



**FRIEDRICH**

1 8 8 3

## Endeavor® Line F-Series™ Gas Furnaces



### FR921V

92% A.F.U.E.†

EcoNet® Enabled

Heating Stages: Single Stage

Motor Type: Constant CFM

Input Rates: 40 to 115 kBTU [11.7 to 33.7 kW]

Configuration Options: 4-Way Multi-Position



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

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## Features and Benefits

- **PlusOne® Energy Efficiency:** US South ENERGY STAR® certified, featuring 92% AFUE® across all model sizes
- **PlusOne Diagnostics:** With the Friedrich® 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 Friedrich Contractor App
- **PlusOne Ignition System:** Proven Direct Spark Ignition (DSI) for reliability and longevity
- **PlusOne Water Management System:** Friedrich-exclusive patented block drain sensor that automatically shuts off the furnace when the drain is blocked, and also alerts the contractor via diagnostic code
- **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>

<sup>1</sup>The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Rheem® is under license. Other trademarks and trade names are those of their respective owners. <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, Alexa and all related logos are trademarks of Amazon.com, Inc. or its affiliates.

Gas Furnaces

| FR             | 92                 | 1                 | V                         | 040                                                                                                                                                                    | 3                                  | A                        | 17                                                     | M4                   | S            | C                                       | A              | P                    |
|----------------|--------------------|-------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------|--------------------------------------------------------|----------------------|--------------|-----------------------------------------|----------------|----------------------|
| Brand          | Furnace Efficiency | Stages of Heating | Motor Type                | Heating Input                                                                                                                                                          | AC Max. Capacity                   | Major Series             | Width                                                  | Position             | NOx          | Controls                                | Minor Series   | Option Code          |
| FR - Friedrich | 92 - 92% AFUE      | 1 - Single Stage  | V - ECM<br>Variable Speed | 040 - 40K BTUH [11.7 kW]<br>060 - 60K BTUH [17.6 kW]<br>070 - 70K BTUH [20.5 kW]<br>085 - 85K BTUH [24.9 kW]<br>100 - 100K BTUH [29.3 kW]<br>115 - 115K BTUH [33.7 kW] | 3 - 3 ton drive<br>5 - 5 ton drive | A - 1st Design<br>Series | 17 - 17.5" Width<br>21 - 21" Width<br>24 - 24.5" Width | M4 - Multi-<br>4 Way | S - Standard | C - Communicating,<br>EcoNet, Bluetooth | A - 1st Series | P - Premium<br>Grade |

[ ] Designates Metric Conversions

| AVAILABLE MODELS    |
|---------------------|
| FR921V0403A17M4SCAP |
| FR921V0603A17M4SCAP |
| FR921V0703A17M4SCAP |
| FR921V0705A21M4SCAP |
| FR921V0855A21M4SCAP |
| FR921V1005A21M4SCAP |
| FR921V1155A24M4SCAP |

| STANDARD EQUIPMENT                                                  |
|---------------------------------------------------------------------|
| Condensate switch connection <sup>1</sup>                           |
| 100% safety lock out                                                |
| 29-4C stainless steel secondary heat exchanger design               |
| Adjustable cool fan off delay                                       |
| Aluminized steel primary heat exchanger design                      |
| Blocked Drain Sensor                                                |
| Blower compartment door safety switch                               |
| Bluetooth® setup and diagnostics                                    |
| Completely assembled and wired                                      |
| Direct drive motor                                                  |
| EcoNet® Thermostat connections                                      |
| Electronic on/off blower time control                               |
| Fully insulated heat exchanger cabinet                              |
| Humidistat terminal connection                                      |
| Induced draft motor                                                 |
| Limit controls                                                      |
| Low speed continuous fan option                                     |
| Manual shut-off valve                                               |
| Marked condensate hoses                                             |
| One hour automatic retry                                            |
| Power and self test diagnostics                                     |
| Pressure switch                                                     |
| PWM Controlled constant torque electrically commutated blower motor |
| Redundant main gas control                                          |
| Single stage heating thermostat connection                          |
| Solid bottom                                                        |
| Blower Insulation                                                   |
| Two plus stage cooling thermostat connection <sup>2</sup>           |

