



BASIC FEATURES

- Six sizes with airflow up to 10 000 m³/h
- Sophisticated integrated regulations and intuitive control by touch controller
- Energy-efficient EC fans with low SFP and silent operation
- Integrated electric/water after-heater, modular C/O or DX coils concept
- Low installation height suitable for suspended ceilings
- Simple maintenance
- Easy installation

The ALFA EC is a highly effective ventilation unit for ventilating and heating rooms with air with commercial use in **offices, shops, coffee bars, restaurants and sports facilities.**

The unit shall be installed indoor in a dry area with ambient temperatures ranging from +5 °C up to +35 °C and relative humidity of up to 80 %. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities with a temperature ranging from -30 °C up to +40 °C and relative humidity of up to 90 %. The complete unit installed in a duct has an IP rating of 20. **The ventilation unit project shall always be developed by the HVAC designer.**

The housing of the unit is made of sandwich panels. The control system allows controlling the air capacity of the unit in five levels. In addition, it allows controlling the air heating, adjusting the flaps, and identification of failure conditions.

The ALFA units are supplied in the following versions

Model of unit		Unit size					
		50	100	200	300	500	800
	S0	✓	✓	✓	✓	✓	✓
	E0	✗	✓	✗	✗	✗	✗
	E1	✓	✓	✓	✓	✗	✗
	E2	✓	✓	✓	✓	✗	✗
	E3	✗	✓	✓	✓	✗	✗
	V2	✓	✓	✓	✓	✓	✓
	C*	✓	✓	✓	✓	✓	✓
	D*	✓	✓	✓	✓	✓	✓

- S0 - without heater
- E0 - electric heater with ΔT 10°K
- E1 - electric heater with ΔT 20°K
- E2 - electric heater with ΔT 30°K
- E3 - electric heater with ΔT 40°K
- V2 - hot water heater 2 row
- C - change over coil (external module)
- D - direct evaporator (external module)

