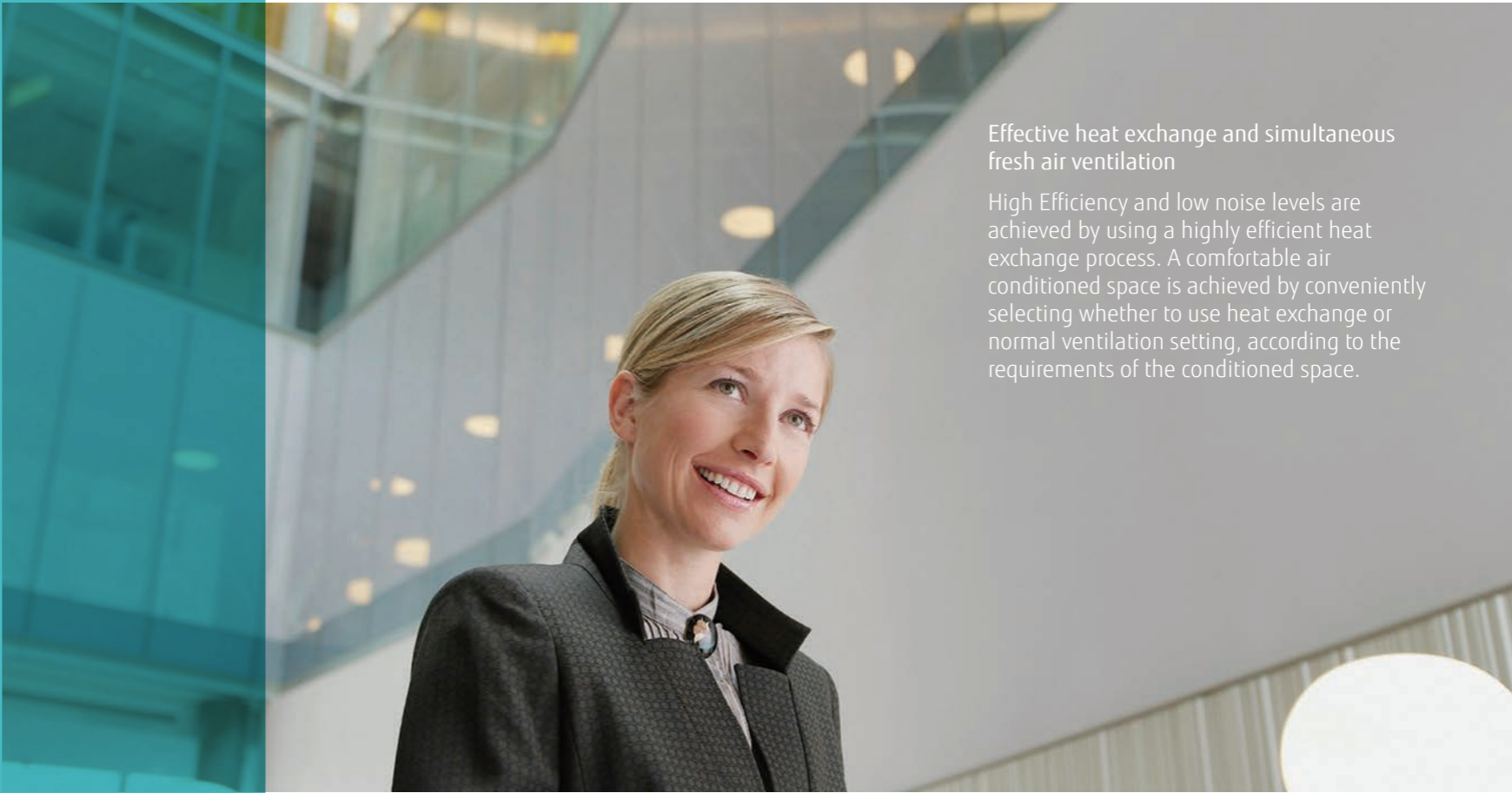


Residential, Commercial & Light Commercial

VENTILATION

VENTILATION Lineup






- Vn-002 Energy Recovery Ventilator
- Vn-004 DX Kit for Air Handling Application
 - for VRF Outdoor Unit
- Vn-006 DX Kit for Air Handling Application
 - for Single Split Outdoor Unit
- Vn-008 AIR HANDLING UNIT












Effective heat exchange and simultaneous fresh air ventilation


High Efficiency and low noise levels are achieved by using a highly efficient heat exchange process. A comfortable air conditioned space is achieved by conveniently selecting whether to use heat exchange or normal ventilation setting, according to the requirements of the conditioned space.

Lineup

Airflow rate (m³/h)	250		350		500		800		1000	
Energy Recovery Ventilator										
	UTZ-BD025C		UTZ-BD035C		UTZ-BD050C		UTZ-BD080C		UTZ-BD100C	

Connectable capacity class (kW)	5.0	6.3	8.0	10.0	12.5	14.0	20.0	25.0	40.0	50.0						
DX Kit for Air Handling Applications for VRF Outdoor Unit	 EEV unit UTP-VX30A		 Control unit UTY-VDGX		 EEV unit UTP-VX60A		 Control unit UTY-VDGX		 EEV unit UTP-VX90A		 Control unit UTY-VDGX		 EEV unit UTP-VX90A×2		 Control unit UTY-VDGX	

Connectable capacity class (kW)	3.5 - 22.0									
DX Kit for Air Handling Applications for Single Split Outdoor Unit	 UTY-XDZX									

Connectable capacity class (kW)	25 - 96									
Air Handling Unit	 AHYA / AHYB / AHYC / AHYD / AHYE									

Energy Recovery Ventilator

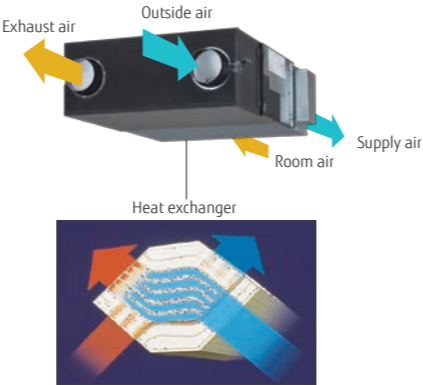


Energy recovery ventilator unit offers maximum comfort and greater energy savings.

Heat exchange ventilation and normal ventilation

Heat exchange ventilation
When a room is cooled or heated, the exhausted cooling / heating energy is recovered by heat-exchange ventilation.

Normal ventilation
The operation is used during periods when the room space requires no cooling or heating effect, i.e. when there is minimal temperature difference between the indoor and outdoor environments.



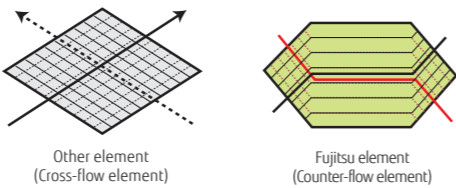
Adopts a highly efficient counter-flow heat exchange element

Energy efficiency and ecology

Energy consumption is dramatically reduced by using a counter-flow heat-exchange element. Air conditioning load is reduced by approximately 20%, resulting in significant energy savings. Recovers up to 77% of the heat in the outgoing air.

Features of heat exchange element

With the cross-flow element, air moves in a straight line across the element. With the counter-flow element, air flows through the element for a longer time (longer distance), so the heat-exchange effect improved.



Quiet operation

Significantly reducing low pressure loss and noise allows low-noise operation.

25.5dB
(UTZ-BD035C)

Extended range of an external static pressure

An external static pressure is improved by adopting a powerful fan motor. This allows for application in a wide variety building.

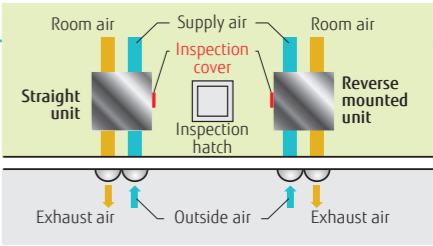
Slim shape and easier installation

Counter-flow heat exchange element used for reduced noise and slimmer, more compact body shape.



Reverse mountable direct air supply / exhaust system

Adoption of straight air supply / exhaust system: Duct design is simplified because the air supply / exhaust ducts are straight.
Since each unit can be mounted in reverse position, only one inspection hole is needed for two units: Two units can share one inspection hole so duct work is easier and more flexible.



Simple remote operation

Easy operation by connecting a liquid crystal switch

- POWER ON/OFF
- ON/OFF Timer
- Air volume High/Low
- Clean filter display
- Heat exchange/Normal Ventilation



Model : UTZ-BD025C / UTZ-BD035C / UTZ-BD050C / UTZ-BD080C / UTZ-BD100C



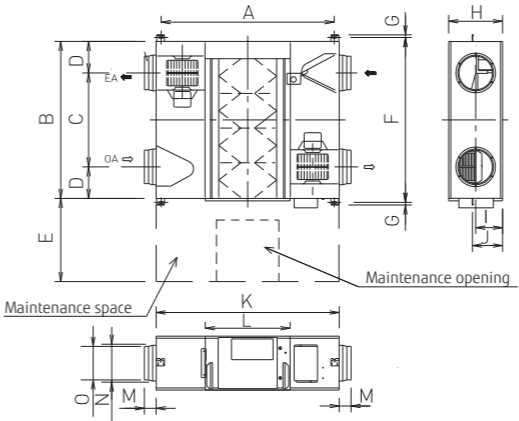
Specifications

Rated flow rate				250 m³/h	350 m³/h	500 m³/h	800 m³/h	1000 m³/h
Model No.				UTZ-BD025C	UTZ-BD035C	UTZ-BD050C	UTZ-BD080C	UTZ-BD100C
Power source				220 - 240 V, 50Hz				
Heat Exchange Ventilation	Input power	(Extra high)/High/Low	W	128 / 123 / 96	190 / 185 / 168	289 / 225 / 185	418 / 378 / 295	464 / 432 / 311
	Air flow rate	(Extra high)/High/Low	m³/h	250 / 250 / 190	350 / 350 / 240	500 / 500 / 440	800 / 800 / 630	1,000 / 1,000 / 700
	External static pressure	(Extra high)/High/Low	Pa	105 / 95 / 45	140 / 60 / 45	120 / 60 / 35	140 / 110 / 55	105 / 80 / 75
	Temperature Exchange Efficiency	(Extra high)/High/Low	%	75 / 75 / 77	75 / 75 / 78	75 / 75 / 76	75 / 75 / 76	75 / 75 / 79
	Energy Exchange Efficiency Cooling	(Extra high)/High/Low	%	63 / 63 / 65	66 / 66 / 71	62 / 62 / 64	65 / 65 / 68	65 / 65 / 70
	Energy Exchange Efficiency Heat pump	(Extra high)/High/Low	%	70 / 70 / 72	69 / 69 / 73	67 / 67 / 69	71 / 71 / 74	71 / 71 / 76
	Sound pressure level	(Extra high)/High/Low	dB*	31.5 / 30.5 / 26.5	33.0/31.0 / 25.5	37.5 / 35.5 / 32.5	37.5 / 37.0 / 34.5	38.5 / 37.5 / 34.5
Normal Ventilation	Input power	(Extra high)/High/Low	W	128 / 123 / 96	190 / 185 / 168	289 / 225 / 185	418 / 378 / 295	464 / 432 / 311
	Air flow rate	(Extra high)/High/Low	m³/h	250 / 250 / 190	350 / 350 / 240	500 / 500 / 440	800 / 800 / 630	1,000 / 1,000 / 700
	External static pressure	(Extra high)/High/Low	Pa	105 / 95 / 45	140 / 60 / 45	120 / 60 / 35	140 / 110 / 55	105 / 80 / 75
	Sound pressure level	(Extra high)/High/Low	dB*	31.5 / 30.5 / 26.5	33.0 / 31.0 / 25.5	38.5 / 38.0 / 32.5	37.5 / 37.0 / 34.5	40.5 / 39.5 / 36.5
Dimensions		W×D×H	mm	882 × 599 × 270	1,050 × 804 × 317	1,090 × 904 × 317	1,322 × 884 × 388	1,322 × 1,134 × 388
Weight			kg	29	49	57	71	83
Outlet duct diameter			mm	150	150	200	250	250
Operating range			°C	-10 to 40	-10 to 40	-10 to 40	-10 to 40	-10 to 40
Maximum humidity			%	85	85	85	85	85

* The noise level must be measured 1.5 m below the center of the unit.

