# 51.2V | 25.6V

# 240Ah

# 6.2 | 12.4

KWh


# DATASHEET

HMC
POWER SOLUTION

# Contents


- **Why lithium-iron-phosphate?** ..... 3
  - **Efficient** ..... 3
  - **Size and weight** ..... 3
  - **Expensive?** ..... 3
- **Features** ..... 3
- **Parameters** ..... 4
- **Battery handling** ..... 5
  1. **Stop/Transport Mode:** ..... 5
  2. **Working Mode:** ..... 5
  3. **Sleep Mode:** ..... 5
  4. **Error Mode:** ..... 5
  5. **In an Over-discharge/Short circuit current case:** ..... 5
- **COMMUNICATION UNIT** ..... 6
  - **Hibernate and wake up** ..... 7
  - **DIP switch settings** ..... 8
  - **Communication pin-out** ..... 8
- **HMC WIFI dongle:** ..... 9
- **Performance Curve (51.2Vmodel)** ..... 10
- **Dimensions** ..... 10

# HMC-LFP Power Wall Series

HMC Power Solution delivers safe lithium iron phosphate batteries solutions for all types of applications.

## ❖ Why lithium-iron-phosphate?

Lithium-iron-phosphate (LiFePO4 or LFP) is the safest of the mainstream li-ion battery types. The nominal voltage of a LFP cell is 3,2V (lead-acid: 2V/cell). A 12,8V LFP battery therefore consists of 4 cells connected in series; and a 25,6V battery consists of 8 cells connected in series and so on. A LFP battery does not need to be fully charged. Service life even slightly improves in case of partial charge instead of a full charge. This is a major advantage of LFP compared to lead-acid.
Other advantages are the wide operating temperature range, excellent cycling performance, low internal resistance and high efficiency (see below).
LFP is therefore the chemistry of choice for demanding applications.

### Efficient

In several applications (especially off-grid solar and/or wind), energy efficiency can be of crucial importance.
The round-trip energy efficiency (discharge from 100% to 0% and back to 100% charged) of the average lead acid battery is 80%.
The round-trip energy efficiency of a LFP battery is more than 92%
The charge process of lead-acid batteries becomes particularly inefficient when the 80% state of charge has been reached, resulting in efficiencies of 50% or even less in solar systems where several days of reserve energy is required (battery operating in 70% to 100% charged state).
In contrast, a LFP battery will still achieve 90% efficiency under shallow discharge conditions.

### Size and weight

Saves up to 70% in space
Saves up to 70% in weight

### Expensive?

LFP batteries are expensive when compared to lead-acid. But in demanding applications, the high initial cost will be more than compensated by longer service life, superior reliability and excellent efficiency.

## ❖ Features

- Built-in automatic protection for over-charge, over-discharge, short circuit and over/under temperature conditions.
- State of charge indication (SOC).
- Internal cells balancing.
- Compatible with most solar and backup systems.
- Maintenance free.
- Real local warranty with 3 working days repair time at the repair shop.

## ❖ Parameters

| Parameter | | HMCLFPEA4823012K | HMCLFPEA242306K |
|---|---|---|---|
| Output Voltage | | 44.8-56.8 | 22.4-28.4 |
| Cells count | | **16** | **8** |
| Cells grade | | **A+** | |
| Nominal capacity(25℃,0.5C) | | 230Ah | |
| Real capacity | | More than 245Ah | |
| Energy | Nominal energy | **11.77** KWh | **5.9** |
| Dimensions | Weight (Approximate) | 85Kg | 47Kg |
| | Width*Depth*Height | 62*22*62 | 62*22*40 |
| Impedance | | <30mΩ | |
| Standard Discharge @25℃ | Max. constant current | **120A** | |
| | Peak current | **140A** | |
| | Cut-off voltage | 45V | 22.5V |
| | Inverter cut-off voltage | 48V | 24V |
| Standard charge @25℃ | Bulk charge Voltage | ~56.8V | ~28.4V |
| | Max. constant current | **70A** | |
| | Recommended charging current and time | **45A**(0.2C) for 5 hours | |
| Round trip efficiency (%) | | ＞**99%** | |
| Life expectancy@25℃ | | ＞**10 years** | |
| Cycle life (0.2C, 25℃) | | **6000 cycles** @80% DOD | |
| Recommend operating temperature | | Charging: 0℃~55℃ | |
| | | Discharging: -5℃~55℃ | |
| Recommend storage temperature | | Recommended range: 0℃~55℃ | |
| LOCAL Warranty | | 3 years (extended to 5 yrs. upon request) | |
| SERVICE AVAILABILITY PERIOD | | 10 YEARS | |
| COMPATIBILITY[1] | HMC WIFI DONGLE | YES | |
| | HMC COMMUNICATION | YES (VOLTRONIC – GROWATT – DEYE – BLUE SUN – CROWN AND MORE) | |
| | HMC ADVANCED PARALLEL ROUTER | YES / 15 units in parallel | |
| | Extended display | YES | |

