## Introduction

### Axial Flow Fans

<table>
<thead>
<tr>
<th>Type</th>
<th>Series</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Input</td>
<td>MRS Series</td>
<td>F-26</td>
</tr>
<tr>
<td>AC Input</td>
<td>Variable Flow MRS Series</td>
<td>F-32</td>
</tr>
<tr>
<td>DC Input</td>
<td>MU Series</td>
<td>F-46</td>
</tr>
<tr>
<td>DC Input</td>
<td>MDS Series, MD Series</td>
<td>F-56</td>
</tr>
<tr>
<td>DC Input</td>
<td>Long-Life MDE Series</td>
<td>F-74</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Series</th>
<th>Page</th>
</tr>
</thead>
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<td>MRS Series</td>
<td>F-26</td>
</tr>
<tr>
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<td>Variable Flow MRS Series</td>
<td>F-32</td>
</tr>
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<td>MU Series</td>
<td>F-46</td>
</tr>
<tr>
<td>DC Input</td>
<td>MDS Series, MD Series</td>
<td>F-56</td>
</tr>
<tr>
<td>DC Input</td>
<td>Long-Life MDE Series</td>
<td>F-74</td>
</tr>
</tbody>
</table>
Axial Flow Fans

Axial flow fans use a propeller to generate air flow in the direction of the axis of rotation. Capable of generating a large air flow, axial flow fans are suited for applications requiring ventilation cooling.

Features

- Extensive Lineup
Axial flow fans are available in a large number of sizes and voltage characteristics, from large air flow AC axial flow fans to extraordinarily compact DC axial flow fans.

- Connector Types are Available.
Connector Types are available for □180 mm (□7.09 in.) MRS Series, MDS Series and MD Series.
By terminating the leads with a connector, the wiring process is simplified and maintenance replacement is easy.

Built-in Alarm Circuit
In addition to the standard type, built-in alarm types are also available which detect and signal fan rotation abnormalities.

Types of Axial Flow Fans

<table>
<thead>
<tr>
<th>Series</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Axial Flow Fans</td>
<td>- AC Axial Flow Fans</td>
</tr>
<tr>
<td>MRS Series</td>
<td>- Large axial flow fans with large air flow, high static pressure and high efficiency.</td>
</tr>
<tr>
<td></td>
<td>- The MRS Series is recognized by UL/CSA Standards and conforms to EN Standards. (Certification status differs according to the product.)</td>
</tr>
<tr>
<td></td>
<td>- CE Marking is used in accordance with the Low Voltage Directive.</td>
</tr>
<tr>
<td></td>
<td>- RoHS-Compliant</td>
</tr>
<tr>
<td></td>
<td>- The MRS Series conforms to the RoHS Directive.</td>
</tr>
<tr>
<td></td>
<td>- Compact AC axial flow fans</td>
</tr>
<tr>
<td></td>
<td>- The MDS and MD Series is recognized by UL/CSA Standards and conforms to EN Standards. (Certification status differs according to the product.)</td>
</tr>
<tr>
<td></td>
<td>- CE Marking is used in accordance with the EMC Directive.</td>
</tr>
<tr>
<td></td>
<td>- RoHS-Compliant</td>
</tr>
<tr>
<td></td>
<td>- The MDS and MD Series conform to the RoHS Directive.</td>
</tr>
<tr>
<td></td>
<td>- Compact DC axial flow fans</td>
</tr>
<tr>
<td></td>
<td>- The MDE Series is recognized by UL/CSA Standards and conforms to EN Standards. (Except MDE1451 type.) CE Marking is used in accordance with the EMC Directive. (Certification status differs according to the product.)</td>
</tr>
<tr>
<td></td>
<td>- RoHS-Compliant</td>
</tr>
<tr>
<td></td>
<td>- The MDE Series conforms to the RoHS Directive.</td>
</tr>
</tbody>
</table>

Details of safety standards ➜ Page H-2
For detailed product safety standard information including standards, file number and certification body, please visit www.orientalmotor.com.
## Lineup

- **●**: Standard Type
- **■**: Alarm Type
- **◆**: Pulse Sensor Type

<table>
<thead>
<tr>
<th>Series</th>
<th>Power Supply Voltage</th>
<th>Frame Size [mm (in.)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Axial Flow Fans</td>
<td>Single-Phase 100/110/115 VAC</td>
<td>●</td>
</tr>
<tr>
<td>MRS Series</td>
<td>Single-Phase 200/220/230 VAC</td>
<td>●</td>
</tr>
<tr>
<td>AC Axial Flow Fans</td>
<td>Three-Phase 200/220/230 VAC</td>
<td>●</td>
</tr>
<tr>
<td>AC Axial Flow Fans</td>
<td>Single-Phase 100/115 VAC</td>
<td>●</td>
</tr>
<tr>
<td>MRS Series Variable Flow Type</td>
<td>Single-Phase 220/230 VAC</td>
<td>●</td>
</tr>
<tr>
<td>AC Axial Flow Fans</td>
<td>Single-Phase 115 VAC</td>
<td>●</td>
</tr>
<tr>
<td>MU Series</td>
<td>Single-Phase 220/230 VAC</td>
<td>●</td>
</tr>
<tr>
<td>DC Axial Flow Fans</td>
<td>5 VDC</td>
<td>●</td>
</tr>
<tr>
<td>MDS Series</td>
<td>12 VDC</td>
<td>●</td>
</tr>
<tr>
<td>MD Series</td>
<td>24 VDC</td>
<td>●</td>
</tr>
<tr>
<td>DC Axial Flow Fans</td>
<td>48 VDC</td>
<td>●</td>
</tr>
<tr>
<td>DC Long-Life Fans</td>
<td>12 VDC</td>
<td>■</td>
</tr>
<tr>
<td>MDE Series</td>
<td>24 VDC</td>
<td>■</td>
</tr>
<tr>
<td>DC Long-Life Fans</td>
<td>48 VDC</td>
<td>■</td>
</tr>
</tbody>
</table>

*The product for single-phase 220 VAC is not available.*
System Configuration

An example of a system configuration with the MU Series. A thermostat, finger guard and plug cord are used.

Example of System Configuration

<table>
<thead>
<tr>
<th>Fan</th>
<th>Sold Separately</th>
</tr>
</thead>
<tbody>
<tr>
<td>MU1238A-21B</td>
<td></td>
</tr>
<tr>
<td>Thermostat</td>
<td>AM1-WA1</td>
</tr>
<tr>
<td>Finger Guard</td>
<td>FG12D</td>
</tr>
<tr>
<td>Plug Cord [1 m (3.3 ft.)]</td>
<td>PCA2B</td>
</tr>
</tbody>
</table>

The system configuration shown above is an example. Other combinations are available.

A fan kit containing all necessary accessories in one package is available.

<table>
<thead>
<tr>
<th>Fan Kit</th>
<th>Package Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-MU1238A-21-GP</td>
<td></td>
</tr>
<tr>
<td>MU1238A-21B</td>
<td>Fan</td>
</tr>
<tr>
<td>FG12D</td>
<td>Finger Guard</td>
</tr>
<tr>
<td>PCA2B</td>
<td>Plug Cord [1 m (3.3 ft.)]</td>
</tr>
<tr>
<td>M4×55 mm (2.17 in.)</td>
<td>Mounting Screws</td>
</tr>
</tbody>
</table>
### General Specifications

#### AC Axial Flow Fans

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation Resistance</td>
<td>100 MΩ or more when 500 VDC megger is applied between the windings and the frame after continuous operation under normal ambient temperature and humidity.</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>Sufficient to withstand 1.5 kVAC at 50 Hz applied between the windings and the frame for 1 minute after continuous operation under normal ambient temperature and humidity.</td>
</tr>
<tr>
<td>Temperature Rise</td>
<td>30°C (86°F) or less measured by the thermometer method after the temperature of the case has stabilized after continuous operation under normal ambient temperature and humidity.</td>
</tr>
<tr>
<td>Operating Voltage Range</td>
<td>±10% of the rated voltage</td>
</tr>
<tr>
<td>Thermal Class</td>
<td>UL/CSA standards: 105 (A), EN standards: 120 (E)</td>
</tr>
<tr>
<td>Overheat Protection</td>
<td>MRS Series has built-in thermal protector, (automatic return type)</td>
</tr>
<tr>
<td>Operating Environment</td>
<td>Provided in a separate box.</td>
</tr>
<tr>
<td>Color</td>
<td>MRS Series Frame: Dark Gray Blades: Black</td>
</tr>
<tr>
<td>Materials</td>
<td>Frame: Die cast aluminum Blades: Polycarbonate (Flammability grade: V-0)</td>
</tr>
<tr>
<td><strong>Operating Environment and Storage Condition</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### DC Axial Flow Fans

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation Resistance</td>
<td>10 MΩ or more when 250 VDC megger (For MDS1751-24B, -24S, MDS1451: 500 VDC megger) is applied between the windings and the frame after continuous operation under normal ambient temperature and humidity.</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>Sufficient to withstand 500 V at 50 Hz applied between the windings and the frame for 1 minute after continuous operation under normal ambient temperature and humidity.</td>
</tr>
<tr>
<td>Temperature Rise</td>
<td>10°C (18°F) or less measured by the thermometer method after the temperature of the case has stabilized after continuous operation under normal ambient temperature and humidity. (MDS1751: 5°C [9°F] or less, MDS1451: 15°C [27°F] or less)</td>
</tr>
<tr>
<td>Operating Voltage Range</td>
<td>±15% of the rated voltage</td>
</tr>
<tr>
<td>Thermal Class</td>
<td>UL/CSA standards: 105 (A), EN standards: 120 (E)</td>
</tr>
<tr>
<td>Overheat Protection</td>
<td>Built-in overheat protection circuit</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>−10° to +60°C (+14° to +140°F)</td>
</tr>
<tr>
<td>Ambient Humidity</td>
<td>85% or less (non-condensing)</td>
</tr>
<tr>
<td>Color</td>
<td>Frame: MD925, MD825, MD625, MDS510, MDS410</td>
</tr>
<tr>
<td>Materials</td>
<td>MD925, MD825, MD625, MDS510, MDS410 Blad: Polycarbonate (Flammability grade: V-0)</td>
</tr>
</tbody>
</table>
### AC Axial Flow Fans

#### MRS Series

**MRS 18 □ - B M H**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>MRS Series</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frame Size</td>
<td>14: 140 mm (5.51 in.)</td>
<td>15: 150 mm (5.91 in.)</td>
<td>16: 160 mm (6.30 in.)</td>
<td>18: 180 mm (7.09 in.)</td>
<td>20: 200 mm (7.87 in.)</td>
</tr>
<tr>
<td>Additional Functions</td>
<td>M: Low-Speed Alarm, Electronic Alarm Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connection Type</td>
<td>Blank: Connection with lead wire type or terminal box type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### MU Series

**MU 12 38 A - 2 1 B**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>MU Series</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frame Size</td>
<td>8: 80 mm (3.15 in.)</td>
<td>9: 90 mm (3.54 in.)</td>
<td>12: 119 mm (4.69 in.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frame Thickness</td>
<td>25: 25 mm (0.98 in.)</td>
<td>38: 38 mm (1.50 in.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed Type</td>
<td>A: Standard Speed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply Voltage</td>
<td>2: Single-Phase 115 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Connection</td>
<td>1: 2-Terminal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DC Axial Flow Fans

