DAIKIN

altherma

all-in-one Comfort

for residential & commercial applications

CATALOGUE 2013

DAIKIN ALTHERMA

HEATING CATALOGUE

Heating, domestic hot water and cooling

Sustainable energy solutions

for residential and commercial use

You and your customer have decided to switch to an energy-efficient heating system that produces low CO_2 emissions. Daikin Altherma is a **total heating and domestic hot water system** based on air and ground source heat pump technology. One that represents a flexible and cost-effective alternative to a fossil fuel boiler. It also has an option for cooling.* The inherent energy-efficiency characteristics of Daikin Altherma make it an ideal solution for **reduced energy consumption and low CO_2 emissions**. Its high- and low-temperature heating systems provide optimal comfort. Highly **energy-efficient** heat pumps with advanced compressor technology transform unused and inexhaustible heat from the surrounding air into usable heat, either as part of the overall climate-control system or to heat domestic hot water. Moreover, the system is easy to install.

*The Daikin Altherma cooling option is available for low-temperature heating systems (under floor heating system, heat pump convectors).

& efficient

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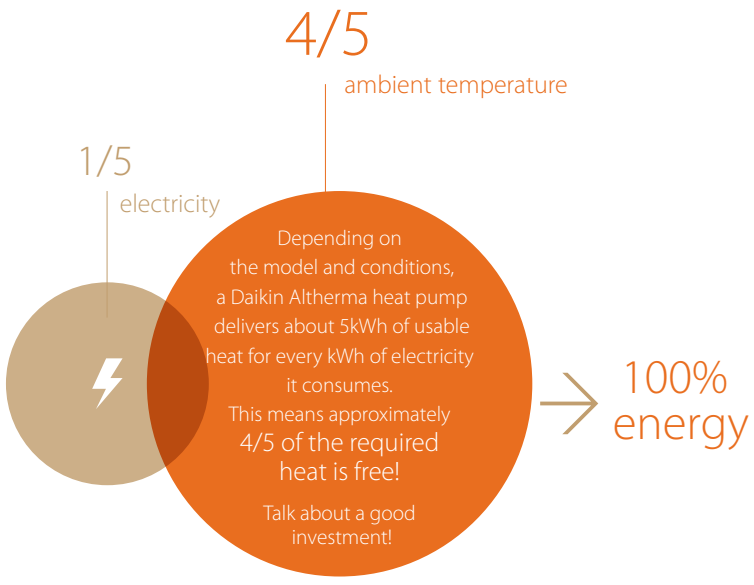
Offer your customer the benefits of Daikin technology

1. ENERGY EFFICIENT OPERATION

The heat pump from Daikin Altherma uses a sustainable energy source. In fact, it extracts heat from the outside air or the ground. The system consists of a closed circuit containing a refrigerant or brine. A thermodynamic cycle is created through evaporation, compression, condensation and expansion.
A heat pump "pumps" heat from a low to a higher temperature level. The heat raised is transferred to the water distribution system (under floor heating, low-temperature radiators, heat pump convectors and/or fan coil units for low-temperature heating systems and high temperature radiators for high temperature heating systems) in the home via a heat exchanger.

Two basic concepts of heat pump technology



Example based on Daikin Altherma low temperature split (EHBX04C3V/ERLQ004CV3)

COP (Coefficient of Performance) or gain factor

The COP indicates the amount of usable heat the heat pump delivers for every kWh electricity the heat pump uses. This number is dependent on the interior and exterior temperature and is therefore only a snapshot indicator.

SPF (Seasonal Performance Factor) or performance factor of the heat pump system

The SPF takes into consideration both the energy consumption of the heat pump system as well as the consumption by peripheral equipment, such as pumps, over the entire heating season.

Energy savings calculator

Go to ecocalc.daikin.eu and see how a Daikin Altherma heat pump saves on both running costs and CO_2 emission.

* Simulation for a new build detached house (room in roof) with low temperature emitters, for 4 people and a heated surface of 125m², taking into account Belgian climate conditions, an electricity price of 0.17 EUR/kWh and a gas price of 0.06 EUR/kWh.

2. DAIKIN ALTHERMA: THE ECONOMICAL ALTERNATIVE

Daikin Altherma heats up to 5 times more efficiently than a traditional heating system based on fossil fuels or electricity, achieving an excellent coefficient of performance (COP) rating of 5.04*. By making use of the heat in the outside air, the system uses much less energy while your customer can still enjoy a pleasant level of comfort. Also, maintenance requirements are minimal, making the running cost low. Thanks to the inverter technology, the energy savings are even greater.

3. LOW CO_2 EMISSIONS

Daikin Altherma keeps CO_2 emissions at a minimum, so you personally contribute to a better environment. The pump does use electricity, but even without renewable electricity the CO_2 emissions are still much lower than traditional boilers.

*EHV(H/X)04C OR EHB(H/X)04C WITH ERLQ004CV3 - TA DB/WB 7°C/6°C - LWC 35°C (DT=5°C)

4. LOW INSTALLATION COST

Daikin Altherma air to water heat pumps take heat from the air. No digging or excavation works are required. Both the outdoor and indoor units are compact. The outdoor unit can be located easily outside any building, including flats.

Ecolabel

Daikin is the first manufacturer to receive the Eco-label for heat pumps!
Daikin Altherma low temperature with under floor heating received the EU Ecolabel* because it has a higher energy efficiency and a lower global warming impact than other heat pump products in its class.

BE/31/001

* Scan this QR code for more information and the latest overview of certified products on daikin.eu

Air as renewable energy source

The European RES directive* recognises air as a renewable energy source. One of the goals of this directive is that by 2020, 20% of the total energy production needs to be produced by a renewable energy source. As a result, several heat pump incentives are already available to homeowners.

* EU objective COM (2008) /30 final

Renewable, inexhaustible energy with solar collectors

In combination with solar collectors, Daikin Altherma uses thermal energy from the sun which will keep up its good work for another five billion years.

Daikin heat pump experience

Daikin has more than 50 years of experience with heat pumps, and supplies more than one million of them to homes, shops and offices each year. This success is not just a quirk of fate: Daikin has always been at the cutting edge of technology and its goal is to provide you with turn-key comfort. Only a market leader can guarantee you this level of service and quality control!

DID YOU KNOW…?

Daikin has set up a number of monitoring sites (in Scandinavia, Portugal, France, Belgium, ...), where Daikin Altherma has been tested under totally different climate conditions.
High satisfaction has been achieved with increased comfort, stable indoor temperature, low energy consumption and hot water always available … whatever the weather conditions at the monitoring site.

Daikin introduces 2 new systems

THE INTELLIGENT SOLUTION

With many gas boilers reaching the end of their lives and customers seeking more energy efficient solutions as replacements, the Daikin Hybrid leads the way. Our advanced heat pump technology in an outdoor unit is linked to the hydraulics of a gas condensing boiler and used to raise the inflow water temperature. This reduces the energy consumed and the actual usage of the boiler. An efficient use of energy and a major cost saving to customers.

THE NATURAL CHOICE

Ground source or geothermal heat is the natural choice. The temperature underground is a reasonably constant 10ºC all year round and this can be tapped as a heat source which, when combined with a Daikin heat pump, provides free heating during the winter months. This converts to high seasonal efficiency, low operating costs, and an even lower carbon footprint.

Top energy-efficient solutions for every

SOURCE TO WATER APPLICATIONS

Heating, domestic hot water and cooling for replacement of a gas boiler

Daikin Altherma hybrid heat pump

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AIR TO WATER APPLICATIONS

Heating and domestic hot water for replacement of an oil boiler

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AIR TO WATER APPLICATIONS

Heating, domestic hot water and cooling for residential and commercial applications

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Heating, domestic hot water and cooling for replacement of a

The futur is now…

...and the future is more eco-friendly, energy efficient and cost conscious. There is a growing demand from home owners for replacement of heating systems, especially the replacement of gas boilers, with more efficient, more cost effective and more environmentally friendly systems that reduce CO_2 emissions, reduce energy consumption and protect the end-user's budget.
We, at Daikin, are playing our part with our advanced heat pump solutions and here's how...

Daikin Altherma hybrid heat pump

gas boiler

New opportunities in residential heating !

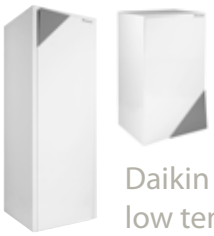
In addition to the the Low Temperature and High Temperature systems, Daikin also offers a new solution for the replacement of aging or inefficient gas boilers. By linking our heat pump outdoor unit to a gas boiler to create our new HYBRID solution, we enable users to reduce their reliance on gas as well as gain a 10% greater efficiency compared to a gas boiler-only solution.

1. HEAT PUMP SOLUTION FOR GAS BOILER REPLACEMENT MARKET

The product range of Daikin Altherma covers all applications in the heating market, not only new installations and replacement of oil boilers, but also the replacement of gas boilers.

Daikin Altherma low temperature is the ideal solution for new build applications and complete renovations, delivering the required heating, cooling and domestic hot water capacities for the house, with the best possible efficiencies. When replacing an oil boiler by **Daikin Altherma high temperature**, no need to replace the existing radiators, as water temperatures of up to 80°C are reached with heat pump operation only.

A new opportunity when replacing a gas boiler is **Daikin Altherma hybrid heat pump**, a cost efficient solution combining a new gas condensing boiler and the most efficient air-to-water heat pump system on the market.



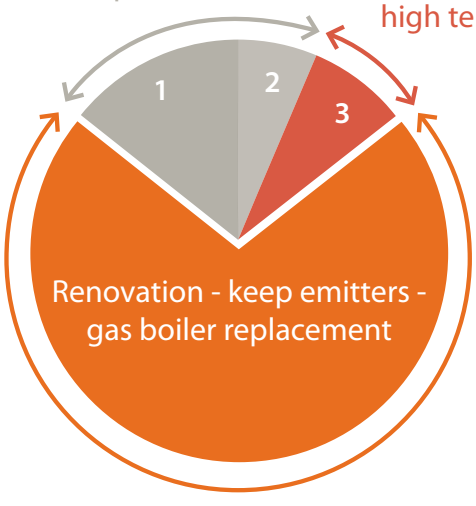
Daikin Altherma
low temperature

Daikin Altherma
high temperature

1 New Build

2 Renovation - change emitters

3 Renovation - keep emitters - oil boiler replacement

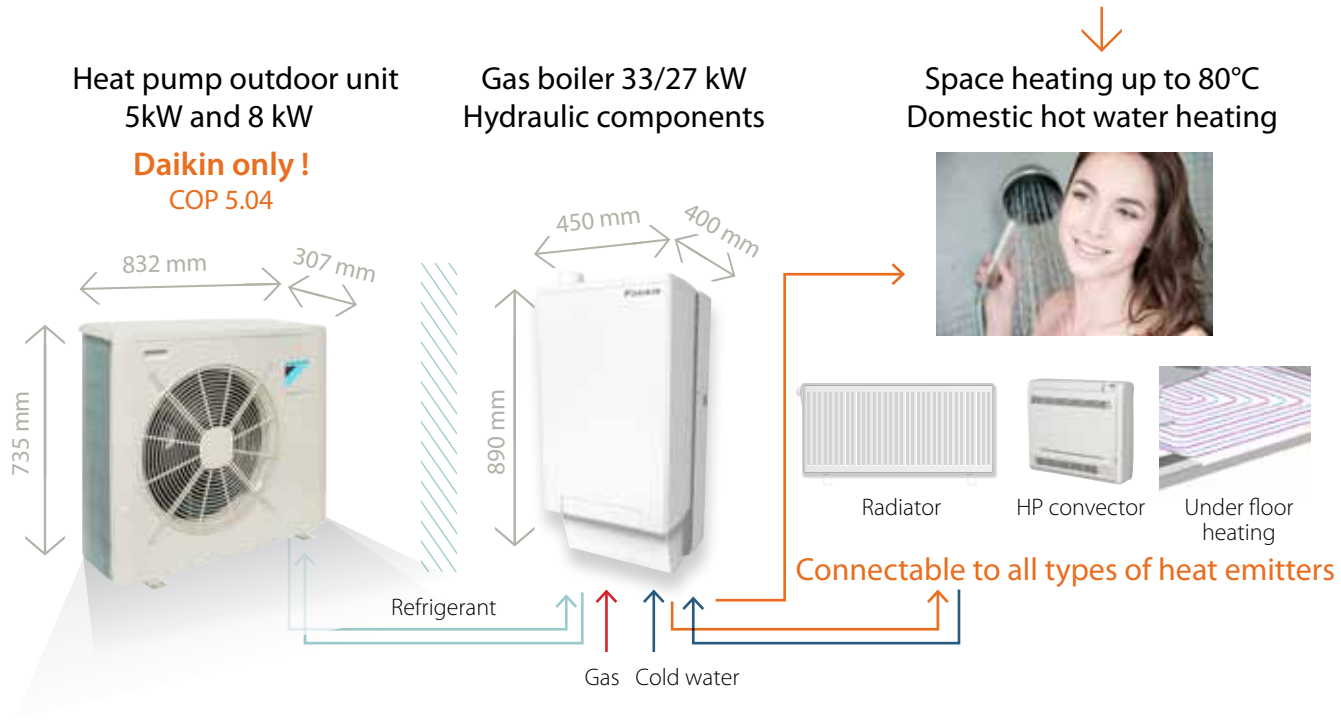


Access to new applications
for Daikin Altherma hybrid heat pump

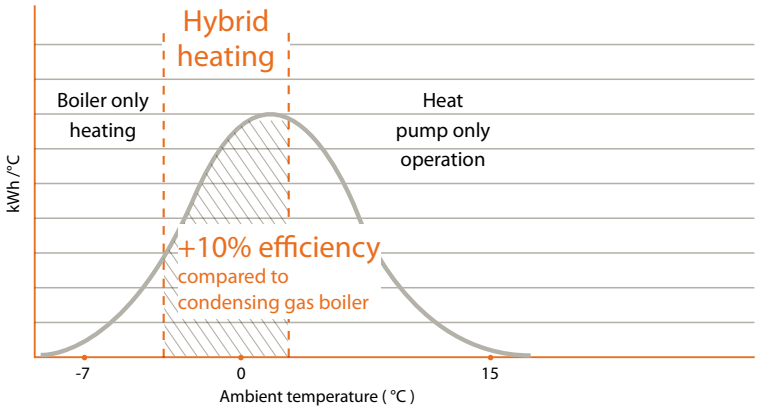
- ✓ Connectable to existing radiators (up to 80°C)
- ✓ Use existing installation space, easy to replace old system
- ✓ Cover high heat loads (above 12 kW) of renovation applications
- ✓ Good ROI compared to new gas condensing boiler

2. DAIKIN ALTHERMA HYBRID HEAT PUMP COMBINES HEAT PUMP TECHNOLOGY WITH GAS

Daikin Altherma hybrid heat pump uses a smart combination of a new gas condensing boiler and the most efficient air-to-water heat pump system on the market.



With the Daikin Altherma hybrid heat pump technology, the most cost efficient operation according to the ambient temperature will be used.



1 High temperature zone:
100% heat pump

2 Mid temperature zone:
heat pump + gas boiler *
- most cost efficient to operate both
- additional capacity if required

3 Cold temperature zone:
100% gas boiler

Typical application

- Location: London
- Heat load: 14 kW
- 70% heat pump output
- 30% gas boiler output

* Did you know that…

thanks to the special Daikin Altherma hybrid heat pump **flow control**, both gas boiler and heat pump can operate at the same time in the most cost efficient way. The water flow rate will be automatically regulated, in order to have the possibility of lowering the entering water temperature coming from the radiators to the heat pump and so maximising heat pump efficiency. This results in the most cost efficient operation combining gas boiler and heat pump to deliver the capacities required.

Daikin patented

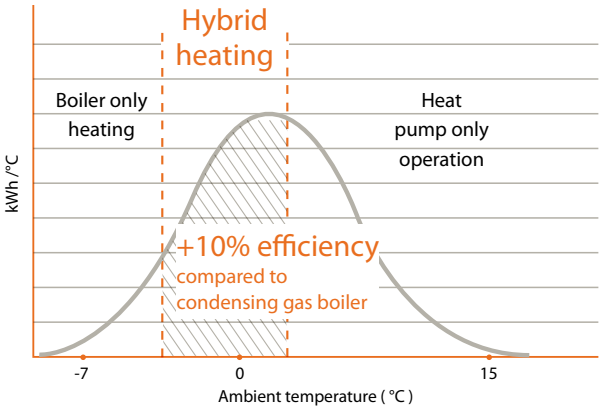
Added value benefits

If you're an end user then you benefit form decreased heating costs, a rapid return on investment and no need to replace radiators and existing pipe work. If you're an installer you have the benefit of having a single heat pump solution for all replacement applications: one that is easy and fast to install and uses renewable energy sources. If you're a wholesaler then you benefit from not having to stock a huge range of materials since one hybrid capacity class can cover all possible replacement applications.

End user benefits

1. SAVE MONEY IN COMPARISON TO A NEW GAS CONDENSING BOILER

- ✓ Space heating **35%** more efficient than new gas condensing boiler
- ✓ Domestic hot water heating **30%** more efficient than new gas condensing boiler
- ✓ High return on investment: payback of **3-7 years**



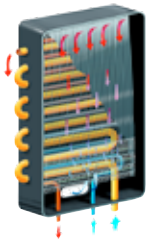
Space heating

- Programmed for most cost efficient operation over the entire temperature range
- Daikin hybrid logic to maximise heat pump usage
- Most efficient heat pump system on the market

Domestic hot water heating

Three possibilites

- Instantaneous with gas boiler *
- Optional domestic hot water tank for storage of domestic hot water
- Optional solar tank to increase domestic hot water efficiency even further (solar - heat pump - gas boiler for domestic hot water heating)



* Did you know that…

the Daikin Altherma hybrid heat pump has the most efficient instantaneous domestic hot water heating on the market, thanks to a special 2 in 1 heat exchanger used for both space heating and domestic hot water heating. Thanks to direct heating of cold water, the Daikin Altherma hybrid heat pump system can benefit from the condensation effect as well for domestic hot water heating, allowing an efficiency increase **up to 30%** over traditional gas condensing boilers.

2. USE EXISTING EQUIPMENT – LOW INVESTMENT

- ✓ Similar dimensions as a gas boiler
- ✓ No modification inside the house required
- ✓ No additional investment required

- Connectable to **existing radiators** (water temperatures up to 80°C possible) and **existing water piping** system
- Similar dimensions to existing gas boiler **- no change to installation space**

Typical example

- existing gas boiler: HxWxD: 850mm x 450 mm x 350mm
- Daikin Altherma hybrid heat pump indoor unit: (both hydrobox and gas boiler) fits in the same space as the original gas boiler.

