

# FUJITSU



## FF\*\*\*LM98 Series

98% A.F.U.E.†

Input Rates from 60 to 115 kBtu  
[11.57 to 33.71 kW]

Manufactured for

**Fujitsu General America, Inc.**

Fairfield, NJ



# FUJITSU MODULATING UPFLOW GAS FURNACE

## Features

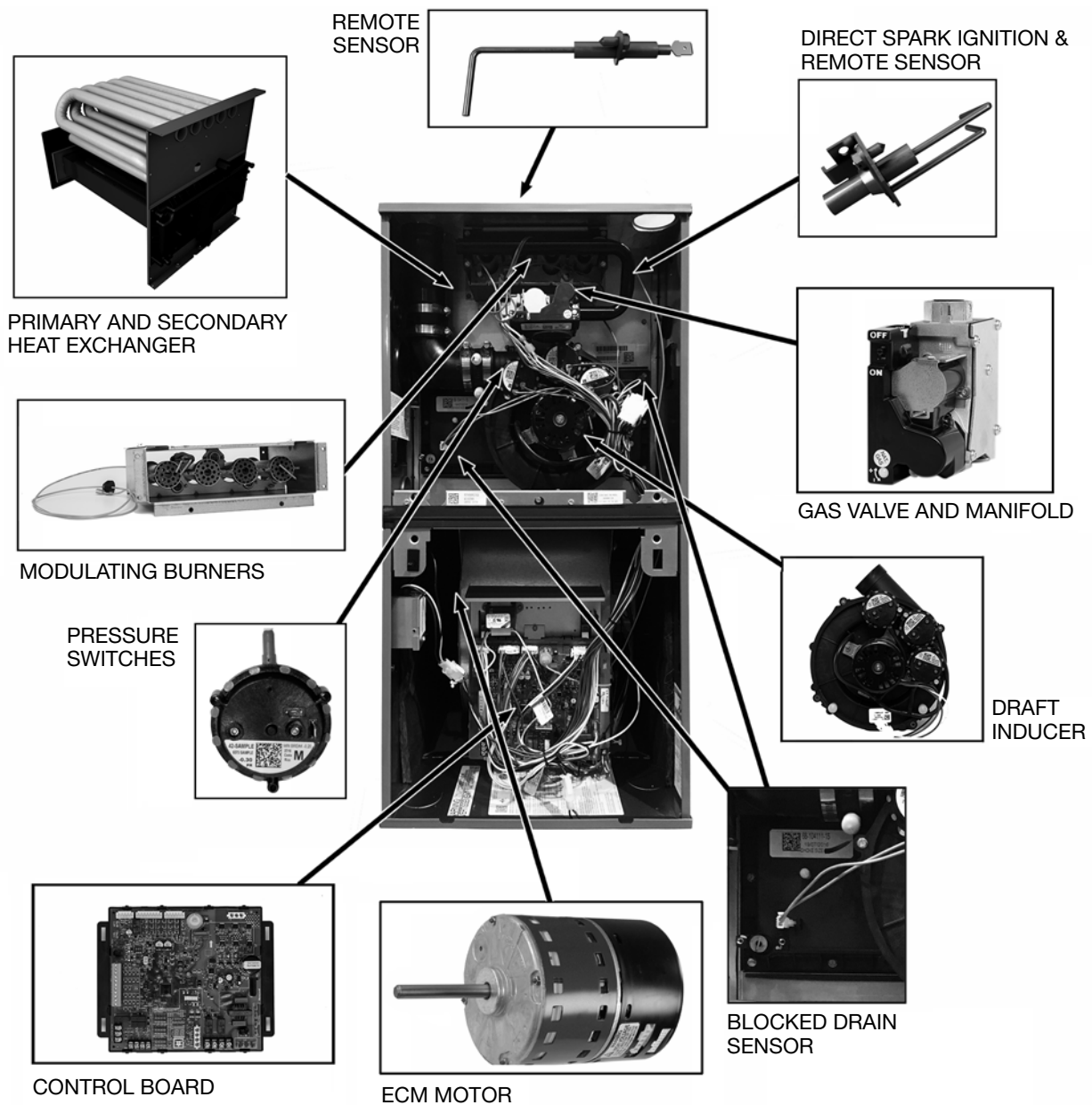
- 98% residential gas furnace CSA certified
- Upflow
- Modulating operation to save energy and maintain optimal comfort level.
- Variable speed blower motor technology provides ultimate humidity control, quieter sound levels, and year round energy savings.
- EcoNet enabled HVAC product
- Diagnostics 7-Segment LED all units
- Ignition System – DSI for reliability and longevity
- Water Management System with patented Blocked Drain Sensor
- Energy Efficiency – Industry’s highest A.F.U.E. Gas Furnace family. The FF\*\*\*LM98 features 98% A.F.U.E. across all model sizes
- Heat exchanger is removable for improved serviceability. Aluminized steel primary and stainless steel secondary construction provide maximum corrosion resistance and thermal fatigue reliability.
- Low profile “34 inch” cabinet ideal for space constrained installations.
- Blower Shelf design – serviceable in all furnace orientations
- Pre marked hoses – insures proper system drainage
- Vent with 2" or 3" PVC
- Replaceable collector box
- Hemmed edges on cabinet and doors
- Quarter turn door fasteners for tool less access
- Integrated control boards feature dip switches for easy system set up
- Self priming condensate trap
- Solid bottom included
- For optimal performance a Communicating Control Center is recommended; must be paired with communicating enabled heat pump or air conditioner, for a fully communicating HVAC system.
- Modulating Function: when used with a Communicating Control Center modulating thermostat, modulation rate between 40% and 100% of total capacity.
- Two-stage Function: when used with a two-stage thermostat, furnace operates at 40% on first stage, and stages up to 65%, then 100% for second stage.
- Multistage Function: when used with a single-stage thermostat, furnace functions as a three stage furnace operating at 40%, 65% and 100% of total capacity.
- Cabinet air leakage less than 2% at 1 inch H<sub>2</sub>O when tested in accordance with ASHRAE standard 193

