**Rheem**

The new degree of comfort.™

# Rheem *Classic Plus*® Series
# Two-Stage Air Conditioners

## RA17 Series

Efficiencies up to 17 SEER/13 EER
Nominal Sizes 2, 3, 4 & 5 Ton
[7.03, 10.6, 14.06 & 17.6 kW]
Cooling Capacities 17.3 to 60.5 kBTU
[5.7 to 17.7 kW]

*"Proper sizing and installation of equipment is critical to achieve optimal performance. Split system air conditioners and heat pumps must be matched with appropriate coil components to meet Energy Star. Ask your Contractor for details or visit www.energystar.gov."*

**EcoNet**™

- EcoNet™ Enabled product. The EcoNet Smart Home System provides advanced air & water control for maximum energy savings and ideal comfort.
- New composite base pan – dampens sound, captures louver panels, eliminates corrosion and reduces number of fasteners needed
- Powder coat paint system – for a long lasting professional finish
- The Two Stage Copeland Scroll™ UltraTech™ Compressor modulates between two capacity settings – 67% and 100% – providing more precise temperature control, lower humidity and greater efficiency in comparison to single stage compressors. It uses 70% fewer moving parts which also increases efficiency and reliability.
- Modern cabinet aesthetics – increased curb appeal with visually appealing design
- Curved louver panels – provide ultimate coil protection, enhance cabinet strength, and increased cabinet rigidity
- Optimized fan orifice – optimizes airflow and reduces unit sound
- Rust resistant screws – confirmed through 1500-hour salt spray testing
- PlusOne™ **Expanded Valve Space** – 3"-4"-5" service valve space – provides a minimum working area of 27-square inches for easier access

- PlusOne™ **Triple Service Access** – 15" wide, industry leading corner service access – makes repairs easier and faster. The two fastener removable corner allows optimal access to internal unit components. Individual louver panels come out once fastener is removed, for faster coil cleaning and easier cabinet reassembly
- Diagnostic service window with two-fastener opening – provides access to the high and low pressure.
- External gauge port access – allows easy connection of "low-loss" gauge ports
- Single-row condenser coil – makes unit lighter and allows thorough coil cleaning to maintain "out of the box" performance
- 35% fewer cabinet fasteners and fastener-free base – allow for faster access to internal components and hassle-free panel removal
- Service trays – hold fasteners or caps during service calls
- QR code – provides technical information on demand for faster service calls
- Fan motor harness with extra long wires allows unit top to be removed without disconnecting fan wire.
- High and low pressure standard on all models.

INTEGRATED HOME COMFORT

## Standard Feature Table

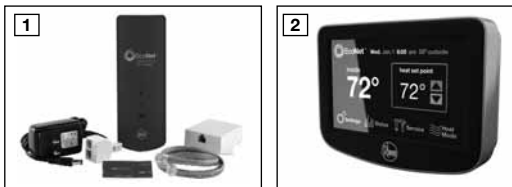| STANDARD FEATURES | | | | |
|---|---|---|---|---|
| Feature | 24 | 36 | 48 | 60 |
| R-410A Refrigerant | √ | √ | √ | √ |
| Maximum SEER | 17 | 17 | 17 | 16 |
| Maximum EER | 13 | 13 | 13 | 12.5 |
| EcoNet Enabled | √ | √ | √ | √ |
| Two Stage Copeland Scroll™ UltraTech™ Compressor | √ | √ | √ | √ |
| Field Installed Filter Drier | √ | √ | √ | √ |
| Front Seating Service Valves | √ | √ | √ | √ |
| Internal Pressure Relief Valve | √ | √ | √ | √ |
| Internal Thermal Overload | √ | √ | √ | √ |
| Long Line capability | √ | √ | √ | √ |
| Low Ambient capability with Kit | √ | √ | √ | √ |
| 3-4-5 Expanded Valve Space | √ | √ | √ | √ |
| Composite Basepan | √ | √ | √ | √ |
| 2 Screw Control Box Access | √ | √ | √ | √ |
| 15" Access to Internal Components | √ | √ | √ | √ |
| Quick release louver panel design | √ | √ | √ | √ |
| No fasteners to remove along bottom | √ | √ | √ | √ |
| Optimized Venturi Airflow | √ | √ | √ | √ |
| Single row condenser coil | √ | √ | √ | √ |
| Powder coated paint | √ | √ | √ | √ |
| Rust resistant screws | √ | √ | √ | √ |
| QR code | √ | √ | √ | √ |
| External gauge ports | √ | √ | √ | √ |
| Service trays | √ | √ | √ | √ |

