

ED.H Kc

DIRECT EXPANSION CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

COOLING CAPACITY FROM 7 TO 151 kW

ED.H 771 D Kc



H₂O

The range of close control units with water cooled condenser, series **ED.H**, is particularly indicated for use in technological centres, data processing rooms, in telecom centres and in such applications where it is important to keep the thermo-hygrometric conditions constant all over the year, so to assure the correct operation of the equipments installed in these sites.

Depending on the cooling capacity, they are available with 1 and 2 cooling circuits.

Thanks to their technologically advanced design, these close control units are able to control the ambient temperature with remarkably high precision and, when the humidity level is required, to adapt their cooling capacity to the room requirements, all automatically managed by the microprocessor on board.

The high technology employed during their design together with the use of the best components available on the markets, make these units extremely reliable and therefore able to work for long periods, without a break. These units are particularly easy to install also in small spaces and easily accessible on the front side for ordinary and extraordinary service operations. They are completely assembled and tested in the factory and supplied with refrigerant and oil charge.

The units are available in different configurations, related to the air return and

discharge:

- **U** front air return, upflow air discharge;
- **V** bottom air return, upflow air discharge;
- **B** back air return, upflow air discharge;
- **D** top air return, downflow air discharge.

Operation limits: ambient temperature from 19 to 35°C - water at condenser inlet min. 20°C - outlet max 50 °C - (for water at inlet < 20°C it is necessary to install option VP)

MAIN COMPONENTS

Structure realized with a framework and internal parts made of galvanized steel riveted profiles and supports, making the structure strong and suitable also for extreme transport and handling conditions. The external panels, fixed to frame with quick opening connections, are made of pre-painted steel sheet (RAL 9004), ensuring a long-term durability to the unit. They are internally insulated with self-extinguishing sound-proofing material (class HF1 – UL94) reducing the overall sound level of the unit. On request (option IS1), it is available the sound-proofing insulation with class 1 material in conformity to the main European regulations in force. All the front and side panels can be

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

dismantled so to allow an easy access to the main components. Moreover, the front of the unit is provided with double panels and inspection window (not available for version U), suitably arranged to let the unit work also with open panels during technical interventions, to allow more accurate regulations and more quick timing for ordinary and extraordinary service operations.

High-efficiency scroll compressor (EER > 3.2 at ARI conditions), with low sound level, internal heat protection, installed on rubber vibration dampers, supplied with crankcase heater.

In the case of 2 circuit units, in case of problem on one of the circuit, the 50% operation of the unit is anyway granted.

Single-inlet and backward curved centrifugal fans, made of high-performance composite material, directly coupled to a three-phase electrical motor with IP54 Class F protection and provided with a thermal protection inside the motor winding. The fans are fixed on suitable supports reducing the transmission of vibration to the frame and the impeller is statically and dynamically balanced with long-life bearings. It is possible to regulate the fan speed by means of an autotransformer and to adjust their air flow to the head pressure requested on site. It is clear that a higher fans speed rotation involves an increase in the sound level of the unit.

All the units are equipped with low airflow and clogged filter alarms which, by means of differential pressure switches, stop the unit operation in case of fans problems and give a signal on microprocessor for replacement respectively.

Direct expansion evaporating coil, realized with copper tube and aluminium fins, it is suitably sized with a wide exchange surface and a low air crossing speed so to allow a remarkable heat exchange and reduce the pressure drops on the air side. It is provided with a hydrophilic treatment to reduce the surface tension between water and metal surface, promoting film condensation and avoiding the risk of condensing drops outside the drain tray.

Weld-brazed plate condenser in AISI 316 stainless steel, with pipes and patented manifold so to reach a high heat exchange coefficient. Its design allows a uniform water distribution, compatibly with pressure drops.

Condensing drain tray, made in corrosion proof peraluman, placed underneath the evaporating coil, it is provided with a flexible pipe for condensing water discharge.

Washable and self-extinguishing air filters Efficiency G4 of pleated type, they are made of synthetic fibre and are contained in a suitable metal frame. Their pleated arrangement, with a wide surface area, ensures a higher filtering efficiency and low pressure drops.

Cooling circuit made of: electronic thermostatic valve, sight glass, dehydrating filter, safety device, high pressure switch, solenoid valve (when necessary), liquid receiver, shut-off valve on compressor discharge and on liquid line. Thanks to the electronic thermostatic valve, there is a more accurate regulation of the evaporating pressure/temperature in all working conditions, with superheating at a constant value.

Electric board in compliance with CE norms, protected by a panel is separated by the air flow and is provided with main switch, automatic switches, remote control switches, motor protection switches, low-tension auxiliary circuits and terminal board for free contacts and remote general alarm, magnetothermic switches for humidifier and electric heaters (when installed).

Unit management microprocessor installed inside the electrical board, complete with hour counter and electronic card to program the switch-over

and rotation between to units, after a pre-set time. On this purpose, in case of order, the information necessary for programming must be clearly defined. It allows 3 languages display reading, a detailed description of parameters, the possibility to manage up to 8 units, to manage non standard communication protocols, a quickest access to the program, the control of the electronic thermostatic valve and of the humidifier, the control of modulating valves.

ACCESSORIES

AA Flooding detector: placed in the downflow units, it is already wired and detects water in the false floor.

AE Electrical power supply different from standard: mainly, 230V three-phase, 460V three-phase. Frequency 50/60 Hz.

AL Smoke alarm: it consists of a sensor detecting smoke inside the unit and activating an alarm signal which stops the fans.

B Adjustable base-frame from 170mm to max 600mm for installation on raised floors. It is provided with adjustable feet.

BC Hot water coil: one-row or 2-row water coil, placed after the cooling coil for the re-heating and/or the heating of treated air. Provided with modulating actuator and with three-way valve, it is controlled by the microprocessor on board. This option is priority when requested with the electric heaters RE option. (Alternative to BG and not available with REM).

BG Hot gas coil: placed after the cooling coil, it makes the re-heating of the treated air and is provided with a 3-way valve (ON/OFF) controlled by the microprocessor on board. It is available only with the dehumidification control (options DH) (Alternative to BC and not available with HG).

BN Base-frame with conveyor: it is provided with a suitable conveyor facilitating the air flow and remarkably reducing the pressure drop in case of horizontal air flow. It is adjustable in height from min 400mm to max 800mm. (Only for D version).

BS Base-frame with ON/OFF damper: it is equipped with an ON/OFF motorized damper. This device prevents the air return from the unit when it is not working or in the case some units are working near to it. Available only for D version; for other versions, being a special execution, please contact our Sales Dept.

BSN Base-frame with conveyor and ON/OFF damper: a single base-frame with both options BS and BN so to optimize efficiency and overall dimensions.

CI Soundproofing jacket on compressors: made of soundproofing material, wrapped all around compressors so to further reduce the overall sound level of the unit.

CS Compressors inrush counter: Electromechanical device positioned inside the electrical board, recording the total inrush starts of compressors.

D Dehumidification control system: managed by microprocessor, through the electronic thermostatic valves, it operates on two parameters, ensuring that the dehumidification process is carried out with a constant air flow, without partializing the evaporating coil. This will optimize the air distribution throughout the room.

DP Internal double panels: for shutting off the compartments affected by the air flow, they are made from pre-painted and galvanized steel plate, ensuring reduction in the noise transmitted through the panels and a better air tightness even without the external panels so that the access is guaranteed with the doors open during service operation.

EC-LP&HP Single-inlet EC (electronically commutated) centrifugal fans with backward curved blade (LP not available for D version):

made of high-performance composite material, directly coupled to a three-phase electrical rotor with IP54 protection grade, they have the possibility of a continuous regulation of the speed by means of 10V signal, sent and integrated to the control. The fans are fixed on suitable supports reducing the transmission of vibration to the frame and the impeller is statically and dynamically balanced with long-life bearings. Thanks to their technology, the EC fans ensures a lower electrical absorption and sound level, if compared to the traditional centrifugal fans. It is possible to adjust their air flow to the head pressure requested on site. **In case of IT electrical supplies, please contact our Sales Dept.**

F5-F6-F7-F9 Higher efficiency air filters: pleated filters, supplied as an alternative to standard G4 filters.

FR Spare filter kit G4 as a replacement to the ones on board of the unit.

H Humidifier of immersed-electrode type for the modulating production of steam. It is made by a steam cylinder, by a steam distributor, by water inlet and outlet valves and by a maximum level probe. The microprocessor on board indicates when the steam cylinder needs to be replaced. It is electrically protected by a magnetothermic switch.

HG Hot gas by-pass: it is a mechanical device for modulating the cooling capacity, so to reduce the ON/OFF of compressors and therefore to wait for the re-starting timing, with influence on condensing temperature. It is not available for sizes 1, 2 and 3 and with options BG and DH.

IE Fumigated wooden crate packing: available on request for critical transports, so to assure a suitable protection to the unit.

IH RS 485 serial interface: electronic card to be connected to microprocessor, to allow communication between the units and a Carel supervision system. It is possible to fully control the unit from remote. For connection to other supervision systems, the protocol of the controlled parameters is available on request.

IM Seawood packing: fumigated seawood case and protection bag with hygroscopic salts, suitable for long sea transports.

IP Magnetothermic switches for auxiliary circuits: when required, they replace the fuses, as a protection of the auxiliary circuits.

IS1 Class 1 insulating material in conformity to the main European regulations in force.

MF Phase monitor: electronic device controlling the correct sequence and/or the eventual lack of one of the 3 phases, switching off the unit if necessary.

MN Lack of neutral wire for 400/3/50 power supply: unit general power supply without neutral wire.

MP Oversized microprocessor: in addition to the standard microprocessor, it allows more languages display reading (maximum 5), it has an increased hardware so to allow the managing of more inputs and outputs for the control of on board installed components (Already included on two circuit units).

PB Condensing water pump: micro pump discharging the condensing water produced by the unit, it is factory installed.

PBH Condensing water and humidifier discharge pump: pump discharging the condensing water produced by the unit and the humidifier discharge water, it is factory installed.

PL Distribution plenum with front grid and a double row of adjustable fins for a better air distribution (for versions U,V,B and not available with options ST and STM).

PQ Remote display: remote terminal, allowing to display the temperature and humidity values detected by probes, the alarm digital inputs, the outputs and the remote ON/OFF of the unit, to change and program of the parameters, the sound signal and the display of the present alarms.

PR Fresh air inlet: external fresh air inlet with filter, placed on side (standard on the left side), with circular connection (Ø 100 mm).

RE Electrical heaters: made in aluminium and installed after the cooling coil, for re-heating and/or heating of the treated air. The heating capacity is split on 3 steps max, so to reduce the energy absorption. They are controlled by the microprocessor on board and electrically protected by a magnetothermic switch.

REM Oversized Electrical heaters.

RF Rephasing condensers (available for compressors only): electrical device for rephasing the compressors charge at power factor $\cos\Phi \geq 0,9$.

RV Personalized frame painting in RAL colour.

SL Main switch with external padlock.

ST Manual calibration damper, in galvanized steel plate with opposed-movement fins. Through the manual control, it is possible to accurately regulate the air flow. (Alternative to STM and not available with option PL)

STM Motorized calibration damper, in galvanized steel plate with opposed-movement fins. Through the modulating control (0-10V), it is possible to accurately regulate the air flow. (Alternative to ST and not available with option PL)

SV Gravity overpressure damper for ducted units, to prevent the air return when the units are not operating, where several units are installed in the same room. Available for U,V,B versions; for D version, being a special execution, please contact our Sales Dept.

