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Factory-installed inverters are a must have for many fleets

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In Joe Egan's office, a framed picture shows a long-haul tractor, or more precisely, its charred remains. "It's not one of our trucks, but it illustrates what can happen when an electrical fire is caused by a bad inverter installation," he says. "It gives a visual reminder to any driver who comes into my office what can happen if an inverter isn't installed correctly."

As director of maintenance for Richmond, Va.,-based [Abilene Motor Express](#), a 350 tractor fleet, Egan says inverters have long been a popular addition to the fleet's trucks. "Drivers have always wanted the comforts of home and AC power is at the top of the list. If you're on the road, you want to be able to plug in a TV, laptop or microwave," says Egan. "Plus, several of our drivers use CPAP machines. Prior to 2009, we were allowing our drivers to install their own inverters, but that became an increasingly difficult situation for our company. We were worried about poor installations – thus the picture on my wall – plus when they moved to another truck they would want to pull out the inverter and reinstall it in the new truck. That was a headache for them as well as for us. So, in 2009, we changed our policy and decided to have inverter/chargers factory-installed with each new truck order. That ensured a proper installation and gave drivers what they wanted. It's been a great decision."



According to Egan, the company runs a mix of tractors – Volvo VN780s, the new Kenworth T680, some Freightliners and Macks. Each truck maker offers Xantrex inverter and inverter/chargers ranging in power from 1,000 to 1,800 watts. Each is rated at double their power for "surge" power (the power needed for the initial load when a microwave turns on for example). Plus, they are equipped with a low-voltage disconnect (LVD) to shut down the inverter, once the system detects low-battery power. This safeguard preserves the starting power in the battery.

According to Steve Carlson, OEM sales manager for Xantrex, when it comes to getting even more from inverters, many fleets are gaining extra "staying-on" power by installing dedicated deep-cycle batteries. "They'll add additional cost, but unlike a starting battery, they can be deep discharged with no less impact on battery life, and the LVD can be set to 10.5 volts versus 11.8," he says. "In many cases, the driver can go a full rest-period without worry of running out of power. We also recommend the dedicated batteries when drivers are using medical equipment, such as CPAP machines to ensure they have enough power for their sleep schedule."

At Gordon Trucking, based in Pacific, Wash., inverter/chargers are also a must-have. The company uses Thermo King TriPac APUs on all its long-haul trucks to provide auxiliary heating (via bunk heater) and air conditioning. The APU also features a Xantrex 1800-watt system, for hotel power loads.

"A quality inverter is very important within that system," says Kirk Altrichter, vice president of Gordon Trucking. "In earlier APUs we were running, an off-shore brand inverter was used, and it gave us nothing but trouble. When the inverter went out, that meant our drivers couldn't use hotel loads in the cab and sleeper."

So, we were very pleased that our new TriPac units were equipped with the Xantrex inverter – we haven't had a problem whatsoever and that's been big for us, and for our drivers. I can tell you that offering AC power to our drivers is a huge retention factor for us. It does make a difference."

With the TriPac APU, Gordon Trucking uses four AGM batteries which the inverter converts to AC power for all the truck's hotel loads. Once the system detects the battery bank needs recharging, the APU automatically fires up to recharge the batteries. Once the batteries are topped off, the APU shuts down.



Since Gordon Trucking's inverters come with the TriPac system, the long-haul trucking company is set for power conversion. But for fleets that don't have inverters integrated into their APUs, Altrichter has some words of wisdom. "With inverters, you truly get what you pay for," he says. "Installation is also critical, you have to have the right wiring to match the amperage draw — it doesn't take much to burn down a truck. In the early days, we saw the problem with drivers installing inverters themselves, so we decided back in 2006 that our trucks should have inverters – we wanted to provide them with AC power and we wanted the installation done professionally."

According to Carlson, proper installation and a quality inverter go hand-in-hand. "Most inverters you find at a truck stop are not UL approved," he says. "And that's where most inverters are purchased. I can tell you unequivocally, that it is worth the extra cost to buy an inverter with a 'Regulatory Listed' approval – such as UL or ETL with UL458 rating. This means the inverter was inspected and approved by an independent agency, which safeguards against issues with electricity. UL458 is the listing for inverters and chargers in mobile applications. They must meet strict vibration, environmental, and thermal requirements to be approved for that listing."



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