



U.S. Department
of Transportation

1200 New Jersey Avenue SE
Washington, DC 20590

**Pipeline and Hazardous
Materials Safety
Administration**

FEB 08 2012

Mr. David Brongiel
Applications Engineering Manager
ICC Nexergy
4 Westbrook Corporate Center, Suite 900
Westchester, IL 60154

Ref. No.: 11-0307

Dear Mr. Brongiel:

This responds to your December 8, 2011 letter regarding the requirements in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to a lithium ion battery pack. In your letter you describe a device that uses three 95 Watt-hour lithium ion batteries, each of which consists of 24, 1.1 Ah cells in a 4S6P configuration. In a previous letter (11-0143) we advised you that your device met the definition of a battery as defined in section 38.3 of the United Nations Manual of Tests and Criteria rather than three separate batteries because the three lithium ion battery packs were electrically connected. According to your letter, you have since redesigned the battery pack to include a 3-pole rocker switch that physically isolates the three batteries. You ask if the configuration described in your letter may be considered three separate 95 Watt-hour lithium ion batteries for the purposes of the HMR.

Yes, because the rocker switch physically isolates the individual battery packs from each other this configuration would constitute separate lithium ion battery packs. Additionally, the measures described in your letter to prevent damage, short circuits and accidental activation during transport, (securing the batteries in the device, shipping the batteries in a shutdown state that cannot be changed without input power and a command from the host device) appear to meet the additional requirements of § 172.102, Special Provision 188.

Please note that prior to transportation in commerce, each lithium ion battery pack must be of a type proven to successfully pass all of the applicable tests in Section 38.3 of the UN Manual of Tests and Criteria

I hope this answers your inquiry. If you need additional assistance, please contact the Standards and Rulemaking Division at (202) 366-8553.

Sincerely,

Ben Supko
Acting Chief, Standards Development
Standards and Rulemaking Division

Leary
§172.102 SP 188
§173.185
Batteries
11-0307

Ben Supko
Office of Hazardous Material Standards
Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

December 8, 2011

Re: SPMU Lithium Ion Battery Design – **Ref. No. 11-0143**

Dear Mr. Supko:

I am writing this letter in response to previous information we exchanged in Ref. No. 11-0143. Based on your reply, we have since modified the design of our SPMU (Stand Power Management Unit) to include a 3-pole rocker switch in the SPMU system to physically isolate all three batteries during shipping.

Please see our latest design concept in following pages. Page 3 of this letter shows the SPMU System Diagram, and shows the electrical separation of the batteries which we have added to the system. The other diagrams are meant to provide you with an image of the completed system. Please note the 3-pole rocker switch on page 6 of this letter.

Please note that all of the other battery and system safeguards mentioned in my previous letter will remain in place in the system. As a reminder, the batteries will be in a SHUTDOWN state and isolated from the circuit via the charge and discharge FETs being open. The batteries cannot come out of the SHUTDOWN state without the presence of AC input power to the SPMU and without a software command from the host device, which is never present during shipping.

In summary, we understand our battery design consists of three individual batteries that meet the requirements of the small battery exception found in 49 CFR § 171.102, Special Provision 188 of the U.S. HMR, and, when these batteries are installed in the SPMU and offered for transport, the SPMU also qualifies for the exceptions found in Special Provision 188 (provided the SPMU has not been plugged into AC power). We would appreciate written confirmation from PHMSA that our understanding of these lithium ion battery regulatory requirements is consistent with previous interpretation letters issued by PHMSA on this issue.

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Thank you very much for taking the time to respond to our letter. Please feel free to contact me with any questions.

Sincerely,

A handwritten signature in black ink that reads 'David E. Brongiel'. The signature is fluid and cursive, with the first name 'David' being the most prominent.

