

MSW

SERIES

1

PHASE

12/24VDC: 10A-300A

SWITCH MODE (HF) BATTERY CHARGER

Usage Areas:

- Vessels and Yachts
- Shipyards
- Rail Systems
- Hydroelectric Power Plants
- Solar Power Plants
- Automobile Services
- Electrical Devices



HIGHLIGHTS

- Switch Mode Technology
- Voltage Controlled Automatic Charging
- Can Be Used as DC Power Supply
- 1 Phase & 3 Phase Wide Power Range
- High Efficiency and Reliability
- Electronic Protections
- Up to 30% Energy Saving

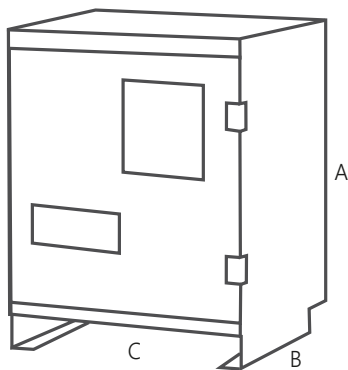
New Generation Switch Mode Charging Rectifiers

- Makelsan Switch Mode Charging Rectifiers are designed with the state of the art technology for charging batteries and DC energy needs of devices supplied by direct current.
- Batteries would be charged much safer with the improved software and special charging program. Non-complex structure, easy maintenance properties, user friendly program and other superior features will meet all requirements.
- The most important feature of the device is it can be used as supply source as well as a battery charger. Besides low ripple factor increases the battery life. It's an ideal solution for where device weight and dimensions are problem.

CERTIFICATES



MODEL	
INPUT	
Input Phase	1 Phase - 2 Phase - 3 Phase (Special Design)
Input Voltage Tolerance	±10%
Input Frequency	50 - 60 Hz
Power Factor	0.98
THDi	<%10
OUTPUT	
Output Current	10A - 300A
Output Voltage	12V - 24V
Ripple	≤1 Ripple
GENERAL	
Cooling	Air Cooling
Isolation Voltage	1500 VAC Input / Chassis Bridge, 500 VAC Output / Chassis Bridge, 500 VAC Between Input and Output
Insulation Class	IP 20 - RAL 7032 (Special Design)
Efficiency	90%
Operating Temperature	-20/50°C
Operating	Ability to set Charge Mode for all Battery Types
Input / Output Connections	Serial Connector - W Otomation
PROTECTION	
Heat Protection	Input / Output Overtemperature Protection
Measure	Output Overcurrent Protection - DC High Low - DC Leakage - Mains Failure
TECHNOLOGY	
IGBT	Switch Mode Technology
Standard	ISO 9001 - LVD - EN 62040 -1 - EMC
INDICATORS	
LCD Panel	2 x 16 - 4 x 16 Line
PLC	S71200 - S7300
Otomation	Modbus / Profibus / ProfiNET / RS 232 / RS 485



Makelsan reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Makelsan products previously or subsequently sold. Makelsan does not guarantee the items of the accuracy and completeness.

DIMENSIONS

CODE	A (mm)	B (mm)	C (mm)
MKL 1	340	240	150
MKL 2	340	240	200
MKL 3	290	260	370
MKL 4	340	280	400
MKL 5	400	320	450
MKL 6	580	390	500

OPTIONS

- DC +/- Ground Leakage Protection
- Modbus RTU Communication
- Individual Outputs for Battery and Load
- Deep Discharge Protection (LVD)
- Output Dropper Diode
- Additional Battery Fuse
- Temperature Comp. Battery Charge Voltage
- Power Fault Detection Dry Contact
- Battery Management, Test
- Rackmounted Chassis/Integrated Battery Racks / (IP31/IP42/IP54/IP65)
- Input Isolation Transformer / 6 Pulse Structure