

Cooling Fans

# Centrifugal Blowers

Introduction
Cooling Module
FM
AC Input MRS
AC Input Variable Flow MRS
Axial Flow Fans
AC Input MU
DC Input Long-Life MDE
DC Input MDS/MD
Centrifugal Blowers
AC Input MB
DC Input MBD
Cross Flow Fans
AC Input MF
DC Input MFD
Thermostats
Accessories
Installation

AC Input  
MB Series

DC Input  
MBD Series

	<u>Page</u>
Introduction .....	E-100
<b>MB</b> Series .....	E-102
<b>MBD</b> Series .....	E-114

Centrifugal blowers provide directional air flow by maximizing static pressure, making them optimal for spot cooling and for air flow through a duct. Alternatively, their high suction can be used to hold object in position or their directed air flow can be used to move objects.

## Features

Since the exhaust outlet is reduced to focus air to a specified direction, these blowers are used for spot cooling. The static pressure is also high, which makes them a suitable choice when cooling equipment through which air cannot flow easily or when blowing air using a duct.

## Types of Centrifugal Blowers

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

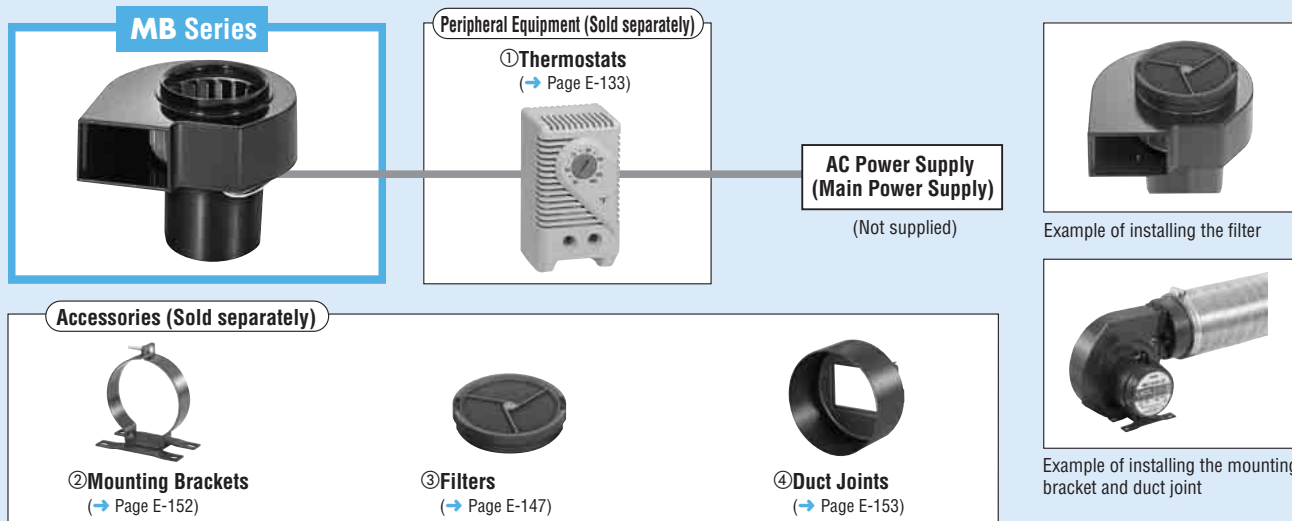
Series	Features	Power Supply Voltage	Impeller Diameter [mm (in.)]					
			φ160 (φ6.30)	φ120 (φ4.72)	φ100 (φ3.94)	φ80 (φ3.15)	φ60 (φ2.36)	φ50 (φ1.97)
AC Centrifugal Blower <b>MB Series</b> → Pages E-102~E-113	<ul style="list-style-type: none"> <li>● AC input centrifugal blowers</li> <li>● The <b>MB Series</b> is recognized by UL/CSA Standards and conforms to EN Standards. CE Marking is used in accordance with the Low Voltage Directive. (Certification status differs according to the product.)</li> <li>● RoHS-Compliant</li> <li>● The <b>MB Series</b> conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.</li> </ul>	Single-Phase 100/110/115 VAC	●	●	●	●	●	●
		Single-Phase 200/220/230 VAC	●	●	●	●	●	●
		Three-Phase 200/220/230 VAC	●*	●		●		
DC Centrifugal Blower <b>MBD Series</b> → Pages E-114~E-119	<ul style="list-style-type: none"> <li>● DC input centrifugal blowers</li> <li>● RoHS-Compliant</li> <li>● The <b>MBD Series</b> conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.</li> </ul>	24 VDC		●	●◆	●◆		
		48 VDC			●◆	●◆		

\* The product for three-phase 220 VAC is not available.

● Details of safety standards → Page G-2 ● List of safety standard approved products (Model, Standards, File No., Certification Body) → Page G-11

## System Configuration

An example of a system configuration with the **MB Series**.



No.	Product Name	Overview	Page
①	Thermostats	Contact is ON and OFF in accordance with thermostat's set temperature. Using a fan with a thermostat provides on/off control of the fan.	E-133
②	Mounting Brackets	Mounting bracket for affixing the motor part of the centrifugal blower.	E-152
③	Filters	This filter shuts out dust in the air.	E-147
④	Duct Joints	Joint for connecting the centrifugal blower outlet and duct.	E-153

### Example of System Configuration



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

## Product Number Code

# MB 12 55 - B

①      ②      ③      ④

①	Series	<b>MB</b> : AC Centrifugal Blower <b>MB</b> Series <b>MBD</b> : DC Centrifugal Blower <b>MBD</b> Series
②	Impeller Diameter	<b>5</b> : $\phi$ 50 mm ( $\phi$ 1.97 in.) <b>6</b> : $\phi$ 60 mm ( $\phi$ 2.36 in.) <b>8</b> : $\phi$ 80 mm ( $\phi$ 3.15 in.) <b>10</b> : $\phi$ 100 mm ( $\phi$ 3.94 in.) <b>12</b> : $\phi$ 120 mm ( $\phi$ 4.72 in.) <b>16</b> : $\phi$ 160 mm ( $\phi$ 6.30 in.)
③	Impeller Thickness	<b>20</b> : 20 mm (0.79 in.) <b>30</b> : 30 mm (1.18 in.) <b>40</b> : 40 mm (1.57 in.) <b>55</b> : 55 mm (2.17 in.) <b>65</b> : 65 mm (2.56 in.)
④	Power Supply Voltage	<b>B</b> : Single-Phase 100/110/115 VAC <b>D</b> : Single-Phase 200/220/230 VAC <b>T</b> : Three-Phase 200/220/230 VAC <b>24</b> : 24 VDC <b>24A</b> : 24 VDC Low-Speed Alarm, Contact Alarm Type <b>24S</b> : 24 VDC Pulse Sensor Type <b>48</b> : 48 VDC <b>48S</b> : 48 VDC Pulse Sensor Type

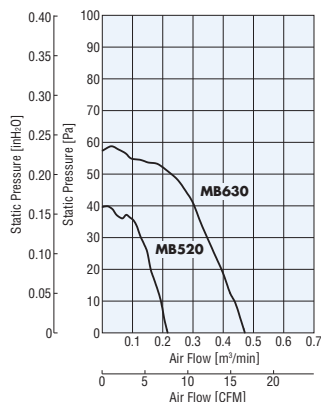
## General Specifications

Item	Specifications
Insulation Resistance	100 M $\Omega$ or more when 500 VDC megger is applied between the windings and the frame after continuous operation under normal ambient temperature and humidity. ( <b>MBD</b> Series: 10 M $\Omega$ or more, 250 VDC megger, <b>MBD</b> □- <b>48, 48S, MBD</b> □- <b>24A, 24S</b> : 10 M $\Omega$ or more, 500 VDC megger)
Dielectric Strength	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. ( <b>MBD</b> Series: 500 VAC at 50 Hz, 1 minute)
Temperature Rise	45°C (81°F) or less measured by the thermometer method after the temperature of the motor case has stabilized after continuous operation under normal ambient temperature and humidity. ( <b>MBD</b> Series: 15°C [27°F] or less)
Operating Voltage Range	AC Centrifugal Blower: $\pm$ 10% of the rated voltage DC Centrifugal Blower: $\pm$ 10% of the rated voltage
Insulation Class	AC Centrifugal Blowers: UL, CSA: Class A [105°C (221°F)], Class E [120°C (248°F)] DC Centrifugal Blowers: Class E [120°C (248°F)]
Overheat Protection	<b>MB1665, MB1255, MB1040</b> and <b>MB840</b> types have built-in thermal protector (automatic return type). Open: 120 $\pm$ 5°C (248 $\pm$ 9°F), Close: 77 $\pm$ 15°C (170.6 $\pm$ 27°F) <b>MB630</b> and <b>MB520</b> types are impedance protected. <b>MBD</b> Series has an overheat protection circuit.
Ambient Temperature	-10 $\sim$ +50°C (+14 $\sim$ +122°F) ( <b>MB520, MB630</b> types, <b>MBD</b> Series: -10 $\sim$ +60°C [+14 $\sim$ +140°F])
Ambient Humidity	85% or less (non-condensing)
Color	Dark gray
Materials	Motor case: Die cast aluminum Casing: Die cast aluminum Impeller: Aluminum

