GAS HEAT PUMP
ECO G RANGE
2014 - 2015
NEW 2014 / 2015
VRF SYSTEMS ECO G RANGE

Summary

HISTORY OF AIR CONDITIONING GROUP ......................................................... 4
PANASONIC – LEADING THE WAY IN HEATING & COOLING ...................... 5
RELIABILITY FACTS ..................................................................................... 6
PANASONIC EUROPE ANNOUNCES SUSTAINABILITY DECLARATION ... 8
EXEMPLARY SUSTAINABLE PROJECTS ....................................................... 9
PRO CLUB: THE PROFESSIONAL WEBSITE OF PANASONIC ............ 10
PANASONIC INTRODUCING THE GAS DRIVEN VRF ......................... 12
ECO G OUTDOOR UNITS RANGE .............................................................. 14
ECO G HIGH POWER, ECO G AND ECO G MULTI TECHNOLOGY ........... 15
ECO G WATER HEAT EXCHANGER FOR HYDRONIC APPLICATIONS .... 18
ECO G HIGH POWER .................................................................................. 20
ECO G AND ECO G MULTI ....................................................................... 22
ECO G 3 WAY ........................................................................................... 24

INDOOR UNITS FOR ECO G ................................................................. 26
ECO G SYSTEMS INDOOR UNITS RANGE ............................................ 28
U1 TYPE 4 WAY 90X90 CASSETTE SEMI CONCEALED CASSETTE ....... 30
Y1 TYPE 4 WAY 60X60 CASSETTE MINI CONCEALED CASSETTE ...... 31
L1 TYPE 2 WAY CASSETTE .................................................................... 32
D1 TYPE 1 WAY CASSETTE .................................................................... 33
F2 TYPE VARIABLE STATIC PRESSURE HIDE AWAY ......................... 34
M1 TYPE SLIM VARIABLE STATIC PRESSURE HIDE AWAY CONCEALED DUCT .... 35
E3 TYPE HIGH STATIC PRESSURE HIDE AWAY .................................. 36
HEAT RECOVERY WITH DX COIL ............................................................ 37
T2 TYPE CEILING .................................................................................... 38
K2/K1 TYPE WALL MOUNTED ............................................................... 39
P1 TYPE FLOOR STANDING ..................................................................... 40
R1 TYPE CONCEALED FLOOR STANDING ............................................. 41
CONTROL SYSTEMS FOR ECO G .......................................................... 42

Quality Management System Certificate
Certified to ISO 9001: 2008
Panasonic Appliances Air-Conditioning
Malaysia Sdn.Bhd.
Cert. No.: MY-AR 1010

Environmental Management System Certificate
Certified to ISO 14001: 2004
Panasonic Appliances Air-Conditioning
Malaysia Sdn.Bhd.
Cert. No.: MY-ER0112

Panasonic Appliances Air-Conditioning (Guangzhou) Co., Ltd.
Certified to ISO 9001: 2008
Cert. No.: 01209Q20645R5L

Panasonic Appliances Air-Conditioning (Guangzhou) Co., Ltd.
Certified to ISO 14001: 2004
Cert. No.: 02110E10562R4L
NEW

New 1,5kW indoor units. This new indoor unit is the perfect solution for small rooms or low consumption buildings requiring low energy to heat or cool the space.
PG 26

NEW

New Remote Controller touch screen with power consumption monitor.
PG 42

NEW

New indoor unit Hotel Remote control which integrates direct connection to: Card switch, lighting, Window contact and blinds.
PG 42

NEW

GHP + WHE heating, cooling and DHW. The ECO G the efficient solution for gas boiler replacement.
PG 18

NEW

New Heat Recovery with DX coil with purifying system Bioxigen®. Increase efficiency of the installation while renewing the air.
PG 37
A Better Life, A Better World

As we move towards our Centenary in 2018, our new brand slogan encapsulates Panasonic’s vision of expanding and pursuing a better life for each of our customers. Working with our many partners, we operate in a wide range of fields such as the home, community, business, travel, realising a better world globally through its contribution to the environment and other activities, in both its B2C and B2B businesses.
History of Air Conditioning Group

Panasonic starts with a desire to create things of value. As hard work and dedication results in one innovative product after another, the fledgling company takes its first steps towards becoming the electronics giant of today.

1936
First electric fan with Automatic Oscillation (36 cm table top model).

1958
First room air conditioner launched for domestic installation. Prior to this date, air conditioners were large and only for commercial use. Panasonic developed the first compact air conditioner for window; it was lightweight and easy to install, improving the quality of life in Japanese homes. 1,198 units were sold in Japan in the first year, and just two years later, in 1960, this figure rose to 230,000.

1973
Panasonic launches the first highly efficient air-to-water heat pump in Japan.

1975
Panasonic becomes the first Japanese air conditioner manufacturer in Europe.

2008
Etherea new concept of air-conditioning systems: high efficiency and high performances with a great design. Etherea also includes a very innovative air quality sensor and air purifier in order to enjoy healthy air at home at all times.

2008
New Aquarea. Panasonic has created Aquarea, an innovative new, low-energy system, designed to help you enjoy ideal temperatures and hot water in your home, even with extreme outdoor temperatures. Aquarea cools or heats to ensure maximum comfort. Aquarea is far cleaner, safer, cheaper and environmentally friendly than alternatives using gas, oil and other electrical systems.

2010
New Aquarea. Panasonic has created Aquarea, an innovative new, low-energy system, designed to help you enjoy ideal temperatures and hot water in your home, even with extreme outdoor temperatures. Aquarea cools or heats to ensure maximum comfort. Aquarea is far cleaner, safer, cheaper and environmentally friendly than alternatives using gas, oil and other electrical systems.

2011
New Eco i VRF solution. The new Panasonic VRF solution for big buildings is the most efficient in the industry in more than 74% of combinations. ECO i satisfies the most demanding standards required by design offices, architects, owners and installers.

2012
New GHP units. Panasonic’s gas-driven VRF systems are ideal for projects where power restrictions apply. In 2012, Panasonic extends the Gas Heat Pump range with a new GHP line-up, new GHP G Power (electricity production) and the new Chiller Units.

2013
New ECOS 3-pipes. The best efficiency for your building. Our New 6 Series 3-pipes is achieving a COP of 4.77 at full load, and even more when recovering heat from the building. There is no doubt, Panasonic is reducing environmental impact!

2014
New Aquarea 16kW T-CAP. Improvements deliver impressive, high efficiencies at low ambient temperatures. T-CAP stands for Total Capacity and is capable of maintaining the same nominal capacity even at -15°C without the help of an electric booster heater. Ideal for retrofit and commercial applications.
Panasonic – leading the way in Heating & Cooling

With more than 30 years of experience, selling to more than 120 countries around the world, Panasonic is unquestionably one of the leaders in the heating and cooling sector.

With a diverse network of production and R&D facilities, Panasonic delivers innovative products incorporating cutting-edge technologies that set the standard for air conditioners worldwide.

Expanding globally, Panasonic provides superior international products transcending borders.

100% Panasonic: we control the process

The company is also a world leader in innovation as it has filed more than 91,539 patents to improve its customers’ lives. Moreover, Panasonic is determined to remain at the forefront of its market. In all, the company has produced more than 200 million compressors and its products are manufactured in 294 plants which are located all over the world. You can be assured of the extremely high quality of Panasonic’s heat pumps.

This wish to excel has made Panasonic the international leader in heating and turn-key air conditioning solutions for homes, medium-sized buildings such as offices and restaurants, and large-scale buildings. These offer maximum effectiveness, comply with the strictest environmental standards and meet the most avant-garde construction requirements of our time.

At Panasonic we know what a great responsibility it is to install heating and cooling systems. Because offering you the best solutions in heating and cooling matters
Today, Panasonic air conditioners have earned widespread acclaim throughout the world. A rugged design ensures that the air conditioner will continue to keep the room comfortable, and operate trouble-free for many years. Panasonic believes this is the true value of an air conditioner. And this is why we subject them to a wide range of stringent tests.

Durability. 10,000 Hour Continuous Operation Simulation.

Long-term Durability Test
The air conditioner's main mission is to provide a level of durability that allows it to operate reliably for years. In order to achieve this, we conduct an accelerated test for 10,000 hours of continuous operation. The results of this test, which is conducted under conditions that are much more severe than actual operating conditions, prove the rugged strength of Panasonic air conditioners.

Compressor Disassembly Test
After a test with 10,000 hours of continuous operation, we remove the compressor from a randomly selected outdoor unit, disassemble it, then examine the internal mechanisms and parts for possible failure. Panasonic air conditioners continue to provide their designed performance for many years even after prolonged operation under harsh conditions.

Operating Test in Harsh Conditions
In addition to normal operating conditions, an operating durability test is conducted in a high-temperature, high-humidity test chamber at a temperature of 55 °C. For use in cold climates, the test is also conducted in a low-temperature test chamber at -20 °C. This test assures that the oil inside the compressor will not freeze during use and interrupt operation.

Waterproof Test
The outdoor unit, which is subjected to rain and wind, is provided with IPX4 waterproof compliance. Contact sections on printed circuit boards are also resin-potted to prevent adverse effects caused by an unlikely exposure to droplets of water.

Checking the oil inside the compressor under extremely cold conditions.

A resin-potted circuit board.
Shock Resistance
Panasonic simulates impacts, vibrations and other environmental conditions that air conditioners might be subjected to during transport. We promise that the quality and performance at the time of the final product inspection are unchanged when the product reaches the user's home.

Drop Test
Even with the large impacts that may occur due to improper handling during transportation, the product packaging has been strengthened to prevent it from being damaged. In addition to conventional vertical dropping, more severe conditions in which the sides or corners hit the floor first are carefully tested to ensure that the product's rigidity and shock-absorbing materials work to prevent problems.

Vibration Test
Preventing damage that would hinder the product's performance due to vibration during transport is a major role of the packaging. Panasonic confirms that the product operates properly even after applying vibrations in both horizontal and vertical directions.

Warehouse Storage Test
During distribution, products may be subjected to extended warehouse storage under unfavourable conditions. To simulate these conditions, we place a weight equal to a stack of five product packages on top of the test package, and leave it in that condition in a room at a temperature of 27°C and a humidity level of 85%. Then, the product is checked for proper operation.

Silence. That Does Not Disturb You.

Noise Test
The operating noise of the indoor and outdoor units is measured in an echo-free chamber. The noise test verifies that the operating noise is low enough so that the product operation will not disturb daily activities including conversations and sleep.

Amenity Test
An actual air conditioner is operated in a test room that simulates an ordinary living room. Conditions such as the amount of sunlight entering the room from outside are changed while measuring a variety of parameters, such as cooling speed, cooling efficiency, and temperature and humidity differences throughout the room. This makes it possible to confirm whether the air conditioner is operating at its designed performance level under ordinary conditions.

EMC (Electromagnetic Compatibility) Test
This test determines whether electromagnetic waves emitted during operation are sufficiently low to prevent adverse effects, i.e., electrical noise, on signals such as TV and radio broadcasts.

Remote Control Drop Test
Because the remote control is the main interface between people and the air conditioner, it is naturally subjected to frequent impacts - such as drops and bumps - when it is passed from person to person during normal operation. Panasonic drops the remote control from a height of 1.5 metres at various angles to ensure that no problems in basic performance will result from accidental dropping.

No Breaking. When Dropped onto Sides or Corners.

Comfort
Air conditioners should keep each person in the room comfortable without making their presence known. They should work totally in the background, using their strength to create and maintain a comfortable environment. We build this hidden strength into our air conditioners, and test them repeatedly from this viewpoint.

Quality. Is at the Core of All Our Manufacturing.

World Standard Quality
Over the years, Panasonic air conditioners have continued to offer the highest possible quality with the lowest environmental impact worldwide. Naturally, the fundamental production principles that are common to all Panasonic products apply to air conditioners as well. The fact that these principles actively support every product, rather than simply serving as slogans, is the result of the endless repetition of challenges and trial-and-error efforts that are conducted at our production bases all over the world.

Reliable Parts with Major Standards Approval
Panasonic air conditioners comply with all of the major standards that maintain high reliability in the countries and regions where they are marketed. To ensure this, we conduct a variety of tests to examine the quality of materials used in parts. The strength of the resin material used in the remote's touch control is confirmed by this tensile test.

RoHS/REACH Compliant Parts
All parts and materials comply with RoHS/REACH, Europe's world-leading environmental regulations. Shingeki inspections of more than 100 materials are conducted to ensure that no hazardous substances are included during parts development.

Sophisticated Production Process
The air conditioner production line uses advanced, state-of-the-art factory automation technologies to produce products with higher reliability. Products are efficiently manufactured with high and uniform quality.

Eco Activities
Panasonic has set up eco-ideas factories around the globe. While developing and manufacturing energy-saving products based on original environmental technologies, these factories reduce CO2 emissions from manufacturing processes and conduct regional-based environmental communication activities to contribute to both the global environment and the local communities that they serve.
Panasonic Europe announces Sustainability Declaration

Panasonic establishes new targets for the business’ environmental performance and CSR initiatives

Best Global Green Brand 2013
We were recently awarded Interbrand’s 4th Best Global Green Brand 2013 – the highest of any consumer electronics brands. This is the result of our commitment to energy efficient products, reduction in CO₂ emissions, our kids school ‘eco learning’ programme and much more.

Sustainability Declaration. Berlin, Germany, 4th September 2013
Panasonic Europe announces today its new Sustainability Declaration for Europe and CIS, extending its current initiatives to ensure all business activities lead to a more sustainable society. The Sustainability Declaration unites Panasonic’s new brand direction towards ‘A Better Life, A Better World’ with a series of environmental and CSR initiatives contributing to the progress and development of society. Recognising the impact on the environment and society through its products and practices, Panasonic aims to deliver on specified targets by March 2016. The European Sustainability Declaration is in accordance with Panasonic’s Global Sustainability Policy, which has been rolled out globally in recent weeks.

We aim to realise a lifestyle with virtually zero CO₂ emissions throughout the entire home
Fujisawa Sustainable Smart Town
Homes will employ the full range of Panasonic’s most advanced systems for energy production, storage and management.
In this project, a new concept and process will be adopted to build the town by designing spaces with a primary focus on services based on people’s lifestyles and creating an optimal smart infrastructure. In Fujisawa SST, Panasonic will offer its unique solutions from an Eco & Smart perspective. With bringing energy to life for residents as the town concept, we will provide services that enhance people’s lives with photovoltaic power, security, mobility, community, and healthcare.
The unparalleled town building, where as many as 1,000 families will live, will serve as a new business model both within Japan and overseas.

