Phoenix Smart IP43 Charger 230 V

Natural convection cooled Bluetooth enabled

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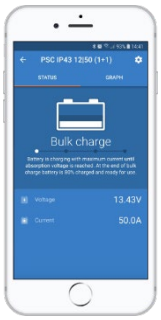


Phoenix Smart 12/50(1+1)





Phoenix Smart 12/50(3)



Bluetooth Smart built-in
The wireless solution to set-up, monitor, control and update Phoenix Smart IP43 Chargers.

Phoenix Smart (1+1): two outputs to charge 2 battery banks
The second output, limited to approximately 3 A and with a slightly lower output voltage, is intended to top up a starter battery.

Phoenix Smart (3): three full current outputs to charge 3 battery banks
Each output can supply the full rated output current. But the total of the 3 outputs combined can never exceed the current rating of the charger.

Automatic voltage compensation
The charger compensates for voltage drop over the DC cabling by slightly increasing output voltage when the DC current increases. Please see the manual for details.

Adaptive 6-stage charge algorithm: bulk– absorption – recondition – float – storage – refresh
The Phoenix Smart Charger features our well-known 'adaptive' battery management system that can be preset to suit different types of batteries. The 'adaptive' feature will automatically optimise the charge process relative to the way the battery is being used.

The right amount of charge: variable absorption time
When only shallow discharges occur (a yacht connected to shore power for example) the absorption time is kept short in order to prevent overcharging of the battery. After a deep discharge the absorption time is automatically increased to make sure that the battery will be fully charged.

Preventing damage due to excessive gassing: the BatterySafe mode (see fig. 2)
If, in order to quickly charge a battery, a high charge current in combination with a high absorption voltage has been chosen, the charger will prevent damage due to excessive gassing by automatically limiting the rate of voltage increase once the gassing voltage has been reached (see the charge curve between 14,4 V and 15,0 V in fig. 2).

Less maintenance and aging when the battery is not in use: the Storage Mode (see fig. 1 & 2)
The Storage Mode kicks in whenever the battery has not been subjected to discharge during 24 hours. In the Storage Mode float voltage is reduced to 2,2 V/cell (13,2 V for a 12 V battery) to minimise gassing and corrosion of the positive plates. Once a week the voltage is raised back to the absorption level to 'equalize' the battery. This feature prevents stratification of the electrolyte and sulphation, a major cause of early battery failure.

Also charges Li-ion ($LiFePO_4$) batteries
Charger on-off control can be implemented by connecting a relay or open collector optocoupler output from a Li-ion BMS to the remote on/off port. Alternatively full control of voltage and current can be achieved with Bluetooth.

Fully programmable charge algorithm
The charge algorithm can be programmed with help of Bluetooth or the VE.Direct interface.
Three preprogrammed algorithms can be selected with the mode button (see specifications).

Optional external battery voltage and temperature sensing via Bluetooth
A Smart Battery Sense, SmartShunt or a BMV-712 Smart Battery Monitor can be used to communicate battery voltage and temperature to one or more Phoenix Smart IP43 Chargers via VE.Smart Networking.

Remote on/off
The remote on/off consists of two terminals: Remote H and Remote L. A remote on/off switch or relay contact can be connected between H and L. Alternatively, terminal H can be pulled high, or terminal L can be pulled low. See the manual for details.

VE.Direct interface
For a wired data connection to a GX device such as the Cerbo GX, PC or other devices. Also enables Instant Readout functionality via VictronConnect remotely from VRM. Please see the VictronConnect app.

Programmable relay
Can be programmed using the VE.Direct interface or a Bluetooth enabled device to trip on an alarm or other events.

Learn more about batteries and battery charging
For more information about adaptive charging please look under Downloads / Technical information on our website.

