

PRODUCTS CATALOGUE  
**VRF SYSTEMS**  
2016/2017



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# Table of contents

**MDV BRAND**

◀ 4 - 7 ▶

**OUTDOOR UNITS**

◀ 9 - 84 ▶

› D4 PLUS SERIES

10 - 33

› V4 PLUS K SERIES

34 - 57

› V4 PLUS I SERIES

58 - 70

› MINI VRF SERIES

72 - 83

**CONTROL**

◀ 85 - 101 ▶

**INDOOR UNITS**

◀ 103 - 135 ▶

**ACCESSORIES**

◀ 137 - 139 ▶

# MDV®

## Leading manufacturer of air-conditioning unit



Professional brand of air-conditioning appliances belonging to the Midea group. Our product range includes different types and classes of air-conditioning systems with broad applicability. Established in 1999, it comes from commercial products group CAC (Commercial Air-Conditioning). Initially MDV brand was offering modern systems and components dedicated to commercial and industrial applications, e.g. VRF systems, chilled water units and fan-coils or condensing units. In 2001 the company decided to incorporate household air-conditioning solutions to its offer.

**Today MDV is one of the most dynamically developing companies in the air-conditioning sector. The company is continually developing new technologies and employs advanced solutions for manufacturing energy-efficient, environmentally friendly, convenient and what is the most important - reliable in operation appliances. The entire production process is closely monitored by the plant's quality control department.**

### A WORLD LEADER IN AIR-CONDITIONING SOLUTIONS

MDV has been successfully implementing its own solutions worldwide, including:

- Russia,
- Spain,
- Brazil,
- Australia,
- Israel,
- Bulgaria,
- Poland,
- Turkey,
- Saudi Arabia,

consistently expanding its global reach, in order to reinforce the position of the leading air-conditioning solutions provider.

### MDV LOGO DEVELOPMENT

The brand image underwent many changes for over 10 years. A new visual identity symbolizes a strong, independent brand, with a unique visual concept, which completely express its dynamic development.



## AVAILABLE SERIES OF UNITS



### SPLIT

Units intended to be installed on wall. Advantages of this type of air-conditioners are: quiet operation, fast cooling and heating as well as energy saving. Perfect solution for flat or house.

### MULTI

One outdoor unit can be connected with 2 or up to 5 indoor units, all of which can operate independently. Connection of one outdoor unit with several indoor units makes it possible to individually cool or heat each room, which entails significant electric energy savings. It is a convenient solution when there is a need for air-conditioning of several living or office spaces.



### OFFICE

A wide range of available indoor units designed to achieve optimal cooling and heating capacity and to ensure comfortable working conditions. The products are recommended for all commercial solutions like: office, shop, restaurant.

### VRF

Modular air-conditioning system, where many indoor units can be connected to one outdoor unit. Wide selection of indoor units for complete integration into building, while maintaining its internal and external aesthetics at low noise level. VRF systems are ideal for air conditioning in buildings, production and assembly halls, etc.).



**Efficient and economical airconditioners,**  
wide selection of models of various capacities.  
**Equally suited for cooling and heating.**

# Buying **MDV** air-conditioning means choosing **high quality product at reasonable price.**

## **MDV brand strategy:**

- Higher capacity, lower energy consumption.
- Environmentally friendly.
- Complete commercial air-conditioning solutions.
- Easy to design.
- Easy installation and maintenance.

### MANY REFERENCE SITES ACROSS THE WORLD



Public Administration  
Facility in Poland



Rapid railway station in China



University of Edinburgh



Airport in the capital of Mozambique



Airport of Beijing



## MDV pays particular attention to the environment protection.

MDV is continuously increasing the level of ecological compatibility, safety and energy efficiency of its systems, involving innovative production technologies. Air-conditioning devices offered by MDV provide high performance, while using much less electric energy. MDV air-conditioners meets requirements of the European ErP Directive. In addition, all devices provide SCOP i SEER coefficients that are consistent with current requirements.

### WHAT IS AN ErP?

The European Union enacted the 2009/125/EC Directive, which specifies requirements for electric energy related products. These requirements provide reduction of primary energy consumption and CO2 emission, while increasing the use of energy from renewable sources by 20% (3x20 package). From 1 January 2013, the provisions of the directive apply to all air-conditioning units with up to 12kW cooling/heating capacity, which are used on the European market. Implemented new seasonal energy efficiency coefficients for:

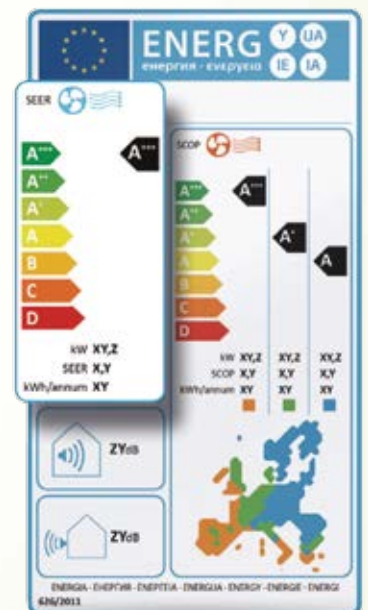
- cooling - SEER (Seasonal Energy Capacity Ratio);
- heating - SCOP (Seasonal Coefficient Of Performance)

are meant to facilitate customer's choice of the most ecological units. Unit energy efficiency class describes only the performance in specific conditions while, the seasonal efficiency indicates performance in actual operating conditions, which more accurately reflects actual energy consumption.

### NEW ENERGY LABELS

The ErP Directive establishes an obligation to apply new product labels, which will help to make informed choices about air-conditioning units and obtain reliable information concerning the purchased device.

**All units** offered by MDV meet stringent **EU standards.**











**OUTDOOR  
UNITS**

## D4 Plus series



The VRF air conditioning system, D4 Plus series, has been designed to meet the needs of the air conditioning market in an optimal way. Thanks to a modular solution, the D4 Plus series offer air conditioning units having the total efficiency from 8 HP (25 kW) to 64 HP (180 kW), in 2 HP (5 kW) increments. Thanks to application of modern technologies and compressors with intelligent efficiency modulation the system is very energy-efficient. The possibility of leading cooling installations with length of up to 1000 m and with height difference of up to 110 m makes it perfect for extensive and tall buildings.

## MODEL

| Capacity range | HP  | 8    | 10   | 12  | 14   | 16   |
|----------------|---|------|------|---|------|------|
|                | kW  | 25.2 | 28.0 | 33.5  | 40.0 | 45.0 |
| Appearance     |  |      |      |  |      |      |

## COMBINATION TABLE

| Model                 | No. of outdoor units | No. of compressors | Combination of outdoor units |      |      |      |      | Max. no. of connectable indoor units | Capacity [kW] |         |
|-----------------------|----------------------|--------------------|------------------------------|------|------|------|------|--------------------------------------|---------------|---------|
|                       |                      |                    | 8HP                          | 10HP | 12HP | 14HP | 16HP |                                      | Cooling       | Heating |
| MDVT-D252(8)W/RN1-B   | 1                    | 2                  | 1                            |      |      |      |      | 13                                   | 25.2          | 27.0    |
| MDVT-D280(10)W/RN1-B  | 1                    | 2                  |                              | 1    |      |      |      | 16                                   | 28.0          | 31.5    |
| MDVT-D335(12)W/RN1-B  | 1                    | 2                  |                              |      | 1    |      |      | 20                                   | 33.5          | 37.5    |
| MDVT-D400(14)W/RN1-B  | 1                    | 3                  |                              |      |      | 1    |      | 23                                   | 40.0          | 45.0    |
| MDVT-D450(16)W/RN1-B  | 1                    | 3                  |                              |      |      |      | 1    | 26                                   | 45.0          | 50.0    |
| MDVT-D532(18)W/RN1-B  | 2                    | 4                  | 1                            | 1    |      |      |      | 29                                   | 53.2          | 58.5    |
| MDVT-D560(20)W/RN1-B  | 2                    | 4                  |                              | 2    |      |      |      | 33                                   | 56.0          | 63.0    |
| MDVT-D615(22)W/RN1-B  | 2                    | 4                  |                              | 1    | 1    |      |      | 35                                   | 61.5          | 69.0    |
| MDVT-D680(24)W/RN1-B  | 2                    | 5                  |                              | 1    |      | 1    |      | 39                                   | 68.0          | 76.5    |
| MDVT-D730(26)W/RN1-B  | 2                    | 5                  |                              | 1    |      |      | 1    | 43                                   | 73.0          | 81.5    |
| MDVT-D800(28)W/RN1-B  | 2                    | 6                  |                              |      |      | 2    |      | 45                                   | 80.0          | 90.0    |
| MDVT-D850(30)W/RN1-B  | 2                    | 6                  |                              |      |      | 1    | 1    | 48                                   | 85.0          | 95.0    |
| MDVT-D900(32)W/RN1-B  | 2                    | 6                  |                              |      |      |      | 2    | 52                                   | 90.0          | 100.0   |
| MDVT-D960(34)W/RN1-B  | 3                    | 7                  |                              | 2    |      | 1    |      | 55                                   | 96.0          | 108.0   |
| MDVT-D1010(36)W/RN1-B | 3                    | 7                  |                              | 2    |      |      | 1    | 58                                   | 101.0         | 113.0   |
| MDVT-D1065(38)W/RN1-B | 3                    | 7                  |                              | 1    | 1    |      | 1    | 61                                   | 106.5         | 119.0   |
| MDVT-D1130(40)W/RN1-B | 3                    | 8                  |                              | 1    |      | 1    | 1    | 64                                   | 113.0         | 126.5   |
| MDVT-D1200(42)W/RN1-B | 3                    | 9                  |                              |      |      | 3    |      | 64                                   | 120.0         | 135.0   |
| MDVT-D1250(44)W/RN1-B | 3                    | 9                  |                              |      |      | 2    | 1    | 64                                   | 125.0         | 140.0   |
| MDVT-D1300(48)W/RN1-B | 3                    | 9                  |                              |      |      | 1    | 2    | 64                                   | 130.0         | 145.0   |
| MDVT-D1350(50)W/RN1-B | 3                    | 9                  |                              |      |      |      | 3    | 64                                   | 135.0         | 150.0   |
| MDVT-D1432(50)W/RN1-B | 4                    | 10                 | 1                            | 1    |      |      | 2    | 64                                   | 143.2         | 158.5   |
| MDVT-D1460(52)W/RN1-B | 4                    | 10                 |                              | 2    |      |      | 2    | 64                                   | 146.0         | 163.0   |
| MDVT-D1515(54)W/RN1-B | 4                    | 10                 |                              | 1    | 1    |      | 2    | 64                                   | 151.5         | 169.0   |
| MDVT-D1580(56)W/RN1-B | 4                    | 11                 |                              | 1    |      | 1    | 2    | 64                                   | 158.0         | 176.5   |
| MDVT-D1650(58)W/RN1-B | 4                    | 12                 |                              |      |      | 3    | 1    | 64                                   | 165.0         | 185.0   |
| MDVT-D1700(60)W/RN1-B | 4                    | 12                 |                              |      |      | 2    | 2    | 64                                   | 170.0         | 190.0   |
| MDVT-D1750(62)W/RN1-B | 4                    | 12                 |                              |      |      | 1    | 3    | 64                                   | 175.0         | 195.0   |
| MDVT-D1800(64)W/RN1-B | 4                    | 12                 |                              |      |      |      | 4    | 64                                   | 180.0         | 200.0   |

**Note:**

The capacity is based on the following conditions:  
 Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB  
 Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB  
 Refrigerant piping length 7.5 m at height difference of 0 m.  
 The above combination is recommended by the manufacturer.  
 DB - dry bulb, WB - wet bulb

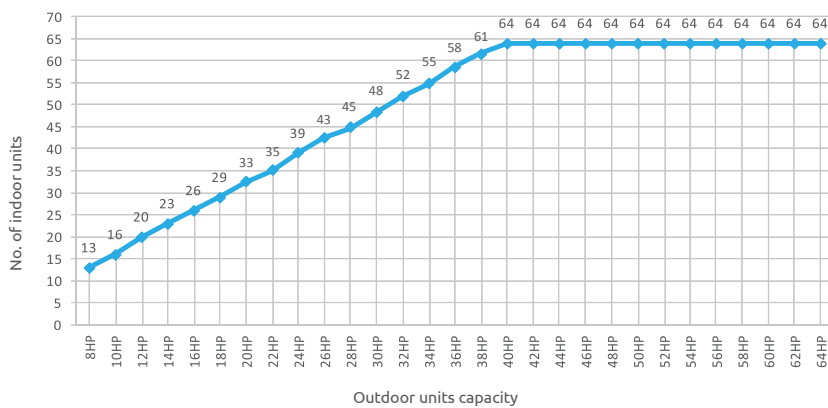
HIGH CAPACITY FOR LARGE BUILDINGS

Capacity range: from 8 HP (25,2 kW) to 64 HP (180 kW), in 2 HP (5 kW) increment. Maximum of 64 indoor units with the total capacity of 130% of the rated outdoor unit capacity in one system.



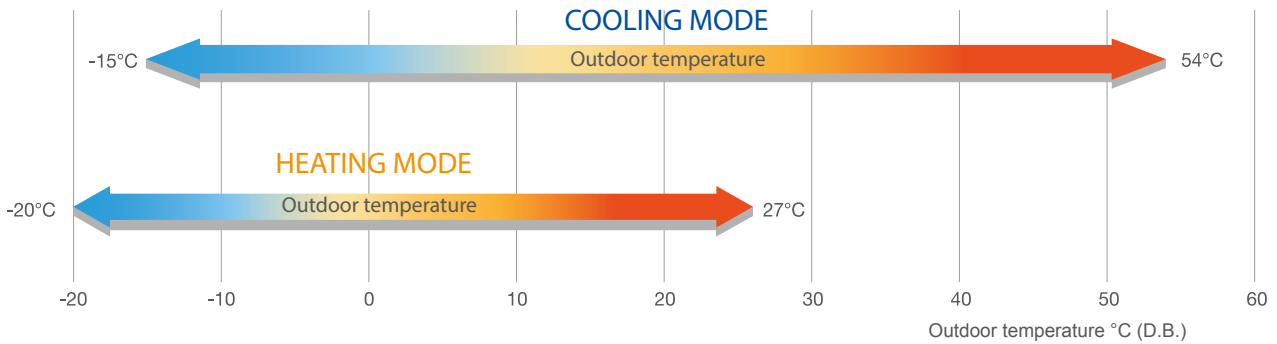
POSSIBLE TO CONNECT A LARGE AMOUNT OF INDOOR UNITS

A large amount of connectable indoor units makes the system very appealing for vast buildings.



## WIDE OPERATION RANGE

The D4 Plus systems ensures stable operation in extreme temperatures from -20°C to +54°C.

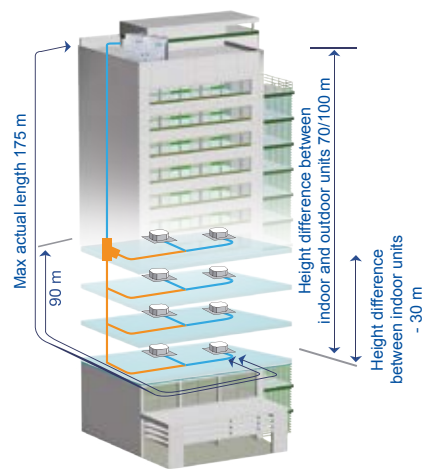


## LONG REFRIGERANT PIPING

Total piping length up to 1000 m with height difference of 110 m significantly enhances system applicability in a large investment projects.

|                   |  |                           | Allowable value (m) |
|-------------------|--|---------------------------|---------------------|
| Piping length     | Total piping length *(actual) length   |                           | 1000                |
|                   | length   | Actual length             | 175                 |
|                   |  | Equivalent length         | 200                 |
| Height difference | Distance from the first branch joint to the farthest indoor unit (equivalent length) |                           | 40/90**             |
|                   | Between indoor and outdoor units   | Outdoor unit stated above | 70                  |
|                   |  | Outdoor unit stated below | 110                 |
|                   | Between indoor units   |                           | 30                  |

\* Total piping length is equal to twice the piping length — plus piping length —  
 \*\* If this part of the piping exceeds 40 m, it is important to meet certain conditions, specified in the installation section of technical documentation.



first branch joint in the system

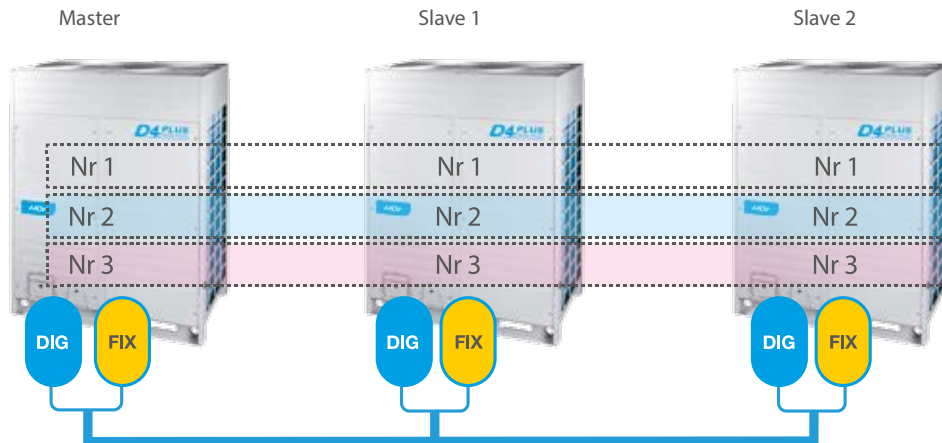
## HIGH EXTERNAL STATIC PRESSURE - MAX 40 Pa, AIR VOLUME INCREASED BY 10%

Special design of the propellers and their optimal housing enable outdoor units to be installed in diverse environments, also in partially covered spaces. Standard fans external static pressure is 0 Pa with the possibility to increase it up to 20 Pa through the change of switch settings on PCB board. It is possible to increase the fans static pressure up to 40 Pa (option available after consulting the technical-sales advisor).



OUTDOOR UNITS CYCLIC OPERATION

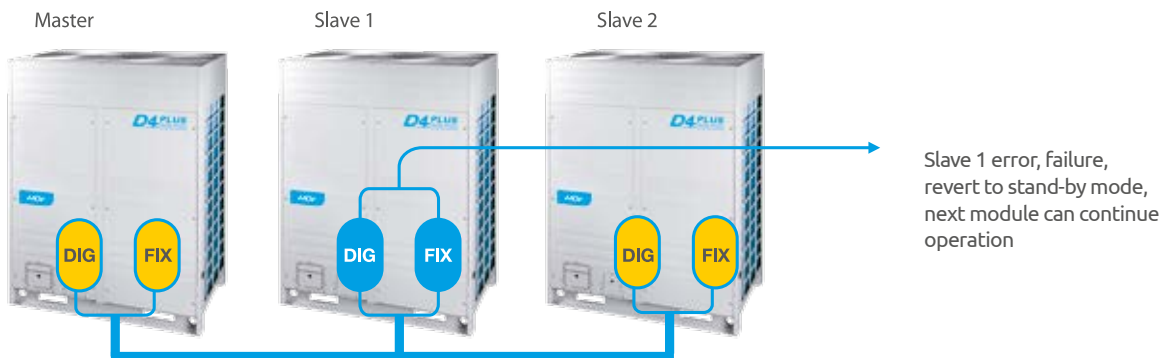
In a refrigeration system composed of several outdoor units, each of them operates cyclically as the master unit. The aim of this is to balance the operation time of all units, and therefore extend the whole system service life.



The cyclic operation function is available for 33-45 kW units.

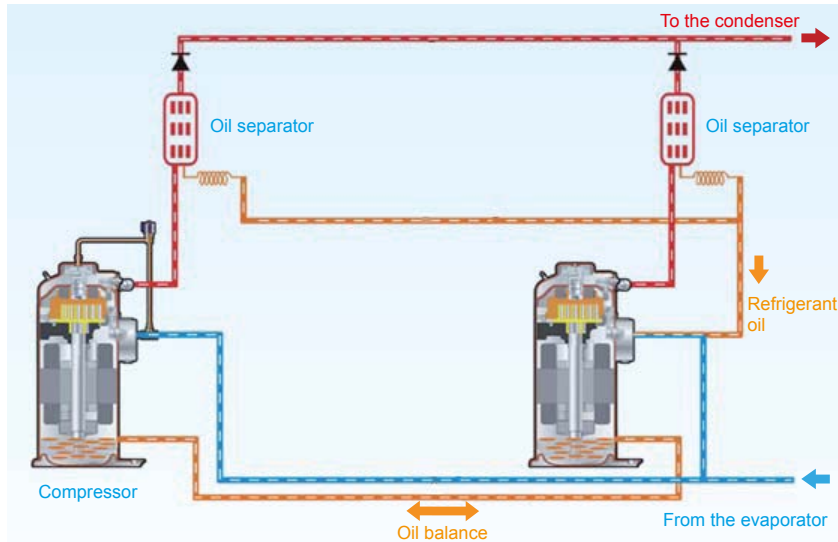
BACKUP - KEEPS THE SYSTEM OPERATING

In a modular refrigeration system, in case of an failure or error of the master unit, each remaining outdoor unit can be set as the master unit. The system can continue operation until the failure will be fixed. This function can be enabled with use of a switch on the control board.



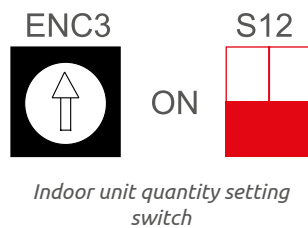
## PRECISE CONTROL OF THE SYSTEM OIL FLOW

Outdoor units adopt several technologies, designed to ensure that the oil in compressors is always on the right level. Initial oil separation in the compressor and high-performance external separator, guarantee more than 99% oil recovery. Oil balance pipes between compressors and modules compensate the oil level in all compressors. A special programme monitors the system operation time and cyclically activates the function of oil recovery from the whole installation. The above mentioned solution ensures proper lubrication of all compressor components, which results in considerably increased service life of the whole system.



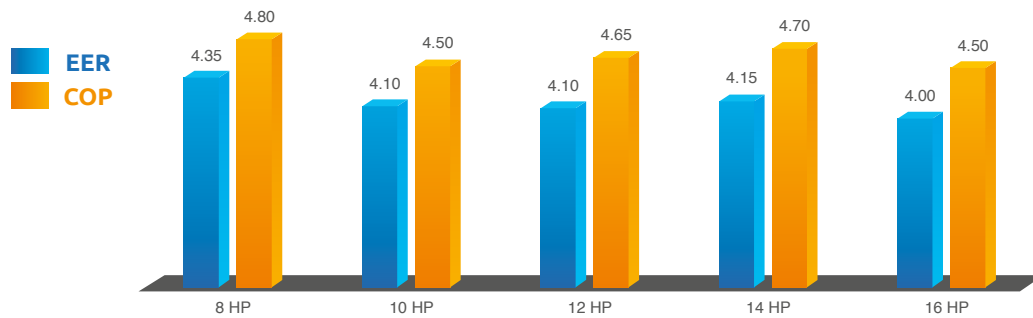
## MONITORING OF THE INDOOR UNITS QUANTITY

The number of indoor units connected to one system can be set on the outdoor unit control board. If, during system operation, one or several indoor units, in result of failure or lack of power supply, loses communication with the outdoor unit, the outdoor unit will stop and display H7 code. The aim of this is to protect the system against improper operation and prevent the compressor damage as a result of liquid slugging from defective indoor units, which EXV valve can remain completely open.



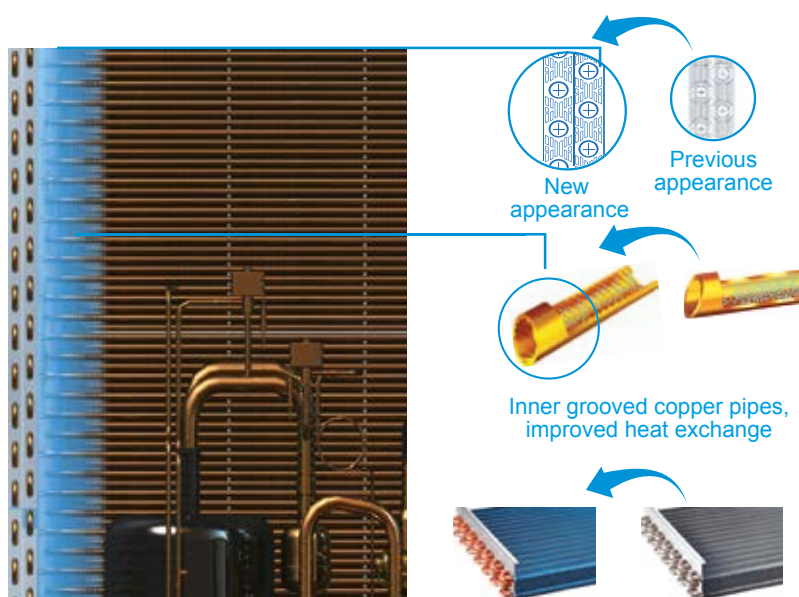
HIGH ENERGY EFFICIENCY COEFFICIENTS - EER AND COP

Modern Digital Scroll compressors, high-performance heat exchanger and DC Inverter fan motor employed in the D4 Plus series VRF air-conditioning units, enables achieving energy efficiency coefficients at the highest world level. EER for 8 HP (25,2 kW) model is 4,29 and COP 4,6 what gives it a place among the leading air-conditioning appliances manufacturers.



HIGH-PERFORMANCE HEAT EXCHANGER

Inside the specially designed heat exchanger there are used fins with greater heat exchange surface and reduced airflow resistance. Fins outside surface is covered with hydrophilic coating. The copper pipes internal surfaces have a special groove embossed, which improves heat transfer on the refrigerant side. These solutions, together with the innovative method of exchanger pipes connection in the "sigma" letter, ensure the highest heat exchange efficiency.





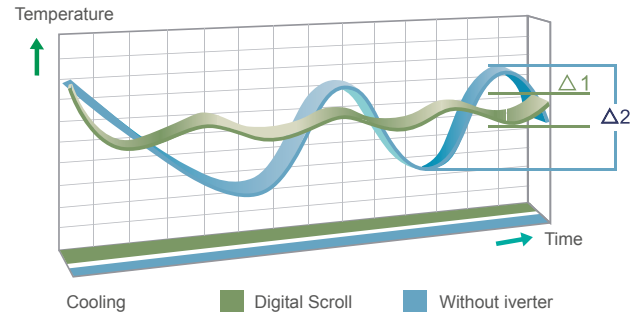
## MAIN FEATURES

## HIGH COMFORT

### FAST HEATING UP AND COOLING DOWN WITHOUT TEMPERATURE FLUCTUATIONS

By using the benefits offered by the Digital Scroll compressors, the D4 Plus system can achieve rated capacity in a very short time, what directly influences the air-conditioned rooms cooling down or heating up time. Smaller temperature fluctuations guarantee instant feeling of comfort.

Room temperature fluctuations

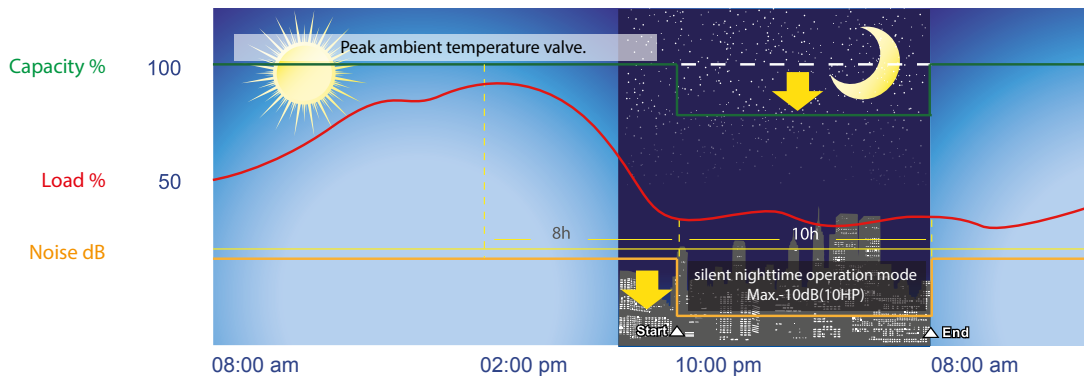


### NIGHT SILENT OPERATION

Night silent mode can be easily programmed on the control board in the outdoor unit. The outdoor unit analyses the hourly demand for cooling capacity and after the X programmed time after the highest cooling demand has elapsed, it activates fans silent operation for the time of Y hours. Night silent mode enables noise level reduction of 15 dB(A).

-Model 1 → X: 6 hours, Y: 10 hours  
-Model 3 → X: 6 hours, Y: 12 hours

-Model 2 → X: 8 hours, Y: 10 hours  
-Model 4 → X: 8 hours, Y: 8 hours

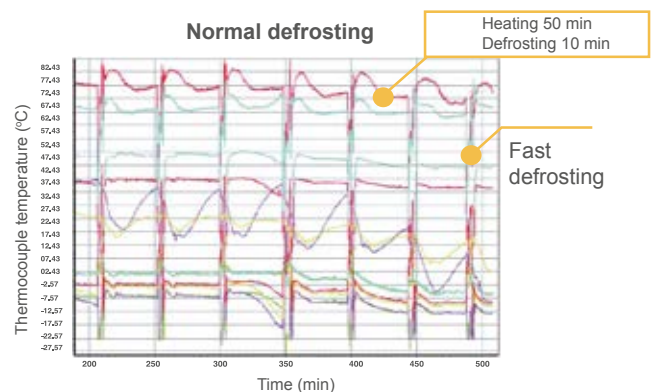
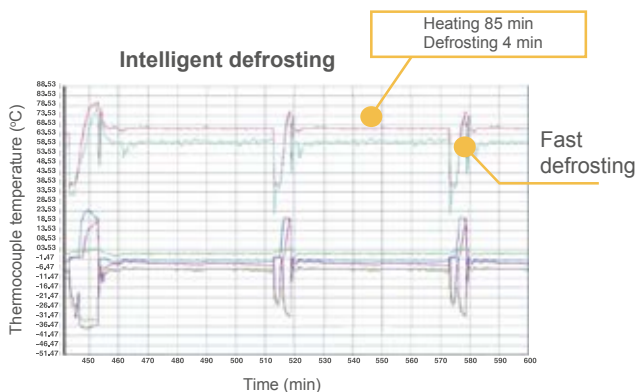


Notice!

This function can be activated in different variants. Temperature (load) curve shown in the graph is just an example.

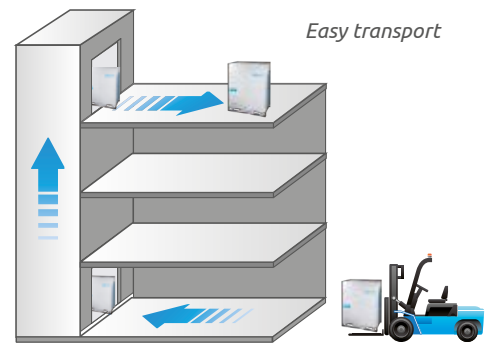
### ADVANCED DEFROSTING TECHNOLOGY

A specially designed defrosting algorithm provides the removal of ice from outdoor unit heat exchanger in optimal time. Because the defrosting time depends on actual, outside conditions, the heating intervals are reduced to the minimum necessary, what has a significant influence on keeping thermal comfort in the heated rooms.



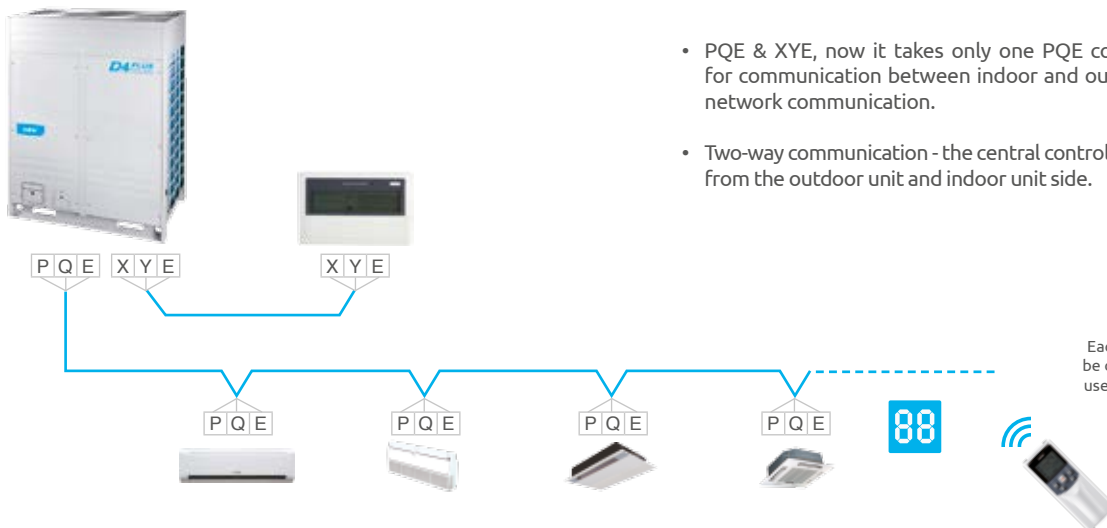
## COMPACT CASING - EFFECTIVE USE OF SPACE

Compact size and limited weight facilitate transport and installation, reduce ceiling and structure loads. Now, only with help of a forklift and an elevator, the units can be placed on the roof of a high building.



## SIMPLIFIED COMMUNICATIONS LINE CONNECTIONS

One, common communication cable. Depending on the requirements, the central controller CCM03 can be connected to the XYE terminal from the outdoor or indoor units side. This solution simplifies and lowers the costs of system wiring.



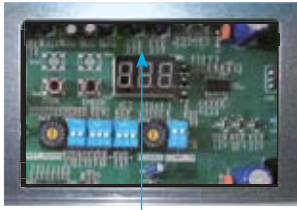
- PQE & XYE, now it takes only one PQE communication cable both for communication between indoor and outdoor units as well as for network communication.
- Two-way communication - the central controller can be connected both from the outdoor unit and indoor unit side.

## AUTOMATIC ADDRESS SETTING

The outdoor unit can automatically assign addresses to indoor units. Indoor units addresses can be checked and in case of need modified with use of an infrared remote controller or wired remote controller.



## EASY MAINTENANCE



Inspection door significantly facilitates access to the unit main board in order to monitor and control unit operation.

888

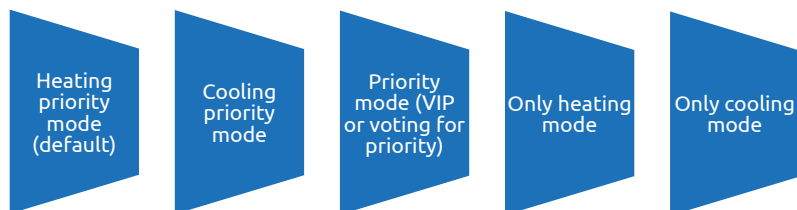
Self-diagnosis function helps service staff in efficient identification of malfunction.



Compressor location facilitates service and maintenance activities.

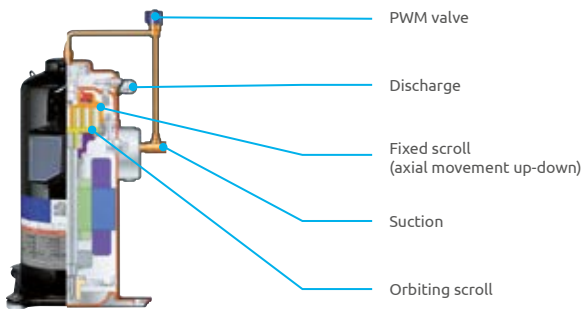
## MANY OPTIONS OF OPERATION MODE BLOCKING

A possibility to set diverse priorities and operation mode locks improves comfort of use. Available options: heating priority, cooling priority, only heating, only cooling and VIP or voting. In case of the VIP or "voting" option, the operation mode of the whole system is decided by the VIP master unit with address set to 63. If the system does not include any unit with the address of 63, the operation mode is decided by units with higher cooling or heating demand.



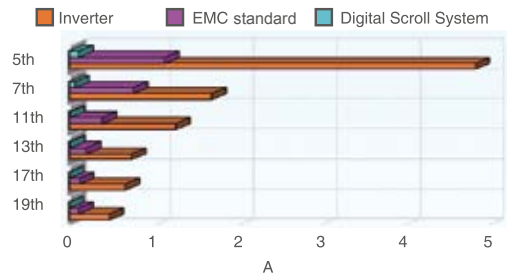
DIGITAL SCROLL COMPRESSOR

Compressor with variable output automatically controls unit cooling and heating capacity. A crucial element responsible for capacity regulation is a PWM electromagnetic valve installed between discharge chamber and compressor suction pipe. Spiral components of the Scroll type compressor are designed so as the upper spiral has the possibility to make a small vertical move, thus enabling depressurization of the discharge chamber.



- Precise room temperature control is achieved thanks to smooth and quick capacity adjustment between 10 and 100%.
- No electromagnetic interference, full electromagnetic compatibility (EMC).

- Digital Scroll compressor reliability is closely related to the PWM electromagnetic valve quality. The valve features long service valve, it was tested against 40 billions cycles, which in actual conditions corresponds to a period of continuous operation equal to 30 years.
- High performance guaranteed through the use of the technology of compressor axial depressurization.

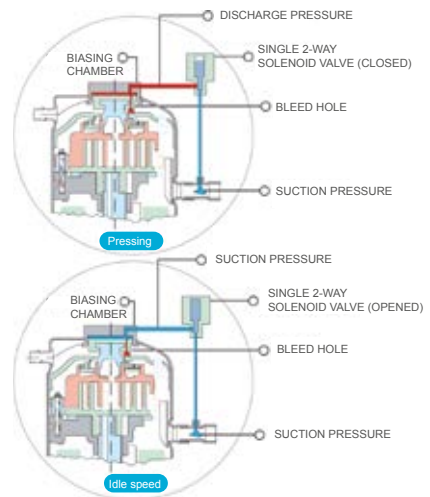


THE PRINCIPLE OF OPERATION OF THE DIGITAL SCROLL COMPRESSOR

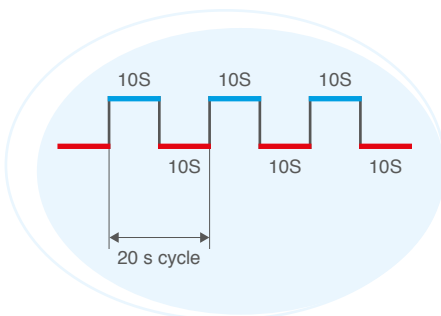
Opening of the PWM electromagnetic valve causes the refrigerant pressure to drop in the pressure chamber, what enables the upper spiral to lift up and depressurize the compressor discharge chamber. With such spiral position, the compressor does not pump the refrigerant but idles.

If the electromagnetic valve PWM is closed, pressure of the compressed refrigerant causes the upper spiral is pressed and then the compressor starts the discharge cycle.

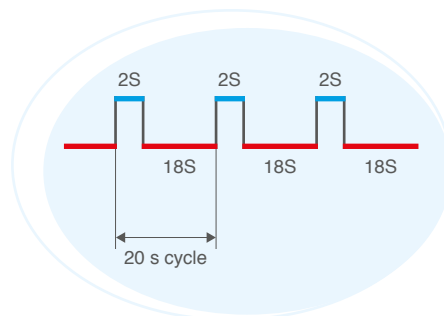
Content of the compressor capacity change consists in maintaining adequate proportion of electromagnetic valve opening and closing time.



Operation with 50% of capacity



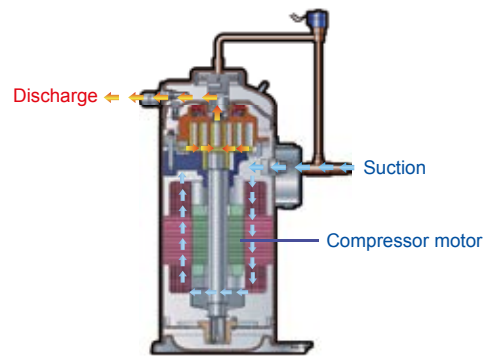
Operation with 10% of capacity



## LOW PRESSURE STRUCTURE OF THE COMPRESSOR MOTOR

Compressor high efficiency and reliability in high ambient temperatures is ensured by a special structure which provides optimal motor cooling with refrigerant.

- Effective motor cooling with sucked gas.
- High resistance to "liquid slugging".
- High reliability in high ambient temperatures.



## FAN GUARD GRILLE AND MODIFIED FAN BLADES PROFILE

Optimized fan blades shape and the new shape of grille increase the air volume, what significantly improves fan performance and reduces noise. Further, higher external static pressure up to 40 Pa (0-20 Pa as standard, 20-40 as option) has been achieved.



New shape of slightly curved blades with sharp edge increases airflow and reduced turbulence.



## DOUBLE EXV EXPANSION VALVE TECHNOLOGY

MDV outdoor units apply technology of double EXV expansion valve control, each with 480 degrees of adjustment. This enables precise control of refrigerant pressure and temperature in order to provide stable operation of the whole system and comfort conditions in the air-conditioned rooms.



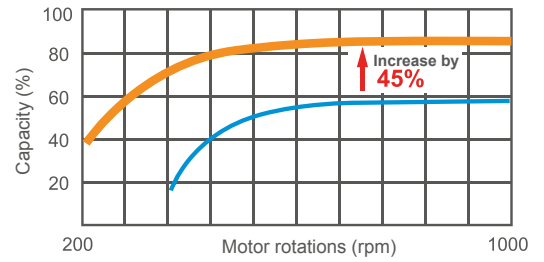
## DC FAN MOTOR

DC fan speed is adjusted depending on actual load and pressure, in order to achieve minimum energy consumption.

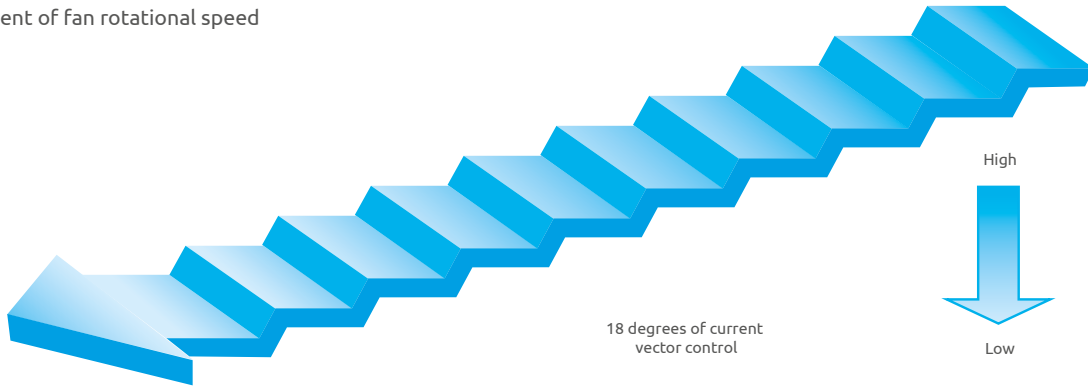
- Application in the whole capacity range (from 8 HP to 72 HP).
- Improved efficiency even by 45%, especially at low speed.



Comparison of DC and conventional motor

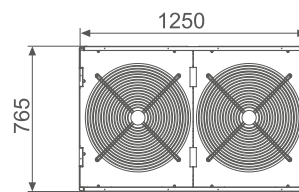
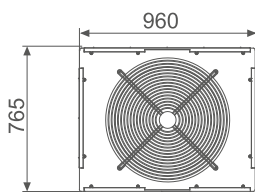
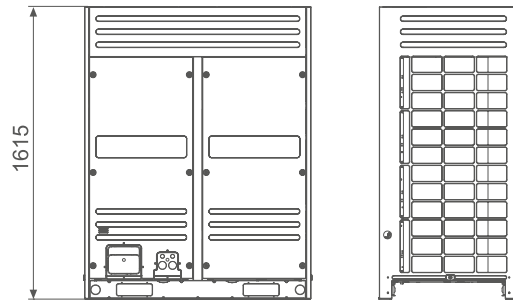
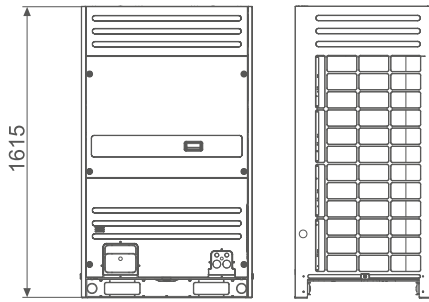


Adjustment of fan rotational speed

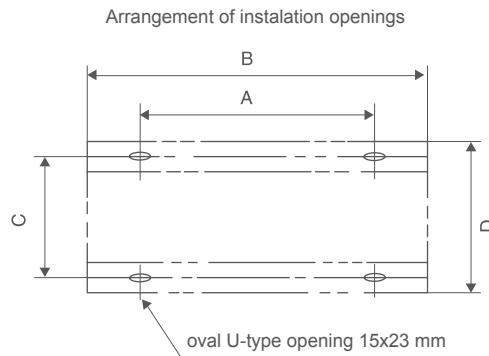
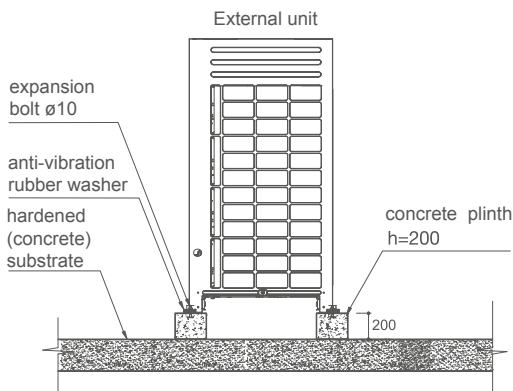


## 8, 10, 12 HP

## 14, 16 HP



Installation dimension [mm]



| HP | 8/10/12 | 14/16 |
|----|---------|-------|
| A  | 830     | 1120  |
| B  | 960     | 1250  |
| C  | 736     | 736   |
| D  | 765     | 765   |



# 8~12 HP

| Model  |   |                     | MDVT-D252(8)W/RN1-B                | MDVT-D280(10)W/RN1-B               | MDVT-D335(12)W/RN1-B               |                |
|--|---|---------------------|------------------------------------|------------------------------------|------------------------------------|----------------|
| Power supply                                   |   | V/phase/Hz          | 380-415/3/50                       | 380-415/3/50                       | 380-415/3/50                       |                |
| Cooling  | Rated capacity                                | kW                  | 25.2                               | 28.0                               | 33.5                               |                |
|  | Rated power input                             | W                   | 5790                               | 6830                               | 8170                               |                |
|  | EER   | W/W                 | 4.35                               | 4.10                               | 4.10                               |                |
| Heating  | Rated capacity                                | kW                  | 27.0                               | 31.5                               | 37.5                               |                |
|  | Rated power input                             | W                   | 5630                               | 7000                               | 8060                               |                |
|  | COP   | W/W                 | 4.80                               | 4.50                               | 4.65                               |                |
| Indoor unit connectable capacity range         |   | %                   | 50-130                             | 50-130                             | 50-130                             |                |
| Maximum connectable indoor units quantity      |   | pcs                 | 13                                 | 16                                 | 20                                 |                |
| Digital Scroll compressor                      | Type  |                     | Scroll                             | Scroll                             | Scroll                             |                |
|  | Brand   |                     | Copeland                           | Copeland                           | Copeland                           |                |
|  | Quantity                                      |                     | 1                                  | 1                                  | 1                                  |                |
| ON/OFF Compressor                              | Type  |                     | Scroll                             | Scroll                             | Scroll                             |                |
|  | Brand   |                     | Copeland                           | Copeland                           | Copeland                           |                |
|  | Quantity                                      |                     | 1                                  | 1                                  | 1                                  |                |
| Fan motor                                      | Type  |                     | DC                                 | DC                                 | DC                                 |                |
|  | Quantity                                      |                     | 1                                  | 1                                  | 1                                  |                |
| Fan  | Type  |                     | Axial                              | Axial                              | Axial                              |                |
|  | Quantity                                      |                     | 1                                  | 1                                  | 1                                  |                |
|  | External static pressure                      | Pa                  |                                    | 0~20 (default)                     | 0~20 (default)                     | 0~20 (default) |
|  |   | Pa                  |                                    | 20~40 (option)                     | 20~40 (option)                     | 20~40 (option) |
| Heat exchanger                                 | Finish type                                   |                     | Aluminium with hydrophilic coating | Aluminium with hydrophilic coating | Aluminium with hydrophilic coating |                |
|  | Type of pipes                                 |                     | Internally grooved                 | Internally grooved                 | Internally grooved                 |                |
| Airflow  |   | m <sup>3</sup> /min | 195                                | 195                                | 195                                |                |
| Sound pressure level                           |   | dB(A)               | 57                                 | 57                                 | 58                                 |                |
| Dimensions                                     | Net dimensions (width x height x depth)       | mm                  | 960×1615×765                       | 960×1615×765                       | 960×1615×765                       |                |
|  | Transport dimensions (width x height x depth) | mm                  | 1025×1790×830                      | 1025×1790×830                      | 1025×1790×830                      |                |
|  | Net / gross weight                            | kg                  | 240/255                            | 240/255                            | 240/257                            |                |
| Refrigerant                                    | Type  |                     | R410A                              | R410A                              | R410A                              |                |
|  | Charge  | kg                  | 9                                  | 9                                  | 10                                 |                |
| Expansion element                              |   |                     | EXV                                | EXV                                | EXV                                |                |
| Cooling pipes                                  | Liquid pipe                                   | mm                  | Ø9.53                              | Ø9.53                              | Ø12.70                             |                |
|  | Gas pipe                                      | mm                  | Ø22.2                              | Ø22.2                              | Ø22.2                              |                |
|  | Total piping length                           | m                   | 1000                               | 1000                               | 1000                               |                |
|  | Max. distance between indoor/outdoor unit     | m                   | 175                                | 175                                | 175                                |                |
|  | Max. height difference, outdoor unit above    | m                   | 70                                 | 70                                 | 70                                 |                |
|  | Max. height difference, outdoor unit below    | m                   | 110                                | 110                                | 110                                |                |
|  | Height difference between indoor units        | m                   | 30                                 | 30                                 | 30                                 |                |
| Recommended electric wiring and safety devices | Power supply cable                            | mm <sup>2</sup>     | 5x4                                | 5x4                                | 5x4                                |                |
|  | Communication cable                           | mm <sup>2</sup>     | 3 shielded wires x 0.75            | 3 shielded wires x 0.75            | 3 shielded wires x 0.75            |                |
|  | Fuse  | A                   | 25A                                | 25A                                | 25A                                |                |
| Outdoor temperature range                      | Cooling                                       | °C                  | -15~-54                            | -15~-54                            | -15~-54                            |                |
|  | Heating                                       | °C                  | -20~-27                            | -20~-27                            | -20~-27                            |                |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.





