Smart Thermostat HD
Installation Guide

ADC-T40K-HD

Installation precautions

- Before installing the Smart Thermostat HD or servicing the HVAC equipment, turn off power to the system.

- Leave power off until you have finished installing or servicing the HVAC equipment.

- Shorting the electric terminals at the control on the heating or cooling system is not recommended. Do not test the system this way.

- When testing the existing system or the new Smart Thermostat HD do not run the cooling system when it is cold outside as this may harm the compressor. Please wait for mild temperatures before testing the cooling system.

- You must follow all local codes and ordinances for wiring the system.

- The Smart Thermostat HD should only be powered by a listed Class 2 power supply at 24 VAC (C-wire or wall transformer).

- A current higher than 1 amp to each thermostat terminal may cause damage to the thermostat.

- Verify that the system is 24 VAC. If the old system is labeled as 120 V or 240 V or has wire nuts, the system is high voltage. Do NOT install this thermostat on a high voltage system. Contact a local HVAC professional for help.

Questions?

Visit **answers.alarm.com**
or contact your service provider.

In the box

1. Trim plate
2. Thermostat
3. Display
4. Drywall anchors x2
5. Wall screws x2
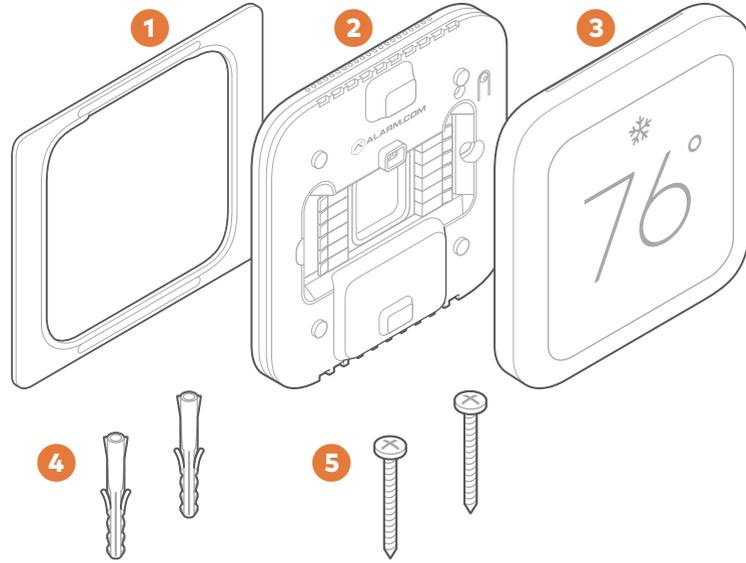
Recommended tools

1. Phillips screwdriver
2. Pencil to mark mounting location
3. Power drill – 3/16" (#13) drill bit
4. Needle nose pliers
5. Camera

Overview

Thermostat

1. Status LED
2. Button

Display

3. Settings menu
4. Current setpoint

   *To change the setpoint,
   tap on the up or down arrow.*

5. Indoor temperature
6. Current mode

   *To change the mode,
   tap on the current mode icon.*
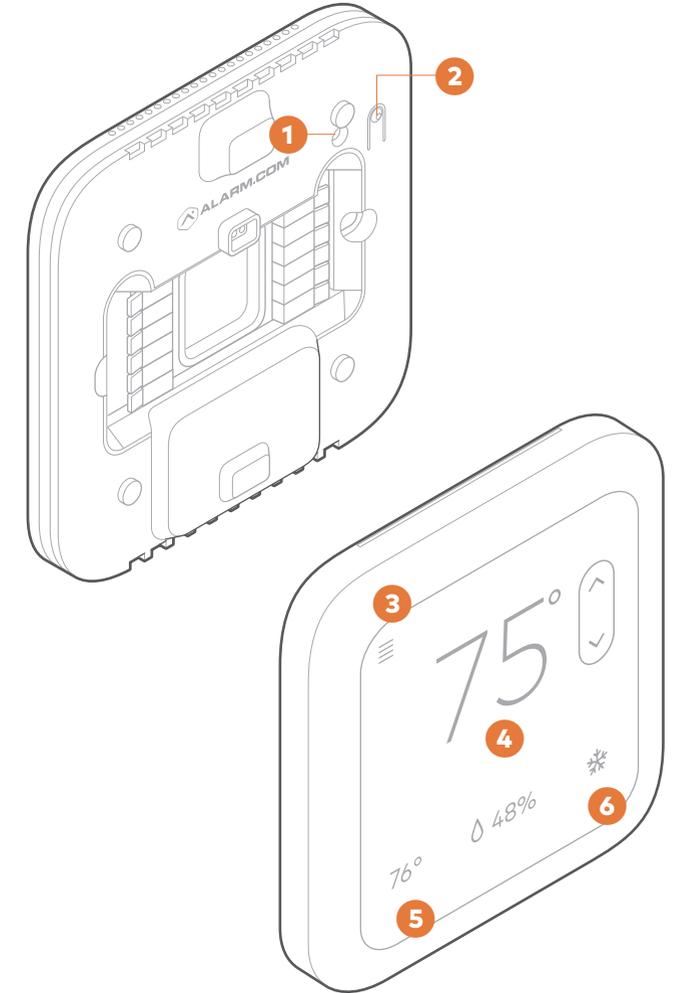
Installation considerations

- The Smart Thermostat HD requires 24 VAC power. There is no option for a battery-powered mode. Power is supplied via a common wire, typically identified as C.

