Charging Outlet Standards for Cargo-Handling Equipment at the Port of Long Beach and Port of Los Angeles

Transitioning to zero-emission technologies for port operations is one of the primary long-term air quality objectives of the Port of Los Angeles and Port of Long Beach (Ports). To successfully demonstrate the emerging zero-emission technologies under development for terminal equipment, and ultimately, to lay the foundation for widespread commercialization of this equipment, the Ports have worked with the manufacturers, terminals, and regulatory agencies to identify and standardize the charging infrastructure requirements.

In mid-2015, the two Ports initiated a collaborative effort in conjunction with agencies (California Air Resources Board, South Coast Air Quality Management District, California Energy Commission), manufacturers (i.e., Transpower, BYD, U.S. Hybrid, Orange EV, Balqon) and infrastructure technology providers. Standardization of the charging requirements for electric tractors at port terminals was deemed necessary in order for the Ports to be able to offer uniform charging infrastructure throughout the terminals in a controlled manner while providing guidance to the manufacturers in designing their vehicles and their charging requirements.

For the electric battery-powered yard tractors and other similar electric battery operated cargo handling equipment, the Ports' engineers have developed a standard for the electrical charging outlets at port terminals.

The standardized rating of the charging outlet is as follows:

The charging outlets must be rated at 250 AMP, 480 volts, 3-phase, with maximum 13000 AIC withstand rating (for two phases for one second). The socket outlet circuit must be protected with a 300 Amp circuit breaker. The charger shall be U.L. listed or U.L. Site Certified.

The electric battery-powered yard tractors and other similar electric battery operated cargo handling equipment servicing the Ports must have on-board chargers. The Ports will only provide outlets.

In addition, the Ports have developed specific safety certification guidelines for electric tractors, draft indemnification language, and draft requirements for the charging system, the charging station receptacle and the tractor's charging plug. These guidelines are available upon request.