

MPP-Solar charge controller SMR1500

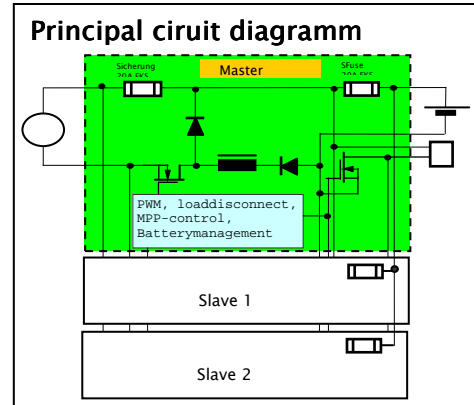
Description:

The SMR1500 consists of 3x SMR500-MPP-Modules, of 1 Master and 2 slaves The charge current and consumer current is divided 1:1:1. The factory adjusts the exact proportion of current for each module. This charger, in processor technique, contains all functions for smooth charging of lead Battery by solar modules of 1680Wp at 24V- and 840Wp at 12V-Systems. Because of the powertracking it is possible to increase the electrical power of a solar system up to 40%, than standard charger can do. The maximum solar voltage can be for a 12V-system as well as for a 24V-system and 48V-System 150V. (Open circuit voltage) Its inherent buck converter feeds the maximum possible current from the power maximum into the Battery. As soon as the Battery is full and reaches its maximum voltage (14.5V/29.0V/58.0V) the charger drives the solar voltage towards open circuit voltage, preventing overcharging of Battery. A yellow LED indicates this state of charge. Deep discharge protection is activatet with 60 Seconds delay. Switching into this state is done by a Power Mosfet on the ground level. Indication of consumer switch off is done by a red LED. The green LED indicates solar current. A temperature sensor tracks the maximum Battery voltage at -4mV/°C/Battery cell. The powertracking system is utilized every 8 seconds to optimize the solar power point. A battery management system allows adaptation to different battery types and optimal use of the battery capacity, including an automatic and manual equalization control.



Highlights:

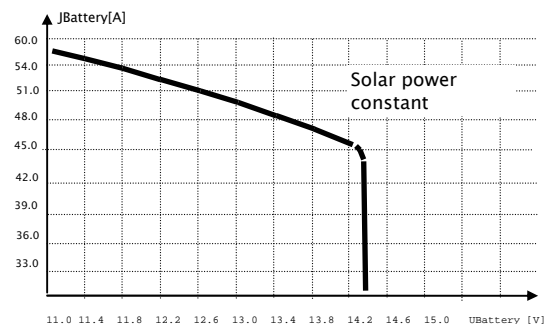
- * DC-Converter to optimize solar power income
- * MPP-Tracking of solar voltage
- * Selection of 3 Battery voltages 12V/24V/48V
- * Indication of state of charge per LED
- * Deep discharge protection
- * Temperature tracking of Battery voltage
- * Battery management system
- * Option: LCD for Battery voltage, -current, -power



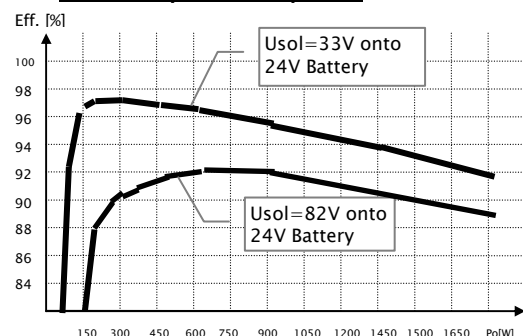
Technical Data:

	12V-Battery	24V-Battery	48V-Battery
Max. solar open circuit voltage, U _{soc}	150V	150V	150V
Max. solar current	60A	60A	37.5A
Max. charge current	60A	60A	37.5A
Max. solar power, P _{nom}	840Wp	1680Wp	2115Wp
Efficiency	Ca. 93% @ 0.5P _{nom}	Ca. 96% @ 0.5P _{nom}	Ca. 96% @ 0.5P _{nom}
End of charge voltage	14.5V	29.0V	58V
Deep discharge protection			
Load disconnect	10.8V	21.6V	43.2V
Load reconnect	12.5V with 60 seconds delay	25.0V with 60 seconds delay	50.0V with 60 seconds delay
Current consumption	9mA	9mA	9mA
Terminals:			
2x Solar generator	16sqmm/10sqmm		
2x Battery output	16sqmm/10sqmm		
2x consumer output	16sqmm/10sqmm		
2x temperture sensor	1.5sqmm		
Temperatur sensor	KTY10-5 or 1.91kOhm		
Cable glands	3xPG16, 1xPG7		
LED's	right: yellow (Indication of max Battery voltage) left: green (Battery current > 0.5A) middle: red (consumer off)		
housing	Steel wall mounted wxhxd 300x300x150mm		
protection	IP55		
weight	15kg		
Moisture	90% (coating)		
Operating Temperature	-20°C to +50°C		

