

accurate

Close control air conditioning



Marketing features

The new high-efficiency air conditioner ACCURATE adds the finishing touch to the already prominent presence on the world industrial air-conditioning scenario. It has been designed to satisfy the conditioning requirements of technological rooms, offering features that make it suitable for all the various applications in daily use and from which we demand utmost reliability.

CENTRALLY CONTROLLED SYSTEMS

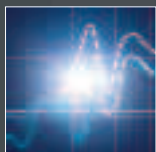
- Banks
- Hotel
- Airports
- Retail and distribution industry
- Museums and Libraries
- Medium/large companies

KEY CUSTOMERS

- Railways and motorways
- Internet providers
- Armed Forces
- Public sector
- Radio and TV companies
- TELECOM operators

FINAL APPLICATIONS

- Data dispatching nodes
- Call Centres
- Data collecting centres
- Internet centres



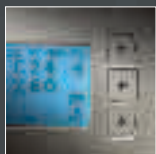
Global efficiency



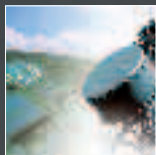
Outstanding performances



Total versatility



Intelligent control



Total compatibility



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Global efficiency



Close air-conditioning means not only compliance with the severest environmental parameters but also with the specific requirements of the site, such as EFFICIENCY, FLEXIBILITY, OPERATING RELIABILITY AND RESPECT FOR THE ENVIRONMENT, which today's products must satisfy. ACCURATE has been created to meet all these requirements, exploiting the renowned capacity to supply total quality air-conditioning systems

EFFICIENCY MOST OF ALL

Nowadays efficiency is no longer considered as just energy saving in respect of the single unit, but takes into account both the PERFORMANCE of the whole system and its COMPLETE RELIABILITY and MODULARITY over the years.

In offering ACCURATE as a solution to technological cooling problems, we have been concentrated on the use of known quality parts and integration with BMS (building management systems).

Standard solutions

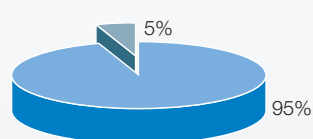
- SCROLL compressors
- Thermostat valve with internal pressure equalisation
- Electronic thermostat (optional)
- Standard centrifugal fans
- High efficiency EC INVERTER ventilation (optional)
- Standard condensation control (DX versions)
- Electric reheat or with hot water
- Immersed electrode humidifying system
- Intelligent dehumidifying system with constant airflow
- Semi-graphic control display
- Connection to traditional BMS

COOLING? SENSIBLE!

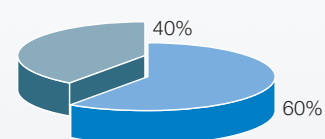
As is known, electronic equipment develops solely SENSIBLE heat loads and therefore needs dedicated air conditioning to deal with this.

That is why ACCURATE has been made; to ensure maximum SENSIBLE cooling capacity to the detriment of the LATENT capacity, which would be a sheer waste of energy in these applications.

This is of basic importance for transforming all the supplied energy into a real room temperature control. The result is a high SHR, minimum of 0.9 and a maximum of 1, in order to have the utmost SENSIBLE and not latent type of cooling.



SHR for TECHNOLOGICAL application



SHR for COMFORT application

1 MAIN BOARD

2 MAIN SWITCH

3 HEATERS

4 INVERTER EC FANS

5 COMPRESSOR

6 DRIER FILTER

7 LIQUID LINE VALVE

8 SIGHT GLASS

9 THERMOSTATIC VALVE

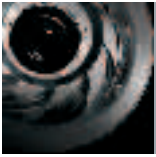
10 HUMIDIFIER

11 DEHUMIDIFICATION VALVE

12 HOT WATER VALVE

13 TEMP. & HUMIDITY SENSOR

14 USER TERMINAL



Outstanding performances



EC INVERTER FANS

This new technology with electronically commutated motor increases the efficiency of the ACCURATE system, optimising running costs through state-of-the-art electronics, which are used to change parameters such as:

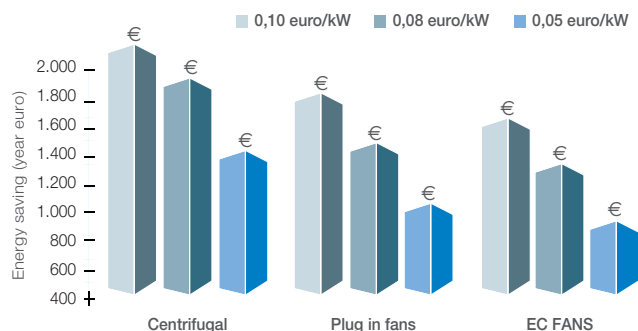
- flow rate
- cooling capacity
- external pressure
- noise level

thereby guaranteeing best operation of the system at any moment, and in particular:

- 1 Continuous adjustment of the quantity of air
- 2 Intelligent and low-noise system of air conveyance throughout the whole appliance
- 3 Up to 45% saving in the chilled water units

EC INVERTER FANS TECHNOLOGY

The most advanced solution for energy saving



Energy saving by EC INVERTER Fans Vs. standard traditional fans

THE SPACE IS ALL FOR YOU

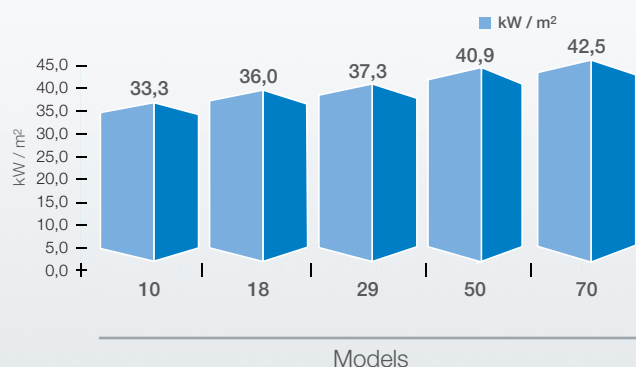
It is a known fact that the set loads (W/m²) in technological applications are continuously increasing. This is mainly due to the increase in data traffic, giving rise to new equipment with an increasingly greater capacity of transmission, which in turn develops a higher heat load to be dispersed.

This requires ever better performance from the air-conditioning system that should, however, take up as little space as possible, leaving it for the transmission equipment.

ACCURATE is the air-conditioner with the best SUPPLIED POWER / FOOT PRINT ratio in the market. Because space means value.

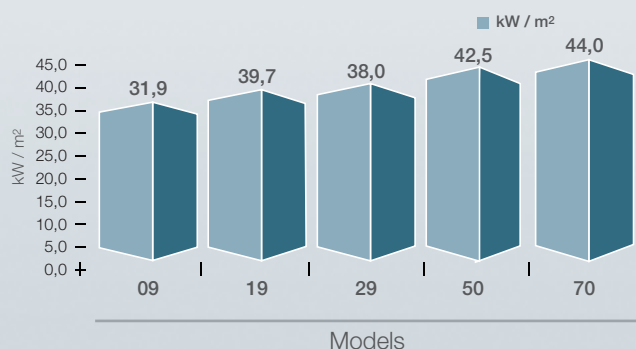
DIRECT EXPANSION RANGE

Cooling Capacity (kW)



CHILLED WATER RANGE

Cooling Capacity (kW)



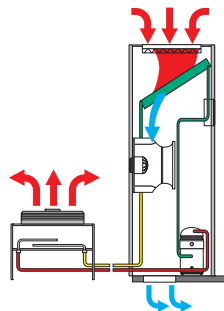


Total versatility

All-round flexibility seen as a service offered for any type of system.

ACCURATE comes with capacities from 7 to 100 kW in the direct expansion version with air cooling (AXO-AXU) and water cooling (AWO-AWU), from 7 to 221 kW in the

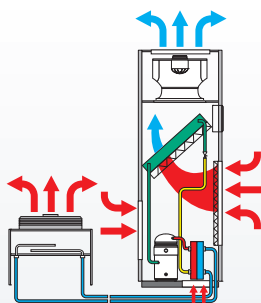
TYPES OF COOLING



AXO/AXU DIRECT EXPANSION AIR COOLED

Refrigerant for heat transfer is used in these direct expansion units. The air in the room is therefore treated in the evaporating coil containing the refrigerant.

