



**Appendix C
FORM TR-DS2
WITNESS TEST PROCEDURE AND CHECKLIST**

**AHRI CERTIFICATION PROGRAM FOR MECHANICAL TRANSPORT
REFRIGERATION UNITS**

Participant: _____
Date of Test: _____
Witness Test Number: _____
Test Results: _____

Instructions to Laboratory Representatives: The following Witness Test Procedure and Checklist is to be used by the Representative contracted by AHRI (Representative) to document all steps required to conduct witness tests for the Mechanical Transport Refrigeration Certification Program. This Witness Test Procedure and Checklist is to be used in conjunction with the AHRI General Operations Manual (OM) for AHRI Certification Programs, the Mechanical Transport Refrigeration Operations Manual (TR OM) and the latest edition of AHRI Standard 1110 (I-P). Where the AHRI General OM, the TR OM and this Witness Test Procedure and Checklist differ, the other documents shall prevail. The completed checklist shall be submitted to AHRI upon the completion of the witness test.

If the AHRI Approved Test Stand within a Facility (Facility) fails to comply with the conditions listed below:

- Notify AHRI
- Notify Participant

REPRESENTATIVE INITIALS	DATA POINT (IF APPLICABLE)
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Pre-Visit

_____	_____	When setting up for a trip to Witness Test a Mechanical Transport Refrigeration Unit (TRU) for AHRI Certification Programs, several information items are required. Verify the following information as received from AHRI: <ol style="list-style-type: none"> 1. AHRI Selection Letter 2. Copy of the latest AHRI Facility Inspection Approval Report 3. Test Site Location 4. Participant's Contact(s) with Phone Number and email 5. TRU Test Unit Model Number 6. TRU Test Unit Serial Model 7. Model Performance Ratings 8. Unit rated voltage, amperage and frequency (if applicable)
_____	_____	Verify the following information as received from the Participant: <ol style="list-style-type: none"> 1. Verification of Power Input Instrumentation requirements 2. Mutually agreed upon test date of when to arrive at the Participant's specified facility 3. Directions to the Participant's specified facility 4. Estimate of when testing will be completed
_____	_____	Inform the Participant that the unit can be set-up as per the latest edition of the TR OM when the Representative arrives

REPRESENTATIVE INITIALS	DATA POINT (IF APPLICABLE)
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Pre-Visit (contin.)	
_____	_____ Be sure that all Laboratory instrumentation has current calibration stickers. Participant to provide copy of calibration certificates, calibration procedures, and photos/schematics for the test cells to be used.
_____	_____ Is instrumentation on site yet? (Yes or No)

Day of Test	
_____	_____ Upon arrival, request a brief meeting of the involved parties to review the following information: <ol style="list-style-type: none"> 1. Safety rules at the test site 2. Instrumentation List Calibration Summary Sheet (to be placed in the project file) 3. Confirm test conditions and unit voltage 4. Test set-up; location of Laboratory instrumentation
_____	_____ Representative shall unpack and visually inspect all Laboratory instrumentation
_____	_____ Representative shall install the Laboratory instrumentation
_____	_____ Representative shall visually inspect and confirm the test unit nameplate against the AHRI Selection Letter to confirm identity of the unit under test.
_____	_____ Representative shall authorize starting the test sample unit

REPRESENTATIVE INITIALS	DATA POINT (IF APPLICABLE)
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Instrumentation Setup Test

All verifications shall be conducted at steady state conditions as the first test point. Representative shall confirm and record that the Laboratory instrumentation is in agreement with the Facility's instruments. If these criteria are not met, interchange the Laboratory instrumentation to confirm they are correct.

Should any of these criteria not be met, steps should be taken to ensure that the discrepancy is resolved. In cases where the discrepancy cannot be resolved and no damage is apparent, the Laboratory instrumentation data for that parameter shall be used.

- | | | |
|-------|-------|--|
| _____ | _____ | 1.1 Ensure the Air Temperature to Condenser is within the limits specified in the selected AHRI Standard |
| _____ | _____ | 1.2 Ensure Return Air Temperature to Forced-Circulation Air-Cooler is within the limits specified in the selected AHRI Standard |
| _____ | _____ | 1.3 Ensure required data as defined by the selected AHRI Standard is being measured and at the prescribed interval as denoted in the AHRI Standard |
| _____ | _____ | 1.4 Reference correct bulkhead setup in the selected AHRI Standard |

_____	The facility operator is to inform the Representative when they are ready to initiate the test so the Representative can record test data simultaneously. The Representative shall verify that the Facility test conditions remain within the allowable tolerances for the duration of the test period, by checking the Representative's test condition measurements.
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REPRESENTATIVE INITIALS	DATA POINT (IF APPLICABLE)
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High Temp Test

