Cross Flow Fans
Cross Flow Fans

Cross flow fans employ a specifically designed blade to create parallel air movement that reaches even distant objects in a wide, uniform pattern. These fans provide right-angle airflow and rectangular shape, allowing for installation in corners and space savings in applications such as circuit board cooling and air curtains.

### Safety Standards and CE Marking

<table>
<thead>
<tr>
<th>Model</th>
<th>Standards</th>
<th>Certification Body</th>
<th>Standards File No.</th>
<th>CE Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF Series</td>
<td>UL507</td>
<td>UL</td>
<td>E58377</td>
<td>Low Voltage Directives</td>
</tr>
<tr>
<td></td>
<td>CSA C22.2 No.113</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>EN60950</td>
<td>VDE</td>
<td>5854</td>
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</tr>
</tbody>
</table>

- Details of Safety Standard ➝ Page G-2
- List of Safety Standard Approved Products ➝ Page G-24

### System Configuration

- **Finger Guards (Accessories)**
  - Protect Against the hazards posed by rotating fan blades.
  - (➔ Page E-102)

- **Thermostats**
  - Thermostats make it possible for fans to operate only when cooling is necessary, thereby conserving energy.
  - (➔ Page E-97)

- The photo shows two optional finger guards, FG915D.
### Types of Cross Flow Fans

<table>
<thead>
<tr>
<th>Length of Impeller</th>
<th>Voltage</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.81 in. (300 mm)</td>
<td>MF930(B)-BC, MF930(B)-DC, MFD930(B)-24, 24A, 48S, 48S</td>
<td>E-88, E-92</td>
</tr>
<tr>
<td>5.91 in. (150 mm)</td>
<td>MF915(B)-BC, MF915(B)-DC, MFD915(B)-24, 24A, 48S, 48S</td>
<td>E-90, E-94</td>
</tr>
</tbody>
</table>

### General Specifications

<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 is applied between the windings and the frame under normal ambient temperature and humidity. (MFD Series: 10 MΩ or more, 250 VDC, MFD915-48, 24A, 48S, MFD930-48, 24A, 48S: 10 MΩ or more, 500 VDC)</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>Sufficient to withstand 1.5 kV at 50 Hz applied between the windings and the frame for 1 minute under normal ambient temperature and humidity. (MFD Series: 500 V • 50 Hz, 1 minute)</td>
</tr>
<tr>
<td>Temperature Rise</td>
<td>81°F (45°C) or less measured by the thermometer method after the temperature of the coil has stabilized under normal operation at the rated voltage and frequency. (MFD Series: 27°F (15°C) or less)</td>
</tr>
<tr>
<td>Operating Voltage Range</td>
<td>AC Cross Flow Fans: ±10% of the rated voltage. DC Cross Flow Fans: ±10% of the rated voltage.</td>
</tr>
<tr>
<td>Insulation Class</td>
<td>Class E (248°F [120°C]) [Recognized as Class A (221°F [105°C]) by UL and CSA standards.]</td>
</tr>
<tr>
<td>Overheat Protection</td>
<td>MF Series has built-in thermal protector (automatic reset). Operating temperature open: 248°F ± 9°F (120°C ± 5°C), close: 170.6°F ± 27°F (77°C ± 15°C). MFD Series has an overheat protection function installed.</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>14°F to 140°F (-10°C to +60°C)</td>
</tr>
<tr>
<td>Ambient Humidity</td>
<td>0% to 85% (noncondensing)</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
</tr>
</tbody>
</table>
**Air Flow–Static Pressure**

- **AC Cross Flow Fans**
  - **MF Series**
  - 50 Hz

![Graph](image1)

- **DC Cross Flow Fans**
  - **MFD Series**

![Graph](image2)
MF Series
AC Cross Flow Fans
Length of Impeller
11.81 in. (300 mm)

