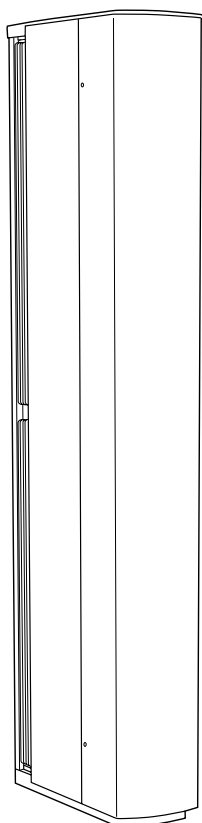
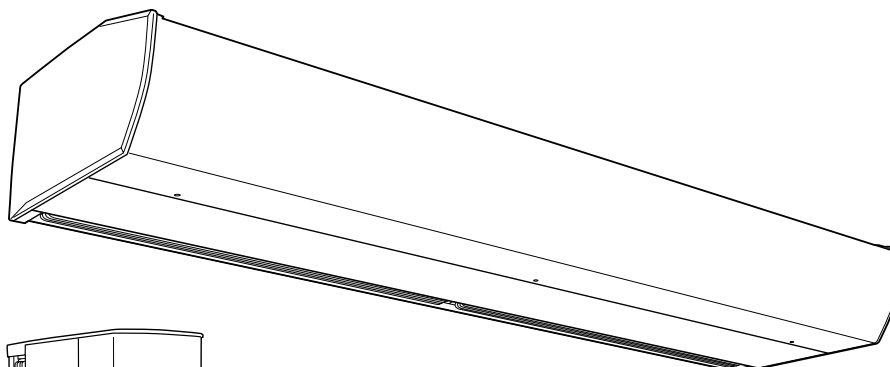
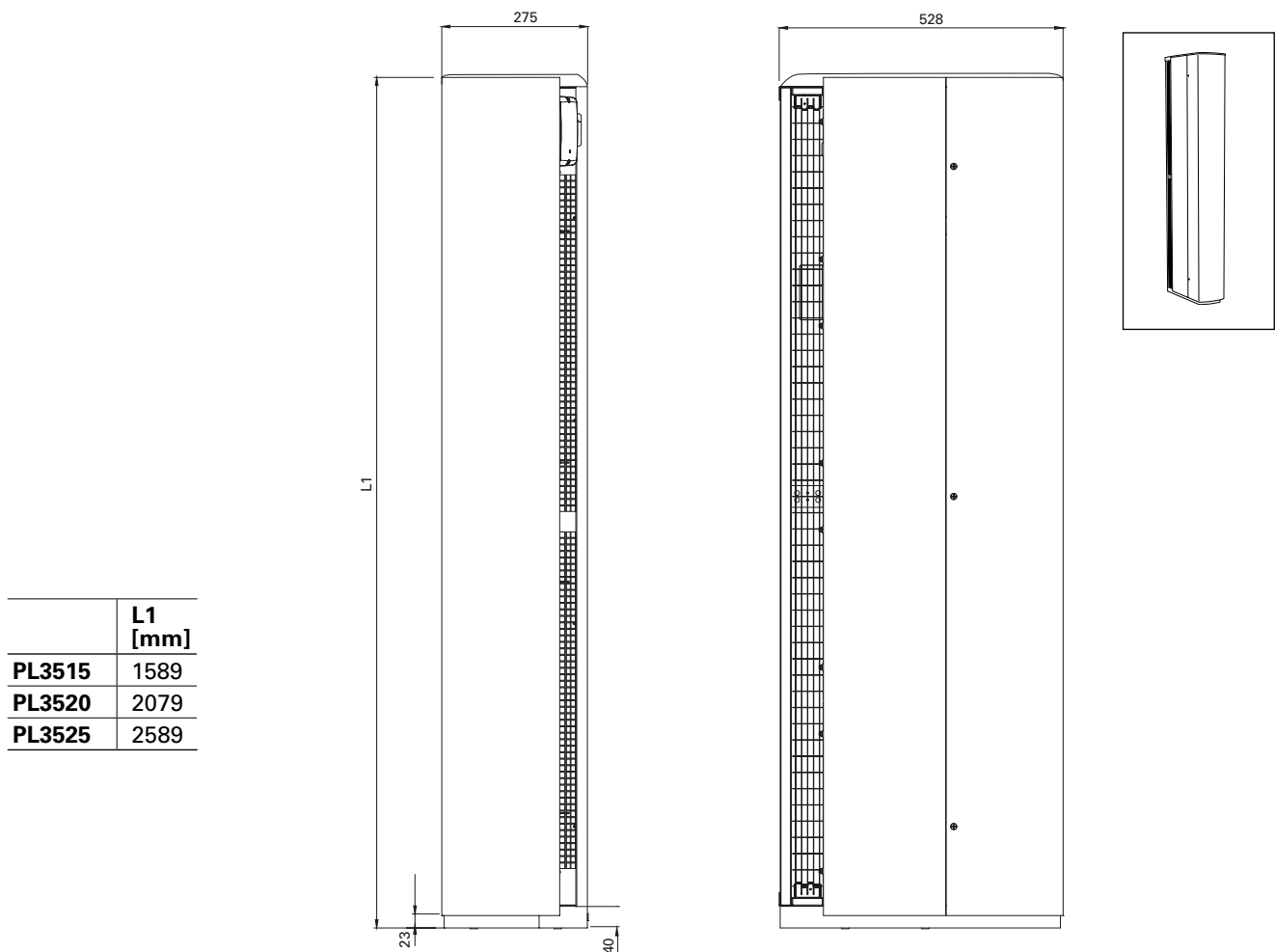
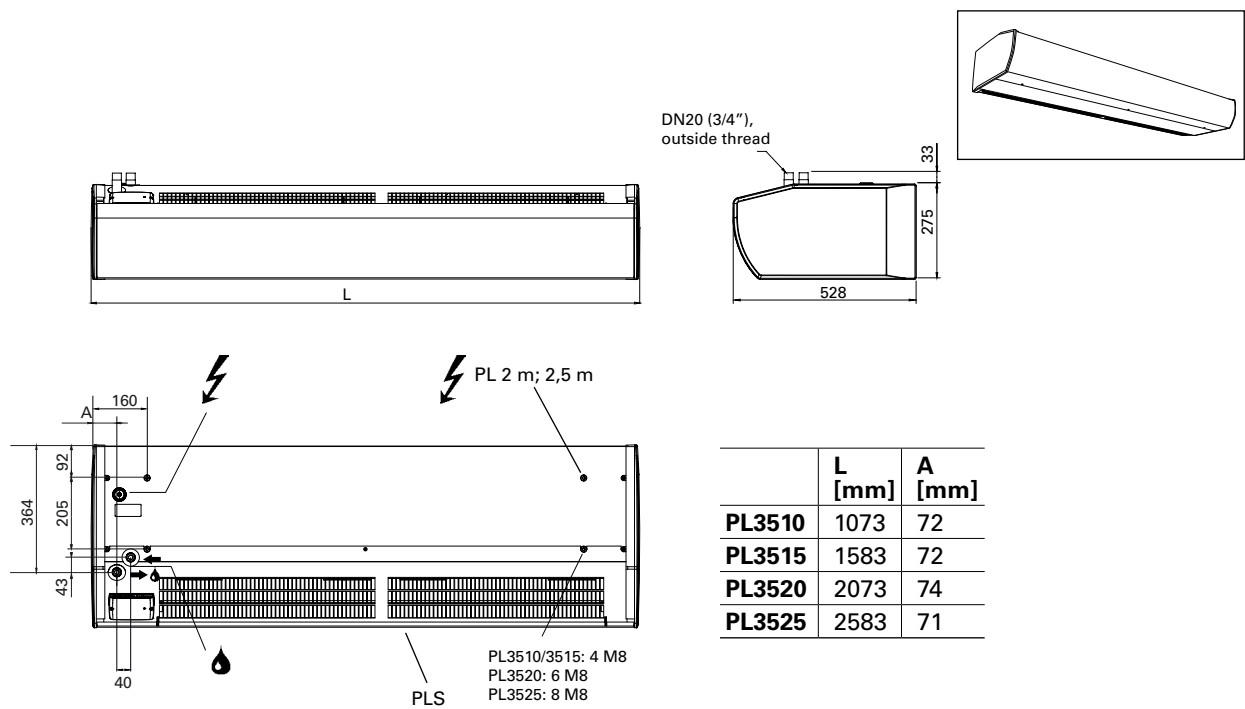


PL3500

**Intended for entrances and larger doors up to
3.5 metres in height.**



PL3500



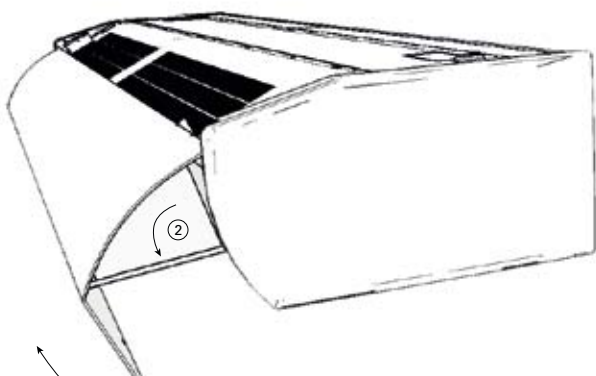


Fig. 1A: Open the unit by raising the front panel. The front is blocked in open position with the front hatch hook.

