

User's Information Manual: Outdoor Split-System Heat Pump - Single-Phase and Three-Phase

About this manual

Read all sections of this manual and keep the manual for future reference.



WARNING: Cancer and Reproductive Harm – www.P65Warnings.ca.gov.

Contact information

To contact us online, go to www.york.com, click **Contact Us**, and follow the instructions.

To contact us by mail, use the following address:

Johnson Controls Ducted Systems

Consumer Relations

5005 York Drive

Norman, OK 73069

Certification



Assembled at a facility with
an ISO 9001:2015-certified
Quality Management
System



Safety

It is important to understand the safety symbols used in this manual. Read safety information carefully and follow all safety requirements.

Understanding safety symbols and instructions



This is a safety alert symbol. When you see this symbol on labels or in manuals, be alert to the potential for personal injury.

Understand and pay particular attention to the signal words **DANGER**, **WARNING**, or **CAUTION**, as well as the **NOTICE**, **Important**, and **Note** alerts.

DANGER indicates an **imminently** hazardous situation, which, if not avoided, will result in death or serious injury.

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 may result in minor or moderate injury. It is also used to alert against unsafe practices and hazards involving only property damage.

NOTICE indicates information considered important, but not hazard-related, such as messages relating to property damage.

Important indicates information that is essential to complete a task or may result in damage to the device if not followed.

Note indicates something of special interest or importance. Notes can contain any type of information except safety information.

Safety requirements



WARNING

Risk of fire

This unit uses a mildly flammable (A2L) refrigerant. The unit must only be repaired or serviced by trained service personnel. Before attempting to repair or service the unit, consult the *Installation Manual*. Follow all safety precautions.

How your system works

Cooling cycle

If your hand is wet and you blow on it, it feels cool because some of the moisture is evaporating and becoming a vapor. This process requires heat. The heat is being taken from your hand, so your hand feels cool.

That is what happens with an air conditioner. During the cooling cycle, your system removes heat and humidity from your home and transfers this heat to the outdoor air.

Heating cycle (heat pumps)

During the heating cycle, your system removes heat and humidity from the outdoor air and transfers this heat to your home. This is possible because even 0°F outdoor air contains a great deal of heat. Your heat pump does not generate much heat, it just transfers it from one place to another.

System operation

Your thermostat puts full control of the comfort level in your home at your fingertips. **Do not** switch your thermostat rapidly **ON** and **OFF** or between **HEAT** to **COOL**. This could damage your equipment. Always allow at least 5 min between changes.

Setting the thermostat



The main power to the system must be kept ON at all times to prevent damage to the outdoor unit compressor. If necessary, the thermostat control switch should be used to turn the system OFF. Should the main power be disconnected or interrupted for 8 h or longer, do not attempt to start the system for 8 h after the power has been restored to the outdoor unit. If heat is needed during this 8 h period, use emergency heat.

Thermostats

Although thermostats may vary widely in appearance, they are all designed to perform the same basic function: to control the operation of your air conditioning or heat pump system. Regardless of size or shape, each thermostat features a temperature indicator; a dial, arm, or pushbutton for selection of the required temperature; a fan switch to choose the indoor fan operation; and a comfort switch to select the system mode of operation.

Only approved thermostats have been tested and are fully compatible with this equipment. Be aware that many different thermostats operate on batteries or power-stealing principals. These types of thermostats cannot be supported as trouble free when used with this product.

If your system is designed to allow both cooling and heating operation, you may have either a manual change-over type or a programmable electronic type thermostat.

Manual change-over simply means that the comfort switch must be manually positioned every time you wish to switch from the cooling to heating or heating to cooling modes of operation.

The manufacturer of each thermostat provides complete operating instructions. Familiarize yourself with its correct operation to obtain the maximum comfort with minimum energy consumption.

The computerized electronic thermostat is a sophisticated electronic version of a manual change-over type. This thermostat includes features that allow set-back temperature variations for periods of sleep or while you are away during the day, and means energy savings. The thermostat also features a digital clock.

Cooling only

If your air conditioning system provides cooling only (AC), with no capability for heating operation (heat pump), then a cooling only thermostat, with a manual, one-position **Cool** and **Off** comfort switch is all that is required for system operation.

Cooling and heating (heat pump)

If your system allows both cooling and heating operation, you may have either a manual change-over type or a programmable electronic type heat pump thermostat.

