

DOCKETED

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| Document Title: | 2019-CF2R-MCH-33-VchpComplianceCreditpdf |
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Variable Capacity Heat Pump Compliance Credit

CEC-CF2R-MCH-33-H (Revised 01/20)

CALIFORNIA ENERGY COMMISSION



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| CERTIFICATE OF INSTALLATION | | CF2R-MCH-33-H |
| Variable Capacity Heat Pump (VCHP) Compliance Credit | | (Page 1 of 5) |
| Project Name: | Enforcement Agency: | Permit Number: |
| Dwelling Address: | City: | Zip Code: |

| | |
|--|---|
| A. VCHP System Information | |
| Procedures for verification of VCHP compliance credit eligibility are described on the residential special case compliance webpage at the following URL: https://ww2.energy.ca.gov/title24/2008standards/special_case_appliance/ . Each VCHP system requiring verification shall use a separate compliance document. | |
| 01 | SC System ID/Name from CF1R |
| 02 | SC System Description of Area Served |
| 03 | Conditioned Floor Area Served by the System (ft ²) |
| 04 | Status: Refrigerant charge verification from MCH-25 |
| 05 | Verification: Is conditioned airflow supplied to all habitable rooms in accordance with the procedure in SC3.1.4.1.7? |
| Notes: | |

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|--|----------------------------|-------------------------|---|---|--|---|---|--|
| B. VCHP Indoor Unit Information | | | | | | | | |
| Ducted indoor units are required to be certified to the Energy Commission as low static systems, and included in the list of certified indoor units published on the Energy Commission website at the following URL: https://www.energy.ca.gov/rules-and-regulations/building-energy-efficiency/manufacture-certification-building-equipment . | | | | | | | | |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| Indoor Unit Name or Description of Area Served | Installed Indoor Unit Type | Indoor Unit Duct Status | Conditioned Floor Area Served By The Indoor Unit (ft ²) | Number of Air Filter Devices on Indoor Unit | Indoor Unit Required Minimum System Airflow Rate (cfm) | Status: Airflow Rate Verification from MCH-23 | Is Field Verification of Default Non-Continuous Fan Operation Required? | Verification: Is Ducted Low Static Indoor Unit Certified to CEC? |
| | | | | | | | | |
| Notes: | | | | | | | | |

Registration Number:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Date/Time:

HERS Provider:

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| CERTIFICATE OF INSTALLATION | | CF2R-MCH-33-H |
| Variable Capacity Heat Pump (VCHP) Compliance Credit | | (Page 2 of 5) |
| Project Name: | Enforcement Agency: | Permit Number: |
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|--|---|--|-----------------------|
| C. Verification: Ducted Indoor Units Located Entirely in Directly Conditioned Space - RA3.1.4.3.8 | | | |
| Ducted indoor units shall be verified in accordance with the Verified Low Leakage Ducts in Conditioned Space procedure in Section RA3.1.4.3.8. | | | |
| 01 | 02 | 03 | 04 |
| Indoor Unit Name or Description of Area Served | A Visual Inspection Shall Confirm the Space Conditioning Distribution System Location | Measured Duct Leakage to Outside (cfm) Using RA3.1.4.3.4 | Compliance Statement: |
| | | | |
| Notes: | | | |

| | | |
|--|--|-----------------------|
| D. Verification: Ductless Indoor Units Located Entirely in Directly Conditioned Space - SC3.1.4.1.8 | | |
| A visual inspection shall confirm that ductless indoor units are located entirely in conditioned space in accordance with the procedures of SC3.1.4.1.8. | | |
| 01 | 02 | 03 |
| Indoor Unit Name or Description of Area Served | Indoor Unit Installation Location Verification | Compliance Statement: |
| | | |
| Notes: | | |

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E. Verification: Wall Mounted Thermostats - SC3.4.5

Field verification according to the procedure in SC3.4.5 shall confirm that VCHP space conditioning zones that are greater than 150 ft², are controlled by a permanently installed wall-mounted thermostat.

| 01 | 02 | 03 | 04 | 05 |
|--|---|---|--|-----------------------|
| Indoor Unit Name or Description of Area Served | Is a Wall-mounted Thermostat Installed in the Zone Served by the Indoor Unit? | Does the Thermostat Control the Zone's Indoor Unit? | Is the Thermostat Mounted Permanently to the Wall? | Compliance Statement: |
| | | | | |

Notes:

F. Verification: Non-Continuous Fan Operation - SC3.4.6

If the certificate of compliance indicates non-continuous indoor unit fan operation was specified for compliance credit, then the system shall be field verified in accordance with the procedures in SC3.4.6 to confirm that the installed system's indoor unit + outdoor unit combination does not operate the fan continuously when the system thermostat is not calling for conditioning.

| 01 | 02 | 03 | 04 | 05 |
|--|--|--|--|-----------------------|
| Indoor Unit Name or Description of Area Served | Is Non-Continuous Default Fan Operation Shown in CEC Certification Listings? | Does Indoor Unit Air Distribution Fan Operate When There Is No Call For Heating? | Does Indoor Unit Air Distribution Fan Operate When There Is No Call For Cooling? | Compliance Statement: |
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Notes:

Registration Number:

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| CERTIFICATE OF INSTALLATION | | CF2R-MCH-33-H |
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G. Verification: Installed Air Filter Sizing and Pressure Drop - SC3.1.4.7 and SC3.1.4.8

Nominal 2-inch or greater depth air filters shall be sized by the system designer to accommodate a maximum allowable clean-filter pressure drop of 0.1 inch w.c at the air filter's design airflow rate as verified according to the procedures in SC3.1.4.8. Nominal one-inch minimum depth air filters shall be allowed if the filter face area is sized based on a maximum face velocity of 150 ft per minute at the air filter design airflow rate according to the procedures in SC3.1.4.7. In order to inform the occupant of the airflow and clean filter pressure drop performance required for replacement air filters, the installer shall place a sticker in or near the filter grille displaying the air filter design airflow rate and the maximum allowed clean filter pressure drop at the design airflow rate as required by Standards Section 150.0(m)12Biv.

