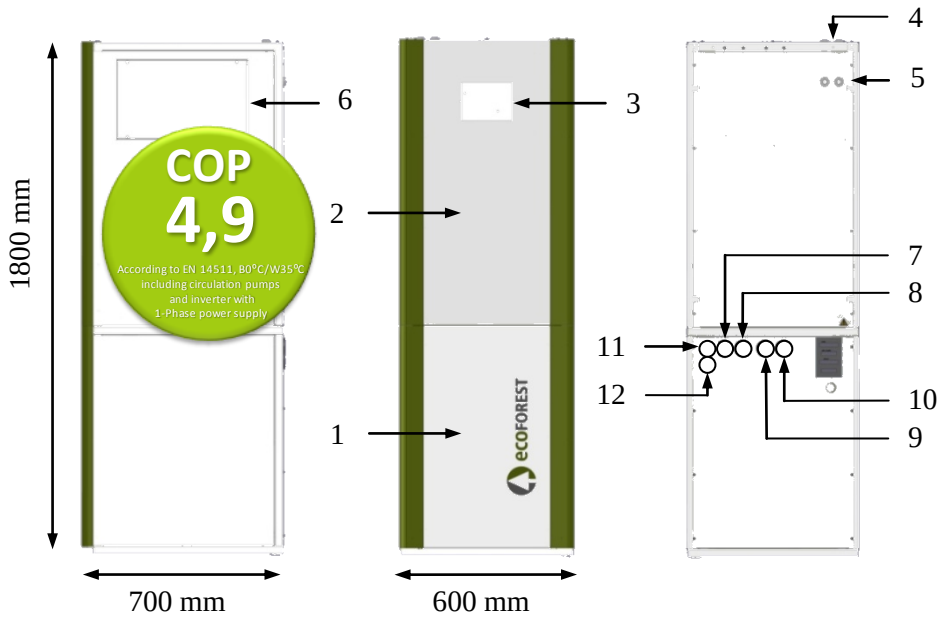
ecoGEO SOLAR HYBRID SYSTEM



1. Heat pump module
2. Power electronics
3. Front panel
4. Photovoltaic panels connections
5. Electric power grid connection
6. Access to electrical protections
7. Heating/cooling outlet
8. Heating/cooling inlet
9. Brine outlet
10. Brine inlet
11. DHW tank outlet
12. DHW tank inlet

ecoGEO SOLAR geothermal heat pumps TECNICAL DATA: Heat pump module		Unit	ecoGEO SOLAR 1		ecoGEO SOLAR 2		ecoGEO SOLAR 3	
			3-12	5-22	3-12	5-22	3-12	5-22
Application	Heating and DHW	-	●	●	●	●	●	●
	Active cooling	-					●	●
	Integrated free cooling	-			●	●		
Refrigerant	Type	-	R410A					
Components	Compressor	-	Scroll with inverter. Copeland					
	Expansion valve	-	Electronic. Carel					
	Heat exchangers	-	Plates. Alfa Laval					
	Circulating pumps	-	High efficiency and variable speed. Wilo (Class A)					
	Built-in expansion vessels	-	Heating circuit (12 l) (and brine circuit in ecoGEO SOLAR1 (5 l))					
Electrical data	Input voltage	-	230 V / 50 Hz, 1/N/PE~					
	Magneto-thermal protection	A	32	40	32	40	32	40
Efficiency	Heating output[1]	kW	3-15	5-26	3-15	5-26	3-15	5-26
	COP[1]	-	5,3	5,66	5,3	5,66	5,3	5,66
	Heating output[2]	kW	3-14	5-23,5	3-14	5-23,5	3-14	5-23,5
	Power consumption[2]	kW	0,7-3,7	1,4-5,5	0,7-3,2	1,4-5,5	0,7-3,2	1,4-5,5
	COP[2]	-	4,6	4,9	4,6	4,9	4,6	4,9
	EER[3]	-	--	--	--	--	6,1-6,9	6,1-6,9
	Active cooling output[3]	kW	--	--	--	--	4-16,3	6,9-30
	Passive cooling output	kW	--	--	6	6	--	--
Refrigerant circuit	Refrigerant charge	kg	1,35	1,70	1,35	1,70	1,50	2,00
	Maximum working pressure	bar	42					
	Compressor oil type	-	POE					
	Compressor oil charge	kg	1,18					
Brine circuit	Maximum/minimum temperature	ºC	60/20					
	Maximum working pressure	bar	3					
	Nominal flow rate	l/h	1200 - 4500					
Heating/cooling circuit	Maximum/minimum temperature	ºC	20/-10					
	Maximum working pressure	bar	3					
	Nominal flow rate	l/h	1200 - 4500					
	Recommended antifreeze[5]	-	Propylene-glycol/water with freezing point -17 ±2 ºC					
DHW	Maximum temperature without support	ºC	55					
	Maximum temperature with support	ºC	70					
Soundproofing	Noise emission level[4]	dB	54 (40)					
Dimensions	Height x Width x Depth	mm	1000 x 600 x 700					
Weight	Unladen weight (without assembly)	kg	230	235	230	235	235	240

