

# 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 Smart built-in: dongle not needed

The wireless solution to set-up, monitor and update the controller using Apple and Android smartphones, tablets or other devices.

### VE.Direct

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

### 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.

### Load output

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

### Programming, real-time data and history display options

- Modern Apple and Android smartphones, tablets, macbooks and other devices: see the VE.Direct Bluetooth Smart dongle and the MPPT app discovery sheet for screenshots.
- ColorControl panel

SmartSolar Charge Controller	MPPT 75/10	MPPT 75/15	MPPT 100/15	MPPT 100/20	MPPT 100/20-48V
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				
Maximum 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 resp. -32 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 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)				
<b>ENCLOSURE</b>					
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	0,65 kg		
Dimensions (h x w x d)	100 x 113 x 40 mm		100 x 113 x 50 mm		100 x 113 x 60 mm
<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) 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.					