Installer benefits

1. ONE HEAT PUMP SOLUTION FOR ALL RENOVATION APPLICATIONS

✓ More applications possible using Daikin Altherma

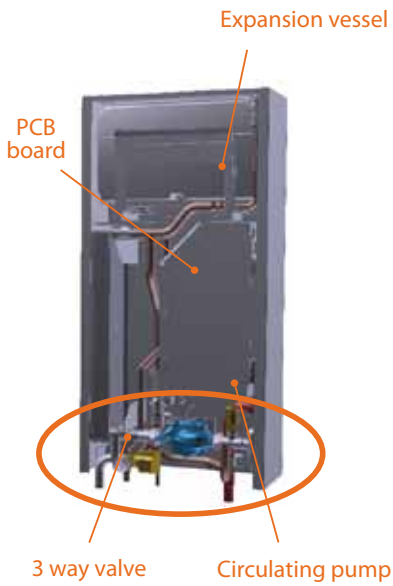
- All heat loads coverable up to 27 kW
- Connectable to all types of heat emitters as well as existing radiators (up to 80°C)
- One solution for heating and domestic hot water
- Gas boiler can be installed without heat pump in early stage, in order to quickly restart heating in case of break down of existing gas boiler

2. EASY AND FAST INSTALLATION OF RENEWABLE ENERGY SOURCE TECHNOLOGY

✓ Time saving: installation and maintenance

- No changes to radiators and installation room
- All components included with front access
- All connections at the bottom, similar to all wall hung gas boilers
- Quick commissioning with user interface

Quick commissioning with user interface



Wholesaler benefits

Gas boiler system:
33/27 kW

Heat pump sytem:
5 kW or 8 kW

LOW STOCK VALUE COVERING ALL REPLACEMENTS

✓ One heat pump solution for all renovation applications

- All heat loads
- All types of emitters
- Space heating and domestic hot water heating
- Replacement in case of break down

✓ Low stock value - low chance of being out of stock

- Heat pump sytem: 5 kW or 8 kW
- Gas boiler system: 33/27 kW
- One combination (e.g. 5 kW heat pump with 33/27 kW boiler) can cover all possible renovation applications
  - › less stock required
  - › lower chance of being out of stock

AIR TO WATER APPLICATIONS

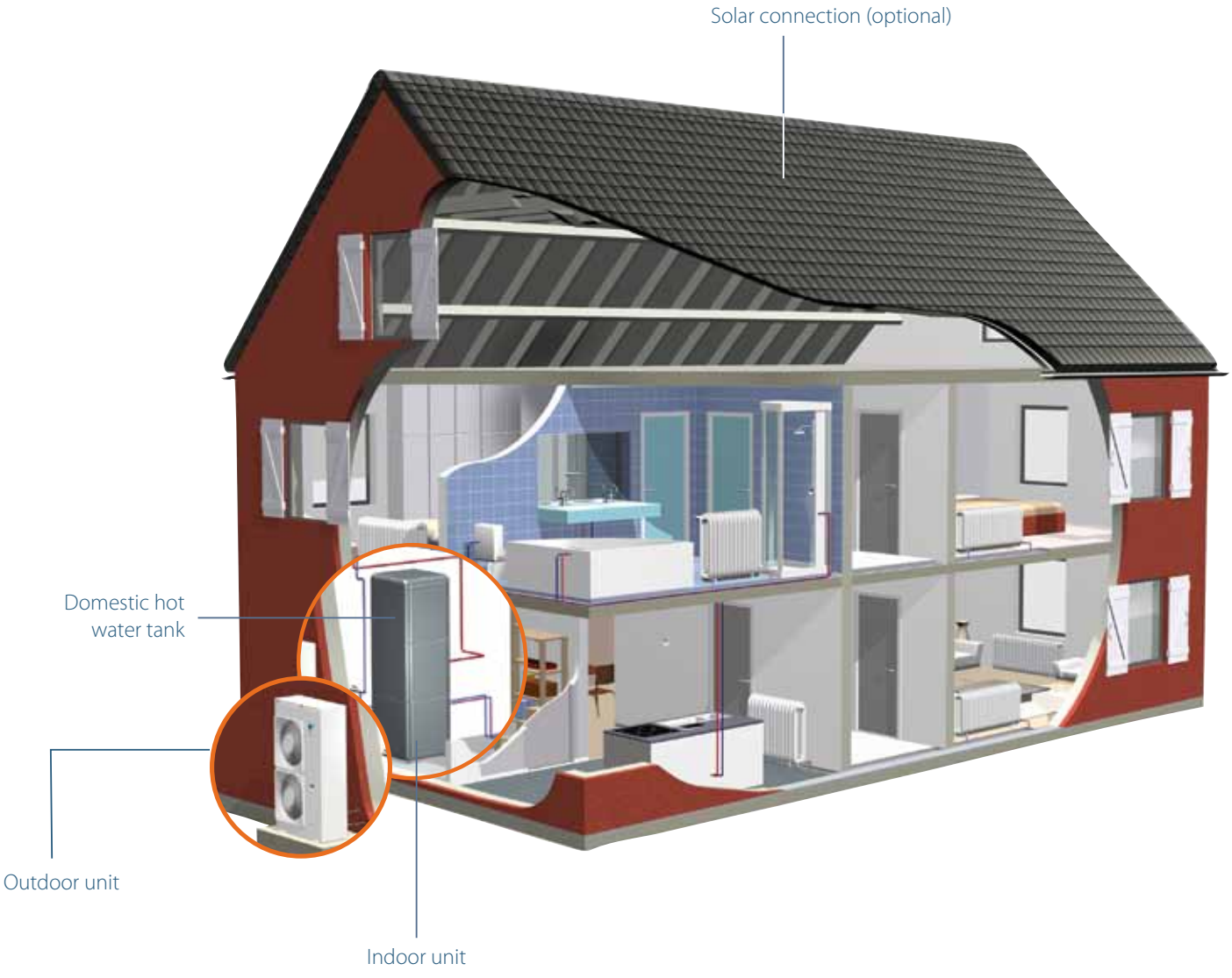
Heating & domestic hot water

Ideal for replacement of an oil boiler

Daikin Altherma high temperature

For replacement of oil boilers

Daikin Altherma high temperature system offers heating and domestic hot water for your home. This system can perfectly **replace a tradional boiler and connect to the existing piping**. Daikin Altherma high temperature is therefore the ideal solution for renovations. The split system consists of an outdoor unit and an indoor unit and can be completed with solar connection.



Split system

A split system consists of an outdoor unit and an indoor unit

The Daikin Altherma outdoor unit includes a heat pump that extracts heat from the outside air resulting in nearly 2/3 of all usable heat coming from a sustainable and free source.
The outdoor unit extracts heat from the ambient outdoor air. This heat is transferred to the indoor unit via refrigerant piping. The indoor unit receives the heat from the outdoor unit and further increases the temperature, allowing water temperatures up to 80°C for heating through radiators and for domestic hot water use. Daikin's unique cascade compressor approach to the heat pumps (one in the outdoor unit/one in the indoor unit) means optimum comfort at even the coldest outdoor temperatures, without the need for an electric back-up heater.
Available capacities are 11, 14 and 16 kW. If a greater heating capacity than 16 kW is required, you can now combine several indoor units with one single outdoor unit to give up to 40 kW of heating.
Daikin Altherma high temperature heats up to 3 times more efficiently than a traditional heating system based on fossil fuels or electricity. A lower running cost is thus achieved, while you can still enjoy a stable and pleasant level of comfort.*

* COP (Coefficient of Performance) of up to 3.08

Domestic hot water tank

Daikin Altherma's high water temperature is ideal for heating domestic hot water without the need for an additional electric heater. Rapid heating of domestic hot water also means smaller heaters are needed. For a family of approximately 4 people, the standard tank is the best solution. Should you require more hot water, a larger tank is also available.

Heat emitters

The Daikin Atherma high temperature system is designed to work only with high-temperature radiators, which come in various sizes and formats to suit the interior design as well as the heating requirement. Our radiators can be individually controlled or they can be regulated by the central heating control programme.

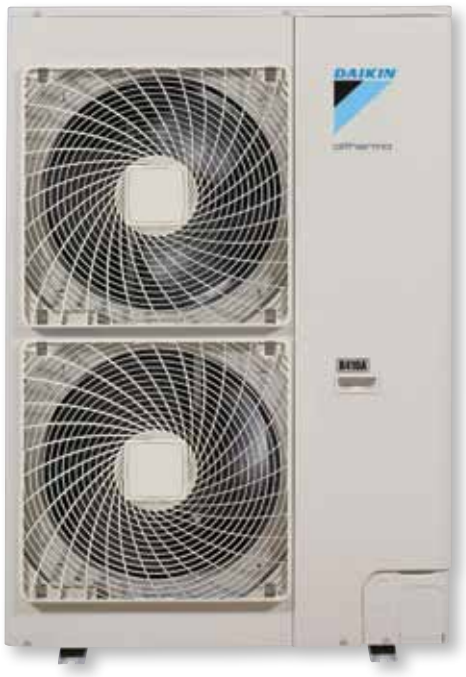
Solar connection

The Daikin Altherma high temperature heating system can optionally use solar energy for hot water production.
If the solar energy is not required immediately, the purpose-built hot water tank (EKHWP) can store large quantities of heated water for up to a day for later use as domestic hot water or for heating.

1. OUTDOOR UNIT AND INDOOR UNIT

OUTDOOR UNIT

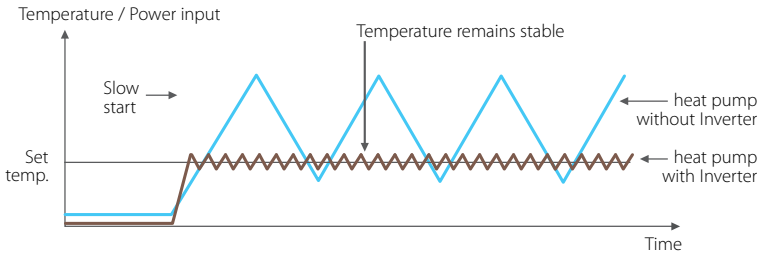
Daikin Altherma high temperature uses 100% thermo-dynamic energy to obtain water temperatures up to 80°C without using an additional heater.



Inverter control means even more savings!

The inverter constantly adapts your system to actual heating demand. No need to fiddle with settings: the programmed temperature is optimally maintained regardless of outdoor and indoor factors such as the amount of sunlight, the number of people in the room, etc. This results in unmatched comfort, prolonged system life since it's only in operation when needed, and 30% additional savings in energy costs compared to non-inverter heat pumps.

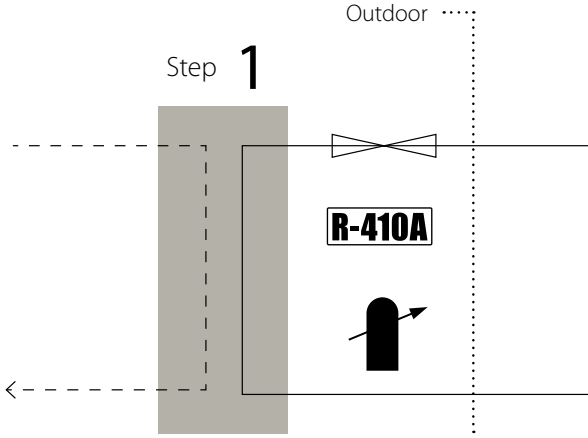
Heating operation:



Daikin Altherma cascade technology

High performance in 3 steps:

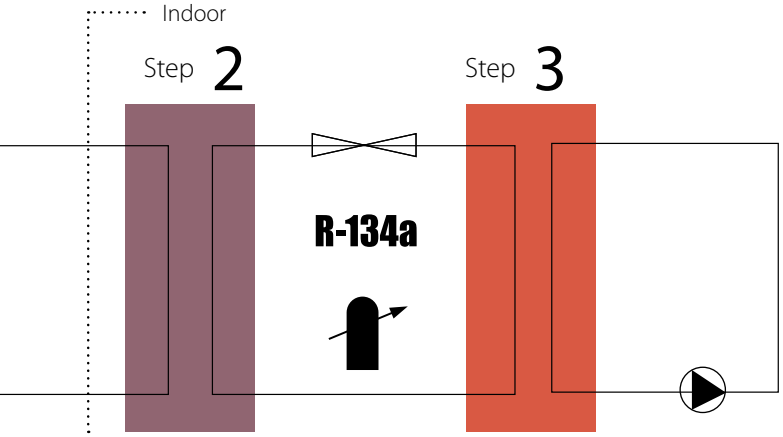
1 The outdoor unit extracts heat from the ambient outdoor air. This heat is transferred to the indoor unit via R-410A refrigerant.



INDOOR UNIT

› Available in heating only applications
› No back-up heater required thanks to cascade technology

1. Heat exchanger R-134a ⟷ H_2O
2. Heat exchanger R-410A ⟷ R-134a
3. Pump (DC-inverter to maintain fixed ΔT)
4. Compressor R-134a
5. Air purge
6. Manometer
7. Expansion vessel (12l)



2 The indoor unit receives the heat and further increases the temperature with R-134a refrigerant.

3 The heat is transferred from the R-134a refrigerant circuit to the water circuit. Thanks to the unique cascade compressor approach, water temperatures of 80° C can be reached without using an additional back-up heater.

2. DOMESTIC HOT WATER TANK

Whether your customer wants domestic hot water only or the advantage of solar energy, Daikin offers you the domestic hot water tank that meets his or her requirements.

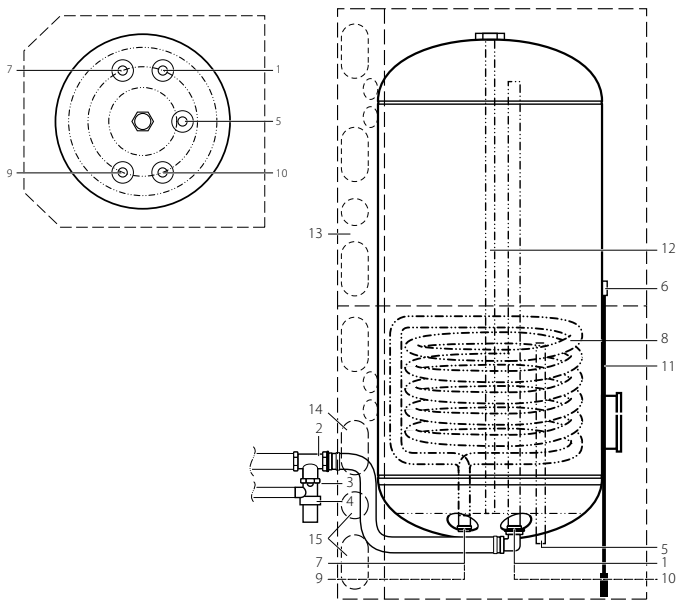
The indoor unit and domestic hot water tank can be stacked to save space, or installed next to each other, if only limited height is available.

Non-stacked Stacked

EKHTS: Domestic hot water tank

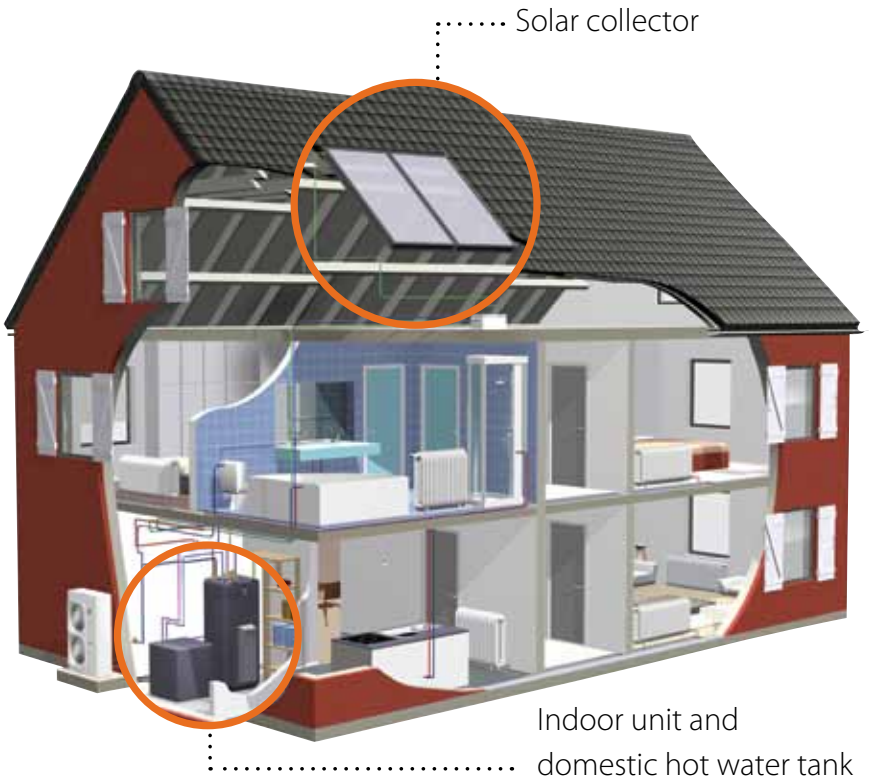
> Available in 200 and 260 litres
> Efficient temperature heat-up: from 10°C to 50°C in only 60 minutes*
> Heat loss is reduced to a minimum thanks to the high quality insulation
> At necessary intervals, the indoor unit can heat up the water to 60°C to prevent the risk of bacteria growth.

* Test done with a 16kW outdoor unit at ambient temperature of 7°C, 200L tank



1. Hot water connection
2. T-piece (field supply)
3. Pressure relief valve connection
4. Pressure relief valve (field supply)
5. Recirculation hole
6. Thermistor socket
7. Flow inlet connection
8. Heat exchanger coil
9. Return outlet connection
10. Cold water connection
11. Thermistor
12. Anode
13. Knockout holes
14. Knockout holes

3. SOLAR CONNECTION



Solar collectors

Averaged over an entire year, the sun delivers half of the energy we need to bring our domestic hot water up to the desired temperature. High-efficiency collectors with highly selective coating transfer all the short-wave solar radiation into heat. The collectors can be mounted on roof tiles.

Operation

The solar collectors are only filled with water when sufficient heat is provided by the sun. In this case, both pumps in the control and pump unit switch on briefly and fill the collectors with storage tank water. After filling, which takes less than a minute, one of the pumps switches off and water circulation is maintained by the remaining pump.

Unpressurised system

If there is insufficient sunshine or if the solar storage tank does not need more heat, the feed pump switches off and the entire Solar System drains into the storage tank. The addition of antifreeze is not necessary since, if the installation is not in use, the collector surfaces are not filled with water – another environmental advantage!

EKHWP: domestic hot water tank

The domestic hot water tank has two sections: The upper, always hot, section – the active water zone – and the lower, colder section – the solar zone.

1. The active water is heated in the upper section of the storage tank. The high temperature of this zone ensures that sufficient hot water is always available.
2. Solar collectors work more efficiently when colder water flows through the solar collectors. Therefore, the water that is fed directly to the solar collectors in solar operation is stored in the solar zone.

4. EASY CONTROL

System controller

The user interface controls the high temperature heating system in two ways:

1/ Weather dependant floating set point

When the floating set point functionality is enabled, the set point for the leaving water temperature will be dependant on the outside ambient temperature. At low outside ambient temperatures, the leaving water temperature will increase to satisfy the increasing heating requirement of the building. At warmer temperatures the leaving water temperature will decrease to save energy.

2/ Thermostat control

With Daikin Altherma's user interface with integrated temperature sensor, the ideal temperature can be easily, quickly and conveniently regulated.
The easy-to-control user interface for high temperature applications guarantees your comfort:

- Space heating
- Quiet mode
- Setback function
- Disinfection function
- Off function
- Time scheduler
- Domestic water heating mode

Optional room thermostat

An external sensor (EKRTETS) can be placed between the under floor heating and the floor, as an option to the wireless room thermostat. The thermostat measures the room temperature and communicates directly to the user interface.

The LCD screen of the room thermostat indicates all the necessary information regarding the setting of the Daikin Altherma system in the blink of an eye. The user can easily navigate between the different menus, the most common of which include:

- Setting the temperature of the room based on measurements from the built-in or external sensor
- Off function (with integrated frost-protection function)
- Holiday function mode
- Comfort and reduced function modes
- Time (day and month)
- Programmable week-timer with 2 user defined and 5 pre-set programmes, with up to 12 actions per day
- Keylock function
- Setting limits. The installer can change the upper and lower limits
- Floor temperature protection *

* only in combination with EKRTETS

DAIKIN

Heating, domestic hot water and cooling

for new

Daikin Altherma offers two low temperature systems both offering **heating and cooling, including a domestic hot water system** all of which connect to the same range of accessories.

Daikin Altherma low temperature

houses

Split system

Whether it is a newly-built house or an existing low-energy home, the Daikin Altherma low-temperature split permits completely integrated components for total climate control.
Will you choose an integrated floor-standing indoor unit to provide heating and domestic hot water, or go for a wall-mounted indoor unit? Does the house use under floor heating, or heat pump convectors? Does the electricity come from the grid, or from a renewable eco-friendly source like solar power?
For all of these situations, **the Daikin Altherma low-temperature system is a total solution for your customer.**

4 brand new benefits

Best seasonal efficiencies,
providing the highest savings on running costs

With many years of air-to-water heat pump experience and over 150,000 units installed throughout Europe, we continuously strive to optimise Daikin Altherma's performance. This is achieved by a constant focus on limiting electrical inputs during each new product development process, resulting in further reducing the running costs.

Perfect fit for new builds,
as well as for low energy houses

The Daikin Altherma low emperature is fully optimised to fulfill the efficiency, comfort and application needs of newly built houses. In addition, the extended product range now offers the perfect solution for low-energy houses, even for very low heat loads.

Integrated heating and hot water unit, saving installation space and time

The new Daikin Altherma low temperature integrated indoor unit is a floor-standing heat pump unit including the domestic hot water tank (available in 180l and 260l). This makes it the easiest and fastest installation when domestic hot water is required, and provides the highest domestic hot water heating efficiency and comfort for the end user in a compact, sleek design. When domestic hot water is preferred in combination with the Daikin Altherma low temperature , the integrated indoor unit is the best solution, for the installer and the end user! A wall-mounted indoor unit is available as well, to offer the best solution in specific situations, e.g. when no domestic hot water heating is required or when a combination with thermal solar energy is preferred.

New control panel:
easy to use, commission and service

The Daikin Altherma low temperature is equipped with a new user interface. Commissioning, servicing and day-to-day operation become straightforward the multi-lingual and graphical interface that provides full-text representation, easy menu navigation and intelligent control features.

1. GUARANTEED OPERATION: DAIKIN ALTHERMA IS SUITABLE FOR ALL CLIMATES, EVEN WITHSTANDING SEVERE WINTER CONDITIONS

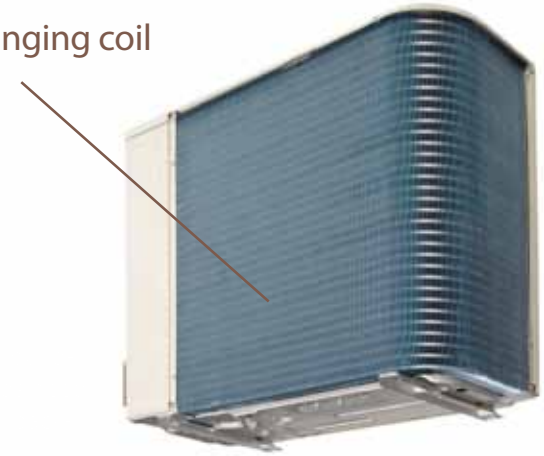
Daikin is renowned for its know-how related to frost protection on its heat pump range. The outdoor units are specifically designed to avoid ice build-up problems, even in the most severe winter conditions.

