

From the sun to your alternator: you decide how!

Whether you are on a trip across the world or just on the move for a few days, alternative sources of energy are indispensable in order to remain independent of grid power: in other words, you need a mobile source of electricity. Mastervolt has multiple solutions for generating electricity, from solar charge regulators to high-output alternators.

MASTERVOLT



ALTERNATORS AND CHARGE REGULATORS

Mastervolt's alternators and charge regulators ensure you get the most out of your propulsion engine. An ideal alternative for a generator.

122 ALPHA COMPACT ALPHA

Standard alternators only supply the specified capacity at a high rpm. The Mastervolt Alpha alternator is specifically designed for powerful charging, even at low rpm and high ambient temperatures. It is suitable for various installation methods, and also available as a multi-belt model.

Alpha Compact 'automotive style' alternators provide an easy fit on factory-installed PTO (power take-off) brackets, available from most engine manufacturers.

RECOMMENDED FOR:



124 ALPHA PRO

Alpha alternators are supplied with an Alpha Pro charge regulator as standard. This charge regulator maximises the capacity of the alternator and ensures the battery bank is optimally charged via the 3-step+ charge method. It is suitable for 12 V and 24 V, MasterBus compatible and appropriate for alternators up to 400 amps charge current.

RECOMMENDED FOR:



Generate



SOLAR CHARGE REGULATORS

Mastervolt solar charge regulators ensure a maximum yield from the often highly irregular availability of sunlight.

128 SOLAR CHARGEMASTER

The Solar ChargeMaster series SCM includes two types of charge regulators: PWM charge regulators with an excellent price/quality ratio, and MPPT modes for medium to large systems. The MPPT version charges the batteries up to 30 % faster than the PWM models, with the same number of solar panels.

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AND
EXTENDED *TECHNICAL BACKGROUND*
ON OUR PRODUCTS:
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RECOMMENDED FOR:



Alternators and Charge Regulators: For rapidly recharged batteries

The existing alternator on the main engine is designed to charge the starter battery. As a result the combination is not ideal for fast and full charging of other batteries, especially if you want to charge the batteries over a short time or when powering a heavy load.

There are two options to solve this issue:

Equip the standard alternator with a Mastervolt Alpha Pro charge regulator. This charge regulator maximises the output of alternators by regulating the alternator in a way that ensures the batteries receive the optimum charge. The proven 3-step+ charge method guarantees fast and safe charging of your batteries.

You can also choose a powerful second Mastervolt Alpha alternator with Alpha Pro charge regulator. This combination was specifically designed for charging service batteries, and allows you to charge quickly and turn off your engine when you want.

Alpha Pro Charge Regulator

- Suitable for 12 and 24 V.
- Including plug & play connection cable, an adapter cable for Bosch alternators is optional.
- The Alpha Pro charge regulator is suitable for alternators up to 800 amps charge current.
- Automatic voltage and temperature compensation.
- 'Keep alive' function for tachometer.
- MasterBus compatible.
- 3-Step+ charging technology for fast and complete charging.

Alpha Alternator Series

- Fast and complete charging of all batteries.
- Power supply for all consumers.
- 12 V and 24 V versions.
- 75 A to 150 A charge current.
- Delivered with Alpha Pro charge regulator for optimal performance and longer-lasting batteries.

Using a Battery Mate, Charge Mate or BI battery isolator in conjunction with an Alpha alternator, makes it possible to easily charge two or three separate battery banks simultaneously.

Alpha Compact Alternator Series

- Plug and play solution.
- Suitable for high ambient temperatures.
- Patented magnetic design.
- 40 % lighter and 25 % more compact than conventional alternators.
- Up to 30 % lower fuel consumption.
- High charge current at idle RPM.
- Cable and electronics protected against oil, moisture and dirt.
- Wide range of accessories available.
- Models with suffix "VP" are a perfect fit for Volvo Penta engines.