David Brongiel
Applications Engineering Manager
ICCNexergy

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O: 708.316.4428

M: 708.890.2515

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China

Germany

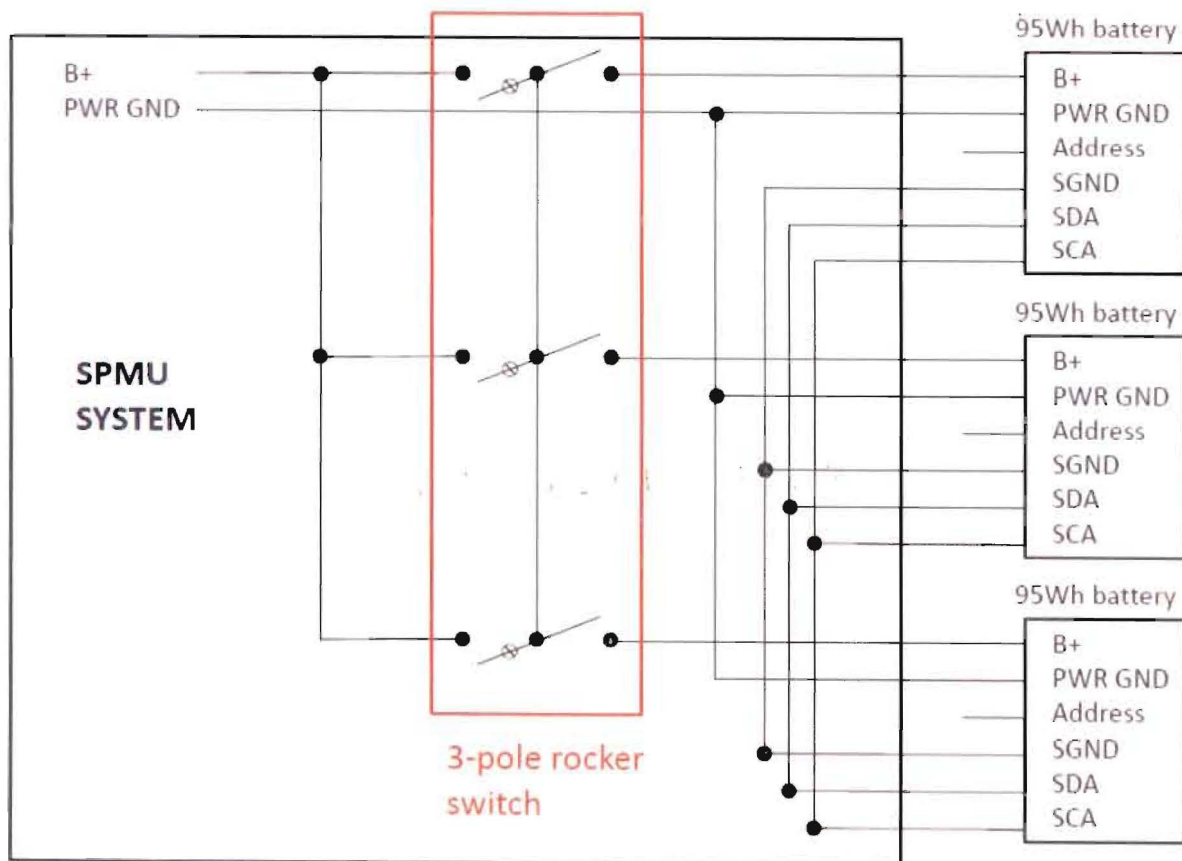
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Mexico

Hong Kong

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SPMU Battery System Diagram



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China

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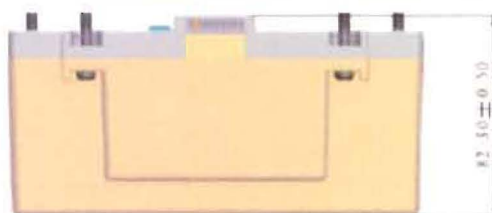
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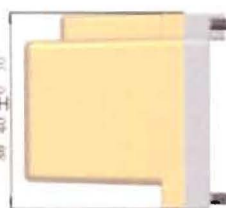
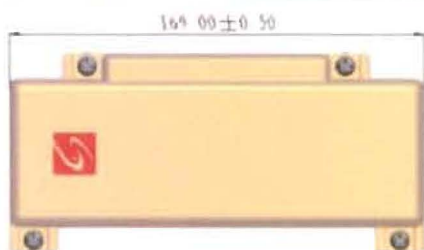
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New sizes for the battery pack



