



# NEXT GENERATION COLD CLIMATE

Inverter Heat Pump & Central Air Handler System



# INVERTER HEAT PUMP

**100%** Heating Output down to -20°C with COP up to 2.0

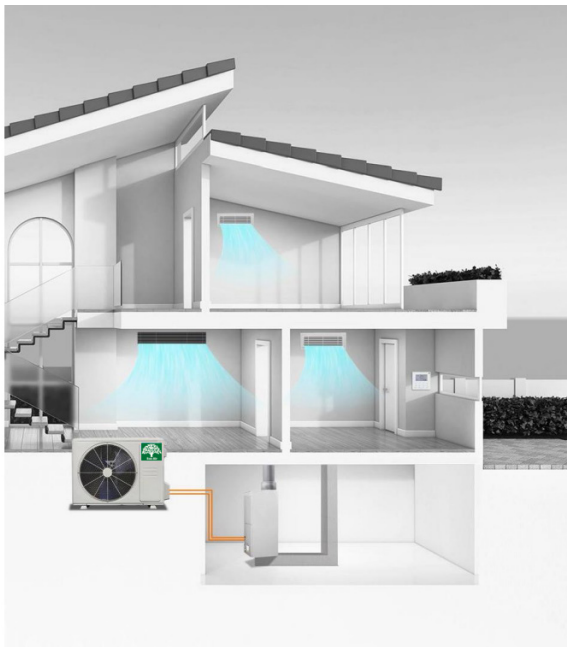
**-30°C** Continuous Operation down to -30°C

**Eco-Air Universal air handlers and DC inverter Heat Pumps are the most energy efficient heating and cooling combinations available for new and existing homes.**

## Features

- 1.5 to 5 ton systems
- Up-flow, horizontal left or right and down-flow applications
- Less than 2% air leakage
- Highly Efficient ECM variable speed fan motor
- Available 5 to 25kw field installed electric heat kits with easy slide in

\*Eco-Air Gen II Universal Air Handlers are compatible with most standard condensers or heat pumps for both new and retro-fit installations. Our Universal Air Handlers are 24Volt controls compatible and can be connected to virtually any manufacturer's thermostat.



ECO-AIR IDU+ECO-AIR ODU



ECO-AIR IDU+Other Brand ODU



ECO-AIR ODU+Other Brand IDU



ECO-AIR Unit+Thermostat

## ◀ System Compatibility

Eco-Air Universal Air Handlers are factory equipped with standard 24V terminals making them ideal for both new and retro-fit installations. Our units will match up perfectly with our 24V Side Discharge Heat pumps or with any other manufacturer's outdoor condensers or heat pumps that use conventional controls including third party 24V Thermostats.

**Quick Fit:** In retro-fit applications, our system is highly compatible with the existing line set, power supply and thermostat.

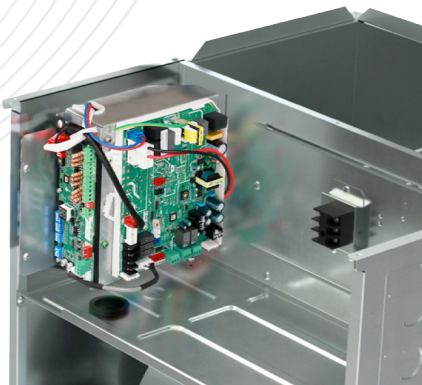


### ◀ **Diagnostics**

Service Technicians can easily check for any error codes displayed on the main control board when trouble shooting by simply removing the access panel located on the front door of the unit.

### **Easy Maintenance** ▶

less screws or bolts for easy access to core components for maintenance.



### ◀ **Only 2 integrated PCB's**

One main control board and one 24V interface board for standard thermostat connections. All internal wiring is connected using keyed quick type connectors.

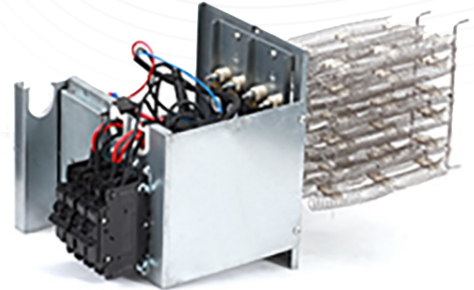
The Aluminum alloy indoor coil is equipped with an EXV and two condensate pans. The coil can easily be pulled out and re-configured to suit the application. ▶





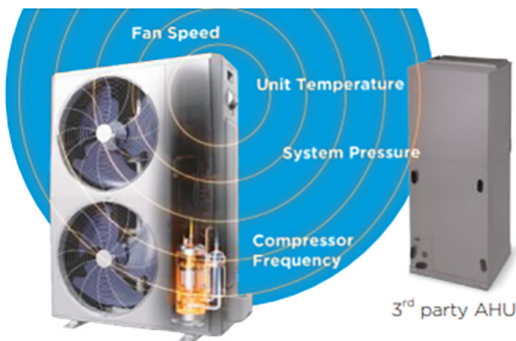
◀ The indoor coils are factory charged with nitrogen to ensure a clean, dry and contaminant free system that is ready for installation. An installed check valve can be used to ensure the integrity of the coil.

