

Technical description

Mega E



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Other languages are a translation of the original instructions.
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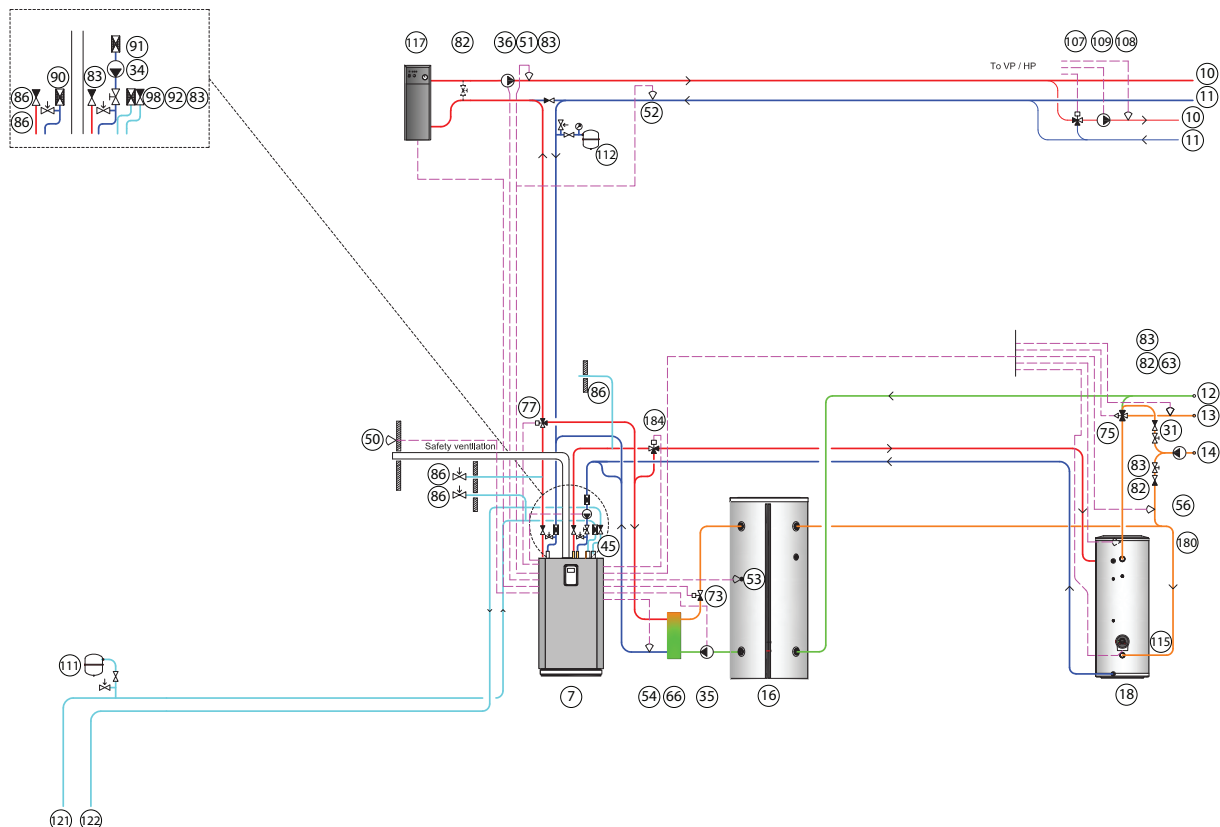
Technical description Mega E

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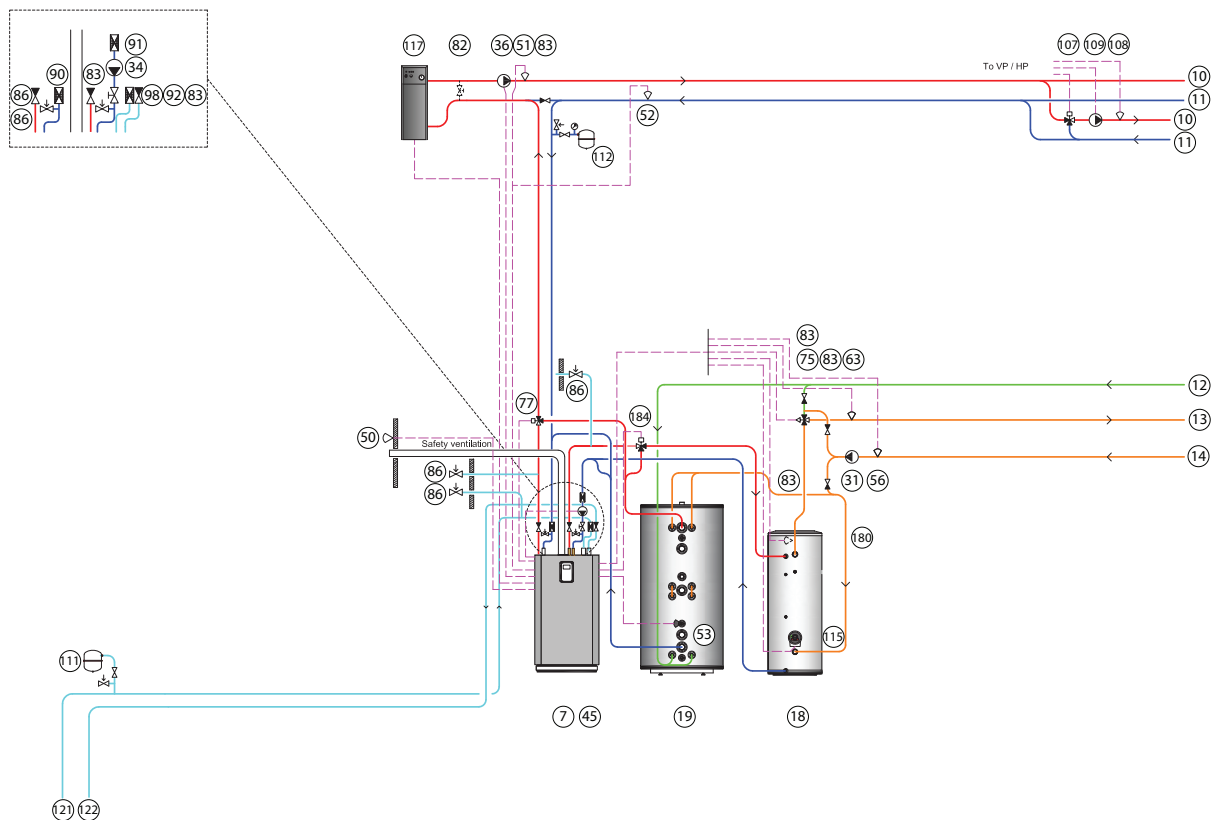
1 System overview

1.1 Mega E with WT-S and final heater for hot gas



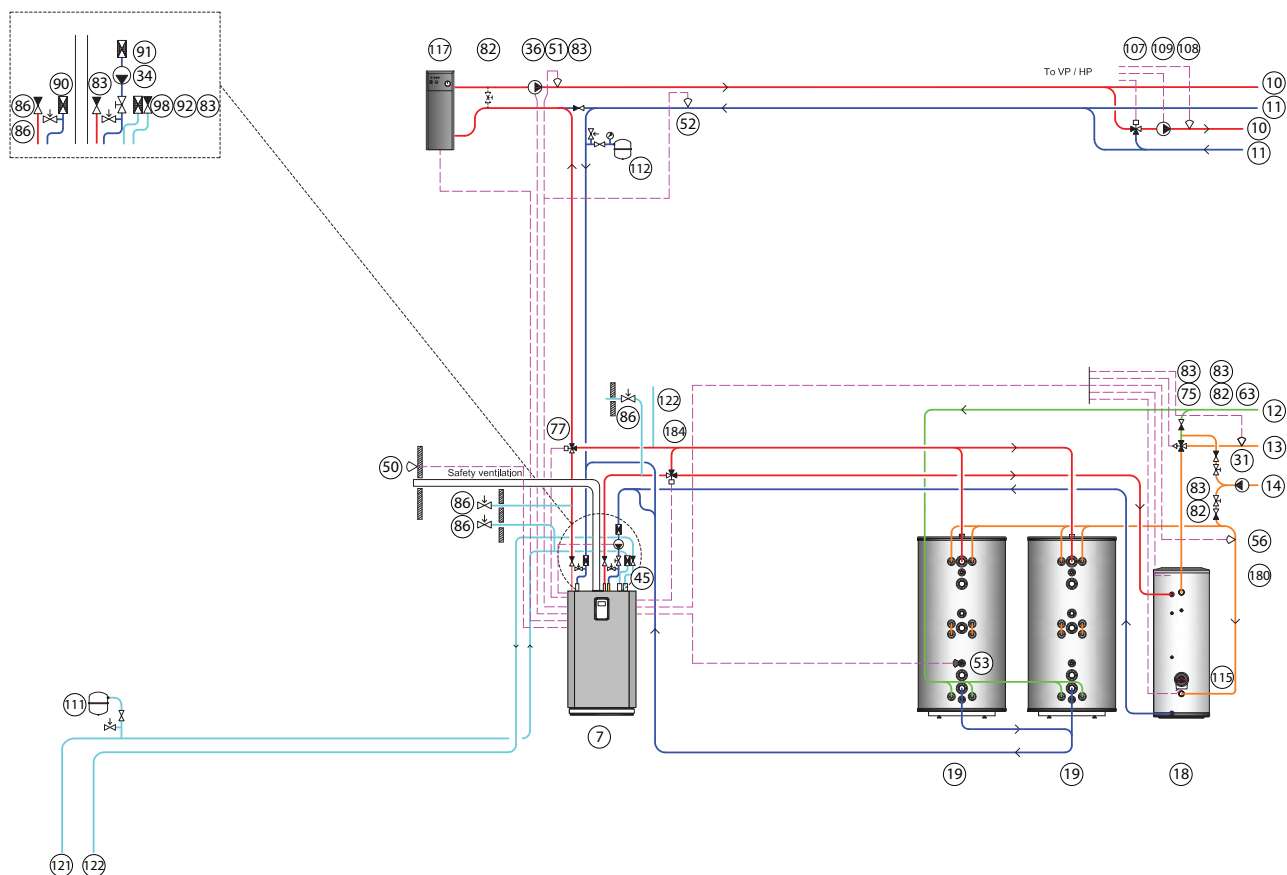
- 7. Heat pump
- 10. Heating supply line
- 11. Heating return line
- 12. Cold tap water line
- 13. Hot tap water line
- 14. Hot water circulation
- 16. Hot water storage tank
- 18. Water heater
- 31. Circulation pump (HWC)
- 34. Circulation pump (hot gas)
- 35. Circulation pump (charging circuit)
- 36. Circulation pump (system)
- 35. Circulation pump (charging circuit)
- 45. Expansion module
- 50. Outdoor sensor
- 51. Supply line sensor, heating system
- 52. System return line sensor
- 53. Hot water sensor, bottom
- 54. Sensor load circuit (return HEX)
- 56. TWC sensor
- 63. Mixing valve additional heater
- 66. Charging exchanger WCS
- 73. Control valve WCS
- 75. Mixing valve
- 77. Hot water exchange valve
- 82. Adjustment valve
- 83. Non-return valve
- 86. Safety valve
- 90. Dirt strainer (condenser)
- 91. Dirt strainer (hot gas)
- 92. Dirt strainer (brine)
- 98. Flexible hose
- 107. Shunt distribution circuit 1, shunt motor + valve
- 108. Shunt distribution circuit 1, supply line sensor
- 109. Shunt distribution circuit 1, circulation pump
- 111. Venting and expansion tank (brine)
- 112. Expansion tank
- 115. Immersion heater
- 117. Auxiliary heating
- 121. Brine in
- 122. Brine out
- 180. Tank sensor TWC (hot gas tank)
- 184. Reversing valve, hot gas tank

1.2 Mega E with coil tank WT-C and final heater for hot gas



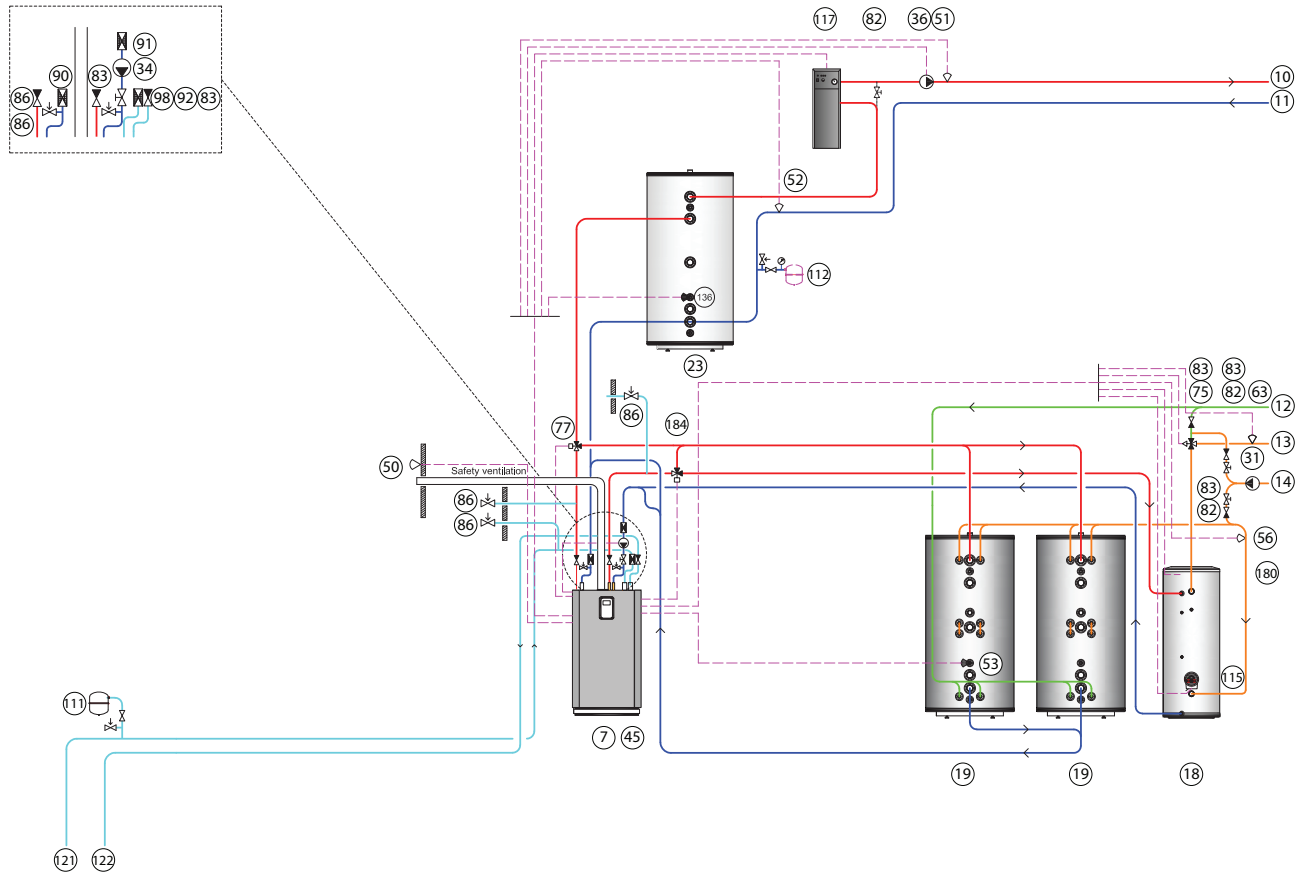
- 7. Heat pump
- 10. Heating supply line
- 11. Heating return line
- 12. Cold tap water line
- 13. Hot tap water line
- 14. Hot water circulation
- 18. Water heater
- 19. Water heater
- 31. Circulation pump (HWC)
- 34. Circulation pump (hot gas)
- 36. Circulation pump (system)
- 45. Expansion module
- 50. Outdoor sensor
- 51. Supply line sensor, heating system
- 52. System return line sensor
- 53. Hot water sensor, bottom
- 63. Mixing valve additional heater
- 56. TWC sensor
- 75. Mixing valve
- 77. Hot water exchange valve
- 82. Adjustment valve
- 83. Non-return valve
- 86. Safety valve
- 90. Dirt strainer (condenser)
- 91. Dirt strainer (hot gas)
- 92. Dirt strainer (brine)
- 98. Flexible hose
- 107. Shunt distribution circuit 1, shunt motor + valve
- 108. Shunt distribution circuit 1, supply line sensor
- 109. Shunt distribution circuit 1, circulation pump
- 111. Venting and expansion tank (brine)
- 112. Expansion tank
- 115. Immersion heater
- 117. Auxiliary heating
- 121. Brine in
- 122. Brine out
- 180. Tank sensor TWC (hot gas tank)
- 184. Reversing valve, hot gas tank