#### MDS, MD and MDE Series

**MD 9 25 A - 12 L H**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>MDS Series</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frame Size</td>
<td>4: 42 mm (1.65 in.)</td>
<td>5: 52 mm (2.05 in.)</td>
<td>6: 62 mm (2.44 in.)</td>
<td>8: 80 mm (3.15 in.)</td>
<td>9: 92 mm (3.62 in.)</td>
<td>12: 119 mm (4.69 in.)</td>
</tr>
<tr>
<td>Frame Thickness</td>
<td>10: 10 mm (0.39 in.)</td>
<td>25: 25.4 mm (1.00 in.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed Type</td>
<td>Blank, A, B: Standard Speed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply Voltage</td>
<td>5: 5 VDC</td>
<td>12: 12 VDC</td>
<td>24: 24 VDC</td>
<td>48: 48 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Functions</td>
<td>B: Low-Speed Alarm, Contact Alarm Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connection Type</td>
<td>Blank: Lead wire type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Fan Kit

**T- MRS18-BMH G**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Fan Kit Order Code</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fan Model Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G: With finger guard and mounting screws</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GP: With finger guard, plug cord and mounting screws</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: With filter and mounting screws</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MRS Series

250 mm – 120 mm Thick
(9.84 in. – 4.72 in. Thick)

Specifications (RoHS)

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Current</th>
<th>Input</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
<th>Capacitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Phase</td>
<td>100</td>
<td>50</td>
<td>0.8</td>
<td>80</td>
<td>2800</td>
<td>21 742</td>
<td>290</td>
<td>1.16</td>
<td>58</td>
</tr>
<tr>
<td>Single-Phase</td>
<td>100</td>
<td>60</td>
<td>1.1</td>
<td>110</td>
<td>3220</td>
<td>24 848</td>
<td>320</td>
<td>1.28</td>
<td>62</td>
</tr>
<tr>
<td>Single-Phase</td>
<td>110</td>
<td>60</td>
<td>1.1</td>
<td>120</td>
<td>3280</td>
<td>24 848</td>
<td>340</td>
<td>1.36</td>
<td>62</td>
</tr>
<tr>
<td>Single-Phase</td>
<td>115</td>
<td>60</td>
<td>1.1</td>
<td>125</td>
<td>3300</td>
<td>24 848</td>
<td>360</td>
<td>1.45</td>
<td>62</td>
</tr>
</tbody>
</table>

Note: Alarm specifications ②, ⑤ → Page F-21 Details of safety standards → Page H-2

Air Flow – Static Pressure Characteristics

Dimensions

Unit: mm (in.)

Mass: 4.1 kg (9.0 lb.)

Lead Wires: 300 mm (12 in.)

Alarm Leads: 300 mm (12 in.)

Protective Earth Terminal

Rotation Direction

Alarm Circuit (Metric type only)
Cooling Fans

Introduction

Axial Flow Fans
Centrifugal Blowers
Cross Flow Fans

Cooling Module
Thermostats
Accessories
Installation

Capacitor (Included)

For MRS25-B and MRS25-D

CH160CFAUL Mass: 75 g (2.6 oz.)
CH45BFAUL Mass: 73 g (2.6 oz.)

(A capacitor and capacitor cap are included with single-phase fans.)

■ Connection Diagrams

Single-Phase

Three-Phase

Panel Cut-Out

Unit = mm (in.)

Connection Diagrams

■ Accessories

Product | Model | Page
--|---|---
Finger Guard | FG25D | F-118

■ Thermostats

A thermostat makes it possible for fans to operate only when cooling is necessary, thereby conserving energy.

Thermostats AM1-WA1/AM1-XA1

■ Product Line

Fan Kit Model

T-MRS25-BM-G
T-MRS25-TB-G
T-MRS25-DM-G
T-MRS25-B-G
T-MRS25-TM-G
T-MRS25-D-G
T-MRS25-BB-G
T-MRS25-T-G
T-MRS25-DB-G

See page F-32 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.

Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

Fan Kit

Mounting Screws

[M5×20 mm (0.79 in.)]
Axial Flow Fans/AC Input

MRS Series

200 mm – 90 mm Thick
(7.87 in. – 3.54 in. Thick)

Specifications (RoHS)

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Current</th>
<th>Input</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
<th>Capacitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRS20-BM</td>
<td>MRS20-BUL</td>
<td>250</td>
<td>50</td>
<td>0.8</td>
<td>75</td>
<td>2850</td>
<td>13.2</td>
<td>466</td>
<td>221</td>
</tr>
<tr>
<td>Single-Phase 100</td>
<td>50</td>
<td>0.8</td>
<td>75</td>
<td>2850</td>
<td>13.2</td>
<td>466</td>
<td>221</td>
<td>0.886</td>
<td>56</td>
</tr>
<tr>
<td>Single-Phase 100</td>
<td>60</td>
<td>1.0</td>
<td>95</td>
<td>3350</td>
<td>15.5</td>
<td>547</td>
<td>186</td>
<td>0.746</td>
<td>60</td>
</tr>
<tr>
<td>Single-Phase 110</td>
<td>60</td>
<td>1.0</td>
<td>95</td>
<td>3400</td>
<td>15.5</td>
<td>547</td>
<td>255</td>
<td>1.02</td>
<td>61</td>
</tr>
<tr>
<td>Single-Phase 115</td>
<td>60</td>
<td>1.0</td>
<td>95</td>
<td>3400</td>
<td>15.5</td>
<td>547</td>
<td>265</td>
<td>1.06</td>
<td>61</td>
</tr>
</tbody>
</table>

MRS20-DM | MRS20-DUL

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Current</th>
<th>Input</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
<th>Capacitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRS20-TM</td>
<td>MRS20-TUL</td>
<td>200</td>
<td>50</td>
<td>0.4</td>
<td>75</td>
<td>2850</td>
<td>13.2</td>
<td>466</td>
<td>221</td>
</tr>
<tr>
<td>Single-Phase 200</td>
<td>50</td>
<td>0.4</td>
<td>75</td>
<td>2850</td>
<td>13.2</td>
<td>466</td>
<td>221</td>
<td>0.886</td>
<td>56</td>
</tr>
<tr>
<td>Single-Phase 200</td>
<td>60</td>
<td>0.5</td>
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<td>Single-Phase 230</td>
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<td>0.5</td>
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<td>15.5</td>
<td>547</td>
<td>265</td>
<td>1.06</td>
<td>61</td>
</tr>
</tbody>
</table>

Air Flow – Static Pressure Characteristics

Dimensions

Unit = mm (in.)

Mass: 2.5 kg (5.5 lb.)

Fan, Capacitor*, Capacitor Cap*, Operating Manual

Single-phase fans only

Other items: Fan, Capacitor*, Capacitor Cap*, Operating Manual

Specifications (Page F-21)

Details of safety standards (Page H-2)

- Alarm Circuit (Alarm type only)
- Protective Earth Terminal (Alarm type only)
- UL Style 1007, AWG22 (Alarm type only)
- UL Style 3266, AWG20 (Alarm type only)

Lead Wires 300 mm (12 in.)
UL Style 3266, AWG20 (Alarm type only)

Alarm Leads 300 mm (12 in.)
UL Style 1007, AWG22 (Alarm type only)

Protective Earth Terminal

Note:

- Fan, Capacitor*, Capacitor Cap*, Operating Manual
- Single-phase fans only

Operating Voltage Range: ±10%

Materials

Frame: Die Cast Aluminum
Blades: Polycarbonate (Flammability grade V-0)
Overheat Protection: Built-in Thermal Protector
Bearings: Ball Bearings

AC Input

□ 250 mm (9.84 in.)
□ 200 mm (7.87 in.)
□ 180 mm (7.09 in.)
□ 160 mm (6.30 in.)
□ 140 mm (5.51 in.)
□ 119 mm (4.69 in.)
□ 92 mm (3.62 in.)
□ 80 mm (3.15 in.)
Cooling Fans

Introduction

Axial Flow Fans

Centrifugal Blowers

Cross Flow Fans

Cooling Modules

Thermostats

Accessories

Installation

A capacitor and capacitor cap are included with single-phase fans.

For MRS20-B□□ and MRS20-D□□

CH60UL Mass: 32 g (1.1 oz.)

Capacitor (Included)

Panel Cut-Out

Unit = mm (in.)

For ◇ MRS20-B□□ and ◇ MRS20-D□□

Capacitor (Included)

(A capacitor and capacitor cap are included with single-phase fans.)

Thermostats

A thermostat makes it possible for fans to operate only when cooling is necessary, thereby conserving energy.

Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

Product Line

Fan Kit Model

Fan Kit Model

See page F-34 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.

Connection Diagrams

<table>
<thead>
<tr>
<th>Line</th>
<th>Black</th>
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<th>White</th>
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</thead>
<tbody>
<tr>
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</table>

Alarm Leads*

Orange | Black

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Orange</td>
</tr>
<tr>
<td>Black</td>
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</table>

Fan Kit Model

Fan Kit Model

MRS20-BM-G

MRS20-DM-G

MRS20-TM-G

MRS20-BUL-G

MRS20-DUL-G

MRS20-TUL-G

See page F-34 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.

Product Line

Fan Kit Model

Fan Kit Model

Fan Kit Model

Fan Kit Model

See page F-34 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.
MRS Series

180 mm – 90 mm Thick
(7.09 in. – 3.54 in. Thick)

Specifications (RoHS)

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Current</th>
<th>Input</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
<th>Capacitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRS18-BMH</td>
<td>Single-Phase 100</td>
<td>50</td>
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<td>50</td>
<td>1.0</td>
<td>76</td>
<td>3300</td>
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<td>452</td>
<td>245</td>
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<td>245</td>
<td>0.982</td>
</tr>
<tr>
<td>MRS18-TUL</td>
<td>Three-Phase 200</td>
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<td>0.4</td>
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<td>2850</td>
<td>11.0</td>
<td>388</td>
<td>196</td>
<td>0.786</td>
</tr>
<tr>
<td>MRS18-TUL</td>
<td>Three-Phase 230</td>
<td>60</td>
<td>0.4</td>
<td>76</td>
<td>3350</td>
<td>12.8</td>
<td>452</td>
<td>245</td>
<td>0.982</td>
</tr>
</tbody>
</table>

- Only terminal box type is VDE certified.
- Alarm specifications ➔ Page F-21
- Details of safety standards ➔ Page H-2

The following items are included in each product:

- **MRS18-□□H**: Fan, Cable with Connector, Operating Manual
- **MRS18-□□UL**: Single-phase fans only

Air Flow – Static Pressure Characteristics

Long-Life Axial Flow Fans

The MRE Series is available as a long life version of the MRS Series products.
These AC input long-life axial flow fans have 100,000 hour life expectancy.
For more details on the MRE Series, please visit www.orientalmotor.com
Cooling Fans

Introduction
Axial Flow Fans
Centrifugal Blowers
Cross Flow Fans
Cooling Modules
Thermostats
Accessories
Installation

Dimensions  Unit = mm (in.)

- Connector Type
  - Fan
    Mass: 2.5 kg (5.5 lb.)
    Alarm Type: DXX E126
    Standard Type: DXX E127

- Terminal Box Type
  - Fan
    Mass: 2.5 kg (5.5 lb.)
    DXX E002
    Alarm Leads 300 mm (12 in.)
    UL Style 1007, AWG22 (Alarm type only)
    Plastic Grommet Inner Diameter: 6x(0.217)

- Cable for Connection to Power Supply (Included)
  Housing: 350779-1 (AMP)
  Cable Cores: AWG18

- Cable for Alarm (Included with alarm type)
  Housing: 350777-1 (AMP)
  Cable Cores: AWG18

- Capacitor (Included)
  Capacitor and capacitor cap are included with single-phase alarm type fans. Single-phase standard type fans contain a built-in capacitor.
  - For MRS18-BTM and MRS18-DTM
    CH60UL Mass: 32 g (1.1 oz.)

