

40VMM
Medium Static Duct Indoor Unit for
Variable Refrigerant Flow (VRF) Systems

Engineering Data Book



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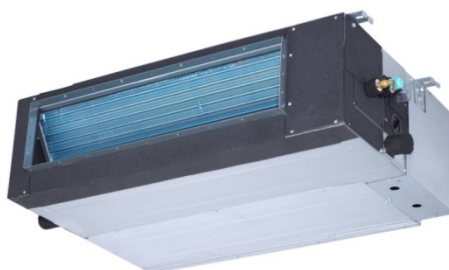
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I. Medium Static Duct Basic information

1. External Appearance



40VMM007/009---3



40VMM012/015/018---3



40VMM024/030---3



40VMM036/048---3

2. Specifications

Table 1 – Data Table

Model Name			40VMM007---3	40VMM009---3
Power Source		V-Ph-Hz	208/230-1-60	208/230-1-60
Capacity Cooling*1		Btu/h	7,000	9,000
Capacity Heating*1		Btu/h	8,000	10,000
Electrical Supply	MCA	A	1.25	1.25
	MOCp	A	15	15
Fan	Type	Centrifugal Fan		
	Air flow rate (H/M/L)	cfm	340/271/230	340/271/230
	Max. External static pressure (ESP)	in. WG	0.32	0.32
Fan Motor	Type		DC	
	Output	W	100	100
Heat Exchanger		Inner Groove Copper Tube and Hydrophilic Aluminum fin		
Refrigerant Control		Electronic Expansion Valve		
Dimensions	H (in)		8-1/4	8-1/4
	W (in)		39-1/4	39-1/4
	D (in)		19-3/4	19-3/4
Net Weight		lbs	48.5	48.5
Sound pressure level*2		Cooling		
		H - dBA	30.9	32.2
		M – dBA	29.3	30.9
		L – dBA	28.0	29.3
		Heating		
		H – dBA	31.3	31.9
		M – dBA	29.2	30.0
		L - dBA	28.1	28.2
Piping Connections	Gas (Low) Pressure	In	1/2	1/2
	Liquid (High) Pressure	In	1/4	1/4
Connectable Outdoor Unit		38VMH – Heat Pump 38VMR – Heat Recovery 38VMH-1P – Single Phase Heat Pump		
Casing		Galvanized Steel		
Filter		Included		
Condensate Lift		In	27-9/16	27-9/16
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data	
	Control Wiring	AWG	2-core shielded twisted pair cable 16AWG or 18AWG	
Remark	*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 at a point 4.6 feet below the center of the unit			

Table 2 – Data Table

Model Name			40VMM012---3	40VMM015---3
Power Source		V-Ph-Hz	208/230-1-60	208/230-1-60
Capacity Cooling*1		Btu/h	12,000	15,000
Capacity Heating*1		Btu/h	13,500	17,000
Electrical Supply	MCA	A	3.13	3.13
	MOCP	A	15	15
Fan	Type		Centrifugal Fan	
	Air flow rate (H/M/L)	cfm	375/294/250	462/385/326
	Max. External static pressure (ESP)	in. WG	0.6	0.6
Fan Motor	Type		DC	
	Output	W	150	150
Heat Exchanger			Inner Groove Copper Tube and Hydrophilic Aluminum fin	
Refrigerant Control			Electronic Expansion Valve	
Dimensions		H (in)	10-5/8	10-5/8
		W (in)	39-3/4	39-3/4
		D (in)	25	25
Net Weight		lbs	76.0	76.0
Sound pressure level*2		Cooling		
		H - dBA	36.1	38.5
		M – dBA	32.0	34.5
		L – dBA	30.0	31.6
		Heating		
		H - dBA	34.4	38.3
		M – dBA	30.4	33.9
		L - dBA	28.5	31.9
Piping Connections	Gas (Low) Pressure	In	1/2	1/2
	Liquid (High) Pressure	In	1/4	1/4
Connectable Outdoor Unit			38VMH – Heat Pump 38VMR – Heat Recovery 38VMH-1P – Single Phase Heat Pump	
Casing			Galvanized Steel	
Filter			Included	
Condensate Lift		In	27-9/16	27-9/16
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data	
	Control Wiring	AWG	2-core shielded twisted pair cable 16AWG or 18AWG	
Remark	*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 at a point 4.6 feet below the center of the unit			

Table 3 – Data Table

Model Name			40VMM018---3	40VMM024---3
Power Source		V-Ph-Hz	208/230-1-60	208/230-1-60
Capacity Cooling*1		Btu/h	19,000	24,000
Capacity Heating*1		Btu/h	21,500	27,000
Electrical Supply	MCA	A	3.13	3.13
	MOCP	A	15	15
Fan	Type		Centrifugal Fan	
	Air flow rate (H/M/L)	cfm	565/444/376	707/592/501
	Max. External static pressure (ESP)	in. WG	0.6	0.6
Fan Motor	Type		DC	
	Output	W	150	150
Heat Exchanger			Inner Groove Copper Tube and Hydrophilic Aluminum fin	
Refrigerant Control			Electronic Expansion Valve	
Dimensions		H (in)	10-5/8	10-5/8
		W (in)	39-3/4	48-1/2
		D (in)	25	30-1/2
Net Weight		lbs	76.0	97.0
Sound pressure level*2		Cooling		
		H - dBA	41.1	41.5
		M - dBA	37.7	38.6
		L - dBA	35.3	36.4
		Heating		
		H - dBA	41.1	41.8
		M – dBA	38.2	37.8
		L - dBA	35.5	35.8
Piping Connections	Gas (Low) Pressure	In	5/8	5/8
	Liquid (High) Pressure	In	3/8	3/8
Connectable Outdoor Unit			38VMH – Heat Pump 38VMR – Heat Recovery 38VMH-1P – Single Phase Heat Pump	
Casing			Galvanized Steel	
Filter			Included	
Condensate Lift		In	27-9/16	27-9/16
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data	
	Control Wiring	AWG	2-core shielded twisted pair cable 16AWG or 18AWG	
Remark	*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 at a point 4.6 feet below the center of the unit			

Table 4 – Data Table

Model Name			40VMM030---3	40VMM036---3
Power Source		V-Ph-Hz	208/230-1-60	208/230-1-60
Capacity Cooling*1		Btu/h	30,000	36,000
Capacity Heating*1		Btu/h	34,000	42,000
Electrical Supply	MCA	A	3.13	5.00
	MOCP	A	15	15
Fan	Type		Centrifugal Fan	
	Air flow rate (H/M/L)	cfm	908/740/626	1117/888/751
	Max. External static pressure (ESP)	in. WG	0.6	0.6
Fan Motor	Type		DC	
	Output	W	150	240
Heat Exchanger			Inner Groove Copper Tube and Hydrophilic Aluminum fin	
Refrigerant Control			Electronic Expansion Valve	
Dimensions		H (in)	10-5/8	11-7/8
		W (in)	48-1/2	50-3/4
		D (in)	30-1/2	34-1/8
Net Weight		lbs	99.0	124.0
Sound pressure level*2		Cooling		
		H - dBA	46.5	45.9
		M - dBA	43.0	42.6
		L - dBA	40.8	38.3
		Heating		
		H - dBA	46.9	46.2
		M - dBA	43.5	42.2
		L - dBA	40.7	39.2
Piping Connections	Gas (Low) Pressure	In	5/8	5/8
	Liquid (High) Pressure	In	3/8	3/8
Connectable Outdoor Unit			38VMH – Heat Pump 38VMR – Heat Recovery 38VMH-1P – Single Phase Heat Pump	
Casing			Galvanized Steel	
Filter			Included	
Condensate Lift		In	27-9/16	27-9/16
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data	
	Control Wiring	AWG	2-core shielded twisted pair cable 16AWG or 18AWG	
Remark	*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 at a point 4.6 feet below the center of the unit			