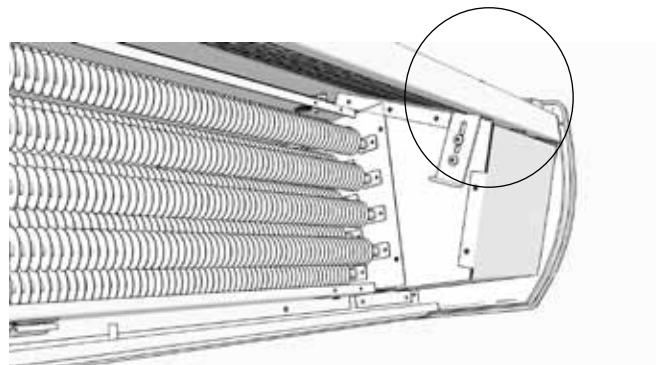


Fig. 1B: When the front has been removed it is important to be sure it is firmly seated in the front locks again.

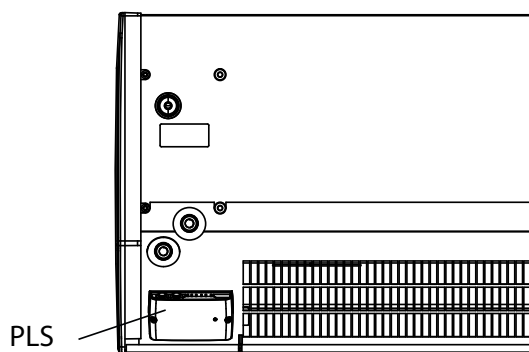


Fig. 2: Control card PLS is integrated in the air curtain at delivery.

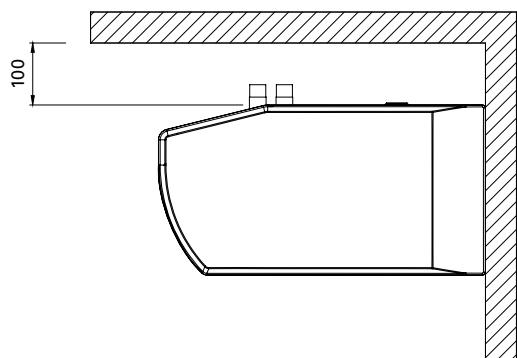


Fig. 3: Minimum distance.

Filling the water coil

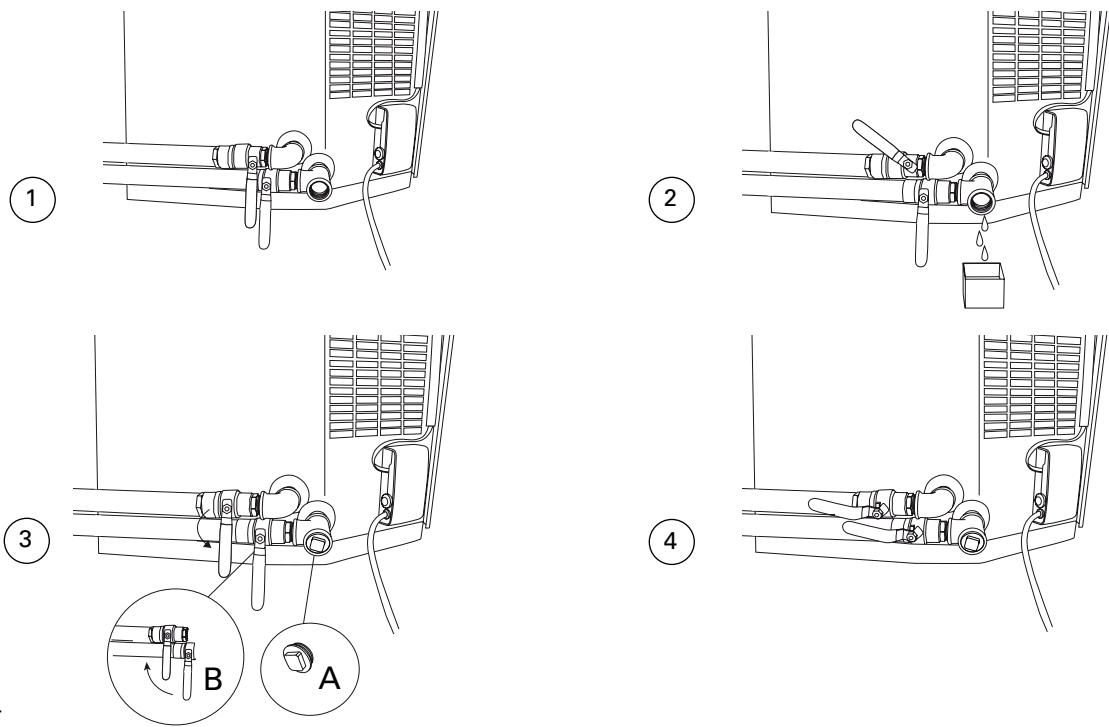


Fig. 4

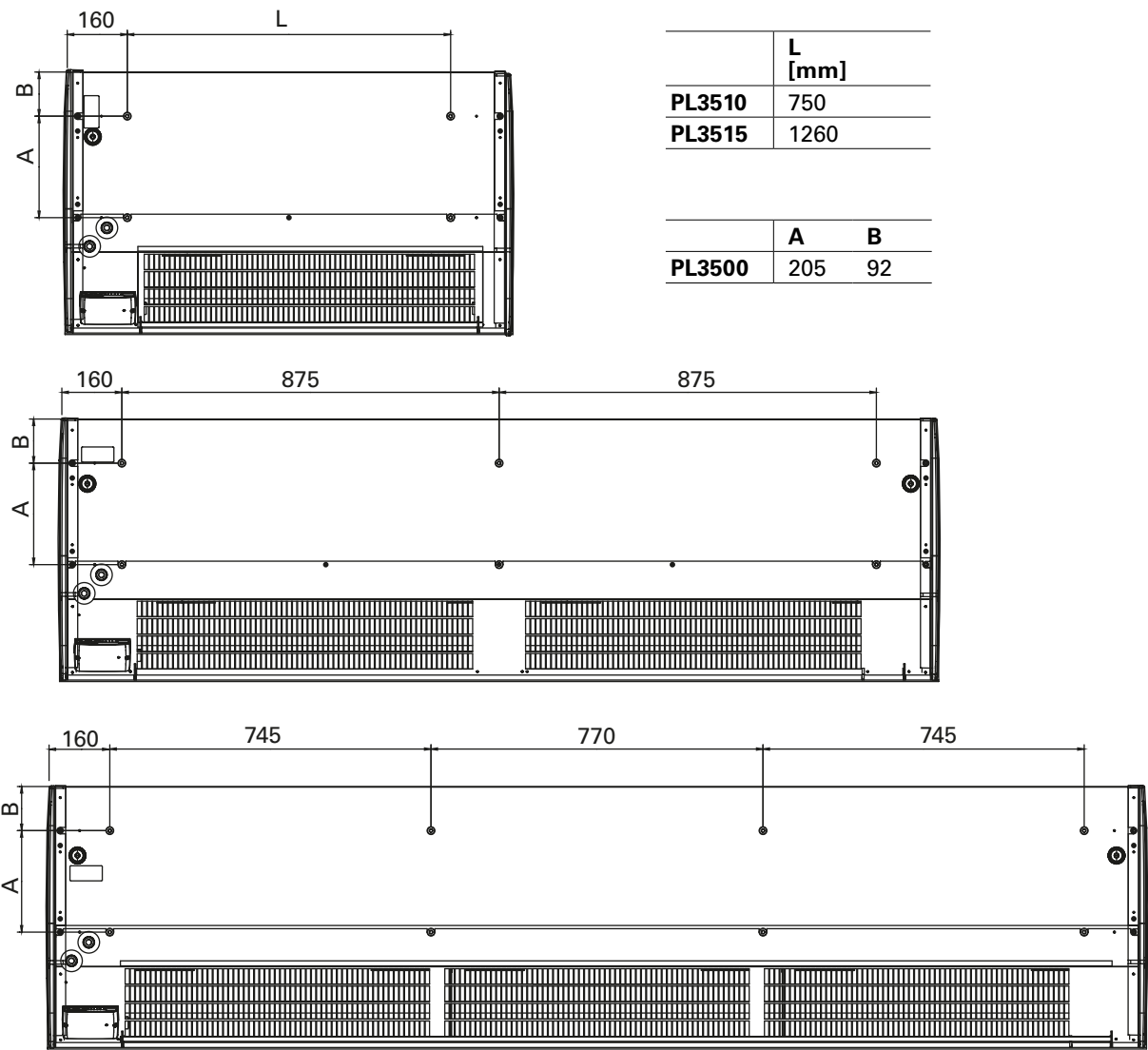


Fig. 5: M8-holes for mounting.

