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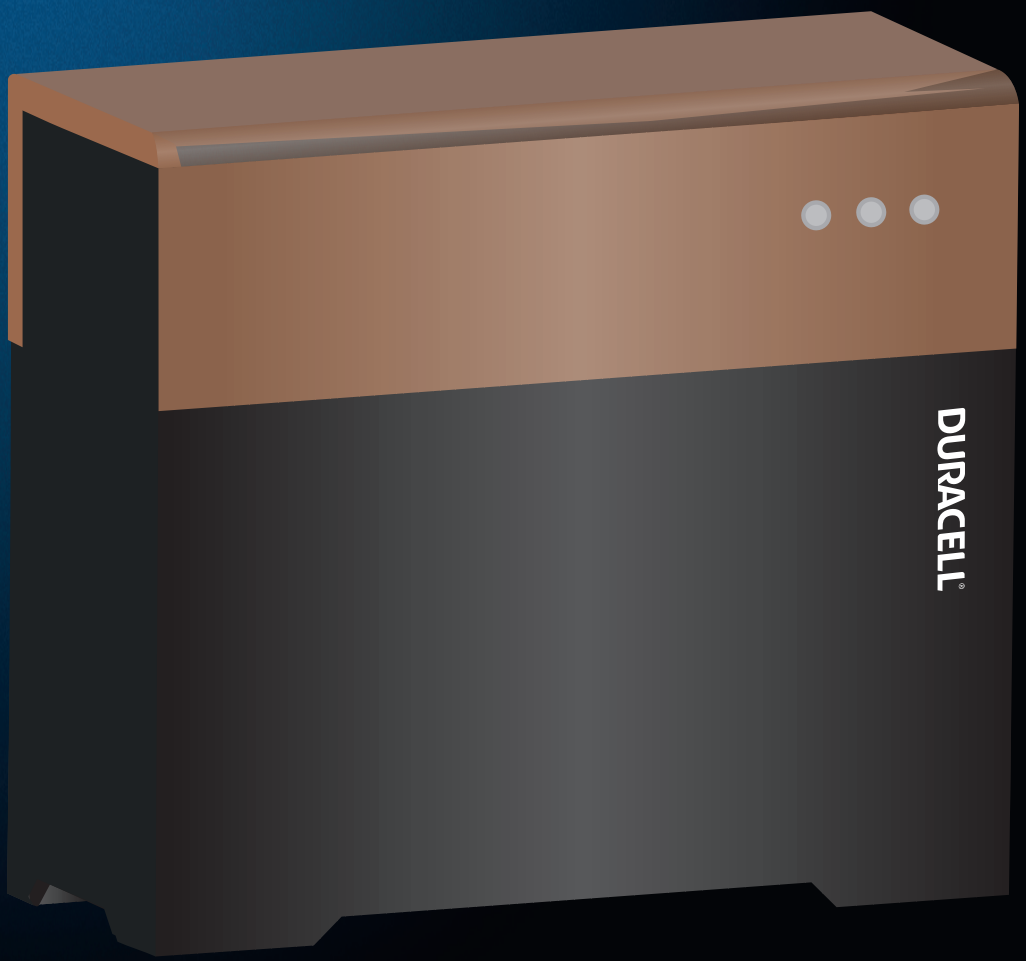
ENERGY Bank



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Product Overview

In order to meet European market requirements, Duracell has successfully developed a 3kVA / 3kWh household Energy Storage solution.

The solution includes smart technology / applications, LiFePO4, PCS, BMS and a monitoring system.

The system is small and lightweight, which makes for easy installation and maintenance.

System Structure

The 3kWh energy storage cabinet consists of 3kWh battery and 3kVA PCS, the system is connected to the customers switchboard via cables.

The suggested connection between system and switchboard is below.

