,06	4,9	33	0,05
AD220W	max	2400	9,2	26	0,10	7,6	29	0,08
	min	1500	7,2	29	0,08	6,0	32	0,06

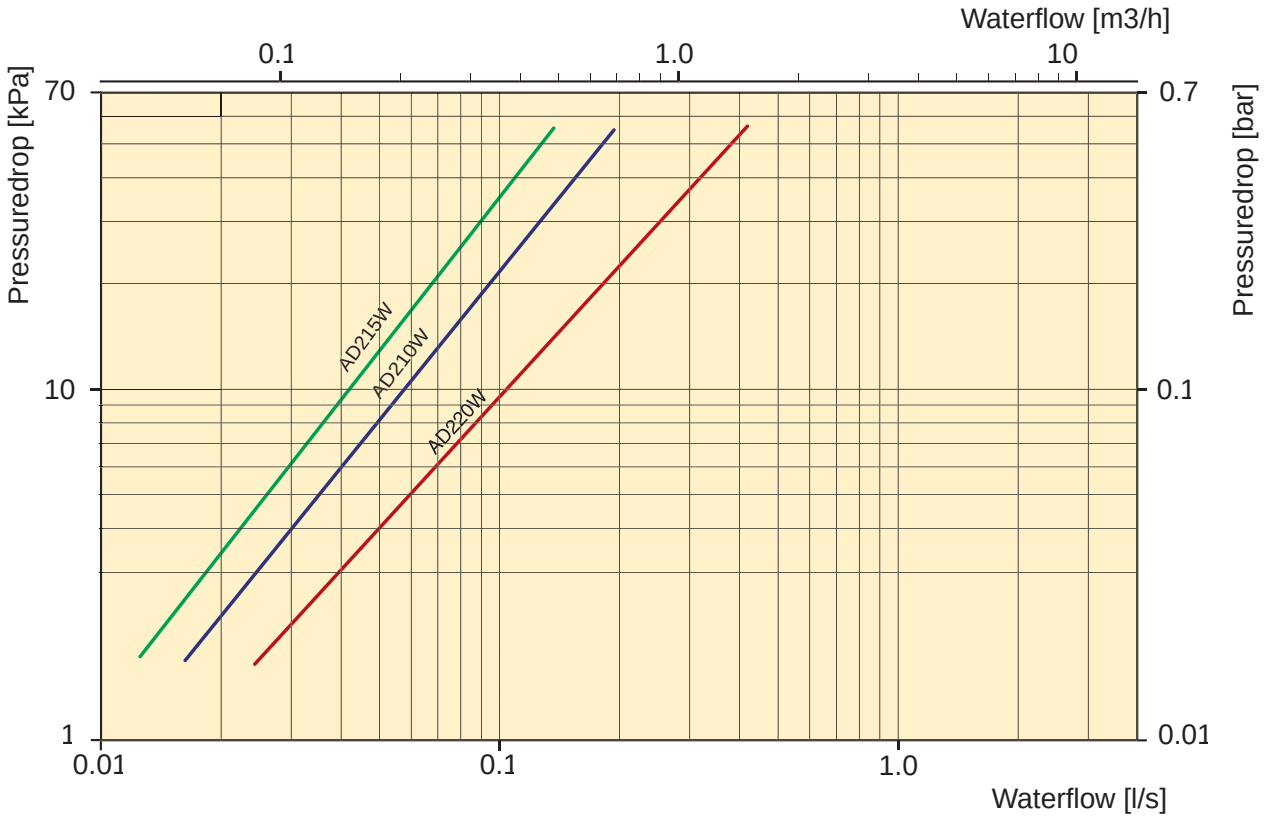
Water 60/30°C

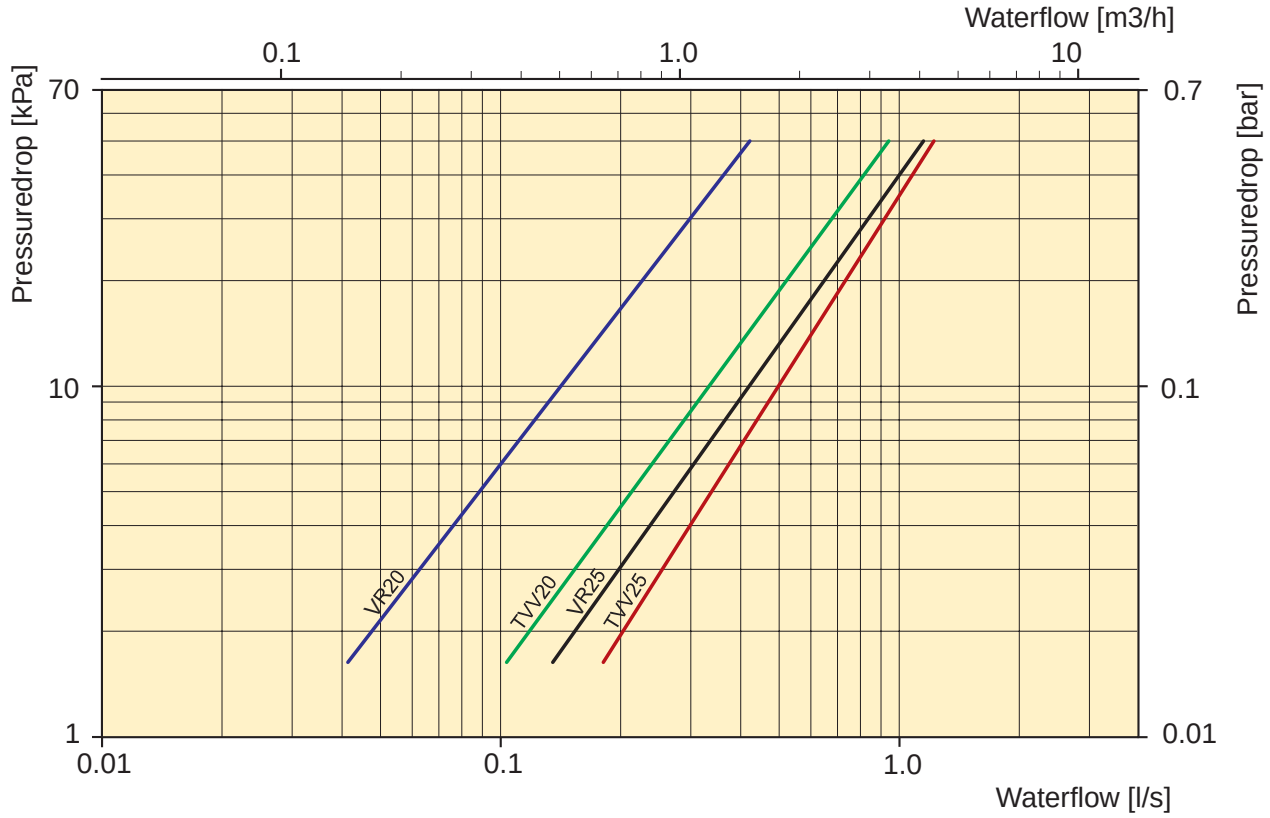
			Air in = +15°C			Air in = +20°C		
Typ	**Fan-speed**	**Air flow [m³/h]**	**Power [kW]**	**Air out [°C]**	**Water flow [l/s]**	**Power [kW]**	**Air out [°C]**	**Water flow [l/s]**
AD210W	max	1200	3,4	23	0,02	2,6	26	0,02
	min	750	2,7	26	0,02	2,0	28	0,01
AD215W	max	1800	5,8	25	0,04	4,5	27	0,03
	min	1100	4,5	27	0,03	3,5	29	0,02
AD220W	max	2400	6,8	23	0,04	5,2	26	0,04
	min	1500	5,4	26	0,04	4,0	28	0,02

Water 55/35°C

			Air in = +15°C			Air in = +20°C		
Typ	**Fan-speed**	**Air flow [m³/h]**	**Power [kW]**	**Air out [°C]**	**Water flow [l/s]**	**Power [kW]**	**Air out [°C]**	**Water-flow [l/s]**
AD210W	max	1200	3,8	24	0,04	3,1	28	0,03
	min	750	3,0	27	0,03	2,4	29	0,02
AD215W	max	1800	6,3	25	0,07	5,1	28	0,06
	min	1100	4,8	28	0,05	3,9	31	0,04
AD220W	max	2400	7,6	24	0,08	6,2	28	0,06
	min	1500	6,0	27	0,06	4,8	29	0,04

Thermozone AD210W, 215W, 220W





The pressure drop is refering to the mean water temperature 70°C, (PVV 80/60).
Correction factor K for other temperatures.

Mean water temp. °C	40	50	60	70	80	90
K	1,10	1,06	1,03	1,00	0,97	0,93

Thermozone AD210W, 215W, 220W

Assembly and operating instructions

General recommendations
Carefully read this instruction manual before installation and use of the AD unit. Keep these instructions in a safe place for future reference.

