

Engineering Data Book



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I. Floor Console – Recessed Basic Information

1. External Appearance

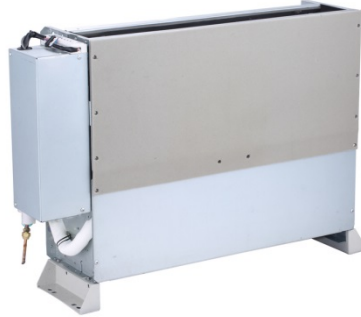


Figure 1 - 40VMR007, 009---3



Figure 2 - 40VMR012, 015---3

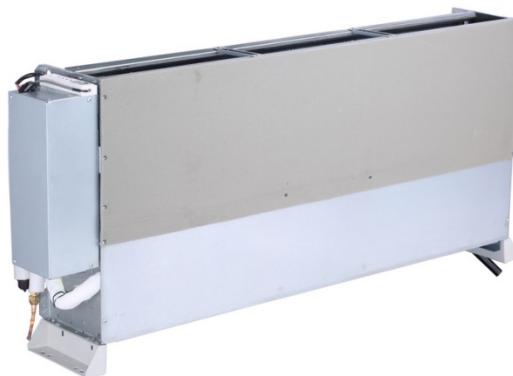


Figure 3 - 40VMR018, 024---3

2. Specifications

Table 1 - Data Table

Model			40VMR007---3	40VMR009---3
Cooling Capacity *1	Btu/h		7,000	9,000
Heating Capacity *1	Btu/h		8,000	10,000
Power Supply	V-Ph-Hz		208/230-1-60	
MCA	A		0.55	0.55
MOCP	A		15	15
Casing			Galvanized steel	
Filter			Included	
Dimensions (H x W x D)	in.		24 x 35-1/4 x 8-3/8	
Net Weight	lbs.		48.9	
Heat Exchanger			Inner groove copper tube and hydrophilic aluminum fin	
Blower / Motor	Fan type		Centrifugal	
	Motor type		DC	
	Air Flow Rate (H/M/L)	CFM	300/276/253	
	Motor Output		100	
Min. External Static Pressure (factory setting)	in. WG		0	
Max. External Static Pressure	in. WG		0.12	
Sound Pressure Level*2	Cooling			
	H-dBA		39.7	39.5
	M-dBA		38.2	37.8
	L-dBA		35.3	35.1
	Heating			
	H-dBA		39.9	39.8
	M-dBA		38.1	37.9
L-dBA		35.7	35.8	
Piping Connections	Gas (Low) Pressure	in.	1/2	
	Liquid (High) Pressure	in.	1/4	
	Condensate	in.	5/8	
Refrigerant Control			Electronic Expansion Valve	
Connectable Outdoor Unit			38VMH – Heat Pump 38VMR – Heat recovery 38VMH-1P – Single Phase Heat Pump	
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data	
	Control Wiring	AWG	2-core twisted shielded pair cable 16AWG or 18AWG	

*1 Rated per AHRI (Air-Conditioning, Heating and Refrigeration Institute) 1230 Standard:

Notes: Cooling: Indoor 80°F (27°C) db/67°F (20°C) wb; Outdoor 95°F (35°C) db
Heating: Indoor 70°F (21°C) db; Outdoor 47°F (8°C) db/43°F (6°C) wb

*2 These values are measured in anechoic chamber.

Table 2 - Data Table

Model		40VMR012---3	40VMR015---3	
Cooling Capacity *1	Btu/h	12,000	15,000	
Heating Capacity *1	Btu/h	13,000	17,000	
Power Supply	V-Ph-Hz	208/230-1-60		
MCA	A	0.63	0.83	
MOCP	A	15	15	
Casing		Galvanized steel		
Filter		Included		
Dimensions (H x W x D)	in.	24 x 43-1/8 x 8-3/8		
Net Weight	lbs.	59.1		
Heat Exchanger		Inner groove copper tube and hydrophilic aluminum fin		
Blower / Motor	Fan type	Centrifugal		
	Motor type	DC		
	Air Flow Rate (H/M/L)	CFM	400/335/271	500/424/347
	Motor Output		100	
Min. External Static Pressure (factory setting)	in. WG	0		
Max. External Static Pressure	in. WG	0.12		
Sound Pressure Level*2	Cooling			
	H-dBA	40.3	45.2	
	M-dBA	36.3	41.4	
	L-dBA	32.5	36.4	
	Heating			
	H-dBA	40.2	45.2	
	M-dBA	36.3	41.7	
	L-dBA	32.1	36.8	
Piping Connections	Gas (Low) Pressure	in.	1/2	
	Liquid (High) Pressure	in.	1/4	
	Condensate	in.	5/8	
Refrigerant Control		Electronic Expansion Valve		
Connectable Outdoor Unit		38VMH – Heat Pump 38VMR – Heat recovery 38VMH-1P – Single Phase Heat Pump		
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data	
	Control Wiring	AWG	2-core twisted shielded pair cable 16AWG or 18AWG	

