American Standard HEATING & AIR CONDITIONING

MITSUBISHI ELECTRIC

Nv-SERIES

SUBMITTAL DATA: NAXMMX60A182B*

5-TON MULTI-INDOOR INVERTER HEAT-PUMP SYSTEM

Job Name:	
System Reference:	Date:

FEATURES

- Variable speed INVERTER-driven compressor
- Blue Fin Coating on heat exchanger
- Thermal Differential 1°F (with TAC-MKA32/52BC only)
- Branch box for simplified piping and installation flexibility
- Up to 8 indoor units connectable (six [6] if a PLA-A**EA7 is connected)
- Optional base pan heater
- Quiet outdoor unit operation as low as 54 dB(A)
- High pressure protection
- Compressor thermal protection
- Compressor overcurrent detection
- Fan motor overheating/voltage protection
- Energy Star® certified[1] (non-ducted only)

[1]ENERGY STAR products are third-party certified by an EPA-recognized Certification Body.

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SPECIFICATIONS: NAXMMX60A182B*

Indoor unit type			Non-Ducted	Mix	Ducted
Cooling[1]	Maximum Capacity	BTU/H	60,000	60,000	60,000
	Rated Capacity	BTU/H	60,000	60,000	60,000
	Minimum Capacity	BTU/H	30,000	30,000	30,000
	Maximum Power Input	W	4,800	5,360	6,000
	Rated Power Input	W	4,800	5,360	6,000
	Power Factor (208V, 230V)	%	98.8 / 98.8	98.8 / 98.8	98.8 / 98.8
Heating at 47°F[2]	Maximum Capacity	BTU/H	66,000	66,000	66,000
	Rated Capacity	BTU/H	66,000	66,000	66,000
	Minimum Capacity	BTU/H	31,000	31,000	31,000
	Maximum Power Input	W	5,530	5,530	5,530
	Rated Power Input	W	5,530	5,530	5,530
	Power Factor (208V, 230V)	%	98.8 / 98.8	98.8 / 98.8	98.8 / 98.8
Heating at 17°F[3]	Maximum Capacity	BTU/H	65,000	65,000	65,000
	Rated Capacity	BTU/H	41,500	41,000	40,500
	Maximum Power Input	W	8,400	9,280	9,800
	Rated Power Input	W	4,870	4,810	4,750
Heating at 5°F[4]	Maximum Capacity	BTU/H	57,000	57,000	57,000
	Maximum Power Input	W	8,350	8,790	9,280
Efficiency	SEER		19.50	18.20	17.00
	EER[1]		12.50	11.20	10.00
	HSPF (IV)		10.7	10.7	10.7
	COP at 47° F[2]		3.50	3.50	3.50
	COP at 17° F[3]		2.20	2.00	1.90
	COP at 5° F[4]		2.00	1.90	1.80
	ENERGY STAR® Certified		YES	NO	NO
Electrical	Voltage, Phase, Frequency		208 / 230V, 1-phase, 60 Hz		
	Guaranteed Voltage Range	V AC	198-253		
	Voltage: Indoor - Outdoor, S1-S2	V AC	208 / 230		
	Voltage: Indoor - Outdoor, S2-S3	V DC	24		
	Short-circuit Current Rating (SCCR)	5kA	5		
	Recommended Fuse/Breaker Size (Outdoor)	A	50		
	Recommended Wire Size (Indoor - Outdoor)	AWG	16		
Outdoor unit	MCA	A	46		
	MOCP	A	55		
	Fan Motor Full Load Amperage	A	200		
	Fan Motor Output	W	0.8 + 0.8		
	Airflow Rate Cooling / Heating	CFM	5,227 / 4,879		
	Refrigerant Control		Linear Expansion Valve		
	Defrost Method		Reverse Cycle		
	Heat Exchanger Type		Plate Fin Coil		
	Sound Pressure Level, Cooling[1]	dB(A)	58		
	Sound Pressure Level, Heating[2]	dB(A)	59		
	Compressor Type		Hermetic		
	Compressor Model		ANB52FYDMT		
	Compressor Motor Output	kW	4.2		
	Compressor Rated Load Amps	A	19.0		
	Compressor Locked Rotor Amps	A	22.0		
	Compressor Oil Type // Charge	oz.	FVC68D // 78		
	External Finish Color		Munsell 3Y 7.8/ 1.1		
	Base Pan Heater		Optional (PAC-SJ20BH-E)		
	Unit Dimensions	W: In. [mm]	41-11/32 [1,050]		
		D: In. [mm]	13 [330]		
		H: In. [mm]	52-11/16 [1,338]		
	Package Dimensions	W: In. [mm]	42 15/16 [1,090]		

