

Cooling Fans

# Centrifugal Blowers

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

AC Input  
**MB Series**

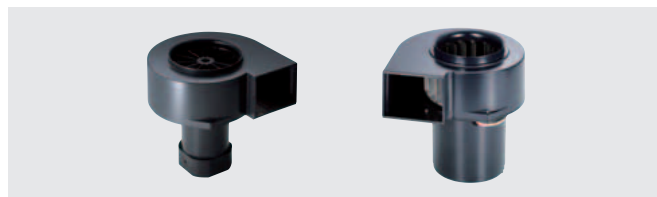
DC Input  
**MBD Series**

	<u>Page</u>
Introduction .....	F-80
<b>MB Series</b> .....	F-82
<b>MBD Series</b> .....	F-94

# Centrifugal Blowers

● Additional Information ●  
 Technical reference → Page G-1

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 an 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

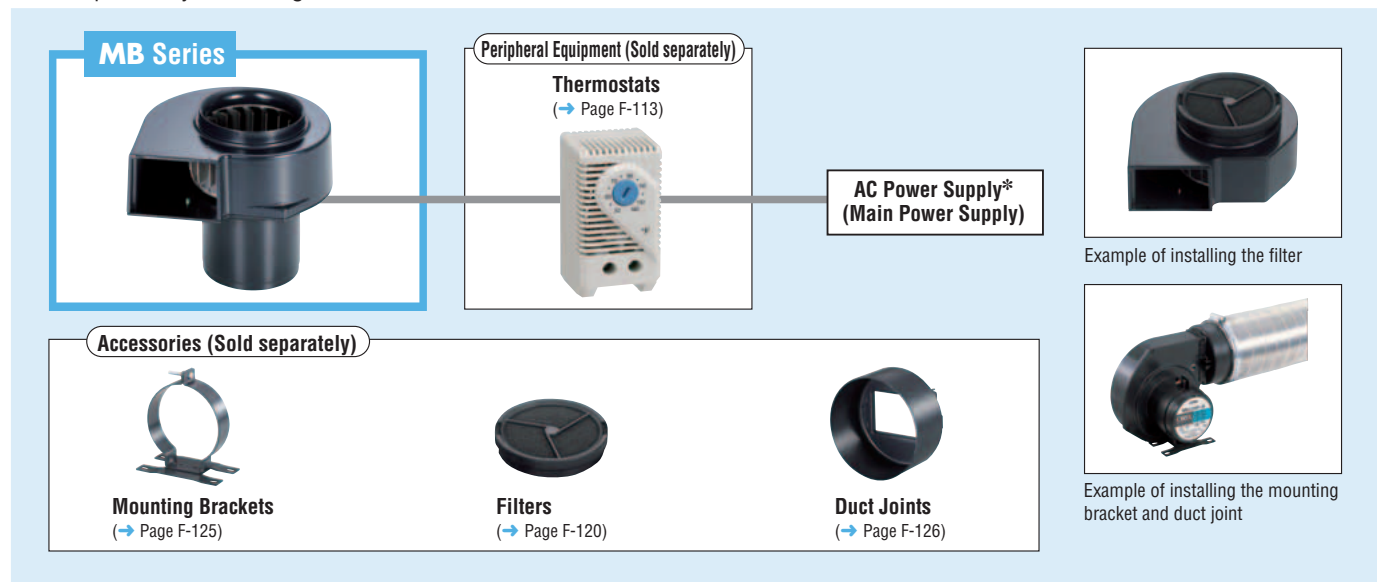
Series	Features	Power Supply Voltage	Impeller Diameter [mm (in.)]					
			φ160 (φ6.30)	φ120 (φ4.72)	φ100 (φ3.94)	φ80 (φ3.15)	φ60 (φ2.36)	φ50 (φ1.97)
AC Centrifugal Blower <b>MB Series</b> → Pages F-82~F-93	● AC input centrifugal blowers ● The <b>MB Series</b> is recognized by UL/CSA Standards and conforms to EN Standards. CE Marking is used in accordance with the Low Voltage Directive. (Certification status differs according to the product.) ● RoHS-Compliant The <b>MB Series</b> conforms to the RoHS Directive.	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 F-94~F-99	● DC input centrifugal blowers ● RoHS-Compliant The <b>MBD Series</b> conforms to the RoHS Directive.	24 VDC		●■	●◆	●◆		
		48 VDC			●◆	●◆		

\* A three-phase 220 VAC version is not available.

● 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](http://www.orientalmotor.com).

## System Configuration

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



### ● Example of System Configuration

Fan	Sold Separately			
	Thermostat	Mounting Bracket	Filter	Duct Joint
<b>MB1040-B</b>	<b>AM1-WA1</b>	<b>PAS4B</b>	<b>FLB10</b>	<b>FD10</b>

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

\* Not supplied

## Product Number Code

● **MB, MBD Series**

**MB 12 55 - B**

①      ②      ③      ④

① Series	<b>MB:</b> AC Centrifugal Blower <b>MB Series</b> <b>MBD:</b> DC Centrifugal Blower <b>MBD Series</b>
② Impeller Diameter	<b>5:</b> φ50 mm (φ1.97 in.) <b>6:</b> φ60 mm (φ2.36 in.) <b>8:</b> φ80 mm (φ3.15 in.) <b>10:</b> φ100 mm (φ3.94 in.) <b>12:</b> φ120 mm (φ4.72 in.) <b>16:</b> φ160 mm (φ6.30 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

● **Fan Kit**

**T- MB1255-D - GA**

①      ②      ③

① Fan Kit Order Code	
② Fan Model Name	
③ <b>GA:</b> With finger guard, mounting bracket and mounting screws <b>FA:</b> With filter, mounting bracket and mounting screws	

● The **MB1665**, **MB630** and **MB520** only come with mounting brackets (A).

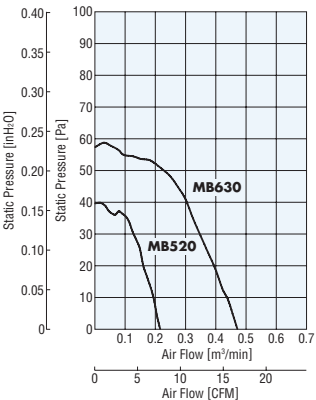
## General Specifications

Item	Specifications
Insulation Resistance	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. ( <b>MBD Series:</b> 10 MΩ or more, 250 VDC megger, <b>MBD□-48, 48S, MBD□-24A, 24S:</b> 10 MΩ 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 Series:</b> 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 Series:</b> 15°C [27°F] or less)
Operating Voltage Range	<b>MB Series:</b> ±10% of the rated voltage <b>MBD Series:</b> ±10% of the rated voltage
Thermal Class	<b>MB Series:</b> UL/CSA standards: 105 (A), EN standards: 120 (E) <b>MBD Series:</b> 120 (E)
Overheat Protection	<b>MB1665, MB1255, MB1040</b> and <b>MB840</b> types have built-in thermal protector (automatic return type). Open: 120±5°C (248±9°F), Close: 77±15°C (170.6±27°F) <b>MB630</b> and <b>MB520</b> types are impedance protected. <b>MBD Series</b> has an overheat protection circuit.
Ambient Temperature	-10~+50°C (+14~+122°F) ( <b>MB520, MB630</b> types, <b>MBD Series:</b> -10~+60°C [+14~+140°F])
Ambient Humidity	85% or less (non-condensing)
Color	Dark gray
Materials	Motor case: Die cast aluminum    Casing: Die cast aluminum    Impeller: Aluminum

