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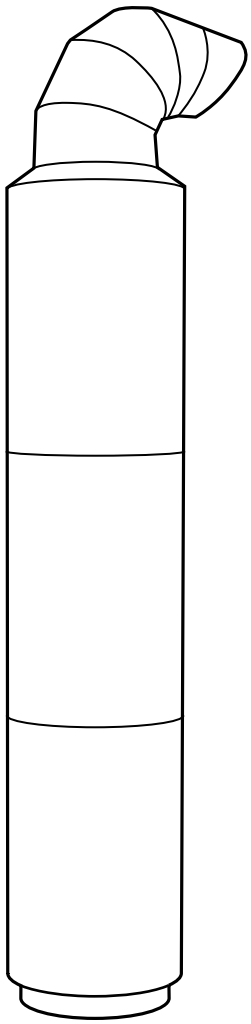
Original instructions

UF600



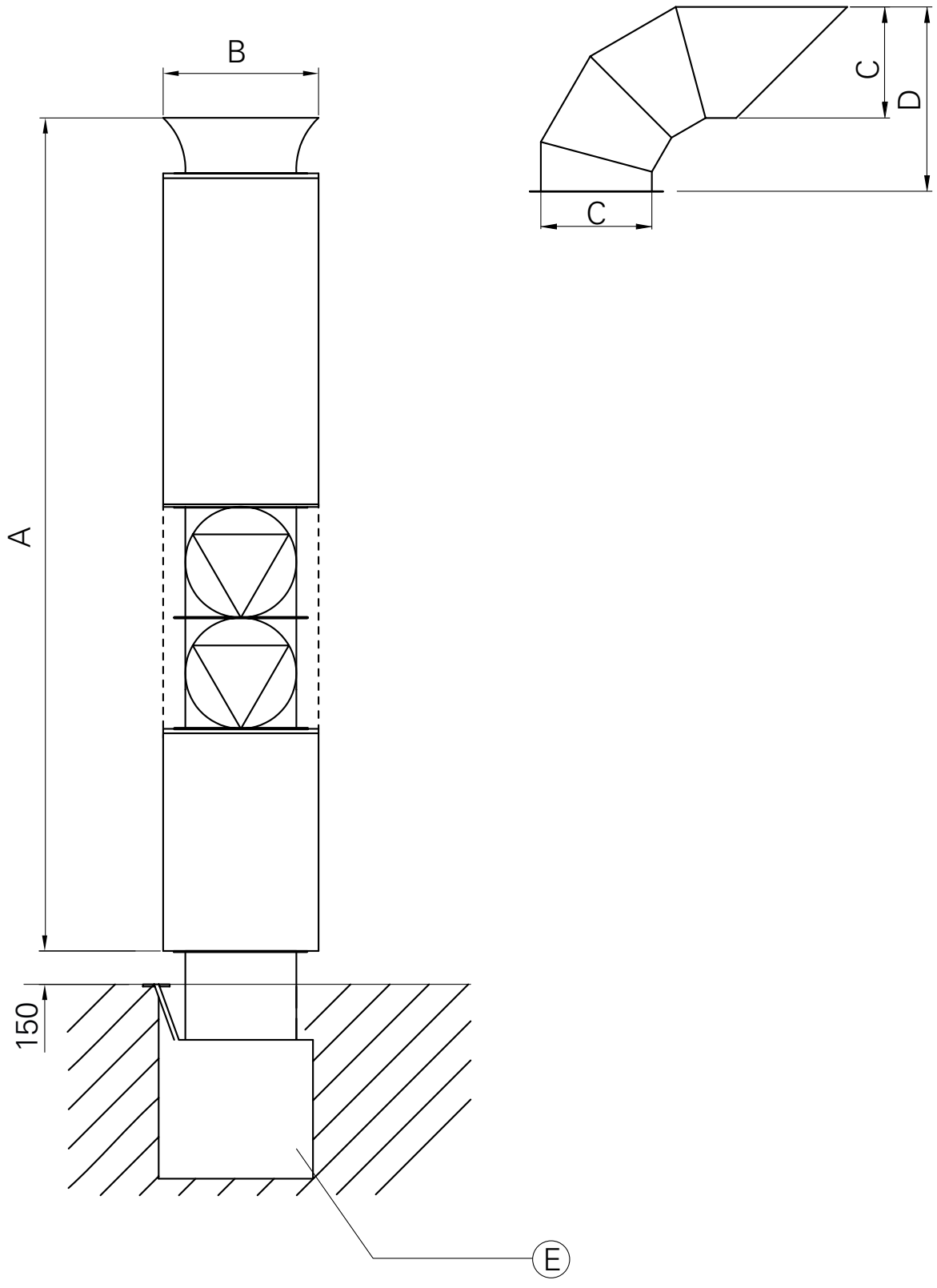


Fig. 1 Dimensions

	A [mm]	B Ø [mm]	C Ø [mm]	D [mm]	E [mm]
UF601-UF602	3750	700	500	830	600x600
UF603-UF605	3995	900	630	945	750x750

UF606 = 2x UF604.

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Installation alternatives

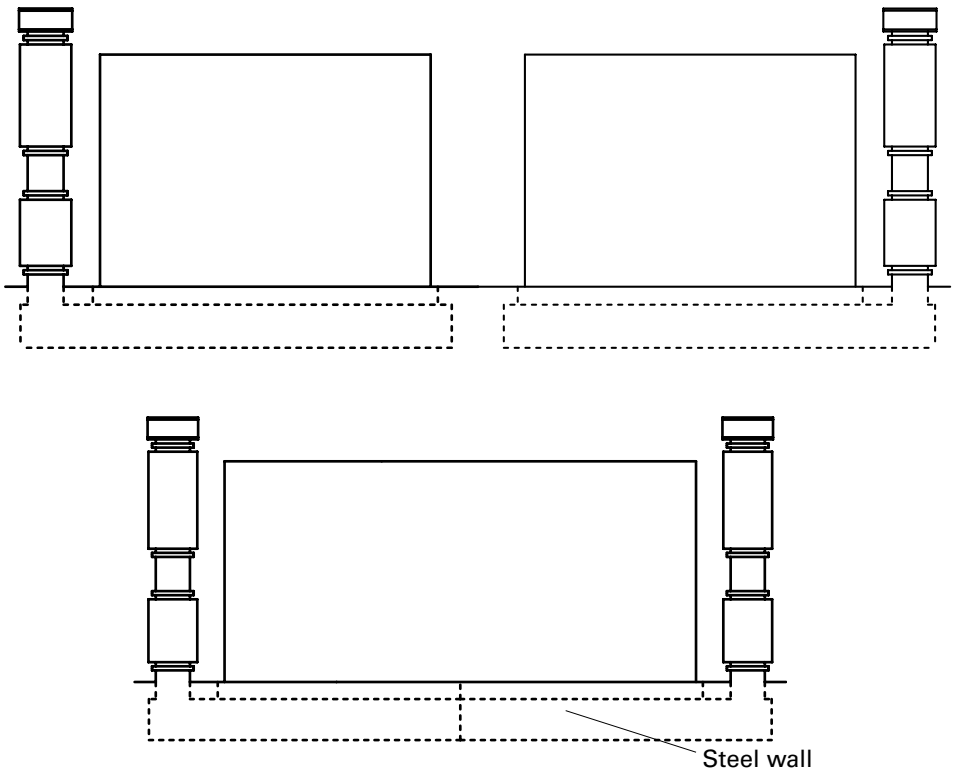

Fig. 2 The positioning of the columns.

