

# POWER LIGHT RENEWABLE ENERGY POWER SOLUTION



# MTEK Information Technology

Renewable energy power conversion systems development company

Since our initiation of business with Electronic control in 2013  
we are doing our best to attain the best quality of products in the industry.  
MTEK Info-Tech Co.,Ltd creates the next generation  
Renewable power solution products.  
WE, MTEK Info-Tech Co.,Ltd specializes in production and development of  
Power conversion system, System-controller and Software.

## Patents & Certificates



## History

- 2013**
  - 02. Established company
  - 04. Rural Development Agency Technology Transfer
  - 06. Registered as a venture company
- 2014**
  - 02. ISO 9001, 14001 certification
  - 05. Commercialization of Vehicle Vision Inspection System
- 2015**
  - 06. Commercialization of Fuel Cell BOP system
  - 08. Factory Registration
- 2016**
  - 08. Commercialization of Fuel Cell Power Converter
  - 12. Commercialization of Hybrid Power Pack
- 2017**
  - 03. Designated as a partner company of Korea Institute of Industrial Technology
  - 08. Establishment of research department
  - 09. En4U Joint Technology Holding Corporation Technology Transfer
  - 10. Research Institute Certification
- 2018**
  - 02. Moved Head Office to Korea Electronics Technology Institute
  - 05. Commercialization of Energy Home ESS
  - 10. Designated as a National Innovative Cluster Project
- 2019**
  - 02. Commercialization of P2G Power Conversion System
  - 05. Commercialization of URFC Power Conversion System







## Smart BMS System

Energy Storage System (ESS, Energy Storage System) is used when necessary by storing the electrical energy production refers to electric power storage system for energy efficiency improvements, renewable energy utilization and improve power system reliability.

DATA Detection	SOC Calculation	Protection/Alarm	User Interface
VOLT	Init SOC CAL	OC/OV Protection	Cell Balancing
TEMP	SOC	OT Protection	Monitor
AMP(SOC)	SOH	Data Log	RS232/485/CAN2.0
Internal RES		Alarm	

### Application



PLANT ESS



HOME ESS



E-Bike

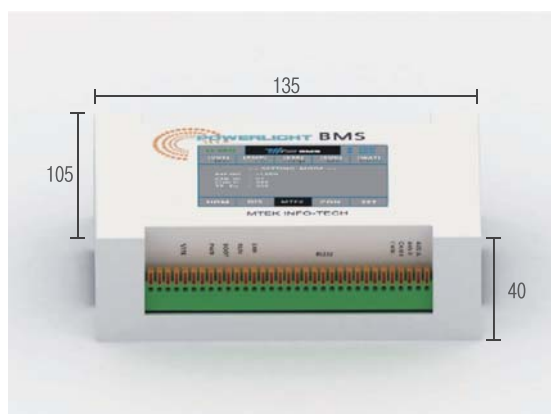


EV

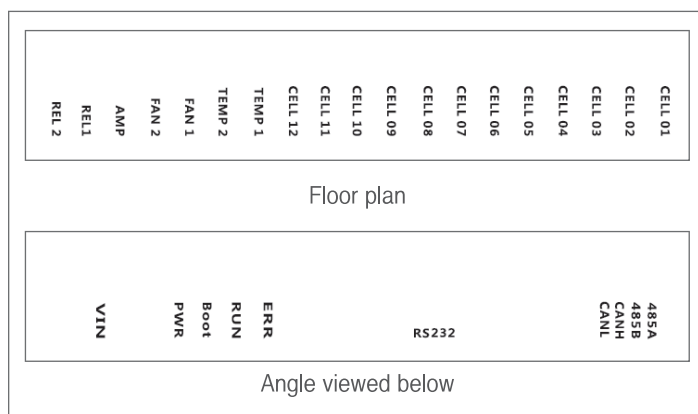
## Specification

Part	PL-SBM			PL-SBMS		
BAT	Lead-Acid, Li-Ion, Li-Fe					
VOLT	DC 0' 72V(1CH Max 16V)					
UI	COM Monitor DownLoading			3.2" TFT Touch LCD		
COM	RS232 / ECAN / RS485 / Bluetooth(option)					
MEASURE	Cell Volt, Cell Internal Res, Temperature, Current					
UNIT	Cell	Res	Temp	Current	Relay	COM
EA	1' 12	1' 12	1' 4	1	2	2