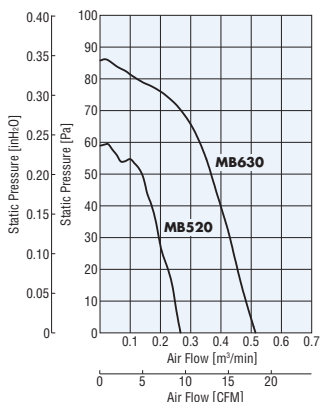
## Comparison of Characteristics

### ● MB Series

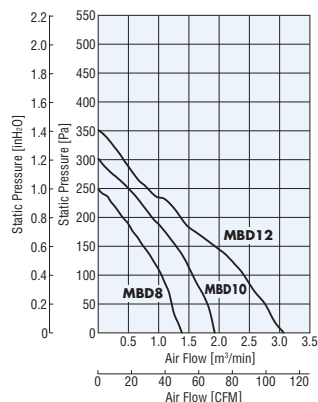
#### ● 50 Hz



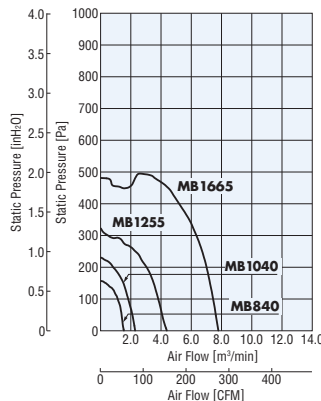
#### ● 60 Hz



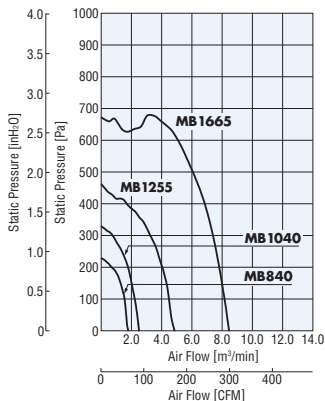
### ● MBD Series



#### ● 50 Hz



#### ● 60 Hz



# AC Centrifugal Blower MB Series

## Impeller Diameter φ160 mm (φ6.30 in.)



Ambient Temperature: -10~+50°C (+14~+122°F)  
 Operating Voltage Range: ±10%  
 Materials  
 Motor Case: Die Cast Aluminum  
 Casing: Die Cast Aluminum  
 Impeller: Aluminum  
 Overheat Protection: Built-in Thermal Protector  
 Bearings: Ball Bearings

### Specifications **RoHS**



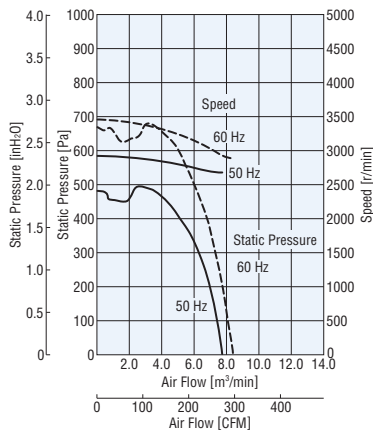
Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)	Capacitor μF
						m <sup>3</sup> /min	CFM	Pa	inH <sub>2</sub> O		
<b>MB1665-B</b>	Single-Phase 100	50	2.6	260	2750	8.0	282	490	1.96	76	40
	Single-Phase 100	60	3.7	360	3100	9.0	318	686	2.75	80	
	Single-Phase 110	60	3.7	380	3200	9.0	318	686	2.75	80	
	Single-Phase 115	60	3.7	400	3200	9.0	318	686	2.75	80	
<b>MB1665-D</b>	Single-Phase 200	50	1.3	245	2700	7.7	272	490	1.96	75	8.0
	Single-Phase 200	60	1.8	340	3000	8.4	297	686	2.75	76	
	Single-Phase 220	60	1.8	360	3150	8.7	307	686	2.75	77	
	Single-Phase 230	50	1.3	270	2750	8.0	282	490	1.96	75	
	Single-Phase 230	60	1.8	370	3150	8.9	314	686	2.75	77	
<b>MB1665-T</b>	Three-Phase 200	50	1.8	280	2750	8.0	282	490	1.96	76	-
	Three-Phase 200	60	1.8	360	3100	9.0	318	686	2.75	80	
	Three-Phase 230	60	1.8	400	3200	9.0	318	686	2.75	80	

● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.  
 Fan, Capacitor\*, Capacitor Cap\*, Operating Manual  
 \*Single-phase fans only

### Air Flow – Static Pressure Characteristics

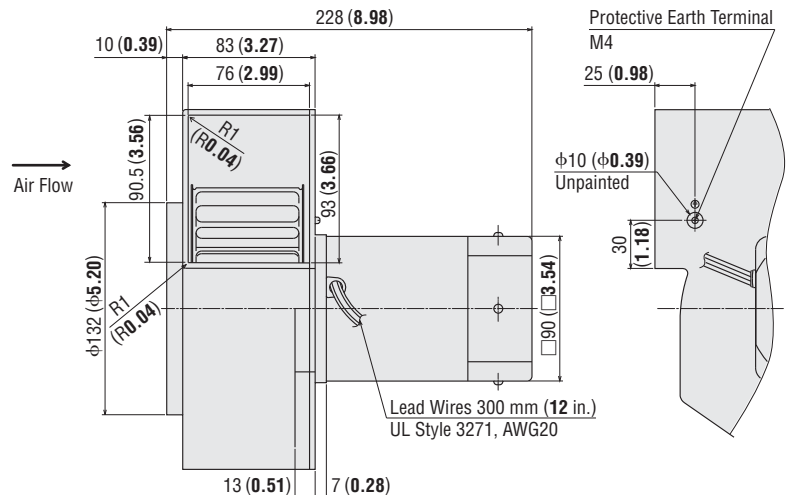
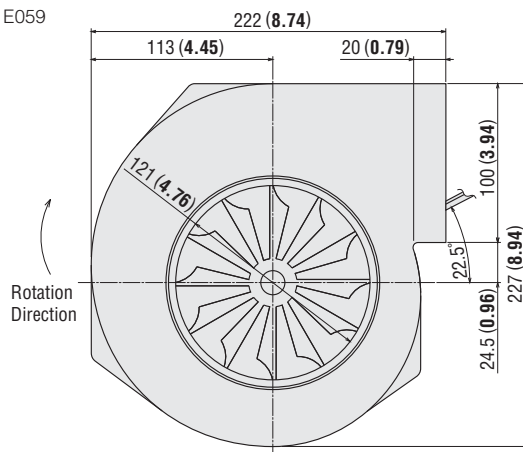
● How to read air flow – static pressure characteristics → Page E-20



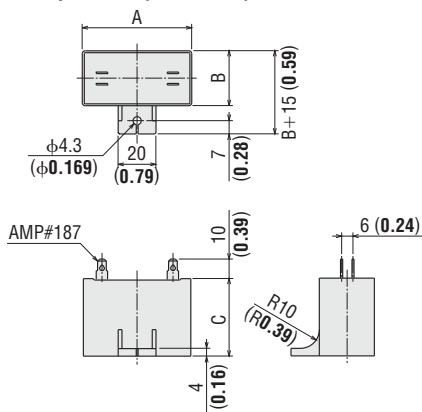
### Dimensions Unit = mm (in.)

Mass: 5 kg (11 lb.)

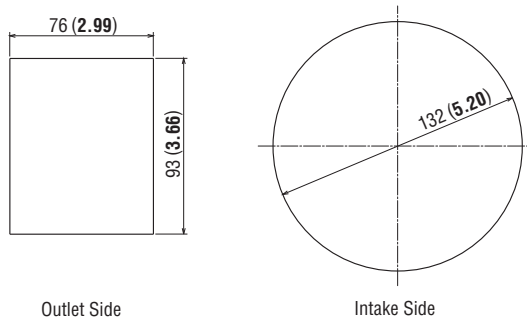
**DXF** E059



● Capacitor (Included)



■ Panel Cut-Out Unit = mm (in.)

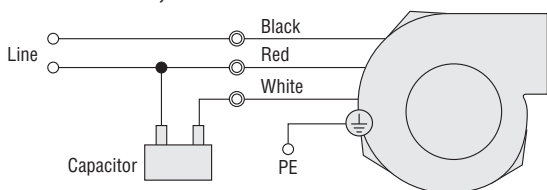


◇ Capacitor Dimensions Table

Model	Capacitor Model	Capacitor Dimensions mm (in.)			Mass g (oz.)	Capacitor Cap
		A	B	C		
<b>MB1665-B</b>	CH400CFAUL	58 (2.28)	41 (1.61)	58 (2.28)	190 (6.7)	Included
<b>MB1665-D</b>	CH80BFAUL	58 (2.28)	35 (1.38)	50 (1.97)	150 (5.3)	Included

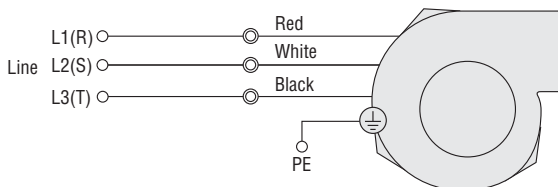
■ Connection Diagrams

● MB1665-B, MB1665-D



● How to connect a capacitor → Page E-158

● MB1665-T



■ Thermostats

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



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

● Page → E-133

■ Accessories

The following products are RoHS-Compliant.

