

# INSTRUCTION MANUAL

## TriTask-300 Series 3-Step Lead Acid Battery Charger



### Version / MEC Art-No.

12V 15A / 121-06153-170

12V 20A / 121-06203-170

24V 8A / 121-12802-170

24V 11A / 121-12113-170

36V 7A / 121-18702-170

48V 5A / 121-24502-170

Dear Customer!

Thank you very much for your trust in us and our product.  
Please read these operating instructions carefully **before** start of operation.

Mainland Energy Conversion Ltd.

### 1. Safety Rules and General Warnings

- ATTENTION: 100-240 Volts AC voltage, device is not suitable for children – danger of life!!
- ATTENTION: Avoid explosive gases, open flames and sparks – look for enough air ventilation while charging!  
EXPLOSION RISK!!
- ATTENTION: The charger is exclusively designed for 12V/24V/36V rechargeable lead /acid batteries and must not be used for other purposes. Please consider the charging instructions from the battery manufacturer before charging!
- DO NOT OPEN! Repair work must only be accomplished by authorized companies or specialized technical staff.
- Persons, which are not able to use the device in a safe way, because of their physical, sensory or mental competence, or because of their inexperience, should not use the charger without control or instruction of a skilled person. Look that the children don't play with the charger.
- If the mains connection of the device is damaged, you have to change it, with an original connection which is available at the manufacturer.
- Never place the device on top of the battery while charging!
- Use the device only in dry rooms and protect against dust, heat (>40°C) and humidity (>80% rel.)
- Protect against direct solar radiation.
- In case of obvious damage or malfunction immediately disconnect the device from mains supply and protect against unintended reconnection.
- Clean with a dry cloth only.
- Disconnect from mains before connecting or disconnecting the battery.

## 2. General Information

The HF-Chargers of the TriTask-300 series have a specific 3-step charge technology (IUOU characteristic) for wet-, gel- and AGM lead batteries.

The high frequent combinatorial circuit technology in connection with the specific charging technology guarantees an optimal and gentle charging of the batteries. It also cares for a long life and a high number of charging cycles.

If the battery remains on the charger after finishing the charging process, the charger automatically switches to float charging what provides a fully charged battery still after some months.

## 3. Special Features

- 3-step charging technology with a timer
- High frequent switching technology
- Automatic float charging
- Short circuit and reverse polarity protection
- Load dependent fanspeed
- Compact, robust metal housing
- 4 LEDs to indicate operation and charging status
- Active PFC (PFC = Power Factor correction)

## 4. Scope of delivery

1. Mains switch (On / Off Switch)
2. IEC socket
3. red power-LED
4. green charge-control LED → 3. charge step
5. yellow charge-control LED → 2. charge step
6. red charge-control LED → 1. charge step
7. charge cable with alligator clamps
8. Power cable



## 5. Operation

Before Operation please make sure that neither the power cable nor the charger including the charging cable show any damage and make sure that the mains supply complies with the specification.

- a) Connect the charging cable with the terminal block of the charger – look for the right polarity!
- b) Connect the charging cable with the plug / the pin of the battery – look for the right polarity!
- c) Make sure that the charge is off.
- d) Connect the charger with the mains supply.

\* is only for exemplars with terminal block

## 6. Charge of the battery

### !! ATTENTION !!

Connect the battery before you switch on the charger!  
Prior attend the instructions of battery or vehicle manufacturer!

#### I. Connect the charger to the battery:

##### Variant a - battery is built in the vehicle:

First connect the positive terminal (+) of the battery with the red clamp of the charging cable (+).  
After that, connect the clamp of the black charging cable (-) with the negative terminal (-) of the battery or the car body of the vehicle. (Please consider details from battery- and vehicle manufacturer !!)  
Please make sure that the connection is done in a safe distance to the fuel line.

##### Variant b – battery is not built in the vehicle:

First connect the positive terminal (+) of the battery with the red clamp of the charging cable (+).  
After that, connect the negative terminal (-) of the battery with the clamp of the black charging cable (-).

#### II. Start charging:

You should switch on the charger via the mains supply only after connection of the battery, in both above mentioned cases. The charging process starts automatically and runs through the following three charging phases:

##### 1. charging phase: constant current (CC)

This charging step is indicated by the **red charge-control LED (6)**.  
During the constant current phase, the battery is being charged to 80% of its capacity.

##### 2. charging phase: constant voltage (CV)

This charging step is indicated by the **yellow charge-control LED (5)**.  
During the constant voltage phase the battery is being charged to its maximum capacity.

