

# SmartSolar Charge Controllers with load output MPPT 75/10, 75/15, 100/15, 100/20, 100/20\_48V

www.victronenergy.com





SmartSolar Charge Controller MPPT 75/15



**Bluetooth sensing Smart Battery Sense** 



**Bluetooth sensing BMV-712 Smart Battery Monitor** 



#### Bluetooth Smart built-in

The wireless solution to set-up, monitor, update and synchronise SmartSolar Charge Controllers.

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

## **Ultra-fast 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 the controller will be a clouded sky, when light intensity is changing continuously, an ultra-fast MPPT controller will improve the controller will be a clouded sky, when light intensity is changing continuously, an ultra-fast MPPT controller will be a clouded sky, when light intensity is changing continuously, an ultra-fast MPPT controller will be a clouded sky, when light intensity is changing continuously, and ultra-fast material controller will be a clouded sky, when light intensity is changing continuously, and ultra-fast material controller will be a clouded sky, when light intensity is changing continuously, and ultra-fast material controller will be a clouded sky, and the clouded skenergy harvest by up to 30% compared to PWM charge controllers and by up to 10% compared to slower MPPT controllers.

Over-discharge of the battery can be prevented by connecting all loads to the load output. The load output will disconnect the load when the battery has been discharged to a pre-set voltage (48V model: interface with a relay).

Alternatively, an intelligent battery management algorithm can be chosen: see Battery Life.

The load output is short circuit proof.

## **Battery Life: intelligent battery management**

When a solar charge controller is not able to recharge the battery to its full capacity within one day, the result is often that the battery will continually be cycled between a 'partially charged' state and the 'end of discharge' state. This mode of operation (no regular full recharge) will destroy a lead-acid battery within weeks or months.

The Battery Life algorithm will monitor the state of charge of the battery and, if needed, day by day slightly increase the load disconnect level (i.e. disconnect the load earlier) until the harvested solar energy is sufficient to recharge the battery to nearly the full 100%. From that point onwards, the load disconnect level will be modulated so that a nearly 100% recharge is achieved about once every week.

## Programmable battery charge algorithm

See the software section on our website for details

## Day/night timing and light dimming option

See the software section on our website for details

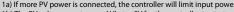
#### Internal temperature sensor

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.

SmartSolar Charge Controller	MPPT 75/10	MPPT 75/15	MPPT 100/15	MPPT 100/20	MPPT100/20-48V	
Battery voltage	12/24V Auto Select				48V	
Rated charge current	10A	15A	15A	20A	20A	
Nominal PV power, 12V 1a,b)	145W	220W	220W	290W	n.a.	
Nominal PV power, 24V 1a,b)	290W	440W	440W	580W	n.a.	
Nominal PV power, 48V 1a,b)	n. a.	n. a.	n. a.	n.a.	1160W	
Max. PV short circuit current 2)	13A	15A	15A	20A	20A	
Automatic load disconnect	Yes					
Max. PV open circuit voltage	75V 100V					
Peak efficiency	98%					
Self-consumption	12V: 25 mA 24V: 15 mA				15mA	
Charge voltage 'absorption'	14,4V / 28,8V (adjustable)				57,6V (adj.)	
Charge voltage 'float'	13,8V / 27,6V (adjustable)				55,2V (adj.)	
Charge algorithm	multi-stage adaptive					
Temperature compensation	-16 mV / °C resp32 mV / °C					
Max. continuous load current	15A 20A				1A	
Low voltage load disconnect	11,1V / 22,2V/44,4V or 11,8V / 23,6V/47,2V or Battery Life a				algorithm	
Low voltage load reconnect	13,1V / 26,2V/52,4V or 14V / 28V/56V or Battery Life algorithm					
Protection	Battery reverse polarity (fuse) / 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 (see the data communication white paper on our website)					
		ENCLOSUF	ŧΕ			
Colour	Blue (RAL 5012)					
Power terminals	6 mm <sup>2</sup> / AWG10					
Protection category	IP43 (electronic components), IP22 (connection area)					
Weight	0,5 kg 0,6 kg 0				0,65 kg	
Dimensions (h x w x d)	100 x 113	3 x 40 mm	100 x 113 x 50 mm	100 x 113 x 60 mm		
		STANDARD	os e e e e e e e e e e e e e e e e e e e			
Safety	EN/IEC 62109-1, UL 1741, CSA C22.2					



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

