Lead Acid Battery Charger 12V/7A

ACCUMATE PRO12V7A

Extra Powerful Dual Program multi-stage charger with 7A Constant current for fast and thorough charging of Odyssey® as well as other lead acid batteries.

Program 1 : for Odyssey®- as well as Deep Cycle batteries Odyssey®- batteries are commonly fitted as after-market upgrades to custom cruisers and other heavy V-twin motorcycles whose engines require higher than average cold cranking Amps. However this type of motorcycle is often used at relatively low engine speeds and for short journeys. The vehicle's charging system does not have adequate opportunity to recharge the battery which therefore becomes progressively discharged. The battery ultimately becomes very difficult to recharge and often ends up as a warranty claim, which creates both direct and/or indirect costs and an unfair product perception for manufacturers Hawker-Enersys. This is why they have been looking for a charger that will more effectively allow users and service shops to recharge these batteries even from a severely discharged state. Hawker-Enersys recommended charging program for Odyssey® batteries is in practice similar to the program required for Deep Cycle batteries used in many applications such as golf caddies &, battery-driven vehicles of various kinds).

Program 2 : for all other 12V lead-acid engine start batteries used on heavy motorcycles such as H-D, BMW, Guzzi, Gold Wing etc, and for automobile batteries.

Specifications

The multi-stage battery-interactive charging program is broadly similar to those of the other chargers in the AccuMate PRO range but with 7 Amps constant current output for 12V batteries only and with some detail differences in the charging program or algorithm as explained below.

As with all AccuMate PRO chargers, the AccuMate PRO 12-7-S automatically adjusts its charge voltage settings by -24mV/°C, so in warmer ambients, voltage settings are lower, in cooler ambients, higher. This is recommended practice for professional level chargers especially for GEL-electrolyte & other technically advanced modern batteries. 20°C (68°F). These parameters are as prescribed by Hawker-Enersys (25°C default) and all other battery manufacturers (20°C default).

The Odyssey® battery is an Absorbed Glass Mat (AGM) battery (sometimes also called "starved electrolyte") as are Yuasa's MF batteries, but the Odyssey® has numerous very thin pure lead plates allowing a relatively very high charge current and an abnormally high rate of discharge (high Cranking Amps). As regards charging requirements these are more like those of a GEL or Deep Cycle battery than those of a conventional battery, or even the more common types of AGM battery, for example, Yuasa's YTX series. Due to lower porosity of the lead peroxide paste on the plates compared with other batteries, the Odyssey® battery does require a slightly higher voltage than conventional filler cap batteries and a charge current which is relatively high for the rated capacity (12Ah, 13Ah, 16Ah are the models mostly used in powersports vehicles).

The user error & other protections of the AccuMate PRO 12-7-S are the same as for the other AccuMate PRO models & indeed all TecMate chargers, and it also has an internal computer type cooling fan which functions when the charge cycle is under maximum load so as to maintain the charger at a consistent temperature to avoid anomalously influencing the thermal sensor (at the back of the housing) which governs the charge voltage setting variations.
Supplied with a detachable input power cord and with detachable & replaceable battery connection sets, one with battery clips, the other with ring terminals (eyelets) and in-line battery protection fuse.

Lead Acid Battery Charger 12V/7A

ACCUMATE PRO12V7A

Multi-stage charging program

Program 1

1)Initialisation : to start the program the battery must measure >2V immediately on connection of the charger. This is to avoid trying to recharge hopeless cases with attendant waste of time and energy.
2) Bulk Charge stage : Delivers a 7 Amp constant current until the battery voltage reaches the limit of 14,6V (at 25°C - 24mV/°C of deviation).
3) Absorption stage : The voltage is held at a constant 14,6V until the current drawn by the battery reduces below 500mA, but in any event for a maximum of 8 hours.
4) Maintenance mode : Float charge with voltage limited at 13,7V (at 25°C -24mV/°C of deviation).

Program 2

1) Initialisation : As for Program 1.
2) Bulk Charge stage : Delivers a 7 Amp constant current until the battery voltage reaches the limit of 14,4V (at 20°C -24mV/°C of deviation).
3) Absorption stage : The voltage is held at a constant 14,4V until the current drawn by the battery reduces below 500mA, but in any event for a maximum of 8 hours.
4) Maintenance mode : Float charge with voltage limited at 13,67V (at 20°C -24mV/°C of deviation). The float charge cycle is active for 4 minutes, then "OFF" for 26 minutes, then active for 4 minutes and so on. The reason for the maintenance mode of this program operating in this intermittent manner is that with a charger of this power, filler cap batteries in particular will benefit from a less frequent need to check and top up electrolyte as the rest periods and relatively short "on" periods will allow the battery temperature to stay at the ambient (or very close), thereby significantly reducing the emission of gases. The secondary advantage is that this maintenance cycle consumes slightly less mains electricity.

In both programs, the maintenance cycle mode reverts to the absorption stage if for any reason the battery requires more than the approximately 500mA available in maintenance mode, OR if the battery voltage drops to below 12,3V. The absorption stage will then again run its course as described, before passing the battery back into maintenance mode.