1.3 Mega E with two WT-C and final heater for hot gas



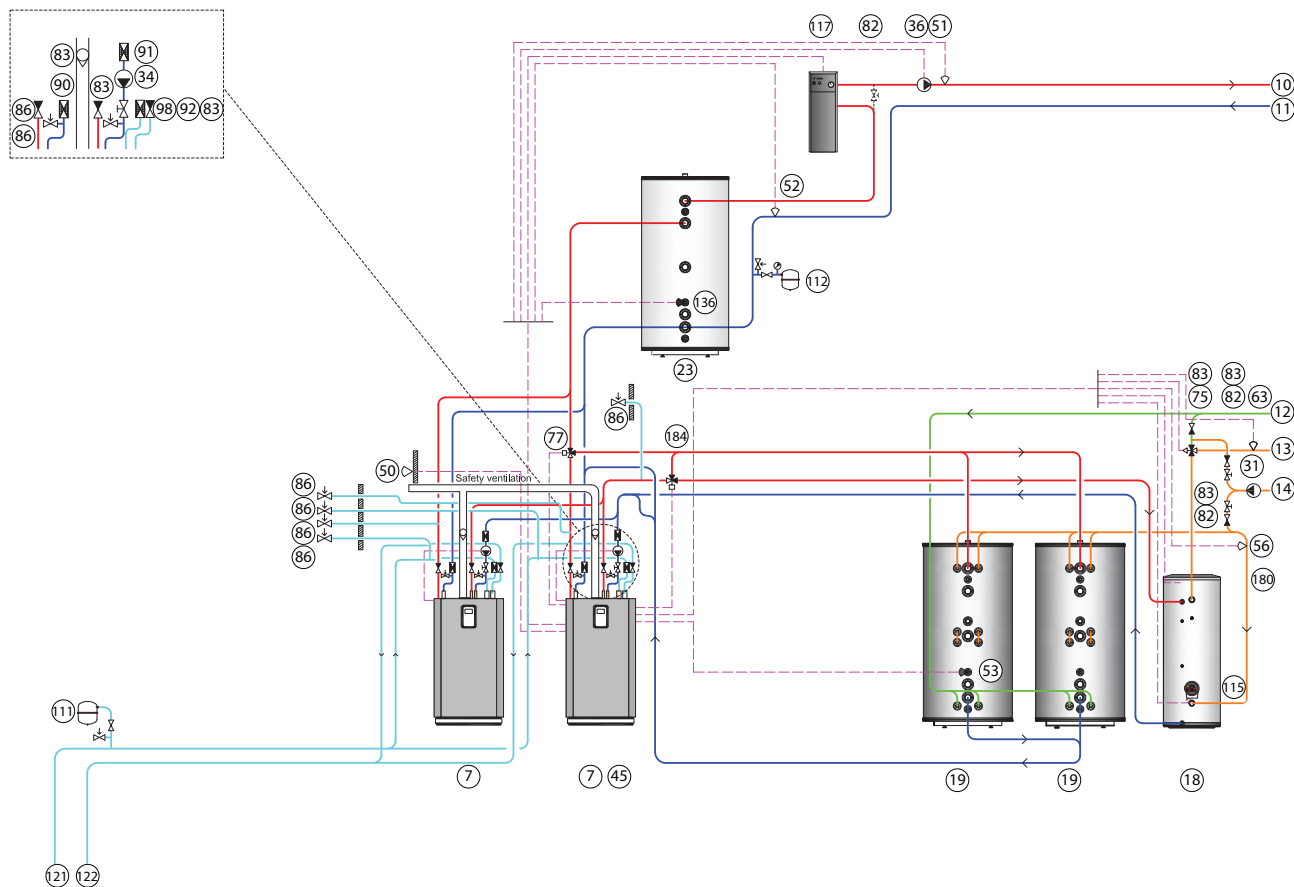
- 7. Heat pump
- 10. Heating supply line
- 11. Heating return line
- 12. Cold tap water line
- 13. Hot tap water line
- 14. Hot water circulation
- 18. Water heater
- 19. Water heater
- 31. Circulation pump (HWC)
- 34. Circulation pump (hot gas)
- 36. Circulation pump (system)
- 45. Expansion module
- 50. Outdoor sensor
- 51. Supply line sensor, heating system
- 52. System return line sensor
- 53. Hot water sensor, bottom
- 56. TWC sensor
- 63. Mixing valve additional heater
- 75. Mixing valve
- 77. Hot water exchange valve
- 82. Adjustment valve
- 83. Non-return valve
- 86. Safety valve
- 90. Dirt strainer (condenser)
- 91. Dirt strainer (hot gas)
- 92. Dirt strainer (brine)
- 98. Flexible hose
- 107. Shunt distribution circuit 1, shunt motor + valve
- 108. Shunt distribution circuit 1, supply line sensor
- 109. Shunt distribution circuit 1, circulation pump
- 111. Venting and expansion tank (brine)
- 112. Expansion tank
- 115. Immersion heater
- 117. Auxiliary heating
- 121. Brine in
- 122. Brine out
- 180. Tank sensor TWC (hot gas tank)
- 184. Reversing valve, hot gas tank

1.4 Mega E with two WT-C, volume tank and final heater for hot gas



- 7. Heat pump
- 10. Heating supply line
- 11. Heating return line
- 12. Cold tap water line
- 13. Hot tap water line
- 14. Hot water circulation
- 18. Water heater
- 19. Water heater
- 23. Volume tank
- 31. Circulation pump (HWC)
- 34. Circulation pump (hot gas)
- 36. Circulation pump (system)
- 45. Expansion module
- 50. Outdoor sensor
- 51. Supply line sensor, heating system
- 52. System return line sensor
- 53. Hot water sensor, bottom
- 55. Hot water sensor, top
- 56. TWC sensor
- 63. Mixing valve additional heater
- 75. Mixing valve
- 77. Hot water exchange valve
- 82. Adjustment valve
- 83. Non-return valve
- 86. Safety valve
- 90. Dirt strainer (condenser)
- 91. Dirt strainer (hot gas)
- 92. Dirt strainer (brine)
- 111. Venting and expansion tank (brine)
- 115. Immersion heater
- 117. Auxiliary heating
- 121. Brine in
- 122. Brine out
- 180. Tank sensor TWC (hot gas tank)
- 184. Reversing valve, hot gas tank

1.5 Two Mega E with two WT-C, volume tank and final heater for hot gas



- 7. Heat pump
- 10. Heating supply line
- 11. Heating return line
- 12. Cold tap water line
- 13. Hot tap water line
- 14. Hot water circulation
- 18. Water heater
- 19. Water heater
- 23. Volume tank
- 31. Circulation pump (HWC)
- 34. Circulation pump (hot gas)
- 36. Circulation pump (system)
- 45. Expansion module
- 50. Outdoor sensor
- 51. Supply line sensor, heating system
- 52. System return line sensor
- 53. Hot water sensor, bottom
- 55. Hot water sensor, top
- 56. TWC sensor
- 63. Mixing valve additional heater
- 75. Mixing valve
- 77. Hot water exchange valve
- 82. Adjustment valve
- 83. Non-return valve
- 86. Safety valve
- 90. Dirt strainer (condenser)
- 91. Dirt strainer (hot gas)
- 92. Dirt strainer (brine)
- 98. Flexible hose
- 111. Venting and expansion tank (brine)
- 112. Expansion tank
- 115. Immersion heater
- 117. Auxiliary heating
- 121. Brine in
- 122. Brine out
- 180. Tank sensor TWC (hot gas tank)
- 184. Reversing valve, hot gas tank

2 Heat pump dimensions and connections (mm)

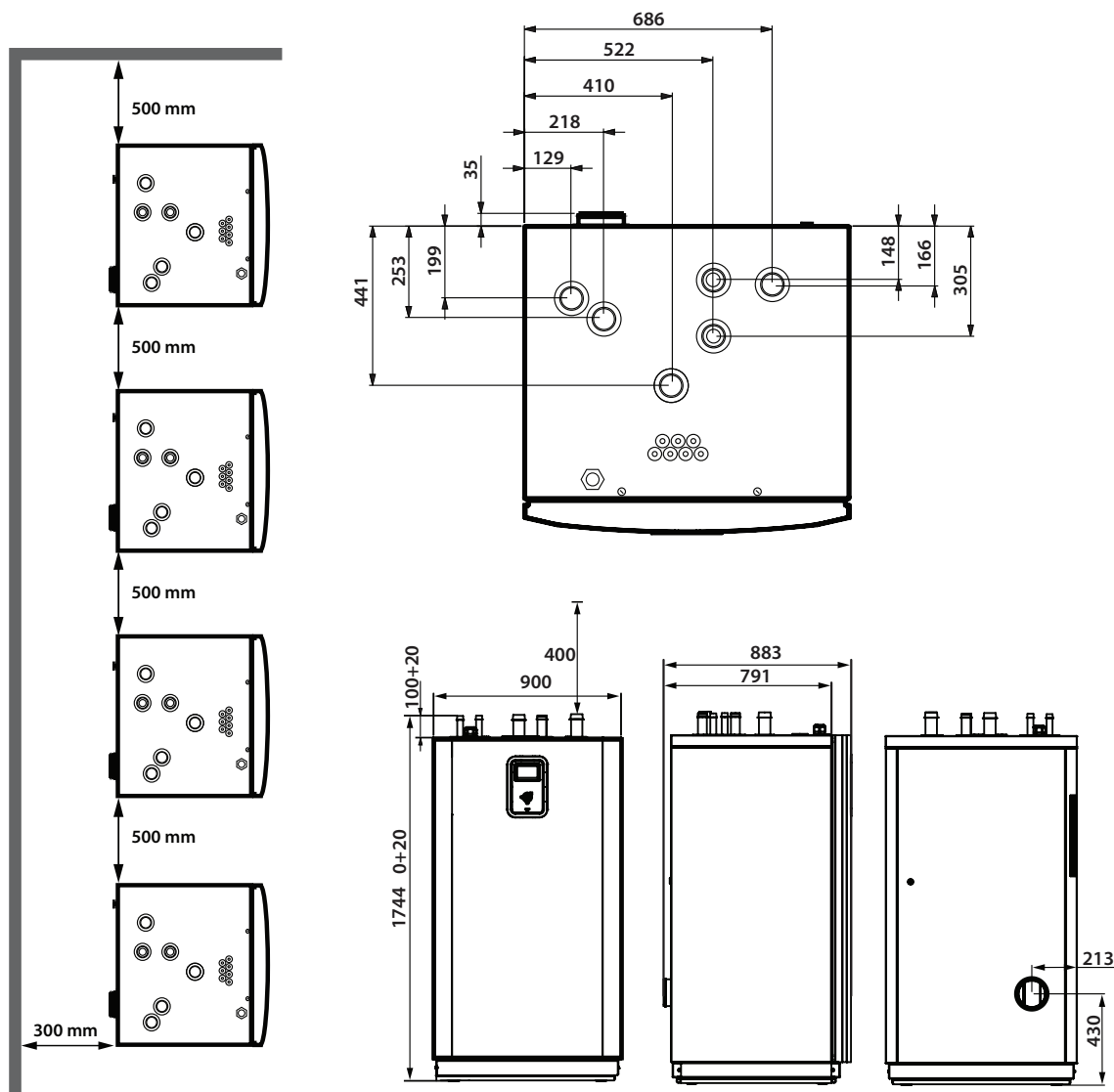
2.1 Minimum free space around the heat pump

To facilitate the installation and subsequent testing and maintenance, there must be sufficient free space around the heat pump.