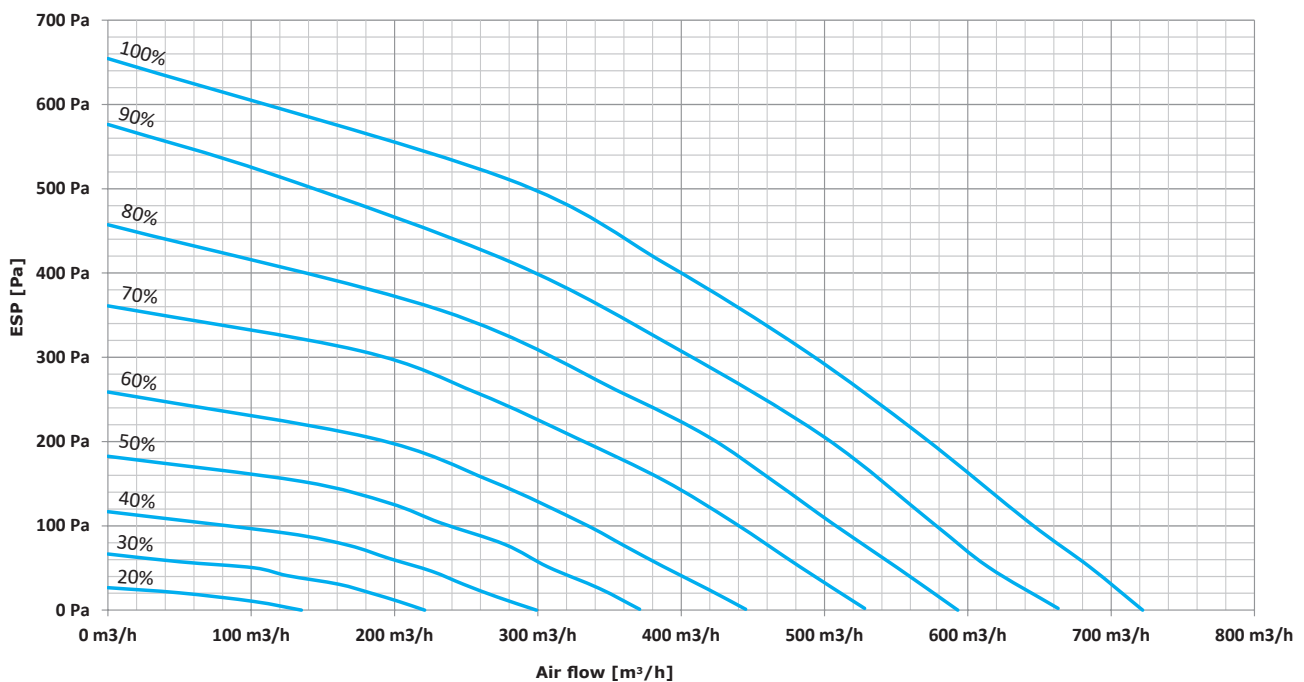


PRIMARY PARAMETERS

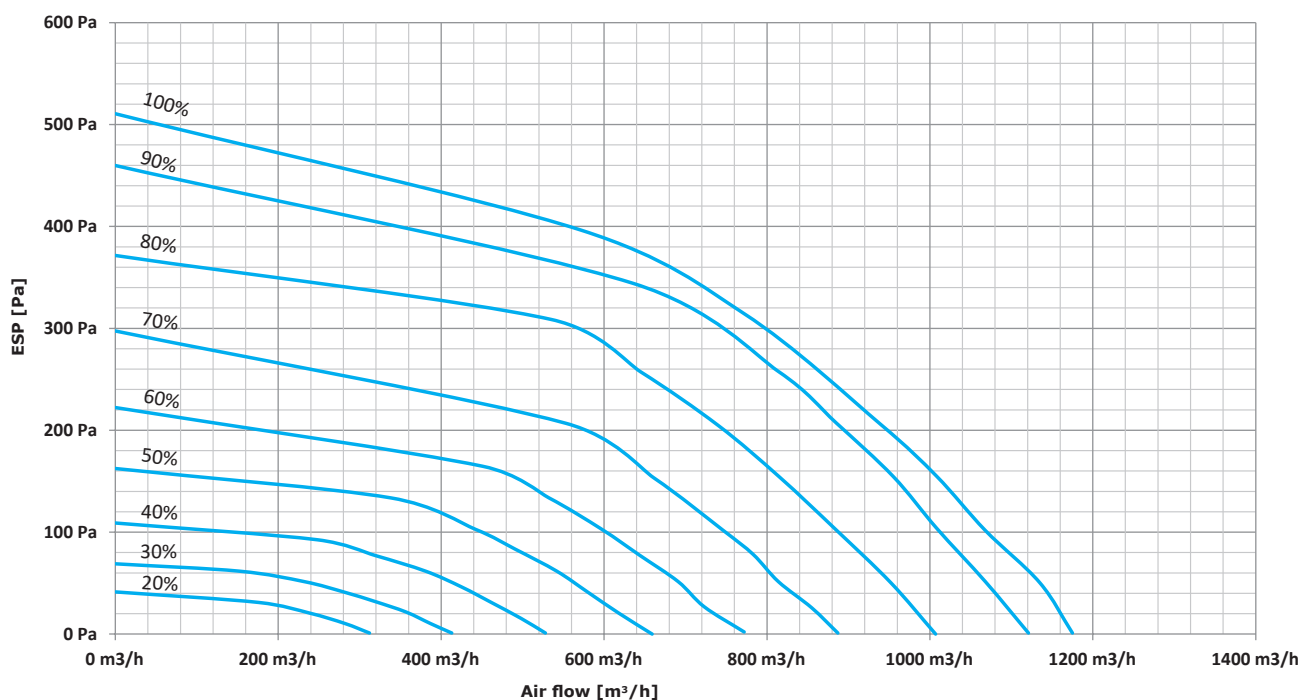
Performance characteristics

With filter class Coarse 90%

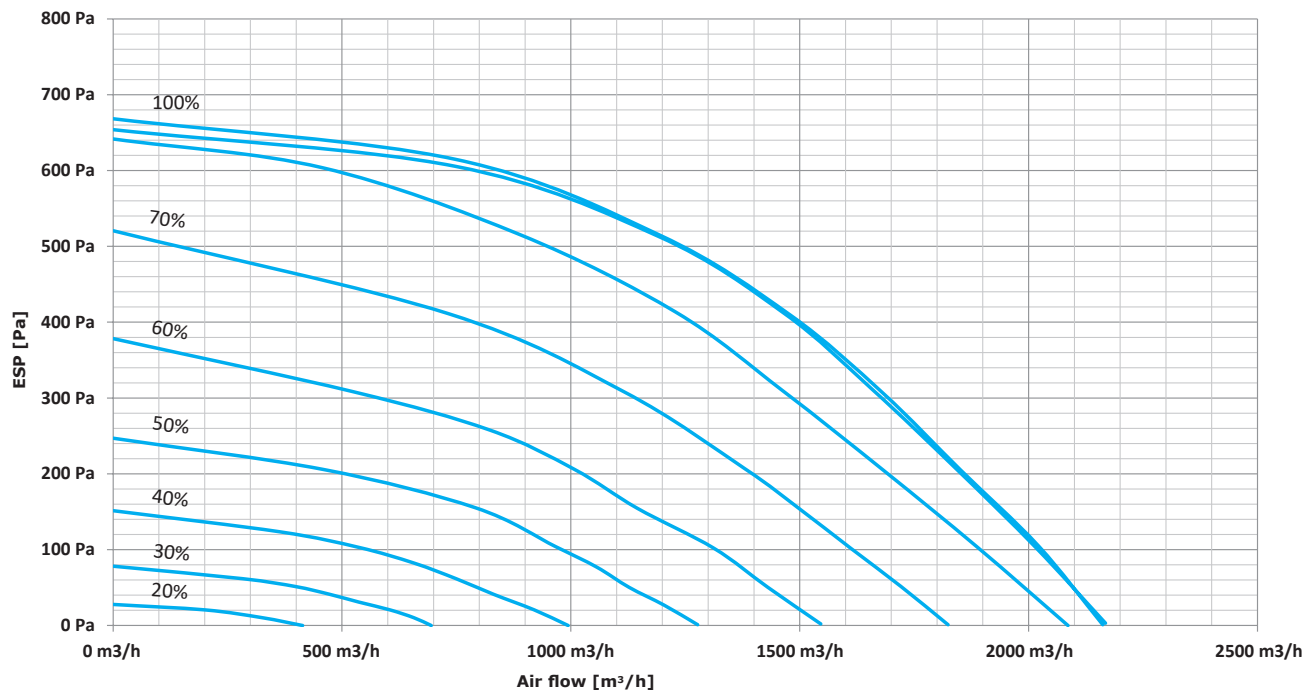
AHAL4-050



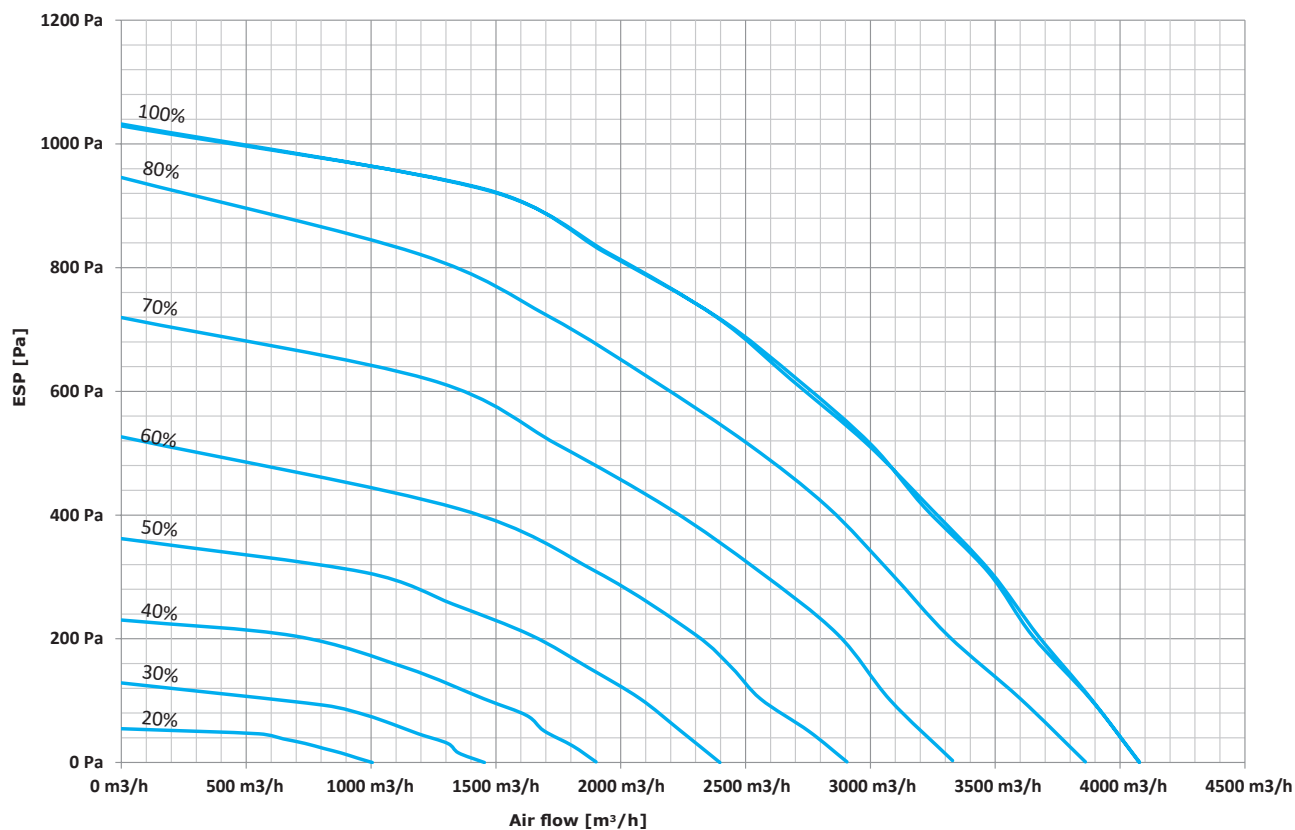
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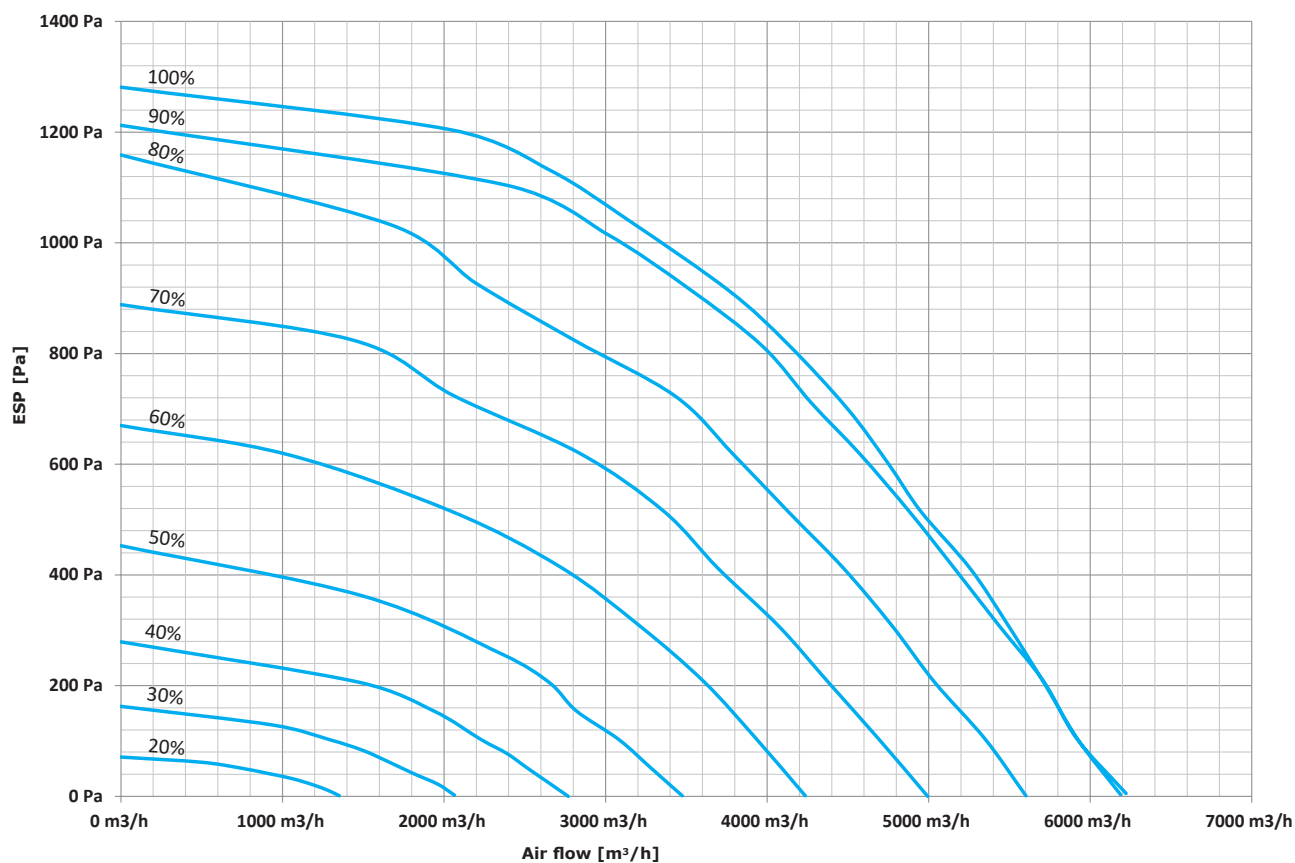
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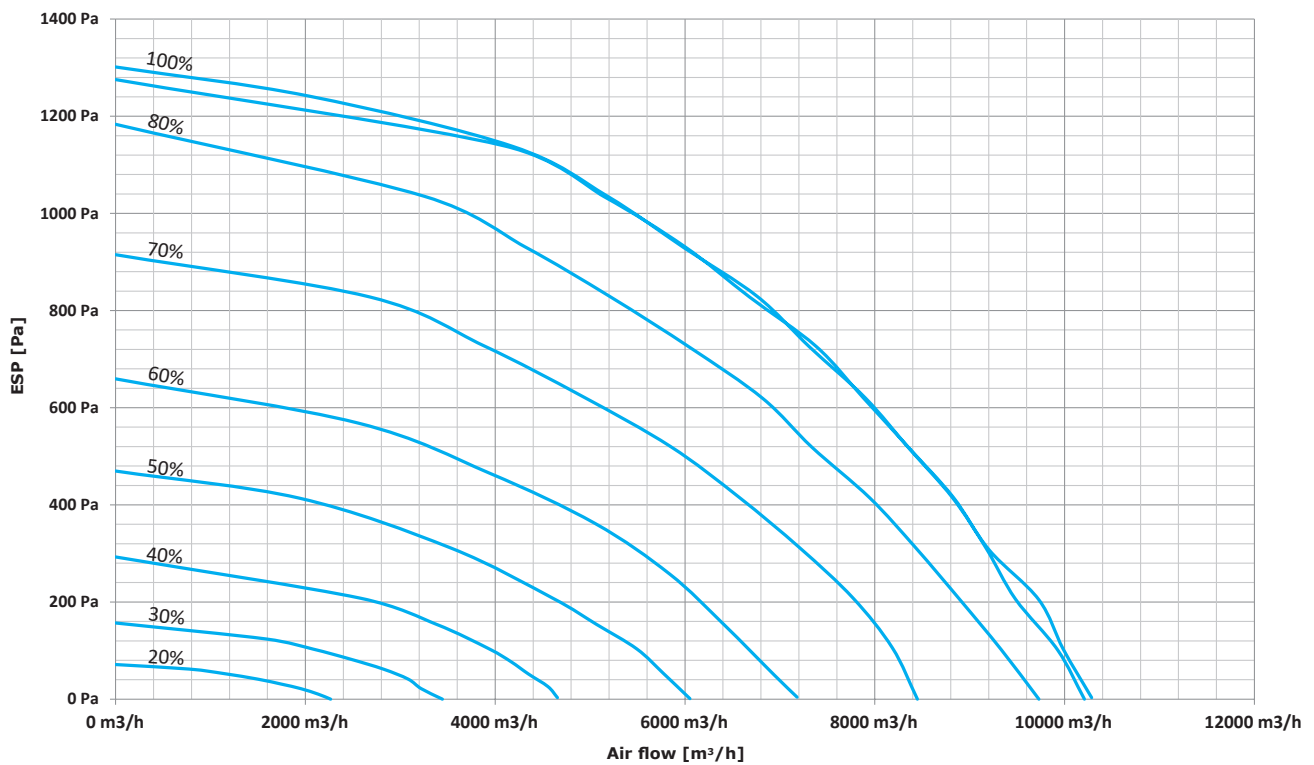
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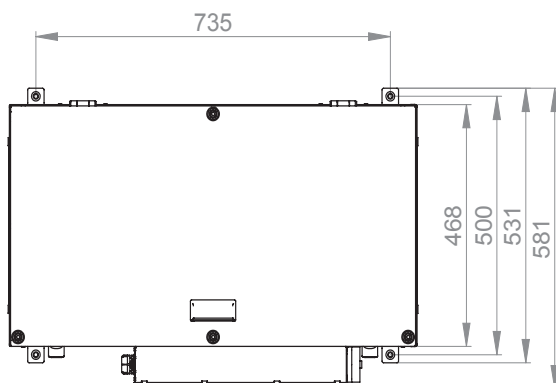
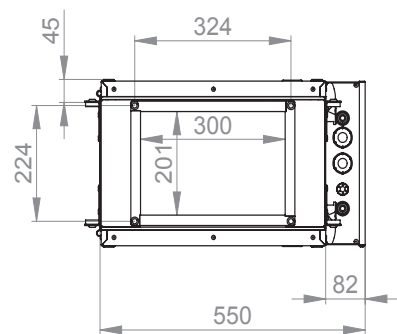
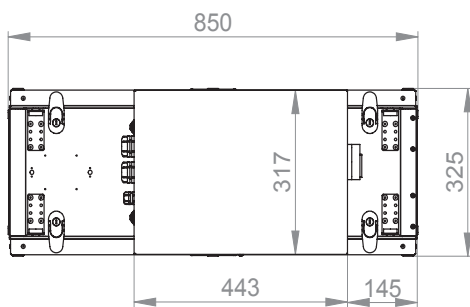
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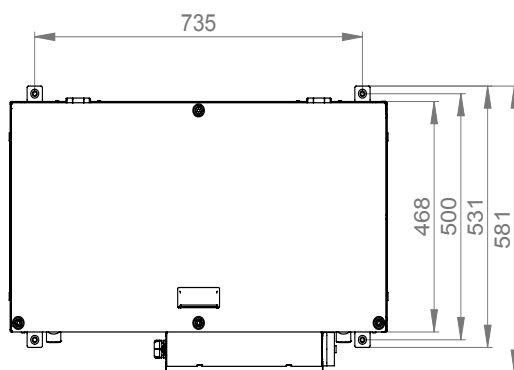
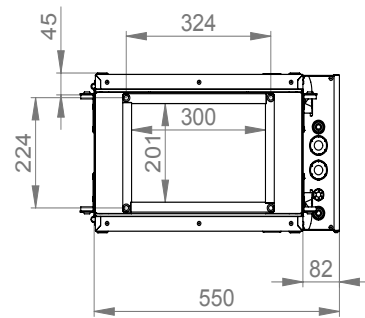
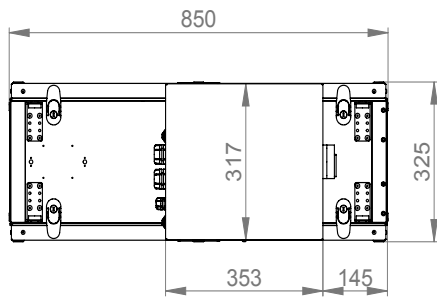
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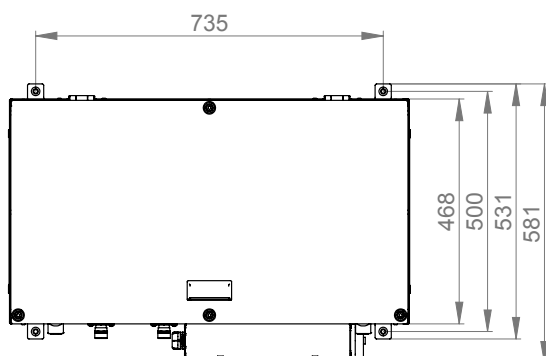
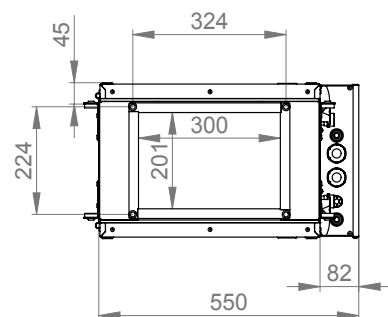
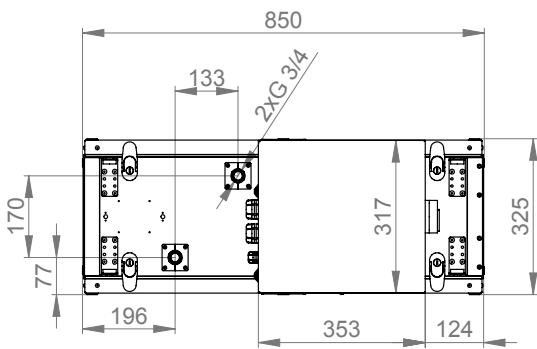
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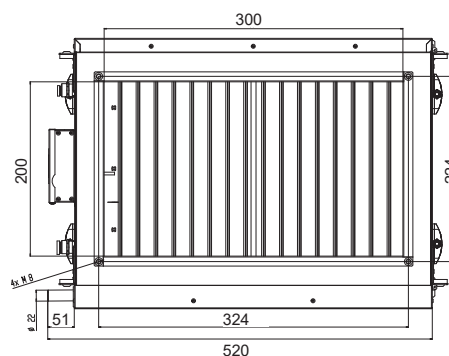
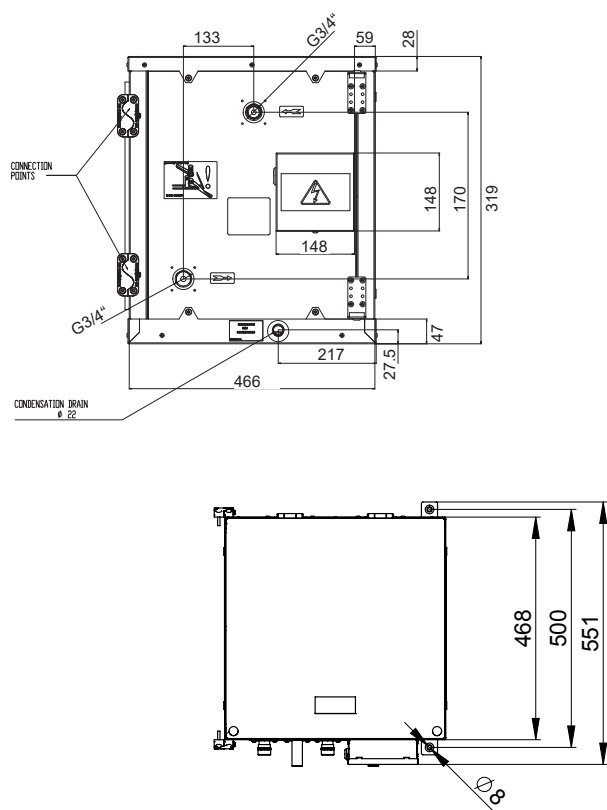
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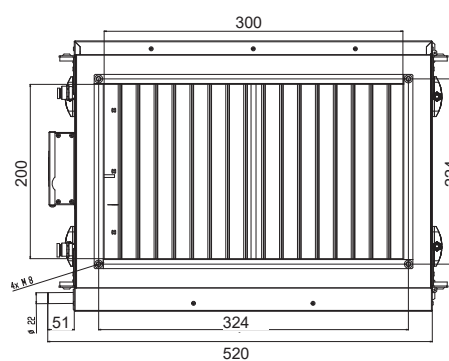
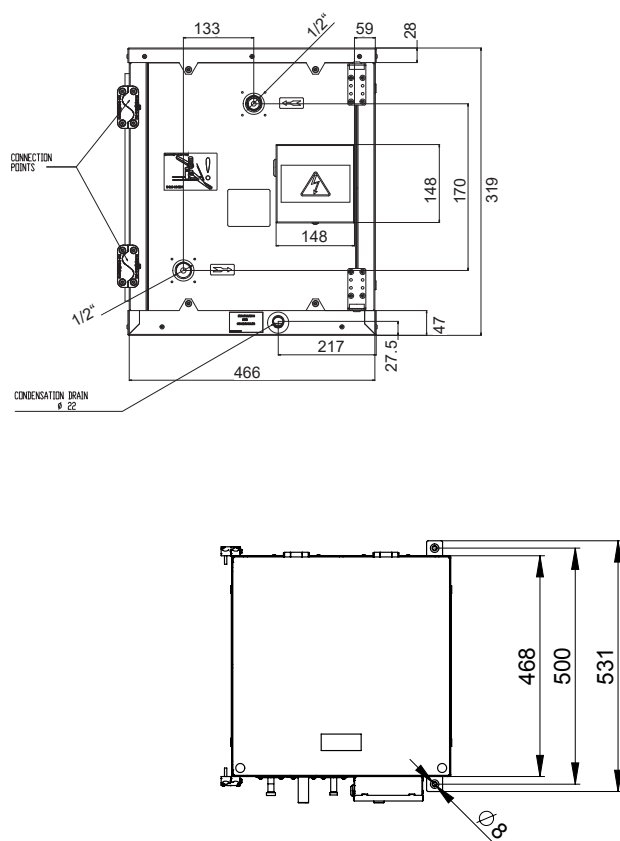
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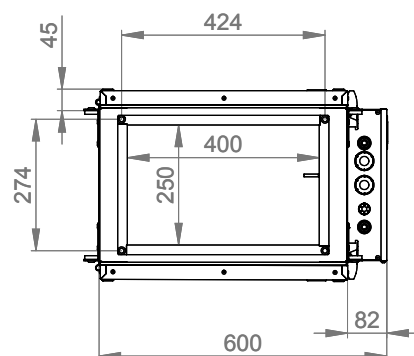
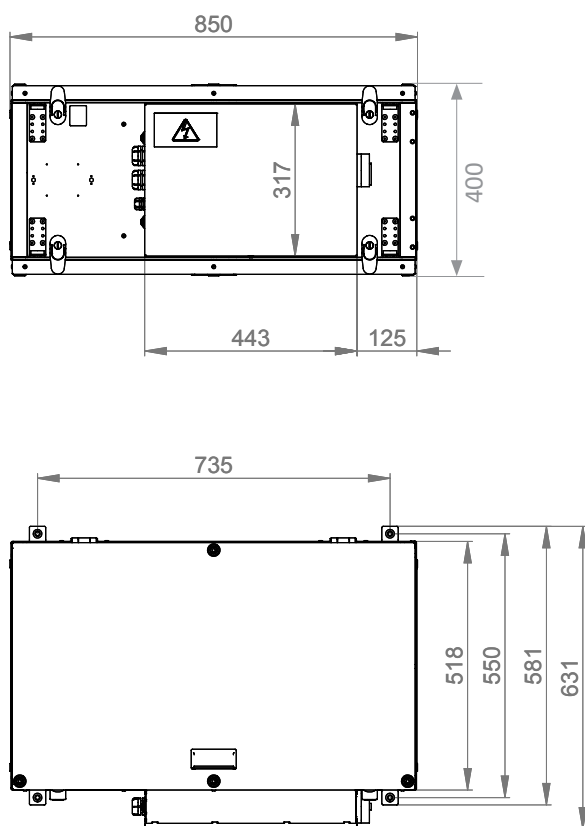
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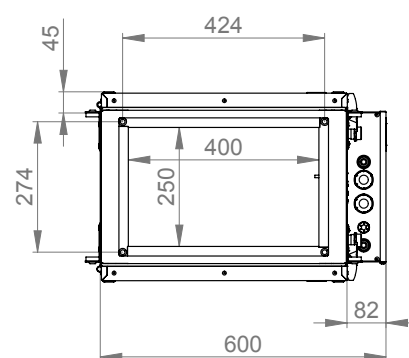
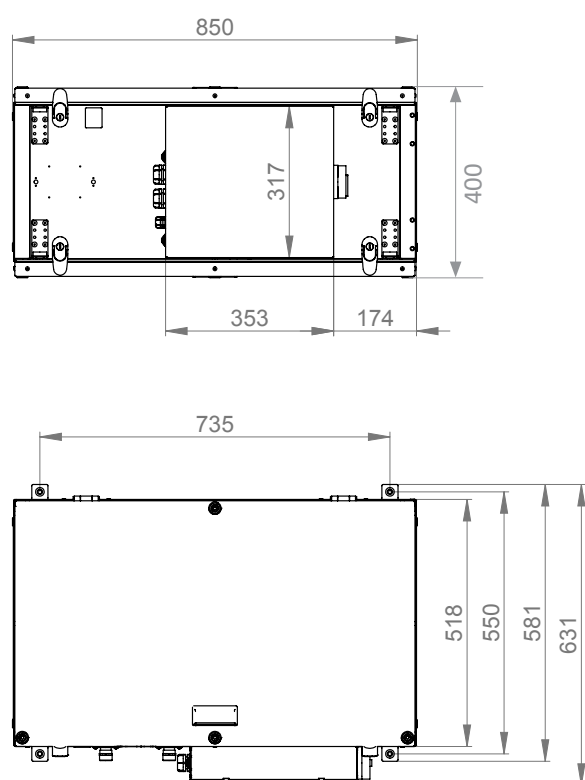
