



## Endeavor™ Line Achiever® Series Gas Furnaces



### **R801V Ultra Low NOx**

80% A.F.U.E.†

EcoNet® Enabled

Heating Stages: Single Stage

Motor Type: Constant CFM

Input Rates: 50-100 kBTU [14.65-29.3 kW]

Configuration Options: Upflow/Horizontal



† A.F.U.E. (Annual Fuel Utilization Efficiency) calculated in accordance with Department of Energy test procedures.

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## Features and Benefits

- **Ultra Low Greenhouse Gas Emissions:** Certified unit meets 14ng/j NOx emission standard – reducing NOx emissions by 65%
- **PlusOne® Diagnostics:** With the Ruud Contractor & EcoNet® Apps, built-in EcoNet® & Bluetooth®<sup>1</sup> technology makes monitoring, troubleshooting and repairing the product easier than ever before
- **Dip Switch Free Installation Commissioning via Bluetooth® Technology:** Seamless final install step without DIP switch configuration using the Ruud Contractor App
- **PlusOne® Ignition System:** Proven Direct Spark Ignition (DSI) for reliability and longevity
- **Constant CFM Motor:** Truly variable speed technology allows for ultimate humidity control, quieter sound levels and year-round energy savings
- **Quieter Operation<sup>2</sup>:** A fully insulated blower cabinet, solid bottom and truly variable speed airflow technology makes this furnace one of the quieter options available
- **EcoNet® Enabled Furnace:** The latest in sensor technology and the EcoNet® monitoring system provides a new level of protection, control and energy savings
- **Allows on-the-go control** and receipt of system alerts by the homeowner via the EcoNet® Smart Thermostat and EcoNet® App<sup>3</sup>

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<sup>2</sup>Based on manufacturer's furnace offering, and the product's heating stages, motor type and cabinet insulation. Sound levels are also dependent on furnace location and installation.

<sup>3</sup>Wifi broadband internet connection required. Download the EcoNet® App from the App Store® or Google Play® to set up your EcoNet® Smart Thermostat. Receipt of notifications depend on home WiFi set up. Amazon, Alex and all related logos are trademarks of Amazon.com, Inc. or its affiliates.

# Gas Furnaces

| <u>R</u> | <u>80</u>          | <u>1</u>          | <u>V</u>               | <u>050</u>  | <u>4</u>                           | <u>A</u>              | <u>17</u>                          | <u>UH</u>                 | <u>U</u>          | <u>C</u>                   | <u>A</u>       | <u>P</u>          |
|----------|--------------------|-------------------|------------------------|---|------------------------------------|-----------------------|------------------------------------|---------------------------|-------------------|----------------------------|----------------|-------------------|
| Brand    | Furnace Efficiency | Stages of Heating | Motor Type             | Heating Input (BTUH)  | AC Max. Capacity                   | Major Series          | Width                              | Position                  | NOx               | Controls                   | Minor Series   | Option Code       |
| R - Ruud | 80 - 80% AFUE      | 1 - Single-Stage  | V - ECM Variable Speed | 050 - 50,000 [14.7 kW]<br>070 - 70,000 [20.5 kW]<br>100 - 100,000 [29.3 kW] | 4 - 4 ton drive<br>5 - 5 ton drive | A - 1st Design Series | 17 - 17.5" Width<br>21 - 21" Width | UH - Upflow<br>Horizontal | U - Ultra Low NOx | C - Communicating, EcoNet® | A - 1st Series | P - Premium Grade |

[ ] Designates Metric Conversions

| AVAILABLE MODELS   |
|--------------------|
| R801V0504A17UHUCAP |
| R801V0704A17UHUCAP |
| R801V1005A21UHUCAP |

| STANDARD EQUIPMENT                            |
|---|
| Complete assembly and wiring                  |
| Condensate switch connection                  |
| Constant CFM variable speed motor             |
| Cool fan off delay                            |
| Direct drive                                  |
| Electronic air cleaner connections            |
| EXV connection                                |
| Flame sense current diagnostics               |
| Fully insulated heat exchanger cabinet        |
| Humidifier connections                        |
| Limit controls                                |
| Low speed continuous fan option               |
| Manual shutoff valve                          |
| On demand dehumidification                    |
| One-hour automatic retry                      |
| Outdoor air temperature connection            |
| Power and self-test diagnostics               |
| Pressure switches                             |
| Primary stainless steel heat exchanger        |
| Redundant main gas control                    |
| Return air temp sensor connection             |
| Suction pressure/evap. temperature connection |
| Suction temperature connection                |
| Supply air temperature connection             |
| Transformer                                   |
| Variable speed 3 phase induced draft motor    |