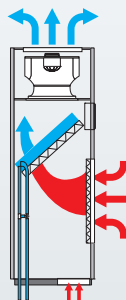
The condensation heat is dispersed to a fresh air condenser that comes in the standard supply with speed control to optimise the condensation pressure even in adverse temperature conditions.



AWO/AWU DIRECT EXPANSION WATER COOLED

Refrigerant for heat transfer is used in these direct expansion units. The air in the room is therefore treated in the evaporating coil containing the refrigerant. The condensation heat is dispersed in an internal plate-type exchanger connected in turn to a water circuit. The water of condensation may come from a well, local water mains or closed circuits such as cooling towers or dry coolers.

NB: for negative External T values antifreeze fluids must be used to protect the system



ACO/ACU CHILLED WATER

Water coming generally from a chiller is used in these units to transfer the heat.

The flow of liquid through the unit water coil is controlled through an internal 2 or 3-way valve.

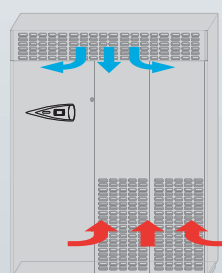
NB: for negative External T values antifreeze fluids must be used to protect the system

AIRFLOW CONFIGURATION

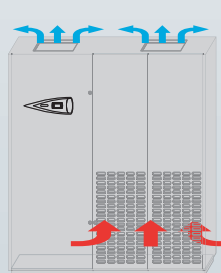
OVER

The versions called OVER with air outflow from the top generally have the air intake at the front, rear or bottom of the unit, according to customer choice, and the outflow from the top is along ducts behind suspended ceilings or front delivery plenums.

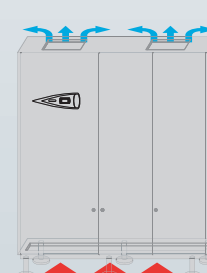
OVER unit with front intake and delivery plenum



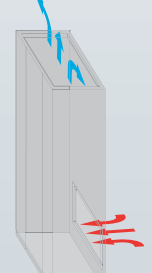
OVER unit with front intake and top delivery



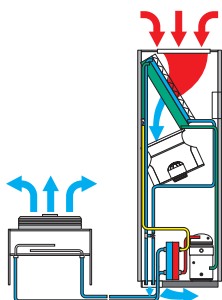
OVER unit with underfloor intake and top delivery



OVER unit with rear intake and top delivery



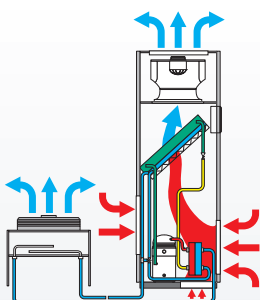
chilled water version (ACO-ACU) to be connected to chillers and from 20 to 145 kW in version dual fluid (ADO-ADU / ATO-ATU), free cooling (AFO-AFU) and dual coil (ABO-ABU).



ADO/ADU & ATO/ATU DUAL FLUID

These units are per standard provided with a dual cooling systems who never work simultaneously. A PRIMARY circuit, made by a chilled water circuit (CW) generally connected to an external chiller, plus a SECONDARY circuit in direct expansion (DX) who is considered as BACK-UP. Such units are particularly indicated anywhere RELIABILITY, SAFETY and REDUNDANCY are required.

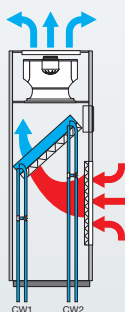
Units provided per standard with EC inverter fans who represents today the best solution for energy saving.



AFO-AFU FREE COOLING

These units are per standard provided with a dual cooling systems who are often working simultaneously along the year. A PRIMARY direct expansion circuit (DX) plus a SECONDARY chilled water circuit (CW) generally connected to an external dry cooler who is considered as "support" to the primary one. Such units are particularly indicated anywhere EFFICIENCY & ENERGY SAVING are required.

Units provided per standard with EC inverter fans who represents today the best solution for energy saving.



ABO-ABU DUAL COIL

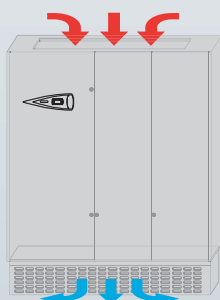
These units are per standard provided with a double chilled water circuit inside, who never work simultaneously. Such circuits are connected to independent water circuit in order to be one in BACK-UP to the other. Such units are particularly indicated anywhere RELIABILITY, SAFETY and REDUNDANCY are required.

Units provided per standard with EC inverter fans who represents today the best solution for energy saving.

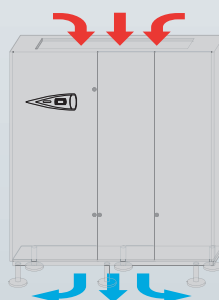
UNDER

The versions called UNDER with air outflow under the floor have the air intake on the top of the unit taking air directly from the environment or through intake ducts or plenums.

UNDER unit with top intake
and front delivery plenum



OVER unit with top intake
and underfloor delivery





Intelligent control

Intelligent heart and soul

ACCURATE has an intelligent electronic heart that allows it to keep a constant control over all the operating and environmental parameters of the site.

The ACCURATE electronic unit is open and configurable to specific user requirements both in site and particularly in the factory with dedicated customisation.



ELECTRONICS

STANDARD FUNCTIONS

- Semi-graphic display 132 x 64 pixel
- Programmable software
- ICONS Graphic Display
- Record storage of 100 alarms
- General alarm
- Automatic reset after blackout
- Compressor FIFO management
- Integral LAN system
- Standby management
- Automatic rotation
- Serious alarms
- Operating contemporaneousness

MAIN OPTIONS

- Serial cards for BMS interconnection
- Clock card
- Fire-smoke alarms
- Flooding alarm
- Electronic thermostat control
- Flow rate modulation
- Emergency function
- Free Cooling, Dual Fluid and Dual Coil management



OPTIONS AND MAIN ACCESSORIES

STANDARD

Structure

- Multi-speed centrifugal fans
- High efficiency Copeland Scroll compressors
- High and low side pressure switches
- Filters EU2 - EU4
- R-407C - R-410A Refrigerant
- 3-way valves (CW)

Electronic unit

- Semi-graphic display 132 x 64pixel
- LAN, integral Local Area Network
- Buffer battery
- Record 100 alarms

OPTIONALS

Structure

- EC INVERTER RADIAL-BLADE fans
- Immersed electrode humidifiers
- Electric reheat and hot water
- Intelligent dehumidifying with constant air flow
- FILTER F5-F6-F7-F8 (built into the structure)
- Air distribution plenum with grilles
- Soundproofed plenum
- CLASS 0 insulating panels
- Electronic thermostat
- Condensing control

Electronic unit

- Serial cards for BMS interfacing
- DC INVERTER FAN control software
- Driver for electronic thermostat control



Total compatibility



ACCURATE IS TOTAL COMMUNICATION

In a policy of “total communication” ACCURATE offers various solutions for interconnection to the most modern BMSs, aimed at satisfying varying needs.

GLOBAL SUPERVISION

firmware protocol for total management of all the air-conditioning parameters, including:

- Detection and transmission of alarms from remote
- Change of data from remote
- Recording of data and alarms
- Sending of SMS via GSM modem

all through dedicated serial cards and supervision systems both in LOCAL and REMOTE mode.

ADVANCED SUPERVISION

solutions of compatibility for all the most common BMSs available on the market today, such as:

- MODBUS
- METASYS
- LON
- TREND
- LONWORKS
- SNMP/TCPIP

to satisfy every single customer requirement and to offer the possibility of communicating with the global network.



