

ENGINEERING SUBMITTALS- 2015.11.12

MINI SPLIT (WMMS) - MULTIPLE ZONE - DC INVERTER R410A

Any Mix and Match (59)2 (One Thermal Mode at One Time)

Cooling & Heat Pump - Up to 5 Indoor Units - 16 SEER

Brief Introduction

Wall mount mini split (WMMS) systems are designed for high performance, easy installation and service.

As the name reads, each multiple-zone WMMS system outdoor unit can power 1 to 5 indoor units. The indoor unit could be either wall, ceiling, ceiling/floor mount or recessed hung over closet or entrance. Any of these indoor unit configurations could be any mix and match. Remote control is standard and wall mount wired control is optional.

The outdoor unit is designed for horizontal venting, which makes condenser installation at tight place a piece of cake. Air is drawn through the coil from rear side of the unit and then discharged to the front horizontally.

These units are perfect choice for apartments, condos, lofts, multi-families and high-rise buildings in residential, commercial, institutional, industrial, hospitality and other applications.

With the most mini split models being developed and sold in the world, our products bring the owners and installers with a wide variety of applications and

Standard Features and Qualities

- 208-230/1/60 power input
- Cooling and heat pump
- **DC Inverter technology**
- **All indoor units stay same thermal mode at one time**
- Any mix & match indoor mounting/size
- High efficiency and quiet operation
- Wide working ambient ranges

System Options

- Indoor unit-HEPA filters
- Outdoor unit-Corrosion resistant coil



installation flexibilities.

Acoustically and thermally balanced design and systematically optimized system give each unit a healthy birth off the assembly line with quality and reliability. Each unit is fully tested with to keep unit from any possible component or system issue, while being filled with peace and satisfaction for customers all around the world.

One Sample System Layout (60CH)



- Built-in low ambient control
- DC compressors Sanyo, Mitsubishi, Etc.
- World-class control boards
- Outdoor unit-pre-charged with R410A
- Weather proof compact side discharge outdoor unit
- Heavy powder coated cabinet
- Flare nut connection valves
- Built to ETL/UL/AHRI standards
- Easy installation and maintenance

Accessories

Copper line sets, wire cables, wind baffles, Copper line set covers, condensing unit Brackets and foot risers...

ENGINEERING SUBMITTALS-WMMS-DC Inverter Inverter-Multiple Zone up to 5



1. INDOOR UNITS

A. Indoor Units-Wall Mount EW Models



Indoor Unit



Standard Remote Control

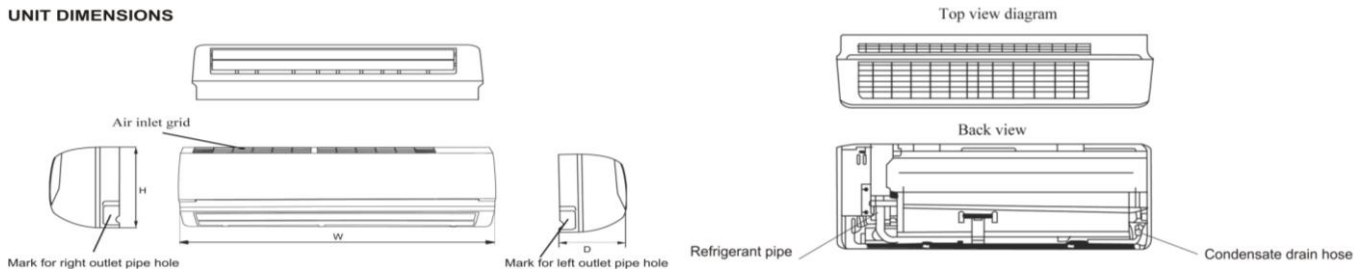
Thermal Performance and Electrical Data

Sizes	Max./Rated/Min. Cooling MBH	SHR	Heating MBH @ 47F/17F/5F	Suggested Ranges of ID Temperature AC < 90F; HP < 90F	Airflow CFM H/M/L	Sound Pressure dB(A) H/M/L	Input Power V/Ph/Hz	Input Power		Min. Wire Sizes IDU-ODU	HVAC Circuit Breaker/Fuse
								Watts	FLA		
09K	12.0 /9.0 /4.4	0.72	9.5 /8.8 /8.0		300 /253 /218	34 /30 /26	208-230/1/60	20	0.20	18 AWG	Fuse on Indoor PCB, 3 AMP. Circuit breaker 10AMP, If Required.
12K	14.0 /12.0 /4.5	0.72	13.0 /11.6 /9.1		330 /253 /218	36 /32 /26		20	0.20	18 AWG	
18K	21.5 /17.0 /6.8	0.72	18.7 /16.6 /13.8		460 /380 /320	45 /42 /40		30	0.25	18 AWG	
24K	26.5 /22.8 /9.6	0.71	27.4 /23.6 /20.6		470 /410 /350	48 /46 /44		45	0.45	18 AWG	