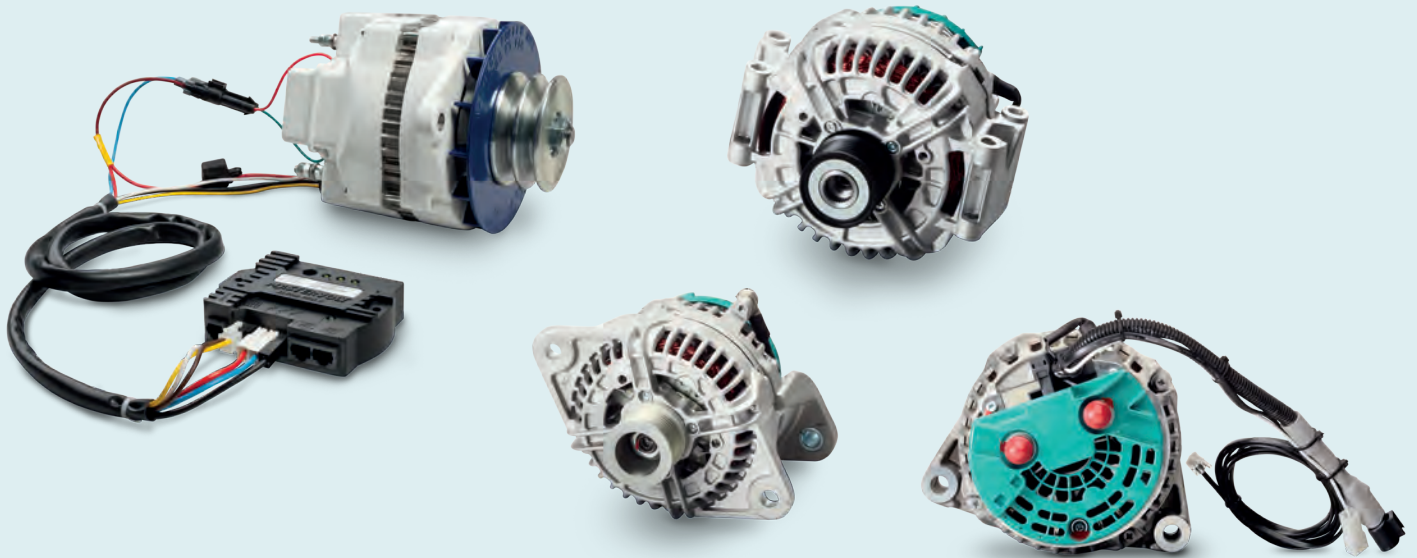
Alpha Compact "automotive style" alternators provide an easy fit on factory-installed PTO (Power Take-Off) brackets available from most engine manufacturers. If space is limited, the Alpha Compact can also be used to exchange the stock alternator for a more powerful model.

MASTER TIP



A second alternator on the main engine, combined with a larger battery bank and inverter, could be an alternative for a generator.





For all engine types

Alpha alternators are equipped with several fixations for customised alternator brackets, available from your installer or engine supplier. Some engine brands come with Mastervolt alternator brackets as an option.



Alpha Pro: Easy to operate

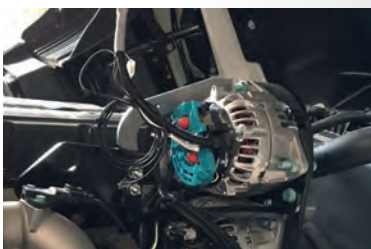
Easy operation LEDs on the body of the charge regulator indicate the charge phase. The Alpha Pro is designed as a 'fit all' solution. Just one unit is needed for both 12 and 24 V applications, with a simple selector switch to set the regulator to the right voltage. The charge regulator can also be used on any other brand of alternator that has a standard Bosch connector, using a Bosch adapter cable (optional).

Wide range of accessories available



Freewheeling multigroove pulleys are available in various diameters and widths for an optimal pulley ratio and belt alignment.