Dimensions

(Unit : mm)



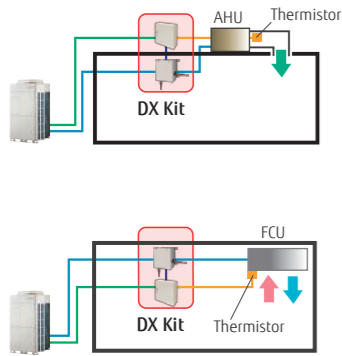
	UTZ-BD025C	UTZ-BD035C	UTZ-BD050C	UTZ-BD080C	UTZ-BD100C
A	810	978	1,018	1,250	1,250
B	599	804	904	884	1,134
C	315	580	640	428	678
D	142	112	132	228	228
E	600	600	600	600	600
F	655	860	960	940	1,190
G	19	19	19	19	19
H	270	317	317	388	388
I	135	159	159	194	194
J	159	182	182	218	218
K	882	1,050	1,090	1,322	1,322
L	414	470	470	612	612
M	95	70	70	85	85
N	Ø164	Ø164	Ø210	Ø258	Ø258
O	Ø144	Ø144	Ø194	Ø242	Ø242

DX Kit for Air Handling Application for VRF Outdoor Unit



These kits enable other manufacturers air handling units (AHU) and fan coil units (FCU) to be incorporated into a Fujitsu VRF system or, be connected to a dedicated Fujitsu VRF outdoor unit as a 1:1 system to control outside air ventilation (AHU) or room temperature (FCU).

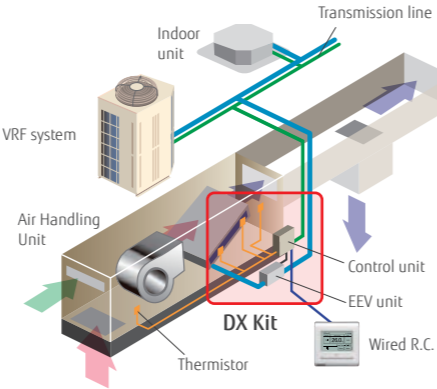
Multiple temperature sensors optimally control the air handling unit and fan coil unit.



When connecting to an air handling unit, the supply air temperature is controlled by the discharge sensor.

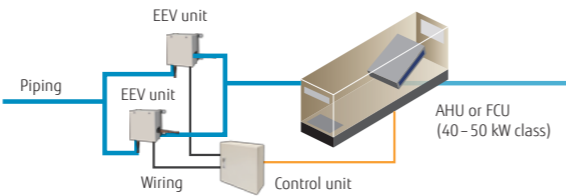
When connecting to a fan coil unit, the room temperature is controlled by the return air temperature sensor.

Arrangement as part of a VRF system



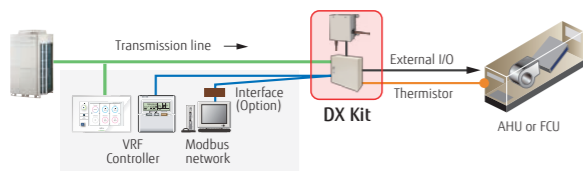
Supports a wide range of capacity classes

- 2 EEV units can be connected in parallel and up to 20 HP (50 kW) large capacity units. (Separation Tube of UTP-LX180A is required.)
- Connectable capacity range: 5 kW to 50 kW

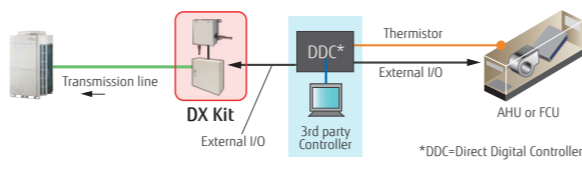


A variety of controls to match the application

Central control using our VRF controllers or central management controllers



Central control from external controllers



*DDC=Direct Digital Controller

Functions Summary

Inputs

- ON/OFF
- Setting temperature
- Capacity demand
- Heating / Cooling operation mode
- Fault information

Outputs

- ON/OFF indication
- Fan ON/OFF indication
- Thermo ON/OFF indication
- Defrost indication
- Fault indication

MODBUS® Control

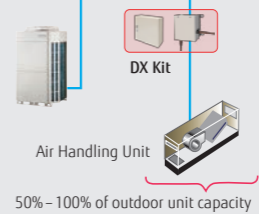
Possible to control via a MODBUS enabled BMS by using optional interface.

Installation Limitation

- Connectable VRF Series: All VRF Series
- Connectable DX Kit system capacity range: 50 to 100% of the outdoor unit capacity
- Connectable DX Kit system capacity range with indoor units: 30% or less of the outdoor unit capacity
- Max. wiring length from control unit: 10 m
- Max. piping length between EEV unit and indoor unit: 5 m
- Outdoor installation: Control unit (IP54 class) and EEV unit can be installed at an outdoor space.

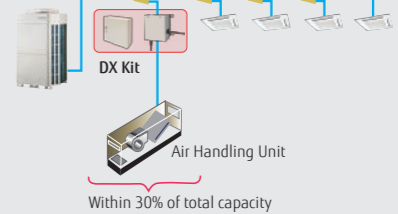
Connectable capacity

• Single connection



50% - 100% of outdoor unit capacity

• Mixed connection

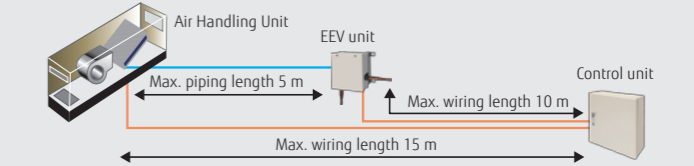


Within 30% of total capacity
50% - 100% of outdoor unit capacity

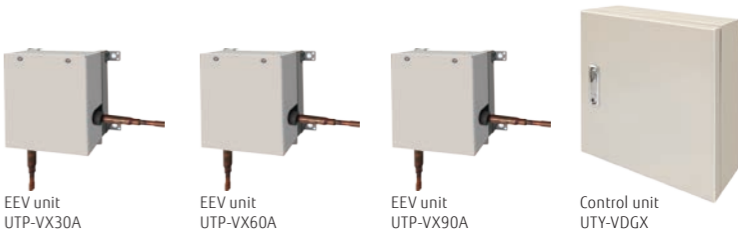
For 2 EEV units connection (option) Separation Tube: UTP-LX180A



Piping and wiring length



Control unit: UTY-VDGX EEV unit: UTP-VX30A / UTP-VX60A / UTP-VX90A



Specifications

Connectable Capacity class		5.0 kW	6.3 kW	8.0 kW	10.0 kW	12.5 kW	14.0 kW	20.0 kW	25.0 kW	40.0 kW	50.0 kW
Capacity	Cooling	5.6	6.3	8.0	10.0	12.5	14.0	22.4	25.0	40.0	50.4
	Heating	6.3	7.1	9.0	11.2	14.0	16.0	25.0	28.0	45.0	56.5
Control unit		UTY-VDGX									
Power source		230/1/50									
Dimensions (H × W × D)		400 × 400 × 120									
EEV unit		UTP-VX30A		UTP-VX60A		UTP-VX90A		UTP-VX90A×2			
Connection pipe diameter (Liquid)		Ø9.53		Ø12.70		Ø12.70		Ø12.70			
Dimensions (H × W × D)				160 × 220 × 90							

Note: Specifications are based on the following conditions.
Cooling: Indoor temperature of 27°CDB / 19°CWB, and outdoor temperature of 35°CDB / 24°CWB.
Heating: Indoor temperature of 20°CDB / (15°CWB), and outdoor temperature of 7°CDB / 6°CWB.
Pipe length: 7.5 m Voltage : 230 [V].

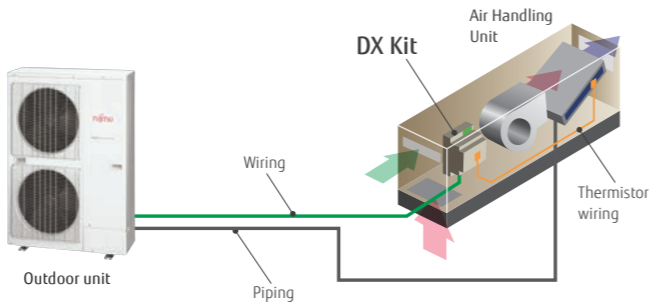
DX Kit for Air Handling Application for Single Split Outdoor Unit



This kit enables other manufacturers air handling units (AHU) and fan coil units (FCU) to be incorporated into a Fujitsu General Split outdoor unit.

Flexible connectivity

This kit is a control unit to allow connection to third party manufacturer equipment. Fujitsu General single split outdoor units can be used with this control unit, creating an ideal solution when a unique air handling unit is required.



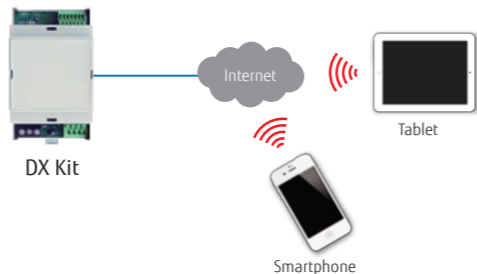
Supports a wide range of capacity class

Connectable large capacity range: 3.5 kW ~ 22.0 kW (Nominal)



Operation from anywhere on your mobile device

Available to use operation and management from remote control such as Smartphones and Tablets



Functions Summary

Inputs

- ON/OFF
- Heating/Cooling operation mode
- Capacity demand (analogue 0-10 V)
- Heat exchanger temperature

Outputs

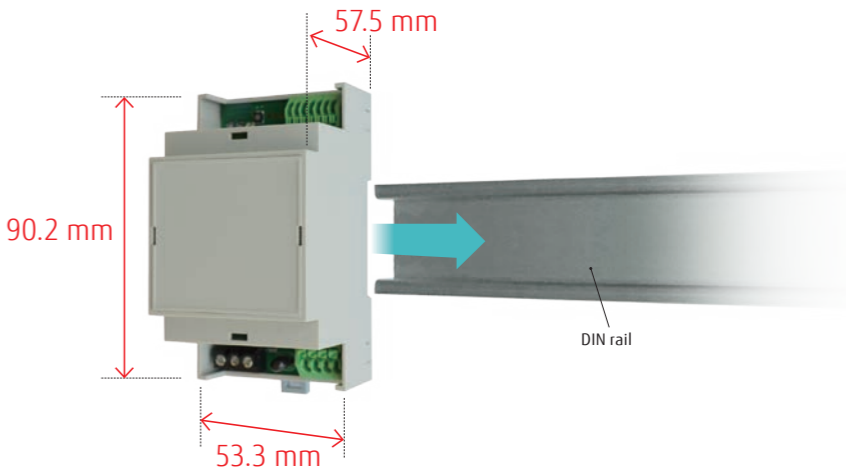
- Status of Compressor, Defrost, Error (Potential free relays)
- LED status indication

Wireless LAN Control

Wireless LAN control with cloud connectivity enables safe remote monitoring and control from anywhere.