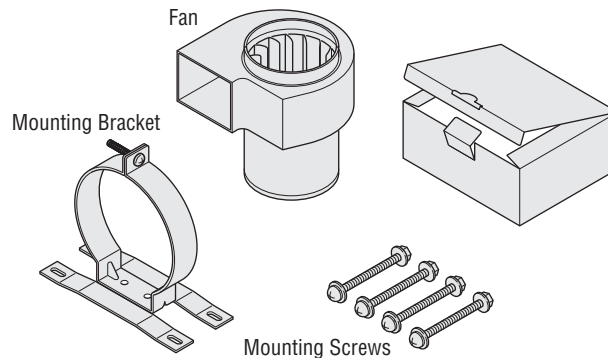
Details → Page E-137

Product	Model	Safety Standards	Page
Mounting Bracket	<b>PAS5A</b>	—	E-152

Fan Kit

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

Details → Page E-143



● Product Line

Fan Kit Model
<b>T-MB1665-B-A</b>
<b>T-MB1665-D-A</b>
<b>T-MB1665-T-A</b>

# AC Centrifugal Blower

## MB Series

# Impeller Diameter

## φ120 mm (φ4.72 in.)



Ambient Temperature: -10~+50°C (+14~+122°F)  
 Operating Voltage Range: ±10%  
 Materials  
 Motor Case: Die Cast Aluminum  
 Casing: Die Cast Aluminum  
 Impeller: Aluminum  
 Overheat Protection: Built-in Thermal Protector  
 Bearings: Ball Bearings

### Specifications RoHS



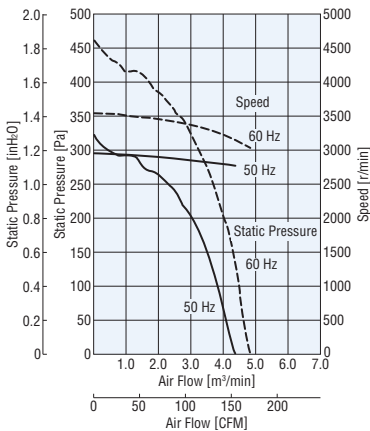
Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)	Capacitor μF
						m <sup>3</sup> /min	CFM	Pa	inH <sub>2</sub> O		
<b>MB1255-B</b>	Single-Phase 100	50	1.3	110	2850	4.4	155	309	1.24	67	10
	Single-Phase 100	60	1.6	150	3300	5.1	180	441	1.77	71	
	Single-Phase 110	60	1.6	150	3300	5.1	180	441	1.77	71	
	Single-Phase 115	60	1.6	150	3300	5.1	180	441	1.77	72	
<b>MB1255-D</b>	Single-Phase 200	50	0.6	100	2850	4.4	155	314	1.26	67	2.0
	Single-Phase 200	60	0.8	145	3200	4.9	173	451	1.81	69	
	Single-Phase 220	60	0.8	145	3300	5.1	180	451	1.81	71	
	Single-Phase 230	50	0.6	110	2900	4.5	159	314	1.26	67	
	Single-Phase 230	60	0.8	150	3300	5.2	184	451	1.81	71	
<b>MB1255-T</b>	Three-Phase 200	50	0.6	85	2850	4.4	155	314	1.26	67	-
	Three-Phase 200	60	0.6	120	3280	5.0	177	451	1.81	70	
	Three-Phase 220	60	0.65	125	3300	5.1	180	451	1.81	71	
	Three-Phase 230	60	0.65	130	3300	5.2	184	451	1.81	71	

● **MB1255-T** meets UL and CSA Standards only.

● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

### Air Flow – Static Pressure Characteristics

● How to read air flow – static pressure characteristics → Page E-20



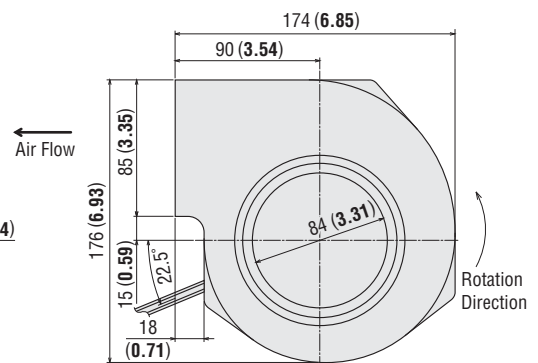
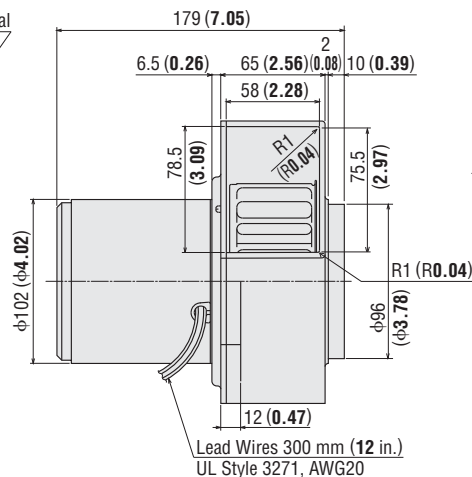
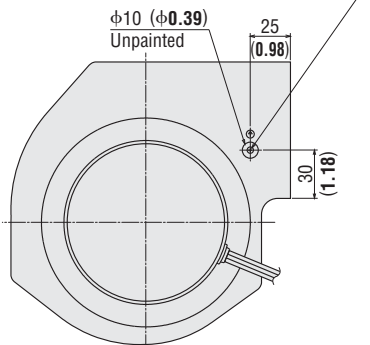
The following items are included in each product.  
 Fan, Capacitor\*, Capacitor Cap\*, Operating Manual  
 \*Single-phase fans only

### Dimensions Unit = mm (in.)

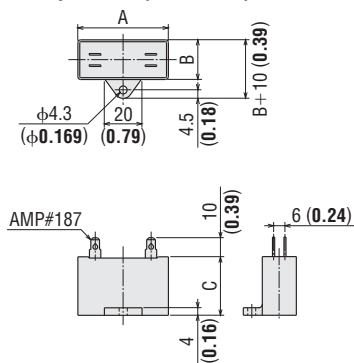
Mass: 4 kg (8.8 lb.)

DXF E060

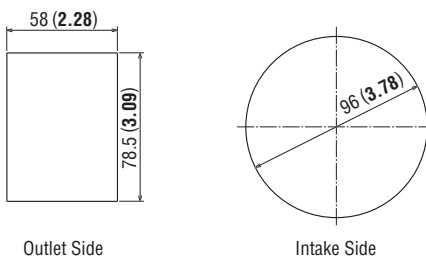
Protective Earth Terminal  
M4



● Capacitor (Included)



■ Panel Cut-Out Unit = mm (in.)

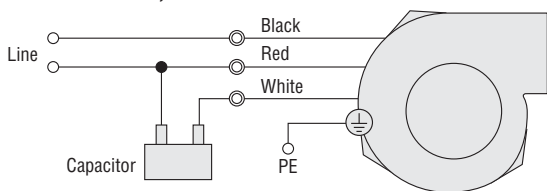


◇ Capacitor Dimensions Table

Model	Capacitor Model	Capacitor Dimensions mm (in.)			Mass g (oz.)	Capacitor Cap
		A	B	C		
<b>MB1255-B</b>	CH100CFAUL	48 (1.89)	22.5 (0.89)	31.5 (1.24)	40 (1.41)	Included
<b>MB1255-D</b>	CH20BFAUL	48 (1.89)	19 (0.75)	29 (1.14)	40 (1.41)	Included

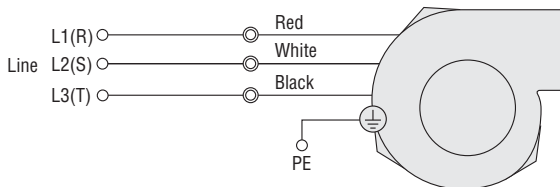
■ Connection Diagrams

● MB1255-B, MB1255-D



● How to connect a capacitor → Page E-158

● MB1255-T



■ Thermostats

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



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

● Page → E-133

■ Accessories

The following products are RoHS-Compliant.

