

**51.2V | 25.6V**

**170Ah**

**8.7 | 4.3**

**KWh**

**KWh**



**DATASHEET**



**HMC**  
power solutions

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# 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 (LiFePO<sub>4</sub> 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

<b>Parameter</b>		<b>HMCLFPEA481708K</b>	<b>HMCLFPEA241704K</b>
<b>Output Voltage</b>		44.8-56.8	22.4-28.4
<b>Cells count</b>		<b>16</b>	<b>8</b>
<b>Cells grade</b>		<b>A+</b>	
<b>Nominal capacity<sub>(25°C,0.5C)</sub></b>		161Ah	
<b>Real capacity</b>		More than 170Ah	
<b>Energy</b>	<b>Nominal energy</b>	<b>8.2 KWh</b>	<b>4.2 KWh</b>
<b>Dimensions</b>	<b>Weight</b> (Approximate)	63Kg	32kg
	<b>Width*Depth*Height</b>	70*13*62	42*13*62
<b>Impedance</b>		<30mΩ	
<b>Standard Discharge</b> @25°C	<b>Max. constant current</b>	<b>75A</b>	
	<b>Peak current</b>	<b>95A</b>	
	<b>Cut-off voltage</b>	45V	22.5V
	<b>Inverter cut-off voltage</b>	48V	24V
<b>Standard charge</b> @25°C	<b>Bulk charge Voltage</b>	~56.8V	~28.4V
	<b>Max. constant current</b>	<b>45A</b>	
	<b>Recommended charging current and time</b>	<b>32A(0.2C) for 5 hours</b>	
<b>Round trip efficiency (%)</b>		<b>&gt;99%</b>	
<b>Life expectancy@25 °C</b>		<b>&gt;10 years</b>	
<b>Cycle life</b> (0.2C, 25 °C)		<b>6000 cycles @80% DOD</b>	
<b>Recommend operating temperature</b>		Charging: 0°C~55°C Discharging: -5°C~55°C	
<b>Recommend storage temperature</b>		Recommended range: 0°C~55°C	
<b>LOCAL Warranty</b>		5 years over cells, one year over the BMS	
<b>SERVICE AVAILABILITY PERIOD</b>		10 YEARS	
<b>COMPATIBILITY<sup>1</sup></b>	<b>HMC WIFI DONGLE</b>	YES	
	<b>HMC COMMUNICATION</b>	YES (VOLTRONIC – GROWATT – DEYE – BLUE SUN – CROWN AND MORE)	
	<b>HMC ADVANCED PARALLEL ROUTER</b>	YES / 15 units in parallel	
	<b>Extended display</b>	YES	

<sup>1</sup> 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  $< -5^{\circ}C$  or  $+60^{\circ}C$ .

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	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	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	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	Off	Stop discharge
	Temperature, over current, short circuit, reverse connection, fail-safe	on	Off	on	Off	Off	Off	Off	Off	Off	Off	Stop discharge
invalid		Off	Off	on	Off	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**

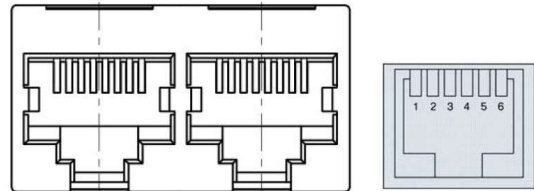
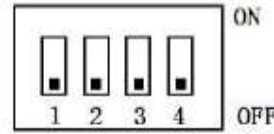
A single press of the activation button will activate.