Daikin Altherma low temperature has a guaranteed operation down to an outside temperature of -25°C. This ensures sufficient heat pump operation for even the coldest climates.

1. The 4-8kW range of Daikin Altherma has a specifically designed casing to avoid the risk of ice formation on the outdoor unit coil.

- The outdoor unit has a free hanging coil, ensuring no ice accumulates in the lower part of the outdoor unit. This is key to offering appropriate frost protection and has the additional advantage that no electrical bottom plate heater is required.
- The discharge grill is also specifically designed to avoid ice accumulation.

Free hanging coil



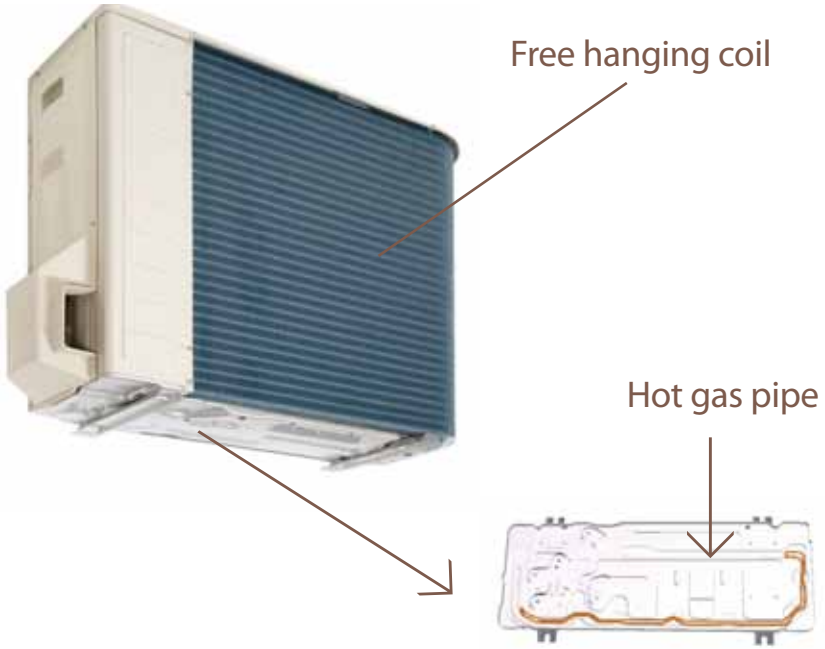
Our advanced protection against frost and icing means that we can offer the Daikin Altherma across the whole of Europe.

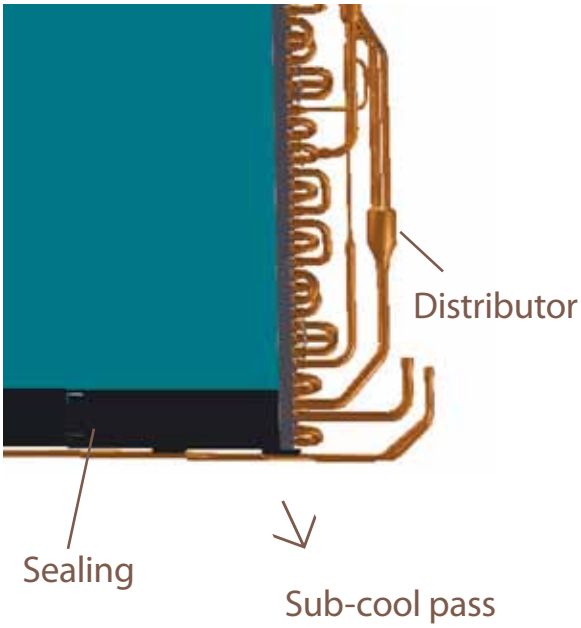
New discharge grille

2. The 11-16kW range of Daikin Altherma (ERLQ-C) has specific frost protection to avoid the risk of ice forming on the outdoor unit coil.

- Hot gas pass: hot gaseous refrigerant coming from the compressor runs through the bottom plate to keep the base free of ice and all the drain holes open
- Sub-cool pass: before the refrigerant pipe is split by the distributor to the hairpins, the refrigerant passes through the bottom of the coil to keep this lower part free of ice

Only a small capacity bottom plate heater is installed (35W) on the ERLQ-C range, with smart operation logic only operating during defrost cycles. This saves around 90% of electricity consumption compared to a traditional heat pump system with a thermostatically controlled bottom plate heater.





2.a EASIEST AND FASTEST INSTALLATION, DOMESTIC HOT WATER TANK INCLUDED

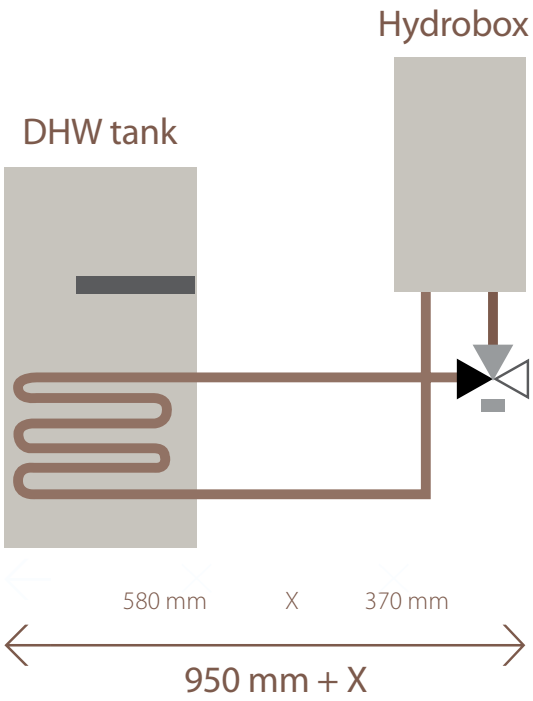
- The stainless steel domestic hot water tank is included in the unit, with all connections between heat pump module and tank factory mounted. This allows for a fast installation compared to a traditional set-up (wall-mounted with separate domestic hot water tank) with only water and refrigerant pipes to be connected.
- All hydraulic components are included (circulating pump, expansion vessel, back-up heater, etc. No need to look for third party components.
- The electric PCB board and hydraulic components are accessible from the front. This ensures easy serviceability and avoids the risk of any damage to electrical components due to water leakages.
- All water and refrigerant connections are at the top of the unit, assuring easy connection and accessibility. This means no connections are required at the back of the unit, resulting in a lower installation footprint.

Components are accessible from the front

Thanks to the all-in-one design, the installation space is minimised both in terms of footprint and height

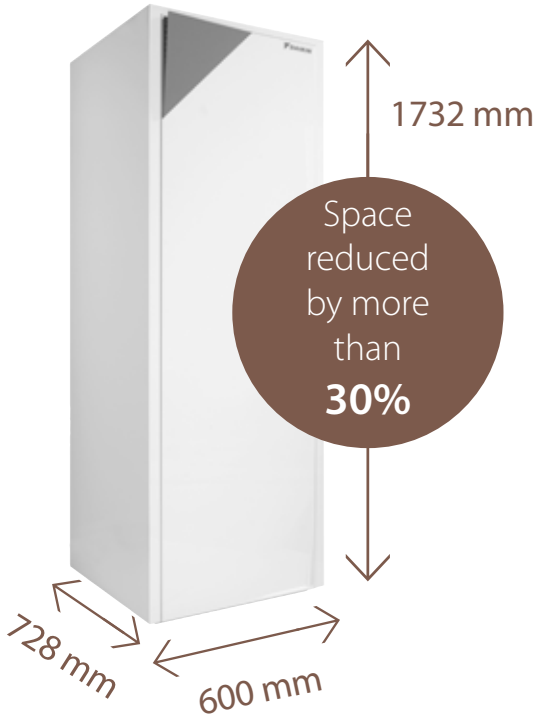
1 Compared to the traditional split-up version for a wall-mounted indoor unit and separate domestic hot water tank, the integrated indoor unit greatly reduces the installation space required.

Traditional set-up



VS

Integrated indoor unit



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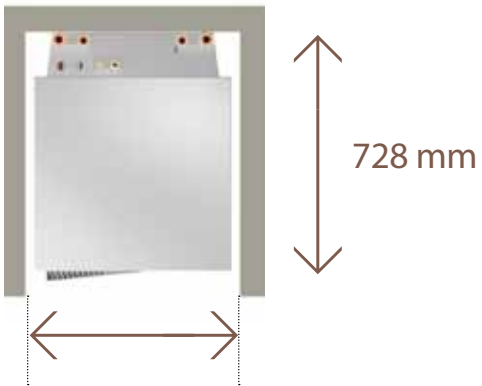


Smaller footprint: with a width of only 600 mm and a depth of 728 mm, the integrated indoor unit has a similar footprint compared to other household appliances.

Smaller installation footprint: almost no side clearances are required, and no space is required behind the unit for the piping, as the piping connections are at the top. This results in an installation footprint of only 0.45 m^2.

3 Low installation height: both the 180l and 260l version come with a height of 173 cm. The required installation hight is less than 2 m.

4 The compactness of the integrated indoor unit is emphasised by its sleek design and modern look, easily fitting with other household appliances.

3. ALTERNATIVE SET-UP: WALL-MOUNTED INDOOR UNIT INCLUDING ALL HYDRAULIC COMPONENTS

The wall-mounted indoor unit is the perfect solution, in certain situations

1. **When no domestic hot water is required in combination with the Daikin Altherma system**

- All hydraulic components are included in the heat pump unit (circulating pump, expansion vessel, back-up heater, etc), no need to look for third-party components
- All hydraulic components and the PCB board, are accessible from the front for easy serviceability
- Compact unit: 890 mm (height) x 480 mm (width) x 344 mm (depth)
- Small installation space as almost no side clearances are required
- Modern outlook easily fits in with other modern household appliances.

2. **The wall-mounted indoor unit can be combined with a separate domestic hot water tank**

- EKHWS stainless steel tank: 150l, 200l or 300l
- EKHWE enameled tank: 150l, 200l or 300l.

NEW

3. When solar connection for hot water is required: Solar collectors

Averaged over an entire year, the sun delivers half of the energy we need to bring our domestic hot water up to the desired temperature. High efficiency collectors with highly selective coating transfer all the short-wave solar radiation into heat. The collectors can be mounted on roof tiles.

Unpressurised thermal hot water

The solar collectors are only filled with water when sufficient heat is provided by the sun. In this case, both pumps in the control and pump unit switch on briefly and fill the collectors with storage tank water. After filling, which takes less than a minute, one of the pumps switches off and water circulation is maintained by the remaining pump. If there is insufficient sunshine or if the solar storage tank does not need more heat, the feed pump switches off and the entire solar system drains into the storage tank. The addition of antifreeze is not necessary since, if the installation is not in use, the collector surfaces are not filled with water – another environmental advantage!

- EKHWP polypropylene tank: 300l or 500l with integrated solar pump station
- High efficiency as no glycol is needed in the system
- Well insulated tank to minimize heat loss
- Support for space heating possible
- Improved frost protection for snow covered solar collectors

Pressurised solar system

If needed, a pressurised thermal hot water system can also be offered. The system is filled with heat transfer fluid with the correct amount of antifreeze to avoid freezing in winter. The whole system is pressurised and sealed. A solar kit and solar pump station will be needed to connect the domestic hot water tank (EKHWS or EKHWE) to the solar collector.

4. EASY CONTROL

Quick and easy commissioning

At the first start-up, a quick configuration wizard will guide the installer through the commissioning process. Through a series of short questions, the set-up of basic parameters will automatically be completed. Fine-tuning these parameters remains possible using the menu-based navigation. As a result of the quick configuration wizard, only the parameter settings relevant to the installation will be shown in the menus. The irrelevant parameters will be hidden and thus inaccessible.

The parameters can be downloaded to a PC as a back-up, or be duplicated to other similar installations. If preferred, the parameter settings can also be prepared on beforehand and uploaded to the units during commissioning.

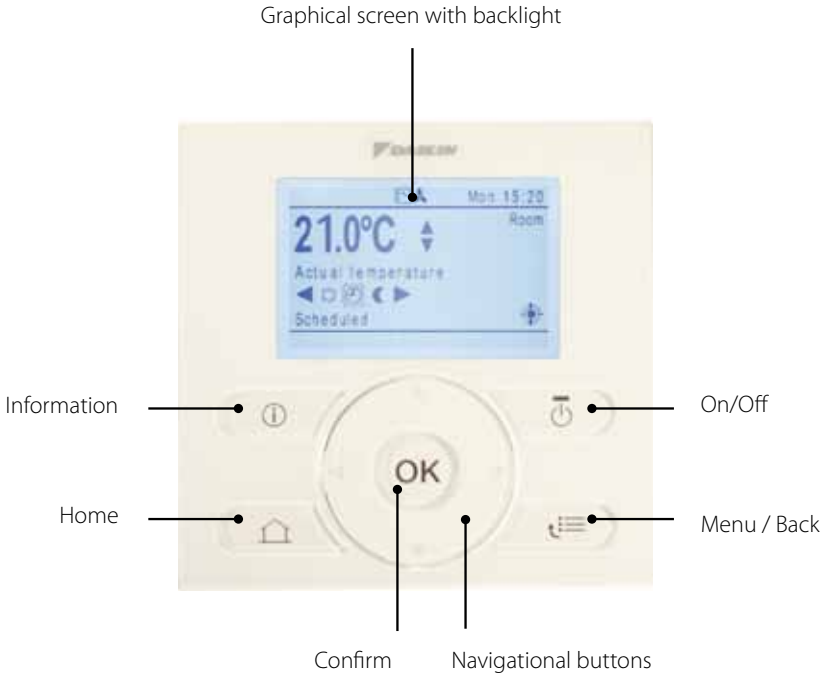
Before the actual test-run of the unit, an actuator test mode allows all the wired components to be activated one by one. This allows for a quick and easy check of all connections and wirings made to ensure a correct operation. An automatic screed drying function can be activated to proceed through a gradual heat-up of an under floor heating system to avoid cracks in the floor during the first heat-up. Individual and easy-to-programme schedule timers for heating, cooling, domestic hot water operation and recirculation noise-sensitive operation and electrical booster heater allow to adjust the operation of the unit to match the end-user's typical daily schedule.

After the commissioning, access to the installer's menu can be restricted (manually or automatically after one hour) to avoid wrong manipulation of the unit by the end-user.

Easy serviceability

In case something goes wrong, full-text error messages will guide the end-user to take appropriate action to try and resolve the problem. If the problem persists and a site intervention is necessary, the service engineer will be able to review the last 20 error occurrences.

Detailed information on the operational conditions of the unit, such as the running hours of the different elements, operating temperatures or number of starts, can easily be read out from the extended end-user's menu.



Room temperature control functionality

The user interface itself is equipped with a temperature sensor and can be installed remotely from the Daikin Altherma low temperature indoor unit.

- Installed on the unit, it will allow quick and easy access to the unit's operating information and settings.
- Installed remotely (e.g. in a living room) it will also act as a room thermostat with more advanced features than a standard room thermostat, resulting in more stable room temperatures, increased efficiency and operation life cycle. A second optional interface can still be installed on the unit for service purposes.

User-friendly with intuitive controls

In the detailed display mode, the large graphical display of the user interface displays the actual room temperature and the operation mode of the unit. Depending on the end-user's preference, a simplified basic display is available that shows just the actual room temperature and only allows the room temperature set-point to be changed.

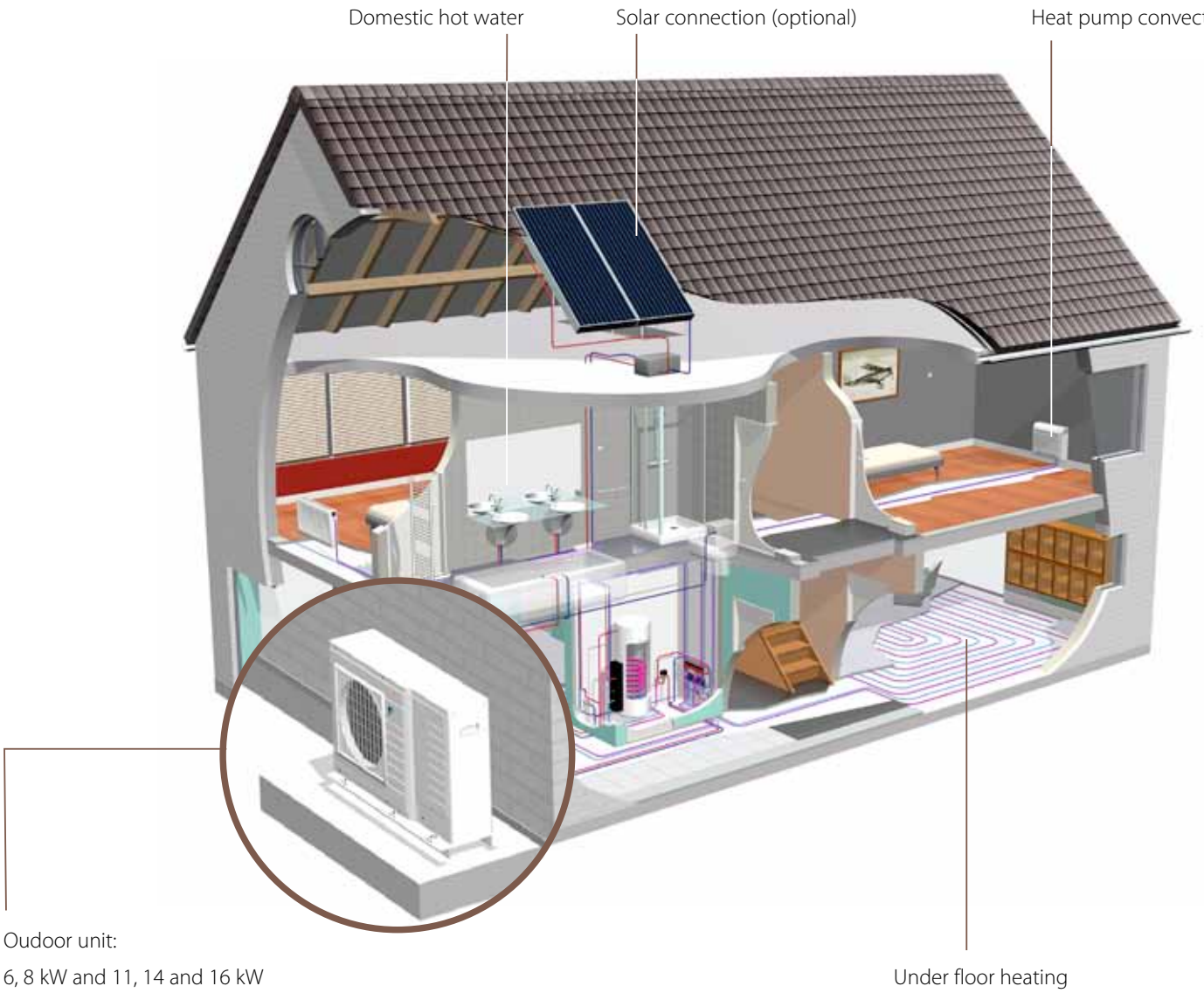
User settings can be accessed through an intuitive and self-explanatory menu. This menu will also give access to additional information such as the energy consumption and heat production of the system, split up between heating, cooling and domestic hot water operation, enabling close monitoring of the unit's efficient operation.

Monobloc system

Everything combined in one outdoor unit

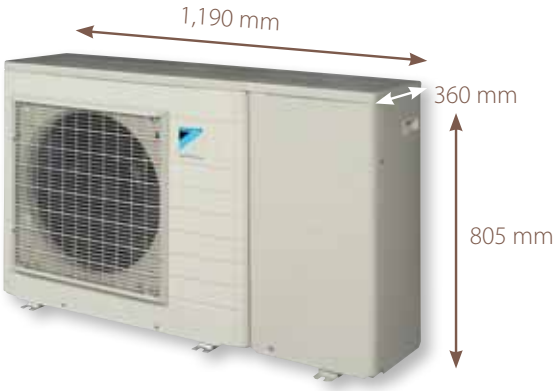
In addition to Daikin Altherma split systems, Daikin has introduced a monobloc version in which all hydraulic parts are located within the outdoor unit.
In this system, the water pipes, rather than the refrigerant pipes, run indoors from the outdoor unit, making installation much quicker and easier for the domestic installer.

Available capacities for monobloc: 6, 8 kW and 11, 14, 16 kW



1. OUTDOOR UNIT ONLY

Extra small casing



6kW and 8kW casing

H_2O piping, No refrigerant

11kW, 14kW and 16kW casing

Freeze protection of hydraulic parts

In order to protect the water pipes from freezing up during winter, insulation is provided for all hydraulic components and special software has been applied to activate the pump and back-up heater if necessary. This prevents the water temperature from dropping below freezing point and obviates the need for the addition of glycol to the water pipes.

Daikin Altherma monobloc is available in the following versions:

- heating only or heating and cooling
- with or without bottom plate heater
- single phase or three phase
- 6kW, 8kW, 11kW, 14kW or 16kW

Built-in electric back-up heater as additional heating during extremely cold outdoor temperature. The Daikin Altherma monobloc can be equipped with a 6 kW back-up heater, which can be adjusted to 3 kW (single phase units) or 2 kW (three phase units) by changing the wiring.

