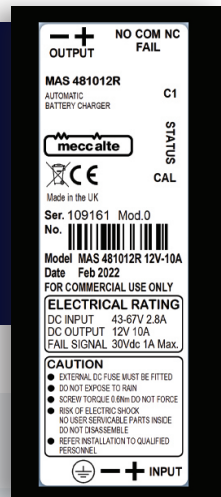


# SmartCharge

## Hybrid Automatic Battery Charger

DC 120-LC

MAS 481012R



SmartCharge DC 120-LC hybrid 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 DC 120-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 DC 120-LC is fully protected against overload, reverse input polarity, reverse battery connection, over voltage and over temperature.

### INPUT SPECIFICATION

Voltage range, $V_{IN}$	34 - 67V DC
Input current	2.8A @ 48V DC
Inrush current	5.0A @ 48V DC

### OUTPUT SPECIFICATION

Voltage / Current	12.0V Nominal 10A
Other voltages on request	
Ripple and noise	$\pm 0.5\%$
Line regulation	$\pm 0.5\%$
Load regulation	$\pm 1.0\%$
Efficiency	Up to 89%
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 13.8V. Boost (Bulk/Absorb) = Float Voltage +4%.
AC / charger fail	Loss of DC 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	16V 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
- Continuously rated
- Protections:
  - Input polarity
  - Short circuit and overload
  - Over voltage
  - Over temperature
  - Reverse battery
- Low ripple output
- Naturally cooled
- Simple calibration procedure
- Comprehensive alarm monitoring
- Fail alarm contact set

### APPLICATIONS

- Hybrid power generators
- Engine driven battery chargers
- Hybrid assist power systems
- DC lighting towers

# SmartCharge

## 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	0.8 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

### DC input and DC output:

Connections terminate to rising clamp screw terminals and will accept 2.5mm<sup>2</sup> stranded cable.

### Fail alarm:

Connections terminate to rising clamp screw terminals and will accept 2.5mm<sup>2</sup> stranded cable.

### Connector 'C1' (signals):

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

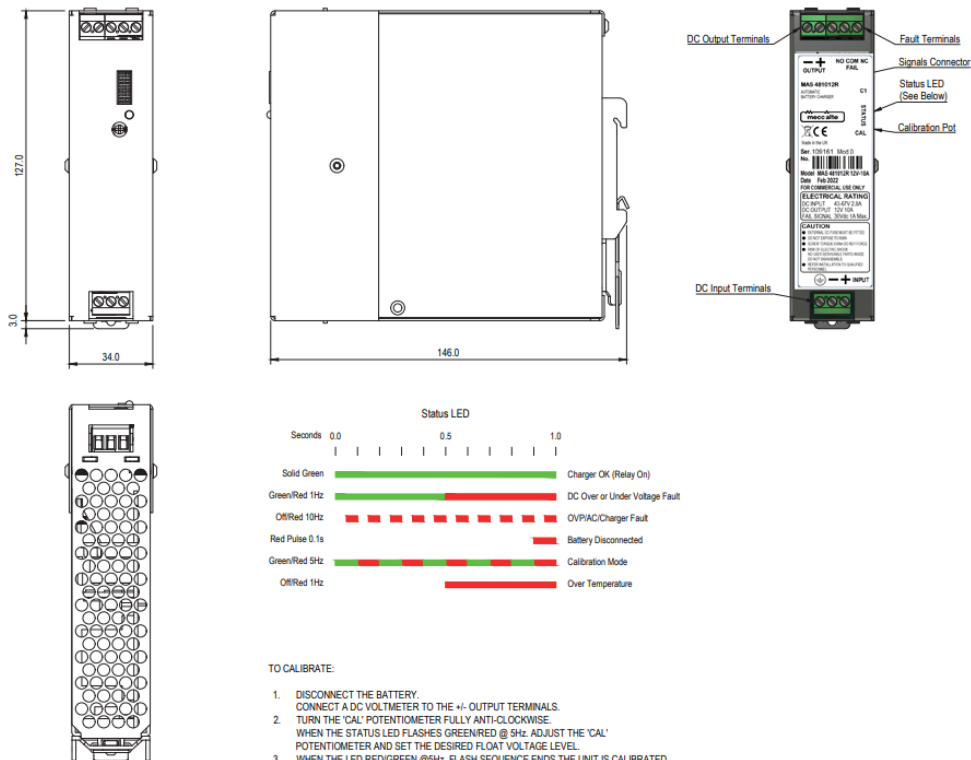
NOTE: Reverse battery and battery disconnected alarms are disabled in PSU mode.

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

## ORDERING INFORMATION

Model No.	DC output
MAS 481012R	12V 10A

## GENERAL ARRANGEMENT



Top-hat din rail mount. Optional brackets for screw fixing.