Air-to-water technology

2. Daikin Altherma low temperature split

Why choose Daikin Altherma low temperature?

Your customer requires: a new heating system
- must work in a new build or low-energy house
- must work with under floor heating, convectors and low temperature radiators

Your solution: the Daikin Altherma low temperature
- provides heating, domestic hot water and cooling with optional solar support
- available in capacities from 4 to 16 kW depending on requirements
- available as split floor standing, split wall mounted, or monobloc
- ideal for new builds and low energy houses

Your customer gains:
- optimal comfort plus domestic hot water
- low operating costs thanks to high efficiencies

Your gains:
- modular construction
- flexible installation
- simple commissioning

Result: win-win for you AND the customer

Daikin Altherma low temperature heat pump the natural choice

Daikin Altherma low temperature split

Best seasonal efficiencies providing the highest savings on running costs. Perfect fit for new builds, as well as for low-energy houses.

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

- All components and connections factory-made
- Very small installation footprint required
- Minimum electrical input with constant availability of hot water
- Model with integrated bi-zone kit available from spring 2015.

2. Integrated heating and hot water unit with extended flexibility

- Solar support of domestic hot water with unpressurised (drain-back) and pressurised solar system
- Lightweight plastic tank with exceptional hygienic benefits
- Bivalent option: combinable with a secondary heat source
- App control possible.

3. Wall mounted indoor unit with optional domestic hot water tank

The best solution in specific situations:

- Ideal when either no domestic hot water or more flexibility for domestic hot water is required
- Combinable with a separate domestic hot water tank with optional solar connection.

Daikin Altherma low temperature split

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.

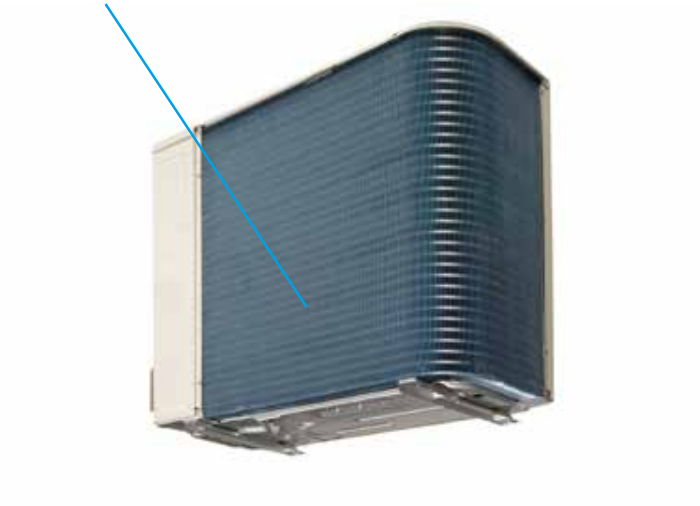
› The outdoor unit has a free hanging coil, ensuring no ice accumulates in the lower part of the outdoor unit. This is key to offering appropriate frost protection and has the additional advantage that no electrical bottom plate heater is required.

› The discharge grill is also specifically designed to avoid ice accumulation.

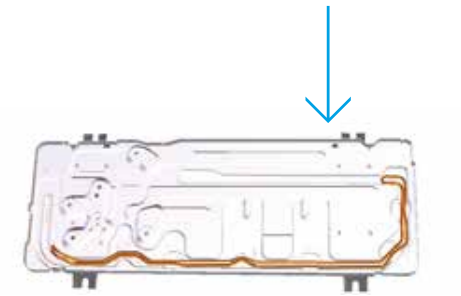
2. The 11-16kW range of Daikin Altherma (ERLQ-C) has specific frost protection.

› 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.

Free hanging coil



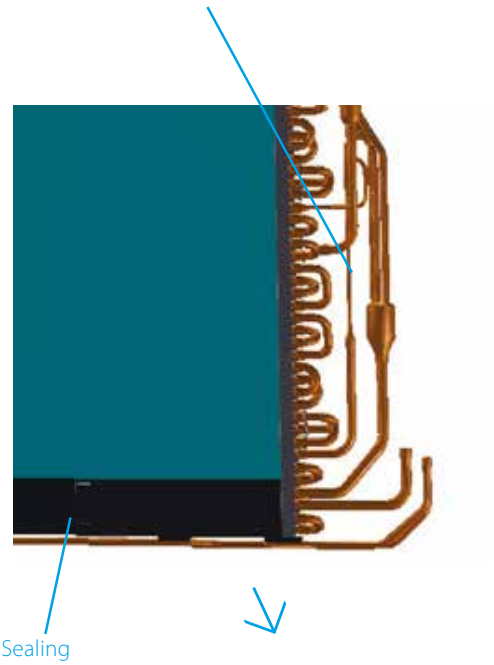
Hot gas pipe



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

New discharge grille

Distributor



Only a small capacity bottom plate heater is installed (35W) on the ERLQ011,014,016C range, with smart operation logic only operating during defrost cycles. This saves around 90% of electricity consumption compared to a thermostatically controlled bottom plate heater.