If necessary, an optional "in line" back-up heater of 6 kW can be mounted indoors (also adjustable to 2 kW or 3 kW)

Daikin Altherma small capacity models (6 to 8 kW) are equipped with a swing compressor. Swing compressors have been setting trends in the area of energy efficient performance for the past 10 years (leaks and friction are basically non-existent) in thousands of outdoor units.

The scroll compressors provided in the Daikin Altherma monobloc models (11 to 16 kW) are designed as compact, robust, low-noise device to guarantee optimal operational reliability (no valves and built-in swing-link coupling) and efficiency (through a low initial flow and a constant compression ratio). A technology already used in many Daikin heat pumps.

2. DOMESTIC HOT WATER TANK

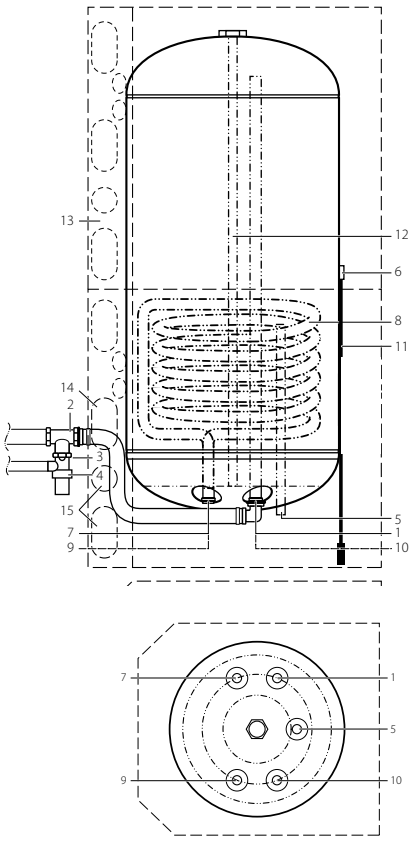
Whether your customer wants domestic hot water only or the advantage of solar energy, Daikin offers you the domestic hot water tank that meets his or her requirements.

EKHTS
Domestic hot water tank

The indoor unit and domestic hot water tank can be stacked to save space, or installed next to each other, if only limited height is available.

- Available in 200 and 260 litres
- Efficient temperature heat-up: from 10°C to 50°C in only 60 minutes*
- Heat loss is reduced to a minimum thanks to the high quality insulation
- At necessary intervals, the indoor unit can heat up the water to 60°C to prevent the risk of bacteria growth.

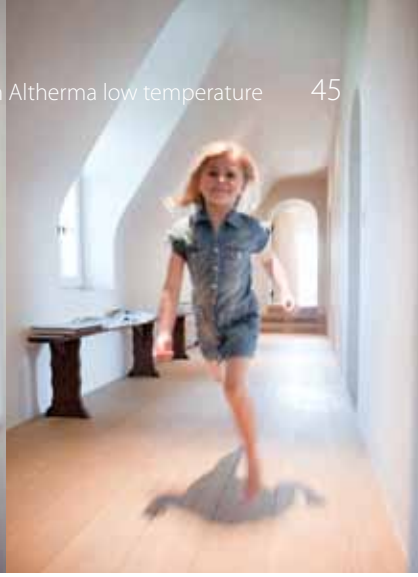
* Test done with a 16kW outdoor unit at ambient temperature of 7°C, 200L tank



1. Hot water connection
2. T-piece (field supply)
3. Pressure relief valve connection
4. Pressure relief valve (field supply)
5. Recirculation hole
6. Thermistor socket
7. Flow inlet connection
8. Heat exchanger coil
9. Return outlet connection
10. Cold water connection
11. Thermistor
12. Anode
13. Knockout holes
14. Knockout holes

EKHWP
Domestic hot water tank

- In combination with wall-mounted split and monobloc heating system
- Available in 2 capacities: 300 and 500 litres
  - › Can be combined with unpressurised solar system
  - › Optimised connections
- Easier installation of each system circuit
  - › Improved design: attractive colour and new form
  - › Optimised for easy transport and installation
  - › Better insulation means reduced energy costs
  - › Higher flow-rate thanks to optimised connection technology
  - › Clear connections mean easier installation



3. EASY CONTROL

System controller

Weather dependant floating set point

When the floating set point functionality is enabled, the set point for the leaving water temperature will be dependant on the outside ambient temperature. At low outside ambient temperatures, the leaving water temperature will increase to satisfy the increasing heating requirement of the building. At warmer temperatures the leaving water temperature will decrease to save energy.

Optional room thermostat

An external sensor (EKRTETS) can be placed between the under floor heating and the floor, as an option to the wireless room thermostat. The thermostat measures the room temperature and communicates directly to the user interface. The LCD screen of the room thermostat indicates all the necessary information regarding the setting of the Daikin Altherma system in the blink of an eye. The user can easily navigate between the different menus, the most common of which include:

- Setting the temperature of the room based on measurements from the built-in or external sensor
- Cooling and heating mode
- Off function (with integrated frost-protection function)
- Holiday function mode
- Comfort and reduced function modes
- Time (day and month)
- Programmable week-timer with 2 user defined and 5 pre-set programmes, with up to 12 actions per day
- Keylock function
- Setting limits. The installer can change the upper and lower limits
- Floor temperature protection and protection against condensation for under floor cooling *

* only in combination with EKRTETS

Heat pump convector

The heat pump convector unit can provide both heating and cooling if required, since the heat pump convector is more than just a fan coil unit.
The heat pump convector also has a very low noise level.

When combining under floor heating and fan coil units, the low leaving water temperatures, important for efficiency, are adequate for under floor heating, but the fan coil units then need to be oversized in order to emit the proper levels of heat at these low water temperatures. The heat pump convector solves this problem.
The heat pump convector is able to emit the required levels of heat at low leaving water temperatures, while retaining a modest size.
Instead of the leaving water circuit being switched on and off via a thermostat in a single master room, each heat pump convector can be directly wired to the Daikin Altherma indoor unit, the system's intelligence centre. This allows all rooms to have heat when required, regardless of the state of the other rooms.
The heat pump convector saves on running costs thanks to the improved efficiency by approximately 25% compared to a heating system that combines under-floor heating and regular fan coil units. The heat pump convector can easily replace existing heat emitters, thanks to its plug and play installation.

Solar connection

Pressurised solar system

Unpressurised thermal hot water

The solar collectors are only filled with water when sufficient heat is provided by the sun. In this case, both pumps in the control and pump unit switch on briefly and fill the collectors with storage tank water. After filling, which takes less than a minute, one of the pumps switches off and water circulation is maintained by the remaining pump. If there is insufficient sunshine or if the solar storage tank does not need more heat, the feed pump switches off and the entire solar system drains into the storage tank. The addition of antifreeze is not necessary since, if the installation is not in use, the collector surfaces are not filled with water – another environmental advantage!

Averaged over an entire year, the sun delivers half of the energy we need to bring our domestic hot water up to the desired temperature. High efficiency collectors with highly selective coating transfer all the short-wave solar radiation into heat. The collectors can be mounted on roof tiles.

Pressurised solar system

If needed, a pressurised thermal hot water system can also be offered. The system is filled with heat transfer fluid with the correct amount of antifreeze to avoid freezing in winter. The whole system is pressurised and sealed. A solar kit and solar pump station will be needed to connect the domestic hot water tank (EKHWS or EKHWE) to the solar collector.

Heating and domestic hot water

for new build and replacement of

Geothermal energy is a free source of energy for heating, and domestic hot water. It delivers enormous **cost savings** in even the coldest climates as the energy is at a relatively constant temperature all year round. The **compact design** of the inside unit requires very little space whilst, at the same time, making the system very **easy and quick to install**. And, once commissioned, our easy, **user-friendly controls** put the user in complete command.

Daikin Altherma ground source heat pump

oil boilers

Ground source heat pump

What is a ground source heat pump?

Even in the coldest climates, geothermal heat is present in the ground resulting in a fairly constant temperature of 10°C at depth of five metres. This trapped energy represents a source of heat that the ground source heat pump at the heart of our system can tap into to heat the home.

Using either a ground probe or a surface collector just below the surface, a water/anti-freeze mixture called 'brine' is pumped round the circuit as a heat transfer medium. The brine then passes into the heat pump unit itself where the heat is transferred to a low evaporation point refrigerant that is compressed to produce heating or domestic hot water.

Why choose a ground source heat pump?

The simple answer is because it is more efficient than an air-to-water heat pump when the average winter ambient temperature drops below 3°C.

For example, as in the Oslo region more than 70% of heating occurs when the outdoor temperature is below 3°C, the ground source heat pump is the most efficient solution, thanks to having access to a stable energy source that is unaffected by the ambient temperature.

In addition, the Daikin Altherma ground source heat pump has very stable heating capacities at low ambient temperatures and there is no need for an outdoor unit. This delivers two major benefits: firstly, it is easier to install as there is no outdoor unit involved and so no refrigerant connections need to be made, and secondly, there is no de-frost cycle involved and this increases the total indoor comfort levels.

Making a difference

Due to high efficiencies resulting from our inverter technology, the Daikin Altherma ground source heat pump provides a leading edge performance in comparison to the on/off units that make up the majority of the market.

1. HIGH SEASONAL EFFICIENCY THANKS TO OUR INVERTER HEAT PUMP TECHNOLOGY

The Daikin inverter heat pump technology has been shown to provide an increase in seasonal efficiency of up to 20% when compared to traditional on/off ground source heat pumps.

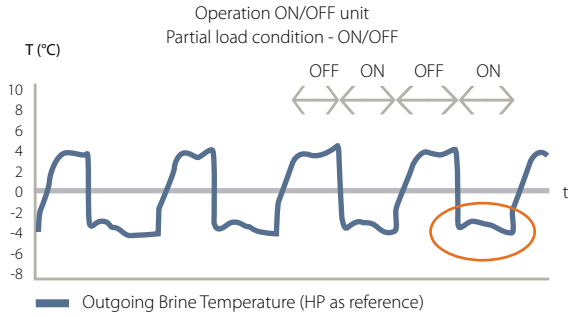
- The brine, a water/anti-freeze mixture that operates as heat transfer medium between the ground and the heat pump, is kept at a higher stable temperature
- Back up operation is reduced to a minimum
- High operating efficiencies of the compressor are reached at partial load operation, i.e. when no full capacity of the unit is required.
- This results in **reduced running costs** and a f**aster return on investment**.

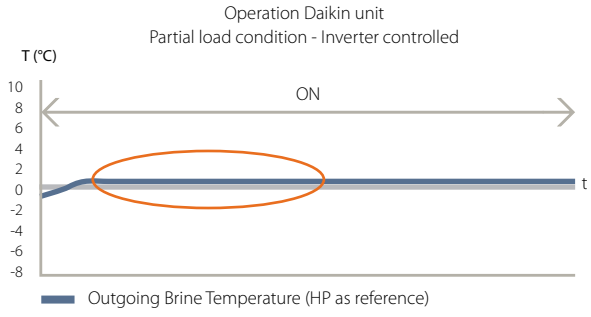
Higher brine temperatures during continuous compressor operation, in partial load conditions

Typical application:

- Location: Sweden
- Design temperature: -17°C
- Heat load: 13kW
- Heating off temperature: 16°C

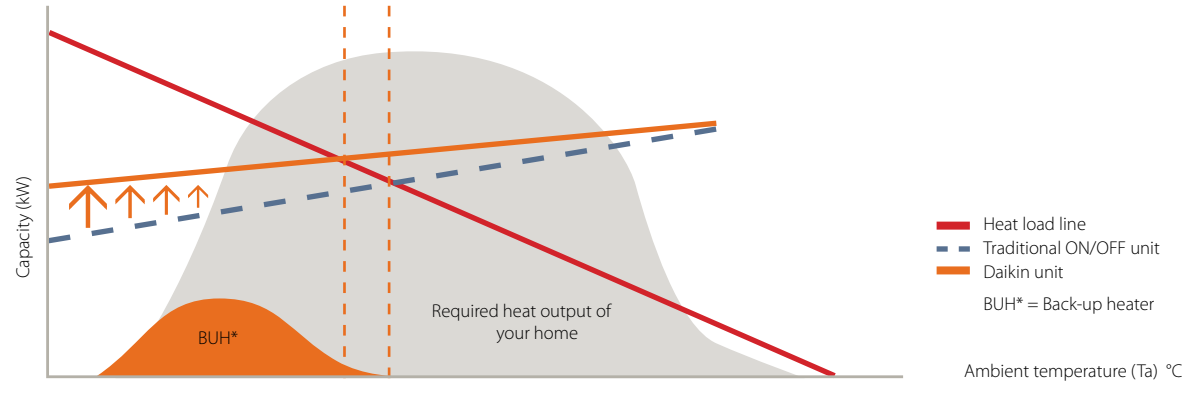
Case study





When no full capacity is required of the system the compressor works in partial load. In partial load conditions, a traditional on/off ground source heat pump sequently switches ON and OFF, whereby the brine temperature decreases down to -4°C when the unit is operating. Daikin's inverter technology results in a stable outgoing brine temperature of around 0°C. This increased stability in brine temperature results in a higher and more constant evaporating temperature which leads to higher operating efficiencies.

Less back up heater operation thanks to the boosting of the inverter compressor frequency



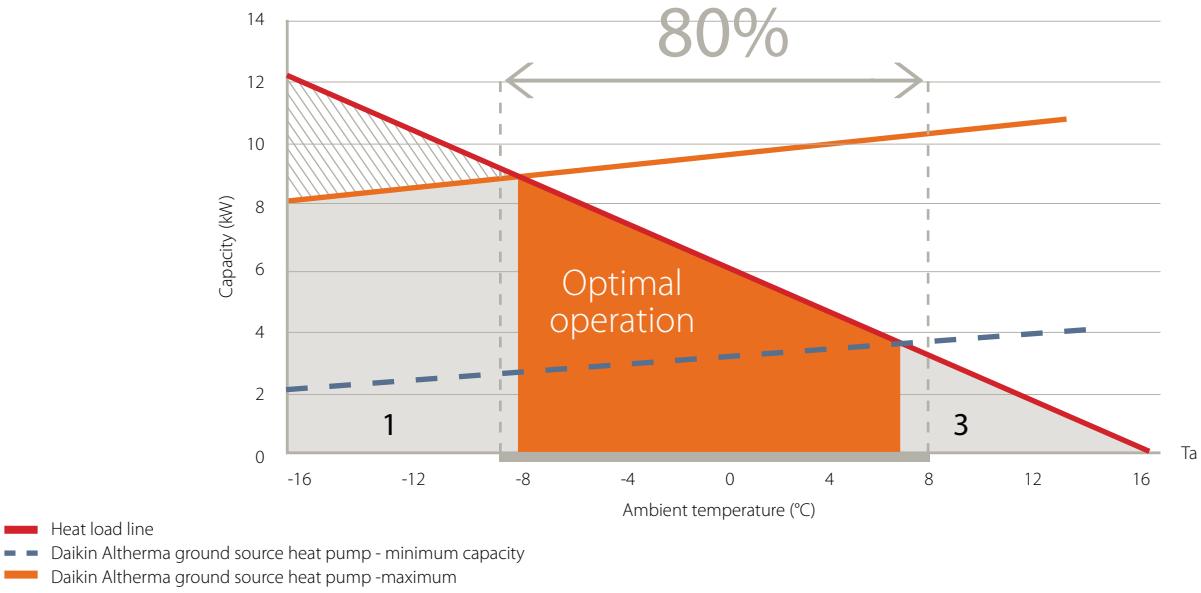
Compared to a traditional On/Off unit, the requirement for support from the back up heater is much lower for the Daikin Altherma ground source heat pump, thanks to the boosting effect of our inverter compressors, also this leads to lower running costs.

Big partial load operation at relevant ambient conditions

Typical Nordic climate application with standard heat load :

- Location: Sweden
- Design temperature: -17°C
- Heat load: 12kW

Case study



1 Full load operation with additional electric assistance (if required): the heat load is higher than the maximum heating capacity

2 Partial load operation: the heat load is lower than the maximum heating capacity and higher than the minimum heating capacity. This is the optimal operation zone. The compressor will reduce its operating frequency to deliver the exact required capacities with high operating efficiencies.

3 On/Off operation: The heat load is below the minimum heating capacity, therefore the unit will go into On/Off mode to deliver the required capacity.

In a Nordic climate, around 80% of the required heat output has to be delivered in an ambient temperature range between -9°C and 8°C, indicated by the orange zone.

To deliver a high seasonal Coefficiency of Performance (COP), it is crucial to have high operating efficiencies for this ambient temperature range as the majority of the required heat has to be delivered within this temperature range. As you will see, thanks to its wide modulating range, the Daikin Altherma ground source heat pump almost completely covers the relevant ambient temperature range whilst in partial load operation, which it the optimal operational zone of the unit. This is, of course, a major benefit compared to traditional On/Off compressors.

2. QUICK AND EASY INSTALLATION INCLUDING A DOMESTIC HOT WATER TANK

To keep things simple, the domestic hot water tank is factory-fitted, thus reducing the installation time and with the pipework connections on the top of the unit it is very easy to connect.

The overall weight of the unit is reduced to facilitate ease of shipping and installation.

3. COMPACT INDOOR UNIT WITH PLEASING DESIGN

- The full integration of heat pump module and domestic hot water tank keeps the footprint very compact
- High quality design helps the unit blend in with other household units

The footprint of the integrated unit is 728mm x 600mm - about the same as a normal household appliance - and at 1800mm high, it fits neatly in any standard room. A further benefit to both the installer and the user is that only 10mm side clearance is required and all the pipework connections are on top of the heat pump unit.

4. NEW USER INTERFACE

- Quick commissioning: the installer can program all the settings for an installation on a laptop computer and then simply upload them to the controller during commissioning. This not only reduces on-site time, but allows the installer to use similar setting on similar installations.
- User-friendly room thermostat functionality: the user can raise or lower water temperature as a function of the actual room temperature, resulting in a more stable room temperature and higher comfort levels.
- Energy management functionality: the controller displays both the output and input energy of the unit allowing the user to manage their energy consumption more accurately.
- Easy servicing: the controller records the time, date and nature of the last 20 Error occurrences enabling quicker diagnostics and maintenance.

Heating, domestic hot water and cooling

for residential and commercial applications

Daikin Altherma Flex Type is the **flexible solution for space heating, domestic hot water and cooling.** It provides **total climate control in places as apartments, social housing, schools, hospitals, libraries, spas, fitness centres and hotels**. A mix of intelligent solutions and advanced control technologies makes Daikin Altherma Flex Type the ultimate choice in controllable comfort for residential and commercial buildings.

The system embraces Daikin's two core ambitions: **innovation** and **reducing the environmental footprint**. Altherma Flex Type meets the EU's ambitious environmental targets for 2020. In these, the EU aims for all new buildings to consume a minimum of energy and thus to be a **"nearly Zero-Energy Building"** or nZEB.

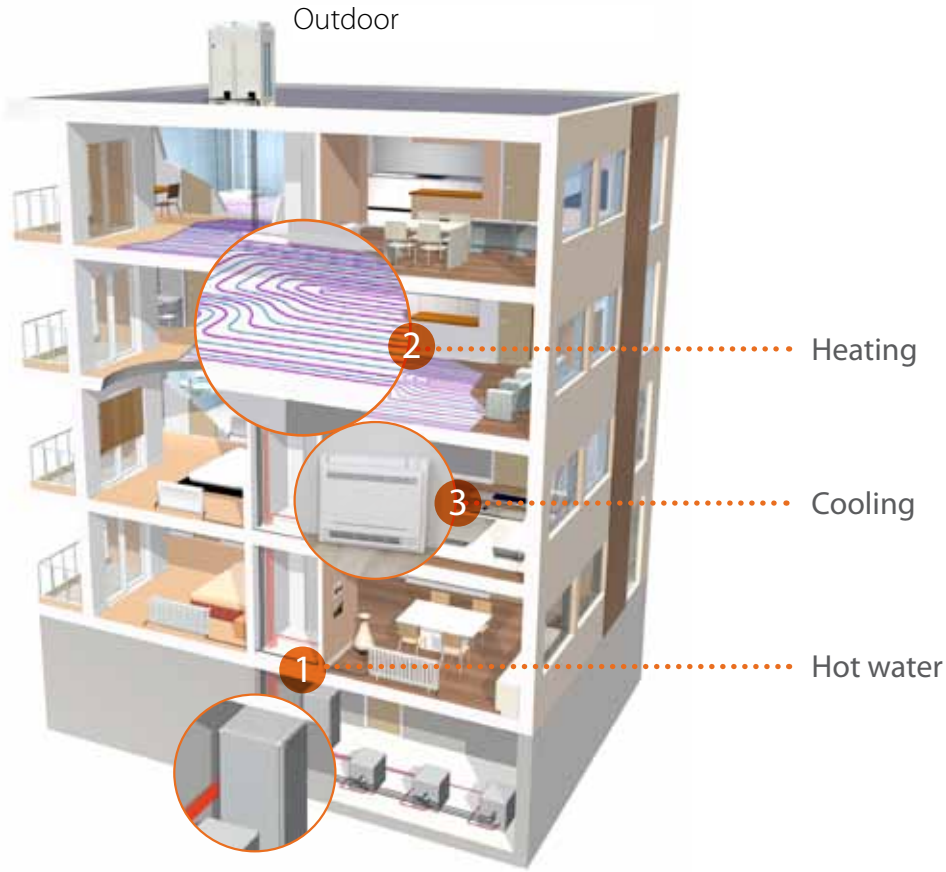
Daikin Altherma Flex Type

More benefits of advanced design:

- High efficiency results in low operating costs
- Individual or centralised control
- Reliable solutions for hot water and heating
- Cooling in the most efficient way
- Large hot water volume
- Green energy solutions
- Advanced control and monitoring for high efficiency and ease of operation
- Limited installation space thanks to small footprint of indoor unit and outdoor unit

8 benefits 4 any application

Daikin Altherma Flex Type for residential and commercial applications is a 3-in-1 system offering heating, domestic hot water and cooling all-in-one, which is highly energy efficient thanks to Daikin's advanced heat pump technolgy. Further more, Daikin Altherma Flex Type is a modular system. Depending from your project one or more outdoor units can be combined with up to ten indoor units per outdoor unit.



