

FREQUENTLY ASKED QUESTIONS

WHAT IS FAST CHARGING?

Fast charging utilizes modern power electronic technology to return energy to industrial batteries faster than conventional charging. Fast charging typically delivers 40 amps or more per 100 ampere hours of battery capacity. This can eliminate the need to change batteries on electric trucks, increasing productivity and reducing cost.

HOW FAST ARE THE EXPRESS FAST CHARGERS?

Express fast chargers allow you to charge 12 to 80 volt industrial lead acid batteries at currents of up to 500 amps, bringing a battery from 30% to 80% state of charge (SOC) in approximately 1.5 hours, depending on battery size.

CAN FAST CHARGING SAVE ME MONEY?

Absolutely. Fast charging can eliminate the need for truck battery changes so that multi-shift operations are able to run on one battery. This translates to higher labor productivity, energy savings, and increased availability of manufacturing floor space for a quick ROI.

WHAT APPLICATIONS ARE SUITABLE FOR EXPRESS FAST CHARGERS?

The fast charging systems are suited to heavy-duty two and three-shift operations in manufacturing and distribution centers.

WHAT DOES OPPORTUNITY CHARGING MEAN?

Opportunity charging with dedicated fast chargers means that operators can charge batteries on their trucks during shift breaks in order to maintain the battery's SOC between 30% and 80%, eliminating the need to take the truck out of service for battery changes.

IS FAST CHARGING SAFE?

Yes, fast charging is safe. All components of the systems are UL/cUL approved.

WHAT IS THE DIFFERENCE BETWEEN A DEDICATED, PARALLEL AND SEQUENTIAL SYSTEM?

Dedicated systems deliver all of their DC output to one battery, returning the most energy to the battery during a given amount of time. Parallel chargers divide the power output over multiple substations. Charging multiple vehicles simultaneously reduces the amount of energy returned to each battery. Sequential chargers are multi-vehicle systems that charge one battery at a time, switching to another battery only when a lower state of charge is detected among the vehicles attached.

WHAT IS INSULATED GATE BIPOLAR TRANSISTOR (IGBT) TECHNOLOGY?

IGBT semiconductor technology represents the latest power electronic circuitry available for high-power industrial applications. The IGBT is a high-frequency switch that enables high current outputs with the greatest efficiency and power factor.

WHAT ARE THE BENEFITS OF DEDICATED IGBT CHARGERS?

Dedicated chargers ensure sufficient power to operate on a single battery through multiple shifts. IGBT power technology provides maximum efficiency for minimal electrical infrastructure costs. Aker Wade is the only company to manufacture dedicated IGBT fast chargers with or without a battery module ID (BMID).

FREQUENTLY ASKED QUESTIONS

WHAT IS THE DIFFERENCE BETWEEN THE THREE BASE CHARGER TECHNOLOGIES: FERRORESONANT, SCR AND IGBT?

A ferroresonant charger is capable of charging only one battery voltage. It has a relatively low efficiency rating. An SCR charger has multi-voltage capability; however the power factor varies depending on the specific battery voltage being charged. An IGBT charger is also multi-voltage, with a high power factor across the range of battery voltages. The IGBT system monitors the battery voltage response more than 10,000 times per second and safely maximizes the charging current without significant losses.

HOW LARGE ARE THE FAST CHARGERS?

The dimensions (WxDxH) of the Express fast chargers are as follows: UniMAX: 21" x 26" x 46" and TwinMAX: 33" x 32" x 52". These fast chargers offer the highest kilowatts per floor space required.

IS THERE A BATTERY MADE SPECIFICALLY FOR FAST CHARGING?

Yes, EnerSys is the only industrial battery company that manufactures a battery from the ground up specifically for fast charging applications. The Express fast charge battery is designed to have the highest charge acceptance in the industry, allowing operations to push more amps back into the battery faster, while managing the heat created so the battery is not damaged. The Ironclad® square tube technology behind the Express battery provides the most capacity available in standard battery dimensions. More capacity allows the vehicle to run longer and harder between charges. This capacity also means that when dropping a plate size to accommodate vents, the Express battery can still exceed the capacity of a standard flat plate battery without vents.

HOW WILL FAST CHARGING AFFECT THE LIFE OF MY BATTERY?

Fast charging does not create more wear and tear on a battery than conventional charging. Electronically controlled charge algorithms ensure a safe and effective battery recharge. The total ampere hour life of the battery remains unchanged. Fast charging simply increases the energy return rate.

HOW DOES FAST CHARGING AFFECT THE GASSING OF THE BATTERY?

The effect of fast charging on the battery is no different from conventional charging.

WHAT IS THE LIFE EXPECTANCY OF AN EXPRESS FAST CHARGE BATTERY?

Warranty states three years based on 160% of the rated battery capacity per day. The warranty also requires at least one equalize charge per week.

WHAT IS NEEDED TO MAINTAIN MY EXPRESS FAST CHARGE BATTERY PROPERLY?

The Express battery comes fully equipped with watering systems, dual cables and connectors designed especially for ease of connection to the Express fast chargers.

WHAT KIND OF DATA IS COLLECTED?

An Express fast charger automatically identifies the battery for charge optimization and provides data on voltage, temperature, charge time and ampere hours returned. Software is available for thorough analysis of all aspects of the charge cycle.

IS SPECIAL TRAINING REQUIRED FOR FAST CHARGING?

Operators need only basic instruction in how to connect and operate the unit.