

# USER'S INFORMATION MANUAL

## VARIABLE CAPACITY OUTDOOR SPLIT-SYSTEM AIR CONDITIONER AND HEAT PUMP

MODELS: YXV, AC21, AL21, YZV, HC20, HL20



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### CONTACT INFORMATION

- Go to website at [www.york.com](http://www.york.com), then click on "Contact Us" and follow the instructions.
- Contact us by mail:

Johnson Controls Unitary Products  
Consumer Relations  
5005 York Drive  
Norman, OK 73069

**We recommend that the user read all sections of this manual and keep the manual for future reference.**

### WARNING

Cancer and Reproductive Harm – [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

### SAFETY

### WARNING

*This product must be installed and serviced by a qualified installer or service agency. Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage.*

### 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's what happens with an air conditioner. During the cooling cycle, your system will remove heat and humidity from your home and will transfer this heat to the outdoor air.

#### HEATING CYCLE (HEAT PUMPS)

During the heating cycle, your system will remove heat and humidity from the outdoor air and will transfer this heat to your home. This is possible because even 0°F outdoor air contains a great deal of heat. Remember that your heat pump doesn't generate much heat, it merely transfers it from one place to another.

#### System Operation

Your thermostat puts full control of the comfort level in your home at your fingertips and remotely using a smart device. DO NOT switch your thermostat rapidly ON and OFF or between HEAT to COOL. This could damage your equipment. Always allow at least 5 minutes between changes.

#### SETTING THE THERMOSTAT

### CAUTION

*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 hours or longer, DO NOT attempt to start the system for 8 hours after the power has been restored to the outdoor unit. If heat is needed during this 8 hour period, use emergency heat.*

# THERMOSTAT

## YOUR KEY TO COMFORT

With the touch on a screen or the swipe of an app, you are in complete control of your touch-screen thermostat. Real-time alerts, home and away modes, schedule creation and exclusive quick heat/cool settings provide real benefits for real life – all available from your home or virtually anywhere in the world with your smart device, our Hx™ Thermostat app and an Internet connection. With automatic over-the-air updates and you're assured of efficient and reliable operation.

### Intuitive, touch-based control.

An unobtrusive, 2.8-inch capacitive touch-screen features an exclusive, easy-to-use hexagonal interface.

### Complete control at home or away via your smart device.

Download our Hx™ Thermostat app for iOS smart device and Android, and control your system at home or away via Wi-Fi®, 3G or 4G – virtually anywhere with Internet access.

### Always up-to-date.

Installed systems connected via Wi-Fi® receive the latest software updates automatically.

### Easy-access home and away modes.

Pre-set modes provide quick access to alternate settings.

**Max Heat Setpoint** - Choose the the maximum heating setpoint that is available.

**Min Cool Setpoint** - Choose the minimum cooling setpoint that is available.

Refer to the thermostat user's manual for additional information.

## HOME SCREEN

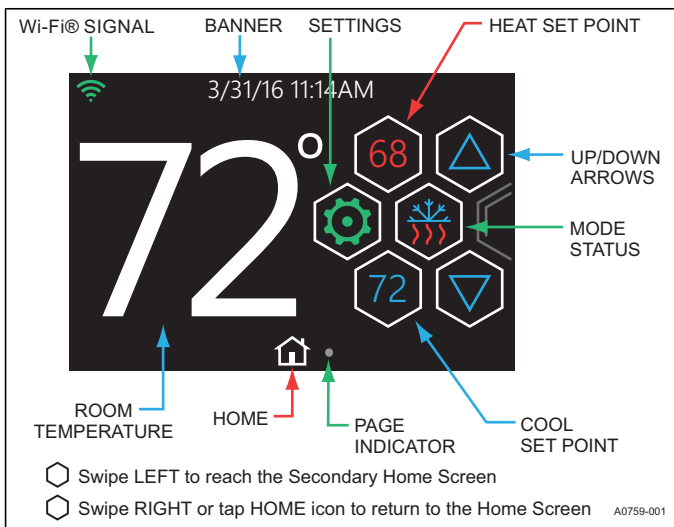


FIGURE 1: Home Screen

## SECONDARY HOME SCREEN

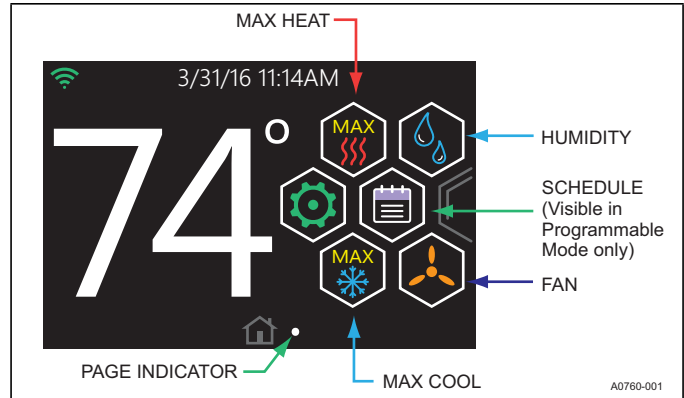


FIGURE 2: Secondary Home Screen (swipe right to view)

