

# Integriti Application Note.

## Battery Testing On Concept/Integriti 2A Power Supplies.

Inner Range Concept and Integriti Standard Power Supplies are equipped with AC Fail and Low Battery outputs and a Battery Test input to allow monitoring and testing of the power supply status via a low-level interface.

This document describes the connections and programming required to provide periodic and/or manual battery testing on these power supplies when used in an Integriti system and applies to the following power supply products:

994055 Concept Short form 2A Power Supply. (PCB and installation kit)  
Also included in: 994050 Concept 2A Power Supply in heavy duty enclosure.  
994051 Concept 2A Power Supply in economy enclosure.

996090PCB&K Integriti/Concept 2A Standard Power Supply.  
Also included in: 995200PEI / 995200PEEU Integriti Small Powered Enclosure.

This application note must be read in conjunction with one or more of the relevant installation manuals:

634050\_2AmpPS R2\_3.pdf  
636090\_Integriti-Concept\_2A\_Standard\_PS\_Rev2\_0.pdf  
635086 Mini Expander R3\_01.pdf  
635012-2Door Rev2\_33.pdf

### IMPORTANT NOTES:

- 1) Any LAN Module that does not have a physical output that is mapped to an Auxiliary and/or at least two physical Zone Inputs, cannot control &/or monitor the Battery Test.  
i.e. LCD Terminal, Prisma Terminal, Terminal Interface, Touchscreen Terminal, Analogue Module, Aperio or Hi-O Access Module or RF Expander.
- 2) Due to their limited I/O resources it is not recommended to attempt Battery Testing on the 2A PSU via a One-Door Access Module or Weatherproof Terminal. This would likely compromise the Module's fundamental operations such as monitoring the Door Reed Switch.
- 3) Battery Testing on any Concept 3000/4000 LAN Module with an on-board power supply (i.e. Universal Expander, IFDAM, ITDAM and LAN Power Supply) is fully supported in Integriti and is programmed in the same way as an Integriti Module which has an Integriti power supply connected. This document is not relevant to these Modules.

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# Concept 3000/4000 Mini Expander Module.

## 2A Power Supply connected via Ribbon Cable.

When the Mini Expander and 2A PSU are connected via the 10-way Ribbon Cable, all the connections required for battery testing are provided. i.e. Mini Exp X2 to 2A PSU X3 (994055) or P1 (996090PCB&K).

The ribbon cable connects the Power Supply battery test input to the Mini Expander Auxiliary X08, and the Power Supply AC Fail and Low Battery outputs to the Mini Expander Zone Inputs Z07 and Z08 respectively. (The EOL Resistors are built-in to the power supply board)

e.g. If the Mini Expander is E04, then E04:X08 will be the Auxiliary that turns the battery test on and off.

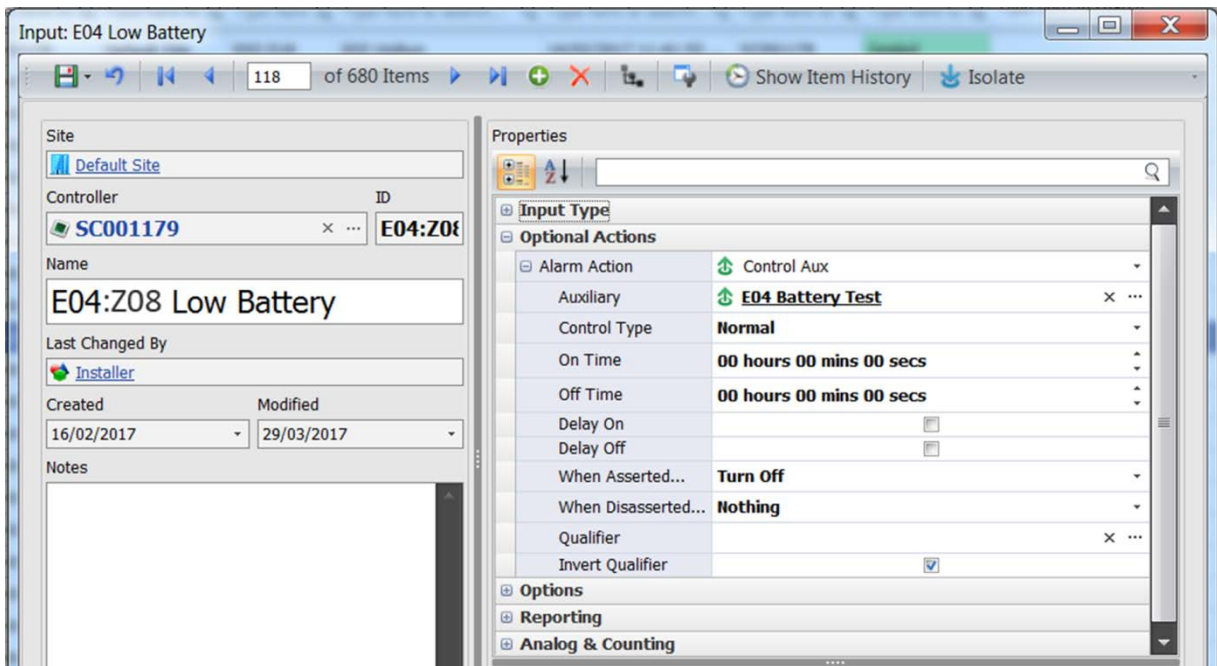
The Auxiliary 8 output terminals and the Zone 7 and Zone 8 input terminals on the Mini Expander board must not be used.