Table 5 – Data Table

Model Name		40VMM048---3	
Power Source		V-Ph-Hz	208/230-1-60
Capacity Cooling*1		Btu/h	48,000
Capacity Heating*1		Btu/h	54,000
Electrical Supply	MCA	A	5.00
	MOCP	A	15
Fan	Type		Centrifugal Fan
	Air flow rate (H/M/L)	cfm	1366/1184/1001
	Max. External static pressure (ESP)	in. WG	0.6
Fan Motor	Type		DC
	Output	W	240
Heat Exchanger		Inner Groove Copper Tube and Hydrophilic Aluminum fin	
Refrigerant Control		Electronic Expansion Valve	
Dimensions	H (in)		11-7/8
	W (in)		50-3/4
	D (in)		34-1/8
Net Weight		lbs	124.0
Sound pressure level*2		Cooling	
		H - dBA	50.4
		M – dBA	47.2
		L - dBA	44.7
		Heating	
		H - dBA	50.8
		M – dBA	47.5
		L - dBA	44.7
Piping Connections	Gas (Low) Pressure	In	5/8
	Liquid (High) Pressure	In	3/8
Connectable Outdoor Unit		38VMH – Heat Pump 38VMR – Heat Recovery 38VMH-1P – Single Phase Heat Pump	
Casing		Galvanized Steel	
Filter		Included	
Condensate Lift		In	27-9/16
Wiring	Power Wiring	AWG	Sized per NEC and Local Codes based on Nameplate Electrical Data
	Control Wiring	AWG	2-core shielded twisted pair cable 16AWG or 18AWG
Remark	*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 at a point 4.6 feet below the center of the unit		

3. Accessories

Table 6 – Table of Accessories

Name of Accessories	Quantity	Outline	Usage
PQ connection wire	2		Connects the outdoor unit, indoor unit, and sub MDC.
Connection Wire	1		Occupy sensor connecting wire
Pipe Insulation material	2		Heat insulation
Condensate connection	1		For drainage
Clamp	1		Connects the drain hose to the condensate connection
Copper Nut	1		Use for pipe connection
LED Display Panel	1		Operation and error display
Copper Pipes	2		Use for inlet and outlet connections

II. Piping Diagram

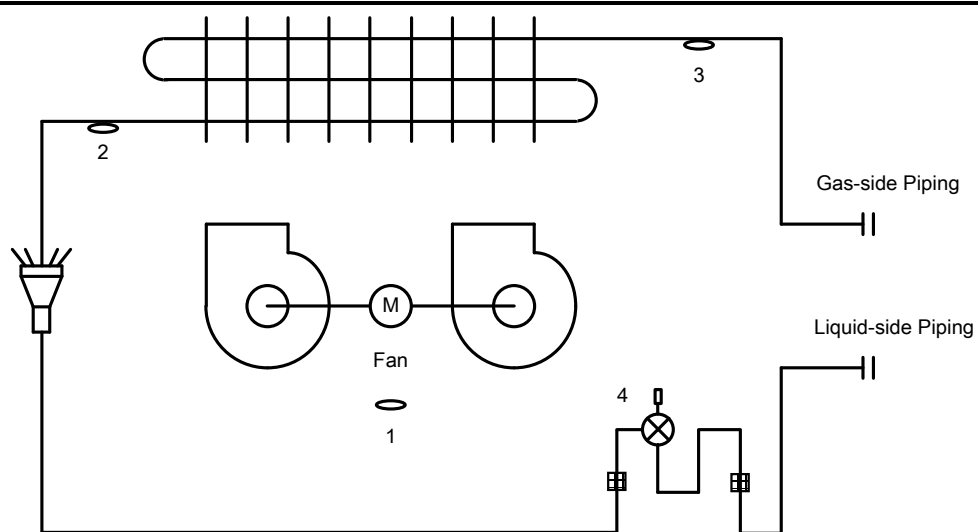


Figure 1 – Piping

Table 7 – Piping

NO.	Symbol	Name
1	T1	Room temperature sensor
2	T2A	Inlet pipe temperature sensor
3	T2B	Outlet pipe temperature sensor
4	EEV	Electronic expansion valve

Table 8 – Gas/Liquid Line Sizes

Model	Gas	Liquid
40VMM007/009/012/015---3	1/2	1/4
40VMM018/024/030/036/048---3	5/8	3/8