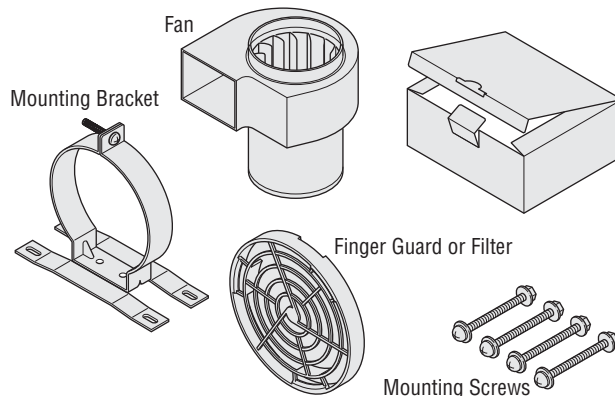
Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	<b>FGB12</b>	Conformed component	E-145
Filter	<b>FLB12</b>	—	E-147
Mounting Bracket	<b>PAS6A</b>	—	E-152
Duct Joint	<b>FD12</b>	—	E-153

■ Fan Kit

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

Details → Page E-143



● Product Line

Fan Kit Model
<b>T-MB1255-B-GA</b>
<b>T-MB1255-B-FA</b>
<b>T-MB1255-D-GA</b>
<b>T-MB1255-D-FA</b>
<b>T-MB1255-T-GA</b>
<b>T-MB1255-T-FA</b>

- **-GA** (Included with finger guard, mounting bracket and mounting screws)
- **-FA** (Included with filter, mounting bracket and mounting screws)

# AC Centrifugal Blower

## MB Series

# Impeller Diameter

## φ100 mm (φ3.94 in.)



Ambient Temperature: -10~+50°C (+14~+122°F)  
 Operating Voltage Range: ±10%  
 Materials  
 Motor Case: Die Cast Aluminum  
 Casing: Die Cast Aluminum  
 Impeller: Aluminum  
 Overheat Protection: Built-in Thermal Protector  
 Bearings: Ball Bearings

### Specifications (RoHS)



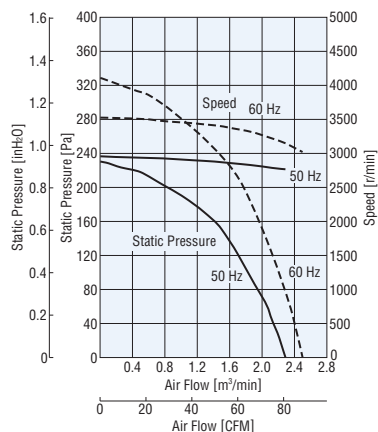
Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)	Capacitor μF
						m³/min	CFM	Pa	inH₂O		
<b>MB1040-B</b>	Single-Phase 100	50	0.50	45	2750	2.3	81.2	206	0.826	60	3.0
	Single-Phase 100	60	0.55	55	3050	2.6	91.8	284	1.14	63	
	Single-Phase 110	60	0.55	55	3200	2.6	91.8	284	1.14	64	
	Single-Phase 115	60	0.55	55	3200	2.6	91.8	284	1.14	64	
<b>MB1040-D</b>	Single-Phase 200	50	0.25	40	2750	2.3	81.2	206	0.826	61	1.2
	Single-Phase 200	60	0.30	50	3100	2.6	91.8	304	1.22	64	
	Single-Phase 220	60	0.30	55	3200	2.7	95.3	304	1.22	65	
	Single-Phase 230	50	0.30	50	2750	2.4	84.7	206	0.826	61	
	Single-Phase 230	60	0.30	55	3250	2.7	95.3	304	1.22	65	

● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.  
 Fan, Capacitor\*, Capacitor Cap\*, Operating Manual  
 \* Single-phase fans only

### Air Flow – Static Pressure Characteristics

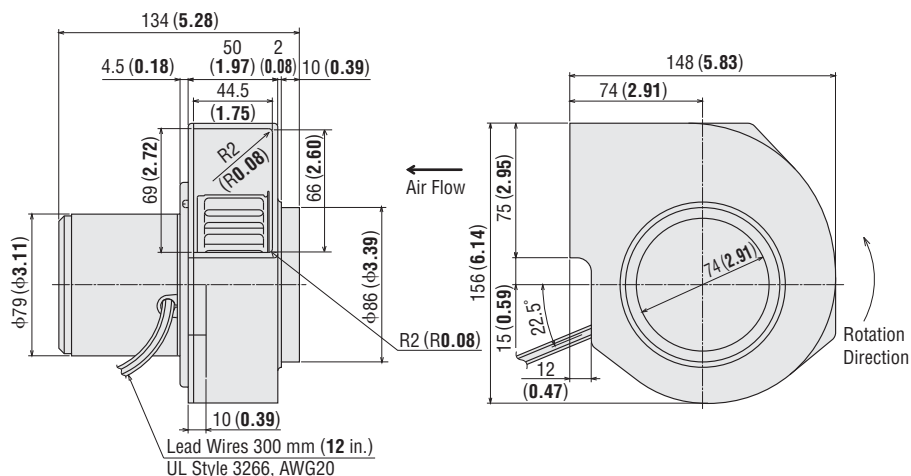
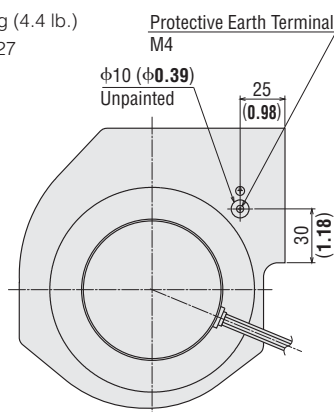
● How to read air flow – static pressure characteristics → Page E-20



### Dimensions Unit = mm (in.)

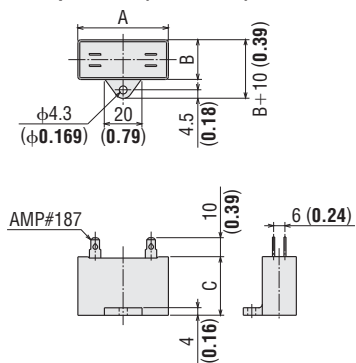
Mass: 2 kg (4.4 lb.)

DXF E027

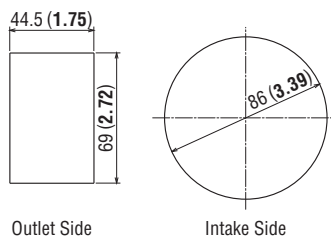




● Capacitor (Included)



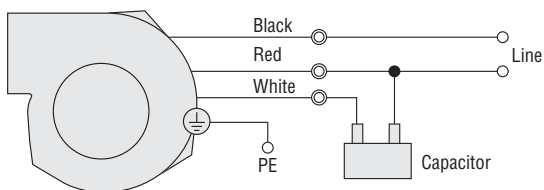
■ Panel Cut-Out Unit = mm (in.)



◇ Capacitor Dimensions Table

Model	Capacitor Model	Capacitor Dimensions mm (in.)			Mass g (oz.)	Capacitor Cap
		A	B	C		
<b>MB1040-B</b>	CH30BFAUL	58 (2.28)	21 (0.83)	31 (1.22)	50 (1.77)	Included
<b>MB1040-D</b>	CH12BFAUL	37 (1.46)	18 (0.71)	27 (1.06)	30 (1.06)	Included

■ Connection Diagram



● How to connect a capacitor → Page E-158

■ Thermostats

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



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

● Page → E-133

■ Accessories

The following products are RoHS-Compliant.

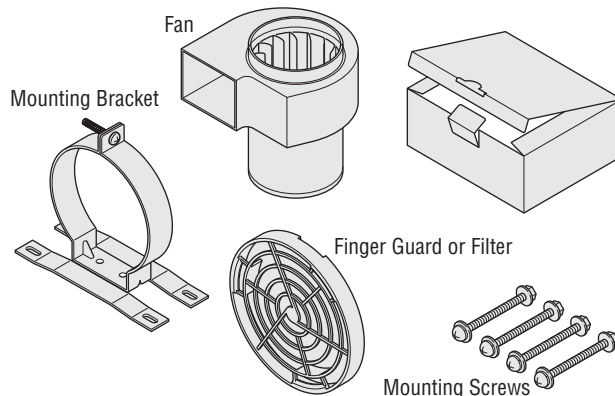
Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	<b>FGB10</b>	Conformed component	E-145
Filter	<b>FLB10</b>	—	E-147
Mounting Bracket	<b>PAS4B</b>	—	E-152
Duct Joint	<b>FD10</b>	—	E-153

Fan Kit

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

Details → Page E-143



● Product Line

Fan Kit Model
<b>T-MB1040-B-GA</b>
<b>T-MB1040-B-FA</b>
<b>T-MB1040-D-GA</b>
<b>T-MB1040-D-FA</b>

- **-GA** (Included with finger guard, mounting bracket and mounting screws)
- **-FA** (Included with filter, mounting bracket and mounting screws)

# AC Centrifugal Blower MB Series

## Impeller Diameter φ80 mm (φ3.15 in.)



Ambient Temperature: -10~+50°C (+14~+122°F)  
 Operating Voltage Range: ±10%  
 Materials  
 Motor Case: Die Cast Aluminum  
 Casing: Die Cast Aluminum  
 Impeller: Aluminum  
 Overheat Protection: Built-in Thermal Protector  
 Bearings: Ball Bearings

### Specifications (RoHS)



Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)	Capacitor μF
						m³/min	CFM	Pa	inH <sub>2</sub> O		
<b>MB840-B</b>	Single-Phase 100	50	0.29	28	2800	1.6	56.5	152	0.61	55	1.5
	Single-Phase 100	60	0.37	32	3150	1.8	63.5	221	0.886	58	
	Single-Phase 110	60	0.37	35	3300	1.8	63.5	226	0.906	59	
	Single-Phase 115	60	0.37	36	3350	1.8	63.5	226	0.906	59	
<b>MB840-D</b>	Single-Phase 200	50	0.14	28	2800	1.6	56.5	152	0.61	55	2.5
	Single-Phase 200	60	0.18	32	3200	1.8	63.5	221	0.886	58	
	Single-Phase 220	60	0.18	35	3350	1.8	63.5	226	0.906	59	
	Single-Phase 230	50	0.15	35	2850	1.6	56.5	157	0.63	55	
	Single-Phase 230	60	0.18	36	3350	1.8	63.5	226	0.906	59	
<b>MB840-T</b>	Three-Phase 200	50	0.12	25	2800	1.6	56.5	152	0.61	55	-
	Three-Phase 200	60	0.15	28	3200	1.8	63.5	221	0.886	58	
	Three-Phase 220	60	0.15	30	3350	1.8	63.5	226	0.906	59	
	Three-Phase 230	60	0.15	30	3350	1.8	63.5	226	0.906	59	

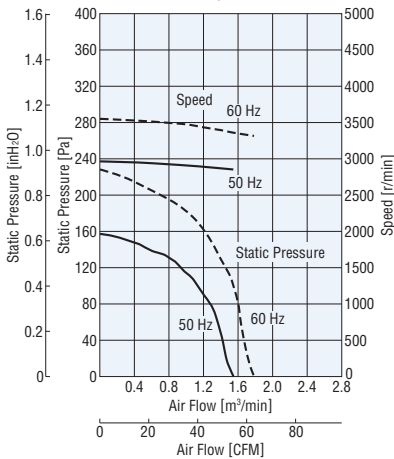
● **MB840-T** meets UL and CSA Standards only.

● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.  
 Fan, Capacitor\*, Capacitor Cap\*, Operating Manual  
 \*Single-phase fans only

### Air Flow – Static Pressure Characteristics

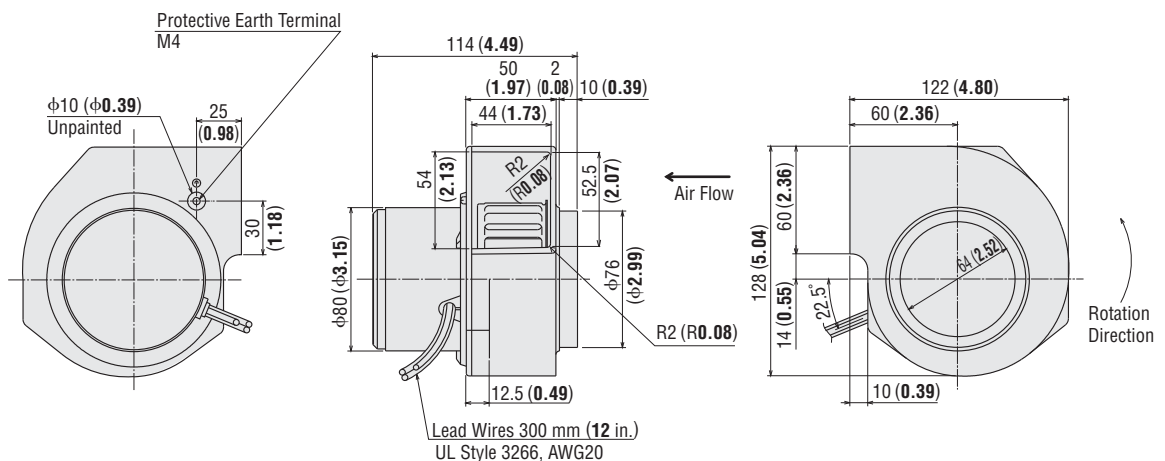
● How to read air flow – static pressure characteristics → Page E-20



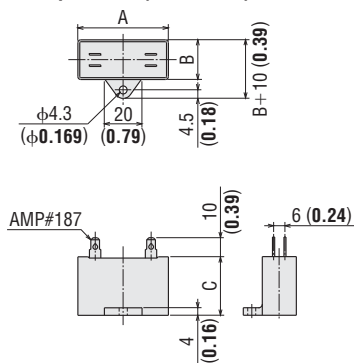
### Dimensions Unit = mm (in.)

Mass: 1.3 kg (2.9 lb.)

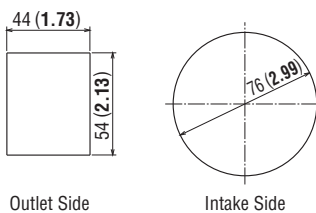
**DXF** E062



● Capacitor (Included)



■ Panel Cut-Out Unit = mm (in.)

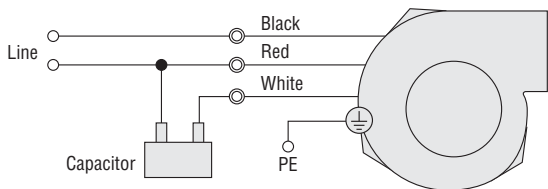


◇ Capacitor Dimensions Table

Model	Capacitor Model	Capacitor Dimensions mm (in.)			Mass g (oz.)	Capacitor Cap
		A	B	C		
<b>MB840-B</b>	CH15FAUL	31 (1.22)	14.5 (0.57)	23.5 (0.93)	35 (1.24)	Included
<b>MB840-D</b>	CH25FAUL	31 (1.22)	17 (0.67)	27 (1.06)	40 (1.41)	Included

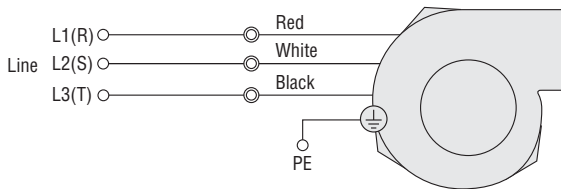
■ Connection Diagrams

● MB840-B, MB840-D



● How to connect a capacitor → Page E-158

● MB840-T



■ Thermostats

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



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

● Page → E-133

■ Accessories

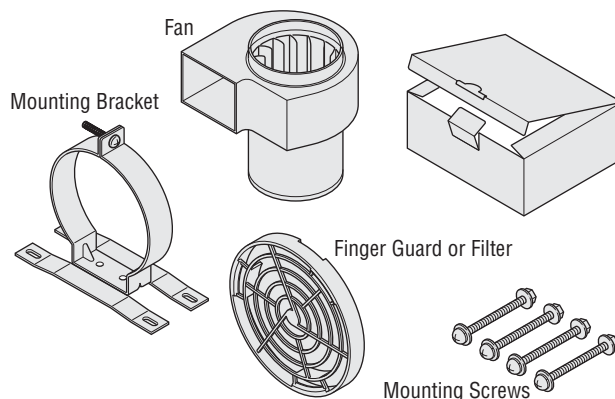
The following products are RoHS-Compliant. Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	<b>FGB8</b>	Conformed component	E-145
Filter	<b>FLB8</b>	—	E-147
Mounting Bracket	<b>PAS4B</b>	—	E-152
Duct Joint	<b>FD8</b>	—	E-153

Fan Kit

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

Details → Page E-143



● Product Line

Fan Kit Model
<b>T-MB840-B-GA</b>
<b>T-MB840-B-FA</b>
<b>T-MB840-D-GA</b>
<b>T-MB840-D-FA</b>
<b>T-MB840-T-GA</b>
<b>T-MB840-T-FA</b>

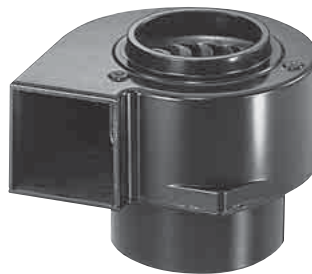
- **-GA** (Included with finger guard, mounting bracket and mounting screws)
- **-FA** (Included with filter, mounting bracket and mounting screws)

# AC Centrifugal Blower

## MB Series

### Impeller Diameter

## φ60 mm (φ2.36 in.)



Ambient Temperature: -10~+60°C (+14~+140°F)  
 Operating Voltage Range: ±10%  
 Materials  
 Motor Case: Die Cast Aluminum  
 Casing: Die Cast Aluminum  
 Impeller: Aluminum  
 Overheat Protection: Impedance Protected  
 Bearings: Ball Bearings

### Specifications (RoHS)



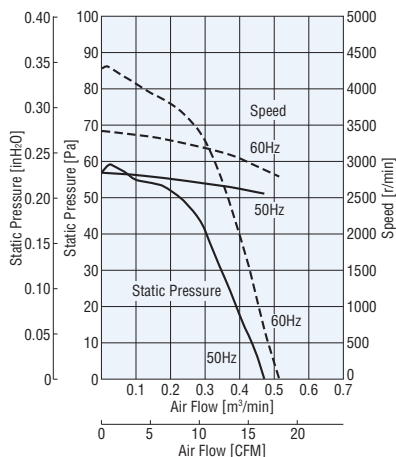
Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
						m <sup>3</sup> /min	CFM	Pa	inH <sub>2</sub> O	
<b>MB630-B</b>	Single-Phase 100	50	0.11	8.0	2300	0.44	15.5	53	0.213	37
	Single-Phase 100	60	0.11	8.0	1900	0.36	12.7	76	0.305	33
	Single-Phase 110	60	0.12	9.5	2300	0.45	15.9	77	0.309	38
	Single-Phase 115	60	0.12	10.0	2500	0.49	17.3	79	0.317	40
<b>MB630-D</b>	Single-Phase 200	50	0.08	12.0	2500	0.49	17.3	56	0.225	38
	Single-Phase 200	60	0.08	11.0	2600	0.50	17.7	83	0.333	39
	Single-Phase 220	60	0.08	13.0	2900	0.55	19.4	83	0.333	42
	Single-Phase 230	50	0.09	16.0	2600	0.50	17.7	56	0.225	39
	Single-Phase 230	60	0.08	14.0	2900	0.55	19.4	83	0.333	43

● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

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

### Air Flow – Static Pressure Characteristics

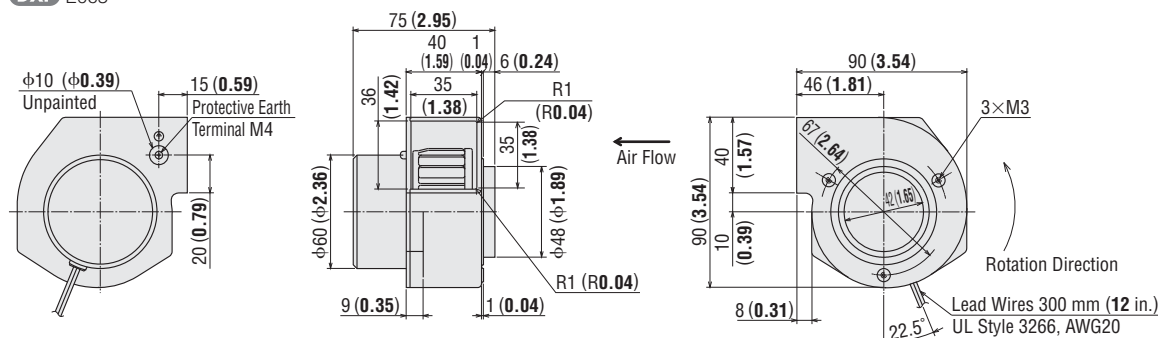
● How to read air flow – static pressure characteristics → Page E-20



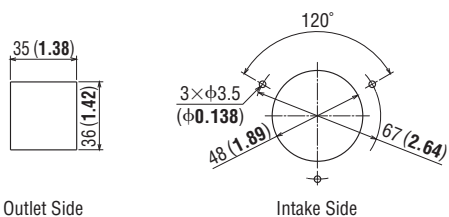
### Dimensions Unit = mm (in.)

Mass: 0.5 kg (1.1 lb.)

**DXF** E063



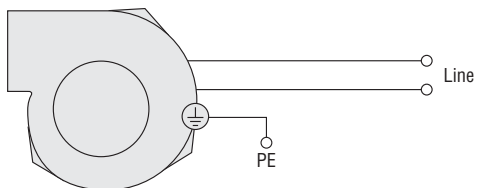
## Panel Cut-Out Unit = mm (in.)



Outlet Side

Intake Side

## Connection Diagram



## Thermostats

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



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

● Page → E-133

## Accessories

The following products are RoHS-Compliant.

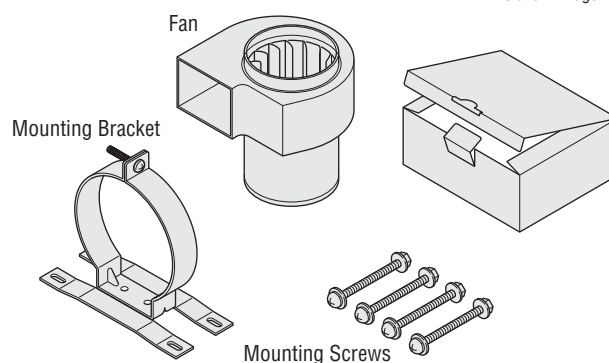
Details → Page E-137

Product	Model	Safety Standards	Page
Mounting Bracket	<b>PAS2B</b>	—	E-152

## Fan Kit

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

Details → Page E-143



## Product Line

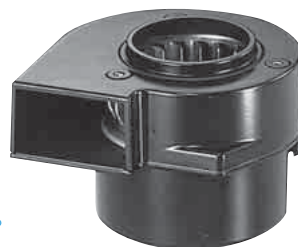
Fan Kit Model
<b>T-MB630-B-A</b>
<b>T-MB630-D-A</b>

# AC Centrifugal Blower

## MB Series

### Impeller Diameter

## φ50 mm (φ1.97 in.)



Ambient Temperature: -10~+60°C (+14~+140°F)  
 Operating Voltage Range: ±10%  
 Materials  
 Motor Case: Die Cast Aluminum  
 Casing: Die Cast Aluminum  
 Impeller: Aluminum  
 Overheat Protection: Impedance Protected  
 Bearings: Ball Bearings

### Specifications (RoHS)



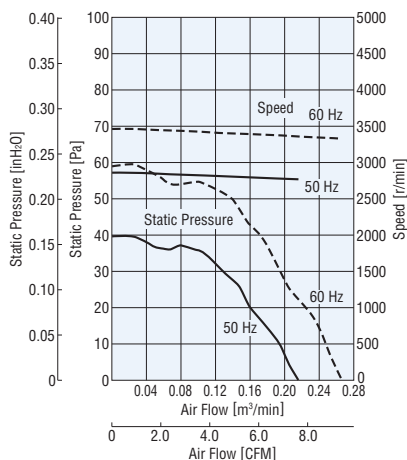
Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
						m <sup>3</sup> /min	CFM	Pa	inH <sub>2</sub> O	
<b>MB520-B</b>	Single-Phase 100	50	0.11	8	2600	0.21	7.41	37	0.149	33
	Single-Phase 100	60	0.10	7	3000	0.24	8.47	53	0.213	37
	Single-Phase 110	60	0.11	8.5	3200	0.25	8.83	55	0.221	38
	Single-Phase 115	60	0.11	9	3200	0.25	8.83	55	0.221	38
<b>MB520-D</b>	Single-Phase 200	50	0.09	11	2650	0.22	7.77	38	0.153	33
	Single-Phase 200	60	0.08	10	3200	0.27	9.53	58	0.233	38
	Single-Phase 220	60	0.09	12	3300	0.27	9.53	60	0.241	38
	Single-Phase 230	50	0.10	16	2750	0.23	8.12	40	0.16	33
	Single-Phase 230	60	0.09	13	3300	0.27	9.53	60	0.241	38

● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

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

### Air Flow – Static Pressure Characteristics

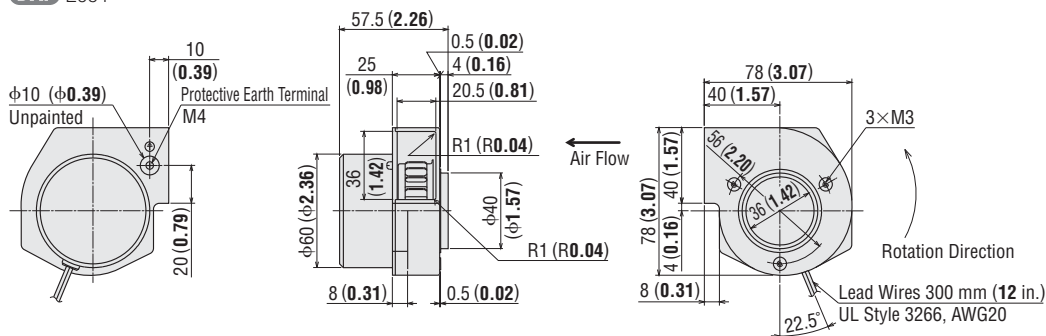
● How to read air flow – static pressure characteristics → Page E-20



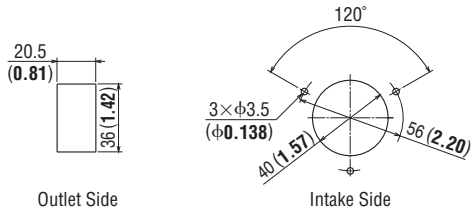
### Dimensions Unit = mm (in.)

Mass: 0.3 kg (0.7 lb.)

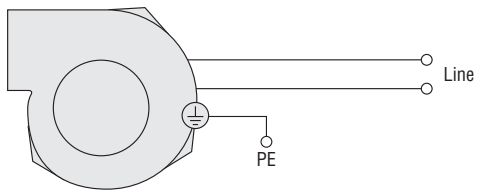
DXF E064



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



**Connection Diagram**



**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 → E-133

**Accessories**

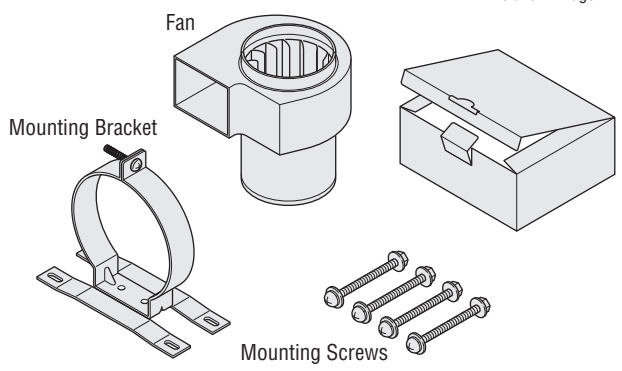
The following products are RoHS-Compliant.  
Details → Page E-137