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SPECIFICATIONS: NAXMMX60A182B*

Indoor unit type			Non-Ducted	Mix	Ducted
		D: In. [mm]	17-3/4 [450]		
		H: In. [mm]	56-11/16 [1,430]		
	Unit Weight	Lbs.[kg]	302 (137)		
	Package Weight	Lbs.[kg]	326 (148)		
Outdoor unit operating temperature range	Cooling Intake Air Temp (Maximum / Minimum*)	°F	115 DB / 23*C DB		
	Cooling Thermal Lock-out / Re-start Temperatures		-1 / 3		
	Heating Intake Air Temp (Maximum / Minimum)	°F	70 DB / -4 DB		
	Heating Thermal Lock-out / Re-start Temperatures	°F	-9 / -4		
Refrigerant	Type		R410A	R410A	R410A
	Charge	Lbs, oz	10 lbs 9 oz	11 lbs 4 oz	10 lbs 9 oz
Indoor unit connection	Maximum Number of Connected IDU		8 (6*A)		
	Minimum Number of Connected IDU		2		
	Maximum connected capacity	BTU/H	78,000		
	Minimum connected capacity	BTU/H	12,000		
Piping	Gas Pipe Size O.D. (Flared)	In.[mm]	3/4 [19.05]		
	Liquid Pipe Size O.D. (Flared)	In.[mm]	3/8 [9.52]		
	Total Piping Length	Ft. [m]	492 [150]		
	Maximum Height Difference*B, ODU above IDU	Ft. [m]	164 [50]		
	Maximum Height Difference*B, ODU below IDU	Ft. [m]	131 [40]		
	Maximum Height Difference*B, between branch boxes	Ft. [m]	49 [15]		
	Maximum Height Difference*B, between branch boxes and IDU	Ft. [m]	49 [15]		
	Max. Piping Length between ODU and Branch Box	Ft. [m]	180 [55]		
	Farthest Piping Length from ODU to IDU	Ft. [m]	262 [80]		
	Farthest Piping Length after Branch Box	Ft. [m]	82 [25]		
	Total Piping Length between Branch Boxes and IDU	Ft. [m]	311 [95]		
	Maximum Number of Bends for IDU		15		
	Maximum Number of Bends for ODU		120		

Notes

AHRI Rated Conditions (Rated data is determined at a fixed compressor speed)	[1]Cooling (Indoor // Outdoor)	°F	80 DB, 67 WB // 95 DB, 75 WB
	[2]Heating at 47°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 47 DB, 43 WB
	[3]Heating at 17°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 17 DB, 15 WB
Conditions	[4]Heating at 5°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 5 DB, 5 WB

*Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.
*A when 1 or more PLA-A·EA7 connected
*B Branch box should be placed within the level between the outdoor unit and indoor units
*C 5°F DB - 115°F DB when optional wind baffles are installed

For reference to connected capacity charts, please refer MX Series Operational Performance
Although the maximum connectable capacity is 130%, the outdoor unit cannot provide more than 100% of the rated capacity. Please utilize this over capacity capability for load shedding or applications where it is known that all connected units will NOT be operating at the same time.

