Installation, Operation, and Maintenance

HVAC Performance Monitoring Kit

Model BAYEHMKTAW00D

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

May 2026

DLTR-SVX001A-EN

Introduction

Read this manual thoroughly before operating or servicing this unit.

This document is customer property and is to remain with this unit. Return to the service information pack upon completion of work.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE	Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury.

All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury.

Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/ sleeves, butyl gloves, safety glasses, hard hat/ bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

⚠ WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

⚠ WARNING

Cancer and Reproductive Harm!

This product can expose you to chemicals, including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ WARNING

Safety Hazard!

Failure to follow instructions below could result in death or serious injury or property damage.

This unit is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

Do not allow children to play or climb on the unit or to clean or maintain the unit without supervision.

⚠ WARNING

Safety Hazard!

Failure to follow instructions below could result in death or serious injury.

All phases of the installation must conform to NATIONAL, STATE, AND LOCAL CODES. For additional information, please contact your local distributor.

⚠ WARNING

Hazardous Voltage!

Failure to disconnect power before servicing could result in death or serious injury.

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Verify that no power is present with a voltmeter.

⚠ WARNING

Live Electrical Components!

Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

When it is necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks.

Copyright

Trademark

Table of Contents

General Information

Product Specifications

Table 1. Product specifications

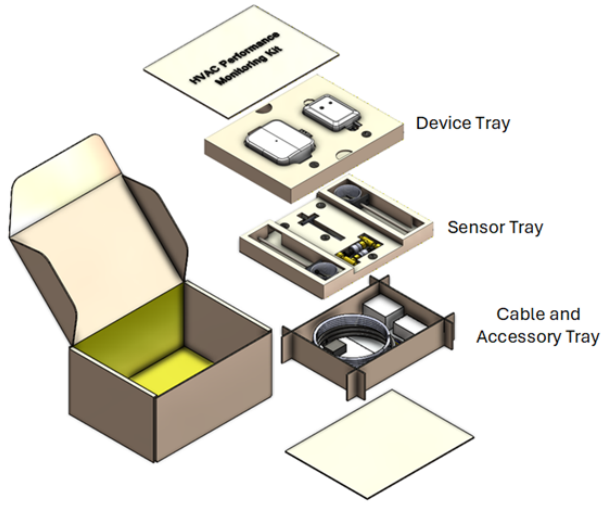
Specification	Description
Kit Model	BAYEHMKTAW00D
Product	HVAC Performance Monitoring Kit
Outdoor Module Model	D163235G01
Indoor Module Model	D163236G01
Storage Temperature	-40 ºF to +176 °F, 0-95 % RH non-condensing
Operating Temperature – Indoor Module	-10 ºF to 167 ºF
Operating Temperature – Outdoor Module	-22 ºF to 149 ºF
Input Power – Indoor Module[a]	24 VAC via HVAC system transformer (Range: 18-30 VAC)
Input Power – Outdoor Module	5 VDC via included 240 VAC AC/DC power supply
Power Consumption – Indoor Module	2.0 VA
Power Consumption – Outdoor Module	5 VDC, 60 mA (0.3 W)
Communications	Cellular: LTE-M, Local wireless (device-to-device): LoRa

[a] On every application, 24 VAC loads should be reviewed to be sure the indoor unit power transformer is adequately sized.

Contents

Important: *Use only the power adapter, cables, and sensors supplied with the kit.*

Figure 1. Box contents



Literature:

- Installation video card
- Installation guide
- Warranty insert

Figure 2. Device tray

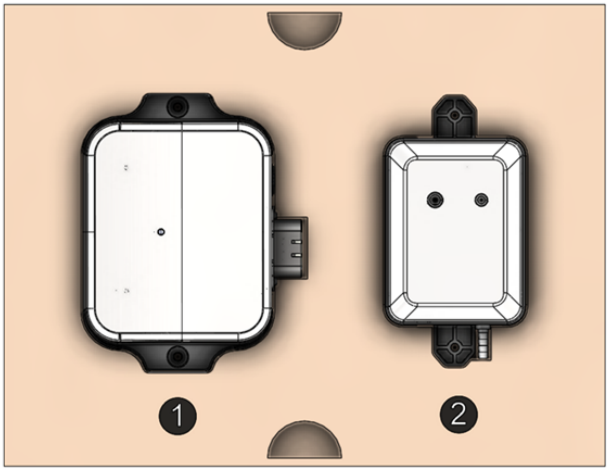


Table 2. Device tray components

Number	Component
1	Outdoor module
2	Indoor module

Figure 3. Sensor tray

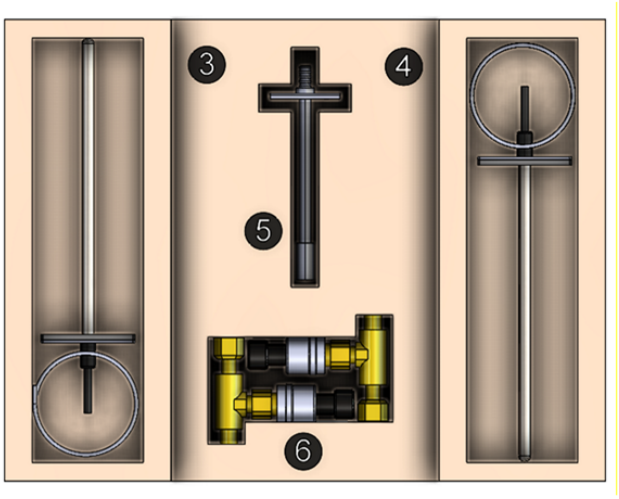
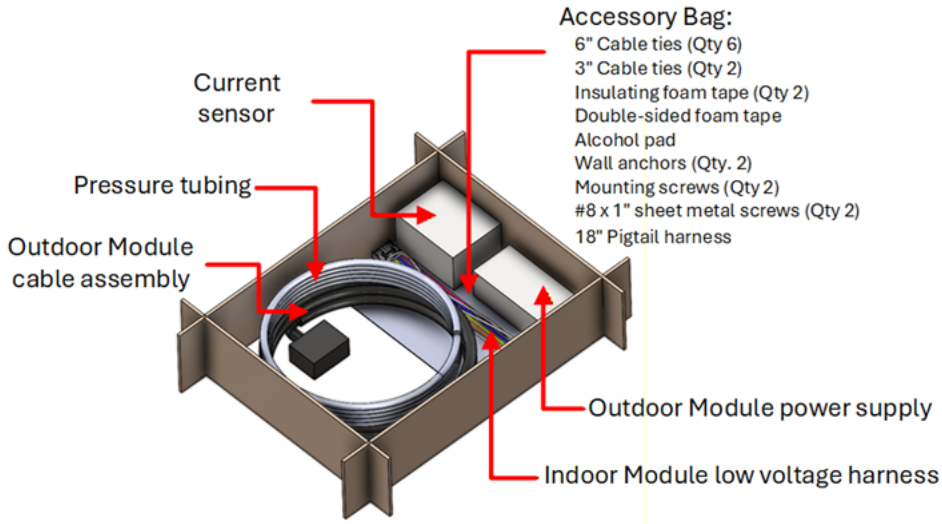


Table 3. Sensor tray components

Number	Component
3, 4	Supply and return air temperature probes
5	Static pressure probe
6	Liquid and suction pressure transducers

Figure 4. Cable and accessory tray



Product Overview

The HVAC Performance Monitoring Kit is a dual-module monitoring system designed to provide near real-time performance data for residential HVAC systems.

The kit measures key operating parameters including supply and return air temperatures, return static pressure, outdoor unit current draw, and both liquid-line and suction-line temperatures and pressures. This data provides clear insights into system efficiency, airflow, energy consumption, and potential fault conditions.

The kit has two dedicated monitoring units:

- **Indoor Module**: installed on or near the indoor unit
- **Outdoor Module**: mounted near the outdoor unit

The modules communicate with each other wirelessly for reliable, local device-to-device data exchange. The Outdoor Module also provides secure cloud reporting through LTE-M (LTE Cat-M1) cellular connectivity. This architecture eliminates the need for Wi-Fi or extra gateway devices, making installation fast and straightforward.

Power and Sensors

- **Outdoor Module**: Powered by a 240 VAC AC/DC adapter (5 VDC at the device). Includes sensors for liquid temperature, suction temperature, liquid pressure, suction pressure, and outdoor unit current draw.
- **Indoor Module**: Powered by 24 VAC from the HVAC system transformer. Monitors supply air temperature, return air temperature, static pressure, and the Y1, W1, and O thermostat signals.

