

DXA-DC

Air-cooled Dual fluid range provides Direct Expansion and Chiller Water technology within the same unit



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The air conditioners belonging to the DXA/DC series direct expansion air condensation, have been specifically designed and manufactured for close control air conditioning where the handling of almost exclusively sensible heat loads is a fundamental requirement and where is not present a central chilled water plant.

The typical applications are high-performance computer rooms, internet data center, digital telephone exchanges, switch rooms, weather stations, medical laboratories, archives, museums as well as any other application both of small or large dimension, where the sensible heat load must be dissipated and is possible also regulate ambient humidity (optional).

The sizing of EC fans, Electronically Commutated the latest "Plug-In" and the exchange surfaces, allows the containment of emissions noise and electronic. The units are designed to present the smallest footprint possible, reducing the cost of the occupied floor space, and full frontal access for easy inspection and service.

DXA/DC units are equipped with a dual air cooling system. In standard running, the air cooling is provided by a refrigerated water inned coil; in the case of lacking of refrigerated water, the controller provides for the automatic start of the on board compressor. The heat of the technical room is dissipated through a remote inned coil condenser or through a plate heat exchanger. DXA/DC units, being equipped with a dual air cooling system, assure higher safety of continuous running.

VERSIONS

- **C00:** Only Cooling, base version, only cooling coil without humidification and dehumidification.
- **C0D:** Cooling and Dehumidification with electrical heater post heating, no humidification.
- **CH0:** Cooling and Humidification by non-pressurised steam humidifier by means of electrodes immersed.
- **CHD:** Cooling/Humidification/Dehumidification with electrical heater post heating, and non-pressurised steam humidifier by means of electrodes immersed.