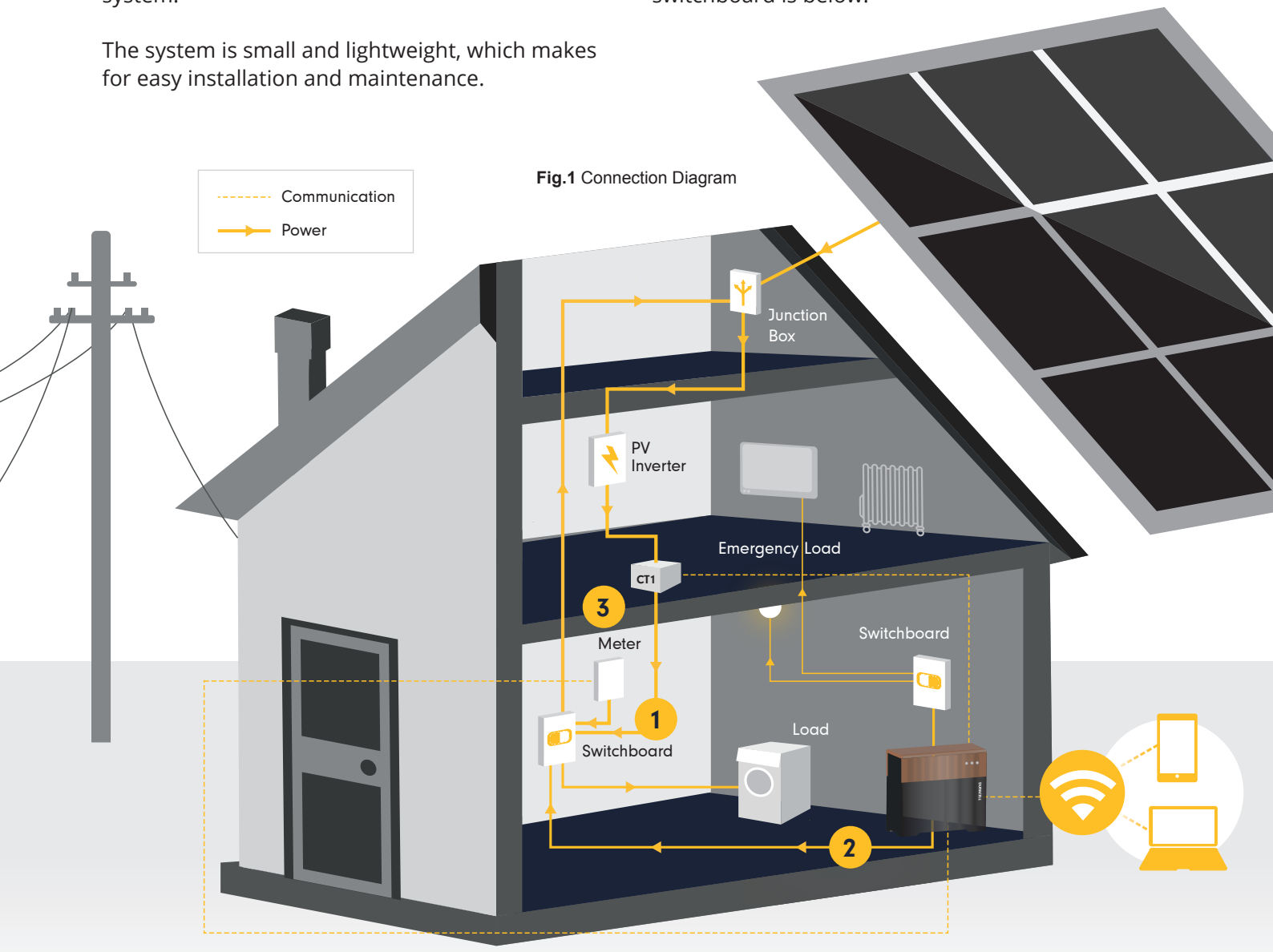

Fig.1 Connection Diagram

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Data Table

Type	Energy Bank EVV1
On-grid	
Nominal Voltage	Single Phase AC230V
Maximum Current	13A
Nominal Frequency	50Hz
Maximum Power	3kWh
Current Harmonics	<5%
Power Factor	-0.99~+0.99
Off-Grid	
Voltage Range	Single Phase 230v±1%
Nominal Current	8a
Maximum Current	16a
Nominal Power	2kva
Nominal Frequency	50hz
Total Harmonic Distortion Of Voltage	＜3%
Load Power Factor	0.7～1
Protection	
PCS	AC voltage Protection AC frequency Protection DC voltage Protection Anti-islanding Protection Overheat Protection
Battery	
Nominal Voltage	52v
Type	Lifepo4
Capacity	3kwh@dc Side
dod Range	85%

Type	Energy Bank EVV1
Protection	
Bms	Short Protection Under Temperature Protection Overheat Protection Overvoltage Protection Low-voltage Protection Over Current Protection
Other	
Work Humidity	10%~95%
Altitude	<2000m
Cooling Method	Air Cooling
Noise	＜45db
Communication Interface	Ethernet
Work Temperature	0~40℃
Storage Temperature	-10℃~40℃
Size	680mm W × 256mm D) × 610mm (H)
Pure Weight	About 96kg
Protection Level	Ip32
Work Condition	Indoor (No Condensation,frozen, Sunshine)
Standards	
Safety standard	EN 62477-1, EN 62109-1/2, EN62040
EMC standard	CE-EMC
On-grid standard	VDE 4105,VDE 0126-1-1,G 83 (pending)
Battery standard	IEC62619
Warranty	
Battery 10 years *60% minimum capacity at year 10 years Electrical Systems - 6 years	