Notes:

- 1) MBH-1000 But/h. SHR-Sensible heat ratio. CFM-Cubic feet per minute. FLA-Full load amp. RLA-Rated load amp. LRA-Locked rotor amp. AC-Air conditioning. HP-Heat pump. IDU-indoor unit. ODU-Outdoor unit;
- 2) Standard cooling capacity is rated at indoor 80/67F, outdoor 95F, 25' copper pipe length with 7 ft ID/OD elevation difference.
- 3) Standard heat pump heating capacity is rated at indoor 70/60F, outdoor 47/43F, 25' copper pipe length with 0 ft ID/OD elevation difference;
- 4) Thanks to the DC inverter technology, the combined indoor unit capacities can be up to 160% of the rated outdoor unit AHRI rating as listed on its nameplate.

UNIT DIMENSIONS

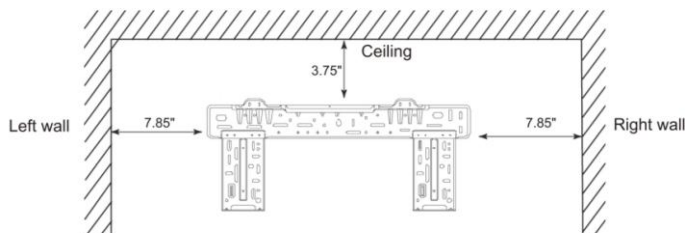


Physical Data

Model	Dimensions W x H x D (In.)		Weight (LBs)		Copper Connections		Wire Connections to Outdoor Unit	Condensate Pipe	
	Unit Net	Packaging Carton Box	Net	Gross	Liq. Line	Gas Line		ID/OD	Length
09EW	30.3x 9.8 x 7.5	33.7 x 13.0 x 10.4	18.7	27.5	1/4"	3/8"	N(1) / 2 / 3 / G One on one match, Not-to-cross between any 2 zones N(1)-Hot Leg 1 2-Control, 3-Hot Leg 2 G-Ground	0.45In., 0.67In.	2 Ft.
12EW	32.7x 11.2 x 7.9	35.7 x 15.2 x 10.7	24.3	30.8	1/4"	3/8"			
18EW	37.0x 11.7 x 7.9	39.8 x 15.0 x 11.2	28.6	37.4	1/4"	1/2"			
24EW	39.7 x 12.4 x 7.9	42.2 x 15.6 x 12.3	35.2	46.3	1/4"	5/8"			

Installation Clearance

MOUNTING BRACKET CLEARANCE



Note: Actual unit/part may appear differently from what are illustrated above.

