ENGINEERING
TOMORROW

Danfoss

Danfoss Editron | Off-highway

EDITRON is the **world's most sophisticated electric drivetrain system**, controlled by **powerful software** to deliver maximum efficiencies.

Saves operational costs up to

**30%**

www.danfoss.com/editron | EDITRON

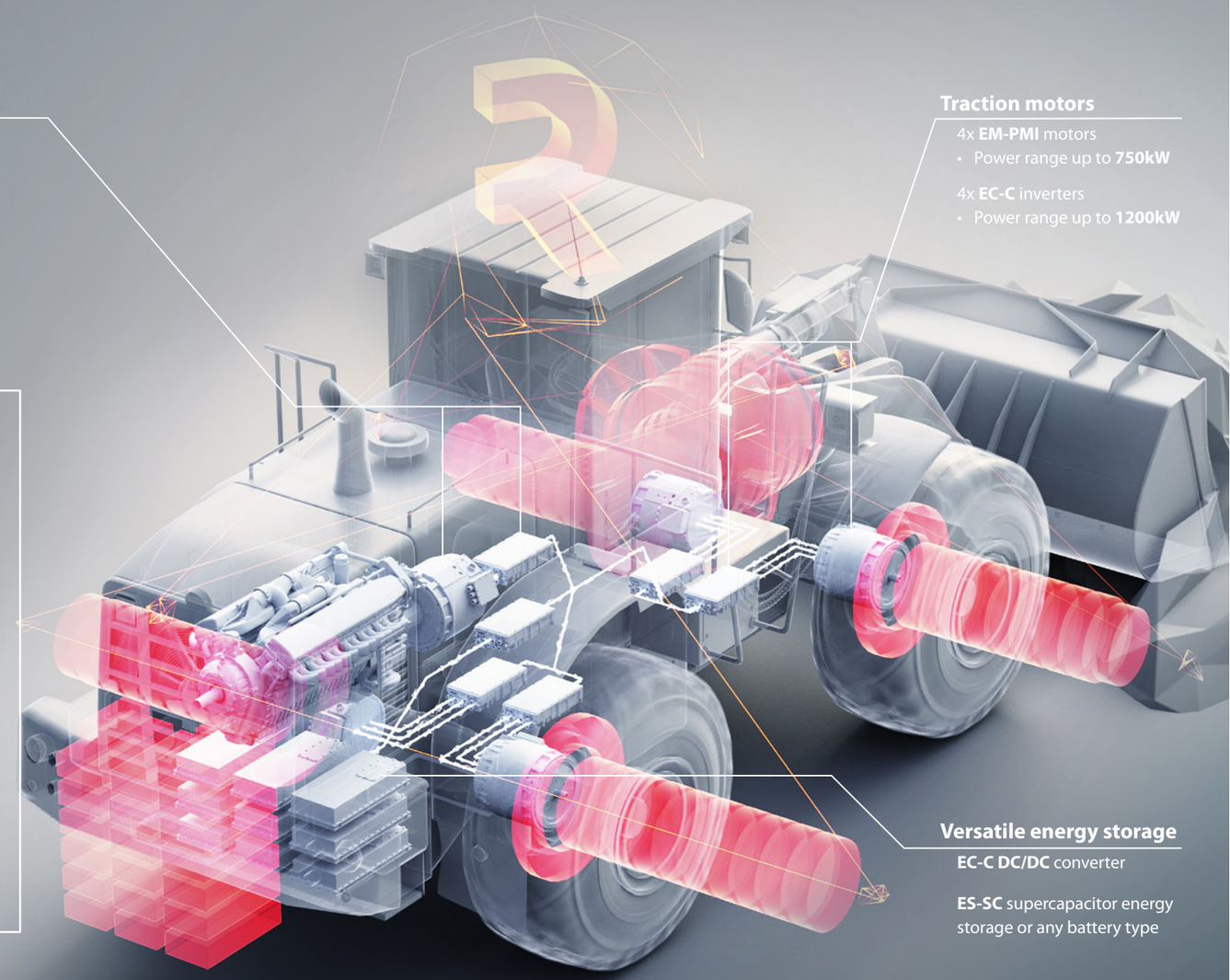
# Danfoss Editron
# Electricity in motion

Danfoss Editron is changing how the world moves with hybrid and electric powertrain systems for heavy duty vehicles and machines on land and sea.

