

TECHNICAL DATA

Technical data UNIBLOCK UBSF 180 – 625

Output data

Data	Type	UBSF 180	UBSF 250	UBSF 500	UBSF 625
Output power		180 kVA	250 kVA	500 kVA	625 kVA
Output voltage		480/277 V	440/254 V	440/254 V	440/254 V
Output current		217 A	382 A	656 A	820 A
Power factor		cos φ 0,8 (ind.)			
Voltage stability		± 1% static with symmetrical load ± 5% dynamic with 50% load change			
Output settling time		approx. 150 ms (half-load step-change, voltage outside ± 2%)			
Output frequency		60 Hz, ± 1%			
Distortion factor (at linear and symmetrical load)		1,5%/2,5% (Ph-Ph/Ph-N)			
Overload capacity (at rated voltage) ¹		10% for 1 h 25% for 10 min 50% for 2 min			
Short-circuit current		approx. 14 x rated current			
Permissible load crest factor ²		limitless for nonlinear load			
Phase angle		120° ± 1° with symmetrical load			
Load unbalance ³		100%			

Input data

Data	Type	UBSF 180	UBSF 250	UBSF 500	UBSF 625
Rated voltage		415 V	400 V	380 V / 400 V / 415 V	415 V
Permissible voltage deviation		+10% / -15% -20% short time			
Rated frequency (tolerance)		50 Hz (± 5%)			
Rated current		275 A	355 A	822 A / 773 A / 751 A	859 A
Fuse rating		315 A	400 A	1000 A	1250 A
Power factor		cos φ 0,85 inductive			
Mains rectifier		12 pulse			
Distortion factor		11%			
DC link circuit voltage		472 V	500 V	432 V / 459 V / 472 V	472 V

¹ Tripping reaction of the output switch is according to tolerance information in IEC 947-2.

² Crest factor = peak factor = ratio between peak factor and RMS value of a periodic quantity (voltage, current)

³ Load unbalance capacity = different loading of the individual phases in a three-phase system.

General data

Data	Type	UBSF 180	UBSF 250	UBSF 500	UBSF 625
Dimensions ¹					
Width		2438 mm	2438 mm	2740 mm	2740 mm
Depth		865 mm	860 mm	985 mm	985 mm
Height		1900 mm	1900 mm	1900 mm	1900 mm
Weight		see table in section "Floor loading capacity"			
Wall-mounting?		yes			
Several sets alongside each other?		yes			
Noise level (at a distance of 1 m)		75 dB(A)	75 dB(A)	78 dB(A)	78 dB(A)
		as per DIN ISO 3746			
		reducing of noise level approx. 5 dB with silencer			
Air flow ²		6120 m ³ /h	6120 m ³ /h	7900 m ³ /h	7900 m ³ /h
Max. back pressure ³		50 Pa to 75 Pa			
MTBF ⁴ -value		≥ 90 000 h			
MTTR ⁵ -value		≤ 24 h			
Temperature range		0 °C to 40 °C (≤ 35 °C daily mean average)			
Rel. humidity		0 % to 95 % without condensation			
Type of protection		IP20 as per DIN/VDE 0470 part 1 11/92 IEC529			
Efficiency ⁶		88,5 %	88,6 %	89,1 %	90 %
Cooling		Regarding room ventilation / air condition please contact us. No air condition is required in case the exhaust air is conducted out of the room.			

¹ rounded dimensions

² decreased slight with silencer, resp. air filter

³ Built-on accessories (ducts, etc.) must not exceed this value.

⁴ MTBF = Mean Time Between Failures

⁵ MTTR = Mean Time To Repair

⁶ For rated load and $\cos \varphi = 1$. Data vary for other operating modes.

Technical data UNIBLOCK UBSF 1000

Output data

Data	Type	UBSF 1000	UBSF 1000
Output power		1000 kVA	1000 kVA
Output voltage		440/254 V	460/266 V
Output current		1312 A	1255 A
Power factor		cos ϕ 0,8 (ind.)	
Voltage stability		\pm 1% static with symmetrical load \pm 5% dynamic with 50% load change	
Output settling time		approx. 150 ms (half-load step-change, voltage outside \pm 2%)	
Output frequency		60 Hz, \pm 1%	
Distortion factor (at linear and symmetrical load)		1,5%/2,5% (Ph-Ph/Ph-N)	
Overload capacity (at rated voltage) ¹		10% for 1 h 25% for 10 min 50% for 2 min	
Short-circuit current		approx. 14 x rated current	
Permissible load crest factor ²		limitless for nonlinear load	
Phase angle		120° \pm 1° with symmetrical load	
Load unbalance ³		100%	

Input data

Data	Type	UBSF 1000	UBSF 1000
Rated voltage		380 V / 400 V / 415 V	380 V
Permissible voltage deviation		+10% / -15% -20% short time	\pm 10%, -15% short time
Rated frequency (tolerance)		50 Hz (\pm 5%)	
Rated current		1626 A / 1530 A / 1486 A	1588 A
Fuse rating		1600 A	
Power factor		cos ϕ 0,85 inductive	
Mains rectifier		12 pulse	
Distortion factor		11%	
DC link circuit voltage		432 V / 459 V / 472 V	443 V (without battery)

¹ Tripping reaction of the output switch is according to tolerance information in IEC 947-2.

² Crest factor = peak factor = ratio between peak factor and RMS value of a periodic quantity (voltage, current)

³ Load unbalance capacity = different loading of the individual phases in a three-phase system.

General data

Data	Type	UBSF 1000
Dimensions ¹		
Width		3662 mm
Depth		1320 mm
Height		2266 mm
Weight		see table in section "Floor loading capacity"
Wall-mounting?		yes
Several sets alongside each other?		no
Noise level (at a distance of 1 m)		77 dB(A) as per DIN ISO 3746
Air flow ²		10800 m ³ /h
Max. back pressure ³		50 Pa to 75 Pa
MTBF ⁴ -value		≥ 90 000 h
MTTR ⁵ -value		≤ 24 h
Temperature range		0 °C to 40 °C (≤ 35 °C daily mean average)
Rel. humidity		0 % to 95 % without condensation
Type of protection		IP20 as per DIN/VDE 0470 part 1 11/92 IEC529
Efficiency ⁶		89,8 %
Cooling		Regarding room ventilation / air condition please contact us. No air condition is required in case the exhaust air is conducted out of the room.