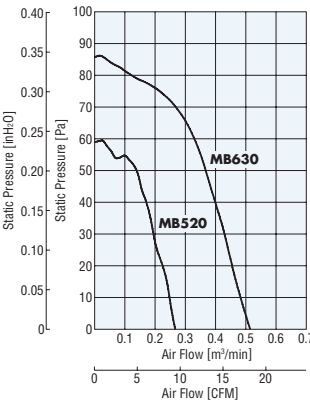
## Comparison of Characteristics

● **MB Series**

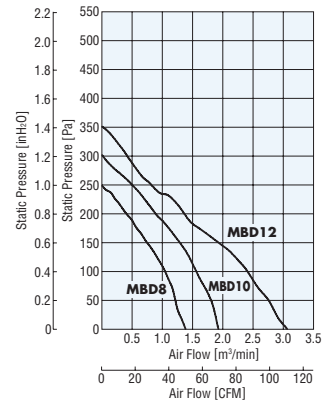
● **50 Hz**



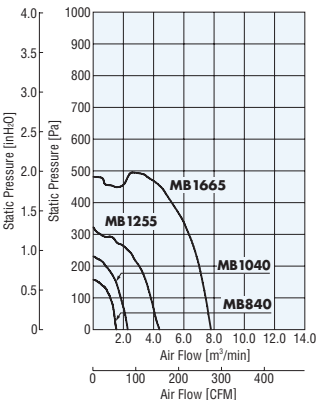
● **60 Hz**



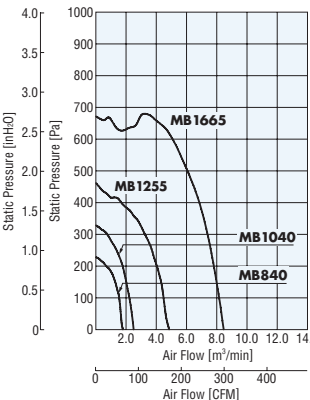
● **MBD Series**



● **50 Hz**



● **60 Hz**



AC Centrifugal Blower  
MB Series

Impeller Diameter  
φ160 mm (φ6.30 in.)



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

φ60 mm (φ2.36 in.)  
φ120 mm (φ4.72 in.)  
φ100 mm (φ3.94 in.)  
φ80 mm (φ3.15 in.)  
φ60 mm (φ2.36 in.)  
φ50 mm (φ1.97 in.)

AC Input

Specifications (RoHS)

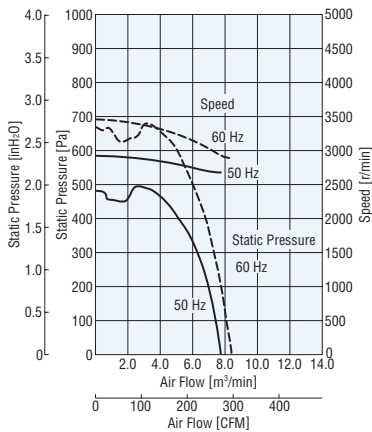


Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)	Capacitor μF
						m <sup>3</sup> /min	CFM	Pa	inH <sub>2</sub> O		
<b>MB1665-B</b>	Single-Phase 100	50	2.6	260	2750	8.0	282	490	1.96	76	40
	Single-Phase 100	60	3.7	360	3100	9.0	318	686	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	

Details of safety standards → Page H-2

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

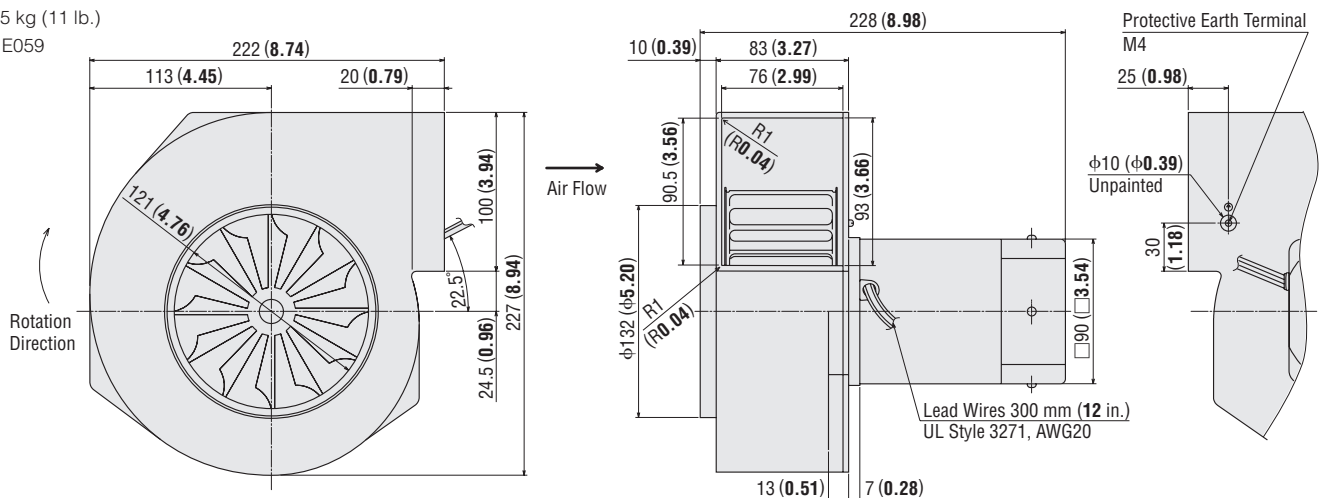
Air Flow – Static Pressure Characteristics



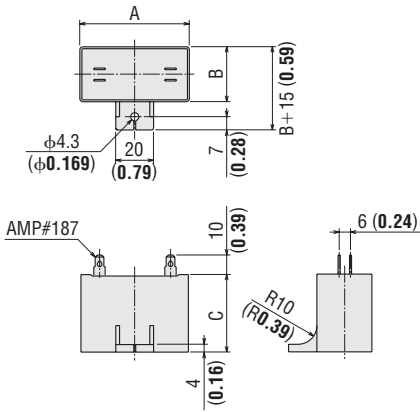
Dimensions Unit = mm (in.)

Mass: 5 kg (11 lb.)

DXF E059



## ● Capacitor (Included)

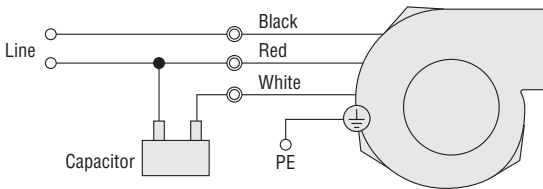


## ◇ Capacitor Dimensions Table

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

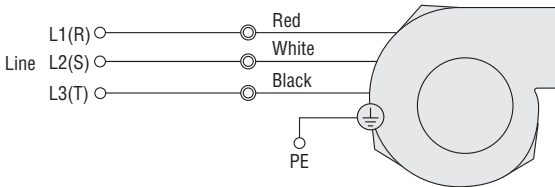
## ■ Connection Diagrams

### ● MB1665-B, MB1665-D



● How to connect a capacitor → Page F-129

### ● MB1665-T



## ■ Thermostats

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

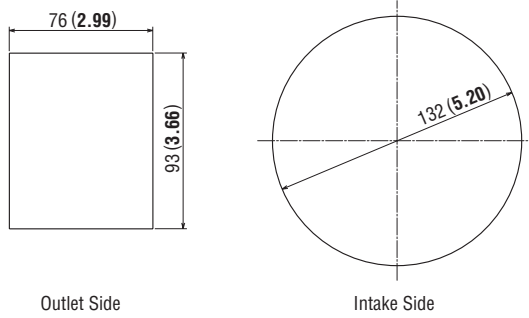


**RoHS**

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

● Page → F-113

## ■ Panel Cut-Out Unit = mm (in.)



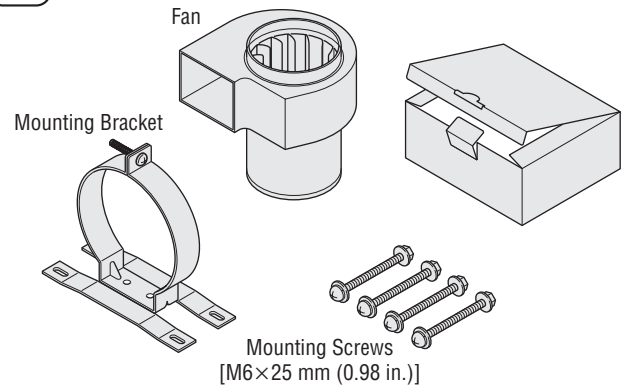
## ■ Accessories

Product	Model	Page
Mounting Bracket	<b>PAS5A</b>	F-125

## Fan Kit

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

**RoHS**



## ● Product Line

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

● See page F-82 to determine base fan required (Voltage) and page F-81 for fan kits product number code.