Flange sizes

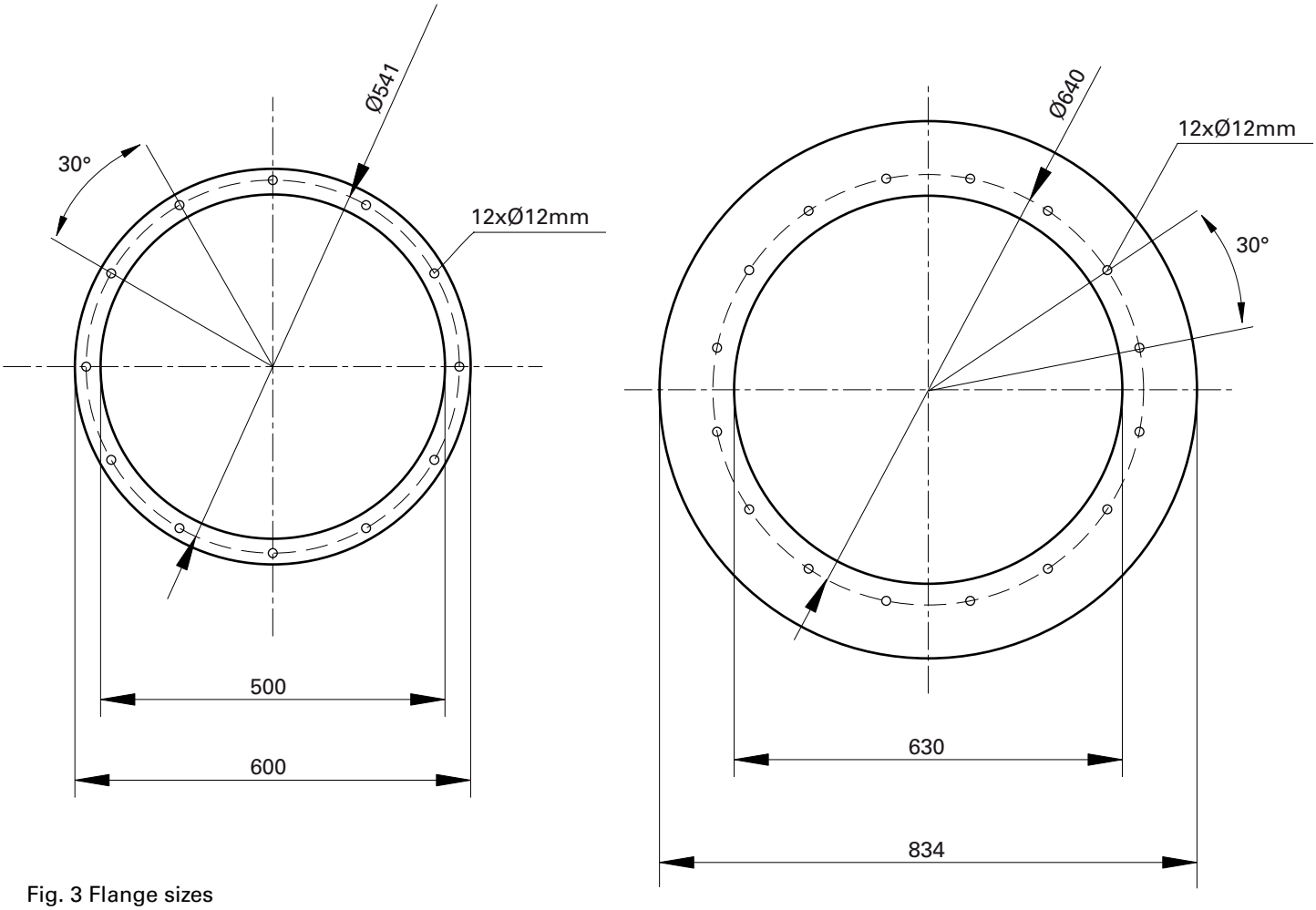

Fig. 3 Flange sizes

Connection boxes

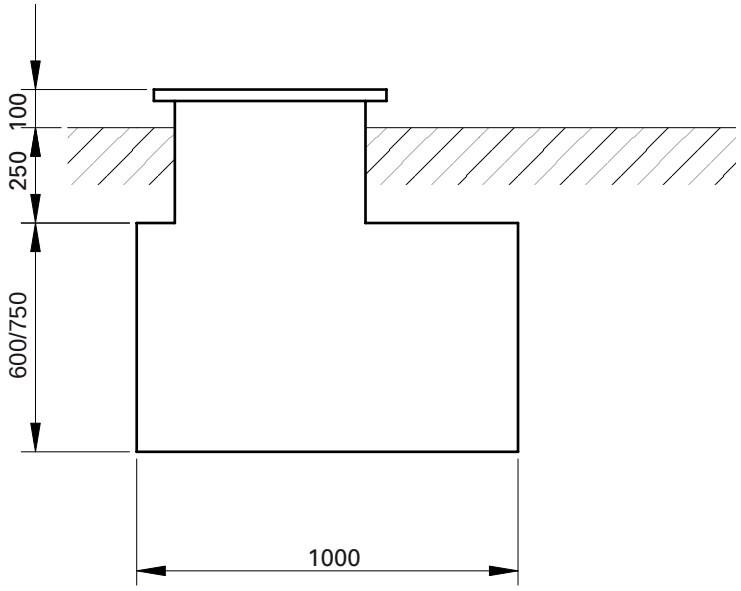

Fig. 4 Connection boxes