Specifications complied with

DIN VDE 0100
 DIN VDE 0103; EN 60865-1; IEC 865-1
 DIN VDE 0106 part 1; IEC 536
 DIN VDE 0110; IEC 60664-1
 DIN VDE 0160; EN 50178
 DIN VDE 0470 part 1; EN 60529; IEC 60529
 DIN VDE 0510 part 2; EN 60896-2
 DIN VDE 0558 part 511; EN 50091-1-1
 DIN VDE 0558 part 5; IEC 60146-4
 DIN VDE 0558 part 520; EN 50091-2
 EN 50091-1-1
 DIN ISO 3746; ISO 3746
 IEC 1000-4-2
 IEC 1000-4-4
 VDE 0839 part 81-2; EN 50098-2
 VDE 0847 part 4-5; EN 61000-4-5; IEC 1000-4-5

¹ rounded dimensions

² decreased slight with silencer, resp. air filter

³ Built-on accessories (ducts, etc.) must not exceed this value.

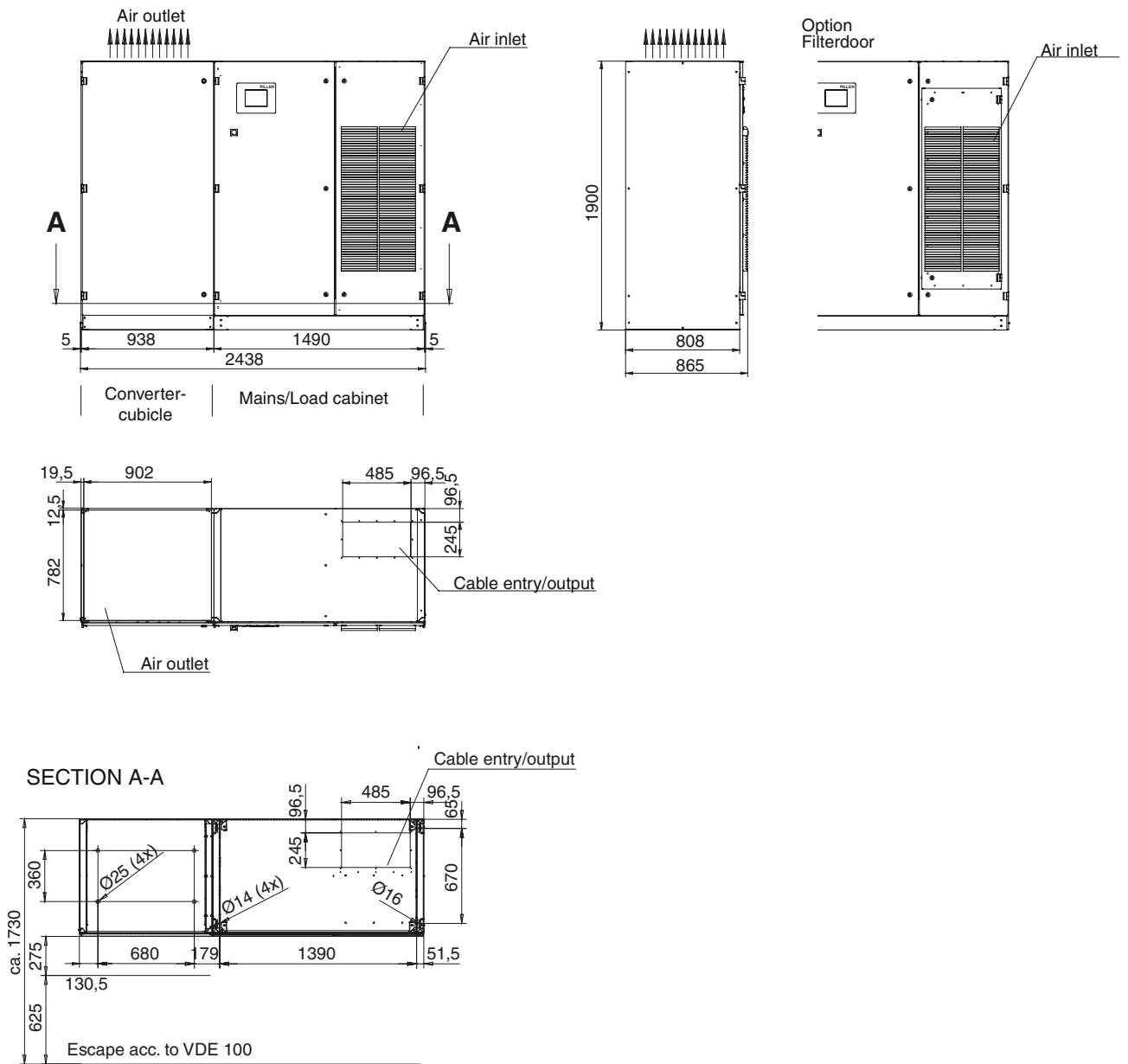
⁴ MTBF = Mean Time Between Failures

⁵ MTTR = Mean Time To Repair

⁶ For rated load and $\cos \varphi = 1$. Data vary for other operating modes.