All components are designed for quick field installation with minimal downtime.

Key Benefits

For dealers

- Catch dips in system performance before they snowball into bigger issues.
- Remotely monitor a system regardless of what brand of equipment a homeowner has.
- Technicians can arrive on site knowing how the system has been performing ahead of time.

For homeowners

- Stay ahead of unexpected maintenance issues with real-time, easy to understand performance data.
- Keep service visits small and scheduled by catching wear-and-tear issues before they escalate.
- Connect directly with a dealer when alerts come through via the HVAC Performance mobile app.

Technician Mobile App

Download the Trane Technician or American Standard Technician mobile app from the Google Play™ Store or App Store®. Scan the QR code below.

Figure 5. Technician mobile app

Installation

Figure 6. System connection diagram

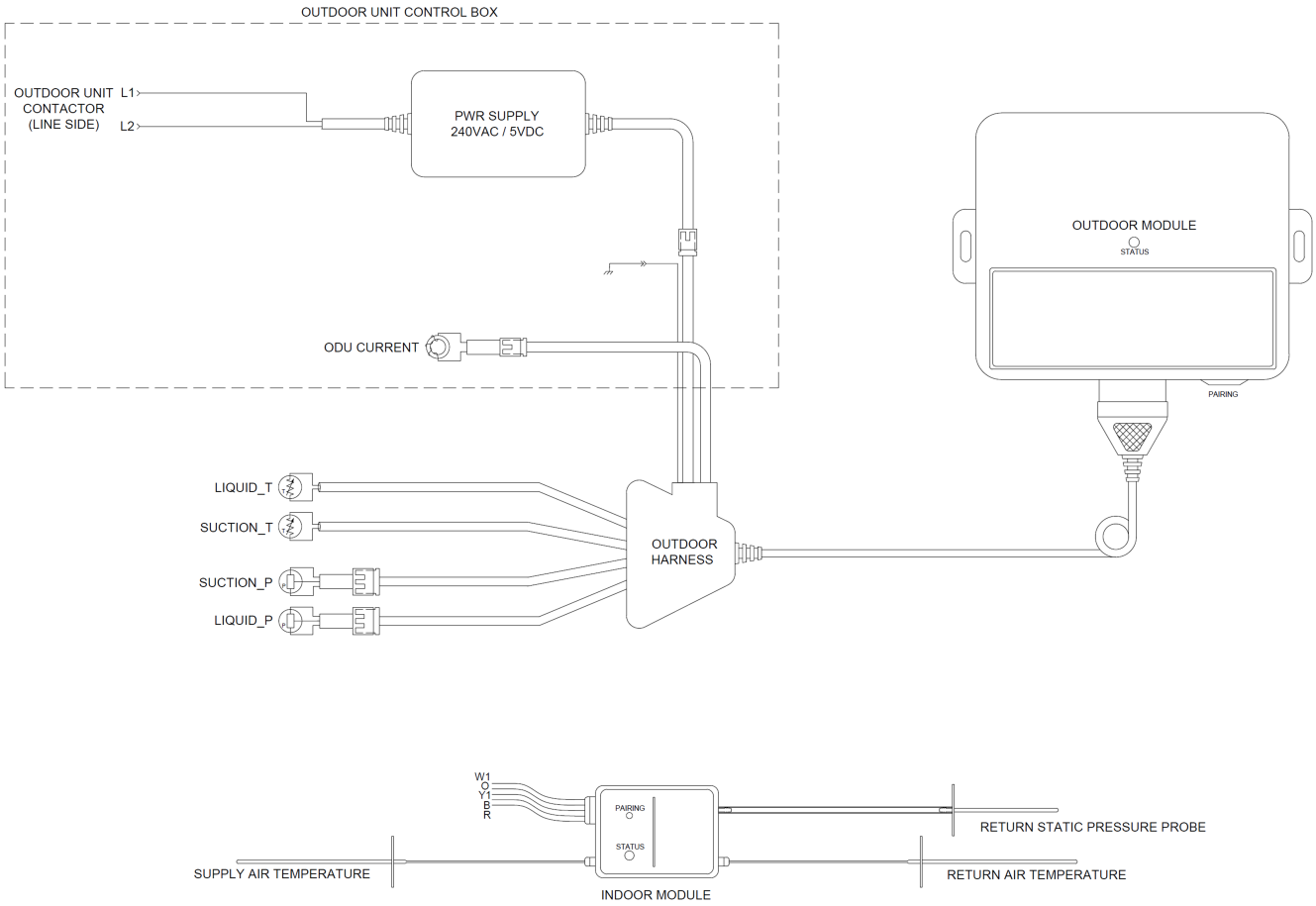


Figure 7. Outdoor module overview

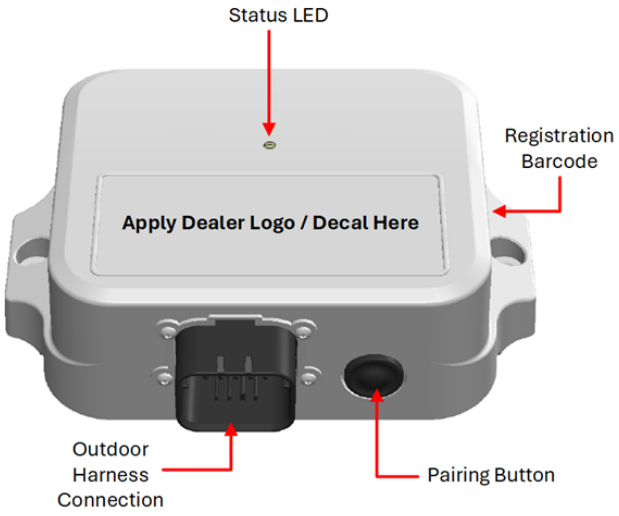
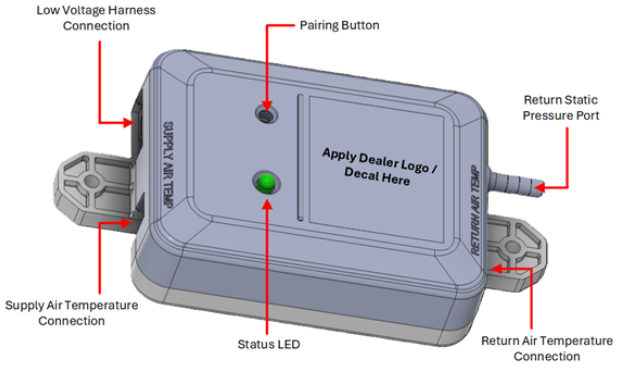


Figure 8. Indoor module overview



Outdoor Module and Sensors