- Terminal Box Type
  - Fan
    Mass: 2.5 kg (5.5 lb.)
    DXX E002
    Alarm Leads 300 mm (12 in.)
    UL Style 1007, AWG22 (Alarm type only)
    Plastic Grommet Inner Diameter: 6x(0.217)

- Cable for Connection to Power Supply (Included)
  Housing: 350779-1 (AMP)
  Cable Cores: AWG18

- Cable for Alarm (Included with alarm type)
  Housing: 350777-1 (AMP)
  Cable Cores: AWG18

- Capacitor (Included)
  Capacitor and capacitor cap are included with single-phase alarm type fans. Single-phase standard type fans contain a built-in capacitor.
  - For MRS18-BTM and MRS18-DTM
    CH60UL Mass: 32 g (1.1 oz.)
**Panel Cut-Out**  Unit = mm (in.)

![Diagram showing panel cut-out dimensions for Axial Flow Fans/AC Input.](image)

**Connection Diagrams**

- **Connector Type**
  - MRS18-BMH
  - MRS18-DMH
  - MRS18-TMH
  - MRS18-BH
  - MRS18-DH
  - MRS18-TH

- **Terminal Box Type**
  - MRS18-BTM
  - MRS18-DTM
  - MRS18-TTM
  - MRS18-BUL
  - MRS18-DUL
  - MRS18-TUL

  ![Diagram showing terminal box types for Axial Flow Fans.](image)

- **How to connect a capacitor** → Page F-129
**Cooling Fans**

### Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG18D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FL18</td>
<td>F-120</td>
</tr>
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</table>

### Thermostats

A thermostat makes it possible for fans to operate only when cooling is necessary, thereby conserving energy.

**RoHS** Thermostats **AM1-WA1/AM1-XA1**

Page ➔ F-113

---

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

- **Package Contents (Fan, Finger guard, Mounting screws)**

  - **RoHS**
  - Fan
  - Finger Guard
  - Mounting Screws
    - [M5×20 mm (0.79 in.)]

- **Package Contents (Fan, Filter, Mounting screws)**

  - **RoHS**
  - Fan
  - Filter
  - Mounting Screws
    - [M5×30 mm (1.18 in.)]

- **Product Line (Fan, Finger guard, Mounting screws)**
  - **Connector Type**
    - Fan Kit Model
      - T-MRS18-BMHG
      - T-MRS18-DMHG
      - T-MRS18-THHG
      - T-MRS18-TMHG
      - T-MRS18-BHG
      - T-MRS18-DHG

  - **Terminal Box Type**
    - Fan Kit Model
      - T-MRS18-BTM-G
      - T-MRS18-DTM-G
      - T-MRS18-DUL-G
      - T-MRS18-TBM-G
      - T-MRS18-DUL-F

- **Product Line (Fan, Filter, Mounting screws)**
  - **Connector Type**
    - Fan Kit Model
      - T-MRS18-BMHF
      - T-MRS18-DMHF
      - T-MRS18-DHF
      - T-MRS18-BHF
      - T-MRS18-DHF

  - **Terminal Box Type**
    - Fan Kit Model
      - T-MRS18-BTM-F
      - T-MRS18-DTM-F
      - T-MRS18-DUL-F
      - T-MRS18-TUL-F

See page F-36 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.
### MRS Series

**160 mm – 62 mm Thick**
*(6.30 in. – 2.44 in. Thick)*

#### Specifications (RoHS)

<table>
<thead>
<tr>
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<tr>
<td>MRS16-BTA</td>
<td>Contact Alarm Type: Single-Phase</td>
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<td>Standard Type: MRS16-BUL</td>
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<td>MRS16-DMF</td>
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<td>MRS16-DTA</td>
<td>Single-Phase 200</td>
<td></td>
</tr>
<tr>
<td>MRS16-DUL</td>
<td>Single-Phase 230</td>
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</tr>
<tr>
<td>MRS16-TTM</td>
<td>Three-Phase 200</td>
<td></td>
</tr>
<tr>
<td>MRS16-TTA</td>
<td>Three-Phase 200</td>
<td></td>
</tr>
<tr>
<td>MRS16-TUL</td>
<td>Three-Phase 230</td>
<td></td>
</tr>
</tbody>
</table>

- **Model Voltage**
- **Frequency**
- **Current**
- **Input**
- **Speed**
- **Max. Air Flow**
- **Max. Static Pressure**
- **Noise Level**
- **Capacitor**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Frequency</th>
<th>Current</th>
<th>Input</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
<th>Capacitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAC</td>
<td>Hz</td>
<td>A</td>
<td>W</td>
<td>r/min</td>
<td>m³/min</td>
<td>CFM</td>
<td>Pa</td>
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<td>157</td>
<td>0.63</td>
</tr>
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<td>Single-Phase 200</td>
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<td>219</td>
<td>127</td>
<td>0.509</td>
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<td>51</td>
<td>3300</td>
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<td>258</td>
<td>157</td>
<td>0.63</td>
</tr>
<tr>
<td>Three-Phase 200</td>
<td>50</td>
<td>0.19</td>
<td>33</td>
<td>2800</td>
<td>6.2</td>
<td>219</td>
<td>127</td>
<td>0.509</td>
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<tr>
<td>Three-Phase 200</td>
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<td>37</td>
<td>3250</td>
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<td>Three-Phase 230</td>
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<td>43</td>
<td>3300</td>
<td>7.3</td>
<td>258</td>
<td>157</td>
<td>0.63</td>
</tr>
</tbody>
</table>

- **Alarm specifications**
- **Details of safety standards**

The following items are included in each product:

- **MRS16-DMF**: Fan, Capacitor*, Capacitor Cap*, Operating Manual
- **MRS16-DTA**: Single-phase fans only
- **MRS16-DUL**: Fan, Capacitor*, Operating Manual
- **MRS16-TTA**: Single-phase fans only
- **MRS16-TUL**: Fan, Operating Manual

#### Air Flow – Static Pressure Characteristics

[Graph showing air flow vs. static pressure characteristics]

---

**Long-Life Axial Flow Fans**

**MRE Series**

The MRE Series is available as a long life version of the MRS Series products. These AC input long-life axial flow fans have 100,000 hour life expectancy. For more details on the MRE Series, please visit www.orientalmotor.com
**Dimensions**  Unit = mm (in.)

Mass: 1.35 kg (3.0 lb.)

**Panel Cut-Out**  Unit = mm (in.)

**Connection Diagrams**

- **MRS16-BTM**
  - Line
  - Capacitor
  - Orange Black
  - Alarm Leads

- **MRS16-DTM**
  - Line
  - Capacitor
  - Orange Black
  - Alarm Leads

- **MRS16-TTM**
  - Line
  - L1(R)
  - L2(S)
  - L3(T)
  - Alarm Leads

- **MRS16-BUL**
  - Line
  - PE

- **MRS16-DUL**
  - Line
  - PE

- **MRS16-TUL**
  - Line
  - Alarm Leads

- **MRS16-TTA**
  - Line
  - Alarm Leads

- **MRS16-DTA**
  - Line
  - White Black

- **MRS16-BTA**
  - Line
  - PE

- **Inside of the Terminal Box**
  - Protective Earth Terminal
  - M4
  - Terminal Attachment Screws
  - 3 x M4

- **How to connect a capacitor** → Page F-129
## Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
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<tbody>
<tr>
<td>Finger Guard</td>
<td>FG16D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FL16</td>
<td>F-120</td>
</tr>
</tbody>
</table>

## Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

### Package Contents (Fan, Finger guard, Mounting screws)

- Fan
- Finger Guard
- Mounting Screws [M5×20 mm (0.79 in.)]

### Package Contents (Fan, Filter, Mounting screws)

- Fan
- Filter
- Mounting Screws [M5×30 mm (1.18 in.)]

## Thermostats

A thermostat makes it possible for fans to operate only when cooling is necessary, thereby conserving energy.

Thermostats **AM1-WA1/AM1-XA1**

*Page ⇒ F-113*

## Product Line (Fan, Finger guard, Mounting screws)

- T-MRS16-BTM-G
- T-MRS16-DTM-G
- T-MRS16-TTM-G
- T-MRS16-BTA-G
- T-MRS16-DTA-G
- T-MRS16-TTA-G
- T-MRS16-BUL-G
- T-MRS16-DUL-G
- T-MRS16-TUL-G

See page F-40 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.

## Thermostats

A thermostat makes it possible for fans to operate only when cooling is necessary, thereby conserving energy.

**AM1-WA1/AM1-XA1**

*Page ⇒ F-113*
MRS Series

140 mm – 47 mm Thick
(5.51 in. – 1.85 in. Thick)

Specifications (RoHS)

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Current</th>
<th>Input</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
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<tbody>
<tr>
<td></td>
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<td>2950</td>
<td>5.0</td>
<td>177</td>
<td>109</td>
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</table>

Alarm specifications → Page F-21  Details of safety standards → Page H-2

The following items are included in each product.

Fan, Operating Manual

Air Flow – Static Pressure Characteristics

Dimensions

Unit = mm (in.)

Mass: 0.9 kg (2.0 lb.)

Mass: 0.9 kg (2.0 lb.)

Plastic Grommet Inner Diameter

<table>
<thead>
<tr>
<th>ø7 (0.28)</th>
<th>ø7 (0.28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø4.5 (0.18)</td>
<td>ø4.5 (0.18)</td>
</tr>
</tbody>
</table>

Air Flow

Rotation Direction

UL Style 1007, AWG22 (Alarm type only)

Alarm Leads 300 mm (12 in.)
**Panel Cut-Out**  
Unit = mm (in.)

Outlet Side/Intake Side

---

**Connection Diagrams**

<table>
<thead>
<tr>
<th>MRS14-TTM</th>
<th>MRS14-TUL</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Connection Diagram" /></td>
<td><img src="image2" alt="Connection Diagram" /></td>
</tr>
</tbody>
</table>

Inside of the Terminal Box

- Terminal Attachment Screws 3×M4
- Lead Wire Entry
- Protective Earth Terminal M4

---

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG14D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FL14</td>
<td>F-120</td>
</tr>
</tbody>
</table>

---

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

---

**Product Line**

- Fan Kit Model
  - T-MRS14-TTM-G
  - T-MRS14-TUL-G

- See page F-44 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.
**VARIOFLOW**  
**MRS Series Variable Flow Type**

**180 mm – 90 mm Thick**  
((7.09 in. – 3.54 in. Thick))

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage VAC</th>
<th>Frequency Hz</th>
<th>Current A</th>
<th>Input W</th>
<th>Speed r/min</th>
<th>Max. Air Flow m³/min</th>
<th>CFM</th>
<th>Max. Static Pressure Pa</th>
<th>Noise Level dBA</th>
<th>Resistance of Potentiometer kΩ</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRS18V2-B</td>
<td>Single-Phase 100</td>
<td>50</td>
<td>1.2</td>
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<td>388</td>
<td>186</td>
<td>0.746</td>
<td>56</td>
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<tr>
<td></td>
<td>Single-Phase 100</td>
<td>60</td>
<td>1.4</td>
<td>100</td>
<td>3200</td>
<td>12.0</td>
<td>424</td>
<td>190</td>
<td>0.786</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Single-Phase 115</td>
<td>60</td>
<td>1.4</td>
<td>100</td>
<td>3350</td>
<td>12.8</td>
<td>452</td>
<td>255</td>
<td>1.02</td>
<td>61</td>
</tr>
<tr>
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<td>Single-Phase 200</td>
<td>50</td>
<td>0.6</td>
<td>74</td>
<td>2800</td>
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<td>0.746</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Single-Phase 200</td>
<td>60</td>
<td>0.7</td>
<td>100</td>
<td>3200</td>
<td>12.0</td>
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<td>190</td>
<td>0.786</td>
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<td></td>
<td>Single-Phase 230</td>
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<td>0.6</td>
<td>84</td>
<td>2850</td>
<td>11.0</td>
<td>388</td>
<td>196</td>
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<td></td>
<td>Single-Phase 230</td>
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<td>0.7</td>
<td>100</td>
<td>3350</td>
<td>12.8</td>
<td>452</td>
<td>255</td>
<td>1.02</td>
<td>61</td>
</tr>
</tbody>
</table>

- Operating Voltage Range: ±10%
- Materials:
  - Frame: Die Cast Aluminum
  - Blades: Polycarbonate (Flammability grade V-0)
- Overheat Protection: Built-in Thermal Protector
- Bearings: Ball Bearings

- Details of safety standards ➔ Page H-2
- The following items are included in each product:
  - Fan, External Speed Potentiometer, Operating Manual

### Air Flow – Static Pressure Characteristics

#### 50 Hz

- ![Graph image](image)

#### 60 Hz

- ![Graph image](image)
## Dimensions  Unit = mm (in.)

