



# Daikin Modular ADT range

# The plug & play fresh Air Solution



A preselected installation package for air handling  
and outdoor units

Easy  
ordering of  
AHU + DX  
package



# The need for clean and fresh air

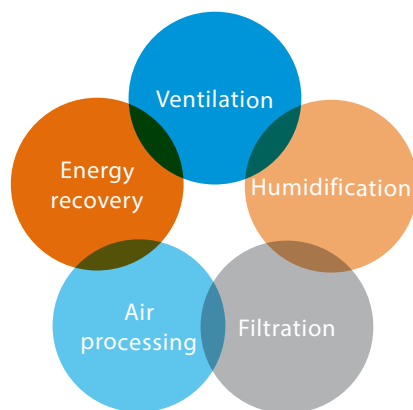
The provision to bring clean and fresh air to occupied spaces is mandatory by European law and essential to achieve a safe and healthy environment for individuals.

## Increased comfort

EN 15251 outlines the qualities of clean, fresh air and gives a detailed outline about the importance of providing the right amount of fresh air. The best method to attain a high indoor air quality is proper ventilation integrated in the total HVAC system.

## Improved cognitive functions

Recent studies carried out by top universities in the U.S.A. indicate that clean and fresh air can have positive effects for office workers, particularly for cognitive functions. These studies demonstrate that proper ventilation of closed spaces is paramount to delivering the perfect indoor climate.



## Five components of indoor air quality

- › **Ventilation:** Ensures the correct amount of fresh air
- › **Energy recovery:** Delivers energy savings by transferring heat and moisture between airflows
- › **Air processing:** Delivers the right supply temperature to decrease the indoor unit load
- › **Humidification:** Ensures relative indoor humidity levels are respected
- › **Filtration:** Separates pollen, dust and pollution odours that are harmful to individuals' health

Unique  
in the  
market



ADT-FDI presized fresh air solution

## Daikin's new fresh air solution

**Daikin introduces the Daikin Modular Air Handling Unit range (ADT) and Daikin VRV condensing unit, an innovative solution to supply fresh air to all types of commercial buildings**

- ✓ Pre-sized by Daikin to cover the most common fresh air needs
- ✓ Unlike current market solutions, the Daikin Modular ADT range contains a control part that is pre-configured for quick and easy commissioning
- ✓ Daikin's flexible systems allow for different configurations, which are accessible via the software tool, ASTRA
- ✓ The Daikin Modular ADT range is built to meet the highest standards in air quality and market needs. The range incorporates the latest technologies and accessories, which earned recognition from Eurovent and the German AHU association, RLT
- ✓ As a single solution provider, Daikin offers a quicker and easier installation process than third party providers
- ✓ Complementary airflow range and building integration offering to the VAM ventilation solution

# Why choose Daikin Modular with a VRV package

## ✓ Easy to design

- › A wide range of preselected AHU and VRV combinations meet the needs of all European climates
- › Range from 2,000 m<sup>3</sup>/h to 17,000 m<sup>3</sup>/h
- › Designed for outdoor temperatures up to 46°CDB
- › The VRV outdoor unit and connection kits (to the coil of the AHU), are all factory mounted and configured

## ✓ Easy integration

- › Fully compatible communication between AHU control and outdoor units, and standard BMS (Modbus and BACnet)
- › Remote operation (of set point operation mode and on/off fresh air solution) is managed by Daikin's unique intelligent Touch Manager, via BACnet/IP interface
- › The unit is also accessible through a dedicated web page, available at anytime from anywhere

