[Air cooled water chillers with axial fans and free-cooling system for outdoor installations]

ERAF



Range

Cooling capacity: 50 ÷ 120 kW

Available versions

- Basic
- Quiet
- UltraQuiet

Refrigerant R410A
Scroll compressors

Standard feature

- Exclusive free-cooling system completely managed by the microprocessor control.
- Self-supporting frame in galvanized steel with panels varnished with epoxy powders (color RAL9022).
- Access panel to the unit equipped with handles and fast screws.
- Two hermetic scroll compressors with internal thermal protection, discharge gas thermal protection (ERAH), phase sequence control, safety internal valve, non-return discharge valve, oil level glass, anti-vibration supports.
- Compressor casing for noise reduction, safe operation, and protection
- Single or double (**22A model) refrigerant circuit* conforming to EC Directives (PED 97/23/CE) in copper tubing including filter dryer, liquid sight glass, thermostatic valve with external equalization, high and low pressure switches, and high and low pressure transducers.
- Environmentally friendly refrigerant R410A.
- Water side brazed plate heat exchanger in stainless steel insulated with closed cell expanded polyurethane
- Water flow differential pressure switch.
- Air side exchange coil with aluminum fins and mechanically expanded copper tubes.
- Free-cooling air coils with aluminium fins and mechanically-expanded copper tubes. The coils are equipped with isolating solenoid valve to maximize the mixed free-cooling operation.
- Sickle-blade axial fans, statically and dynamically balanced and made from composite materials for high efficiency and low acoustic impact with internal and external safety protection grilles.
- Modulating condensation control with fan speed regulation.
- Electrical panel conforming to EC standards (2006/95/EC and EMC 2004/108/EC) protection grade IP54 with maximum and minimum internal temperature control, auxiliary transformer, general auxiliary cut-off switch, magneto-thermal protection switches with trip alarm signal on compressors, magneto thermal protection for fan speed control protection, safe-motor for pumps protection and remote control cut-off switches.
- Electrical board an embeddedcontact for an externally fitted 230V isolating motorized valve.
- Phase sequence control and phase presence monitoring, minimum / maximum voltage protection and correct phase balancing.
- Anti-freeze heaters
- Anti-condensation heaters for the electrical panel.
- Microprocessor control system including:
  - Local human interface with external display and accessible via an access hatch
  - Outlet chilled water temperature regulation by means of an exclusive algorithm
  - Free-cooling and intelligent free-cooling management
  - Mixed free-cooling operation
  - External motorized isolating valve management
  - Anti-freeze protection
  - Compressor timing and protection
  - Compressor rotation based on FIFO logic
  - Pump rotation (if present) on a timed basis for equal operation and start-up of the stand-by pump (with alarm signal) in the event of a breakdown
  - Integrated LAN card for connecting more than one unit to the local area network
  - Main electrical data acquisition and management
  - Integrated clock card.
  - Management of double set-point from remote control
  - Free-contact for general alarm and 2 for addressable alarms
  - Remote ON-OFF switch
  - Ability to interface with two separate BMSs with different protocols
  - Direct connection to serial BMSs with Modbus protocols (integrated RS485 serial card)
  - Set-point variation based on external temperature or signal (0-10V, 4-20mA or 0-20mA).

