



New Phoenix Inverters

- Pure sine wave output: suitable to supply sensitive electronic equipment
- Ring core transformer: high efficiency
- Microprocessor control: excellent protection against accidental misuse
- Terminal for remote on/off switch
- Battery cables included: easy to install (model 12/150 with cigarette plug)

Specifications

Phoenix inverter	12/180	12/350	24/180	24/350	24/750
Input voltage range (V DC)	10,5 - 15,0	10,5 - 15,0	21,0 - 30,0	21,0 - 30,0	21,0 - 30,0
DC start voltage	12,5	12,5	25,0	25,0	25,0
Output voltage	115 V ± 5%				
Output frequency	60 Hz ± 0,3%				
Cont. power at 100°F (W)	150	300	150	300	750
Peak power (W)	200	400	200	400	800
Max. efficiency (%)	91	92	92	93	93
Zero-load power (W)	2,2	2,8	3,8	3,8	3,8
Fan assisted cooling	Yes, temperature controlled				
Protection (3)	a - e				
Operating temperature range	0 to 120°F				
Humidity (non condensing)	max 95%				
ENCLOSURE					
Material & Colour	aluminum (blue Ral 5012)				
Battery-connection	Battery cables of 1.5 meter				
115 V AC-connection	2 x NEMA5-15R				
Protection category	IP 20				
Weight (lbs)	6.0	7.7	6.0	7.7	5.4
Dimensions (hwxwd in inches)	2.8x5.2x7.9	2.8x6.1x9.3	2.8x5.2x7.9	2.8x6.1x9.3	2.8x7.1x11.3
ACCESSOIRES					
Remote on-off switch	Yes, connector available				
Recommended automatic transfer switch	Filax				
STANDARDS					
Safety	EN 60950				
Emission / Immunity	EN 50081-1, EN55014 / EN 55014-2				

1) 230 V AC on request
2) 50 Hz on request

3) Protection
a. Output short circuit
b. Overload
c. Battery voltage too high
d. Battery voltage too low
e. Over temperature

Phoenix Inverters



victron energy
B L U E P O W E R

Phoenix Inverter

Phoenix Inverter

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. The 24/800 model, for example, is capable of starting a typical refrigerator.

Virtually unlimited power thanks to parallel, 3-phase and split phase operation capability

Up to 6 units Phoenix 24/3000 can operate in parallel to achieve higher power output. Six 24/3000 units, for example, will provide 15 kW / 18 kVA output power. Operation in 3-phase, split phase and 2 leg three phase configuration is also possible.

To transfer the load to another AC source: the automatic transfer switch

If an automatic transfer switch is required on models rated at 800 VA or more, we recommend to use the Phoenix Multi instead. The switch is included in these products and the charger function of the Multi can be disabled. For our lower power models we recommend the use of our Filax Automatic Transfer Switch. Computers and other electronic equipment will continue to operate without disruption because both the Filax and the Phoenix Multi feature a very short switchover time (less than 16 milliseconds).

Computer interface

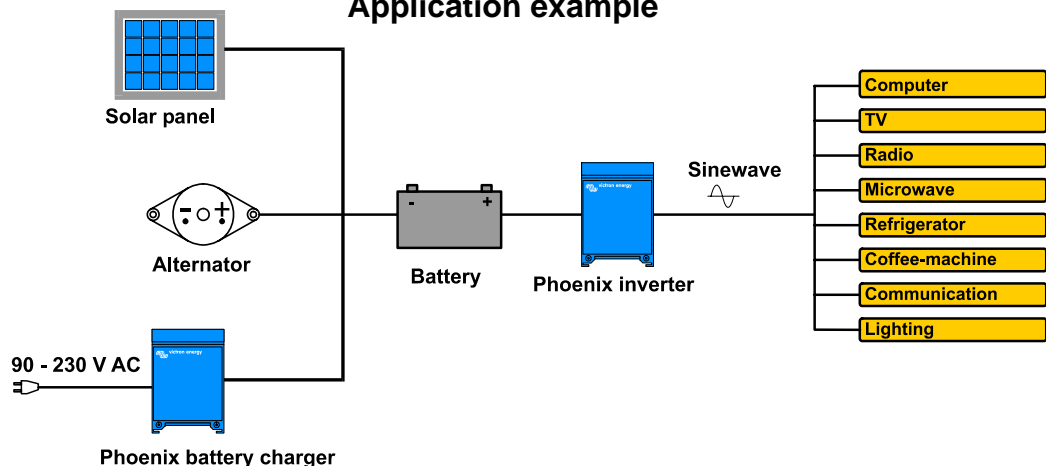
All models rated at 1200 VA or more have a RS-485 computer interface. All you need to connect to your PC is our data link MK1b (see under accessories). This data link takes care of galvanic isolation between the inverter and the computer, and converts from RS-485 to RS-232. Together with the [VEConfigure](#) 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





