

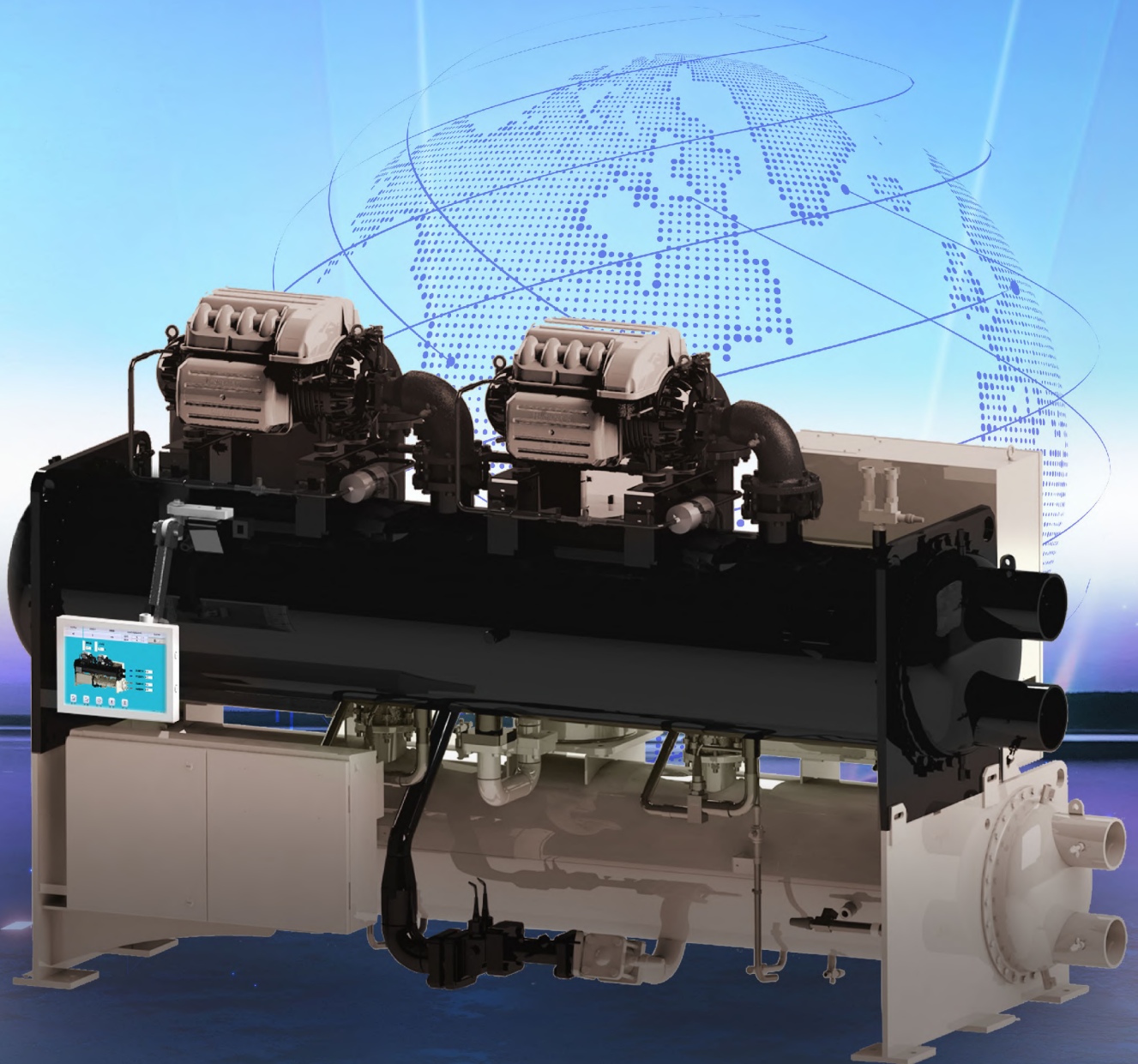
DAIKIN

HXE

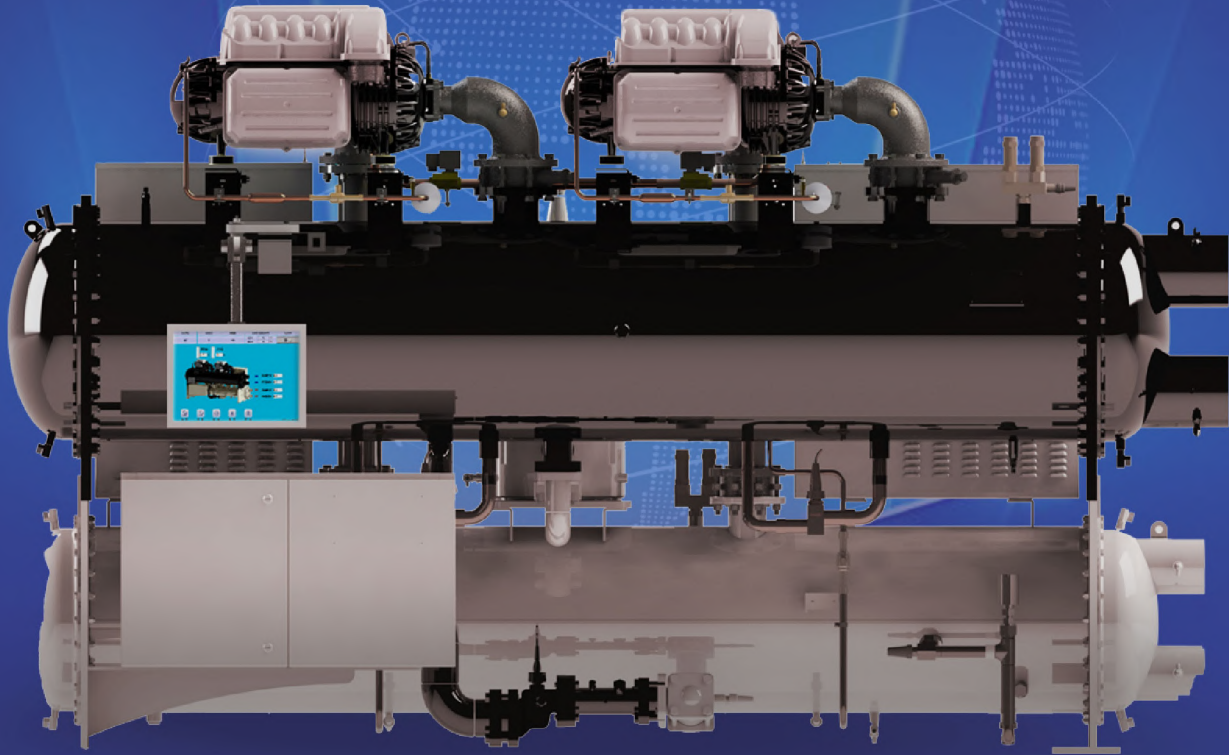
HFC-R134a

100~700RT

WATER COOLED
MAGNETIC BEARING
CENTRIFUGAL
CHILLER



WORLD-CLASS PERFORMANCE



COP up to

6.8
kW/kW

IPLV up to
12.1 kW/kW



**Chiller performance
based on
AHRI condition**

As one of the largest air conditioning manufacturers in the world, Daikin has earned a worldwide reputation in delivering high quality products and expertise to meet various requirements from different customers.

The Water Cooled Centrifugal Magnetic Bearing Chiller, HXEV has been designed with the oil-free system by utilizing the magnetic bearing compressor and permanent magnet motor. These combined technology eliminates the oil