Refer to:

- 634050\_2AmpPS R2\_3.pdf or 636090\_Integrati-Concept\_2A\_Standard\_PS\_Rev2\_0.pdf
- 635086 Mini Expander R3\_01.pdf

The following programming is required:

- 1) Program a name for Auxiliary X08 to identify its purpose. e.g. "E04 Battery Test Aux"
- 2) Program an operation to turn X08 ON when required (e.g. Every Wednesday at 2PM) for the period of time considered appropriate for a battery test on this Module.  
e.g. Program a Schedule and a Named Action. If manual battery testing is required, then include appropriate 'User Interface' and 'User Access' settings in the Named Action so that appropriate Users can start a battery test from a Terminal. See 'Programming Notes' below.
- 3) Program names for Z07 and Z08.  
e.g. Z07 "E04 AC Fail" Z08 "E04 Low Battery"
- 4) Assign Zones Z07 and Z08 to an appropriate Area with relevant Process Groups to ensure that they are monitored and reported as required.
- 5) Ensure that the Module System Inputs S05 (Low Batt) and S19 (LAN Comms) are also assigned to an appropriate Area with relevant Process Groups to ensure they are monitored and reported as required.
- 6) Program an operation to turn X08 OFF (i.e. cancel the battery test) in the event of an alarm on any of the inputs that indicate a problem with the Battery or the Power Supply.  
e.g. Program an 'Alarm Action' in the Input programming for Z07, Z08, S05 and S19 as shown below.  
Note: Multi-select edit may be used to program the action once for all the relevant inputs.



PROGRAMMING NOTES:

- 1) If there are multiple Modules that require battery testing to be performed in this manner, and all require the same test period, a single Schedule and Named Action may be programmed where the Named Action controls an Auxiliary List rather than a single Auxiliary.  
If different battery test times are required, then a separate Named Action will be required for each Module.  
If staggered battery testing is preferred, then a separate Schedule and Named Action will be required for each Module.
- 2) A dedicated 'Battery Test Fail' condition may be monitored &/or reported by combining the Schedule and the Low Battery Zone Input in logic to trigger another Zone Input.

## **2A Power Supply connected without Ribbon Cable.**

When the Power Supply is connected to the Mini Expander by wiring the PSU +V/0V terminals to the Mini Expander LAN POS & NEG terminals, then additional wiring is required for the battery testing operation.

The PSU 'AC FAIL', 'LOW BATT' and 'BATT TEST' terminals must be connected to the Mini Expander as shown and described in the Power Supply installation manual. (The EOL Resistors for the AC Fail and Low Battery circuits are built-in to the power supply board)

Note that the 0V connection is provided by the connection between the PS '0V' terminal and Mini Expander LAN 'NEG' terminal.

Programming is the same as described above, except that different Auxiliary and Zone Input IDs may need to be substituted if those used are different to those mandated by using the Ribbon Cable.

## Concept 3000/4000 2-Door Access Module.

To allow battery testing on a 2A PSU when connected to a Concept 2-Door Access Module (2DAM), the Ribbon Cable connection must not be used. The Ribbon Cable connection supports +V and 0V, but does not support the Auxiliary and Zone connections, and if connected will disable the Module Low Battery (Low Volts) monitoring (Rnn:S09)

The Power Supply should be connected to the 2DAM by wiring the PSU +V/0V terminals to the 2DAM +LAN or +V terminal and 0V terminal.

The PSU 'AC FAIL', 'LOW BATT' and 'BATT TEST' terminals must be connected to the 2DAM as shown and described in the Power Supply installation manual. (The EOL Resistors for the AC Fail and Low Battery circuits are built-in to the power supply board)

Note that the 0V connection is provided by the connection between the PSU '0V' terminal and the 2DAM '0V' terminal.

