

# START STRONG™

**Effectively eliminates costly jump-starts, late loads or Monday morning scramble with Maxwell's Engine Start Module.**



**Reliable starts. Anytime. Anywhere.** Managing costs and ensuring safe, timely deliveries is a tough job, but somebody's got to do it. That's why we want to make sure you're up to speed on a revolutionary new product, the ultracapacitor-based Engine Start Module (ESM) from Maxwell Technologies.

**Rugged, lightweight and low maintenance,** the ESM provides consistent, reliable diesel engine cranking performance for hundreds of thousands of starts.\* The ESM takes over all diesel engine cranking, delivering fast, reliable starts. Anytime. Anywhere.

## ESM benefits:

- Performs all engine cranking\*
- Reliable starts from -40°F to 149°F (-40°C to 65°C)
- Effectively eliminates costly jump-starts
- Extends battery life, lowering replacement costs
- Resists shock, vibration and overcharging
- Easily cranks diesel engines up to 16 L
- Limited 4-year warranty\*\*
- Assembled in the USA

## ESM fundamentals:

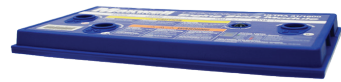
- Two models to choose from:
  - For 7 L - 16 L engines: ULTRA 31/1800
  - For 4 L - 6.9 L engines: ULTRA 31/900
- Provides 900 - 1800 CCA at every start†
- Industry standard BCI Group 31 form factor
- Installs quickly, replacing one Group 31 battery
- Recharges fully in less than 15 minutes (Initial charge requires 30 minutes or less)
- Maintenance-free

\*Lead-acid batteries still power ECM/ECU. Results may vary. See installation instructions for further information.

\*\*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.

†Ultracapacitor CCA is calculated differently than a battery using a different interval. Consult footnotes section of product datasheet for details.

# Engine Start Module Overview



## Plastic lid

Thermal weld (heat plate) to case



## Electronics assembly

With DC-DC converter and controller electronics



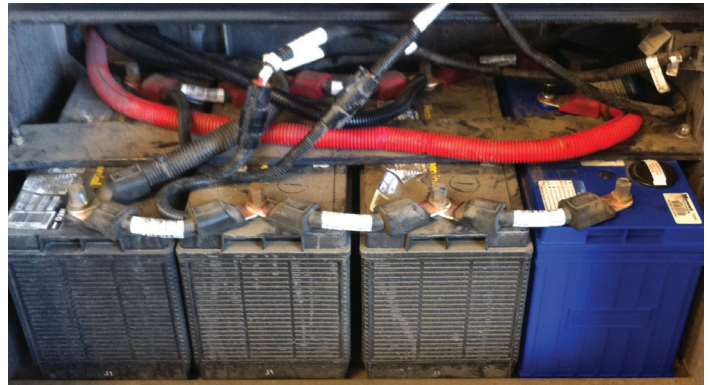
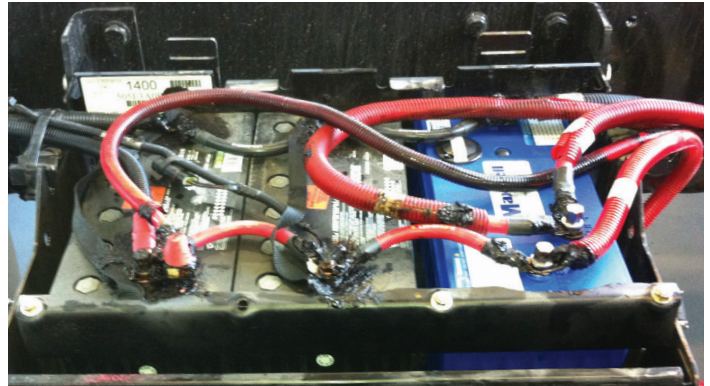
## Laser-welded cell pack

12 each 3000 Farad Maxwell ultracapacitor cells with plastic spacers and terminals



## Polypropylene plastic case

## ESM installation in 3 and 4 battery banks



## Additional reasons to install an ESM

- Reliable starts, regardless of the battery charge status or temperature<sup>††</sup>
- Improved delivery times and schedules
- Low total cost of ownership
- No lead. No acid.
- Lightweight - 13.5 - 19 lbs

See product and installation videos at:  
[maxwell.com/esm/videos](http://maxwell.com/esm/videos)



Scan to  
learn more  
about the  
ESM.

[maxwell.com/esm](http://maxwell.com/esm)

**Sales Support Technical/Warranty Support**  
**(877) 511-4324 (888) 890-3337**

<sup>††</sup>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 and datasheet for applicable operating and use requirements.

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