



**50 Hz Chargers**  
**ME/ME II/TE**  
**8MSE/8TSE**  
**8TSE + air pump**

**COST-EFFECTIVE 50 HZ  
CHARGING SOLUTIONS**



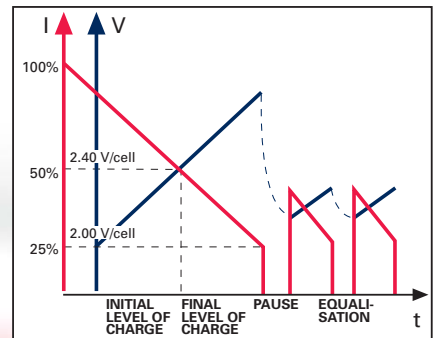
In today's market the range of traction batteries on offer for the industrial truck sector is very extensive. Many motive power batteries are designed to meet specific needs and form a coordinated system when paired with a matching charger. To achieve this, charger specifications must also comply with a set of specific requirements. The charging process must take the characteristics and application of the battery into account. This process is a decisive factor for the economic use of batteries. Hawker® offers extremely modern charging systems for all applications. All chargers are equipped with microprocessor control of the charge cycle. They are protected with a tough outer casing and are of course CE compliant.

Our products have German TÜV-GS certifications for quality and safety. They are 89/336/CEE, 73/23/CEE, ROHs and CE brand compliant.



## ME-ME II / TE types

The Hawker charger, type ME - ME II (single phase) or TE (3-phase) is a high added value product at a competitive price. It is especially suitable for basic requirements and single shift operations, i.e., where charging times of more than 10 hours are possible. The ME II is a brand new range, similar to ME series but offering specific cabinet dimensions and a different control board.



Wa Curve

### Technical Specifications

- Power requirements  
**ME - ME II:** (single phase) 230 V / 50-60 Hz  
**TE:** (3-phase) 230/400 V / 50-60 Hz
- Adaptation to mains voltage via a transformer  
**ME - ME II:** 220-230-240 V  
**TE:** 380-400-420 V
- Battery capacity range at nominal voltage  
**ME - ME II:** (single phase): 60-950 Ah  
**TE:** (3-phase) : 250-1430 Ah
- Normal charging time: 10 to 12 hours.
- 3 metre mains and battery leads, plugs supplied (specify make & model when ordering).

- Tropicalised stray-flux transformer, copper windings with double enamel insulation, class H, impregnated with non-toxic resins, kiln-dried.
- Rectifier bridge equipped with EMC filters.
- Leads are marked in compliance with safety standards.

### Safety Features

- Network entry (**ME - ME II**) and direct current exit (**ME - ME II** and **TE**) protected by fuses to prevent polarity reversals and/or power surges.
- Thermal protection around the transformer.
- Safety cut-out circuit: after 11 hours (**ME - ME II** or **TE**) without reaching the gassing point.
- Final charge time can be adjusted.
- Polarity reversal.
- Microprocessor control.
- Cabinet protection IP20.

### LED display

LED display for the following information:

- Battery connected
- Auto start
- Initial level of charge
- Final level of charge
- Charge complete
- Automatic equalising charge (for **ME - ME II** and **TE**)



### Fault information

- LED display for the following faults:
- Charger faults: red LED flashes (AC alternating current network fault).
  - Battery faults: red LED stays lit: the battery has been charged for 11 hours in the first step (ME - ME II and TE) without reaching the gassing point. The charger stops automatically.

### Features

- Non-regulated Wa charging curve.
- LED state of charge display.
- 80% and 100% charge levels and faults are displayed.
- Automatic equalising charge can be programmed at the weekend.
- Auto start: reliable and fully automatic start of the charging process with 5-second delay.
- Safety cut-out circuit. In the event of a fault, the safety cut out circuit will prevent overcharging of the battery.
- Fault diagnosis and display.
- STOP button: this button enables risk-free interruption of the charge cycle at any stage.

### Advantages

- Competitive prices = reduction in financial outlay.
- Industry proven Wa curve ensures simple and safe battery charging.
- LED display, fast recognition of the state of charge.
- Automatic equalising charge, minimises the differences in power in the cells caused by use.
- Charge starts automatically.
- Safety cut-out circuit and fault diagnosis, fast fault detection and protection of the battery from damage.