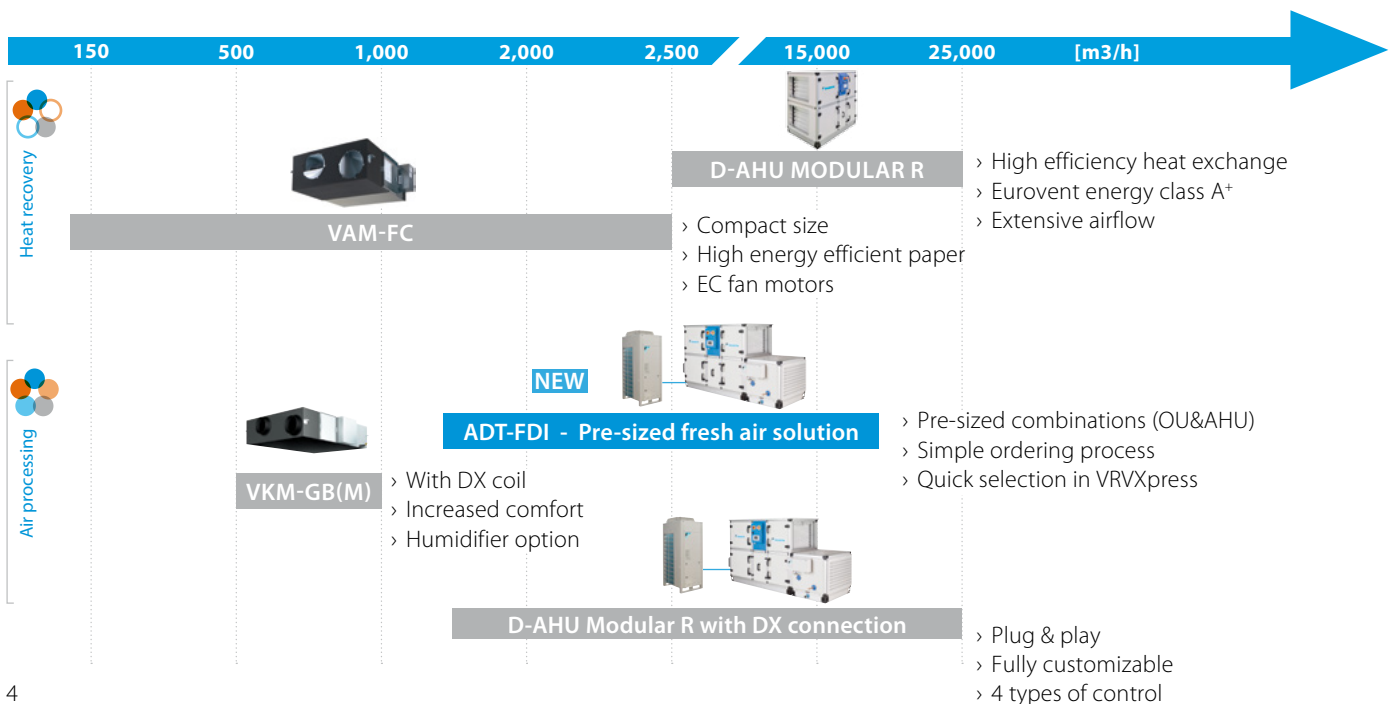
## ✓ Easy installation

- › Factory mounted controls and same piping diameter between the AHU coil and the VRV outdoor unit
- › Factory developed control logic guarantees faster installation compared to other third party combinations of AHU and controls
- › Commissioning becomes extremely easy thanks to Daikin's fresh air solution

## ✓ Fast Quotation

- › Daikin's fresh air solution is incorporated into the VRVXpress tool, which serves to send accurate quotations and offer more insight about the VRV range
- › VRVXpress selection is as easy as any other VRV indoor unit
- › With VRVXpress, the consultant is able to gain a competitive edge by offering accurate and reliable quotations

**Download**  
**VRV**  
**Xpress**







Energy efficient EC fan



Heat wheel for heat recovery

## ✓ The choice for efficiency

The Daikin Modular range incorporates the latest technologies to deliver high energy efficiency with low environmental impact.