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Performance

Battery

The Duracell LiFePO4 battery is stable, green, long lasting and environmentally friendly. The design and test is based on UL1642.5th and IEEE 1625-2004, which is also popular in electric vehicles and when combined has a total range more than 250 million km.

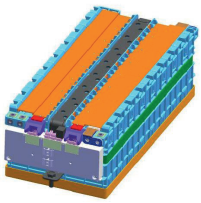

Fig.2 Battery Module

BMS

BMS can create a balanced consistency between the battery cell, battery module, battery string and the battery array, to ensure the long-term reliability of the system.

BMS performs the battery monitoring, operation control, insulation monitoring, balanced management, protection warning and communication functions.

Through the real-time battery monitoring, it ensures a normal and stable system and applies balance to protect the battery and ensure the efficiency and life of the battery system.

PCS

- Strong adaptability for the power grid and the environment.
- Advantages of high power, high density and high conversion efficiency.
- Low harmonic content and small harmonic pollution, which can improve the safety and reliability of the whole system.
- High power and small size.

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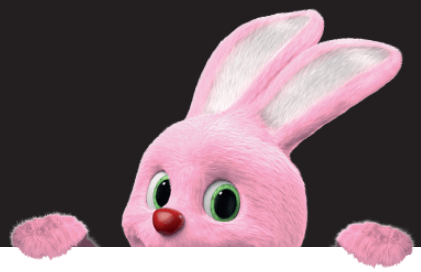

Balance Meter

Under balance meter mode, the Energy Bank can balance the three phase load, and reduce the amount of electricity that you buy from the grid.