*1 Rated per AHRI (Air-Conditioning, Heating and Refrigeration Institute) 1230 Standard:

Cooling: Indoor 80°F (27°C) db/67°F (20°C) wb; Outdoor 95°F (35°C) db

Heating: Indoor 70°F (21°C) db; Outdoor 47°F (8°C) db/43°F (6°C) wb

*2 These values are measured in anechoic chamber.

Notes:

Table 3 - Data Table

Model		40VMR018---3	40VMR024---3	
Cooling Capacity *1	Btu/h	18,000	24,000	
Heating Capacity *1	Btu/h	20,000	27,000	
Power Supply	V-Ph-Hz	208/230-1-60		
MCA	A	0.72	1.38	
MOCP	A	15	15	
Casing		Galvanized steel		
Filter		Included		
Dimensions (H x W x D)	in.	24 x 54-15/16 x 8-3/8		
Net Weight	lbs.	69.2		
Heat Exchanger		Inner groove copper tube and hydrophilic aluminum fin		
Blower / Motor	Fan type	Centrifugal		
	Motor type	DC		
	Air Flow Rate (H/M/L)	CFM	488/418/365	776/635/553
	Motor Output		100	
Min. External Static Pressure (factory setting)	in. WG	0		
Max. External Static Pressure	in. WG	0.12		
Sound Pressure Level*2	Cooling			
	H-dBA	38.9	49.9	
	M-dBA	34.8	45.2	
	L-dBA	32.6	42.5	
	Heating			
	H-dBA	39.0	49.6	
	M-dBA	35.5	45.1	
	L-dBA	32.8	41.9	
Piping Connections	Gas (Low) Pressure	in.	5/8	
	Liquid (High) Pressure	in.	3/8	
	Condensate	in.	5/8	
Refrigerant Control		Electronic Expansion Valve		
Connectable Outdoor Unit		38VMH – Heat Pump 38VMR – Heat recovery 38VMH-1P – Single Phase Heat Pump		
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data	
	Control Wiring	AWG	2-core twisted shielded pair cable 16AWG or 18AWG	

*1 Rated per AHRI (Air-Conditioning, Heating and Refrigeration Institute) 1230 Standard:

Cooling: Indoor 80°F (27°C) db/67°F (20°C) wb; Outdoor 95°F (35°C) db







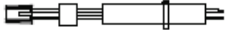
Heating: Indoor 70°F (21°C) db; Outdoor 47°F (8°C) db/43°F (6°C) wb

*2 These values are measured in anechoic chamber.

Notes:

II. Accessories

Table 4 - Components Shipped with Unit

Name	Shape	Quantity	Function
Foot mounting bolt		4	For connecting the feet to the bottom of the unit
Pipe insulation material		2	Heat insulation
LED display panel		1	Operation and error display
Mounting feet		2	Supports unit in floor-mounted applications
Copper nut		1	Use for piping connection
PQE connection wire		2	Connect outdoor unit, indoor unit, and sub MDC
Connecting wire		1	For occupancy sensor

