

## Air Source Heat Pump Unit

### Nomenclature

	<u>ES</u> 1	<u>S</u> 2	<u>A</u> 3	<u>05</u> 4	<u>L</u> 5	<u>H</u> 6	<u>N</u> 7
1	ES	ESACIR					
2	S	Compressor type S:Scroll type					
3	A	Product series A:Air-cooled series					
4	05	Product seris NO:(USRT/KW/HP)					
5	L	Product type L:Low ambient temp. P:Swimming pool type Omitted when not mentioned any letter					
6	H	Function H-Heat pump					
7	N	Refrigerant N: R407C M: R134a S:R22 P: 410A					

### Product Photos



## Air Source Heat Pump Unit

### Product Brief Introduction

Eurostars Air Source Heat Pump is one of the most competitive products, consists of famous brand compressor, electric controlling components, high efficient heat exchanger etc. With compact structure, elegant appearance, sufficient capacity, high efficiency and maintenance easily.

Eurostars Air Source Heat Pump is special designed with several working models: heating, cooling, hot water, heating + hot water, cooling +hot water;which is widely used for hotel,villa,hospital,school,etc

### Unit Features

#### High Efficiency

Utilizing advanced high efficient scroll type compressor, equipping with high efficient heat exchanger and imported expansion valve, to realize high COP .

#### Reliability Operation

- Multi-protection device to keep units safety operation;
- Modular design can be adopted ,whole system can work well even if one modular has problem;
- All units have passed national standard safety system test before leaving factory, to accord with national standard.

#### Intellectualized Control System

Adopt LCD micro computer controller,can operate via centralized manage system;clients also can choose remote controller which can also indicate unit running condition.



#### Easy and Simply Installation and Maintenance

- No need cooling tower system and machine room, can work in draughty places;
- Refrigerant and refrigeration oil are charged well before leaving factory, just connecting with inlet/outlet water pipe and power on to start running it;
- Controller interface indicating fault information directly in order to know and maintain it in time.

#### Special Design Is Optional

- Optional for refrigerant R134a,R410a etc,according to customer's need;
- Optional for different kinds of power supply,such as 380/400/415V-3PH-50HZ,220~230/440/460V-3PH-60HZ;
- Customized unit is optional,such anti-corrosion material etc.

## Air Source Heat Pump Unit

### Main Components

#### High Efficiency Scroll Type Compressor

- Copeland scroll type ZW series compressor is special for hot water, it has higher compression ratio and pressure difference because its unique scroll plate and axial flexible design, and can work at wider operating range.
- Continuous compression output ensure the pulse of air flow to be reduced, with low vibration noise



#### High Efficiency Air Side Heat Exchanger

- Special "L" or "V" shaped design, inner grooved patent sawtooth design copper pipe and aluminum fin guarantee efficient heat exchange between the air side exchanger and ambient air.
- Organic hydrophilic foil fin prevent condensed water from forming water droplets. Increased heat exchanging rate, reduced noise, anti-corrosion.



#### High Efficiency Tube in Shell Water Side Heat Exchanger

- High heat exchanging efficiency: tube is high efficiency finned tube, the heat exchanging area is 3.6 times of smooth tube.
- Safe: There is not solder point on the tube, insure no leakage. There is not blind zone of water flow, so avoid local freezing and scaling. Water drain is at the bottom, avoid freezing.
- Small volume: save space of heat pump.



#### Expansion Valve

Electric expansion valve, world wide famous brand, stable quality, long lifetime, precise and sensitive adjustment.



#### Four Way Valve

International famous brand 4-way valve, stable quality, long lifetime, solenoid control conversion, precise and magnetic intensity is high, action control is fast.



## Air Source Heat Pump Unit

### Main Components

#### Axial fan

Famous brand external rotor axial fan, compact structure, which is accord with aerodynamic principles; falciform impeller which can assure it runs with high efficiency and low noise, also can keep a better aerodynamic performance even under a short air inlet condition; strong waterproof performance



#### EATON AC contactor

- Advanced contact design (long life);
- 690V Insulation rating
- Working voltage up to 660VAC
- Up to 3 normally open or normally closed contacts



#### Intellectualized LCD micro computer Controller

- At constant temperature, the circulating water pump can be stopped or not;
- Automatic defrosting and manual defrosting functions
- Equipped with touch LCD remote wired controller, easy to operate;
- Multiple protections, such as high and low refrigerant pressure protection, high and low refrigerant temperature protection, high water temperature protection, low water flow protection, water level switch protection, undercurrent and over current protection., etc;

- Fault alarm function;
- Water supply, backwater, water replenishment and other control functions;
- Antifreeze function in winter;
- Up to 8 units can be online and controlled centrally
- Under the refrigeration mode and heating mode, the energy-saving mode can be selected for operation;
- With independent test function of circulating water pump