**Mass:** 2.5 kg (5.5 lb.)

- **MRS**
  - **Variable Flow**
- **MRSMU**
- **MDS/MD**
- **Long-Life**
- **MDE**
- **MB**
- **MBD**
- **MF**
- **MFD**
- **FM**

### Leads for Connecting External Speed Potentiometer 300 mm (12 in.)

**Plastic Grommet Inner Diameter:** δ8 (φ0.31)

**Rotation Direction:**
- **Air Flow**

**Outlet Side Intake Side**

**External Speed Potentiometer (Included)**

200 kΩ, 1/4 W with a linear resistance vs. angle curve

**Panel Cut-Out  Unit = mm (in.)**

**Outlet Side Intake Side**

**Connection Diagram**

- **Line**
- **PE**
- **Blue**
- **External Speed Potentiometer**

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG18D</td>
<td>F-118</td>
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<tr>
<td>Filter</td>
<td>FLT18</td>
<td>F-120</td>
</tr>
</tbody>
</table>

---

**Cooling Fans**

**Introduction**

**Axial Flow Fans**

**Centrifugal Blowers**

**Cross Flow Fans**

**Cooling Module**

**Thermostats**

**Accessories**

**Installation**

**AC Input**

**DC Input**
### Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Model</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Current A</th>
<th>Input W</th>
<th>Speed r/min</th>
<th>Max. Air Flow m³/min</th>
<th>Max. Static Pressure Pa</th>
<th>Noise Level dB (A)</th>
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</thead>
<tbody>
<tr>
<td>Standard</td>
<td>MU1238A-21B</td>
<td>Single-Phase 115</td>
<td>50</td>
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<td>2.7</td>
<td>95.3</td>
<td>81</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>0.18</td>
<td>13.0</td>
<td>3250</td>
<td>3.0</td>
<td>106</td>
<td>81</td>
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<tr>
<td></td>
<td>MU1238A-51B</td>
<td>Single-Phase 220</td>
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<td>0.10</td>
<td>13.5</td>
<td>2800</td>
<td>2.7</td>
<td>95.3</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>0.11</td>
<td>16.0</td>
<td>2800</td>
<td>2.7</td>
<td>95.3</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>0.10</td>
<td>13.5</td>
<td>3250</td>
<td>3.0</td>
<td>106</td>
<td>81</td>
</tr>
<tr>
<td>Middle</td>
<td>MU1238B-21B</td>
<td>Single-Phase 115</td>
<td>50</td>
<td>0.16</td>
<td>12.5</td>
<td>2500</td>
<td>2.2</td>
<td>77.7</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>60</td>
<td>0.15</td>
<td>11.5</td>
<td>2800</td>
<td>2.5</td>
<td>88.3</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>MU1238B-51B</td>
<td>Single-Phase 220</td>
<td>50</td>
<td>0.09</td>
<td>11.5</td>
<td>2500</td>
<td>2.2</td>
<td>77.7</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>0.09</td>
<td>14.0</td>
<td>2500</td>
<td>2.3</td>
<td>81.2</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>0.09</td>
<td>11.5</td>
<td>2800</td>
<td>2.5</td>
<td>88.3</td>
<td>52</td>
</tr>
<tr>
<td>Low Speed</td>
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<td>Single-Phase 115</td>
<td>50</td>
<td>0.10</td>
<td>8.0</td>
<td>2100</td>
<td>1.9</td>
<td>67.1</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>0.09</td>
<td>7.5</td>
<td>2100</td>
<td>1.8</td>
<td>63.5</td>
<td>27</td>
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<tr>
<td></td>
<td>MU1238L-51B</td>
<td>Single-Phase 220</td>
<td>50</td>
<td>0.06</td>
<td>7.5</td>
<td>2100</td>
<td>1.85</td>
<td>65.3</td>
<td>34</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>0.06</td>
<td>9.5</td>
<td>2100</td>
<td>1.9</td>
<td>67.1</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>0.06</td>
<td>7.5</td>
<td>2200</td>
<td>1.9</td>
<td>67.1</td>
<td>29</td>
</tr>
</tbody>
</table>

Details of safety standards → Page H-2

The following items are included in each product:
- Fan, Operating Manual

### Air Flow – Static Pressure Characteristics

![Graph](Image)

#### Dimensions

**Unit = mm (in.)**

- **Mass:** 0.53 kg (1.2 lb.)

![Diagram](Image)

**Panel Cut-Out**

**Unit = mm (in.)**

![Diagram](Image)
### Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG12D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FL12</td>
<td>F-120</td>
</tr>
<tr>
<td>Screen</td>
<td>FS12S</td>
<td>F-123</td>
</tr>
<tr>
<td>Plug Cord</td>
<td>PCA2B</td>
<td>F-124</td>
</tr>
<tr>
<td></td>
<td>PCA2B2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[1 m (3.3 ft.)]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC28S2</td>
<td>[2 m (6.6 ft.)]</td>
</tr>
</tbody>
</table>

### Thermostats

A thermostat makes it possible for fans to operate only when cooling is necessary, thereby conserving energy.

RoHS

Thermostats AM1-WA1/AM1-XA1

● Page ➜ F-113

### Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

RoHS

![Fan Kit Diagram](image)

- Fan
- Finger Guard
- Mounting Screws [M4 x 55 mm (2.17 in.)]
- Plug Cord

### Product Line

<table>
<thead>
<tr>
<th>Fan Kit Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-MU1238A-21-GP</td>
</tr>
<tr>
<td>T-MU1238A-51-GP</td>
</tr>
<tr>
<td>T-MU1238B-21-GP</td>
</tr>
<tr>
<td>T-MU1238B-51-GP</td>
</tr>
<tr>
<td>T-MU1238L-21-GP</td>
</tr>
<tr>
<td>T-MU1238L-51-GP</td>
</tr>
</tbody>
</table>

● See page F-48 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.
MU Series

119 mm – 25 mm Thick
(4.69 in. – 0.98 in. Thick)

Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Model</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Current</th>
<th>Input</th>
<th>Speed</th>
<th>Air Flow</th>
<th>Static Pressure</th>
<th>Noise Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MU1225S-21</td>
<td>VAC</td>
<td>50 Hz</td>
<td>0.14</td>
<td>11.0</td>
<td>2500</td>
<td>65.5</td>
<td>49</td>
<td>0.196</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>60 Hz</td>
<td>0.12</td>
<td>9.5</td>
<td>2950</td>
<td>67.1</td>
<td>44</td>
<td>0.176</td>
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<tr>
<td></td>
<td>MU1225S-51</td>
<td>VAC</td>
<td>50 Hz</td>
<td>0.07</td>
<td>10.5</td>
<td>2500</td>
<td>56.5</td>
<td>49</td>
<td>0.196</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>60 Hz</td>
<td>0.08</td>
<td>12.0</td>
<td>2500</td>
<td>56.5</td>
<td>49</td>
<td>0.196</td>
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<tr>
<td></td>
<td>MU1225M-21</td>
<td>VAC</td>
<td>50 Hz</td>
<td>0.13</td>
<td>10.5</td>
<td>2250</td>
<td>49.4</td>
<td>32</td>
<td>0.129</td>
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<td></td>
<td></td>
<td>60 Hz</td>
<td>0.11</td>
<td>9.0</td>
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<td>MU1225M-51</td>
<td>VAC</td>
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<td>0.07</td>
<td>10.0</td>
<td>2250</td>
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<td>32</td>
<td>0.129</td>
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<tr>
<td></td>
<td></td>
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<td>60 Hz</td>
<td>0.07</td>
<td>12.0</td>
<td>2600</td>
<td>49.4</td>
<td>32</td>
<td>0.129</td>
</tr>
</tbody>
</table>

Air Flow – Static Pressure Characteristics

Air Flow – Static Pressure Characteristics

Dimensions

Unit = mm (in.)

Panel Cut-Out

Unit = mm (in.)
Cooling Fans

Connection Diagram

![Connection Diagram](image)

Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG12D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FL12</td>
<td>F-120</td>
</tr>
<tr>
<td>Screen</td>
<td>FS125</td>
<td>F-123</td>
</tr>
<tr>
<td>Plug Cord</td>
<td>PCA2B</td>
<td>F-124</td>
</tr>
<tr>
<td></td>
<td>[1 m (3.3 ft.)]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PCA2B2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[2 m (6.6 ft.)]</td>
<td></td>
</tr>
</tbody>
</table>

Thermostats

A thermostat makes it possible for fans to operate only when cooling is necessary, thereby conserving energy.

![Thermostats](image)

Product Line

<table>
<thead>
<tr>
<th>Fan Kit Model</th>
</tr>
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<tbody>
<tr>
<td>T-MU1225S-21-GP</td>
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<tr>
<td>T-MU1225S-51-GP</td>
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<td>T-MU1225M-21-GP</td>
</tr>
<tr>
<td>T-MU1225M-51-GP</td>
</tr>
</tbody>
</table>

See page F-50 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.

Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

![Fan Kit](image)
MU Series

92 mm – 25 mm Thick
(3.62 in. – 0.98 in. Thick)

Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Model</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Current</th>
<th>Input</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>MU925S-21</td>
<td>Single-Phase 115</td>
<td>50</td>
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<tr>
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<td>8.0</td>
<td>3000</td>
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<td>Middle Speed</td>
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<td>8.0</td>
<td>2700</td>
<td>1.00</td>
<td>35.8</td>
<td>44</td>
</tr>
</tbody>
</table>

Dimensions Unit = mm (in.)

Mass: 0.27 kg (0.59 lb.)

Panel Cut-Out Unit = mm (in.)

Air Flow – Static Pressure Characteristics

MU925S

MU925M
### Connection Diagram

![Connection Diagram]

**Input Terminals**

---

### Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
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<tr>
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<td>FG9D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
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<td>F-120</td>
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<tr>
<td>Screen</td>
<td>F595</td>
<td>F-123</td>
</tr>
<tr>
<td>Plug Cord</td>
<td>PCA2B [1 m (3.3 ft.)]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PCA2B2 [2 m (6.6 ft.)]</td>
<td>F-124</td>
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</table>

---

### Thermostats

A thermostat makes it possible for fans to operate only when cooling is necessary, thereby conserving energy.