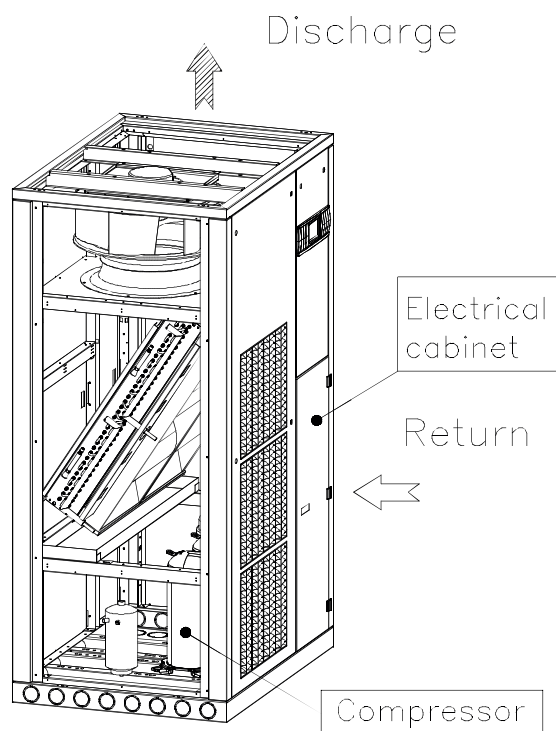
TS Touch screen graphic terminal designed to simplify user interface with the unit controller. It allows the set-point fixing, the alarm reading, the graphic display of the main controlled parameters in real time (suitable for download on USB interface) and possibility of set-point scheduling. The 4.3", 65.000 colours and 480x422 resolution display, being a dedicated terminal for the end user, does not allow to change the basic configuration of the unit.

VCP 3-way valve for regulation of the condensing pressure. (Alternative to VP)

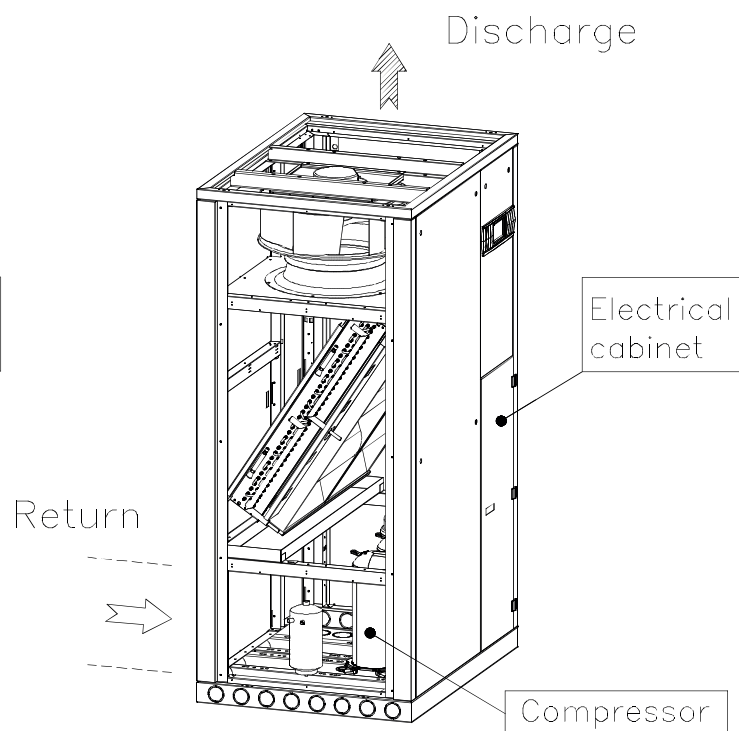
VP 2-way Pressostatic valve: it is placed on condenser water side and controls the water flow rate according to the unit condensing pressure. (Alternative to VCP)

WG WebGate device for interfacing to BMS with SNMP or TCP/IP protocols. Only available with option IH.

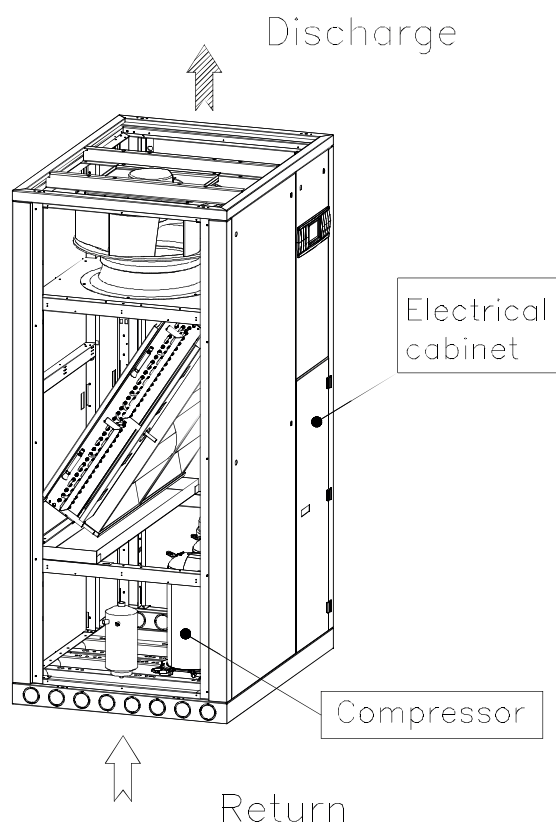
U Front air return
Upflow air discharge



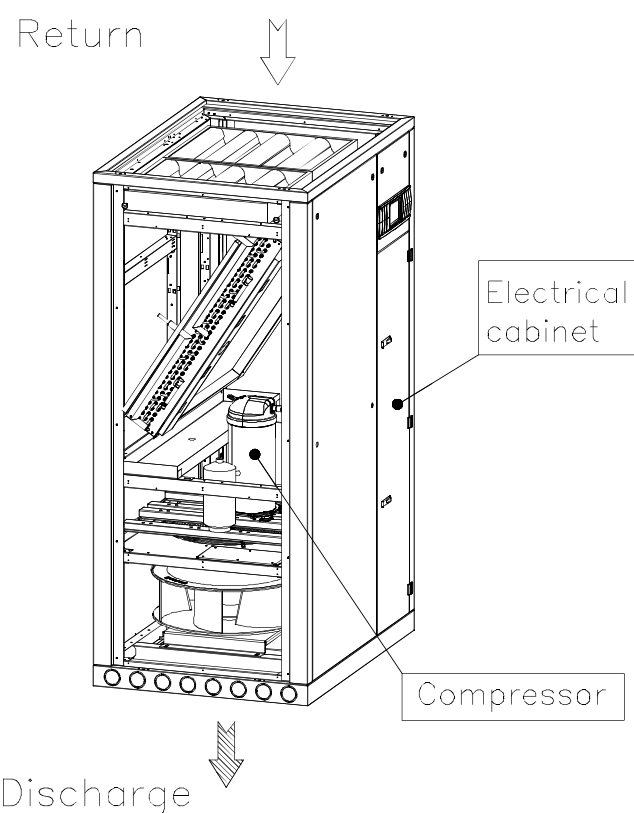
B Back air return
Upflow air discharge



V Bottom air return
Upflow air discharge



D Top air return
Downflow air discharge



CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 1-circuit units - ED.H U-V-B Versions

ED.H U-V-B		71 Kc	81 Kc	101 Kc	131 Kc	161 Kc	211 Kc	231 Kc	261 Kc	271 Kc	281 Kc
Frame		1		2		3		4			
Cooling capacity											
Total cooling capacity (27°C - 50% R.H.)	kW	7,6	9,3	10,6	13,8	18,1	23,5	25,5	27,9	28,3	30,8
Sensible cooling capacity (27°C - 50% R.H.)	kW	6,3	8,1	9,3	12,3	15,5	20,2	22,7	23,7	23,9	27,3
SHR @ 27°C-50% U.R.	%	83%	87%	88%	89%	86%	86%	89%	85%	84%	89%
Nominal input power (27°C - 50% R.H.)	kW	1,5	1,9	2,0	2,6	3,4	4,4	4,3	5,2	5,1	5,8
Nominal input current (27°C - 50% R.H.)	A	3,1	4,1	4,5	4,6	6,5	10,0	9,7	9,1	11,3	11,3
Total cooling capacity (24°C - 50% R.H.)	kW	7,0	8,5	9,7	12,7	16,6	21,5	23,5	25,6	26,0	28,2
Sensible cooling capacity (24°C - 50% R.H.)	kW	6,1	7,7	8,9	11,8	14,9	19,4	21,9	22,8	22,9	26,3
SHR @ 24°C-50% U.R.	%	87%	91%	92%	93%	90%	90%	93%	89%	88%	93%
Nominal input power (24°C - 50% R.H.)	kW	1,5	1,9	2,1	2,6	3,4	4,4	4,3	5,2	5,1	5,7
Nominal input current (24°C - 50% R.H.)	A	3,1	4,1	4,5	4,7	6,6	10,2	10,0	9,3	11,6	11,4
Total cooling capacity (22°C - 50% R.H.)	kW	6,7	8,2	9,2	12,1	15,9	20,7	22,2	24,5	24,9	27,0
Sensible cooling capacity (22°C - 50% R.H.)	kW	5,8	7,6	8,7	11,5	14,6	19,0	21,0	22,3	22,5	25,6
SHR @ 22°C-50% U.R.	%	87%	93%	95%	95%	92%	92%	95%	91%	90%	95%
Nominal input power (22°C - 50% R.H.)	kW	1,5	1,9	2,1	2,6	3,4	4,4	4,3	5,2	5,1	5,7
Nominal input current (22°C - 50% R.H.)	A	3,2	4,1	4,5	4,7	6,7	10,3	10,1	9,4	11,8	11,5
Scroll compressors											
Quantity	n.	1	1	1	1	1	1	1	2	1	1
Circuits	n.	1	1	1	1	1	1	1	1	1	1
Capacity steps	%			0 / 100				0/50/100		0 / 100	
Max input current	A	4,7	10,0	10,0	13,0	15,0	19,0	19,0	26,0	19,0	19,0
Inrush current	A	28,0	45,0	45,0	60,0	70,0	87,0	87,0	73,0	100,0	110,0
Water cooled condenser (27°C - 50% R.H.)											
Quantity	n.					1					
Water flow	m³/h	1,6	1,9	2,2	2,8	3,7	4,8	5,2	5,7	5,8	6,3
Water flow	l/s	0,44	0,53	0,61	0,78	1,03	1,33	1,44	1,58	1,61	1,75
Pressure drop	kPa	33	50	62	53	44	72	50	61	62	53
Water cooled condenser (24°C - 50% R.H.)											
Quantity	n.					1					
Water flow	m³/h	1,5	1,8	2,0	2,7	3,5	4,5	4,8	5,3	5,4	5,9
Water flow	l/s	0,42	0,50	0,56	0,75	0,97	1,25	1,33	1,47	1,50	1,64
Pressure drop	kPa	30	43	55	47	38	63	44	54	55	46
Water cooled condenser (22°C - 50% R.H.)											
Quantity	n.					1					
Water flow	m³/h	1,4	1,7	2,0	2,6	3,3	4,4	4,6	5,2	5,2	5,7
Water flow	l/s	0,39	0,47	0,56	0,72	0,92	1,22	1,28	1,44	1,44	1,58
Pressure drop	kPa	28	41	51	44	36	59	41	51	52	43
Refrigerant charge											
Charge per circuit	kg	3,2	3,3	3,6	3,6	4,0	3,9	4,4	4,4	4,6	6,8
AC fans with autotransformer											
Quantity	n.	1	1	1	1	1	1	1	1	1	1
Fan(s) supply voltage	V	270	300	340	300	340	290	320	320	320	260
Air flow	m³/h	2.330	2.330	2.330	3.500	3.500	5.610	5.610	5.610	5.610	5.610
Available pressure	Pa	20	20	20	20	20	20	20	20	20	20
Rotation speed	rpm	1.192	1.250	1.307	1.266	1.325	1.090	1.143	1.143	1.143	1.150
Input power	kW	0,35	0,37	0,4	0,64	0,69	1,02	1,1	1,1	1,1	1,52
Input current	A	0,97	0,97	0,97	1,49	1,45	2,63	2,63	2,63	2,63	4,13
Max available pressure (max ESP)	Pa	108	74	43	88	46	132	89	88	89	241
Sound pressure level @ 2 m - U Version	dB(A)	52	52	52	55	55	58	59	59	59	61
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	53	51	52	56	56	61	61	60	61	63
Sound pressure level @ 2 m - B Version	dB(A)	48	48	48	51	52	55	55	55	56	57
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	49	49	49	52	52	57	57	57	58	59
Sound pressure level @ 2 m - V Version	dB(A)	48	47	47	50	51	54	54	54	54	56
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	49	48	48	51	51	56	56	56	56	58
EC Fans - LP (low pressure)											
Quantity	n.	-	-	-	-	-	1	1	1	1	1
Air flow	m³/h	-	-	-	-	-	5.610	5.610	5.610	5.610	5.610
Max available pressure (max ESP)	Pa	-	-	-	-	-	182	136	136	136	156
Rotation speed	rpm	-	-	-	-	-	1.234	1.285	1.284	1.285	1.115
Input power	kW	-	-	-	-	-	0,82	0,94	0,93	0,94	1,06
Sound pressure level @ 2 m - U Version	dB(A)	-	-	-	-	-	58	58	58	58	59
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	-	-	-	-	-	59	59	58	59	60
Sound pressure level @ 2 m - B Version	dB(A)	-	-	-	-	-	54	55	54	55	56
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	-	-	-	-	-	55	55	55	55	56
Sound pressure level @ 2 m - V Version	dB(A)	-	-	-	-	-	53	54	53	54	55
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	-	-	-	-	-	54	54	54	54	55

