

## Content

1. 10HP Floor Standing Unit.....	2
1.1 Inverter 10HP Floor Standing Unit .....	2
1.1.1 Appearance and Features.....	2
1.1.2 Operating Conditions .....	2
1.1.3 Specifications .....	3
1.1.4 Electrical Connection .....	4
1.1.5 Names and External Dimensions of All Parts.....	7
1.1.6 Installation Instructions .....	8
1.1.7 Pipe Connection Methods .....	11
1.1.8 Accessories .....	11

## 1. 10HP Floor Standing Unit

### 1.1 Inverter 10HP Floor Standing Unit

#### 1.1.1 Appearance and Features



#### Features

- The inverter design of ODU ensures higher energy efficiency.
- The inverter module adopts the refrigerant cooling technology to ensure stable and reliable operation.
- The 10HP ultra-large capacity, wide air outlet design, rapid cooling and heating, and strong and comfortable air supply easily meet the air conditioning requirements of large space.
- The ODU adopts the side air outlet structure, which ensures flexible handling and with less installation area required.

#### 1.1.2 Operating Conditions

To maintain good performance, please operate the air conditioner under the following temperature conditions.

Operating Mode \ Temperature	Cool	Heat	Dry
Room temperature	17°C to 32°C	0°C to 30°C	17°C to 32°C
Outdoor temperature	10°C to 55°C	-15°C to +27°C	10°C to 55°C

Note: If the above operating conditions cannot be met, the safety protection function may be triggered and the air conditioner may malfunction.

When the unit operates in "Cool" mode in a relatively humid environment (relative humidity higher than 80%), condensation may occur on the surface of the IDU and water may drip. In this case, turn the air guide to the maximum air outlet position and set the fan speed to "High".

### 1.1.3 Specifications

IDU model		MFA-96HWAN1-R
ODU model		MOUB-96HD1N1-R
Rated cooling capacity (kW)		28
Rated heating capacity (kW)		30
Rated power (kW)	Cooling	11.0
	Heating	9.8
Rated current (A)	Cooling	18.8
	Heating	16.8
Max. power input (kW)		13.0
Max. input current (A)		27.0
Circulating air flow (m <sup>3</sup> /h)		4500
Noise dB(A)	IDU	60
	ODU	60
Dimensions (mm) (width×height×depth)	IDU	1200×1860×420
	ODU	1120×1558×400
Weight (kg)	IDU	137
	ODU	142
Power supply (V/Hz)	IDU	220V 1N to 50Hz
	ODU	380V 3N to 50Hz
SEER		3.4
Standby power (W)		19
Refrigerant		R410A/6000g
Refrigerant pipe size (mm)		Gas side φ22.2 Liquid side φ9.5
Waterproof grade (ODU)		IPX4
Protection against electric shock		Class I
Control mode		Remote controller or key controller
Main board fuse specification	IDU	T10A 250VAC
	ODU	T10A 250VAC

#### Notes:

1. The cooling capacity of the air conditioner is measured under the indoor dry bulb/wet bulb

temperature of 27°C/19°C and the outdoor dry bulb/wet bulb temperature of 35°C/24°C; the heating capacity of the air conditioner is measured under the indoor dry bulb/wet bulb temperature of 20°C/15°C and the outdoor dry bulb/wet bulb temperature of 7°C/6°C. The actual cooling/heating capacity will vary with the indoor and outdoor ambient temperature and relative humidity.

**2. The noise of the air conditioner is measured in the semi-anechoic noise laboratory according to the Chinese national standard.**

**3. The above specifications may change due to product improvement. Please refer to the nameplate of the product.**

**4. The external static pressure range of the air conditioner at the test site is 0 Pa.**

#### 1.1.4 Electrical Connection

Notes:

1) Before the installation, check whether the power supply of the user meets the electrical installation requirements of the product (including reliable grounding, power leakage, and wire-diameter electrical load). Do not install the product before the modification if the electrical installation requirements of the product are not met.

2) Design the special power supply for the IDU and ODU respectively. The power supply adopts a dedicated branch circuit. Power leakage protector and manual switch should be installed.

3) The power supplies, leakage protectors and manual switches connected to the IDUs of the same ODU should be compatible with one another. (Use the same loop for the IDU supplies for the same system; which should be powered on or off concurrently.)

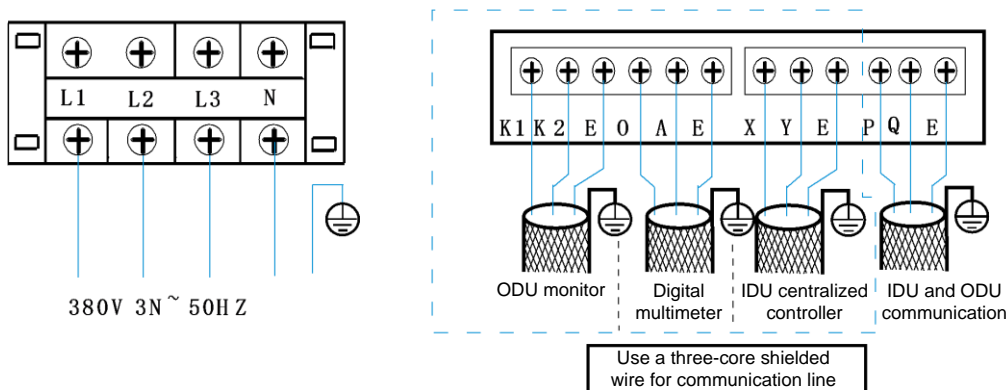
4) Incorporate the IDU and ODU wiring system and refrigerant pipe system into the same system.

5) We recommend using 3-core shielded cables for the ODU to minimize interference. Do not use unshielded multi-core conductor cables.

6) Follow the relevant national electrical standards. Power wiring must be conducted by professionals with electrician qualification.

7) When multiple air conditioners are installed in a centralized manner, ensure load balance of the three-phase power supply, and avoid installing multiple units at the same phase of the three-phase power supply.

1. Terminal block functions of ODU



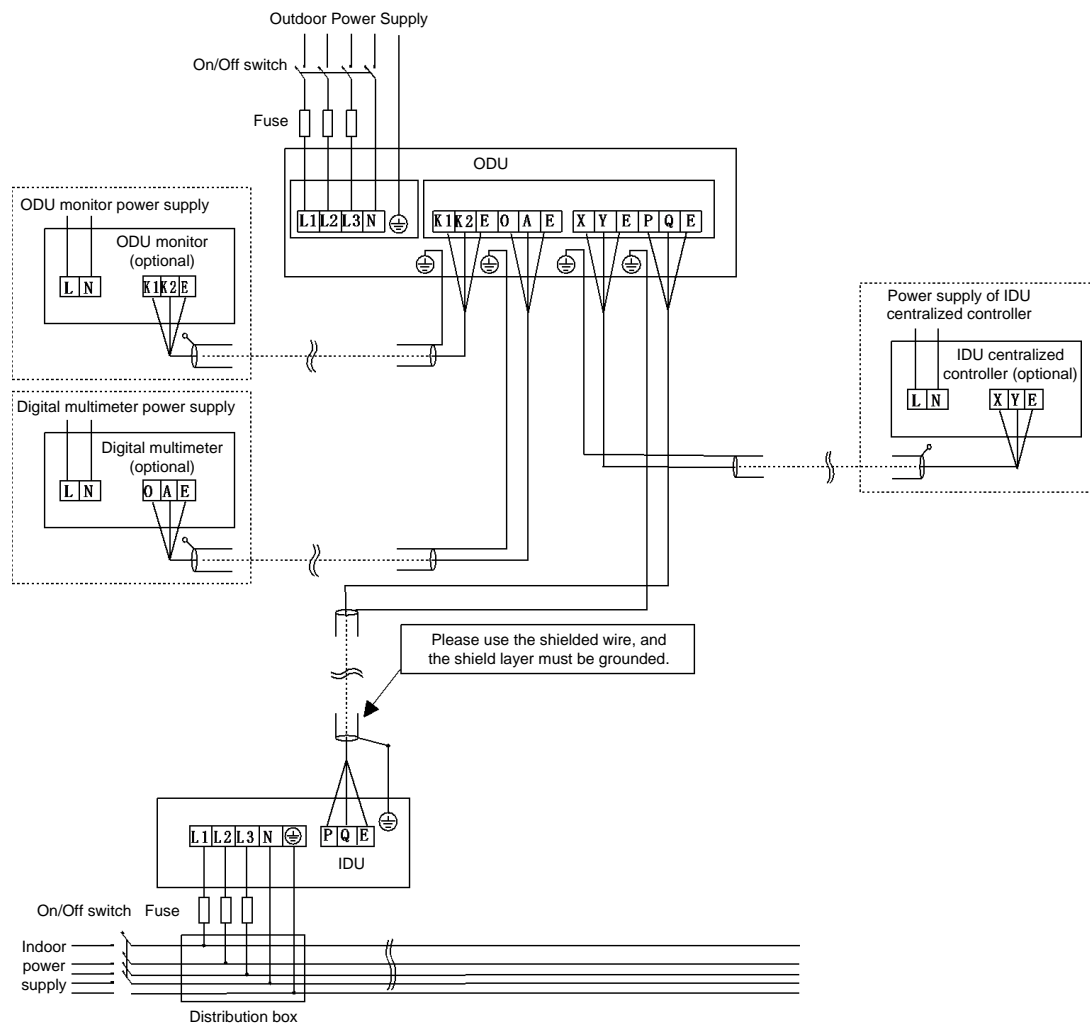
Note: The digital power meter and IDU centralized controller in the dotted wire frame are optional accessories.

2. Power supply specifications

In case of individual power supply (without power supply equipment)

Name	IDU	ODU
Model	MFA-96HWAN1-R	MOUB-96HD1N1-R
Power supply	Single-phase 380V 3N to 50Hz	Three-phase 380V 3N to 50Hz
Input capacity main switch (A)	40	50
Fuse (A)	20	40
Power cable dimension (mm <sup>2</sup> )	5×4.0	5×6.0
Grounding cable size (mm <sup>2</sup> )	4	6
MDV-125Q4/N1-D IDU and ODU connection line (mm <sup>2</sup> )(weak-current signal cable)	3-core shielded cable 3×0.75	3-core shielded cable 3×0.75