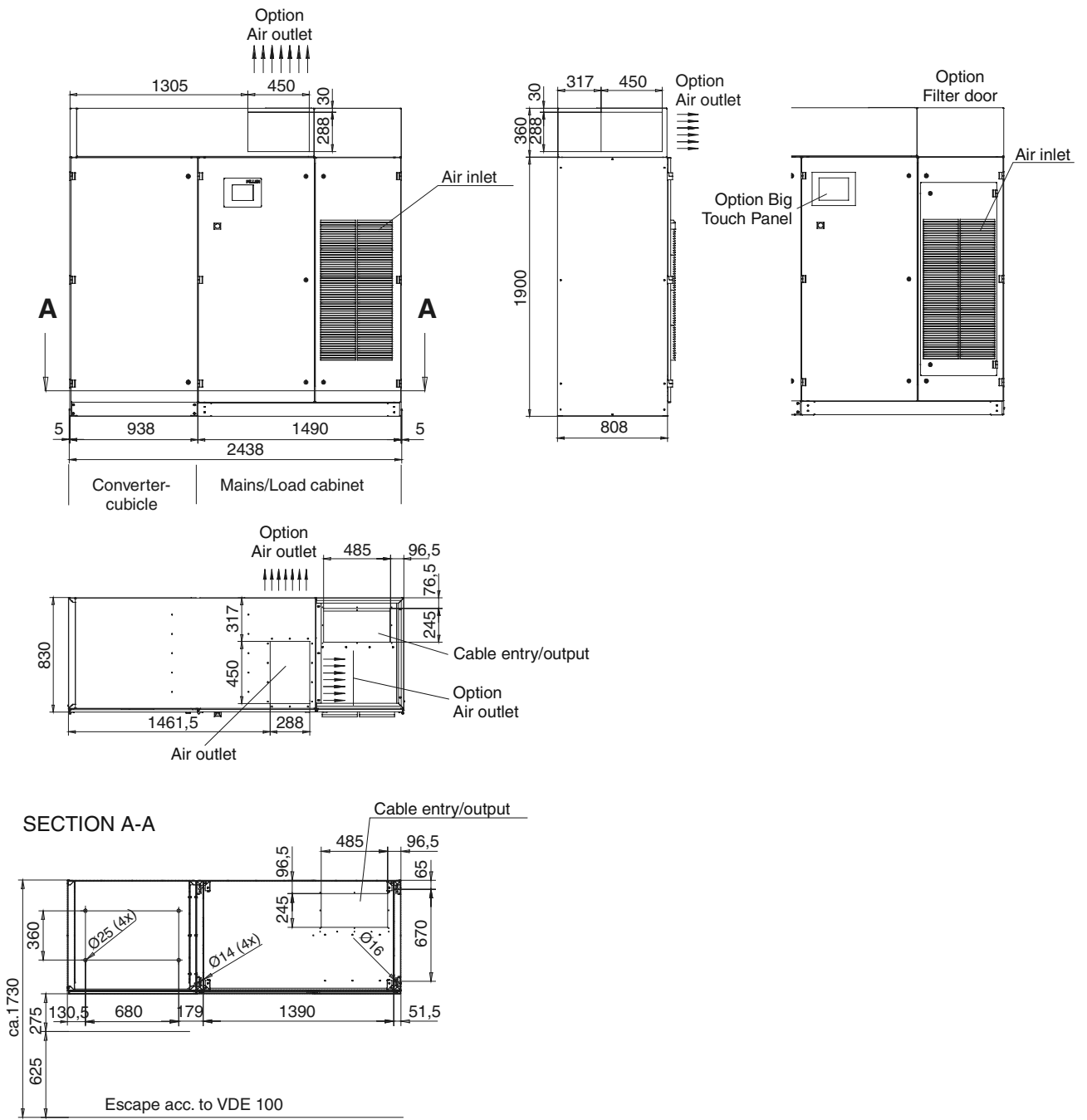
DIMENSIONS AND SPACE REQUIREMENTS

1. UNIBLOCK UBSF 180 – UB-SF 250



Dimensions are in mm

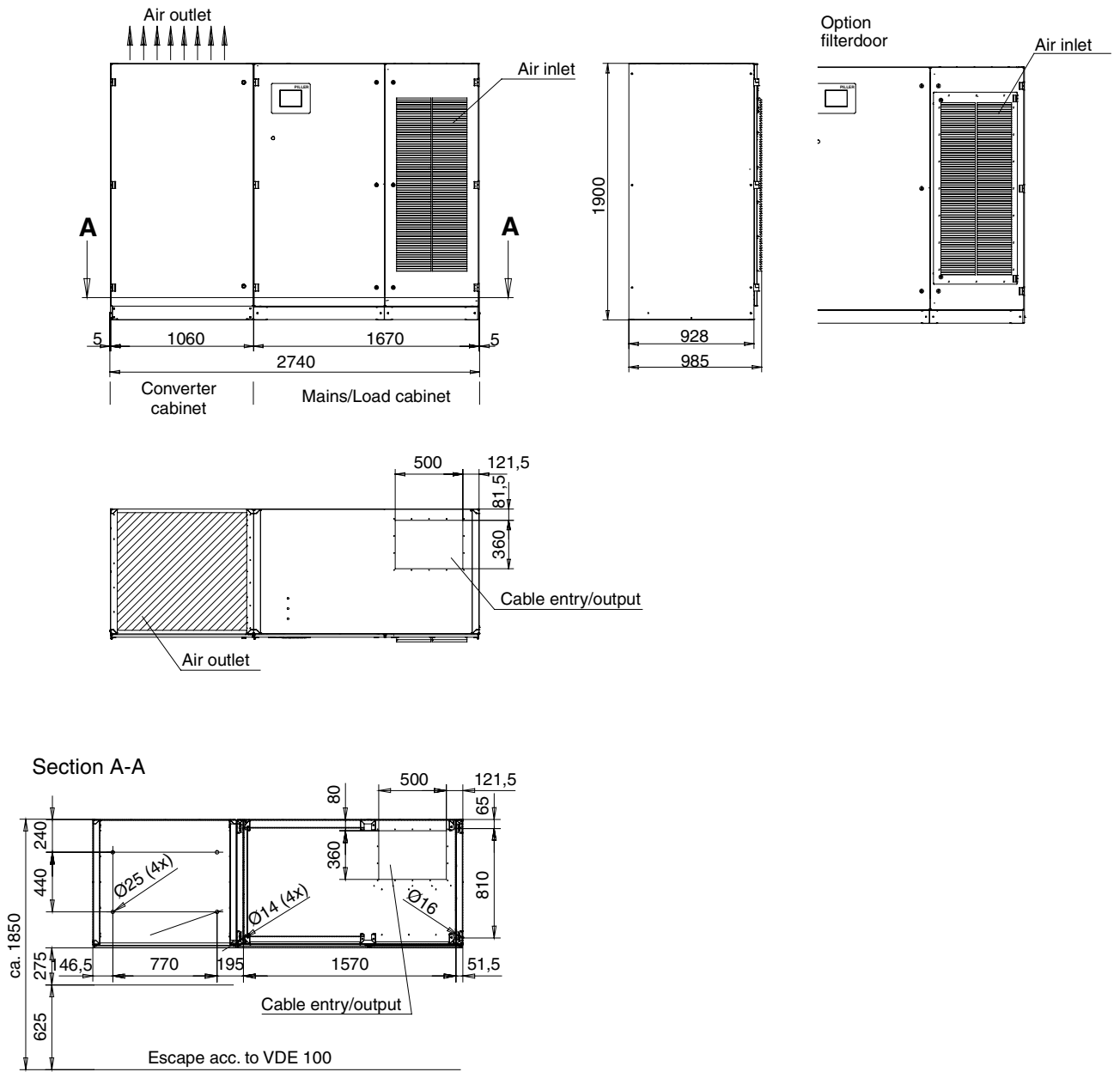