Panasonic joins Smart Electric Lyon consortium
What is Smart Electric Lyon?
Smart Electric Lyon is a project that looks at electricity consumption as a key part of the building energy solutions of tomorrow. The project aims to develop a wide range of innovative facilities and services through real-life experiments to test energy saving technologies and to measure how consumers can control energy consumption. This experiment, unprecedented in scale in Europe, will be conducted for four years in more than 25,000 homes, businesses and communities of Grand Lyon. It is intended to test innovative solutions that will consume less and better.

Panasonic will provide the project with a variety of its energy efficient heating and cooling products, including the Aquarea Air Source Heat Pump – a super-efficient system for providing heating and cooling facilities, as well as the production of domestic hot water. These heat pumps are especially equipped with connectivity solutions from Panasonic to ensure the systems are easy to use, and collect the vital, accurate data. The company will also integrate other home equipment solutions such as LED white lighting products to optimize the overall energy management of the project’s properties. This project is particularly apt for Panasonic, as heating and hot water occupy a prominent place in household energy consumption. Panasonic plans to make its European and French resources available for Smart Electric Lyon. The company has involved for the project a dedicated and experienced R&D team from Panasonic’s European technical centre in Frankfurt.

Exemplary sustainable projects
PRO Club: the professional website of Panasonic

Panasonic has an impressive range of support services for designers, specifiers, engineers and distributors working in the heating and cooling markets.

Panasonic announces a new initiative for all professionals involved in the heating and cooling business - the Panasonic PRO Club (www.panasonicproclub.com). Panasonic PRO Club is the online tool which makes your life easier! You just have to register and a lot of functionalities are freely available to you, where ever you are, from your computer or smart phone!

- Print catalogues with your logo and your address
- Download the latest VRF designer with PACi units and Autocad reader
- Get Documents of conformity and all other documents you may need
- Download all the service manuals, end user manuals and installation manuals
- Know what to do with error codes
- Be the first to learn about latest news
- Register for in-house and online training

Highlighted Features

- Extensive library of resources
- Tools & Apps for end users. Check availability in your country:
  - My Home: sizing wizard for domestic and A2W range
  - My Project: Contact form to Panasonic team
  - iFinder: Lists of installers displayed by postcode
- Special offers & promotions
- Training PRO Academy
- Catalogues (Commercial documentation)
- Marketing (Images in high resolution, advertisements, deco guidelines)
- Tools (Professional software, sizing tools...)

NEW Highlighted Features

- NEW! Installers customize leaflets in PDF format with their logo & contact details
- NEW! Energy label generator. Download energy labels of any device in PDF format
- NEW! Heating demand calculator
- NEW! Noise calculator for outdoor unit
- NEW! Aquarea Radiator calculator
- NEW! Error Code Search by error code or unit ref. Compatible with smartphone and tablet computer
- NEW! Revit / CAD Images / Spec texts
- NEW! Access to Pananet, online library of technical documentation
- NEW! Download Documents of Conformity and other Certifications
- NEW! Commissioning online
The Panasonic PRO Academy opens its doors

Panasonic takes its responsibility to its distributors, specifiers and installers seriously and has developed a comprehensive Training Programme. The Panasonic Pro-Academy encompasses the traditional hands-on approach, as well as embracing today’s technology to offer an eLearning facility available 24 hours, 7 days a week!

New training courses cover three levels. Design, installation, and commissioning & trouble-shooting. Training courses include:

- Domestic applications Air to Air
- Aquarea air source heat pumps
- VRF ECOi

The courses are offered on site at Panasonic’s premises across Europe as well as via the Panasonic ProClub eLearning site. The Training Centres display Panasonic’s latest product range and give delegates an opportunity to get hands-on experience with the latest controllers, indoor and outdoor units from the VRF ECOi, Etherea, GHP and Aquarea ranges.
Panasonic introducing the gas driven VRF

Panasonic’s GHP range is extensive and covers the 2-Pipe and 3-Pipe system. Our GHP VRF range of commercial systems is leading the industry in the development of efficient and flexible systems, and is the natural choice for commercial projects, especially those where power restrictions apply. As you would expect, all our gas-driven VRF systems have the highest reliability rates in the industry and a leading customer service programme. The torque and rpm control functions of the GHP’s motor are comparable with an inverter-type electric air conditioner. Thus, the GHP ensures individual, and efficient control and performance - just as you expect from an electric inverter controlled air conditioner.

Easy to position
- Up to 71 kW of cooling from a current consumption of 0.1 kWh
- Single Phase power supply across the range
- The option of natural gas or LPG as its main power source
- Embedded Water Heat Exchanger to connect to domestic hot water systems 16–25 HP (2-Pipe units only)
- Option of DX or chilled water for indoor heat exchange
- Reduced CO₂ emissions
ECO G and ECO G Multi, S Series
The advanced Gas Driven VRF system offers increased efficiency and performance across the range. Now more powerful than ever before, it can connect up to 48 indoor units. Improvements include increased part load performance, reduced gas consumption with a Miller-cycle engine and reduced electrical consumption by using DC fan motors.

ECO G High Power
1% this is what the new ECO G High Power is consuming versus your Electrical VRF. Your savings start now! Ideal for locations with low electricity grid, for chiller, ventilation and air conditioning application.

ECO G and ECO G Multi
The S Series 2-Pipe not only offers improved performance but also increased flexibility.

ECO G 3 Way
3 Way heat recovery system with simultaneous heating & cooling.

ECO G and ECO G Multi benefits
High-efficiency operation
All models are equipped with a high-performance air exchanger and a newly developed refrigerant heat exchanger for high efficiency operation, making them one of the most energy efficient solutions on the market.

Lowest nitrogen oxide emissions
The GHP VRF systems have the lowest nitrogen oxide emissions. In a pioneering development, the Panasonic GHP features a brand new lean-burn combustion system that utilises air fuel ratio feedback control to reduce NOx emissions to an all time low.

High performance
With its advanced heat exchanger design, this new GHP system offers improved efficiency and reduced running costs, which, coupled with improved engine management systems, have greatly improved the system COP rating.

Excellent economy
The Panasonic GHP provides quick and powerful cooling/heating and increases delivery of heat into the space by the efficient recovery of heat from the engine cooling water, which is injected into the refrigerant circuit by a highly efficient plate heat exchanger. In addition, the use of engine waste heat ensures that our gas heat pump air conditioner requires no defrost cycle, therefore providing continuous 100% heating performance in severe weather conditions with an outside air temperature as low as -20°C. During cooling mode the rejected heat from the engine is available for use with in a DHW system and can supply up to 30 kW of hot water at 75°C. The DHW is also available in heating when the outside air temp is above 7°C.

Water chiller option
Our GHP system is also available with a water chiller option, which can be combined with individual outdoor units or as part of a DX chilled water mix of indoor units. The system can be operated via a BMS system or a Panasonic supplied control panel, with chilled water set points from -15°C – +15°C and heating set points 35°C – +55°C.

No defrost requirements
Below 4°C ambient in heating mode, the outdoor fans switch OFF, saving further running costs and CO₂ emissions.

ECO G with Water Heat Exchanger for chilled and hot water production
For hydronic applications.
**Comparison of heating capacity**

<table>
<thead>
<tr>
<th>Outside air temperature (°C)</th>
<th>Gas heat pump*</th>
<th>Electric heat pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Regarding models 16 and 20 HP.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comparison of the start times for heating operation**

**The Gas Heat Pump (GHP)**

Panasonic Gas Heat Pump is the natural choice for commercial projects, especially for those projects where power restrictions apply. As you would expect, all of our Gas Driven VRF systems are designed to give the highest reliability rates. The GHP engine or (internal combustion engine) varies the engine speed to match the building load functions that are comparable with an inverter type electric air conditioner.

**Power supply problems?**

If you are short of electrical power, our gas heat pump could be the perfect solution:
- Runs on natural gas or LPG and just needs Single Phase supply
- Enables the building’s electrical power supply to be used for other critical electrical demands
- Reduces capital cost to upgrade power substations to run heating and cooling systems
- Reduces power loadings within a building especially during peak periods
- Electricity supply freed up for other uses such as IT servers, commercial refrigeration, manufacturing, lighting etc.

**GHP Outdoor Heat Exchanger**

- Integrated DX and hot water coil
- No defrost required
- Faster reaction to demand for heating
ECO G High Power

2-Pipe Heat Pump System with Electrical Power Generator

Production of electricity
Generates up to 2 kW depending on air conditioning load.

Panasonic innovates again introducing a new GHP producing his own electricity.
Equipped with a small, high-performance generator. Compressor and generator are driven by gas engine. The generated electricity is used for the fan motor and cooling water pump of its own unit. The generating efficiency is more than 40%.

ECO G High Power
GHP with electrical generator. Only consumes 1% of the electricity required by standard VRF systems!

Comparisons of electrical consumption on a 71 kW outdoor unit:
- Standard VRF for 73 kW: 18.2 kW
- ECO G for 71 kW: 1.33 kW
- ECO G High Power for 71 kW: 0.10 kW

Less than 1% of electrical consumption
2-Pipe Heat Pump System
Easy to add additional units in the future
Load can easily be increased in the future by the addition of indoor and outdoor units without having to plumb pipe shafts.

* When specifying refrigerant pipe work, please choose the size according to the horsepower after the increase of units.

If there is a possibility for addition after setting up, please plan it so that the placement of a ball valve (sold separately) on a branch pipe on indoor/outdoor units is possible.

Non-stop operation, even during maintenance
- System will not stop even during maintenance, due to Manual Backup Operating Function.
- Maintenance is possible during weekdays because it can continue operating during maintenance.
- Automatic Backup Operating Function enables continuous operation. If one outdoor unit stops the backup function will automatically start on the remaining unit and continue operating. During service intervals, the system being serviced can be isolated by a closing valve in the outdoor unit, enabling continuous operation with the still operative outdoor unit.

Long lifetime
- Renewal period prolonged due to rotation function.
  Rotation function, which is run from outdoor units with low operating time, will average the operating hours of each outdoor unit. This extends the periods between maintenance or replacement.

Saving Energy
- Energy savings achieved by the appropriate capacity.
- Equational program function.
  Energy savings are achieved by the appropriate load divider function, which enables efficient operation by concentrating the cooling/heating capacity to one outdoor unit and stopping the other. Compared to conventional machines with a similar COP, this function allows energy savings and thus reduces the running costs, especially in part-load seasons like spring and autumn.
Ease of construction
- By using common header pipe work the installation cost and time is significantly reduced.

By combining all pipes, which were needed for each indoor unit, into a common pipe in each system, the number of pipes are reduced by half* which leads to ease of construction. Furthermore, space of pipes within pipe shafts can be reduced by 2/3.*

Combining all pipes, which were needed for each outdoor unit, into a pipe in each system. (Number of pipes is reduced by half).

*System with approximately 40HP (20HP x 2 units)

EXEMPLARY OF A SYSTEM WITH APPROXIMATELY 40 HP

Hot Water Supply Function
- System Advantage.
The engine waste heat, which is normally exhausted into the atmosphere, is recovered via the heat exchanger and effectively used to heat water, so the GHP Chiller acts as embedded sub system that alleviates the load on the client’s main hot water system, and therefore offers ‘free’ hot water.

Capacity at cooling standard point

<table>
<thead>
<tr>
<th>Outdoor unit</th>
<th>kW</th>
<th>20 HP</th>
<th>20 HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>U-16GE2E5</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-20GE2E5</td>
<td>20.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-25GE2E5</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-30GE2E5</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hot water piping allowable pressure
- MPa: 0.7

Hot water circulation rate
- m³/h: 3.9

Hot water tube size
- Rp: 3/4

Excellent performance
Panasonic 3 WAY Multi system is capable of simultaneous heating/cooling and individual operation of each indoor unit by only one outdoor unit. As a result, efficient individual air conditioning is possible in buildings having diverse room temperatures.

System example
Improved maintenance intervals. The unit only needs to be serviced every 10,000 hours. This is the best in the industry.

Solenoid valve kit
To be fitted on all ‘zones’ to allow simultaneous heating and cooling. Up to 36 indoor units are capable of simultaneous heating/cooling operation. Oil-recovery operation to gives more stable comfort air-conditioning control.

3-PIPE CONTROL SOLENOID VALVE KIT
- 3-PIPE CONTROL PCB
- 3-Pipe control PCB CZ-CAPE2*
  Must be added to the CZ-P56HR3 OR CZ-P160HR3.
* For wall mounted.

VALVE DIMENSIONS
- 9P connector
- Front side
- Service cover
ECO G Water Heat Exchanger for hydronic applications

Connection to chilled water coils in air handling equipment.

Air Handling application
When a top London restaurant opened, it needed large volumes of fresh air to ensure the optimum dining environment. GHP units connected to the cooling coils within the air handling equipment ensured the air was introduced in the right condition in both summer and winter.
Chiller replacement. Chilled water supply to fan coils.

Chiller replacement
When some old chillers needed replacing at the end of their operational lifetime, GHPs with Water Heat Exchangers enabled the project to be carried out in stages whilst still utilising the existing water pipe work and fan coils. This enabled the project to be delivered on time, to a restricted budget and avoided all issues regarding refrigerant in confined spaces.

Connection to ‘close control’ computer equipment.
Computer room applications
When all available electrical power needed to be utilised for the IT equipment for a leading international bank, the cooling load of over 450 kW had to be powered by gas. The outdoor units were connected via Water Heat Exchangers to cooling coils inside the ‘close control’ units thereby maintaining a conditioned environment for temperature and humidity. By utilising the hot water function over 100 kW of hot water are supplied to the building and therefore the additional benefit of considerable CO₂ savings is ensured.

This Part L design has reduced CO₂ Emissions by 26% or 166 tonnes per annum compared to electric chillers.

Specifications subject to change without notice.
Rating Conditions: Cooling Indoor 27°C DB 19°C WB
Outdoor 35°C DB 24°C WB
Heating Indoor 20°C DB Outdoor 7°C DB a°C WIN.

This drawing is copyright. 1. Do not scale this drawing. 2. Errors / omissions to be immediately notified to the Engineer. 3. All dimensions to be checked on site.
### ECO G HIGH POWER

The 2-Pipe Gas Driven VRF with an electrical power generator

ECO G High Power is a revolution in air conditioning design. Fitted with a permanent magnet, non-bearing type generator, it is the first VRF system that can supply heating, cooling, hot water and now also supply electrical power. Each ECO G High Power unit has a 2.0 kW generator, drastically reducing the outdoor unit’s electricity consumption.

