



## I. Safety Precautions

### General

Some figures in the Installation Flow Chart are in exploded view in order to explain the installation process. Please operate the product according to this manual.

#### ▲ Danger

Please read this manual carefully before installation.

#### ▲ In order to prevent electric shock:

Nonprofessionals are not allowed to repair, inspect or replace the parts.

Do not carry out wiring work within 1 minute of switching on or off the power, otherwise there will be a risk of electric shock (the capacitor may still retain charge for a short time after the power is turned off). When to replace or move the power supply, please cut off the power and wait for all indicators to be off for 1 minute before operation.

#### ▲ Warning

Use the correct controller according to the product model. Do not use unmatched controller, which may cause damage to the motor or controller.

Please confirm whether the power is connected according to the marks and whether there is any obstacle within the operating range of the product before operation. After operation, please check whether the rotation direction of the product is correct (clockwise as viewed from below).

This product shall not be operated in freezing, corrosive, explosive and severely dusty environment.

#### ▲ Installation

The installation and maintenance must be carried out by professionally trained or experienced personnel with electrician certificates.

## II. Introduction

HDS series PM VFD commerce ceiling fan is specially developed to create a comfortable work environment. The independently designed VFD and energy-saving permanent magnet synchronous motor is featured by low noise, small size, light weight, compact structure and beautiful shape. It is a new type of energy-saving fan which is widely used supermarkets, restaurants, fitness centers, industrial plants, logistics warehouses, waiting rooms, exhibition halls and gyms for ventilation and cooling. The fan can produce a large amount of airflow to form a moving airflow in a certain room for overall air circulation. It is like the natural breeze system and you can intimately experience the natural wind.

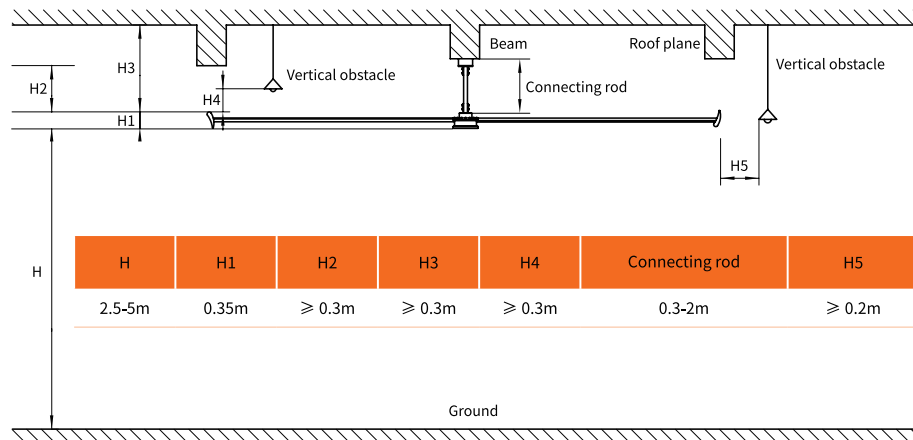
## III. Technical Parameters

Model	Diameter		Voltage (v)	Frequency (Hz)	Power (w)	Rotating Speed (rpm)	Air speed (m/s)	Airflow (m <sup>3</sup> /min)
	m	ft						
29029	3.7	12	120	60	300	65	1-3	4000

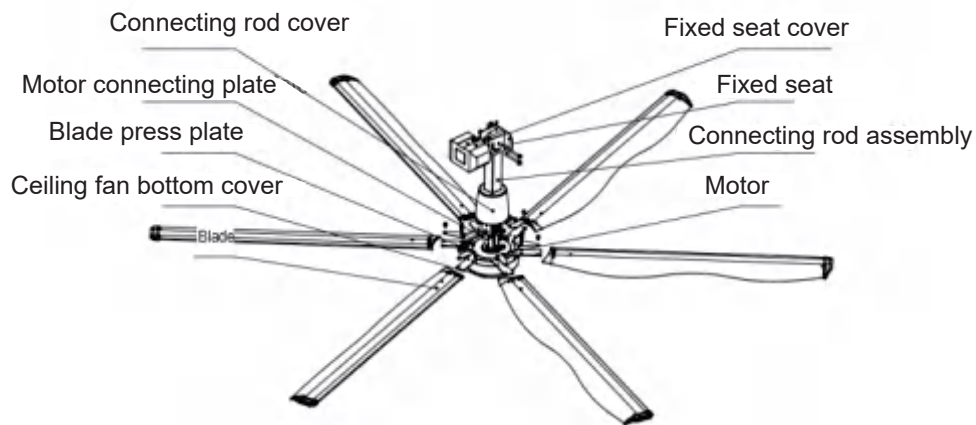
Model	Weight (kg)	Noise (dB)	Coverage area (m <sup>2</sup> )	Motor weight (kg)	Number of leaves (Pcs)
29029	IP55	38	330	15	6