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Mounting

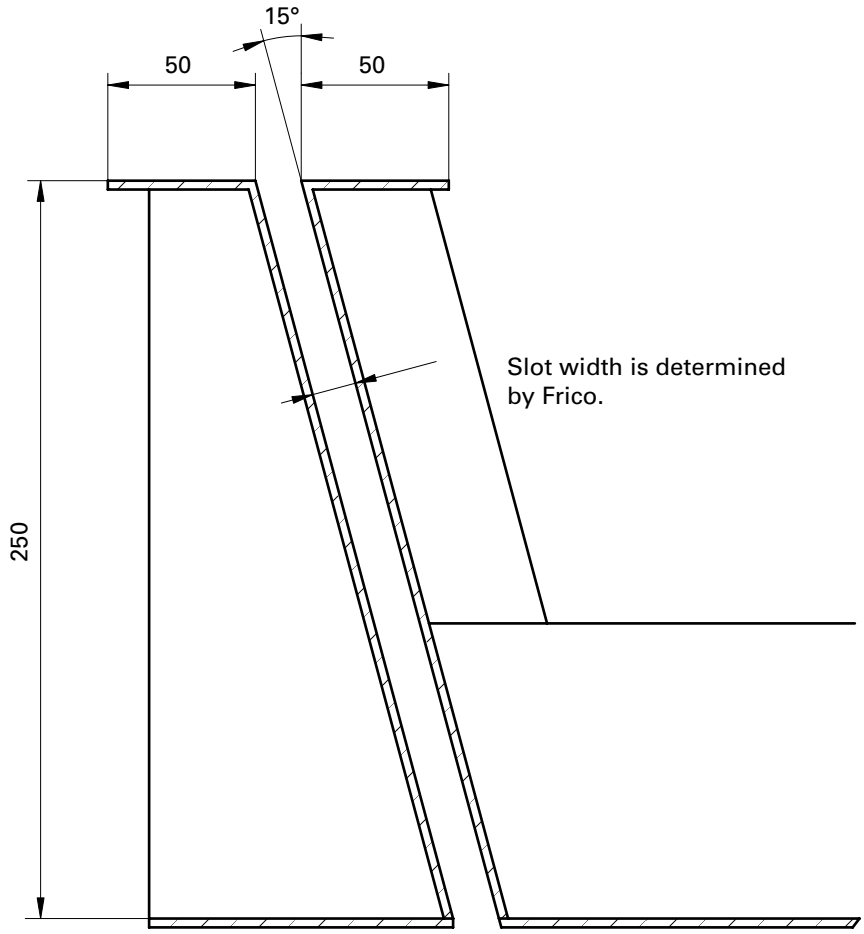
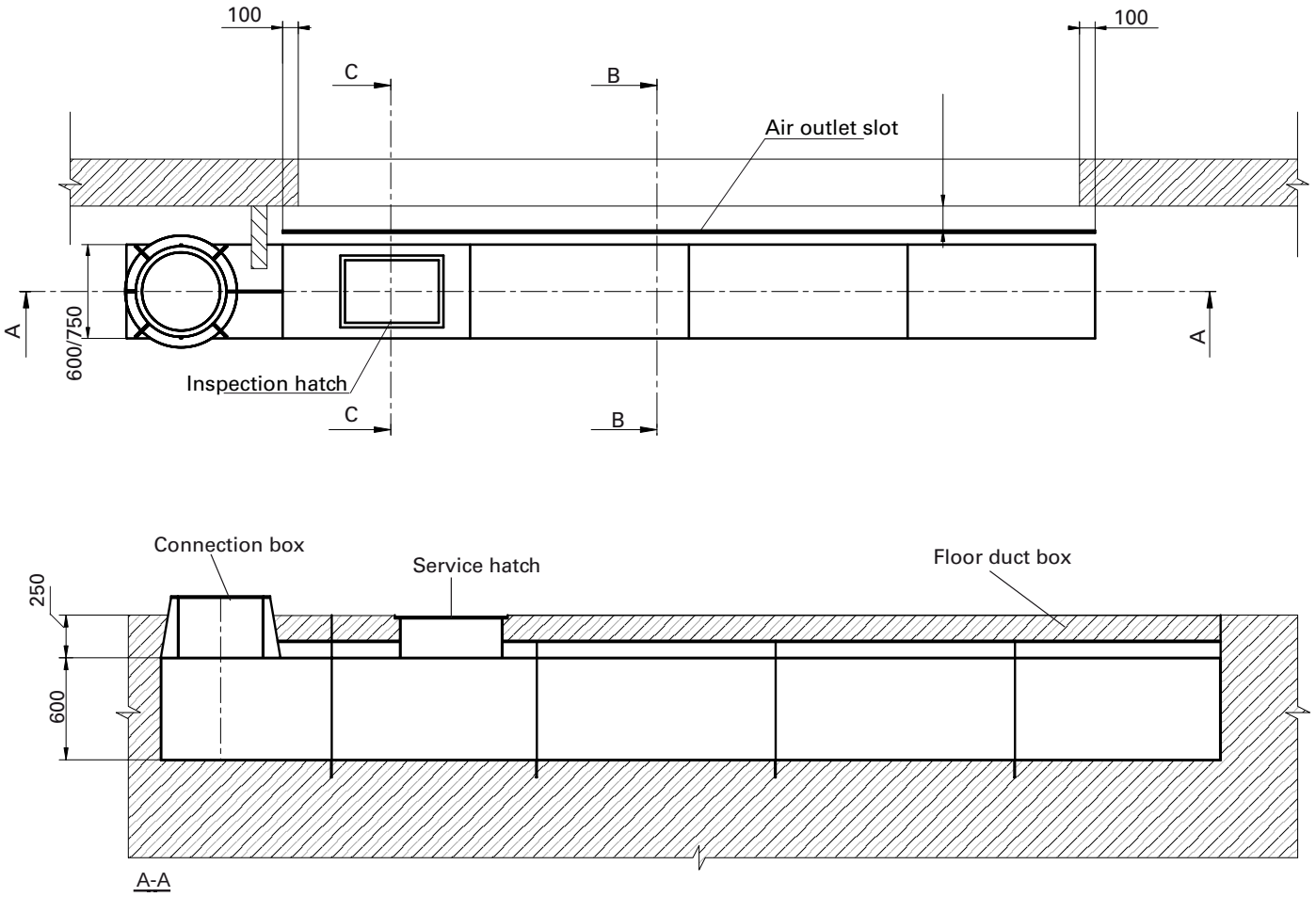


Fig. 5 Floor duct



Floor duct for one column.

