



QUICK INSTALLATION GUIDE

MITS AIR™ Side Discharge Cold
Climate Heat Pump with Cased A-
Coils (pages 1 to 4)

MITS AIR™ Side Discharge Cold
Climate Heat Pump with Fan Coil/Air
Handling Unit (pages 5 to 8)

The MITS AIR™ Side Discharge Cold Climate Heat Pump with Cased A-Coils*

*Will work with any Furnace or Fan Coil. *Some conditions apply.

OUTDOOR HEAT PUMPS

Outdoor		MOD30-24HFN1-MW	MOD30U-30HFN1-MR0(X)	MOE31U-36HFN1-M	MOE30U-48HFN1-M-[X1]	MOE30U-55HFN1-M	
Power supply (Outdoor)	V- Ph-Hz	208/230V,1Ph, 60Hz	208/230V,1Ph, 60Hz	208/230V,1Ph, 60Hz	208/230V,1Ph, 60Hz	208/230V,1Ph, 60Hz	
Cooling (Standard conditions)	Rated capacity	Btu/hr	24000	30000	36000	46000	52000
	EER2	Btu/w	10.70	10.50	9.80	8.60	9.0
	SEER2	Btu/w	16.80	15.50	14.80	14.30	16.4
Heating (Standard conditions)	Rated capacity (47°F)	Btu/hr	25000	33000	39000	51000	53000
	HSPF2-4	Btu/w	9.50	9.70	10.00	9.0	10.5
	COP	W/W	3.28	3.39	3.18	2.98	2.57
Heating (H42) 5F(-15°C)	COP	W/W	1.95	1.85	2.0	1.8	1.9
MINIMUM CIRCUIT AMPACITY (Outdoor)	A	20.5	23	30	40	40	
MAX. FUSE (Outdoor)	A	35	35	50	50	50	
Compressor	Inverter Type		Twin-ROTARY	ROTARY	ROTARY	ROTARY	ROTARY
	Rated current (RLA)	A	15	16.5	32	33	26
Outdoor Fan Motor	Qty		1	1	2	2	2
	RLA	A	1.35	1.35	1.2	1.2	1.2
Outdoor air flow	CFM	3000	3000	4500	4411.76	4500	
Outdoor noise level	dB(A)	62	60.5	64.0	64.0	63.5	
Refrigerant type			R410A	R410A	R410A	R410A	
Refrigerant piping	Liquid side/ Gas side	inch	3/8" x 3/4"	3/8" x 3/4"	2221	3/8" x 3/4"	3/8" x 7/8"
	Max. refrigerant pipe length	ft	164.04	164.04	213.25	213.25	213.25
	Max. difference in level	ft	82.02	82.02	98.42	98.42	98.42
Outdoor unit	Dimension(W*D*H)	inch	37.24x16.14x31.89	37.24x16.14x31.89	37.48x16.34x52.48	37.48x16.34x52.48	37.48x16.34x52.48
	Packing (W*D*H)	inch	42.91x19.69x34.84	42.91x19.69x34.84	43.11x19.49x58.27	43.11x19.49x58.27	43.11x19.49x58.27
	Net/Gross weight	kg	62/66	72.5/77	103/116	99.9/112.9	108.8/123.2

CASED A-COILS

Indoor		MAC-24HWDN1-MN0	MAC-36HWFN1-M	MAC-36HWFN1-M	MAC-48HWFN1-M	MAC-60HWDN1-MN0
IRV	inch*3	58.3	106.9	106.9	158.0	/
Air flow	SCFM	720	960	960	1015	/
Pressure drop	Pa	51.3	65.1	65.1	70.0	/
	In. wg.	0.21	0.26	0.26	0.28	/
Cased A-Coil Unit	Dimension(W)	inch	17.52	20.98	20.98	24.50
	Dimension(D)	inch	20.98	20.98	20.98	21.00
	Dimension(H)	inch	17.99	23.98	23.98	28.00
	Net/Gross Weight	lbs.	42.77/52.03	66.58/77.16	66.58/77.16	66.58/77.16
Condensate Drain	MIPT	3/4	3/4	3/4	3/4	3/4