Easy installation

- Simple installation through compact DIN rail mountable enclosure
- No need for expansion devise
- No separate external power required



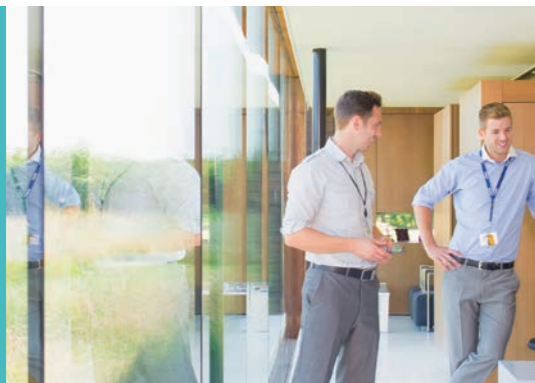
Model: UTY-XDZX



Specifications

BTU			12	14	18	24	30	36	45	54	60	72	90
Capacity (Nominal)	Cooling	kW	3.5	4.3	5.2	6.8	8.5	9.4	12.1	13.3	15.0	19.0	22.0
	Heating	kW	4.1	5.0	6.0	7.8	10.0	10.8	13.3	15.8	18.0	22.4	27.0
Model No.			UTY-XDZX										
Power source			V/Ø/Hz			230/1/50							
Dimensions (H × W × D)			mm			90.2 × 53.3 × 57.5							
Weight			g			110							

Note: Specifications are based on the following conditions.
Cooling: Indoor temperature of 27°CDB / 19°CWB, and outdoor temperature of 35°CDB / 24°CWB.
Heating: Indoor temperature of 20°CDB / (15°CWB), and outdoor temperature of 7°CDB / 6°CWB.
Pipe length: 5.0 m Voltage : 230 [V].



Light Commercial & Commercial AIR HANDLING UNIT

- Vn-010 System Overview
- Vn-012 AIRSTAGE™ Lineup
- Vn-014 Air Handling Units Overview
- Vn-016 Features
 - Structure
 - Filtration
 - Thermal Exchange Sections
 - Fan Section
 - Humidifier
 - Heat Recovery Section
- Vn-022 Dimensions
- Vn-025 Loose Accessories
- Vn-026 Total Pressure Drops Calculation
- Vn-027 Fan Characteristic Curves
- Vn-030 Specifications
- Vn-032 Control System
 - AHU Controller
 - System Controller, System Controller Lite



FUJITSU GENERAL (Euro) GmbH participates in the ECP program for AHU. Check ongoing validity of certificate: www.eurovent-certification.com



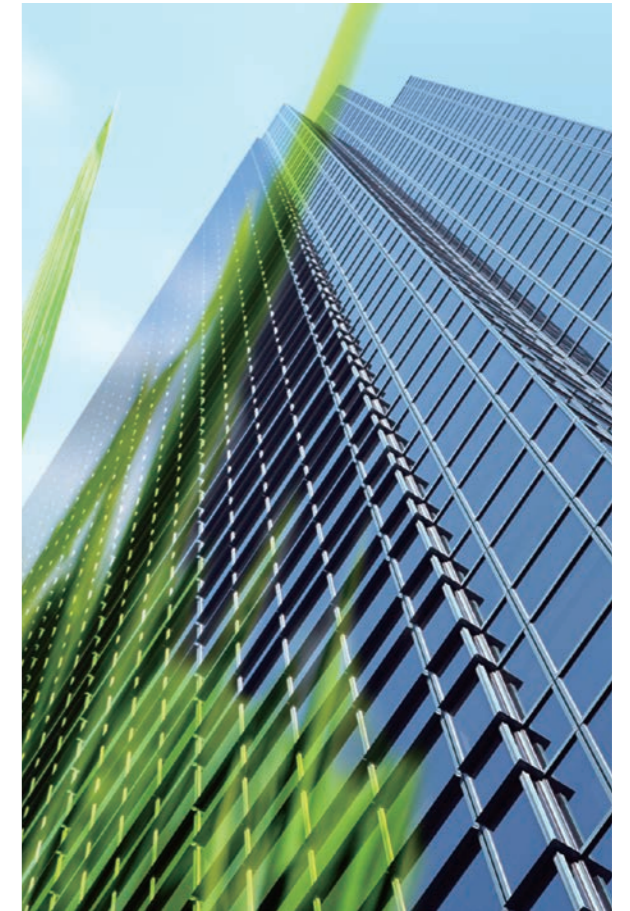
System Overview

The Air handling applications for AIRSTAGE™ system is the Fujitsu general offer to the most demanding installations, where energy efficiency meets with the highest comfort.

The system is composed of AIRSTAGE™ outdoor unit from 10 to 54 HP and Air handling unit for civil and industrial buildings for thermo-ventilation and air conditioning purposes, covering air flow ranges from 4,300 to 18,100 m³/h and cooling capacities from 25 to 96 kW.



- For AHU control: AHU controller (Only For AHU)
- For mixed connection control: System controller, or 3rd party controller with Modbus convertor



The Advantages of the System

Full comfort

The system offers full comfort and air quality in the buildings providing clean treated air thanks to the advanced filtration and balanced temperature.

Easy design and installation














































The system is Simple design and installation. No additional external kit is required as the Air Handling Unit includes DX Kit (Expansion valve and control PCB) AHU model selection is easy by using Selection Software.

Total solution concept

Integrating an Air Handling Unit into the total building climate system simplifies both design and installation procedures based on a single common technology. From project follow-up to installation, commissioning and maintenance, all procedures are simplified. There is a requirement for not more than one installer.

AIRSTAGE™ Lineup

Fujitsu General provides multi air conditioning systems for buildings AIRSTAGE™ Series matched to the size and application of the property.

Capacity (kW)		28.0	33.5	40.0	45.0	50.4	55.9	61.5	67.0	73.5	78.5	85.0	90.0				95.0	100.5	107.0	112.0	118.5	123.5	130.0	135.0	140.0	145.0	150.0	
HP		10	12	14	16	18	20	22	24	26	28	30	32				34	36	38	40	42	44	46	48	50	52	54	
J-IVL Series		 AJY090 LELBH	 AJY108 LELBH	 AJY126 LELBH	 AJY144 LELBH	 AJY162 LELBH																						
V-III Series Heat Pump	Space Saving																											
	Set Model	AJY090 LALBH	AJY108 LALBH	AJY126 LALBH	AJY144 LALBH	AJY162 LALBH	AJY180 LALBH	AJY198 LALBH	AJY216 LALBH	AJY234 LALBH	AJY252 LALBH	AJY270 LALBH	AJY288 LALBH				AJY306 LALBH	AJY324 LALBH	AJY342 LALBH	AJY360 LALBH	AJY378 LALBH	AJY396 LALBH	AJY414 LALBH	AJY432 LALBH	AJY450 LALBH	AJY468 LALBH	AJY486 LALBH	
	Energy Efficiency																											
Set Model					AJY144 LALBHH	AJY162 LALBHH	AJY180 LALBHH		AJY216 LALBHH	AJY234 LALBHH	AJY252 LALBHH	AJY270 LALBHH	AJY288 LALBHH				AJY306 LALBHH	AJY324 LALBHH	AJY342 LALBHH	AJY360 LALBHH	AJY378 LALBHH	AJY396 LALBHH	AJY414 LALBHH					



AIRSTAGE™ J-IVL

for Small Office

Fujitsu General provides air conditioning systems for a wide range of applications from small office buildings and stores to large houses.



AIRSTAGE™ V-III

for Large Office

Smart and cutting edge design. Extensive line-up from 10 HP to 54 HP in 2 HP increment. Connectable indoor unit capacity ratio up to 100%

Air Handling Units Overview



AHU is the range of Air Handling Units for civil and industrial buildings for thermo-ventilation and air conditioning purposes, designed to be connected with AIRSTAGE™ Series Outdoor units.

Units are available in different models and several additional modular sections to meet all installation needs, with air flow ranges varying from 4,300 to 18,100m³/h and covering a cooling capacity from 25 to 96kW.

AHU is made of extruded aluminium profiles and nylon angle bars. The "sandwich-type" double-skin panels (50 mm thick) with galvanised sheets, externally pre-painted, and thermal insulation in high density polyurethane foam are fastened on the units by means of an aluminium snap-in locking system.

AHU fan section is equipped with EC Inverter Plug-Fans and is provided with Automatic Regulation Control Systems for Constant Air Flow and Constant Available Static Pressure. An electronic device with pressure sensors on the system and control sensors on EC Plug-Fans adjust the flow rate and the available static pressure to keep the air flow constant.