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ACCESSORIES: NAXMMX60A182B*

Distribution pipe for Branch box (Flare Connection)	□ MSDD-50AR-E
Distribution pipe for Branch box (Brazed Connection)	□ MSDD-50BR-E
Port Adapter size: 3/8" x 5/8"	□ PAC-SG76RJ-E
Port Adapter size: 1/4" x 3/8"	□ PAC-493PI
Port Adapter size: 3/8" X 1/2"	□ MAC-A454JP-E
Port Adapter size: 1/2" X 3/8"	□ MAC-A455JP-E
Port Adapter size: 1/2" X 5/8"	□ MAC-A456JP-E
Branch Box	□ TAC-MKA52BC
Branch Box	□ TAC-MKA32BC
Branch Box Outer Cover	□ BBE-1
Air Outlet Guide	□ PAC-SH96SG-E
Air Outlet Guide	□ PAC-SJ07SG-E
Air Outlet Guide	□ PAC-ADG096AA-E (two pieces are required)
Front Wind Baffle	□ WB-PA3 (two pieces are required)
Drain Socket	□ PAC-SG61DS-E
Optional Defrost Heater	□ PAC-SJ20BH-E
Centralized Drain Pan	□ PAC-SH97DP-E
M-NET Converter	□ PAC-IF01MNT-E
Refrigeration Ball Valve-Flare/Schrader/Insulated — 1/2" size	□ BV12FFSI2
Refrigeration Ball Valve-Flare/Schrader/Insulated — 1/4" size	□ BV14FFSI2
Refrigeration Ball Valve-Flare/Schrader/Insulated — 3/8" size	□ BV38FFSI2
Refrigeration Ball Valve-Flare/Schrader/Insulated — 5/8" size	□ BV58FFSI2
Hail Guard	□ HG-A2
Outdoor Unit 3-1/4 inch Mounting Base (Pair) - Plastic	□ DSD-400P
Condensing Unit Mounting Pad 16" x 36" x 3"	□ ULTRILITE1
Outdoor Unit Stand — 12" High	□ QSMS1202M
Outdoor Unit Stand — 18" High	□ QSMS1802M
Outdoor Unit Stand — 24"High	□ QSMS2402M
Heavy Duty Wall Mounting Bracket— Coated Steel	□ QSWB2000M-1
Heavy Duty Wall Mounting Bracket — 316 Series Stainless Steel	□ QSWBSS
15' x 3/8" x 15' / 3/4" Lineset (Twin-Tube Insulation)	□ MPLS383412T-15
50' x 3/8" x 50' / 3/4" Lineset (Twin-Tube Insulation)	□ MPLS383412T-50

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SYSTEM DESIGN: NAXMMX60A182B*

Outdoor unit			NAXMPH36A142BA	NAXMPH42A152BA	NAXMPH48A182BA NAXMMX48A182BA	NAXMMX60A182BA
			4HP	4.5HP	5HP	7HP
	Rated capacity (kBtu/h)	Cooling	36	42	48	60
		Heating	45	48	54	66
		Refrigerant	R410A			
Connectable indoor unit	Capacity class		Type 06 to Type 36 Caution: The indoor unit which rated capacity exceeds 36 kBtu/ h (Type 36) can NOT be connected.			
	Number of units		2(*1) to 4 units	2(*1) to 5 units	2(*1) to 8 units	2(*1) to 8 units
	Total system capacity range		33 to 130% of outdoor unit capacity (12 to 46.8 kBtu/h)	29 to 130% of outdoor unit capacity (12 to 54.6 kBtu/h)	25 to 130% of outdoor unit capacity (12 to 62.4 kBtu/h)	20 to 130% of outdoor unit capacity (12 to 78 kBtu/h)
Connectable branch box	Number of units		1 or 2 units			

Connectable indoor unit lineups (Heat pump inverter type)									
Model type	Model name ** shows Capacity class. * changes such as A, B, C...	Capacity class [kBTU/h]							
		06	09	12	15	18	24	30	36
Deluxe Wall-mounted	NAXWPH**A112A*	●	●	●	●	●			
Standard Wall-mounted	NAXWST**A112A*	●	●	●	●	●	●		
Low static ducted*3 *4	NAXDKS**A112A*		●	●	●	●			
P-series mid static ducted*3 *4	PEAD-A24/30/36AA5*		●	●	●	●	●	●	●
1-way cassette	NAXUKS**A112A*		●	●		●			
22*22 4-way cassette	NAXCKS**A112A*		●	●	●				
P-series 33*33 4-way cassette	PLA-A12/18/24/30/36EA7*			●		●	●	●	●
Floor standing	NAXFKS**A112A*		●	●	●	●			
Standard Multi-position air handler*2	NAXAMT**A112A*			●		●	●	●	●

Branch box	TAC-MKA52BC	TAC-MKA32BC
Number of branches (Indoor unit that can be connected)	5 branches (MAX. 5 units)	3 branches (MAX. 3 units)

Note: A maximum of 2 branch boxes can be connected to 1 outdoor unit.

2- branch pipe (joint): Optional parts	
In the case of using 1- branch box	No need
In the case of using 2- branch boxes	Model name / Connection method MSDD-50AR-E / flare MSDD-50BR-E / brazing Select a model according to the connection method.

Option	Optional accessories for indoor units and outdoor units are available.

*1 Only one unit connection is possible with ducted unit.

