



User Manual

LSUM 0380R8L 0002F EA



User Manual

CONTENT

1. Overview	04
2. Unpacking	05
3. Safety	05
4. Identification of features	06
5. Module to module connection	07
6. Output terminal connection	08
7. Monitoring system	09
7-1. Alarm signal	09
7-2. Alarm connector	10
8. Mounting	11
9. Maintenance	12
10. Contact Information	13
Appendix I	14

User Manual

LSUM 0380R8L 0002F EA

1. Overview

The LS 380.8V / 2F Ultracapacitor Module has high energy and low ESR to meet energy storage and power delivery requirements.

The cells used in the module 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 circuit connected parallel to each cell.

User Manual

LSUM 0380R8L 0002F EA

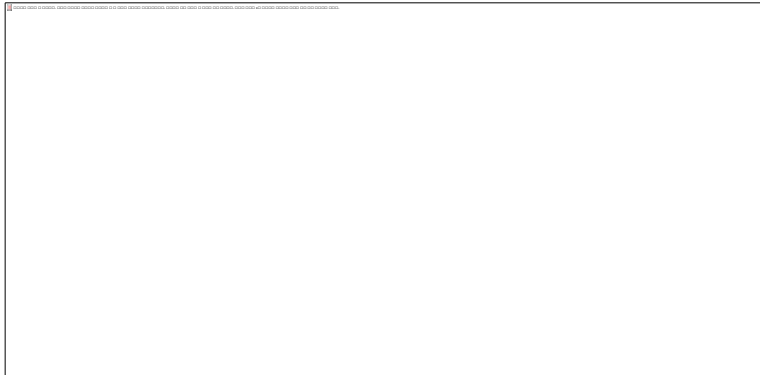
2. Unpacking

Inspect the shipping carton for signs of damage prior to unpacking the module. Damage to the shipping carton or module should be reported to the carrier immediately.

Remove the module from the shipping carton and retain the shipping materials until the unit has been inspected and is determined to be operational.

NOTE: The original shipping materials are approved for both air and ground shipment. The module should be removed from the shipping carton by lifting the body of the module.

3. Safety



Do not operate above specified voltage.

Do not operate above specified temperature rating.

Do not touch terminals with conductors while charged. Serious burns, shock, or material fusing may occur.

Protect surrounding electrical components from incidental contact.

Provide sufficient electrical isolation when working above rated voltage.

Prior to installation and removal from the equipment, it is mandatory to fully discharge the module.

User Manual

LSUM 0380R8L 0002F EA

4. Identification of features

- Product Image



<Fig. 1> Product Image

User Manual

LSUM 0380R8L 0002F EA

5. Module to module connection

- There are series and parallel connection for High power



<Fig. 2> Series Connection of Modules



<Fig. 3> Parallel Connection of Modules.

User Manual

LSUM 0380R8L 0002F EA

6. Output terminal connection

The LS 380.8V / 2F Ultracapacitor Modules are designed to connect directly to a ring terminal. The positive and negative terminals have each hole for the screw. Two terminals threaded size are M6.

When tightening the terminal bolt, a torque of 6 N-m for the M6 bolt should be used. Because the modules have a very low ESR, total ESR will be affected by a ring lug, bus bar or torque. Therefore, it needs more attention to assemble the modules. And appropriate protection and sealing should be used on both module terminals to avoid shock hazards and corrosion.

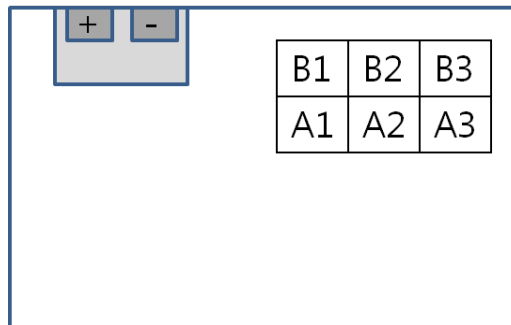
User Manual

LSUM 0380R8L 0002F EA

7. Monitoring system

7-1. Alarm signal & reset






If UC module exceeds 195V or 75℃, alarm signal will activate which allows client system to monitor properly UC module state. Pin-out of connector is below.



Pin #	Pin out
A1	Over temperature alarm
B1	If there is any over temperature detected(higher than 75℃) at least one of 6points temperature sensors, it will give a alarm signal.
A2	Over voltage alarm
B2	If one of two parts shows charged voltage higher than 195V, it will give a alarm signal.
A3	Alarm reset
B3	If client gives a reset signal and return to normal state, alarm signal will be off.