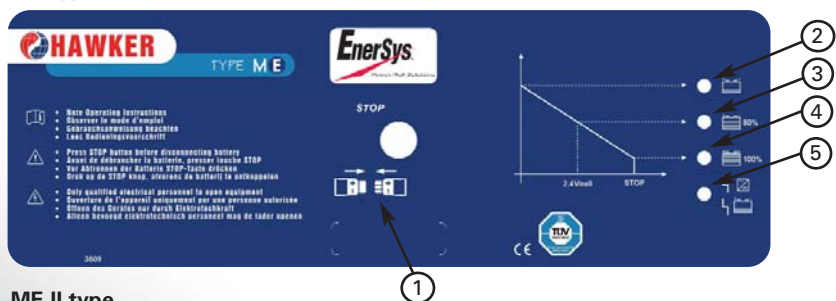
### Cabinet

- Epoxy powder paint coating
- Standard colours (blue RAL 5002 and white RAL 9010)

For cabinet dimensions please refer to the Technical Data.

### Control panel

#### ME type



#### ME II type



#### TE type



Ref.	Function	Ref.	Function
①	On/Off button	⑤	Fault
②	Battery Connected/charging	⑥	Equalising charge
③	Charging (final stage) (80% of charge)	⑦	Visualisation level of intensity
④	Charge complete		

### Use

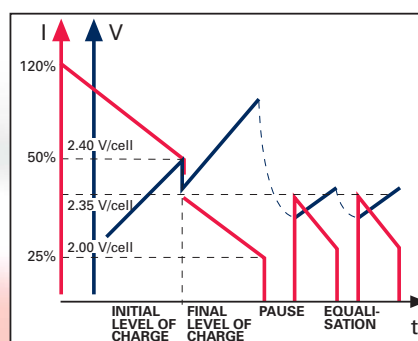
1. Light duty	2. Normal duty
<b>Hawker perfect plus</b>	

8MSE/8TSE type chargers from the Hawker® range are equipped with an alpha-numeric display to indicate various settings and features during the charging process (charge current, battery voltage, Ah returned, diagnostic messages) and offer all the advantages of powerful microprocessor control combined with intelligent recharge technology. Regulation of the recharge in Ah enables the quantity of energy (in Ah) returned to the battery to be displayed. This proven method guarantees optimal quality recharging, i.e., the battery is fully charged but not overcharged. Our chargers have an extensive range of programme settings (full charge voltage, charging time, safety cut-out time).



## 8MSE/8TSE type 8TSE + air pump type

Fast 8MSE (single phase) and 8TSE (3-phase) chargers can recharge a battery in 8 hours (6 to 7 hours for the 8TSE + air pump), using a Wo-Wa curve, enabling intensive use of the battery.



Wo-Wa Curve

### Technical Specifications

- Power supply  
8MSE: (single phase) 230 V / 50-60 Hz  
8TSE: (3-phase) 230/400 V / 50-60 Hz
- Adaptation to mains voltage via a transformer  
8MSE: 220-230-240 V  
8TSE: 380-400-420 V
- Battery capacity range at nominal voltage  
8MSE: (single phase): 150-650 Ah  
8TSE: (3-phase): 240-1650 Ah  
8TSE + air pump: 200 - 1350 Ah
- Normal charging time: 8 hours.
- 3 metre mains and battery leads, plugs supplied (specify when ordering).
- Tropicalised stray-flux transformer, copper windings with double enamel insulation, class H, impregnated with non-toxic resins, kiln-dried.

- Rectifier bridge equipped with EMC filters.
- Leads marked in compliance with safety standards.
- Non-regulated Wo-Wa charging curve.
- Automatic float charge to prevent battery discharging completely.

### Safety features

- Network and control circuit protected by fuses.
- Safety cut-out 7 hours after charge begins.
- High battery voltage >2.80 V/cell.
- Polarity reversal.
- Microprocessor control.
- Thermal protection around transformer.
- Data feedback control.
- IP20 protection.

### LED display

LED display for the following information:

- Battery connected
- Auto start
- Initial level of charge
- Final level of charge
- Charge complete
- Equalising charge programmed
- LCD fault display



### Fault information

LED displays for the following faults:

- Network fault
- Faulty back-up fuses
- Problem with thermal protection around transformer
- Safety cut-out time
- Faulty diode bridge
- Battery at maximum voltage

### Features

- Non-regulated Wo-Wa charging curve.
- Electronic control AP-735WW controlled by the microprocessor.
- New polycarbonate panel for immediate display of charge cycle status using 5 clearly legible LEDs.
- LCD display with 4 figures and 12 multifunction symbols. The green ON/OFF button can be used to display settings from a previous charge.
- 80% and 100% charge levels, current charging status, equalising charge and faults can all be displayed using LEDs.
- The display gives results in figures.
- STOP button: this button enables risk-free interruption of the charge cycle at any stage.
- Adapts to nominal battery voltages of 12/16/24/28/36/40/48/72/80/96 V with jumpers and limit control at 2.40 V/cell with potentiometer.
- Recharge regulated according to the quantity of Ah returned to the battery.
- Automatic equalising charge.
- Charge setting display.