[1] Extra charge may be applied

## ❖ Battery handling

1. Stop/Transport Mode:

   In working mode, turn off the switch (press in), the battery will go to STOP mode with low self-discharge. In STOP mode, charging MOS and discharging MOS are turned off, and the battery cannot charge or discharge.

2. Working Mode:

   turn on the switch (press out) and press the SOC display button for 3 seconds, or simply connect to the charger or the load, the battery will auto wake up and go to working mode.

   In working mode, BMS will monitor battery voltage, current, and temperature and if communication is available, the battery will operate as the settings.

3. Sleep Mode:

   After turning on the battery, if the battery voltage is below low voltage protection, BMS will go to sleep mode in 1 minute. In sleep mode, charging MOS and discharging MOS are closed BMS will check the current every 1 Min, if there is a charging current connected, the battery will automatically switch to working mode.

4. Error Mode:

   In working mode, if there are:

   Any cell voltage＞3.8V or ＜2.5V

   Battery temperature is ＜-5℃ or +60℃.

   BMS will go to error mode, SOC display will shut down, and go to STOP mode, charging MOS and/or discharging MOS are turned off.

5. **In an** Over-discharge/Short circuit current case:

   The battery should be disconnected for 10 seconds and then reconnected. **A DC CIRCUIT BREAKER** is highly recommended to simplify the disconnection.

## ❖ COMMUNICATION UNIT

Table 1 LED working status indication

| state | normal/alarm/ protect | ON/ OFF | RUN | ALM | Battery indicator LED | | | | | | Directions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| shutdown | Hibernate | Off | Off | Off | Off | Off | Off | Off | Off | Off | Annihilate |
| Standby | Normal | on | flash 1 | Off | According to the battery indicator | | | | | | Standby mode |
| | Alert | on | flash 1 | flash 3 | | | | | | | Module low voltage |
| Charge | Normal | on | on | Off | According to the battery indicator (battery indication maximum LED flashes 2) | | | | | | The highest power LED flashes (flashing 2), and the ALM does not flash when the overcharge alarm occurs |
| | Alert | on | on | 闪3 | | | | | | | |
| | Over voltage protection | on | on | Off | on | on | on | on | on | on | If there is no utility power, the indicator turns to standby state |
| | Temperature, over current, short circuit, reverse connection, fail-safe | on | Off | on | Off | Off | Off | Off | Off | Off | Stop charge |
| Discharge | Normal | on | flash 3 | Off | According to the battery indicator | | | | | | |
| | Alert | on | flash | flash | | | | | | | |
| | Under voltage protection | on | Off | Off | Off | Off | Off | Off | Off | Off | Stop discharge |
| | Temperature, over current, short circuit, reverse connection, fail-safe | on | Off | on | Off | Off | Off | Off | Off | Off | Stop discharge |
| invalid | | Off | Off | on | Off | Off | Off | Off | Off | Off | Stop charging and discharging |

Table 2 Description of capacity indication

| state | | | Charge | | | | | Discharge | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| capacity indicator | | L6● | L5● | L4● | L3● | L2● | L1● | L6● | L5● | L4● | L3● | L2● | L1● |
| SOC（%） | 0～16.6% | Off | Off | Off | Off | Off | flash 2 | Off | Off | Off | Off | Off | on |
| | 16.6～33.2% | Off | Off | Off | Off | flash 2 | on | Off | Off | Off | Off | on | on |
| | 33.2～49.8% | Off | Off | Off | flash 2 | on | on | Off | Off | Off | on | on | on |
| | 49.8～66.4% | Off | Off | flash 2 | on | on | on | Off | Off | on | on | on | on |
| | 66.4～83.0% | Off | flash 2 | on | on | on | on | Off | on | on | on | on | on |
| | 83.0～100% | flash 2 | on | on | on | on | on | on | on | on | on | on | on |
| Operation indicator● | | on | | | | | | flash (flash 3) | | | | | |

