
GENESI

GENESI GENERATOR WITH VARIABLE SPEED STAND ALONE OR GRID CONNECTED:

Genesi represents the evolution of the concept of power generation in the field of generating sets.
To ensure the adjustment of the voltage and frequency output, but especially for a perspective oriented to the Green Economy and to the saving of fuel, is adopted a new inverter technology applied in the industrial field.
The chassis exterior is designed specifically for the housing of the components, to ensure stability during operation and for a movement in complete safety.

ADVANTAGES:

- High reliability ,
- Reduce consumption,
- Less weight and bulk compared to a generator set of equal power rating,
- excellent electrical performance due to water cooling components,
- High efficiency due to the use of technologies, cutting-edge materials and advanced components,
- Variable speed function of the applied load,
- Engine control through appropriate SW strategies,
- Revolution in the standard sets market.

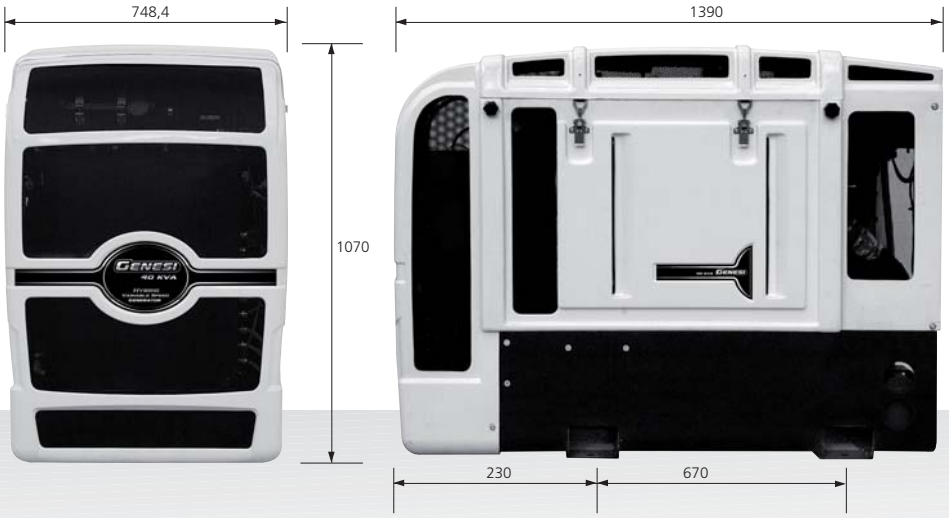
GENERAL DATA

Genesi 40 kVA

Dimension LxLxH [mm]	1390x680x1070
Weight [kg]	400
Capacity battery [Ah]	100
Auxiliary voltage [V]	12
ENVIRONMENTAL CONDITIONS	
Temperature [°C]	25
Humidity	30%
Altitude s.l.m. [m]	100
PERFORMANCE DATA	
Frequency [Hz]	50
Operating regime [rpm]	Variable (1000..3000)
Standard voltages [V]	400/230
Nominal active power [kW]	0..32 kW
Nominal reactive power [kVA]	0..40kVA
Cosφ	0.8..1
FUEL SUPPLY	
Capacity STD tank [l]	100
Fuel type	Diesel

