# Short▲Finder Tool

## 3 & 5-amp auto-resetting

1. **Remove the power from the unit**.
   Determine if you are testing a 3 or 5-amp system. (The system 24V transformer usually indicates this.) Use appropriate wire configuration below.
   - Wire configurations: White – common, Blue – 3A, and Red – 5A
   - LED configurations: Green LED = 3A short, Red LED = 5A short.
   - Auto-resetting procedure: remove power from the tool for 5 to 10 seconds.

2. **Is the system Fused or Not Fused?**

   **24V fuse** on the transformer's output, attach the *Short▲Finder's* leads to the terminals where the 'blown' fuse was:
   a. For plastic ATO style fuses, remove fuse and simply place each male tab, using correct wire configuration above, into one of the fuse-holder terminals. (Some fuse holder terminals might be too loose to make a solid connection with the *Short▲Finder*; in which case use the supplied alligator clip adapters.)
   b. For inline fuses, open fuse holder and remove fuse. Using supplied alligator clip adapters, place each alligator clip on one of the fuse-holder contacts. Cap off unused blue or red wire of the tool with the supplied spare terminal.

   **Not fused**, you will have to break the transformer's 24VAC output wiring (the 24V HOT side) and clip the *Short▲Finder's* alligator clip leads to each side of the break, using the correct amperage wire configuration, as above. Cap off unused blue or red wire of the tool with the supplied spare terminal.

3. Place system thermostat in "**Off**" mode and fan in "**Auto**" mode.

4. Power the system **On**. If the LED does **not** light, skip ahead to step 7.

5. If the LED is on, it indicates a short is present. Remove power from *Short▲Finder* for 5 to 10 seconds for it to auto-reset. Finding exactly where the short is located is now just a matter of removing circuits, one at a time, divide and conquer.

   **Start with the wiring going to the thermostat: remove the thermostat "Hot" wire from the board or terminal strip and reset power.**

   If the **LED stays off** - the problem is somewhere down that line. Further isolate the short by reconnecting the wire and removing connections further down that line, ie. the thermostat itself.

If the **LED stays on** and will not auto-reset without power after 5-10 seconds, it is an indication that the short is still present in the wiring connected to the circuit. To find the short, continue to disconnect wiring until the LED stays off.

6. If the LED is **not** on when the system is powered up, it means that the short is not presently connected to the circuits. It's either (a) an intermittent short, or (b) you need to activate the thermostat-controlled circuits, one at a time, until the short is found. For instance, if the short is in the wiring that activates the contactor in the condensing unit (possibly chewed by an animal) the short probably will not be seen until the 24V condensing unit line is activated.

   Instead of spending time moving back and forth, to and from the thermostat for each test, consider using a *ZebraStat* to make this process much quicker. The *ZebraStat* acts as a remote control, along with many other functions.

7. Make certain that each mode **(Fan - Cool - Heat)** works properly and at a safe current draw before removing the *Short▲Finder Tool* and installing a new fuse.

8. If an intermittent problem is suspected, our *Z▲Breakers* may help keep the system operating until the problem is diagnosed.

9. For 24VAC use only; do not connect to 120V or 240V.

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