

## Features

- Universal input 195~264V AC
- Short Circuit Output Protected
- Approved to UKCA, CE
- LVD & EMC Class B Certified, RoHS & REACH compliant
- 12-24V Lead Acid 3 Stage Control (Fast/Normal/Float)
- OVP, OCP, OTP, SCP
- LED Charge Indicators Included



Ideal Power's 31ACPP12\_24 Range of 12-24V Lead Acid Battery Chargers Series are certified to UKCA, CE, RoHS, REACH & EN 62368-1 Standards and comply with the relevant Efficiency Regulations. These are primarily used in ITE, Audio & Video Industries and customised solutions are available upon request.

| Models                | 31AC0512                                                                  | 31AC2524  | 31AC3024 |
|-----------------------|---------------------------------------------------------------------------|-----------|----------|
| Input Voltage         | 195~264V AC / 230V AC +/-15%                                              |           |          |
| Input Frequency       | 47Hz ~ 63Hz / 50-60Hz +/- 5%                                              |           |          |
| Input Current 230V AC | 7.1A                                                                      | 6.9A      |          |
| Output Max Current    | 5A                                                                        | 25A       | 30A      |
| Output Power          | 60W                                                                       | 600W      | 720W     |
| Output Voltage        | 13.7~14.6                                                                 | 27.4~29.2 |          |
| Ripple & Noise        | 500 mVp-p                                                                 |           |          |
| Isolation             | Input isolate Chassis : 500M OHM                                          |           |          |
| Battery Application   | Lead Acid Battery                                                         |           |          |
| Fan Control           | Fan on fast speed: Bulk/Absorption charge Fan on slow speed: Float charge |           |          |
| LED - Power           | Red                                                                       |           |          |
| LED - Charging        | Orange                                                                    |           |          |
| LED - Fully Charged   | Green                                                                     |           |          |
| DC Cable              | 1.0M Mount clips                                                          |           |          |
| Dimensions            | 372 x 180 x 76 (LxWxH) mm                                                 |           |          |
| Weight                | 5.0 (Kgs)                                                                 |           |          |

Specifications subject to change without notice.

### Applications

- |                         |                             |                             |                          |
|-------------------------|-----------------------------|-----------------------------|--------------------------|
| Ⓞ Communication devices | Ⓞ Power generators          | Ⓞ UPS                       | Ⓞ Power Inverters        |
| Ⓞ Vacuums Pumps         | Ⓞ Sailing boats             | Ⓞ Fork-lift                 | Ⓞ Ambulance              |
| Ⓞ Fire trucks           | Ⓞ Emergency vehicles        | Ⓞ Electrical car & bicycles | Ⓞ Mobile command centres |
| Ⓞ Household items       | Ⓞ Communication Equipment's | Ⓞ Automobiles               |                          |

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**Environmental Data**

|                       | Minimum | Typical | Maximum | Units | Notes |
|-----------------------|---------|---------|---------|-------|-------|
| Operating Temperature | 0       | --      | 45      | °C    |       |
| Storage Temperature   | 0       | --      | 70      | °C    |       |
| Operating Humidity    | 20      | --      | 90      | °C    |       |
| Storage Humidity      | 10      | --      | 95      | °C    |       |

**EMC Emissions (2014/30/EU)**

|                  | Standard     | Test Level | Criteria | Notes |
|------------------|--------------|------------|----------|-------|
| Conducted        | EN 55032     | Pass       | B        |       |
| Radiated         | EN 55032     | Pass       | B        |       |
| Harmonic Current | EN 61000-3-2 | Pass       | A        |       |
| Voltage Flicker  | EN61000-3-2  | Pass       |          |       |

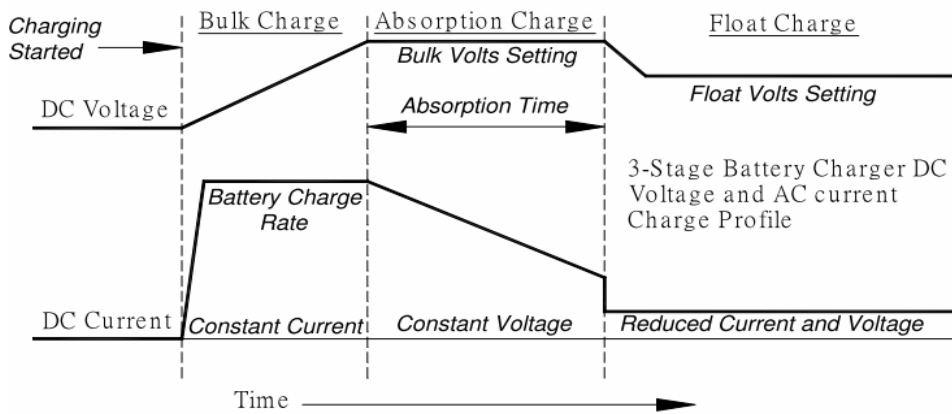
**EMC Immunity (2014/30/EU)**

|                        | Standard       | Test Level | Criteria | Notes                                                      |
|------------------------|----------------|------------|----------|------------------------------------------------------------|
| EMS                    | EN 55035       | Pass       | A        |                                                            |
| ESD                    | IEC 61000-4-2  | Pass       | B        | Contact: +/- 4KV; Air: +/- 8KV                             |
| RS                     | IEC 61000-4-3  | Pass       | A        | Frequency: 80-1000MHz; Field Strength: 3V/M ' 80% AM(1KHz) |
| EFT                    | IEC 61000-4-4  | Pass       | B        | 1.0KV on input AC power ports                              |
| Surges                 | IEC 61000-4-5  | Pass       | B        | Line to Line: +/- 1KV (peak); Line to F.G: +/- 2KV (peak)  |
| Conducted              | IEC 61000-4-6  | Pass       | A        | 150KHz to 80MHz 3Vms                                       |
| PFMF                   | IEC 61000-4-8  | Pass       | A        | 50hZ, 60Hz, 1A/m                                           |
| Dips and Interruptions | IEC 61000-4-11 | Pass       | Complies | 0%, 70%, 0% of UT                                          |