AC Centrifugal Blower  
MB Series

Impeller Diameter  
φ120 mm (φ4.72 in.)



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

φ120 mm (φ4.72 in.)  
φ100 mm (φ3.94 in.)  
φ80 mm (φ3.15 in.)  
φ60 mm (φ2.36 in.)  
φ50 mm (φ1.97 in.)

AC Input

Specifications (RoHS)

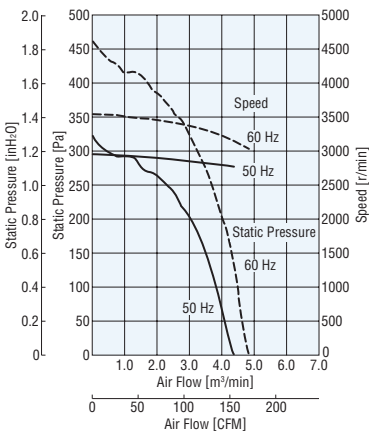


Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)	Capacitor μF
						m³/min	CFM	Pa	inH <sub>2</sub> O		
<b>MB1255-B</b>	Single-Phase 100	50	1.3	110	2850	4.4	155	309	1.24	67	10
	Single-Phase 100	60	1.6	150	3300	5.1	180	441	1.77	71	
	Single-Phase 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.
- Details of safety standards → Page H-2

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

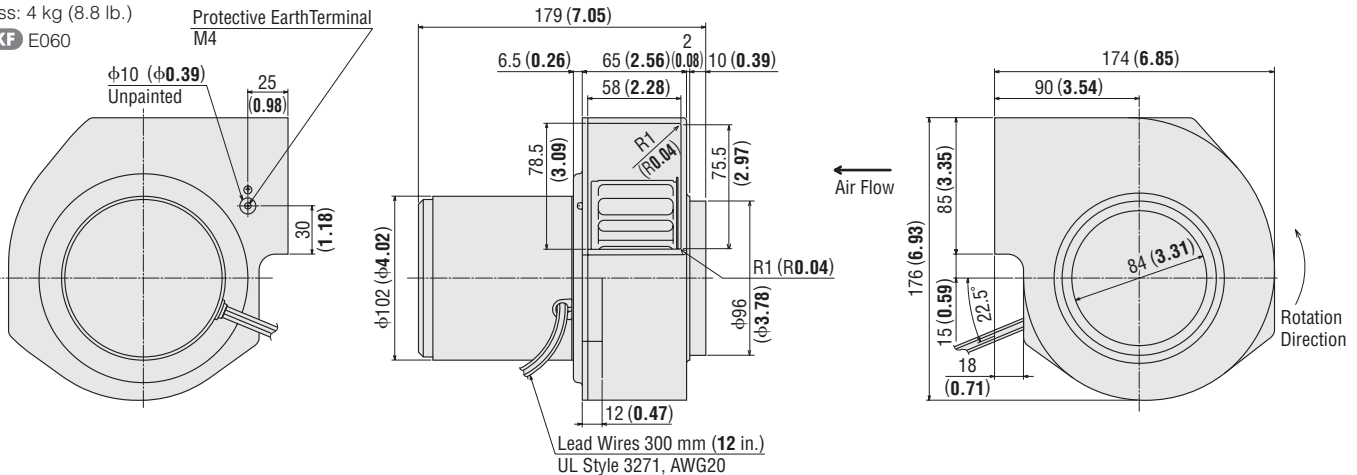
Air Flow – Static Pressure Characteristics



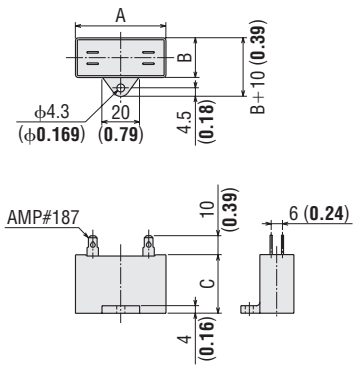
Dimensions Unit = mm (in.)

Mass: 4 kg (8.8 lb.)  
DXF E060

Protective Earth Terminal  
M4



## ● Capacitor (Included)

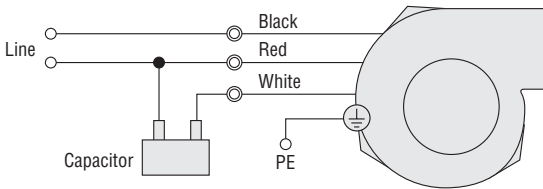


## ◇ Capacitor Dimensions Table

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

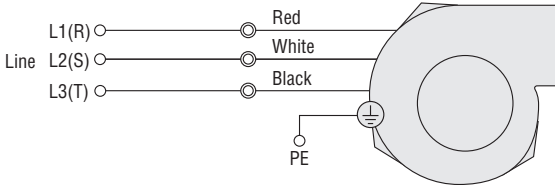
## ■ Connection Diagrams

### ● MB1255-B, MB1255-D



● How to connect a capacitor → Page F-129

### ● MB1255-T



## ■ Thermostats

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

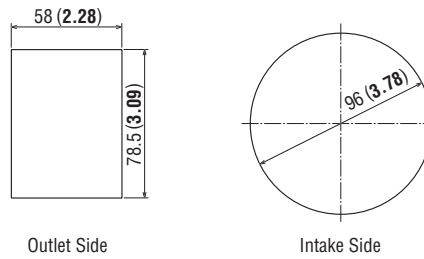


**RoHS**

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

● Page → F-113

## ■ Panel Cut-Out Unit = mm (in.)



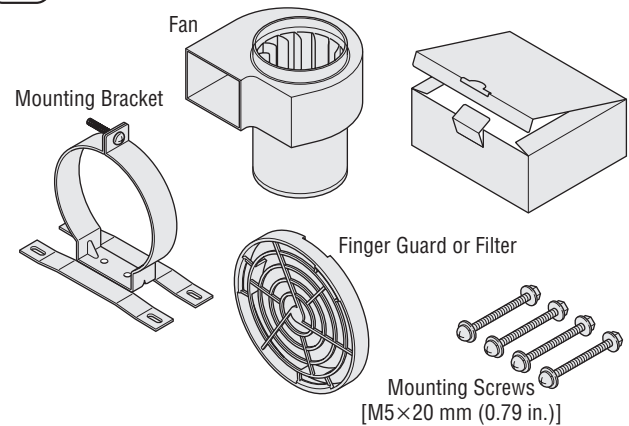
## ■ Accessories

Product	Model	Page
Finger Guard	<b>FGB12</b>	F-118
Filter	<b>FLB12</b>	F-120
Mounting Bracket	<b>PAS6A</b>	F-125
Duct Joint	<b>FD12</b>	F-126

## Fan Kit

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

**RoHS**



## ● 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)

● See page F-84 to determine base fan required (Voltage) and page F-81 for fan kits product number code.

