



FRIEDRICH

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Endeavor® Line K-Series™ Gas Furnaces



FR97MV

97% A.F.U.E.†

EcoNet® Enabled

Heating Stages: Modulating

Motor Type: Constant CFM

Input Rates: 60 to 115 kBTU [11.6 to 33.7 kW]

Configuration Options: Downflow/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

- **PlusOne® Energy Efficiency:** ENERGY STAR® certified, featuring 97% AFUE® across all model sizes
- **PlusOne Diagnostics:** Industry first, 7-Segment LED Display makes service calls quick and easy
- **PlusOne Ignition System:** Proven Direct Spark Ignition (DSI) for reliability and longevity
- **PlusOne Water Management System:** Exclusive patented block drain sensor that automatically shuts off the furnace when the drain is blocked and alerts the contractor via diagnostic code
- **Modulating Heating Stage:** Gradual auto-adjustment from low to 100% of capacity to meet precise comfort requirements
- **Constant CFM Motor:** Truly variable speed technology allows for ultimate humidity control, quieter sounds levels and year-round energy savings
- **Quietest Operation¹:** A fully insulated blower cabinet, solid bottom and truly variable speed airflow technology makes this furnace of the quietest 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 App²

¹Based 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. ²Wifi 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

<u>FR</u>	<u>97</u>	<u>M</u>	<u>V</u>	<u>060</u>	<u>3</u>	<u>A</u>	<u>17</u>	<u>DH</u>	<u>S</u>	<u>G</u>	<u>A</u>	<u>P</u>
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®	97 - 97% AFUE	M - Modulating	V - ECM Variable Speed	060 - 60,000 [17.6 kW] 070 - 70,000 [20.5 kW] 085 - 85,000 [24.9 kW] 100 - 100,000 [29.3 kW] 115 - 115,000 [33.7 kW]	3 - 3 Ton Drive 5 - 5 Ton Drive	A - 1st Design Series	17 - 17.5" Width 21 - 21" Width 24 - 24.5" Width	DH - Downflow Horizontal	S - Standard	G - Communicating, EcoNet	A - 1st Series	P - Premium Grade

[] Designates Metric Conversions

AVAILABLE MODELS
FR97MV0603A17DHSGAP
FR97MV0703A17DHSGAP
FR97MV0855A21DHSGAP
FR97MV1005A21DHSGAP
FR97MV1155A24DHSGAP

STANDARD EQUIPMENT
100% Safety Lock Out
29-4C Stainless Steel Secondary Heat Exchanger Design
7 Segment LED
Adjustable Cool Fan Off Delay
Adjustable Heat Fan Off Delay
Aluminized Steel Primary Heat Exchanger Design
Blocked Drain Sensor
Blower Compartment Door Safety Switch
Completely Assembled and Wired
Direct Drive Motor
EcoNet Thermostat Connections (Enables Modulating Heat)
Electronic Air Cleaner Connections
Flame Sense Current Diagnostics
Fully Insulated Heat Exchanger Cabinet
Humidifier Connections
Humidifier On/Off Delay
Limit Controls
Low Speed Continuous Fan Option
Manual Shut-Off Valve
Marked Condensate Hoses
Modulating Redundant Main Gas Control
One Hour Automatic Retry
Power and Self-Test Diagnostics
Pressure Switches
Solid State time on/Off Blower Control
Blower Insulation
Transformer
Two Plus* Stage Cooling Thermostat Connection
Two Stage Heating Thermostat Connection (Three Stage Heating Operation)
Variable Speed 3 Phase Induced Draft Motor
Variable Speed Electrically Commutated Blower Motor (ECM)

* 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. and Canadian Models

MODEL NUMBER	FR97MV0603 A17DHSGAP	FR97MV0703 A17DHSGAP	FR97MV0855 A21DHSGAP	FR97MV1005 A21DHSGAP	FR97MV1155 A24DHSGAP
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]	39,200 [11.49]	44,800 [13.13]
HEATING CAPACITY BTU/HR [kW]	54,320 [15.92]	67,900 [19.89]	81,480 [23.87]	96,060 [27.85]	108,640 [31.83]
BLOWER (D x W) [mm]	11 x 8 [279 x 203]	11 x 8 [279 x 203]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 11 [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	9.00	9.00	12.00	12.00	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	15.00	20.00
MAXIMUM EXT. STATIC PRESSURE IN. W.C. [kPa]	1.0 [.249]	1.0 [.249]	1.0 [.249]	1.0 [.249]	1.0 [.249]
MAXIMUM HEATING CFM [L/s]	954 [450]	1109 [523]	1062 [501]	1250 [590]	1628 [769]
COOLING CFM @ .50" W.C. [.124 kPa] E.S.P. [L/s]	1050 [496]	1050 [496]	1750 [825]	1750 [825]	1750 [825]
TEMPERATURE RISE- HIGH FIRE °F [°C]	40 - 70 [22 - 39]	40 - 70 [22 - 39]	50 - 80 [27 - 44]	50 - 80 [27 - 44]	45 - 75 [25 - 42]
TEMPERATURE RISE- LOW FIRE °F [°C]	20 - 50 [11 - 28]	20 - 50 [11 - 28]	20 - 50 [11 - 28]	20 - 50 [11 - 28]	20 - 50 [11 - 28]
APPROX. SHIPPING WEIGHT (LBS) [kg]	128 [58]	132 [60]	147.5 [67]	152 [69]	165 [75]
AFUE ①	97.00%	97.00%	97.00%	97.00%	97.00%