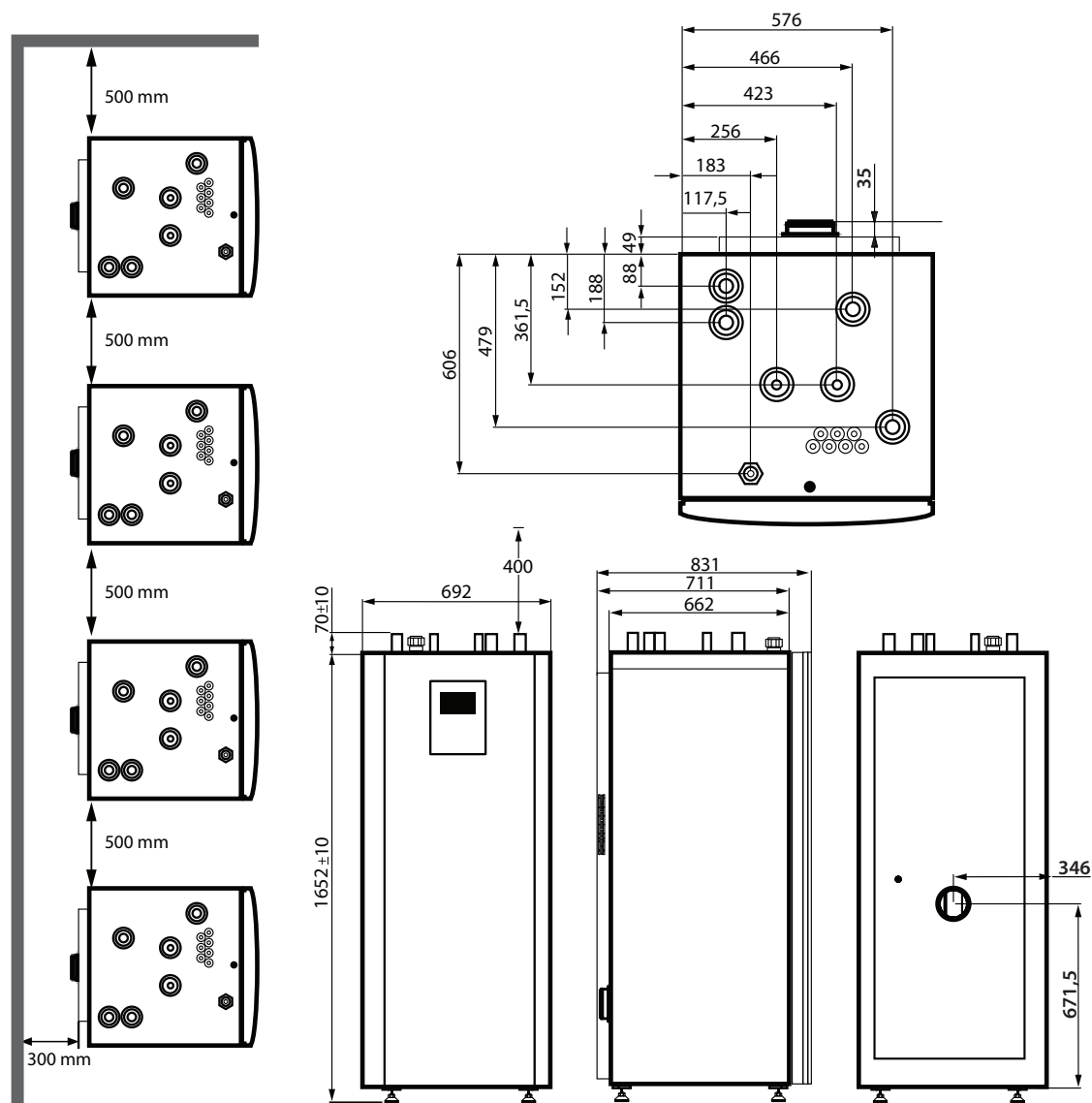
- Model XL, L, M, S & S-E: Minimum free space on the back 300 mm.

Minimum free space on the right side is 300mm, for the fan to work as intended. Recommended free space for all models is 500mm on both the left and the right side, to facilitate any maintenance

Mega E XL & L



Mega E M, S & S-E

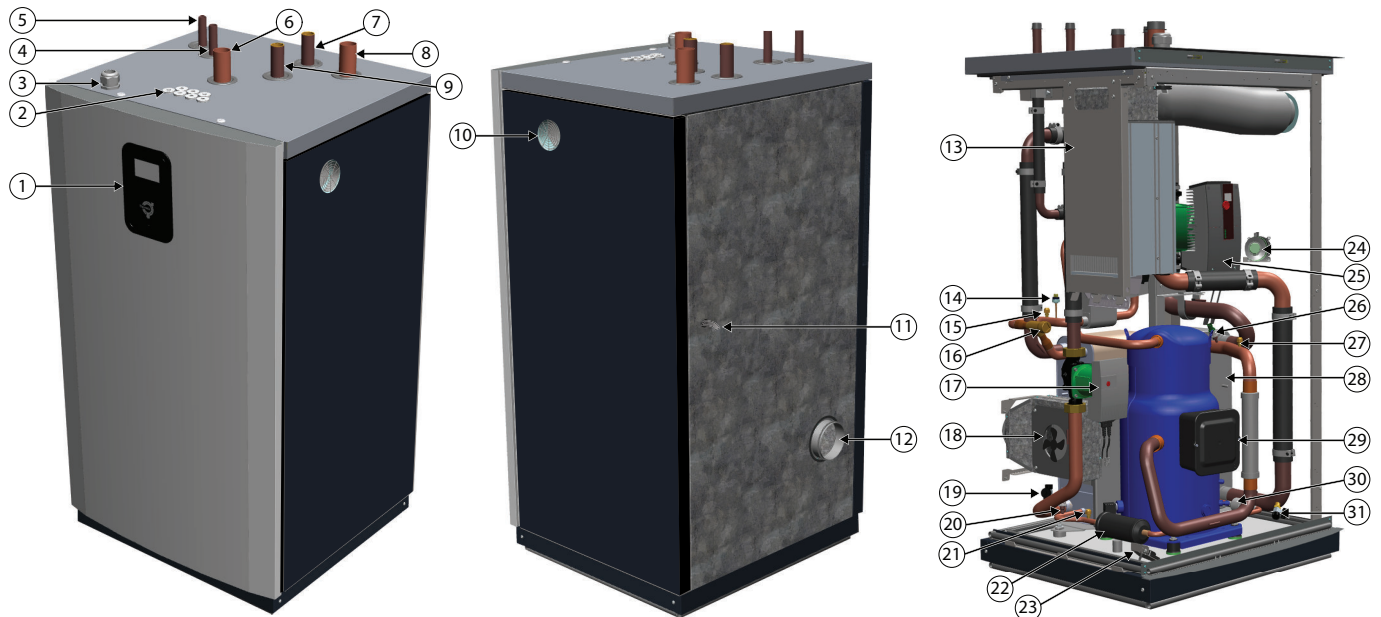


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3 Components

3.1 Mega E XL & L

Image shows the position of the components (brand of components can vary).



- | | |
|--|----------------------------------|
| 1. Control panel | 17. Condenser pump |
| 2. Lead-ins for communication cable and sensor | 18. Safety fan |
| 3. Lead-in for incoming supply | 19. Drain |
| 4. Returning hot gas from water heater | 20. High pressure transmitter |
| 5. Hot gas water heater | 21. Service output high pressure |
| 6. Brine out | 22. Drying filter |
| 7. Supply pipe, heating system | 23. Refrigerant sensor |
| 8. Brine in | 24. Differential pressure switch |
| 9. Return pipe, heating system | 25. Brine pump |
| 10. Fan | 26. Low pressure transmitter |
| 11. Differential pressure switch tube | 27. Service outlet, low pressure |
| 12. Ventilation pipe | 28. Evaporator |
| 13. Inverter | 29. Compressor |
| 14. High pressure switch | 30. Electronic expansion valve |
| 15. Service output high pressure | 31. Drain |
| 16. Non-return valve | |

Mega E XL & L Connections, pipe diameter in mm

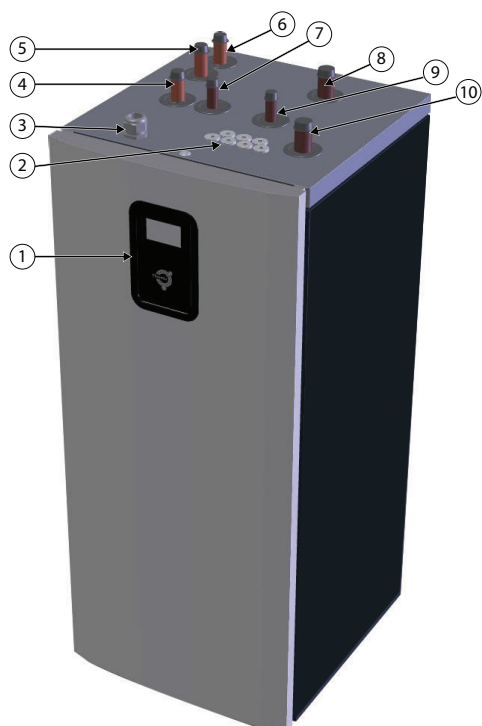
Brine	Heating system	Hot gas exchanger
54	42	28

Technical description

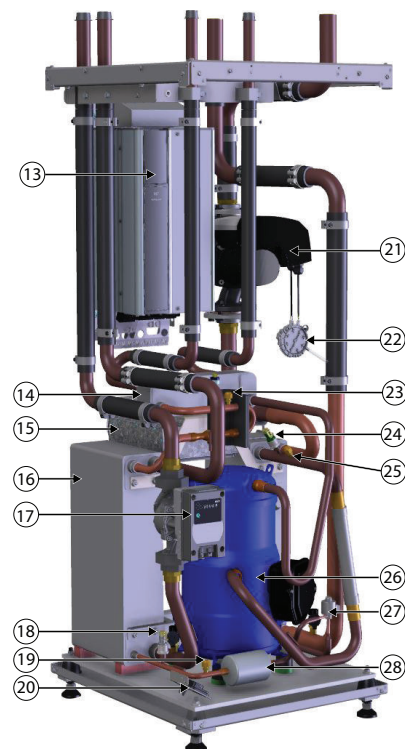
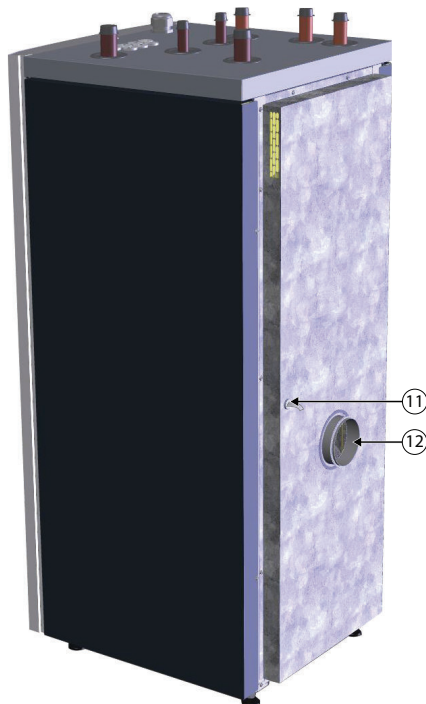
Mega E

3.2 Mega E M & S

Image shows the position of the components (brand of components can vary).



1. Control panel
2. Lead-ins for communication cable and sensor
3. Lead-in for incoming power supply
4. Return pipe, tap water system
5. Supply pipe, heating system
6. Return pipe, heating system
7. Returning hot gas from water heater
8. Brine out
9. Hot gas to water heater
10. Brine in
11. Differential pressure switch tube
12. Ventilation pipe
13. Inverter
14. Hot gas exchanger
15. Safety fan



16. Condenser
17. Condenser pump
18. High pressure transmitter
19. Service output, high pressure
20. Refrigerant sensor
21. Brine pump
22. Differential pressure switch
23. pressure transmitter
24. Low pressure transmitter
25. Service output, high pressure
26. Compressor
27. Electronic expansion valve
28. Drying filter

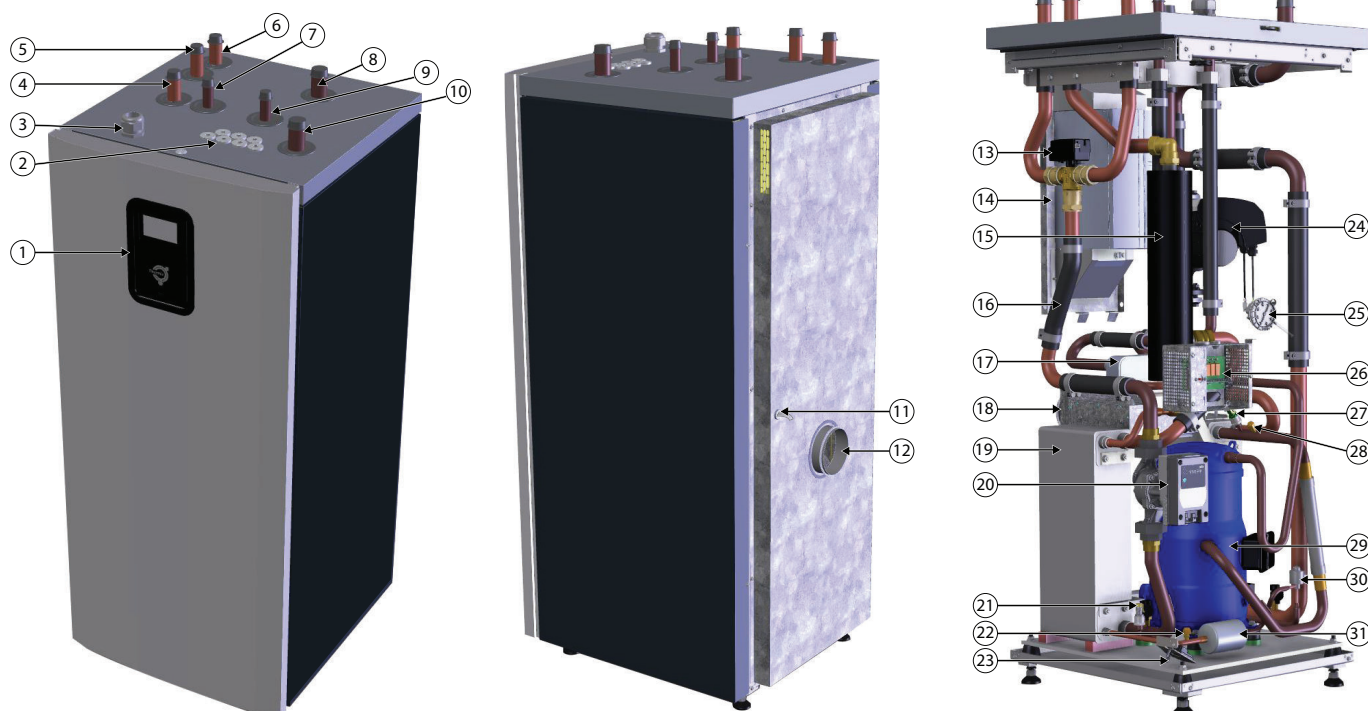
Mega E M & S Connections, pipe diameter in mm

Brine	Heating system	Hot gas exchanger
42	35	28

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3.3 Mega E S-E

Image shows the position of the components (brand of components can vary).



