Banke

Conversion from diesel to electric drive

Cleaner driving in cities

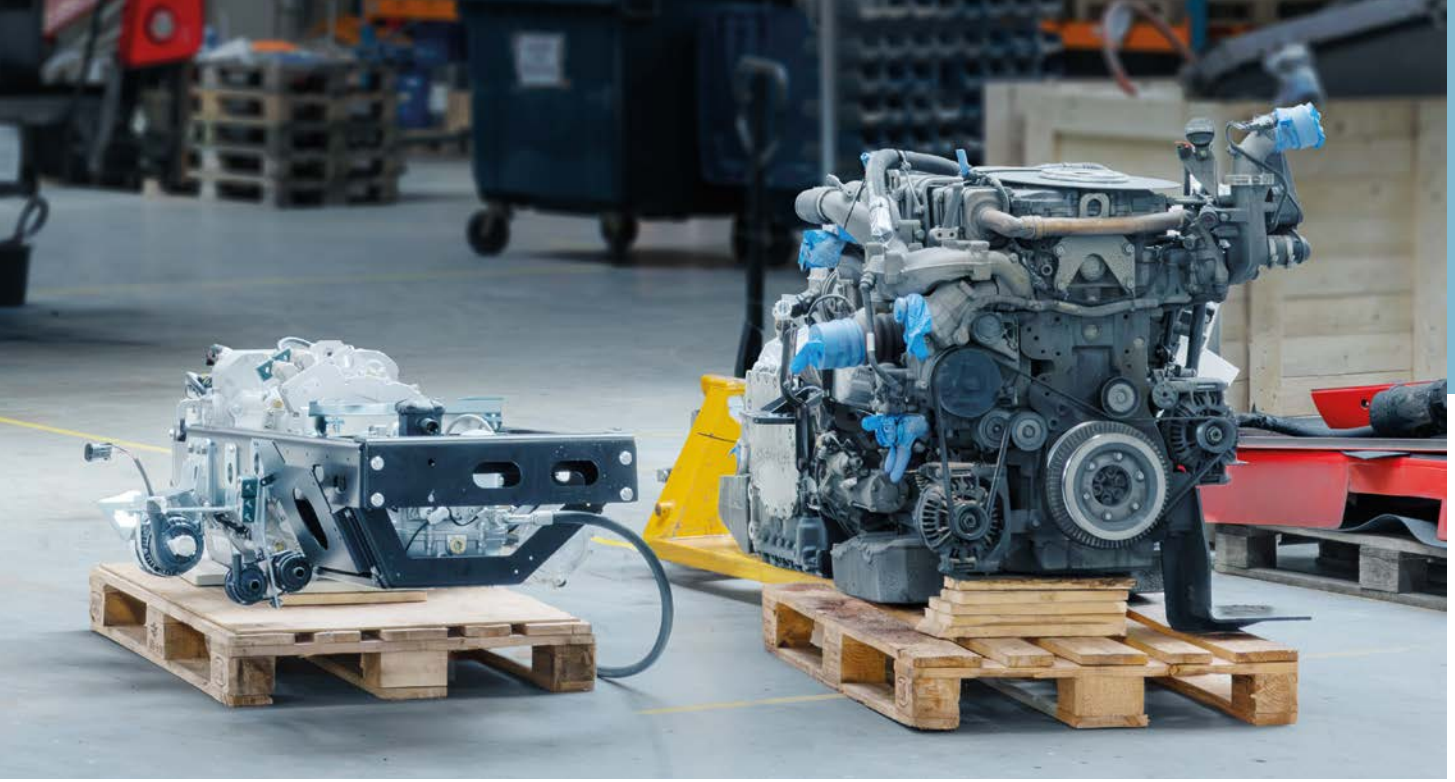
Electrification of commercial vehicles for emission-free urban transport

Traffic in large cities is one of the main causes of poor air quality. Diesel vehicles in particular emit pollutants such as nitrogen oxides and particulate matter, which not only pollute the environment but also pose a considerable risk to public health. Electric vehicles offer an effective solution for improving air quality in urban areas. An increasing number of commercial vehicles, aside from passenger cars, are being equipped with electric drives to make urban transport more sustainable and environmentally friendly.

The Danish company Banke ApS specialises in converting commercial diesel vehicles to fully electric. This complex process involves replacing the diesel engine with a compact, powerful electric motor and integrating advanced batteries and control electronics for efficient and reliable operation. Automation specialist ifm electronic is an important partner in this ambitious project, supplying robust components such as controllers and displays. Their collaboration demonstrates how innovative technology can revolutionise urban mobility.

