



OPTIMAX CROSS

COMPACT AIR HANDLING UNITS

CATALOGUE SHEET



TÜV[®]
Verified product
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AC 137
QMS

Manufactured in accordance with EN 1886 and EN 13053 standards

OPTIMAX-CROSS is a range of energy-efficient compact air handling units that incorporate the latest thermal and ventilation technology. The high-efficiency counter-flow heat exchanger enables **the recovery of thermal energy from exhaust air with up to 90% efficiency**. Additionally, the **high-efficiency fans with EC motors** are used to minimize electricity consumption. The double-skin panels are **50 mm thick and insulated with mineral wool** to reduce heat loss to the environment. They also provide excellent acoustic insulation for the working fans.

The OPTIMAX-CROSS air handling units come fully pre-wired with a built-in, pre-configured control panel. This AHU series includes **8 sizes with air flows of 250 up to 10,000 m³/h**. They are designed for use in ventilation and air conditioning systems in public, residential, and industrial buildings.

FUNCTIONS OF AIR HANDLING UNIT

 <p>AIR FILTRATION</p> <ul style="list-style-type: none"> • panel filters • bag filters 	 <p>HEATING</p> <ul style="list-style-type: none"> • water heating coil • electric heater • DX heating coil (condenser)
 <p>HEAT RECOVERY</p> <ul style="list-style-type: none"> • counterflow heat exchanger up to 90% efficiency 	 <p>AIR TRANSFER</p> <ul style="list-style-type: none"> • direct-driven fans with EC motors
 <p>COOLING</p> <ul style="list-style-type: none"> • DX cooling coil • water cooling coil • DX cooling coil (evaporator) 	 <p>PLUG & PLAY</p> <ul style="list-style-type: none"> • built-in control panel and full pre-wiring

AIR FLOW RANGE

SIZE	05	07	10	25	40	60	80	90
V min (m ³ /h)	250	400	600	1100	2300	3900	5000	5500
V max (m ³ /h)	700	1000	1400	2700	4300	6300	8000	10000

DESIGN AND CONSTRUCTION

Casing design of OPTIMAX-CROSS air handling units is based on a framework of aluminium profiles. The casing is composed of 50 mm thick double-skin panels filled with mineral wool. Inspection panels are hinged, fitted with pull handles, and secured using wing thumb screws. The roof version is additionally equipped with a roof and optionally with air intake and air extract cowl. The base frame for each size is constructed using steel profiles.

The OPTIMAX-CROSS air handling units come fully pre-wired with a built-in, pre-configured control panel installed in a basic section. Additionally, air shut-off dampers are fitted inside the basic section to the intake and discharge.

CASING PARAMETERS

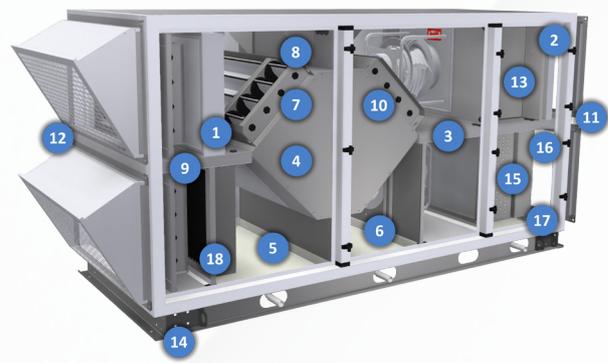
The parameters below are provided in accordance with EN 1886:

PARAMETER	mechanical strength	casing air leakage	filter bypass leakage	thermal transmittance	thermal bridging factor
CLASS	D1	L1	F9	T3	TB1

