



## MOBILE POWER: PORTABLE INVERTERS PROVIDE POWER ON THE ROAD

**F**or power on-site or on the road, a truck-based inverter system can provide a versatile source of high-quality electricity, wherever it is needed. Whether one needs power inside the vehicle for a phone charger or laptop PC, or an external outlet for drills, sanders, grinders, and more, a mobile inverter can provide a solution that is both safe and versatile.

Available in a range of models, a mobile inverter hooks up to a vehicle's starting battery or an auxiliary battery, and converts the direct current (DC) to alternating current (AC), making it compatible as a power source for electrical equipment. Thanks to the proven utility and reliability of this technology, mobile inverters are commonly used on many types of commercial and privately owned vehicles, powering everything from power tools and communications gear to coolers, microwaves, and portable office equipment.

Mobile inverters come in a range of sizes and power outputs, typically ranging from 150 watts (suitable for smaller equipment, such as laptop PCs), to 3,000-watt systems (capable of powering

larger household appliances like those commonly used in recreational vehicles). The smallest inverters include an adapter that plugs easily into a cigarette lighter. However, the larger systems require additional equipment, such as custom wiring, and an industrial-strength DC inverter fuse.

While a vehicle equipped with a mobile power system can charge its batteries by idling the engine, a battery charger provides the option of charging the system by plugging it into a source of grid-based power or, if the user is in the field, by using a portable generator.

### SOLAR POWER FOR MOBILE FIELD OFFICES

Higher output inverters, commonly used in the RV industry, are increasingly used in combination with a rooftop solar power system. This type of solar-electric solution can be an ideal power source for a remote field office, testing station, or on-site quality-control laboratory.

Versatile and dependable, a solar power system can provide a reliable source of high-quality electricity for lights, computers, testing equipment,

sensors, heaters, and fans—all without grid access, generators, or ongoing costs for utility power or fuel deliveries. As a mobile power alternative, today's solar technology offers a solution that is clean, silent, and cost-effective.

Although the size, configuration, and output of these systems may vary from one application to another, the way the technology operates is basically the same. A typical solar power system uses one or more photovoltaic solar modules to collect the sun's energy, a battery to store it, and an inverter to convert it into usable AC electricity. Anytime the user needs power, the inverter draws electricity from the battery and converts it for use with the user's AC electrical equipment. The solar system then recharges the battery to ensure it is always topped up and ready to go.

In recent years, advancements in the design and construction of these components have greatly enhanced the effectiveness of a solar-powered solution. Today's solar modules are more durable and efficient than ever, offering decades of uninterrupted, maintenance-free power.



A Go Power!™ 3,000-watt mobile inverter provides power on the road.



The inverter is installed safely and securely within a locking utility cabinet.



An external receptacle provides access to power from outside the vehicle, even with all doors securely closed.

Photos courtesy of Axton Fleet Systems, San Antonio, Texas, USA

FOR more  
INFORMATION



Carmanah Technologies Corporation is a designer and manufacturer of solar-powered LED lighting and solar power systems for off-grid and mobile power applications worldwide. Carmanah's Go Power!™ DC and AC mobile power products are regularly used and trusted in thousands of utility, fleet, commercial trucking, recreational, and emergency service vehicles around the world. For more information, please visit [www.invertersolutions.net](http://www.invertersolutions.net).

## MODIFIED SINE WAVE OR PURE SINE WAVE?

Whether powering a mobile office or a vehicle on the go, the type of equipment being powered helps determine the right inverter for the job. In general, today's mobile power market offers two types of power inverters: modified sine wave and pure (or "true") sine wave. The most economical type—modified sine wave inverters—produce a modified square wave that is sufficient for most devices, but is typically of a lesser quality than electricity from the power grid. Pure sine wave inverters, on the other hand, produce a smooth power wave that is as good as or better than power from the electric utility. Choosing the right inverter for a specific application depends on the types of equipment that need to be used for the job.

Traditionally, modified sine wave inverters have proven to be a versatile all-around power source for running typical loads like lights, small appliances, and TVs. Affordable and readily available from the automotive aisle of many department stores, modified sine wave inverters offer an inexpensive alternative for most mobile-power applications. Some devices, however, may run poorly or not at all with a modified sine wave inverter. Cordless tools may not charge correctly, products with variable-speed motors like electric drills may not operate properly, and sensitive electronic equipment like communications gear may experience interference from a modified sine wave power source. For these applications, a pure sine wave inverter is the answer. By providing a reliable source of high-quality power, a pure sine wave inverter enables many products to run more efficiently, and may even help prolong the life of electrical tools and sensitive electronic equipment.

Once equipped with a mobile power supply, there may be a temptation to plug in too many appliances at the risk of overloading the inverter. Though a good quality inverter may avoid permanent damage by shutting down temporarily before it can overload or overheat, this problem can be avoided altogether by choosing an inverter with enough power to handle all of the required equipment from the start.

Carmanah Technologies, the Canadian-based provider of Go Power!™ mobile power products used in thousands of utility, fleet, and commercial trucking applications around the world, recommends choosing a system based on the type of equipment to be powered, but with enough capacity to manage additional equipment in the future. A professional installer can help choose the best equipment for the job, including a suitable inverter, the correct gauge of wiring, and the appropriate level of fuse protection, to ensure safe and trouble-free operation for many years to come.

## POWER ON THE GO

Mobile inverters can offer a lot of flexibility, greatly increasing the type of equipment that can be powered from the vehicle. No longer limited to specialized DC-powered mobile equipment, vehicle operators can bring tools and conveniences from home or the shop, and simply plug them into the standard electrical outlets provided on the inverter.

With a choice of modified or pure sine wave models, and a range of outputs available, there's a mobile inverter to suit most applications and budgets. Thanks to today's mobile inverter technology, a reliable source of high-quality power is never farther away than the user's vehicle. ♦

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