





SmartSolar Charge Controller MPPT 75/15



Bluetooth sensing Smart Battery Sense



Bluetooth sensing BMV-712 Smart Battery Monitor



0861

## SMARTSOLAR CHARGE CONTROLLERS WITH LOAD OUTPUT MPPT

75/10, 75/15, 100/15, 100/20, 100/20 - 48 V

A solar charger gathers energy from your solar panels and stores it in your batteries. Using the latest, fastest technology, **SmartSolar** maximises this energy-harvest, driving it intelligently to achieve full charge in the shortest possible time. **SmartSolar** maintains battery health, extending its life.

The **SmartSolar** charge controller will even recharge a severely depleted battery. It can operate with a battery voltage as low as 0 Volts, provided the cells are not permanently sulphated or otherwise damaged.

Ultra-fast Maximum Power Point Tracking (MPPT) ensures that when light intensity is changing continuously, the 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.

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 (48 V model: interface with a relay). Alternatively, an intelligent battery management algorithm can be chosen: see Battery Life. The load output is short-circuit proof.

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 (not a 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.

**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.** 

The fully discharged battery recovery function will initiate charging even if the battery has been discharged to zero volts.

## Features & Benefits:

- Bluetooth Smart built-in the wireless solution to set-up, monitor, update and synchronise SmartSolar Charge
  Controllers
- VE.Direct for a wired data connection to a Colour Control GX, other GX products, PC or other devices
- Ultra-fast Maximum Power Point Tracking (MPPT)
- Intelligent battery management
- Programmable battery charge algorithm
- Day/night timing and light dimming option
- · Internal temperature sensor compensates absorption and float charge voltage for temperature
- Fully discharged battery recovery function





WITH LOAD OUTPUT MPPT 75/10, 75/15, 100/15, 100/20, 100/20 - 48 V

SmartSolar Charge Controller	MPPT 75 / 10	MPPT 75 / 15	MPPT 100 / 15	MPPT 100 / 20	MPPT100 / 20 - 48 V	
Part No.	T750020021	T120015698	TBA	T120015699	TBA	
Battery Voltage (Auto Select)	12 / 24 V 12 / 24 / 48 V					
Rated Charge Current	10 A	15 A	15 A	20 A	20 A	
Nominal PV Power, 12 V <sup>1a,b)</sup>	145 w	220 w	220 w	290 w	290 w	
Nominal PV Power, 24 V <sup>1a,b)</sup>	290 w	440 w	440 w	580 w	580 w	
Nominal PV Power, 48 V <sup>1a,b)</sup>	NA	NA	NA	NA	NA	
Max. PV Short Circuit Current <sup>2)</sup>	13 A	15 A	15 A	20 A	20 A	
Automatic Load Disconnect	Yes					
Max. PV Open Circuit Voltage	75 V		100 V			
Peak Efficiency	98%					
Self-Consumption	12 V: 25 mA, 24 V: 15 mA 25 / 15 / 0 mA					
Charge Voltage 'Absorption'	14.4 V / 28.8 V (adjustable)				14,4 V / 28.8 V / 57.6 V (adjustable)	
Charge Voltage 'Float'	13.8 V / 27.6 V (adjustable)				13.8 V / 27.6 V / 55.2 V (adjustable)	
Charge Algorithm	multi-stage adaptive					
Temperature Compensation	-16 mV/°C resp32 mV/°C					
Max. Continuous Load Current	15 A 20 A				20 A/20 A/1 A	
Low Voltage Load Disconnect	11.1 V / 22.2 V / 44.4 V or 11.8 V / 23.6 V / 47.2 V or Battery Life Algorithm					
Low Voltage Load Reconnect	13.1 V / 26.2 V / 52.4 V or 14 V / 28 V / 56 V or Battery Life Algorithm					
Protection	Output Short Circuit/Over Temperature					
Operating Temperature	-30 °C 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)					
	ENCLOSURE					
Colour	Blue (RAL 5012)					
Power Terminals	6 mm²/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	100 x 113 x 40 mm 100 x 113 x 50 mm 100 x 113 x 60 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.						

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

This product may not be a stock item. Please speak to our sales representative about lead times. Lead times, price, and availability can only be determined on receipt of an official quote from our supplier. This can sometimes take up to 3 days.

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