

FOTO CHARGER DC 48



The aim of VONSCH was to complete its photovoltaic portfolio and to produce highly reliable battery charger with high efficiency and long durability.

Solar MPPT charger FOTO CHARGER DC 48 uses DC voltage generated at the terminals of solar panel to optimal and efficient charging of batteries with a nominal voltage of 48 V.

The charger is powered directly from DC voltage of photovoltaic panels connected in series into a single string. Integration of several FOTO CHARGER DC 48 chargers to allow faster charging of the battery is possible, when higher power of properly connected panels is present.

In case of insufficient illumination of solar panels and discharged battery, it is possible to charge the battery from the grid by adding the rectifier module UM-01AC to FOTO CHARGER DC 48.

Reliable and efficient charging is ensured by 3-stage charging characteristics.

The advantage of FOTO CHARGER DC 48 is low acoustic noise, high efficiency and the possibility of integrating new promising features.



The main advantages of using FOTO CHARGER DC 48:

- high efficiency of 95% is achieved by using the modern SiC FET switching elements and by minimization the self-consumption
- automatic 3-stage charging with the equalization possibility
- fast and effective MPP tracking
- inbuilt switch for disconnecting the control board
- simple parallel coupling of chargers to achieve higher charging power
- design with focus on high reliability and efficiency
- indication of operation parameters
- is compliant with all safety and EMC requirements
- possibility of adding UM-01AC rectifier module and charging battery from the grid
- power reduction with increasing temperature of the charger - avoiding charger overheating
- inbuilt DC input fusing
- possibility of extending the standard warranty

Communication possibilities:

- communication interface RS485, communication protocol MODBUS RTU, for connecting the control system
- user friendly graphical display
- communication module RM-WEB for on-line visualization

TECHNICAL DATA - FOTO CHARGER DC 48

Rated permanent power	$P_N = 3000$ W at ambient temperature T_A up to 25 °C and input DC voltage higher than 375 V. Power P_N is reduced with increasing ambient temperature T_A above 25 °C.
Maximum input voltage of PV panels	600 V
Maximum input voltage of PV panels	170 V
Input voltage range for MPPT	180 ~550 V
Rated input DC current	9 A
Rated output voltage	57 V
Output voltage operating range	42 ~ 64 V
Rated output DC current	52 A
Peak / Euro efficiency	95% / 94,4%
MPPT adaption efficiency	>99%

Technical specification

Control unit	UNF03E2 / processor control board, equipped with Texas Instruments DSP
Communication	RS 485 with MODBUS RTU protocol, USB
Input fusing	Inbuilt fuses, surge protections, electronic protections
Output fusing	Electronic protections
Display	Inbuilt graphical, monochromatic display
Analog inputs	2 x / 0 (4) – 20 mA / 0 (2) – 10 V
Analog outputs	1 x / 0 (4) – 20 mA
Digital (binary) inputs	4x (BIN1, BIN2, BIN3, BIN 4)
Digital outputs	2x (BOUT1, BOUT2)
Emergency input	1 digital, EN 13849-1 category 3
Cooling	Natural air cooling, forced by inbuilt fan
Absolute altitude of the permitted usage	≤ 1000 m above the sea, 1% reduction of power for every 100 m above 1000 m. The installation site altitude is from 0 to 2500 m.
Relative humidity of the air	≤ 95 % without corrosive and explosive gases, without water vapor and condensates
Ambient working temperature T_A	+ 2 °C ~ + 55 °C
Cover	IP23 (IP43 optional)
Storage ambient temperature	- 20 °C ~ + 70 °C
Standards compliance	Safety: EN 50178 EMC emissions: EN 61000-6-3 EMC immunity: EN 61000-6-1 Harmonic distortion: EN 61000-3-11, EN 61000-3-12

