

1. Introduction

Proposed solution has Li-ion battery. Li-ion battery system forms the robust backup in case of Grid not available. Charging would be done through Grid and Solar. Our scope would be Li-ion battery, inter-connecting cables, rest of the items will be arranged by customer itself.

The prime advantages being the highly efficient and reliable, zero maintenance and green power backup solution. It is an intelligent system which provides real time data as well as logs data for 6 months related to system performance.

The proposed system solution describes the specifications and features of **Energy Storage system**.

2. System Operation and Configuration

Solution: Li-Ion Battery System

Proposed Energy Storage Solution has Li-ion battery. Li-ion battery system forms the robust backup during power failure.

Charging would be done through Grid or Solar.

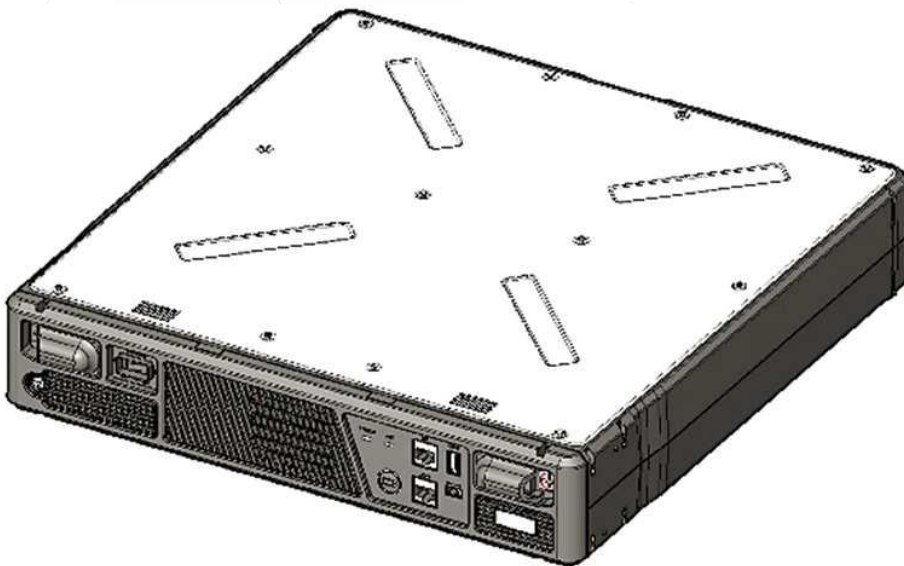
This highly efficient system ensures that there is no interruption in the load in case of any power failure.

- Continuity of load.
- Superb cycle performance. Li-ion battery system is highly efficient (**>95%**) leading to large recovery of the stored energy.
- Space requirement is significantly less as compared to conventional battery.

2.1. Battery system

Panasonic make DCB 105-ZK would form the basis building block for storing electric energy. It has an in-built BMS which monitors battery internal vital parameters, measures and display various alarms/warnings, establish a communication link with the external system, which, generally, is an inverter system. It behaves as a completely independent functional block and can be scaled up as per the project requirement. Each battery module is also equipped with internal switches to control charge/discharge operation of battery as per the set threshold value of various parameters. E.g. temperature, current, voltage etc.

Battery specification (DCB105-ZK) are as given below:





Name	DCB-105ZK
Battery Layout	13S27P 18650ZK Type
Nominal Voltage	46.8V
Capacity (Min.)	56.28Ah (CC-CV charging)
Input Charge Voltage	52V
Charge Current	Up to 25A
Discharge Current	Up to 25A
Charge Temp.	Range 5°C to 55°C
Discharge Temp.	Range -10°C to 55°C
Humidity	10% to 85% (no condensation)
Size	440mm X 450mm X 84mm
Weight	25kg (approx.)
Warranty	3 years from the date of shipment