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



## TABLE OF CONTENTS

|   |     |
|---|-----|
| Standard & Optional Equipment .....     | 3   |
| Physical Data & Specifications .....    | 4   |
| Model Number Identification .....       | 5   |
| Dimensional Data.....                   | 6   |
| Blower Performance Data – Heating ..... | 7   |
| Blower Performance Data – Cooling ..... | 7   |
| Accessories .....                       | 8-9 |
| Limited Warranty .....                  | 10  |



## STANDARD EQUIPMENT

Completely assembled and wired; blocked drain sensor, 7 segment LED and marked hoses; heat exchanger; primary: aluminized steel, secondary: 29-4C stainless steel; variable speed 3 phase induced draft motor; pressure switches; digitally controlled modulating gas valve with internal redundancy and manual shut off; blower compartment door safety switch; solid state time on/off blower control; limit controls; 100% safety lock out; cool fan off delay; field selectable heat fan off delay; one hour automatic retry; power and self-test diagnostics; flame sense current diagnostics; electronic air cleaner connections; humidifier connections; humidifier on/off delay; low CFM continuous fan option; transformer; direct drive, variable speed electrically commutated blower motor (ECM). Solid bottom. (Please note: a thermostat is not included as standard equipment.)

## OPTIONAL EQUIPMENT

Side and bottom filter racks; return air cabinet for all sizes.  
NOTE: Furnace is not listed for use with fuels other than natural or L.P. (propane) gas.

All models can be converted by a qualified distributor or local service dealer to use L.P. (propane) gas without changing burners. Factory approved kits must be used to convert from natural to L.P. (propane) gas and may be ordered as optional accessories from a parts distributor.

For L.P. (propane) operation, refer to Gas Conversion Kit Index Natural to LP Gas. The L.P. Conversion kit contains components unique to Modulating furnaces, the correct kit must be used.