1 PV Supply For The Load 2 Duracell Energy Bank Supply For The Load 3 Grid Supply For The Load

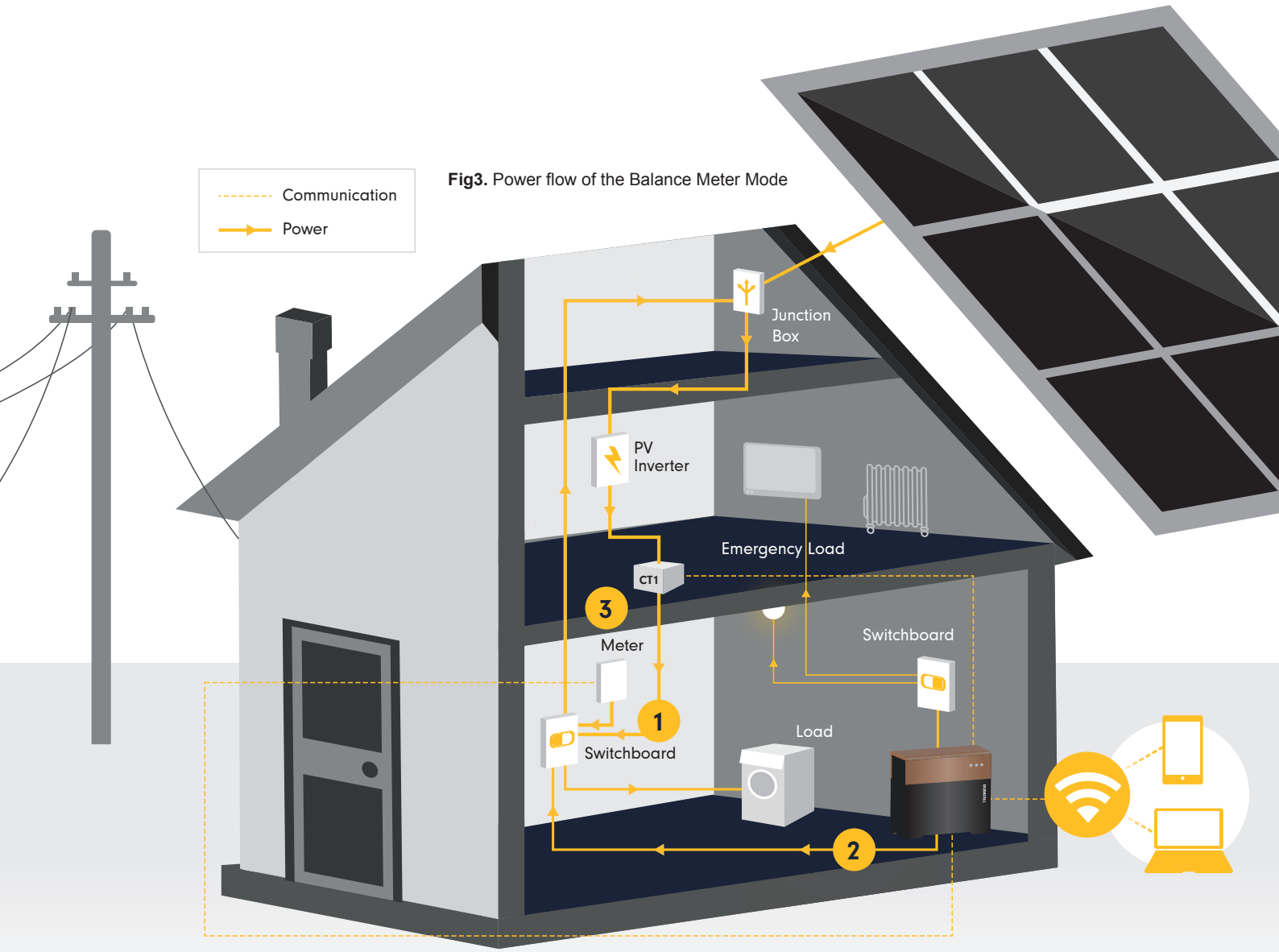

Fig3. Power flow of the Balance Meter Mode

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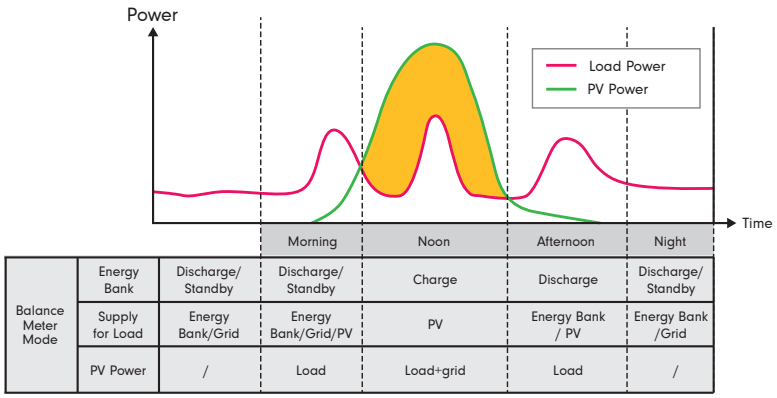
Emergency Mode

When off-grid or during power failure, the Energy Bank supply can be used for emergency power.



			Morning	Noon	Afternoon	Night
Balance Meter Mode	Energy Bank	Discharge/ Standby	Discharge/ Standby	Charge	Discharge	Discharge/ Standby