**Thermostats** AM1-WA1/AM1-XA1

![Thermostats AM1-WA1/AM1-XA1](image)

*See page F-113*

---

### Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

![Fan Kit](image)

**Product Line**

**Fan Kit Model**

- T-MU92SS-21-GP
- T-MU92SS-51-GP
- T-MU92SM-21-GP
- T-MU92SM-51-GP

*See page F-52 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.*

---

### Product Line

**Fan Kit Model**

- T-MU92SS-21-GP
- T-MU92SS-51-GP
- T-MU92SM-21-GP
- T-MU92SM-51-GP

*See page F-52 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.*
MU Series

\[80 \text{ mm} - 25 \text{ mm Thick} \]
(\[3.15 \text{ in.} - 0.98 \text{ in. Thick}\])

- **Specifications (RoHS)**
  - **Speed Type** | **Model** | **Voltage VAC** | **Frequency Hz** | **Current A** | **Input W** | **Speed r/min** | **Max. Air Flow m³/min** | **Max. Static Pressure Pa** | **Noise Level dB(A)**
  - Standard Speed
    - MU825S-23
      - Single-Phase 115
        - 50: 0.11, 9.5, 2750, 0.45, 15.9, 34, 0.137, 28
        - 60: 0.09, 8.0, 3250, 0.55, 19.4, 49, 0.196, 35
    - MU825S-53
      - Single-Phase 220
        - 50: 0.06, 8.5, 2750, 0.45, 15.9, 34, 0.137, 28
        - 60: 0.07, 10.5, 3250, 0.55, 19.4, 49, 0.196, 35

- Details of safety standards ➜ Page H-2
- The following items are included in each product:
  - Fan, Operating Manual

- **Air Flow – Static Pressure Characteristics**

- **Dimensions** Unit = mm (in.)
  - Mass: 0.25 kg (0.55 lb.)
  - E015

- **Panel Cut-Out** Unit = mm (in.)
  - Protective Earth Terminal M4 (-53 type only)
  - Outlet Side: 71.5 (2.815)
    - 78 (3.07)
    - 4×Ø4.5 (ø0.177)
  - Intake Side: 71.5 (2.815)
    - 78 (3.07)
    - 4×Ø4.5 (ø0.177)

- **Panel Cut-Out** Unit = mm (in.)
  - Protective Earth Terminal M4 (-53 type only)
  - Outlet Side: 71.5 (2.815)
    - 78 (3.07)
    - 4×Ø4.5 (ø0.177)
  - Intake Side: 71.5 (2.815)
    - 78 (3.07)
    - 4×Ø4.5 (ø0.177)

- **Power Supply Leads**
  - UL Style 3266, AWG22
Connection Diagram

Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG8D</td>
<td>F-118</td>
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<tr>
<td>Filter</td>
<td>FL8</td>
<td>F-120</td>
</tr>
<tr>
<td>Screen</td>
<td>FS8S</td>
<td>F-123</td>
</tr>
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</table>

Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

Fan Kit Model

- T-MU8255-23-G
- T-MU8255-53-G

See page F-54 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.
**MDS Series**

**ϕ172 mm – 51 mm Thick (ϕ6.77 in. – 2.01 in. Thick)**

### Specifications (RoHS)

<table>
<thead>
<tr>
<th>Function</th>
<th>Model</th>
<th>Connector Type</th>
<th>Lead Wire Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-Speed Alarm, Contact Alarm Type (Alarm specifications: ⑧)</td>
<td>MDS1751-24BH</td>
<td>MDS1751-24B</td>
<td></td>
</tr>
<tr>
<td>Pulse Sensor Type (Alarm specifications: ⑨)</td>
<td>MDS1751-24SH</td>
<td>MDS1751-24S</td>
<td></td>
</tr>
<tr>
<td>Standard Type</td>
<td>MDS1751-24H</td>
<td>MDS1751-24</td>
<td></td>
</tr>
</tbody>
</table>

*Only standard type lead wire model is DEMKO certified.*

*Alarm specifications ⑧, ⑨ → Page F-22  Details of safety standards → Page H-2*

The following items are included in each product:

- Connector Type
- Fan, Cable with Connector, Operating Manual
- Lead Wire Type
- Fan, Operating Manual

### Air Flow – Static Pressure Characteristics

![Graph showing Air Flow vs Static Pressure characteristics](image)

### Dimensions  Unit = mm (in.)

- **Connector Type**
  - **Fan**
    - **Type**
      - Low-Speed Alarm, Contact Alarm Type: SMR-04V-N (J.S.T.)
      - Pulse Sensor Type / Standard Type: SMR-03V-N (J.S.T.)
    - **Mass kg (lb.)**
      - SMR-04V-N (J.S.T.): 0.9 (2.0)
      - SMR-03V-N (J.S.T.): 0.9 (2.0)
    - **DXF**
      - E115

- **Cable with Connector (Included)**
  - **Type**
    - Low-Speed Alarm, Contact Alarm Type: SMR-04V-NC (J.S.T.)
    - Pulse Sensor Type: SMR-03V-NC (J.S.T.)
    - Standard Type: SMR-03V-NC (J.S.T.)
  - **Housing P/N**
    - SMR-04V-NC (J.S.T.): SMP-04V-NC (J.S.T.)
    - SMR-03V-NC (J.S.T.): SMP-03V-NC (J.S.T.)

### Operating Voltage Range: ±15%

- **Materials**
  - Frame: Die Cast Aluminum
  - Blades: Polycarbonate (Flammability grade V-0)
- Overheat Protection: Built-in Overheat Protection Circuit
- Bearings: Ball Bearings

### Dimensions

- **Housing P/N**
  - SMR-04V-N (J.S.T.): SMP-04V-NC (J.S.T.)
  - SMR-03V-N (J.S.T.): SMP-03V-NC (J.S.T.)


### Lead Wire Type

- **Mass:** 0.9 kg (2.0 lb.)

#### Connection Diagrams

- **Connector Type**
  - Low-Speed Alarm, Contact Alarm Type
    - Red
    - Black GND
  - Pulse Sensor Type, Standard Type
    - Red
    - Black GND
    - Yellow Pulse Sensor Output

- **Lead Wire Type**
  - Low-Speed Alarm, Contact Alarm Type
    - Red
    - Black GND
  - Pulse Sensor Type, Standard Type
    - Red
    - Black GND
    - Yellow Pulse Sensor Output

#### Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG17D</td>
<td>F-118</td>
</tr>
</tbody>
</table>

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

**Product Line**

- **Connector Type**
  - Fan Kit Model
    - T-MDS1751-24BHG
    - T-MDS1751-24SHG
    - T-MDS1751-24HG

- **Lead Wire Type**
  - Fan Kit Model
    - T-MDS1751-24B-G
    - T-MDS1751-24S-G
    - T-MDS1751-24-G

See page F-58 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.

---

**Panel Cut-Out**

Unit = mm (in.)

- Outlet Side/Intake Side
  - UL Style 1007, AWG24
MDS Series

140 mm – 51 mm Thick
(5.51 in. – 2.01 in. Thick)

Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Function</th>
<th>Model</th>
<th>Voltage VDC</th>
<th>Current A</th>
<th>Speed r/min</th>
<th>Max. Air Flow m³/min</th>
<th>Max. Static Pressure Pa</th>
<th>Noise Level dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Speed</td>
<td>Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)</td>
<td>MDS1451-24LH</td>
<td>24</td>
<td>0.7</td>
<td>3150</td>
<td>5.8</td>
<td>205</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>Pulse Sensor Type (Alarm specifications: ②)</td>
<td>MDS1451-48LH</td>
<td>48</td>
<td>0.35</td>
<td>3150</td>
<td>5.8</td>
<td>205</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>Stall Alarm, Electronic Alarm Type (Alarm specifications: ③)</td>
<td>MDS1451-24SH</td>
<td>24</td>
<td>0.7</td>
<td>3150</td>
<td>5.8</td>
<td>205</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>Pulse Sensor Type (Alarm specifications: ④)</td>
<td>MDS1451-48SH</td>
<td>48</td>
<td>0.35</td>
<td>3150</td>
<td>5.8</td>
<td>205</td>
<td>130</td>
</tr>
</tbody>
</table>

Specifications

- Operating Voltage Range: ±15%
- Materials:
  - Frame: Die Cast Aluminum
  - Blades: Polycarbonate (Flammability grade V-0)
- Overheat Protection: Built-in Overheat Protection Circuit
- Bearings: Ball Bearings

Air Flow – Static Pressure Characteristics

Dimensions

- Connector Type
  - Fan Mass: 0.65 kg (1.43 lb.)

Cable with Connector (Included)

- Stall Alarm, Electronic Alarm Type
- Pulse Sensor Type
- Standard Type

Materials

- Frame: Die Cast Aluminum
- Blades: Polycarbonate (Flammability grade V-0)
- Overheat Protection: Built-in Overheat Protection Circuit
- Bearings: Ball Bearings
DC Axial Flow Fans with Low-Speed Alarm

**MDA Series**

The MDA Series is similar to the MDS Series and available with a low-speed alarm function. An alarm is output when the fan speed drops to approximately 70% of the rated level. For more details on the MDA Series, please visit www.orientalmotor.com.

---

**Panel Cut-Out**

Unit = mm (in.)

---

**Connection Diagrams**

- **Connector Type**

  - Red: 24 VDC or 48 VDC
  - Black: GND
  - Yellow: Stall Alarm Output (Stall Alarm type only)
  - UL Style 3385, AWG24

- **Lead Wire Type**

  - Red: 24 VDC or 48 VDC
  - Black: GND
  - Yellow: Stall Alarm Output (Stall Alarm type only) or Pulse Sensor Output (Pulse Sensor type only)

---

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG14D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FLT4</td>
<td>F-120</td>
</tr>
</tbody>
</table>

---

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

---

**Fan Kit Model**

- **T-MDS1451-24LHG**
- **T-MDS1451-24S-G**
- **T-MDS1451-48LHG**
- **T-MDS1451-48S-G**

---

**Product Line**

- **Connector Type**

  - Fan Kit Model
    - **T-MDS1451-24LHG**
    - **T-MDS1451-24S-G**
    - **T-MDS1451-48LHG**
    - **T-MDS1451-48S-G**

- **Lead Wire Type**

  - Fan Kit Model
    - **T-MDS1451-24L-G**
    - **T-MDS1451-24S-G**
    - **T-MDS1451-48L-G**
    - **T-MDS1451-48S-G**

---

**See page F-58 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.**
Axial Flow Fans/DC Input

MDS Series

- 119 mm – 25.4 mm Thick
  (4.69 in. – 1.00 in. Thick)

Specifications

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Function</th>
<th>Model</th>
<th>Voltage</th>
<th>Current A</th>
<th>Speed r/min</th>
<th>Max. Air Flow [m³/min]</th>
<th>Max. Static Pressure [Pa]</th>
<th>Noise Level [dB (A)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Speed</td>
<td>Low-Speed Alarm, Electronic Alarm Type</td>
<td>MDS1225-12MH</td>
<td>VDC 12</td>
<td>0.63</td>
<td>3000</td>
<td>2.7</td>
<td>95.3</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MDS1225-12M</td>
<td>VDC 24</td>
<td>0.34</td>
<td>24</td>
<td>0.58</td>
<td>70</td>
<td>0.30</td>
</tr>
</tbody>
</table>

- Only lead wire type is DEMKO certified.
- Alarm specifications → Page F-21
- Details of safety standards → Page H-2

The following items are included in each product:
- Connector Type
- Fan, Cable with Connector, Operating Manual
- Lead Wire Type
- Fan, Operating Manual

Air Flow – Static Pressure Characteristics

Dimensions

- Connector Type
  - Fan

![Diagram of dimensions and specifications](image-url)

Cable with Connector (Included)

- UL Style 1007, AWG24
- Cable Cores: AWG22

- Low-Speed Alarm, Electronic Alarm Type
  - ø5.1 (ø0.20)
  - SMP-04V-NC (J.S.T.)
- Standard Type
  - ø4.5 (ø0.18)
  - SMP-03V-NC (J.S.T.)