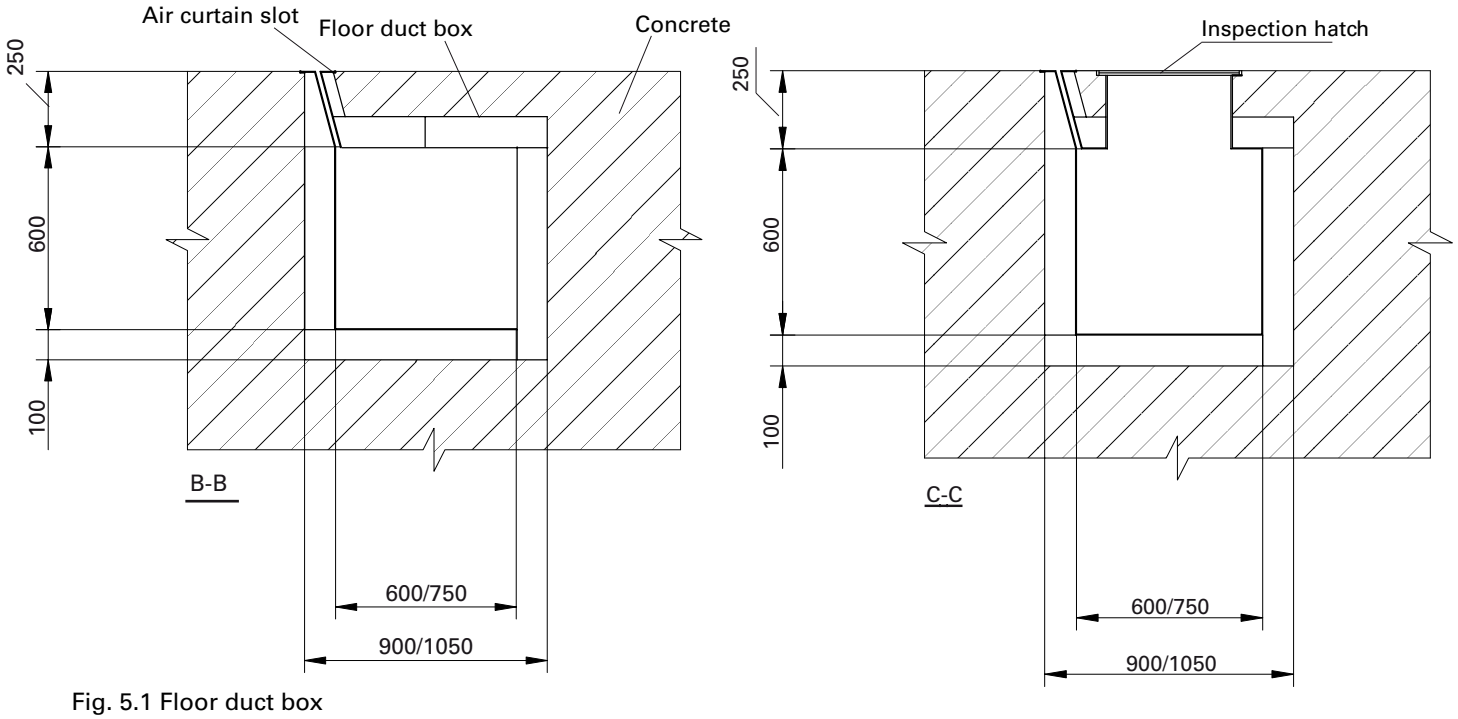


Fig. 5.1 Floor duct box

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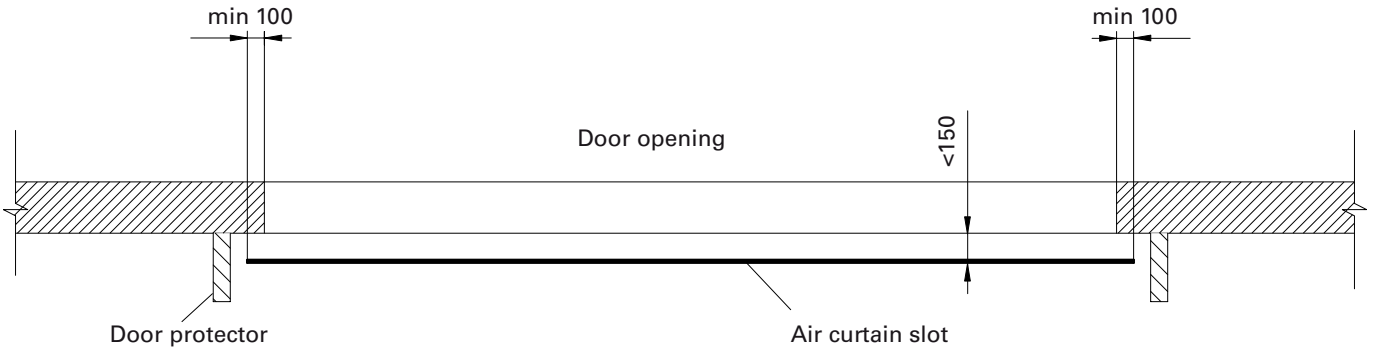
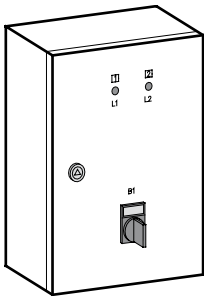