### 3. Electrical connection diagram

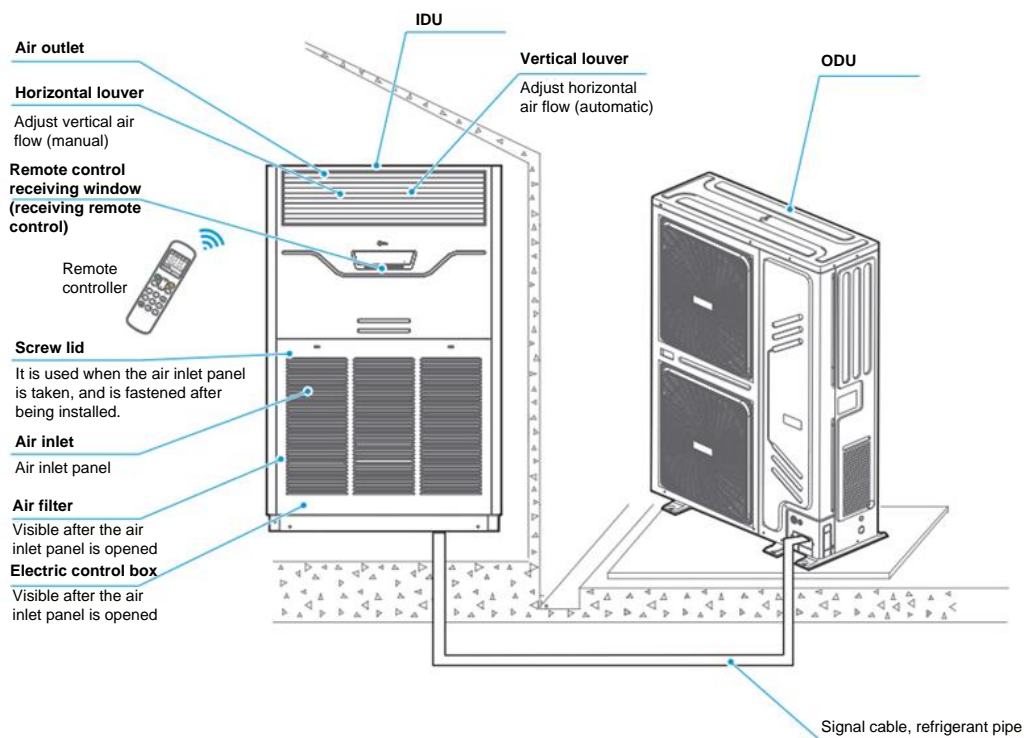


IDU and ODU electrical control system connection diagram

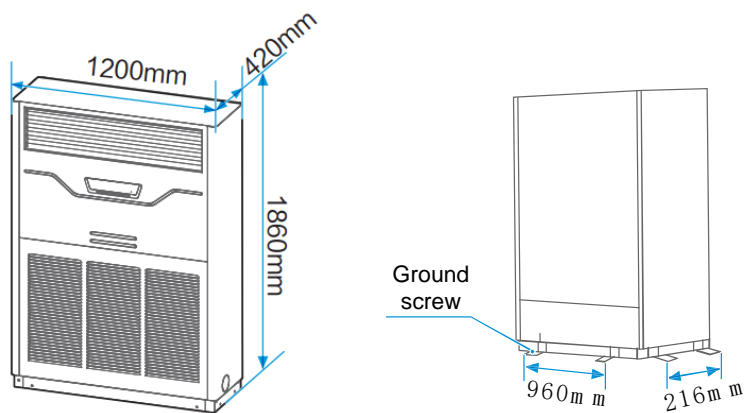
Notes:

- 1) Wiring errors may damage the compressor and other components.
- 2) PQE is connected to the weak-current signal cable. Do not connect it to a strong-current cable.
- 3) All the terminal blocks must be reliably fixed, and the grounding cables must be grounded as required.
- 4) After a power cable is connected to the power supply terminal, it must be fixed reliably.
- 5) Power the system on only after all the completed wiring operations have been carefully checked.

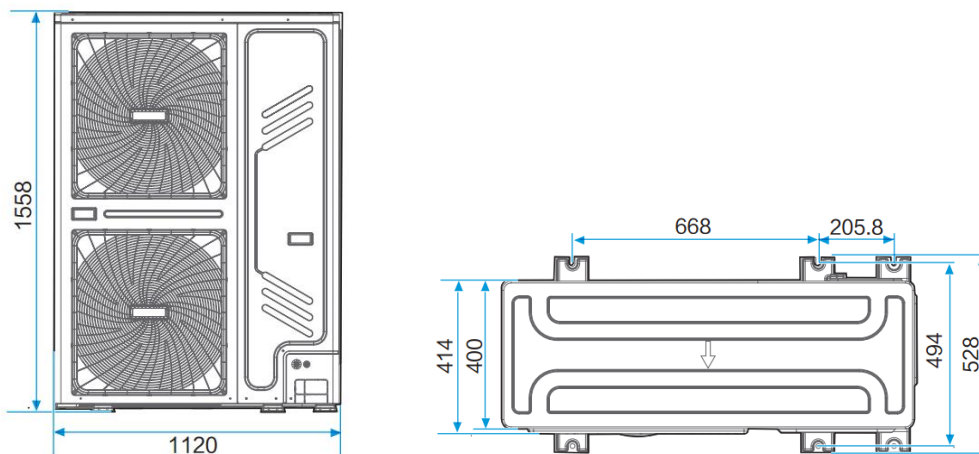
1.1.5 Names and External Dimensions of All Parts



IDU dimensions



ODU dimensions



1.1.6 Installation Instructions

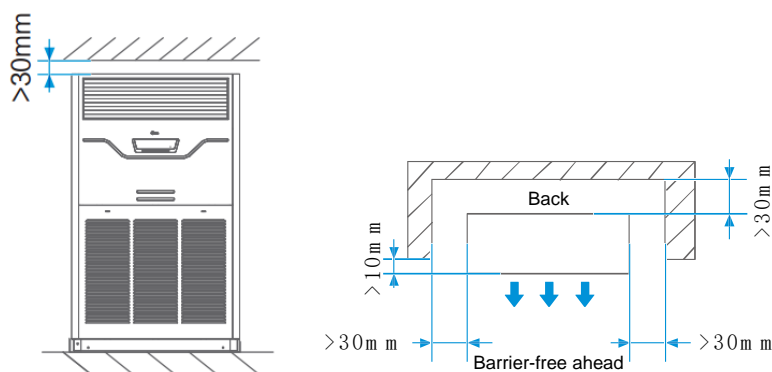
1.1.6.1 IDU Installation

1. Selecting an installation site for IDU

- 1) Sufficient space for installation and maintenance.
- 2) The ceiling is level, and the structure is strong enough to support the weight of IDU; take reinforcement measures when necessary.
- 3) Unobstructed air flows in/out of unit, and where air flow is minimally affected by external air. The supplied airflow can be sent to every corner in the room.
- 4) Where it is easier to drain fluids from the connected pipe and water discharge pipe.
- 5) No direct heat radiation.

2. Space required for IDU installation and maintenance

To ensure correct installation, select a solid and flat ground. Ensure the necessary space for installation and maintenance.



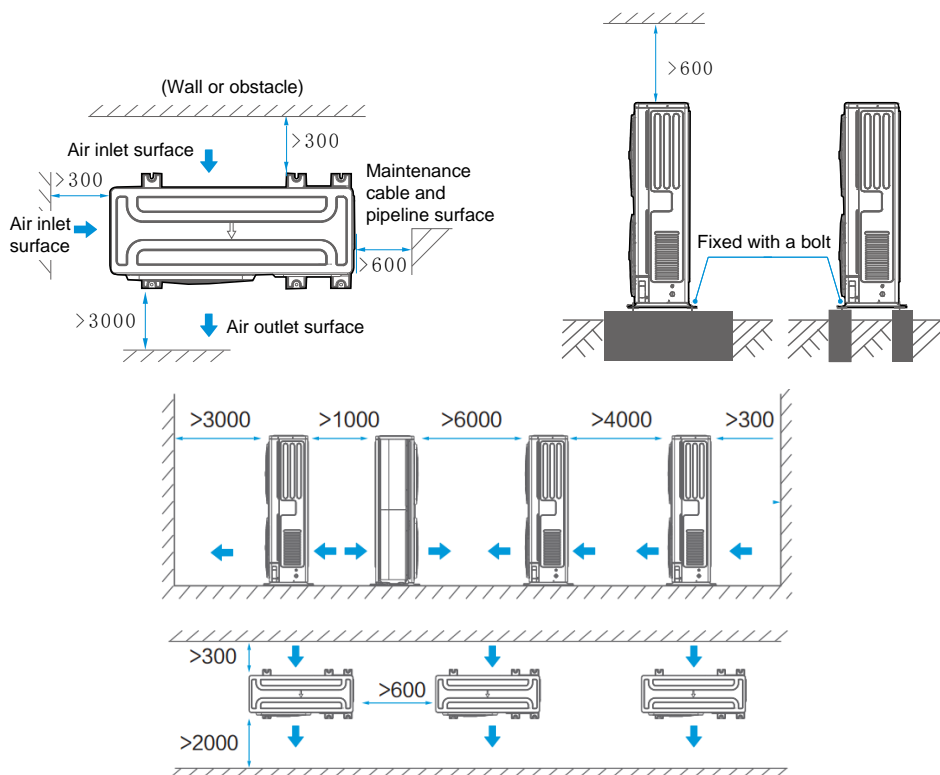


### 1.1.6.2 ODU Installation

#### 1. Selecting an installation site for ODU

- 1) Sufficient space for installation and maintenance.
- 2) Unobstructed air flows in/out of the unit, and there is no strong breeze; the site should be dry and well-ventilated.
- 3) The supporting surface should be flat and can bear the weight of the ODU. The ODU can be installed horizontally without increasing the vibration and noise; take reinforcement measures when necessary. The operating noise and the discharged air should not affect neighbours.
- 4) There is no leakage of flammable gas. It is easy to install the connecting pipes and complete electrical connections.
- 5) The level difference of connection pipes and the lengths of connection pipes must be within the allowed ranges.

#### 2. Space required for ODU installation and maintenance (unit: mm)

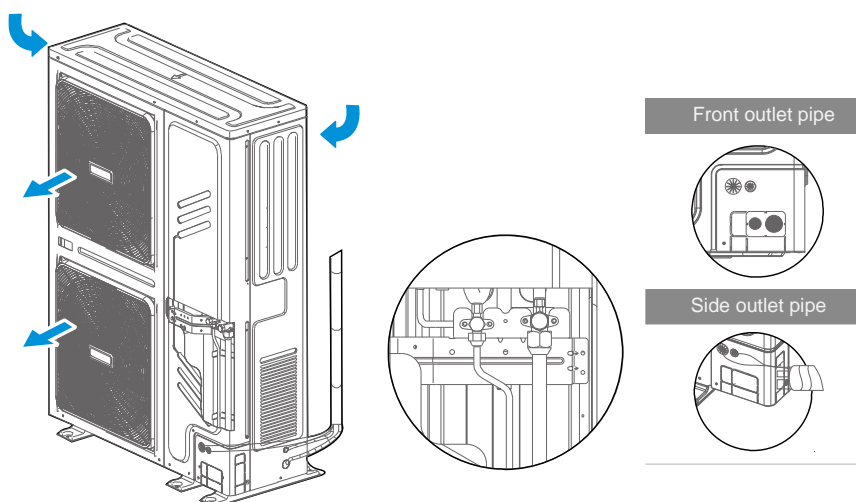


#### 3. Handling and installation

- 1) Because the center of gravity of the unit is not at the center, be careful when lifting the unit with a hoist cable.

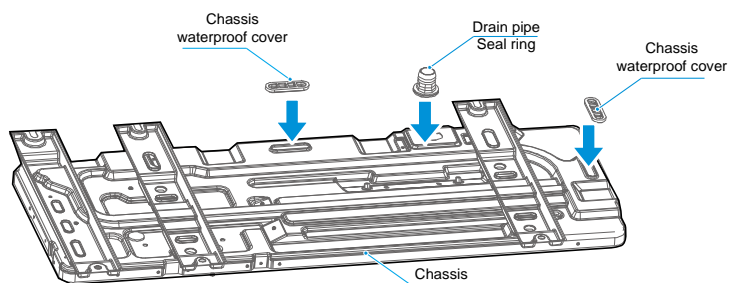
- 2) Do not hold the air outlet grille on the casing; otherwise, it will be deformed. Do not touch the air blades with your hands or other objects.
- 3) Do not tilt the unit over 45° when carrying it; do not store it horizontally.
- 4) Use the bolts (M10) to fix the feet of the unit. The unit must be installed firmly to prevent collapse in the event of an earthquake or a sudden blast.
- 5) Prepare a concrete foundation. Shockproof measures should be taken for the feet.

4. Indoor and outdoor pipe connections



5. Centralized drainage of chassis

When centralized drainage is required for the ODU, install the two chassis waterproof covers together with the chassis as shown in the following figure. At the same time, install the outlet pipe and seal ring together with the chassis, and then connect the drain pipe for centralized drainage.



