

REFRIGERATED WAREHOUSE VARIABLE SPEED COMPRESSOR ACCEPTANCE

CEC-NRCA-PRC-07-F (Revised 01/16)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF ACCEPTANCE		NRCA-PRC-07-F
Refrigerated Warehouse Variable Speed Compressor Acceptance		(Page 1 of 3)
Project Name:	Enforcement Agency:	Permit Number:
Project Address:	City:	Zip Code:

<i>Note: Submit one Certificate of Acceptance for each compressor that must demonstrate compliance.</i>	Enforcement Agency Use: Checked by/Date
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Intent:	<i>Verify that applicable compressors control compressor speed in response to the refrigeration load.</i>
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<p>A. Construction Inspection</p> <p>1. Installation. Verify the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> All single open-drive screw compressors dedicated to a suction group have variable speed control. <input type="checkbox"/> All compressor speed controls are operational and connected to compressor motors. <input type="checkbox"/> Compressor nameplate data is correctly entered into the PLC or other control system. <input type="checkbox"/> Compressor panel control readings for RPM, % speed, kW, and amps match the readings from the PLC or other control systems. <input type="checkbox"/> All sensor readings used by the compressor controller convert or calculate to the correct conversion units at the controller (e.g., pressure reading is correctly converted to appropriate saturated temperature, etc.) <input type="checkbox"/> All speed controls are in "auto" mode. <p>2. Field Calibration:</p> <p>Sensors used for control must be calibrated to read accurate from the control system. Calibration values must be documented. Attach field calibration records, including offsets used, to this compliance document. The following sensors are used for air-cooled condenser control:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Compressor suction pressure sensor. <p>The calibrating instrument used to calibrate the sensor used for control must have the following accuracies:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pressure: ± 2.5 psi between 0 and 500 psig <p>Notes:</p>

B. Functional Testing	Results
<i>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 setpoints, etc.) as may be required to perform the Functional Testing.</i>	
Step 1: Override any conflicting controls before performing the Functional Tests.	
Notes:	
Step 2: Document current suction operation and setpoints	
a. Current operating suction pressure or saturated suction temperature (SST)	psig °F
Step 3: Set the test suction setpoint.	
a. Document the current suction pressure or SST setpoint	psig °F



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Program into the control system a target setpoint equal to the current operating condition measured in Step #2. Allow 5 minutes for system to normalize.	
Notes:	
Step 4: Raise the test suction setpoint in small increments until the compressor controller modulates to decrease compressor speed.	
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 minimum speed is reached	Y / N
Notes:	
Step 5: Lower the test suction setpoint in small increments until the compressor controller modulates to increase compressor speed.	
a. Any slide valve or other unloading first goes to 100% before compressor increases from minimum speed.	Y / N
b. Compressor begins to increase speed.	Y / N
c. Compressor speed continues to increase to 100%.	Y / N
Notes:	
Step 6: Restore suction setpoints back to original setting as documented in Step #3.	Y / N
Step 7: Restore any controls disabled in step #1.	Y / N

C. Testing Results	PASS / FAIL	
Step 1: Compressor speed decreases to the minimum value before unloading slide valve or other unloading means. (Pass if all Answers are Yes)	<input type="checkbox"/>	<input type="checkbox"/>
Step 2: Compressor slide valve or other unloading means fully loads, before compressor speed increases. (Pass if all Answers are Yes)	<input type="checkbox"/>	<input type="checkbox"/>

D. Evaluation
<input type="checkbox"/> PASS: All Construction Inspection responses are complete and all Testing Results responses are "Pass"
Notes:

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT		
1. I certify that this Certificate of Acceptance documentation is accurate and complete.		
Documentation Author Name:	Documentation Author Signature:	
Documentation Author Company Name:	Date Signed:	
Address:	CEA/HERS/ATT Certification Identification (If applicable):	
City/State/Zip:	Phone:	
FIELD TECHNICIAN'S DECLARATION STATEMENT		
I certify the following under penalty of perjury, under the laws of the State of California:		
<ol style="list-style-type: none"> The information provided on this Certificate of Acceptance is true and correct. I am the person who performed the acceptance verification reported on this Certificate of Acceptance (Field Technician). The construction or installation identified on this Certificate of Acceptance complies with the applicable 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 Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance has been completed and signed by the responsible builder/installer and has been posted or made available with the building permit(s) issued for the building. 		
Field Technician Name:	Field Technician Signature:	
Field Technician Company Name:	Position with Company (Title):	
Address:	CEA/HERS/ATT Certification Identification (If applicable):	
City/State/Zip:	Phone:	Date Signed:
RESPONSIBLE PERSON'S DECLARATION STATEMENT		
I certify the following under penalty of perjury, under the laws of the State of California:		
<ol style="list-style-type: none"> 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 Certificate of Acceptance. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Acceptance and attest to the declarations in this statement (responsible acceptance person). The information provided on this Certificate of Acceptance substantiates that the construction or installation identified on this Certificate of Acceptance 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 Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance 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. 		
Responsible Acceptance Person Name:	Responsible Acceptance Person Signature:	
Responsible Acceptance Person Company Name:	Position with Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