5 configurations are Available

Configuration A

In line with Front Damper

For fresh air operation up to 100% external air

Configuration B

In line with Top Inlet Damper

For fresh air operation up to 100% external air

Configuration C

In line with Inlet Mixing Box

For fresh air operation up to 20% external air

Configuration D

Double Deck with Cross-Flow Heat Exchanger

Configuration E

Double Deck with Heat Wheel

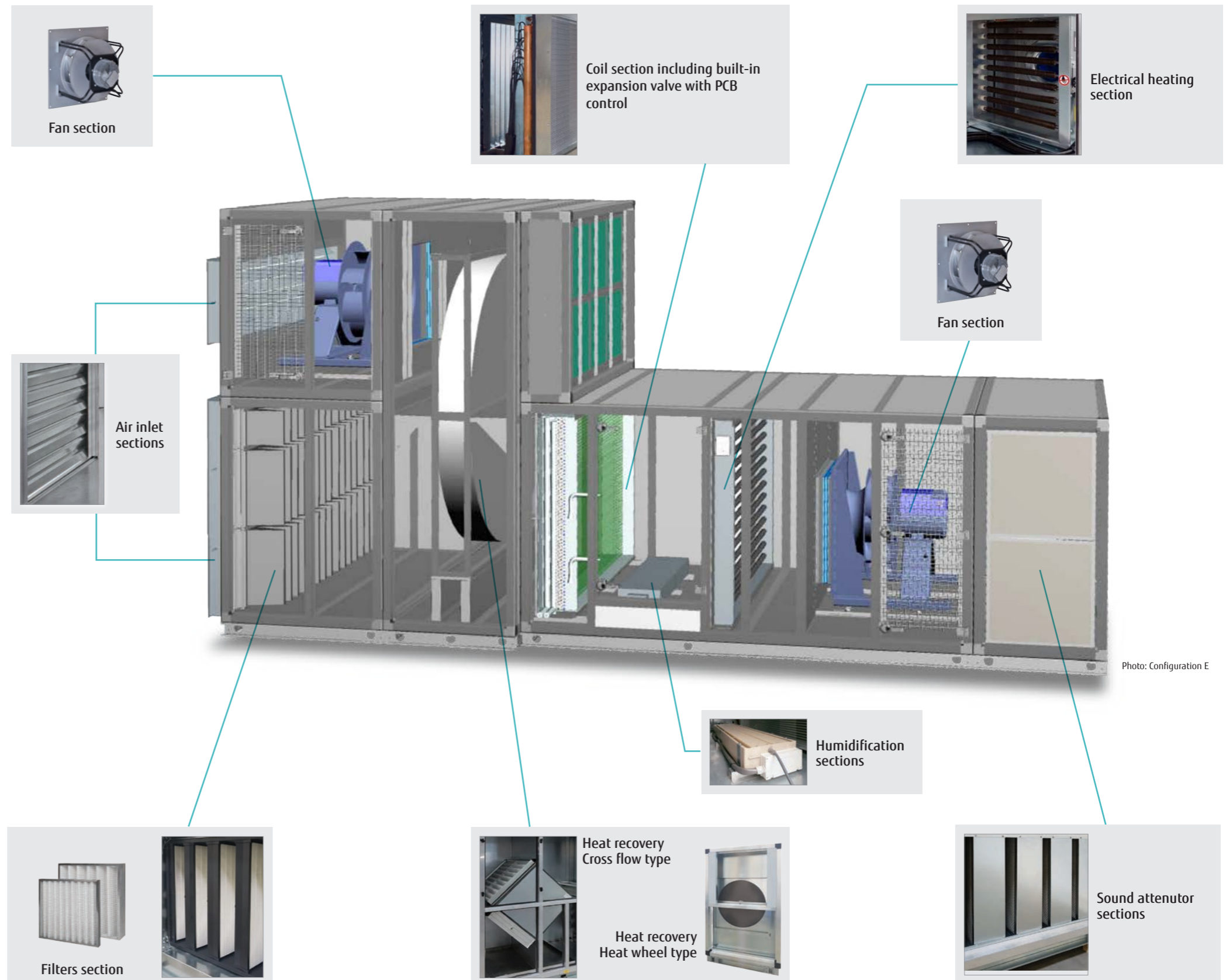


Photo: Configuration E

Feature



Structure

Section of extruded profile 62 × 62 mm (SNAP-IN system)

- The Air Handling Units are manufactured with bearing framework and sandwich paneling.
- The frame is made of extruded anticorodal aluminium alloy profiles of AlMgSi 0,5- UNI 9006/1 type.

Mechanical characteristics of extruded aluminium alloy

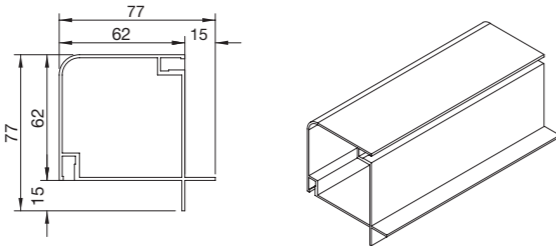
Denomination	Specific weight (kg/dm ³)	Unitary load of traction break R (kg/mm ²)	Yielding load S (0,2) (kg/mm ²)	Stretch (%)	Brinell hardness (kg/mm ²)
ANTICORODAL 050 UNI 9006/1 EX UNI 3569 (6060) ISO = Al Mg Si 0.5	2,70	20 ÷ 23	16 ÷ 20	12 ÷ 15	60 ÷ 70

Profile

- The exclusive bearing structure made by Fujitsu General, having actual dimension of 62 x 62 mm, uses the lock panel system in aluminium (SNAP-IN system). This system permits to reach paneling tightnesses beyond 2500 Pa (10 in WG), because of the homogeneity of the pressure over the paneling perimeter, not achievable with the traditional system (selfdrilling screw fastening). This profile doesn't require the aid of internal and external screws, giving therefore a solider and aesthetically more pleasant appearance.
- Because of the dimensions of the profile, the used panel has actual dimensions of 50 mm.
- The profile hasn't got external sharp edges, as foreseen by the safety and accident-prevention rules in force.
- Air Handling Units are certified for the highest performance standards.



- Fujitsu General units and all internal components are compliant to ErP EcoDesign 2018 LOT6 Regulation.
- Fujitsu General units comply with UNI EN 1886 European Regulation about thermal and mechanical performance.



(Unit : mm)

Panelling

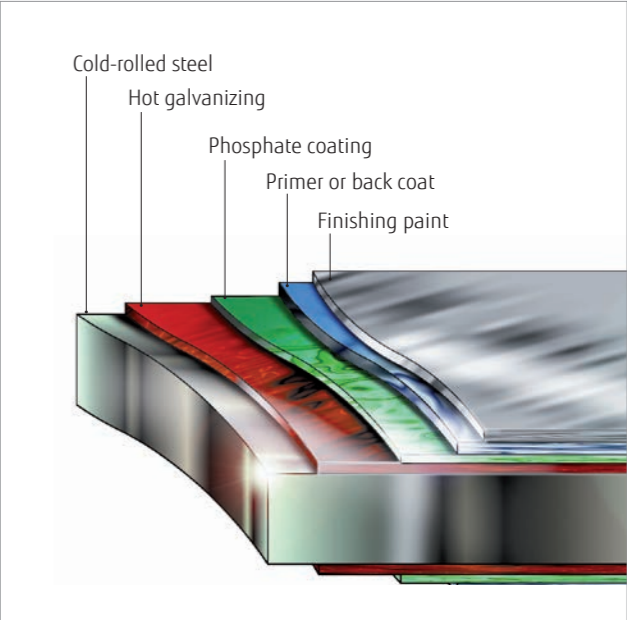
The panelling is double skin sandwich type made of galvanized sheet, with polyurethane foam insulation of minimum density 45 kg/m³, actual thickness: -50 mm

Panels are made as follows:

Inner skin: Hot dipped galvanized sheet (galvanization not less than 140 g/m²), 5/10 mm thick.

Insulation: Rigid polyurethane foam minimum density 45 kg/m³, thermal conductivity 0,018 ÷ 0,024 w/m² °c.

Outer skin: Hot dipped pre-painted galvanized sheet (galvanization not less than 140 g/m²), 6/10 mm thick.



PRE-PAINTED GALVANIZED STEEL SHEET

Steel Sheet Features

Hot dipped galvanized steel sheet type Fe P02 GZ 140 UNI En 10142 with galvanization not less than 140 g/m². The thickness is 6/10 mm.

Pre-painted steel sheet 6/10 mm thick with base support made of hot dipped galvanized steel (galvanization not less than 140 g/m²) EURONORM 142-79 and coating, colour white-grey for a special resistance to weathering. The protective system consists of a dry film of 25 µm on the exposed skin and of a dry film of 5 µm on the non-exposed skin.

Hardness of film: F on the Koh - i - Noor's scale.

Other chemical-physical characteristics:

- Resistance beyond 250 h in salty mist (ECCA T8)
- Resistance beyond 1000 h in high humidity conditions (ASTM D 714)
- Film resistance to the cleaving and adhesion after bending (ECCA T7).

A self-adhesive PVC film is laid on the steel sheet exposed surface in order to avoid damages during the manufacturing procedures and transport.

Baseframe

The bearing baseframe is made of galvanized steel with pressure bent, bolted or welded profile, according to the configuration of the unit.

It is arranged for the sections lifting and suitable for water piping passage and drain.

Perimeter baseframes heights and profiles are dimensioned as follows: H = 100 mm with bolted C profile for all units

The baseframes of all the above solutions are made of galvanized steel sheet with minimum thickness 2.0 mm.



SECTION VIEW.
The baseframe is flush with the panelling

Covering Roof (TT - Accessory)

- All units that must be positioned outside or generally speaking are exposed to the weather may be equipped with a hot galvanized steel sheet roof (galvanization not less than 140 g/m²) as accessory element.
- The roof overhang with regard to the unit outer dimensions is of about 100 mm.
- All roof corners are equipped with accident prevention corners protections.

Filtration

Plate Filters COARSE 55%

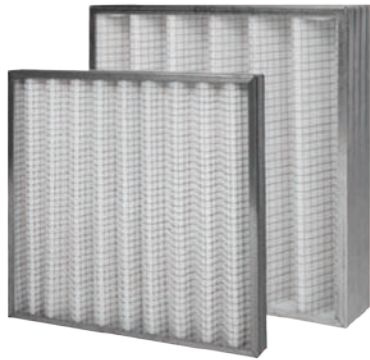


Plate filters filter the air at a low and medium efficiency.

- Plate filters are commonly used as prefilters in order to keep a longer efficiency of filters installed downstream.
- Plate filters are installed on guides fastened inside the unit. In this case the air by-pass is minimum.

Plate filters are highly used because of the following features

- Easy removal
- Easy availability on spare parts market
- Regenerability (they can be washed with warm water and soap or common domestic detergents).

Plate filters are made of

- Galvanized steel sheet frame 48 mm th.
- Support containing net made of galvanized electrowelded wire
- Filtering stuff made of synthetic fiber with filtration efficiency COARSE 55%.

Filtration

Bag Filters ePM1 50%



N.B. ePM1 50% bag filters are mandatory for ECODSIGN ErP 2016 compliance

Bag filters have the characteristic of giving a wide filtering area thanks to their bag shape and therefore they highly reduce the crossing air speed.

The bags are installed on galvanized slides for side extraction. This filtering section includes the access door.

Soft bag filter features

- Efficiency, ePM1 50%
- Depth 287 mm
- Fiberglass filtering stuff
- Galvanized steel sheet frame
- 80% of the material is recyclable
- Limit relative humidity 100%.

Thermal Exchange Sections

DX Coil



The section consists of

- DX coil with copper tubes and aluminium fins, specifically designed to guarantee an high thermal exchange and an excellent ratio between sensible and latent heat;
- One distributor and one electronic expansion valve for each circuit connected to its control PCB, which is located in close proximity to avoid every possible interference, immunity and electromagnetic disturbance problems;
- Temperature probes installed at the front, at the rear and in the middle of the coil provide the data to the control PCB, which consequently determines the opening of the electronic expansion valve, depending on the work point and the set point;

On multi-module units the cooling circuits are interlaced to guarantee a full exploitation of the exchange surface and air treated uniformity also at partial loads. The section includes the PCB control.

Thermal Exchange Sections

Electrical Heating



Electrical heating section is used for the execution of heating and post-heating treatment

They are manufactured as follows

- galvanized steel sheet flanged containing frame
- finned steel tubular heaters on base insulators
- safety fix thermostat with manual reset
- electrical heating is foreseen for 3-Stage 400V/3P/50 up to 36 kW capacity.

Fan Section

EC Inverter Plug-Fan



The fan section is equipped with EC Inverter Plug-Fan.

- The EC Inverter Plug-Fans are managed by an electronic control adjusting fans rotational speed to adapt air flow and static pressure to the system capacity. They supply a variable air flow according to the requested thermal load, providing important benefits in terms of energy consumption and low noise operation especially when the unit is operating at partial load.
- The EC Inverter Plug-Fans can be set to different working conditions, according to the unit needs, directly on site through the control panel installed on the Electrical Board section.
- Compared to traditional Plug-Fans, thanks to EC Inverter technology the overall efficiency and acoustic behaviour of the fans has been significantly improved. The blade geometry with a diagonal trailing edge has positive effects on the aerodynamic performance and on the running smoothness of the fans. The same is true for the implemented nozzle contour.
- The overall dimension of the section can be kept at minimum thanks to the fan dimension: the EC motor is integrated directly in the impeller. A belt drive between the motor and the fan, which is commonly used otherwise, is not necessary. This reduces the required installation volume and the associated installation effort.
- The EC Plug-Fans significantly exceed the ErP 2015 norm and the requirements of energy efficiency class A+ stated in German manufacturer's association RLT Directive 01, "General Requirements for Ventilation and Air-conditioning Devices".
- AHU fan section equipped with EC Inverter Plug-Fans is provided with the Automatic Regulation Control Systems for Constant Air Flow and Constant Available Static Pressure. An electronic device with pressure sensors on the system and control sensors on EC Plug-Fans adjust the flow rate and the available static pressure to keep the air flow constant.