Materials
- Frame: Die Cast Aluminum
- Blades: Polycarbonate (Flammability grade V-0)

Overheat Protection: Built-in Overheat Protection Circuit

Bearings: Ball Bearings

Operating Voltage Range: ±15%
(MDS1225-12M, -24M: ±10%)
DC Axial Flow Fans with Low-Speed Alarm

**MDA Series**

The **MDA Series** is similar to the **MDS Series** and available with a low-speed alarm function. An alarm is output when the fan speed drops to approximately 70% of the rated level. For more details on the **MDA Series**, please visit [www.orientalmotor.com](http://www.orientalmotor.com).

**Lead Wire Type**

<table>
<thead>
<tr>
<th>Lead Wire Type</th>
<th>Mass: 0.3 kg (0.66 lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E020</td>
<td></td>
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</tbody>
</table>

**Panel Cut-Out**

Unit = mm (in.)

- Outlet Side: 104.8 (4.126)
- Intake Side: 104.8 (4.126)

**Connection Diagrams**

- **Connector Type**
  - Red: 12 VDC or 24 VDC
  - Black: GND
  - Orange: Alarm Output (Alarm type only)
  - Blue: GND (Alarm type only)

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG12D</td>
<td>F-118</td>
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<tr>
<td>Filter</td>
<td>FL12</td>
<td>F-120</td>
</tr>
<tr>
<td>Screen</td>
<td>FS12S</td>
<td>F-123</td>
</tr>
</tbody>
</table>

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

- **Fan**
  - **Finger Guard**
  - **Mounting Screws** [M4×40 mm (1.57 in.)]

**Product Line**

- **Fan Kit Model**
  - T-MDS1225-12MHG
  - T-MDS1225-24MHG
  - T-MDS1225-12HG
  - T-MDS1225-24HG

- **Lead Wire Type**
  - Fan Kit Model
  - T-MDS1225-12M-G
  - T-MDS1225-24M-G
  - T-MDS1225-12-G
  - T-MDS1225-24-G

*See page F-80 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.*
MD Series

119 mm – 25.4 mm Thick (4.69 in. – 1.00 in. Thick)

Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Model</th>
<th>Voltage</th>
<th>Current</th>
<th>Speed (r/min)</th>
<th>Air Flow (m³/min)</th>
<th>Static Pressure (Pa)</th>
<th>Noise Level (dB (A))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Type</td>
<td>Lead Wire Type</td>
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<tr>
<td>Standard Speed</td>
<td>MD1225-12H</td>
<td>12</td>
<td>0.47</td>
<td>3100</td>
<td>2.5</td>
<td>88.3</td>
<td>43</td>
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<td>MD1225-24H</td>
<td>24</td>
<td>0.26</td>
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<td>45</td>
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</table>

- Only lead wire model is DEMKO certified.
- Details of safety standards → Page H-2

The following items are included in each product:

- Connector Type
  - Fan, Cable with Connector, Operating Manual
- Lead Wire Type
  - Fan, Operating Manual

Air Flow – Static Pressure Characteristics

Dimensions Unit = mm (in.)

- Connector Type
  - Fan
    Mass: 0.19 kg (0.42 lb.)
    UL Style 1007
    AWG 24
    E120

- Cable with Connector (Included)
  - 1000 (39.37)
  - 4.5 (0.18)
  - Cable Cores: AWG 22
  - Housing: SMP-03V-NC (J.S.T.)
  - Housing: SMR-03V-N (J.S.T.)
Cooling Fans

Introduction

Axial Flow Fans
Centrifugal Blowers
Cross Flow Fans
Cooling Module
Thermostats
Accessories
Installation

Connection Diagrams

Connector Type

Lead Wire Type
Mass: 0.19 kg (0.42 lb.)

E021

Lead Wire Type

Cable with Connector

Outlet Side

Intake Side

Panel Cut-Out

Unit = mm (in.)

Accessories

Product Model Page

Finger Guard FG12D F-118
Filter FL12 F-120
Screen FS12S F-123

Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

RoHS

Fan

Finger Guard

Mounting Screws
[M4×40 mm (1.57 in.)]

Product Line

Connector Type

Fan Kit Model
T-MD1225-12HG
T-MD1225-24HG

Lead Wire Type

Fan Kit Model
T-MD1225-12-G
T-MD1225-24-G

See page F-62 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.

Connection Diagrams

Connector Type

Red Black GND
12 VDC or 24 VDC

Lead Wire Type

Red Black GND
12 VDC or 24 VDC

Accessories

Product Model Page

Finger Guard FG12D F-118
Filter FL12 F-120
Screen FS12S F-123

Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

RoHS

Fan

Finger Guard

Mounting Screws
[M4×40 mm (1.57 in.)]

Product Line

Connector Type

Fan Kit Model
T-MD1225-12HG
T-MD1225-24HG

Lead Wire Type

Fan Kit Model
T-MD1225-12-G
T-MD1225-24-G

See page F-62 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.
### MD Series

**92 mm – 25.4 mm Thick**  
(3.62 in. – 1.00 in. Thick)

#### Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Function</th>
<th>Model</th>
<th>Voltage VDC</th>
<th>Current A</th>
<th>Speed r/min</th>
<th>Max. Air Flow m³/min</th>
<th>Max. Static Pressure Pa</th>
<th>Noise Level dB (A)</th>
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</thead>
<tbody>
<tr>
<td>Stall Alarm, Electronic Alarm Type</td>
<td>Stall Alarm, Electronic Alarm Type</td>
<td>MD925A-12LH</td>
<td>12</td>
<td>0.24</td>
<td>3400</td>
<td>130</td>
<td>45.9</td>
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<td>MD925A-12L</td>
<td>12</td>
<td>0.24</td>
<td>3400</td>
<td>130</td>
<td>45.9</td>
<td>49</td>
<td>0.196</td>
<td>36</td>
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<tr>
<td>MD925A-24L</td>
<td>24</td>
<td>0.12</td>
<td>2800</td>
<td>110</td>
<td>38.8</td>
<td>34</td>
<td>0.137</td>
<td>31</td>
</tr>
<tr>
<td>Pulse Sensor Type</td>
<td>Pulse Sensor Type</td>
<td>MD925A-12SH</td>
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<td>0.24</td>
<td>2800</td>
<td>110</td>
<td>38.8</td>
<td>34</td>
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<tr>
<td>MD925A-12S</td>
<td>24</td>
<td>0.12</td>
<td>2800</td>
<td>110</td>
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<td>0.137</td>
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<tr>
<td>Middle Speed</td>
<td>Middle Speed</td>
<td>MD925AM-12</td>
<td>12</td>
<td>0.15</td>
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<td>90</td>
<td>31.8</td>
<td>22</td>
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<td>MD925AM-24</td>
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<td>2200</td>
<td>90</td>
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<td>22</td>
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<td>Standard Type</td>
<td>Standard Type</td>
<td>MD925AL-12</td>
<td>12</td>
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<td>56</td>
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<tr>
<td>MD925AL-24</td>
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<td>0.06</td>
<td>1500</td>
<td>56</td>
<td>24</td>
<td>18</td>
<td>0.0456</td>
<td>18</td>
</tr>
</tbody>
</table>

For detailed product safety standard information including standards, file number and certification body, please visit www.orientalmotor.com.

Details of safety standards ➜ Page H-2

The following items are included in each product:
- Connector Type
- Fan, Cable with Connector, Operating Manual
- Lead Wire Type
- Fan, Operating Manual

#### Air Flow – Static Pressure Characteristics

![Graph showing Air Flow and Static Pressure Characteristics]

- Connector Type
- Fan
  - Mass: 0.12 kg (0.26 lb.)
  - UL Style 1007, AWG24
- Cable with Connector (Included)
  - Housing: SMR-03V-N(J.S.T.)
  - Cable Cores: AWG22

- Stall Alarm, Electronic Alarm Type
- Pulse Sensor Type
- Standard Type

#### Dimensions

Unit = mm (in.)

- Connector Type
- Fan
- Cable with Connector

For detailed product safety standard information including standards, file number and certification body, please visit www.orientalmotor.com.

Details of safety standards ➜ Page H-2

The following items are included in each product:
- Connector Type
- Fan, Cable with Connector, Operating Manual
- Lead Wire Type
- Fan, Operating Manual

For detailed product safety standard information including standards, file number and certification body, please visit www.orientalmotor.com.

Details of safety standards ➜ Page H-2

The following items are included in each product:
- Connector Type
- Fan, Cable with Connector, Operating Manual
- Lead Wire Type
- Fan, Operating Manual
DC Axial Flow Fans with Low-Speed Alarm

**MDA Series**

The MDA Series is similar to the MD Series and available with a low-speed alarm function. An alarm is output when the fan speed drops to approximately 70% of the rated level. For more details on the MDA Series, please visit www.orientalmotor.com.
MD Series

**80 mm – 25.4 mm Thick (3.15 in. – 1.00 in. Thick)**

### Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Function</th>
<th>Connector Type</th>
<th>Lead Wire Type</th>
<th>Voltage VDC</th>
<th>Current A</th>
<th>Speed r/min</th>
<th>Max. Air Flow m³/min</th>
<th>Max. Static Pressure Pa</th>
<th>Noise Level dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)</td>
<td>MD825B-12LH</td>
<td>MD825B-12L</td>
<td>12</td>
<td>0.25</td>
<td>3800</td>
<td>1.00</td>
<td>35.3</td>
<td>49.0</td>
</tr>
<tr>
<td></td>
<td>Pulse Sensor Type (Alarm specifications: ⑨)</td>
<td>MD825B-125H</td>
<td>MD825B-125L</td>
<td>12</td>
<td>0.25</td>
<td>3800</td>
<td>1.00</td>
<td>35.3</td>
<td>49.0</td>
</tr>
<tr>
<td></td>
<td>Standard Type</td>
<td>MD825B-12H</td>
<td>MD825B-12</td>
<td>12</td>
<td>0.25</td>
<td>3800</td>
<td>1.00</td>
<td>35.3</td>
<td>49.0</td>
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<tr>
<td></td>
<td></td>
<td>MD825B-24L</td>
<td>MD825B-24</td>
<td>24</td>
<td>0.14</td>
<td>2850</td>
<td>0.73</td>
<td>25.8</td>
<td>29.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MD825B-125L</td>
<td>MD825B-125</td>
<td>24</td>
<td>0.14</td>
<td>2850</td>
<td>0.73</td>
<td>25.8</td>
<td>29.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MD825B-245L</td>
<td>MD825B-245</td>
<td>24</td>
<td>0.14</td>
<td>2850</td>
<td>0.73</td>
<td>25.8</td>
<td>29.0</td>
</tr>
</tbody>
</table>

Operating Voltage Range: ±15%  
Materials  
Frame: Polycarbonate (Flammability grade: V-0)  
Blades: Polycarbonate (Flammability grade: V-0)  
Overheat Protection: Built-in Overheat Protection Circuit  
Bearings: Ball Bearings

For detailed product safety standard information including standards, file number and certification body, please visit www.orientalmotor.com.

