

# THE PMP ENGINE START MODULE

Stop Start Failures.  
Cut Downtime.  
Save Costs.



PMP GROUP



## THE CHALLENGE

Extreme temperatures, inactive periods, heavy electrical loads, and aging batteries cause start failures in heavy equipment.

**Each failed start means lost production, higher maintenance costs, and increased safety risk.**

## BUILT FOR MINING

- 1. Smart, rugged design**  
Compact, sealed, vibration-resistant
- 2. Easy integration**  
Works with existing battery systems, no major mods
- 3. Long-term reliability**  
Over 1 million cycles with minimal degradation

| **RELIABILITY** | **SAFETY**

| **REDUCED COST** | **SUSTAINABILITY**

## READY TO ELIMINATE START FAILURES?

 [pmpgroup.io](https://pmpgroup.io)

 [sales@pmpgroup.io](mailto:sales@pmpgroup.io)

## THE SOLUTION

**Reliable Starts.  
Every Time.**

The ESM uses **ultracapacitor technology** to deliver a dedicated, high-power energy source for engine cranking—**independent of battery condition.**

This ensures instant, reliable starts even with weak or heavily loaded batteries.

## WHAT YOU GAIN

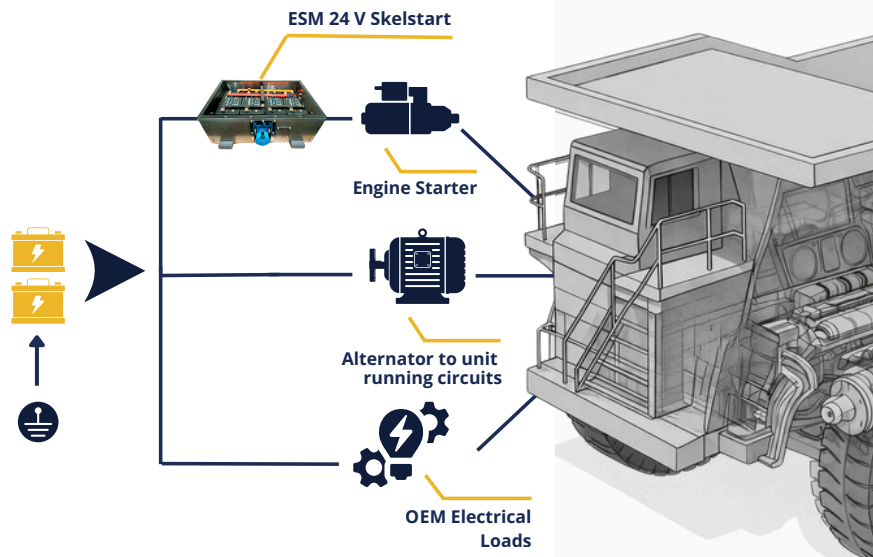
The ESM delivers measurable operational benefits across reliability, cost, safety, and sustainability.

- 01 Boost Fleet Availability**  
Eliminate start failures and unplanned downtime.
- 02 Lower Operating Costs**  
Reduce idling, fuel waste, and jump-starts.
- 03 Extend Battery Life**  
Minimise strain and replacement frequency.
- 04 Enhance Safety**  
Reduced vehicle/personnel interactions.
- 05 Support Sustainability**  
Lower emissions and battery waste.

# HOW THE ESM WORKS



- ▶ The ultracapacitor bank stores energy separately from the batteries.
- ▶ During engine start, the ESM delivers high-current cranking power.
- ▶ Once the engine is running, it rapidly recharges—without stressing the battery system.



## TECHNICAL CREDIBILITY

- Ultracapacitors rated for **1,000,000+ cycles** — designed to last the life of the equipment.
- Consistent performance in **extreme heat and cold**.
- Engineered for **heavy-duty duty cycles** and harsh environments.
- **Simple installation** and low maintenance.

## SAFETY & SUSTAINABILITY

- Integrated **de-energising discharge unit** for safe isolation during maintenance.
- Reduced idling lowers **fuel consumption and emissions**.
- Fewer battery replacements reduce **waste, procurement costs, and safety exposure**.

## EQUIPMENT APPLICATIONS

- Dump trucks
- Dozers
- Drill rigs
- Excavators
- Front-end loaders
- Water carts
- Road graders
- Drainage pumps
- Support vehicles
- Other fuel-powered equipment

## TECHNICAL SUPPORT

- Local PMP Group support for **installation, training, and optimisation**.
- No major modifications required to existing battery systems.

**START EVERY TIME.  
REDUCE DOWNTIME.  
IMPROVE SAFETY.**

**Contact us today!**

Discover how ESM protects your operation.

✉ [sales@pmpgroup.io](mailto:sales@pmpgroup.io)

🌐 [pmpgroup.io](http://pmpgroup.io)