BASIC SECTION WITH HEATER



BASIC SECTION WITH REVERSIBLE DX COIL



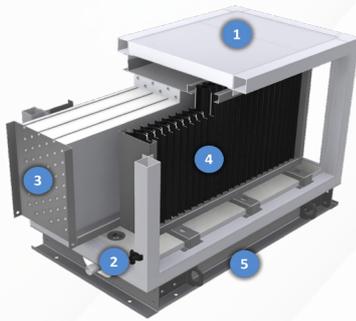
AHU Components

1. Super Fine Panel Filter 96 mm Depth (Supply Side)
2. Fine Panel Filter 48 mm Depth (Exhaust Side)
3. Supply and Exhaust Fans with EC Motors
4. Counterflow Heat Exchanger
5. Condensate Drip Tray (Exhaust Side)
6. Condensate Drip Tray (Supply Side)
7. Heat Exchanger Bypass
8. Heat Exchanger Bypass Damper
9. Supply and Exhaust Shut-Off Dampers
10. Air Recirculation Damper
11. Flexible Duct Connectors
12. Air Intake/Discharge Cowl
13. Electrical Control Panel
14. Base Frame
15. Water Heating Coil / Electric Heater / Reversible DX Coil
16. Droplet Eliminator for Reversible DX Coil
17. Condensate Drip Tray for Reversible DX Coil
18. Droplet Eliminator (Exhaust Side)

The versions of the basic section described above differ based on the type of coil used after the counterflow heat exchanger. The version of the basic section with a heater can be fitted with either a water heating coil or an electric heater. This configuration is standard and suitable for most ventilation system applications. The basic section with a reversible DX coil is equipped with a DX coil, which can function as an evaporator (for cooling) or as both an evaporator and a condenser (for cooling and heating). This version is ideal for ventilation systems integrated with a heat pump.

ADDITIONAL AHU SECTIONS

COOLING COIL SECTION



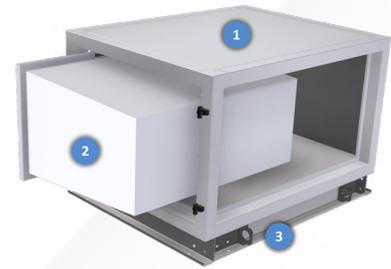
- 1. Casing
- 2. Condensate Drip Tray
- 3. Cooling Coil
- 4. Droplet Eliminator
- 5. Base Frame

SOUND ATTENUATOR SECTION



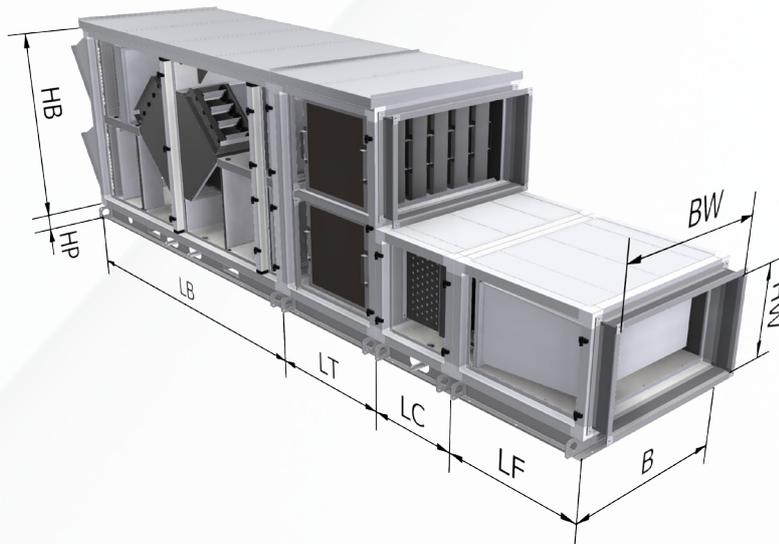
- 1. Casing
- 2. Removable Baffles
- 3. Base Frame

FINAL FILTER SECTION



- 1. Casing
- 2. Filter
- 3. Base Frame

OUTSIDE DIMENSIONS OF THE UNIT



DIMENSION SIZE	B	H	LB	LB*	BW	HW	LC	HP	LT	LF
05	600	800	1550	1850	500	300	550	100	800	800
07	700	800	1550	1850	600	300	550	100	800	800
10	800	1000	1700	2200	700	400	550	100	800	800
25	1000	1200	2100	2400	900	500	550	100	800	800
40	1200	1400	2250	2550	1100	600	550	100	800	800
60	1400	1600	2400	2650	1300	700	550	100	800	800
80	1700	1600	2450	2700	1600	700	550	100	800	800
90	1700	1900	2900	3150	1500	850	550	120	800	800