Outdoor unit

One or more outdoor units
+ several indoor units
>> a modular system

Indoor installation

Indoor unit

Domestic hot water tank

Apartment buildings & collective housing

Daikin Altherma Flex Type is designed with the particular challenge of apartment building and collective housing in mind.
High efficiency is ensured by the combination of technologies with low operating costs as a result. Next to central control, the latest integrated control technologies also allow the temperature of each residential space to be individually regulated and maintained.

Hotels

Daikin Altherma Flex Type offers reliable solutions for hotel applications. The system generates efficiently hot water in both heating and cooling modes. Thanks to the advanced cascade technology the rooms are cooled in the most efficient way.

Restaurants

Highly efficient production of large hot water volume also makes the system a perfect solution for restaurants. With its very low environmental impact the system represents a perfect green energy solution.

Spas and leisure

All types of hot water applications

Daikin Altherma Flex Type easily provides heating and cooling to a large number of rooms of varying sizes, while at the same time large volumes of hot water are also needed. Advanced control and monitoring assure highly efficient operation. Furthermore only limited installation space is required.

1. TWO DAIKIN TECHNOLOGIES COMBINED

OUTDOOR UNIT: Daikin VRV technology

Modular flexibility

The Daikin Altherma makes use of Daikin's renowned VRV technology. Multiple indoor units can be connected to a single outdoor unit. A combination of Proportional Integral Derivative controlled compressors and electronic expansion valves in the outdoor unit continuously adjust the circulating refrigerant volume in response to load variations in the indoor units connected to it.
This allows the indoor units to operate independently of each other, assuring total flexibility.

Each apartment retains control of its own heating, hot water and cooling.

Heat recovery

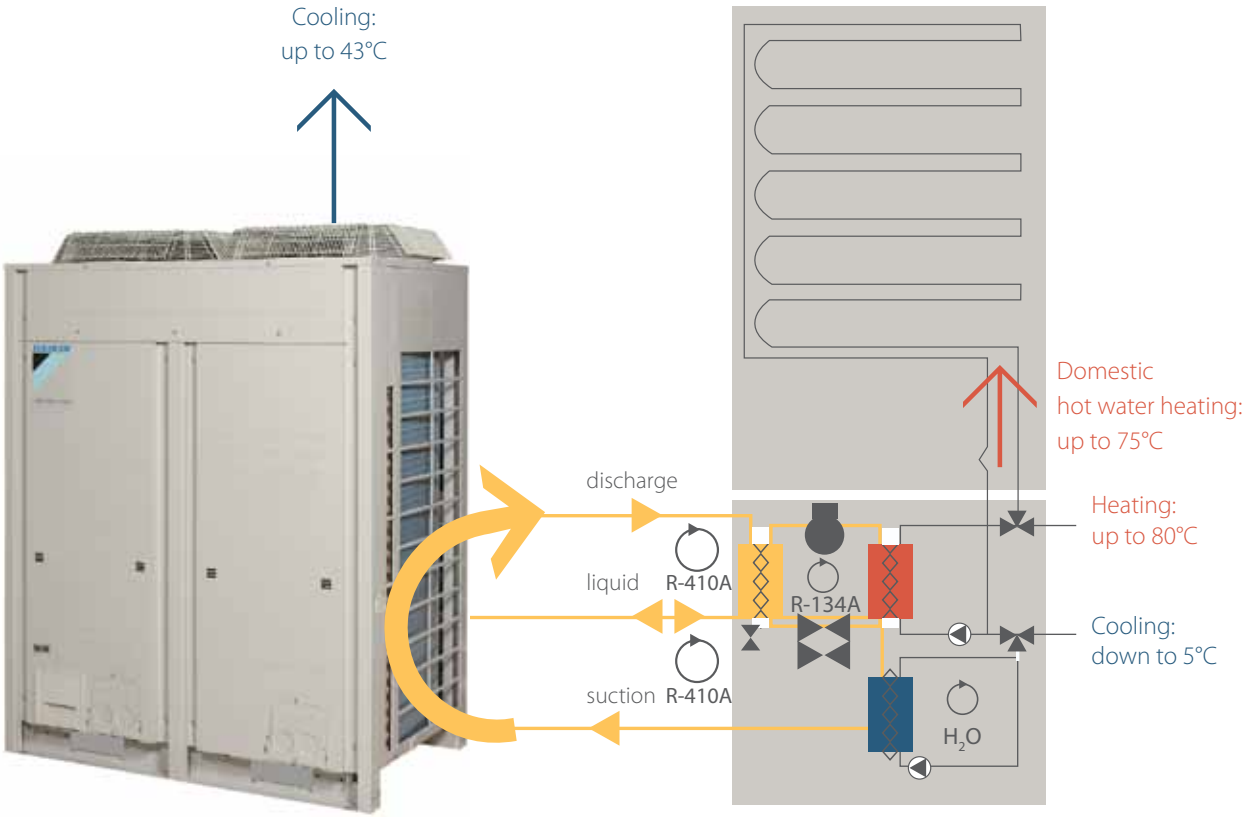
Heat absorbed while cooling one apartment can be recovered instead of being simply released into the air. This recovered heat can be used

- for domestic hot water production in the same apartment
- for space heating and domestic hot water production in other apartments

Maximum use is made of available energy, thus reducing electricity costs.

Inverter compressors

Daikin Altherma Flex Type owes its remarkable low energy consumption to a unique combination of highly efficient inverter-controlled Daikin compressors with a variable operating point. This allows capacity to be exactly matched to the actual heating demand of the building. The ability to optimally control the heat capacity of the outdoor unit also means maximum comfort and minimum energy consumption.



INDOOR UNIT: Daikin Altherma cascade technology

The Daikin Cascade technology uses an outdoor unit that extracts heat from the surrounding air and transfers this to the indoor unit via a R-410A refrigerant circuit. The indoor unit then increases this heat via the R-134a refrigerant circuit and it is then used to heat the water circuit. Using the unique cascade compressor approach, water temperatures of 80º C can be achieved without additional back-up heaters.

Space heating

Daikin Altherma Flex Type makes use of the cascade technology to improve the efficiency of the spacing heating supplied because it has a number of significant advantages over single refrigerant heat pumps:

- it provides for a wide range of water temperatures (25º - 80ºC) which enables all types of heat emitters to be connected including under floor heating, convectors and radiators and it is compatible with existing radiator systems
- there is no drop in capacity with increasing water temperatures
- it delivers high capacities at low ambient temperatures right down to -20ºC
- No back-up electrical heater is required

Domestic hot water heating

The cascade technology also delivers water temperatures of 75°C that can be used to heat up the domestic hot water tank, which makes it highly efficient for the production of domestic hot water.

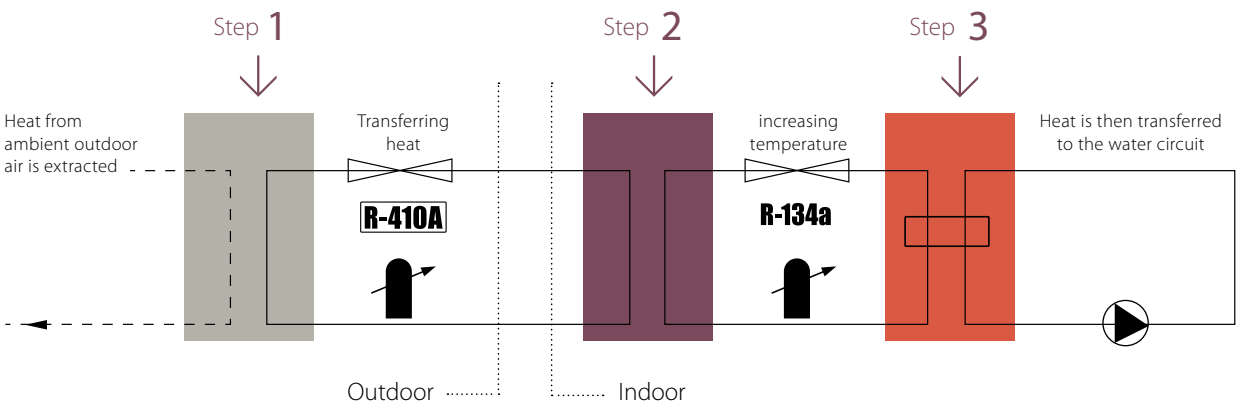
- Domestic hot water can be produced up to 75° C, without the assistance of an electric heater
- No electric heater required for Legionella disinfection
- COP of 3.0 for heating from 15° C to 60° C
- Heat-up time from 15° to 60° C in 70 minutes (200L tank)
- Equivalent hot water volume of 320L at 40° C (without reheat) for a 200L tank at a tank temperature of 60°C. Higher volumes of equivalent hot water are available with the 260l tank, or using a higher tank temperature.

Cooling

The second refrigerant cycle R-134a can be bypassed to offer efficient cooling. The R-410A refrigerant cycle is reversed, and the cool water circuit can be used to cool the rooms.

- High cooling capacities with water temperatures down to 5°C, in combination with Daikin heat pump convector or Daikin fan coil units
- Under floor cooling is possible, with water temperatures down to 18° C
- Heat from cooling operation can be recovered to heat the domestic hot water tank

Cascade technology



2. DOMESTIC HOT WATER TANK

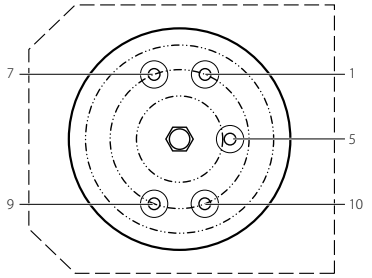
The indoor unit and domestic hot water tank can be stacked to save space, or installed next to each other, if only limited height is available.

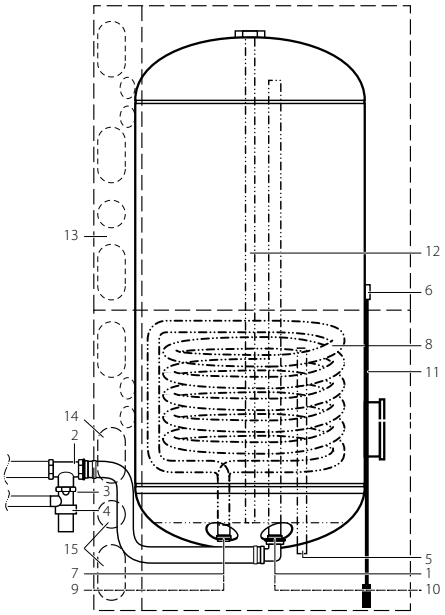
EKHTS: Domestic hot water tank

- Available in 200 and 260 litres
- Efficient temperature heat-up: from 10°C to 50°C in only 60 minutes*
- Heat loss is reduced to a minimum thanks to the high quality insulation
- At necessary intervals, the indoor unit can heat up the water to 60°C to prevent the risk of bacteria growth.

* Test done with a 16kW outdoor unit at ambient temperature of 7°C 200L tank

Stacked or Non-stacked





1. Hot water connection
2. T-piece (field supply)
3. Pressure relief valve connection
4. Pressure relief valve (field supply)
5. Recirculation hole
6. Thermistor socket
7. Flow inlet connection
8. Heat exchanger coil
9. Return outlet connection
10. Cold water connection
11. Thermistor
12. Anode
13. Knockout holes
14. Knockout holes

3. EASY CONTROL

System controller

The user interface controls the high temperature heating system in two ways:

1/ Weather dependant floating set point

When the floating set point functionality is enabled, the set point for the leaving water temperature will be dependant on the outside ambient temperature. At low outside ambient temperatures, the leaving water temperature will increase to satisfy the increasing heating requirement of the building. At warmer temperatures the leaving water temperature will decrease to save energy.

2/ Thermostat control

With Daikin Altherma's user interface with integrated temperature sensor, the ideal temperature can be easily, quickly and conveniently regulated.
The easy-to-control user interface for high temperature applications guarantees your comfort:

- Space heating
- Quiet mode
- Setback function
- Disinfection function
- Off function
- Time scheduler
- Domestic water heating mode

Optional room thermostat

An external sensor (EKRTETS) can be placed between the under floor heating and the floor, as an option to the wireless room thermostat. The thermostat measures the room temperature and communicates directly to the user interface.

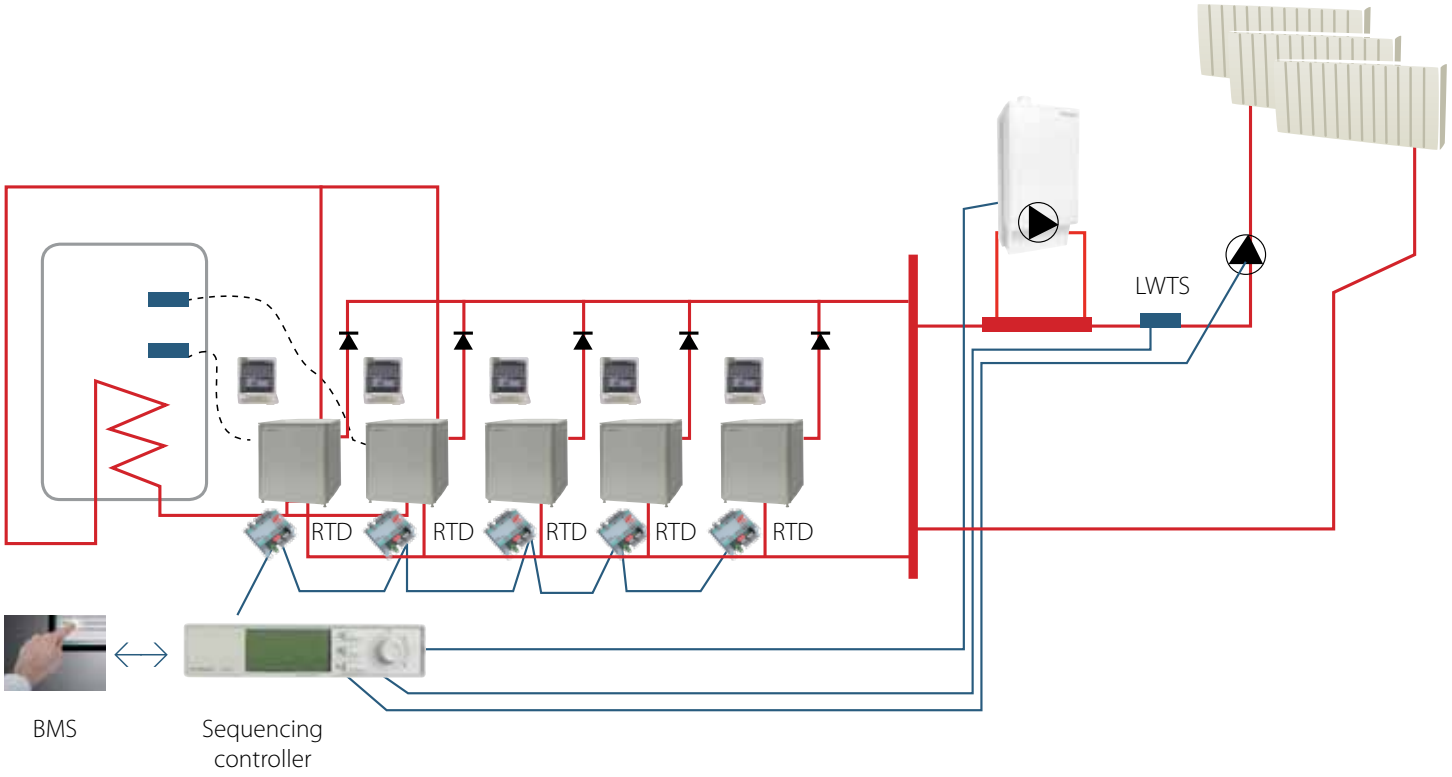
The LCD screen of the room thermostat indicates all the necessary information regarding the setting of the Daikin Altherma system in the blink of an eye. The user can easily navigate between the different menus, the most common of which include:

- Setting the temperature of the room based on measurements from the built-in or external sensor
- Cooling and heating mode
- Off function (with integrated frost-protection function)
- Holiday function mode
- Comfort and reduced function modes
- Time (day and month)
- Programmable week-timer with 2 user defined and 5 pre-set programmes, with up to 12 actions per day
- Keylock function
- Setting limits. The installer can change the upper and lower limits
- Floor temperature protection and protection against condensation for underfloor cooling *

* only in combination with EKRTETS

Advanced control and monitoring for high efficiency and ease of operation

To further increase the efficiency, an **RTD-W** per indoor unit and a **sequencing controller** for the full heating system can be installed to monitor the exact heating demand.



RTD-W interface

Daikin's RTD control systems allow the company's entire product portfolio to be integrated fully with other building systems. Designed for a wide range of applications, their pre-programmed functions ensure systems are highly efficient, delivering reduced energy consumption and carbon emissions, while maintaining excellent levels of comfort.

Whatever the application, Daikin's RTD controls mean all systems can be controlled centrally, helping owners, building managers, operators and home owners to reduce energy consumption (and bills), as well as lowering carbon emissions.

The RTD-W control uses dry-contacts, 0-10V signal and Modbus interface to monitor, control and integrate domestic and commercial hot water and heating systems.

Sequencing controller

Thanks to the Modbus interface of the RTD-W, the sequencing controller (EKCC7-W) can centrally monitor the whole heating system.

The sequencing controller transfers centralised settings and control through Modbus to the units:

- weather dependent leaving water set point and schedule
- domestic hot water set point and schedule
- quiet mode schedule

A centralised overview of the operating conditions of all units is shown on one screen, including error history.

A main energy reducing function is the cascade operation of units. The number of operating indoor units is defined based on the difference between measured common leaving water temperature and the set point. The order of start-up of the units is determined by running hours, domestic hot water operation and grouped per outdoor unit.

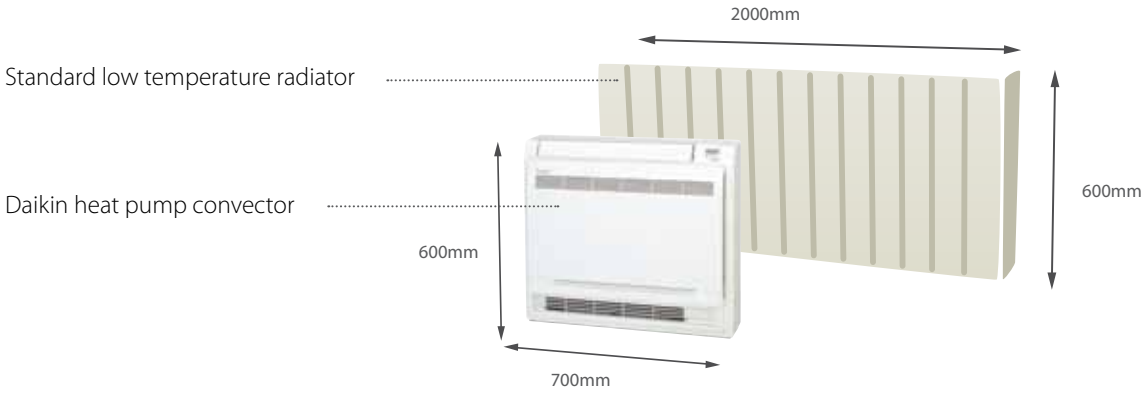
In case of capacity shortage and unit alarm, the back-up heater operation is enabled by the sequencing controller.

The advanced monitoring of the heating system ensures the **building owner** a low energy bill and a clear view on the operation of the system. The **installer** has a clear view on the error history if intervention is needed.

