



VersaPro™ Series 96% AFUE Gas Furnace

96% AFUE



Contents:

1 NOMENCLATURE.....	2
2 SPECIFICATIONS.....	3
3 COMBUSTION SYSTEM SPECIFICATIONS.....	5
4 DIMENSIONS.....	6
5 AIRFLOW DATA.....	7
6 PISTON.....	10
7 WIRING DIAGRAMS.....	11



Features:

- Durable aluminized steel tubular heat exchanger. Stainless-steel secondary heat exchanger.
- Two-stage gas valve.
- Hot surface igniter.
- Quiet multi-speed ECM circulator blower motor.
- Control board with self-diagnostics and Low-voltage terminal block.
- Constant air volume control, 0-250pa static pressure automatically adapts to different installation requirements
- R454b refrigerant leakage sensor adaptable
- Natural gas and propane (LP) convertible.
- Designed for multi-position installation: Up flow, horizontal. Industry-standard cabinet sizes for easy replacement, installation and add-on cooling.
- Convenient left or right connection for gas and electric service.
- Removable bottom for side or bottom return applications.
- UL60335-2-40 certified

1 Nomenclature

M	G	M	96	E	E	60	B	3	N	B
1	2	3	4	5	6	7	8	9	10	11

Legend		
No.	Code	Remarks
1	M	MRCOOL
2	G	Gas Furnace
3	M	M = Multi-position (Upflow/Horizontal)
4	96	AFUE: 96: 96% AFUE 80: 80% AFUE
5	E	S = Single Stage / Multi-Speed H = Two-Stage / Multi-Speed E = Two-Stage / Consistent-Flow DC Motor
6	E	Motor: C = PSC E = ECM
7	060	BTU
8	B	Cabinet Size: A = 14.5, B = 17.5, C = 21, D = 24.5
9	3	CFM (3 = 1200, 4 = 1600, 5 = 2000)
10	N	X = Low Nox, N = No
11	B	3rd Generation

2 Specifications

	MGM96EE060B3NB	MGM96EE080B3NB	MGM96EE080C4NB
FUEL TYPE	Natural/Propane Gas	Natural/Propane Gas	Natural/Propane Gas
GAS HEATING PERFORMANCE			
High Fire Input (BTU/h)	60,000	80,000	80,000
High Fire Output (BTU/h)			
Natural Gas	57,000	76,000	76,000
LP Gas	57,000	76,000	76,000
Low Fire Input (BTU/h)	39,000	52,000	52,000
Low Fire Output (BTU/h)			
Natural Gas	37,000	49,000	49,000
LP Gas	37,000	49,000	49,000
AFUE	96	96	96
Available AC @ 0.5" ESP	1.5/2/2.5/3	2.5/3/3.5/4	2.5/3/3.5/4
Temperature Rise Range (° F)	30-60	35-65	35-65
Static pressure(in.w.c)			
Heating	0.12	0.15	0.15
Cooling	0.5	0.5	0.5
ELECTRICAL DATA			
Voltage/Phase(60Hz)	115	115	115
Min. / Max. Voltage	104/127	104/127	104/127
Min. Circuit Ampacity	8	8	7.8
Max. Overcurrent Protection	15	15	15
FAN MOTOR			
Motor Type	ECM	ECM	ECM
Horsepower	3/4	3/4	3/4
Rated RPM	1050	1050	1050
Full Load Amps (FLA)	8	8	7.8
Capacitor (uF)	/	/	/
CIRCULATOR BLOWER			
Material	Metal	Metal	Metal
Size (D x H) (in.)	12-3/8 x 8	12-3/8 x 8	12-6/8 x 11-1/4
Vent Diameter ¹	2"/3"	2"/3"	2"/3"
No. of Burners	3	4	4
Speed Mode Number	5	5	5