- | | |
|--|-----------------------------------|
| 1. Control panel | 17. Hot gas exchanger |
| 2. Lead-ins for communication cable and sensor | 18. Safety fan |
| 3. Lead-in for incoming power supply | 19. Condenser |
| 4. Return pipe, tap water system | 20. Condenser pump |
| 5. Supply pipe, heating system | 21. High pressure transmitter |
| 6. Return pipe, heating system | 22. Service output, high pressure |
| 7. Returning hot gas from water heater | 23. Refrigerant sensor |
| 8. Brine out | 24. Brine pump |
| 9. Hot gas to water heater | 25. Differential pressure switch |
| 10. Brine in | 26. Relay output card |
| 11. Differential pressure switch tube | 27. Service outlet, low pressure |
| 12. Ventilation pipe | 28. Evaporator |
| 13. Mixing valve, heating and tap water | 29. Compressor |
| 14. Inverter | 30. Electronic expansion valve |
| 15. Internal immersion heater | 31. Drying filter |
| 16. Flexible hose | |

Mega E S-E Connections, pipe diameter in mm

Brine	Heating system	Hot gas exchanger	Tap water
42	35	28	35

4 Evacuation ventilation

4.1 Guidelines

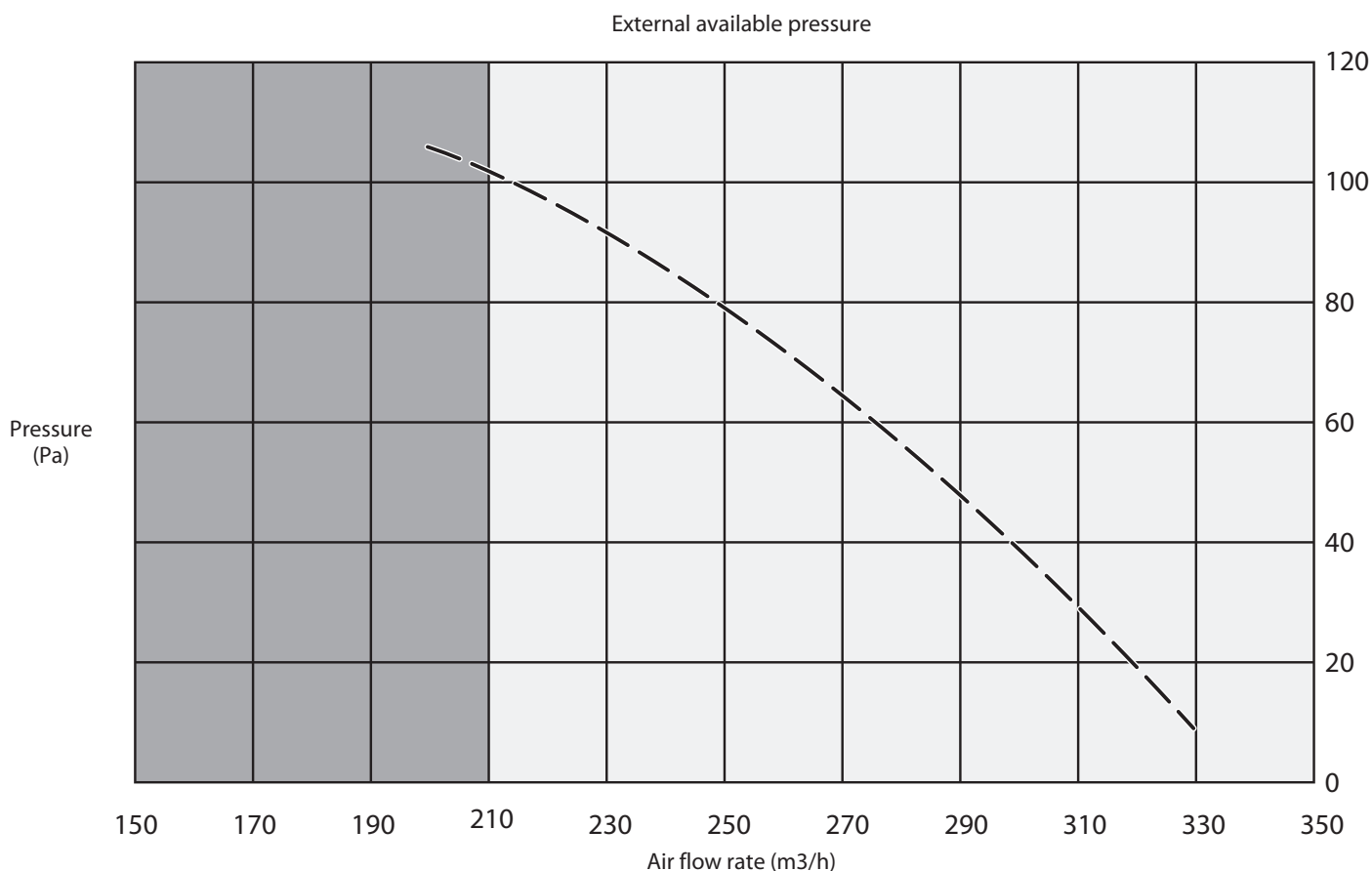


Installation of evacuation ventilation should be carried out by qualified ventilation personnel or those who have knowledge regarding flow, pressure drop and installation.

Mega E requires the cabinet to be ventilated outdoors, otherwise the installation is not approved as a closed ventilated cabi-net. This is done by connecting the plug (125mm) to the back of a ventilation duct. The duct must not be connected to any other function, and be independent from the facility's ventilation system. The venting must debouch in a place without any sources of ignition and where the risk of leaking refrigerant is minimized.

Minimum rated airflow: 210 m³/h For cascade set-up is this value for each and single unit in the multiple installation.

The R454B is a **lightly** flammable refrigerant. The area must be marked with an ATEX sign at door or outlet.



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External available pressure is 102 Pa with the built-in fan. The following table should be used as an approximately guide when installing the ventilation duct.

For longer pipe runs and common manifold, it is always recommended to go up in dimension. The recommendation is to always make a flow and pressure drop calculation for each individual installation to get the correct length and dimension of the ventilation pipes. It is of most important to check the manufacturer's data (pipes, bends, check valves and grilles, etc.) to get the correct information regarding flows and pressure drops, as this can differ between different manufacturers.

Duct connections Ø mm	Number of bends***	Maximum length (m). Available pressure 102Pa					
		Ventilation grilles*		Ventilation grilles**		Without ventilation grilles	
		Pipes, only	Pipes+non-return valve	Pipes, only	Pipes+non-return valve	Pipes, only	Pipes+non-return valve
125	2	26	14	-	-	32	21
125	4	21	10	-	-	28	16
125	6	17	5	-	-	23	12
160	2	100	85	65	50	108	93
160	4	94	79	59	45	102	87
160	6	88	74	54	39	96	81

* Low pressure grille. The above table is calculated with a pressure drop of 17 Pa for 125 Ø mm and 7 Pa for 160 Ø mm.

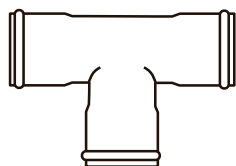
** High pressure grille. The above table is calculated with a pressure drop of 90 Pa for 125 Ø mm and 38 Pa for 160 Ø mm.

*** Using a T-Brach can result in an additional pipe reduction with -1.5 meters compared to a regular 90-degree elbow.

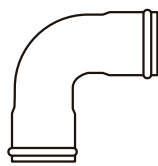
Non-return valve. The above table is calculated with a pressure drop of 32 Pa for 125 Ø mm and 15 Pa for 160 Ø mm.

Note that the examples below it can differ from different brands.

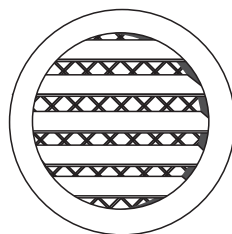
T-branch



Elbow bend

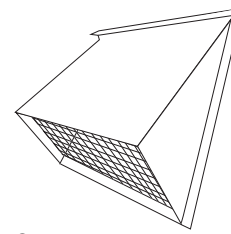


High pressure ventilation grille



Open area >50%

Low pressure ventilation grille



Open area >50%

The ventilation system must be connected and installed in a professional manner that ensures that leakage of air and leaked refrigerant does not leak from the duct into the room. Joints must be sealed. The ventilation ducts must be well suspended. Ducts in ventilation systems must be of at least Class B according to PN EN 12237:2005

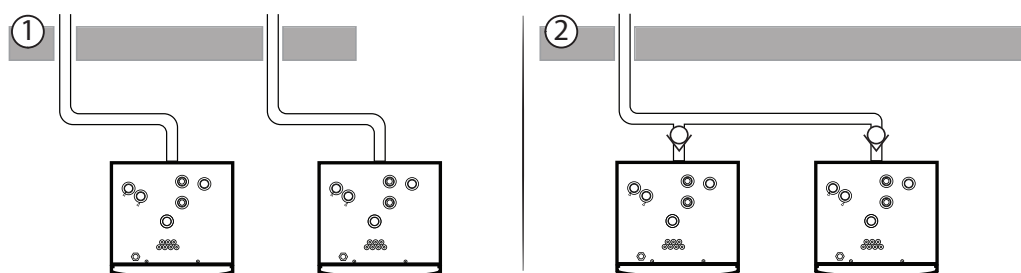
4.2 Cascade, ventilation

When installing multiple units, the ventilation system can be configured in one of the following ways:

- Individual ventilation ducts for each unit, figure 1
- Shared ventilation duct, as illustrated in figure 2.

If the ventilation system is cascaded, it is recommended to install check valves (see figure 2) to prevent air circulation between the heat pumps. This ensures proper airflow direction and avoids undesired pressure interactions between units.

When connecting the ventilation system as shown in figure 2, it is also recommended to use a larger diameter manifold pipe to minimize pressure drop and maintain optimal system performance.

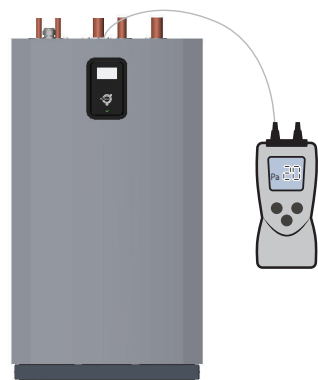


Before commissioning, it is of most important that a ventilation test is performed (see chapter "**Manual test**" in the commissioning guide).

In order for the test to be approved, a negative pressure of 20 Pa must be achieved in the cabinet for a 10-second period within one minute of starting the test. One way to test this, is to connect a pressure gauge, connected via one of the sensor ports on the top of the heat pump (see image below).



In a cascade installation, it is important to test each individual unit separately and not on multiple units at the same time, this can create the opposite effect. If the test is not approved, please investigate and make the test again until the test is approved.



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4.3 External fan

If the pressure drop is too high for the built-in fan, one of the following methods can be used:

- External fan can be connected. It must be rated for a EX-classification environment. When dimensioning an external fan, it is important to consider the pressure drop for pipes, bends, check valves, and other flow restrictions, based on the manufacturer's data, as this can differ depending on manufacturer.
- In some cases, it may be sufficient to increase the pipe dimension to compensate for the pressure drop.

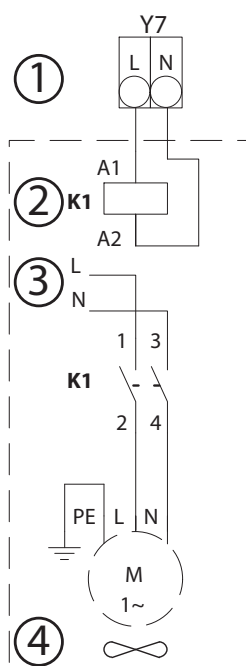
Note! For cascade installation:

- The external fan will normally draw air flow through all the connected heat pumps in parallel, and needs to be sized accordingly.
- Each heat pump must be connected to the external fan, for example via an external relay.

Single installation



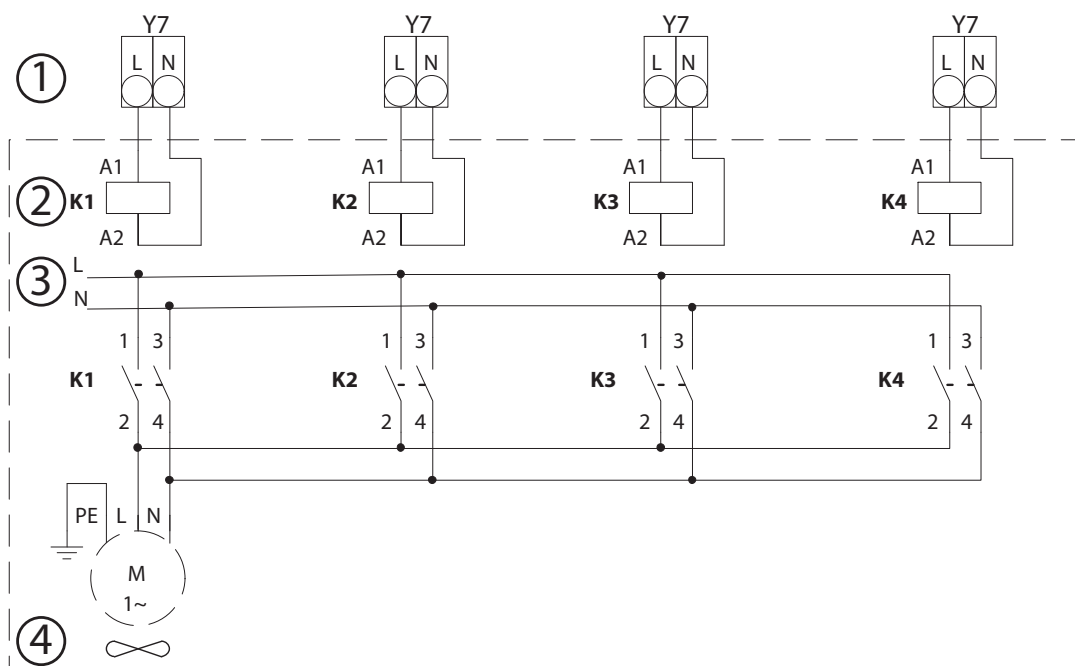
Y7: Located on safety card, connection external safety fan



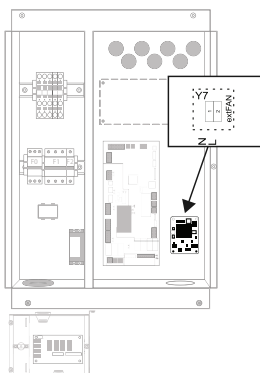
Cascade installation ->



Y7: Located on safety card, connection external safety fan



Safety card location



1. Terminal, for 230V control circuit only!
2. Contactor.
3. Supply 230~1N
4. External safety fan.

4.4 Safety valves and automatic vents

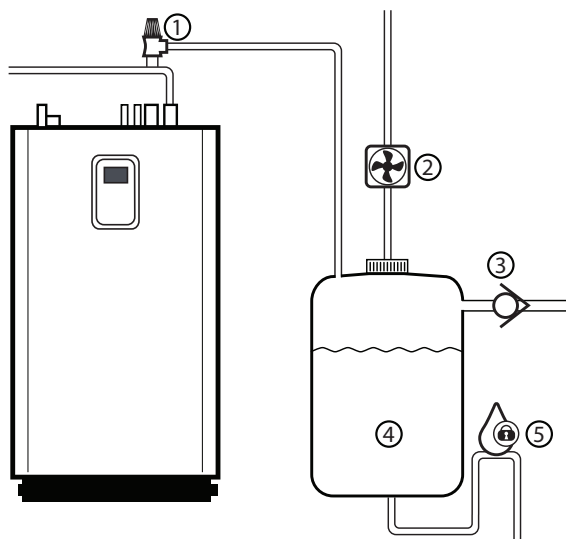
All secondary circuits must be equipped with safety valves and automatic deaerators with outlets that ensures that no leaked refrigerant ends up indoors. Consider local and national regulations.

Ventilation led outside or ventilated collection container.

- If they are led outdoors, the pipes must be designed in a way that evacuated water does not freeze. When using an outlet in a collection tank, the tank must be ventilated according to EN 378-3.
- When dimensioning automatic vents and safety valves, the pressure and temperature of the system must be taken into account. The minimum nominal flow rate for automatic vents is 15l/s.
- Recommendation is to place safety valves as close to the heat pump as possible.
- Extra automatic vents in the remaining systems that do not have a safe outlet outside, must be switched off during operation.
- If the HGW function is not used, it must be connected to the radiator circuit, or be mechanically bridged and equipped with a safety valve and automatic vent that are drawn outside or to a ventilated collection container.

