

SmartCharge

Automatic Battery Charger

DS-400/1

500-LC
MAS 2024R 24V-20A



SmartCharge Automatic battery chargers provide a cost effective solution to most industrial battery charging requirements.

Utilising the latest high efficiency switch-mode technology and micro-processor control, the SmartCharge 500-LC is suitable for charging most sealed or flooded batteries and is easily calibrated by the end user to suit the battery type. The multi-stage intelligent charging characteristic ensures accurate and efficient battery charging and is designed for permanent connection to the batteries maintaining them in a fully charged condition without overcharging.

The SmartCharge 500-LC is fully protected against overload, reverse battery connection, over voltage and over temperature.

INPUT SPECIFICATION

Voltage range, V_{IN}	100 - 264V AC
Frequency	47 - 63Hz
Input current	5.5A max.
Leakage current	<2mA / 240VAC

OUTPUT SPECIFICATION

Voltage / Current	24.0V Nominal 20A. Other voltages on request
Ripple and noise	$\pm 0.5\%$
Line regulation	$\pm 0.5\%$
Load regulation	$\pm 1.0\%$
Efficiency	Up to 92%
Overload protection	Constant current limit
Over temp. protection	Output shutdown with automatic recovery
Reversed battery protection	Automatic protection. Disabled when in PSU mode.

ALARMS AND LEVELS

DC output voltages	Float = Factory set to 27.6V. Boost (Bulk/Absorb) = Float Voltage +4%.
AC / charger fail	Loss of AC input or DC output voltage control
Low DC voltage alarm	Float voltage -12% alarm, -8% Reset
High DC voltage alarm	Float voltage +7% alarm, +5% Reset
Over voltage protection	30.5 Instantaneous lockout
Battery disconnected	Open circuit on DC output (Disabled in PSU mode)

FEATURES

- Cost effective
- Micro-processor control
- Small footprint & compact size
- Din rail mounting
- Automatic multi-stage charging
- Manual boost override
- Continuously rated
- Protections
 - Short circuit and overload
 - Over voltage
 - Over temperature
 - Reverse battery
- Universal AC input range
- Low ripple output
- Naturally cooled
- Simple calibration procedure
- Comprehensive alarm monitoring
- Fail alarm contact set

APPLICATIONS

- Standby & prime power generators
- Engine driven pumps and compressors
- Switch gear tripping
- Industrial control systems
- Robust PSU
- Alarm systems
- Navigational aids

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ISOLATION

Withstand voltage	Input - Output, Input - Earth 1.5kV AC
Isolation resistance	Input - Output, Input - Earth, Output - Earth 500V DC / 100M Ohms

ENVIRONMENTAL SPECIFICATION

Working temperature	-10°C to +50°C
Working humidity	20 - 90% RH
Storage temperature	-20°C to +85°C
Storage humidity	10 - 95% RH
Unpacked weight	1.7 kgs

FINISH

Aluminium / RAL9005 black fine texture

FAIL ALARM RELAY CONTACT SET (OPTIONAL)

Volt-free form C relay contact set for signalling of a fault alarm condition. The relay contacts de-energise 60 seconds after a fault occurs. The over voltage protection shutdown alarm de-energises the contacts instantly.

TERMINATION

AC input and DC output:

Connections terminate to rising clamp screw terminals and will accept 6.0mm² stranded cable.

Optional fail alarm:

Connections terminate to rising clamp screw terminals and will accept 2.5mm² stranded cable.

Connector 'C1' (signals):

Pins 7 and 8 should be linked when the charger should also function as a PSU.

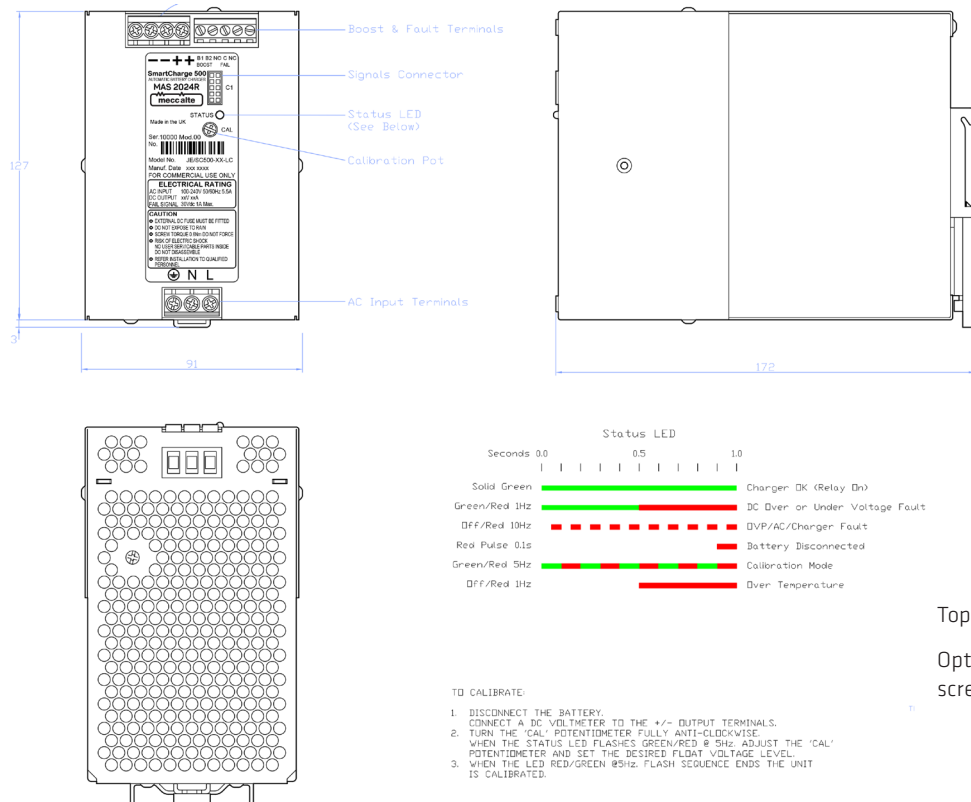
NOTE: Reverse battery and battery disconnected alarms are disabled in PSU mode.

The remaining pins are for expansion modules, communication interfaces, firmware upgrade, etc and should not be used.

ORDERING INFORMATION

Model No.	DC output
MAS 2024R 24V-20A	24V 20A

GENERAL ARRANGEMENT



Top-hat din rail mount

Optional brackets for screw fixing