MicroPower™

POWERFUL SOLUTIONS IN BATTERY CHARGING

# MTM–HF ADVANCED MULTI CHARGER

- Advanced technology – for best battery lifetime
- High-frequency based multi-charger for all tractionary batteries
- Processor controlled
- High efficiency
- 24-80V, 40-300A

## MTM-HF

# MTM-HF

## SOME ADVANTAGES FOR THE MTM-HF CHARGERS

- Can charge all types of tractionary batteries
- High efficiency, up to 94%
- Low weight and small volume
- Advanced recharging control for best battery lifetime
- Display and keyboard permits simple adjustments, fault finding and statistics
- High power factor permits low mains fuse
- Fast charging

**MTM-HF is a high frequency, programmable, regulated charger with optimized charging curves for standard- and special batteries. This means that the battery is fully charged in the shortest possible time with low water consumption and minimum wear and tear in the battery. Thanks to the high frequency tecnique the charger has  low weight, small volume and high efficiency.**

## Function

The regulated charger MTM-HF can, independently of variations in the mains voltage, charge with a constant current and constant voltage in sequences prescribed by the manufacturer of the battery. This means that the charger can be used more effectively, leading to shorter charging-time compared with a Wa-charger with the same nominal current. MTM-HF is also equipped with a real time clock.

## Charging curves

The MTM-HF charger has a large number of preprogrammed charging curves for different types of batteries and applications. The selection of charging curve and type of battery can easily be programmed from the keyboard. All parameters are automatically changed when the charging curve and battery is programmed. Normally, these adjustments are made by Micropower at the customer´s request.

## Display and keyboard

Via the keyboard the customer can easily navigate through the menu and get information about charging time, number of recharged Ah etc.

Changes of the charging curve can be done locally without updating of the programs. All information is presented in plain language in the display. The customer has the possibility to choose between three different language versions.

## Statistics

The charger stores the five most recent charges, deviations and error messages and the charging profile together with the times. All information can be read in the display.

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*The display shows the charging process regarding the current and voltage and the keyboard permits simple adjustments of the charging curves without special tools or expensive equipment. Three LED's show how far the charging process has progressed.*

## Processor

MTM-HF is preprogrammed when it leaves the factory but can be reprogrammed via the keyboard by experienced personnel if the conditions are changed. The MTM-HF has a built-in processor that constantly calculates charging power and monitors the charging process. The charger interrupts charging if a fault occurs in the battery or the charger, temporarily or until the fault has been remedied, depending on the nature of the fault. MTM-HF indicates the nature of the fault in the built-in display.

## "Monday fatigue"

A common phenomenon is that the truck seems tired on Monday morning. This is also the case if the charger has been connected to maintenance charging throughout the weekend. The MTM-HF's "extra charging" function counteracts this by charging shortly before Monday's work begins. The desired time is selected with the help of the keyboard, "extracharging" will then take place automatically at the same time every weekend. This function and other time related functions can be programmed with the help of the keyboard and the real time clock in the charger.

## Options

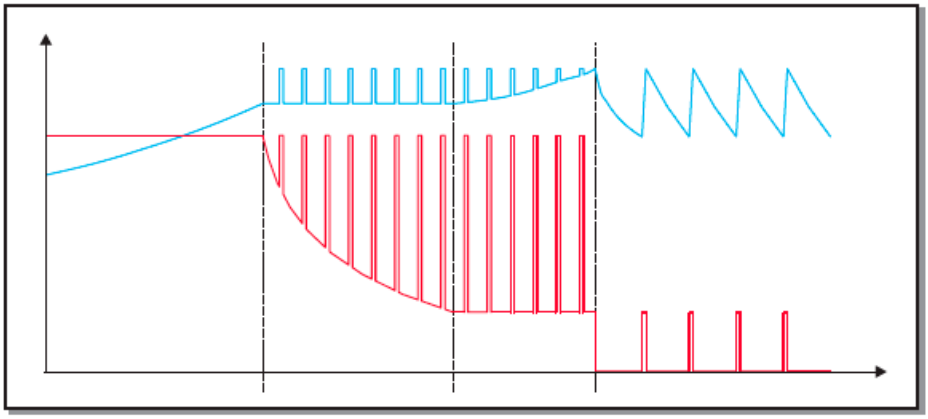
The MTM-HF charger has a number of options:

- Special charging curves
- Potentialfree inputs/outputs
- AGV charging
- Alarm functions
- Builtin pump for acid circulation
- IDB Battery Identification (only 3-phase mod.)

For further information on IDB – please see separtate information sheet.