Fig. 6 Air curtain slot

Accessories

AGB304



UFC600

Type	
UFC601	→ UF601
UFC602	→ UF602
UFC603	→ UF603
UFC604	→ UF604 (2x → UF606)
UFC605	→ UF605
AGB304	

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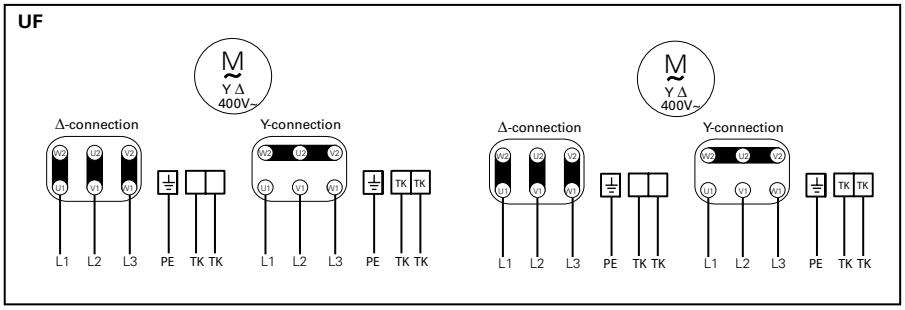
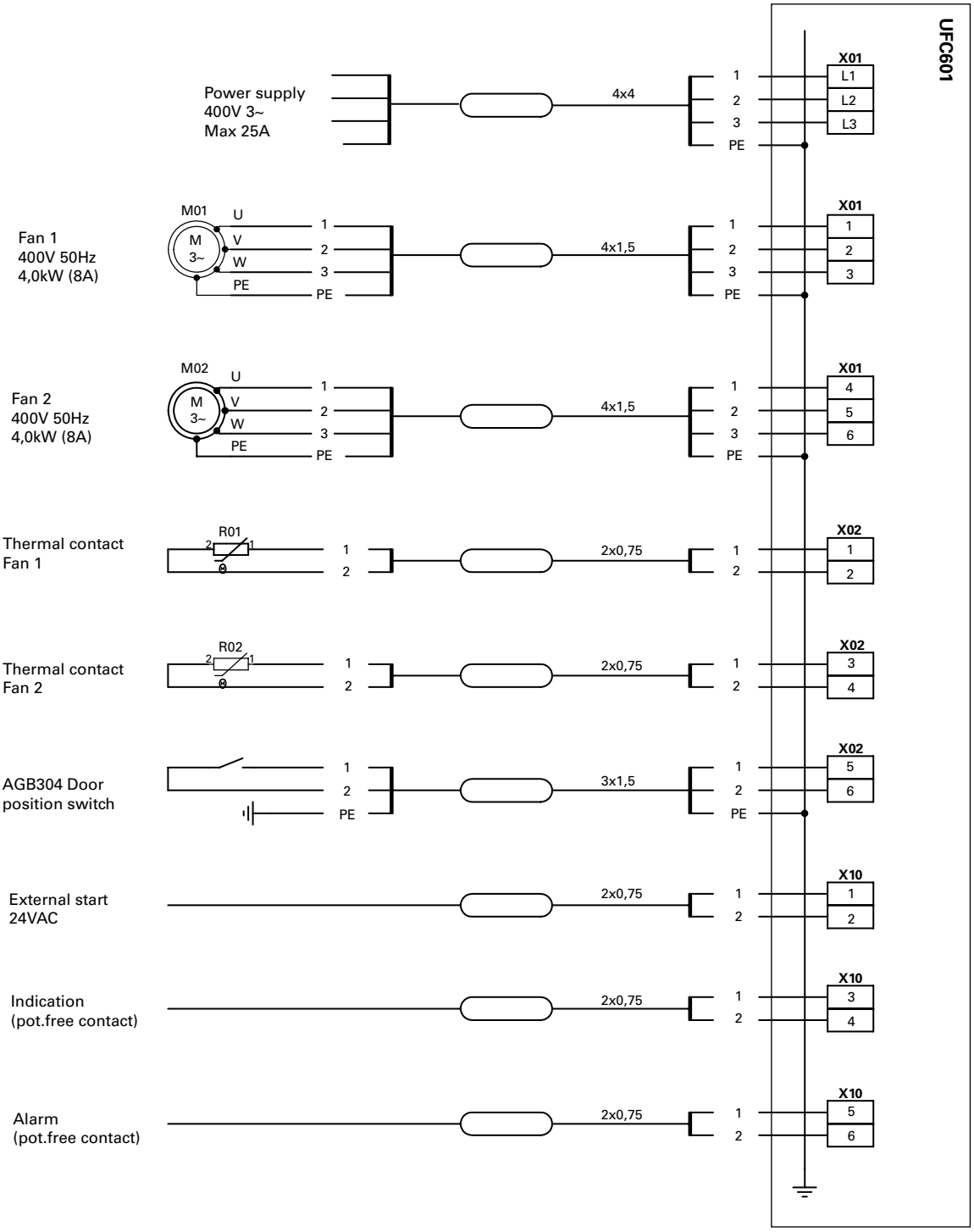
Wiring diagrams UF600

Internal wiring diagram

UF600



UFC601


UFC601
Power supply
400V 3~
Max 25A
4x4
X01
L1
L2
L3
PE
M01
U
V
W
PE
M
3~
Fan 1
400V 50Hz
4,0kW (8A)
4x1,5
M02
Fan 2
400V 50Hz
4,0kW (8A)
R01
Thermal contact
Fan 1
2x0,75
X02
R02
Thermal contact
Fan 2
AGB304 Door
position switch
3x1,5
X10
External start
24VAC
Indication
(pot.free contact)
Alarm
(pot.free contact)

