AVAILABLE NOW: MAXWELL 24-VOLT ENGINE START MODULE (ESM) FOR STARTING HEAVY DUTY DIESEL ENGINES

Give your customers increased starting reliability and equipment uptime with the new 24-Volt Engine Start Module from Maxwell. Whether you build or maintain buses, bulldozers, off-road trucks, agricultural equipment, cranes, graders, pavers, feller-bunchers, or portable compressors, we’ve got you covered with the high current 24-Volt cranking capacity your customers need. Effectively eliminate jump-starts, lost productivity, drivers/operators on standby time, and equipment downtime due to weak batteries.

Don’t leave starting to batteries. One Maxwell 24-Volt ESM takes over all engine cranking for engines up to 15 liters. And it provides high speed cranking from -40°F to +149°F (-40°C to +65°C), all the time, every time for hundreds of thousands of starts.  

**FEATURES & BENEFITS**

- No lead. No acid.
- Improves overall system power performance
- Shock & vibration resistant
- Built-in overcharge protection
- Low total cost of ownership
- Cold weather reliability down to -40°F (-40°C)
- Faster cranking

- Industry standard BCI Group 31 form factor
- Recharges fully in less than 15 minutes
  (Initial charge is 30 minutes or less)
- Provides 900-1100 CCA
- 4-year non pro-rated warranty
- Assembled in the USA

*Lead acid batteries still power ECM/ECU. Results may vary. Additional terms and conditions, including the limited warranty, apply at the time of purchase. See the warranty details for applicable operating and use requirements.
## MAXWELL ENGINE START MODULE: PRODUCT SPECIFICATION COMPARISON

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>ESM ULTRA 31/900/24V</th>
<th>ESM ULTRA 31/1100/24V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum engine size</td>
<td>12.5 L</td>
<td>15.0 L</td>
</tr>
<tr>
<td>Cold cranking amps</td>
<td>900 CCA</td>
<td>1100 CCA</td>
</tr>
<tr>
<td>Peak power</td>
<td>45.5 kW</td>
<td>50.7 kW</td>
</tr>
<tr>
<td>Input voltage (B+ terminal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output voltage</td>
<td>27.0 V max. (temperature dependent)</td>
<td>28.5 V max. (temperature dependent)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>Designed for heavy equipment environments -40°F to +149°F (-40°C to +65°C)</td>
<td></td>
</tr>
<tr>
<td>Current draw (on batteries)</td>
<td>20 A max. (from battery when charging) &lt; 10 mA (when fully charged - sleep mode)</td>
<td></td>
</tr>
<tr>
<td>Recharge time</td>
<td>15 minutes</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>BCI Group 31</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>7.8 kg (17 lbs)</td>
<td>8.2 kg (18 lbs)</td>
</tr>
<tr>
<td>Shelf life</td>
<td>4 years</td>
<td></td>
</tr>
</tbody>
</table>

### FOOTNOTES

1. CCA = \( \frac{C \times (V_{\text{max}} - V_{\text{min}})}{T + C \times \text{ESR}} \)

2. Peak Power = \( \frac{V_{\text{max}}^2}{4 \times \text{ESR}} \)

### ESM 24V INSTALLATION DIAGRAMS

**All 24V System**

- 24V Alternator
- 24V Vehicle Power
- 24V Alternator Cable
- 24V Starter Power Cable
- BCI Group 31

**Split 12V/24V System**

- 12V Alternator
- 12V Vehicle Power
- 12V Alternator Cable
- 24V Starter Power Cable
- BCI Group 31

---

**MAXWELL TECHNOLOGIES, MAXWELL CERTIFIED INTEGRATOR, ENABLING ENERGY’S FUTURE, BOOSTCAP, C CELL, D CELL and their respective designs and/or logos are either trademarks or registered trademarks of Maxwell Technologies, Inc. and may not be copied, imitated or used, in whole or in part, without the prior written permission from Maxwell Technologies, Inc. All contents copyright © 2015 Maxwell Technologies, Inc. All rights reserved. No portion of these materials may be reproduced in any form, or by any means, without prior written permission from Maxwell Technologies, Inc.**

---

**MAXWELL TECHNOLOGIES, MAXWELL CERTIFIED INTEGRATOR, ENABLING ENERGY’S FUTURE, BOOSTCAP, C CELL, D CELL and their respective designs and/or logos are either trademarks or registered trademarks of Maxwell Technologies, Inc. and may not be copied, imitated or used, in whole or in part, without the prior written permission from Maxwell Technologies, Inc. All contents copyright © 2015 Maxwell Technologies, Inc. All rights reserved. No portion of these materials may be reproduced in any form, or by any means, without prior written permission from Maxwell Technologies, Inc.**

---

**CONTACT US**

Maxwell Technologies, Inc.  
Global Headquarters  
3888 Calle Fortunada  
San Diego, CA 92123  
Phone: +1 (858) 503-3300  
Fax: +1 (858) 503-3301

ESM Sales Support: +1 (877) 511-4324  
ESM Technical/Warranty Support: +1 (888) 890-3337  
Email: esmsales@maxwell.com  
Web: maxwell.com/esm