



CFM COMPANY

AIR CONDITIONING / HEATING / VENTILATING EQUIPMENT

1440 South Lipan Street • Denver, CO 80223-3411

Phone: (303) 761-2291 • Fax: (303) 761-0325

Variable Frequency Drive Pre-Startup Checklist

Please contact CFM Tech Support 2 weeks prior to your desired date to schedule a start up. To provide an efficient and thorough start-up, the following questions need to be reviewed, and the job site inspected for compliance to this checklist. This requirement will eliminate delays, extra cost, and limiting or voiding the factory warranty. This form must be completely filled out, signed, and received by CFM Tech Support, **48 hours** prior to the coordinated start-up and commissioning of your ABB Variable Frequency Drive(s).

Please fax or e-mail the completed form to CFM Technical Support.

E-mail to cfmtechsupport@cfmcompany.com

or Fax # **303-777-8531**

Electricians - please refer to NEC 110-3B and the supplied ABB User's Manual for proper installation practices, maximum wire sizes, tightening torques, and electrical warnings prior to installation. If there are any installation questions, please call us.

Jobsite Name: _____ Contractor Name: _____

Address: _____ Point of Contact: _____

City, ST, Zip _____ Cell Phone #: _____

Application and quantity of VFDs ready for startup:

AHU Supply: ____ AHU Return: ____ Cooling Tower(s): ____ Exhaust Fans: ____ Pumps: ____
Other: _____

Jobsite Prerequisites: - If "Yes" to questions 1 – 4 please attach full details with this form.

Yes	No	
[]	[]	1. Is background check or clearance paperwork required prior to being on the jobsite?
[]	[]	2. Is an Access / ID badge required prior to being on the jobsite?
[]	[]	3. Is there a fee required to obtain an ID badge? How much? \$ _____
[]	[]	4. Are mandatory safety classes required to work on this jobsite? Safety Class duration? ____HRS What days are the Safety Classes offered? M T W Th F Time: ____to ____ Point of Contact: _____ Phone #: _____

Physical Installation:

Yes	No	
[]	[]	5. Have the VFD(s) been visually inspected for damage during shipment or installation? Shipping damage is not covered under warranty and any claims must be filed directly and immediately with the freight company for insurance coverage. If parts are damaged and need replacement the cost will be invoiced to the contractor responsible for the equipment.
[]	[]	6. Is this a "HOT SWAP"? (Shutdown – Replace with new VFDs – Re-Start ASAP)

Continued... NEXT PAGE...

Yes	No	
[]	[]	7. Is the operating environment free from dripping water, excessive dust, extreme temperatures, heavy condensation, metal shavings, and any other contamination? Metal shavings from electrical installation must be removed prior to start up. CFM is not responsible for cleaning dust and contamination.
[]	[]	8. Have the VFD(s) been mounted in accordance with the supplied ABB User's Manual, including proper clearances for ventilation?
[]	[]	9. Has the ABB documentation packet and Operator Control Panel been retained for use at start up? The packet contains all operation manuals and wiring diagrams. The Control Panel is required for both start up and operation of the VFD.

Electrical: – Please call our Tech Support Dept. if you have electrical connection questions.

Yes	No	
[]	[]	<p>Electrical Contractor: _____</p> <p>Onsite Point of Contact: _____</p> <p>Cell Phone #: _____</p>
[]	[]	10. Have the VFD(s) been electrically wired in accordance with the supplied ABB User's Manual, including proper grounding, the use of separate metal conduits to keep these three classes of wiring apart: Input power wiring, motor wiring, and control/communications wiring, etc.?
[]	[]	11. Are there any devices on the Line side of the VFD such as power correction capacitors or motor starters? The only device connected to the input power side of the VFD should be a circuit breaker, or disconnect with fuses. Existing Motor Starters should be removed.

Controls – Please call our Tech Support Dept. if you have questions about control terminations.

Yes	No	
[]	[]	<p>Controls Contractor: _____</p> <p>Onsite Point of Contact: _____</p> <p>Cell Phone #: _____</p>
[]	[]	12. Is the Building Automation System installed, wired, and ready for automatic operation? <input type="checkbox"/> Safeties, <input type="checkbox"/> Start/Stop, <input type="checkbox"/> Analog Speed Reference, <input type="checkbox"/> Communications, <input type="checkbox"/> Running Status <input type="checkbox"/> Fault Status For proper VFD programming, the BAS control signals must be ready to test at startup.
[]	[]	13. For AHU/Fan applications, has a pressure relief damper or a High-Pressure Limit switch been installed and wired to prevent over-pressurization at full speed operation?

Equipment Condition (Check all that apply)

Yes	No	<u>Air Handling Units</u>
[]	[]	14. Is the air handling unit ready for full speed operation? Is the ductwork complete and are all VAVs open? Are <u>ALL</u> the Fire/Smoke dampers open?
[]	[]	15. Have main filters and pre-filters (if used) been installed?
[]	[]	16. Are all interior compartments of the AHU(s)/RTU(s) clean and free of debris?
[]	[]	17. Have the shipping blocks for the fan isolation frame been completely removed?

Continued... NEXT PAGE...

Yes	No	
[]	[]	18. (If applicable) Fan Wall Pre-startup (supplement) included and complete?
[]	[]	<u>Exhaust Fans</u> 19. Are the dampers operable or fixed in the OPEN position?
[]	[]	20. (If applicable) Fire/Smoke VFD Pre-startup (supplement) included and complete?
[]	[]	<u>Cooling Tower Fans</u> 21. Cooling Tower Pre-startup (supplement) included and complete?
[]	[]	<u>Pumps</u> 22. Have the lines been filled with water so that pumps can be run to 100%?

Jobsite Coordination

Yes	No	
[]	[]	23. Have the control contractors been notified of start-up date and scheduled to be onsite for check out? Commissioning of automatic control equipment must be done at time of start up.
[]	[]	24. Are the contractors responsible for the mechanical equipment scheduled to be on site at time of start-up? Equipment will not be started without the responsible contractor present.
[]	[]	25. Are customer's representatives available for owner training while on site for start up? Owner training is included in start-up provided it is done at time of start-up.

Last Update 21JAN2015

WARNING: Please call CFM Tech Support if equipment must be running before startup. Otherwise, do not apply power to units until start up representatives are present. **Motor rotation will be checked and verified at time of start up.** Warranty may be affected if power is applied and equipment is damaged prior to start up!

**CFM Tech Support Hours are
Monday – Friday, 7AM – 4PM
All other Times and Days are by
prior approval only!**

**Contact CFM Tech Support
Office: 303-761-2291
Email:
cfmtechsupport@cfmcompany.com**

Form Completed by: _____ Phone #: _____
(Please Print)

Your signature (below) confirms that equipment condition has been verified in the field and the information provided on this form reflects that condition.

Signature: _____ Date: _____

CFM Company reserves the right to charge for round trip travel and time on-site if the preparedness of the equipment does not reflect the information provided, prevents startup due to safety concerns, poor coordination between trades, or lack of completeness. This determination is at the discretion of the CFM Company Employee who is on-site at the time of startup.