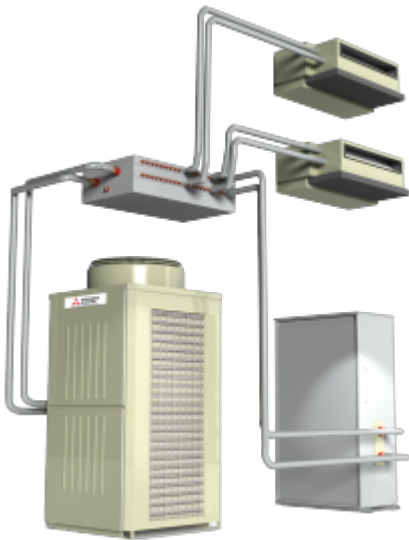


ABOUT THE CITY MULTI SYSTEM

Universal, easily adaptable and energy-saving system with the latest environment-friendly technology. Unique 2-pipe connection system reduces material and installation costs.



Universal, easily adaptable and energy-saving system with the latest environment-friendly technology. Unique 2-pipe connection system reduces material and installation costs.

INDOOR PARTS

The widest range of indoor parts and accessories on the market.

Simple and elegant design. Indoor parts for various models and different needs of installation.

OUTDOOR PARTS

Easily adaptable, durable and having one of the lowest noise levels on the market.

Equipped with the latest technology, have a high performance rate. Require little space and are suitable for all types of buildings.

CONTROL THE INDOOR CLIMATE. PRESERVE THE WORLD'S RESOURCES

Quality indoor air equals creative environment. A pleasant indoor climate can be directly associated with increased productivity. 90 percent of the annual costs of a conventional office building can be attributed to the work carried out by people in it. As a result, even an insignificant drop in productivity of employees by a few percent may have a major economic importance. Increased productivity is the outcome of work done better and better health, which, for example, reduces absences from work.

Energy performance of a building is affected by the air conditioning and ventilation systems to a large extent. Energy consumption depends on the type of the system installed and the way it is maintained. Nowadays, our buildings are so well insulated and full of internal heat load that the need for effective climate control is greater than ever before.

CityMulti systems are cooling the buildings during warm days, supervising the internal heat load and efficiently heating when the outside temperature drops. Residual energy can be recycled or transferred, for what our systems are well adapted. All systems are adapted to the climate of the Northern countries.

VRF SYSTEM

The VRF (Variable Refrigerant Flow) type air conditioning system adjusts the power depending on the building requirements and activities. The VRF system can be formed of reversible air or water cooled power unit and a certain amount of indoor parts within the building, which continuously regulate the temperature independently of one another.

INVERTER TECHNOLOGY

Mitsubishi Electric is constantly seeking to satisfy customer requirements. With the inverter technology, our systems can produce the exact amount of energy needed for the building. Effective technology means that the system does not waste energy when producing excessive heat or cool.

INTELLIGENT POWER MODULE TECHNOLOGY (IPM)

With the CityMulti series IPM technology you will have full control of energy flows. A simple and clear management system will allow you to control the heat and cool in different parts of the building. The IPM module provides a high degree of partial load efficiency, which reduces the operation costs of cooling and heating production.

R410A

In all our systems we are using an environmentally safe refrigerant R410A. Comparing to the conventional water systems used for cooling and heating, the CityMulti system requires less operating power and materials, and therefore has a much lower impact

on global warming. We protect the environment as much as possible to create the systems as useful as possible.

ENERGY EFFICIENT, RELIABLE AND ADAPTABLE

The CityMulti system consists of outdoor parts, which can supply heat and cool to up to fifty indoor units. The energy in the building may be also transferred and aligned, and used where it is needed the most.

Depending on the needs of the building, the power of the outdoor unit may be continuously adjusted from 15 to 100 percent. The power of indoor units ranges from 20 to 180 kW.

In case of a high power demand, several systems may be installed to obtain as optimal power adjustment as possible. Various indoor units are managed separately, independently of the settings of other indoor sections. Desired temperature may be set in every room, and the energy may be transferred to indoor units or water modules and ventilation devices.

TWO PIPES INSTEAD OF THREE - SAVE MONEY

Unlike other systems operating with three pipes, the CityMulti uses only two and this has significant advantages.