AC Centrifugal Blower  
MB Series

Impeller Diameter  
φ100 mm (φ3.94 in.)



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

φ60 mm  
(φ2.30 in.)

φ120 mm  
(φ4.72 in.)

φ100 mm  
(φ3.94 in.)

φ80 mm  
(φ3.15 in.)

φ60 mm  
(φ2.36 in.)

φ50 mm  
(φ1.97 in.)

AC Input

Specifications (RoHS)

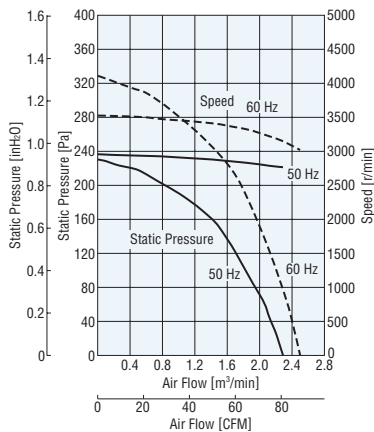


Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)	Capacitor μF
						m <sup>3</sup> /min	CFM	Pa	inH <sub>2</sub> O		
<b>MB1040-B</b>	Single-Phase 100	50	0.50	45	2750	2.3	81.2	206	0.826	60	3.0
	Single-Phase 100	60	0.55	55	3050	2.6	91.8	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	

Details of safety standards → Page H-2

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

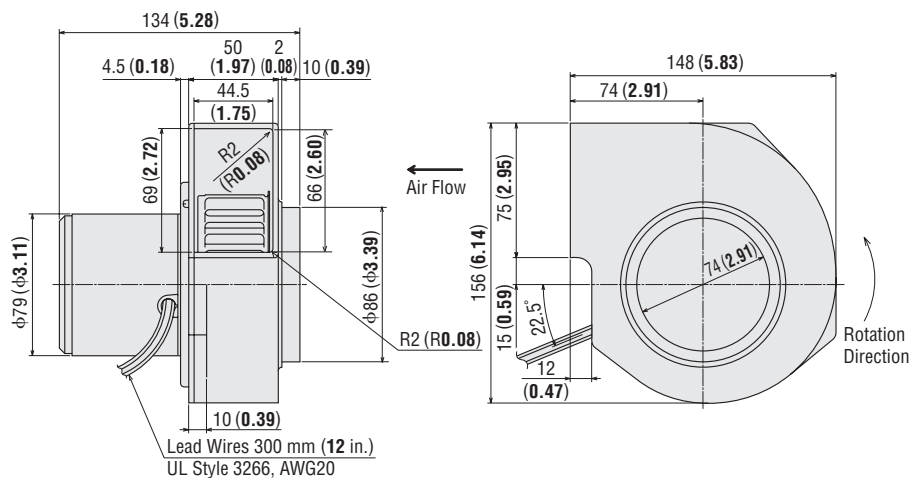
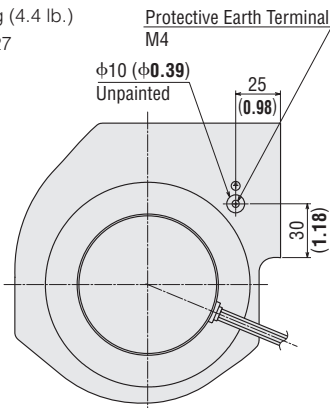
Air Flow – Static Pressure Characteristics



Dimensions Unit = mm (in.)

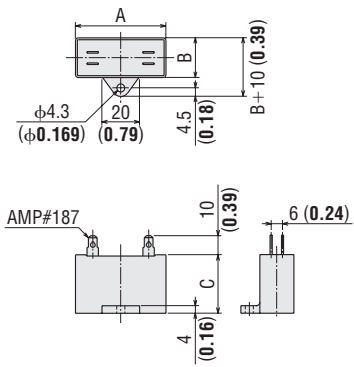
Mass: 2 kg (4.4 lb.)

DXF E027





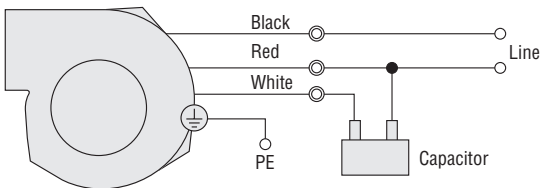
## Capacitor (Included)



## 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 F-129

## Thermostats

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

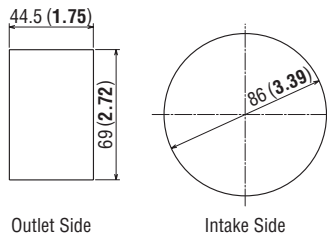


**RoHS**

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

Page → F-113

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



Outlet Side

Intake Side

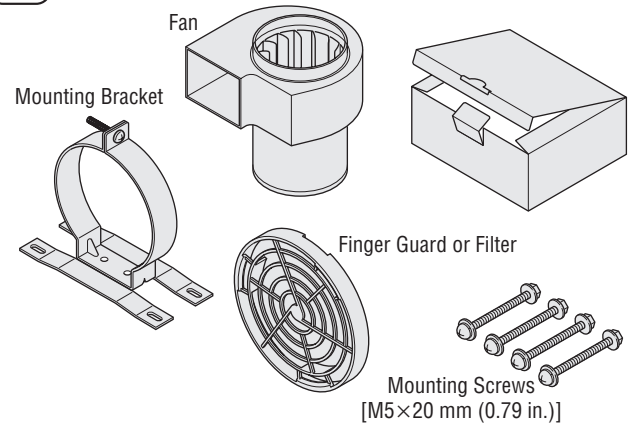
## Accessories

Product	Model	Page
Finger Guard	<b>FGB10</b>	F-118
Filter	<b>FLB10</b>	F-120
Mounting Bracket	<b>PAS4B</b>	F-125
Duct Joint	<b>FD10</b>	F-126

## Fan Kit

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

**RoHS**



## 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)

See page F-86 to determine base fan required (Voltage) and page F-81 for fan kits product number code.

AC Centrifugal Blower  
MB Series

Impeller Diameter  
φ80 mm (φ3.15 in.)



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

AC Input  
φ60 mm (φ2.36 in.)  
φ80 mm (φ3.15 in.)  
φ100 mm (φ3.94 in.)  
φ120 mm (φ4.72 in.)  
φ160 mm (φ6.30 in.)

Specifications **RoHS**

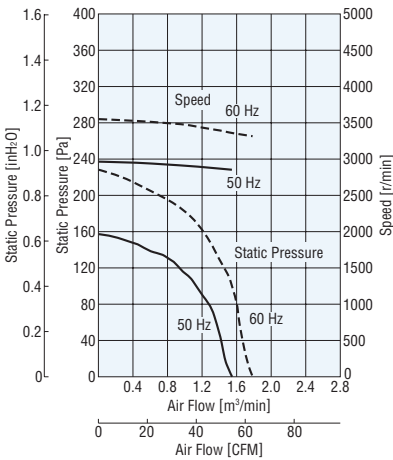


Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow m³/min	Max. Air Flow CFM	Max. Static Pressure Pa	Max. Static Pressure inH <sub>2</sub> O	Noise Level dB (A)	Capacitor μF
<b>MB840-B</b>	Single-Phase 100	50	0.29	28	2800	1.6	56.5	152	0.61	55	1.5
	Single-Phase 100	60	0.37	32	3150	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.
- Details of safety standards → Page H-2