RESPECT FOR THE ENVIROMENT

ACCURATE is totally in line with the known policy of full respect for the environment in which we live and for human health and safety. The use of recyclable materials and eco-compatible refrigerants (R407C - R410A) to current standards and legislation, make ACCURATE a state-of-the-art product in this sense.

NOISELESS COLD

Modern telephone applications in residential areas must satisfy increasingly severer requirements in terms of noise pollution. ACCURATE then propose a large range to satisfy such requests, often customized base on customer requests and site conditions.

Main systems are:

- Centrifugal fans (STD)
- EC INVERTER FANS (OPT) with air flow modulation capability
- Soundproofed compressors (OPT)
- Panelling clad in soundproofing material (STD)

MAINTENANCE

The design of the new ACCURATE models was based on the need to simplify routine and extraordinary maintenance work carried out during the lifetime of the product.

The refrigerant circuit area is completely separate from the fan area, thereby allowing routine maintenance to be carried out also with the unit in operation.

All servicing operations, even the most critical ones, can be accomplished by a full front access.

That is why all the front panels are openable and can even be removed thanks to simple hinges.

Technical features



TECHNICAL FEATURES

- AXO / AXU
- AWO / AWU
- ACO / ACU
- ADO / ADU
- ATO / ATU
- AFO / AFU
- ABO / ABU
- BRC / BRE / BDC

TECHNICAL FEATURES

AXO / AXU 07÷90



AXO / AXU

Close control air conditioner

**Type: DIRECT EXPANSION, AIR COOLED,
upflow or downflow version**



Evolution

Available Versions

- STD** Cooling only without condensation control device
- MOD** Cooling only with condensation control device through external unit fans regulation
- LT** Low temperatures version (-45°C) with condensation control device through external unit speed regulation.

UNIT DESCRIPTION

Ductable close control air-conditioners with capacities ranging from 7 to 90 kW for vertical installation and cooling only, with optional heating by means of heating element or hot water, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for air-conditioning technological, server and CED rooms and all technological applications in general.

Units fitted with centrifugal fans with airflow from the top & from bottom.

External air condenser.

Power supply 400/3N/50 (all models).

STANDARD UNIT COMPOSITION

- Unit for installing inside or outside the room to be air-conditioned.
- Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material.
- The reliability and functionality of the compressor and all the other components are guaranteed by partners who are world leaders in their sector.
- Double-inlet centrifugal fan units, directly coupled and suspended on vibration-isolation mountings.
The fans are of the forward-bladed type for maximum efficiency and low noise.
- Condensation control for maximum low noise (standard).
- Standard G4 filtering section, F5-F8 optional, under CEN-EN 779 rule with the separation degree 90,1% ASHRAE.
The filter is autoextinguishing type.
- The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Electrical box under IEC 204-1/EN60204-1 rules.
- Refrigerant circuit consisting in the standard version of a thermostat with external valve for internal pressure relief, solenoid valve, high/low pressure safety pressure switch, liquid indicator light and dehydrating filter.

Model			07	10	15	18	20	26	29	39	30	40	50	55	60	70	80	90
Frames			F1		F2		F3			F4				F5			F6	
Power supply	V/Ph/Hz		400/3N/50															
Refrigerant			R410A															
COOLING PERFORMANCES																		
TOTAL Cooling Capacity	(1)	kW	7,2	9,6	16,3	19,1	23,3	28,9	31,8	41	33,4	46,2	52,3	60,3	68,1	73,2	87,8	95,4
SENSIBLE Cooling Capacity	(1)	kW	7,2	9,2	16,3	18,2	23,3	28,8	29,9	41	33,4	46,2	49,9	60,3	68,1	70,1	87,8	91,8
SHR	(1)		1,00	0,96	1,00	0,95	1,00	1,00	0,94	1,00	1,00	1,00	0,95	1,00	1,00	0,96	1,00	0,96
COMPRESSORS																		
Quantity			1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Power abs.		kW	1,69	2,20	3,64	4,31	4,93	6,00	6,93	7,86	7,26	9,85	12,02	12,02	13,86	15,69	17,70	21,34
Circuits			1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Refrigerant			R407C															
COOLING PERFORMANCES																		
TOTAL Cooling Capacity	(2)	kW	7,9	10,1	16,1	19,3	23,7	29,0	31,7	42,5	34,0	46,9	53,4	62,3	69,7	74,2	86,5	96,7
SENSIBLE Cooling Capacity	(2)	kW	7,9	9,4	16,1	18,2	23,5	28,8	29,8	42,5	34,0	46,3	50,3	62,3	68,7	70,5	86,5	92,3
SHR	(2)		1,00	0,93	1,00	0,94	0,99	0,99	0,94	1,00	1,00	0,99	0,94	1,00	0,99	0,95	1,00	0,95
COMPRESSORS																		
Quantity			1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Power abs.		kW	1,84	2,41	3,89	4,46	5,13	6,39	7,32	8,30	7,36	9,68	12,50	12,54	14,67	16,57	18,83	22,49
Circuits			1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
VENTILATION																		
Air flow	cbm/h		2500	2500	4900	4900	6500	8000	8000	13500	10500	13500	13500	19000	19000	19000	25000	25000
N° Centrifugal fans			1	1	2	2	1	1	1	2	2	2	2	2	2	2	-	-
N° EC Inverter fans			1	1	2	2	1	1	1	2	2	2	2	3	3	3	3	3
Centrifugal fans power abs.		kW	0,49	0,49	1,00	1,00	1,66	2,02	2,02	3,61	2,89	3,61	3,61	6,55	6,55	6,55	-	-
EC Inverter fans power abs		kW	0,27	0,27	0,53	0,53	0,89	1,69	1,69	3,51	2,09	3,51	3,51	5,11	5,11	5,11	6,1	6,1
Sound pressure level	(5)	dB(A)	50	50	53	53	56	60	60	64	59	64	64	67	67	67	67	67
HUMIDIFIER																		
Steam production	kg/h		3	3	5	5	5	5	5	5	5	5	5	8	8	8	8	8
Power abs.		kW	2,25	2,25	3,75	3,75	3,75	3,75	3,75	3,75	3,75	3,75	3,75	6	6	6	6	6
HEATERS																		
Steps			3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Power abs.		kW	4	4	8	8	9	9	9	15	15	15	15	18	18	18	18	18
DIMENSIONS																		
W	mm		600		1000		1000			1550				2100			2650	
D	mm		500		500		790			790				790			790	
H	mm		1980		1980		1980			1980				1980			1980	

NOTE

(1) 24°C-50%, 45°C - ESP 20Pa

(2) 24°C-50%, 48°C (dew point) - ESP 20Pa

(5) Measured at 1,5 m height and 2 m front free field

Coupling

BRE - R410A																	
Indoor unit AX	07	10	15	18	20	26	29	39	30	40	50	55	60	70	80	90	
Remote condenser BRE	014m	022m	027m	044m	051m	054b	065b	076b	0100b	116b							
N°	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

BRC - R407C																	
Indoor unit AX	07	10	15	18	20	26	29	39	30	40	50	55	60	70	80	90	
Remote condenser BRC	014m	025m	032m	052m	051b	077b	088b	093b	102b	120b							
N°	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1



ACCESSORIES

- Remote user terminal
- Electric heating coil
- Water heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum for air outlet
- Interface electronic board

TECHNICAL FEATURES

AWO / AWU 07÷90



AWO / AWU

Close control air conditioner

**Type: DIRECT EXPANSION, WATER COOLED,
upflow or downflow version**



Evolution



Available Versions

- STD** Cooling only without condensation control device
- MOD_A** Cooling only with condensation control device with speed regulation for external unit. **For closed circuit installation**
- MOD_B** Cooling only with condensation control device with pressostatic valve. **For open circuit installation**

UNIT DESCRIPTION

Ductable close control air-conditioners with capacities ranging from 7 to 90 kW for vertical installation and cooling only, with optional heating by means of heating element or hot water, optional humidifier and dehumidifier for precise temperature and humidity control.