Fig. 1 Dimensions UB-SF 180 – UB-SF 250



Dimensions are in mm

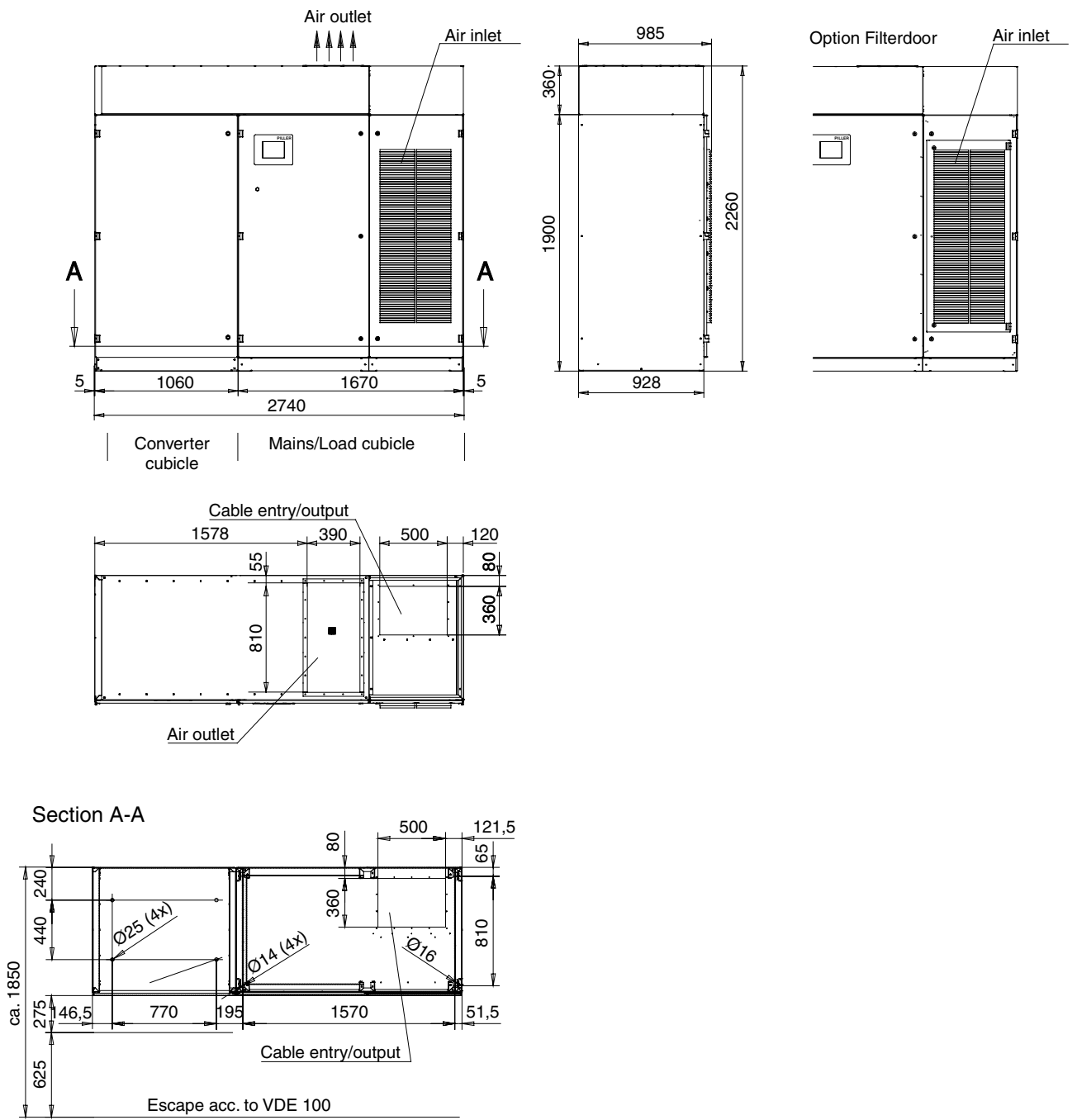
Fig. 2 Dimensions UBSF 180 – UBSF 250 with silencer