Mega E safety system

The illustration below is an example of what a safety system can look like. If you have a system, where ventilation is led outdoors, see chapter 3 for system suggestions. (Thermia does not provide the equipment regarding the safety system set-up.)



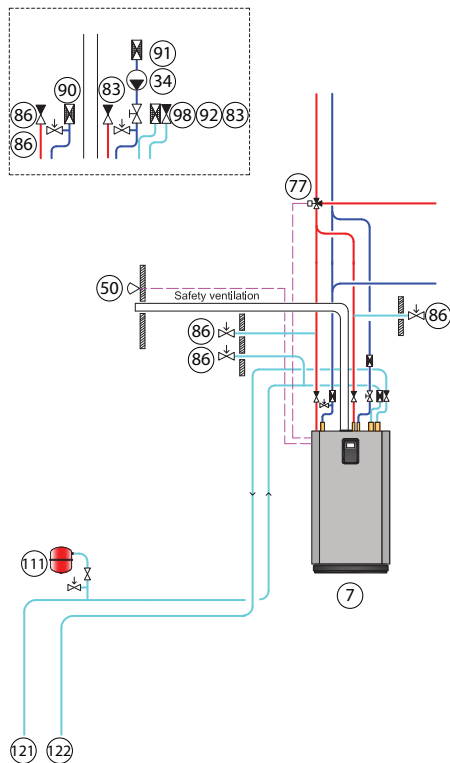
1. Safety valve
2. External fan
3. Non-return valve
4. Collection tank
5. Water lock

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System overview, if HGW function is not used

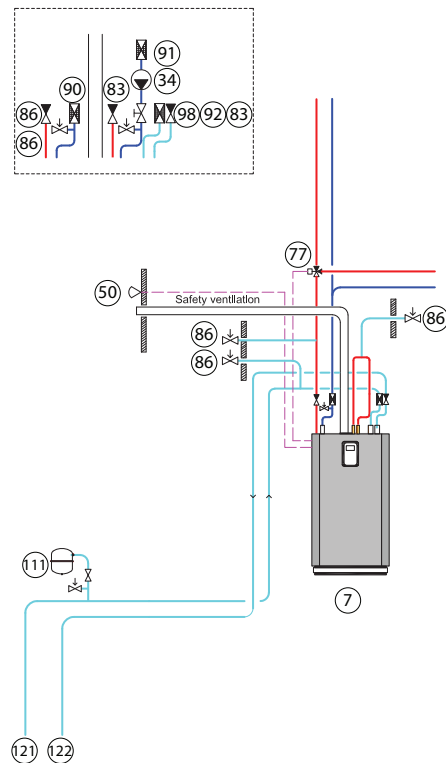
If the HGW function is not used, it must be connected to the radiator circuit, or be mechanically bridged and equipped with a safety valve and automatic vent that are drawn outside or to a ventilated collection container.

Mega E with HGW, no circulation pump



- 7. Heat pump
- 34. Circulation pump (hot gas)
- 50. Outdoor sensor
- 77. Hot water exchange valve
- 83. Non-return valve
- 86. Safety valve
- 90. Dirt strainer (condenser)
- 91. Dirt strainer (hot gas)
- 92. Dirt strainer (brine)
- 98. Flexible hose
- 111. Venting and expansion tank (brine)
- 121. Brine in
- 122. Brine out

Mega E with mechanically bridged HGW, no circulation pump



- 7. Heat pump
- 34. Circulation pump (hot gas)
- 50. Outdoor sensor
- 77. Hot water exchange valve
- 83. Non-return valve
- 86. Safety valve
- 90. Dirt strainer (condenser)
- 91. Dirt strainer (hot gas)
- 92. Dirt strainer (brine)
- 98. Flexible hose
- 111. Venting and expansion tank (brine)
- 121. Brine in
- 122. Brine out

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5 Technical data

5.1 Technical data, XL & L

Mega E			XL	L
Refrigerant	Type		R454B	
	Amount ¹	kg	8,8	5,9
	CO ² equivalent	tons	4,101	2,749
Compressor	Type		Scroll	
	Oil /Amount		POE/7.69	POE/4.11
Electrical data 3~N	Mains power supply	Volt	400 3N~	
	Type output, compressor	kW	30	22
	Type output, circulation pump	kW	1	
	Fuse ¹⁰	A	63	40
	Short-circuit power (Ssc) ¹¹	MVA	3,1	2,3
Performance	COP ²		4,55	4,72
	Heating capacity ²	kW	50,31	35,44
	Input power ²	kW	11,06	7,51
	SCOP, floor heating (35°C) ³		5,44	5,54
	SCOP, Radiator (55°C) ⁴		4,35	4,46
	SCOP, floor heating (35°C) ¹²		5,25	5,32
	SCOP, Radiator (55°C) ¹³		4,18	4,27
	Energy efficiency class		N/A	A+++
	Energy efficiency class built in temperature control package		N/A	A+++
	Energy efficiency class (low temperature applications)		N/A	A+++
	Energy efficiency class built in temperature control package (low temperature applications)		N/A	A+++
	Declared load profile		N/A	N/A
	Energy label water heater		N/A	
Max system pressure	Brine	bar	6,0	
	Heat transfer fluid		6,0	
Available pressure	Built-in fan	Pa	102	
Max/min temperature ⁶	Cooling circuit	°C	20/-10	
	Heating circuit	°C	65 ⁷ /20	
Max/min refrigerant circuit	Low pressure	MPa	0,21	
	High pressure	MPa	4,3	
Sound power level	Min/max ^{8a}	dB (A)	45-63 ⁵	39-59 ⁵
	Sound power level ^{8b}	dB (A)	50 ⁵	44 ⁵
Antifreeze ⁹	Antifreeze with anti-corrosive properties must be used in the brine collector circuit		Ethanol + water solution -17°C ± 2	
Net weight		kg	485	407
Dimensions (WxDxH)	Without pipes	mm	900x849x164 4 +/-10	900x849x164 4 +/-10
Dimensions (WxDxH)	With pipes	mm	900x884x174 4 +/-10	900x884x174 4 +/-10

Technical description Mega E

*NB Remember to dimension the collector in accordance with the building's P design. The data given above only apply to nominal flow and speed.

- 1) The refrigerant circuit is hermetically sealed and contains refrigerants covered by the F-Gas Regulation. GWP for R454B according to EC 517/2014 is 466, giving a CO₂ equivalent, equivalent to XL 4,101 & L 2,749 tons.
- 2) B0/W35 according to EN14511 incl. Circular pump at 3600 rpm on XL & L.
- 3) B0/W35, according to EN14825, Cold Climate Pdesign S: 33 kW, S-E: 33kW, M: 44 kW, L: 58 kW, XL: 84 kW.
- 4) B0/W55, according to EN14825, Cold Climate Pdesign S: 31 kW, S-E: 31 kW, M: 42 kW, L: 56 kW, XL: 81 kW.
- 5) Compressor speed rpm 1500-6000 rpm. $\Delta t = 10K$.
- 6) Note that it is not possible to combine all of the temperature of the brine with heat carrier temperatures.
- 7) Minimum incoming coolant temperature 0 °C.
- 8a) Sound power level measured according to EN 12102:2017 and EN 3741:2010 (B0/W35).
- 8b) Sound power level according to Energy label, measured according to EN 12102:2017 and EN 3741:2010 (B0/W55).
- 9) Always check local rules and regulations before using antifreeze.
- 10) The fuse size can be adjusted according to the heat pumps power output. See chapter "Estimated current".
- 11) This equipment complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to xx (see table for XL value) at the interface point between the user's supply and the public system. It is the responsibility of the installer or user for the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power Ssc greater than or equal to xx (see table for XL & L value).
- 12) B0/W35, according to EN14825, Average Climate Pdesign S: 33 kW, S-E: 33 kW, M: 44 kW, L: 58 kW, XL: 84 kW.
- 13) B0/W55, according to EN14825, Average Climate Pdesign S: 31 kW, S-E: 31 kW, M: 42 kW, L: 56 kW, XL: 81 kW

5.2 Technical data, M & S

Mega E			M	S	S-E
Refrigerant	Type		R454B	R454B	R454B
	Amount ¹	kg	4.5	4.0	4.0
	CO ₂ equivalent	tons	2.097	1.864	1.864
Compressor	Type		Scroll	Scroll	Scroll
	Oil /Amount	l	POE/ 3.79	POE/ 3.79	POE/ 3.79
Electrical data 400V 3~N	Mains power supply	Volt	400 3N~	400 3N~	400 3N~
	Type output, compressor	kW	18	14	14
	Type output, circulation pump	kW	0,8	0,8	0,8
	Fuse ¹⁰	A	32	25	25
	Fuse, combined ²	A	N/A	N/A	50
	Fuse separate supply, Immersion heater only	A	N/A	N/A	10/16/25
	Immersion heater, 3 steps	kW	N/A	N/A	5/10/15
	Short-circuit power (Ssc) ¹¹	MVA	2,0	2,0	2,0
Electrical data 230V~3	Mains power supply	Volt	230 3N~	230 3N~	N/A
	Type output, compressor	kW	18	14	N/A
	Type output, circulation pump	kW	0,8	0,8	N/A
	Fuse ¹⁰	A	2,0	2,0	N/A
	Short-circuit power (Ssc) ¹¹	MVA	2,0	2,0	N/A

Technical description

Mega E

Mega E			M	S	S-E
Performance	COP ²		4,50	4,71	4,71
	Heating capacity ²	kW	26,89	19,96	19,96
	Input power ²	kW	5.98	4.24	4.24
	SCOP, floor heating (35°C) ³		5,54	5,6	5,6
	SCOP, Radiator (55°C) ⁴		4,27	4,31	4,31
	SCOP, floor heating (35°C) ¹²		5,29	5,40	5,40
	SCOP, Radiator (55°C) ¹³		4,09	4,15	4,15
	Energy efficiency class		A+++	A+++	A+++
	Energy efficiency class built in temperature control package		A+++	A+++	A+++
	Energy efficiency class (low temperature applications)		A+++	A+++	A+++
	Energy efficiency class built in temperature control package (low temperature applications)		A+++	A+++	A+++
	Declared load profile		N/A	N/A	N/A
	Energy label water heater		N/A	N/A	N/A
	Power range @B0/W35 kW	kW	11-44 ⁵	10-33 ⁵	10-33 ⁵
Max system pressure	Brine	bar	6,0	6,0	6,0
	Heat transfer fluid		6,0	6,0	6,0
Available pressure	Built-in fan	Pa	102	102	102
Max/min temperature ⁶	Cooling circuit	°C	20/-10	20/-10	20/-10
	Heating circuit	°C	65 ⁷ /20	65 ⁷ /20	65 ⁷ /20
Max/min refrigerant circuit	Low pressure	MPa	0,21	0,21	0,21
	High pressure	MPa	4,3	4,3	4,3
Sound power level	Min/max ^{8a}	dB (A)	41-56 ⁵	41-53 ⁵	41-53 ⁵
	Sound power level ^{8b}	dB (A)	50 ¹¹	47 ¹¹	47 ¹¹
Antifreeze ⁹	Antifreeze with anti-corrosive properties must be used in the brine collector circuit		Ethanol + water solution -17°C ± 2		
Net weight	400V/230V	kg	311/322	304/	315
Dimensions (WxDxH)	Without pipes	mm	692x796x16 52 +/-10	692x796x16 52 +/-10	692x796x16 52 +/-10
	With pipes	mm	692x831x17 22 +/-10	692x831x17 22 +/-10	692x831x17 22 +/-10

*NB Remember to dimension the collector in accordance with the building's P design. The data given above only apply to nominal flow and speed.

1) The refrigerant circuit is hermetically sealed and contains refrigerants covered by the F-Gas Regulation. GWP for R454B according to EC 517/2014 is 466, giving a CO2 equivalent, equivalent to M 2,097 & S 1,864 tons.

2) B0/W35 according to EN14511 incl. Circular pump at 3600 rpm on XL & L.

3) B0/W35, according to EN14825, Cold Climate Pdesign S: 33 kW, S-E: 33kW, M: 44 kW, L: 58 kW, XL: 84 kW.

4) B0/W55, according to EN14825, Cold Climate Pdesign S: 31 kW, S-E: 31 kW, M: 42 kW, L: 56 kW, XL: 81 kW.

5) Compressor speed rpm 1500-6000 rpm. Δt = 10K.

6) Note that it is not possible to combine all of the temperature of the brine with heat carrier temperatures.

7) Minimum incoming coolant temperature 0 °C.

8a) Sound power level measured according to EN 12102:2017 and EN 3741:2010 (B0/W35).

8b) Sound power level according to Energy label, measured according to EN 12102:2017 and EN 3741:2010 (B0/W55).

9) Always check local rules and regulations before using antifreeze.

10) The fuse size can be adjusted according to the heat pumps power output. See chapter "Estimated current".

11) This equipment complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to xx (see table for XL value) at the interface point between the user's supply and the public system. It is the responsibility of the installer or user for the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power Ssc greater than or equal to xx (see table for XL & L value).

