

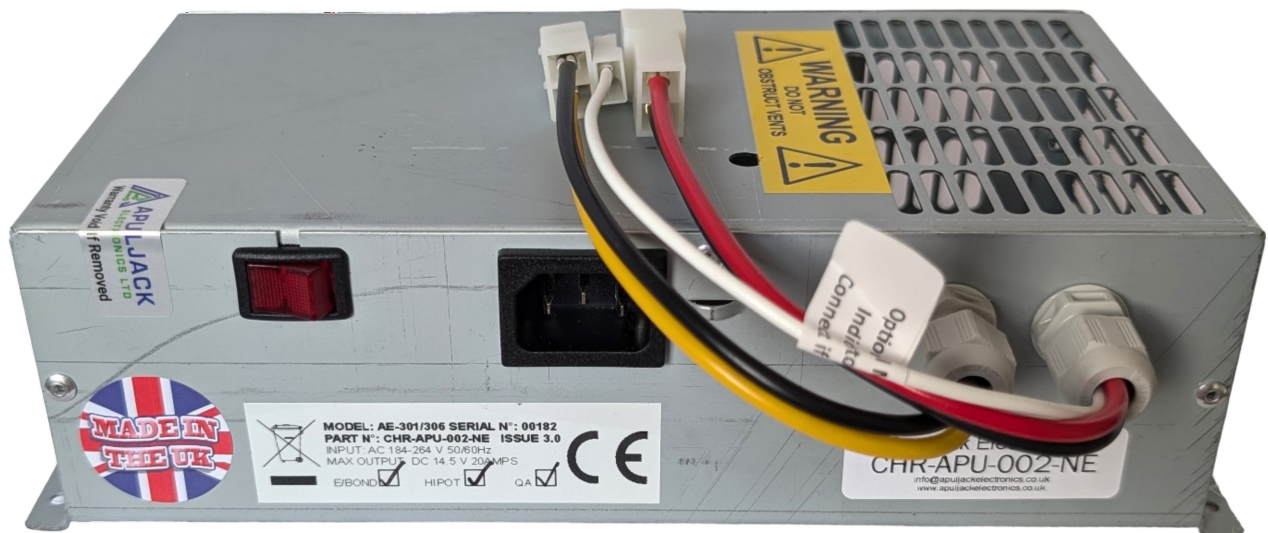


APULJACK

ELECTRONICS LTD

DESIGN AND REPAIR SPECIALISTS

AE301/306 Ultra Intelligent 6-Stage Charger with Adaptive Charging Profile



Replacement for BCA PS301/306

Product Code: CHR-APU-002-NE - Version 3.0

1. Scope

These instructions relate only to the Apuljack Electronics item - Model: AE301/304/306 Ultra, Part number: CHR-APU-002 Version 3.0

2. General Description

The AE301/304/306 Ultra is a multistage intelligent charger with fast charge characteristics suitable for 12V vehicle systems with two DC connecting cables. It maintains long battery life due to intelligent charging features utilising microprocessor control to ensure high efficiency charging conditions are supplied via constant current and voltage cycles.

The charger provides both charging to the leisure battery and power to the vehicle systems when the mains is connected. It automatically connects the battery to the vehicle systems when the mains is not present.

NOTE: The AE276 ULTRA has an extra white wire – See Section 6 for details

3. Safety & Warnings

Please observe the warnings on the charger label along with the items below.