B. Indoor Units-Ceiling Mount EC Models



Indoor Unit



Standard Remote Control



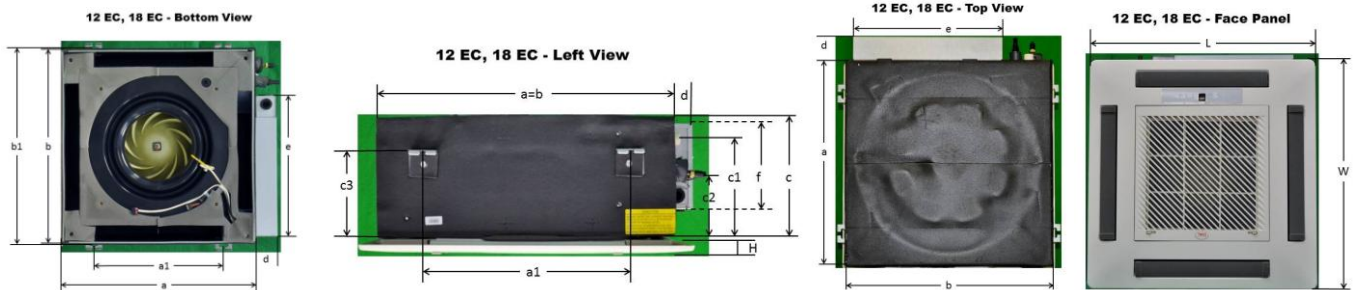
Optional Wall Control

Thermal Performance and Electrical Data

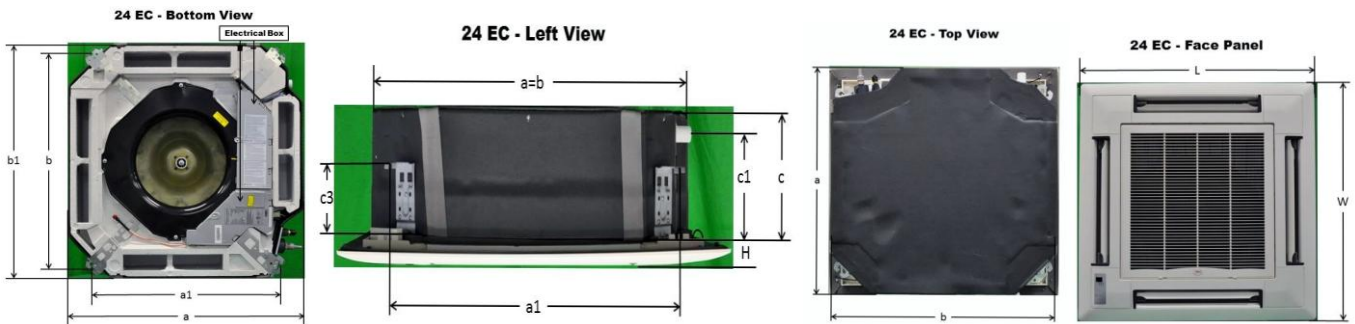
Sizes	Max./Rated/Min. Cooling MBH	SHR	Heating MBH @ 47F/17F/5F	Airflow CFM H/M/L	Sound-Pressure dB(A) H / M / L	Input Power V/Ph/Hz	Input Power		Min. Wire Sizes IDU-ODU	HVAC Circuit Breaker/Fuse
							Watts	FLA		
12EC	13.9/12.0/5.2	0.72	13.0/11.6/9.0	353/312/245	39/37/35	208-230/1/60	50	0.28	16 AWG	3AMP Fuse on PCB. 15AMP Circuit Breaker, if Required.
18EC	20.8/17.2/6.2	0.72	18.1/16.2/13.1	353/312/245	39/37/35		50	0.28	16 AWG	
24EC	26.5/22.8/9.6	0.71	27.4/23.8/20.6	694/522/366	45/43/41		165	0.43	16 AWG	

Notes:

- 1) MBH-1000 But/h. SHR-Sensible heat ratio. CFM-Cubic feet per minute. FLA-Full load amp. RLA-Rated load amp. LRA-Locked rotor amp. AC-Air conditioning. HP-Heat pump. IDU-indoor unit. ODU-Outdoor unit;
- 2) Standard cooling capacity is rated at indoor 80/67F, outdoor 95F, 25' copper pipe length with 7 ft ID/OD elevation difference.
- 3) Standard heat pump heating capacity is rated at indoor 70/60F, outdoor 47/43F, 25' copper pipe length with 0 ft ID/OD elevation difference;
- 4) Thanks to the DC inverter technology, the combined indoor unit capacities can be up to 160% of the rated outdoor unit AHRI rating as listed on its nameplate.



12EC and 18EC units can fit into 24" CTC joints. 24EC units are bigger and so can not.



Physical Data

Model	Dimensions (Inches)													Weight Net, LBS	Connections		Condensate Pump	
	a	a1	b	b1	c	c1	c2	c3	e	f	H	L	W		Wire to ODU	Liq., Gas Line	ID, OD	Water Lift
12EC	22.4	15.5	22.4	25.75	9.1	7.5	5.25	6.625	16.5	7.25	2	25.6	25.6	39.7	N(1)/ 2 / 3/G -- N(1) Hot, 2 Control, 3 Hot, G-GN.	1/4, 3/8"	3/4", 1"	25"
18EC	22.4	15.5	22.4	25.75	9.1	7.5	5.25	6.625	16.5	7.25	2	25.6	25.6	39.7		1/4, 1/2"		
24EC	33.1	27	33.1	30.00	9.4	5.0	6.00	5.500	16.5	7.25	2.4	37.4	37.4	66.0		1/4, 5/8"		