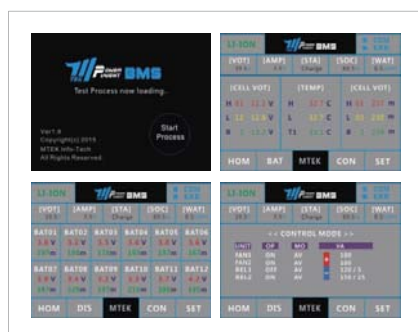
## H/W



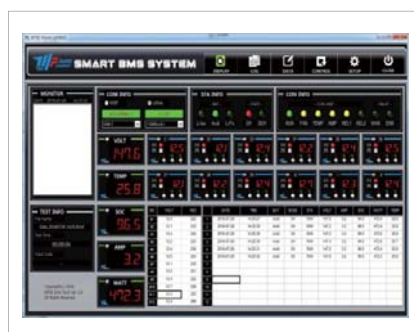
## Terminal description



## S/W



LCD Monitor



PC SW Monitor



APP Monitor



## PEMFC System

The product to be developed is an integrated-type electric power conversion Stand-alone system to drive / control the small, 500W class polymer electrolyte fuel cell capable mobile (PEMFC). The system is capable of diagnosing the BOP control module and the stack above that can drive the 500W class PEMFC CVM (Cell Voltage Monitoring) integrated module, and 500W class fuel cell DC / DC converter is a One-Board Type of Stand-alone with an integrated-type power converter.

PEMFC Control	Li-Ion BAT Control	HMI Control Module	Power Converter
BOP Control	BAT CH/DCH	GUI	Bidirectional DC/DC
Driver Control	SOC/SOH	LCD Monitor	F/C Driver
STACK Diagnosis	Cell Monitor	DATA Log	BAT CH/DCH
Load Control			Inverter
			Load Driver

### Application



Fuel Cell Bike



APU



Drone



Fuel Cell Car

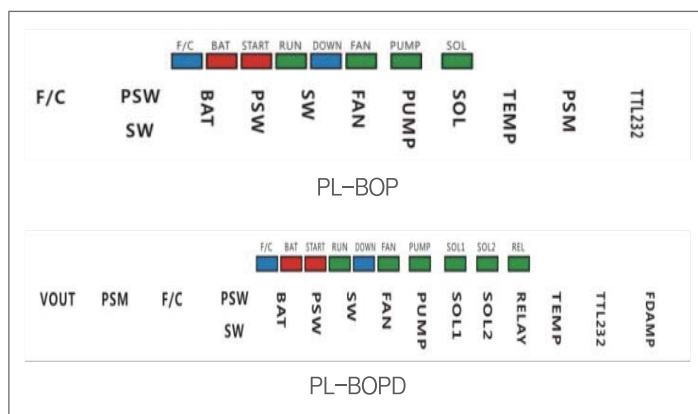
## Specification

Part	PL-BOP				PL-BOPD			
F/C IN	DC 18' 44V							
POWER	100W	200W	300W	500W	100W	200W	300W	500W
DC OUT	—				DC 12 / 24 / 36 / 48V			
COM	RS232/ ECAN/ RS485/ Bluetooth (option)							
BOP	FAN	Blower	SOL	PUMP	TEMP	Current	PSM	Relay
EA	1' 12	1	1' 2	1	1' 2	1	1	1' 2

## H/W



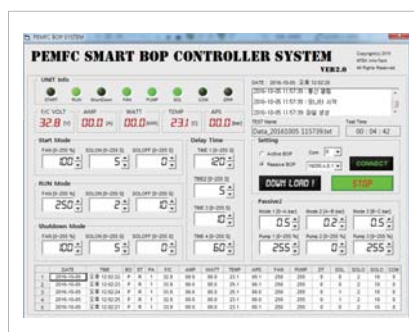
## Terminal description



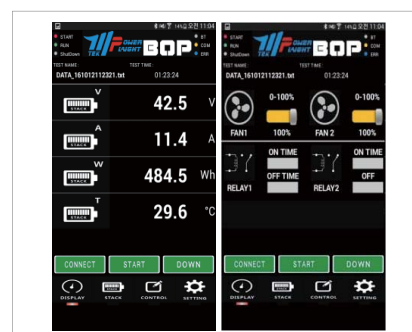
## S/W



LCD Monitor



PC SW Monitor



APP Monitor



## Hydrogen DC Power Pack

This product is designed to supply power from fuel cell at normal (low load), store surplus power in Li-Ion battery, and supply power simultaneously in fuel cell and Li-Ion battery at peak time. This system reduces the efficiency and cost of the fuel cell system. In addition, the Li-Ion battery plays a role of an auxiliary power source in preparation for starting and malfunctioning of the fuel cell system, there by securing the systematicity of the system.