2. UNIBLOCK UBSF 500 – UB-SF 625



Dimensions are in mm

Fig. 3 Dimensions UB-SF 500 – UB-SF 625



Dimensions are in mm

Fig. 4 Dimensions UB-SF 500 – UB-SF 625 with silencer

3. UNIBLOCK UB-SF 1000

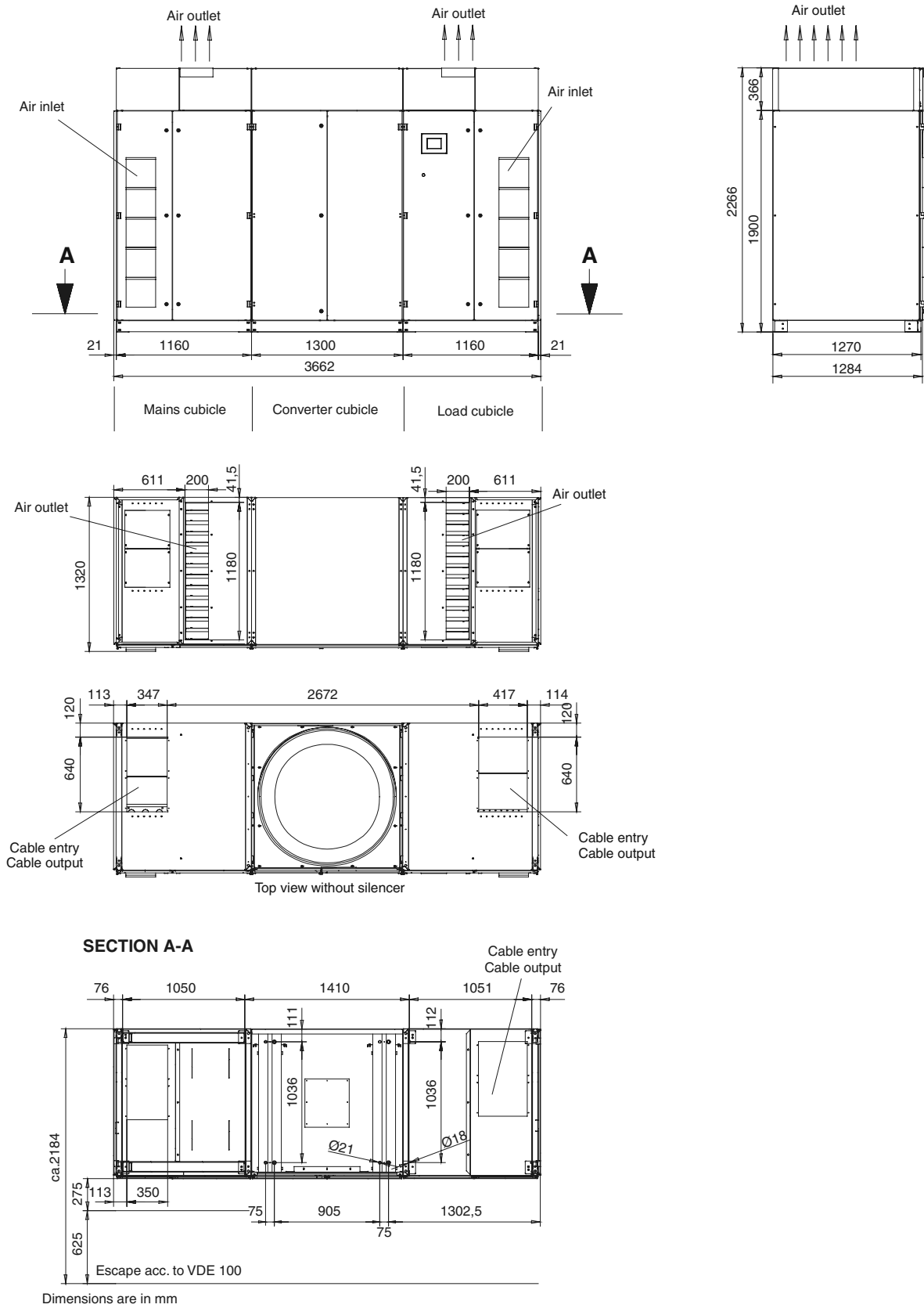
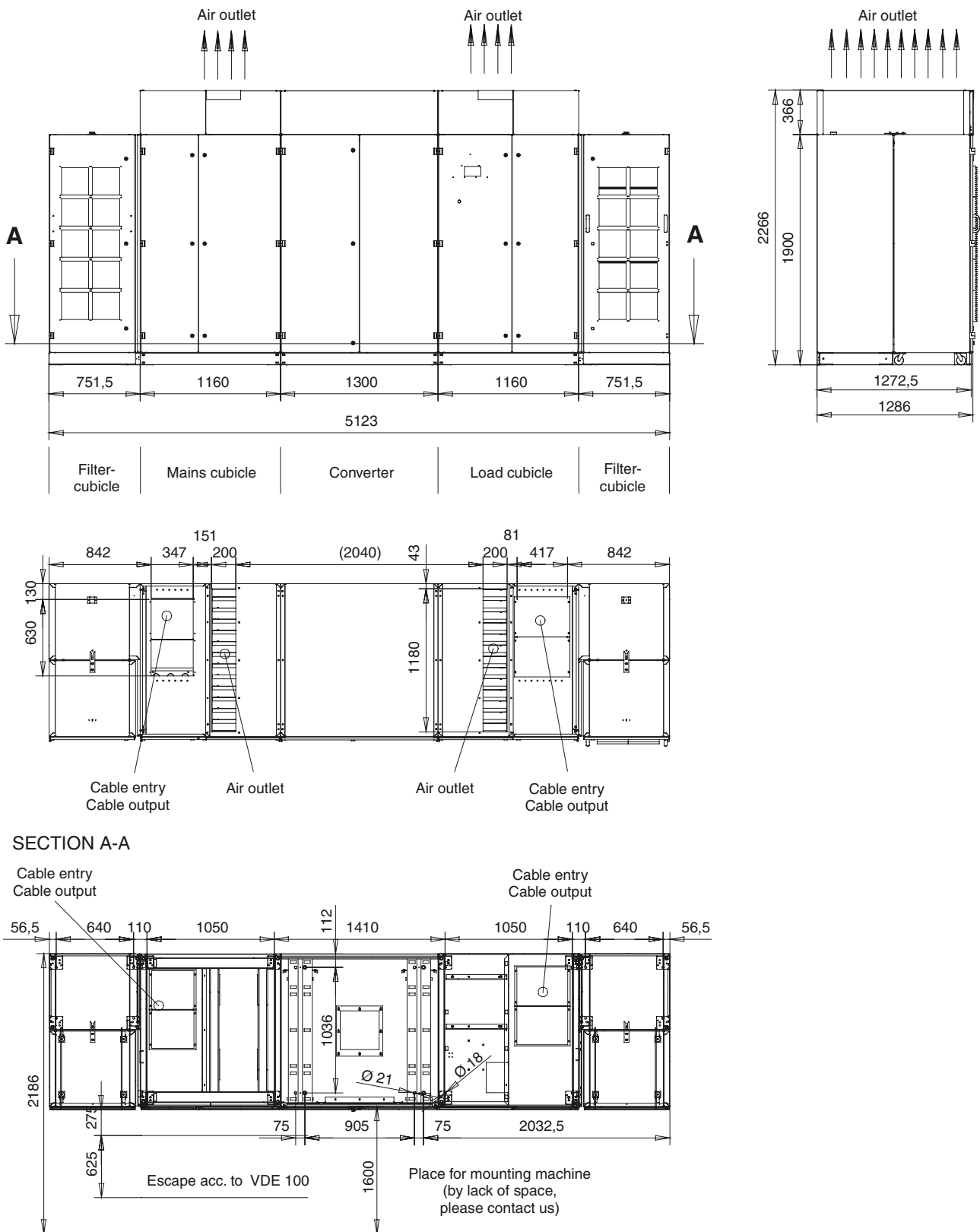