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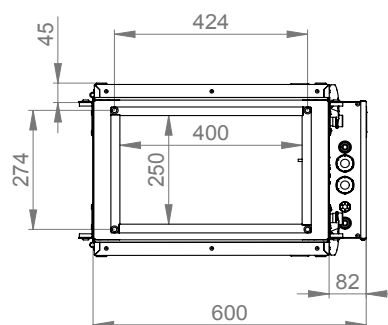
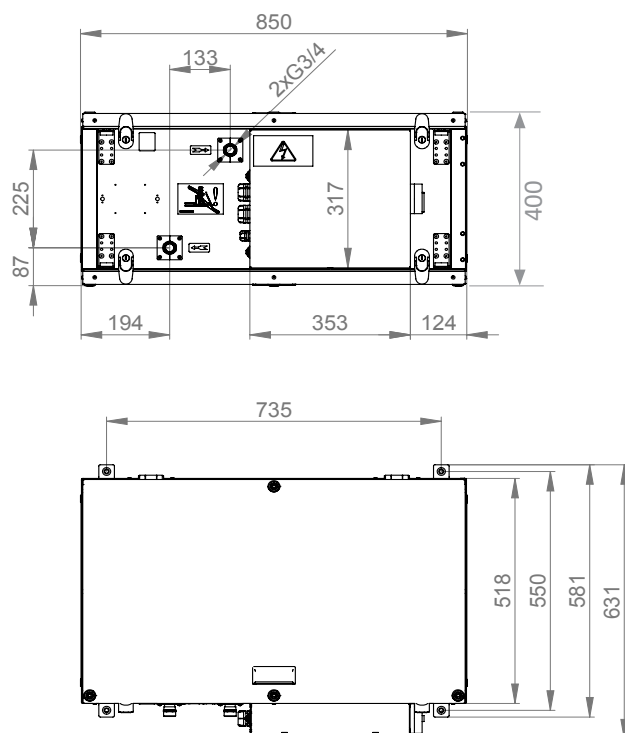
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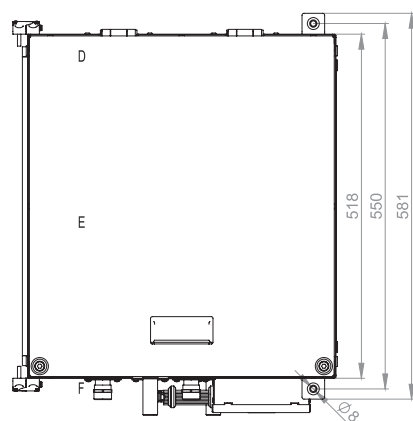
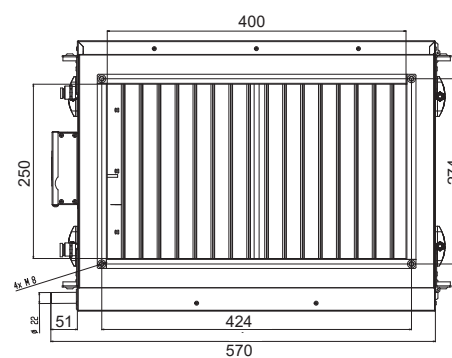
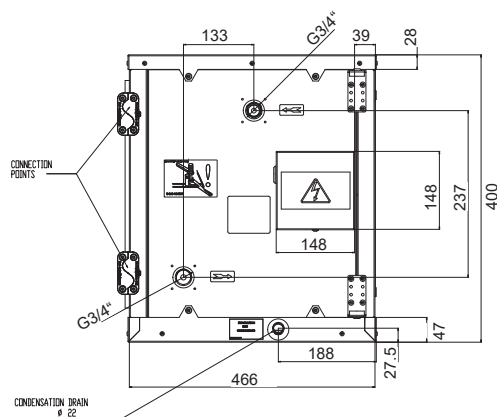
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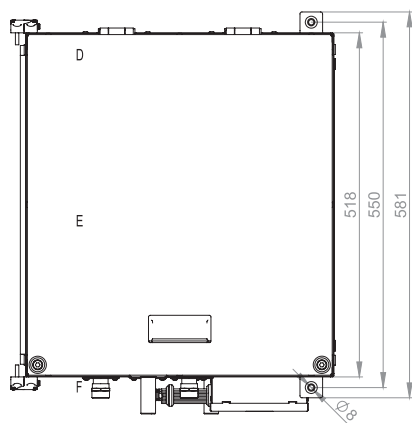
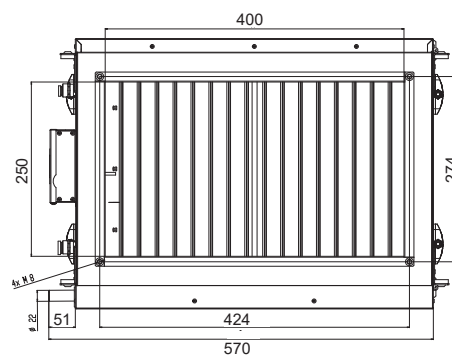
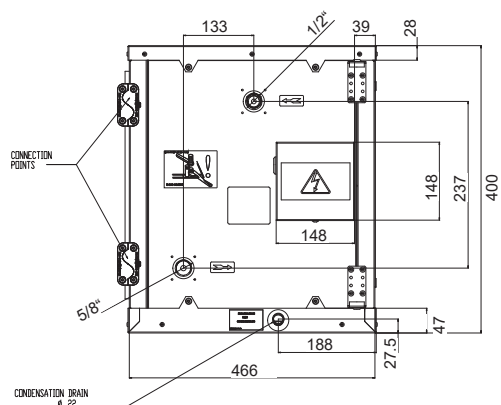
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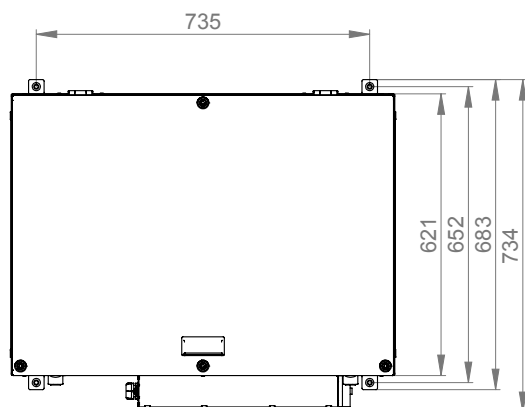
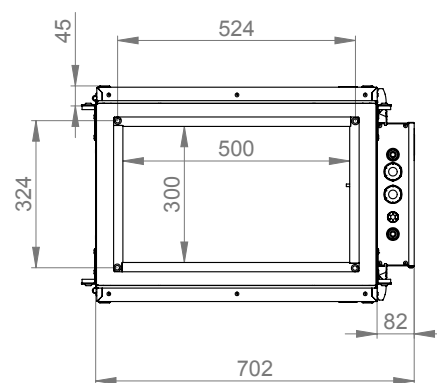
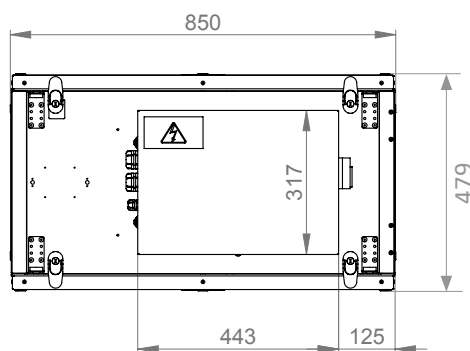
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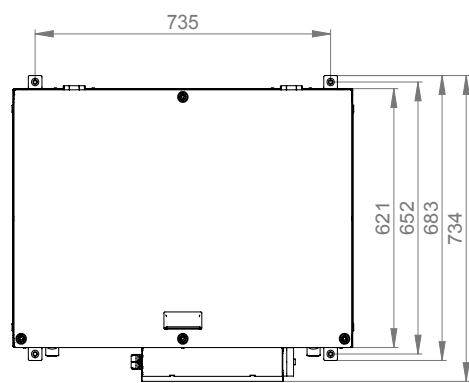
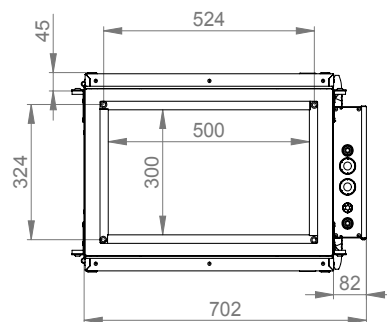
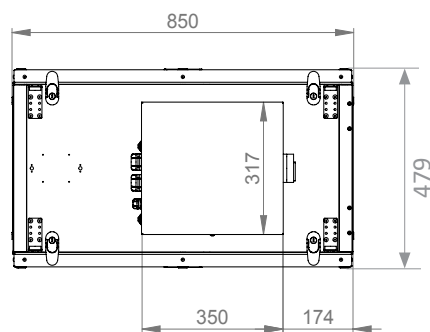
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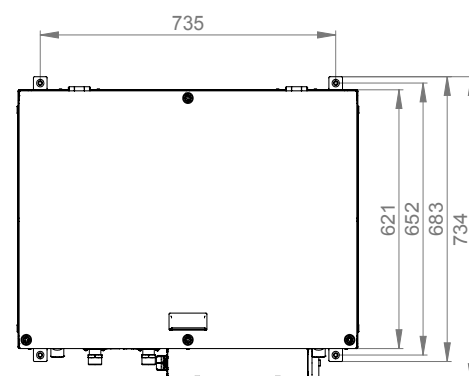
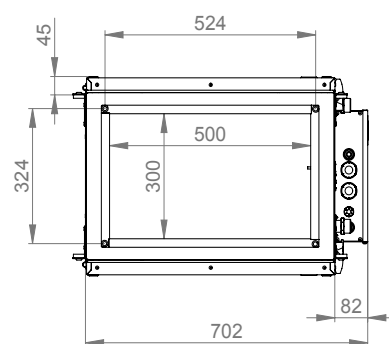
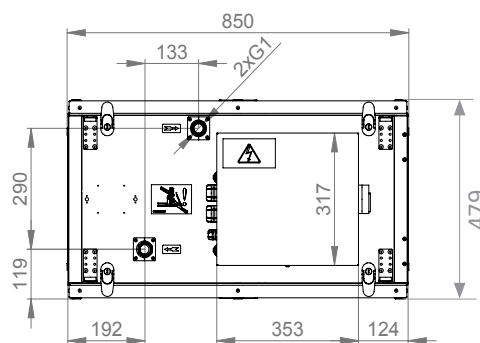
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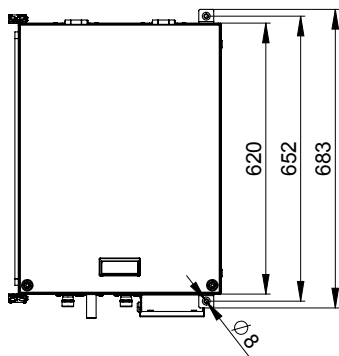
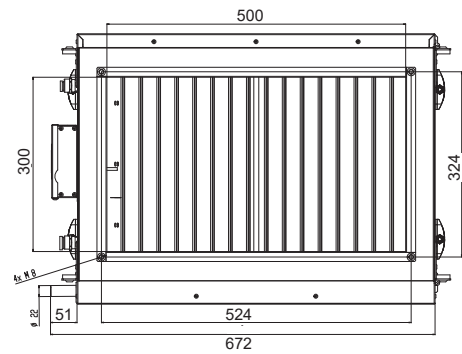
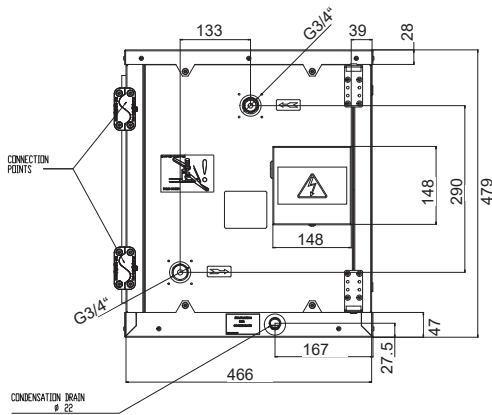
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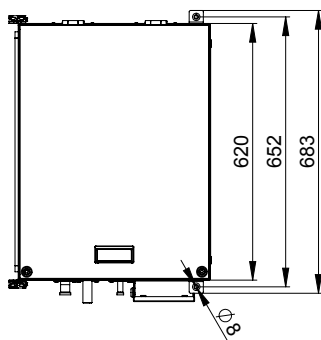
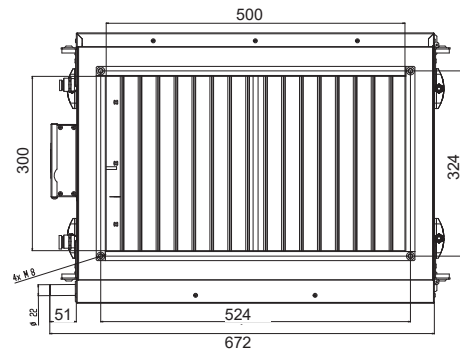
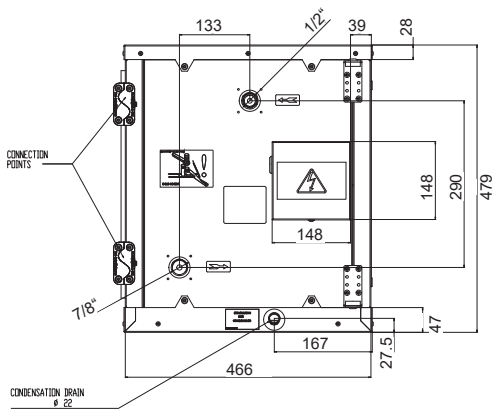
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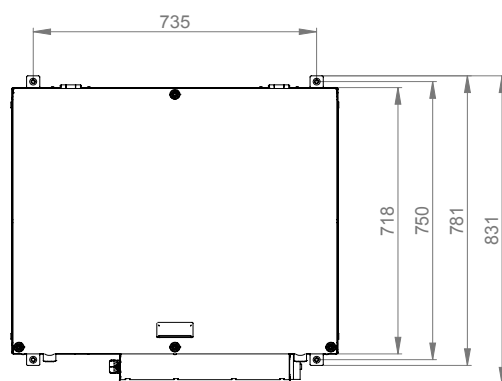
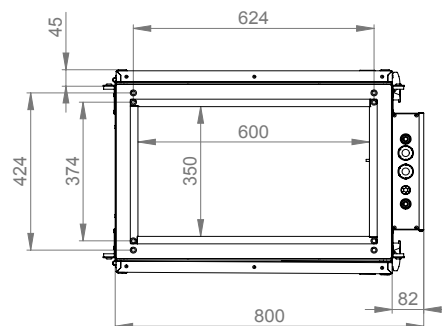
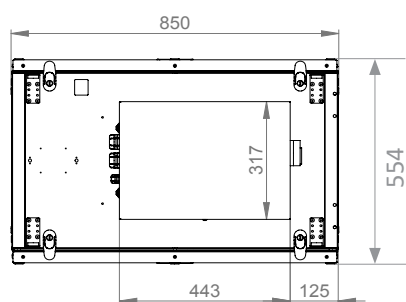
