

HRUS

ICT In-Row Cooling

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HRUS-RF Direct Expansion Unit (DX)



EER ≥ 3.5

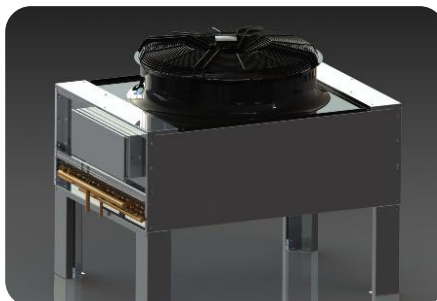


Configure

HRUS-RF – DX for in row cooling,

Profit from the latest converter compressor and the EC fan application, HRUS-RF DX units are excellent in both performance and energy efficiency

- ◆ DC converter compressor (In indoor unit) , R410a refrigerant
- ◆ EEV , precise for flow control
- ◆ Latest EC fans , high efficient
- ◆ Higher efficient , rated EER≥3.5,SHR=1
- ◆ Each fan are equipped with independent switch, convenient maintenance
- ◆ 7 " LCD touch screen, full information display
- ◆ Equipped with multi inlet and outlet air temperature sensor and return air humidity sensor
- ◆ RS485 port, Compatible with TCP/IP protocol, the maximum 16 units networking
- ◆ The outdoor unit has all aluminum housing, strong corrosion resistance, and can be installed horizontally or vertically to save space
- ◆ Double power supply, heating, humidifying, dehumidification, condensate water pump are optional
- ◆ Control target optional (outlet air temperature, return air temperature or remote temperature), convenient for application
- ◆ Two ways can be used for connecting pipes: up or down
- ◆ The air guide plate is optional, which is convenient for multi direction air supply
- ◆ Low temperature module is optional, convenient for low temperature area application
- ◆ Extension module is optional, convenient for long distance installation
- ◆ Cooling Capacity:25~40Kw



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HRUS-RW Chilled Water Unit (CW)

Configure



HRUS-RW – CW for in row cooling,
Profit from the special heat exchanger design and the EC fan application, HRUS-RW CW units are excellent in both performance and energy efficiency

- ◆ Latest EC fans, high efficient
- ◆ Higher efficient, rated $EER \geq 45$, $SHR=1$
- ◆ Each fan are equipped with independent switch, convenient maintenance
- ◆ 7" LCD touch screen, full information display
- ◆ The special design and optimization of heat exchangers, be higher efficiency and smaller flow resistance
- ◆ Equipped with multi inlet and outlet air temperature sensor and return air humidity sensor
- ◆ RS485 port, Compatible with TCP/IP protocol, the maximum 16 units networking
- ◆ 7~15°C chilled water be available
- ◆ The low pressure loss of chilled water flow (< 100kPa)
- ◆ Double power supply, heating, humidifying, dehumidification, condensate water pump are optional
- ◆ Control target optional (outlet air temperature, return air temperature or remote temperature), convenient for application
- ◆ The air guide plate is optional, which is convenient for multi direction air supply
- ◆ Cooling Capacity: 25~60Kw



$EER \geq 45$



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Application Advantages



Hot spot management

T In-Row cooling is considered as an efficient way to manage high density servers, or hot spots management:

- ◆ The configuration flexibility, easy expansion of the construction of computer room
 - ◆ The cold air directly to the equipment, and greatly raise the direct expansion system of evaporation temperature or water temperature of chilled water system, energy saving
 - ◆ The application of converter compressor technology in DX, high efficiency and energy saving, that can adjusting the cooling output according to the heat load
 - ◆ EC fan can be realized according to the real-time load VAV operation. According to the temperature sensors installed in the cold and heat channel to determine the heat load
 - ◆ Can be integrated with existing cabinet perfectly and easy expansion
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Flexibility and modular design