Particularly suitable for air-conditioning technological, server and CED rooms and all technological applications in general. Units fitted with centrifugal fans with airflow from the top & from bottom and built-in water-cooled condenser.

External dry cooler.

Power supply 400/3N/50 (all models).

STANDARD UNIT COMPOSITION

- Unit for installing inside or outside the room to be air-conditioned.
- Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material.
- The reliability and functionality of the compressor and all the other components are guaranteed by partners who are world leaders in their sector.
- Double-inlet centrifugal fan units, directly coupled and suspended on vibration-isolation mountings. The fans are of the forward-bladed type for maximum efficiency and low noise.
- Condensation control for maximum low noise (standard).
- Standard G4 filtering section, F5-F8 optional, under CEN-EN 779 rule with the separation degree 90,1% ASHRAE. The filter is autoextinguishing type.
- The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Electrical box under IEC 204-1/EN60204-1 rules.
- Refrigerant circuit consisting in the standard version of a thermostat with external valve for internal pressure relief, solenoid valve, high/low pressure safety pressure switch, liquid indicator light and dehydrating filter.

Model			07	10	15	18	20	26	29	39	30	40	50	55	60	70	80	90
Frames			F1		F2		F3			F4				F5			F6	
Power supply	V/Ph/Hz		400/3N/50															
Refrigerant			R410A															
COOLING PERFORMANCES																		
TOTAL Cooling Capacity	(1)	kW	7,5	9,8	16,9	19,8	24,5	29,2	33,0	43,0	34,8	48,5	54,5	62,6	70,8	77,4	90,6	99,3
SENSIBLE Cooling Capacity	(1)	kW	7,5	9,3	16,9	18,3	23,8	28,3	29,9	43,0	34,8	48,4	49,9	62,6	69,1	71,1	90,0	92,8
SHR	(1)		1,00	0,95	1,00	0,92	0,97	0,97	0,91	1,00	1,00	1,00	0,92	1,00	0,98	0,92	0,99	0,93
COMPRESSORS																		
Quantity			1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Power abs.	(1)	kW	1,47	1,91	3,26	3,93	4,28	5,38	6,24	6,91	6,42	8,53	10,76	10,77	12,38	13,54	15,90	19,15
Circuits			1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
PLATE CONDENSER																		
Quantity			1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1
Water Flow	(1)	l/h	1520	2050	3390	4020	4820	5930	6730	8360	3460x2	4780x2	5715x2	6155x2	6975x2	7705x2	17850	20160
Total pressure drops	(1)	kPa	8	14	5	7	23	30	27	30	24	21	30	33	30	26	31	39
Refrigerant			R407C															
COOLING PERFORMANCES																		
TOTAL Cooling Capacity	(1)	kW	7,9	10,3	16,3	19,5	23,9	29,4	32,5	44,6	34,3	47,7	54,8	65,0	72,2	77,2	90,1	100,5
SENSIBLE Cooling Capacity	(1)	kW	7,9	9,4	16,3	18,2	23,5	28,5	30,3	44,6	34,3	47,6	50,9	65,0	69,7	71,6	89,8	93,8
SHR	(1)		1,00	0,91	1,00	0,93	0,98	0,97	0,93	1,00	1,00	1,00	0,93	1,00	0,97	0,93	1,00	0,93
COMPRESSORS																		
Quantity			1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Power abs.	(1)	kW	1,62	1,83	3,21	3,77	4,28	5,64	6,43	7,24	6,49	8,33	11,20	11,28	13,09	14,26	16,87	20,21
Circuits			1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
PLATE CONDENSER																		
Quantity			1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1
Water Flow	(1)	l/h	1620	2190	3350	3980	4720	6090	6880	8680	3420x2	4690x2	5855x2	6385x2	7145x2	7930x2	18840	20520
Total pressure drops	(1)	kPa	10	17	6	7	22	34	31	35	24	20	32	35	32	31	31	40
VENTILATION																		
Air flow	cbm/h		2500	2500	4900	4900	6500	8000	8000	13500	10500	13500	13500	19000	19000	19000	25000	25000
N° Centrifugal fans			1	1	2	2	1	1	1	2	2	2	2	2	2	2	-	-
N° EC Inverter fans			1	1	2	2	1	1	1	2	2	2	2	3	3	3	3	3
Centrifugal fans power abs.		kW	0,49	0,49	1,00	1,00	1,66	2,02	2,02	3,61	2,89	3,61	3,61	6,55	6,55	6,55	-	-
EC Inverter fans power abs		kW	0,27	0,27	0,53	0,53	0,89	1,69	1,69	3,51	2,09	3,51	3,51	5,11	5,11	5,11	6,1	6,1
Sound pressure level	(5)	dB(A)	50	50	53	53	56	60	60	64	59	64	64	67	67	67	67	67
HUMIDIFIER																		
Steam production		kg/h	3	3	5	5	5	5	5	5	5	5	5	8	8	8	8	8
Power abs.		kW	2,25	2,25	3,75	3,75	3,75	3,75	3,75	3,75	3,75	3,75	3,75	6	6	6	6	6
HEATERS																		
Steps			3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Power abs.		kW	4	4	8	8	9	9	9	15	15	15	15	18	18	18	18	18
DIMENSIONS																		
W	mm		600		1000		1000			1550				2100			2650	
D	mm		500		500		790			790				790			790	
H	mm		1980		1980		1980			1980				1980			1980	

NOTE

(1) Air 24°C-50%, water 30°- 35°C - ESP 20Pa

(5) Measured at 1,5 m height and 2 m front free field



Coupling

BDC		07	10	15	18	20	26	29	39	30	40	50	55	60	70	80	90
Indoor unit AW																	
Dry cooler BDC	013m			030m			039m	052m	039m	052m	062m	078m	92m	103m	123m		
N°		1		1			1	1	1	1	1	1	1	1	1	1	1

ACCESSORIES

- Remote user terminal
- Electric heating coil
- Water heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum for air outlet
- Interface electronic board

TECHNICAL FEATURES

ACO / ACU 07÷221



ACO / ACU

Close control air conditioner

Type: CHILLED WATER,
upflow or downflow version



Evolution

Available Versions

STD Cooling only,
with 3 way valve

UNIT DESCRIPTION

Ductable close control air-conditioners with capacities ranging from 7 to 221 kW for vertical installation and cooling only, with optional heating by means of heating element or hot water, optional humidifier and dehumidifier for precise temperature and humidity control.

Particularly suitable for air-conditioning technological, server and CED rooms and all technological applications in general.

Units fitted with centrifugal fans with airflow from the top & from bottom.

Unit has to be connected to an external chiller.

STANDARD UNIT COMPOSITION

- Unit for installing inside or outside the room to be air-conditioned.
- Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material.
- The reliability of all the components is guaranteed by partners who are world leaders in their sector.
- Double-inlet centrifugal fan units, directly coupled and suspended on vibration-isolation mountings. The fans are of the forward-bladed type for maximum efficiency and low noise.
- Standard G4 filtering section, F5-F8 optional, under CEN-EN 779 rule with the separation degree 90,1% ASHRAE. The filter is autoextinguishing type.
- The microprocessor controls all the main functions of the air conditioners; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Electrical box under IEC 204-1/EN60204-1 rules.
- Capillary Pre and After sales service.