**Safety Approvals**

|    | Safety standard                                                                       |
|----|---------------------------------------------------------------------------------------|
| CE | EMC Directive 2014/30/EU, LVD Directive 2014/35/EU, RoHS Directive RoHS (EU) 2015/863 |

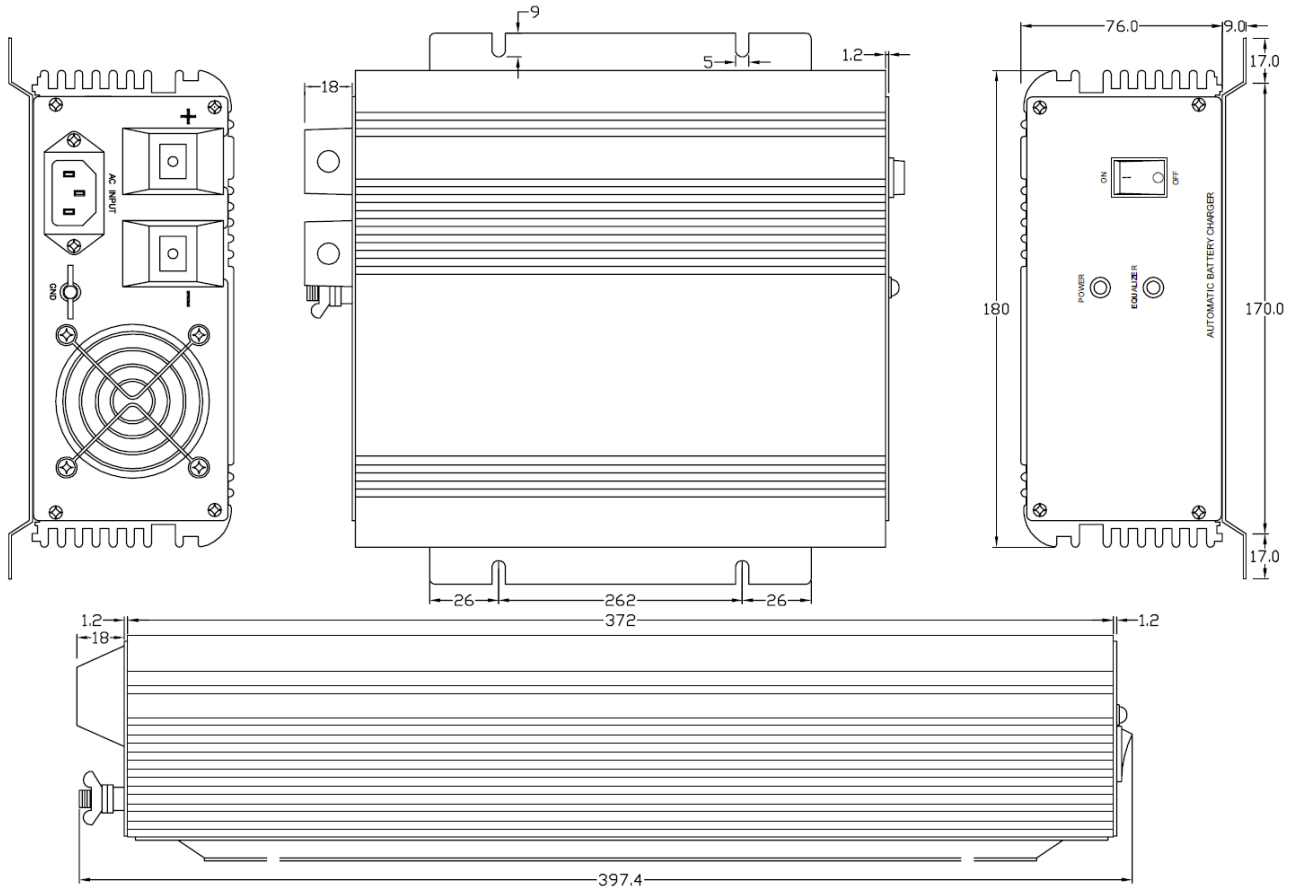
Three Steps of Charging & Charge Curve



|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1  | Bulk charge – bring batteries to 75% capacity fast. During this stage charging occurs at full power, which means maximum current, until the battery voltage reached the set limit.                                                                                                                                                                                                                                                                                                                                                      |
| Step 2: | Absorption Charge, boost – slow the current flow, adjusting for maximum efficiency and gently topping off batteries. During absorption charging the current decreases as the battery approached full charge.                                                                                                                                                                                                                                                                                                                            |
| Step 3  | Trickle Charge – for longer period, maintains fully charged batteries without harmful effects of overcharging and cooking. Trickle charge is intended to keep the battery in a fully charged state and compensates for self-discharge. When the current reaches setting point the battery switches to a maintenance charge at a constant voltage. Should the battery be in use and the charge current Subsequently exceed setting point the charger will automatically return to the beginning of the three-step charge characteristic. |

AC – DC

Case Drawing



AC - DC