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Charging correctly

As vehicle electronics have moved on, it is vital operators are using 21st-century battery charging systems to avoid doing serious damage to a vehicle. Rupert King reports

From the outside, coaches and buses still resemble their predecessors from decades gone by, but underneath, advances in vehicle electronics, have brought huge changes.

Modern day public transport requires an increasing range of products to keep passengers entertained and comfortable, forcing the hand of vehicle manufacturers to update electronics and the batteries that support them.

Simple lead acid batteries are no longer the only battery type around, modern batteries can be either GEL or absorbant glass mat (AGM) and can contain materials such as calcium or silver, only recently seen on a modern coach or bus, and being used increasingly in commercial vehicle applications. Gel batteries and absorbed glass mat (AGM) batteries are now the norm, and these require a more complex charging cycle to maintain performance and prolong their lifespan.

Yet most battery chargers on the market are exactly the same as they were 20 or 30 years ago which not only means the majority of operators are failing to charge their batteries to their potential, but that they are risking catastrophic damage to their vehicle's electronics system by using chargers without necessary safeguards. Most importantly, given that no-one wants to remove the battery from the vehicle to charge it these days, it is vital that when charging a battery in situ that the charger is fitted with overvoltage protection to ensure that the electronics in the vehicle itself cannot be damaged.

"The drains on a battery are higher than they used to be," Neil Pulsford, UK commercial director at GYS explains. "Years ago you would use a battery for about two seconds - to start your vehicle - and for the rest of the day the battery was recharging, but that isn't the case anymore."

Intelligent systems

GYS is a French manufacturer of battery chargers, vehicle starters and battery support systems. Last year it turned over €66m and the firm has doubled in size in four years, twice.

"We're serious about battery chargers," Neil says. "The difference between a simple



Above: UK commercial director Neil Pulsford. Below: GYS' Batium 15/24 battery charger



technology, cheap charger and a modern one is the charging curve and safety features. A simple transformer cheap charger won't charge to 100% and critically probably won't protect your vehicle. Operators are connecting £300,000 coaches to the national grid and risking expensive damage to their electronics."

GYS' Batium 15/24 is an intelligent charger with over-voltage protection, eliminating any



Above: GYS Inverter 70:24. Below: GY Start 724E vehicle starter

damage a power surge could cause. The control panel allows the user to select the voltage application - 6 V, 12 V or 24 V batteries can be used with the 15/24, and the current can be set to 7 A, 10 A or 15 A. "Most people will opt for 15 A thinking the more power, the better, but you don't always really want that," says Neil. "It will charge quickly, but not as well."

On the face of it, the 15/24 is a charger like any other - a box with a wall plug at one end and positive and negative connectors at the other. But inside, the micro processor controlled circuit board instructs the unit when and how to charge.

GYS calls it an intelligent charger as it knows when it is connected to a battery, what type of battery it is connected to and modifies its output accordingly. The common test of rubbing positive and negative connectors together won't work on the Batium 15/24 - the unit will know it is not connected to a battery and won't emit any current voltage at all until it is. The complex charging curve it uses is suitable for all types of battery, from a traditional lead acid to a modern, state-of-the-art gel battery. Only by

using complex, multi-stage charging curves will a battery ever be charged to 100%.

"The safety aspect of it is a real USP," Neil stressed. "You could leave this connected for a week if you wanted to - it wouldn't do any damage. It is simply not able to emit a dangerous charge. If there's a surge going into the mains in the workshop, it won't affect the charge going into the vehicle, and anyone can use it as it is totally safe. With older technology cheaper alternatives, the whole engine management system could be at risk."

Product range

It is a similar story with starters as with chargers, only the issues are arguably even more serious.

Rather than spending a few hours charging your battery, if at 5am you discover a flat and you need a bus starting there and then, a powerful starter is the solution. Yet suddenly pumping 100's of amps into a vehicle needs to be done carefully to protect against damage.

GYS' 724E is a high performance vehicle starter

aimed at commercial vehicles and is equipped with the necessary protection to ensure its use is safe. Another key feature is the remote start button, which allows a coach or bus to be started by just one person, as the driver can press the remote then start the ignition from his cab, eliminating the need for a second pair of hands.

If your vehicle is too far away and mains power isn't an option, booster packs are also among the GYS product line up. "A common complaint about booster packs is that they don't last long, but with ours, you have a very, very high performance battery, and we equip it internally with a Batium battery charger ensuring that it is always recharged to the highest possible standard, so it really will last if regularly properly charged," Neil stresses.

Technology in battery chargers comes to the fore again when the vehicle is in the workshop as well. For vehicle repairers or workshops, GYS has what Neil believes is the only 24 V battery support unit on the market. When the engineers are working in 'key on, engine off' mode, it is entirely dependent on the battery for power. Diagnostic work is a big drain on the battery and energy is soon sapped from even the most powerful of modern batteries. As batteries discharge, voltage drops, and as soon as voltage drops below a usable level, problems will begin and diagnostic readings may become inaccurate.

If an engineer was reprogramming certain parts of the electrical system and voltage became insufficient, they are running the very real risk of rendering some components useless.

By connecting the GYS battery support unit to a vehicle, whatever the engineers are pulling out, the unit provides. So if 20 amps are being pulled from whatever the engineers happen to be doing, the support unit will input this amount into the system, so that battery is dormant, maintaining its charge for when you need it to start the vehicle next. The GYS Inverter 70:24 Battery Support Unit will provide support up to 70 A (12V) and 35 A (24V). It is also a very advanced battery charger making it a vital tool for the modern workshop.

Distribution

The GYS range is to be sold in the UK through a network of distributors. At present, Intertruck - the commercial vehicle subsidiary of Unipart - is the main route to market into the bus and coach sector for GYS, although the firm is actively looking to widen its team of sales partners.

Clearly passionate about the quality range of products GYS manufactures, Neil is confident operators will start to realise the benefit of paying around £170 for a professional charger with over-voltage protection, rather than buying a low technology cheap alternative. When what is at risk is of such value, the decision to spend just a little more seems a no-brainer. ■

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