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

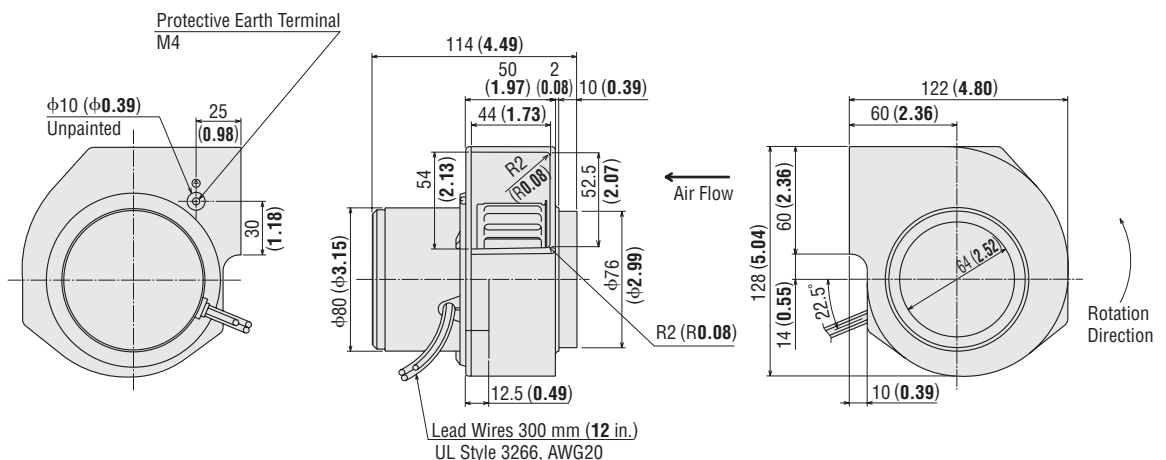
Air Flow – Static Pressure Characteristics



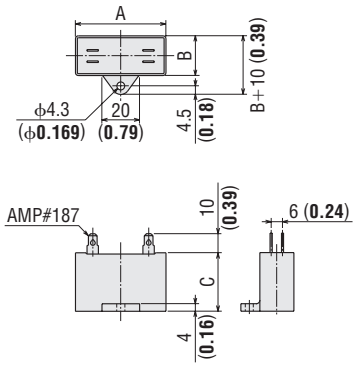
Dimensions Unit = mm (in.)

Mass: 1.3 kg (2.9 lb.)

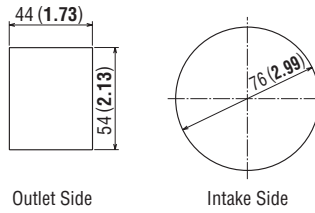
**DXF** E062



## ● Capacitor (Included)



## ■ Panel Cut-Out Unit = mm (in.)

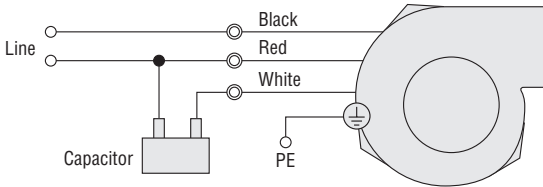


## ◇ Capacitor Dimensions Table

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

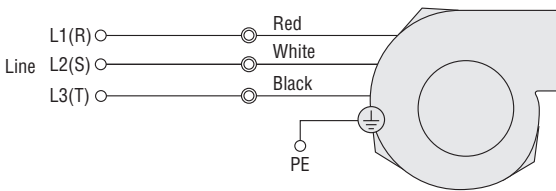
## ■ Connection Diagrams

### ● MB840-B, MB840-D



● How to connect a capacitor → Page F-129

### ● MB840-T



## ■ 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

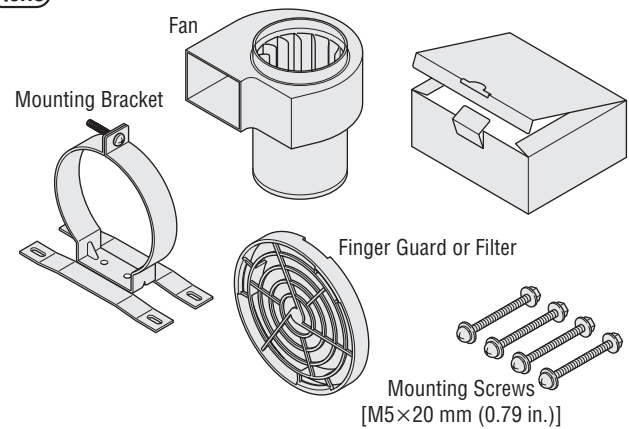
## ■ Accessories

Product	Model	Page
Finger Guard	<b>FGB8</b>	F-118
Filter	<b>FLB8</b>	F-120
Mounting Bracket	<b>PAS4B</b>	F-125
Duct Joint	<b>FD8</b>	F-126

## Fan Kit

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

**RoHS**



## ● 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)

● See page F-88 to determine base fan required (Voltage) and page F-81 for fan kits product number code.

AC Centrifugal Blower  
MB Series

Impeller Diameter  
φ60 mm (φ2.36 in.)



Operating Voltage Range: ±10%  
Materials  
Motor Case: Die Cast Aluminum  
Casing: Die Cast Aluminum  
Impeller: Aluminum  
Overheat Protection: Impedance Protected  
Bearings: Ball Bearings

φ60 mm (φ2.36 in.)  
φ120 mm (φ4.72 in.)  
φ100 mm (φ3.94 in.)  
φ80 mm (φ3.15 in.)  
φ60 mm (φ2.36 in.)  
φ50 mm (φ1.97 in.)

AC Input

Specifications (RoHS)

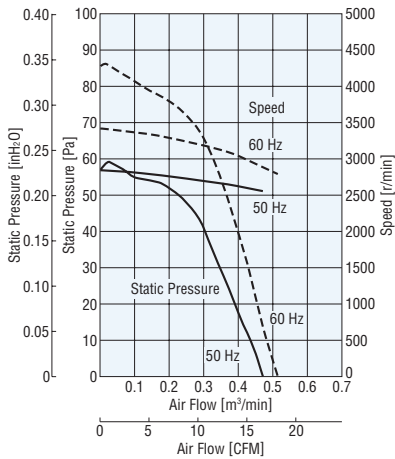


Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
						m³/min	CFM	Pa	inH <sub>2</sub> O	
<b>MB630-B</b>	Single-Phase 100	50	0.11	8.0	2300	0.44	15.5	53	0.213	37
	Single-Phase 100	60	0.11	8.0	1900	0.36	12.7	76	0.305	33
	Single-Phase 110	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

Details of safety standards → Page H-2

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

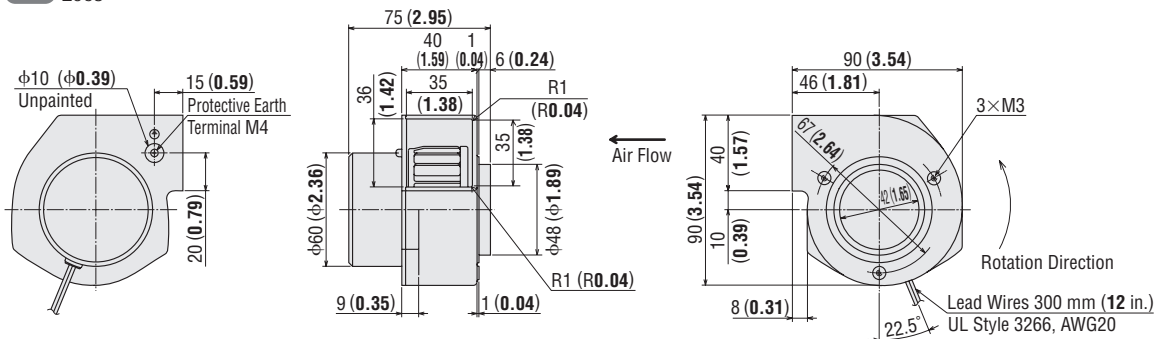
Air Flow – Static Pressure Characteristics



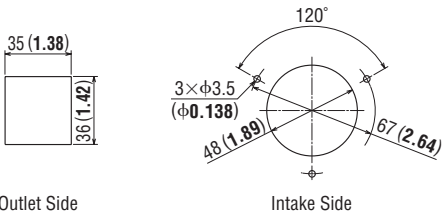
Dimensions Unit = mm (in.)