contamination in refrigerant hence provide an outstanding operating efficiency over time without performance degradation as happens to the conventional oil-system chiller.

And with the Variable Frequency Drive, the chiller is able to unload smoothly for superior part load performance. The chiller utilizes the zero ODP HFC-R134a refrigerant, and with additional flash tank type economizer to boost the full load and part load efficiency. The chiller full load COP and part load IPLV are able to reach up to 6.8 kW/kW and 12.1 kW/KW concurrently under AHRI condition.

PREMIUM TECHNOLOGY

CHILLER COMPONENTS



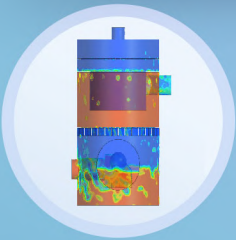
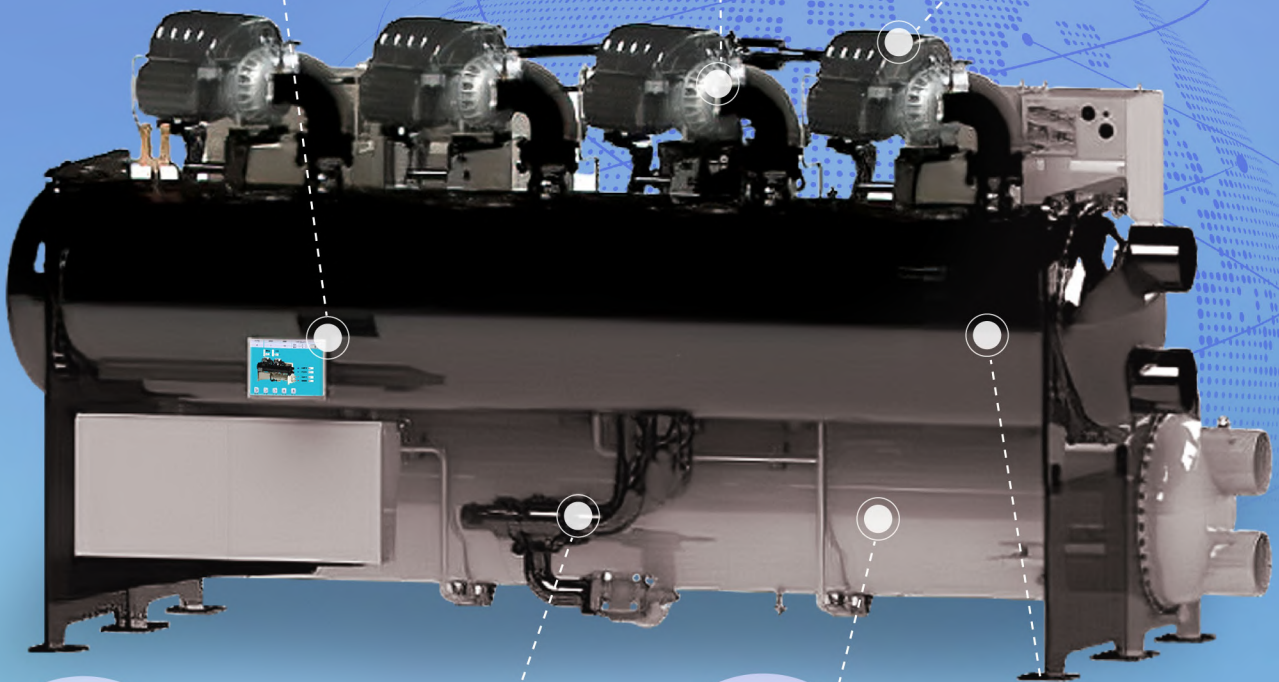
- MICROTECH CONTROL SYSTEM
- ADVANCED OITS