NOTE: A thermostat is not included as standard equipment

**WARNING**  
 THIS FURNACE IS NOT APPROVED  
 OR RECOMMENDED  
 FOR USE IN MOBILE HOMES

## Physical Data and Specifications – Upflow Models

| MODEL NUMBERS R801V<br>1stg VS-CT UP/HZ SERIES | R801V<br>0504A17UHUCAP  | R801V<br>0704A17UHUCAP  | R801V<br>1005A21UHUCAP |
|--|-------------------------|-------------------------|------------------------|
| Input-BTU/Hr [kW]                              | 50,000 [15]             | 70,000 [20.5]           | 100,000 [29]           |
| Heating Capacity BTU/Hr [kW] ①                 | 40,000 [12]             | 56,000 [16.4]           | 80,000 [23]            |
| Heat Ext. Static Pressure [kPa]                | .18 [.05]               | .20 [.05]               | .28 [.07]              |
| Blower (D x W) [mm]                            | 11 x 6<br>[279 x 152]   | 11 x 7<br>[279 x 178]   | 11 x 10<br>[279 x 254] |
| Motor H.P. [W]<br>Type                         | 3/4 [373]<br>VS-CT(ECM) | 3/4 [560]<br>VS-CT(ECM) | 1 [746]<br>VS-CT(ECM)  |
| Min. Circuit Ampacity                          | 13                      | 13                      | 17                     |
| Min. Overload Protection Device                | 15                      | 15                      | 20                     |
| Max. Overload Protection Device                | 20                      | 20                      | 25                     |
| Motor Full Load Amps                           | 8.8                     | 8.8                     | 11.1                   |
| Heating CFM [L/s]                              | 735 [334]               | 1020 [464]              | 1525 [693]             |
| MAX Cooling CFM [L/s]                          | 1650 [779]              | 1650 [779]              | 1980 [934]             |
| MIN Cooling CFM [L/s]                          | 300 [142]               | 300 [142]               | 500 [236]              |
| Fan CFM [L/s]                                  | 800 [378]               | 800 [378]               | 1000 [472]             |
| Max. E.S.P. (In. W.C.) [kPa]                   | 1.0 [0.25]              | 1.0 [0.25]              | 1.0 [0.25]             |
| Temperature Rise Range °F<br>[°C]              | 35-65<br>[19.4-36.1]    | 35-65<br>[19.4-36.1]    | 35-65<br>[19.4-36.1]   |
| Approx. Shipping Weight (Lbs.) [kg]            | 125 [50]                | 125 [57]                | 140 [64]               |
| AFUE ②   | 80.0%                   | 80.0%                   | 80.0%                  |

NOTES: All models are 115V, 60HZ, 1 Ph. Gas connection size for all models is 1/2" [12 mm] N.P.T.

① This model does not require any component changes at elevations 0-5,500 ft. above sea level. At elevations higher than 2,000 ft. these models do require a 2% de-rate for every 1,000 ft. of elevation above sea level.

② In accordance with D.O.E test procedures.