Application area
The Thermozone AD200W air curtains are intended for stationary/permanent installation above entrances and smaller doors with a height up to 2.5 meters, but can also be used for industrial heating and drying. The AD200W has been designed for connection to a low-pressure hot water supply. The unit can be surface mounted above a doorway or recessed into a ceiling.
Protection class: IP24

Operation
The air is drawn in at the top of the unit and blown out at high velocity across the doorway, providing a protective air shield. The air shield minimises cold draughts and reduces heat loss through open doorways. For best efficiency, the air curtain(s) should cover the whole width of the opening.
The air director/grille is adjustable and is normally angled outwards (5-10°) to achieve the best protection.
The airflow can be adjusted by use of the fan speed selector (CB30/RPE)
The efficiency of the air curtain(s) depends on the air temperature and pressure differences across the doorway and any wind pressure.
NOTE! Negative pressure in the building considerably reduces the efficiency of the air curtain. Ventilation should therefore be balanced.

Mounting
The units may only be installed horizontally over a doorway with the air-stream directed downwards.
For the protection of wider doorways, several units can be mounted next to each other.
For optimal performance it is recommended that a minimum gap of 60mm is maintained above the air-curtain.
The units can be fitted to the wall or suspended from the ceiling. Two or three (AD220W) mounting consoles are included with the air-curtain.
The M6 bolts (2 or 3) which slot into the to the aluminium profile on top of the unit can slide sideways, allowing the consoles to be mounted at different distances from each other. *(See details on page 3.)*<

Fitted on the wall or beam
1. Mount the consoles to the wall/beam, see fig. A or B, page 3 (AD220W see page 4-6)
2. Loosen the nuts on the upper side of the air curtain to be able to fit the consoles between the nut and the unit.
3. Mount the unit on to the consoles and tightened the nuts.

Suspended from the ceiling
1. Mount the consoles to pendulums to obtain a suspension from the ceiling. (See fig. C page 3) The width of the consoles is 29mm and will fit to standard pendulums.
2. Loosen the nuts on the upper side of the air curtain to be able to fit the consoles between the nut and the unit.
3. Mount the unit on to the consoles and tightened the nuts.

NOTE! The consoles should be locked/tightened with the nuts as deep as possible in to the slit of the consoles, see fig C on page 3.

Alternative mounting
When using the brackets for pendulum fixing ADPF1 see fig. D on page 3 or ADPK see fig E on page 3.

Electrical installation
The air-curtain(s) should only be wired by a competent electrician, and in accordance with the latest edition of IEE wiring regulations.

1 Remove the front plate by pressing a screwdriver or similar in to the two holes (Ø 5mm) underneath the edge of the front plate. Press until it clicks and the front plate can be openedand removed. See Fig. on page. 3

2. Remove the lid of the connection box by removing the four screws placed on the right side of the unit. Remove the knockouts on top of the unit (2xØ23mm, 1xØ29mm) for routing of electrical supply and remote switching cables Different combinations of fan speed and heat output are detailed in the wiring diagrams on pages 4-6.

Water connection
The air-curtain has an aluminium finned heating coil (fin distance 2 mm) with copper tubes suitable for connection to a closed water heating system.
The heating coil must not be connected to a mains pressure water system or an open water system.
The water pipes (DN15 - 1/2" BSP-F, inside thread) are connected at the left hand side (when viewed from inside the building) on top of the unit. (See details on page 2)
The installation should be carried out by a certified

installer.
NOTE: Care must be taken when connecting the pipes. Use a wrench or similar to hold the air-curtain connections to prevent straining of the pipes and subsequent water leakage during connection to water supply pipe-work.
A bleed valve should be connected at a high point in the pipe system and all air bled during commissioning of the air-curtain.
It is also recommended that a drain valve is fitted in the supply pipe-work. This should be mounted on the outside of the AD unit. *Air-vent and drain valves are not included in the heating coil.*

Filter
The heating coil is protected by an air filter which covers the coil face.

Overheating
All motors are equipped with an integral thermal safety cut-out. This will operate, stopping the air-curtain should the motor temperature rise too high. The cut-out will automatically reset when the motor temperature has returned to within the motor's operating limits.

Maintenance
To ensure performance and reliability of the air curtain, inspection and cleaning should be carried out regularly.
Filter inspection should be carried out at least twice a year.
Before removing any panels, the power supply must always first be disconnected.
A clogged filter will considerably reduce the efficiency of the air curtain.

Changing filter

1 Disconnect the power supply.
2 Remove the front plate by pressing a screwdriver or similar in to the two holes (Ø 5mm) underneath the edge of the front plate. Press until it clicks and the front plate can be opened and removed.
3 Remove the filter, vacuum-clean or wash with mild detergent. (Dry thoroughly before refitting) Change the filter if damaged or very dusty.

