

geyser mini

6÷9 kW

High efficiency air/water
reversible heat pumps





TECHNICAL FEATURES

GEYSER MINI

Air/water heat pumps of high temperature and efficiency with axial fans.

STRUCTURE

Structure in galvanised sheet coated at 180 °C with RAL 7035 polyester powder paint that provides high weather resistance.

The neutral color of the unit allows integration in any type of ambient. The panels can be easily removed providing full access to the internal parts. The unit can be easily positioned due to its compact structure.

COMPRESSOR

Hermetically sealed scroll compressors of the latest generation.

These compressors have been expressly designed to be used for heating: the compressor has maximum efficiency during winter operation when water is at medium to high temperatures. Each compressor is equipped with thermal breaker, oil level gauge, crankcase heater and rubber antivibration mounts to reduce the vibration transmission to the unit.

FANS

The fans are helicoidal type, connected directly to the 6 poles electric motor with external rotor, and have IP 54 degree of protection. Each fan is plugged into special outlets and provided with accident protection grid according to UNI EN 294.

SOURCE SIDE HEAT EXCHANGER

Composed of finned coil with copper pipes and shuttered aluminium fins of high exchange surface. The coil base is fitted with a sub-cooler which provides complete defrosting and an antifreeze heater is mounted on the bottom of the condense collection tray ensuring the water flow is conveyed towards discharge outlet.

The finned pack is protected by a metal mesh.

PLANT SIDE HEAT EXCHANGER

The brazed plate heat exchangers are made in stainless steel AISI 316, insulated against condensate, ideal for reducing the thermal losses, fitted with temperature probe for antifreeze protection and connected with the flow switch control (supplied). The countercurrent heat exchange takes place during winter operation to optimise the COP values. An accurate selection of the heat exchanger has reduced the pressure drop to minimum even at high concentrations of glycol.

COOLING CIRCUIT

Comprises: compressor, plate heat exchangers on the plant side, plate heat exchangers on domestic hot water side, finned coil on source side, feeding plug, dehydrating filter, electronic control thermostatic expansion valve, high and low pressure switches, 4-way inversion valve, fluid sight glass.

ELECTRICAL PANEL

Fitted with main disconnect switch, breakers on both the main and auxiliary power circuit, remote disconnect switch on the compressors, microprocessor control and display of the main operations.

The electrical panel consists of:

- Automatic disconnect switch for the main and auxilliary power circuit protection;
 - Main disconnect switch and fuses for main and auxilliary power circuit protection;
 - Compressor remote disconnect switch
 - Fan turn regulator for condensation control;
 - Pump relay control or motor protection and remote disconnect switch (for the ST 1P and ST 1PS versions);
 - Contacts without general alarm control;Main control operations:
 - Control of ingoing water temperature
 - Anti-freeze protection
 - Compressor timing
 - Control of high pressure pre-alarm (to avoid in many cases unit locking)
 - Automatic defrosting
 - Alarm signaling
 - Alarm reset
 - Self-adjusting control to ensure efficient operation in case of low water content in the plant
 - External ON-OFF digital input
 - Digital input for summer/iwinter mode remote switching Display of:
 - Outgoing water temperature
 - Condensation temperature
 - Currently set temperature and differential
 - Alarm description
 - Hour counter for pump and compressor operation
- Standard power supply 230V/1~/50Hz

CONTROL AND SAFETY DEVICES

- Manual reset high pressure switch;
- Low pressure switch with manual reset at the third alarm;
- High pressure safety valve;
- Water temperature control probe on the plant side
- Temperature control probe on the domestic hot water storage tank
- Antifreeze probe on the plant side heat exchanger outlet
- Vain mechanical flow switch
- Compressor overtemperature protection

TESTING

All units are factory-tested and supplied complete with oil and refrigerant.

VERSIONS

Check the table with the available configurations for any interferences between one option and the other.

PLANT SIDE HYDRAULIC MODULE

The basic version has no circulation device or pump fitted on the plant side. The unit may be supplied upon request with the following outfits:

- /ST 1P (unit with pump): the unit is equipped with a circulation device or pump (depending on the model), hydraulic circuit water discharge valve, safety valve calibrated at 6 bar, value which corresponds to the maximum allowed operating pressure.
- /ST 1PS (unit with pump and tank): besides the /ST 1P version components, the unit is equipped with an insulated storage tank.

ACCESSORIES

The basic version of Geyser Mini unit can be fitted with extra accessories. For a complete list of accessories refer to the price list.

basic version technical data

UNIT SIZE			5	6	7	8
Heating						
Heating capacity (W 35°C)	(3)	kW	5,8	6,2	8,1	9,2
Absorbed power	(3),(2)	kW	1,4	1,5	1,9	2,1
COP	(3)		4,17	4,15	4,27	4,37
Heating capacity (W 45°C)	(5)	kW	5,6	6,1	7,9	8,9
Absorbed power	(5),(2)	kW	1,6	1,7	2,1	2,4
COP	(5)		3,56	3,59	3,76	3,73
Cooling						
Cooling capacity (W 18)	(1)	kW	6,9	7,6	10,0	11,1
Absorbed power	(1),(2)	kW	1,8	1,9	2,4	2,6
EER	(1)		3,88	4,00	4,17	4,27
Cooling capacity (W 7)	(4)	kW	4,8	5,5	7,2	8,0
Absorbed power	(4),(2)	kW	1,5	1,7	2,1	2,3
EER	(4)		3,20	3,21	3,41	3,49
Compressor						
Quantity/Cooling circuits		n° / n°	1 / 1	1 / 1	1 / 1	1 / 1
Capacity steps		%	0-100	0-100	0-100	0-100
Fans						
Quantity		n°	1	1	1	1
Air flow		m³/s	1,08	1,08	1,00	1,00
Hydraulic module						
Pump head rating	(6)	kPa	52	49	43	43
Storage tank capacity	(6)	l	40	40	40	40
Noise levels						
Noise power level	(7)	dB(A)	63	65	66	66
Noise pressure level	(8)	dB(A)	32	34	35	35
Basic version dimensions and weights						
Length		mm	925	925	925	925
Depth		mm	375	375	375	375
Height		mm	700	700	700	700
Weight during operation		kg				

(1) External air temperature 35°C, ingoing/outgoing water temperature 23/18°C.