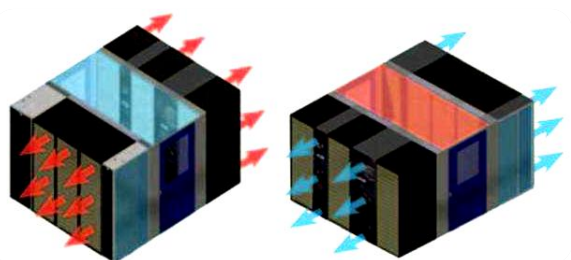
The In-Row conditioner is designed for the server cabinet of data center:

- ◆ 300mm and 600mm width, 1000~1200mm depth
- ◆ Operate automatically according to the usual heat load
- ◆ Modular unit design, can meet the needs of the rapid upgrading of data centers



Free-cooling

The CW system can be applied to cold water at 15 °C, which is convenient for low temperature areas in winter and fully utilizes natural cooling, DX system can choose iFreecooling module, which is convenient for low temperature areas in winter, fully utilize natural cooling, reduce the running time of compressor, and save energy more fully.



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Technology advantage



Converter Technology

DX unit using frequency conversion technology, the well-known inverter scroll compressor, according to the real-time load to adjust the motor frequency, so as to optimize performance when at the part load, Compared with common fixed frequency compressor, converter compressor has the following advantages:

- ◆ Benefit from the compressor's frequency rise control function, the cooling speed is faster
- ◆ Soft start function can reduce the starting current
- ◆ Small vibration and low noise during running
- ◆ Higher efficiency running In part load

EC Fan

Apply to all products

EC fan can reduce running noise and energy consumption, and can operate according to the real-time heat load, reduce the operation cost of the unit and improve the service life of the fan:

- ◆ The reduced running noise
- ◆ The lower operating power
- ◆ The fan running state can be monitored at all times



Electronic Expansion Valve (EEV)

DX unit using well-known brands of EEV, coordinate the inverter compressor more perfect operation, according to the change of load, flow control is more accurate, more efficient, the internal temperature can be more stability.

Technology advantage



Flow control valve (Chilled Water)

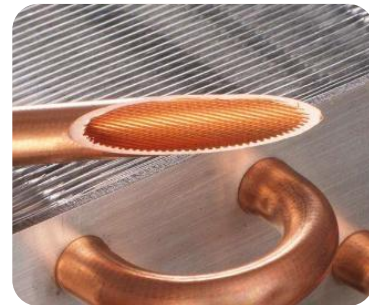
CW units are equipped with well-known flow control valves and actuators

- ◆ The high KV value, small pressure drop loss
- ◆ The spool state feedback function, realizing the perfect inspection and monitoring

High efficiency heat exchanger

Apply to all products; optimize process design, high heat transfer efficiency, low system resistance and low air resistance, and better system performance

Full solder joint leak detection to ensure the system does not leak before out of the factory



E-Mate Controller

- ◆ The 7" LCD touch screen, full information display
 - ◆ The parameters can be set, 3 level password management
 - ◆ The running state query
 - ◆ The management records and curve for querying and download
 - ◆ The PID control, dynamic proportional integral management
 - ◆ The maximum 16 units networking
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Technical parameter - HRUS-RF (DX)