Charge current vs. Battery voltage

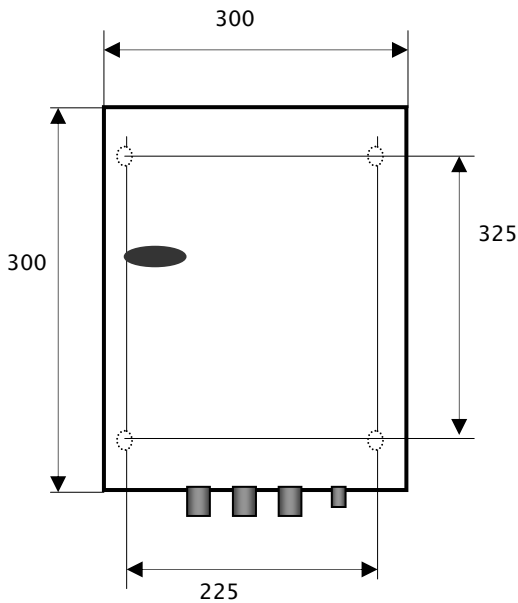


Efficiency vs. Solarpower



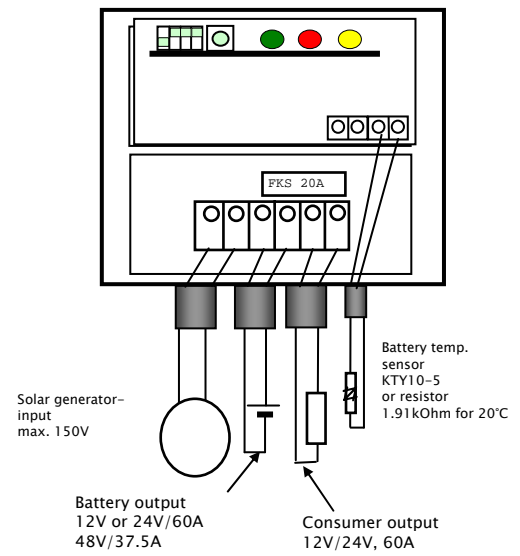
Technical data are subject to change

Housing dimensions:

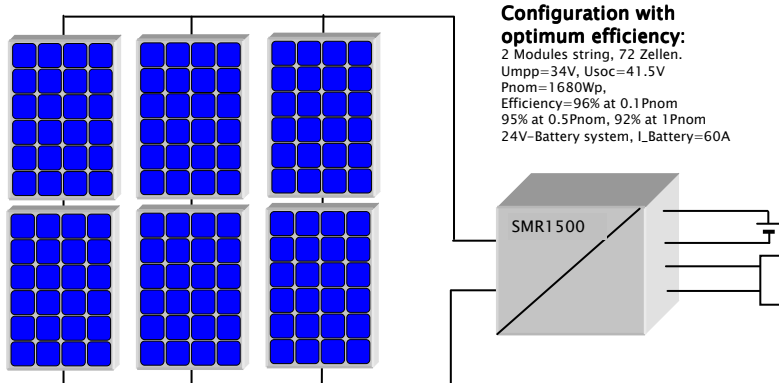


Height=150mm
 Mounting holes in bottom of housing
 D=10mm

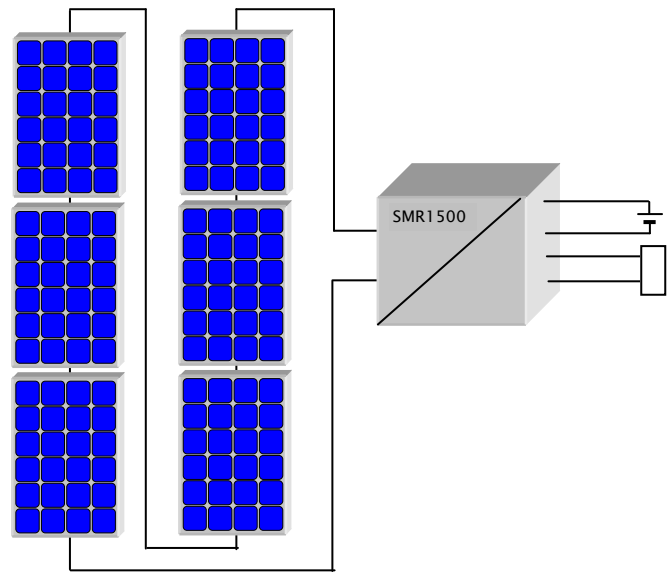
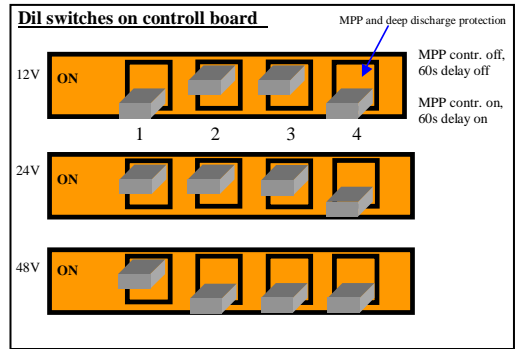
Connection diagram



Applications:



Configuration with optimum efficiency:
 2 Modules string, 72 Zellen.
 Umpp=34V, Usoc=41.5V
 Pnom=1680Wp,
 Efficiency=96% at 0.1Pnom
 95% at 0.5Pnom, 92% at 1Pnom
 24V-Battery system, L_Battery=60A



Configuration with maximum Solarvoltage:
 6 Modules string, 216 Cells.
 Umpp=102V, Usoc=124V
 Pnom=1680Wp,
 Efficiency=81% at 0.1Pnom
 91% at 0.5Pnom, 89% at 1Pnom
 24V-Battery system, L_Battery=60A

Technical data are subject to change