High performance plug & play alternators



Compared to conventional alternators, the Alpha Compact offers lower weight, smaller dimensions and reduced fuel consumption.



MasterBus Connectivity








The Alpha Pro charge regulator is compatible with MasterBus, allowing easy monitoring via an EasyView touchscreen. In a MasterBus system, the voltage drop over the battery cable and the battery temperature is compensated automatically.








Performs above 40 °C









Forced cooling by integrated fan on the pulley. Providing high power even at high ambient temperatures, like in engine compartments.

Specifications Alpha Compact Alternators

	NEW MODEL	NEW MODEL	NEW MODEL	NEW MODEL	NEW MODEL	NEW MODEL	NEW MODEL
							
	Alpha Compact 14/120	Alpha Compact 14/200	Alpha Compact 28/110	Alpha Compact 28/150	Alpha Compact 28/80 VP	Alpha Compact 28/110 VP	Alpha Compact 28/150 VP
Product code	46214120	46214200	46228110	46228150	46228082	46228112	46228152
Delivered with Alpha Pro III charge regulator	46614120	46614200	46628110	46628150			
GENERAL SPECIFICATIONS							
Charge regulation	delivered as standard or via optional Alpha Pro III charge regulator (product code 45513000)						
Isolated operation	yes, with optional isolation bushings						
Rotational direction	clockwise	clockwise	clockwise	clockwise	clockwise	clockwise	clockwise
Galvanic isolation	non-isolated	non-isolated	non-isolated	non-isolated	non-isolated	non-isolated	non-isolated
Cooling	integrated dual fan	integrated dual fan	integrated dual fan	integrated dual fan	integrated dual fan	integrated dual fan	integrated dual fan
Mounting	swivel arm	direct mounting	swivel arm	swivel arm	swivel arm	swivel arm	swivel arm
Pulley included	no	no	no	no	yes	yes	yes
Weight	6.7 kg 14.8 lb	7.5 kg 16.5 lb	7.4 kg 16.3 lb	7.9 kg 17.4 lb	6.9 kg 15.2 lb	7.4 kg 16.3 lb	7.9 kg 17.4 lb
TECHNICAL SPECIFICATIONS							
System voltage	12 V	12 V	24 V	24 V	24 V	24 V	24 V
Nominal current (at 6000 rpm, 25 °C / 77 °F)	120 A	200 A	110 A	150 A	85 A	110 A	150 A
Charge current (at 1800 rpm, 25 °C / 77 °F)	70 A	106 A	41 A	28 A	45 A	40 A	30 A
Cut-in speed	1300 rpm	1350 rpm	1400 rpm	1700 rpm	1400 rpm	1400 rpm	1700 rpm
Max. rotational speed	20.000 rpm	20.000 rpm	15.000 rpm	16.000 rpm	15.000 rpm	15.000 rpm	16.000 rpm
Power Take Off (kW / hp)	3.4 / 4.5	5.6 / 7.6	6.2 / 8.3	8.4 / 11.4	4.8 / 6.4	6.2 / 8.3	8.4 / 11.4
Max. operating temperature	120 °C / 248 °F	120 °C / 248 °F	120 °C / 248 °F	120 °C / 248 °F	120 °C / 248 °F	120 °C / 248 °F	120 °C / 248 °F
Temperature sensor	integrated, RJ12 connection	integrated, RJ12 connection	integrated, RJ12 connection	integrated, RJ12 connection	integrated, RJ12 connection	integrated, RJ12 connection	integrated, RJ12 connection
CONNECTIONS							
Positive output stud	2x M8	2x M8	2x M8	2x M8	2x M8	2x M8	2x M8
W (rpm) signal connection	isolated fast-on	isolated fast-on	isolated fast-on	isolated fast-on	isolated fast-on	isolated fast-on	isolated fast-on
Field current connection	Mastervolt plug	Mastervolt plug	Mastervolt plug	Mastervolt plug	Mastervolt plug	Mastervolt plug	Mastervolt plug

