

Epsilon Echos LE 25



Configured unit accessories

RIC - Liquid receiver

MAFR - Pressure gauges

A43N - 400/3+N/50 power supply

AG - Rubber vibration dampers

The image does not refer to the configured unit

General description

Air/water unit with hermetic scroll or rotary compressors, plate heat exchanger and axial fans. Refrigerant fluid: R410A.

Version designed for operation with a remote air evaporator, and is therefore without a user-side heat exchanger.

Specifications

Structure

Made of galvanized sheet-iron coated with polyester powder at 180°C, which makes it highly resistant to weather conditions.

The panels can be removed easily to allow full access to internal components.

7035

Compressors

Rotary vane compressors (sizes 6 and 8), complete with thermal overload protection included in the electric motor windings, and rubber vibration damping supports.

Hermetic scroll compressors (sizes 10 to 14), complete with thermal overload protection included in the electric motor windings, crankcase heater and rubber vibration damping supports.

Coils

Consists of a row coil with copper tubes and aluminium fins having a large exchange surface. A grille with metal filter is installed as standard to protect the finned pack.

Fans

Axial flow fans, directly coupled to a 6-pole electric motor with external rotor. The protection rating of the motor is IP 54. The fan houses shaped nozzles and includes a safety guard in conformity with standard UNI EN 294.

Refrigerant circuit

The circuit includes:

charging connections in the liquid and suction line

- liquid sight glass

dehydrator filter

thermostatic expansion valve having external pressure equalization

pressure transducer

- high and low pressure switches

safety valve (with the exception of sizes 6, 8 and 10)

The unit is supplied:

- without the user-side heat exchanger
- without the thermostatic valve
- without refrigerant charge and charged with nitrogen without refrigerant charge and charged with nitrogen

Electrical control panel

The circuit includes:

Main disconnect switch and fuses to protect the auxiliary and power circuits (sizes 14 to 41)

Automatic circuit breaker to protect the auxiliary and power circuits (sizes 6 to 10)

- Compressor contactors

Fan Fan speed regulator for saturation pressure control

Pump relay or overload cutout and contactor for units with user-side hydraulic module

- General alarm clean contacts

Contact for ON/OFF digital input

to control the following functions

- Water temperature control, with inlet control
- Freeze protection
- Compressor timings
- High pressure alert management to prevent the unit from stopping in many cases
- Alarm signalling
- Alarm reset
- Self-adjusting control to enable optimal operation even when the water level in the system is low
- Display of the following on the display:
 - > Outgoing water temperature
 - > High pressure temperature
 - > Temperature and differential set points
 - > Description of alarms
 - > Compressor operation hour meter

Standard power supply [V/ph/Hz]

230/1~/50 for sizes 6 and 8; 400/3N~/50 for sizes from 10 to 41

CONTROLS AND SAFETY DEVICES

All the units are fitted with the following control and safety components:

- high pressure switch with manual reset
 - high pressure safety device with automatic reset, for a limited number of occurrences, managed by the controller
 - low pressure safety device with automatic reset and limited tripping managed by the controller
 - high pressure safety valves
 - antifreeze probe at the outlet of the user-side heat exchangers
 - differential pressure switch already fitted on the user-side heat exchangers
 - overtemperature protection for compressors and fans
 - overtemperature protection for compressors and fans
-
- High pressure switch with manual reset for each compressor;
 - Low pressure switch with automatic reset and limited interventions managed by the control;
 - High pressure safety valve (with the exception of sizes 6, 8 and 10);
 - Protection against overtemperature for compressors;
 - Condensation pressure control by means of Fan speed regulator for operation with low external temperatures;

Testing

All the units are factory-tested and supplied complete with oil and refrigerant.

The units are electrically tested. For on-site installation, in addition to the electrical and hydraulic connections for the user part, it will be necessary to make the refrigerant connection to the remote heat exchanger and charge with the correct refrigerant and oil charge.

Other standard features

Saturation pressure control with fan Fan speed regulator

The microprocessor control of the unit considers all the operating parameters and carries out continuous fan speed control through a Fan speed regulator, in order to optimize the operating conditions and efficiency of the unit.

This control also has the effect of reducing the noise level of the unit; in fact, the typical conditions under which the control will be modulating the speed of the fans are those of the night, spring and autumn. This ensures that, whenever there is a chance, the machine will reduce the speed of the fans, and therefore the noise of the machine, to the minimum.

Self-adjustable control logic

This function allows the control of the unit to dynamically change the set point of the outgoing water depending on the operating and stopping cycles of the machine: practically, by raising or lowering the outlet temperature of the water, the control prevents the compressor start-ups from being too close together, so reducing the number of starts and protecting the components of the unit

CONFIGURED UNIT ACCESSORIES DESCRIPTION

Liquid receivers.

The adoption of this accessory always guarantees correct feeding of the expansion valve even when the unit is subjected to wide external air temperature ranges. This accessory is standard on DC and HP units.

Freon pressure gauges

The pressure gauges are situated in a clearly visible position and allow real time reading of the working pressures of the refrigerant gas on the low pressure side and on the high pressure side.

Rubber anti-vibration mounts

These are supplied as a separate package from the unit and must be installed on site following the assembly diagram supplied. They allow you to reduce the vibrations transmitted from the unit to the surface it is standing on.

ACCORDING TO EN14511

Unit		Epsilon Echos LE
Model		25
Refrigerant fluid		R410A
Minimum partialization of the unit	%	100
Requested partialization	%	100

Compressors

Type		Scroll
Number		1
Refrigerant circuits		1
Total oil charge		2.8
Total refrigerant charge (estimated)		0.0

Fans

Type		Axial
Number		2
Rated absorbed power	kW	0.30
Rated absorbed current	A	1.70

Dimensions

Length	mm	1105
Width	mm	725
Height	mm	1385

Weight

Net weight	kg	204
------------	----	-----

Cooling conditions

Evaporating temperature	°C	7.5
External air temperature	°C	35.0
Height asl	m	0

Cooling performances

Cooling capacity	kW	26.6
Compressors absorbed power	kW	8.0
Total absorbed power (A1)	kW	8.6
EER		3.11
Air flow rate	m3/h	14000
Available pressure		0
Fans absorbed power	kW	0.30
Fans absorbed current	A	1.70

Sound levels

Sound power (4)	dB(A)	73
Sound pressure (5)	dB(A)	42

(A1) Compressors + Fans + Pumps (if present) (according to EN14511)

(4) Sound power levels calculated according to ISO 3744.

(5) Sound pressure levels measured at a distance of 10 metres from the unit in free field and directivity factor Q=2

ELECTRICAL DATA (Theoretical calculations)

Power supply	V/ph/Hz	400/3N~/50 ±10%
Control power supply	V/ph/Hz	230/1~/50

Electrical performances

Maximum absorbed power (E1)	kW	11.60
Maximum starting current - LRA	A	99.4
Full load current - FLA	A	21.5

(E1) Mains power supply to allow unit operation

Technical calculations may change according to calculation methods. Technical data may be revised.

SOUND LEVEL

Sound Level	63 [Hz]	125 [Hz]	250 [Hz]	500 [Hz]	1000 [Hz]	2000 [Hz]	4000 [Hz]	8000 [Hz]		
Lw [dB]	78	76	76	72	64	61	56	47	Lw_tot dB(A)	73
Lp [dB]	47	45	45	41	33	30	25	16	Lp_tot dB(A)	42