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ED.H U-V-B		71 Kc	81 Kc	101 Kc	131 Kc	161 Kc	211 Kc	231 Kc	261 Kc	271 Kc	281 Kc
Frame											
Frame			1		2			3			4
EC Fans - HP (High pressure)											
Quantity	n.	1	1	1	1	1	1	1	1	1	1
Air flow	m³/h	2.330	2.330	2.330	3.500	3.500	5.610	5.610	5.610	5.610	5.610
Max available pressure (max ESP)	Pa	671	655	625	486	447	664	618	618	618	593
Rotation speed	rpm	1.216	1.242	1.294	1.262	1.315	1.235	1.283	1.282	1.283	1.116
Input power	kW	0,28	0,3	0,33	0,5	0,56	0,84	0,95	0,95	0,95	1,04
Sound pressure level @ 2 m - U Version	dB(A)	52	52	52	55	55	58	59	59	59	61
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	63	63	63	62	62	64	64	64	64	64
Sound pressure level @ 2 m - B Version	dB(A)	49	48	49	52	52	55	56	56	56	58
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	61	60	61	60	59	60	61	62	61	61
Sound pressure level @ 2 m - V Version	dB(A)	47	47	47	50	51	55	55	54	55	55
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	59	59	59	58	58	60	60	60	60	58
Humidifier											
Steam production (nominal)	kg/h	1,5	1,5	1,5	3	3	5	5	5	5	8
Steam production (max)	kg/h	3	3	3	3	3	8	8	8	8	8
Maximum input power	kW	1,12	1,12	1,12	2,25	2,25	2,25	3,75	3,75	3,75	3,75
Maximum input current	A	5	5	5	10	10	10	5,5	5,5	5,5	5,5
Specific conductivity at 20°C (min/max)	µS/cm						300 / 1'250				
Total hardness (min/max)	mg/l CaCo3						100 / 400				
Electrical heaters											
Steps	n.	1	1	1	3	3	2	2	2	2	3
Power	kW	3	3	3	4,5	4,5	6	6	6	6	9
Input current	A	4,3	4,3	4,3	6,5	6,5	8,7	8,7	8,7	8,7	13
Oversized electrical heaters											
Steps	n.	3	3	3	2	2	3	3	3	3	3
Power	kW	4,5	4,5	4,5	6	6	9	9	9	9	12
Input current	A	6,5	6,5	6,5	8,7	8,7	13	13	13	13	17,3
Hot water coil											
Heating capacity	kW	4,5	4,5	4,5	6,90	6,90	10,2	10,2	10,2	10,2	19,8
Water flow rate	m³/h	0,8	0,8	0,8	1,20	1,20	1,8	1,8	1,8	1,8	3,4
Pressure drop (coil+3-way valve)	kPa	37	37	37	35	35	55	55	55	55	77
Internal volume of the coil	dm³	1	1	1	1,3	1,3	1,5	1,5	1,5	1,5	2,8
Hot gas coil											
Heating capacity	kW	5,1	5,1	5,1	7,5	7,5	9,8	9,8	9,8	9,8	14,5
Condensing water pump											
Nominal water flow	l/h	27,5	27,5	27,5	390	390	390	390	390	390	390
Max water flow (pressure = 0 m)	l/h	34	34	34	500	500	500	500	500	500	500
Max height (water flow = 0 m³/h)	l/h	15,0	15,0	15,0	5,40	5,40	5,40	5,40	5,40	5,40	5,40
Condensing water pump + humidifier											
Nominal water flow	l/h	-	-	-	-	-	-	-	-	-	600
Max water flow (pressure = 0 m)	l/h	-	-	-	-	-	-	-	-	-	900
Max height (water flow = 0 m³/h)	m	-	-	-	-	-	-	-	-	-	6,0
Dimensions											
Length	mm	550	550	550	750	750	980	980	980	980	1'160
Width	mm	550	550	550	550	550	750	750	750	750	850
Height	mm	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980
Weight - U Version	kg	176	187	191	239	245	293	302	346	302	375
Weight - V Version	kg	176	187	191	239	245	298	307	351	307	369
Weight - B Version	kg	176	187	191	234	240	303	312	356	312	375
Power supply											
Power supply	V/ph/Hz						400 / 3 / 50 + T + N				
REMARKS											
- Condenser IN/OUT water temperature 30-35°C. - Filters calculated for 20% dirt. - Max pressure is referred to the nominal air flow and the max tension/regulation. - Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa. - The condensing water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm (6 mm for EDH 71-81-101). - The condenser pressure drop does not include the pressostatic valve. - The refrigerant charge does not include the gas re-heating coil.											

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 1-circuit units - ED.H U-V-B Versions

ED.H U-V-B		331 Kc	371 Kc	421 Kc	461 Kc	501 Kc	551 Kc	591 Kc	771 Kc	921 Kc	991 Kc
Frame											
Frame		4			4			6		7	
Cooling capacity											
Total cooling capacity (27°C - 50% R.H.)	kW	34,4	40,4	45,3	48,9	53,6	56,8	64,0	84,6	101,0	108,7
Sensible cooling capacity (27°C - 50% R.H.)	kW	28,9	34,8	33,4	43,7	45,4	48,5	56,5	66,5	81,8	85,4
SHR @ 27°C-50% U.R.	%	84%	86%	74%	89%	85%	85%	88%	79%	81%	79%
Nominal input power (27°C - 50% R.H.)	kW	6,7	7,8	8,6	8,5	9,6	9,5	11,1	14,1	18,9	19,1
Nominal input current (27°C - 50% R.H.)	A	15,0	17,2	17,6	17,7	18,6	18,7	22,8	29,9	37,3	37,3
Total cooling capacity (24°C - 50% R.H.)	kW	31,4	37,1	41,7	45,6	49,8	53,2	58,9	77,5	92,9	99,8
Sensible cooling capacity (24°C - 50% R.H.)	kW	27,6	33,3	32,1	42,3	43,9	47,2	54,0	64,0	79,0	82,2
SHR @ 24°C-50% U.R.	%	88%	90%	77%	93%	88%	89%	92%	83%	85%	82%
Nominal input power (24°C - 50% R.H.)	kW	6,6	7,7	8,5	8,4	9,4	9,4	11,0	14,0	18,7	18,9
Nominal input current (24°C - 50% R.H.)	A	14,9	17,1	17,6	17,6	18,6	18,6	22,6	29,8	37,2	37,3
Total cooling capacity (22°C - 50% R.H.)	kW	30,3	35,5	40,2	43,6	47,6	50,7	56,2	74,3	88,7	95,5
Sensible cooling capacity (22°C - 50% R.H.)	kW	27,4	32,8	31,6	40,5	42,3	45,2	52,9	62,3	76,3	79,9
SHR @ 22°C-50% U.R.	%	90%	92%	79%	93%	89%	89%	94%	84%	86%	84%
Nominal input power (22°C - 50% R.H.)	kW	6,6	7,6	8,4	8,3	9,3	9,3	10,9	14,0	18,7	18,8
Nominal input current (22°C - 50% R.H.)	A	14,8	17,0	17,5	17,6	18,6	18,6	22,6	29,8	37,2	37,2
Scroll compressors											
Quantity	n.	1	1	1	1	1	1	1	1	2	2
Circuits	n.	1	1	1	1	1	1	1	1	1	1
Capacity steps	%	0 / 100					0/50/100				
Max input current	A	25,0	27,0	30,0	30,0	33,0	33,0	38,6	51,0	66,0	66,0
Inrush current	A	110,0	140,0	147,0	147,0	158,0	158,0	197,0	215,0	191,0	191,0
Water cooled condenser (27°C - 50% R.H.)											
Quantity	n.	1									
Water flow	m³/h	7,1	8,4	9,4	10,0	11,0	11,5	13,0	17,1	20,8	22,1
Water flow	l/s	1,97	2,33	2,61	2,78	3,06	3,19	3,61	4,75	5,78	6,14
Pressure drop	kPa	66	71	55	50	60	56	71	39	56	64
Water cooled condenser (24°C - 50% R.H.)											
Quantity	n.	1									
Water flow	m³/h	6,6	7,7	8,7	9,3	10,3	10,8	12,1	15,9	19,3	20,6
Water flow	l/s	1,83	2,14	2,42	2,58	2,86	3,00	3,36	4,42	5,36	5,72
Pressure drop	kPa	57	62	48	45	54	51	63	34	50	56
Water cooled condenser (22°C - 50% R.H.)											
Quantity	n.	1									
Water flow	m³/h	6,4	7,5	8,4	9,0	9,8	10,4	11,6	15,3	18,6	19,8
Water flow	l/s	1,78	2,08	2,33	2,50	2,72	2,89	3,22	4,25	5,17	5,50
Pressure drop	kPa	54	58	45	42	50	47	58	32	46	52
Refrigerant charge											
Charge per circuit	kg	6,8	7,4	7,7	7,9	7,9	8,8	8,8	14,5	15,2	19,5
AC fans with autotransformer											
Quantity	n.	1	1	1	2	2	2	2	2	3	3
Fan(s) supply voltage	V	260	280	280	230	230	250	250	300	260	290
Air flow	m³/h	7.880	7.880	7.880	13.820	13.820	13.820	13.820	16.550	21.600	21.600
Available pressure	Pa	20	20	20	20	20	20	20	20	20	20
Rotation speed	rpm	1.150	1.189	1.189	1.075	1.075	1.122	1.122	1.227	1.145	1.204
Input power	kW	1,52	1,63	1,63	2,71	2,71	2,97	2,97	3,44	4,61	5,09
Input current	A	4,13	4,13	4,13	8,3	8,3	8,38	8,38	8,16	12,54	12,48
Max available pressure (max ESP)	Pa	241	196	198	311	311	264	261	157	240	171
Sound pressure level @ 2 m - U Version	dB(A)	61	61	61	61	62	62	63	68	65	66
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	63	63	63	65	65	65	66	69	67	68
Sound pressure level @ 2 m - B Version	dB(A)	58	58	58	58	58	59	60	65	62	62
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	60	60	59	61	61	61	62	66	65	64
Sound pressure level @ 2 m - V Version	dB(A)	56	57	57	57	57	58	59	64	60	61
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	59	59	58	60	60	60	61	65	63	63
EC Fans - LP (low pressure)											
Quantity	n.	1	1	1	2	2	2	2	2	3	3
Air flow	m³/h	7.880	7.880	7.880	13.820	13.820	13.820	13.820	16.550	21.600	21.600
Max available pressure (max ESP)	Pa	156	108	108	223	223	177	177	75	151	92
Rotation speed	rpm	1.114	1.156	1.160	1.045	1.046	1.091	1.087	1.189	1.117	1.173
Input power	kW	1,06	1,2	1,22	1,79	1,79	2,06	2,04	2,61	3,31	3,89
Sound pressure level @ 2 m - U Version	dB(A)	60	60	60	60	60	61	62	68	64	64
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	60	60	60	61	61	61	63	68	64	64
Sound pressure level @ 2 m - B Version	dB(A)	56	56	56	56	57	57	59	64	60	60
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	57	57	56	58	58	58	59	64	61	61
Sound pressure level @ 2 m - V Version	dB(A)	55	55	55	55	56	56	58	63	59	59
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	56	56	55	57	57	57	58	63	60	60