Each battery is 4S3P, 96Wh



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China

Germany

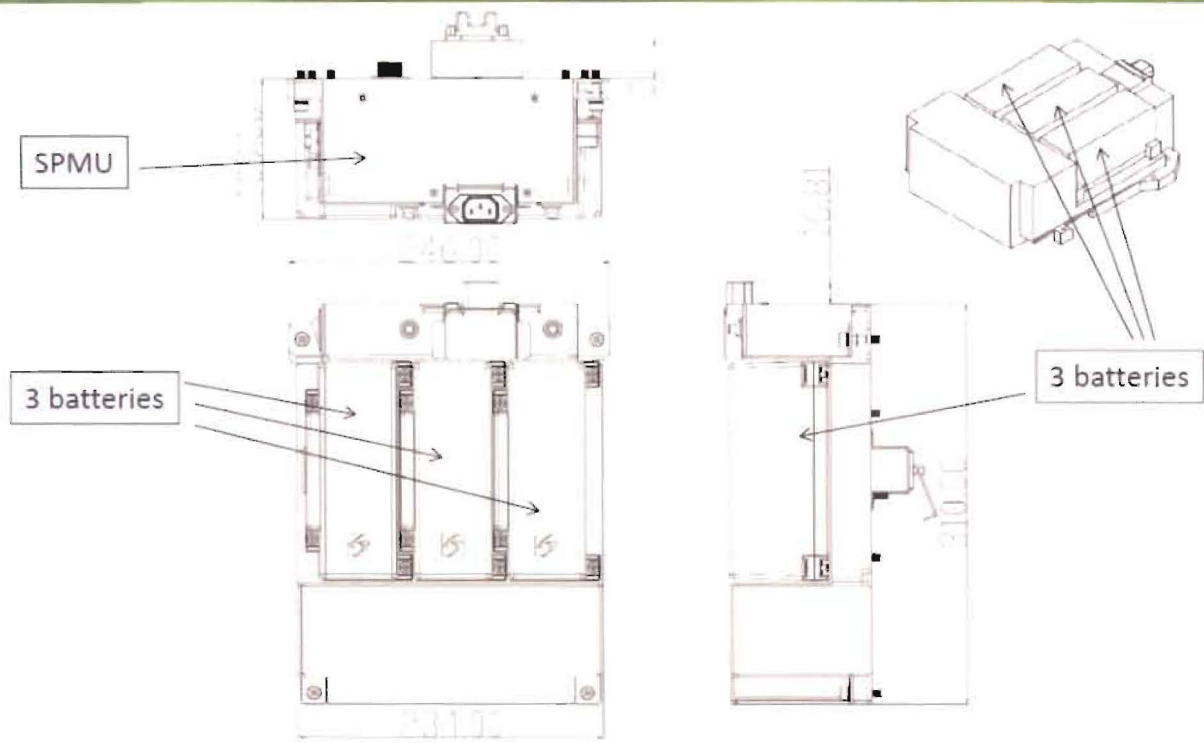
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sizes for the SPMU



