TECHNICAL DATA SHEETS

ecoGEO

Ground source heat pumps

ecoFOREST

ecoGEO

Inverter ground source, the most efficient technology

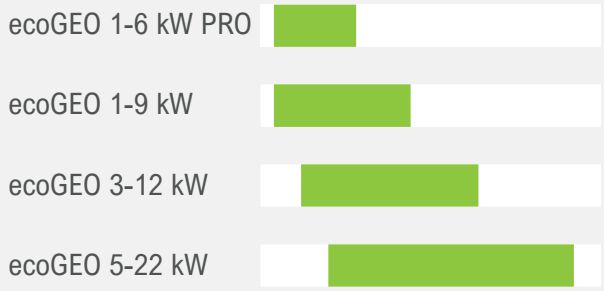
The ecoGEO range is the Ecoforest range of geothermal heat pumps. These heat pumps, both domestic and high power, are compatible with any of the type of ground source collection system, even with hybrid aerothermal-geothermal collection systems and fully aerothermal collection systems. Likewise, they are also capable of offering all the services required in a HVAC system in an integrated way: DHW, Heating, Pool, Passive Cooling (or Free Cooling) and Active Cooling.

All ecoGEO heat pumps make use of Inverter technology, which allows them to modulate their power in order to adapt to the thermal demands of the installation with the highest efficiency. This translates into a very considerable reduction in electrical consumption and great savings. Thanks to the technology and control strategies developed by Ecoforest, the installation of ecoGEO heat pumps also becomes much simpler, more compact and cheaper than those of other heat pumps on the market, since it allows to dispense with certain components that would be necessary in traditional heat pump installations.

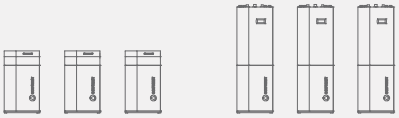
ecoGEO Basic & Compact

Domestic range

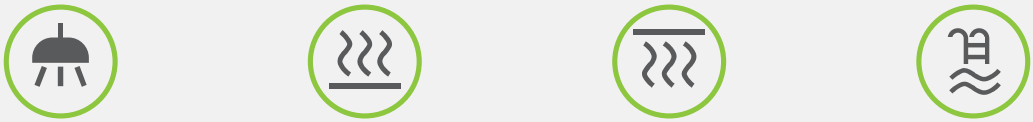
Power ranges



Cascade



Services



Models

ecoGEO B1/C1	ecoGEO B2/C2	ecoGEO B3/C3	ecoGEO B4/C4
DHW	DHW	DHW	DHW
Heating	Heating	Heating	Heating
Pool	Pool	Pool	Pool
	Free Cooling	Active Cooling	Free Cooling
			Active Cooling

- Inverter technology
- Power ranges: 1-6 kW / 1-9 kW / 3-12 kW / 5-22 kW
- Domestic hot water production
- Heating and pool production
- Integrated active cooling production
- Integrated passive (free) cooling production
- Internet connection through the ecoSMART Easynet
- Photovoltaic hybridization through ecoSMART e-manager & e-system energy managers
- HTR technology for DHW production up to 70°C and simultaneous production of several services
- Natural refrigerant used in ecoGEO PRO models allowing DHW production temperature up to 75°C
- Integrated cascade management up to 3 units
- Single-phase (230V) or three-phase (400V) power supply