Humidifier



Electrode humidifiers specifically designed for installation inside air handling units.

- The humidifier is constituted by two parts connected together electrically: the hydraulic part and the control unit based on a microprocessor board. The hydraulic part is completely inserted into the AHU, lying on the condensate drain tank immediately downstream of the cooling coil.
- The control is fully integrated in the microprocessor installed aboard the AHU.
- The hydraulic boiler is made up of plastic polypropylene "channel" having a section of 33 cm x 16 cm height, and having a length proportional to the width of the AHU. Inside the boiler are arranged longitudinally the stainless steel electrodes, connected to the power supply phases and easily removable. The lid is made of plastic sections with slope, so as to allow any condensation that falls by gravity into the boiler in order to avoid power losses.
- Between the plastic sections is obtained a narrow longitudinal slot which allows the output of the steam produced, that meets the air for the whole length of the AHU section.
- This solution prevents the formation of condensate in the pipes and also prevents any increase in steam pressure in the boiler due to blockages in the pipes conveying steam.

On one side of the kettle (the easiest to access once installed) you have the body of hydraulic management of the system

- Maximum water level sensor
- Draining bloc the draining bloc has been specially designed to empty the tank from water and limestone pieces without having to block and having to be able to work without pressure.

A electronic rotation sensor, rigidly grafted on the pivot motor, communicating with the microprocessor which manage the correct operation and shown in the display any faults that may appear.

Heat Recovery Section

Cross Flow Heat Recovery



The recovery unit efficiency has values up to 85%.

- The fixed plates static recovery units are air to air type, without moving parts, therefore working in a reliable and safe way. The air movement is in a crossed flow with heat transfer directly from higher temperature flow to the lower temperature one. The recovery unit efficiency has values up to 85%.
- This type of heat exchanger is made of pressed aluminium sheets, housed in a variable spacing depending on the use type.
- Sealings are made along the edges in order to prevent contamination on renewal air from polluting agents contained in exhaust air.

The normal supply foresees

- Recovery units with aluminium fins
- Cell prefilters COARSE 55% type (85% eff.) on fresh air side
- Galvanized steel sheet drain pan to collect possible condensation.

Heat Recovery Section

Heat Wheel Recovery Units



The working principle is the following

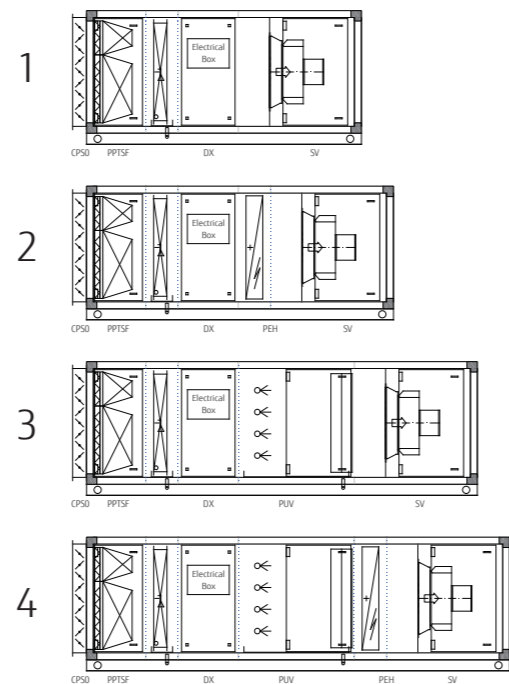
- The exhaust air crosses half circular rotor sector and gives part of its heat to the metallic mass. This, slowly wheeling, is invested from cold renewal air crossing in counterflow the other half of the exchanger, taking the heat given from the exhaust air. When rotor is hygroscopic type, also humidity contained into the exhaust air will be partially transferred to the renewal air.
- The words "warm air" and "cold air" of the above description are valid for winter working cycle; in summer cycle the functions of transfer and absorption of heat and humidity are evidently inverted.

Usually these type of recovery units are made as follows

- aluminium rotor
- galvanized steel sheet frame
- constant speed electric gearmotor

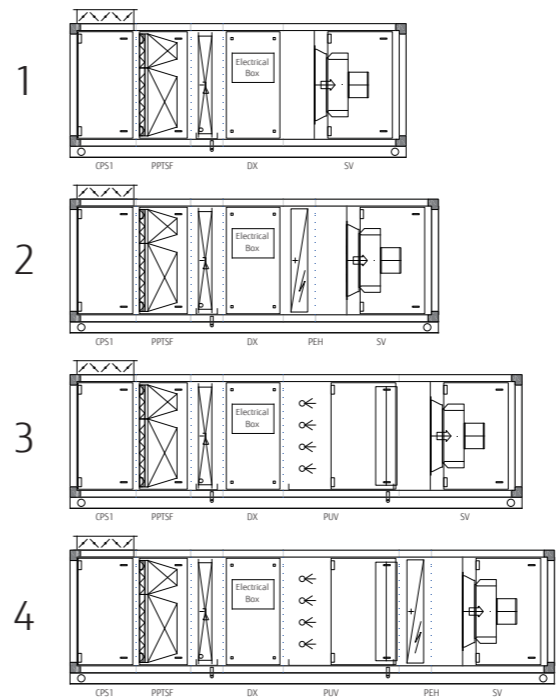
Dimensions

Configurations A



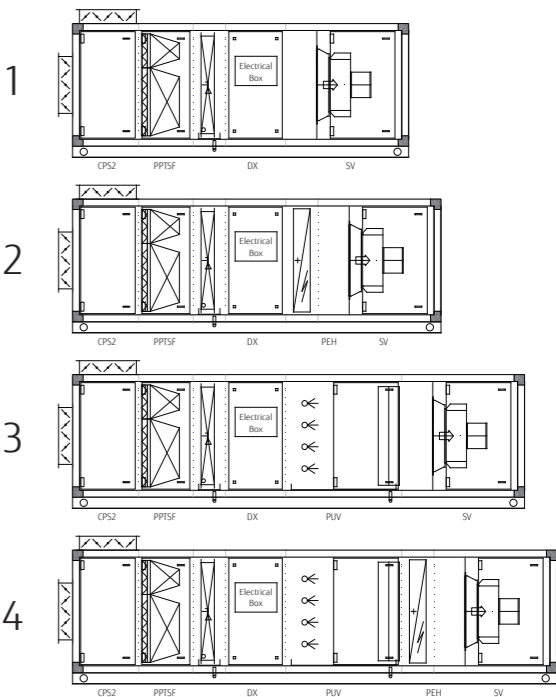
Model name	Config.	H (mm)	W (mm)	L (mm)	kg	L (with silencer) (mm)
AHYA025GWAA	1	1,064	1,154	2,619	611	3,529
AHYA025GWAB	2	1,064	1,154	3,109	679	4,019
AHYA025GWAC	3	1,064	1,154	2,619	629	3,529
AHYA025GWAD	4	1,064	1,154	3,109	697	4,019
AHYA040GWAA	1	1,199	1,354	2,749	844	3,659
AHYA040GWAB	2	1,199	1,354	3,319	931	4,229
AHYA040GWAC	3	1,199	1,354	2,749	865	3,659
AHYA040GWAD	4	1,199	1,354	3,319	952	4,229
AHYA048GWAA	1	1,309	1,574	2,749	921	3,659
AHYA048GWAB	2	1,309	1,574	3,319	1,023	4,229
AHYA048GWAC	3	1,309	1,574	2,749	944	3,659
AHYA048GWAD	4	1,309	1,574	3,319	1,046	4,229
AHYA080GWAA	1	1,544	2,074	3,189	1,542	4,099
AHYA080GWAB	2	1,544	2,074	3,839	1,701	4,749
AHYA080GWAC	3	1,544	2,074	3,189	1,570	4,099
AHYA080GWAD	4	1,544	2,074	3,839	1,729	4,749
AHYA096GWAA	1	1,789	2,250	3,189	1,691	4,099
AHYA096GWAB	2	1,789	2,250	3,839	1,869	4,749
AHYA096GWAC	3	1,789	2,250	3,189	1,724	4,099
AHYA096GWAD	4	1,789	2,250	3,839	1,899	4,749

Configurations B



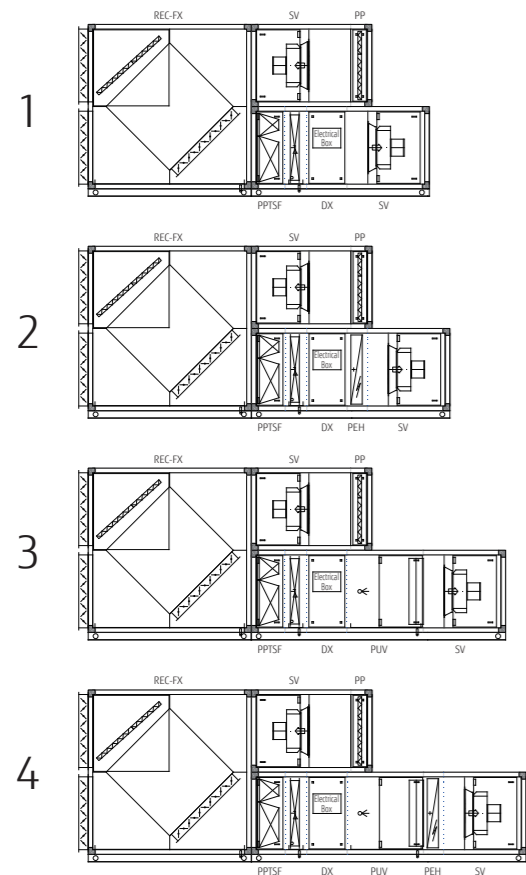
Model name	Config.	H (mm)	W (mm)	L (mm)	kg	L (with silencer) (mm)
AHYB025GWAA	1	1,179	1,154	2,854	628	3,764
AHYB025GWAB	2	1,179	1,154	3,344	696	4,254
AHYB025GWAC	3	1,179	1,154	2,854	646	3,764
AHYB025GWAD	4	1,179	1,154	3,344	714	4,254
AHYB040GWAA	1	1,314	1,354	3,084	873	3,994
AHYB040GWAB	2	1,314	1,354	3,654	960	4,564
AHYB040GWAC	3	1,314	1,354	3,084	894	3,994
AHYB040GWAD	4	1,314	1,354	3,654	981	4,564
AHYB048GWAA	1	1,424	1,574	3,084	953	3,994
AHYB048GWAB	2	1,424	1,574	3,654	1,055	4,564
AHYB048GWAC	3	1,424	1,574	3,084	976	3,994
AHYB048GWAD	4	1,424	1,574	3,654	1,078	4,564
AHYB080GWAA	1	1,659	2,074	3,624	1,591	4,534
AHYB080GWAB	2	1,659	2,074	4,274	1,749	5,184
AHYB080GWAC	3	1,659	2,074	3,624	1,619	4,534
AHYB080GWAD	4	1,659	2,074	4,274	1,777	5,184
AHYB096GWAA	1	1,904	2,250	3,724	1,760	4,634
AHYB096GWAB	2	1,904	2,250	4,374	1,936	5,284
AHYB096GWAC	3	1,904	2,250	3,724	1,790	4,634
AHYB096GWAD	4	1,904	2,250	4,374	1,966	5,284