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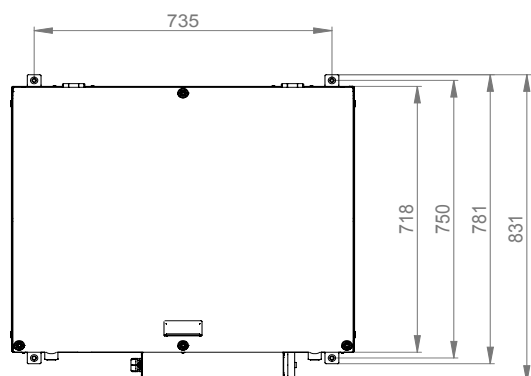
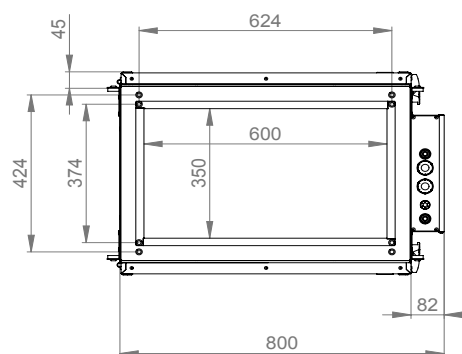
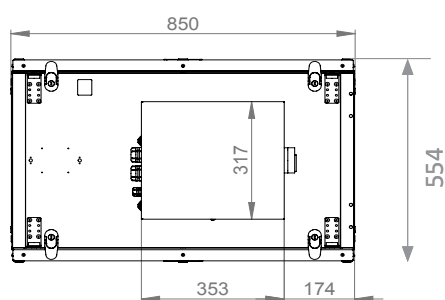
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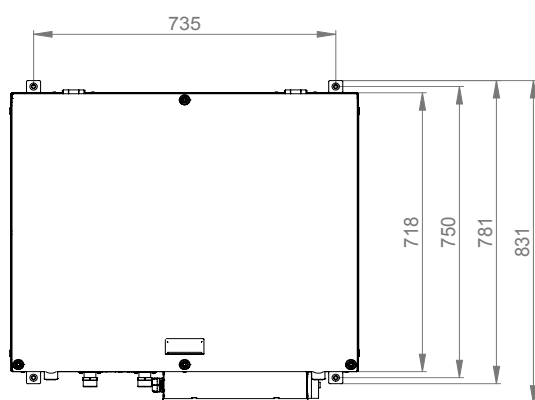
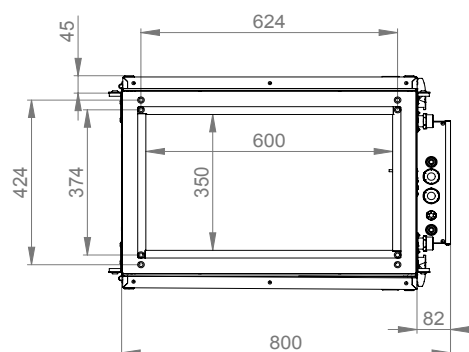
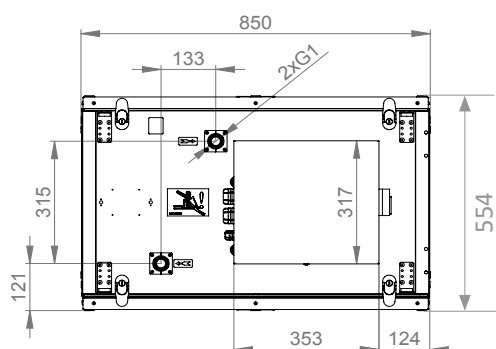
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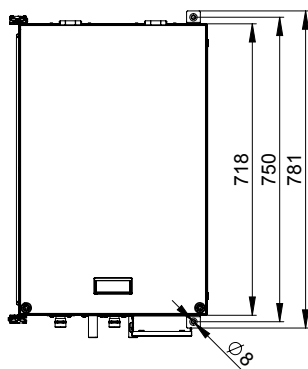
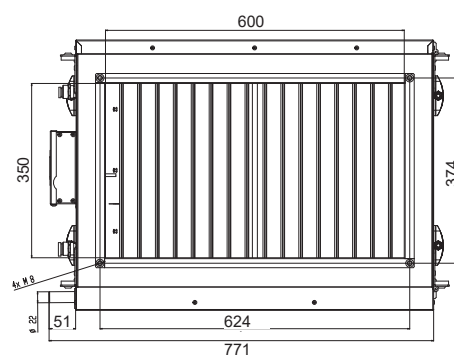
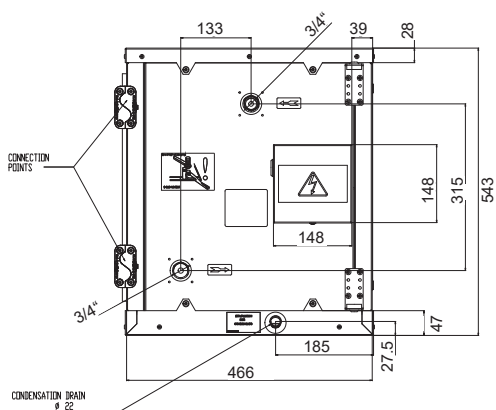
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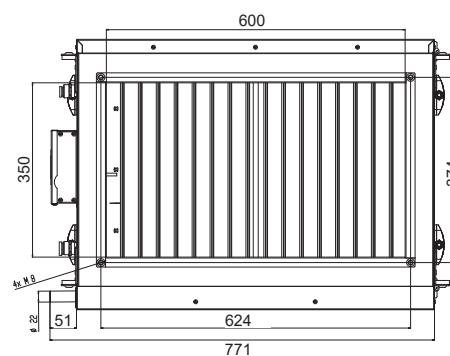
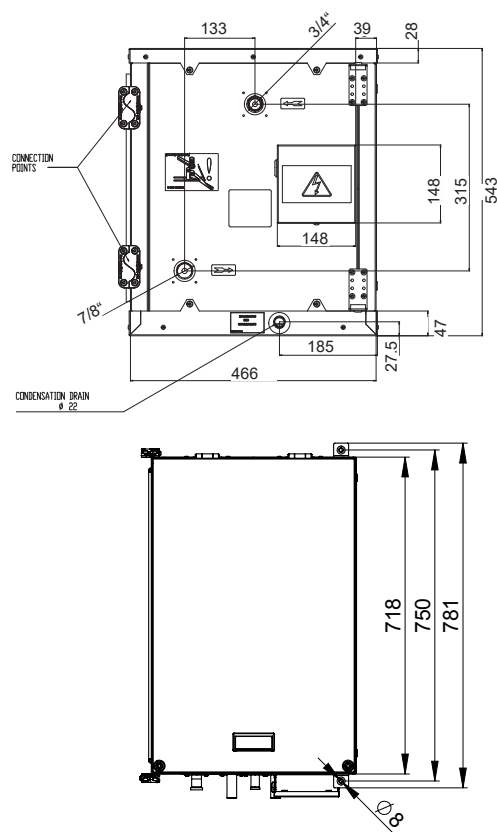
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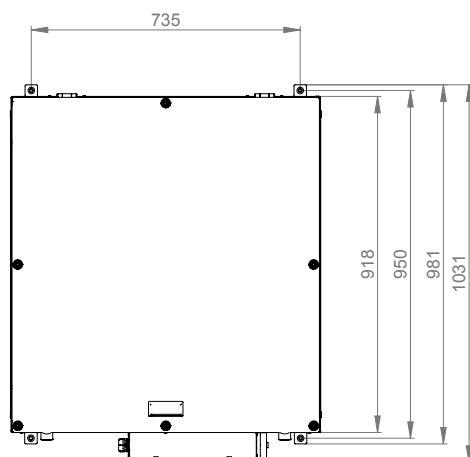
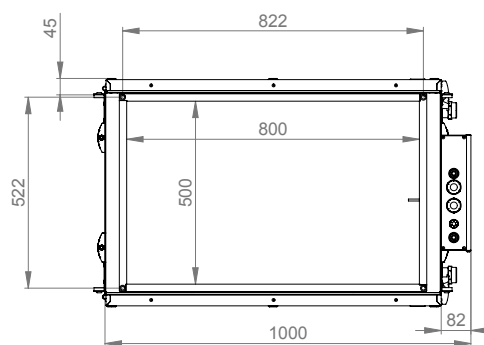
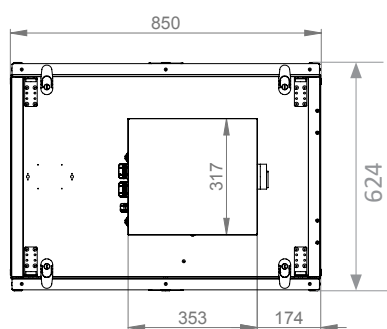
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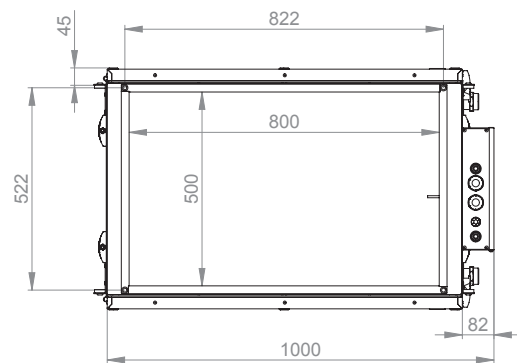
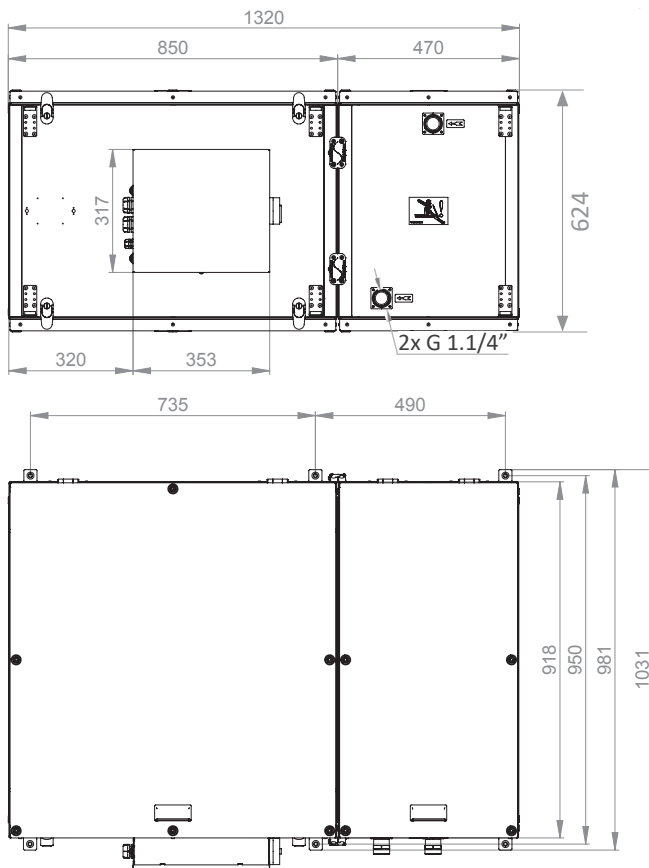
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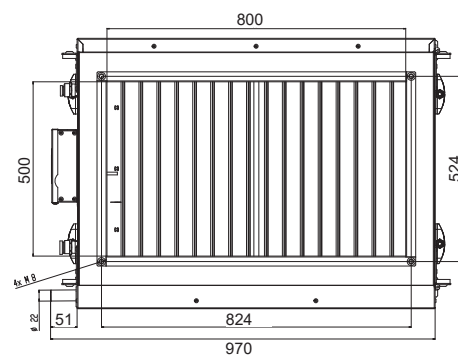
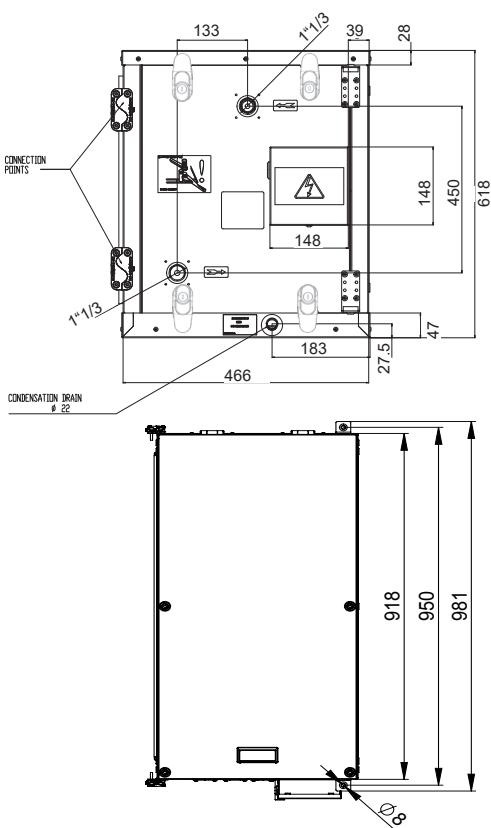
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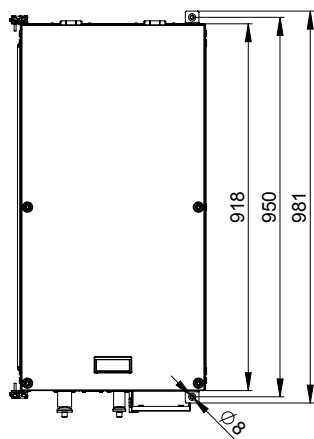
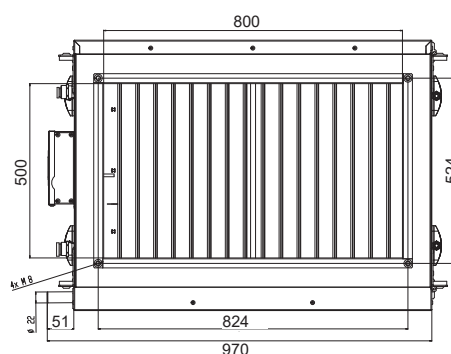
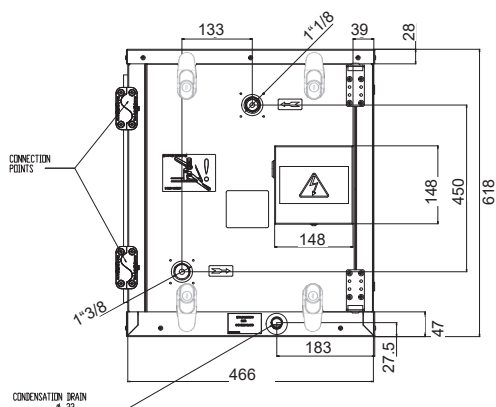
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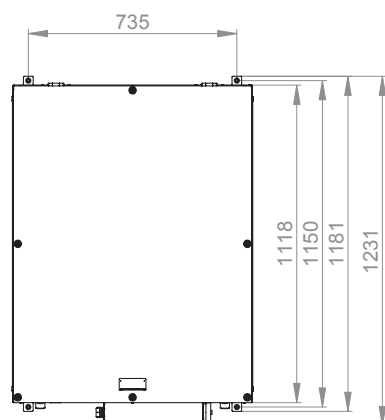
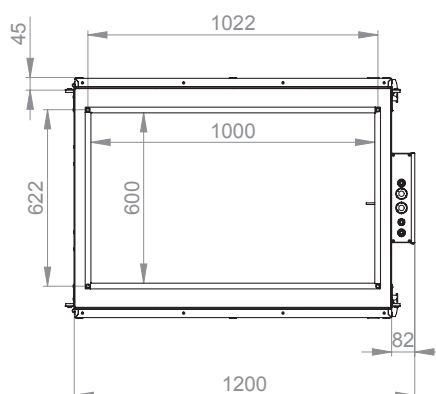
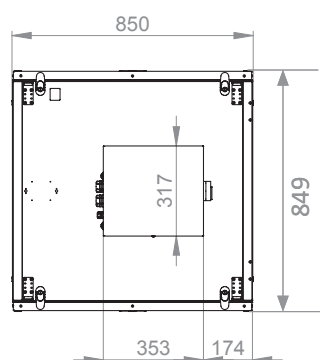
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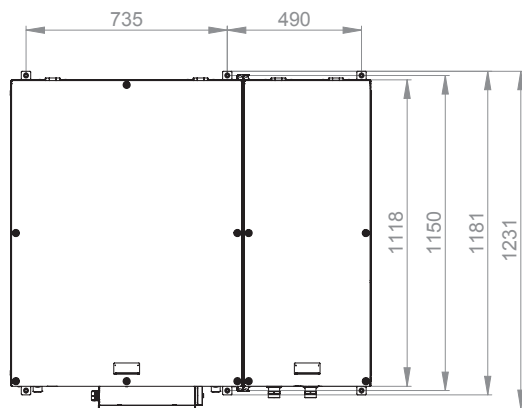
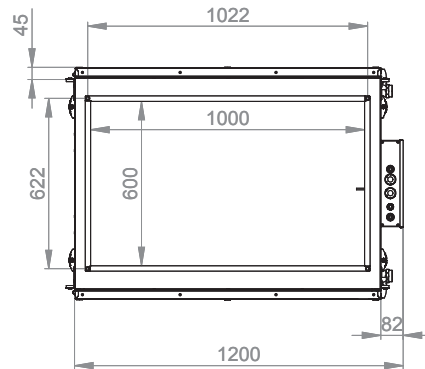


