DX-coil and humidifier
VKM–GM series
VKM–G series
DX-coil

NEW
Combined Air Conditioning and Ventilation for Energy Efficiency and Comfort

Heat Reclaim Ventilation
VKM-G(M) series

Cautions on product corrosion
1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided and choose an outdoor unit with anti-corrosion treatment.

Warning
● Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
● Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorized parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
● Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

For any inquiries, contact your local distributor.

ISO 14001
Our group has been acknowledged by an internationally accredited compliance organisation as having an appropriate programme of environmental protection procedures and activities. Our group has been acknowledged by an internationally accredited compliance organisation as having an appropriate programme of environmental protection procedures and activities.

About ISO 14001

The air conditioners manufactured by Daikin Industries have received ISO 9001 certification for quality assurance.

Certificate Number. JQA-1452

All Daikin Industries locations and subsidiaries in Japan have received environmental management systems certified ISO 14001 certification.

ISO 14001 is the standard defined by the International Organization for Standardization (ISO). It is a set of guidelines for creating and maintaining an efficient environmental management system in an enterprise. Our group has been acknowledged by an internationally accredited compliance organisation as having an appropriate programme of environmental protection procedures and activities.

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The new HRV lineup features the DX-coil in response to recently diversifying outdoor air introduction requirements.

Efficient outdoor air introduction and temperature adjustment to suit conditions indoors. This is realized by heat exchanger and energy saving technology unique to Daikin. The lineup now includes models with a humidifier, responding to diversifying customer requirements. The features you expect from Daikin are there. The DX-coil contributes to the prevention of cold airflow hitting people directly during heating operation. High static pressure enhances design flexibility. All these cutting-edge technologies are packed in an integrated compact body. Daikin, the top provider of high quality indoor air, offers even more comfortable environment.

Efficient outdoor air introduction is possible
HRV (VKM) introduces fresh outdoor air with minimum heat losses, while a wide variety of features respond to customer requirements.

New features
- Humidifier
  The lineup now includes models with a humidifier, in response to diversifying customer requirements.
- DX-coil
  The HRV features DX-coil that contributes to the prevention of cold airflow hitting people directly during heating operation, due to the after-cool, after-heat operations done beforehand.
- High static pressure
  Higher external static pressure means enhanced design flexibility.

Lineup

<table>
<thead>
<tr>
<th>Type</th>
<th>500</th>
<th>800</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX-Coil &amp; Humidifier</td>
<td>VKM50GMV1</td>
<td>VKM80GMV1</td>
<td>VKM100GMV1</td>
</tr>
<tr>
<td>DX-Coil</td>
<td>VKM50GV1</td>
<td>VKM80GV1</td>
<td>VKM100GV1</td>
</tr>
</tbody>
</table>
Proprietary Developed HEP Element

The heat exchange element uses a High Efficiency Paper (HEP) that has superior moisture-absorption and humidifying properties and doubles the current efficiency of moisture absorption. The heat exchange unit speedily recovers heat contained as latent heat (vapor). The element is made of a material with superior flame-resistant properties and is treated with an anti-molding agent.

Humidifier element

Utilizing the principle of capillary action, water is permeated throughout the humidifier element. The heated air from the DX-coil goes through the humidifier and absorbs the moisture.

Efficient fan performance produces a high static pressure

Dramatically higher static pressure is achieved due to improved fan performance. This reduces limitations on unit placement and allows more flexibility in duct design.

Indoor unit

If the outdoor air suction temperature falls below –10°C, the unit changes to operable outdoor temperature down to –15°C.

Operable outdoor temperature down to –15°C

Interruption operation

A thermistor (standard equipment) within the unit detects the outdoor air temperature. Unit operation varies according to the detected temperature.

Quiet operation

Reduced pressure loss and quieter operation internally lowers the noise output of the VKM50GMV1 system to 35/36 dB (220–240 V, 50 Hz).

Design flexibility

Independent operation possible

Independent operation of HRV (VKM) type indoor unit is possible (on/off control only) by connecting an optional remote controller.

Operability possible

Adding an optional remote controller allows individual operation possible (on/off control only) of the indoor units.

The VRV II outdoor unit

The VRV II outdoor unit has a simple and compact design with reduced pressure loss and quieter operation internally. The noise output of the VKM50GMV1 system is 35/36 dB (220–240 V, 50 Hz).
Integrated system includes ventilation and humidifying operations

Easy installation + Space saving

Rather than using separate ventilation and humidifying components, the system incorporating HRV (VKM) integrates all functions, reducing the total number of indoor units and facilitating a far simpler system. The installation space becomes smaller and the labor required for installation and maintenance is reduced significantly.