LB* applies to the basic section with reversible DX coil. All dimensions are in [mm]

DESIGNATION**OPTIMAX-CROSS - 10 - EC2 - P - ZV - K - M - NLW / CLW - TZ - FD****UNIT SIZE**

05, 07, 10, 25, 40, 60, 80, 90

TYPE AND NUMBER OF FANS

EC1 – one supply EC fan and one exhaust EC fan

EC2 – two supply EC fans and two exhaust EC fans

ACCESS SIDE

P – right-hand

L – left-hand

VERSION

W – indoor, 4 flexible connectors

ZK – outdoor, 4 flexible connectors

ZC – outdoor, 3 flexible connectors, + air intake cowl

ZW – outdoor, 3 flexible connectors + air extract cowl

ZV – outdoor, 2 flexible connectors + air extract cowl+ air intake cowl

HEAT EXCHANGER TYPE

K – heat recovery efficiency in the range from 80 to 90%

KE – heat recovery efficiency in the range from 80 to 90%, epoxy-coated version

C – heat recovery efficiency in the range from 73 to 80%

CE – heat recovery efficiency in the range from 73 to 80%, epoxy-coated version

M – mixing chamber

HEATING COIL

NLW – water coil

NE – electric

SF – condenser

COOLING COIL

CLW – water coil

CF – evaporator coil

SCF – reversible DX coil

SOUND ATTENUATORS

TZ – street side sound attenuator

TW – room side sound attenuator

FILTERS

FD – super fine filter

OPERATING CONDITIONS

The units must not be used under the following conditions:

- » The air being transferred may contain solid, pasty, fibre and aggressive substances causing corrosion or decomposition of zinc, copper, steel and aluminium.
- » Temperature and humidity values for external air in summer or winter fall outside the limits specified for Europe.
- » Operation is expected in maritime or tropical climates.
- » The air is excessively dusty, requiring frequent replacement of air filters within the unit.
- » Prolonged power supply interruptions occur, which may disrupt hot water production and compromise regulation and control systems. Consequently, even high-performance automatic safety mechanisms may fail to prevent heating coils from freezing, potentially leading to coil damage, property damage, and other associated losses.
- » The limit values of certain operational parameters are exceeded:
 - Minimum supply temperature of the heat transfer medium in the water heating coil: 20°C
 - Maximum supply temperature of the heat transfer medium in the water heating coil: 130°C
 - Maximum operating pressure of the water heating coil: 1.5 MPa
 - Minimum temperature of the handled air: -35°C
 - Maximum temperature of the handled air: +35°C
 - Minimum ambient temperature: -35°C
 - Maximum ambient temperature: +50°C

AVAILABLE VERSIONS

Standard version: Suitable for most ventilation system applications where there are no specific requirements for increased resistance to chemicals and their vapours in the ambient or transported air.

Hygienic version HS: Designed for environments requiring higher resistance to chemicals and their vapours in the ambient or transported air. This version is ideal for use in the food and pharmaceutical industries or healthcare facilities, except for class S1 rooms such as operating theatres.

Swimming Pool Version: Specifically tailored for environments such as swimming pool facilities and indoor pool areas, where chemical vapours from water treatment processes are present in the surrounding or transported air.