Manual change-over

Manual change-over means that the comfort switch must be manually positioned every time you wish to switch from the cooling to heating or heating to cooling modes of operation.

Programmable electronic thermostats

The computerized electronic thermostat is a sophisticated electronic version of a manual change-over type. This thermostat includes features which allow set-back temperature variations for periods of sleep, or while you are away during the day, and means energy savings. The thermostat also features a digital clock.

Fan operation selection

A multi-position fan switch allows you to choose the type of fan operation of the indoor fan.

AUTO

With the thermostat fan switch set to **AUTO**, the fan will run intermittently as required for either heating or cooling. This position will provide the lowest operating cost. If you purchased one of our thermostats, they have an Intelligent fan mode which continually circulates the air during occupied modes or when you are at home, and can cycle the fan during unoccupied mode or during the night while you sleep to further conserve energy.

ON

Continuous fan operation: With the thermostat fan switch set to **ON**, the indoor fan will not shut off. However, the cooling (AC) or heating (heat pump) systems will still operate as required by room temperatures. This provides continuous air filtering and more even temperature distribution to all conditioned spaces.

Fan only operation: On moderate days, usually during spring and fall, when neither heating nor cooling is required, you may want to run only the fan to ventilate, circulate and filter the air in your home or building. Set the comfort control switch to **OFF** and the fan switch to **ON**. Be sure to return the switches to their original positions for normal operation.

Start-up

The maximum and minimum conditions for operation must be observed to assure a system that will give maximum performance with minimum service.

Table 1: Application limitations¹

Model	Air temperature at outdoor coil °F				Air temperature at indoor coil °F			
	Minimum		Maximum		Minimum		Maximum	
	DB cool	DB heat	DB cool	DB heat	WB cool	DB heat	WB cool	DB heat
1 phase all 13.4 SEER2 AC	55	-	115	-	57	-	72	-
3 phase all 13.4 SEER2 AC	55	-	125	-	57	-	72	-
All 14.3 and 16+ SEER2 AC	55	-	125	-	57	-	72	-
All 14.3 and 15+ SEER2 HP	55	0	125	75	57	50 ¹	72	80
3 phase all 14.3 SEER2 HP	55	0	125	75	57	50 ¹	72	80
1 phase all 16+ SEER2 HP	55	0	125	75	57	50 ¹	72	80

① **Note:**

1. Operation below this temperature is permissible for a short period of time during morning warm-up.

The comfort control switch is assumed to be in the **OFF** position. If the main power supply to the outdoor and indoor units is off, turn the appropriate disconnects to the **ON** position.

Place the system into operation by completing the following steps:

1. Set the temperature adjustment to the desired temperature on your thermostat.
Cooling - The higher the setting, the lower the amount of energy consumed. Federal Guidelines recommend a setting of 78°F.
Heating - The lower the setting, the lower the amount of energy consumed. Federal guidelines recommend a setting of 65°F or lower.

NOTICE

If your cooling and heating temperature adjustments are separate, be sure to set both.

2. After considering the [Fan operation selection](#) section, select and set the fan operation mode you desire.
3. Move the comfort control switch to the desired mode of operation (cooling or heating) found on your particular thermostat.

Power failure

When accidents, wind storms, or other occurrences disrupt electrical power supply to your house, switch thermostat to **OFF** position.

System operation

Manual change-over thermostat

Cooling your home: With the comfort control switch in the **COOL** position, the system operates as follows:

When the indoor temperature rises above the level indicated by the temperature adjustment setting, the system starts. The outdoor unit operates and the indoor fan circulates the cooled, filtered air. When the room temperature falls to the selected setting, the system shuts off.

Heating your home: If your system includes a heating unit and the comfort control switch is in the **HEAT** position, the system operates as follows:

When the indoor temperature drops below the level indicated by the temperature adjustment setting, the system starts. The heating system operates and the indoor fan circulates the filtered air. When the room temperature rises to the selected setting, the system shuts off. Whether heating or cooling, the fan continues to operate if the fan switch was set in the **ON or Intelligent** position. The **AUTO** setting on the fan switch allows the fan to shut off when your system does.

Electronic thermostat

The computerized electronic thermostat, when programmed, functions automatically to operate the system as follows:

When the indoor temperature rises above the higher (**COOL**) setting, the outdoor unit operates and the indoor fan circulates the cooled, filtered air. When the room temperature falls to the selected level, the system shuts off. The indoor fan either shuts off or runs continuously, depending on your choice of fan switch setting. When the indoor temperature drops below the lower (**HEAT**) setting, the heating system operates and the indoor fan circulates the heated, filtered air. When the indoor temperature rises to the selected setting, the system shuts off. The indoor fan either shuts off or runs continuously, depending on your choice of fan switch setting.