- OIL-FREE, MAGNETIC BEARINGS
- PERMANENT MAGNET SYNCHRONOUS MOTOR
- TWO STAGE COMPRESSION



- COMPRESSOR WITH BUILT-IN VFD
- INTEGRATED REFRIGERANT COOLING LOOP FOR VFD



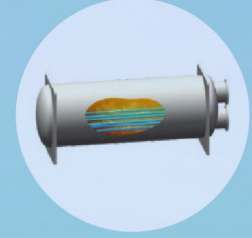
- ENHANCED PATENTED CYCLONE ECONOMIZER
- FEWER REFRIGERANT CHARGE
- HIGH SEPARATION EFFICIENCY
- PREVENT LIQUID CARRY OVER



- ELECTRONIC EXPANSION VALVE, EXV

R134a

- HFC-R134A REFRIGERANT
- GDP=0, GWP ≈1200, ASHRAE A1
- NON-FLAMMABLE, NON-TOXIC



- FLOODED EVAPORATOR
- BETTER CAPACITY & PERFORMANCE COMPARED TO DX TYPE

INNOVATIVE TECHNOLOGY

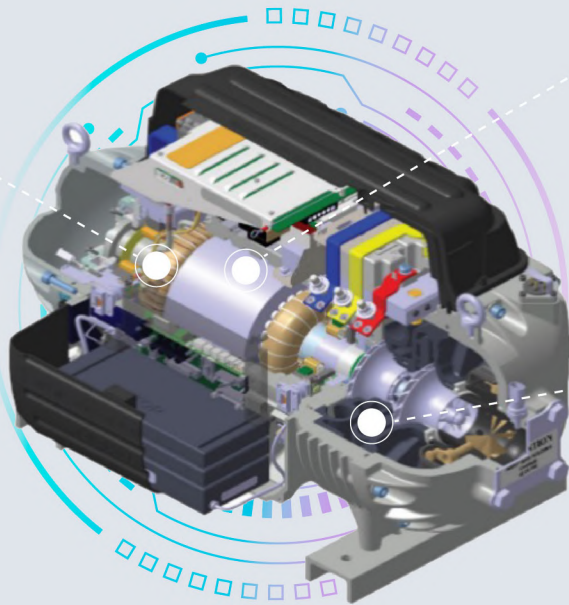
KEY FEATURES

1 SUSTAINABLE & LUBRICATION FREE COMPRESSOR

A simplified chiller design, increased reliability and reduced maintenance.

Oil-free, magnetic bearings eliminates complex oil, lubrication and mechanical friction, eliminates efficiency losses from oil contamination.

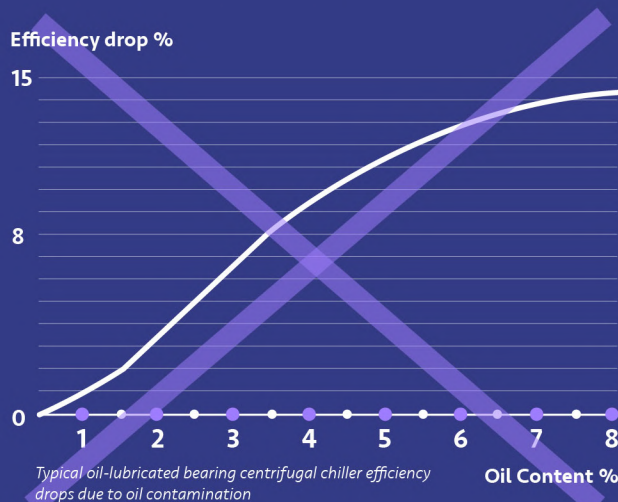
VFD (Variable Frequency Drive) as standard providing unmatched **part load efficiency**.



Permanent magnet synchronous motor eliminates rotor excitation, emits less heat, low torque fluctuation and greater power factor.

Two stage, direct drive, hermetic centrifugal compressor.

2 LUBRICATION-FREE CHILLER ELIMINATES POTENTIAL EFFICIENCY DROP DUE TO OIL CONTAMINATION

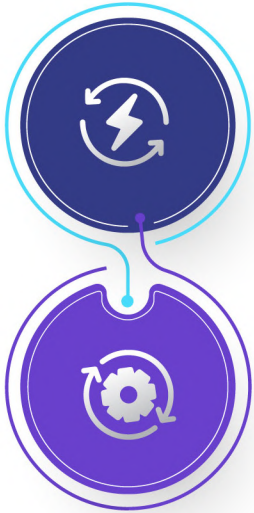


Zero Performance Degradation

Oil lubrication system can cause oil contamination in heat exchanger. The more oil in heat exchanger, the higher the performance loss!