PL3500 + PA34WB

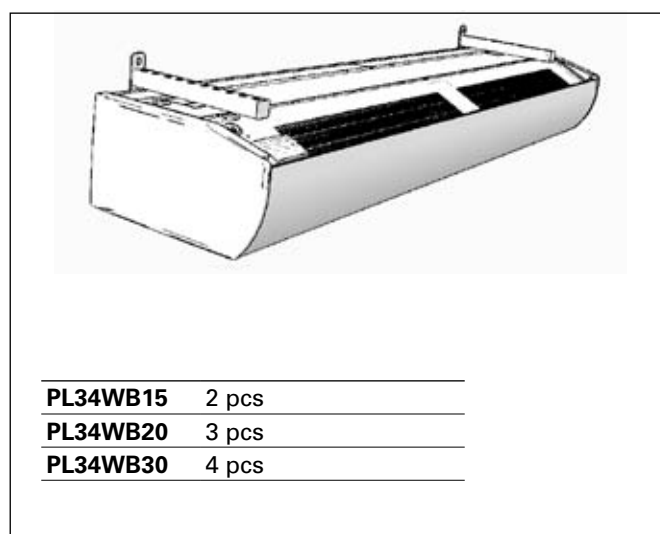
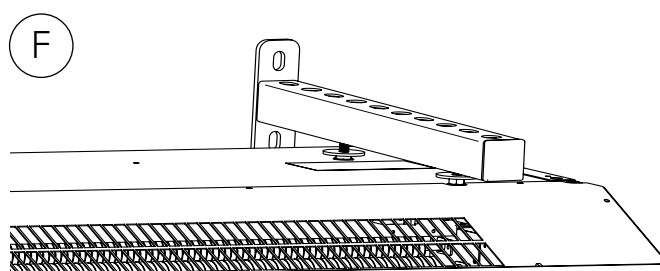
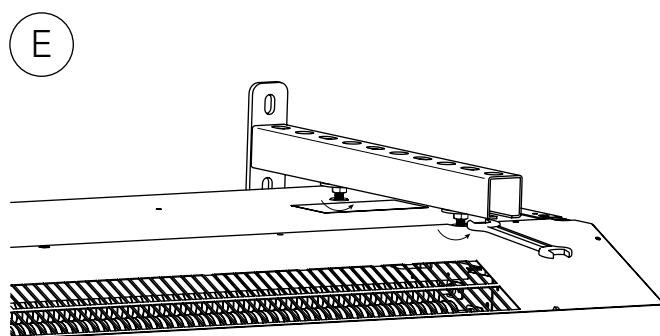
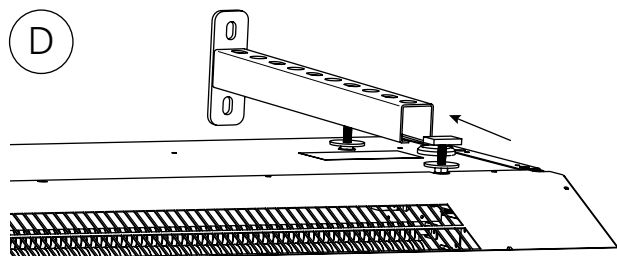
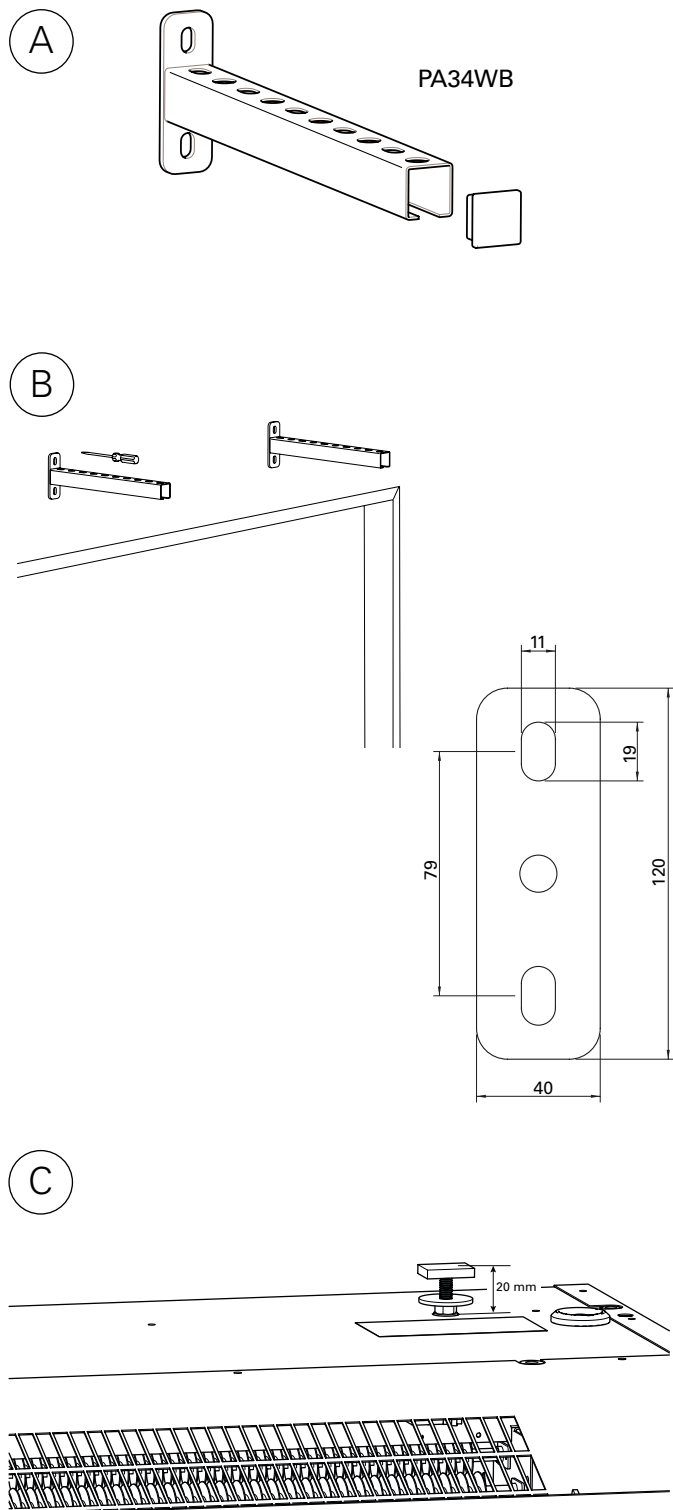
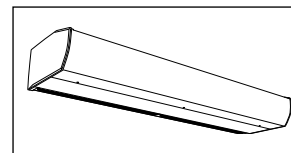


Fig. 6: See separate manual for PA34WB.

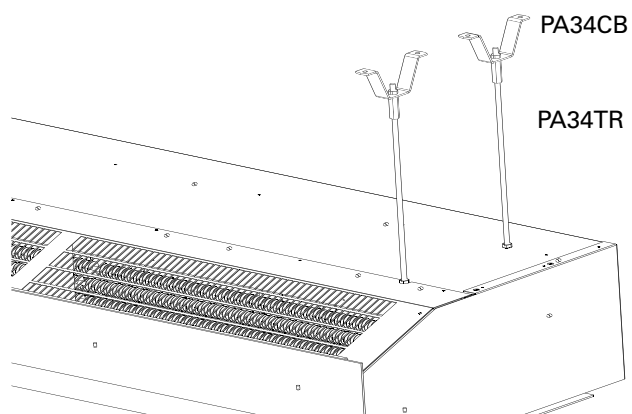


Fig. 7: PA34TR + PA34CB.
See separate manual for PA34TR.

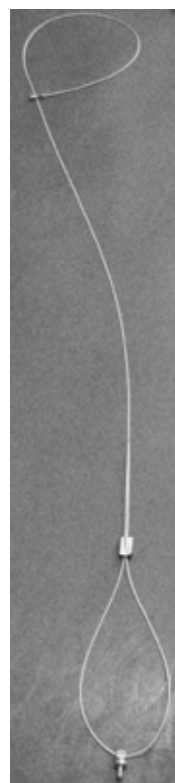
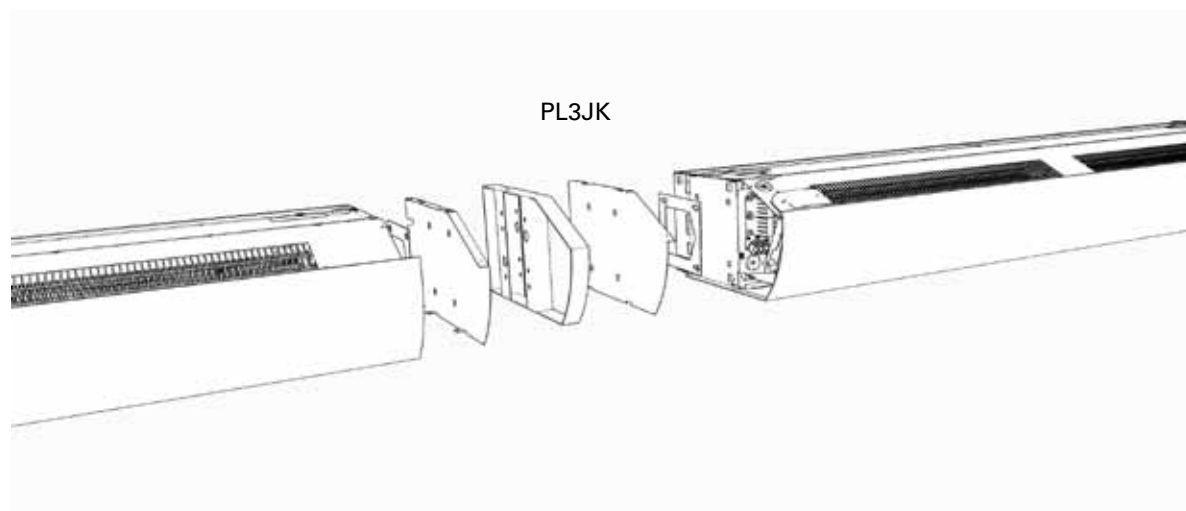
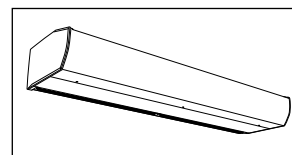
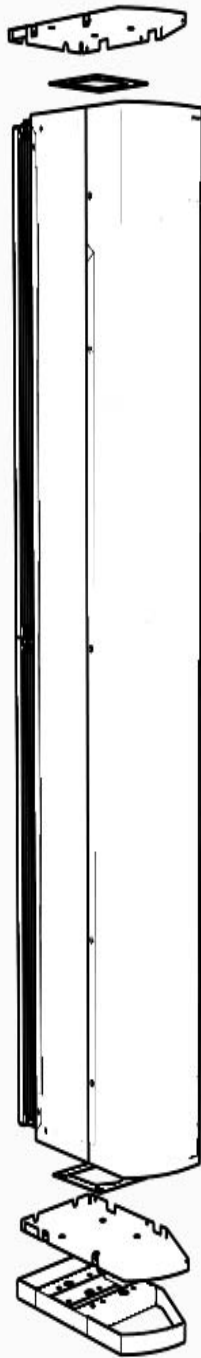
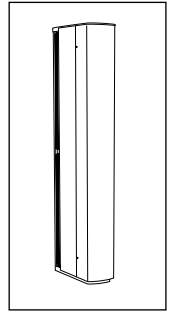


Fig.8: PA34WS + PA34CB
See separate manual for PA34WS.