Easy operation

Ventilation, cooling/heating and humidifying are possible with one remote controller.

Various air conditioner functions can be managed using a single remote control. This makes it easy to obtain high-quality and energy-efficient outdoor air treatment.

Design flexibility

The slim design of only 387 mm in height enables installation inside ceilings with less than 407 mm of clearance.

Night Purge Operation

Night purge is an energy-conserving function that works at night when air conditioners are off. By ventilating rooms containing office equipment that raises the room temperature, night purge reduces the cooling load when air conditioners are turned on in the morning.
- Night purge only works to cool and if connected to Building Multi or VRV systems.
- Night purge is set to “off” in the factory settings, so if you wish to use it, request your dealer to turn it on.

Automatic changeover to efficient operation patterns

Operation automatically changes to the optimum pattern to suit conditions.

Efficient outdoor air introduction with heat exchanger and cooling/heating operation

Using outdoor air, the temperature can be brought near room temperature with minimal cooling capacity through the use of outdoor air.

Design flexibility

Indoor unit connectable to up to 130% of the capacity of the outdoor units

Energy saving

Energy saving

Night Purge Operation

Energy saving

Automatic changeover to efficient operation patterns

Energy saving

Efficient outdoor air introduction with heat exchanger and cooling/heating operation
Clean

- **Fresh-up Operation**
The user can select between two fresh-up modes using the remote controller.

  **Supply Fresh-up:**
  Raising the air supply maintains proper room pressure to prevent back-flow of toilet/kitchen odors or moisture inflow.

  **Exhaust Fresh-up:**
  Raising exhaust air decreases room pressure to prevent the leaking of odors or floating bacteria into other rooms.

- **Preventing Dust from Falling with Directly Mounted Ducts**
  
  With Competitors’ Products
  When conventional total heat exchange units, which are independently operated using a dedicated remote controller, are directly connected by a duct, there is a possibility of dust falling from the air filter of the indoor unit when the air conditioner is OFF.

  With the HRV (VKM)
  When the HRV (VKM) is operating independently, the fan in an interlocked indoor unit continues turning, so dust does not fall from the air filter.

- A sign is displayed on the remote controller when the air filter needs cleaning.

### Model Line Up

**DX-Coil & Humidifier (VKM50MV1, VKM80MV1, VKM100MV1)**

![VKM50MV1](image1)

![VKM80MV1](image2)

![VKM100MV1](image3)

**DX-Coil (VKM50G1, VKM80G1, VKM100G1)**

![VKM50GV1](image4)

![VKM80GV1](image5)

![VKM100GV1](image6)
### Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>VK880GBYV1</th>
<th>VK890GBYV1</th>
<th>VK900GBYV1</th>
<th>VK910GBYV1</th>
<th>VK920GBYV1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>1 phase, 220-240 V, 50 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Air Flow Rate & Static Pressure (Note 7)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Ultra-high</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air flow rate (m³/h)</td>
<td>550</td>
<td>750</td>
<td>1,050</td>
</tr>
<tr>
<td>Static pressure (Pa)</td>
<td>180</td>
<td>140</td>
<td>110</td>
</tr>
</tbody>
</table>

#### Power Consumption

<table>
<thead>
<tr>
<th>Condition</th>
<th>Ultra-high (W)</th>
<th>High (W)</th>
<th>Low (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power consumption</td>
<td>550</td>
<td>450</td>
<td>420</td>
</tr>
</tbody>
</table>

#### Dimensions

**VK880/100G(M)Y1**

- [Diagram of Dimensions](#)

**VK880/100G(M)Y1**

- [Diagram of Dimensions](#)

### Note

1. Cooling and heating capacities are based on the following conditions. Fan is based on 8m and Flows are based on 30%.
2. The figure in the parenthesis indicates the heat reclaimed from the heat recovery ventilation system.
3. Indoor temperature: 21°C DB, 16°C WS. Outdoor temperature: NTS, 3°C WS.
4. Indoor temperature: 20°C DB, Outdoor temperature: 7°C DB, 6°C WS.
5. Humidity capacity is based on the following conditions:
6. Mechanical ventilation: 150 m³/h.
7. Efficiency is measured under the following condition: NTS, 3°C WS.
8. Laboratory tests are performed in accordance with the JIS C 1550 standard. The actual operating sound levels depend on the surrounding environment, including the installation and use of the unit. 100 hours on normal load, 150 hours on maximum load, and 150 hours on minimum load.
9. The noise level is at 0.8-1 dB higher than the unit's cooling sound level.
10. For operation in a space of 100m², it is required to take measures to lower the sound.