Model		7	9	14	19	25	30	34	41	50	60	70	80	90	131	151	171	191	221
Frames		F1		F2		F3		F4			F5		F6			F7		F8	
Power supply	V/Ph/Hz	230/1/50		400/3N/50															
COOLING PERFORMANCES																			
TOTAL Cooling Capacity	(1) kW	8,5	10,1	15,7	20,4	28,4	33,8	37,4	48,5	57,7	69,0	82,6	88,7	104,3	131,1	154,9	178,2	197,2	224,7
SENSIBLE Cooling Capacity	(1) kW	8,5	9,5	15,7	19,0	28,4	30,9	37,4	48,5	52,8	69,0	73,7	88,7	97,0	106,1	126,6	136,4	156,0	168,0
SHR	(1)	1,00	0,94	1,00	0,93	1,00	0,91	1,00	1,00	0,92	1,00	0,89	1,00	0,93	0,81	0,82	0,77	0,79	0,75
WATER SIDE																			
Water Flow	(1) l/h	1390	1660	2570	3330	4640	5520	6110	7930	9430	11280	13500	14500	17050	21650	25530	29290	32350	36610
Total pressure drops	(1) kPa	33	36	39	60	57	65	46	69	71	71	73	69	74	122	88	105	147	135
VENTILATION																			
Air flow	kPa	2500	2500	4900	4900	8000	8000	13500	13500	13500	19000	19000	25000	25000	25000	30000	30000	36000	36000
N° Centrifugal fans		1	1	2	2	1	1	2	2	2	2	2	3	3	3	-	-	-	-
N° EC Inverter fans		1	1	2	2	1	1	2	2	2	3	3	3	3	3	3	3	3	3
Centrifugal fans power abs.	kW	0,49	0,49	1,00	1,00	2,02	2,02	3,61	3,61	3,61	6,55	6,55	9,42	9,42	9,42	-	-	-	-
EC Inverter fans power abs	kW	0,27	0,27	0,53	0,53	1,69	1,69	3,51	3,51	3,51	5,11	5,11	6,1	6,1	6,1	4,90	4,90	6,70	6,70
Sound pressure level	(5) dB(A)	50	50	53	53	60	60	64	64	64	67	67	67	67	67	69	69	70	70
HUMIDIFIER																			
Steam production	kg/h	3	3	5	5	5	5	5	5	5	8	8	8	8	8	10	10	15	15
Power abs.	kW	2,25	2,25	3,75	3,75	3,75	3,75	3,75	3,75	3,75	6	6	6	6	6	7,5	7,5	11,25	11,25
HEATERS																			
Steps		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Power abs.	kW	4	4	8	8	9	9	15	15	15	18	18	18	18	18	24	24	24	24
DIMENSIONS																			
W	mm	600		1000		1000		1550			2100		2650			2650		3200	
D	mm	500		500		790		790			790		790			890		890	
H	mm	1980		1980		1980		1980			1980		1980			2180		2180	

NOTE

(1) Water 7-12 °C; air 24°C-50% - ESP 20Pa

(5) Measured at 1,5 m height and 2 m front free field



ACCESSORIES

- Remote user terminal
- Electric heating coil
- Water heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum for air outlet
- Interface electronic board
- 3 way valve 0÷10 V

TECHNICAL FEATURES

ADO / ADU 20÷90



ADO / ADU

Close control air conditioner

Type: DUAL FLUID, AIR COOLED,
upflow or downflow version



Evolution

Available Versions

- STD** Cooling only without condensation control device
- MOD** Cooling only with condensation control device through external unit fans regulation
- LT** Low temperatures version (-45°C) with condensation control device through external unit speed regulation.

UNIT DESCRIPTION

Ductable close control units air-conditioners with capacity ranging from 20 to 90 kW for vertical installation and cooling only, with optional heating by means of heating elements and hot water, optional humidifier and dehumidifier for precise temperature and humidity control.

Particularly suitable for air conditioning technological, servers and IT rooms and all technological applications in general.

Units fitted with EC INVERTER fans, upflow or downflow.

Units have to be connected to an external chiller for PRIMARY circuit instead to an air cooled condenser for the SECONDARY circuit (BACK-UP circuit).

STANDARD UNIT COMPOSITION

- Unit for installing inside or outside the room to be air-conditioned.
- Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material.
- The reliability of all the components is guaranteed by partners who are world leaders in their sector.
- NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
- Standard G4 filtering section, F5-F8 optional, under CEN-EN 779 rule with the separation degree 90,1% ASHRAE. The filter is autoextinguishing type.
- The microprocessor controls all the main functions of the air conditioners; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Electrical box under IEC 204-1/EN60204-1 rules.

Model		20	26	29	39	30	40	50	60	70	80	90
Frames		F3			F4				F5		F6	
Power supply	V/Ph/Hz	400/3N/50										
Refrigerant		R410A										
COOLING PERFORMANCES (DX)												
TOTAL Cooling Capacity	(1) kW	23,7	29,4	32,7	42,2	36,7	47,6	55,1	62,1	75,5	86,3	98,8
SENSIBLE Cooling Capacity	(1) kW	21,8	27,9	30,2	42,2	36,2	47,0	50,7	62,1	71,0	86,1	91,0
SHR		0,92	0,95	0,92	1,00	0,99	0,99	0,92	1,00	0,94	1,00	0,92
COMPRESSORS												
Quantity		1	1	1	1	2	2	2	2	2	2	2
Power abs.	kW	4,93	6,01	6,75	7,87	7,15	9,87	11,70	12,02	15,40	17,68	21,38
Circuits		1	1	1	1	2	2	2	2	2	2	2
Refrigerant		R407C										
COOLING PERFORMANCES (DX)												
TOTAL Cooling Capacity	(2) kW	23,2	30,1	32,9	43,8	36,2	46,7	55,3	64,2	77,5	90,8	99,9
SENSIBLE Cooling Capacity	(2) kW	22,2	28,1	30,3	43,8	36,0	46,6	50,9	64,2	71,8	87,9	91,4
SHR		0,96	0,93	0,92	1,00	0,99	1,00	0,92	1,00	0,93	0,97	0,91
COMPRESSORS												
Quantity		1	1	1	1	2	2	2	2	2	2	2
Power abs.	kW	4,85	6,26	7,15	8,30	7,41	9,70	12,20	12,55	16,30	18,84	22,51
Circuits		1	1	1	1	2	2	2	2	2	2	2
COOLING PERFORMANCES (CW)												
TOTAL Cooling Capacity	(4) kW	23,8	28,1	29,5	50,0	41,0	50,0	51,4	65,0	67,6	91,0	91,0
SENSIBLE Cooling Capacity	(4) kW	21,8	26,4	27,6	46,3	37,0	46,3	47,5	62,2	64,5	85,0	85,0
SHR		0,92	0,94	0,94	0,93	0,90	0,93	0,92	0,96	0,95	0,93	0,93
WATER SIDE												
Water Flow	(4) l/h	3890	4590	4590	8170	6710	8170	8170	10630	10630	14870	14870
Total pressure drops	(4) kPa	26	35	35	46	30	46	46	26	26	53	53
VENTILATION												
Air flow	cbm/h	6000	7500	8000	13000	10000	13000	13500	18000	19000	24000	24000
N° EC Inverter fans		1	1	1	2	2	2	2	3	3	3	3
EC Inverter fans power abs	kW	0,89	1,60	1,80	3,40	2,09	3,40	3,65	4,50	5,20	6,1	6,1
Sound pressure level	(5) dB(A)	56	60	60	64	59	64	64	67	67	67	67
HUMIDIFIER												
Steam production	kg/h	5	5	5	5	5	5	5	8	8	8	8
Power abs.	kW	3,75	3,75	3,75	3,75	3,75	3,75	3,75	6	6	6	6
HEATERS												
Steps		3	3	3	3	3	3	3	3	3	3	3
Power abs.	kW	9	9	9	15	15	15	15	18	18	18	18
DIMENSIONS												
W	mm	1000			1550				2100		2650	
D	mm	790			790				790		790	
H	mm	1980			1980				1980		1980	

NOTE

- (1) 24°C-50%, 45°C - ESP 20Pa
- (2) 24°C-50%, 48°C (dew point) - ESP 20Pa
- (4) Air 24°C-50%, water 7-12 °C - ESP 20Pa
- (5) Measured at 1,5 m height and 2 m front free field

Coupling

BRE - R410A												
Indoor unit AD	20	26	29	39	30	40	50	60	70	80	90	
Remote condenser BRE	027m	044m	051m	054b	065b	076b	100b	116b				
N°	1	1	1	1	1	1	1	1	1	1	1	

BRC - R407C												
Indoor unit AD	20	26	29	39	30	40	50	60	70	80	90	
Remote condenser BRC	032m	052m	051b	077b	088b	093b	102b	120b				
N°	1	1	1	1	1	1	1	1	1	1	1	



ACCESSORIES

- Remote user terminal
- Electric heating coil
- Water heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum for air outlet
- Interface electronic board

TECHNICAL FEATURES

ATO / ATU 20÷90



ATO / ATU

Close control air conditioner

**Type: DUAL FLUID, WATER COOLED,
upflow or downflow version**



Evolution



Available Versions

- STD** Cooling only without condensation control device
- MOD_A** Cooling only with condensation control device with speed regulation for external unit. **For closed circuit installation**
- MOD_B** Cooling only with condensation control device with pressostatic valve. **For open circuit installation (well-probe)**

UNIT DESCRIPTION

Ductable close control units air-conditioners with capacity ranging from 20 to 90 kW for vertical installation and cooling only, with optional heating by means of heating elements and hot water, optional humidifier and dehumidifier for precise temperature and humidity control.