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

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

| MODEL NUMBER                                       | FF60173LM98U          | FF70173LM98U          | FF85215LM98U           | FF100215LM98U          | FF115245LM98U          |
|--|-----------------------|-----------------------|------------------------|------------------------|------------------------|
| HIGH FIRE INPUT BTU/HR [kW]                        | 56,000 [16.41]        | 70,000 [20.50]        | 84,000 [24.61]         | 98,000 [28.72]         | 112,000 [32.82]        |
| LOW FIRE INPUT                                     | 22,400 [6.56]         | 28,000 [8.21]         | 33,600 [9.85]          | 39,000 [11.49]         | 44,800 [13.13]         |
| HEATING CAPACITY BTU/HR [kW]                       | 55,000 [16.12]        | 69,000 [20.22]        | 83,000 [24.32]         | 97,000 [28.43]         | 110,000 [32.24]        |
| BLOWER (D x W) [mm]                                | 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 11<br>[279 x 279] |
| MOTOR H. P. [W]-TYPE                               | 1/2 [373] E. C. M.    | 1/2 [373] E. C. M.    | 3/4 [559] E. C. M.     | 3/4 [559] E. C. M.     | 3/4 [559] E. C. M.     |
| MIN. CIRCUIT AMPACITY                              | 8.00                  | 9.00                  | 12.00                  | 13.00                  | 12.00                  |
| MIN. OVERLOAD PROTECTION DEVICE                    | 15.00                 | 15.00                 | 15.00                  | 15.00                  | 15.00                  |
| MAX. OVERLOAD PROTECTION DEVICE                    | 15.00                 | 15.00                 | 20.00                  | 20.00                  | 20.00                  |
| MINIMUM EXT. STATIC PRESSURE<br>IN. W.C. [kPa]     | .20<br>[.050]         | .23<br>[.057]         | .28<br>[.070]          | .28<br>[.070]          | .28<br>[.070]          |
| MAXIMUM EXT. STATIC PRESSURE<br>IN. W.C. [kPa]     | 1.0<br>[0.249]        | 1.0<br>[0.249]        | 1.0<br>[0.249]         | 1.0<br>[0.249]         | 1.0<br>[0.249]         |
| MAXIMUM HEATING CFM<br>[L/s]                       | 954<br>[450]          | 1109<br>[524]         | 1294<br>[611]          | 1644<br>[776]          | 1629<br>[769]          |
| COOLING CFM @ .50" W.C. [.124 kPa]<br>E.S.P. [L/s] | 1050<br>[496]         | 1050<br>[496]         | 1750<br>[825]          | 1750<br>[825]          | 1750<br>[825]          |
| TEMPERATURE RISE- HIGH FIRE °F<br>[°C]             | 40 - 70<br>[22 - 39]  | 40 - 70<br>[22 - 39]  | 40 - 70<br>[22 - 39]   | 40 - 70<br>[22 - 39]   | 45 - 75<br>[25 - 41]   |
| TEMPERATURE RISE- LOW FIRE °F<br>[°C]              | 20 - 50<br>[11 - 28]  | 20 - 50<br>[11 - 28]  | 20 - 50<br>[11 - 28]   | 25 - 55<br>[13 - 30]   | 20 - 50<br>[11 - 28]   |
| APPROX. SHIPPING WEIGHT (LBS)<br>[kg]              | 128<br>[58]           | 132<br>[60]           | 147.5<br>[67]          | 152<br>[69]            | 165<br>[75]            |
| AFUE ①   | 98.7%                 | 98.3%                 | 98.1%                  | 98.1%                  | 98.6%                  |

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

① In accordance with D.O.E. test procedures.

\*S=Standard Models

NOTE: Standard model complies with California low nox requirements.

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 not eligible for the Clean Air Furnace Rebate Program: [www.CleanAirFurnaceRebate.com](http://www.CleanAirFurnaceRebate.com).

