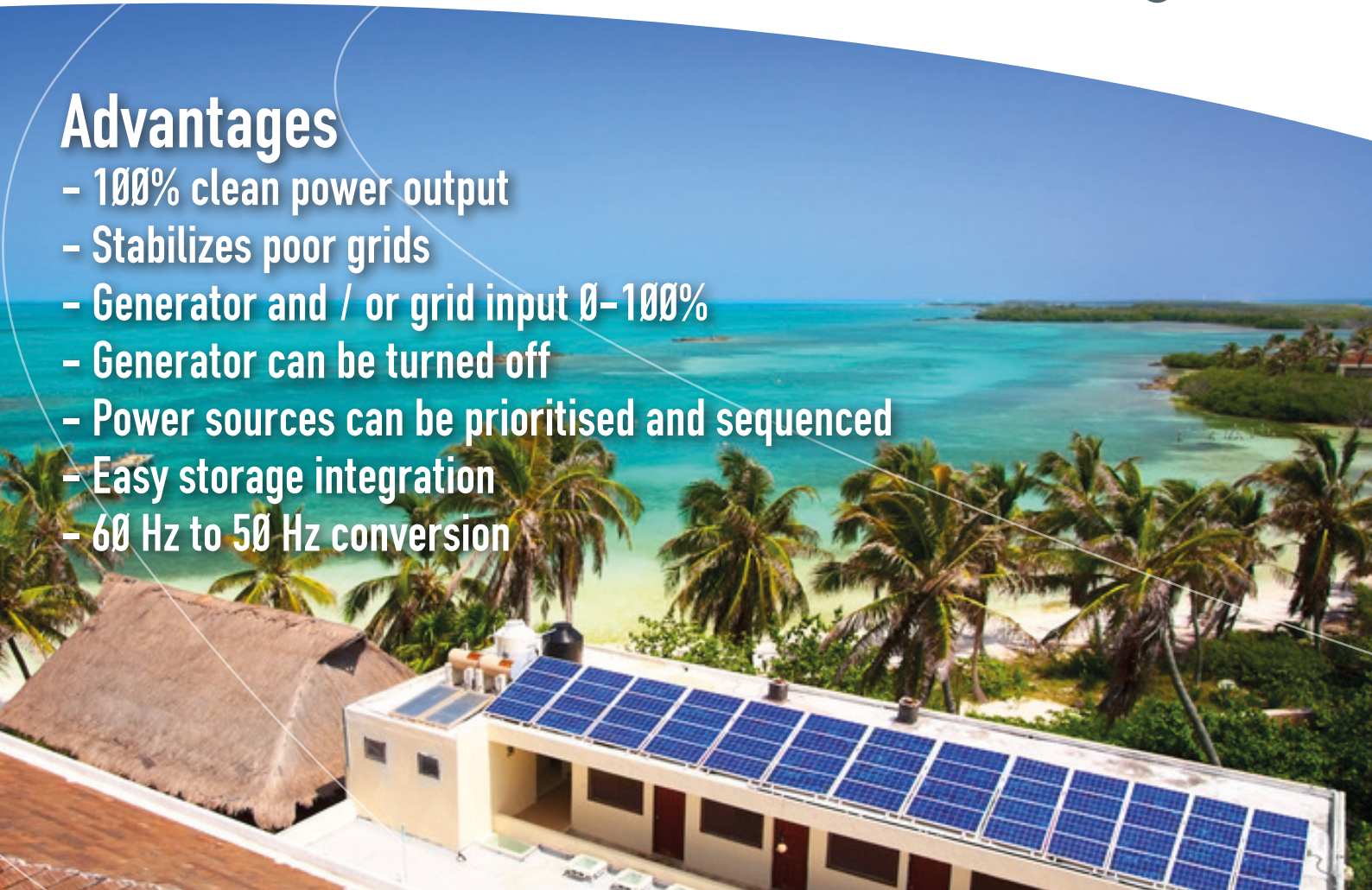


Advantages

- 100% clean power output
- Stabilizes poor grids
- Generator and / or grid input 0-100%
- Generator can be turned off
- Power sources can be prioritised and sequenced
- Easy storage integration
- 60 Hz to 50 Hz conversion



PV Diesel Hybrid systems (5 – 20 kVA)

With the HYBRID systems, elgris offers a scalable platform for a high quality power system targeting power solutions between 5 kVA and 20 kVA.