## ❖ 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

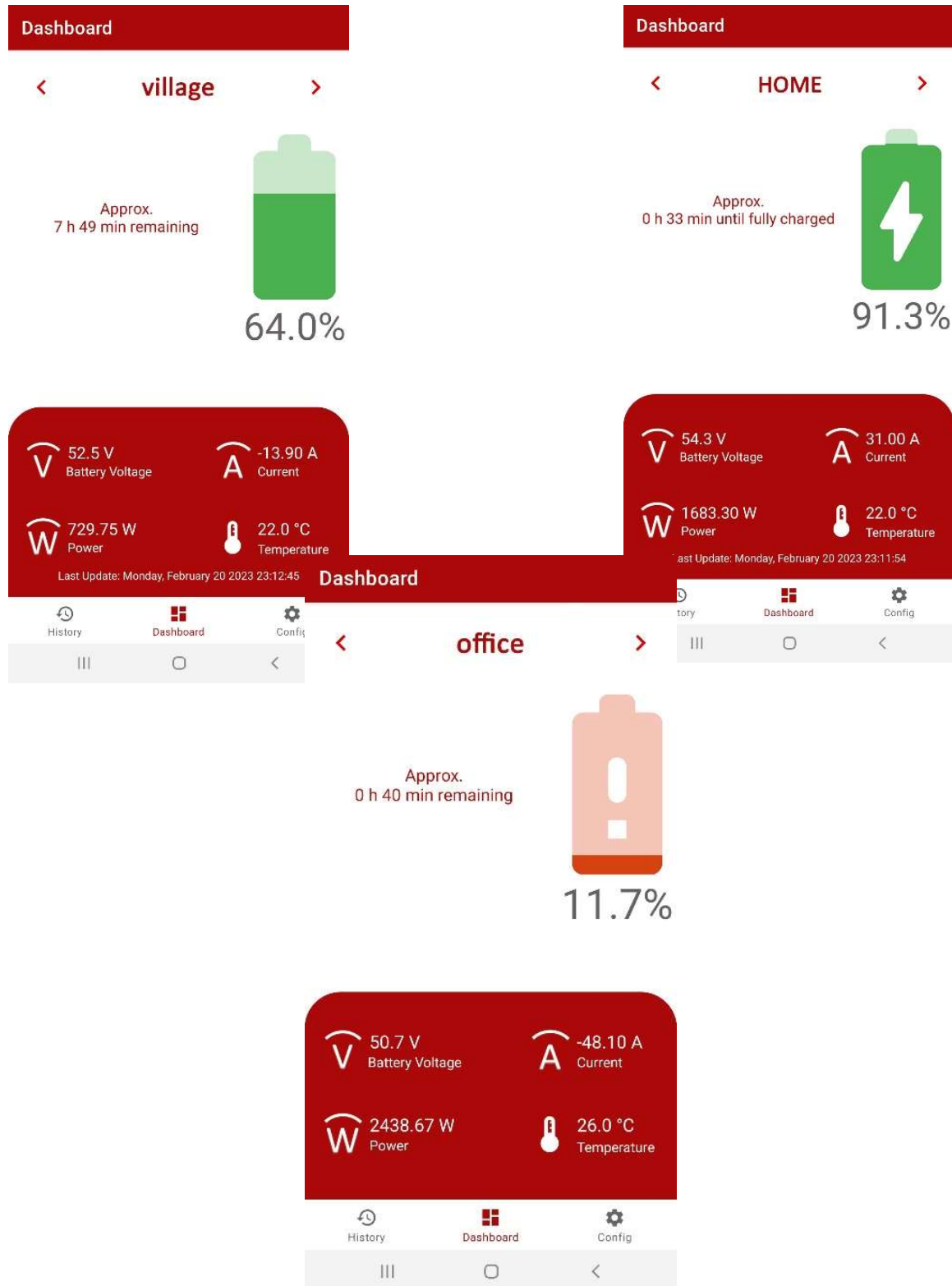
CAN--use 8P8C vertical RJ45 socket		CAN--use 8P8C vertical RJ45 socket	
RJ45:Pin	Definition Description	RJ45 引脚	Definition Description
1、 8	NC	9	CANH
2、 7	NC	10	CANL
3、 6	GND	11、 14	GND
4	CANL	12	CANL
5	CANH	13	CANH
		15、 16	NC