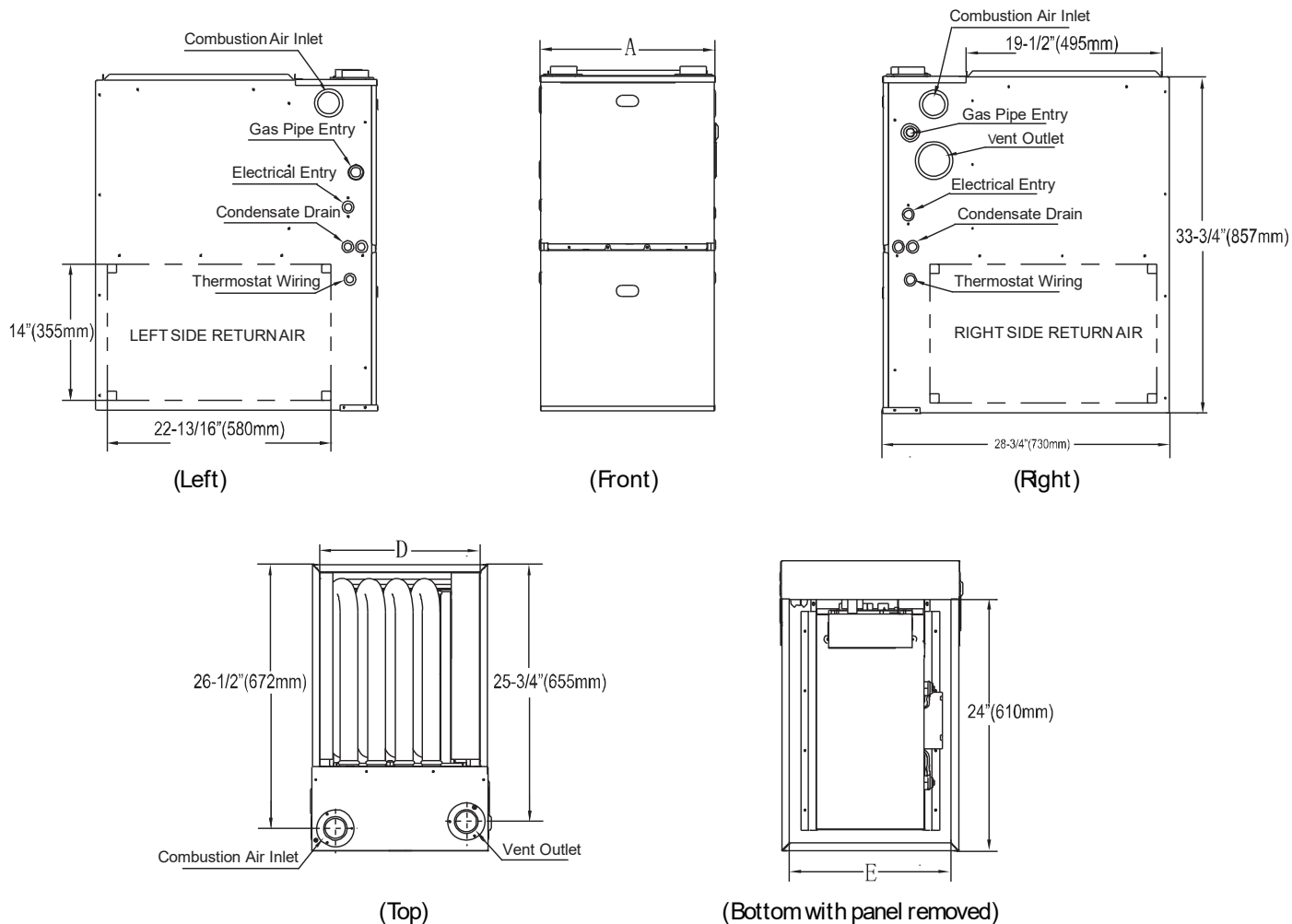
Specifications

	MGM96EE100C5NB	MGM96EE120D5NB
FUEL TYPE	Natural/Propane Gas	Natural/Propane Gas
GAS HEATING PERFORMANCE		
High Fire Input (BTU/h)	100000	120000
High Fire Output (BTU/h)		
Natural Gas	95000	115000
LP Gas	95000	115000
Low Fire Input (BTU/h)	70000	84000
Low Fire Output (BTU/h)		
Natural Gas	67000	80500
LP Gas	67000	80500
AFUE	96	96
Available AC @ 0.5" ESP	3.5/4/4.5/5	3.5/4/4.5/5
Temperature Rise Range (° F)	35-65	40-70
Static pressure(in.w.c)		
Heating	0.2	0.2
Cooling	0.5	0.5
ELECTRICAL DATA		
Voltage/Phase(60Hz)	115	115
Min. / Max. Voltage	104/127	104/127
Min. Circuit Ampacity	11.5	10.5
Max. Overcurrent Protection	20	20
FAN MOTOR		
Motor Type	ECM	ECM
Horsepower	1	1
Rated RPM	1050	1050
Full Load Amps (FLA)	11.5	10.5
Capacitor (uF)	/	/
CIRCULATOR BLOWER		
Material	Metal	Metal
Size (D x H) (in.)	12-6/8 x 11-1/4	12-6/8 x 11-1/4
Vent Diameter ¹	2"/3"	3"
No. of Burners	5	6
Speed Mode Number	5	5

3 Combustion System Specifications

Model			060B3NB	080B3NB	080C4NB	100C5NB	120D5NB
Max. Inlet Gas Press	Natural Gas	in.w.c	10.5	10.5	10.5	10.5	10.5
	Propane Gas (LP)	in.w.c	13	13	13	13	13
Min. Inlet Gas Press	Natural Gas	in.w.c	4.5	4.5	4.5	4.5	4.5
	Propane Gas (LP)	in.w.c	11	11	11	11	11
Natural Gas Manifold Pressure(High fire)		in.w.c	3.5	3.5	3.5	3.5	3.5
