Phoenix Inverter

Phoenix Inverters   1200VA - 5000VA (per module)

SinusMax - Superior engineering
Developed for professional duty, the Phoenix range of inverters is suitable for the widest range of applications. The design criteria have been to produce a true sine wave inverter with optimised efficiency but without compromise in performance. Employing hybrid HF technology, the result is a top quality product with compact dimensions, light in weight and capable of supplying power, problem-free, to any load.

Extra start-up power
A unique feature of the SinusMax technology is very high start-up power. Conventional high frequency technology does not offer such extreme performance. Phoenix inverters, however, are well suited to power up difficult loads such as refrigeration compressors, electric motors and similar appliances.

Virtually unlimited power thanks to parallel and 3-phase operation capability
Up to 6 units inverters can operate in parallel to achieve higher power output. Six 24/5000 units, for example, will provide 24kW / 30kVA output power. Operation in 3-phase configuration is also possible.

To transfer the load to another AC source: the automatic transfer switch
If an automatic transfer switch is required we recommend using the MultiPlus inverter/charger instead. The switch is included in these products and the charger function of the MultiPlus can be disabled. Computers and other electronic equipment will continue to operate without disruption because the MultiPlus features a very short switchover time (less than 20 milliseconds).
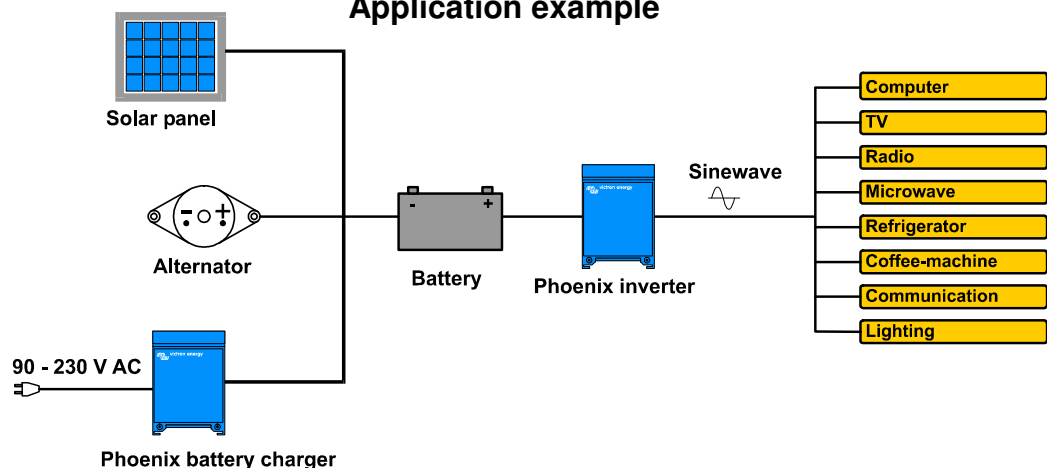
Computer interface
All models have a RS-485 port. All you need to connect to your PC is our MK2 interface (see under accessories). This interface takes care of galvanic isolation between the inverter and the computer, and converts from RS-485 to RS-232. A RS-232 to USB conversion cable is also available. Together with our VEConfigure software, which can be downloaded free of charge from our website www.victronenergy.com, all parameters of the inverters can be customised. This includes output voltage and frequency, over and under voltage settings and programming the relay. This relay can for example be used to signal several alarm conditions, or to start a generator.
The inverters can also be connected to VENet, the new power control network of Victron Energy, or to other computerised monitoring and control systems.

New applications of high power inverters
The possibilities of paralleled high power inverters are truly amazing. For ideas, examples and battery capacity calculations please refer to our book "Electricity on board" (available free of charge from Victron Energy and downloadable from www.victronenergy.com).