III. Dimensions

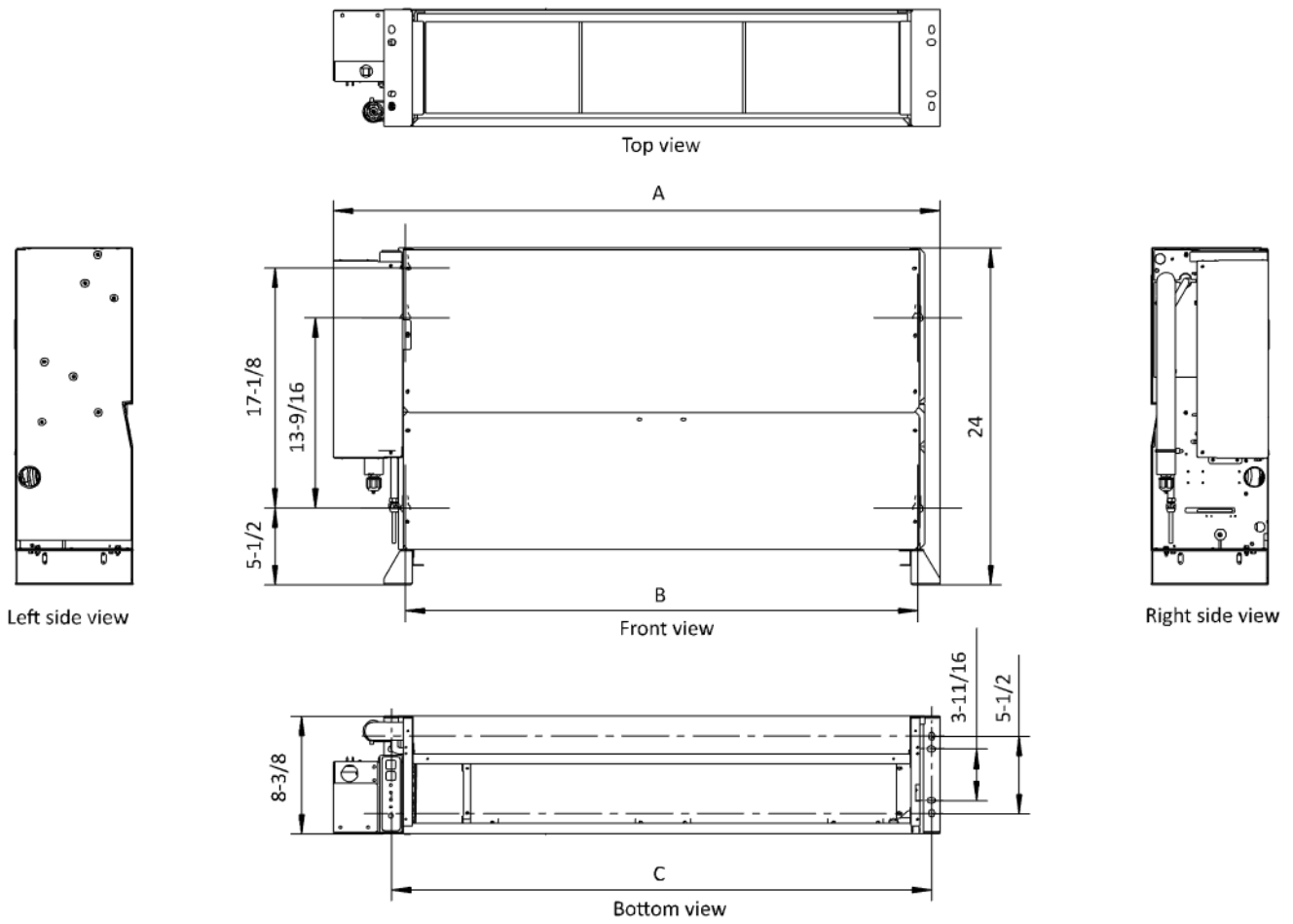


Figure 4 - 40VMD006M--3

Model	A	B	C
40VMR007, 009---3	35-1/4	28-9/16	30-1/2
40VMR012, 015---3	43-1/8	36-7/16	38-3/8
40VMR018, 024---3	54-15/16	48-1/4	50-3/16