Natural Gas Manifold Pressure(Low fire)		in.w.c	1.6	1.6	1.6	1.6	1.6
Propane Gas Manifold Pressure(High fire)		in.w.c	10	10	10	10	10
Propane Gas Manifold Pressure(Low fire)		in.w.c	4	4	4	4	4
Natural Gas Factory Orifice (0-2000 feet)		#	45	45	45	45	45
Propane Gas (LP) Factory Orifice (0-2000 feet)		#	55	55	55	55	55
Gas Connection Size		in. NPT	1/2	1/2	1/2	1/2	1/2
Igniton Device			Hot surface				
Number of Burners		#	3	4	4	5	6
Primary Heat exchanger Diameter		Inch	1-6/8	1-6/8	1-6/8	1-6/8	1-6/8
Primary Heat exchanger		# tubes	3	4	4	5	6
Secondary Heat Exchanger Diameter		Inch	3/8	3/8	3/8	3/8	3/8
Secondary Heat Exchanger		# tubes	33	33	39	39	48
Flue Vent Diameter		Inch	2"/3"	2"/3"	2"/3"	2"/3"	3"
Safety Switch Settings							
Pressure Switch Factory Setting		High	in.w.c	1.1	1.1	1.1	1.1
Pressure Switch Factory Setting		Low	in.w.c	0.55	0.55	0.55	0.55
Rollout switch - resettable		Off/On	°F	300	300	300	300
Inlet High Temperature Limit switch - fixed		Off/On	°F	150/120	130/100	150/120	150/120

4 Dimensions



FURNACE SIZE	A CABINET WIDTH IN.	D SUPPLY AIR WIDTH IN.	E RETURN AIR WIDTH IN.	NET/SHIP WT (lbs)
60B3NB	17.5	16	15-57/32	135/147.5
80B3NB	17.5	16	15-57/32	141/153
80C4NB	21	19.5	19-13/32	152/165
100C5NB	21	19.5	19-13/32	162/173
120D5NB	24.5	23	22-27/32	176/190