Integrated floor standing unit, saving installation space and time

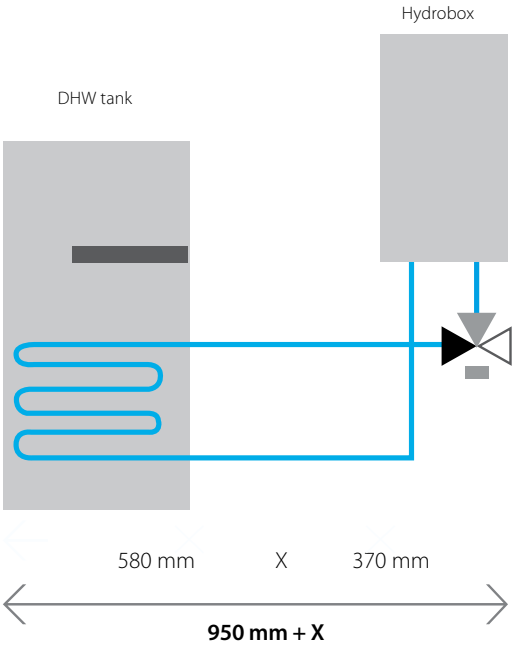
- The stainless steel domestic hot water tank is included in the unit, with all connections between the heat pump module and tank factory mounted. This allows for a fast installation compared to a traditional set-up (wall-mounted with separate domestic hot water tank) with only water and refrigerant 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

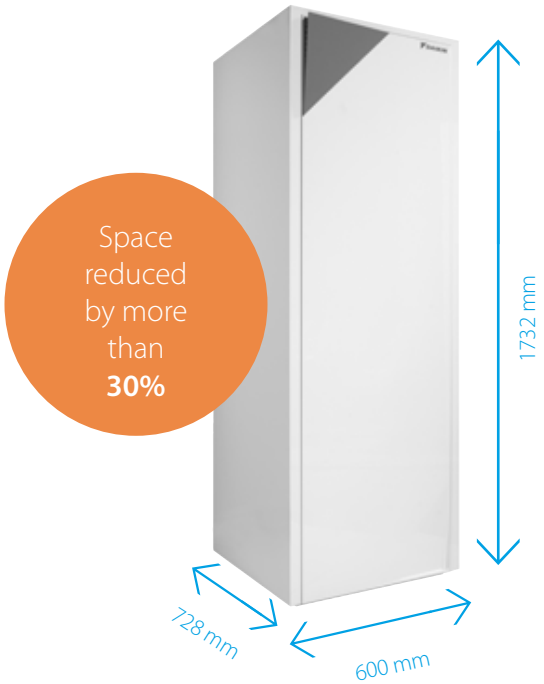
1 Compared to the traditional split-up version for a wall-mounted indoor unit and separate domestic hot water tank, the integrated indoor unit greatly reduces the installation space required.

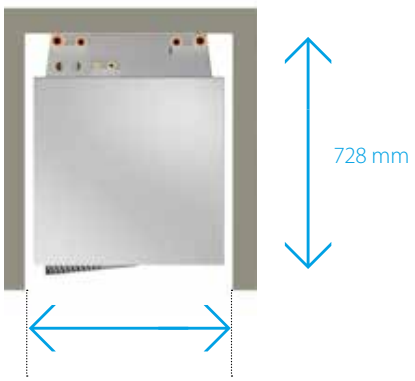
Traditional set-up



VS

Integrated indoor unit





600 mm + 10 mm clearance on both sides

2 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. For installation, 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.

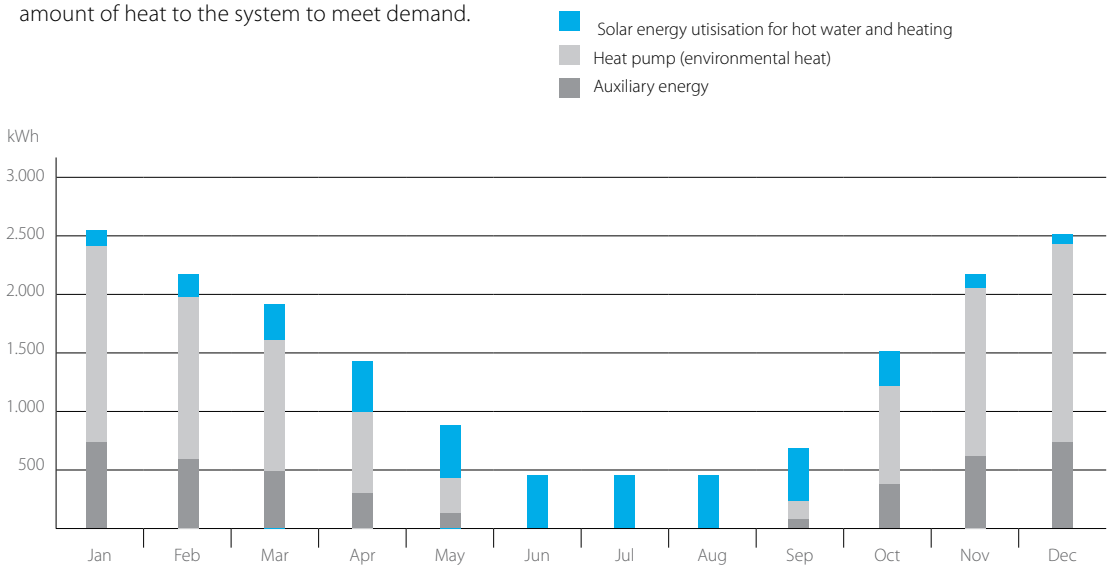
Integrated solar unit, maximising renewable energy and offering top comfort