12) B0/W35, according to EN14825, Average Climate Pdesign S: 33 kW, S-E: 33 kW, M: 44 kW, L: 58 kW, XL: 84 kW

13) 0/W55, according to EN14825, Average Climate Pdesign S: 31 kW, S-E: 31 kW, M: 42 kW, L: 56 kW, XL: 81 kW

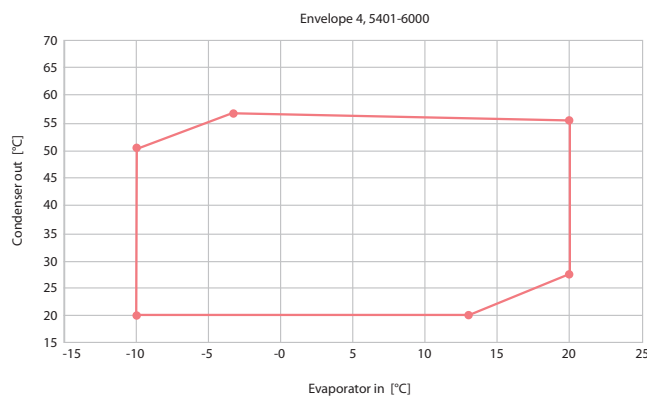
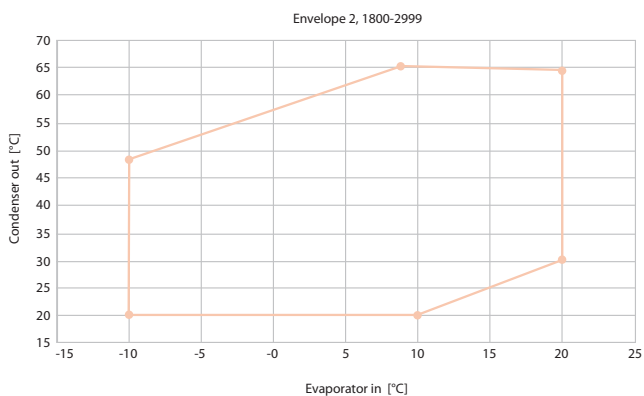
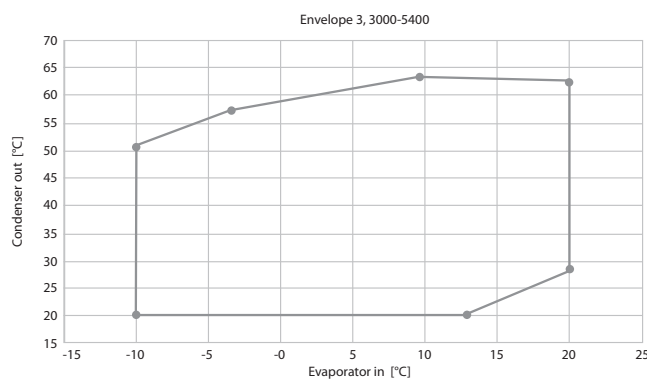
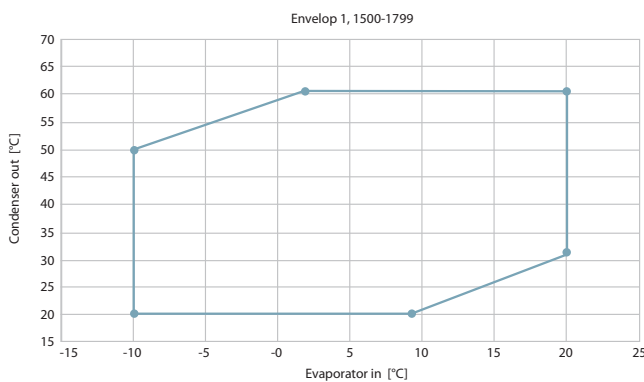
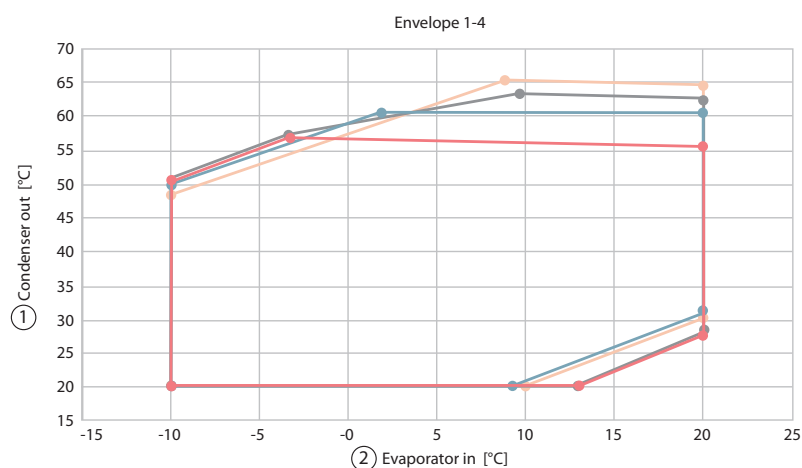
Technical description Mega E

6 Operation temperatures

6.1 Min/Max operation temperature R454B

1. Condenser out [°C] ($\Delta 10k$)
2. Evaporator in [°C] ($\Delta 3k$)

Note, that envelope 4 is not applicable for Mega E S

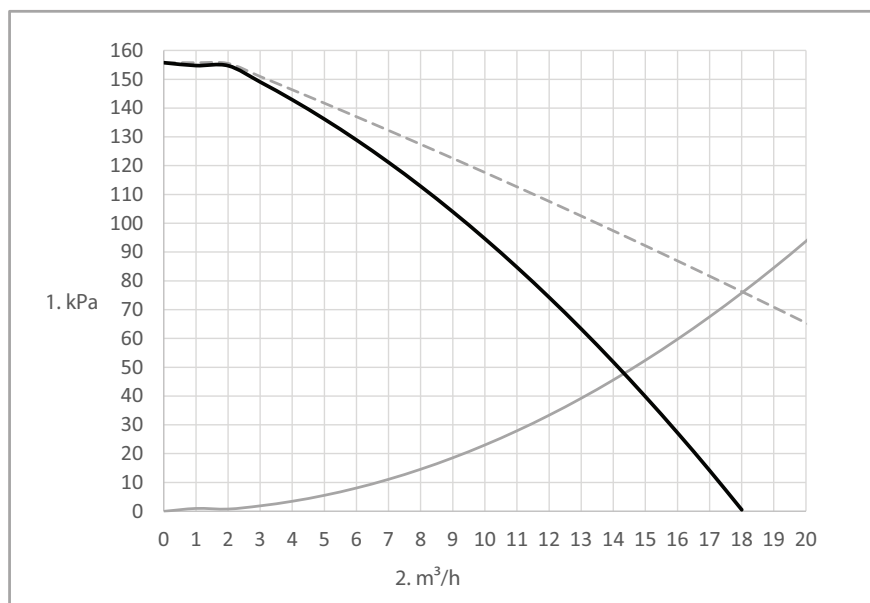


Picture is showing the maximum working envelope for the heat pump, as an example. Actual working envelope depends on operating conditions.

7 Calculated flow/pressure diagrams

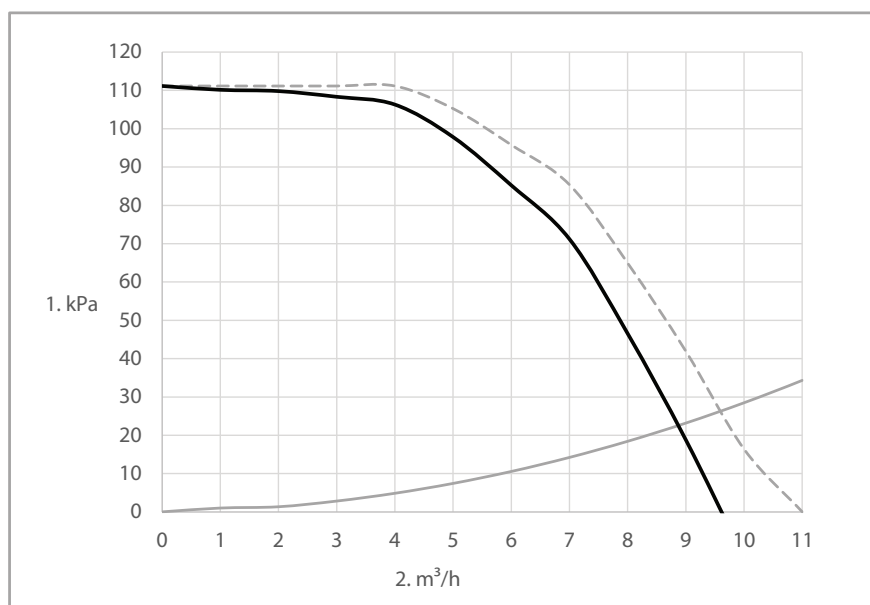
7.1 Mega E XL

7.1.1 Evaporator diagram



- Pump curve
 - Internal pressure drop
 - External available pressure
- Brine anti freeze mixture 30% ethanol+water
1. Pressure kPa
 2. Flow m³/h

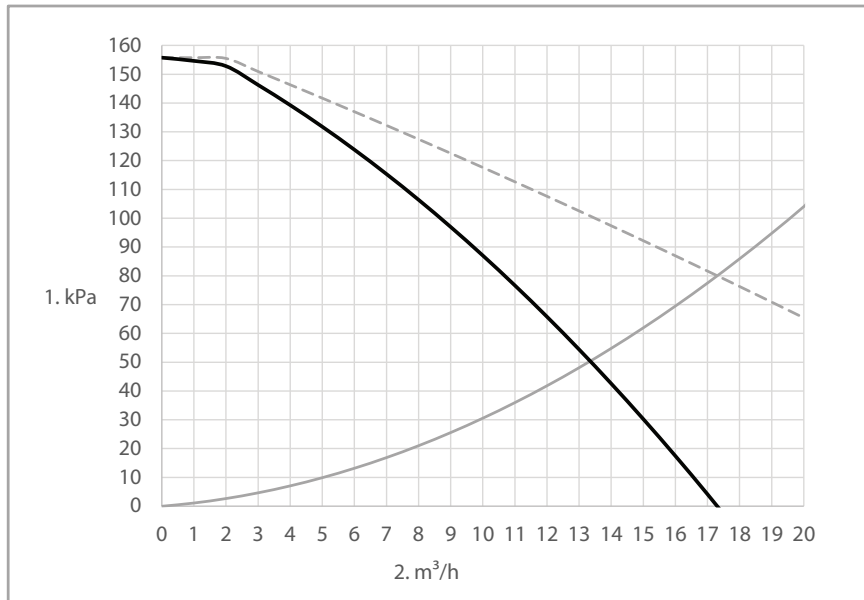
7.1.2 Condenser diagram



- Pump curve
 - Internal pressure drop
 - External available pressure
1. Pressure kPa
 2. Flow m³/h

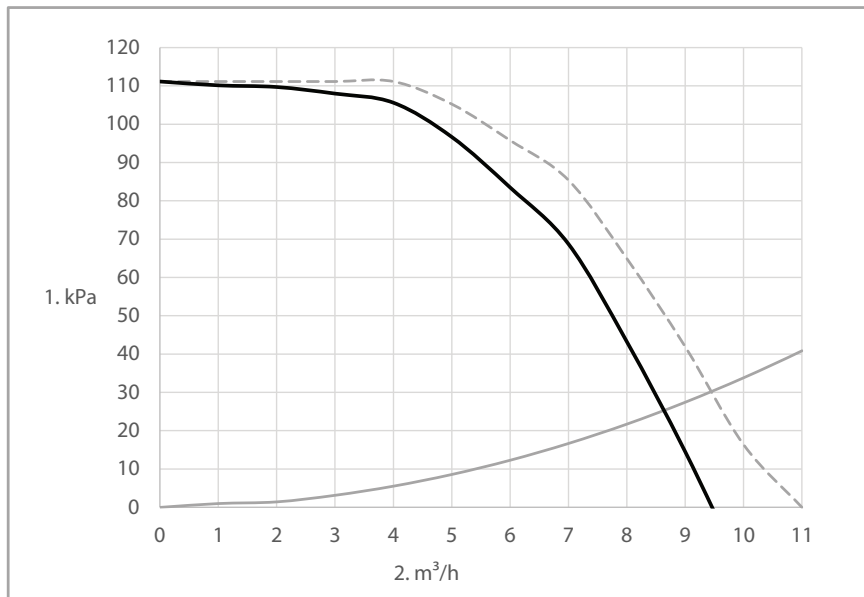
7.2 Mega E L

7.2.1 Evaporator diagram



- Pump curve
 - Internal pressure drop
 - External available pressure
- Brine anti freeze mixture 30% ethanol+water
1. Pressure kPa
2. Flow m³/h

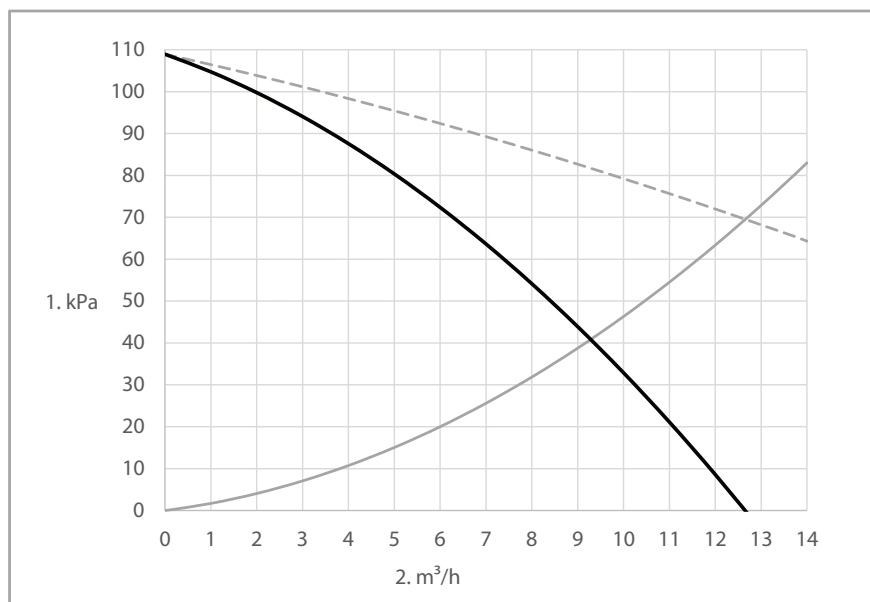
7.2.2 Condenser diagram



- Pump curve
 - Internal pressure drop
 - External available pressure
1. Pressure kPa
2. Flow m³/h

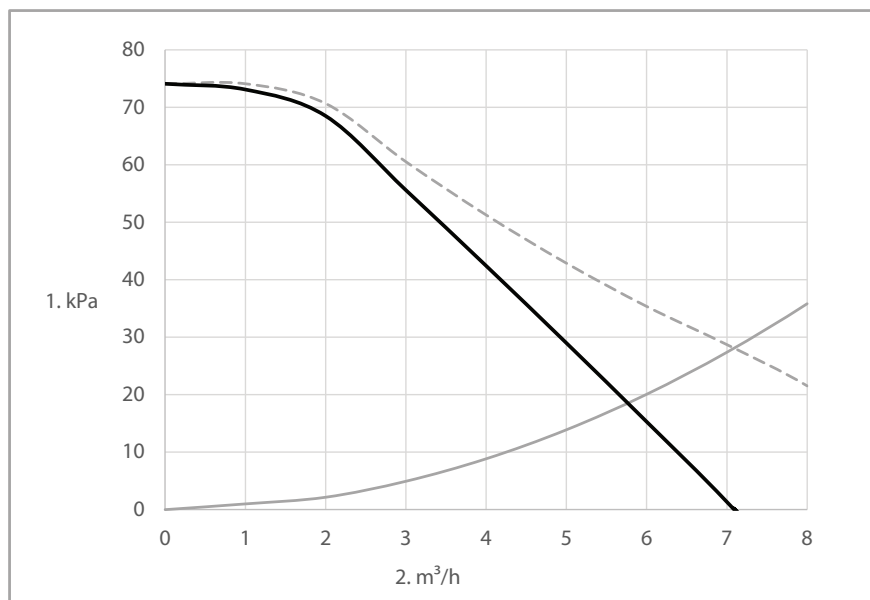
7.3 Mega E M

7.3.1 Evaporator diagram



- Pump curve
 - Internal pressure drop
 - External available pressure
- Brine anti freeze mixture 30% ethanol+water
1. Pressure kPa
 2. Flow m³/h