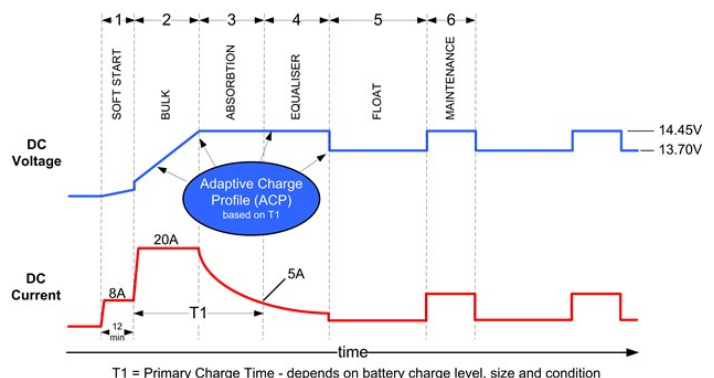
- Under heavy loads the charger case may become hot.
- The internals of the charger contain lethal voltages – DO NOT TOUCH.
- Users should keep flames and sparks away from a charging battery due to possible presence of explosive gases.
- Users should provide adequate ventilation during charging.
- Users should disconnect the supply before making or breaking the connections to the battery or charger

4. New Charger Profile

The AE301/304/306 Ultra features the new 6-stage Adaptive Charge Profile (ACP) technology from Apuljack Electronics. This technology adjusts the Equaliser stage to suit the capacity and charge characteristics of the battery connected. The Bulk and Absorption phase times are measured by the charger and the ACP algorithm calculates the optimum equalisation time for that particular charge cycle. This helps to maximise the life of the battery.

- Stage 1: Soft Start – the charger gently begins charging at a maximum of 8A, this helps to protect very flat or damaged batteries.

(RED/GREEN LED FLASH)



- Stage 2: Bulk – Output current limited to 20A - the charger adds most of the energy into the battery in this phase. (**RED** LED)
- Stage 3: Absorption – Output held at 14.45V – The final 10-20% of the charge is added to the battery. (**RED** LED)
- Stage 4: Equaliser – the ACP algorithm – the remaining few percent is added and the individual cells are allowed to equalise. (**ORANGE** LED)
- Stage 5: Float – Output held at 13.7V – Battery full – held at this industry standard level to avoid excessive leakage. (**GREEN** LED)
- Stage 6: Maintenance – Output boosted to 14.45V – designed to reduce sulphation and top up charge if required. (**GREEN** LED)
- Whilst the ACP determines the overall length of the boost voltage, unlike other chargers which would remain at this voltage if a damaged battery were connected, the internal charger has an intelligently controlled safety timer. This timer terminates the boost voltage after a 4 hour period to protect your battery

The **BLUE** LED indicates POWER ON if solid, or OVER TEMPERATURE if flashing, unit should be left to cool before attempt to use.

5. Mains Plug Retention

The AE301/306 ULTRA features a unique Cable Retention Loop for the mains cable. Once the right angled mains connector is fitted, insert the supplied cable tie through the loop in the case and tighten round the mains connector at right angles to the case.



6. Inputs/Outputs

Mains input connector type: IEC C14

The charger is on when the power switch is illuminated. Ensure the unit is switched on before fitting into a Power Distribution Unit.

- Charging output: Connector: Fastin-Faston 2 way Male – Yellow & Black Wire
- Vehicle output: Connector: Fastin-Faston 2 way Female – Red & Black Wire
- 'Mains On' output: connector type: 6.35mm Female – White Wire

The 'Mains on' output is used on some control panels to display a plug or electrical symbol to show when the vehicle is connected to the mains. If you do not have this feature/connection in your vehicle then the white wire/connector can be left unconnected. The operation of the charger is not affected if the 'Mains on' connector is not used.

7. Approvals

Approved to:-

- Safety EN60335-2-29:1996
- Emissions EN61000-3-2/3 & EN55014-1
- Immunity EN55014-2

8. Technical Specification

Input Voltage:	230V AC +/-15%, 196-264V AC
Input Frequency:	47Hz to 63Hz
Efficiency:	87%
Charge Output Current:	20A
'Mains On' Output	12V with mains applied, 0V otherwise
Protection circuits:	Over-Current Short-Circuit protection Over-Voltage protection Thermal Protection Output Reverse Polarity
Operating Temperature:	-30°C to 55°C at full load
Cooling fan:	SMART: Temperature Controlled
Protection:	4A internal fuse (Type T)
Dimensions:	125 x 230 x 67mm
Weight:	1.42Kg excluding packaging

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