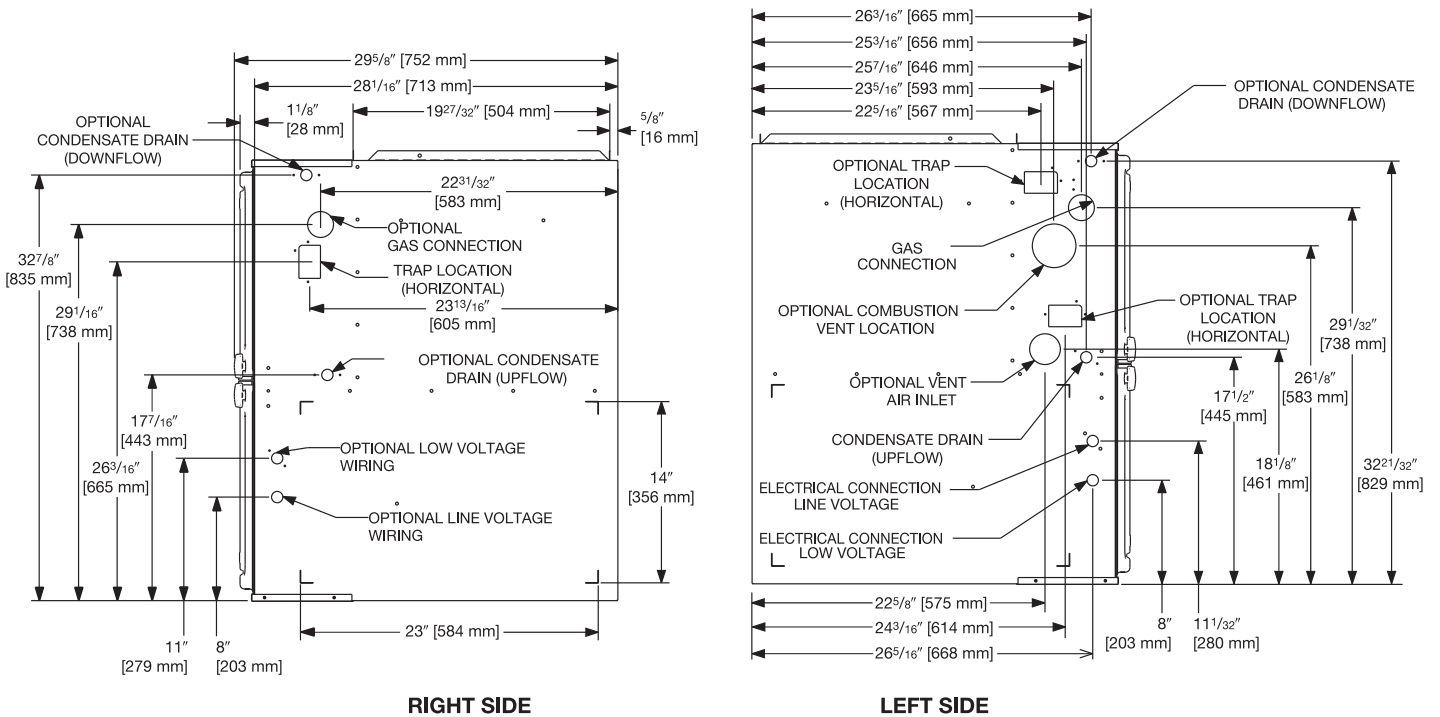
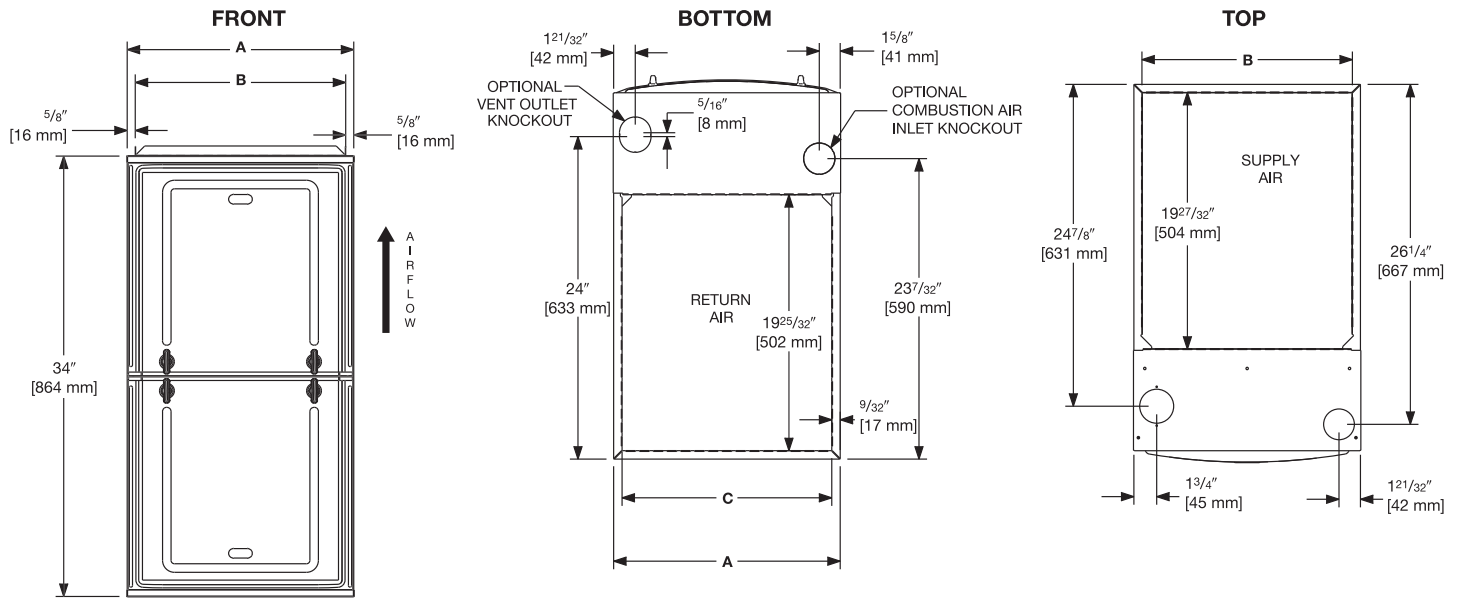
This furnace is to be installed for propane firing only in air districts requiring 14 ng/J NOx emission limits. Operating in natural gas mode is in violation of these Rules.

