**SmartSolar Charge Controllers** with screw- or MC4 PV connection
MPPT 150/45 up to MPPT 150/100

**Bluetooth Smart built-in**
The wireless solution to set-up, monitor, update and synchronise SmartSolar Charge Controllers.

**Ultra-fast Maximum Power Point Tracking (MPPT)**
Especially in case of a clouded sky, where 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 (MPP) 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 98%.

**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.

**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 to trip on an alarm, or other events.

**Optional: SmartSolar pluggable LCD display**
Simply remove the rubber seal that protects the plug on the front of the controller, and plug-in the display.
**SmartSolar Charge Controller**

### Specifications

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<td>5800W</td>
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</tr>
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</table>

**Battery Voltage**
- 12 / 24 / 48V Auto Select (software tool needed to select 36V)

**Rated Charge Current**
- 45A, 60A, 70A, 85A, 100A

**Nominal PV Power**
- 12V: 650W, 860W, 1000W, 1200W, 1450W
- 36V: 1950W, 2580W, 3000W, 3600W, 4350W
- 48V: 2600W, 3440W, 4000W, 4900W, 5800W

**Maximum PV Short Circuit Current**
- 50A (max 30A per MC4 conn.)

**Maximum PV Open Circuit Voltage**
- 150V absolute maximum coldest conditions
- 145V start-up and operating maximum

**Rated Efficiency**
- 98%

**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 with: rotary switch, display, VE.Direct or Bluetooth

**Charge Voltage 'Equalization'**
- Default setting: 16.2V / 32.4V / 48.6V / 64.8V

**Charge Algorithm**
- Multi-stage adaptive (eight preprogrammed algorithms) or user defined algorithm

**Temperature Compensation**
- -16 mV / -32 mV / -64 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

**Maximum Altitude**
- 5000m (full rated output up to 2000m)

**Environmental Condition**
- Indoor, unconditioned

**Pollution Degree**
- PD3

**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)

**Colour**
- Blue (RAL 5012)

**PV Terminals**
- 35 mm² / AWG2 (Tr models)
- 35 mm² / AWG2 (MC4 models)
- Two pairs of MC4 connectors (MC4 models)
- Three pairs of MC4 connectors (MC4 models)

**Battery Terminals**
- 35mm² / AWG2

**Protection Category**
- IP43 (electronic components), IP22 (connection area)

**Weight**
- 3 kg
- 4.5kg

**Dimensions (h x w x d) in mm**
- Tr models: 185 x 250 x 95 mm
- MC4 models: 215 x 250 x 95 mm
- Tr models: 216 x 295 x 103 mm
- MC4 models: 246 x 295 x 103 mm

**Standards**
- EN/IEC 62109-1, UL 1741, CSA C22.2

**Notes**
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.
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)