The outdoor module is mounted near the outdoor unit to monitor liquid-line and suction-line temperatures and pressures, and the outdoor unit's current draw. The following steps detail the recommended mounting location, sensor connections, and power wiring.

1. Remove power from the outdoor unit.

2. Install and secure the outdoor harness to the equipment chassis. Locate the harness in a location that reaches all components.

Figure 9. Install the outdoor harness

3. Route the PWR, current sensor, liquid, and suction line sensor through the service valve opening.
4. Route the PWR and current sensor harnesses up through the grommet into the control box. It may be easier to remove the grommet before passing wires through into the control box.
5. The power supply is equipped with spade connectors. Route the wires to the bottom of the contactor and plug the leads into L1 and L2.

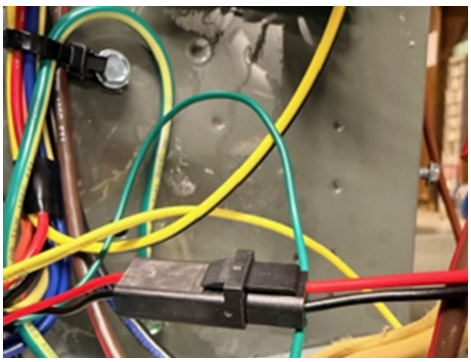
   Note: *An 18–inch pigtail harness is included in the accessory bag if additional wire length is needed.*
6. Clean the power supply mounting surface inside the control box using the alcohol pad.
7. Secure the power supply inside the control box with the double-sided foam tape provided.