Electric heater ▶



Model No.	Capacity	Compatible Model No.						Power Supply
		18K	24K	30K	36K	48K	60K	
	Air handler model							
EAH-05B(UL)	5KW heater	√	√	√	√			208-230V
EAH-10B(UL)	10KW heater	√	√	√	√	√	√	208-230V
EAH-15B(UL)	15KW heater		√	√	√	√	√	208-230V
EAH-20B(UL)	20KW heater				√	√	√	208-230V
EAH-25B(UL)	25KW heater						√	208-230V

The optional electric heat kits are easily accessible by removing the upper front panel of the air handler.

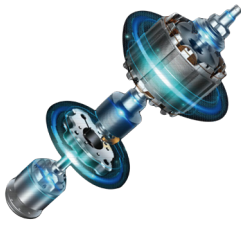


Self-adapt Model ▲



Strong package design ▲

## Reliable Technologies ▼



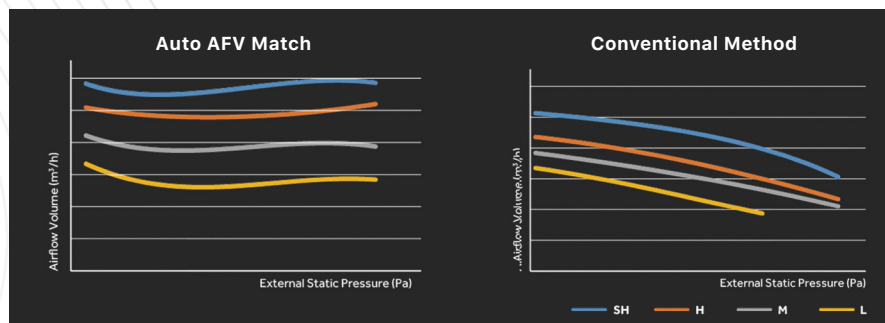
- **Reliable Inverter Compressor**  
Keeps Operating in Cold Weather



- **Heating Belt**  
Preheats compressor for good start-up



- **Base Pan Heater**  
Melts down the snow and ice



Conventional Systems fan performance decreases with long duct systems and often provide too much air on shorter duct systems making it difficult to provide a quiet and comfortable system.

## Automatic Air Flow Adjustment ▲

Auto AFV Match technology leads to exactly enough airflow volume.

(\*Maximum Static Pressure=0.8in.wg)

## Easy Maintenance ▼



- **Check Point Button**  
Press this button to check current operational parameters.
- **Status and error display**  
Display shows the error or status codes to indicate the working condition.
- **Portable Diagnostic Tool (Optional)**  
Provides real time diagnostics of a functioning or non-functioning system.

## AIR HANDLER WITH REGULAR INVERTER HEAT PUMP

Series			Regular	Regular	Regular	Regular
Indoor unit model			MVC-18HWFN1-M	MVC-24HWFN1-M	MVC-36HWFN1-M	MVC-60HWFN1-M
Outdoor unit model			MOX330U-18HFN1-MR0	MOX430U-24HFN1-MR0	MOD30U-36HFN1-MR0	MOE30U-60HFN1-MR0
Power supply	Rated	V, Ph, Hz	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60
Cooling	Rated Capacity (range)	Btu/h	18000(5350~18700)	24000(7500~26000)	36000(7700~38900)	57000(4395~60200)
	EER	Btu/w	11.1	11.3	10.4	10.3
	SEER	Btu/w	19	19.4	18	18
Heating at 47°F	Rated Capacity (range)	Btu/h	18000(5600~18700)	26000(5600~30000)	36000(6000~36400)	60000(11400~63100)
	Input power	W	1510	2150	3496	4959
	Rated current	A	6.7	9.8	16.12	20.9
	COP	W/W	3.49	3.54	3.02	3.55
	HSPF4	Btu/w	10.8	11.3	9.1	9.2
	HSPF5	Btu/w	8.8	9.2	7.1	7.6
Heating at 5°F (-15°C)	Capacity	Btu/h	9550	17000	18600	29000
	COP	W/W	1.85	1.75	1.80	1.8
The Rated Input Current of The Power Conversion Equipment		A	1.0	3.0	3.5	5.0
MINIMUM CIRCUIT AMPACITY (Indoor unit)		A	3.0	4.0	4.5	7.0
MAX. FUSE (Indoor unit)		A	15.0	15.0	15.0	15.0
Indoor air flow (Hi/Mi/Lo)		m3/h	980/900/830	1290/1180/1070	1840/1650/1470	2690/2310/1930
Indoor air flow (Hi/Mi/Lo)		CFM	576.47/529.41/488.24	758.82/694.12/629.41	1082.35/970.59/864.71	1582.35/1358.82/1135.29
Indoor noise level (Hi/Mi/Lo)		dB(A)	36/34/32	43/40.5/35	46.8/44/41.3	52.5/49/44
Throttle type			EEV for Cooling	EEV for Cooling	EEV for Cooling	EEV for Cooling
Indoor unit	Dimension (WxDxH)	inch	21.02x17.52x45.00	21.02x17.52x45.00	21.02x21.02x49.02	21.02x24.49x52.99
	Packing (WxDxH)	inch	25.20x20.87x50.39	25.20x20.87x50.39	25.20x24.41x54.33	25.20x27.76x58.27
	Net/gross weight	lbs.	105.82/129.41	105.60/127.43	129.19/155.64	162.70/190.70
Refrigerant piping	Liquid side/Gas side	inch	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"
Drainage water pipe diameter		inch	3/4	3/4	3/4	3/4
Connection wiring			14AWG*2 Stranded, shielded	14AWG*2 Stranded, shielded	14AWG*2 Stranded, shielded	14AWG*2 Stranded, shielded
Communication protocol between IDU and ODU			RS485+24V	RS485+24V	RS485+24V	RS485+24V

