

HVAC Guide Specifications
Air to Air Energy Recovery Ventilator

Section 15700 – Mechanical HVAC

Size Range:

300 to 1200 nominal cubic feet per minute

Daikin AC Model Number:

VAM300GVJU

VAM470GVJU

VAM600GVJU

VAM1200GVJU

Part 1 – GENERAL

ENERGY RECOVERY VENTILATOR

1.01 SYSTEM DESCRIPTION

The fresh air ventilation system shall consist of the Daikin VAM-GVJU series energy recovery ventilator, incorporating a high-efficiency paper, cross-flow heat exchanger core in order to provide both sensible and latent heat recovery.

1.02 QUALITY ASSURANCE

- A. The units shall be tested by a Nationally Recognized Testing Laboratory (NRTL), in accordance with ANSI/UL 1995 – Heating and Cooling Equipment and bear the Listed Mark.
- B. All wiring shall be in accordance with the National Electric Code (NEC).
- C. The system shall be certified in accordance with Air Conditioning, Heating, and Refrigeration Institute's (AHRI) Standard 1060 and bear the AHRI Certified label.
- D. The heat exchanger core shall be tested in accordance with Underwriters Laboratories (UL) 723 and shall have a flame spread rating of not more than 25, and a smoke developed rating of not more than 50.
- E. The system will be produced in an ISO 9001 and ISO 14001 facility, which are standards set by the International Standard Organization (ISO). The system shall be factory tested for safety and function.
- F. System efficiency shall meet or exceed 65% thermal efficiency and 40% enthalpy recovery efficiency.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Unit shall be stored and handled according to the manufacturer's recommendations.

Part 2 – WARRANTY

2.01 LIMITED WARRANTY

Daikin AC (Americas), Inc. (“Daikin AC”) warrants to the customer who is the original owner and user of the Daikin AC products specified above (“Customer”) that under normal use and maintenance for comfort cooling and conditioning applications such products (the “Products”) will be free from defects in material or workmanship. This warranty applies to parts only and is limited in duration to one (1) year from the earlier to occur of (a) the date of original installation, whether or not actual use begins on that date, or (b) eighteen (18) months from the date of shipment by Daikin AC. Customer must present proof of the original date of receipt and of installation of the Product in order to establish the effective date of this warranty. Otherwise the effective date will be deemed to be the date of manufacture plus sixty (60) days. Repaired or replacement parts are warranted for the balance of the warranty period applicable to the original part following the date on which the repaired or replacement part is provided to the Customer.

2.02 EXTENDED WARRANTY

For the core only, Daikin AC provides the above warranty for a six (6) year period. This extended warranty for the core is limited in duration to six (6) years from the earlier to occur of (a) the date of original installation, whether or not actual use begins on that date, or (b) twenty-four (24) months from the date of shipment by Daikin AC. The effective date of this extended warranty shall be established as above.

2.03 INSTALLATION REQUIREMENTS

The system must be installed by a Daikin factory trained contractor/dealer. The bidders shall be required to submit training certification proof with bid documents. The mechanical contractor’s installation price shall be based on the systems installation requirements. The mechanical contractor bids with complete knowledge of the HVAC system requirements. Untrained contractors who wish to bid this project may contact _____ to arrange training prior to bid day.

Part 3 – PERFORMANCE

3.01 PERFORMANCE

The energy recovery ventilator units shall be based on nominal airflow conditions:

System Model	Nominal Airflow (CFM)	External Static (in. H₂O) EX-H/H/L
VAM300GVJU	300	0.64 / 0.26 / 0.16
VAM470GVJU	470	0.73 / 0.39 / 0.33
VAM600GVJU	600	0.76 / 0.34 / 0.32
VAM1200GVJU	1200	0.56 / 0.16 / 0.24

The cooling thermal recovery and enthalpy recovery efficiencies shall be based on 95°F DB / 78°F WB for the entering supply air and 75°F DB / 63°F WB for the exhaust air, at both 100% nominal airflow and 75% nominal airflow.

The heating thermal recovery and enthalpy recovery efficiencies shall be based on 35°F DB / 33°F WB for the entering supply air and 70°F DB / 58°F WB for the exhaust air, at both 100% nominal airflow and 75% nominal airflow.