IV. Piping Diagrams

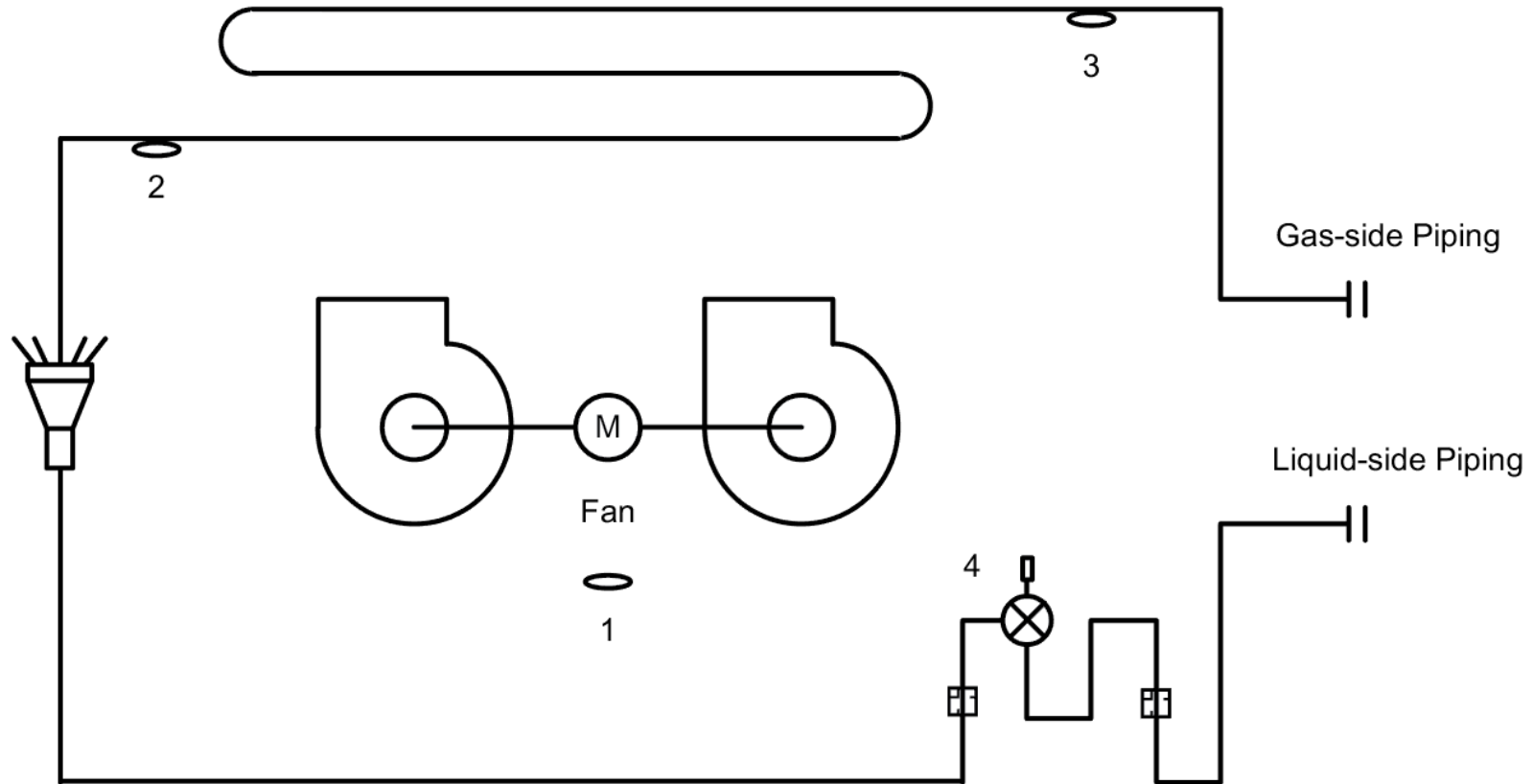


Figure 5 - Piping

NO.	Symbol	Name
1	T1	Suction air thermistor
2	T2A	Inlet pipe temp. thermistor
3	T2B	Outlet pipe temp. thermistor
4	EEV	Electronic expansion valve