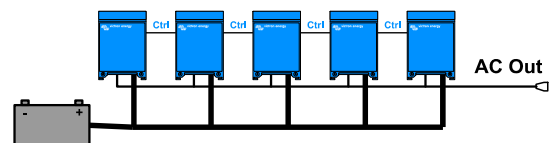
Specifications

Phoenix inverter	12 Volt 24 Volt 48 Volt	12/220 24/220	12/300 24/350	12/600 24/800	12/2500 (5) 24/3000 (5)
Input voltage range (V DC)		10,5 - 15,5 21,0 - 31,0	10,5 - 15,5 21,0 - 31,0	10,5 - 15,5 21,0 - 31,0	9,5 - 16,0 19,5 - 33,0
Cont. output power at 75 °F (VA) (6)		220 220	300 350	600 800	2500 3000
Cont. power at 75 °F / 100 °F (W)		175 / 150 175 / 150	225 / 215 300 / 275	500 / 450 650 / 600	2000 / 1600 2500 / 2000
Peak power (W)		400 400	500 600	900 1500	4500 6000
Max. efficiency 12 / 24 / 48 V (%)		90 / 90 / 92	90 / 91	92 / 94	93 / 94 / 95
Zero-load power 12 / 24 / 48 V (W)		2,5 / 3,0 / 4,0	3,0 / 3,5	4,0 / 4,6	15 / 15 / 16
Zero-load power in AES mode		0,5 / 0,8 / 1,2	0,7 / 0,8	0,4 / 0,7	10 / 10 / 12
Multi purpose relay driver or relay (7)					relay
Protection (4)		a,b,d,h	a,b,d,h	a,b,d,h	a - h
Common Characteristics (2,3)		Output: 120 V ± 2% / 60 Hz ± 0,2% Operating temperature range: 0 - 120°F (fan assisted cooling) condensing) : max 95%			Humidity (non
ENCLOSURE					
Material & Colour		aluminum (blue Ral 5012)			
Battery-connection		1)	1)	1)	M8 studs
120 V AC-connection		NEMA5-15R	NEMA5-15R	NEMA5-15R	screw-clamp AWG 6
Protection category		IP 20	IP 20	IP 20	IP 21
Weight (lbs)		4.4	6.2	13	40
Dimensions (hxxwx d in inches)		3.9x5.1x7.1	3.9x5.1x8.2	4.2x7.4x9.0	19.0x10.2x8.6
ACCESSORIES					
Remote panel (RS 485 port)					√ (PIV)
Remote on-off switch					√
Automatic transfer switch		Filax	Filax	Filax	Phoenix Multi
STANDARDS					
Safety		EN 60950	EN 60950	EN 60950	EN 60335-1
Emission / Immunity		EN 50081-1, EN55014 / EN 55014-2			
Automotive Directive					95/54/EC

- 1) Battery cables of 1.5 meter
- 2) 230 V AC on request
- 3) 50 Hz on request
- 4) Protection
 - a. Output short circuit
 - b. Overload
 - c. Battery voltage too high
 - d. Battery voltage too low
 - e. Battery reverse polarity detection
 - f. 230 V AC on inverter output
 - g. Input voltage ripple too high
 - h. Temperature too high
- 5) Suitable for parallel, 3-phase, split phase and 2 leg three phase

- 6) Non linear load, crest factor 3:1
- 7) Multipurpose relay which can be set for general alarm, DC undervoltage or genset start signal function
- 8) Relay driver: open collector 66V 40mA

Five parallel units: output power 12,5 kW



Accessories



Battery Alarm

An excessively high or low battery voltage is indicated by an audible and visual alarm, and a relay for remote signalling.



Phoenix Inverter Control (PIV)

This panel is intended for the models equipped with a RS-485 data port. It can also be used on a Phoenix Multi 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 MK1b)

All models rated at 1200 VA or more are ready to communicate with a computer through 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 data link as shown and software available on our website.

Moreover, all Victron Energy products equipped with an RS-485 data port can easily be integrated in VENet, the new power control network of Victron Energy, or to other computerised monitoring and control systems.



BMV-501 Battery Monitor

The BMV – 501 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 – 501 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.

