



# strocco

## Why Electric Bus Operators Should Choose Hybrid Heating over Electric Heating Pumps

Hybrid heaters have a key role to play in the adoption of electric buses. How, you ask?

Well, their ability to switch between electric and combustion heating saves battery power, extending a vehicle’s range and making them a more viable option to operators.

As the transport sector’s focus on sustainability continues to grow, so does adoption of electric buses. They have many benefits, but as electric vehicles are still quite a new technology, they also have their limitations.

Current battery capacity means that operators are restricted in the distance a vehicle can travel between charges, and this range is shortened further when auxiliary systems also run off the battery.

*“This is why fully electric heaters aren’t always the best option,”* explains Søren Rasmussen, International Sales Manager at Strocco ApS; a Danish manufacturer of heaters for buses, trucks, trains and boats. *“This will likely change as the technology advances and battery capacity grows, but right now manufacturers are making a big mistake by using fully electric heaters in their buses.*

*“Think about Nordic countries in particular – during the cold months when the heating will be relied on heavily, the distance the bus can travel on a single charge will be dramatically reduced.”*

The 35.02 M – LE Hybrid Heater from Strocco ApS

In response to this industry challenge, Strocco ApS developed the industry’s first combined fuel-burning heater/electrically charged boiler.

Hybrid heaters ensure that passengers remain comfortably warm without limiting the vehicle’s range, simply by switching between the two power options depending on the scenario.

*“Electric is used whenever the battery is being charged and whenever battery capacity is above a designated percentage,”* says Rasmussen. *“Any other time, you can switch over to combustion mode.”*

Strocco ApS’ 35.02 M – LE (low-emission) Hybrid heater is a combination heater in one complete unit that’s specifically designed for use in electric and hybrid buses.

The heater, with its stainless-steel combustion chamber and automatic fan motor regulation, is delivered in DC in combination with one or two heating elements and provides an overall energy saving of approximately 10%.

The brushless water pump is mounted directly on the boiler, meaning the installation only requires two water connections.

Like all other Strocco heaters, this model can run on



alternative fuels such as hydrotreated vegetable oil (HVO) – also known as renewable diesel, biodiesel, ethanol and RME. In the case that HVO is used, the vehicle will be running 100% fossil free.

This model is also unique in that it's fitted with a complete electronic security system, including a 'flame super vision' photoelectric sensor and over-temperature safeguard, which re-establishes the contact through the application of light pressure.

*"When you use HVO or biodiesel the flame goes blue and this can be an issue because if that blue flame isn't recognised, then the combustion heater will not work. This is an issue for many heater manufacturers, but not us. We developed a special sensor for our heaters that enables us to reliably register the flame every time,"* Rasmussen says.

Several Stroco customers are already seeing the benefits of the hybrid heater.

*"One of our customers has thrown the electrical heater pump out of their buses in the Nordics and will only use our hybrid heaters in these vehicles,"* says Rasmussen. *"This is because they've seen how they can benefit from using a hybrid heater, such as improving their vehicles' range and getting a better indoor climate."*

## Benefits of the 35.02 M – LE Hybrid heater

- 10% energy saving
- Reduced consumption of fossil fuels
- Electronic error indication and fan motor regulation ensures cleaner combustion
- Single unit means easy fitting
- Low-emission nozzle

Stroco ApS has been a leader in the mobile heating market for almost 50 years. It offers a wide range of heating solutions, which are known for their high efficiency and minimal maintenance.

If you'd like to learn more about Stroco's heaters, please visit [www.stroco.dk](http://www.stroco.dk) or contact:

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# STROCO 35.02 M – LE Hybrid

For electrical and hybrid buses

Temp. outside: -8° C.

Temp. inside: 19° C.

**+45**  
years  
experience

**stroco**  
MOBILE HEATING SOLUTIONS

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