Model	Gas	Liquid
40VMR007/009/012/015---3	1/2	1/4
40VMR018/024---3	5/8	3/8

V.Wiring Diagrams

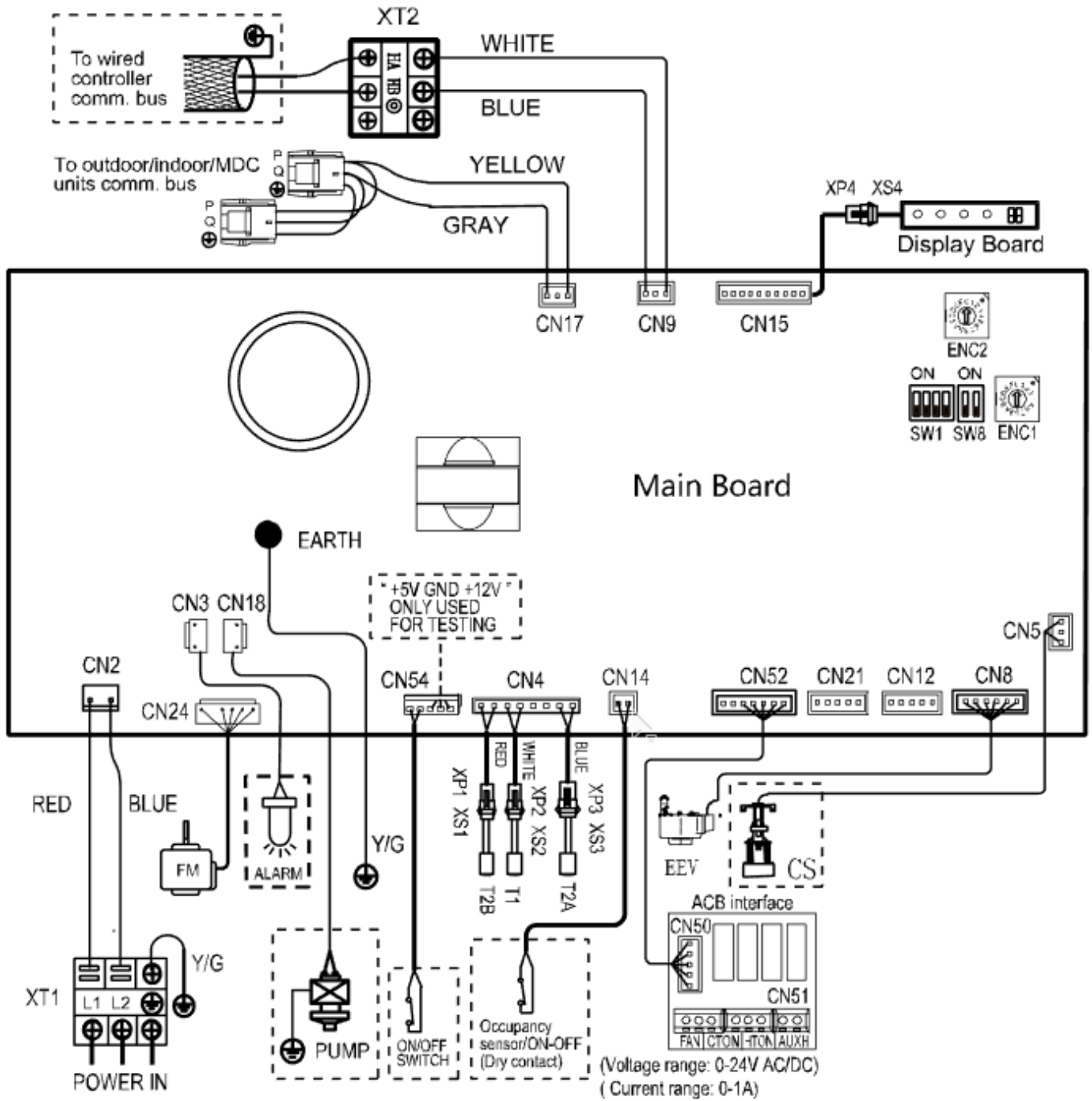


Figure 6 - 40VMD006, 008, 010M(S)--3

Table 5 - Legend

Code	Title
FM	Indoor fan motor
T1	Room temp. sensor
T2A	Inlet pipe temp. sensor
T2B	Outlet pipe temp. sensor
ALARM	Warning lamp
EEV	Electronic expansion valve
XP1-4	Connectors
XS1-4	
XT1-2	Terminal
PUMP	Pump motor
CS	Condensate switch

Table 6 – ENC1 Definition


 ENC1	(Reserved)
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Table 7 – SW1 Definition





 SW1	0 means auto addressing mode (Default)
	1 means factory test mode
 SW1	0 means normal mode (Default)
	1 means factory self-checking mode
 SW1	Reserved
 SW1	0 means standard indoor unit (Default)
	1 means main indoor unit (Must be addressed #63)

Table 8 – ENC2 Definition


 ENC2	(Reserved)
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Table 9 – 0/1 Definition



	Means 0		Means 1
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Table 10 – Error Codes

