

DXi.H

DIRECT EXPANSION CLOSE CONTROL UNIT WATER COOLED WITH INVERTER COMPRESSOR



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.

The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads, optimizing the power absorbed and eliminating the starting current. Electronic expansion valve and EC Inverter fans are fitted in this model as standard. Emibyte units are fully designed and tested in the Emicon validation laboratories.



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

The condensation heat is disposed of in an internal plate heat exchanger, connected in turn to a water circuit. The condensation water can derive from a well, local water network or closed circuits such as evaporative towers and / or dry coolers.

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.H		61	111	121	151	181	201
Cooling capacity (Total) ⁽¹⁾ ESP 20 Pa	kW	7,7	10,5	12,1	17,7	20,2	21,7
Cooling capacity (Sensible) ⁽¹⁾ ESP 20 Pa	kW	7,7	9,5	11,8	15,4	18,5	21,7
Tot. absorbed power ⁽²⁾ ESP 20 Pa	kW	2,1	3,0	3,2	4,5	4,7	4,8
SHR		1,00	0,91	0,97	0,88	0,91	1,00
Water flow	m³/h	1,7	2,3	2,6	3,8	4,3	4,6
Pressure drops	kPa	46	35	45	45	33	37
Air flow	m³/h	3900	3900	3900	3900	5700	5700
Fan	n°	1	1	1	1	1	1
Max. ESP	Pa	535	536	512	439	622	575
EER	W/W	4,0	3,8	4,1	4,2	4,7	4,9
Maximum absorbed power	Kw	4	6	6	9	11	11
Maximum absorbed current	A	14	18	18	16	21	21
Starting current	A	4	4	4	4	7	7
Power supply	V/ph/Hz	400/3/50+N+PE					
Humidifier							
Steam production (nominal)	kg/h	3	3	3	3	5	5
Steam production (max.)	kg/h	3	3	3	3	8	8
Max. absorbed power	kW	2,25	2,25	2,25	2,25	3,75	3,75
Max. absorbed current	A	10,0	10,0	10,0	10,0	5,5	5,5
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°	3	3	3	3	2	2
Power	kW	4,5	4,5	4,5	4,5	6,0	6,0
Absorbed current	A	6,5	6,5	6,5	6,5	8,7	8,7
Oversized electrical heaters							
Steps	n°	2	2	2	2	3	3
Power	kW	6,0	6,0	6,0	6,0	9,0	9,0
Absorbed current	A	8,7	8,7	8,7	8,7	13,0	13,0
Hot water coil							
Heating capacity ⁽³⁾	kW	7,3	7,3	7,3	7,3	10,6	10,6
Water flow	m³/h	1,3	1,3	1,3	1,3	1,8	1,8
Pressure drop (coil + 3 way valve)	kPa	31	31	31	31	48	48
Coil internal volume	dm³	1,4	1,4	1,4	1,4	2,1	2,1
Compressors							
Circuits / Compressors	n°/n°	1/1	1/1	1/1	1/1	1/1	1/1
On / Off Compressors	n°	--	--	--	--	--	--
Inverter Compressors	n°	1	1	1	1	1	1
Condensing water pump							
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0	390,0
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	-	-	-	-	-	-
Max. flow (prevalence = 0 m)	l/h	-	-	-	-	-	-
Max. discharge height (flow=0 m³/h)	m	-	-	-	-	-	-
Dimensions and weight							
Frame	n°	2	2	2	2	3	3
Width	mm	750	750	750	750	980	980
Depth	mm	550	550	550	550	750	750
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	201	209	212	223	289	297
Weight (Configuration V)	Kg	204	212	215	226	293	301
Weight (Configuration D)	Kg	205	213	217	228	295	303
Weight (Configuration B)	Kg	204	212	215	226	293	301

(1) Ambient temperature 24°C, Relative humidity 50%,
Water temperature 30/35°C.