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage VAC</th>
<th>Frequency Hz</th>
<th>Current A</th>
<th>Input Power W</th>
<th>Speed r/min</th>
<th>Max. Air Flow CFM</th>
<th>Max. Static Pressure m²/min</th>
<th>Max. Static Pressure inH₂O</th>
<th>Max. Static Pressure Pa</th>
<th>Noise Level dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF930-BC</td>
<td>Single-Phase 100</td>
<td>50</td>
<td>0.40</td>
<td>35</td>
<td>2500</td>
<td>212</td>
<td>6.0</td>
<td>0.297</td>
<td>74</td>
<td>58</td>
</tr>
<tr>
<td>MF930-BC</td>
<td>Single-Phase 100</td>
<td>60</td>
<td>0.50</td>
<td>45</td>
<td>2700</td>
<td>219</td>
<td>6.2</td>
<td>0.413</td>
<td>103</td>
<td>60</td>
</tr>
<tr>
<td>MF930-BC</td>
<td>Single-Phase 110</td>
<td>60</td>
<td>0.50</td>
<td>48</td>
<td>2950</td>
<td>233</td>
<td>6.6</td>
<td>0.425</td>
<td>106</td>
<td>62</td>
</tr>
<tr>
<td>MF930-BC</td>
<td>Single-Phase 115</td>
<td>60</td>
<td>0.50</td>
<td>50</td>
<td>3000</td>
<td>240</td>
<td>6.8</td>
<td>0.425</td>
<td>106</td>
<td>63</td>
</tr>
<tr>
<td>MF930-BC</td>
<td>Single-Phase 200</td>
<td>50</td>
<td>0.20</td>
<td>35</td>
<td>2500</td>
<td>212</td>
<td>6.0</td>
<td>0.297</td>
<td>74</td>
<td>58</td>
</tr>
<tr>
<td>MF930-BC</td>
<td>Single-Phase 200</td>
<td>60</td>
<td>0.25</td>
<td>45</td>
<td>2700</td>
<td>219</td>
<td>6.2</td>
<td>0.413</td>
<td>103</td>
<td>60</td>
</tr>
<tr>
<td>MF930-BC</td>
<td>Single-Phase 220</td>
<td>60</td>
<td>0.25</td>
<td>48</td>
<td>2950</td>
<td>233</td>
<td>6.6</td>
<td>0.425</td>
<td>106</td>
<td>62</td>
</tr>
<tr>
<td>MF930-BC</td>
<td>Single-Phase 230</td>
<td>50</td>
<td>0.20</td>
<td>40</td>
<td>2700</td>
<td>219</td>
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<td>0.313</td>
<td>78</td>
<td>60</td>
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<tr>
<td>MF930-BC</td>
<td>Single-Phase 230</td>
<td>60</td>
<td>0.25</td>
<td>50</td>
<td>3000</td>
<td>240</td>
<td>6.8</td>
<td>0.425</td>
<td>106</td>
<td>63</td>
</tr>
</tbody>
</table>

Air Flow — Static Pressure Characteristics

Frequency — Audible Noise Level (dB)
Measured at a distance of 3.3 feet (1 m) from the fan intake side
### Dimensions

**Scale 1/4, Unit = inch (mm)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight (lb.)</th>
<th>Accessories (Sold Separately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF930</td>
<td>4.2 lb. (1.9 kg)</td>
<td>✽ These products have been designed to pass tests set forth under the UL and CSA standards for equipment used in fans. They conform to the standards only when used with an ORIX FAN.</td>
</tr>
</tbody>
</table>

#### MF930B
- Weight: 4.2 lb. (1.9 kg)
- 2 Leads 12 inch (300 mm) Length
- UL Style 3271, AWG 20

### Panel Cut-Out

**Unit = inch (mm)**

- 2.36 (60)
- 0.59 (15)
- 1.54 (39)
- 0.75 (19)

### Connection Diagram

### Accessories (Sold Separately)

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>Safety Standards</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG930D</td>
<td></td>
<td>E-104</td>
</tr>
</tbody>
</table>

Thermostats (Sold Separately)

Thermostats make it possible for fans to operate only when cooling is necessary, thereby conserving energy.

