Ladegerät BC 10

Operating instructions
To be kept in the vehicle!

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CONGRATULATIONS

to the purchase of your new professional switch mode battery charger.

1. Connect the charger to the battery.
2. Connect the charger to the wall socket. The power lamp will indicate that the mains cable is connected to the wall socket. The error lamp will indicate if the battery clamps are incorrectly connected. The reverse polarity protection will ensure that the battery or charger will not be damaged.
3. Press the MODE-button to select charging program.
4. Follow the 8-step display through the charging process. The battery is ready to start the engine when STEP 4 is lit. The battery is fully charged when STEP 7 is lit.
5. Stop charging at any time by disconnecting the mains cable from the wall socket.

*Supply plugs may differ to suit your wall socket.

1. Attach the temperature sensor to the charger.
2. Attach the temperature sensor to the clamp/battery.
CHARGING PROGRAMS
Settings are made by pressing the MODE-button. After about two seconds the charger activates the selected program. The selected program will be restarted next time the charger is connected.

The table explains the different Charging Programs:

<table>
<thead>
<tr>
<th>Program</th>
<th>Explanation</th>
<th>Temp range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Gel</td>
<td>Use for WET batteries, Ca/Ca, MF and for most GEL batteries.</td>
<td>-20°C–+50°C (-4ºF–122ºF)</td>
</tr>
<tr>
<td>AGM</td>
<td>Use for AGM batteries.</td>
<td>-20°C–+50°C (-4ºF–122ºF)</td>
</tr>
<tr>
<td>Optima</td>
<td>Use for Optima batteries.</td>
<td>-20°C–+50°C (-4ºF–122ºF)</td>
</tr>
<tr>
<td>Supply</td>
<td>Use as 12V power supply or use for float maintenance charging when 100% capacity of the battery is required. Supply program activates step 7 without time or voltage limitation.</td>
<td>-20°C–+50°C (-4ºF–122ºF)</td>
</tr>
</tbody>
</table>

ERROR LAMP
If the error lamp is lit, check the following:

1. Is the charger's positive lead connected to the battery's positive pole?
2. Is the charger connected to a 12V battery?
3. Has charging been interrupted in STEP 1, 2 or 5?
   - STEP 1: ...is seriously sulphated and may need to be replaced.
   - STEP 2: ...can not accept charge and may need to be replaced.
   - STEP 5: ...can not keep charge and may need to be replaced.

POWER LAMP
If the power lamp is lit with a:

1. STEADY LIGHT
   - The mains cable is connected to the wall socket.
2. FLASHING LIGHT:
   - The charger has entered the energy save mode. This happens if the charger isn’t connected to the battery in 2 minutes.

TEMPERATURE SENSOR
The charger is equipped with an external temperature sensor. The temperature sensor is attachable. If so, the charger will compensate voltage according to ambient temperature. Activated temperature sensor will be indicated by a lit temperature sensor indicator lamp.

READY TO USE
The table shows the estimated time for empty battery to 80% charge.

<table>
<thead>
<tr>
<th>BATTERY SIZE (Ah)</th>
<th>TIME TO 80% CHARGED</th>
</tr>
</thead>
<tbody>
<tr>
<td>20Ah</td>
<td>2h</td>
</tr>
<tr>
<td>50Ah</td>
<td>5h</td>
</tr>
<tr>
<td>100Ah</td>
<td>10h</td>
</tr>
<tr>
<td>200Ah</td>
<td>20h</td>
</tr>
</tbody>
</table>
**STEP 1 DESULPHATION**
Detects sulphated batteries. Pulsing current and voltage, removes sulphate from the lead plates of the battery restoring the battery capacity.

**STEP 2 SOFT START**
Tests if the battery can accept charge. This step prevents that charging proceeds with a defect battery.

**STEP 3 BULK**
Charging with maximum current until approximately 80% battery capacity.

**STEP 4 ABSORPTION**
Charging with declining current to maximize up to 100% battery capacity.

**STEP 5 ANALYSE**
Tests if the battery can hold charge. Batteries that can not hold charge may need to be replaced.

**STEP 6 RECOND**
Choose the Optima program to add the Recond step to the charging process. During the Recond step voltage increases to create controlled gasing in the battery. Gasing mixes the battery acid and gives back energy to the battery.

