

# BlueSolar Charge Controllers with screw- or MC4 PV connection

MPPT 150/45, MPPT 150/60 and MPPT 150/70

www.victronenergy.co.nz



Solar Charge Controller  
MPPT 150/70-Tr



Solar Charge Controller  
MPPT 150/70-MC4



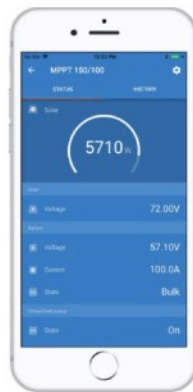
VE.Direct Bluetooth  
Smart Dongle



Bluetooth sensing:  
Smart Battery Sense



Bluetooth sensing:  
BMV-712 Smart Battery Monitor  
or SmartShunt



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BMV-712 Smart Battery Monitor  
or SmartShunt

## 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 and optional external battery voltage, temperature and current sensing via Bluetooth

A Smart Battery Sense or a BMV-712 Smart Battery Monitor can be used to communicate battery voltage and temperature (and current, in case of a BMV-712 or a SmartShunt) to one or more BlueSolar Charge Controllers. (VE.Direct Bluetooth Smart dongle needed)

## Real-time data display options

- Color Control 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 150/45	MPPT 150/60	MPPT 150/70
Battery voltage	12 / 24 / 48 V Auto Select (software tool needed to select 36 V)		
Rated charge current	45 A	60 A	70 A
Nominal PV power, 12 V 1a,b)	650 W	860 W	1000 W
Nominal PV power, 24 V 1a,b)	1300 W	1720 W	2000 W
Nominal PV power, 48 V 1a,b)	2600 W	3440 W	4000 W
Max. PV short circuit current 2)	50 A	50 A	50 A
Maximum PV open circuit voltage	150 V absolute maximum coldest conditions 145 V start-up and operating maximum		
Maximum efficiency	98 %		
Self-consumption	10 mA		
Charge voltage 'absorption'	Default setting: 14,4 / 28,8 / 43,2 / 57,6 V (adjustable)		
Charge voltage 'float'	Default setting: 13,8 / 27,6 / 41,4 / 55,2 V (adjustable)		
Charge algorithm	multi-stage adaptive		
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		
Data comm. 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)		
Battery terminals	35 mm <sup>2</sup> / AWG2		
Protection category	IP43 (electronic components), IP22 (connection area)		
Weight	3 kg		
Dimensions (h x w x d) in mm	Tr models: 185 x 250 x 95    MC4 models: 215 x 250 x 95		
<b>STANDARDS</b>			
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 Vbat + 5 V for the controller to start.  
 Thereafter minimum PV voltage is Vbat + 1 V.  
 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: 30 A (the MC4 connectors are parallel connected to one MPPT tracker)