[ ] Designates Metric Conversions

## Upflow Application

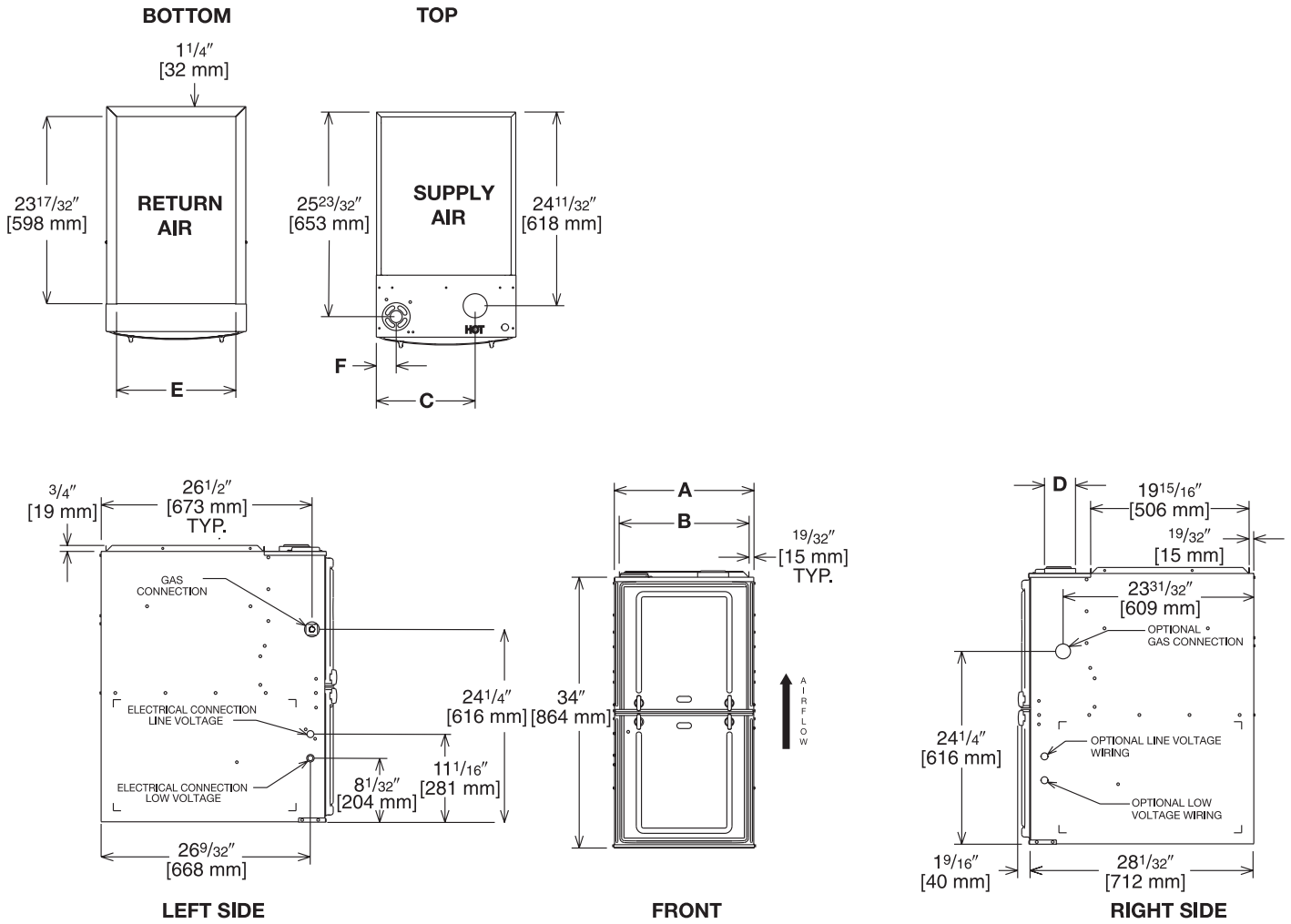


Illustration  
ST-A1220-04-00  
FIGURE 1

## Dimensional Data – Upflow Model

| MODEL<br>R801V- | A            | B              | C            | D | E            | F          | MINIMUM CLEARANCE (IN.) [mm] |               |      |        |        |           | SHIP<br>WGTS.<br>(LBS.) [kg] |
|-----------------|--------------|----------------|--------------|---|--------------|------------|------------------------------|---------------|------|--------|--------|-----------|------------------------------|
|                 |              |                |              |   |              |            | LEFT<br>SIDE                 | RIGHT<br>SIDE | BACK | TOP    | FRONT  | VENT      |                              |
| 050/070         | 17 1/2 [445] | 16 11/32 [415] | 12 3/8 [314] | ① | 15 [381]     | 2 1/2 [64] | 0                            | 3 [76] ②      | 0    | 1 [25] | 3 [76] | 6 [152] ③ | 125 [57]                     |
| 100             | 21 [533]     | 19 27/32 [504] | 14 1/8 [359] | ① | 18 1/2 [470] | 2 1/2 [64] | 0                            | 0             | 0    | 1 [25] | 3 [76] | 6 [152] ③ | 140 [64]                     |

NOTES: ① May require a 4" [102 mm] or 5" [127 mm] adapter.