III. Dimensions

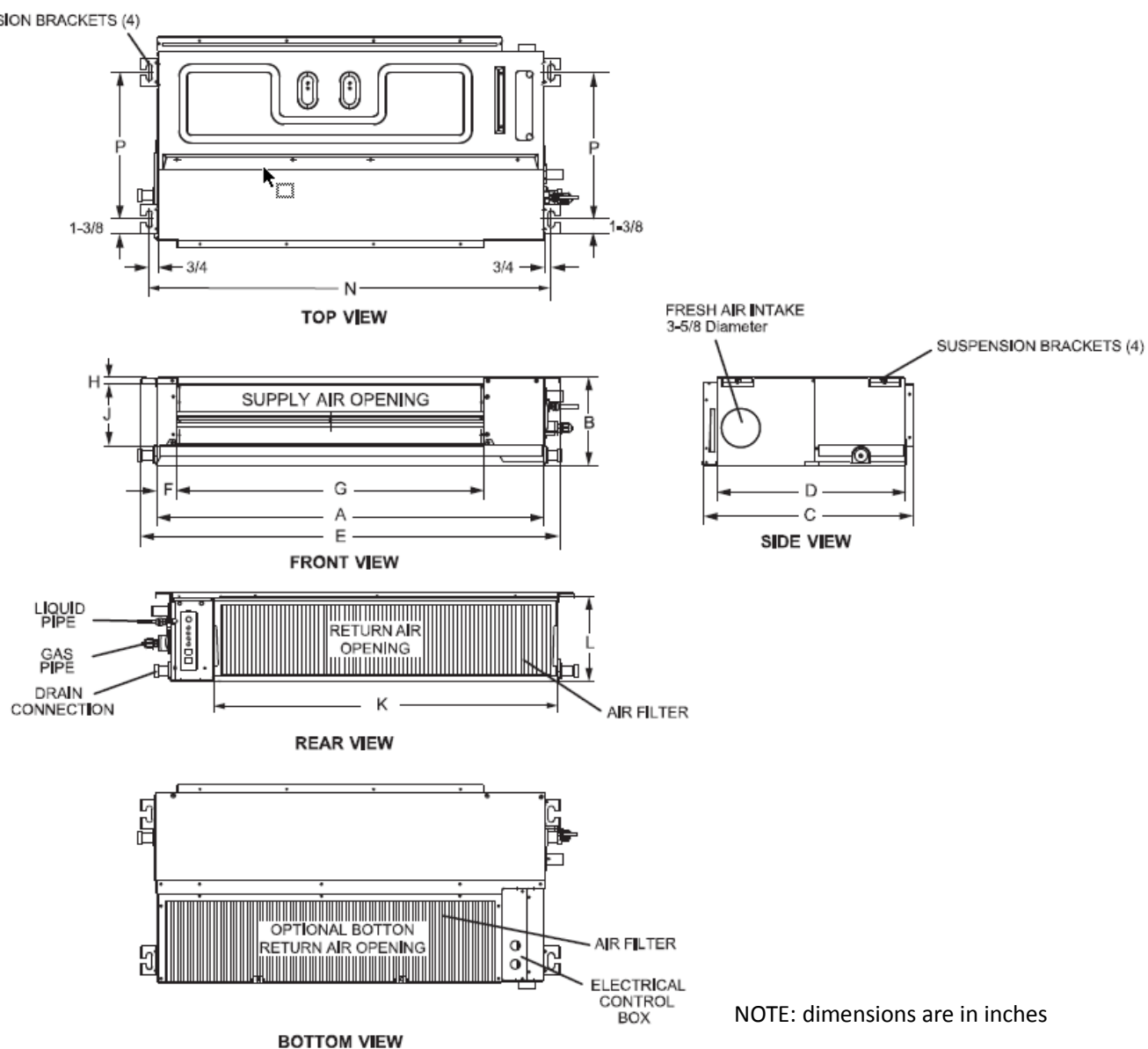


Figure 2 – 40VMM007/009---3

Table 9 – Dimensions 007, 009

A	B	C	D	E	F	G
36-1/4	8-1/4	19-3/4	17-3/4	39-1/4	1-3/4	28-3/4

H	J	K	L	N	P
5/8	5-3/4	32-1/4	7-7/8	37-3/4	13-3/4

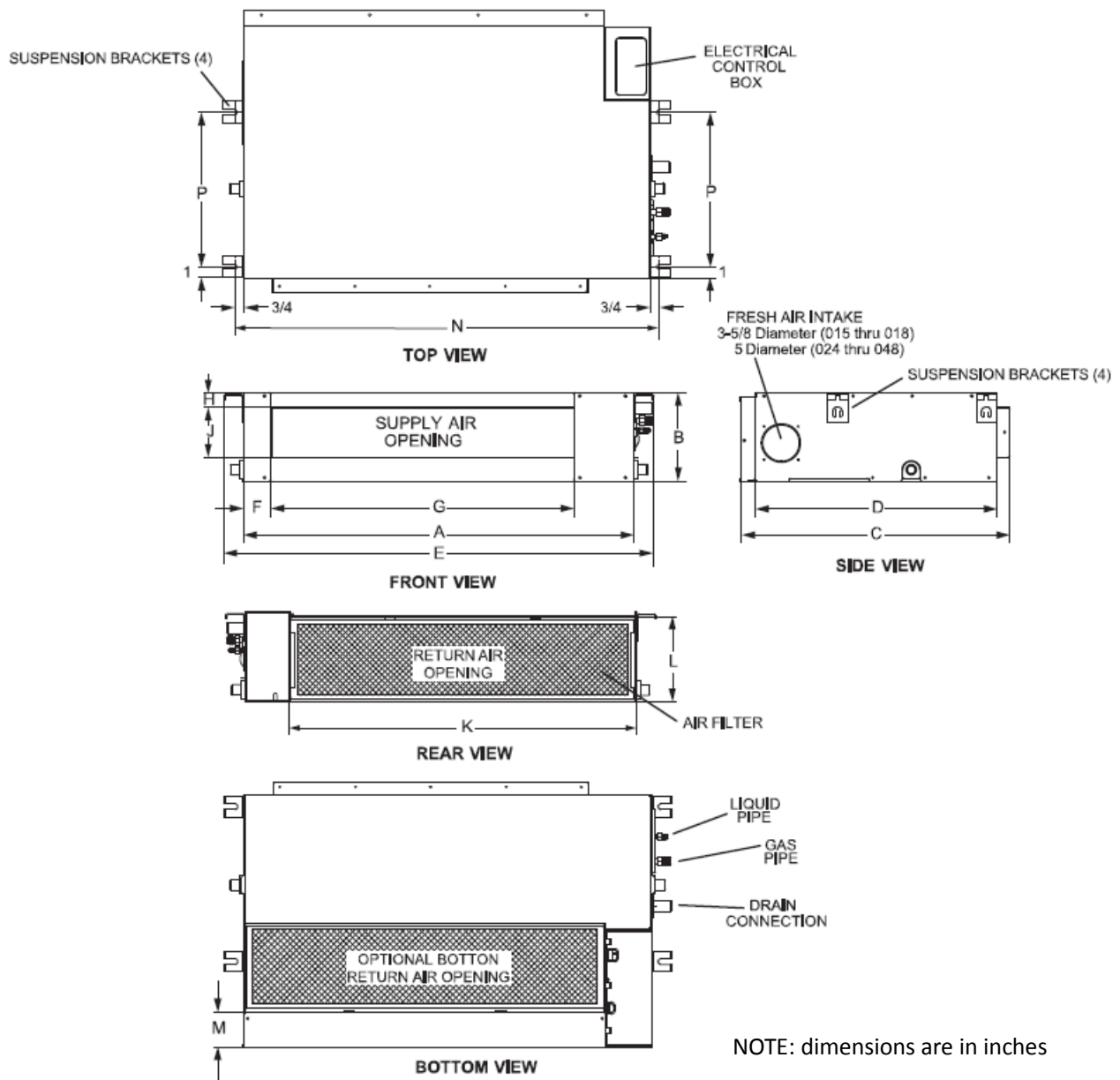


Figure 3 – 40VMM012/015/018/024/030/036/048---3

Table 10 – Dimensions 012-048

Capacity	A	B	C	D	E	F	G
012-018	36-1/4	10-5/8	25	22-1/2	39-3/4	2-5/8	28
024-030	44-7/8	10-5/8	30-1/2	28	48-1/2	2-5/8	36-3/4
036-048	47-1/4	11-7/8	34-1/8	31-1/2	50-3/4	3-1/8	38-1/8

Capacity	H	J	K	L	M	N	P
012-018	1-3/8	7	32	10-1/4	3/4	37-3/4	13-3/4
024-030	1-3/8	7	40-3/4	10-1/4	3/4	46-1/2	19-1/4
036-048	1-1/2	8	43	11-3/8	1-3/4	48-7/8	19-5/8

IV. Wiring Diagrams

1. 40VMM007/009---3

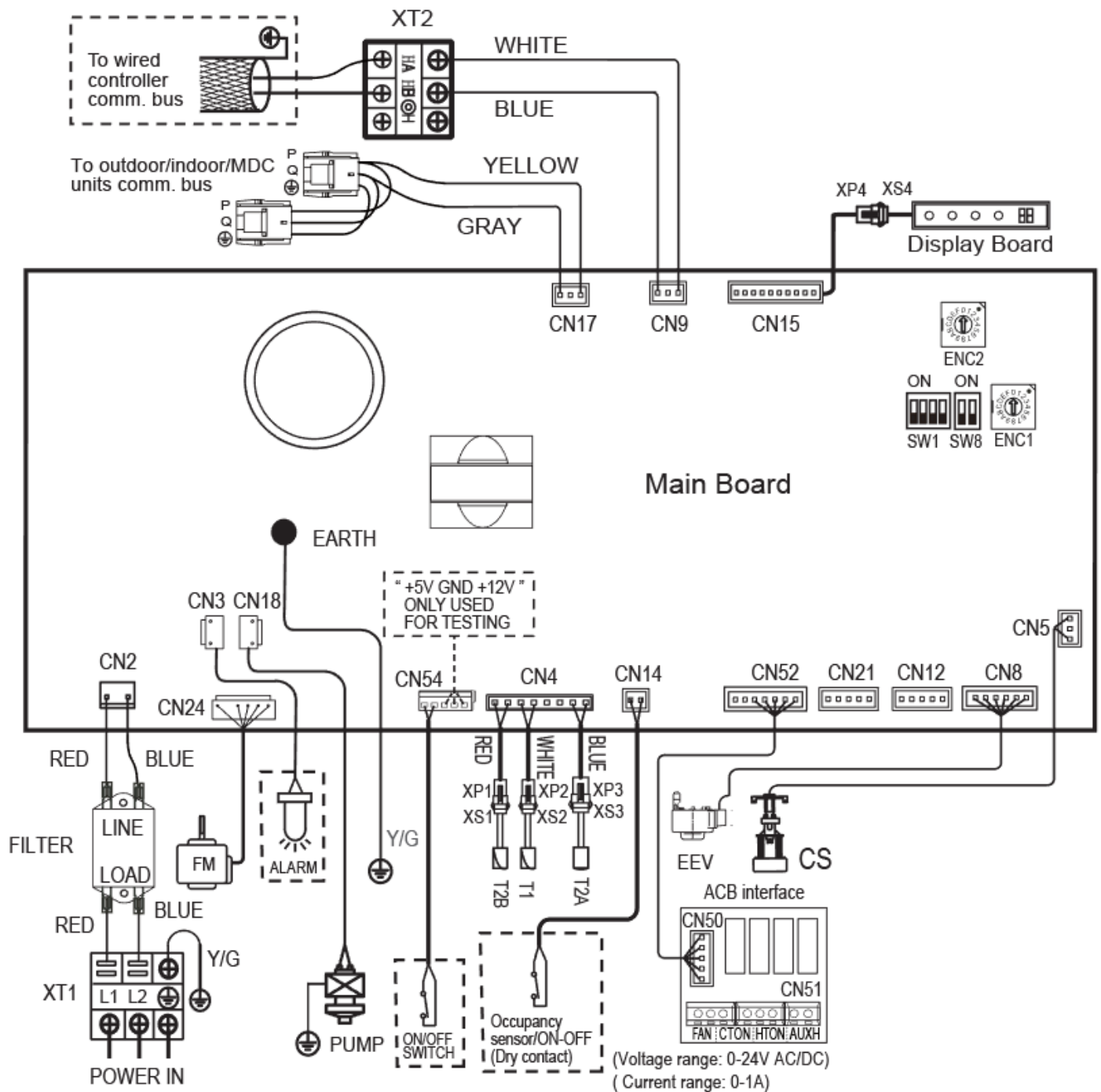


Figure 4 – Wiring Diagram (40VMM007/009---3)

