

Skype



SMARTSOLAR MPPT

New SmartSolar MPPT solar charge controllers from Victron Energy.



Regulador Victron Energy SmartSolar MPPT



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Display Victron Energy SmartSolar MPPT

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.
VEDirect

For a wired data connection to a Color Control panel, 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

Simply remove the rubber seal that protects the plug on the front of the controller, and plug-in the display.

75/10 - 100/20

SPECIFICATIONS

SmartSolar MPPT MPPT MPPT MPPT MPPT
MPPT 75/10 75/15 100/15 100/20 100/20-48

Performance

Battery voltage	12 / 24 Vdc	12 / 24 Vdc	12 / 24 Vdc	12 / 24 Vdc	12 / 24 / 48 Vdc
Self consumption	12V: 25 mA - 24 V: 15 mA			12V: 25 mA - 24 V: 15 mA 48V: 10 mA	

DC input

Maximum power 12V	PV 145 W	220 W	220 W	290 W	290 W
Maximum power 24V	PV 290 W	440 W	440 W	580 W	580 W
Maximum PV power 48V	n.d.	n.d.	n.d.	n.d.	1160 W
Max PV open circuit voltage	75 Vdc	75 Vdc	100 Vdc	100 Vdc	100 Vdc
Peak efficiency	98 %	98 %	98 %	98 %	98 %

DC Output

Load current	15 Amp max	15 Amp max	15 Amp max	20 Amp max.	20 A / 20 A / 1 A max.
Absorption voltage	14,4 / 28,8 Vdc	14,4 / 28,8 Vdc	14,4 / 28,8 Vdc	14,4 / 28,8 Vdc	14,4 / 28,8 / 57,6 Vdc
Float voltage	13,8 / 27,6 Vdc	13,8 / 27,6 Vdc	13,8 / 27,6 Vdc	13,8 / 27,6 Vdc	13,8 / 27,6 / 55,2 Vdc
Charge algorithm	Multi stage adaptative				
Temperature compensation	-16 mV/°C rep. -32mV/°C				
Continuous peak load current	13 A	15 A	15 A	20 A	20 A
Low voltage disconnect	11,1 / 22,2 / 44,4 V ó 11,8 / 23,6 / 57,6 V or BatteryLife algorithm				
Low voltage reconnect	13,1 V / 26,2 / 52,4 V ó 14 V / 28 / 56 V or BatteryLife algorithm				

Ambiental specifications

Operating temperature	-30 a +60 °C. Full rated output up to 40° C
Humidity	95%, non condensing

Enclosure and Environmental

Data communication port	VE.Direct or Bluetooth
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Power terminals	6 mm ²	6 mm ²	6 mm ²	6 mm ²	6 mm ²
Protection category	IP65 / IP22 (connections)				
Dimensions	100 x 113 x 40 mm		100 x 113 x 50 mm	100 x 113 x 60 mm	
Weight	0,5 Kg		0,6 Kg	0,65 Kg	
Mounting	Vertical wall mount. Indoor only				
Standards					
Security	EN 62109-1, UL 1741, CSA C22.2				

100/30 - 100/50 SPECIFICATIONS

SmartSolar MPPT	MPPT	MPPT
	100/30	100/50

Performance

Battery voltage	12 / 24 Vdc	12 / 24 Vdc
Self consumption	12V.: 30 mA. - 24V: 20 mA	

DC input

Maximum power 12V	PV	440 W (15 to 80 Vdc)*	700 W (15 to 70 Vdc resp. 95V)*
Maximum power 24V	PV	880 W (30 to 80 Vdc)*	1400 W (30 to 70 Vdc resp. 95V)*
Max PV open circuit voltage		100 Vdc	100 Vdc
Peak efficiency		98 %	98 %

DC Output

Absorption voltage	14,4 / 28,8 Vdc	14,4 / 28,8 Vdc
Float voltage	13,8 / 27,6 Vdc	13,8 / 27,6 Vdc
Charge algorithm	Multi stage adaptative	
Temperature compensation	-16 mV/°C rep. - 32mV/°C	
Load current	30 A	50 A

Ambiental specifications

Operating temperature	-30 a +60 °C. Full rated output up to 40° C
Humidity	95%, non condensing

Enclosure and Environmental

Data communication port	VE.Direct or Bluetooth	
Terminals	16 mm ²	16 mm ²
Protection category	IP43 / IP22 (connections)	
Dimensions	130 x 186 x 70 mm	

Dimensions	150x150x75 mm
Weight	1,30 Kgr
Mounting	Vertical wall mount. Indoor only
Standards	
Security	EN62109

