



Put an end to jump-starts with the Engine Start 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 Engine Start Module to a Class 6-8 diesel truck for reliable starting from -40°F to 149°F (-40°C to +65°C)



Maxwell Technologies
Engine Start Module
ESM123000-31

Features & Benefits*

- ✦ Engine start reliability
- ✦ 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 1800 CCA (3 second crank)
- ✦ Long life - limited 4 year 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.

ESM SPECIFICATIONS (12V)

Voltage	Input voltage (B+) 10 - 18 V Output voltage (max.) 16.2 V
Cold cranking amps¹	1800 CCA (3 second crank)
Peak power²	32.8 kW
Recharge time	15 minutes (recharge from battery at 20 A)
Dimensions	BCI Group 31 13"L x 6 13/16" W x 9 7/16" H (330mm L x 173mm W x 240mm H)
Terminals	SAE 3/8"-16 UNC, 3 each
Environmental	Designed for heavy truck battery box environments
Weight	21 lbs (9.5kg)
Current draw	25 A max. (from battery when charging) <10mA (when fully charged)

INSTALL THE ESM IN JUST 6 EASY STEPS

1. Disconnect cable(s) connecting the batteries to the starter, and remove one battery.
2. Install the ESM and connect the existing cable(s) from the Starter Solenoid to the **STARTER +** terminal of the ESM.³
3. Connect Cable from the primary Battery Positive terminal to the **BATTERY +** terminal of the ESM.
4. Connect the negative battery cable to the **BATTERY -** terminal of the ESM.
5. Initial Charge - The ESM takes up to 30 minutes for an initial charge (15 minutes thereafter).
6. See the ESM Installation Video at: <http://www.maxwell.com/esm> under the Features tab.

NOTES

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

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

3. The vehicle starter solenoid must be the only connection to the ESM **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 seconds ESR = 0.002 Ohm (max.)

Product dimensions are for reference only unless otherwise identified. Product dimensions and specifications may change without notice.

Please contact Maxwell Technologies directly for any technical specifications critical to application. All products featured on this datasheet are covered by the following U.S. patents and their respective foreign counterparts: 6643119, 7295423, 7342770, 7352558, 7384433, 7440258, 7492571, 7508651, 7590243, 7791860, 7791861, 7859826, 7883553, 7935155, 8072734, 8098481, 8279580, and patents pending.



Maxwell Technologies, Inc.
Global Headquarters
3888 Calle Fortunada
San Diego, CA 92123
USA
Tel: +1 858 503 3300
Fax: +1 858 503 3301



Maxwell Technologies SA
Route de Montena 65
CH-1728 Rossens
Switzerland
Tel: +41 (0)26 411 85 00
Fax: +41 (0)26 411 85 05



Maxwell Technologies, GmbH
Leopoldstrasse 244
80807 München
Germany
Tel: +49 (0)89 / 4161403 0
Fax: +49 (0)89 / 4161403 99



Maxwell Technologies, Inc.
Shanghai Trading Co. Ltd.
Unit A2,C 12th Floor
Huarun Times Square
500 Zhangyang Road,
Pudong New Area
Shanghai 200122,
P.R. China
Phone: +86 21 3852 4000
Fax: +86 21 3852 4099



Maxwell Technologies Korea, Ltd.
Room 1524, D-Cube City
Office Tower, 15F #662
Gyeongin-Ro, Guro-Gu,
Seoul, 152-706
South Korea
Phone: +82 10 4518 9829

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