Mass: 0.5 kg (1.1 lb.)

DXF E063



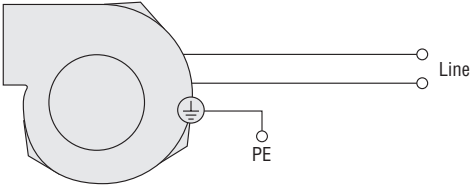
## Panel Cut-Out Unit = mm (in.)



Outlet Side

Intake Side

## Connection Diagram



## Thermostats

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



RoHS

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

● Page → F-113

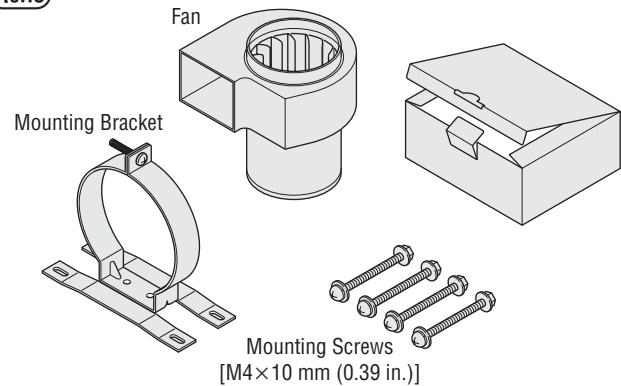
## Accessories

Product	Model	Page
Mounting Bracket	<b>PAS2B</b>	F-125

## Fan Kit

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

RoHS



## Product Line

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

● See page F-90 to determine base fan required (Voltage) and page F-81 for fan kits product number code.

# AC Centrifugal Blower MB Series

## Impeller Diameter φ50 mm (φ1.97 in.)



Operating Voltage Range: ±10%  
Materials  
Motor Case: Die Cast Aluminum  
Casing: Die Cast Aluminum  
Impeller: Aluminum  
Overheat Protection: Impedance Protected  
Bearings: Ball Bearings

φ60 mm (φ2.30 in.)  
φ120 mm (φ4.72 in.)  
φ100 mm (φ3.94 in.)  
φ80 mm (φ3.15 in.)  
φ60 mm (φ2.36 in.)  
φ50 mm (φ1.97 in.)

AC Input

### Specifications RoHS

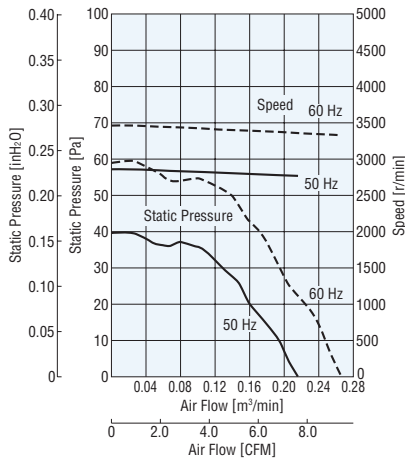


Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
						m³/min	CFM	Pa	inH <sub>2</sub> O	
<b>MB520-B</b>	Single-Phase 100	50	0.11	8	2600	0.21	7.41	37	0.149	33
	Single-Phase 100	60	0.10	7	3000	0.24	8.47	53	0.213	37
	Single-Phase 110	60	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

● Details of safety standards → Page H-2

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

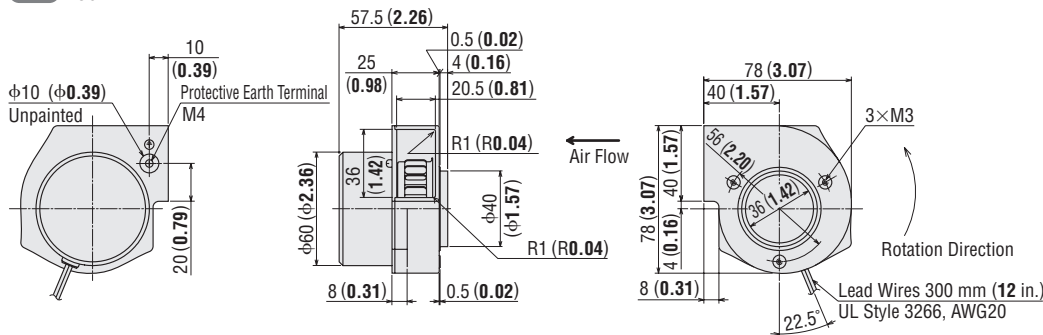
### Air Flow – Static Pressure Characteristics



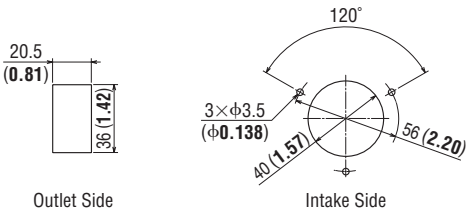
### Dimensions Unit = mm (in.)

Mass: 0.3 kg (0.7 lb.)

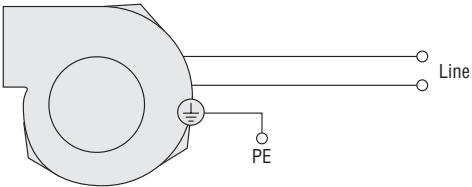
DXF E064



## 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 → F-113

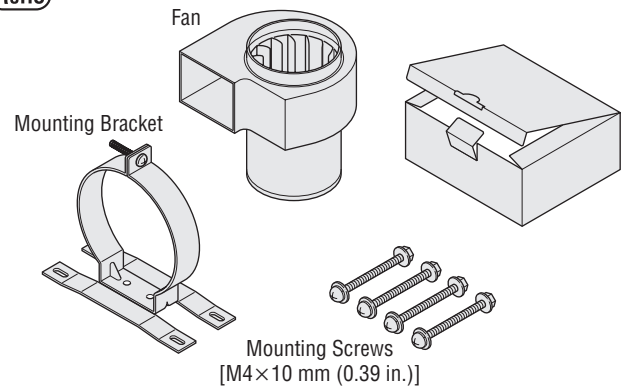
## Accessories

Product	Model	Page
Mounting Bracket	<b>PAS2B</b>	F-125

## Fan Kit

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

**RoHS**



## Product Line

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

● See page F-92 to determine base fan required (Voltage) and page F-81 for fan kits product number code.

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

DC Centrifugal Blower  
MBD Series

Impeller Diameter  
φ120 mm (φ4.72 in.)



Operating Voltage Range: ±10%  
Materials  
Motor Case: Die Cast Aluminum  
Casing: Die Cast Aluminum  
Impeller: Aluminum  
Overheat Protection: Built-in Overheat Protection Circuit  
Bearings: Ball Bearings

φ120 mm (φ4.72 in.)  
φ100 mm (φ3.94 in.)  
φ80 mm (φ3.15 in.)

