**LFEV-Y5**

01

**Lafayette College: Electrical and Computer Engineering**

08

**Fall**

Accumulator Simulation Test: ATP-01

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This document contains information about how to set up a test for the accumulator. This test verifies that the packs are able to power the motor. A simulated load is used for this test.

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# Desired objectives

This test should verify that the packs perform safely. To achieve this the packs will discharge into a simulated load. This will be done in two steps. The first test will verify that a individual pack can deliver the expected current. The second test will ensure that all of the packs can work together to ensure that the correct current can be driven into the load at the right voltage.

To run these test a safety plan must have already been agreed and accepted by the ECE Director of Laboratories.

# Required Hardware

* 4 Packs in series
* Simulated load
* Basic GLV safety loop
* PPE per safety plan
* Danger zone per safety plan

# Required Software

None

# Hardware Setup

## Single pack

1. Ensure safety loop is disconnected and the AIR(s) are open
2. Check BRBs are open
3. Connect pack to simulated load
4. Connect safety loop
5. Set load to 0.5 ohms

## Series packs

This setup requires a professor present since there is a high voltage present.

1. Ensure safety loop is disconnected and all AIRs are open
2. Check BRBs are open
3. Connect packs in series from pack 1 to pack 4
4. Connect packs to the simulated load
5. Connect safety loop
6. Set load to 2.0 ohms

# Software Setup

N/A

# Test Procedure

## Single pack

1. Close the BRB
2. Verify current draw per ATP01-01
3. Set simulated load to 0.32 ohms
4. Verify current draw per ATP01-02

## Series packs

1. Close the BRB
2. Verify current draw per ATP01-03
3. Set simulated load to 1.3 ohms
4. Verify current draw per ATP01-04

# Acceptance Test Summary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test | Criteria | Bounds +/- | Actual | Pass/Fail |
| ATP01-01 | 45 A | 5 A |  |  |
| ATP01-02 | 70 A | 5 A |  |  |
| ATP01-03 | 45 A | 5 A |  |  |
| ATP01-04 | 70 A | 5 A |  |  |

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Witness/examiner signature Date Pass/Fail