<table>
<thead>
<tr>
<th>HP</th>
<th>16 HP</th>
<th>20 HP</th>
<th>25 HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>U-16GEP2E5</td>
<td>U-20GEP2E5</td>
<td>U-25GEP2E5</td>
</tr>
<tr>
<td>Cooling capacity kW</td>
<td>45.0</td>
<td>56.0</td>
<td>71.0</td>
</tr>
<tr>
<td>Hot water (cooling mode) kW</td>
<td>15.0</td>
<td>20.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Power Input kW</td>
<td>0.1 (220~230) 0.36 (240)</td>
<td>0.1 (220~230) 0.36 (240)</td>
<td>0.1 (220~230) 0.36 (240)</td>
</tr>
<tr>
<td>EER Nominal W/W</td>
<td>45.4</td>
<td>45.5</td>
<td></td>
</tr>
<tr>
<td>Max COP (inc hot water)</td>
<td>42.9</td>
<td>42.9</td>
<td></td>
</tr>
<tr>
<td>Gas consumption kW</td>
<td>37.3</td>
<td>47.4</td>
<td>62.3</td>
</tr>
<tr>
<td>Heating capacity kW</td>
<td>50.0</td>
<td>63.0</td>
<td>80.0</td>
</tr>
<tr>
<td>Power Input kW</td>
<td>0.1 (220~230) 0.36 (240)</td>
<td>0.1 (220~230) 0.36 (240)</td>
<td>0.1 (220~230) 0.36 (240)</td>
</tr>
<tr>
<td>COP Nominal</td>
<td>50-200%²</td>
<td>50-200%²</td>
<td>50-200%²</td>
</tr>
<tr>
<td>Gas consumption kW</td>
<td>33.0</td>
<td>42.9</td>
<td>56.1</td>
</tr>
<tr>
<td>COP Average</td>
<td>50-200%²</td>
<td>50-200%²</td>
<td>50-200%²</td>
</tr>
<tr>
<td>Starter amperes A</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Sound pressure level (dBA)</td>
<td>67</td>
<td>58</td>
<td>64</td>
</tr>
<tr>
<td>Dimensions H x W x D mm</td>
<td>2,273 x 1,650 x 1,000 (+80)</td>
<td>2,273 x 1,650 x 1,000 (+80)</td>
<td>2,273 x 1,650 x 1,000 (+80)</td>
</tr>
<tr>
<td>Net weight kg</td>
<td>795</td>
<td>825</td>
<td></td>
</tr>
<tr>
<td>Pipe Connections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas (inch (mm))</td>
<td>1 1/8 (28,58)</td>
<td>1 1/8 (28,58)</td>
<td>1 1/8 (28,58)</td>
</tr>
<tr>
<td>Liquid (inch (mm))</td>
<td>5/8 (15,88)</td>
<td>5/8 (15,88)</td>
<td>5/8 (15,88)</td>
</tr>
<tr>
<td>Exhaust drain port mm</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Indoor/outdoor capacity ratio</td>
<td>50-200%²</td>
<td>50-200%²</td>
<td>50-200%²</td>
</tr>
<tr>
<td>Number of connections indoor²</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
</tbody>
</table>

**Service kits model**

<table>
<thead>
<tr>
<th>Kit CZ-P5K60S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material included</td>
</tr>
<tr>
<td>Oil Filter</td>
</tr>
<tr>
<td>Air Cleaner Element</td>
</tr>
<tr>
<td>Plug</td>
</tr>
<tr>
<td>V BELT (for compressor)</td>
</tr>
<tr>
<td>V Belt (for generator)</td>
</tr>
<tr>
<td>Oil Strainer</td>
</tr>
<tr>
<td>Drain Filter Packing</td>
</tr>
</tbody>
</table>

Rating Conditions: Cooling Indoor 27°C DB / 19°C WB. Cooling Outdoor 35°C DB. Heating (standard) Indoor 20°C DB / 7°C WB. Heating (low temp.) Indoor 20°C DB / 15°C WB or less. Heating (low temp.) Outdoor 2°C DB / 1°C WB. DB: Dry Bulb, WB: Wet Bulb

1) Low temp condition: outdoor temperature -2°C.
2) Indoor unit can be connected to up to 16 kW model (model size 160)

Specifications subject to change without notice.

- Gas consumption is the total (high) calorific value standard.
- Outdoor unit operating sound is measured 1 meter from the front and 1.5 meters above the floor in an anechoic environment.
- Actual installations may have larger values due to ambient noise and reflections.
- Specifications are subject to change without notice.
- Hot water heating capacity is applicable during cooling operation. - The maximum water temperature that can be obtained is 75°C. Water heating performance and temperature vary with the air conditioning load. Because the hot water heating system uses waste heat from the engine, which runs the air conditioning, its ability to heat water is not guaranteed.

22
**U-16GEP2E5 // U-20GEP2E5 // U-25GEP2E5**

**Technical focus**
- 2-Pipe air conditioning system providing cooling or heating
- Up to 2 kW electricity generated (used on the outdoor unit)
- Very efficient generator
- Can connect to up to 24 indoor units
- IU/OU capacity ratio 50–200%
- 15 to 30 kW hot water generation capacity
- Free Hot water provided when in cooling throughout temperature range and in heating when the ambient is above 7°C*
- 200 m maximum allowable piping length (L1)

* Referring to outside temperature.

**Generates electricity during heating or cooling operation**
Generates electricity and air conditioning (heating or cooling) at the same time by using remaining engine power. ECO G High Power can generate 2.0 kW electricity at a generation efficiency of more than 40%.

---

**SERVICE CLEARANCES FOR INSTALLATION**

<table>
<thead>
<tr>
<th>kW</th>
<th>45.0</th>
<th>56.0-71.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Suction refrigerant pipe</td>
<td>Ø 28.5/8</td>
</tr>
<tr>
<td>2</td>
<td>Liquefied refrigerant pipe</td>
<td>Ø 12.7/8</td>
</tr>
<tr>
<td>3</td>
<td>Exhaust gas drain port</td>
<td>Ø 20/25 (accessory)</td>
</tr>
<tr>
<td>4</td>
<td>Electrical power supply port</td>
<td>Ø 20</td>
</tr>
<tr>
<td>5</td>
<td>Inter-unit cable port</td>
<td>Ø 20</td>
</tr>
<tr>
<td>6</td>
<td>Fuel gas port</td>
<td>Ø 20/4</td>
</tr>
<tr>
<td>7</td>
<td>Condensation drain opening</td>
<td>Ø 20</td>
</tr>
<tr>
<td>8</td>
<td>Rain and condensation outlet</td>
<td>Ø 20</td>
</tr>
<tr>
<td>9</td>
<td>Engine exhaust outlet</td>
<td>Ø 20</td>
</tr>
<tr>
<td>10</td>
<td>Suspension holes + Ø 25x30</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Anchor holes + Ø 30x30</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Segmented display</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Coolant intake (top)</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Vent</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Hot water inlet R 3/4</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Hot water outlet R 3/4</td>
<td></td>
</tr>
</tbody>
</table>

---

**TOP VIEW**

---

**FRONT VIEW**
### 2-Pipe Heat Pump System

ECO G and ECO G Multi 2-Pipe for Heat Pump Applications.

The S Series 2-Pipe not only offers improved performance but also increased flexibility. Now available as multi-systems, many combinations are possible, from 16 HP to 50 HP, allowing for more power and enabling accurate matching of a system building load. Additional new features include part load engine management and compressor run hour equalisation.

<table>
<thead>
<tr>
<th>HP</th>
<th>16 HP</th>
<th>20 HP</th>
<th>25 HP</th>
<th>30 HP</th>
<th>32 HP</th>
<th>36 HP</th>
<th>40 HP</th>
<th>45 HP</th>
<th>50 HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity kW</td>
<td>45,00</td>
<td>56,00</td>
<td>71,00</td>
<td>85,00</td>
<td>90,00</td>
<td>101,00</td>
<td>112,00</td>
<td>127,00</td>
<td>142,00</td>
</tr>
<tr>
<td>Hot water (cooling mode) kW</td>
<td>15,00</td>
<td>20,00</td>
<td>30,00</td>
<td>30,00</td>
<td>30,00</td>
<td>30,00</td>
<td>35,00</td>
<td>40,00</td>
<td>50,00</td>
</tr>
<tr>
<td>Power Input kW</td>
<td>0,71</td>
<td>1,02</td>
<td>1,33</td>
<td>1,70</td>
<td>1,42</td>
<td>1,73</td>
<td>2,35</td>
<td>2,35</td>
<td>2,66</td>
</tr>
<tr>
<td>EER (Calorific Value)¹ High / Low W/W</td>
<td>1,48 / 1,64</td>
<td>1,48 / 1,64</td>
<td>1,35 / 1,28</td>
<td>1,22 / 1,26</td>
<td>1,48 / 1,44</td>
<td>1,43 / 1,39</td>
<td>1,35 / 1,39</td>
<td>1,15 / 1,28</td>
<td></td>
</tr>
<tr>
<td>Max COP (inc hot water)</td>
<td>1,97</td>
<td>1,89</td>
<td>1,64</td>
<td>1,42</td>
<td>1,73</td>
<td>1,93</td>
<td>2,04</td>
<td>1,74</td>
<td>1,64</td>
</tr>
<tr>
<td>Gas consumption kW</td>
<td>79,70</td>
<td>97,10</td>
<td>68,40</td>
<td>67,9</td>
<td>59,40</td>
<td>48,80</td>
<td>78,20</td>
<td>77,6</td>
<td>99,50</td>
</tr>
<tr>
<td>Heating capacity STD / Low temperature² kW</td>
<td>50,00 / 53,00</td>
<td>63,00 / 67,00</td>
<td>80,00 / 78,00</td>
<td>95,00 / 90,00</td>
<td>100,00 / 106,00</td>
<td>113,00 / 120,00</td>
<td>127,00 / 134,00</td>
<td>142,00 / 145,00</td>
<td>160,00 / 166,00</td>
</tr>
<tr>
<td>Power Input kW</td>
<td>0,60</td>
<td>0,64</td>
<td>0,83</td>
<td>1,45</td>
<td>1,20</td>
<td>1,24</td>
<td>1,28</td>
<td>1,47</td>
<td>1,66</td>
</tr>
<tr>
<td>COP (Calorific Value)¹ High / Low W/W</td>
<td>1,51 / 1,68</td>
<td>1,46 / 1,62</td>
<td>1,48 / 1,64</td>
<td>1,37 / 1,46</td>
<td>1,48 / 1,44</td>
<td>1,47 / 1,63</td>
<td>1,48 / 1,64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas consumption kW</td>
<td>59,50</td>
<td>69,50</td>
<td>65,00</td>
<td>65,00</td>
<td>59,40</td>
<td>68,80</td>
<td>85,00</td>
<td>85,00</td>
<td>75,00</td>
</tr>
<tr>
<td>Heating capacity STD / Low temperature² kW</td>
<td>50,00 / 53,00</td>
<td>63,00 / 67,00</td>
<td>80,00 / 78,00</td>
<td>95,00 / 90,00</td>
<td>100,00 / 106,00</td>
<td>113,00 / 120,00</td>
<td>127,00 / 134,00</td>
<td>142,00 / 145,00</td>
<td>160,00 / 166,00</td>
</tr>
<tr>
<td>COP Average</td>
<td>1,50</td>
<td>1,43</td>
<td>1,32</td>
<td>1,29</td>
<td>1,30</td>
<td>1,46</td>
<td>1,43</td>
<td>1,36</td>
<td>1,32</td>
</tr>
<tr>
<td>Starter amperes A</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Sound pressure level dB(A)</td>
<td>57</td>
<td>58</td>
<td>62</td>
<td>63</td>
<td>60</td>
<td>61</td>
<td>61</td>
<td>63</td>
<td>65</td>
</tr>
<tr>
<td>Dimensions Height mm</td>
<td>2,273</td>
<td>2,273</td>
<td>2,273</td>
<td>2,273</td>
<td>2,273</td>
<td>2,273</td>
<td>2,273</td>
<td>2,273</td>
<td>2,273</td>
</tr>
<tr>
<td>Width mm</td>
<td>1,650</td>
<td>1,650</td>
<td>1,650</td>
<td>2,026</td>
<td>1,990</td>
<td>1,990</td>
<td>1,990</td>
<td>1,990</td>
<td>1,990</td>
</tr>
<tr>
<td>Depth mm</td>
<td>1,000 (+80)</td>
<td>1,000 (+80)</td>
<td>1,000 (+80)</td>
<td>1,000 (+80)</td>
<td>1,000 (+80)</td>
<td>1,000 (+80)</td>
<td>1,000 (+80)</td>
<td>1,000 (+80)</td>
<td>1,000 (+80)</td>
</tr>
<tr>
<td>Net weight kg</td>
<td>97</td>
<td>98</td>
<td>62</td>
<td>63</td>
<td>60</td>
<td>61</td>
<td>61</td>
<td>63</td>
<td>65</td>
</tr>
<tr>
<td>Pipe Connections Gas Inch (mm)</td>
<td>1 1/8 (28,58)</td>
<td>1 1/8 (28,58)</td>
<td>1 1/8 (28,58)</td>
<td>1 1/4 (31,75)</td>
<td>1 1/4 (31,75)</td>
<td>1 1/4 (31,75)</td>
<td>1 1/4 (31,75)</td>
<td>1 1/4 (31,75)</td>
<td>1 1/4 (31,75)</td>
</tr>
<tr>
<td>Liquid Inch (mm)</td>
<td>1/2 (12,70)</td>
<td>5/8 (15,88)</td>
<td>5/8 (15,88)</td>
<td>3/4 (19,05)</td>
<td>3/4 (19,05)</td>
<td>3/4 (19,05)</td>
<td>3/4 (19,05)</td>
<td>3/4 (19,05)</td>
<td>3/4 (19,05)</td>
</tr>
</tbody>
</table>

#### GHP Service kits model names

<table>
<thead>
<tr>
<th>Kit C2-PSE505S</th>
<th>Kit C2-PSE560S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor unit reference</td>
<td>U-16GEG5ES / U-20GEG5ES / U-25GEG5ES</td>
</tr>
<tr>
<td>Material included on the kit</td>
<td></td>
</tr>
<tr>
<td>Oil Filter</td>
<td>1</td>
</tr>
<tr>
<td>Air Cleaner Element (Air Filter)</td>
<td>1</td>
</tr>
<tr>
<td>Plug</td>
<td>4</td>
</tr>
<tr>
<td>V BELT (for compressor)</td>
<td>1</td>
</tr>
<tr>
<td>V BELT (for generator)</td>
<td>-</td>
</tr>
<tr>
<td>Oil Strainer</td>
<td>1</td>
</tr>
<tr>
<td>Drain Filter Packing</td>
<td>1</td>
</tr>
</tbody>
</table>

---


- Gas consumption is the total (high) calorific value standard.
- Environmentally friendly refrigerant R410A.
- Outdoor unit operating sound is measured 1 meter from the front and 1.5 meters above the floor (in an anechoic environment). Actual installations may have larger values due to ambient noise and reflections.
- Specifications subject to change without notice.