Configurations C



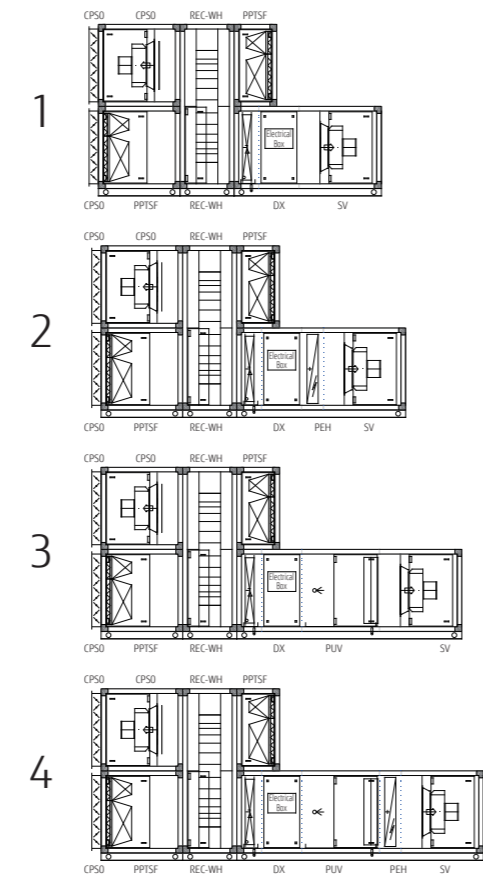
Model name	Config.	H (mm)	W (mm)	L (mm)	kg	L (with silencer) (mm)
AHYC025GWAA	1	1,179	1,154	2,969	650	3,879
AHYC025GWAB	2	1,179	1,154	3,459	718	4,369
AHYC025GWAC	3	1,179	1,154	2,969	668	3,879
AHYC025GWAD	4	1,179	1,154	3,459	736	4,369
AHYC040GWAA	1	1,314	1,354	3,199	899	4,109
AHYC040GWAB	2	1,314	1,354	3,769	986	4,679
AHYC040GWAC	3	1,314	1,354	3,199	920	4,109
AHYC040GWAD	4	1,314	1,354	3,769	1,007	4,679
AHYC048GWAA	1	1,424	1,574	3,199	980	4,109
AHYC048GWAB	2	1,424	1,574	3,769	1,082	4,679
AHYC048GWAC	3	1,424	1,574	3,199	1,003	4,109
AHYC048GWAD	4	1,424	1,574	3,769	1,105	4,679
AHYC080GWAA	1	1,659	2,074	3,739	1,624	4,649
AHYC080GWAB	2	1,659	2,074	4,389	1,782	5,299
AHYC080GWAC	3	1,659	2,074	3,739	1,652	4,649
AHYC080GWAD	4	1,659	2,074	4,389	1,810	5,299
AHYC096GWAA	1	1,904	2,250	3,839	1,799	4,749
AHYC096GWAB	2	1,904	2,250	4,489	1,975	5,399
AHYC096GWAC	3	1,904	2,250	3,839	1,829	4,749
AHYC096GWAD	4	1,904	2,250	4,489	2,005	5,399

Configurations D



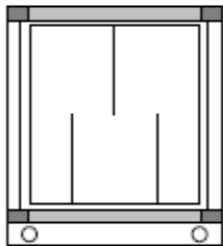
Model name	Config.	H (mm)	W (mm)	L (mm)	kg	L (with silencer) (mm)
AHYD025GWAA	1	2028/1064	1424/1154	4,311	1,259	5,221
AHYD025GWAB	2	2028/1064	1424/1154	4,801	1,327	5,711
AHYD025GWAC	3	2028/1064	1424/1154	4,311	1,277	5,221
AHYD025GWAD	4	2028/1064	1424/1154	4,801	1,345	5,711
AHYD040GWAA	1	2298/1199	1574/1354	4,871	1,750	5,781
AHYD040GWAB	2	2298/1199	1574/1354	5,441	1,837	6,351
AHYD040GWAC	3	2298/1199	1574/1354	4,871	1,771	5,781
AHYD040GWAD	4	2298/1199	1574/1354	5,441	1,858	6,351
AHYD048GWAA	1	2518/1309	1824/1574	4,871	1,978	5,781
AHYD048GWAB	2	2518/1309	1824/1574	5,348	2,080	6,258
AHYD048GWAC	3	2518/1309	1824/1574	4,778	2,001	5,688
AHYD048GWAD	4	2518/1309	1824/1574	5,348	2,103	6,258
AHYD080GWAA	1	2988/1544	2,074	6,161	3,361	7,071
AHYD080GWAB	2	2988/1544	2,074	6,811	3,520	7,721
AHYD080GWAC	3	2988/1544	2,074	6,161	3,389	7,071
AHYD080GWAD	4	2988/1544	2,074	6,811	3,548	7,721
AHYD096GWAA	1	3478/1789	2,250	6,451	3,849	7,361
AHYD096GWAB	2	3478/1789	2,250	7,008	4,025	7,918
AHYD096GWAC	3	3478/1789	2,250	6,451	3,879	7,268
AHYD096GWAD	4	3478/1789	2,250	7,008	4,055	7,918

Configurations E



Model name	Config.	H (mm)	W (mm)	L (mm)	kg	L (with silencer) (mm)
AHYE025GWAA	1	2028/1064	1429/1154	3,813	1,150	4,723
AHYE025GWAB	2	2028/1064	1429/1154	4,303	1,226	5,213
AHYE025GWAC	3	2028/1064	1429/1154	3,813	1,168	4,723
AHYE025GWAD	4	2028/1064	1429/1154	4,303	1,244	5,213
AHYE040GWAA	1	2298/1199	1729/1354	4,073	1,571	4,983
AHYE040GWAB	2	2298/1199	1729/1354	4,643	1,658	5,553
AHYE040GWAC	3	2298/1199	1729/1354	4,073	1,592	4,983
AHYE040GWAD	4	2298/1199	1729/1354	4,643	1,679	5,553
AHYE048GWAA	1	2518/1309	1829/1574	4,073	1,696	4,983
AHYE048GWAB	2	2518/1309	1829/1574	4,643	1,798	5,553
AHYE048GWAC	3	2518/1309	1829/1574	4,073	1,719	4,983
AHYE048GWAD	4	2518/1309	1829/1574	4,643	1,821	5,553
AHYE080GWAA	1	2988/1544	2374/2074	4,953	2,753	5,863
AHYE080GWAB	2	2988/1544	2374/2074	5,603	2,912	6,513
AHYE080GWAC	3	2988/1544	2374/2074	4,953	2,781	5,863
AHYE080GWAD	4	2988/1544	2374/2074	5,603	2,940	6,513
AHYE096GWAA	1	3478/1789	2582/2250	4,953	3,035	5,863
AHYE096GWAB	2	3478/1789	2582/2250	5,603	3,211	6,513
AHYE096GWAC	3	3478/1789	2582/2250	4,953	3,065	5,863
AHYE096GWAD	4	3478/1789	2582/2250	5,603	3,241	6,513

Silencer PI



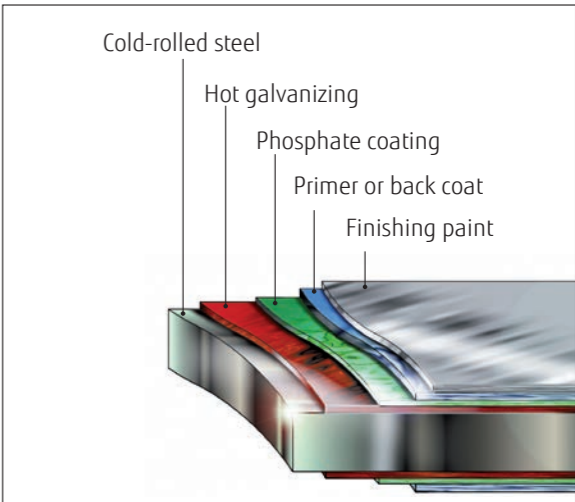
Connectable AHU model name	H (mm)	L (mm)	W (mm)	Kg
AHY* 025GWA*	1064	910	1154	209
AHY* 040GWA*	1199	910	1354	233
AHY* 048GWA*	1309	910	1574	274
AHY* 080GWA*	1544	910	2074	280
AHY* 096GWA*	1789	910	2250	444



Loose Accessories

Galvanized metal sheet roof

All units that must be positioned outside or generally speaking are exposed to the weather may be equipped with a hot-galvanized metal sheet roof (galvanization not less than 140 g/ m²) as accessory element. The roof overhang with regard to the unit outer dimensions is of about 100 mm. All roof corners are equipped with accident prevention protections.



Total Pressure Drops Calculation

AHU units, being controlled by EC Inverter Plug-Fans, can satisfy a high range of required air flow rate and static pressure.

The EC Inverter Plug-Fans can be set to different working conditions, according to the unit needs, directly on site through the control panel installed on the Electrical Board section.

Procedure for selection

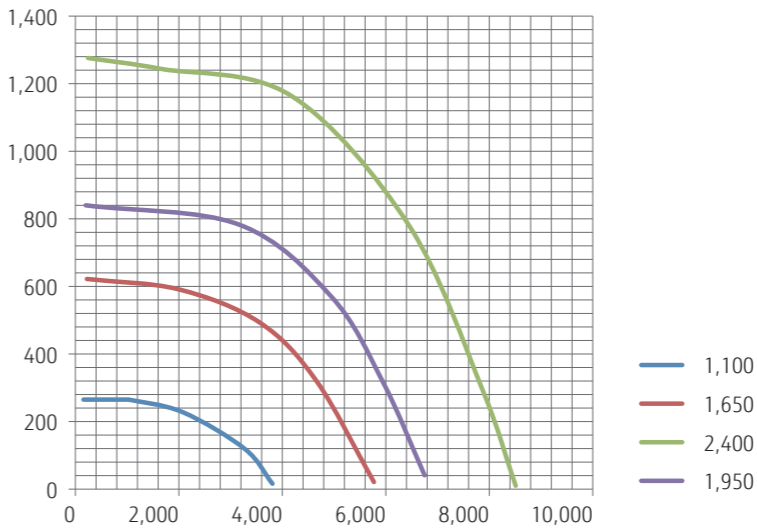
- Select the AHU model most suitable according the air volume.
- Check the air flow static pressure operating point on the curve of the chosen fan by crossing the required air flow rate with the value of the overall static pressure.

To calculate the total static pressure value refer to the Components Pressure Drop table and add the net static pressure required for the plant.



