

# BlueSolar Charge Controllers with screw- or MC4 PV connection

## MPPT 150/45, MPPT 150/60, MPPT 150/70, MPPT 150/85, MPPT 150/100

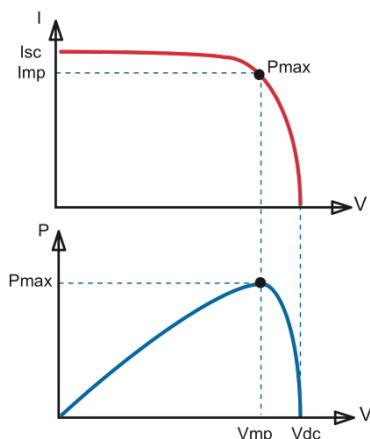
www.victronenergy.com



Solar Charge Controller  
MPPT 150/70-Tr



Solar Charge Controller  
MPPT 150/70-MC4



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 x 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 Vmp.

### 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 BlueSolar 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

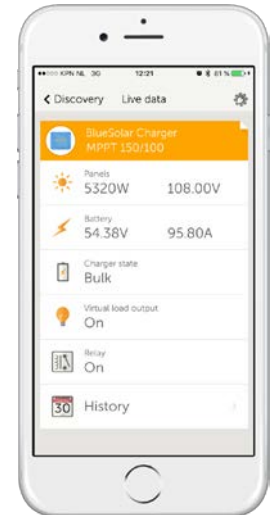
Over-temperature protection and power derating when temperature is high.  
PV short circuit and PV reverse polarity protection.  
PV reverse current protection.

### Internal temperature sensor

Compensates absorption and float charge voltage for temperature.

### Real-time data display options

- Apple and Android smartphones, tablets and other devices:  
see the VE.Direct to Bluetooth Smart dongle  
- ColorControl panel



BlueSolar Charge Controller	MPPT 150/45	MPPT 150/60	MPPT 150/70	MPPT 150/85	MPPT 150/100
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 1a,b)	650W	860W	1000W	1200W	1450W
Nominal PV power, 24V 1a,b)	1300W	1720W	2000W	2400W	2900W
Nominal PV power, 48V 1a,b)	2600W	3440W	4000W	4900W	5800W
Max. PV short circuit current 2)	50A	50A	50A	70A	70A
Maximum PV open circuit voltage	150V absolute maximum coldest conditions 145V start-up and operating maximum				
Maximum efficiency	98%				
Self-consumption	10 mA				
Charge voltage 'absorption'	Default setting: 14,4 / 28,8 / 43,2 / 57,6V (adjustable)				
Charge voltage 'float'	Default setting: 13,8 / 27,6 / 41,4 / 55,2V (adjustable)				
Charge algorithm	multi-stage adaptive				
Temperature compensation	-16 mV / -32 mV / -68 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 and remote on-off	VE.Direct (see the data communication whitepaper on our website)				
Parallel operation	Yes (not synchronized)				
<b>ENCLOSURE</b>					
Colour	Blue (RAL 5012)				
PV terminals 3)	35 mm <sup>2</sup> / AWG2 (Tr models) Two sets of MC4 connectors (MC4 models up to 150/70) Three sets of MC4 connectors (MC4 models 150/85 and 150/100)				
Battery terminals	35 mm <sup>2</sup> / AWG2				
Protection category	IP43 (electronic components), IP22 (connection area)				
Weight	3kg			4,5kg	
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	
<b>STANDARDS</b>					
Safety	EN/IEC 62109				
1a) If more PV power is connected, the controller will limit input power. 1b) PV voltage must exceed Vbat + 5V for the controller to start. Thereafter 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)					