##### 3. charging phase: float charge / battery is fully charged

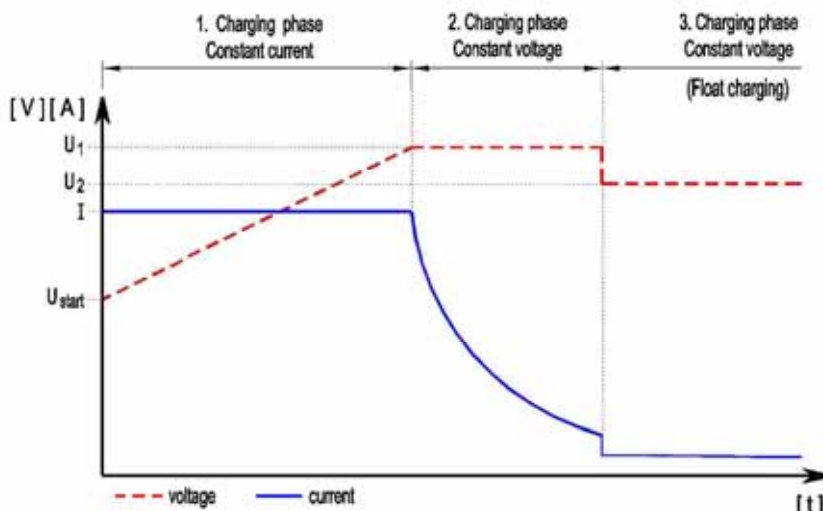
This charging step is indicated by the **green charge control LED (4)**.  
As soon as the battery has reached its full capacity, the charger switches into float-charge mode. The charger can now be disconnected from the battery (see pt. III disconnection the charger) or remain at the battery in float-charge mode. This guarantees a full battery at any time and therefore an instant operational readiness.

##### Further charging advices:

If a battery with a high status of capacity is connected to the charger, it is possible that the automatic switch from the 1<sup>st</sup> charging phase to the 2<sup>nd</sup> charging phase happens after a short time.

If a battery with a very low status of capacity is connected to the charger the automatic switch from the 1<sup>st</sup> charging phase to the 2<sup>nd</sup> need more time.

If the charger will be disconnected from the battery during the charging process, the charge current will be interrupted immediately. In this case switch off the charger via the ON/OFF switch. For starting a new charging process please comply with the relevant points.



Picture 1: Charging profile

### III. Disconnect the charger from the battery:

Before you disconnect the battery you have to switch off the charger after finishing the charging process. After that you can disconnect the connection. If you have alligator clamps you have to disconnect first the black clamp (-) and than the red one (+) of the charging cable from the battery.

## 7. Errors and Troubleshooting

#### Red Power-LED lights, battery is connected but charging process does not start:

- Check if red clamp (+) and black clamp (-) are reversed connected;
- A defective or deep-discharged battery is connected

#### Red Power-LED does not light:

- Check if the mains-plug is connected properly;
- Check if On/Off switch is switched on;
- Check if mains cable is defective;

## 8. Technical Data

TriTask-300 Series						
Version	12V / 15A	12V / 21A	24V / 8A	24V / 11A	36V / 7A	48V / 5A
Input (VAC)	100-240V / 50-60Hz					
Charging characteristic	IU0U					
**1. charging phase (A)	15	21	8	11	7	5
***2. charging phase (VDC)	14.7	14.7	29.4	29.4	44.1	58.8
****3. charging phase (VDC)	13.8	13.8	27.6	27.6	41.4	55.2
Output power max. (W)	220	309	236	324	309	294
Temperature range	0°C – 40°C					
Cooling	Fan					
Mains cable connection	3-pin or fix mounted					
Charge connection	Terminal block or fix mounted DC-cable					
Certifications	CE					
Dimensions / Weight	226 x 112 x 52mm / ~1.45kg					
Rec. battery capacity (Ah)	42 - 190	56 - 250	22 - 100	31 - 140	20 - 90	15 - 65
MEC Art-No.:	121-06153-170	121-06213-170	121-12802-170	121-12113-170	121-18702-170	121-24502-170

\*\* main charge with constant current \*\*\* reloading with constant voltage \*\*\*\* float charge with constant voltage

## 9. Advice for Disposal



It is prohibited to dispose the charger into the house- and residual waste removal (WEEE-Richtlinie 2002/96/EG und EAG-VO) , it must be disposed at the according collection points. For the protection of our environment please inform yourself at your communal administrative agency about your nearest disposal point.



The charger equates to the RoHS-directive 2002/95/EG, for the restriction of the use of certain hazardous substances in electrical and electronic equipment.



## 10. Disclaimer of Warranty

Mainland Energy Conversion Ltd guarantees replacement or repair of chargers that are recognized as defective within 2 years under common environmental conditions. The validation of the warranty time starts with the delivery date from the manufacturer. Mainland Energy Conversion Ltd is limiting the free guaranteeing to working hours and spare parts only.

For damages caused by non-observance of the operating instructions, inappropriate start up or handling as well as reconstructions and modifications of the device, the warranty claim expires and Mainland Energy Conversion Ltd assumes no liability for consequential damage to property or persons!

Repair work must only be accomplished by authorized companies or professional staff!

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