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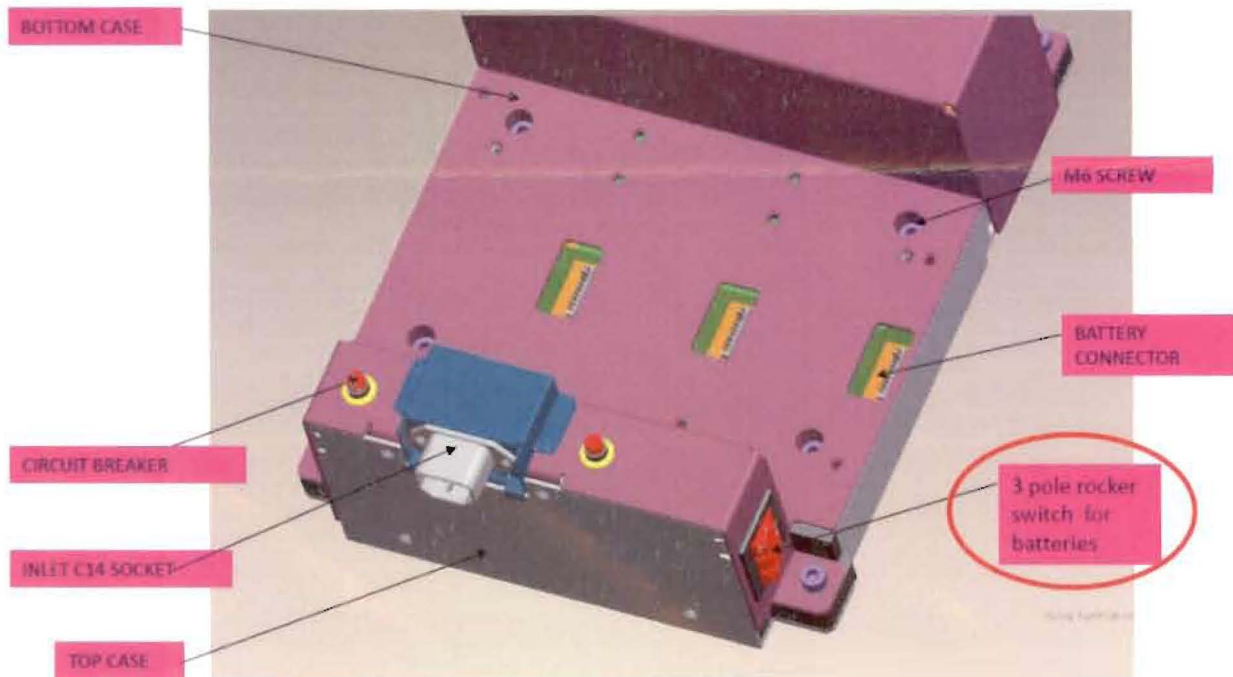
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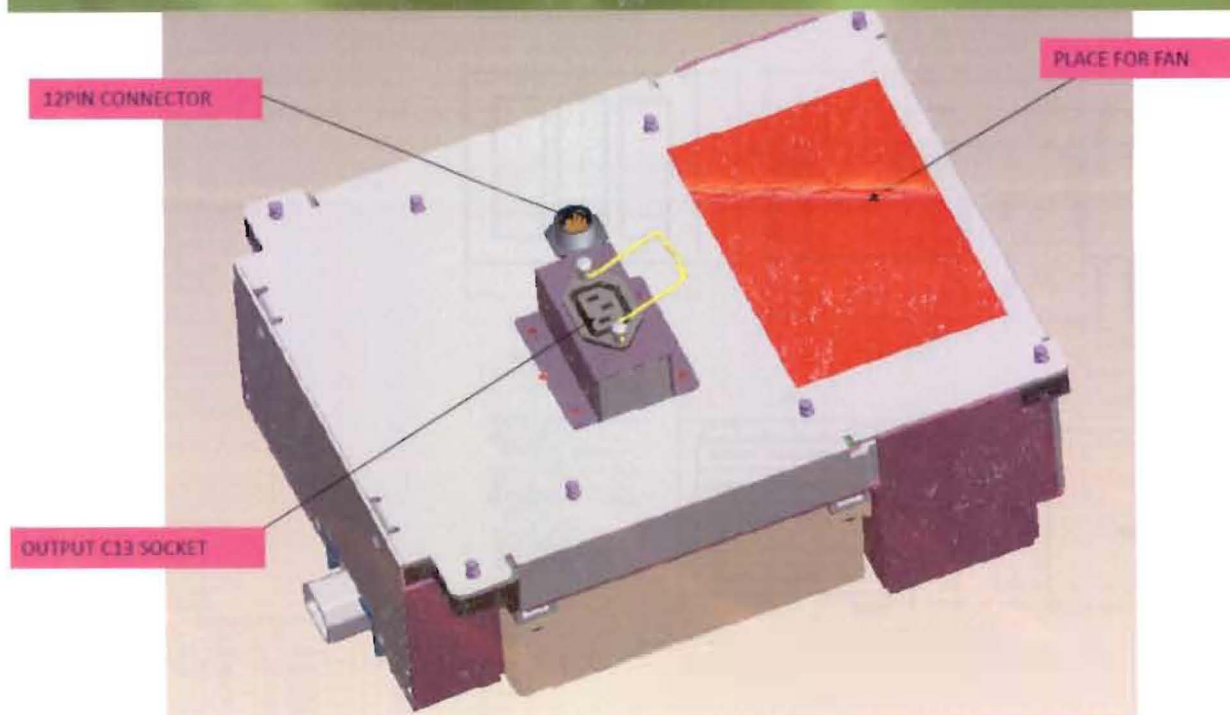
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Detail show the SPMU



