

**NERC-PRC-005 and the AT Series Products**  
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HindlePower is the industry leader in providing DC Utility Power Solutions and we understand that utilities are preparing to comply with NERC-PRC-005. It is important to note that HindlePower has provided certain tools to help. Our AT series of chargers offers a host of features that may be used in preparing a PSMP (Protection System Maintenance Program) for NERC compliance.

NERC-PRC-005 outlines activities which must be included in a PSMP. Our current AT series chargers will assist with verification, monitoring, testing, calibration, upkeep and restoration. If you refer to NERC-PRC-005, table 1-4 (f), it lists a series of items that when monitored by an automatic device may be excluded from any requirements for periodic maintenance. This is a significant issue. If the battery charger already monitors a component, then you do not have to include it as part of your active periodic maintenance. Therefore, by relating those features already available in your battery charger, you may use them to simplify your PSMP. The good news is several of these items are already available with the AT series products you may already have or may easily retrofit.

Four (4) of the eight (8) requirements listed in table 1-4 (f) are available with our AT series battery chargers!

- 1. Any station dc supply with high and low voltage monitoring and alarming of the battery charger voltage to detect overvoltage and charger failure.**
  - ✓ The AT series charger has this as a standard feature in its primary alarm system. Further, you may bring these out at two (2) sets of form C independent alarm relays, one (1) for high DC voltage and another set for low DC voltage!
- 2. Any station dc supply with unintentional dc ground monitoring and alarming.**
  - ✓ Ground detection is a standard feature for the AT series charger. It displays polarity on the front panel and may report it discreetly as a fault of unintentional ground through either the common form C contact or through the auxiliary relay as two (2) set of independent form C contacts.
- 3. Any station dc supply with charger float voltage monitoring and alarming to ensure correct float voltage is being applied on the station dc supply.**
  - ✓ All AT series chargers are equipped with “Remote Voltage Sensing.” This capability allows the operator to set up the charger to monitor battery terminal voltage at the battery terminals! This provides an exact depiction of the station DC potential as required. Further, the high and low DC voltage alarms are also used to ensure monitoring of the DC voltage ranges and excursions. These alarms are also available at the common or on the auxiliary relays as two (2) set of isolated form C contacts for each alarm function.

**4. Any battery based station dc supply with monitoring and alarming of battery string continuity.**

- ✓ Coming soon as a standard feature on all AT series products is an integral **“Battery Open Alarm.”** This feature evaluates the battery with regular intervals for battery continuity. If the battery does not exhibit continuity the charger will maintain the load and report the defect via the common alarm relay with local indication.

Consistent with the intention of NEC-PRC-005 and your PSMP program to ensure such factors as **Verification** and **Upkeep**, all AT series chargers have a self-diagnostics system that monitors all functionality of the battery charger from start-up through operation, and reports any malfunction as a diagnostic code. Some of the features that are routinely monitored and reported by the charger while causing the common alarm to change state include:

- E02 - short circuit on dc output
- E03 – high dc voltage shutdown occurrence
- E06 – voltage sensing failure (this is the circuit that monitors the dc bus)
- E07 – dc breaker open, or dc output wiring defective
- E08 – remote TempCo probe defective
- E12 – internal over-temp circuit defective (typically applies to larger fan cooled AT30 products)
- E13 – rectifier over-temperature occurrence (typically applies to larger fan cooled AT30 products)
- A01 – manual equalize enabled for more than 24 hours
- LED on the back of the control card – analog low voltage alarm (this covers failures that were not determined by the microprocessor)

For more information about the AT series chargers and how they can assist with your NERC compliance program, please contact us. To provide you with a greater measure of DC system peace of mind, we will continue to update you with ongoing compliance solutions as they come available.