

DXi.AF

DIRECT EXPANSION CLOSE CONTROL UNIT

AIR CONDENSED WITH ADDITIONAL FREECOOLING COIL, INVERTER COMPRESSOR

R410a



AIR

FC



EC



Close control air-conditioners for vertical installations and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control.

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

Direct expansion FREE-COOLING unit with INVERTER compressor is water cooled and it has to be connected to a remote dry cooler. The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads and optimizing the power absorbed and eliminating the start current. Units fitted with electronic expansion valve and EC INVERTER fans, upflow or downflow.



VERSIONS

- D** - Downflow air supply
- U** - Up flow air supply
- E** - Front supply (Displacement)
- B** - Up supply, (Rear return)
- V** - Up supply (Down suction)

ACCESSORIES

- Remote user terminal
- Electric Heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Interface electronic board
- Air distribution plenum
- Condensing pump discharge
- Interface card for TCP/IP Protocol
- Longwork, modbus, bacnet
- Touch screen graphic terminal
- Power supply different from standard

Features

Unit for installing inside or outside the room to be air-conditioned. Maximum resistance to rust thanks to the galvanized sheet metal structures and panels with bevelled corner uprights to enhance its unique, clean and attractive design. The panels are lined with sound-insulating material to limit noise levels. Last generation of BLDC INVERTER compressor designed to deliver maximum cooling efficiency when you need it most. This latest variable speed compressor technology allows CRAC system manufacturers as Emicon to achieve superior performance. New generation EC Inverter centrifugal fan made in high class technological material with 5 backward curved blades. Impeller with bionic 3D profile thanks to an innovative design in the form of a blade geometry with specific buckling. Special V-shaped rear edge allows a wide characteristic field. Together with the rotating diffuser that opens, exceptional performances of the impeller and the entire system are thus obtained. In combination with the undulated surface of the blade surface, a diffused sound emission takes place which guarantees a very low noise level.

Standard COARSE 60% (ISO EN 16890) EU4/G4 filtering section is fitted. The filter is self-extinguishing. The microprocessor controls the compressor activation times thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.

Refrigerant circuit consisting of Electronic Expansion Valve, sight glass filter dryer on liquid line, pressure transducer with indication, control and protection functions on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories. Thanks to the double coil (Free-cooling water and Direct Expansion) the unit provides the highest saving match with full availability of the DX solution. The usage of Free cooling coil and the BLDC Inverter compressor allows maximizing the saving in mixed mode operation, so whenever the free-cooling is not able to fully take the load the compressors can work just to complete the missing cooling needs. Therefore Emicon DXI-HF can provide extremely high energy saving granting the highest availability of the application.

Control

Semi-graphic display 132x64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function modality.



TECHNICAL DATA

DXi.AF		181	251	381	392	531	532
Cooling capacity (Total) ⁽¹⁾ ESP 20 Pa	kW	18,6	24,9	35,3	37,0	51,3	49,1
Cooling capacity (Sensible) ⁽¹⁾ ESP 20 Pa	kW	16,5	23,3	33,2	33,4	43,4	43,1
Tot. absorbed power ⁽²⁾ ESP 20 Pa	kW	5,23	7,37	10,1	10,5	14,8	14,3
SHR		0,88	0,93	0,94	0,90	0,84	0,87
Air flow	m³/h	5777	8260	11656	11656	14696	14696
Fan	n°	1	1	1	1	2	2
Max. ESP	Pa	568	359	374	374	397	396
EER	W/W	3,56	3,38	3,50	3,52	3,47	3,43
Maximum absorbed power	kW	10,6	11,5	16,4	18,6	24,3	23,0
Maximum absorbed current	A	21,0	21,2	25,6	37,6	36,9	42,4
Starting current	A	17,8	17,8	21,6	34,4	32,0	39,0
Power supply	V/ph/Hz	400/3/50+N+PE					
Free - cooling							
Cooling capacity (Total) ⁽¹⁾ ESP 20 Pa	kW	17,3	25,2	35,3	35,3	45,9	45,9
Tot. absorbed power ⁽²⁾ ESP 20 Pa	kW	0,75	1,02	1,42	1,49	1,64	1,71
SHR		0,88	0,88	0,87	0,87	0,88	0,88
Water flow	m³/h	3,08	4,48	6,28	6,28	8,14	8,14
Tot. pressure drop	kPa	21,7	38,5	29,8	29,8	41,9	41,9
Humidifier							
Steam production (nominal)	kg/h	5	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8
Max. absorbed power	kW	3,75	6	6	6	6	6
Max. absorbed current	A	5,5	8,7	8,7	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l CaCO ₃	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	2	3	3	3	3	3
Power	kW	6	9	9	9	15	15
Absorbed current	A	9,12	13,7	13,7	13,7	22,8	22,8
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	9	12	12	12	18	18
Absorbed current	A	13,7	18,2	18,2	18,2	27,3	27,3
Hot water coil							
Heating capacity ⁽³⁾	kW	10,6	16,7	24,5	24,5	31,1	31,1
Water flow	m³/h	1,8	2,9	4,3	4,3	5,43	5,43
Pressure drop (coil + 3 way valve)	kPa	48	56	46	46	53	53
Coil internal volume	dm³	2,1	3,3	4,7	4,7	5,8	5,8
Condensing water pump							
Nominal flow	l/h	390	390	390	390	390	390
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500	500
Max. discharge height (flow=0 m³/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	-	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	-	900	900	900	900	900
Max. discharge height (flow=0 m³/h)	m	-	6	6	6	6	6
Dimensions and weight							
Frame	n°	3	4	4,5	4,5	5	5
Width	mm	980	1160	1505	1505	1860	1860
Depth	mm	750	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	297	352	446	463	560	575
Weight (Configuration V)	Kg	301	356	452	469	566	581
Weight (Configuration D)	Kg	303	359	454	471	570	585
Weight (Configuration B)	Kg	301	356	452	469	566	581