---


- Gas consumption is the total (high) calorific value standard.
- Environmentally friendly refrigerant R410A.
- Outdoor unit operating sound is measured 1 meter from the front and 1.5 meters above the floor (in an anechoic environment). Actual installations may have larger values due to ambient noise and reflections.
- Specifications subject to change without notice.

---

* In these combinations, GEP2E5 is able to connect to a W-multi system Specifications subject to change without notice instead of a GE2E5.

1) Referred to Natural Gas (HCV=55,489 MJ/kg; LCV=50,013 MJ/kg). 2) Low temperature condition: outdoor temperature 2°C.

Specifications subject to change without notice.

Cooling and heating capacities in the tables are determined under the test conditions of JIS B 8627. Effective heating requires that the outdoor air intake temperature be at least -20°C DB or -21°C WB.

- Gas consumption is the total (high) calorific value standard.
- Environmentally friendly refrigerant R410A.
- Outdoor unit operating sound is measured 1 meter from the front and 1.5 meters above the floor (in an anechoic environment). Actual installations may have larger values due to ambient noise and reflections.
- Specifications are subject to change without notice. Hot water heating capacity is applicable during cooling operation. The maximum water temperature that can be obtained is 75°C. Water heating performance and temperature vary with the air conditioning load. Because the hot water heating system uses waste heat from the engine, which runs the air conditioning, its ability to heat water is not guaranteed.
U-16GE2E5 // U-20GE2E5 // U-25GE2E5 // U-30GE2E5

Technical focus

- Reduced gas consumption by Miller-cycle engine
- Reduced electrical power consumption by using DC Motors
- Lightweight design reduces weight
- Capacity ratio 50-130% (single models only)
- Quiet mode offers a further 2 dB(A) reduction
- Part load efficiencies increased
- Connectivity increased - now up to 48 indoor units
- Multi-systems with combinations from 13 HP up to 50 HP
- 10,000 run hours between engine service intervals (equivalent to one maintenance every 3.2 years*)
- 200 m maximum allowable piping length (L1)
- Extended pipe runs (total 780 m)

Full heating capacity down to -20°C
No defrost cycle

Sample installation

* Assuming 3,120 running hours per year - 12 h x 5 days x 52 weeks
### ECO G 3 WAY

3 Way Heat Recovery System with Simultaneous Heating & Cooling

The only 3 Way GHP system in Europe, the S Series ECO G 3 Way offers even more performance and outstanding features when you need simultaneous heating and cooling. Now with capacities available from 16 HP to 25 HP, Panasonic offers the greatest choice and flexibility to solve any power problem or site requirement.

<table>
<thead>
<tr>
<th>HP</th>
<th>16 HP</th>
<th>20 HP</th>
<th>25 HP</th>
<th>26 HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>U-16GF2E5</td>
<td>U-20GF2E5</td>
<td>U-25GF2E5</td>
<td></td>
</tr>
<tr>
<td>Cooling capacity kW</td>
<td>45,00</td>
<td>56,00</td>
<td>71,00</td>
<td></td>
</tr>
<tr>
<td>Power input cooling kW</td>
<td>0,71</td>
<td>1,02</td>
<td>1,33</td>
<td></td>
</tr>
<tr>
<td>EER (Calorific Value)¹ High / Low WW</td>
<td>1,48 / 1,34</td>
<td>1,48 / 1,36</td>
<td>1,35 / 1,28</td>
<td></td>
</tr>
<tr>
<td>Cooling gas consumption kW</td>
<td>29,7</td>
<td>39,1</td>
<td>60,4</td>
<td></td>
</tr>
<tr>
<td>Heating capacity STD kW</td>
<td>50,00</td>
<td>63,00</td>
<td>80,00</td>
<td></td>
</tr>
<tr>
<td>Low temperature² kW</td>
<td>47,5</td>
<td>66,4</td>
<td>62,3</td>
<td></td>
</tr>
<tr>
<td>COP (Calorific Value)¹ High / Low WW</td>
<td>1,48 / 1,42</td>
<td>1,48 / 1,64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas consumption STD kW</td>
<td>22,5</td>
<td>42,5</td>
<td>53,2</td>
<td></td>
</tr>
<tr>
<td>Low temperature² kW</td>
<td>27,0</td>
<td>47,5</td>
<td>58,3</td>
<td></td>
</tr>
<tr>
<td>COP Average</td>
<td>1,50</td>
<td>1,43</td>
<td>1,32</td>
<td></td>
</tr>
<tr>
<td>Starter amperes A</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Operation sound (dB(A))</td>
<td>57</td>
<td>58</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Dimensions H x W x D mm</td>
<td>2,273 x 1,650 x 1,000 (+80)</td>
<td>2,273 x 1,650 x 1,000 (+80)</td>
<td>2,273 x 1,650 x 1,000 (+80)</td>
<td></td>
</tr>
<tr>
<td>Net weight kg</td>
<td>775</td>
<td>775</td>
<td>805</td>
<td></td>
</tr>
<tr>
<td>Pipe Connections Gas Inch (mm)</td>
<td>1 1/8 (28,58)</td>
<td>1 1/8 (28,58)</td>
<td>1 1/8 (28,58)</td>
<td></td>
</tr>
<tr>
<td>Liquid Inch (mm)</td>
<td>3/4 (19,05)</td>
<td>3/4 (19,05)</td>
<td>3/4 (19,05)</td>
<td></td>
</tr>
<tr>
<td>Discharge Inch (mm)</td>
<td>7/8 (22,22)</td>
<td>1 (25,40)</td>
<td>1 (25,40)</td>
<td></td>
</tr>
<tr>
<td>Fuel gas R3/4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Exhaust drain port mm</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Indoor/outdoor capacity ratio</td>
<td>50-200%³</td>
<td>50-200%³</td>
<td>50-200%³</td>
<td></td>
</tr>
<tr>
<td>Number of connected indoor units</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

**Solenoid valve kit**

| KIT-P60HR3 | KIT-P60HR3 | 3-Pipe control Solenoid valve kit (up to 5,6kW) |
| C2-P60HR3 | Solenoid valve kit (up to 5,6kW) |
| C2-CAPE2 | 3-Pipe control PCB |

| KIT-P160HR3 | KIT-P160HR3 | 3-Pipe control Solenoid valve kit (from 5,6kW to 10,6kW) |
| C2-P160HR3 | Solenoid valve kit (from 5,6kW to 10,6kW) |
| C2-CAPE2 | 3-Pipe control PCB |
| C2-CAPEK2 | 3-Pipe control PCB for wall mounted |

**GHP Service kits model name**

<table>
<thead>
<tr>
<th>KIT CZ-P70S500S</th>
<th>Outdoor unit reference</th>
</tr>
</thead>
</table>

**Material included on the kit**

- Oil Filter
- Air Cleaner Element (Air Filter)
- Plug
- V BELT (For compressor)
- V Belt (For generator)
- Oil Strainer
- Drain Filter Packing

1) Referred to Natural Gas (HCV=55,489 MJ/kg; LCV=50,013 MJ/kg). 2) Low temperature condition: outdoor temperature 2°C. 3) Indoor unit can be connected to up to 16 kW model (model size 60).

Specifications subject to change without notice.

- Cooling and heating capacities in the tables are determined under the test conditions of JIS B 8627.
- Effective heating requires that the outdoor air intake temperature be at least -20°C DB or -21°C WB.

- Gas consumption is the total (high) calorific value standard. - Outdoor unit operating sound is measured 1 meter from the front and 1.5 meters above the floor (in an anechoic environment). Actual installations may have larger values due to ambient noise and reflections. - Specifications are subject to change without notice. - Hot water heating capacity is applicable during cooling operation. - The maximum water temperature that can be obtained is 75°C. Water heating performance and temperature vary with the air conditioning load. Because the hot water heating system uses waste heat from the engine, which runs the air conditioning, its ability to heat water is not guaranteed.
U-16GF2E5 // U-20GF2E5 // U-25GF2E5

Technical focus

- Simultaneous heating and cooling for total control
- Reduced gas consumption by Miller-cycle engine
- Reduced electrical power consumption by using DC Motors
- Part load efficiencies increased
- Connectability increased to up to 24 indoor units
- 145 m maximum allowable piping length, L1
- Capacity ratio 50–200%
- Extended pipe runs (total 780 m)
- Quiet mode offers a further 2 dB(A) reduction
- Full heating capacity down to -21°C
- Option of using LPG as a power supply (increases flexibility and avoids problems of potential site restrictions in the future. The purer fuel is also excellent for further reductions in CO₂ emissions)

- No defrost cycle
- 10,000 run hours between engine service intervals (equivalent to one maintenance every 3.2 years*)

* Assuming 3,120 running hours per year - 12 h x 5 days x 52 weeks

Additional parts

3-Pipe control Solenoid valve kit
CZ-P56HR3: Up to 5.6 kW
CZ-P160HR3: From 5.7 to 16 kW
KIT-P56HR3 (CZ-P56HR3+CZ-CAPE2)
KIT-P160HR3 (CZ-P160HR3+CZ-CAPE2)

* For conference rooms and other locations where low noise is required, pay attention to the installation location and install in a corridor etc.

SERVICE CLEARANCES FOR INSTALLATION

<table>
<thead>
<tr>
<th>kW</th>
<th>45.0</th>
<th>56.0-71.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Section refrigerant pipe Ø 28.58</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Discharge refrigerant pipe Ø 22.22 Ø 25.4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Liquid refrigerant pipe Ø 19.05</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Exhaust gas drain port HOS1 OD Ø 25 (accessory)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Electrical power supply port Ø 28</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Inter-unit cable port Ø 28</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Fuel gas port R3/4</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Condensation drain opening Ø 20</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Rain and condensation outlet</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Engine exhaust outlet</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Suspension holes 4-Ø 20x30</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Anchor holes 4-Ø 22x30</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Segmented display</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Coolant intake (top)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Post</td>
<td></td>
</tr>
</tbody>
</table>

TOP VIEW

- 3-Pipe control PCB CZ-CAPE2*.
  Must be added to the CZ-P56HR3 OR CZ-P160HR3.
  * For wall mounted.

3-Pipe control Solenoid valve kit
CZ-P56HR3: Up to 5.6 kW
CZ-P160HR3: From 5.7 to 16 kW
KIT-P56HR3 (CZ-P56HR3+CZ-CAPE2)
KIT-P160HR3 (CZ-P160HR3+CZ-CAPE2)

* For conference rooms and other locations where low noise is required, pay attention to the installation location and install in a corridor etc.
Indoor units for ECO G
Wide choice of models depending on the indoor requirements.
4 Way 90x90 Cassette
Wide & Comfortable Airflow
This proprietary design has wide-angle discharge outlets and flaps are larger in the middle, featuring a shape based on a combination of geometrics and the testing of prototype units. Air coming out of the center of the discharge outlets travels farther. From the sides of each outlet, where the openings are larger, airflow spreads out to reach the corners of the room. Air is discharged across a wide area from the four sides of the unit. The curves on the room temperature distribution graph expand gently out through 360° in a circle centered on the indoor unit.

Flexible 3D air-flow control
Comfort air flow control & proper energy use. Flexible Air flow direction control by individual flap control:
- 4 Flaps can be controlled individually (by standard wired remote controller*).
- It can make more flexible Air-flow control to be matched to several demands can be accommodated in one space.

New 360° Air Flow for better comfort
By redesigning the air-outlet and flap, Soft & 3D air flow circulates whole space and provides even temperature distribution in the room.

360° air flow

High-efficient & Silent turbo Fan.
It is realized more air volume and more silent due to new development of a bigger fan chassis than previous one and optimization design of airflow path.

New 360º Air Flow
IT’S HOT
IT’S COLD
BETTER COMFORT

New design
Wide direction air discharge by outlet design.
The Circle Flow Flap and redesigned air outlet eliminate airflow along recessed parts on the ceiling to reduce contamination. If air flows only along these recessed parts, they will quickly become dirty. These new features greatly reduce accumulations of dirt.

Current Model
360° Air Flow

Simulated conditions: Floor area: 225 m². Ceiling height: 3 m, Unit 5 HP type.

Outlet A: Swing (only upper)
Outlet B: Fixed to upper
Outlet C: Swing
Outlet D: Fixed to Lower

* It needs pre-setting for this function at System test-run procedure.
# ECO G systems indoor units range