6. Amount of refrigerant charged

Calculate the amount of the R410A refrigerant to be charged based on the diameter and length of the liquid pipes of the ODU and IDUs.

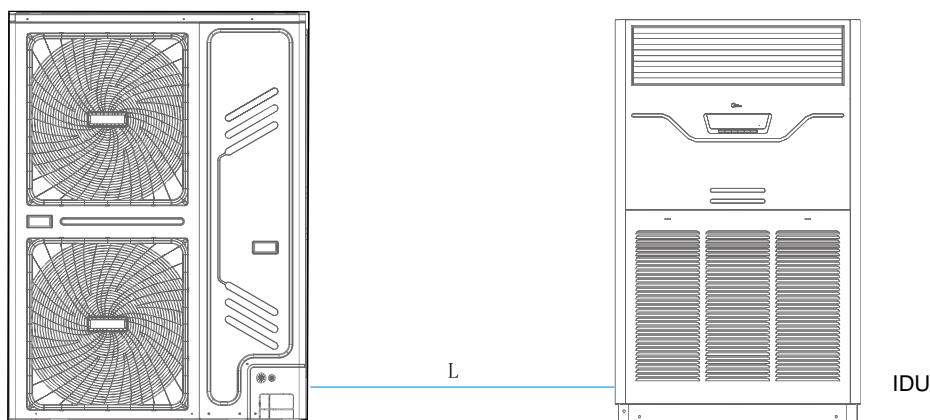
Diameter of liquid side pipe	Amount of refrigerant charged for the equivalent length of one-meter pipe
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$\Phi 9.5$ 

0.057 kg

### 1.1.7 Pipe Connection Methods

1. Connect the IDU as shown in the following figure



2. Allowable length and level difference for refrigerant pipe (liquid side pipes only)

MOUB-96HD1N1-R					
	Pipe length			Level difference	
	Total pipe length (actual length)	Farthest pipe length (L)		Level difference between IDU and ODU (H)	
		Actual length	Equivalent length	ODU above	ODU below
Allowable value	$\leq 70$ m	$\leq 60$ m	$\leq 65$ m	$\leq 30$ m	$\leq 20$ m
Pipe part	L	L		—	—

Note: When the sum of the equivalent length of the liquid and gas pipes is equal to or greater than 60 m, the size of the gas-side main pipe must be increased.

### 1.1.8 Accessories

No.	Accessory Name	Qty	Purpose	Remarks
1	Installation Manual	1	Instructions for IDU and ODU installation	
2	User Manual	1	Instructions for IDU and ODU operations	
3	MCAC User Service Guide	1		
4	Brass nut	1	For use in the installation works of connecting pipes	Used for IDU
5	Drain pipe connector	1	Connecting to the drain pipe	Used for IDU
6	Protection sleeve for refrigerant pipe	2	Thermal insulation at the joint between IDU and ODU	
7	Seal ring	1	Used with water outlet pipe	Used for ODU
8	Drain pipe connector	1	Connecting to the drain pipe	Used for ODU
9	Connecting pipe	1	For use in the installation works of connecting pipe	Used for ODU, placed in the ODU
10	Chassis waterproof cover	2		Used for ODU

11	Network matching wires	1		
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## Content

1. 10HP One-Driven-Two Unit.....	2
1.1 Inverter 10HP One-Driven-Two Unit.....	2
1.1.1 Appearance .....	2
1.1.2 Features.....	2
1.1.3 Operating Conditions .....	3
1.1.4 Specifications.....	3
1.1.5 IDU.....	9

## 1. 10HP One-Driven-Two Unit

### 1.1 Inverter 10HP One-Driven-Two Unit

#### 1.1.1 Appearance



#### 1.1.2 Features

Applicable to shops, restaurants, meeting rooms, etc.

1. High energy efficiency: The ODU adopts the DC inverter compressor and the VRF core technology for highly adjustable air conditioning functions. As an industry-leading certified energy efficient product, it boasts the IPLV(C) up to 6.0.
2. Comfort experience: With the DC inverter drive control, the electronic expansion valve achieves a grade 480 precision for accurate temperature control.
3. High-end quality and elegance: The IDU adds an aesthetic look to the interior design and provides 360° air supply for enhanced comfort.
4. Stable and reliable: The inverter module adopts the refrigerant cooling technology to realize fast heat dissipation. The quality parts equipped can ensure stable and reliable operation of the product.
5. Easy control: The product can be operated with the VRF remote controller and wired controller, which is fashionable, nice-looking and more convenient.
6. Flexible installation: high level difference design for long pipes, with the maximum pipe length of 70 m, and the maximum level difference of 30 m for the IDU and ODU; free and flexible ODU installation positions for optimized space utilization.

### 1.1.3 Operating Conditions

To maintain good performance, please operate the air conditioner under the following temperature conditions.

Operating Mode \ Temperature	Cool	Heat	Dry
Room temperature	17°C to 32°C	0°C to 30°C	17°C to 32°C
Outdoor temperature	10°C to 55°C	-15°C to +27°C	10°C to 55°C

Note: When the unit operates in "Cool" mode in a relatively humid environment (relative humidity higher than 80%), condensation may occur on the surface of the IDU and water may drip. In this case, turn the air guide to the maximum air outlet position and set the fan speed to "High".

This unit is a comfortable air conditioner. Do not use it in equipment rooms or rooms with precision instruments, food, plants, animals, or works of art.

### 1.1.4 Specifications

IDU model	MQ4A-48HWAN1*2	
ODU model	MOUB-96HD1N1-R	
Rated cooling capacity (kW)	26	
Rated heating capacity (kW)	27.5	
Rated power (kW)	Cooling	8.2
	Heating	7.85
Rated current (A)	Cooling	13.1
	Heating	12.6
Max. power input (kW)	11.8	
Max. input current (A)	21.0	
Noise dB(A)	IDU	41
	ODU	60
Dimensions (mm) (width×height×depth)	IDU	840×300×840
	ODU	1120×1558×400
Weight (kg)	IDU	29.2
	ODU	142
Power supply (V/Hz)	IDU	220V 1N to 50Hz
	ODU	380V 3N to 50Hz
Standby power (W)	20	
Refrigerant	R410A/6000g	
Refrigerant pipe size (mm)	IDU	Gas side φ15.9 Liquid side φ9.5
	ODU	Gas side φ22.2 Liquid side φ9.5
Waterproof grade	IPX4	

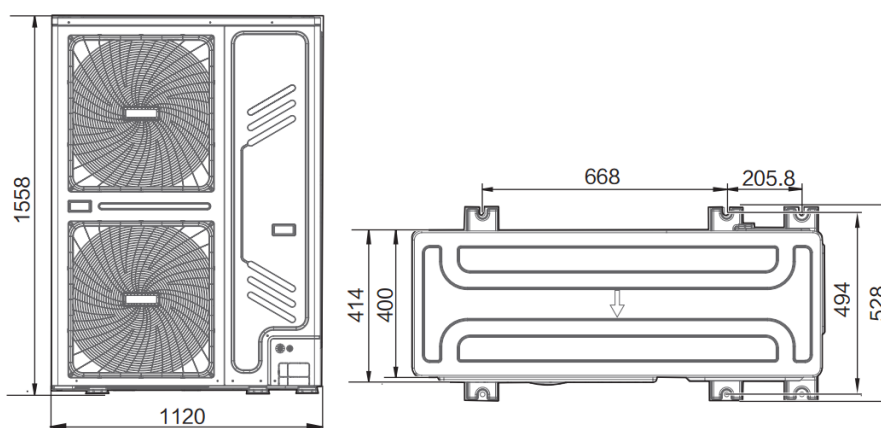
Protection against electric shock		Class I
Control mode		Remote controller or key controller
Main board fuse specification	IDU	T5A 250VAC
	ODU	T10A 250VAC

**Notes:**

1. The cooling capacity of the air conditioner is measured under the indoor dry bulb/wet bulb temperature of 27°C/19°C and the outdoor dry bulb/wet bulb temperature of 35°C/24°C; the heating capacity of the air conditioner is measured under the indoor dry bulb/wet bulb temperature of 20°C/15°C and the outdoor dry bulb/wet bulb temperature of 7°C/6°C. The actual cooling/heating capacity will vary with the indoor and outdoor ambient temperature and relative humidity.
2. The noise of the air conditioner is measured in the semi-anechoic noise laboratory according to the Chinese national standard.
3. The external static pressure range of the air conditioner at the test site is 0 Pa.
4. The above specifications may change due to product improvement. Please refer to the nameplate of the product.

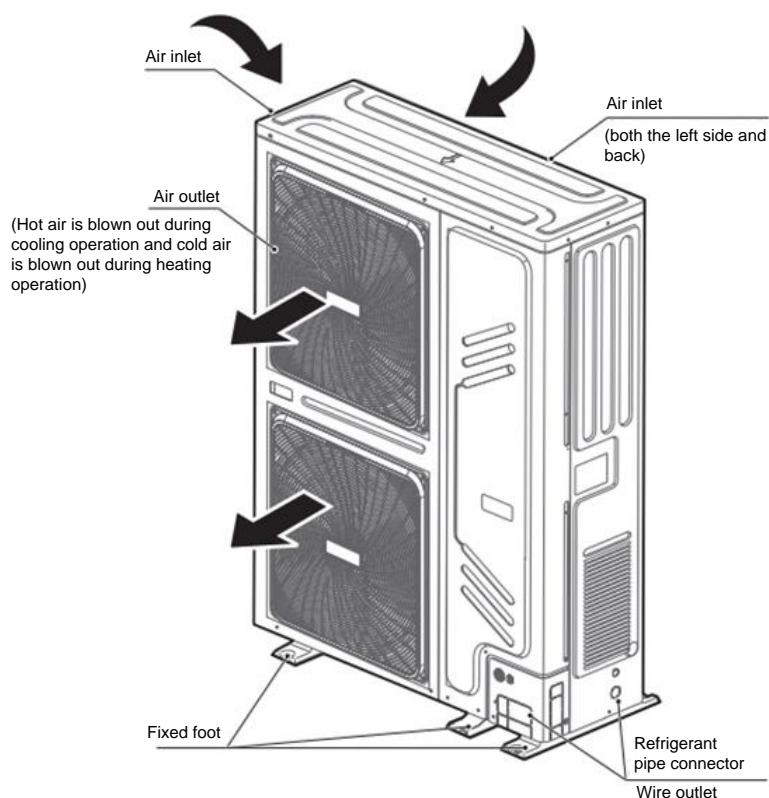
## 2. Dimensions and part names

## Dimensions:



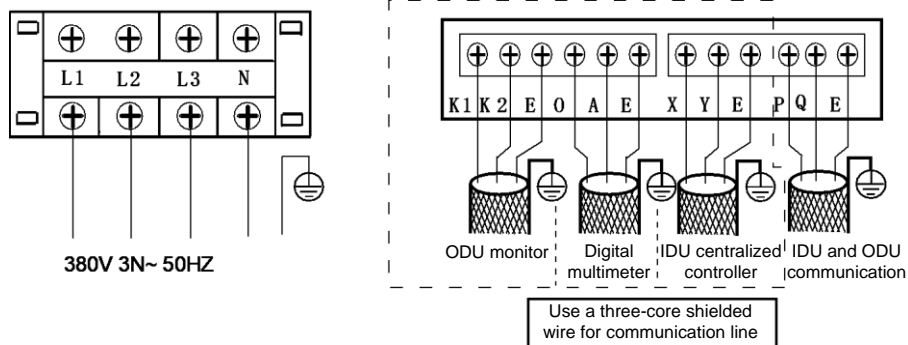
Name of each part:





### 3. Electrical connection

#### 1) Terminal block functions of ODU



#### 2) Power supply specifications

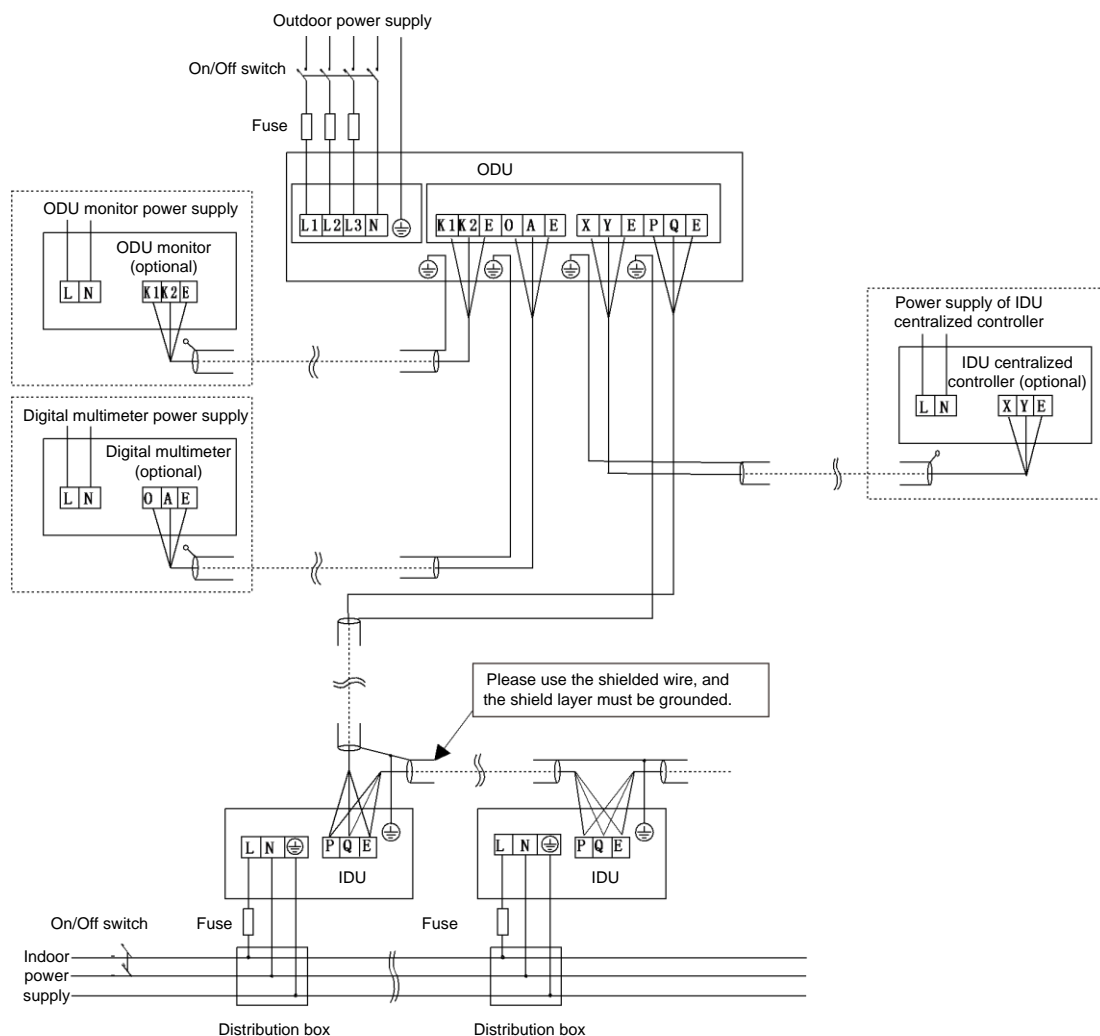
Model	Item	ODU power supply		Fuse (A)	Input capacity main switch (A)	IDU and ODU signal cables (mm <sup>2</sup> ) (weak-current signal cables)
		Specification	Power cable (mm <sup>2</sup> )			
MOUB-96HD1N1-R		380V 3N to 50Hz	5×6.0	40	50	3-core shielded cable 3×0.75

#### 3) Electrical connection diagram

Notes:

- a. Wiring errors may damage the compressor and other components.

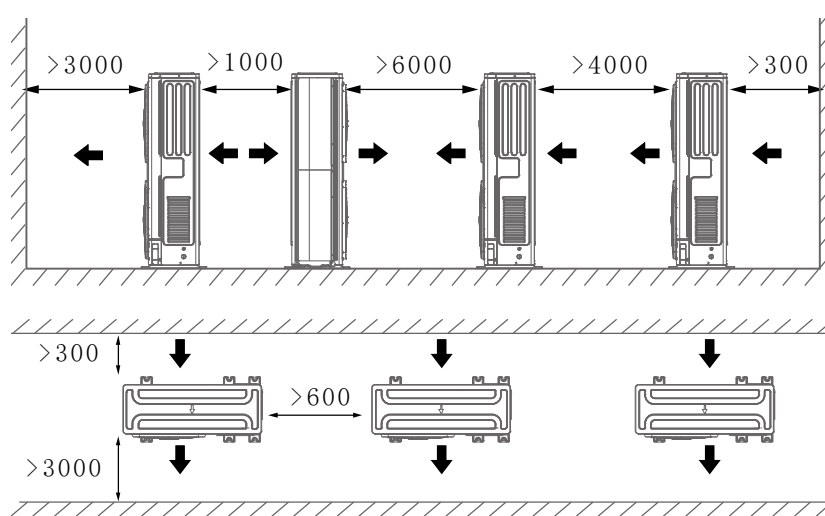
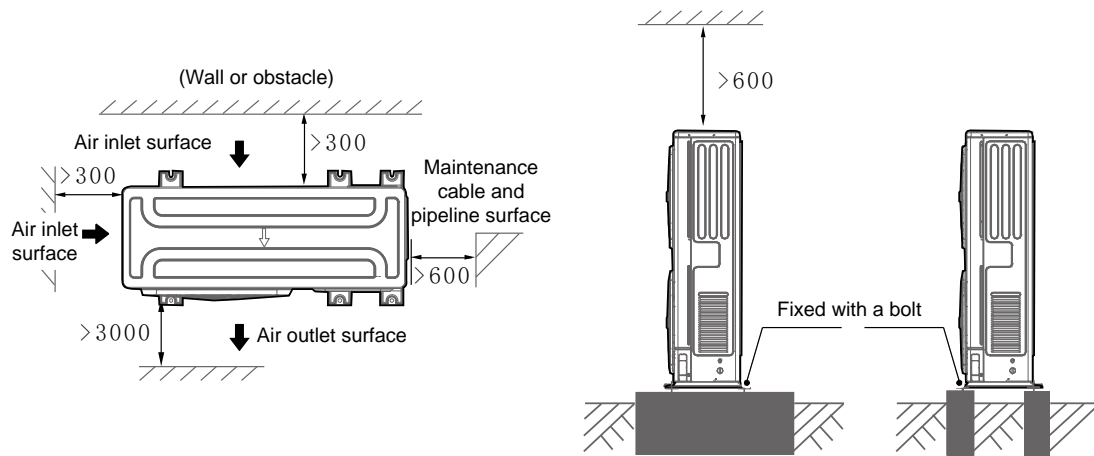
- b. PQE is connected to a weak-current signal cable. Do not connect it to a strong-current cable.
- c. All the terminal blocks must be reliably fixed, and the grounding cables must be grounded as required.
- d. After a power cable is connected to the connector, it must be fixed reliably.
- e. Power the system on only after all the completed wiring operations have been carefully checked.



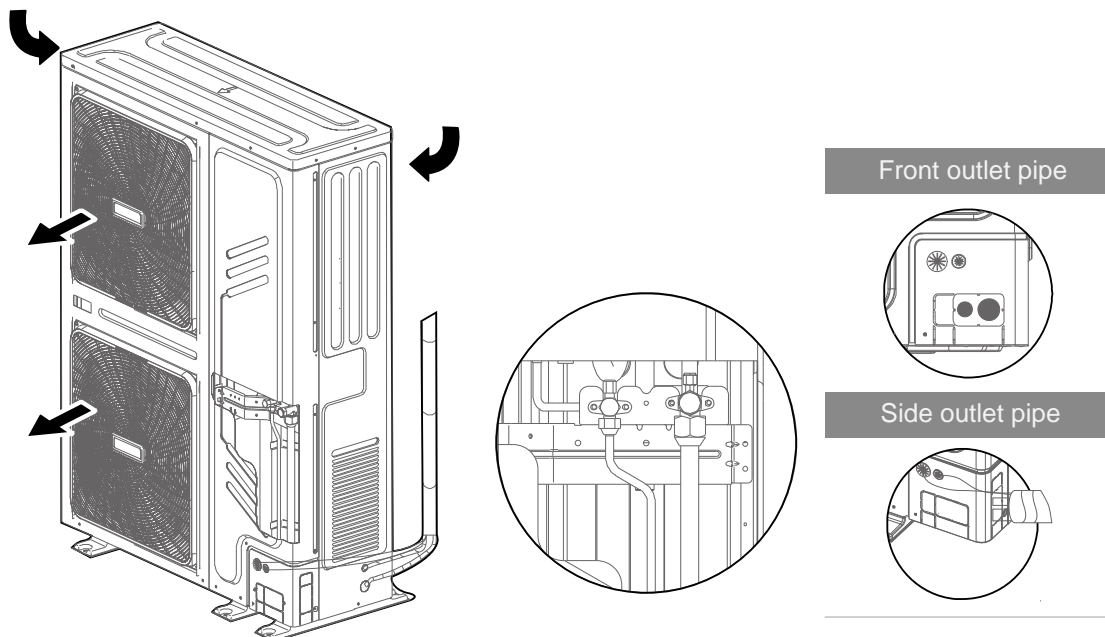
Three-phase ODU electrical control system connection diagram

4. Space required for installation and maintenance

Unit (mm)

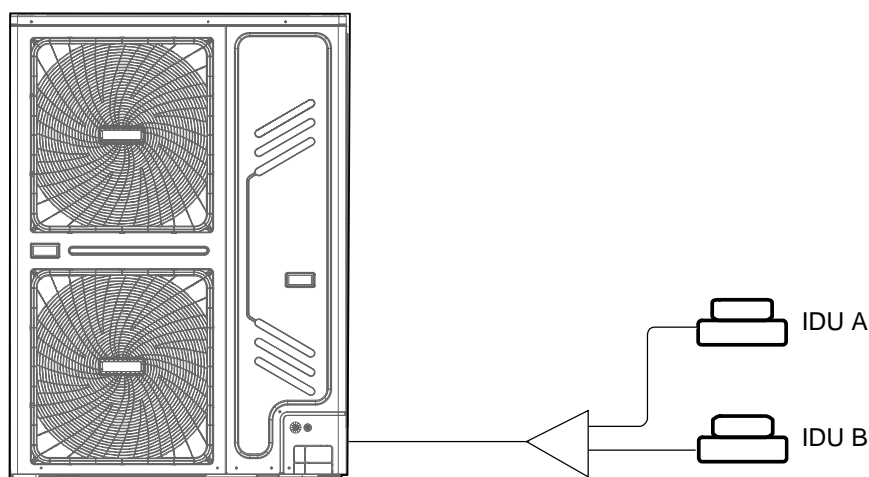


5. Indoor and outdoor pipe connections



6. Pipe connection mode

1) Connect the IDU as shown in the following figure



2) Allowable length and level difference for refrigerant pipe (liquid pipes only)