The HYBRID systems accept sources from the grid, existing or new generators, storage systems and photovoltaic modules. The unique features of the elgris HYBRID systems define new standards in term of commissioning time, durability and performance.

The input and output of the system are not connected so a bad quality grid and/or generator can be upgraded with the HYBRID system to create a clean, stable and reliable grid with savings by means of using photovoltaic.

All systems are pre-wired and factory tested before being dispatched to the customer. Only the generator and/or grid and photovoltaic and/or storage system needs to be connected. This saves enormous on the commissioning time and thus saves money. Especially in remote areas or in areas where the safety of the workers is not guaranteed this is an important criterion.

Based on the in-house developed HYBRID control algorithm, the integrated elgris controller determines the operating point of the generator(s) and adjusts the photovoltaic system and/or generator accordingly. There is no minimum load needed on the generator for the elgris HYBRID system. The order in which the power sources are used can be prioritised and sequenced.

In situations where there is a surplus of photovoltaic power, the generator can be stopped to archive maximum savings. Due to the universal layout and standardized components, scalability and redundancy is already given.

By using the MODBUS protocols and a wide range of interfaces, a wide range of third party monitoring and customized solutions are being supported.

With the elgris HYBRID system, we offer a universal, scalable solution targeting customers in the field of production, mining, village electrification, construction and other areas where most power is being consumed during daytime.