150/35 - 150/100

SPECIFICATIONS

SmartSolar MPPT	MPPT 150/35	MPPT 150/45	MPPT 150/60	MPPT 150/70	MPPT 150/85	MPPT 150/100
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Performance

Battery voltage	12 / 24 / 48 Vdc	12/24/48 Vdc	12/24/48 Vdc	12/24/48 Vdc	12/24/48 Vdc	12/24/48 Vdc
Self consumption	Less than 35mA @ 12V / 20mA @ 48V					

DC input

Maximum PV power 12V	500 W	650 W	860 W	1000 W	1200 W	1450 W
Maximum PV power 24V	1000 W	1300 W	1720 W	2000 W	2400 W	2900 W
Maximum PV power 48V	2000 W	2600 W	3440 W	4000 W	3600 W	5800 W
Max PV open circuit voltage	150 Vdc	150 Vdc	150 Vdc	150 Vdc	4900 W	150 Vdc
Peak efficiency	98 %	98 %	98 %	98 %	98 %	98 %

DC Output

Absorption voltage	14,4 / 28,8 / 57,6 Vcc (adjustable)					
Float voltage	13,8 / 27,6 / 55,2 Vcc (adjustable)					
Charge algorithm	Multi stage adaptative					
Temperature compensation	-16 mV/°C / -32mV/°C / -64 mV/°C					
Load current	35 A	45 A	60 A	70 A	85 A	100 A
Max. PV short circuit current	40 A	50 A	50 A	50 A	70 A	70 A
Protection	PV Reverse polarity / Output Short Circuit / Over temperature					

Ambiental specifications

Operating temperature	-30 to +60 °C. Full rated output up to 40° C					
Humidity	95%, non condensing					

Enclosure and Environmental

Data communication port	VE.Direct or Bluetooth					
Terminals	13 mm2	35 mm2 (Tr) 2 x MC4 (MC4)	35 mm2 (Tr) 2 x MC4 (MC4)	35 mm2 (Tr) 2 x MC4 (MC4)	35 mm2 (Tr) 3 x MC4 (MC4)	35 mm2 (Tr) 3 x MC4 (MC4)
Protection	IP43 / IP22 (conections)					

category			
Dimensions	130 x 186 x 70 mm	Tr: 185 x 250 x 95 mm MC4: 215 x 250 x 95 mm	Tr: 216 x 295 x 103 mm MC4: 246 x 295 x 103 mm
Weight	1,25 Kgr	3 Kgr	4,5 Kgr
Mounting	Vertical wall mount. Indoor only		
Standards			
Security	EN 62109-1, UL 1741, CSA C22.2		

250/60 - 250/100 SPECIFICATIONS

Model	MPPT 250/60	MPPT 250/70	MPPT 250/85	MPPT 250/100
Battery voltage	Auto Select: 12, 24, 48 V Software tool needed to select 36 V			
Rated charge current	60 Amp	70 Amp	85 Amp.	100 Amp
Maximum PV power, 12 V 1a,b)	860 W	1000 W	1200 W	1450 W
Maximum PV power, 24 V 1a,b)	1720 W	2000 W	2400 W	2900 W
Maximum PV power, 48 V 1a,b)	3440 W	4000 W	4800 W	5800 W
Max. PV short circuit current	35 A	35 A	70 A	70 A
Maximum PV open circuit voltage	250 V maximum			
Maximum efficiency	99%			
Self-consumption	Less than 35 mA at 12V / 20 mA at 48 V			
Charge voltage (absorption) adjustable	14,4 / 28,8 / 43,2 / 57,6 V			
Charge voltage (float) adjustable	13,8 / 27,6 / 41,4 / 55,2 V			
Charge algorithm	Multi-stage adaptative			
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 a 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 240 VAC / 4 A DC Rating 4 A up to 35 Vcc, 1 A up to 60 Vcc
Parallel operation	Yes (not synchronized)

ENCLOSURE

Color	Blue (RAL 5012)	
PV Terminals 3)	35 mm ² / AWG2 (Tr models) Two sets of MC4 connectors (MC4 models)	35 mm ² / AWG2 (Tr models) Three sets of MC4 connectors (MC4 models)
Battery terminals	35 mm ² / AWG2	35 mm ² / 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 61209-1, UL 1741, CSA C22.2
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1a) If more PV power is connected, the controller will limit input power to the stated maximum.

1b) PV voltage must exceed $V_{bat} + 5V$ for the controller to start.

Thereafter minimum PV voltage is $V_{bat} + 1 V$.