Thermostats: AM1-WA1, AM1-XA1

- Page E-97

- UL Style 3271, AWG 20

The photo shows two finger guards.
MF Series
AC Cross Flow Fans
Length of Impeller
5.91 in. (150 mm)

Ambient Temperature: 14°F to 140°F (−10°C to +60°C)
Operating Voltage Range: ±10%

Materials
Motor Case: Die Cast Aluminum
Casing: Steel
Impeller: Aluminum
Overheat Protection: Built-in Thermal Protector
Bearings: Ball Bearings

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage VAC</th>
<th>Frequency Hz</th>
<th>Current A</th>
<th>Input Power W</th>
<th>Speed r/min</th>
<th>Max. Air Flow CFM</th>
<th>Max. Static Pressure inH2O</th>
<th>Max. Static Pressure Pa</th>
<th>Noise Level dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF915-BC</td>
<td>Single-Phase 100 50</td>
<td>0.35</td>
<td>30</td>
<td>2650</td>
<td>120</td>
<td>3.4</td>
<td>0.353</td>
<td>88</td>
<td>60</td>
</tr>
<tr>
<td>MF915-BC</td>
<td>Single-Phase 100 60</td>
<td>0.45</td>
<td>40</td>
<td>2950</td>
<td>131</td>
<td>3.7</td>
<td>0.509</td>
<td>127</td>
<td>63</td>
</tr>
<tr>
<td>MF915B-BC</td>
<td>Single-Phase 110 60</td>
<td>0.45</td>
<td>42</td>
<td>3200</td>
<td>141</td>
<td>4.0</td>
<td>0.529</td>
<td>132</td>
<td>64</td>
</tr>
<tr>
<td>MF915B-BC</td>
<td>Single-Phase 115 60</td>
<td>0.45</td>
<td>43</td>
<td>3250</td>
<td>145</td>
<td>4.1</td>
<td>0.529</td>
<td>132</td>
<td>64</td>
</tr>
<tr>
<td>MF915-DC</td>
<td>Single-Phase 200 50</td>
<td>0.20</td>
<td>30</td>
<td>2650</td>
<td>120</td>
<td>3.4</td>
<td>0.353</td>
<td>88</td>
<td>60</td>
</tr>
<tr>
<td>MF915-DC</td>
<td>Single-Phase 200 60</td>
<td>0.25</td>
<td>40</td>
<td>2950</td>
<td>131</td>
<td>3.7</td>
<td>0.509</td>
<td>127</td>
<td>63</td>
</tr>
<tr>
<td>MF915B-DC</td>
<td>Single-Phase 220 60</td>
<td>0.25</td>
<td>42</td>
<td>3200</td>
<td>141</td>
<td>4.0</td>
<td>0.529</td>
<td>132</td>
<td>64</td>
</tr>
<tr>
<td>MF915B-DC</td>
<td>Single-Phase 230 50</td>
<td>0.20</td>
<td>33</td>
<td>2800</td>
<td>127</td>
<td>3.6</td>
<td>0.369</td>
<td>92</td>
<td>61</td>
</tr>
<tr>
<td>MF915B-DC</td>
<td>Single-Phase 230 60</td>
<td>0.25</td>
<td>43</td>
<td>3250</td>
<td>145</td>
<td>4.1</td>
<td>0.529</td>
<td>132</td>
<td>64</td>
</tr>
</tbody>
</table>

Air Flow — Static Pressure Characteristics

Frequency — Audible Noise Level (dB)

Measured at a distance of 3.3 feet (1 m) from the fan intake side.
**Dimensions**

Scale 1/4, Unit = inch (mm)

**MF915**

Weight: 3.7 lb. (1.7 kg)

**MF915B**

Weight: 3.7 lb. (1.7 kg)

---

**Panel Cut-Out**

Scale 1/4, Unit = inch (mm)

---

**Thermostats** (Sold Separately)

Thermostats make it possible for fans to operate only when cooling is necessary, thereby conserving energy.

