

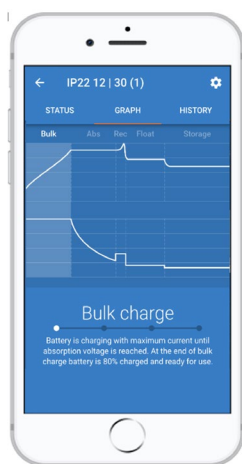
Blue Smart IP22 Charger

230 / 120 VAC VE.Smart Network enabled

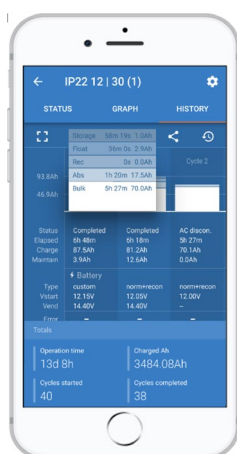
www.victronenergy.com



**Blue Smart IP22
12/30 (3)**



Graph screen



**One of the history
screens**

Bluetooth Smart

The wireless solution to monitor voltage and current, to change settings and to update the charger when new features become available.

High efficiency

With up to 94 % efficiency, these chargers generate up to four times less heat when compared to the industry standard.

And once the battery is fully charged, power consumption reduces to 0,5 Watt, some five to ten times better than the industry standard.

Adaptive 6-stage charge algorithm: test - bulk - absorption - recondition - float - storage

The Blue Smart Charger features a microprocessor controlled 'adaptive' battery management. The adaptive feature will automatically optimize the charging process relative to the way the battery is being used.

Fully programmable charge algorithm

Absorption, Float and Storage voltages as well as the Recondition setting and the temperature compensation value can be programmed with the Bluetooth app.

After enabling the Expert mode, the app allows changing practically all parameters and time limits used by the charge algorithm.

Storage Mode: less maintenance and aging when the battery is not in use

The storage mode kicks in whenever the battery has not been subjected to discharge for 24 hours. In the storage mode float voltage is reduced to 2,2 V/cell (13,2 V for a 12 V battery) to minimize 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 sulfation, which are major causes of early battery failure.

Also charges Li-ion batteries

Li-ion batteries are charged with a simple bulk - absorption - float algorithm.

Fully discharged battery recovery function

Will initiate charging even if the battery has been discharged to zero volts.

Will reconnect to a fully discharged Li-ion battery with internal disconnect function.

NIGHT and LOW setting

When in NIGHT or LOW mode, the output current is reduced to max. 50 % of the nominal output and the charger will be totally noiseless. The NIGHT mode automatically ends after 8 hours. The LOW mode can be ended manually.

Protected against overheating

Output current will reduce as temperature increases up to 50 °C, but the Blue Smart Charger will not fail.

Eleven LEDs for status indication

Charge algorithm: TEST / BULK / ABSORPTION / RECONDITION / FLOAT / STORAGE / READY.

MODE button to set: NORMAL (14,4 V) / HIGH (14,7 V) / RECONDITION / LI-ION.

Forty cycle history log

The history screen contains historical usage data over the charger's lifetime and detailed statistics for the last 40 charge cycles.

VE.Smart Networking

The VE.Smart Network is a wireless device to device (D2D) communication network between Victron products, using Bluetooth Smart.

Optional battery voltage and temperature compensation, and current sensing

The VE.Smart Network opens the possibility to optimize the charge process: a Smart Battery Sense, Smart Battery Monitor or a SmartShunt can be used to communicate battery voltage and temperature to one or more battery chargers. A Smart Battery Monitor or SmartShunt will also communicate battery current.

Synchronized parallel charging

Synchronize up to ten battery chargers in a VE.Smart network to make them charge a battery as if they were one large charger. The chargers will synchronize the charge algorithm between them. They will simultaneously switch from one charge state to another, for example from bulk to absorption.

Synchronized parallel charging has several interesting advantages:

- Redundancy: if one charger stops for whatever reason, the other chargers will continue to operate.
- Flexibility: simply add a charger to the network if more current is needed.
- Cost: several low power chargers will in general cost less than one high power charger.
- Installation: several low power chargers may be easier to fit in a confined space.

