PH Series

DC/AC Inverters 12V 24V 48V 180VA-1200VA

PH-IN-12-180

PH-IN-12-800

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 optimized 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 computers and low power electric tools.

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

For our lower power models we recommend the use of our Filax Automatic Transfer Switch. The Filax features a very short switchover time (less than 20 miliseconds) so that computers and other electronic equipment will continue to operate without disruption.

LED diagnosis

Please see manual for a description.

Remote on/off switch

Connector for remote on/off switch available on all models.

DIP switch for 50/60Hz selection (48/350 model only)

Available with different output sockets

Please see pictures below.

PH-IN-12-350-IEC
with IEC-320 Socket

PH-IN-12-800-IEC
with IEC-320 Socket

PH-12-800-AU
With AS/NZS 3112 Socket

Phoenix Inverter 12 Volt / 24 Volt / 48 Volt	12/180 24/180	12/350 24/350 48/350	12/800 24/800 48/800	12/1200 24/1200 48/1200
Cont. AC power at 25 °C (VA) (3)	180	350	800	1200
Cont. power at 25 °C / 40 °C (W)	175 / 150	300 / 250	700 / 650	1000 / 900
Peak power (W)	350	700	1600	2400
Output AC voltage / frequency (4)	110VAC or 230VAC +/- 3% 50Hz or 60Hz +/- 0,1%			
Input voltage range (V DC)	10,5 - 15,5 / 21,0 - 31,0 / 42,0 - 62,0		9,2 - 17,3 / 18,4 - 34,0 / 36,8 - 68,0	
Low battery alarm (V DC)	11,0 / 22 / 44		10,9 / 21,8 / 43,6	
Low battery shut down (V DC)	10,5 / 21 / 42		9,2 / 18,4 / 36,8	
Low battery auto recovery (V DC)	12,5 / 25 / 50		12,5 / 25 / 50	
Max. efficiency (%)	87 / 88	89 / 89/ 90	91 / 93 / 94	92 / 94 / 94
Zero-load power (W)	2,6 / 3,8	3,1 / 5,0 / 6,0	6 / 5 / 4	6 / 5 / 6
Zero-load power in search mode	n. a.	n. a.	2	2
Protection (2)	a - e			
Operating temperature range	-40 to +50°C (fan assisted cooling)			
Humidity (non condensing)	max 95%			
ENCLOSURE				
Material & Colour	aluminium (blue Ral 5012)			
Battery-connection	1)	1)	1)	1)
Standard AC outlets	230V: IEC-320 (IEC-320 plug included), CEE 7/4 (Schuko) 120V: Nema 5-15R			
Other outlets (at request)	BS 1363 (United Kingdom) AN/NZS 3112 (Australia, New Zealand)			
Protection category	IP 20			
Weight (kg / lbs)	2,7 / 5,4	3,5 / 7,7	6,5 / 14.3	8,5 / 18.7
Dimensions (hxwxd in mm) (hxwxd in inches)	72x132x200 2.8x5.2x7.9	72x155x237 2.8x6.1x9.3	108x165x305 4.2x6.4x11.9	108x165x305 4.2x6.4x11.9
ACCESSORIES				
Remote on-off switch	Two pole connector			
Automatic transfer switch	Filax			
STANDARDS				
Safety	EN 60335-1			
Emission Immunity	EN55014-1 / EN 55014-2/ EN 61000-6-2 / EN 61000-6-3			

1) Battery cables of 1.5 meter (12/180 with cigarette plug)
2) Protection key:
a) output short circuit
b) overload
c) battery voltage too high
d) battery voltage too low
e) temperature too high

3) Non linear load, crest factor 3:1
4) Frequency can be set by DIP switch (48/350 model only)

Phoenix Inverter 24/5000

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.

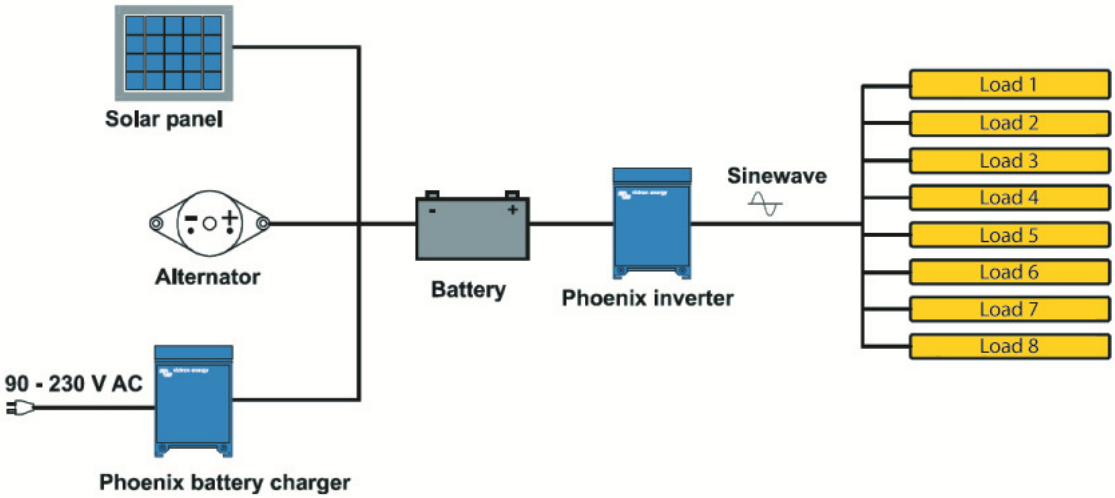
To transfer the load to another AC source: the automatic transfer switch

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, 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.

