

### DESCRIPTION

The Curtis Primo Charger is designed to recharge batteries in 8-14 hours. Available from the standard range for recharging batteries of 12 to 96 volts at 10 to 200 amps from either single or three phase supplies. Primo is also available in higher ratings for specialist requirements.

### APPLICATION

Curtis, the world leader in the supply of battery monitoring instrumentation and DC motor speed controllers in the electric vehicle industry, now offers a full range of motive power battery chargers to meet all needs. Designed to meet Curtis standards of reliability the Curtis Primo offers a high level of control, protection and information at affordable prices. The chargers meet all European quality and safety standards including CE, TUV and 1809002. The standard colours are Ral 5010 Blue and 7016 Grey. Customer specific colours and product are available to special order.

### BENEFITS

- Improved battery performance: Proportional gassing and controlled equalization ensure the battery receives the correct amount of charge whatever the operation and is always fully charged ready for use.
- Reduced running costs: Programmable delay on charge start allows for use of off peak power, giving savings of up to 60% on electricity.
- Lower installation costs: Integral AC cables and low AC input currents, (as much as 20% lower than most high frequency and thyristor controlled chargers), allows for more equipment to be connected to the mains supply.
- Low cost three phase: Advanced three phase design allows for many three phase ratings to be available at comparative prices to single phase product.
- Improved management of truck fleet and batteries: Detailed information displayed by the charger assists in determining battery usage and condition.
- Reduced labour costs: Automatic control of battery topping systems and remote indication of state of charge.
- Superior protection: Manufactured to TUV GS standards and fitted with thermal protection to transformer and fuses to AC input.
- High durability: Heavy gauge, welded, all steel casework finished in a hard wearing wipe clean epoxy paint.

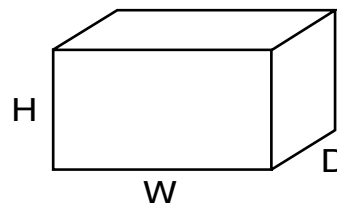
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## SPECIFICATIONS

|   |  |  |  |
|---|--|--|--|
| <b>Input</b>                            | <b>Supply voltage:</b>   | Single phase 220-230-240-250 volts AC 50/60 hertz<br>Three phase 380-400-415-440 Volts 50/60 hertz<br>110 volts and non standard voltages on application                             |  |
|   | <b>Protection:</b>   | Fast blow fuses on each phase of the AC supply<br>Transformer protected by automatic reset thermal trip  |  |
|   | <b>Connection:</b>   | Case 2 and 3 : 2m of AC input cable with moulded 13 Amp plug<br>Case 4,5,6,7 : 3m of 1 phase or 3 phase cable as appropriate   |  |
| <b>Output</b>                           | <b>Characteristic:</b>   | Wa taper to DIN 41774  |  |
|   | <b>Protection:</b>   | DC fuse  |  |
|   | <b>Connection:</b>   | Case 2,3 : 2.5m of suitably rated DC output cable<br>Case 4,5,6 & 7 : 3m of suitably rated DC output cable<br>12-96V 10-200 Amp. Higher ratings on application                       |  |
| <b>Operating Ambient</b>                | 0-60°C. 85% RH   |  |  |
| <b>Enclosure</b>                        | To IP20, finished in kiln dried epoxy coating  |  |  |
| <b>Security</b>                         | Keylock on door (Case 4,5,6,7)   |  |  |
| <b>Control</b>                          | Voltage sensing microprocessor control.<br>Auto reset and safety start delay.<br>Proportional charging.<br>Automatic controlled equalize.<br>Quick test of timers.   | Fault recognition and safety shut down.<br>Delay start 3 or 6 hours.<br>Adjustable timed final charge.<br>Safety timer security system.<br>Digital readout of Current, Ah and Volts. |  |
| <b>Indication LED of charger status</b> | Green:   | Flat battery symbol LED lit - Battery connected but not charging.  |  |
|   | All LED's flash:   | Diagnostic test when mains first applied.  |  |
|   | Green LED flash:   | Charging in process.   |  |
|   | Yellow LED lit:  | Battery 80% charged V > 2.4V per cell.   |  |
|   | Green LED:   | Fully recharged battery symbol LED lit when charge complete.   |  |
|   | Red LED:   | Battery fault - LED flashes or remains on if there is a power failure or other fault.  |  |
|   | Yellow LED:  | Lit during equalization.   |  |
|   | For full details see manual.   |  |  |
| <b>LCD panel</b>                        | The LCD panel consists of a back lit 4 digit 7 segment display, 12 multifunctional charging data symbols and the battery charge status indicator. Information displayed includes instantaneous and maximum battery voltage; instantaneous and maximum charging current; ampere hours returned during charge; state of charge; overall charging time in hours and minutes. Fault graphic, AC fault, DC fault and time. Various fault conditions are also displayed i.e. mains failure, fuse blown, thermal cut-out, operation of safety time, rectifier failure and maximum battery voltage exceeded. |  |  |

## DIMENSIONS

|        | <b>Width</b> | <b>Height</b> | <b>Depth</b> |
|--------|--------------|---------------|--------------|
| Case 2 | 450          | 290           | 280          |
| Case 3 | 500          | 310           | 300          |
| Case 4 | 500          | 700           | 380          |
| Case 5 | 500          | 1000          | 400          |



## MODEL REFERENCE/CHARGER SELECTION

Chargers are mounted into case sizes 2-5 as follows, (Cases 2,3 & 4 are single phase chargers only) :

| <b>Battery Voltage</b> | <b>Case 2<br/>12.8-23.5Kg</b> | <b>Case 3<br/>22.1-29.5Kg</b> | <b>Case 4<br/>57.0-83.0Kg</b> | <b>Case 5<br/>60.0-140.0Kg</b> |
|------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|
| 12V                    | 10-60 amp                     | -                             | -                             | -                              |
| 24V                    | 10-40 amp                     | 50-60 amp                     | 80-140 amp                    | 80-200 amp                     |
| 36V                    | 10-30 amp                     | 40 amp                        | 50-100 amp                    | 50-200 amp                     |
| 48V                    | -                             | 20-30 amp                     | 40-80 amp                     | 40-180 amp                     |
| 72V                    | -                             | -                             | 30-60 amp                     | 30-120 amp                     |
| 80V                    | -                             | -                             | 30-50 amp                     | 30-120 amp                     |
| 96V                    | -                             | -                             | 40 amp                        | 50-100amp                      |

**WARRANTY** Five year limited warranty from time of delivery.