Error Code	Error Content
dd	Mode conflict
E1	Comm. Error with outdoor unit
E2	Temp. sensor (T1) error
E4	Temp. sensor (T2B) error
E5	Temp. sensor (T2A) error
E6	DC fan error
E7	EEPROM error
UU	MDC error in auto system-check mode
E9	Comm error with wired controller
Eb	EEV error
EC	Indoor fan error in auto system-check mode
Ed	Outdoor unit error
EE	Water level alarm

Table 11 – J1 Definition





	Without jumper J1 for auto restart function
	With jumper J1 for manual restart

Table 12 – SW8 Definition

 SW8	Reserved
 SW8	Reserved

VI. Electrical Characteristics

Table 13 – Electrical Characteristics

Model	Power Supply				IFM		
	Hz	Volts	Voltage Range	MCA	MOCP	KW	FLA
40VMR007---3	60	208/230	Max. 253V Min. 187V	0.55	15	0.1	0.44
40VMR009---3				0.55	15	0.1	0.44
40VMR012---3				0.63	15	0.1	0.50
40VMR015---3				0.83	15	0.1	0.66
40VMR018---3				0.72	15	0.1	0.57
40VMR024---3				1.38	15	0.1	1.1

Symbols:

MCA: Minimum Circuit Amps (A)

MOCP: Maximum Overcurrent Protection (A)

KW: Fan Motor Rated Output (KW)

FLA: Full Load Amps (A)

IFM: Indoor Fan Motor

VII. Sound Data

1. Sound Pressure Level

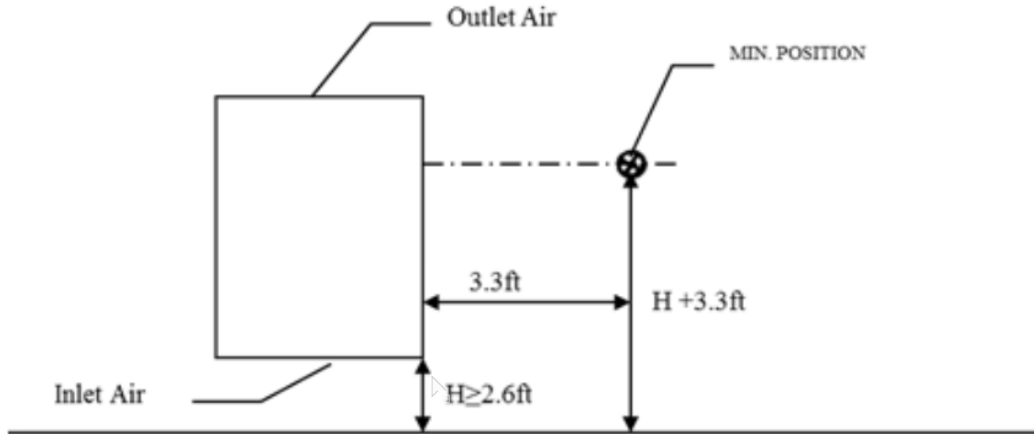


Table 14 - Cooling mode

Model	H	M	L
40VMR007---3	39.7	38.2	35.3
40VMR009---3	39.5	37.8	35.1
40VMR012---3	40.3	36.3	32.5
40VMR015---3	45.3	41.4	36.4
40VMR018---3	38.9	34.8	32.6
40VMR024---3	49.9	45.2	42.5

Table 15 - Cooling mode

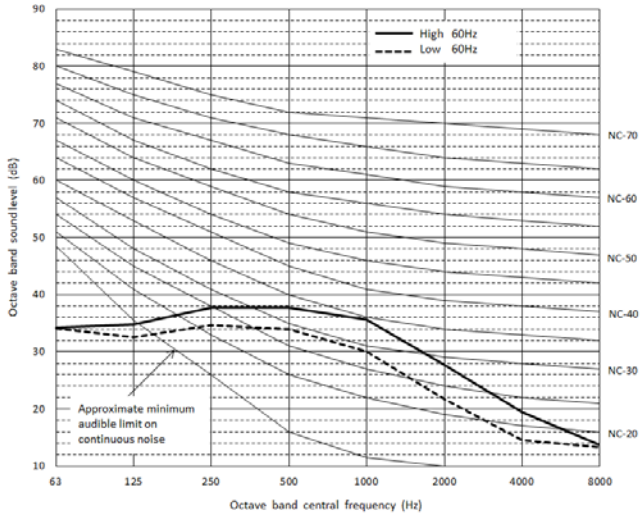
Model	H	M	L
40VMR007---3	39.9	38.1	35.7
40VMR009---3	39.8	37.9	35.8
40VMR012---3	40.2	36.3	32.1
40VMR015---3	45.2	41.7	36.8
40VMR018---3	39.0	35.5	32.8
40VMR024---3	49.6	45.1	41.9