### Inverter compressors

- › The compressor continuously adapts its speed to meet current demands
- › Fewer start/stops decreases energy consumption (up to 30%),
- › Delivers more stable temperatures

### High efficiency energy wheel

- › Recovers up to 85% of the heat and up to 60% of the humidity
- › Decreases latent load during the summer and improves indoor comfort during the winter
- › Reduces the total annual cooling load (up to 50%)

### Free cooling

- › Enjoy free cooling when the outdoor temperature is lower than the indoor temperature set point
- › During free cooling periods, the outdoor unit stops its operation to achieve higher energy savings
- › AHU control automatically switches to free cooling mode

### High efficiency EC fan

- › Electro commutated motor (IE4 premium efficiency)
- › Aerodynamic optimised inlet nozzle
- › Maintenance-free ball bearings and permanent lubrication

## The new Daikin fresh air solution is also:

Unique in the market

Daikin VRV unit

Daikin modular AHU with DX coil

Cannot be combined with Daikin indoor units

**QUALITY:** Daikin Inverter outdoor unit is exclusively combined with a state-of-the-art Daikin Modular AHU

**HEALTH:** As proven by several studies, achieving high indoor air quality in enclosed spaces is a priority to deliver healthy working conditions

**COMFORT:** An abundant supply of clean outdoor air in an office space means people are more likely to feel comfortable and productive at work

**EFFICIENCY:** The CO<sub>2</sub> control ensures just the right amount of fresh air is provided to maintain energy savings

**SAFETY:** Reduces the potential for airborne illnesses, which tend to arise from unfiltered indoor air

# Fresh Air Unit from Daikin

## Outstanding reliability and performance

### Internal anodized aluminum rounded profiles

Hygienic feature to help maintain high standards of IAQ for VDI6022 compliance

### Thermal break design

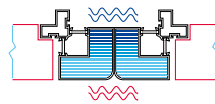
A unique feature, the thermal break helps to minimise internal/external heat transfer

### Aluzinc®

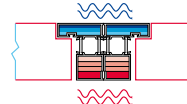
Surface treatment is applied to the inner side of the AHU panels for maximum corrosive resistance

### Noise Reduction Laminar Straightener

Quieter operation (-3,3 dBA), thanks to Noise Reduction Laminar Straightener at the fan inlet



Conventional design



Daikin design

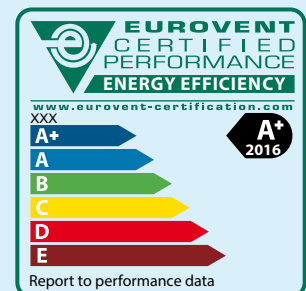
## Attaining the highest market standards

The Daikin AHU, selected for the fresh air combination unit, adheres to the regulations set by the most important certification bodies in Europe, and therefore maintains the highest standards in construction and indoor air quality.

Interior rounded profiles limit the accumulation of dust during normal operation, which allows for easier cleaning.



RLT member since 2015



AHU unit fully Eurovent certified

# Working principle at a glance

## 1 Outstanding construction features

- › Anodized aluminum profiles
- › Aluzinc surface for outstanding corrosion protection
- › Rounded profiles for hygienic purposes
- › Rain hood and rain cover

## 2 Factory set AHU controls Intelligent Manager

- › Manage AHU for optimum results
- › Fully configured factory mounted DDC ensures seamless operation
- › Direct communication with VRV outdoor unit for optimum capacity management
- › BACnet and Modbus protocol for BMS integration
- › Fully iTM compatible

## 3 DX cooling & heating

- › Factory fitted and tested DX solution
- › Perfect combination with VRV outdoor units
- › Most affordable solution in the market for ultimate comfort

## 4 EC plug fans

- › Most efficient fans in the market
- › Can operate either in constant air volume (CAV), variable air volume (VAV) or demand controlled ventilation (DCV)
- › Maintenance-free ball bearing
- › Contains Laminar Straightener for noise reduction

## 5 Energy recovery wheel with purge sector

- › Increase energy savings up to 90% during the mid-season (free cooling)
- › Decrease coil load (up to 50%)
- › Top class efficiency
- › Recover sensible and latent heat