# 14~16 HP

| Model  |   |                     | MDVT-D400(14)W/RN1-B               | MDVT-D450(16)W/RN1-B               |                |
|--|---|---------------------|------------------------------------|------------------------------------|----------------|
| Power supply                                   |   | V/phase/Hz          | 380-415/3/50                       | 380-415/3/50                       |                |
| Cooling  | Rated capacity                                | kW                  | 40.0                               | 45.0                               |                |
|  | Rated power input                             | W                   | 9640                               | 11250                              |                |
|  | EER   | W/W                 | 4.15                               | 4.00                               |                |
| Heating  | Rated capacity                                | kW                  | 45.0                               | 50.0                               |                |
|  | Rated power input                             | W                   | 9570                               | 11110                              |                |
|  | COP   | W/W                 | 4.70                               | 4.50                               |                |
| Indoor unit connectable capacity range         |   | %                   | 50-130                             | 50-130                             |                |
| Maximum connectable indoor units quantity      |   | pcs                 | 23                                 | 26                                 |                |
| Digital Scroll compressor                      | Type  |                     | Scroll                             | Scroll                             |                |
|  | Brand   |                     | Copeland                           | Copeland                           |                |
|  | Quantity                                      |                     | 1                                  | 1                                  |                |
| ON/OFF Compressor                              | Type  |                     | Scroll                             | Scroll                             |                |
|  | Brand   |                     | Copeland                           | Copeland                           |                |
|  | Quantity                                      |                     | 2                                  | 2                                  |                |
| Fan motor                                      | Type  |                     | DC+AC                              | DC+AC                              |                |
|  | Quantity                                      |                     | 2                                  | 2                                  |                |
| Fan  | Type  |                     | Axial                              | Axial                              |                |
|  | Quantity                                      |                     | 2                                  | 2                                  |                |
|  | External static pressure                      | Pa                  |                                    | 0~20 (default)                     | 0~20 (default) |
|  |   | Pa                  |                                    | 20~40 (option)                     | 20~40 (option) |
| Heat exchanger                                 | Finish type                                   |                     | Aluminium with hydrophilic coating | Aluminium with hydrophilic coating |                |
|  | Type of pipes                                 |                     | Internally grooved                 | Internally grooved                 |                |
| Airflow  |   | m <sup>3</sup> /min | 260                                | 260                                |                |
| Sound pressure level                           |   | dB(A)               | 60                                 | 61                                 |                |
| Dimensions                                     | Net dimensions (width x height x depth)       | mm                  | 1250×1615×765                      | 1250×1615×765                      |                |
|  | Transport dimensions (width x height x depth) | mm                  | 1305×1790×820                      | 1305×1790×820                      |                |
|  | Net / gross weight                            | kg                  | 335/350                            | 335/350                            |                |
| Refrigerant                                    | Type  |                     | R410A                              | R410A                              |                |
|  | Charge  | kg                  | 14                                 | 14                                 |                |
| Expansion element                              |   |                     | EXV                                | EXV                                |                |
| Cooling pipes                                  | Liquid pipe                                   | mm                  | Ø12.7                              | Ø12.7                              |                |
|  | Gas pipe                                      | mm                  | Ø22.2                              | Ø28.6                              |                |
|  | Total piping length                           | m                   | 1000                               | 1000                               |                |
|  | Max. distance between indoor/outdoor unit     | m                   | 175                                | 175                                |                |
|  | Max. height difference, outdoor unit above    | m                   | 70                                 | 70                                 |                |
|  | Max. height difference, outdoor unit below    | m                   | 110                                | 110                                |                |
|  | Height difference between indoor units        | m                   | 30                                 | 30                                 |                |
| Recommended electric wiring and safety devices | Power supply cable                            | mm <sup>2</sup>     | 5x4                                | 5x4                                |                |
|  | Communication cable                           | mm <sup>2</sup>     | 3 shielded wires x 0.75            | 3 shielded wires x 0.75            |                |
|  | Fuse  | A                   | 40A                                | 40A                                |                |
| Outdoor temperature range                      | Cooling                                       | °C                  | -15~54                             | -15~54                             |                |
|  | Heating                                       | °C                  | -20~27                             | -20~27                             |                |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 18~22 HP

| Model                                     | Unit set name                                 |                     | MDVT-D532(18)W/RN1-B | MDVT-D560(20)W/RN1-B | MDVT-D615(22)W/RN1-B |
|---|---|---------------------|----------------------|----------------------|----------------------|
|   | Component units                               |                     | MDVT-D252(8)W/RN1-B  | MDVT-D280(10)W/RN1-B | MDVT-D280(10)W/RN1-B |
|   |   |                     | MDVT-D280(10)W/RN1-B | MDVT-D280(10)W/RN1-B | MDVT-D335(12)W/RN1-B |
|   | Branch joint connecting the component units   |                     | FQZHW-02N1D          | FQZHW-02N1D          | FQZHW-02N1D          |
| Power supply                              |   | V/phase/Hz          | 380-415/3/50         | 380-415/3/50         | 380-415/3/50         |
| Cooling                                   | Rated capacity                                | kW                  | 53.2                 | 56.0                 | 61.5                 |
|   | Rated power input                             | W                   | 12620                | 13660                | 15000                |
|   | EER   | kW/kW               | 4.22                 | 4.10                 | 4.10                 |
| Heating                                   | Rated capacity                                | kW                  | 58.5                 | 63.0                 | 69.0                 |
|   | Rated power input                             | W                   | 12630                | 14000                | 15060                |
|   | COP   | kW/kW               | 4.63                 | 4.50                 | 4.58                 |
| Indoor unit connectable capacity range    |   | %                   | 50-130               | 50-130               | 50-130               |
| Maximum connectable indoor units quantity |   | pcs                 | 29                   | 33                   | 35                   |
| Digital Scroll compressor                 | Type  |                     | Scroll               | Scroll               | Scroll               |
|   | Brand   |                     | Copeland             | Copeland             | Copeland             |
|   | Quantity                                      |                     | 2                    | 2                    | 2                    |
| ON/OFF Compressor                         | Type  |                     | Scroll               | Scroll               | Scroll               |
|   | Brand   |                     | Copeland             | Copeland             | Copeland             |
|   | Quantity                                      |                     | 2                    | 2                    | 2                    |
| Airflow                                   |   | m <sup>3</sup> /min | 390                  | 390                  | 390                  |
| Sound pressure level                      |   | dB(A)               | 62                   | 62                   | 62                   |
| Dimensions                                | Net dimensions (width x height x depth)       | mm                  | (960×1615×765)×2     | (960×1615×765)×2     | (960×1615×765)×2     |
|   | Transport dimensions (width x height x depth) | mm                  | (1025×1790×830)×2    | (1025×1790×830)×2    | (1025×1790×830)×2    |
|   | Net / gross weight                            | kg                  | 240×2/255×2          | 240×2/255×2          | 240×2/255+257        |
| Refrigerant                               | Type  |                     | R410A                | R410A                | R410A                |
|   | Charge  | kg                  | 18                   | 18                   | 19                   |
| Cooling pipes                             | Liquid pipe                                   | mm                  | Ø15.9                | Ø15.9                | Ø15.9                |
|   | Gas pipe                                      | mm                  | Ø28.6                | Ø28.6                | Ø28.6                |
| Outdoor temperature range                 | Cooling                                       | °C                  | -15~48               | -15~48               | -15~48               |
|   | Heating                                       | °C                  | -20~27               | -20~27               | -20~27               |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 24~28 HP

| Model                                     | Unit set name                                 |                     | MDVT-D680(24)W/RN1-B            | MDVT-D730(26)W/RN1-B            | MDVT-D800(28)W/RN1-B |
|---|---|---------------------|---------------------------------|---------------------------------|----------------------|
|   | Component units                               |                     | MDVT-D280(10)W/RN1-B            | MDVT-D280(10)W/RN1-B            | MDVT-D400(14)W/RN1-B |
|   | Branch joint connecting the component units   |                     | FQZHW-02N1D                     | FQZHW-02N1D                     | FQZHW-02N1D          |
|   |   |                     |                                 |                                 |                      |
| Power supply                              |   | V/faza/Hz           | 380-415/3/50                    | 380-415/3/50                    | 380-415/3/50         |
| Cooling                                   | Rated capacity                                | kW                  | 68.0                            | 73.0                            | 80.0                 |
|   | Rated power input                             | W                   | 16470                           | 18080                           | 19280                |
|   | EER   | kW/kW               | 4.13                            | 4.04                            | 4.15                 |
| Heating                                   | Rated capacity                                | kW                  | 76.5                            | 81.5                            | 90.0                 |
|   | Rated power input                             | W                   | 16570                           | 18110                           | 19150                |
|   | COP   | kW/kW               | 4.62                            | 4.50                            | 4.70                 |
| Indoor unit connectable capacity range    |   | %                   | 50-130                          | 50-130                          | 50-130               |
| Maximum connectable indoor units quantity |   | pcs                 | 39                              | 43                              | 45                   |
| Digital Scroll compressor                 | Type  |                     | Scroll                          | Scroll                          | Scroll               |
|   | Brand   |                     | Copeland                        | Copeland                        | Copeland             |
|   | Quantity                                      |                     | 2                               | 2                               | 2                    |
| ON/OFF Compressor                         | Type  |                     | Scroll                          | Scroll                          | Scroll               |
|   | Brand   |                     | Copeland                        | Copeland                        | Copeland             |
|   | Quantity                                      |                     | 3                               | 3                               | 4                    |
| Airflow                                   |   | m <sup>3</sup> /min | 455                             | 455                             | 520                  |
| Sound pressure level                      |   | dB(A)               | 63                              | 63                              | 64                   |
| Dimensions                                | Net dimensions (width x height x depth)       | mm                  | 960×1615×765<br>+1250×1615×765  | 960×1615×765<br>+1250×1615×765  | (1250×1615×765)×2    |
|   | Transport dimensions (width x height x depth) | mm                  | 1025×1790×830<br>+1305×1790×820 | 1025×1790×830<br>+1305×1790×820 | (1305×1790×820)×2    |
|   | Net / gross weight                            | kg                  | 240+335/255+350                 | 240+335/255+350                 | 330×2/345×2          |
| Refrigerant                               | Type  |                     | R410A                           | R410A                           | R410A                |
|   | Charge  | kg                  | 23                              | 23                              | 28                   |
| Cooling pipes                             | Liquid pipe                                   | mm                  | Ø15.9                           | Ø19.1                           | Ø19.1                |
|   | Gas pipe                                      | mm                  | Ø28.6                           | Ø31.8                           | Ø31.8                |
| Outdoor temperature range                 | Cooling                                       | °C                  | -15~48                          | -15~48                          | -15~48               |
|   | Heating                                       | °C                  | -20~27                          | -20~27                          | -20~27               |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 30~34 HP

| Model                                     | Unit set name                                 |                     | MDVT-D850(30)W/RN1-B | MDVT-D900(32)W/RN1-B | MDVT-D960(34)W/RN1-B                   |
|---|---|---------------------|----------------------|----------------------|--|
|   | Component units                               |                     | MDVT-D400(14)W/RN1-B | MDVT-D450(16)W/RN1-B | MDVT-D280(10)W/RN1-B                   |
|   |   |                     | MDVT-D450(16)W/RN1-B | MDVT-D450(16)W/RN1-B | MDVT-D280(10)W/RN1-B                   |
|   | Branch joint connecting the component units   |                     | -                    | -                    | MDVT-D400(14)W/RN1-B                   |
| Power supply                              |   | V/phase/Hz          | 380-415/3/50         | 380-415/3/50         | 380-415/3/50                           |
| Cooling                                   | Rated capacity                                | kW                  | 85.0                 | 90.0                 | 96.0                                   |
|   | Rated power input                             | W                   | 19450                | 22500                | 23300                                  |
|   | EER   | kW/kW               | 4.37                 | 4.00                 | 4.12                                   |
| Heating                                   | Rated capacity                                | kW                  | 95.0                 | 100.0                | 108.0                                  |
|   | Rated power input                             | W                   | 20690                | 22220                | 23570                                  |
|   | COP   | kW/kW               | 4.59                 | 4.50                 | 4.58                                   |
| Indoor unit connectable capacity range    |   | %                   | 50-130               | 50-130               | 50-130                                 |
| Maximum connectable indoor units quantity |   | pcs                 | 48                   | 52                   | 55                                     |
| Digital Scroll compressor                 | Type  |                     | Scroll               | Scroll               | Scroll                                 |
|   | Brand   |                     | Copeland             | Copeland             | Copeland                               |
|   | Quantity                                      |                     | 2                    | 2                    | 3                                      |
| ON/OFF Compressor                         | Type  |                     | Scroll               | Scroll               | Scroll                                 |
|   | Brand   |                     | Copeland             | Copeland             | Copeland                               |
|   | Quantity                                      |                     | 4                    | 4                    | 4                                      |
| Airflow                                   |   | m <sup>3</sup> /min | 520                  | 520                  | 650                                    |
| Sound pressure level                      |   | dB(A)               | 64                   | 64                   | 64                                     |
| Dimensions                                | Net dimensions (width x height x depth)       |                     | mm (1250×1615×765)×2 | mm (1250×1615×765)×2 | mm (960×1615×765)×2 + (1250×1615×765)  |
|   | Transport dimensions (width x height x depth) |                     | mm (1305×1790×820)×2 | mm (1305×1790×820)×2 | mm (1025×1790×830)×2 + (1305×1790×820) |
|   | Net / gross weight                            |                     | kg 335×2/350×2       | kg 335×2/350×2       | kg 240×2+335/255×2+350                 |
| Refrigerant                               | Type  |                     | R410A                | R410A                | R410A                                  |
|   | Charge  |                     | kg 28                | kg 28                | kg 32                                  |
| Cooling pipes                             | Liquid pipe                                   |                     | mm Ø19.1             | mm Ø19.1             | mm Ø19.1                               |
|   | Gas pipe                                      |                     | mm Ø31.8             | mm Ø31.8             | mm Ø38.1                               |
| Outdoor temperature range                 | Cooling                                       |                     | °C -15~48            | °C -15~48            | °C -15~48                              |
|   | Heating                                       |                     | °C -20~27            | °C -20~27            | °C -20~27                              |

**Note:**

The capacity is based on the following conditions:  
 Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB  
 Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.  
 Refrigerant piping length 7.5 m at the height difference of 0 m.  
 DB - dry bulb, WB - wet bulb  
 Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.  
 Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 36~40 HP

| Model                                     | Unit set name                                 |       | MDVT-D1010(36)W/RN1-B                 | MDVT-D1065(38)W/RN1-B                 | MDVT-D1130(40)W/RN1-B                 |
|---|---|-------|---------------------------------------|---------------------------------------|---------------------------------------|
|   | Component units                               |       | MDVT-D280(10)W/RN1-B                  | MDVT-D280(10)W/RN1-B                  | MDVT-D280(10)W/RN1-B                  |
|   |   |       | MDVT-D280(10)W/RN1-B                  | MDVT-D335(12)W/RN1-B                  | MDVT-D400(14)W/RN1-B                  |
|   |   |       | MDVT-D450(16)W/RN1-B                  | MDVT-D450(16)W/RN1-B                  | MDVT-D450(16)W/RN1-B                  |
|   | Branch joint connecting the component units   |       | FQZHW-03N1D                           | FQZHW-03N1D                           | FQZHW-03N1D                           |
| Power supply                              | V/phase/Hz                                    |       | 380-415/3/50                          | 380-415/3/50                          | 380-415/3/50                          |
| Cooling                                   | Rated capacity                                | kW    | 101.0                                 | 106.5                                 | 113.0                                 |
|   | Rated power input                             | W     | 24910                                 | 26250                                 | 27720                                 |
|   | EER   | kW/kW | 4.05                                  | 4.06                                  | 4.08                                  |
| Heating                                   | Rated capacity                                | kW    | 113.0                                 | 119.0                                 | 126.5                                 |
|   | Rated power input                             | W     | 25110                                 | 26180                                 | 27690                                 |
|   | COP   | kW/kW | 4.50                                  | 4.55                                  | 4.57                                  |
| Indoor unit connectable capacity range    |   | %     | 50-130                                | 50-130                                | 50-130                                |
| Maximum connectable indoor units quantity |   | pcs   | 58                                    | 61                                    | 64                                    |
| Digital Scroll compressor                 | Type  |       | Scroll                                | Scroll                                | Scroll                                |
|   | Brand   |       | Copeland                              | Copeland                              | Copeland                              |
|   | Quantity                                      |       | 3                                     | 3                                     | 3                                     |
| ON/OFF Compressor                         | Type  |       | Scroll                                | Scroll                                | Scroll                                |
|   | Brand   |       | Copeland                              | Copeland                              | Copeland                              |
|   | Quantity                                      |       | 4                                     | 4                                     | 5                                     |
| Airflow                                   | m <sup>3</sup> /min                           |       | 650                                   | 650                                   | 715                                   |
| Sound pressure level                      | dB(A)   |       | 64                                    | 64                                    | 65                                    |
| Dimensions                                | Net dimensions (width x height x depth)       | mm    | (960×1615×765)×2<br>+(1250×1615×765)  | (960×1615×765)×2<br>+(1250×1615×765)  | (960×1615×765)<br>+(1250×1615×765)×2  |
|   | Transport dimensions (width x height x depth) | mm    | (1025×1790×830)×2<br>+(1305×1790×820) | (1025×1790×830)×2<br>+(1305×1790×820) | (1025×1790×830)<br>+(1305×1790×820)×2 |
|   | Net / gross weight                            | kg    | 240×2+335/255×2+350                   | 240×2+335/255×2+350                   | 240+335×2/255+350×2                   |
| Refrigerant                               | Type  |       | R410A                                 | R410A                                 | R410A                                 |
|   | Charge  | kg    | 32                                    | 33                                    | 37                                    |
| Cooling pipes                             | Liquid pipe                                   | mm    | Ø19.1                                 | Ø19.1                                 | Ø19.1                                 |
|   | Gas pipe                                      | mm    | Ø38.1                                 | Ø38.1                                 | Ø38.1                                 |
| Outdoor temperature range                 | Cooling                                       | °C    | -15~48                                | -15~48                                | -15~48                                |
|   | Heating                                       | °C    | -20~27                                | -20~27                                | -20~27                                |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

# 42~46 HP



| Model                                     | Unit set name                                 |                     | MDVT-D1200(42)W/RN1-B | MDVT-D1250(44)W/RN1-B | MDVT-D1300(46)W/RN1-B |
|---|---|---------------------|-----------------------|-----------------------|-----------------------|
|   | Component units                               |                     | MDVT-D400(14)W/RN1-B  | MDVT-D400(14)W/RN1-B  | MDVT-D400(14)W/RN1-B  |
|   |   |                     | MDVT-D400(14)W/RN1-B  | MDVT-D400(14)W/RN1-B  | MDVT-D450(16)W/RN1-B  |
|   |   |                     | MDVT-D400(14)W/RN1-B  | MDVT-D450(16)W/RN1-B  | MDVT-D450(16)W/RN1-B  |
|   | Branch joint connecting the component units   |                     | FQZHW-03N1D           | FQZHW-03N1D           | FQZHW-03N1D           |
| Power supply                              |   | V/phase/Hz          | 380-415/3/50          | 380-415/3/50          | 380-415/3/50          |
| Cooling                                   | Rated capacity                                | kW                  | 120.0                 | 125.0                 | 130.0                 |
|   | Rated power input                             | W                   | 28900                 | 30500                 | 32140                 |
|   | EER   | kW/kW               | 4.15                  | 4.10                  | 4.04                  |
| Heating                                   | Rated capacity                                | kW                  | 135.0                 | 140.0                 | 145.0                 |
|   | Rated power input                             | W                   | 28700                 | 30300                 | 31800                 |
|   | COP   | kW/kW               | 4.70                  | 4.62                  | 4.56                  |
| Indoor unit connectable capacity range    |   | %                   | 50-130                | 50-130                | 50-130                |
| Maximum connectable indoor units quantity |   | pcs                 | 64                    | 64                    | 64                    |
| Digital Scroll compressor                 | Type  |                     | Scroll                | Scroll                | Scroll                |
|   | Brand   |                     | Copeland              | Copeland              | Copeland              |
|   | Quantity                                      |                     | 3                     | 3                     | 3                     |
| ON/OFF Compressor                         | Type  |                     | Scroll                | Scroll                | Scroll                |
|   | Brand   |                     | Copeland              | Copeland              | Copeland              |
|   | Quantity                                      |                     | 6                     | 6                     | 6                     |
| Airflow                                   |   | m <sup>3</sup> /min | 780                   | 780                   | 780                   |
| Sound pressure level                      |   | dB(A)               | 66                    | 66                    | 66                    |
| Dimensions                                | Net dimensions (width x height x depth)       |                     | mm (1250×1615×765)×3  | (1250×1615×765)×3     | (1250×1615×765)×3     |
|   | Transport dimensions (width x height x depth) |                     | mm (1305×1790×820)×3  | (1305×1790×820)×3     | (1305×1790×820)×3     |
|   | Net / gross weight                            |                     | kg 335×3/350×3        | 335×3/350×3           | 335×3/350×3           |
| Refrigerant                               | Type  |                     | R410A                 | R410A                 | R410A                 |
|   | Charge  | kg                  | 42                    | 42                    | 42                    |
| Cooling pipes                             | Liquid pipe                                   | mm                  | Ø19.1                 | Ø19.1                 | Ø19.1                 |
|   | Gas pipe                                      | mm                  | Ø38.1                 | Ø38.1                 | Ø38.1                 |
| Outdoor temperature range                 | Cooling                                       | °C                  | -15~48                | -15~48                | -15~48                |
|   | Heating                                       | °C                  | -20~27                | -20~27                | -20~27                |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

## TECHNICAL DATA



# 48~52 HP

| Model                                       | Unit set name                                 |                     | MDVT-D1350(48)W/RN1-B | MDVT-D1432(50)W/RN1-B                   | MDVT-D1460(52)W/RN1-B                   |
|---|---|---------------------|-----------------------|---|---|
|   | Component units                               |                     | MDVT-D450(16)W/RN1-B  | MDVT-D252(8)W/RN1-B                     | MDVT-D280(10)W/RN1-B                    |
|   |   |                     | MDVT-D450(16)W/RN1-B  | MDVT-D280(10)W/RN1-B                    | MDVT-D280(10)W/RN1-B                    |
|   |   |                     | MDVT-D450(16)W/RN1-B  | MDVT-D450(16)W/RN1-B                    | MDVT-D450(16)W/RN1-B                    |
|   |   |                     | -                     | MDVT-D450(16)W/RN1-B                    | MDVT-D450(16)W/RN1-B                    |
| Branch joint connecting the component units |   | FQZHW-03N1D         | FQZHW-03N1D           | FQZHW-04N1D                             |   |
| Power supply                                |   | V/phase/Hz          | 380-415/3/50          | 380-415/3/50                            | 380-415/3/50                            |
| Cooling                                     | Rated capacity                                | kW                  | 135.0                 | 143.2                                   | 146.0                                   |
|   | Rated power input                             | W                   | 33750                 | 35120                                   | 36200                                   |
|   | EER   | kW/kW               | 4.00                  | 4.08                                    | 4.03                                    |
| Heating                                     | Rated capacity                                | kW                  | 150.0                 | 158.5                                   | 163.0                                   |
|   | Rated power input                             | W                   | 33330                 | 34850                                   | 36220                                   |
|   | COP   | kW/kW               | 4.50                  | 4.55                                    | 4.50                                    |
| Indoor unit connectable capacity range      |   | %                   | 50-130                | 50-130                                  | 50-130                                  |
| Maximum connectable indoor units quantity   |   | pcs                 | 64                    | 64                                      | 64                                      |
| Digital Scroll compressor                   | Type  |                     | Scroll                | Scroll                                  | Scroll                                  |
|   | Brand   |                     | Copeland              | Copeland                                | Copeland                                |
|   | Quantity                                      |                     | 3                     | 4                                       | 4                                       |
| ON/OFF Compressor                           | Type  |                     | Scroll                | Scroll                                  | Scroll                                  |
|   | Brand   |                     | Copeland              | Copeland                                | Copeland                                |
|   | Quantity                                      |                     | 6                     | 6                                       | 6                                       |
| Airflow                                     |   | m <sup>3</sup> /min | 810                   | 910                                     | 910                                     |
| Sound pressure level                        |   | dB(A)               | 66                    | 66                                      | 66                                      |
| Dimensions                                  | Net dimensions (width x height x depth)       | mm                  | (1250×1615×765)×3     | (960×1615×765)×2<br>+(1250×1615×765)×2  | (960×1615×765)×2<br>+(1250×1615×765)×2  |
|   | Transport dimensions (width x height x depth) | mm                  | (1305×1790×820)×3     | (1025×1790×830)×2<br>+(1305×1790×820)×2 | (1025×1790×830)×2<br>+(1305×1790×820)×2 |
|   | Net / gross weight                            | kg                  | 335×3/350×3           | 240×2+335×2/255×2+350×2                 | 240×2+335×2/255×2+350×2                 |
| Refrigerant                                 | Type  |                     | R410A                 | R410A                                   | R410A                                   |
|   | Charge  | kg                  | 42                    | 46                                      | 46                                      |
| Cooling pipes                               | Liquid pipe                                   | mm                  | Ø19.1                 | Ø22.2                                   | Ø22.2                                   |
|   | Gas pipe                                      | mm                  | Ø38.1                 | Ø41.2                                   | Ø41.2                                   |
| Outdoor temperature range                   | Cooling                                       | °C                  | -15~48                | -15~48                                  | -15~48                                  |
|   | Heating                                       | °C                  | -20~27                | -20~27                                  | -20~27                                  |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

## TECHNICAL DATA



# 54~58 HP

| Model                                       | Unit set name                                 |                     | MDVT-D1515(54)W/RN1-B                   | MDVT-D1580(56)W/RN1-B                 | MDVT-D1650(58)W/RN1-B |
|---|---|---------------------|---|---------------------------------------|-----------------------|
|   | Component units                               |                     | MDVT-D280(10)W/RN1-B                    | MDVT-D280(10)W/RN1-B                  | MDVT-D400(14)W/RN1-B  |
|   |   |                     | MDVT-D335(12)W/RN1-B                    | MDVT-D400(14)W/RN1-B                  | MDVT-D400(14)W/RN1-B  |
|   |   |                     | MDVT-D450(16)W/RN1-B                    | MDVT-D450(16)W/RN1-B                  | MDVT-D400(14)W/RN1-B  |
|   |   |                     | MDVT-D450(16)W/RN1-B                    | MDVT-D450(16)W/RN1-B                  | MDVT-D450(16)W/RN1-B  |
| Branch joint connecting the component units |   | FQZHW-04N1D         | FQZHW-04N1D                             | FQZHW-04N1D                           |                       |
| Power supply                                |   | V/phase/Hz          | 380-415/3/50                            | 380-415/3/50                          | 380-415/3/50          |
| Cooling                                     | Rated capacity                                | kW                  | 151.5                                   | 158.0                                 | 165.0                 |
|   | Rated power input                             | W                   | 37500                                   | 38970                                 | 40200                 |
|   | EER   | kW/kW               | 4.04                                    | 4.05                                  | 4.10                  |
| Heating                                     | Rated capacity                                | kW                  | 169.0                                   | 176.5                                 | 185.0                 |
|   | Rated power input                             | W                   | 37290                                   | 38800                                 | 39800                 |
|   | COP   | kW/kW               | 4.53                                    | 4.55                                  | 4.65                  |
| Indoor unit connectable capacity range      |   | %                   | 50-130                                  | 50-130                                | 50-130                |
| Maximum connectable indoor units quantity   |   | pcs                 | 64                                      | 64                                    | 64                    |
| Digital Scroll compressor                   | Type  |                     | Scroll                                  | Scroll                                | Scroll                |
|   | Brand   |                     | Copeland                                | Copeland                              | Copeland              |
|   | Quantity                                      |                     | 4                                       | 4                                     | 4                     |
| ON/OFF Compressor                           | Type  |                     | Scroll                                  | Scroll                                | Scroll                |
|   | Brand   |                     | Copeland                                | Copeland                              | Copeland              |
|   | Quantity                                      |                     | 6                                       | 7                                     | 8                     |
| Airflow                                     |   | m <sup>3</sup> /min | 910                                     | 975                                   | 1040                  |
| Sound pressure level                        |   | dB(A)               | 66                                      | 67                                    | 68                    |
| Dimensions                                  | Net dimensions (width x height x depth)       | mm                  | (960×1615×765)×2<br>+(1250×1615×765)×2  | (960×1615×765)<br>+(1250×1615×765)×3  | (1250×1615×765)×4     |
|   | Transport dimensions (width x height x depth) | mm                  | (1025×1790×830)×2<br>+(1305×1790×820)×2 | (1025×1790×830)<br>+(1305×1790×820)×3 | (1305×1790×820)×4     |
|   | Net / gross weight                            | kg                  | 240×2+335×2/255×2+350×2                 | 240+335×3/255+350×3                   | 335×4/350×4           |
| Refrigerant                                 | Type  |                     | R410A                                   | R410A                                 | R410A                 |
|   | Charge  | kg                  | 47                                      | 51                                    | 56                    |
| Cooling pipes                               | Liquid pipe                                   | mm                  | Ø22.2                                   | Ø22.2                                 | Ø22.2                 |
|   | Gas pipe                                      | mm                  | Ø41.2                                   | Ø41.2                                 | Ø41.2                 |
| Outdoor temperature range                   | Cooling                                       | °C                  | -15~48                                  | -15~48                                | -15~48                |
|   | Heating                                       | °C                  | -20~27                                  | -20~27                                | -20~27                |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



## TECHNICAL DATA



# 60~64 HP

| Model                                       | Unit set name                                 |              | MDVT-D1700(60)W/RN1-B | MDVT-D1750(62)W/RN1-B | MDVT-D1800(64)W/RN1-B |
|---|---|--------------|-----------------------|-----------------------|-----------------------|
|   | Component units                               |              | MDVT-D400(14)W/RN1-B  | MDVT-D400(14)W/RN1-B  | MDVT-D450(16)W/RN1-B  |
|   |   |              | MDVT-D400(14)W/RN1-B  | MDVT-D450(16)W/RN1-B  | MDVT-D450(16)W/RN1-B  |
|   |   |              | MDVT-D450(16)W/RN1-B  | MDVT-D450(16)W/RN1-B  | MDVT-D450(16)W/RN1-B  |
|   |   |              | MDVT-D450(16)W/RN1-B  | MDVT-D450(16)W/RN1-B  | MDVT-D450(16)W/RN1-B  |
| Branch joint connecting the component units |   | FQZHW-04N1D  | FQZHW-04N1D           | FQZHW-04N1D           |                       |
| Power supply                                | V/phase/Hz                                    | 380-415/3/50 | 380-415/3/50          | 380-415/3/50          |                       |
| Cooling                                     | Rated capacity                                | kW           | 170.0                 | 175.0                 | 180.0                 |
|   | Rated power input                             | W            | 41800                 | 43400                 | 45000                 |
|   | EER   | kW/kW        | 4.07                  | 4.03                  | 4.00                  |
| Heating                                     | Rated capacity                                | kW           | 190.0                 | 195.0                 | 200.0                 |
|   | Rated power input                             | W            | 41400                 | 42910                 | 44440                 |
|   | COP   | kW/kW        | 4.42                  | 4.41                  | 4.40                  |
| Indoor unit connectable capacity range      | %   | 50-130       | 50-130                | 50-130                |                       |
| Maximum connectable indoor units quantity   | pcs   | 64           | 64                    | 64                    |                       |
| Digital Scroll compressor                   | Type  |              | Scroll                | Scroll                | Scroll                |
|   | Brand   |              | Copeland              | Copeland              | Copeland              |
|   | Quantity                                      |              | 4                     | 4                     | 4                     |
| ON/OFF Compressor                           | Type  |              | Scroll                | Scroll                | Scroll                |
|   | Brand   |              | Copeland              | Copeland              | Copeland              |
|   | Quantity                                      |              | 8                     | 8                     | 8                     |
| Airflow                                     | m <sup>3</sup> /min                           | 1040         | 1040                  | 1040                  |                       |
| Sound pressure level                        | dB(A)   | 68           | 68                    | 68                    |                       |
| Dimensions                                  | Net dimensions (width x height x depth)       | mm           | (1250×1615×765)×4     | (1250×1615×765)×4     | (1250×1615×765)×4     |
|   | Transport dimensions (width x height x depth) | mm           | (1305×1790×820)×4     | (1305×1790×820)×4     | (1305×1790×820)×4     |
|   | Net / gross weight                            | kg           | 335×4/350×4           | 335×4/350×4           | 335×4/350×4           |
| Refrigerant                                 | Type  |              | R410A                 | R410A                 | R410A                 |
|   | Charge  | kg           | 56                    | 56                    | 56                    |
| Cooling pipes                               | Liquid pipe                                   | mm           | Ø22.2                 | Ø22.2                 | Ø22.2                 |
|   | Gas pipe                                      | mm           | Ø41.2                 | Ø41.2                 | Ø41.2                 |
| Outdoor temperature range                   | Cooling                                       | °C           | -15~48                | -15~48                | -15~48                |
|   | Heating                                       | °C           | -20~27                | -20~27                | -20~27                |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

## V4 Plus K series



K series of the V4 PLUS system provides a series of unique features, including wide range of outdoor and indoor units capacity and high static pressure. 8 HP (25,2 kW) and 10 HP (28 kW) contains one inverter compressor, 12 HP (33,5 kW) to 18 HP (50 kW) are equipped with inverter compressors with energy-saving technology. This series provides excellent piping length up to 1000 m with height difference up to 110 m, which makes it ideal for large buildings, skyscrapers, etc.

## MODEL

| Capacity range | HP | 8    | 10   | 12   | 14   | 16   | 18   |
|----------------|----|------|------|------|------|------|------|
|                | kW | 25.2 | 28.0 | 33.5 | 40.0 | 45.0 | 50.0 |
| Appearance     |    |      |      |      |      |      |      |

## COMBINATION TABLE

| Model                  | No. of outdoor units | No. of compressors | Combination of of outdoor units |       |       |      |       |       | Max. no. of connectable indoor units | Capacity [kW] |         |
|------------------------|----------------------|--------------------|---------------------------------|-------|-------|------|-------|-------|--------------------------------------|---------------|---------|
|                        |                      |                    | 8 HP                            | 10 HP | 12 HP | 14HP | 16 HP | 18 HP |                                      | Cooling       | Heating |
| MDV-D252(8)W/DRN1(D)   | 1                    | 1                  | 1                               |       |       |      |       |       | 13                                   | 25.2          | 27.0    |
| MDV-D280(10)W/DRN1(D)  | 1                    | 1                  |                                 | 1     |       |      |       |       | 16                                   | 28.0          | 31.5    |
| MDV-D335(12)W/DRN1(D)  | 1                    | 2                  |                                 |       | 1     |      |       |       | 20                                   | 33.5          | 37.5    |
| MDV-D400(14)W/DRN1(D)  | 1                    | 2                  |                                 |       |       | 1    |       |       | 23                                   | 40.0          | 45.0    |
| MDV-D450(16)W/DRN1(D)  | 1                    | 2                  |                                 |       |       |      | 1     |       | 26                                   | 45.0          | 50.0    |
| MDV-D500(18)W/DRN1(D)  | 1                    | 2                  |                                 |       |       |      |       | 1     | 29                                   | 50.0          | 56.0    |
| MDV-D560(20)W/DRN1(D)  | 2                    | 2                  |                                 | 2     |       |      |       |       | 33                                   | 56.0          | 63.0    |
| MDV-D615(22)W/DRN1(D)  | 2                    | 3                  |                                 | 1     | 1     |      |       |       | 36                                   | 61.5          | 69.0    |
| MDV-D680(24)W/DRN1(D)  | 2                    | 3                  |                                 | 1     |       | 1    |       |       | 39                                   | 68.0          | 76.5    |
| MDV-D730(26)W/DRN1(D)  | 2                    | 3                  |                                 | 1     |       |      | 1     |       | 43                                   | 73.0          | 81.5    |
| MDV-D780(28)W/DRN1(D)  | 2                    | 3                  |                                 | 1     |       |      |       | 1     | 46                                   | 78.0          | 87.5    |
| MDV-D850(30)W/DRN1(D)  | 2                    | 4                  |                                 |       |       | 1    | 1     |       | 50                                   | 85.0          | 95.0    |
| MDV-D900(32)W/DRN1(D)  | 2                    | 4                  |                                 |       |       | 1    |       | 1     | 53                                   | 90.0          | 101.0   |
| MDV-D960(34)W/DRN1(D)  | 2                    | 4                  |                                 |       |       |      | 1     | 1     | 56                                   | 95.0          | 106.0   |
| MDV-D1000(36)W/DRN1(D) | 2                    | 4                  |                                 |       |       |      |       | 2     | 59                                   | 100.0         | 112.0   |
| MDV-D1060(38)W/DRN1(D) | 3                    | 4                  |                                 | 2     |       |      |       | 1     | 63                                   | 106.0         | 119.0   |
| MDV-D1130(40)W/DRN1(D) | 3                    | 5                  |                                 | 1     |       | 1    | 1     |       | 64                                   | 113.0         | 126.5   |
| MDV-D1200(42)W/DRN1(D) | 3                    | 5                  |                                 |       |       | 3    |       |       | 64                                   | 120.0         | 135.0   |
| MDV-D1230(44)W/DRN1(D) | 3                    | 5                  |                                 | 1     |       |      | 1     | 1     | 64                                   | 123.0         | 137.5   |
| MDV-D1280(46)W/DRN1(D) | 3                    | 5                  |                                 | 1     |       |      |       | 2     | 64                                   | 128.0         | 143.5   |
| MDV-D1350(48)W/DRN1(D) | 3                    | 6                  |                                 |       |       | 1    | 1     | 1     | 64                                   | 135.0         | 151.0   |
| MDV-D1400(50)W/DRN1(D) | 3                    | 6                  |                                 |       |       | 1    |       | 2     | 64                                   | 140.0         | 157.0   |
| MDV-D1450(52)W/DRN1(D) | 3                    | 6                  |                                 |       |       |      | 1     | 2     | 64                                   | 145.0         | 162.0   |
| MDV-D1500(54)W/DRN1(D) | 3                    | 6                  |                                 |       |       |      |       | 3     | 64                                   | 150.0         | 168.0   |
| MDV-D1560(56)W/DRN1(D) | 4                    | 6                  |                                 | 2     |       |      |       | 2     | 64                                   | 156.0         | 175.0   |
| MDV-D1630(58)W/DRN1(D) | 4                    | 7                  |                                 | 1     |       | 1    | 1     | 1     | 64                                   | 163.0         | 182.5   |
| MDV-D1680(60)W/DRN1(D) | 4                    | 7                  |                                 | 1     |       | 1    |       | 2     | 64                                   | 168.0         | 188.5   |
| MDV-D1730(62)W/DRN1(D) | 4                    | 7                  |                                 | 1     |       |      | 1     | 2     | 64                                   | 173.0         | 193.5   |
| MDV-D1780(64)W/DRN1(D) | 4                    | 7                  |                                 | 1     |       |      |       | 3     | 64                                   | 178.0         | 199.5   |
| MDV-D1850(66)W/DRN1(D) | 4                    | 8                  |                                 |       |       | 1    | 1     | 2     | 64                                   | 185.0         | 207.0   |
| MDV-D1900(68)W/DRN1(D) | 4                    | 8                  |                                 |       |       | 1    |       | 3     | 64                                   | 190.0         | 213.0   |
| MDV-D1950(70)W/DRN1(D) | 4                    | 8                  |                                 |       |       |      | 1     | 3     | 64                                   | 195.0         | 218.0   |
| MDV-D2000(72)W/DRN1(D) | 4                    | 8                  |                                 |       |       |      |       | 4     | 64                                   | 200.0         | 224.0   |

**Note:**

The capacity is based on the following conditions:  
 Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB  
 Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB  
 Refrigerant piping length 7.5 m at height difference of 0 m.  
 The above combination is recommended by the manufacturer.  
 DB - dry bulb, WB - wet bulb

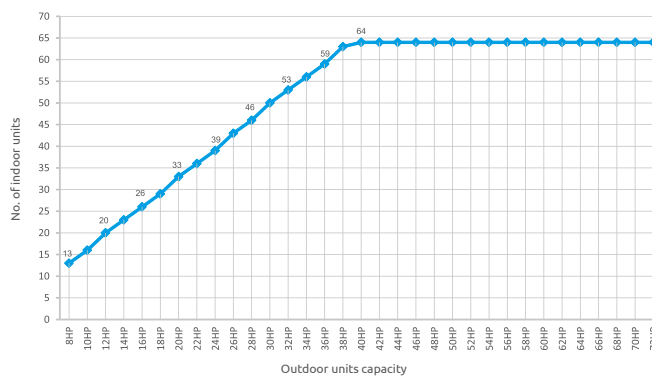
## HIGH CAPACITY FOR LARGE BUILDINGS

Capacity range: from 8 HP (25,2 kW) to 72 HP (200 kW), in 2 HP (5 kW) increment. Maximum of 64 indoor units with the total capacity of 130% of the rated outdoor unit capacity in one system.



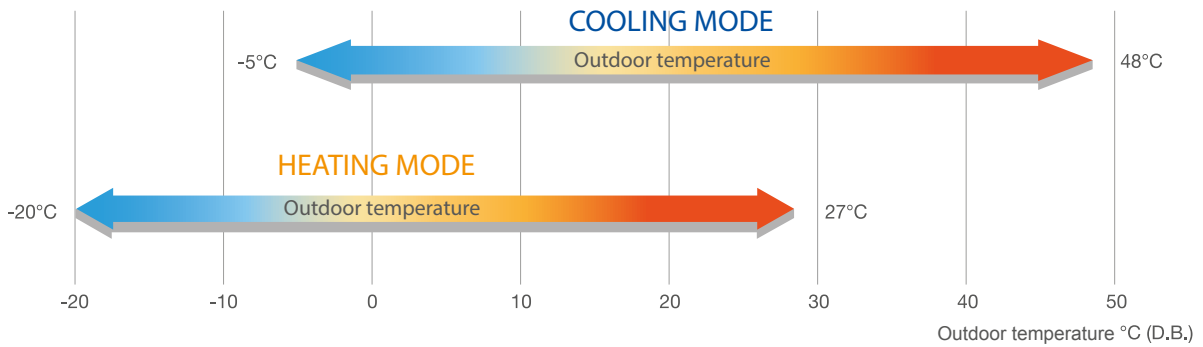
## POSSIBLE TO CONNECT A LARGE AMOUNT OF INDOOR UNITS

A large amount of connectable indoor units makes the system very appealing for vast buildings.



## WIDE OPERATION RANGE

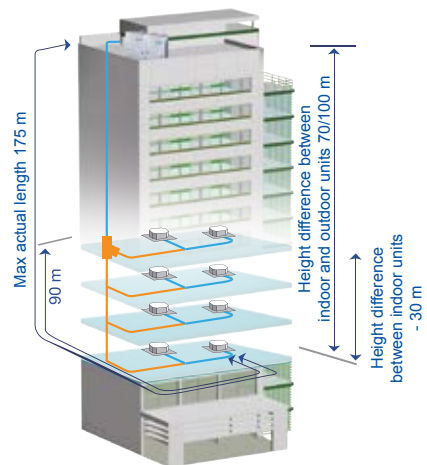
The V4 Plus K series system ensures stable operation in extreme temperatures, from -20°C up to +48°C.



## LONG REFRIGERANT PIPING

Total piping length up to 1000 m with height difference of 110 m significantly enhances system applicability in a large investment projects.

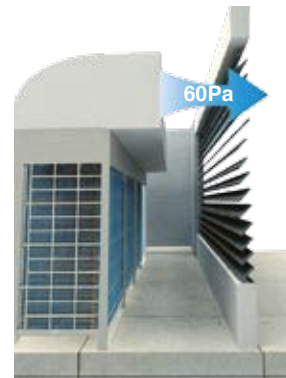
|                   |  |                           | Allowable value (m) |
|-------------------|--|---------------------------|---------------------|
| Piping length     | Total piping length  |                           | 1000                |
|                   | Maximum length   | Actual length             | 175                 |
|                   |  | Equivalent length         | 200                 |
| Height difference | Distance from the first branch joint to the farthest indoor unit (equivalent length) |                           | 40/90               |
|                   | Between indoor and outdoor units   | Outdoor unit stated above | 70                  |
|                   |  | Outdoor unit stated below | 110                 |
|                   | Between indoor units   |                           | 30                  |



## HIGH EXTERNAL STATIC PRESSURE - MAX 60 Pa, AIR VOLUME INCREASED BY 10%

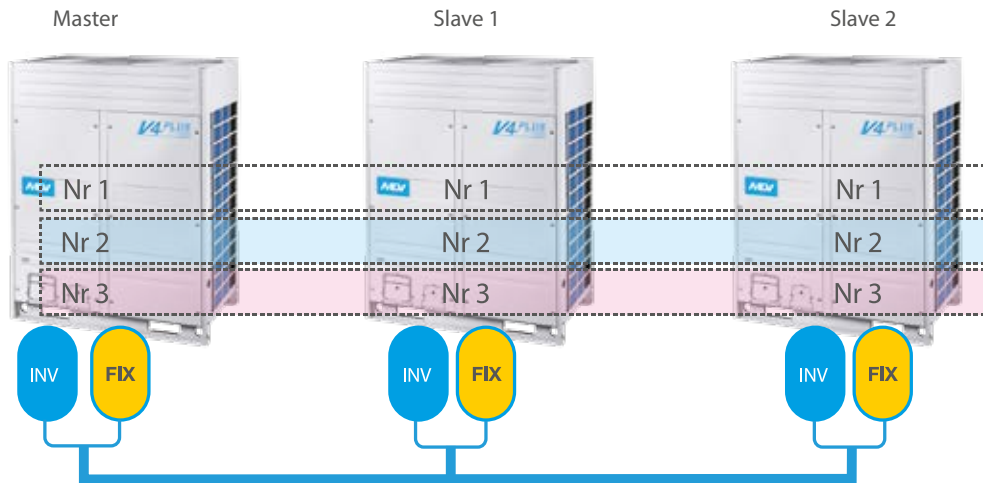
Special design of the propellers and their optimal casing enable outdoor units to be installed in diverse environments, also in partially covered spaces. Standard fans external static pressure is 0 Pa with the possibility to increase it up to 20 Pa through the change of switch settings on PCB board.

It is possible to increase the fans static pressure up to 40 Pa, and for outdoor units with capacity above 33 kW up to 60 Pa (option available after consulting the technical-sales advisor).