Location

- If replacing an existing thermostat, the new Smart Thermostat HD can be mounted in its place. If a new location is desired it will be necessary to move the wiring.

- New installations and relocations should follow the accompanying guidelines to ensure the most accurate temperature reading and ease of use.

- Mount on an inside wall, approximately 5 ft. (1.5 m) above the floor in a frequently used room.

- Do not install in locations near appliances or devices that affect the local temperature such as televisions, lamps, or dryers.

- Avoid areas that are exposed to large temperature variances, such as: direct sunlight, near an AC unit, above or below auxiliary heat and air vents, and drafts from windows or exterior doors.

- Be aware of what is on the other side of the wall where the installation is occurring. Do not install on walls adjacent to unheated rooms, stoves, or housing hot water pipes. Exterior walls are also not ideal locations for installation.

- Damp areas will not only affect the humidity reading but could lead to corrosion and shorten the lifespan of the thermostat.

- Install in a location with good air circulation. Stagnant air will not accurately reflect the rate of temperature change in the room.

- Avoid areas behind open doors, corners, and alcoves.

- Wait until construction and painting are finished before installing.

Preparation

1 **If you will add the Smart Thermostat HD to a Z-Wave network, power on the controller and verify it is communicating.**

- *If the Z-Wave network supports SmartStart, use MobileTech to scan the QR code found on the Thermostat or the box.*

2 **Test the existing system.**

- *Verify that the heating and/or cooling system is operating properly before you try to install the new Smart Thermostat HD.*

⚠ **CAUTION:** Do not test the system by shorting electric terminals. Do not test the cooling system if it is cold outside, as this may harm the compressor.

3 **Turn off power to the HVAC unit.**

- *Turn all heating and cooling systems off. This can be done at the circuit breaker.*

⚠ **CAUTION:** Do not remove the existing thermostat until power has been turned off at the circuit breaker.

4 **Remove the existing thermostat.**

- *Remove the cover from the existing thermostat. Do not disconnect the wires yet.*

- *Make sure the wires are identified correctly. If you have an unidentified wire, it may be necessary to identify where the wire connects to the heating or air conditioning equipment.*
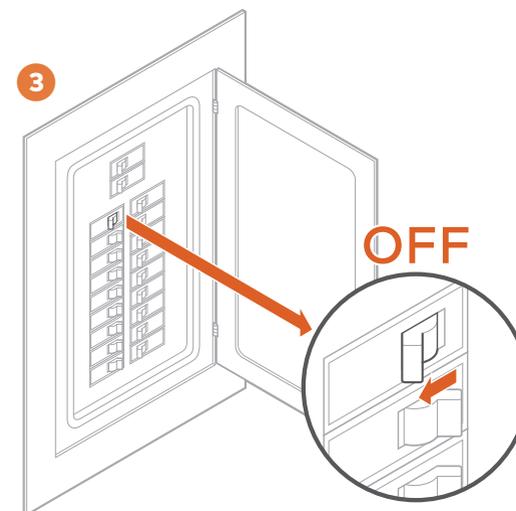
⚠ **CAUTION:** Wiring can vary for each manufacturer. Identify all wiring designations before removing it from the existing thermostat.

- *Take a picture of the wires before you detach them from the existing thermostat for future reference.*

- *After all wires are identified and a picture has been taken, disconnect all the wires and remove the existing thermostat. Remember to secure the wires so they do not fall into the wall.*

5 **Prep wires (if needed).**

- *Ensure the wires are a proper gauge between 16-24 AWG (1.3 – 0.5 mm)*

- *Make sure wires have exposed straight ends of the appropriate length.*

OFF

Thermostat installation

1 **Level and mount the Thermostat to the wall with the supplied hardware.**

- *If additional support is necessary, drill holes with a 3/16" (#13) drill bit and tap in the drywall anchors.*

- *If you need to cover up any marks or holes from the previous thermostat, mount the trim plate prior to securing the Thermostat to the wall.*
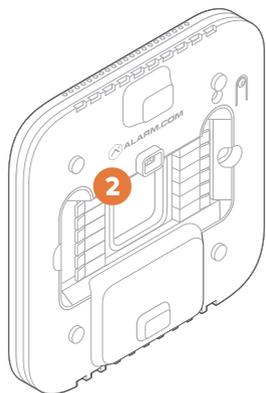
2 **Insert the wires into their designated wire terminals. See the table for details.**

⚠ **IMPORTANT:** If you only have one R wire, insert it into RH. Only connect wires to the thermostat that will be used by the system. Inserting wires that are not connected to or used by the HVAC system could cause the Smart Thermostat HD to operate improperly.

