



**SmartSolar Charge Controller
MPPT 100/50**



**Bluetooth sensing
Smart Battery Sense**



**Bluetooth sensing
BMW-712 Smart Battery Monitor**



Bluetooth Smart built-in

The wireless solution to set-up, monitor, update and synchronise SmartSolar Charge Controllers.

VE.Direct

For a wired data connection to a Color Control GX, other GX products, PC or other devices

Ultrafast Maximum Power Point Tracking (MPPT)

Especially in case of a clouded sky, when light intensity is changing continuously, an ultra-fast MPPT controller will improve energy harvest by up to 30% compared to PWM charge controllers and by up to 10% compared to slower MPPT controllers.

Advanced Maximum Power Point Detection in case of partial shading conditions

If partial shading occurs, two or more maximum power points may be present on the power-voltage curve. Conventional MPPTs tend to lock to a local MPP, which may not be the optimum MPP. The innovative BlueSolar algorithm will always maximize energy harvest by locking to the optimum MPP.

Outstanding conversion efficiency

No cooling fan. Maximum efficiency exceeds 98%.
The full output current up to 40°C (104°F).

Flexible charge algorithm

Fully programmable charge algorithm (see the software page on our website), and eight pre-programmed algorithms, selectable with a rotary switch (see manual for details).

Extensive electronic protection

Over-temperature protection and power derating when temperature is high.
PV short circuit and PV reverse polarity protection.
PV reverse current protection.

Internal temperature sensor

Compensates absorption and float charge voltage for temperature.

Optional external battery voltage and temperature sensing via Bluetooth

A Smart Battery Sense or a BMV-712 Smart Battery Monitor can be used to communicate battery voltage and temperature to one or more SmartSolar Charge Controllers.

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 integrated disconnect function.

| SmartSolar Charge Controller | MPPT 100/30 | MPPT 100/50 |
|---|--|-------------|
| Battery voltage | 12/24V Auto Select | |
| Rated charge current | 30A | 50A |
| Nominal PV power, 12V 1a,b) | 440W | 700W |
| Nominal PV power, 24V 1a,b) | 880W | 1400W |
| Maximum PV open circuit voltage | 100V | 100V |
| Max. PV short circuit current 2) | 35A | 60A |
| Maximum efficiency | 98% | 98% |
| Self-consumption | 12V: 30 mA 24V: 20 mA | |
| Charge voltage 'absorption' | Default setting: 14,4V / 28,8V (adjustable) | |
| Charge voltage 'float' | Default setting: 13,8V / 27,6V (adjustable) | |
| Charge algorithm | multi-stage adaptive | |
| Temperature compensation | -16 mV / °C resp. -32 mV / °C | |
| Protection | PV reverse polarity Output short circuit Over temperature | |
| Operating temperature | -30 to +60°C (full rated output up to 40°C) | |
| Humidity | 95%, non-condensing | |
| Data communication port | VE.Direct See the data communication white paper on our website | |
| ENCLOSURE | | |
| Colour | Blue (RAL 5012) | |
| Power terminals | 16 mm ² / AWG6 | |
| Protection category | IP43 (electronic components), IP22 (connection area) | |
| Weight | 1,3 kg | |
| Dimensions (h x w x d) | 130 x 186 x 70 mm | |
| STANDARDS | | |
| Safety | EN/IEC 62109-1, UL 1741, CSA C22.2 | |
| 1a) If more PV power is connected, the controller will limit input power. 1b) The PV voltage must exceed Vbat + 5V for the controller to start. Thereafter the minimum PV voltage is Vbat + 1V. 2) A PV array with a higher short circuit current may damage the controller. | | |