Technical overview	With feed in		Without feed in	
	HYBRID SYSTEM 5 kW	HYBRID SYSTEM 10 kW	HYBRID INVERTER 5 kW	HYBRID INVERTER 10 kW
RATED POWER				
Rated power	5000 VA	10000 VA	5000 VA	10000 VA
Maximum charging power	4800 VA	9600 VA	4800 VA	9600 VA
PV input (DC)				
Maximum DC input power	10000 W	20000 W	10000 W	20000 W
Nominal DC voltage	720 VDC	720 VDC	400 V	400 V
Maximum DC voltage	900 VDC	900 VDC	425 V	425 V
Start-up voltage / initial feeding voltage	225 VDC / 250 VDC	225 VDC / 250 VDC	230 V	230 V
MPP voltage range	250 VDC ~850 VDC	250 VDC ~850 VDC	230 V – 380 V	230 V – 380 V
Number of MPP trackers	2	4	1	2
Maximum input current	2 x 10.0 A	4 x 10.0 A	40 A	80 A
Isc PV (absolute maximum)	2 x 15 A	4 x 15 A	40 A	80 A
PV circuit protection	2 x 2 pole 1000 volt 15 Amp	4 x 2 pole 1000 volt 15 Amp	Fuse	Fuse
PV circuit surge protection (optional)	2 x P	4 x PRD40r 1000DC	Optional	Optional
Max. inverter backfeed current to the array		0 A	0 A	0 A
GRID AND LOAD OUTPUT (AC)				
Nominal output voltage	208/220/230/240 VAC	208/220/230/240 VAC	208/220/230/240 VAC	208/220/230/240 VAC
Output voltage range	184 - 265 VAC	184 - 265 VAC	110 - 276 VAC	110 - 276 VAC
Output frequency range	47.5-51.5 Hz or 59.3-60.5 Hz	47.5-51.5 Hz or 59.3-60.5 Hz	50 Hz or 60 Hz	50 Hz or 60 Hz
Nominal output current	21 A*	42 A*	21 A*	21 A*
Inrush current	60 A	120 A	60 A	60 A
Maximum output fault current	80 A	160 A	80 A	80 A
Maximum output overcurrent protection	80 A	160 A	80 A	80 A
Power factor range	0.9 lead - 0.9 lag	0.9 lead - 0.9 lag	0.9 lead - 0.9 lag	0.9 lead - 0.9 lag
Load circuit protection	2 pole 240 volt 32 Amp (circuit breaker)	2 pole 240 volt 32 Amp (circuit breaker)	2 pole 240 volt 32 Amp (circuit breaker)	2 pole 240 volt 32 Amp (circuit breaker)
AC INPUT				
AC start-up voltage	120-140 VAC	120-140 VAC	110 - 276 VAC	110 - 276 VAC
Auto restart voltage	180 VAC	180 VAC	180 VAC	180 VAC
Acceptable input voltage range	170 - 280 VAC	170 - 280 VAC	170 - 280 VAC	170 - 280 VAC
Nominal frequency	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
AC input power	4800VA/5100W	9600VA/10200W	5000VA	10000VA
Maximum AC input current	40 A	80 A	40 A	80 A
Inrush input current	40 A / 1ms	80 A / 1ms	40 A / 1ms	80 A / 1ms
BATTERY MODE OUTPUT (AC)				
Nominal output voltage	208/220/230/240 VAC	208/220/230/240 VAC	208/220/230/240 VAC	208/220/230/240 VAC
Output frequency	50 Hz / 60 Hz (auto sensing)	50 Hz / 60 Hz (auto sensing)	50 Hz / 60 Hz	50 Hz / 60 Hz
Output waveform	Pure sine wave	Pure sine wave	Pure sine wave	Pure sine wave
Output power	4800VA / 5100W	9600VA / 10200W	5000VA	10000 VA
Output current	23 A	46 A	23 A	46 A
Efficiency (DC to AC)	92%	92%	92%	92%
BATTERY & CHARGER				
Nominal DC voltage	40 to 60 VDC	40 to 60 VDC	240 VDC	240 VDC
Maximum battery discharging current	200 A	200 A	30 A	60 A
Maximum charging current	100 A	100 A	10 A	10 A
BATTERY CAPACITY				
Battery capacity in kW (100% DOD)	9.6 kW / 14.4 kW (Lead Crystal*)	19.2 kW / 28.8 kW (Lead Crystal*)	On request	On request
Battery DC circuit protection	2 pole 60 volt 200 Amp (isolator)	2 pole 60 volt 200 Amp (isolator)		
GENERAL CHARACTERISTICS				
Dimension, H x W x D (mm)	1750 x 700 x 550 mm	1750 x 700 x 550 mm	750 x 600 x 280 mm	750 x 600 x 280 mm
Net weight (Kg)	390 / 480 kg	390 / 480 kg	35 kg	45 kg
Chasis construction material	Laser cut galvanized steel	Laser cut galvanized steel	Laser cut galvanized steel	Laser cut galvanized steel
Enclosure construction material	UL94 V0 thermo molded ABS	UL94 V0 thermo molded ABS		
INTERFACE				
Communication port	RS-232/USB (wifi optional)	RS-232/USB (wifi optional)	RS-485	RS-485
Intelligent slot	Optional SNMP and Modbus	Optional SNMP and Modbus	Ethernet (optional)	Ethernet (optional)
ENVIRONMENT				
Protective class	I	I	I	I
Ingress protection rating	IP55	IP55	IP55	IP55
Cooling	Internal electrical fan	Internal electrical fan	Internal electrical fan	Internal electrical fan
Humidity	0 ~ 90% RH (non condensing)	0 ~ 90% RH (non condensing)	0 ~ 90% RH (non condensing)	0 ~ 90% RH (non condensing)
Operating temperature	neg 10°C to plus 55°C	neg 10°C to plus 55°C	neg 10°C to plus 55°C	neg 10°C to plus 55°C
Altitude	1 ~ 2000 m**	1 ~ 2000 m**	1 ~ 2000 m**	1 ~ 2000 m**