4. HEAT PUMP CONVECTOR

The Daikin heat pump convector operates at typical water temperatures of 45°C, which can be efficiently produced thanks to the Daikin Altherma cascade technology.
The heat pump convector is therefore the ideal heat emitter for apartment applications, providing high comfort levels:

- Small dimensions compared to low-temperature radiators: width is reduced with 2/3rd

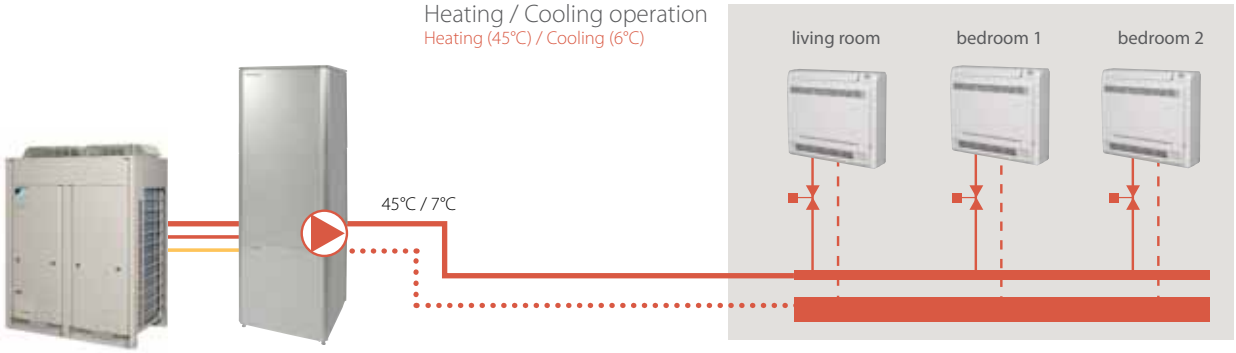


- Low sound level down to 19 dB(A), optimal for bedroom applications
- High-capacity cooling with water temperatures down to 6° C

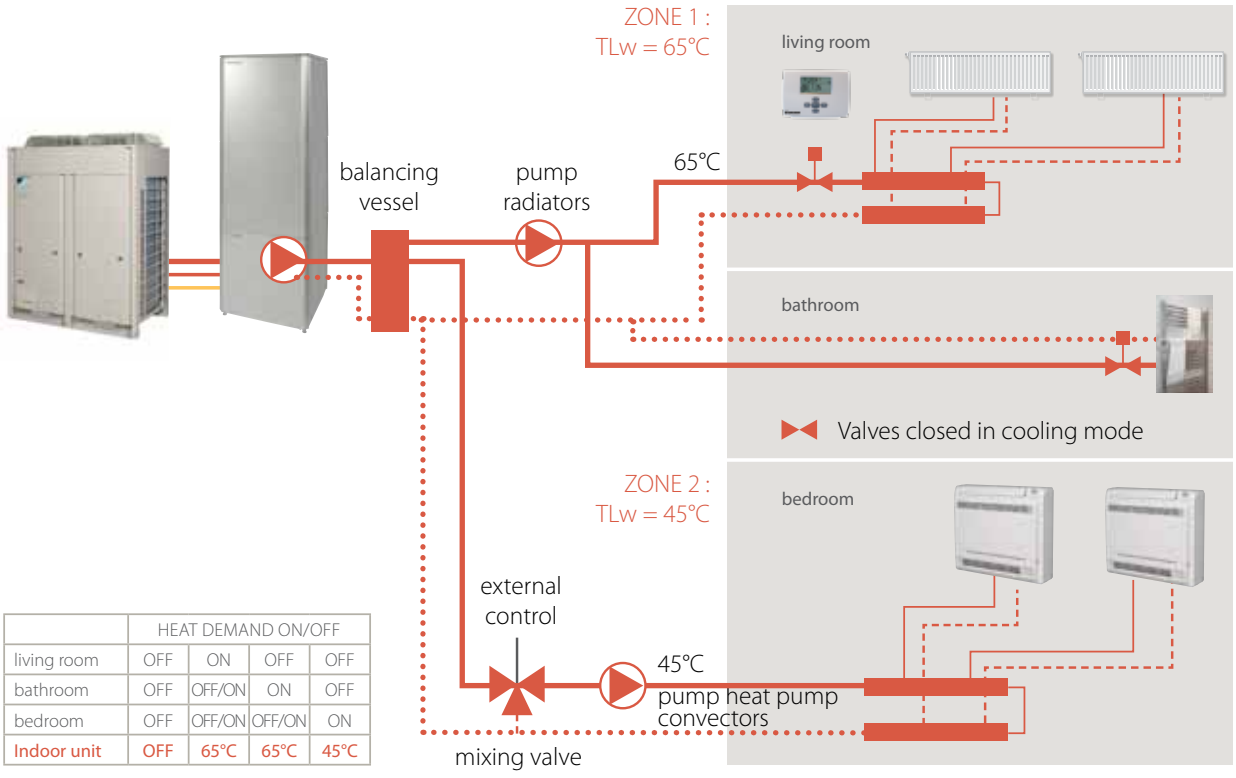
Control

Each Daikin heat pump convector has its own control and every room can be independently heated (or cooled) as required. The remote control has a built-in weekly timer for optimum flexibility and comfort. Operation of the unit can be adapted to individual requirements.

Infrared remote control (Standard)
ARC452A15



All types of heat emitters can be connected to Daikin Altherma for apartment buildings and collective housing, thanks to its wide water temperature range and its ability to work with multiple set points, allowing a combination of different heat emitters operating at different water temperatures. The set point of the indoor unit is a function of the actual demand of the various heat emitters, ensuring optimum efficiency at all times and under all conditions.



	HEAT DEMAND ON/OFF			
living room	OFF	ON	OFF	OFF
bathroom	OFF	OFF/ON	ON	OFF
bedroom	OFF	OFF/ON	OFF/ON	ON
Indoor unit	OFF	65°C	65°C	45°C

At your service, with the Daikin

selection

Daikin worked out three selection tools for an accurate estimation of your specific project and doing so Daikin provides a maximum of comfort, even in the early stage of choosing! / even when considering the options!

Make a quick estimation of savings on running costs and savings on CO_2 emissions thanks to the **Energy Savings Calculator**. The Daikin Altherma **simulation software** provides for every specific application an appropriate heat pump selection based on the specific house and location details. And for new houses or renovations the Daikin Altherma **selection and simulation software** allows quick and easy identification of the optimal mix of components.

tools

1. ENERGY SAVINGS CALCULATOR

Daikin provides a web-based tool to give a quick estimation of savings on running costs and savings on CO_2 emissions. Based on a few inputs from the customer (location, house type, floor area, number of people), a comparison is made between the Daikin Altherma heat pump system and traditional heating systems. This comparison includes the space heating and domestic hot water heating. This is available for both new builds and refurbishment applications.
http://ecocalc.daikin.eu

2. SIMULATION SOFTWARE

The Daikin Altherma simulation software provides for every specific application an appropriate heat pump selection, taking into account the needs of the building and specific climate data. An installer can provide the following data:

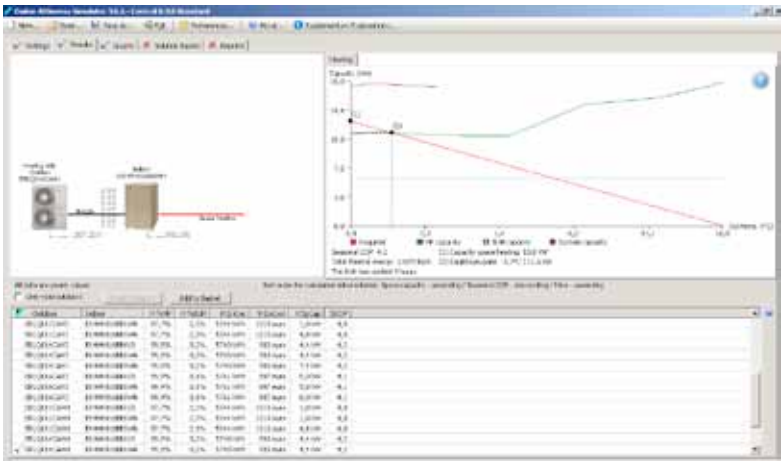
- house application: heat/cool load, water temperatures, power supply
- climate conditions: location, design temperature
- domestic hot water requirements: tank volume, material, solar connection
- preferences: "heating off" temperature, night setback function

Based on the specific house and location details, the software provides a full dimensioning assuring a correct material selection.

As well as a full material selection, the software provides detailed information for the installer and the end-user, on the expected outcome of the specified Daikin Altherma unit for its specific application and climate:

- seasonal efficiency of the heat pump system
- amount of back-up heater operation
- energy consumption and energy cost per month
- savings on running costs compared to traditional heating systems

All this information will be summarised in a detailed report.



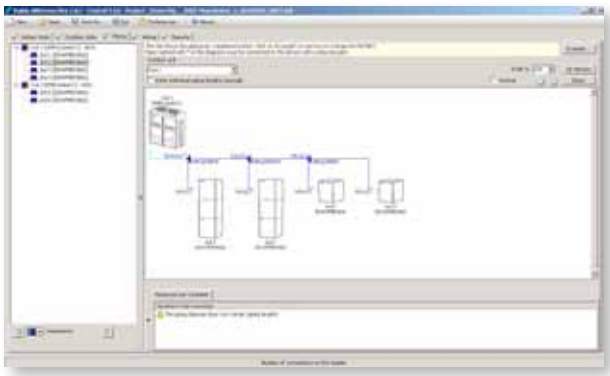
Check your local Daikin website for availability of this simulation software.

3. SELECTION AND DESIGN SOFTWARE FOR DAIKIN ALTHERMA FLEX TYPE

The Daikin Altherma selection and simulation software for new houses or renovations allows quick and easy identification of the optimal mix of components. It automatically selects indoor and outdoor units based on the required heat loads per housing unit and calculates the required refrigerant piping dimensions.

The software also features:

- automatic or manual selection of indoor units
- automatic selection of outdoor units
- calculation of refrigerant piping diameters
- automatic selection of refnet headers and joints
- creation of piping and wiring diagrams with the possibility to export them as DXF file
- creation of extensive selection report



Technical specifications

1. DAIKIN ALTHERMA LOW TEMPERATURE

HEATING ONLY

INDOOR UNIT					EHVH04S18C3V	EHVH08S18C3V	EHVH08S26C9W	EHVH16S18C3V	EHVH16S26C9W
Casing	Colour				White			White	
	Material				Precoated sheet metal			Precoated sheet metal	
Dimensions	Unit	HeightxWidthxDepth		mm	1,732x600x728			1,732x600x728	
Weight	Unit			kg	115	116	126	120	129
Operation range	Heating	Ambient	Min.~Max.	°C	-25~25			-25~25	-25~35
		Water side	Min.~Max.	°C	15~55			15~55	
	Domestic hot water	Ambient	Min.~Max.	°CDB	-25~35			-20~35	
		Water side	Min.~Max.	°C	25~60			25~60	
Sound power level	Nom.			dBA	42			47	
Sound pressure level	Nom.			dBA	28			33	

INVERTER

OUTDOOR UNIT				EHVH04S18C3V	EHVH08S18C3V	EHVH08S26C9W	EHVH16S18C3V	EHVH16S26C9W	
Heating capacity	Min.		kW	1.80[1] / 1.80[2]	1.80[1] / 1.80[2]	1.80[1] / 1.80[2]	-		
	Nom.		kW	4.40[1] / 4.03[2]	6.00[1] / 5.67[2]	7.40[1] / 6.89[2]	11.38	14.55	16.10
	Max.		kW	5.12[1] / 4.90[2]	8.35[1] / 7.95[2]	10.02[1] / 9.35[2]	-		
Power input	Heating	Nom.	kW	0.87[1] / 1.13[2]	1.27[1] / 1.59[2]	1.66[1] / 2.01[2]	2.64	3.43	3.83
COP				5.04[1] / 3.58[2]	4.74[1] / 3.56[2]	4.45[1] / 3.42[2]	4.31	4.24	4.20
Dimensions	Unit	HeightxWidthxDepth	mm	735x832x307			1,345x900x320		
Weight	Unit		kg	54	56		113 /114		
Operation range	Heating	Min.~Max.	°CWB	-25~25			-25~35		
	Domestic hot water	Min.~Max.	°CDB	-25~35			-20~35		
Refrigerant	Type			R-410A			R-410A		
	Charge		kg	1.45	1.60		3.4		
Sound power level	Heating	Nom.	dBA	61		62	64		66
Sound pressure level	Heating	Nom.	dBA	48		49	51		52
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230			V3/1~/50/230 // W1/3N~/50/400		
Current	Recommended fuses		A	20			40/20		

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(2) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

HEATING ONLY

INDOOR UNIT					EHVH16S18C3V	EHVH16S26C9W	EHVH16S18C3V	EHVH16S26C9W
Casing	Colour				White		White	
	Material				Precoated sheet metal		Precoated sheet metal	
Dimensions	Unit	HeightxWidthxDepth		mm	1,732x600x728		1,732x600x728	
Weight	Unit			kg	120	129	120	129
Operation range	Heating	Ambient	Min.~Max.	°C	-25~35		-25~35	
		Water side	Min.~Max.	°C	15~55		15~55	
	Domestic hot water	Ambient	Min.~Max.	°CDB	-20~35		-20~35	
		Water side	Min.~Max.	°C	25~60		25~60	
Sound power level	Nom.			dBA	47		47	
Sound pressure level	Nom.			dBA	33		33	

INVERTER

OUTDOOR UNIT				ERHQ011BV3	ERHQ014BV3	ERHQ016BV3	ERHQ011BW1	ERHQ014BW1	ERHQ016BW1
Heating capacity	Nom.		kW	11.2	14.0	16.0	11.32	14.50	16.05
Power input	Heating	Nom.	kW	2.55	3.26	3.92	2.63	3.42	3.82
COP				4.39	4.29	4.08	4.30	4.24	4.20
Dimensions	Unit	HeightxWidthxDepth	mm	1,170x900x320			1,345x900x320		
Weight	Unit		kg	103			108		
Operation range	Heating	Min.~Max.	°CWB	-20~35			-20~35		
	Domestic hot water	Min.~Max.	°CDB	-20~43			-20~43		
Refrigerant	Type			R-410A			R-410A		
	Charge		kg	3.7			2.95		
Sound power level	Heating	Nom.	dBA				64		66
Sound pressure level	Heating	Nom.	dBA	49	51	53	51		52
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230			W1/3N~/50/400		
Current	Recommended fuses		A	32			20		

HEATING & COOLING

INDOOR UNIT					EHVX04S18C3V	EHVX08S18C3V	EHVX08S26C9W	EHVX16S18C3V	EHVX16S26C9W
Casing	Colour				White			White	
	Material				Precoated sheet metal			Precoated sheet metal	
Dimensions	Unit	HeightxWidthxDepth		mm	1,732x600x728			1,732x600x728	
Weight	Unit			kg	115	117	126	121	129
Operation range	Heating	Ambient	Min.~Max.	°C	-25~25			-25~25	
		Water side	Min.~Max.	°C	15~55			15~55	
	Cooling	Ambient	Min.~Max.	°CDB	10~43			10~46	
		Water side	Min.~Max.	°C	5~22			5~22	
	Domestic hot water	Ambient	Min.~Max.	°CDB	-25~35			-20~35	
		Water side	Min.~Max.	°C	25~60			25~60	
Sound power level	Nom.			dBA	42			47	
Sound pressure level	Nom.			dBA	28			33	

OUTDOOR UNIT				ERLQ004CV3	ERLQ006CV3	ERLQ008CV3	ERLQ011CV3/CW1	ERLQ014CV3/CW1	ERLQ016CV3/CW1
Heating capacity	Min.		kW	1.80[1] / 1.80[2]	1.80[1] / 1.80[2]	1.80[1] / 1.80[2]	-		
	Nom.		kW	4.40[1] / 4.03[2]	6.00[1] / 5.67[2]	7.40[1] / 6.89[2w]	11.38	14.55	16.10
	Max.		kW	5.12[1] / 4.90[2]	8.35[1] / 7.95[2]	10.02[1] / 9.53[2]	-		
Cooling capacity	Min.		kW	2.00[1] / 2.00[2]	2.50[1] / 2.50[2]	2.50[1] / 2.50[2]	-		
	Nom.		kW	5.00[1] / 4.17[2]	6.76[1] / 4.84[2]	6.86[1] / 5.36[2]	11.72	12.55	13.12
Power input	Heating	Nom.	kW	0.87[1] / 1.13[2]	1.27[1] / 1.59[2]	1.66[1] / 2.01[2]	2.64	3.43	3.83
	Cooling	Nom.	kW	1.48[1] / 1.80[2]	1.96[1] / 2.07[2]	2.01[1] / 2.34[2]	4.31	5.09	5.74
COP				5.04[1] / 3.58[2]	4.74[1] / 3.56[2]	4.45[1] / 3.42[2]	4.31	4.24	4.20
EER				3.37[1] / 2.32[2]	3.45[1] / 2.34[2]	3.42[1] / 2.29[2]	2.72	2.47	2.29
Dimensions	Unit	HeightxWidthxDepth	mm	735x832x307			1,345x900x320		
Weight	Unit		kg	54	56		113/114		
Operation range	Heating	Min.~Max.	°CWB	-25~25			-25~35		
	Cooling	Min.~Max.	°CDB	10~43			10~46		
	Domestic hot water	Min.~Max.	°CDB	-25~35			-20~35		
Refrigerant	Type			R-410A			R-410A		
	Charge		kg	1.45	1.60		3.4		
Sound power level	Heating	Nom.	dBA	61		62	64		66
	Cooling	Nom.	dBA	63			64	66	69
Sound pressure level	Heating	Nom.	dBA	48		49	51		52
	Cooling	Nom.	dBA	48	49	50	50	52	54
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230			V3/1~/50/230 // W1/3N~/50/400		
Current	Recommended fuses		A	20			40/20		

INVERTER

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(2) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

HEATING & COOLING

INDOOR UNIT					EHVX16S18C3V	EHVX16S26C9W	EHVX16S18C3V	EHVX16S26C9W
Casing	Colour				White		White	
	Material				Precoated sheet metal		Precoated sheet metal	
Dimensions	Unit	HeightxWidthxDepth		mm	1,732x600x728		1,732x600x728	
Weight	Unit			kg	121	129	121	129
Operation range	Heating	Ambient	Min.~Max.	°C	-25~35		-25~35	
		Water side	Min.~Max.	°C	15~55		15~55	
	Cooling	Ambient	Min.~Max.	°CDB	10~46		10~46	
		Water side	Min.~Max.	°C	5~22		5~22	
	Domestic hot water	Ambient	Min.~Max.	°CDB	-20~35		-20~35	
		Water side	Min.~Max.	°C	25~60		25~60	
Sound power level	Nom.			dBA	47		47	
Sound pressure level	Nom.			dBA	33		33	

OUTDOOR UNIT				ERHQ011BV3	ERHQ014BV3	ERHQ016BV3	ERHQ011BW1	ERHQ014BW1	ERHQ016BW1
Heating capacity	Nom.		kW	11.2	14.0	16.0	11.32	14.50	16.05
Cooling capacity	Nom.		kW	10.0	12.5	13.1	11.72	12.55	13.12
Power input	Heating	Nom.	kW	2.55	3.26	3.92	2.63	3.42	3.82
	Cooling	Nom.	kW	3.69	5.38	6.04	4.31	5.09	5.74
COP				4.39	4.29	4.08	4.30	4.24	4.20
EER				2.71	2.32	2.17	2.72	2.47	2.29
Dimensions	Unit	HeightxWidthxDepth	mm	1,170x900x320			1,345x900x320		
Weight	Unit		kg	103			108		
Operation range	Heating	Min.~Max.	°CWB	-20~35			-20~35		
	Cooling	Min.~Max.	°CDB	-			10~46		
	Domestic hot water	Min.~Max.	°CDB	-20~43			-20~43		
Refrigerant	Type			R-410A			R-410A		
	Charge		kg	3.7			2.95		
Sound power level	Heating	Nom.	dBA	-			64		66
	Cooling	Nom.	dBA	-			64	66	69
Sound pressure level	Heating	Nom.	dBA	49	51	53	51		52
	Cooling	Nom.	dBA	-			50	52	54
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230			W1/3N~/50/400		
Current	Recommended fuses		A	32			20		

INVERTER

HEATING ONLY

INDOOR UNIT					EHBH04C3V	EHBH08C3V	EHBH08C9W	EHBH16C3V	EHBH16C9W
Casing	Colour				White			White	
	Material				Precoated sheet metal			Precoated sheet metal	
Dimensions	Unit	HeightxWidthxDepth		mm	890x480x344			890x480x344	
Weight	Unit			kg	44	46	48	45	48
Operation range	Heating	Ambient	Min.~Max.	°C	-25~25			-25~35	
		Water side	Min.~Max.	°C	15~55			15~55	
	Domestic hot water	Ambient	Min.~Max.	°CDB	-25~35			-20~35	
		Water side	Min.~Max.	°C	25~80			25~80	
Sound power level	Nom.			dBA	40			47	
Sound pressure level	Nom.			dBA	26			33	