Solar support of domestic hot water with unpressurised (drain-back) or pressurised solar system

The integrated solar unit uses free energy from the sun to support the production of domestic hot water.
At its peak, 80% of solar energy can be converted into usable heat, made possible by the extremely high efficiency of our flat solar panels. Solar energy and heat pumps complement each other ideally in this application. The heat pump adds the required amount of heat to the system to meet demand.

The graphic shows when and how much the solar system supports the heating and hot water generation.

Combined with a heat pump, which also exploits regenerative ambient energy, the use of ancillary energy is reduced to an absolute minimum.

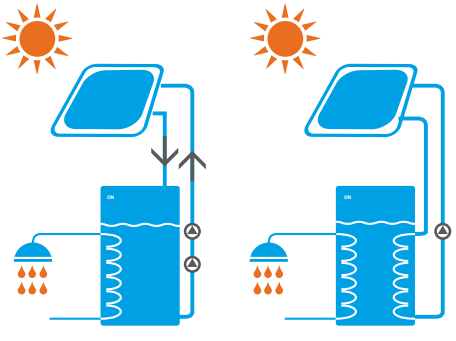


Depending on your customer's needs, an unpressurised or pressurised system can be offered.

Unpressurised solar system (with EHSH(X)-A)
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!

Pressurised solar system (with EHSH(X)B-A)
If needed, a pressurised thermal hot water system can also be offered. The system is filled with heat transfer fluid containing the correct amount of antifreeze to avoid freezing in winter.
The whole system is pressurised and sealed.



Lightweight plastic tank with exceptional hygienic benefits

The integrated domestic hot water tank is water-hygienic and is state of- the-art technology. Thanks to the flow-through principle, legionella bacteria cannot grow, thus eliminating the need for a thermal disinfection cycle. Its exceptional water hygiene benefits have been confirmed in an extensive study by the Hygiene Institute at the University of Tübingen.

Bivalent option: combinable with a secondary heat source (EHSH(X)B-A only)

Heat from other sources can also be efficiently stored in the indoor unit. A solar system can also be supported by oil-fired and gas-fired boilers, pellet-fired boilers or wood-fired stoves with back boilers for heating and hot water generation. If you are not installing a solar system from the beginning, it can be fitted quickly and easily at any time afterwards.

App control possible

1. Control with the app
Simple consistent handling with intuitive menu navigation and control can be carried out via your smartphone with the app. available from beginning of 2014.

2. Clear display and easy modification
The display shows values and parameters in clear text. All operating modes, timer programmes and operating parameters can be set and modified quickly.

3. Simple controller for easy regulation
The water temperature for the heating is regulated in accordance with the outdoor temperature. The controller automatically detects winter and summer, and switches the heating mode on and off to suit the demand. The controller is easy and intuitive to operate and can be extended by the use of a room controller, which can be used conveniently to control and monitor the heating system.

3. When solar connection for hot water is required:
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 virtually any kind of roof.

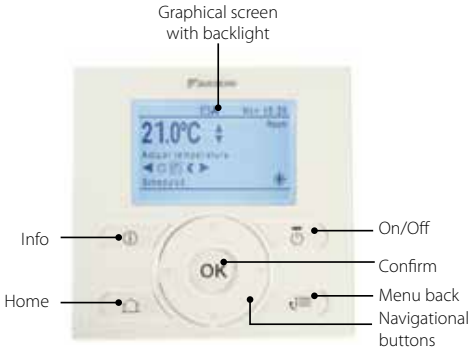
Unpressurised solar system
- The solar collectors are only filled with water
- Heat is provided by the sun.
- Both pumps switch on briefly and fill the collectors with storage tank water.
- After filling, water circulation is maintained by the remaining pump.

Pressurised solar system
- System is filled with heat transfer fluid with the correct amount of antifreeze to avoid freezing in winter.
- 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.

Easy control

System controller for Daikin Altherma low temperature split

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.



System controller for Daikin Altherma low temperature monobloc

The leaving water temperature is dependant on the outside ambient temperature thanks to the floating setpoint functionality. At low outside ambient temperatures, the leaving water temperature will increase to satisfy the increasing heating requirement of the building and vice versa.

Optional 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. An external sensor (EKRTETS) can be placed between the under floor heating and the floor, as an option to the wireless room thermostat. 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

Home automation

The Daikin RTD-LT/CA accessory allows your customers to control their Daikin Altherma low temperature heat pump via their home automation system.