

*User friendly charging technology*



**Smart chargers**  
**Fiamm Motive Power**  
**Premium HF flex**  
**Premium HF com**

# Smart and flexible state of the art technology

## Premium HF flex - Premium HF com

This new range of Fiamm Motive Power high frequency chargers is the result of long expertise and constant study of the customer's needs and requirements. With the ability to communicate with the battery we can provide the optimal energy pack needed for all motive power applications.

### The optimal solution

#### Premium HF flex

This range is our premium brand and at the leading edge of smart technology. These three phase, multivoltage and multicapacity chargers are able to communicate with the battery through the Fiamm Motive Power energycom or easyplus, the electronic device located on the battery.

#### Premium HF com

This range offers the ultimate compromise in efficiency and customer value. It is a single voltage and multicapacity charger and it is available in single phase and three phase.

### Benefits of HF technology

Optimal availability for use and long service life can only be achieved from motive power batteries when the battery and the charger are perfectly matched.

#### The HF technology permits:

- Compact wall-mounted designs to save floor space
- Significantly higher electrical performances.

Thus the necessity for specific chargers is replaced by the capability of multicapacity and multivoltage (with the Premium HF flex).

**The Premium HF flex and Premium HF com chargers adapt automatically to:**

- Capacity of the battery
- Voltage of the battery (Premium HF flex)
- Depth of discharge of the battery.

These factors plus high energy efficiency, very high and constant power factor, reduced overcharge factor and delayed start of charge available on Premium HF flex and Premium HF com ranges deliver significant energy cost reductions.

**Our HF charger ranges match all technologies of lead-acid batteries (vented, gas recombination: gel or AGM), especially for Fiamm Motive Power battery ranges:**

- Fiamm Motive Power energy dry (valve regulated batteries with gel electrolyte)
- Fiamm Motive Power energy plus (vented batteries)
- Fiamm Motive Power energy plus with air mixing
- Other low maintenance package
- In Fiamm Motive Power System energy Low Maintenance 70 (low maintenance, heavy duty)
- Powerbloc/powerbloc dry (monoblocs for small traction)

And offer high performances, reliability and multipurpose use.



### Definition of application fields

#### 1. Low duty

Single shift with light operation and discharge lower than 60 % C<sub>5</sub>, electrolyte T °C about 30 °C

#### 2. Normal duty

Single shift with discharge up to 80 % C<sub>5</sub>, electrolyte T °C 30 °C

#### 3. Heavy duty

- Single shift with discharges of 80 % C<sub>5</sub> and high discharging currents
- Opportunity charging to augment the useable capacity
- Multi-shift operation with or without battery changes
- High ambient temperature

### Example of parameters stored by the charger

Nb	T °C	Cap	Batt. Serial Number	Techno-logy	U <sub>init</sub>	Ah+	U <sub>final</sub>	I <sub>final</sub>	State of charge Init	Status
1	22	600	AC56123	Gel	2.00	426	2.71	6	29	Complete
...										
100	30	520	AC12562	PbO	2.05	175	2.35	65	40	Disconnect

# Capability of communication with the battery

## Premium HF flex - Premium HF com

With the Fiamm Motive Power energycom (Fiamm Motive Power energy dry batteries) or easyplus (flooded batteries) located on the battery, the Premium HF flex and Premium HF com are capable of communication with the battery and can display the charge parameters for the last 100 charges.

### energycom or easyplus: electronic device

Automatic profile correction in relation to temperature, when used with Fiamm Motive Power energycom or easyplus, ensures correct charge profile to safeguard charging time and optimal service life.

### Main technical features

- High power factor and efficiency
- Optimal charge factor based on depth of discharge
- Temperature regulation (gel, flooded with or without electrolyte mixing)
- Memory of last 100 charges
- Menu:
  - Deferred start
  - Selection of equalization
  - Selection of charging profile
  - Temperature
  - Selection of cable length and section
  - Rest time of the battery
  - Electrically-operated valve (with control)

- **Charging status**  
(Incomplete Charge, Full Charge, Total Incomplete Charges, Total Full Charges)
- **Download of profiles on PDA through RS232**
- **Optional extras**
  - Red/green light
  - Automatic water topping up kit
  - Pneumatic air mixing pump kit
  - Download (profiles, memory) on PC, or printer



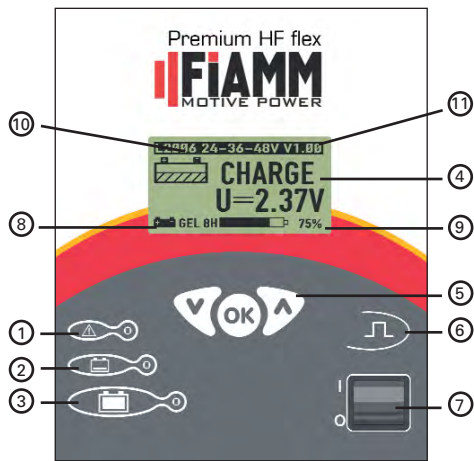
Fiamm Motive Power energy dry  
 Fiamm Motive Power energy plus  
 Fiamm Motive Power energy plus with electrolyte mixing  
 Fiamm Motive Power LM 200  
 Other low maintenance package  
 Fiamm Motive Power System energy LM 70

Low duty	Normal duty	Heavy duty
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# Front Panels