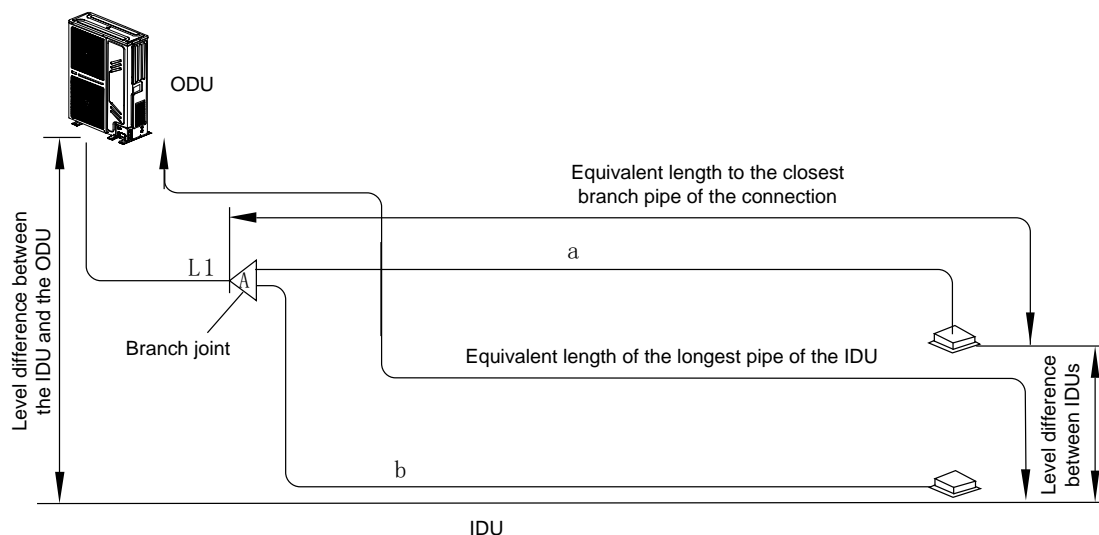
MOUB-96HD1N1-R							
	Pipe length				Level difference		
	Total pipe length (actual length)	Farthest pipe length (L)		Equivalent length to the connected branch joint (L)	Level difference between IDU and ODU (H)		Level difference between IDUs (H)
		Actual length	Equivalent length		ODU above	ODU below	
Allowable value	≤ 70 m	≤ 60 m	≤ 65 m	≤ 15 m	≤ 30 m	≤ 20 m	≤ 8 m
Pipe part	L1+a+b	L1+a or L1+b		a, b	—	—	—

Note: When the equivalent length sum of the liquid and gas pipes is equal to or greater than 90 m, the size of the gas-side main pipe must be increased. In addition, based on the distance between the refrigerant pipes, the size of the gas-side main pipe may be increased when the capacity is lowered.

#### Examples

Equivalent total length of liquid side + gas side pipes	Main pipe size	Branch joint model
< 90 m	Φ9.5/Φ22.2	FQZHN-02C
≥ 90 m	Φ9.5/Φ25.4	FQZHN-02C

#### Connection methods



## Notes:

1. Use the special-purpose branch joint provided by Midea.
2. The actual length of the IDU connected to the branch joint should not exceed 15 m.

## 1.1.5 IDU

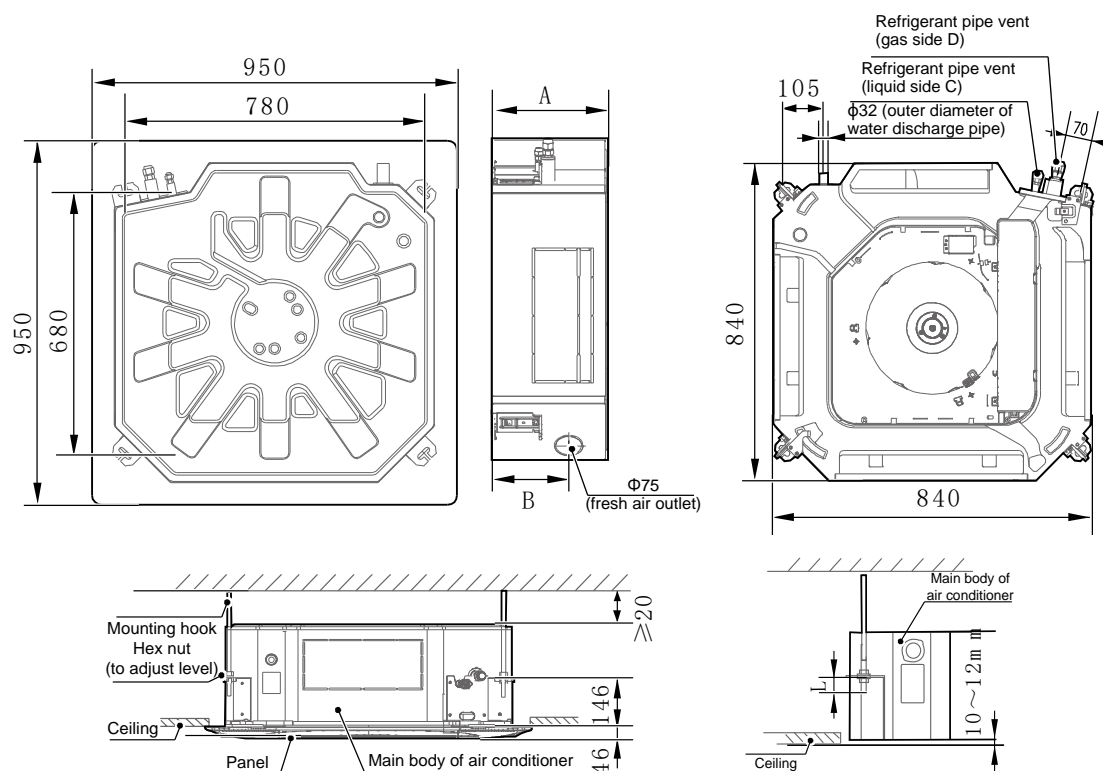
## 1. Specifications

Model		MQ4A-48HWAN1	
Cooling capacity (kW)		13	
Heating capacity (kW)		13.75	
Electrical characteristics	Cooling	Operating current (A)	1.0
		Power consumption (W)	190
	Heating	Operating current (A)	1.0
		Power consumption (W)	190
Air outlet static pressure (Pa)		0	
Dimensions (width×height×depth)		Unit body (mm)	840×840×300
		Panel (mm)	950×950×54.5
Applicable area (m <sup>2</sup> )		48 to 80	
Circulating air flow (m <sup>3</sup> /h)		1800	
Noise dB(A)		41/39/37	
Weight (kg) (unit body/panel)		29.2/5.8	
Fuse specifications		T5A 250VAC	
Pipe size (mm)		Liquid side	Φ9.5
		Gas side	Φ15.9

**Notes:**

1. The cooling capacity of the air conditioner is measured under the indoor dry bulb/wet bulb temperature of 27°C/19°C and the outdoor dry bulb/wet bulb temperature of 35°C/24°C; the heating capacity of the air conditioner is measured under the indoor dry bulb/wet bulb temperature of 20°C/15°C and the outdoor dry bulb/wet bulb temperature of 7°C/6°C. The actual cooling/heating capacity will vary with the indoor and outdoor ambient temperature and relative humidity.
2. The noise of the air conditioner is measured in the semi-anechoic noise laboratory according to the Chinese national standard.
3. This unit is a one-driven-two system, i.e., the IDU and ODU power supplies can be connected separately when an ODU drives two IDUs for combination operation.
5. The above specifications may change due to product improvement. Please refer to the nameplate of the product.

## 2. Dimensions (unit: mm)



IDU Model	A (mm)	B (mm)	C (mm)	D (mm)
MQ4A-48HWAN1	300	197	$\Phi 9.5$	$\Phi 15.9$

Note: The IDU is equipped with a built-in drain pump and float switch. Do not tilt the unit in the reverse

direction of the drain pan; otherwise, the float switch may malfunction and cause water leakages.

### 3. Electrical connection

#### 1) Power supply specifications

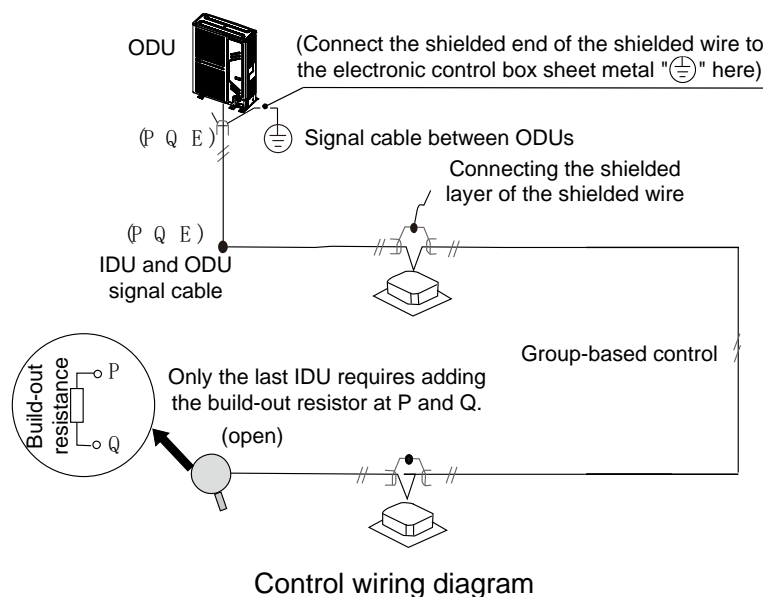
Refer to the following table for the power cable specifications. A capacity too small will cause wire overheating, and lead to accidents when the unit burns and becomes damaged.

Model \ Item	Indoor power supply					Connected wires		Ground cable (mm <sup>2</sup> )
	Power supply	Power switch		Power supply wiring		IDU and ODU signal cables		
		Capacity	Fuse	Less than 20 m (mm <sup>2</sup> )	Less than 50 m (mm <sup>2</sup> )	Qty	Wire diameter (mm <sup>2</sup> )	
MQ4A-48HW AN1/2	Single-phase 220V to 50Hz	10A	10A	2×2.5	2×4.0	1	Triple-core shielded cable 0.75	Single line 1.5

#### 2) IDU power supply

a. Use a dedicated power supply for the IDU that is different from the power supply for the ODU.

b. Use the same power supply, leakage protective device, air circuit breaker and air switch for all the IDUs connected to the same ODU.



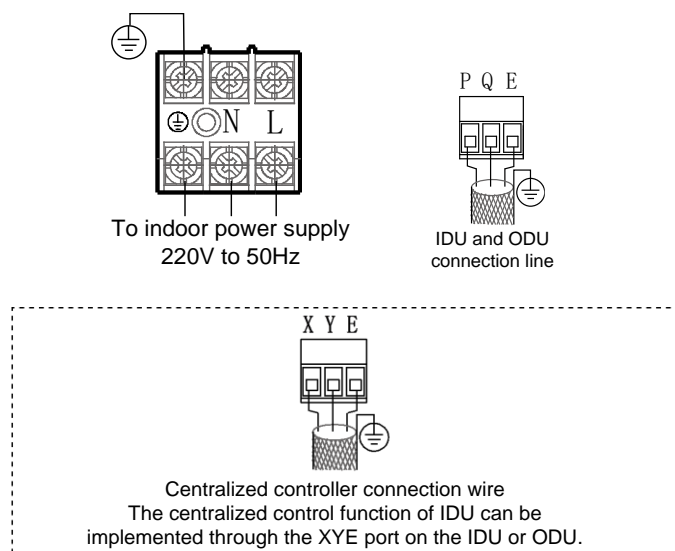
#### 3) IDU and ODU signal cables

- a. Use only shielded wires for the control wiring. Any other type of wires may produce a signal interference that will cause the units to malfunction.
- b. All the shielded wiring in the network are interconnected, and will eventually connect to earth at the same point "⊕" (see the control wiring diagram).
- c. Do not bind the control wire, refrigerant pipe and power cable together. When the power cable and control wire are laid parallel, they should be kept at a distance of more than 300 mm to prevent signal source interference.
- d. The control wire must not form a closed loop.
- e. Use a three-core shielded cable with polarity (with a cross-sectional area of 0.75 mm<sup>2</sup>) as the signal line between the IDU and ODU. Make sure the line is connected correctly. This signal cable can only be led out from the master ODU.

