**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: ±0.5%
- Line regulation: ±0.5%
- Load regulation: ±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)

**APPLICATIONS**

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

<table>
<thead>
<tr>
<th></th>
<th>Input - Output, Input - Earth 1.5kV AC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Withstand voltage</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Isolation resistance</strong></td>
<td>Input - Output, Input - Earth, Output - Earth 500V DC / 100M Ohms</td>
</tr>
</tbody>
</table>

**ENVIRONMENTAL SPECIFICATION**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Working temperature</strong></td>
<td>-10ºC to +50ºC</td>
</tr>
<tr>
<td><strong>Working humidity</strong></td>
<td>20 - 90% RH</td>
</tr>
<tr>
<td><strong>Storage temperature</strong></td>
<td>-20ºC to +85ºC</td>
</tr>
<tr>
<td><strong>Storage humidity</strong></td>
<td>10 - 95% RH</td>
</tr>
<tr>
<td><strong>Unpacked weight</strong></td>
<td>1.7 kgs</td>
</tr>
</tbody>
</table>

**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.

**GENERAL ARRANGEMENT**

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**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>DC output</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAS 2024R 24V-20A</td>
<td>24V 20A</td>
</tr>
</tbody>
</table>

Top-hat din rail mount
Optional brackets for screw fixing