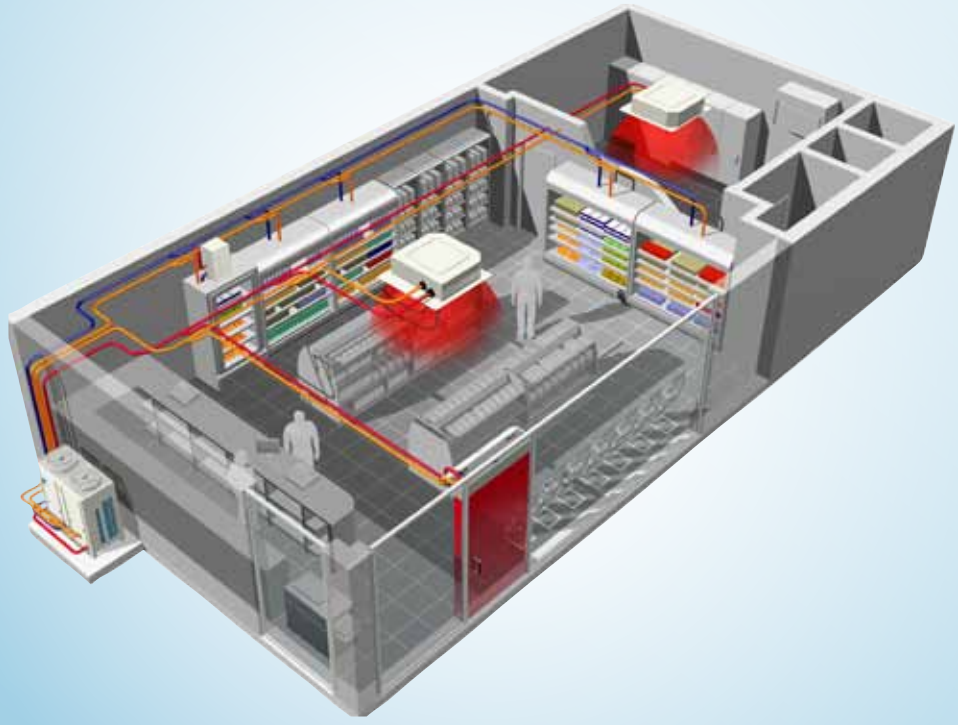
DAIKIN

ΤΡΙΚ-ΤΡΑΚ ΧΑΤΖΗΑΓΓΕΛΙΔΗΣ

Conveni-Pack

Integrated refrigeration, heating and air conditioning system

- Energy consumption reduction up to 50%!
- Lower associated CO_2 emissions
- Applicable for small to medium size applications
- Space saving and installation flexibility
- Improved in-store comfort
- Low noise level



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CONVENI-PACK

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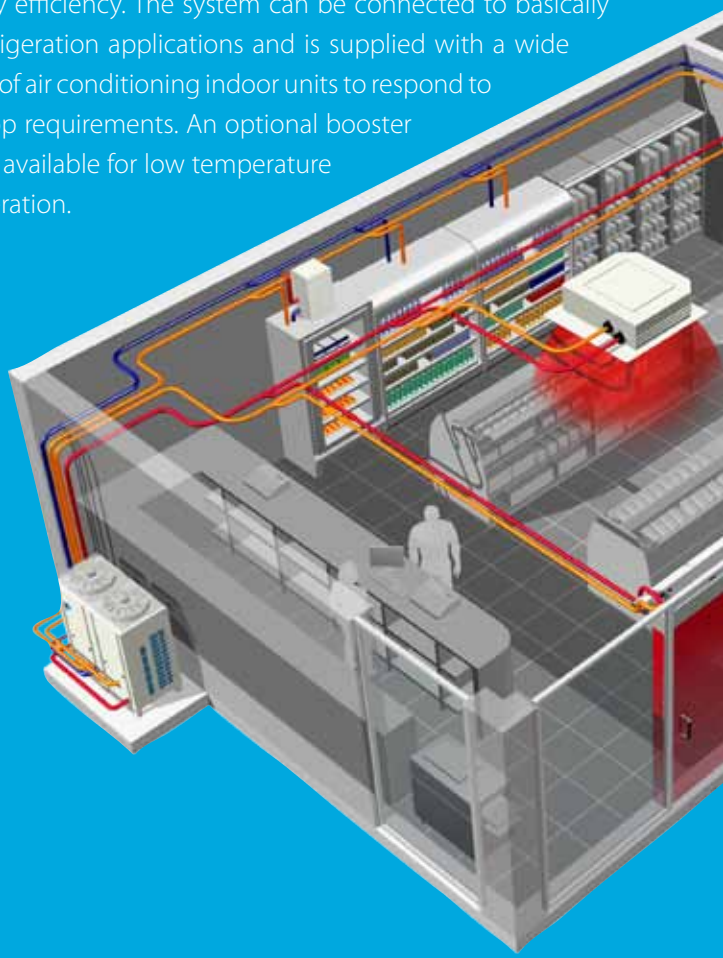
CONVENI-PACK IS A COMPACT, LOW NOISE SYSTEM WHICH INTEGRATES HIGH AND LOW TEMPERATURE REFRIGERATION AND AIR CONDITIONING (INCLUDING HEATING) INTO ONE SYSTEM.