Maximizing operating efficiency

Heating conservation

For the most efficient operation, keep storm windows and doors closed all year long. They not only help insulate against heat and cold, but they also keep out dirt, pollen, and noise.

Closing drapes at night, keeping fireplace dampers closed when not in use, and running exhaust fans only when necessary helps you to retain the air you have already paid to heat.

Keep lamps, televisions, or other heat producing sources away from the thermostat. The thermostat senses this extra heat and is not able to maintain the inside temperature to the desired comfort level.

Cooling conservation

To comfortably cool your home, your air conditioner must remove both heat and humidity. Do not turn your system off even if you are away all day. On a hot day, your system may have to operate between 8 h to 12 h to reduce the temperature in your home to a normal comfort level.

Keep windows closed after sundown. While the outdoor temperature at night may be lower than indoors, the air is generally loaded with moisture which is soaked up by furniture, carpets, and fabrics. This moisture must be removed when you restart your system.

The hotter the outside temperature, the greater the load on your system. Therefore, do not be alarmed when your system continues to run after the sun has set on a hot day. Heat is stored in your outside walls during the day and continues to flow into your home for several hours after sunset.

Use your kitchen exhaust fan when cooking. One surface burner on **HIGH** requires 1 ton of cooling. Turn on your bathroom exhaust fan while showering to remove humidity. However, do not run exhaust fan excessively as this decreases efficiency by removing conditioned air.

You can also help your system in the summer by closing drapes or blinds and by lowering awnings on windows that get direct sunlight.

Care of system

It is essential to perform regular periodic preventative maintenance on this equipment. The person most familiar with the equipment in your HVAC system is a dealer.

The dealer can ensure your maintenance program meets the conditions of the warranty, maximize the efficiency of the equipment, and service your unit within the federally mandated guidelines with regard to unlawful discharge of refrigerants into the atmosphere.

Coil care

Keep the outdoor unit free of foliage, grass clippings, leaves, paper, and any other material which could restrict the correct airflow in and out of the unit. Vacuum the coil to remove any debris from between the fins. If the coil becomes excessively dirty, turn the main disconnect switch to **OFF** and wash the coil with your garden hose. Avoid getting water into the fan motor and control box. Flush dirt from the base pan after cleaning the coil.

Service calls

To avoid unnecessary service calls if the unit stops functioning correctly, check the following items before calling your servicing dealer:

- Indoor section for a dirty filter.
- Outdoor section for a leaf or debris blockage. Eliminate the problem, turn off the thermostat for 10 s, and attempt to start. Wait 5 min. If system does not start, call your servicing dealer.

WARNING

Risk of fire

This unit uses a slightly flammable (A2L) refrigerant. The unit must only be repaired or serviced by trained service personnel. Before attempting to repair or service the unit, consult the *Installation Manual*. Follow all safety precautions.

Filter care

Inspect the air filters at least once a month. If they are dirty, wash reusable filters with a mild detergent per manufacturer's recommendations. Replace disposable filters with new filters. Install the clean filters with the airflow arrow in the same direction as the airflow in your duct. Filters must be clean to assure maximum efficiency and adequate air circulation.

Clearances

The minimum clearances shown below must be maintained if doing any patio or yard improvements around the outdoor unit.

Table 2: Outdoor unit clearances

Model	Coil clearance area (in.)	Overhead clearance (in.)	Service panel access (in.)	Unit to unit distance (in.)
All 13.4 SEER2 AC	10	48	18	24
All 14.3+ SEER2 AC and HP and 16+ SEER2 HP	10	48	24	24

Parts information

Replacement parts are available from your local contractor/dealer.

Extended warranty

Special warranty packages (called YORK Care Performance Promise) are available through your contractor. These packages reduce the potential cost of service calls following the first year of operation on your cooling (or heating/cooling) system.

Some efficiency dos and do nots

Do not keep adjusting your thermostat. Moving your thermostat setting does not make your system heat or cool any faster. Adjust your thermostat to a comfortable setting and leave it there.

Do not restrict air circulation. Placing furniture, rugs, and other items in such a way that they interfere with air vents makes your system work harder to achieve a comfortable temperature level. This requires more energy, which means greater cost to you.

