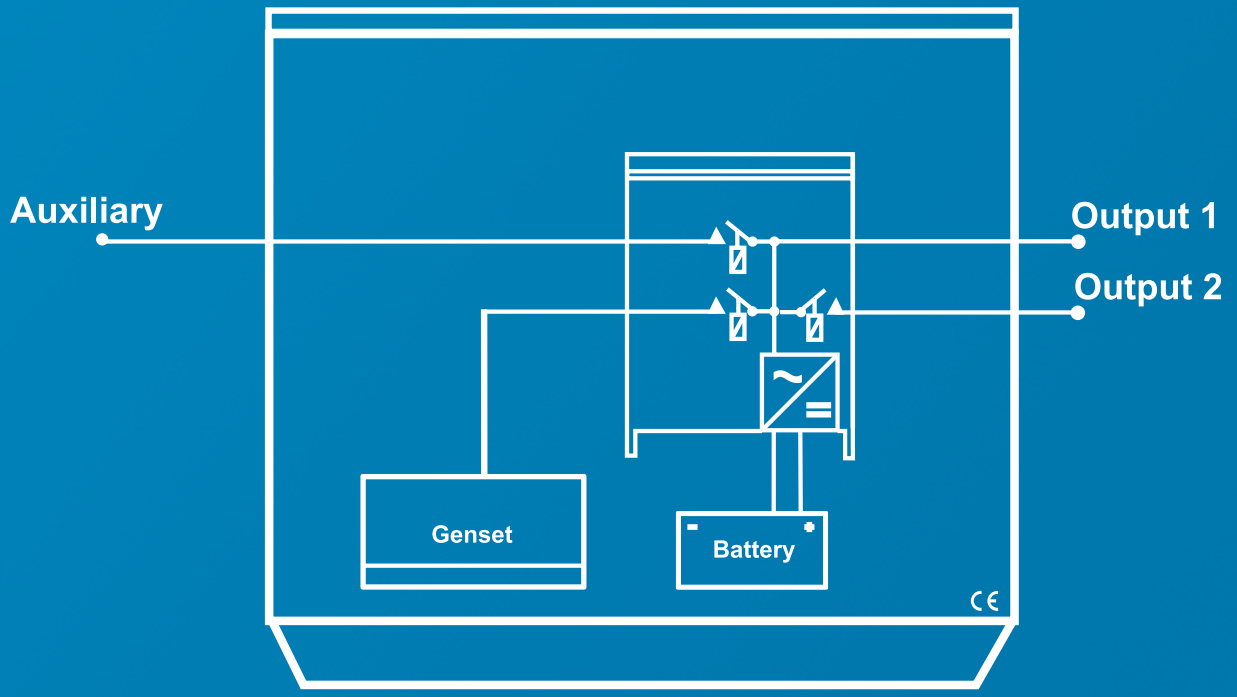
victron energy
BLUE POWER



MultiPower

Environment friendly all-in-one hybrid energy

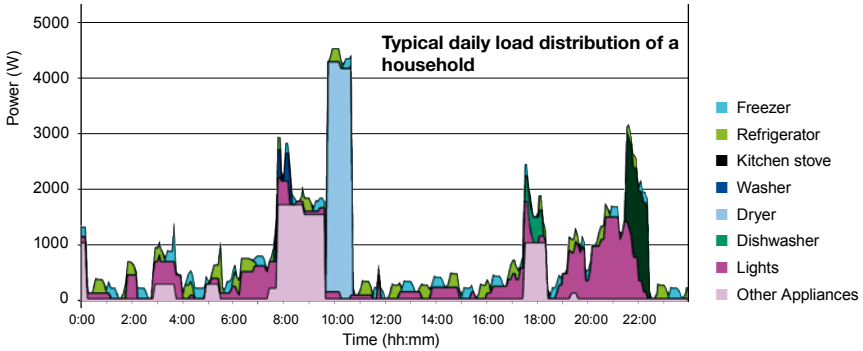
MultiPower

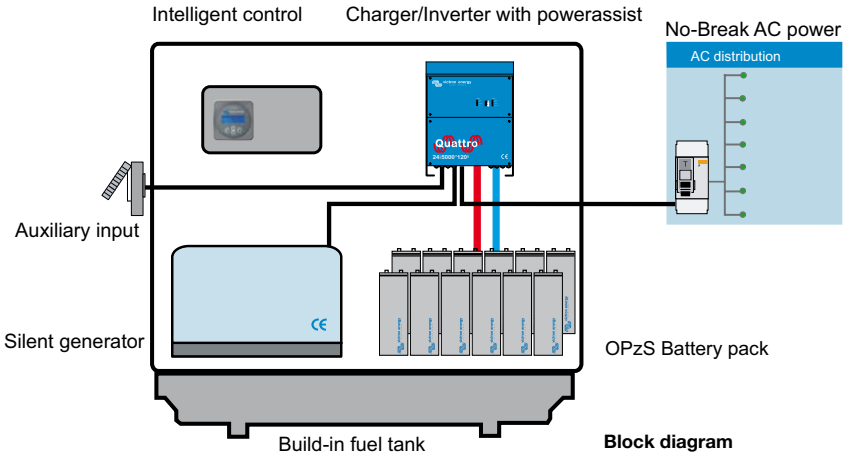
The case for a hybrid system

Per Watt AC-power, an inverter is generally more expensive than a generator. So why would one add an inverter to an AC-generator system?