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

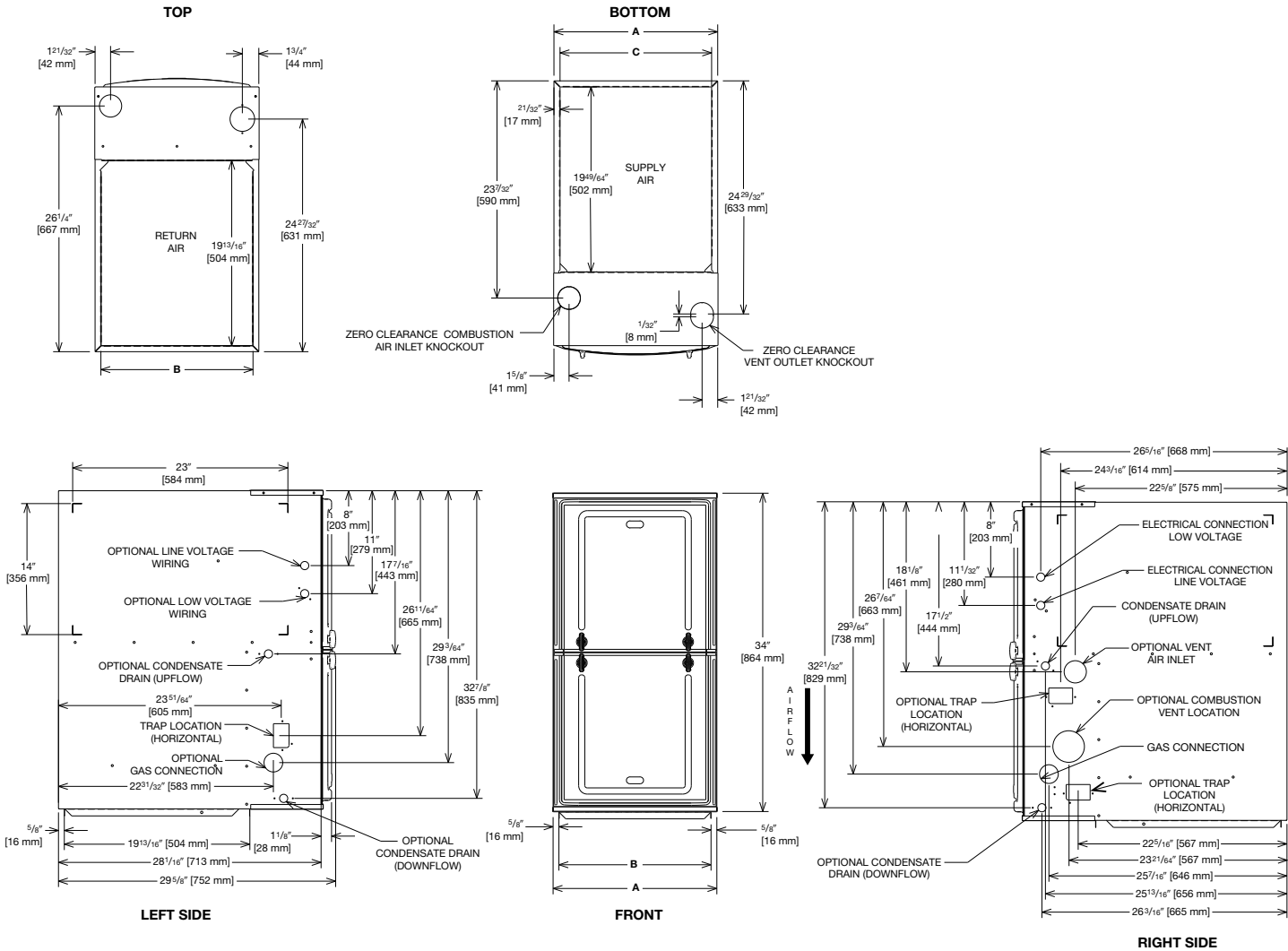
Standard model complies with California low NOx requirements.

This furnace does not meet air district requirements of 14 ng/J NOx emissions limit.