NEW		
ACCESSORIES		Multigroove pulley Ø 49.8 mm 48420110
		Multigroove pulley Ø 56.2 mm 48420120
		Multigroove pulley Ø 55 mm 48420130
		Multigroove pulley Ø 57.4 mm 48420100
		Multigroove pulley Ø 56 mm 48420140
		Isolating bushing Ø 10.5 mm 48420210
		Isolating bushing Ø 12.5 mm 48420230
The negative pole of Alpha Compact alternators connects to the housing. Isolated operation is possible by installation of isolating bushings.		

NEW		
ACCESSORIES		Multigroove pulley Ø 50 mm 48420150
		Multigroove pulley Ø 66.1 mm 48420160
		Multigroove pulley Ø 48.1 mm 48420170
		Multigroove pulley Ø 49.8 mm 48420180
		Oil pressure switch isolated 48420200
		B+ adapter M10 48420220
M10x1		
B+ adapter for M10 cable eye		

Specifications Alpha Alternators



	12/90 III	12/130 III	24/75 III	24/110 III	24/150 III
Product code	48612090	48612130	48624075	48624110	48624150
Delivered with multigroove pulley		48612131	48624076		
GENERAL SPECIFICATIONS					
Charge regulation	an Alpha Pro III charge regulator comes standard with all models				
Cable length regulator/alternator	1.5 metre, oil resistant connection cable - delivered as standard				
Belt section	2xA	2xA	2xA	2xA	2xA
Isolated from mass	yes	yes	yes	yes	yes
Directions of revolutions	2	2	2	2	2
Mounting	five to six, six o'clock & five past six	six o'clock	six o'clock	six o'clock	five to six, six o'clock & five past six
Dimensions	go to mastervolt.com/alternators for drawings				
Weight	5.5 kg / 12.1 lb	10.1 kg / 22.3 lb	10.1 kg / 22.3 lb	10.1 kg / 22.3 lb	13.1 kg / 28.9 lb
TECHNICAL SPECIFICATIONS					
System voltage	12 V	12 V	24 V	24 V	24 V
Charge voltage absorption	14.25 V	14.25 V	28.5 V	28.5 V	28.5 V
Charge voltage float	13.25 V	13.25 V	26.5 V	26.5 V	26.5 V
Nominal diameter pulley	73 mm / 2.9 inch	89 mm / 3.5 inch	89 mm / 3.5 inch	89 mm / 3.5 inch	89 mm / 3.5 inch
ACCESSORIES					
Multigroove pulley (sold separately) 48400030	n.a.	option	option	option	option

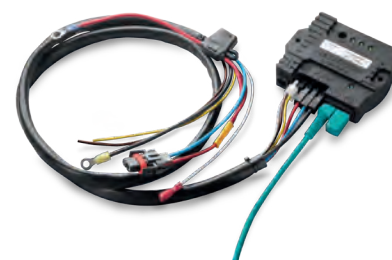


Specifications Alpha Pro





Alpha Pro III

Product code	45513000
GENERAL SPECIFICATIONS	
Link to MasterShunt	yes
Connection to Mastervolt alternator	yes
Connection to Bosch alternator	yes, using a Bosch adapter cable (product code 45510500)
Cooling	fanless
Nominal output voltage	12 V / 24 V
Cable length regulator/alternator	1.5 mtr / 5 ft oil resistant connection cable
Connection plug regulator/alternator	Alpha/Mastervolt
MasterBus powering	yes
Battery temperature sensor	yes, included / alternator temperature sensor is optional
Dimensions, hwxwd	90 x 109 x 30 mm 3.5 x 4.3 x 1.2 inch
Weight	0.4 kg / 0.9 lb
Delivered with	battery temperature sensor with 6 m (20 ft) cable, connection cable, MasterBus cable, MasterBus terminator, user manual
Approvals	CE
TECHNICAL SPECIFICATIONS	
Charge characteristic	user defined charge characteristics
Temperature compensation	yes, -30 mV / °C (-17 mV / °F)
Voltage drop compensation	yes, up to 3 V
Alternator type	alternators with negative excitation
Field current	up to 20 amps
MasterBus compatible	yes



The Alpha Pro comes standard with connection cable and battery temperature sensor.