## IV. Installation Data



## V. 3m Ceiling Fan Structure and Installation Steps

### 5.1 Concrete structure installation steps of 3m ceiling fan



### 5.1.1 Unpack the product and check whether the accessories are complete.

Accessories:

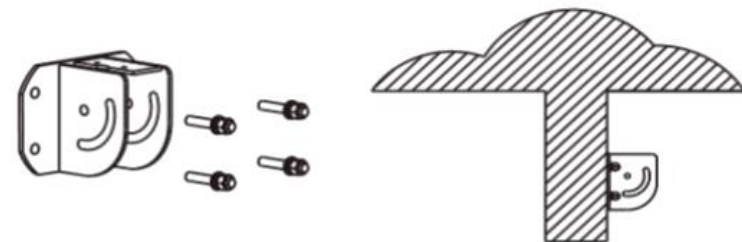
General Accessories of Ceiling Fan				I-shaped Steel Structure	
Name	Qty.	Name	Qty.	Name	Qty.
Motor assembly	1	Rubber sheathed cable	1	I-shaped steel press plate	2
M8X16 Hex bolt (full thread)	18	M10X100 Hex bolt	4	M10X60 Hex bolt (full thread)	4
Ø12 Standard spring washer	18	M10X20 Hex bolt	4	Ø10 Large washer	8
Blade press plate	6	Ø10 Large washer	12	Ø10 Spring washer	4
Blade assembly	6	Ø10 Standard spring washer	8	M10 Hex nylon nut	4
Connecting rod assembly	1	M10 Hex nylon nut	4		
Motor connecting plate	2	M3 Steel rope clamp	2		
Permanent magnet motor controller	1	Fixed seat	1		

Square Steel Structure		Concrete Structure		Installation Tools	
Name	Qty.	Name	Qty.	Name	Qty.
Ceiling bracket	1	Fixed seat cover	1	13-16 Open end wrench	2
M10X150 Hex bolt (full thread)	4	M 10x80 Expansion screw hook	1	14-17 Open end wrench	2
Ø10 Large washer	8	M 10x80 Expansion screw	4	Cross screwdriver	1
Ø10 Spring washer	4			Slotted screwdriver	1
M10 Hex nylon nut	4			5mm Inner hex spanner	1

5.1.2 Determine the installation position of the fan, mark it with the fixed seat, drill the installation hole with a 12mm drill bit (the hole depth>60mm) and then install the M10x80 expansion screws to fix the fixed seat.

Accessories:

Fixed seat	1
Expansion screw	4

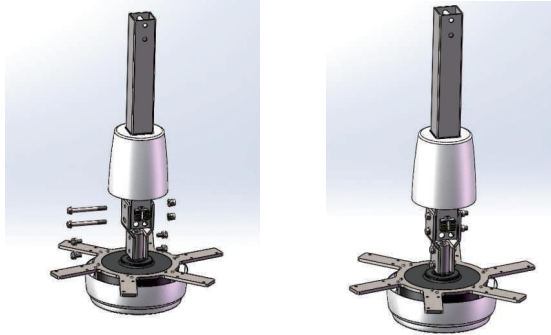


Attention: Pay attention to safety during the work and install expansion screws securely.

5.1.3 Install the connecting rod on the motor, screw it without tightening. The steel rope should be pulled out from the upper part of the connecting rod.

Accessories:

Motor assembly	1	M 10x100 Hex bolt	2	Ø10 Spring washer	6
Connecting rod assembly	1	M 10x20 Hex bolt	4		
Connecting rod cover	1	M10 Hex nylon nut	2		
Motor connecting plate	2	Ø10 Large washer	8		

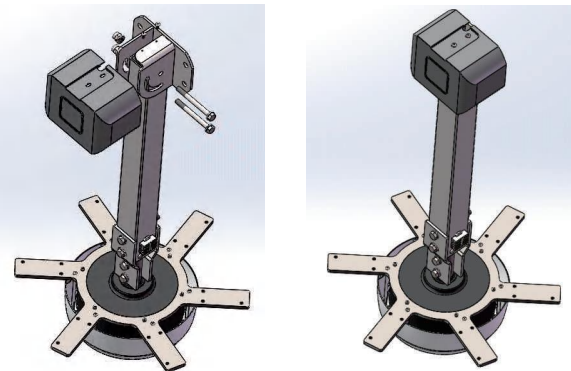


**Attention:** Check whether the blade bracket on the motor assembly is installed in the wrong direction (See the figure above).