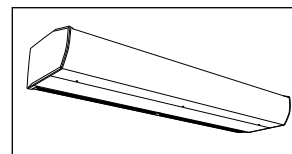
Note! The top of the air curtain must be secured in the wall or ceiling.



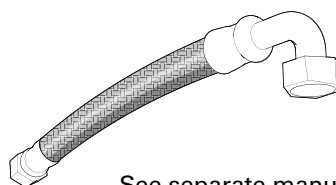
PL3JK

Fig. 9: See separate manual for PL3JK

Accessories Horizontal



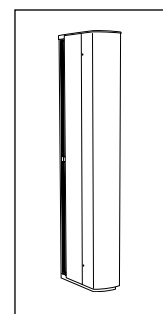
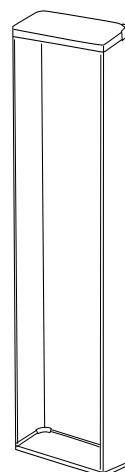
PA34WB15	PL3510/15, 400 mm	Fig. 6
PA34WB20	PL3520, 400 mm	Fig. 6
PA34WB30	PL3525, 400 mm	Fig. 6
PA34CB15	PL3510/15	Fig. 7/8
PA34CB20	PL3520	Fig. 7/8
PA34CB30	PL3525	Fig. 7/8
PA34WS15	PL3510/15	Fig. 8
PA34WS20	PL3520	Fig. 8
PA34WS30	PL3525	Fig. 8
PA34TR15	PL3510/15, 1 m	Fig. 7
PA34TR20	PL3520, 1 m	Fig. 7
PA34TR30	PL3525, 1 m	Fig. 7
PL3JK	PL3500	Fig. 9
FHDN20	PL3500/4200, 350 mm	



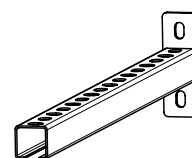
See separate manual for FHDN20.

Accessories Vertical

PL3JK	PL3500	Fig. 9
FHDN20	PL3500, 350 mm	
PA3DW10	PL3510	
PA3DW15	PL3515	
PA3DW20	PL3520	
PA3DW25	PL3525	
PA34WB15	PL3510, 400 mm, 2x	
PA34WB20	PL3520, 400 mm, 4x	
PA34WB30	PL3525, 400 mm, 6x	



See separate manual for PA3DW

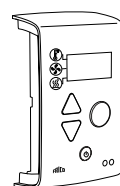


PA34WB

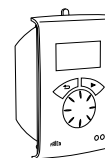
Accessories

PLS

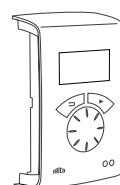
PLSB		
PLSAC		
PLSRTX	673 09 22	70x33x23 mm
PLSUR	673 09 21	114x70x50 mm
CJ4		
CJ6		
CC603	673 09 23	3 m
CC605	673 09 24	5 m
CC610	673 09 25	10 m
CC615	673 09 26	15 m
CC403	673 09 27	30 m
CC405	673 09 28	50 m
CC410	673 09 29	10 m
CC415	673 09 30	15



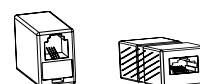
PLSB



PLSUR



PLSAC



CJ4/CJ6



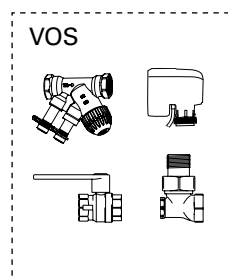
PLSRTX



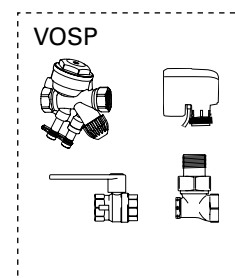
CC



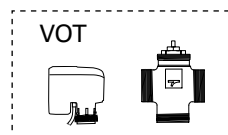
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VOS15NF	DN15
VOS20	DN20
VOS25	DN25
VOSP15 LF	DN15
VOSP15NF	DN15
VOSP20	DN20
VOSP25	DN25
VOT15	DN15
VOT20	DN20
VOT25	DN25
VAT	