MOAL1-500HX00000-XD3X-...



AHAL4-800HX00E40-XS0...





Technical drawing of the Condensation Brain 422, showing a top-down view of the unit with dimensions and connection points.

Dimensions (mm):

- Overall width: 843
- Overall height: 675
- Top panel width: 145
- Top panel height: 28
- Right panel width: 39
- Bottom panel width: 47
- Bottom panel height: 27.5
- Internal width (left): 148
- Internal width (right): 148
- Internal height (bottom): 183
- Internal height (top): 466

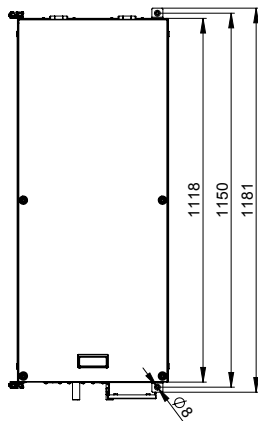
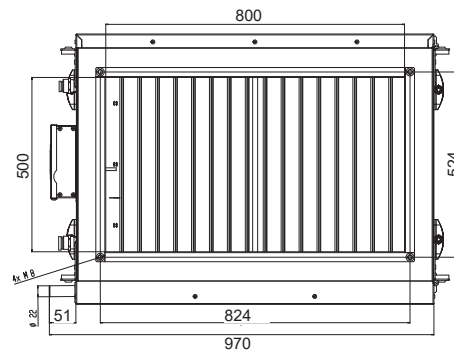
Connection points:

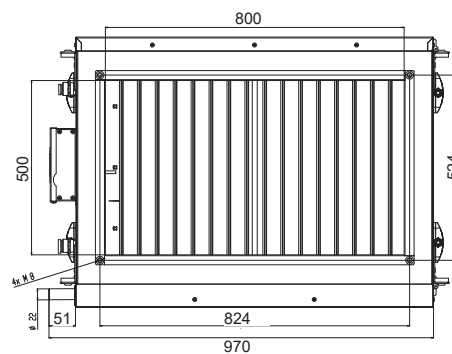
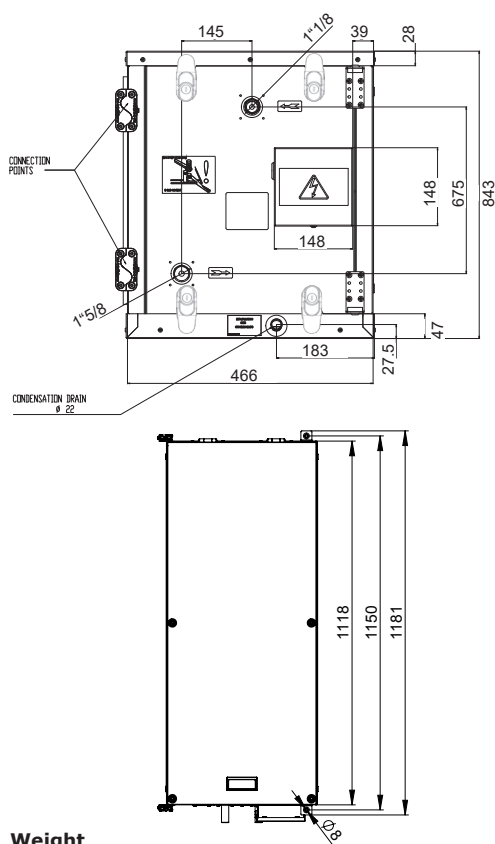
- Top left: 1" 1/4
- Top right: 1" 1/4
- Bottom left: 1" 1/4
- Bottom right: 1" 1/4

Warning symbols:

- Top left: High voltage warning symbol (lightning bolt in a triangle).
- Top right: High voltage warning symbol (lightning bolt in a triangle).
- Bottom left: High voltage warning symbol (lightning bolt in a triangle).
- Bottom right: High voltage warning symbol (lightning bolt in a triangle).

Condensation Brain 422



MOAL1-800HX00000-XD3X-...

Weight

Type	Weight (kg)	ALFA + modul C/O (kg)	ALFA + DX module (kg)
AHAL4-050HX00E40-XS0...	34	60	60
AHAL4-050HX00E40-XE1...	36	62	62
AHAL4-050HX00E40-XE2...	36	62	62
AHAL4-050HX00E40-XV2...	36	not possible	62
AHAL4-100HX00E40-XS0...	37	67	67
AHAL4-100HX00E40-XE0...	41	71	71
AHAL4-100HX00E40-XE1...	41	71	71
AHAL4-100HX00E40-XE2...	41	71	71
AHAL4-100HX00E40-XV2...	41	not possible	71
AHAL4-200HX00E40-XS0...	50	88	88
AHAL4-200HX00E40-XE1...	55	93	93
AHAL4-200HX00E40-XE2...	55	93	93
AHAL4-200HX00E40-XE3...	55	93	93
AHAL4-200HX00E40-XV2...	55	not possible	93
AHAL4-300HX00E40-XS0...	65	109	109
AHAL4-300HX00E40-XS0...	70	114	114
AHAL4-300HX00E40-XE1...	70	114	114
AHAL4-300HX00E40-XE2...	70	114	114
AHAL4-300HX00E40-XE3...	70	114	114
AHAL4-500HX00E40-XS0...	95	147	147
AHAL4-500HX00E40-XV2...	104	not possible	147
AHAL4-800HX00E40-XS0...	120	202	202
AHAL4-800HX00E40-XV2...	128	not possible	202

Basic technical parameters of fans

Type	Phase (No)	Voltage [V]	Frequency [Hz]	Power consumption [W]	Current [A]	Speed (rpm) [1/min]	Max. operating temperature [°C]
050	1	230	50-60	118	0,87	3635	60
100	1	230	50-60	145	0,99	2900	60
200	1	230	50-60	430	2,59	2600	60
300	3	400	50-60	1031	1,8	2580	60
500	3	400	50-60	1739	2,54	2600	60
800	3	400	50-60	4500	6,8	2480	60

Basic technical parameters of electric heaters

Units fitted with electric heater are fitted with the safety thermostat with automatic reset and emergency thermostat with manual reset.

