CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 07/13/16

DAIKIN

ENERGY-INTELLIGENT™ HEATING AND COOLING SYSTEMS

VRV®
★ 2004 - 2014 ★

10 YEARS OF VRV IN NORTH AMERICA

The Daikin VRV Revolution is Everywhere in North America!

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Daikin is celebrating the 10 year anniversary of VRV in North America. Daikin VRV has been installed in over 10,000 buildings representing more than 100 million square feet of floor space!

What does Daikin do?

Daikin doesn't make phones, TV's, cars, microwaves or refrigerators. Daikin is primarily engaged in developing indoor comfort products, systems and refrigeration products for residential, commercial and industrial applications. Its consistent success is derived, in part, from a focus on innovative, energy-efficient and premium quality indoor climate and comfort management solutions.

Daikin is a Global Leader

Becoming a global leader in any industry takes more than just time. For over 90 years Daikin has shown that it takes industry-leading product innovation and a commitment to excellence in order to climb to the top. This commitment led Daikin to develop the first Variable Refrigerant Volume (VRV) system in 1982 and to become a pioneer in many markets.

What is a Daikin VRV Pro Contractor?

A Daikin VRV Pro Contractor receives focused training and support to establish himself as the expert when designing and installing Daikin's VRV system.

Daikin is Committed to the North America market

- Daikin acquired Goodman Manufacturing in 2012 for $3.7B – Goodman Manufacturing is one of the leading unitary equipment manufacturers with an extensive HVAC distribution network in North America
- Daikin's new $417 million campus near Houston, TX will become one of the most technologically advanced HVAC manufacturing facilities in the country with all corporate functions, product development, engineering, production, service and support centralized in a single location
- Extensive local inventory commitments and local manufacturing for improved productivity and delivery lead times compared to other import only manufacturers
- Numerous technology leading solutions in the North American market with VRV's product portfolio
- Development of a manufacturer's representatives and distributors network dedicated to VRV business development and support regionally

Local Support Systems

- Daikin City – A centralized support system providing access to all the necessary tools for the successful development of our local manufacturers representatives and distributors
- Daikin VRV Pro – A network of contractors specializing in the installation of VRV Products with access to training tools and dedicated support
- Daikin University – An industry leading resource for extensive online, classroom and hands-on training

DAIKIN

A Growing History of Excellence and Innovation with VRV in North America

CUMULATIVE DAIKIN VRV INSTALL BASE (x 1,000)

0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60

FY 2004
- **VRV III** — First R-410A VRF in North America

FY 2005
- **VRV II-S** — First Daikin VRF for residential and light commercial in North America

FY 2006
- **VRV WII** — First water-cooled VRF
- **VRV III** — Continuous heating during defrost. Piping length up to 3,280 ft.

FY 2007
- **VRV III-S** — Improved residential and light commercial features
- **Vertical Air Handling Unit** — First in North America market

FY 2008
- **Intelligent Manager III** — PC control of VRV. For Large buildings (1024 Indoor Units).
- **VRV-WIII** — Geothermal connectivity. Exceeds AHRI 1230
- **Round Flow Ceiling Mounted Cassette** — 23 configurable Airflow distribution patterns
- **Navigation Controller BRC1E71** — First launch with dual set points with USA specific and featured functions

FY 2009
- **Intelligent Touch Controller v.6** — Advanced zone configuration and greater application flexibility with enhanced change over and dual set points
- **100% Outside Air Processing Unit**
- **D-NET** — Daikin 24/7 Preventative Maintenance, monitoring and optimization of VRV performance and reporting

FY 2010
- **Intelligent Touch Controller v.4** — Monitor and control of up to 256 indoor units with web access and touch screen
- **Intelligent Manager v.1.0** — Lower cost replacement for I-Manager
- **VRV III** PB SERIES — Extended operation range of VRV III AHRI certified

FY 2011
- **Navigation Controller BRC1E72** — Enhanced changeover and lockouts
- **DZK** Daikin Zoning Kit — DZK Daikin Zoning Kit. Zoning kit for ducted VRV indoor fan coil

FY 2012
- **Round Flow Sensing Cassette** — True 360° and 18 airflow patterns. Occupancy sensors control airflow pattern. Self cleaning filter
- **Intelligent Manager v.2.0** — Enhanced changeover and web access. Enhanced controls and WAGO integration

FY 2013
- **Navigation Controller BRC1E73** — Adds occupancy sensor and filter cleaning features for indoor cassette units
- **VRV IV** — First VRF assembled in North America. Variable Refrigerant Temperature (VRT)
- 10 YEAR PARTS LIMITED WARRANTY / 10 YEAR REPLACEMENT COMPRESSOR LIMITED WARRANTY*

* Complete warranty details available from your local sales representative or at www.daikinac.com. and www.daikincomfort.com.

FY 2014

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VRF INDUSTRY MILESTONES

- FY 2005: DOE issues waiver recognizing unique characteristics of VRF systems
- FY 2008: ASHRAE includes VRF systems in ASHRAE 90.1 - 2012
- FY 2009: AHRI — AHRI passes Standard 1230. First appropriate standard for testing VRF and rating systems
- FY 2010: AHRI — AHRI passes VRF systems certification program, providing third party validation of VRF equipment performance
- FY 2012: DOE incorporates AHRI standard 1230, ASHRAE 90.1
- FY 2012: ASHRAE adds VRF chapter to ASHRAE systems handbook

COMPANY MILESTONES

- FY 2006: Local support operations launched with DaikinAC (Americas), Inc.
- FY 2008: Daikin industries acquire OYL group including McQuay International
- FY 2011: Daikin Purchases Goodman® Air Conditioning & Heating — $3.7b investment
- FY 2012: Local assembly of VRV IV condensing units
- FY 2014: New Business Campus, Houston, TX Announced — $417m investment, 4 million sq. ft.