## Air Source Heat Pump Unit(Heating Only)

Model			ESSA-5HN	ESSA-10HN	ESSA-12.5HN
			5ES	2*5ES	2*6ES
Working mode			Heating		
Rated heating capacity	Heating	KW	18	36	43
Rated input power		KW	4.28	8.48	10.2
Rated current		A	7.8	15.5	18.5
COP		KW/KW	4.21	4.25	4.22
Rater water flow		m³/h	3.096	6.192	7.396
Max intput power		KW	6.3	13.2	15.7
Max. current		A	11.8	24	28.6
Max outlet water temperature			60℃		
Hot water capacity		L/H	387	774	925
Water pressure drop	kPa		30	45	45
Inlet/outlet water pipe (internal thread)			DN25	DN40	DN40
Casing material / color			Sprayed galvanized sheet/gray color		
Power supply			380V-3N-50Hz		
Refrigerant	Type		R407C	R407C	R407C
	Weight(Kg)		3.0kg	3.0kg*2	3.6kg*2
Compressor	Brand		Copeland	Copeland	Copeland
	Type		Hermetic Scroll		
	Quantity		1	2	2
Max gas pressure of compressor outlet			3.0MPa		
Rated pressure of water			0.7MPa		
Classification of waterproof			IPX4		
Electric shock proof grade			I		
Water side heat exchanger			High efficiency tube in shell heat exchanger		
Source side heat exchanger			Hydrophilic aluminium foil and red copper tube		
4 way valve			Sanhua(China)/OKAYAMA SEIKO (Japan)		
Electronic expansion valve			FUJIKOKI (Japan),Emerson/Danfoss		
AC contactor			EATON (USA)		
Fan			Axial flow fan		
Controller			LCD multiple function controller		
Net weight	kg		125	280	300
Noise	dB(A)		55	55	55
Package			Foam protector and plywood case		
Dimension(L×W×H) mm			870×810×1050	1450×790×1130	1575×905×1245
Packing dimension(L×W×H) mm			910×910×1200	1520×840×1280	1650×970×1425

### Remarks:

1.Working air temperature range:-7℃ to 43℃

2.Rated working condition:

dry-bulb temp: 20℃, wet-bulb temp: 15℃, cool water temp: 15℃, hot water temp:55 ℃.

## Air Source Heat Pump Unit(Heating Only)

Model			ESSA-20HN	ESSA-25HN	ESSA-40HN
			4*5ES	4*6ES	4*10ES
Working mode			Heating		
Rated heating capacity	Heating	KW	72	86	140
Rated input power		KW	17.15	20.5	29.5
Rated current		A	31.2	37.4	106
COP		KW/KW	4.20	4.20	4.75
Rater water flow		m³/h	12.384	14.792	24.08
Max intput power		KW	26.4	31.4	43
Max. current		A	48	57.2	100.8
Max outlet water temperature			60℃		
Hot water capacity		L/H	1,548	1,849	3,010
Water pressure drop	kPa		45	50	50
Inlet/outlet water pipe (internal thread)			DN50	DN50	DN80
Casing material / color			Sprayed galvanized sheet/gray color		
Power supply			380V-3N-50Hz		
Refrigerant	Type		R407C	R407C	R407C
	Weight(Kg)		3.0kg*4	3.6kg*4	6kg*4
Compressor	Brand		Copeland	Copeland	Copeland
	Type		Hermetic Scroll		
	Quantity		4	4	4
Max gas pressure of compressor outlet			3.0MPa		
Rated pressure of water			0.7MPa		
Classification of waterproof			IPX4		
Electric shock proof grade			I		
Water side heat exchanger			High efficiency tube in shell heat exchanger		
Source side heat exchanger			Hydrophilic aluminium foil and red copper tube		
4 way valve			Sanhua(China)/OKAYAMA SEIKO (Japan)		
Electronic expansion valve			FUJIKOKI (Japan),Emerson/Danfoss		
AC contactor			EATON (USA)		
Fan			Axial flow fan		
Controller			LCD multiple function controller		
Net weight	kg		480	580	1340
Noise	dB(A)		73	75	75
Package			Foam protector and plywood case		
Dimension(L×W×H) mm			1850×1000×1850	2000×1100×1950	2150×2000×2100
Packing dimension(L×W×H) mm			2010×1060×2030	2060×1160×2130	2210×2060×2280

### Remarks:

1.Working air temperature range:-7℃ to 43℃

2.Rated working condition:

dry-bulb temp: 20℃, wet-bulb temp: 15℃, cool water temp: 15℃, hot water temp:55 ℃.