## REGULAR INVERTER HEAT PUMP

Series			Regular	Regular	Regular	Regular
Outdoor unit model			MOX330U-18HFN1-MR0	MOX430U-24HFN1-MR0	MOD30U-36HFN1-MR0	MOE30U-60HFN1-MR0
Power supply	Rated	V, Ph, Hz	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60
	Voltage range	V	187-253	187-253	187-253	187-253
Communication protocol between IDU and ODU			RS485+24V	RS485+24V	RS485+24V	RS485+24V
MINIMUM CIRCUIT AMPACITY (Outdoor unit)		A	16.0	19.0	24.0	34.0
MAX.FUSE (Outdoor unit)		A	20.0	30.0	40.0	60.0
Outdoor air flow (Max.)		m3/h	2465	3000	3800	7500
Outdoor air flow (Max.)		CFM	1450.00	1764.71	2235.29	4411.76
Outdoor noise level (Sound pressure)		dB(A)	54	56.5	61	61
Throttle type			EEV for Heating	EEV for Heating	EEV for Heating	EEV for Heating
Outdoor unit	Dimension (WxDxH)	inch	31.69x12.99 x21.81	35.04x13.46 x26.50	37.24x16.14 x31.89	37.48x16.34 x52.48
	Packing (WxDxH)	inch	36.02x14.57 x24.21	39.17x15.67 x29.13	42.91x19.69 x34.84	43.11x19.49 x58.27
	Net/Gross weight	lbs.	75.84/81.35	102.29/109.13	151.68/161.16	217.15/248.46
Refrigerant	Type/Charged	g	R410A/1600	R410A/2100	R410A/3700	R410A/4900
		oz	R410A/56.44	R410A/74.08	R410A/130.51	R410A/172.84
Refrigerant precharge		ft	25	25	25	25
Additional charge		oz/ft	0.69	0.69	0.69	0.69
Design pressure		PSI G	550/340	550/340	550/340	550/340
Refrigerant piping	Liquid side/Gas side	inch	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"
	Max. pipe length	ft	98	164	213	213
	Max. difference in level	ft	66	82	98	98
Ambient temperature	Cooling	°C	-15 ~ 50	-15 ~ 50	-15 ~ 50	-15 ~ 50
	Heating	°C	-15 ~ 24	-15 ~ 24	-15 ~ 24	-15 ~ 24