ACCESSORIES		Bosch adapter cable 45510500	option Connection cable for any other brand of alternator that has a standard Bosch connector.
		Alternator temperature sensor 41500400	option When using the Alpha Pro in combination with non-Mastervolt alternators, this alternator temperature sensor may offer additional protection against over heating (see manual for instructions).

Benefits of a Mastervolt Charge Regulator

- The Alpha Pro charge regulator maximises the output of Mastervolt Alpha alternators or any other alternator by regulating the alternator in a way that the batteries receive the optimum charge. The proven 3-step+ charge method used by all Mastervolt battery chargers guarantees fast and safe charging of your batteries.
- The Alpha Pro helps to cut emissions by requiring less run time because it maximises the power from any alternator. A battery can be charged quickly even at very low RPM, especially when connected to an Alpha series alternator. By connecting the Alpha Alternator to a Battery Mate or battery isolator, several battery banks can be charged simultaneously.
- Does your tachometer sometimes indicate zero while the engine is running? The 'keep alive' function of the Alpha Pro gets rid of this problem for ever.



The charge regulator measures the battery temperature and adjusts the charging process accordingly, resulting in a safe and fast charge. Therefore the battery is always kept in good condition.

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BACKGROUND](http://MASTERVOLT.COM/TECHNICAL-
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ALTERNATORS AND CHARGE REGULATORS
ALPHA PRO



QUOTE

"Having Mastervolt's Lithium Ion batteries and system onboard gives me a comfortable feeling on the road. The two main energy sources are an alternator on the truck's engine and four solar panels on the roof. To properly charge the Lithium Ion batteries, an Alpha Pro charge regulator is used for the alternator. I know that wherever in the world I park my truck I will be able to enjoy the comforts of 'home' before continuing my travels."

MICHAEL WISSINGER, GLOBETROTTER
GERMANY



The sun as an additional energy source

Solar cells provide power from sunlight. This renewable energy source boosts your independence and also helps keep your battery in optimal condition. Mastervolt Solar ChargeMaster charge regulators maximize yield from the often very irregular supply of sunlight. Robust power electronics convert the energy from the solar panels, taking the charge status of the batteries into account.

Efficient, Reliable and Safe

Mastervolt's solar charge regulators are suitable for energy systems with system voltages of 12 V, 24 V and 48 V (SCM60 MPPT-MB), and charge any battery type, including Mastervolt Lithium Ion (MLI) batteries. They ensure an optimal and efficient charge cycle and are highly reliable. The 3-step+ charging method guarantees an extra-long lifespan for your batteries. A MasterBus connection is available for optimal integration within the energy system.

Versatile and Flexible

Mastervolt solar charge regulators can be used flexibly to complement your energy system, or in places where no electricity is available, such as remote holiday cottages or chalets. In addition, the solar charge regulators are a perfect mobile solution for campers, special vehicles, yachts and traffic & information signs. They are also ideal for professional applications at remote petrol stations, telecom relay stations or offshore units.

The Solar ChargeMaster series comprises two charge regulators based on PWM (Pulse Width Modulation) technology and two models that are equipped with MPPT (Maximum Power Point Tracker) technology.

The robust PWM charge regulators offer a great solution for simple power systems, using lead-acid batteries. Unlike other PWM regulators, the Mastervolt PWM regulators are compatible with negative grounding, making them especially suited for marine and mobile applications.

For advanced systems, Mastervolt solar regulators with integrated Maximum Power Point Tracker draw the maximum output from your solar panels. The MPPT models are suitable for both lead-acid and Lithium Ion batteries in 12 V, 24 V and 48 V.