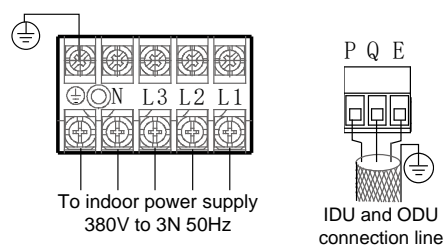
#### 4) Terminal block setting diagram

For the connection method, refer to the wiring diagram of each IDU.

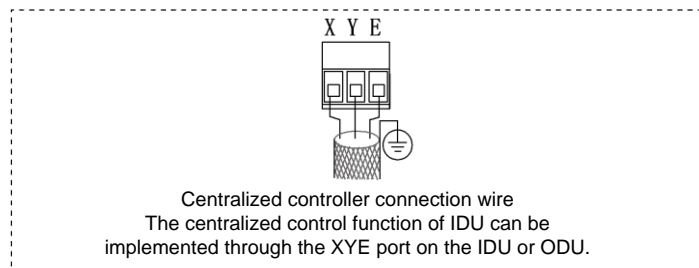
##### ➤ Single-phase power supply model



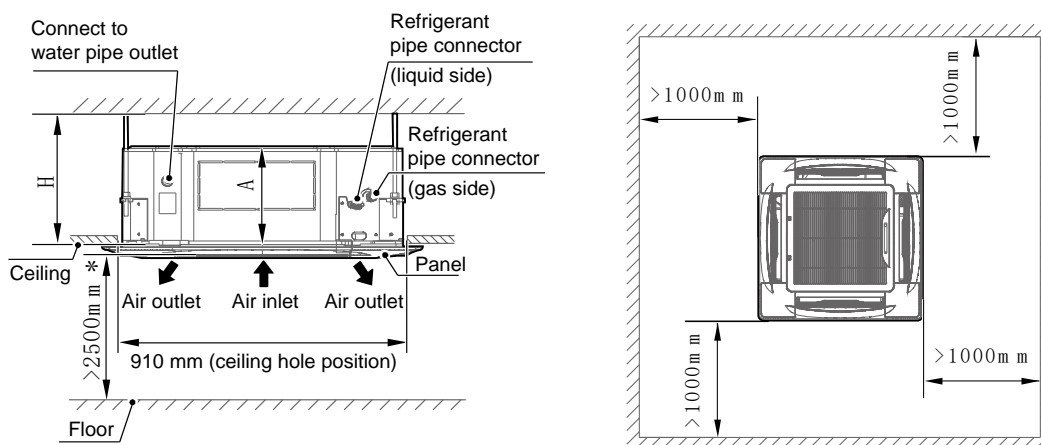
##### ➤ Three-phase power supply model







4. Space required for installation and maintenance



IDU Model	A (mm)	H (mm)
MQ4A-48HWAN1	300	≥ 330

Note: The IDU can be mounted on a ceiling with a height of 2.5 to 4 m. As the mounting height of the unit increases, the heating performance in areas close to the ground surface will decrease to some extent due to the rising of hot air.

## Content

1. 10HP Duct Unit .....	2
1.1 Inverter 10HP Duct Unit .....	2
1.1.1 Appearance and Features .....	2
1.1.2 Operating Conditions .....	2
1.1.3 Specifications .....	3
1.1.4 Electrical Connection .....	5
1.1.5 Names and Dimensions of All Parts .....	8
1.1.6 Installation Instructions .....	9
1.1.7 Installation of Connecting Pipes .....	12
1.1.8 Accessories .....	13

## 1. 10HP Duct Unit

### 1.1 Inverter 10HP Duct Unit

#### 1.1.1 Appearance and Features



#### Features

- The inverter design of ODU ensures higher energy efficiency.
- The ODU inverter module adopts the refrigerant cooling technology to realize fast heat dissipation and improve stability and reliability.
- A variety of static pressures are available to meet the needs of different air duct lengths in various spaces.
- Remote air supply at multiple points is suitable for different rooms.

#### 1.1.2 Operating Conditions

To maintain good performance, please operate the air conditioner under the following temperature conditions.

Operating Mode \ Temperature	Cool	Heat	Dry
Room temperature	17°C to 32°C	0°C to 30°C	17°C to 32°C
Outdoor temperature	10°C to 55°C	-15°C to +27°C	10°C to 55°C

Note: If the above operating conditions cannot be met, the safety protection function may be triggered and the air conditioner may malfunction.

When the unit operates in "Cool" mode in a relatively humid environment (relative humidity higher than 80%), condensation may occur on the surface of the IDU and water

may drip. In this case, turn the air guide to the maximum air outlet position and set the fan speed to "High".

### 1.1.3 Specifications

IDU model		MHA-96HWAN1	
ODU model		MOUB-96HD1N1-R1	
Cooling capacity (kW)		26	
Heating capacity (kW)		30	
Electrical characteristics	Cooling	Rated current (A)	20.5
		Rated power (kW)	11.6
	Heating	Rated current (A)	18
		Rated power (kW)	10
Power supply (V/Hz)		IDU	Single-phase 220V to 50Hz
		ODU	Three-phase 380V 3N to 50Hz
Max. input current (A)		29	
Max. power input (kW)		14	
Dimensions (mm) (width×height×depth)		IDU	1366×450×722
		ODU	1120×1558×400
Weight (kg)		IDU	90
		ODU	142
Noise dB(A)		IDU	55
		ODU	62
SEER		2.91	
Circulating air flow (m <sup>3</sup> /h) (rated static pressure)		4600 (150Pa)	
Static pressure (Pa)		50 to 200	
Refrigerant		R410A/6000g	
Waterproof grade		IDU	IPX0
		ODU	IPX4
Protection against electric shock		Class I	
Control mode		Remote controller or wired controller	
Main board fuse specification		IDU	T10A 250VAC
		ODU	T10A 250VAC

Notes:

1. The cooling capacity of the air conditioner is measured under the indoor dry bulb/wet bulb temperature of 27°C/19°C and the outdoor dry bulb/wet bulb temperature of 35°C/24°C; the heating capacity of the air conditioner is measured under the indoor dry bulb/wet bulb temperature of 20°C/15°C and the outdoor

dry bulb/wet bulb temperature of 7°C/6°C. The actual cooling/heating capacity will vary with the indoor and outdoor ambient temperature and relative humidity.

2. The noise of the air conditioner is measured in the semi-anechoic noise laboratory according to the Chinese national standard.

3. The above specifications may change due to product improvement. Please refer to the nameplate of the product.

4. The external static pressure range of the air conditioner at the test site is 0 Pa.

IDU model		MTA-96HWAN1	
ODU model		MOUB-96HD1N1-R1	
Cooling capacity (kW)		26	
Heating capacity (kW)		30	
Electrical characteristics	Cooling	Rated current (A)	20.5
		Rated power (kW)	11.3
	Heating	Rated current (A)	18
		Rated power (kW)	10
Power supply (V/Hz)		IDU	Single-phase 220V to 50Hz
		ODU	Three-phase 380V 3N to 50Hz
Max. input current (A)		29	
Max. power input (kW)		14	
Dimensions (mm) (width×height×depth)		IDU	1366×450×722
		ODU	1120×1558×400
Weight (kg)		IDU	85
		ODU	142
Noise dB(A)		IDU	55
		ODU	60
SEER/APF		2.87/2.81	
Circulating air flow (m <sup>3</sup> /h) (rated static pressure)		4400 (100Pa)	
Static pressure (Pa)		50 to 150	
Refrigerant		R410A/6000g	
Waterproof grade		IDU	IPX0
		ODU	IPX4
Protection against electric shock		Class I	
Control mode		Remote controller or wired controller	
Main board fuse	IDU	T10A 250VAC	

specification	ODU	T10A 250VAC
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Notes:

1. The cooling capacity of the air conditioner is measured under the indoor dry bulb/wet bulb temperature of 27°C/19°C and the outdoor dry bulb/wet bulb temperature of 35°C/24°C; the heating capacity of the air conditioner is measured under the indoor dry bulb/wet bulb temperature of 20°C/15°C and the outdoor dry bulb/wet bulb temperature of 7°C/6°C. The actual cooling/heating capacity will vary with the indoor and outdoor ambient temperature and relative humidity.
2. The noise of the air conditioner is measured in the semi-anechoic noise laboratory according to the Chinese national standard.
3. The above specifications may change due to product improvement. Please refer to the nameplate of the product.
4. The external static pressure range of the air conditioner at the test site is 0 Pa.

#### 1.1.4 Electrical Connection

Notes:

- 1) A special power supply must be used for air-conditioners. The power voltage should be in line with the rated voltage.
- 2) The external power supply circuit of the air conditioner must include an earth line, and the earth line of the power cable connecting to the indoor unit must be securely connected to the earth line of the external power supply.
- 3) Only professional technicians can perform wiring according to the labels on the circuit diagram.
- 4) The connected fixed line must be configured with an all-pole disconnection device with at least 3 mm contact separation.
- 5) Electric leakage protection must be configured according to national electrical equipment technical standards.
- 6) The power cable and signal cables must be neatly and properly arranged without interfering with one another or contacting with any connecting pipes or valves. In general, two wires cannot be connected unless the joint is securely welded and wrapped with insulation tape.
- 7) Power the system on only after the wiring has been checked.
- 8) When multiple air conditioners are installed in a centralized manner, ensure load balance of the three-phase power supply, and avoid installing multiple units at the same phase of the three-phase power supply.