C. Indoor Units-Ceiling/Floor Mount EU Models



Indoor Unit



Standard Remote Control



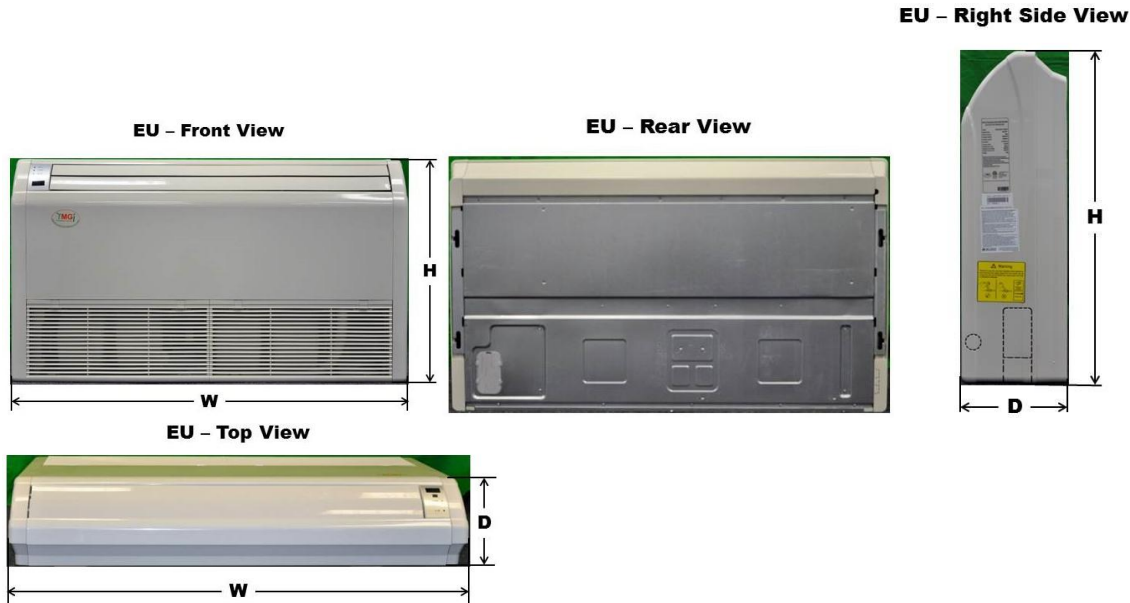
Optional Wall Control

Thermal Performance and Electrical Data

Sizes	Max./Rated/Min. Cooling MBH	SHR	Heating MBH @ 47F/17F/5F	Airflow CFM H/M/L	Sound-Pressure dB(A) H / M / L	Input Power V/Ph/Hz	Input Power		Min. Wire Sizes IDU-ODU	HVAC Circuit Breaker/Fuse
							Watts	FLA		
09EU	10.7 /8.5 /4.6	0.72	9.5 /8.8 /8.0	383 /324 /265	40 /38 /36	208-230/1/60	55	0.28	16 AWG	3AMP Fuse on PCB. 15AMP Circuit Breaker, if Required.
12EU	14.1 /11.9 /5.9	0.72	13.1 /11.6 /9.1	383 /324 /265	40 /38 /36		55	0.28	16 AWG	
18EU	21.5 /17.0 /6.8	0.72	18.7 /16.6 /13.8	559 /412 /294	45 /42 /40		20	0.5	16 AWG	
24EU	26.5 /22.8 /9.6	0.71	27.4 /23.6 /20.6	736 /530 /412	48 /46 /44		145	0.63	16 AWG	

Notes:

- 1) MBH-1000 But/h. SHR-Sensible heat ratio. CFM-Cubic feet per minute. FLA-Full load amp. RLA-Rated load amp. LRA-Locked rotor amp. AC-Air conditioning. HP-Heat pump. IDU-indoor unit. ODU-Outdoor unit;
- 2) Standard cooling capacity is rated at indoor 80/67F, outdoor 95F, 25' copper pipe length with 7 ft ID/OD elevation difference.
- 3) Standard heat pump heating capacity is rated at indoor 70/60F, outdoor 47/43F, 25' copper pipe length with 0 ft ID/OD elevation difference;
- 4) Thanks to the DC inverter technology, the combined indoor unit capacities can be up to 160% of the rated outdoor unit AHRI rating as listed on its nameplate.