Electric heaters type E0

Type	Air flow [m³/h]	Temperature rise of air [°C]	Total power consumption [kW]	Current [A]	Number of phases [pc]	Voltage [V]
100...E0	1000	20	3,3	14,4	1	230

Electric heaters type E1

Type	Air flow [m³/h]	Temperature rise of air [°C]	Total power consumption [kW]	Current [A]	Number of phases [pc]	Voltage [V]
050...E1	500	20	3,3	14,4	1	230
100...E1	1000	20	6,6	9,5	3	400
200...E1	2000	20	13,5	19,5	3	400
300...E1	3000	20	20	28,9	3	400

Electric heaters type E2

Type	Air flow [m³/h]	Temperature rise of air [°C]	Total power consumption [kW]	Current [A]	Number of phases [pc]	Voltage [V]
050...E2	500	30	6,6	9,5	3	400
100...E2	1000	30	9,9	14,3	3	400
200...E2	2000	30	18	26	3	400
300...E2	3000	30	27	39	3	400

Electric heaters type E3

Type	Air flow [m³/h]	Temperature rise of air [°C]	Total power consumption [kW]	Current [A]	Number of phases [pc]	Voltage [V]
100...E3	1000	40	13,5	19,5	3	400
200...E3	2000	40	27	39	3	400
300...E3	3000	40	40	57,8	3	400

Basic technical parameters of LPHW coils

The LPHW coils are designed for a maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

LPHW coil type V2
Table for 90/70°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050HX00E40-XV2S-0A0	500	36,9	9,16	0,11	9	41,20	8,12	0,10	8
AHAL4-100HX00E40-XV2S-0A0	1000	30,4	16,4	0,20	7	35,3	14,5	0,18	6
AHAL4-200HX00E40-XV2S-0A0	2000	24,3	29,3	0,36	5	29,8	25,9	0,32	4
AHAL4-300HX00E40-XV2S-0A0	3000	24,5	44,1	0,54	7	30	39	0,48	5
AHAL4-500HX00E40-XV2S-0A0	5000	23,9	72,6	0,89	12	29,6	64,3	0,79	9
AHAL4-800HX00E40-XV2S-0A0	8000	24,5	117	1,44	5	29,9	104	1,27	4
Supply air temp.	0°C					10°C			
AHAL4-050HX00E40-XV2S-0A0	500	45,50	7,11	0,10	6	49,70	6,11	0,08	5
AHAL4-100HX00E40-XV2S-0A0	1000	40,1	12,7	0,16	4	44,9	10,8	0,13	3
AHAL4-200HX00E40-XV2S-0A0	2000	35,2	22,5	0,28	4	40,5	19,2	0,23	3
AHAL4-300HX00E40-XV2S-0A0	3000	35,5	33,9	0,42	6	40,9	29	0,36	4
AHAL4-500HX00E40-XV2S-0A0	5000	35,1	56	0,69	9	40,7	48	0,59	6
AHAL4-800HX00E40-XV2S-0A0	8000	35,4	90,1	1,10	5	40,7	76,9	0,94	3

Table for 80/60°C temperature drop

Type Typ	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050HX00E40-XV2S-0A0	500	30,30	8,27	0,10	8	34,70	7,23	0,09	6
AHAL4-100HX00E40-XV2S-0A0	1000	24,4	14,7	0,18	6	29,3	12,8	0,16	5
AHAL4-200HX00E40-XV2S-0A0	2000	18,8	26,2	0,32	4	24,3	22,7	0,28	4
AHAL4-300HX00E40-XV2S-0A0	3000	19,1	39,5	0,48	6	24,6	34,4	0,42	6
AHAL4-500HX00E40-XV2S-0A0	5000	18,7	65,2	0,79	10	24,4	56,8	0,69	9
AHAL4-800HX00E40-XV2S-0A0	8000	19	105	1,28	4	24,5	91,1	1,11	3
Supply air temp.	0°C					10°C			
AHAL4-050HX00E40-XV2S-0A0	500	39	6,21	0,08	5	43,20	5,22	0,06	6
AHAL4-100HX00E40-XV2S-0A0	1000	34,2	11	0,13	3	39	9,16	0,11	4
AHAL4-200HX00E40-XV2S-0A0	2000	29,7	19,3	0,24	3	35	16	0,19	4
AHAL4-300HX00E40-XV2S-0A0	3000	30,1	29,3	0,36	5	35,5	24,4	0,30	5
AHAL4-500HX00E40-XV2S-0A0	5000	48,6	30	0,59	7	35,5	40,6	0,49	5
AHAL4-800HX00E40-XV2S-0A0	8000	29,9	77,7	0,95	3	35,3	64,5	0,79	2

Table for 70/50°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp. / Zulufttemp.	-20°C					-10°C			
AHAL4-050HX00E40-XV2S-0A0	500	23,90	7,35	0,09	7	28,20	6,31	0,08	5
AHAL4-100HX00E40-XV2S-0A0	1000	18,4	13	0,16	5	23,3	11,1	0,14	4
AHAL4-200HX00E40-XV2S-0A0	2000	13,3	22,9	0,28	4	18,8	19,4	0,24	3
AHAL4-300HX00E40-XV2S-0A0	3000	13,7	34,7	0,42	6	19,3	29,6	0,36	5
AHAL4-500HX00E40-XV2S-0A0	5000	13,6	57,6	0,70	9	19,2	49,1	0,60	7
AHAL4-800HX00E40-XV2S-0A0	8000	13,6	92	1,12	4	19,1	78,3	0,95	4
Supply air temp. / Zulufttemp.	0°C					10°C			
AHAL4-050HX00E40-XV2S-0A0	500	32,50	5,29	0,06	6	36,80	4,28	0,05	6
AHAL4-100HX00E40-XV2S-0A0	1000	28,2	9,24	0,11	4	33	7,44	0,09	3
AHAL4-200HX00E40-XV2S-0A0	2000	24,2	16,1	0,19	4	29,6	12,8	0,16	2
AHAL4-300HX00E40-XV2S-0A0	3000	24,8	24,6	0,30	5	30,2	19,7	0,24	3
AHAL4-500HX00E40-XV2S-0A0	5000	24,8	41	0,50	5	30,3	33	0,40	5
AHAL4-800HX00E40-XV2S-0A0	8000	24,5	64,8	0,79	2	29,9	51,7	0,63	3

Table for 45/35°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050HX00E40-XV2S-0A0	500	12,7	5,69	0,13	13	17,2	4,64	0,11	10
AHAL4-100HX00E40-XV2S-0A0	1000	8,8	10,1	0,24	9	13,8	8,21	0,19	8
AHAL4-200HX00E40-XV2S-0A0	2000	5,2	17,9	0,43	7	10,7	14,4	0,35	5
AHAL4-300HX00E40-XV2S-0A0	3000	5,4	27	0,65	10	11	21,8	0,52	7
AHAL4-500HX00E40-XV2S-0A0	5000	5,2	44,5	1,07	18	10,8	36,1	0,87	12
AHAL4-800HX00E40-XV2S-0A0	8000	5,3	71,5	1,7	6	10,9	57,8	1,39	5
Supply air temp.	0°C					10°C			
AHAL4-050HX00E40-XV2S-0A0	500	21,4	3,63	0,08	7	25,7	2,62	0,06	6
AHAL4-100HX00E40-XV2S-0A0	1000	18,7	6,33	0,15	5	23,6	4,51	0,15	4
AHAL4-200HX00E40-XV2S-0A0	2000	16,1	11	0,26	4	21,5	7,72	0,18	3
AHAL4-300HX00E40-XV2S-0A0	3000	16,5	16,8	0,41	6	21,9	11,9	0,28	5
AHAL4-500HX00E40-XV2S-0A0	5000	16,4	27,9	0,67	9	22	20	0,48	5
AHAL4-800HX00E40-XV2S-0A0	8000	16,3	44,3	1,07	5	21,7	31,3	0,75	2

External module - water heater/cooler type C
Table for 80/60°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050	500	55,1	11,4	0,14	4	56,7	10,1	0,12	5
AHAL4-100	1000	50,2	21,5	0,26	6	52,3	18,9	0,23	5
AHAL4-200	2000	46	40,7	0,50	10	48,6	35,9	0,44	8
AHAL4-300	3000	43,9	59,5	0,89	5	46,6	52,3	0,64	4
AHAL4-500	5000	42,7	97,6	1,19	6	45,6	85,7	0,04	6
AHAL4-800	8000	44,3	159	1,94	4	47	140	1,71	4
Supply air temp.	0°C					10°C			
AHAL4-050	500	58,3	8,76	0,11	4	59,8	7,45	0,09	3
AHAL4-100	1000	54,4	16,4	0,20	5	56,4	13,9	0,17	4
AHAL4-200	2000	51,1	31	0,38	7	53,7	26,3	0,32	5
AHAL4-300	3000	49,3	45,2	0,55	3	52	38,1	0,46	3
AHAL4-500	5000	48,4	74	0,90	5	51,5	62,4	0,76	3
AHAL4-800	8000	49,6	121	1,47	3	52,1	102	1,24	3

Table for 70/50°C temperature drop

Type Typ	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp,	-20°C					-10°C			
AHAL4-050	500	45,8	10,3	0,13	6	47,4	8,93	0,11	4
AHAL4-100	1000	41,4	19,3	0,23	5	43,5	16,7	0,20	6
AHAL4-200	2000	37,7	36,5	0,44	8	40,3	31,6	0,38	8
AHAL4-300	3000	35,6	53,2	0,65	5	38,4	45,9	0,56	3
AHAL4-500	5000	34,6	87,2	1,06	6	37,5	75,1	0,91	5
AHAL4-800	8000	35,9	142	1,73	4	38,6	123	1,49	3
Supply air temp,	0°C					10°C			
AHAL4-050	500	49,1	7,58	0,09	3	50,6	6,23	0,08	2
AHAL4-100	1000	45,6	14,1	0,17	4	47,7	11,6	0,14	3
AHAL4-200	2000	42,9	26,7	0,33	6	45,4	21,9	0,27	5
AHAL4-300	3000	41,1	38,6	0,47	3	43,7	31,4	0,83	3
AHAL4-500	5000	40,3	63,2	0,77	4	43,2	51,5	0,63	4
AHAL4-800	8000	41,3	103	1,25	3	43,9	84,1	1,02	2

Table for 60/40°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050	500	36,5	9,09	0,11	5	38,2	7,71	0,09	3
AHAL4-100	1000	32,6	17	0,20	6	34,7	14,4	0,17	4
AHAL4-200	2000	29,3	32,1	0,38	8	32	27,1	0,23	6
AHAL4-300	3000	27,3	46,5	0,56	4	30,1	39,1	0,47	3
AHAL4-500	5000	26,4	76,2	0,92	5	29,4	64	0,77	4
AHAL4-800	8000	27,6	124	1,50	5	30,3	105	1,26	3
Supply air temp.	0°C					10°C			
AHAL4-050	500	39,8	6,32	0,07	2	41,3	4,54	0,06	4
AHAL4-100	1000	36,8	11,7	0,14	3	38,8	9,16	0,11	4
AHAL4-200	2000	34,6	22,2	0,27	5	37,1	17,3	0,21	5
AHAL4-300	3000	32,8	31,7	0,38	4	35,5	24,4	0,29	4
AHAL4-500	5000	32,3	52	0,63	4	35,1	40	0,48	2
AHAL4-800	8000	33	84,8	1,02	3	35,6	65,2	0,78	2

Table for 6/12°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	25°C					30°C			
AHAL4-050	500	14	2,2	0,09	3	14,9	4,1	0,16	7
AHAL4-100	1000	14,7	3,9	0,16	4	16	7,5	0,30	10
AHAL4-200	2000	14,9	6,9	0,27	6	16,6	14,3	0,57	16
AHAL4-300	3000	15,6	9,6	0,38	4	17,3	19,4	0,77	7
AHAL4-500	5000	15,8	15,8	0,63	4	17,5	32	1,27	9
AHAL4-800	8000	15,6	25,7	1,02	4	17,3	51,9	2,06	6
Supply air temp.	35°C					40°C			
AHAL4-050	500	16	6,3	0,25	13	17,2	9	0,36	23
AHAL4-100	1000	17,3	11,7	0,46	17	18,8	16,6	0,66	32
AHAL4-200	2000	18,2	22,1	0,88	32	-			
AHAL4-300	3000	19	31	1,23	15	20,8	44,7	1,78	28
AHAL4-500	5000	19,2	50,8	2,02	18	21,1	73,3	2,91	33
AHAL4-800	8000	19	82,8	3,29	13	20,7	120	4,76	23

Table for 7/13°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	25°C					30°C			
AHAL4-050	500	14,2	1,8	0,07	2	15,7	3,8	0,15	6
AHAL4-100	1000	15,1	3,4	0,13	3	16,6	6,9	0,27	8
AHAL4-200	2000	15,6	6,4	0,25	5	17,2	13	0,52	13
AHAL4-300	3000	16,3	8,9	0,35	4	17,9	17,7	0,70	8
AHAL4-500	5000	16,4	14,6	0,58	4	18	29,2	1,16	7
AHAL4-800	8000	16,3	23,7	0,94	3	17,9	47,2	1,88	5
Supply air temp.	35°C					40°C			
AHAL4-050	500	16,7	6	0,24	12	17,9	8,6	0,34	21
AHAL4-100	1000	18	11	0,44	15	19,4	16	0,63	29
AHAL4-200	2000	18,8	20,9	0,83	29	-			
AHAL4-300	3000	19,6	29,2	1,16	14	21,3	42,9	1,70	26
AHAL4-500	5000	19,8	48	1,90	16	21,6	70,4	2,80	31
AHAL4-800	8000	19,5	78,1	3,10	11	21,3	115	4,57	21