5 Airflow Data

Air Delivery - CFM without filter

FURNACE SIZE	RETURN-AIR INLET	SPEED	EXTERNAL STATIC PRESSURE(IN.W.C)											
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
60B	Bottom or Sides	H	CFM	1339	1327	1338	1309	1321	1320	1342	1334	1316	1335	
			Temp Rise-1st stage°F	--	--	--	--	--	--	--	--	--	--	--
			Temp Rise-2nd stage°F	37.3	37.7	37.5	38.3	38.1	38.1	37.6	37.9	38.5	38.0	38.0
		Mid-H	CFM	1124	1118	1102	1106	1096	1099	1102	1109	1089	1105	1105
			Temp Rise-1st stage°F	--	--	--	--	--	--	--	--	--	--	--
			Temp Rise-2nd stage°F	44.2	44.5	45.2	45.1	45.6	45.5	45.5	45.3	46.2	45.6	45.6
		Mid	CFM	880	870	853	858	865	858	854	866	871	839	839
			Temp Rise-1st stage°F	36.7	37.2	37.9	37.8	37.6	38.0	38.2	37.8	37.6	39.1	39.1
			Temp Rise-2nd stage°F	56.3	57.0	58.1	57.9	57.5	58.0	58.4	57.7	57.4	59.7	59.7
		Mid-L	CFM	779	768	762	756	740	753	757	747	785	766	766
			Temp Rise-1st stage°F	41.4	42.0	42.4	42.8	43.8	43.1	43.0	43.6	41.6	42.7	42.7
			Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--
Low	CFM	553	586	543	569	552	562	584	572	575	567	567		
	Temp Rise-1st stage°F	58.1	54.9	59.3	56.7	58.5	57.6	55.5	56.8	56.5	57.4	57.4		
	Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--		
80B	Bottom or Sides	H	CFM	1230	1233	1222	1226	1214	1236	1255	1244	1249	1251	
			Temp Rise-1st stage°F	--	--	--	--	--	--	--	--	--	--	--
			Temp Rise-2nd stage°F	53.9	53.8	54.4	54.3	54.8	53.9	53.2	53.7	53.6	53.6	53.6
		Mid-H	CFM	1052	1052	1041	1044	1037	1034	1048	1046	1024	1076	1076
			Temp Rise-1st stage°F	41.0	41.0	41.5	41.5	41.8	42.1	41.5	41.7	42.7	40.7	40.7
			Temp Rise-2nd stage°F	62.8	62.8	63.6	63.5	64.0	64.3	63.4	63.7	65.1	62.1	62.1
		Mid	CFM	849	861	854	853	855	844	855	848	834	859	859
			Temp Rise-1st stage°F	50.6	50.0	50.4	50.5	50.5	51.2	50.6	51.2	52.1	50.7	50.7
			Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--
		Mid-L	CFM	754	771	765	764	728	761	782	739	758	758	758
			Temp Rise-1st stage°F	56.9	55.7	56.2	56.3	59.2	56.8	55.3	58.5	57.2	57.3	57.3
			Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--
Low	CFM	569	554	571	572	568	572	598	594	572	548	548		
	Temp Rise-1st stage°F	--	--	--	--	--	--	--	--	--	--	--		
	Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--		
80C	Bottom or Sides	H	CFM	1303	1301	1281	1291	1289	1291	1290	1295	1298	1253	
			Temp Rise-1st stage°F	--	--	--	--	--	--	--	--	--	--	--
			Temp Rise-2nd stage°F	50.8	50.9	51.8	51.5	51.6	51.7	51.6	51.6	51.6	51.6	53.6
		Mid-H	CFM	1120	1127	1134	1130	1135	1138	1132	1143	1107	1112	1112
			Temp Rise-1st stage°F	38.5	38.3	38.1	38.3	38.2	38.2	38.5	38.2	38.5	39.4	39.4
			Temp Rise-2nd stage°F	59.0	58.7	58.4	58.7	58.5	58.4	58.8	58.3	60.3	60.1	60.1
		Mid	CFM	908	894	896	902	896	894	864	891	935	880	880
			Temp Rise-1st stage°F	47.3	48.1	48.0	47.8	48.2	48.4	50.1	48.7	46.5	49.5	49.5
			Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--
		Mid-L	CFM	818	819	825	800	813	803	831	838	791	802	802
			Temp Rise-1st stage°F	52.4	52.4	52.1	53.8	53.1	53.8	52.1	51.8	54.9	54.2	54.2
			Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--
Low	CFM	577	628	605	624	615	601	628	573	590	588	588		
	Temp Rise-1st stage°F	--	--	--	--	--	--	--	--	--	--	--		
	Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--		
100C	Bottom or Sides	H	CFM	1752	1764	1768	1781	1774	1786	1762	1802	1792	1786	
			Temp Rise-1st stage°F	--	--	--	--	--	--	--	--	--	--	--
			Temp Rise-2nd stage°F	47.5	47.3	47.3	47.0	47.3	47.0	47.7	46.8	47.2	47.4	47.4
		Mid-H	CFM	1512	1506	1536	1523	1514	1509	1529	1551	1565	1532	1532
			Temp Rise-1st stage°F	38.6	38.8	38.1	38.5	38.8	39.0	38.6	38.1	37.9	38.8	38.8
			Temp Rise-2nd stage°F	54.8	55.1	54.1	54.6	55.1	55.3	54.7	54.0	53.6	54.8	54.8
		Mid	CFM	1354	1354	1362	1370	1357	1381	1389	1394	1416	1383	1383
			Temp Rise-1st stage°F	42.9	43.0	42.8	42.6	43.1	42.4	42.3	42.2	41.7	42.7	42.7
			Temp Rise-2nd stage°F	61.1	61.1	60.8	60.6	61.2	60.3	60.0	59.9	59.0	60.5	60.5
		Mid-L	CFM	1165	1165	1176	1164	1185	1190	1186	1205	1174	1199	1199
			Temp Rise-1st stage°F	49.7	49.7	49.3	49.9	49.2	49.0	49.2	48.6	49.9	49.0	49.0
			Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--
Low	CFM	994	1025	1018	1024	1032	1026	1035	988	1005	1041	1041		
	Temp Rise-1st stage°F	58.1	56.4	56.9	56.6	56.3	56.7	56.3	59.0	58.1	56.2	56.2		
	Temp Rise-2nd stage°F	--	--	--	--	--	--	--	--	--	--	--		