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**Heat Exchanger System**

- Air to Air Cross Flow.

- **Specially Processed Nonflammable Paper**

**Heat Exchanger Material**

- Self-Extinguishing Unflammable Foam

**Heat Exchanger Element**

- Multi-Flow FlowPath Flow

### Table

<table>
<thead>
<tr>
<th>Type</th>
<th>VK880GBYV1</th>
<th>VK890GBYV1</th>
<th>VK900GBYV1</th>
<th>VK910GBYV1</th>
<th>VK920GBYV1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reagent</td>
<td>RH11A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Power Supply

1. Air flow rate can be changed to Low or Max. for each main flow rate or for each flow rate.
7. 0°C-40°C DB, 0%RH or less.
8. -1°C-40°C DB, 0%RH or less.
9. 0°C-40°C DB, 0%RH or less.
Centralized Control of Air Conditioning and Ventilation

Operation of the air conditioner using the remote controller is interlocked with operation of the HRV, greatly simplifying overall system control. The same remote controller completely centralizes air conditioning and ventilation operations, so no HRV remote controller installation work is necessary. Using a centralized remote controller also frees the user to choose from a wide range of control systems that integrate air conditioning and ventilation. By incorporating a variety of centralized control equipment, the user can build a large, high-grade centralized control system.

Operations and Control with the Air Conditioning Remote Controller

- Simultaneous ON/OFF of the HRV (VKM) and air conditioner
- Independent operation of the HRV (VKM)
- Airflow rate switching (initial setting)
- Ventilation mode switching (initial setting)
- Self-diagnosis functions
- Filter sign display and reset
- Timer settings (simultaneous control with air conditioner)
- Fresh-up mode switching (Selectable: supply rich mode, exhaust rich mode; Initial setting)

A Variety of Control Systems That Can Be Controlled Using Only the Air Conditioner Remote Controller

- **Group Control**
  One air conditioner remote controller simultaneously controls up to 16 air conditioner and HRV (VKM) units.

- **2-Remote-Controller Control**
  Allows control of air conditioner and HRV units from two places by connecting two air conditioner remote controllers. (Group control possible)

- **Long-distance Remote Control**
  Operation control from afar, i.e., a distant control room, is possible thanks to wiring of up to 500 m. (2-remote-controller control possible)

Centralized Control System

By combining the (optional) centralized control equipment below, the user can achieve a wide range of comprehensive centralized control systems for air conditioning and ventilation.

- **Centralized Controller** (DCS302C61)
  - 64 groups (zones) of indoor units can be controlled individually same as LCD Remote controller.
  - Max.64 groups (128 indoor units controllable)
  - Zone control
  - Malfunction code display
  - Combination with Unified ON/OFF controller, schedule timer and BMS system
  - Airflow volume and direction can be controlled individually for indoor units in each group operation.
  - Ventilation volume and mode can be controlled for Heat Reclaim Ventilation (VKM).
  - Up to 4 Operation/Stop pairs can be set per day by connecting a schedule timer.

- **Unified ON/OFF Controller** (DCS301B61)
  - One unit can turn ON/OFF up to 16 groups (128 units) of HRV (VKM) and air conditioner units individually or in a batch.
  - Lamps display operation and failure status of the connected HRV (VKM) and air conditioner units.
  - Up to 8 units can be linked to allow centralized control of up to 128 units.

- **Schedule Timer** (DST301B61)
  - One unit can control the operation of up to 128 HRV (VKM) and air conditioner units on a weekly schedule.
  - Can set two ON/OFF operations per day for a period of one week.