VOS



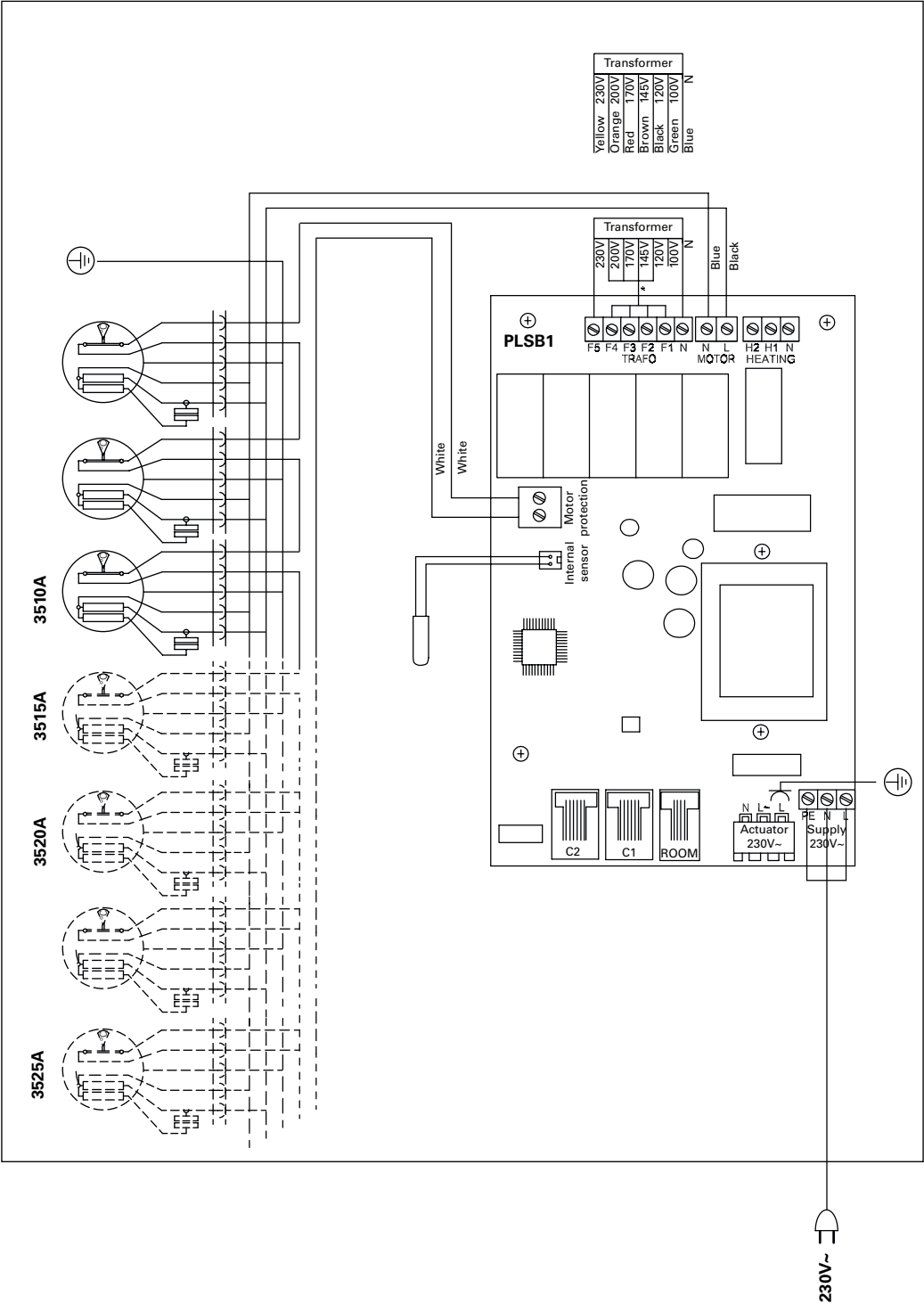
VOSP



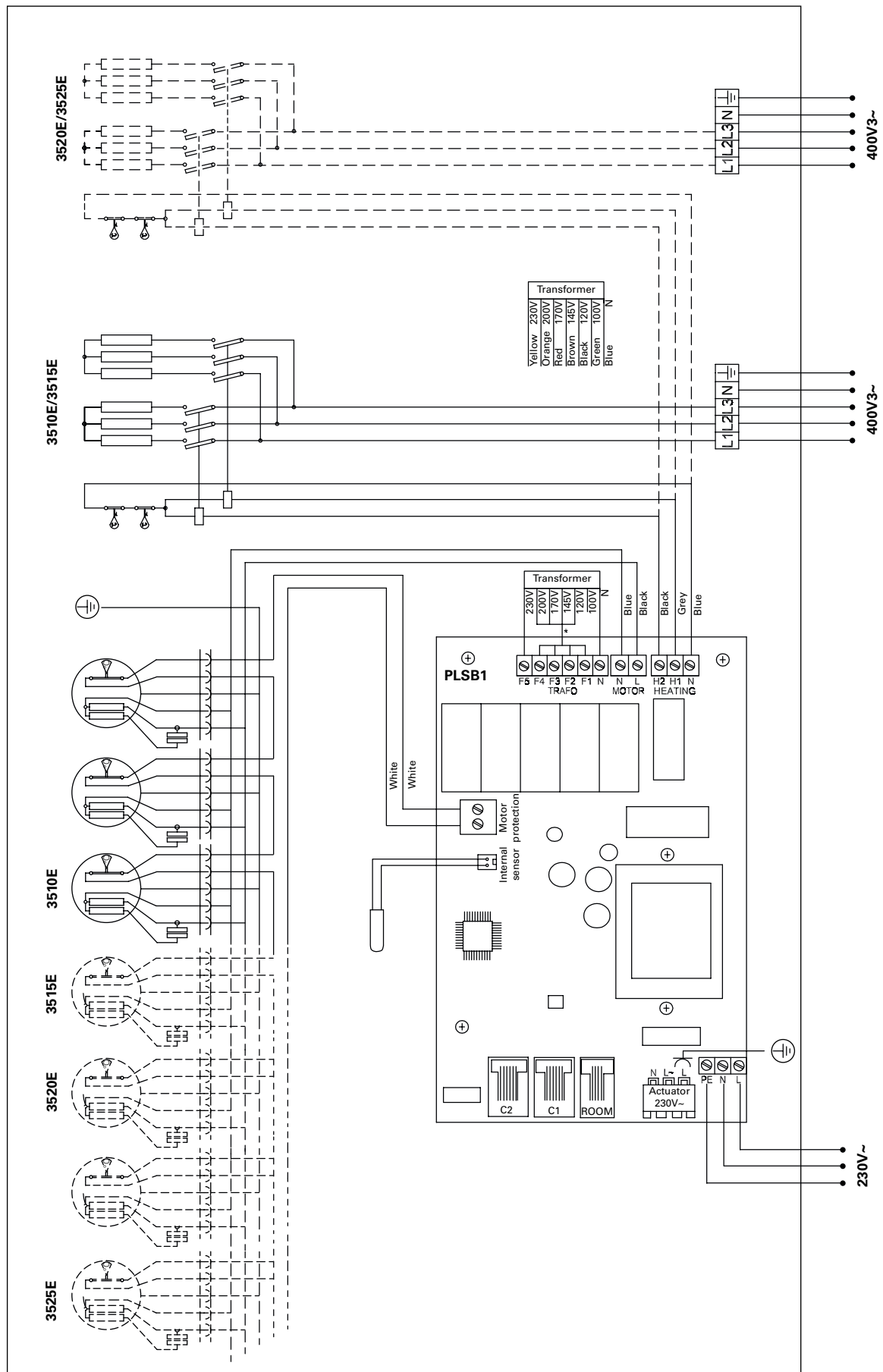
VOT

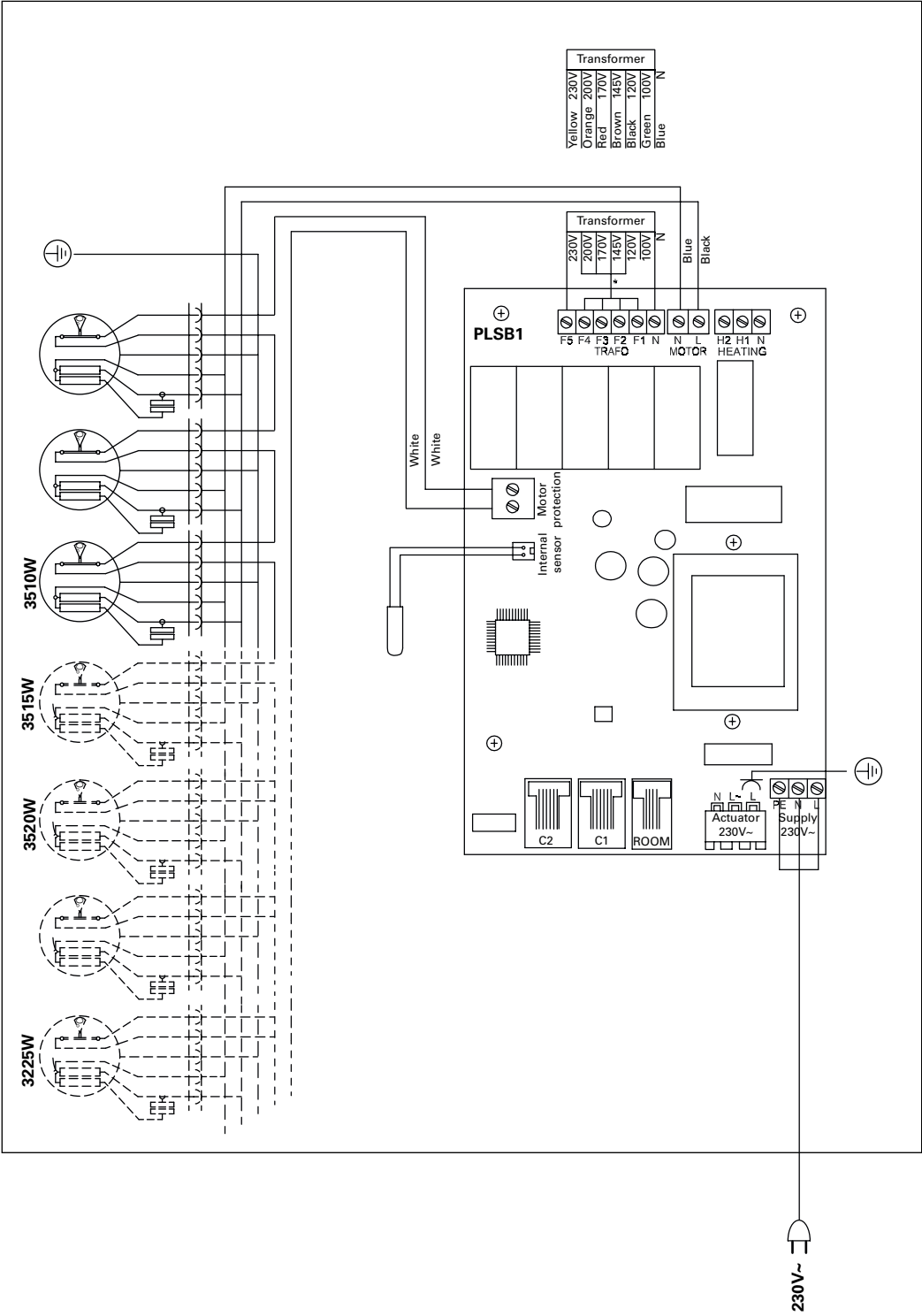


VAT



PL3500 E

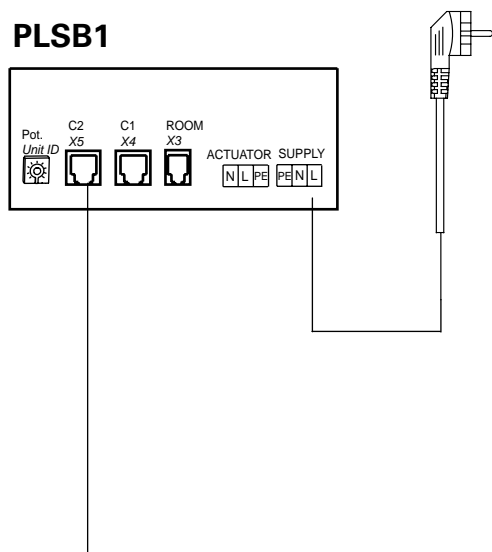




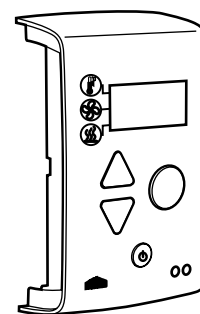
PLS Basic

PL3500A

PLSB1

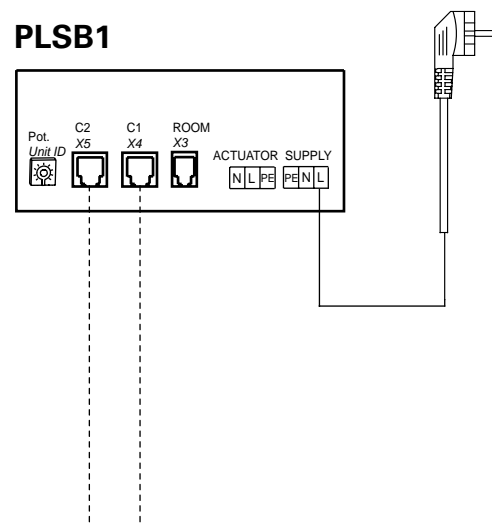


PLSUB1

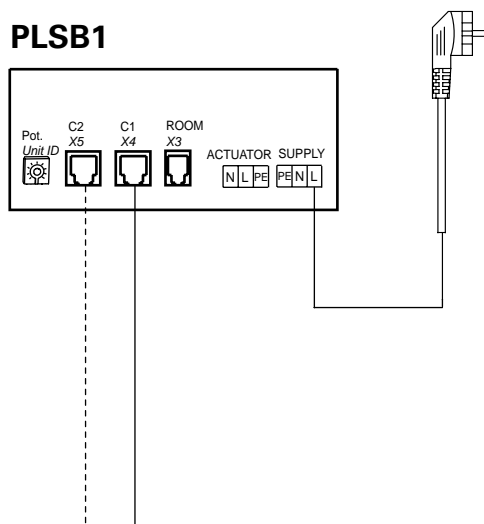