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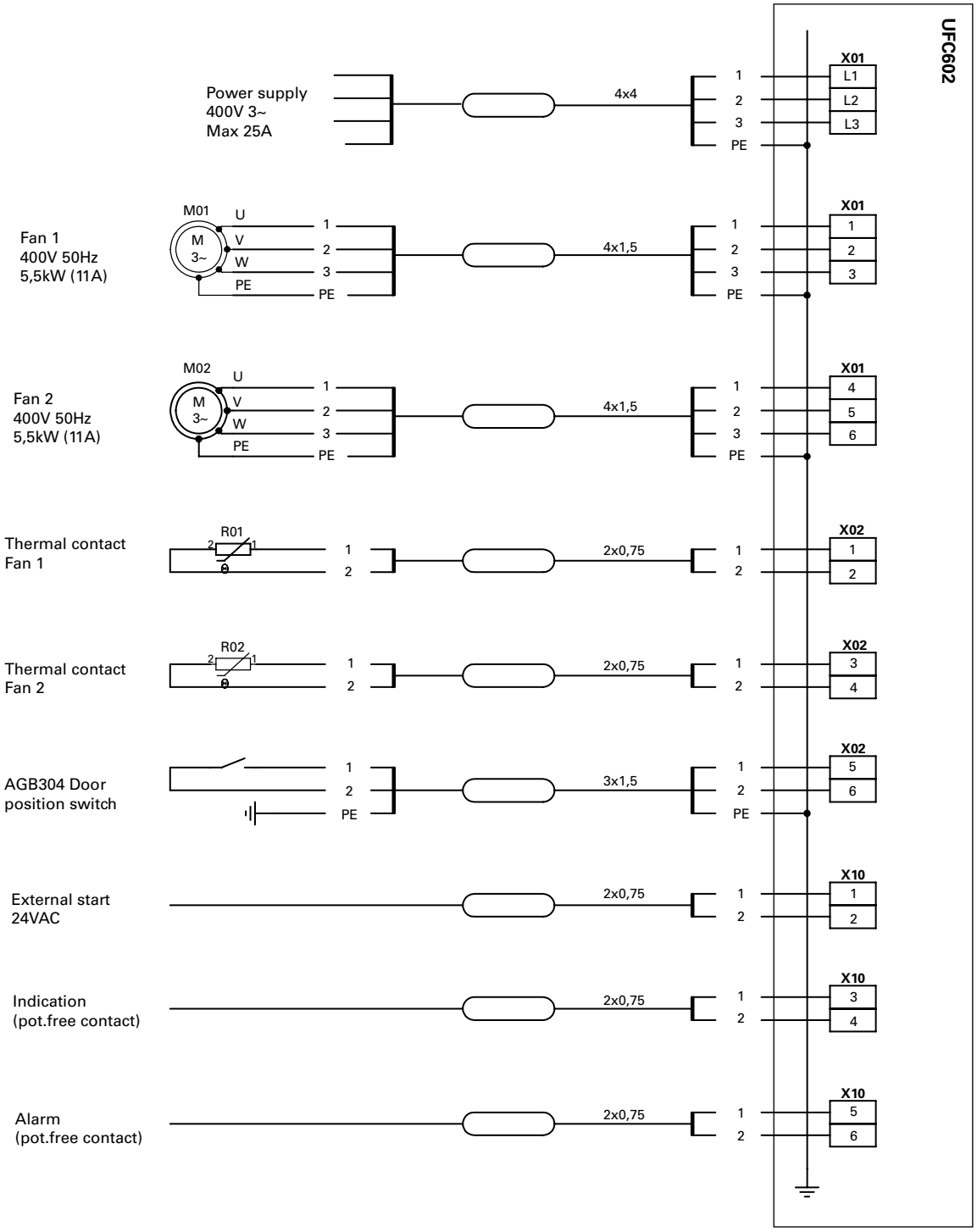
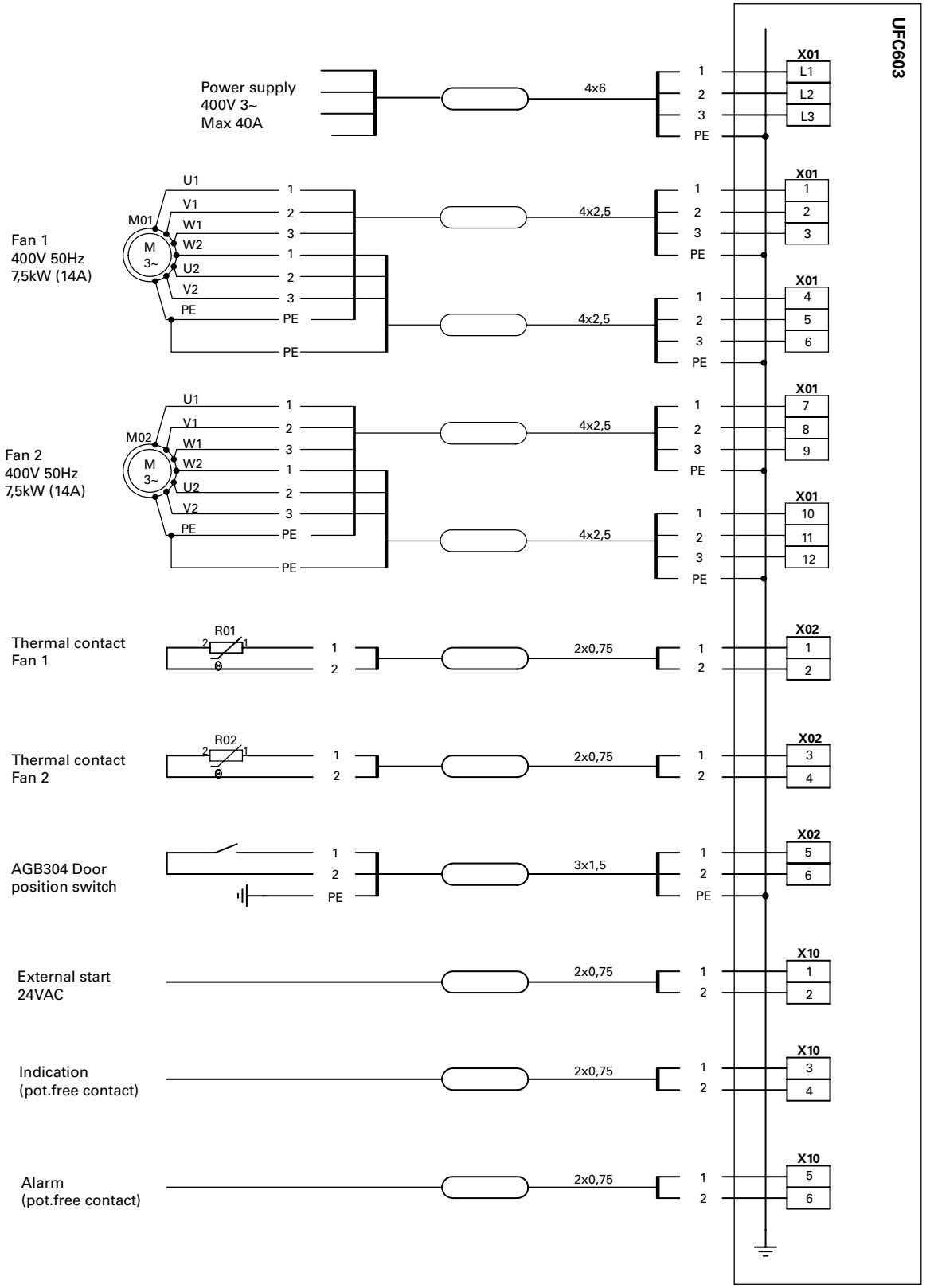
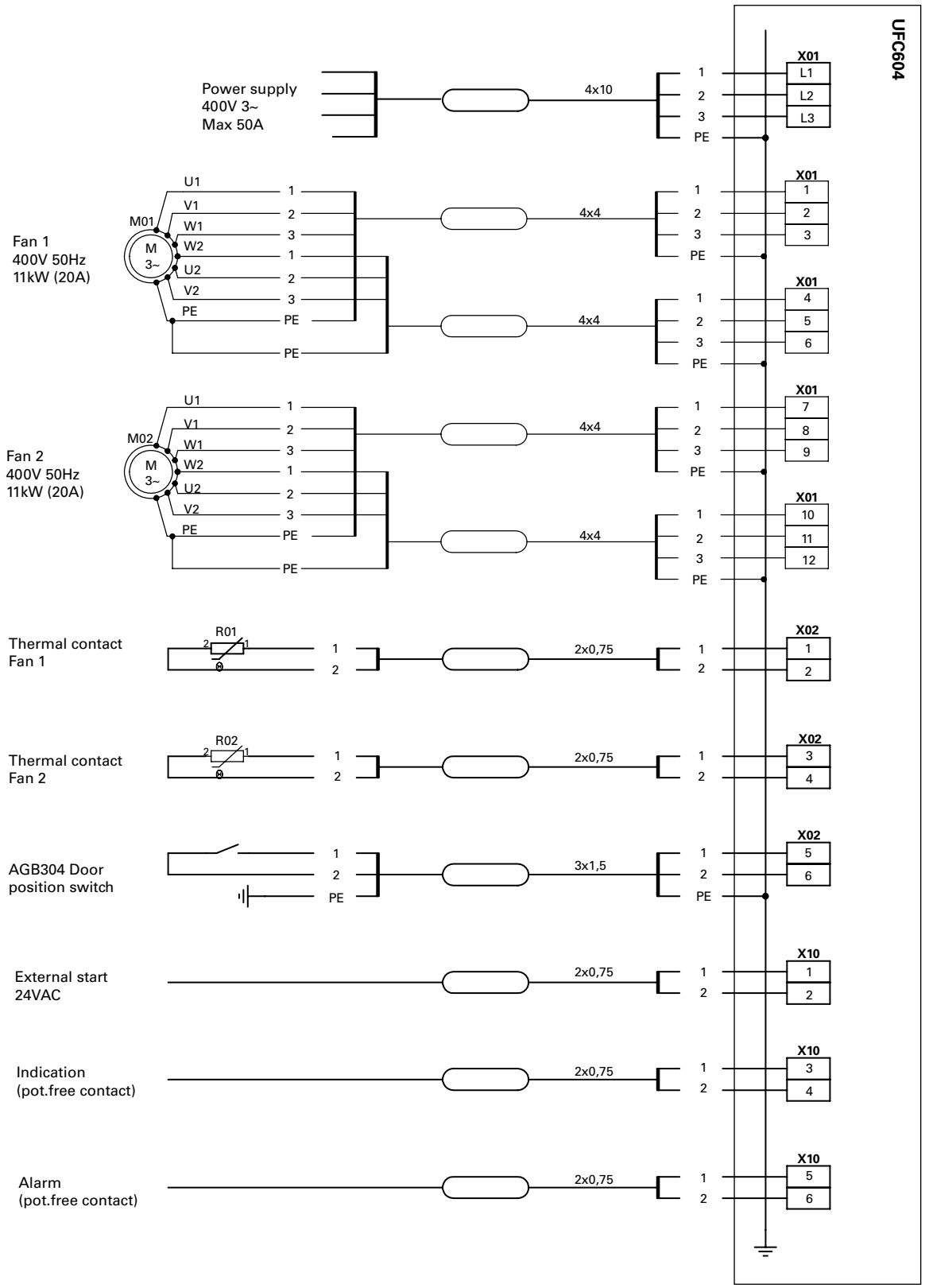
UFC602