External module - direct evaporator type D
Refrigerant R410a

Type	Airflow	Inlet temperature	Coil capacity	Outlet temperature	RH after coil	Refrigerant pressure drop	Air pressure drop
	m³/h	°C	kW	°C	%	kPa	Pa
AHAL4-050	500	20	1.5	11.9	79.8	16.9	26
		25	2.4	14.6	80.8	38.3	28
		30	3.3	17.6	81.8	68.3	29
		35	4.3	20.9	82.7	110.8	29
AHAL4-100	1000	20	2.6	13	75.8	8.5	43
		25	4.1	15.9	77.1	20.3	46
		30	5.7	19.1	77.9	36.6	48
		35	7.5	22.6	78.7	59.2	49
AHAL4-200	2000	20	4.6	13.5	74.2	11.4	62
		25	7.3	16.7	75.1	26.4	67
		30	10.2	20.1	76	48.8	69
		35	13.3	23.8	76.7	77.7	71
AHAL4-300	3000	20	6.6	13.8	73.3	12.4	70
		25	10.3	17.1	74.1	28.6	74
		30	14.5	20.5	75	52.9	78
		35	18.8	24.3	75.7	84.1	80
AHAL4-500	5000	20	10.8	13.9	73	13.9	78
		25	16.8	17.2	73.8	31.5	84
		30	23.3	20.8	74.6	57.1	88
		35	30.4	24.5	75.2	91.0	90
AHAL4-800	8000	20	17.5	13.8	73.3	17.4	67
		25	27.3	17.1	74.1	38.8	72
		30	37.9	20.6	74.9	69.8	75
		35	49.2	24.4	75.5	110.4	77

*Inlet air relative humidity 50%, evaporation temperature 5°C, superheating 7°C, subcooling 3°C, condensing temperature 45°C

External module - direct evaporator type D
Refrigerant R32

Type	Airflow	Inlet temperature	Coil capacity	Outlet temperature	RH after coil	Refrigerant pressure drop	Air pressure drop
	m³/h	°C	kW	°C	%	kPa	Pa
AHAL4-050	500	20	1.6	11.8	79.8	10.8	26
		25	2.5	14.4	80.8	24.4	28
		30	3.5	17.3	81.9	43.5	29
		35	4.5	20.5	82.9	70.3	29
AHAL4-100	1000	20	2.6	12.9	75.9	5.4	43
		25	4.2	15.8	76.9	12.3	46
		30	5.9	18.9	77.9	23.0	48
		35	7.8	22.3	78.9	36.9	49
AHAL4-200	2000	20	4.8	13.4	74.3	7.3	63
		25	7.5	16.5	75.2	16.8	67
		30	10.6	19.9	76	30.4	70
		35	13.9	23.5	76.9	49.2	71
AHAL4-300	3000	20	6.8	13.7	73.3	7.9	70
		25	10.7	16.9	74.2	18.2	75
		30	15.1	20.3	75.1	33.4	78
		35	19.7	24	75.8	53.5	80
AHAL4-500	5000	20	11.0	13.8	73.1	8.7	79
		25	17.3	17.1	73.8	19.9	84
		30	24.4	20.5	74.7	36.3	88
		35	31.8	24.2	75.4	58.3	90
AHAL4-800	8000	20	18.1	13.7	73.4	10.9	68
		25	28.4	16.9	74.1	24.6	73
		30	39.8	20.3	75	45.1	76
		35	51.8	24.1	75.6	71.3	77

*Inlet air relative humidity 50%, evaporation temperature 5°C, superheating 7°C, subcooling 3°C, condensing temperature 45°C

Noise data

* Indicative values of sound pressure at a distance of 3m

AHAL4-050

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63	125	250	500	1 k	2 k	4 k	8 k	LWA	LPA 3m
645	100	59	58	54	58	48	46	44	36	57	40
530	250	58	55	51	55	47	43	42	37	55	37
390	400	57	55	50	56	46	42	40	31	54	37
110	600	60	63	58	54	49	45	42	33	56	39

AHAL4-100

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63	125	250	500	1 k	2 k	4 k	8 k	LWA	LPA 3m
1070	100	61	60	65	60	49	44	42	35	60	43
920	220	66	58	63	59	47	43	41	33	59	41
700	350	60	56	61	56	46	42	39	33	56	39
310	450	67	64	59	52	46	43	40	34	55	38

AHAL4-200

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	LWA	LPA 3m
2040	100	65	70	63	65	58	55	50	38	65	48
1770	250	65	71	62	63	56	54	49	35	64	46
1380	450	65	70	60	60	53	52	47	35	61	44
840	600	67	73	68	60	54	51	46	36	63	46

AHAL4-300

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	LWA	LPA 3m
3890	100	74	72	77	69	61	59	55	47	71	54
3480	300	73	70	75	68	62	59	55	46	70	53
2680	600	73	69	72	67	63	61	58	47	70	52
1450	900	76	77	73	68	64	63	60	50	71	54

AHAL4-500

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	LWA	LPA 3m
5930	100	76	72	83	74	66	64	61	48	77	59
5260	400	76	72	79	72	66	64	60	48	74	57
4130	800	77	74	76	70	69	65	62	50	74	57
2050	1200	78	77	79	70	72	66	64	53	76	59

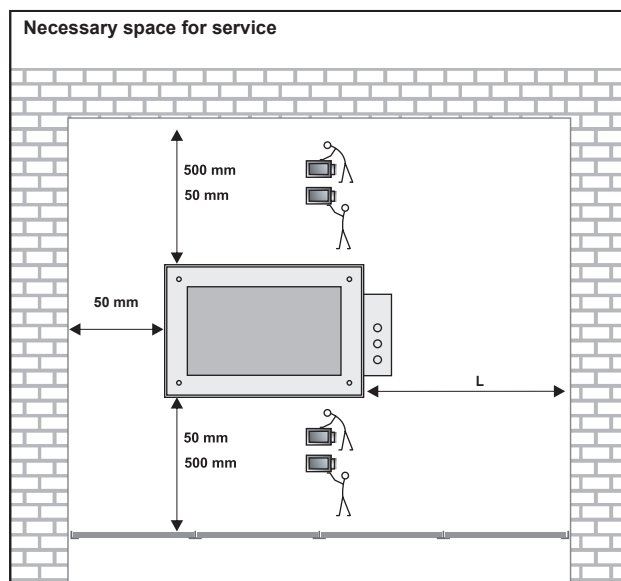
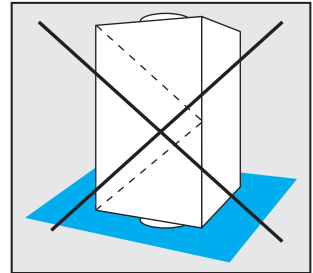
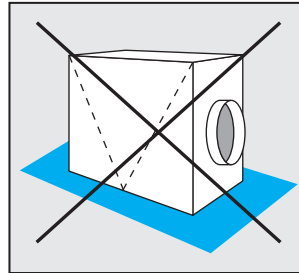
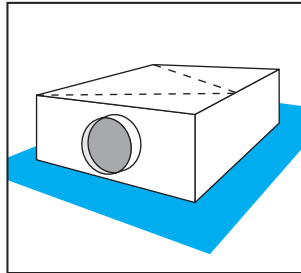
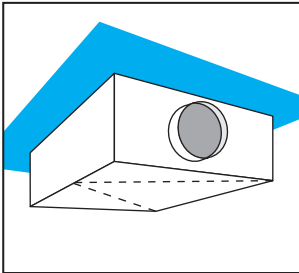
AHAL4-800

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	LWA	LPA 3m
9370	250	85	84	83	69	67	63	59	52	77	59
8360	500	76	73	80	71	69	65	58	49	75	58
5990	900	81	74	79	69	67	64	59	51	74	57
2040	1200	85	84	83	69	67	63	59	52	77	59



INSTALLATION AND ASSEMBLY

- The unit is designed for installation in the horizontal position with the inspection cover facing upwards or downwards. Other installation positions are not possible. To access the unit, it is also possible to choose the upper or lower inspection cover.
- Installation of the unit shall allow a sufficient access for performing maintenance, servicing, and dismounting operations. This particularly applies to access to at least one inspection cover and access to the control system box.



Type	L [mm]
AHAL4-050...	550
AHAL4-100...	550
AHAL4-200...	650
AHAL4-300...	750
AHAL4-500...	850
AHAL4-800...	850

- The unit is fixed using suspension holders located on both sidewalls of the unit.
- Threaded bars with nuts are usually used for attaching the unit to the support structure.
- The unit shall be fixed safely to avoid its dropping.
- No flammable materials are allowed within 100 mm of the unit housing and within 500 mm of the inlet sleeve of the unit or piping.



CONTROL

AirGENIO SUPERIOR - Description of control

Remote controller can be used to:

- adjust operational parameters,
 - display the alarms.
 - Possibility of control unit with two controllers
- Data cable shall not exceed length of 50 m.

Recommended data cable type UTP



Product with:

- Integrated temperature sensors
- sensor to protect the postheaters
- digital pressure sensor for filters
- digital pressure sensors for constant air flow / pressure

Overview of the main AirGENIO control function

Control using a wired remote control

Control from a higher regulation system
(Modbus RTU / TCP, BACnet)

Controls based on CO₂ concentration (air quality)

Controls for CAV systems

Controls for VAV systems

Controls for DCV systems

Special night time ventilation

Boost Mode

Fire protection mode

Supply temperature maintenance

Room temperature maintenance

Electrical coil control

LPHW coil control (0-10V)

Change-over control with automatic detection of the heating / cooling (0-10V)

Direct evaporator control with two possible types of control (ON-OFF or 0-10V) with reverse control cycles (heating / cooling mode)

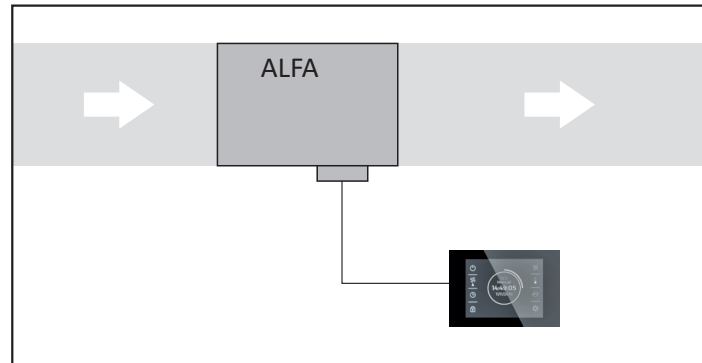
Possible control of external postheater and preheater

Filter clogging indication

Weekly and yearly programming

ALFA MASTER (AHAL4-...-HX00E40-X..S(C)-...)

- No accessories are needed to connect the ventilation unit.

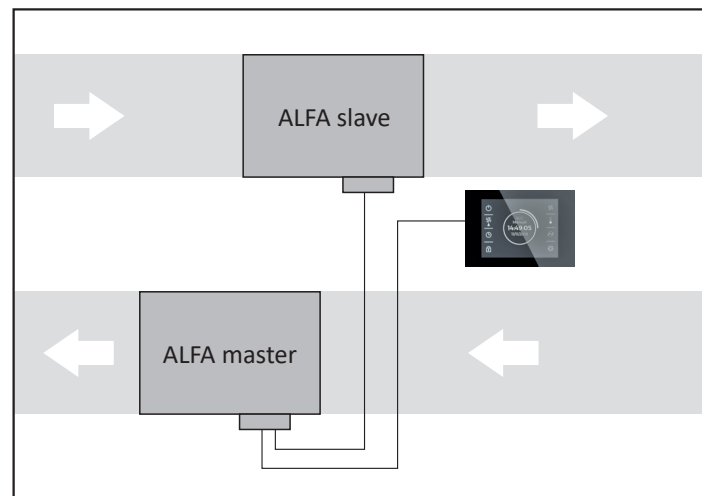


Connection examples of units and accessories necessary to ensure a correct operation

ALFA SLAVE (AHAL4-...-HX00E40-XS0D-...)

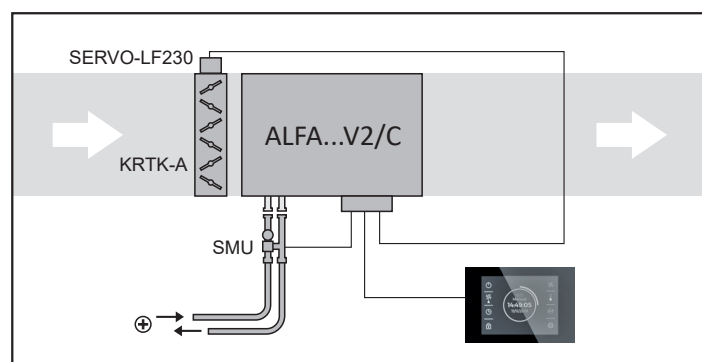
- The unit is fitted with a communication cable. It is necessary to connect the unit as a slave to the ALFA supply unit controller.

This combination is not allowed in EU zone.



ALFA-V2 (AHAL4-...HX00E0-XV2-...)

- It is necessary to connect a mixing node to control the LPHW coil output and tight flap with a servo drive to provide the LPHW coil with frost protection.





ACCESSORIES

REQUIRED ACCESSORIES

These accessories shall be ordered to make the air handling unit functional.

More details can be found on the relevant page in this catalog

External modul – Additional heating/cooling modul for ALFA unit

MOAL1-050HX00000-XC4X-0A0

0 – Standard RAL

C4 – Change over coil

D3 – Direct evaporator

050 – Nominal air flow 500 m³/h

100 – Nominal air flow 1000 m³/h

200 – Nominal air flow 2000 m³/h

300 – Nominal air flow 3000 m³/h

500 – Nominal air flow 5000 m³/h

800 – Nominal air flow 8000 m³/h

External modul

Type	ALFA + modul C/O	ALFA + DX module
AHAL4-050HX00E40-XS0...	✓	✓
AHAL4-050HX00E40-XE1...	✓	✓
AHAL4-050HX00E40-XE2...	✓	✓
AHAL4-050HX00E40-XV2...	not possible	✓
AHAL4-100HX00E40-XS0...	✓	✓
AHAL4-100HX00E40-XE0...	✓	✓
AHAL4-100HX00E40-XE1...	✓	✓
AHAL4-100HX00E40-XE2...	✓	✓
AHAL4-100HX00E40-XV2...	not possible	✓
AHAL4-200HX00E40-XS0...	✓	✓
AHAL4-200HX00E40-XE1...	✓	✓
AHAL4-200HX00E40-XE2...	✓	✓
AHAL4-200HX00E40-XE3...	✓	✓
AHAL4-200HX00E40-XV2...	not possible	✓
AHAL4-300HX00E40-XS0...	✓	✓
AHAL4-300HX00E40-XS0...	✓	✓
AHAL4-300HX00E40-XE1...	✓	✓
AHAL4-300HX00E40-XE2...	✓	✓
AHAL4-300HX00E40-XE3...	not possible	✓
AHAL4-500HX00E40-XS0...	✓	✓
AHAL4-500HX00E40-XV2...	not possible	✓
AHAL4-800HX00E40-XS0...	✓	✓
AHAL4-800HX00E40-XV2...	not possible	✓

Mixing valve

The **SMU2** mixing unit is designed for controlling the heat-output of water-type heat exchangers. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units

Recommended values for individual types of the **ALFA** units:



Unit type	K _{vs}	Pump pressure (kPa)	C/O Module type	K _{vs}	Pump pressure (kPa)
AHAL4-050HX00E40-XV2.-...	4	60	MOAL1-050HX00000-XC4X-...	4	60
AHAL4-100HX00E40-XV2.-...	4	60	MOAL1-100HX00000-XC4X-...	4	60
AHAL4-200HX00E40-XV2.-...	6,3	60	MOAL1-200HX00000-XC4X-...	6,3	60
AHAL4-300HX00E40-XV2.-...	6,3	60	MOAL1-300HX00000-XC4X-...	12	60
AHAL4-500HX00E40-XV2.-...	12	70	MOAL1-500HX00000-XC4X-...	12	70
AHAL4-800HX00E40-XV2.-...	24	70	MOAL1-800HX00000-XC4X-...	24	70

SMU2-024-06,3-SC

- SC** – with short circuit
- WO** – without short circuit
- 04,0** – mixing valve – k_{vs} 4,0
- 06,3** – mixing valve – k_{vs} 6,3
- 12,0** – mixing valve – k_{vs} 12,0
- 24,0** – mixing valve – k_{vs} 24,0

024 – 24V stepless control

SMU2 – mixing unit

Servo drive

SERVO-TD-04-230-1 – necessary for controlling the shutting flap. Servo drive is installed on a tight shutting flap.