User Manual



LSUM 0380R8L 0002F EA

LED	state
	62V↑, no alarm signal(normal state)
	alarm ON(over temperature or over voltage)
 → 	give a reset signal
	62V↓

Alarm output : DC24V, nonpolar, B contact (short circuit when alarm signal is ON), latch-type
Reset input : DC24V, nonpolar, reset over temperature & over voltage alarm at the same time

7-2. Alarm connector

- The mating monitoring connector is not included.
- Connector manufacturer: AMP

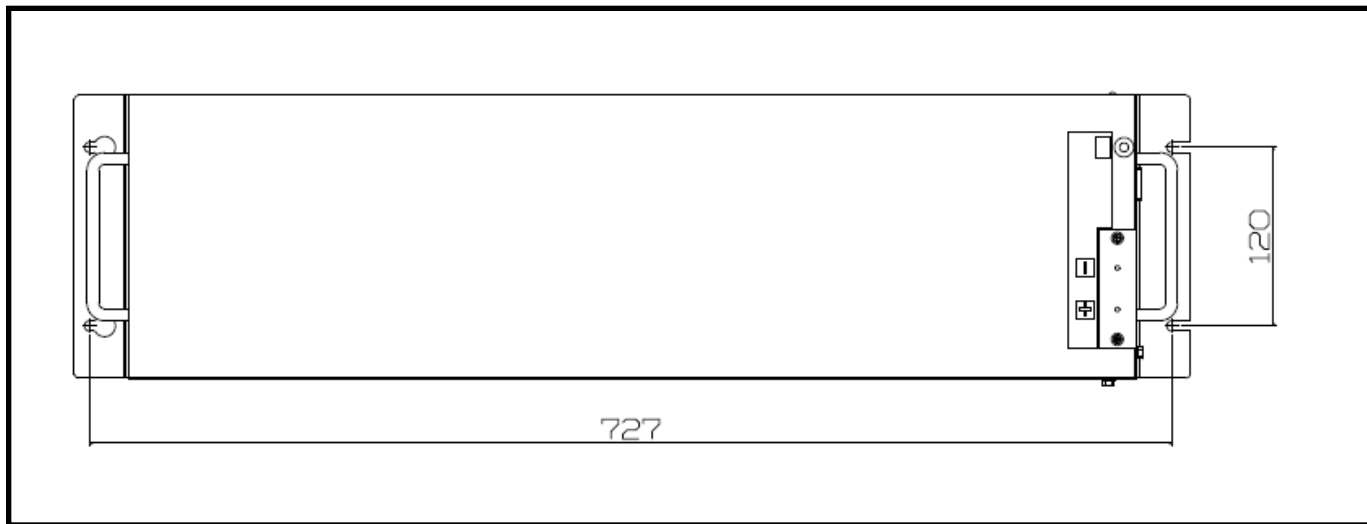
	LS Ultra Capacitor Module side	Customer System side
Image		
Housing Part No.	178803-3	178289-3
Contact Part No.	175288-2	175217-2

User Manual

LSUM 0380R8L 0002F EA

8. Mounting

The modules should not be mounted in locations where they are directly exposed to the environment.



<Fig. 4> Mounting Positions

User Manual

LSUM 0380R8L 0002F EA

9. Maintenance

Power Rating

If the applied voltage is over rated voltage, charging the module should be stopped. And the allowable low voltage level of the module depends on the user's requirements, but full discharging to 0V does not affect the module performance.

Temperature

The module has its optimal operating temperature range of -40 to 65. Over 70℃, charging and discharging should be stopped to expect its performance and life cycle.

Do not expose to direct sunlight

For installation do not make the module expose to direct sunlight due to temperature increase inside the module.

Maintenance

The module has its expected life cycle over 10years at rated voltage and +25℃. 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.

- Monitoring high temperature in normal operating conditions
- Internal resistance increase or initial voltage drop increase
- Deformation of the module case

User Manual

LSUM 0380R8L 0002F EA

10. Contact Information

LS Ultracapacitor

LS Mtron

6F, LS Mtron Hi-Tech Center, 39, LS-Ro, 116beon-gil, Dongan-gu, Anyang-si,
Gyeonggi-do 431-831, Korea

Tel. +82-31-8045-9579

Fax. +82-31-8045-9544

E-mail. ultracapacitor@lsmtron.com

User Manual

LSUM 0380R8L 0002F EA

Appendix I

Drawing