⚠ **CAUTION:** Do not insert more than one wire into a wire terminal as this will damage the wire terminal. If you only have one R wire, there is no need to physically jump RH and RC. The Thermostat will internally jump the two terminals.

Terminal	Description
RC	Cooling power
RH*	Heating power
W2	Heat/aux stage 2
W	Heat/aux stage 1
C*	Common wire from transformer
Z1	Configurable: W3, humidifier, dehumidifier, vent
Z2	Configurable: W3, humidifier, dehumidifier, vent
Y	Cool/pump stage 1
Y2	Cool/pump stage 2
G	Fan
O	Heat pump reversing valve (Energized in COOL mode)
B	Heat pump reversing valve (Energized in HEAT mode)

Required wire

3 **After all wires are inserted into the wire terminals, restore power to the HVAC system.**

- *This will supply 24 VAC power to the Thermostat.*

ON
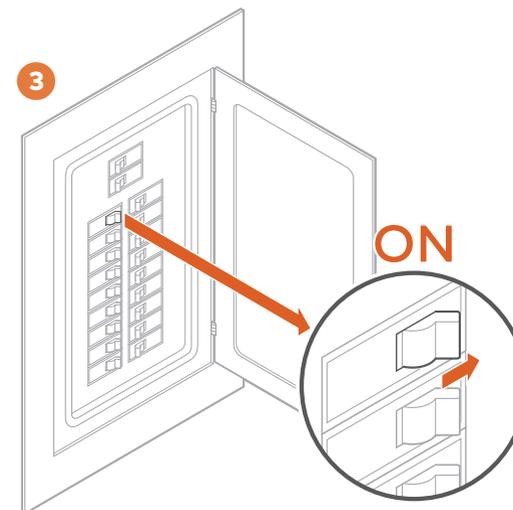
4 **Check the Status LED, which will indicate the Thermostat has power.**

- *If the Status LED is off, it indicates the Thermostat does not have 24 VAC power.*

- *Visually verify both RH and C are securely inserted into the appropriately labeled terminals.*

- *Verify the HVAC system has power, this may be identified at the unit.*

- *Verify the circuit breaker was correctly turned back on.*

Display installation

1 **Connect the Display to the Thermostat. Magnets will hold the Display in place.**
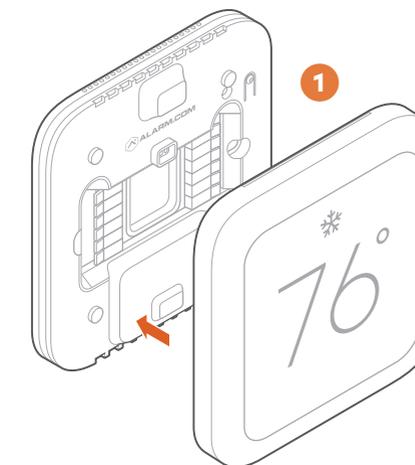
2 **The Display will turn on after being connected.**

- *If the display does not power on after 30 seconds, verify 24 VAC power is being supplied to the Thermostat from the HVAC system.*

Setup

- Follow the on-screen setup wizard to configure the Smart Thermostat HD and connect it to a Z-Wave network.

Test the system

⚠ **CAUTION:** Do not test the cool mode during cold weather. Wait for mild weather to fully test the system.

• After successfully installing and setting up your new Smart Thermostat HD, please test the Smart Thermostat HD and HVAC system.

• If the Smart Thermostat HD will control a heating system, test the heating system by changing the mode to HEAT and adjusting the setpoint to be higher than the current room temperature. Verify the heating system turns on and that the room is starting to warm up.

• If the Smart Thermostat HD will control a cooling system, test the cooling system by changing the mode to COOL and adjusting the setpoint to be lower than the current room temperature. Verify the cooling system turns on and that the room is starting to cool down.

Additional configuration

• Although the default settings will be appropriate in most cases, you also have the option to change all configuration settings via the Display.
Open the Navigation menu ☰ and proceed to the relevant settings.

⚠ **CAUTION:** Be careful when changing advanced configuration settings. These configuration settings should only be changed by those familiar with heating and cooling system parameters. Contact your local HVAC professional for help.