OUTDOOR UNITS CYCLIC OPERATION

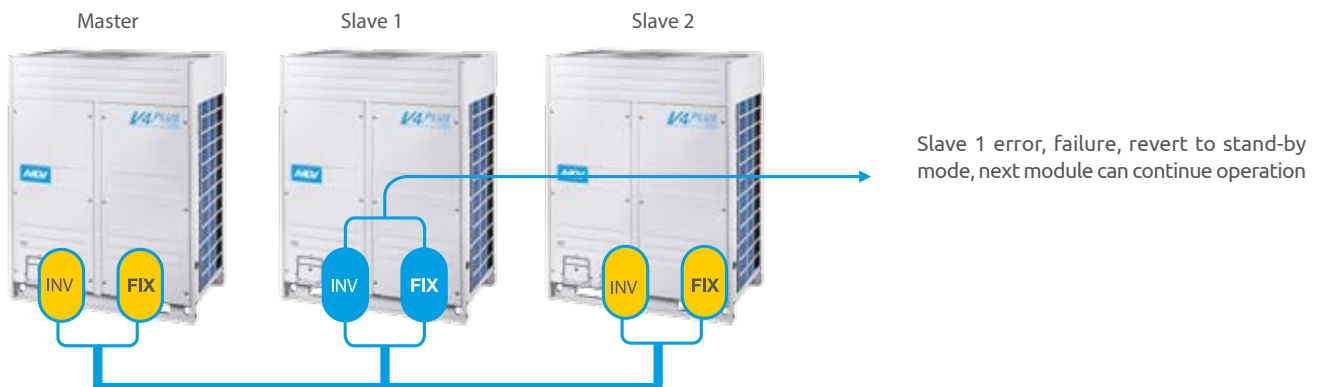
In a refrigeration system composed of several outdoor units, each of them operates cyclically as the master unit. The aim of this is to balance the operation time of all units, and therefore extend the whole system service life.



The cyclic operation function is available for 33-50 kW units.

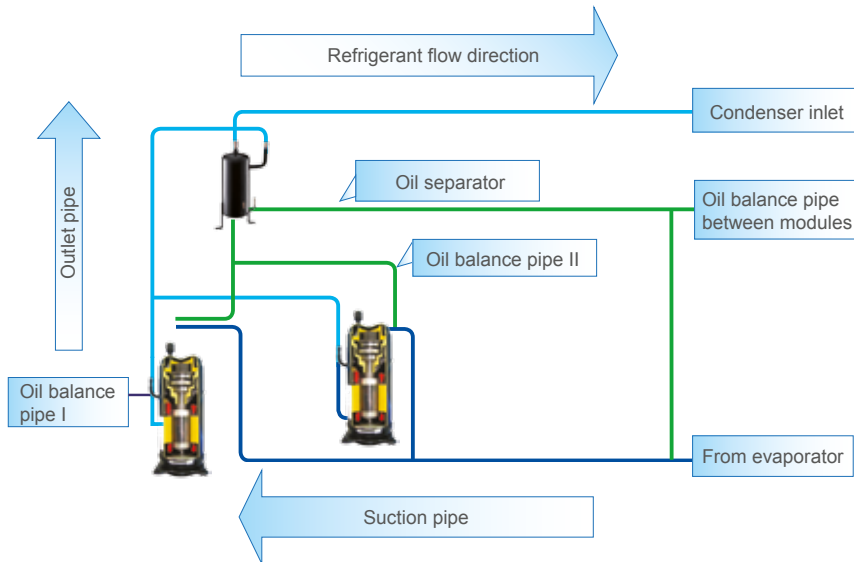
BACKUP - KEEPS THE SYSTEM OPERATING

In a modular refrigeration system, in case of an failure or error of the master unit, each remaining outdoor unit can be set as the master unit. The system can continue operation until the failure will be fixed. This function can be enabled with use of a switch on the control board.



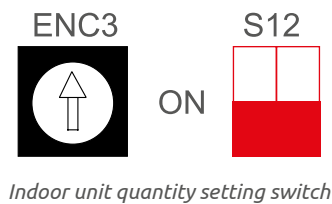
## PRECISE CONTROL OF THE SYSTEM OIL FLOW

Outdoor units adopt several technologies, designed to ensure that the oil in compressors is always on the right level. Initial oil separation in the compressor and high-performance external separator, guarantee more than 99% oil recovery. Oil balance pipes between compressors and modules compensate the oil level in all compressors. A special programme monitors the system operation time and cyclically activates the function of oil recovery from the whole installation. The above mentioned solution ensures proper lubrication of all compressor components, which results in considerably increased service life of the whole system.



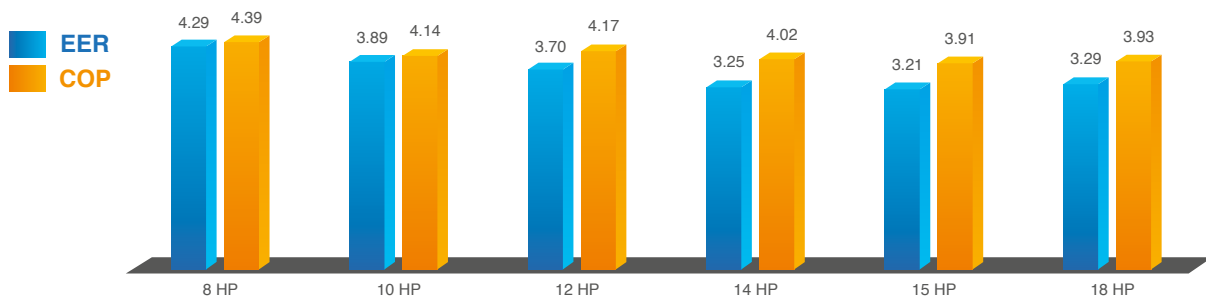
## MONITORING OF THE INDOOR UNITS QUANTITY

The number of indoor units connected to one system can be set on the outdoor unit control board. If, during system operation, one or several indoor units, in result of failure or lack of power supply, loses communication with the outdoor unit, the outdoor unit will stop and display H7 code. The aim of this is to protect the system against improper operation and prevent the compressor damage as a result of liquid slugging from defective indoor units, which EXV valve can remain completely open.



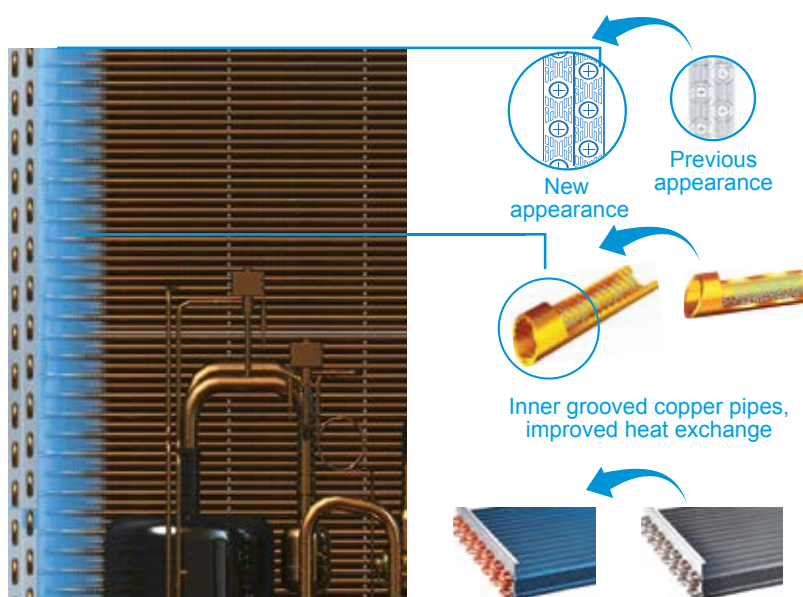
HIGH ENERGY EFFICIENCY COEFFICIENTS - EER AND COP

High-performance heat exchanger, top class inverter compressor and DC Inverter fan motor employed in the V4 Plus K series air-conditioning units, enables achieving energy efficiency coefficients at the highest world level. EER for 8 HP (25,2 kW) model is 4,29 and COP 4,39 what gives it a place among the leading air-conditioning appliances manufacturers.



HIGH-PERFORMANCE HEAT EXCHANGER

Inside the specially designed heat exchanger there are used fins with greater heat exchange surface and reduced airflow resistance. Fins outside surface is covered with hydrophilic coating. The copper pipes internal surfaces have a special groove embossed, which improves heat transfer on the refrigerant side. These solutions, together with the innovative method of exchanger pipes connection in the "sigma" letter, ensure the highest heat exchange efficiency.

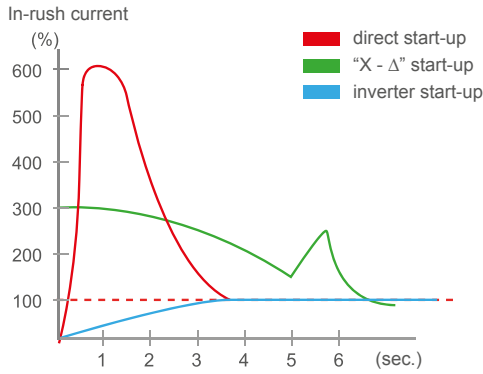




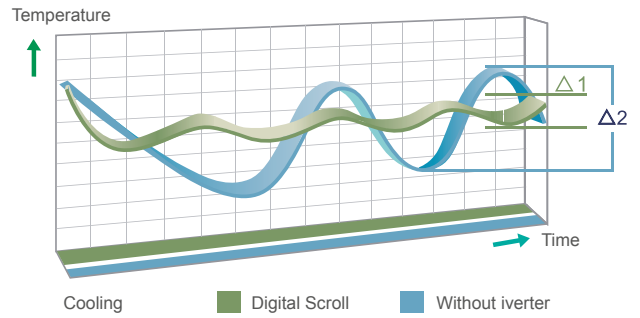
SOFT START, PRECISE TEMPERATURE CONTROL

Inverter compressor with „soft“ start function reduces temporary overload and voltage drops in the building electricity system. High-performance inverter compressor achieves rated capacity in a very short time, what directly influences the air-conditioned rooms cooling down or heating up time. Smaller temperature fluctuations guarantee instant feeling of comfort.

Comparison of inverter and traditional start-up



Room temperature fluctuations

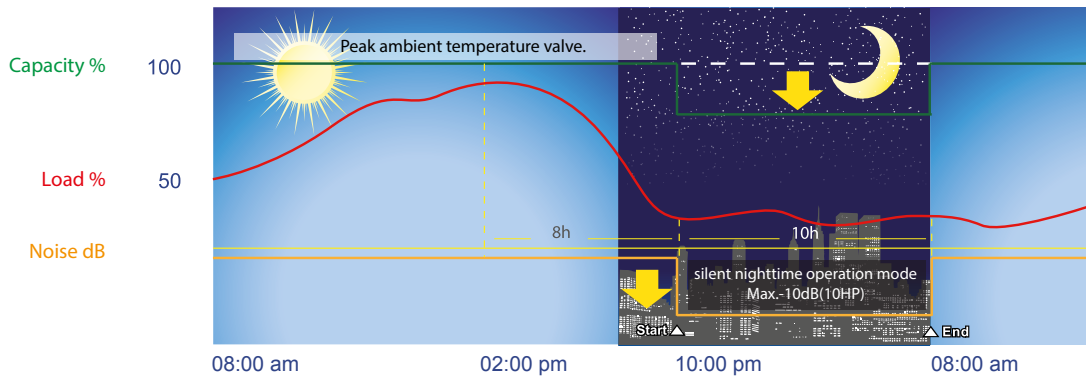


NIGHT SILENT MODE

Night silent operation can be easily programmed on the control board in the outdoor unit. The outdoor unit analyses the hourly demand for cooling capacity and after the X programmed time after the highest cooling demand has elapsed, it activates fans silent operation for the time of Y hours. Night silent mode enables noise level reduction of 15 dB(A).

- Model 1 → X: 6 hours, Y: 10 hours
- Model 3 → X: 6 hours, Y: 12 hours

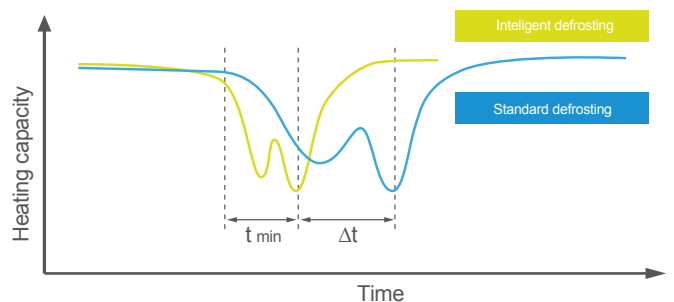
- Model 2 → X: 8 hours, Y: 10 hours
- Model 4 → X: 8 hours, Y: 8 hours



Notice!  
This function can be activated in different variants. Temperature (load) curve shown in the graph is just an example.

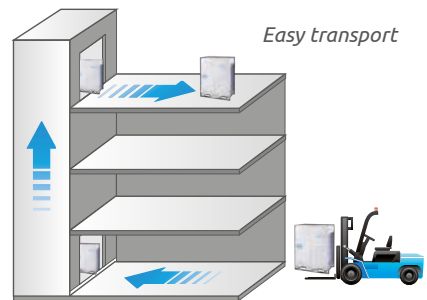
ADVANCED DEFROSTING TECHNOLOGY

A specially designed defrosting algorithm provides the removal of ice from outdoor unit heat exchanger in optimal time. Because the defrosting time depends on actual, outside conditions, the heating intervals are reduced to the minimum necessary, what has a significant influence on keeping thermal comfort in the heated rooms.



## COMPACT CASING - EFFECTIVE USE OF SPACE

Compact size and limited weight facilitate transport and installation, reduce ceiling and structure loads. Now, only with help of a forklift and an elevator, the units can be placed on the roof of a high building.



## SIMPLIFIED CONNECTION OF THE COMMUNICATION LINE

One, common communication cable. Depending on the requirements, the central controller CCM03 can be connected to the XYE terminal from the outdoor or indoor units side. This solution simplifies and lowers the costs of system wiring.



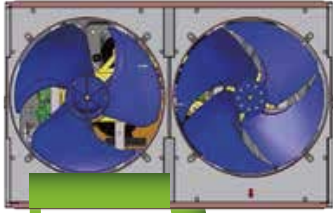
- PQE & XYE, now it takes only one PQE communication cable both for communication between indoor and outdoor units as well as for network communication.
- Two-way communication - the central controller can be connected both from the outdoor unit and indoor unit side.

## AUTOMATIC ADDRESS SETTING

The outdoor unit can automatically assign addresses to indoor units. Indoor units addresses can be checked and in case of need modified with use of an infrared remote controller or wired remote controller.



## EASY MAINTENANCE



Newly developed rotating control box with wide rotation angle, significantly facilitates access for inspection and maintenance of refrigerant pipes connections as well as shortens the time needed to disassembly the components.

\* Rotating control box is available for 18 HP model.



Inspection door significantly facilitates access to the unit main board in order to monitor and control unit operation.



Compressor location facilitates service and maintenance activities.



Self-diagnosis function helps service staff in efficient identification of malfunction.

## MANY OPTIONS OF OPERATION MODE BLOCKING

A possibility to set diverse priorities and operation mode locks improves comfort of use. Available options: heating priority, cooling priority, only heating, only cooling and VIP or voting. In case of the VIP or "voting" option, the operation mode of the whole system is decided by the VIP master unit with address set to 63. If the system does not include any unit with the address of 63, the operation mode is decided by units with higher cooling or heating demand.

Heating  
priority  
mode  
(default)

Cooling  
priority  
mode

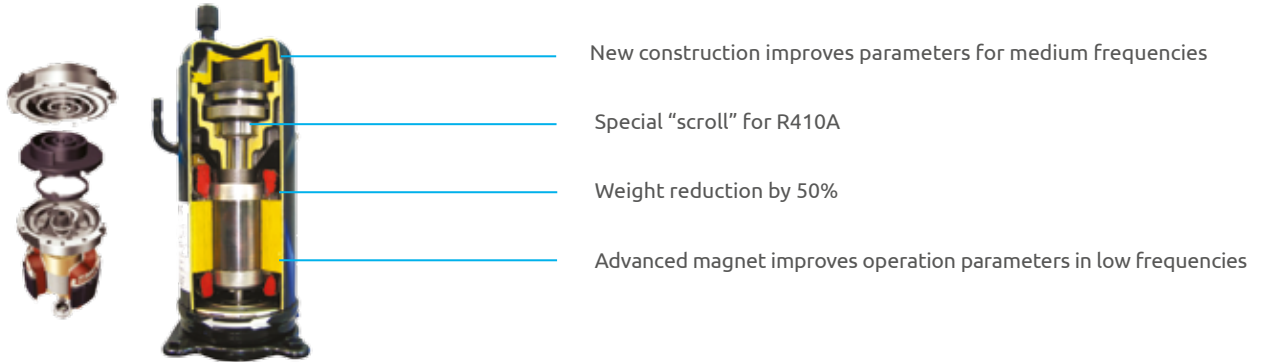
Priority  
mode (VIP  
or voting for  
priority)

Only heating  
mode

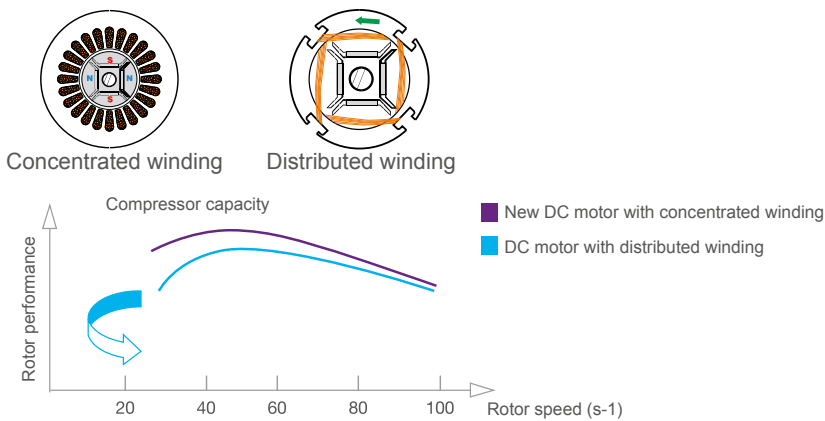
Only cooling  
mode

FULL DC INVERTER – HIGH EFFICIENCY COMPRESSOR

K series of the V4 PLUS system achieves the best-in-class EER and COP energy coefficients by applying compressor brushless DC Inverter motor, DC fan motor and high efficiency heat exchanger. These solutions enable energy reduction even by 25%.

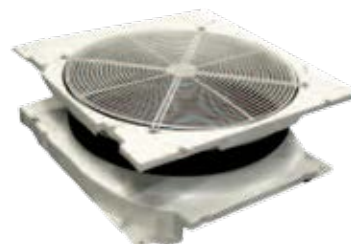


Strong magnets provide high torque and capacity, which gives reduced dimensions by 70%.



FAN GUARD GRILLE

Optimized fan blades shape and the new shape of grille increase the air volume, what significantly improves fan performance and reduces noise. Further, higher external static pressure from 20 to 40 Pa (60 Pa available for 12 HP model) has been achieved.



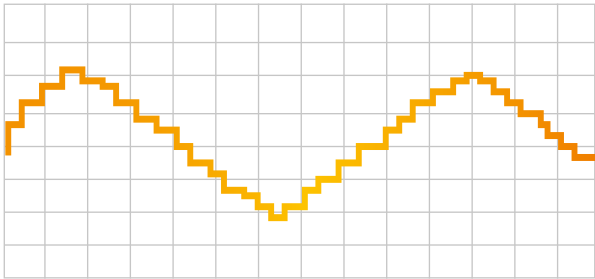
MODIFIED FAN BLADES PROFILE

New shape of slightly curved blades with sharp edge increases airflow and reduces vibrations.

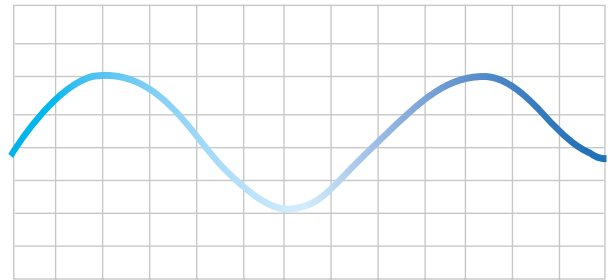


## DC INVERTER ANTI-ALIASED 180° SINE WAVE

Inverter compressor anti-aliased 180° sine wave input current significantly improves operation efficiency in comparison with traditional sawtooth current.



Sawtooth current



DC Inverter 180° sine wave

## DC FAN MOTOR

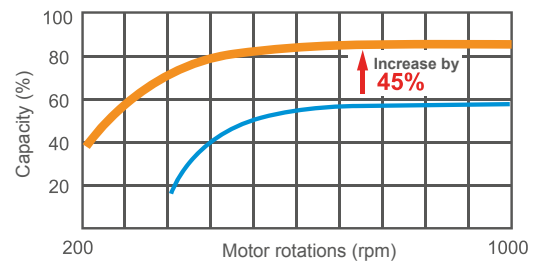
DC fan speed is adjusted depending on actual load and pressure, in order to achieve minimum energy consumption.

- Application in the whole capacity range (from 8 HP to 72 HP).
- Improved efficiency even by 45%, especially at low speed.

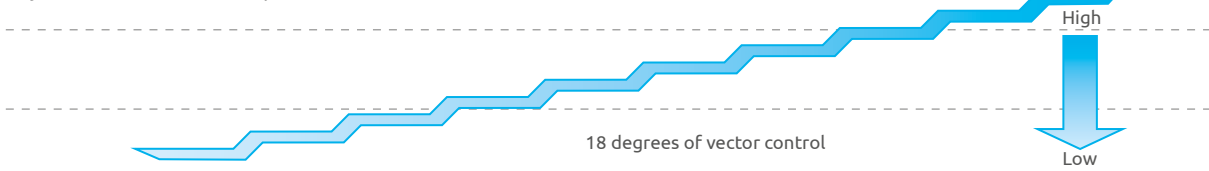


DC motor

Comparison of DC and conventional motor

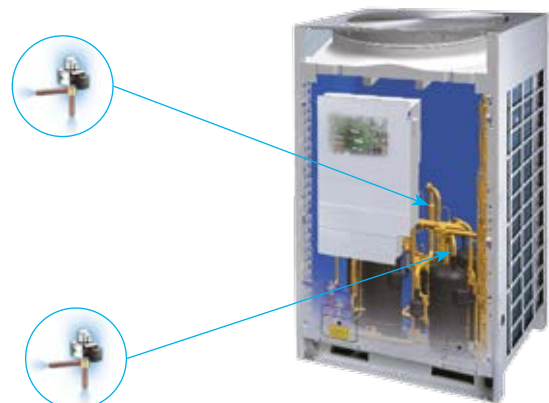


Adjustment of fan rotational speed

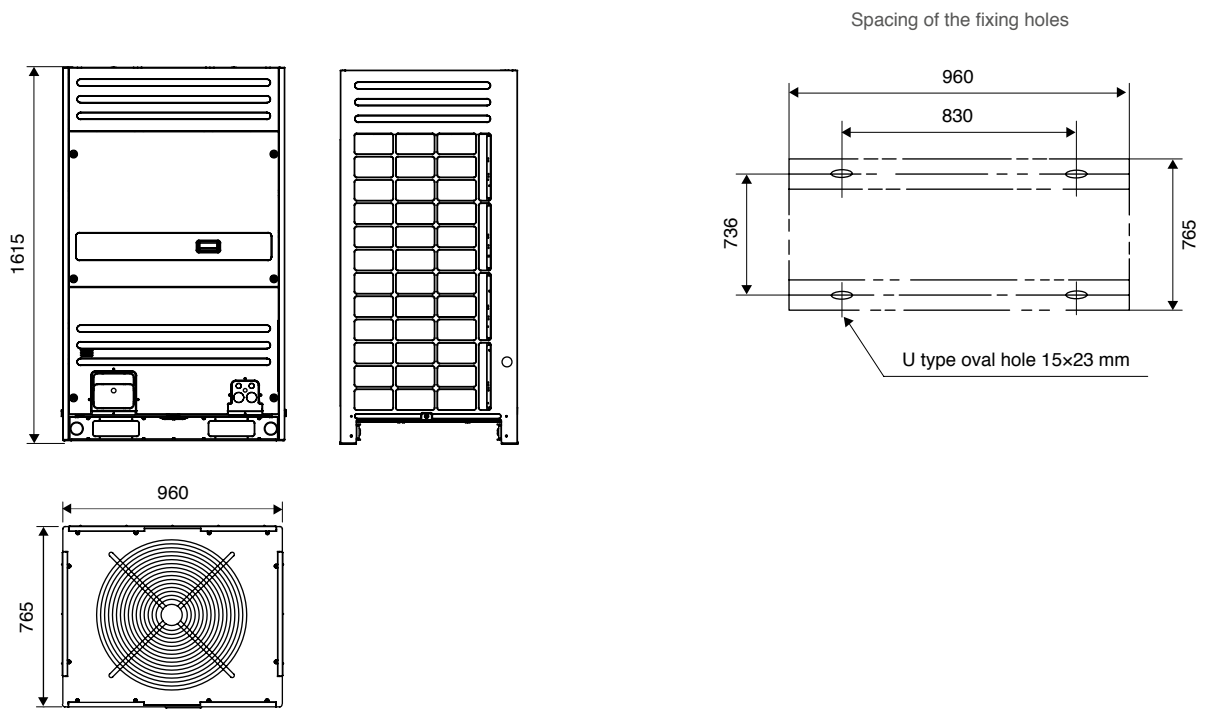


## DOUBLE EXV EXPANSION VALVE TECHNOLOGY

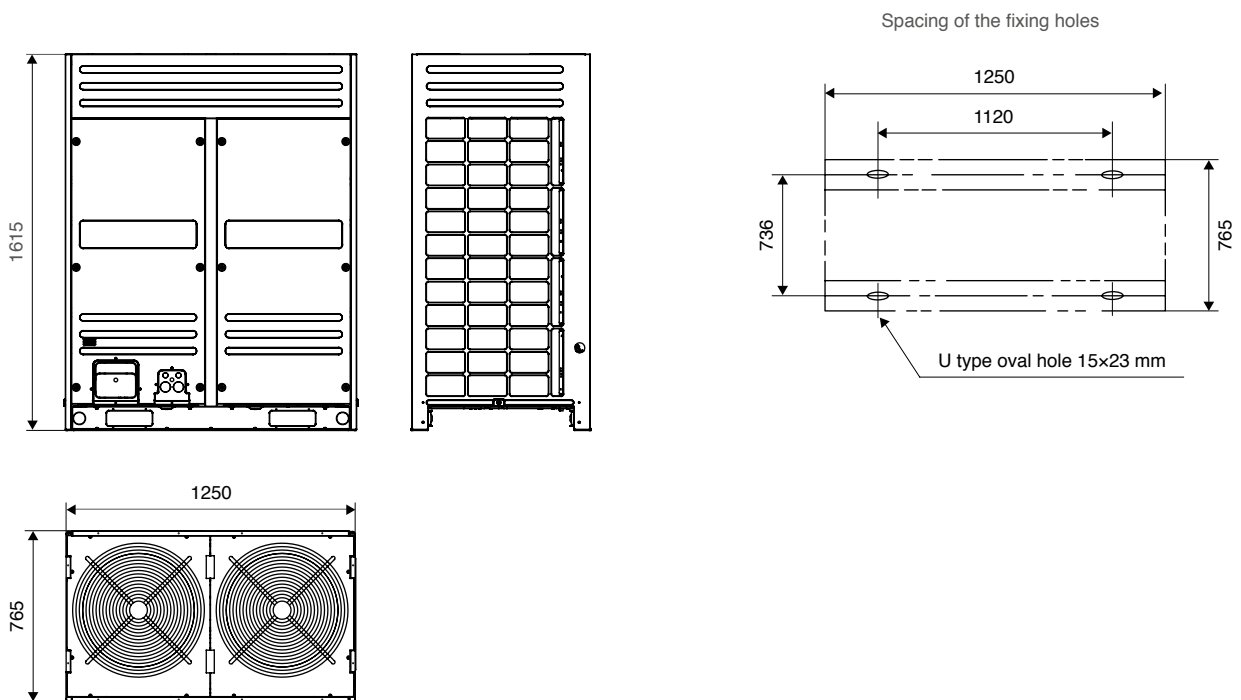
MDV outdoor units apply technology of double EXV expansion valve control, each with 480 degrees of adjustment. This enables precise control of refrigerant pressure and temperature in order to provide stable operation of the whole system and comfort conditions in the air-conditioned rooms.



**8, 10 HP**



**12, 14, 16, 18 HP**





# 8~12 HP

| Model                                     |   |                     | MDV-252(8)W/DRN1(D)                | MDV-280(10)W/DRN1(D)               | MDV-335(12)W/DRN1(D)               |
|---|---|---------------------|------------------------------------|------------------------------------|------------------------------------|
| Power supply                              |   | V/phase/Hz          | 380~415/3/50                       | 380~415/3/50                       | 380~415/3/50                       |
| Cooling                                   | Rated capacity                                | kW                  | 25.2                               | 28.0                               | 33.5                               |
|   | Rated power input                             | W                   | 5875                               | 7198                               | 9054                               |
|   | EER   | W/W                 | 4.29                               | 3.89                               | 3.70                               |
| Heating                                   | Rated capacity                                | kW                  | 27.0                               | 31.5                               | 37.5                               |
|   | Rated power input                             | W                   | 6150                               | 7609                               | 8993                               |
|   | COP   | W/W                 | 4.39                               | 4.14                               | 4.17                               |
| Indoor unit connectable capacity range    |   | %                   | 50-130                             | 50-130                             | 50-130                             |
| Maximum connectable indoor units quantity |   | pcs                 | 13                                 | 16                                 | 20                                 |
| Compressor - DC Inverter                  | Quantity                                      |                     | 1                                  | 1                                  | 1                                  |
|   | Type  |                     | Scroll                             | Scroll                             | Scroll                             |
|   | Brand   |                     | Hitachi                            | Hitachi                            | Hitachi                            |
| ON/OFF Compressor                         | Quantity                                      |                     | -                                  | -                                  | 1                                  |
|   | Type  |                     | -                                  | -                                  | Scroll                             |
|   | Brand   |                     | -                                  | -                                  | Hitachi                            |
| Fan motor                                 | Type  |                     | DC                                 | DC                                 | DC                                 |
|   | Quantity                                      |                     | 1                                  | 1                                  | 2                                  |
| Fan                                       | Type  |                     | Axial                              | Axial                              | Axial                              |
|   | Quantity                                      |                     | 1                                  | 1                                  | 1+1                                |
|   | Dimensions (diameter x height)                | mm                  | 700×202                            | 700×202                            | 560×189                            |
|   | Number of fan blades                          |                     | 3                                  | 3                                  | 3/4                                |
| Heat exchanger                            | Finish type                                   |                     | Aluminium with hydrophilic coating | Aluminium with hydrophilic coating | Aluminium with hydrophilic coating |
|   | Type of pipes                                 |                     | Internally grooved                 | Internally grooved                 | Internally grooved                 |
| Airflow                                   |   | m <sup>3</sup> /min | 192                                | 192                                | 252                                |
| Static pressure                           |   | Pa                  | 0~20 (default)                     | 0~20 (default)                     | 0~20 (default)                     |
|   |   |                     | 20~40 (option)                     | 20~40 (option)                     | 20~40 (option)                     |
| Sound pressure level                      |   | dB(A)               | 57                                 | 57                                 | 59                                 |
| Dimensions                                | Net dimensions (width x height x depth)       | mm                  | 960×1615×765                       | 960×1615×765                       | 1250×1615×765                      |
|   | Transport dimensions (width x height x depth) | mm                  | 1025×1790×830                      | 1025×1790×830                      | 1305×1790×825                      |
|   | Net / gross weight                            | kg                  | 200/215                            | 200/215                            | 268/288                            |
| Refrigerant                               | Type  |                     | R410A                              | R410A                              | R410A                              |
|   | Charge  | kg                  | 9                                  | 9                                  | 11                                 |
| Expansion element                         |   |                     | EXV                                | EXV                                | EXV                                |
| Cooling pipes                             | Liquid pipe / Gas pipe                        | mm                  | Ø12.7/Ø25.4                        | Ø12.7/Ø25.4                        | Ø15.9/Ø31.8                        |
|   | Oil balance                                   | mm                  | Ø6.35                              | Ø6.35                              | Ø6.35                              |
|   | Total piping length                           | m                   | 1000                               | 1000                               | 1000                               |
|   | Max. distance between indoor/outdoor unit     | m                   | 175                                | 175                                | 175                                |
|   | Max. height difference, outdoor unit above    | m                   | 70                                 | 70                                 | 70                                 |
|   | Max. height difference, outdoor unit below    | m                   | 110                                | 110                                | 110                                |
|   | Height difference between indoor units        | m                   | 30                                 | 30                                 | 30                                 |
| Electrical cables                         | Power supply cable                            | mm <sup>2</sup>     | 5×4.0                              | 5×4.0                              | 5×4.0                              |
|   | Communication cable                           | mm <sup>2</sup>     | 3 shielded wires x 0.75            | 3 shielded wires x 0.75            | 3 shielded wires x 0.75            |
| Fuse recommended                          |   | A                   | 25                                 | 25                                 | 25                                 |
| Outdoor temperature range                 | Cooling                                       | °C                  | -5 ~ 48                            | -5 ~ 48                            | -5 ~ 48                            |
|   | Heating                                       | °C                  | -20 ~ 27                           | -20 ~ 27                           | -20 ~ 27                           |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 14~18 HP

| Model                                     |   |                     | MDV-400(14)W/DRN1(D)               | MDV-450(16)W/DRN1(D)               | MDV-500(18)W/DRN1(D)               |
|---|---|---------------------|------------------------------------|------------------------------------|------------------------------------|
| Power supply                              |   | V/phase/Hz          | 380~415/3/50                       | 380~415/3/50                       | 380~415/3/50                       |
| Cooling                                   | Rated capacity                                | kW                  | 40.0                               | 45.0                               | 50.0                               |
|   | Rated power input                             | W                   | 12308                              | 14019                              | 15198                              |
|   | EER   | W/W                 | 3.25                               | 3.21                               | 3.29                               |
| Heating                                   | Rated capacity                                | kW                  | 45.0                               | 50.0                               | 56.0                               |
|   | Rated power input                             | W                   | 11194                              | 12787                              | 14250                              |
|   | COP   | W/W                 | 4.02                               | 3.91                               | 3.93                               |
| Indoor unit connectable capacity range    |   | %                   | 50-130                             | 50-130                             | 50-130                             |
| Maximum connectable indoor units quantity |   | pcs                 | 23                                 | 26                                 | 29                                 |
| Compressor - DC Inverter                  | Quantity                                      |                     | 1                                  | 1                                  | 1                                  |
|   | Type  |                     | Scroll                             | Scroll                             | Scroll                             |
|   | Brand   |                     | Hitachi                            | Hitachi                            | Hitachi                            |
| ON/OFF Compressor                         | Quantity                                      |                     | 1                                  | 1                                  | 1                                  |
|   | Type  |                     | Scroll                             | Scroll                             | Scroll                             |
|   | Brand   |                     | Hitachi                            | Hitachi                            | Hitachi                            |
| Fan motor                                 | Type  |                     | DC                                 | DC                                 | DC                                 |
|   | Quantity                                      |                     | 2                                  | 2                                  | 2                                  |
| Fan                                       | Type  |                     | Axial                              | Axial                              | Axial                              |
|   | Quantity                                      |                     | 1+1                                | 1+1                                | 1+1                                |
|   | Dimensions (diameter x height)                | mm                  | 560×189                            | 560×189                            | 560×189                            |
|   | Number of fan blades                          |                     | 3/4                                | 3/4                                | 3/4                                |
| Heat exchanger                            | Finish type                                   |                     | Aluminium with hydrophilic coating | Aluminium with hydrophilic coating | Aluminium with hydrophilic coating |
|   | Type of pipes                                 |                     | Internally grooved                 | Internally grooved                 | Internally grooved                 |
| Airflow                                   |   | m <sup>3</sup> /min | 252                                | 252                                | 254                                |
| Static pressure                           |   | Pa                  | 0~20 (default)                     | 0~20 (default)                     | 0~20 (default)                     |
|   |   |                     | 20~40 (option)                     | 20~40 (option)                     | 20~40 (option)                     |
| Sound pressure level                      |   | dB(A)               | 60                                 | 60                                 | 61                                 |
| Dimensions                                | Net dimensions (width x height x depth)       | mm                  | 1250×1615×765                      | 1250×1615×765                      | 1250×1615×765                      |
|   | Transport dimensions (width x height x depth) | mm                  | 1305×1790×825                      | 1305×1790×825                      | 1305×1790×825                      |
|   | Net / gross weight                            | kg                  | 280/300                            | 280/300                            | 300/320                            |
| Refrigerant                               | Type  |                     | R410A                              | R410A                              | R410A                              |
|   | Charge  | kg                  | 13                                 | 13                                 | 16                                 |
| Expansion element                         |   |                     | EXV                                | EXV                                | EXV                                |
| Cooling pipes                             | Liquid pipe / Gas pipe                        | mm                  | Ø15.9/Ø31.8                        | Ø15.9/Ø31.8                        | Ø19.1/Ø31.8                        |
|   | Oil balance                                   | mm                  | Ø6.35                              | Ø6.35                              | Ø6.35                              |
|   | Total piping length                           | m                   | 1000                               | 1000                               | 1000                               |
|   | Max. distance between indoor/outdoor unit     | m                   | 175                                | 175                                | 175                                |
|   | Max. height difference, outdoor unit above    | m                   | 70                                 | 70                                 | 70                                 |
|   | Max. height difference, outdoor unit below    | m                   | 110                                | 110                                | 110                                |
|   | Height difference between indoor units        | m                   | 30                                 | 30                                 | 30                                 |
| Electrical cables                         | Power supply cable                            | mm <sup>2</sup>     | 5x6.0                              | 5x6.0                              | 5x6.0                              |
|   | Communication cable                           | mm <sup>2</sup>     | 3 shielded wires x 0.75            | 3 shielded wires x 0.75            | 3 shielded wires x 0.75            |
| Fuse recommended                          |   | A                   | 40                                 | 40                                 | 40                                 |
| Outdoor temperature                       | Cooling                                       | °C                  | -5 ~ 48                            | -5 ~ 48                            | -5 ~ 48                            |
|   | Heating                                       | °C                  | -20 ~ 24                           | -20 ~ 24                           | -20 ~ 24                           |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.





# 20~24 HP

| Model                                     | Unit set name                                 |                     | MDV-560(20)W/DRN1(D) | MDV-615(22)W/DRN1(D)                 | MDV-680(24)W/DRN1(D)                |
|---|---|---------------------|----------------------|--------------------------------------|-------------------------------------|
|   | Component units                               |                     | MDV-280(10)W/DRN1(D) | MDV-280(10)W/DRN1(D)                 | MDV-280(10)W/DRN1(D)                |
|   |   |                     | MDV-280(10)W/DRN1(D) | MDV-335(12)W/DRN1(D)                 | MDV-400(14)W/DRN1(D)                |
|   | Branch joint connecting the component units   |                     | FQZHW-02N1D          | FQZHW-02N1D                          | FQZHW-02N1D                         |
| Power supply                              |   | V/phase/Hz          | 380~415/3/50         | 380~415/3/50                         | 380~415/3/50                        |
| Cooling                                   | Rated capacity                                | kW                  | 56.0                 | 61.5                                 | 68.0                                |
|   | Rated power input                             | W                   | 14396                | 16252                                | 19506                               |
|   | EER   | kW/kW               | 3.89                 | 3.78                                 | 3.49                                |
| Heating                                   | Rated capacity                                | kW                  | 63.0                 | 69.0                                 | 76.5                                |
|   | Rated power input                             | W                   | 15218                | 16602                                | 18803                               |
|   | COP   | kW/kW               | 4.14                 | 4.16                                 | 4.07                                |
| Indoor unit connectable capacity range    |   | %                   | 50-130               | 50-130                               | 50-130                              |
| Maximum connectable indoor units quantity |   | pcs                 | 33                   | 36                                   | 39                                  |
| Compressor - DC Inverter                  | Quantity                                      |                     | 2                    | 2                                    | 2                                   |
|   | Type  |                     | Scroll               | Scroll                               | Scroll                              |
|   | Brand   |                     | Hitachi              | Hitachi                              | Hitachi                             |
| ON/OFF Compressor                         | Quantity                                      |                     | -                    | 1                                    | 1                                   |
|   | Type  |                     | -                    | Scroll                               | Scroll                              |
|   | Brand   |                     | -                    | Hitachi                              | Hitachi                             |
| Airflow                                   |   | m <sup>3</sup> /min | 192x2                | 192+252                              | 192+252                             |
| Static pressure                           |   | Pa                  | 0~20 (default)       | 0~20 (default)                       | 0~20 (default)                      |
|   |   |                     | 20~40 (option)       | 20~40 (option)                       | 20~40 (option)                      |
| Sound pressure level                      |   | dB(A)               | 62                   | 63                                   | 63                                  |
| Dimensions                                | Net dimensions (width x height x depth)       | mm                  | (960×1615×765)×2     | (960×1615×765)<br>+ (1250×1615×765)  | (960×1615×765)<br>+ (1250×1615×765) |
|   | Transport dimensions (width x height x depth) | mm                  | (1025×1790×830)×2    | (1025×1790×830)<br>+ (1305×1790×820) | 025×1790×830)<br>+ (1305×1790×820)  |
|   | Net / gross weight                            | kg                  | (200×2)/(215×2)      | (200+268)/(215+288)                  | (200+280)/(215+300)                 |
| Refrigerant                               | Type  |                     | R410A                | R410A                                | R410A                               |
|   | Charge  | kg                  | 18                   | 20                                   | 22                                  |
| Cooling pipes                             | Liquid pipe / Gas pipe                        | mm                  | Ø15.9/Ø28.6          | Ø15.9/Ø28.6                          | Ø15.9/Ø28.6                         |
|   | Oil balance                                   | mm                  | Ø6.35                | Ø6.35                                | Ø6.35                               |
| Outdoor temperature                       | Cooling                                       | °C                  | -5 ~ 48              | -5 ~ 48                              | -5 ~ 48                             |
|   | Heating                                       | °C                  | -20 ~ 24             | -20 ~ 24                             | -20 ~ 24                            |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 26~30 HP

| Model                                     | Unit set name                                 |                     | MDV-730(26)W/DRN1(D)                 | MDV-780(28)W/DRN1(D)                 | MDV-850(30)W/DRN1(D) |
|---|---|---------------------|--------------------------------------|--------------------------------------|----------------------|
|   | Component units                               |                     | MDV-280(10)W/DRN1(D)                 | MDV-280(10)W/DRN1(D)                 | MDV-400(14)W/DRN1(D) |
|   |   |                     | MDV-450(16)W/DRN1(D)                 | MDV-500(18)W/DRN1(D)                 | MDV-450(16)W/DRN1(D) |
|   | Branch joint connecting the component units   |                     | FQZHW-02N1D                          | FQZHW-02N1D                          | FQZHW-02N1D          |
| Power supply                              |   | V/phase/Hz          | 380~415/3/50                         | 380~415/3/50                         | 380~415/3/50         |
| Cooling                                   | Rated capacity                                | kW                  | 73.0                                 | 78.0                                 | 85.0                 |
|   | Rated power input                             | W                   | 21217                                | 22396                                | 26327                |
|   | EER   | kW/kW               | 3.44                                 | 3.48                                 | 3.23                 |
| Heating                                   | Rated capacity                                | kW                  | 81.5                                 | 87.5                                 | 95.0                 |
|   | Rated power input                             | W                   | 20396                                | 21859                                | 23981                |
|   | COP   | kW/kW               | 4.02                                 | 4.00                                 | 3.96                 |
| Indoor unit connectable capacity range    |   | %                   | 50-130                               | 50-130                               | 50-130               |
| Maximum connectable indoor units quantity |   | pcs                 | 43                                   | 46                                   | 50                   |
| Compressor - DC Inverter                  | Quantity                                      |                     | 2                                    | 2                                    | 2                    |
|   | Type  |                     | Scroll                               | Scroll                               | Scroll               |
|   | Brand   |                     | Hitachi                              | Hitachi                              | Hitachi              |
| ON/OFF Compressor                         | Quantity                                      |                     | 1                                    | 1                                    | 2                    |
|   | Type  |                     | Scroll                               | Scroll                               | Scroll               |
|   | Brand   |                     | Hitachi                              | Hitachi                              | Hitachi              |
| Airflow                                   |   | m <sup>3</sup> /min | 192+252                              | 192+254                              | 252x2                |
| Static pressure                           |   | Pa                  | 0~20 (default)                       | 0~20 (default)                       | 0~20 (default)       |
|   |   |                     | 20~40 (option)                       | 20~40 (option)                       | 20~40 (option)       |
| Sound pressure level                      |   | dB(A)               | 63                                   | 63                                   | 64                   |
| Dimensions                                | Net dimensions (width x height x depth)       | mm                  | (960×1615×765)<br>+ (1250×1615×765)  | (960×1615×765)<br>+ (1250×1615×765)  | (1250×1615×765)×2    |
|   | Transport dimensions (width x height x depth) | mm                  | (1025×1790×830)<br>+ (1305×1790×820) | (1025×1790×830)<br>+ (1305×1790×820) | (1305×1790×820)×2    |
|   | Net / gross weight                            | kg                  | (200+280)/(215+300)                  | (200+300)/(215+320)                  | (220×2)/(300×2)      |
| Refrigerant                               | Type  |                     | R410A                                | R410A                                | R410A                |
|   | Charge  | kg                  | 22                                   | 25                                   | 26                   |
| Cooling pipes                             | Liquid pipe / Gas pipe                        | mm                  | Ø19.1/Ø31.8                          | Ø19.1/Ø31.8                          | Ø19.1/Ø31.8          |
|   | Oil balance                                   | mm                  | Ø6.35                                | Ø6.35                                | Ø6.35                |
| Outdoor temperature                       | Cooling                                       | °C                  | -5 ~ 48                              | -5 ~ 48                              | -5 ~ 48              |
|   | Heating                                       | °C                  | -20 ~ 24                             | -20 ~ 24                             | -20 ~ 24             |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 32~36 HP

| Model                                     | Unit set name                                 |                     | MDV-900(32)W/DRN1(D) | MDV-950(34)W/DRN1(D) | MDV-1000(36)W/DRN1(D) |
|---|---|---------------------|----------------------|----------------------|-----------------------|
|   | Component units                               |                     | MDV-400(14)W/DRN1(D) | MDV-450(16)W/DRN1(D) | MDV-500(18)W/DRN1(D)  |
|   |   |                     | MDV-500(18)W/DRN1(D) | MDV-500(18)W/DRN1(D) | MDV-500(18)W/DRN1(D)  |
|   | Branch joint connecting the component units   |                     | FQZHW-02N1D          | FQZHW-02N1D          | FQZHW-02N1D           |
| Power supply                              |   | V/phase/Hz          | 380~415/3/50         | 380~415/3/50         | 380~415/3/50          |
| Cooling                                   | Rated capacity                                | kW                  | 90.0                 | 95.0                 | 100.0                 |
|   | Rated power input                             | W                   | 27506                | 29217                | 30396                 |
|   | EER   | kW/kW               | 3.27                 | 3.25                 | 3.29                  |
| Heating                                   | Rated capacity                                | kW                  | 101.0                | 106.0                | 112.0                 |
|   | Rated power input                             | W                   | 25444                | 27037                | 28500                 |
|   | COP   | kW/kW               | 3.97                 | 3.92                 | 3.93                  |
| Indoor unit connectable capacity range    |   | %                   | 50-130               | 50-130               | 50-130                |
| Maximum connectable indoor units quantity |   | pcs                 | 53                   | 56                   | 59                    |
| Compressor - DC Inverter                  | Quantity                                      |                     | 2                    | 2                    | 2                     |
|   | Type  |                     | Scroll               | Scroll               | Scroll                |
|   | Brand   |                     | Hitachi              | Hitachi              | Hitachi               |
| ON/OFF Compressor                         | Quantity                                      |                     | 2                    | 2                    | 2                     |
|   | Type  |                     | Scroll               | Scroll               | Scroll                |
|   | Brand   |                     | Hitachi              | Hitachi              | Hitachi               |
| Airflow                                   |   | m <sup>3</sup> /min | 252+254              | 252+254              | 254x2                 |
| Static pressure                           |   | Pa                  | 0~20 (default)       | 0~20 (default)       | 0~20 (default)        |
|   |   |                     | 20~40 (option)       | 20~40 (option)       | 20~40 (option)        |
| Sound pressure level                      |   | dB(A)               | 64                   | 64                   | 64                    |
| Dimensions                                | Net dimensions (width x height x depth)       | mm                  | (1250×1615×765)×2    | (1250×1615×765)×2    | (1250×1615×765)×2     |
|   | Transport dimensions (width x height x depth) | mm                  | (1305×1790×820)×2    | (1305×1790×820)×2    | (1305×1790×820)×2     |
|   | Net / gross weight                            | kg                  | (280+300)/(300+320)  | (280+300)/(300+320)  | (300×2)/(320×2)       |
| Refrigerant                               | Type  |                     | R410A                | R410A                | R410A                 |
|   | Charge  | kg                  | 29                   | 29                   | 32                    |
| Cooling pipes                             | Liquid pipe / Gas pipe                        | mm                  | Ø19.1/Ø31.8          | Ø19.1/Ø38.1          | Ø19.1/Ø38.1           |
|   | Oil balance                                   | mm                  | Ø6.35                | Ø6.35                | Ø6.35                 |
| Outdoor temperature                       | Cooling                                       | °C                  | -5 ~ 48              | -5 ~ 48              | -5 ~ 48               |
|   | Heating                                       | °C                  | -20 ~ 24             | -20 ~ 24             | -20 ~ 24              |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