Wiring Diagram Definitions and Settings (40VMM007/009---3)

Code	Title
FM	Indoor Fan Motor
T1	Room Temperature Sensor
T2A	Inlet Pipe Temperature Sensor
T2B	Outlet Pipe Temperature Sensor
ALARM	Warning Lamp
EEV	Electronic Extension Valve
XP1-4	Connectors
XS1-4	
XT1-2	Terminal
PUMP	Pump Motor
CS	Condensate Switch
ACB	Auxiliary Control Board
AXUH	Output for Auxiliary Heat
CTON	Output for Cooling Operation
HTON	Output for Heating Operation

ENC1 Definition

	Reserved
--	----------

ENC2 Definition

	Reserved
--	----------

O/1 Definition

	Means 0
	Means 1

SW1 Definition

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

J1 Definition

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

SW8 Definition

	(Reserved)
	(Reserved)

Wiring Diagram Error Codes (40VMM007/009---3)

Error Code	Error Content
dd	Heating/Cooling 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 (Data Storage)
UU	MDC Error in Auto System-Check Mode
E9	Comm. Error with Wired Controller
Eb	EEV Error
Ed	Outdoor Unit Error
EE	Condensate Error
FE	No Address when Power On for First Time

2. 40VMM0012/015/018/024/030/036/048---3

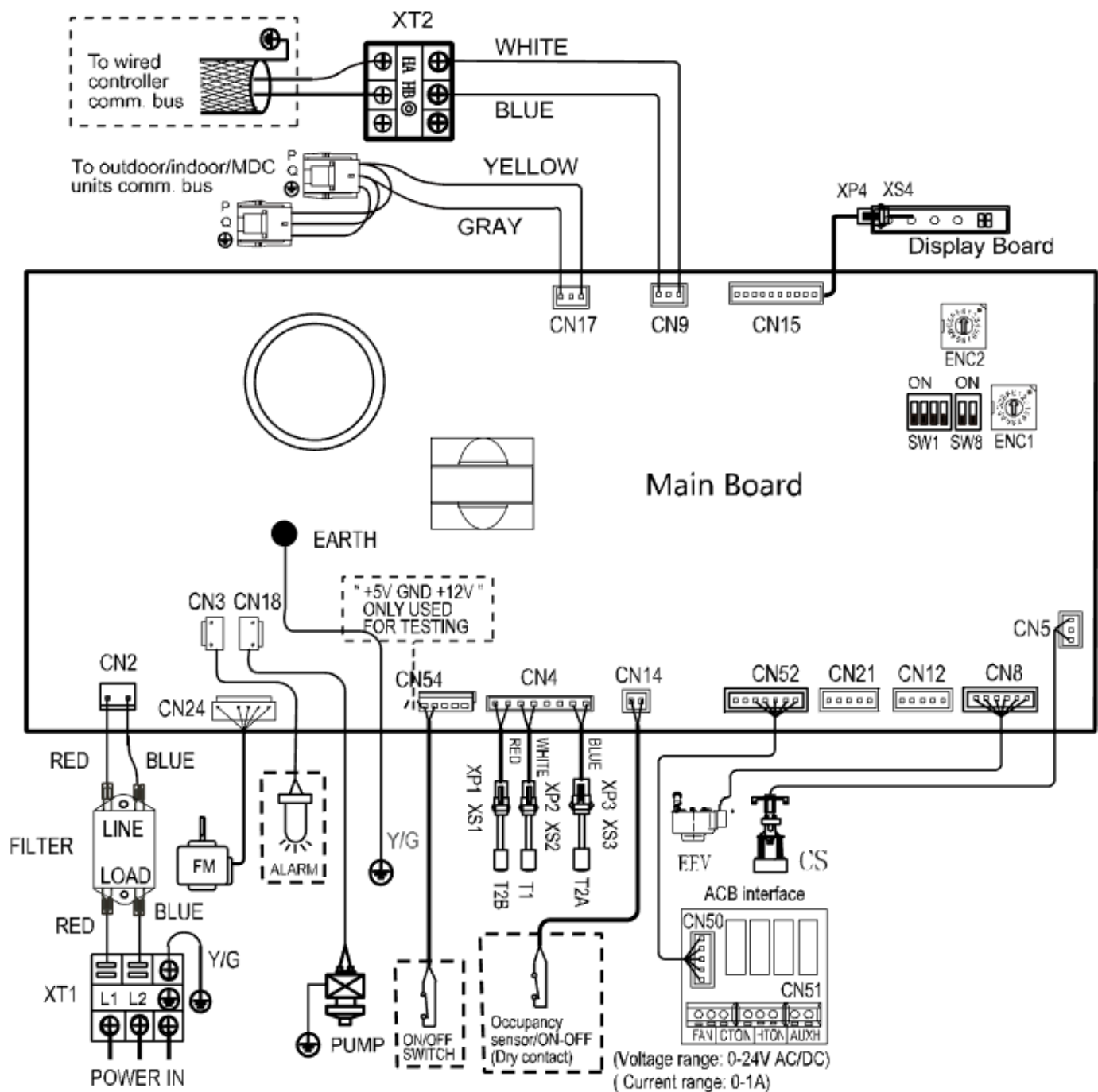


Figure 5 – Wiring Diagram (40VMM012/015/018/024/030/036/048---3)

Wiring Diagram Definitions and Settings (40VMM012 - 048---3)

Code	Title
FM	Indoor Fan Motor
T1	Room Temperature Sensor
T2A	Inlet Pipe Temperature Sensor
T2B	Outlet Pipe Temperature Sensor
ALARM	Warning Lamp
EEV	Electronic Extension Valve
XP1-4	Connectors
XS1-4	
XT1-2	Terminal
PUMP	Pump Motor
CS	Condensate Switch
ACB	Auxiliary Control Board
AXUH	Output for Auxiliary Heat
CTON	Output for Cooling Operation
HTON	Output for Heating Operation

SW1 Definition

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

J1 Definition

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

ENC1 Definition

	Reserved
---	----------

ENC2 Definition

	Reserved
---	----------

O/1 Definition

	Means 0		Means 1
---	---------	---	---------

SW8 Definition

	(Reserved)
	(Reserved)

Wiring Diagram Error Codes (40VMM012 - 048---3)

Error Code	Error Content
dd	Heating/Cooling 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 (Data Storage)
UU	MDC Error in Auto System-Check Mode
E9	Comm. Error with Wired Controller
Eb	EEV Error
Ed	Outdoor Unit Error
EE	Condensate Error
FE	No Address when Power On for First Time

V. Electrical Characteristics

Table 11 – Electrical Characteristics

Model	Power supply					IFM	
	Hz	Volts	Voltage range	MCA	MOCP	KW	FLA
40VMM007---3	60	208/230V	Max.253V Min.187V	1.25	15	0.10	1.00
40VMM009---3				1.25	15	0.10	1.00
40VMM012---3				3.13	15	0.15	2.50
40VMM015---3				3.13	15	0.15	2.50
40VMM018---3				3.13	15	0.15	2.50
40VMM024---3				3.13	15	0.15	2.50
40VMM030---3				3.13	15	0.15	2.50
40VMM036---3				5.0	15	0.24	4.00
40VMM048---3				5.0	15	0.24	4.00

MCA: Minimum Circuit Amps (A)

MOCP: Maximum Overcurrent Protection

Symbols: kW : Fan Motor Rated Output (KW)

FLA : Full Load Amps (A)

IFM : Indoor Fan Motor

VI. Fan Performance

There are nine external static pressure (ESP) settings for 40VMM007, 009---3.

There are sixteen external static pressure (ESP) for other models.

Below figures on the left show "MAX. ESP", "Rating ESP", and "Min. ESP" as an example for fan characteristics.

Below tables on the right show air flows at "H-Speed" in each ESP for field setting.

Allowable ESP selections are listed in the first column.

Select ESP setting according to resistance of a connected duct.

Controller can be used to change indoor unit fan speed "H", "M", and "L".