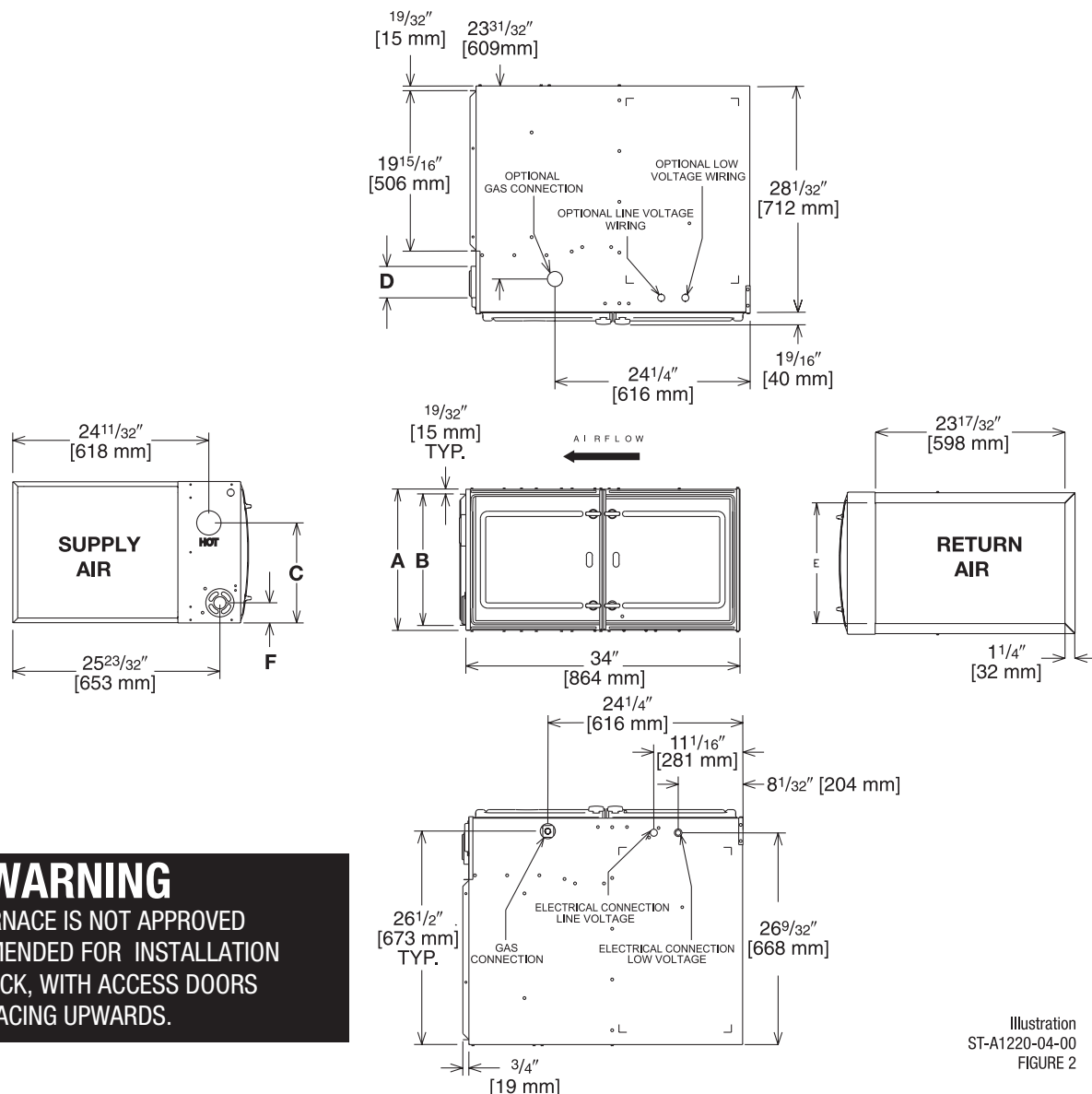
② May be 0" [0 mm] with type B vent.

③ May be 1" [25 mm] with type B vent.