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C, Evaporation temperature 9°C. (3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

(2) The fans electrical power has to be added to the ambient load.

DXi.AF		631	652	742	761	931	952
Cooling capacity (Total) ⁽¹⁾ ESP 20 Pa	kW	61,3	66,8	69,2	76,2	89,0	96,8
Cooling apacity (Sensible) ⁽¹⁾ ESP 20 Pa	kW	52,0	53,4	61,6	63,3	78,8	81,4
Tot. absorbed power ⁽²⁾ ESP 20 Pa	kW	17,5	19,6	19,9	22,3	25,8	29,2
SHR		0,84	0,79	0,89	0,83	0,88	0,84
Air flow	m³/h	17838	17838	21183	21183	26048	26048
Fan	n°	2	2	2	2	3	3
Max. ESP	Pa	354	355	399	400	432	433
EER	W/W	3,50	3,41	3,48	3,42	3,45	3,32
Maximum absorbed power	kW	27,7	30,8	32,7	35,9	44,5	48,8
Maximum absorbed current	A	46,6	48,4	51,2	57,9	76,3	73,8
Starting current	A	156	44,4	47,2	168	185	68,9
Power supply	V/ph/Hz	400/3/50+N+PE					
Free - cooling							
Cooling capacity (Total) ⁽¹⁾ ESP 20 Pa	kW	54,3	54,3	65,4	65,4	80,8	80,8
Tot. absorbed power ⁽²⁾ ESP 20 Pa	kW	2,17	2,17	2,49	2,49	2,89	2,89
SHR		0,88	0,88	0,88	0,88	0,88	0,88
Water flow	m³/h	9,67	9,67	11,62	11,62	14,33	14,33
Tot. pressure drop	kPa	32,2	32,2	31,0	31,0	27,3	27,3
Humidifier							
Steam production (nominal)	kg/h	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8
Max. absorbed power	kW	6	6	6	6	6	6
Max. absorbed current	A	8,7	8,7	8,7	8,7	8,7	8,7
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l CaCO₃	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	18	18	24	24	27	27
Absorbed current	A	27,3	27,3	36,5	36,5	41,0	41,0
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	24	24	27	27	36	36
Absorbed current	A	36,5	36,5	41,0	41,0	54,7	54,7
Hot water coil							
Heating capacity ⁽³⁾	kW	37,4	37,4	48,9	48,9	60,8	60,8
Water flow	m³/h	6,5	6,5	8,5	8,5	10,6	10,6
Pressure drop (coil + 3 way valve)	kPa	34	34	48	48	42	42
Coil internal volume	dm³	7,1	7,1	10,45	10,45	12,6	12,6
Condensing water pump							
Nominal flow	l/h	390	390	390	390	390	390
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500	500
Max. discharge height (flow=0 m³/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900
Max. discharge height (flow=0 m³/h)	m	6	6	6	6	6	6
Dimensions and weight							
Frame	n°	6	6	7	7	8	8
Width	mm	2210	2210	2565	2565	3100	3100
Depth	mm	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	680	684	807	810	996	994
Weight (Configuration V)	Kg	687	692	815	818	1006	1004
Weight (Configuration D)	Kg	691	695	819	822	1011	1009
Weight (Configuration B)	Kg	687	692	815	818	1006	1004

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C, Evaporation temperature 9°C. (3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

(2) The fans electrical power has to be added to the ambient load.