- Automatic waterfilling
- Fast charging

## Example of charging curve (LK 10-04, chemical acid circulation)



# MTM-HF

**The size of the battery charger with regard to the size of the battery and available charging time.**

| Type description | | | | Recommended battery size. Standard charging algorithm | | Recommended battery size with chemical acid circulation | | Number of phases / mains current (A) | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Charging time (IUIU) | | | | | | |
| Type | Battery voltage (V) | Current (A) | Cabinet size | 8 hours* cap. Ah/5h | 12 hours cap. Ah/5h | 8 hours cap. Ah/5h | 10 hours cap. Ah/5h | 1-phase 220-230 (V) | 3-phase** 400 (V) | ~kg |
| **MTM-HF** | **24** | 60 | E4 | 371 | 710 | 459 | 627 | 8 | | 10 |
| | | 80 | E4 | 495 | 947 | 612 | 836 | 10,7 | | 10 |
| | | 100 | E4 | 619 | 1184 | 765 | 1045 | 13,4 | | 10 |
| | | 120 | E4 | 742 | 1421 | 918 | 1254 | 16 | | 10 |
| | | 150 | T3 | 929 | 1776 | 1148 | 1568 | | 7,2 | 15 |
| | | 175 | T4 | 1 083 | 2072 | 1339 | 1829 | | 8,4 | 31 |
| | | 200 | T4 | 1 238 | 2368 | 1530 | 2090 | | 9,6 | 31 |
| | | 250 | T4 | 1548 | 2960 | 1913 | 2613 | | 12 | 31 |
| | | 300 | T4 | 1857 | 3552 | 2295 | 3135 | | 14,4 | 31 |
| | **36** | 40 | E4 | 248 | 474 | 306 | 418 | 8 | | 10 |
| | | 60 | E4 | 371 | 710 | 459 | 627 | 12 | | 10 |
| | | 80 | E4 | 495 | 947 | 612 | 836 | 16 | | 10 |
| | | 100 | T3 | 619 | 1184 | 765 | 1045 | | 7,2 | 15 |
| | | 130 | T3 | 805 | 1539 | 995 | 1359 | | 9,4 | 16 |
| | | 150 | T3 | 929 | 1776 | 1148 | 1568 | | 10,8 | 16 |
| | | 175 | T4 | 1083 | 2072 | 1339 | 1829 | | 12,6 | 31 |
| | | 200 | T4 | 1238 | 2368 | 1530 | 2090 | | 14,4 | 31 |
| | | 225 | T4 | 1393 | 2664 | 1721 | 2351 | | 16,2 | 31 |
| | | 250 | T4 | 1548 | 2960 | 1913 | 2613 | | 18 | 31 |
| | | 300 | T4 | 1857 | 3552 | 2295 | 3135 | | 21,5 | 31 |
| | **48** | 40 | E4 | 248 | 474 | 306 | 418 | 10,7 | | 10 |
| | | 60 | E4 | 371 | 710 | 459 | 627 | 16 | | 10 |
| | | 80 | T3 | 495 | 947 | 612 | 836 | | 7,7 | 15 |
| | | 100 | T3 | 619 | 1184 | 765 | 1045 | | 9,6 | 15 |
| | | 130 | T3 | 805 | 1539 | 995 | 1359 | | 12,5 | 16 |
| | | 150 | T4 | 929 | 1776 | 1148 | 1568 | | 14,4 | 31 |
| | | 200 | T4 | 1238 | 2368 | 1530 | 2090 | | 19,2 | 31 |
| | | 225 | T4 | 1393 | 2664 | 1721 | 2351 | | 21,6 | 31 |
| | | 260 | T4 | 1610 | 3078 | 1990 | 2718 | | 24,8 | 31 |
| | **72–80** | 40 | T3 | 248 | 474 | 306 | 418 | | 6,4 | 15 |
| | | 60 | T3 | 371 | 710 | 459 | 627 | | 9,6 | 15 |
| | | 80 | T3 | 495 | 947 | 612 | 836 | | 12,8 | 16 |
| | | 100 | T4 | 619 | 1184 | 765 | 1045 | | 16 | 31 |
| | | 120 | T4 | 742 | 1421 | 918 | 1254 | | 19,2 | 31 |
| | | 160 | T4 | 990 | 1539 | 1224 | 1672 | | 25,6 | 31 |



***3-phase charger also available in 3x440V, 60 Hz and 3x480V, 50-60 Hz (UL approved)*

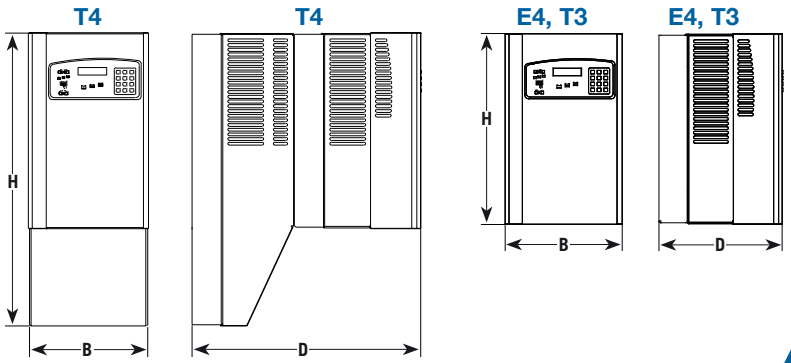
***With our chemical acid circulation (ionic mixing) the charging time can be about 1 hour less than the values shown in the table.*

**Standard chargers include:**
1-phase charger: Primary cable 2.5 m with contact.
3-phase charger: Primary cable 3 m with contact (no contact delivered at switchable chargers)
Secondary cable: Twin cable length 3 m.
**Chargers with charge current >200A are delivered with dual secondary cables.**

## Dimensions and data:

| | Cabinet Type | Height H | Width B | Depth D |
|---|---|---|---|---|
| 1-phase | E4 | 420 | 255 | 150 |
| 3-phase | T3 | 420 | 255 | 270 |
| 3-phase | T4 | 623 | 255 | 486 |

All cabinets are classified as IP21.
Other classifications can be obtained as an option. All measurements in mm.

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