

# BBC BATTERY CHARGER

*High Efficiency  
Low Ripple  
Constant Voltage Type  
Constant Current Type*

*For Substation and  
Communication system*



*Trustfulness from  
-Metropolitan Electricity  
Authority ( MEA )  
-Provincial Electricity  
Authority ( PEA )  
-Electricity Generating  
Authority of Thailand  
(EGAT)  
-Industrial Factory of  
Thailand*

## Standard features

- Input/Output circuit breaker
- Mains isolation Transformer
- Thyristor full wave control
- Automatic and manual boost charge
- Output voltmeter & ammeter
- Standard protection
- Standard Alarm & Potential free contact

## Options

- Addition meters and alarms
- Diode voltage dropper
- Output DC distribution
- Low voltage disconnect
- Optional remote communications
- Other options on request

## Single Phase

| Amps  | DC output voltage |       | Type of cabinet / Weight |       |           |       |          |       |  |  |
|-------|-------------------|-------|--------------------------|-------|-----------|-------|----------|-------|--|--|
|       | 24 VDC            | © Kg. | 48 VDC                   | © Kg. | 110,125 V | © Kg. | 220 VDC  | © Kg. |  |  |
| 5 A   |                   |       |                          |       | 150CG-05  | A 70  | 250CG-05 | A 80  |  |  |
| 10 A  | 24CG-10           | A 40  | 48CG-10                  | A 45  | 150CG-10  | A 90  | 250CG-10 | A 95  |  |  |
| 20 A  | 24CG-20           | A 45  | 48CG-20                  | A 50  | 150CG-20  | C 130 | 250CG-20 | D 200 |  |  |
| 25 A  | 24CG-25           | A 50  | 48CG-25                  | A 60  | 150CG-25  | C 140 | 250CG-25 | D 220 |  |  |
| 30 A  | 24CG-30           | A 55  | 48CG-30                  | A 65  | 150CG-30  | D 200 |          |       |  |  |
| 40 A  | 24CG-40           | A 65  | 48CG-40                  | A 75  | 150CG-40  | D 230 |          |       |  |  |
| 50 A  | 24CG-50           | A 70  | 48CG-50                  | B 135 | 150CG-50  | D 270 |          |       |  |  |
| 75 A  | 24CG-75           | C 120 | 48CG-75                  | D 200 |           |       |          |       |  |  |
| 100 A | 24CG-100          | D 160 | 48CG-100                 | D 220 |           |       |          |       |  |  |
| 150 A | 24CG-150          | D 200 | 48CG-150                 | D 250 |           |       |          |       |  |  |

## Three Phase

| Amps  | DC output voltage |       | Type of cabinet / Weight |       |           |       |           |       |  |  |
|-------|-------------------|-------|--------------------------|-------|-----------|-------|-----------|-------|--|--|
|       | 24 VDC            | © Kg. | 48 VDC                   | © Kg. | 110,125 V | © Kg. | 220 VDC   | © Kg. |  |  |
| 30 A  |                   |       | 48CG-30                  | C 100 | 150CG-30  | D 180 | 250CG-30  | D 200 |  |  |
| 50 A  | 24CG-50           | C 100 | 48CG-50                  | C 120 | 150CG-50  | D 200 | 250CG-50  | E 250 |  |  |
| 60 A  |                   |       |                          |       | 150CG-60  | D 220 | 250CG-60  | E 270 |  |  |
| 70 A  | 24CG-70           | D 130 | 48CG-70                  | D 160 | 150CG-70  | D 230 | 250CG-70  | E 290 |  |  |
| 90 A  |                   |       |                          |       | 150CG-90  | E 270 | 250CG-90  | F 350 |  |  |
| 100 A | 24CG-100          | D 150 | 48CG-100                 | D 180 | 150CG-100 | E 280 | 250CG-100 | F 370 |  |  |
| 120 A | 24CG-120          | D 160 | 48CG-120                 | D 200 | 150CG-120 | E 300 | 250CG-120 | F 400 |  |  |
| 150 A | 24CG-150          | D 180 | 48CG-150                 | D 230 | 150CG-150 | F 370 | 250CG-150 | F 450 |  |  |
| 200 A | 24CG-200          | E 250 | 48CG-200                 | E 280 | 150CG-200 | F 400 | 250CG-200 | F 550 |  |  |
| 250 A | 24CG-250          | E 280 | 48CG-250                 | E 300 | 150CG-250 | F 450 |           |       |  |  |
| 300 A | 24CG-300          | F 350 | 48CG-300                 | F 400 | 150CG-300 | F 500 |           |       |  |  |
| 400 A | 24CG-400          | F 380 | 48CG-400                 | F 450 | 150CG-400 | F 600 |           |       |  |  |
| 500 A | 24CG-500          | F 450 | 48CG-500                 | F 500 | 150CG-500 | F 680 |           |       |  |  |