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Model		061	071	091	111	141	161	191	211	261	321	401	501
Total cooling capacity ⁽¹⁾	kW	6,4	7,5	9,3	11,6	14,7	16,5	19,6	22,5	25,8	33,8	37,5	45,6
Sensible cooling capacity ⁽¹⁾	kW	5,6	7,2	8,1	9,6	11,7	14,2	16,6	19,0	21,3	28,1	30,8	37,7
SHR		0,87	0,96	0,87	0,83	0,79	0,86	0,85	0,84	0,83	0,83	0,82	0,83
Max power input compressor	kW	1,5	1,9	2,3	2,9	3,8	3,9	4,5	5,2	5,7	7,3	8,2	9,5
Total cooling power DC ⁽²⁾	kW	8,9	9,8	10,8	11,3	14,4	18,1	18,6	20,5	26,7	33,6	37,8	46,5
Sensible cooling power DC ⁽²⁾	kW	7,4	8,1	9,0	9,5	12,7	15,9	16,4	18,0	23,3	29,2	32,9	40,9
Nominal air low	m³/h	1800	2050	2600	2800	3300	4500	4700	5400	6100	8500	8300	11300
Fans	n°xkW	1x0,13	1x0,16	1x0,26	1x0,32	1x0,23	1x0,33	1x0,41	1x0,70	1x0,68	1x1,48	2x0,42	2x0,70
Nominal pressure drop	Pa	130	130	100	80	250	250	250	250	250	250	250	250
Type of compressor		Rotative				Hermetic scroll							
N. compressors / N. Circuit		1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1
Power supply		230V/1N/50Hz				400/3N/50	400V/3/50Hz						
Max power input	A	10,4	13,4	16,2	7,9	9,7	10,1	15,0	15,0	16,0	22,0	25,0	31,0
Max current input	A	43,0	62,0	64,0	48,0	63,0	63,0	75,0	101,0	95,0	118,0	118,0	140,0
Humidier nominal capacity ⁽³⁾	kg/h	1,5	1,5	3	3	5	5	5	5	5	5	5	5
Heat.capacity of electrical heaters	kW	1,5	1,5	1,5	1,5	5,0	5,0	5,0	5,0	5,0	5,0	10,0	10,0
SPL indoor unit “Under” ⁽⁴⁾	dB(A)	54	57	62	64	50	56	57	59	62	68	57	60
SPL indoor unit “Over” ⁽⁴⁾	dB(A)	57	60	65	67	52	59	60	62	65	72	60	63
HRA (Standard)		S070	S070	S090	S110	S160	S160	S210	S210	L260	L320	L450	L450
SPL outdoor unit STD ⁽⁵⁾	dB(A)	43	43	43	46	46	46	43	43	46	46	46	48
HRA/LS (Silenziato)		S060	S070	S090	S110	S160	S160	S210	S210	L260	L400	L400	L450
SPL outdoor unit LS ⁽⁵⁾	dB(A)	33	33	36	29	32	32	32	32	39	39	39	41
Model		262	322	402	452	482	582	652	752	902	1002		
Total cooling capacity ⁽¹⁾	kW	30,5	33,1	39,3	46,0	50,0	57,7	67,0	75,0	89,6	99,4		
Sensible cooling capacity ⁽¹⁾	kW	25,5	28,7	32,6	39,4	42,0	49,0	56,2	63,2	74,0	81,4		
SHR		0,84	0,87	0,83	0,86	0,84	0,85	0,84	0,84	0,84	0,83		
Max power input compressor	kW	6,6	7,7	9,1	10,3	11,3	12,7	14,6	16,5	18,9	22,2		
Total cooling power DC ⁽²⁾	kW	30,1	32,9	39,5	47,0	49,3	58,8	67,1	77,7	89,2	97,8		
Sensible cooling power DC ⁽²⁾	kW	26,2	28,6	34,4	41,4	42,9	52,3	59,7	65,2	75,8	82,2		
Nominal air low	m³/h	7200	8200	8900	11500	11900	14500	16100	17300	21100	22000		
Fans	n°xkW	1x0,91	1x1,32	2x0,31	2x0,74	2x0,86	2x1,01	2x1,41	2x1,23	3x1,06	3x1,22		
Nominal pressure drop	Pa	250	250	250	250	250	250	250	250	250	250		
Type of compressor		Hermetic scroll											
N. compressors / N. Circuit		2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2		
Power supply		400V/3/50Hz											
Max power input	A	20,6	23,6	30,0	30,0	32,0	42,0	44,0	50,0	62,0	68,0		
Max current input	A	103,0	128,0	150,0	202,0	190,0	222,0	236,0	236,0	280,0	348,0		
Humidier nominal capacity ⁽³⁾	kg/h	5	5	5	5	8	8	8	8	8	8		
Heat.capacity of electrical heaters	kW	5,0	5,0	10,0	10,0	10,0	10,0	10,0	15,0	15,0	15,0		
SPL indoor unit “Under” ⁽⁴⁾	dB(A)	66	68	58	64	65	69	71	72	72	73		
SPL indoor unit “Over” ⁽⁴⁾	dB(A)	69	71	61	67	68	72	74	75	75	76		
HRA (Standard)		L260	L320	L450	L480	L480	2XL260	2XL320	2XL450	2XL450	2XL480		
SPL outdoor unit STD ⁽⁵⁾	dB(A)	46	46	46	48	48	2x46	2x46	2x46	2x46	2x48		
HRA/LS (Silenziato)		L260	L400	L400	L450	L480	2XL260	2X L400	2X L400	2X L450	2X L480		
SPL outdoor unit LS ⁽⁵⁾	dB(A)	39	39	39	41	41	2x39	2x39	2x39	2x41	2x41		

Performance refer to the following conditions:

(1) 24°C db, 17,1°C wb; 50% R.H. - 45°C condensing

(2) Water temperature: inlet 7°C, outlet 12°C

(3) When water conductivity is between 350-750 uS/cm³

(4) Sound pressure level at 1 mt in free field

(5) Sound pressure level at 10 mt in free field (EN 13487)

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FRAME

Frame in galvanized steel sheet with vertical rods and external panels painted with epoxy powder black gray colour RAL 7021. Fixing screws in galvanized steel. Doors are mounted on hinges and equipped with easy to open lock with key. Insulation acoustically and thermally, in open-cell polyurethane, class 1 self-extinguishing anti dripping (UL94-HF1), density of 25 Kg/m³ and thermal conductivity of 0,035 W/Mk at 10°C, insulation thickness of 20mm.

COMPRESSORS

The compressors utilised are scroll type. All compressors are fitted with a crankcase heater and each compressor has a klixon embedded in the motor winding for thermal overload protection. They are mounted in a separate compartment within the casing in order to isolate them from the condenser air stream. The crankcase heater is always energised when the compressor is in stand-by. Access to the compressor compartment is by removal of a front panel and, because they are isolated from the main airstream, maintenance of the compressors is possible whilst the unit is operating.

The compressors used are all in tandem configuration. This results in much higher efficiencies at part loads compared to units with independent refrigerant circuits.

