

Nmotion™ TR 160-45

Specification Sheet

The Nmotion™ TR 160-45 is designed as a mobile power source for trailer auxiliary equipment such as Transport Refrigeration Units (TRUs). The system utilizes in-wheel electric motors to capture regenerative power. This power is then transformed into electric energy, which is stored in the system's battery or shared with auxiliary equipment as needed. The Nmotion TR 160-45 system can also be charged with a standard shore AC power connection and is compatible with any TRU that runs on 480V 3-phase shore power for electric standby.

Nmotion TR 160-45 (Gen 2) Specifications

Energy Management

Energy Management Unit (EMU)	5' x 7' x 2' enclosure houses the power management electronics, battery, and thermal management system for EMU components, including the battery cells
Battery	45 kWh lithium-ion, commercial-vehicle grade battery with a water/glycol cooling loop thermal management system
Power output	480VAC 3 phase 18kW power output
Charging	480VAC 3 phase, 30A charging port, which provides 22kW of charge power Simultaneous single-plug battery charging and TRU standby functionality

In-Wheel Power Generation

eHub™ 80	Electric motors integrated with PreSet Plus® hubs and installed on forward axle of tandem
Nmotion™ Software Controls	Advanced system software controls that: <ul style="list-style-type: none"> ▶ Maximize free energy recuperation from deceleration events ▶ Optimize efficiency through energy balancing between TRU, tractor, and grid ▶ Ensure power is available by varying electric motor power generation
Motor Thermal Management	Dedicated water/glycol cooling loop and thermal management system for in-wheel electric motors

Telematics

ConMet eMobility	Nmotion TR 160-45 data available through ConMet eMobility Data capable of integration with OEM and third-party platforms
------------------	---

User Interface

Operator Controls	Located at the front driver-side of the trailer, the controls include the user interface with state of charge display, charge disconnect switch, and ON/OFF switch
Status Indicator Light	Front driver-side trailer green/amber indicators for operation status
Service Controls	Housed within the EMU, user interface for qualified technicians to diagnose and resolve faults

System Specifications

Weight	2,600 lbs.
Environmental	Full performance and capacity from -4°F to 130°F (-20° C to 54.4° C) Extensive environmental testing for reliability and durability
Safety	Layered internal safety monitoring and rollover detection Electrical isolation interlocks and automatic shutdown Manual emergency disconnects for first responders

Trailer Build Requirements

Refrigeration

TRU	Compatible with all Carrier Transicold Vector™ TRUs Supports all TRU setpoints and duty cycles System mimics standard shore power and operates as electric power source for TRU
-----	---

Trailer Configuration

Length	Compatible with 38' to 53' (tandem axle required)
Trailer Specs	Compatible with the following trailer OEMs through ConMet trailer build specifications: <ul style="list-style-type: none"> ▶ Great Dane ▶ Vanguard CIMC ▶ Hyundai Translead
Axle / Suspension	Meritor RideSentry™ Suspension Air ride suspension required Slider must be pinned
Tire Inflation	Only available on tandem rear axle Front axle is not compatible with automatic tire inflation systems (ATIS)

Tire & Wheel

Front Axle	Michelin 365 / 70R22.5 (low rolling resistance preferred)
Rear Axle	Standard dual tires compatible with ATIS
Hub Assembly	ConMet iron PreSet Plus® hub with TruTurn® brake drum

Lift Gate & Ramp Compatibility

Lift Gate (Rear)	Compatible
Lift Gate (Side)	Side gates possible under doors but will require technical evaluation
Ramp (Rear)	Not compatible
Ramp (Side)	Dependent on trailer configuration Technical drawing evaluation required