

SmartSolar Charge Controllers 250V and 99% efficiency

MPPT 250/60, 250/70, 250/85 & 250/100

Ultra-fast Maximum Power Point Tracking (MPPT)

Especially in case of a cloudy 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 SmartSolar algorithm will always maximize energy harvest by locking to the optimum MPP.

Outstanding conversion efficiency

No cooling fan. Maximum efficiency exceeds 99%.

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.

Bluetooth Smart built-in: dongle not needed

The wireless solution to set-up, monitor and update the controller using Apple and Android smartphones, tablets or other devices.

VE.Direct

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

Remote on-off

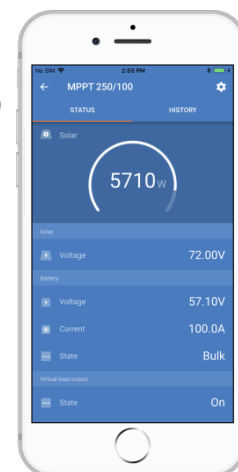
To connect for example to a VE.BUS BMS.

Programmable relay

Can be programmed (a.o. with a smartphone) to trip on an alarm, or other events.

Optional: pluggable LCD display

Remove the seal that protects the plug on the front of the controller, and plug-in the display.



**SmartSolar Charge Controller
MPPT 250/100-Tr
with optional pluggable display**



**SmartSolar Charge Controller
MPPT 250/100-MC4
without display**

| SmartSolar Charge Controller | MPPT 250/60 | MPPT 250/70 | MPPT 250/85 | MPPT 250/100 |
|---|--|-------------|---|--------------|
| Battery voltage | 12 / 24 / 48V Auto Select (software tool needed to select 36V) | | | |
| Rated charge current | 60A | 70A | 85A | 100A |
| Nominal PV power, 12V 1a,b) | 860W | 1000W | 1200W | 1450W |
| Nominal PV power, 24V 1a,b) | 1720W | 2000W | 2400W | 2900W |
| Nominal PV power, 48V 1a,b) | 3440W | 4000W | 4900W | 5800W |
| Max. PV short circuit current 2) | 35A (max 30A per MC4 conn.) | | 70A (max 30A per MC4 conn.) | |
| Maximum PV open circuit voltage | 250V absolute maximum coldest conditions 245V start-up and operating maximum | | | |
| Maximum efficiency | 99% | | | |
| Self-consumption | Less than 35mA @ 12V / 20mA @ 48V | | | |
| Charge voltage 'absorption' | Default setting: 14,4 / 28,8 / 43,2 / 57,6V (adjustable with: rotary switch, display, VE.Direct or Bluetooth) | | | |
| Charge voltage 'float' | Default setting: 13,8 / 27,6 / 41,4 / 55,2V (adjustable: rotary switch, display, VE.Direct or Bluetooth) | | | |
| Charge algorithm | multi-stage adaptive | | | |
| Temperature compensation | -16 mV / -32 mV / -64 mV / °C | | | |
| Protection | Battery reverse polarity (fuse, not user accessible) 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 or Bluetooth | | | |
| Remote on/off | Yes (2 pole connector) | | | |
| Programmable relay | DPST AC rating: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC | | | |
| Parallel operation | Yes (not synchronized) | | | |
| ENCLOSURE | | | | |
| Colour | Blue (RAL 5012) | | | |
| PV terminals 3) | 35 mm ² / AWG2 (Tr models) Two sets of MC4 connectors (MC4 models 250/60 and 250/70) Three sets of MC4 connectors (MC4 models 250/85 and 250/100) | | | |
| Battery terminals | 35 mm ² / AWG2 | | | |
| Protection category | IP43 (electronic components), IP22 (connection area) | | | |
| Weight | 3 kg | | 4,5 kg | |
| Dimensions (h x w x d) in mm | Tr models: 185 x 250 x 95 MC4 models: 215 x 250 x 95 | | Tr models: 216 x 295 x 103 MC4 models: 246 x 295 x 103 | |
| STANDARDS | | | | |
| Safety | EN/IEC 62109-1, UL 1741, CSA C22.2 | | | |
| 1a) If more PV power is connected, the controller will limit input power to the stated maximum. 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. | | | | |
| 3) MC4 models: several splitter pairs may be needed to parallel the strings of solar panels. Maximum current per MC4 connector: 30A (the MC4 connectors are parallel connected to one MPPT tracker) | | | | |