Furnaces must be vented in accordance with the National Fuel Gas Code, ANSI Z223.1 and in accordance with local codes.

[ ] Designates Metric Conversions

## Horizontal Application



**WARNING**  
THIS FURNACE IS NOT APPROVED  
OR RECOMMENDED FOR INSTALLATION  
ON ITS BACK, WITH ACCESS DOORS  
FACING UPWARDS.

Illustration  
ST-A1220-04-00  
FIGURE 2

## Dimensional Data – Horizontal Model

| MODEL<br>R801V- | A                                    | B                                      | C                                    | D | E                                    | F                                  | MINIMUM CLEARANCE (IN.) [mm] |                    |      |        |        |           | SHIP<br>WGTS.<br>(LBS.) [kg] |
|-----------------|--------------------------------------|--|--------------------------------------|---|--------------------------------------|------------------------------------|------------------------------|--------------------|------|--------|--------|-----------|------------------------------|
|                 |                                      |  |                                      |   |                                      |                                    | SUPPLY<br>AIR SIDE           | RETURN<br>AIR SIDE | BACK | TOP    | FRONT  | VENT      |                              |
| 050/070         | 17 <sup>1</sup> / <sub>2</sub> [445] | 16 <sup>11</sup> / <sub>32</sub> [415] | 12 <sup>3</sup> / <sub>8</sub> [314] | ① | 15 [381]                             | 2 <sup>1</sup> / <sub>2</sub> [64] | 3 [76] ②                     | 3 [76] ②           | 0    | 1 [25] | 3 [76] | 6 [152] ③ | 125 [57]                     |
| 100             | 21 [533]                             | 19 <sup>27</sup> / <sub>32</sub> [504] | 14 <sup>1</sup> / <sub>8</sub> [359] | ① | 18 <sup>1</sup> / <sub>2</sub> [470] | 2 <sup>1</sup> / <sub>2</sub> [64] | 0                            | 0                  | 0    | 1 [25] | 3 [76] | 6 [152] ③ | 140 [64]                     |

NOTES: ① May require a 4" [102 mm] or 5" [127 mm] adapter.

② May be 0" [0 mm] with type B vent.

③ May be 1" [25 mm] with type B vent.

Furnaces must be vented in accordance with the National Fuel Gas Code, ANSI Z223.1 and in accordance with local codes.

[ ] Designates Metric Conversions

## Blower Performance Data

| TARGET GAS HEATING AIRFLOWS                    |                   |                    |                    |
|--|-------------------|--------------------|--------------------|
|  | R81V0504A17UHUCAP | R801V0704A17UHUCAP | R801V1005A21UHUCAP |
| Factory High Heating CFM [L/s]                 | 735 [334]         | 1020 [464]         | 1525 [693]         |
| High Heat Side Return CFM [L/s]                | 794 [361]         | 1100 [500]         | 1647 [749]         |
| High Heat Approx. $\pm 7^{\circ}\text{F}$ CFM  | 662 [301]         | 918 [417]          | 1373 [624]         |
| High Heat Approx. $\pm 12^{\circ}\text{F}$ CFM | 611 [278]         | 847 [385]          | 1266 [575]         |

[ ] Designates Metric Conversions



**BOTTOM RETURN FILTER RACK FOR  
UPFLOW APPLICATION: RXGF-CB**

**SIDE RETURN FILTER RACK: RXGF-CD**

| FILTER RACK FILTER SIZES* INCHES [mm] |  |  |
|---------------------------------------|--|--|
| MODEL                                 | RXGF-CB<br>(UPFLOW/<br>HORIZONTAL)                 | RXGF-CD<br>(UPFLOW)<br>SIDE RETURN                 |
| R801VA050/<br>R801VA070               | 15 <sup>3</sup> / <sub>4</sub> x 25<br>[400 x 635] | 15 <sup>3</sup> / <sub>4</sub> x 25<br>[400 x 635] |
| R801VA100                             | 19 <sup>1</sup> / <sub>4</sub> x 25<br>[489 x 635] | 15 <sup>3</sup> / <sub>4</sub> x 25<br>[400 x 635] |