Application example

Solar panel

Alternator

90 - 230 V AC

Phoenix battery charger

Battery

Phoenix inverter

Sinewave

Computer
TV
Radio
Microwave
Refrigerator
Coffee-machine
Communication
Lighting

Specifications

| Phoenix Inverter	12 Volt 24 Volt 48 Volt	C 12/1200 C 24/1200	C 12/1600 C 24/1600	C 12/2000 C 24/2000	12/3000 (3) 24/3000 (3) 48/3000 (3)	12/5000 (3) 24/5000 (3) 48/5000 (3)
Input voltage range (V DC)		9,5 - 17,0 19,5 – 33,0	9,5 - 17,0 19,5 - 33,0	9,5 - 17,0 19,5 - 33,0	9,5 - 17,0 19,5 - 33,0 38,0 - 66,0	9,5 - 17,0 19,5 - 33,0 38,0 - 66,0
Cont. output power at 25℃ (VA) (4)		1200 1200	1600 1600	2000 2000	3000 3000 3000	5000 5000 5000
Cont. power at 25℃ / 40℃ (W)		1000 / 900 1000 / 900	1300 / 1200 1300 / 1200	1600 / 1450 1600 / 1450	2500 / 2000 2500 / 2000 2500 / 2000	4000 / 3000 4000 / 3000 4000 / 3000
Peak power (W)		2400 2400	3000 3000	4000 4000	6000 6000 6000	8000 9000 9000
Max. efficiency 12 / 24 / 48 V (%)		92 / 94	92 / 94	92 / 94	92 / 94 / 95	92 / 94 / 95
Zero-load power 12 / 24 / 48 V (W)		8 / 10	8 / 10	9 / 11	15 / 15 / 16	20 / 25 / 25
Zero-load power in AES mode (W)		5 / 8	5 / 8	7 / 9	10 / 10 / 12	15 / 20 / 20
Zero-load power in Search mode (W)		2 / 3	2 / 3	3 / 4	4 / 5 / 5	5 / 5 / 6
Programmable relay		Yes				
RS485 interface		Yes				
Protection (2)		a - g				
Common Characteristics (1)		Output: 230V ± 2% / 50/60Hz ± 0,2% (switch selectable) Operating temperature range: -20 to +50℃ (fan assisted cooling) Humidity (non condensing) : max 95%				
ENCLOSURE						
Material & Colour		aluminium (blue Ral 5012)				
Battery-connection		battery cables of 1.5 meter		M8 bolts	2+2 M8 bolts	2+2 M8 bolts
230 V AC-connection		G-ST18i plug	G-ST18i plug	Spring-clamp	Screw terminals	Screw terminals
Protection category		IP 21				
Weight (kg)		10	10	12	18	30
Dimensions (hxwxd in mm)		375x214x110	375x214x110	520x255x125	362x258x218	444 x 328 x 240
ACCESSORIES						
Remote panel		Phoenix Inverter Control Panel (PIV)				
Remote on-off switch		Two pole connector				
STANDARDS						
Safety		EN 60335-1				
Emission / Immunity		EN 55014-1 / EN 55014-2				
Automotive Directive		2004/104/EC	2004/104/EC		2004/104/EC	

1) Can be adjusted to 60Hz, and to 240V
2) Protection
   a. Output short circuit
   b. Overload
   c. Battery voltage too high
   d. Battery voltage too low
   e. Temperature too high
   f. 230 V AC on inverter output
   g. Input voltage ripple too high
3) Suitable for parallel and 3-phase operation

4) Non linear load, crest factor 3:1
5) Programmable relay which can be set for general alarm, DC under voltage or genset start signal function (MK2 interface and VEConfigure software needed)

Up to six units can be connected in parallel
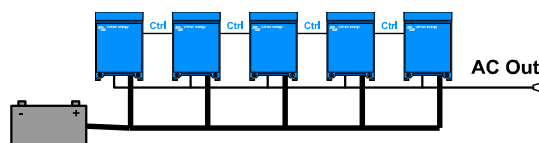
Accessories
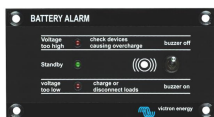
Battery Alarm
An excessively high or low battery voltage is indicated by an audible and visual alarm, and a relay for remote signalling.
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Phoenix Inverter Control (PIV)
This panel can also be used on a MultiPlus inverter/charger when an automatic transfer switch but no charger function is desired.
The brightness of the LED's is automatically reduced during night time.

Computer controlled operation and monitoring (Victron Interface MK2)
All models have a RS-485 data port. All you need to link to your PC and be able to set and read out all parameters is the MK2 interface as shown and our VEConfigure software (VEConfigure software can be down loaded free of charge from our website).

BMV-600 Battery Monitor
The BMV–600 Battery Monitor features an advanced microprocessor control system combined with high resolution measuring systems for battery voltage and charge/discharge current. Besides this, the software includes complex calculation algorithms, like Peukert's formula, to exactly determine the state of charge of the battery. The BMV–600 selectively displays battery voltage, current, consumed Ah or time to go. The monitor also stores a host of data regarding performance and use of the battery.