© = Type of cabinet

\* Other Voltage & Current available on request

| Type of cabinet | Dimensions of cabinet (mm.) |       |       | Type of cabinet | Dimensions of cabinet (mm.) |       |       |
|-----------------|-----------------------------|-------|-------|-----------------|-----------------------------|-------|-------|
|                 | Height                      | Width | Depth |                 | Height                      | Width | Depth |
| A               | 700                         | 400   | 300   | D               | 1200                        | 500   | 600   |
| B               | 900                         | 450   | 400   | E               | 1500                        | 550   | 650   |
| C               | 1050                        | 450   | 400   | F               | 1800                        | 650   | 750   |



H

W D

A




B



C, D, E



F

| Technical data of Charger                            |   |  |   |              |               |
|--|---|--|---|--------------|---------------|
| Nominal voltage                                      |   | 24 VDC   | 48 VDC  | 110,125VDC   | 220 VDC       |
| Input AC voltage                                     | V   | Single phase 220/230VAC $\pm$ 10% , 50Hz $\pm$ 5%<br>Three phase 380/400 VAC $\pm$ 10%, 50Hz $\pm$ 5% ( $\Delta$ , Y)<br>Other Voltage on request  |   |              |               |
| Input AC current(1 phase)                            | A   | 15% of I O/P   | 35% of I O/P  | 85% of I O/P | 120% of I O/P |
| Input AC current(3 phase)                            | A/phase   | 8% of I O/P  | 15% of I O/P  | 35% of I O/P | 60 % of I O/P |
| Floating Charge range                                | V   | 2.2 - 2.3VPC Pb Battery , 1.4 – 1.45 VPC Nicd Battery  |   |              |               |
| Equalizing Charge range                              | V   | 2.3 – 2.7 VPC Pb Battery , 1.5 – 1.65 VPC Nicd Battery   |   |              |               |
| DC output current                                    | A   | 105% of nominal current and current limited not exceed 110%  |   |              |               |
| DC voltage accuracy                                  |   | $\pm$ 1% at 0-100% load and specified AC voltage tolerance   |   |              |               |
| Output ripple  | Vrms  | $\leq$ 2% Vrms without battery connected   |   |              |               |
| Audio Noise  | dB(A)   | Not exceed 65 dB(A) at 1 meter , 60 dB(A) at 3 feet  |   |              |               |
| Efficiency   | %   | 75% to 95% at full load (depending on model)   |   |              |               |
| Operating condition                                  | $^{\circ}$ C<br>RH<br>M   | -10 $^{\circ}$ C to +40 $^{\circ}$ C ( up to +55 $^{\circ}$ C optional)<br>$\leq$ 95% humidity<br>$\leq$ 1000 m ASL  |   |              |               |
| Ventilation  |   | Natural convection cooled (special models with fan cooling)  |   |              |               |
| Cabinet protection                                   |   | Indoor type : IP20-IP42 , IP43-IP54 (Floor mounting )  |   |              |               |
| Cabinet color  |   | Epoxy powder code RAL 7032 , RAL 7035 , GRAY   |   |              |               |
| Instruments  |  | Output DC voltmeter , Output DC ammeter<br>Other measure on request  |   |              |               |
| Standard protection                                  |   | Input & Output circuit breaker , Thyristor protection fuse, Lightning surge (MOV) at input ,output   |   |              |               |
| Standard alarms and indicators LED' s on front panel |   | AC source ,Floating charge , Equalize charge ,Charge fail , High DC voltage ,Low DC voltage ,Positive & Negative ground fault<br><b>Optional</b> : Battery Reverse polarity, Fuse Fail, Battery low volt disconnect, High temperature.<br>( Other Alarm on request ) All alarm fault have potential free contact |   |              |               |
| Optional remote communication                        |   | RS232/485 MODBUS communication to allow monitoring of the charger.   |   |              |               |
| Charging characteristics                             |   | IU to DIN 41773  |   |              |               |
| Main application standards                           |   | NEMA PE5-1997(R2003)<br>IEC 146<br>IEC 529   | Utility Type Battery charger<br>Semi – Conductor converters<br>Degree of Protection |              |               |



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