TOTAL PROJECTS 2004-2014

- A total of 10,000 projects completed
- 60,000+ condensing units installed
- More than 100 million sq. feet
- Exceeding 400,000 tons of VRV units

Daikin's VRV products and controls are designed to provide a flexible, scalable, total solution to any application.

	VERTICAL MARKETS														
	DATA CENTERS	DORMS	HEALTHCARE	OFFICES	MULTI-FAMILY HOUSING	SCHOOLS	RESTAURANT	BANK	RETAIL/STORES	ASSISTED LIVING	CHURCH	HOTELS	PUBLIC TRANSPORT	AIRPORT	PUBLIC BUILDINGS
VRV	*	◤	◤	◤	◤	◤	◤	◤	◤	◤	◤	◤	◤	◤	◤

* = Application to data center or equipment rooms is very common but adhering to some basic design and selection principles are important for optimum performance. Daikin VRV is designed and optimized as a comfort cooling and heating solution.

In addition to providing comfort to a wide array of applications, VRV has been utilized into project sizes from 3 Tons to 1,000+ tons due to its scalable capacity, and modular approach.

Key Vertical Applications Summary

SCHOOLS

- More than 2,000 schools
- Total of 12,000 VRV systems installed
- In excess of 26 million sq. feet
- More than 100,000 tons of VRV units

COMMERCIAL

- More than 1,500 commercial spaces
- Total of 6,200 VRV systems installed
- In excess of 13.5 million sq. feet
- Exceeding 45,000 tons of VRV units

RESIDENTIAL

- More than 1,600 residential buildings (including single family, condominiums and apartments)
- Total of 6,700 VRV systems installed
- In excess of 12 million sq. feet
- Exceeding 45,000 tons of VRV units

GOVERNMENT

- More than 1,000 buildings
- Total of 3,300 VRV systems installed
- In excess of 8 million sq. feet
- Exceeding 26,000 tons of VRV units

HOTELS

- More than 350 hotels
- Total of 2,300 VRV systems installed
- In excess of 5.3 million sq. feet
- Exceeding 18,000 tons of VRV units

OFFICE

- More than 1,600 offices
- Total of 4,900 VRV systems installed
- In excess of 11 million sq. feet
- 36,000 tons of VRV units

VRV is a modular, energy-intelligent™ and reliable solution in a flexible package

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Daikin VRV is a modular, commercially applied air-conditioning and heating system that distributes refrigerant from the outdoor unit to multiple indoor units, providing efficiency, comfortable individual user control and reliability in one flexible package.

Air cooled or water cooled?

Air cooled

- Fast and easy to install — no need for additional components
- Low maintenance costs
- Can be installed both outdoors and indoors
- Up to 38 tons capacity for one system

Components:

OUTDOOR UNIT | INDOOR UNIT | REFRIGERANT PIPING

Water cooled

- Suitable for multi-story and large buildings because of the almost unlimited possibilities of water piping
- Not affected by outdoor temperature/climate conditions

Components:

CONDENSING UNIT | INDOOR UNIT | REFRIGERANT PIPING | (GEOTHERMAL) WATER LOOP

As many as 64 separate indoor units can be connected to a refrigerant circuit with a single outdoor unit of up to 38 tons capacity. The Daikin VRV indoor unit range is one of the widest on the market, offering no less than 11 stylish and elegant indoor unit types in 57 different models — all designed to maximize comfort, minimize operating sound and simplify installation and servicing.

Ducted Concealed Units Options

FXMQ-PBVJU
DC-Ducted Concealed Ceiling (Medium Static)

FXDQ-MVJU
Slim Duct Built-In Concealed Ceiling Unit

FXTQ-PAVJU
Vertical Air Handling Unit (Horizontal RHS is Possible)

FXMQ-MVJU
Concealed Ceiling Unit (Medium Static)

FXNQ-MVJU9
Concealed Floor-Standing Unit

Ductless Units Options

FXFQ-TVJU
Round Flow Sensing Cassette, Ceiling Mounted

FXUQ-PVJU
4-Way Blow Ceiling-Suspended Cassette

FXZQ-MVJU9
2' X 2' 4-Way Ceiling-Mounted Cassette

FXHQ-MVJU
Ceiling-Suspended Unit

FXAQ-PVJU
Wall-Mounted Unit

FXLQ-MVJU9
Floor-Standing Unit

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Daikin: The Industry leader

Daikin Industries, Ltd. (DIL) is a global Fortune 1000 company which celebrated its 90th anniversary in May 2014. The company is recognized as the largest HVAC (Heating, Ventilating, Air Conditioning) manufacturer in the world. DIL is primarily engaged in developing indoor comfort products, systems and refrigeration products for residential, commercial and industrial applications. Its consistent success is derived, in part, from a focus on innovative, energy-efficient and premium quality indoor climate and comfort management solutions.

Before purchasing this appliance, read important information about its estimated annual energy consumption, yearly operating cost, or energy efficiency rating that is available from your retailer.

Contact your local Daikin manufacturers representative or distributor for more information.

Our continuing commitment to quality products may mean a change in specifications without notice.
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