PLS Basic - Parallel connection

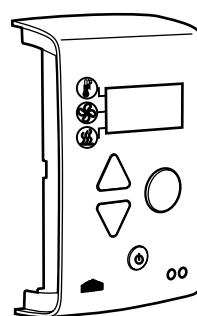
PLSB1



PLSB1



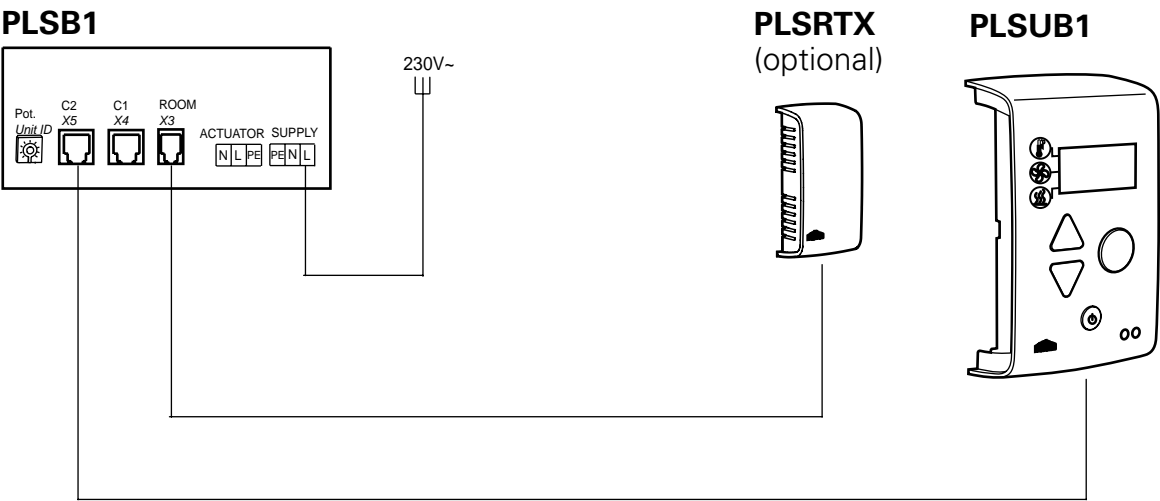
PLSUB1



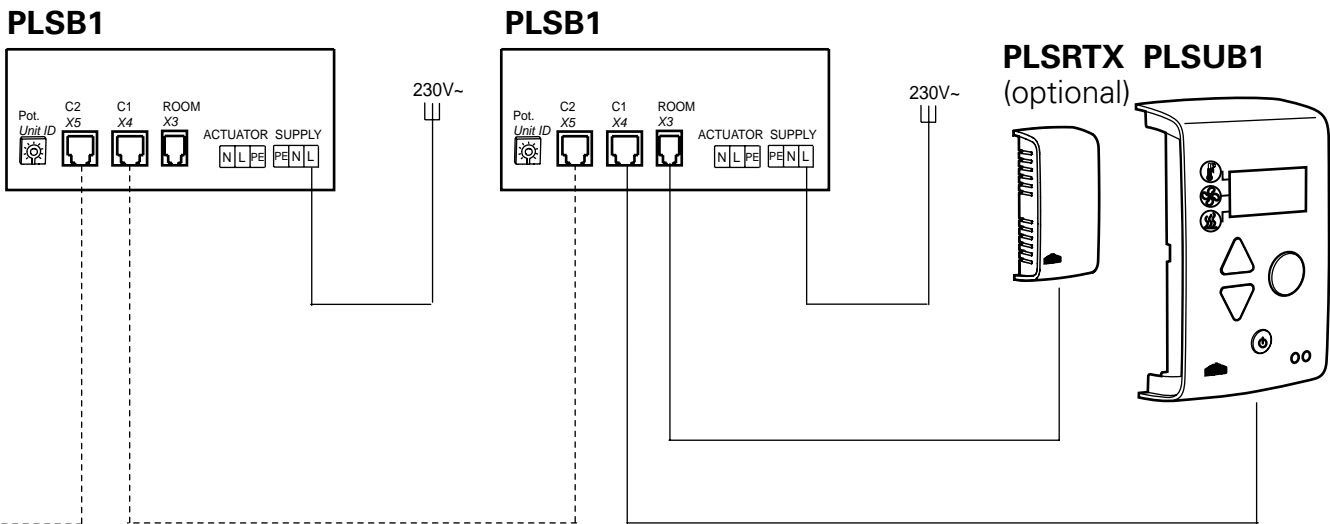
Wiring diagrams for PLSAC Competent, see manual for PLS.

PLS Basic

PL3500E



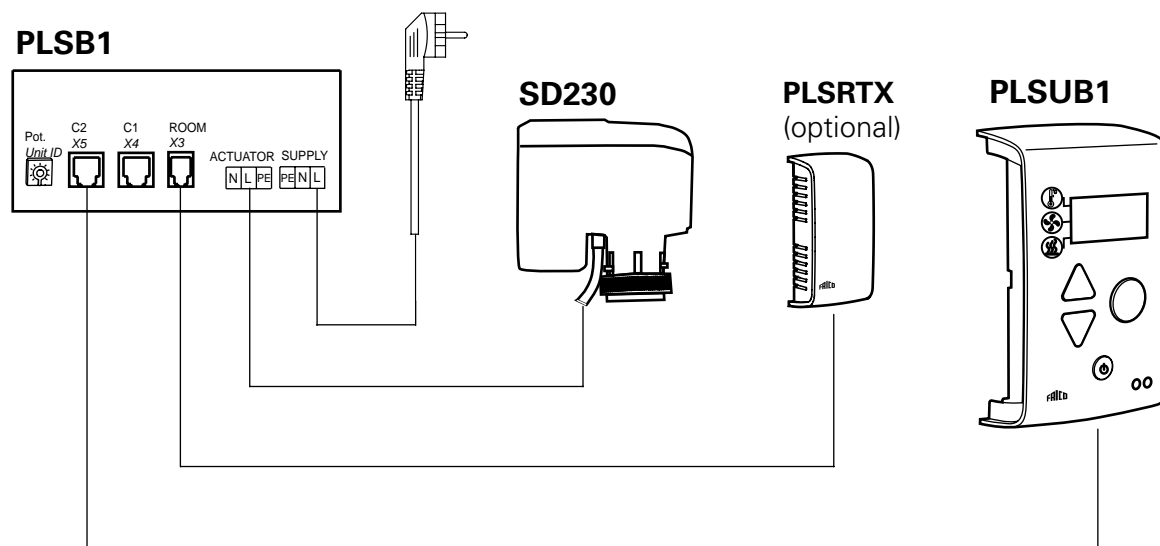
PLS Basic - Parallel connection



Wiring diagrams for PLSAC Competent, see manuals for PLS.

