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# BC Chargers

## Automatic Battery Chargers For Genset Applications

### Product Description:

“BC Series” Battery Chargers are specially designed for Genset applications to charge all types of “starter” batteries with optimum performance, keeping the battery at its maximum capacity and ready for maximum power delivery whenever required.

These charger series have 3 models, ranging from 75W to 300W and with options for integrated intelligent “Battery Management System” (BMS) features. This ensures that, genset battery group is charged to its optimum capacity while ensuring maximum operation lifetime for the batteries.

All models have universal AC input circuit and guarantees operation between 90Vac and 300Vac input voltage. Fluctuating utility voltage does not cause any degradation in charging performance. Specially designed input filter ensures that charger hardware is protected even with high voltage transients on the mains line.

All charges can deliver full output current into a complete depleted battery, ensuring the battery can be recovered from its low-capacity status in the shortest possible time. Built in “V-I Three-Stage” charging characteristics ensures battery can gain majority of its capacity back in the shortest possible time, ready for its next discharge. All chargers are fully “short-circuit” protected and can work into short-circuit indefinitely.

The chargers monitor battery connection and if the battery is disconnected, an alarm warning is generated for service. The alarm output is a potential-free relay contact, which can be connected directly to peripheral control devices.

BCM and BCL models are designed with microcontroller-based architecture, which offers flexible features for applications.

The device parameters can be configured using USB communication port, together with licence-free PC-Tools SW package. All charge characteristics can be programmed, while alarm conditions can be organised, based on demanding application requirements.

BOOST stage is automatically managed without the need for an external command. Chargers monitor and analyse the discharge pattern of the application and initiates an automatic Boost, to ensure that, the battery is always kept at its maximum performance level. These battery chargers can be permanently kept connected to the battery even during cranking and/or high load drain from the battery bank. Battery disconnection is not required.

All models can charge AGM, wet Lead Acid or Jel type starter batteries. Charging characteristics can be configured according to battery type.

The charger units are designed with very low output DC ripple and precise voltage regulation such that, they can be used as safe DC power source for the devices in the control cabin.

These units are built into plastic rail-mount enclosures, suitable for all applications. The units are built to withstand harsh environment conditions and can withstand high vibration present on the genset cabin.

#### MAIN FEATURES:

- ✓ Universal wide range AC input circuit, switched-mode design,
- ✓ Input voltage range: 90Vac to 300Vac,
- ✓ Input transient protection filter,
- ✓ High-efficiency design topology,
- ✓ High MTBF life-time design,
- ✓ Microcontroller based intelligent design with built-in BMS function,
- ✓ Wide operating temperature range: -30°C to +70°C with power de-rating above 60°C,
- ✓ USB program port for device configuration, using license-free PC-Tools software package,
- ✓ 12V/5A, 24V/5A, 12V/10A and 24V/10A models available in three different models,
- ✓ Very low DC output ripple allows these units to be used as DC power supplies in the control panel,
- ✓ Alarm relay contact output for connection to peripheral protection devices,
- ✓ Three-stage or four-stage battery charging patterns,
- ✓ Possibility to connect multiple chargers in parallel mode to get higher power charge capacity and/or predicted redundancy,
- ✓ Compliance with CE and UL safety regulations,

| Technical Specifications       | BCS series  |            | BCM series                       |            | BCL series      | Description:                                  |
|--------------------------------|---|------------|----------------------------------|------------|-----------------|---|
| AC input voltage:              | 90Vac to 264Vac   |            | 90Vac to 264Vac                  |            | 90Vac to 264Vac | Withstand up to 300Vac input voltage          |
| Rated power:                   | 75W   |            | 150W                             |            | 300W            | Rated over full temperature range             |
| DC Output Voltage:             | 13.8VDC   | 27.6VDC    | 13.8VDC                          | 27.6VDC    | 27.6VDC         | DC output voltage (nominal 12V / 24V)         |
| DC Output current:             | 5.0 ADC   | 3.0A DC    | 10.0A DC                         | 5.0A DC    | 10.0A DC        |   |
| Operating temperature range:   | -30°C to +70°C (power de-rated above 60°C)                                |            |                                  |            |                 | Power de-rating above 60°C                    |
| Operating humidity range:      | 30%RH to 97%RH over full operating range                                  |            |                                  |            |                 | Non-condensing                                |
| Storage temperature range:     | -40°C to +85°C  |            |                                  |            |                 | No radiated IR heat                           |
| Output voltage regulation:     | <1% of rated output voltage from no-load to full load                     |            |                                  |            |                 | Line input voltage change ±15%                |
| Output ripple voltage:         | <0.25Vpk-pk   | <0.5Vpk-pk | <0.25Vpk-pk                      | <0.5Vpk-pk | <0.3Vpk-pk      | Rated at full load                            |
| Output voltage noise:          | <1.5Vpk over 100KHz to 500Kz  |            |                                  |            |                 | Measured at 10% load                          |
| Short circuit protection:      | All models are protected for s/c conditions                               |            |                                  |            |                 | Indefinite time                               |
| Overvoltage protection:        |   |            |                                  |            |                 |   |
| Alarm output:                  | SS output   |            | Relay contact o/p (N/C)          |            |                 | Configurable function                         |
| Communication port:            | None  |            | USB2 Type-B                      |            |                 | For device parameter configuration            |
| Boost Charge:                  | Manual/External input   |            | Automatic boost control function |            |                 | Configurable function                         |
| Battery detection:             | YES   |            | YES                              |            | YES             |   |
| Input power failure detection: |   |            |                                  |            |                 |   |
| Reverse polarity protection:   | No-fuse required, automatic protection against reverse battery connection |            |                                  |            |                 | Automatic resettable integrated protection    |
| EMC compliance:                | EN61000-6-2 EN61000-6-4   |            |                                  |            |                 | Full CE compliance for emissions and immunity |
| Flammability:                  | Compliant to UL94 regulations   |            |                                  |            |                 | All component and plastic material            |
| Weight (approximate):          | 320gr   |            | 510gr                            |            | 680gr           |   |
| Mounting:                      | Rail mounting or panel mounting   |            |                                  |            |                 | Available on all models                       |