### Specification

Part	Hydrogen DC Power Pack
Power	500W
Input voltage	DC 18V-45V
Output voltage	DC 12V/24V/48V
Switching frequency	20kHz
Size	200x300x270mm
Weight	3.0kg







## Hydrogen AC Power Pack

This product is designed to supply power from fuel cell at normal (low load), store surplus power in Li-Ion battery, and supply power simultaneously in fuel cell and Li-Ion battery at peak time. This system reduces the efficiency and cost of the fuel cell system.

In addition, the Li-Ion battery plays a role of an auxiliary power source in preparation for starting and malfunctioning of the fuel cell system, thereby securing the systematicity of the system.

### Specification

Part	Hydrogen AC Power Pack
Power	500W
Input voltage	DC 18V~45V
Output voltage	AC 220V/2.3A
Switching frequency	20kHz
Size	200x300x270mm
Weight	3.0kg



## V2X Inverter

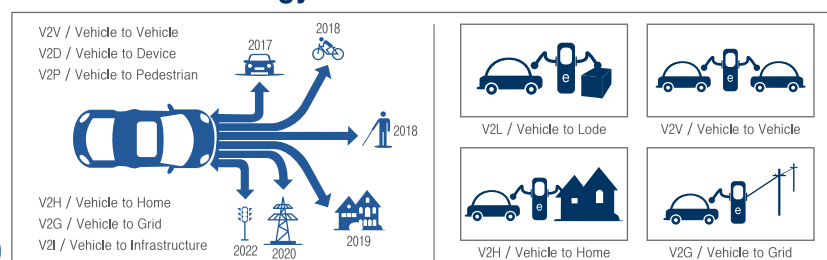
- Portable mobility is convenient.
- Converted directly from the car charging inlet to household power.
- Active at various places such as outdoor events, even when emergency power supply at a disaster.
- Convert the electricity of the vehicle with the external power supply function to the domestic power.
- Zero emissions, quiet and clean operation, and also consider the surrounding and natural environment.
- Using IoT technology, electric power can be managed through user application.

### Specification

Part	V2X Inverter
Rated capacity	1.5kW
Input voltage	150Vdc-450Vdc
Output voltage/Frequency	100Vac(50Hz) or 220Vac(60Hz)
COM Port	HMI Available/CAN 2.0/PLC
Size	200x300x270mm
Weight	3.0kg



### Future Technology

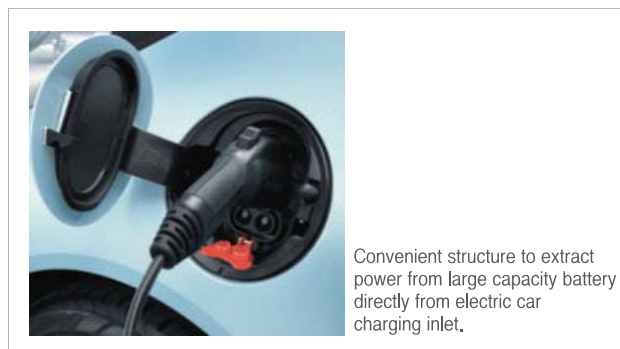




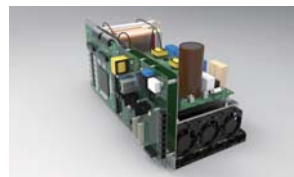
This technology enables users to easily supply power through 1.5kW V2X inverter with energy network using high-capacity high-voltage battery in EV.

It can be used for camping and external events as well as disaster area such flood damage and earthquake damage. V2L and future V2H/V2G implementation.

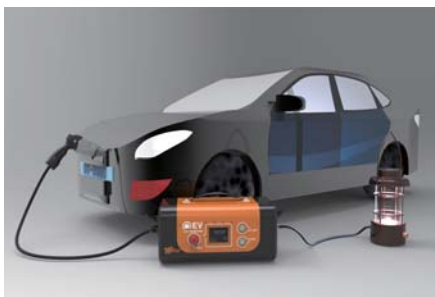
## Dual Protocol



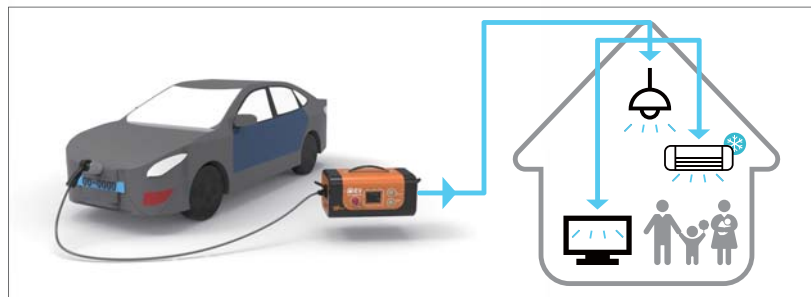
## H/W



## Application



V2L



V2X





## Li-Ion Power Pack

Small Battery pack using daisy-chain method with BMS Modular Li-Ion battery power pack for ESS

