

# SmartSolar Charge Controllers with screw- or MC4 PV connection MPPT 150/45 up to MPPT 150/100



SmartSolar Charge Controller MPPT 150/100-Tr with optional pluggable display



SmartSolar Charge Controller MPPT 150/100-MC4 without display



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.

## **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 (MPP) 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 98%.

## Flexible charge algorithm

Fully programmable charge algorithm (see the software page on our website), and eight preprogrammed 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.

# 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.

## VE.Direct

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

## Remote on-off

To connect for example to a VE.BUS BMS.

## Programmable relay

Can be programmed to trip on an alarm, or other events.

# Optional: SmartSolar pluggable LCD display

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



SmartSolar pluggable display



Battery voltage	SmartSolar Charge Controller	150/45	150/60	150/70	150/85	150/100	
Nominal PV power, 12V 1a,b    650W   860W   1000W   1200W   1450W   Nominal PV power, 24V 1a,b    1300W   1720W   2000W   2400W   2900W   2400W   2900W   2500W   3600W   3600W   4350W   3600W   4350W   3600W   4350W   3600W   4350W   3600W   4350W   3600W   3600W   4350W   3600W   36	Battery voltage	12 / 24 / 48V Auto Select (software tool needed to select 36V)					
Nominal PV power, 24V 1a,b   1300W	Rated charge current	45A	60A	70A	85A	100A	
Nominal PV power, 36V 1a,b   1950W   2580W   3000W   3600W   4350W   Nominal PV power, 48V 1a,b   2600W   3440W   4000W   4900W   5800W   3445W   5400W   300 per MC4 conn.)   70A (max 30A per MC4 pe	Nominal PV power, 12V 1a,b)	650W	860W	1000W	1200W	1450W	
Nominal PV power, 48V 1a,b)  Max. PV short circuit current 2)  50A (max 30A per MC4 conn.)  ToX (max 30A per MC4 conn.)  Maximum PV open circuit voltage  1150V absolute maximum coldest conditions 145V start-up and operating maximum  Maximum efficiency  98%  Self-consumption  Less than 35mA @ 12V/20mA @ 48V  Default setting: 14,4 / 28.8 / 43,2 / 75,6V  (adjustable with: rotary switch, display, VE.Direct or Bluetooth)  Charge voltage 'equalization'  Charge slgorithm  multi-stage adaptive (eight preprogrammed algorithms) or user defined algorithm  Temperature compensation  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  Maximum altitude  5000m (full rated output up to 2000m)  Environmental condition  PDST AC rating: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC  Parallel operation  PV terminals 3)  To post of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Tr models: 185 x 250 x 95 mm  MC4 models: 216 x 295 x 103	Nominal PV power, 24V 1a,b)	1300W	1720W	2000W	2400W	2900W	
Max. PV short circuit current 2)  150 A (max 30 A per MC4 conn.)  70 A (max 30 A per MC4 connectors (mC4 models)  70 A (max 30 A per MC4 connectors (mC4 models)  70 A (max 30 A per MC4 connectors (mC4 models)  70 A (max 30 A per MC4 connectors (mC4 models)  70 A (max 30 A per MC4 connectors (mC4 models)  71 A (max 30 A per MC4 connectors (mC4 models)  72 A (max 30 A per MC4 connectors (mC4 models)  73 A (max 3) A (max 4 per A per	Nominal PV power, 36V 1a,b)	1950W	2580W	3000W	3600W	4350W	
Maximum PV open circuit voltage     150V absolute maximum coldest conditions       Maximum efficiency     98%       Self-consumption     Less than 35mA @ 12V / 20mA @ 48V       Charge voltage 'absorption'     Default setting: 14.4 / 28.8 / 43.2 / 57.6V       Charge voltage 'float'     Apéault setting: 13.8 / 27.6 / 41.4 / 55.2V       Charge voltage 'float'     Apéault setting: 16.2V / 32.4V / 48.6V / 64.8V (adjustable)       Charge voltage 'equalization'     Default setting: 16.2V / 32.4V / 48.6V / 64.8V (adjustable)       Charge algorithm     multi-stage adaptive (eight preprogrammed algorithms) or user defined algorithm       Temperature compensation     1-6 mV / -32 mV / -64 mV / -62 mV / -64 mV /	Nominal PV power, 48V 1a,b)	2600W	3440W	4000W	4900W	5800W	