3 GOOD INVESTMENT

Over the life of the equipment, the total maintenance savings could be significant and depend on maintenance practices, age and efficiency of other equipment, energy prices, etc.



ENERGY SAVINGS

HXEV Chiller reduced annual energy costs due to outstanding part-load efficiency, since the chiller spend about 99% of their operating hours at part-load conditions.

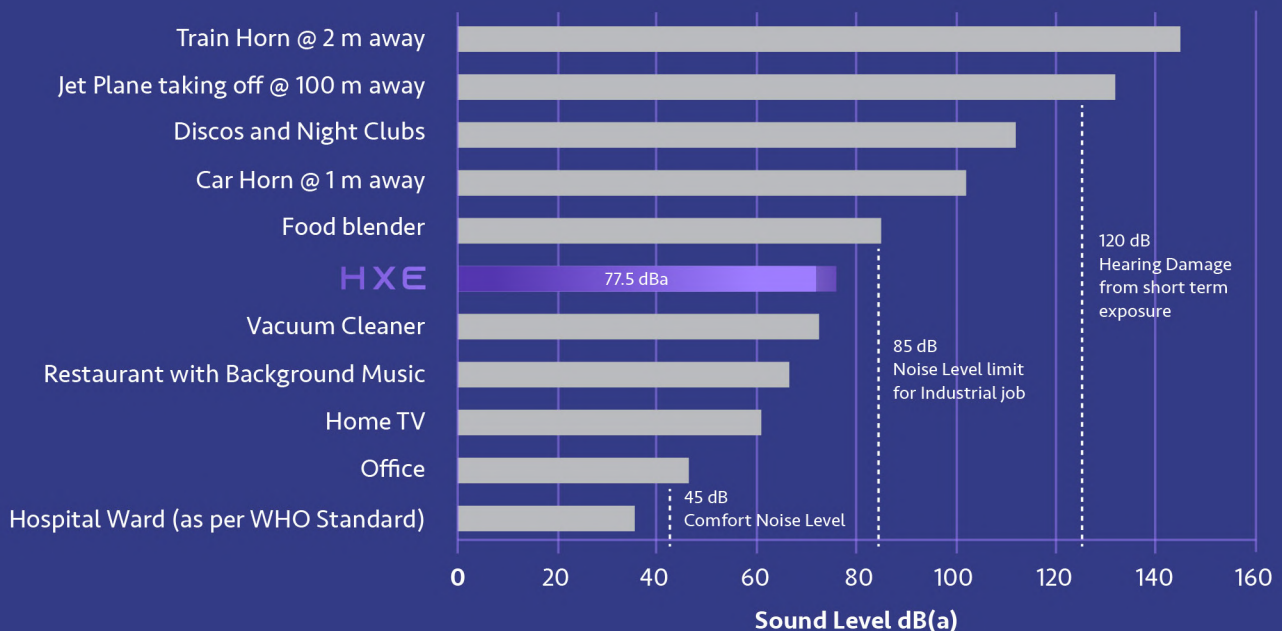
OPERATIONAL SAVINGS

Due to low operating costs, HXEV gives customers a fast payback.

- To maximize value added to the customer, HXEV has been designed with optimized operating efficiency to minimize energy cost by fully leveraging the advantages of a two-stage compressor and variable speed driveline.
- With the magnetic bearing technology, HXEV provides a low maintenance cost because, with its oil-free design, it does not require maintenance for the oil charge, oil replacement, filter, oil heater, etc.

4 LOW NOISE LEVEL

The chiller sound pressure level is as low as 77.5 dB(A), creating a quiet environment. Less mechanical movements allow the chiller to be one of the quietest chillers, making it an ideal option for sound-sensitive environments such as schools, concert halls and museums.



CONTROL FEATURES

HXEV chiller adopts the microprocessor technology into the MicroTech control system to provide optimum chiller control. MicroTech controller incorporates microprocessor, providing all monitor and control function for an efficient and safe operation. The control has several energy-saving features to keep your chiller running efficiently day after day.



USER-FRIENDLY OPERATION

HXEV provides an easy operator interface with key operating parameters on the screen. Operation simplicity allows you to change the setpoints easily by pressing the set button from any screen.

ALARM HISTORY FOR EASY TROUBLESHOOTING

Alarm history is easily accessed through intuitive touch-screen buttons. The operator can monitor all operating conditions by using the unit-mounted HMI. The alarms are retained in the controller's memory to aid in troubleshooting and fault analysis. Alarm history lists the alarms with the most current on top with a date stamp.

BUILDING AUTOMATION SYSTEM

All MicroTech controllers can connect with the Building Automation System. The exclusive control feature provides seamless integration and comprehensive monitoring, control, and two-way data exchange with industry-standard protocols such as LONWORKS, Modbus or BACnet. It is easy to integrate into your building automation system, providing comprehensive data exchange and point list for system integration equipment monitoring and alarm notification.



HXE RAPID RESTART

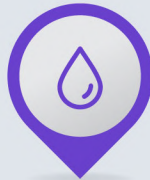
RAPID RESTART FEATURES

For uninterruptible cooling supply demand, the rapid restart option can be provided as an optional item. Below informative graphic shows the benefits of the rapid restart features for the chiller.