Phoenix Inverter Compact 24/1600



PH Series

DC/AC Inverters 12V 24V 48V 1200VA-5000VA

Phoenix Inverter	C12/1200 C24/1200	C12/1600 C24/1600	C12/2000 C24/2000	12/3000 24/3000 48/3000	24/5000 48/5000
Parallel and 3-phase operation	Yes				
INVERTER					
Input voltage range (V DC)	9,5 – 17V 19 – 33V 38 – 66V				
Output	Output voltage: 230 VAC ±2% Frequency: 50 Hz ± 0,1% (1) Harmonic distortion < 3% (linear load)				
Cont. output power at 25 °C (VA) (2)	1200	1600	2000	3000	5000
Cont. output power at 25 °C (W)	1000	1300	1600	2500	4500
Cont. output power at 40 °C (W)	900	1200	1450	2200	4000
Peak power (W)	2400	3000	4000	6000	10000
Max. efficiency 12/ 24 /48 V (%)	92 / 94	92 / 94	92 / 92	93 / 94 / 95	94 / 95
Zero-load power 12 / 24 / 48 V (W)	8 / 10	8 / 10	9 / 11	15 / 15 / 16	25 / 25
Zero-load power in AES mode (W)	5 / 8	5 / 8	7 / 9	10 / 10 / 12	20 / 20
Zero-load power in Search mode (W)	2 / 3	2 / 3	3 / 4	4 / 5 / 5	5 / 6
GENERAL					
Programmable relay (3)	Yes				
Protection (4)	a - g				
VE.Bus communication port	For parallel and three phase operation, remote monitoring and system integration				
Remote on-off	Yes				
Common Characteristics	Operating temperature range: -40 to +50 °C (fan assisted cooling) Humidity (non condensing): max 95%				
ENCLOSURE					
Common Characteristics	Material & Colour: aluminum (blue RAL 5012) Protection category: IP 21				
Battery-connection	battery cables of 1.5 meter included		M8 bolts	2+2 M8 bolts	
230 V AC-connection	G-ST18i plug		Spring-clamp	Screw terminals	
Weight (kg)	10		12	18	30
Dimensions (hxwhd in mm)	375x214x110		520x255x125	362x258x218	444x328x240
STANDARDS					
Safety	EN 60335-1				
Emission Immunity	EN 55014-1 / EN 55014-2				

1) Can be adjusted to 60Hz and to 240V
2) Non linear load, crest factor 3:1
3) Programmable relay that can a.o. be set for general alarm, DC undervoltage or genset start/stop function.
AC rating: 230V/4A
DC rating: 4a up to 35VDC, 1A up to 60VDC

4) Protection key:
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

Phoenix Inverter	12/3000	24/3000
Parallel,3-phase and split-phase operation	Yes	
INVERTER		
Input voltage range (V DC)	9,5 – 17V	19 – 33V
Output	Output voltage: 120 VAC ±2% Frequency: 60 Hz ± 0,1% (1)	
Cont. output power at 25 ºC (VA) (2)	3000	3000
Cont. output power at 25 ºC (W)	2500	2500
Cont. output power at 40 ºC (W)	2200	2200
Peak power (W)	6000	6000
Max. efficiency (%)	93	94
Zero-load power (W)	15	15
Zero-load power in AES mode (W)	10	10
Zero-load power in Search mode (W)	4	5
GENERAL		
Programmable relay (3)	Yes	
Protection (4)	a - g	
VE.Bus communication port	For parallel and three phase operation, remote monitoring and system integration	
Remote on-off	Yes	
Common Characteristics	Operating temperature range: -40 to +50 ºC (0 - 120°F) Humidity (non condensing): max 95%	
ENCLOSURE		
Common Characteristics	Material & Colour: aluminum (blue RAL 5012) Protection category: IP 21	
Battery-connection	2+2 M8 bolts	
230 V AC-connection	Screw terminals	
Weight	18 kg 38 lbs	
Dimensions (hxwxd)	362x258x218 mm 14.3x10.2x8.6 inch	
STANDARDS		
Safety	EN 60335-1	
Emission Immunity	EN 55014-1 / EN 55014-2	

1) Can be adjusted to 60Hz and to 240V
2) Non linear load, crest factor 3:1
3) Programmable relay that can a.o. be set for general alarm, DC undervoltage or genset start/stop function.
   AC rating: 230V/4A
   DC rating: 4a up to 35VDC, 1A up to 60VDC

4) Protection key:
   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