Table 3 LED flashing description

| flashing method | on | off |
|---|---|---|
| Flash 1 | 0.25S | 3.75S |
| Flash 2 | 0.5S | 0.5S |
| Flash 3 | 0.5S | 1.5S |

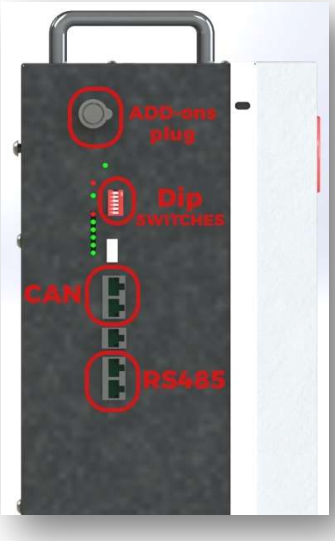
## ❖ Hibernate and wake up

**Hibernate**

The interface board itself does not have a sleep function.
If the BMS sleeps, the interface board will shut down.

**Wake up**

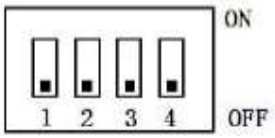
A single press of the activation button will activate.

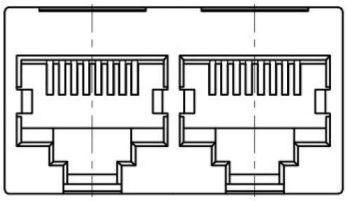


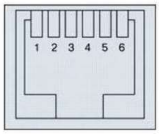
## ❖ DIP switch settings

When the PACK's are used in parallel, different PACK's can be distinguished by setting the address through the DIPswitch on the interface board. It is necessary to avoid setting the same address. Refer to the following table for the definition of the BMS DIP switch.

| Address | DIP switch position | | | |
|---|---|---|---|---|
| | #1 | #2 | #3 | #4 |
| 0 | OFF | OFF | OFF | OFF |
| 1 | ON | OFF | OFF | OFF |
| 2 | OFF | ON | OFF | OFF |
| 3 | ON | ON | OFF | OFF |
| 4 | OFF | OFF | ON | OFF |
| 5 | ON | OFF | ON | OFF |
| 6 | OFF | ON | ON | OFF |
| 7 | ON | ON | ON | OFF |
| 8 | OFF | OFF | OFF | ON |
| 9 | ON | OFF | OFF | ON |
| 10 | OFF | ON | OFF | ON |
| 11 | ON | ON | OFF | ON |
| 12 | OFF | OFF | ON | ON |
| 13 | ON | OFF | ON | ON |
| 14 | OFF | ON | ON | ON |
| 15 | ON | ON | ON | ON |





