

# iCharge

## Automatic Battery Charger

DS-399/1

MAS 1024R 24V-10A

iCharge 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 range 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 iCharge 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 2.5A max.

Leakage current <1mA / 240VAC

### OUTPUT SPECIFICATION

Voltage / Current 24.0V 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 88%

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
- 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



# iCharge

## 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	1.2 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 6.0mm<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.

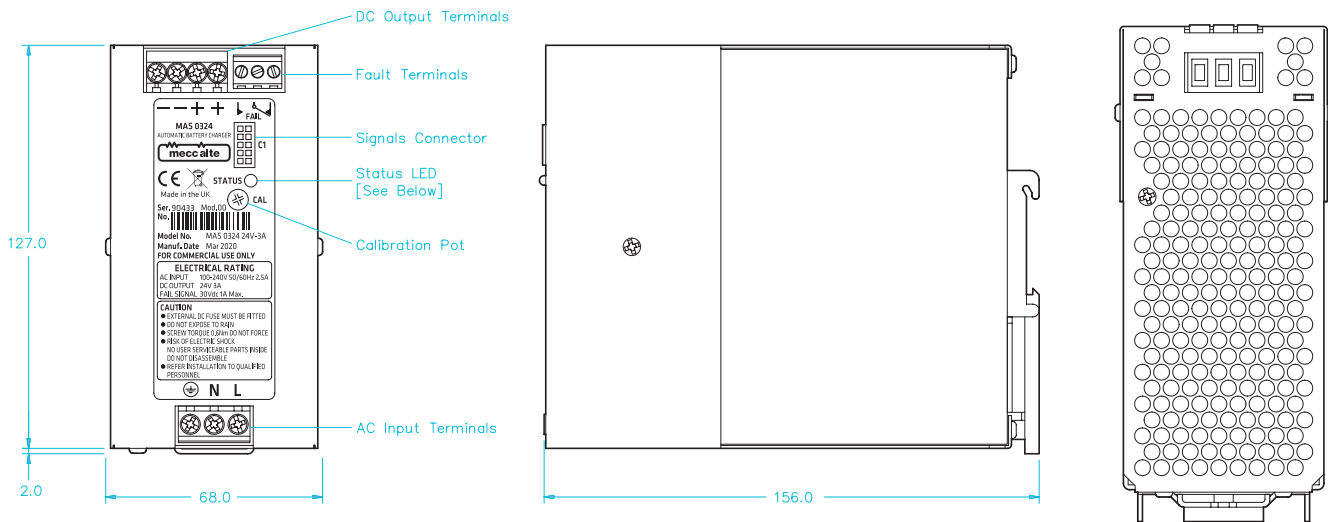
NOTE: Reverse battery and battery disconnected alarms are disabled in PSU mode.

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

## ORDERING INFORMATION

Model No.	DC output
MAS 1024R 24V-10A	24V 10A

## GENERAL ARRANGEMENT



**Status LED**

Seconds	0.0	0.5	1.0	
Solid Green	[Green bar]			Charger OK (Relay On)
Green/Red 1Hz	[Green bar] [Red bar]			DC Over or Under Voltage Fault
Off/Red 10Hz	[Red bar]			OVP/AC/Charger Fault
Red Pulse 0.1s	[Red bar]			Battery Disconnected
Green/Red 5Hz	[Green bar] [Red bar]			Calibration Mode
Off/Red 1Hz	[Red bar]			Over Temperature

### TO CALIBRATE:

- DISCONNECT THE BATTERY. CONNECT A DC VOLTMETER TO THE +/- OUTPUT TERMINALS.
- TURN THE 'CAL' POTENTIOMETER FULLY ANTI-CLOCKWISE. WHEN THE STATUS LED FLASHES GREEN/RED @ 5Hz, ADJUST THE 'CAL' POTENTIOMETER AND SET THE DESIRED FLOAT VOLTAGE LEVEL.
- WHEN THE LED RED/GREEN @ 5Hz FLASH SEQUENCE ENDS THE UNIT IS CALIBRATED.

Top-hat din rail mount