Maximum PV open circuit voltage     145V start-up and operating maximum       Maximum efficiency     98%       Self-consumption     Less than 35mA e 12V/20mA @ 48V       Charge voltage 'absorption'     Default setting: 14,4 / 28,8 / 43,2 / 57,6V       Charge voltage 'float'     Default setting: 13,8 / 27,6 / 41,4 / 55,2V       Charge voltage 'equalization'     Default setting: 13,8 / 27,6 / 41,4 / 55,2V       Charge voltage 'equalization'     Default setting: 16,2V / 32,4V / 48,6V / 64,8V (adjustable)       Charge voltage 'equalization'     Default setting: 16,2V / 32,4V / 48,6V / 64,8V (adjustable)       Charge algorithm     multi-stage adaptive (eight preprogrammed algorithms) or user defined algorithm       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       Maximum altitude     5000m (full rated output up to 2000m)       Environmental condition     Indoor, unconditioned       Pollution degree     PD3       Data communication port     Yes (2 pole connector)       Programmable relay     DPST AC rating: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC       Parallel operation     Folionation of MC4 connectors (MC4 models)       PV terminals 3)     35 mm² / AWG2 (Tr models)	Max. PV short circuit current 2)	50A (max 30A per MC4 conn.) 70A (max 30A per MC4 conn.)					
Self-consumption  Less than 35mA @ 12V / 20mA @ 48V  Default setting: 14,4 / 28,4 / 32,2 / 57,6V  (adjustable with: rotary switch, display, VE.Direct or Bluetooth)  Charge voltage 'float'  Charge voltage 'equalization'  Charge voltage 'equalization'  Charge voltage 'equalization'  Charge algorithm  multi-stage adaptive (eight preprogrammed algorithms) or user defined algorithm  Temperature compensation  PV reverse polarity / Output short circuit / Over temperature  Operating te	Maximum PV open circuit voltage						
Charge voltage 'absorption'  (adjustable with: rotary switch, display, VE.Direct or Bluetooth)  Default setting: 13,8 / 27,6 / 41,4 / 55,2V  (adjustable: rotary switch, display, VE.Direct or Bluetooth)  Charge voltage 'equalization'  Charge voltage 'equalization'  Charge algorithm  Temperature compensation  Temperature compensation  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  Operating temperature  Operating temperature  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  Operating temperature  Operating temperature  PD3  Data communication port  VE.Direct or Bluetooth  Yes (2 pole connector)  PVes	Maximum efficiency						
Charge voltage absorption' Charge voltage in Charge algorithm  Charge voltage in Charge algorithm  Default setting: 16,2V / 32,4V / 48,6V (64,8V (adjustable)  Charge algorithm  multi-stage adaptive (eight preprogrammed algorithms) or user defined algorithm  Temperature compensation  Protection  PV reverse polarity / Output short circuit / Over temperature  Operating temperature  Operating temperature  Operating temperature  -30 to +60°C (full rated output up to 40°C)  Humidity  95%, non-condensing  Maximum altitude  Environmental condition  Indoor, unconditioned  PD3  Act communication port  VE.Direct or Bluetooth  Yes (2 pole connector)  Programmable relay  DPST AC rating: 240VAC / 4A D Crating: 4A up to 35VDC, 1A up to 60VDC  Parallel operation  Ves (not synchronized)  ENCLOSURE  Colour  Blue (RAL 5012)  Two pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Battery terminals  PV terminals  35 mm² / AWG2  Protection category  IP43 (electronic components), IP22 (connection area)  Weight  Tr models: 215 x 250 x 95 mm  MC4 models: 215 x 250 x 95 mm  MC4 models: 215 x 250 x 95 mm  MC4 models: 225 x 103  STANDARDS	Self-consumption	Less than 35mA @ 12V / 20mA @ 48V					
Charge Voltage Tloat (adjustable: rotary switch, display, VE.Direct or Bluetooth) Charge voltage 'equalization' Charge algorithm  Temperature compensation PV reverse polarity / Output short circuit / Over temperature Operating to 40°C Operating temperature Operati	Charge voltage 'absorption'	<b>3</b> , , , ,					
Charge algorithm Temperature compensation Temperature compensation PV reverse polarity / Output short circuit / Over temperature Operating temperature Operating temperature Operating temperature  -30 to +60°C (full rated output up to 40°C) Humidity 95%, non-condensing Maximum altitude 5000m (full rated output up to 2000m) Environmental condition Indoor, unconditioned Pollution degree PD3 Data communication port 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)  S mm² / AWG2 (Tr models) Two pairs of MC4 connectors (MC4 models) Three pairs of MC4 connectors (MC4 models)  Battery terminals  S 35 mm² / AWG2 Protection category Weight  Tr models: 185 x 250 x 95 mm MC4 models: 215 x 250 x 95 mm	Charge voltage 'float'						