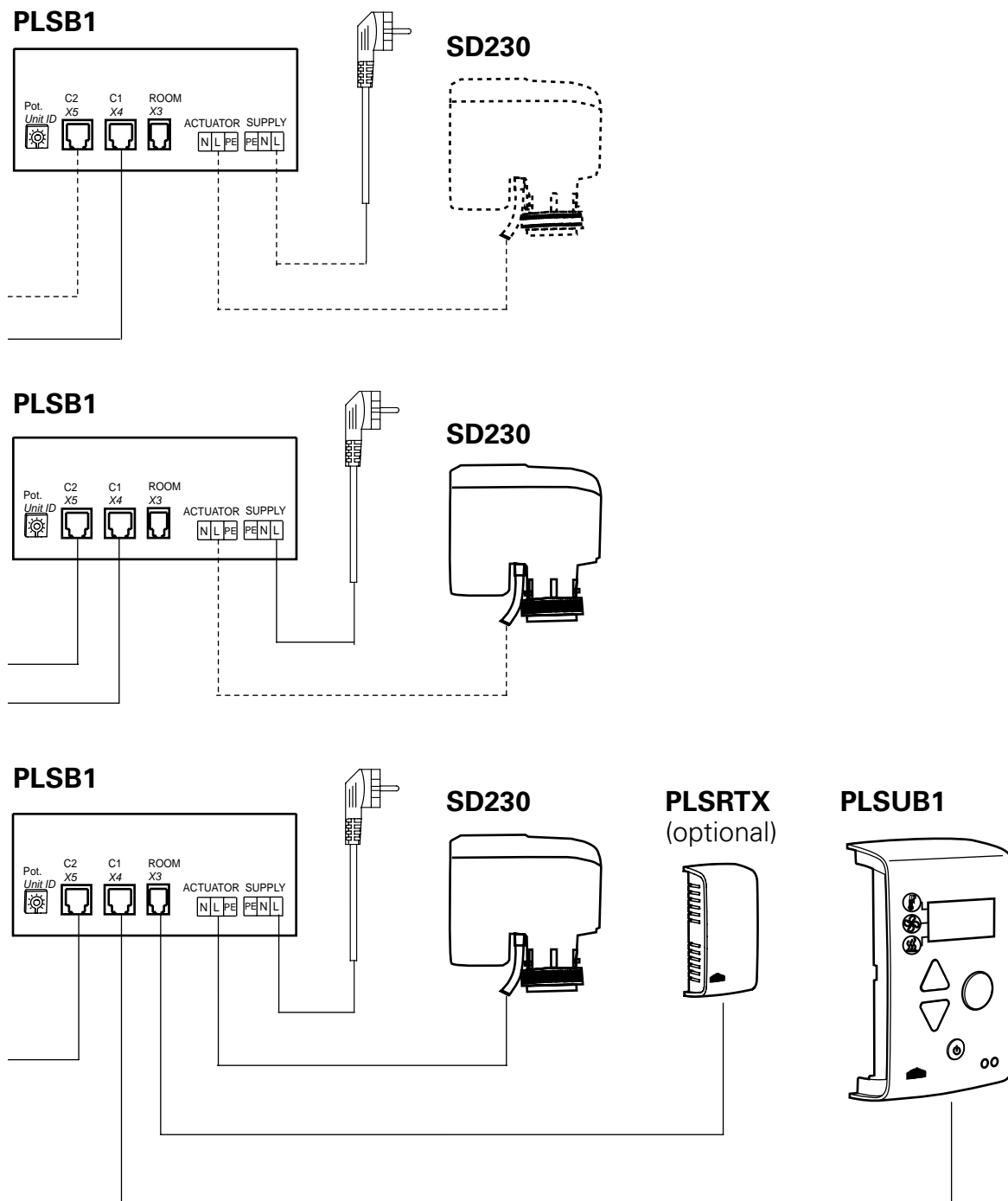
PLS Basic

PL3500W



PLS Basic - Parallel connection

PL3500W



Wiring diagrams for PLSAC Competent, see manuals for PLS.

Output charts water PL3500

PL3500 WL

			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]
PL3510WL	max	1800	10,4	31,5	0,05	1,2	20,3	51,2	0,25	19,0
	min	860	5,0	29,2	0,02	0,3	12,1	59,2	0,15	7,4
PL3515WL	max	2600	15,0	28,8	0,07	1,5	31,0	53,2	0,38	28,5
	min	1240	7,2	26,6	0,03	0,4	18,1	61,1	0,22	10,8
PL3520WL	max	3200	18,5	28,8	0,09	0,9	39,4	54,2	0,48	18,6
	min	1530	9,0	28,2	0,04	0,3	22,9	62,0	0,28	6,9
PL3525WL	max	4600	26,6	27,7	0,12	2,1	55,4	53,5	0,68	40,9
	min	2200	12,7	24,9	0,06	0,5	32,4	61,4	0,40	15,4
			Supply water temperature: 70 °C Room temperature: +18 °C Outlet air temperature: +35 °C*1				Water temperature: 70/50 °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]
PL3510WL	max	1800	10,4	33,5	0,07	2,1	16,0	44,2	0,19	12,7
	min	860	5,0	29,8	0,03	0,5	9,6	50,7	0,12	5,0
PL3515WL	max	2600	15,0	30,9	0,09	2,5	24,6	45,9	0,30	19,2
	min	1240	7,2	27,4	0,04	0,6	14,5	52,4	0,18	7,4
PL3520WL	max	3200	18,5	30,6	0,11	1,5	31,2	46,7	0,38	12,5
	min	1530	8,8	28,4	0,05	0,4	18,2	53,1	0,22	4,8
PL3525WL	max	4600	26,5	29,8	0,16	3,3	44,1	46,2	0,54	27,6
	min	2200	12,7	26,0	0,07	0,8	26,0	52,7	0,32	10,6
			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]
PL3510WL	max	1800	10,4	36,0	0,11	4,5	11,7	37,1	0,14	7,4
	min	860	5,0	31,0	0,04	0,9	7,0	42,0	0,08	3,0
PL3515WL	max	2600	15,0	33,7	0,14	5,0	18,1	38,5	0,22	11,3
	min	1240	7,2	28,9	0,06	1,0	10,7	43,5	0,13	4,5
PL3520WL	max	3200	18,5	33,1	0,17	3,0	22,8	39,1	0,28	7,4
	min	1530	8,8	29,2	0,07	0,7	13,5	43,9	0,16	2,9
PL3525WL	max	4600	26,6	32,9	0,24	6,7	32,6	38,9	0,39	16,5
	min	2200	12,7	27,8	0,09	1,4	19,3	43,9	0,23	6,5
			Supply water temperature: 55 °C Room temperature: +18 °C Outlet air temperature: +35 °C*1				Water temperature: 55/35 °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]
PL3510WL	max	1800	10,4	37,9	0,15	8,1	9,4	33,4	0,11	5,2
	min	860	5,0	31,9	0,05	1,3	5,7	37,4	0,07	2,1
PL3515WL	max	2600	15,0	35,5	0,19	8,6	14,7	34,7	0,18	8,0
	min	1240	7,1	29,9	0,07	1,5	8,7	38,9	0,10	3,1
PL3520WL	max	3200	18,5	34,8	0,22	5,0	18,6	35,1	0,23	5,2
	min	1530	8,9	30,1	0,09	1,0	11,1	39,1	0,13	2,1
PL3525WL	max	4600	26,6	34,9	0,32	11,6	26,7	35,1	0,32	11,7
	min	2200	12,7	29,0	0,12	2,0	15,9	39,3	0,19	4,7

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

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

Technical specifications | PL3500 A without heat ✱

Type	Output [kW]	Airflow* ² [m³/h]	Sound level* ³ [dB(A)]	Output motor [W]	Voltage motor [V]	Amperage motor [A]	Length [mm]	Weight [kg]
PL3510A* ¹	0	860/1800	40/57	470	230V~	2,0	1073	35
PL3515A	0	1240/2600	40,5/58,5	650	230V~	2,8	1583	49
PL3520A	0	1530/3200	42/59,5	810	230V~	3,5	2073	63
PL3525A	0	2200/4600	42/60,5	1140	230V~	4,9	3583	77

Technical specifications | PL3500 E with electrical heat ⚡

Type	Output steps [kW]	Airflow* ² [m³/h]	Δt* ⁵ [°C]	Sound level* ³ [dB(A)]	Output motor [W]	Voltage motor [V]	Amperage motor [A]	Voltage [V] Amperage [A] heat	Length [mm]	Weight [kg]
PL3510E08* ¹	2,7/5,4/8,1	860/1800	35/13	40/57	470	230V~	2,0	400V3~/11,7	1073	43
PL3515E12	3,9/7,8/11,7	1240/2600	38/14	40,5/58,5	650	230V~	2,8	400V3~/16,9	1583	62
PL3520E16	5,4/10,8/16,2	1530/3200	35/13	42/59,5	810	230V~	3,5	400V3~/23,4	2073	78
PL3525E20	6,6/13,2/19,8	2200/4600	37/14	42/60,5	1140	230V~	4,9	400V3~/28,6	3583	102

Technical specifications | PL3500 WL with water heat, coil for low temperature water < 80/60 °C 💧

Type	Output* ⁴ [kW]	Airflow* ² [m³/h]	Δt* ^{4,5} [°C]	Water- volume [l]	Sound level* ² [dB(A)]	Output motor [W]	Voltage motor [V]	Amperage motor [A]	Length [mm]	Weight [kg]
PL3510WL* ¹	11,7	860/1800	24/19	1,51	40/57	470	230V~	2,0	1073	42
PL3515WL	18,1	1240/2600	26/21	2,38	40,5/58,5	650	230V~	2,8	1583	59
PL3520WL	22,8	1530/3200	26/21	3,33	42/59,5	810	230V~	3,5	2073	73
PL3525WL	32,6	2200/4600	26/21	4,18	42/60,5	1140	230V~	4,9	3583	93

*¹) For horizontal mounting only.

*²) Lowest/highest airflow of totally 5 fan steps.

*³) Conditions: Distance to the unit 5 metres. Directional factor: 2. Equivalent absorption area: 200 m². At lowest/highest airflow.

*⁴) Applicable at water temperature 60/40 °C, air temperature, in +18 °C.

*⁵) Δt = temperature rise of passing air at maximum heat output and lowest/highest airflow.

Protection class for units with electrical heating: IP20.

Protection class for units without heating and units with water heating: IP21.

CE compliant.

Assembly and operating instructions

General Instructions

Read these instructions carefully before installation and use. Keep this manual for future reference.

The product may only be used as set out in the assembly and operating instructions. The guarantee is only valid if the product is used in the manner intended and in accordance with the instructions.

Application area

The PL3500 air curtain unit is supplied without heating, with electrical heating or hot water heating.

PL3500 is intended for entrances and smaller doors up to 3.5 metres in height.

Protection class for units with electrical heating: IP20.

Protection class for units without heating and units with water heating: IP21.

Operation

Air is drawn in at the top/rear of the unit and blown out downwards/outwards so that it shields the door opening and minimizes heat loss. To achieve the optimum curtain effect the unit must extend the full height/width of the door opening.

The grille for directing exhaust air is adjustable and is normally angled outwards to achieve the best protection against incoming cold air.

The efficiency of the air curtain depends on the air temperature, pressure differences across the doorway and any wind pressure.

NOTE! Negative pressure in the building considerably reduces the efficiency of the air curtain. The ventilation should therefore be balanced.