<table>
<thead>
<tr>
<th>kW</th>
<th>1.5 kW</th>
<th>2.2 kW</th>
<th>2.8 kW</th>
<th>3.0 kW</th>
<th>3.6 kW</th>
<th>4.0 kW</th>
<th>4.5 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U1 Type // 4 Way 90x90 Cassette</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Y2 TYPE // 4 Way 60x60 Cassette</strong></td>
<td><img src="image8.png" alt="Image" /></td>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
<td><img src="image13.png" alt="Image" /></td>
<td><img src="image14.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>L1 Type // 2 Way Cassette</strong></td>
<td><img src="image15.png" alt="Image" /></td>
<td><img src="image16.png" alt="Image" /></td>
<td><img src="image17.png" alt="Image" /></td>
<td><img src="image18.png" alt="Image" /></td>
<td><img src="image19.png" alt="Image" /></td>
<td><img src="image20.png" alt="Image" /></td>
<td><img src="image21.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>D1 Type // 1 Way Cassette</strong></td>
<td><img src="image22.png" alt="Image" /></td>
<td><img src="image23.png" alt="Image" /></td>
<td><img src="image24.png" alt="Image" /></td>
<td><img src="image25.png" alt="Image" /></td>
<td><img src="image26.png" alt="Image" /></td>
<td><img src="image27.png" alt="Image" /></td>
<td><img src="image28.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>F2 Type // Variable Static Pressure Hide Away</strong></td>
<td><img src="image29.png" alt="Image" /></td>
<td><img src="image30.png" alt="Image" /></td>
<td><img src="image31.png" alt="Image" /></td>
<td><img src="image32.png" alt="Image" /></td>
<td><img src="image33.png" alt="Image" /></td>
<td><img src="image34.png" alt="Image" /></td>
<td><img src="image35.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>M1 Type // Slim Variable Static Pressure Hide Away</strong></td>
<td><img src="image36.png" alt="Image" /></td>
<td><img src="image37.png" alt="Image" /></td>
<td><img src="image38.png" alt="Image" /></td>
<td><img src="image39.png" alt="Image" /></td>
<td><img src="image40.png" alt="Image" /></td>
<td><img src="image41.png" alt="Image" /></td>
<td><img src="image42.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>E2 Type // High Static Pressure Hide Away</strong></td>
<td><img src="image43.png" alt="Image" /></td>
<td><img src="image44.png" alt="Image" /></td>
<td><img src="image45.png" alt="Image" /></td>
<td><img src="image46.png" alt="Image" /></td>
<td><img src="image47.png" alt="Image" /></td>
<td><img src="image48.png" alt="Image" /></td>
<td><img src="image49.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Heat Recovery With DX Coil</strong></td>
<td><img src="image50.png" alt="Image" /></td>
<td><img src="image51.png" alt="Image" /></td>
<td><img src="image52.png" alt="Image" /></td>
<td><img src="image53.png" alt="Image" /></td>
<td><img src="image54.png" alt="Image" /></td>
<td><img src="image55.png" alt="Image" /></td>
<td><img src="image56.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>T2 Type // Ceiling</strong></td>
<td><img src="image57.png" alt="Image" /></td>
<td><img src="image58.png" alt="Image" /></td>
<td><img src="image59.png" alt="Image" /></td>
<td><img src="image60.png" alt="Image" /></td>
<td><img src="image61.png" alt="Image" /></td>
<td><img src="image62.png" alt="Image" /></td>
<td><img src="image63.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>K2/K1 Type // Wall Mounted</strong></td>
<td><img src="image64.png" alt="Image" /></td>
<td><img src="image65.png" alt="Image" /></td>
<td><img src="image66.png" alt="Image" /></td>
<td><img src="image67.png" alt="Image" /></td>
<td><img src="image68.png" alt="Image" /></td>
<td><img src="image69.png" alt="Image" /></td>
<td><img src="image70.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>P1 Type // Floor Standing</strong></td>
<td><img src="image71.png" alt="Image" /></td>
<td><img src="image72.png" alt="Image" /></td>
<td><img src="image73.png" alt="Image" /></td>
<td><img src="image74.png" alt="Image" /></td>
<td><img src="image75.png" alt="Image" /></td>
<td><img src="image76.png" alt="Image" /></td>
<td><img src="image77.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>R1 Type // Concealed Floor Standing</strong></td>
<td><img src="image78.png" alt="Image" /></td>
<td><img src="image79.png" alt="Image" /></td>
<td><img src="image80.png" alt="Image" /></td>
<td><img src="image81.png" alt="Image" /></td>
<td><img src="image82.png" alt="Image" /></td>
<td><img src="image83.png" alt="Image" /></td>
<td><img src="image84.png" alt="Image" /></td>
</tr>
</tbody>
</table>

Wide choice of models depending on the indoor requirements.
<table>
<thead>
<tr>
<th>5,6 kW</th>
<th>6,0 kW</th>
<th>7,3 kW</th>
<th>9,0 kW</th>
<th>10,6 kW</th>
<th>14,0 kW</th>
<th>16,0 kW</th>
<th>22,4 kW</th>
<th>28,0 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-56MU1E5A</td>
<td>S-60MU1E5A</td>
<td>S-73MU1E5A</td>
<td>S-90MU1E5A</td>
<td>S-106MU1E5A</td>
<td>S-140MU1E5A</td>
<td>S-160MU1E5A</td>
<td>S-224ME2E5A</td>
<td>S-280ME2E5A</td>
</tr>
<tr>
<td>S-6AMY2E5A</td>
<td>S-6AML1E5</td>
<td>S-73ML1E5</td>
<td>S-90MF2E5A</td>
<td>S-106MF2E5A</td>
<td>S-140MF2E5A</td>
<td>S-160MF2E5A</td>
<td>S-224ME1E5</td>
<td>S-280ME1E5</td>
</tr>
<tr>
<td>S-56MF2E5A</td>
<td>S-60MF2E5A</td>
<td>S-73MF2E5A</td>
<td>S-90MF2E5A</td>
<td>S-106MF2E5A</td>
<td>S-140MF2E5A</td>
<td>S-160MF2E5A</td>
<td>S-224ME2E5A</td>
<td>S-280ME2E5A</td>
</tr>
<tr>
<td>S-56MT2E5A</td>
<td>S-60MT2E5A</td>
<td>S-73MT2E5A</td>
<td>S-90MT2E5A</td>
<td>S-106MT2E5A</td>
<td>S-140MT2E5A</td>
<td>S-160MT2E5A</td>
<td>S-224ME1E5</td>
<td>S-280ME1E5</td>
</tr>
<tr>
<td>S-56MK1E5A</td>
<td>S-60MK1E5A</td>
<td>S-73MK1E5A</td>
<td>S-90MK1E5A</td>
<td>S-106MK1E5A</td>
<td>S-140MK1E5A</td>
<td>S-160MK1E5A</td>
<td>S-224ME2E5A</td>
<td>S-280ME2E5A</td>
</tr>
<tr>
<td>S-56MP1E5</td>
<td>S-71MP1E5</td>
<td>S-71MP1E5</td>
<td>S-71MP1E5</td>
<td>S-71MP1E5</td>
<td>S-71MP1E5</td>
<td>S-71MP1E5</td>
<td>S-71MP1E5</td>
<td>S-71MP1E5</td>
</tr>
</tbody>
</table>

VRF SYSTEMS ECO G
NEW
U1 TYPE
4 WAY 90X90 CASSETTE
SEMI CONCEALED
CASSETTE

The award winning range of U1 type cassettes are smaller, shallower and lighter than previous models and feature a 950 x 950mm panel throughout. The DC fan motor and air discharge louver ensure quiet, optimum air distribution.

Technical focus
- Compact design
- Reduced sound levels (from previous models)
- DC fan motor for increased efficiency
- Powerful drain pump gives 850mm lift
- Lightweight design
- Fresh air knockout
- Branch duct connection
- Optional air-intake plenum CZ-FD02

Air intake chamber
1. Air intake box CZ-BCU2 for main unit.
2. Air intake box CZ-ATU2* for Air intake plenum. CZ-CT2 for Part to close air flow for the cassette 90x90 series U1.

*A when using air intake box (CZ-ATU2), Air intake plenum (CZ-FD02) is required.

Energy saving
Easy maintenance
SELF-DIAGNOSING
For more comfort
AUTOMATIC FAN
Perfect humidity control
MILD DRY
Further comfort
AUTOMATIC RESTART
Practical operations
AIR SWEEP
Easy to install
BUILD-IN DRAIN PUMP
Easy control by BMS
CONNECTIVITY

Internet Control Ready
Internet Control
Energy saving
Environmentally friendly refrigerant R32/R4
Easy maintenance
SELF-DIAGNOSING
For more comfort
AUTOMATIC FAN
Perfect humidity control
MILD DRY
Further comfort
AUTOMATIC RESTART
Practical operations
AIR SWEEP
Easy to install
BUILD-IN DRAIN PUMP
Easy control by BMS
CONNECTIVITY

Panel
CZ-KPU21

Optional Controller
Wired remote controller
CZ-RTC3
Wired remote controller
CZ-RWSU2
Simplified remote controller
CZ-RE2C2

Optional Controller
Timer remote controller
CZ-RTC2

Optional Controller
Wireless remote controller
CZ-WK002

Optional Controller
Simplified remote controller
CZ-RE2C2

A drain height of approx. 850mm from the ceiling surface
The drain height can be increased by approximately 350mm over the conventional value by using a high-lift drain pump, and long horizontal piping is possible.

---

Model¹
S-22MU1E5A  S-28MU1E5A  S-36MU1E5A  S-45MU1E5A  S-56MU1E5A  S-60MU1E5A  S-73MU1E5A  S-90MU1E5A  S-106MU1E5A  S-140MU1E5A  S-160MU1E5A

Power source 230 V / Single Phase / 50 Hz

Cooling capacity kW 2,2 2,8 3,6 4,5 5,6 6,0 7,3 9,0 10,6 14,0 16,0

Power input cooling W 20 20 20 20 25 35 40 40 95 100 115

Operating current cooling A 0,19 0,19 0,19 0,19 0,22 0,31 0,33 0,36 0,71 0,76 0,89

Heating capacity kW 2,5 3,2 4,2 5,0 6,3 7,1 8,0 10,0 11,4 16,0 18,0

Power input heating W 20 20 20 20 25 35 40 40 85 100 105

Operating current heating A 0,17 0,17 0,17 0,17 0,20 0,30 0,32 0,34 0,65 0,73 0,80

Fan type Turbo fan Turbo fan Turbo fan Turbo fan Turbo fan Turbo fan Turbo fan Turbo fan Turbo fan Turbo fan Turbo fan


Dimensions H x W x D mm 256 (+33,5) x 840 (950) x 840 (950) 319 (+33,5) x 840 (950) x 840 (950)

Pipe connections Liquid inch (mm) 1/4 (6,35) 1/4 (6,35) 1/4 (6,35) 1/4 (6,35) 1/4 (6,35) 3/8 (9,52) 3/8 (9,52) 3/8 (9,52) 3/8 (9,52) 3/8 (9,52) 3/8 (9,52)

Gas inch (mm) 1/2 (12,7) 1/2 (12,7) 1/2 (12,7) 1/2 (12,7) 1/2 (12,7) 5/8 (15,88) 5/8 (15,88) 5/8 (15,88) 5/8 (15,88) 5/8 (15,88) 5/8 (15,88)


Net weight kg 23 23 23 23 23 24 24 24 27 27 27

Rating Conditions: Cooling Indoor 27°C DB / 19°C WB. Cooling Outdoor 35°C DB / 24°C WB. Heating Indoor 20°C DB. Heating Outdoor 7°C DB / 6°C WB.

DB: Dry Bulb; WB: Wet Bulb.

¹) Available from April 2014.
Y2 TYPE
4 WAY 60X60 CASSETTE
MINI SEMI CONCEALED CASSETTE

Designed to fit exactly into a 600 x 600mm ceiling grid without the need to alter the bar configuration, the Y2 is ideal for small commercial and retrofit applications. In addition, the improvements to efficiency make this one of the most advanced units in the industry.

Technical focus
- Mini cassette fits into a 600 x 600mm ceiling grid
- Fresh air knock out
- Multidirectional air flow
- Powerful drain pump gives 850mm lift
- Turbo fans and heat exchanger fins with improved design
- DC fan motors with variable speed, new heat exchangers, etc. ensure an efficient power consumption

Special designed flap
The flap can be removed easily for washing with water.

A drain height of approx. 850mm from the ceiling surface
The drain height can be increased by approximately 350mm over the conventional value by using a high-lift drain pump, and long horizontal piping is possible.

A lightweight unit at 18.4 kg the unit is also very slim with a height of only 288mm, making installation possible even in narrow ceilings.

Panel
CZ-NP73A (size 700 x 700mm)
CZ-NP73B (size 625 x 625mm)

Model¹
- S-15MY2ESA
- S-22MY2ESA
- S-28MY2ESA
- S-36MY2ESA
- S-45MY2ESA
- S-56MY2ESA

Power source
200 V / Single Phase / 50 Hz

Cooling capacity
- kW: 1.5, 2.2, 2.8, 3.6, 4.5, 5.6
- Input cooling W: 35, 35, 35, 40, 40, 45
- Operating current cooling A: 0.30, 0.30, 0.30, 0.30, 0.32, 0.35

Heating capacity
- kW: 1.7, 2.7, 3.2, 4.2, 5.0, 6.3
- Input heating W: 30, 30, 35, 35, 35, 35
- Operating current heating A: 0.25, 0.25, 0.25, 0.25, 0.30, 0.30

Fan type
- Centrifugal fan

Air volume
- Cooling m³/h: 534 / 492 / 336, 546 / 492 / 336, 558 / 504 / 336, 567 / 504 / 336
- Heating m³/h: 544 / 504 / 336, 558 / 504 / 336, 576 / 522 / 336

Drainage
- Height: 25 / 33 / 35, 25 / 33 / 35, 25 / 33 / 35
- Diameter: 25 / 33 / 35, 25 / 33 / 35, 25 / 33 / 35

Dimensions
- H x W x D mm: 288 x 583 x 583, 288 x 583 x 583, 288 x 583 x 583

Pipe connections
- Liquid: 1/4 (6,35), 1/4 (6,35), 1/4 (6,35)
- Gas: 1/2 (12,7), 1/2 (12,7), 1/2 (12,7)

Net weight
- kg: 20.4 (18 + 2,4), 20.4 (18 + 2,4), 20.4 (18 + 2,4)

DB: Dry Bulb; WB: Wet Bulb.

Optional Controller
- Wired remote controller
- Timer remote controller
- Wireless remote controller
- Simplified remote controller

Model
<table>
<thead>
<tr>
<th>Panel Model</th>
<th>Controller Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>CZ-NP73A</td>
<td>Wired remote controller CZ-RTC3</td>
</tr>
<tr>
<td>CZ-NP73B</td>
<td>Wired remote controller CZ-RTC2</td>
</tr>
<tr>
<td></td>
<td>Wireless remote controller CZ-RWSK2</td>
</tr>
<tr>
<td></td>
<td>Simplified remote controller CZ-RE2C2</td>
</tr>
</tbody>
</table>

1) Available from April 2014.
Slim, compact and lightweight units. Remarkable size and weight reductions have been achieved by improvement of the design around the fan, the weight of all models now being 30 kg.

**Technical focus**
- Airflow and distribution is automatically altered depending on the operational mode of the unit.
- Drain up is possible up to 500mm from the drain port.
- Simple maintenance

**Simple maintenance**
The drain pan is equipped with site wiring and can be removed. The fan case has a split construction, and the fan motor can be removed easily when the lower case is removed.

Airflow and distribution is automatically altered depending on the operational mode of the unit.

Drain up is possible up to 500mm from the drain port.

Maintenance of the drain pump is possible from two sides, from the left side (piping side) and from the inside of the unit.