Helping retailers save energy and the environment

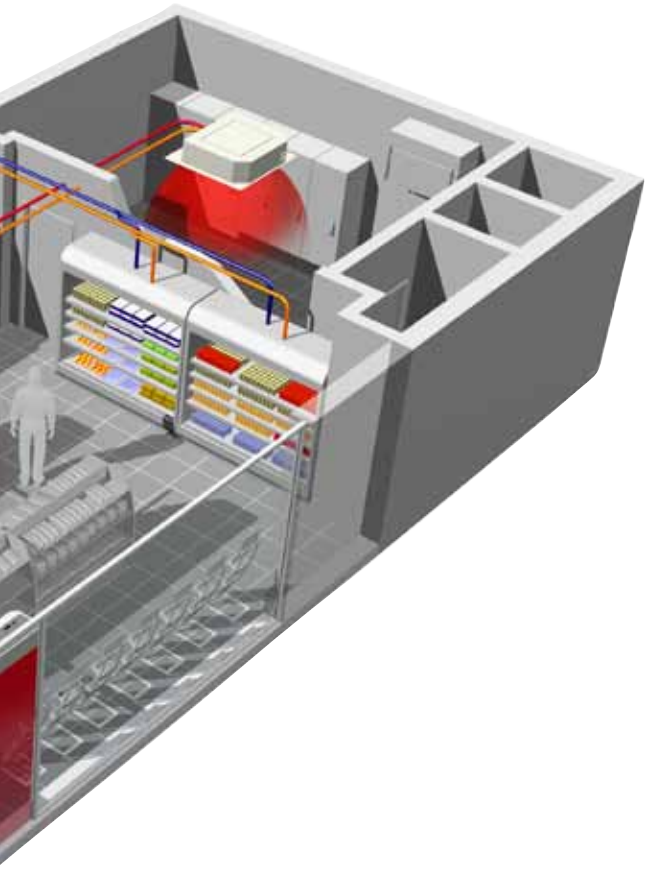
Retailers are faced with a growing need for fresh goods, prepared meals and chilled drinks. At the same time, environmental and zoning requirements are stricter than ever, and energy costs must be kept under control. Conveni-pack minimises total energy demand due to its unique, integrated approach to refrigeration and air conditioning.

A total solution for small applications

Conveni-pack is unique in combining refrigeration and air conditioning equipment in one total solution using the latest controls and inverter technology in order to maximize energy efficiency. The system can be connected to basically all refrigeration applications and is supplied with a wide range of air conditioning indoor units to respond to all shop requirements. An optional booster unit is available for low temperature refrigeration.