# 38~42 HP



| Model                                       | Unit set name                                 |                     | MDV-1060(38)W/DRN1(D)                        | MDV-1130(40)W/DRN1(D)                  | MDV-1180(42)W/DRN1(D)                  |
|---|---|---------------------|--|--|--|
|   | Component units                               |                     | MDV-280(10)W/DRN1(D)                         | MDV-280(10)W/DRN1(D)                   | MDV-280(10)W/DRN1(D)                   |
|   |   |                     | MDV-280(10)W/DRN1(D)                         | MDV-400(14)W/DRN1(D)                   | MDV-450(16)W/DRN1(D)                   |
|   |   |                     | MDV-500(18)W/DRN1(D)                         | MDV-450(16)W/DRN1(D)                   | MDV-450(16)W/DRN1(D)                   |
| Branch joint connecting the component units |   | FQZHW-03N1D         | FQZHW-03N1D                                  | FQZHW-03N1D                            |  |
| Power supply                                |   | V/phase/Hz          | 380~415/3/50                                 | 380~415/3/50                           | 380~415/3/50                           |
| Cooling                                     | Rated capacity                                | kW                  | 106.0  | 113.0                                  | 118.0                                  |
|   | Rated power input                             | W                   | 29594  | 33525                                  | 35236                                  |
|   | EER   | kW/kW               | 3.58   | 3.37                                   | 3.35                                   |
| Heating                                     | Rated capacity                                | kW                  | 119.0  | 126.5                                  | 131.5                                  |
|   | Rated power input                             | W                   | 29468  | 31590                                  | 33183                                  |
|   | COP   | kW/kW               | 4.04   | 4.00                                   | 3.96                                   |
| Indoor unit connectable capacity range      |   | %                   | 50-130                                       | 50-130                                 | 50-130                                 |
| Maximum connectable indoor units quantity   |   | pcs                 | 63   | 64                                     | 64                                     |
| Compressor - DC Inverter                    | Quantity                                      |                     | 3  | 3                                      | 3                                      |
|   | Type  |                     | Scroll                                       | Scroll                                 | Scroll                                 |
|   | Brand   |                     | Hitachi                                      | Hitachi                                | Hitachi                                |
| ON/OFF Compressor                           | Quantity                                      |                     | 1  | 2                                      | 2                                      |
|   | Type  |                     | Scroll                                       | Scroll                                 | Scroll                                 |
|   | Brand   |                     | Hitachi                                      | Hitachi                                | Hitachi                                |
| Airflow                                     |   | m <sup>3</sup> /min | 192x2+254                                    | 192+252x2                              | 192+252x2                              |
| Static pressure                             |   | Pa                  | 0~20 (default)                               | 0~20 (default)                         | 0~20 (default)                         |
|   |   |                     | 20~40 (option)                               | 20~40 (option)                         | 20~40 (option)                         |
| Sound pressure level                        |   | dB(A)               | 63   | 65                                     | 65                                     |
| Dimensions                                  | Net dimensions (width x height x depth)       |                     | mm<br>(960×1615×765)×2<br>+ (1250×1615×765)  | (960×1615×765)<br>+ (1250×1615×765)×2  | (960×1615×765)<br>+ (1250×1615×765)×2  |
|   | Transport dimensions (width x height x depth) |                     | mm<br>(1025×1790×830)×2<br>+ (1305×1790×820) | (1025×1790×830)<br>+ (1305×1790×820)×2 | (1025×1790×830)<br>+ (1305×1790×820)×2 |
|   | Net / gross weight                            |                     | kg<br>(200×2+300)/(215×2+320)                | (200+280×2)/(215+300×2)                | (200+280×2)/(215+300×2)                |
| Refrigerant                                 | Type  |                     | R410A  | R410A                                  | R410A                                  |
|   | Charge  |                     | kg<br>34                                     | 35                                     | 35                                     |
| Cooling pipes                               | Liquid pipe / Gas pipe                        |                     | mm<br>Ø19.1/Ø38.1                            | Ø19.1/Ø38.1                            | Ø19.1/Ø38.1                            |
|   | Oil balance                                   |                     | mm<br>Ø6.35                                  | Ø6.35                                  | Ø6.35                                  |
| Outdoor temperature                         | Cooling                                       |                     | °C<br>-5 ~ 48                                | -5 ~ 48                                | -5 ~ 48                                |
|   | Heating                                       |                     | °C<br>-20 ~ 24                               | -20 ~ 24                               | -20 ~ 24                               |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 44~48 HP

| Model                                     | Unit set name                                 |                     | MDV-1230(44)W/DRN1(D)                  | MDV-1280(46)W/DRN1(D)                  | MDV-1350(48)W/DRN1(D)   |
|---|---|---------------------|--|--|-------------------------|
|   | Component units                               |                     | MDV-280(10)W/DRN1(D)                   | MDV-280(10)W/DRN1(D)                   | MDV-400(14)W/DRN1(D)    |
|   |   |                     | MDV-450(16)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)                   | MDV-450(16)W/DRN1(D)    |
|   |   |                     | MDV-500(18)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)    |
|   | Branch joint connecting the component units   |                     | FQZHW-03N1D                            | FQZHW-03N1D                            | FQZHW-03N1D             |
| Power supply                              |   | V/phase/Hz          | 380~415/3/50                           | 380~415/3/50                           | 380~415/3/50            |
| Cooling                                   | Rated capacity                                | kW                  | 123.0                                  | 128.0                                  | 135.0                   |
|   | Rated power input                             | W                   | 36415                                  | 37594                                  | 41525                   |
|   | EER   | kW/kW               | 3.38                                   | 3.40                                   | 3.25                    |
| Heating                                   | Rated capacity                                | kW                  | 137.5                                  | 143.5                                  | 151.0                   |
|   | Rated power input                             | W                   | 34646                                  | 36109                                  | 38231                   |
|   | COP   | kW/kW               | 3.97                                   | 3.97                                   | 3.95                    |
| Indoor unit connectable capacity range    |   | %                   | 50-130                                 | 50-130                                 | 50-130                  |
| Maximum connectable indoor units quantity |   | pcs                 | 64                                     | 64                                     | 64                      |
| Compressor - DC Inverter                  | Quantity                                      |                     | 3                                      | 3                                      | 3                       |
|   | Type  |                     | Scroll                                 | Scroll                                 | Scroll                  |
|   | Brand   |                     | Hitachi                                | Hitachi                                | Hitachi                 |
| ON/OFF Compressor                         | Quantity                                      |                     | 2                                      | 2                                      | 3                       |
|   | Type  |                     | Scroll                                 | Scroll                                 | Scroll                  |
|   | Brand   |                     | Hitachi                                | Hitachi                                | Hitachi                 |
| Airflow                                   |   | m <sup>3</sup> /min | 192+252+254                            | 192+254x2                              | 252x2+254               |
| Static pressure                           |   | Pa                  | 0~20 (default)                         | 0~20 (default)                         | 0~20 (default)          |
|   |   |                     | 20~40 (option)                         | 20~40 (option)                         | 20~40 (option)          |
| Sound pressure level                      |   | dB(A)               | 65                                     | 65                                     | 65                      |
| Dimensions                                | Net dimensions (width x height x depth)       |                     | (960×1615×765)<br>+ (1250×1615×765)×2  | (960×1615×765)<br>+ (1250×1615×765)×2  | (1250×1615×765)×3       |
|   | Transport dimensions (width x height x depth) |                     | (1025×1790×830)<br>+ (1305×1790×820)×2 | (1025×1790×830)<br>+ (1305×1790×820)×2 | (1305×1790×820)×3       |
|   | Net / gross weight                            |                     | kg                                     | (200+280+300)/(215+300+320)            | (200+300×2)/(215+320×2) |
| Refrigerant                               | Type  |                     | R410A                                  | R410A                                  | R410A                   |
|   | Charge  |                     | kg                                     | 38                                     | 41                      |
| Cooling pipes                             | Liquid pipe / Gas pipe                        |                     | mm                                     | Ø19.1/Ø38.1                            | Ø19.1/Ø38.1             |
|   | Oil balance                                   |                     | mm                                     | Ø6.35                                  | Ø6.35                   |
| Outdoor temperature                       | Cooling                                       |                     | °C                                     | -5 ~ 48                                | -5 ~ 48                 |
|   | Heating                                       |                     | °C                                     | -20 ~ 24                               | -20 ~ 24                |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

# 50~54 HP



| Model                                     | Unit set name                                 |                     | MDV-1400(50)W/DRN1(D) | MDV-1450(52)W/DRN1(D)   | MDV-1500(54)W/DRN1(D)   |
|---|---|---------------------|-----------------------|-------------------------|-------------------------|
|   | Component units                               |                     | MDV-400(14)W/DRN1(D)  | MDV-450(16)W/DRN1(D)    | MDV-500(18)W/DRN1(D)    |
|   |   |                     | MDV-500(18)W/DRN1(D)  | MDV-500(18)W/DRN1(D)    | MDV-500(18)W/DRN1(D)    |
|   |   |                     | MDV-500(18)W/DRN1(D)  | MDV-500(18)W/DRN1(D)    | MDV-500(18)W/DRN1(D)    |
|   | Branch joint connecting the component units   |                     | FQZHW-03N1D           | FQZHW-03N1D             | FQZHW-03N1D             |
| Power supply                              |   | V/phase/Hz          | 380~415/3/50          | 380~415/3/50            | 380~415/3/50            |
| Cooling                                   | Rated capacity                                | kW                  | 140.0                 | 145.0                   | 150.0                   |
|   | Rated power input                             | W                   | 42704                 | 44415                   | 45594                   |
|   | EER   | kW/kW               | 3.28                  | 3.26                    | 3.29                    |
| Heating                                   | Rated capacity                                | kW                  | 157.0                 | 162.0                   | 168.0                   |
|   | Rated power input                             | W                   | 39694                 | 41287                   | 42750                   |
|   | COP   | kW/kW               | 3.96                  | 3.92                    | 3.93                    |
| Indoor unit connectable capacity range    |   | %                   | 50-130                | 50-130                  | 50-130                  |
| Maximum connectable indoor units quantity |   | pcs                 | 64                    | 64                      | 64                      |
| Compressor - DC Inverter                  | Quantity                                      |                     | 3                     | 3                       | 3                       |
|   | Type  |                     | Scroll                | Scroll                  | Scroll                  |
|   | Brand   |                     | Hitachi               | Hitachi                 | Hitachi                 |
| ON/OFF Compressor                         | Quantity                                      |                     | 3                     | 3                       | 3                       |
|   | Type  |                     | Scroll                | Scroll                  | Scroll                  |
|   | Brand   |                     | Hitachi               | Hitachi                 | Hitachi                 |
| Airflow                                   |   | m <sup>3</sup> /min | 252+254x2             | 252+254x2               | 254x3                   |
| Static pressure                           |   | Pa                  | 0~20 (default)        | 0~20 (default)          | 0~20 (default)          |
|   |   |                     | 20~40 (option)        | 20~40 (option)          | 20~40 (option)          |
| Sound pressure level                      |   | dB(A)               | 66                    | 66                      | 66                      |
| Dimensions                                | Net dimensions (width x height x depth)       |                     | mm                    | (1250×1615×765)×3       | (1250×1615×765)×3       |
|   | Transport dimensions (width x height x depth) |                     | mm                    | (1305×1790×820)×3       | (1305×1790×820)×3       |
|   | Net / gross weight                            |                     | kg                    | (280+300×2)/(300+320×2) | (280+300×2)/(300+320×2) |
| Refrigerant                               | Type  |                     | R410A                 |                         |                         |
|   | Charge  |                     | kg                    | 45                      | 45                      |
| Cooling pipes                             | Liquid pipe / Gas pipe                        |                     | mm                    | Ø22.2/Ø41.3             | Ø22.2/Ø41.3             |
|   | Oil balance                                   |                     | mm                    | Ø6.35                   | Ø6.35                   |
| Outdoor temperature                       | Cooling                                       |                     | °C                    | -5 ~ 48                 | -5 ~ 48                 |
|   | Heating                                       |                     | °C                    | -20 ~ 24                | -20 ~ 24                |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 56~60 HP

| Model                                       | Unit set name                                 |                     | MDV-1560(56)W/DRN1(D)                    | MDV-1630(58)W/DRN1(D)                  | MDV-1680(60)W/DRN1(D)                  |
|---|---|---------------------|--|--|--|
|   | Component units                               |                     | MDV-280(10)W/DRN1(D)                     | MDV-280(10)W/DRN1(D)                   | MDV-280(10)W/DRN1(D)                   |
|   |   |                     | MDV-280(10)W/DRN1(D)                     | MDV-400(14)W/DRN1(D)                   | MDV-400(14)W/DRN1(D)                   |
|   |   |                     | MDV-500(18)W/DRN1(D)                     | MDV-450(16)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)                   |
|   |   |                     | MDV-500(18)W/DRN1(D)                     | MDV-500(18)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)                   |
| Branch joint connecting the component units |   | FQZHW-04N1D         | FQZHW-04N1D                              | FQZHW-04N1D                            |  |
| Power supply                                |   | V/phase/Hz          | 380~415/3/50                             | 380~415/3/50                           | 380~415/3/50                           |
| Cooling                                     | Rated capacity                                | kW                  | 156.0                                    | 163.0                                  | 168.0                                  |
|   | Rated power input                             | W                   | 44792                                    | 48723                                  | 49902                                  |
|   | EER   | kW/kW               | 3.48                                     | 3.35                                   | 3.37                                   |
| Heating                                     | Rated capacity                                | kW                  | 175.0                                    | 182.5                                  | 188.5                                  |
|   | Rated power input                             | W                   | 43718                                    | 45840                                  | 47303                                  |
|   | COP   | kW/kW               | 4.00                                     | 3.98                                   | 3.98                                   |
| Indoor unit connectable capacity range      |   | %                   | 50-130                                   | 50-130                                 | 50-130                                 |
| Maximum connectable indoor units quantity   |   | pcs                 | 64                                       | 64                                     | 64                                     |
| Compressor - DC Inverter                    | Quantity                                      |                     | 4  | 4                                      | 4                                      |
|   | Type  |                     | Scroll                                   | Scroll                                 | Scroll                                 |
|   | Brand   |                     | Hitachi                                  | Hitachi                                | Hitachi                                |
| ON/OFF Compressor                           | Quantity                                      |                     | 2  | 3                                      | 3                                      |
|   | Type  |                     | Scroll                                   | Scroll                                 | Scroll                                 |
|   | Brand   |                     | Hitachi                                  | Hitachi                                | Hitachi                                |
| Airflow                                     |   | m <sup>3</sup> /min | 192x2+254x2                              | 192+252x2+254                          | 192+252+254x2                          |
| Static pressure                             |   | Pa                  | 0~20 (default)                           | 0~20 (default)                         | 0~20 (default)                         |
|   |   |                     | 20~40 (option)                           | 20~40 (option)                         | 20~40 (option)                         |
| Sound pressure level                        |   | dB(A)               | 67                                       | 67                                     | 67                                     |
| Dimensions                                  | Net dimensions (width x height x depth)       |                     | (960×1615×765)×2<br>+ (1250×1615×765)×2  | (960×1615×765)<br>+ (1250×1615×765)×3  | (960×1615×765)<br>+ (1250×1615×765)×3  |
|   | Transport dimensions (width x height x depth) |                     | (1025×1790×830)×2<br>+ (1305×1790×820)×2 | (1025×1790×830)<br>+ (1305×1790×820)×3 | (1025×1790×830)<br>+ (1305×1790×820)×3 |
|   | Net / gross weight                            |                     | (200×2+300×2)/(215×2+320×2)              | (200+280×2+300)/(215+300×2+320)        | (200+280+300×2)/(215+300+320×2)        |
| Refrigerant                                 | Type  |                     | R410A                                    | R410A                                  | R410A                                  |
|   | Charge  | kg                  | 45                                       | 45                                     | 48                                     |
| Cooling pipes                               | Liquid pipe / Gas pipe                        |                     | Ø22.2/Ø41.3                              | Ø22.2/Ø41.3                            | Ø22.2/Ø41.3                            |
|   | Oil balance                                   |                     | Ø6.35                                    | Ø6.35                                  | Ø6.35                                  |
| Outdoor temperature                         | Cooling                                       | °C                  | -5 ~ 48                                  | -5 ~ 48                                | -5 ~ 48                                |
|   | Heating                                       | °C                  | -20 ~ 24                                 | -20 ~ 24                               | -20 ~ 24                               |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

## TECHNICAL DATA



# 62~66 HP

| Model                                       | Unit set name                                 |                     | MDV-1730(62)W/DRN1(D)                  | MDV-1780(64)W/DRN1(D)                  | MDV-1850(66)W/DRN1(D)   |
|---|---|---------------------|--|--|-------------------------|
|   | Component units                               |                     | MDV-280(10)W/DRN1(D)                   | MDV-280(10)W/DRN1(D)                   | MDV-400(14)W/DRN1(D)    |
|   |   |                     | MDV-450(16)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)                   | MDV-450(16)W/DRN1(D)    |
|   |   |                     | MDV-500(18)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)    |
|   |   |                     | MDV-500(18)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)                   | MDV-500(18)W/DRN1(D)    |
| Branch joint connecting the component units |   | FQZHW-04N1D         | FQZHW-04N1D                            | FQZHW-04N1D                            |                         |
| Power supply                                |   | V/phase/Hz          | 380~415/3/50                           | 380~415/3/50                           | 380~415/3/50            |
| Cooling                                     | Rated capacity                                | kW                  | 173.0                                  | 178.0                                  | 185.0                   |
|   | Rated power input                             | W                   | 51613                                  | 52792                                  | 56723                   |
|   | EER   | kW/kW               | 3.35                                   | 3.37                                   | 3.26                    |
| Heating                                     | Rated capacity                                | kW                  | 193.5                                  | 199.5                                  | 207.0                   |
|   | Rated power input                             | W                   | 48896                                  | 50359                                  | 52481                   |
|   | COP   | kW/kW               | 3.96                                   | 3.96                                   | 3.94                    |
| Indoor unit connectable capacity range      |   | %                   | 50-130                                 | 50-130                                 | 50-130                  |
| Maximum connectable indoor units quantity   |   | pcs                 | 64                                     | 64                                     | 64                      |
| Compressor - DC Inverter                    | Quantity                                      |                     | 4                                      | 4                                      | 4                       |
|   | Type  |                     | Scroll                                 | Scroll                                 | Scroll                  |
|   | Brand   |                     | Hitachi                                | Hitachi                                | Hitachi                 |
| ON/OFF Compressor                           | Quantity                                      |                     | 3                                      | 3                                      | 4                       |
|   | Type  |                     | Scroll                                 | Scroll                                 | Scroll                  |
|   | Brand   |                     | Hitachi                                | Hitachi                                | Hitachi                 |
| Airflow                                     |   | m <sup>3</sup> /min | 192+252+254x2                          | 192+254x3                              | 252x2+254x2             |
| Static pressure                             |   | Pa                  | 0~20 (default)                         | 0~20 (default)                         | 0~20 (default)          |
|   |   |                     | 20~40 (option)                         | 20~40 (option)                         | 20~40 (option)          |
| Sound pressure level                        |   | dB(A)               | 67                                     | 67                                     | 67                      |
| Dimensions                                  | Net dimensions (width x height x depth)       |                     | (960×1615×765)<br>+ (1250×1615×765)×3  | (960×1615×765)<br>+ (1250×1615×765)×3  | (1250×1615×765)×4       |
|   | Transport dimensions (width x height x depth) |                     | (1025×1790×830)<br>+ (1305×1790×820)×3 | (1025×1790×830)<br>+ (1305×1790×820)×3 | (1305×1790×820)×4       |
|   | Net / gross weight                            |                     | kg                                     | (200+280+300×2)/(215+300+320×2)        | (200+300×3)/(215+320×3) |
| Refrigerant                                 | Type  |                     | R410A                                  | R410A                                  | R410A                   |
|   | Charge  | kg                  | 54                                     | 57                                     | 58                      |
| Cooling pipes                               | Liquid pipe / Gas pipe                        |                     | mm                                     | ∅22.2/∅41.3                            | ∅22.2/∅41.3             |
|   | Oil balance                                   |                     | mm                                     | ∅6.35                                  | ∅6.35                   |
| Outdoor temperature                         | Cooling                                       | °C                  | -5 ~ 48                                | -5 ~ 48                                | -5 ~ 48                 |
|   | Heating                                       | °C                  | -20 ~ 24                               | -20 ~ 24                               | -20 ~ 24                |

### Note:

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.





# 68~72 HP

| Model                                       | Unit set name                                 |                     | MDV-1900(68)W/DRN1(D)      | MDV-1950(70)W/DRN1(D)   | MDV-2000(72)W/DRN1(D) |
|---|---|---------------------|----------------------------|-------------------------|-----------------------|
|   | Component units                               |                     | MDV-400(14)W/DRN1(D)       | MDV-450(16)W/DRN1(D)    | MDV-500(18)W/DRN1(D)  |
|   |   |                     | MDV-500(18)W/DRN1(D)       | MDV-500(18)W/DRN1(D)    | MDV-500(18)W/DRN1(D)  |
|   |   |                     | MDV-500(18)W/DRN1(D)       | MDV-500(18)W/DRN1(D)    | MDV-500(18)W/DRN1(D)  |
|   |   |                     | MDV-500(18)W/DRN1(D)       | MDV-500(18)W/DRN1(D)    | MDV-500(18)W/DRN1(D)  |
| Branch joint connecting the component units |   | FQZHW-04N1D         | FQZHW-04N1D                | FQZHW-04N1D             |                       |
| Power supply                                |   | V/phase/Hz          | 380~415/3/50               | 380~415/3/50            | 380~415/3/50          |
| Cooling                                     | Rated capacity                                | kW                  | 190.0                      | 195.0                   | 200.0                 |
|   | Rated power input                             | W                   | 57902                      | 59613                   | 60792                 |
|   | EER   | kW/kW               | 3.28                       | 3.27                    | 3.29                  |
| Heating                                     | Rated capacity                                | kW                  | 213.0                      | 218.0                   | 224.0                 |
|   | Rated power input                             | W                   | 53944                      | 55537                   | 57000                 |
|   | COP   | kW/kW               | 3.95                       | 3.93                    | 3.93                  |
| Indoor unit connectable capacity range      |   | %                   | 50-130                     | 50-130                  | 50-130                |
| Maximum connectable indoor units quantity   |   | pcs                 | 64                         | 64                      | 64                    |
| Compressor - DC Inverter                    | Quantity                                      |                     | 4                          | 4                       | 4                     |
|   | Type  |                     | Scroll                     | Scroll                  | Scroll                |
|   | Brand   |                     | Hitachi                    | Hitachi                 | Hitachi               |
| ON/OFF Compressor                           | Quantity                                      |                     | 4                          | 4                       | 4                     |
|   | Type  |                     | Scroll                     | Scroll                  | Scroll                |
|   | Brand   |                     | Hitachi                    | Hitachi                 | Hitachi               |
| Airflow                                     |   | m <sup>3</sup> /min | 252+254x3                  | 252+254x3               | 254x4                 |
| Static pressure                             |   | Pa                  | 0~20 (default)             | 0~20 (default)          | 0~20 (default)        |
|   |   |                     | 20~40 (option)             | 20~40 (option)          | 20~40 (option)        |
| Sound pressure level                        |   | dB(A)               | 68                         | 68                      | 68                    |
| Dimensions                                  | Net dimensions (width x height x depth)       |                     | mm (1250×1615×765)×4       | (1250×1615×765)×4       | (1250×1615×765)×4     |
|   | Transport dimensions (width x height x depth) |                     | mm (1305×1790×820)×4       | (1305×1790×820)×4       | (1305×1790×820)×4     |
|   | Net / gross weight                            |                     | kg (280+300×3)/(300+320×3) | (280+300×3)/(300+320×3) | (300×4)/(320×4)       |
| Refrigerant                                 | Type  |                     | R410A                      | R410A                   | R410A                 |
|   | Charge  | kg                  | 61                         | 61                      | 64                    |
| Cooling pipes                               | Liquid pipe / Gas pipe                        |                     | mm Ø25.4/Ø44.5             | Ø25.4/Ø44.5             | Ø25.4/Ø44.5           |
|   | Oil balance                                   |                     | mm Ø6.35                   | Ø6.35                   | Ø6.35                 |
| Outdoor temperature                         | Cooling                                       | °C                  | -5 ~ 48                    | -5 ~ 48                 | -5 ~ 48               |
|   | Heating                                       | °C                  | -20 ~ 24                   | -20 ~ 24                | -20 ~ 24              |

**Note:**

The capacity is based on the following conditions:  
 Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB  
 Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.  
 Refrigerant piping length 7.5 m at the height difference of 0 m.  
 DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.



Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

# V4 Plus I series



The V4 Plus I series is a series of high efficiency units in a single module. These devices stand out because of their compact design and, as a result, straightforward installation and space saving. The application of many advanced technologies, including, among others, a specially designed defrosting algorithm, ensures removal of ice from the external unit's exchanger in optimal time. The silent nighttime operation mode ensures comfort during sleep and the precise adjustment of temperature guarantee immediate feeling of comfort. The units belonging to this series are available only as single modules that should not be combined into cooling systems.

## MODEL

|                |   |      |   |      |
|----------------|---|------|---|------|
| Capacity range | HP  | 20   | 22  | 24   |
|                | kW  | 56.0 | 61.5  | 67.0 |
| Appearance     |  |      |  |      |

## COMBINATION TABLE

| Model              | Number of external units | Number of compressors | Maximum number of int. units connected | Capacity [kW] |         |
|--------------------|--------------------------|-----------------------|--|---------------|---------|
|                    |                          |                       |  | Cooling       | Heating |
| MDV-560W/DRN1-i(C) | 1                        | 3                     | 33                                     | 56.0          | 63.0    |
| MDV-615W/DRN1-i(C) | 1                        | 3                     | 36                                     | 61.5          | 69.0    |
| MDV-670W/DRN1-i(C) | 1                        | 3                     | 39                                     | 67.0          | 75.0    |

**Note:**

The capacity is based on the following conditions:  
 Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB  
 Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB  
 Refrigerant piping length 7.5 m at height difference of 0 m.  
 The above combination is recommended by the manufacturer.  
 DB - dry bulb, WB - wet bulb

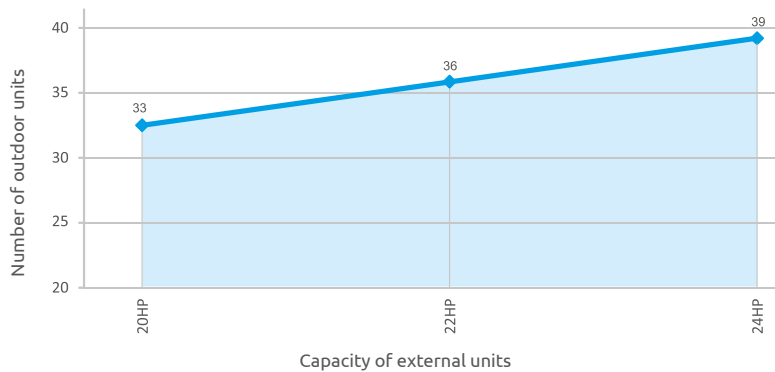
HIGH CAPACITY FOR LARGE BUILDINGS

The V4 Plus I series system is distinguished by compact design of devices where high capacity units are included in a single module. Thanks to application of this solution we are saving place, the risk of refrigerant leak is lower and the device assembly is simple and quick. Additionally, the series stands out with its expanded range of efficiency of units from 56 to 67 kW. The modules belonging to this series are available only individually and should not be combined into cooling systems.



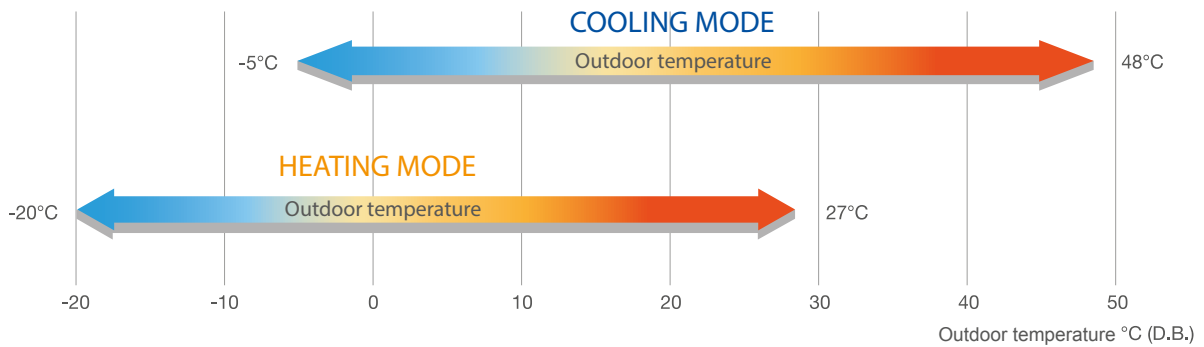
POSSIBLE TO CONNECT A LARGE AMOUNT OF INDOOR UNITS

A large amount of connectable indoor units makes the system very appealing for vast buildings.



## WIDE OPERATION RANGE

The V4 Plus I series system ensures stable operation in extreme temperatures, from -20°C to +48°C.



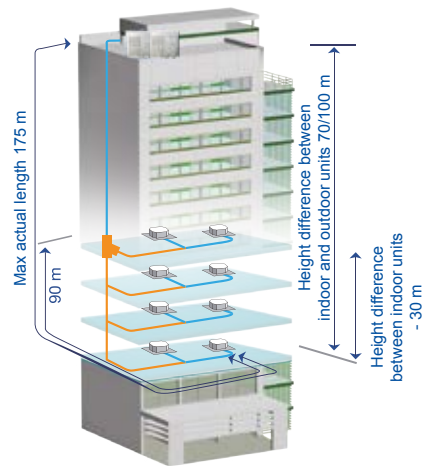
## LONG REFRIGERANT PIPING

Total piping length up to 1000 m with height difference of 110 m significantly enhances system applicability in a large investment projects.

|                   |  |                           | Allowable value (m) |
|-------------------|--|---------------------------|---------------------|
| Piping length     | Total piping length *(actual) length   |                           | 1000                |
|                   | length   | Actual length             | 175                 |
|                   |  | Equivalent length         | 200                 |
| Height difference | Distance from the first branch joint to the farthest indoor unit (equivalent length) |                           | 40/90**             |
|                   | Between indoor and outdoor units   | Outdoor unit stated above | 70                  |
|                   |  | Outdoor unit stated below | 110                 |
|                   | Between indoor units   |                           | 30                  |

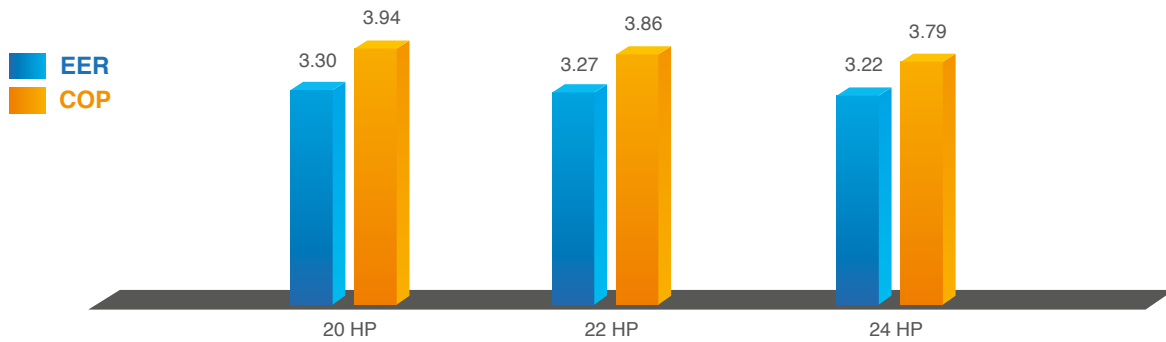
\* Total piping length is equal to twice the piping length — plus piping length —

\*\* If this part of the piping exceeds 40 m, it is important to meet certain conditions, specified in the installation section of technical documentation.



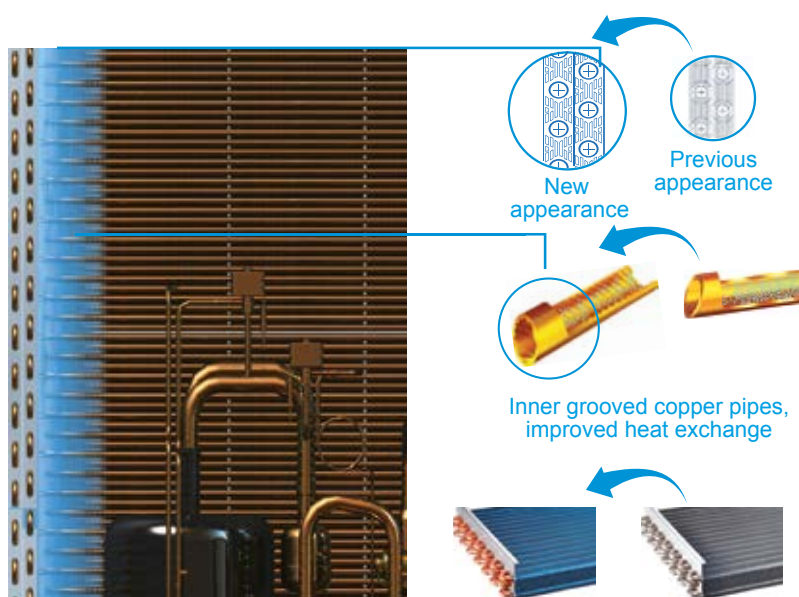
HIGH ENERGY EFFICIENCY COEFFICIENTS - EER AND COP

The application of highly efficient heat exchanger, top-grade inverter compressor and fan motor of the DC Inverter type in the air conditioning devices belonging to the V4 PLUS system I series made it possible to obtain energy efficiency coefficients that are at the highest international level. For the 20 HP (56.0 kW) model the EER coefficient amounts to 3.30 and COP to 3.94, which places it in the forefront of the best air conditioning device manufacturers.



HIGH-PERFORMANCE HEAT EXCHANGER

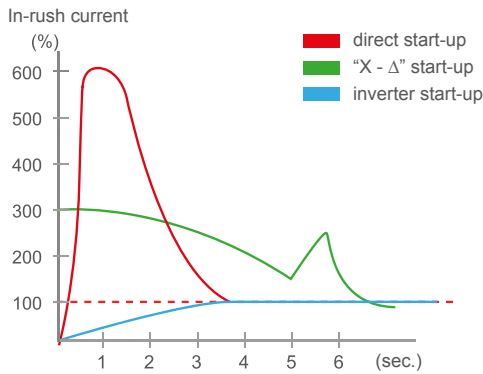
Inside the specially designed heat exchanger there are used fins with greater heat exchange surface and reduced airflow resistance. Fins outside surface is covered with hydrophilic coating. The copper pipes internal surfaces have a special groove embossed, which improves heat transfer on the refrigerant side. These solutions, together with the innovative method of exchanger pipes connection in the "sigma" letter, ensure the highest heat exchange efficiency.



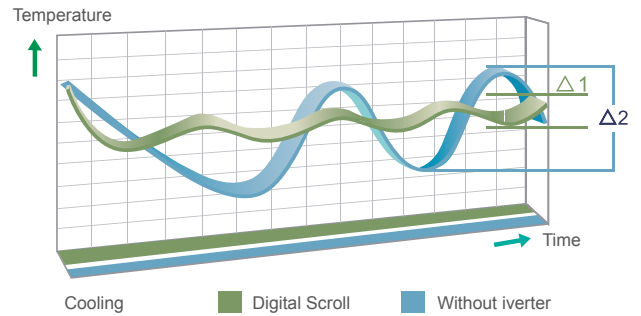
## SOFT START, PRECISE TEMPERATURE CONTROL

Inverter compressor with „soft“ start function reduces temporary overload and voltage drops in the building electricity system. High-performance inverter compressor achieves rated capacity in a very short time, what directly influences the air-conditioned rooms cooling down or heating up time. Smaller temperature fluctuations guarantee instant feeling of comfort.

Comparison of inverter and traditional start-up



Room temperature fluctuations

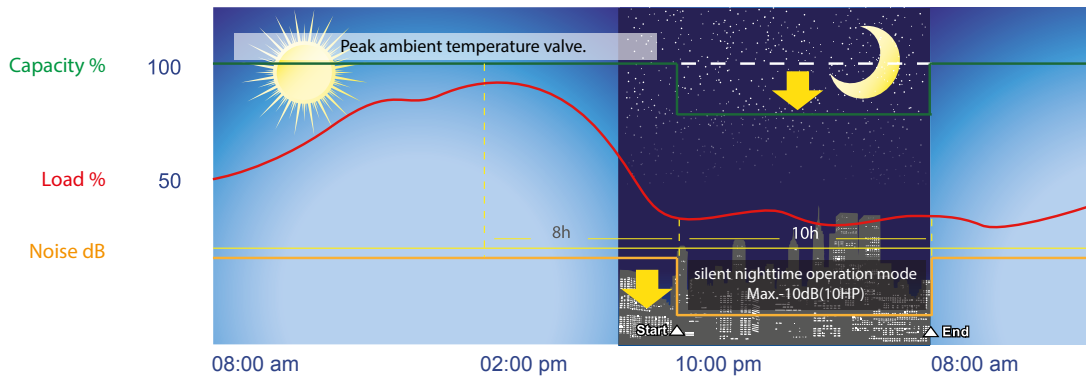


## NIGHT SILENT MODE

Night silent operation can be easily programmed on the control board in the outdoor unit. The outdoor unit analyses the hourly demand for cooling capacity and after the X programmed time after the highest cooling demand has elapsed, it activates fans silent operation for the time of Y hours. Night silent mode enables noise level reduction of 15 dB(A).

- Model 1 → X: 6 hours, Y: 10 hours
- Model 3 → X: 6 hours, Y: 12 hours

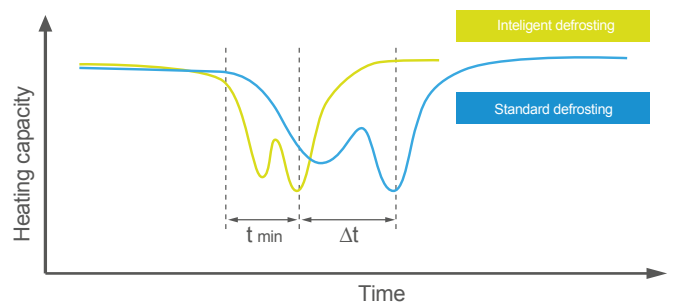
- Model 2 → X: 8 hours, Y: 10 hours
- Model 4 → X: 8 hours, Y: 8 hours



*Notice!*  
This function can be activated in different variants. Temperature (load) curve shown in the graph is just an example.

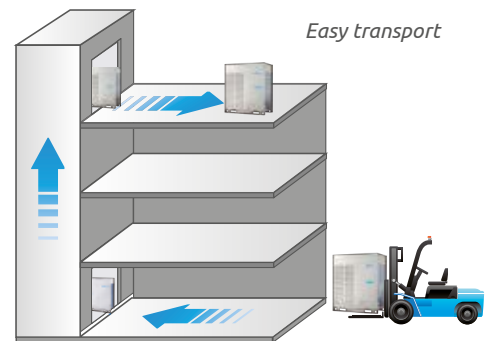
## ADVANCED DEFROSTING TECHNOLOGY

A specially designed defrosting algorithm provides the removal of ice from outdoor unit heat exchanger in optimal time. Because the defrosting time depends on actual, outside conditions, the heating intervals are reduced to the minimum necessary, what has a significant influence on keeping thermal comfort in the heated rooms.



## COMPACT CASING - EFFECTIVE USE OF SPACE

Compact size and limited weight facilitate transport and installation, reduce ceiling and structure loads. Now, only with help of a forklift and an elevator, the units can be placed on the roof of a high building.



## SIMPLIFIED CONNECTION OF THE COMMUNICATION LINE

One, common communication cable. Depending on the requirements, the central controller CCM03 can be connected to the XYE terminal from the outdoor or indoor units side. This solution simplifies and lowers the costs of system wiring.



- PQE & XYE, now it takes only one PQE communication cable both for communication between indoor and outdoor units as well as for network communication.
- Two-way communication - the central controller can be connected both from the outdoor unit and indoor unit side.

## AUTOMATIC ADDRESS SETTING

The outdoor unit can automatically assign addresses to indoor units. Indoor units addresses can be checked and in case of need modified with use of an infrared remote controller or wired remote controller.





## EASY MAINTENANCE



Inspection door significantly facilitates access to the unit main board in order to monitor and control unit operation.



Compressor location facilitates service and maintenance activities.

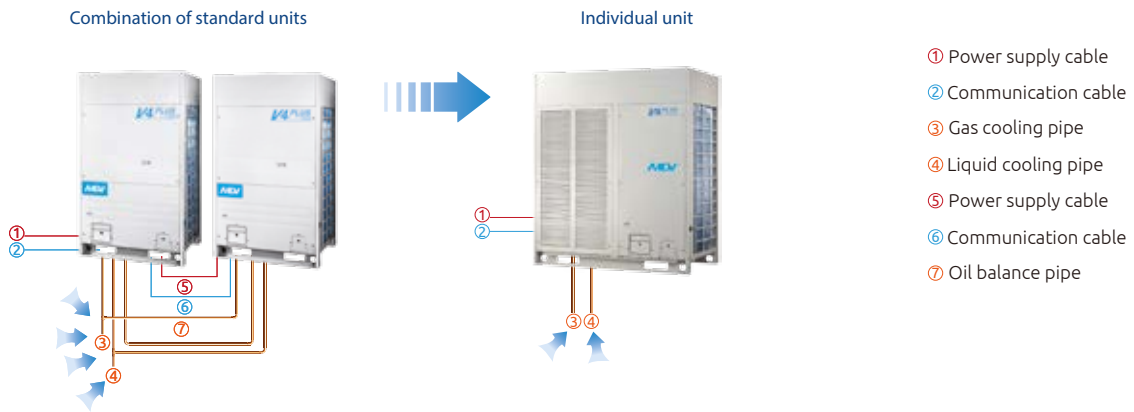


Self-diagnosis function helps service staff in efficient identification of malfunction.

## REDUCED RISK OF REFRIGERANT LEAK

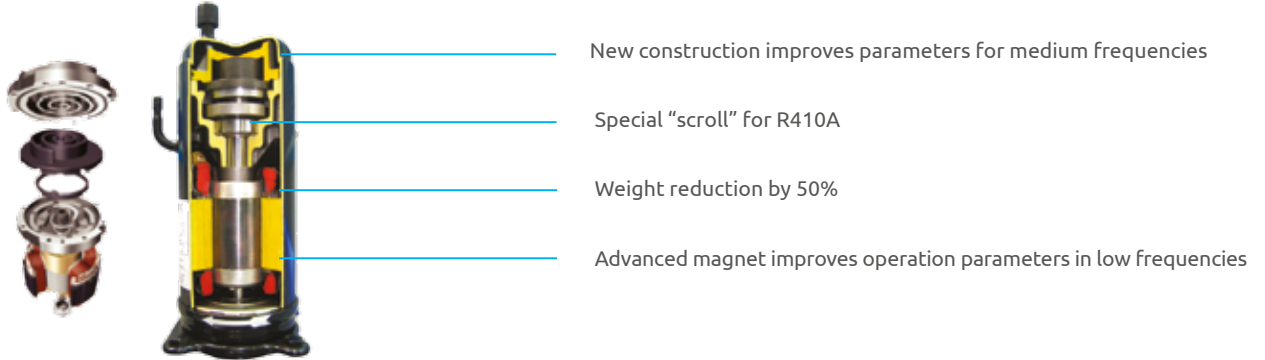
In comparison to standard units in combination of several modules, the units of the Individual type do not require creating any complex electric and cooling connections at the installation site. There are eliminated the power supply and communication cables, the oil balance pipe and distributors on cooling pipes.

A larger number of soldered connection in combined system increases the risk of passage of moisture into the inside of pipelines. Thanks to the reduced number of connection in the V4 PLUS system I series this risk is limited to the minimum.

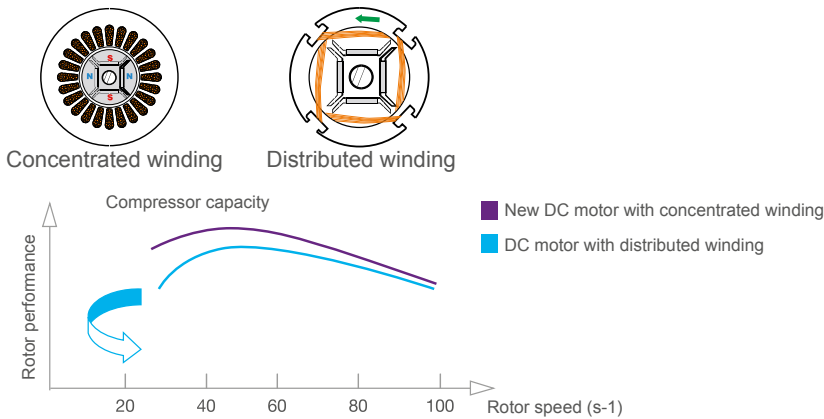


FULL DC INVERTER – HIGH EFFICIENCY COMPRESSOR

The VRF V4 Plus I series system achieves the EER and COP energy efficiency coefficients that are the best in its class thanks to employing a brushless compressor motor of the DC Inverter type and a highly efficient heat exchanger. These solutions enable reducing the energy consumption by as much as 25% in comparison of devices with on/off compressors.

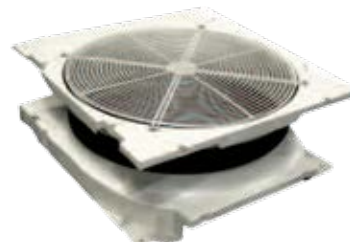


Strong magnets provide high torque and capacity, which gives reduced dimensions by 70%.



FAN GUARD GRILLE

Optimized fan blades shape and the new shape of grille increase the air volume, what significantly improves fan performance and reduces noise. Further, higher external static pressure from 20 to 40 Pa (60 Pa available for 12 HP model) has been achieved.



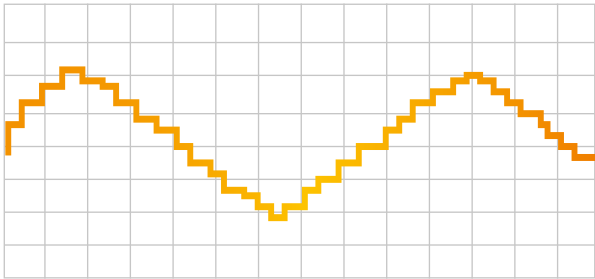
MODIFIED FAN BLADES PROFILE

New shape of slightly curved blades with sharp edge increases airflow and reduces turbulence.

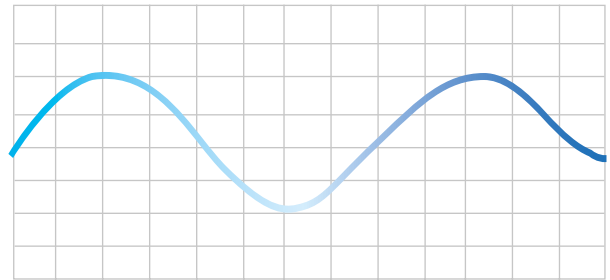


## DC INVERTER ANTI-ALIASED 180° SINE WAVE

Inverter compressor anti-aliased 180° sine wave input current significantly improves operation efficiency in comparison with traditional sawtooth current.



Sawtooth current



DC Inverter 180° sine wave

## DC FAN MOTOR

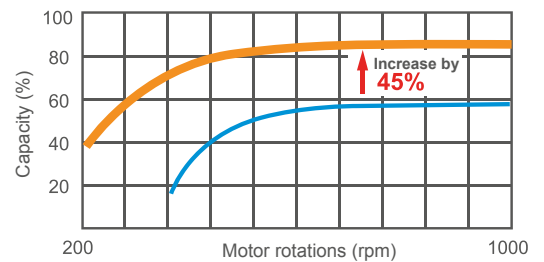
DC fan speed is adjusted depending on actual load and pressure, in order to achieve minimum energy consumption.