Reducing time for chiller restart after power loss



Keeping process equipment cooled



Providing a faster initial start

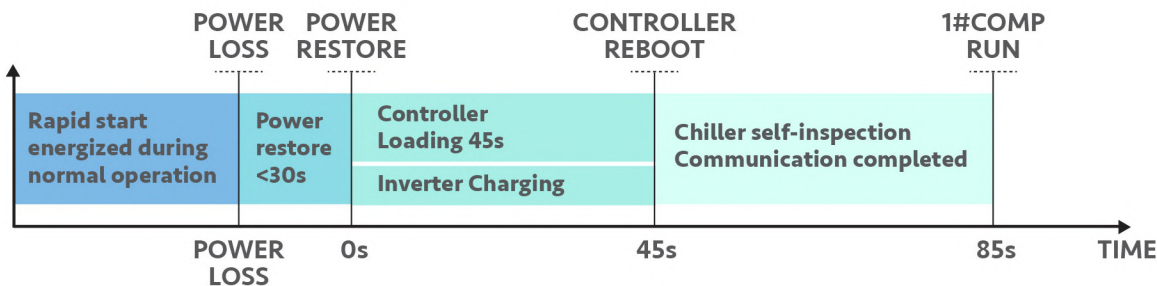


Rapidly restore chilled-water temperature

Reducing risks of expensive downtime cost

RAPID RESTART LOGIC IMPROVEMENT

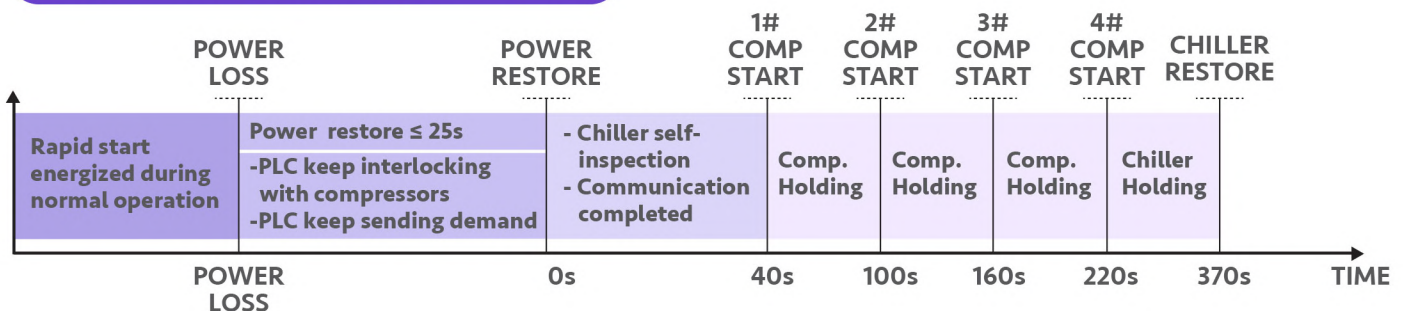
Rapid Restart -Control logic w/o UPS



NOTES:

1. W/O UPS, it takes approximately 85s for the first compressor to start running back from power restore.
2. Time for the whole chiller ramping up depends on the real time load requirements.

Rapid Restart -Control logic with UPS

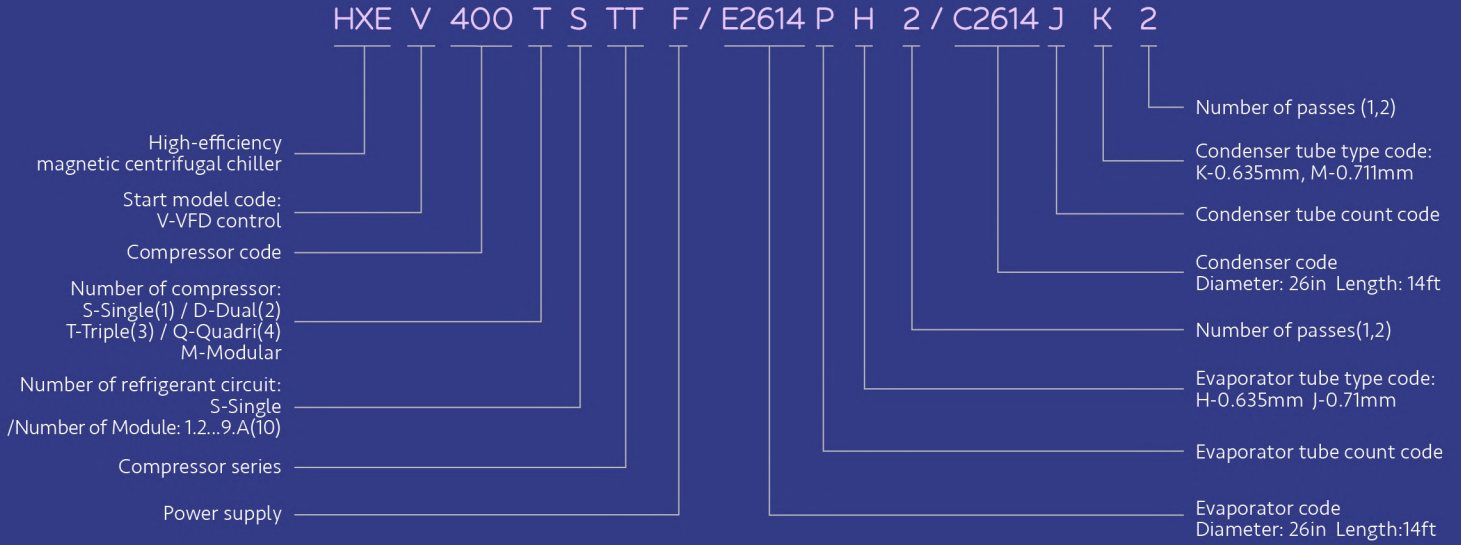


NOTES:

1. The sequence above are based reference for four compressors chiller. The quality of compressor to be activated depends on the running number before power loss.
2. With UPS, it takes approximately 40s for the first compressor to start running back from power restore.
3. Time for chiller to restore depends on the real-time system condition.
4. Chiller ramping up to the previous parameters before power loss take about 150s minimum, but it may takes longer time depends on the varying cooling load.

DETAILS MATTER

NOMENCLATURE



NOTES:

1. Comp code: 350/400/700 (Same type), 470/447/477 (Mixed type), 120: VTT1200.
2. Power supply: F: 380V/50Hz/3ph, U: 380V/60Hz/3ph, G: 400V/50Hz/3ph, 7:400V/60Hz/3ph, R:460V/60Hz/3ph.

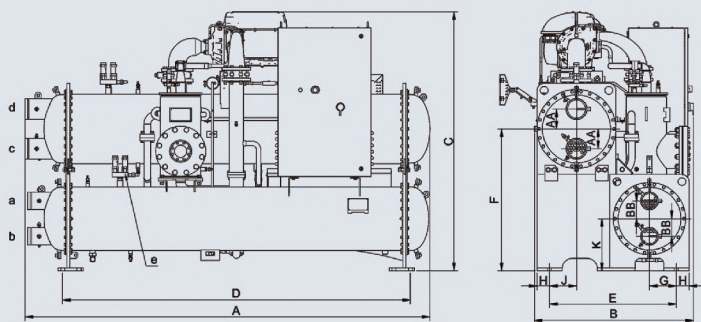
HXE TECHNICAL DATA

MODEL	COOLING CAPACITY		POWER CONSUMPTION	EFFICIENCY		EVAPORATOR		CONDENSER		RATED LOAD AMPS	CHILLER WEIGHT	OPERATING WEIGHT
						FLOW RATE	PRESSURE DROP	FLOW RATE	PRESSURE DROP			
	Rton	kW	kW	kW/Rton	COP	L/s	kPa	L/s	kPa	A	kg	kg
HXEV350SSTTF/E2209-RH/C2009-MK	100	351.7	54.3	0.5426	6.481	15.09	15.5	18.90	13.3	97.3	2,927	3,358
HXEV400SSTTF/E2209-QH/C2009-KK	150	527.5	90.8	0.6052	5.811	22.66	21.1	28.76	22.5	151.3	2,990	3,463
HXEV700SSTTF/E2209-PH/C2009-JK	200	703.4	118.3	0.5915	5.946	30.19	26.1	38.25	27.5	196.5	3,068	3,605
HXEV350DSTTF/E2210-PH/C2210-KK	200	703.4	109.0	0.5447	6.455	30.19	28.5	37.81	28.1	195.2	3,881	4,425
HXEV400DSTTF/E2212-QH/C2212-KK	250	879.2	135.6	0.5425	6.482	37.73	65.4	47.24	46.8	229.8	4,128	4,715
HXEV470DSTTF/E2212-PH/C2212-JK	300	1,055.0	163.5	0.5451	6.451	45.28	67.4	56.72	49.3	277.7	4,128	4,715
HXEV700DSTTF/E2612-PH/C2212-JK	300	1,055.0	164.5	0.5483	6.414	45.28	33.8	56.76	49.4	278.0	4,777	5,583
HXEV700DSTTF/E2612-QH/C2612-KK	350	1,231.0	193.1	0.5561	6.376	52.88	55.0	66.24	42.7	323.1	5,096	5,983
HXEV700DSTTF/E2612-PH/C2612-JK	400	1,407.0	229.7	0.5740	6.126	60.45	55.7	76.13	43.6	381.8	5,220	6,195
HXEV350TSTTF/E2614-RH/C2614-MK	300	1,055.0	159.6	0.5319	6.612	45.32	60.8	56.50	46.6	286.7	6,091	7,004
HXEV400TSTTF/E2614-QH/C2614-MK	350	1,231.0	184.0	0.5257	6.690	52.88	63.8	65.82	60.3	314.5	6,153	7,105
HXEV400TSTTF/E2614-PH/C2614-KK	400	1,407.0	217.7	0.5441	6.464	60.45	64.6	75.57	61.8	366.9	6,300	7,347
HXEV447TSTTF/E2614-PH/C2614-JK	450	1,583.0	244.2	0.5426	6.482	68.01	79.2	84.99	60.8	414.1	6,390	7,497
HXEV700TSTTF/E2614-PH/C2614-JK	450	1,583.0	244.6	0.5434	6.472	68.01	79.2	85.01	60.8	413.7	6,390	7,497
HXEV477TSTTF/E3014-PH/C2614-JK	500	1,758.0	272.3	0.5447	6.456	75.45	55.3	94.50	72.7	460.0	6,948	8,190
HXEV700TSTTF/E3014-PH/C2614-JK	500	1,758.0	271.2	0.5426	6.482	75.52	55.4	94.39	72.6	455.5	6,948	8,190
HXEV700TSTTF/E3014-QH/C3014-KK	550	1,934.0	302.6	0.5502	6.392	83.09	78.6	104.00	65.8	505.4	7,479	8,844
HXEV700TSTTF/E3014-PH/C3014-JK	600	2,110.0	339.2	0.5653	6.221	90.65	76.0	113.90	66.3	564.1	7,639	9,100
HXEV700QSTTF/E3614-EK/C3014-KK	650	2,286.0	356.5	0.5485	6.412	98.11	29.5	123.00	87.3	599.3	9,235	11,024
HXEV700QSTTF/E3614-SK/C3014-JK	700	2,462.0	384.9	0.5498	6.397	105.80	29.0	132.40	85.5	644.2	9,420	11,336