Product	Model	Safety Standards	Page
Mounting Bracket	<b>PAS2B</b>	—	E-152

**Fan Kit**

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

Details → Page E-143



**Product Line**

Fan Kit Model
<b>T-MB520-B-A</b>
<b>T-MB520-D-A</b>

## DC Centrifugal Blower MBD Series

# Impeller Diameter $\phi 120$ mm ( $\phi 4.72$ in.)



Ambient Temperature:  $-10 \sim +60^{\circ}\text{C}$  ( $+14 \sim +140^{\circ}\text{F}$ )  
 Operating Voltage Range:  $\pm 10\%$   
 Materials  
 Motor Case: Die Cast Aluminum  
 Casing: Die Cast Aluminum  
 Impeller: Aluminum  
 Overheat Protection: Built-in Overheat Protection  
 Circuit  
 Bearings: Ball Bearings

### Specifications (RoHS)

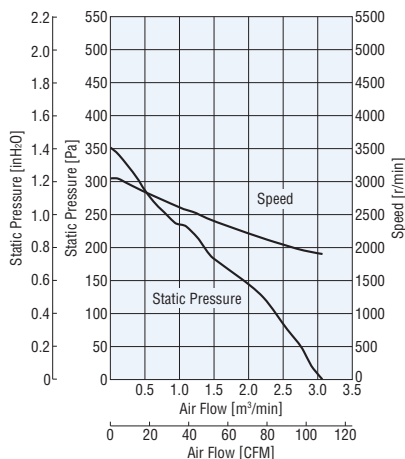
Model	Voltage VDC	Current A	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
				$\text{m}^3/\text{min}$	CFM	Pa	inH <sub>2</sub> O	
<b>MBD12-24</b>	24	1.5	1900	3.0	106	372	1.49	58

● How to read specifications → Page E-19 ● Details of RoHS Directive → Page G-38

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

### Air Flow – Static Pressure Characteristics

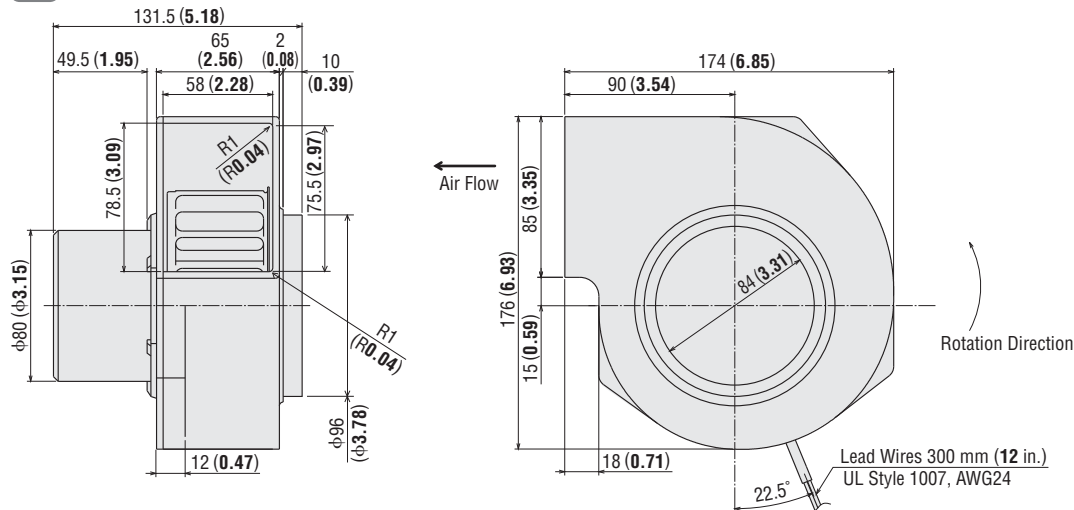
● How to read air flow – static pressure characteristics → Page E-20



### Dimensions Unit = mm (in.)

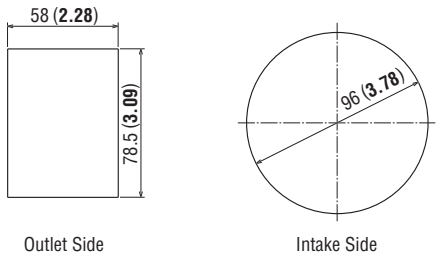
Mass: 1.5 kg (3.3 lb.)

DXF E031

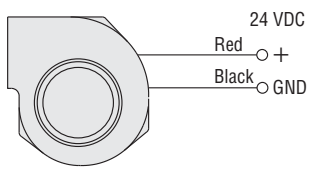




## Panel Cut-Out Unit = mm (in.)



## Connection Diagram



## Accessories

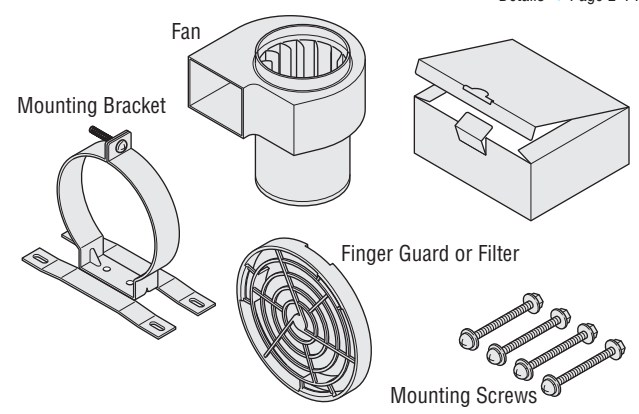
The following products are RoHS-Compliant.  
Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	<b>FGB12</b>	Conformed component	E-145
Filter	<b>FLB12</b>	—	E-147
Mounting Bracket	<b>PAS4B</b>	—	E-152
Duct Joint	<b>FD12</b>	—	E-153

## Fan Kit

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

Details → Page E-143



## Product Line

Fan Kit Model
<b>T-MBD12-24-GA</b>
<b>T-MBD12-24-FA</b>

- **-GA** (Included with finger guard, mounting bracket and mounting screws)
- **-FA** (Included with filter, mounting bracket and mounting screws)

## DC Centrifugal Blower MBD Series

# Impeller Diameter $\phi 100$ mm ( $\phi 3.94$ in.)



Ambient Temperature:  $-10 \sim +60^{\circ}\text{C}$  ( $+14 \sim +140^{\circ}\text{F}$ )  
 Operating Voltage Range:  $\pm 10\%$   
 Materials  
 Motor Case: Die Cast Aluminum  
 Casing: Die Cast Aluminum  
 Impeller: Aluminum  
 Overheat Protection: Built-in Overheat Protection Circuit  
 Bearings: Ball Bearings

### Specifications (RoHS)

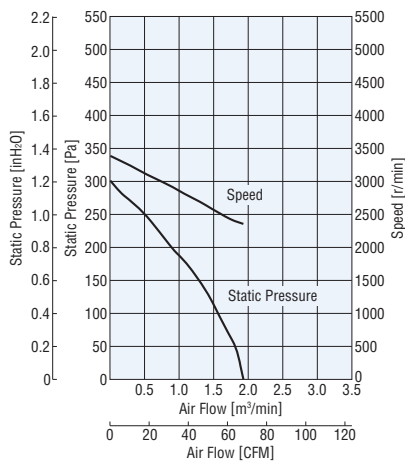
Model	Voltage VDC	Current A	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)	
				$\text{m}^3/\text{min}$	CFM	Pa	inH <sub>2</sub> O		
Low-Speed Alarm, Contact Alarm Type (Alarm specifications: ㉞)	<b>MBD10-24A</b>	24	1.0	2400	1.95	68.8	294	1.18	56
Pulse Sensor Type (Alarm specifications: ㉟)	<b>MBD10-24S</b>	24	1.0	2400	1.95	68.8	294	1.18	56
	<b>MBD10-48S</b>	48	0.7						
Standard Type	<b>MBD10-24</b>	24	1.0	2400	1.95	68.8	294	1.18	56
	<b>MBD10-48</b>	48	0.7						

● How to read specifications → Page E-19 ● Alarm specifications ㉞, ㉟ → Page E-21 ● Details of RoHS Directive → Page G-38

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

### Air Flow – Static Pressure Characteristics

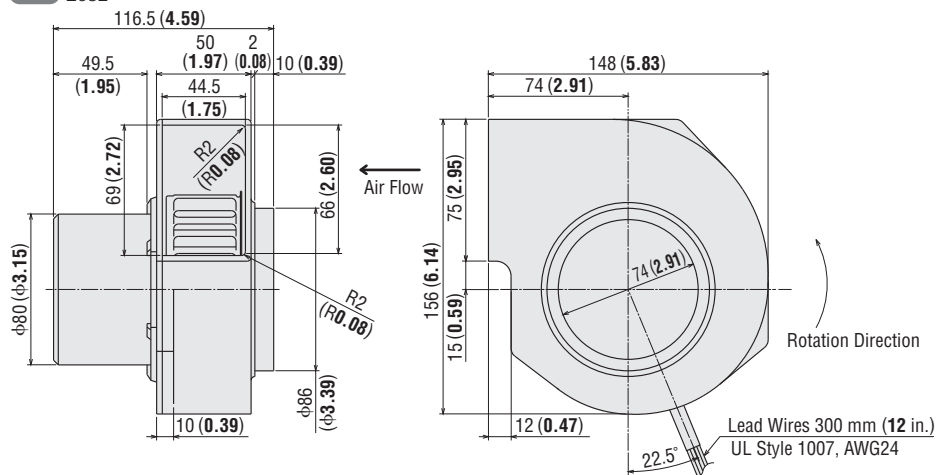
● How to read air flow – static pressure characteristics → Page E-20



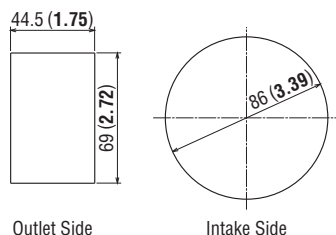
### Dimensions Unit = mm (in.)