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 1-circuit units - ED.H U-V-B Versions

ED.H U-V-B		331 Kc	371 Kc	421 Kc	461 Kc	501 Kc	551 Kc	591 Kc	771 Kc	921 Kc	991 Kc
Frame											
Frame		4			4			6		7	
EC Fans - HP (High pressure)											
Quantity	n.	1	1	1	2	2	2	2	2	3	3
Air flow	m³/h	7.880	7.880	7.880	13.820	13.820	13.820	13.820	16.550	21.600	21.600
Max available pressure (max ESP)	Pa	593	545	545	654	654	608	608	516	585	526
Rotation speed	rpm	1.115	1.156	1.160	1.044	1.045	1.090	1.086	1.190	1.116	1.171
Input power	kW	1,04	1,18	1,19	1,77	1,78	2,04	2,01	2,54	3,26	3,8
Sound pressure level @ 2 m - U Version	dB(A)	61	61	61	61	62	62	63	68	65	65
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	64	64	64	67	67	67	63	69	69	69
Sound pressure level @ 2 m - B Version	dB(A)	58	59	59	59	59	60	60	65	63	64
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	62	62	62	64	63	64	64	66	66	67
Sound pressure level @ 2 m - V Version	dB(A)	56	56	56	56	57	57	58	63	60	60
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	59	59	59	61	61	61	62	64	63	63
Humidifier											
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8	8	8
Steam production (max)	kg/h	8	8	8	8	8	8	8	8	8	8
Maximum input power	kW	3,75	3,75	3,75	3,75	6	6	6	6	6	6
Maximum input current	A	5,5	5,5	5,5	5,5	8,7		8,7	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300 / 1'250									
Total hardness (min/max)	mg/l CaCo3	100 / 400									
Electrical heaters											
Steps	n.	3	3	3	3	3	3	3	3	3	3
Power	kW	9	9	9	9	9	15	15	18	18	24
Input current	A	13	13	13	13	13	21,7	21,7	26	26	34,6
Oversized electrical heaters											
Steps	n.	3	3	3	3	3	3	3	3	3	3
Power	kW	12	12	12	18	18	18	18	24	27	27
Input current	A	17,3	17,3	17,3	26	26	26	26	34,6	39	39
Hot water coil											
Heating capacity	kW	19,8	19,8	19,8	35,7	35,7	35,7	35,7	43,70	54,3	54,3
Water flow rate	m³/h	3,4	3,4	3,4	6,2	6,2	6,2	6,2	7,60	9,5	9,5
Pressure drop (coil+3-way valve)	kPa	77	77	77	79	79	79	79	70	79	79
Internal volume of the coil	dm³	2,8	2,8	2,8	5,3	5,3	5,3	5,3	6,5	10,1	10,1
Hot gas coil											
Heating capacity	kW	14,5	14,5	14,5	30	30	30	30	37,6	50,3	50,3
Condensing water pump											
Nominal water flow	l/h	390	390	390	390	390	390	390	390	390	390
Max water flow (pressure = 0 m)	l/h	500	500	500	500	500	500	500	500	500	500
Max height (water flow = 0 m³/h)	l/h	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40
Condensing water pump + humidifier											
Nominal water flow	l/h	600	600	600	600	600	600	600	600	600	600
Max water flow (pressure = 0 m)	l/h	900	900	900	900	900	900	900	900	900	900
Max height (water flow = 0 m³/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions											
Length	mm	1'160	1'160	1'160	1'860	1'860	1'860	1'860	2'210	2'565	2'565
Width	mm	850	850	850	850	850	850	850	850	850	850
Height	mm	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980
Weight - U Version	kg	375	388	413	518	520	541	544	650	768	803
Weight - V Version	kg	369	382	408	528	530	551	554	660	778	813
Weight - B Version	kg	375	388	413	538	540	561	564	665	789	823
Power supply											
Power supply	V/ph/Hz	400 / 3 / 50 + T + N									
REMARKS											
- Condenser IN/OUT water temperature 30-35°C.											
- Filters calculated for 20% dirt.											
- Max pressure is referred to the nominal air flow and the max tension/regulation.											
- Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa.											
- The condensing water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm.											
- The condenser pressure drop does not include the pressostatic valve.											
- The refrigerant charge does not include the gas re-heating coil.											

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 2-circuits units - ED.H U-V-B Versions

ED.H U-V-B		282 Kc	332 Kc	372 Kc	422 Kc	462 Kc	502 Kc	552 Kc	592 Kc	642 Kc	
Frame											
Frame		4					5				
Cooling capacity											
Total cooling capacity (27°C - 50% R.H.)	kW	27,4	34,7	40,0	45,6	49,3	55,4	58,3	63,6	70,9	
Sensible cooling capacity (27°C - 50% R.H.)	kW	23,0	28,9	31,9	33,8	44,0	48,6	54,0	51,8	56,2	
SHR @ 27°C-50% U.R.	%	84%	83%	80%	74%	89%	88%	93%	81%	79%	
Nominal input power (27°C - 50% R.H.)	kW	5,3	6,9	7,6	8,9	8,7	10,2	10,2	11,5	13,0	
Nominal input current (27°C - 50% R.H.)	A	9,1	13,2	15,7	20	19,6	22,9	22,4	22,6	30,1	
Total cooling capacity (24°C - 50% R.H.)	kW	25,7	31,8	36,7	41,7	46,0	50,8	54,1	58,4	64,9	
Sensible cooling capacity (24°C - 50% R.H.)	kW	22,3	27,8	30,7	32,4	42,4	46,8	52,5	50,0	54,0	
SHR @ 24°C-50% U.R.	%	87%	87%	84%	78%	92%	92%	97%	86%	83%	
Nominal input power (24°C - 50% R.H.)	kW	5,3	6,9	7,6	8,9	8,7	10,2	10,2	11,4	12,9	
Nominal input current (24°C - 50% R.H.)	A	9,3	13,4	16,1	20,4	20,1	23,4	23	22,8	29,9	
Total cooling capacity (22°C - 50% R.H.)	kW	24,5	30,7	35,3	40,2	43,7	48,8	51,4	55,3	62,3	
Sensible cooling capacity (22°C - 50% R.H.)	kW	21,4	27,2	30,0	32,0	41,0	45,4	50,1	47,8	52,8	
SHR @ 22°C-50% U.R.	%	87%	89%	85%	80%	94%	93%	97%	86%	85%	
Nominal input power (22°C - 50% R.H.)	kW	5,3	6,5	7,6	8,9	8,7	10,1	10,2	11,4	12,9	
Nominal input current (22°C - 50% R.H.)	A	9,4	13,6	16,2	20,6	20,3	23,6	23,3	22,8	29,8	
Scroll compressors											
Quantity	n.	2	2	2	2	2	2	2	2	2	
Circuits	n.	2	2	2	2	2	2	2	2	2	
Capacity steps	%	0/50/100									
Max input current	A	26	30	30	38	38	38	38	38	50	
Inrush current	A	73	85	97	106	106	119	119	129	135	
Water cooled condenser (27°C - 50% R.H.)											
Quantity	n.	2									
Water flow	m³/h	5,7	7,2	8,2	9,4	10	11,4	11,9	13	14,5	
Water flow	l/s	1,58	2,00	2,28	2,61	2,78	3,17	3,31	3,61	4,03	
Pressure drop	kPa	53	84	53	68	48	60	65	55	55	
Water cooled condenser (24°C - 50% R.H.)											
Quantity	n.	2									
Water flow	m³/h	5,4	6,7	7,7	8,8	9,5	10,6	11,1	12,1	13,5	
Water flow	l/s	1,50	1,86	2,14	2,44	2,64	2,94	3,08	3,36	3,75	
Pressure drop	kPa	48	74	46	60	43	53	58	49	48	
Water cooled condenser (22°C - 50% R.H.)											
Quantity	n.	2									
Water flow	m³/h	5,2	6,5	7,4	8,5	9,1	10,2	10,7	11,5	13	
Water flow	l/s	1,44	1,81	2,06	2,36	2,53	2,83	2,97	3,19	3,61	
Pressure drop	kPa	45	70	44	57	40	50	54	45	45	
Refrigerant charge											
Charge per circuit	kg	3,9	3,8	4,2	4,2	4,3	4,8	5,1	5,2	5,4	
AC fans with autotransformer											
Quantity	n.	1	1	1	1	2	2	2	2	2	
Fan(s) supply voltage	V	260	260	280	280	230	230	250	250	250	
Air flow	m³/h	7'880	7'880	7'880	7'880	13'820	13'820	13'820	13'820	13'820	
Available pressure	Pa	20	20	20	20	20	20	20	20	20	
Rotation speed	rpm	1.150	1.150	1.189	1.189	1.075	1.075	1.122	1.122	1.122	
Input power	kW	1,52	1,52	1,63	1,63	2,71	2,71	2,97	2,97	2,97	
Input current	A	4,13	4,13	4,13	4,13	8,3	8,3	8,38	8,38	8,38	
Max available pressure (max ESP)	Pa	242	242	197	198	311	310	262	263	263	
Sound pressure level @ 2 m - U Version	dB(A)	60	60	61	62	62	62	62	63	63	
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	62	62	63	63	65	65	65	65	66	
Sound pressure level @ 2 m - B Version	dB(A)	56	56	58	58	58	58	59	59	60	
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	59	59	60	60	62	62	62	62	63	
Sound pressure level @ 2 m - V Version	dB(A)	55	55	57	57	58	58	58	58	59	
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	58	58	59	59	62	62	61	61	61	
EC Fans - LP (low pressure)											
Quantity	n.	1	1	1	1	2	2	2	2	2	
Air flow	m³/h	7'880	7'880	7'880	7'880	13'820	13'820	13'820	13'820	13'820	
Max available pressure (max ESP)	Pa	156	156	108	108	223	223	177	177	177	
Rotation speed	rpm	1.116	1.116	1.160	1.160	1.045	1.045	1.090	1.091	1.090	
Input power	kW	1,06	1,06	1,22	1,22	1,79	1,79	2,06	2,06	2,06	
Sound pressure level @ 2 m - U Version	dB(A)	58	58	60	60	61	61	61	61	62	
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	59	59	60	61	62	62	62	62	63	
Sound pressure level @ 2 m - B Version	dB(A)	55	55	56	57	57	57	57	58	59	
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	55	55	57	57	58	58	58	59	59	
Sound pressure level @ 2 m - V Version	dB(A)	54	54	55	56	56	56	56	57	58	
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	54	54	56	56	57	57	57	58	58	

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 2-circuits units - ED.H U-V-B Versions