- Application in the whole capacity range (from 8 HP to 72 HP).
- Improved efficiency even by 45%, especially at low speed.

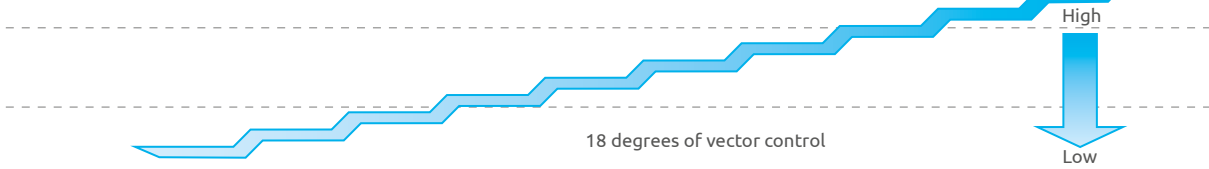


DC motor

Comparison of DC and conventional motor

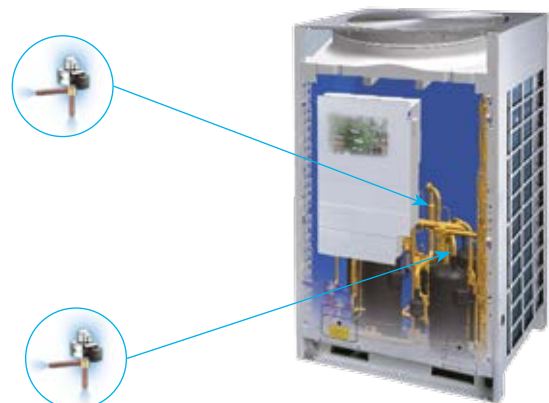


Adjustment of fan rotational speed

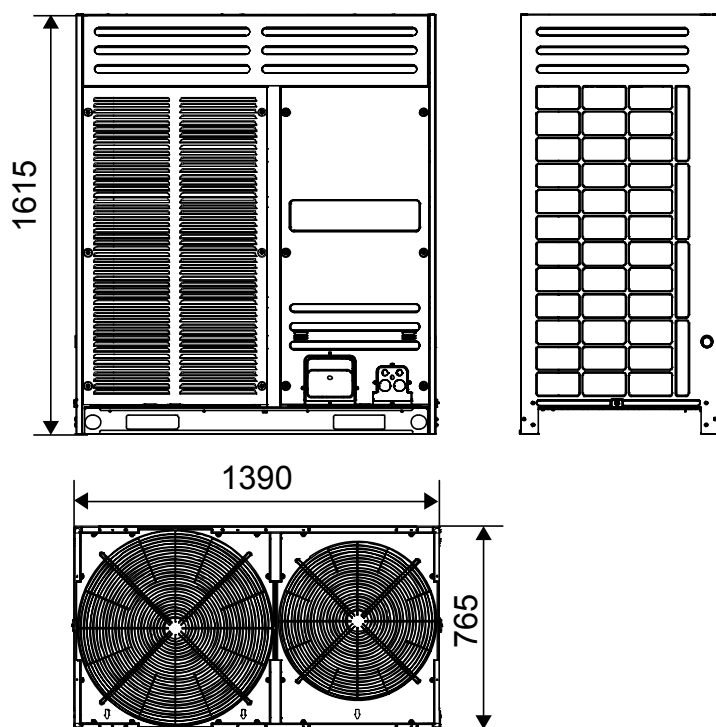


## DOUBLE EXV EXPANSION VALVE TECHNOLOGY

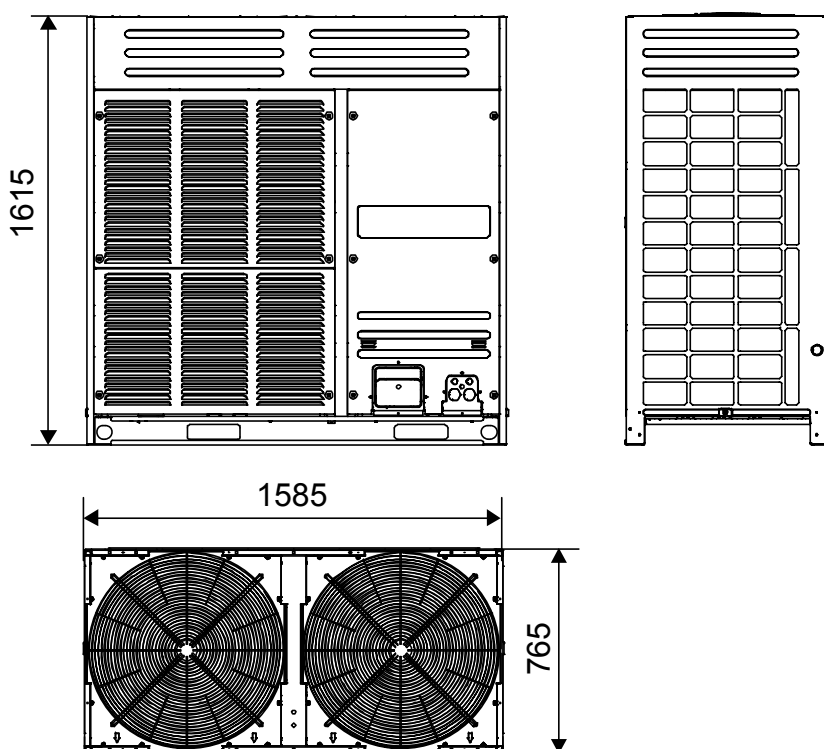
MDV outdoor units apply technology of double EXV expansion valve control, each with 480 degrees of adjustment. This enables precise control of refrigerant pressure and temperature in order to provide stable operation of the whole system and comfort conditions in the air-conditioned rooms.



20 HP



22, 24 HP





# 20 HP

| Model                                     |   |                 | MDV-560W/DRN1-i(C)                 |
|---|---|-----------------|------------------------------------|
| Power supply                              |   | V/phase/Hz      | 380-415/3/50                       |
| Cooling                                   | Rated capacity                                | kW              | 56.0                               |
|   | Rated power input                             | W               | 17000                              |
|   | EER   | W/W             | 3.30                               |
| Heating                                   | Rated capacity                                | kW              | 63.0                               |
|   | Rated power input                             | W               | 16000                              |
|   | COP   | W/W             | 3.94                               |
| Indoor unit connectable capacity range    |   | %               | 50~130                             |
| Maximum connectable indoor units quantity |   | pcs             | 33                                 |
| Compressor - DC Inverter                  | Quantity                                      |                 | 1                                  |
|   | Type  |                 | Scroll                             |
|   | Brand   |                 | Hitachi                            |
| ON/OFF Compressor                         | Quantity                                      |                 | 2                                  |
|   | Type  |                 | Scroll                             |
|   | Brand   |                 | Hitachi                            |
| Fan motor                                 | Type  |                 | DC + AC                            |
|   | Quantity                                      |                 | 2                                  |
| Fan                                       | Type  |                 | Axial                              |
|   | Quantity                                      |                 | 2                                  |
|   | Dimensions (diameter x height)                | mm              | 562×162/700×202                    |
|   | Number of fan blades                          |                 | 3/4                                |
| Heat exchanger                            | Finish type                                   |                 | Aluminium with hydrophilic coating |
|   | Type of pipes                                 |                 | Internally grooved                 |
| Airflow                                   | m <sup>3</sup> /min                           |                 | 333                                |
| Static pressure                           | Pa  |                 | 0~20 (default)                     |
|   |   |                 | 20~40 (option)                     |
| Sound pressure level                      | dB(A)   |                 | 62                                 |
| Dimensions                                | Net dimensions (width x height x depth)       | mm              | 1390×1615×765                      |
|   | Transport dimensions (width x height x depth) | mm              | 1455×1790×830                      |
|   | Net / gross weight                            | kg              | 360/375                            |
| Refrigerant                               | Type  |                 | R410A                              |
|   | Charge  | kg              | 17.0                               |
| Expansion element                         |   |                 | E×V                                |
| Cooling pipes                             | Liquid pipe / Gas pipe                        | mm              | Ø19.1/Ø31.8                        |
|   | Oil balance                                   | mm              | Ø6.35                              |
|   | Total piping length                           | m               | 1000                               |
|   | Max. distance between indoor/outdoor unit     | m               | 175                                |
|   | Max. height difference, outdoor unit above    | m               | 110                                |
|   | Max. height difference, outdoor unit below    | m               | 70                                 |
|   | Height difference between indoor units        | m               | 30                                 |
| Electrical cables                         | Power supply cable                            | mm <sup>2</sup> | 5× 10.0                            |
|   | Communication cable                           | mm <sup>2</sup> | 3 x 0.75 screened conductors       |
| Fuse recommended                          | A   |                 | 50                                 |
| Outdoor temperature range                 | Cooling                                       | °C              | -5~48                              |
|   | Heating                                       | °C              | -20~27                             |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 22 HP

| Model                                     |   |                     | MDV-615W/DRN1-i(C)                 |
|---|---|---------------------|------------------------------------|
| Power supply                              |   | V/phase/Hz          | 380-415/3/50                       |
| Cooling                                   | Rated capacity                                | kW                  | 61.5                               |
|   | Rated power input                             | W                   | 18800                              |
|   | EER   | W/W                 | 3.27                               |
| Heating                                   | Rated capacity                                | kW                  | 69.0                               |
|   | Rated power input                             | W                   | 17900                              |
|   | COP   | W/W                 | 3.86                               |
| Indoor unit connectable capacity range    |   | %                   | 50~130                             |
| Maximum connectable indoor units quantity |   | pcs                 | 36                                 |
| Compressor - DC Inverter                  | Quantity                                      |                     | 1                                  |
|   | Type  |                     | Scroll                             |
|   | Brand   |                     | Hitachi                            |
| ON/OFF Compressor                         | Quantity                                      |                     | 2                                  |
|   | Type  |                     | Scroll                             |
|   | Brand   |                     | Hitachi                            |
| Fan motor                                 | Type  |                     | DC + AC                            |
|   | Quantity                                      |                     | 2                                  |
| Fan                                       | Type  |                     | Axial                              |
|   | Quantity                                      |                     | 2                                  |
|   | Dimensions (diameter x height)                | mm                  | 700/202                            |
|   | Number of fan blades                          |                     | 3/4                                |
| Heat exchanger                            | Finish type                                   |                     | Aluminium with hydrophilic coating |
|   | Type of pipes                                 |                     | Internally grooved                 |
| Airflow                                   |   | m <sup>3</sup> /min | 383                                |
| Static pressure                           |   | Pa                  | 0~20 (default)                     |
|   |   |                     | 20~40 (option)                     |
| Sound pressure level                      |   | dB(A)               | 63                                 |
| Dimensions                                | Net dimensions (width x height x depth)       | mm                  | 1585×1615×765                      |
|   | Transport dimensions (width x height x depth) | mm                  | 1650×1810×840                      |
|   | Net / gross weight                            | kg                  | 385/400                            |
| Refrigerant                               | Type  |                     | R410A                              |
|   | Charge  | kg                  | 18.5                               |
| Expansion element                         |   |                     | E×V                                |
| Cooling pipes                             | Liquid pipe / Gas pipe                        | mm                  | Ø19.1/Ø31.8                        |
|   | Oil balance                                   | mm                  | Ø6.35                              |
|   | Total piping length                           | m                   | 1000                               |
|   | Max. distance between indoor/outdoor unit     | m                   | 175                                |
|   | Max. height difference, outdoor unit above    | m                   | 110                                |
|   | Max. height difference, outdoor unit below    | m                   | 70                                 |
|   | Height difference between indoor units        | m                   | 30                                 |
| Electrical cables                         | Power supply cable                            | mm <sup>2</sup>     | 5× 10.0                            |
|   | Communication cable                           | mm <sup>2</sup>     | 3 x 0.75 screened conductors       |
| Fuse recommended                          |   | A                   | 50                                 |
| Outdoor temperature range                 | Cooling                                       | °C                  | -5~48                              |
|   | Heating                                       | °C                  | -20~27                             |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 24 HP

| Model                                     |   |                     | MDV-670W/DRN1-i(C)                           |
|---|---|---------------------|--|
| Power supply                              |   | V/phase/Hz          | 380-415/3/50                                 |
| Cooling                                   | Rated capacity                                | kW                  | 67.0   |
|   | Rated power input                             | W                   | 20800  |
|   | EER   | W/W                 | 3.22   |
| Heating                                   | Rated capacity                                | kW                  | 75.0   |
|   | Rated power input                             | W                   | 19800  |
|   | COP   | W/W                 | 3.79   |
| Indoor unit connectable capacity range    |   | %                   | 50~130                                       |
| Maximum connectable indoor units quantity |   | pcs                 | 39   |
| Compressor - DC Inverter                  | Quantity                                      |                     | 1  |
|   | Type  |                     | Scroll                                       |
|   | Brand   |                     | Hitachi                                      |
| ON/OFF Compressor                         | Quantity                                      |                     | 2  |
|   | Type  |                     | Scroll                                       |
|   | Brand   |                     | Hitachi                                      |
| Fan motor                                 | Type  |                     | DC + AC                                      |
|   | Quantity                                      |                     | 2  |
| Fan                                       | Type  |                     | Axial  |
|   | Quantity                                      |                     | 2  |
|   | Dimensions (diameter x height)                |                     | mm 700/202                                   |
|   | Number of fan blades                          |                     | 3/4  |
| Heat exchanger                            | Finish type                                   |                     | Aluminium with hydrophilic coating           |
|   | Type of pipes                                 |                     | Internally grooved                           |
| Airflow                                   |   | m <sup>3</sup> /min | 383  |
| Static pressure                           |   | Pa                  | 0~20 (default)                               |
|   |   |                     | 20~40 (option)                               |
| Sound pressure level                      |   | dB(A)               | 63   |
| Dimensions                                | Net dimensions (width x height x depth)       |                     | mm 1585×1615×765                             |
|   | Transport dimensions (width x height x depth) |                     | mm 1650×1810×840                             |
|   | Net / gross weight                            |                     | kg 390/405                                   |
| Refrigerant                               | Type  |                     | R410A  |
|   | Charge  | kg                  | 18.5   |
| Expansion element                         |   |                     | E×V  |
| Cooling pipes                             | Liquid pipe / Gas pipe                        |                     | mm Ø19.1/Ø31.8                               |
|   | Oil balance                                   |                     | mm Ø6.35                                     |
|   | Total piping length                           |                     | m 1000                                       |
|   | Max. distance between indoor/outdoor unit     |                     | m 175  |
|   | Max. height difference, outdoor unit above    |                     | m 110  |
|   | Max. height difference, outdoor unit below    |                     | m 70   |
| Height difference between indoor units    |   | m 30                |  |
| Electrical cables                         | Power supply cable                            |                     | mm <sup>2</sup> 5× 10.0                      |
|   | Communication cable                           |                     | mm <sup>2</sup> 3 x 0.75 screened conductors |
| Fuse recommended                          |   | A                   | 55   |
| Outdoor temperature range                 | Cooling                                       | °C                  | -5~48  |
|   | Heating                                       | °C                  | -20~27                                       |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

# Mini VRF series





Mini VRF Full DC Inverter series units is a system dedicated for family houses, offices and other small commercial sites. Depending on the size of outdoor unit, it is possible to connect from 6 to 15 indoor units to one system. Individual control provides independent setting of required air parameters in each room.



### WIDE OUTDOOR UNITS LINEUP

Outdoor units capacity range from 12.0 to 45.0 kW. Ideal for application in residences, family houses, small offices and other public utility facilities.

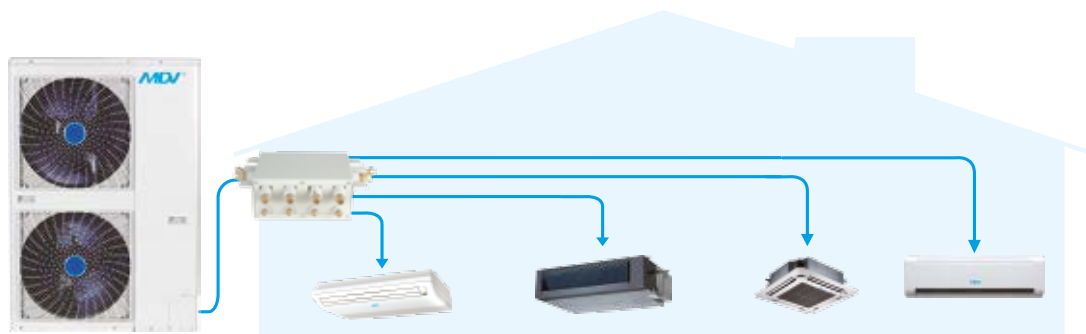
| 14/18 kW  | 22.4/26.0/40.0/45.0 kW  |
|---|---|
|  |  |

### FLEXIBLE CONFIGURATION

Mini VRF system allows to connect up to 15 indoor units to one outdoor unit. Total indoor units capacity can remain in range 50-130% of outdoor unit capacity. Application of the whole lineup of the VRF indoor units ensures high flexibility in use, and independent control guarantees comfort in each room.

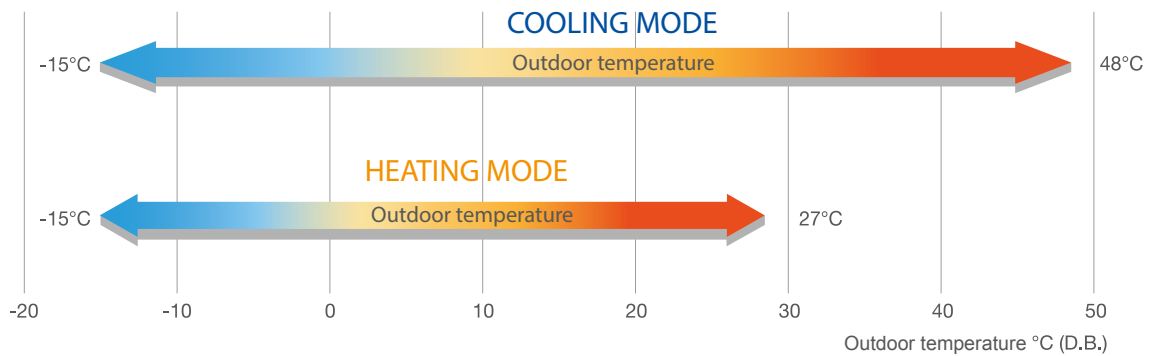
**Possible connections:**

- Max. 6 indoor units for a 14.0 kW outdoor unit
- Max. 9 indoor units for a 18.0 kW outdoor unit
- Max. 11 indoor units for a 22.4 kW outdoor unit
- Max. 12 indoor units for a 26.0 kW outdoor unit
- Max. 14 indoor units for a 40.0 kW outdoor unit
- Max. 15 indoor units for a 45.0 kW outdoor unit



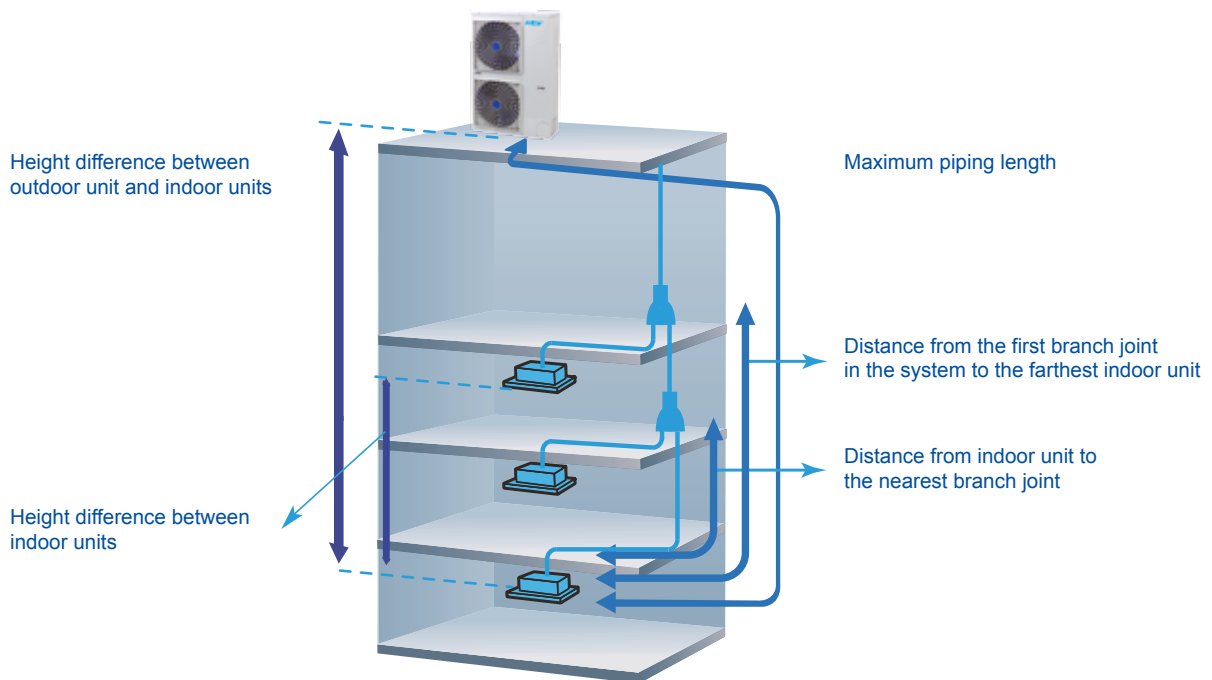
## WIDE OPERATION RANGE

Mini VRF system ensures stable operation in extreme temperatures, from -15°C up to +48°C.



\* The above ranges regard 14.0-26.0 kW devices.

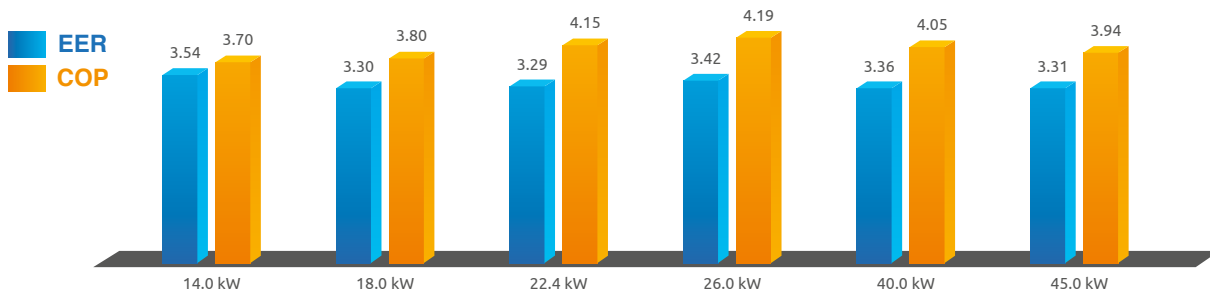
## LONG REFRIGERANT PIPING – FLEXIBLE DESIGN



|                   |  |                           | Allowable value (m) |              |              |
|-------------------|--|---------------------------|---------------------|--------------|--------------|
|                   |  |                           | 14/18 kW            | 22.4/26.0 kW | 40.0/45.0 kW |
| Piping length     | Total piping length *(actual)  |                           | 100                 | 120          | 250          |
|                   | Maximum length (L)   | Actual length             | 60                  | 60           | 100          |
|                   |  | Equivalent length         | 70                  | 70           | 120          |
| Height difference | Distance from the first branch joint in the system to the farthest indoor unit |                           | 20                  | 20           | 40           |
|                   | Distance from indoor unit to the nearest branch joint                          |                           | 15                  | 15           | 15           |
|                   | Between indoor and outdoor units   | Outdoor unit stated above | 30                  | 30           | 30           |
|                   |  | Outdoor unit stated below | 20                  | 20           | 20           |
|                   | Between indoor units   |                           | 8                   | 8            | 8            |

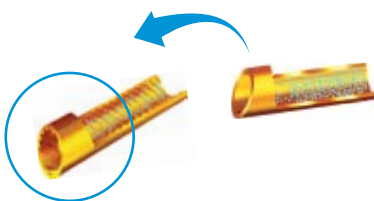
HIGH ENERGY EFFICIENCY COEFFICIENTS - EER AND COP

High-performance heat exchanger, top class inverter compressor and DC Inverter fan motor employed in the Mini VRF series air-conditioning units, enables achieving energy efficiency coefficients.

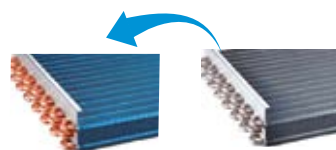


HIGH-PERFORMANCE HEAT EXCHANGER

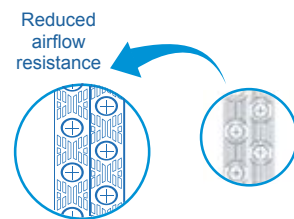
Inside the specially designed heat exchanger there are used fins with greater heat exchange surface and reduced airflow resistance. Fins outside surface is covered with hydrophilic coating. The copper pipes internal surfaces have a special groove embossed, which improves heat transfer on the refrigerant side. These solutions, together with the innovative method of exchanger pipes connection, ensure the highest heat exchange efficiency.



High performance, inner grooved pipes of the heat exchanger with large heat exchange surface



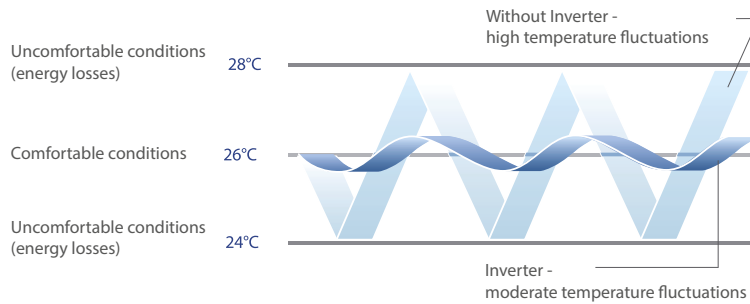
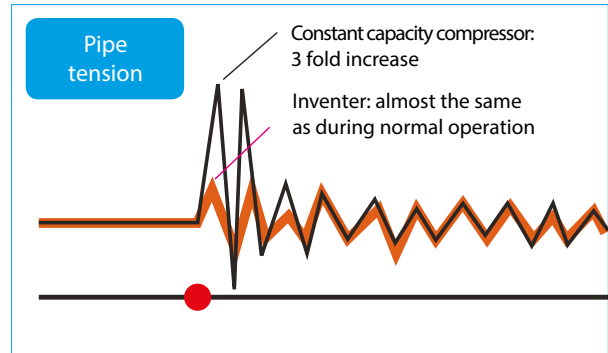
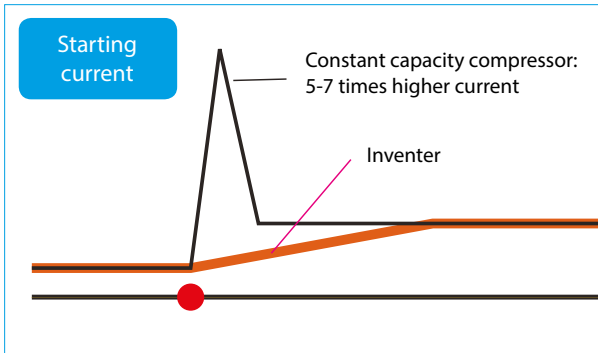
Hydrophilic fins + inner grooved copper pipes



New structure Previous construction

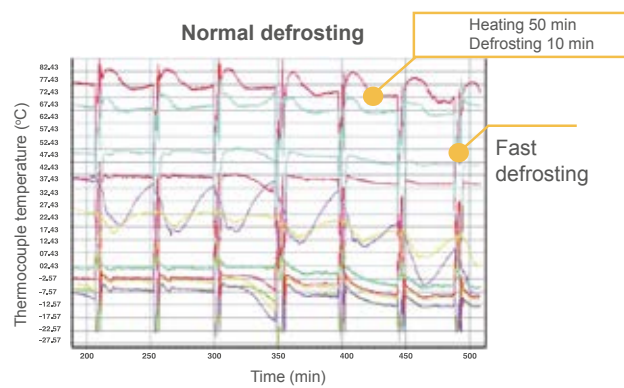
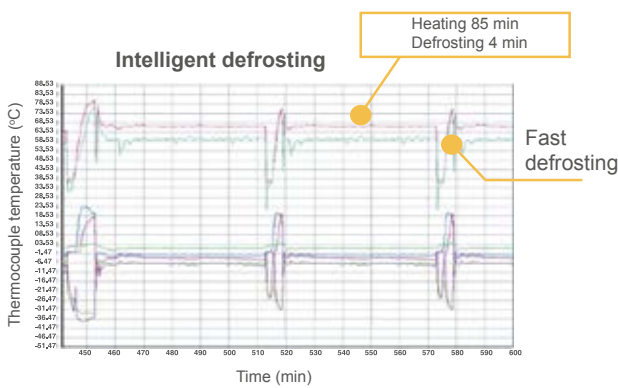
SOFT START, PRECISE TEMPERATURE CONTROL

Inverter compressor with the soft start function limits temporary overloads and voltage drops in the building electricity system. High performance inverter compressors achieve rated capacity in a very short time, what directly influences the air-conditioned rooms cooling down or heating up time. Smaller temperature fluctuations guarantee instant feeling of comfort.



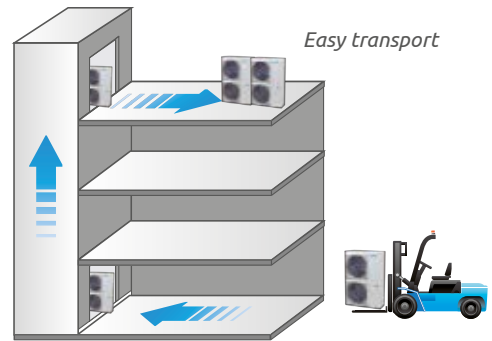
ADVANCED DEFROSTING TECHNOLOGY

A specially designed defrosting algorithm provides the removal of ice from outdoor unit heat exchanger in optimal time. Because the defrosting time depends on actual, outside conditions, the heating intervals are reduced to the minimum necessary, what has a significant influence on keeping thermal comfort in the heated rooms.



COMPACT CASING - EFFECTIVE USE OF SPACE

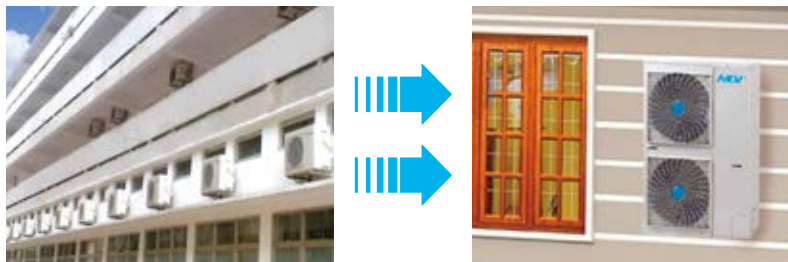
Compact size and limited weight facilitate transport and installation, reduce ceiling and structure loads. Now, only with help of a forklift and an elevator, the units can be placed on the roof of a high building.



Easy transport

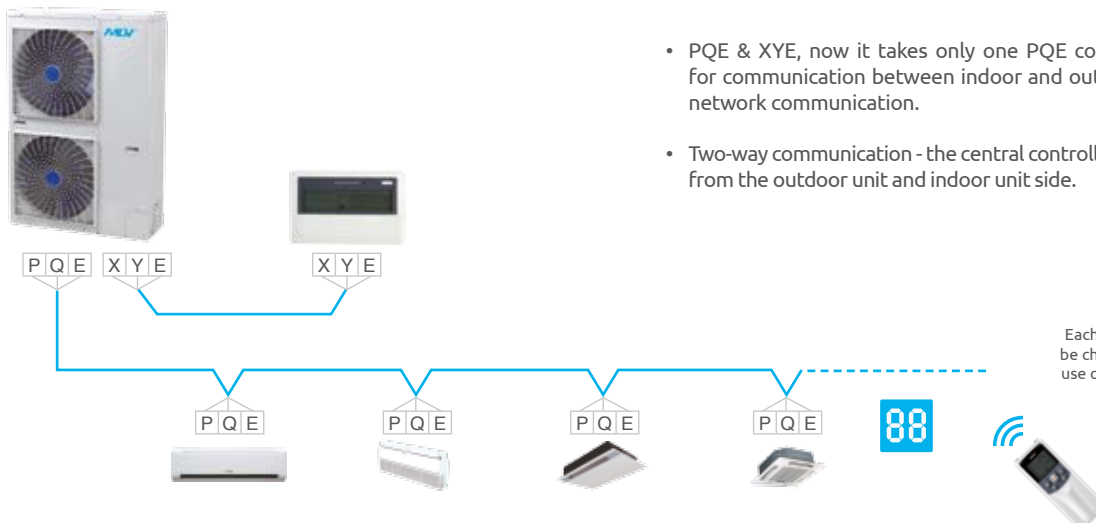
INSTALLATION SPACE SAVING - BUILDING AESTHETIC IS MAINTAINED

Outdoor unit compact casing leads to considerable savings of the installation space. Small dimensions and low weight makes it possible to install the unit even on the wall brackets. In comparison to traditional split type air-conditioners, the Mini VRF system replaces from several to dozens of smaller units, without affecting current aesthetic of the building.



SIMPLIFIED CONNECTION OF THE COMMUNICATION LINE

One, common communication cable. Depending on the requirements, the central controller CCM03 can be connected to the XYE terminal from the outdoor or indoor units side. This solution simplifies and lowers the costs of system wiring.



- PQE & XYE, now it takes only one PQE communication cable both for communication between indoor and outdoor units as well as for network communication.
- Two-way communication - the central controller can be connected both from the outdoor unit and indoor unit side.

Each indoor unit address can be checked and modified with use of the wireless controller.

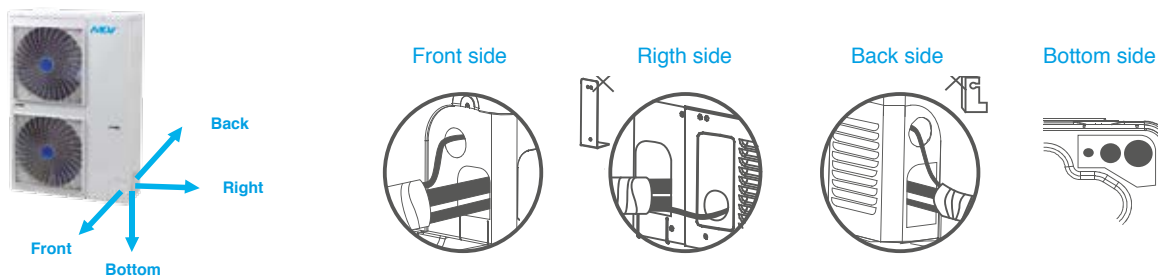
## AUTOMATIC ADDRESS SETTING

The outdoor unit can automatically assign addresses to indoor units. Indoor units addresses can be checked and in case of need modified with use of an infrared remote controller.



## CONVENIENT INSTALLATION

Refrigerant system pipes and electric wires can be lead in any direction, thus considerably facilitating installation works and affects the aesthetic of the finish.



## EASY MAINTENANCE

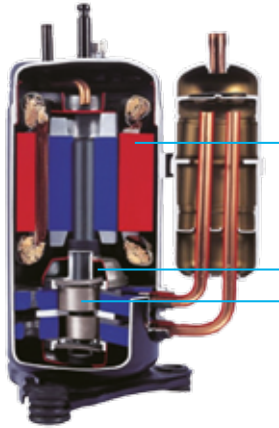
Forced cooling switch enables starting the outdoor unit in cooling mode in any conditions, which facilitate refrigerant charge in case of such need. Self-diagnosis function detects system malfunctions and displays adequate error codes, which makes it considerably easier to perform troubleshooting.



FULL DC INVERTER – HIGH EFFICIENCY COMPRESSOR

Application of new inverter technology and DC fan motor allow to achieve high capacity and energy saving, significantly reducing energy consumption during continuous operation, while ensuring stable temperature conditions in the room.

Twin rotary DC compressor



**High performance DC motor**

- new motor core
- high density neodymium magnet
- concentrated stator
- wide range of operational frequency

**Better balance and very low vibrations**

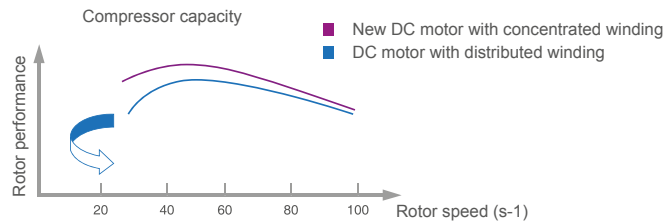
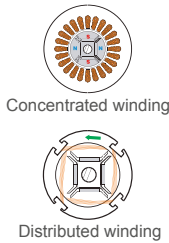
- twin eccentric discs
- two balance weights

**More stable moving parts**

- optimal shaft fitting
- optimisation of compressor drive technology
- extremely durable bearings
- compact construction



STRONG MAGNETS PROVIDE HIGH TORQUE AND CAPACITY



QUIET FAN WITH DC MOTOR

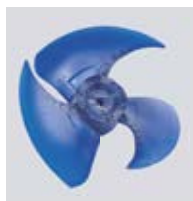
Special guard design and properly profiled fan blades significantly reduces noise while keeping large airflow.

**DC Panasonic fan motor**

- fan speed wide adjustment range
- lower noise
- lower energy consumption



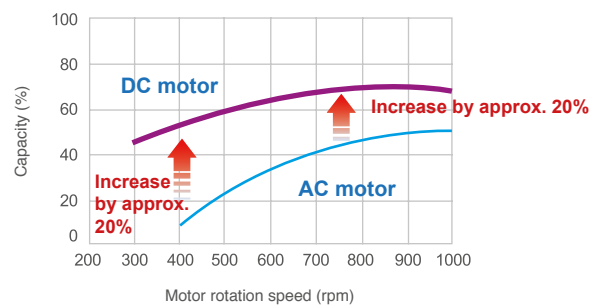
New fan shield



New and larger propeller

**DC motor efficiency**

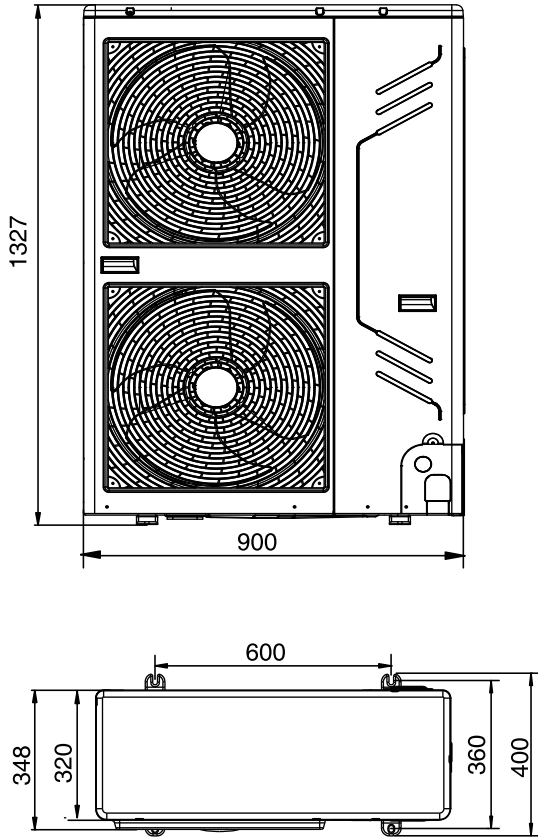
(comparison with conventional alternating current motor)



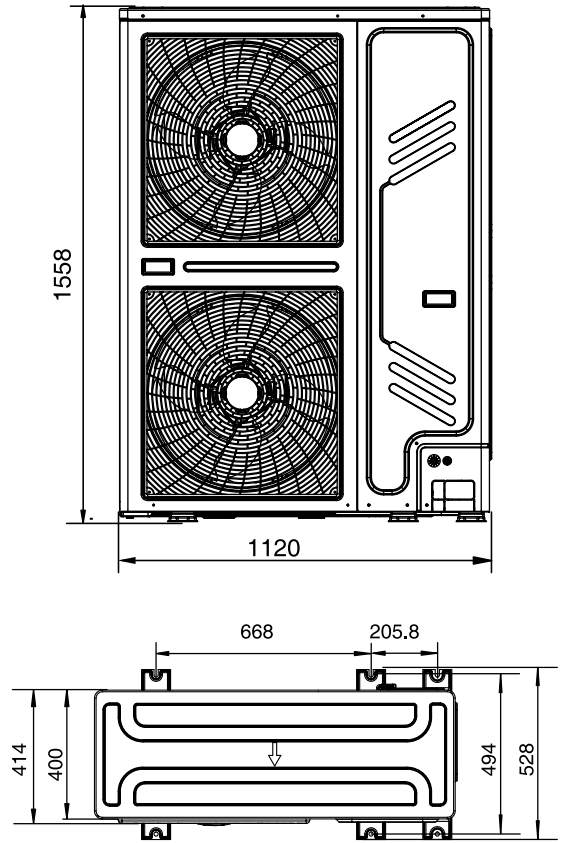
## DIMENSIONS

## EXTERNAL UNITS

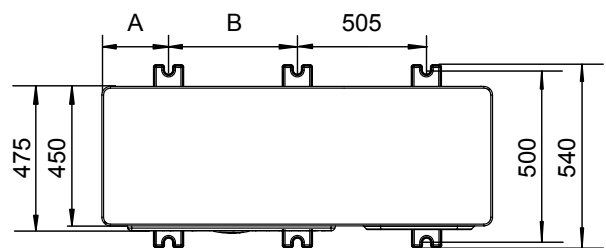
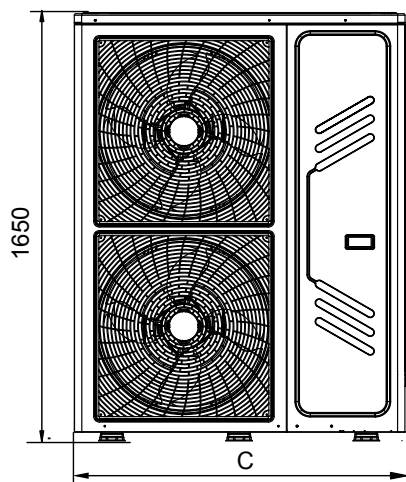
14.0, 18.0 kW



22.4, 26.0 kW



40.0, 45.0 kW



| Model | A   | B   | C    |
|-------|-----|-----|------|
| 40kW  | 175 | 505 | 1360 |
| 45kW  | 225 | 555 | 1460 |





# 14.0~18.0 kW

| Model                                     |   |                     | MDV-V140W/DRN1                     | MDV-V180W/DRN1               |
|---|---|---------------------|------------------------------------|------------------------------|
| Power supply                              |   | V/phase/Hz          | 380~415/3N/50                      | 380~415/3N/50                |
| Cooling                                   | Rated capacity                                | kW                  | 14.0                               | 17.5                         |
|   | Rated power input                             | W                   | 3950                               | 5300                         |
|   | EER   | kW/kW               | 3.54                               | 3.30                         |
| Heating                                   | Rated capacity                                | kW                  | 15.4                               | 19.0                         |
|   | Rated power input                             | W                   | 4160                               | 5000                         |
|   | COP   | kW/kW               | 3.70                               | 3.80                         |
| Admissible efficiency of internal units   |   | %                   | 45-130                             | 45-130                       |
| Maximum connectable indoor units quantity |   |                     | 6                                  | 9                            |
| Compressor - DC Inverter                  | Type  |                     | Rotary                             | Rotary                       |
|   | Brand   |                     | MITSUBISHI                         | MITSUBISHI                   |
| Fan motor                                 | Type  |                     | DC motor                           | DC motor                     |
| Fan                                       | Type  |                     | Axial fan                          | Axial fan                    |
|   | Diameter                                      | mm                  | 508                                | 508                          |
| Heat exchanger                            | Type  |                     | Aluminium with hydrophilic coating |                              |
| Airflow                                   |   | m <sup>3</sup> /min | 100                                | 113                          |
| Sound pressure level                      |   | dB(A)               | 57                                 | 59                           |
| Dimensions and weights                    | Net dimensions (width x height x depth)       | mm                  | 900 x 1327 x 400                   | 900 x 1327 x 400             |
|   | Transport dimensions (width x height x depth) | mm                  | 1030 x 1456 x 435                  | 1030 x 1456 x 435            |
|   | Net / gross weight                            | kg                  | 95/103                             | 107/118                      |
| Refrigerant                               | Type  |                     | R410A                              | R410A                        |
|   | Charge  | g                   | 3900                               | 4500                         |
| Expansion element                         |   |                     | EXV                                |                              |
| Cooling pipes                             | Liquid pipe/Gas pipe                          | mm                  | Ø9.52/Ø15.9                        | Ø9.52/Ø19.1                  |
|   | Maximum length of pipes                       | m                   | 100                                | 100                          |
|   | Maximum height difference                     | m                   | 30                                 | 30                           |
| Electrical cables                         | Power supply cable                            | mm <sup>2</sup>     | 5 conductors x 2.5                 | 5 conductors x 2.5           |
|   | Communication cable                           | mm <sup>2</sup>     | 3 x 0.75 screened conductors       | 3 x 0.75 screened conductors |
| Fuse recommended                          |   | A                   | 25                                 | 25                           |
| Ambient temperature                       | Cooling                                       | °C                  | -15 ~ 48                           | -15 ~ 48                     |
|   | Heating                                       | °C                  | -15 ~ 27                           | -15 ~ 27                     |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 22.4~26.0 kW

| Model                                     |  |                                    | MDV-V224W/DRN1               | MDV-V260W/DRN1               |
|---|--|------------------------------------|------------------------------|------------------------------|
| Power supply                              |  | V/phase/Hz                         | 380~415/3N/50                | 380~415/3N/50                |
| Cooling                                   | Rated capacity                               | kW                                 | 22.4                         | 26.0                         |
|   | Rated power input                            | W                                  | 6800                         | 7600                         |
|   | EER  | kW/ kW                             | 3.29                         | 3.42                         |
| Heating                                   | Rated capacity                               | kW                                 | 24.5                         | 28.5                         |
|   | Rated power input                            | W                                  | 5900                         | 6800                         |
|   | COP  | kW/ kW                             | 4.15                         | 4.19                         |
| Admissible efficiency of internal units   |  | %                                  | 50-130                       | 50-130                       |
| Maximum connectable indoor units quantity |  |                                    | 11                           | 12                           |
| Compressor - DC Inverter                  | Type   |                                    | Rotary                       | Rotary                       |
|   | Brand  |                                    | MITSUBISHI                   | MITSUBISHI                   |
| Fan motor                                 | Type   |                                    | DC motor                     | DC motor                     |
| Fan                                       | Type   |                                    | Axial fan                    | Axial fan                    |
|   | Diameter                                     | mm                                 | 560                          | 560                          |
| Heat exchanger                            | Type   | Aluminium with hydrophilic coating |                              |                              |
| Airflow                                   |  | m <sup>3</sup> /min                | 175                          | 175                          |
| Sound pressure level                      |  | dB(A)                              | 59                           | 60                           |
| Dimensions and weights                    | Net dimensions (width x height x depth)      | mm                                 | 1120×1558×400                | 1120×1558×400                |
|   | Shipping dimensions (width x height x depth) | mm                                 | 1270×1575×480                | 1270×1575×480                |
|   | Net / gross weight                           | kg                                 | 146.5/162.5                  | 147/163                      |
| Refrigerant                               | Type   |                                    | R410A                        | R410A                        |
|   | Charge                                       | g                                  | 6200                         | 6200                         |
| Expansion element                         |  |                                    | EXV                          |                              |
| Cooling pipes                             | Liquid pipe/Gas pipe                         | mm                                 | Ø9.52/Ø19.1                  | Ø9.52/Ø22.2                  |
|   | Maximum length of pipes                      | m                                  | 120                          | 120                          |
|   | Maximum height difference                    | m                                  | 30                           | 30                           |
| Electrical cables                         | Power supply cable                           | mm <sup>2</sup>                    | 5 conductors x 6.0           | 5 conductors x 6.0           |
|   | Communication cable                          | mm <sup>2</sup>                    | 3 x 0.75 screened conductors | 3 x 0.75 screened conductors |
| Fuse recommended                          |  | A                                  | 40                           | 40                           |
| Ambient temperature                       | Cooling                                      | °C                                 | -15 ~ 48                     | -15 ~ 48                     |
|   | Heating                                      | °C                                 | -15 ~ 27                     | -15 ~ 27                     |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.