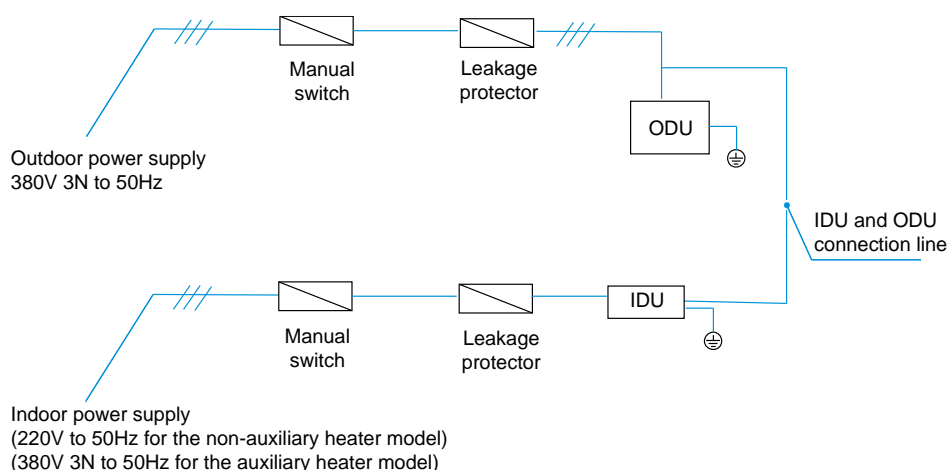
## 1. Power supply specifications

Model	Power supply	Input capacity main switch/fuse (A)	Power cable dimension (mm <sup>2</sup> )	Grounding cable size (mm <sup>2</sup> )	IDU and ODU connection line (mm <sup>2</sup> ) (weak-current signal cable)
MHA-96HWAN1	Single-phase 220V to 50Hz	20/10	3×1.5	1.5	3×0.75
MTA-96HWAN1	Single-phase 220V to 50Hz	40/20	5×2.5	2.5	3×0.75
MOUB-96HD1N1-R1	Three-phase 380V 3N to 50Hz	50/40	5×6 (less than 20 m in length)	6 (less than 20 m in length)	3×0.75

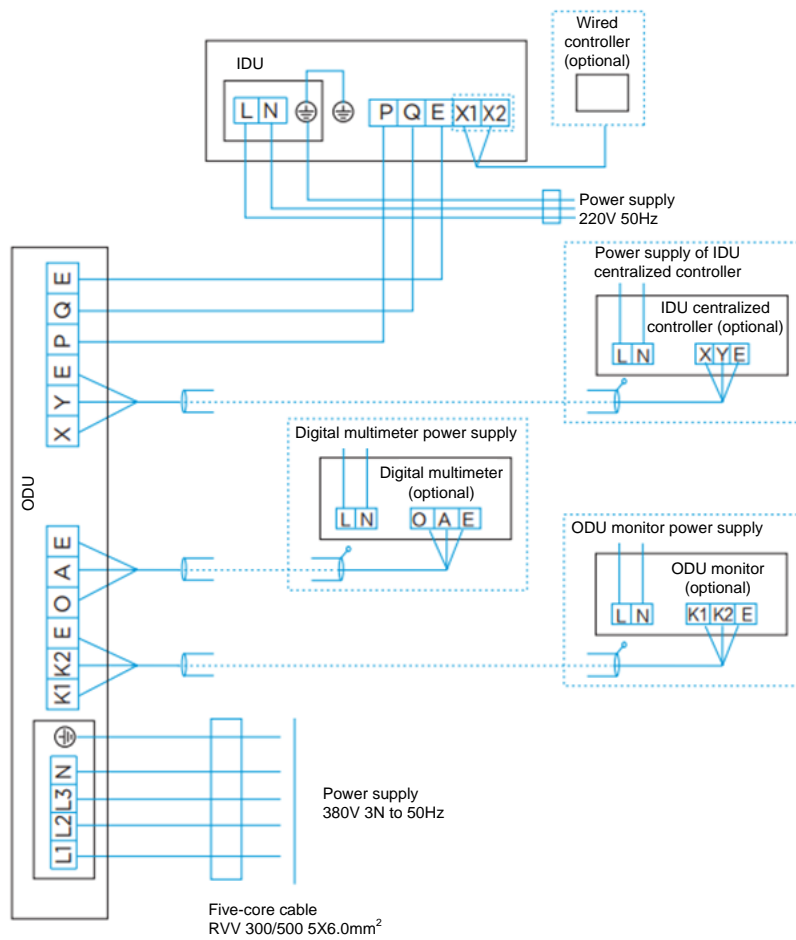
## 2. Power supply wiring

Model	Power supply	Minimum power cable diameter (mm <sup>2</sup> ) (wiring for the metal pipe and synthetic resin pipe)		Manual Switch (A)		Leakage protector
		Dimension	Ground line	Capacity	Fuse	
MOUB-96HD1N1-R1	Three-phase 380V 3N to 50Hz	5×6.0	6.0	50	40	< 100 mA, 0.1 sec

The wiring diameter and continuous length in the table indicate the situation when the voltage drop is within 2%. If the continuous wiring length exceeds the value specified in the table, select the wire diameter in accordance with relevant regulations.



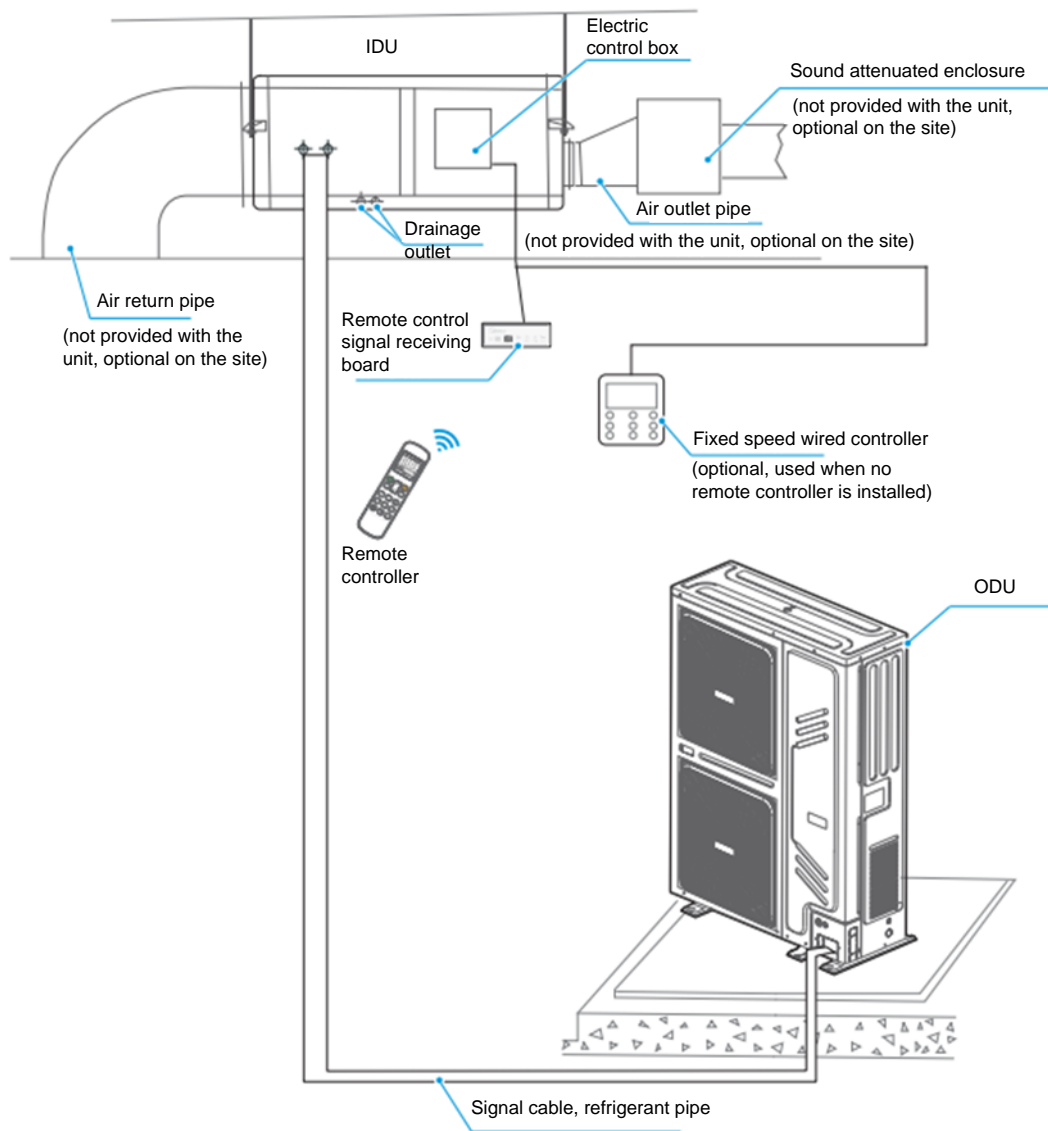
3. Electrical connection diagram



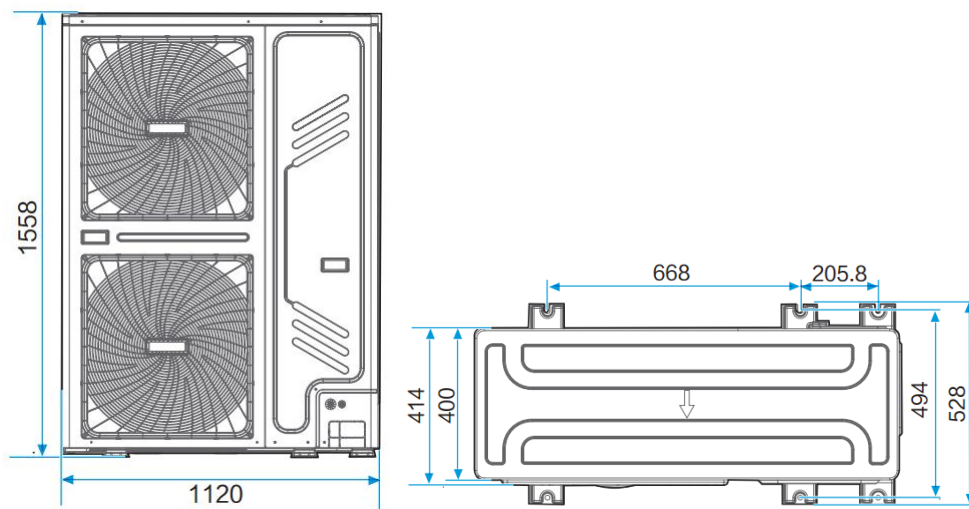
Single-phase IDU electrical control system connection diagram



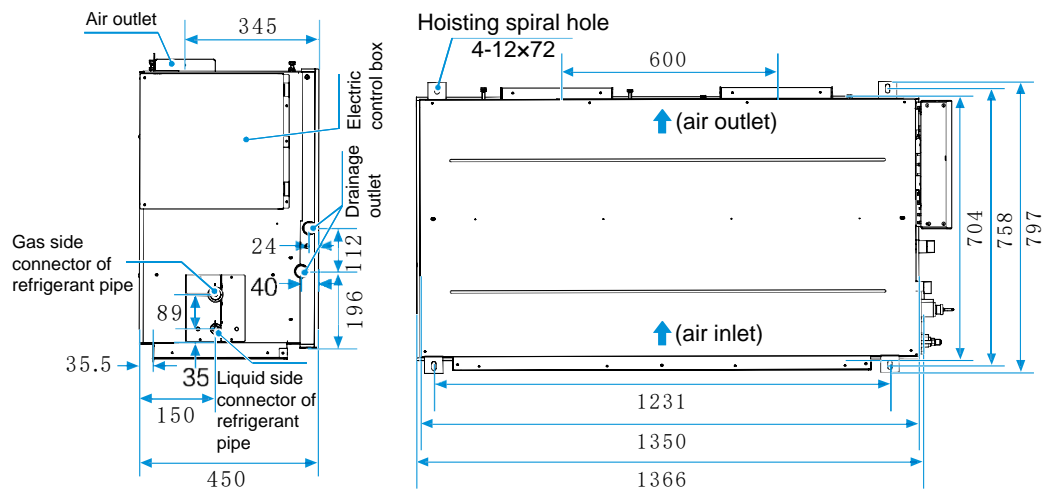
1.1.5 Names and Dimensions of All Parts



ODU dimensions



## IDU dimensions



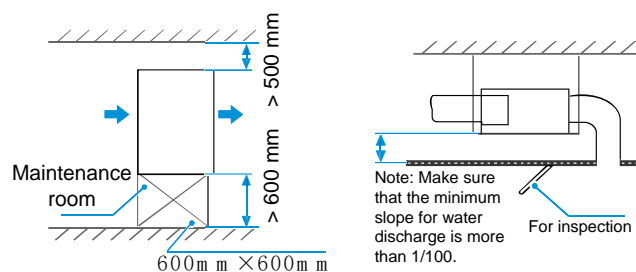
## 1.1.6 Installation Instructions

### 1.1.1.1 IDU Installation

#### 1. Selecting an installation site for IDU

- 1) Sufficient space for installation and maintenance.
- 2) The ceiling is level, and the structure is strong enough to support the weight of IDU; take reinforcement measures when necessary.
- 3) Unobstructed air flows in/out of unit, and where air flow is minimally affected by external air.
- 4) Air supply by the fan can be distributed to all parts of the room.
- 5) Where it is easier to drain fluids from the connected pipe and water discharge pipe.
- 6) No direct heat radiation.