The Representative shall confirm all of the following data collected at each test point are in accordance with the Standard:

- | | | | |
|-------|--|-----|--|
| _____ | | 2.1 | Data collected at required time interval |
| _____ | | 2.2 | Required Temperature channels recorded |
| _____ | | 2.3 | Required Pressure channels recorded |
| _____ | | 2.4 | Required Energy Input channels recorded |
| _____ | | 2.5 | Required Rotational Speed channels recorded (where direct measurement is not possible, a calculated value can be provided) |

The Representative shall confirm all of the following at the conclusion of the test are in accordance with the AHRI Certified Product Directory:

- | | | | |
|-------|-------|-----|---------------------|
| _____ | _____ | 3.1 | Calculated Capacity |
| _____ | _____ | 3.2 | Compressor Speed |

Low Temp Test

The Representative shall confirm all of the following data collected at each test point are in accordance with the Standard:

- | | | | |
|-------|--|------|--|
| _____ | | 2.6 | Data collected at required time interval |
| _____ | | 2.7 | Required Temperature channels recorded |
| _____ | | 2.8 | Required Pressure channels recorded |
| _____ | | 2.9 | Required Energy Input channels recorded |
| _____ | | 2.10 | Required Rotational Speed channels recorded (where direct measurement is not possible, a calculated value can be provided) |

The Representative shall confirm all of the following at the conclusion of the test are in accordance with the AHRI Certified Product Directory:

- | | | | |
|-------|-------|-----|---------------------|
| _____ | _____ | 3.3 | Calculated Capacity |
| _____ | _____ | 3.4 | Compressor Speed |

REPRESENTATIVE INITIALS	DATA POINT (IF APPLICABLE)
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**Electric Standby
High Temp Test** (if applicable)

The Representative shall confirm all of the following data collected at each test point are in accordance with the Standard:

- | | | |
|-------|--|---|
| _____ | | 2.11 Data collected at required time interval |
| _____ | | 2.12 Required Temperature channels recorded |
| _____ | | 2.13 Required Pressure channels recorded |
| _____ | | 2.14 Required Energy Input channels recorded |
| _____ | | 2.15 Required Rotational Speed channels recorded (where direct measurement is not possible, a calculated value can be provided) |

The Representative shall confirm all of the following at the conclusion of the test are in accordance with the AHRI Certified Product Directory:

- | | | |
|-------|-------|-------------------------|
| _____ | _____ | 3.5 Calculated Capacity |
| _____ | _____ | 3.6 Compressor Speed |

**Electric Standby
Low Temp Test** (if applicable)

The Representative shall confirm all of the following data collected at each test point are in accordance with the Standard:

- | | | |
|-------|--|---|
| _____ | | 2.16 Data collected at required time interval |
| _____ | | 2.17 Required Temperature channels recorded |
| _____ | | 2.18 Required Pressure channels recorded |
| _____ | | 2.19 Required Energy Input channels recorded |
| _____ | | 2.20 Required Rotational Speed channels recorded (where direct measurement is not possible, a calculated value can be provided) |

The Representative shall confirm all of the following at the conclusion of the test are in accordance with the AHRI Certified Product Directory:

- | | | |
|-------|-------|-------------------------|
| _____ | _____ | 3.7 Calculated Capacity |
| _____ | _____ | 3.8 Compressor Speed |

Post Test

- _____ _____ After the test is completed, an electronic copy of the Facility's test data will be provided to the Representative. Any required post-test photographs may be gathered by the Representative

- _____ _____ The results are then calculated by the Laboratory (using the Participant data) to compare with the Participant's calculated results as well as a separate Laboratory calculation. Any instrumentation discrepancies shall be included in the final test report. The Participant shall be informed of the final test results, and if the sample met the Certification Program criteria. If the sample fails, the Participant decides the next course of action as per the TR OM.

- _____ _____ If discrepancies were observed between the program participants and the Laboratory instrumentation, they should be so noted in the Laboratory test report along with any required follow-up. During the next visit to the program Participant's Facility, the Representative shall verify that the corrective action was performed.

- _____ _____ The Laboratory test report, along with the raw data obtained from both the Facility and the Laboratory instrumentation, shall be issued to AHRI within 30 calendar days. The Laboratory shall invoice AHRI and the Participant in accordance with the AHRI/Laboratory Testing Services Agreement.

This checklist & all supporting documents have been reviewed & approved by:

PRINTED NAME OF REPRESENTATIVE

SIGNATURE OF REPRESENTATIVE

DATE