**STEP 7 FLOAT**
Maintaining the battery voltage at maximum level by providing a constant voltage charge.

**STEP 8 PULSE**
Maintaining the battery at 95–100% capacity. The charger monitors the battery voltage and gives a pulse when necessary to keep the battery fully charged.
### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model number</td>
<td>7212</td>
</tr>
<tr>
<td>Rated Voltage AC</td>
<td>220–240VAC, 50–60Hz</td>
</tr>
<tr>
<td>Charging voltage</td>
<td>WET/GEL 14.4V, AGM 14.7V, Optima 15.8V, Supply 13.6V</td>
</tr>
<tr>
<td>Start voltage</td>
<td>2.0V</td>
</tr>
<tr>
<td>Charging current</td>
<td>10A max</td>
</tr>
<tr>
<td>Current, mains</td>
<td>1.0A rms (at full charging current)</td>
</tr>
<tr>
<td>Back current drain*</td>
<td>&lt;1Ah/month</td>
</tr>
<tr>
<td>Ripple**</td>
<td>&lt;4%</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-20°C to +50°C, output power is reduced automatically at high temperatures</td>
</tr>
<tr>
<td>Charger type</td>
<td>Eight step, fully automatic charging cycle</td>
</tr>
<tr>
<td>Battery types</td>
<td>All types of 12V lead-acid batteries (WET, MF, Ca/Ca, AGM and GEL)</td>
</tr>
<tr>
<td>Battery capacity</td>
<td>20–200Ah up to 300Ah for maintenance</td>
</tr>
<tr>
<td>Dimensions</td>
<td>230 x 95 x 50 mm (L x W x H)</td>
</tr>
<tr>
<td>Insulation class</td>
<td>IP65</td>
</tr>
<tr>
<td>Weight</td>
<td>0.75kg</td>
</tr>
</tbody>
</table>

*) Back current drain is the current that drains the battery if the charger is not connected to the mains. The charger has a very low back current.

**) The quality of the charging voltage and charging current is very important. A high current ripple heats up the battery which has an aging effect on the positive electrode. High voltage ripple could harm other equipment that is connected to the battery. The charger produce very clean voltage and current with low ripple.

### SAFETY

- The charger is designed for charging only for batteries according to the technical specification. Do not use the charger for any other purpose. Always follow battery manufacturers recommendations.
- Never try to charge non rechargeable batteries.
- Check the charger cables prior to use. Ensure that no cracks have occurred in the cables or in the bend protection. A charger with damaged cables must not be used. A damaged mains cable must be replaced by a retailer.
- Never charge a damaged battery.
- Never charge a frozen battery.
- Never place the charger on top of the battery when charging.
- Always provide for proper ventilation during charging.
- Avoid covering the charger.
- A battery being charged could emit explosive gasses. Prevent sparks close to the battery. When batteries are reaching the end of their lifecycle internal sparks may occur.
- All batteries fail sooner or later. A battery that fails during charging is normally taken care of by the chargers advanced control, but some rare errors in the battery could still exist. Don’t leave any battery during charging unattended for a longer period of time.
- Ensure that the cabling does not jam or comes into contact with hot surfaces or sharp edges.
- Battery acid is corrosive. Rinse immediately with water if acid comes into contact with skin or eyes, seek immediate medical advice.
- Always check that the charger has switched to STEP 7 before leaving the charger unattended and connected for long periods. If the charger has not switched to STEP 7 within 55 hours, this is an indication of an error. Manually disconnect the charger.
- Batteries consume water during use and charging. For batteries where water can be added, the water level should be checked regularly. If the water level is low add distilled water.
- This appliance is not designed for use by young children or people who cannot read or understand the manual unless they are under the supervision of a responsible person to ensure that they can use the battery charger safely. Store and use the battery charger out of the reach of children, and ensure that children cannot play with the charger.
- Connection to the mains supply must be in accordance with the national regulations for electrical installations.
Always notify the Truma Service Centre or one of our authorised service partners if problems are encountered (see Truma Service Booklet or www.truma.com).

In order to avoid delays, please have the unit model and factory number ready (see type plate).

Veuillez vous adresser au centre de SAV Truma ou à un de nos partenaires de SAV agréés en cas de dysfonctionnements (consultez votre livret de service Truma ou www.truma.com).

Pour un traitement rapide de votre demande, veuillez tenir prêts le type d’appareil et le numéro d’usine (voir plaque signalétique).

Bij storingen kunt u contact opnemen met het Truma Servicecentrum of met een van onze erkende servicepartners (zie Truma Serviceblad of www.truma.com).

Voor een snelle bediening dient u apparaattype en fabriksnummer (zie typeplaat) gereed te houden.

Ved fejl kontaktes Trumas serviceafdeling eller en af vores autoriserede servicepartnere (se Truma servicehæftet eller www.truma.com).

Sørg for at have oplysninger om apparattype og fabriksnummer (se typeskiltet) klar for hurtig behandling.

In caso di guasti rivolgersi al centro di assistenza Truma o a un nostro partner di assistenza autorizzato (vedere il libretto di assistenza Truma o il sito www.truma.com).

Affinché la richiesta possa essere elaborata rapidamente, tenere a portata di mano il modello dell’apparecchio e il numero di fabbrica (vedere targa dati).

Vid fel kontakta Truma servicecenter eller någon av våra auktoriserade servicepartner (se Truma servicehälle eller www.truma.com).

För snabb handläggning bör du ha aggregatets typ och fabriksnummer (se typskylten) till hands.