Particularly suitable for air conditioning technological, servers and IT rooms and all technological applications in general.

Units fitted with EC INVERTER fans, upflow or downflow.

Units has to be connected to an external chiller for PRIMARY circuit instead to an external dry cooler for the SECONDARY circuit (BACK-UP circuit).

STANDARD UNIT COMPOSITION

- Unit for installing inside or outside the room to be air-conditioned.
- Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material.
- The reliability of all the components is guaranteed by partners who are world leaders in their sector.
- NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
- Standard G4 filtering section, F5-F8 optional, under CEN-EN 779 rule with the separation degree 90,1% ASHRAE. The filter is autoextinguishing type.
- The microprocessor controls all the main functions of the air conditioners; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Electrical box under IEC 204-1/EN60204-1 rules.

Model			20	26	29	39	30	40	50	60	70	80	90
Frames			F3			F4				F5		F6	
Power supply	V/Ph/Hz		400/3N/50										
Refrigerant			R410A										
COOLING PERFORMANCES (DX)													
TOTAL Cooling Capacity	(1)	kW	24,9	30,6	32,3	47,3	38,1	50,0	54,5	70,3	76,6	91,8	101,9
SENSIBLE Cooling Capacity	(1)	kW	22,8	28,3	30,0	46,9	36,7	47,9	50,7	66,8	71,1	88,2	92,2
SHR	(1)		0,92	0,92	0,93	0,99	0,96	0,96	0,93	0,95	0,93	0,96	0,90
COMPRESSORS													
Quantity			1	1	1	1	2	2	2	2	2	2	2
Power abs.	(1)	kW	4,30	5,40	6,11	6,94	6,44	8,61	10,55	12,28	13,30	16,03	19,33
Circuits			1	1	1	1	2	2	2	2	2	2	2
PLATE CONDENSER													
Quantity			1	1	1	1	2	2	2	2	2	1	1
Water Flow	(1)	l/h	4900	6330	7002	8430	3690 x 2	4905 x 2	5977x2	7180x2	8066x2	18120	20830
Total pressure drops	(1)	kPa	24	32	28	31	27	21	32	30	28	33	41
Refrigerant			R407C										
COOLING PERFORMANCES (DX)													
TOTAL Cooling Capacity	(1)	kW	24,2	31,3	32,5	45,9	37,6	49,0	54,7	71,7	77,6	92,8	101,0
SENSIBLE Cooling Capacity	(1)	kW	22,6	28,6	30,2	45,9	36,5	47,5	50,8	67,3	71,3	88,5	91,9
SHR	(1)		0,93	0,91	0,93	1,00	0,97	0,97	0,93	0,94	0,92	0,95	0,91
COMPRESSORS													
Quantity			1	1	1	1	2	2	2	2	2	2	2
Power abs.	(1)	kW	4,53	5,96	6,64	7,66	7,05	8,85	11,55	13,4	14,78	17,83	21,35
Circuits			1	1	1	1	2	2	2	2	2	2	2
PLATE CONDENSER													
Quantity			1	1	1	1	2	2	2	2	2	1	1
Water Flow	(1)	l/h	4780	6190	7204	9650	3720x2	4805x2	6156x2	7370x2	8340x2	19160	21340
Total pressure drops	(1)	kPa	22	35	32	36	26	22	33	36	32	32	40
COOLING PERFORMANCES (CW)													
TOTAL Cooling Capacity	(6)	kW	23,8	28,1	29,5	50,0	41,0	50,0	51,4	65,0	67,6	91,0	91,0
SENSIBLE Cooling Capacity	(6)	kW	21,8	26,4	27,6	46,3	37,0	46,3	47,5	62,2	64,5	85,0	85,0
SHR			0,92	0,94	0,94	0,93	0,90	0,93	0,92	0,96	0,95	0,93	0,93
WATER SIDE													
Water Flow	(6)	l/h	3890	4590	4590	8170	6710	8170	8170	10630	10630	14870	14870
Total pressure drops	(6)	kPa	26	35	35	46	30	46	46	26	26	53	53
VENTILATION													
Air flow	cbm/h		6000	7500	8000	13000	10000	3000	13500	18000	19000	24000	24000
N° EC Inverter fans			1	1	1	2	2	2	2	3	3	3	3
EC Inverter fans power abs		kW	0,89	1,60	1,80	3,40	2,09	3,40	3,65	4,50	5,20	6,1	6,1
Sound pressure level	(5)	dB(A)	56	60	60	64	59	64	64	67	67	67	67
HUMIDIFIER													
Steam production		kg/h	5	5	5	5	5	5	5	8	8	8	8
Power abs.		kW	3,75	3,75	3,75	3,75	3,75	3,75	3,75	6	6	6	6
HEATERS													
Steps			3	3	3	3	3	3	3	3	3	3	3
Power abs.		kW	9	9	9	15	15	15	15	18	18	18	18
DIMENSIONS													
W		mm	1000			1550				2100		2650	
D		mm	790			790				790		790	
H		mm	1980			1980				1980		1980	

NOTE

- (1) Air 24°C-50%, water 30°- 35°C - ESP 20Pa
 (5) Measured at 1,5 m height and 2 m front free field
 (6) Air 24°C-50%, water 7-12 °C - ESP 20Pa

Coupling

BDC	20	26	29	39	30	40	50	60	70	80	90
Indoor unit AT											
Dry cooler BDC	030m	039m	052m	039m	052m	062m	078m	092m	103m	123m	
N°	1	1	1	1	1	1	1	1	1	1	1

ACCESSORIES

- Remote user terminal
- Electric heating coil
- Water heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum for air outlet
- Interface electronic board



TECHNICAL FEATURES

AFO / AFU 20÷90



AFO / AFU

Close control air conditioner

Type: FREECOOLING, WATER COOLED,
upflow or downflow version



Evolution



Available Versions

- | | |
|--------------|--|
| STD | Cooling only with condensation control device through flooding valve |
| MOD_A | Cooling only with condensation control device through flooding valve and speed regulator for external unit |

UNIT DESCRIPTION

Ductable close control units air-conditioners with capacity ranging from 20 to 90 kW for vertical installation and cooling only, with optional heating by means of heating elements and hot water, optional humidifier and dehumidifier for precise temperature and humidity control.

Particularly suitable for air conditioning technological, servers and IT rooms and all technological applications in general.

Units fitted with EC INVERTER fans, upflow or downflow.

Units has to be connected to an external chiller or dry cooler

STANDARD UNIT COMPOSITION

- Unit for installing inside or outside the room to be air-conditioned.
- Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material.
- The reliability of all the components is guaranteed by partners who are world leaders in their sector.
- NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
- Standard G4 filtering section, F5-F8 optional, under CEN-EN 779 rule with the separation degree 90,1% ASHRAE. The filter is autoextinguishing type.
- The microprocessor controls all the main functions of the air conditioners; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Electrical box under IEC 204-1/EN60204-1 rules.