[ ] Designates Metric Conversions

# Model Number Identification

| <u>FF</u> | <u>60</u>  | <u>17</u>         | <u>3</u>               | <u>L</u> | <u>M</u>       | <u>98</u>  | <u>U</u>    |
|-----------|--|-------------------|------------------------|----------|----------------|------------|-------------|
| Product   | Capacity   | Width             | Airflow                | Motor    | Speed          | Efficiency | Orientation |
| Furnace   | 60 = 60,000 [17.58 kW]<br>70 = 70,000 [20.51 kW]<br>85 = 85,000 [24.91 kW]<br>100 = 100,000 [29.31 kW]<br>115 = 115,000 [33.70 kW] | 17"<br>21"<br>24" | 3 = 3 Ton<br>5 = 5 Ton | L = ECM  | M = Modulating | 98 = 98%   | U = Upflow  |

[ ] Designates Metric Conversions



**UNIT DIMENSIONS  
(CLEARANCE TO COMBUSTIBLES)**

| MODEL<br>FF***LM98 | LEFT<br>SIDE | MINIMUM CLEARANCE (IN.) [mm] |      |        |        |      | SHIP<br>WGTS. | FLANGE DIMENSIONS |                |                |
|--------------------|--------------|------------------------------|------|--------|--------|------|---------------|-------------------|----------------|----------------|
|                    |              | RIGHT<br>SIDE                | BACK | TOP    | FRONT  | VENT |               | A                 | B              | C              |
| 060                | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 128 [58]      | 17 1/2 [445]      | 16 17/64 [413] | 16 13/64 [412] |
| 070                | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 132 [60]      | 17 1/2 [445]      | 16 17/64 [413] | 16 13/64 [412] |
| 085                | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 147.5 [67]    | 21 [533]          | 19 49/64 [502] | 19 45/64 [500] |
| 100                | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 152 [69]      | 21 [533]          | 19 49/64 [502] | 19 45/64 [500] |
| 115                | 0            | 0                            | 0    | 1 [25] | 2 [51] | 0    | 165 [75]      | 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

| Comfort Select – CFM Options                      |                      |              |              |              |               |               |
|---|----------------------|--------------|--------------|--------------|---------------|---------------|
| Model Number                                      |                      | FF60173LM98U | FF70173LM98U | FF85215LM98U | FF100215LM98U | FF115245LM98U |
| HEATING<br>CFM [L/s]                              | LOW HEAT<br>(40%)    | 428 [202]    | 466 [220]    | 568 [268]    | 544 [257]     | 778 [367]     |
|   | MEDIUM<br>HEAT (65%) | 562 [265]    | 635 [300]    | 754 [356]    | 855 [404]     | 990 [467]     |
|   | HIGH HEAT<br>(100%)  | 749 [353]    | 871 [411]    | 1015 [479]   | 1290 [609]    | 1286 [607]    |
| Efficiency Select – CFM Options (factory setting) |                      |              |              |              |               |               |
| HEATING<br>CFM [L/s]                              | LOW HEAT<br>(40%)    | 550 [260]    | 599 [283]    | 730 [345]    | 725 [342]     | 1000 [472]    |
|   | MEDIUM<br>HEAT (65%) | 690 [325]    | 778 [367]    | 926 [437]    | 1058 [499]    | 1271 [600]    |
|   | HIGH HEAT<br>(100%)  | 885 [418]    | 1029 [486]   | 1200 [566]   | 1525 [720]    | 1520 [717]    |
|   | MAX HEAT<br>(-4°F)   | 954 [450]    | 1109 [524]   | 1294 [611]   | 1645 [776]    | 1629 [769]    |

\*S = Standard Models

NOTES Standard model complies with California low NOx requirements.