GENERAL FEATURES

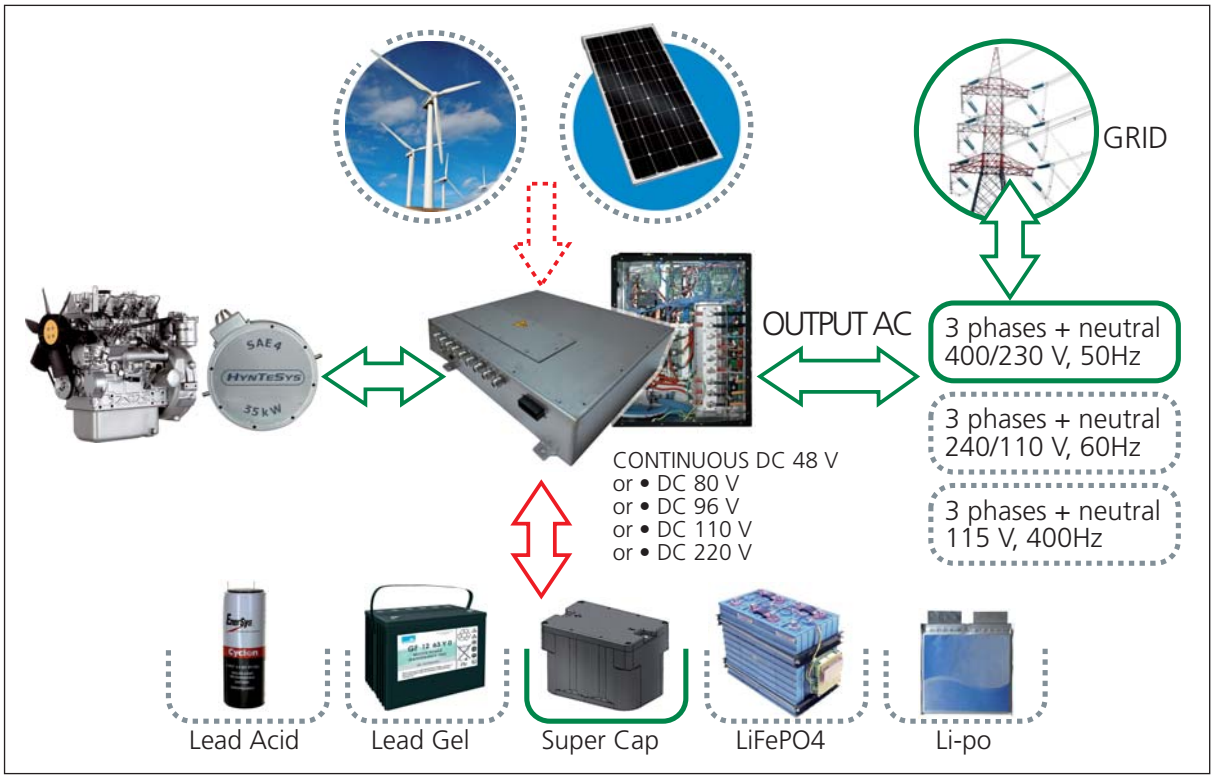
All the machines and components are tested during construcion and manufacturing.



STANDARD EQUIPMENT:

- Liquid collection tank with drain hole
- Anti-turning fork-lift
- Central hanger for lifting
- Large capacity fuel tank
- Anti-vibration supports
- Electrical wiring IP65
- Overload protection, short circuit and differential
- Emergency stop button
- Starting battery and power supply services to the lead
- Liquids (oil and anti-freeze)
- Accelerator
- Auxiliary cooling circuit for electronic and electric machine equipped with a radiator and coolant pump

HYBRID ENERGY SYSTEM



GENESI 40 KVA - Hybrid Energy System

•Engine Diesel Perkins 404D-22

Auxiliary voltage	12V
Number of cylinders	4 in line
Aspiration	Natural
Minimum speed	1000
Maximum speed	3000
Flywheel housing / Flywheel	SAE4 / 7" 1/2
Crankshaft power	36,3 kW @ 2800 rpm
Maximum torque	143Nm @ 1800rpm

•AFPM Hyntesys SAE4 HL 35kW Pilot

Cooling	Water + glycol
Max voltage phase-phase	320V @ 3000 rpm
Minimum speed	1000
Maximum speed	3000
Max frequency	250Hz @ 3000 rpm
Max output current	65A
Power shaft	36.1kW
Efficiency	>94% @ 3000 rpm
Output Electric power	34kW
Costant torque	110 Nm
International Protection	IP65
Flywheel	SAE 4 (7.5")
Lenght	80 mm
Weight	45Kg

•Hyntesys PEC535:

Nominal Power [kW]	35
Dimensions LxLzH [mm]	500x600x150
Weight [Kg]	45
Efficiency	>98%
Cooling	water + glycol
International Protection	IP65
Protections HW	overvoltage, overcurrent overtemperature

INPUT:

Type of input	3 phases at variable voltage and frequency

OUTPUT AC 3 phases+ neutral:

Output voltage threephase [V]	400
Output voltage monophase [V]	230
Maximum current output [A]	50
Output frequency [Hz]	50

OUTPUT DC

Output Voltage [V]	300V

•Hyntesys stack20 Supercap

Vnom [V]	300
International Protection	IP65

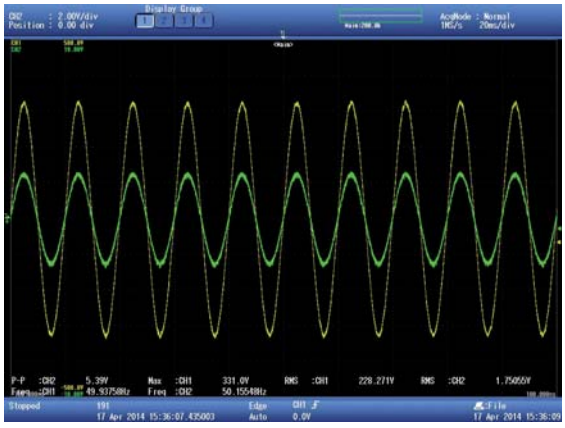
MAIN SYSTEM COMPONENTS :

Diesel engine
Electric machine with permanent magnets
Electronic converter
Super capacitors stack
Display & control

Output an AC voltage, 3 phase and neutral 400/230 V, 50Hz in addition to the possibility of having a DC voltage to 300V simultaneously.