OUTDOOR UNIT					ERLQ004CV3	ERLQ006CV3	ERLQ008CV3	ERLQ011CV3/CW1	ERLQ014CV3/CW1	ERLQ016CV3/CW1
Heating capacity	Min.			kW	1.80[1] / 1.80[2]	1.80[1] / 1.80[2]	1.80[1] / 1.80[2]		-	
	Nom.			kW	4.40[1] / 4.03[2]	6.00[1] / 5.67[2]	7.40[1] / 6.89[2]	11.38	14.55	16.10
	Max.			kW	5.12[1] / 4.90[2]	8.35[1] / 7.95[2]	10.02[1] / 9.35[2]		-	
Power input	Heating	Nom.		kW	0.87[1] / 1.13[2]	1.27[1] / 1.59[2]	1.66[1] / 2.01[2]	2.64	3.43	3.83
COP					5.04[1] / 3.58[2]	4.74[1] / 3.56[2]	4.45[1] / 3.42[2]	4.31	4.24	4.20
Dimensions	Unit	HeightxWidthxDepth		mm	735x832x307			1,345x900x320		
Weight	Unit			kg	54	56		113 / 114		
Operation range	Heating	Min.~Max.		°CWB	-25~25			-25~35		
	Domestic hot water	Min.~Max.		°CDB	-25~35			-20~35		
Refrigerant	Type				R-410A			R-410A		
	Charge			kg	1.45	1.60		3.4		
Sound power level	Heating	Nom.		dBA	61		62	64		66
Sound pressure level	Heating	Nom.		dBA	48		49	51		52
Power supply	Name/Phase/Frequency/Voltage			Hz/V	V3/1~/50/230			V3/1~/50/230// W1/3N~/50/400		
Current	Recommended fuses			A	20			40/20		

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(2) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

HEATING ONLY

INDOOR UNIT					EHBH16C3V	EHBH16C9W	EHBH16C3V	EHBH16C9W
Casing	Colour				White		White	
	Material				Precoated sheet metal		Precoated sheet metal	
Dimensions	Unit	HeightxWidthxDepth		mm	890x480x344		890x480x344	
Weight	Unit			kg	45	48	45	48
Operation range	Heating	Ambient	Min.~Max.	°C	-25~35		-25~35	
		Water side	Min.~Max.	°C	15~55		15~55	
	Domestic hot water	Ambient	Min.~Max.	°CDB	-20~35		-20~35	
		Water side	Min.~Max.	°C	25~80		25~80	
Sound power level	Nom.			dBA	47		47	
Sound pressure level	Nom.			dBA	33		33	

OUTDOOR UNIT					ERHQ011BV3	ERHQ014BV3	ERHQ016BV3	ERHQ011BW1	ERHQ014BW1	ERHQ016BW1
Heating capacity	Nom.			kW	11.2	14.0	16.0	11.32	14.50	16.05
Power input	Heating	Nom.		kW	2.55	3.26	3.92	2.63	3.42	3.82
COP					4.39	4.29	4.08	4.30	4.24	4.20
Dimensions	Unit	HeightxWidthxDepth		mm	1,170x900x320			1,345x900x320		
Weight	Unit			kg	103			108		
Operation range	Heating	Min.~Max.		°CWB	-20~35			-20~35		
	Domestic hot water	Min.~Max.		°CDB	-20~43			-20~43		
Refrigerant	Type				R-410A			R-410A		
	Charge			kg	3.7			2.95		
Sound power level	Heating	Nom.		dBA	-			64		66
Sound pressure level	Heating	Nom.		dBA	49	51	53	51		52
Power supply	Name/Phase/Frequency/Voltage			Hz/V	V3/1~/50/230			W1/3N~/50/400		
Current	Recommended fuses			A	32			20		

HEATING & COOLING

INDOOR UNIT					EHBX04C3V	EHBX08C3V	EHBX08C9W	EHBX16C3V	EHBX16C9W
Casing	Colour				White			White	
	Material				Precoated sheet metal			Precoated sheet metal	
Dimensions	Unit	HeightxWidthxDepth		mm	890x480x344			890x480x344	
Weight	Unit			kg	44	46	48	45	48
Operation range	Heating	Ambient	Min.~Max.	°C	-25~25			-25~35	
		Water side	Min.~Max.	°C	15~55			15~55	
	Cooling	Ambient	Min.~Max.	°CDB	10~43			10~46	
		Water side	Min.~Max.	°C	5~22			5~22	
	Domestic hot water	Ambient	Min.~Max.	°CDB	-25~35			-20~35	
		Water side	Min.~Max.	°C	25~80			25~80	
Sound power level	Nom.			dBA	40			47	
Sound pressure level	Nom.			dBA	26			33	

OUTDOOR UNIT				ERLQ004CV3	ERLQ006CV3	ERLQ008CV3	ERLQ011CV3/CW1	ERLQ014CV3/CW1	ERLQ016CV3/CW1
Heating capacity	Min.		kW	1.80[1] / 1.80[2]	1.80[1] / 1.80[2]	1.80[1] / 1.80[2]		-	
	Nom.		kW	4.40[1] / 4.03[2]	6.00[1] / 5.67[2]	7.40[1] / 6.89[2]	11.38	14.55	16.10
	Max.		kW	5.12[1] / 4.90[2]	8.35[1] / 7.95[2]	10.02[1] / 9.53[2]		-	
Cooling capacity	Min.		kW	2.00[1] / 2.00[2]	2.50[1] / 2.50[2]	2.50[1] / 2.50[2]		-	
	Nom.		kW	5.00[1] / 4.17[2]	6.76[1] / 4.84[2]	6.86[1] / 5.3[2]	11.72	12.55	13.12
Power input	Heating	Nom.	kW	0.87[1] / 1.13[2]	1.27[1] / 1.59[2]	1.66[1] / 2.01[2]	2.64	3.43	3.83
	Cooling	Nom.	kW	1.48[1] / 1.80[2]	1.96[1] / 2.07[2]	2.01[1] / 2.34[2]	4.31	5.09	5.74
COP				5.04[1] / 3.58[2]	4.74[1] / 3.56[2]	4.45[1] / 3.42[2]	4.31	4.24	4.20
EER				3.37[1] / 2.32[2]	3.45[1] / 2.34[2]	3.42[1] / 2.29[2]	2.72	2.47	2.29
Dimensions	Unit	HeightxWidthxDepth	mm	735x832x307			1,345x900x320		
Weight	Unit		kg	54	56		113 / 114		
Operation range	Heating	Min.~Max.	°CWB	-25~25			-25~35		
	Cooling	Min.~Max.	°CDB	10~43			10~46		
	Domestic hot water	Min.~Max.	°CDB	-25~35			-20~35		
Refrigerant	Type			R-410A			R-410A		
	Charge		kg	1.45	1.60		3.4		
Sound power level	Heating	Nom.	dBA	61		62	64		66
	Cooling	Nom.	dBA	63			64	66	69
Sound pressure level	Heating	Nom.	dBA	48		49	51		52
	Cooling	Nom.	dBA	48	49	50	50	52	54
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230			V3/1~/50/230 // W1/3N~/50/400		
Current	Recommended fuses		A	20			40/20		

INVERTER

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(2) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

HEATING & COOLING

INDOOR UNIT					EHBX16C3V	EHBX16C9W	EHBX16C3V	EHBX16C9W
Casing	Colour				White		White	
	Material				Precoated sheet metal		Precoated sheet metal	
Dimensions	Unit	HeightxWidthxDepth		mm	890x480x344		890x480x344	
Weight	Unit			kg	45	48	45	48
Operation range	Heating	Ambient	Min.~Max.	°C	-25~35		-25~35	
		Water side	Min.~Max.	°C	15~55		15~55	
	Cooling	Ambient	Min.~Max.	°CDB	10~46		10~46	
		Water side	Min.~Max.	°C	5~22		5~22	
	Domestic hot water	Ambient	Min.~Max.	°CDB	-20~35		-20~35	
		Water side	Min.~Max.	°C	25~80		25~80	
Sound power level	Nom.			dBA	47		47	
Sound pressure level	Nom.			dBA	33		33	

OUTDOOR UNIT				ERHQ011BV3	ERHQ014BV3	ERHQ016BV3	ERHQ011BW1	ERHQ014BW1	ERHQ016BW1
Heating capacity	Nom.		kW	11.2	14.0	16.0	11.32	14.50	16.05
Cooling capacity	Nom.		kW	10.0	12.5	13.1	11.72	12.55	13.12
Power input	Heating	Nom.	kW	2.55	3.26	3.92	2.63	3.42	3.82
	Cooling	Nom.	kW	3.69	5.38	6.04	4.31	5.09	5.74
COP				4.39	4.29	4.08	4.30	4.24	4.20
EER				2.71	2.32	2.17	2.72	2.47	2.29
Dimensions	Unit	HeightxWidthxDepth	mm	1,170x900x320			1,345x900x320		
Weight	Unit		kg	103			108		
Operation range	Heating	Min.~Max.	°CWB	-20~35			-20~35		
	Cooling	Min.~Max.	°CDB	-			10~46		
	Domestic hot water	Min.~Max.	°CDB	-20~43			-20~43		
Refrigerant	Type			R-410A			R-410A		
	Charge		kg	3.7			2.95		
Sound power level	Heating	Nom.	dBA	-			64		66
	Cooling	Nom.	dBA	-			64	66	69
Sound pressure level	Heating	Nom.	dBA	49	51	53	51		52
	Cooling	Nom.	dBA	-			50	52	54
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230			W1/3N~/50/400		
Current	Recommended fuses		A	32			20		

INVERTER

HEATING & COOLING MONOBLOC SYSTEM

INVERTER

OUTDOOR UNIT					EBHQ006BBV3	EBHQ008BBV3
Heating capacity	Nom.			kW	5.94[1] 5.48[2]	8.02[1] 8.15[2]
Cooling capacity	Nom.			kW	7.20[1] 5.12[2]	8.37[1] 6.70[2]
Power input	Heating	Nom.		kW	1.41[1] 1.79[2]	2.21[1] 2.72[2]
	Cooling	Nom.		kW	2.20[1] 2.16[2]	2.97[1] 2.75[2]
COP					4.13[1] 3.09[2]	4.02[1] 3.00[2]
EER					3.08[1] 2.31[2]	2.76[1] 2.45[2]
Dimensions	Unit	Height/Width/Depth		mm	805/1,190/360	
Weight	Unit			kg	95	
Hydraulic component	Back-up heater current	Type			-	
		Power supply	Phase		-	
Operation range	Heating	Ambient	Min.~Max.	°CWB	-15~25	
		Water side	Min.~Max.	°C	15~50	
	Cooling	Ambient	Min.~Max.	°CDB	10~43	
		Water side	Min.~Max.	°C	5~22	
	Domestic hot water	Ambient	Min.~Max.	°CDB	-15~35	
		Water side	Min.~Max.	°C	25~80	
Refrigerant	Type				R-410A	
	Charge			kg	1.7	
Sound power level	Heating	Nom.		dBA	61	62
	Cooling	Nom.		dBA	63	
Sound pressure level	Heating	Nom.		dBA	48	49
	Cooling	Nom.		dBA	48	50
Compressor component	Main power supply	Name			V3	
		Phase			1	
		Frequency		Hz	50	
		Voltage		V	230	

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(2) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

* Note: grey cells contain preliminary data

MONOBLOC SYSTEM CONTROL BOX

INDOOR UNIT					EKCV(B/H)008BBV3
Dimensions	Unit	Height		mm	390
		Width		mm	412
		Depth		mm	100
		Depth with remocon mounted on front plate		mm	120
Weight	Unit			kg	6
Operation range	Cooling	Ambient	Min.~Max.	°CDB	4 ~35

HEATING ONLY MONOBLOC SYSTEM SINGLE PHASE

INVERTER

OUTDOOR UNIT WITH BOTTOM PLATE HEATER					EDLQ011BB6V3	EDLQ014BB6V3	EDLQ016BB6V3
OUTDOOR UNIT WITHOUT BOTTOM PLATE HEATER					EDHQ011BB6V3	EDHQ014BB6V3	EDHQ016BB6V3
Heating capacity	Nom.			kW	11.20[1] / 10.87[2]	14.00[1] / 13.10[2]	16.00[1] / 15.06[2]
Power input	Heating	Nom.		kW	2.56[1] / 3.31[2]	3.29[1] / 4.01[2]	3.88[1] / 4.71[2]
COP					4.38[1] / 3.28[2]	4.25[1] / 3.27[2]	4.12[1] / 3.20[2]
Dimensions	Unit	Height X Width X Depth		mm	1,418 X 1,435 X 382		
Weight	Unit			kg	180		
Hydraulic component	Back-up heater current	Type			6V3		
		Power supply	Phase/Frequency/ Voltage	Hz/V	1~/50/230		
Operation range	Heating	Ambient	Min.~Max.	°CWB	EDLQ: -20~35 / EDHQ: -15~35		
		Water side	Min.~Max.	°C	15 ~55		
	Domestic hot water	Ambient	Min.~Max.	°CDB	EDLQ: -20~43 / EDHQ: -15~43		
		Water side	Min.~Max.	°C	25~80		
Refrigerant	Type				R-410A		
	Charge			kg	2.95		
Sound power level	Heating	Nom.		dBA	64	65	66
Sound pressure level	Heating	Nom.		dBA	51		52
Compressor component	Main power supply	Name			V3		
		Phase			1~		
		Frequency		Hz	50		
		Voltage		V	230		

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(2) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

HEATING ONLY MONOBLOC SYSTEM THREE PHASE

INVERTER

OUTDOOR UNIT WITH BOTTOM PLATE HEATER					EDLQ011BB6W1	EDLQ014BB6W1	EDLQ016BB6W1
OUTDOOR UNIT WITHOUT BOTTOM PLATE HEATER					EDHQ011BB6W1	EDHQ014BB6W1	EDHQ016BB6W1
Heating capacity	Nom.			kW	11.20[1] / 10.87[2]	14.00[1] / 13.1[2]	16.00[1]) / 15.06[2]
Power input	Heating	Nom.		kW	2.60[1] / 3.21[2]	3.30[1] / 4.07[2]	3.81[1] / 4.66[2]
COP					4.31[1] / 3.38[2]	4.24[1] / 3.22[2]	4.20[1] / 3.23[2])
Dimensions	Unit	Height X Width X Depth		mm	1,418 X 1,435 X 382		
Weight	Unit			kg	180		
Hydraulic component	Back-up heater current	Type			6W1		
		Power supply	Phase/Frequency/ Voltage	Hz/V	3~/50/400		
Operation range	Heating	Ambient	Min.~Max.	°CWB	EDLQ: -25~35 / EDHQ: -15~35		
		Water side	Min.~Max.	°C	15 ~55		
	Domestic hot water	Ambient	Min.~Max.	°CDB	EDLQ: -25~43 / EDHQ: -15~43		
		Water side	Min.~Max.	°C	25~80		
Refrigerant	Type				R-410A		
	Charge			kg	2.95		
Sound power level	Heating	Nom.		dBA	64	65	66
Sound pressure level	Heating	Nom.		dBA	49	51	53
Compressor component	Main power supply	Name			W1		
		Phase			3N~		
		Frequency		Hz	50		
		Voltage		V	400		

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(2) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

HEATING & COOLING MONOBLOC SYSTEM SINGLE PHASE

INVERTER

WITH BOTTOM PLATE HEATER					EBLQ011BB6V3	EBLQ014BB6V3	EBLQ016BB6V3
WITHOUT BOTTOM PLATE HEATER					EBHQ011BB6V3	EBHQ014BB6V3	EBHQ016BB6V3
Heating capacity	Nom.			kW	11.20[1] / 10.87[2]	14.00[1] / 13.10[2]	16.00[1] / 15.06[2]
Cooling capacity	Nom.			kW	12.85[1] / 10.00[2]	15.99[1] / 12.50[2]	16.73[1] / 13.10[2]
Power input	Cooling	Nom.		kW	3.87[1] / 3.69[2]	5.75[1] / 5.39[2]	6.36[1] / 5.93[2]
	Heating	Nom.		kW	2.56[1] / 3.31[2]	3.29[1] / 4.01[2]	3.88[1] / 4.71[2]
COP					4.38[1] / 3.28[2]	4.25[1] / 3.27[2]	4.12[1] / 3.20[2]
EER					3.32[1] / 2.71[2]	2.78[1] / 2.32[2]	2.63[1] / 2.21[2]
Dimensions	Unit	Height X Width X Depth		mm	1,418 X 1,435 X 382		
Weight	Unit			kg	180		
Hydraulic component	Back-up heater current	Type			6V3		
		Power supply	Phase/Frequency/ Voltage	Hz/V	1~/50/230		
Operation range	Heating	Ambient	Min.~Max.	°CWB	EBLQ: -20~35 / EBHQ: -15~35		
		Water side	Min.~Max.	°C	15~55		
	Cooling	Ambient	Min.~Max.	°CDB	10~46		
		Water side	Min.~Max.	°C	5~22		
	Domestic hot water	Ambient	Min.~Max.	°CDB	EBLQ: -20~43 / EBHQ: -15~43		
		Water side	Min.~Max.	°C	25~80		
Refrigerant	Type				R-410A		
	Charge			kg	2.95		
Sound power level	Heating	Nom.		dBA	64	65	66
	Cooling	Nom.		dBA	65	66	69
Sound pressure level	Heating	Nom.		dBA	5		52
	Cooling	Nom.		dBA	50	52	54
Compressor component	Main power supply	Name			V3		
		Phase			1~		
		Frequency		Hz	50		
		Voltage		V	230		

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(2) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

HEATING & COOLING MONOBLOC SYSTEM THREE PHASE

INVERTER

WITH BOTTOM PLATE HEATER					EBLQ011BB6W1	EBLQ014BB6W1	EBLQ016BB6W1
WITHOUT BOTTOM PLATE HEATER					EBHQ011BB6W1	EBHQ014BB6W1	EBHQ016BB6W1
Heating capacity	Nom.			kW	11.20[1] / 10.87[2]	14.00[1] / 13.10[2]	16.00[1] / 15.06[2]
Cooling capacity	Nom.			kW	12.85[1] / 10.00[2]	15.99[1] / 12.50[2]	16.73[1] / 13.10[2])
Power input	Cooling	Nom.		kW	3.87[1] / 3.69[2]	5.40[1]/ 5.06[2]	6.15[1] / 5.75[2]
	Heating	Nom.		kW	2.60[1] / 3.21[2]	3.30[1] / 4.07[2]	3.81[1] / 4.66[2]
COP					4.31[1] / 3.38[2]	4.24[1] / 3.22[2]	4.20[1] / 3.23[2]
EER					3.32[1] / 2.71[2]	2.96[1] / 2.47[2]	2.72[1] / 2.28[2]
Dimensions	Unit	Height X Width X Depth		mm	1,418 X 1,435 X 382		
Weight	Unit			kg	180		
Hydraulic component	Back-up heater current	Type			6W1		
		Power supply	Phase/Frequency/ Voltage	Hz/V	3~/50/400		
Operation range	Heating	Ambient	Min.~Max.	°CWB	EBLQ: -25~35 / EBHQ: -15~35		
		Water side	Min.~Max.	°C	15~55		
	Cooling	Ambient	Min.~Max.	°CDB	10~46		
		Water side	Min.~Max.	°C	5~22		
	Domestic hot water	Ambient	Min.~Max.	°CDB	EBLQ: -25~43 / EBHQ: -15~43		
		Water side	Min.~Max.	°C	25~80		
Refrigerant	Type				R-410A		
	Charge			kg	2.95		
Sound power level	Heating	Nom.		dBA	64	65	66
	Cooling	Nom.		dBA	65	66	69
Sound pressure level	Heating	Nom.		dBA	49	51	53
	Cooling	Nom.		dBA	50	52	54
Compressor component	Main power supply	Name			W1		
		Phase			3N~		
		Frequency		Hz	50		
		Voltage		V	400		

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(2) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

DOMESTIC HOT WATER TANK

STAINLESS STEEL DOMESTIC HOT WATER TANK				EKHWS150B3V3	EKHWS200B3V3	EKHWS300B3V3	EKHWS200B3Z2	EKHWS300B3Z2
Casing	Colour			Neutral white				
	Material			Epoxy-coated mild steel				
Weight	Unit	Empty	kg	37	45	59	45	59
Tank	Water volume		l	150	200	300	200	300
	Material			Stainless steel (DIN 1.4521)				
	Maximum water temperature		°C	85				
Heat exchanger	Quantity			1				
	Tube material			Duplex steel LDX 2101				
Booster heater	Capacity		kW	3				
Power supply	Phase/Frequency/Voltage		Hz/V	1~/50/230			2~/50/400	

ENAMELED STEEL DOMESTIC HOT WATER TANK				EKHWE150A3V3	EKHWE200A3V3	EKHWE300A3V3	EKHWE200A3Z2	EKHWE300A3Z2
Casing	Colour			RAL9010				
	Material			Epoxy coated steel				
Weight	Unit	Empty	kg	80	104	140	104	140
Tank	Water volume		l	150	200	300	200	300
	Material			Enamel coated steel acc.DIN4753TL2				
	Maximum water temperature		°C	75				
Booster heater	Capacity		kW	3.0				
Power supply	Phase/Frequency/Voltage		Hz/V	1~/50/230			2~/50/400	

