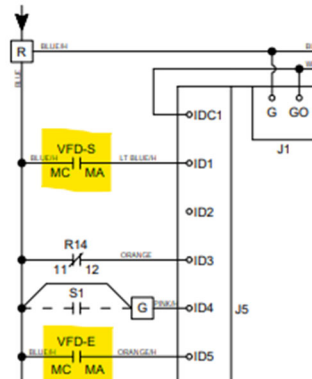


## Frequently Asked Questions

### What does “Supply/Exhaust Fan 1 Run Status Not Proven” mean?

The Supply/Exhaust Fan 1 Run Status Not Proven alarm occurs when the unit’s Carel c.pCO controller is expecting proof that the applicable fan is running and fails to see this feedback on its programmed input. The VFDs are responsible for proving run status to the controller via their programmed internal relay contacts.

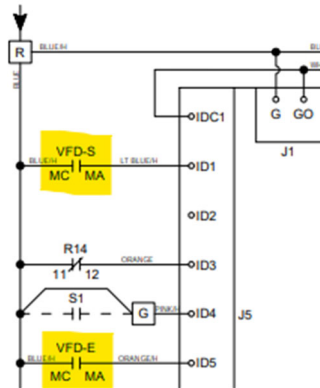
- For most units, the contact for supply fan proving is labeled VFD-S and the contact for exhaust fan proving is labeled VFD-E. These contacts will feed into inputs on the Carel controller (Example: ID1 and ID5 in the example below).
  - o The Carel input associated with each fan’s run status can vary from unit to unit.
- In the example below, the contacts on the supply and exhaust fan VFDs for run status are MC and MA.
  - o The actual contacts used on the drive can vary from one unit to the next based on drive model.
  - o These contacts are programmed in the VFD to close when the drives’ output frequency exceeds the proving frequency.
    - In a Yaskawa VFD, this proving frequency is the *Speed Agreement Detection Level* parameter (often, L4-01, which is generally set by default to 15Hz).
      - This means that whenever the VFD is outputting a frequency of at least 15Hz, the contact is closed.



- Depending on the unit’s design, the inputs associated with run status could be looking for voltage, or dry contact closure. Use the unit’s wiring diagram to determine what closes your unit’s inputs.
  - o An input being fed by Terminal Block R will be looking for 24VAC for closure.
  - o An input being fed by Terminal Block C (neutral) will be looking for dry contact closure.

## Example

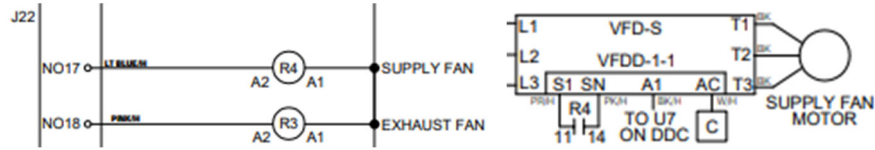
In the example below, Terminal Block R has 24VAC. When each VFD sees its output frequency is above 15hz, they close their MC/MA contacts and 24VAC is passed to ID1 (supply) and ID5 (exhaust). When the controller sees 24VAC on the applicable terminal, the fan's run status has been proven, and no alarm is triggered. When voltage is lost on the applicable terminal, and there is a call for that fan to run, the alarm is activated.



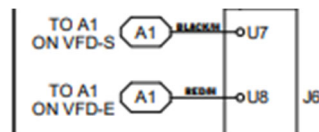
## Troubleshooting

1. Verify the unit wiring matches the schematic. Correct any discrepancies.
2. Verify the VFD is not displaying a fault, if it is, contact technical support.
3. If Steps 1 and 2 were completed and no wiring issues or VFD faults have been found, the alarm on the main unit controller will have to be cleared to continue troubleshooting. Press the Alarm button on the Carel twice and then press the Enter button. The alarm should clear, and after a delay, the Carel will try to energize the fans.
  - a. If the fans begin rotating, make note of the VFD's output frequency, it must maintain a run frequency above 15Hz to prevent the alarm from triggering.
    - i. If the run frequency is below this threshold, contact technical support. This is the most common cause for the alarm to trigger.
    - ii. If the run frequency stays above this threshold, the alarm is most likely attributed to a VFD fault that has since cleared. Possible causes can be numerous and additional monitoring may be required.

- b. If the fans do not begin rotating, verify that the VFD is receiving its start command and speed signal from the Carel controller. While completing this step, the unit may fall back into an alarm state. If this occurs, simply clear the alarm again using the same process as step 3 and continue.
- i. The start command is generally listed on the unit schematic as Supply Fan/Exhaust Fan and will generally indicate a digital output terminal on the controller responsible for energizing the fan's start. This relay closes the start contact on the associated VFD.



- i. The speed signal is also generally listed on the schematic. In the below example, we see the supply fan (VFD-S) speed signal comes from U7 on the controller. We would expect to see a 0-10VDC signal from this terminal with 10VDC equating to 100% run speed.



4. Reach out to technical support for additional assistance as needed.