ED.H U-V-B		282 Kc	332 Kc	372 Kc	422 Kc	462 Kc	502 Kc	552 Kc	592 Kc	642 Kc
Frame										
Frame		4					5			
EC Fans - HP (High pressure)										
Quantity	n.	1	1	1	1	2	2	2	2	2
Air flow	m³/h	7'880	7'880	7'880	7'880	13'820	13'820	13'820	13'820	13'820
Max available pressure (max ESP)	Pa	593	593	545	545	654	654	608	608	608
Rotation speed	rpm	1.117	1.117	1.160	1.160	1.044	1.044	1.089	1.090	1.089
Input power	kW	1,05	1,05	1,19	1,19	1,77	1,77	2,03	2,04	2,03
Sound pressure level @ 2 m - U Version	dB(A)	59	59	60	61	61	61	61	62	63
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	63	63	63	64	66	66	66	66	66
Sound pressure level @ 2 m - B Version	dB(A)	55	55	57	57	59	58	58	58	59
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	59	59	60	60	62	62	62	63	63
Sound pressure level @ 2 m - V Version	dB(A)	54	54	56	56	57	57	57	57	58
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	58	58	59	59	61	61	61	62	62
Humidifier										
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8	8
Steam production (max)	kg/h	8	8	8	8	8	8	8	8	8
Maximum input power	kW	6	6	6	6	6	6	6	6	6
Maximum input current	A	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300 / 1'250								
Total hardness (min/max)	mg/l CaCo3	100 / 400								
Electrical heaters										
Steps	n.	3	3	3	3	3	3	3	3	3
Power	kW	9	9	9	9	15	15	15	15	15
Input current	A	13	13	13	13	21,7	21,7	21,7	21,7	21,7
Oversized electrical heaters										
Steps	n.	3	3	3	3	3	3	3	3	3
Power	kW	12	12	12	12	18	18	18	18	18
Input current	A	17,3	17,3	17,3	17,3	26	26	26	26	26
Hot water coil										
Heating capacity	kW	19,8	19,8	19,8	19,8	35,7	35,7	35,7	35,7	35,7
Water flow rate	m³/h	3,4	3,4	3,4	3,4	6,2	6,2	6,2	6,2	6,2
Pressure drop (coil+3-way valve)	kPa	77	77	77	77	79	79	79	79	79
Internal volume of the coil	dm³	2,8	2,8	2,8	2,8	5,3	5,3	5,3	5,3	5,3
Hot gas coil										
Heating capacity	kW	15,4	15,4	15,4	15,4	29	29	29	29	29
Condensing water pump										
Nominal water flow	l/h	390	390	390	390	390	390	390	390	390
Max water flow (pressure = 0 m)	l/h	500	500	500	500	500	500	500	500	500
Max height (water flow = 0 m³/h)	l/h	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40
Condensing water pump + humidifier										
Nominal water flow	l/h	600	600	600	600	600	600	600	600	600
Max water flow (pressure = 0 m)	l/h	900	900	900	900	900	900	900	900	900
Max height (water flow = 0 m³/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions										
Length	mm	1'160	1'160	1'160	1'160	1'860	1'860	1'860	1'860	1'860
Width	mm	850	850	850	850	850	850	850	850	850
Height	mm	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980
Weight - U Version	kg	411	410	423	423	529	530	549	569	573
Weight - V Version	kg	405	405	418	418	539	540	559	579	584
Weight - B Version	kg	411	410	423	423	549	550	569	589	594
Power supply										
Power supply	V/ph/Hz	400 / 3 / 50 + T + N								
REMARKS										
- Condenser IN/OUT water temperature 30-35°C.										
- Filters calculated for 20% dirt.										
- Max pressure is referred to the nominal air flow and the max tension/regulation.										
- Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa.										
- The condensing water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm.										
- The condenser pressure drop does not include the pressostatic valve.										
- The refrigerant charge does not include the gas re-heating coil.										

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 2-circuits units - ED.H U-V-B Versions

ED.H U-V-B		772 Kc	852 Kc	922 Kc	992 Kc	1022 Kc	1112 Kc	1122 Kc	1442 Kc	1462 Kc
Frame										
Frame		6		7				8		
Cooling capacity										
Total cooling capacity (27°C - 50% R.H.)	kW	83,0	92,6	100,3	108,6	112,6	121,3	120,9	160,2	163,0
Sensible cooling capacity (27°C - 50% R.H.)	kW	66,4	71,6	81,5	88,9	94,8	93,6	93,8	122,3	114,8
SHR @ 27°C-50% U.R.	%	80%	77%	81%	82%	84%	77%	78%	76%	70%
Nominal input power (27°C - 50% R.H.)	kW	15,2	17,1	19,1	19,1	19,8	22,6	22,1	28,1	26,5
Nominal input current (27°C - 50% R.H.)	A	34,4	35,3	37,3	37,3	46,5	45,4	45,2	68,6	59,7
Total cooling capacity (24°C - 50% R.H.)	kW	76,2	84,7	92,5	99,8	103,3	110,7	110,7	148,8	151,0
Sensible cooling capacity (24°C - 50% R.H.)	kW	64,0	68,6	78,8	85,6	91,0	89,6	90,0	118,7	110,9
SHR @ 24°C-50% U.R.	%	84%	81%	85%	86%	88%	81%	81%	80%	73%
Nominal input power (24°C - 50% R.H.)	kW	14,9	16,9	18,9	18,9	19,9	22,4	21,8	27,7	26,4
Nominal input current (24°C - 50% R.H.)	A	34,2	35,2	37,3	37,3	46,5	45,7	45,2	68,1	59,6
Total cooling capacity (22°C - 50% R.H.)	kW	72,9	81,3	88,4	95,4	98,8	106,1	106,2	140,9	143,2
Sensible cooling capacity (22°C - 50% R.H.)	kW	62,1	67,6	76,3	83,5	89,4	88,1	88,6	116,1	108,6
SHR @ 22°C-50% U.R.	%	85%	83%	86%	88%	90%	83%	83%	82%	76%
Nominal input power (22°C - 50% R.H.)	kW	14,7	16,8	18,8	18,8	19,9	22,3	21,7	27,5	26,3
Nominal input current (22°C - 50% R.H.)	A	34,1	35,1	37,2	37,2	47,1	45,8	45	67,9	59,7
Scroll compressors										
Quantity	n.	2	2	2	2	4	4	2	4	2
Circuits	n.	2	2	2	2	2	2	2	2	2
Capacity steps	%	0/50/100								
Max input current	A	54	60	66	66	76	76	77,2	108	102
Inrush current	A	167	177	191	191	157	167	235,6	221	266
Water cooled condenser (27°C - 50% R.H.)										
Quantity	n.	2								
Water flow	m³/h	17	19	20,7	22,1	22,9	24,9	24,8	32,6	32,8
Water flow	l/s	4,72	5,28	5,75	6,14	6,36	6,92	6,89	9,06	9,11
Pressure drop	kPa	46	56	67	61	66	65	65	64	65
Water cooled condenser (24°C - 50% R.H.)										
Quantity	n.	2								
Water flow	m³/h	15,8	17,6	19,3	20,6	21,3	23	23	30,6	30,7
Water flow	l/s	4,39	4,89	5,36	5,72	5,92	6,39	6,39	8,50	8,53
Pressure drop	kPa	40	49	59	54	58	57	56	57	58
Water cooled condenser (22°C - 50% R.H.)										
Quantity	n.	2								
Water flow	m³/h	15,2	17	18,6	19,8	20,6	22,2	22,2	29,2	29,4
Water flow	l/s	4,22	4,72	5,17	5,50	5,72	6,17	6,17	8,11	8,17
Pressure drop	kPa	37	46	55	50	54	53	53	52	53
Refrigerant charge										
Charge per circuit	kg	8,0	8,0	8,7	9,8	9,7	10,0	10,0	15,3	15,4
AC fans with autotransformer										
Quantity	n.	2	2	3	3	3	3	3	4	4
Fan(s) supply voltage	V	300	300	260	290	300	290	290	280	280
Air flow	m³/h	16'550	16'550	21'600	21'600	21'600	21'600	21'600	27'200	27'200
Available pressure	Pa	20	20	20	20	20	20	20	20	20
Rotation speed	rpm	1.227	1.227	1.145	1.204	1.222	1.204	1.204	1.185	1.185
Input power	kW	3,44	3,44	4,61	5,09	5,24	5,09	5,09	6,6	6,6
Input current	A	8,16	8,16	12,54	12,48	12,42	12,48	12,48	16,72	16,72
Max available pressure (max ESP)	Pa	157	156	240	171	170	171	171	191	193
Sound pressure level @ 2 m - U Version	dB(A)	65	65	65	66	66	66	67	67	71
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	67	66	67	68	68	68	68	69	72
Sound pressure level @ 2 m - B Version	dB(A)	62	62	62	62	62	63	63	64	67
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	63	64	65	64	64	64	64	65	68
Sound pressure level @ 2 m - V Version	dB(A)	61	60	60	61	61	62	62	62	66
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	62	62	63	63	63	63	64	64	67
EC Fans - LP (low pressure)										
Quantity	n.	2	2	3	3	3	3	3	4	4
Air flow	m³/h	16'550	16'550	21'600	21'600	21'600	21'600	21'600	27'200	27'200
Max available pressure (max ESP)	Pa	75	75	151	92	92	92	92	101	101
Rotation speed	rpm	1.189	1.189	1.117	1.172	1.168	1.172	1.172	1.161	1.164
Input power	kW	2,61	2,61	3,31	3,88	3,84	3,88	3,88	5,05	5,09
Sound pressure level @ 2 m - U Version	dB(A)	63	63	64	64	64	65	65	66	70
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	64	63	64	64	64	65	66	66	70
Sound pressure level @ 2 m - B Version	dB(A)	60	60	60	60	61	61	62	62	67
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	60	60	61	61	61	61	62	63	67
Sound pressure level @ 2 m - V Version	dB(A)	59	59	59	59	60	60	61	61	66
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	59	59	60	60	60	60	61	62	66

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 2-circuits units - ED.H U-V-B Versions

ED.H U-V-B		772 Kc	852 Kc	922 Kc	992 Kc	1022 Kc	1112 Kc	1122 Kc	1442 Kc	1462 Kc
Frame										
Frame		6			7				8	
EC Fans - HP (High pressure)										
Quantity	n.	2	2	3	3	3	3	3	4	4
Air flow	m³/h	16'550	16'550	21'600	21'600	21'600	21'600	21'600	27'200	27'200
Max available pressure (max ESP)	Pa	516	516	585	526	526	526	526	532	532
Rotation speed	rpm	1.190	1.190	1.116	117	1.166	1.170	1.170	1.158	1.161
Input power	kW	2,54	2,54	3,26	3,79	3,75	3,79	3,79	4,94	4,98
Sound pressure level @ 2 m - U Version	dB(A)	64	64	64	64	65	65	66	66	70
Sound pressure level @ 2 m - U Version (max ESP)	dB(A)	67	66	68	68	68	68	69	70	72
Sound pressure level @ 2 m - B Version	dB(A)	60	60	61	61	61	62	62	63	67
Sound pressure level @ 2 m - B Version (max ESP)	dB(A)	63	63	64	64	65	65	65	66	69
Sound pressure level @ 2 m - V Version	dB(A)	59	59	60	60	60	61	61	62	66
Sound pressure level @ 2 m - V Version (max ESP)	dB(A)	62	62	63	63	64	64	64	65	68
Humidifier										
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8	8
Steam production (max)	kg/h	8	8	8	8	8	8	8	8	8
Maximum input power	kW	6	6	6	6	6	6	6	6	6
Maximum input current	A	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300 / 1'250								
Total hardness (min/max)	mg/l CaCo3	100 / 400								
Electrical heaters										
Steps	n.	3	3	3	3	3	3	3	3	3
Power	kW	18	18	24	24	24	24	24	27	27
Input current	A	26	26	34,6	34,6	34,6	34,6	34,6	39	39
Oversized electrical heaters										
Steps	n.	3	3	3	3	3	3	3	3	3
Power	kW	24	24	27	27	27	27	27	36	36
Input current	A	34,6	34,6	39	39	39	39	39	52	52
Hot water coil										
Heating capacity	kW	43,7	43,7	54,3	54,3	54,3	54,3	54,3	73,5	73,5
Water flow rate	m³/h	7,6	7,6	9,5	9,5	9,5	9,5	9,5	12,8	12,8
Pressure drop (coil+3-way valve)	kPa	70	70	79	79	79	79	79	82	82
Internal volume of the coil	dm³	6,6	6,6	10,1	10,1	10,1	10,1	10,1	12,4	12,4
Hot gas coil										
Heating capacity	kW	37,1	37,1	44,2	44,2	44,2	44,2	44,2	58,4	58,4
Condensing water pump										
Nominal water flow	l/h	390	390	390	390	390	390	390	390	390
Max water flow (pressure = 0 m)	l/h	500	500	500	500	500	500	500	500	500
Max height (water flow = 0 m³/h)	l/h	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40
Condensing water pump + humidifier										
Nominal water flow	l/h	600	600	600	600	600	600	600	600	600
Max water flow (pressure = 0 m)	l/h	900	900	900	900	900	900	900	900	900
Max height (water flow = 0 m³/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions										
Length	mm	2'210	2'210	2'565	2'565	2'565	2'565	2'565	3'100	3'100
Width	mm	850	850	850	850	850	850	850	850	850
Height	mm	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980
Weight - U Version	kg	650	695	782	817	834	874	829	1.051	1.090
Weight - V Version	kg	660	705	792	827	845	884	839	1.051	1.090
Weight - B Version	kg	665	711	802	838	855	894	849	1.062	1.100
Power supply										
Power supply	V/ph/Hz	400 / 3 / 50 + T + N								
REMARKS										
- Condenser IN/OUT water temperature 30-35°C.										
- Filters calculated for 20% dirt.										
- Max pressure is referred to the nominal air flow and the max tension/regulation.										
- Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa.										
- The condensing water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm.										
- The condenser pressure drop does not include the pressostatic valve.										
- The refrigerant charge does not include the gas re-heating coil.										