DOMESTIC HOT WATER TANK FOR UNPRESSURIZED SOLAR CONNECTION

DOMESTIC HOT WATER TANK				EKHWP300B	EKHWP500B
Casing	Material			Impact resistant polypropylene	
Weight	Unit	Empty	kg	59	92
Heat exchanger	Domestic hot water	Tube material		Stainless steel (DIN 1.4404)	
		Face area	m^2	5.7	5.9
		Internal coil volume	l	27.8	28.4
		Operating pressure	bar	6	
		Average specifc thermal output	W/K	2,795	2,860
	Charging	Tube material		Stainless steel (DIN 1.4404)	
		Face area	m^2	2.5	3.7
		Internal coil volume	l	12.3	17.4
		Average specifc thermal output	W/K	1,235	1,809
	Auxiliary solar heating	Tube material		Stainless steel (DIN 1.4404)	
		Face area	m^2	-	1.0
		Internal coil volume	l	-	5
		Average specifc thermal output	W/K	-	313
Power supply	Phase			-	
Tank	Water volume		l	300	500
	Maximum water temperature		°C	85	

Note: grey cells contain preliminary data

SOLAR CONNECTION - UNPRESSURIZED SYSTEM

SOLAR CONNECTION				EKSRPS3
Dimensions	Unit	HeightxWidthxDepth	mm	-
Control	Type			Digital temperature difference controller with plain text display
	Power consumption		W	-
Mounting				On side of tank
Sensor	Solar panel temperature sensor			Pt1000
	Storage tank sensor			PTC
	Return flow sensor			PTC
	Feed temperature and flow sensor			Voltage signal (3.5V DC)

SOLAR CONNECTION - PRESSURIZED SYSTEM

SOLAR CONNECTION				EKSOLHWAV1
Dimensions	Unit	HeightxWidthxDepth	mm	770x305x270
Weight	Unit		kg	8
Operation range	Outdoor temperature	Min.~Max.	°C	1~35
Sound pressure level	Nom.		dBA	27
Thermal performance	Zero loss collector efficiency η0		%	-
Power supply	Phase/Frequency/Voltage		Hz/V	1~/50/220-240
Power supply intake				Indoor unit

ACCESSORY				EKSR3PA
Mounting				On wall
Dimensions	Unit	HeightxWidthxDepth	mm	332x230x145
Thermal performance	Zero loss collector efficiency η0		%	-
Control	Type			Digital temperature difference controller with plain text display
	Power consumption		W	2
Sensor	Solar panel temperature sensor			Pt1000
	Storage tank sensor			PTC
	Return flow sensor			PTC
	Feed temperature and flow sensor			Voltage signal (3.5V DC)
Power supply	Frequency/Voltage		Hz / V	50/230

SOLAR COLLECTOR

SOLAR COLLECTOR				EKSV26P	EKSH26P
Dimensions	Unit	HeightxWidthxDepth	mm	2,000x1,300x85	1,300x2,000x85
Weight	Unit		kg	43	
Volume			l	1.7	2.1
Surface	Outer		m^2	2.601	
	Aperture		m^2	2.364	
	Absorber		m^2	2.354	
Coating				Micro-therm (absorption max.96%, Emission ca. 5% +/-2%)	
Absorber				Harp-shaped copper pipe register with laser-welded highly selective coated aluminium plate	
Glazing				Single pane safety glass, transmission +/- 92%	
Allowed roof angle	Min.~Max.		°	15~80	
Operating pressure	Max.		bar	6	
Stand still temperature	Max.		°C	200	
Thermal performance	Zero loss collector efficiency η0		%	78.7	
	Heat loss coefficient a1		$W/m^2.K$	4.270	
	Temperature dependence of the heat loss coefficient a2		$W/m^2.K^2$	0.0070	
	Thermal capacity		kJ/K	6.5	
	Incident angle modifier	AM at 50°		0.94	
Installed position				Vertical	Horizontal

HEAT PUMP CONVECTOR

INDOOR UNITS				FWXV20AVEB	FWXV15AVEB
Heating capacity	Total capacity	Nom.	kW	2.0	1.5
Cooling capacity	Total capacity	Nom.	kW	1.7	1.2
	Sensible capacity	Nom.	kW	1.4	0.98
Power input	Heating	Nom.	kW	0.015	0.013
	Cooling	Nom.	kW	0.015	0.013
Dimensions	Unit	Height/Width/Depth	mm	600/700/210	
Weight	Unit		kg	15	
Piping connections	Drain/OD/Inlet/Outlet		mm/inch	18/G 1/2/G 1/2	
Sound pressure level	Heating	Nom.	dBA	29	19
	Cooling	Nom.	dBA	29	19
Power supply	Phase/Frequency/Voltage		Hz/V	1~/50/60/220-240/220	

(1)Cooling: indoor temp. 27°CDB, 19°CWB; entering water temp. 7°C, water temperature rise 5K.(2)Heating: room temperature 20°CDB and entering water temperature 45°C, water temperature drop 5K.

ROOM THERMOSTAT

WIRED ROOM THERMOSTAT				EKRTWA
Dimensions	Unit	Height/Width/Depth	mm	87/125/34
Weight	Unit		g	215
Outdoor temperature	Storage	Min./Max.	°C	-20/60
	Operation	Min./Max.	°C	0/50
Temperature setting range	Heating	Min./Max.	°C	4/37
	Cooling	Min./Max.	°C	4/37
Clock				Yes
Regulation function				Proportional band
Power supply	Voltage		V	Battery powered 3* AA-LR6 (alkaline)
Connection	Type			Wired

WIRELESS ROOM THERMOSTAT				EKRTR1
Dimensions	Thermostat	Height/Width/Depth	mm	87/125/34
	Receiver	Height/Width/Depth	mm	170/50/28
Weight	Thermostat		g	210
	Receiver		g	125
Outside temperature	Storage	Min./Max.	°C	-20/60
	Operation	Min./Max.	°C	0/50
Temperature setting range	Heating	Min./Max.	°C	4/37
	Cooling	Min./Max.	°C	4/37
Clock				Yes
Regulation function				Proportional band
Power supply	Thermostat	Voltage	V	Battery powered 3x AA-LRG (alkaline)
	Receiver	Voltage	V	230
	Frequency		Hz	50
	Phase			1~
Connection	Thermostat			Wireless
	Receiver			Wired
Maximum distance to receiver	Indoor		m	approx.30m
	Outdoor		m	approx.100m

2. DAIKIN ALTHERMA HIGH TEMPERATURE

INDOOR UNITS

INDOOR UNITS					EKHBRD011ACV1	EKHBRD014ACV1	EKHBRD016ACV1	EKHBRD011ACY1	EKHBRD014ACY1	EKHBRD016ACY1
Heating capacity	Nom.			kW	11[1] 11[2] 11[3]	14[1] 14[2] 14[3]	16[1] 16[2] 16[3]	11[1] 11[2] 11[3]	14[1] 14[2] 14[3]	16[1] 16[2] 16[3]
Power input	Heating	Nom.		kW	3.57[1] 4.40[2] 2.61[3]	4.66[1] 5.65[2] 3.55[3]	5.57[1] 6.65[2] 4.31[3]	3.57[1] 4.40[2] 2.61[3]	4.66[1] 5.65[2] 3.55[3]	5.57[1] 6.65[2] 4.31[3]
COP					3.08[1] 2.50[2] 4.22[3]	3.00[1] 2.48[2] 3.94[3]	2.88[1] 2.41[2] 3.72[3]	3.08[1] 2.50[2] 4.22[3]	3.00[1] 2.48[2] 3.94[3]	2.88[1] 2.41[2] 3.72[3]
Casing	Colour				Metallic grey					
	Material				Precoated sheet metal					
Dimensions	Unit	Height/Width/Depth		mm	705/600/695					
Weight	Unit			kg	144.25			147.25		
Operation range	Heating	Ambient	Min.~Max.	°C	-20~20					
		Water side	Min.~Max.	°C	25~80					
	Domestic hot water	Ambient	Min.~Max.	°CDB	-20~35					
		Water side	Min.~Max.	°C	25~80					
Refrigerant	Type				R-134a					
	Charge			kg	3.2					
Sound pressure level	Nom.			dBA	43 46	45 46	46 46	43[1] 46[2]	45[1] 46[2]	46[1] 46[2]
	Night quiet mode	Level 1		dBA	40	43	45	40[1]	43[1]	45[1]
Power supply	Name				V1			Y1		
	Phase				1~			3~		
	Frequency			Hz	50					
	Voltage			V	220-240			380-415		
Current	Recommended fuses			A	25			16		

(1) EW 55°C; LW 65°C; Dt 10°C; ambient conditions: 7°CDB/6°CWB | (2) EW 70°C; LW 80°C; Dt 10°C; ambient conditions: 7°CDB/6°CWB | (3) EW 30

OUTDOOR UNITS

INVERTER

WITH BOTTOM PLATE HEATER				ERRQ011AV1	ERRQ014AV1	ERRQ016AV1	ERRQ011A	ERRQ014A	ERRQ016A
Dimensions	Unit	Height/Width/Depth	mm	1,345/900/320					
Weight	Unit		kg	120					
Operation range	Heating	Min.~Max.	°CWB	-20~20					
	Domestic hot water	Min.~Max.	°CDB	-20~35					
Refrigerant	Type			R-410A					
	Charge		kg	4.5					
Sound power level	Heating	Nom.	dBA	68	69	71	68	69	71
Sound pressure level	Heating	Nom.	dBA	52	53	55	52	53	55
Power supply	Name;Phase;Frequency;Voltage		Hz;V	V1;1~;50;220-440			Y1/3~/50/380-415		
Current	Recommended fuses		A	25			16		

WITHOUT BOTTOM PLATE HEATER				ERSQ011A	ERSQ014A	ERSQ016A	ERSQ011AY1	ERSQ014AY1	ERSQ016AY1
Dimensions	Unit	Height/Width/ Depth	mm	1.345/900/320					
Weight	Unit		kg	120					
Operation range	Heating	Min.~Max.	°CWB	-20~20					
	Domestic hot water	Min.~Max.	°CDB	-20~35					
Refrigerant	Type			R-410A					
	Charge		kg	4.5					
Sound power level	Heating	Nom.	dBA	68	69	71	68	69	71
Sound pressure level	Heating	Nom.	dBA	52	53	55	52	53	55
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V1/1~/50/220-440			Y1/3~/50/380-415		
Current	Recommended fuses		A	25			16		

DOMESTIC HOT WATER TANK

DOMESTIC HOT WATER TANK				EKHTS200AC	EKHTS260AC
Casing	Colour			Metallic grey	
	Material			Galvanised steel (precoated sheet metal)	
Dimensions	Unit	Height/Integrated on indoor unit/ Width/Depth	mm	1,335/2,010/600/695	1,335/2,285/600/695
Weight	Unit	Empty	kg	70	78
Heat exchanger	Quantity			1	
	Tube material			Duplex steel (EN 1.4162)	
	Face area		m^2	1.56	
	Internal coil volume		l	7.5	
Power supply	Phase			-	
Tank	Water volume		l	200	260
	Material			Stainless steel (EN 1.4521)	
	Maximum water temperature		°C	75	

DOMESTIC HOT WATER TANK FOR SOLAR CONNECTION				EKHWP300B	EKHWP500B
Casing	Material			Impact resistant polypropylene	
Weight	Unit	Empty	kg	59	92
Heat exchanger	Domestic hot water	Tube material		Stainless steel (DIN 1.4404)	
		Face area	m^2	5.7	5.9
		Internal coil volume	l	27.8	28.4
		Operating pressure	bar	6	
		Average specifc thermal output	W/K	2,795	2,860
	Charging	Tube material		Stainless steel (DIN 1.4404)	
		Face area	m^2	2.5	3.7
		Internal coil volume	l	12.3	17.4
		Average specifc thermal output	W/K	1,235	1,809
	Auxiliary solar heating	Tube material		Stainless steel (DIN 1.4404)	
		Face area	m^2	-	1.0
		Internal coil volume	l	-	5
		Average specifc thermal output	W/K	-	313
Power supply	Phase			-	
Tank	Water volume		l	300	500
	Maximum water temperature		°C	85	

Note: grey cells contain preliminary data

SOLAR COLLECTOR

SOLAR COLLECTOR				EKSV26P	EKSH26P
Dimensions	Unit	HeightxWidthxDepth	mm	2,000x1,300x85	1,300x2,000x85
Weight	Unit		kg	43	
Volume			l	1.7	2.1
Surface	Outer		m^2	2.601	
	Aperture		m^2	2.364	
	Absorber		m^2	2.354	
Coating				Micro-therm (absorption max.96%, Emission ca. 5% +/-2%)	
Absorber				Harp-shaped copper pipe register with laser-welded highly selective coated aluminium plate	
Glazing				Single pane safety glass, transmission +/- 92%	
Allowed roof angle	Min.~Max.		°	15~80	
Operating pressure	Max.		bar	6	
Stand still temperature	Max.		°C	200	
Thermal performance	Zero loss collector efficiency η0		%	78.7	
	Heat loss coefficient a1		$W/m^2.K$	4,270	
	Temperature dependence of the heat loss coefficient a2		$W/m^2.K^2$	0.0070	
	Thermal capacity		kJ/K	6.5	
	Incident angle modifier	AM at 50°		0.94	
Installed position				Vertical	Horizontal

SOLAR CONNECTION

SOLAR CONNECTION				EKSRPS3
Dimensions	Unit	HeightxWidthxDepth	mm	-
Control	Type			Digital temperature difference controller with plain text display
	Power consumption		W	-
Mounting				On side of tank
Sensor	Solar panel temperature sensor			Pt1000
	Storage tank sensor			PTC
	Return flow sensor			PTC
	Feed temperature and flow sensor			Voltage signal (3.5V DC)

3. DAIKIN ALTHERMA HYBRID HEAT PUMP

INDOOR UNITS

					GAS MODULE	HEAT PUMP MODULE	
INDOOR UNIT					*EHYKOMB33AA	*EHYHBH05A	*EHYHBH08AV3
Function					Heating only	Heating only	
Power rating	Nom.			kW	7.2-32.7	-	-
Heating capacity	Nom.	80/60		kW	7.1-26.3	-	-
		50/30		kW	7.8-27.1	-	-
User efficiency	High	Heat recovery space heating		%	107	-	-
	High	Heat recovery domestic hot water		%	95.8	-	-
Casing	Colour				S5730 White	S5730 White	
Dimensions	Unit	HeightxWidthxDepth		mm	710x450x240	970x450x165	
Weight	Unit			kg	36		
Sound power level	Heating	Nom.		dBA		42 dBA	
Sound pressure level	Heating	Nom.		dBA		28 dBA	

OUTDOOR UNITS

OUTDOOR UNIT				*EVLQ05CV3	*EVLQ08CV3
Heating capacity	Nom.	Heat pump operation only	kW	4.40 [1] 4.03 [2]	7.40 [1] 6.89 [2]
COP	Heat pump operation only			5.04 [1] 3.58 [2]	4.45 [1] 3.42 [2]
Dimensions	Unit	HeightxWidthxDepth	mm	735x825x300	
Sound power level	Heating	Nom.	dBA	61	62
Sound pressure level	Heating	Nom.	dBA	48	49

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
(1) cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

* Note: grey cells contain preliminary data

4. DAIKIN ALTHERMA FLEX TYPE

INDOOR UNITS

INDOOR UNIT			EKHVMRD50AV1	EKHVMRD80AV1	EKHVMYD50AV1	EKHVMYD80AV1
Function			Heating only		Heating and cooling	
Dimensions	HxWxD	mm	705x600x695		705x600x695	
Leaving water temperature range	heating	°C	25~80		25~80	
Material			Precoated sheet metal		Precoated sheet metal	
Colour			Metallic grey		Metallic grey	
Sound pressure level	nominal	dB(A)	40[1]/ 43[2]	42[1]/ 43[2]	40[1]/ 43[2]	42[1]/ 43[2]
Weight		kg	92		120	
Refrigerant	Type		R-134a		R-134a	
	Charge	kg	2	2	2	2
Power supply			1~/ 50Hz /220-240V		1~/ 50Hz /220-240V	

(1) Sound levels are mesured at:EW 55°C; LW 65°C (2) Sound levels are mesured at:EW 70°C; LW 80°C

					EKHBRD011ACV1	EKHBRD014ACV1	EKHBRD016ACV1	EKHBRD011ACY1	EKHBRD014ACY1	EKHBRD016ACY1
Casing	colour				Metallic grey					
	material				Precoated sheet metal					
Dimensions	unit	height/width/depth		mm	705/600/695					
Weight	unit			kg	144.25			147.25		
Operation range	heating	ambient	min.~max.	°C	-20~20					
		water side	min.~max.	°C	25~80					
	domestic hot water	ambient	min.~max.	°CDB	-20~35					
		water side	min.~max.	°C	25~80					
Refrigerant	type				R-134a					
	charge			kg	3.2					
Sound pressure level	nom.			dBA	43 [1] 46 [2]	45 [1] 46 [2]	46 [1] 46 [2]	43 [1] 46 [2]	45 [1] 46 [2]	46 [1] 46 [2]
	night quiet mode	level 1		dBA	40 [1]	43 [1]	45 [1]	40 [1]	43 [1]	45 [1]
Power supply	name				V1			Y1		
	phase				1~			3~		
	frequency			Hz	50					
	voltage			V	220-240			380-415		
Current	recommended fuses			A	25			16		

(1) EW 55°C; LW 65°C; Dt 10°C; ambient conditions: 7°CDB/6°CWB (2) EW 70°C; LW 80°C; Dt 10°C; ambient conditions: 7°CDB/6°CWB | (3) EW 30

OUTDOOR UNITS

OUTDOOR UNIT				EMRQ8AY1	EMRQ10AY1	EMRQ12AY1	EMRQ14AY1	EMRQ16AY1
Nominal capacity	heating		kW	22.4	28	33.6	39.2	44.8
	cooling		kW	20	25	30	35	40
Capacity range			HP	8	10	12	14	16
Dimensions	HxWxD		mm	1680x1300x765				
Weight			kg	331			339	
Sound power level	heating		dB(A)	78		80	83	84
Sound pressure level	heating		°C	58		60	62	63
Operation range	heating		°C	-20°C~20*				
	domestic water		°C	-20°C~35*				
Refrigerant	type		kg	R-410A				
Power supply				3~/50Hz/380-415V				
Piping connections	liquid		mm	9.52		12.7		
	suction		mm	19.1	22.2	28.6		
	high&low pressure gas			15.9	19.1		22.2	
	max total length		m	300				
	level differnce OU-IU		m	40				
Recommended fuses			A	20	25		40	

Heating conditions: Ta = 7°CDB / 6°CWB, 100% connection ratio Cooling conditions: Ta = 35°CDB, 100% connection ratio *Capacity not guaranteed between -20°C and -15°C

DOMESTIC HOT WATER TANK

DOMESTIC HOT WATER TANK			EKHTS200AC	EKHTS260AC
Water volume		l	200	260
Max. water temperature		°C	75°C	
Dimensions	HxWxD	mm	1,335x600x695	1,610x600x695
Dimensions - integrated on indoor unit	HxWxD	mm	2,010x600x695	2,285x600x695
Material outside casing			Galvanised metal	
Colour			Metallic grey	
Empty weight		kg	70	78

HEAT PUMP CONVECTOR

HEAT PUMP CONVECTOR				FWXV15A	FWXV20A
Capacity	Heating	45°C [1]	kW	1.5	2.0
	Cooling	7°C [2]	kW	1.2	1.7
Dimensions	HxWxD		mm	600x700x210	
Weight			kg	15	
Air flow rate	H/M/L/SL		m3/h	318/228/150/126	474/354/240/198
Sound pressure	M		dB(A)	19	29
Refrigerant				Water	
Power Supply				1~/220-240V/50/60Hz	
Piping connections	Liquid (OD)/Drain			12.7 / 20	

[1] Water inlet temperature = 45°C / Water outlet temperature: 40°C
indoor temperature = 20°CDB
Medium fan speed

[2] Water inlet temperature = 7°C / Water outlet temperature: 12°C
indoor temperature = 27°CDB / 19°CWB
Medium fan speed

5. DAIKIN ALTHERMA GROUND SOURCE HEAT PUMP

Technical data coming soon

Daikin: your reliable partner

Daikin is the specialist in climate conditioning systems – for private homes as well as for large commercial and industrial spaces. We make every effort to ensure that your customers are 100% satisfied.

High-quality, innovative products

Innovation and quality are constantly at the forefront of Daikin's philosophy. The entire Daikin team is continually trained to provide you with optimal information and advice.

A clean environment

In producing your customer's climate control system, we strive for sustainable energy consumption, product recycling and waste reduction. Daikin rigorously applies the principles of eco-design, thus restricting the use of materials that are harmful to our environment.

SEASONAL EFFICIENCY

Today, Daikin leads the way towards more efficient, cost-effective and environmentally friendly comfort solutions, introducing products optimised for all seasons. In fact, Daikin products reduce energy and costs in a smart way. They are designed to perform under all conditions and reflect the actual performance you can expect over an entire heating and cooling season. So, with Daikin you make the right choice for your wallet... and the environment.

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Daikin Europe N.V. participates in the Eurovent Certification programme for Air conditioners (AC), Liquid Chilling Packages (LCP) and Fan coil units (FCU), Check ongoing validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com

Only applicable for Daikin Altherma low temperature units. Daikin Altherma high temperature units are not in scope of the Eurovent certification programme.

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DAIKIN EUROPE N.V. Naamloze Vennootschap - Zandvoordestraat 300, B-8400 Oostende - Belgium - www.daikin.eu - BE 0412 120 336 - RPR Oostende

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