Our team is working to enable a cleaner tomorrow through electrification, developing systems that deliver more power with less fuel consumption and fewer emissions. Our unique Synchronous Reluctance Assisted Permanent Magnet (SRPM) technology and software deliver market-leading efficiency to revolutionize hybrid and electric applications for commercial vehicles, machines and marine vessels within the power range of 30kW to 2,000kW. Our rugged and compact systems are teamed with smart software controls to provide a comprehensive drivetrain solution for our customers.

Based in Lappeenranta, Finland, our unit operates in the Netherlands, Hong Kong and Taiwan, serving our broad international client base, with exports to Europe and Asia representing 90 per cent of sales.

At Danfoss Editron, we've assembled some of the brightest minds in the industry to work on the technologies that will enable the world of tomorrow to do more with less, and ensure a pollution-free future.




**Danfoss EDITRON off-highway system benefits**

- Lower fuel/energy consumption
- Highest possible productivity and energy savings
- Easy integration
- Reduced $CO_2$ and small particle emissions
- Space and weight savings
- Improved handling and drive performance
- Higher efficiency
- Less audible noise
- Lower maintenance costs
- World class software development and user interface design

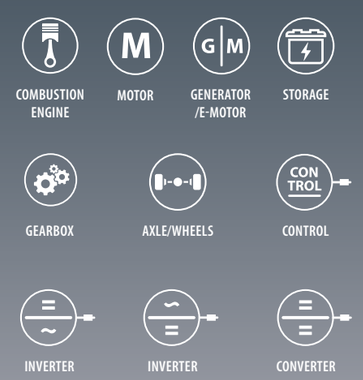
**EDITRON OFF-HIGHWAY SYSTEM** - SERIAL HYBRID

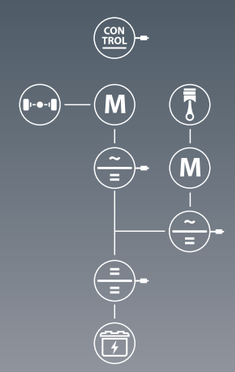
## Electrifying heavy-duty vehicles and machines

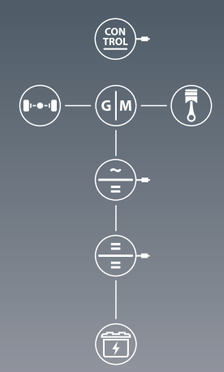
The EDITRON off-highway system has been designed from the ground up to ensure maximum efficiency at real-world load speeds. Designed for seamless integration, and available as both hybrid and fully-electric, the Editron off-highway system delivers high performance and fuel reduction savings of up to 50 percent in hybrid systems.

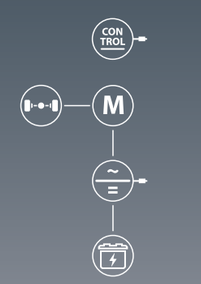
The system is optimized for harsh environment and offers unmatched efficiency and endurance even in the roughest conditions. Dust, moisture, mechanical vibrations and extreme temperatures are simply no match. Compact and lightweight, every EDITRON system is designed to last the entire life cycle of the machine.

The EDITRON systems offer a power range of 30kW to 2,000kW. A high tolerance to shocks and vibrations means excellent reliability. All components are liquid-cooled, guaranteeing reliability throughout a wide ambient temperature range and broad range of environments. Lightweight and compact, EDITRON saves space and allows for flexibility in installation. Our easy-to-use software platform makes system integration quick and easy and takes care of monitoring, diagnostics and set-up. Our advanced control software guarantees superior performance in even the most demanding situations.