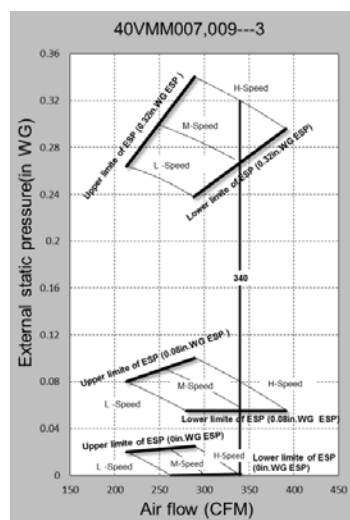


Figure 6 – Fan Performance 007, 009

Table 12 – Fan Performance 007, 009

External Static Pressure	Fan speed	Range of available air flow rate in H-Speed					
		Max Point		Mid Point		Min Point	
		Max CFM	SP(in)	Mid CFM	SP(in)	Min CFM	SP(in)
0.04	H	391	0.00	340	0.04	289	0.07
0.08	H	391	0.06	340	0.08	289	0.10
0.12	H	391	0.09	340	0.12	289	0.15
0.16	H	391	0.14	340	0.16	289	0.18
0.20	H	391	0.18	340	0.20	289	0.22
0.24	H	391	0.20	340	0.24	289	0.27
0.28	H	391	0.24	340	0.28	289	0.31
0.32	H	391	0.30	340	0.32	289	0.34

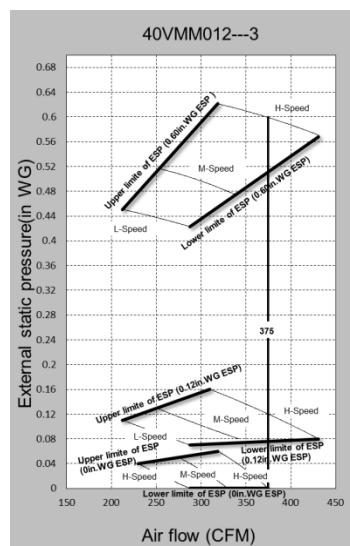


Figure 7 – Fan Performance 012

Table 13 – Fan Performance 012

External Static Pressure	Fan Speed	Range of available air flow rate in H-Speed					
		Max Point		Mid Point		Min Point	
		Max CFM	SP(in)	Mid CFM	SP(in)	Min CFM	SP(in)
0.04	H	410	0.00	375	0.04	319	0.09
0.08	H	431	0.04	375	0.08	319	0.12
0.12	H	431	0.08	375	0.12	319	0.16
0.16	H	431	0.12	375	0.16	319	0.20
0.20	H	431	0.16	375	0.20	319	0.24
0.24	H	431	0.20	375	0.24	319	0.28
0.28	H	431	0.24	375	0.28	319	0.32
0.32	H	431	0.28	375	0.32	319	0.36
0.36	H	431	0.32	375	0.36	319	0.40
0.40	H	431	0.36	375	0.40	319	0.44
0.44	H	431	0.40	375	0.44	319	0.48
0.48	H	431	0.45	375	0.48	319	0.50
0.52	H	431	0.49	375	0.52	319	0.54
0.56	H	431	0.53	375	0.56	319	0.58
0.60	H	431	0.57	375	0.60	319	0.62

Legend:

SP – Static Pressure

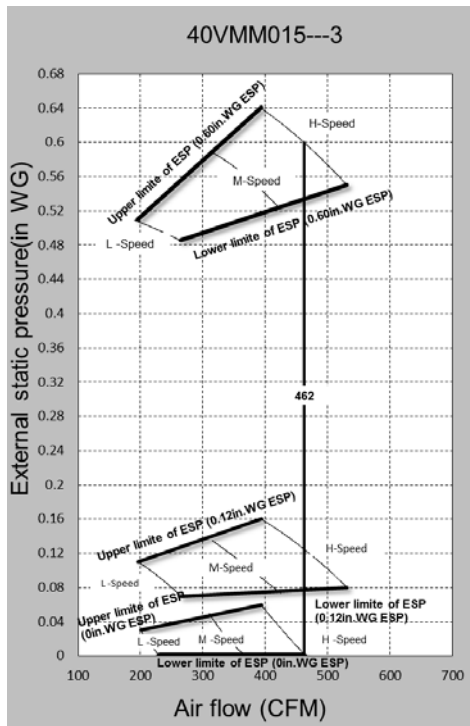


Figure 8 – Fan Performance 015

Table 14 – Fan Performance 015

External Static Pressure	Fan Speed	Rang of available air flow rate in H-Speed					
		Max Point		Mid Point		Min Point	
		Max CFM	SP(in)	Mid CFM	SP(in)	Min CFM	SP(in)
0.04	H	531	0.00	462	0.04	393	0.07
0.08	H	531	0.04	462	0.08	393	0.11
0.12	H	531	0.08	462	0.12	393	0.16
0.16	H	531	0.11	462	0.16	393	0.20
0.20	H	531	0.15	462	0.20	393	0.24
0.24	H	531	0.20	462	0.24	393	0.29
0.28	H	531	0.24	462	0.28	393	0.33
0.32	H	531	0.28	462	0.32	393	0.37
0.36	H	531	0.27	462	0.36	393	0.46
0.40	H	531	0.31	462	0.40	393	0.50
0.44	H	531	0.36	462	0.44	393	0.54
0.48	H	531	0.40	462	0.48	393	0.58
0.52	H	531	0.47	462	0.52	393	0.56
0.56	H	531	0.51	462	0.56	393	0.60
0.60	H	531	0.55	462	0.60	393	0.64

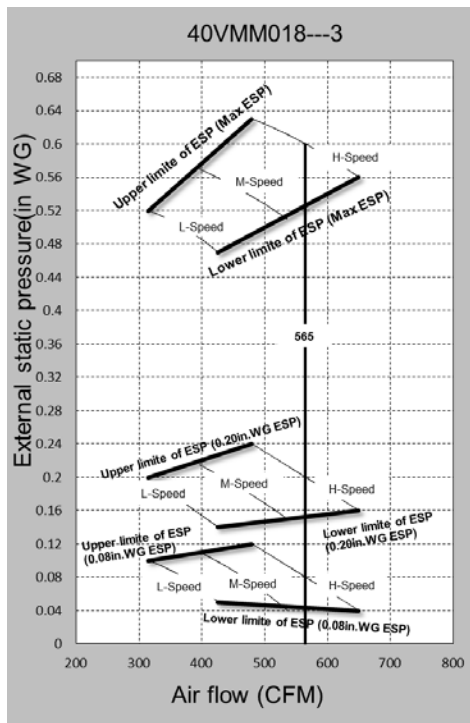


Figure 9 – Fan Performance 018

Table 15 – Fan Performance 018

External Static Pressure	Fan Speed	Rang of available air flow rate in H-Speed					
		Max Point		Mid Point		Min Point	
		Max CFM	SP(in)	Mid CFM	SP(in)	Min CFM	SP(in)
0.04	H	650	0.01	565	0.04	480	0.08
0.08	H	650	0.04	565	0.08	480	0.12
0.12	H	650	0.09	565	0.12	480	0.16
0.16	H	650	0.10	565	0.14	480	0.18
0.20	H	650	0.16	565	0.20	480	0.24
0.24	H	650	0.20	565	0.24	480	0.28
0.28	H	650	0.23	565	0.28	480	0.31
0.32	H	650	0.27	565	0.32	480	0.35
0.36	H	650	0.31	565	0.36	480	0.40
0.40	H	650	0.35	565	0.40	480	0.44
0.44	H	650	0.41	565	0.44	480	0.48
0.48	H	650	0.45	565	0.48	480	0.52
0.52	H	650	0.49	565	0.53	480	0.55
0.56	H	650	0.53	565	0.57	480	0.59
0.60	H	650	0.56	565	0.60	480	0.63

Legend:

SP – Static Pressure

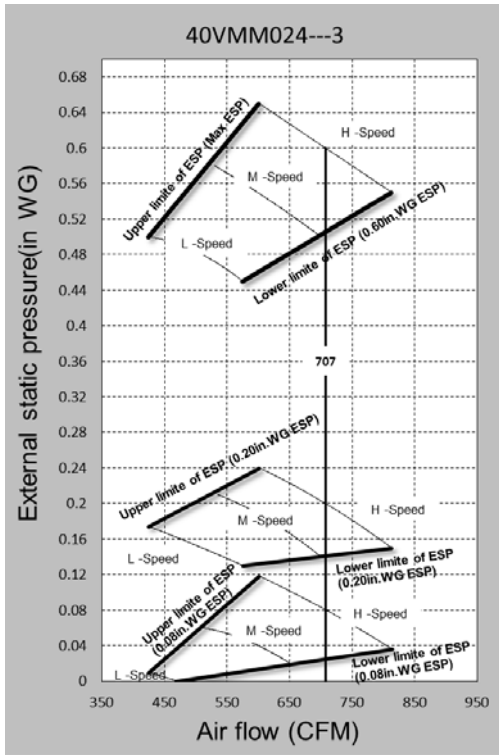


Figure 10 - Fan Performance 024

Table 16 – Fan Performance 024

External Static Pressure	Fan Speed	Rang of available air flow rate in H-Speed					
		Max Point		Mid Point		Min Point	
		Max CFM	SP(in)	Mid CFM	SP(in)	Min CFM	SP(in)
0.04	H	813	0.01	707	0.04	601	0.08
0.08	H	813	0.04	707	0.08	601	0.12
0.12	H	813	0.09	707	0.12	601	0.16
0.16	H	813	0.12	707	0.16	601	0.20
0.20	H	813	0.15	707	0.20	601	0.24
0.24	H	813	0.20	707	0.24	601	0.28
0.28	H	813	0.24	707	0.28	601	0.32
0.32	H	813	0.28	707	0.32	601	0.35
0.36	H	813	0.32	707	0.36	601	0.39
0.40	H	813	0.36	707	0.40	601	0.43
0.44	H	813	0.40	707	0.44	601	0.47
0.48	H	813	0.44	707	0.48	601	0.51
0.52	H	813	0.48	707	0.52	601	0.55
0.56	H	813	0.52	707	0.56	601	0.58
0.60	H	813	0.55	707	0.60	601	0.64

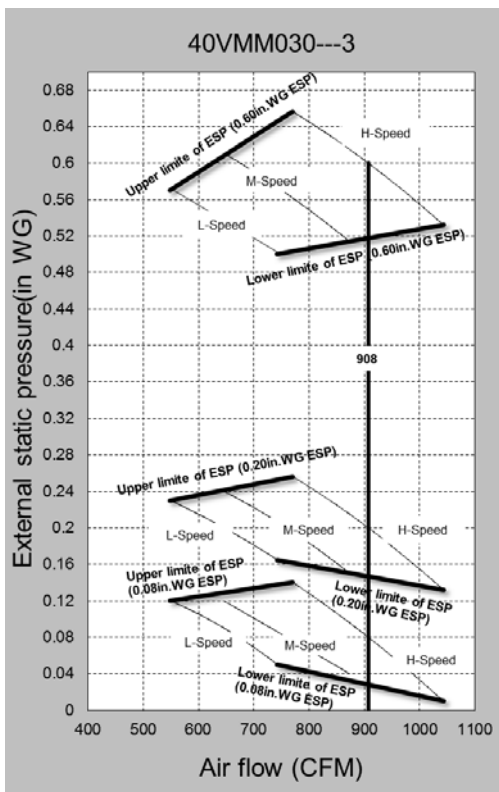


Figure 11 – Fan Performance 030

Table 17 – Fan Performance 030

External Static Pressure	Fan Speed	Rang of available air flow rate in H-Speed					
		Max Point		Mid Point		Min Point	
		Max CFM	SP(in)	Mid CFM	SP(in)	Min CFM	SP(in)
0.04	H	990	0.00	908	0.04	771	0.11
0.08	H	1043	0.01	908	0.08	771	0.14
0.12	H	1043	0.05	908	0.12	771	0.19
0.16	H	1043	0.09	908	0.16	771	0.22
0.20	H	1043	0.13	908	0.20	771	0.26
0.24	H	1043	0.17	908	0.24	771	0.30
0.28	H	1043	0.21	908	0.28	771	0.34
0.32	H	1043	0.25	908	0.32	771	0.38
0.36	H	1043	0.29	908	0.36	771	0.42
0.40	H	1043	0.33	908	0.40	771	0.46
0.44	H	1043	0.37	908	0.44	771	0.50
0.48	H	1043	0.41	908	0.48	771	0.54
0.52	H	1043	0.44	908	0.52	771	0.59
0.56	H	1043	0.48	908	0.56	771	0.63
0.60	H	1043	0.53	908	0.60	771	0.66

Legend:

SP – Static Pressure

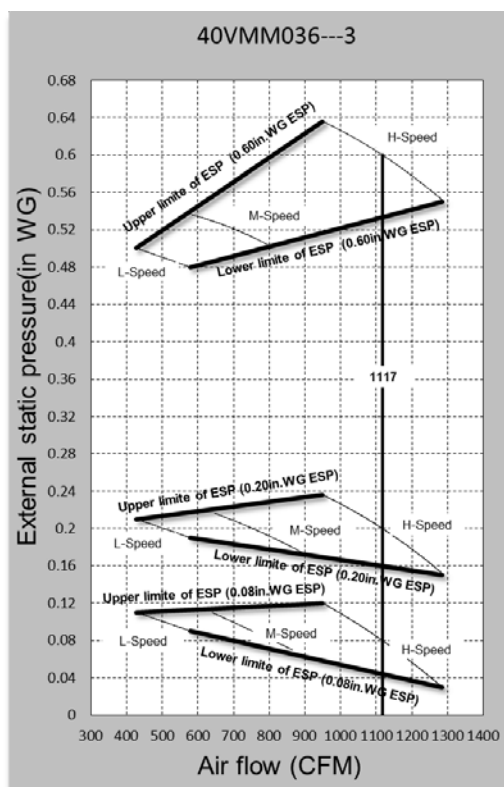


Figure 12 – Fan Performance 036

Table 18 – Fan Performance 036

External Static Pressure	Fan Speed	Rang of available air flow rate in H-Speed					
		Max Point		Mid Point		Min Point	
		Max CFM	SP(in)	Mid CFM	SP(in)	Min CFM	SP(in)
0.04	H	1160	0.00	1117	0.02	949	0.08
0.08	H	1285	0.03	1117	0.08	949	0.12
0.12	H	1285	0.06	1117	0.12	949	0.17
0.16	H	1285	0.08	1117	0.16	949	0.21
0.20	H	1285	0.15	1117	0.20	949	0.24
0.24	H	1285	0.16	1117	0.24	949	0.29
0.28	H	1285	0.22	1117	0.26	949	0.30
0.32	H	1285	0.26	1117	0.30	949	0.34
0.36	H	1285	0.30	1117	0.34	949	0.38
0.40	H	1285	0.34	1117	0.38	949	0.42
0.44	H	1285	0.38	1117	0.42	949	0.46
0.48	H	1285	0.42	1117	0.46	949	0.50
0.52	H	1285	0.46	1117	0.50	949	0.54
0.56	H	1285	0.50	1117	0.54	949	0.58
0.60	H	1285	0.55	1117	0.60	949	0.64

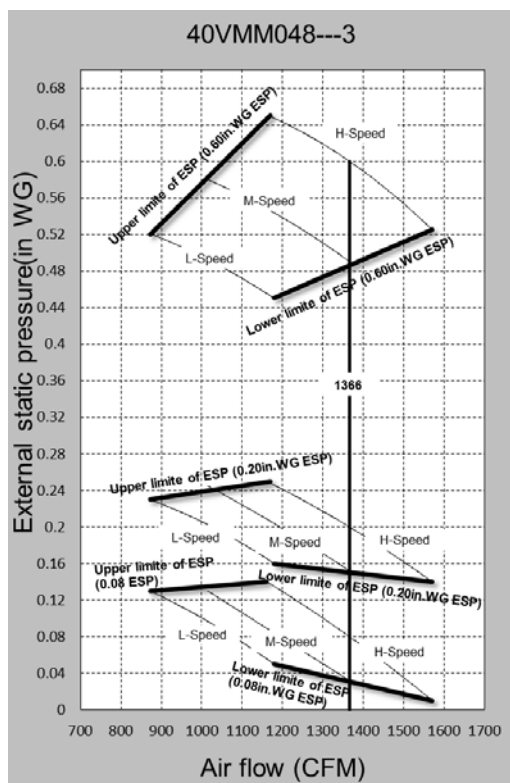


Figure 13 – Fan Performance 048

Table 19 – Fan Performance 048

External Static Pressure	Fan speed	Rang of available air flow rate in H-Speed					
		Max Point		Mid Point		Min Point	
		Max CFM	SP(in)	Mid CFM	SP(in)	Min CFM	SP(in)
0.04	H	1460	0.00	1366	0.04	1161	0.13
0.08	H	1571	0.01	1366	0.08	1161	0.14
0.12	H	1571	0.08	1366	0.12	1161	0.16
0.16	H	1571	0.12	1366	0.16	1161	0.20
0.20	H	1571	0.14	1366	0.20	1161	0.25
0.24	H	1571	0.20	1366	0.24	1161	0.28
0.28	H	1571	0.24	1366	0.28	1161	0.32
0.32	H	1571	0.26	1366	0.32	1161	0.37
0.36	H	1571	0.30	1366	0.36	1161	0.41
0.40	H	1571	0.34	1366	0.40	1161	0.45
0.44	H	1571	0.38	1366	0.44	1161	0.49
0.48	H	1571	0.42	1366	0.48	1161	0.53
0.52	H	1571	0.44	1366	0.52	1161	0.57
0.56	H	1571	0.48	1366	0.56	1161	0.61
0.60	H	1571	0.52	1366	0.60	1161	0.65