FINNED PACK COOLING COIL

In copper-aluminium with large front surface to reduce air transit speed. The copper tubes mechanically expanded into aluminium fins to increase the heat exchange factor. All the units are equipped with a drip tray in stainless steel.

SUPPLY FAN

It is a high performance electrically commutated (EC) plug fan, backward aerofoil

blades, directly coupled to the electric motor. The electric motor is a high efficiency DC brushless type with external rotor, to guarantee an ideal cooling of the windings and the absence of power lost due to pulleys and belt transmission. The fan is statically and dynamically balanced class 6.3 according to ISO1940. The electric motor has a separate electronic commutator (driver). Serial interface card with modbus protocol RTU.

FILTERS

Standard efficiency class G4, Various options are available for filters with higher efficiency levels.

REFRIGERATING CIRCUIT

In conformity with the PED directive, complete with thermostatic expansion valve, filter, liquid gauge, solenoid valve, liquid receiver, safety valve and high and low pressure switches.

ELECTRICAL PANEL

With main interlocking switch and phase sequence relay. The secondary circuit is powered at low voltage of 24 Vac.

MICROPROCESSOR

Each unit of the DATA CENTER series is equipped with an advanced control, a microprocessor at 16 bit and a FLASH memory to guarantee high speed software performance and the possibility of managing multi-language configuration masks and different serial communication protocols. All the electronic boards can be connected to a local network named pLAN (Local Area Network) that is able to manage 8 units at most. (For more information, see the control service manual). Also, the management of a electronic expansion valve (EEV) is available.

USER INTERFACE

Display the unit conditions, status and operating parameters, with the following characteristics: display of room temperature and temperature set-point for supply air, display of operating parameters, control keyboard with two levels of "menu" under "password", alarm reset and unit set-up, on/off safety switch, watchdog function.

CONTROL AND PROTECTION DEVICES

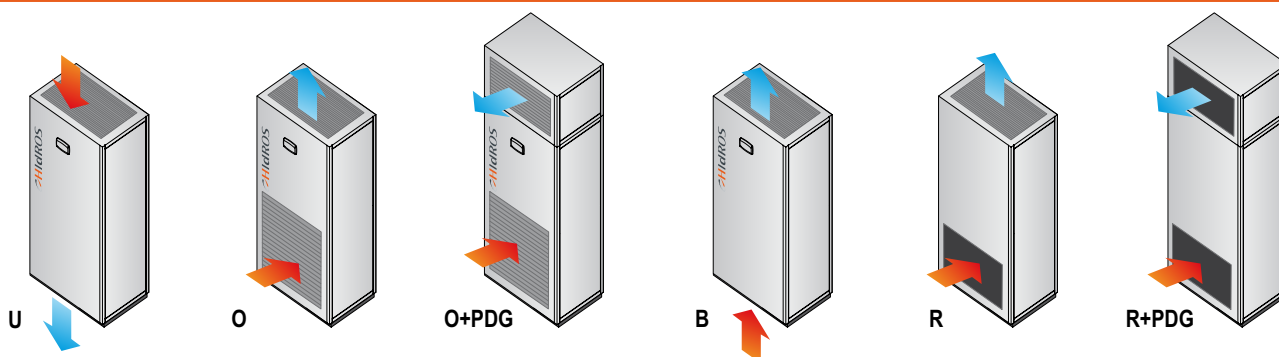
All units are supplied with the following control and protection devices: high pressure switch with manual reset, low pressure switch with automatic reset, high pressure safety valve, compressor thermal overload protection, fans thermal overload protection, probe, air electrical temperature and humidity (option).

AIR COOLED CONDENSER WITH FANS SPEED REGULATOR

Frame Self-bearing, in embossed aluminium, that provides optimal mechanical characteristics and corrosion resistance. Heat exchangers inned coils, manufactured with copper tubes, arranged in staggered lines, with aluminium fins which provide a high heat exchanger surface. Helicoidal fans, low rotational speed, directly coupled, with IP 54 protection degree, thermal protection and accident prevention grate; standard version (STD). The shaped nozzle and the blade profile increase the efficiency and reduce the noise level. Low-noise version (LSR) available. Power supply electrical board 230/1N, with master circuit breaker and speed regulator, for packaged condensation control.