*2 When connecting a multi-position unit(s), set additional constraints as follows. For connections other than those specified below, consult your dealer.

● **Models other than NAXMMX60A182BA** (For each connected branch box)

Number of connecting multi-position unit	Constraints
2	Any indoor units other than ducted units are not connectable.
1	· The total system wide capacity should be 130% or below including the ducted unit. · Only 1 ducted unit can be included in the connection.

● **NAXMMX60A182BA** (For each connected branch box)

Number of connecting multi-position unit	Constraints
2	Any indoor units other than ducted unit are not connectable.
1	· The total system wide capacity should be 100% or below including the ducted unit. · Only 1 ducted unit can be included in the connection.

*3 For NAXMMX60A182BA; When connecting the ducted units, the total system wide capacity per 1 branch box should be 100% or below including the ducted units. (Only if connecting to TAC-MKA52BC)

*4 For other than NAXMMX60A182BA: A branch box can connect to maximum 3 of the ducted units. When connecting with 3 of the ducted units per 1 branch box, other indoor units cannot be connected.
For NAXMMX60A182BA: A branch box can connect to maximum 2 of the ducted units. When connecting with 1 and over 1 of the ducted units, the total ability including of the ducted units is 100% and below 100%.

5 When the system includes even 1 unit of PLA-EA7, the number of the maximum connectable indoor units is decreased as follows:
3 for NAXMPH36A142BA, 4 for NAXMPH42A152BA, and 6 for NAXMPH48A182BA, NAXMMX48A182BA and NAXMMX60A182BA.

NOTE

Please refer to Application Note 1039 for more information and exceptions to these rules.

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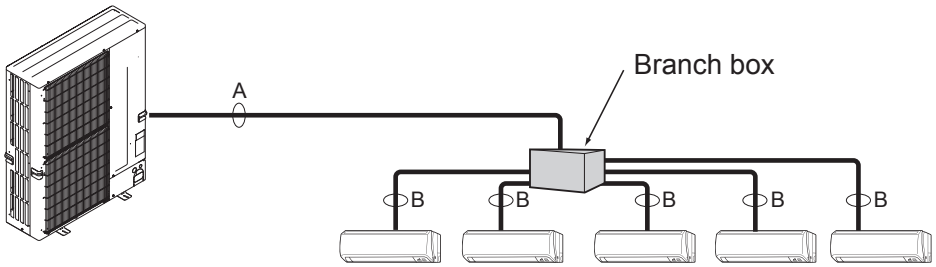
SYSTEM DESIGN: NAXMMX60A182B*

Piping connection size

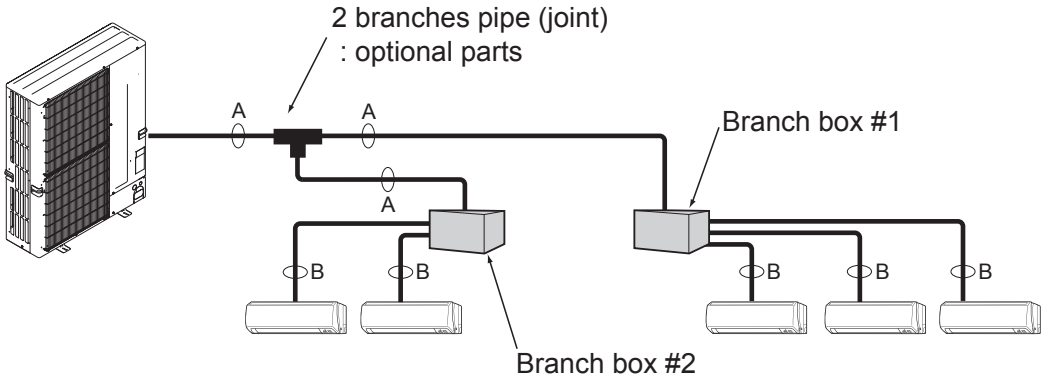
	A	B
Liquid	ϕ3/8 inch [9.52 mm]	The piping connection size differs according to the type and capacity of indoor units. Match the piping connection size of branch box with indoor unit. If the piping connection size of branch box does not match the piping connection size of indoor unit, use optional different-diameter (deformed) joints to the branch box side. (Connect deformed joint directly to the branch box side.)
Gas	ϕ5/8 inch [15.88 mm] / ϕ3/4 inch* [19.05 mm]	

* NAXMMX60A182B* only

■ In case of using 1-branch box
Flare connection employed (No brazing)



■ In case of using 2-branch boxes



■ Installation procedure (2 branches pipe (joint))
Refer to the installation manuals of MSDD-50AR-E and MSDD-50BR-E.