<sup>1</sup>When used with EcoNet Smart Thermostat only  
<sup>2</sup>When connected to three-speed or modulating AC/HP product

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

## Physical Data and Specifications—U.S. Models

| MODEL NUMBERS                                          | FR921V0403<br>A17M4SCAP | FR921V0603<br>A17M4SCAP | FR921V0703<br>A17M4SCAP | FR921V0705<br>A21M4SCAP | FR921V0855<br>A21M4SCAP | FR921V1005<br>A21M4SCAP | FR921V1155<br>A24M4SCAP |
|--------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| HIGH FIRE INPUT BTU/HR [kW] ①                          | 42,000 [12.30]          | 56,000 [16.41]          | 70,000 [20.51]          | 70,000 [20.51]          | 84,000 [24.61]          | 98,000 [28.72]          | 112,000 [32.82]         |
| HEATING CAPACITY BTU/HR [kW]                           | 39,900 [11.69]          | 53,200 [15.59]          | 66,500 [19.49]          | 66,500 [19.49]          | 79,800 [23.39]          | 93,100 [27.28]          | 106,400 [31.18]         |
| HIGH ALTITUDE OUTPUT<br>10% DERATE [kW] ②              | 35,910 [10.52]          | 47,880 [14.03]          | 59,850 [17.54]          | 59,850 [17.54]          | 71,820 [21.05]          | 83,790 [24.56]          | 95,760 [28.06]          |
| BLOWER (D x W) [mm]                                    | 11 x 7<br>[279 x 178]   | 11 x 8<br>[279 x 203]   | 11 x 8<br>[279 x 203]   | 11 x 10<br>[279 x 254]  | 11 x 10<br>[279 x 254]  | 11 x 10<br>[279 x 254]  | 11 x 11<br>[279 x 279]  |
| MOTOR H.P. [W]—TYPE                                    | 1/2 [373]<br>VS-CT(ECM) | 1/2 [373]<br>VS-CT(ECM) | 1/2 [373]<br>VS-CT(ECM) | 1 [746]<br>VS-CT(ECM)   | 1 [746]<br>VS-CT(ECM)   | 1 [746]<br>VS-CT(ECM)   | 1 [746]<br>VS-CT(ECM)   |
| MIN. CIRCUIT AMPACITY                                  | 10.00                   | 10.00                   | 10.00                   | 17.00                   | 16.00                   | 17.00                   | 17.00                   |
| MIN. OVERLOAD PROTECTION DEVICE                        | 15.00                   | 15.00                   | 15.00                   | 20.00                   | 20.00                   | 20.00                   | 20.00                   |
| MAX. OVERLOAD PROTECTION DEVICE                        | 15.00                   | 15.00                   | 15.00                   | 25.00                   | 25.00                   | 25.00                   | 25.00                   |
| Motor Full Load Amps                                   | 6.1                     | 6.1                     | 6.1                     | 12.4                    | 12.4                    | 11.1                    | 11.1                    |
| MAXIMUM EXT. STATIC PRESSURE<br>(IN. W.C.) [kPa]       | 1.0<br>[0.25]           | 1.0<br>[0.25]           | 1.0<br>[0.25]           | 1.0<br>[0.25]           | 1.0<br>[0.25]           | 1.0<br>[0.25]           | 1.0<br>[0.25]           |
| HEATING CFM [L/s]                                      | 990 [468]               | 1100 [520]              | 1200 [566]              | 1375 [649]              | 1735 [819]              | 1440 [680]              | 1650 [779]              |
| MAX Cooling CFM [L/s]                                  | 1240 [585]              | 1240 [585]              | 1240 [585]              | 1980 [934]              | 1980 [934]              | 1980 [934]              | 1980 [934]              |
| MIN Cooling CFM [L/s]                                  | 300 [142]               | 300 [142]               | 300 [142]               | 500 [236]               | 500 [236]               | 500 [236]               | 500 [236]               |
| Fan CFM [L/s]                                          | 600 [283]               | 600 [283]               | 600 [283]               | 1000 [472]              | 1000 [472]              | 1000 [472]              | 1000 [472]              |
| TEMPERATURE RISE-HIGH FIRE<br>RANGE IN DEGREES °F [°C] | 20 - 50<br>[11 - 28]    | 30 - 60<br>[17 - 33]    | 40 - 70<br>[22 - 39]    | 30 - 60<br>[17 - 33]    | 40 - 70<br>[23 - 39]    | 40 - 70<br>[22 - 39]    | 45 - 75<br>[25 - 42]    |
| APPROX. SHIPPING WEIGHT<br>(LBS.) [kg]                 | 123<br>[56]             | 128<br>[58]             | 133.5<br>[61]           | 146.5<br>[66]           | 150<br>[68]             | 155<br>[70]             | 190<br>[86.2]           |
| AFUE ③                                                 | 92.00%                  | 92.00%                  | 92.00%                  | 92.00%                  | 92.00%                  | 92.00%                  | 92.00%                  |