Collection system

Ground | Open loop | Air | Hybrid

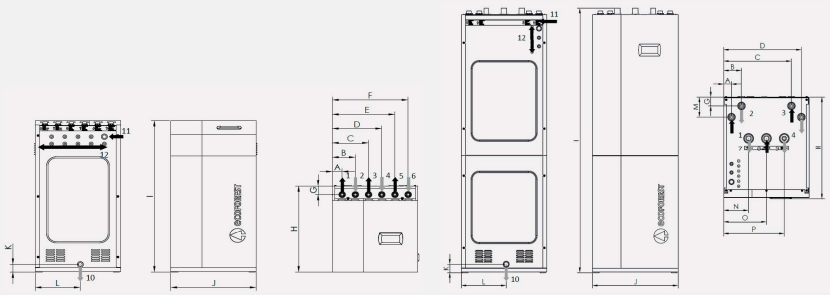
ecoGEO B/C 5-22

- **Modulating thermal power control** within a wide range (20-100%) and modulating flow rate control of both brine and production circuits (20-100%).
- **Inverter technology** and scroll compressor.
- **Compact design** including brine and production circulation pumps, brine and production expansion vessels (8l and 12l respectively), brine and production safety valves and DHW three-way valve.
- **High Temperature Recovery system (HTR)** for DHW production up to 70 ºC without electrical support and simultaneous production of DHW and heating/cooling.
- **Integrated management of up to 4 different emission temperatures, 2 buffer tanks** (heating and cooling), **1 DHW tank, 1 pool and hourly control of DHW recirculation.**
- **Integrated management of aerothermal collection modulating units**, in case of air source or hybrid configurations.
- **Integrated management of external On/Off or modulating auxiliary systems**, such as electrical heaters, On/Off boilers or modulating boilers.
- **Integrated management of cascade systems** up to 3 units.
- **Integrated management of simultaneous cooling/heating systems** according to scheme.
- **Integrated free cooling in models 2 and 4.**
- **Integrated active cooling in models 3 and 4.**
- **Single-phase and Three-phase versions available.**
- **Compatible with ecoSMART e-manager and ecoSMART e-system.**
- **Integrated energy meters** to measure the electrical consumption, the heating/cooling thermal power, the COP and the monthly and annual SPF.

SPECIFICATIONS ecoGEO B/C 5-22		UNITS	B1/C1	B2/C2	B3/C3	B4/C4
APPLICATION	Place of installation	-	Indoors			
	Type of brine system [1]	-	Ground source / Air source / Hybrid source			
	DHW, Heating and Pool	-	✓	✓	✓	✓
	High Temperature Recovery (HTR) system option	-	✓	✓	✓ by default	✓ by default
	Integrated Active cooling	-	-	-	✓	✓
	Integrated Passive cooling	-	-	✓	-	✓
PERFORMANCE	Modulation range of the compressor	%	20 to 100			
	Heating power output [2], B0W35	kW	4,0 to 22,8			
	COP [2], B0W35	-	4,9			
	Active cooling power output [2], B35W7	kW	-		4,2 to 22,0	
	EER [2], B35W7	-	-		5,4	
	Max. DHW temperature without / with support [5]	°C	63 / 70			
	Noise power emission level [6]	db	35 to 46			
	Energy label / ηs / SCOP W35 average climate control	-	A+++ / 184% / 4,80			
	Energy label / ηs / SCOP W55 average climate control	-	A++ / 146% / 3,85			
OPERATION LIMITS	Distribution / Set heating outlet temperature range	°C	10 to 60 / 20 to 60			
	Distribution / Set cooling outlet temperature range	°C	4 to 35 / 7 to 25			
	Brine inlet temperature range in heating applications	°C	-25 to 35			
	Brine inlet temperature range in cooling applications	°C	10 to 60			
	Minimum / Maximum refrigerant circuit pressure	bar	2 / 45			
	Production / Pre-load circuit pressure	bar	0,5 to 3,0 / 1,5			
	Brine / Pre-load circuit pressure	bar	0,5 to 3,0 / 0,7			
	Volume / Max. DHW storage tank pressure (ecoGEO C)	l / bar	165 / 8			
WORKING FLUIDS	R410A Refrigerant load without HTR / with HTR	kg	1,4		1,5	
	Compressor oil type / load	kg	POE / 1,18			
CONTROL ELECTRICAL DATA	1/N/PE 230 V / 50-60 Hz [8]	-	✓			
	Maximum recommended external protection [9]	-	C16A			
	Transformer primary circuit fuse	A	0,5			
	Transformer secondary circuit fuse	A	2,5			
ELECTRICAL DATA: SINGLE-PHASE	1/N/PE 230 V / 50-60 Hz [8]	-	✓			
	Maximum recommended external protection [9]	-	C32A			
	Maximum consumption [2], B0W35	kW / A	5,5 / 23,9			
	Maximum consumption [2], B0W55	kW / A	5,5 / 23,9			
	Minimum / Maximum starting current [7]	A	2,6 / 12,5			
	Correction of cosine Ø	-	0,96/1			
ELECTRICAL DATA: THREE-PHASE	3/N/PE 400 V / 50-60Hz [8]	-	✓			
	Maximum recommended external protection [9]	-	C13A			
	Maximum consumption [2], B0W35	kW / A	6,0 / 8,7			
	Maximum consumption [2], B0W55	kW / A	6,0 / 8,7			
	Minimum / Maximum starting current [7]	A	0,9 / 4,2			
	Correction of cosine Ø	-	0,96-1			
DIMENSIONS/WEIGHT	Height x width x depth	mm	ecoGEO B: 1060x600x710 · ecoGEO C: 1804x600x720			
	Empty weight (without assembly)	kg	B 185 · C 247	B 193 · C 255	B 185 · C 247	B 193 · C 255