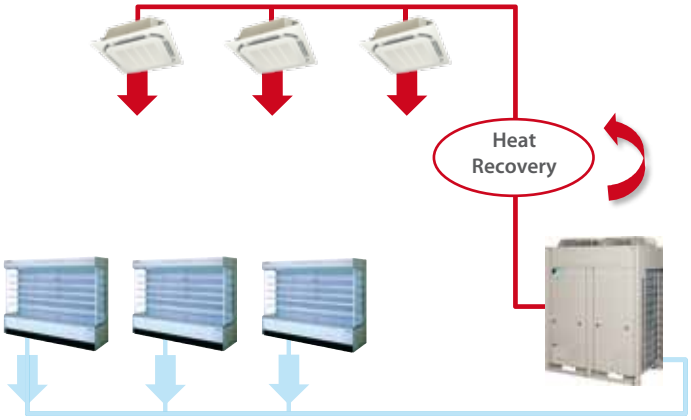


- Inverter driven outdoor units match system output to actual demand in order to reach optimum efficiency under all conditions
- Conveni-pack supports a wide variety of refrigeration and cooling units
- By recovering the heat extracted from the connected refrigeration appliances and by using sophisticated controls energy savings of up to 50% or more can be reached.
- Small footprint, reduced piping, quiet operation: ideal for densely populated urban areas



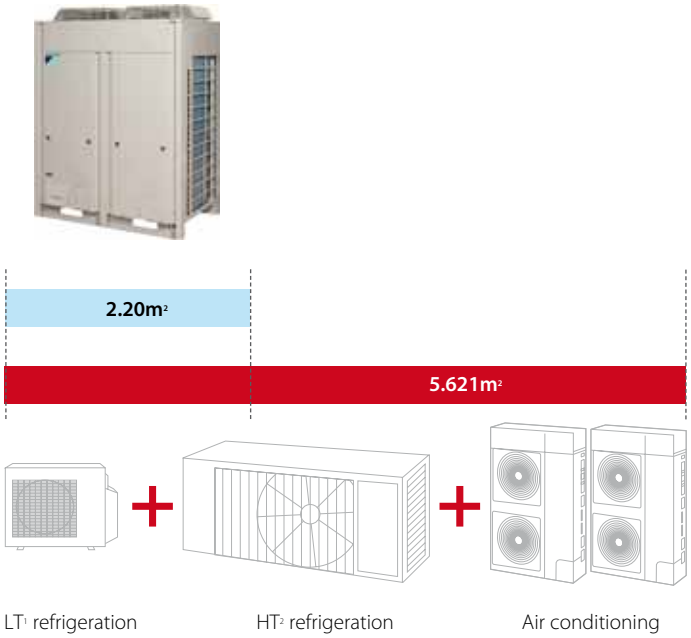
Heat Recovery

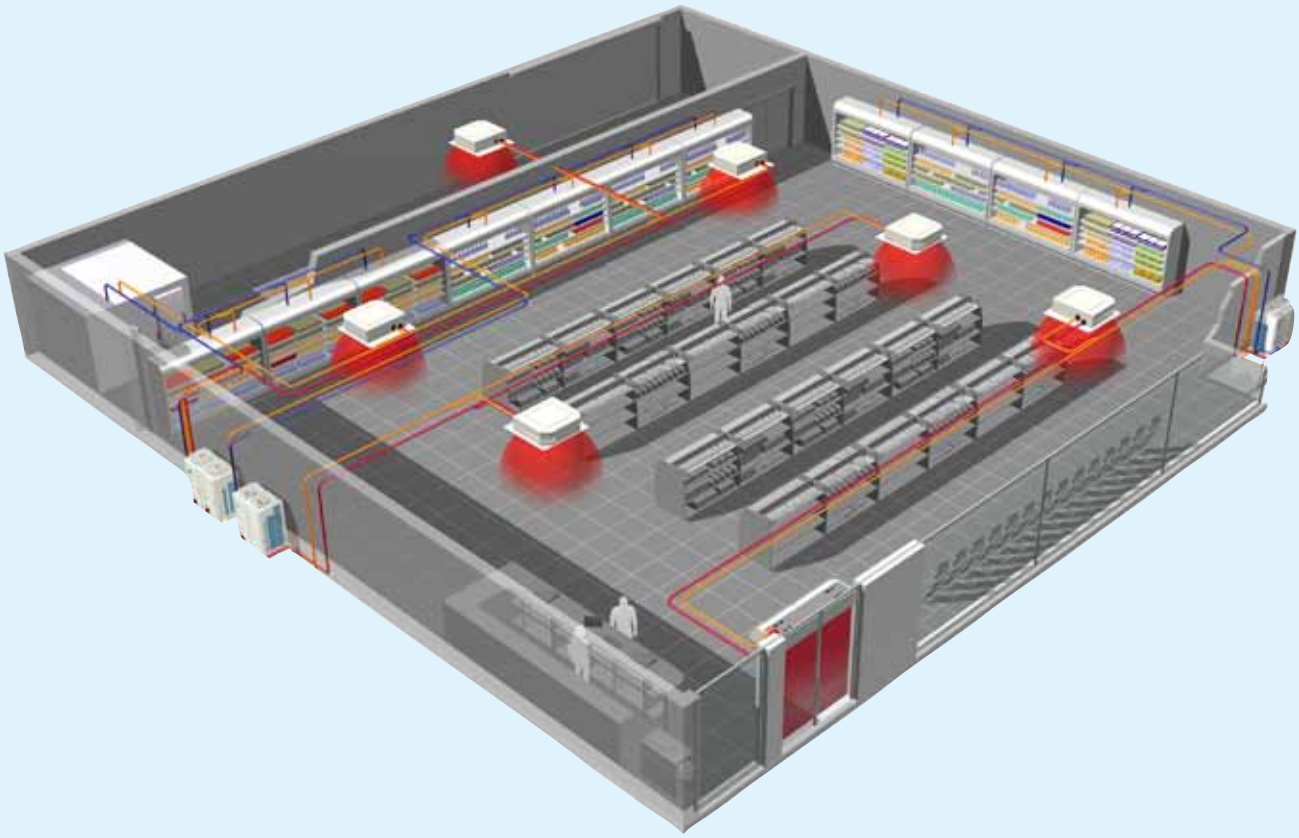
The heat extracted from the refrigeration showcases or evaporators can be re-used for comfort heating of the shop… at no extra cost!