Figure 10. High voltage connection

Figure 11. Power supply

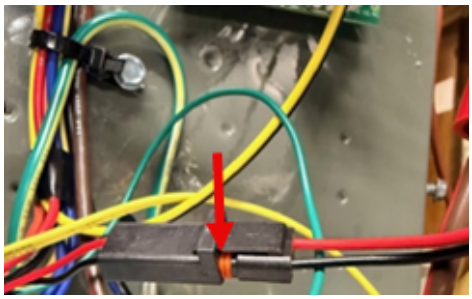
8. Plug the low voltage connector from the power supply into the mating connector labeled PWR. See Figure 12, p. 9.

Figure 12. Low voltage connection



9. Confirm the harness is fully connected. An audible click should be heard when the connector is fully engaged. If the orange gasket is visible, the harness is not secure. See Figure 13, p. 10

Figure 13. Loose low voltage connector

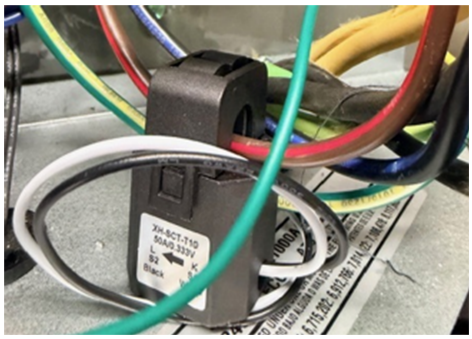


10. The harness comes with a ground clip with spade. The clip can be attached to the control box bottom. If the ground clip cannot be used, remove the spade connector and attach a ring connector to the ground wire. See Figure 14, p. 10.

Figure 14. Ground clip

11. Clamp the current sensor to either L1 or L2 on the incoming power side of the contactor. Open the latch end of the current sensor, position it around the wire, and close the latch. The direction of the arrow on the current sensor should point toward the load (in the direction of current flow).

Figure 15. Current transformer



12. Route and mount the liquid line sensors to the liquid line:
    a. Insulate and secure sensor to refrigerant line with the supplied insulation and cable tie.
    b. (Recommended) route the sensor to the inside of the cabinet. This can help mitigate temperature bias that may be created due to the sun.
13. Attach the suction sensor to the suction line.
    - Secure and insulate the sensors with the supplied insulation and cable ties.
    - The sensors must make good surface contact for proper temperature readings.
    - Sensors can be mounted either inside or near the condenser coil see Figure 16, p. 10 and Figure 17, p. 10 or outside of the cabinet on the line set, avoid areas of line set that are note. See Figure 18, p. 11.

Figure 16. Liquid line sensor

Figure 17. Insulated sensors

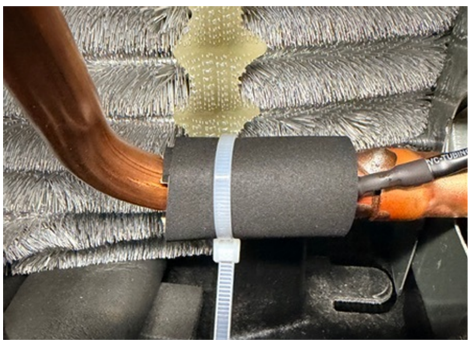
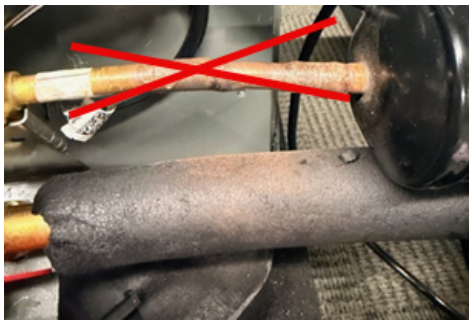
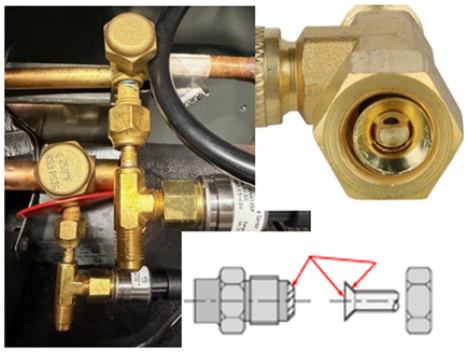


Figure 18. Liquid line braze joint



14. The kit includes two transducers. The transducers are pre-mounted to the brass swivel T fittings provided.
15. The inside of the flare of the swivel T fitting should be free of debris and scratches. Apply a thin layer of refrigerant oil to the pipe and joint seating surface before screwing onto the service valve.