** ERAF models with **22A suffix are available with two compressors on two circuits.*

Technical Data											
ERAF Model		**0521A**	**0621A**	**0721A**	**0821A**	**0921A**	**0922A**	**1021A**	**1022A**	**1221A**	**1222A**
Power supply	V/ph/Hz	400/3/50									
Compressors/circuits	nr. x mod.	2/1	2/1	2/1	2/1	2/1	2/2	2/1	2/2	2/1	2/2
Evaporator	nr. x mod.	1 x brazed plate									
Fans	nr.	2	2	2	3	3	3	3	3	3	3
ERAF — Basic or Quiet version											
Cooling capacity (1)	kW	49	58	68	77	85	86	102	101	114	115
Absorbed power (1)(2)	kW	15,7	19,6	21,4	24,6	28,7	28,8	32,3	32,3	37,9	38,0
EER (1)(2)		3,12	2,95	3,17	3,13	2,96	2,98	3,15	3,12	3,00	3,02
Free-cooling capacity (3)	kW	36	38	46	53	55	55	66	66	66	66
SEER mid temperature (b)	%	169,7	167,7	180,1	179,7	172,3	168,6	191,6	175,2	184	172,4
SEPR (c)	-	5,46	5,33	5,66	5,53	5,31	4,73	5,92	4,91	5,81	4,94
ERAF — UltraQuiet version											
Cooling capacity (1)	kW	47	56	66	75	82	83	97	97	109	110
Absorbed power (1)(2)	kW	15,7	20,0	22,0	24,8	29,4	29,4	33,3	33,3	39,8	39,9
EER (1)(2)		2,99	2,80	3,00	3,02	2,78	2,82	2,91	2,91	2,73	2,75
Free-cooling capacity (3)	kW	36	38	46	53	54	54	66	66	66	66
SEER mid temperature (b)	%	166,2	160,7	172,9	175,7	165,9	161,5	182,7	166,1	171	160,4
SEPR (c)	-	5,52	5,31	5,63	5,56	5,31	4,71	5,85	4,85	5,66	4,81
Noise pressure levels											
Basic version (4)	dB(A)	50.2	50.2	54.3	54.3	54.3	54.3	56.2	56.2	56.7	56.7
Quiet version (4)	dB(A)	49.9	50.0	54.1	54.1	54.1	54.1	54.6	54.6	54.8	54.8
UltraQuiet version (4)	dB(A)	44.9	45.1	46.7	46.7	46.7	46.7	49.2	49.2	49.9	49.9
Dimensions											
Height (EC fans)	mm	1600	1600	1600	1600	1600	1600	1910	1910	1910	1910
Depth	mm	1214	1214	1219	1219	1219	1184	1272	1184	1272	1184
Width	mm	2026	2026	2821	2821	2821	2804	3088	3073	3088	3073

1. Data refer to nominal conditions: water temperature 15/10 °C, external temperature 35 °C, glycol 20%, refrigerant R410A, fouling factor 0.0 m2 °C/W
   Unit equipped with EC fans
2. Data refer to total absorbed power (compressors and fans)
   Unit equipped with EC fans
3. Data refer to nominal conditions: inlet water temperature 15 °C, external temperature 5 °C, glycol 20%, refrigerant R134a, fouling factor 0.0 m2 °C/W
   Unit equipped with EC fans
4. Data refer to free field at 10 meters from the unit operating without pump at minal conditions, with fans at nominal conditions, coil side, Q=2 directional factor. At different conditions and with different configurations, noise values may vary
   Unit equipped with EC fans

a. Seasonal Energy Efficiency Ratio calculated at 7/12°C water temperatures according to Regulation EU 2016/2281

b. Seasonal Energy Efficiency Ratio calculated at 18/23°C water temperatures according to Regulation EU 2016/2281

c. Seasonal Energy Performance Ratio according to Regulation EU 2016/2281

*. Data refer to units equipped with EC fans. Data in different configuratons are available in Schneder Electric specific technical literature

**. Unit not compliant with Ecodesign Regulation EU 2016/2281. Please refer to Schneider Electric for further details

Construction options

- Quiet version with compressor soundproof casing.
- UltraQuiet version with fan speed reduction and compressor soundproof casing.
- Double power supply with automatic integrated management on the active line.
- Acoustic-Composite fans with electronic commutated motors (EC).
- Partial condensation heat recovery.
- Electronic expansion valve (**21A models only)
- Intelligent free-cooling.
- Integrated hydronic system with one or two circulation pumps.
- Integrated hydronic system with one inverter driven circulation pump.
- Internal water tank.
- Internal water tank including a pump to manage the primary circuit.
- Discharge shut-off valves
- Power factor improvement compressors.
- Compressor soft start.
- Cataphoresis treatment for the condensing coils.
- Modification of the set point by external 0 V – 10 V signal

For external accessories see page 76