Reduced footprint

The Conveni-pack outdoor unit is compact when compared to conventional systems. Its footprint is 60% smaller, allowing it to be used in applications where space is restricted.





A flexible system for larger applications

Conveni-pack's modular design allows it to be used for smaller as well as larger shops. One or more outdoor units can be installed throughout the building, inside or outside.

Capacity range

By combining Conveni-pack and ZEAS condensing units the optimum total solution for heating, AC and refrigeration can be provided for virtually any shop concept.

Placement flexibility

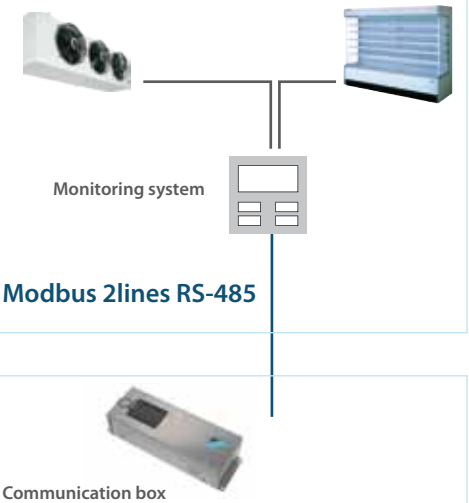
The modularity of the Conveni-pack system maximises installation flexibility. Outdoor units can be grouped into blocks or rows, or distributed around the building, to meet individual installation constraints. Additionally, the outdoor units can be located above or below the refrigeration cabinets, inside the building and with long piping runs if required.

Configuration and installation flexibility

The Conveni-pack concept allows a wide range of installation possibilities in order to suit the variety of conditions met on-site:

- **Configurations**: multiple outdoor units can be positioned to make the best use of the space available, in blocks, rows or distributed around the building to minimize pipe runs.
- **Distance**: the length of piping between the outdoor unit and the furthest refrigeration cabinet or air conditioning indoor unit on the circuit can be up to 130m.
- **Height**: depending on the model the outdoor unit can be placed up to 35m above the lowest cabinet/indoor unit, or up to 10m below the highest refrigeration cabinet/air conditioning unit.
- **Inside the building**: a limited amount of ducts can be connected to the Conveni-pack unit in order to allow installation inside a building.

Refrigeration control systems



Communication box
Powerful interface providing 2 way communication possibility with third party BMS / Monitoring systems, via MOD - BUS. Allows remote access to all operating parameters, while in the same time provides the possibility to control the refrigeration units from a distance. Setting of target evaporating temperature, Error code reset, On and Off of unit and Low Noise operation setting can be executed remotely.