2. NC Curves

40VMR007---3

External Static Pressure: 0.0in. (0Pa)

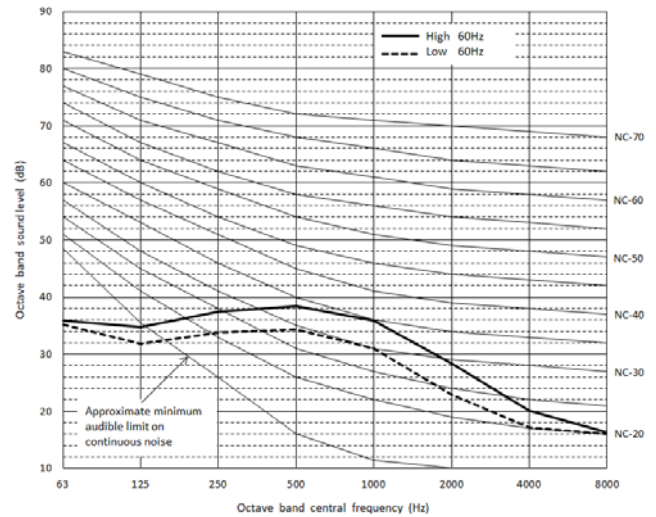
Power source: 208/230V-1Ph-60Hz



40VMR009---3

External Static Pressure: 0.0in. (0Pa)

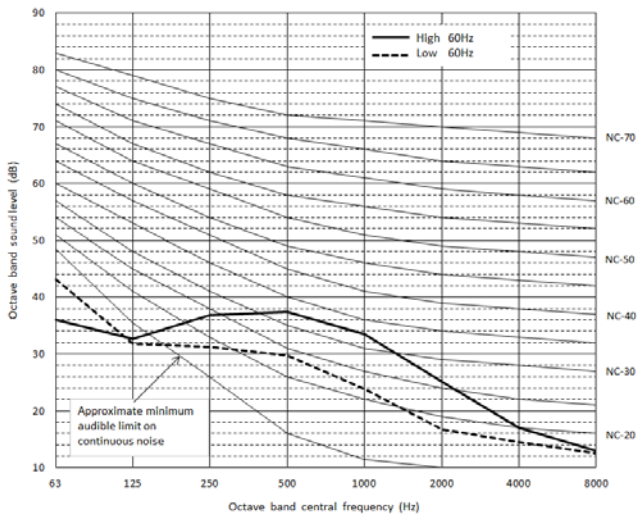
Power source: 208/230V-1Ph-60Hz



40VMR012---3

External Static Pressure: 0.0in. (0Pa)

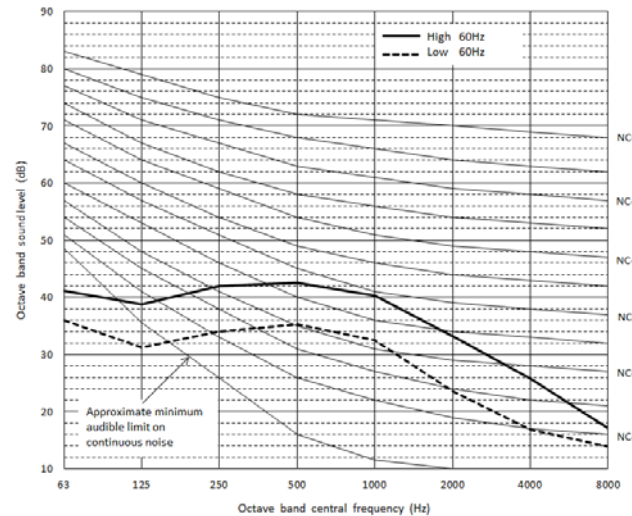
Power source: 208/230V-1Ph-60Hz



40VMR015---3

External Static Pressure: 0.0in. (0Pa)