DC Input

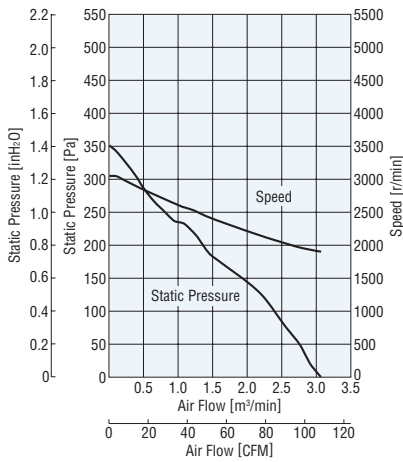
Specifications (RoHS)

Function	Model	Voltage VDC	Current A	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	
Low-Speed Alarm, Contact Alarm Type (Alarm specifications: ⑦)	<b>MBD12-24A</b>	24	1.5	1900	3.0	106	372	1.49	58
Standard Type	<b>MBD12-24</b>	24	1.5	1900	3.0	106	372	1.49	58

● Alarm specifications ⑦ → Page F-22

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

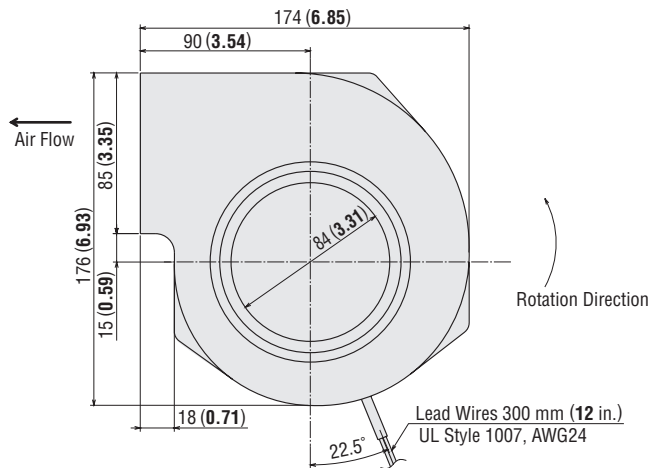
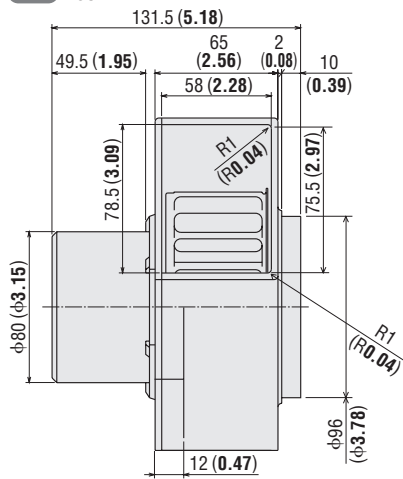
Air Flow – Static Pressure Characteristics



Dimensions Unit = mm (in.)

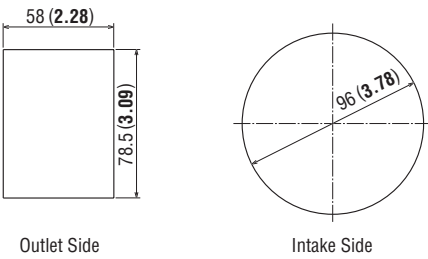
Mass: 1.5 kg (3.3 lb.)

DXF E031





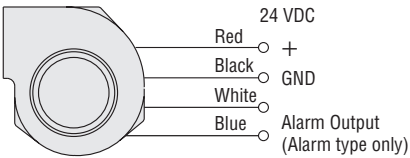
## Panel Cut-Out Unit = mm (in.)



Outlet Side

Intake Side

## Connection Diagram



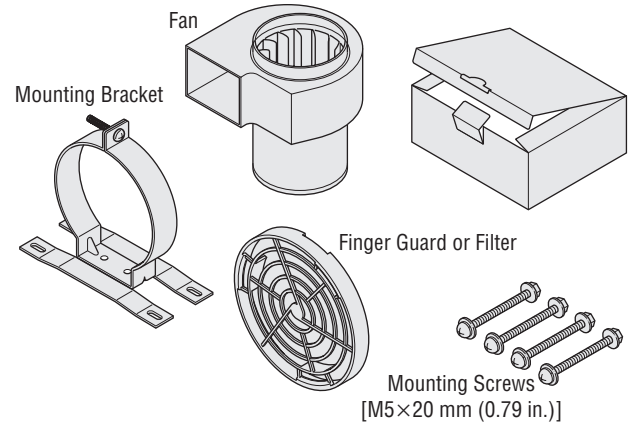
## Accessories

Product	Model	Page
Finger Guard	<b>FGB12</b>	F-118
Filter	<b>FLB12</b>	F-120
Mounting Bracket	<b>PAS4B</b>	F-125
Duct Joint	<b>FD12</b>	F-126

## Fan Kit

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

**(RoHS)**



## Product Line

Fan Kit Model
<b>T-MBD12-24A-GA</b>
<b>T-MBD12-24A-FA</b>
<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)
- See page F-94 to determine base fan required (Voltage/Alarm) and page F-81 for fan kits product number code.

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

DC Centrifugal Blower  
MBD Series

Impeller Diameter  
φ100 mm (φ3.94 in.)



Operating Voltage Range: ±10%  
Materials  
Motor Case: Die Cast Aluminum  
Casing: Die Cast Aluminum  
Impeller: Aluminum  
Overheat Protection: Built-in Overheat Protection Circuit  
Bearings: Ball Bearings

φ120 mm (φ4.72 in.)  
φ100 mm (φ3.94 in.)  
φ80 mm (φ3.15 in.)

DC Input

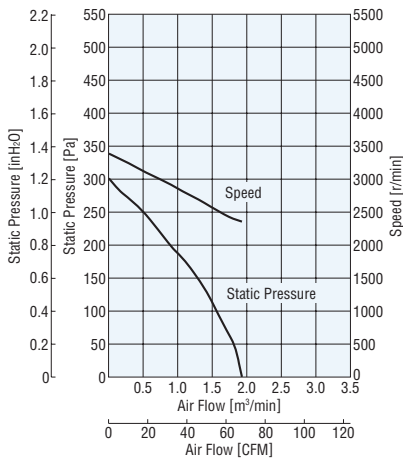
Specifications (RoHS)

Function	Model	Voltage VDC	Current A	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	
Low-Speed Alarm, Contact Alarm Type (Alarm specifications: ⑦)	<b>MBD10-24A</b>	24	1.0	2400	1.95	68.8	294	1.18	56
Pulse Sensor Type (Alarm specifications: ⑧)	<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						

● Alarm specifications ⑦, ⑧ → Page F-22

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

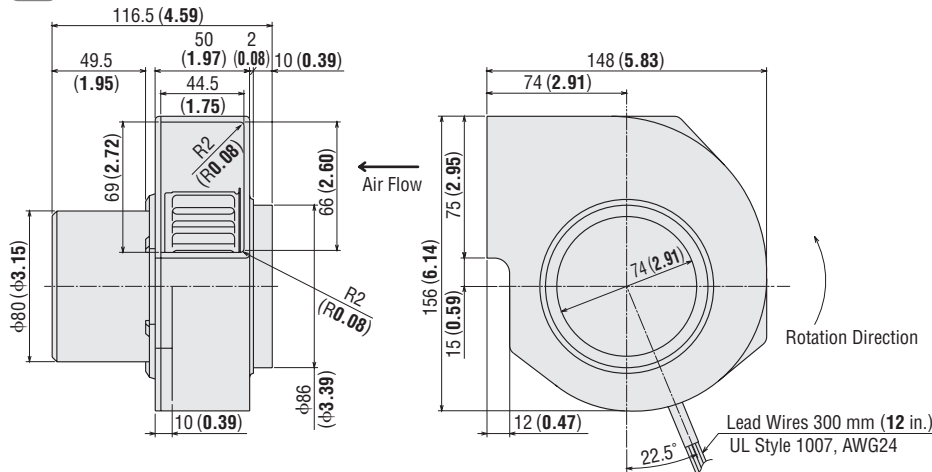
Air Flow – Static Pressure Characteristics



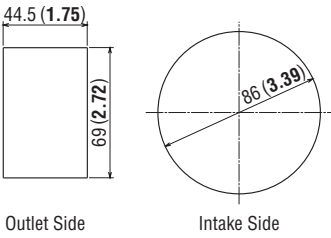
Dimensions Unit = mm (in.)