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 1-circuit units - ED.H D Version

ED.H D		71 Kc	81 Kc	101 Kc	131 Kc	161 Kc	211 Kc	231 Kc	261 Kc	271 Kc	281 Kc
Frame											
Frame		1		2		3			4		
Cooling capacity											
Total cooling capacity (27°C - 50% R.H.)	kW	7,6	9,3	10,6	13,8	18,1	23,5	25,5	27,9	28,3	30,8
Sensible cooling capacity (27°C - 50% R.H.)	kW	6,3	8,1	9,3	12,3	15,5	20,2	22,7	23,7	23,9	27,3
SHR @ 27°C-50% U.R.	%	83%	87%	88%	89%	86%	86%	89%	85%	84%	89%
Nominal input power (27°C - 50% R.H.)	kW	1,5	1,9	2,0	2,6	3,4	4,4	4,3	5,2	5,1	5,8
Nominal input current (27°C - 50% R.H.)	A	3,1	4,1	4,5	4,6	6,5	10,0	9,7	9,1	11,3	11,3
Total cooling capacity (24°C - 50% R.H.)	kW	7,0	8,5	9,7	12,7	16,6	21,5	23,5	25,6	26,0	28,2
Sensible cooling capacity (24°C - 50% R.H.)	kW	6,1	7,7	8,9	11,8	14,9	19,4	21,9	22,8	22,9	26,3
SHR @ 24°C-50% U.R.	%	87%	91%	92%	93%	90%	90%	93%	89%	88%	93%
Nominal input power (24°C - 50% R.H.)	kW	1,5	1,9	2,1	2,6	3,4	4,4	4,3	5,2	5,1	5,7
Nominal input current (24°C - 50% R.H.)	A	3,1	4,1	4,5	4,7	6,6	10,2	10,0	9,3	11,6	11,4
Total cooling capacity (22°C - 50% R.H.)	kW	6,7	8,2	9,2	12,1	15,9	20,7	22,2	24,5	24,9	27,0
Sensible cooling capacity (22°C - 50% R.H.)	kW	5,8	7,6	8,7	11,5	14,6	19,0	21,0	22,3	22,5	25,6
SHR @ 22°C-50% U.R.	%	87%	93%	95%	95%	92%	92%	95%	91%	90%	95%
Nominal input power (22°C - 50% R.H.)	kW	1,5	1,9	2,1	2,6	3,4	4,4	4,3	5,2	5,1	5,7
Nominal input current (22°C - 50% R.H.)	A	3,2	4,1	4,5	4,7	6,7	10,3	10,1	9,4	11,8	11,5
Scroll compressors											
Quantity	n.	1	1	1	1	1	1	1	2	1	1
Circuits	n.	1	1	1	1	1	1	1	1	1	1
Capacity steps	%				0/100				0/50/100		0/100
Max input current	A	4,7	10,0	10,0	13,0	15,0	19,0	19,0	26,0	19,0	19,0
Inrush current	A	28,0	45,0	45,0	60,0	70,0	87,0	87,0	73,0	100,0	110,0
Water cooled condenser (27°C - 50% R.H.)											
Quantity	n.					1					
Water flow	m³/h	1,6	1,9	2,2	2,8	3,7	4,8	5,2	5,7	5,8	6,3
Water flow	l/s	0,44	0,53	0,61	0,78	1,03	1,33	1,44	1,58	1,61	1,75
Pressure drop	kPa	33	50	62	53	44	72	50	61	62	53
Water cooled condenser (24°C - 50% R.H.)											
Quantity	n.					1					
Water flow	m³/h	1,5	1,8	2,0	2,7	3,5	4,5	4,8	5,3	5,4	5,9
Water flow	l/s	0,42	0,50	0,56	0,75	0,97	1,25	1,33	1,47	1,50	1,64
Pressure drop	kPa	30	43	55	47	38	63	44	54	55	46
Water cooled condenser (22°C - 50% R.H.)											
Quantity	n.					1					
Water flow	m³/h	1,4	1,7	2,0	2,6	3,3	4,4	4,6	5,2	5,2	5,7
Water flow	l/s	0,39	0,47	0,56	0,72	0,92	1,22	1,28	1,44	1,44	1,58
Pressure drop	kPa	28	41	51	44	36	59	41	51	52	43
Refrigerant charge											
Charge per circuit	kg	3,2	3,3	3,6	3,6	4,0	3,9	4,4	4,4	4,6	6,8
AC fans with autotransformer											
Quantity	n.	1	1	1	1	1	1	1	1	1	1
Fan(s) supply voltage	V	320	340	400	340	400	300	340	340	340	290
Air flow	m³/h	2.330	2.330	2.330	3.500	3.500	5.610	5.610	5.610	5.610	5.610
Available pressure	Pa	20	20	20	20	20	20	20	20	20	20
Rotation speed	rpm	1.281	1.307	1.353	1.325	1.361	1.105	1.158	1.158	1.158	1.207
Input power	kW	0,39	0,4	0,44	0,69	0,74	1,04	1,14	1,14	1,14	1,68
Input current	A	0,97	0,97	1,06	1,45	1,53	2,63	2,63	2,63	2,63	4,12
Max available pressure (max ESP)	Pa	59	42	20	45	19	117	64	64	64	175
Sound pressure level @ 2 m - D Version	dB(A)	49	48	49	52	52	55	56	56	56	58
Sound pressure level @ 2 m - D Version (max ESP)	dB(A)	49	49	49	53	53	58	58	57	58	60
EC Fans - HP (High pressure)											
Quantity	n.	1	1	1	1	1	1	1	1	1	1
Air flow	m³/h	2.330	2.330	2.330	3.500	3.500	5.610	5.610	5.610	5.610	5.610
Max available pressure (max ESP)	Pa	640	623	594	454	415	648	603	603	603	521
Rotation speed	rpm	1.270	1.296	1.346	1.305	1.357	1.251	1.299	1.298	1.299	1.178
Input power	kW	0,32	0,34	0,37	0,55	0,62	0,88	0,99	0,99	0,99	1,26
Sound pressure level @ 2 m - D Version	dB(A)	48	48	48	52	52	56	56	56	56	57
Sound pressure level @ 2 m - D Version (max ESP)	dB(A)	61	61	61	60	60	62	62	61	62	60

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 1-circuit units - ED.H D Version

ED.H D		71 Kc	81 Kc	101 Kc	131 Kc	161 Kc	211 Kc	231 Kc	261 Kc	271 Kc	281 Kc
Frame											
Frame			1		2			3			4
Humidifier											
Steam production (nominal)	kg/h	1,5	1,5	1,5	3	3	5	5	5	5	8
Steam production (max)	kg/h	3	3	3	3	3	8	8	8	8	8
Maximum input power	kW	1,12	1,12	1,12	2,25	2,25	2,25	3,75	3,75	3,75	3,75
Maximum input current	A	5	5	5	10	10	10	5,5	5,5	5,5	5,5
Specific conductivity at 20°C (min/max)	µS/cm					300 / 1'250					
Total hardness (min/max)	mg/l CaCo3					100 / 400					
Electrical heaters											
Steps	n.	1	1	1	3	3	2	2	2	2	3
Power	kW	3	3	3	4,5	4,5	6	6	6	6	9
Input current	A	4,3	4,3	4,3	6,5	6,5	8,7	8,7	8,7	8,7	13
Oversized electrical heaters											
Steps	n.	3	3	3	2	2	3	3	3	3	3
Power	kW	4,5	4,5	4,5	6	6	9	9	9	9	12
Input current	A	6,5	6,5	6,5	8,7	8,7	13	13	13	13	17,3
Hot water coil											
Heating capacity	kW	4,5	4,5	4,5	6,90	6,90	10,2	10,2	10,2	10,2	19,8
Water flow rate	m³/h	0,8	0,8	0,8	1,20	1,20	1,8	1,8	1,8	1,8	3,4
Pressure drop (coil+3-way valve)	kPa	37	37	37	35	35	55	55	55	55	77
Internal volume of the coil	dm³	1	1	1	1,3	1,3	1,5	1,5	1,5	1,5	2,8
Hot gas coil											
Heating capacity	kW	5,1	5,1	5,1	7,5	7,5	9,8	9,8	9,8	9,8	14,5
Condensing water pump											
Nominal water flow	l/h	27,5	27,5	27,5	390	390	390	390	390	390	390
Max water flow (pressure = 0 m)	l/h	34	34	34	500	500	500	500	500	500	500
Max height (water flow = 0 m³/h)	l/h	15,0	15,0	15,0	5,40	5,40	5,40	5,40	5,40	5,40	5,40
Condensing water pump + humidifier											
Nominal water flow	l/h	-	-	-	-	-	-	-	-	-	600
Max water flow (pressure = 0 m)	l/h	-	-	-	-	-	-	-	-	-	900
Max height (water flow = 0 m³/h)	m	-	-	-	-	-	-	-	-	-	6,0
Dimensions											
Length	mm	550	550	550	750	750	980	980	980	980	1'160
Width	mm	550	550	550	550	550	750	750	750	750	850
Height	mm	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980
Weight - D Version	kg	181	192	196	234	240	303	312	356	312	375
Power supply											
Power supply	V/ph/Hz					400 / 3 / 50 + T + N					
REMARKS											
- Condenser IN/OUT water temperature 30-35°C. - Filters calculated for 20% dirt. - Max pressure is referred to the nominal air flow and the max tension/regulation. - Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa. - The condensing water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm (6 mm for EDH 71-81-101). - The condenser pressure drop does not include the pressostatic valve. - The refrigerant charge does not include the gas re-heating coil.											

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 1-circuit units - ED.H D Version