## WI-FI NETWORK STATUS SCREEN

Wireless Status Screen is invoked when the Wi-Fi® Signal Strength Icon is pressed on the Banner. This screen provides Wi-Fi® connectivity information.

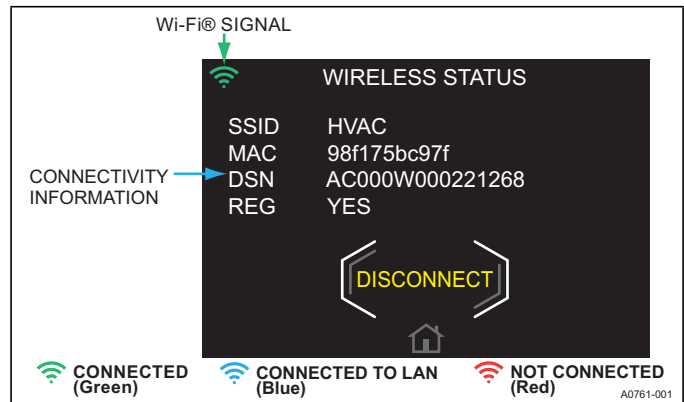


FIGURE 3: WI-FI- Network Status Screen

## NOTICE

For full thermostat functionality please refer to the Homeowner and Installer Quick Reference Guide located in the thermostat box.

## 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 Limitations<sup>1</sup>

	Air Temperature at Outdoor Coil, °F				Air Temperature at Indoor Coil, °F			
	Min.		Max.		Min.		Max.	
Model	DB Cool	DB Heat	DB Cool	DB Heat	WB Cool	DB Heat	WB Cool	DB Heat
All Inverter AC & HP	35	-5	125	75	57	50	72	80

<sup>1</sup>. Operation outside these below this temperature is permissible for a short period of time during morning warm-up.

If the main power supply to the outdoor and indoor units is off. Place the system into operation as follows:

1. Enable mode.
2. Set 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.*

3. Select and set the fan operation mode you desire.

### POWER FAILURE

Should power failure occur, when power is restored the system will automatically resume operation using the set-points that were present when power was interrupted.

When accidents, wind storms, etc. disrupt electrical power supply to your house, switch thermostat to "OFF" position.

### Hx™ THERMOSTAT

This computerized electronic thermostat, when programmed, will function automatically to operate the system as follows: When the indoor temperature rises above the higher (COOL) setting, the outdoor unit will operate and the indoor fan will circulate the cooled, filtered air. When the room temperature is lowered to the selected level, the system will shut off. The indoor fan will either shut off or run continuously, depending upon your choice of fan switch setting. When the indoor temperature drops below the lower (HEAT) setting, the heating system will operate, and the indoor fan will circulate the heated, filtered air. When the indoor temperature rises to the selected setting, the system will shut off. The indoor fan will either shut off or run continuously, depending upon your choice of fan switch setting.

## TO MAXIMIZE 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 will help 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 will sense this extra heat and will not be 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. Don't turn your system off even though you will be away all day. On most days it will be normal for this unit to run continuously, as it maintains comfort.

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 will continue to flow into your home for several hours after sunset.

Use your kitchen exhaust fan when cooking. One surface burner on "HIGH" requires one ton of cooling. Turn on your bathroom exhaust fan while showering to remove humidity. However, exhaust fans should not be run excessively. It would decrease 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 strongly recommended that regular periodic preventative maintenance be performed on this equipment. The person most familiar with the equipment in your H.V.A.C. 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 proper air flow in and out of the unit. The coil may be vacuumed 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 base pan after cleaning the coil.

### SERVICE CALLS

There are a few instances where the user can avoid unnecessary service calls. If unit stops functioning properly check the following items before calling your servicing dealer:

1. Indoor section for dirty filter.
2. Outdoor section for leaf or debris blockage. Eliminate problem, turn off the thermostat for 10 seconds and attempt start. Wait 5 minutes. If system does not start, call your servicing dealer.

