

## OPERATING MANUAL

### AC Axial Flow Fans **MU Series**

#### Introduction

##### ■ Before using the fan

Only qualified personnel of electrical and mechanical engineering should work with the product. Use the product correctly after thoroughly reading the section "Safety precautions." In addition, be sure to observe the contents described in warning, caution, and note in this manual. The product described in this manual has been designed and manufactured to be incorporated in general industrial equipment. Do not use for any other purpose. Oriental Motor Co., Ltd. is not responsible for any damage caused through failure to observe this warning.

#### Regulations and standards

The applicable standards and certification body vary according to the product. Check on the Oriental Motor Website for details about standards.

##### ■ UL Standards, CSA Standards

This product is recognized by UL under the UL and CSA Standards.

##### ■ Electrical Appliance and Material Safety Law

This product is affixed with the PSE Mark under the Electrical Appliance and Material Safety Law.

It is also obtained the S-JET certification.

##### ■ CE Marking / UKCA Marking

This product is affixed with the marks under the following directives/regulations.

##### ● EU Low Voltage Directive/UK Electrical Equipment (Safety) Regulation

Installation conditions

Overvoltage category II, Pollution degree 2, Class I equipment  
When connecting to a power supply of overvoltage category III, supply power via the insulation transformer.

##### ■ EU RoHS Directive/UK RoHS Regulation

This products do not contain the substances exceeding the restriction values.

#### Safety precautions

The precautions described below are intended to prevent danger or injury to the user and other personnel through safe, correct use of the product. Use the product only after carefully reading and fully understanding these instructions.



#### WARNING

Handling the product without observing the instructions that accompany a "WARNING" symbol may result in serious injury or death.

- Do not use the product in explosive or corrosive environments, in the presence of flammable gases, locations subjected to splashing water, or near combustibles. Doing so may result in fire, electric shock or injury.
- Only qualified and educated personnel should be allowed to perform installation, connection, operation and inspection/troubleshooting of the product. Handling by unqualified and uneducated personnel may result in fire, electric shock or injury.
- Do not transport, install the product, perform connections or inspections when the power is on. Always turn the power off before carrying out these operations. Failure to do so may result in electric shock.
- The fan for class I equipment. Install the fan so as to avoid contact with hands, or ground it to prevent the risk of electric shock.  
*Lüfter zur Verwendung in Geräten der Schutzklasse I. Die Gehäuse der Lüfter sind mit einer Schraube und Zahnscheibe sicher mit dem geerdeten Gehäuse des Gerätes zu verbinden.*

Thank you for purchasing an Oriental Motor product. This Operating Manual describes product handling procedures and safety precautions.

- Please read it thoroughly to ensure safe operation.
  - Always keep the manual where it is readily available.
- Install the fan in an enclosure in order to prevent electric shock or injury.
  - Keep the input-power voltage within the specified range to avoid fire and electric shock.
  - Connect the cables securely according to the wiring diagram in order to prevent fire and electric shock.
  - Do not forcibly bend, pull or pinch the cable. Doing so may fire and electric shock.
  - Turn off the power in the event of a power failure, or the fan will suddenly start when the power is restored and may cause injury or damage to equipment.
  - Do not disassemble or modify the fan. This may cause electric shock or injury. Refer all such internal inspections and repairs to the branch or sales office from which you purchased the product.



#### CAUTION

Handling the product without observing the instructions that accompany a "CAUTION" symbol may result in injury or property damage.

- Do not use the fan beyond its specifications, or electric shock, injury or damage to equipment may result.
- Keep your fingers and objects out of the openings in the fan. This may cause injury.
- Do not touch the motor during operation or immediately after stopping. The surface is hot and may cause a skin burn(s).
- Do not hold the rotating parts (blades) of the fan or lead wire. This may cause injury.
- Keep the area around the fan free of combustible materials in order to prevent fire or a skin burn(s).
- To prevent the risk of damage to equipment, leave nothing around the fan that would obstruct ventilation.
- Do not touch the rotating parts (blades) when the fan is in operation. This may cause injury. The use of the optional fingerguard is recommended to ensure protection.  
*Wegen der Verletzungsgefahr dürfen die Lüfterflügel bei Ventilatorbetrieb nicht berührt werden. Der Gebrauch des als Sonderzubehör erhältlichen Fingerschutzes ist empfehlenswert, um erhöhte Sicherheit zu gewährleisten.*
- When an abnormality is noted, stop the operation immediately, or fire, electric shock or injury may occur.
- The motor's surface temperature may exceed 70 °C (158 °F), even under normal operating conditions. If a fan is accessible during operation, post the warning label shown in the figure in a conspicuous position to prevent the risk of skin burn(s).
- Dispose the product correctly in accordance with laws and regulations, or instructions of local governments.



Warning label

#### Preparation

Verify the model number of the purchased product against the number shown on the package label. The fan model name is listed on the fan nameplate.