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

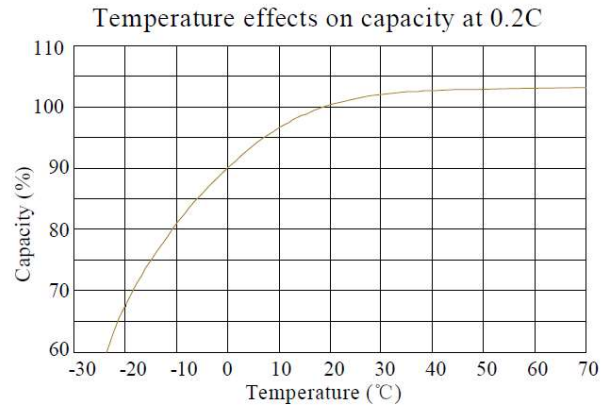
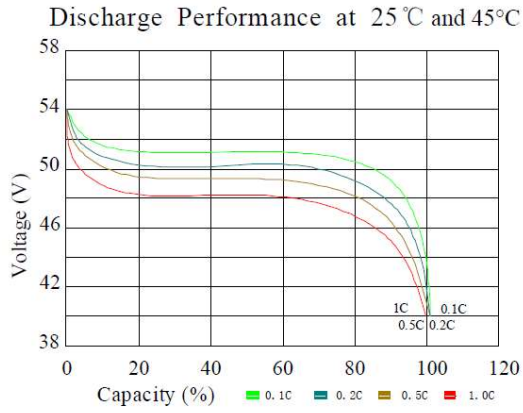


## ❖ HMC WIFI dongle:

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.

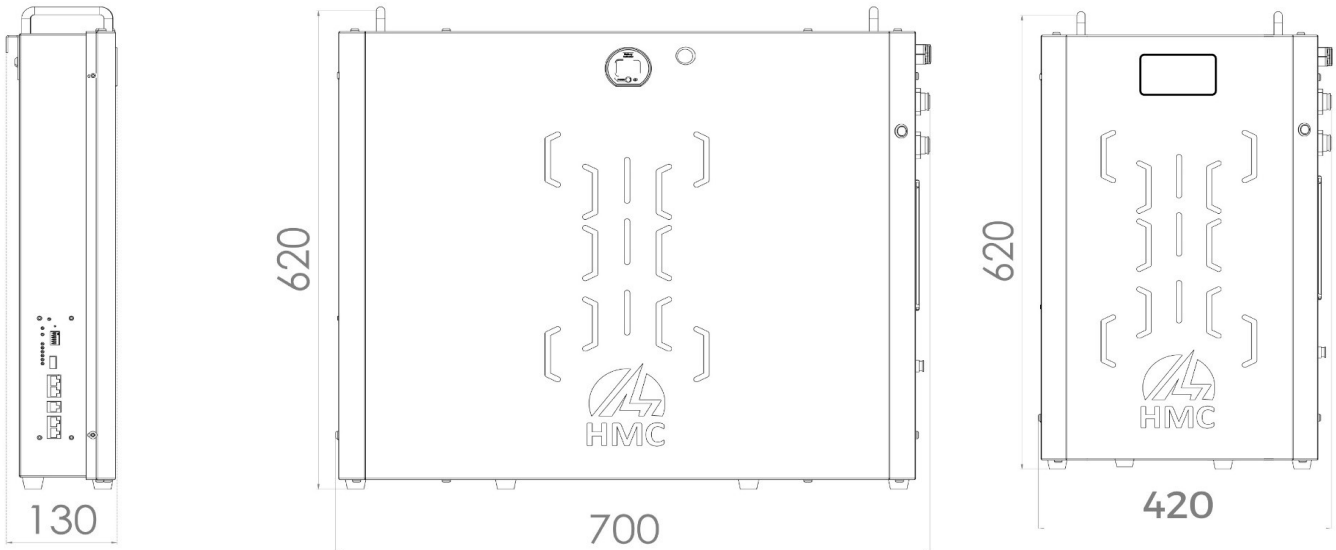


## ❖ Performance Curve (51.2Vmodel)



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 (mm):





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