## ⚠ WARNING

*Your system contains environmentally friendly refrigerant R-410A, which operates at high pressures. You may be in danger if you try to make an attempt to repair your unit. Please contact your local dealer.*

### FILTER CARE

Inspect the air filter(s) 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 "air flow" arrow in the same direction as the air flow in your duct. Filters should be clean to assure maximum efficiency and adequate air circulation.

### CLEARANCES

The minimum clearances from the outdoor unit shown below must be maintained should any patio or yard improvements be done around the outdoor unit.

- 10" Clearance Coil Area
- 48" Overhead Clearance
- 18" to 24" is the minimum service panel access depending on model. Refer to the installation manual for details.
- 24" Unit to Unit Distance

### PARTS INFORMATION

Replacement parts are available from 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 DO'S & DON'TS

DON'T be a "thermostat juggler". Moving your thermostat setting will not make your system heat or cool any faster. Adjust your thermostat to a comfortable setting and leave it there.

DON'T restrict air circulation. Placing furniture, rugs, etc. in such a way that they interfere with air vents will make your system work harder to achieve a comfortable temperature level. This requires more energy, which means greater cost to you.

DON'T locate lamps or other heat-producing appliances (radios, TV's, heaters, etc.) near your thermostat. The heat from these items will give 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 will save energy.

DO turn on your kitchen exhaust fan when cooking and your bathroom exhaust fan when showering. Also, make sure your clothes dryer is properly vented. If these items are neglected, an excess heat and humidity condition may be created, 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. He has been trained to perform this service.

## CHARACTERISTICS OF HEAT PUMPS

### A CONSTANT HEAT

Heat pumps have a 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. No need for alarm, your unit has not sprung a leak!

### 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 will automatically defrost itself. Steam rising from the outdoor unit is normal and is an indication of proper operation. The vapor cloud will only last for a few minutes. When the defrost cycle is completed, the system will automatically switch back to heating. Auxiliary heat is automatically energized to maintain comfort during defrost.

# Limited Warranty

## Residential Split AC & HP Communicating Variable Capacity Systems

**WARRANTY TERMS:** Johnson Controls Unitary Products (hereinafter “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 any parts, without charge, subject to the exclusions below, that prove to have such defects according to the terms outlined in this warranty. Company reserves the right, at its sole discretion, to provide a replacement unit in the place of repair parts, in which case the warranty period for the replacement unit is limited to the remainder of the original warranty period. Alternatively, Company may, at its option, extend a replacement allowance to be applied toward the purchase of a new unit marketed by Company. The exact amount of the allowance will be determined at the discretion of Company, based upon current market conditions, but in no case shall this allowance exceed thirty (30) percent of the original consumer purchase price of the unit excluding such items as ductwork, wiring, piping, and installation costs. The warranty period for repair or replacement parts or unit provided hereunder shall not extend beyond the warranty period stated below. Company shall have no responsibility hereunder for installation, shipping, handling, or other charges except as specifically provided herein.

This warranty covers only the 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. 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 nontransferable. 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 date the warranty became effective, contact Company at (877) 874-7378 or visit [www.upgproductregistration.com](http://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](http://www.upgproductregistration.com) or by returning the Warranty Registration Card on the back page of this packet.

System AHRI #:		
System Component	Model Number	Serial Number
Outdoor Unit		
Indoor Unit(s)		
System Control		

Installation Date: \_\_\_\_\_

Installing Dealer: \_\_\_\_\_

Dealer Training Certification Number: \_\_\_\_\_

**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.yorkupg.com](http://www.yorkupg.com).

If a Dealer response is not received within a reasonable amount of time, notify Company at: Johnson Controls Unitary Products, Consumer Relations, 5005 York Drive, Norman, OK 73069 or by telephone at (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.

For warranty coverage, these variable capacity designs are required to be installed as complete systems including the communicating Hx™ thermostat and variable speed communicating air handler, furnace & coil, or modular air handler & coil with factory mounted EEV. **Company strongly recommends that a completed Startup Sheet is submitted at the time of warranty registration.**

SYSTEM COMPONENT	COMPRESSOR	PARTS
YXV, AC21, AL21, YZV, HC20, HL20 Outdoor Unit	10 or Lifetime†‡	5 or 10†
AVV or MC Indoor Unit with factory mounted EEV	—	5 or 10†

**NOTES:**

To qualify for the † Extended 10-year parts warranty and/or the ‡ Lifetime compressor warranty, the unit must be registered online at [www.upgproductregistration.com](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.

**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.