Fig. 5 Dimensions UB-SF 1000

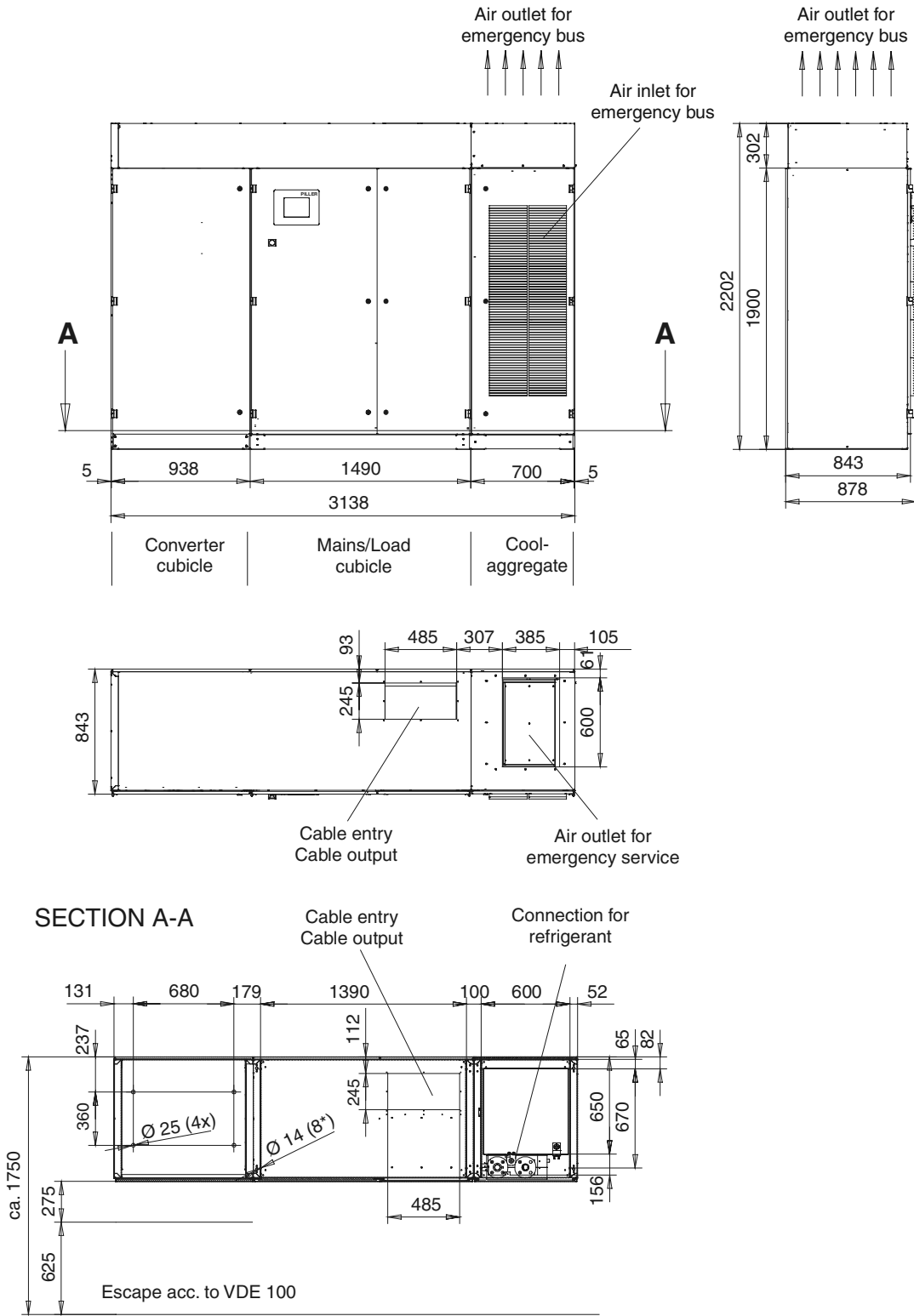


Dimensions are in mm

Fig. 6 Dimensions UB-SF 1000 with Filter cubicle

Dimensions watercooling optional

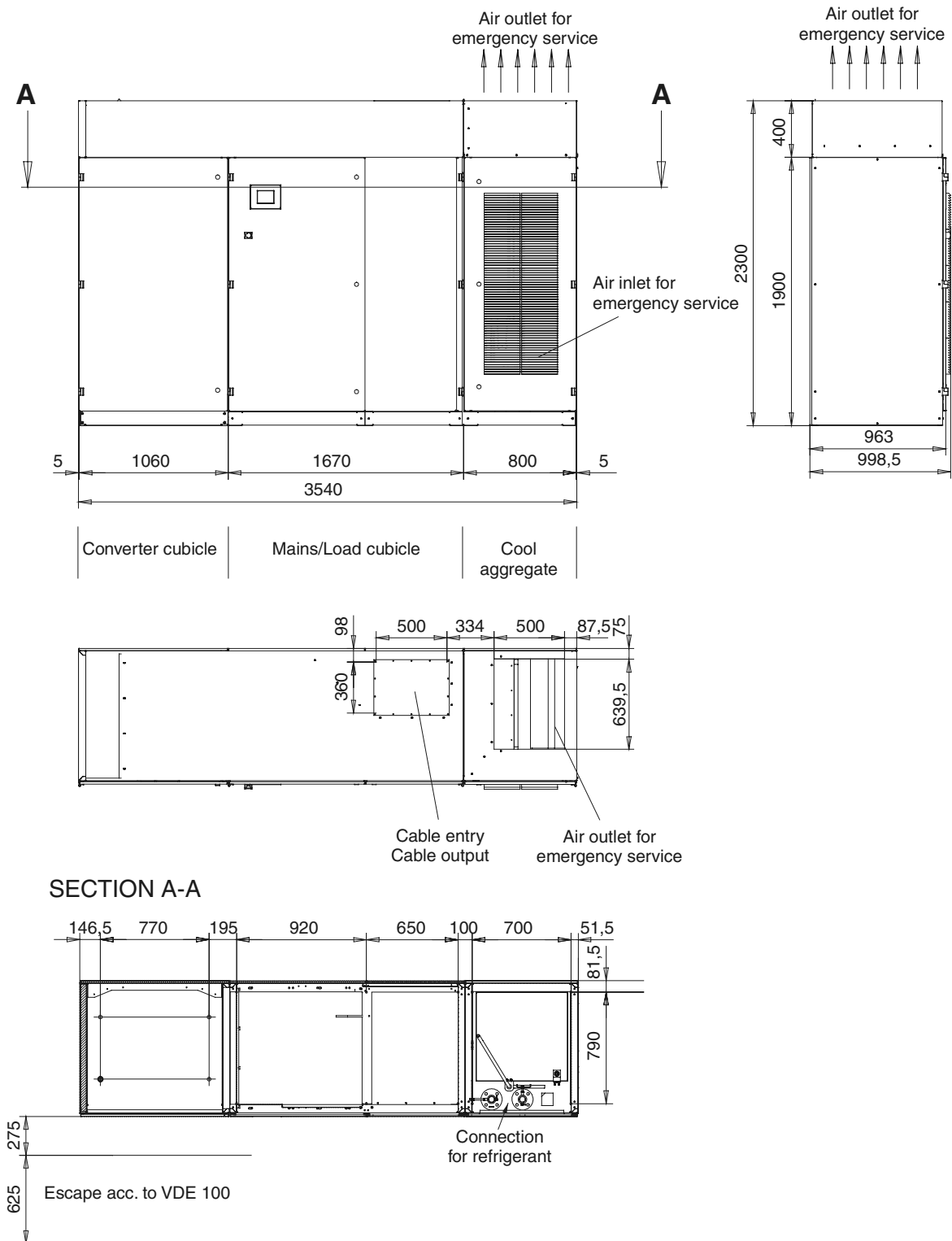
1. UNIBLOCK UB-SF 180 – UB-SF 250



Dimensions are in mm

Fig. 7 Dimensions UB-SF 180 – UB-SF 250 with water cooling

2. UNIBLOCK UB-SF 500 – UB-SF 625



Dimensions are in mm

Fig. 8 Dimensions UB-SF 500 – UB-SF 625 with water cooling

3. UNIBLOCK UB-SF 1000

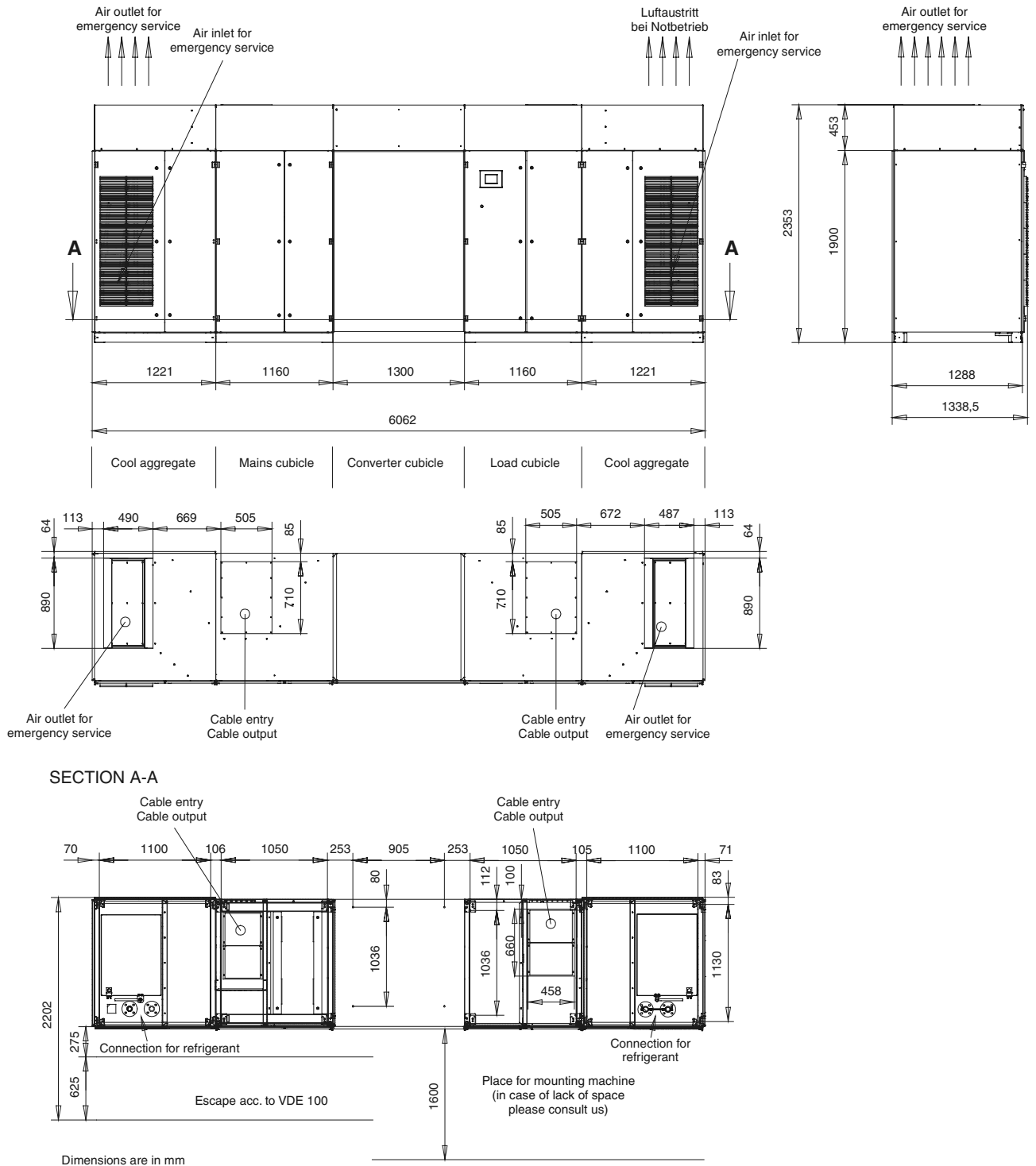


Fig. 9 Dimensions UB-SF 1000 with water cooling

Floor loading capacity

The weights of the units require a minimum floor loading capacity. However, since these weights do not act upon the entire support surface but at points on the support surface, these support points must have adequate load bearing capacity. The individual weights can be obtained from the tables. A base is available as optional equipment.

Type	Mains/Load cabinet ¹ kg	MG-set kg	Converter cabinet kg	Silencer kg	Complete system kg	Cool aggregate kg	Hood kg	Filter cabinet kg
UBSF 180	1390	2025	210	110	3735	400	84	-
UBSF 250	1390	2100	210	110	3810	400	84	-
UBSF 500	2270	3740	210	120	6340	420	116	-
UBSF 625	2270	3740	210	120	6340	420	116	-
UBSF 1000	2375+1600	7600	210	255	12040	2 x 500	230	2 x 285