AHU COMPONENTS		AHU VERSIONS		
		STANDARD	HYGIENIC HS	SWIMMING POOL
CASING	framework	aluminium	aluminium	epoxy coated aluminium
	inner skin – walls	galvanised steel	aluzinc/magnelis	epoxy coated galvanised steel
	inner skin – ceiling	galvanised steel	aluzinc/magnelis	epoxy coated galvanised steel
	inner skin – floor	galvanised steel	acid-proof stainless steel	epoxy coated galvanised steel
	outer skin	aluzinc/magnelis	aluzinc/magnelis	aluzinc/magnelis
	internal structural elements	galvanised steel	acid-proof stainless steel	epoxy coated galvanised steel / acid-proof stainless steel
	insulation	mineral wool	mineral wool	mineral wool
	base-frame	galvanised steel	galvanised steel	galvanised steel
AIR DAMPERS	frame	galvanised steel	acid-proof stainless steel	epoxy coated galvanised steel
	blades	aluminium	aluminium	epoxy coated aluminium
COILS	frame	galvanised steel	acid-proof stainless steel	epoxy coated galvanised steel
	fins	aluminium / epoxy coated aluminium	aluminium / epoxy coated aluminium	epoxy coated aluminium
	tubes	copper	copper	copper
CONDENSATE DRIP TRAY	condensate drip tray	prepainted galvanised steel	prepainted galvanised steel	epoxy coated galvanised steel
	drain connection	plastic	plastic	plastic
BAFFLES OF SOUND ATTENUATORS	frame	galvanised steel	acid-proof stainless steel	epoxy coated galvanised steel
	infill	mineral wool covered with fabric	mineral wool covered with fabric	mineral wool covered with fabric
FANS	impeller	plastic	plastic	plastic
	motor	prepainted steel	prepainted steel	prepainted steel
	frame	galvanised steel	epoxy coated galvanised steel	epoxy coated galvanised steel
DROPLET ELIMINATOR	frame	galvanised steel	acid-proof stainless steel	epoxy coated galvanised steel
	blades	plastic	plastic	plastic
FLEXIBLE CONNECTORS	frame	galvanised steel	galvanised steel	epoxy coated galvanised steel
	flexible strip	galvanised steel	galvanised steel	acid-proof stainless steel
CORROSION CLASS	inner skin / outer skin	C3/C4	C3/C4	C3/C3

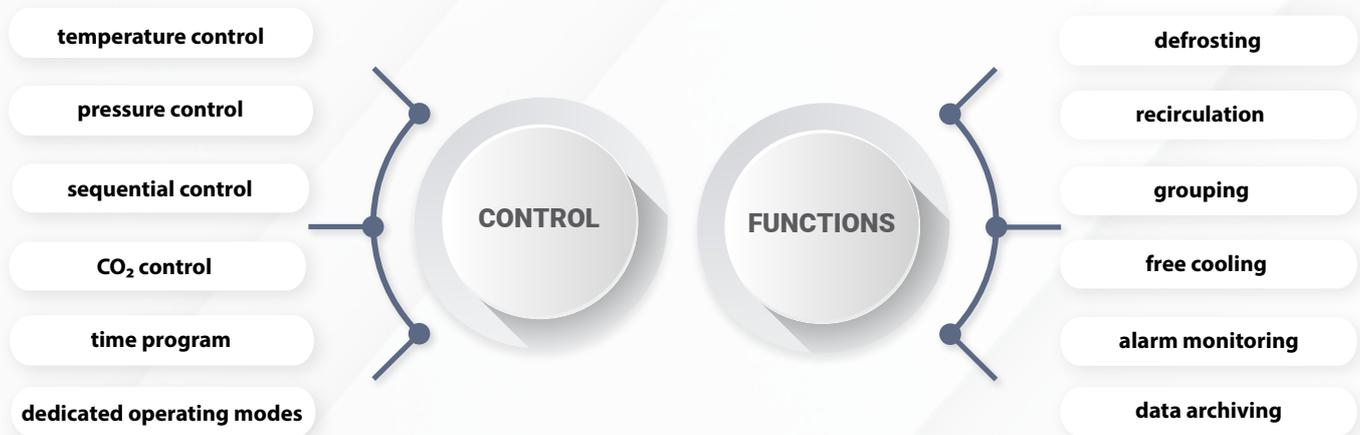
CONTROL SYSTEMS

Our air handling units feature advanced control systems, meticulously designed to accelerate and simplify the startup process. The factory-configured control system including built-in electrical control panel and pre-wiring ensures optimal comfort at minimal operating costs while providing safety and monitoring to protect control devices from damage.

The electrical control panel, pre-installed in the basic section of the unit, features an integrated controller and a remote touchscreen display, offering a plug-and-play electrical connection. It comes equipped with all necessary automation components, as well as terminals for connecting the supply air temperature sensor, heating/cooling valve actuators, pumps, and other components. etc.