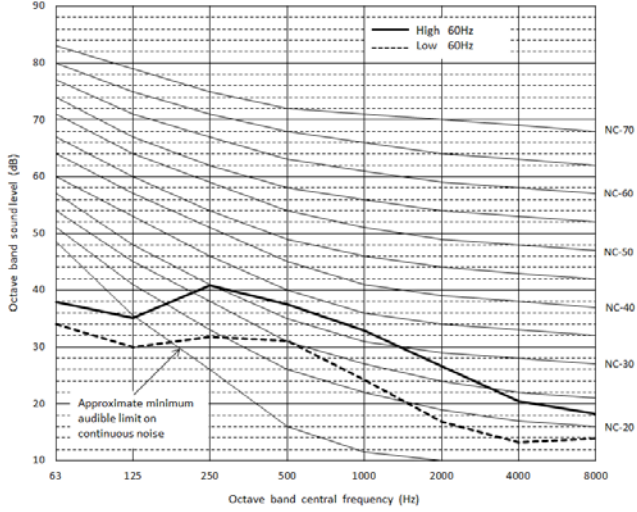
Power source: 208/230V-1Ph-60Hz



40VMR018---3

External Static Pressure: 0.0in. (0Pa)

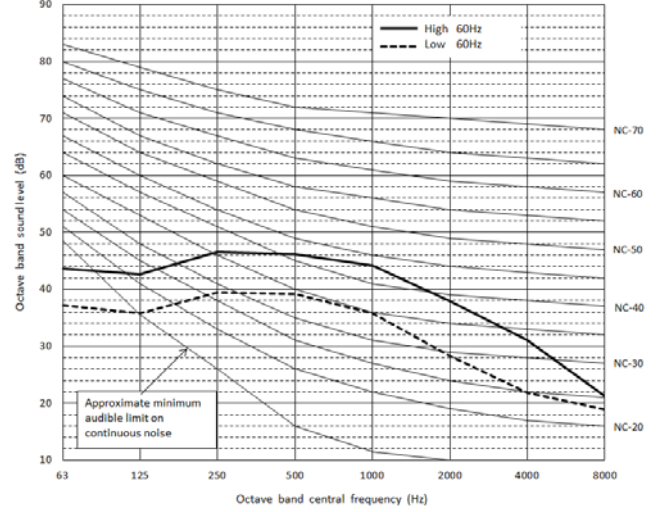
Power source: 208/230V-1Ph-60Hz



40VMR024---3

External Static Pressure: 0.0in. (0Pa)

Power source: 208/230V-1Ph-60Hz



IX. Capacity Tables

Table 16 - Cooling Capacity

Model	Capacity Index	Indoor Air Temperature											
		68°F DB / 57°F WB		71°F DB / 60°F WB		75°F DB / 63°F WB		80°F DB / 67°F WB		85°F DB / 71°F WB		90°F DB / 75°F WB	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
40VMR	7	4.11	4.11	4.98	4.94	5.84	5.46	7.00	6.00	7.12	6.09	7.23	6.17
	9	5.28	5.24	6.40	5.59	7.51	6.19	9.00	6.83	9.15	6.86	9.30	6.89
	12	7.04	7.01	8.53	7.48	10.02	8.29	12.00	9.14	12.20	9.18	12.40	9.21
	15	8.80	8.72	10.66	9.31	12.52	10.32	15.00	11.39	15.25	11.44	15.50	11.49
	18	10.56	9.51	12.79	10.25	15.02	11.39	18.00	12.61	18.30	12.56	18.60	12.51
	24	14.08	13.64	17.06	14.59	20.03	16.19	24.00	17.88	24.40	17.94	24.79	18.00

Rated Condition: Evaporation temperature is 42.8°F (6°C) with high speed airflow.

Table 17 - Heating Capacity

Model	Capacity Index	Indoor Air Temperature					
		61°F DB	64°F DB	67°F DB	70°F DB	73°F DB	75°F DB
		TC	TC	TC	TC	TC	TC
40VMR	7	8.96	8.64	8.32	8.00	7.46	7.11
	9	11.21	10.80	10.40	10.00	9.33	8.88
	12	14.57	14.04	13.52	13.00	12.13	11.55
	15	19.05	18.37	17.68	17.00	15.86	15.10
	18	22.41	21.61	20.80	20.00	18.66	17.77
	24	30.25	29.17	28.08	27.00	25.19	23.99

Rated Condition: Condensation temperature is 114.8°F (46°C).

TC=Total capacity; KBTU/h

SC=Sensible capacity; KB

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.