- Fewer connection points - simpler installation. Lower material costs and a shorter installation time
- More flexible design options
- Lower investment costs
- Installation pays off more quickly
- Smaller amount of refrigerant required

General advantages of the CityMulti systems

- Proven technologies of 20 years
- Require little space
- Effective installation
- Flexible design of the system provides significant opportunities for reuse
- Low operating costs
- Only 8-amperes starting current in all outdoor units
- Environment-friendly

Y SYSTEM

The outdoor unit produces heat or cool for indoor units. When the cool or heat is decreasing, all indoor units are controlled continuously. All energy is transferred to or taken through the outdoor units of the system.

R2 SYSTEM

The outdoor unit provides refrigerant to the BC Box. Then the BC Box distributes the refrigerant and/or gas to the indoor units depending on whether they are in the zone of cool or heat decrease.

Inside the building the energy is distributed so that the indoor units requiring cooling would obtain cooling, and the units requiring heat would get the heat. The system transfers the energy to the indoor units or water module. Reuse of energy for ventilation is possible as well.

WR2 SYSTEM

The WR2 system operates on the same principle as the R2. The difference is that in this system the condenser takes and releases energy in the refrigerant system or the outdoor water manhole.

An even better power distribution and reuse is achieved due to the WR2 systems. Partial reuse can occur through the power transmission of the system, as well as through the refrigerant system in which the equipment takes or releases its energy. This way the system connected to the refrigerant system can take the energy provided by another system. There is a Y model of this type of the system available too.

SUITABLE FOR NORTH CLIMATE

The standard size of the CityMulti systems in Sweden is 20-50 KW of cooling power and 25-60 kW of heating power. In case of a greater power demand several systems may be installed.

Over 50,000 VRF systems are installed in Europe every year, which can be seen as a proof of the popularity of the systems.

EASILY ADAPTABLE AND DURABLE SYSTEM

Thanks to the simple and elegant design of the indoor and outdoor units, the CityMulti is suitable for most environments. Furthermore, they take up little space and operate well despite their long pipeline and various height differences of the outdoor and indoor units. This way, the system meets the needs of most buildings.

INDOOR UNITS

Mitsubishi Electric may offer the widest range of indoor units and accessories on the market.

- Wall-mounted, floor, ceiling or built-in models
- Channel connected models
- Built-in models with the Coanda effect, which are designed to carry the supplied air replacing the supply air devices of the room.
- Water modules for refrigerants
- Water modules for hot water of up to 70°C
- Ventilation interface device for heating and cooling in a ventilation unit.

THE MOST SILENT OUTDOOR UNIT ON THE MARKET

The YHM-A system of Mitsubishi Electric is characterized not only by a high degree of efficiency, but also by the most silent outdoor unit on the market.

DURABLE IN A CHALLENGING ENVIRONMENT

The standard casing of outdoor units is class C4. The exchanger is epoxy treated from rust and is resistant to dirty and corrosive environments, e.g. in the city or at the sea.

ADVANTAGES OF THE YHM-A SERIES

- Modern inverter technology
- Fan design of the latest technology
- Compressor of the latest technology

HIGH PERFORMANCE RATIO AT LOW TEMPERATURES

The new, patented cooling cycle ZubaDan technique means that it is possible to pump the heat to -15°C while maintaining the thermal effect. It also means a guaranteed use of heat at the temperatures of down to -25°C .

FULL CONTROL WITH THE INTELLIGENT POWER MODULE (IPM)

Thanks to the IPM technology the new YHM-A series of Mitsubishi Electric provides full control of the supplied energy. This technique allows for detailed control of the building's energy requirements even in areas not in use.

The power adjustment may be controlled in steps as small as 1Hz. The IPM technology ensures a high degree of efficiency at partial load. IPM also monitors and takes care of the "peaks" and "valleys" of the load of the building. The CityMulti system therefore has a high coefficient of performance throughout the year, including drops of cold or heat.

HIGHER LEVEL OF PRODUCTIVITY

Environment-friendly inverter technology is saving energy.

Mitsubishi Electric is one of the largest and leading compressor manufacturers in the world. When installing new and advanced technology, we always strive to meet our customers' needs. Inverter technology is one of the examples. By using a system that regularly produces exactly the right amount of heat or cooling energy, we optimize energy consumption.

