



## Engine Start Modules

Example product overview and introduction text.

Pana-Pacific Website (<https://www.panapacific.com/>)

### Product Highlights

Effectively eliminate costly jump-starts, late loads or Monday morning scramble with Maxwell's Engine Start Module (ESM). The ESM replaces one of the batteries in the truck battery box and connects directly to the starter motor to provide reliable starting in a broad range of temperatures and environmental conditions.

Increases Uptime

Effectively Eliminates Jump Starts

Cranks in Temperatures up to 149°F and as low as -40°F

Low Weight Increase Payload

Starts Truck Even when Batteries are Severely Discharged

Decreases Battery Replacement Costs

Lowers Fuel Cost Due to Idle Reduction

Two Models Available – Heavy Duty and Medium Duty

### Top Movers - (Insert Product Name)

Part Number	Description	Dimensions (L X W X H)	Product Weight	Diesel Engine Size	Input Voltage	Output Voltage (Max)	Peak Power	Cold Cranking Amps	Recharge Time	Terminals
PSO ULTRA31 1800	Ultracapacitor, Engine Start Module Heavy Duty	13" X 6 13/16" X 9 7/16"	21 lbs.	7 L - 16 L	(B+) 10-18 V	16.2 V	32.8 kW	1800 CCA (3 second crank)	20 minutes (recharge from battery at 10 amps)	SAE Type A post 3/8" thread
PSO ULTRA31 900	Ultracapacitor, Engine Start Module Medium Duty	13" X 6 13/16" X 9 7/16"	16 lbs.	4 L - 9.9 L	(B+) 10-18 V	16.2 V	16.4 kW	900 CCA (3 second crank)	8 minutes (recharge from battery at 20 amps)	SAE 3/8" - 16 UNC

### General Product Information

Maxwell Technologies is the leader in the development and manufacture of ultracapacitor power and energy storage solutions. Maxwell is also the leader in ultracapacitor-based starting solutions for owner operators and fleets alike. Designed in a Group 31 form factor, the Maxwell Engine Start Module (ESM) replaces one lead-acid battery in class 6-8 diesel trucks and performs all engine cranking – virtually eliminating jump starts. With no lead and no acid, the ESM lasts far longer than batteries.

Unlike a battery, the ESM has 3 terminals with the 3rd terminal dedicated and wired directly to the starter with no reverse flow of energy back to the batteries. Given that, even if the batteries are severely discharged, the ESM stays fully charged and ready to crank. Since the ESM is ultracapacitor based, it only takes one ESM to crank up to a 16L diesel engine in the harshest weather.

**ESM features:**

- One ESM replaces one lead acid battery in the battery bank
- Industry standard group 31
- -40°F to +149°F (-40C to +65C) operating temp range
- Weighs only 21 pounds (part number: PSO ULTRA31 1800)
- No lead and no acid

**Warranty Information**

FOUR YEARS OF WARRANTY COVERAGE – (no pro rate)

**Pana-Pacific Contacts**

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