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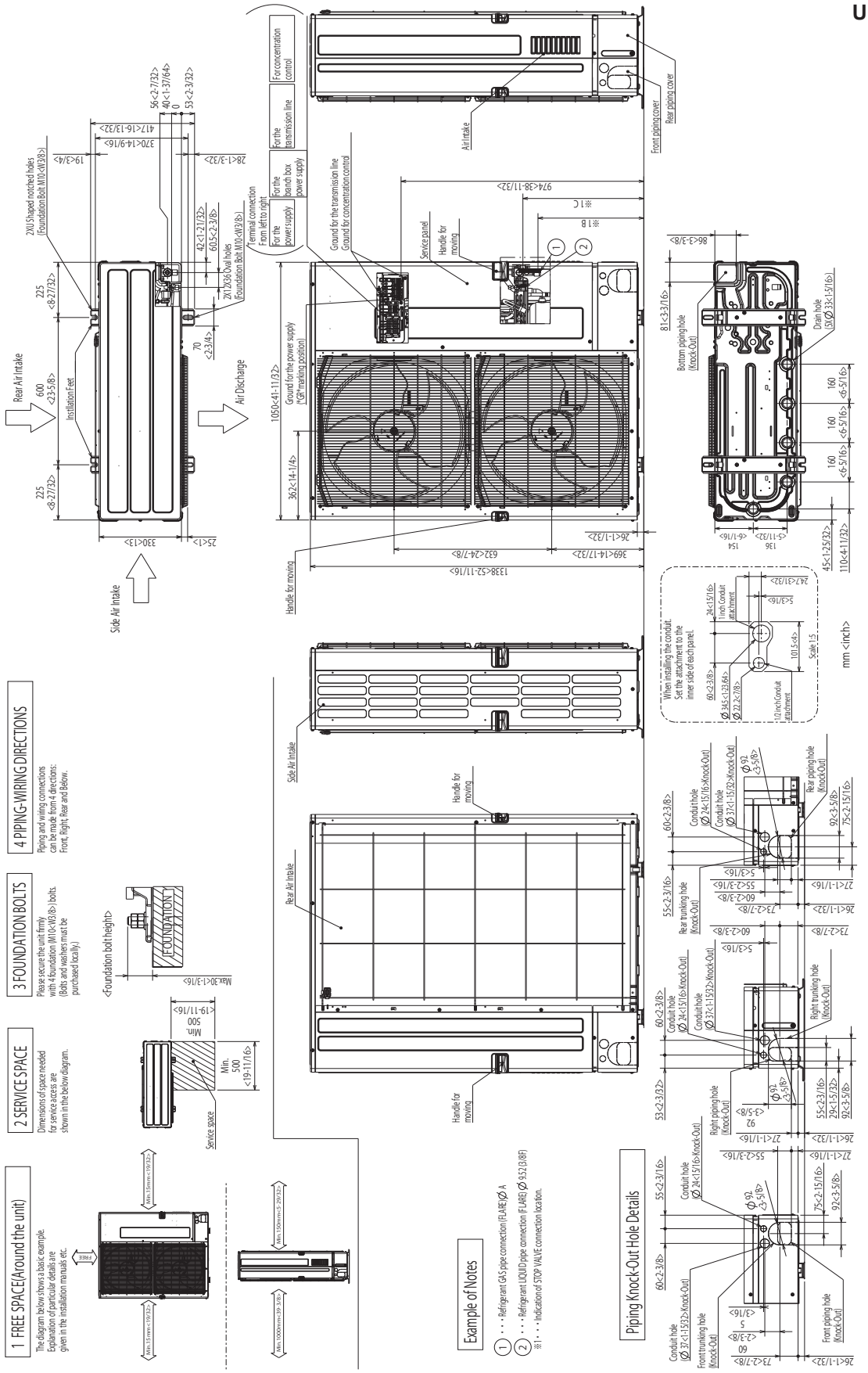
DIMENSIONS: NAXMMX60A182B*