● Alarm specifications: ①, ⑨ ➜ Page F-21  
● Details of safety standards ➜ Page H-2

The following items are included in each product:  
- Connector Type  
- Fan, Cable with Connector, Operating Manual  
- Lead Wire Type  
- Fan, Operating Manual

### Dimensions  
Unit = mm (in.)

- **Connector Type**
- **Fan**
  - Mass: 0.11 kg (0.24 lb.)
  - UL Style 1007, AWG24
- **Cable with Connector (Included)**

### Air Flow – Static Pressure Characteristics

![Graph showing air flow and static pressure characteristics](image)

- **Connector Type**
- **Fan**  
  - UL Style 1007, AWG24
- **Cable with Connector (Included)**
  - Stall Alarm, Electronic Alarm Type  
  - Pulse Sensor Type  
  - Standard Type

For detailed product safety standard information including standards, file number and certification body, please visit www.orientalmotor.com.

For detailed safety standards, please visit www.orientalmotor.com.
DC Axial Flow Fans with Low-Speed Alarm

**MDA Series**

The **MDA** Series is similar to the **MD** Series and available with a low-speed alarm function. An alarm is output when the fan speed drops to approximately 70% of the rated level. For more details on the **MDA** Series, please visit www.orientalmotor.com.

---

**Panel Cut-Out**

<table>
<thead>
<tr>
<th>Unit = mm (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>78 (3.07)</td>
</tr>
<tr>
<td>71.5 (2.815)</td>
</tr>
<tr>
<td>4×Ø4.5 (Ø0.177)</td>
</tr>
</tbody>
</table>

---

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

---

**Connector Type**

- **Red**: 12 VDC or 24 VDC
- **Black**: GND
- **Yellow**: Stall Alarm Output (Stall Alarm type only) or Pulse Sensor Output (Pulse sensor type only)

---

**Lead Wire Type**

- **Red**: Mass: 0.11 kg (0.24 lb.)
- **Black**: E023

---

**Product Line**

- **Fan Kit Model**
  - T-MD825B-12LG
  - T-MD825B-12HLG
  - T-MD825B-12LHG
  - T-MD825B-24LG
  - T-MD825B-24HLG
  - T-MD825B-24LHG

- **Lead Wire Type**
  - **Fan Kit Model**
    - T-MD825B-12LG
    - T-MD825B-24LG
    - T-MD825B-12LHG
    - T-MD825B-24LHG
    - T-MD825B-12LMG
    - T-MD825B-24LMG
    - T-MD825BL-12LG

---

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG8D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FL8</td>
<td>F-126</td>
</tr>
<tr>
<td>Screen</td>
<td>FS8S</td>
<td>F-123</td>
</tr>
</tbody>
</table>

---

See page F-86 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.
### MD Series

- **62 mm – 25.4 mm Thick (2.44 in. – 1.00 in. Thick)**

#### Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Function</th>
<th>Model</th>
<th>Voltage</th>
<th>Current</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Speed</td>
<td>Stall Alarm, Electronic Alarm Type</td>
<td>MD625B-12LH</td>
<td>MD625B-12L</td>
<td>12</td>
<td>0.16</td>
<td>4000</td>
<td>0.50</td>
<td>17.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MD625B-24LH</td>
<td>MD625B-24L</td>
<td>24</td>
<td>0.10</td>
<td>2500</td>
<td>0.37</td>
<td>13.1</td>
</tr>
<tr>
<td>Middle Speed</td>
<td>Standard Type</td>
<td>MD625B-12H</td>
<td>MD625B-12</td>
<td>12</td>
<td>0.16</td>
<td>3000</td>
<td>0.70</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MD625B-24H</td>
<td>MD625B-24</td>
<td>24</td>
<td>0.10</td>
<td>2400</td>
<td>0.40</td>
<td>20</td>
</tr>
</tbody>
</table>

- Operating Voltage Range: ±15%
- Materials
  - Frame: Polycarbonate (Flammability grade: V-0)
  - Blades: Polycarbonate (Flammability grade V-0)
- Overheat Protection: Built-in Overheat Protection Circuit
- Bearings: Ball Bearings

#### Air Flow – Static Pressure Characteristics

![Graph showing air flow vs. static pressure characteristics]

#### Dimensions

- Unit = mm (in.)
  - Connector Type
    - Fan
      - Mass: 0.1 kg (0.22 lb.)
      - UL Style 1007, AWG24
  - Cable with Connector (Included)
    - Housing: SMR-03V-N (J.S.T.)
    - Cable Cores: AWG22

- Stall Alarm, Electronic Alarm Type
  - Type: 4.4 A
  - Housing P/N: SMP-03V-NC (J.S.T.)

- Pulse Sensor Type
  - Type: 4.5 A
  - Housing P/N: SMP-03V-NC (J.S.T.)

- Standard Type
  - Type: 4.8 A
  - Housing P/N: SMP-03V-NC (J.S.T.)
**Cooling Fans**

**Introduction**

Axial Flow Fans
Centrifugal Blowers
Cross Flow Fans
Cooling Module
Thermostats
Accessories
Installation

**Connection Diagrams**

- **Connector Type**
  - Cable with Connector
  - Red, Black, Yellow
  - Stall Alarm Output (Stall Alarm type only) or Pulse Sensor Output (Pulse sensor type only)

- **Lead Wire Type**
  - Red, Black, Orange or Yellow
  - Stall Alarm Output (Stall Alarm type only) or Pulse Sensor Output (Pulse sensor type only)

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG6D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FL6</td>
<td>F-120</td>
</tr>
<tr>
<td>Screen</td>
<td>FS6S</td>
<td>F-123</td>
</tr>
</tbody>
</table>

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

**Panel Cut-Out**

Unit = mm (in.)

Outlet Side
- 50 (1.969)
- 1.969 (0.077)
- 4×62.5
- 4×62.5 (-0.138)

Intake Side
- 50 (1.969)
- 2.00 (0.079)
- 4×62.5
- 4×62.5 (-0.138)

**Product Line**

- **Connector Type**
  - Fan Kit Model
    - T-MD625B-12LHG
    - T-MD625B-24LHG
    - T-MD625B-12SHG
    - T-MD625B-24SHG
    - T-MD625B-12HG
    - T-MD625B-24HG

- **Lead Wire Type**
  - Fan Kit Model
    - T-MD625B-12L-G
    - T-MD625B-24L-G
    - T-MD625B-12S-G
    - T-MD625B-24S-G
    - T-MD625B-12-G
    - T-MD625B-24-G
    - T-MD625BM-12-G
    - T-MD625BM-24-G

See page F-68 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.

**DC Axial Flow Fans with Low-Speed Alarm**

**MDA Series**

The MDA Series is similar to the MD Series and available with a low-speed alarm function. An alarm is output when the fan speed drops to approximately 70% of the rated level. For more details on the MDA Series, please visit www.orientalmotor.com.
Axial Flow Fans/DC Input

**MDS Series**

<table>
<thead>
<tr>
<th>52 mm – 10 mm Thick</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2.05 in. – 0.39 in. Thick)</td>
</tr>
</tbody>
</table>

**Specifications (RoHS)**

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Function</th>
<th>Model</th>
<th>Voltage VDC</th>
<th>Current A</th>
<th>Speed r/min</th>
<th>Max. Air Flow m³/min</th>
<th>Max. Static Pressure Pa</th>
<th>Noise Level dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Speed</td>
<td>Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)</td>
<td>MDS510-12LH</td>
<td>12</td>
<td>0.14</td>
<td>7000</td>
<td>0.27</td>
<td>9.53</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Standard Type</td>
<td>MDS510-12L</td>
<td>12</td>
<td>0.14</td>
<td>7000</td>
<td>0.27</td>
<td>9.53</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)</td>
<td>MDS510-24LH</td>
<td>24</td>
<td>0.08</td>
<td>1200</td>
<td>0.12</td>
<td>9.12</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Standard Type</td>
<td>MDS510-24L</td>
<td>24</td>
<td>0.08</td>
<td>1200</td>
<td>0.12</td>
<td>9.12</td>
<td>41</td>
</tr>
<tr>
<td>Middle Speed</td>
<td>Standard Type</td>
<td>MDS510M-5H</td>
<td>5</td>
<td>0.20</td>
<td>5500</td>
<td>0.20</td>
<td>7.06</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>–</td>
<td>MDS510M-12</td>
<td>12</td>
<td>0.12</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>–</td>
<td>MDS510M-24</td>
<td>24</td>
<td>0.06</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

- Only lead wire type is DEMKO certified.
- Alarm specifications ① ➜ Page F-21
- Details of safety standards ➜ Page H-2

- The following items are included in each product:
  - Connector Type
  - Fan, Cable with Connector, Operating Manual
  - Lead Wire Type
  - Fan, Operating Manual

**Air Flow – Static Pressure Characteristics**

![Air Flow – Static Pressure Characteristics Graph]

**Dimensions**

- Connector Type
  - Fan
    - Mass: 30 g (1.06 oz.)
  - Lead Wire Type
    - Mass: 30 g (1.06 oz.)

- Cable with Connector (Included)
  - Type: ④
  - Housing P/N: SM50-03V-NC (J.S.T.)

- UL Style 1007, AWG22

**Housing:** SMR-03V-N (J.S.T.)

**Operation Voltage Range:** ±10%

- Materials
  - Frame: Polycarbonate (Flammability grade: V-0)
  - Blades: PBT (Flammability grade: V-0)

- Overheat Protection: Built-in Overheat Protection Circuit

- Bearings: Ball Bearings
Cooling Fans

Introduction

Axial Flow Fans
Centrifugal Blowers
Cross Flow Fans
Cooling Module

Thermostats
Accessories
Installation

● Lead Wire Type
Mass: 30 g (1.06 oz.)

UL Style 1007, AWG26

52 (2.05)

42 \times 3.7 (\phi 0.146)

10 (0.39)

300 (12)

Panel Cut-Out
Unit = mm (in.)

42 (1.654)

4 \times \phi 4 (\phi 0.157)

Outlet Side/Intake Side

Connection Diagrams

● Connector Type

5 VDC, 12 VDC or 24 VDC

Red

Black

Stall Alarm Output
(Stall Alarm type only)

Cable with Connector

Fan

Mounting Screws

[M3 \times 25 mm (0.98 in.)]

Fan Kit
The lineup includes a product configuration containing all necessary accessories in one package.

ReoHS

Accessories

Product | Model | Page
--- | --- | ---
Finger Guard | FG5D | F-118

● Product Line

◇ Connector Type

<table>
<thead>
<tr>
<th>Fan Kit Model</th>
<th>T-MD5510-12LHG</th>
<th>T-MD5510-24LHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-MD5510-12HG</td>
<td>T-MD5510-24HG</td>
<td></td>
</tr>
<tr>
<td>T-MD5510M-5HG</td>
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</table>

◇ Lead Wire Type

<table>
<thead>
<tr>
<th>Fan Kit Model</th>
<th>T-MD5510-12L-G</th>
<th>T-MD5510-24L-G</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-MD5510-12-G</td>
<td>T-MD5510-24-G</td>
<td></td>
</tr>
<tr>
<td>T-MD5510M-5-G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T-MD5510M-12-G</td>
<td>T-MD5510M-24-G</td>
<td></td>
</tr>
</tbody>
</table>

See page F-70 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.
Axial Flow Fans/DC Input

MDS Series

**42 mm – 10 mm Thick**

*(1.65 in. – 0.39 in. Thick)*

### Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Function</th>
<th>Connector Type</th>
<th>Lead Wire Type</th>
<th>Voltage</th>
<th>Current</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stall Alarm, Electronic Alarm Type</td>
<td>MDS410-12L</td>
<td>MDS410-12L</td>
<td>12</td>
<td>0.16</td>
<td>1000</td>
<td>0.18</td>
<td>6.35</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Stock Alarm Type</td>
<td>MDS410-24L</td>
<td>MDS410-24L</td>
<td>24</td>
<td>0.09</td>
<td>1000</td>
<td>0.18</td>
<td>86</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td><strong>Standard Type</strong></td>
<td>MDS410-12H</td>
<td>MDS410-12</td>
<td>12</td>
<td>0.16</td>
<td>7500</td>
<td>0.13</td>
<td>4.59</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Middle Speed Standard Type</td>
<td>MDS410M-5H</td>
<td>MDS410M-5</td>
<td>5</td>
<td>0.20</td>
<td>7500</td>
<td>0.13</td>
<td>4.59</td>
<td>47</td>
</tr>
</tbody>
</table>

*Only lead wire type is DEMKO certified.*


The following items are included in each product.