Apart from the obvious advantage of “silent AC-power”, there are other major considerations why it is attractive to add a Multi or Quattro inverter/charger to a system with ac-generator:

- More power: generator **plus** inverter instead of generator **or** inverter
- Reduces fuel consumption (and pollution) by a factor three or more
- Cost and time savings as a result of reduced maintenance
- Extended generator life
- 24/7 availability of AC power





Block diagram

More power: generator + inverter

The VE Quattro inverter-chargers feature PowerAssist, a unique capability of supplementing power to the generator. Insufficient generator power is immediately compensated for by the inverter/charger with extra power from the battery. The total output power of the system can reach up to 3 times the nominal generator power for temporary heavy loads, and problems related to insufficient generator power are solved once and for all. Electric cooking, washing machines, power tools, water pumping and pressurisation… there are virtually no limitations.

Fuel savings and less pollution

Tests have shown that a generator is incredibly inefficient when operating at low load. By combining a generator with an inverter/charger and batteries, efficiency can be increased as follows:

- By operating the generator in parallel with the inverter/charger, peak power available is equal to the sum of generator power and inverter power. A smaller generator can therefore be installed.
- When the generator is operating, any available power that is not needed to supply the load will be used to recharge the batteries. The generator will therefore always operate at maximum efficiency.

Cost and time savings as a result of reduced maintenance, and extended generator life

In most applications the generator, instead of running 24/7, will operate only a few hours per day.

24/7 availability of AC power

With AC power available from both the generator and the inverter, the MultiPower has built-in redundancy.

Preassembled and ready for use

The MultiPower includes all controls for fully automatic operation. Solar or wind power can be added to further reduce generator run hours.

A few examples of MultiPower configurations

MultiPower	5kVA/600Ah	13kVA/800Ah	18kVA/1000Ah	20kVA/1000Ah	27kVA/1200Ah
Maximum Output	(5kVA inverter)		(Parallel operation of AC generator and Quattro(s))		
Max. output power (kVA / kW)	5 / 4,25	13 / 11	18 / 15	20 / 16	27 / 23
Generator	DC generator		AC generator		
Nominal output voltage	24V DC		230VAC ± 6% single-phase – 50Hz ± 4%		
Continuous output power (kW)	4,8kW/200A DC	7	7	8	10
Output – Inverter mode					
Nominal AC output voltage			230V ± 2% single-phase – 50Hz ± 0.1%		
Cont. output power at 25°C (kVA / kW)	5 / 4,25	5 / 4,25	10 / 8,5	10 / 8,5	15 /12,75
Cont. output power at 40°C (kW)	3,35	3,35	6,7	6,7	10
Peak power (kW)	7,5	7,5	15	15	22,5
Genset					
Engine (4-stoke direct injection diesel)	Air cooled	Air cooled	Air cooled	Air cooled	0il cooled
Model	Ruggerini RY 103	Ruggerini RY 125	Ruggerini RY 125	Lombardini 9LD625.2L	Deutz FL2L2011
Cylinders / displacement cm^3	1 / 401	1 / 505	1 / 505	2/ 1.248	2 / 1.550
Rating ISO 3046/1 IFN (kW / HP)	6,6 / 9 @3000rpm	8,1 / 11 @3000rpm	8,1 / 11 @3000rpm	10,3 / 14 @1500rpm	12,6 / 17 @1500rpm
Fuel consumption, nominal load (L/h)	1,6	2,3	2,3	2,7	3,4
Fuel consumption, nominal load (g/kWh)	220	230	230	230	220
Governor type			Mechanical		
Electric start, starter battery, alternator			Standard		
Alternator	DC		SINCRO single-phase AVR regulated		
Model / kW	ET2MCD / 4,8	EK2LBA / 7	EK2LBA / 7	SK160SA1 / 8,2	SK160CB1 / 12,8
Voltage regulation			AVR (electronic voltage regulation)		
Inverter-charger					
Model	Inverter 24/5000		Quattro 24/5000/120 [1]		
Configuration	1 unit single	1 unit single	2 units parallel	2 units parallel	3 units parallel
Max. charge current (A)	200	120	120	240	360
Battery					
Type			OPzS flooded tubular plate, 12 cells, 24V		
Cell capacity (Ah @ C10)	600	800	1000	1000	1200
Controls					
Generator controller			Auto/manual start/stop with oil pressure, temperature and voltage protection		
Output voltage indicators			Voltage – Amps – Frequency		
Tank level gauge			Standard		
Hour counter			Standard		
Battery monitor			BMV-600 [1]		
External emergency stop button			Standard		
Electrical Connections					
External AC in (grid or emergency)			For external 230V AC source (MCB protected)		
AC out 1			Inverter or/and genset output (MCB protected)		
AC out 2			Genset only output (MCB protected)		
Enclosure					
Common characteristics			Chassis mounted 3-compartment enclosure with lifting ring, designed for outdoor use		
Material, colour			Assembled steel soundproofing enclosure, blue RAL 5012, chassis black		
Access doors			3 doors with single-key locks, left (genset), front (battery), right (inverter-chargers & controls)		
Engine silencer & exhaust			Integrated in enclosure		
Ventilation			Extractor fans in genset and battery compartments, air outlets on back side		
Fuel tank			150L chassis tank		
Dimensions (hxwxd, cm)			174 x 200 x 120		
Approx. weight (excl. Fuel, kg)	1.200	1.500	1.550	1.850	2.000
Approx. noise (open field, dB(A) @ 7m)	65	65	65	65	60

1) for more details on our Quattro Inverter-charger and BMV-600 monitor, please refer to our specific product documentation





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More information

Several downloads are available on our website:

- Victron Marine Generator Test, in particular chapter 4: “The case for a hybrid system”
- “Using the Phoenix MultiPlus to reduce operating cost of a generator”
- “How to reduce the cost of supplying power to an off-grid BTS”

Configure or assemble your own MultiPower

Please contact us for more information.

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