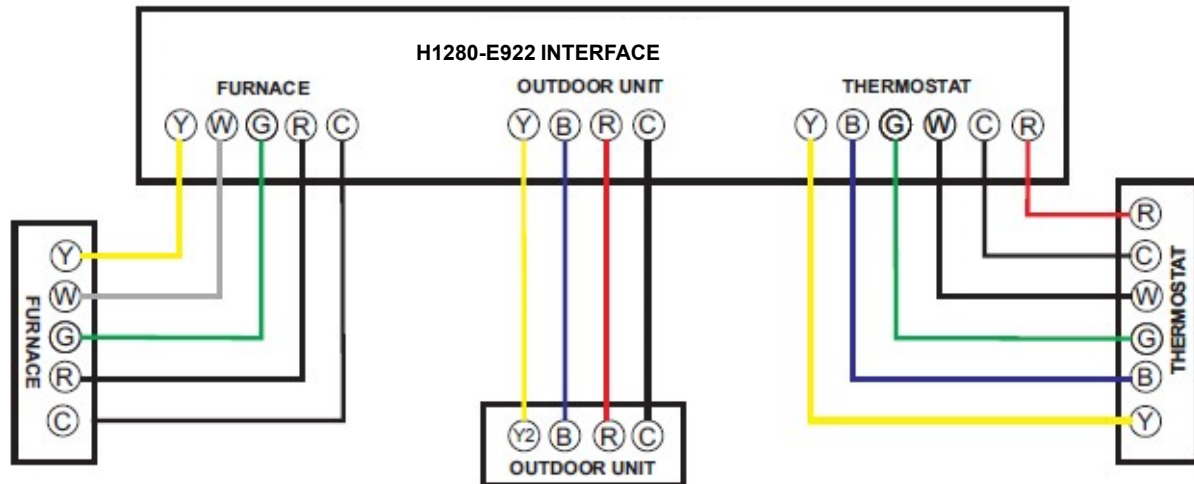
§ All Testing and Values are per Manufacturer's testing and the use of Manufacturer's Coils.

WARRANTY: All warranty effective from date of installation. Labour Warranty is the responsibility of the Installing Contractor. Side Discharge Inverter Heat Pump Condenser by Mits Airconditioning Inc., 5 years compressor, 5 year parts. To register warranty on equipment, go to www.mitsair.com/warranty-registration.

	Mississauga - Head Office	905-564-2221	1-800-567-2221
	Hydronics Division	905-564-2221	1-800-567-2221
	Barrie	705-722-3200	1-800-688-1673
	London	519-914-9000	
	Windsor	519-914-0332	



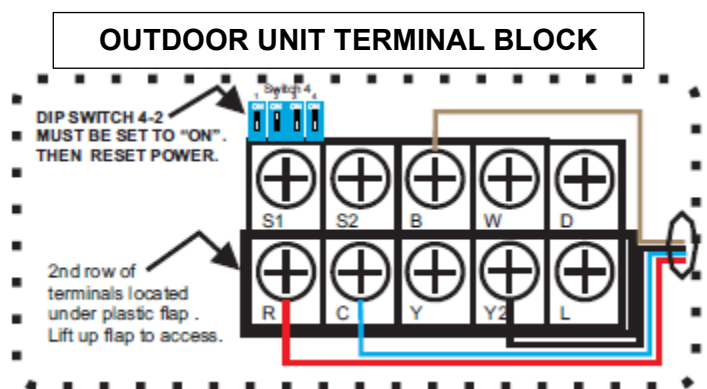
SIMPLIFIED LOW VOLTAGE WIRING DIAGRAM MITS AIR™ “U” SERIES ADD-ON HEAT PUMP



MOD30- 24 HFN1-MW
MOD30U- 30 HFN1-MR0(X)
MOE31U- 36 HFN1-M
MOE30U- 48 HFN1-M-[X1]
MOE30U- 55 HFN1-M

Notes:

1. **Thermostat** is a **Heat Pump** type.
2. “**B**” configuration is used for the reversing valve.
3. Change switch 4-2 to “**ON**” and restore power.
4. Do **not** remove metering device from indoor coil.



MITS AIR™ Side Discharge Cold Climate Heat Pump Coil Mounting & Line Set Guide

This guide is a distillation of information to assist you to install a MITS AIR™ Cold Climate heat pump indoor coil. *Please note that reference should always be made to the Installation and Operation Manual for full explanations.