## Air Source Heat Pump Unit(Heating-Cooling)

Model			ESSA-5HN	ESSA-10HN	ESSA-12.5HN
			5ES	2*5ES	2*6ES
Working mode			Heating&Cooling		
Rated heating capacity	Heating	KW	15	30	36
Rated input power		KW	4.28	8.48	10.2
Rated current		A	7.8	15.5	18.5
COP		KW/KW	3.50	3.54	3.53
Rater water flow		m³/h	2.58	5.16	6.192
Rated cooling capacity	Cooling	KW	13.5	27	32.4
Rated input power		KW	4.62	9.2	11.2
EER		KW/KW	2.92	2.93	2.89
Rater water flow		m³/h	2.32	4.64	5.57
Max input power		KW	6.3	13.2	15.7
Max. current		A	11.8	24	28.6
Water pressure drop	kPa		30	45	45
Inlet/outlet water pipe (internal thread)			DN25	DN40	DN40
Casing material / color			Sprayed galvanized sheet/gray color		
Power supply			380V-3N-50Hz		
Refrigerant	Type		R407C	R407C	R407C
	Weight(Kg)		3.0kg	3.0kg*2	3.6kg*2
Compressor	Brand		Copeland	Copeland	Copeland
	Type		Hermetic Scroll		
	Quantity		1	2	2
Max gas pressure of compressor outlet			3.0MPa		
Rated pressure of water			0.7MPa		
Classification of waterproof			IPX4		
Electric shock proof grade			I		
Water side heat exchanger			High efficiency tube in shell heat exchanger		
Source side heat exchanger			Hydrophilic aluminium foil and red copper tube		
4 way valve			Sanhua(China)/OKAYAMA SEIKO (Japan)		
Electronic expansion valve			FUJIKOKI (Japan)		
AC contactor			EATON (USA)		
Fan			Axial flow fan		
Controller			LCD multiple function controller		
Net weight	kg		125	280	300
Noise	dB(A)		55	55	55
Package			Foam protector and plywood case		
Dimension(L×W×H) mm			870×810×1050	1450×790×1130	1575×905×1245
Packing dimension(L×W×H) mm			910×910×1200	1520×840×1280	1650×970×1425

### Remarks:

1.Working air temperature range:-7℃ to 43℃

2.Rated working condition:

Heating: air temperature (DB/WB): 7℃/6℃, water temperature (inlet/outlet):40℃/45℃;

Cooling: air temperature (DB/WB): 35℃, wet-bulb temp: 24℃, water temperature (inlet/outlet):12℃/7℃.

## Air Source Heat Pump Unit(Heating-Cooling)

Model			ESSA-20HN	ESSA-25HN	ESSA-40HN
			4*5ES	4*6ES	4*10ES
Working mode			Heating&Cooling		
Rated heating capacity	Heating	KW	60	74	120
Rated input power		KW	17.15	20.5	34
Rated current		A	31.2	37.4	106
COP		KW/KW	3.50	3.61	3.53
Rater water flow		m <sup>3</sup> /h	10.32	12.728	20.64
Rated cooling capacity	Cooling	KW	54	66	106
Rated input power		KW	18.3	22.2	36
EER		KW/KW	2.95	2.97	2.94
Rater water flow		m <sup>3</sup> /h	9.29	11.35	18.23
Max input power		KW	26.4	31.4	55
Max. current		A	48	57.2	100.8
Water pressure drop	kPa		45	50	50
Inlet/outlet water pipe (internal thread)			DN50	DN50	DN80
Casing material / color			Sprayed galvanized sheet/gray color		
Power supply			380V-3N-50Hz		
Refrigerant	Type		R407C	R407C	R407C
	Weight(Kg)		3.0kg*4	3.6kg*4	6kg*4
Compressor	Brand		Copeland	Copeland	Copeland
	Type		Hermetic Scroll		
	Quantity		4	4	4
Max gas pressure of compressor outlet			3.0MPa		
Rated pressure of water			0.7MPa		
Classification of waterproof			IPX4		
Electric shock proof grade			I		
Water side heat exchanger			High efficiency tube in shell heat exchanger		
Source side heat exchanger			Hydrophilic aluminium foil and red copper tube		
4 way valve			Sanhua(China)/OKAYAMA SEIKO (Japan)		
Electronic expansion valve			FUJIKOKI (Japan)		
AC contactor			EATON (USA)		
Fan			Axial flow fan		
Controller			LCD multiple function controller		
Net weight	kg		480	580	1340
Noise	dB(A)		73	75	75
Package			Foam protector and plywood case		
Dimension(L×W×H) mm			1850×1000×1850	2000×1100×1950	2150×2000×2100
Packing dimension(L×W×H) mm			2010×1060×2030	2060×1160×2130	2210×2060×2280

### Remarks:

1.Working air temperature range:-7℃ to 43℃

2.Rated working condition:

Heating: air temperature (DB/WB): 7℃/6℃, water temperature (inlet/outlet):40℃/45℃;

Cooling: air temperature (DB/WB): 35℃, wet-bulb temp: 24℃, water temperature (inlet/outlet):12℃/7℃.



## Air Source Heat Pump Unit

Model	ESSA-5HN	ESSA-10HN
	5ES	2*5ES
Dimension(L*W*H)	870×810×1050	1450×790×1130
Refer. Photo		
Model	ESSA-12.5HN	ESSA-20HN
	2*6ES	4*5ES
Dimension(L*W*H)	1575×905×1245	1850×1000×1850
Refer. Photo		
Model	ESSA-25HN	ESSA-40HN
	4*6ES	4*10ES
Dimension(L*W*H)	2000×1100×1950	2150×2000×2100
Refer. Photo		
Heat Pump Unit		<a href="http://www.eurostarschina.com">www.eurostarschina.com</a>