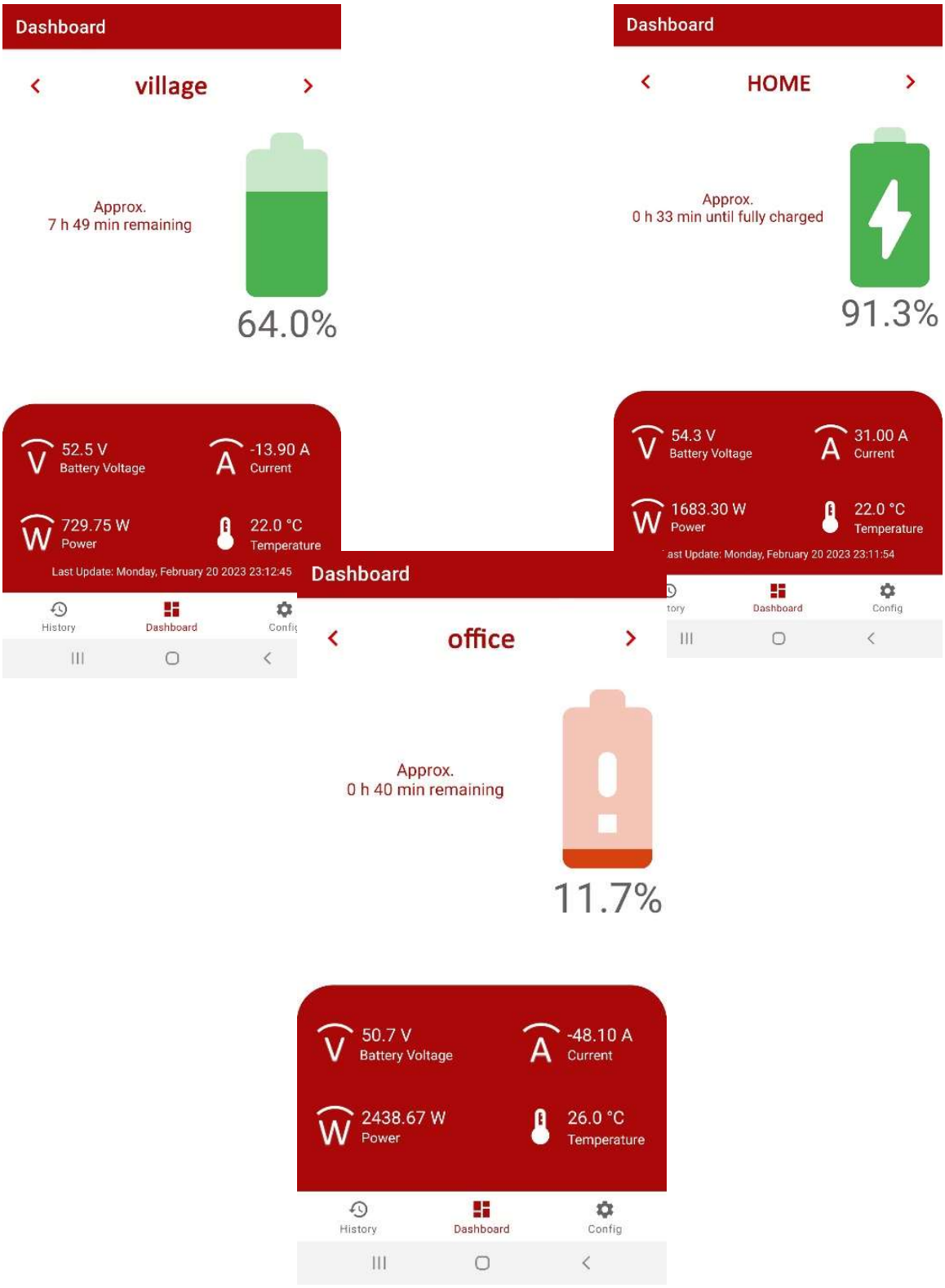

## ❖ Communication pin-out

| CAN--use 8P8C vertical RJ45 socket | | CAN--use 8P8C vertical RJ45 socket | |
|---|---|---|---|
| RJ45:Pin | Definition Description | RJ45 引脚 | Definition Description |
| 1、8 | NC | 9 | CANH |
| 2、7 | NC | 10 | CANL |
| 3、6 | GND | 11、14 | GND |
| 4 | CANL | 12 | CANL |
| 5 | CANH | 13 | CANH |
| | | 15、16 | NC |