7.3.2 Condenser diagram

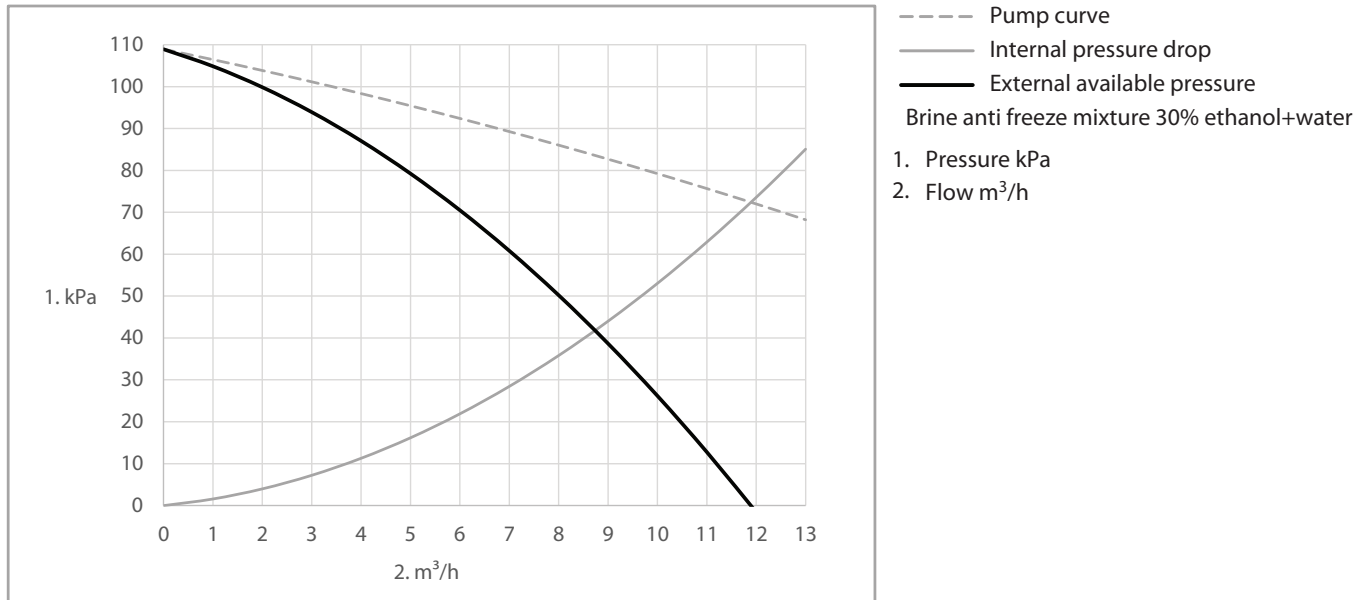


- Pump curve
 - Internal pressure drop
 - External available pressure
1. Pressure kPa
 2. Flow m³/h

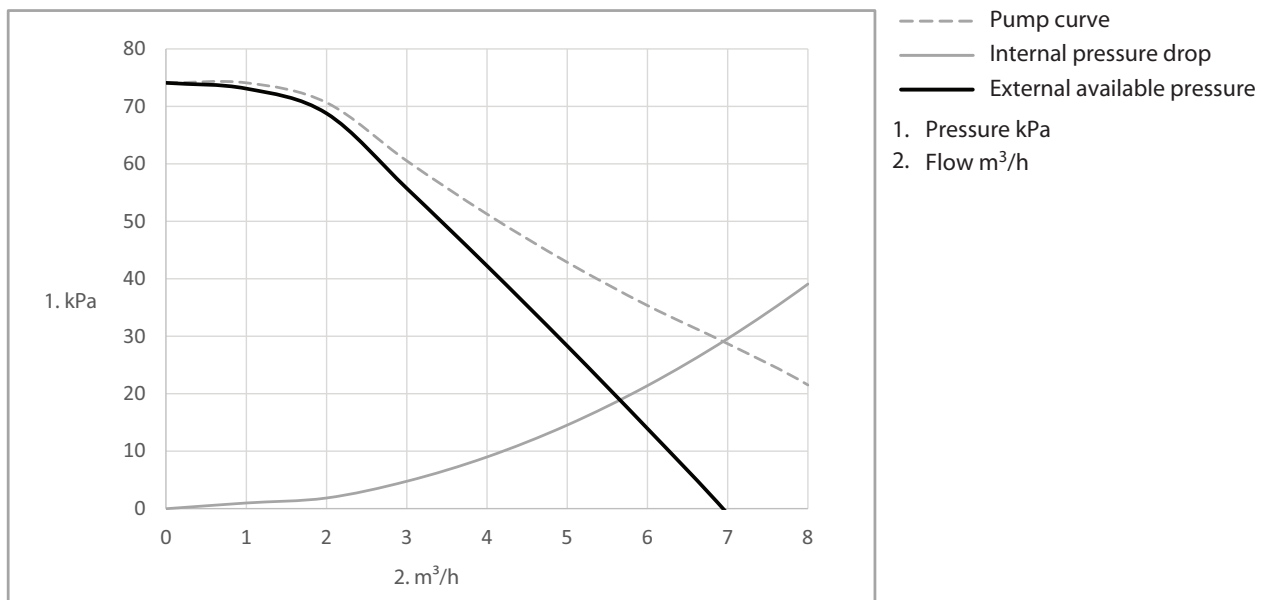
Technical description Mega E

7.4 Mega E S & S-E

7.4.1 Evaporator diagram



7.4.2 Condenser diagram



Technical description Mega E

8 Reference output data tables

8.1 Mega E XL

XL	Radiator temp out/in	°C / °C	35 / 30					35 / 25				
RPM	Brine temp in/out	°C / °C	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2
1500	Heating Capacity	kW	19	20	21	23	25	19	21	22	24	25
	Cooling Capacity	kW	14	16	17	19	20	15	16	18	20	21
	Input power	kW	4,3	4,2	4,3	4,2	4,2	4,1	4,1	4,1	4,1	4,1
	COP	-	4,4	4,7	5,0	5,5	5,8	4,6	5,0	5,3	5,8	6,1
	Radiator flow	m ³ /h	3,2	3,5	3,7	4,0	4,2	1,6	1,8	1,9	2,1	2,2
	Brine flow	m ³ /h	4,3	2,9	5,1	3,4	6,1	4,5	3,0	5,3	3,5	6,3
3000	Heating Capacity	kW	36	40	42	46	49	37	41	43	47	50
	Cooling Capacity	kW	28	31	33	37	40	29	32	35	39	42
	Input power	kW	8,6	8,7	8,8	8,8	9,0	8,3	8,4	8,5	8,5	8,7
	COP	-	4,2	4,6	4,8	5,2	5,4	4,5	4,9	5,1	5,6	5,8
	Radiator flow	m ³ /h	6,3	6,9	7,3	8,0	8,5	3,2	3,5	3,8	4,1	4,4
	Brine flow	m ³ /h	8,4	5,6	10,1	6,8	12,1	8,8	5,9	10,5	7,0	12,6
4500	Heating Capacity	kW	54	59	63	69	73	55	61	65	71	75
	Cooling Capacity	kW	40	45	48	54	57	42	47	51	57	61
	Input power	kW	13,6	13,8	14,4	14,7	15,5	13,1	13,2	13,7	13,6	14,4
	COP	-	4,0	4,3	4,4	4,6	4,7	4,2	4,6	4,7	5,2	5,2
	Radiator flow	m ³ /h	9,3	10,2	10,9	11,9	12,7	4,8	5,2	5,6	6,1	6,5
	Brine flow	m ³ /h	12,3	8,2	14,8	9,9	17,8	12,7	8,6	15,4	10,3	18,5
6000	Heating Capacity	kW	71	77	82	90	96	72	79	84	93	99
	Cooling Capacity	kW	51	57	61	69	72	54	61	65	73	77
	Input power	kW	19,8	20,1	21,3	21,3	23,3	18,5	18,6	19,8	19,5	21,6
	COP	-	3,6	3,9	3,9	4,2	4,1	3,9	4,3	4,3	4,7	4,6
	Radiator flow	m ³ /h	12,3	13,5	14,4	15,7	16,7	6,2	6,9	7,3	8,0	8,5
	Brine flow	m ³ /h	15,9	10,7	19,2	12,8	23,0	16,3	11,0	19,8	13,2	23,8

Technical description

Mega E

XL	Radiator temp out/in	°C / °C	55 / 47					55 / 45				
RPM	Brine temp in/out	°C / °C	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2
1500	Heating Capacity	kW	18	20	21	23	24	19	20	21	23	24
	Cooling Capacity	kW	12	13	14	16	17	12	13	14	16	17
	Input power	kW	6,8	6,8	6,8	6,9	6,9	6,7	6,7	6,8	6,8	6,8
	COP	-	2,7	2,9	3,1	3,3	3,5	2,8	3,0	3,1	3,4	3,5
	Radiator flow	m ³ /h	2,0	2,2	2,3	2,5	2,6	1,6	1,7	1,8	2,0	2,1
	Brine flow	m ³ /h	3,5	2,4	4,3	2,9	5,1	3,6	2,4	4,4	2,9	5,2
3000	Heating Capacity	kW	36	39	41	44	47	36	39	41	45	47
	Cooling Capacity	kW	23	26	28	31	33	23	26	28	32	34
	Input power	kW	12,9	12,9	13,1	13,1	13,3	12,7	12,8	12,9	13,0	13,1
	COP	-	2,8	3,0	3,1	3,4	3,5	2,8	3,0	3,2	3,4	3,6
	Radiator flow	m ³ /h	3,9	4,2	4,4	4,8	5,1	3,1	3,4	3,6	3,9	4,1
	Brine flow	m ³ /h	6,9	4,7	8,4	5,7	10,1	7,1	4,8	8,6	5,8	10,4
4500	Heating Capacity	kW	53	57	61	66	70	54	58	61	67	70
	Cooling Capacity	kW	34	38	41	46	49	34	39	42	47	50
	Input power	kW	19,5	19,6	19,9	20,0	20,4	19,2	19,3	19,6	19,7	20,2
	COP	-	2,7	2,9	3,1	3,3	3,4	2,8	3,0	3,1	3,4	3,5
	Radiator flow	m ³ /h	5,8	6,3	6,6	7,2	7,6	4,7	5,1	5,4	5,8	6,1
	Brine flow	m ³ /h	10,3	6,9	12,5	8,4	15,0	10,5	7,1	12,7	8,5	15,3
6000	Heating Capacity	kW	72	78	82	88	93	72	78	82	89	94
	Cooling Capacity	kW	45	51	54	61	64	46	52	55	62	66
	Input power	kW	26,8	26,8	27,4	27,4	28,6	26,4	26,4	27,1	27,0	28,2
	COP	-	2,7	2,9	3,0	3,2	3,2	2,7	3,0	3,0	3,3	3,3
	Radiator flow	m ³ /h	7,8	8,5	8,9	9,6	10,1	6,3	6,8	7,2	7,8	8,2
	Brine flow	m ³ /h	13,9	9,3	16,7	11,1	19,8	14,1	9,5	17,0	11,3	20,2

Technical description

Mega E

8.2 Mega E L

L	Radiator temp out/in	°C / °C	35 / 30					35 / 25				
RPM	Brine temp in/out	°C / °C	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2
1500	Heating Capacity	kW	12	13	14	16	17	12	14	15	16	17
	Cooling Capacity	kW	9	10	11	13	14	9	11	12	14	15
	Input power	kW	3,0	3,0	3,0	2,9	2,9	3,0	3,0	2,9	2,9	2,8
	COP	-	4,0	4,5	4,8	5,4	5,8	4,2	4,7	5,1	5,7	6,1
	Radiator flow	m ³ /h	2,1	2,3	2,5	2,8	2,9	1,1	1,2	1,3	1,4	1,5
	Brine flow	m ³ /h	2,7	1,9	3,4	2,3	4,2	2,8	1,9	3,5	2,4	4,4
3000	Heating Capacity	kW	24	27	29	32	34	25	27	29	33	35
	Cooling Capacity	kW	18	21	23	26	28	19	22	24	27	29
	Input power	kW	6,0	6,0	6,1	6,1	6,1	5,9	5,9	6,0	5,9	6,0
	COP	-	4,0	4,4	4,7	5,2	5,5	4,2	4,6	4,9	5,5	5,9
	Radiator flow	m ³ /h	4,2	4,6	5,0	5,5	5,9	2,1	2,4	2,6	2,8	3,0
	Brine flow	m ³ /h	5,5	3,8	6,8	4,6	8,4	5,7	3,9	7,1	4,8	8,7
4500	Heating Capacity	kW	36	40	43	47	50	37	41	44	49	52
	Cooling Capacity	kW	27	30	33	37	40	28	32	34	39	42
	Input power	kW	9,6	9,7	9,9	9,9	10,2	9,3	9,4	9,6	9,6	9,8
	COP	-	3,8	4,1	4,3	4,8	5,0	4,0	4,4	4,6	5,1	5,3
	Radiator flow	m ³ /h	6,3	7,0	7,4	8,2	8,7	3,2	3,6	3,8	4,2	4,5
	Brine flow	m ³ /h	8,2	5,6	10,0	6,8	12,2	8,5	5,8	10,5	7,1	12,7
6000	Heating Capacity	kW	49	54	58	63	67	51	56	59	65	69
	Cooling Capacity	kW	36	40	43	49	51	37	42	45	51	55
	Input power	kW	13,8	14,0	14,5	14,6	15,5	13,4	13,5	13,9	13,9	14,5
	COP	-	3,6	3,9	4,0	4,3	4,3	3,8	4,1	4,3	4,7	4,8
	Radiator flow	m ³ /h	8,5	9,4	10,0	10,9	11,6	4,4	4,8	5,1	5,6	6,0
	Brine flow	m ³ /h	10,9	7,3	13,2	8,9	15,9	11,4	7,7	13,8	9,2	16,6

Technical description

Mega E

L	Radiator temp out/in	°C / °C	55 / 47					55 / 45				
RPM	Brine temp in/out	°C / °C	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2
1500	Heating Capacity	kW	-	13	14	15	16	-	13	14	16	16
	Cooling Capacity	kW	-	8	9	10	11	-	8	9	11	11
	Input power	kW	-	5,0	5,0	5,0	5,0	-	4,9	4,9	4,9	4,9
	COP	-	-	2,7	2,8	3,1	3,3	-	2,7	2,9	3,1	3,3
	Radiator flow	m ³ /h	-	1,4	1,5	1,7	1,8	-	1,2	1,2	1,4	1,4
	Brine flow	m ³ /h	-	1,5	2,8	1,9	3,4	-	1,5	2,8	1,9	3,5
3000	Heating Capacity	kW	24	26	28	30	32	24	26	28	31	32
	Cooling Capacity	kW	15	17	18	21	23	15	17	19	21	23
	Input power	kW	9,1	9,2	9,3	9,3	9,4	9,1	9,1	9,2	9,2	9,3
	COP	-	2,6	2,8	3,0	3,2	3,4	2,7	2,9	3,1	3,3	3,5
	Radiator flow	m ³ /h	2,6	2,8	3,0	3,3	3,5	2,1	2,3	2,4	2,7	2,8
	Brine flow	m ³ /h	4,6	3,1	5,7	3,8	6,9	4,7	3,2	5,8	3,9	7,1
4500	Heating Capacity	kW	36	39	41	45	48	36	40	42	46	48
	Cooling Capacity	kW	22	25	27	31	33	23	26	28	31	34
	Input power	kW	13,9	14,0	14,2	14,3	14,5	13,8	13,9	14,1	14,2	14,4
	COP	-	2,6	2,8	2,9	3,1	3,3	2,6	2,8	3,0	3,2	3,4
	Radiator flow	m ³ /h	3,9	4,3	4,5	4,9	5,2	3,2	3,5	3,7	4,0	4,2
	Brine flow	m ³ /h	6,9	4,7	8,4	5,7	10,2	7,0	4,8	8,6	5,8	10,4
6000	Heating Capacity	kW	-	53	56	60	64	-	53	56	61	65
	Cooling Capacity	kW	-	33	36	40	43	-	34	37	41	44
	Input power	kW	-	19,6	19,9	20,1	20,6	-	19,4	19,7	19,9	20,3
	COP	-	-	2,7	2,8	3,0	3,1	-	2,7	2,9	3,1	3,2
	Radiator flow	m ³ /h	-	5,7	6,1	6,6	7,0	-	4,6	4,9	5,3	5,7
	Brine flow	m ³ /h	-	6,1	11,1	7,5	13,4	-	6,3	11,3	7,6	13,7