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|--|--|------------------------|---|---------------------------------|----------------------------------|---------------------------------|--|--|----------------------|---|-------------------------------------|
| Indoor Unit Name or Description of Area Served | Air Filter Name or Description of Location | Air Filter Device Type | Design Airflow Rate for Air Filter Device (cfm) | Air Filter Nominal Depth (inch) | Air Filter Nominal Length (inch) | Air Filter Nominal Width (inch) | Air Filter Calculated Nominal Face Area (inch ²) | Air Filter Required Minimum Face Area (inch ²) | Face Area Compliance | Air Filter Rated Pressure Drop at Design Airflow Rate (inch W.C.) | Air Filter Pressure Drop Compliance |
| | | | | | | | | | | | |

Notes:

H. VCHP System Compliance Statement

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| 01 | |
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| | | |
|--|--|--------------|
| DOCUMENTATION AUTHOR'S DECLARATION STATEMENT | | |
| 1. I certify that this Certificate of Installation documentation is accurate and complete. | | |
| Documentation Author Name: | Documentation Author Signature: | |
| Documentation Author Company Name: | Date Signed: | |
| Address: | CEA/HERS Certification Identification (if applicable): | |
| City/State/Zip: | Phone: | |
| 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"> The information provided on this Certificate of Installation is true and correct. I am either: a) a responsible person 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 Installation and attest to the declarations in this statement, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency. I understand that a HERS rater will check the installation to verify compliance and if such checking determines the installation fails to comply, I am required to offer any necessary corrective action at no charge to the building owner. I will ensure that a registered copy of this Certificate of Installation 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 registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. | | |
| Responsible Builder/Installer Name: | Responsible Builder/Installer Signature: | |
| Company Name: (Installing Subcontractor or General Contractor or Builder/Owner) | Position With Company (Title): | |
| Address: | CSLB License: | |
| City/State/Zip: | Phone: | Date Signed: |
| Third Party Quality Control Program (TPQCP) Status: | Name of TPQCP (if applicable): | |

Registration Number:

Registration Date/Time:

HERS Provider:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

January 2020

CF2R-MCH-33-H User Instructions**Section A. VCHP System Information**

1. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
2. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
3. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
4. This field is filled out automatically. It is referenced from the CF2R-MCH-25 which must be completed prior to this document.
5. Perform the verification specified by RSC3.1.4.1.7 and select the value that describes the result of the verification.

Section B. VCHP Indoor Unit Information

1. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
2. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
3. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
4. Enter the conditioned floor area served by the indoor unit - a value in ft².
5. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
6. This field is filled out automatically. It is referenced from the CF2R-MCH-23 which must be completed prior to this document.
7. This field is filled out automatically. It is referenced from the CF2R-MCH-23 which must be completed prior to this document.
8. This field is filled out automatically. It is referenced from the Certificate of Compliance which must be completed prior to this document.
9. Navigate to the URL for the Manufacturer certification listings and determine whether the installed system is included in the CEC listing, then select the value that describes the result of the verification.

Section C. Verification: Ducted Indoor Units Located Entirely in Directly Conditioned Space - RA3.1.4.3.8

1. This field is filled out automatically. It is referenced from a different section of this document.
2. Select the statement that best describes the location of the ducted distribution system.
3. Enter the leakage to outside airflow determined from the RA3.1.4.3.8
4. This field is filled out automatically

Section D. Verification: Ductless Indoor Units Located Entirely in Directly Conditioned Space - SC3.1.4.1.8

1. This field is filled out automatically. It is referenced from a different section of this document.
2. Select the statement that best describes the indoor unit installation location as determined according to SC3.1.4.1.8.
3. This field is filled out automatically

Section E. Verification: Wall Mounted Thermostats - SC3.4.5

1. This field is filled out automatically. It is referenced from a different section of this document.
2. Answer yes or no to the question: Is a wall-mounted thermostat installed in the zone served by the indoor unit?
3. Answer yes or no to the question: Does the thermostat control the zone's indoor unit?
4. Answer yes or no to the question: Is the thermostat mounted permanently to the wall?
5. This field is filled out automatically

Section F. Verification: Non-Continuous Fan Operation SC3.4.6

1. This field is filled out automatically. It is referenced from a different section of this document.
2. Select the best response to the question: Is non-continuous default fan operation shown in CEC certification listings?
3. Select the best response to the question: Does indoor unit air distribution fan operate when there is no call for heating?
4. Select the best response to the question: Does indoor unit air distribution fan operate when there is no call for cooling?
5. This field is filled out automatically

Section G. Verification: Installed Air Filter Sizing and Pressure Drop - SC3.1.4.7 and SC3.1.4.8

1. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
2. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
3. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
4. This field is filled out automatically. It is referenced from another section on this document, or from the CF2R-MCH-01 which must be completed prior to this document.
5. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
6. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
7. This field is filled out automatically. It is referenced from the CF2R-MCH-01 which must be completed prior to this document.
8. This field is filled out automatically by calculating the product of air filter length and air filter width.
9. This field is filled out automatically based on the depth of the filter.
10. This field is filled out automatically
11. Input the pressure drop at the design airflow rate from the performance data information published on the air filter label.
12. This field is filled out automatically

Section H. VCHP System Compliance Statement

1. This field is filled out automatically.