Do not locate lamps or other heat-producing appliances (radios, TVs, heaters) near your thermostat. The heat from these items gives your thermostat false information about the temperature in the room.

Do select a comfortable thermostat setting, but keep in mind that moderation in temperature selection saves energy.

Do turn on your kitchen exhaust fan when cooking and your bathroom exhaust fan when showering. Also, make sure your clothes dryer is adequately vented. If you neglect these items, this may create an excess heat and humidity condition, causing your air conditioning system to run longer.

Do set your thermostat a few degrees lower than normal several hours before entertaining a large group of people in a relatively small area. People give off a considerable amount of heat and moisture in a closed area.

Do keep drapes and venetian blinds closed when practical. These items provide insulation against heat loss/gain.

Do contact a qualified service person to make repairs or adjustments to your system. They have been trained to perform this service.

Characteristics of heat pumps

A constant heat

Heat pumps have a noticeable cooler supply air temperature than furnaces. The common practice of over-sizing furnaces contributes to an off-and-on again operation with short blasts of hot supply air. The heat pump system is sized more closely to the heating needs of your home. Heat is supplied at a lower temperature over a longer period of time to provide a more constant heat, and it may give you the impression that your system never stops running.

Water run-off

During the heating cycle in mild weather, you may notice water running off the outdoor coil. Moisture from the air is condensed on the outside surface of the coil where it gathers and runs off. This is normal and does not require attention.

Outdoor coil defrosting

At certain outdoor conditions (low temperature, high humidity), frost may build up on the coil of the outdoor unit. In order to maintain heating efficiency, the system automatically defrosts itself. Steam rising from the outdoor unit is normal and is an indication of correct operation. The vapor cloud only lasts for a few minutes. When the defrost cycle completes, the system automatically switches back to heating. Auxiliary heat is automatically energized to maintain comfort during defrost.

Limited warranty

Residential Split Air Conditioning and Heat Pump Condensing Units

Warranty terms: Johnson Controls Ducted Systems (“Company”) warrants this product to be free from defects in factory workmanship and material under normal use and service and will at its option, repair or replace defective parts without charge, subject to the exclusions below and according to the terms outlined in this warranty. Company reserves the right, at its sole discretion, to provide an equivalent complete replacement unit in place of repair parts. Alternatively, Company may at its option, offer a replacement price allowance to be applied toward the purchase of a new unit offered by Company. The exact allowance amount will be determined at the discretion of Company, based upon availability, age of existing equipment and current market conditions, but excluding items as ductwork, wiring, piping, and installation costs. The warranty period for obtaining repaired or replacement parts, or an allowance shall not extend beyond the original warranty period as stated below. In addition, if a replacement unit is provided by Company, the warranty period for the complete replacement unit is limited to the remainder of the original warranty period.

This warranty covers only equipment described by the Product Model Number and Unit Serial Number on the equipment or listed on the Warranty Registration Card, and applies only to products installed in the United States, Canada, or Puerto Rico. Company shall have no responsibility for installation, service, shipping, handling or other costs or charges, except as otherwise provided in this warranty. Tampering, altering, defacing, or removing the product serial number will serve to void this warranty. This warranty extends only to the original consumer purchaser and is non-transferable.

For this warranty to apply, the product must be installed according to Company recommendations and specifications, and in accordance with all local, state, and national codes; and the product or residence must not be removed from its place of original installation. This warranty does not apply to any unit sold over the Internet, by telephone or other electronic means unless the dealer that buys or sells a unit over the Internet, by telephone or other electronic means also installs the unit. In the absence of a recorded Warranty Registration Card, the warranty period will begin upon product shipment from Company. If you are unaware of the effective warranty date, contact Company at 1-877-874-7378 or www.upgproductregistration.com.

For product registration: For your benefit and protection, register your product with Company promptly after installation. This will initiate the warranty period and allow us to contact you, should it become necessary. You can register your product online at www.upgproductregistration.com or by returning the Warranty Registration Card on the back page of this packet.

Product Model Number: _____

Unit Serial Number: _____

Installation Date: _____

Installing Dealer: _____

For warranty service or repair: Notify your Installing Dealer or a Participating Dealer, preferably in writing, as soon as possible after discovery of the problem. Be sure to include the Product Model Number, Unit Serial Number, Installation Date, and a description of the problem. You may find the Installing Dealer's name on this page or on the equipment, and you can locate Participating Dealers online at www.york.com.