<table>
<thead>
<tr>
<th>Number of units that can be connected per system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralized controller</td>
</tr>
<tr>
<td>Unified ON/OFF controller</td>
</tr>
<tr>
<td>Schedule timer</td>
</tr>
</tbody>
</table>

Centralized Control of Air Conditioning and Ventilation
# HRV (VKM) Control Systems

Various Control Systems According to Applications and Conditions

## Major HRV Control Systems

<table>
<thead>
<tr>
<th>System Construction</th>
<th>System Characteristics</th>
<th>Necessary Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard System</strong></td>
<td><strong>Air Conditioning Interlocked Control (VRV, SkyAir) System</strong></td>
<td>VRV remote controller</td>
</tr>
</tbody>
</table>
|                     | - Independent operation of HRV (VKM) is possible.  
                      - VRV remote controller can be used. |                      |
|                     | **System Characteristics** | VRV remote controller |
|                     | - Operation is possible using 2 remote controllers.  
                      - Multiple HRV (VKM) units can be simultaneously controlled in batch.  
                      [Up to 8 HRV (VKM) units can be connected.] |                      |
|                     | **Necessary Accessories** | VRV remote controller |
|                     | **Air Conditioning Interlocked Centralized Control System** | VRV remote controller |
|                     | - One controller can control the "ON/OFF" operation of 16 groups of units collectively or individually.  
                      - Up to 8 controllers can be installed in one centralized transmission line (in one system), which enables control of up to 128 groups.  
                      [16 groups x 8 = 128 groups]  
                      [Schedule Timer] | When necessary, centralized controller |
|                     | - One schedule timer can control the weekly schedule of up to 128 units. |                      |

### Table 1: Connectable Indoor Units

<table>
<thead>
<tr>
<th>Unit Type</th>
<th>Connectable Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRV</td>
<td>Up to 16</td>
</tr>
<tr>
<td>HRV (VKM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Up to 16</td>
</tr>
<tr>
<td></td>
<td>Up to 14</td>
</tr>
<tr>
<td></td>
<td>Up to 12</td>
</tr>
<tr>
<td></td>
<td>Up to 10</td>
</tr>
<tr>
<td></td>
<td>Up to 8</td>
</tr>
<tr>
<td></td>
<td>Up to 6</td>
</tr>
<tr>
<td></td>
<td>Up to 4</td>
</tr>
<tr>
<td></td>
<td>Up to 2</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Note: The HRV (VKM) uses two remote control addresses per unit, and the number of units that can be group controlled are shown above.

## Independent Operation System

### Independent Operation of Multiple Units

<table>
<thead>
<tr>
<th>System Construction</th>
<th>System Characteristics</th>
<th>Necessary Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Simultaneous Operation of Multiple Units</strong></td>
<td><strong>Air Conditioning Interlocked Control (VRV, SkyAir) System</strong></td>
<td>VRV remote controller</td>
</tr>
<tr>
<td></td>
<td>- Multiple VRV indoor units can be connected and controlled in batch, with interlocked operation of HRV (VKM)s and air conditioners by using the air conditioner remote controller.</td>
<td>VRV remote controller</td>
</tr>
<tr>
<td></td>
<td>- The HRV (VKM) unit can also be operated independently using the remote controller for the indoor unit, even if the indoor unit is not in operation.</td>
<td>VRV remote controller</td>
</tr>
</tbody>
</table>

### Unified ON/OFF Controller

- One controller can control the "ON/OFF" operation of 16 groups of units collectively or individually.
- Up to 8 controllers can be installed in one centralized transmission line (in one system), which enables control of up to 128 groups.
- [Schedule Timer] One schedule timer can control the weekly schedule of up to 128 units.

When necessary, unified ON/OFF controller or schedule timer, VRV remote controller

### Centralized Controller

- The centralized controller provides setting and monitoring functions, and can control up to 128 VRV and HRV (VKM) units collectively or individually.
- Multiple groups can be controlled within the same zone.

When necessary, unified ON/OFF controller or schedule timer
Installation of Optional Products (For VKM50G (M) V1, VKM80G (M) V1, VKM100G (M) V1)

For wiring
- Silencer
- Air suction/discharge grille
- High efficiency filter
- Flexible duct (1 m)
- Flexible duct (2 m)
- Duct adaptor

For humidifier running ON signal output
- Installation box for adaptor PCB

For heater control kit
- PC board adaptor for heater control kit (BRP4A50)

Notes when installing
1. Examine fully the installation place and specification for using the electric heater based on the standard and regulation of each country.
2. Supply the electric heater and safety production devices such as a relay and a thermostat, etc., of which satisfies the standard and regulation of each country at site.
3. Use a non-inflammable connecting duct to the electric heater. Be sure to allow 2 m or more between the electric heater and HRV (VKM) for safety.
4. For the HRV (VKM) units, use a different power supply from that of the electric heater and install a circuit breaker for each.