



Unit Shown: MSM-30-24V-U1



## High Frequency Battery Charger

The MSM Series is a Smart High Frequency Switch Mode charger specifically developed for Marine and Engine Starting applications. MSM series incorporates Power Factor Correction (PFC) Circuitry with a wide input voltage range in order to accommodate many marine charging applications.

The MSM has an Integrated Battery Charge Divider / Isolator which provides connections for charging up to three independent batteries simultaneously with a three-stage charge cycle. MSM's filtered output is suitable to charge different types of batteries for Marine/Industrial applications. This series is equipped with an LCD display for ease of navigation through the configurations menu. The LCD also displays Input AC voltage, Output DC Voltage & Current, and Alarm Status. The front of the unit provides three status LED indicators for the overall status of the system.

The MSM charger is built in a robust, non-corrosive enclosure that addresses harsh environments, meeting stringent safety and regulatory standards. MSM chargers can be used inside engine rooms as this series is ignition protected 33 CFR 183.410 compliant.

### Standard Features

- Smart Microprocessor Controlled High Frequency Charging Technology
- Single Phase AC Input 102-264VAC, 45-65Hz
- Complete Isolation from AC to DC
- LCD Digital Voltmeter & Ammeter
- Current Limit Protection
- Filtered Output for VRLA (Gel-Cell & AGM) Batteries
- Battery Isolator (Charge Divider allows for charging up to three Batteries Simultaneously)
- Input & Output Fuses
- On/Off Switch with Disable Option
- AC Voltage Metering
- Conformal Coated Circuit Boards
- Internal or External Temp. Compensation w/Disable Option (24ft Probe Included)

- Audible Charger Failure Alarm with LED Indicator and Form "C" Dry Relay Contacts
- IP22/NEMA Type 2 (with dripshield)
- 33 CFR 183.410 - Ignition Protection
- Corrosion Resistant
- Meets ABS & USCG Requirements
- CE Certified
- 2-Year Warranty

### Optional Accessories

- 11Y** External Temperature Probe 100 feet
- 57Y** Modbus (Ethernet) TCP/IP
- 551** VFD Display
- 545** Solar Input w/MPPT Controller
- 57B** 5 Isolated Output Terminals
- EAB-JBOX: Provides Low/High Voltage and Ground Fault alarm contacts (ordered separately)



Model Number	AC Input 100% (load)		DC Output		Case No.	Net Weight*	
	Volts (Nominal)	Amps	Volts (Nominal)	Amps		lbs	kgs
MSM-10-12V-U1	120	1.5	12	10	201	5	2.3
	240	0.8					
MSM-20-12V-U1	120	3.1	12	20	201	5	2.3
	240	1.6					
MSM-30-12V-U1	120	4.6	12	30	203	11	5.0
	240	2.4					
MSM-40-12V-U1	120	6.0	12	40	203	11	5.0
	240	3.2					
MSM-60-12V-U1	120	9.2	12	60	205	18	8.2
	240	4.8					
MSM-80-12V-U1	120	12.0	12	80	205	18	8.2
	240	6.4					

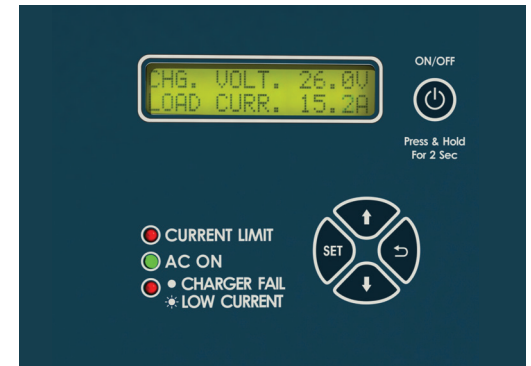
\*Weight does not include shipping packaging