√ = Standard

## Available SKUs

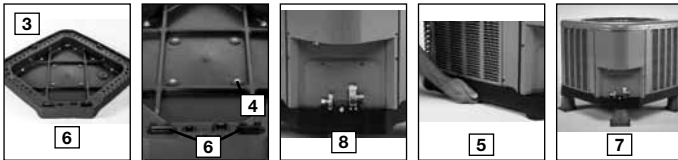| Available Models | Description |
|---|---|
| RA1724AJ2CB | *Classic Plus®* Series 2 ton 17 SEER Two Stage Air Conditioner-208/230/1/60 |
| RA1736AJ2CB | *Classic Plus®* Series 3 ton 17 SEER Two Stage Air Conditioner-208/230/1/60 |
| RA1748AJ2CB | *Classic Plus®* Series 4 ton 17 SEER Two Stage Air Conditioner-208/230/1/60 |
| RA1760AJ2CB | *Classic Plus®* Series 5 ton 17 SEER Two Stage Air Conditioner-208/230/1/60 |

# Introduction to RA17 Air Conditioner

The RA17 is our EcoNet Enabled 17 SEER Two-Stage Air Conditioner and is part of the Rheem Air Conditioner product line that extends from 13 to 20 SEER. This highly featured and reliable air conditioner is designed for years of reliable, efficient operation when matched with Rheem indoor aluminum evaporator coils and furnaces or air handler units with aluminum evaporators.

The RA17 is exclusively designed to operate with the EcoNet Smart Home System. Developed by Rheem, The EcoNet Smart Home System allows homeowners to manage select high-efficiency, EcoNet Enabled air conditioners, heat pumps, gas furnaces, air handlers and water heaters from anywhere. EcoNet Enabled products in a home are connected through standard HVAC wiring; then, contractors have the option of adding an EcoNet WiFi kit (1) so the homeowner can access everything remotely through a free mobile app or mobile-friendly website. The Control Center (2) acts as both a thermostat for the heating and cooling system, and a remote control for connected water heaters.
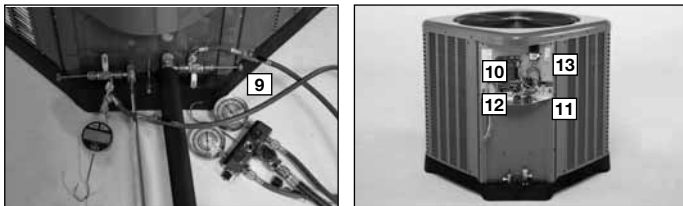



The EcoNet Smart Home System is the first integrated system for a home's Heating, Cooling and Water Heating equipment – allowing homeowners to manage the products that consume up to 65% of their home's energy. EcoNet sets Rheem, our distributor and contactor customers apart in the industry with a unique, advanced and efficient technology solution.
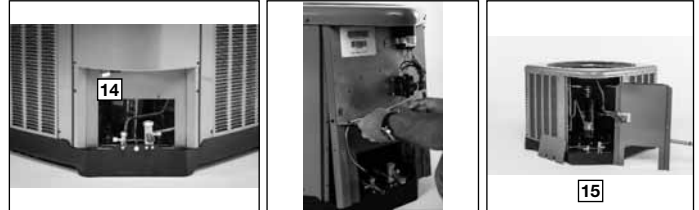