Coil Mounting:

1. A transition should be used between the furnace and the cased coil assembly with a minimum height of 6". Use a metal gauge of sufficient weight to properly support the coil.
2. After mounting the coil, remove the front panel. The TX valve sensing bulb is attached to the gas pipe and insulated with foam rubber tape.
 - a. Carefully remove the tape covering the sensing bulb. It will be used to reinsulate the bulb at the end of this procedure.
 - b. Loosen the screw of the clamp holding the sensor to the gas pipe and remove the bulb.
 - c. Temporarily secure the valve well away from the pipe to prevent it accidentally struck with your torch or heat from brazing.
 - d. Braze the refrigerant lines. After cooling and leak testing, re-secure the valve to the pipe in the same position that it was removed from. Ensure the sensing bulb is securely strapped to the pipe and will not move.
 - e. Replace the rubber insulation to its original position.
 - f. Check the capillary tubing from the sensing bulb to the valve. Make sure that the tubing does not rub on itself. Chafing of the capillary tube will cause failure of the valve.
3. A transition may also be required to match the case coil top to the plenum. Always ensure that the coil does not block the plenum takeoff.

General:

1. The coil is designed for upflow or downflow operation. An accessory drain pan is pre-installed for horizontal usage. This drain pan does not require removal for vertical or downflow operation.
2. Always trap the drain as required by the plumbing code.
3. **Do not install** a filter-drier or sight glass.
4. The machine is pre-charged for up to 25' of line set. It does not need adjustment for shorter line sets. The minimum line set length is 10'.

MITS AIR™ Side Discharge Cold Climate Heat Pump Line Set Information

Line Set Sizing:

Model	To	Liq	Ga
MOD30-24HFN1-MW	2.0	3/8	3/4
MOD30U-30HFN1-MR0(X)	2.5	3/8	3/4
MOE31U-36HFN1-M	3.0	3/8	3/4
MOE30U-48HFN1-M-[X1]	4.0	3/8	3/4
MOE30U-55HFN1-M	5.0	3/8	7/8

Minimum Line Set Length: 10'

Maximum Lengths:

Model	Model	Max Length		Max Height	
		ft	m	ft	m
R401A Inverter Split Air Conditioner	MOD30-24HFN1-MW	99	30	66	20
	MOD30U-30HFN1-MR0(X)	164	50	82	25
	MOE31U-36HFN1-M	213	65	98	30
	MOE30U-48HFN1-M-[X1]				
	MOE30U-55HFN1-M				

Refrigerant Charge Data:

*System pre-charged to 25'. Add 0.69 oz per foot in excess of 25'.

<i>Additional Charge Beyond 25' For 3/8" Liquid Lines (ft)</i>									
3/8" Liquid Line Length	10' -25'	30	35	40	45	50	55	60	65
Additional Charge (oz)	0	3.5	7.0	10.5	14.0	17.5	20.5	24.0	27.5
3/8" Liquid Line Length		65	70	75	80	85	90	95	100
Additional Charge (oz)		27.5	31.0	34.5	38.0	41.5	45.0	48.5	51.5