Temperature compensation 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 Maximum altitude 5000m (full rated output up to 2000m) Environmental condition Indoor, unconditioned Pollution degree PD3 Data communication port 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  ENCLOSURE Colour Blue (RAL 5012) PV terminals 3) Two pairs of MC4 connectors (MC4 models) Two pairs of MC4 connectors (MC4 models)  Battery terminals Battery terminals Protection category Weight Tr models: 18 x 250 x 95 mm MC4 models: 216 x 295 x 103 MC4 models: 215 x 250 x 95 mm MC4 models: 216 x 295 x 103 MC4 models: 216 x 295 x 103 STANDARDS	Charge voltage 'equalization'	Default setting: 16,2V / 32,4V / 48,6V / 64,8V (adjustable)					
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  Maximum altitude  Environmental condition  Pollution degree  Data communication port  Remote on/off  Programmable relay  DPST AC rating: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC  Parallel operation  PV terminals 3)  PV terminals 3)  Bue (RAL 5012)  Blue (RAL 5012)  Two pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Battery terminals  Protection category  Weight  Tr models: 185 x 250 x 95 mm  MC4 models: 215 x 250 x 95 mm  MC4 models: 246 x 295 x 103  MC4 models: 246 x 295 x 103  MC4 models: 246 x 295 x 103  STANDARDS	Charge algorithm	multi-stage adaptive (eight preprogrammed algorithms) or user defined algorithm					
Operating temperature  -30 to +60°C (full rated output up to 40°C) Humidity  95%, non-condensing Maximum altitude 5000m (full rated output up to 2000m)  Environmental condition Indoor, unconditioned Pollution degree PD3  Data communication port Remote on/off Yes (2 pole connector) Programmable relay PD5T AC rating: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC Parallel operation  PVE.Direct or Blue (RAL 5012)  ENCLOSURE  Colour Blue (RAL 5012)  PV terminals 3) 35 mm² / AWG2 (Tr models) Two pairs of MC4 connectors (MC4 models) Two pairs of MC4 connectors (MC4 models)  Battery terminals Battery terminals PV terminals Battery terminals Battery terminals Tr models: 185 x 250 x 95 mm MC4 models: 216 x 295 x 103 MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103 MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103 MC4 models: 246 x 295 x 103 MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103	Temperature compensation	-16 mV / -32 mV / -64 mV / °C					
Humidity 95%, non-condensing  Maximum altitude 5000m (full rated output up to 2000m)  Environmental condition Indoor, unconditioned  Pollution degree PD3  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 pairs of MC4 connectors (MC4 models)  Battery terminals 35mm² / AWG2  Protection category IP43 (electronic components), IP22 (connection area)  Weight 3 kg 4,5kg  Dimensions (h x w x d) in mm MC4 models: 215 x 250 x 95 mm MC4 models: 216 x 295 x 103  MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103  STANDARDS	Protection	PV reverse polarity / Output short circuit / Over temperature					
Maximum altitude 5000m (full rated output up to 2000m)  Environmental condition Indoor, unconditioned  Pollution degree PD3  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) Three pairs of MC4 connectors (MC4 models)  Battery terminals 35mm² / AWG2  Protection category IP43 (electronic components), IP22 (connection area)  Weight 3 kg 4,5kg  Dimensions (h x w x d) in mm Tr models: 216 x 295 x 103  MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103  STANDARDS	Operating temperature	-30 to +60°C (full rated output up to 40°C)					
Environmental condition Pollution degree PD3 Data communication port Remote on/off Programmable relay Post AC rating: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC Parallel operation PV terminals 3) PV terminals 3) Battery terminals Protection category Protection category Pimensions (h x w x d) in mm POST AC rating: 1ndoor, unconditioned PDST AC rating: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC Parallel operation PV terming: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC Parallel operation PENCLOSURE  Blue (RAL 5012)  35 mm² / AWG2 (Tr models) Three pairs of MC4 connectors (MC4 models) Three pairs of MC4 connectors (MC4 models) Protection category IP43 (electronic components), IP22 (connection area)  Tr models: 185 x 250 x 95 mm MC4 models: 216 x 295 x 103 MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103 STANDARDS	Humidity	95%, non-condensing					
Pollution degree PD3  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 pairs of MC4 connectors (MC4 models)  Battery terminals  Battery terminals 35mm² / AWG2  Protection category IP43 (electronic components), IP22 (connection area)  Weight 3 kg 4,5kg  Dimensions (h x w x d) in mm  Tr models: 185 x 250 x 95 mm  MC4 models: 215 x 295 x 103  MC4 models: 215 x 295 x 103  MC4 models: 215 x 250 x 95 mm  MC4 models: 246 x 295 x 103  STANDARDS	Maximum altitude	5000m (full rated output up to 2000m)					