OPERATING MODE :

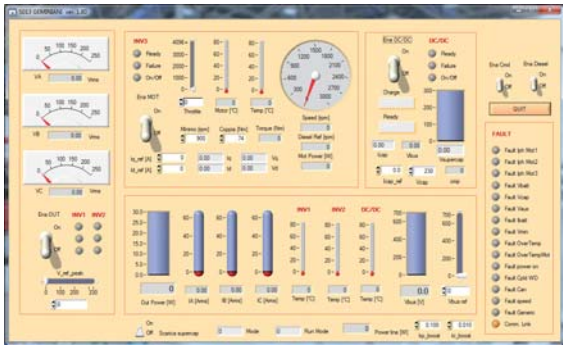
The system has been designed to work in both island connected to the network, in respect of the mandatory regulations that refer to the placing of energy in the network.
The generator can work at variable rpm of the internal combustion engine complying with the performance G3 ISO 8528-5.
It's capable of delivering power single-phase and three-phase with neutral at the same time, supply loads completely unbalanced and heavily distorting; meets the regulations on electrical safety and electromagnetic compatibility and has all the protections load side.
It also has a high peak current when required, thanks to its specific sizing.



Yellow: voltage
Green: current
Load: resistive

DIAGNOSTIC TOOL:

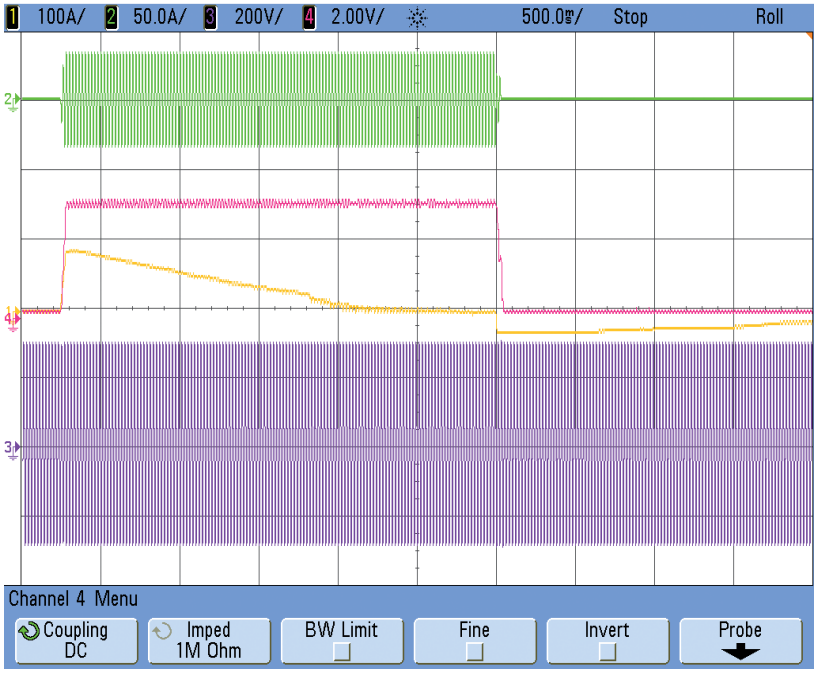
We have developed a diagnostic tool for PC in real time that allows us to monitor all signals, measurements and magnitudes of the components belonging to the system.



HYNTESYS DYSPLAY& I/O CORE

The Hyntesys control panel provides a reliable and simple solution of control of the generator throughout a direct communication with the power converter via Canbus.
Start & Stop automatic/manual of generator and monitoring of all parameters GenSet and single components of the system.

POWER SUPPLY FROM 0% TO 100% OF LOAD



Load current

Output power

Supercap current

Output voltage

CERTIFICATE OF TESTING FOR GENERATOR
Result ISO8528 Class G3

Description		Measured	Limit Class
Frequency droop (%)		0,00	3,0
Steady state band (%)		0,07	0,5
Transitien frequency difference from initial frequency	Power decrease (%)	0,05	+10,0
	Power increase (%)	-0,04	-10,0
Transitien frequency difference from rated frequency	Power decrease (%)	0,05	+10,0
	Power increase (%)	-0,04	-7,0
Frequency recovery time	Power increase (sec)	0,00	3,0
	Power decrease (sec)	0,00	3,0
Related frequency tolerance band (%)		0,17	2,0
Steady state voltage deviation (%)		0,18	+/- 1,0
Transitien voltage deviation	Power decrease (%)	0,94	+20
	Power increase (%)	-0,32	-15,0
Voltage recovery time	Power increase (sec)	0,00	4,0
	Power decrease (sec)	0,00	4,0

According to:
ISO8528-1:2005
ISO8528-5:2005
ISO8528-6:2005