Figure 19. Pressure transducers



16. Using a torque wrench and back up wrench, tighten the flare nut with the provided torque specs in Table 4, p. 11. Over-tightening can lead to flare leakage if the seat surface cracks.

Table 4. Flare nut torque specifications

ft-lbs	in-lbs	Nm
14.75	177	20

17. On preexisting systems, leaks can be checked by using soap bubbles. On systems that are empty waiting to be dehydrated and evacuated, leaks can be tested by pressurizing the system with nitrogen.
18. Plug in the transducer harness to the pressure transducer.
19. Route and secure wires.
20. Select a mounting location near the outdoor unit so that the outdoor harness can easily reach the Outdoor Module.
21. Mount the Outdoor Module in the selected location using the provided wall anchors and mounting screws.
22. Connect the outdoor harness to the module.

Figure 20. Mounted outdoor module

Indoor Module and Sensors

The Indoor Module is designed for simple and flexible installation on or near the indoor unit. It features strong magnets on the back that allow it to be quickly and easily attached directly to the metal cabinet of the indoor unit without additional tools or mounting hardware in most cases. The module monitors supply and return air temperatures, return static pressure, and the Y1, W1, and O thermostat signals. The following steps detail the recommended mounting location and the proper connection of the sensors and wiring.

1. Remove power from the outdoor unit.
2. Attach the Indoor Module to the side of the indoor unit using the magnetic mounts on the back of the module. See Figure 21, p. 11.

Figure 21. Indoor Module installed

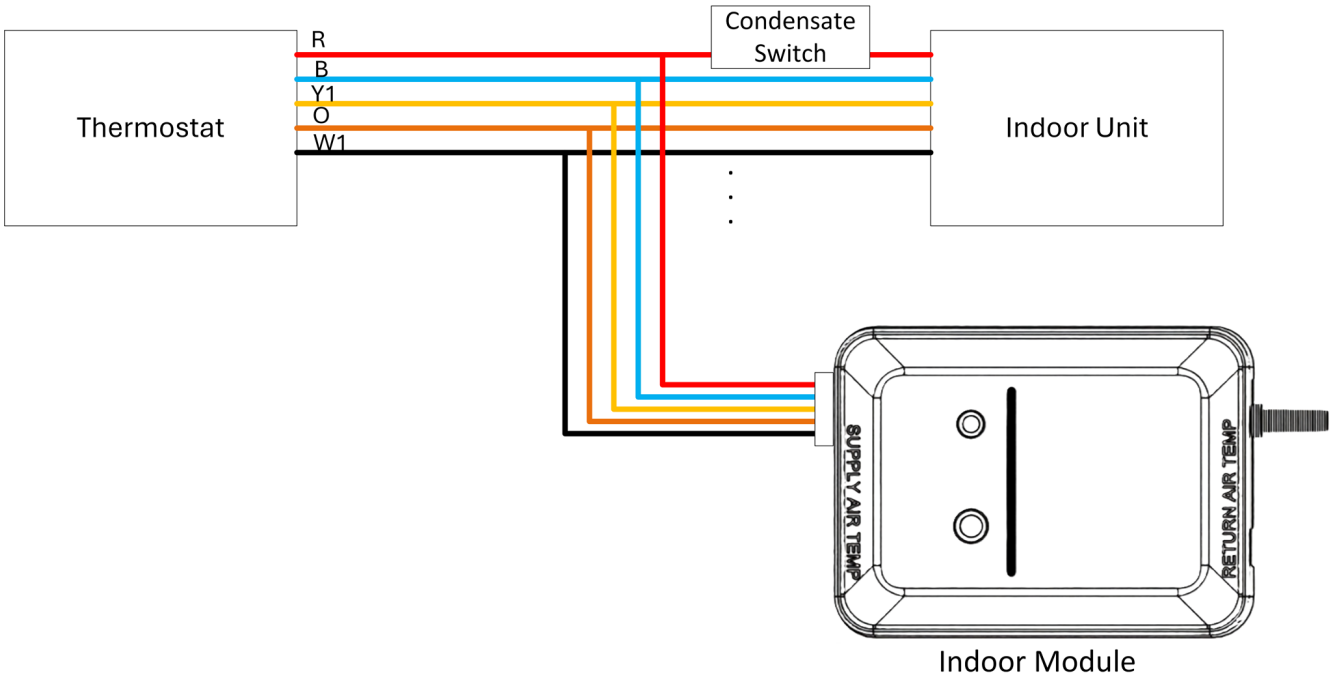
3. Install the supply and return air temperature probes using the provided mounting hardware.
   a. **Supply air probe**: Locate in the supply ductwork. In air handler applications, position the probe as far

as possible from the electric heat strips, if possible, after a bend in the ductwork to minimize radiant heat bias from the heat strips.

b. **Return air probe**: Locate in the return airstream. Confirm there is sufficient wiring length for both probes to reach the Indoor Module.

