

## Rooftop Packaged Air Conditioner

### Application Scope

EUROSTARS ESSA series rooftop air conditioners were developed by our company, with continuous development and improvement, at present, we do not only have the conventional series with R22 as refrigerant but also have the environmental friendly series product with refrigerant R407C, R134A, or R410A which are harmless to the ozoneosphere.

This series product is horizontal packaged ones which consist of supply air, refrigeration, heating, humidity, air purification, and electric control section as an integral body. The unit has the advantages of big refrigerating capacity, simplified refrigerating circuit, compact structure and etc. The unit can be installed on the roof and do not occupy much space; it is very to connect with air duct. To ensure a precise temperature and humidity of supply air, the unit adopt computer controller.

EUROSTARS rooftop air conditioner can be widely used in industrial fields of metallurgy, chemical, mechanism, electron, power and etc, also can be used in hospital, supermarket, hotel and office.



### Nomenclature

	<u>ES</u>	<u>S</u>	<u>A</u>	<u>10</u>	<u>WD</u>	<u>C</u>	<u>H</u>	<u>T</u>	<u>N</u>	<u>PU</u>	<u>C</u>
	1	2	3	4	5	6	7	8	9	10	11

1	ES	ESACIR									
2	S	Compressor type: S-Scroll G-Screw									
3	A	Product series No.: A-Air cooled series									
4	10	Cooling capacity: USRT/HP/KW									
5	WD	Product type: WD-Rooftop									
6	C	Frame type: C-Cabinet type									
7	H	H-Heat pump E-Electrical heating Cooling or Heating only- when not to mention any letter									
8	T	Air discharge direction: T-Top									
9	N	N-R407C M-R134a P-R410A Omitted when not to mention any letter									
10	PU	PU-Purified HT-Thermostatic and humidistat PT-Purified thermostatic and humidistat Omitted when not to mention any letter									
11	C	Sales Region C: Mainland China O: Other Regions									

### Unit Features

#### High Reliability

- Adopt high efficiency hermetic scroll type compressor,smooth running with low noise
- Flexible compressed,high anti fluid-attack ability
- Directly driving,forward curved centrifugal-type fans,use refrigerant to cool -Famous brand components,stable and reliable
- Multi circuits design,maintenance without machine stop

#### Energy Saving Operation

- Single,double or multi compressor design,partial load increase 15~30%
- Multi circuits design with higher partial load efficiency
- No cold bridge design to guarantee no cooling capacity lost
- Fresh air valve is optional for transition season

#### Manifold Protection Device

Equip with temp. Protection switch,overload relay.,high/low pressure protection,anti-phase protection to assure the air conditioner run reliability and safety

#### Low noise,running quietly

- Compressor room is optional to make the compressor to be isolated and use sound-dampening material to reduce noise
- Adopt famous brand axial fans,compact structure
- Adopt high quality centrifugal fans with good dynamic balance and a stable performance;also there is spring shock absorber for bigger unit to reduce indoor side noise
- Flexible connection for centrifugal fans to isolate fan vibration

#### Advanced,high quality,reliable performance control system

- Adopt famous brand components can be controlled easy and accurate
- Adopt SCM or PLC controller,user can check unit running condition easy
- High automatization,complete functions,with sound and light alarm for failures
- Intelligent control process for defrosting

#### Easy,labor saving,minimum floor space Installation

- Monoblock design,no need machine room,can be put on the rooftop or other place outdoor.
- Single unit configuration,all refrigeration work can be omitted.The unit operation can commence immediately after connecting to the power supply,drain pipping,ducting and control system
- Compactly design and has been succeeded in reducing more floor space
- Multi supply air/return air mode for easy installation:supply air/return air at side,supply air/return air under below,supply air/return air on the top,etc
- Refrigeration been charged and tested well before delivery,only connect air duct at site

### Main Components

#### Scroll type compressor

- Flexible high-efficiency scroll compressor,which patent flexible design provides best ability of fluid-attack resistance and impurity tolerance.
- Continuous compression output ensure the pulse of air flow to be reduced,with low vibration noise



## Rooftop Packaged Air Conditioner

### Throttling Device

Adopt superior quality famous exterior balanced thermal expansion valve, or capillary tube. Expansion valve is high reliability and adjustability, which can realize precise refrigerant and temperature control to ensure operating in precise and reliable status.



### Heat Exchanger

Adopt high efficiency fin type heat exchanger with high quality internal thread copper tube and hydrophilic blue aluminum fin.



### Evaporator fan

-Direct-drive, forward curved, centrifugal-type fan, the shell and impeller were made from hot galvanized steel plate  
-Outer rotor motor was equipped for directly driving, which belt is needless, ensuring long term and reliable running of air conditioner



### Condenser fan

Adopt famous brand 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.