	Supply for Load	Energy Bank/Grid	Energy Bank/Grid/PV	PV	Energy Bank / PV	Energy Bank /Grid
	PV Power	/	Load	Load+grid	Load	/

Fig4. Energy Bank Load

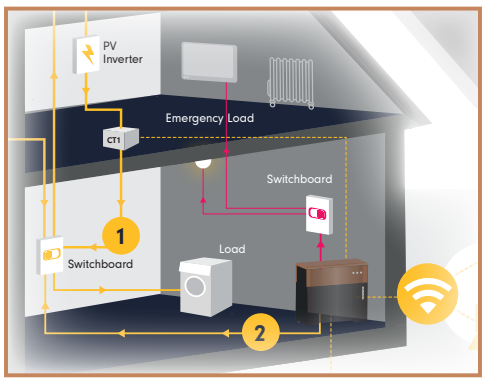
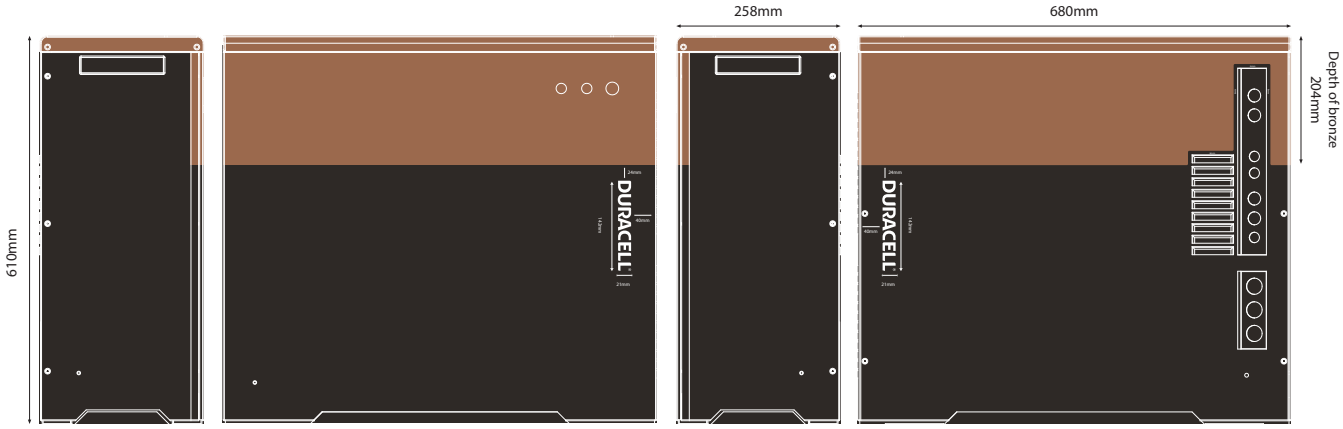


Fig5. Power Flow Of Emergency Mode



Note: Emergency power can only be used off-grid for things such as; household lighting, mobile phone's, laptop's etc. It cannot supply a high-power load.