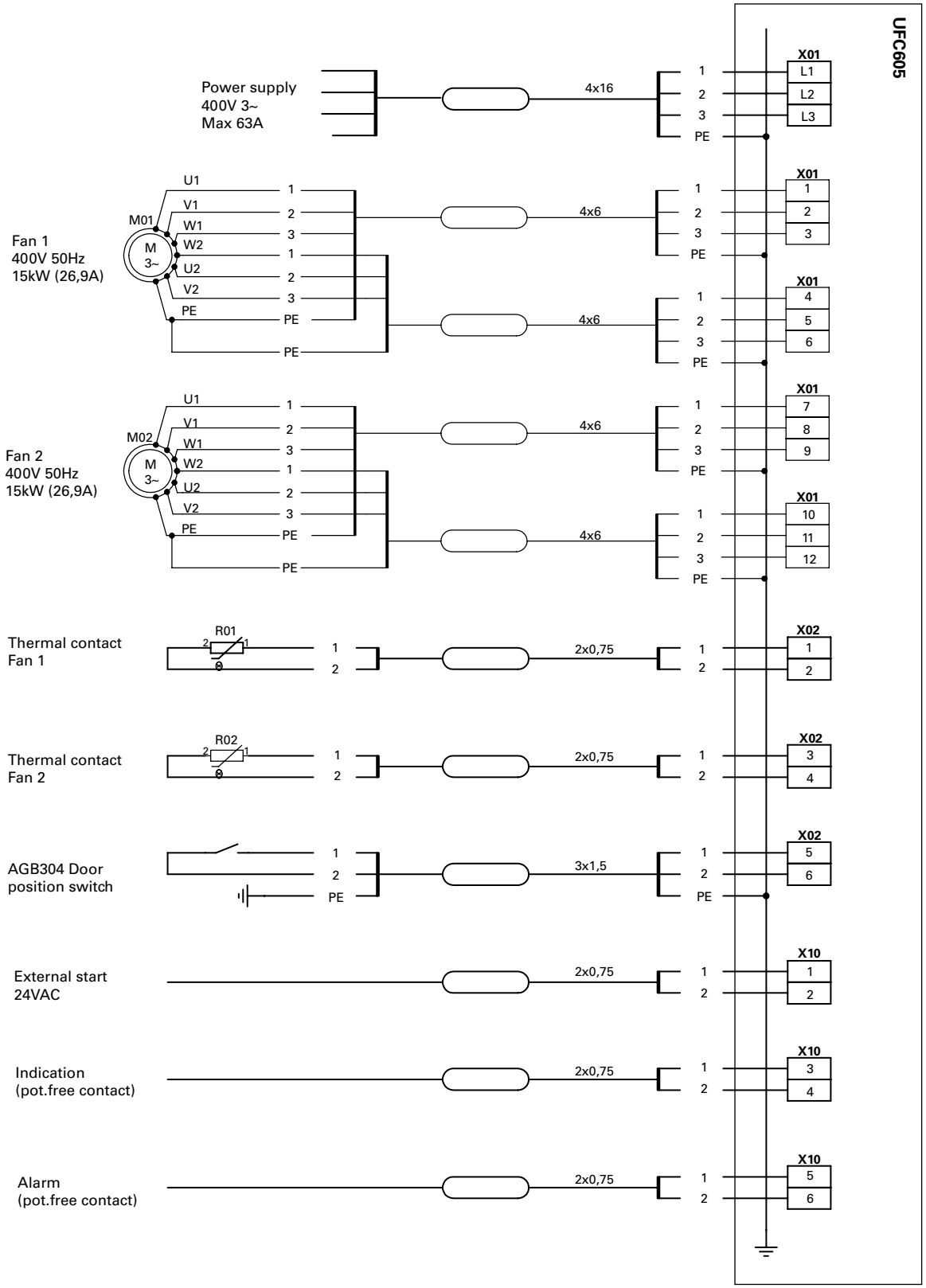
UFC603


UFC603
Power supply
400V 3~
Max 40A
4x6
X01
L1
L2
L3
PE
Fan 1
400V 50Hz
7,5kW (14A)
M01
M
3~
U1
V1
W1
W2
U2
V2
PE
4x2,5
Fan 2
400V 50Hz
7,5kW (14A)
M02
Thermal contact
Fan 1
R01
2x0,75
X02
Thermal contact
Fan 2
R02
AGB304 Door
position switch
3x1,5
External start
24VAC
X10
Indication
(pot.free contact)
Alarm
(pot.free contact)

UFC604


UFC604
Power supply
400V 3~
Max 50A
4x10
X01
L1
L2
L3
PE
Fan 1
400V 50Hz
11kW (20A)
M01
M
3~
U1
V1
W1
W2
U2
V2
PE
4x4
Fan 2
400V 50Hz
11kW (20A)
M02
Thermal contact
Fan 1
R01
2x0,75
X02
Thermal contact
Fan 2
R02
AGB304 Door
position switch
3x1,5
External start
24VAC
X10
Indication
(pot.free contact)
Alarm
(pot.free contact)