### Model Data

<table>
<thead>
<tr>
<th>Model</th>
<th>S-22ML1E5</th>
<th>S-28ML1E5</th>
<th>S-36ML1E5</th>
<th>S-45ML1E5</th>
<th>S-56ML1E5</th>
<th>S-73ML1E5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power source</strong></td>
<td>230 V / Single Phase / 50 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cooling capacity kW</strong></td>
<td>2.2</td>
<td>2.8</td>
<td>3.6</td>
<td>4.5</td>
<td>5.6</td>
<td>7.3</td>
</tr>
<tr>
<td><strong>Power input cooling W</strong></td>
<td>96</td>
<td>92</td>
<td>93</td>
<td>97</td>
<td>97</td>
<td>145</td>
</tr>
<tr>
<td><strong>Operating current A</strong></td>
<td>0.45</td>
<td>0.45</td>
<td>0.45</td>
<td>0.45</td>
<td>0.45</td>
<td>0.45</td>
</tr>
<tr>
<td><strong>Heating capacity kW</strong></td>
<td>2.5</td>
<td>3.2</td>
<td>4.2</td>
<td>5.8</td>
<td>6.3</td>
<td>8.0</td>
</tr>
<tr>
<td><strong>Power input heating W</strong></td>
<td>98</td>
<td>60</td>
<td>61</td>
<td>65</td>
<td>65</td>
<td>109</td>
</tr>
<tr>
<td><strong>Operating current heating A</strong></td>
<td>0.29</td>
<td>0.29</td>
<td>0.29</td>
<td>0.29</td>
<td>0.29</td>
<td>0.68</td>
</tr>
<tr>
<td><strong>Fan type</strong></td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
</tr>
<tr>
<td><strong>Air volume Hi / Med / Lo m³/h</strong></td>
<td>480 / 420 / 360</td>
<td>540 / 480 / 420</td>
<td>580 / 520 / 460</td>
<td>580 / 520 / 460</td>
<td>580 / 520 / 460</td>
<td>580 / 520 / 460</td>
</tr>
<tr>
<td><strong>Sound pressure level Lo / Med / Hi dB(A)</strong></td>
<td>24 / 27 / 30</td>
<td>26 / 29 / 33</td>
<td>28 / 31 / 34</td>
<td>28 / 31 / 35</td>
<td>28 / 31 / 35</td>
<td>28 / 31 / 35</td>
</tr>
</tbody>
</table>
| **Pipe connections**
  | Liquid (inch/mm) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) |
  | Gas (inch/mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| **Net weight** | 28.5 (23 + 5.5) | 28.5 (23 + 5.5) | 28.5 (23 + 5.5) | 28.5 (23 + 5.5) | 28.5 (23 + 5.5) | 30 (30 + 9) |

**Rating Conditions:**
- Cooling Indoor: 37°C DB / 19°C WB.
- Cooling Outdoor: 35°C DB / 24°C WB.
- Heating Indoor: 20°C DB.
- Heating Outdoor: 7°C DB / 6°C WB.

DB: Dry Bulb, WB: Wet Bulb.
Designed for installation within the ceiling void, the D1 range of slimline 1 way blow cassettes feature powerful yet quiet fans for up to 4.2 m.

**Technical focus**
- Ultra-Slim
- Suitable for standard and high ceilings
- Built-in drain pump provides 590mm lift
- Easy to install and maintain
- Hanging height can be easily adjusted
- Uses a DC fan motor to improve energy-efficiency

---

**Drain height**

30mm or less

---

**Panel**

CZ-KP02

**Optional Controller**

- Wired remote controller CZ-KTC3
- Timer remote controller CZ-RTC2
- Wireless remote controller CZ-KX012
- Simplified remote controller CZ-RE2C2

---

**Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>S-28MD1E5</th>
<th>S-36MD1E5</th>
<th>S-45MD1E5</th>
<th>S-56MD1E5</th>
<th>S-73MD1E5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power source</td>
<td>230 V / Single Phase / 50 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling capacity kW</td>
<td>2.8</td>
<td>3.6</td>
<td>4.5</td>
<td>5.6</td>
<td>7.3</td>
</tr>
<tr>
<td>Power input cooling W</td>
<td>51</td>
<td>53</td>
<td>60</td>
<td>67</td>
<td>77</td>
</tr>
<tr>
<td>Power input heating W</td>
<td>40</td>
<td>40</td>
<td>48</td>
<td>56</td>
<td>66</td>
</tr>
<tr>
<td>Operating current cooling A</td>
<td>0.39</td>
<td>0.39</td>
<td>0.39</td>
<td>0.46</td>
<td>0.7</td>
</tr>
<tr>
<td>Operating current heating A</td>
<td>0.35</td>
<td>0.35</td>
<td>0.36</td>
<td>0.40</td>
<td>0.60</td>
</tr>
<tr>
<td>Fan type</td>
<td>Sirocco fan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air volume</td>
<td>m³/h</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound pressure level dBA</td>
<td>33</td>
<td>34</td>
<td>34</td>
<td>36</td>
<td>38</td>
</tr>
</tbody>
</table>

**Dimensions**

| Dimensions H x W x D mm | 200 (+20)x1.000 (1.230)x710 (800) | 200 (+20)x1.000 (1.230)x710 (800) | 200 (+20)x1.000 (1.230)x710 (800) | 200 (+20)x1.000 (1.230)x710 (800) | 200 (+20)x1.000 (1.230)x710 (800) |

**Pipe connections**

| Liquid inch (mm) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) |
| Gas inch (mm)    | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |

**Net weight** kg

| 24.5 (21 + 5.5) | 26.5 (21 + 5.5) | 28.5 (21 + 5.5) | 24.5 (21 + 5.5) | 27.5 (22 + 5.5) |

The new F2 type is designed specifically for applications requiring fixed square ducting. The internal filter is equipped as standard.

**Technical focus**
- Industry-leading low sound levels from 25 dBA
- Built-in drain pump provides 785mm lift
- Easy to install and maintain
- Air OFF sensor avoids cold dumping
- Configurable air temperature control

**More powerful drain pump**
Using a high-lift drain pump, drain piping can be elevated up to 785mm from the base of the unit.

**Air Outlet & Inlet Plenum**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan type</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
</tr>
<tr>
<td>Operating current heating A</td>
<td>0.57</td>
<td>0.57</td>
<td>0.57</td>
<td>0.57</td>
<td>0.57</td>
<td>0.74</td>
<td>0.89</td>
<td>0.89</td>
<td>0.97</td>
<td>1.34</td>
<td>1.42</td>
<td>1.50</td>
</tr>
<tr>
<td>Power input heating W</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>100</td>
<td>100</td>
<td>120</td>
<td>120</td>
<td>135</td>
<td>200</td>
<td>210</td>
<td>225</td>
</tr>
<tr>
<td>Heating capacity kW</td>
<td>1.7</td>
<td>2.5</td>
<td>3.2</td>
<td>4.2</td>
<td>5.8</td>
<td>8.3</td>
<td>9.7</td>
<td>11.4</td>
<td>16.0</td>
<td>18.0</td>
<td>21.5</td>
<td>22.5</td>
</tr>
<tr>
<td>Operating current cooling A</td>
<td>0.57</td>
<td>0.57</td>
<td>0.57</td>
<td>0.57</td>
<td>0.57</td>
<td>0.74</td>
<td>0.89</td>
<td>0.89</td>
<td>0.97</td>
<td>1.30</td>
<td>1.44</td>
<td>1.50</td>
</tr>
<tr>
<td>Power input cooling W</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>100</td>
<td>100</td>
<td>120</td>
<td>120</td>
<td>135</td>
<td>195</td>
<td>215</td>
<td>225</td>
</tr>
<tr>
<td>Cooling capacity kW</td>
<td>1.5</td>
<td>2.2</td>
<td>2.8</td>
<td>3.4</td>
<td>4.5</td>
<td>5.6</td>
<td>7.3</td>
<td>9.0</td>
<td>11.6</td>
<td>14.0</td>
<td>16.0</td>
<td>18.0</td>
</tr>
<tr>
<td>Power source</td>
<td>230 V / Single Phase / 50 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full range of External Static Pressure and Airflow Volumes available by special setting

To meet all design needs thanks to DC fan motor it is possible to select the best fitted airflow/ static pressure curve.

**F2 Advantages**
Automatic learning function for the required static pressure, to be activated easily by the standard wired remote controller. Possible to increase the sensible cooling capacity by adjusting the air volume flow in order to almost completely eliminate latent losses. This is possible due to the outstanding big heat exchanger surface in combination with increasing the air volume flow by a manual selection of higher fan speed curves through the standard wired remote controller when commissioning the system together with the default active off-cool, temperature control and the room load based variable evaporation temperature control.

**Pipe connections**

- Liquid (inch) mm: [Diagram]
- Gas (inch) mm: [Diagram]
- Drain piping: [Diagram]

**Power source**: 230 V / Single Phase / 50 Hz

**Model¹**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>1.5</td>
<td>2.2</td>
<td>2.8</td>
<td>3.4</td>
<td>4.5</td>
<td>5.6</td>
<td>7.3</td>
<td>9.0</td>
<td>11.6</td>
<td>14.0</td>
<td>16.0</td>
<td>18.0</td>
</tr>
</tbody>
</table>

**Operation current heating A**: 0.57 0.57 0.57 0.57 0.57 0.74 0.89 0.89 0.97 1.34 1.42 1.50

**Power input heating W**: 70 70 70 70 100 100 120 120 135 200 210 225

**Heating capacity kW**: 1.7 2.5 3.2 4.2 5.8 8.3 9.7 11.4 16.0 18.0 21.5 22.5

**Operating current cooling A**: 0.57 0.57 0.57 0.57 0.57 0.74 0.89 0.89 0.97 1.34 1.42 1.50

**Power input cooling W**: 70 70 70 70 100 100 120 120 135 195 215 225

**Cooling capacity kW**: 1.5 2.2 2.8 3.4 4.5 5.6 7.3 9.0 11.6 14.0 16.0 18.0

**External static pressure Pa**: [Diagram]

**Sound power level¹ dBA**: [Diagram]

**External electrical equipment box makes maintenance easy.**

**Full range of External Static Pressure and Airflow Volumes available by special setting**

To meet all design needs thanks to DC fan motor it is possible to select the best fitted airflow/ static pressure curve.

The table below shows the airflow and noise data at minimum airflows the best fitted airflow/ static pressure curve.

To meet all design needs thanks to DC fan motor it is possible to select the best fitted airflow/ static pressure curve.

The table below shows the airflow and noise data at minimum airflows the best fitted airflow/ static pressure curve.
The ultra slim M1 type is one of the leading products of its type in the industry. With a depth of only 200mm it provides greater flexibility and can be used in far more applications. In addition, its high-efficiency and extremely quiet sound levels make it very popular with many users, including hotels and small offices.

Technical focus
- Ultra-slim profile: 200mm for all models
- DC fan motor greatly reduces power consumption
- Ideal for hotel application with very narrow false ceilings
- Easy maintenance and service by external electrical box
- 40 Pa static pressure enables ductwork to be fitted.
- Includes drain pump

Ultra-slim profile for all models

Drain pump with increased power!
By adoption of a high-lift drain pump, the drain piping rise height can be increased to 785mm from the lower surface of the body.

<table>
<thead>
<tr>
<th>Air Outlet &amp; Inlet Plenum</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>S-22MM1E5A</th>
<th>Diameters</th>
<th>Air Outlet Plenum</th>
<th>Diameters</th>
<th>Air Inlet Plenum</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 x 28 &amp; 36</td>
<td>Ø 200</td>
<td>CZ-DUMPA22MMR2</td>
<td>2 x Ø 200</td>
<td>CZ-DUMPA22MMR2</td>
</tr>
<tr>
<td>45 &amp; 56</td>
<td>Ø 160</td>
<td>CZ-DUMPA45MMR3</td>
<td>2 x Ø 200</td>
<td>CZ-DUMPA22MMR3</td>
</tr>
</tbody>
</table>

Model¹ | S-15MM1E5A | S-22MM1E5A | S-28MM1E5A | S-36MM1E5A | S-45MM1E5A | S-56MM1E5A |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power source</td>
<td>230 V / Single Phase / 50 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling capacity kW</td>
<td>1,5</td>
<td>1,7</td>
<td>2,2</td>
<td>2,8</td>
<td>3,6</td>
<td>4,6</td>
</tr>
<tr>
<td>Power input cooling W</td>
<td>36</td>
<td>36</td>
<td>40</td>
<td>42</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>Operating current cooling A</td>
<td>0,26</td>
<td>0,26</td>
<td>0,30</td>
<td>0,31</td>
<td>0,37</td>
<td>0,37</td>
</tr>
<tr>
<td>Heating capacity kW</td>
<td>1,7</td>
<td>2,5</td>
<td>3,2</td>
<td>4,2</td>
<td>5,9</td>
<td>6,9</td>
</tr>
<tr>
<td>Power input heating W</td>
<td>26</td>
<td>26</td>
<td>30</td>
<td>32</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>Operating current heating A</td>
<td>0,23</td>
<td>0,23</td>
<td>0,27</td>
<td>0,28</td>
<td>0,34</td>
<td>0,34</td>
</tr>
<tr>
<td>Fan type</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
</tr>
<tr>
<td>Air volume</td>
<td>Hi / Med / Lo m³/h</td>
<td>480 / 420 / 360</td>
<td>480 / 420 / 360</td>
<td>510 / 450 / 390</td>
<td>540 / 480 / 420</td>
<td>620 / 570 / 480</td>
</tr>
<tr>
<td>External static pressure Pa</td>
<td>10 (30)</td>
<td>15 (50)</td>
<td>15 (60)</td>
<td>15 (60)</td>
<td>15 (60)</td>
<td>15 (60)</td>
</tr>
<tr>
<td>Sound pressure level dBA</td>
<td>25 / 27 / 29 / 31</td>
<td>28 / 30 / 32 / 34</td>
<td>30 / 32 / 34 / 36</td>
<td>32 / 34 / 36 / 38</td>
<td>34 / 36 / 38 / 40</td>
<td>36 / 38 / 40 / 42</td>
</tr>
<tr>
<td>Dimensions H x W x D mm</td>
<td>200 x 850 x 640</td>
<td>200 x 850 x 640</td>
<td>200 x 850 x 640</td>
<td>200 x 850 x 640</td>
<td>200 x 850 x 640</td>
<td>200 x 850 x 640</td>
</tr>
<tr>
<td>Pipe connections Liquid inch (mm)</td>
<td>1/4 (6,35)</td>
<td>1/4 (6,35)</td>
<td>1/4 (6,35)</td>
<td>1/4 (6,35)</td>
<td>1/4 (6,35)</td>
<td>1/4 (6,35)</td>
</tr>
<tr>
<td>Gas inch (mm)</td>
<td>3/8 (9,5)</td>
<td>3/8 (9,5)</td>
<td>3/8 (9,5)</td>
<td>3/8 (9,5)</td>
<td>3/8 (9,5)</td>
<td>3/8 (9,5)</td>
</tr>
<tr>
<td>Drain piping VP-20</td>
<td>VP-20</td>
<td>VP-20</td>
<td>VP-20</td>
<td>VP-20</td>
<td>VP-20</td>
<td>VP-20</td>
</tr>
<tr>
<td>Net weight kg</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

Rating Conditions: Cooling Indoor 27°C DB / 19°C WB. Cooling Outdoor 35°C DB / 24°C WB. Heating Indoor 20°C DB. Heating Outdoor 7°C DB / 6°C WB.
DB: Dry Bulb; WB: Wet Bulb.