5.1.4 Install the installed connecting rod motor assembly on the fixed seat and screw it without tightening.

Accessories:

M 10x100 Hex bolt	1	Ø10 Spring washer	2
M10 Hex nylon nut	2	Fixed seat cover	1
Ø10 Large washer	4	Cross-recessed pan head screw	2

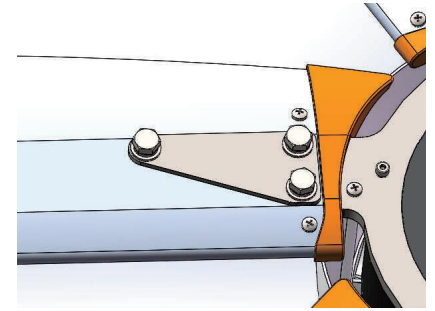
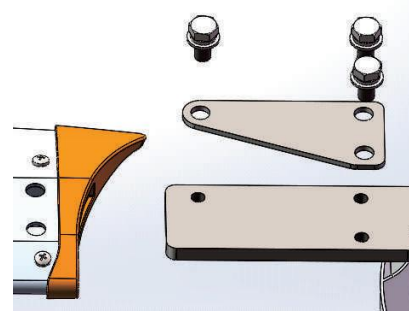


5.1.5 Install the blade on the motor, install the screws and pull the blade outward from the center

Accessories

Blade	6
Blade press plate	6

M8X16 Hex bolt (full thread)	18
Ø8 Spring washer	18

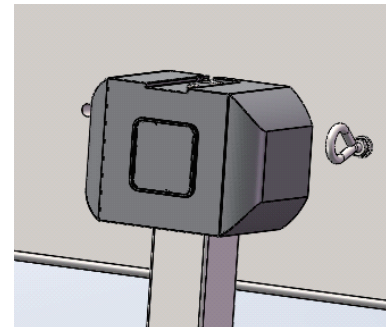


**Attention:** Check whether the blade bracket on the motor assembly is installed in the wrong direction (See the figure above).

5.1.6 Determine the position of the expansion screw hook, drill the mounting holes with a 12mm drill bit (the hole depth > 60mm), install and tighten the M10x80 expansion screw hook.

Accessories:

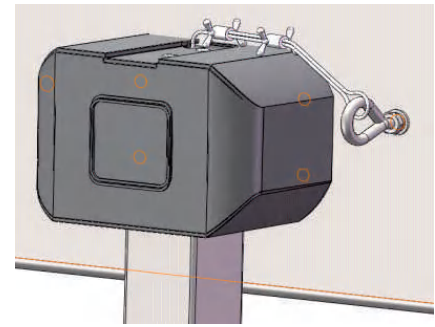
Expansion screw hook	1
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5.1.7 Put the steel rope through the expansion screw hook, straighten it after pulling back and then fix it with the steel rope clamp.

Accessories:

M3 Steel rope clamp	2
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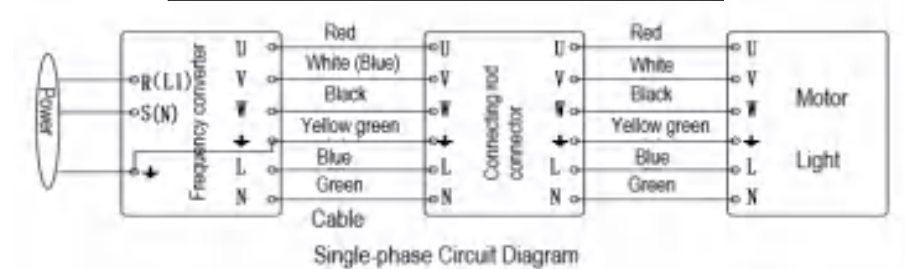


**Attention:** Before tightening the fan blade screws, pull the blade outward from the center of the motor. Adjust the levelness of the motor and the verticality of the connecting rod before tightening the screws and check whether all the screws are tightened.

