



### Features

- Universal input 195~264V AC
- Short Circuit Output Protected
- Approved to UKCA, CE
- LVD & EMC Class B Certified, RoHS & REACH compliant
- 12-48V Lead Acid 3 Stage Control (Fast/Normal/Float)
- OVP, OCP, OTP & Short Circuit
- LED Charge Indicators Included



Ideal Power's 31ACMM12\_24\_48 Range of 24-48V 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	31AC1212	31AC0824	31AC1024	31AC0648	31AC0848
Input Voltage	195~264V AC / 260V AC +/-15%				
Input Frequency	47Hz ~ 63Hz / 50-60Hz +/- 5%				
Input Current	6~12A - 230Vac				
Output Max Current	12A	8A	10A	6A	8A
Output Power	144W	144W	192W	240W	384W
Output Voltage	14.6~58.4V DC Float charge / absorption charge				
Ripple & Noise	280 ~ 350 mVp-p (model dependant)				
Float Voltage Start Point	1.2-1.5A (model dependant)				
Isolation	Input isolate Chassis : 500M OHM				
Battery Application	Lead Acid Battery				
LED - Power	Red				
LED - Charging	Orange				
LED – Fully Charged	Green				
DC Cable	1.0M Mount clips				
Dimensions	200 x 180 x 76 (LxWxH) mm				
Weight	3.0 (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               |                          |

**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)**

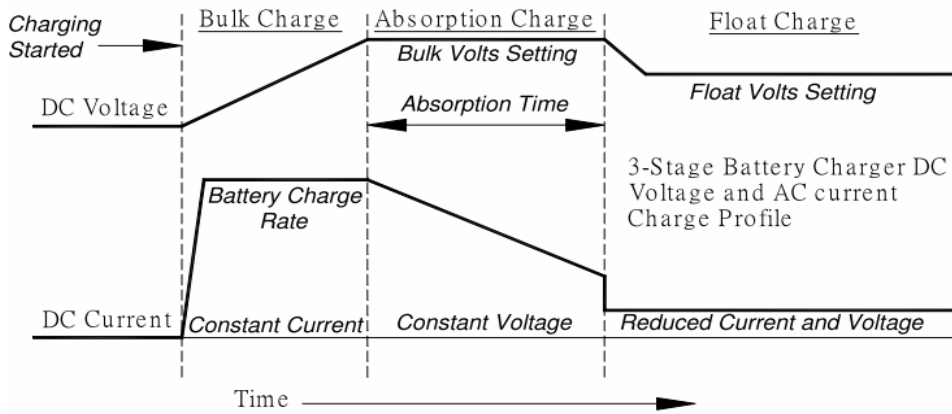
	Standard	Test Level	Criteria	Notes
EMS	EN 55035	Pass	A	
ESD	IEC 61000-4-2	Pass	B	Contact: +/- 4KV; Air: +/- 8KV
RS	IEC 61000-4-3	Pass	A	Frequency: 80-1000MHz; Field Strength: 3V/M ' 80% AM
EFT	IEC 61000-4-4	Pass	B	1.0KV on input AC power ports
Surges	IEC 61000-4-5	Pass	B	Line to Line: +/- 1KV (peak); 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**

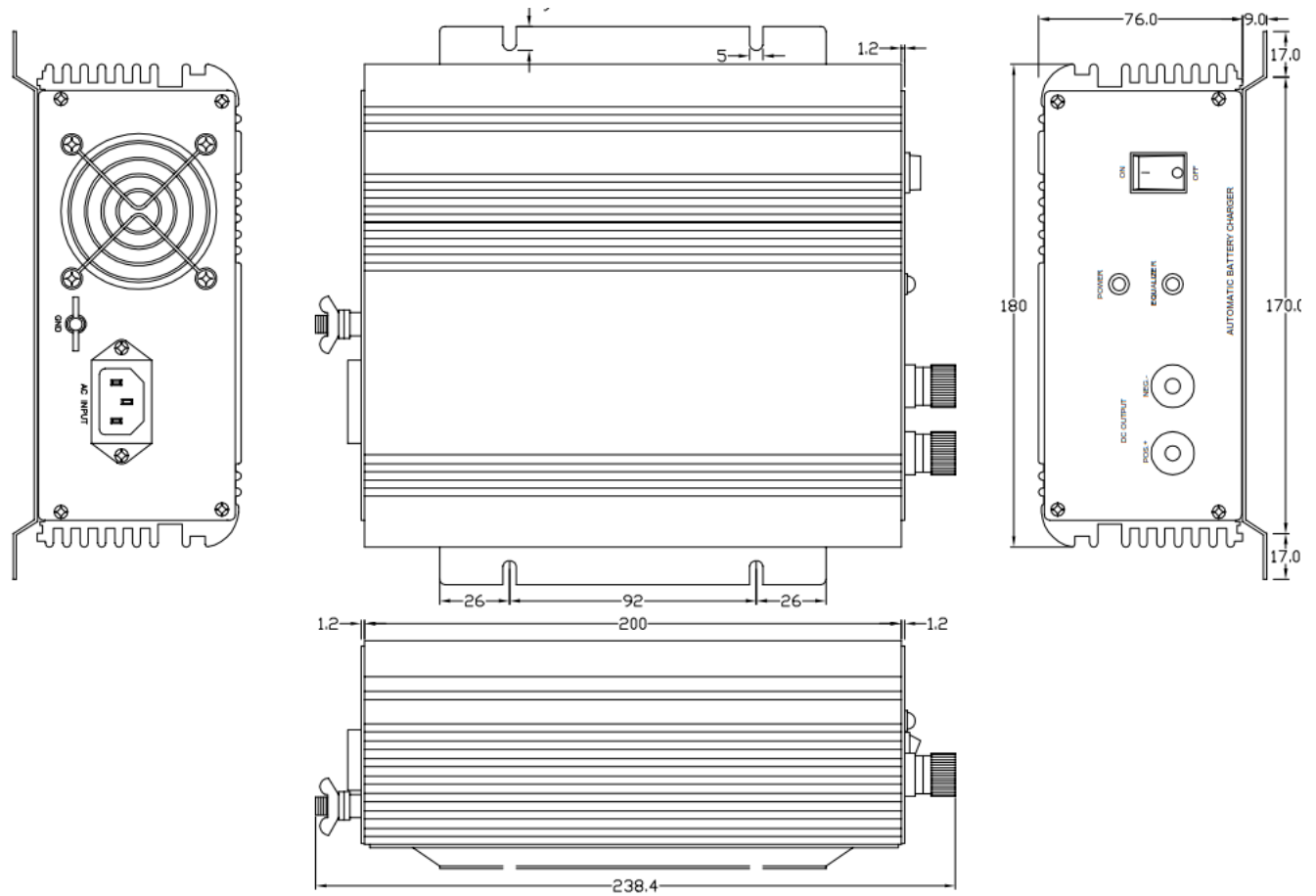


Step 1	Bulk charge – bring batteries to 75% capacity fast. During this stage charging occurs at full power, which means maximum current, until the battery voltage reached the set limit.
Step 2:	Absorption Charge, boost – slow the current flow, adjusting for maximum efficiency and gently topping off batteries. 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 (continued)



AC - DC