### Zone Inputs

You will require two spare Zone Inputs that support EOL Resistors to be available on the 2DAM. Only the Reed Switch and Tongue Sense Inputs are suitable for this purpose.

If the Tongue Sense inputs are not being used, these would be the best choice and 'Tongue Sense' should be disabled in the programming for the Module/Doors.

The remainder of this chapter will assume the use of the Tongue Sense Inputs for this purpose.

i.e. Connect the AC Fail output to the Door 1 Tongue Sense Input (Rnn:Z03).

Connect the Low Battery output to the Door 2 Tongue Sense Input (Rnn:Z04).

If all Reed and Tongue Sense Inputs are being used for the Door/s controlled by the Module, then the PSU AC Fail and Low Battery outputs will need to be connected to spare Zone Inputs on another Module and the programming adapted accordingly.

### Battery Test Auxiliary

You will also require a spare Auxiliary Output on the 2DAM.

If the 2DAM is only controlling one Door, then the 2<sup>nd</sup> Lock Relay may be used (X02). In this case, the Normally Open (NO) terminal is connected to the BATT TEST terminal of the 2A PSU and the Common (COM) terminal is connected to 0V of the PSU.

If a 'Valid' or 'Invalid' LED output is available, AND the 'No Valid/Invalid Outputs' option is enabled, then one of these open collector outputs may be used:

X05	Reader 1 Valid
X06	Reader 1 Invalid
X07	Reader 2 Valid
X08	Reader 2 Invalid

NOTE: If any of these LED outputs are being used for Valid &/or Invalid indication (i.e. The 'No Valid/Invalid Outputs' option is not enabled), then no LED output can be used for the Battery Test Auxiliary.

If either of the DOTL outputs is available, then one of these open collector outputs may be used. If a DOTL output is used then there must be no DOTL Warning options programmed for the Door.

If both Lock Relays and DOTL outputs are already in use and none of the LED outputs are available, then the Battery Test Auxiliary will need to be sourced from another Module and the programming adapted accordingly.

Refer to:

- 634050\_2AmpPS R2\_3.pdf or 636090\_Integrity-Concept\_2A\_Standard\_PS\_Rev2\_0.pdf
- 635012-2Door Rev2\_33.pdf

## Programming

The following programming is required:

- 7) Program a name for the chosen Battery Test Auxiliary to identify its purpose. e.g. "R01 Battery Test Aux"
- 8) Program an operation to turn the nominated Auxiliary ON when required (e.g. Every Wednesday at 2PM) for the period of time considered appropriate for a battery test on this Module.  
e.g. Program a Schedule and a Named Action. If manual battery testing is required, then include appropriate 'User Interface' and 'User Access' settings in the Named Action so that appropriate Users can start a battery test from a Terminal. *See 'Programming Notes' in the previous chapter.*
- 9) Program names for the AC Fail and Low Battery Zone Inputs.  
e.g. R01:Z03 "R01 AC Fail" R01:Z04 "R01 Low Battery"
- 10) Assign these Zone Inputs to an appropriate Area with relevant Process Groups to ensure that they are monitored and reported as required.
- 11) Ensure that the Module System Inputs S09 (Low Batt) and S21 (LAN Comms) are also assigned to an appropriate Area with relevant Process Groups to ensure they are monitored and reported as required.
- 12) Program an operation to turn the nominated Battery Test Auxiliary OFF (i.e. cancel the battery test) in the event of an alarm on any of the inputs that indicate a problem with the Battery or the Power Supply.  
e.g. Program an 'Alarm Action' in the Input programming for Z03, Z04, S09 and S21 as shown in the previous chapter.  
Note: Multi-select edit may be used to program the action once for all the relevant inputs.

## Any other LAN Module

Battery Testing on a Concept or Integriti 2A Standard Power Supply can be implemented with any Concept or Integriti LAN Module that meets the following criteria:

- A spare physical output is available that is mapped to an Auxiliary ID.
- Two spare Zone Inputs are available that are compatible with EOL Resistor device wiring.

e.g. Depending on what inputs & outputs are already in use, the following modules may be suitable:

- Concept Mini Expander and 2DAM as described in detail in this document.
- Integriti 8-Zone Expander and Integriti SLAM.

Note that the Integriti ILAM may also be suitable, however it is highly recommended that the ILAM is powered from a 3A or 8A Smart Power Supply. The 2A PSU is usually inadequate for the ILAM.

Where a LAN Module that is powered by a 2A PSU lacks either of these criteria, it may be possible to use a spare output &/or inputs on another Module nearby if convenient.

See the 'IMPORTANT NOTES' on Page 1 for the list of Modules that are not suitable or not recommended.

Connections and programming follow the same principles as described above substituting the Auxiliary and Zone Input IDs that are used for those given in the examples.