Our unique composite base (3) reduces sound emission, eliminates rattles, significantly reduces fasteners, eliminates corrosion and has integrated brass compressor attachment inserts (4). Furthermore it has incorporated into the design, water management features, means for hand placement (5) for unit maneuvering, screw trays (6) and inserts for lifting off unit pad. (7)

Service Valves (8) are rigidly mounted in the composite base with 3" between suction and discharge valves, 4" clearance below service valves and a minimum of 5" above the service valves, creating industry leading ease of installation. The minimum
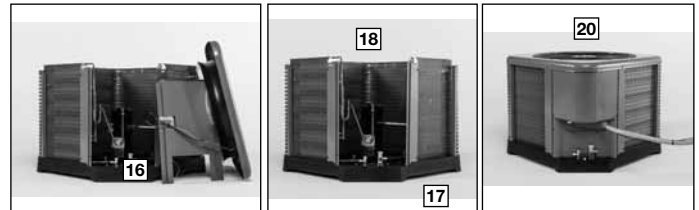


27 square-inches around the service valves allows ample room to remove service valve schrader prior to brazing, plenty of clearance for easy brazing of the suction and discharge lines to service valve outlets, easy access and hookup of low loss refrigerant gauges (9), and access to the service valve caps for opening. For applications with long-line lengths up to 250 feet total equivalent length, up to 200 feet condenser above evaporator, or up to 80 feet evaporator above condenser, the long-line instructions in the installation manual should be followed.

Controls are accessed from the corner of the unit by removing only two fasteners from the control access cover, revealing the industry's largest 15" wide and 14" tall control area (10). With all this room in the control area the high voltage electrical whip (11) can easily be inserted through the right size opening in the bottom of the control area. Routing it leads directly to contractor lugs for connection. The low voltage control wires (12) are easily connected to the units low voltage wiring. If contactor or capacitor (13) needs to be replaced there is more than adequate space to make the repair. The service window (14) can be removed by removing two screws, to access the high and low pressure switches and view interior of unit. (15) (High and low pressure is standard on RA17 models).




If in the rare event, greater access is needed to internal components, such as the compressor, the entire corner of the unit can be removed along with the top cover assembly to have unprecedented access to interior of the unit (16). Extra wire length is incorporated into each outdoor fan and compressor so top cover and control panel can be positioned next to the unit. With minimal effort the plug can be removed from the compressor and the outdoor fan wires can be removed from the capacitor to allow even more uncluttered access to the interior of the unit (17). Outdoor coil heights range from as short as 35" to 51". Disassembly to this degree and complete reassembly only takes a first time service technician less than 10 minutes. (17)




All units utilize strong formed louver panels which provide industry leading coil protection. Louver removal for coil cleaning is accomplished by removing one screw and lifting the panel out of the composite base pan. (19) All RA17 units utilize single row coils (18) making cleaning easy and complete, restoring the performance of the air conditioner back to out of the box performance levels year after year.

The outdoor fan motor has sleeve bearings and is inherently protected. The motor is totally enclosed for maximum protection from weather, dust and corrosion. ([20]) Access to the outdoor fan is made by removing four fasteners from the fan grille. The outdoor fan can be removed from the fan grille by removing 4 fasteners in the rare case outdoor fan motor fails.

Each cabinet has optimized composite ([21]) fan orifice assuring efficient and quiet airflow.



The entire cabinet has post powder paint ([22]) achieving 1000 hour salt spray rating, allowing the cabinet to retain its aesthetics throughout its life.



Two Stage Copeland Scroll™ UltraTech™ compressors with standard internal pressure relief and internal thermal overload are used on all capacities assuring longevity of high efficient and quiet operation for the life of the product.