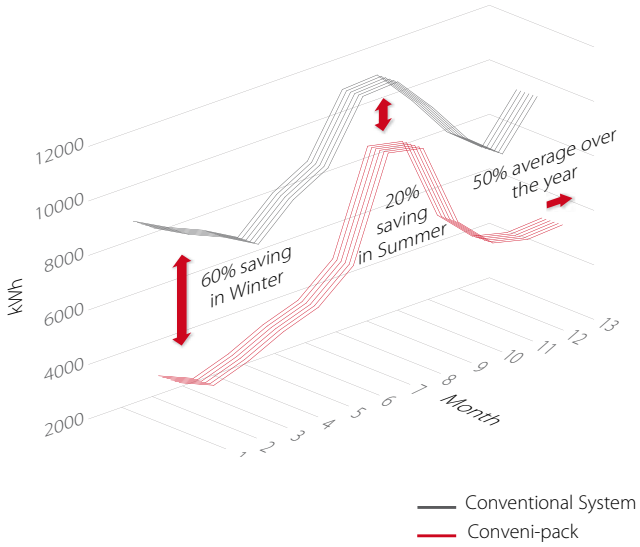
Diagnostic tool
Handy tool providing easy access to main operating data, error codes, error history and main PCB settings.

Service checker Type III
Powerful service tool allowing monitoring and logging of all operating parameters providing all necessary ;information for ecient and effective troubleshooting.

Conveni-Pack System Features

Energy saving

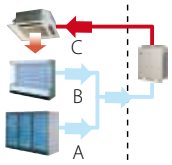
By using heat recovery, optimised controls and state of the art compressor technology, Conveni-pack can reduce annual energy consumption up to 50%, compared to conventional systems.



Heat recovery improved comfort

The heat recovery function provides large energy savings by taking the waste heat from the refrigeration system and providing it to the AC indoor units. This way comfort in the shop is improved …for free! Conveni-pack is able to provide comfort all year round. Depending on the outdoor temperature, the system can operate in 4 different modes:

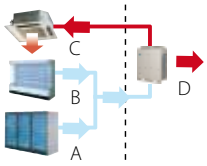
Mode 1: Mid Heating Season



A + B = C

Full heat recovery - heating demand is fully met by recovered heat.

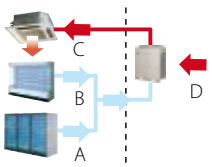
Mode 2: Start of Heating Season



A + B - D = C

Full heat recovery - heating demand is low and the extra heat is transfered to the air.

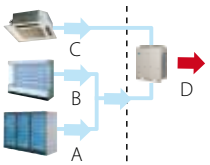
Mode 3: Coldest Days of the Year



A + B + D = C

Full heat recovery - heating demand exceeds the available recovered heat and additional energy is extracted from the air.