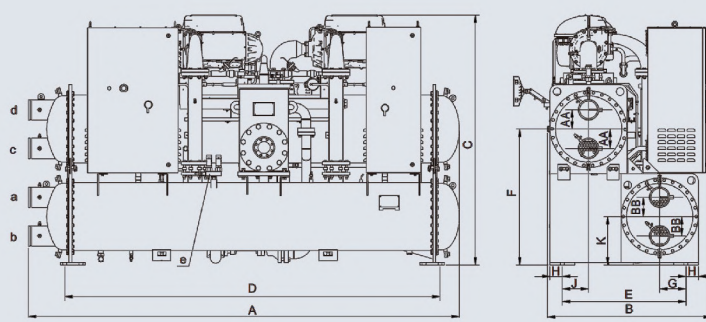
NOTES:

1. Above chiller cooling capacity is based on AHRI 550/590(I-P) standard condition:
ELWT: 6.67°C, EEWT: 12.22°C; CEWT: 29.44°C, CLWT: 34.61°C; | Evaporator/Condenser water side fouling factor: 0.0176/ 0.0440 °C.m²/kW;
2. Power Supply: 380V/50Hz/3ph;
3. Above chiller is recommended, please contact local sales for other specific models;
4. Start-up In-rush Current : 2 Amps;

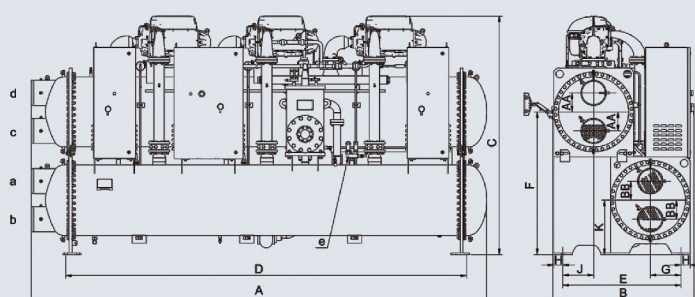
DIMENSIONS



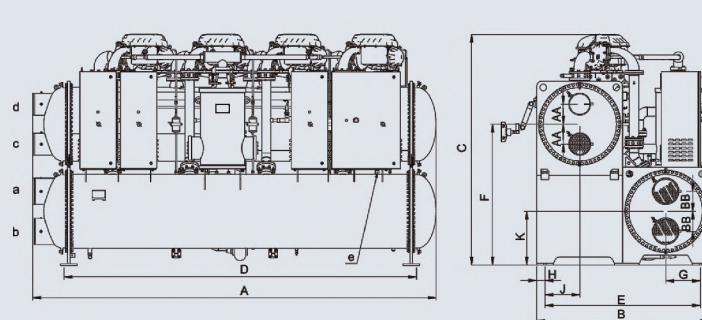
Dimensions of **Single** Compressors Units



Dimensions of **Dual** Compressors Units



Dimensions of **Triple** Compressors Units



Dimensions of **Quadra** Compressors Units

MODEL		DIMENSION (MM)						LOCATING SIZE OF EVAPORATOR MODEL CONNECTION(MM)				LOCATING SIZE OF CONDENSER MODEL CONNECTION(MM)			
COMPR. QTY	NAME	A	B	C	D	E	H	F	J	AA	OD	G	K	BB	OD
Single	HXEV***SSTT*/E2209/C2009	3,288	1,313	2,091	2,808	1,023	102	1,146	217	160	168	217	421	143	140
Dual	HXEV***DSTT*/E2210/C2210	3,589	1,403	2,071	3,108	1,023	102	1,126	217	160	168	217	401	160	168
	HXEV***DSTT*/E2610/C2210	3,685	1,478	2,238	3,108	1,110	102	1,264	305	180	219	217	401	160	168
	HXEV***DSTT*/E2610/C2610	3,685	1,483	2,389	3,109	1,198	102	1,415	305	180	219	304	489	180	219
	HXEV***DSTT*/E2212/C2212	4,174	1,403	2,071	3,694	1,023	102	1,126	217	160	168	217	401	160	168
	HXEV***DSTT*/E2612/C2212	4,270	1,478	2,238	3,693	1,110	102	1,264	305	180	219	217	401	160	168
	HXEV***DSTT*/E2612/C2612	4,270	1,483	2,389	3,694	1,198	102	1,415	305	180	219	304	489	180	219
Triple	HXEV***TSTT*/E2614/C2614	4,919	1,504	2,423	4,345	1,198	102	1,435	305	180	219	304	509	180	219
	HXEV***TSTT*/E3014/C2614	4,960	1,554	2,454	4,345	1,226	102	1,415	332	206	273	304	509	180	219
	HXEV***TSTT*/E3014/C3014	4,960	1,589	2,586	4,345	1,279	102	1,547	332	206	273	332	590	206	273
Quadra	HXEV***QSTT*/E3614/C3014	5,017	2,074	2,553	4,374	1,831	102	1,438	432	248	325	432	590	248	273
	HXEV***QSTT*/E3614/C3614	5,017	2,154	2,863	4,374	1,930	102	1,748	432	248	325	432	668	248	325