The MITS AIR™ Side Discharge Cold Climate Heat Pump with Air Handling Unit

OUTDOOR HEAT PUMPS

Outdoor			MOD30-24HFN1-MW	MOD30U-30HFN1-MR0(X)	MOE31U-36HFN1-M	MOE30U-48HFN1-M-[X1]	MOE30U-55HFN1-M
Power supply (Outdoor)	V- Ph-Hz		208/230V,1Ph, 60Hz	208/230V,1Ph, 60Hz	208/230V,1Ph, 60Hz	208/230V,1Ph, 60Hz	208/230V,1Ph, 60Hz
Cooling (Standard conditions)	Rated capacity	Btu/hr	24000	30000	36000	46000	52000
	EER2	Btu/w	10.70	10.50	9.80	8.60	9.0
	SEER2	Btu/w	16.80	15.50	14.80	14.30	16.4
Heating (Standard conditions)	Rated capacity (47°F)	Btu/hr	25000	33000	39000	51000	53000
	HSPF2-4	Btu/w	9.50	9.70	10.00	9.0	10.5
	COP	W/W	3.28	3.39	3.18	2.98	2.57
Heating (H42) 5F(-15°C)	COP	W/W	1.95	1.85	2.0	1.8	1.9
MINIMUM CIRCUIT AMPACITY (Outdoor)	A		20.5	23	30	40	40
MAX. FUSE (Outdoor)	A		35	35	50	50	50
Compressor	Inverter Type		Twin-ROTARY	ROTARY	ROTARY	ROTARY	ROTARY
	Rated current (RLA)	A	15	16.5	32	33	26
Outdoor Fan Motor	Qty		1	1	2	2	2
	RLA	A	1.35	1.35	1.2	1.2	1.2
Outdoor air flow	CFM		3000	3000	4500	4411.76	4500
Outdoor noise level	dB(A)		62	60.5	64.0	64.0	63.5
Refrigerant type			R410A	R410A	R410A	R410A	R410A
Refrigerant piping	Liquid side/ Gas side	inch	3/8" x 3/4"	3/8" x 3/4"	2221	3/8" x 3/4"	3/8" x 7/8"
	Max. refrigerant pipe length	ft	164.04	164.04	213.25	213.25	213.25
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Outdoor unit	Dimension(W*D*H)	inch	37.24x16.14x31.89	37.24x16.14x31.89	37.48x16.34x52.48	37.48x16.34x52.48	37.48x16.34x52.48
	Packing (W*D*H)	inch	42.91x19.69x34.84	42.91x19.69x34.84	43.11x19.49x58.27	43.11x19.49x58.27	43.11x19.49x58.27
	Net/Gross weight	kg	62/66	72.5/77	103/116	99.9/112.9	108.8/123.2

AIR HANDLING UNITS

Indoor		MVC-24HWFN1-M	MVC-30HWFN1-M	MVC-36HWFN1-M	MVC-48HWFN1-M	MVC-60HWFN1-M
		2 TON	2.5 TON	3 TON	4 TON	5 TON
Indoor Air Flow (Hi/Mi/Lo)	CFM	823/758/694	1088/894/805	1188/1082/970	1470/1282/1094	1805/1582/1358
Indoor Noise Level (Hi/Mi/Lo)	dB(A)	39/36/33	42/40.5/36.5	45/43/41	50/47/43.5	51/45.5/41.5
Air Handling Unit	Dimension(W)	inch	21.02	21.02	21.02	21.02
	Dimension(D)	inch	17.52	21.02	21.02	21.02
	Dimension(H)	inch	45.00	49.02	49.02	49.02
	Net/Gross Weight	lbs.	105.60/127.43	129.19/155.64	129.19/155.64	130.51/156.31

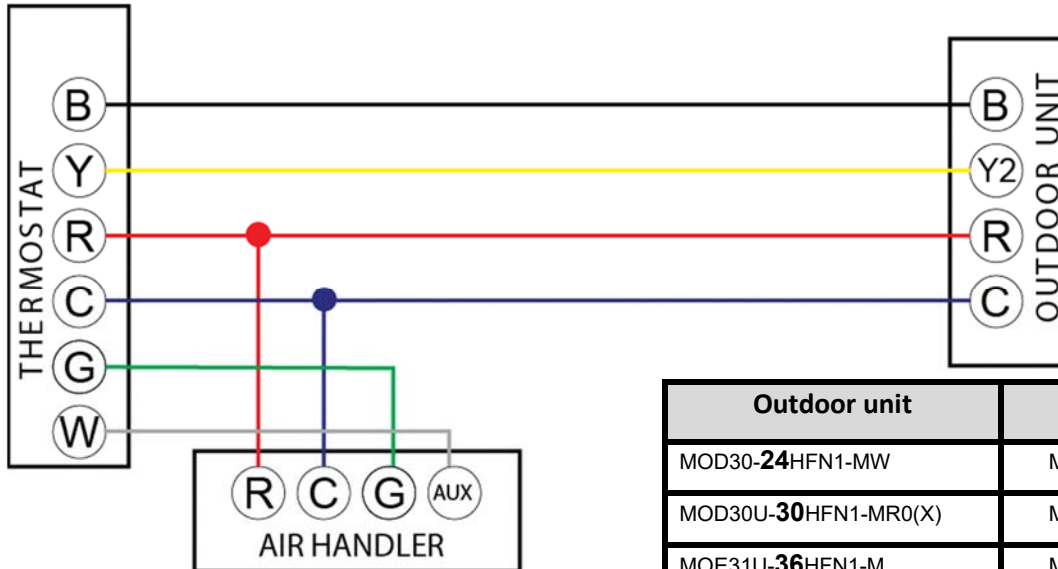
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SIMPLIFIED LOW VOLTAGE WIRING DIAGRAM MITS AIR™ “U” SERIES OUTDOOR UNIT WITH “MVC” SERIES AIR HANDLER