Physical Data

Model	Dimensions (Inches)			Weight Net, LBS	Connections		Condensate Pump	
	W	H	D		Wire to ODU	Liq., Gas Line	ID, OD	Water Lift
09EU	48.0	27.6	8.9	88	N(1) 2 / 3 /G N(1) Hot, 2 Control, 3 Hot, G-GN.	1/4, 3/8"	3/4", 1"	No condensate pump built in
12EU	48.0	27.6	8.9	88		1/4, 3/8"		
18EU	48.0	27.6	8.9	88		1/4, 1/2"		
24EU	48.0	27.6	8.9	99		1/4, 5/8"		

D. Indoor Units-Recessed Ceiling Mount Fan Coil Unit EF Models



Indoor Unit



Standard Wall Control



Optional Remote for Wall Control

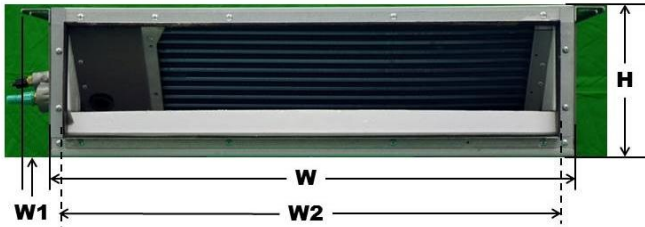
Thermal Performance and Electrical Data

Sizes	Max./Rated/Min. Cooling MBH	SHR	Heating MBH @ 47F/17F/5F	Airflow CFM H/M/L	Sound-Pressure dB(A) H / M / L	Input Power V/Ph/Hz	Input Power		Min. Wire Sizes IDU-ODU	HVAC Circuit Breaker/Fuse
							Watts	FLA		
09EF	10.7 /8.5 /4.6	0.72	9.5 /8.8 /8.0	260 /180 /150	37 /34 /31	208-230 / 1/60	80	0.28	16 AWG	3AMP Fuse on PCB. 15AMP Circuit Breaker, if Required.
12EF	14.1 /11.9 /5.9	0.72	13.1 /11.6 /9.1	320 /240 /180	39 /35 /32		90	0.28	16 AWG	
18EF	21.5 /15.3 /6.8	0.72	18.7 /16.6 /13.8	410 /350 /295	41 /37 /33		100	0.41	16 AWG	
24EF	26.5 /23.8 /9.6	0.71	27.4 /23.6 /20.6	590 /440 /320	42 /38 /34		2x85	2x0.30	16 AWG	

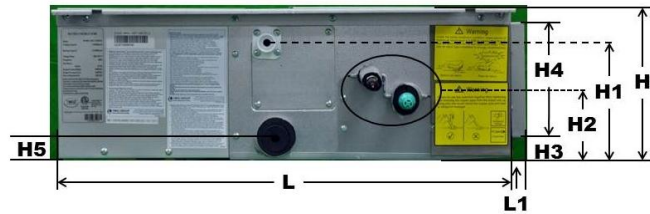
Notes:

- 1) MBH-1000 But/h. SHR-Sensible heat ratio. CFM-Cubic feet per minute. FLA-Full load amp. RLA-Rated load amp. LRA-Locked rotor amp. AC-Air conditioning. HP-Heat pump. IDU-indoor unit. ODU-Outdoor unit;
- 2) Standard cooling capacity is rated at indoor 80/67F, outdoor 95F, 25' copper pipe length with 7 ft ID/OD elevation difference.
- 3) Standard heat pump heating capacity is rated at indoor 70/60F, outdoor 47/43F, 25' copper pipe length with 0 ft ID/OD elevation difference;
- 4) Thanks to the DC inverter technology, the combined indoor unit capacities can be up to 160% of the rated outdoor unit AHRI rating as listed on its nameplate.