Model Number	AC Input 100% (load)		DC Output		Case No.	Net Weight*	
	Volts (Nominal)	Amps	Volts (Nominal)	Amps		lbs	kgs
MSM-10-24V-U1	120	2.6	24	10	201	5	2.3
	240	1.4					
MSM-20-24V-U1	120	5.2	24	20	203	11	5.0
	240	2.7					
MSM-25-24V-U1	120	6.5	24	25	203	11	5.0
	240	3.1					
MSM-30-24V-U1	120	7.8	24	30	203	11	5.0
	240	3.8					
MSM-35-24V-U1	120	9.1	24	35	203	11	5.0
	240	4.4					
MSM-50-24V-U1	120	13	24	50	205	18	8.2
	240	6.3					
MSM-65-24V-U1	120	16.9	24	65	205	18	8.2
	240	8.2					
MSM-100-24V-U1	120	26.0	24	100	207	32.6	14.8
	240	12.6					

## Charger Specifications

- AC Input**  
 Wide AC Input Range 102 - 264VAC  
 Single Phase 45 - 65 Hz
- DC Output**  
 10 - 80A / 12V  
 10 - 100A / 24V
- Power Factor**  
 0.99
- Load Regulation**  
 $< \pm 0.5\%$
- Input Protection**  
 Fuse with Surge and Transient Protection  
 AC Over Voltage Protection
- Output Protection**  
 Current Limit Protection  
 Fuse with Surge Protection  
 Reverse Current Polarity  
 Thermal Protection  
 Short Circuit Protection
- LED Indicators**  
 Current Limit  
 AC ON  
 Charger Fail  
 Low Current
- Alarm Contacts**  
 Charger Failure
- LCD Digital Display**  
 AC Input Voltmeter  
 DC Output Voltmeter and Ammeter (1%)
- Environmental**  
 Operating:  $-20^{\circ}$  to  $50^{\circ}$ C ( $-4^{\circ}$  to  $122^{\circ}$ F)  
 Storage:  $-40^{\circ}$  to  $85^{\circ}$ C ( $-40^{\circ}$  to  $185^{\circ}$ F)  
 Relative Humidity: 0 to 95% non condensing
- Adjustable Voltage Range**  
 10.4 to 14.1 (12V)  
 20.8V to 28.2V (24V)
- Mounting**  
 Wall mount
- Cable Entry**  
 Bottom
- Finish**  
 Powder coated aluminum enclosure (corrosion resistant)
- Standards**  
 UL 1236, ABS & USCG Requirements  
 EN 60335-1 (Electrical Safety)  
 IEC 60335-2-29 (Electrical Safety)  
 IEC 60068-2-6 (Sinusoidal Vibration)  
 EN 55011 (Radiated EMI)  
 IEC 1000-4-2 (Electrostatic Discharge)  
 IEC 1000-4-4 (Electrical Fast Transient)  
 33 CFR 183.410 (Ignition Protection)

## LCD Display



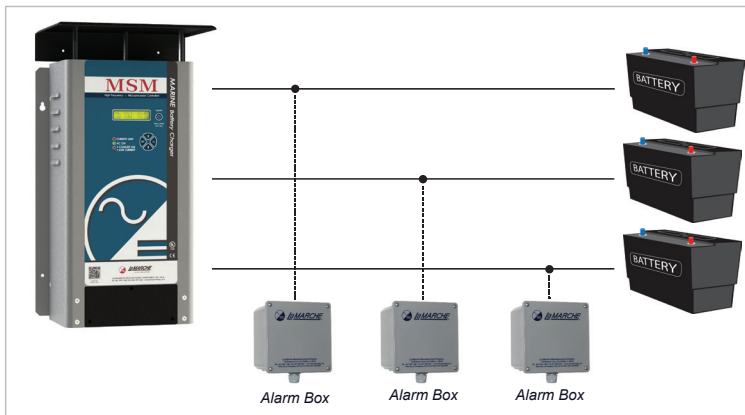
## Case Specifications

Case No.	Overall Dimensions					
	Width		Depth		Height	
	in	mm	in	mm	in	mm
201	9.63	244	6.16	156	14.20	360
203	9.63	244	6.16	156	18.30	464
205	9.63	244	9.85	250	18.30	464
207	13.63	346	8.57	217	18.31	465

## Optional External Alarm Box

EAB-JBOX-12V (also in 24V) available for additional remote annunciation. Alarm includes One Form "C" Contacts each for:

- High DC Voltage
- Low DC Voltage
- Ground Fault (Positive or Negative)



## Model Number Nomenclature