Legend:

SP – Static Pressure

VII. Sound Data

1. Sound Pressure Levels

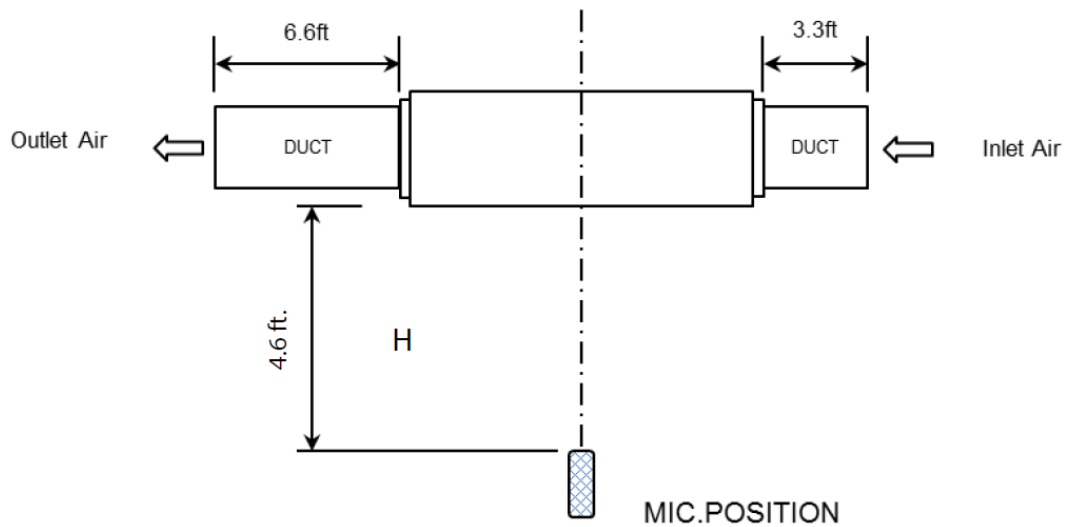


Figure 14 – Overall Sound Levels

Table 20 – Cooling Mode

Model	H	M	L
40VMM007---3	30.9	29.3	28.0
40VMM009---3	32.2	30.9	29.3
40VMM012---3	36.1	32.0	30.0
40VMM015---3	38.5	34.5	31.6
40VMM018---3	41.1	37.7	35.3
40VMM024---3	41.5	38.6	36.4
40VMM030---3	46.5	43.0	40.8
40VMM036---3	45.9	42.6	38.3
40VMM048---3	50.4	47.2	44.7

Table 21 – Heating Mode

Model	H	M	L
40VMM007---3	31.3	29.2	28.1
40VMM009---3	31.9	30.0	28.2
40VMM012---3	34.4	30.4	28.5
40VMM015---3	38.3	33.9	31.9
40VMM018---3	41.1	38.2	35.5
40VMM024---3	41.8	37.8	35.8
40VMM030---3	46.9	43.5	40.7
40VMM036---3	46.2	42.2	39.2
40VMM048---3	50.8	47.5	44.7

NOTE: Units are dB(A)

2. NC Curves

NOTES:

External Static Pressure: 0.1in. (25Pa)