- Connector Type
- Fan, Cable with Connector, Operating Manual
- Lead Wire Type
- Fan, Operating Manual

### Air Flow – Static Pressure Characteristics

![Air Flow – Static Pressure Characteristics Graph](chart)

### Dimensions  Unit = mm (in.)

- **Connector Type**
  - Fan
    - Mass: 25 g (0.88 oz.)
    - E125

- **Cable with Connector (Included)**
  - Housing: SMR-03V-N (J.S.T.)
  - UL Style 1007, AWG26
  - Stall Alarm, Electronic Alarm Type: φ0.8 (φ0.19)
  - Standard Type, Standard Speed: φ1.5 (φ0.3)
  - Standard Type, Middle Speed: φ0.2 (φ0.02)

- **Housing**
  - cable cores: AWG22
  - Stall Alarm, Electronic Alarm Type: φ0.8 (φ0.19)
  - Standard Type, Standard Speed: φ1.5 (φ0.3)
  - Standard Type, Middle Speed: φ0.2 (φ0.02)

- **Operation Voltage Range:** ±10%
- **Materials**
  - Frame: Polycarbonate (Flammability grade: V-0)
  - Blades: PBT (Flammability grade: V-0)
- **Overheat Protection:** Built-in Overheat Protection Circuit
- **Bearings:** Ball Bearings
### Cooling Fans

#### Introduction

Axial Flow Fans  
Centrifugal Blowers  
Cross Flow Fans  
Cooling Modules  
Thermostats  
Accessories  
Installation

---

#### Lead Wire Type

**Mass:** 25 g (0.88 oz.)

---

#### Panel Cut-Out

Unit = mm (in.)

---

#### Connection Diagrams

- **Connector Type**
  - 5 VDC, 12 VDC or 24 VDC
  - Red, Black, GND
  - Stall Alarm Output (Stall Alarm type only)

- **Lead Wire Type**
  - 5 VDC, 12 VDC or 24 VDC
  - Red, Black, GND
  - Stall Alarm Output (Stall Alarm type only)

---

#### Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG4D</td>
<td>F-118</td>
</tr>
</tbody>
</table>

---

#### Fan Kit

The lineup includes a product configuration containing all necessary accessories in one package.

![Fan Kit](image)

**RoHS**

- **Mounting Screws**  
  - M3 × 25 mm (0.98 in.)

---

#### Product Line

<table>
<thead>
<tr>
<th>Fan Kit Model</th>
<th>Connectors Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-MDS410-12LHG</td>
<td>T-MDS410-24LHG</td>
</tr>
<tr>
<td>T-MDS410-12HG</td>
<td>T-MDS410-24HG</td>
</tr>
<tr>
<td>T-MDS410M-5HG</td>
<td>T-MDS410M-5HG</td>
</tr>
</tbody>
</table>

- **Lead Wire Type**
  - 5 VDC, 12 VDC or 24 VDC
  - Red, Black, GND
  - Stall Alarm Output (Stall Alarm type only)

---

*See page F-72 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.*

---

### Panel Cut-Out

Unit = mm (in.)

- **Outlet Side**
  - 37 (1.46)
  - 32 (1.260)
  - 5 VDC, 12 VDC or 24 VDC

- **Intake Side**
  - 37 (1.46)
  - 32 (1.260)
  - 5 VDC, 12 VDC or 24 VDC

---

### Lead Wire Type

- **Mass:** 25 g (0.88 oz.)
- **Dimensions:**
  - 42 (1.65) × 3.5 (0.138)
  - 32 (1.260) × 0.3
  - 10 (0.39)

---

**UL Style 1007, AWG26**

**Connection Diagrams**

- **Connector Type**
  - 5 VDC, 12 VDC or 24 VDC
  - Red, Black, GND
  - Stall Alarm Output (Stall Alarm type only)

---

**Panel Cut-Out**

Unit = mm (in.)

- **Outlet Side**
  - 37 (1.46)
  - 32 (1.260)
  - 5 VDC, 12 VDC or 24 VDC

- **Intake Side**
  - 37 (1.46)
  - 32 (1.260)
  - 5 VDC, 12 VDC or 24 VDC

---

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG4D</td>
<td>F-118</td>
</tr>
</tbody>
</table>

---

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

**Mounting Screws**

- **Fan Kit**  
  - M3 × 25 mm (0.98 in.)

---

**Product Line**

<table>
<thead>
<tr>
<th>Fan Kit Model</th>
<th>Connectors Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-MDS410-12LHG</td>
<td>T-MDS410-24LHG</td>
</tr>
<tr>
<td>T-MDS410-12HG</td>
<td>T-MDS410-24HG</td>
</tr>
<tr>
<td>T-MDS410M-5HG</td>
<td>T-MDS410M-5HG</td>
</tr>
</tbody>
</table>

- **Lead Wire Type**
  - 5 VDC, 12 VDC or 24 VDC
  - Red, Black, GND
  - Stall Alarm Output (Stall Alarm type only)

---

*See page F-72 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.*
Axial Flow Fans/DC Input

Long-Life Fans
MDE Series

☐ 140 mm – 51 mm Thick
☐ 5.51 in. – 2.01 in. Thick

The 100,000 hours of expected life indicates that more than 90% of fans will satisfy the following criteria when used at an ambient temperature of 60˚C (140°F).

Criteria:
- Speed (at rated voltage): Greater than 70% of rated speed
- Input Current (at rated voltage): Less than 130% of rated current

Materials
- Frame: Die Cast Aluminum
- Blades: Polycarbonate (Flammability grade V-0)
- Overheat Protection: Built-in Overheat Protection Circuit
- Bearings: Ball Bearings

Specifications
- Operating Voltage Range: ±15%

Specs
<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Function</th>
<th>Model</th>
<th>Voltage</th>
<th>Current</th>
<th>Speed</th>
<th>Max. Air Flow</th>
<th>Max. Static Pressure</th>
<th>Noise Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Speed</td>
<td>Stall Alarm, Electronic Alarm</td>
<td>MDE1451-24L2</td>
<td>24</td>
<td>0.7</td>
<td>3150</td>
<td>5.8</td>
<td>205</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>Type (Alarm specifications: ①)</td>
<td>MDE1451-48L2</td>
<td>48</td>
<td>0.35</td>
<td></td>
<td></td>
<td></td>
<td>0.521</td>
</tr>
</tbody>
</table>

Alarm specifications ① → Page F-21
Details of safety standards → Page H-2

The following items are included in each product.

Fan, Operating Manual

Dimensions
Unit = mm (in.)
Mass: 0.65 kg (1.43 lb.)

Air Flow – Static Pressure Characteristics

<table>
<thead>
<tr>
<th>Speed [r/min]</th>
<th>Static Pressure [Pa]</th>
<th>Static Pressure [inH2O]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>120</td>
<td>4.7</td>
</tr>
<tr>
<td>200</td>
<td>200</td>
<td>9.4</td>
</tr>
<tr>
<td>300</td>
<td>280</td>
<td>14.1</td>
</tr>
<tr>
<td>400</td>
<td>360</td>
<td>18.8</td>
</tr>
<tr>
<td>500</td>
<td>440</td>
<td>23.5</td>
</tr>
<tr>
<td>600</td>
<td>520</td>
<td>28.2</td>
</tr>
<tr>
<td>700</td>
<td>600</td>
<td>32.9</td>
</tr>
</tbody>
</table>

Air Flow [m3/min]

- 0 50 100 150 200

Air Flow [CFM]

- 0 150 300 450 600
Cooling Fans

**Panel Cut-Out**  
Unit = mm (in.)

<table>
<thead>
<tr>
<th>Outlet Side/Intake Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>138 (5.43)</td>
</tr>
<tr>
<td>124.5 (4.90)</td>
</tr>
<tr>
<td>4 × 4.5</td>
</tr>
<tr>
<td>(0.177)</td>
</tr>
</tbody>
</table>

**Connection Diagram**

- Red: 24 VDC or 48 VDC
- Black: GND
- Orange: Stall Alarm Output
- PE

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG14D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FL14</td>
<td>F-120</td>
</tr>
</tbody>
</table>

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

- **Fan Kit Model**
  - T-MDE1451-24L2G
  - T-MDE1451-48L2G

- See page F-74 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.
Long-Life Fans
MDE Series

☐119 mm – 25.4 mm Thick
(☐4.69 in. – 1.00 in. Thick)

The 100,000 hours of expected life indicates that more than 90% of fans will satisfy the following criteria when used at an ambient temperature of 60˚C (140˚F).
Criteria: Speed (at rated voltage): Greater than 70% of rated speed
Input Current (at rated voltage): Less than 130% of rated current

Specifications (RoHS)

<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Function</th>
<th>Model</th>
<th>Voltage</th>
<th>Current</th>
<th>Speed r/min</th>
<th>Max. Air Flow m³/min</th>
<th>Max. Static Pressure Pa</th>
<th>Noise Level dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Speed</td>
<td>Stall Alarm, Electronic Alarm Type</td>
<td>MDE1225-12L</td>
<td>12</td>
<td>0.58</td>
<td>3000</td>
<td>2.7</td>
<td>95.3</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>(Alarm specifications: ①)</td>
<td>MDE1225-24L</td>
<td>24</td>
<td>0.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Alarm specifications ① → Page F-21  ■ Details of safety standards → Page H-2

The following items are included in each product.

Fan, Operating Manual

Air Flow – Static Pressure Characteristics

Dimensions  Unit = mm (in.)

Mass: 0.3 kg (0.66 lb.)

UL Style 1007, AWG24
**Panel Cut-Out**  Unit = mm (in.)

Outlet Side

116 (4.57)  104.8 (4.126)  4×Ø4.5 (Ø0.177)

104.8 (4.126)  116 (4.57)

Intake Side

104.8 (4.126)  116 (4.57)  4×Ø4.5 (Ø0.177)

**Connection Diagram**

- Red: 12 VDC or 24 VDC
- Black: GND
- Orange: Stall Alarm Output

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG12D</td>
<td>F-118</td>
</tr>
<tr>
<td>Filter</td>
<td>FL12</td>
<td>F-120</td>
</tr>
<tr>
<td>Screen</td>
<td>FS12S</td>
<td>F-123</td>
</tr>
</tbody>
</table>

**Fan Kit**

The lineup includes a product configuration containing all necessary accessories in one package.

**Product Line**

- Fan Kit Model
  - T-MDE1225-12L-G
  - T-MDE1225-24L-G

See page F-76 to determine base fan required (Voltage/Alarm) and page F-30 for fan kits product number code.