# Steadfast commitment **to sustainable forestry**

The engineers at Logset were looking for a way to improve the existing function of its largest harvester in order to maximize its output without taxing the engine or damaging the harvest in the process.
While an obvious solution might be to use a larger, more powerful engine for the harvester, that option would only flatten the trees and damage the land before the trees could be harvested. They needed a better solution.

Together with Danfoss Editron, they designed the Logset 12H GTE Hybrid Harvester — the first of its kind in forestry machinery.

The EDITRON software controls and optimizes each individual component of the hybrid drivetrain, making power distribution in the 12H GTE Hybrid far more intelligent. With this application of EDITRON, the parallel hybrid system reacts instantly to the workload, providing an extra power boost to the 7.4-liter Final Tier 4 diesel engine. The hybrid system can quickly deliver up to 510 hp (380kW) and generate 2,000 Nm of torque. The heavy-duty horsepower guarantees that the machine can manage demanding applications.

The hybrid machine is very compact, yet delivers a 72 percent increase in power, 54 percent increase in torque and 5 percent noise reduction. It weighs 54,000 lbs while remaining in a higher power group normally only featuring heavier machines, offering increased power density. This means customers can have the same amount of power in a smaller machine.

Furthermore, the working efficiency of the 12H GTE Hybrid harvester is 27 percent higher than non-hybrid machines. The integration of EDITRON also significantly reduces the fuel consumption (by 20 to 30 percent) and CO2 and small particle emissions per felled cubic meter (by 25 percent), which is beneficial to both the operator and the environment.

## 12H GTE Hybrid forest harvester

| | |
|---|---|
| Manufacturer: | Logset Oy |
| Type: | Parallel hybrid |
| Delivery: | 2016 |

### SCOPE OF DELIVERY

- EM-PMI motor
- ES-SC energy storage
- EC-C DC/DC converter
- EC-C inverter
- Parallel hybrid system

### MAIN BENEFITS

- Power increase +72%
- 20-30% reduction in fuel consumption
- World's most powerful forest harvester - 360kW



# Developing **ZERO emission** construction sites

Danfoss Editron delivered electrification technology to support Pon Equipment AS in its development of a fully battery-operated 25-ton electric excavator.

Transforming diesel-powered excavators into fully electric earth moving machines will be key for meeting the Norwegian government's new policy on zero-emission construction sites. Diesel use in construction machinery accounts for about 20 percent of all $CO_2$ emissions in Oslo. The new policy has been put in place in order to support Norway's radical proposal, pledged in 2016, to become climate neutral by 2030.

The Cat 323F Z-line is a clean, green innovative machine, enabled by Danfoss' powerful EDITRON drivetrain system and controlled by Danfoss' proprietary software. The machine can operate for up to seven hours on a single battery charge under nominal load. The electric excavator is zero emission, and significantly quieter than the former diesel machine, which makes it ideal for use in urban areas with noise restrictions. EDITRON powertrain systems are rugged and compact, with smart software controls that are suitable for hybrid and electric applications within the power range of 30kW to 2,000kW.

The EDITRON drivetrain is a market leading technology when it comes to size and performance, and its efficiency and robustness are critical for the heavy-duty demands of the construction industry.

Electrifying the excavator brings multiple benefits for customers: zero emissions, safer and more reliable operations and shorter payback time.

## Electric excavator Z-Line

| | |
|---|---|
| Manufacturer: | Pon Equipment AS |
| Type: | Battery electric |
| Delivery: | 2018 |

### SCOPE OF DELIVERY

- EMP-PMI motor
- EC-C inverter
- EC-IDC battery charger
- EC-MG multiconverter

### MAIN BENEFITS

- Zero emissions
- Significantly quieter
- Safer and more reliable operations

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