

Offer code	Hanka	Creation Date	29/04/2015
Customer		Expiration Date	29/04/2015
Reference		Payment Type	
Packaging		Payment Conditions	
Commissioning		Warranty	
Delivery Terms		Net Price	
Lead time			
Notes			

Position code	Description	Quantity	Net price EUR
	Epsilon Echos + LE 26	1	
	LN - Low noise	1	
	A43N - 400/3+N/50 power supply	1	
	SERI - RS485 serial interface	1	
	AG - Rubber vibration dampers	1	
Total Price Position			

Epsilon Echos + LE LN 26



Configured unit accessories

LN - Low noise

A43N - 400/3+N/50 power supply

SERI - RS485 serial interface

AG - Rubber vibration dampers

The image does not refer to the configured unit

General description

High efficiency air/water unit with plate heat exchangers and axial fans, having DC inverter-controlled hermetic scroll compressors that can change their rotation speed in accordance with the power demand of the system. This characteristic allows the limits of ON/OFF compressors to be exceeded and allows high COP and EER levels to be obtained, thanks to the generous heat exchange surfaces available to the compressor during operation of the unit at reduced power. To ensure the best efficiency of the compressor under nominal conditions, the nominal conditions are declared at 90rps for all models. Cooling fluid: R410A.

Motocondensing unit

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.

RAL

7035

Compressors

The compressors are “twin rotary” or “scroll” with inverter-controlled brushless DC motor, operating with power supply of 400-460V/3ph/50-60Hz. The compressors are provided with integrated thermal overload protection and acoustic hood. The compressor motor control driver is provided with integral electronic protection against overtemperature, overcurrent, over or under-voltage with absence of one or more phases. Compressor speed can vary between about 30rps and about 110rps, for rotary compressors, or about 120rps for scroll compressors. The electronic control of the inverter is provided with automatic soft-start system and continuous control of the compressor curve to prevent and correct its use beyond the maximum allowed limits.

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 valve in the liquid and suction line

liquid sight glass

dehydrator filter

electronic expansion valve. The solenoid valve function on the liquid line is performed by the electronic expansion valve, which shuts off the liquid by closing when the circuit stops. On request, the electronic valve can be fitted with a backup battery that will guarantee it closes even without mains power.

pressure transducer

high and low pressure switches

Refrigerant circuit of the motocondensing set-up

In addition to the components of the basic version, the unit includes:

- liquid receiver
- delivery oil separator
- split type suction and liquid valves 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

Automatic circuit breaker to protect the auxiliary and power circuits

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

0-10V and 4-20mA input for external modulation control of the compressor

Microprocessor

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
- Display of the following on the display:
 - > Outgoing water temperature
 - > Temperature and differential set points
 - > Description of alarms
 - > High pressure temperature
 - > Compressor operation hour meter

Safety devices

- 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/evaporation pressure control by means of Fan speed regulator for operation with low external temperatures;

Testing

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.

Electronic thermostatic valve

The use of this component is particularly advisable on units operating in very variable heat load or operating mode conditions, as in the case of joint management of air conditioning and high temperature water production. The use of an electronic thermostatic valve allows you to:

- maximize heat exchange at the evaporator
- minimize response times to changes in load and operating conditions
- optimize control of overheating
- ensure maximum energy efficiency ensure maximum energy efficiency

Configured unit accessories description

Additional RS485 serial card

RS485 serial card for connection of the unit to an external supervisor via ModBus protocol. This card is in addition to the RS485 serial connection with ModBus protocol present as standard.

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 LN
Model		26
Refrigerant fluid		R410A
Minimum partialization of the unit	%	35
Requested partialization	%	126
Compressors		
Type		Scroll
Number		1
Refrigerant circuits		1
Total oil charge		2.4
Total refrigerant charge (estimated)		0.0
Fans		
Type		Axial
Number		2
Rated absorbed power	kW	0.7
Rated absorbed current	A	2.5
Dimensions		
Length	mm	1310
Width	mm	780
Height	mm	1590
Weight		
Net weight	kg	248
Cooling conditions		
Evaporating temperature	°C	8.0
External air temperature	°C	35.0
Height asl	m	0
Cooling performances		
Cooling capacity	kW	33.4
Compressors absorbed power	kW	6.4
Total absorbed power (A1)	kW	8.1
EER		4.15
Air flow rate	m ³ /h	19000
Available pressure		0
Fans absorbed power	kW	0.67
Fans absorbed current	A	2.50
Sound levels		
Sound power (S1)	dB(A)	72
Sound pressure (S2)	dB(A)	41

(A1) Compressor and fans power

(S1) Sound power values calculate in compliance with ISO 3744

(S2) Sound pressure values measured at 10 meters from the unit in free field conditions and directional factor Q=2

(S1) Sound power values at 90 Hz

ELECTRICAL DATA (Theoretical calculations)

Power supply	V/ph/Hz	400/3N~/50 ±5%
Control power supply	V/ph/Hz	230/1~/50
Electrical performances		
Maximum absorbed power (E1)	kW	11.4
Maximum starting current - LRA	A	75.0
Full load current - FLA	A	20.8

(E1) Mains power supply to allow unit operation

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

LEVEL SOUND

Sound Level	63 [hZ]	125 [hZ]	250 [hZ]	500 [hZ]	1000 [hZ]	2000 [hZ]	4000 [hZ]	8000 [hZ]	Tot [hZ]
Lw [(dbA)]	76	75	75	72	66	62	58	53	72
Lp [(dbA)]	48	47	45	42	35	31	25	18	41