NOTE For the water cooling option the weights of the hood and the cooling aggregate should be added to the respective system. For the filter cabinet option the weights shown in the last table added to the respective system.

In the case of the mains/load cabinets and the cooling cabinets, the weights of the individual system components act on the feet and in the case of the converter cabinet on the floor rails. For all systems the compressive loads per unit area under the support points are shown in the table below.

Type		compressive loads per unit area per feet res. floor rails kg/cm ²	Number of feet / floor rails
UBSF 180 - UBSF 250	Mains/Load cabinet	3.73	4
	Converter cabinet	1.77	2
	Cool aggregate	1	4
UBSF 500	Mains/Load cabinet	4.2	6
	Converter cabinet	1.96	2
	Cool aggregate	1.05	4
UBSF 625	Mains/Load cabinet	4.2	6
	Converter cabinet	1.96	2
	Cool aggregate	1.05	4
UBSF 1000	Mains cabinet	6.19	4
	Converter cabinet	1.89	2
	Load cabinet	4	4
	Cool aggregate	1.25	4
	Filter cabinet	0.71	4

¹ UB-SF 1000 Mains and Load cabinet are separate

The floor loading capacity is an important factor in the overall strength of the supporting surface. It specifies the ratio between the weight of the unit and the installation area and is shown in the following table for all sizes of unit.

