

# technical q&a

# msac

MANUFACTURERS' SERVICE  
ADVISORY Council

# HOTLINE

The Manufacturers' Service Advisory Council provides expert answers to your technical questions

*The MSAC Members, their employers and RSES Journal assume no responsibility for the accuracy of answers and assume no liability arising from answers or Hotline feedback.*

## Blown Circuit Board Fuse

**I have a 5-ton RTU that keeps blowing the 3 amp circuit board fuse. The contactor and circuit board have both been replaced and it still blows the fuse every other day. Any helpful thought as to what could cause this?**

A fuse that trips every other day or so is caused by something in the low-voltage circuit that leads to higher than normal current draw. This could be as simple as a short or shunt in one of the wires or as difficult as a coil in a relay or contactor that slowly heats up over time when energized. Look on the unit wiring diagram to identify all loads in the circuit then try to measure current flow in each load to see if any have a higher than expected running value. Also, ask yourself or the unit owners if any additional loads have been placed on the circuit in the field, such as an accessory not listed on the wiring diagram.  
*Question from Golden State HVAC of Burbank, CA. Answer from Jack Bartell, Director, Service & Training, Virginia Air Distribution.*

## Open Limit Event

**The gas furnace IFC board I am working on was replaced. All wires were applied to the same locations on the new one. I put it to call for cool and right away the inducer fan motor came on calling for heat. The blower also does not turn off now even when in the off position on the thermostat. I'm returning today to try a new thermostat or to determine if the thermostat wires are shorted. What else can I do that I did not mention?**

I would suggest there may be a primary limit circuit open based on the supply air blower running continuously. Several of our Lennox furnaces will also run the Cold Air Intake (CAI) blower in response to an open limit event.  
*Question from Jose Hoffa Oritz of Bolivia, NC. Answer from Bob Coné, CM, Field Technical Consultant, Lennox.*

## Confirm a Leak

**I have a 4-ton Payne RTU that was low on charge last Thursday. I recharged it with R-410A and this morning it is bone dry again and there was no sign of leakage. I filled it with nitrogen and did a soap and water leak test for two hours and no leak. Do you have any thoughts on why this might be happening?**

If the unit is accessible from the ground vandalism or huffing by addicts, which is an extremely dangerous practice, are possibilities. If the unit is not easily accessible the only possible answer is a leak that has yet to be found. Testing for a leak with soap and bubbles at the evaporator or condenser coil can be very difficult. While many manufacturers do not support using a dye it might be an option to consider. To confirm a leak on a sealed system you should also evacuate the system to below 500 microns. If sealed you'll hold the micron level but if there is a leak you will not.  
*Question from Golden State HVAC of Burbank, CA. Answer from Jack Bartell, Director, Service & Training, Virginia Air Distribution.*

### RSES Journal is looking for technical questions to ask MSAC Members!

There are three ways to submit a question:

1. Look for the postage-paid MSAC Hotline card in this issue, fill it out and place it in the mail;
2. Visit [www.rses.org/msacquestion.aspx](http://www.rses.org/msacquestion.aspx) and fill out the online form; or
3. Email your question to [msac@rses.org](mailto:msac@rses.org).

Please be specific when referencing products or equipment—give manufacturer name, model number, serial number and year of manufacture when possible. Answers will be sent as quickly as possible and published in an upcoming issue of RSES Journal.