Data communication port  Remote on/off  Programmable relay  DPST AC rating: 240VAC / 4A DC rating: 4A up to 35VDC, 1A up to 60VDC  Parallel operation  ENCLOSURE  Colour  Blue (RAL 5012)  PV terminals 3)  35 mm² / AWG2 (Tr models)  Two pairs of MC4 connectors (MC4 models)  Battery terminals  Protection category  Weight  Dimensions (h x w x d) in mm  VE.Direct or Bluetooth  Yes (2 pole connector)  Yes (not synchronized)  Blue (RAL 5012)  35 mm² / AWG2 (Tr models)  Three pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Tr models: 35mm² / AWG2  Protection category  IP43 (electronic components), IP22 (connection area)  Weight  Tr models: 185 x 250 x 95 mm  MC4 models: 216 x 295 x 103  MC4 models: 246 x 295 x 103  MC4 models: 246 x 295 x 103	Environmental condition	Indoor, unconditioned					
Remote on/off Programmable relay Programmable relay Parallel operation  ENCLOSURE  Colour  Blue (RAL 5012)  35 mm² / AWG2 (Tr models) Two pairs of MC4 connectors (MC4 models)  Battery terminals Protection category Weight  Tr models: 185 x 250 x 95 mm MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103  STANDARDS  Dimensions (h x w x d) in mm  Tr models: 246 x 295 x 103 MC4 models: 246 x 295 x 103 MC4 models: 246 x 295 x 103 MC4 models: 246 x 295 x 103	Pollution degree	PD3					
Programmable relay  Parallel operation  Parallel operation  ENCLOSURE  Colour  Blue (RAL 5012)  35 mm² / AWG2 (Tr models) Two pairs of MC4 connectors (MC4 models)  Battery terminals  B	Data communication port						
Parallel operation  ENCLOSURE  Colour  Blue (RAL 5012)  35 mm² / AWG2 (Tr models) Three pairs of MC4 connectors (MC4 models)  Battery terminals  Battery terminals  Battery terminals  Battery terminals  Battery terminals  Trotection category  IP43 (electronic components), IP22 (connection area)  Weight  Brown Area  Trotection area  Trotection area  Trotection area  MC4 models: 185 x 250 x 95 mm MC4 models: 216 x 295 x 103 MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103 STANDARDS	Remote on/off						
Colour  Blue (RAL 5012)  PV terminals 3)  Battery terminals  Battery t	Programmable relay	3 , , ,					
Colour  Blue (RAL 5012)  35 mm² / AWG2 (Tr models) Two pairs of MC4 connectors (MC4 models)  Battery terminals  Protection category  Weight  Dimensions (h x w x d) in mm  Blue (RAL 5012)  35 mm² / AWG2 (Tr models) Three pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Battery terminals  35 mm² / AWG2  Three pairs of MC4 connectors (MC4 models)	Parallel operation	·					
PV terminals 3)  35 mm² / AWG2 (Tr models) Two pairs of MC4 connectors (MC4 models)  Battery terminals  Protection category  Weight  Dimensions (h x w x d) in mm  35 mm² / AWG2 (Tr models) Three pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  Three pairs of MC4 connectors (MC4 models)  1943 (electronic components), IP22 (connection area)  4,5kg  Tr models: 185 x 250 x 95 mm Tr models: 216 x 295 x 103  MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103  STANDARDS	ENCLOSURE ENCLOSURE						
PV terminals 3)  Two pairs of MC4 connectors (MC4 models)  Battery terminals  Protection category  Weight  Dimensions (h x w x d) in mm  Tr models: 215 x 250 x 95 mm  MC4 models: 246 x 295 x 103  STANDARDS  Three pairs of MC4 connectors (MC4 models)	Colour	· · · · · · · · · · · · · · · · · · ·					
Protection category         IP43 (electronic components), IP22 (connection area)           Weight         3 kg         4,5kg           Dimensions (h x w x d) in mm         Tr models: 185 x 250 x 95 mm         Tr models: 216 x 295 x 103           MC4 models: 215 x 250 x 95 mm         MC4 models: 246 x 295 x 103           STANDARDS	PV terminals 3)			Three pairs of MC4 connectors (MC4			
Weight         3 kg         4,5kg           Dimensions (h x w x d) in mm         Tr models: 185 x 250 x 95 mm         Tr models: 216 x 295 x 103           MC4 models: 215 x 250 x 95 mm         MC4 models: 246 x 295 x 103           STANDARDS	Battery terminals	35mm <sup>2</sup> / AWG2					
Dimensions (h x w x d) in mm  Tr models: 185 x 250 x 95 mm	Protection category	IP43 (electronic components), IP22 (connection area)					
MC4 models: 215 x 250 x 95 mm MC4 models: 246 x 295 x 103  STANDARDS	Weight	•			4,5kg		
STANDARDS	Dimensions (h x w x d) in mm						
		STANDARDS					
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.
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)