All models come standard with high and low pressure controls. Each unit is shipped with filter drier for field installation and will trap any moisture or dirt that could contaminate the refrigerant system.



All cabinets have industry leading structural strength due to the composite base pan ([23]), interlocking corner post ([24]), formed curved louver panels ([25]) and drawn top cover ([26]) making it the most durable cabinet on the market today.

Each RA17 capacity has undergone rigorous psychometric testing to assure performance ratings of capacity, SEER and EER per AHRI Standard 210/240 rating conditions. Also each unit bears the UL mark and each unit is certified to UL 1995 safety standards.

Each unit has undergone specific strain and modal testing to assure tubing ([27]) is outside the units natural frequency and that the suction and discharge lines connected to the compressor withstand any starting, steady state operation, or shut down forces imposed by the compressor.

All units have been sound tested in sound chamber to AHRI 270 rating conditions, and A-weighted Sound Power Level tables produced, assuring units have acceptable noise qualities (see page 10). Each unit has been ran in cooling operation at 95°F and 82°F and sound ratings for the RA17 range from as low as 72.3 dBA to 76.7 dBA.

All units have been ship tested to assure units meet stringent "over the road" shipping conditions.

As manufactured, all units in the RA17 family have cooling capability to 55 °F. Addition of low ambient control will allow the unit to operate down to 0°F. Factory testing is performed on each unit. All component parts meet well defined specification and continually go through receiving inspections. Each component installed on a unit is scanned, assuring correct component utilization for a given unit capacity and voltage. All condenser coils are leak tested with pressurization test to 550#'s and once installed and assembled, each units' complete refrigerant system is helium leak tested. All units are fully charged from the factory for up to 15 feet of piping. All units are factory run tested. The RA17 has a 10-year conditional unit replacement warranty (registration required) and a 10 year limited parts warranty.

## Optional Accessories
**(Refer to accessory chart for model #)**

### Compressor Crankcase Heater
Protects against refrigerant migration that can occur during low ambient operation

### Compressor Sound Cover
• Reinforced vinyl compressor cover containing a 1½ inch thick batt of fiberglass insulation

• Open edges are sealed with a one-inch wide hook and loop fastening tape

### Compressor Hard Start Kit
• Single-phase units are equipped with a PSC compressor motor, this type of motor normally does not need a potential relay and start capacitor

• Kit may be required to increase the compressor starting torque, in conditions such as low voltage

### Low Ambient Kit
• Air conditioners operate satisfactorily in the cooling mode down to 55°F outdoor air temperature without any additional controls

• This Kit can be added in the field enabling unit to operate properly down to 0° in the cooling mode

• Crankcase heater and freezestat should be installed on compressors equipped with a low ambient kit

### 3"/6"/12"
• Gray high density polyethylene feet are available to raise unit off of mounting surface away from moisture

### Decorative Top
• Can be installed on fan grille

# Accessories
## EcoNet Control Center

The EcoNet Control Center serves as the hub of communication for a home's Heating, Cooling and Water Heating systems, and is required to operate an EcoNet Enabled Heating & Cooling system in a fully communicating mode.

**RETST601SYS**

## WiFi Kit for Heating and Cooling Systems

The WiFi kit is required to remotely operate EcoNet Enabled Heating and Cooling Systems from the EcoNet Web portal and mobile apps.