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Phoenix Smart IP43 Charger	12 V, 2 outputs 12/30(1+1) 12/50(1+1)	12 V, 3 outputs 12/30(3) 12/50(3)	24 V, 2 outputs 24/16(1+1) 24/25(1+1)	24 V, 3 outputs 24/16(3) 24/25(3)
Input voltage	230 VAC (range: 210 – 250 V)			
DC input voltage range	290 – 355 VDC			
Frequency	45-65 Hz			
Power factor	0,7			
Back current drain	AC disconnected: < 0,1 mA		AC connected and charger remote off: < 6 mA	
No load power consumption	1 W			
Efficiency	12/30: 94 % 12/50: 92 %	12/30: 94 % 12/50: 92 %	94 %	94 %
Charge voltage – Absorption / Float / Storage	Normal: 14.4 V / 13.8 V / 13.2 V High: 14.7 V / 13.8 V / 13.2 V Li-ion: 14.2 V / n/a / 13.5 V		Normal: 28.8 V / 27.6 V / 26.4 V High: 29.4 V / 27.6 V / 26.4 V Li-ion: 28.4 V / n/a / 27.0 V	
Fully programmable	Yes, with Bluetooth and/or VE.Direct			
Number of battery connections	(1+1) models: 2 (2nd output via 2 pole terminal & 3 A max) | (3) models: 3			
Charge current house battery	30 / 50 A	30 / 50 A	16 / 25 A	16 / 25 A
Low current mode	15 / 25 A	15 / 25 A	8 / 12,5 A	8 / 12,5 A
Temperature compensation - Default	-16 mV/°C		-32 mV/°C	
Charge current starter battery	3 A (1+1 output models only)			
Charge algorithm	6-stage adaptive (3-stage for Li-ion)			
Protection	Battery reverse polarity (fuse, not user accessible) / Output short circuit / Over temperature			
Can be used as power supply	Yes, output voltage can be set with Bluetooth and/or VE.Direct			
Operating temp. range	-20 to 60 °C (0 – 140 °F) Rated output current up to 40 °C, derate linearly to 20 % at 60 °C			
Humidity (non-condensing)	max 95 %			
Remote on/off	Yes (2-pole terminal)			
Relay (programmable)	DC rating: 5 A up to 28 VDC			
Bluetooth	Power: -4 dBm | Frequency: 2402 – 2480 MHz			
ENCLOSURE				
Material & Colour	aluminium (blue RAL 5012)			
Battery-connection	Screw terminals 16 mm² (AWG6)			
AC-connection	IEC 320 C14 inlet with retainer clip (AC cord with country specific plug must be ordered separately)			
Protection category	IP43 (electronic components), IP22 (connection area)			
Weight kg (lbs)	3,5 kg			
Dimensions (hxwxd)	180 x 249 x 100 mm (7.1 x 9.8 x 4.0 inch)			
STANDARDS				
Safety	EN 60335-1, EN 60335-2-29			
Emission	EN 55014-1, EN 61000-6-3, EN 61000-3-2			
Immunity	EN 55014-2, EN 61000-6-1, EN 61000-6-2, EN 61000-3-3			
Vibration	IEC68-2-6:10-150Hz/1.0G			



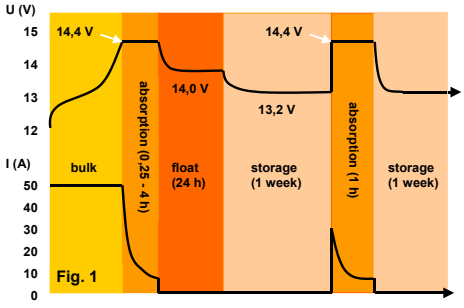
Retainer clip
(included)

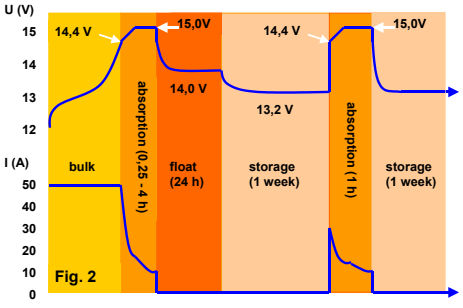


AC cord
(must be ordered separately)

Plug options:
Europe: CEE 7/7
UK: BS 1363
Australia/New Zealand: AS/NZS 3112

Charge curves: up to the gassing voltage (fig.1), and exceeding the gassing voltage (fig.2)





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