#### 2. IDU installation and maintenance space diagram



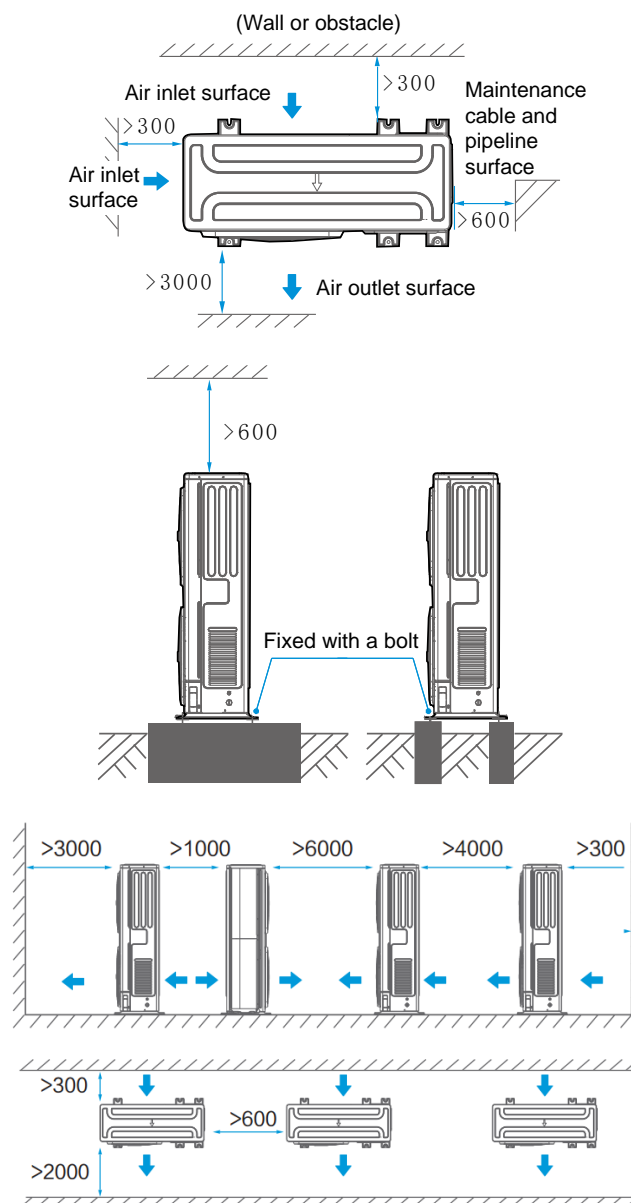
### 1.1.6.2 ODU Installation

#### 1. Selecting an installation site for ODU

- 1) Sufficient space for installation and maintenance.

- 2) Unobstructed air flows in/out of the unit; there is no strong breeze.
- 3) The site should be dry and well-ventilated.
- 4) The supporting surface should be flat and can bear the weight of the unit. The ODU should be able to be installed horizontally without increasing the vibration and noise.
- 5) The operating noise and the discharged air should not affect neighbours.
- 6) There is no leakage of flammable gas.
- 7) It is easy to install the connecting pipes and complete electrical connections.

## 2. Space required for ODU installation and maintenance (unit: mm)



## 3. Handling and installation

- 1) Because the center of gravity of the unit is not at the center, be careful when lifting the

unit with a hoist cable.

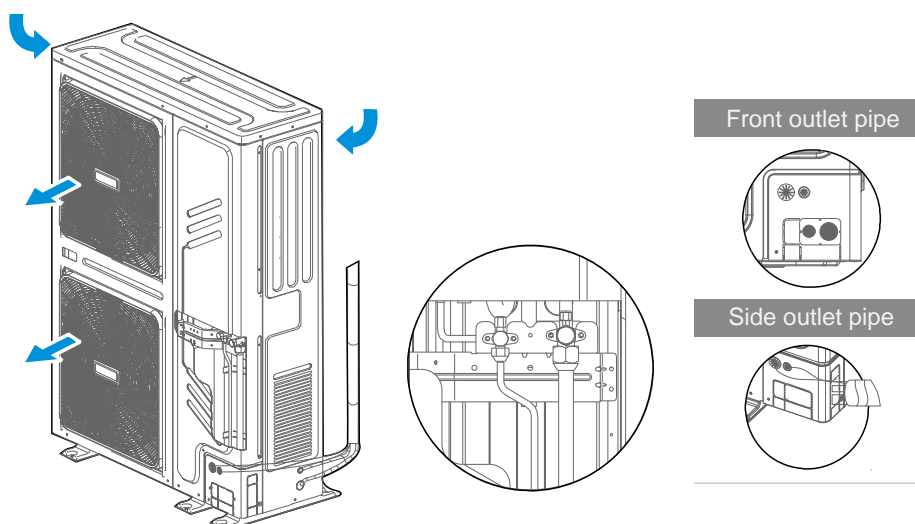
2) Do not hold the air outlet grille on the casing; otherwise, it will be deformed. Do not touch the air blades with your hands or other objects.

3) Do not tilt the unit over 45° when carrying it; do not store it horizontally.

4) Use the bolts (M10) to fix the feet of the unit. The unit must be installed firmly to prevent collapse in the event of an earthquake or a sudden blast.

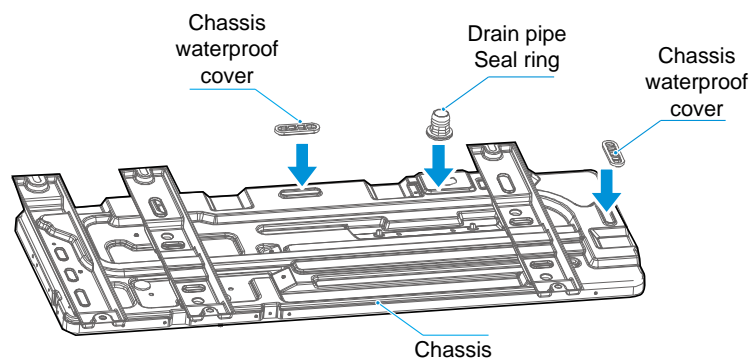
5) Prepare a concrete foundation. Shockproof measures should be taken for the feet.

#### 4. Indoor and outdoor pipe connections



#### 5. Centralized drainage of chassis

When centralized drainage is required for the ODU, install the two chassis waterproof covers together with the chassis as shown in the following figure. At the same time, install the outlet pipe and seal ring together with the chassis, and then connect the drain pipe for centralized drainage.



#### 6. Amount of refrigerant charged

No refrigerant needs to be charged when the length of the one-way pipe is less than 5 m (the unit has been charged with refrigerant before delivery).

Calculate the amount of the R410A refrigerant to be charged based on the diameter and length of the liquid pipes of the ODU and IDUs.

Charge refrigerant according to the following table when the length L of the one-way pipe is greater than 5 m. Record the amount of refrigerant charged and retain the record for use in the future maintenance.

Diameter of liquid side pipe	Charging Refrigerant
Φ9.5	0.057 (L-5) kg

### 1.1.7 Installation of Connecting Pipes

#### 1. Length and level difference requirements for the pipe connections of IDU and ODU

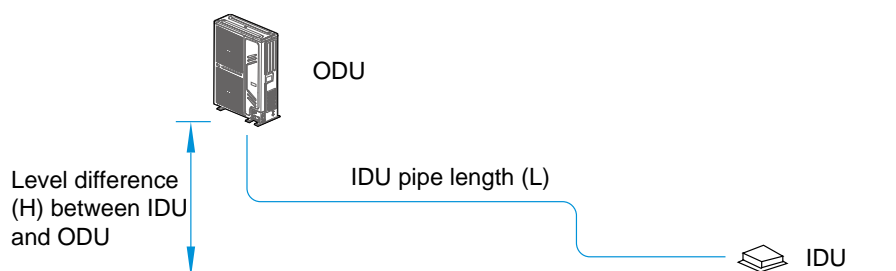
	Maximum pipe length (L)	Level difference between IDU and ODU (H)	
		ODU above	ODU below
Allowable value	50 m	30 m	20 m

Note: When the length of unilateral pipe is equal to or greater than 30 m, the size of the gas-side main pipe must be increased.

For example:

Length of unilateral pipe	Main pipe size
< 30 m	Φ9.5/φ22.2
≥ 30 m	Φ9.5/φ25.4

#### 2. Connection methods



Notes:

- 1) Do not let air, dust, and other particles invade the pipeline system during installation of the connecting pipes.
- 2) Install the connecting pipes only when the IDUs and ODUs are fixed reliably.

3) Make sure to keep the connecting pipes dry during installation so that no water will enter the pipeline system.

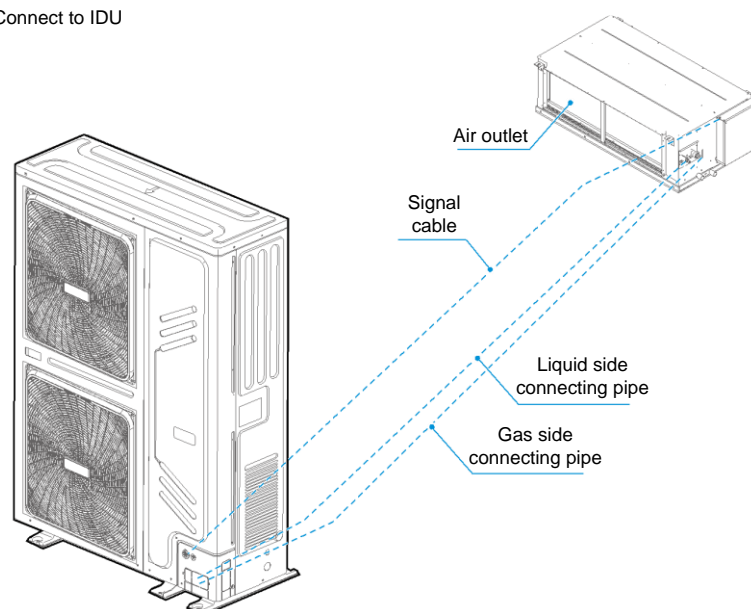
4) Connecting copper pipes must be wrapped with insulation materials (thicker than 9 mm).

5) When welding the connecting pipe of IDU, be sure to wrap the copper tube and insulation cotton with a wet cloth to prevent damage at a high temperature.

### 3. ODU pipe size

Model	Gas side	Liquid side
MOUB-96HD1N1-R1	Φ22.2	Φ9.5

- Connect to IDU



### 1.1.8 Accessories

No.	Accessory Name	Qty	Purpose	Remarks
1	Installation Manual	1	Instructions for IDU and ODU installation	
2	User Manual	1	Instructions for IDU and ODU operations	
3	User Service Guide	1		
4	Brass nut	1	For use in the installation works of connecting pipes	Used for IDU
5	Water pipe	2	Connecting to the drain pipe	
6	Protection sleeve for refrigerant pipe	2	Thermal insulation at the joint between IDU and ODU	
7	Display assembly	1	Receive remote signals	
8	Mounting spring	2		

9	Chassis waterproof cover	2		Used for ODU
10	Seal ring	1	Used with water outlet pipe	Used for ODU
11	Drain pipe connector	1	Connecting to the drain pipe	Used for ODU
12	Connecting pipe	1	For use in the installation works of connecting pipe	Used for ODU, placed in the ODU
13	Network matching wires	1		