**REWRA630SYS**

## 90%+ AFUE Gas Furnaces (For Reference)**

Model number example: R 96 V A 70 2 3 17 M S A

| Code | Category | Options |
|------|----------|---------|
| R | Brand | Rheem |
| 96 | Series | 90 - 90 AFUE; 92 - 92 AFUE; 95 - 95 AFUE; 96 - 96 AFUE; 97 - 97 AFUE |
| V | Motor | V - Variable speed; T - Constant Torque (X-13); P - PSC |
| A | Major Rev | A - 1st Design |
| 70 | Input BTU/HR | 040 - 42,000 [12.31 kW]; 060 - 56,000 [16.41 kW]; 070 - 70,000 [20.51 kW]; 085 - 84,000 [24.62 kW]; 100 - 98,000 [28.72 kW]; 115 - 112,000 [32.82 kW] |
| 2 | Stages | 1 - Single-stage; 2 - Two-stage; M - Modulating |
| 3 | Air Flow | 3 - up to 3 ton; 5 - 3 1/2 up to 5 ton |
| 17 | Cabinet Width | 14 - 14"; 17 - 17.5"; 21 - 21"; 24 - 24.5" |
| M | Configuration | M - Multi |
| S | Nox | X - Low Nox; S - Standard |
| A | Minor Rev | A - 1st Design |

## 80% AFUE Gas Furnaces (For Reference)**

Model number example: R 80 2 V A 075 A 3 17 M S A

| Code | Category | Options |
|------|----------|---------|
| R | Brand | Rheem |
| 80 | Series | 80 - 80+ AFUE |
| 2 | Stages | 1 - Single-stage; 2 - Two-stage |
| V | Motor | V - Variable speed; T - Constant Torque (X-13); P - PSC premium; S - PSC standard |
| A | Major Rev | A - 1st Design |
| 075 | Input BTU/HR | 050 - 50,000 [15 kW]; 075 - 75,000 [22 kW]; 100 - 100,000 [29 kW]; 125 - 125,000 [37 kW]; 150 - 150,000 [44 kW] |
| A | Major Rev | A - 1st Design |
| 3 | Air Flow | 3 - up to 3 ton; 4 - 2 1/2 to 4 ton; 5 - 3 1/2 up to 5 ton |
| 17 | Cabinet Width | 14 - 14"; 17 - 17.5"; 21 - 21"; 24 - 24.5" |
| M | Configuration | M - Multi; D - Down; Z - Down & zero clearance down flow |
| S | Nox | X - Low Nox; S - Standard |
| A | Minor Rev | A - 1st Design |

## Air Handlers (For Reference)**

Model number example: R H 2 T 36 S 17 E A C A A 000 *

| Code | Category | Options |
|------|----------|---------|
| R | Brand | Rheem |
| H | Product Category | H - Air Handler |
| 2 | Stages of Airflow | 1 - Single-Stage; 2 - Two-Stage; M - Modulating |
| T | Motor Type | V - Variable Speed; T - Constant Torque; P - PSC |
| 36 | Capacity BTU/HR | 24 - 24,000 [7.03 kW]; 36 - 36,000 [10.55 kW]; 48 - 48,000 [14.07 kW]; 60 - 60,000 [17.58 kW] |
| S | Coil Size | S - Standard Eff.; M - Mid Eff.; H - High Eff. |
| 17 | Width | 14 - 14"; 17 - 17.5"; 21 - 21"; 24 - 24.5" |
| E | Metering Device | T - TEV; E - EEV; P - Piston |
| A | Major Series* | A - 1st Design |
| C | Controls | C - Communicating; N - Non-comm |
| A | Minor Series** | A - 1st Design |
| A | Voltage | A - 1ph, 115/60; J - 1ph, 208-240/60; D - 3ph, 480/60 |
| 000 | Factory Heat Cap | 00 - no factory heat with option code |
| * | Option Code | *TBD |

**Model number ID's are for reference only. See available SKU page of applicable spec sheet for table of available SKU's for a specific model.