Mass: 1.2 kg (2.6 lb.)

**DXF** E032



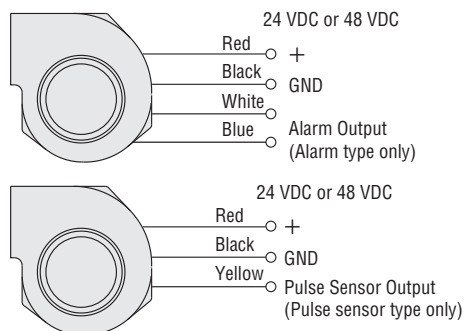
## Panel Cut-Out Unit = mm (in.)



Outlet Side

Intake Side

## Connection Diagrams



## Accessories

The following products are RoHS-Compliant.

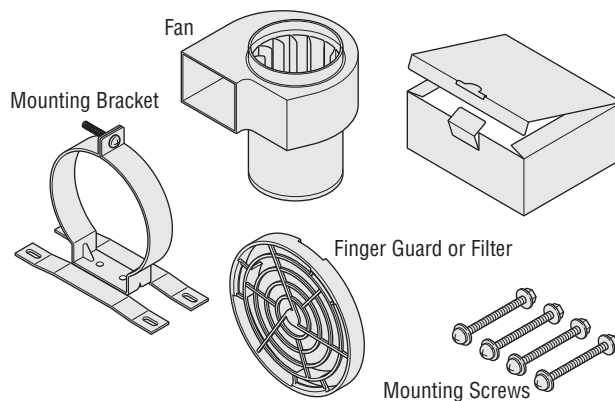
Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	<b>FGB10</b>	Conformed component	E-145
Filter	<b>FLB10</b>	—	E-147
Mounting Bracket	<b>PAS4B</b>	—	E-152
Duct Joint	<b>FD10</b>	—	E-153

## Fan Kit

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

Details → Page E-143



## Product Line

Fan Kit Model
<b>T-MBD10-24A-GA</b>
<b>T-MBD10-24A-FA</b>
<b>T-MBD10-24S-GA</b>
<b>T-MBD10-24S-FA</b>
<b>T-MBD10-24-GA</b>
<b>T-MBD10-24-FA</b>
<b>T-MBD10-48S-GA</b>
<b>T-MBD10-48S-FA</b>
<b>T-MBD10-48-GA</b>
<b>T-MBD10-48-FA</b>

● **-GA** (Included with finger guard, mounting bracket and mounting screws)

● **-FA** (Included with filter, mounting bracket and mounting screws)

## DC Centrifugal Blower MBD Series

# Impeller Diameter φ80 mm (φ3.15 in.)



Ambient Temperature:  $-10\sim+60^{\circ}\text{C}$  ( $+14\sim+140^{\circ}\text{F}$ )  
 Operating Voltage Range:  $\pm 10\%$   
 Materials  
 Motor Case: Die Cast Aluminum  
 Casing: Die Cast Aluminum  
 Impeller: Aluminum  
 Overheat Protection: Built-in Overheat Protection Circuit  
 Bearings: Ball Bearings

### Specifications (RoHS)

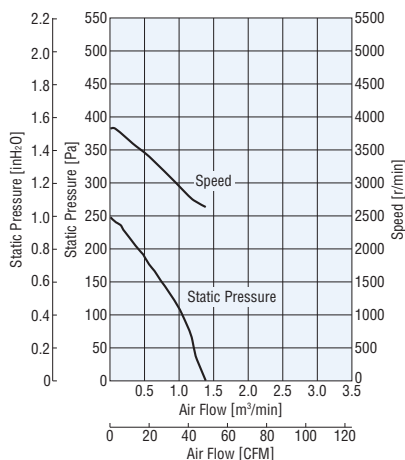
Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level
					m <sup>3</sup> /min	CFM	Pa	inH <sub>2</sub> O	dB (A)
Low-Speed Alarm, Contact Alarm Type (Alarm specifications: ㉞)	<b>MBD8-24A</b>	24	0.7	2600	1.45	51.2	196	0.786	51
	<b>MBD8-24S</b>	24	0.7	2600	1.45	51.2	196	0.786	51
Pulse Sensor Type (Alarm specifications: ㉟)	<b>MBD8-48S</b>	48	0.5						
Standard Type	<b>MBD8-24</b>	24	0.7	2600	1.45	51.2	196	0.786	51
	<b>MBD8-48</b>	48	0.5						

● How to read specifications → Page E-19 ● Alarm specifications ㉞, ㉟ → Page E-21 ● Details of RoHS Directive → Page G-38

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

### Air Flow – Static Pressure Characteristics

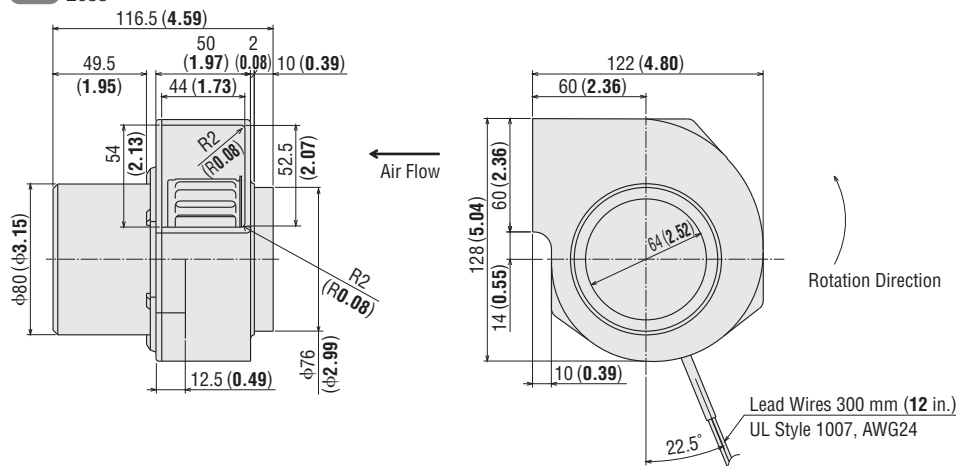
● How to read air flow – static pressure characteristics → Page E-20



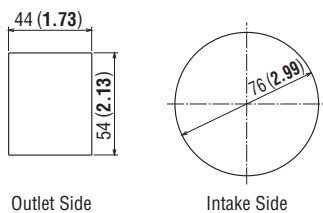
### Dimensions Unit = mm (in.)

Mass: 1.1 kg (2.4 lb.)

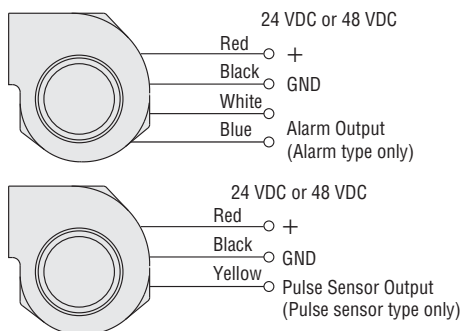
DXF E033



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



## Connection Diagrams



## Accessories

The following products are RoHS-Compliant.

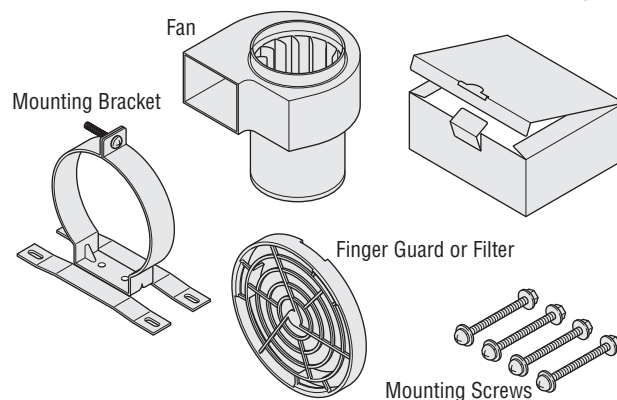
Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	<b>FGB8</b>	Conformed component	E-145
Filter	<b>FLB8</b>	—	E-147
Mounting Bracket	<b>PAS4B</b>	—	E-152
Duct Joint	<b>FD8</b>	—	E-153

## Fan Kit

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

Details → Page E-143



## Product Line

Fan Kit Model
<b>T-MBD8-24A-GA</b>
<b>T-MBD8-24A-FA</b>
<b>T-MBD8-24S-GA</b>
<b>T-MBD8-24S-FA</b>
<b>T-MBD8-24-GA</b>
<b>T-MBD8-24-FA</b>
<b>T-MBD8-48S-GA</b>
<b>T-MBD8-48S-FA</b>
<b>T-MBD8-48-GA</b>
<b>T-MBD8-48-FA</b>

- **-GA** (Included with finger guard, mounting bracket and mounting screws)
- **-FA** (Included with filter, mounting bracket and mounting screws)

