

# 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.\*

## ULTRA 31/900/24V Engine Start Module

For heavy duty vehicles and equipment with maximum engine size 12.5 liters



## ULTRA 31/1100/24V Engine Start Module

For heavy duty vehicles and equipment with maximum engine size 15.0 liters



### 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<sup>1</sup>
- 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

SPECIFICATIONS	ESM ULTRA 31/900/24V	ESM ULTRA 31/1100/24V
Maximum engine size	12.5 L	15.0 L
Cold cranking amps <sup>1</sup>	900 CCA	1100 CCA
Peak power <sup>2</sup>	45.5 kW	50.7 kW
Input voltage (B+ terminal)	9.5 V - 32.0 V	
Output voltage	27.0 V max. (temperature dependent)	28.5 V max. (temperature dependent)
Operating temperature	Designed for heavy equipment environments -40°F to +149°F (-40°C to +65°C)	
Current draw (on batteries)	20 A max. (from battery when charging) < 10 mA (when fully charged - sleep mode)	
Recharge time	15 minutes	
Dimensions	BCI Group 31 13"L x 6 13/16"W x 9 7/16"H (330mm L x 173mm W x 240mm H)	
Weight	7.8 kg (17 lbs)	8.2 kg (18 lbs)
Shelf life	4 years	

FOOTNOTES

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

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

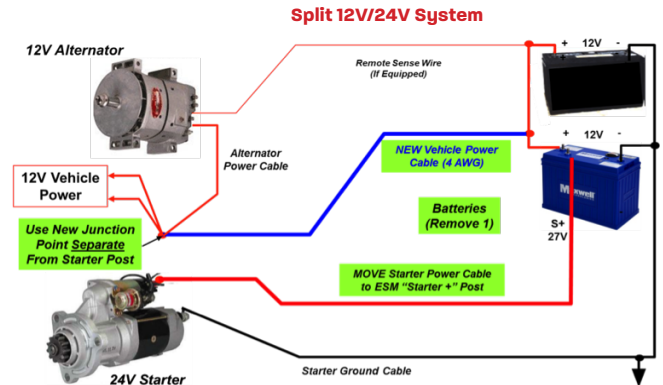
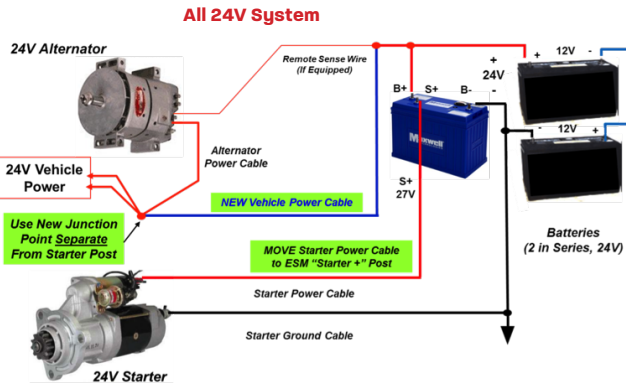
**ULTRA 31/900/24V**

C = 300 F (min.)  
 V<sub>max</sub> = 27 V (for 0°C)  
 V<sub>min</sub> = 14.4 V (per SAE)  
 T = 3 seconds  
 ESR = 0.004 Ohm (max.)

**ULTRA 31/1100/24V**

C = 340 F (min.)  
 V<sub>max</sub> = 28.5 V (for 0°C)  
 V<sub>min</sub> = 14.4 V (per SAE)  
 T = 3 seconds  
 ESR = 0.004 Ohm (max.)

ESM 24V INSTALLATION DIAGRAMS



\*See user manual for full installation details.

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, 7580243, 7791860, 7791861, 7859826, 7883553, 7935155, 8072734, 8098481, 8279580, and patents pending.

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