Model			20	26	29	39	30	40	50	60	70	80	90
Frames			F3			F4				F5		F6	
Power supply	V/Ph/Hz		400/3N/50										
Refrigerant			R410A										
COOLING PERFORMANCES (DX)													
TOTAL Cooling Capacity	(1)	kW	24,9	30,6	32,3	47,3	38,1	50,0	54,5	70,3	76,6	91,8	101,9
SENSIBLE Cooling Capacity	(1)	kW	22,8	28,3	30,0	46,9	36,7	47,9	50,7	66,8	71,1	88,2	92,2
SHR			0,92	0,92	0,93	0,99	0,96	0,96	0,93	0,95	0,93	0,96	0,90
COMPRESSORS													
Quantity			1	1	1	1	2	2	2	2	2	2	2
Power abs.		kW	4,40	5,40	6,11	8,00	6,44	8,61	10,55	12,28	13,30	16,03	19,33
Circuits			1	1	1	1	2	2	2	2	2	2	2
PLATE CONDENSER													
Quantity			1	1	1	1	2	2	2	2	2	1	1
Condensation water flow	(1)	l/h	4900	6330	7002	8430	7380	9810	11954	14360	16133	18120	20830
Pressure drop DX operation			47	70	46	66	49	56	55	65	70	55	68
Refrigerant			R407C										
COOLING PERFORMANCES (DX)													
TOTAL Cooling Capacity	(1)	kW	24,2	31,3	32,5	45,9	37,6	49,0	54,7	71,7	77,6	92,8	101,0
SENSIBLE Cooling Capacity	(1)	kW	22,6	28,6	30,2	45,9	36,5	47,5	50,8	67,3	71,3	88,5	91,9
SHR			0,93	0,91	0,93	1,00	0,97	0,97	0,93	0,94	0,92	0,95	0,91
COMPRESSORS													
Quantity			1	1	1	1	2	2	2	2	2	2	2
Power abs.		kW	4,30	5,66	6,30	7,28	6,70	8,41	10,96	13,40	14,03	16,94	20,28
Circuits			1	1	1	1	2	2	2	2	2	2	2
PLATE CONDENSER													
Quantity			1	1	1	1	2	2	2	2	2	1	1
Condensation water flow	(1)	l/h	4780	6190	7204	9650	7440	9610	12313	14740	16680	19160	21340
Pressure drop DX operation		kPa	45	73	47	67	48	58	57	71	74	60	72
COOLING PERFORMANCES IN FREE-COOLING													
TOTAL Cooling Capacity	(2)	kW	19,95	24,04	25,10	40,79	33,62	41,47	43,80	56,62	58,10	76,67	78,26
SENSIBLE Cooling Capacity	(2)	kW	19,95	24,04	25,10	40,79	33,62	41,47	43,80	56,62	58,10	76,67	78,26
SHR			1	1	1	1	1	1	1	1	1	1	1
Pressure drop FC operation		kPa	60	97	69	89	64	84	95	85	91	80	99
VENTILATION													
Air flow		cbm/h	6000	7500	8000	13000	10000	13000	13500	18000	19000	24000	24000
N° EC Inverter fans			1	1	1	2	2	2	2	3	3	3	3
EC Inverter fans power abs		kW	0,89	1,60	1,80	3,40	2,09	3,40	3,65	4,50	5,20	6,1	6,1
Sound pressure level	(5)	dB(A)	56	60	60	64	59	64	64	67	67	67	67
HUMIDIFIER													
Steam production		kg/h	5	5	5	5	5	5	5	8	8	8	8
Power abs.		kW	3,75	3,75	3,75	3,75	3,75	3,75	3,75	6	6	6	6
HEATERS													
Steps			3	3	3	3	3	3	3	3	3	3	3
Power abs.		kW	9	9	9	15	15	15	15	18	18	18	18
DIMENSIONS													
W		mm	1000			1550				2100		2650	
D		mm	790			790				790		790	
H		mm	1980			1980				1980		1980	

NOTE

- (1) Air 24°C-50%, water 30°- 35°C - ESP 20Pa
 (2) Water in 10°C, water flow as for DX - ESP 20 Pa
 (5) Measured at 1,5 m height and 2 m front free field

Coupling

BDC		20	26	29	39	30	40	50	60	70	80	90
Indoor unit AF		030m	039m	052m	039m	052m	062m	078m	092m	103m	123m	
Dry cooler BDC		030m	039m	052m	039m	052m	062m	078m	092m	103m	123m	
N°		1	1	1	1	1	1	1	1	1	1	1

ACCESSORIES

- Remote user terminal
- Electric heating coil
- Water heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum for air outlet
- Interface electronic board



TECHNICAL FEATURES

ABO / ABU 20÷140



ABO / ABU

Close control air conditioner

Type: DUAL COIL,
upflow or downflow version



Evolution

Available Versions

STD Cooling only,
with 3 way valve

UNIT DESCRIPTION

Ductable close control units air-conditioners with capacity ranging from 20 to 140 kW for vertical installation and cooling only, with optional heating by means of heating elements and hot water, optional humidifier and dehumidifier for precise temperature and humidity control.

Particularly suitable for air conditioning technological, servers and IT rooms and all technological applications in general. Units fitted with EC INVERTER fans, upflow or downflow.

Units has to be connected to 2 completely independent circuits each one in back-up to the other one.

STANDARD UNIT COMPOSITION

- Unit for installing inside or outside the room to be air-conditioned.
- Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material.
- The reliability of all the components is guaranteed by partners who are world leaders in their sector.
- NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
- Standard G4 filtering section, F5-F8 optional, under CEN-EN 779 rule with the separation degree 90,1% ASHRAE. The filter is autoextinguishing type.
- The microprocessor controls all the main functions of the air conditioners; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Electrical box under IEC 204-1/EN60204-1 rules.

Model		20	25	30	40	45	55	60	75	105	120	130	140
Frames		F3		F4		F5		F6		F7		F8	
Power supply	V/Ph/Hz	400/3N/50											
COOLING PERFORMANCES													
TOTAL Cooling Capacity	(1) kW	22,5	29,0	41,2	50,5	54,2	66,4	76,6	94,3	104,5	124,7	131,3	148,2
SENSIBLE Cooling Capacity	(1) kW	22,5	27,7	41,2	47,5	54,2	64,5	76,6	89,9	101,9	111,8	128,2	136,6
SHR	(1)	1,00	0,96	1,00	0,94	1,00	0,97	1,00	0,95	0,98	0,90	0,98	0,92
VENTILATION													
Air flow	cbm/h	8000	8000	13500	13500	19000	19000	26000	26000	30000	30000	36000	36000
N° EC Inverter fans		1	1	2	2	3	3	3	3	3	3	3	3
EC Inverter fans power abs	kW	1,69	1,69	3,51	3,51	5,11	5,11	6,1	6,1	4,90	4,90	6,70	6,70
Sound pressure level	(5) dB(A)	60	60	64	64	67	67	67	67	69	69	70	70
WATER SIDE													
Water Flow	(1) l/h	3670	4840	6740	8420	8860	11060	12520	15710	17420	20780	21880	24070
Total pressure drops	(1) kPa	51	72	42	45	38	53	43	52	95	73	55	66
HUMIDIFIER													
Steam production	kg/h	5	5	5	5	8	8	8	8	10	10	15	15
Power abs.	kW	3,75	3,75	3,75	3,75	6	6	6	6	7,5	7,5	11,25	11,25
HEATERS													
Steps		3	3	3	3	3	3	3	3	3	3	3	3
Power abs.	kW	9	9	15	15	18	18	18	18	24	24	24	24
DIMENSIONS													
W	mm	1000		1550		2100		2650		2650		3200	
D	mm	790		790		790		790		890		890	
H	mm	1980		1980		1980		1980		2180		2180	

NOTE

(1) Water 7-12 °C; air 24°C-50% - ESP 20Pa

(5) Measured at 1,5 m height and 2 m front free field



ACCESSORIES

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum for air outlet
- Interface electronic board
- 3 way valve 0÷10 V

TECHNICAL FEATURES

BRC / BRE / BDC



BRC (R407C) / BRE (R410A)

Air cooled remote condensers with axial fans for direct expansion units

BDC

Dry Cooler with axial fans

Available Versions

STD standard
(+46°C/-25°C, Text.)