| Blue Smart IP22 Charger | 12 V, 1 output 15 / 20 / 30 A | | 12 V, 3 outputs 15 / 20 / 30 A | | 24 V, 1 output 8 / 12 / 16 A | | 24 V, 3 outputs 16 A | |
|------------------------------|---|--------------|-----------------------------------|--|---------------------------------|--------------|-------------------------|--|
| Input voltage range | 180 – 265 VAC | | | | 180 – 265 VAC | | | |
| Charge current, normal mode | 15 / 20 / 30 A | | | | 8/12/16 A | | | |
| Charge current, NIGHT or LOW | 7,5 / 10 / 15 A | | | | 4 / 6 / 8 A | | | |
| Efficiency | 93 % | | | | 94 % | | | |
| No load power consumption | 0.5 W | | | | 0.5 W | | | |
| Frequency | 45 – 65 Hz | | | | 45 – 65 Hz | | | |
| Number of outputs | 1 | | 3 | | 1 | | 3 | |
| Charge voltage 'absorption' | Normal: 14,4 V | High: 14,7 V | Li-ion: 14,2 V | | Normal: 28,8 V | High: 29,4 V | Li-ion: 28,4 V | |
| Charge voltage 'float' | Normal: 13,8 V | High: 13,8 V | Li-ion: 13,5 V | | Normal: 27,6 V | High: 27,6 V | Li-ion: 27,0 V | |
| Charge voltage 'storage' | Normal: 13,2 V | High: 13,2 V | Li-ion: 13,5 V | | Normal: 26,4 V | High: 26,4 V | Li-ion: 27,0 V | |
| Charge algorithm | 6-stage adaptive | | | | | | | |
| Can be used as power supply | Yes | | | | | | | |
| Protection | Battery reverse polarity (fuse) | | Output short circuit | | Over temperature | | | |
| Operating temp. range | -40 to +60 °C (full rated output up to 40 °C) | | | | | | | |
| Humidity (non-condensing) | Max 98 % | | | | | | | |
| ENCLOSURE | | | | | | | | |
| Material & Colour | Aluminium (blue RAL 5012) | | | | | | | |
| Battery connection | Screw terminals 16 mm² / AWG6 | | | | | | | |
| 230 VAC connection | Cable of 1,5 meter with CEE 7/7 plug, BS 1363 plug (UK) or AS/NZS 3112 plug (AU/NZ) | | | | | | | |
| Protection category | IP22 | | | | | | | |
| Weight | 1,3 kg | | | | | | | |
| Dimensions (h x w x d) | 235 x 108 x 65 mm | | | | | | | |
| 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 | | | | | | | |
| Automotive | ECE R10-5 | | | | | | | |



Smart Battery Sense
Enables temperature and voltage compensated charging.



BMV-712 Smart Battery Monitor or SmartShunt enables temperature and voltage compensated charging.
The battery charge current information can for example be used to switch from absorption charging to float charging at a set battery tail current.



- Notes
1. The VE.Smart Network feature is enabled on all IP22 chargers with serial number HQ2024xxxxx and later.
 2. Models with different current ratings can be paralleled and synchronized.

| Blue Smart IP22 Charger | 12 V, 1 output 15 / 20 / 30 A | | 12 V, 3 outputs 15 / 20 / 30 A | | 24 V, 1 output 8 / 12 / 16 A | | 24 V, 3 outputs 16 A | |
|------------------------------|--|--------------|-----------------------------------|--|---|--------------|-------------------------|--|
| Input voltage range | 100 – 130 VAC | | | | 100 – 130 VAC | | | |
| Charge current, normal mode | 15 / 20 / 30 A | | | | 8/12/16 A | | | |
| Charge current, NIGHT or LOW | 7,5 / 10 / 15 A | | | | 4 / 6 / 8 A | | | |
| Efficiency | 93 % | | | | 94 % | | | |
| No load power consumption | 0.5 W | | | | 0.5 W | | | |
| Frequency | 45 – 65 Hz | | | | 45 – 65 Hz | | | |
| Number of outputs | 1 | | 3 | | 1 | | 3 | |
| Charge voltage 'absorption' | Normal: 14,4 V | High: 14,7 V | Li-ion: 14,2 V | | Normal: 28,8 V | High: 29,4 V | Li-ion: 28,4 V | |
| Charge voltage 'float' | Normal: 13,8 V | High: 13,8 V | Li-ion: 13,5 V | | Normal: 27,6 V | High: 27,6 V | Li-ion: 27,0 V | |
| Charge voltage 'storage' | Normal: 13,2 V | High: 13,2 V | Li-ion: 13,5 V | | Normal: 26,4 V | High: 26,4 V | Li-ion: 27,0 V | |
| Charge algorithm | 6-stage adaptive | | | | | | | |
| Can be used as power supply | Yes | | | | | | | |
| Protection | Battery reverse polarity (fuse) | | Output short circuit | | Over temperature | | | |
| Operating temp. range | -40 to +60 °C (full rated output up to 40 °C) | | | | 0 to + 140 °F (full rated output up to 90 °F) | | | |
| Humidity (non-condensing) | Max 98 % | | | | | | | |
| ENCLOSURE | | | | | | | | |
| Material & Colour | Aluminium (blue RAL 5012) | | | | | | | |
| Battery connection | Screw terminals 16 mm² / AWG6 | | | | | | | |
| 120 VAC connection | Cable of 1.8 meter (6 feet) with US NEMA 5-15 plug | | | | | | | |
| Protection category | IP22 | | | | | | | |
| Weight | 1,3 kg (3lbs) | | | | | | | |
| Dimensions (h x w x d) | 235 x 108 x 65 mm (9.7 x 4.3 x 2.6 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 | | | | | | | |
| Automotive | ECE R10-5 | | | | | | | |



Smart Battery Sense
Enables temperature and voltage compensated charging.



BMV-712 Smart Battery Monitor



SmartShunt

BMV-712 Smart Battery Monitor or SmartShunt enables temperature and voltage compensated charging.
The battery charge current information can for example be used to switch from absorption charging to float charging at a set battery tail current.

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