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

(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.H		251	321	381	392	472	491
Cooling capacity (Total) ⁽¹⁾ ESP 20 Pa	kW	25,9	35,1	36,4	39,4	48,0	50,9
Cooling cpacity (Sensible) ⁽¹⁾ ESP 20 Pa	kW	24,8	31,6	37,5	35,0	40,7	45,4
Tot. absorbed power ⁽²⁾ ESP 20 Pa	kW	6,4	7,6	8,0	8,0	11,0	11,8
SHR		0,96	0,90	1,00	0,89	0,85	0,89
Water flow	m³/h	5,6	7,3	7,6	8,2	10,1	10,8
Pressure drops	kPa	29	27	21	7	10	33
Air flow	m³/h	8150	8150	11500	11500	11500	11500
Fan	n°	1	1	1	1	1	1
Max. ESP	Pa	399	358	344	399	370	323
EER	W/W	4,4	5,0	4,9	5,4	4,7	4,7
Maximum absorbed power	Kw	12	15	16	19	21	23
Maximum absorbed current	A	21	24	26	38	40	34
Starting current	A	6	6	8	24	25	8
Power supply	V/ph/Hz	400/3/50+N+PE					
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	6,0	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	8,7	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 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	9,0	9,0	9,0	9,0	9,0	9,0
Absorbed current	A	13,0	13,0	13,0	13,0	13,0	13,0
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	12,0	12,0	12,0	12,0	12,0	12,0
Absorbed current	A	17,3	17,3	17,3	17,3	17,3	17,3
Hot water coil							
Heating capacity ⁽³⁾	kW	16,7	16,7	24,5	24,5	24,5	24,5
Water flow	m³/h	2,9	2,91	4,3	4,3	4,3	4,3
Pressure drop (coil + 3 way valve)	kPa	56	56	46	46	46	46
Coil internal volume	dm³	3,3	3,3	4,7	4,7	4,7	4,7
Compressors							
Circuits / Compressors	n°/n°	1/1	1/1	1/1	2/2	2/2	1/1
On / Off Compressors	n°	--	--	--	--	--	--
Inverter Compressors	n°	1	1	1	2	2	1
Condensing water pump							
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0	390,0
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	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	4	4	4,5	4,5	4,5	4,5
Width	mm	1160	1160	1505	1505	1505	1505
Depth	mm	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	339	372	428	456	458	435
Weight (Configuration V)	Kg	343	376	433	462	464	440
Weight (Configuration D)	Kg	345	379	436	465	466	443
Weight (Configuration B)	Ka	343	376	433	462	464	440

(1) Ambient temperature 24°C, Relative humidity 50%,
Water temperature 30/35°C.

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

(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.H		531	532	631	652	691	742
Cooling capacity (Total) ⁽¹⁾ ESP 20 Pa	kW	55,0	53,7	68,1	70,6	72,2	76,4
Cooling cpacity (Sensible) ⁽¹⁾ ESP 20 Pa	kW	53,4	52,8	65,3	66,2	67,0	75,8
Tot. absorbed power ⁽²⁾ ESP 20 Pa	kW	12,2	13,0	14,6	15,5	15,7	16,9
SHR		0,97	0,98	0,96	0,94	0,93	0,99
Water flow	m³/h	11,6	11,5	14,2	14,8	15,1	16,0
Pressure drops	kPa	37	12	28	10	31	11
Air flow	m³/h	14500	14500	17600	17600	17600	20900
Fan	n°	2	2	2	2	2	2
Max. ESP	Pa	389	360	390	361	390	365
EER	W/W	4,9	4,5	5,0	4,9	5,0	4,9
Maximum absorbed power	Kw	24	23	28	31	30	33
Maximum absorbed current	A	37	42	47	48	50	51
Starting current	A	10	27	156	30	167	33
Power supply	V/ph/Hz	400/3/50+N+PE					
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	6,0	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	8,7	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°	3	3	3	3	3	3
Power	kW	15,0	15,0	18,0	18,0	18,0	24,0
Absorbed current	A	21,7	21,7	26,0	26,0	26,0	34,6
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	18,0	18,0	24,0	24,0	24,0	27,0
Absorbed current	A	26,0	26,0	34,6	34,6	34,6	39,0
Hot water coil							
Heating capacity ⁽³⁾	kW	31,1	31,1	37,4	37,4	37,4	48,9
Water flow	m³/h	5,43	5,43	6,5	6,5	6,5	8,5
Pressure drop (coil + 3 way valve)	kPa	53	53	34	34	34	48
Coil internal volume	dm³	5,8	5,8	7,1	7,1	7,1	10,45
Compressors							
Circuits / Compressors	n°/n°	1/1	2/2	1/2	2/2	1/2	2/2
On / Off Compressors	n°	--	--	1	--	1	--
Inverter Compressors	n°	1	2	1	2	1	1
Condensing water pump							
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0	390,0
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	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	5	5	6	6	6	7
Width	mm	1860	1860	2210	2210	2210	2565
Depth	mm	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	525	548	627	652	627	749
Weight (Configuration V)	Kg	531	554	634	660	634	757
Weight (Configuration D)	Kg	535	558	638	663	638	761
Weight (Configuration B)	Kg	531	554	634	660	634	757