Type	Floor loading capacity kg/cm ²
UBSF 180	0.142
UBSF 180 W	0.130
UBSF 250	0.145
UBSF 250W	0.130
UBSF 500 – 625	0.244
UBSF 500 – 625 W	0.213
UBSF 1000	0.257
UBSF 1000 Filter	0.194
UBSF 1000 W	0.169

Cable runs

Openings are provided in the roof and bottom of the AC input and load cabinets for cable entries and outlets.

NOTE The dimensions of the cable entries in the AC input and load cabinets are shown on the drawings Fig. 1 - Fig. 9.

The connecting terminals are located at the following points:

- ▼ UB-SF 180 – UB-SF 625:
Mains 1 lower and upper part at the back row left side
Outgoing feeder lower and upper part at the back row right side
- ▼ UB-SF 1000
Mains 1 in centre and bottom of AC input cabinet
Outgoing feeder in bottom of load cabinet

All unused cable entries should remain closed to prevent the ingress of foreign objects. The used openings should be sealed with suitable materials.

IMPORTANT The cable entries should be sealed on completion of the electrical installation to prevent bypass air entering the system.

Attaching the connecting cables

The cables should be connected to the brackets of the respective terminal bars with bolts, nuts and two plain washers.

IMPORTANT Please note that in aluminium-copper connections the two metals form an electrochemical element under the influence of an electrolyte (e.g. moisture), which results in the aluminium being dissolved. If an aluminium-copper bond is formed when the UNIBLOCK is connected up, suitable corrosion protection measures must be taken at the connecting point.

Bolt sizes:

- ▼ M12 x 35 property class 8.8

Bolt tightening torque:

- ▼ UB-SF 180 – UB-SF 1000: 60 Nm

All cables should be fitted with DIN 46 234 cable lugs.

IMPORTANT Please ensure that the phase of AC connections are correct since incorrect connections can cause damage to the system. (Direction of rotation of MG-set: counter clockwise, viewed from above).

NOTE If there is sufficient space alongside the set, it is recommended that the side panels of the cabinets be removed when making connections. This will make work easier.

Cable ratings

Cable sizes may be varied by local regulations.

IMPORTANT Cables have to be specified by local contractor.

For reasons of symmetry, if possible, and where permitted, cable type NYCWY 3-core (sleeve with full cross-section) and a separate protective conductor should be used at the output.

IMPORTANT The cable must have an upper temperature limit of min. 75° C.

Overview of electrical connections

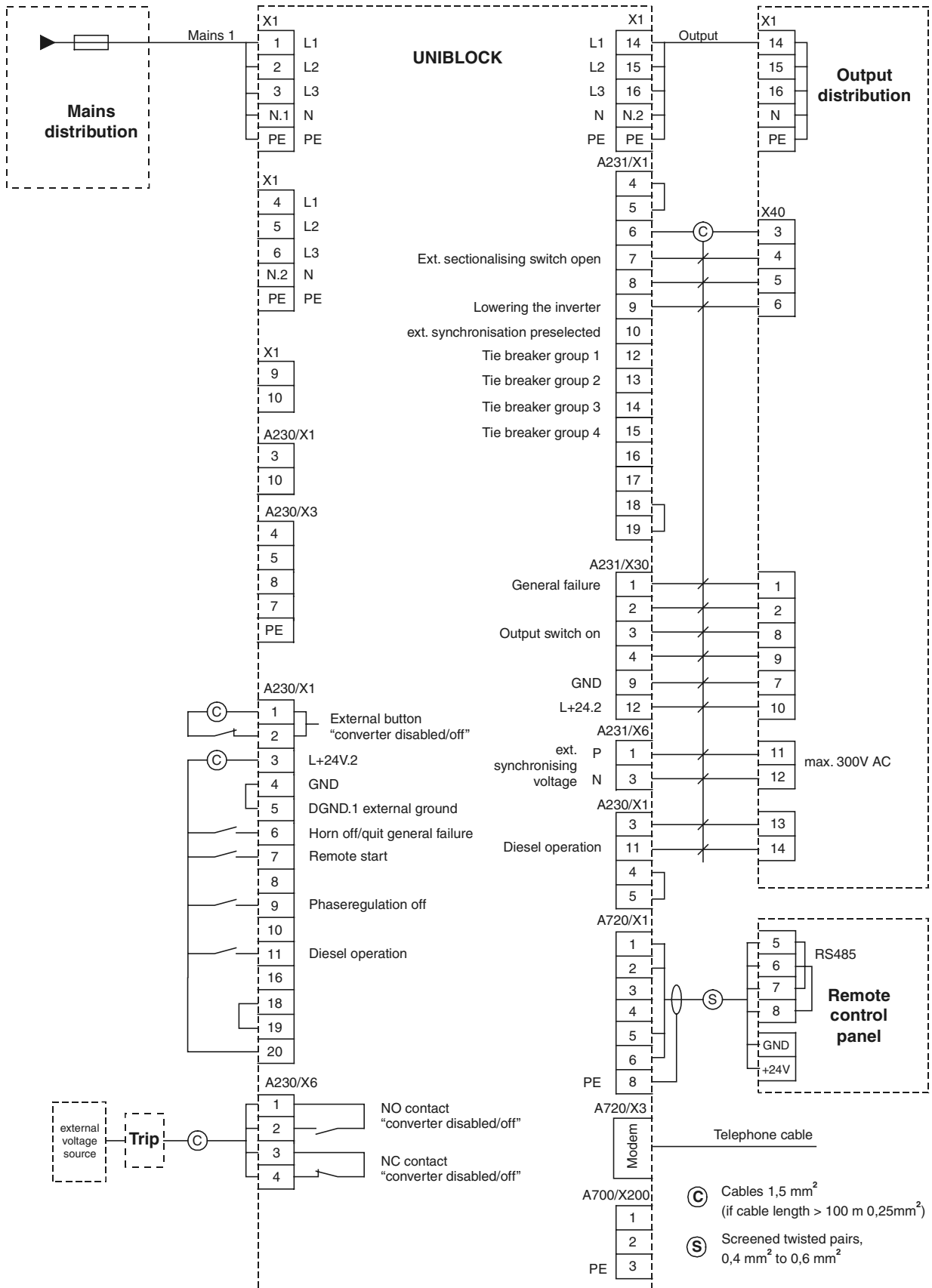


Fig. 10 Overview of electrical connections