UFC605


UFC605
Power supply
400V 3~
Max 63A
4x16
X01
L1
L2
L3
PE
Fan 1
400V 50Hz
15kW (26,9A)
M01
M
3~
U1
V1
W1
W2
U2
V2
PE
4x6
Fan 2
400V 50Hz
15kW (26,9A)
M02
Thermal contact
Fan 1
R01
2x0,75
X02
Thermal contact
Fan 2
R02
AGB304 Door
position switch
3x1,5
External start
24VAC
X10
Indication
(pot.free contact)
Alarm
(pot.free contact)

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Technical specifications

Ambient, no heat - UF600

Typ	Output [kW]	Airflow [m³/h]	Voltage [V]	Amperage [A]	Length [mm]	Diameter [mm]	Max doorsize HxW [m]
UF601	8 (2x4)	10500	400V3~	16.0	3900	700	3 x 4
UF602	11 (2x5.5)	12000	400V3~	22.4	3900	700	3 x 6
UF603	15 (2x7.5)	15000	400V3~	28.2	4145	900	4 x 5
UF604	22 (2x11)	18000	400V3~	42.0	4145	900	4 x 6
UF605	30 (2x15)	23000	400V3~	56.8	4145	900	6 x 6
UF606*	2x22(4x11)	36000	400V3~	2x42.0	4145	900	6 x 12

*) UF606 corresponds to two UF604.
Protection class: IPX4.
CE compliant.

GB

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

UF600 creates a very effective air barrier when air at high speed is pushed out through a narrow channel situated in the floor inside the door opening. An air barrier directed upwards from the floor gives the best possible protection against cold air flowing into the premises.
UF600 consists of one or two pillars with inlet hood, silencers and fans, as well as a floor channel with its slot at floor level. The pillars are placed inside or outside the door on either (or both) sides of the opening. The floor channel width and blowing angle is adapted to the specific door.
Ambient Temperature limits: -20 °C –55 °CProtection class: IPX4.

Operation

The air is drawn in through the air inlet at the top of the unit and blown out through a narrow air outlet slot in the floor. The air is distributed at high velocity across the doorway, providing a protective air shield. The air shield minimises cold draughts and reduces heat loss through open doorways. The air outlet slot is angled outwards 15° to achieve the best protection. 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 AF600 unit is assembled according to this manual and bolted together with supplied bolt kit. The floor duct design choosen is cast into the floor complete with air outlet slot, inspection hatch and connection box. The air outlet slot should extend approximately 100 mm outside the door edges.
The UF600 unit is connected to the connection box with the flange shown in this manual, see fig. 3.
For indoor mounting the air intake should be above the door opening, therefore an extension of the column is sometimes necessary. Column extension can be ordered by length from Frico.
The UF600 unit should be fastened in ceiling or wall to avoid the risk of tipping if the unit is hit by a vehicle.
If the air outlet slot is more than 150 mm away from the door opening internal door protectors should be mounted on both sides of the door to increase air curtain effect.
Standard max load on air duct is 7 ton, up to 20 ton for special orders.

Electrical installation

The air-curtain should only be wired by a competent electrician, and in accordance with the latest edition of IEE wiring regulations. The connection is via the terminal box fitted on the outside of the fan housing.

Service, repairs and maintenance

Periodically check the following according to official requirements, however at least once a year (the first four points only with the fan switched off!):

- Screw connections, specifically the rotor fitting.
- Is there dirt in the fan wheel? If so, remove it.
- Have accumulations formed the rotor? If so, remove them.
- Function of the safety components.
- Coil resistance
- Function of the control elements.
- Operating current.

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- Vibrations which may occur.
- Noises which may occur in the bearings of the electric motor.
- The air duct should regularly be cleaned through the inspection hatch.

NOTE! The power supply must always be disconnected before disassembling any part of the unit.

Overheating

Starter kit UFC is equipped with motor protection for each one of the fan motors. If there is an overload the motor protection will trip, stopping the air curtain. The motor protection must be reset manually.

If the motor protection is tripped please check the fuses and if the air inlet is blocked.

Trouble shooting

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

- Operating power supply to the unit; check fuses, circuit-breaker, time switch/ thermostat (if any) that starts and stops the unit.
- That the air flow selector is correctly set
- That the position limit switch is working.
- That the overheat protection for the motors has not been deployed.
- That the intake grille/filter is not dirty.

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

Drainage

If there is a risk of large amounts of water running into the floor channel, a drainage pipe should be connected to the existing 1” connection (internal thread).
Do not connect the drainage to the sewage (risk of blowing out water lock).

Start-up current

The external fusing must be adapted to the motor start-up current.

Safety

- Do not cover surfaces of the air curtain or obstruct air inlet, as this can cause excessive temperatures that can be hazardous and may cause fan motor malfunction.
- The air velocity will be too high for people to go through the air flow. People should not enter the opening without protection from a vehicle etc.

Fig. 1 Dimensions
Fig. 2 The positioning of the columns

The fan pillar can be positioned on either side of the door. For large doors, two fan pillars are often required. They should be positioned one on each side. When two units are placed on each side of the doorway, the floor duct has to be divided by a steel wall in the middle to prevent the fans from working against each other.

Fig. 3 Flange sizes

The tower is connected to the connection box with flanges these sizes mounted on the silencers. The AC600 flange comes with Ø12 mm holes.

Fig. 4 Connection box

The connection box is where the tower is connected to the floor duct. The height depends on the installation alternative chosen. Please contact Frico for more information.

Fig. 5, 5.1 Floor duct

The floor channel box is a steel construction that is cast into the concrete floor. The outlet opening is at floor level, as close to the floor opening as possible. The length of the box and the angle and column width is determined at the project planning stage.
The channel can be made in one piece or delivered in sections which are then welded together on location and include air outlet slot, connection box and inspection hatch. Measures are suggestions. The air outlet slot should extend approximately 100 mm outside the edge of the door. Please contact Frico for more information.

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Fig. 6 Air curtain slot

To compensate for the inward-directed pressure force, the air curtain slot is directed at an outward angle of about 15°. The air curtain slot should be at least 200 mm wider than the door opening. Internal door protectors should be mounted next to the door if the distance between the air curtain slot and the door is greater than 150 mm.

Control options

Air curtain UF600 is supplemented with starter kit UFC600. For air curtain UF601 starter kit UFC601 is used, UCF602 is used for UF602 and so on. UF606 corresponds to two UF604s, and must be controlled by two UFC604s.

Accessories

UFC601/602, starter kit

Time delay between the motors at start up. Possibility of starting via door switch. Integrated motor protection for each fan.

UFC603-605, starter kit

Star delta start. Possibility of starting via door switch. Integrated motor protection for each fan.

AGB304, position limit switch

Starts the air curtain when the door is opened and stops it when the door is closed. Alternating contact 4 A, 230 V~. IP44.

Column extension

For indoor mounting the air intake should be above the door opening, therefore an extension of the column is sometimes necessary. Column extension can be ordered by length from Frico.
Special order to required dimension.