

# Charging Systems Product Brief



## High Reliability, High Efficiency Bi-Directional EV Charging Systems

Rhombus builds state-of-the-art, high-efficiency, industrial-grade bi-directional charging systems for medium and heavy-duty electric vehicles (EVs) fleets such as busses, delivery trucks, and industrial vehicles. In addition to building the dispensers and power conditioning systems (PCSs) for medium and heavy-duty EV charging systems, Rhombus also builds energy storage systems (ESSs) to provide extra capacity during peak charging windows, and to store energy from EVs at the end of their shift. Rhombus provides its VectorStat® energy management system (EMS) software and controllers to orchestrate and manage multiple charging sites for customers.

## Medium and Heavy-Duty EV Fleet Charging is Different Than Residential EV Charging

Building residential EV charging systems is simple – there is one type of vehicle that needs to be supported, and the charging system can simply be connected directly to the grid.

Charging systems for medium and heavy-duty EV fleets are fundamentally different. A large fleet has multiple vehicle types, potentially with radically different charging characteristics. The charging systems for medium and heavy-duty EVs must also support bi-directional charging, so that energy can be removed from vehicles at the end of their shift; not doing so impacts battery life. Most importantly, charging a fleet may require dozens or even hundreds of vehicles to be charged simultaneously, putting a significant (and perhaps unsupportable) load on the utility connection.



Worse yet, a failed or malfunctioning system doesn't simply impact a single person's vehicle – it likely impacts dozens of very expensive vehicles that transport hundreds or thousands of people. And a system that is not optimized for the vehicles it supports wastes energy, increasing the total cost of ownership (TCO) of the fleet.

## Why Charging Solutions From Rhombus Are Different

The team at Rhombus are THE experts in medium and heavy-duty vehicle charging, energy storage, and energy management systems. Our technical expertise, when combined with our experience in charging systems, means that we can design and adapt our systems to meet the specific needs of customers, their heavy EVs, and their deployment needs quickly and with extremely low technical risk. This speeds time to market while reducing development costs.

## Charging Systems for a Variety of EV Fleets

Rhombus Energy Solutions builds a complete line of charging solutions for medium and heavy-duty, EV fleets, including custom dispensers and multiple power conditioning systems (PCSs). Our charging solutions are fully bi-directional, with vehicle-to-grid (V2G) capabilities. All systems are NEMA 3R rated and UL 2202/2231/1741SA rated.

### 60kW Charger

- Continuous duty 60KW DC power
- Dual power stages

### 125kW Charger

- Continuous duty 125KW DC power
- Dual voltages for LV and HV batteries

### 500kW Charger

- Continuous duty 500KW DC w/ dual power stages
- Dual voltages for LV and HV batteries



Rhombus utilizes our expertise in high-power conversion systems to build and deploy high-ROI, high-efficiency, built-in-the-USA charging solutions for commercial and industrial electric vehicles worldwide. Let us know how we can help you increase the availability and reduce the TCO of your medium and heavy-duty EV fleet by contacting us at [info@RhombusEnergy.com](mailto:info@RhombusEnergy.com)



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