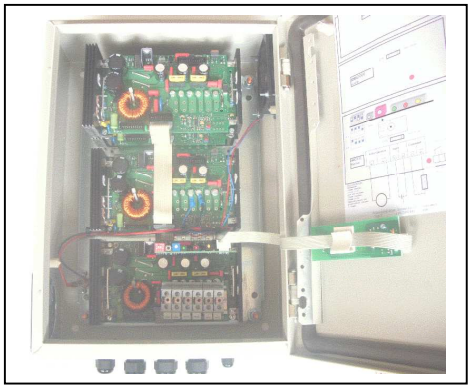
MPP- Solar charge controller SMR2500

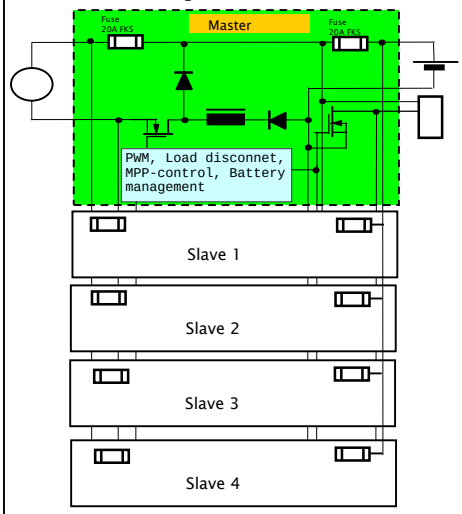
Description:

The SMR2500 consists of 5x SMR500-MPP-Modules, of 1 Master and 4 slaves
The charge current and consumer current is divided 1:1:1:1:1. The factory ajusts 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 1400Wp at 12V- and 2800Wp at 24V-Systems.
Because of the powertracking it is possible to increase the electrical power of a solar system up to 40%, than standart 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 of the solar modul 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 the Battery. A yellow LED indicates this state of charge.
Deep discharge protection is activated with 60 Seconds delay. Switching is done by a Power Mosfet on the ground level. The indication of the consumer switch off state 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.



Picture of SMR2000

Principal diagramm:



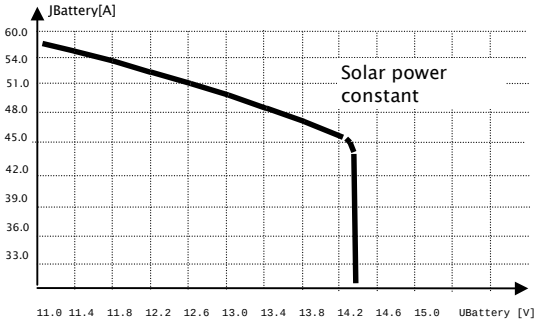
Highlights:

*** 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**

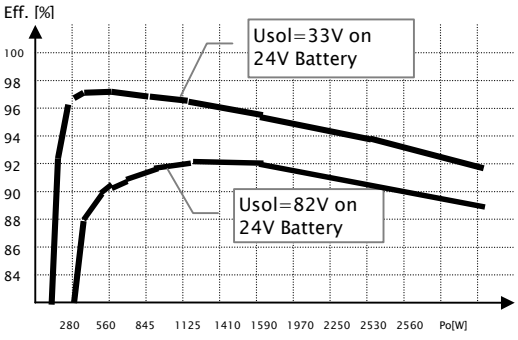
Technical data

	12V-Akku	24V-Akku	48V-Akku
Max. solar open circuit voltage, Usoc	150V	150V	150V
Max. solar current@Umpp=120V	100A	100A	62.5A
Max. charge current	100A	100A	62.5A
Max. solar power, Pnom	1400Wp	2800Wp	3500Wp
Efficiency	Ca. 93% at halfload	Ca. 96% at halfload	Ca. 96% at halfload
End of charge voltage	14.5V	29.0V	58.0V
Deep discharge protection Load disconnect Load reconnect	10.8V 12.5V with 60 seconds delay	21.6V 25.0V with 60 seconds delay	43.2V 50.0V with 60 seconds delay
Current consumption	15mA	15mA	15mA
Terminals: 2x Solar generator 2x Battery output 2x consumer output 2x temperture sensor	25sqmm/16sqmm 25sqmm/16sqmm 25sqmm/16sqmm 1.5sqmm		
Temperatur sensor	KTY10-5 or 1.91kOhm		
Cable glands	3x PG16, 1x PG7		
LED's	right: yellow (Indication of max Battery voltage) left: green (Battery current>0.5A) middle: red (consumer off)		
housing	Steel wall mounted wxhxd 300x400x150mm		
protection	IP55		
weight	16kg		
Moisture	90%		
Operating Temperature	-20°C bis +50°C		