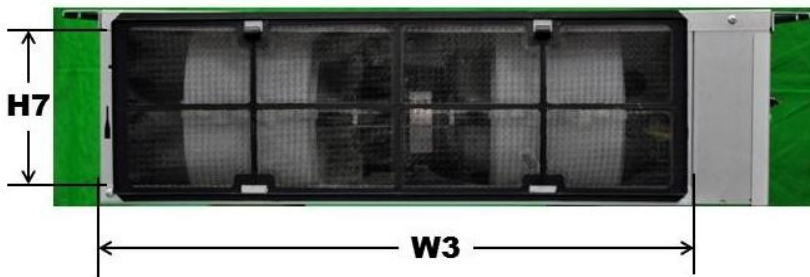
EF – Front Side View



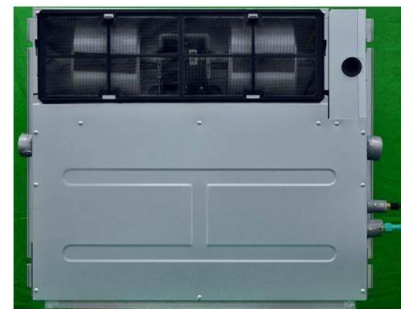
EF - Left Side View



EF – Rear Side View – Option 1



EF- Bottom View – Option 2



Return Air at Rear Side (Same Cover to Switch between)

Return Air at Bottom

Physical Data

Model	Dimensions (Inches)													Weight Net, LBS	Connections		Condensate Pump	
	W	W1	W2	W3	L	L1	H	H1	H2	H3	H4	H5	H7		Wire to ODU	Liq., Gas Line	ID, OD	Water Lift
09EF	27.6	1.5	26	24.5	24.2	0.75	7.9	6.5	4	1	2	1.25	6.375	48	N(1)/ 2 / 3 /G - N(1) Hot, 2 Control, 3 Hot, G-GN.	1/4, 3/8"	3/4", 1"	25"
12EF	27.6	1.5	26	24.5	24.2	0.75	7.9	6.5	4	1	2	1.25	6.375	51		1/4, 3/8"		
18EF	35.4	1.5	33.63	32.25	24.2	0.75	7.9	6.5	4	1	2	1.25	6.375	59		1/4, 1/2"		
24EF	43.3	1.5	41.63	40.13	24.2	0.75	7.9	6.5	4	1	2	1.25	6.375	68.0		3/8, 5/8"		

2. OUTDOOR UNITS (ODU—CH Models)



Thermal Performance and Electrical Data

Sizes	Max./Rated/Min. Cooling MBH	SHR	Heating MBH @ 47F/17F/5F	Suggested Ranges of OD Temperature	Sound dB(A) H/M/L	Input Power V/Ph/Hz	RLA/RLA Compressor + Fan Motor	Power Input W		Min. Wire Sizes ODU-Disconnect	HVAC Circuit Breaker/Fuse
								AC	HP		
30CH	30.0/18.0/7.2	0.72	32.0/19.0/6.5	AC 20-115F; HP 5-75F	56/54	208-230/1/60	27 / 8.4 + 0.65	1550	1750	12 AWG	30 AMP
36CH	36.0/24.0/10.0	0.72	38.0/29.5/9.0		56/54		45 / 9.7 + 0.65	2250	2500	10 AWG	30 AMP
42CH	42.0/28.0/10.0	0.72	50.0/31.0/9.0		56/54		45 / 9.7 + 0.65	2600	2920	8 AWG	40 AMP
48CH	57.0/30.0/10.0	0.71	59.0/33.0/9.0		56/54		45 / 10.0 + 0.65	2600	2920	8 AWG	40 AMP
60CH	72.0/42.0/12.0	0.70	74.0/46.0/10.0		56/54		55 / 13.0 + 1.40	3950	4400	8 AWG	50 AMP

Notes:

- 1) Standard cooling capacity is rated at indoor 80/67F, outdoor 95F, 25' copper pipe length with 7 ft IDU/ODU elevation difference
- 2) Standard heat pump heating capacity is rated at indoor 70/60F, outdoor 47/43F, 25' copper pipe length 0 ft IDU/ODU elevation difference;
- 3) Thanks to the DC inverter technology, the combined indoor unit capacities can be up to 160% of the rated outdoor unit AHRI rating as listed on its nameplate.