LT Low temperature
(+46°C/-45°C, Text.)

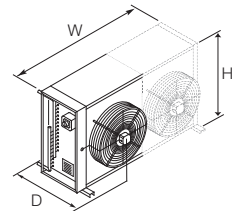
LN Low Noise
(+46°C/-45°C, Text.)

Accessories

Condenser leg kit for vertical air flow version

BRC STD - LT (R407C)		014m	025m	032m	052m	051b	077b	088b	093b	102b	120b
NOMINAL CHARACTERISTICS											
Nominal capacity	kW	14	26	32	52	52	77	90	93	102	120
Air flow	kPa	4410	8780	7870	17560	17560	26340	25230	23610	35120	33640
Sound pressure level 10m	dB(A)	41,0	48,0	48,0	51,0	51,0	53,0	53,0	53,0	54,0	54,0
Power supply	V-Ph-Hz	230/1/50									
DIMENSIONS											
W	mm	1175	1325	1325	2425	2425	3525	3525	3525	4625	4625
D	mm	510	630	630	630	630	630	630	630	630	630
H	mm	872	1168	1168	1168	1168	1168	1168	1168	1168	1168

BRC LN (R407C)		014m	025m	032m	052m	051b	077b	088b	093b	102b	120b
NOMINAL CHARACTERISTICS											
Nominal capacity	kW	13	22	42	48	48	72	76	85	95	101
Air flow	kPa	2930	6410	12820	12160	12160	18240	17340	25640	24320	23400
Sound pressure level 10m	dB(A)	33	38	41	41	41	43	43	44	44	44
Power supply	V-Ph-Hz	230/1/50									
DIMENSIONS											
W	mm	1175	1325	2425	2425	2425	3525	3525	4625	4625	4625
D	mm	510	630	630	630	630	630	630	630	630	630
H	mm	872	1168	1168	1168	1168	1168	1168	1168	1168	1168



PACKAGING DIMENSIONS

DIRECT EXPANSION AXO / AXU

Model		07	10	15	18	20	26	29	39	30	40	50	55	60	70	80	90
W	mm	660		1060		1060		1610		2160		2710		3260		3810	
D	mm		560						850								
H	mm									2250							
Weight	kg*	162	177	264	276	329	380	398	524	464	519	544	712	758	778	912	942

DIRECT EXPANSION AWO / AWU

Model		07	10	15	18	20	26	29	39	30	40	50	55	60	70	80	90
W	mm	660		1060		1060		1610		2160		2710		3260		3810	
D	mm		560						850								
H	mm									2250							
Weight	kg*	168	184	274	288	341	394	412	543	482	543	569	740	787	812	972	1003

CHILLER WATER ACO / ACU

Model		07	09	14	19	25	30	34	41	50	60	70	80	90	131	151	171	191	221
W	mm	660		1060		1060		1610		2160		2710		3260		3810		4360	
D	mm		560						850									950	
H	mm									2250								2450	
Weight	kg*	127	137	208	218	278	293	374	384	394	548	558	634	644	644	659	669	750	800

NOTE

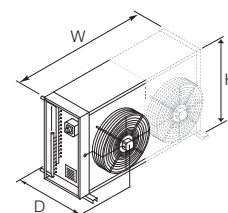
*Shipping weight (wooden crate non included)

BRE STD - LT (R410A)		014m	022m	027m	044m	051b	054b	065b	076b	100b	116b
NOMINAL CHARACTERISTICS											
Nominal capacity	kW	13,4	21,7	26,6	43,5	50,4	53,3	65,1	76,2	100	116
Air flow	kPa	5000	8200	7200	16400	15200	14400	24600	22800	28800	38000
Sound pressure level 10m	dB(A)	40,0	46,0	46,0	49,0	49,0	49,0	51,0	51,0	52,0	53,0
Power supply	V-Ph-Hz	230/1/50									
DIMENSIONS											
W	mm	1240	1360	1360	2360	2360	2360	3360	3360	4360	5360
D	mm	494	580	580	580	580	580	580	580	580	580
H	mm	764	1070	1070	1070	1070	1070	1070	1070	1070	1070

BRE LN (R410A)		014m	022m	027m	044m	051b	054b	065b	076b	100b	116b
NOMINAL CHARACTERISTICS											
Nominal capacity	kW	14,1	20	28,2	42,3	50	55,3	73,1	75,5	99,1	117,5
Air flow	kPa	6000	6500	12000	18000	16500	16000	22000	20300	27050	28560
Sound pressure level 10m	dB(A)	37	35	39	41	41	41	42	42	43	43
Power supply	V-Ph-Hz	230/1/50									
DIMENSIONS											
W	mm	1360	2120	2360	3360	3360	3360	4360	4360	5360	5560
D	mm	580	494	580	580	580	580	580	580	580	615
H	mm	1070	764	1070	1070	1070	1070	1070	1070	1070	1070

BDC STD - LT		013m	030m	039m	052m	062m	078m	092m	103m	123m
NOMINAL CHARACTERISTICS										
Nominal capacity	kW	17	33	40,5	61	68	83	98,5	121	135
Air flow	kPa	8780	17560	16820	25230	23610	33640	52680	50460	47220
Sound pressure level 10m	dB(A)	48	51	51	53	53	54	56	56	56
Power supply	V-Ph-Hz	230/1/50								
DIMENSIONS										
W	mm	1325	2425	2425	3525	3525	4625	3658	3658	3658
D	mm	630	630	630	630	630	630	760	760	760
H	mm	1168	1168	1168	1168	1168	1168	2286	2286	2286

BDC LN		013m	030m	039m	052m	062m	078m	092m	103m	123m
NOMINAL CHARACTERISTICS										
Nominal capacity	kW	14	32	40,5	54	65,5	82	96	107	128,5
Air flow	kPa	6410	12160	19230	25640	24320	30400	36480	51280	48640
Sound pressure level 10m	dB(A)	38	41	43	44	44	45	46	47	47
Power supply	V-Ph-Hz	230/1/50								
DIMENSIONS										
W	mm	1325	2425	3525	4625	4625	5725	3658	4758	4758
D	mm	630	630	630	630	630	630	760	760	760
H	mm	1168	1168	1168	1168	1168	1168	2286	2286	2286



DUAL FLUID ADO/ADU

Model		20	26	29	39	30	40	50	60	70	80	90
W	mm		1060			1610			2160		2710	
D	mm						850					
H	mm						2250					
Weight	kg*	308	355	373	489	429	484	509	731	751	871	901

DUAL FLUID ATO/ATU

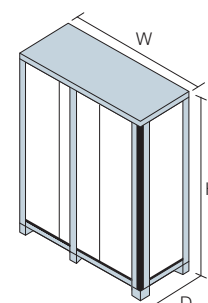
Model		20	26	29	39	30	40	50	60	70	80	90
W	mm		1060			1610			2160		2710	
D	mm						850					
H	mm						2250					
Weight	kg*	343	394	412	528	468	523	548	767	787	908	938

FREE-COOLING AFO/AFU

Model		20	26	29	39	30	40	50	60	70	80	90
W	mm		1060			1610			2160		2710	
D	mm						850					
H	mm						2250					
Weight	kg*	351	402	412	528	468	523	554	767	779	897	927

DUAL COIL ABO/ABU

Model		20	25	30	40	45	55	60	75	105	120	130	140
W	mm		1060		1610		2160		2710		2710		3260
D	mm					850					950		
H	mm					2250					2450		
Weight	kg*	381	381	533	533	771	803	806	887	890	947	880	920



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