NRCA-PRC-07-F User Instructions

Section A. Construction Inspection

This section consists of check boxes for checking the condition of the sensors, equipment and systems before beginning the actual test. Complete each check box to confirm that the construction inspection is complete for all items.

Section B. Functional Testing

This section consists of the steps followed during the acceptance test. Enter data as instructed in each column or answer either yes or no to the yes/no questions.

Section C. Testing Results

This section consists of data entry requirements for the results of the test(s). Enter data associated with the appropriate system type as instructed.

Section D. Evaluation

This section briefly describes the steps followed during the acceptance test. Enter either Pass or Fail in the boxes next to the steps. Any portion that fails should be explained in the given rows.

Documentation Author's Declaration Statement

- NAME is the name of the person completing this compliance document.
- COMPANY is the name of the company the DOCUMENTATION AUTHOR represents.
- ADDRESS is the address of the COMPANY.
- CITY/STATE/ZIP is the city, state and zip code of the COMPANY.
- SIGNATURE is the signature of the DOCUMENTATION AUTHOR.
- DATE is the date on which the acceptance test was completed and the DOCUMENTATION AUTHOR signed the compliance document.
- CEA, HERS OR ATT CERTIFICATION # is the certification number of the CEA (Certified Energy Auditor), HERS (Home Energy Rating System) or ATT (Acceptance Test Technician) certification, in case the DOCUMENTATION AUTHOR is CEA, HERS or ATT certified.
- PHONE is the phone number where the DOCUMENTATION AUTHOR can be reached during regular business hours.

Field Technician's Declaration Statement

The FIELD TECHNICIAN is responsible for performing and documenting the results of the acceptance procedures on the Certificate of Acceptance compliance documents. The FIELD TECHNICIAN must sign the Certificate of Acceptance to certify that the information he or she provides on the Certificate of Acceptance is true and correct. It is important to note that the FIELD TECHNICIAN is not required to have a contractor's, architect's or engineer's license.

- COMPANY NAME is the name of the company that the FIELD TECHNICIAN represents.
- FIELD TECHNICIAN'S NAME is the name of the FIELD TECHNICIAN.
- FIELD TECHNICIAN'S SIGNATURE is the signature of the FIELD TECHNICIAN.
- DATE SIGNED is the date on which the acceptance test was completed and the FIELD TECHNICIAN signed the compliance document.
- POSITION WITH COMPANY (TITLE) is the title of the FIELD TECHNICIAN in the company he represents, e.g. SENIOR ELECTRICAL TECHNICIAN.

Responsible Person's Declaration Statement

A RESPONSIBLE PERSON is eligible under Division 3 of the Business and Professions code in the applicable classification, to take responsibility for the scope of work specified by the Certificate of Acceptance document. The RESPONSIBLE PERSON can also perform the field testing and verification work, and if this is the case, the RESPONSIBLE PERSON must complete and sign both the FIELD TECHNICIAN's SIGNATURE block and the RESPONSIBLE PERSON'S SIGNATURE block on the Certificate of Acceptance compliance document. The RESPONSIBLE PERSON assumes responsibility for the acceptance testing work performed by the FIELD TECHNICIAN agent or employee.

- COMPANY NAME is the name of the company the RESPONSIBLE PERSON represents.
- PHONE is the phone number where the RESPONSIBLE PERSON can be reached during regular business hours.
- RESPONSIBLE PERSON'S NAME is the name of the RESPONSIBLE PERSON.
- RESPONSIBLE PERSON'S SIGNATURE is the signature of the RESPONSIBLE PERSON.
- LICENSE is the professional license number of the RESPONSIBLE PERSON.
- DATE SIGNED is the date on which the acceptance test was signed by the RESPONSIBLE PERSON.
- POSITION WITH COMPANY (TITLE) is the title of the RESPONSIBLE PERSON in the company he represents, e.g. SENIOR ELECTRICAL ENGINEER.