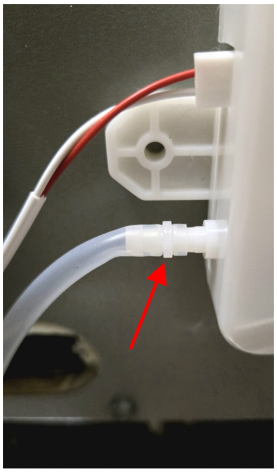
4. Connect both the supply and return air temperature probes to the marked terminals on the Indoor Module.
5. Install the return static pressure probe in the return airstream after the filter and before the indoor blower.
6. Using the provided low-voltage wiring harness, connect the wiring per the wire diagram below.

Figure 22. Indoor module low-voltage wiring



7. Connect the supplied rubber tubing from the Indoor Module pressure port to the return static pressure probe.
   a. Secure both tubing connections with 3-inch cable ties. See Figure 23, p. 12.
   b. Route tubing such that moisture does not return to the Indoor Module.
   c. Calibrate the static pressure sensor per the instructions in Table 5, p. 15 Static Pressure Calibration prior to connecting the rubber tubing to the Indoor Module.

Figure 23. Tubing connection



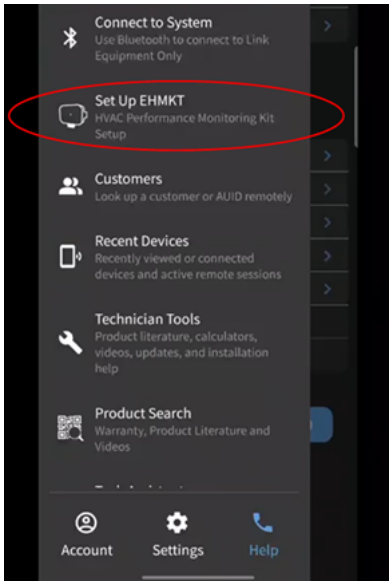
Device Registration

After physically installing the Indoor and Outdoor Modules, the final steps are to power up both modules and register the system in the Diagnostics platform.

Important: *The Dealer Admin* ***must activate their account in Diagnostics prior to installing*** *the HVAC Performance Monitoring Kits. The Dealer Admin can activate the user account from the Account Settings in Diagnostics.*

1. In the latest version of the Technician App, select **Set Up EHMKT**.

Figure 24. Set Up EHMKT

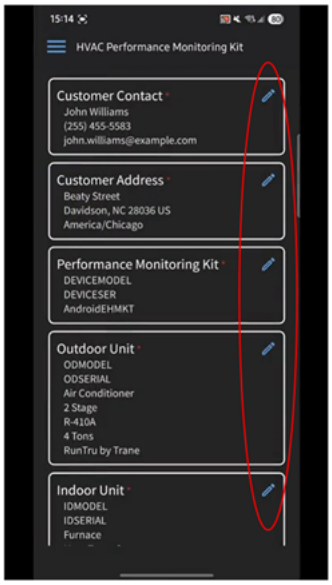


2. Edit the required information:

- **Customer Contact**: All information is required.
- **Customer Address**: Zip Code and Time Zone are required and can be auto-populated by geolocation.
- **Performance Monitoring Kit**: Scan the barcode on the side of the Outdoor Module to auto-fill Device ID, Model Number, and Serial Number.
- **Outdoor Unit**: Unit Type, Refrigerant, and Number of Stages are required.
- **Indoor Unit**: Unit Type, Heat Type, and Number are stages are required.
- **Data Share Agreement**: Add customer signature to the agreement and press **Done**.