1. Air source/Hybrid source by replacing/combining the ground source circuit by/with one or more ecoGEO AU. Consult the ecoGEO AU manual for more detailed information.
2. In compliance with EN 14511, this includes the consumption of the circulation pumps and the compressor driver.
3. Considering brine and production flow rates in compliance with EN 14511.
4. Considering a heat slope from 20°C to 50°C in absence of consumption.
5. Considering support provided by the emergency electrical heater or the HTR system. Maximum DHW temperature with the HTR system can be limited by the compressor discharge temperature.
6. In compliance with EN 12102, this includes the acoustic insulation kit of the compressor.
7. Starting current depends on the working conditions of the hydraulic circuits.
8. The admissible voltage range for proper operation of the heat pump is ±10%.
9. Maximum consumption can vary significantly according to working conditions, or if the compressor's operation range is restricted. Consult the technical service manual for more detailed information.
10. Certification in process.

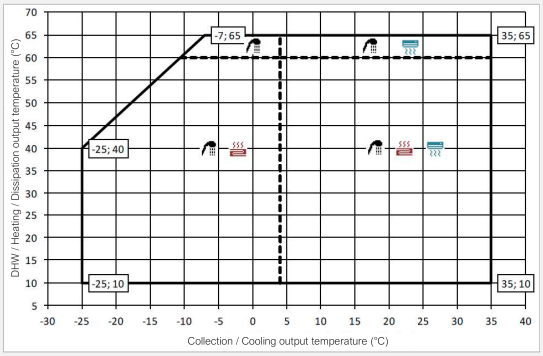
Dimensions and hydraulic connections



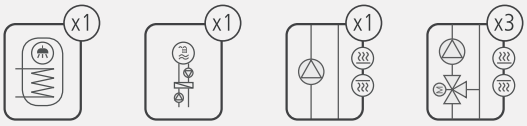
MODEL	DIMENSIONS (mm)															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
ecoGEO Basic	55	153	251	349	447	545	70	710	1058	600	61	300	-	-	-	-
ecoGEO Compact	55	125	475	545	-	-	62	720	1851	600	58	315	140	175	300	425

1. Heating/Cooling Outlet - 1 1/4 " M
2. Heating/Cooling Inlet - 1 1/4 " M
3. Brine Outlet - 1 1/4 " M
4. Brine Inlet - 1 1/4 " M
5. DHW System Outlet - 1 1/4 " M
6. DHW System Inlet - 1 1/4 " M
7. DCW Inlet - 1 " F
8. DHW Outlet - 1 " F
9. DHW Recirculation Inlet - 3/4 " F
10. Drain - 16 mm