**NOTES:** All models are 115V, 60HZ, 1 phase Gas connection size for all models is 1/2" [13 mm] N.P.T.

① Installation instructions for high altitude derate.

② Canadian installations only.

③ In accordance with D.O.E. test procedures.

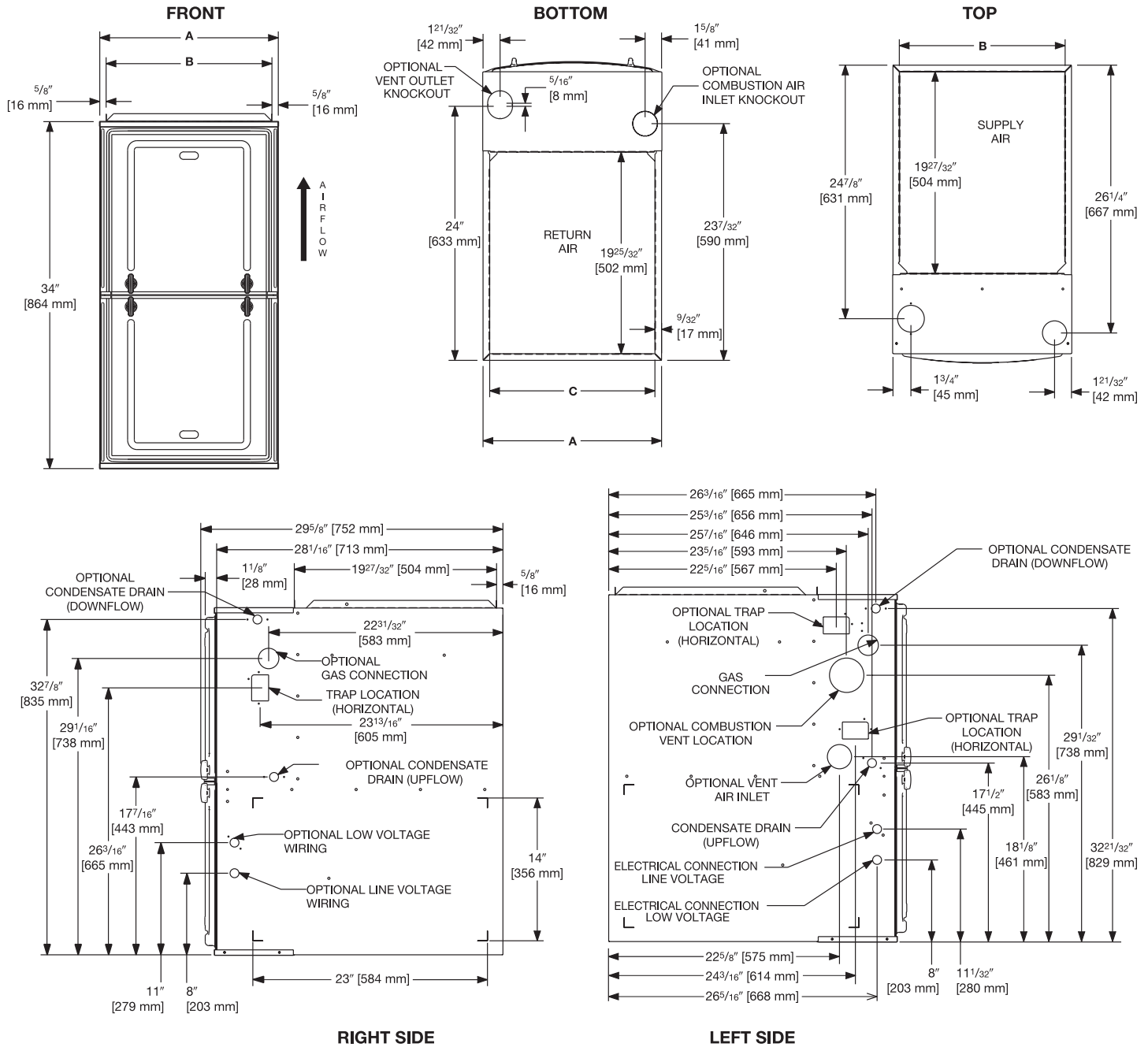
**NOTE:** Standard model complies with California low nox requirements up to 40ng/J.