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

Downflow Horizontal Applications



Unit Dimensions (Clearance to Combustibles)

MODEL FR97MV	LEFT SIDE	MINIMUM CLEARANCE (IN.) [mm]				
		RIGHT SIDE	BACK	TOP	FRONT	VENT
60	0	0	0	1 [25]	2 [51]	0
70	0	0	0	1 [25]	2 [51]	0
85	0	0	0	1 [25]	2 [51]	0
100	0	0	0	1 [25]	2 [51]	0
115	0	0	0	1 [25]	2 [51]	0

*A service clearance of at least 24" is recommended in front of all furnaces

FLANGE DIMENSIONS		
A	B	C
17 1/2 [445]	16 17/64 [413]	16 13/64 [412]
21 [533]	19 49/64 [502]	19 45/64 [500]
24 1/2 [662]	23 17/64 [591]	23 13/64 [589]

Supply and return depicted as downflow configuration.
Flange configuration will vary depending on installation orientation.

[] Designates Metric Conversions

Blower Performance Data

Comfort Select – CFM Options (factory setting)						
Model Number		FR97MV(-)060M317K(--)	FR97MV(-)070M317K(--)	FR97MV(-)085M521K(--)	FR97MV(-)100M521K(--)	FR97MV(-)115M524K(--)
HEATING CFM [L/s]	LOW HEAT (40%)	428 [202]	466 [220]	579 [276]	683 [322]	778 [367]
	MEDIUM HEAT (65%)	562 [265]	635 [300]	685 [323]	807 [381]	990 [467]
	HIGH HEAT (100%)	749 [353]	871 [411]	833 [393]	982 [463]	1286 [607]
Efficiency Select – CFM Options						
HEATING CFM [L/s]	LOW HEAT (40%)	550 [260]	599 [283]	745 [352]	910 [429]	1000 [472]
	MEDIUM HEAT (65%)	690 [325]	778 [367]	845 [399]	1014 [479]	1217 [574]
	HIGH HEAT (100%)	885 [418]	1029 [486]	985 [465]	1160 [547]	1520 [717]
	MAX HEAT (-4°F)	954 [450]	1109 [524]	1067 [501]	1251 [590]	1628 [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				FR97MV0603 A17DHSGAP	FR97MV0703 A17DHSGAP	FR97MV0855 A21DHSGAP	FR97MV1005 A21DHSGAP	FR97MV1155 A24DHSGAP
TARGET COOLING/ HEAT PUMP AIRFLOW	HIGH COOLING CFM [L/s]	SW 4 = OFF	SW 5 = OFF	1050 [496]	1050 [496]	1750 [825]	1750 [825]	1750 [825]
		SW 4 = ON	SW 5 = OFF	875 [413]	875 [413]	1400 [661]	1400 [661]	1400 [661]
		SW 4 = OFF	SW 5 = ON	700 [330]	700 [330]	1225 [578]	1225 [578]	1225 [578]
		SW 4 = ON	SW 5 = ON	525 [248]	525 [248]	1050 [496]	1050 [496]	1050 [496]
	LOW COOLING CFM [L/s]	SW 4 = OFF	SW 5 = OFF	788 [372]	788 [372]	1313 [619]	1313 [619]	1313 [619]
		SW 4 = ON	SW 5 = OFF	656 [310]	656 [310]	1050 [496]	1050 [496]	1050 [496]
		SW 4 = OFF	SW 5 = ON	525 [248]	525 [248]	919 [434]	919 [434]	919 [434]
		SW 4 = ON	SW 5 = ON	394 [185]	394 [185]	788 [372]	788 [372]	788 [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 (HORIZONTAL) RACK:** RXGF-CB
- EXTERNAL (DOWNFLOW) FILTER RACK:** RXGF-CC

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**
- FR97MV060M317K(--)
FR97MV070M317K(--)
FR97MV085M521K(--)
FR97MV100M521K(--)
FR97MV115M524K(--)
- RXGY-F48
RXGY-F49
RXGY-F50
RXGY-F51
RXGY-F52

FILTER RACK FILTER SIZES* INCHES [mm]		
MODEL	RXGF-CB (HORIZONTAL)	RXGF-CC (DOWNFLOW)
FR97MV(-)060	16 x 24 [40 x 61]	(2) 14 x 20 [36 x 51]
FR97MV(-)070	16 x 24 [40 x 61]	(2) 14 x 20 [36 x 51]
FR97MV(-)085	20 x 24 [51 x 61]	(2) 14 x 20 [36 x 51]
FR97MV(-)100	20 x 24 [51 x 61]	(2) 14 x 20 [36 x 51]
FR97MV(-)115	24 x 24 [61 x 61]	(2) 14 x 20 [36 x 51]

*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

- L.P. CONVERSION KIT:** RXGJ-FP37
- CONDENSATE PUMP KIT:** PROSTOCK & 1PCB151TUL
- COMBUSTIBLE FLOOR BASE:** RXGC-B17
RXGC-B21
RXGC-B24



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



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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 Unit Replacement (Registration Required).....	Limited Lifetime
Heat Exchanger.....	Limited Lifetime
Parts	Ten (10) 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, manufacturer reserves the right to make changes without notice.

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