Outdoor unit	Air Handler
MOD30- 24 HFN1-MW	MVC-24HWFN1-M
MOD30U- 30 HFN1-MR0(X)	MVC-30HWFN1-M
MOE31U- 36 HFN1-M	MVC-36HWFN1-M
MOE30U- 48 HFN1-M-[X1]	MVC-48HWFN1-M
MOE30U- 55 HFN1-M	MVC-60HWFN1-M

INDOOR AIR HANDLER

Switch S-4-2 of air handler must be turned “OFF” to allow auxiliary heat.

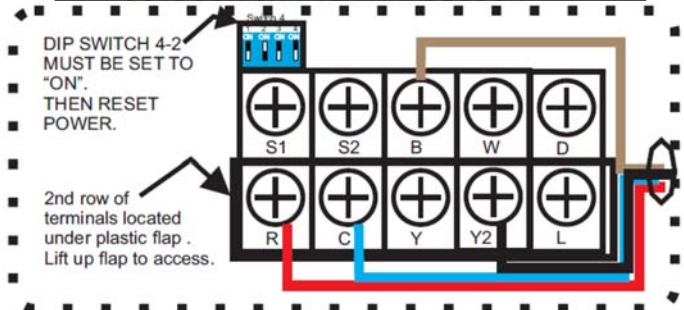
Jumper between W1 and W2 to enable full auxiliary heat.



Notes:

1. **Thermostat** is a Heat Pump type.
2. “**B**” configuration is used for the reversing valve.
3. Reset power after changing dip switch 4-2 to “**ON**”.
4. Follow thermostat manufacturer’s instructions to enable emergency heat.

OUTDOOR UNIT TERMINAL BLOCK



MITS AIR™ Side Discharge Cold Climate Heat Pump with “MVC” Air Handler (“U Series”) – Quick Installation Guide

The “MVC” air handler ships with a digital thermostat that provides a full range of comfort and diagnostic features. The air handler is shipped configured for this thermostat. The thermostat will work on standard 18/2 LVT wire but like all electronic devices it is susceptible to electronic noise.

When using the digital thermostat, we recommend the use of a shielded wire with the ground attached only at the air handler. When using the MITS AIR™ digital thermostat we also recommend wiring to the outdoor unit with the shielded wire. Once again, ground the shielding only at the air handler. Grounding both ends will eliminate the shielding and create a ground loop which must be avoided.

The MITS AIR™ air handler also has the capability to incorporate a standard 24V thermostat. Please use the appropriate diagram for installation. For most installations this would require 6 wires from the thermostat to the air handler and four wires from the air handler to the outdoor unit.

The return air is designed for bottom entry only. We have an excellent return air plenum that acts both as a platform for the air handler and provides easily connected side entry for the return air duct. Corner cut-ins for the most popular duct sizes have been provided on both sides for quick installation of fish lock duct fasteners.

Heaters are installed inside the air handler cabinet, and you can purchase these in a capacity of 5kW to 20kW depending on the model of the air handler and are provided with low voltage plugs for quick installation to our control board.

The indoor fan motor is an EC type motor and provides quiet air flow at the correct capacity.

COMPATIBLE HEATERS

Compatible Heater Model No.		Air Handler Model No.				
		MVC-24HWFN1-M (2 Ton)	MVC-30HWFN1-M (2.5 Ton)	MVC-36HWFN1-M (3 Ton)	MVC-48HWFN1-M (4 Ton)	MVC-60HWFN1-M (5 Ton)
EAH-05B(UL)	5 kW	X	X	X		
EAH-10B(UL)	10 kW	X	X	X	X	X
EAH-15B(UL)	15 kW	X	X	X	X	X
EAH-20B(UL)	20 kW			X	X	X
EAH-25B(UL)	25 kW					X