Unit: mm <inch>



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DIMENSIONS: TAC-MKA52BC AND TAC-MKA32BC BRANCH BOXES

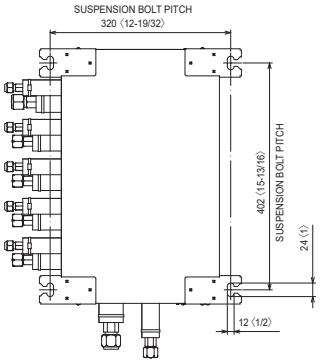
TAC-MKA52BC

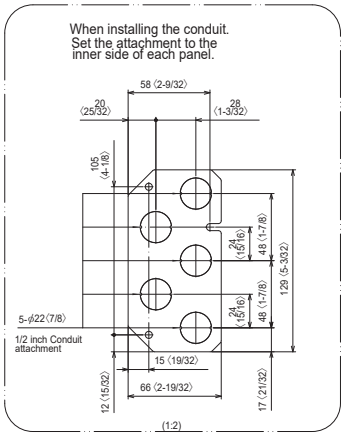
Unit: mm <inch>

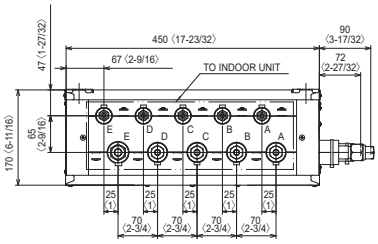
SUSPENSION BOLT: W3/8(M10)

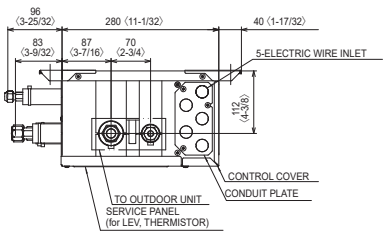
REFRIGERANT PIPE FLARED CONNECTION — Unit: inch

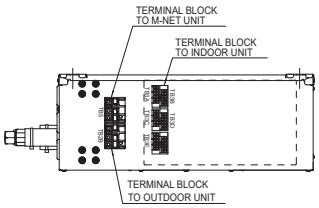
	A	B	C	D	E	TO OUTDOOR UNIT
LIQUID PIPE	1/4F	1/4F	1/4F	1/4F	1/4F	3/8F
GAS PIPE	3/8F	3/8F	3/8F	3/8F	1/2F	5/8F









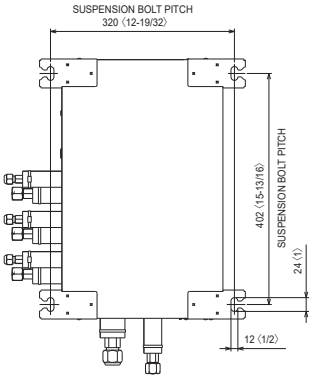


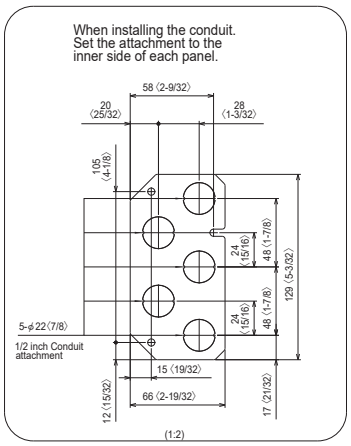
TAC-MKA32BC

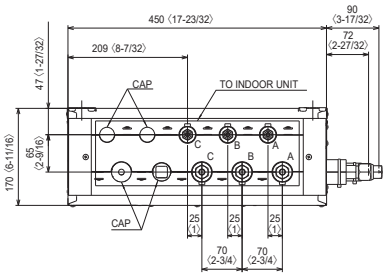
SUSPENSION BOLT: W3/8(M10)

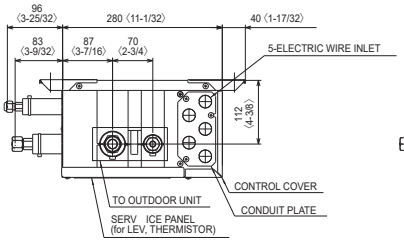
REFRIGERANT PIPE FLARED CONNECTION — Unit: inch

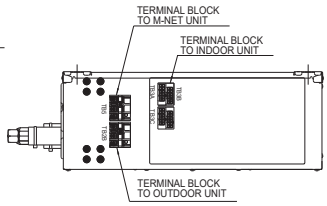
	A	B	C			TO OUTDOOR UNIT
LIQUID PIPE	1/4F	1/4F	1/4F			3/8F
GAS PIPE	3/8F	3/8F	3/8F			5/8F











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