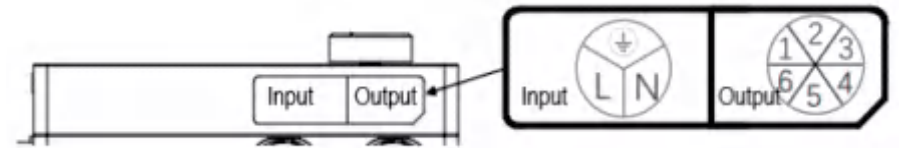
5.1.8 Select the location to install the controller. Connect the motor and mains power to the controller as required. Check whether there are obstacles around the fan to affect its operation and operate the fan according to the operation manual of the controller.

Attention: The phase sequence of the motor connected to the controller shall not be wrong.

Accessories:	Permanent magnet motor controller	1
	Rubber sheathed cable	1

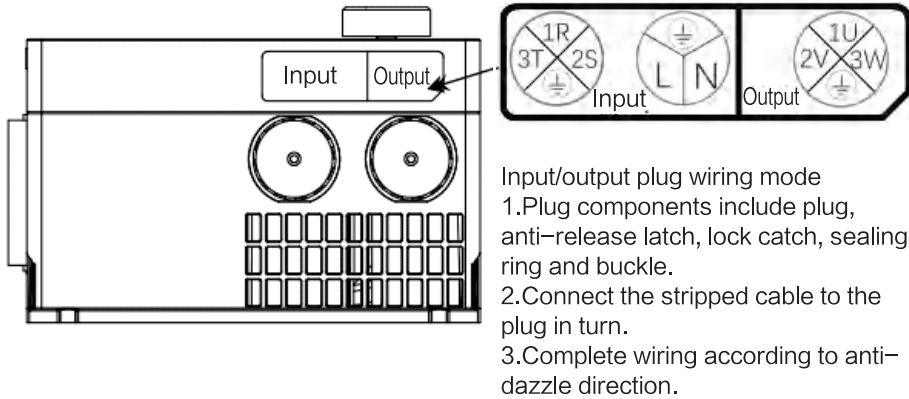


Single-phase 220V Wiring				
Terminal Function	Terminal ID	Wiring Description	Function Description	Cable Color
Power input	L	L	Input live wire	Red
	N	N	Input null wire	Blue
	⊕	G	Input grounding	Yellow green
Power output	1	U	Motor phase U	Red
	2	V	Motor phase V	White
	3	W	Motor phase W	Black
	4	G	Motor grounding	Yellow green
	5	L	Live wire of light	Blue
	6	N	Null wire of light	Green

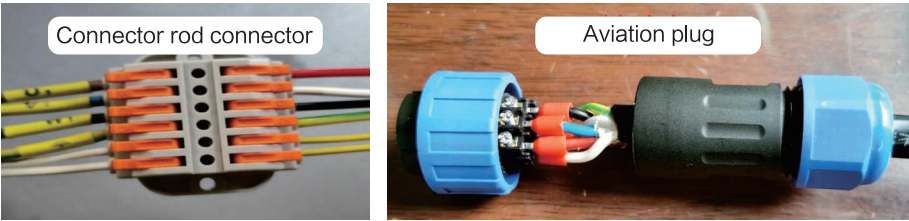


### Description of Main Circuit Terminals

Single-phase 220V Wiring				Three-phase 380V Wiring			
Terminal Function	Terminal ID	Wiring Description	Function Description	Terminal ID	Wiring Description	Function Description	Cable
Power input	L	L	Input live wire	1	R	Input phase R	
	N	N	Input null wire	2	S	Input phase S	
	⊕	G	Input grounding	3	T	Input phase T	
				⊕	G	Input grounding	
Power output	U	U	Motor phase U	U	U	Motor phase U	Red
	V	V	Motor phase V	V	V	Motor phase V	White (blue)
	W	W	Motor phase W	W	W	Motor phase W	Black
	⊕	G	Motor grounding	⊕	G	Motor grounding	Yellow green



Input/output plug wiring mode  
1.Plug components include plug, anti-release latch, lock catch, sealing ring and buckle.  
2.Connect the stripped cable to the plug in turn.  
3.Complete wiring according to anti-dazzle direction.

