

ERCC - ERCH



Air-cooled water chillers and heat pumps with backward curved blade fans

Range:

Cooling capacity: 50 ÷ 120 kW

Available versions:

- low noise
- ultra low noise

Refrigerant R410A

Scroll compressors

STANDARD FEATURES

- Self supporting frame in galvanised steel with panels varnished with epoxy powders (colour RAL7037)
 - Access panel to the unit equipped with handles and fast screws
 - Two hermetic scroll compressors with internal thermal protection, anti-vibration supports and crankcase heaters (ERCH and low ambient temperature versions)
 - Single refrigerant circuit (*) conforming to EC Directives (PED 97/23/CE) in copper tubing including filter dryer, liquid sight glass, dual flow thermostatic valve with external equalisation, high and low pressure switches and high pressure transducers
 - Environmentally friendly R410A Refrigerant
 - Water side brazed plate heat exchanger in stainless steel insulated with closed cell expanded polyurethane
 - Water flow differential pressure switch
 - Free-cooling air side exchange coil with aluminium fins and mechanically-expanded copper tubes
 - Refrigerant side cycle inversion with 4-way inversion valve (ERCH)
 - Single suction backward curved blade centrifugal fans, with aluminium impeller with a low a low moment of inertia. The external tri-phase rotary electric motor is directly coupled and has an IP54 Class F equipped with internal thermal protection (klixon) around the electric motor windings. The fan impeller is dynamically and statically balanced and the cushions are sealed and lubricated for life
 - Modulating condensation control based on the condensation pressure
 - Electrical panel conforming to EC Directives (73/23/CE and EMC 89/336/CE) protection grade IP54 with auxiliary transformer, lockable general cut off switch, magneto-thermal cut off switches and remote control
 - Sequence phase control
 - Anti-condensation heaters for the electrical panel (ERCH and low ambient temperature versions)
 - Microprocessor control system including:
 - Local user terminal externally viable and accessible via an access hatch
 - Chilled / hot water temperature regulation (ERCH)
 - Production of chilled water to -15°C
 - Anti-freeze protection
 - Compressor timing and protection
 - Compressor rotation based on FIFO logic
 - Pump rotation on a timed basis for equal operation and start-up of the stand-by pump (with alarm signal) in the event of a breakdown
 - Display of compressor operating hours
 - Alarm code signal
 - General alarm with clean signal contact
 - ON-OFF remote contact
- (*) ERCC with **22° suffix are available with two compressors on two circuits

TOP LEVEL OPTIONS

- Electronic expansion valve directly controlled by the unit microprocessor control
- Single suction backward curved fans with electronically commutated motor (EC)
- Evolved UpC01m control for:
 - Discharge water temperature regulation
 - Management of the electronic thermostatic valve
 - Monitoring of the refrigerant load
 - Self-adjustment of the set-point regulation
 - Evolved defrost operation management (ERCH)
 - Integrated LAN card
 - Compatibility with the most common external BMS and with the Modbus protocol using only a RS485 card

TECHNICAL DATA

ERCC/ERCH MODELS		0521A	0621A	0721A	0821A	0921A	0922A	1021A	1022A	1221A	1222A
Power supply	V/ph/Hz	400 / 3 + N / 50									
Fans	nr.	2	2	2	3	3	3	3	3	4	4
Refrigerant circuits	nr.	1	1	1	1	1	2	1	2	1	2
Compressors	nr. x mod	2 x Scroll									
Evaporator	nr.	1	1	1	1	1	2	1	2	1	2
Evaporator	mod	plate									
ERCC - standard fans											
Cooling capacity (1)	kW	48	57	66	76	84	85	97	97	113	113
Absorbed power (1)	kW	16.7	20.4	22.7	26.2	30.0	30.0	34.4	34.4	40.5	40.5
E.E.R. (2)		2.85	2.78	2.90	2.91	2.81	2.82	2.83	2.82	2.79	2.79
E.S.S.E.R. (5)		3.54	3.85	4.09	3.86	3.90	3.75	3.99	3.84	3.98	3.98
ERCH - standard fans											
Heating capacity (3)	kW	59	69	79	92	102	n.a.	118	n.a.	138	n.a.
Absorbed power (3)	kW	17.9	20.9	23.2	27.7	30.9	n.a.	35.7	n.a.	42.3	n.a.
C.O.P. (2)		3.29	3.29	3.40	3.32	3.30	n.a.	3.30	n.a.	3.26	n.a.
Noise pressure level (4)	dB(A)	67.5	67.6	67.5	69.1	69.1	69.1	71.2	71.2	72.5	72.5
ERCC - EC Fans											
Cooling capacity (1)	kW	48	57	66	76	84	85	97	97	113	113
Absorbed power (1)	kW	16.7	20.4	22.8	26.2	30.0	30.0	34.5	34.5	40.6	40.6
E.E.R. (2)		2.85	2.78	2.89	2.91	2.81	2.82	2.82	2.81	2.80	2.80
E.S.S.E.R. (5)		4.02	4.23	4.42	4.28	4.27	4.13	4.41	4.21	4.40	4.39
ERCH - EC Fans											
Heating capacity (3)	kW	59	69	79	92	102	n.a.	118	n.a.	138	n.a.
Absorbed power (3)	kW	17.9	20.9	23.3	27.8	30.9	n.a.	35.8	n.a.	42.3	n.a.
C.O.P. (2)		3.28	3.29	3.39	3.32	3.30	n.a.	3.29	n.a.	3.26	n.a.
Noise pressure level (4)	dB(A)	65.2	65.3	65.3	66.8	66.8	66.8	69.9	69.9	71.2	71.2
Dimensions and weights											
Height	mm	1836	1836	1836	1836	1836	1836	2146	2146	2146	2146
Depth	mm	1190	1190	1190	1190	1190	1190	1190	1190	1190	1190
Width	mm	2006	2006	2798	2798	2798	2798	3067	3067	3067	3067
Weight ERCC basic (6)	kg	773	778	921	957	963	974	1197	1196	1232	1232
Weight ERCH basic (6)	kg	797	802	951	987	994	n.a.	1241	n.a.	1276	n.a.

(1) Data refer to nominal conditions: water temperature 12/7°C; external temperature 35°C; glycol 0%; 50Pa; R410A refrigerant

(2) Data refer to the total absorbed power (compressors and fans)

(3) Data refer to nominal conditions: water temperature 40/45°C, external temperature 7°C dry bulb, 6°C wet bulb; 50Pa; R410A refrigerant

(4) Data measured in free field at 1 mt. from the ducted unit at nominal conditions, coil side, Q=2 directional factor

(5) European Seasonal Energy Efficiency Ratio

(6) Data refer to an empty unit without pump and water tank

CONSTRUCTION OPTIONS

- Ultra low noise version by means of sound-proofing the compressors
- Partial / total condensation heat recovery
- Integrated hydraulic module with one or two pumps (1 + 1 stand-by) with heat-protected circulation, reservoir tank and safety valve
- Internal water tank
- Internal water tank including a pump to manage the primary circuit
- Power factor improvement compressors
- Compressor Softstart
- Cataphoresis treatment for the condensing coils
- Shut off taps on the compressor discharge
- Evaporator, water tank and pump group anti-freeze heaters
- Modification of the set point by external 0-10V signal

OPTIONS

- Remote user terminal
- Clock card
- RS485, FTT10 or TCP/IP serial card for connection to the Uniflair supervision system or an external BMS
- Metal filters and protection grills for the condensing coils
- Rubber or spring anti-vibration supports