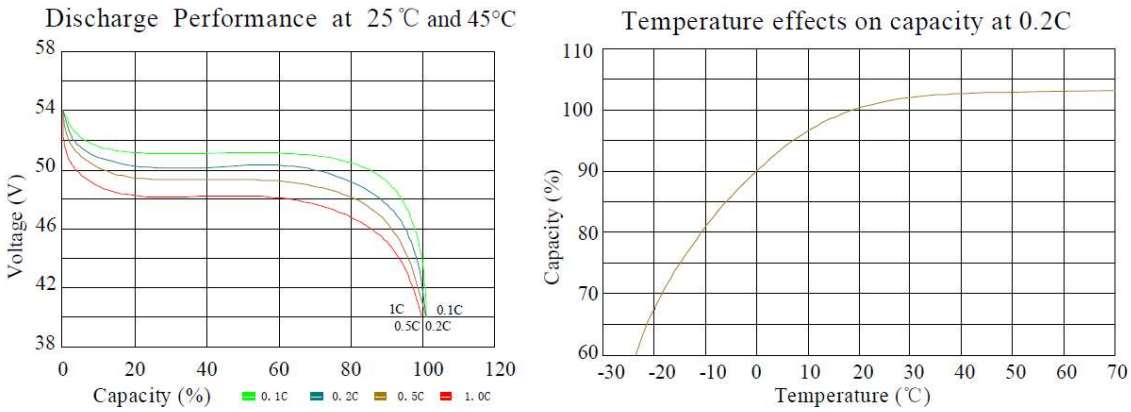
| RS485--use 8P8C vertical RJ45 socket | | RS485--use 8P8C vertical RJ45 socket | |
|---|---|---|---|
| RJ45 Pin | Definition Description | RJ45 Pin | Definition Description |
| 1、8 | RS485-B | 9、16 | RS485-B |
| 2、7 | RS485-A | 10、15 | RS485-A |
| 3、6 | GND | 11、14 | GND |
| 4、5 | NC | 12、13 | NC |

## ❖ HMC WIFI dongle:

The HMC WIFI dongle will help you to monitor your batteries wherever you are using our HMC mobile app, and get easier control of your consumption.

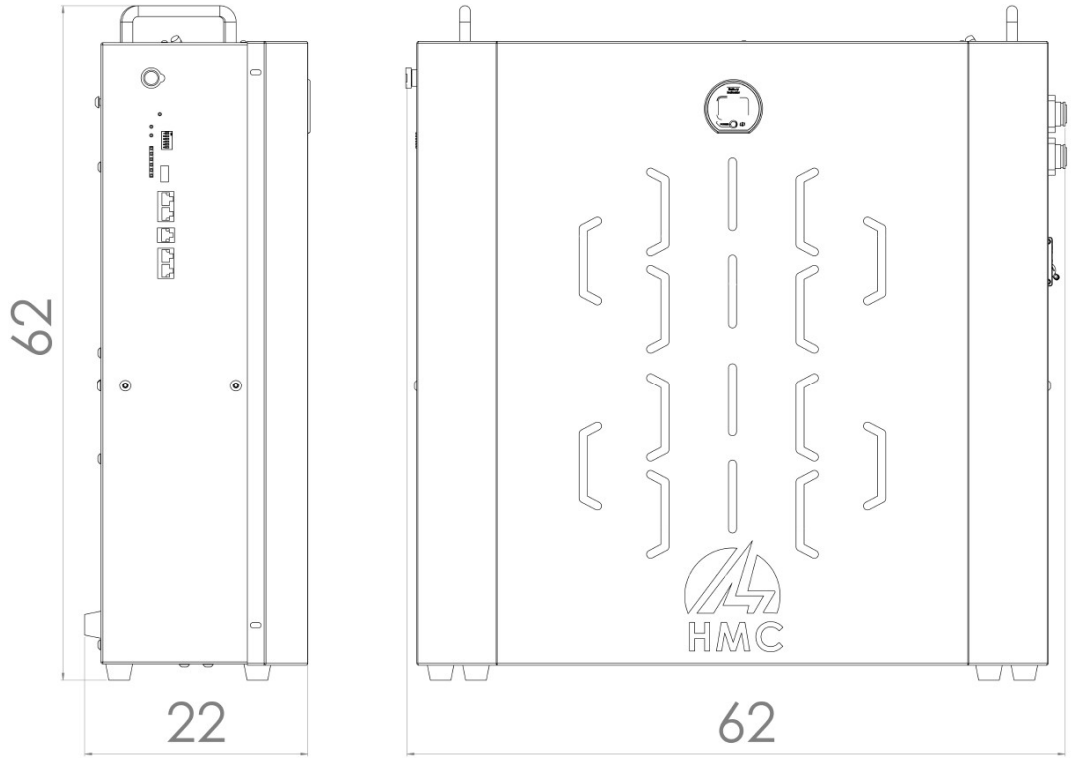


## ❖ Performance Curve (51.2Vmodel)




Performance may vary depending on but not limited to cell usage and application. If a cell is used outside specifications, performance will diminish.
All specifications are subject to change without notice. All information provided herein is believed, but not guaranteed, to be current and accurate.

## ❖ Dimensions



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