Sensors **CI-LCN-FTK140VV**

This is an electronic sensor of relative humidity. The sensor has an analogue voltage output 0-10V, corresponding to the range of relative air humidity 0-100%.



Channel sensor CO2: **CI-EE850-C3xx-FP**

The transmitter is ideally suited for duct mounting in the fields of building management and demand controlled ventilation. The elegant, compact housing enables easy installation directly at the ventilation duct using a mounting flange.



Spatial sensor CO2: **CI-CO2-R**

Sensor combines CO2. The snap-in mounting concept stands for easy installation



Spatial sensor RH: **CI-RH-R**

Capacitive relative humidity sensor with 0-10V analog and relay output.



Signal combiner **CI-AQS-COMBI**

This is a signal combiner for AQS sensors using 0-10V logic which you can connect up to 10 different sensors. The input signal with the highest voltage will be the signal that is on the output terminal.



PIR sensor **CI-PS 1003**

Spatial infrared sensor for automatic ventilation based on presence of people in the ventilated area.



Replacement air filters

ALFA-xxD-xx – Class plate filter for **ALFA** unit.



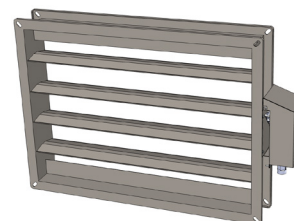
Please make the designation key below according to the standard key appearance.

Recommended combinations:

Unit type	Filter type – Coarse 90%	Filter type – ePM 10 70%	Filter type – ePM 2,5 65%
050	ALFA-G4D-050	ALFA-M5D-050	ALFA-F7D-050
100	ALFA-G4D-100	ALFA-M5D-100	ALFA-F7D-100
200	ALFA-G4D-200	ALFA-M5D-200	ALFA-F7D-200
300	ALFA-G4D-300	ALFA-M5D-300	ALFA-F7D-300
500	ALFA-G4D-500	ALFA-M5D-500	ALFA-F7D-500
800	ALFA-G4D-800	ALFA-M5D-800	ALFA-F7D-800

Four-sided closing flap with servo drive

The **MLKR** rectangular control flap is designed for controlling and closing the HVAC systems. The flap is designed for operation in the basic environment for conveying air free of rough dust, grease, chemical fumes, and other contaminants. The flanged damper frame and blades are made of galvanized plate.



Unit type	Flap type
050	MLKR-300200-SR*
100	MLKR-400250-SR*
200	MLKR-500300-SR*
300	MLKR-600350-SR*
500	MLKR-800500-SR*
800	MLKR-1000600-SR*

* **SR** - servodrive with spring, **SX** - servodrive without spring

Threaded bar

The unit is suspended using four threaded bars.

ZTZ-M8-1,0 – threaded bar, M8 thread, 1 m length, suitable for all types of **ALFA** units



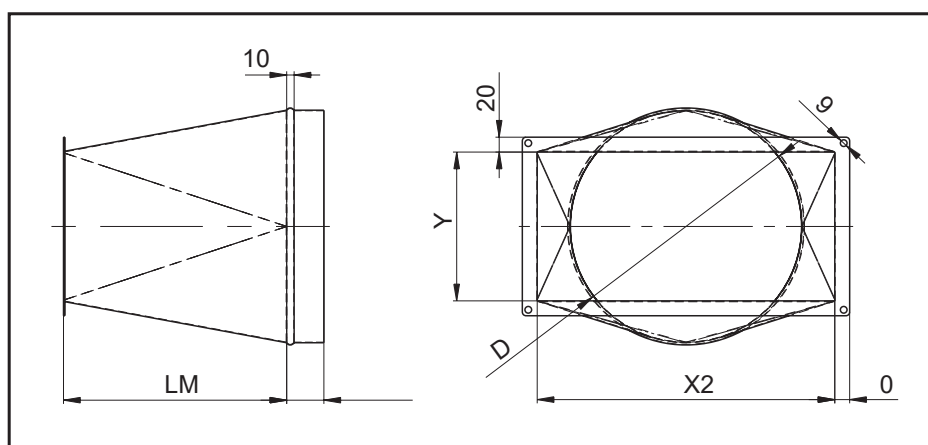
Flexible connection hoses

OH-...



Reduction - rectangular on circular connection

ALFA-PR – Reduction from rectangular flange of ALFA unit on circular connection of duct.



Unit type	Reduction type	Dimensions [mm]				
		X	Y	D	L	M
AHAL4-050...	ALFA-PR-05	300	200	200	180	50
AHAL4-100...	ALFA-PR-10	400	250	250	220	50
AHAL4-200...	ALFA-PR-20	500	300	315	250	70
AHAL4-300...	ALFA-PR-30	600	400	400	300	70
AHAL4-500...	ALFA-PR-50	800	500	500	400	70
AHAL4-800...	ALFA-PR-80	1000	600	630	450	70

The diagram shows a terminal block with five terminals: L1, L2, L3, N, and PE. Below the terminals, there are two rows of connection labels. The first row is for a 3-phase 400V supply, with L1, L2, and L3 connected to the first three terminals, and N and PE connected to the last two terminals. The second row is for a 1-phase 230V supply, with L1 connected to the first terminal, and N and PE connected to the last two terminals. The L2 and L3 terminals are not connected in this configuration.

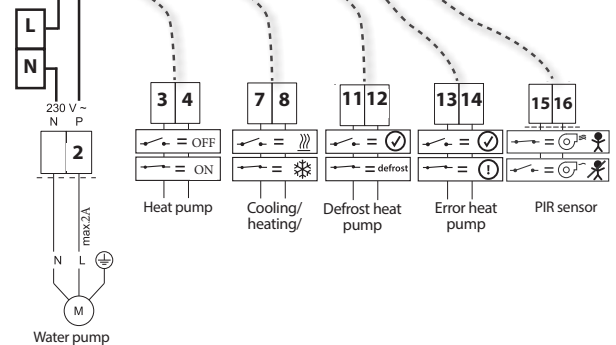
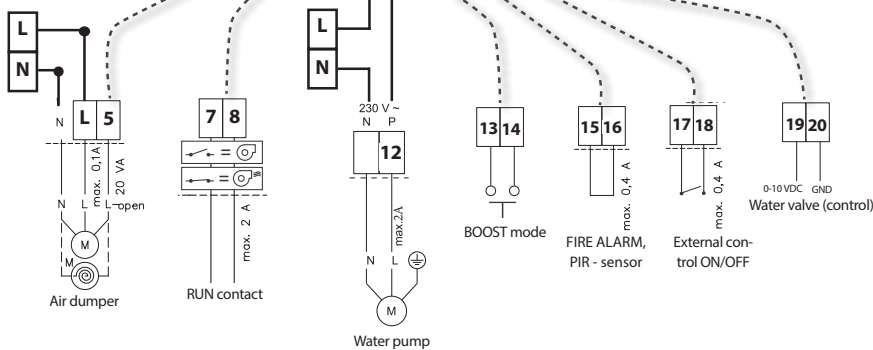
Terminal	3~400V	1~230V
L1	Connected	Connected
L2	Connected	Not Connected
L3	Connected	Not Connected
N	Connected	Connected
PE	Connected	Connected

UTP cable

Figure 1: Pin configuration of the B-v1 module. The top part shows a 2x4 pin header with pins 36 and 37 highlighted. The middle part shows three 6-pin headers: JTAG (pins 1-6), I-BUS INPUT (pins 1-6), and I-BUS OUTPUT (pins 1-6). The bottom part shows a 16-pin header with pins 1-16 labeled. The labels are: 1: GND, 2: +12V, 3: GND, 4: B, 5: A, 6: +12V, 7: GND, 8: B, 9: A, 10: +12V, 11: GND, 12: B, 13: A, 14: +12V, 15: GND, 16: B. The bottom right shows a 16-pin header with pins 1-16 labeled: 1: GND, 2: +12V, 3: GND, 4: B, 5: A, 6: +12V, 7: GND, 8: B, 9: A, 10: +12V, 11: GND, 12: B, 13: A, 14: +12V, 15: GND, 16: B.

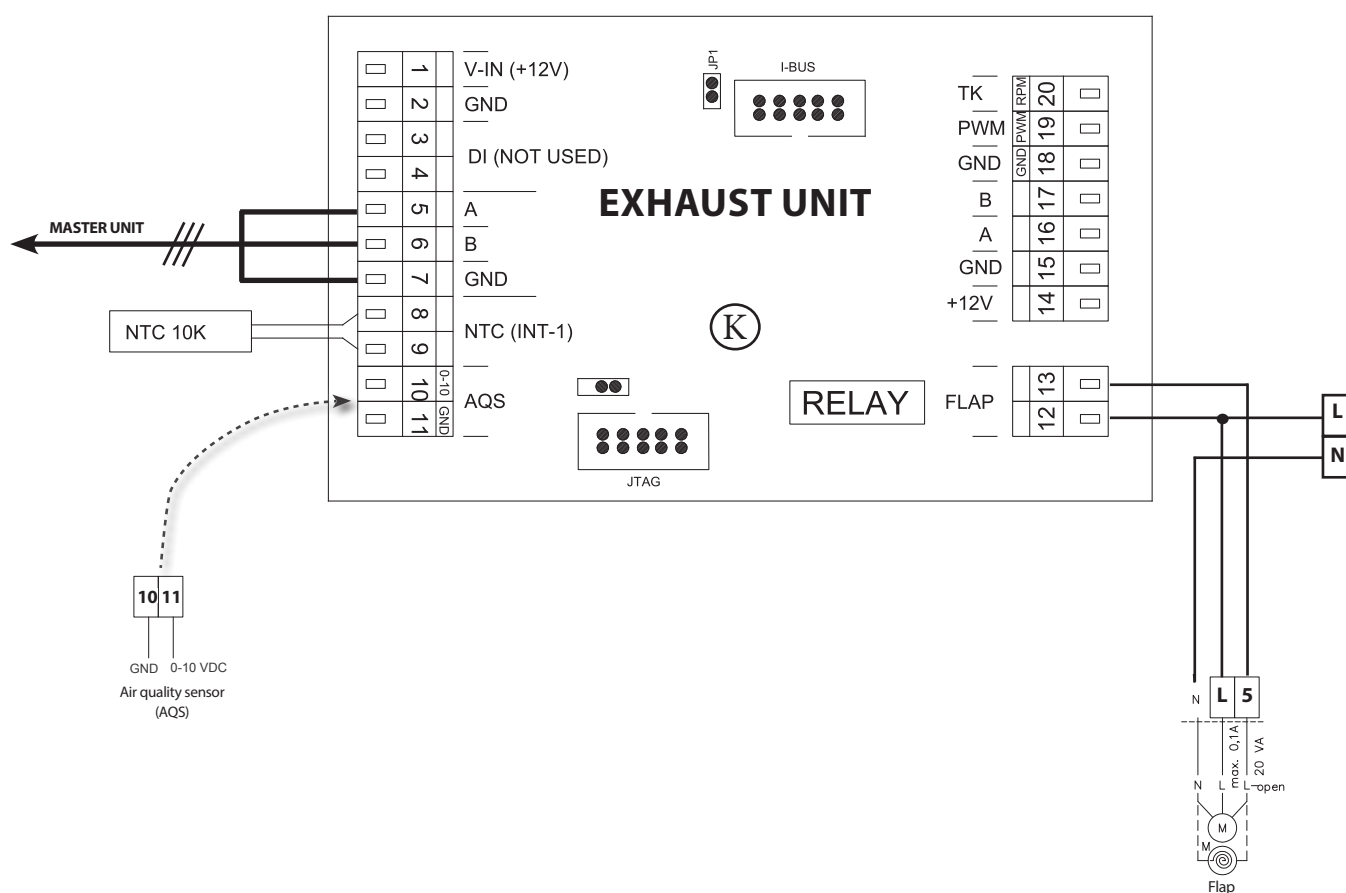
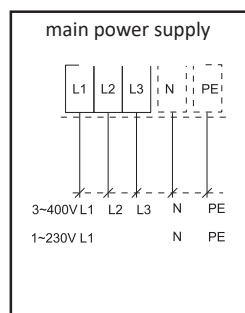
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Regulator of unit - ALFA SLAVE (AHAL-.....-...D-...)





KEY TO CODING

AHAL4 - 100 HX00E40-X E1 S - 0A0

0 - Standard RAL

S - Superior control

D - Superior slave control

S0 - Air only (all sizes)

E0 - Electric heater (AHAL4-100)

E1 - Electric heater (AHAL4-050,100,200,300)

E2 - Electric heater (AHAL4-050,100,200,300)

E3 - Electric heater / increased power (AHAL4-100,200,300)

V2 - 2-row LPHW coil (all sizes)

050 - Nominal air flow 500 m³/h

100 - Nominal air flow 1000 m³/h

200 - Nominal air flow 2000 m³/h

300 - Nominal air flow 3000 m³/h

500 - Nominal air flow 5000 m³/h

800 - Nominal air flow 8000 m³/h

ALFA - ALFA ventilation unit