Mass: 1.2 kg (2.6 lb.)

DXF E032

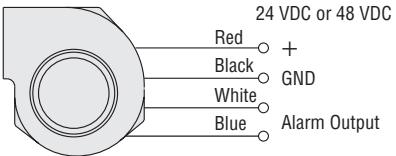


## Panel Cut-Out Unit = mm (in.)

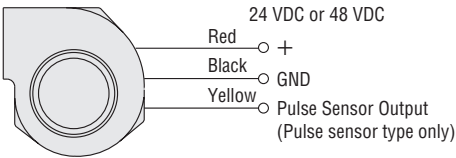


## Connection Diagrams

### Low-Speed Alarm, Contact Alarm Type



### Pulse Sensor Type, Standard Type



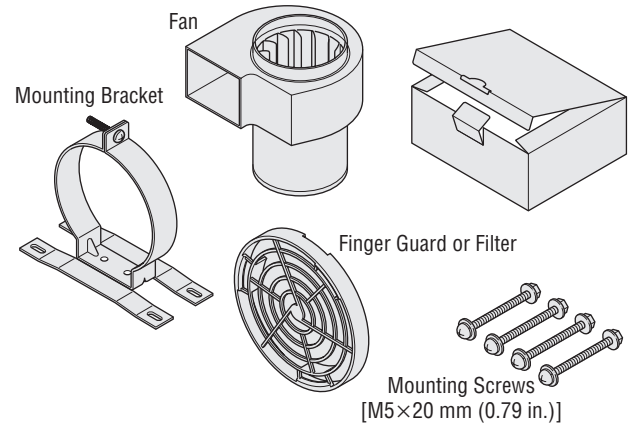
## Accessories

Product	Model	Page
Finger Guard	<b>FGB10</b>	F-118
Filter	<b>FLB10</b>	F-120
Mounting Bracket	<b>PAS4B</b>	F-125
Duct Joint	<b>FD10</b>	F-126

## Fan Kit

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

RoHS



### 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)

●See page F-96 to determine base fan required (Voltage/Alarm) and page F-81 for fan kits product number code.

DC Centrifugal Blower  
MBD Series

Impeller Diameter  
φ80 mm (φ3.15 in.)



Operating Voltage Range: ±10%  
Materials  
Motor Case: Die Cast Aluminum  
Casing: Die Cast Aluminum  
Impeller: Aluminum  
Overheat Protection: Built-in Overheat Protection Circuit  
Bearings: Ball Bearings

φ120 mm (φ4.72 in.)  
φ100 mm (φ3.94 in.)  
φ80 mm (φ3.15 in.)

DC Input

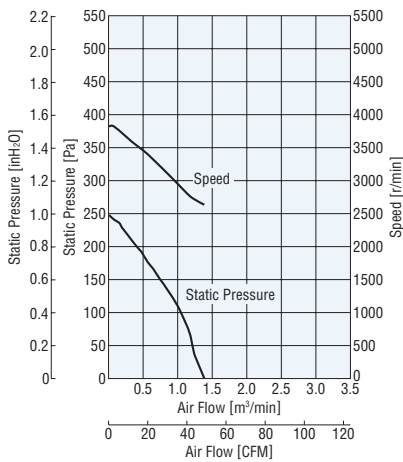
Specifications (RoHS)

Function	Model	Voltage VDC	Current A	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	
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
Pulse Sensor Type (Alarm specifications: ㉟)	<b>MBD8-24S</b>	24	0.7	2600	1.45	51.2	196	0.786	51
	<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						

● Alarm specifications ㉞, ㉟ → Page F-22

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

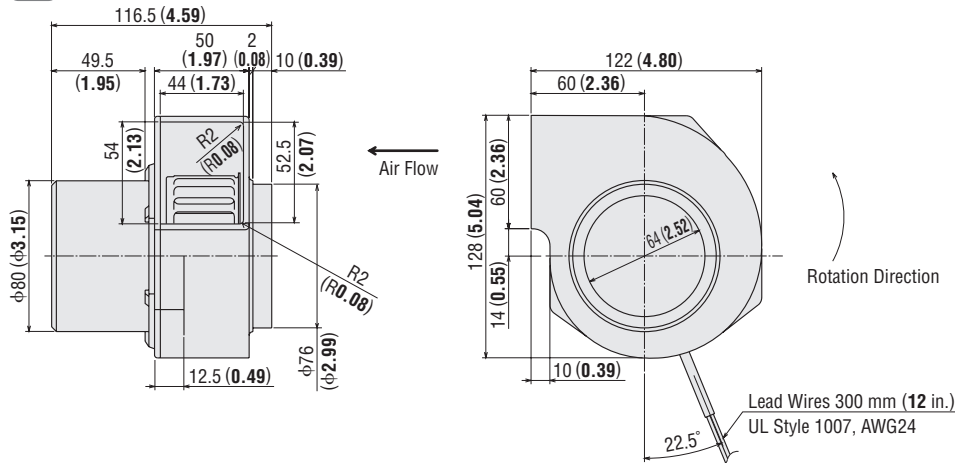
Air Flow – Static Pressure Characteristics



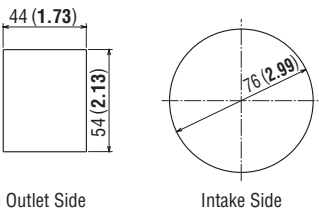
Dimensions Unit = mm (in.)

Mass: 1.1 kg (2.4 lb.)

DXF E033



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

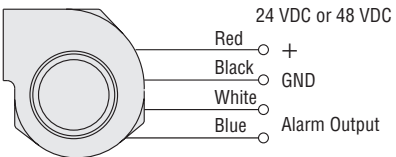


Outlet Side

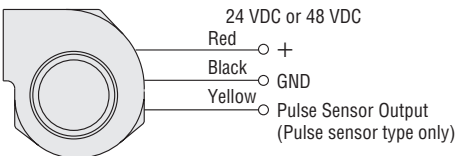
Intake Side

## Connection Diagrams

### Low-Speed Alarm, Contact Alarm Type



### Pulse Sensor Type, Standard Type



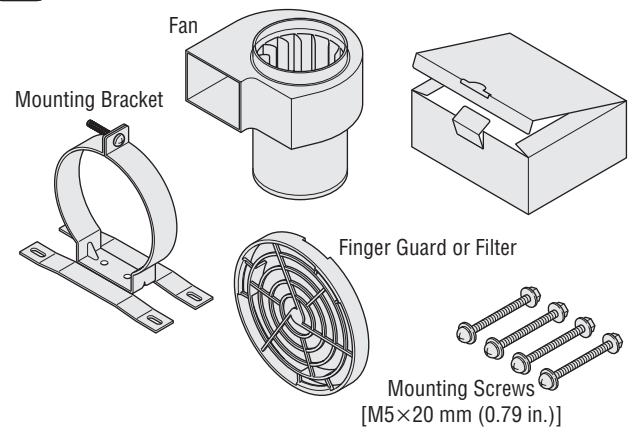
## Accessories

Product	Model	Page
Finger Guard	<b>FGB8</b>	F-118
Filter	<b>FLB8</b>	F-120
Mounting Bracket	<b>PAS4B</b>	F-125
Duct Joint	<b>FD8</b>	F-126

## Fan Kit

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

**RoHS**



### 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)

● See page F-98 to determine base fan required (Voltage/Alarm) and page F-81 for fan kits product number code.