(1) Ambient temperature 24°C, Relative humidity 50%,
Water temperature 30/35°C.

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

(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.H		761	861	931	952	1021	1142
Cooling capacity (Total) ⁽¹⁾ ESP 20 Pa	kW	85,9	87,3	100,3	104,6	107,4	118,9
Cooling apacity (Sensible) ⁽¹⁾ ESP 20 Pa	kW	80,1	80,7	96,5	98,0	99,4	104,5
Tot. absorbed power ⁽²⁾ ESP 20 Pa	kW	18,7	19,9	21,9	23,5	22,9	26,8
SHR		0,93	0,92	0,96	0,94	0,93	0,88
Water flow	m³/h	18,0	18,4	21,0	22,0	22,4	25,1
Pressure drops	kPa	29	21	26	12	22	15
Air flow	m³/h	20900	20900	25700	25700	25700	25700
Fan	n°	2	2	3	3	3	3
Max. ESP	Pa	394	394	414	385	414	386
EER	W/W	5,0	4,7	4,9	4,8	5,1	4,8
Maximum absorbed power	Kw	36	38	45	49	47	56
Maximum absorbed current	A	58	61	76	74	79	93
Starting current	A	168	179	185	47	219	203
Power supply	V/ph/Hz	400/3/50+N+PE					
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	6,0	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	8,7	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°	3	3	3	3	3	3
Power	kW	24,0	24,0	27,0	27,0	27,0	27,0
Absorbed current	A	34,6	34,6	39,0	39,0	39,0	39,0
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	27,0	27,0	36,0	36,0	36,0	36,0
Absorbed current	A	39,0	39,0	52,0	52,0	52,0	52,0
Hot water coil							
Heating capacity ⁽³⁾	kW	48,9	48,9	60,8	60,8	60,8	60,8
Water flow	m³/h	8,5	8,5	10,6	10,6	10,6	10,6
Pressure drop (coil + 3 way valve)	kPa	48	48	42	42	42	42
Coil internal volume	dm³	10,45	10,45	12,6	12,6	12,6	12,6
Compressors							
Circuits / Compressors	n°/n°	1/2	1/2	1/2	2/2	1/2	2/4
On / Off Compressors	n°	1	1	1	--	1	2
Inverter Compressors	n°	1	1	1	2	1	2
Condensing water pump							
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0	390,0
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	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	7	7	8	8	8	8
Width	mm	2565	2565	3100	3100	3100	3100
Depth	mm	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	735	739	900	919	904	995
Weight (Configuration V)	Kg	743	748	910	929	915	1006
Weight (Configuration D)	Kg	747	752	915	934	920	1011
Weight (Configuration B)	Kg	743	748	910	929	915	1006

(1) Ambient temperature 24°C, Relative humidity 50%,
Water temperature 30/35°C.

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

(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.