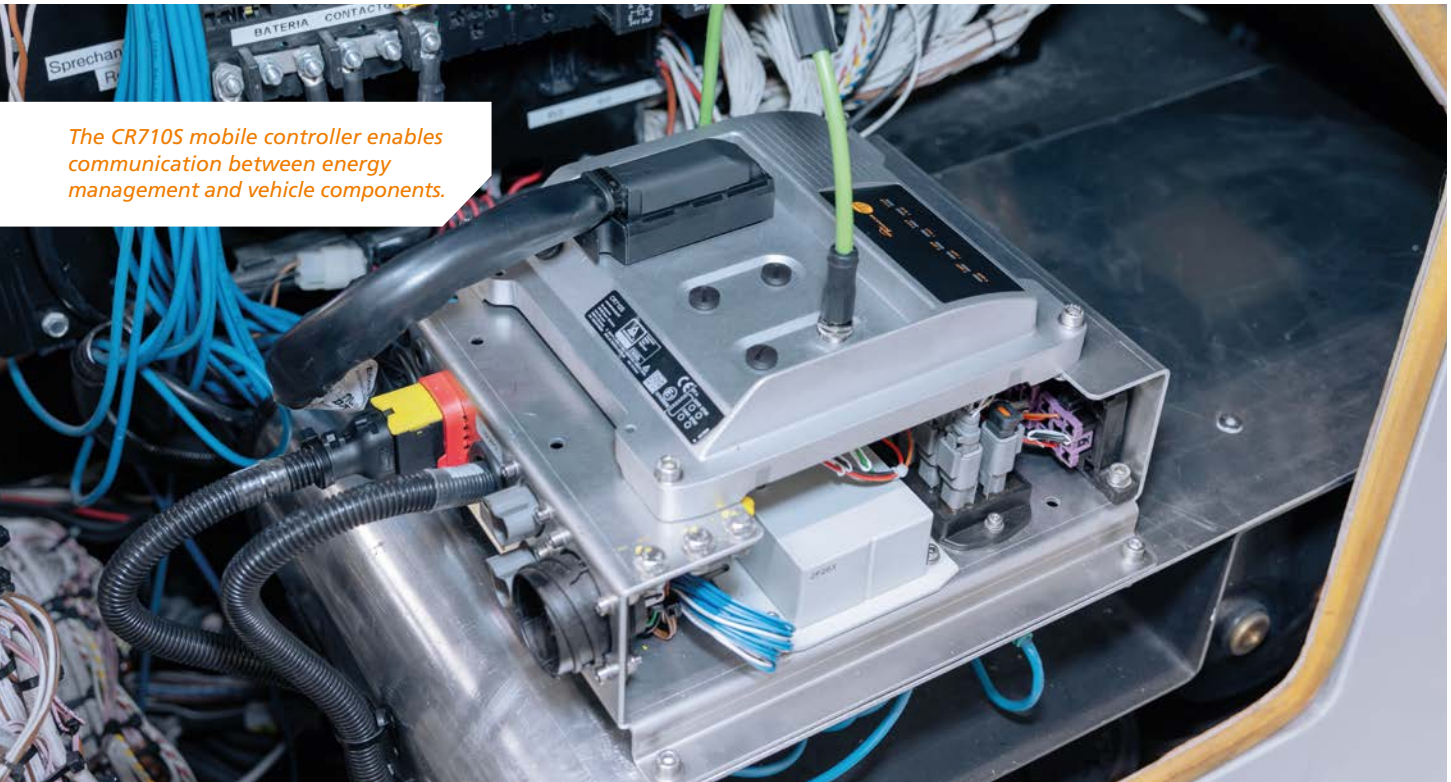
Banke ApS replaces diesel engines with modern electric motors.

Clean through the city: sightseeing on an electric bus.



Size comparison: electric vs. diesel.

> *Electrifying heavy-duty transport is a crucial step in reducing CO_2 emissions across the entire mobility sector.*



The CR710S mobile controller enables communication between energy management and vehicle components.

The challenge of electrifying heavy commercial vehicles

"Electrifying heavy-duty transport is a crucial step in reducing CO_2 emissions across the entire mobility sector," explains **Rasmus Banke**, Managing Director of Banke ApS. He sees significant potential especially in urban environments: *"What we are mainly seeing across Europe is that urban transport companies in particular want to electrify their fleets. This could apply to buses, as well as to refuse collection vehicles and truck-mounted cranes."*

However, converting heavy commercial vehicles to electric drive poses particular challenges. The high technical demands on power electronics, battery management and charging systems require innovative solutions and close cooperation among specialists. This is precisely where the strength of the partnership between Banke and ifm lies, with both companies working together to ensure an efficient and reliable transition to electric drives.

In the cockpit, the robust CR1203 graphic display provides the driver with all key parameters of the electric drive system.

A partnership in action: retrofitting sightseeing buses

In a current project, Banke has converted a fleet of double-decker sightseeing buses operating in German cities along the Rhine, including Bonn, Cologne and Düsseldorf. These buses now run on emission-free electric drives and are a compelling example of how electromobility can be successfully implemented in demanding urban environments. A range of customised components from ifm are used to meet the specific requirements of these electric drives.

For example, ifm's CR710S mobile controller, a dual control unit with safety certification, manages a wide range of control tasks between energy management and vehicle components, thus ensuring smooth operation.
Besides communicating with decentralised IO modules, the compact ifm CR0403 controller performs important control functions in the battery management system, which controls both the charging and traction currents. This system is crucial for the efficiency and reliability of the electric drive, as it ensures the battery capacity is utilised optimally while extending the batteries' service life.

In addition to these components, ifm offers a variety of other solutions that optimally meet the special requirements of electromobility. These include sensors that monitor the temperature and charge status of the batteries, as well as controllers that facilitate the integration of charging infrastructure and vehicle technology. These technologies play a key role in the electrification of commercial vehicles and help bring the vision of clean, sustainable mobility to life.

From local projects to a global movement

"We are now seeing strong growth almost everywhere in the world, at least in China, Europe and the USA – and this is a rapidly expanding sector," says **Rasmus Banke**, commenting on the industry's rapid growth. The electrification of buses, refuse collection vehicles and other urban commercial vehicle fleets is a decisive step towards cleaner air in cities and lower CO_2emissions.

The collaboration between Banke and ifm goes beyond technical innovation. It stands for social progress and shows how targeted partnerships can use state-of-the-art technology to improve the quality of life in cities. Projects such as the conversion of German sightseeing buses prove that widespread electromobility in cities is no longer a distant vision, but can already be implemented today.

Conclusion

By combining powerful electric motors, intelligent battery management systems and robust automation components, pioneers like Banke and ifm are paving the way for a future in which urban transport is both sustainable and environmentally friendly and the vision of clean city centres becomes a tangible reality.