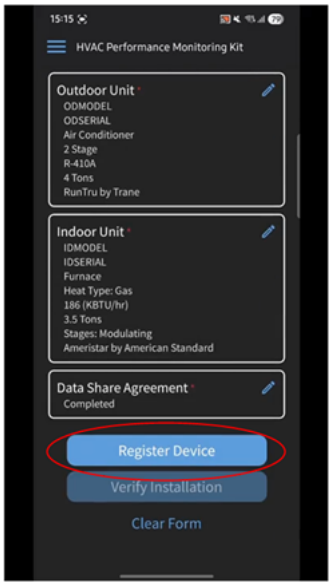
  A PDF is generated and can be saved or emailed.

Figure 25. Edit required fields



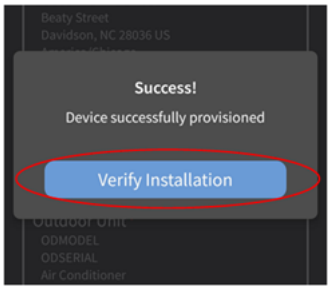
3. Tap the back button (**<**) twice to return to the main form.
4. Press **Register Device**.

Figure 26. Register device



5. Upon successful registration, verify data and complete the registration process:
   a. Select **Verify Installation** to view data from the installed sensors.

Figure 27. Verify installation



b. View data. Depending on the connection, it may take several minutes for data to populate.

c. Tap **Done** to complete installation.

Figure 28. Complete installation

Troubleshooting

Button/LED Functions

Table 5. Button/LED functions

FUNCTION	Module(s)	Button Action	LED Indication	NOTES
Normal Operation	Indoor and Outdoor	N/A	1 quick flash per minute	LED flash occurs when Indoor and Outdoor Modules exchange data.
Enter Pairing Mode	Indoor and Outdoor	Press and hold for 5 seconds, then release	LED will start to flash after 5-second button hold. Pairing mode indicated by continuous flashing (auto timeout after 30 minutes)	Pairing mode is entered when the button is released.
Static Pressure Calibration	Indoor only	Press and hold for 10 seconds, then release	Solid ON for 2 seconds, followed by 2 quick flashes	Before starting calibration, disconnect the rubber tubing from the pressure port on the Indoor Module to confirm the sensor is at ambient pressure. Calibration begins when the button is released and is completed when the LED flashes twice. Reattach and secure the tubing.

Fault Indications

Table 6. Fault indications

LED Pattern	Fault	Description	Troubleshooting Steps
1 Flash	Cellular Connectivity Fault	The Outdoor Module cannot establish or maintain LTE-M cellular connection.	• Verify cellular coverage at the installation location • Power cycle the Outdoor Module • Contact technical support
2 Flashes	Server Communication Fault	The device has cellular connectivity but cannot communicate with the cloud server.	• Power cycle the Outdoor Module • Contact technical support
3 Flashes	Local Wireless Communication Fault	The Indoor and Outdoor Modules have lost their local device-to-device wireless link.	• Move modules closer to one another • Check for obstructions or interference between the modules • Re-enter Pairing Mode on both modules and re-pair them • Power cycle both modules • Contact technical support

Regulatory Compliance

FCC Compliance Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) This device may not cause harmful interference, and(2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, consult the dealer or an experienced radio/TV technician for help.

Caution

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

RF Exposure Warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (8 inches) between the radiator and your body.

ISED Compliance Notice (Canada)

This device contains licence-exempt transmitter(s)/receiver (s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:(1) This device may not cause interference.(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Avis de conformité ISED (Canada)

Le présent appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :(1) l'appareil ne doit pas produire de brouillage ; (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RF Exposure Warning

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (8 inches) between the radiator and your body.

Avertissement d'exposition aux RF

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm (8 pouces) entre le radiateur et votre corps.

Contains Transmitter Module(s)

Outdoor Module – D163235G01:

- FCC ID: XVREHMOD1
- Contains FCC ID: 2ANPO00NRF9151
- IC: 6178D-EHMOD1
- Contains IC: 24529-NRF9151

Indoor Module – D163236G01:

- FCC ID: XVREHMID1
- IC: 6178D-EHMID1

Notes

About Trane and American Standard Heating and Air Conditioning

Trane and American Standard create comfortable, energy efficient indoor environments for residential applications. For more information, please visit www.trane.com or www.americanstandardair.com.

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Supersedes (New)