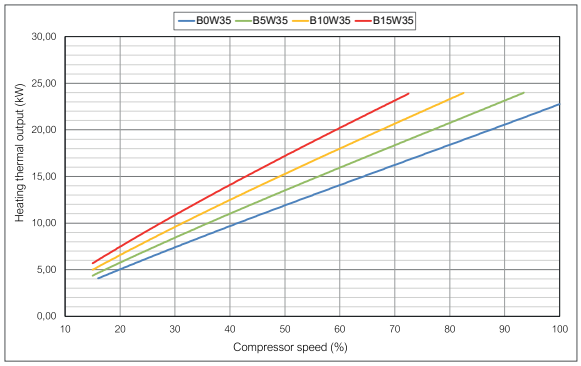
Operational chart

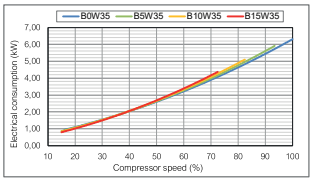


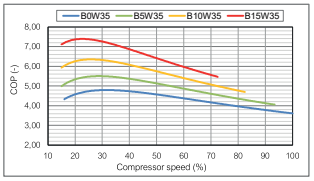
Installation management

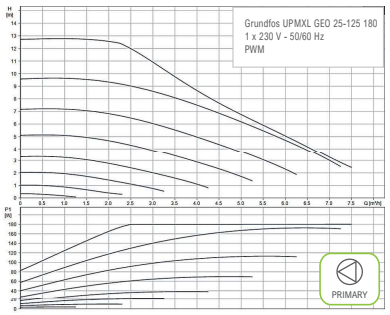


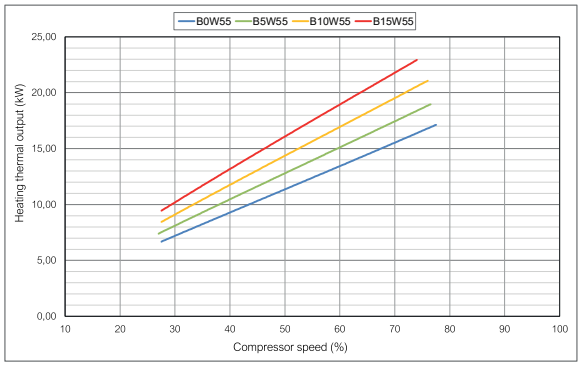
Performance curves

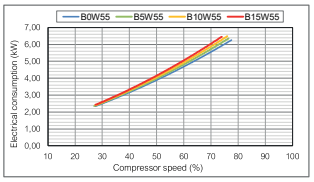


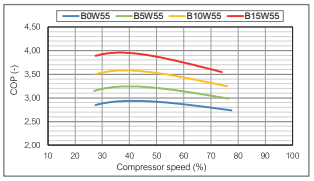


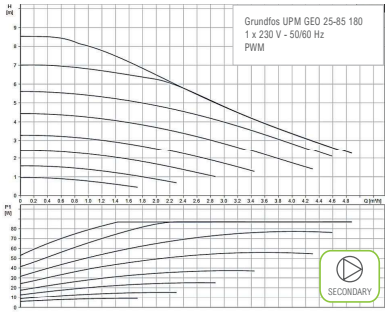


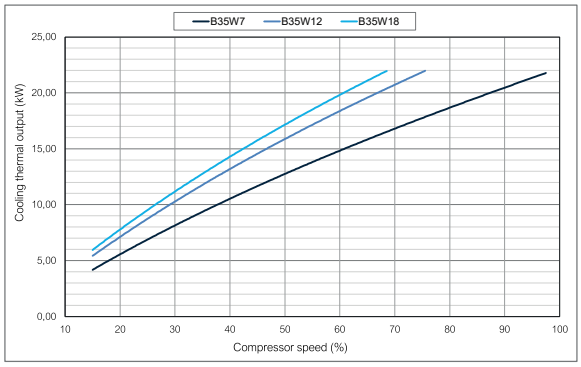


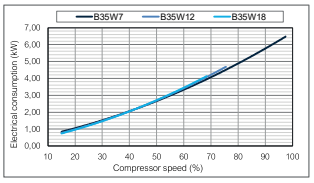


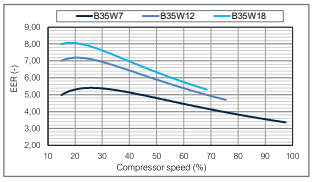


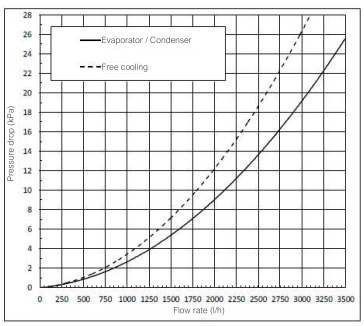












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