FURNACE SIZE	RETURN-AIR INLET	SPEED		EXTERNAL STATIC PRESSURE(IN.W.C)										
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
120D	Bottom or Sides	H	CFM	1926	1933	1915	1923	1916	1929	1971	1941	2036	1998	
			Temp Rise-1st stage °F	--	--	--	--	--	--	--	--	--	--	--
			Temp Rise-2nd stage °F	51.8	51.7	52.2	52.1	52.4	52.1	51.1	52.0	49.8	50.7	
		Mid-H	CFM	1721	1747	1716	1749	1760	1768	1778	1783	1747	1788	
			Temp Rise-1st stage °F	--	--	--	--	--	--	--	--	--	--	
			Temp Rise-2nd stage °F	57.8	57.0	58.1	57.1	56.8	56.6	56.4	56.3	57.5	56.4	
		Mid	CFM	1489	1497	1503	1504	1507	1488	1496	1518	1519	1568	
			Temp Rise-1st stage °F	46.7	46.6	46.4	46.5	46.5	47.1	47.0	46.4	46.4	45.1	
			Temp Rise-2nd stage °F	66.5	66.3	66.1	66.1	66.1	67.0	66.7	65.8	65.9	64.0	
		Mid-L	CFM	1384	1360	1365	1384	1382	1383	1379	1401	1421	1414	
			Temp Rise-1st stage °F	50.2	51.1	51.0	50.4	50.6	50.6	50.8	50.1	49.5	49.9	
			Temp Rise-2nd stage °F	--	--	--	--	--	--	--	--	--	--	
		Low	CFM	1165	1175	1162	1158	1158	1184	1186	1204	1201	1185	
			Temp Rise-1st stage °F	59.5	59.0	59.8	60.0	60.1	58.9	58.9	58.1	58.4	59.2	
			Temp Rise-2nd stage °F	--	--	--	--	--	--	--	--	--	--	

A filter is required for each return -air Inlet. Airflow performance Included 3/4-In. (19 mm) washable filter media such as contained In factory-authorized accessory filter rack. To determine airflow performance with this filter, assume an additional 0.1 in.w.c available external static pressure.