Model-Physical Data (Outdoor Unit)

Model	Liq. Valve	Gas Valve	Wire Knock-out @	Recommended Pipe Length (Ft.)				Weight (LB)		Dimensions W x H x D (In)	
				Min.	Max.	Lift	Drop	Net	Gross	Unit	Package
30CH	2x1/4"	2x3/8"	Refrigerant Pipe Side, Top, Close to Incoming Ele. Cover	15	75	25	35	115	126	33.3x 27.0 x 11.8	39.1x 29.5 x 12.9
36CH	3x1/4"	3x3/8"		15	75	25	35	150	161	33.4x 27.5 x 15.5	40.6x 29.5 x 16.5
42CH	4x1/4"	4x3/8"		15	75	25	35	165	176	37.2x27.6x15.8	40.5 x 29.5 x 18.0
48CH	3x1/4"+3/8"	2x3/8"+1/2"+5/8"		15	75	25	35	165	176	35.0x27.6x13.4	40.6 x 28.9 x 18.1
60CH	2x1/4"+2x1/4"+1x3/8"	2x3/8"+2x1/2"+1x5/8"		15	75	25	35	225	248	42.3x43.5x17.5	46.0 x 48.6 x 19.4

Disconnect Switch / Fuse and Wire Harness between Indoor and Outdoor Units

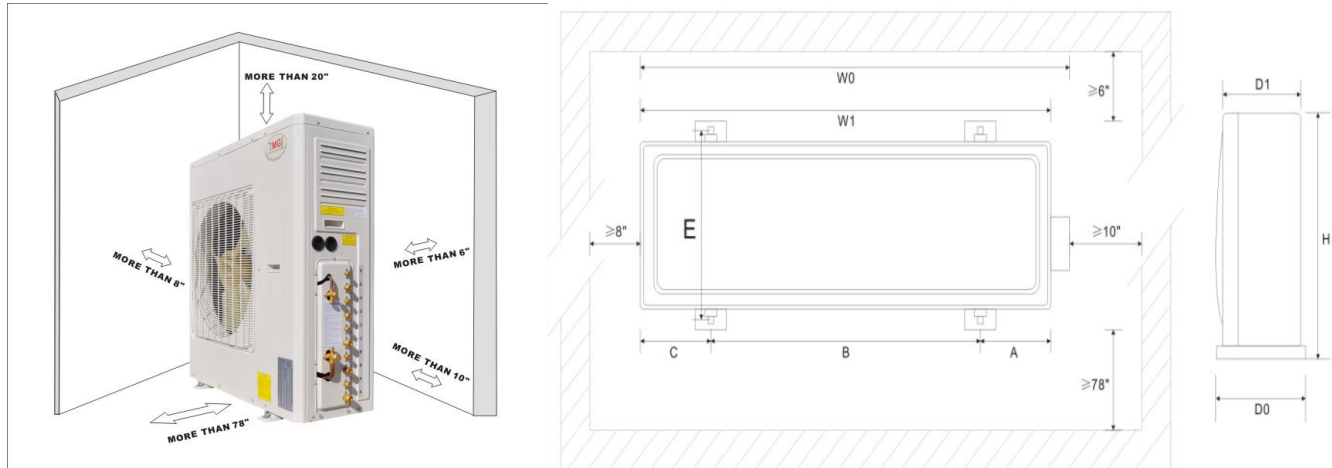


Disconnect switch box for outdoor unit



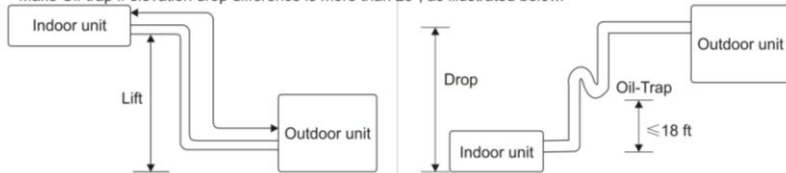
Non-Metallic Power Whip for Outdoor Use (Field-Supplied, Not Spliced and Not Knotted, Water-Proof Sealed Tight, UL Approved)

Installation Clearance Requirements-Indoor and Outdoor Units



HEIGHT LIMITS OF INDOOR AND OUTDOOR UNITS

- * Either the indoor unit or the outdoor unit can be higher, but the height difference must comply with the stated requirements.
- * Try to reduce the bending of the piping line as much as possible so as to avoid possible negative impacts upon the performances of the units.
- * Make Oil-trap if elevation drop difference is more than 25", as illustrated below.