			VAM300GVJU	VAM470GVJU	VAM600GVJU	VAM1200GVJU
Temperature Recovery Efficiency %	Cooling	100%	65	68	72	72
		75%	70	72	74	74
	Heating	100%	65	66	70	70
		75%	69	69	73	73
Enthalpy Recovery Efficiency %	Cooling	100%	40	45	49	49
		75%	48	50	52	52
	Heating	100%	57	59	60	60
		75%	63	65	63	63

3.02 OPERATING RANGE

The equipment operating range shall be 5°F DB ~ 122°F DB and 80%RH or less.

Part 4 – PRODUCTS

4.01 ENERGY RECOVER VENTILATOR

A. General:

The fresh air ventilation system shall consist of the Daikin VAM-GVJU series energy recovery ventilator, incorporating a high-efficiency paper, cross-flow heat exchanger core in order to provide both sensible and latent heat recovery.

B. Unit Cabinet:

1. The cabinet shall be constructed of galvanized steel plate.
2. The unit shall be internally insulated with a self-extinguishing urethane foam.

C. Fans:

1. The fans shall be direct-drive, forward-curved centrifugal type with statically and dynamically balanced impellers with extra-high, high, and low fan speeds.
2. The fan motor(s) shall operate on 208-230 volts, 1 phase, 60 hertz.
3. The air flow rate shall be available in extra-high, high, and low settings.
4. The fan motor shall be thermally protected.

D. Filter:

1. The supply and exhaust air streams shall be filtered prior to entering the heat exchanger core by means of a multidirectional fibrous fleece filter.

E. Heat Exchanger:

1. The heat exchanger element shall consist of a specially processed, nonflammable, HEP (high efficiency paper) heat exchanger designed to allow the exchange of both sensible and latent energy between the supply and exhaust airstreams. The core material shall be tested as specified in UL 723 and have a flame spread rating of not more than 25, and a smoke developed rating of not more than 50.

F. Electrical:

1. A separate power supply will be required of 208-230 volts, 1 phase, 60 hertz. The acceptable voltage range shall be 187 to 253 volts.
2. Transmission (control) wiring between the indoor unit and remote controller shall be a maximum distance of 1,640 feet.

G. Control:

1. The unit shall be compatible with Daikin D-III net via the F1/F2 terminal.
2. The unit shall be capable of the following methods of control:
 - i. Independent control – The unit shall be operable directly by a local remote controller.
 - ii. Interlocked control – The unit shall be operable in conjunction with a VRV or Sky Air system by a local remote controller.
 - iii. Centralized control – The unit shall be operable by a centralized control without the need for a local remote controller to be connected.
3. The unit shall be capable of the following modes of operation:
 - i. Energy recovery
 - ii. Bypass ventilation – The unit shall be capable of bypass ventilation which diverts air flow around the heat exchanger core. No energy recovery is performed.
 - iii. Auto Mode – The unit shall be capable of automatically determining the need for performing energy recovery or bypassing the heat exchanger core based on the current fan coil operation mode and the current indoor and outdoor temperatures.
 - iv. Fresh-up Mode (supply) – The unit shall be capable of entering Fresh-up Supply operation in which the incoming supply air ratio is greater than the exhaust air ratio.
 - v. Fresh-up Mode (exhaust) – The unit shall be capable of entering Fresh-up Exhaust operation which in the incoming supply air ratio is less than the exhaust air ratio.
 - vi. Night Time Free Cooling – The unit shall be capable of Night Time Free Cooling in which the unit will automatically energize to lower the space temperature based on the current outdoor temperature, the current indoor temperature, current set point, and the operating state of the indoor fan coils.

H. Installation

1. The unit shall be capable of inverted installation if required by ductwork and access clearance requirements.
2. The unit shall not require a condensate drain connection or condensate pan of any kind.

I. Accessories Available

1. Replacement air filter.
2. DCS601C71 – I-Touch Controller
3. DCM601A71 – I-Touch Manager
4. DCS302C71 – Central Remote Controller
5. DCS301C71 – Unified On/Off Controller
6. DST301BA61 – Schedule Timer
7. BRC1E - Navigation Remote Controller
8. KRP4A72 – Group Control Adaptor PCB
9. KRP50-2 – PC Board Adaptor for Humidifier
10. KRP50-2A90 – Installation box adaptor for PCB