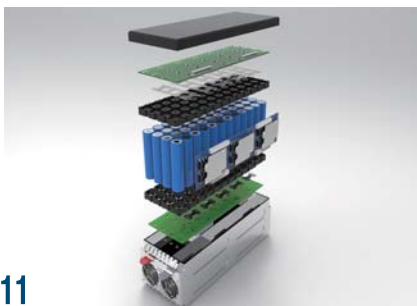
- BMS Cell Balancing Function(Active Method)
- Battery life diagnosis and prediction technology using ELS technique
- Multi cell measurement technology using daisy-chain method

### Specification

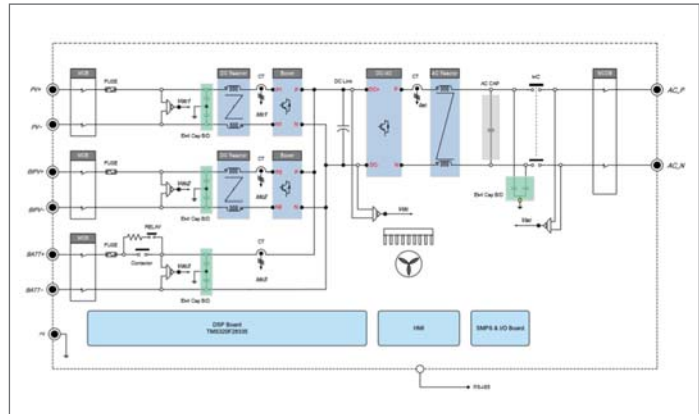
Cell Array	48S1P
OCV	177.6V
Volt.Range	153.6V ~ 201.6V
Current	2.8A
Efficiency	>90%
Charging Volt.	194.4V
POWER	497.28W



### Configuration

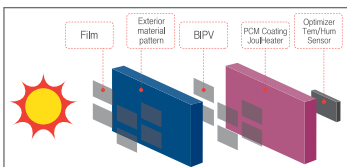






## HYBRID ESS

Hybrid ESS is a device that can store electricity generated from photovoltaic modules in the energy storage system(ESS) and then be used by consumers through inverters. This product is a hybrid ESS system for home use that integrates solar inverter, battery storage device and stand-alone inverter.



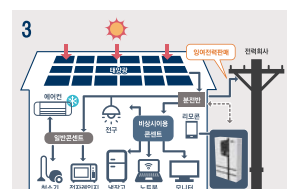
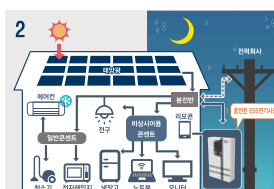
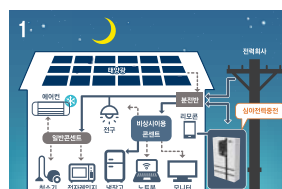
## Specification

PART	PLPCS-3K
Input Volt Range	200VDC ~ 1,000V
MPPT Volt Range	250VDC ~ 800VDC
Input Max Current	10A
Max Efficiency	98% ↑
Rated Frequency	60Hz
Min/Max Frequency	59.3/60.5Hz
Rated Volt	3 φ 4W, 220VAC
Min/Max Phase Volt	194/242VAC

Rated Current	4.5A
Power Factor	94% ↑
Operating Temp	-10°C ~ +40°C
Relative Humidity	95%
Cooling System	Air cooling
Protection Class	IP-44
Size(W*D*H)	500*310*120mm
Weight	12Kg

## Application

1. Midnight : Fully charging with cheap electricity
2. Morning and Evening : Use peak hours
3. Daytime : Surplus sales of solar power



# BlockSCADA EMS



Supervisory Control And Data Acquisition (SCADA) is a computer system that monitors and controls work processes that are typically based on industrial control systems, just like industrial processes / infrastructures / facilities. BlockSCADA is a SCADA solution that is designed for lightweight and simple application of heavy and complex SCADA technology

through efficient resource allocation, making it easy for small and medium PCS developers to access.