## AIR HANDLER WITH HYPER HEAT INVERTER HEAT PUMP

Series			Hyper heat	Hyper heat	Hyper heat	Hyper heat	Hyper heat
Indoor unit model			MVC-18HWFN1-M	MVC-24HWFN1-M	MVC-30HWFN1-M	MVC-36HWFN1-M	MVC-48HWFN1-M
Power supply	Rated	V, Ph, Hz	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60
Cooling	Rated Capacity (range)	Btu/ h	18000(6880~21000)	24000(6400~27000)	30000(10400~33600)	36000(12000~47400)	47000(18000~48000)
	Input power	W	1430	1920	2720	3300	5530
	Rated current	A	6.5	9.4	12.4	14.8	24.2
	EER	Btu/ w	12.5	12.5	11	10.5	8.5
	SEER	Btu/ w	20	20	18	18	16
Heating at 47°F	Rated Capacity (range)		19000(2800~21000)	24000(10100~31000)	33000(12000~37000)	40000(9000~57200)	50000(20000~55000)
	Input power	W	1550	2040	2780	3400	4880
	Rated current	A	7	9.13	12.5	14.8	21.5
	COP	W/ W	3.59	3.45	3.48	3.45	3
	HSPF4	Btu/ w	11	12	10.5	10.5	10
	HSPF5	Btu/ w	9	10	8.4	8.5	8.5
Heating at 5°F (-15°C)	Capacity	Btu/ h	19000	24000	28500	43300	47000
	COP	W/ W	1.9	1.8	1.95	1.8	1.88
MINIMUM CIRCUIT AMPACITY (Indoor unit)		A	3.0	4.0	4.5	4.5	4.5
MAX. FUSE (Indoor unit)		A	15.0	15.0	15.0	15.0	15.0
Indoor air flow (Hi/Mi/Lo)		m3/ h	980/900/830	1290/1180/1070	1520/1370/1210	1840/1650/1470	2180/1860/1540
Indoor air flow (Hi/Mi/Lo)		CFM	576.47/529.41/488.24	758.82/694.12/629.41	894.12/805.88/711.76	1082.35/970.59/864.71	1282.35/1094.12/905.88
Indoor noise level (Hi/Mi/Lo)		dB(A)	36/34/32	43/40.5/35	43/40/30.5	46.8/44/41.3	53/50/46
External static pressure	Range	In. wc.	0-0.8	0-0.8	0-0.8	0-0.8	0-0.8
Throttle type			EEV for Cooling	EEV for Cooling	EEV for Cooling	EEV for Cooling	EEV for Cooling
Indoor unit	Dimension (WxDxH)	inch	21.02x17.52x45.00	21.02x17.52x45.00	21.02x21.02x49.02	21.02x21.02x49.02	21.02x21.02x49.02
	Packing (WxDxH)	inch	25.20x20.87x50.39	25.20x20.87x50.39	25.20x24.41x54.33	25.20x24.41x54.33	25.20x24.41x54.33
	Net/Gross weight	lbs.	105.82/129.41	105.60/127.43	129.19/155.64	129.19/155.64	130.51/156.31
Refrigerant piping	Liquid side/Gas side	inch	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"
Drainage water pipe diameter		inch	3/4	3/4	3/4	3/4	3/4
Connection wiring			14AWG*2 Stranded, shielded	14AWG*2 Stranded, shielded	14AWG*2 Stranded, shielded	14AWG*2 Stranded, shielded	14AWG*2 Stranded, shielded
Communication protocol between IDU and ODU			RS485+24V	RS485+24V	RS485+24V	RS485+24V	RS485+24V

## HYPER HEAT INVERTER HEAT PUMP

Series		HYPER HEAT	HYPER HEAT	HYPER HEAT	HYPER HEAT	HYPER HEAT	
<b>Outdoor unit model</b>		MOX430U-18HFN1-M	MOD30-24HFN1-MW	MOD30U-30HFN1-MR0(X)	MOE31U-36HFN1-M	MOE30U-48HFN1-M-[X1]	
MINIMUM CIRCUIT AMPACITY (Outdoor unit)	A	16	20.5	23	41	42	
MAX. FUSE (Outdoor unit)	A	20	35	35	50	50	
Outdoor unit	Dimension (WxDxH)	inch	35.04x13.46 x26.50	37.24x16.14 x31.89	37.24x16.14 x31.89	37.48x16.34 x52.48	37.48x16.34 x52.48
	Packing (WxDxH)	inch	39.17x15.67 x29.13	42.91x19.69 x34.84	42.91x19.69 x34.84	43.11x19.49 x58.27	43.11x19.49 x58.27
	Net/Gross weight	lbs.	102.95/109.79	136.69/145.50	159.83/169.75	227.07/255.73	220.24/248.90
Refrigerant	Type/Charged	g	R410A/2300	R410A/2900	R410A/3800	R410A/4700	R410A/4800
		oz	R410A/81.1	R410A/102.32	R410A/134.04	R410A/165.79	R410A/169.31
Refrigerant pre-charge		ft	25	25	25	25	25
Additional charge		g/m	65	65	65	65	65
		oz/ft	0.69	0.69	0.69	0.69	0.69
Design pressure		PSIG	550/340	550/340	550/340	550/340	550/340
Refrigerant piping	Max. pipe length	ft	98	164	213	213	213
	Max. different in level	ft	66	82	98	98	98
Ambient temperature	Cooling	°C	-30 ~ 50	-30 ~ 50	-30 ~ 50	-30 ~ 50	-30 ~ 50
	Heating	°C	-30 ~ 24	-30 ~ 24	-30 ~ 24	-30 ~ 24	-30 ~ 24





## **North American HVAC**

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