Model	HRUS-RF-025	HRUS-RF-040
Main Power	380Vac-3Ph/50Hz	
Total Cooling@40°CDB/20%RH (kW)	27	42
Sensible cooling@40°CDB/20%RH (kW)	27	42
Total Cooling @37°CDB/24%RH (kW)	25	40
Sensible cooling @37°CDB/24%RH (kW)	25	40
Total Cooling @35°CDB/26%RH (kW)	24	38
Sensible cooling @35°CDB/26%RH (kW)	24	38
Total Cooling @32°CDB/29%RH (kW)	22	36
Sensible cooling @32°CDB/29%RH (kW)	22	36
Total Cooling @30°CDB/34%RH (kW)	21	35
Sensible cooling @30°CDB/34%RH (kW)	21	35
Compressor power (kW)	5.6	8.7
Condenser fan power (kW)	0.8	1.6
Evaporator fan power (kW)	0.6	1.1
Air volume (m3/h)	5000m3/h	8000m3/h
EER@ rated condition	3.6	3.5
Electric heating capacity (kW)	3	6
Humidifying capacity (kg/h)	3	3
Connecting pipe dimensions – gas pipe (OD)	19.05mm	22mm
Connecting pipe dimensions – liquid pipe (OD)	15.88mm	19.05mm
Humidifying inlet pipe - female thread	G1/2"	G1/2"
Condensate pump drain pipe (OD mm)	12	12
FLA – Cooling only	19A	33A
FLA – Cooling + Humidifying	22A	36A
FLA –Cooling + Humidifying + Heating	25A	40A
Air filter	G4	G4
Dimension-indoor unit (HxDxW)	2000x1200x300mm	2000x1200x600mm
Dimension-outdoor unit (HxDxW)	1150x970x1350mm	1150x970x1800mm
FLA – outdoor unit	6A	8A
Operating temperature range of standard unit	-15~45°C	-15~45°C
Operating temperature range with special module	-40~45°C	-40~45°C
Net weight (indoor unit / outdoor unit)	245 kg /90 kg	320 kg /155 kg
Noise (indoor unit / outdoor unit)	72dB(A)/ 67dB(A)	70dB(A)/ 72dB(A)

Note:

The rated condition is: return air temperature 37°C, RH24%, ambient temperature is 35°C

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Technical parameter - HRUS-RW (CW)

Model	HRUS-RW-025				HRUS-RW-045			
Main Power	220Vac-1Ph-50Hz / 380Vac-3Ph-50Hz							
Inlet / outlet temperature (°C)	7/12	10/15	12/17	15/20	7/12	10/15	12/17	15/20
Total Cooling @40°CDB/20%RH (kW)	43	36	32	29	71	64	57	52
Sensible cooling @40°CDB/20%RH (kW)	41	36	32	29	66	64	57	52
Total Cooling @37°CDB/24%RH (kW)	39	32	28	25	69	60	52	45
Sensible cooling @37°CDB/24%RH (kW)	36	32	28	25	64	60	52	45
Total Cooling @35°CDB/26%RH (kW)	35	29	25	22	61	52	45	40
Sensible cooling @35°CDB/26%RH (kW)	33	29	25	22	57	52	45	40
Total Cooling @32°CDB/29%RH (kW)	30	25	21	18	52	44	35	32
Sensible cooling @32°CDB/29%RH (kW)	29	25	21	18	49	44	35	32
Total Cooling @30°CDB/34%RH (kW)	28	22	18	25	47	39	32	27
Sensible cooling @30°CDB/34%RH (kW)	27	22	18	25	45	39	32	27
Fan power (kW)	0.7				1.3			
Air volume (m3/h)	5000				8500			
EER@ rated condition	45				45			
Electric heating capacity (kW)	3				6			
Humidifying capacity (kg/h)	3				3			
Connecting pipe dimensions – water inlet	DN25				DN32			
Connecting pipe dimensions – water outlet	DN25				DN32			
Humidifying inlet pipe - female thread	G1/2"				G1/2"			
Condensate pump drain pipe (OD mm)	12				12			
FLA – Cooling only	7/4A				12/6A			
FLA – Cooling + Humidifying	12/7A				20/11A			
FLA –Cooling + Humidifying + Heating	18/9A				33/17A			
Air filter	G4				G4			
Dimension (HxDxW)	2000x1200x300mm				2000x1200x600mm			
Net weight (kg)	185				250			
Noise	72dB(A)				70dB(A)/ 72dB(A)			
Flow resistance at rated condition (kPa)	77				80			
Rated flow rate (m3/h)	5.5				10.3			

Note:

The rated condition is: return air temperature 37°C, RH24%, inlet temperature 10°C, and outlet water temperature 15°C



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