Mounting

The air curtain range includes possibilities for horizontal installation and for vertical installation and the units can also be installed recessed into suspended ceilings.

Horizontal mounting

The air curtain unit is installed horizontally with the supply air grille facing downwards as close to the door as possible. Minimum distance from outlet to floor for electrically heated units is 1800 mm. For other minimum distances, see fig. 3.

For the protection of wider openings, several units can be mounted next to each other using a joining kit (fig. 9).

Mounting with wall brackets PA34WB (fig. 6)

1. Remove the plastic covers on the wall brackets. (Fig. 6A)
2. Mount the brackets on the wall according to measures in fig. 6B.
3. Fasten the hammer head screws on the unit in the holes M8. (Fig. 5 and 6C)
4. Lock the nuts so that the hammer head screws are at 20 mm height. Note the direction of the screw heads. (Fig. 6C)
5. Slide the unit on the consoles. (Fig. 6D)
6. Lock the nuts against the bracket and put the plastic covers on again. (Fig. 6E)

Horizontal mounting on the ceiling

Threaded rods, wire suspension kits and ceiling brackets for ceiling mounting are available as accessories, see fig. 7 och 8 and separate manuals.

Vertical mounting PA3JK

Units from 1,5 metres and longer may be used vertically. For vertical mounting, all units must be supplemented with a vertical kit containing everything needed for a practical installation of floor standing units.

The unit can be reversed and placed on either side of the door. Connections and PC Board PLS are positioned near floor level when the air curtain is placed to the left of the door and at the top when it is placed to the right (seen from the inside).

The accompanying floor edging is attached to the floor with fasteners appropriate to the surface.

Two units can be mounted directly on top of each other, the floor edging is then used as a joining bracket.

The air curtain must be secured to wall or ceiling, use PA34WB (accessory).

A design kit which gives a neater installation that conceals cables and pipes is available as accessory, see accessories pages.

See separate manual.

Electrical installation

The installation, which should be preceded by an omnipolar switch with a contact separation of at least 3 mm, should only be wired by a competent electrician and in accordance with the latest edition of IEE wiring regulations.

The control system is pre-installed in the air curtain with an integrated control card, (see fig. 2).

PLS is supplied pre-programmed with quick-fit connections.

Modular cables are connected to the control board. See manual for PLS.

Unit without heating

Connected via the built-in PLS control board with 2 m cord and plug.

Unit with water heating

Connected via the built-in PLS control board with 2 m cord and plug.

Unit with electrical heating

The installation is made on the top of the unit (horizontal) or on the reverse (vertical).

Control supply is 230V~ and cable is routed

from the built-in PLS control board.

Power supply for heating (400V3 ~) is connected to terminal block in the internal connection boxes. 2-metre and longer units require dual power supplies.

The largest cable diameter for the terminal block is 16 mm². The cable glands used must meet the protection class requirements. In the distribution board it is to be indicated that "the air curtains can be supplied from more than one connection".

See wiring diagrams.

Type	Output [kW]	Voltage [V]	Minimum area* ² [mm ²]
Control	0	230V~	1,5
PL3510E08	8	400V3~	2,5
PL3515E12	12	400V3~	4
PL3520E16*¹	8	400V3~	2,5
	8	400V3~	2,5
PL3525E20*¹	8	400V3~	2,5
	12	400V3~	4

*¹) 2 m and 2.5 m-units are connected with two power supplies, see p. 2. 2.5 meter units have electric batteries with two different effects, and the electric battery on the left, on a horizontal unit, seen from inside the room, has the highest effect.

*²) Dimensioning of external wiring shall comply with applicable regulations and local deviations may occur.

Start-up (E)

Note! When using for the first time or when starting up after a long period of disuse, a small amount of smoke and a slight odour may occur temporarily, which is completely normal.

Connecting the water coil (W)

The installation must be carried out by an authorised installer.

The water coil has copper tubes with aluminium fins and is suitable for connection to a closed water heating system. Steel connection pipe. The heating coil must not be connected to a mains pressure water system or an open water system.

Note that the unit shall be preceded by a regulating valve, see valve kits.

The water coil is connected on top of the unit (horizontal mounting) or on the reverse (vertical mounting) via connections DN20 (3/4"), external thread. Flexible hoses are available as an accessory, see accessories pages.

The connections to the heating coil must be equipped with shut off valves (included in valve kits) to allow problem free removal.

A vent valve should be connected at a high point in the pipe system. Air valves are not included.

For vertical installation and bottom water connection it is not possible to bleed the coil in the unit. Ensure that the water coil is filled with water and that no air remains, prior to commissioning. See fig. 4.

Our recommended solution is to use a T-connection and shut off valves. Small air bubbles may remain, but will disappear with normal operation.

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.

Adjustment of the air curtain and air flow

The direction and speed of the air flow should be adjusted considering the load on the opening. Pressure forces affect the air stream and make it bend inwards into the premises (when the premises are heated and the outdoor air is cold).

The air stream should therefore be directed outwards to withstand the load. Generally speaking, the higher the load, the greater the angle that is needed.

Basic setting fan speed

The fan speed when the door is open is set using the control. Note that the air flow direction and fan speed may need fine adjustment depending on the loading of the door.

Filter (W)

The water coil is protected against dirt and blockage by an air filter which covers the coil face. In environments where the filter needs cleaning often, it is advisable to use an external intake filter (see accessories pages), which provides an easier maintenance, since the unit does not need to be opened.

Service, repairs and maintenance

For all service, repair and maintenance first carry out the following:

1. Disconnect the power supply.
2. Loosen the screws and raise the front panel.
The front is blocked in open position with the front hatch hook, see fig 1A or removed completely, see fig. 1B. The service hatch is removed by loosening the screws.
3. After service, repairs and maintenance fasten the service hatch and the front. When the front has been removed it is important to be sure it is firmly seated in the front locks again, see fig. 1B.

Maintenance

Unit with water heating:

The appliance filter should be cleaned regularly to ensure the air curtain effect and the heat emission from the device. How often depends on local circumstances. A clogged filter is not a risk, but the appliance function can fail.

1. Disconnect the power.
2. Loosen the screws and raise the front panel.
The front is blocked in open position with the front hatch hook, see fig 1A.
3. Remove the filter and vacuum clean or wash it. If the filter is clogged or damaged, it may need to be changed.

All units:

Since fan motors and other components are maintenance free, no maintenance other than cleaning is necessary. The level of cleaning can vary depending on local conditions. Undertake cleaning at least twice a year. Inlet and exhaust grilles, impeller and elements can be vacuum cleaned or wiped using a damp cloth. Use a brush when vacuuming to prevent damaging sensitive parts. Avoid the use of strong alkaline or acidic cleaning agents.

Overheating

The air curtain unit with electric heater is equipped with an overheat protector. The overheat protection is reset by turning off the switch and the unit cools. If it is deployed due to overheating, reset as follows:

1. Disconnect the electricity with the fully isolated switch.
2. Allow the electrical coil to cool.
3. Determine the cause of overheating and rectify the fault.
4. Connect the air curtain again.

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.

Temperature control

Temperature control of PLS maintains the exhaust temperature to approx. +40 °C. If the temperature should exceed anyway there is an overheating alarm. For more information see the manual for PLS.

Fan replacement

1. Determine which of the fans is not functioning.
2. Disconnect the cables to the relevant fan.
3. Remove the screws securing the fan and lift the fan out.
4. Install the new fan as above in reverse order.

Replacing a electric coil (E)

1. Mark and disconnect the cables to the electric coil package.
2. Remove the mounting screws securing the electric coil package in the unit and lift it out.
3. Replace faulty electric coil.
4. Install the electric coil package in reverse order to the above.

Replacing the water coil (W)

1. Shut off the water supply to the unit.
2. Disconnect the connections to the water coil.
3. Remove the mounting screws securing the coil in the unit and lift the coil out.
4. Install the new coil in reverse order to the above.

Draining the water coil (W)

The drain valves is on the underside of the coil on the connector side. It can be accessed via the service hatch.

Trouble shooting

If the fans are not working or do not blow properly, check the following:

- That the intake grille/filter is not dirty.
- Check the functions and settings of the control system PLS, see manual for PLS.

If there is no heat, check the following:

- Check the functions and settings of the control system PLS, see manual for PLS.

For units with electrical heating, check also the following:

- Power supply to electric heater coil; check fuses and circuit-breaker (if any).
- That the overheat protection for the motors has not been deployed.

For units with water coil, check also the following:

- That the water coil is air free.
- That there is enough water flow.
- That incoming water is heated enough.

If the fault cannot be rectified, please contact a qualified service technician.

Residual current circuit breaker (E)

When the installation is protected by means of a residual current circuit breaker, which trips when the appliance is connected, this may be due to moisture in the heating element. When an appliance containing a heater element has not been used for a long period or stored in a damp environment, moisture can enter the element.

This should not be seen as a fault, but is simply rectified by connecting the appliance to the mains supply via a socket without a safety cut-out, so that the moisture can be eliminated from the element. The drying time can vary from a few hours to a few days. As a preventive measure, the unit should occasionally be run for a short time when it is not being used for extended periods of time.

Safety

- *For all installations of electrically heated products should a residual current circuit breaker 300 mA for fire protection be used.*
- *Keep the areas around the air intake and exhaust grilles free from possible obstructions!*
- *During operation the surfaces of the unit can be hot!*
- *The unit must not be fully or partially covered with clothing, or similar materials, as overheating can result in a fire risk! (E)*
- *This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.*

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Art.no.207323, 2013-04-16 SÄ/HH