3546 LI Max. 28W
Charger for Li-ion batteries - switch mode

- 3-step charge control with current detection
- Universal input voltage (90-264 VAC)
- Wake up and low current start-up of deeply discharged batteries
- Error indication for reverse polarity, short circuit, charging battery packs with wrong number of cells and safety timer run-out
- With NTC input on request
- Order plugs and mains cord separately
- ECO-design compliance: DoE and CEC
- Approvals:
  - Medically certified
  - Safety: EN 60601-1 ed. 3.1
  - EMC: EN 60601-1-2 ed. 4
  - UL approved

For updates: see www.mascot.no

TECHNICAL SPECIFICATIONS

GENERAL INPUT/OUTPUT

| Input voltage: | 90-264 VAC |
| Line Frequency: | 47 – 63Hz |
| Switch frequency, approx.: | 40 kHz |
| Leakage current from batt. with mains switched off: | <0.4 mA @ nominal battery voltage |
| Temperature range:
  - Operating: | -25 °C - +40 °C |
  - Storage: | -25 °C - +85 °C |
| Ripple: | < 100 mV p-p |
| Dimensions (L×W×H): | 124 × 50 × 37 mm |
| Weight: | 220g |

SAFETY PROTECTION EMC

- Protection: Protected against reversed polarity and short circuit proof
- Insulation class: Class II
- Insulation voltage:
  - Primary – secondary: 4000VAC / 5700VDC
- Electrical safety std:
  - EN/IEC 60335-2-29, EN/IEC/ANSI 60601-1
- EMC standards:
  - Medical: EN 60601-1-2
  - Emission: EN 55014-1, EN 61000-6-3
  - Immunity: EN 55014-2, EN 61000-6-1
- Input terminal:
  - 2-pin IEC 60320 connector C8
- Output terminals:
  - DC connector, battery clips, push on terminals or open ends 4X
- IP-code: 4X

VERSIONS

<table>
<thead>
<tr>
<th>CHARGE CONTROL</th>
<th>Step 0 &lt; 10min (yellow)</th>
<th>Step 0 &gt; 10min (Red: 4 blinks)</th>
<th>Step 1 (yellow)</th>
<th>Step 2 (Flash yellow)</th>
<th>Step 3 (green)</th>
<th>Charge term when current is:</th>
<th>Restart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cells</td>
<td>Max output power (W)</td>
<td>Low Current start-up for deeply discharged batt.</td>
<td>Battery voltage too low</td>
<td>Charge Current</td>
<td>Charge Voltage</td>
<td>&lt;100mA or max. 1 hr.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>23W</td>
<td>CC 100mA±25mA when batt. &lt; 6V</td>
<td>0A/0V</td>
<td>2.5A ±0.3A</td>
<td>8.4V ±0.1V</td>
<td>8.2V</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>28W</td>
<td>CC 100mA±25mA when batt. &lt; 6V</td>
<td>2.2A ±0.2A</td>
<td>12.6V ±0.1V</td>
<td>12.3V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>28W</td>
<td>CC 100mA±25mA when batt. &lt; 12V</td>
<td>1.6A ±0.15A</td>
<td>16.8V ±0.1V</td>
<td>16.4V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>29W</td>
<td>CC 100mA±25mA when batt. &lt; 21V</td>
<td>1.0A ±0.1A</td>
<td>29.4V ±0.2V</td>
<td>28.7V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>29W</td>
<td>CC 100mA±25mA when batt. &lt; 30V</td>
<td>0.7A ±0.07A</td>
<td>42V ±0.3V</td>
<td>41V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Charging characteristics and LED indication *

<table>
<thead>
<tr>
<th>INDICATOR: YELLOW</th>
<th>INDICATOR: FLASHING YELLOW</th>
<th>INDICATOR: GREEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Voltage</td>
<td>Charge Voltage</td>
<td>Battery Voltage</td>
</tr>
<tr>
<td>Charge Current</td>
<td></td>
<td>No voltage, no current from charger!</td>
</tr>
<tr>
<td>Start Current</td>
<td>Low Current Start-Up at Vbatt &lt;3V/cell</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Error Mode if &lt;3V/cell after 10 minutes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cut-Off Current</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No current (0A)</td>
</tr>
</tbody>
</table>

**Step 0**
Start Timer (10 min)  

**Step 1**
CC Charge  

**Step 2**
CV Charge (max 1 h)  

**Step 3**
Charge complete  

Safety Timer (72 hours)  

* an animated video of this charging progress is available on our website

**BATTERY NOT CONNECTED INDICATIONS**
Battery not connected is indicated by FLASHING GREEN. In this mode charger will apply short pulses attempting to wake up deeply discharged batteries.

**ERROR INDICATIONS**
2 red blinks: Battery is connected to charger with wrong polarity!  
3 red blinks: Charger output is shorted. Check output cable connection!  
4 red blinks: Battery voltage is low. Check battery status or voltage.  
5 red blinks: Safety timer has run out. Check battery status or capacity.  
LED off: Battery voltage is too high. Check battery voltage.

**WAIT MODE INDICATIONS**
Yellow with 1 red blink: Battery temperature is too low (<0°C)  
Yellow with 2 red blink: Battery temperature is too high (>45°C)
Exchangeable AC plugs

EU plug adapter
Part no. 127000
Weight: 20.9 g

US plug adapter
Part no. 127100
Weight: 13.4 g

UK plug adapter
Part no. 127200
Weight: 29.2 g

AUS plug adapter
Part no. 127300
Weight: 21.4 g

2-pin IEC 60320 C7 mains cord
1800 mm
EU part no. 131306, UK part no. 131148,
US part no. 131368, AU part no. 013108