**WARNING** - Taking return air from back of the furnace is NOT permitted.

**Indoor Coil Casings**

| MODEL<br>NUMBER |
|-----------------|
| RXBC-D17AI      |
| RXBC-D21AI      |
| RXBC-D21BI      |
| RXBC-D24AI      |

[ ] Designates Metric Conversions

**WARNING: IMPORTANT NOTICE**

A SOLID METAL BASE PLATE (SEE TABLE) MUST BE IN PLACE WHEN THE FURNACE IS INSTALLED WITH SIDE AIR RETURN DUCTS. FAILURE TO INSTALL A BASE PLATE COULD CAUSE PRODUCTS OF COMBUSTION TO BE CIRCULATED INTO THE LIVING SPACE AND CREATE POTENTIALLY HAZARDOUS CONDITIONS.

| FURNACE<br>WIDTH<br>IN. [mm]         | SOLID<br>BOTTOM<br>KIT NO. | BASE<br>PLATE NO. | BASE<br>PLATE SIZE<br>IN. [mm]   |
|--------------------------------------|----------------------------|-------------------|--|
| 17 <sup>1</sup> / <sub>2</sub> [445] | RXGB-D17                   | AE-61874-02       | 15 <sup>1</sup> / <sub>8</sub> x 23 <sup>9</sup> / <sub>16</sub> [384 x 598] |
| 21 [533]                             | RXGB-D21                   | AE-61874-03       | 18 <sup>5</sup> / <sub>8</sub> x 23 <sup>9</sup> / <sub>16</sub> [473 x 598] |

**For High Altitudes:**

**OPTION CODE FOR HIGH ALTITUDE: U.S.**

None required for high altitudes.

**HIGH ALTITUDE CONVERSION KITS: U.S.**

None required for high altitudes.

**80+ HIGH ALTITUDE INSTRUCTIONS**

**CAUTION:** Always follow National Fuel Gas Code (NFPA) guidelines when converting for high altitudes.

High altitude option codes are not required for these models. However, the burner orifice size needs to be recalculated and verified at elevations above 2000 ft. See Installation Instructions for more information.



## THE ECONET® SMART THERMOSTAT

### BUILT-IN WIFI

### 4.3" LCD TOUCH SCREEN

**LOCAL WEATHER** – Current conditions plus 6-day forecast

**5 OPERATING MODES** – Heat, Cool, Auto, Emergency Heat and Fan Only

**7-DAY PROGRAMMABLE SCHEDULE** – Offers comfort without thought

**ONE-TOUCH AWAY** – Quickly switch to your energy-saving away preferences

**VACATION SCHEDULING** – Allows you to save while you're away and come home to comfort

**STANDBY SCREEN** – Displays indoor temperature and current weather



**UETST700SYS**

## OPERATIONAL FEATURES

**AUTOMATIC CHANGEOVER** – Transitions between heating and cooling automatically to keep the house comfortable

**INTEGRATED WATER CONTROL** – Enables easy water heater management

**SMOOTH ARRIVAL** – Prompts the system to start ahead of schedule to ensure the home is at the desired temperature at the scheduled time

**HUMIDITY CONTROL** – Supports humidifier accessories or over-cool based dehumidification

**DETAILED OPERATING STATUS** – View pertinent equipment status information and run times

**CONTINUOUS FAN** – Offers 5 speeds (Low, Medium Low, Medium, Medium High, High)

**SHORT-CYCLE PROTECTION** – Avoids damage to equipment from short run cycles

## MONITORING & REMOTE CONTROL FEATURES

**ACTIVE MONITORING** – Alerts to problems that need immediate attention

**REMOTE CONTROL** – Allows adjusting of comfort and settings from anywhere using a mobile device

**SERVICE ALERTS** – Sends routine maintenance reminders

**AIR FILTER MONITORING** – Detects when it's time to replace the air filter

**ALARM HISTORY** – Displays time-stamped alarm codes with clear descriptions





**GENERAL TERMS OF LIMITED WARRANTY\***

Ruud will furnish a replacement for any part of this product which fails in normal use and service within the applicable period stated, in accordance with the terms of the limited warranty.

**\*For complete details of the Limited and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.**

Conditional Parts  
(Registration Required)..... Ten (10) Years  
Heat Exchanger ..... Twenty (20) Years

**Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.**

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*In keeping with its policy of continuous progress and product improvement, Ruud reserves the right to make changes without notice.*

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