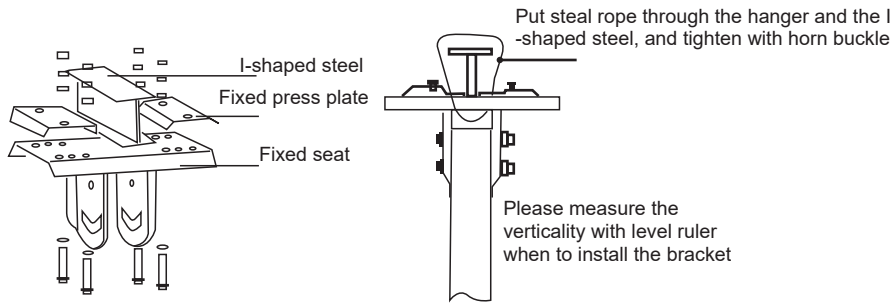


Warning: Do not connect the mains power directly to the ceiling fan. Confirm whether the power voltage matches the controller voltage.



6.2 Installation diagram of I-shaped steel structure of ceiling fan (the rest are the same as 6.2).

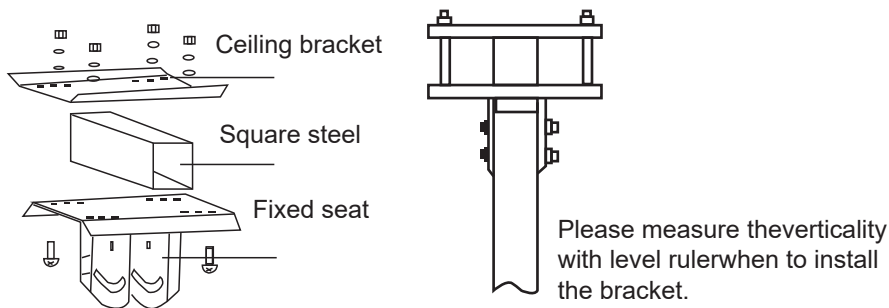
Expansion screw hook is not available and the end of the steel rope can be tied to the I-beam with the steel rope clamp.



Attention: Just straighten the steel rope without too tight.

6.3 Square steel installation (the rest are the same as 6.2).

Expansion screw hook is not available and the end of the steel rope can be tied to the square



Attention: Just straighten the steel rope without too tight.

## 6.4 Troubleshooting

Fault Code	Faults	Causes	Solutions
01	Output short circuit	1. The cable from the controller to the motor is short-circuited to the ground (leakage)	1. Replace the cable.
		2. Motor is short-circuited to ground	2. Replace the motor.
02	Acceleration overcurrent	1. Acceleration time is too short. 2. Short circuit at output side. 3. Motor is locked. 4. Motor is overloaded. 5. Inaccurate	1. Delay acceleration time. 2. Check whether the motor wire is damaged. 3. Check whether the motor is overloaded. 4. Reduce V/F compensation value. 5. Motor parameter self-learning.
03	Deceleration overcurrent		
04	Constant speed overcurrent		
05	Acceleration overvoltage	1. Power voltage is too high	1. Check whether the input voltage is correct. 2. Increase acceleration/deceleration time. 3. Motor parameter self-learning.
06	Deceleration overvoltage		
07	Constant speed overvoltage		
09	Undervoltage protection	1. Input voltage is too low.	1. Check whether the power input is normal
10	Frequency converter overloaded	Converter power is insufficient.	Replace with high-power converter
12	Input phase loss	1. Phase loss of input power	1. Check whether the power input is normal
13	Motor phase loss	1. Motor wire is disconnected	1. Check the connecting wire of motor controller
		2. Motor is damaged	2. Replace the motor.
		3. Frequency converter has fault	3. Contact the manufacturer.
14	Controller overheat protection	1. Ambient temperature is too high	1. Improve the installation environment.
		2. The fan is too dirty.	2. Clean the air inlet/outlet and fan.
		3. The installation position is not ventilated.	3. Increase the ventilation.
		4. The cooling fan is damaged	4. Replace the damaged cooling fan.
23	Short circuit to ground	1. Cable is short-circuited to ground (leakage)	1. Replace the cable.
		2. Motor is short-circuited to ground	2. Replace the motor.
		3. The controller is damaged.	3. Contact the manufacturer.

### Attention:

1. The installation and wiring work must be carried out by professionals according to the Operation Manual in order to prevent electric shock.
2. Check whether the surrounding room of the ceiling fan meets the requirements before operation. When the product is used for the first time, please confirm whether the power supply meets the requirements and whether the wiring is correct and secure. The power can only be turned on when it is confirmed to be safe.
3. The system has over voltage, undervoltage, voltage loss regulation, phase loss, overload, collision, overheating and lightning protection functions.
4. If the ceiling fan is not used for a long time, please run it for 10min every other month in order to prolong the service life of the product.