LS ULTRACAPACITOR MODULE

User Manual

Part No. : LSUM 033R6P 0250F EA
Version 1.1 _ Apr./ 2010

LS Ultracapacitor Module

User's Guide

Overview

The LS 33.6V/250F Ultracapacitor Modules have high energy and low ESR to meet energy storage and power delivery requirements.

The cells used in the modules have 2.8 V maximum voltage rating and are connected in series to get higher operating voltage of modules. To meet the long cycle life requirements, the cells operate under 2.8V. In addition, all the cells are balanced by balancing circuits connected parallel to each cell.

Item		Value	Comments
Rated Capacitance	F	250	3000F unit 12 series
Max. Voltage	V	33.6	2.8V/cell
Rated Voltage	V	31.2	2.6V/cell
ESR(DC)	mΩ	4.8 (Max.)	3000F unit 12 series
Rated. Current	A	150	Max. 400A (~10 sec.)
Ambient Temp.	℃	-40 ~ 65	Storage @ -40 ~ 70
Ambient Humidity	%	0 ~ 95	Storage @ 0 ~ 100
Weight	kg	9.8	
Dimension-W	mm	130	
Dimension-D	mm	415	
Dimension-H	mm	180	
Balancing		Active & Passive	Over 2.8V/cell

Description

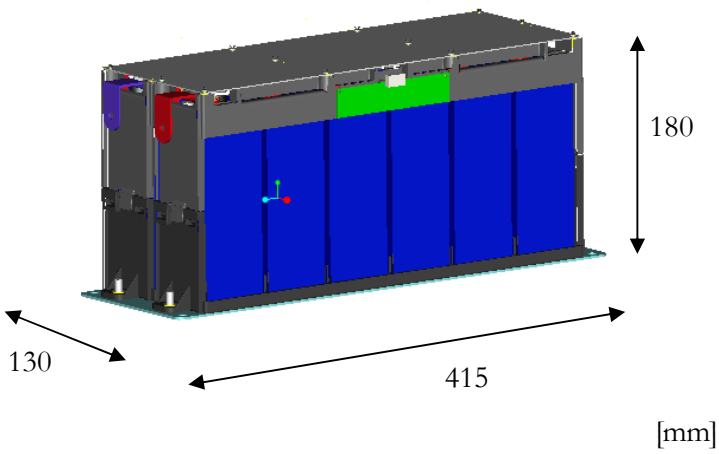
System Design

In this module, 12EA cells are connected in series by bus-bars. Fig 1 shows the picture of module.

The charging conditions are as follows;

- Rated voltage : 33.6V
- Minimum voltage : N/A
- Charging & Discharging Current : refer the rated rms. value

<Fig. 1> 33.6/250F Ultracapacitor Module

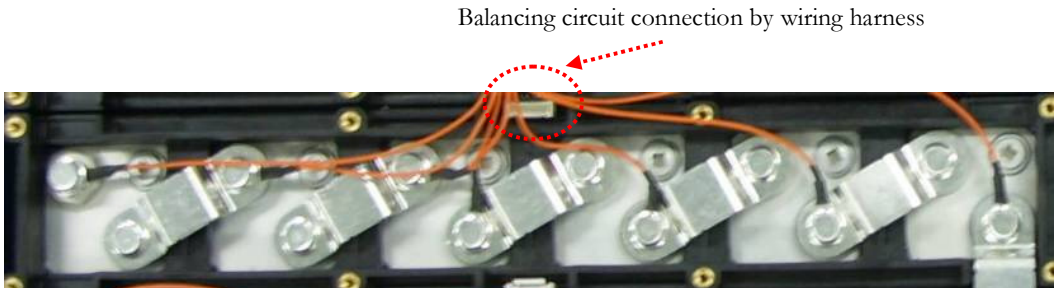


<Fig. 2> 33.6V/250F Ultracapacitor Module

Part Description

The Module consists of 2 EA sub-modules. One sub-module contains 6 cells and cell balancing circuit. All the cells and sub-modules are connected by bus-bars. Each bus-bar has conducting cross-section of 40 sq. mm.

Balancing circuit has 6 parts that control each cell. One part of circuit has 100Ω passive resistor and fast by-pass transistor that is activated over 2.8V.

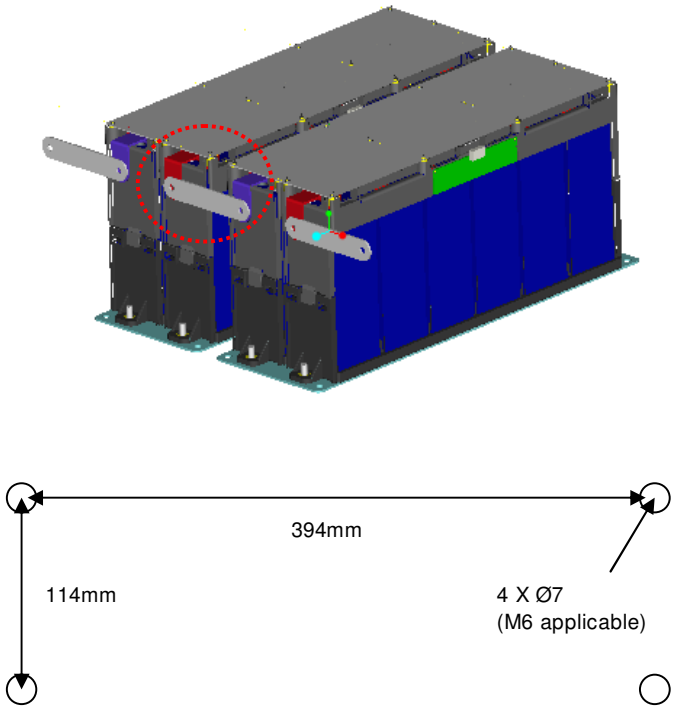


<Fig. 3> Sub-Module

Installation

The main power terminals are bus-bar type (M6 bolt). They are designed to connect directly to ring-type terminal lugs or bus-bars and should be fastened with proper torque. (100±10 [kgf/Cm])

When power is connected between modules, balancing circuits must not be in touch. There is possibility existing for balancing circuits be damaged or short.



<Fig4.> Module connections & mounting holes

Maintenance

The module has its expected life cycle over 10years at normal conditions. However the life cycle of the module may be decreased in high temperature condition or over voltage charging.

If following abnormal module performances are detected, operation should be stopped and checking the electrical & mechanical connections is recommended.

- Internal resistance increase or initial voltage drop increase

- Deformation of the module case

Contact Information

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