NOTES:

1. a. Condenser Outlet | b. Condenser Inlet | c. Evaporator Inlet | d. Evaporator Outlet | e. Relief Valve NPT1
2. A, B, C dimension deviation ± 13mm
3. Above dimension base on 2 pass water flow, Please contact your Daikin representative for other passes.
4. The dimension include 20mm insulation for the evaporator.
5. OD means the outside diameter of water connection pipe.

SCOPE OF SUPPLY

ITEMS	STANDARD	OPTIONS
Vessel Code	None	ASME . JKPP (DOSH Malaysia)
Water Connection	Victaulic Groove	DIN Flange
Water Box	Compact Water Cover (1.0MPa)	Marine Water Box, 2.0MPa Water Cover
Insulation	20mm Insulation on Evaporator & Cold Surface	40mm Insulation on Evaporator ¹
Flow Switch	None	Pressure Differential / Thermal Flow Switch
Anti-vibration	Rubber Isolation Pad	Spring Isolator
Warranty Extension	None	Maximum: Extended 4 Years
Test	Factory Functional Test ²	Witness Test
Harmonic Distortion Filter	None	Active Power Filter / EMI Filter ³
Rapid Restart	None	Optional

NOTES:

1. Insulation:

- Ambient temperature lower than 30°C:
Humidity lower than 70%, use single layer insulation (20mm); humidity higher than 70% (include), use double layer insulation (40mm).
- Ambient temperature higher than 30°C (include):
Humidity lower than 65%, use single layer insulation (20mm); humidity higher than 65% (include), use double layer insulation (40mm).
- Double layer of insulation (40mm) must be used when chiller leaving water temperature lower than 5°C (include).
- 40mm Insulation on evaporator shell and 20mm on water head cap.

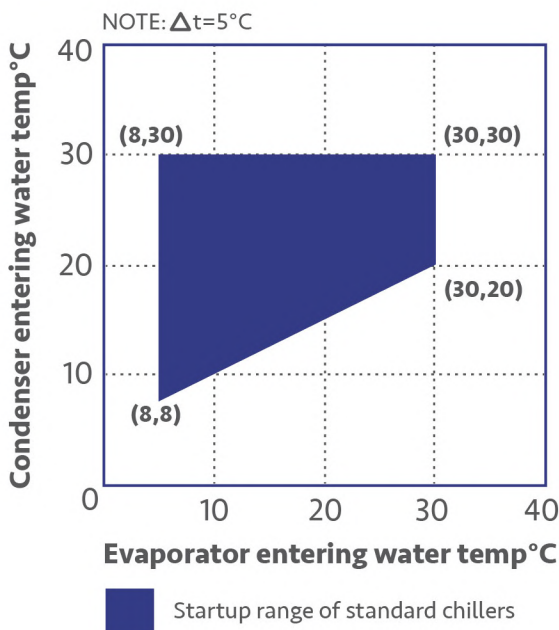
2. Factory Testing:

To ensure provide safe and reliable products to costumers, all Daikin applied chillers are factory tested before shipment. Operating and safety controls are checked for correct settings and operation. This testing helps reduce start-up issues and maintain critical construction schedules.

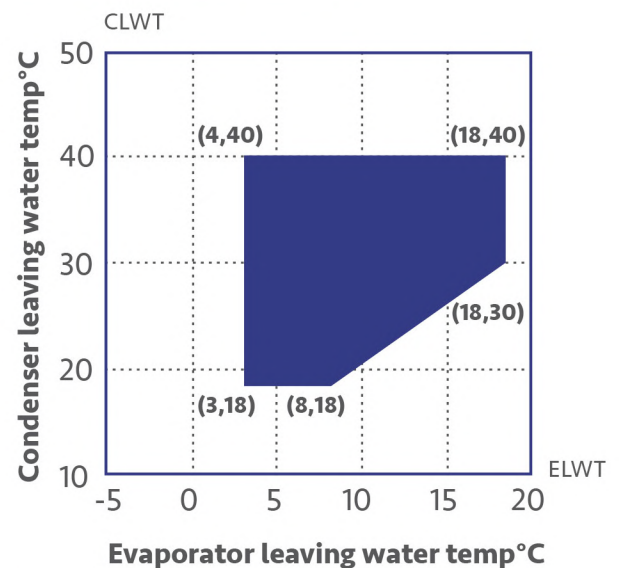
3. Active power filter and EMI filter are unit mounted. Harmonic distortion filter is an optional solution to lower the total harmonic distortion imposed on power grid.

OPERATION ENVELOPE

STARTING RANGE



OPERATING RANGE



NOTE: Chiller operating range shall be subject to the latest selection software.



Daikin Refrigeration Malaysia Sdn. Bhd. (Shah Alam)

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