Mode 4: Summer

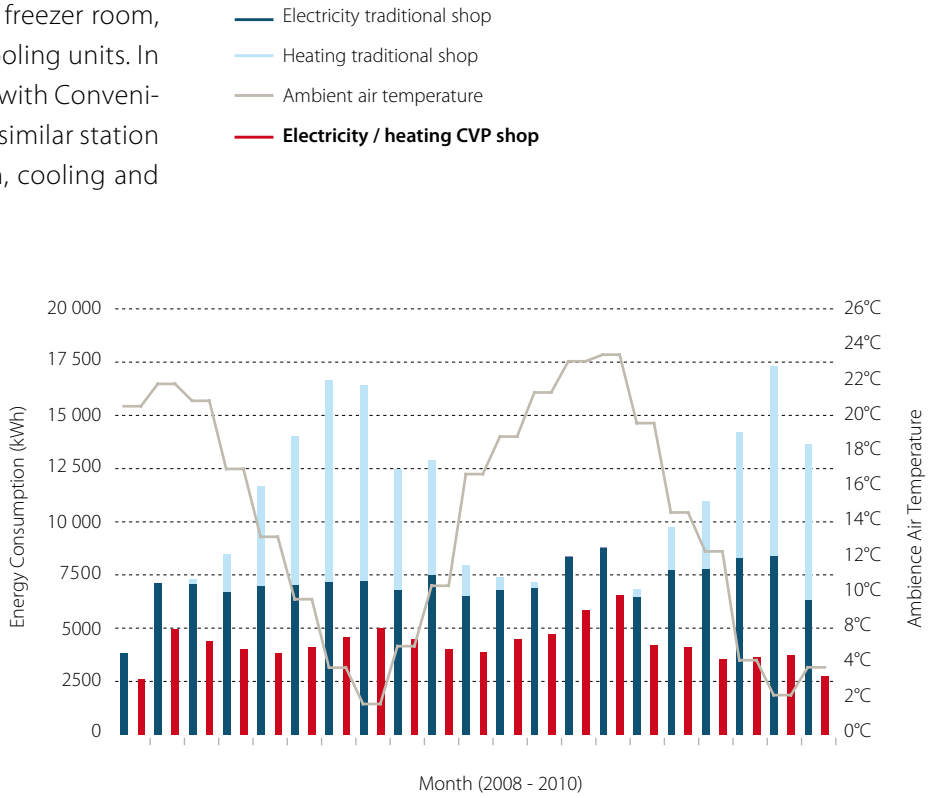


A + B + C = D

Cooling - heat is extracted from the building and transfered to the air.

Case study

Total operates a premium network of 490 petrol stations along major roadways and in the large metropolitan areas in Belgium. These facilities include convenience shops where customers can purchase a variety of frozen and chilled foods and drinks. A typical shop includes a mix of refrigerated showcases, refrigerators, a freezer room, a display counter and comfort heating/cooling units. In 2008, the Total station in Wavre was fitted with Conveni-pack. Its performance was compared to a similar station in Cambre with a traditional refrigeration, cooling and heating set-up.



The result:

- Between June 2008 and February 2010, the Conveni-pack equipped station in Wavre used almost 60% less energy than the traditionally equipped shop in Cambre.
- CO_2 emissions were also reduced by more than one half during the same period.

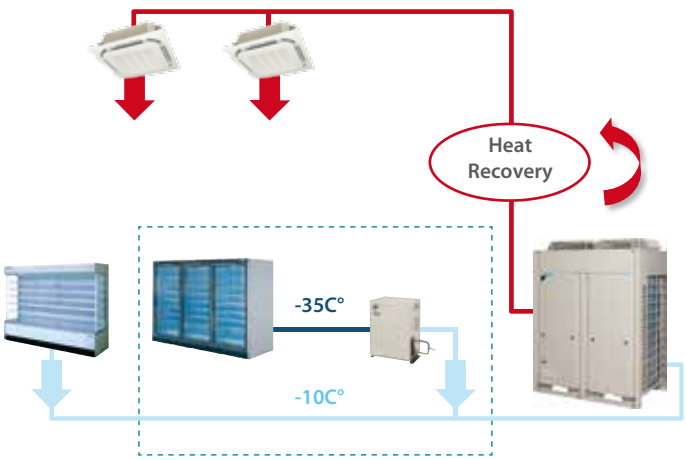
Low noise

The technology at the heart of Conveni-pack resembles VRV, which has been installed in residential and noise-sensitive areas for years. Noise is minimised by:

- The use of scroll compressors, which are much quieter than traditional compressors.
- Inverter control of the compressors, which allows them to run at the lowest possible speed to meet cooling demand, improving overall noise levels and eliminating constant compressor starts and stops.
- Specially designed sound-absorbing casing.
- Inverter driven fans with optimised blades and grills to reduce turbulence and noise. Fans turn at the lowest possible speeds, without noisy starts and stops.
- A programmable night mode and several noise reduction modes are available in order to further decrease the noise level.

Freezer booster unit

An optional booster unit is available to allow the connection of freezer showcases or cold rooms.



Daikin offers a wide range of refrigeration units for commercial, professional and industrial applications.
Daikin refrigeration units combine efficiency and reliability with easy installation and maintenance.

Commercial Condensing units

The "plug & play" condensing units offer a perfect solution for companies in need of an extremely compact, simple and affordable system."

Zeas Condensing units

Inverter controlled scroll compressors open the door to VRV technology for commercial refrigeration.

Large Variable Capacity Condensing unit

These industrial condensing units are real workhorses designed for maximum performance in minimum space.

In all of us, a green heart

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

FSC

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Daikin products are distributed by:

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