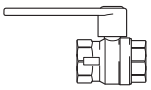
The fans, motors and other components are maintenance free. Inspection and cleaning (if needed) should however be carried out at least once a year.

Security
Do not cover surfaces of the air curtain or obstruct air intake grille, as this can cause excessive temperatures that can be hazardous and may cause safety cut-outs to operate.

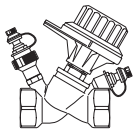
Thermozone AD210W, 215W, 220W

Water regulation

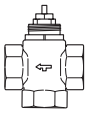
VR20/25, set of valves
For the facility to isolate the air-curtain from the water supply pipe-work (should removal of the air-curtain or heating coil be necessary) a set of valves are required.
An integral thermostat controls the water flow / heat output.
Use of a bypass valve ensures a small water flow is maintained, the valve quickly responds to heating requirements as dictated by the thermostat.
The SWR20 is suitable for DN20 ($^3/_4$") pipe-work and the SWR25 for DN25 (1") pipe-work.



• AV20/25, stop valve
Isolates the unit from the water supply. Consists of a ball valve which is either open or closed.

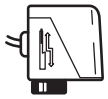


• JV20/25, adjustment valve
Enables adjustment of the water flow to the required level.
(kv-value for JV20: 0,13 - 5,9. kv-value for JV25: 0,17 - 8,52). When maintenance is needed, the valve can be used to isolate the air-curtain from the water supply.
For specification table for the adjustment valves JV20 and JV25, see separate sheet.

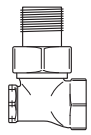


• TRV20/25, 3-way regulation valve
Pressure class PN16, maximum pressure 2000kPa (20Bar),

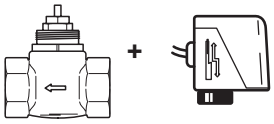
Max pressure drop:	TRV20,	100kPa (1,0Bar)
	TRV25,	62kPa (0,62Bar).
Kv-value:	TRV20	3,5
	TRV25	5,5



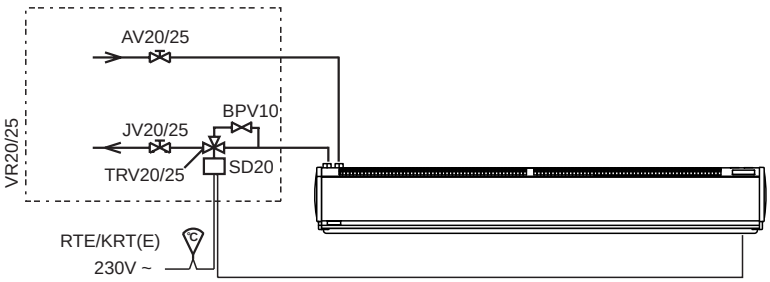
• SD20, *actuator on/off 230V*
A thermostat determines if the two position motorised valve is open or shut, thereby regulating the supply of heat to the Thermozone.
A 5 second closing of the valve prevents sudden pressure changes in the pipe system.
The motor is rated at insulation class IP40.

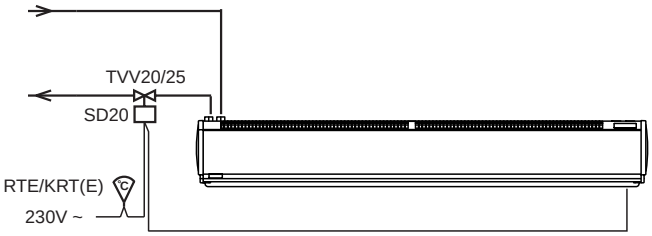


• BPV10, bypass valve
The BPV10 bypass valve ensures a small water flow is maintained, the valve quickly responds to heating requirements as dictated by the thermostat even when the regulation valve (TRV20/25) is closed. To adjust the valve: close completely and then open it one turn. If the air curtain is sited at the end of long supply pipe-work resulting in a low supply pressure, the bypass valve may be opened even more.



TVV20/25, valve + SD20, actuator
This combination allows water flow regulation and hence heat output to be controlled by a thermostat, but without the option of manual adjustment or isolation of the water supply.
The VR20 is suitable for DN20 ($^3/_4$") pipe-work and the VR25 for DN25 (1") pipe-work.