(2) The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3) External air temperature 7°C BS, 6°C BU, Ingoing/outgoing water temperature 30/45 .

(4) External air temperature 35°C, ingoing/outgoing water temperature 12/7°.

(5) External air temperature 7°C BS, 6°C BU, Ingoing/outgoing water temperature 40/45 .

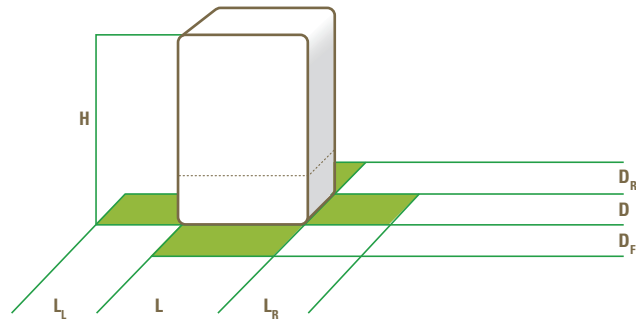
(6) For ST 1PS version

(7) Noise power levels calculated according to ISO 3744

(8) Noise pressure levels measured at 10 meter from the unit in free field, with a directivity factor Q=2

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basic version technical data

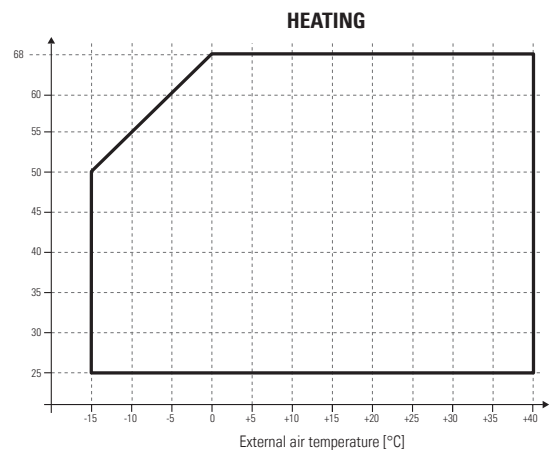
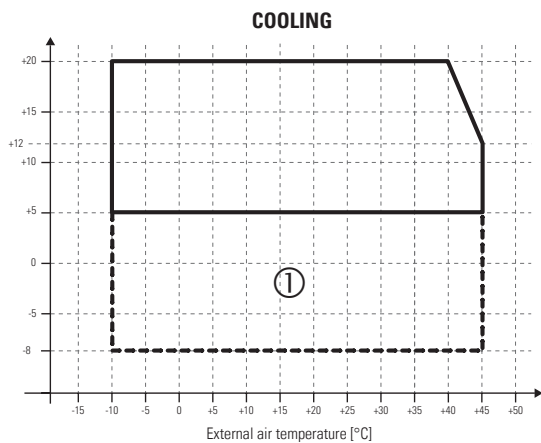


Basic version and ST1P		5	6	7	8
L	Length	mm		925	
D	Depth	mm		375	
H	Height	mm		700	
W	Operating weight	(1)	kg		

Version ST1PS		5	6	7	8
L	Length	mm		925	
D	Depth	mm		375	
H	Height	mm		1.000	
W	Operating weight	(1)	kg		

Clearance areas		5	6	7	8
L _L	Left side	(2)	mm	300	
L _R	Right side	(2)	mm	600	
D _F	Front side	(2)	mm	900	
D _R	Rear side	(2)	mm	300	

- (1) The weight is only indicative and may vary depending on the unit outfit
 (2) The clearance areas are indicated considering that the unit is controlled from the fans side



- The heat exchanger temperature rise must be within 3°C e 5°C
 The maximum temperature of user side heat exchanger ingoing water is 63°C
 ① : within this range the unit can operate only with glycol solution on evaporator side
 ② : units with HWS outfit cannot operate within this range

basic version electrical data

Basic version			5	6	7	8
Maximum absorbed power	(1)	kW	2,7	2,9	3,6	3,8
Maximum absorbed current	(2)	A	17,9	16,9	21,3	25,7
Maximum input current	(3)	A	75	77	98	109
		A	(45)	(46)	(59)	(66)
Additional electric heater	(4)	kW	3,0	3,0	3,0	3,0

Version ST1P or ST1PS			5	6	7	8
Maximum absorbed power	(1)	kW	2,9	3,1	3,8	4,0
Maximum absorbed current	(2)	A	18,9	17,9	22,3	26,7
Maximum input current	(3)	A	76	78	99	110
		A	(46)	(47)	(60)	(67)
Additional electric heater	(4)	kW	3,0	3,0	3,0	3,0

Main power supply		5	6	7	8
Standard power supply	V/ph/Hz	← 230/1~/50 →			

(1) Electrical power that must be supplied by the mains to power the unit.

(2) Internal breakers tripping current. This value is never exceeded and must be used to size the line and its protections (refer to the electric diagram supplied with the unit).

(3) Maximum input current calculated considering the power of the compressor with max. power and the max. current absorbed by all other devices. The value between parenthesis refers to the units equipped with soft-starter (optional).

(4) To be asked for when ordering

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