# 40.0~45.0 kW

| Model                                     |   |                     | MDV-V400W/DRN1                     | MDV-V450W/DRN1               |
|---|---|---------------------|------------------------------------|------------------------------|
| Power supply                              |   | V/phase/Hz          | 380~415/3N/50                      | 380~415/3N/50                |
| Cooling                                   | Rated capacity                                | kW                  | 40.0                               | 45.0                         |
|   | Rated power input                             | W                   | 11900                              | 13600                        |
|   | EER   | kW/ kW              | 3.36                               | 3.31                         |
| Heating                                   | Rated capacity                                | kW                  | 45.0                               | 50.0                         |
|   | Rated power input                             | W                   | 11100                              | 12700                        |
|   | COP   | kW/ kW              | 4.05                               | 3.94                         |
| Admissible efficiency of internal units   |   | %                   | 50-130                             | 50-130                       |
| Maximum connectable indoor units quantity |   |                     | 14                                 | 15                           |
| Compressor - DC Inverter                  | Type  |                     | Rotary                             | Rotary                       |
|   | Brand   |                     | MITSUBISHI                         | MITSUBISHI                   |
| Fan motor                                 | Type  |                     | DC motor + AC                      | DC motor + AC                |
| Fan                                       | Type  |                     | Axial fan                          | Axial fan                    |
|   | Diameter                                      | mm                  | 700                                | 700                          |
| Heat exchanger                            | Type  |                     | Aluminium with hydrophilic coating |                              |
| Airflow                                   |   | m <sup>3</sup> /min | 276                                | 276                          |
| Sound pressure level                      |   | dB(A)               | 62                                 | 62                           |
| Dimensions and weights                    | Net dimensions (width x height x depth)       | mm                  | 1360x1650x540                      | 1460x1650x540                |
|   | Transport dimensions (width x height x depth) | mm                  | 1450x1785x560                      | 1550x1785x560                |
|   | Net / gross weight                            | kg                  | 240/260                            | 275/290                      |
| Refrigerant                               | Type  |                     | R410A                              | R410A                        |
|   | Charge  | g                   | 9000                               | 12000                        |
| Expansion element                         |   |                     | EXV                                |                              |
| Cooling pipes                             | Liquid pipe/Gas pipe                          | mm                  | Ø12.7/Ø22.2                        | Ø12.7/Ø25.4                  |
|   | Maximum length of pipes                       | m                   | 250                                | 250                          |
|   | Maximum height difference                     | m                   | 30                                 | 30                           |
| Electrical cables                         | Power supply cable                            | mm <sup>2</sup>     | 5 conductors x 10.0                | 5 conductors x 10.0          |
|   | Communication cable                           | mm <sup>2</sup>     | 3 x 0.75 screened conductors       | 3 x 0.75 screened conductors |
| Fuse recommended                          |   | A                   | 70A                                | 90A                          |
| Ambient temperature                       | Cooling                                       | °C                  | -5 ~ 48                            | -5 ~ 48                      |
|   | Heating                                       | °C                  | -15 ~ 25                           | -15 ~ 24                     |

**Note:**

The capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB

Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB.

Refrigerant piping length 7.5 m at the height difference of 0 m.

DB - dry bulb, WB - wet bulb

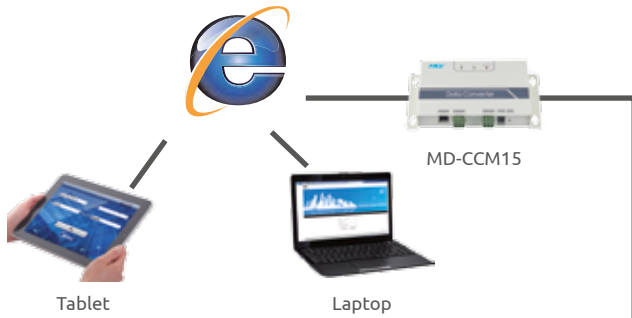
Sound pressure level measured in a reverberation chamber in a distance of 1 m from the unit front. Microphone is placed 1.3 m above the floor.

Main pipelines diameters are provided for the calculated conditions and assuming 100% oversizing of the outdoor unit. Actual diameters should be determined on the basis of the data included in the technical documentation or with use of the selection software.

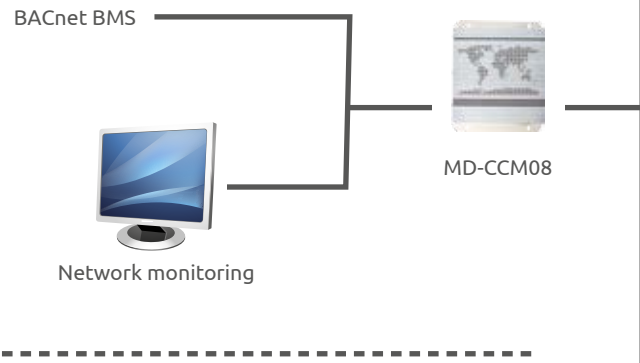


The background is a solid blue color with several overlapping, semi-transparent white geometric shapes. These shapes include rounded rectangles and lines that form a complex, abstract pattern. The shapes are layered, creating a sense of depth and movement. The overall aesthetic is clean, modern, and technical.

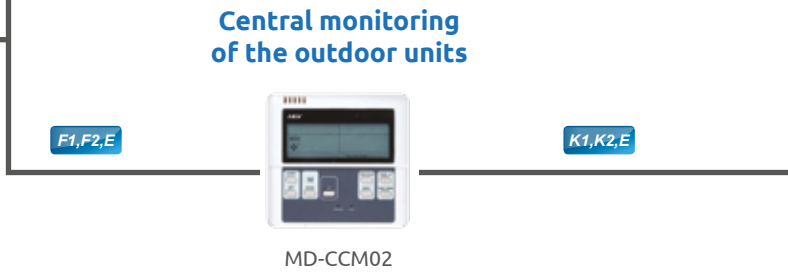
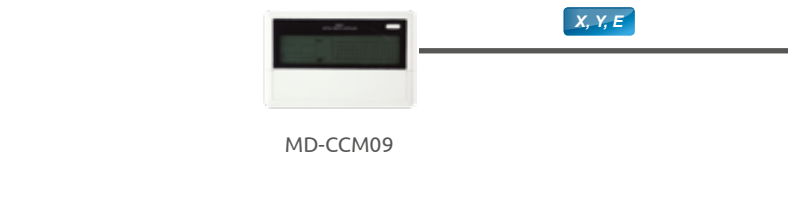
CONTROL



**BMS central control system**



**Central controllers**



Note: The diagram illustrates only the communication signal low and does not reflect the actual method of units wiring.

### Individual controllers

#### Wired remote controllers

KJR-10B  
KJR12B



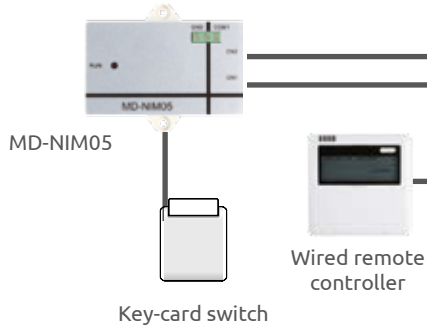
#### Wireless remote controllers

R51  
R05



### Accessories

#### Switch interface MD-NIM05



Outdoor units

| Type                               |                             | Wireless remote controllers |      |      | Wired controllers |         |       | Central controllers |          |
|------------------------------------|-----------------------------|-----------------------------|------|------|-------------------|---------|-------|---------------------|----------|
| Model                              |                             | RM05                        | R51  | R05  | KJR-10B           | KJR-12B | CCM04 | MD-CCM03            | MD-CCM09 |
| Max. connectable indoor units      |                             | 1                           | 1    | 1    | 1                 | 1       | 1     | 64                  | 64       |
| Air-conditioning control functions | On/Off                      | ●                           | ●    | ●    | ●                 | ●       | ●     | ●                   | ●        |
|                                    | Operation mode setting      | ●                           | ●    | ●    | ●                 | ●       | ●     | ●                   | ●        |
|                                    | Fan speed                   | ●                           | ●    | ●    | ●                 | ●       | ●     | ●                   | ●        |
|                                    | Temperature settings        | ●                           | ●    | ●    | ●                 | ●       | ●     | ●                   | ●        |
|                                    | Vertical swing              | ●                           | ●    | ●    | –                 | –       | –     | –                   | –        |
|                                    | Horizontal swing            | ●                           | –    | ●    | ●                 | ●       | –     | ●                   | ●        |
|                                    | Economy operation mode      | ●                           | ●    | ●    | ●                 | ●       | –     | –                   | –        |
|                                    | Group control               | –                           | –    | –    | –                 | –       | –     | ●                   | ●        |
|                                    | Key lock                    | ●                           | ●    | ●    | ●                 | ●       | ●     | ●                   | ●        |
|                                    | Operation mode lock         | –                           | –    | –    | –                 | –       | –     | ●                   | ●        |
| Display                            | Background light            | ●                           | ●    | ●    | –                 | ●       | ●     | ●                   | ●        |
|                                    | Clock                       | ●                           | –    | ●    | ●                 | –       | ●     | –                   | ●        |
|                                    | Individual controllers lock | –                           | –    | –    | –                 | –       | –     | ●                   | ●        |
|                                    | Address                     | –                           | –    | –    | –                 | –       | –     | ●                   | ●        |
|                                    | Error codes                 | –                           | –    | –    | –                 | ●       | ●     | ●                   | ●        |
|                                    | Room temperature            | –                           | –    | –    | –                 | –       | –     | ●                   | ●        |
| Timer                              | Time period                 | 24 h                        | 24 h | 24 h | 24 h              | 24 h    | Week  | 24 h                | Week     |
|                                    | On/Off per day              | 1                           | 1    | 1    | 1                 | 1       | 4     | 1                   | 4        |
|                                    | On/Off per week             | –                           | –    | –    | –                 | –       | 28    | –                   | 28       |
| Additional functions               | FOLLOW ME function          | –                           | –    | –    | –                 | ●       | –     | –                   | –        |
|                                    | Emergency stop              | –                           | –    | –    | –                 | –       | –     | ●                   | ●        |
|                                    | Emergency start             | –                           | –    | –    | –                 | –       | –     | ●                   | ●        |
|                                    | Address setting             | ●                           | –    | –    | ●                 | –       | –     | –                   | –        |
|                                    | BMS access                  | –                           | –    | –    | –                 | –       | –     | –                   | ●        |
|                                    | Control via the Internet    | –                           | –    | –    | –                 | –       | –     | –                   | ●        |
|                                    | Filter cleaning reminder    | –                           | –    | –    | ●                 | –       | ●     | –                   | –        |

● Function available  
 – Function unavailable



## CONTROLLERS

## WIRELESS REMOTE

**RM05**  
**R05**  
**R51**



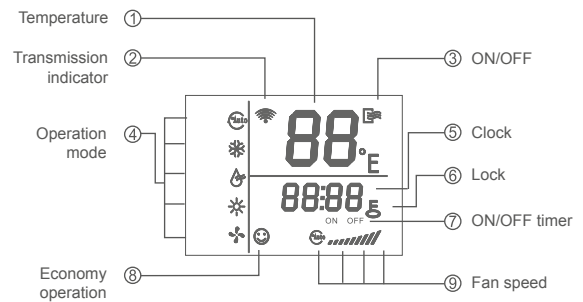
### PORTABLE DEVICE

Remote controller enables remote control of air-conditioning appliances with use of infrared signal. Remote controller signal range is up to 11 m.



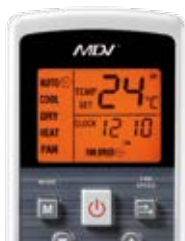
### EASY TO READ DISPLAY

Parameters set by the user are clearly presented on the controller display, so they can be easily adapted to individual needs.



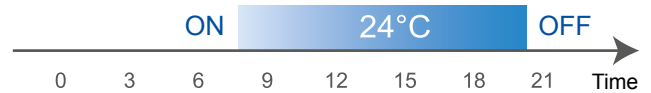
### BACKGROUND LIGHT

Background light is active during entering the settings, what facilitates controller usage in a darkened room.



### TIMER FUNCTION

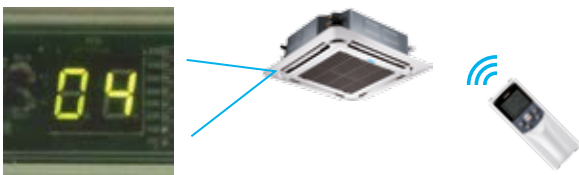
Timer function enables programming of air-conditioner on and off time within next 24 hours.



Auto operation mode of the indoor unit is set from 8:00 to 20:00.

### UNIT ADDRESS SETTING

RM05 controller provides easy programming and checking of indoor unit address.



### SPECIFICATION

| Model                                | RM05             | R05       | R51       |
|--------------------------------------|------------------|-----------|-----------|
| Dimensions (width×height×depth) [mm] | 150×65×20        | 150×65×20 | 140×60×15 |
| Power supply                         | 1.5V(LR03/AAA)×2 |           |           |

## CONTROLLERS

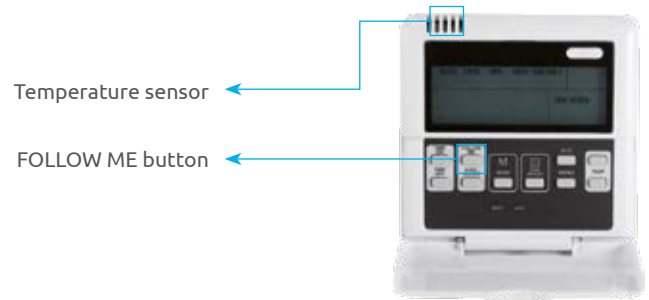
## WIRED CONTROLLER

# KJR-10B KJR-12B



### FOLLOW ME FUNCTION

The "Follow me" function enables room temperature control on the basis of measurement from the sensor built-in the remote controller. This guarantees keeping comfortable conditions of the occupied zone.



### UNIT ADDRESS SETTING

Address setting function facilitates installation and unit maintenance. Installer can set or change the address of indoor unit. Function available for KJR-10B controller.



### TIMER FUNCTION

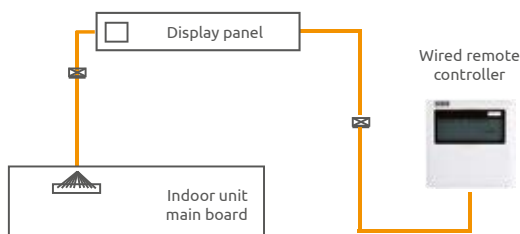
Timer function enables programming of air-conditioner on and off time within next 24 hours.



Auto operation mode of the indoor unit is set from 8:00 to 20:00.

### EASY CONNECTION

Wall mounted controller connected to the air-conditioner with use of a cable supplied with the controller.



### SPECIFICATION

| Model                                | KJR-10B    | KJR-12B    |
|--------------------------------------|------------|------------|
| Dimensions (width×height×depth) [mm] | 120×120×15 | 120×120×15 |
| Power supply                         | DC 5V      |            |

# MD-CCM04



## SIMPLE STRUCTURE

MD-CCM04 controller can be used both as a weekly timer or as an individual simple remote controller. The controller enables setting of all basic parameters of air-conditioner operation, monitors room temperature and displays error codes. The backlit display simplifies controller use in a darkened room.

## DELAY FUNCTION

During weekly timer operation, it is possible to delay the turn off time for an hour or two, with the simple press of a button. This function is especially suitable for those who works overtime.

## WEEKLY TIMER

User can program up to four changes of air-conditioner operation parameters during one day. Available functions: on/off, operation mode, temperature and fan speed.

|     | 8:00 | 16:00 | 23:59 |
|-----|------|-------|-------|
| Mon | 28°C | 22°C  | 24°C  |
| Tue | 26°C | 22°C  | 23°C  |
| Wed | 26°C | 22°C  | 23°C  |
| Thu | 26°C | 22°C  | 23°C  |
| Fri | 26°C | 22°C  | 26°C  |
| Sat | 26°C | 22°C  | 26°C  |
| Sun | 28°C | off   | 24°C  |

## SPECIFICATION

|                                      |            |
|--------------------------------------|------------|
| Model                                | MD-CCM04   |
| Dimensions (width×height×depth) [mm] | 120×120×15 |
| Power supply                         | DC 5V      |

# MD-CCM03



## CENTRAL CONTROLLER

Multifunction central controller can control up to 64 indoor units. Total communication cable length can reach even 1200 m. The controller can be connected to indoor units or "master" outdoor unit, what significantly facilitates installation. The picture below shows two methods of controller connection.



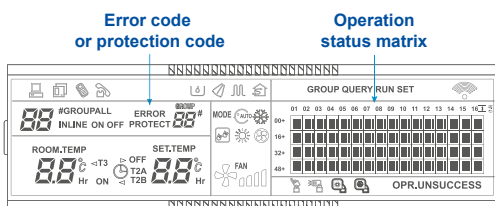
## THREE LOCKING MODES

MD-CCM03 perfectly controls indoor units. Depending on the user needs, it is possible to lock individual wireless controllers operation, mode (cooling, heating) or controller keys.



## INDOOR UNITS OPERATION STATUS

On large, clear display it is possible to easily check operation status of all indoor units, set temperatures and real room temperatures. In case of a malfunction, the red diode starts flashing and an error code is displayed on the display.

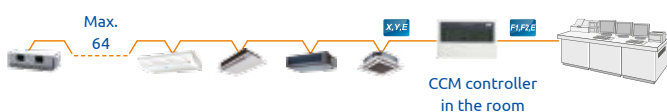


## INDIVIDUAL AND GROUP CONTROL

Central controller enables individual control of single unit and group control of all indoor units in the system. Turning the whole system on or off can be done with the push of a single button. Feedback signal from the indoor units immediately informs user about adoption of modified settings.

## NETWORK MONITORING

MD-CCM03 can be connected to the system of network control or BMS.



## SPECIFICATION

| Model                                | MD-CCM03          |
|--------------------------------------|-------------------|
| Dimensions (width×height×depth) [mm] | 179×119×74        |
| Power supply                         | 198-242V(50/60Hz) |

# MD-CCM09



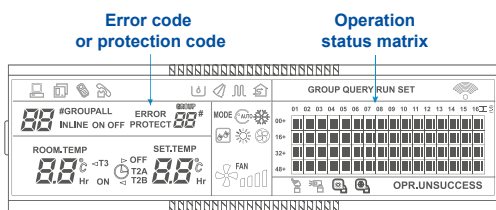
## WEEKLY SCHEDULE

MD-CCM09 enables weekly programming of up to 64 indoor units. It is possible to specify up to 4 operation periods daily, choose a desired operation mode and room temperature for each indoor unit. Each indoor unit can be programmed individually or collectively. Programmed weekly schedule can be easily enabled or disabled in at any time, without the need to reenter the settings.

|     | 8:00 | 16:00 | 23:59 |
|-----|------|-------|-------|
| Mon | 28°C | 22°C  | 24°C  |
| Tue | 26°C | 22°C  | 23°C  |
| Wed | 26°C | 22°C  | 23°C  |
| Thu | 26°C | 22°C  | 23°C  |
| Fri | 26°C | 22°C  | 26°C  |
| Sat | 26°C | 22°C  | 26°C  |
| Sun | 28°C | off   | 24°C  |

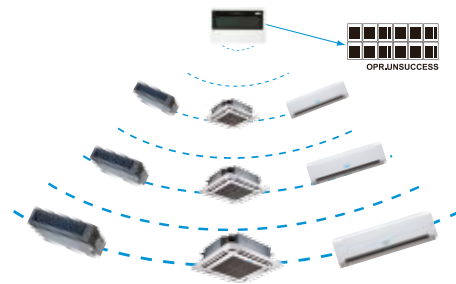
## INDOOR UNITS OPERATIONAL STATUS

Thanks to the large, clear display the user can easily read the operational status of all indoor units, set temperatures and real temperatures in the rooms. In case of a failure the red diode starts flashing and the display shows an error code.



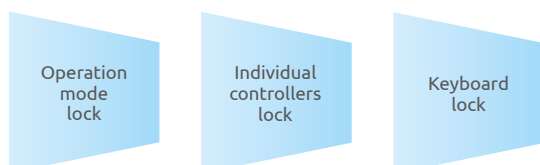
## INDIVIDUAL AND GROUP CONTROL

Central controller enables individual control of single unit and group control of all indoor units in the system. Turning the whole system on or off can be done with the push of a single button. Feedback signal from the indoor units immediately informs user about adoption of modified settings.



## THREE LOCKING MODES

MD-CCM09 perfectly controls the indoor units. Depending on the needs, the user can lock operation of individual wireless controllers, operation mode (cooling, heating) or controller keys.



## SPECIFICATION

| Model                                | MD-CCM09   |
|--------------------------------------|------------|
| Dimensions (width×height×depth) [mm] | 120×120×15 |
| Power supply                         | DC 5V      |

# MD-CCM15



## DIVERSITY OF APPLICATION

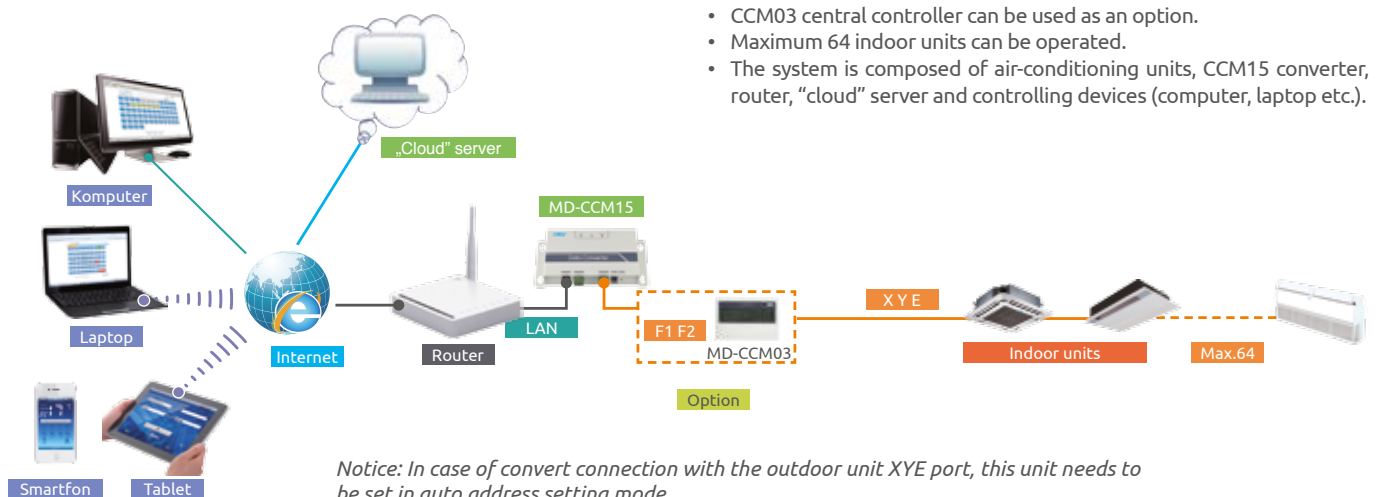
The controller is used to convert data between 485 and TCP/IP protocols. Access to the VRF system control is performed through the web site. The user can control and monitor air-conditioning system operation through the LAN and WAN network. Access to the air-conditioning system through WEB/HTTP/TCP/IP. Remote control with use of a computer, smart phone, tablet etc.

## SIMPLE CONTROL INTERFACE

- Software access through the WEB.
- Simple and user friendly "click and go" interface.
- Individual and group control.
- Icon colours enable easy recognition of the air-conditioners operation mode.
- Full-screen mode and temperature adjustment with a slider available.



## NETWORK CONFIGURATION

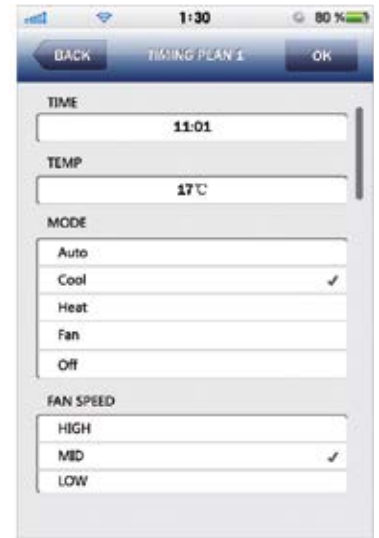


- Direct connection to the indoor units XYE port.
- CCM03 central controller can be used as an option.
- Maximum 64 indoor units can be operated.
- The system is composed of air-conditioning units, CCM15 converter, router, "cloud" server and controlling devices (computer, laptop etc.).

*Notice: In case of convert connection with the outdoor unit XYE port, this unit needs to be set in auto address setting mode.*

## WEEKLY TIMER

- Weekly timer for tablets available.
- Possibility of setting several time period daily for a single unit or the whole group.
- Functions available for the weekly timer mode: start/stop, operation mode and temperature.



## FUNCTIONS AVAILABLE VIA WEBSITE

- Single unit or whole group operational status control and command.
- Weekly timer, individual or group programming.
- Group control of several converters after logging in as a "group user".
- Error history - simplified service and system troubleshooting owing to the possibility of checking the history of occurred errors.

## INTELLIGENT CONTROL SYSTEM

- Remote control of the air-conditioning system with use of a smart phone or tablet.
- Possibility to control and monitor the system operation at any place and time.
- Possibility of remote turning the unit off in order to avoid wasteful energy consumption.

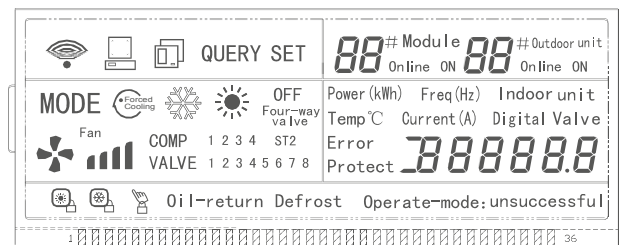


# MD-CCM02



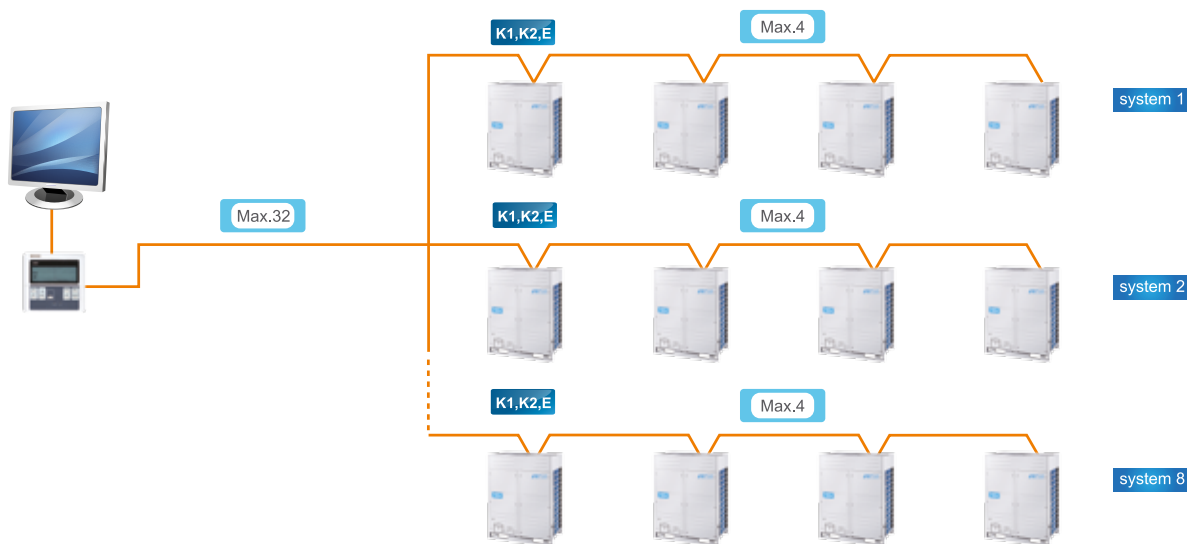
## DISPLAYING INDOOR UNIT PARAMETERS

CCM02 controller enables user to check basic operation parameters of the outdoor units. The available functions, among others, include: operation mode, current input and operation frequency of individual compressors, temperature in several points of the system, and if the system is equipped with optional meter - even the energy consumption. In case of a failure the display shows an error code.



## ACCESS TO THE NETWORK CONTROL SYSTEM

- CCM02 provides monitoring of up to 8 refrigerant systems.
- Each system can be composed of maximum 4 units, giving a total of 32 monitored outdoor units that are connected do the network control system or BMS.



## SPECIFICATION

| Model                                | MD-CCM02          |
|--------------------------------------|-------------------|
| Dimensions (width×height×depth) [mm] | 120×120×15        |
| Power supply                         | 198-242V(50/60Hz) |



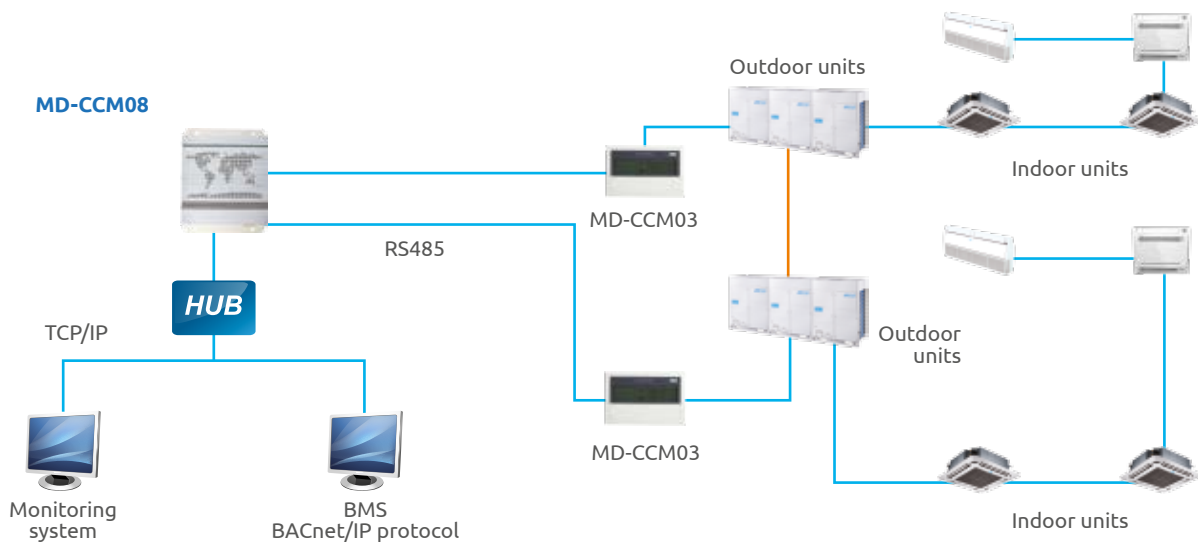
# MD-CCM08



## DIVERSITY OF APPLICATION

Equipped with 4 sets of RS232 port, which enable control of up to 256 indoor and 128 outdoor units. The possibility of connection with the BMS system. Compatibility with the fourth-generation network software. Possible to control through the local Ethernet network.

## EXAMPLE OF NETWORK CONFIGURATION



## MONITORING VIA LOCAL WEB NETWORK

The gateway enables units monitoring through the local web network, only via Internet Explorer web browser. The user, in addition to the units operational status preview, can also perform changes in operation parameters.

## BROAD COMPATIBILITY

|   | Company   | BMS software  | Brand |
|---|-----------|---------------|-------|
| 1 | SIEMENS   | APOGEE        |       |
| 2 | TRANE     | Tracer Summit |       |
| 3 | Honeywell | Alerton       |       |
| 4 | Schneider | Andover       |       |
| 5 | Johnson   | METASYS       |       |

# MD-CCM18

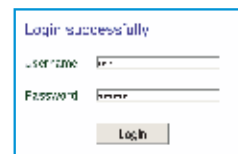


## DIVERSITY OF APPLICATION

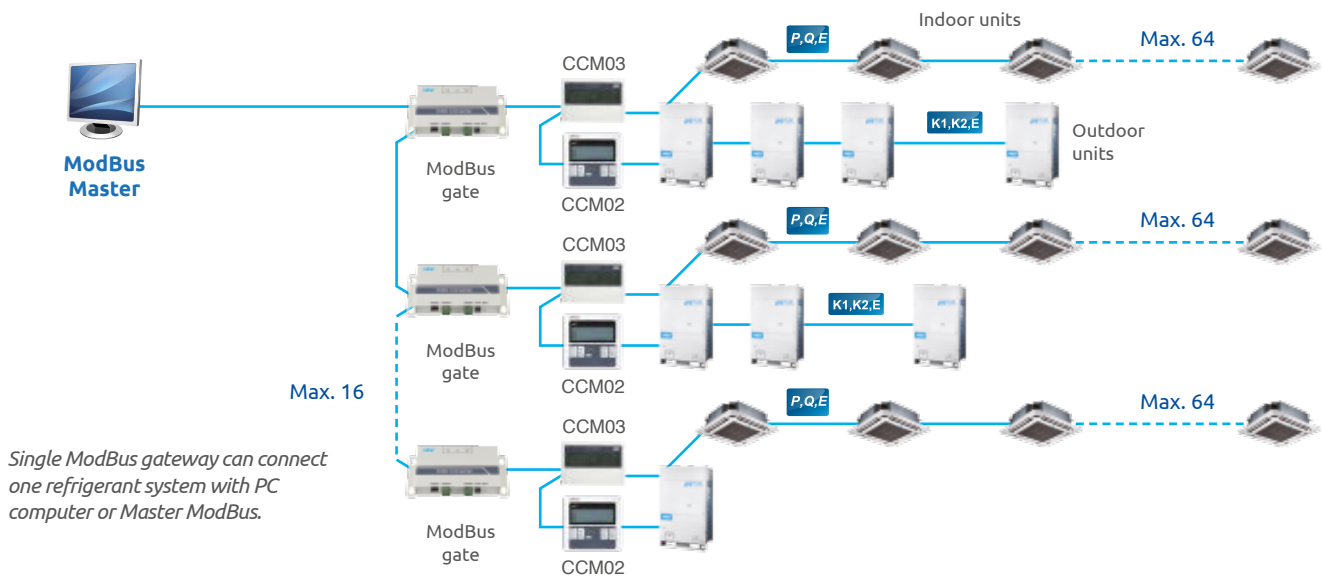
- Supports ModBus protocol networks.
- Bridges: MDV central system - BMS.
- Creates ModBus network composed of maximum 1024 indoor units and 64 outdoor units.
- Data transfer in RTU mode.
- Provides wide range of power supply voltage: 12-48V DC.
- TCP/IP or RTU.

## SYSTEM CONFIGURATION THROUGH THE WEB

System configuration can be performed through the web network, using web browser via the TCP/IP protocol.



## EXAMPLE OF NETWORK CONFIGURATION



## SPECIFICATION

| Model                                | MD-CCM18   |
|--------------------------------------|------------|
| Dimensions (width×height×depth) [mm] | 115×186×25 |
| Power supply                         | 230V/50Hz  |

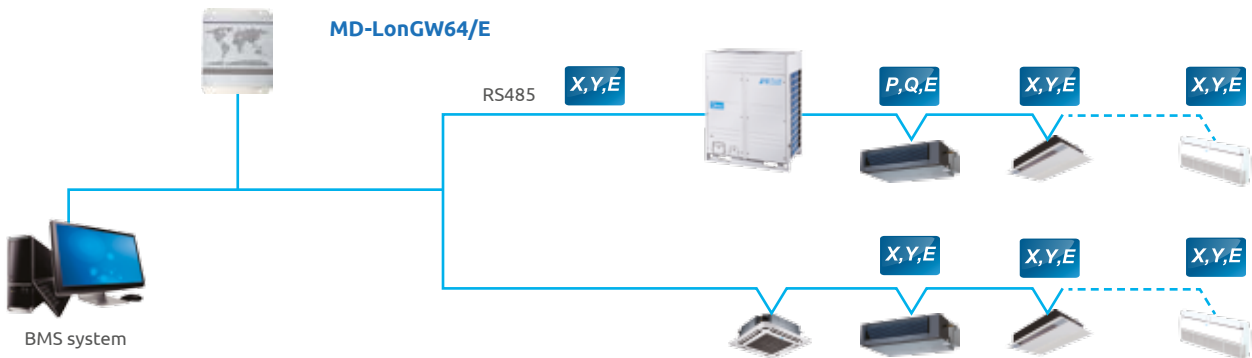
# MD-LonGW64



## DIVERSITY OF APPLICATION

- New Lonworks gateway is in conformity with LonMark standard.
- It is possible to connect 64 indoor units with BMS system.
- Supports non-polar communication, the application can be downloaded online.

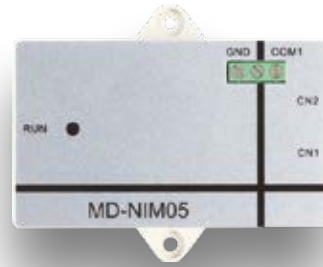
## EXAMPLE OF NETWORK CONFIGURATION



## SPECIFICATION

| Model                                | MD-LonGW64             |
|--------------------------------------|------------------------|
| Dimensions (width×height×depth) [mm] | 31.9×25.1×6.1          |
| Power supply                         | 177~165V AC(50Hz/60Hz) |

# MD-NIM05B/E MD-NIM05



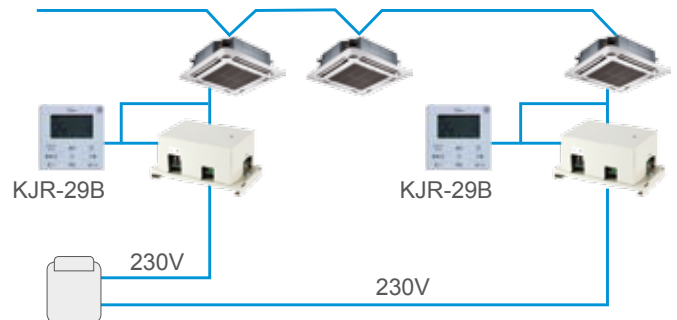
## DIVERSITY OF APPLICATION

- Compatible with wired remote controller.
- Low voltage supply - safety and operation stability.
- Built-in auto restart function.

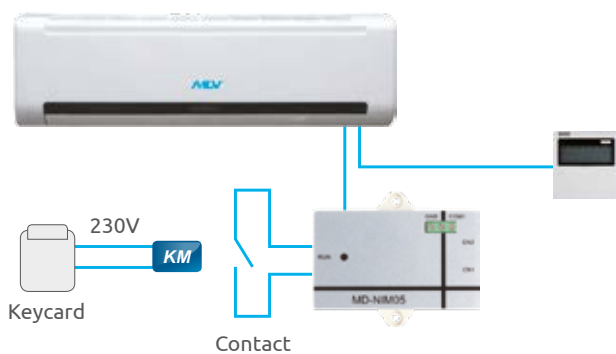
### EXAMPLE MD-NIM05 INSTALLATION



### EXAMPLE MD-NIM05B/E INSTALLATION



## CIRCUIT DIAGRAM



## SPECIFICATION

| Model                                | MD-NIM05     | MD-NIM05B/E |
|--------------------------------------|--------------|-------------|
| Dimensions (width×height×depth) [mm] | 72.8×86×15.5 | 150×74×88   |
| Power supply                         | DC 5V        | 230V        |

## NEW APPEARANCE OF THE SELECTION SOFTWARE

The manufacturer has developed a new application for the VRF system designing, that meets every user requirements. Its intuitive interface significantly facilitates operation and provides fast and comfortable method for unit selection. Program supports many languages.



### DESIGN

Identifying design information, such as: project name, site location etc. Determining meteorologic data typical for this region.

### HEAT GAINS

There are two calculation methods available. Heat gains are determined manually or with use of accurate method by specifying data of each room, such as: floor area, W/m<sup>2</sup> load index.

### WIDE SELECTION OF UNITS

Possibility of choosing indoor units, different accessories and outdoor units from the wide range of products.

### INSTALLATION DIAGRAM

Installation diagram provides relevant data, such as: indoor units layout, pipe diameters and lengths, branch joints type.

### CONTROLLER SELECTION

Specifying the selection of individual and central controllers, indoor and outdoor units, according to the assumptions.

### FINAL REPORT

System calculation results can be exported to \*.doc or \*.pdf format file.







**INDOOR  
UNITS**

| Type                                     | Model   | 15    | 22    | 28    | 36    | 45     | 56     | 71     | 80     |        |
|--|---|-------|-------|-------|-------|--------|--------|--------|--------|--------|
|  |   | kW    | 1.5   | 2.2   | 2.8   | 3.6    | 4.5    | 5.6    | 7.1    | 8.0    |
|  |   | Btu/h | 6 100 | 7 500 | 9 600 | 12 300 | 15 400 | 19 100 | 24 200 | 27 300 |
| Wall mounted                             | S  | ●     | ●     | ●     | ●     | ●      | ●      |        |        |        |
|  | R  |       |       |       |       |        |        | ●      | ●      |        |
| Duct low static pressure                 |    | ●     | ●     | ●     | ●     | ●      | ●      | ●      |        |        |
| Duct medium static pressure              |    |       | ●     | ●     | ●     | ●      | ●      | ●      | ●      |        |
| Duct high static pressure                |    |       |       |       |       |        |        | ●      | ●      |        |
|  |    |       |       |       |       |        |        |        |        |        |
|  |   |       |       |       |       |        |        |        |        |        |
| Duct with 100% fresh air processing unit |  |       |       |       |       |        |        |        |        |        |
|  |  |       |       |       |       |        |        |        |        |        |
| 4-way compact cassette                   |  | ●     | ●     | ●     | ●     | ●      |        |        |        |        |
| 4-way cassette                           |  |       |       | ●     | ●     | ●      | ●      | ●      | ●      |        |
| 2-way cassette                           |  |       | ●     | ●     | ●     | ●      | ●      | ●      |        |        |
| 1-way cassette                           |  | ●     |       | ●     | ●     | ●      | ●      |        |        |        |
| Ceiling & Floor                          |  |       |       |       | ●     | ●      | ●      | ●      | ●      |        |
| Console                                  |  |       | ●     | ●     | ●     | ●      |        |        |        |        |
| Standing (floor)                         |  |       | ●     | ●     | ●     | ●      | ●      | ●      | ●      |        |
|  |  |       | ●     | ●     | ●     | ●      | ●      | ●      | ●      |        |
|  |  |       | ●     | ●     | ●     | ●      | ●      | ●      | ●      |        |



| 90     | 100    | 112    | 125    | 140    | 160    | 200    | 250    | 280    | 400     | 450     | 560     | Page |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|------|
| 9.0    | 10.0   | 11.2   | 12.5   | 14.0   | 16.0   | 20.0   | 25.0   | 28.0   | 40.0    | 45.0    | 56.0    |      |
| 30 700 | 34 100 | 38 200 | 42 700 | 47 800 | 54 600 | 68 200 | 85 300 | 95 500 | 136 500 | 153 500 | 191 100 |      |
|        |        |        |        |        |        |        |        |        |         |         |         | 106  |
| •      |        |        |        |        |        |        |        |        |         |         |         |      |
|        |        |        |        |        |        |        |        |        |         |         |         | 110  |
| •      |        | •      |        | •      |        |        |        |        |         |         |         | 112  |
| •      |        | •      |        | •      | •      |        |        |        |         |         |         | 114  |
|        |        |        |        |        |        | •      | •      | •      |         |         |         |      |
|        |        |        |        |        |        |        |        |        | •       | •       | •       |      |
|        |        |        | •      | •      |        |        |        |        |         |         |         | 116  |
|        |        |        |        |        |        | •      | •      | •      |         |         |         |      |
|        |        |        |        |        |        |        |        |        |         |         |         | 118  |
| •      | •      | •      |        | •      |        |        |        |        |         |         |         | 120  |
|        |        |        |        |        |        |        |        |        |         |         |         | 122  |
|        |        |        |        |        |        |        |        |        |         |         |         | 124  |
| •      |        | •      |        | •      |        |        |        |        |         |         |         | 126  |
|        |        |        |        |        |        |        |        |        |         |         |         | 128  |
|        |        |        |        |        |        |        |        |        |         |         |         | 130  |
|        |        |        |        |        |        |        |        |        |         |         |         |      |
|        |        |        |        |        |        |        |        |        |         |         |         |      |

## INDOOR UNITS

## WALL MOUNTED

# Model S Model R

S



R

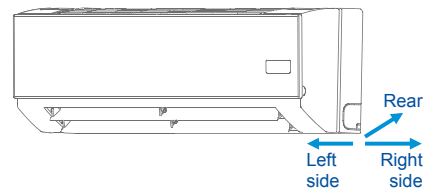


### PANEL WITH LED DISPLAY

Unit panel is equipped with digital LED display, which informs user about current temperature settings.

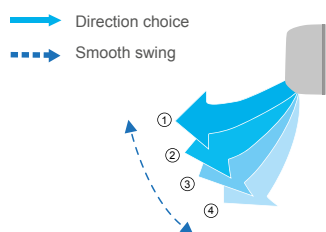
### COMFORTABLE AND EASY INSTALLATION

- Flexible installation of the refrigerant pipes: at the rear, from the left or right side.
- EXV valve built in the indoor unit; compact size; longer connection pipes: gas 468 mm, liquid 550 mm.
- New mounting plate significantly facilitates installation.



### AUTOMATIC SWING

Possibility to set louvers swing. Louvers can be stopped in any position. Air louver automatically adjusts its position when changing the operation mode, so to ensure highest possible comfort.



### EASY MAINTENANCE

Front panel can be easily removed in order to improve service access.



### IMPROVED REFRIGERANT FLOW CONTROL, LOWER NOISE LEVEL

EXV expansion valve provides quiet operation and precise adjustment of the refrigerant flow, which ensures stable maintenance of the set temperature. Full range of adjustment is 2000 steps. Three fan speeds and properly shaped air deflectors ensure even airflow without unnecessary whirls and turbulence.