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CONFIGURATIONS

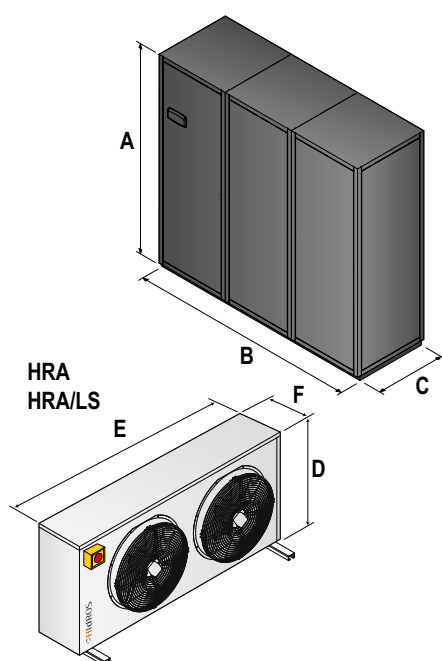


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Description	Code	
Dirty filter alarm	DFA	○
Flooding alarm	FAA	○
Smoke/Fire alarm	SFA	○
Power failure alarm	PFA	○
Water coil + 3-way valve	WCV	○
Capacity step control (hot gas by-pass)	HBP	○
Continuous capacity control (hot gas by-pass + liquid injection)	HBI	○
Sound-insulation caps on compressors	SIC	○
High/low refrigerating pressure gauges	HLM	○
Electronic thermostatic valve	EEV	○
Plenum for air diffusion into environment, with grille (for O/B/R versions only)	PDG	○
Base frame, height adjustable H=300/500 ±25 mm (for U version only)	BFX	○
Base frame, with detector and height adjustable H=300/500 ±25 mm (for U version only)	BDX	○
Non return air gate, motor-driven (for U version only)	NRG	○
Overpressure type non return air gate (for O/B/R versions only)	ONG	○
RS485 type serial board	SB5	○
Remote control panel	RCP	○
Alarm log clock board	ACB	○
Air discharge temperature sensor	OTS	○
Filter section with F5 grade (according to EN 779)	FF5	○
Filter section with F7 grade (according to EN 779)	FF7	○
2-way pressure valve for tower water	2VT	●
3-way pressure valve for tower water	3VT	○
Abbinamento con HRA - Standard	HRA	○
Abbinamento con HRA/LS - Silenziato	HRA/LS	○

● Standard, ○ Optional, – Not available

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to quote A for base module.

Mod.	A* (mm)	B (mm)	C (mm)	Kg	XRA DxExF (mm)	Kg	HRA/LS DxExF (mm)	Kg
061	1750	670	500	190	555x780x362	19,4	555x780x362	19,4
071	1750	670	500	210	555x780x362	19,4	555x780x362	20,8
091	1750	670	500	220	555x780x362	20,8	555x1380x362	34,0
111	1750	670	500	250	555x1380x362	34,0	828x1115x470	46,4
141	1980	770	650	270	555x1380x362	39,0	828x2015x470	76,0
161	1980	770	650	310	555x1380x362	39,0	828x2015x470	76,0
191	1980	770	650	350	828x1105x428	46,6	828x2015x470	85,3
211	1980	770	650	380	828x1105x428	46,6	828x2015x470	85,3
261	1980	1280	890	440	828x2005x428	76,0	1034x2261x750	150,0
321	1980	1280	890	530	828x2005x428	85,3	1034x2261x750	162,0
401	1980	1680	890	630	828x2005x428	93,2	1034x2261x750	162,0
501	1980	1680	890	700	828x2005x428	93,2	1034x3261x750	221,0
262	1980	1280	890	460	828x2005x428	76,0	1034x2261x750	150,0
322	1980	1280	890	520	828x2005x428	85,3	1034x2261x750	162,0
402	1980	1680	890	600	828x2005x428	93,2	1034x2261x750	162,0
452	1980	1680	890	640	828x2905x428	123,4	1034x3261x750	221,0
482	1980	1680	890	680	828x2905x428	123,4	1034x3261x750	238,0
582	1980	2060	890	735	828x2005x428	76,0	1034x2261x750	150,0
652	1980	2060	890	865	828x2005x428	85,3	1034x2261x750	162,0
752	1980	2580	890	995	828x2005x428	93,2	1034x2261x750	162,0
902	1980	2580	890	1045	828x2005x428	93,2	1034x3261x750	221,0
1002	1980	2580	890	1085	828x2905x428	123,4	1034x3261x750	238,0

* For versions Over (O, O+PDG, R, R+PDG) consider 100 mm in addition