Refrigerant Pipe Min/Max. Length, Rise and Drop Height

1,000 Btu/h	Min. Length (Ft.)	Max. Length (Ft.)	Max. Rise Height (Ft.)	Max. Drop Height (Ft.)
09-12	15	50	20	28
18-24	15	75	25	35
30-36	15	100	35	50

Install 1 Oil Trap per 18 ft. ODU is above IDU

RECOMMENDED MATCHING INDOOR AND OUTDOOR UNITS (NOT ALL POSSIBILITIES BEING LISTED)

Indoor Unit Mix and Match Size Possibilities (Samples), to Work with: Outdoor Unit WMMS-21CH-V2B(59)(2) / WMMS-30CH-V2B(59)(2)										
1 Indoor Unit	2 Indoor Units			3 Indoor Units			4 Indoor Units			
09K	12K	09K+09K	09K+12K	Not allowed			Not allowed			
18K	24K	12K+12K	12K+18K							
Indoor Unit Mix and Match Size Possibilities (Samples), to Work with: Outdoor Unit WMMS-24CH-V2B(59)(2) / WMMS-36CH-V2B(59)(2)										
1 Indoor Unit	2 Indoor Units			3 Indoor Units			4 Indoor Units			
Not allowed	09K+12K	12K+12K	09K+09K+09K	09K+09K+12K	09K+09K+18K	Not allowed				
	09K+18K	18K+18K	09K+12K+12K	09K+12K+18K	12K+12K+12K					
Indoor Unit Mix and Match Size Possibilities (Samples), to Work with: Outdoor Unit WMMS-42CH-V2B(59)(2)										
1 Indoor Unit	2 Indoor Units			3 Indoor Units			4 Indoor Units			
Not allowed	12K+12K	09K+18K	9K+9K+9K	09K+09K+12K	09K+12K+12K	09K+09K+09K+09K	09K+09K+09K+12K	09K+09K+12K+12K	09K+09K+12K+12K	
	12K+18K	12K+24K	9K+9K+18K	09K+12K+18K	12K+12K+18K	09K+12K+12K+12K	12K+12K+12K+12K	09K+09K+09K+18K		
	18K+18K	18K+24K	12K+12K+12K	09K+09K+24K	09K+12K+24K	09K+09K+12K+18K				
Indoor Unit Mix and Match Size Possibilities (Samples), to Work with: Outdoor Unit WMMS-48CH-V2B(59)(2)										
1 Indoor Unit	2 Indoor Units			3 Indoor Units			4 Indoor Units			
Not allowed	12K+18K	09K+24K	09K+09K+09K	09K+09K+12K	09K+12K+12K	09K+09K+09K+09K	09K+09K+09K+12K	09K+09K+09K+18K		
	18K+18K	12K+24K	09K+09K+18K	12K+12K+12K	09K+12K+18K	09K+09K+12K+18K	09K+12K+12K+18K	12K+12K+12K+12K		
	18K+24K	24K+24K	12K+12K+18K	09K+12K+24K	12K+12K+24K	09K+09K+09K+24K	09K+09K+12K+24K	09K+12K+12K+24K		
Indoor Unit Mix and Match Size Possibilities (Samples), to Work with: Outdoor Unit WMMS-60CH-V2B(59)(2)										
1 Indoor Unit	2 Indoor Units			3 Indoor Units			4 Indoor Units			5 Indoor Units
Not allowed	12K+12K	12K+18K	09K+09K+09K	09K+09K+12K	09K+12K+12K	09K+09K+09K+12K	09K+09K+09K+09K	09K+09K+09K+18K	09K+09K+09K+12K/18K/24K	09K+09K+09K+12K+12K/18K/24K
	18K+18K	12K+24K	09K+09K+18K	12K+12K+18K	09K+12K+18K	09K+09K+12K+18K	09K+12K+12K+18K	12K+12K+12K+18K	09K+09K+12K+12K/18K	09K+12K+12K+12K+18K
	18K+24K	24K+24K	12K+12K+12K	12K+12K+24K	09K+12K+24K	09K+09K+12K+24K	09K+12K+12K+24K	12K+12K+12K+24K	09K+09K+12K+18K+18K	09K+09K+12K+12K+18K
									09K+09K+12K+18K+18K	09K+12K+12K+18K+18K

Important Notes: structure or appearance of the indoor unit and/or outdoor unit may change from time to time, for marketing purpose.

		<p>YMGI Group LLC POB 1559, O'Fallon, MO 63366 Toll Free Tel.: (866)833-3138 Toll Free Fax: (866)377-3355 Email: info@ymgigroup.com</p>
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