Filter Size Information - In.

FURNACE CASING WIDTH (IN.)	FILTER SIZE		FILTER TYPE
	SIDE RETURN (IN.)	BOTTOM RETURN (IN.)	
14-1/2	16X25	14X25	High Velocity (600 FPM)
17-1/2	16X25	16X25	
21	16X25	20X25	
24.5	16X25	24X25	

NOTES:

1. Air velocity through throwaway type filters may not exceed 300 feet per minute (91.4 m/min). All velocities over this require the use of high velocity filters.
2. Do not exceed 1800 CFM using a single side return and a 16x25 filter. For CFM greater than 1800, you may use two side returns or one side and the bottom or one side return with a transition to allow use of a 20x25 filter.

6 Piston

High Altitude Derate Orifice Size Chart (Natural and LP Gas*)

US installation

Input Rate KBTU/H	Number of Burner	Elevation(Ft)									
		0-2000		2000-4000		4000-6000		6000-8000		8000-10000	
		Nat	LP	Nat	LP	Nat	LP	Nat	LP	Nat	LP
60	3	45	55	47	56	48	57	49	58	50	59
80	4	45	55	47	56	48	57	49	58	50	59
100	5	45	55	47	56	48	57	49	58	50	59
120	6	45	55	47	56	48	57	49	58	50	59

*LP orifice based on 10 in.w.c manifold pressure

The input to the furnace must be checked AFTER reorificing.

High Altitude Derate Orifice Size Chart (Natural and LP Gas*)

Canada installation

Input Rate KBTU/H	Number of Burner	Elevation(Ft)									
		0-2000		2000-4000		4000-6000		6000-8000		8000-10000	
		Nat	LP	Nat	LP	Nat	LP	Nat	LP	Nat	LP
60	3	45	55	47	56	48	57	49	58	50	59
80	4	45	55	47	56	48	57	49	58	50	59
100	5	45	55	47	56	48	57	49	58	50	59
120	6	45	55	47	56	48	57	49	58	50	59

*LP orifice based on 10 in.w.c manifold pressure

The input to the furnace must be checked AFTER reorificing.

For Canada application, based on regulation that requires 10% derating between 2000-4500ft. orifice change is NOT required up to 4500ft.

7 Wiring Diagrams

MGM96EE060B3NB, MGM96EE080B3NB, MGM96EE080C4NB, MGM96EE100C5NB, MGM96EE120D5NB

WARNING: ELECTRIFICATION ON THE OUTDOOR MAIN BOARD, DO NOT TOUCH WHEN POWER IS ON.

To thermostat

WHITE W
YELLOW Y
BLUE B
BLACK C
PURPLE Y2
BLACK T3
BLACK T4
RED LPC
RED DTS

Note:

1. B terminal is connected and energized for heating operation.
2. W terminal is energized in defrosting operation.
3. LPC is available only for heat pump model.
4. CN28 is short circuit for cooling only model.

CODE	DESCRIPTION
--	Standby
-C	Cooling mode
-H	Heating mode
FC	Forced cooling mode
dF	Defrosting mode
CH	Abnormal signal

CODE	FAULT DESCRIPTION
E3	T3 sensor fault
E4	T4 sensor fault
E8	Capacity setting no set
E9	R110 resistor or drive chip software fault
P2	LPC protection
P4	Discharge temperature protection
P5	T3 high-temperature protection
AL	Ambient temperature limitation
H0	Communication fault between drive chip and main control chip
n1X	OFM overcurrent protection
n2X	Drive module overtemperature protection
n3X	DC bus voltage fault
n4X	Main control program no match driver program
n5X	OFM startup fault
n6X	Phase loss protection

n serial faults, alternately display n and xx

Force	Press 1 s	Forced cooling mode
Check	Press 6s	Forced defrosting mode
	Press 1 s	Check the system parameters