A key benefit of the integrated control system is the elimination of additional wiring between automation components and the electrical control panel.

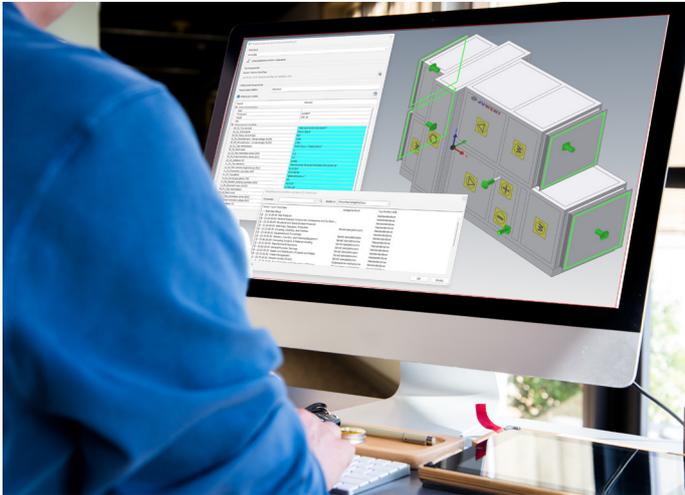


The built-in web server and multiple communication protocols enable remote control and monitoring via a web interface, offering a more comprehensive and user-friendly overview of operating parameters compared to a standard controller display. This solution also facilitates seamless integration with other HVAC units and building automation systems, ensuring unified management and optimized performance across all connected devices.



JUWENT DESIGN AIDS AND 3D BIM MODELS

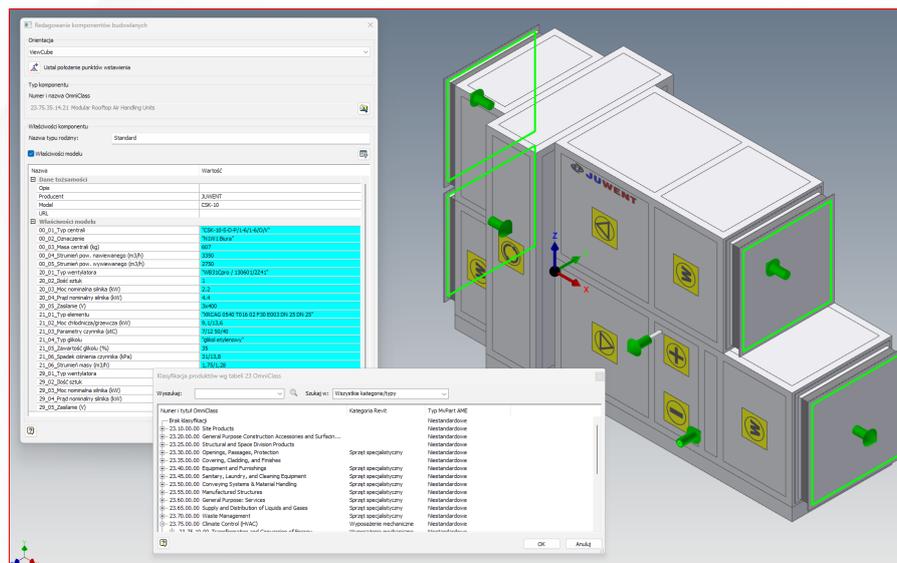
Effective design depends on cutting-edge tools, which is why we are proud to introduce our innovative design aids and 3D **BIM** models, transforming the way professionals approach HVAC system design. All our air handling units are now available as 3D **BIM** models, specifically developed to meet the diverse needs of architects, engineers, MEP designers, and HVAC specialists. These tools simplify and streamline the design process, ensuring seamless integration into modern building projects. We are committed to providing our clients with comprehensive solutions that align with the latest industry standards, supporting efficient and precise project execution.



What is **BIM**? Building Information Modeling (BIM) is a digital process for creating, managing, and sharing building and infrastructure data using intelligent 3D models. These models incorporate geometry, materials, technical specifications, schedules, cost estimates, and operational details, making them invaluable throughout a building's entire lifecycle — from design and construction to operation and maintenance. **BIM** enhances project management by minimizing errors, optimizing costs, and improving collaboration between all stakeholders, ensuring better communication and decision-making.