* Tentative data.
2 products in 1: High pressure duct and 100% Fresh air duct function. The E2 range of ducted units offers improved design flexibility for extended duct layouts as a result of their increased external static pressures and reduces energy consumption.

Technical focus
- NEW! No need of rap valve
- NEW! 100% Fresh air duct function
- NEW! DC fan motor for more savings
- Complete flexibility for ductwork design
- Can be located into a weatherproof housing for external siting
- Air OFF sensor avoids cold air dumping
- Configurable air temperature control

System example
An inspection port (450 x 450mm or more) is required at the lower side of the indoor unit body (field supply).

100% Fresh air duct function
The New E2 duct with 100% fresh air duct function have exceptional discharge temperature.

<table>
<thead>
<tr>
<th>Discharge Range</th>
<th>Min</th>
<th>Max</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>15°C</td>
<td>24°C</td>
<td>18°C</td>
</tr>
<tr>
<td>Heating</td>
<td>17°C</td>
<td>45°C</td>
<td>40°C</td>
</tr>
</tbody>
</table>

Plenums
Air Outlet Plenum (suitable for rigid + flexible duct)

| S-224ME1ESA | S-280ME1ES | 1 x 500mm | CZ-TREMIESPW706 |

1) Available to select the setting by initial setup.
2) With booster cable.
3) Values with 140Pa setting.

Optional Controller
- Wired remote controller CZ-RTC3
- Timer remote controller CZ-RTC3
- Wireless remote controller CZ-RWSK2 + CZ-RWSC3
- Simplified remote controller CZ-RE2C2
- Wired remote controller CZ-RTC3
HEAT RECOVERY WITH DX COIL

Technical focus
- Motorised heat recovery by-pass device automatically controlled by unit control to use fresh air free-cooling when convenient.
- The Bioxigen® purifying system, activates when the fan runs, provides an efficient antibacterial treatment, ensuring optimum health of supplied air.

General characteristics
- Galvanized steel self-supporting panels, internally and externally insulated.
- Counterflow air-to-air heat recovery device, made of sheets of special paper with special sealing to keep airflows separate and only permeable to water vapor. Total heat exchange with temperature efficiency up to 77% and enthalpy efficiency up to 63%, also at high level during summer season.
- G4 efficiency class filters with synthetic cleanable media, both on fresh air and return air intake.
- Removable side panel to access filters and heat recovery in the event of scheduled maintenance.
- Low consumption, high efficiency & low noise direct driven fans with 3-speed EC motors.
- Supply section complete with DX coil (R410A) fitted with solenoid control valve, freon filter, contact temperature sensors on liquid and gas line, NTC sensors upstream and downstream airflow.
- Built-in electric box equipped with PCB to control internal fan speed and to interconnect outdoor/indoor units.
- Duct connection by circular plastic collars.
- CZ-RTC2 Timer remote controller (option)

Balanced Ventilation

Winter
- Cool
- Warm
- Outside
- Inside
- Cool

Summer
- Warm
- Cool
- Outside
- Inside

Interconnection to outdoor/indoor units

Characteristic curves
The following curves show the unit external static pressure at maximum fan speed for each model.

<table>
<thead>
<tr>
<th>Model¹</th>
<th>PAW-500ZDX2</th>
<th>PAW-800ZDX2</th>
<th>PAW-01KZDX2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power source</td>
<td>230 V / Single Phase / 50 Hz</td>
<td>230 V / Single Phase / 50 Hz</td>
<td>230 V / Single Phase / 50 Hz</td>
</tr>
<tr>
<td>Air volume</td>
<td>Hi / Med / Lo m³/h 500 / 500 / 360</td>
<td>800 / 800 / 625</td>
<td>1.000 / 780 / 650</td>
</tr>
<tr>
<td>External static pressure²</td>
<td>Hi / Med / Lo Pa 85 / 80 / 21</td>
<td>117 / 68 / 18</td>
<td>144 / 48 / 17</td>
</tr>
<tr>
<td>Maximum current</td>
<td>A 1,1</td>
<td>2,3</td>
<td>2,5</td>
</tr>
<tr>
<td>Maximum power input</td>
<td>W 135</td>
<td>300</td>
<td>310</td>
</tr>
<tr>
<td>Sound pressure level³</td>
<td>Hi / Med / Lo dB(A) 33 / 31 / 27</td>
<td>36 / 36 / 32</td>
<td>39 / 37 / 33</td>
</tr>
<tr>
<td>Pipe connections</td>
<td>Liquid / Gas inch (mm) 1/4 (6,35) / 1/2 (12,7)</td>
<td>1/4 (6,35) / 1/2 (12,7)</td>
<td>1/4 (6,35) / 1/2 (12,7)</td>
</tr>
</tbody>
</table>

HEAT RECOVERY

- Temperature efficiency summer mode % 62,5 59 59,5
- Enthalpy efficiency summer mode % 60 57 57,5
- Saved power winter mode kW 1,7 2,5 3,2
- Temperature efficiency winter mode % 74,5 (74,5) 73 (73) 73,5 (74,5)
- Enthalpy efficiency winter mode % 42,3 (44,1) 39 (40,8) 49,5 (51,2)
- Saved power winter mode kW 4,3 (4,8) 6,5 (7,3) 8,2 (9,8)

DX COIL

- Total cooling capacity kW 3,7 4,9 5,6
- Sensible cooling capacity kW 2,3 3,3 3,8
- Off temperature Cooling °C 14,4 14,2 17,0
- Off relative humidity Cooling % 81 82 84
- Total heating capacity kW 5,4 (4,1) 6,4 (6,7) 6,8 (6,9)
- Off temperature Heating °C 35,4 (34,4) 32,6 (31,7) 31,3 (30,3)

Nominal summer conditions: Outside air: 32°C DB, RH 50%. Nominal winter conditions: Outside air: -5°C / (10°C DB, RH 60%). 1) Available in December 2014. 2) Referred to the nominal air flow after filter and plate heat exchanger. 3) Referred to 1.5 meters from inlet in free field condition.

Optional

- Internet Control Ready
- Energy saving
- Environmentally friendly refrigerant R410A
- Easy maintenance
- Self-diagnostics
- Automatic Fail
- Further comfort
- Perfect humidity control
- Auto-flap control
- Practical operation
- Comfort description
- Easy control by BMS
- Connectivity
The T2 TYPE ceiling mounted units feature a DC fan motor for increased efficiency and reduced operating sound levels. All the units are the same height and depth for a uniform appearance in mixed installations and feature a fresh air knockout for improved air quality.

Technical focus
- Low sound levels
- New design, all units just 235mm high
- Large and wide air distribution
- Easy to install and maintain
- Fresh air knockout

Further comfort improvement
The wide air discharge opening widens the air flow to the left and the right, so that a comfortable temperature is obtained in the entire room. The unpleasant feeling caused when the air flow directly hits the human body is prevented by the "Draft prevention position", which changes the swing width, so that the degree of comfort is increased.

Further comfort improvement with airflow distribution
Air distribution is automatically altered depending on the operational mode of the unit.
The K2/K1 Type wall mounted unit has a stylish smooth panel which not only looks good but is also easy to clean. The unit is also smaller, lighter and substantially quieter than previous models making it ideal for small offices and other commercial applications.

Technical focus
- Closed discharge port
- Lighter and smaller units make the installation easy
- Quiet operation
- Smooth and durable design
- Piping outlet in three directions
- Washable front panel
- Air distribution is automatically altered depending on the operational mode of the unit

Closed discharge port
When the unit is turned OFF, the flap closes completely to prevent entry of dust into the unit and to keep the equipment clean.

Lighter and smaller units make the installation easy
The width has been decreased by 17% and the units are lighter.

Quiet operation
These units are among the quietest in the industry, making them ideal for hotels and hospitals.

Smooth and durable design
The smooth cover means these units match most modern interiors. Their compact size enables them to blend in, even in small spaces.

Piping outlet in three directions
Piping outlet is possible in the three directions of rear, right, and left, making the installation work easier.

Washable front panel
The indoor unit’s front panel can be easily removed and washed for trouble-free cleaning.

Air distribution is automatically altered depending on the operational mode of the unit

External valve (Optional)
CZ-P56SVK2 (model sizes 15 to 56)
CZ-P160SVK2 (model sizes 73 to 106)

---

**Model¹ | S-15MK2E5A | S-22MK2E5A | S-28MK2E5S | S-36MK2E5S | S-45MK1E5A | S-56MK1E5A | S-73MK1E5A | S-106MK1E5A**

<table>
<thead>
<tr>
<th>Power source</th>
<th>230 V / Single Phase / 50 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity kW</td>
<td>1.5</td>
</tr>
<tr>
<td>Power input cooling W</td>
<td>25</td>
</tr>
<tr>
<td>Operating current cooling A</td>
<td>0.20</td>
</tr>
<tr>
<td>Heating capacity kW</td>
<td>1.7</td>
</tr>
<tr>
<td>Power input cooling W</td>
<td>25</td>
</tr>
<tr>
<td>Operating current heating A</td>
<td>0.20</td>
</tr>
<tr>
<td>Fan type</td>
<td>Cross flow</td>
</tr>
<tr>
<td>Air volume Hi / Med / Lo m³/h</td>
<td>474 / 444 / 390</td>
</tr>
<tr>
<td>Liquid inch (mm)</td>
<td>1/4 (6.35)</td>
</tr>
<tr>
<td>Dimensions H x W x D mm</td>
<td>290 x 870 x 214</td>
</tr>
<tr>
<td>Drain piping (O.D.)</td>
<td>ϕ16</td>
</tr>
<tr>
<td>Net weight kg</td>
<td>9</td>
</tr>
</tbody>
</table>

Rating Conditions: Cooling Indoor 27°C DB / 19°C WB, Cooling Outdoor 35°C DB / 24°C WB, Heating Indoor 20°C DB, Heating Outdoor 7°C DB / 6°C WB.

1) Available from April 2014.
2) Sound pressure level with fan only.

---

Optional Controller
Wired remote controller CZ-RTC3
Timer remote controller CZ-RTC2
Wireless remote controller CZ-KWSK2
Simplified remote controller CZ-REC2

---

**Optional Controller**

- Internet Control Ready
- Energy saving
- Environmentally friendly refrigerant R32
- Easy maintenance
- Simple design
- Automatic operation
- Perfect humidity control
- Mild dry
- Further comfort
- Further operation
- Preventive operation
- Comfort operation
- Easy control by BMS

---

**41**
The compact floor standing P1 units are the ideal solution for providing perimeter air conditioning. The standard wired controller can be incorporated into the body of the unit.

**Technical focus**
- Pipes can be connected to either side of the unit from the bottom or rear
- Easy to install
- Front panel opens fully for easy maintenance
- Removable air discharge grille gives flexible air flow
- Room for condensate pump

**Effective perimeter handling**

**Model**
- **S-22MP1E5**
- **S-28MP1E5**
- **S-36MP1E5**
- **S-45MP1E5**
- **S-56MP1E5**
- **S-71MP1E5**

**Power source** 230 V / Single Phase / 50 Hz

**Cooling capacity kW**
- **S-22MP1E5**: 2.2
- **S-28MP1E5**: 2.8
- **S-36MP1E5**: 3.6
- **S-45MP1E5**: 4.5
- **S-56MP1E5**: 5.6
- **S-71MP1E5**: 7.1

**Power input cooling W**
- **S-22MP1E5**: 56
- **S-28MP1E5**: 56
- **S-36MP1E5**: 95
- **S-45MP1E5**: 126
- **S-56MP1E5**: 126
- **S-71MP1E5**: 160

**Operating current cooling A**
- **S-22MP1E5**: 0.25
- **S-28MP1E5**: 0.25
- **S-36MP1E5**: 0.38
- **S-45MP1E5**: 0.56
- **S-56MP1E5**: 0.56
- **S-71MP1E5**: 0.72

**Heating capacity kW**
- **S-22MP1E5**: 2.5
- **S-28MP1E5**: 3.2
- **S-36MP1E5**: 4.2
- **S-45MP1E5**: 5.6
- **S-56MP1E5**: 6.3
- **S-71MP1E5**: 8.0

**Power input heating W**
- **S-22MP1E5**: 46
- **S-28MP1E5**: 40
- **S-36MP1E5**: 85
- **S-45MP1E5**: 126
- **S-56MP1E5**: 126
- **S-71MP1E5**: 160

**Operating current heating A**
- **S-22MP1E5**: 0.18
- **S-28MP1E5**: 0.18
- **S-36MP1E5**: 0.31
- **S-45MP1E5**: 0.41
- **S-56MP1E5**: 0.41
- **S-71MP1E5**: 0.64

**Fan type**
- **S-22MP1E5**: Sirocco fan
- **S-28MP1E5**: Sirocco fan
- **S-36MP1E5**: Sirocco fan
- **S-45MP1E5**: Sirocco fan
- **S-56MP1E5**: Sirocco fan
- **S-71MP1E5**: Sirocco fan

**Air volume**
- **S-22MP1E5**: 420 / 360 / 300
- **S-28MP1E5**: 420 / 360 / 300
- **S-36MP1E5**: 540 / 420 / 360
- **S-45MP1E5**: 720 / 540 / 480
- **S-56MP1E5**: 990 / 780 / 660
- **S-71MP1E5**: 1,820 / 840 / 720

**Sound pressure level**
- **S-22MP1E5**: 28 / 30 / 33
- **S-28MP1E5**: 28 / 30 / 33
- **S-36MP1E5**: 29 / 35 / 39
- **S-45MP1E5**: 31 / 35 / 39
- **S-56MP1E5**: 35 / 38 / 41
- **S-71MP1E5**: 35 / 38 / 41

**Dimensions**
- **S-22MP1E5**: 615 x 1,065 x 230
- **S-28MP1E5**: 615 x 1,065 x 230
- **S-36MP1E5**: 615 x 1,065 x 230
- **S-45MP1E5**: 615 x 1,380 x 230
- **S-56MP1E5**: 615 x 1,380 x 230
- **S-71MP1E5**: 615 x 1,380 x 230

**Net weight kg**
- **S-22MP1E5**: 29
- **S-28MP1E5**: 29
- **S-36MP1E5**: 29
- **S-45MP1E5**: 39
- **S-56MP1E5**: 39
- **S-71MP1E5**: 39

**Pipe connections**
- **Liquid**
  - **S-22MP1E5**: 1/4 (6.35)
  - **S-28MP1E5**: 1/4 (6.35)
  - **S-36MP1E5**: 1/4 (6.35)
  - **S-45MP1E5**: 1/4 (6.35)
  - **S-56MP1E5**: 1/4 (6.35)
  - **S-71MP1E5**: 3/8 (9.52)
- **Gas**
  - **S-22MP1E5**: 1/2 (12.7)
  - **S-28MP1E5**: 1/2 (12.7)
  - **S-36MP1E5**: 1/2 (12.7)
  - **S-45MP1E5**: 1/2 (12.7)
  - **S-56MP1E5**: 1/2 (12.7)
  - **S-71MP1E5**: 1/2 (12.7)

**Energy saving**
- Environmentally friendly refrigerant
- R410A

**Internet Control Ready**
- Ready

**Automatic Fan**
- Self-diagnosing

**For more comfort**
- Easy maintenance

**Perfect humidity control**
- Mild Dry

**Practical operation**
- Automatic Restart

**Easy control by BMS**
- BMS Ready

**Optionality**
- Optional Controller Wired remote controller CZ-RTC3
- Optional Controller Timer remote controller CZ-RTC2
- Optional Controller Wireless remote controller CZ-ROWK3 + CZ-RWSC3
- Optional Controller Simplified remote controller CZ-RE3C2

**Ratings Conditions**
- Cooling Indoor: 27°C DB / 19°C WB
- Cooling Outdoor: 35°C DB / 24°C WB
- Heating Indoor: 20°C DB
- Heating Outdoor: 7°C DB / 6°C WB

DB: Dry Bulb, WB: Wet Bulb.
At just 229mm deep, the R1 unit can be easily concealed in perimeter areas to provide powerful and effective air conditioning.