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Mexico

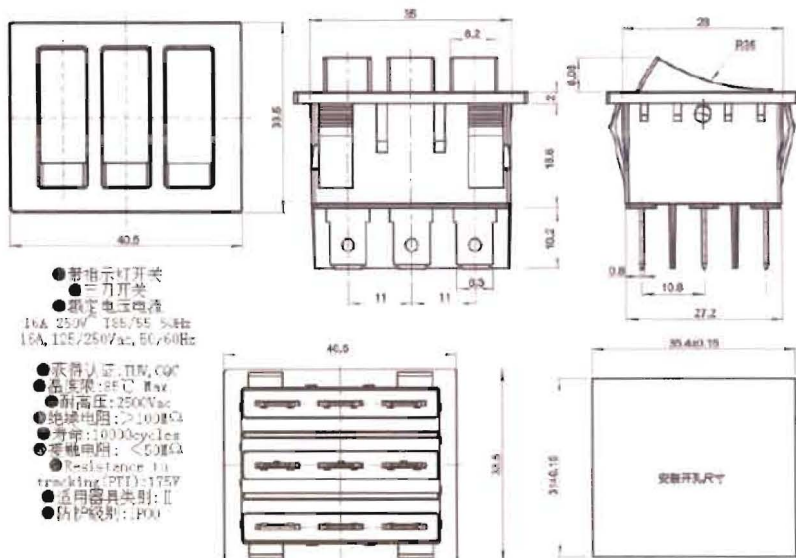
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United Kingdom

3-Pole Switch

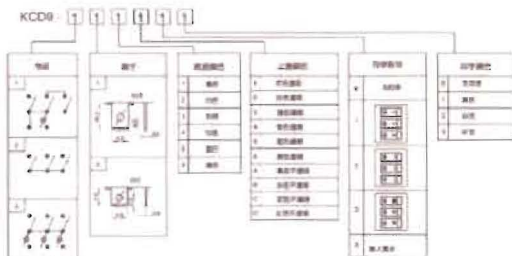


莱斯欣电子
LUSTER ELECTRONICS



- 带指示灯开关
- 带刀开关
- 额定电压/电流
- 16A/250V/185/55 50Hz
- 16A/125/250V ac, 50/60Hz

- 获得认证: UL, CQC
- 温度范围: 25°C ~ 85°C
- 耐高压: 2500Vac
- 绝缘电阻: >100MΩ
- 寿命: 10000cycles
- 零接触电阻: <50mΩ
- Resistance to tracking (PTI): >175V
- 适用器具类别: II
- 防护等级: IP00



End.