



laMARCHE®

ISO 9001:2015 CERTIFIED

MSM

High Frequency Battery Charger / Rectifier



The MSM is a Smart High Frequency Switch Mode battery 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 withstands 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 (Output Fuses Accessible)
- On/Off Switch
- 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
- 57B** 5 Isolated Output Terminals
- 18W** Water Tight Connectors
- 19P** AC Cord (9.84ft) 14 AWG NEMA 5-15P
- 35F** External Termination Box (5 Outputs)
- 35G** Expanded Cable Entry Box
- EAB-JBOX: Provides Low/High Voltage and Ground Fault alarm contacts (ordered separately)

Specifications subject to change without notice

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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					

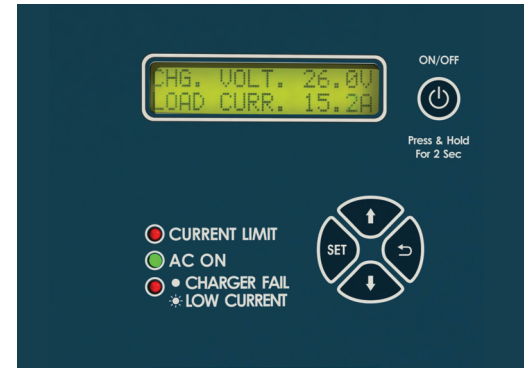
*Weight does not include shipping packaging

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 (2%)
- Environmental**
 Operating: -20° to 50°C (-4° to 122°F)
 Storage: -40° to 85°C (-40° to 185°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)

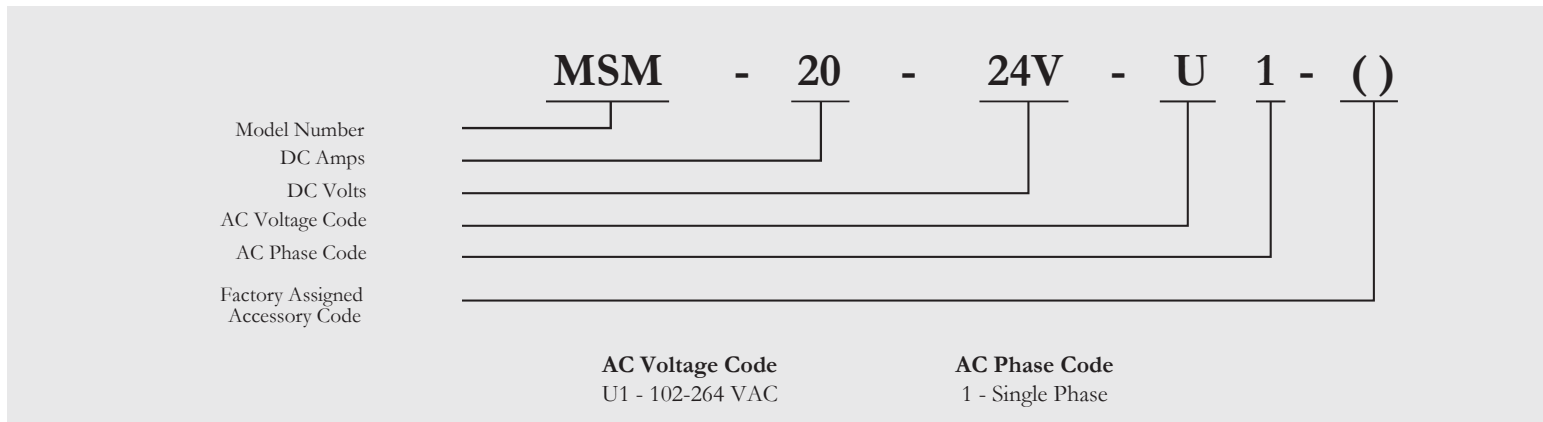
LCD Display



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	15.38	391	11.67	297	20.42	519

Model Number Nomenclature

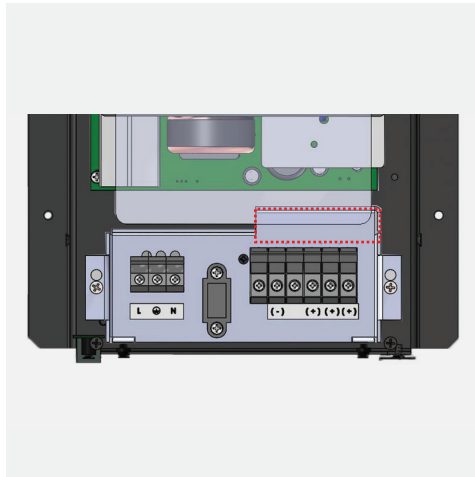


OPTIONAL ACCESSORIES



Termination Box

The optional termination box provides external space for managing the cables of multiple output/battery connections to the MSM battery charger. The termination box provides an easy carefree solution for installations that require additional space for connecting thicker cabling and multiple outputs.



Expanded Cable Entry Box

The optional Expanded Cable Entry Box provides an extra 0.70 inches of space for input/output connections. This makes connecting to the MSM battery charger easier for installations with multiple outputs or thicker cabling.



MODBUS Ethernet TCP/IP

Optional Modbus Ethernet allows for remote monitoring of the battery charger. This allows for easier servicing and maintenance of the battery charger by receiving alerts and battery charger data points remotely.



Water Tight Connectors

The optional watertight connectors offer robust protection against moisture, water, and dust. By forming a secure seal around cable connections, these connectors significantly reduce the risk of electrical faults, corrosion, and damage caused by environmental elements.



EAB-JBOX Alarm Box

The optional external alarm box is connected to the battery charger and includes one form "C" contact each for High DC Voltage, Low DC Voltage and Ground Fault (Positive or Negative) in addition to the charger fail alarm that is integrated into the MSM battery charger by default.