## 6 Top class filtration

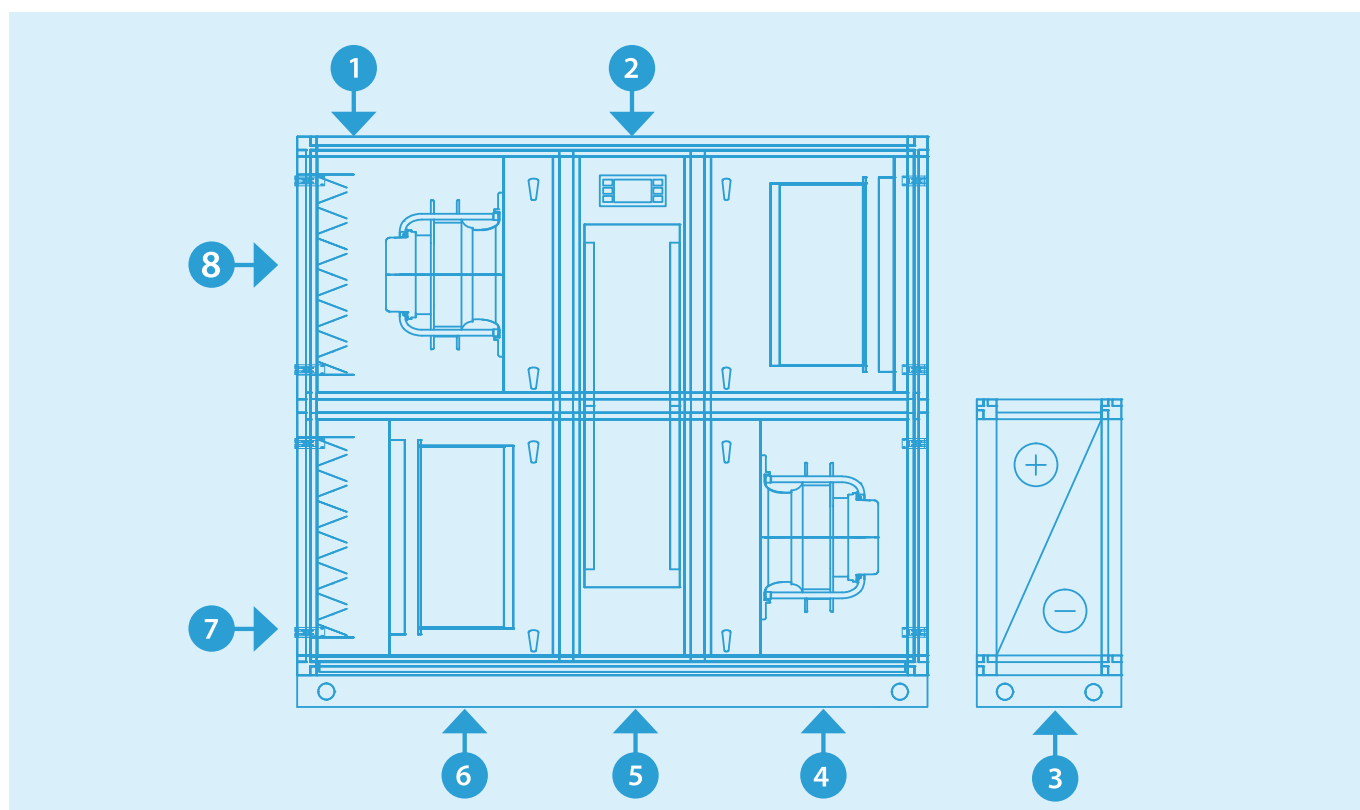
- › Standard F7 filters in supply & return air

## 7 Thermal bridge free

- › New design guarantees no thermal bridge

## 8 Motorised dampers

- › Controlled by DDC
- › Closed during stop time



# Simplifying the selecting, ordering and commissioning process



With Daikin's new fresh air unit, consultants and installers do not need to worry about coordinating third party AHU integration with VRV. By integrating all the components into one single package, Daikin ensures a more simplified and worry-free installation process.



