



Service Tips Number # ST-012-01

■ TOPIC:

- Enabling of the GVX9000 VFD on 15 through 25 Ton Packaged Rooftops

■ SCOPE & PURPOSE:

- There have been reports of the indoor blower motor not starting when commanded to energize on 15 through 25 ton package units that utilize the GVX9000 VFD. This usually occurs on a transition from unoccupied to occupied modes. It could also occur with a momentary interruption of power to the unit or any time the indoor blower is commanded ON during the unoccupied mode. The cause appears to be a timing issue between initializing, or power-up, of the vfd and the enable command, both of which are provided through a contactor that is energized by the FAN output on the Simplicity 1A control. The purpose of this letter is to provide an alternate method of enabling the vfd in order to eliminate the timing issue.

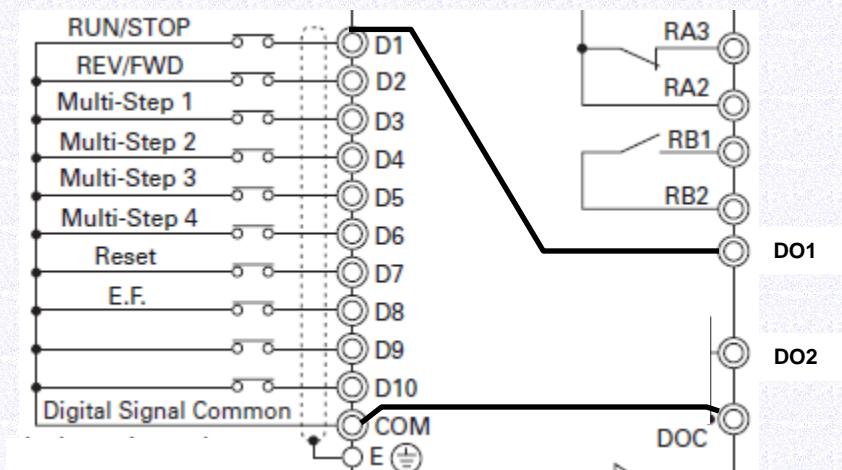
■ CONTENT:

- As built from the factory, the 15 through 25 ton packaged VAV units utilize an Eaton GVX9000 vfd. The vfd is powered through a contactor that is energized by the FAN output on the Simplicity 1A control. That output is ON when the unit is commanded into an occupied mode, or when unit operation is requested during the unoccupied (i.e., unoccupied heating). When the FAN output is turned ON, the contactor is energized, the vfd is provided power and it goes through a brief initialization period. The same contactor has an auxiliary contact that enables the vfd at the same time that the vfd is powered. Enabling the vfd during the initialization period can cause an intermittent condition where the vfd display shows an output to the motor, but there is no output and the motor does not run. This can cause a number of alarms depending on the configuration of the unit's Simplicity controls.
- To remedy this condition the GVX9000 can be configured to enable itself through one of its own relays. The relay can be configured to close only when the vfd is READY, or has completed its initialization period, and will eliminate the timing issue

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created by the dual use of the contactor to power and enable the drive simultaneously. To accomplish this, perform the following tasks:

- Remove factory wires from COM and D1 and the GVX9000 terminal block and tie them back.
- Fabricate and install two (2) jumpers on the GVX9000 terminal block as follows:
 - COM to DOC
 - DO1 to D1
- Change the following GVX9000 parameters:
 - 40.05 to a value of 01 (READY)
 - 50.42 to a value of 01
 - 50.46 to a value of 0
 - 70.21 to a value of 2 secs
- The sequence after making the above changes will be:
 - Command the unit occupied or into any condition which requires the indoor blower operation
 - Indoor blower contactor is energized powering up the vfd
 - After the vfd initialization period is complete, the GVX9000 relay DOC to DO1 will close sending the enable command to D1, the RUN/STOP input



■ SUMMARY/CONCLUSION:

- Enabling of the GVX9000 during the time when the vfd is going through a brief initialization period can cause a condition where the vfd does not provide any output to the indoor blower motor even though the vfd display indicates an output. This can be remedied by using one of the GVX9000 relays for the enable command and eliminating the auxiliary contact on the blower contactor that is used for the enable command.

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