Battery current vs Battery voltage

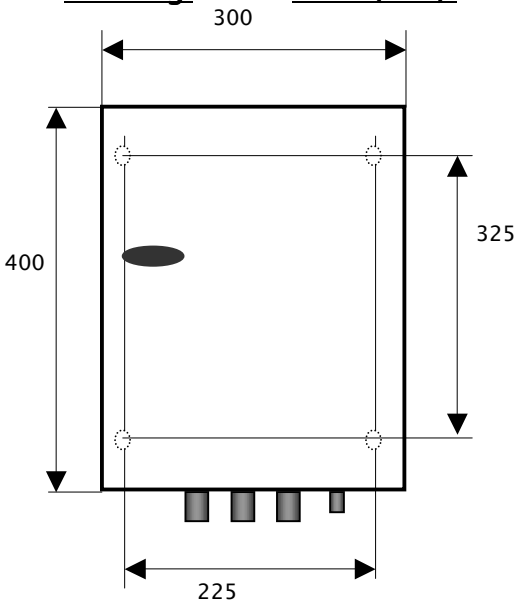


Effectivity vs solar power



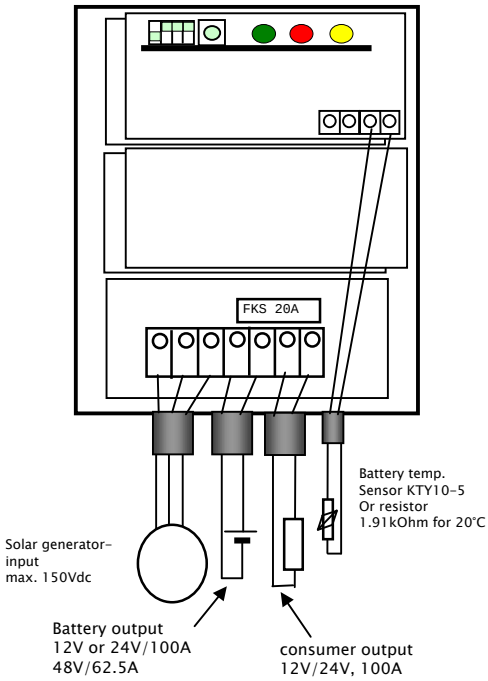
Technical data are subject to change

Housing dimensions (mm):

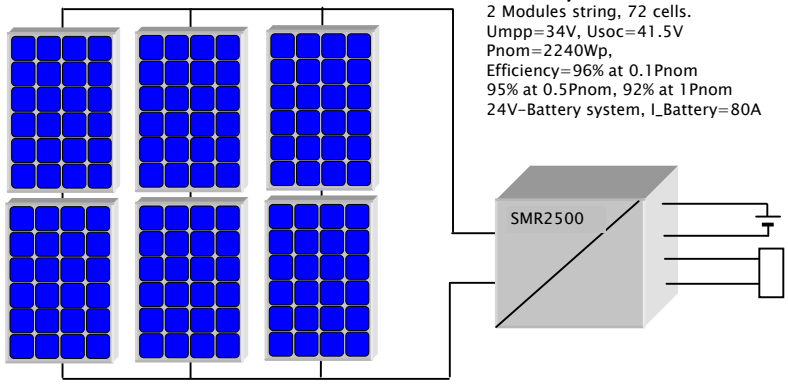


Height=150mm
Mounting holes in bottom of housing
D=10mm

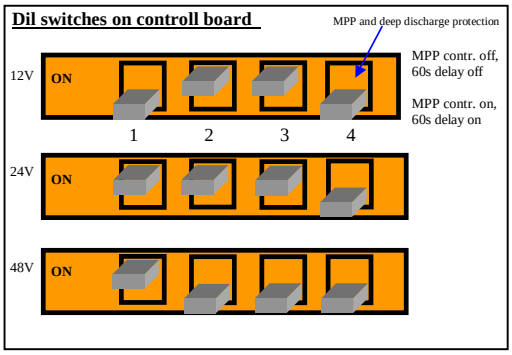
Connection diagram

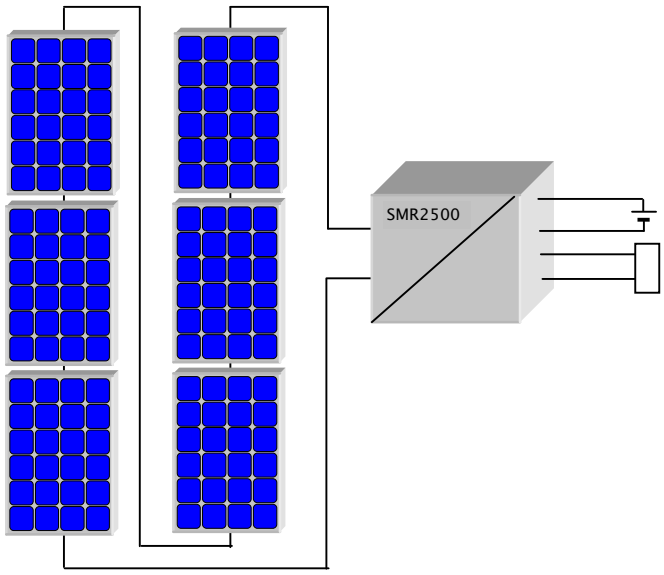


Applications:



Configuration with optimum efficiency:
2 Modules string, 72 cells.
Umpp=34V, Usoc=41.5V
Pnom=2240Wp,
Efficiency=96% at 0.1Pnom
95% at 0.5Pnom, 92% at 1Pnom
24V-Battery system, I_Battery=80A





Configuration with maximum Solarvoltage:
6 Modules string, 216 Cells.
Umpp=102V, Usoc=124V
Pnom=2240Wp,
Efficiency=81% at 0.1Pnom
91% at 0.5Pnom, 89% at 1Pnom
24V-Battery system,
I_Battery=80A

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