[ ] Designates Metric Conversions

## Physical Data

| Model No. | RA1724A | RA1736A | RA1748A | RA1760A |
|---|---|---|---|---|
| **Nominal Tonnage** | 2.0 | 3.0 | 4.0 | 5.0 |
| **Valve Connections** | | | | |
| Liquid Line O.D. – in. | 3/8 | 3/8 | 3/8 | 3/8 |
| Suction Line O.D. – in. | 3/4 | 3/4 | 7/8 | 7/8 |
| **Refrigerant (R-410A) furnished oz.[1]** | 128 | 151 | 204 | 223 |
| **Compressor Type** | Scroll | | | |
| **Outdoor Coil** | | | | |
| Net face area – Outer Coil | 19.8 | 22.2 | 32.3 | 32.3 |
| Net face area – Inner Coil | — | — | — | — |
| Tube diameter – in. | 0.375 | 0.375 | 0.375 | 0.375 |
| Number of rows | 1 | 1 | 1 | 1 |
| Fins per inch | 20 | 22 | 22 | 22 |
| **Outdoor Fan** | | | | |
| Diameter – in. | 24 | 24 | 26 | 26 |
| Number of blades | 3 | 3 | 3 | 3 |
| Motor hp | 1/5 | 1/5 | 1/2 | 1/2 |
| CFM | 3326 | 3540 | 4251 | 5133 |
| RPM | 850 | 820 | 646 | 825 |
| watts | 112 | 112 | 132 | 113 |
| **Shipping weight – lbs.** | 200 | 209 | 297 | 298 |
| **Operating weight – lbs.** | 193 | 202 | 290 | 291 |

## Electrical Data

| | RA1724A | RA1736A | RA1748A | RA1760A |
|---|---|---|---|---|
| **Line Voltage Data (Volts-Phase-Hz)** | 208/230-1-60 | 208/230-1-60 | 208/230-1-60 | 208/230-1-60 |
| **Maximum overcurrent protection (amps)[2]** | 25 | 35 | 50 | 70 |
| **Minimum circuit ampacity[3]** | 16 | 21 | 32 | 42 |
| **Compressor** | | | | |
| Rated load amps | 11.7 | 15.3 | 21.2 | 28.8 |
| Locked rotor amps | 58.3 | 83 | 104 | 152.9 |
| **Condenser Fan Motor** | | | | |
| Full load amps | 1.4 | 1.2 | 5.3 | 5.3 |
| Locked rotor amps | — | — | — | — |

[1]Refrigerant charge sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the installation instructions for information about set length and additional refrigerant charge required.
[2]HACR type circuit breaker of fuse.
[3]Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.

# Accessories

| Model No. | | RA1724 | RA1736 | RA1748 | RA1760 |
|---|---|---|---|---|---|
| EcoNet Control Center | | RETST601SYS | RETST601SYS | RETST601SYS | RETST601SYS |
| WiFi Kit for Heating & Cooling | | REWRA630SYS | REWRA630SYS | REWRA630SYS | REWRA630SYS |
| Compressor crankcase heater* | | 44-17402-49 | 44-17402-49 | 44-101884-05 | 44-101884-05 |
| Low ambient control | | RXAD-A08 | RXAD-A08 | RXAD-A08 | RXAD-A08 |
| Freeze Stat | | 50313 | 50313 | 50313 | 50313 |
| Compressor sound cover | | 68-23427-26 | 68-23427-26 | 68-25217-10 | 68-25217-10 |
| Compressor hard start kit | | SK-A1 | SK-A1 | SK-A1 | SK-A1 |
| Heat pump Riser 6 in. | | 686020 | 686020 | 686020 | 686020 |
| Liquid Line Solenoid (24 VAC, 50/60 Hz) | Solenoid Valve | 200RD2T3TVLC | 200RD2T3TVLC | 200RD3T3TVLC | 200RD3T3TVLC |
| | Solenoid Coil | 61-AMG24V | 61-AMG24V | 61-AMG24V | 61-AMG24V |
| Liquid Line Solenoid (120/240 VAC, 50/60 Hz) | Solenoid Valve | 200RD2T3TVLC | 200RD2T3TVLC | 200RD3T3TVLC | 200RD3T3TVLC |
| | Solenoid Coil | 61-AMG120/240V | 61-AMG120/240V | 61-AMG120/240V | 61-AMG120/240V |

*Crankcase Heater recommended with Low Ambient Kit.