This furnace does not meet air district requirements of 14 ng/J NOx emissions limit, and thus is subject to a mitigation fee of up to \$450.

This furnace is to be installed for propane firing only in air districts requiring 14 ng/J NOx emission limits. Operating in natural gas mode is in violation of these Rules.

[ ] Designates Metric Conversions

## Multi-Position Application



## Unit Dimensions (Clearance To Combustibles)

| MODEL<br>FR921V | LEFT<br>SIDE | MINIMUM CLEARANCE (IN.) [mm] |      |        |        |      | FLANGE DIMENSIONS |                |                |
|-----------------|--------------|------------------------------|------|--------|--------|------|-------------------|----------------|----------------|
|                 |              | RIGHT<br>SIDE                | BACK | TOP    | FRONT  | VENT | A                 | B              | C              |
| 040             | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 17 1/2 [445]      | 16 17/64 [413] | 16 13/64 [412] |
| 060             | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 17 1/2 [445]      | 16 17/64 [413] | 16 13/64 [412] |
| 070             | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 17 1/2 [445]      | 16 17/64 [413] | 16 13/64 [412] |
| 070 (wide)      | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 21 [533]          | 19 49/64 [502] | 19 45/64 [500] |
| 085             | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 21 [533]          | 19 49/64 [502] | 19 45/64 [500] |
| 100             | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 21 [533]          | 19 49/64 [502] | 19 45/64 [500] |
| 115             | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 24 1/2 [662]      | 23 17/64 [591] | 23 13/64 [589] |

\*A service clearance of at least 24" is recommended in front of all furnaces  
Supply and return depicted as upflow configuration.  
Flange configuration will vary depending on installation orientation.

[ ] Designates Metric Conversions

## Blower Performance Data

| TARGET GAS HEATING AIRFLOWS           |                         |                         |                         |                         |                         |                         |                         |
|---------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                       | FR921V0403<br>A17M4SCAP | FR921V0603<br>A17M4SCAP | FR921V0703<br>A17M4SCAP | FR921V0705<br>A21M4SCAP | FR921V0855<br>A21M4SCAP | FR921V1005<br>A21M4SCAP | FR921V1155<br>A24M4SCAP |
| Furnace Hi Heat CFM A (factory)       | 990 [468]               | 1100 [520]              | 1200 [566]              | 1375 [649]              | 1735 [819]              | 1440 [680]              | 1650 [779]              |
| Furnace Hi Heat CFM B (side return)   | 990 [468]               | 1188 [561]              | 1296 [612]              | 1550 [732]              | 1874 [884]              | 1691 [798]              | 1800 [850]              |
| Furnace Hi Heat CFM C (Approx. +7°F)  | 891 [421]               | 990 [468]               | 1080 [510]              | 1238 [584]              | 1562 [737]              | 1296 [612]              | 1485 [701]              |
| Furnace Hi Heat CFM D (Approx. +12°F) | 822 [388]               | 913 [431]               | 996 [470]               | 1141 [539]              | 1440 [680]              | 1195 [564]              | 1370 [647]              |