##### ■ Checking the product

Verify that the items listed below are included. Report any missing or damaged items to the branch or sales office from which you purchased the product.

| Fan                      |                                  |
|--------------------------|----------------------------------|
| <input type="checkbox"/> | Fan                              |
| <input type="checkbox"/> | OPERATING MANUAL (this document) |
| <input type="checkbox"/> | Plug cord*                       |

| Fan kit                  |                                  |
|--------------------------|----------------------------------|
| <input type="checkbox"/> | Fan                              |
| <input type="checkbox"/> | OPERATING MANUAL (this document) |
| <input type="checkbox"/> | Finger guard                     |
| <input type="checkbox"/> | Mounting screws                  |
| <input type="checkbox"/> | Plug cord*                       |

\* A plug cord is not included with the **MU825** fans because of the lead wire type.

## How to identify the fan model

**MU1225S-11 - 1**

Fan model

Number: Length (m) of plug cord  
Blank: without plug cord

**T- MU1225S-11 - GP**

Fan kit

Fan model

-G: Finger guard  
Mounting screws  
-GP: Finger guard  
Plug cord  
Mounting screws

## Installation

### Location for installation

Install it in a well-ventilated location that provides easy access for inspection. The location must also satisfy the following conditions:

- Inside an enclosure that is installed indoors
- Operating ambient temperature  
-30 to +60 °C (-22 to +140 °F) (non-freezing)
- Operating ambient humidity 85% or less (non-condensing)
- Area that is free of explosive atmosphere or toxic gas (such as sulfuric gas) or liquid
- Area not exposed to direct sun
- Area free of excessive amount of dust, iron particles or the like
- Area not subject to splashing water (rains, water droplets), oil (oil droplets) or other liquids
- Area not subject to continuous vibration or excessive shocks
- Area free of radioactive materials, magnetic fields or vacuum
- Area free of excessive electromagnetic noise (from welders, power machinery, etc.)

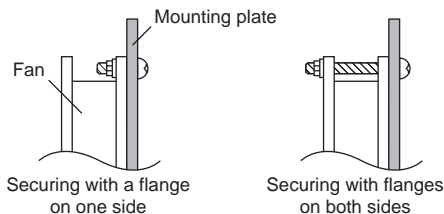
When using near a switching circuit or high-frequency power supply, the induced current may flow inside the fan due to electromagnetic noise (conductive noise, radiative noise). If the induced current flows, the electric corrosion is caused in the bearings of the fan. As a result, it may generate the noise or shorten the service life of the products. Use the fan in the environment that the electromagnetic noise does not cause.

### How to install the fan

- Install the fan onto an appropriate flat metal plate having excellent vibration resistance and heat conductivity.  
For air orientation and rotational direction, see the indications shown on the fan's side frame.
- Drill holes on the mounting plate and fix the fan on the plate using screws (not supplied).

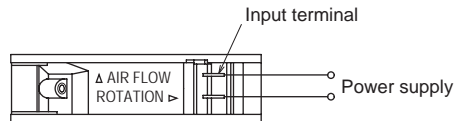
| Model               | Screw size | Tightening torque   |
|---------------------|------------|---------------------|
| MU825 MU1025 MU1225 | M4         | 0.6 N·m (5.3 lb-in) |
| MU1238 MU1428       | M4         | 0.6 N·m (5.3 lb-in) |
| MU925               | M3         | 0.4 N·m (3.5 lb-in) |

For the **MU925** type and **MU1025** type, it is not possible to secure with a flange on one side. Secure with flanges on both sides using a screw for piercing. When securing with a flange on one side for the **MU1238** type fan, use a plain washer which outside diameter is 8 mm (0.315 in.) or less.



## Connection

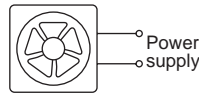
### 2-terminal type



Use an optional plug code for the terminal type fan.

**Note** If the plug code is not used, be sure to properly insulate the terminal.

### Lead wire type (MU825)



### Connecting Protective Earth Terminal

Ground the motor using the motors with a Protective Earth Terminal (PE).

Applicable crimp terminal:

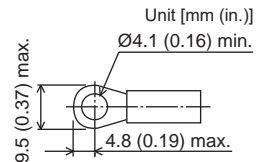
Insulated round crimp terminal

Terminal screw size: M4

Tightening torque:

1.0 to 1.3 N·m (8.8 to 11.5 lb-in)

Applicable minimum lead wire size:  
AWG18 (0.75 mm<sup>2</sup>) or more



**Note** Be sure to use the screw for grounding attached on the product.

## Overheat protection

Impedance protection means the fan will not burn out in the event of a lockup.

## Product warranty

Check on the Oriental Motor Website for the product warranty.

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• Please contact your nearest Oriental Motor office for further information.

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