2) A PV array with a higher short circuit current may damage the controller

3) MC4 models: several splitter parts 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)

VE.CAN 150/70 - 150/100 SPECIFICATIONS

SmartSolar **MPPT 150/70** **MPPT 150/85** **MPPT 150/100**

Battery voltage	Auto Select: 12, 24, 48 V Software tool needed to select 36 V		
Rated charge current	70 Amp	85 Amp.	100 Amp
Maximum PV power, 12 V 1a,b)	1000 W	1200 W	1450 W
Maximum PV power, 24 V 1a,b)	2000 W	2400 W	2900 W
Maximum PV	4000 W	4900 W	5800 W

Maximum PV power, 48 V (1a,b)	1000 W	1000 W	1000 W
Max. PV short circuit current	50 A (max 30 per MC4 conn)	70 A (max 30 per MC4 conn)	70 A (max 30 per MC4 conn)
Maximum PV open circuit voltage	150 V maximum		
Maximum efficiency	99%		
Self-consumption	Less than 35 mA at 12V / 20 mA at 48 V		
Charge voltage (absorption) adjustable	14,4 / 28,8 / 43,2 / 57,6 V		
Charge voltage (float) adjustable	13,8 / 27,6 / 41,4 / 55,2 V		
Charge algorithm	Multi-stage adaptative		
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 a 60 °C (Full rated output up to 40 °C)		
Humidity	95%, non-condensing		
Data communication port	VE.Can, VE.Direct or bluetooth		
Remote on /off	Yes (2 pole connector)		
Programmable relay	DPST AC Rating 240 VAC / 4 A DC Rating 4 A up to 35 Vcc, 1 A up to 60 Vcc		
Parallel operation	Yes, synchronized via VE.Can or Bluetooth		
ENCLOSURE			
Color	Blue (RAL 5012)		
PV Terminals (3)	35 mm ² / AWG2 (Tr models) One set of MC4 connectors (MC4 models)	35 mm ² / AWG2 (Tr models) Two sets of MC4 connectors (MC4 models)	
Battery terminals	35 mm ² / 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	Tr Models: 216 x 295 x 103	

250 x 95 MC4 Models: 246 x
 MC4 295 x 103
 Models:
 215 x 250
 x 95

STANDARDS

Safety EN / IEC 61209-1, UL 1741, CSA
 C22.2

1a) If more PV power is connected, the controller will limit input power to the stated maximum.

1b) PV voltage must exceed $V_{bat} + 5V$ for the controller to start.

Thereafter minimum PV voltage is $V_{bat} + 1V$.

2) A PV array with a higher short circuit current may damage the controller

3) MC4 models: several splitter parts 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)

VE.CAN 250/70 - 250/100 SPECIFICATIONS

SmartSolar	MPPT 150/85	MPPT 150/85	MPPT 150/100
Battery voltage	Auto Select 12, 24, 48 V Software tool needed to select 36 V		
Rated charge current	70 Amp	85 Amp.	100 Amp
Maximum PV power, 12 V 1a,b)	1000 W	1200 W	1450 W
Maximum PV power, 24 V 1a,b)	2000 W	2400 W	2900 W
Maximum PV power, 48 V 1a,b)	4000 W	4900 W	5800 W
Max. PV short circuit current	35 A (max 30 per MC4 conn)	70 A (max 30 per MC4 conn)	70 A (max 30 per MC4 conn)
Maximum PV open circuit voltage	150 V maximum		
Maximum efficiency	99%		
Self-consumption	Less than 35 mA at 12V / 20 mA at 48 V		
Charge voltage (absorption) adjustable	14,4 / 28,8 / 43,2 / 57,6 V		
Charge voltage (float) adjustable	13,8 / 27,6 / 41,4 / 55,2 V		

Charge algorithm	Multi-stage adaptative
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 a 60 °C (Full rated output up to 40 °C)
Humidity	95%, non-condensing
Data communication port	VE.Can, VE.Direct or bluetooth
Remote on /off	Yes (2 pole connector)
Programmable relay	DPST AC Rating 240 VAC / 4 A DC Rating 4 A up to 35 Vcc, 1 A up to 60 Vcc
Parallel operation	Yes, synchronized via VE.Can or Bluetooth

ENCLOSURE

Color	Blue (RAL 5012)	
PV Terminals (3)	35 mm ² / AWG2 (Tr models) Two sets of MC4 connectors (MC4 models)	35 mm ² / AWG2 (Tr models) Three sets of MC4 connectors (MC4 models)
Battery terminals	35 mm ² / 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 61209-1, UL 1741, CSA C22.2
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1a) If more PV power is connected, the controller will limit input power to the stated maximum.

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CATÁLOGO GENERAL 2020

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