



Engine start reliability in extreme temperatures with a smart power module from Maxwell*

You live in your truck, you work in your truck, but your batteries don't always start your truck. In cold or freezing weather, after a night of running hotel loads on batteries or sitting in line at a weigh station with anti-idle laws, your batteries frequently do not have the power needed to start your engine.

Don't leave starting to batteries. The Engine Start Module from Maxwell Technologies will provide the power to start your truck consistently, for the life of your truck.

✧ *Replace a battery or add the module to a Class 6-8 truck for reliable starting from -40°C to +60°C / -40°F to 140°F



Maxwell Technologies
Engine Start Module

- ✧ Engine start reliability
- ✧ Green technology
- ✧ Low total cost of ownership
- ✧ Anti-idle laws solution
- ✧ Easy to install
- ✧ Cold weather reliability down to -40°F
- ✧ Improves overall system power performance
- ✧ Extends lead acid battery life
- ✧ Recharges in just 15 minutes
- ✧ 1800 CCA
- ✧ 4 year warranty**

** Limited warranty; additional terms and conditions may apply at the time of purchase.

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ESM SPECIFICATIONS (12V)

Voltage	Input voltage (B+) 10 - 18 V Output voltage (max.) 16.2 V
Cold cranking amps¹	1800 CCA (3 sec. crank)
Peak power²	32.8 kW
Recharge time	15 minutes (recharge from battery at 10 A)
Dimensions	BCI Group 31 13"L x 6 13/6" W x 9 7/16" H (33cm L x 42.7cm W x 23.97cm H)
Terminals	SAE 3/8"-16 UNC, 3 each
Environmental	Design for heavy truck battery box environments
Weight	21 lbs (9.5kg)
Current draw	25 A max. (from battery)

MAXWELL BACKGROUND

Maxwell Technologies, Inc. is the global leader in ultracapacitor technology and is helping to change the way energy is used and stored. Our ultracapacitor products provide energy storage and power delivery solutions for applications in an array of industries, including automotive, heavy transportation, renewable energy, backup power, wireless communications and consumer and industrial electronics.

Available in a range of component cells, modules and system configurations, our ultracapacitor products bring new levels of efficiency and power to everything from consumer electronics to hybrid vehicles and renewable energy sources, ensuring an ideal solution for virtually any application for up to 1 million recharge cycles or up to 10 years life.*

Our proprietary electrode technology and global manufacturing facilities allow us to deliver unsurpassed value to our customers, while tailoring performance to specific applications.

* Applicable in certain operating conditions; see datasheet for details. Actual results may vary.



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Brought to market by

INSTALL THE ESM IN JUST 5 EASY STEPS

1. Disconnect cable(s) connecting the batteries to the starter, and remove one battery.
2. Install the ESM and connect the negative battery cable to the **BATTERY** - terminal of the ESM.
3. Connect the existing cable(s) from the Starter Solenoid to the **STARTER** + terminal of the ESM.³
4. Connect Cable from the primary Battery Positive terminal to the **BATTERY** + terminal of the ESM.
5. Initial Charge - The ESM takes up to 18 minutes for an initial charge.
6. See the ESM Installation Video at: <http://www.maxwell.com/products/ultracapacitors/products/engine-start-module>.

FOOTNOTES

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

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

3. The vehicle starter solenoid must be the only connection to the **STARTER** + terminal. May require new wire to connect cab loads/alternator to batteries.

C = 1000 F (min.)

V_{max} = 16.2 V (for 0° C)

V_{min} = 7.2 V (per SAE)

T = 3 sec.

ESR = 0.002 Ohm (max.)

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