## ✓ Complete range overview

- › The new fresh air unit range is divided into combinations according to the required fresh airflow
- › The operating range is built to comply with common European sizing conditions, (fresh airflow and seasonal outdoor temperatures)
- › Selections can be made from below 2.000 m<sup>3</sup>/h up to 17.500 m<sup>3</sup>/h

## ✓ Simple selection process

- › Pre-selected units based on summer nominal outdoor temperature and airflow
- › Selected in VRVXpress as a normal VRV indoor unit
- › Units equipped with standard industry features such as:
  - Roof plate for outdoor or indoor installation
  - Constant Air Volume controls
  - Flexible duct connections

## ✓ Easy ordering

- › Order like any other indoor unit, through a standard model code from the ADT-FDI range
- › VRV Xpress automatically indicates the matching outdoor unit model code in the report





✓ Three easy commissioning steps

- 1 Installation:** Place the outdoor unit in a location close to the AHU. Same piping diameter of the AHU coil and outdoor unit ensures easy and fast installation, with only communication cables left to install
- 2 Setup:** Configuration of the AHU is done by accessing the HMI touch pad and following the commission manual. The outdoor unit and expansion valve kits are configured once using our BRC1E remote controllers
- 3 Test Run:** Check all necessary parameters to ensure the smooth operation of the unit

# Pre-sized fresh air solution

## High-end ventilation with heat recovery

- › Pre-sized unit, complete with selection, quotation and easy ordering
- › Directly connects to preselected Daikin VRV outdoor units
- › IE premium efficiency motor
- › High efficiency heat wheel (heat recovery)
- › Compact design
- › Indoor air quality compliant with VDI hygiene guidelines
- › Operating limits from - 20°C - +46 °C ambient temperature
- › Monitor and control with the intelligent Touch Manager
- › Cannot be combined with Daikin indoor units



			ADT03FDI-80	ADT03FDI-100	ADT03FDI-125	ADT04FDI-125	ADT04FDI-140	ADT04FDI-200	ADT05FDI-200	ADT05FDI-250	
Airflow	Nominal Air Flow valid for Cooling (1) and Heating(2)	m3/h	2,200	2,700	3,200	3,600	4,100	4,700	5,500	6,200	
Integrated expansion valve kit	Type		EKEXV80	EKEXV100	EKEXV125	EKEXV125	EKEXV140	EKEXV200	EKEXV200	EKEXV250	
	Number		1								
Integrated control box	Type		EKEQFCBA								
	Number		1								
Energy Rating	Eurovent Energy Class		A+	A	A	A+	A	A+	A		
	ERP Compliance		ErP 2018								
Heat Recovery Technology		%	Sorption Heat Wheel								
Heat Recovery Technology	Winter	Nom.	81.5	79.2	76.9	81.1	79.6	77.8	79	77.4	
	ESP	Nom.	200								
SFPv	Nom.	W/(m3/s)	1,388	1,508	1,660	1,402	1,512	1,637	1,456	1,575	
Supply Fan power input	Nom.	kW	0.53	0.7	0.92	0.89	1.08	1.35	1.4	1.72	
Filter class	Supply		F7+ F7								
	Extract		F7+ F7								
Dimensions	Unit	Height	1,540			1,740			2,780		
		Width	2,500			2,620			2,780		
		Depth	990			1,200			1,400		
Weight		Kg	549			659			840		
Total Power Input	Nom.	kW	1.55	2	2.3	2.25	2.63	3.15	3.25	3.86	
AHU power supply	Electrical voltage	V/ph/Hz	230V/1Ph/50Hz			400V/3Ph/50Hz					
Door opening (following supply air direction)			Right								
Recommended outdoor unit	Type		ERQ100AV1	ERQ125AV1	ERQ140AV1	ERQ200AW1	ERQ250AW1				
	Number		1								