### Characteristic

- Installation Convenience
- Increased Scalability

## ■ Operating Method

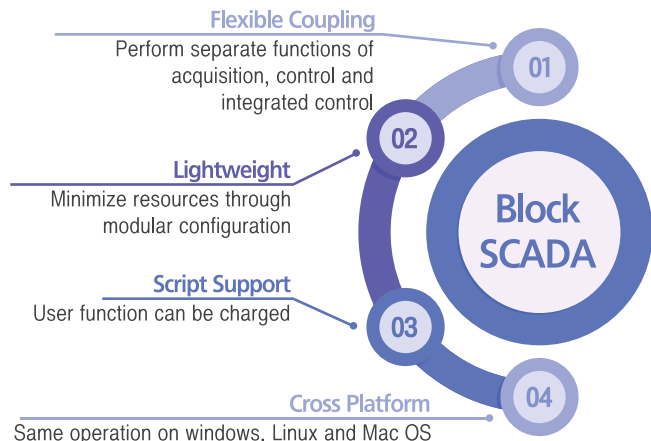
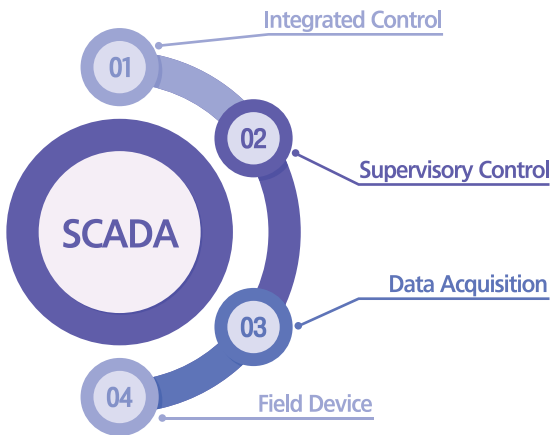
- Unit ( 1 : 1 )
- Multi( 1 : N or N : N )

## COM Port

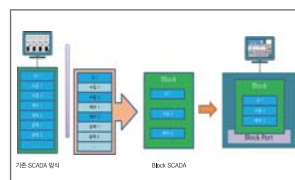
- RS232, RS422/485
- BT, TCP/IP, CAN

- Low cost, Low specification

- Maximize hardware resources with Block SCADA



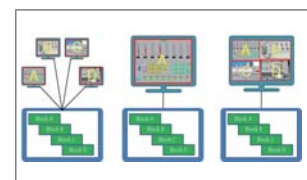
Cross Platform Technology



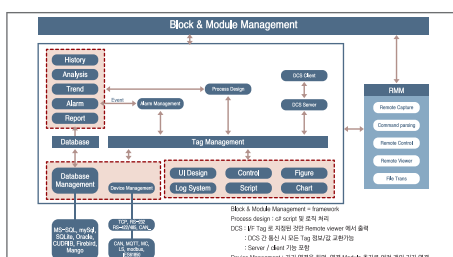
## Block SCADA Technology



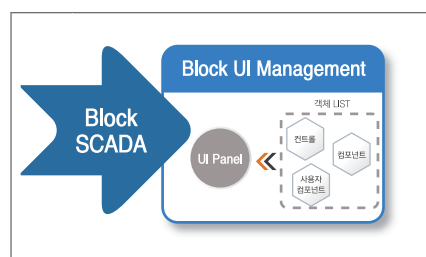
## Block Plug-In Support



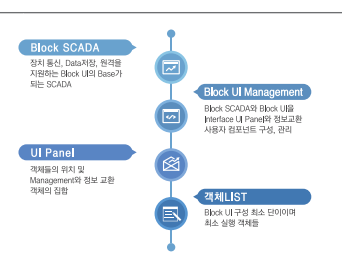
## Multi Monitoring



## Function Configuration



## Block U Configuration





## Li-Ion battery power pack

This product is a 500W portable Li-ion battery power pack equipped with intelligent BMS using daisy-chain method. It can be charged by using solar panel or DC adapter and has DC output and AC output function that can be used in various parts.

### Specification

Capacity	500Wh
Inverter Output	220V 60Hz, Rated 350W, Max 500W
Inverter Efficiency	96%
Output1	DC 5V/3A
Output2	QC3.0 DC 5V/3A, 9V/2A, 12V/1.5A
Adapter Input	24V/12A, Rated 250W
Charging Time	2.5hours
PV Input	30~35V/8.5A, Rated 250W

### Configuration





The new slogan of the MTEK POWERLIGHT Series  
is always in your heart to think about customers  
first is the attitude that only MTEK creates the next  
generation Renewable power solution products.



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