**Technical focus**
- Chassis unit for discreet installation
- Complete with removable filters
- Pipes can be connected to either side of the unit from the bottom or rear
- Easy to install

---

**Perimeter air conditioning with high interior quality**

---

<table>
<thead>
<tr>
<th>Model</th>
<th>S-22MRI1ES</th>
<th>S-28MRI1ES</th>
<th>S-36MRI1ES</th>
<th>S-45MRI1ES</th>
<th>S-56MRI1ES</th>
<th>S-71MRI1ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power source</td>
<td>230 V / Single Phase / 50 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling capacity kW</td>
<td>2.2</td>
<td>2.8</td>
<td>3.6</td>
<td>4.5</td>
<td>5.6</td>
<td>7.1</td>
</tr>
<tr>
<td>Power input cooling W</td>
<td>56</td>
<td>56</td>
<td>85</td>
<td>126</td>
<td>126</td>
<td>168</td>
</tr>
<tr>
<td>Operating current cooling A</td>
<td>0.25</td>
<td>0.29</td>
<td>0.38</td>
<td>0.56</td>
<td>0.56</td>
<td>0.72</td>
</tr>
<tr>
<td>Heating capacity kW</td>
<td>2.6</td>
<td>3.2</td>
<td>4.2</td>
<td>5.0</td>
<td>6.3</td>
<td>8.0</td>
</tr>
<tr>
<td>Power input heating W</td>
<td>40</td>
<td>40</td>
<td>70</td>
<td>91</td>
<td>91</td>
<td>120</td>
</tr>
<tr>
<td>Operating current heating A</td>
<td>0.18</td>
<td>0.18</td>
<td>0.31</td>
<td>0.41</td>
<td>0.41</td>
<td>0.54</td>
</tr>
<tr>
<td>Fan type</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
<td>Sirocco fan</td>
</tr>
<tr>
<td>Air volume</td>
<td>m³/h</td>
<td>420 / 360 / 300</td>
<td>420 / 360 / 300</td>
<td>540 / 480 / 480</td>
<td>720 / 640 / 640</td>
<td>900 / 840 / 720</td>
</tr>
<tr>
<td>Sound pressure level dBA</td>
<td>28 / 30 / 33</td>
<td>28 / 30 / 33</td>
<td>31 / 35 / 39</td>
<td>31 / 35 / 39</td>
<td>35 / 38 / 41</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>mm</td>
<td>616 x 904 x 229</td>
<td>616 x 904 x 229</td>
<td>616 x 904 x 229</td>
<td>616 x 1,219 x 229</td>
<td>616 x 1,219 x 229</td>
</tr>
<tr>
<td>Net weight kg</td>
<td>21</td>
<td>21</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>43</td>
</tr>
<tr>
<td>Pipe connections</td>
<td>Liquid inch (mm)</td>
<td>1/4 (6.35)</td>
<td>1/4 (6.35)</td>
<td>1/4 (6.35)</td>
<td>1/4 (6.35)</td>
<td>1/4 (6.35)</td>
</tr>
<tr>
<td></td>
<td>Gas inch (mm)</td>
<td>1/2 (12.7)</td>
<td>1/2 (12.7)</td>
<td>1/2 (12.7)</td>
<td>1/2 (12.7)</td>
<td>1/2 (12.7)</td>
</tr>
</tbody>
</table>

**Optional Controller**
- Wired remote controller CZ-RTC3
- Timer remote controller CZ-RTC2
- Wireless remote controller CZ-RWCAO + CZ-RW02C03
- Simplified remote controller CZ-RC2C03

---

**Rating Conditions:**
- Cooling Indoor: 27°C DB / 19°C WB.
- Cooling Outdoor: 35°C DB / 24°C WB.
- Heating Indoor: 20°C DB.
- Heating Outdoor: 7°C DB / 6°C WB.

DB: Dry Bulb, WB: Wet Bulb.
### Operation System

**Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Control for hotel application (for VRF)</th>
<th>Wired remote controller</th>
<th>Wireless remote controller</th>
<th>Quick and easy operation</th>
</tr>
</thead>
</table>

**External appearance**

<table>
<thead>
<tr>
<th>Type, model name</th>
<th>Intuitive Controller</th>
<th>Normal operation</th>
<th>Design wired remote controller</th>
<th>Wireless remote controller</th>
<th>Simplified remote controller</th>
<th>Backlit remote controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAW-RE2C3-WH</td>
<td>PAW-RE2C3-GR</td>
<td>PAW-RE2C3-MOD-WH</td>
<td>PAW-RE2C3-ON-WH</td>
<td>PAW-RE2C3-LON-WH</td>
<td>PAW-RE2C3-MOD-GR</td>
<td>PAW-RE2C3-LON-GR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Type, model name**

<table>
<thead>
<tr>
<th>Intelligent Controller</th>
<th>Normal operation</th>
<th>Design wired remote controller</th>
<th>Wireless remote controller</th>
<th>Simplified remote controller</th>
<th>Backlit remote controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAW-RE2C3-WH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAW-RE2C3-GR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAW-RE2C3-MOD-WH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAW-RE2C3-ON-WH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAW-RE2C3-LON-WH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAW-RE2C3-MOD-GR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAW-RE2C3-LON-GR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Econavi Control**

| Econavi Control | —                  | ✔                  | —                  | —                  | —                  |

**Power consumption monitor**

| Power consumption monitor | —                  | ✔                  | —                  | —                  |

**Built-in Thermostat**

| Built-in Thermostat | ✔                  | ✔                  | ✔                  | ✔                  |

**I_O which can be controlled**

| I_O which can be controlled | 1 indoor unit | 1 group, 8 units | 1 group, 8 units | 1 group, 8 units |

**Use limitations**

| Use limitations | —                  | —                  | —                  | —                  |

**Function ON/OFF**

| Function ON/OFF | ✔                  | ✔                  | ✔                  | ✔                  |

**Mode setting**

| Mode setting | AUTO               | ✔                  | ✔                  | ✔                  |

**Fan speed setting**

| Fan speed setting | ✔                  | ✔                  | ✔                  | ✔                  |

**Temperature setting**

| Temperature setting | ✔                  | ✔                  | ✔                  | ✔                  |

**Air flow direction**

| Air flow direction | —                  | ✔                  | ✔                  | ✔                  |

**Permit/Prohibit switching**

| Permit/Prohibit switching | ✔                  | ✔                  | ✔                  | ✔                  |

**Weekly program**

| Weekly program | —                  | —                  | —                  | —                  |

---

1. Setting is not possible when a remote control unit is present (use the remote control for setting).
2. Only for PAC Elite ex except 50 type.
3. All specifications subject to change without notice.
## Control systems for ECO G

A wide variety of control options to meet the requirements of different applications.

<table>
<thead>
<tr>
<th>Timer Operation</th>
<th>Centralized Control Systems</th>
<th>BMS System. PC Base Connection with 3rd Party Controller</th>
<th>Connection with 3rd Party Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily and weekly program</td>
<td>Operation with various function from center station</td>
<td>Only ON/OFF operation from center station</td>
<td>Simplified load distribution ratio (LDR) for each tenant</td>
</tr>
<tr>
<td>Schedule timer</td>
<td>System controller</td>
<td>ON/OFF Controller</td>
<td>Intelligent Controller (Touch screen panel)</td>
</tr>
<tr>
<td>CZ-ESWC2</td>
<td>CZ-64ESMC2</td>
<td>CZ-ANC2</td>
<td>CZ-256ESMC2 (CZ-CFUNC2)</td>
</tr>
</tbody>
</table>

- Required power supply from the system controller
- When there is no system controller, connection is possible to the T10 terminal of an indoor unit
- Up to 10 controllers, can be connected to one system
- Main unit/sub unit (1 main unit + 1 sub unit) connection is possible
- Use without remote controller is possible
- Up to 8 controllers (4 main units + 4 sub units) can be connected to one system
- Use without remote controller is impossible
- A communication adaptor (CZ-CFUNC2) must be installed for three or more systems

- 64 groups, maximum 64 units
- 64 units x 4 systems, max. 256 units

- AIMS Basic Software
- CZ-CSWKC2
- Optional software
- CZ-CSWAC2 for Load distribution.
- CZ-CSWWC2 for Web application.
- CZ-CSWGC2 for Object layout display.
- CZ-CSWB2 for BAC net software interface.
- PC required (field supply)

- Web Interface Systems
- CZ-CWEBC2
- *PC required (field supply)

- Communication Adaptor
- CZ-CFUNC2
- CZ-ESMC2
- CZ-ANC2
- CZ-256ESMC2 (CZ-CFUNC2)
GHP Connectivity. New Plug and play interface connected directly to the P-Link

Great flexibility for integration into your KNX / EnOcean / Modbus / LonWorks / BACnet projects allows fully bi-directional monitoring and control of all the functioning parameters. Panasonic Partners have designed solutions specifically for Panasonic air conditioners, and provide complete monitoring, control and full functionality of the entire Commercial line-up from KNX / EnOcean / Modbus / LonWorks / BACnet installations.

For more information, contact Panasonic.

---

**Communication adaptor (CZ-CFUNC2)**

This communication interface is required to connect a ECOi and GHP systems to a BMS. An additional interface is needed to convert the information into KNX/Modbus/Bacnet language. CZ-CFUNC2 is very easy to operate and to connect to the Panasonic P-link, which is the ECOi bus. From the CZ-CFUNC2, all the indoor and outdoor units of the installation can be easily control. Two linked wiring systems can be connected to one CZ-CFUNC2.

Dimensions: H 260 x W 200 x D 68mm

* As this is not a splash-proof design, it must be installed indoors or in the control panel, etc.

---

### Panasonic Model name Interface Connected on P-link or in the indoor unit Maximum number of indoor units connected

<table>
<thead>
<tr>
<th>Indoor Units</th>
<th>Panasonic Model name</th>
<th>Interface</th>
<th>Connected on P-link or in the indoor unit</th>
<th>Maximum number of indoor units connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECOi / PACi</td>
<td>PAW-RC2-KNX-1i</td>
<td>KNX</td>
<td>Indoor unit</td>
<td>11 Group of Indoor units</td>
</tr>
<tr>
<td></td>
<td>PAW-RC2-MBS-1</td>
<td>Modbus RTU*</td>
<td>Indoor unit</td>
<td>11 Group of Indoor units</td>
</tr>
<tr>
<td></td>
<td>PAW-RC2-ENO-1i</td>
<td>EnOcean</td>
<td>Indoor unit</td>
<td>11 Group of Indoor units</td>
</tr>
<tr>
<td></td>
<td>PA-RC2-WIFI-1</td>
<td>IntesisHome</td>
<td>Indoor unit</td>
<td>11 Group of Indoor units</td>
</tr>
<tr>
<td></td>
<td>ECi P-Link PAW-AC-KNX-64</td>
<td>KNX**</td>
<td>P-link</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>PAW-AC-KNX-128</td>
<td>KNX**</td>
<td>P-link</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>PAW-TM-MBS-RTU-64</td>
<td>Modbus RTU**</td>
<td>P-link</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>PAW-TM-MBS-TCP-128</td>
<td>Modbus TCP**</td>
<td>P-link</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>PAW-AC-BAC-64</td>
<td>BACnet**</td>
<td>P-link</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>PAW-AC-BAC-128</td>
<td>BACnet**</td>
<td>P-link</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>CZ-CLNC2</td>
<td>LonMark</td>
<td>P-link</td>
<td>16 groups of max. 8 indoor units, in total max. 64 indoor units</td>
</tr>
</tbody>
</table>

* Interface Modbus RTU/TCP is needed in case if Modbus TCP connection. PAW-MBS-TCP2RTU (ModBus RTU Slave devices).

** Interface CZ-CFUNC2 needed.
Example of BMS connection for air conditioner central control system

<table>
<thead>
<tr>
<th>A/C unit settings</th>
<th>Unit ON/OFF</th>
<th>A/C unit status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode-change</td>
<td></td>
<td>Operation mode</td>
</tr>
<tr>
<td>Room temperature setting</td>
<td></td>
<td>Setting temperature</td>
</tr>
<tr>
<td>Fan speed setting</td>
<td></td>
<td>Fan speed status</td>
</tr>
<tr>
<td>Flap setting</td>
<td></td>
<td>Flap status</td>
</tr>
<tr>
<td>Central control setting</td>
<td></td>
<td>Central control setting</td>
</tr>
<tr>
<td>Filter-sign clear</td>
<td></td>
<td>Filter-sign situation</td>
</tr>
<tr>
<td>Alarm reset</td>
<td></td>
<td>Correct/Incorrect status</td>
</tr>
</tbody>
</table>

Max. 64 total indoor units connected to one link on CZ-CFUNC2

Max. 64 indoor units

Max. 64 indoor units
Due to the ongoing innovation of our products, the specifications of this catalogue are valid barring typographic errors, and may be subject to minor modifications by the manufacturer without prior warning in order to improve the product. The total or partial reproduction of this catalogue is prohibited without the express authorisation of Panasonic UK Ltd.

To find out how Panasonic cares for you, log on to: www.aircon.panasonic.eu

Do not add or replace refrigerant other than the specified type. Manufacturer is not responsible for the damage and deterioration in safety due to usage of the other refrigerant.