Refer to Installation Manual for complete heating dip switch options.

| COOLING CFM                                   |                              |               |               |               |               |               |               |               |
|---|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Model Number                                  |                              |               | FF60173LM98U  | FF70173LM98U  | FF85215LM98U  | FF100215LM98U | FF115245LM98U |               |
| TARGET<br>COOLING/<br>HEAT<br>PUMP<br>AIRFLOW | HIGH<br>COOLING<br>CFM [L/s] | SW 4 =<br>OFF | SW 5 =<br>OFF | 1050<br>[496] | 1050<br>[496] | 1750<br>[825] | 1750<br>[825] | 1750<br>[825] |
|   |                              | SW 4 =<br>ON  | SW 5 =<br>OFF | 875<br>[413]  | 875<br>[413]  | 1400<br>[661] | 1400<br>[661] | 1400<br>[661] |
|   |                              | SW 4 =<br>OFF | SW 5 =<br>ON  | 700<br>[330]  | 700<br>[330]  | 1225<br>[578] | 1225<br>[578] | 1225<br>[578] |
|   |                              | SW 4 =<br>ON  | SW 5 =<br>ON  | 525<br>[248]  | 525<br>[248]  | 1050<br>[496] | 1050<br>[496] | 1050<br>[496] |
|   | LOW<br>COOLING<br>CFM [L/s]  | SW 4 =<br>OFF | SW 5 =<br>OFF | 788<br>[372]  | 788<br>[372]  | 1313<br>[619] | 1313<br>[619] | 1313<br>[619] |
|   |                              | SW 4 =<br>ON  | SW 5 =<br>OFF | 656<br>[310]  | 656<br>[310]  | 1050<br>[496] | 1050<br>[496] | 1050<br>[496] |
|   |                              | SW 4 =<br>OFF | SW 5 =<br>ON  | 525<br>[248]  | 525<br>[248]  | 919<br>[434]  | 919<br>[434]  | 919<br>[434]  |
|   |                              | SW 4 =<br>ON  | SW 5 =<br>ON  | 394<br>[185]  | 394<br>[185]  | 788<br>[372]  | 788<br>[372]  | 788<br>[372]  |

[ ] 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) RACK:** RXGF-CB

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

| FILTER RACK FILTER SIZES* INCHES [mm] |                   |
|---------------------------------------|-------------------|
| MODEL                                 | RXGF-CD (UPFLOW)  |
| 060                                   | 16 x 24 [40 x 61] |
| 070                                   | 16 x 24 [40 x 61] |
| 085                                   | 20 x 24 [51 x 61] |
| 100                                   | 20 x 24 [51 x 61] |
| 115                                   | 24 x 24 [61 x 61] |

\*Filter racks are shipped without filters.  
 A suitable 1" [25.4 mm] filter may be used

[ ] Designates Metric Conversions

## INDOOR COIL CASINGS

| MODEL NUMBER |
|--------------|
| RXBC-D17A1   |
| RXBC-D21A1   |
| RXBC-D21B1   |
| RXBC-D24A1   |

## FOR HIGH ALTITUDES:

NOTE: Modulating furnaces require a unique 2% derate at altitudes above 2,000 feet. See Installation Instructions for details.

### HIGH ALTITUDE KITS

FF60173LM98U RXGY-F53  
 FF70173LM98U RXGY-F54  
 FF85215LM98U RXGY-F55  
 FF100215LM98U RXGY-F56  
 FF115245LM98U RXGY-F57

**L.P. CONVERSION KIT:** RXGJ-FP37

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

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



## ECONET CONTROL RECOMMENDED COMMUNICATING FURNACE CONTROL



**FETST601SYS**

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 and cooling system in a fully-communicating mode.

### **CONTRACTOR BENEFITS:**

- Auto/Self Configuration
- Day-at-a-glance scheduling, with programmable fan
- Intuitive wiring connections
- Dual fuel ready
- Automatically optimizes airflow
- System status & mode information
- Complete diagnostic information on display

### **HOMEOWNER BENEFITS:**

- Large, easy to read icons and characters
- Auto-mode control
- Smart recovery
- Continuous Fan Mode (5 speeds)
- Humidity Control
- Water heater, pool heater integration\* (check model compatibility)

### **\*ECONET CONTROL ACCESSORIES:**

Wall Plate = RCPN-AMC08

\*Available through PROSTOCK®.

**GENERAL TERMS OF LIMITED WARRANTY\***

*Fujitsu General America, Inc.* 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.**

Parts .....Ten (10) Years  
Heat Exchanger .....Limited Lifetime  
    Limited Lifetime  
Conditional Unit Replacement  
    (Registration Required) .....Limited Lifetime



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**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, the right is reserved to make changes without notice."*