Fan Characteristic Curves

Fan type 400 mm

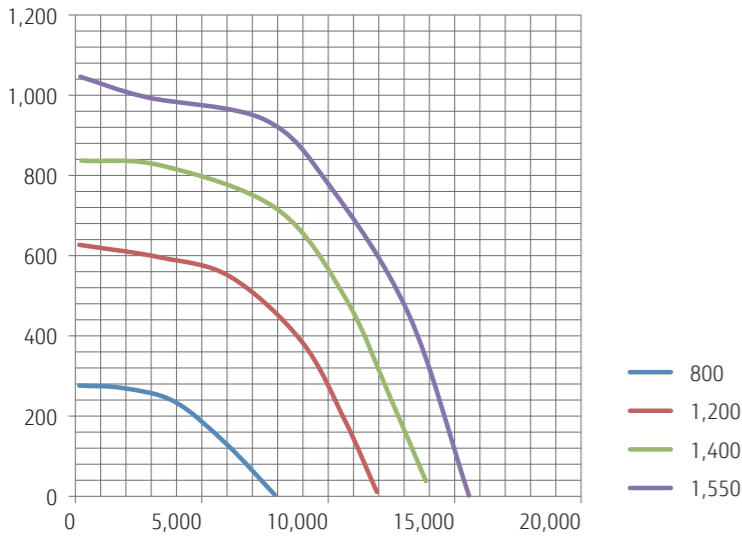


Components Pressure Drop table

ODU	AHU SIZE	MIN. NOM. MAX.	Airflow	Inlet damper (Config. A-E)	Inlet damper (Config. B-C)	COARSE 55% filters - supply	ePM1 50% filters	DX coil	Silencer	PHE + dampers + COARSE 55% filters-supply	PHE + damper -exhaust	COARSE 55% filters - exhaust (Config. D)	Heat wheel - supply	COARSE 55% filters - supply (Config. E)	ePM1 50% filters (Config. E)	Heat wheel - exhaust	COARSE 55% filters - exhaust (Config. E)	Exhaust damper (Config. E)	Humidifier	Electrical heater
			m³/h	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa
10HP	025	MIN.	4,300	1	12	91	156	55	26	206	120	91	162	93	144	159	84	7	-	-
		NOM.	4,500	1	13	98	158	59	28	210	122	95	167	93	146	165	95	8	-	-
		MAX.	5,000	2	16	99	164	71	36	235	147	96	187	95	150	185	96	10	-	-
14HP	040	MIN.	5,000	1	4	91	138	37	4	154	70	91	116	89	135	114	91	4	-	-
		NOM.	7,200	2	13	87	149	68	10	240	145	87	172	93	144	169	94	8	-	-
		MAX.	8,000	2	16	96	153	82	12	243	165	96	193	94	147	190	96	9	-	-
18HP	048	MIN.	8,100	1	12	96	153	50	10	225	139	92	167	94	147	165	92	9	-	-
		NOM.	8,600	1	13	97	156	55	11	241	155	93	178	95	149	176	93	10	-	-
		MAX.	9,100	2	15	98	159	60	13	257	171	93	189	95	152	187	93	11	-	-
2X 14HP	080	MIN.	11,000	1	8	91	140	30	9	148	62	90	121	90	137	119	90	6	-	-
		NOM.	14,500	2	14	94	148	47	16	188	101	93	163	93	143	161	93	10	-	-
		MAX.	16,100	2	17	96	153	56	19	209	122	94	183	94	147	180	94	13	-	-
2X 18HP	096	MIN.	16,000	1	10	96	152	37	16	157	74	91	146	92	142	144	91	10	-	-
		NOM.	17,300	1	11	97	156	42	19	168	86	92	159	93	145	157	92	11	-	-
		MAX.	18,100	1	13	98	158	46	21	175	93	92	167	93	146	165	92	13	-	-

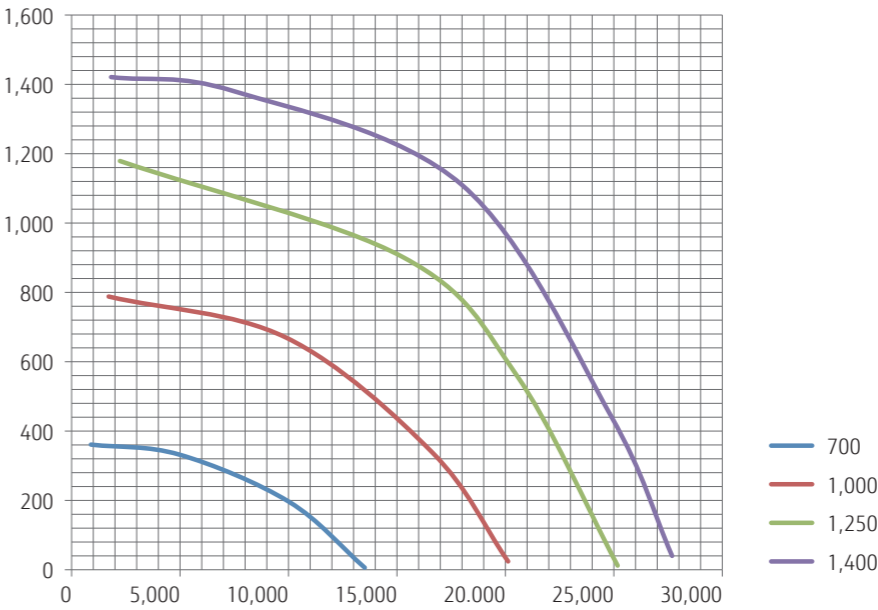
fan type	m³/h	Pa Total static pressure	W	n	LwAin	LwAout
				[1/min]	[dB]	[dB]
400 mm	156	265	124	1100	63	71
400 mm	334	265	134	1100	63	70
400 mm	1002	265	187	1100	62	69
400 mm	1025	265	181	1100	62	69
400 mm	2072	228	234	1100	58	66
400 mm	3275	119	224	1100	62	69
400 mm	3809	16	173	1100	69	74
400 mm	223	622	352	1650	75	82
400 mm	2005	591	642	1650	72	79
400 mm	3564	493	767	1650	68	75
400 mm	4656	321	708	1650	71	77
400 mm	5770	21	487	1650	79	83
400 mm	200	840	509	1950	79	86
400 mm	3163	783	1154	1950	74	81
400 mm	4946	570	1223	1950	74	80
400 mm	5948	316	1027	1950	78	83
400 mm	6750	41	773	1950	83	87
400 mm	245	1276	921	2400	85	92
400 mm	1649	1244	1497	2400	86	92
400 mm	4163	1165	2223	2400	81	87
400 mm	6438	783	2237	2400	81	87
400 mm	7864	296	1738	2400	86	91
400 mm	8510	10	1389	2392	89	93

Fan type 560 mm



fan type	m³/h	Pa Total static pressure	W	n	LwAin	LwAout
				[1/min]	[dB]	[dB]
560 mm	158	276	209	800	65	72
560 mm	1861	270	345	800	65	71
560 mm	3921	236	438	800	61	67
560 mm	5980	130	452	800	62	67
560 mm	7881	4	313	800	69	74
560 mm	158	627	591	1200	77	83
560 mm	3327	596	1164	1200	75	82
560 mm	6139	547	1471	1200	71	77
560 mm	8950	386	1473	1200	72	78
560 mm	10653	190	1212	1200	76	82
560 mm	11921	11	936	1200	80	85
560 mm	238	837	901	1400	80	87
560 mm	3446	824	1743	1400	80	87
560 mm	8000	715	2403	1400	75	81
560 mm	10693	493	2260	1400	76	82
560 mm	12475	243	1859	1400	80	86
560 mm	13861	38	1521	1400	85	89
560 mm	198	1046	1210	1550	84	90
560 mm	2812	995	2086	1550	84	91
560 mm	7485	939	3131	1550	78	84
560 mm	10059	774	3249	1550	77	84
560 mm	13188	453	2901	1550	82	88
560 mm	15564	2	1948	1550	91	94

Fan type 710 mm



fan type	m³/h	Pa Total static pressure	W	n	LwAin	LwAout
				[1/min]	[dB]	[dB]
710 mm	891	361	744	700	71	77
710 mm	4975	332	1290	700	69	74
710 mm	10025	196	1427	700	69	75
710 mm	13515	6	880	700	77	83
710 mm	1708	788	1693	1000	81	88
710 mm	9876	670	3179	1000	77	83
710 mm	16634	338	3084	1000	80	86
710 mm	20124	24	2177	1000	87	93
710 mm	2228	1179	3015	1250	87	94
710 mm	15297	901	6054	1250	83	89
710 mm	20495	563	5794	1250	86	92
710 mm	25173	12	3857	1250	92	98
710 mm	1821	1421	3716	1400	89	96
710 mm	7500	1380	5851	1400	89	95
710 mm	17996	1110	8301	1400	86	92
710 mm	24855	445	6916	1400	91	98
710 mm	27685	40	5271	1400	95	101

Specifications

Configuration A-B-C						
Model FG		025	040	048	080	096
Model name		AHYA025GWA* AHYB025GWA* AHYC025GWA*	AHYA040GWA* AHYB040GWA* AHYC040GWA*	AHYA048GWA* AHYB048GWA* AHYC048GWA*	AHYA080GWA* AHYB080GWA* AHYC080GWA*	AHYA096GWA* AHYB096GWA* AHYC096GWA*
Casing						
Material		Outer skin in 0.6 mm pre-painted galvanized sheet; inner skin in 0.6 mm galvanized sheet				
Insulation		PU foam, 50 mm thickness, 45 kg/m³				
Performances						
Cooling capacity	kW	25	40	48	78	96
Heating capacity	kW	31.5	45	50	81.5	100
Available static pressure	Pa	200	200	200	200	200
Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Air flow						
Max.	m³/h	5000	8000	9100	16100	18100
Rated	m³/h	4500	7200	8600	14500	17300
Min.	m³/h	4300	5000	8100	11000	16000
Cross flow heat recovery						
Efficiency (*)	%	—	—	—	—	—
DX Coil						
Rows	n°	4				
Coil type		25x22 - 3/8"				
Coil duty		Cooling - Heating				
Fluid		R410A				
Pipes material		Copper				
Fins material		Aluminium				
Electrical heating						
Stages	n°	3				
Heating capacity	kW	9	15	18	30	36
Humidifier						
Fix steam capacity	kg/h	15	25	30	45	60
Fan						
Type		EC Plug Fan				
Motor data	mm	400	560	560	710	710
	kW	2.4	3.4	3.4	7.3	7.3
Thermal transmittance of the casing(TT) class		T3	T3	T3	T3	T3
Thermal bridging factor(TBF) class		TB3	TB3	TB3	TB3	TB3
Casing strength(CS) class		D2(M)	D2(M)	D2(M)	D2(M)	D2(M)
Casing air leakage(CAL) class@-400Pa		L2(M)	L2(M)	L2(M)	L2(M)	L2(M)
Casing air leakage(CAL) class@+700Pa		>L3(M)	>L3(M)	>L3(M)	>L3(M)	>L3(M)
Filter bypass leakage (FBL) class		F9(M)	F9(M)	F9(M)	F9(M)	F9(M)