Thermostats: AM1-WA1

AM1-XA1

[Page E-97]

---

**Connection Diagram**

---

**Accessories** (Sold Separately)

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>Safety Standards</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG915D</td>
<td></td>
<td>E-104</td>
</tr>
</tbody>
</table>

These products have been designed to pass tests set forth under the UL and CSA standards for equipment used in fans. They conform to the standards only when used with an ORIX FAN.

---

The photo shows two finger guards.
MFD Series
dc cross flow fans

length of impeller
11.81 in. (300 mm)

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage VDC</th>
<th>Current A</th>
<th>Speed r/min</th>
<th>Max. Air Flow CFM</th>
<th>Max. Static Pressure inH2O</th>
<th>Noise Level dB (A)</th>
</tr>
</thead>
</table>
| Low Speed Alarm, Contact Alarm Type
  MFD930-24A             | 24          | 1.0       | 2100        | 184               | 5.2                         | 0.333             |
| Standard Type
  MFD930-24             |             |           |             |                   |                             |                   |
| Pulse Sensor Type
  MFD930-48S            | 48          | 0.7       | 2100        | 184               | 5.2                         | 0.333             |
| Standard Type
  MFD930-48             |             |           |             |                   |                             |                   |

How to read the specifications → Page E-13
Alarm Specifications → Page E-16

Air Flow — Static Pressure Characteristics

Frequency — Audible Noise Level (dB)

Measured at a distance of 3.3 feet (1 m) from the fan intake side
### Dimensions

**MFD930**
- Weight: 3.5 lb. (1.6 kg)

**MFD930B**
- Weight: 3.5 lb. (1.6 kg)

---

### Panel Cut-Out

Unit = inch (mm)

---

### Connection Diagrams

- +24 VDC or +48 VDC
  - GND
  - Alarm Output
  - (Alarm Type Only)

---

### Accessories (Sold separately)

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>Safety Standards</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger Guard</td>
<td>FG930D</td>
<td>✽</td>
<td>E-104</td>
</tr>
</tbody>
</table>

* These products have been designed to pass tests set forth under the UL and CSA standards for equipment used in fans. They conform to the standards only when used with an ORIX FAN.
MFD Series
DC Cross Flow Fans
Length of Impeller
5.91 in. (150 mm)

Specifications

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<tr>
<td>MFD915-24A</td>
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<td>MFD915-48S</td>
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<td>0.7</td>
<td>2500</td>
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<td>MFD915B-48S</td>
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Air Flow — Static Pressure Characteristics

Frequency — Audible Noise Level (dB)
Measured at a distance of 3.3 feet (1 m) from the fan intake side

Materials
Motor Case: Die Cast Aluminum
Casing: Steel
Impeller: Aluminum
Overheat Protection: Built-in Overheat Protection Circuit
Bearings: Ball Bearings

Ambient Temperature: 14°F to 140°F (−10°C to +60°C)
Operating Voltage Range: ±10%

How to read the specifications ➔ Page E-13
Alarm Specifications ➔ Page E-16
### Dimensions

Scale 1/4, Unit = inch (mm)

**MFD915**

Weight: 3.1 lb. (1.4 kg)

**MFD915B**

Weight: 3.1 lb. (1.4 kg)

- **Panel Cut-Out**
  - Unit = inch (mm)
  - Outlet side
  - 4 Leads UL Style 1007 AWG 22
  - Alarm Lead (White, Blue)
  - Pulse Sensor Lead (Yellow) (Alarm Type Only)

- **Connection Diagrams**
  - 4 Leads UL Style 1007 AWG 22
  - Alarm Lead (White, Blue)
  - Pulse Sensor Lead (Yellow) (Alarm Type Only)

- **Accessories** (Sold Separately)
  - | Item | Model | Safety Standards | Page |
  - | --- | --- | --- | --- |
  - | Finger Guard | FG915D * | E-104 |

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The photo shows two finger guards.