QUOTE

"The conception and development of the E-NA project allowed us to create the company ZEST, which today offers its products and systems all over the world. We chose Mastervolt for the reliability of its products, especially in harsh environments."

**MATTHIEU DELASTRE, R&D MANAGER
ZEST, FRANCE**



Which Solar ChargeMaster is best for your application?

■ PWM models

The SCM20 and SCM40 PWM models are both suitable for 36 cells panels (12 V systems) and 72 cells panels (24 V systems). A clear integrated display, suitability for high ambient temperatures and compatibility with negative grounding. Recommended PV power ranges from 360 Wp to 1440 Wp.

■ MPPT models

The SCM25 MPPT is Mastervolt's smallest MPPT charge regulator. With 200 to 700 Wp in solar panels, switchable output and buzzer, this Solar ChargeMaster is very well suited to small and medium systems. The innovative MPPT technology charges your batteries up to 30 % faster than PWM regulators – with the same number of panels.

The SCM60 MPPT-MB is the largest MPPT solar charge regulator in our range. With 600 to 3600 Wp in solar panels, connections for 12, 24 and 48-volt battery banks and an integrated MasterBus connection, this Solar ChargeMaster is perfect for large and medium-sized systems. Besides the traditional 36 and 72-cell panels, the MPPT models are also ideal for the inexpensive 60-cell panels.

FEATURES

- High efficiency: your batteries are charged quickly.
- Capacity for solar panel configurations of up to 3600 Wp.
- Suitable for AGM, Gel and flooded batteries.
- Fast and flexible setting of battery type.
- Battery temperature sensor for long lifespan of your batteries.
- Automatic detection 12 V, 24 V and 48 V (SCM60 MPPT-MB).
- Switchable output.
- Noiseless operation.
- Large, clear LCD display.
- Fully protected against over-temperature, over load, high/low battery voltage, high/low PV voltage, short circuit and reverse polarity.

Additional features MPPT models:

- Charges up to 30 % faster with the same number of solar panels.
- Less cables, quick installation and lower losses.
- Suitable for all solar panels, including the inexpensive 60-cell panels.
- Suitable for humid environments (IP23).
- Also suitable for Mastervolt Lithium Ion (MLI) batteries.
- Audible signal (SCM25 MPPT).
- Monitoring and control via MasterBus (SCM60 MPPT-MB).

Specifications

Solar ChargeMaster

PWM models



NEW
MODEL**SCM20 PWM**

131822000

NEW
MODEL**SCM40 PWM**

131824000

Product code	131822000	131824000
SPECIFICATIONS BATTERY CHARGER		
System voltage (battery)	12/24 V auto select	12/24 V auto select
Battery types	AGM, Gel, flooded	AGM, Gel, flooded
Battery temperature sensor	optional	optional
Nominal charge current at 40 °C / 104 °F	20 A	40 A
Switchable output (max. current)	20 A	40 A
Energy consumption (night)	< 7 mA	< 7 mA
SOLAR INPUT (DC) SPECIFICATIONS		
Panel type (12 V system)	36 cells	36 cells
Panel type (24 V system)	72 cells	72 cells
Max. PV current (Imp)	20 A	40 A
Recommended PV power (12 V system)	360 Wp	720 Wp
Recommended PV power (24 V system)	720 Wp	1440 Wp
GENERAL SPECIFICATIONS		
Display/read-out	backlit LCD with PV power, load power, battery voltage, charge current, warnings, battery state of charge, battery setting	
Dimensions, hxxwxd	98 x 189 x 53 mm 3.9 x 7.4 x 2.1 inch	98 x 189 x 53 mm 3.9 x 7.4 x 2.1 inch
Weight	0.5 kg / 1.1 lb	0.5 kg / 1.1 lb
Cooling	passive	passive
Protection degree	IP23	IP23
Grounding	common negative grounding	common negative grounding
TECHNICAL SPECIFICATIONS		
Technology	PWM (Pulse Width Modulation)	PWM (Pulse Width Modulation)
Temperature range (ambient temp.)	-20 °C to 50 °C, derating power > 40 °C / -4 °F to 122 °F, derating power > 104 °F	
Cable size	max. 16 mm² Litz wire	max. 16 mm² Litz wire
Protections	over-temperature, overload, high/low battery voltage, short circuit, reverse polarity	
MasterBus communication	no	no
Relative humidity	95 % non-condensing	95 % non-condensing