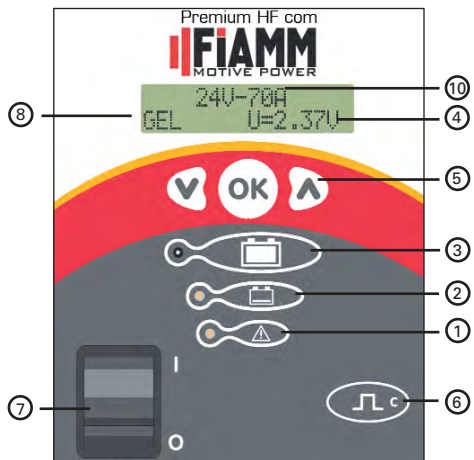
## Premium HF flex chargers



Clear, easily understood indications of charge parameters on the LCD display for these multivoltage, 3-phase chargers

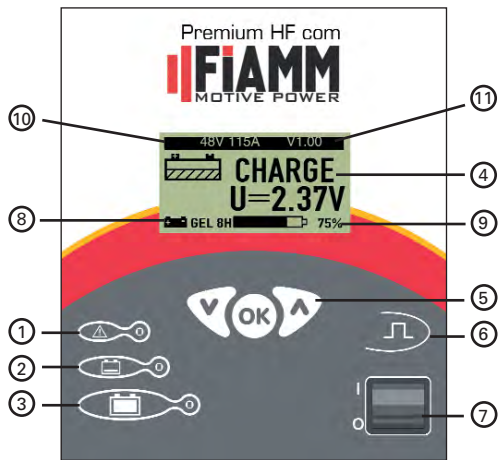
No.	Function
①	Red « Fault » light: permanently lit, flashing or unlit
②	Yellow « Battery on charge » light: permanently lit, flashing or unlit
③	Green « Battery available » light: permanently lit, flashing or unlit
④	Digital display
⑤	Parameter/memory menu
⑥	Desulphation button
⑦	Start (position I) and Stop (position 0) switch
⑧	Battery technology
⑨	State of charge
⑩	Type of charger – Available voltage
⑪	Software version

## Premium HF com chargers Single Phase



Clear, easily understood indications of charge parameters on the LCD display for these single voltage, single phase or 3-phase chargers

## Premium HF com chargers Three Phase



The optimal energy pack needed for all motive power applications



# EnerSys battery fleet management



## Take control of your battery fleet

One of the challenges facing many companies today is the effective management of their fleet of motive power batteries. Multi-shift manufacturing operations, longer retail trading hours and the demand for faster logistics solutions are part of everyday business life. Keeping your materials handling equipment running, often times 24 hours a day, to support your business creates the need for battery changing. Selecting the "best battery" is vital to keep your truck fleet up-time and productivity to a maximum. EnerSys have a solution that makes managing your battery fleet straight forward and affordable. Communication between the EnerSys HF chargers and the pc is automatic and requires no data input from your staff. Battery selection by your truck operators is simple, it just requires them to look at the screen.

### PowerNet

Building on the success of the BFM system, EnerSys has developed the **PowerNet** software program which adds some great new features for the effective management of your charging room. If you are dedicated to getting the optimum performance and service life from your battery fleet, having visibility and control of your battery charging operation and also controlling the amount of power you use in the battery room then **PowerNet** is what you have been waiting for!

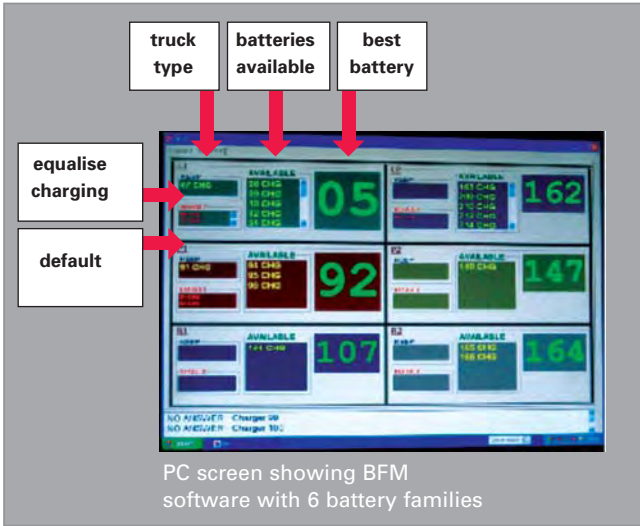
#### PowerNet Software

- First in, first out" Battery Fleet Management
- Allocates "best battery" for each truck type
- Can manage 10 truck/battery families
- Can manage 500+ chargers
- Visibility of other fully charged batteries
- Check status of all chargers
- Visibility of all charge cycles - number, complete, incomplete & equalise
- Remote access to data via internet

#### Additional features

(When batteries are equipped with easyplus devices)

- Check status of all batteries
- Check for over-discharging
- Check for high operating temperatures
- Identify potential faults (before breakdowns occur)
- Identify which batteries require water topping



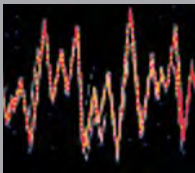
#### BFM Software

The BFM program, which is set up on a pc, is an extremely easy to use "first in, first out" system. The software can manage up to 12 battery families and 500+ chargers. Each truck type or battery family is allocated a name and the pc screen displays the relevant data: "next battery" "batteries available" "batteries equalisation charging" "defaults"

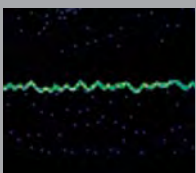
#### Look at the benefits ...

- maximises battery utilisation across your fleet
- avoids the need to dedicate batteries to specific trucks
- manages charging & battery rotation
- reduces battery changing time
- improve battery service life
- integrates pc controlled automatic equalisation charging

### Electricity power demand



Fluctuating electricity consumption without power management



Balanced electricity consumption using PowerNet

Controlling the rate at which you use electricity can have a dramatic impact on how much you pay. Peaks in demand above agreed thresholds generally mean large premiums.

**PowerNet** can be programmed to manage the total power used in your battery room by switching chargers on/off automatically to maintain electricity consumption within desired parameters.

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