SmartSolar Charge Controllers 250V and 99% efficiency
MPPT 250/60, 250/70, 250/85 & 250/100

www.victronenergy.com

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 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 SmartSolar algorithm will always maximize energy harvest by locking to the optimum MPP.

Outstanding conversion efficiency
No cooling fan. Maximum efficiency exceeds 99%.

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.

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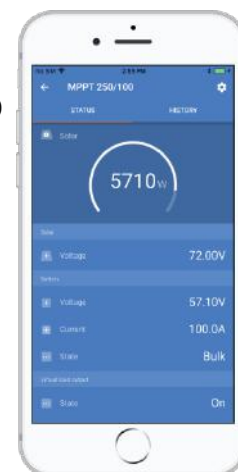For a wired data connection to a Color Control panel, Venus GX, PC or other devices

Remote on-off
To connect for example to a VE.BUS BMS.

Programmable relay
Can be programmed (a.o. with a smartphone) to trip on an alarm, or other events.

Optional: pluggable LCD display
Remove the seal that protects the plug on the front of the controller, and plug-in the display.

SmartSolar Charge Controller
MPPT 250/100-Tr
with pluggable display

SmartSolar Charge Controller
MPPT 250/100-MC4
without display

SmartSolar Charge Controller	MPPT 250/60	MPPT 250/70	MPPT 250/85	MPPT 250/100
Battery voltage	12 / 24 / 48V Auto Select (software tool needed to select 36V)			
Rated charge current	60A	70A	85A	100A
Nominal PV power, 12V 1a,b	860W	1000W	1200W	1450W
Nominal PV power, 24V 1a,b	1720W	2000W	2400W	2900W
Nominal PV power, 48V 1a,b	3440W	4000W	4900W	5800W
Max. PV short circuit current 2)	35A (max 30A per MC4 conn.)		70A (max 30A per MC4 conn.)	
Maximum PV open circuit voltage	250V absolute maximum coldest conditions 245V start-up and operating maximum			
Maximum efficiency	99%			
Self-consumption	Less than 35mA @ 12V / 20mA @ 48V			
Charge voltage 'absorption'	Default setting: 14,4 / 28,8 / 43,2 / 57,6V (adjustable with: rotary switch, display, VE.Direct or Bluetooth)			
Charge voltage 'float'	Default setting: 13,8 / 27,6 / 41,4 / 55,2V (adjustable: rotary switch, display, VE.Direct or Bluetooth)			
Charge algorithm	multi-stage adaptive			
Temperature compensation	-16 mV / -32 mV / -64 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	VE.Direct or Bluetooth			
Remote on/off	Yes (2 pole connector)			
Programmable relay	DPST AC rating: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC			
Parallel operation	Yes (not synchronized)			
ENCLOSURE				
Colour	Blue (RAL 5012)			
PV terminals 3)	35 mm² / AWG2 (Tr models) Two sets of MC4 connectors (MC4 models 250/60 and 250/70) Three sets of MC4 connectors (MC4 models 250/85 and 250/100)			
Battery terminals	35 mm² / AWG2			
Protection category	IP43 (electronic components), IP22 (connection area)			
Weight	3 kg		4,5 kg	
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	
STANDARDS				
Safety	EN/IEC 62109-1			

1a) If more PV power is connected, the controller will limit input power to the stated maximum.
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 in case of reverse polarity connection of the PV array.
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)