ED.H D		331 Kc	371 Kc	421 Kc	461 Kc	501 Kc	551 Kc	591 Kc	771 Kc	921 Kc	991 Kc
Frame											
Frame		4			5				6	7	
Cooling capacity											
Total cooling capacity (27°C - 50% R.H.)	kW	34,4	40,4	45,3	48,9	53,6	56,8	64,0	84,6	101,0	108,7
Sensible cooling capacity (27°C - 50% R.H.)	kW	28,9	34,8	33,4	43,7	45,4	48,5	56,5	66,5	81,8	85,4
SHR @ 27°C-50% U.R.	%	84%	86%	74%	89%	85%	85%	88%	79%	81%	79%
Nominal input power (27°C - 50% R.H.)	kW	6,7	7,8	8,6	8,5	9,6	9,5	11,1	14,1	18,9	19,1
Nominal input current (27°C - 50% R.H.)	A	15,0	17,2	17,6	17,7	18,6	18,7	22,8	29,9	37,3	37,3
Total cooling capacity (24°C - 50% R.H.)	kW	31,4	37,1	41,7	45,6	49,8	53,2	58,9	77,5	92,9	99,8
Sensible cooling capacity (24°C - 50% R.H.)	kW	27,6	33,3	32,1	42,3	43,9	47,2	54,0	64,0	79,0	82,2
SHR @ 24°C-50% U.R.	%	88%	90%	77%	93%	88%	89%	92%	83%	85%	82%
Nominal input power (24°C - 50% R.H.)	kW	6,6	7,7	8,5	8,4	9,4	9,4	11,0	14,0	18,7	18,9
Nominal input current (24°C - 50% R.H.)	A	14,9	17,1	17,6	17,6	18,6	18,6	22,6	29,8	37,2	37,3
Total cooling capacity (22°C - 50% R.H.)	kW	30,3	35,5	40,2	43,6	47,6	50,7	56,2	74,3	88,7	95,5
Sensible cooling capacity (22°C - 50% R.H.)	kW	27,4	32,8	31,6	40,5	42,3	45,2	52,9	62,3	76,3	79,9
SHR @ 22°C-50% U.R.	%	90%	92%	79%	93%	89%	89%	94%	84%	86%	84%
Nominal input power (22°C - 50% R.H.)	kW	6,6	7,6	8,4	8,3	9,3	9,3	10,9	14,0	18,7	18,8
Nominal input current (22°C - 50% R.H.)	A	14,8	17,0	17,5	17,6	18,6	18,6	22,6	29,8	37,2	37,2
Scroll compressors											
Quantity	n.	1	1	1	1	1	1	1	1	2	2
Circuits	n.	1	1	1	1	1	1	1	1	1	1
Capacity steps	%	0/100					0/50/100				
Max input current	A	25,0	27,0	30,0	30,0	33,0	33,0	38,6	51,0	66,0	66,0
Inrush current	A	110,0	140,0	147,0	147,0	158,0	158,0	197,0	215,0	191,0	191,0
Water cooled condenser (27°C - 50% R.H.)											
Quantity	n.	1									
Water flow	m³/h	7,1	8,4	9,4	10,0	11,0	11,5	13,0	17,1	20,8	22,1
Water flow	l/s	1,97	2,33	2,61	2,78	3,06	3,19	3,61	4,75	5,78	6,14
Pressure drop	kPa	66	71	55	50	60	56	71	39	56	64
Water cooled condenser (24°C - 50% R.H.)											
Quantity	n.	1									
Water flow	m³/h	6,6	7,7	8,7	9,3	10,3	10,8	12,1	15,9	19,3	20,6
Water flow	l/s	1,83	2,14	2,42	2,58	2,86	3,00	3,36	4,42	5,36	5,72
Pressure drop	kPa	57	62	48	45	54	51	63	34	50	56
Water cooled condenser (22°C - 50% R.H.)											
Quantity	n.	1									
Water flow	m³/h	6,4	7,5	8,4	9,0	9,8	10,4	11,6	15,3	18,6	19,8
Water flow	l/s	1,78	2,08	2,33	2,50	2,72	2,89	3,22	4,25	5,17	5,50
Pressure drop	kPa	54	58	45	42	50	47	58	32	46	52
Refrigerant charge											
Charge per circuit	kg	6,8	7,4	7,7	7,9	7,9	8,8	8,8	14,5	15,2	19,5
AC fans with autotransformer											
Quantity	n.	1	1	1	2	2	2	2	2	3	3
Fan(s) supply voltage	V	290	320	320	260	260	280	280	340	310	340
Air flow	m³/h	7.880	7.880	7.880	13.820	13.820	13.820	13.820	16.550	21.600	21.600
Available pressure	Pa	20	20	20	20	20	20	20	20	20	20
Rotation speed	rpm	1.207	1.256	1.256	1.144	1.144	1.185	1.185	1.287	1.239	1.283
Input power	kW	1,38	1,82	1,82	3,08	3,08	3,3	3,3	3,79	5,37	5,73
Input current	A	4,12	4,09	4,09	8,38	8,38	8,36	8,36	8,08	12,39	12,24
Max available pressure (max ESP)	Pa	174	116	118	239	239	195	193	85	135	81
Sound pressure level @ 2 m - D Version	dB(A)	58	59	59	59	59	60	60	65	63	64
Sound pressure level @ 2 m - D Version (max ESP)	dB(A)	60	60	60	62	62	62	63	65	64	64
EC Fans - HP (High pressure)											
Quantity	n.	1	1	1	2	2	2	2	2	3	3
Air flow	m³/h	7.880	7.880	7.880	13.820	13.820	13.820	13.820	16.550	21.600	21.600
Max available pressure (max ESP)	Pa	521	473	473	582	582	536	536	444	490	431
Rotation speed	rpm	1.177	1.217	1.220	1.112	1.113	1.155	1.152	1.249	1.200	1.251
Input power	kW	1,25	1,4	1,41	2,17	2,18	2,45	2,43	3	4,1	4,67
Sound pressure level @ 2 m - D Version	dB(A)	57	57	57	58	58	58	59	64	61	62
Sound pressure level @ 2 m - D Version (max ESP)	dB(A)	60	60	60	63	63	63	63	65	65	65

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 1-circuit units - ED.H D Version

ED.H D		331 Kc	371 Kc	421 Kc	461 Kc	501 Kc	551 Kc	591 Kc	771 Kc	921 Kc	991 Kc
Frame											
Frame			4			5			6	7	
Humidifier											
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8	8	8
Steam production (max)	kg/h	8	8	8	8	8	8	8	8	8	8
Maximum input power	kW	3,75	3,75	3,75	3,75	6	6	6	6	6	6
Maximum input current	A	5,5	5,5	5,5	5,5	8,7	8,7	8,7	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm					300 / 1'250					
Total hardness (min/max)	mg/l CaCo3					100 / 400					
Electrical heaters											
Steps	n.	3	3	3	3	3	3	3	3	3	3
Power	kW	9	9	9	9	9	15	15	18	18	24
Input current	A	13	13	13	13	13	21,7	21,7	26	26	34,6
Oversized electrical heaters											
Steps	n.	3	3	3	3	3	3	3	3	3	3
Power	kW	12	12	12	18	18	18	18	24	27	27
Input current	A	17,3	17,3	17,3	26	26	26	26	34,6	39	39
Hot water coil											
Heating capacity	kW	19,8	19,8	19,8	35,7	35,7	35,7	35,7	43,70	54,3	54,3
Water flow rate	m³/h	3,4	3,4	3,4	6,2	6,2	6,2	6,2	7,60	9,5	9,5
Pressure drop (coil+3-way valve)	kPa	77	77	77	79	79	79	79	70	79	79
Internal volume of the coil	dm³	2,8	2,8	2,8	5,3	5,3	5,3	5,3	6,5	10,1	10,1
Hot gas coil											
Heating capacity	kW	14,5	14,5	14,5	30	30	30	30	37,6	50,3	50,3
Condensing water pump											
Nominal water flow	l/h	390	390	390	390	390	390	390	390	390	390
Max water flow (pressure = 0 m)	l/h	500	500	500	500	500	500	500	500	500	500
Max height (water flow = 0 m³/h)	l/h	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40
Condensing water pump + humidifier											
Nominal water flow	l/h	600	600	600	600	600	600	600	600	600	600
Max water flow (pressure = 0 m)	l/h	900	900	900	900	900	900	900	900	900	900
Max height (water flow = 0 m³/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions											
Length	mm	1'160	1'160	1'160	1'860	1'860	1'860	1'860	2'210	2'565	2'565
Width	mm	850	850	850	850	850	850	850	850	850	850
Height	mm	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980
Weight - D Version	kg	375	388	413	548	550	571	574	675	783	818
Power supply											
Power supply	V/ph/Hz	400 / 3 / 50 + T + N									

REMARKS

- Condenser IN/OUT water temperature 30-35°C.
- Filters calculated for 20% dirt.
- Max pressure is referred to the nominal air flow and the max tension/regulation.
- Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa.
- The condensing water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm.
- The condenser pressure drop does not include the pressostatic valve.
- The refrigerant charge does not include the gas re-heating coil.

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 2-circuits units - ED.H D Version

ED.H D		282 Kc	332 Kc	372 Kc	422 Kc	462 Kc	502 Kc	552 Kc	592 Kc	642 Kc	
Frame											
Frame		4					5				
Cooling capacity											
Total cooling capacity (27°C - 50% R.H.)	kW	27,4	34,7	40,0	45,6	49,3	55,4	58,3	63,6	70,9	
Sensible cooling capacity (27°C - 50% R.H.)	kW	23,0	28,9	31,9	33,8	44,0	48,6	54,0	51,8	56,2	
SHR @ 27°C-50% U.R.	%	84%	83%	80%	74%	89%	88%	93%	81%	79%	
Nominal input power (27°C - 50% R.H.)	kW	5,3	6,9	7,6	8,9	8,7	10,2	10,2	11,5	13,0	
Nominal input current (27°C - 50% R.H.)	A	9,1	13,2	15,7	20	19,6	22,9	22,4	22,6	30,1	
Total cooling capacity (24°C - 50% R.H.)	kW	25,7	31,8	36,7	41,7	46,0	50,8	54,1	58,4	64,9	
Sensible cooling capacity (24°C - 50% R.H.)	kW	22,3	27,8	30,7	32,4	42,4	46,8	52,5	50,0	54,0	
SHR @ 24°C-50% U.R.	%	87%	87%	84%	78%	92%	92%	97%	86%	83%	
Nominal input power (24°C - 50% R.H.)	kW	5,3	6,9	7,6	8,9	8,7	10,2	10,2	11,4	12,9	
Nominal input current (24°C - 50% R.H.)	A	9,3	13,4	16,1	20,4	20,1	23,4	23	22,8	29,9	
Total cooling capacity (22°C - 50% R.H.)	kW	24,5	30,7	35,3	40,2	43,7	48,8	51,4	55,3	62,3	
Sensible cooling capacity (22°C - 50% R.H.)	kW	21,4	27,2	30,0	32,0	41,0	45,4	50,1	47,8	52,8	
SHR @ 22°C-50% U.R.	%	87%	89%	85%	80%	94%	93%	97%	86%	85%	
Nominal input power (22°C - 50% R.H.)	kW	5,3	6,5	7,6	8,9	8,7	10,1	10,2	11,4	12,9	
Nominal input current (22°C - 50% R.H.)	A	9,4	13,6	16,2	20,6	20,3	23,6	23,3	22,8	29,8	
Scroll compressors											
Quantity	n.	2	2	2	2	2	2	2	2	2	
Circuits	n.	2	2	2	2	2	2	2	2	2	
Capacity steps	%	0/50/100									
Max input current	A	26	30	30	38	38	38	38	38	50	
Inrush current	A	73	85	97	106	106	119	119	129	135	
Water cooled condenser (27°C - 50% R.H.)											
Quantity	n.	2									
Water flow	m³/h	5,7	7,2	8,2	9,4	10	11,4	11,9	13	14,5	
Water flow	l/s	1,58	2,00	2,28	2,61	2,78	3,17	3,31	3,61	4,03	
Pressure drop	kPa	53	84	53	68	48	60	65	55	55	
Water cooled condenser (24°C - 50% R.H.)											
Quantity	n.	2									
Water flow	m³/h	5,4	6,7	7,7	8,8	9,5	10,6	11,1	12,1	13,5	
Water flow	l/s	1,50	1,86	2,14	2,44	2,64	2,94	3,08	3,36	3,75	
Pressure drop	kPa	48	74	46	60	43	53	58	49	48	
Water cooled condenser (22°C - 50% R.H.)											
Quantity	n.	2									
Water flow	m³/h	5,2	6,5	7,4	8,5	9,1	10,2	10,7	11,5	13	
Water flow	l/s	1,44	1,81	2,06	2,36	2,53	2,83	2,97	3,19	3,61	
Pressure drop	kPa	45	70	44	57	40	50	54	45	45	
Refrigerant charge											
Charge per circuit	kg	3,9	3,8	4,2	4,2	4,3	4,8	5,1	5,2	5,4	
AC fans with autotransformer											
Quantity	n.	1	1	1	1	2	2	2	2	2	
Fan(s) supply voltage	V	290	290	320	320	260	260	280	280	280	
Air flow	m³/h	7'880	7'880	7'880	7'880	13'820	13'820	13'820	13'820	13'820	
Available pressure	Pa	20	20	20	20	20	20	20	20	20	
Rotation speed	rpm	1.207	1.207	1.256	1.256	1.144	1.144	1.185	1.185	1.185	
Input power	kW	1,68	1,68	1,82	1,82	3,08	3,08	3,3	3,3	3,3	
Input current	A	4,12	4,12	4,09	4,09	8,38	8,38	8,36	8,36	8,36	
Max available pressure (max ESP)	Pa	176	176	118	118	239	238	194	195	194	
Sound pressure level @ 2 m - D Version	dB(A)	58	58	59	59	59	59	60	60	60	
Sound pressure level @ 2 m - D Version (max ESP)	dB(A)	59	59	60	60	62	62	62	62	63	
EC Fans - HP (High pressure)											
Quantity	n.	1	1	1	1	2	2	2	2	2	
Air flow	m³/h	7'880	7'880	7'880	7'880	13'820	13'820	13'820	13'820	13'820	
Max available pressure (max ESP)	Pa	521	521	473	473	582	582	536	536	536	
Rotation speed	rpm	1.179	1.179	1.220	1.220	1.112	1.112	1.155	1.156	1.155	
Input power	kW	1,26	1,26	1,41	1,41	2,17	2,17	2,45	2,45	2,45	
Sound pressure level @ 2 m - D Version	dB(A)	56	56	57	58	58	58	60	60	60	
Sound pressure level @ 2 m - D Version (max ESP)	dB(A)	60	60	60	60	63	63	62	62	63	