**UL94  
V-2**

**Compliance:**

BCX series battery chargers are tested and compliant to CE regulations for emitted and conducted RFI interference, according to EN61000-6-4 class-A. Immunity is tested against EN61000-6-2. Vibration: EN60068-6-2 Dielectric strength: IEC255, Flammability: UL94, Safety: UL508

**Outline:**

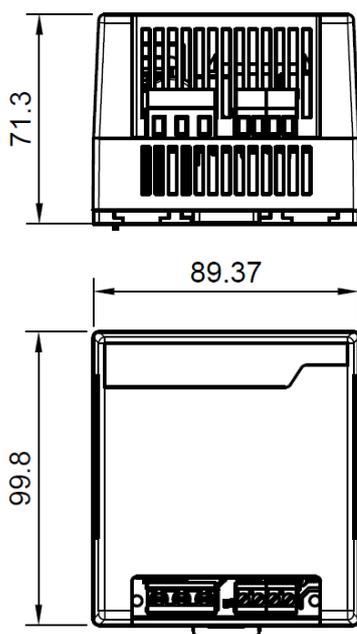


Figure 1: BCS dimensions (mm)

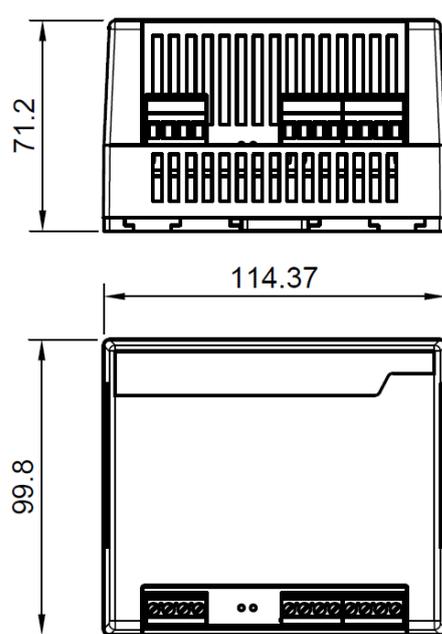


Figure 2: BCM dimensions (mm)

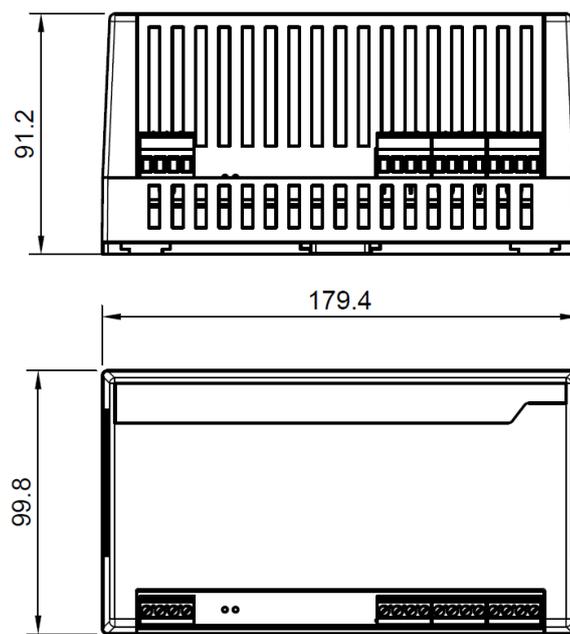


Figure 3: BCL dimensions (mm)