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

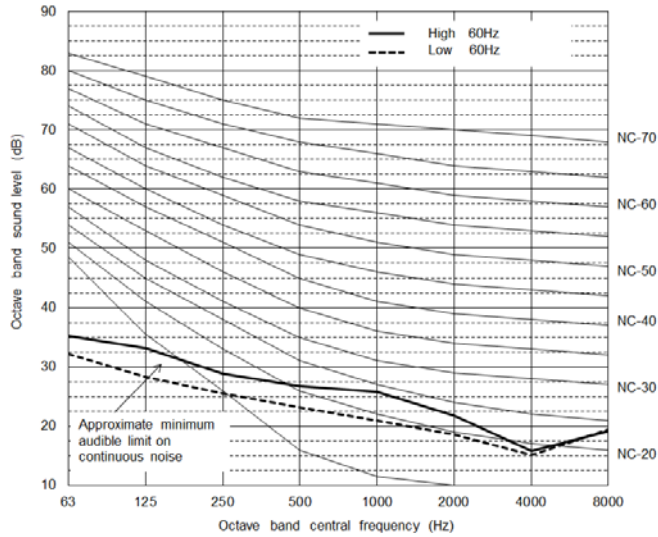


Figure 15 – 40VMM007---3

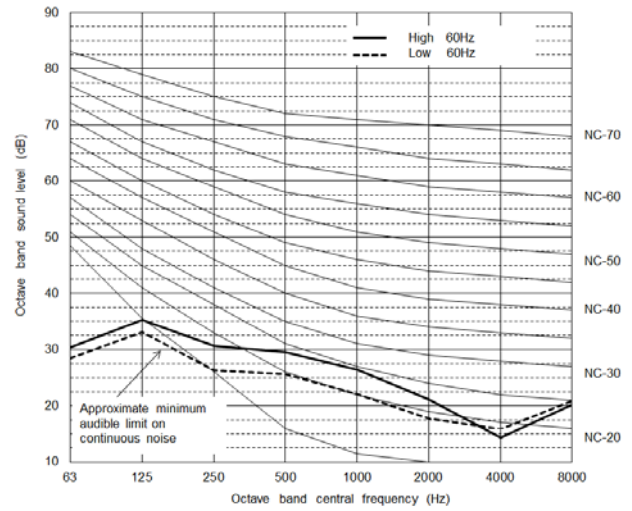


Figure 16 – 40VMM009---3

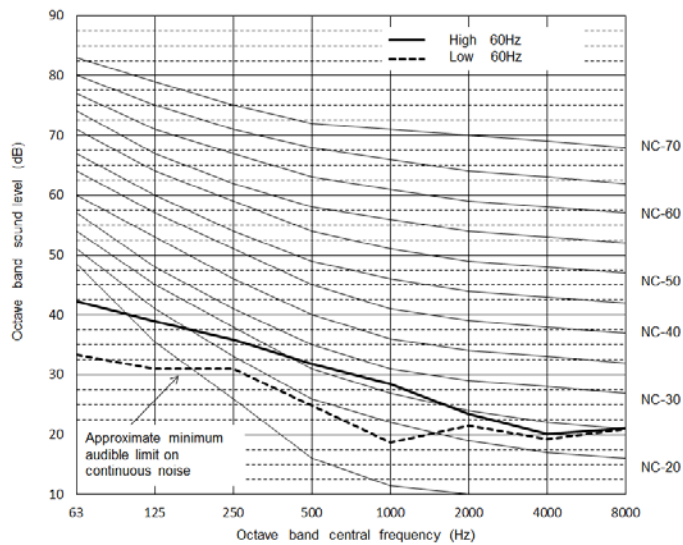


Figure 17 – 40VMM012---3

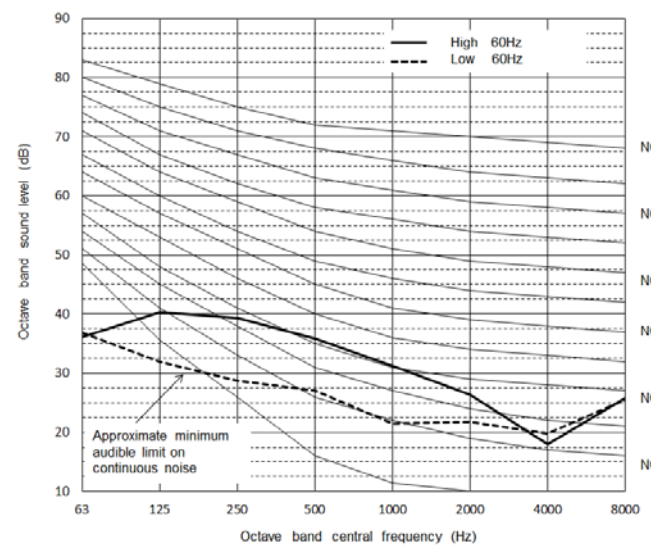


Figure 18 – 40VMM015---3

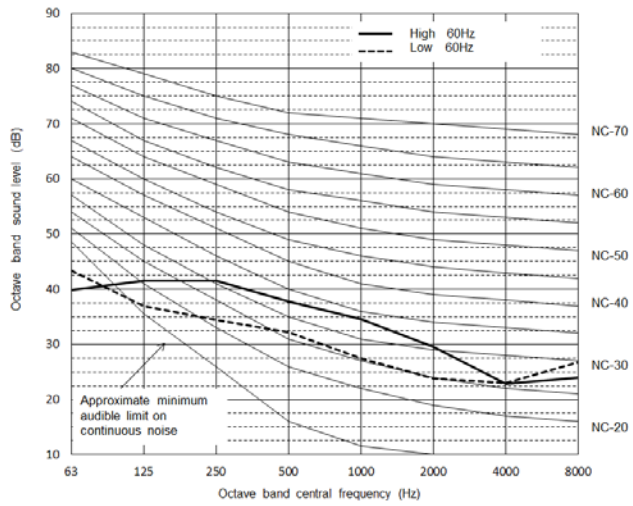


Figure 19 – 40VMM018---3

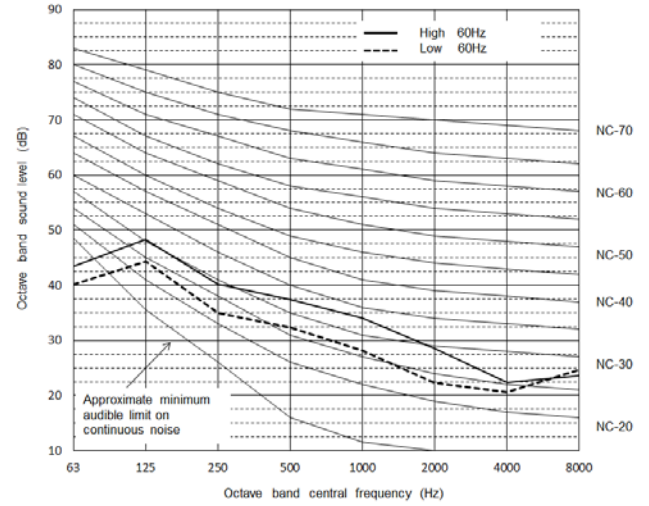


Figure 20 – 40VMM024---3

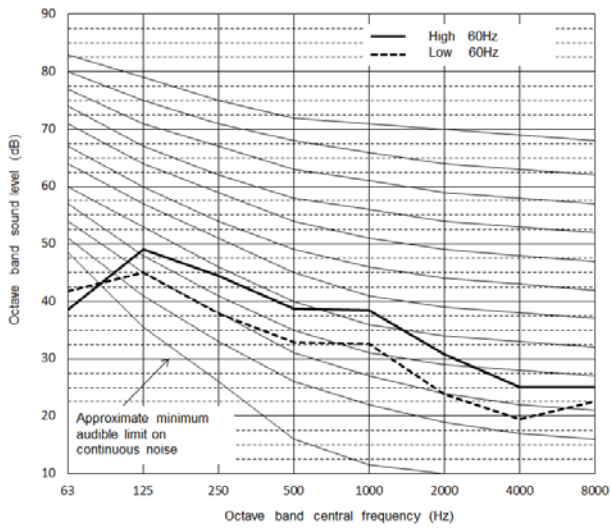


Figure 21 – 40VMM030---3

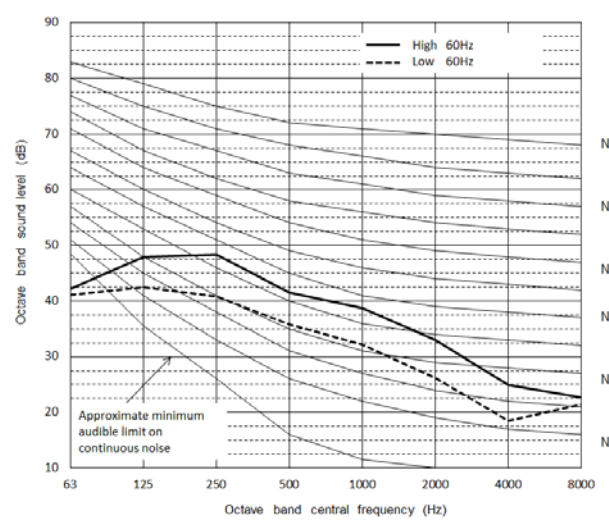


Figure 22 – 40VMM036---3

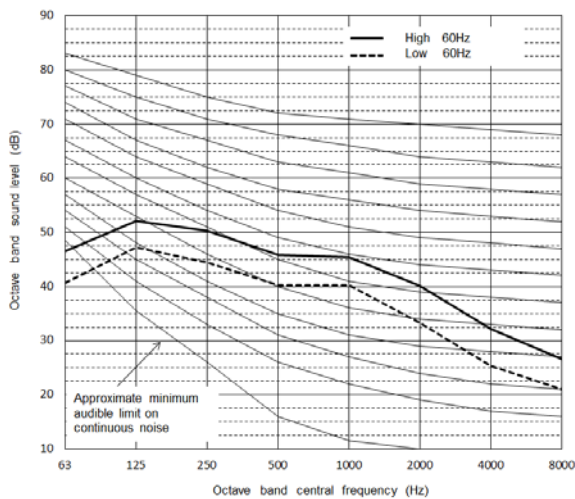


Figure 23 – 40VMM048---3

VIII. Capacity Data Tables

Table 22 – Cooling Capacity

Model	Unit size	Indoor air temp.											
		68 °FDB/57 °FWB		71 °FDB/60 °FWB		75 °FDB/63 °FWB		80 °FDB/67 °FWB		85 °FDB/71 °FWB		90 °FDB/75 °FWB	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
40VMM	7	4.11	4.1	4.98	4.98	5.84	5.80	7.00	6.37	7.46	6.62	7.93	6.85
	9	5.28	5.2	6.40	5.89	7.51	6.52	9.00	7.18	9.60	7.43	10.19	7.63
	12	7.04	6.4	8.53	6.88	10.02	7.68	12.00	8.52	12.79	8.77	13.59	9.00
	15	8.80	7.9	10.66	8.55	12.52	9.55	15.00	10.60	15.99	10.91	16.98	11.18
	18	11.15	10.	13.50	10.76	15.86	12.00	19.00	13.32	20.26	13.70	21.51	14.03
	24	14.08	12.	17.06	13.93	20.03	15.52	24.00	17.20	25.59	17.71	27.17	18.15
	30	17.60	15.	21.32	17.05	25.04	19.02	30.00	21.11	31.98	21.73	33.97	22.26
	36	21.12	19.	25.59	20.73	30.05	23.12	36.00	25.64	38.38	26.40	40.76	27.06
	48	28.17	24.	34.12	26.44	40.07	29.54	48.00	32.83	51.17	33.75	54.35	34.53

Rated Condition: Evaporation temperature is 42.8°F with high speed airflow.

Table 23 – Heating Capacity

Model	Unit size	Indoor air temp.					
		61 °FDB		64 °FDB		67 °FDB	
		TC		TC		TC	
40VMM	7	8.48		8.32		8.16	
	9	10.60		10.40		10.20	
	12	14.31		14.04		13.77	
	15	18.02		17.68		17.34	
	18	22.27		21.84		21.42	
	24	28.63		28.08		27.54	
	30	36.05		35.37		34.68	
	36	44.53		43.69		42.84	
	48	57.25		56.17		55.08	

Rated Condition: Condensation temperature is 114.8°F.

TC = Total capacity; KBTU/h

SC = Sensible capacity; KBTU/h

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