## TECHNICAL DATA

### Model S

| Model                                  |  |                     | MDV-D15G/N1-S                   | MDV-D22G/N1-S | MDV-D28G/N1-S |
|--|--|---------------------|---------------------------------|---------------|---------------|
| Power supply                           |  | V/phase/Hz          | 220~240/1/50                    |               |               |
| Cooling                                | Rated capacity (*1)                          | kW                  | 1.5                             | 2.2           | 2.8           |
|  | Rated power input                            | W                   | 28                              | 28            | 28            |
|  | Rated current                                | A                   | 0.12                            | 0.12          | 0.12          |
| Heating                                | Rated capacity (*2)                          | kW                  | 1.7                             | 2.4           | 3.2           |
|  | Rated power input                            | W                   | 28                              | 28            | 28            |
|  | Rated current                                | A                   | 0.12                            | 0.12          | 0.12          |
| Heat exchanger                         | Corrosion protection                         |                     | Hydrophilic coating             |               |               |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min | 5.6/6.5/7.1                     | 7.2/8.0/8.8   | 7.2/8.0/8.8   |
| Sound pressure level (low/medium/high) |  | dB(A)               | 28/31/33                        | 29/32/35      | 29/32/35      |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                  | 915×230×290                     | 915×230×290   | 915×230×290   |
|  | Shipping dimensions (width x height x depth) | mm                  | 1020×315×390                    | 1020×315×390  | 1020×315×390  |
|  | Net/gross weight                             | kg                  | 12.4/15.9                       | 13.0/16.8     | 13.0/16.8     |
| Refrigerant                            |  |                     | R410A                           |               |               |
| Refrigerant flow adjustment            |  |                     | EXV                             |               |               |
| Piping                                 | Liquid                                       | mm                  | Ø6.35                           | Ø6.35         | Ø6.35         |
|  | Gas  | mm                  | Ø12.7                           | Ø12.7         | Ø12.7         |
| Condensate drain                       |  | mm                  | Ø16                             | Ø16           | Ø16           |
| Cables                                 | Power supply                                 | mm <sup>2</sup>     | 3×2.5(L≤20m); 3×3.5(L≤50m)      |               |               |
|  | Communication                                | mm <sup>2</sup>     | 3×0.75 shielded                 |               |               |
| Remote controller                      |  |                     | Wireless remote controller RM05 |               |               |

**Notice:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## Model S

| Model                                  |  |                     | MDV-D36G/N1-S                   | MDV-D45G/N1-S  | MDV-D56G/N1-S  |
|--|--|---------------------|---------------------------------|----------------|----------------|
| Power supply                           |  | V/phase/Hz          | 220~240/1/50                    |                |                |
| Cooling                                | Rated capacity (*1)                          | kW                  | 3.6                             | 4.5            | 5.6            |
|  | Rated power input                            | W                   | 28                              | 45             | 45             |
|  | Rated current                                | A                   | 0.12                            | 0.20           | 0.20           |
| Heating                                | Rated capacity (*2)                          | kW                  | 4.0                             | 5.0            | 6.3            |
|  | Rated power input                            | W                   | 28                              | 45             | 45             |
|  | Rated current                                | A                   | 0.12                            | 0.20           | 0.20           |
| Heat exchanger                         | Corrosion protection                         |                     | Hydrophilic coating             |                |                |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min | 8.0/8.7/9.8                     | 10.5/12.6/14.3 | 12.6/14.3/15.4 |
| Sound pressure level (low/medium/high) |  | dB(A)               | 29/32/35                        | 34/38/40       | 34/38/40       |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                  | 915×230×290                     | 1072×230×315   | 1072×230×315   |
|  | Shipping dimensions (width x height x depth) | mm                  | 1020×315×390                    | 1180×315×415   | 1180×315×415   |
|  | Net/gross weight                             | kg                  | 13.0/16.8                       | 15.1/19.5      | 15.1/19.5      |
| Refrigerant                            |  |                     | R410A                           |                |                |
| Refrigerant flow adjustment            |  |                     | EXV                             |                |                |
| Piping                                 | Liquid                                       | mm                  | Ø6.35                           | Ø6.35          | Ø9.52          |
|  | Gas  | mm                  | Ø12.7                           | Ø12.7          | Ø15.9          |
| Condensate drain                       |  | mm                  | Ø16                             | Ø16            | Ø16            |
| Cables                                 | Power supply                                 | mm <sup>2</sup>     | 3×2.5(L≤20m); 3×3.5(L≤50m)      |                |                |
|  | Communication                                | mm <sup>2</sup>     | 3×0.75 shielded                 |                |                |
| Remote controller                      |  |                     | Wireless remote controller RM05 |                |                |

**Notice:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## TECHNICAL DATA

### Model R

| Model                                  |  |                     | MDV-D71G-R3/N1Y                 | MDV-D80G-R3/N1Y | MDV-D90G-R3/N1Y |
|--|--|---------------------|---------------------------------|-----------------|-----------------|
| Power supply                           |  | V/phase/Hz          | 220~240/1/50                    |                 |                 |
| Cooling                                | Rated capacity (*1)                          | kW                  | 7.1                             | 8.0             | 9.0             |
|  | Rated power input                            | W                   | 79                              | 86              | 86              |
|  | Rated current                                | A                   | 0.34                            | 0.37            | 0.37            |
| Heating                                | Rated capacity (*2)                          | kW                  | 8.0                             | 9.0             | 10.0            |
|  | Rated power input                            | W                   | 79                              | 86              | 86              |
|  | Rated current                                | A                   | 0.34                            | 0.37            | 0.37            |
| Heat exchanger                         | Corrosion protection                         |                     | Hydrophilic coating             |                 |                 |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min | 11.3/14.7/19.8                  | 10.7/14.0/22.0  | 10.7/14.0/22.0  |
| Sound pressure level (low/medium/high) |  | dB(A)               | 42/43/47                        | 38/43/48        | 38/43/49        |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                  | 1250×245×325                    | 1250×245×325    | 1250×245×325    |
|  | Shipping dimensions (width x height x depth) | mm                  | 1345×335×430                    | 1345×335×430    | 1345×335×430    |
|  | Net/gross weight                             | kg                  | 19.9/25.0                       | 19.9/25.0       | 19.9/25.0       |
| Refrigerant                            |  |                     | R410A                           |                 |                 |
| Refrigerant flow adjustment            |  |                     | EXV                             |                 |                 |
| Piping                                 | Liquid                                       | mm                  | Ø9.52                           |                 |                 |
|  | Gas  | mm                  | Ø15.9                           |                 |                 |
| Condensate drain                       |  | mm                  | Ø16.5                           |                 |                 |
| Cables                                 | Power supply                                 | mm <sup>2</sup>     | 3×2.5(L≤20m); 3×3.5(L≤50m)      |                 |                 |
|  | Communication                                | mm <sup>2</sup>     | 3×0.75 shielded                 |                 |                 |
| Remote controller                      |  |                     | Wireless remote controller RM05 |                 |                 |

**Notice:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## INDOOR UNITS

## DUCT UNITS

# Low static pressure



### WIDE CAPACITY RANGE

Capacity range from 1,8 to 7,1 kW. 7 available models.

### SMOOTH AIRFLOW

Properly shaped air duct and multi-blade fan ensure even airflow without turbulence.

### COMFORTABLE INSTALLATION

EXV valve is placed inside indoor unit what significantly facilitates installation.

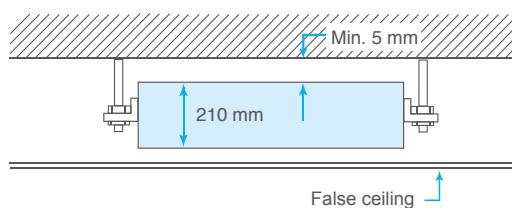
### LOW NOISE LEVEL

The use of modern centrifugal fan ensures reduction of the noise level even up to 24 dB. This series units are perfect for rooms with demanding acoustic requirements, like hotels, schools, lecture halls etc.



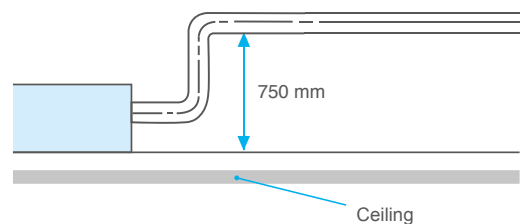
### SLIM AND LIGHT STRUCTURE

The whole unit lineup has unified height of 210 mm. This makes it possible to install different capacity units in places with limited installation space.



### OPTION

Drain pump with head up to 750 mm is an accessory option.



## TECHNICAL DATA

| Model                       |   |                                 | MDV-D18T3/N1-C             | MDV-D22T3/N1-C   | MDV-D28T3/N1-C   | MDV-D36T3/N1-C    |
|-----------------------------|---|---------------------------------|----------------------------|------------------|------------------|-------------------|
| Power supply                |   | V/phase/Hz                      | 220~240/1/50               |                  |                  |                   |
| Cooling                     | Rated capacity (*1)                     | kW                              | 1.8                        | 2.2              | 2.8              | 3.6               |
|                             | Rated power input                       | W                               | 59                         | 59               | 59               | 65                |
|                             | Rated current                           | A                               | 0.26                       | 0.26             | 0.26             | 0.28              |
| Heating                     | Rated capacity (*2)                     | kW                              | 2.2                        | 2.6              | 3.2              | 4.0               |
|                             | Rated power input                       | W                               | 59                         | 59               | 59               | 65                |
|                             | Rated current                           | A                               | 0.26                       | 0.26             | 0.26             | 0.28              |
| Heat exchanger              | Corrosion protection                    |                                 | Hydrophilic coating        |                  |                  |                   |
| Rated airflow               |   | m <sup>3</sup> /min             | 6.8/8.5/9.6/10.1           | 6.8/8.5/9.6/10.1 | 6.8/8.5/9.6/10.1 | 7.4/9.2/10.3/10.8 |
| External static pressure    |   | Pa                              | 10(10-30)                  | 10(10-30)        | 10(10-30)        | 10(10-30)         |
| Sound pressure level        |   | dB(A)                           | 24/27/35                   | 24/27/35         | 24/27/35         | 24/27/35          |
| Dimensions                  | Net dimensions (width x height x depth) | mm                              | 740×210×470                | 740×210×470      | 740×210×470      | 740×210×470       |
|                             | Shipping dimensions (W x H x D)         | mm                              | 910×230×510                | 910×230×510      | 910×230×510      | 910×230×510       |
|                             | Net/gross weight                        | kg                              | 14.0/17.5                  | 14.0/17.5        | 14.0/17.5        | 14.0/17.5         |
| Refrigerant                 |   | R410A                           |                            |                  |                  |                   |
| Refrigerant flow adjustment |   | EXV                             |                            |                  |                  |                   |
| Piping                      | Liquid                                  | mm                              | Ø6.35                      | Ø6.35            | Ø6.35            | Ø6.35             |
|                             | Gas                                     | mm                              | Ø12.7                      | Ø12.7            | Ø12.7            | Ø12.7             |
| Condensate drain            |   | mm                              | Ø25                        | Ø25              | Ø25              | Ø25               |
| Cables                      | Power supply                            | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                  |                  |                   |
|                             | Communication                           | mm <sup>2</sup>                 | 3×0.75 shielded            |                  |                  |                   |
| Remote controller           |   | Wireless remote controller RM05 |                            |                  |                  |                   |

| Model                       |   |                                 | MDV-D45T3/N1-C             | MDV-D56T3/N1-C      | MDV-D71T3/N1-C      |
|-----------------------------|---|---------------------------------|----------------------------|---------------------|---------------------|
| Power supply                |   | V/phase/Hz                      | 220~240/1/50               |                     |                     |
| Cooling                     | Rated capacity (*1)                     | kW                              | 4.5                        | 5.6                 | 7.1                 |
|                             | Rated power input                       | W                               | 105                        | 105                 | 130                 |
|                             | Rated current                           | A                               | 0.46                       | 0.46                | 0.57                |
| Heating                     | Rated capacity (*2)                     | kW                              | 5.0                        | 6.3                 | 8.0                 |
|                             | Rated power input                       | W                               | 105                        | 105                 | 130                 |
|                             | Rated current                           | A                               | 0.46                       | 0.46                | 0.57                |
| Heat exchanger              | Corrosion protection                    |                                 | Hydrophilic coating        |                     |                     |
| Rated airflow               |   | m <sup>3</sup> /min             | 10.2/11.5/13.7/13.4        | 10.2/11.5/13.7/13.4 | 13.5/16.2/17.7/20.1 |
| Available compression       |   | Pa                              | 10(10-30)                  | 10(10-30)           | 10(10-30)           |
| Sound pressure level        |   | dB(A)                           | 29/32/39                   | 29/32/39            | 30/33/41            |
| Dimensions                  | Net dimensions (width x height x depth) | mm                              | 960×210×470                | 960×210×470         | 1180×210×470        |
|                             | Shipping dimensions (W x H x D)         | mm                              | 1130×230×510               | 1130×230×510        | 1350×230×510        |
|                             | Net/gross weight                        | kg                              | 17.5/22.0                  | 17.5/22.0           | 21/26.5             |
| Refrigerant                 |   | R410A                           |                            |                     |                     |
| Refrigerant flow adjustment |   | EXV                             |                            |                     |                     |
| Piping                      | Liquid                                  | mm                              | Ø6.35                      | Ø9.52               | Ø9.52               |
|                             | Gas                                     | mm                              | Ø12.7                      | Ø15.9               | Ø15.9               |
| Condensate drain            |   | mm                              | Ø25                        | Ø25                 | Ø25                 |
| Cables                      | Power supply                            | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                     |                     |
|                             | Communication                           | mm <sup>2</sup>                 | 3×0.75 shielded            |                     |                     |
| Remote controller           |   | Wireless remote controller RM05 |                            |                     |                     |

**Notice:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## INDOOR UNITS

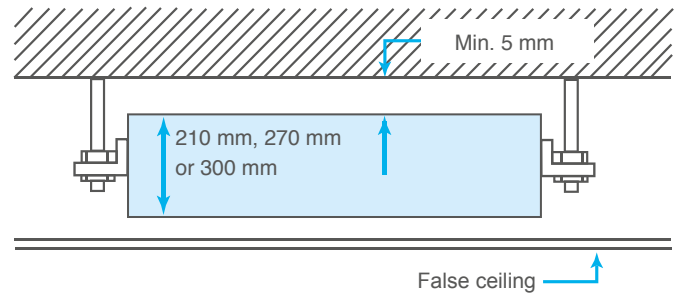
## DUCT UNITS

# Medium static pressure



### COMPACT SIZE

Unit height only 210 mm (15÷56 models) and 270 mm (71÷140 models) and 300 mm (model 140). Electronic expansion valve built-in the unit.



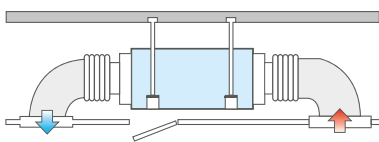
### WIDE CAPACITY RANGE

Capacity range from 1.5 kW to 10.0 kW. 11 available models.

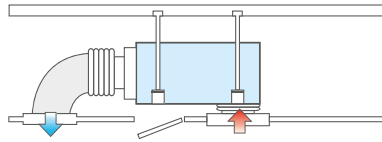
### COMFORTABLE INSTALLATION

- EXV valve built-in the unit.
- The possibility of supplying fresh air. Inlet and outlet connection flanges as standard.
- Filter fitted in the aluminium frame, easy to remove.
- Air inlet normally from the back of the unit, optionally from the bottom.

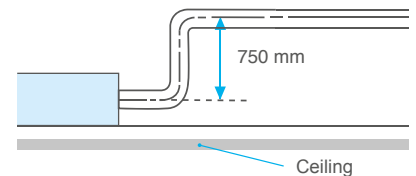
Air inlet from the back



Air inlet from the bottom



Drain pump with head up to 750 mm as a standard equipment



### FLEXIBLE CONTROL, SIMPLE MAINTENANCE

- Wired remote controller as a standard equipment.
- LED display is pre-wired to the electric box - easy error codes reading.
- Possibility to install the electric box in a distance of 1 m from the unit, in a more convenient place for the service stuff.
- As standard the unit is equipped with ports for remote on and off and alarm signalling (230 V).



## TECHNICAL DATA

| Model                                  |  |                     | MDV-D15T2/<br>N1-DA5            | MDV-D22T2/<br>N1-DA5 | MDV-D28T2/<br>N1-DA5 | MDV-D36T2/<br>N1-DA5 | MDV-D45T2/<br>N1-DA5 | MDV-D56T2/<br>N1-DA5 |
|--|--|---------------------|---------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Power supply                           |  | V/phase/Hz          | 220~240/1/50                    |                      |                      |                      |                      |                      |
| Cooling                                | Rated capacity (*1)                          | kW                  | 1.5                             | 2.2                  | 2.8                  | 3.6                  | 4.5                  | 5.6                  |
|  | Rated power input                            | W                   | 56                              | 57                   | 57                   | 61                   | 98                   | 103                  |
|  | Rated current                                | A                   | 0.24                            | 0.25                 | 0.25                 | 0.27                 | 0.43                 | 0.45                 |
| Heating                                | Rated capacity (*2)                          | kW                  | 1.7                             | 2.6                  | 3.2                  | 4.0                  | 5.0                  | 6.3                  |
|  | Rated power input                            | W                   | 56                              | 57                   | 57                   | 61                   | 98                   | 103                  |
|  | Rated current                                | A                   | 0.24                            | 0.25                 | 0.25                 | 0.27                 | 0.43                 | 0.45                 |
| Heat exchanger                         | Corrosion protection                         |                     | Hydrophilic coating             |                      |                      |                      |                      |                      |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min | 6.3/7.6/9.0                     | 6.3/7.6/9.0          | 6.3/7.6/9.0          | 7.2/8.6/10.0         | 9.6/11.4/13.5        | 9.6/11.4/13.5        |
| External static pressure               |  | Pa                  | 10(10~30)                       | 10(10~30)            | 10(10~30)            | 10(10~30)            | 10(10~30)            | 10(10~30)            |
| Sound pressure level (low/medium/high) |  | dB(A)               | 31/35/36                        | 32/35/36             | 32/35/37             | 34/38/39             | 34/38/39             | 34/38/39             |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                  | 740×210×500                     | 740×210×500          | 740×210×500          | 740×210×500          | 960×210×500          | 960×210×500          |
|  | Shipping dimensions (width x height x depth) | mm                  | 870×285×525                     | 870×285×525          | 870×285×525          | 870×285×525          | 1115×285×525         | 1115×285×525         |
|  | Net/gross weight                             | kg                  | 17.5/20.5                       | 17.5/20.0            | 17.5/20.0            | 17.5/20.0            | 22.5/26.0            | 22.5/26.0            |
| Refrigerant                            |  |                     | R410A                           |                      |                      |                      |                      |                      |
| Refrigerant flow adjustment            |  |                     | EXV                             |                      |                      |                      |                      |                      |
| Piping                                 | Liquid                                       | mm                  | Ø6.35                           | Ø6.35                | Ø6.35                | Ø6.35                | Ø6.35                | Ø9.52                |
|  | Gas  | mm                  | Ø12.7                           | Ø12.7                | Ø12.7                | Ø12.7                | Ø12.7                | Ø15.9                |
| Condensate drain                       |  | mm                  | Ø25                             | Ø25                  | Ø25                  | Ø25                  | Ø25                  | Ø25                  |
| Cables                                 | Power supply                                 | mm <sup>2</sup>     | 3×2.5(L≤20m); 3×3.5(L≤50m)      |                      |                      |                      |                      |                      |
|  | Communication                                | mm <sup>2</sup>     | 3×0.75 shielded                 |                      |                      |                      |                      |                      |
| Remote controller                      |  |                     | Wired remote controller KJR-10B |                      |                      |                      |                      |                      |

| Model                                  |  |                     | MDV-D71T2/N1-DA5                | MDV-D80T2/N1-BA5 | MDV-D90T2/N1-BA5 | MDV-I112T2/DHN1-BA5 | MDV-I140T2/DHN1-BA5 |  |
|--|--|---------------------|---------------------------------|------------------|------------------|---------------------|---------------------|--|
| Power supply                           |  | V/phase/Hz          | 220~240/1/50                    |                  |                  |                     |                     |  |
| Cooling                                | Rated capacity (*1)                          | kW                  | 7.1                             | 8.0              | 9.0              | 11.2                | 14.0                |  |
|  | Rated power input                            | W                   | 140                             | 198              | 200              | 200                 | 160                 |  |
|  | Rated current                                | A                   | 0.61                            | 0.86             | 0.87             | 0.87                | 0.70                |  |
| Heating                                | Rated capacity (*2)                          | kW                  | 8.0                             | 9.0              | 10.0             | 12.5                | 15.5                |  |
|  | Rated power input                            | W                   | 140                             | 198              | 200              | 200                 | 160                 |  |
|  | Rated current                                | A                   | 0.61                            | 0.86             | 0.87             | 0.87                | 0.70                |  |
| Heat exchanger                         | Corrosion protection                         |                     | Hydrophilic coating             |                  |                  |                     |                     |  |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min | 13.0/15.6/17.2                  | 14.4/17.0/20.4   | 14.4/17.0/20.4   | 22.5/25.8/29.7      | 23.3/26.7/32.5      |  |
| External static pressure               |  | Pa                  | 10(10~30)                       | 20(10~50)        | 20(10~50)        | 40(10~80)           | 40(10~100)          |  |
| Sound pressure level (low/medium/high) |  | dB(A)               | 35/39/41                        | 37/40/45         | 37/40/45         | 37/41/47            | 38/42/47            |  |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                  | 1180×210×500                    | 1140×270×710     | 1140×270×710     | 1180×270×775        | 1240×300×865        |  |
|  | Shipping dimensions (width x height x depth) | mm                  | 1335×285×525                    | 1355×350×795     | 1355×350×795     | 1355×350×795        | 1400×375×925        |  |
|  | Net/gross weight                             | kg                  | 28.0/31.5                       | 38.0/46.5        | 40.0/48.0        | 40.0/48.0           | 49.0/58.0           |  |
| Refrigerant                            |  |                     | R410A                           |                  |                  |                     |                     |  |
| Refrigerant flow adjustment            |  |                     | EXV                             |                  |                  |                     |                     |  |
| Piping                                 | Liquid                                       | mm                  | Ø9.52                           | Ø9.52            | Ø9.52            | Ø9.52               | Ø9.52               |  |
|  | Gas  | mm                  | Ø15.9                           | Ø15.9            | Ø15.9            | Ø15.9               | Ø15.9               |  |
| Condensate drain                       |  | mm                  | Ø25                             | Ø25              | Ø25              | Ø25                 | Ø25                 |  |
| Cables                                 | Power supply                                 | mm <sup>2</sup>     | 3×2.5(L≤20m); 3×3.5(L≤50m)      |                  |                  |                     |                     |  |
|  | Communication                                | mm <sup>2</sup>     | 3×0.75 shielded                 |                  |                  |                     |                     |  |
| Remote controller                      |  |                     | Wired remote controller KJR-10B |                  |                  |                     |                     |  |

**Notice:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## INDOOR UNITS

## DUCT UNITS

# High static pressure

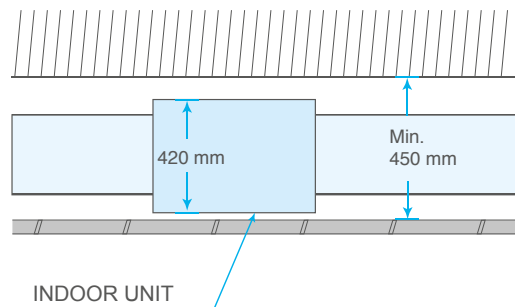
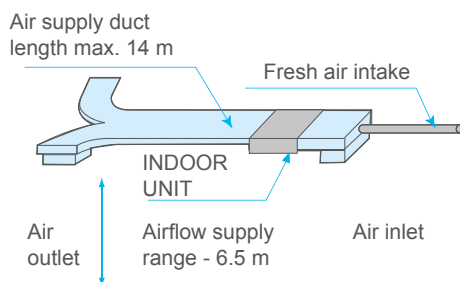


### WIDE CAPACITY RANGE

Capacity range from 7.1 kW to 56.0 kW. 12 models available.

### FLEXIBLE STRUCTURE OF THE AIR SUPPLY DUCT

Four fan speeds (fourth speed available in models 71 to 140). Maximum length of the air supply duct is approx. 14 m, airflow range is 6,5 m. Minimum ceiling cavity is 450 mm (unit height is 420 mm for 71÷160 models).

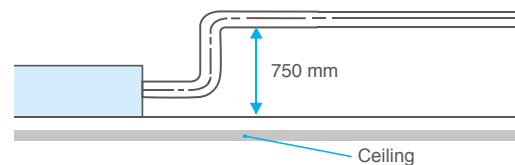


### COMFORTABLE INSTALLATION

- EXV valve built-in the unit.
- Filter fitted in the aluminium frame, easy to remove.
- The possibility of supplying fresh air. Inlet and outlet connection flanges as standard.
- Air inlet normally from the back of the unit, optionally from the bottom.

### OPTION

Drain pump with head up to 750 mm as optional equipment (for models 71÷160).



### FLEXIBLE CONTROL, SIMPLE MAINTENANCE

Wired remote controller as a standard equipment. LED display is pre-wired to the electrical box - easy error codes reading. Possibility to install the electric box in a distance of 1 m from the unit, in a more convenient place for the service stuff. As a standard, the unit is equipped with ports for remote turning on and off and alarm signaling (230 V).

## TECHNICAL DATA

| Model                                  |  |                                 | MDV-D71T1/N1-B             | MDV-D80T1/N1-B | MDV-D90T1/N1-B | MDV-I112T1/DHN1-B | MDV-I140T1/DHN1-B | MDV-I160T1/DHN1-B |
|--|--|---------------------------------|----------------------------|----------------|----------------|-------------------|-------------------|-------------------|
| Power supply                           |  | V/phase/Hz                      | 220~240/1/50               |                |                |                   |                   |                   |
| Cooling                                | Rated capacity (*1)                          | kW                              | 7.1                        | 8.0            | 9.0            | 11.2              | 14.0              | 16.0              |
|  | Rated power input                            | W                               | 263                        | 263            | 423            | 380               | 420               | 700               |
|  | Rated current                                | A                               | 1.1                        | 1.1            | 1.8            | 1.7               | 1.8               | 3.0               |
| Heating                                | Rated capacity (*2)                          | kW                              | 8.0                        | 9.0            | 10.0           | 12.5              | 16.0              | 17.0              |
|  | Rated power input                            | W                               | 263                        | 236            | 423            | 380               | 420               | 700               |
|  | Rated current                                | A                               | 1.1                        | 1.1            | 1.8            | 1.7               | 1.8               | 3.0               |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                |                |                   |                   |                   |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 20.6/23.3/25.2             | 20.4/23.3/25.0 | 25.2/28.7/32.3 | 28.5/32.2/34.7    | 33.5/40.7/47.7    | 40.0/44.3/56.7    |
| External static pressure               |  | Pa                              | 40(30~196)                 | 40(30~196)     | 40(30~196)     | 37(30~196)        | 50(30~196)        | 50(30~196)        |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 44.0/46.0/48.0             | 44.5/46.0/48.0 | 47.0/49.0/52.0 | 45.0/47.0/50.0    | 48.0/50.0/53.0    | 50.0/52.0/54.0    |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                              | 952×420×690                | 952×420×690    | 952×420×690    | 952×420×690       | 1300×420×690      | 1300×420×690      |
|  | Shipping dimensions (width x height x depth) | mm                              | 1102×450×768               | 1102×450×768   | 1102×450×768   | 1090×440×768      | 1436×450×768      | 1436×450×768      |
|  | Net/gross weight                             | kg                              | 45.0/50.0                  | 45.0/50.0      | 46.5/52.4      | 47.0/53.0         | 68.0/70.0         | 70.0/77.5         |
| Refrigerant                            |  | R410A                           |                            |                |                |                   |                   |                   |
| Refrigerant flow adjustment            |  | EXV                             |                            |                |                |                   |                   |                   |
| Piping                                 | Liquid                                       | mm                              | Ø9.52                      | Ø9.52          | Ø9.52          | Ø9.52             | Ø9.52             | Ø9.52             |
|  | Gas  | mm                              | Ø15.9                      | Ø15.9          | Ø15.9          | Ø15.9             | Ø15.9             | Ø15.9             |
| Condensate drain                       |  | mm                              | Ø25                        | Ø25            | Ø25            | Ø25               | Ø25               | Ø25               |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                |                |                   |                   |                   |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                |                |                   |                   |                   |
| Remote controller                      |  | Wired remote controller KJR-10B |                            |                |                |                   |                   |                   |

| Model                                  |  |                                 | MDV-I200T1/DHN1-B          | MDV-I250T1/DHN1-B | MDV-I280T1/DHN1-B | MDV-D400T1/N1            | MDV-D450T1/N1 | MDV-D560T1/N1 |
|--|--|---------------------------------|----------------------------|-------------------|-------------------|--------------------------|---------------|---------------|
| Power supply                           |  | V/phase/Hz                      | 220~240/1/50               |                   |                   |                          |               |               |
| Cooling                                | Rated capacity (*1)                          | kW                              | 20.0                       | 25.0              | 28.0              | 40.0                     | 45.0          | 56.0          |
|  | Rated power input                            | W                               | 800                        | 800               | 800               | 2700                     | 2700          | 3400          |
|  | Rated current                                | A                               | 3.5                        | 3.5               | 3.5               | 11.7                     | 11.7          | 14.8          |
| Heating                                | Rated capacity (*2)                          | kW                              | 22.5                       | 26.0              | 31.5              | 45.0                     | 50.0          | 63.0          |
|  | Rated power input                            | W                               | 800                        | 800               | 800               | 2700                     | 2700          | 3400          |
|  | Rated current                                | A                               | 3.5                        | 3.5               | 3.5               | 11.7                     | 11.7          | 14.8          |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                   |                   |                          |               |               |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 77.0/77.7/80.3             | 78.2/79.3/81.2    | 78.2/79.3/81.2    |                          |               |               |
| External static pressure               |  | Pa                              | 62(40~200)                 | 62(40~200)        | 62(40~200)        | 200(50~280)              | 200(50~280)   | 200(50~280)   |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 50/53/57                   | 50/53/57          | 50/53/57          | 56/59/61                 | 56/59/61      | 57/60/63      |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                              | 1443×470×810               | 1443×470×810      | 1443×470×810      | 1970×668×903             | 1970×668×903  | 1970×668×903  |
|  | Shipping dimensions (width x height x depth) | mm                              | 1509×550×990               | 1509×550×990      | 1509×550×990      | 2095×800×964             | 2095×800×964  | 2095×800×964  |
|  | Net/gross weight                             | kg                              | 108.0/120.0                | 108.0/120.0       | 108.0/120.0       | 232.0/245.0              | 232.0/245.0   | 235.0/250.0   |
| Refrigerant                            |  | R410A                           |                            |                   |                   |                          |               |               |
| Refrigerant flow adjustment            |  | EXV (2 sets)                    |                            |                   | EXV (4 sets)      |                          |               |               |
| Piping                                 | Liquid                                       | mm                              | Ø9.52 (×2)                 | Ø9.52 (×2)        | Ø9.52 (×2)        | Ø12.7 (×2)               | Ø12.7 (×2)    | Ø15.9 (×2)    |
|  | Gas  | mm                              | Ø15.9 (×2)                 | Ø15.9 (×2)        | Ø15.9 (×2)        | Ø28.6 (×2)               | Ø28.6 (×2)    | Ø28.6 (×2)    |
| Condensate drain                       |  | mm                              | Ø32                        | Ø32               | Ø32               | Ø32                      | Ø32           | Ø32           |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                   |                   |                          |               |               |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                   |                   |                          |               |               |
| Remote controller                      |  | Wired remote controller KJR-10B |                            |                   |                   | KJR-12B wired controller |               |               |

**Notice:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## INDOOR UNITS

## DUCT UNITS

# Fresh air processing unit



### COMFORTABLE AND HEALTHY CLIMATE

Fresh air supply to the air-conditioned rooms ensures highest comfort of the occupants.

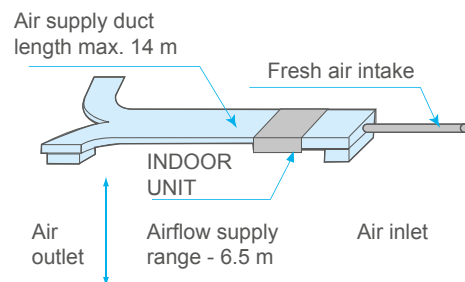
### 100% FRESH AIR

Filtering, cooling and heating function can be performed in one system. Duct unit can operate on 100% fresh air or partial recirculation.

### HIGH EXTERNAL STATIC PRESSURE

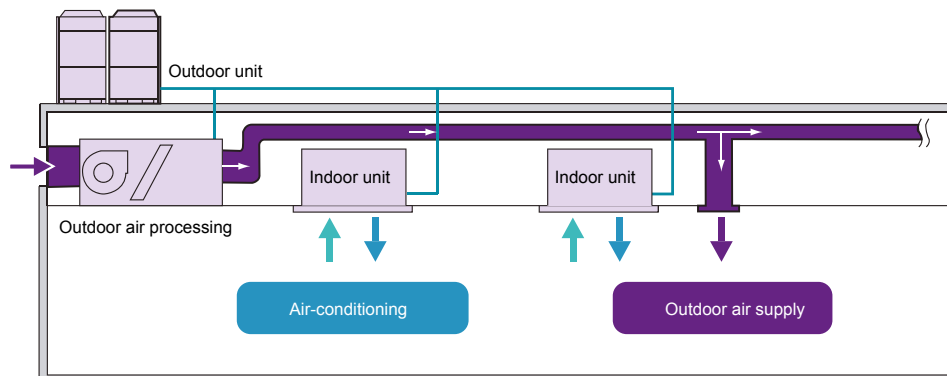
External static pressure can achieve 220 Pa (models 125÷140) and 260 Pa (models 200÷280).

### FLEXIBLE STRUCTURE OF AIR SUPPLY DUCTS



## INNOVATIVE TECHNOLOGY

In order to maintain the maximum comfort, the duct units supplying fresh air can be used together with other typical indoor units. This allows to obtain comfort conditions and precise temperature adjustment.



## TECHNICAL DATA

| Model                                  |  |                                 | MDV-I125T1/DHN1-FA         | MDV-I140T1/DHN1-FA | MDV-I200T1/DHN1-FA | MDV-I250T1/DHN1-FA | MDV-I280T1/DHN1-FA |
|--|--|---------------------------------|----------------------------|--------------------|--------------------|--------------------|--------------------|
| Power supply                           |  | V/phase/Hz                      | 220~240/1/50               |                    |                    |                    |                    |
| Cooling                                | Rated capacity (*1)                          | kW                              | 12.5                       | 14.0               | 20.0               | 25.0               | 28.0               |
|  | Rated power input                            | W                               | 370                        | 370                | 615                | 670                | 670                |
|  | Rated current                                | A                               | 1.6                        | 1.6                | 2.7                | 2.9                | 2.9                |
| Heating                                | Rated capacity (*2)                          | kW                              | 10.5                       | 12.0               | 18.0               | 20.0               | 22.0               |
|  | Rated power input                            | W                               | 370                        | 370                | 615                | 670                | 670                |
|  | Rated current                                | A                               | 1.6                        | 1.6                | 2.7                | 2.9                | 2.9                |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                    |                    |                    |                    |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 24.5/33.3/40.7             | 24.5/33.3/40.7     | 48.2/57.2/64.3     | 48.2/57.2/64.3     | 48.2/57.2/64.3     |
| External static pressure               |  | Pa                              | 50(0~200)                  | 50(0~200)          | 62(0~200)          | 62(0~200)          | 62(0~200)          |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 48/50/52                   | 48/50/52           | 49/51/52           | 50/52/53           | 50/52/53           |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                              | 1300×420×690               | 1300×420×690       | 1443×470×810       | 1443×470×810       | 1443×470×810       |
|  | Shipping dimensions (width x height x depth) | mm                              | 1436×450×768               | 1436×450×768       | 1509×550×990       | 1509×550×990       | 1509×550×990       |
|  | Net/gross weight                             | kg                              | 63.0/71.0                  | 63.0/71.0          | 108.0/120.0        | 108.0/120.0        | 108.0/120.0        |
| Refrigerant                            |  | R410A                           |                            |                    |                    |                    |                    |
| Refrigerant flow adjustment            |  | EXV                             |                            |                    | EXV (2 sets)       |                    |                    |
| Piping                                 | Liquid                                       | mm                              | Ø9.53                      | Ø9.53              | 2 × Ø9.53          |                    |                    |
|  | Gas  | mm                              | Ø15.9                      | Ø15.9              | 2 × Ø15.9          |                    |                    |
| Condensate drain                       |  | mm                              | Ø25                        | Ø25                | Ø32                |                    |                    |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                    |                    |                    |                    |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                    |                    |                    |                    |
| Remote controller                      |  | Wired remote controller KJR-10B |                            |                    |                    |                    |                    |

**Notes:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

**Connection conditions:**

Below restrictions must be respected for proper operation of indoor units connected to the same system.

\* if units with the fresh air intake are connected, the total capacity of all indoor units must stay between 50-100% of the outdoor unit rated capacity.

\* if there are both - units with fresh air intake and standard units connected to the system, the total capacity of the indoor units with the fresh air intake can not exceed 30% of the outdoor unit rated capacity.

## INDOOR UNITS

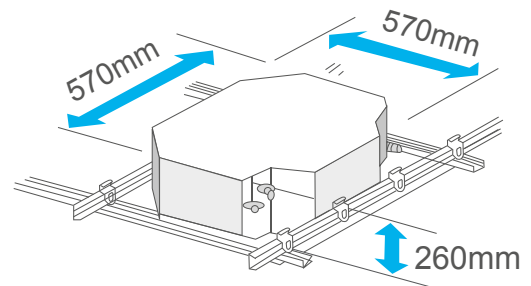
## CASSETTE UNITS

# Compact 4-way



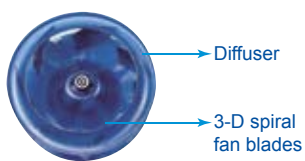
### COMPACT STRUCTURE, EASY INSTALLATION AND MAINTENANCE

Compact structure enables installation in standard 600x600 modular ceiling. Units low height and weight simplify installation works.



### QUIET OPERATION, GENTLE AIRFLOW

Modern structure and spatially shaped fan blades significantly reduced noise level while maintaining large airflow.



### EVEN, 4-WAY AIR SUPPLY

Four air outlet ducts provides effective circulation in the whole room. Setting the high fan speed ensures even temperature distribution also in rooms with height of more than 3 m.



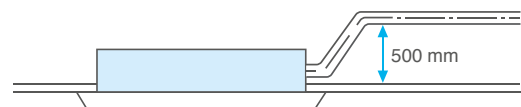
### 360° AIR OUTLET

360° air outlet ensures even temperature and airflow distribution in the whole room.



### HIGH HEAD PUMP

Built-in drain pump with maximum head up to 500 mm.



## TECHNICAL DATA

| Model                                  |  |                                 | MDV-D15Q4/N1-A3            | MDV-D22Q4/N1-A3 | MDV-D28Q4/N1-A3 | MDV-D36Q4/N1-A3  | MDV-D45Q4/N1-A3  |
|--|--|---------------------------------|----------------------------|-----------------|-----------------|------------------|------------------|
| Power supply                           |  | V/phase/Hz                      | 220~240/1/50               |                 |                 |                  |                  |
| Cooling                                | Rated capacity (*1)                          | kW                              | 1.5                        | 2.2             | 2.8             | 3.6              | 4.5              |
|  | Rated power input                            | W                               | 36                         | 50              | 50              | 56               | 56               |
|  | Rated current                                | A                               | 0.16                       | 0.22            | 0.22            | 0.24             | 0.24             |
| Heating                                | Rated capacity (*2)                          | kW                              | 1.7                        | 2.4             | 3.2             | 4.0              | 5.0              |
|  | Rated power input                            | W                               | 36                         | 50              | 50              | 56               | 56               |
|  | Rated current                                | A                               | 0.16                       | 0.22            | 0.22            | 0.24             | 0.24             |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                 |                 |                  |                  |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 3.5/4.7/7.3/8.5            | 4.0/5.2/6.9/8.7 | 4.0/5.2/6.9/8.7 | 5.2/6.8/8.7/10.2 | 5.2/6.8/8.7/10.2 |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 23/33/35                   | 23/33/36        | 23/33/36        | 29/36/42         | 29/36/42         |
| Unit dimensions                        | Net dimensions (width x height x depth)      | mm                              | 570×260×570                | 570×260×570     | 570×260×570     | 570×260×570      | 570×260×570      |
|  | Shipping dimensions (width x height x depth) | mm                              | 675×285×675                | 675×285×675     | 675×285×675     | 675×285×675      | 675×285×675      |
|  | Net/gross weight                             | kg                              | 16.0/19.5                  | 16.0/20.0       | 16.0/20.0       | 18.0/22.0        | 18.0/22.0        |
| Panel                                  | Symbol                                       |                                 | T-MBQ4-03B1                | T-MBQ4-03B1     | T-MBQ4-03B1     | T-MBQ4-03B1      | T-MBQ4-03B1      |
|  | Net dimensions (width x height x depth)      | mm                              | 647×50×647                 | 647×50×647      | 647×50×647      | 647×50×647       | 647×50×647       |
|  | Shipping dimensions (width x height x depth) | mm                              | 715×123×715                | 715×123×715     | 715×123×715     | 715×123×715      | 715×123×715      |
|  | Net/gross weight                             | kg                              | 2.5/4.5                    | 2.5/4.5         | 2.5/4.5         | 2.5/4.5          | 2.5/4.5          |
| Refrigerant                            |  | R410A                           |                            |                 |                 |                  |                  |
| Refrigerant flow adjustment            |  | EXV                             |                            |                 |                 |                  |                  |
| Piping                                 | Liquid                                       | mm                              | Ø6.35                      | Ø6.35           | Ø6.35           | Ø6.35            | Ø6.35            |
|  | Gas  | mm                              | Ø12.7                      | Ø12.7           | Ø12.7           | Ø12.7            | Ø12.7            |
| Condensate drain                       |  | mm                              | Ø25                        | Ø25             | Ø25             | Ø25              | Ø25              |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                 |                 |                  |                  |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                 |                 |                  |                  |
| Remote controller                      |  | Wireless remote controller RM05 |                            |                 |                 |                  |                  |

**Notes:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

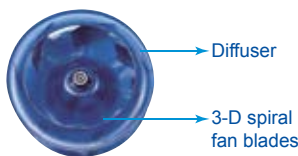
Sound level measured in a reverberation chamber 1.4 m below the unit.

# Standard 4-way



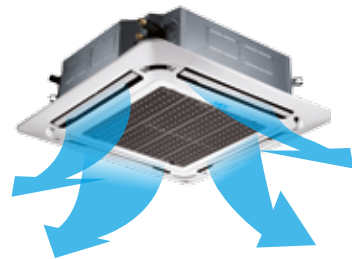
## QUIET OPERATION, GENTLE AIRFLOW

Modern structure and spatially shaped fan blades significantly reduced noise level while maintaining large airflow.



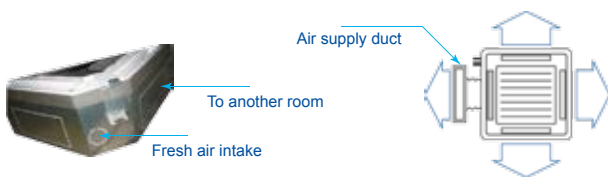
## EVEN 4-WAY AIR SUPPLY

Four air outlet ducts provides effective circulation in the whole room. Setting the high fan speed ensures even temperature distribution also in rooms with height of more than 3 m.



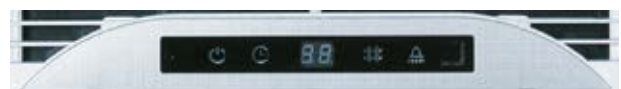
## ADDITIONAL CONNECTIONS

Possibility of air-conditioning additional rooms by connection of ventilation ducts.



## EASY TROUBLESHOOTING

Reading the error codes directly from a display on the panel simplifies problem recognition and helps in quicker troubleshooting.



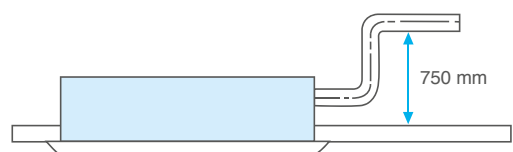
## SLIM STRUCTURE

Ultra slim unit structure facilitates installation and maintenance.



## HIGH PUMP HEAD

Built-in drain pump with maximum head up to 750 mm, significantly simplifies drain outlet installation.





## TECHNICAL DATA

| Model                                  |  |                                 | MDV-D28Q4/N1-E             | MDV-D36Q4/N1-E | MDV-D45Q4/N1-E | MDV-D56Q4/N1-E | MDV-D71Q4/N1-E |
|--|--|---------------------------------|----------------------------|----------------|----------------|----------------|----------------|
| Power supply                           |  | V/phase/Hz                      | 220~240/1/50               |                |                |                |                |
| Cooling                                | Rated capacity (*1)                          | kW                              | 2.8                        | 3.6            | 4.5            | 5.6            | 7.1            |
|  | Rated power input                            | W                               | 80                         | 80             | 88             | 88             | 88             |
|  | Rated current                                | A                               | 0.35                       | 0.35           | 0.38           | 0.38           | 0.38           |
| Heating                                | Rated capacity (*2)                          | kW                              | 3.2                        | 4.0            | 5.0            | 6.3            | 8.0            |
|  | Rated power input                            | W                               | 80                         | 80             | 88             | 88             | 88             |
|  | Rated current                                | A                               | 0.35                       | 0.35           | 0.38           | 0.38           | 0.38           |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                |                |                |                |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 9.2/10.6/12.7              | 9.2/10.6/12.7  | 10.9/12.3/15.1 | 10.9/12.3/15.1 | 11.1/12.8/15.8 |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 30/31/32                   | 30/31/32       | 33/34/36       | 33/34/36       | 35/36/38       |
| Unit dimensions                        | Net dimensions (width x height x depth)      | mm                              | 840×230×840                | 840×230×840    | 840×230×840    | 840×230×840    | 840×230×840    |
|  | Shipping dimensions (width x height x depth) | mm                              | 955×260×955                | 955×260×955    | 955×260×955    | 955×260×955    | 955×260×955    |
|  | Net/gross weight                             | kg                              | 21.5/26.7                  | 21.5/26.7      | 23.7/28.9      | 23.7/28.9      | 23.7/28.9      |
| Panel                                  | Symbol                                       |                                 | T-MBQ4-02B1                | T-MBQ4-02B1    | T-MBQ4-02B1    | T-MBQ4-02B1    | T-MBQ4-02B1    |
|  | Net dimensions (width x height x depth)      | mm                              | 950×46×950                 | 950×46×950     | 950×46×950     | 950×46×950     | 950×46×950     |
|  | Shipping dimensions (width x height x depth) | mm                              | 1035×90×1035               | 1035×90×1035   | 1035×90×1035   | 1035×90×1035   | 1035×90×1035   |
|  | Net/gross weight                             | kg                              | 6.0/9.0                    | 6.0/9.0        | 6.0/9.0        | 6.0/9.0        | 6.0/9.0        |
| Refrigerant                            |  | R410A                           |                            |                |                |                |                |
| Refrigerant flow adjustment            |  | EXV                             |                            |                |                |                |                |
| Piping                                 | Liquid                                       | mm                              | Ø6.35                      | Ø6.35          | Ø6.35          | Ø9.53          | Ø9.53          |
|  | Gas  | mm                              | Ø12.7                      | Ø12.7          | Ø12.7          | Ø15.9          | Ø15.9          |
| Condensate drain                       |  | mm                              | Ø32                        | Ø32            | Ø32            | Ø32            | Ø32            |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                |                |                |                |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                |                |                |                |
| Remote controller                      |  | Wireless remote controller RM05 |                            |                |                |                |                |

| Model                                  |  |                                 | MDV-D80Q4/N1-E             | MDV-D90Q4/N1-E | MDV-I100Q4/DHN1-D | MDV-I112Q4/DHN1-D | MDV-I140Q4/DHN1-D |
|--|--|---------------------------------|----------------------------|----------------|-------------------|-------------------|-------------------|
| Power supply                           |  | V/phase/Hz                      | 220~240/1/50               |                |                   |                   |                   |
| Cooling                                | Rated capacity (*1)                          | kW                              | 8.0                        | 9.0            | 10.0              | 11.2              | 14.0              |
|  | Rated power input                            | W                               | 110                        | 140            | 125               | 125               | 135               |
|  | Rated current                                | A                               | 0.48                       | 0.61           | 0.54              | 0.54              | 0.59              |
| Heating                                | Rated capacity (*2)                          | kW                              | 9.0                        | 10.0           | 11.1              | 12.5              | 15.0              |
|  | Rated power input                            | W                               | 110                        | 140            | 125               | 125               | 135               |
|  | Rated current                                | A                               | 0.48                       | 0.61           | 0.54              | 0.54              | 0.59              |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                |                   |                   |                   |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 13.2/17.0/20.0             | 15.1/18.8/22.2 | 17.2/20.7/26.6    | 17.2/20.7/26.6    | 20.3/23.8/28.8    |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 37/39/42                   | 38/39/43       | 36/41/47          | 36/42/47          | 35/45/50          |
| Unit dimensions                        | Net dimensions (width x height x depth)      | mm                              | 840×230×840                | 840×300×840    | 904×300×840       | 904×300×840       | 904×300×840       |
|  | Shipping dimensions (width x height x depth) | mm                              | 955×260×955                | 955×330×956    | 955×330×955       | 955×330×955       | 955×330×955       |
|  | Net/gross weight                             | kg                              | 23.7/28.9                  | 28.7/34.1      | 27.4/33.2         | 27.4/33.2         | 30.0/35.8         |
| Panel                                  | Symbol                                       |                                 | T-MBQ4-02B1                | T-MBQ4-02B1    | T-MBQ-02C1        | T-MBQ-02C1        | T-MBQ-02C1        |
|  | Net dimensions (width x height x depth)      | mm                              | 950×46×950                 | 950×46×950     | 950×46×950        | 950×46×950        | 950×46×950        |
|  | Shipping dimensions (width x height x depth) | mm                              | 1035×90×1035               | 1035×90×1035   | 1035×90×1035      | 1035×90×1035      | 1035×90×1035      |
|  | Net/gross weight                             | kg                              | 6.0/9.0                    | 6.0/9.0        | 6.0/9.0           | 6.0/9.0           | 6.0/9.0           |
| Refrigerant                            |  | R410A                           |                            |                |                   |                   |                   |
| Refrigerant flow adjustment            |  | EXV                             |                            |                |                   |                   |                   |
| Piping                                 | Liquid                                       | mm                              | Ø9.53                      | Ø9.53          | Ø9.53             | Ø9.53             | Ø9.53             |
|  | Gas  | mm                              | Ø15.9                      | Ø15.9          | Ø15.9             | Ø15.9             | Ø15.9             |
| Condensate drain                       |  | mm                              | Ø32                        | Ø32            | Ø32               | Ø32               | Ø32               |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                |                   |                   |                   |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                |                   |                   |                   |
| Remote controller                      |  | Wireless remote controller RM05 |                            |                |                   |                   |                   |

**Notes:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## INDOOR UNITS

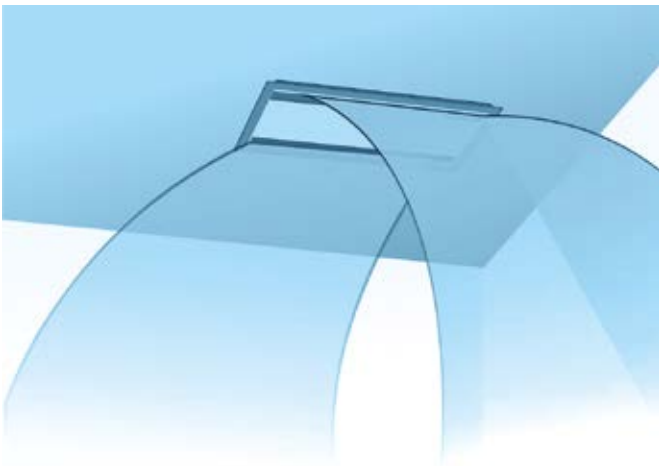
## CASSETTE UNITS

# 2-way



### LONG DISTANCE

Long distance air stream ensures even temperature distribution in the whole room.