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 2-circuits units - ED.H D Version

ED.H D		282 Kc	332 Kc	372 Kc	422 Kc	462 Kc	502 Kc	552 Kc	592 Kc	642 Kc
Frame		4					5			
Humidifier										
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8	8
Steam production (max)	kg/h	8	8	8	8	8	8	8	8	8
Maximum input power	kW	6	6	6	6	6	6	6	6	6
Maximum input current	A	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300 / 1'250								
Total hardness (min/max)	mg/l CaCo3	100 / 400								
Electrical heaters										
Steps	n.	3	3	3	3	3	3	3	3	3
Power	kW	9	9	9	9	15	15	15	15	15
Input current	A	13	13	13	13	21,7	21,7	21,7	21,7	21,7
Oversized electrical heaters										
Steps	n.	3	3	3	3	3	3	3	3	3
Power	kW	12	12	12	12	18	18	18	18	18
Input current	A	17,3	17,3	17,3	17,3	26	26	26	26	26
Hot water coil										
Heating capacity	kW	19,8	19,8	19,8	19,8	35,7	35,7	35,7	35,7	35,7
Water flow rate	m³/h	3,4	3,4	3,4	3,4	6,2	6,2	6,2	6,2	6,2
Pressure drop (coil+3-way valve)	kPa	77	77	77	77	79	79	79	79	79
Internal volume of the coil	dm³	2,8	2,8	2,8	2,8	5,3	5,3	5,3	5,3	5,3
Hot gas coil										
Heating capacity	kW	15,4	15,4	15,4	15,4	29	29	29	29	29
Condensing water pump										
Nominal water flow	l/h	390	390	390	390	390	390	390	390	390
Max water flow (pressure = 0 m)	l/h	500	500	500	500	500	500	500	500	500
Max height (water flow = 0 m³/h)	l/h	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40
Condensing water pump + humidifier										
Nominal water flow	l/h	600	600	600	600	600	600	600	600	600
Max water flow (pressure = 0 m)	l/h	900	900	900	900	900	900	900	900	900
Max height (water flow = 0 m³/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions										
Length	mm	1'160	1'160	1'160	1'160	1'860	1'860	1'860	1'860	1'860
Width	mm	850	850	850	850	850	850	850	850	850
Height	mm	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980
Weight - D Version	kg	411	410	423	423	559	560	579	599	604
Power supply										
Power supply	V/ph/Hz	400 / 3 / 50 + T + N								

REMARKS

- Condenser IN/OUT water temperature 30-35°C.
- Filters calculated for 20% dirt.
- Max pressure is referred to the nominal air flow and the max tension/regulation.
- Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa.
- The condensing water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm.
- The condenser pressure drop does not include the pressostatic valve.
- The refrigerant charge does not include the gas re-heating coil.

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 2-circuits units - ED.H D Version

ED.H D		772 Kc	852 Kc	922 Kc	992 Kc	1022 Kc	1112 Kc	1122 Kc	1442 Kc	1462 Kc	
Frame											
Frame			6			7				8	
Cooling capacity											
Total cooling capacity (27°C - 50% R.H.)	kW	83,0	92,6	100,3	108,6	112,6	121,3	120,9	160,2	163,0	
Sensible cooling capacity (27°C - 50% R.H.)	kW	66,4	71,6	81,5	88,9	94,8	93,6	93,8	122,3	114,8	
SHR @ 27°C-50% U.R.	%	80%	77%	81%	82%	84%	77%	78%	76%	70%	
Nominal input power (27°C - 50% R.H.)	kW	15,2	17,1	19,1	19,1	19,8	22,6	22,1	28,1	26,5	
Nominal input current (27°C - 50% R.H.)	A	34,4	35,3	37,3	37,3	46,5	45,4	45,2	68,6	59,7	
Total cooling capacity (24°C - 50% R.H.)	kW	76,2	84,7	92,5	99,8	103,3	110,7	110,7	148,8	151,0	
Sensible cooling capacity (24°C - 50% R.H.)	kW	64,0	68,6	78,8	85,6	91,0	89,6	90,0	118,7	110,9	
SHR @ 24°C-50% U.R.	%	84%	81%	85%	86%	88%	81%	81%	80%	73%	
Nominal input power (24°C - 50% R.H.)	kW	14,9	16,9	18,9	18,9	19,9	22,4	21,8	27,7	26,4	
Nominal input current (24°C - 50% R.H.)	A	34,2	35,2	37,3	37,3	46,5	45,7	45,2	68,1	59,6	
Total cooling capacity (22°C - 50% R.H.)	kW	72,9	81,3	88,4	95,4	98,8	106,1	106,2	140,9	143,2	
Sensible cooling capacity (22°C - 50% R.H.)	kW	62,1	67,6	76,3	83,5	89,4	88,1	88,6	116,1	108,6	
SHR @ 22°C-50% U.R.	%	85%	83%	86%	88%	90%	83%	83%	82%	76%	
Nominal input power (22°C - 50% R.H.)	kW	14,7	16,8	18,8	18,8	19,9	22,3	21,7	27,5	26,3	
Nominal input current (22°C - 50% R.H.)	A	34,1	35,1	37,2	37,2	47,1	45,8	45	67,9	59,7	
Scroll compressors											
Quantity	n.	2	2	2	2	4	4	2	4	2	
Circuits	n.	2	2	2	2	2	2	2	2	2	
Capacity steps	%	0/50/100									
Max input current	A	54	60	66	66	76	76	77,2	108	102	
Inrush current	A	167	177	191	191	157	167	235,6	221	266	
Water cooled condenser (27°C - 50% R.H.)											
Quantity	n.	2									
Water flow	m³/h	17	19	20,7	22,1	22,9	24,9	24,8	32,6	32,8	
Water flow	l/s	4,72	5,28	5,75	6,14	6,36	6,92	6,89	9,06	9,11	
Pressure drop	kPa	46	56	67	61	66	65	65	64	65	
Water cooled condenser (24°C - 50% R.H.)											
Quantity	n.	2									
Water flow	m³/h	15,8	17,6	19,3	20,6	21,3	23	23	30,6	30,7	
Water flow	l/s	4,39	4,89	5,36	5,72	5,92	6,39	6,39	8,50	8,53	
Pressure drop	kPa	40	49	59	54	58	57	56	57	58	
Water cooled condenser (22°C - 50% R.H.)											
Quantity	n.	2									
Water flow	m³/h	15,2	17	18,6	19,8	20,6	22,2	22,2	29,2	29,4	
Water flow	l/s	4,22	4,72	5,17	5,50	5,72	6,17	6,17	8,11	8,17	
Pressure drop	kPa	37	46	55	50	54	53	53	52	53	
Refrigerant charge											
Charge per circuit	kg	8,0	8,0	8,7	9,8	9,7	10,0	10,0	15,3	15,4	
AC fans with autotransformer											
Quantity	n.	2	2	3	3	3	3	3	4	4	
Fan(s) supply voltage	V	340	340	310	340	360	340	340	340	340	
Air flow	m³/h	16' 550	16' 550	21' 600	21' 600	21' 600	21' 600	21' 600	27' 200	27' 200	
Available pressure	Pa	20	20	20	20	20	20	20	20	20	
Rotation speed	rpm	1.287	1.287	1.239	1.283	1.307	1.283	1.283	1.283	1.283	
Input power	kW	3,79	3,79	5,37	5,73	5,92	5,73	5,73	7,62	7,62	
Input current	A	8,08	8,08	12,39	12,24	12,21	12,24	12,24	16,32	16,32	
Max available pressure (max ESP)	Pa	85	85	135	81	80	81	81	82	83	
Sound pressure level @ 2 m - D Version	dB(A)	63	63	63	64	64	64	64	65	67	
Sound pressure level @ 2 m - D Version (max ESP)	dB(A)	64	64	64	64	65	65	65	66	68	
EC Fans - HP (High pressure)											
Quantity	n.	2	2	3	3	3	3	3	4	4	
Air flow	m³/h	16' 550	16' 550	21' 600	21' 600	21' 600	21' 600	21' 600	27' 200	27' 200	
Max available pressure (max ESP)	Pa	444	444	490	431	431	431	431	438	438	
Rotation speed	rpm	1.249	1.249	1.200	1.251	1.247	1.251	1.251	1.240	1.244	
Input power	kW	3	3	4,1	4,67	4,62	4,67	4,67	6,08	6,14	
Sound pressure level @ 2 m - D Version	dB(A)	63	63	63	62	62	62	63	63	67	
Sound pressure level @ 2 m - D Version (max ESP)	dB(A)	64	64	64	65	65	65	66	67	69	

CLOSE CONTROL UNITS WITH WATER COOLED CONDENSER

Technical data sheet - 2-circuits units - ED.H D Version

ED.H D		772 Kc	852 Kc	922 Kc	992 Kc	1022 Kc	1112 Kc	1122 Kc	1442 Kc	1462 Kc
Frame										
Frame		6			7				8	
Humidifier										
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8	8
Steam production (max)	kg/h	8	8	8	8	8	8	8	8	8
Maximum input power	kW	6	6	6	6	6	6	6	6	6
Maximum input current	A	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300 / 1'250								
Total hardness (min/max)	mg/l CaCO ₃	100 / 400								
Electrical heaters										
Steps	n.	3	3	3	3	3	3	3	3	3
Power	kW	18	18	24	24	24	24	24	27	27
Input current	A	26	26	34,6	34,6	34,6	34,6	34,6	39	39
Oversized electrical heaters										
Steps	n.	3	3	3	3	3	3	3	3	3
Power	kW	24	24	27	27	27	27	27	36	36
Input current	A	34,6	34,6	39	39	39	39	39	52	52
Hot water coil										
Heating capacity	kW	43,7	43,7	54,3	54,3	54,3	54,3	54,3	73,5	73,5
Water flow rate	m ³ /h	7,6	7,6	9,5	9,5	9,5	9,5	9,5	12,8	12,8
Pressure drop (coil+3-way valve)	kPa	70	70	79	79	79	79	79	82	82
Internal volume of the coil	dm ³	6,6	6,6	10,1	10,1	10,1	10,1	10,1	12,4	12,4
Hot gas coil										
Heating capacity	kW	37,1	37,1	44,2	44,2	44,2	44,2	44,2	58,4	58,4
Condensing water pump										
Nominal water flow	l/h	390	390	390	390	390	390	390	390	390
Max water flow (pressure = 0 m)	l/h	500	500	500	500	500	500	500	500	500
Max height (water flow = 0 m ³ /h)	l/h	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40	5,40
Condensing water pump + humidifier										
Nominal water flow	l/h	600	600	600	600	600	600	600	600	600
Max water flow (pressure = 0 m)	l/h	900	900	900	900	900	900	900	900	900
Max height (water flow = 0 m ³ /h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions										
Length	mm	2'210	2'210	2'565	2'565	2'565	2'565	2'565	3'100	3'100
Width	mm	850	850	850	850	850	850	850	850	850
Height	mm	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980	1'980
Weight - D Version	kg	675	721	797	833	850	889	844	1.082	1.120
Power supply										
Power supply	V/ph/Hz	400 / 3 / 50 + T + N								

REMARKS

- Condenser IN/OUT water temperature 30-35°C.
- Filters calculated for 20% dirt.
- Max pressure is referred to the nominal air flow and the max tension/regulation.
- Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa.
- The condensing water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm.
- The condenser pressure drop does not include the pressostatic valve.
- The refrigerant charge does not include the gas re-heating coil.