1) According to EN 14511, 5/2 – 30/35 ºC (including circulation pumps and inverter with 1-Phase power supply).
2) According to EN 14511, 0/-3 – 30/35 ºC (including circulation pumps and inverter with 1-Phase power supply).
3) According to EN 14511, 7/12 – 30/35 ºC (including circulation pumps and inverter with 1-Phase power supply).
4) According to EN 14511. Values in brackets include kit sound shell for compressor.
5) Always consult regional regulations before using antifreeze.

ecoGEO SOLAR geothermal heat pumps TECNICAL DATA: Power electronics		ecoGEO-SOLAR 1		ecoGEO-SOLAR 2		ecoGEO-SOLAR 3	
		3-12	5-22	3-12	5-22	3-12	5-22
Electrical specifications	Continuous power	6 kWA					
	Surge rating	12 kWA					
	Output current	26,1 A					
	Peak output current (rms)	53 A					
	Input current at rated power	131 A					
	Type of signal	True sine wave					
	Automatic transfer relay	56 A					
	Typical transfer time	8 ms					
	DC input voltage (nominal)	50,4 Vdc					
	Input voltage limits	40 – 64 A					
	Charging current	100 A					
	Power factor corrected charging	0,98 A					
	Auxiliary relay output voltage	0 – 12 Vdc					
	Auxiliary relay output current	250 mA					
	Power consumption (search mode)	< 12 W					
	AC input voltage (nominal)	230 Vac ± 3%					
	Input voltage limits (bypass/charge mode)	165 – 280 Vac (230 V nominal)					
	Frequency	50 Hz ± 0,1					
	AC input frequency range (bypass/charge mode)	40 – 68 Hz (50 Hz nominal)					
	Total harmonic distortions (THD)	< 5%					
	AC connections	AC1 (Grid), AC2 (Generator)					
	AC input breaker	60 A 1P					
Efficiency	Peak	95,4 %					
General specifications	IP degree of protection	IP20 (sensitive electronic components sealed inside enclosure)					
	Ambient air temperature for operation	-25 – 70 ºC (-13 – 158 ºF) Power derating above 45 ºC (113 ºF)					
	System network and remote monitoring	Available					
	Warranty	2 or 5 years (depending on the country of installation)					
Features and options	Display type	Touch screen technology					
	Battery bank size	100 – 2000Ah (scaled to PV array size)					
	Battery temperature sensor	Included					
	Non volatile memory	Yes					
	Multiple unit configurations	Single-phase: up to 4 parallel units Tree-phase: 2 units per phase					
	Nominal battery voltage	48 Vdc					
	Battery voltage operating range	0 – 80 Vdc					
	Maximum PV array voltage (operating)	140 V					
	Maximum PV array open circuit voltage	150 V (including temperature correction factor)					
	Maximum charge current	120 A					
	Charger regulation method	Tree-stage (bulk, absorption, float) plus manual equalization Two-stage (bulk, absorption) plus manual equalization					
	Supported battery types	Flooded, GEL, AGM, Custom					
Efficiency for battery	Maximum power consumption efficiency	93% (12 V nominal) 96% (24 V nominal) 97% (36 V nominal) 98% (48 V nominal)					
	Battery temperature sensor	Included					
	Auxiliary output	5 – 13 V, up to 200 mA					
	Storage temperature range	-40 – 85 ºC (-40 – 185 ºF) full power, Power derating above 45 ºC					
	Operating altitude	Sea level – 2000 m (6562 ft)					
	System network and remote monitoring	Available					
	Warranty	5 years standard					