

# PWM Charge Controllers

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BlueSolar 12/24-5

## BlueSolar 12/24-5

5A at 12V or 24V

- Low cost PWM controller
- Internal temperature sensor
- Three stage battery charging (bulk, absorption, float)
- Protected against over current
- Protected against short circuit
- Protected against reverse polarity connection of the solar panels and/or battery
- With low voltage load disconnect output.



BlueSolar DUO 12/24-20

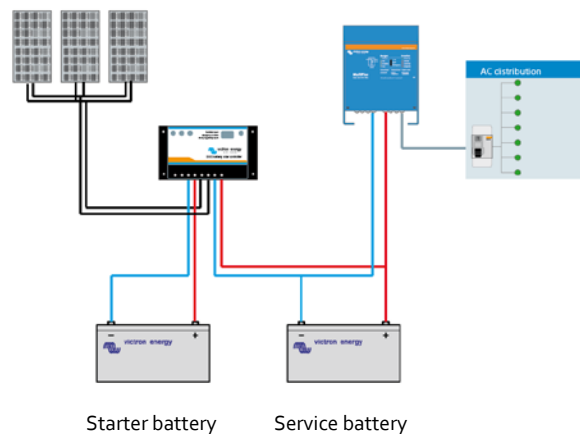
## BlueSolar DUO 12/24-20

20A at 12V or 24V

- PWM controller
- Charges two separate batteries. For example the starter battery and the service battery of a boat or mobile home
- Programmable charge current ratio (standard setting: equal current to both batteries)
- Charge voltage settings for three battery types (Gel, AGM and Flooded)
- Internal temperature sensor and optional remote temperature sensor
- Protected against over current
- Protected against short circuit
- Protected against reverse polarity connection of the solar panels and/or battery



Remote display for BlueSolar DUO 12/24-20



BlueSolar 12/24 with timer

## BlueSolar 12/24-10 with timer

10A at 12V or 24V

- PWM solar lighting controller
- Two timers to enable dusk to dawn operation, or limited time after dusk and limited time before dawn operation
- Seven segment display to visualize timer settings and analyze fault conditions
- Battery status indicator with over discharged warning
- Internal temperature sensor
- Three stage battery charging (bulk, absorption, float)
- Protected against over current
- Protected against short circuit
- Protected against reverse polarity connection of the solar panels and/or battery
- Low voltage load disconnect override

BlueSolar	BlueSolar 12/24-5		BlueSolar DUO 12/24-20		BlueSolar 12/24 with timer	
	12V	24V	12V	24V	12V	24V
Battery Voltage	12/24V Auto Select (1)		12/24V Auto Select (1)		12/24V Auto Select (1)	
Rated charge current	5A		20A		10A	
Second battery output	No		Yes		No	
Automatic load disconnect	Yes (maximum load 10A)		n. a.		Yes (maximum load 10A)	
Maximum solar voltage	28/55V (1)		28/55V (1)		28/55V (1)	
Self-consumption	6mA		4mA		5mA	
<b>Default settings</b>						
Absorption charge (2)	14.4V	28.8V	14.4V	28.8V	14.4V	28.8V
Float charge (2)	13.7V	27.4V	13.7V	27.4V	13.7V	27.4V
Equalization charge (2)	n. a.		n. a.		14.8V	29.6V
Low voltage load disconnect	11.1V	22.2V	n. a.		11.1V	22.2V
Low voltage load reconnect	12,6V	25.2V	n. a.		12,6V	25.2V
<b>Enclosure &amp; Environmental</b>						
Battery temperature sensor	Yes Internal sensor		Yes Internal sensor		Yes Internal sensor	
Temperature compensation	-30mV/°C	-60mV/°C	-30mV/°C	-60mV/°C	-30mV/°C	-60mV/°C
Operating temperature	-35°C to +55°C (full load)		-35°C to +55°C (full load)		-35°C to +55°C (full load)	
Cooling	Natural Convection		Natural Convection		Natural Convection	
Humidity (non-condensing)	Max. 95%		Max. 95%		Max. 95%	
Protection class	IP20		IP20		IP30	
Terminal size	6mm <sup>2</sup> / AWG10		6mm <sup>2</sup> / AWG10		6mm <sup>2</sup> / AWG10	
Weight	160		180gr		150gr	
Dimension (h x w x d)	70x133x34 mm		76x153x37 mm		65x140x45 mm	
Mounting	Vertical wall mount Indoor only		Vertical wall mount Indoor only		Vertical wall mount Indoor only	
<b>Standards</b>						
Safety	EN 60335-1					
EMC	EN 61000-6-1, EN 61000-6-3					
1) For 12V use 36 cell Solar panels For 24V use 72 cell Solar panels or 2x 36 cell in series 2) See manual for alternative charge voltage settings						