## Rooftop Packaged Air Conditioner

### Control system

- SCM controller,digital operation display,high automatization
- PLC control system was applied to constant temperature/humidity the startup sequence of load,estimation of temperature and running order of compressor can be automatically switched,LCD operation panel,digital controller ensure that the temperature,humidity and other required conditions were controlled in selected scope
- Alarming mode for fault and any condition beyond acceptable valve:sound and light alarm



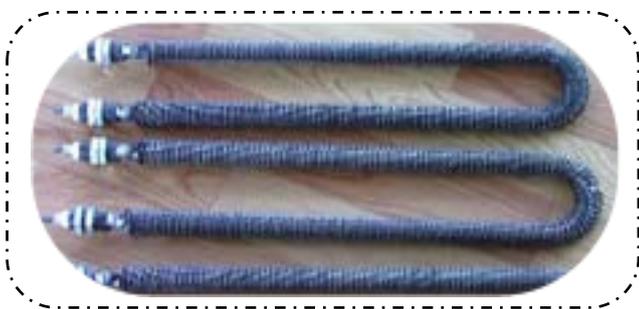
### Electrode Humidifier(optional)

- Electrode humidifier is high efficiency,energy saving,running reliable,long use time.
- Auto-cleaning process ensure little dirty in humidifier



### Electric heater(optional)

- Stainless electric heating pipe,equal heating,high heating efficiency,long use time
- Low surface temperature,good safety performance



### Air filter

- Primary efficiency filter:including bag type and plate type,equipped with chemical fibre filter material,filter efficiency:G3-G4,can be washed
- Middle efficiency filter:including bag type and plate type,equipped with chemical fibre filter material,filter efficiency:F5-F8
- High efficiency/sub-high efficiency filter,filter efficiency is from F9 to H13

### Rooftop Packaged Air Conditioner

Model ESSA-			05WDCT	06WDCT	10WDCT	12WDCT	15WDCT	20WDCT
Cooling capacity	KW		15	21	30	35	44	59
	USRT		4.3	6.0	8.6	10.0	12.6	16.9
Air flow	m3/h		3,000	4,500	6,000	7,200	9,000	11,000
Pressure	Pa		200	200	300	300	300	350
Refrigerant			R22/R407C					
Throttling device			Thermal expansion valve					
Total power input	KW		4.85	6.01	9.85	12.05	15.35	19.70
Power supply			380/400/415V-3PH-50HZ					
Compressor	Type		Hermetic Scroll					
	Power	KW	3.75	4.50	7.50	9.00	11.25	15.00
	Quantity	Units	1	1	2	2	3	2
Evaporator			Ripple Aluminum Fins around Copper Pipe					
Condenser			Ripple Aluminum Fins around Copper Pipe					
Evaporator fan	Type		Centrifugal					
	Power	KW	0.75	1.1	1.5	2.2	3	3
	Qty	Units	1	1	1	1	1	1
Condenser fan	Type		Axial					
	Power	KW	0.35	0.41	0.85	0.85	1.1	1.7
	Qty	Units	1	1	1	1	1	2
Filter			Washable Aluminum alloy/ Nylon Filter					
Dimensions	L	mm	600+800	700+900	800+1000	800+1000	800+1200	800+1100
	W	mm	1000	1000	1300	1500	1650	2150
	H	mm	1200	1400	1500	1550	1550	1500

**Note:**

1. Rated Cooling Capacity based on: Indoor side inlet Air Temperature 27°C/19.5°C, Ambient Temperature:35°C;
2. Similar performance while using efficient refrigerant R407 and Ordinary R22 in standard working condition.
3. Specifications are subject to change without notice for further improvement.

### Rooftop Packaged Air Conditioner

Model ESSA-			24WDCT	30WDCT	36WDCT	48WDCT	60WDCT	
Cooling capacity	KW		69	88	104	136	176	
	USRT		19.7	25.1	29.7	38.9	50.3	
Air flow	m3/h		14,500	16,000	21,000	23,000	30,000	
Pressure	Pa		350	400	400	450	500	
Refrigerant			R22/R407C					
Throttling device			Thermal expansion valve					
Total power input	KW		23.70	30.20	37.30	46.90	60.50	
Power supply			380/400/415V-3PH-50HZ					
Compressor	Type		Hermetic Scroll					
	Power	KW	18.00	22.50	27.00	36.00	45.00	
	Quantity	Units	2	3	3	4	5	
Evaporator			Ripple Aluminum Fins around Copper Pipe					
Condenser			Ripple Aluminum Fins around Copper Pipe					
Evaporator fan	Type		Centrifugal					
	Power	KW	4	5.5	7.5	7.5	11	
	Qty	Units	1	1	1	1	1	
Condenser fan	Type		Axial					
	Power	KW	1.7	2.2	2.8	3.4	4.5	
	Qty	Units	2	2	2	4	4	
Filter			Washable Aluminum alloy/ Nylon Filter					
Dimensions	L	mm	800+1100	900+1200	900+12000	1400+2200	1500+2300	
	W	mm	2150	2150	2150	2150	2150	
	H	mm	1750	2050	2050	1900	2050	

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### Unit Typical Installation Example