[ ] Designates Metric Conversions

## Vent Termination Kits:

**RXGY-E02:** Vertical/Horizontal Concentric Vent Termination Kit  
2" Pipe (US Only)

**RXGY-E02A:** Vertical/Horizontal Concentric Vent Termination Kit  
2" Pipe (US & Canadian)

**RXGY-E03:** Vertical/Horizontal Concentric Vent Termination Kit  
3" Pipe (US Only)

**RXGY-E03A:** Vertical/Horizontal Concentric Vent Termination Kit  
3" Pipe (US & Canadian)

**RXGY-G02:** Direct Vent Furnace Side Wall Vent 2" or 3" (US Only)

**RXGY-D05:** Combustion Air Drain Kit 2"

**RXGY-D06:** Combustion Air Drain Kit 3"

**NEUTRALIZER KIT:** RXGY-A01  
(Replacement Cartridge 54-22120-01)

**EXTERNAL BOTTOM FILTER (UPFLOW/HORIZONTAL) RACK:**  
RXGF-CB

**EXTERNAL SIDE (UPFLOW) FILTER RACK:** RXGF-CD

**EXTERNAL (DOWNFLOW) FILTER RACK:** RXGF-CC

## For High Altitudes:

**NOTE:** For Canadian installations only, an optional derate (manifold gas pressure reduction) method may be used to adjust the furnace for altitude. See Installation Instructions for more information. This optional method may **NOT** be used for U.S. installations. See installation instructions as appropriate orifice change is required.

**L.P. CONVERSION KIT:** RXGJ-FP38

**CONDENSATE PUMP KIT:** PROSTOCK & 1PCB151TUL

**DOWNFLOW/HORIZONTAL CONVERSION KIT:** RXGY-CK

**DOWNFLOW/HORIZONTAL LEFT ZERO CLEARANCE  
CONVERSION KIT:** RXGY-ZK

**COMBUSTIBLE FLOOR BASE:** RXGC-B17  
RXGC-B21  
RXGC-B24

| FILTER RACK FILTER SIZES* INCHES [mm] |                                                    |                                                    |                        |
|---------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------|
| MODEL                                 | RXGF-CB<br>(UPFLOW/<br>HORIZONTAL)                 | RXGF-CD<br>(UPFLOW)                                | RXGF-CC<br>(DOWNFLOW)  |
| FR921V(-)040                          | 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] | 14 x 20<br>[356 x 508] |
| FR921V(-)060                          | 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] | 14 x 20<br>[356 x 508] |
| FR921V(-)070                          | 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] | 14 x 20<br>[356 x 508] |
| FR921V(-)070<br>(wide)                | 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] | 12 x 20<br>[305 x 508] |
| FR921V(-)085                          | 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] | 14 x 20<br>[356 x 508] |
| FR921V(-)100                          | 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] | 14 x 20<br>[356 x 508] |
| FR921V(-)115                          | 22 <sup>3</sup> / <sub>4</sub> x 25<br>[578 x 635] | 15 <sup>3</sup> / <sub>4</sub> x 25<br>[400 x 635] | 14 x 20<br>[356 x 508] |

[ ] Designates Metric Conversions

## Indoor Coil Casings

| MODEL<br>NUMBER |
|-----------------|
| RXBC-D17A1      |
| RXBC-D21A1      |
| RXBC-D21B1      |
| RXBC-D24A1      |





When installed with applicable smart Friedrich residential heating & cooling and water heating products, the EcoNet Smart Thermostat works with those products to create a complete communicating ecosystem.

## 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



**CETST900SYS**

## 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



**FRIEDRICH**

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## GENERAL TERMS OF LIMITED WARRANTY\*

Friedrich® 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<br>(Registration Required)..... | Ten (10) Years   |
| Heat Exchanger .....                              | Limited Lifetime |

**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, manufacturer reserves the right to make changes without notice.

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