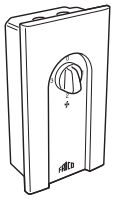
Thermozone AD210W, 215W, 220W

GB

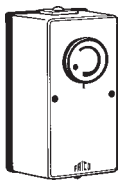
Data

Type		AD 210W	AD 215W	AD 220W
Output, 80/60°C	[kW]	7,3	12	14,6
Voltage, motor/manoeuvre	[V]	230~	230~	230~
Current, motor/manoeuvre	[A]	0,5	0,6	0,9
Airflow	[m^3/h]	750/950/1200	1100/1400/1800	1500/1900/2400
Water volume	[l]	0,7	1	1,4
Noise level	[dB(A)]	38 / 43 / 49	40 / 44 / 51	41 / 46 / 52
Weight	[kg]	15	21	31
Length	[mm]	1020	1530	2000
Protection class		IP 44	IP 44	IP 44
Max working pressure water coil, 100 °C	[bar]	16	16	16

Accesories	Type	Measures HxWxD [mm]
Control panel (3-step)	**CB30**	
Variable fan speed regulator	**RPE06G**	81x81x63
Set of valves, connection DN20	**VR20**	
Set of valves, connection DN25	**VR25**	
2-way valve, connection DN20	**TVV20**	
2-way valve, connection DN25	**TVV25**	
Actuator, on/off	**SD20**	
Electronic thermostat IP30	**RTE102**	71x71x28
Electronic 2-stage thermostat IP44	**RTI2**	
1-stage thermostat IP55	**KRT1900**	165x60x57
False ceiling grille (1192 x 192)	**22003**	1192x192
False ceiling grille (1515 x 192)	**22004**	1515x192
Brackets for pendulum fixing	**ADPF1**	
Suspension set	**ADPK1**	

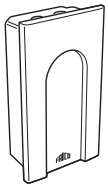


CB30, Control panel ***(3-step)***
Wall mounted manual three step regulation of the fan speed.
Controls a maximum of 6 units (max. current 10A).
Protection class: IP44



RPE06G, single phase stepless fan speed regulator
Wall mounted manual stepless regulation of the fan speed.
Can also be used for starting and stopping the unit.
Controls a maximum of 2-3 units (max. current 2A)
Protection class: IP44

RTE102, electronic thermostat
Internal setting for a temperature range 7–35°C. (Can also be delivered with external setting ,RTEV102). Cover frame for wall box is included on delivery.
Protection class: IP30



RTI2, electronic 2-step thermostat
RTI2 with adjustable temperature difference between the steps (1– 10°C) and internal setting for a temperature range 5–35°C.
Protection class: IP44

KRT1900, Capillary tube thermostat
1-stage thermostat with a change-over contact for heat regulation or fan operation.
Protection class: IP55

Tillverkare
Våra produkter är tillverkade i enlighet med gällande internationella standarder och föreskrifter.

CE

Frico AB
Box 102
S-43322 PARTILLE
SVERIGE

Tillverkaren försäkrar härmed att luftridåaggregat

AD210W, AD215W, AD220W

och tillbehör:
CB30, RPE06G, RTE102, RTI2, KRT1900, SD20 och VR20/25

överensstämmer med kraven i nedanstående EG-direktiv.

Tillverkardeklaration
EG-försäkran om överensstämmelse
enligt EGs Låg Spännings Direktiv 731231 EEC.

Följande harmoniserade standarder används:

SS-EN 60 335-1: 1988, A2, A5, A6, A51- A54, A56
SS-EN 60 335-2-30:1992, A51, A52

Komplett teknisk dokumentation finns tillgänglig.

EG-försäkran om överensstämmelse
enligt EGs Elektromagnetiska Kompatibilitets Direktiv 891336/EC och 92131/EC.

Följande harmoniserade standarder används,

SS-EN 50 082-1: 1992
SS-EN 60 555-213:1991

Komplett teknisk dokumentation finns tillgänglig.

Partille, 19 januari 2002

Mats Careborg
Teknisk Chef

Manufacturer
Our products are manufatured in accordance with applicable international standards and regulations.

CE

Frico AB
Box 102
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SWEDEN

The manufacturer hereby declares that the following products

AD210W, AD215W, AD220W

and accessories:
CB30, RPE06G, RTE102, RTI2, KRT1900, SD20 och VR20/25

comply with the following EC-directives.

EC Declaration of Conformity
Defined by the EC Low Voltage Directive 73/23/EEC.

The following harmonised standards are in use:

SS-EN 60 335-1: 1988, A2, A5, A6,
A51- A54, A56
SS-EN 60 335-2-30: 1992, A51, A52

Complete technical documentation is available.

EC Declaration of Conformity
Defined by the EC Electromagnetic Compatibility Directive 89/336/EC och
92/31/EC.

The following harmonised standards are in use:

SS-EN 50 082-1: 1992
SS-EN 60 555-2/3: 1991

Complete technical documentation is available.

Partille, 19 january 2002

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