CODE	DESCRIPTION
CC	Compressor Contactor
COMP.	Compressor
CCH	Crankcase Heater
PEV	Pressure Equalizer Valve
T4	Ambient Temperature Sensor
T3	Pipe Temperature Sensor
HPC	High Pressure Cut-out Control
LPC	Low Pressure Cut-out Control
DTS	Discharge Temperature Switch
OFM	Outdoor Fan Motor
RC	Run Capacitor
RV	Reversing Valve

NUMBER	POINT CHECK CONTENT
1	Unit capacity
2	Operation mode
3	Current fan speed(Actual speed divided by 10, for example, 560R is represented by '56', 1050R is represented by 'A5', hexadecimal number A represents 10.)
4	Target fan speed(Actual speed divided by 10, for example, 560R is represented by '56', 1050R is represented by 'A5', hexadecimal number A represents 10.)
5	T3 temperature('F')(if the value is less than 100, the actual value is displayed. if over 100, divided by 10, 135 is represented by '13', if it is negative, '1.0' means -10, '.5' means -.5)
6	T4 temperature('F')(if the value is less than 100, the actual value is displayed. if over 100, divided by 10, 135 is represented by '13', if it is negative, '1.0' means -10, '.5' means -.5)
7	Compressor running time(day) (if the value is less than 100, the actual number of days is displayed. if over 100 and less than 1000, 360 days are represented by '36', if over 1000, 3600 days are represented by '3.6.')
8	Main control chip software version
9	Drive chip software version
10	Y1 signal state(1=ON, 0=OFF)
11	B signal state(1=ON, 0=OFF)
12	W signal state(1=ON, 0=OFF)
13	Y2 signal state(1=ON, 0=OFF)
14	RV condition (1=ON, 0=OFF)
15	High wind pattern (1=ON, 0=OFF)
16	Last fault code
17	Last second fault code
18	Last third fault code
19	-

Use copper conductors only

CAPACITY SETTING	MODEL	18K 1.5TON	24K 2TON	30K 2.5TON	36K 3TON	42K 3.5TON	48K 4TON	60K 5TON	61K 5TON
SW2	15.2AC FIN	010,0	001,0	001,0	010,1	011,1	100,1	100,1	100,1
	15.2AC MC	010,0	001,0	010,1	010,1	011,1	100,1	100,1	/
	15.2HP	011,0	001,0	001,0	010,1	011,1	100,1	100,1	100,1

Q/1 Definition of dial code switch	SW2 - 4 definition	MODEL	DESCRIPTION
means 0=OFF	100W Fan motor	15.2AC FIN	15.2 SEER Fin type heat exchanger cooling only system
means 1=ON	200W Fan motor	15.2AC MC	15.2 SEER Micro-channel heat exchanger cooling only system
		15.2HP	15.2 SEER heat exchanger heat pump system

*** The factory default**

SW1	SW1-1	SW1-2	SW1-3
ON	Reserved	Reserved	Reserved
OFF	Reserved	Reserved	Reserved
ON	Reserved	Reserved	Reserved
OFF	Reserved	Reserved	Reserved
ON	Defrosting cycle:30min	Defrosting cycle:30min	Defrosting cycle:30min
OFF	Defrosting cycle:60min	Defrosting cycle:60min	Defrosting cycle:60min

WARNING! CABINET MUST BE PERMANENTLY EARTHED CONFORM, AND ALL WIRING CONFORM TO UL60335. REPLACEMENT WIRES MUST BE THE SAME GAUGE AND INSULATION TYPE AS ORIGINAL WIRES.

High voltage line
 - Factory standard _____
 - Field installed - - - - -
Low voltage line
 - Factory standard _____
 - Factory optional - - - - -

The wiring diagram shown is for reference only, it may be different from the actual product.

Factory code	Date	Revision
16023000014756	Jan. 28th, 2024	D