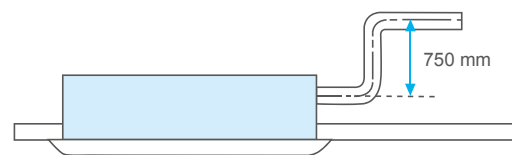
### STYLISH DESIGN

With a stylish appearance and compact size, the unit harmonizes with the room interior. Slim structure (only 300 mm of height) simplifies installation in limited spaces.



### HIGH HEAD PUMP

A drain pump with head of 750 mm is built-in as a standard.



### QUIET OPERATION

Optimum air ducts shape significantly reduces noise level. Minimum noise level is only 24 dB.



## TECHNICAL DATA

| Model                                  |  |                                 | MDV-D22Q2/N1               | MDV-D28Q2/N1 | MDV-D36Q2/N1 | MDV-D45Q2/N1  | MDV-D56Q2/N1   | MDV-D71Q2/N1   |
|--|--|---------------------------------|----------------------------|--------------|--------------|---------------|----------------|----------------|
| Power supply                           |  | V/phase/Hz                      | 220-240/1/50               |              |              |               |                |                |
| Cooling                                | Rated capacity (*1)                          | kW                              | 2.2                        | 2.8          | 3.6          | 4.5           | 5.6            | 7.1            |
|  | Rated power input                            | W                               | 57                         | 57           | 60           | 60            | 108            | 154            |
|  | Rated current                                | A                               | 0.25                       | 0.25         | 0.26         | 0.26          | 0.47           | 0.67           |
| Heating                                | Rated capacity (*2)                          | kW                              | 2.6                        | 3.2          | 4.0          | 5.0           | 6.3            | 8.0            |
|  | Rated power input                            | W                               | 57                         | 27           | 60           | 60            | 108            | 154            |
|  | Rated current                                | A                               | 0.25                       | 0.25         | 0.26         | 0.26          | 0.47           | 0.67           |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |              |              |               |                |                |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 6.8/8.8/10.9               | 6.8/8.8/10.9 | 7.6/9.9/12.1 | 9.2/11.2/14.2 | 11.2/13.3/16.3 | 12.8/16.7/20.0 |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 24/29/33                   | 29/32/36     | 29/32/36     | 30/35/39      | 30/35/39       | 34/40/44       |
| Unit dimensions                        | Net dimensions (width x height x depth)      | mm                              | 1172×299×591               | 1172×299×591 | 1172×299×591 | 1172×299×591  | 1172×299×591   | 1172×299×591   |
|  | Shipping dimensions (width x height x depth) | mm                              | 1355×400×675               | 1355×400×675 | 1355×400×675 | 1355×400×675  | 1355×400×675   | 1355×400×675   |
|  | Net/gross weight                             | kg                              | 34.0/42.5                  | 34.0/42.5    | 34.0/42.5    | 36.0/44.5     | 36.0/44.5      | 36.0/44.5      |
| Panel                                  | Symbol                                       |                                 | T-MBQ2-01                  | T-MBQ2-01    | T-MBQ2-01    | T-MBQ2-01     | T-MBQ2-01      | T-MBQ2-01      |
|  | Net dimensions (width x height x depth)      | mm                              | 1430×53×680                | 1430×53×680  | 1430×53×680  | 1430×53×680   | 1430×53×680    | 1430×53×680    |
|  | Shipping dimensions (width x height x depth) | mm                              | 1525×130×765               | 1525×130×765 | 1525×130×765 | 1525×130×765  | 1525×130×765   | 1525×130×765   |
|  | Net/gross weight                             | kg                              | 10.5/15.0                  | 10.5/15.0    | 10.5/15.0    | 10.5/15.0     | 10.5/15.0      | 10.5/15.0      |
| Refrigerant                            |  | R410A                           |                            |              |              |               |                |                |
| Refrigerant flow adjustment            |  | EXV                             |                            |              |              |               |                |                |
| Piping                                 | Liquid                                       | mm                              | Ø6.35                      | Ø6.35        | Ø6.35        | Ø6.35         | Ø9.53          | Ø9.53          |
|  | Gas  | mm                              | Ø12.7                      | Ø12.7        | Ø12.7        | Ø12.7         | Ø15.9          | Ø15.9          |
| Condensate drain                       |  | mm                              | Ø32                        | Ø32          | Ø32          | Ø32           | Ø32            | Ø32            |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |              |              |               |                |                |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |              |              |               |                |                |
| Remote controller                      |  | Wireless remote controller RM05 |                            |              |              |               |                |                |

**Notes:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## INDOOR UNITS

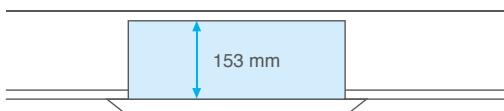
## CASSETTE UNITS

# 1-way



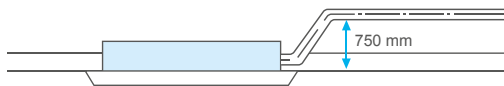
### ONLY 169 mm OF HEIGHT

Compact structure and only 169 mm of height requires small installation space. Ideal for installation in small rooms with a short distance between the false ceiling and the main one.



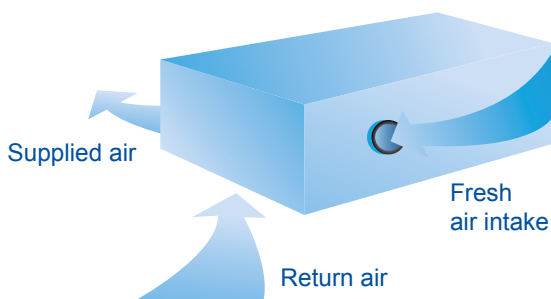
### HIGH HEAD PUMP

A drain pump with head of 750 mm is built-in as a standard.



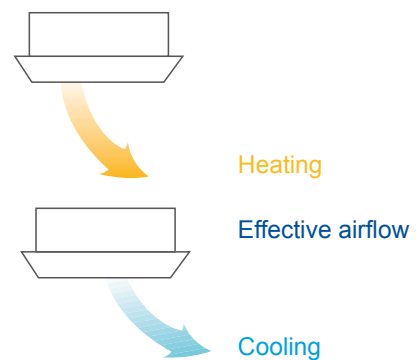
### FRESH AIR SUPPLY

Reserve port enables connection of a fresh air supply duct, which significantly improves comfort in the room.



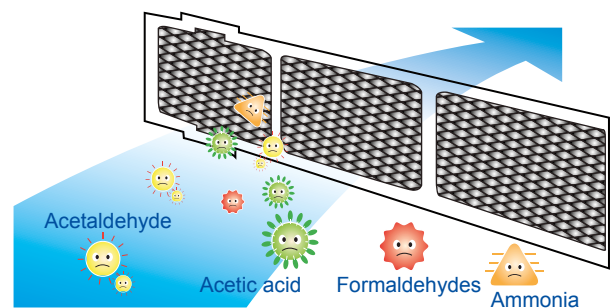
### AUTO SWING

Auto swing mechanism guarantees even air and temperature distribution in the room.



### FILTRATION TECHNOLOGY

Special enzyme filtration technology removes bacteria, smoke and pollens from the air. This makes the room air more natural and healthier.



## TECHNICAL DATA

| Model                                  |  |                                 | MDV-D18Q1/N1-D             | MDV-D22Q1/N1-D | MDV-D28Q1/N1-D | MDV-D36Q1/N1-D |
|--|--|---------------------------------|----------------------------|----------------|----------------|----------------|
| Power supply                           |  | V/phase/Hz                      | 220~240/1/50               |                |                |                |
| Cooling                                | Rated capacity (*1)                          | kW                              | 1.8                        | 2.2            | 2.8            | 3.6            |
|  | Rated power input                            | W                               | 41                         | 41             | 41             | 41             |
|  | Rated current                                | A                               | 0.18                       | 0.18           | 0.18           | 0.18           |
| Heating                                | Rated capacity (*2)                          | kW                              | 2.2                        | 2.6            | 3.2            | 4.0            |
|  | Rated power input                            | W                               | 41                         | 41             | 41             | 41             |
|  | Rated current                                | A                               | 0.18                       | 0.18           | 0.18           | 0.18           |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                |                |                |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 4.6/6.7/8.7                | 4.6/6.7/8.7    | 5.3/7.6/9.6    | 5.3/7.6/9.6    |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 30/34/37                   | 30/34/38       | 34/37/39       | 34/38/40       |
| Unit dimensions                        | Net dimensions (width x height x depth)      | mm                              | 1054×153×425               | 1054×153×425   | 1054×153×425   | 1054×153×425   |
|  | Shipping dimensions (width x height x depth) | mm                              | 1155×245×490               | 1155×245×490   | 1155×245×490   | 1155×245×490   |
|  | Net/gross weight                             | kg                              | 12.5/16.0                  | 12.5/16.0      | 13.0/16.5      | 13.0/16.5      |
| Panel                                  | Symbol                                       |                                 | T-MBQ1-02D                 | T-MBQ1-02D     | T-MBQ1-02D     | T-MBQ1-02D     |
|  | Net dimensions (width x height x depth)      | mm                              | 1180×25×465                | 1180×25×465    | 1180×25×465    | 1180×25×465    |
|  | Shipping dimensions (width x height x depth) | mm                              | 1232×107×517               | 1232×107×517   | 1232×107×517   | 1232×107×517   |
|  | Net/gross weight                             | kg                              | 3.5/5.2                    | 3.5/5.2        | 3.5/5.2        | 3.5/5.2        |
| Refrigerant                            |  | R410A                           |                            |                |                |                |
| Refrigerant flow adjustment            |  | EXV                             |                            |                |                |                |
| Piping                                 | Liquid                                       | mm                              | Ø6.35                      | Ø6.35          | Ø6.35          | Ø6.35          |
|  | Gas  | mm                              | Ø12.7                      | Ø12.7          | Ø12.7          | Ø12.7          |
| Condensate drain                       |  | mm                              | Ø25                        |                |                |                |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                |                |                |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                |                |                |
| Remote controller                      |  | Wireless remote controller RM05 |                            |                |                |                |

| Model                                  |  |                                 | MDV-D45Q1/N1-C             | MDV-D56Q1/N1-C | MDV-D71Q1/N1-C |  |
|--|--|---------------------------------|----------------------------|----------------|----------------|--|
| Power supply                           |  | V/phase/Hz                      | 220~240/1/50               |                |                |  |
| Cooling                                | Rated capacity (*1)                          | kW                              | 4.5                        | 5.6            | 7.1            |  |
|  | Rated power input                            | W                               | 80                         | 85             | 86             |  |
|  | Rated current                                | A                               | 0.35                       | 0.37           | 0.37           |  |
| Heating                                | Rated capacity (*2)                          | kW                              | 5.0                        | 6.3            | 8.0            |  |
|  | Rated power input                            | W                               | 80                         | 85             | 86             |  |
|  | Rated current                                | A                               | 0.35                       | 0.37           | 0.37           |  |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                |                |  |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 7.9/10.0/11.6              | 9.2/11.5/13.2  | 9.9/12.5/15.6  |  |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 35/39/41                   | 36/40/42       | 37/41/44       |  |
| Unit dimensions                        | Net dimensions (width x height x depth)      | mm                              | 1204x189x443               | 1204x189x443   | 1204x189x443   |  |
|  | Shipping dimensions (width x height x depth) | mm                              | 1370x295x505               | 1370x295x505   | 1370x295x505   |  |
|  | Net/gross weight                             | kg                              | 18.5/23.2                  | 18.8/23.5      | 19.5x24.2      |  |
| Panel                                  | Symbol                                       |                                 | T-MBQ1-03A                 | T-MBQ1-03A     | T-MBQ1-03A     |  |
|  | Net dimensions (width x height x depth)      | mm                              | 1350x25x505                | 1350x25x505    | 1350x25x505    |  |
|  | Shipping dimensions (width x height x depth) | mm                              | 1410x95x560                | 1410x95x560    | 1410x95x560    |  |
|  | Net/gross weight                             | kg                              | 4.0/5.4                    | 4.0/5.4        | 4.0/5.4        |  |
| Refrigerant                            |  | R410A                           |                            |                |                |  |
| Refrigerant flow adjustment            |  | EXV                             |                            |                |                |  |
| Piping                                 | Liquid                                       | mm                              | Ø6.35                      | Ø12.7          | Ø12.7          |  |
|  | Gas  | mm                              | Ø12.7                      | Ø15.9          | Ø15.9          |  |
| Condensate drain                       |  | mm                              | Ø25                        |                |                |  |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                |                |  |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                |                |  |
| Remote controller                      |  | Wireless remote controller RM05 |                            |                |                |  |

### Notes:

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

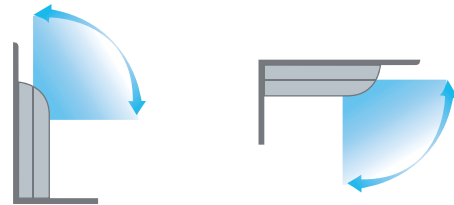
## INDOOR UNITS

## CEILING AND FLOOR UNITS



### COMFORTABLE INSTALLATION

Easy and comfortable installation below the ceiling even in narrow spaces in corners (when for instance it is impossible to install the unit in the central part of the ceiling due to such obstacles as lighting etc.).

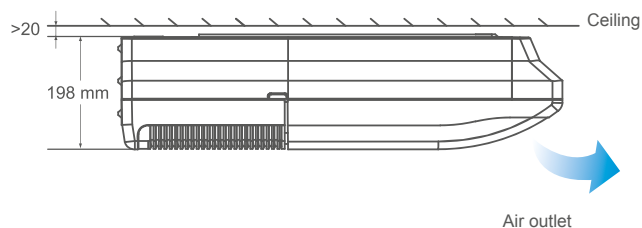


Possible to install vertically against the wall or horizontally below the ceiling

### PANEL WITH LED DISPLAY

A clear operating panel with LED display informs about operation mode, and in case of failure, helps to read the error code.

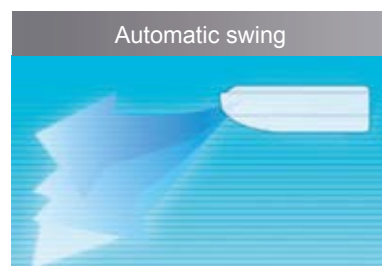
### COMFORT AMBIENT CONDITIONS THANKS TO LOW NOISE LEVEL



- Slim
- Elegant appearance
- Relatively low weight
- Quick installation
- Low noise level

### AUTO SWING FUNCTION AND WIDE AIRFLOW ANGLE

Unit is equipped with automatic vertical and horizontal swing function, what ensures even temperature distribution in a room. Three fan speeds available. Multi blades fan ensures even airflow without unnecessary whirls and turbulence.



## TECHNICAL DATA

| Model                                  |  |                     | MDV-D36DL/N1-C                  | MDV-D45DL/N1-C | MDV-D56DL/N1-C | MDV-D71DL/N1-C |
|--|--|---------------------|---------------------------------|----------------|----------------|----------------|
| Power supply                           |  | V/phase/Hz          | 220~240/1/50                    |                |                |                |
| Cooling                                | Rated capacity (*1)                          | kW                  | 3.6                             | 4.5            | 5.6            | 7.1            |
|  | Rated power input                            | W                   | 49                              | 120            | 122            | 125            |
|  | Rated current                                | A                   | 0.21                            | 0.52           | 0.53           | 0.54           |
| Heating                                | Rated capacity (*2)                          | kW                  | 4.0                             | 5.0            | 6.3            | 8.0            |
|  | Rated power input                            | W                   | 50                              | 120            | 122            | 125            |
|  | Rated current                                | A                   | 0.21                            | 0.52           | 0.53           | 0.54           |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min | 8.3/9.5/10.8                    | 8.3/10.0/13.3  | 8.3/10.0/13.3  | 8.3/10.0/13.3  |
| Sound pressure level (low/medium/high) |  | dB(A)               | 36/38/40                        | 38/41/43       | 38/41/43       | 38/41/43       |
| Refrigerant                            |  |                     | R410A                           |                |                |                |
| Refrigerant flow adjustment            |  | type                | EXV                             |                |                |                |
| Unit dimensions                        | Net dimensions (width x height x depth)      | mm                  | 990×203×660                     | 990×203×660    | 990×203×660    | 990×203×660    |
|  | Shipping dimensions (width x height x depth) | mm                  | 1089×296×744                    | 1089×296×744   | 1089×296×744   | 1089×296×744   |
|  | Net/gross weight                             | kg                  | 26.0/32.0                       | 28.0/34.0      | 28.0/34.0      | 28.0/34.0      |
| Piping                                 | Liquid                                       | mm                  | Ø6.35                           | Ø6.35          | Ø9.53          | Ø9.53          |
|  | Gas  | mm                  | Ø12.7                           | Ø12.7          | Ø15.9          | Ø15.9          |
| Condensate drain                       |  | mm                  | Ø16                             | Ø16            | Ø16            | Ø16            |
| Cables                                 | Power supply                                 | mm <sup>2</sup>     | 3×2.5(L≤20m); 3×3.5(L≤50m)      |                |                |                |
|  | Communication                                | mm <sup>2</sup>     | 3×0.75 shielded                 |                |                |                |
| Remote controller                      |  |                     | Wireless remote controller RM05 |                |                |                |

| Model                                  |  |                     | MDV-D80DL/N1-C                  | MDV-D90DL/N1-C | MDV-I112DL/DHN1-C | MDV-I140DL/DHN1-C |
|--|--|---------------------|---------------------------------|----------------|-------------------|-------------------|
| Power supply                           |  | V/phase/Hz          | 220~240/1/50                    |                |                   |                   |
| Cooling                                | Rated capacity (*1)                          | kW                  | 8.0                             | 9.0            | 11.2              | 14.0              |
|  | Rated power input                            | W                   | 130                             | 130            | 130               | 130               |
|  | Rated current                                | A                   | 0.57                            | 0.57           | 0.57              | 0.57              |
| Heating                                | Rated capacity (*2)                          | kW                  | 9.0                             | 10.0           | 12.5              | 15.5              |
|  | Rated power input                            | W                   | 130                             | 130            | 130               | 130               |
|  | Rated current                                | A                   | 0.57                            | 0.57           | 0.57              | 0.57              |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min | 11.7/15.0/20.0                  | 11.7/15.0/20.0 | 31.5/28.3/26.3    | 31.5/28.3/26.3    |
| Sound pressure level (low/medium/high) |  | dB(A)               | 40/43/45                        | 40/43/45       | 42/45/47          | 42/45/47          |
| Refrigerant                            |  |                     | R410A                           |                |                   |                   |
| Refrigerant flow adjustment            |  | type                | EXV                             |                |                   |                   |
| Unit dimensions                        | Net dimensions (width x height x depth)      | mm                  | 1280×203×660                    | 1280×203×660   | 1670×244×680      | 1670×244×680      |
|  | Shipping dimensions (width x height x depth) | mm                  | 1379×296×744                    | 1379×296×744   | 1764×329×760      | 1764×329×760      |
|  | Net/gross weight                             | kg                  | 34.5/41.0                       | 34.5/41.0      | 49.0/57.0         | 49.0/57.0         |
| Piping                                 | Liquid                                       | mm                  | Ø9.53                           | Ø9.53          | Ø9.53             | Ø9.53             |
|  | Gas  | mm                  | Ø15.9                           | Ø15.9          | Ø15.9             | Ø15.9             |
| Condensate drain                       |  | mm                  | Ø16                             | Ø16            | Ø25               | Ø25               |
| Cables                                 | Power supply                                 | mm <sup>2</sup>     | 3×2.5(L≤20m); 3×3.5(L≤50m)      |                |                   |                   |
|  | Communication                                | mm <sup>2</sup>     | 3×0.75 shielded                 |                |                   |                   |
| Remote controller                      |  |                     | Wireless remote controller RM05 |                |                   |                   |

**Notes:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## INDOOR UNITS

## CONSOLE



### COMPACT STRUCTURE, ELEGANT

Sophisticated design that harmonizes with every type of the room. Compact size simplifies arrangement. Built-in EXV valve.

### FLEXIBLE INSTALLATION

Installation on the wall in any place above the floor space.

### HIGH LEVEL OF COMFORT

- Flexible airflow adjustment: vertical swing function and wide angle of the louver slope ensures efficient and effective air distribution across the entire room.
- 5-stage airflow adjustment.
- EXV expansion valve provides quiet operation and precise adjustment of the refrigerant flow, which ensures stable maintenance of the set temperature.
- Full range of adjustment is 2000 steps.

### EFFICIENT TURBO OPERATION MODE - FAST COOLING AND HEATING

#### COOLING MODE



Fast cooling

Maintenance of fixed temperature

#### HEATING MODE



Anti-cold function (cold airflow prevention)

Normal operation

### HIGH EFFICIENCY FILTER

Built-in anti-formaldehyde filter. Filter with active carbon or biological (antivirus) as an option.

### QUIET UNIT

Five fan speeds, low noise level, energy savings.

### TWO AIR INLETS, FOUR AIR OUTLETS

Comfortable temperature conditions in a room. Thanks to the diverse airflow settings options, it is possible to achieve several variants of air circulation.



Air outlet

Air inlet



## TECHNICAL DATA

| Model                                  |  |                     | MDV-D22Z/DN1-B                  | MDV-D28Z/DN1-B | MDV-D36Z/DN1-B | MDV-D45Z/DN1-B |
|--|--|---------------------|---------------------------------|----------------|----------------|----------------|
| Power supply                           |  | V/phase/Hz          | 220-240/1/50                    |                |                |                |
| Cooling                                | Rated capacity (*1)                          | kW                  | 2.2                             | 2.8            | 3.6            | 4.5            |
|  | Rated power input                            | W                   | 20                              | 25             | 25             | 45             |
|  | Rated current                                | A                   | 0.09                            | 0.11           | 0.11           | 0.20           |
| Heating                                | Rated capacity (*2)                          | kW                  | 2.6                             | 3.2            | 4.0            | 5.0            |
|  | Rated power input                            | W                   | 20                              | 25             | 25             | 45             |
|  | Rated current                                | A                   | 0.09                            | 0.11           | 0.11           | 0.20           |
| Heat exchanger                         | Corrosion protection                         |                     | Hydrophilic coating             |                |                |                |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min | 3.8/5.8/7.2                     | 3.8/7.2/8.5    | 3.8/7.2/8.5    | 6.7/8.5/11.0   |
| Sound pressure level (low/medium/high) |  | dB(A)               | 26/32/38                        | 27/33/39       | 27/33/39       | 36/39/42       |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                  | 700x600x210                     |                |                |                |
|  | Shipping dimensions (width x height x depth) | mm                  | 810x710x305                     |                |                |                |
|  | Net/gross weight                             | kg                  | 14.0/19.0                       | 15.0/20.0      | 15.0/20.0      | 15.0/20.0      |
| Refrigerant                            |  |                     | R410A                           |                |                |                |
| Refrigerant flow adjustment            |  |                     | EXV                             |                |                |                |
| Piping                                 | Liquid                                       | mm                  | ø6.35                           | ø6.35          | ø6.35          | ø6.35          |
|  | Gas  | mm                  | ø12.7                           | ø12.7          | ø12.7          | ø12.7          |
| Condensate drain                       |  | mm                  | ø16                             |                |                |                |
| Cables                                 | Power supply                                 | mm <sup>2</sup>     | 3×2.5(L≤20m); 3×3.5(L≤50m)      |                |                |                |
|  | Communication                                | mm <sup>2</sup>     | 3×0.75 shielded                 |                |                |                |
| Sterownik                              |  |                     | Wireless remote controller RM05 |                |                |                |

**Notes:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## INDOOR UNITS

## STANDING UNITS



### SIMPLE INSTALLATION

Units can be mounted on wall or floor, extremely simple access to the unit interior simplifies cleaning and maintenance.

### SIMPLE MAINTENANCE

The proper structure of the unit facilitates access to the filter (supplied as a standard). Stylish and elegant appearance ideally harmonizes with every modern room interior design. Each metal part is galvanically covered with anti-corrosion coating, what significantly extends the service life of the unit.

### COMPACT STRUCTURE

The standing unit can be flush-mounted and therefore it ideally harmonizes with room interior design. Depth of 212 mm additionally simplifies installation. Low noise level and efficient operation create a perfect comfort level in the room.

#### Standing unit for the flush-mount



Model F3

#### Air inlet from the front



Model F4

#### Air intake from the bottom



Model F5

## TECHNICAL DATA

| Model                                  |  | MDV-D22Z/<br>N1-F3B             | MDV-D28Z/<br>N1-F3B        | MDV-D36Z/<br>N1-F3B | MDV-D45Z/<br>N1-F3B | MDV-D56Z/<br>N1-F3B | MDV-D71Z/<br>N1-F3B | MDV-D80Z/<br>N1-F3B |                |
|--|--|---------------------------------|----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------|
| Power supply                           |  | V/phase/Hz                      |                            | 220~240/1/50        |                     |                     |                     |                     |                |
| Cooling                                | Rated capacity (*1)                          | kW                              | 2.2                        | 2.8                 | 3.6                 | 4.5                 | 5.6                 | 7.1                 | 8.0            |
|  | Rated power input                            | kW                              | 40                         | 46                  | 46                  | 49                  | 88                  | 130                 | 130            |
|  | Rated current                                | A                               | 0.17                       | 0.20                | 0.24                | 0.21                | 0.38                | 0.57                | 0.57           |
| Heating                                | Rated capacity (*2)                          | kW                              | 2.4                        | 3.2                 | 4.0                 | 5.0                 | 6.3                 | 8.0                 | 9.0            |
|  | Rated power input                            | kW                              | 40                         | 46                  | 46                  | 49                  | 88                  | 130                 | 130            |
|  | Rated current                                | A                               | 0.17                       | 0.20                | 0.24                | 0.21                | 0.38                | 0.57                | 0.57           |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                     |                     |                     |                     |                     |                |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 6.7/7.6/8.8                | 7.0/8.1/9.5         | 6.3/8.7/10.4        | 7.3/9.0/11.0        | 13.8/16.2/19.2      | 14.5/18.3/23.0      | 14.5/18.3/23.0 |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 29/33/36                   | 29/33/36            | 30/34/37            | 30/34/37            | 31/35/41            | 33/39/44            | 33/39/44       |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                              | 840×544×212                | 840×544×212         | 1036×544×212        | 1036×544×212        | 1336×544×212        | 1336×544×212        | 1336×544×212   |
|  | Shipping dimensions (width x height x depth) | mm                              | 939×639×305                | 939×639×305         | 1139×639×305        | 1139×639×305        | 1425×639×305        | 1425×639×305        | 1425×639×305   |
|  | Net/gross weight                             | kg                              | 26.0/29.5                  | 26.0/29.5           | 29.5/34.0           | 29.5/34.0           | 33.0/39.0           | 33.0/39.0           | 36.0/40.0      |
| Refrigerant                            |  | R410A                           |                            |                     |                     |                     |                     |                     |                |
| Refrigerant flow adjustment            |  | EXV                             |                            |                     |                     |                     |                     |                     |                |
| Piping                                 | Gas  | mm                              | Ø6.35                      | Ø6.35               | Ø6.35               | Ø6.35               | Ø9.53               | Ø9.53               | Ø9.53          |
|  | Liquid                                       | mm                              | Ø12.7                      | Ø12.7               | Ø12.7               | Ø12.7               | Ø15.9               | Ø15.9               | Ø15.9          |
| Condensate drain                       |  | mm                              | Ø16                        | Ø16                 | Ø16                 | Ø16                 | Ø16                 | Ø16                 | Ø16            |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                     |                     |                     |                     |                     |                |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                     |                     |                     |                     |                     |                |
| Remote controller                      |  | Wireless remote controller RM05 |                            |                     |                     |                     |                     |                     |                |

| Model                                  |  | MDV-D22Z/<br>N1-F4              | MDV-D28Z/<br>N1-F4         | MDV-D36Z/<br>N1-F4 | MDV-D45Z/<br>N1-F4 | MDV-D56Z/<br>N1-F4 | MDV-D71Z/<br>N1-F4 | MDV-D80Z/<br>N1-F4 |                |
|--|--|---------------------------------|----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------|
| Power supply                           |  | V/phase/Hz                      |                            | 220~240/1/50       |                    |                    |                    |                    |                |
| Cooling                                | Rated capacity (*1)                          | kW                              | 2.2                        | 2.8                | 3.6                | 4.5                | 5.6                | 7.1                | 8.0            |
|  | Rated power input                            | kW                              | 40                         | 46                 | 55                 | 49                 | 88                 | 130                | 130            |
|  | Rated current                                | A                               | 0.17                       | 0.20               | 0.24               | 0.21               | 0.38               | 0.57               | 0.57           |
| Heating                                | Rated capacity (*2)                          | kW                              | 2.4                        | 3.2                | 4.0                | 5.0                | 6.3                | 8.0                | 9.0            |
|  | Rated power input                            | kW                              | 40                         | 46                 | 46                 | 49                 | 88                 | 130                | 130            |
|  | Rated current                                | A                               | 0.17                       | 0.20               | 0.20               | 0.21               | 0.38               | 0.57               | 0.57           |
| Heat exchanger                         | Corrosion protection                         |                                 | Hydrophilic coating        |                    |                    |                    |                    |                    |                |
| Rated airflow (low/medium/high)        |  | m <sup>3</sup> /min             | 6.7/7.6/8.8                | 7.0/8.1/9.5        | 6.3/8.7/10.4       | 7.3/9.0/11.0       | 13.8/16.2/19.2     | 14.5/18.3/23.0     | 14.5/18.3/23.0 |
| Sound pressure level (low/medium/high) |  | dB(A)                           | 29/33/36                   | 29/33/36           | 30/34/37           | 30/34/37           | 31/35/41           | 33/39/44           | 33/39/44       |
| Dimensions                             | Net dimensions (width x height x depth)      | mm                              | 1000×625×220               | 1000×625×220       | 1200×625×220       | 1200×625×220       | 1500×625×220       | 1500×625×220       | 1500×625×220   |
|  | Shipping dimensions (width x height x depth) | mm                              | 1089×683×312               | 1089×683×312       | 1289×683×312       | 1289×683×312       | 1589×683×312       | 1589×683×312       | 1589×683×312   |
|  | Net/gross weight                             | kg                              | 30.0/35.0                  | 30.0/35.0          | 36.0/44.0          | 36.0/44.0          | 41.0/46.5          | 41.0/46.5          | 42.5/48.5      |
| Refrigerant                            |  | R410A                           |                            |                    |                    |                    |                    |                    |                |
| Refrigerant flow adjustment            |  | EXV                             |                            |                    |                    |                    |                    |                    |                |
| Piping                                 | Gas  | mm                              | Ø6.35                      | Ø6.35              | Ø6.35              | Ø6.35              | Ø9.53              | Ø9.53              | Ø9.53          |
|  | Liquid                                       | mm                              | Ø12.7                      | Ø12.7              | Ø12.7              | Ø12.7              | Ø15.9              | Ø15.9              | Ø15.9          |
| Condensate drain                       |  | mm                              | Ø16                        | Ø16                | Ø16                | Ø16                | Ø16                | Ø16                | Ø16            |
| Cables                                 | Power supply                                 | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                    |                    |                    |                    |                    |                |
|  | Communication                                | mm <sup>2</sup>                 | 3×0.75 shielded            |                    |                    |                    |                    |                    |                |
| Remote controller                      |  | Wireless remote controller RM05 |                            |                    |                    |                    |                    |                    |                |

**Notes:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

## TECHNICAL DATA

| Model                                  |   | MDV-D22Z/<br>N1-F5              | MDV-D28Z/<br>N1-F5         | MDV-D36Z/<br>N1-F5 | MDV-D45Z/<br>N1-F5 | MDV-D56Z/<br>N1-F5 | MDV-D71Z/<br>N1-F5 | MDV-D80Z/<br>N1-F5 |                |
|--|---|---------------------------------|----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------|
| Power supply                           |   | V/phase/Hz                      |                            | 220~240/1/50       |                    |                    |                    |                    |                |
| Cooling                                | Rated capacity (*1)                             | kW                              | 2.2                        | 2.8                | 3.6                | 4.5                | 5.6                | 7.1                | 8.0            |
|  | Rated power input                               | kW                              | 40                         | 46                 | 55                 | 49                 | 88                 | 130                | 130            |
|  | Rated current                                   | A                               | 0.17                       | 0.20               | 0.24               | 0.21               | 0.38               | 0.57               | 0.57           |
| Heating                                | Rated capacity (*2)                             | kW                              | 2.4                        | 3.2                | 4.0                | 5.0                | 6.3                | 8.0                | 9.0            |
|  | Rated power input                               | kW                              | 40                         | 46                 | 46                 | 49                 | 88                 | 130                | 130            |
|  | Rated current                                   | A                               | 0.17                       | 0.20               | 0.20               | 0.21               | 0.38               | 0.57               | 0.57           |
| Heat exchanger                         | Corrosion protection                            | Hydrophilic coating             |                            |                    |                    |                    |                    |                    |                |
| Rated airflow (low/medium/high)        |   | m <sup>3</sup> /min             | 6.7/7.6/8.8                | 7.0/8.1/9.5        | 6.3/8.7/10.4       | 7.3/9.0/11.0       | 13.8/16.2/19.2     | 14.5/18.3/23.0     | 14.5/18.3/23.0 |
| Sound pressure level (low/medium/high) |   | dB(A)                           | 29/33/36                   | 29/33/36           | 30/34/37           | 30/34/37           | 31/35/41           | 33/39/44           | 33/39/44       |
| Dimensions                             | Net dimensions<br>(width x height x depth)      | mm                              | 1000×625×220               | 1000×625×220       | 1200×625×220       | 1200×625×220       | 1500×625×220       | 1500×625×220       | 1500×625×220   |
|  | Shipping dimensions<br>(width x height x depth) | mm                              | 1182×683×312               | 1182×683×312       | 1382×683×312       | 1382×683×312       | 1682×683×312       | 1682×683×312       | 1682×683×312   |
|  | Net/gross weight                                | kg                              | 30.0/38.0                  | 30.0/38.0          | 35.5/41.0          | 35.5/41.0          | 42.0/51.0          | 42.0/51.0          | 44.0/53.0      |
| Refrigerant                            |   | R410A                           |                            |                    |                    |                    |                    |                    |                |
| Refrigerant flow adjustment            |   | EXV                             |                            |                    |                    |                    |                    |                    |                |
| Piping                                 | Gas   | mm                              | Ø6.35                      | Ø6.35              | Ø6.35              | Ø6.35              | Ø9.53              | Ø9.53              | Ø9.53          |
|  | Liquid  | mm                              | Ø12.7                      | Ø12.7              | Ø12.7              | Ø12.7              | Ø15.9              | Ø15.9              | Ø15.9          |
| Condensate drain                       |   | mm                              | Ø16                        | Ø16                | Ø16                | Ø16                | Ø16                | Ø16                | Ø16            |
| Cables                                 | Power supply                                    | mm <sup>2</sup>                 | 3×2.5(L≤20m); 3×3.5(L≤50m) |                    |                    |                    |                    |                    |                |
|  | Communication                                   | mm <sup>2</sup>                 | 3×0.75 shielded            |                    |                    |                    |                    |                    |                |
| Remote controller                      |   | Wireless remote controller RM05 |                            |                    |                    |                    |                    |                    |                |

**Notes:**

Rated capacity is given for the following conditions:

(\*1) Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB

(\*2) Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB

Refrigerant piping length measured for the liquid side 8 m. Height difference 0 m.

DB - dry bulb, WB - wet bulb

Sound level measured in a reverberation chamber 1.4 m below the unit.

# AHUKZ-A AHUKZ-B

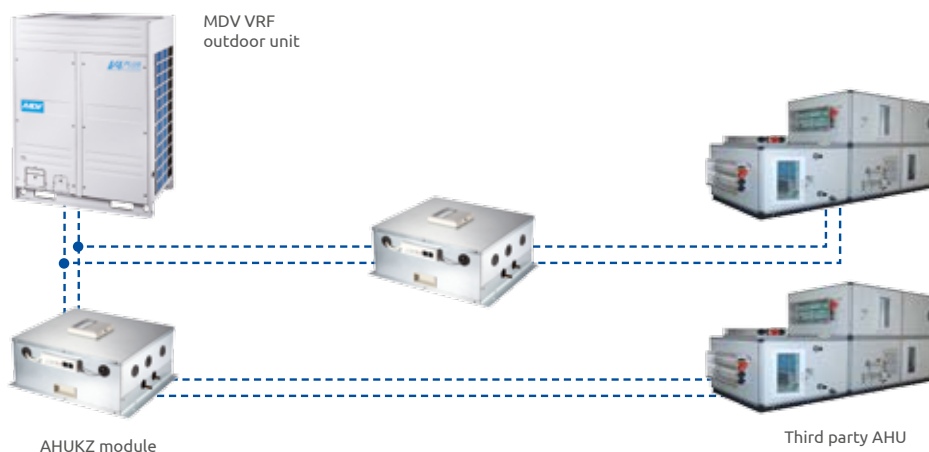
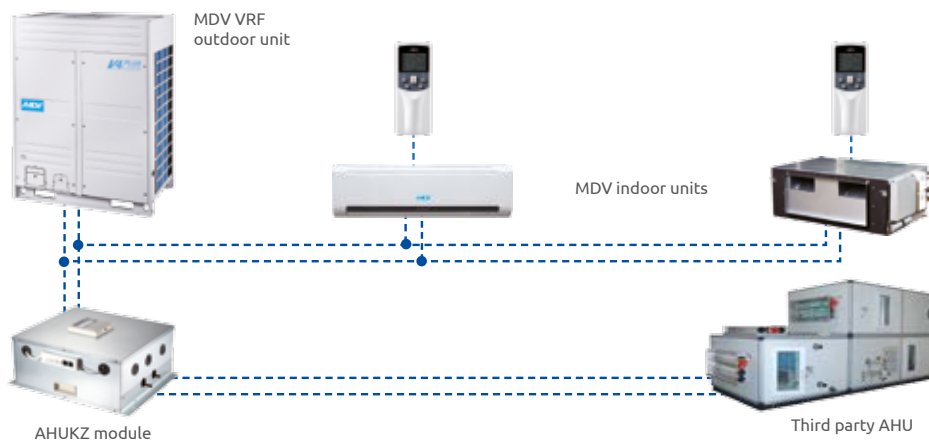


## FUNCTIONS

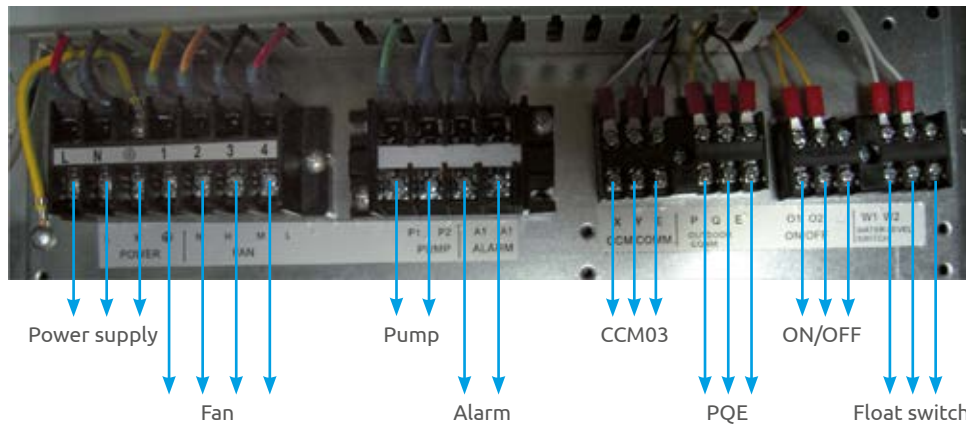
CE-AHUKZ-01~03 control module enables interaction of the MDV VRF system with another manufacturers units, that needs to be supplied with R410A refrigerant. The module can be used for supplying refrigerant heat exchangers in air handling units and other uncommon air-conditioning units.

## FLEXIBLE CONFIGURATION

The AHU can be connected as one of several indoor units in the VRF system. There is also a possibility to connect one AHU directly to one outdoor unit or several AHUs to one outdoor unit while maintaining individual control.



## TOTAL CONTROL OF AN AIR HANDLING UNIT



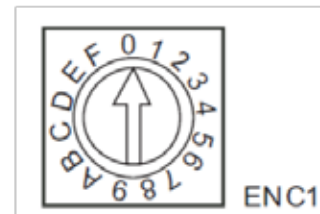
the above image show version A of AHUKZ

Beside supplying AHU heat exchanger, the AHUKZ module can perform the following functions:

- Control of the air handling unit fans: low, medium and high speed;
- Activation of the drain pump;
- Displaying of an error code on the digital display;
- Sending an alarm signal in case of malfunction;
- Disconnection of exchanger supply in case the alarm water level in the AHU drain pan is exceeded;
- Remote system on and off with use of the on/off potential-free contact;
- Possibility of connection with the air-conditioning system central controller and BMS system.

## CAPACITY ADJUSTMENT - HIGH FLEXIBILITY OF APPLICATION

AHUKZ modules are available in three basic sizes: 14, 28 and 56 kW. The built-in knob enables reduction of the rated module capacity so as to optimally adjust it to the AHU heat exchanger capacity. Built-in electronic expansion valve enables smooth adjustment of cooling and heating, ensuring comfort in air-conditioned room.



## SMOOTH EFFICIENCY ADJUSTMENT BY MEANS OF A SIGNAL FROM THE AIR HANDLING UNIT

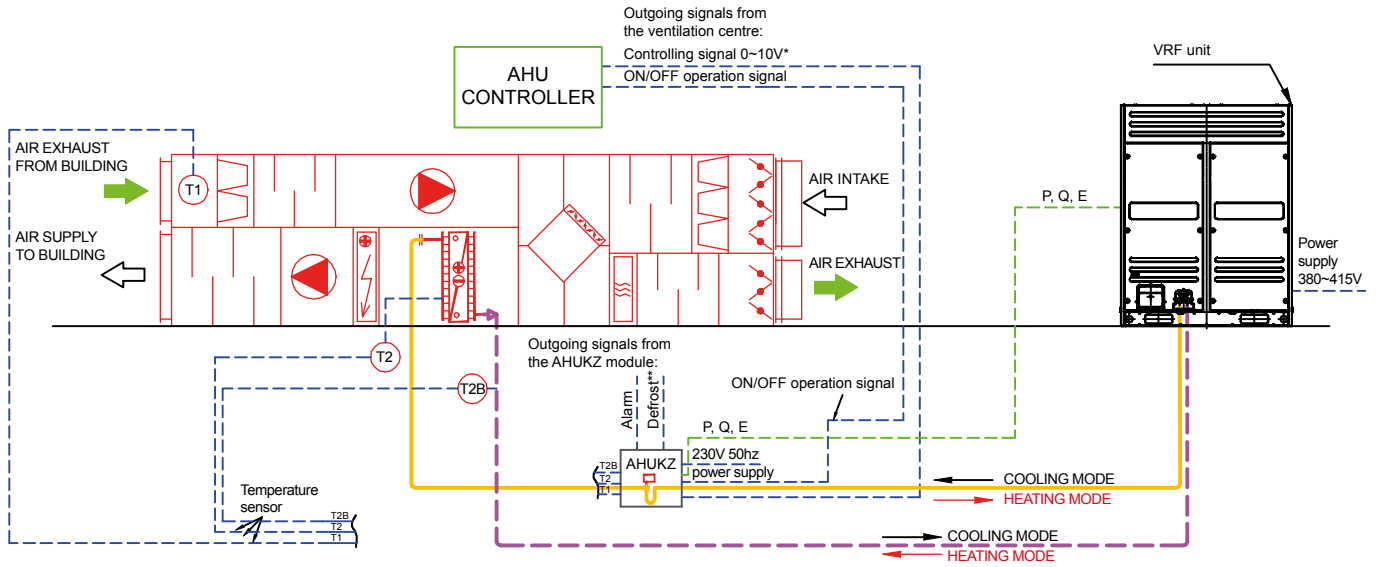
The B version of the AHUKZ module enables adjusting efficiency by means of a 0~10V analogue signal from the ventilation centre. Additionally, this module is fitted with an outgoing defrost signal and automatic operation mode change.

## SET CONTENT

The AHUKZ set includes: control module, expansion valve, three temperature sensors together with extension cables, display and controller.



## CONNECTION DIAGRAMS



### DESIGNATIONS:

- T1 Exhaust air temperature sensor
- T2 Sensor in the middle of the DX cooler manifold
- T2B Sensor at the outlet of the DX cooler
- LIQUID-BASED copper pipeline, thermally insulated
- - - GAS-BASED copper pipeline, thermally insulated
- - - Electrical connections / Signal and control connections

\* 0~10V controlling signal is available for the controlling module only in version B

\*\*Defrost signal is available for the controlling module only in version B

## TECHNICAL DATA

| Model                       |  |                 | AHUKZ-01A                       | AHUKZ-02A   | AHUKZ-03A   |
|-----------------------------|--|-----------------|---------------------------------|-------------|-------------|
| Power supply                |  | V/phase/Hz      | 220~240/1/50                    |             |             |
| Cooling                     | Minimum / maximum capacity                   | kW              | 9.0~20.0                        | 20.0~33.0   | 28.1~56.0   |
| Heating                     | Minimum / maximum capacity                   | kW              | 10.0~22.4                       | 22.4~35.0   | 31.5~63.0   |
| Dimensions                  | Net dimensions (width x height x depth)      | mm              | 375×350×150                     | 375×350×150 | 375×350×150 |
|                             | Shipping dimensions (width x height x depth) | mm              | 490×420×240                     | 490×420×240 | 490×420×240 |
| Refrigerant                 |  |                 | R410A                           |             |             |
| Refrigerant flow adjustment |  |                 | EXV                             |             |             |
| Piping                      | Inlet pipe                                   | mm              | Ø9.52                           | Ø12.7       | Ø15.9       |
|                             | Outlet pipe                                  | mm              | Ø9.52                           | Ø12.7       | Ø15.9       |
| Cables                      | Power supply                                 | mm <sup>2</sup> | 3×2.5                           |             |             |
|                             | Communication with external unit             | mm <sup>2</sup> | 3×0.75 shielded                 |             |             |
| Remote controller           |  |                 | Wired remote controller KJR-10B |             |             |

| Model                       |  |                 | AHUKZ-01B                       | AHUKZ-02B   | AHUKZ-03B   |
|-----------------------------|--|-----------------|---------------------------------|-------------|-------------|
| Power supply                |  | V/phase/Hz      | 220~240/1/50                    |             |             |
| Cooling                     | Minimum / maximum capacity                   | kW              | 9.0~20.0                        | 20.0~36.0   | 36.0~56.0   |
| Heating                     | Minimum / maximum capacity                   | kW              | 10.0~22.4                       | 24.4~38.0   | 38.0~63.0   |
| Dimensions                  | Net dimensions (width x height x depth)      | mm              | 375×350×150                     | 375×350×150 | 375×350×150 |
|                             | Shipping dimensions (width x height x depth) | mm              | 490×420×240                     | 490×420×240 | 490×420×240 |
| Refrigerant                 |  |                 | R410A                           |             |             |
| Refrigerant flow adjustment |  |                 | EXV                             |             |             |
| Piping                      | Inlet pipe                                   | mm              | Ø9.52                           | Ø12.7       | Ø15.9       |
|                             | Outlet pipe                                  | mm              | Ø9.52                           | Ø12.7       | Ø15.9       |
| Cables                      | Power supply                                 | mm <sup>2</sup> | 3×2.5                           |             |             |
|                             | Communication with external unit             | mm <sup>2</sup> | 3×0.75 shielded                 |             |             |
| Remote controller           |  |                 | Wired remote controller KJR-10B |             |             |







# ACCESSORIES

# OUTDOOR UNIT BRANCH JOINT

| Model       | Gas side | Liquid side |
|-------------|----------|-------------|
| FQZHW-02N1D |          |             |
| FQZHW-03N1D |          |             |
| FQZHW-04N1D |          |             |

# OUTDOOR UNIT BRANCH JOINT

| Model     | Gas side | Liquid side |
|-----------|----------|-------------|
| FQZHN-01D |          |             |
| FQZHN-02D |          |             |
| FQZHN-03D |          |             |
| FQZHN-04D |          |             |
| FQZHN-05D |          |             |

NOTES

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NOTES

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V/001/2016

**General representative of MDV in Poland**

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