			ADT06FDI-250	ADT07FDI-250	ADT07FDI-140	ADT07FDI-200	ADT08FDI-200	ADT09FDI-200	ADT09FDI-250	ADT10FDI-250	
Airflow	Nominal Air Flow valid for Cooling (1) and Heating(2)	m3/h	6,900	7,400	8,000	8,700	10,000	11,500	13,200	14,900	
Integrated expansion valve kit	Type		EKEXV250		EKEXV140	EKEXV200			EKEXV250	EKEXV250	
	Number		1			2					
Integrated control box	Type		EKEQFCBA								
	Number		1		2						
Energy Rating	Eurovent Energy Class		A	A+	A			A+	A	A+	
	ERP Compliance		ErP 2018								
Heat Recovery Technology		%	Sorption Heat Wheel								
Heat Recovery Technology	Winter	Nom.	77.9	80.2	79.3	78.1	78.4	79.7	77.9	80.2	
	ESP	Nom.	200								
SFPv	Nom.	W/(m3/s)	1,580	1,438	1,491	1,581	1,429	1,438	1,569	1,397	
Supply Fan power input	Nom.	kW	1.86	1.82	2.04	2.35	2.48	2.82	3.54	3.62	
Filter class	Supply		F7+ F7								
	Extract		F7+ F7								
Dimensions	Unit	Height	1920				2,180	2,460		2,570	
		Width	2,980	3,100			3,150	2,980		3,100	
		Depth	1,400	1,600			1,940		2,300		
Weight		Kg	887	1,063			1,489	1,594		1,973	
Total Power Input	Nom.	kW	4.14	4.07	4.48	5.08	5.37	6.06	7.44	7.6	
AHU power supply	Electrical voltage	V/ph/Hz	400V/3Ph/50Hz								
Door opening (following supply air direction)			Right								
Recommended outdoor unit	Type		ERQ250AW1	ERQ140AV1	ERQ200AW1			ERQ250AW1			
	Number		1	2	2			2			

(1) Cooling: indoor temp. 27°CDB, 19.0°CWB; outdoor temp. 35°CDB; equivalent piping length: 5m; level difference: 0m  
 (2) Heating: indoor temp. 20°CDB; outdoor temp. -15°CDB; equivalent refrigerant piping: 5m; level difference: 0m

# Daikin's new fresh air solution



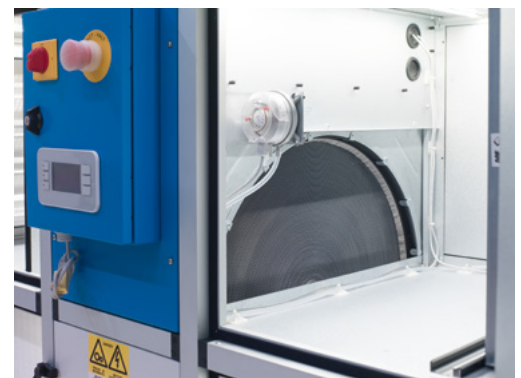
High efficient EC fan



Factory fitted and tested DX heat exchanger



Efficient filtration



Heat wheel for heat recovery



New pre-sized  
fresh air solution



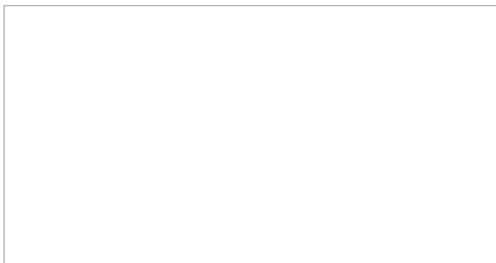
Select your AHU like any other VRV indoor

Easy  
ordering of  
AHU + DX  
package

- ✓ Easy selection
- ✓ Fast quotation
- ✓ Easy ordering
- ✓ Easy installation



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