

Transport Refrigeration Units



Traditionally powered by an onboard diesel

engine or generator, transport refrigeration units or TRUs now come with electric standby and can plug into shore power at home base or during stops. With idle reduction laws in force in 38 states or jurisdictions, the market for electric TRUs is expanding. One estimate places the number of TRUs operating in the United States without electric standby capability at 350,000.

“The thing we at Carrier Transicold like about electricity is, it’s available everywhere.”

—Dave Kiefer, Director of Sales, Marketing,
Product Management, Carrier Transicold

Transport refrigeration units, TRUs or “reefers,” control the temperature of cargo in shipping containers on trucks, trains, ships, and in stationary applications. TRUs are typically used by private regional carriers that transport groceries, produce and other perishables, in long-haul trucking, rail and sea transport, and in large intermodal shipping operations.

TRUs vary in size, shape, and technology based on the size of container to which they are matched and the cooling or heating requirements. Some models can simultaneously heat or cool separate compartments of a single container.

Historically, TRUs have been powered by an integral diesel engine that typically operates at 8–38 hp, burning up to one gallon of fuel per hour. Today, one all-electric TRU is designed for stationary or portable cold-storage applications, operating at 115 V, 230 V, or 460 V.

Typical Input Demand: 8–9 kW for trailer TRU

Average Annual Energy Usage: 15,000 kWh



At ports or busy intermodal goods movement centers, refrigerated cargo containers can be plugged in or stacked in electric-powered “reefer” racks while awaiting ground transfer.



A big intermodal warehouse may have several hundred docking bays for TRUs.

The New England Produce Center in Chelsea, Mass., replaced 98 stationary diesel TRUs with all-electric models, reducing emissions by 1,025 tons and fuel consumption by 268,000 gallons, and saving \$590,000 in operating expenses each year.

All-Electric and Electric Standby TRU Manufacturers

Brand Name	Supplier	Contact Information
Carrier Vector	Carrier Transicold	www.carrier.com
Thermo King Precedent	Thermo King	www.na.thermoking.com

Additional EPRI Resources

Available for download at www.epri.com/ET.

Commercial and Industrial Guide to Electric Transportation, 2015, ID# 3002004898

This 16-page color brochure introduces the electric vehicles and equipment that are currently in use or being demonstrated, and the opportunities for further electrification in commercial and industrial applications.

Contact Information

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