Technical description

Mega E

8.3 Mega E M

M	Radiator temp out/in	°C / °C	35 / 30					35 / 25				
RPM	Brine temp in/out	°C / °C	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2
1500	Heating Capacity	kW	9	10	11	12	13	10	10	11	12	13
	Cooling Capacity	kW	7	8	8	9	10	7	8	9	10	11
	Input power	kW	2,4	2,4	2,4	2,3	2,3	2,4	2,4	2,3	2,3	2,2
	COP	-	3,8	4,2	4,5	5,1	5,5	4,0	4,4	4,8	5,4	5,8
	Radiator flow	m ³ /h	1,6	1,7	1,9	2,0	2,2	0,8	0,9	1,0	1,1	1,1
	Brine flow	m ³ /h	2,1	1,4	2,6	1,7	3,1	2,2	1,5	2,7	1,8	3,3
3000	Heating Capacity	kW	19	21	22	25	26	20	22	23	25	27
	Cooling Capacity	kW	14	16	18	20	21	15	17	19	21	22
	Input power	kW	4,7	4,7	4,7	4,7	4,7	4,6	4,6	4,6	4,6	4,6
	COP	-	4,0	4,5	4,7	5,3	5,6	4,3	4,7	5,0	5,6	5,9
	Radiator flow	m ³ /h	3,3	3,6	3,9	4,2	4,5	1,7	1,9	2,0	2,2	2,3
	Brine flow	m ³ /h	4,4	2,9	5,3	3,6	6,4	4,6	3,1	5,6	3,7	6,7
4500	Heating Capacity	kW	29	31	34	37	39	29	32	35	38	40
	Cooling Capacity	kW	21	24	26	29	31	22	25	27	31	33
	Input power	kW	7,5	7,5	7,6	7,6	7,8	7,3	7,3	7,4	7,4	7,5
	COP	-	3,8	4,2	4,4	4,8	5,0	4,0	4,4	4,7	5,1	5,4
	Radiator flow	m ³ /h	4,9	5,4	5,8	6,4	6,8	2,5	2,8	3,0	3,3	3,5
	Brine flow	m ³ /h	6,4	4,3	7,8	5,2	9,4	6,7	4,5	8,1	5,5	9,8
6000	Heating Capacity	kW	37	41	44	48	51	38	42	45	50	53
	Cooling Capacity	kW	27	30	33	37	40	28	32	34	39	42
	Input power	kW	10,6	10,8	11,1	11,2	11,7	10,3	10,4	10,7	10,6	11,1
	COP	-	3,5	3,8	4,0	4,3	4,4	3,7	4,1	4,2	4,7	4,8
	Radiator flow	m ³ /h	6,5	7,1	7,6	8,4	8,9	3,3	3,6	3,9	4,3	4,6
	Brine flow	m ³ /h	8,0	5,5	9,9	6,7	12,1	8,4	5,7	10,3	7,0	12,6

Technical description

Mega E

M	Radiator temp out/in	°C / °C	55 / 47					55 / 45				
RPM	Brine temp in/out	°C / °C	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2
1500	Heating Capacity	kW	-	10	10	11	12	-	10	10	11	12
	Cooling Capacity	kW	-	6	6	7	8	-	6	6	7	8
	Input power	kW	-	4,0	4,0	3,9	3,9	-	4,0	4,0	3,9	3,9
	COP	-	-	2,4	2,6	2,8	3,0	-	2,5	2,6	2,9	3,1
	Radiator flow	m ³ /h	-	1,0	1,1	1,2	1,3	-	0,9	0,9	1,0	1,0
	Brine flow	m ³ /h	-	1,1	2,0	1,3	2,5	-	1,1	2,0	1,4	2,5
3000	Heating Capacity	kW	19	20	21	23	25	19	20	22	24	25
	Cooling Capacity	kW	11	13	14	16	17	12	13	15	16	18
	Input power	kW	7,2	7,2	7,2	7,2	7,2	7,1	7,1	7,2	7,2	7,2
	COP	-	2,6	2,8	3,0	3,2	3,4	2,6	2,9	3,0	3,3	3,5
	Radiator flow	m ³ /h	2,0	2,2	2,3	2,5	2,7	1,6	1,8	1,9	2,1	2,2
	Brine flow	m ³ /h	3,5	2,4	4,3	2,9	5,3	3,6	2,4	4,4	3,0	5,4
4500	Heating Capacity	kW	28	30	32	35	37	28	31	33	35	38
	Cooling Capacity	kW	17	20	21	24	26	18	20	22	25	27
	Input power	kW	10,7	10,7	10,8	10,9	11,0	10,6	10,6	10,7	10,8	10,9
	COP	-	2,6	2,8	3,0	3,2	3,4	2,7	2,9	3,0	3,3	3,4
	Radiator flow	m ³ /h	3,0	3,3	3,5	3,8	4,0	2,5	2,7	2,8	3,1	3,3
	Brine flow	m ³ /h	5,2	3,5	6,4	4,4	7,8	5,3	3,6	6,6	4,5	8,0
6000	Heating Capacity	kW	-	-	42	46	49	-	-	43	47	50
	Cooling Capacity	kW	-	-	28	31	34	-	-	28	32	35
	Input power	kW	-	-	14,8	14,9	15,2	-	-	14,6	14,7	15,0
	COP	-	-	-	2,9	3,1	3,2	-	-	2,9	3,2	3,3
	Radiator flow	m ³ /h	-	-	4,6	5,0	5,4	-	-	3,7	4,1	4,3
	Brine flow	m ³ /h	-	-	8,3	5,7	10,2	-	-	8,5	5,8	10,5

Technical description

Mega E

8.4 Mega E S and S-E

S & S-E	Radiator temp out/in	°C / °C	35 / 30					35 / 25				
RPM	Brine temp in/out	°C / °C	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2
1500	Heating Capacity	kW	9	10	10	12	12	9	10	11	12	13
	Cooling Capacity	kW	6	7	8	9	10	7	8	8	10	10
	Input power	kW	2,4	2,4	2,4	2,3	2,3	2,4	2,4	2,3	2,3	2,2
	COP	-	3,6	4,1	4,4	5,0	5,4	3,8	4,3	4,7	5,2	5,7
	Radiator flow	m ³ /h	1,5	1,7	1,8	2,0	2,1	0,8	0,9	0,9	1,0	1,1
	Brine flow	m ³ /h	2,0	1,4	2,5	1,7	3,1	2,1	1,5	2,6	1,8	3,2
3000	Heating Capacity	kW	19	21	22	24	26	19	21	23	25	27
	Cooling Capacity	kW	14	16	17	20	21	15	17	18	20	22
	Input power	kW	4,8	4,7	4,7	4,6	4,7	4,7	4,6	4,6	4,5	4,5
	COP	-	4,0	4,4	4,7	5,2	5,5	4,2	4,6	4,9	5,5	5,9
	Radiator flow	m ³ /h	3,3	3,6	3,8	4,2	4,5	1,7	1,8	2,0	2,2	2,3
	Brine flow	m ³ /h	4,3	2,9	5,3	3,5	6,4	4,5	3,0	5,5	3,7	6,7
4500	Heating Capacity	kW	28	31	33	36	39	29	32	34	37	40
	Cooling Capacity	kW	20	23	25	29	31	21	24	26	30	32
	Input power	kW	7,6	7,6	7,7	7,6	7,8	7,4	7,4	7,5	7,3	7,5
	COP	-	3,7	4,1	4,3	4,8	5,0	3,9	4,3	4,5	5,1	5,3
	Radiator flow	m ³ /h	4,9	5,3	5,7	6,3	6,7	2,5	2,7	2,9	3,2	3,5
	Brine flow	m ³ /h	6,2	4,2	7,7	5,2	9,4	6,5	4,4	8,0	5,4	9,7

S & S-E	Radiator temp out/in	°C / °C	55 / 47					55 / 45				
RPM	Brine temp in/out	°C / °C	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2	-5 / -8	0 / -5	0 / -3	5 / 0	5 / 2
1500	Heating Capacity	kW	-	9	10	11	12	-	10	10	11	12
	Cooling Capacity	kW	-	5	6	7	8	-	6	6	7	8
	Input power	kW	-	4,0	4,0	3,9	3,9	-	4,0	4,0	3,9	3,9
	COP	-	-	2,4	2,5	2,8	3,0	-	2,4	2,6	2,8	3,0
	Radiator flow	m ³ /h	-	1,0	1,1	1,2	1,3	-	0,8	0,9	1,0	1,0
	Brine flow	m ³ /h	-	1,1	1,9	1,3	2,4	-	1,1	2,0	1,4	2,5
3000	Heating Capacity	kW	18	20	21	23	24	19	20	21	23	25
	Cooling Capacity	kW	11	13	14	16	17	11	13	14	16	18
	Input power	kW	7,2	7,2	7,2	7,2	7,3	7,2	7,2	7,2	7,2	7,2
	COP	-	2,5	2,8	2,9	3,2	3,4	2,6	2,8	3,0	3,3	3,4
	Radiator flow	m ³ /h	2,0	2,2	2,3	2,5	2,7	1,6	1,8	1,9	2,0	2,2
	Brine flow	m ³ /h	3,4	2,3	4,3	2,9	5,2	3,5	2,4	4,4	3,0	5,3
4500	Heating Capacity	kW	28	30	32	35	37	28	30	32	35	38
	Cooling Capacity	kW	17	19	21	24	26	17	20	22	25	27
	Input power	kW	10,8	10,9	10,9	11,0	11,1	10,7	10,7	10,8	10,8	11,0
	COP	-	2,6	2,8	2,9	3,2	3,3	2,6	2,8	3,0	3,3	3,4
	Radiator flow	m ³ /h	3,0	3,3	3,5	3,8	4,0	2,4	2,7	2,8	3,1	3,3
	Brine flow	m ³ /h	5,1	3,5	6,4	4,3	7,8	5,3	3,6	6,5	4,4	8,0

Technical description Mega E

9 Estimated current

9.1 Estimated current for Mega E XL 400V

Rad out °C	Estimated current (A) for Mega E XL (400V~3N)						
65 °C	-	-	-	50¹	50¹	50¹	50¹
60 °C	-	-	49	50¹	50¹	50¹	50¹
55 °C	-	45	46	46	47	48	48
50 °C	41	42	42	43	44	44	45
45 °C	38	39	39	40	41	41	41
40 °C	35	36	37	37	38	38	38
35 °C	33	34	34	35	35	35	34
30 °C	31	32	32	32	32	32	30
Brine in °C	-10	-5	0	5	10	15	20

1) Highest current

9.2 Estimated current for Mega E L 400V

Rad out °C	Estimated current (A) for Mega E L (400V~3N)						
65 °C	-	-	-	-	37,0	37,2¹	37,2¹
60 °C	-	-	36,8	37,2¹	37,2¹	37,2¹	37,2¹
55 °C	-	33,7	34,1	34,5	35,7	35,4	35,7
50 °C	30,9	31,3	31,7	32,1	33,1	32,9	33,1
45 °C	28,7	29,2	29,6	30,0	30,7	30,6	30,7
40 °C	26,9	27,3	27,7	28,1	28,5	28,5	28,5
35 °C	25,2	25,6	26,0	26,3	26,3	26,5	26,3
30 °C	23,7	24,1	24,4	24,6	24,2	24,6	24,2
Brine in °C	-10	-5	0	5	10	15	20

1) Highest current

Technical description

Mega E

9.3 Estimated current for Mega E M 400V

Rad out °C	Estimated current (A) for Mega E M (400V~3N)						
65 °C	-	-	-	-	28,3¹	28,3¹	28,3¹
60 °C	-	-	28,3¹	28,3¹	28,3¹	28,3¹	28,3¹
55 °C	-	27,2	27,8	28,3¹	28,3¹	28,3¹	28,3¹
50 °C	24,8	25,4	26,0	26,6	27,1	27,2	27,1
45 °C	23,1	23,8	24,5	25,1	25,4	25,6	25,4
40 °C	21,7	22,5	23,1	23,7	23,7	24,0	23,7
35 °C	20,5	21,2	21,8	22,3	22,0	22,5	22,0
30 °C	19,3	20,0	20,6	21,0	20,1	20,8	20,1
Brine in °C	-10	-5	0	5	10	15	20

1) Highest current

9.4 Estimated current for Mega E M 230 V

Rad out °C	Estimated current (A) for Mega E M (230V~3N)						
65 °C	-	-	-	-	48.2	48.6	48.7
60 °C	-	-	48.7	49.5	50¹	50¹	50¹
55 °C	-	44.4	45.4	46.3	47.3	47.3	47.3
50 °C	40.3	41.3	42.4	43.3	44.2	44.4	44.2
45 °C	37.5	38.6	39.8	40.7	41.3	41.6	41.3
40 °C	35.0	36.2	37.4	38.3	38.3	38.9	38.3
35 °C	32.8	34.0	35.1	35.9	35.3	36.2	35.3
30 °C	30.8	32.0	33.0	33.6	32.1	33.3	32.1
Brine in °C	-10	-5	0	5	10	15	20

1) Highest current

Technical description Mega E

9.5 Estimated current Mega E S & S-E 400V²

Rad out °C	Estimated current (A) for Mega E S & S-E ² (400V~3N)						
65 °C	-	-	-	23,7¹	23,7¹	23,7¹	23,7¹
60 °C	-	-	0,0	23,7¹	23,7¹	23,7¹	23,7¹
55 °C	-	0,0	22,4	22,6	22,9	22,9	22,9
50 °C	0,0	20,8	21,0	21,2	21,3	21,3	21,3
45 °C	19,4	19,5	19,6	19,8	19,9	19,8	19,6
40 °C	18,0	18,2	18,3	18,4	18,5	18,3	18,0
35 °C	16,8	17,0	17,1	17,2	17,1	16,9	16,4
30 °C	15,6	15,8	15,9	15,9	15,8	15,4	14,9
Brine in °C	-10	-5	0	5	10	15	20

1) Highest current

2) The table only includes estimated current in compressor-only operation. Since Mega S-E also have a built-in immersion heater, its estimated current must be added separately to the table values, with consideration on how many steps that are planned to be used. To include immersion heater estimated current,

- for Step 1 (5kW) : add 7,2 A to table value.
- for Step 2 (10kW): add 14,5 A to table value.
- for Step 3 (15kW): add 21,7 A to table value.



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