

NA7.10.4 Compressor Variable Speed Acceptance

Project Name/Address:

System Name or Identification/Tag:

System Location or Area Served:

Enforcement Agency:

Permit Number:

Note: Submit one Certificate of Acceptance for each system that must demonstrate compliance.

Enforcement Agency Use: Checked by/Date

Documentation Author's Declaration Statement

- I certify that this Certificate of Acceptance documentation is accurate and complete.

Name:

Signature:

Company :

Date:

Address:

If Applicable: CEA or CEPE (Certification #):

City/State/Zip:

Phone:

FIELD TECHNICIAN'S DECLARATION STATEMENT

- I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct.
- I am the person who performed the acceptance requirements verification reported on this Certificate of Acceptance (Field Technician).
- I certify that the construction/installation identified on this form complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
- I have confirmed that the Installation Certificate(s) for the construction/installation identified on this form has been completed and is posted or made available with the building permit(s) issued for the building.

Company Name:

Field Technician's Name:

Field Technician's Signature:

Date Signed:

Position With Company (Title):

RESPONSIBLE PERSON'S DECLARATION STATEMENT

- I certify under penalty of perjury, under the laws of the State of California, that I am the Field Technician, or the Field Technician is acting on my behalf as my employee or my agent and I have reviewed the information provided on this form.
- I am a licensed contractor, architect, or engineer, who is eligible under Division 3 of the Business and Professions Code, in the applicable classification, to take responsibility for the scope of work specified on this document and attest to the declarations in this statement (responsible person).
- I certify that the information provided on this form substantiates that the construction/installation identified on this form complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
- I have confirmed that the Installation Certificate(s) for the construction/installation identified on this form has been completed and is posted or made available with the building permit(s) issued for the building.
- I will ensure that a completed, signed copy of this Certificate of Acceptance shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a signed copy of this Certificate of Acceptance is required to be included with the documentation the builder provides to the building owner at occupancy.

Company Name:

Phone:

Responsible Person's Name:

Responsible Person's Signature:

License:

Date Signed:

Position With Company (Title):

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Intent: *Verify that the compressor has a variable speed control*

Construction Inspection

1 No instrumentation is needed to perform test

2 Installation

- Verify all single open-drive screw compressors dedicated to a suction group have variable speed control.
- Verify all compressor suction and discharge pressure sensors read accurately (or provide an appropriate offset) using a standard.
- Verify all input or control temperature sensors used by controller read accurately (or provide an appropriate offset) using temperature standard.
- Verify that all sensor readings used by the compressor controller convert or calculate to the correct conversion units at the controller (e.g., saturated pressure reading is correctly converted to appropriate saturated temperature, etc.)
- Verify that all compressor speed controls are operational and connected to compressor motors.
- Verify that all speed controls are in “auto” mode.
- Verify that compressor panel control readings for “RPMs”, “% speed”, “kW”, and “amps” match the readings from the PLC or other control systems.
- Verify that compressor nameplate data is correctly entered into the PLC or other control system.

A. Functional Testing

Results

Note: The system cooling load must be sufficiently high to run the test. Artificially increase or decrease evaporator loads (add or shut off zone loads, change set points, etc.) as may be required to perform the Functional Testing.

Step 1: Override any heat reclaim, floating suction pressure, floating head pressure and defrost functionality before performing functional tests.

Step 2: Measure and document the current compressor operating suction pressure and saturated suction temperature.

- | | |
|---|------|
| a. Current operating suction pressure. | psig |
| b. Current operating saturated suction temperature. | °F |

Step 3: Document the suction pressure/saturated suction temperature set point. Program into the control system a target set point equal to the current operating condition measured in Step #2. Allow 5 minutes for system to normalize. This will be referred to as the “test suction pressure/saturated suction temperature set point”.

- | | |
|---|------------|
| a. Suction pressure/saturated suction temperature set point | psig
°F |
|---|------------|

Step 4: Using the control system, raise the test suction set point in 1 psi increments until the compressor controller modulates to decrease compressor speed. Verify the following:

- | | |
|---|-------|
| a. Compressor speed decreases. | Y / N |
| b. Compressor speed continues to decrease to minimum speed. | Y / N |
| c. Any slide valve or other unloading means does not unload until after the compressor has reached its minimum speed (RPM). | Y / N |

Step 5: Using the control system, lower the test suction set point in 1 psi increments until the compressor controller modulates to increase compressor speed.

- | | |
|---|-------|
| a. Any slide valve or other unloading means first goes to 100 percent before compressor speed increases from minimum. | Y / N |
| b. Compressor begins to increase speed. | Y / N |
| c. Compressor speed continues to increase to 100 percent. | Y / N |