Troubleshooting

Problem	Cause	Tip
Heating or cooling does not turn on when the setpoint is above or below the room temperature.	To prevent damaging the compressor, the Smart Thermostat HD inserts a delay when cycling the compressor. This delay is only a few minutes long.	• Change the setpoint to 2 degrees beyond the current setpoint and wait 5 minutes, at which point the system should turn on. • If this does not work, contact your local HVAC professional.
Heat pump is "cooling when it should be heating" or "heating when it should be cooling."	Some heat pumps use the O terminal for their reversing valve, while others use the B terminal. Your heat pump may be the opposite type from how your thermostat is wired.	• Try physically swapping the O or B wire to the opposite terminal. ❶ Turn off power to the HVAC system at the circuit breaker. ❷ Remove the Display. ❸ Hold down the terminal to remove the wire, remove the wire, hold down the opposite terminal, insert the wire fully. ❹ Reattach the Display to the Thermostat. ❺ Power on your HVAC system. • If this does not work, contact your local HVAC professional.

Problem	Cause	Tip
How do I add the Smart Thermostat HD to a Z-Wave network or delete it from a Z-Wave network?		• To find the Z-Wave settings, open the Navigation menu ☰ and proceed to the relevant settings. • The on-screen menu will assist you in adding or deleting the Smart Thermostat HD to or from a Z-Wave network, respectively.
How do I reconfigure my Smart Thermostat HD?	My wiring has changed and I need to re-configure the thermostat. I made a mistake during the setup process and want to start again.	• If you would like to reconfigure the Smart Thermostat HD settings using the setup wizard, open the Navigation menu ☰ and proceed to the relevant settings. • **NOTE:** This will NOT delete the device from the Z-Wave network.
Can I set up local schedules?	Scheduling is needed prior to adding the Smart Thermostat HD to a smart home system.	• Schedules can be set up for the Smart Thermostat HD before it is connected to a smart home system if necessary. Open the Navigation menu ☰ and proceed to the relevant settings. • We suggest making use of your smart home supplied schedules. Local scheduling is only available when the device is not connected to your smart home system.

Problem	Cause	Tip
How do I reset my Smart Thermostat HD to the factory settings?	I am moving or re-setting up my smart home network and need the Smart Thermostat HD reset to its factory settings.	• The Smart Thermostat HD can be reset to its factory settings. This will reset all HVAC settings, rules, and schedules. It will also delete the Smart Thermostat HD from the Z-Wave network. • To reset your Smart Thermostat HD to factory settings, open the Navigation menu ☰ and proceed to the relevant settings. • If you are unable to use the Display, you may also reset the device to factory settings from the Thermostat: ❶ Remove the Display. ❷ Press and hold the button on the Thermostat for 30 seconds. When the Status LED slowly blinks, release the button. The Status LED will blink 10 times rapidly before turning off. When the LED turns back on, the device has been factory reset. ❸ After factory resetting the thermostat, put the Display back on the Thermostat. You will need to restart the setup process. • **NOTE:** It is recommended that you delete the Smart Thermostat HD from the Z-Wave network before performing this reset.

Problem	Cause	Tip
The Display is not working.	The Display may not be configured to wake up when you approach. The Display may not be receiving power.	• Tap the screen to wake up the Display. • If you would like your Display to wake up in response to your movement in front of it, please check the settings in the configuration menu. • Ensure that the Display is powered. ❶ Remove the Display from the Thermostat. ❷ Ensure the Thermostat LED is on. This indicates the Thermostat has power and should be able to power the Display. ❸ Put the Display back on the Thermostat. ⚠ **CAUTION:** If the Display is broken and cannot communicate with the Thermostat or is physically removed from the Thermostat, your HVAC control will not behave as expected. Please contact your HVAC professional to remedy the situation as soon as possible.

Regulatory information

FCC

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 of the device.

   NOTE: Changes and Modifications not expressly approved by Building 36 can void your authority to operate this equipment under Federal Communications Commission's rules.

   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 instruction, may cause harmful interference to radio communication. 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, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

IC Notice

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

   Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisee aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage, et
2. L'appareil doit accepter tout brouillage radioelectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiation Exposure Statement

The device has been found to be compliant to the requirements set forth in CFR 47 Sections 2.1091 and Industry Canada RSS-102 for an uncontrolled environment. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Le dispositif a été jugé conforme aux exigences énoncées dans les articles 47 CFR 2.1091 et Industrie Canada RSS-102 pour un environnement non contrôle'. L'antenne(s) utilisée pour ce transmetteur doit etre installé pour fournir une distance de séparation d'au moins 20 cm de toutes les personnes et ne doit pas être co-localisés ou fonctionner en conjunction avec une autre antenne ou transmetteur.

Questions?

Visit **answers.alarm.com** or contact your service provider.

ALARM.COM®

8281 Greensboro Drive
Suite 100
Tysons, VA 22102