ACCESSORIES		Temperature sensor 6m 41500500	option	option
		Temperature sensor 15m 41500800	option	option



Specifications Solar ChargeMaster MPPT models

SOLAR CHARGE REGULATORS

SCM20 PWM
SCM40 PWM
SCM25 MPPT
SCM60 MPPT-MB



	SCM25 MPPT	SCM60 MPPT-MB
Product code	131902500	131906000
SPECIFICATIONS BATTERY CHARGER		
System voltage (battery)	12/24 V auto select	12/24/48 V auto select
Battery types	AGM, Gel, flooded, Lithium Ion	AGM, Gel, flooded, Lithium Ion
Battery temperature sensor	included	included
Lithium Ion protection	via Multipurpose Contact Output product code 77030500	yes, via MasterBus connection
Max. charge current at 40 °C / 104 °F	25 A	60 A
Switchable output (max. current)	25 A	via MasterBus
Energy consumption (night)	5 mA	< 1 mA
SOLAR INPUT (DC) SPECIFICATIONS		
Nominal PV current at 40 °C / 104 °F	18 A	50 A
PV start voltage 12/24 V	15 V/27 V	n.a.
PV start voltage 12/24/48 V	n.a.	15 V/27 V/51 V
Nominal PV voltage 12 V	15-66 V	13.2-115 V
Nominal PV voltage 24 V	30-66 V	26.4-115 V
Nominal PV voltage 48 V	n.a.	52.8-115 V
Max. PV voltage (Tmin)	75 V	145 V
Max. PV power 12 V	360 Wp	900 Wp
Max. PV power 24 V	720 Wp	1800 Wp
Max. PV power 48 V	n.a.	3600 Wp
Max. efficiency	> 98 %	> 98 %
Static MPP efficiency	99.9 %	99.9 %
GENERAL SPECIFICATIONS		
Display/read-out	backlit LCD with PV power, load power, battery voltage, charge current, warnings, battery state of charge, battery setting	
Dimensions, hxxwxd	135 x 190 x 75 mm 5.3 x 7.5 x 3.0 inch	398 x 168 x 104 mm 15.7 x 6.6 x 4.1 inch
Weight	1.3 kg / 2.9 lb	5.5 kg / 12.1 lb
Alarms	buzzer	via MasterBus
Cooling	passive	passive
Protection degree	IP23	IP23
Grounding	(-) terminal	(-) terminal
TECHNICAL SPECIFICATIONS		
Technology	MPPT (Max. Power Point Tracker)	MPPT (Max. Power Point Tracker)
Temperature range (ambient temp.)	-20 °C to 55 °C -4 °F to 131 °F	-20 °C to 55 °C -4 °F to 131 °F
Cable size	max. 10 mm ² Litz wire	max. 35 mm ² Litz wire
Protections	over-temperature, overload, high/low battery voltage, high/low PV voltage, short circuit, reverse polarity & HV transients	
MasterBus communication	no	yes
Relative humidity	95 % non-condensing	95 % non-condensing

ACCESSORIES		Temperature sensor 6m 41500500	included	included
		Temperature sensor 15m 41500800	option	option

MASTER TIP



The innovative technology in the Mastervolt MPPT charge regulators increases the efficiency of the solar panels. As a result, Mastervolt MPPT regulators charge the batteries up to 30 % faster.



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