### LCD display

LCD display with 4 figures and 12 multifunction symbols. The green ON/OFF button can be used to display settings from a previous charge:

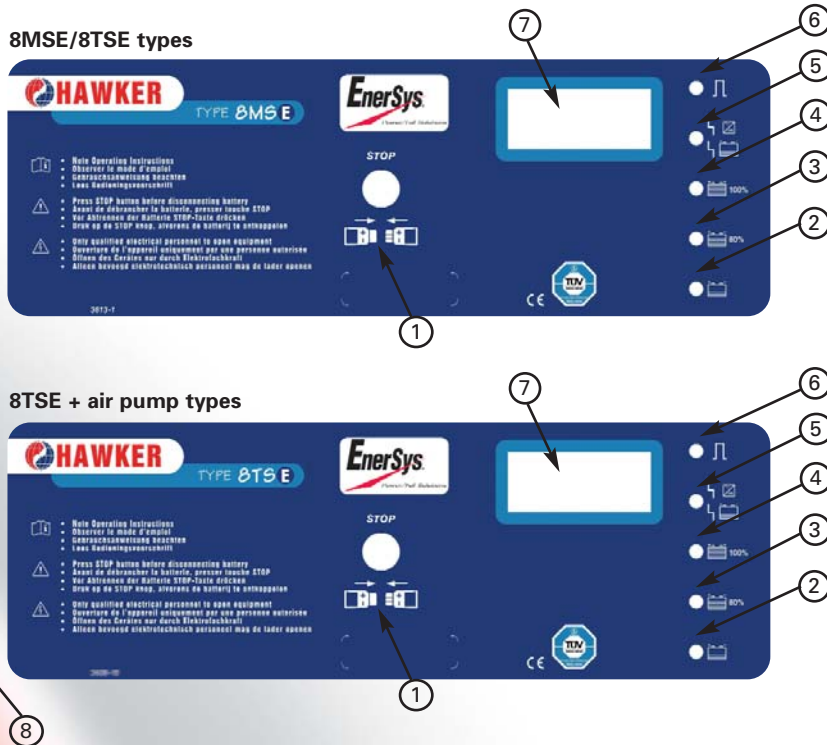
- Ah returned to the battery (Ah)
- Total charge time (hr: min.)
- Maximum battery voltage (V)
- Maximum initial current (A)

### Cabinet

- Epoxy powder paint coating
- Standard colours (blue RAL 5002 and white RAL 9010)

For cabinet dimensions please refer to the Technical Data.

### Control panel



Ref.	Function	Ref.	Function
①	On/Off button	⑤	Fault
②	Battery Connected/charging	⑥	Equalising charge
③	Charging (final stage) (80% of charge)	⑦	Multifunction display
④	Charge complete	⑧	Air Pump Alarm

### Use

1. Light duty	2. Normal duty	3. Heavy duty
Hawker perfect plus (8MSE-8TSE)		
Hawker perfect plus + EC* (8TSE + air pump)		

\* EC: electrolyte circulation



Wherever you do business, EnerSys® can support you with motive power energy. The Hawker® branded battery range, matched chargers and systems provide trouble free performance under the most demanding service conditions. Our strategically located manufacturing plants are efficient and responsive with a culture of continuous improvement and added value for our business partners.

EnerSys has an enviable position in technology leadership and with significant investment in research and development we intend to stay at the leading edge in product innovation. The recently developed energy solutions: Hawker XFC™ and Water Less® 20 batteries, Lifetech and Lifespeed IQ™ HF chargers, have defined new benefits for our customers: faster recharge, more machine availability, lower operating and investment costs, reduced carbon footprint. Our team of development engineers is driven by the desire to build the best energy solutions and works closely with our customers and suppliers to identify development opportunities. Our bias for rapid innovation means we get new products to market fast.

EnerSys's integrated sales and service network is dedicated to providing our customers with the best solutions and after-sales support for their business. Whether you require 1 battery or a complete fleet of batteries, chargers, a battery handling system and a state of the art fleet management system, you can count on us. EnerSys is the world's largest industrial battery manufacturer and we are dedicated to being the best.



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