# Weighted Sound Power Level (dBA)

| Unit Size - Voltage, Series | Standard Rating (dBA) | TYPICAL OCTAVE BAND SPECTRUM (dBA without tone adjustment) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| RA1724A | 72.5 | 48.6 | 53.7 | 62.9 | 63.0 | 60.5 | 57.3 | 54.6 |
| RA1736A | 72.3 | 53.1 | 52.7 | 60.9 | 62.4 | 61.2 | 58.4 | 51.6 |
| RA1748A | 73.0 | 46.1 | 50.4 | 59.5 | 64.6 | 59.6 | 55.8 | 54.6 |
| RA1760A | 76.7 | 58.8 | 60.5 | 65.6 | 65.2 | 62.9 | 62.4 | 55.5 |

NOTE: Tested in accordance with AHRI Standard 270-08 (not listed in AHRI)

# Integrated Controls


EcoNet™

EcoNet is smart, new technology developed exclusively by Rheem that allows Heating, Cooling, and Water Heating products to communicate with each other on one integrated network.

### Easy to Setup, Easy to Use, Easy to Save

- Built with our 360°+1 design philosophy, it is optimized for Installability™, Performance, Integration & Serviceability
- Controls 65%† or more of a typical home's energy use from a single device
- Can reduce energy costs by up to 30%††

### Features

- Added support for new EEV (Electronic Expansion Valve) Air Handlers, Air Conditioners and Heat Pumps*
- Rapid installation with standard 4-wire configuration
- Automatically configures communicating equipment with optimal settings
- Adapts to home décor through interchangeable faceplates and adjustable background coloring
- Full-color, 4.7" LCD touchscreen display with easy-to-read icons and text
- Convenient date, time and indoor/outdoor temperature indications
- 5 operating modes with short-cycle protection (Heat, Cool, Auto, Emergency Heat, Fan Only)

- 7-Day programmable schedule with Smooth Arrival & Whole Home Vacation options
- Detailed operating status, alarm history, and audible alerts
- Supports humidifier accessories or over-cool based dehumidification
- One-touch access to Water Heater Management†††
- Easily manage from anywhere in the world with the compatible WiFi Module & EcoNet app for smart phones and tablets

### Warranty

- 5-Year limited warranty from date of installation

  † Source – Department of Energy

  †† When compared to non-programmable thermostats. Source: ENERGY STAR® for Programmable Thermostats

  ††† Requires wired connection to EcoNet Enabled Electric or Hybrid Water Heaters



### EcoNet™ Control Center
Home control with intuitive LCD touchscreen navigation

RETST601SYS

## EcoNet Control Center Compatibility

| OFFERINGS | HEATING & COOLING | | | | | | | | | | | WiFi Kit for HVAC REWRA630SYS | WATER HEATING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product Categories | Gas Furnaces | | Air Handlers | | Air Conditioners | | | | Heat Pumps | | | | Electric Tank Models Ending in EC2 | Hybrid Tank HB50 Models | Gas Powered Damper Tank Models |
| Models | R96V | R802V | RHMV* | RH2T* (EEV**) | RA20* | RASL-JEC | RA17 | RARL-JEC | RP20* | RP17* | RPRL-JEC | | | | |
| RETST601SYS | √ | √ | √ | √ | √ | √★ | √ | √★ | √ | √ | √★ | √ | √ | √ | |

*Available in 2015
**Electronic Expansion Valve (EEV) Models

## ★ Comfort Control² System™ Translator for EcoNet Required

Installation of the RETRN620CC2 Comfort Control² System™ Translator on the outdoor unit's control board is required to operate Comfort Control² System™ Air Conditioner and Heat Pump models (****-JEC) with an EcoNet Control Center in a fully communicating mode when matched with EcoNet Enabled Furnaces or Air Handlers*.