(*) at rated air flow

		Configuration D				
Model FG		025	040	048	080	096
Model name		AHYD025GWA*	AHYD040GWA*	AHYD048GWA*	AHYD080GWA*	AHYD096GWA*
Casing						
Material		Outer skin in 0,6 mm pre-painted galvanized sheet; inner skin in 0,6 mm galvanized sheet				
Insulation		PU foam, 50 mm thickness, 45 kg/m³				
Performances						
Cooling capacity	kW	25	40	48	78	96
Heating capacity	kW	31.5	45	50	81.5	100
Available static pressure	Pa	200	200	200	200	200
Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Air flow						
Max.	m³/h	5000	8000	9100	16100	18100
Rated	m³/h	4500	7200	8600	14500	17300
Min.	m³/h	4300	5000	8100	11000	16000
Heat recovery						
Efficiency (*)	%	73.3	74.4	74.2	73.7	73.6
DX Coil						
Rows	n°	4				
Coil type	25x22 - 3/8"					
Coil duty	Cooling - Heating					
Fluid	R410A					
Pipes material	Copper					
Fins material	Aluminium					
Electrical heating						
Stages	n°	3				
Heating capacity	kW	9	15	18	30	36
Humidifier						
		15	25	30	45	60
Fan						
Type	EC Plug Fan					
Motor data	mm					
	kW	2.4	3.4	3.4	7.3	7.3
Thermal transmittance of the casing(TT) class		T3	T3	T3	T3	T3
Thermal bridging factor(TBF) class		TB3	TB3	TB3	TB3	TB3
Casing strength(CS) class		D2(M)	D2(M)	D2(M)	D2(M)	D2(M)
Casing air leakage(CAL) class@-400Pa		L2(M)	L2(M)	L2(M)	L2(M)	L2(M)
Casing air leakage(CAL) class@+700Pa		>L3(M)	>L3(M)	>L3(M)	>L3(M)	>L3(M)
Filter bypass leakage (FBL) class		F9(M)	F9(M)	F9(M)	F9(M)	F9(M)

Configuration E				
025	040	048	080	096
AHYE025GWA*	AHYE040GWA*	AHYE048GWA*	AHYE080GWA*	AHYE096GWA*
Outer skin in 0,6 mm pre-painted galvanized sheet; inner skin in 0,6 mm galvanized sheet				
PU foam, 50 mm thickness, 45 kg/m³				
25	40	48	78	96
31.5	45	50	81.5	100
200	200	200	200	200
400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
5000	8000	9100	16100	18100
4500	7200	8600	14500	17300
4300	5000	8100	11000	16000
75.6	74.7	74.2	75.3	75.6
4				
25x22 - 3/8"				
Cooling - Heating				
R410A				
Copper				
Aluminium				
3				
9	15	18	30	36
15	25	30	45	60
EC Plug Fan				
2.4	3.4	3.4	7.3	7.3
T3	T3	T3	T3	T3
TB3	TB3	TB3	TB3	TB3
D2(M)	D2(M)	D2(M)	D2(M)	D2(M)
L2(M)	L2(M)	L2(M)	L2(M)	L2(M)
>L3(M)	>L3(M)	>L3(M)	>L3(M)	>L3(M)
F9(M)	F9(M)	F9(M)	F9(M)	F9(M)

(*) at rated air flow

Control System

AHU units include built-in electrical panel and expansion valve with PCB control. Set point is fixed via standard wired control.
The cooling load is determined by the air return temperature and set point on the wired control.

AHU Controller

UTY-TXUX



Features

- Easy to install. Control connects to AHU PLC.
- Able to install the control after building decoration.
- Mode lock function: user can lock the running mode of Air Handling Unit.

Easy Opration

The remote controller realized an intuitive operation feeling by touch panel operation.

Functions

- Schedule setting change
- Set temperature and humidity
- Ambient's name
- Alarms setting
- Event setting

Specifications

Model name		UTY-TXUX
Format	mm	120 × 86 × 25
Display		Display touch color 3.5" 320 × 240
Power supply		24 Vac - 24 Vac/dc
Analogue inputs		1 × Integrated NTC
Connectivity		RS485 - Modbus SL, USB Micro-B (debug and programming)
Operating temperature		0 - +50 °C

System Controller

UTY-APGXZ1 Software

Features

System Controller realizes the advanced integrated monitoring & control of VRF network system from small scale buildings to large scale buildings.

- Up to a maximum of 4 VRF network systems, 1,600 indoor units, and 400 outdoor units can be controlled.
- In addition to air conditioning precision control function, central remote control, electricity charge calculation, schedule management, and energy saving functions are strengthened and building manager and owner needs are met.

Max. Controllable
4 VRF network systems

Max. Controllable
400 outdoor units

Max. Controllable
1,600 indoor units



It is possible to perform centralized control to stop the operation of lighting and ventilation equipment in addition to air conditioners. This is useful in energy saving management over the whole building.

System Controller Lite

UTY-ALGXZ1 + UTY-PLGXX2 Software

Features

System Controller Lite has standard functions sufficient for air conditioner management in small and medium scale buildings.

- Up to a maximum of 1 VRF network system, 400 indoor units, and 100 outdoor units can be controlled.
- In addition to air conditioning precision control function, a variety of management software is available as an option to give customers a wide range of choice.

Max. Controllable
1 VRF network systems

Max. Controllable
100 outdoor units

Max. Controllable
400 indoor units



VRF indoor units

Facilities

Lightning

Ventilation

Energy Recovery Ventilator

Functions Summary

Function	Type	System controller		System controller lite				
		UTY-APGXZ1	Option UTY-PEGXZ1	UTY-ALGXZ1	Option UTY-PLGXR2	Option UTY-PLGXA2	Option UTY-PLGXE2	Option UTY-PLGXX2
System specification	Max. VRF networks supported	4	—	1	—	—	—	—
	Max. indoor unit / remote controller groups per VRF network	400	—	400	—	—	—	—
	Max. outdoor units per VRF network	100	—	100	—	—	—	—
	Max. indoor units / remote controller groups per System controller	1600	—	400	—	—	—	—
	Max. outdoor units per System controller	400	—	100	—	—	—	—
Site supervision	Multi site display	10	—	10	—	—	—	—
	Number of building / 1 site	20	—	—	—	—	—	—
	Number of floor per 1 site	200	—	—	—	—	—	—
	Number of floor per 1 building	50	—	—	—	—	—	—
	3D graphical layout view	●	—	—	—	—	—	—
	2D graphical layout view	●	—	—	—	—	—	—
	List display	●	—	●	—	—	—	—
	Tree display	●	—	●	—	—	—	—
	Group display	●	—	●	—	—	—	—
Error management	Error notification	●	—	●	—	—	—	—
	Audible alarm	●	—	●	—	—	—	—
	Error e-mail notification	●	—	●	—	—	—	—
History	Error history	●	—	●	—	—	—	—
	Operation history	●	—	●	—	—	—	—
	Control history	●	—	●	—	—	—	—
Operation control	Individual control	On/Off	●	—	●	—	—	—
		Operation mode*	●	—	●	—	—	—
		Room temperature	●	—	●	—	—	—
		Fan speed	●	—	●	—	—	—
		Air flow direction	●	—	●	—	—	—
		Economy mode	●	—	●	—	—	—
		Room temperature set point limitation	●	—	●	—	—	—
		Antifreeze	●	—	●	—	—	—
	Individual management	Outdoor unit low noise setting	●	—	●	—	—	—
		Remote control prohibition setting	●	—	●	—	—	—
		Temperature upper and lower limit setting	●	—	●	—	—	—
	Other	Filter sign reset	●	—	●	—	—	—
		Memory operation	●	—	●	—	—	—
		Pattern operation	●	—	●	—	—	—
Schedule	Annual Schedule	●	—	●	—	—	—	—
	Special day setting	●	—	●	—	—	—	—
	On / off per day	72	—	72	—	—	—	—
	On / off per week	504	—	504	—	—	—	—
	Day off	●	—	●	—	—	—	—
	Min. unit of timer setting (Minutes)	10	—	10	—	—	—	—
	Low noise mode Weekly schedule	●	—	●	—	—	—	—
Remote management	Web Operation	●	—	●	—	—	—	—
	Remote monitoring	●	—	—	●	—	—	—
	Remote operation control	●	—	—	●	—	—	—
	Remote function setting	●	—	—	●	—	—	—
Electricity charge apportionment	Apportionment charge/bill calculation	●	—	—	—	●	—	—
	Tenant (block) setting	●	—	—	—	●	—	—
	Common facilities apportionment setting	●	—	—	—	●	—	—
	Rated power consumption allotment setting	●	—	—	—	●	—	—
	Individual calculation at cooling and heating	—	●	—	—	●	—	—
Energy saving management	Electricity meter supported	—	●	—	—	●	—	—
	Indoor unit rotation	—	●	—	—	—	●	—
	Peak cut control	—	●	—	—	—	●	—
	Outdoor unit capacity save	—	●	—	—	—	●	—
	Record of energy saving operation	—	●	—	—	—	●	—
	Energy saving information	—	●	—	—	—	●	—
	Power consumption monitor	—	●	—	—	—	●	—
	Electricity meter supported	—	●	—	—	—	●	—
External Device Control	Monitor	●	—	—	—	—	—	●
	Control	●	—	—	—	—	—	●
Others	Database import/export	●	—	●	—	—	—	—
	Automatic clock adjustment	●	—	●	—	—	—	—
	Multi language	7 languages	—	7 languages	—	—	—	—
	Refrigerant leakage detection function	●	—	●	—	—	—	—
	Power shutdown	●	—	●	—	—	—	—

●●: Available. - : Not available.

Personal Computer System Requirements

The required PC specifications are shown in the following table.

	System Controller	System Controller Lite
Operating system	• Microsoft® Windows® 7 Home Premium (32-bit or 64-bit) SP1, Windows® 7 Professional (32-bit or 64-bit) SP1 • Microsoft® Windows® 8.1 (32-bit or 64-bit), Windows® 8.1 Pro (32-bit or 64-bit) • Microsoft® Windows® 10 Home (32-bit or 64-bit), Windows® 10 Pro (32-bit or 64-bit) [Supported languages] English, Chinese, French, German, Russian, Spanish, and Polish	
CPU	Intel® CoreTM i3 2 GHz or higher	
Memory	• 2 GB or more (for Windows® 7 [32-bit]) • 4 GB or more (for Windows® 7 [64-bit], Windows® 8.1, and Windows® 10)	
HDD	40 GB or more of free space	
Display	1024 × 768 or higher resolution	
Interface	• Ethernet port (for getting access to the Internet using LAN) or Modem (for getting access to the Internet using Public Telephone Line) • USB ports (Maximum of 6 ports) (Required only for the Server PC that works as VRF Controller) – Maximum of 2 USB ports are required for WHITE-USB-KEY/WibuKey connection – Maximum of 4 USB ports are required for Echelon® U10 USB Network Interface * Maximum number of required USB port depends on the applicable system configuration.	• Ethernet port (for getting access to the Internet using LAN) or Modem (for getting access to the Internet using Public Telephone Line) • USB ports (Maximum of 6 ports) (Required only for the Server PC that works as VRF Controller) – Maximum of 4 USB ports are required for WHITE-USB-KEY/WibuKey connection – 1 USB port is required for Echelon® U10 USB Network Interface * The maximum number of required USB port depends on the applicable system configuration.
Graphic accelerator	Microsoft® DirectX® 9.0c compatible	
Software	Adobe® Acrobat Reader® 9.0 or later	

• Echelon® U10 USB Network Interface – TP/FT-10 Channel (Model number: 75010R) (Required for each VRF Network.)

Packing List

Type	For System controller		For System controller Lite				
	System Controller	Option Energy manager	System Controller Lite	Remote access	Option Electricity charge apportionment	Energy saving	Central Control
Model name	UTY-APGXZ1	UTY-PEGXZ1	UTY-ALGXZ1	UTY-PLGXR2	UTY-PLGXA2	UTY-PLGXE2	UTY-PLGXX2
WHITE-USB-KEY	1	1	1	1	1	1	1

*1: Software protection key to be inserted in a USB slot running System Controller or System Controller Lite.
System Controller or System Controller Lite may only run on a PC with WHITE-USB-KEY. However, WHITE-USB-KEY is not required for remote VRF Explorer software.