RFA files are a key component of Autodesk Revit®, one of the most widely used **BIM** platforms. These files define objects, such as air handling units, with detailed geometry, parameters, graphical properties, and essential technical information for seamless integration within a BIM model.

The Autodesk Revit® provides design offices with an efficient way to model and coordinate building installations in a unified environment, facilitating accuracy and consistency across all project stages. One of the latest BIM innovations is a newly available BIM model generator, providing a unique solution for design processes. This advanced tool provides unmatched flexibility in generating 3D models of JUWENT air handling units while allowing for customized configurations and defining parameters in accordance with specific project requirements.

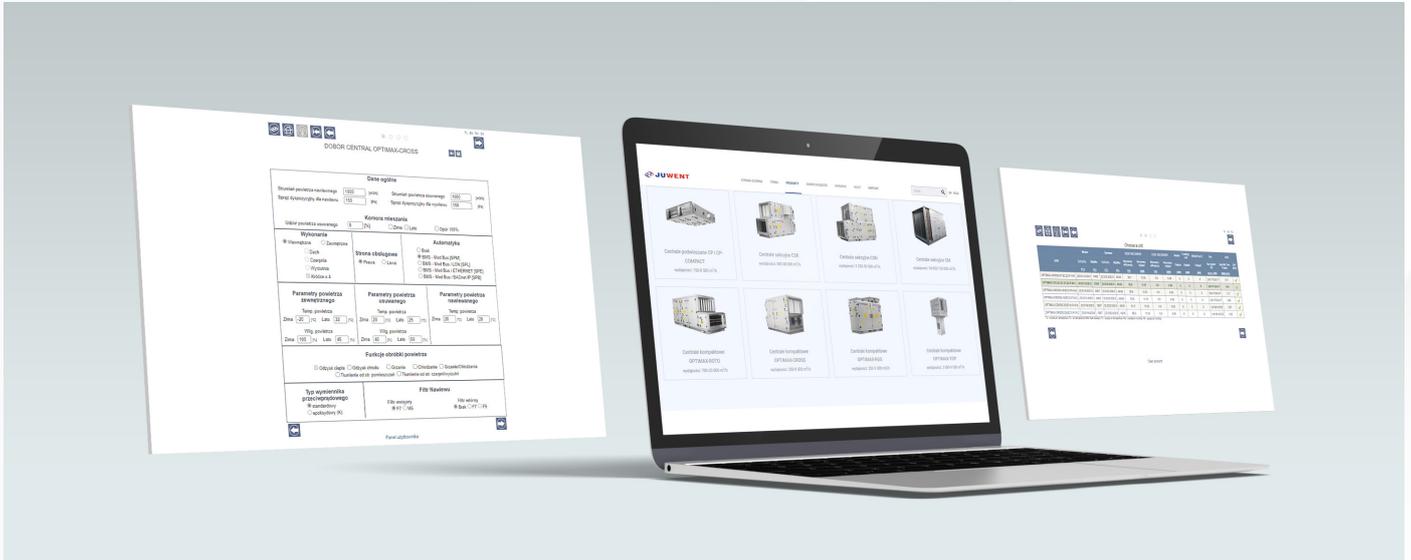


By integrating seamlessly with the **Revit**® platform, the generator not only accelerates the design process but also ensures data consistency and compatibility throughout the entire project. With these advanced **BIM** solutions, JUWENT empowers design professionals with greater precision, efficiency, and flexibility, ensuring seamless integration of air handling units into modern building projects.

PRODUCT SELECTION TOOL

Recognizing the growing importance of mobile devices with internet access in our daily lives, we have designed and implemented a versatile product selection tool.

This web-based solution works seamlessly on any device with an internet connection and a web browser, allowing users to select our products anytime, anywhere, regardless of location or device.



The online program ensures correct product selection, presenting all essential parameters and generating a detailed summary report for easy review and printing. With no installation required, it provides a professional, efficient, and time-saving selection process—accessible directly from our website at www.juvent.com.pl.