If a Dealer response is not received within a reasonable amount of time, notify Company at: Johnson Controls Ducted Systems, Consumer Relations, 5005 York Drive, Norman, OK 73069 or by telephone at 1-877-874-7378. All warranty service or repair will be performed during regular business hours, Monday through Friday 9:00 AM - 5:00 PM. Service requests sent to Company without prior Dealer contact will be referred back to a Participating Dealer. Because this process takes time, it is in the best interest of the Consumer to contact a Participating Dealer directly.

Warranty period: The warranty period in years, depending on the part, is as shown in the chart below.

Condensing units	Compressor	Parts
R-454B models: RC3, RC4, RH4	5 years	5 or 10 years
R-454B models: YC3, XC3, YC4, XC4, YC6, XC6, YH4, XH4, YH5, XH5, YH6, XH6, XC3 three-phase, and XH4 three-phase	10 years	5 or 10 years [†]

① **Note:** All three-phase models (with 31, 41, or 51 voltage codes) have 5-year compressor and 1-year parts warranty and are not eligible for 10-year parts warranty. To qualify for the † Extended 10-year parts warranty the unit must be registered online at <http://www.upgproductregistration.com> within 90 days of installation for replacement units or within 90 days of closing for new home construction. In some states, registration is not required, but proof of installation is required.

Maintenance: Company strongly recommends regular periodic preventive maintenance on this equipment. The person most familiar with the equipment in your HVAC system is a Participating Dealer. The Participating Dealer can ensure that your maintenance program meets the “Company Warranty” conditions, maximize the equipment efficiency, and service your unit within the mandated guidelines with regard to unlawful discharge of refrigerants into the atmosphere. For additional buyer protection, Residential Home Comfort Plans are available from a Participating Dealer. These plans provide you with additional years of warranty service protection including labor charges. Home Comfort Plans must be purchased within one (1) year from the date the equipment was installed.

Exclusions: This warranty does not cover any:

1. Shipping, labor, or material charges or damages resulting from transportation, installation, or servicing.
2. Damage or repairs required as a consequence of mishandling, faulty installation, misapplication, abuse, improper servicing, unauthorized alteration, or improper operation.
3. Damages or failure to start resulting from improper voltage conditions, blown fuses, open circuit breakers, or other inadequacy or interruption of electrical service or fuel supply.
4. Fuses, either internal or external to the product.
5. Labor or other costs incurred for diagnosing, repairing, removing, installing, shipping, servicing, or handling of either defective parts or replacement parts.
6. Products removed from their original location for reinstallation purposes.
7. Damages resulting from accident, abuse, fire, flood, alteration, or acts of God.
8. Damages resulting from use of the product in a corrosive atmosphere.
9. Normal maintenance, or damages resulting from failure to perform normal maintenance, as outlined in the installation and servicing instructions or owner's manual.
10. Cleaning or replacement of filters, nozzles, or orifices.
11. Damages resulting from operation with inadequate supply of air or water; Damages resulting from failure to properly and regularly clean air and/or water side of condenser and evaporator.
12. Damages resulting from: (I) freezing of condenser water or condensate; (II) inadequate or interrupted water supply; (III) use of corrosive water; (IV) fouling or restriction of the water circuit by foreign material or like causes.
13. Damages caused by improper parts, components or accessories not suitable for use in or with the unit. For a list of parts that are known to be compatible please reference the equipment renewal parts list, contact a Participating Dealer for assistance, or call 1-877-874-7378.
14. Electricity or fuel costs, or increases in fuel or electric costs, for any reason including additional or unusual use of supplemental electric heat.

This warranty is in lieu of all other express warranties. All implied warranties, including the implied warranty of merchantability and fitness for a particular purpose are limited in duration to the actual warranty period applicable to the part. Some states do not allow the disclaimer of implied warranties, so the above disclaimer may not apply to you. In addition, some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. In no event, whether as a result of breach of warranty or contract, tort (including negligence), strict liability, or otherwise, shall Company be liable for special, incidental, or consequential damages or expenses, including but not limited to loss of use of the equipment or associated equipment, lost revenues or profits, cost of substitute equipment, or cost of fuel or electricity.

The above limitations shall inure to the benefit of Company's suppliers and subcontractors. The above limitation on consequential damages shall not apply to injuries to persons in the case of consumer goods. Company does not assume, or authorize any other person to assume for Company, any other liability for the sale of this product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