Thanks to the possibility of establishing various power, the outdoor unit consumes exactly as much energy as needed. This provides a significantly higher level of productivity than the system functioning in a steady state only.

With the inverter technology, the operating costs are reduced as well. Systems with no possibility to change power do not have the advantage of high savings which are achieved when the system does not need to work at full capacity.

The unique HIC converter additionally enhances performance and enables more efficient operation of electronic expansion valves. This ensures a high degree of efficiency and a smaller amount of refrigerant in the system.

With an integrated management system of Mitsubishi Electric, excessive heating and cooling is avoided. This reduces the waste of energy, and your energy consumption is considerably reduced. Installation costs pay off quickly due to low operating costs.

ENVIRONMENT-FRIENDLY MORE THAN EVER BEFORE

The greatest impact our cooling and heating pumps have on the greenhouse effect is carbon dioxide they emit during energy production. The VRF system is a system which performs exchange directly into the air from both ends and this provides a big advantage to VRF systems in terms of energy over, for example, indirect systems in which exchange is carried out to water and where a high power of pumps and fans as well as exchange losses reduce the level of performance. The entire refrigerant system must be frozen and circulate, although only one room must be cooled.

The outdoor unit of the VRF system uses the same piping system for heating and cooling, which is not possible in the refrigerant system.

Investments in the VRF system are more environment-friendly than installation of individual heating and cooling systems in a building.

mitsubishi electric environmental objectives

In 2021 Mitsubishi Electric will become 100 years. By then the carbon dioxide emissions of our products must be reduced by 30 percent. By 2050 the emissions must be reduced by 50 percent.

UNIVERSAL SYSTEM

WATER MODULES

You may choose from a wide variety of water modules for processing heating and cooling into warm water, radiators or refrigerant systems.

With Booster - PWFY P100 VM-E BU - Mitsubishi Electric, as the only supplier in the market, may process and transfer energy to produce hot water and radiator water with the outlet water temperature of up to 70°C.

EASY TO OPERATE AND MAINTAIN

If you lack an effective and easily-managed maintenance and control system, energy consumption can be difficult to manage. The universal M-Net system allows you to:

- control and manage all indoor units

- configure special zones of a building

The system has programmed energy-saving functions, which automatically manage the building in an optimal way.

FULL CONTROL AND MAINTENANCE

A central controller AG-150 is easily accessible via the internet. You will not need any special licenses or software. You can manage and control all the indoor units via your normal web browser.

With the PI controller, you may control and measure electric power, water and gas consumption.

The DIDO controller allows you to monitor the external functions such as lights, door sensors and card readers.

The AI controller allows you to monitor moisture and temperature.

There are ready-made interface devices for connection to the overall control system suitable for the majority of the protocols in the market (LonWorks, BACnet, EIB, Modbus, etc.).

We may offer connection to the most reservation systems such as Fedelio for hotel installations.

SMOOTH INSTALLATION

Due to the unique oil separation system and unique power receiver of Mitsubishi Electric, pipes can be installed without any special requirements.

Pipe length and height differences between various indoor units may be easily determined with the assistance of the dimensioning programme, according to which installation is performed.

CityMulti works well at long distances and large height differences between the outdoor and various indoor units as well.

THE MOST FLEXIBLE IN THE MARKET

The total length of pipework in the YHM-A series is 1,000 meters.

Typical standard T-shaped connection pipes as well as standard pipes for refrigerants may be used for installation.

ELECTRICAL SYSTEM WITH ADVANTAGES

The starting current in the VRF system of Mitsubishi Electric is only 8A, which reduces the electrical installation to a minimum, because the main fuse does not need to take care of large AC compressor start currents. This in turn means that the customer can choose lower level of security and thus lower fixed costs for their

electricity account.

These units are particularly useful in an extremely loaded electric network with a bad short-circuit impedance.

AUTOMATIC REFRIGERANT CONTENT CONTROL

The outdoor units of the YHM-A series CityMulti system are equipped with automatic refrigerant control, allowing for easy management of the amount of refrigerant in the system.

VENTILATION INTERFACE DEVICE

The CityMulti system includes a user interface device for continuous cooling and heat pump operation in the ventilation unit with a rotating VVX. The customer can meet the needs of cooling and heating of the building by using the same battery.

AIR CURTAINS

The system also provides great opportunities for recycling or heat pumping via air curtains in workshops, shops and supermarkets.