

BlueSolar Charge Controllers MPPT 100/30 & 100/50

www.aeppacific.co.nz

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

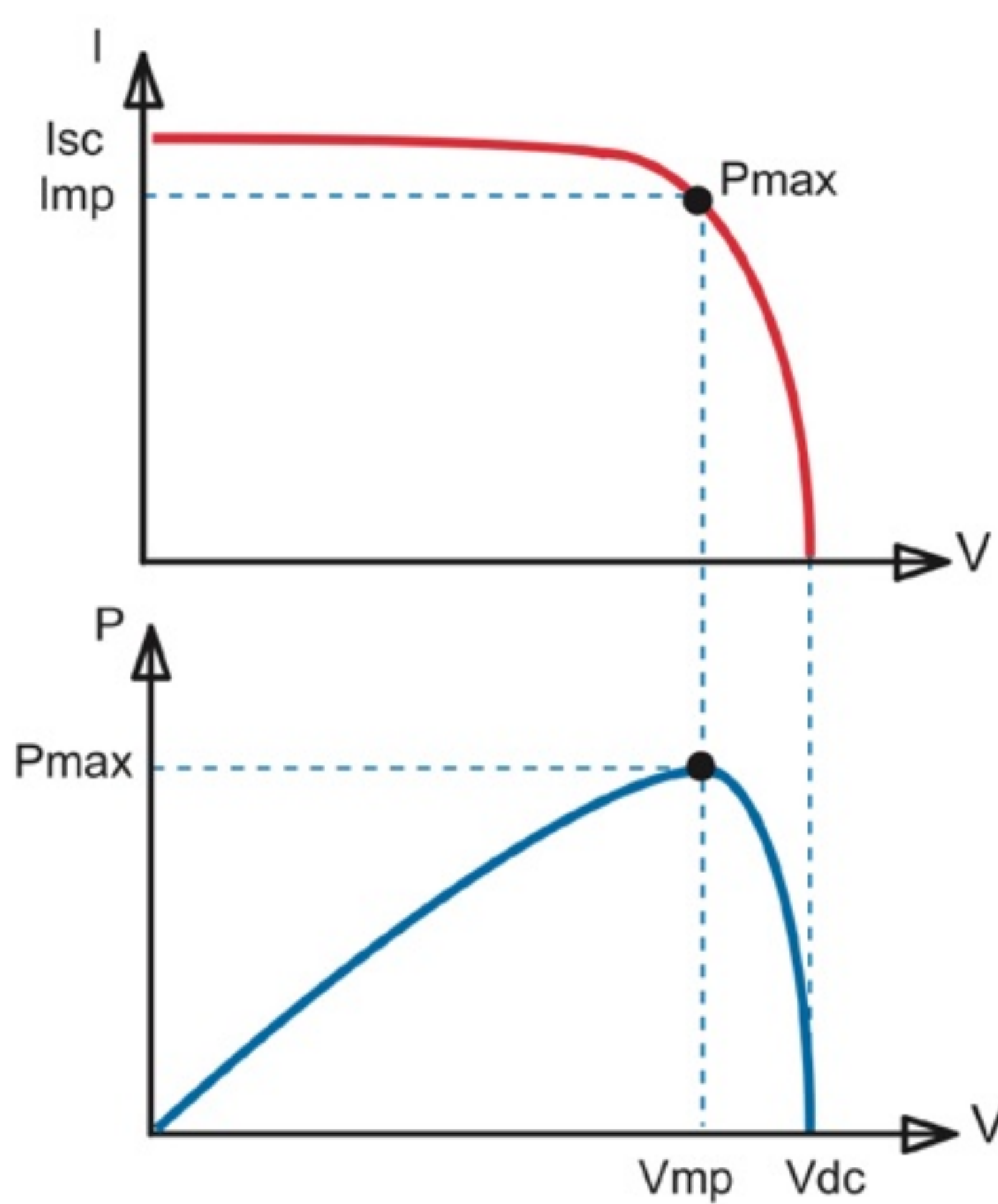
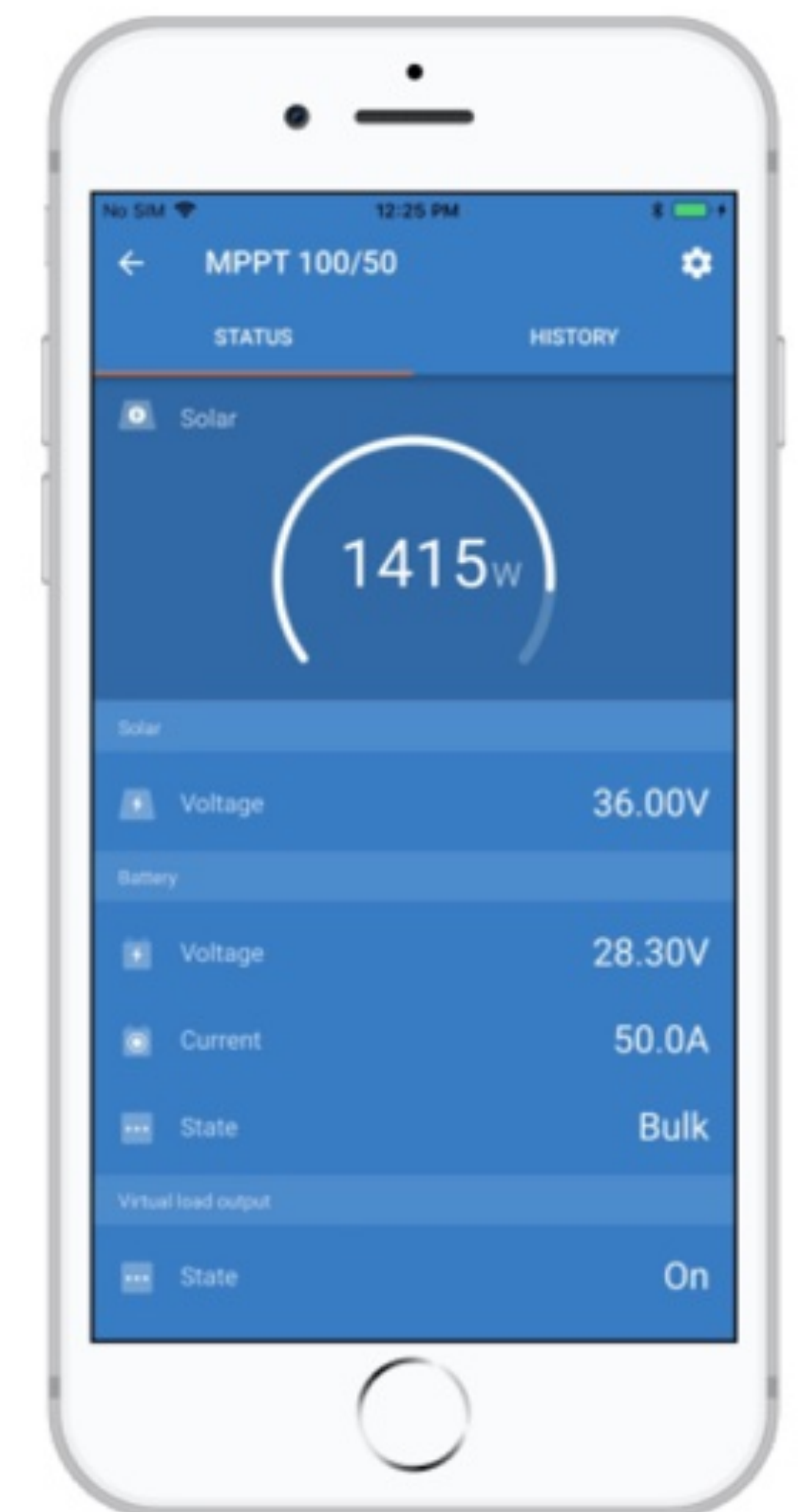
Compensates absorption and float charge voltage for temperature.

Real-time data display options

- ColorControl GX or other GX devices: see the **Venus** documents on our website.
- A smartphone or other Bluetooth-enabled device: VE.Direct Bluetooth Smart dongle needed.



BlueSolar Charge Controller MPPT 100/50



Maximum Power Point Tracking

Upper curve:

Output current (I) of a solar panel as function of output voltage (V).
The Maximum Power Point (MPP) is the point Pmax along the curve where the product $I \times V$ reaches its peak.

Lower curve:

Output power $P = I \times V$ as function of output voltage.
When using a PWM (not MPPT) controller the output voltage of the solar panel will be nearly equal to the voltage of the battery, and will be lower than V_{mp} .

| BlueSolar 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 | |
| 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 | 1,3 kg |
| Dimensions (h x w x d) | 130 x 186 x 70 mm | 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) PV voltage must exceed $V_{bat} + 5V$ for the controller to start. Thereafter minimum PV voltage is $V_{bat} + 1V$. | | |
| 2) A PV array with a higher sort circuit current may damage the controller. | | |