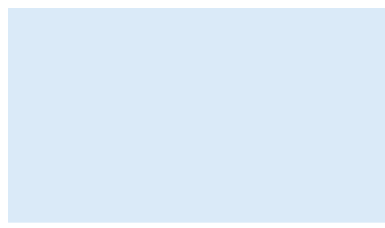


Cooling Fans

Axial Flow Fans



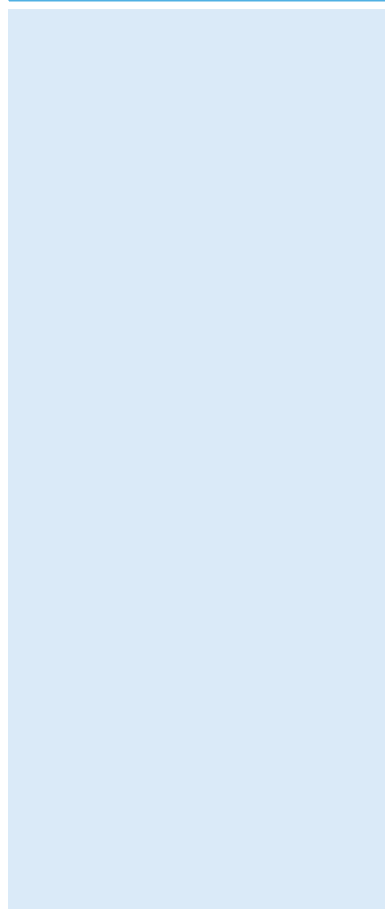
AC Input
MRS Series

AC Input
Variable Flow **MRS Series**

AC Input
MU Series

DC Input
Long-Life **MDE Series**

DC Input
MDS Series
MD Series



Introduction

FM
Cooling Module

AC Input
MRS

AC Input
Variable Flow
MRS

AC Input
MU

DC Input
Long-Life
MDE

DC Input
MDS/MD

AC Input
MB

DC Input
MBD

AC Input
MF

DC Input
MFD

Thermostats

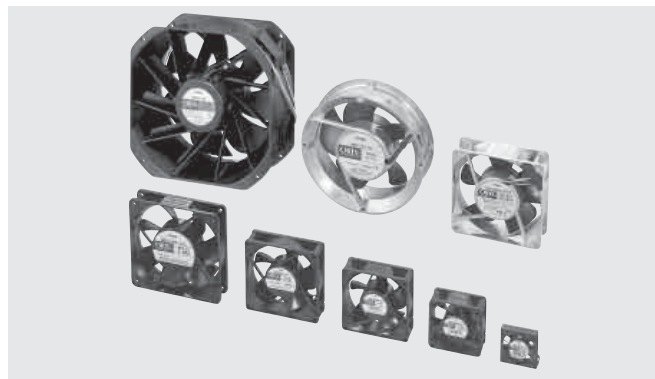
Accessories

Installation

	Page
Introduction	E-46
MRS Series	E-54
Variable Flow MRS Series	E-68
MU Series	E-70
MDE Series	E-78
MDS Series	E-80
MD Series	E-80

Introduction	E-46
MRS Series	E-54
Variable Flow MRS Series	E-68
MU Series	E-70
MDE Series	E-78
MDS Series	E-80
MD Series	E-80

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



Features

● Extensive Lineup

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

● Connector Types are Available.






Connector Types are available for □180 mm (□7.09 in.) **MRS** Series, **MDS** Series and **MD** Series.

By terminating the leads with a connector, the wiring process is simplified and maintenance replacement is easy.

● Built-in Alarm Circuit

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

Types of Axial Flow Fans

Series	Features
AC Axial Flow Fans MRS Series → Pages E-54~E-67 	<ul style="list-style-type: none"> ● AC Axial Flow Fans ● Large axial flow fans with large air flow, high static pressure and high efficiency. ● The MRS Series is recognized by UL/CSA Standards and conforms to EN Standards. (Certification status differs according to the product.) CE Marking is used in accordance with the Low Voltage Directive. ● RoHS-Compliant The MRS Series conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.
AC Axial Flow Fans MRS Series Variable Flow Type → Pages E-68~E-69 	<ul style="list-style-type: none"> ● AC Axial Flow Fans ● An internal power control device allows adjustment of airflow.
AC Axial Flow Fans MU Series → Pages E-70~E-77 	<ul style="list-style-type: none"> ● Compact AC axial flow fans ● The MU Series is recognized by UL/CSA Standards and the Electrical Appliance and Material Safety Law (Japan), and conforms to EN Standards. (Certification status differs according to the product.) CE Marking is used in accordance with the Low Voltage Directive. ● RoHS-Compliant The MU Series conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.
DC Long-Life Fans MDE Series → Pages E-78~E-79 	<ul style="list-style-type: none"> ● Compact DC axial flow fans ● The MDE Series is recognized by UL/CSA Standards and conforms to EN Standards. CE Marking is used in accordance with the EMC Directive. ● RoHS-Compliant The MDE Series conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.
DC Axial Flow Fans MDS Series MD Series → Pages E-80~E-97 	<ul style="list-style-type: none"> ● DC axial flow fans ● The MDS and MD Series is recognized by UL/CSA Standards and conforms to EN Standards. CE Marking is used in accordance with the EMC Directive. (Certification status differs according to the product.) ● RoHS-Compliant The MDS and MD Series conform to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.

● Details of safety standards → Page G-2 ● List of safety standard approved products (Model, Standards, File No., Certification Body) → Page G-11 ● Details of RoHS Directive → Page G-38

Lineup

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

Series	Power Supply Voltage	Frame Size [mm (in.)]											
		□250 (□9.84)	□200 (□7.87)	□180 (□7.09)	φ172 (φ6.77)	□160 (□6.30)	□140 (□5.51)	□119 (□4.69)	□92 (□3.62)	□80 (□3.15)	□62 (□2.44)	□52 (□2.05)	□42 (□1.65)
AC Axial Flow Fans MRS Series → Pages E-54~E-67	Single-Phase 100/110/115 VAC	●■	●■	●■		●■							
	Single-Phase 200/220/230 VAC	●■	●■*	●■*		●■*							
	Three-Phase 200/220/230 VAC	●■	●■	●■		●■	●■						
AC Axial Flow Fans MRS Series Variable Flow Type → Pages E-68~E-69	Single-Phase 100/115 VAC			●									
	Single-Phase 220/230 VAC			●									
AC Axial Flow Fans MU Series → Pages E-70~E-77	Single-Phase 115 VAC							●	●	●			
	Single-Phase 220/230 VAC							●	●	●			
DC Long-Life Fans MDE Series → Pages E-78~E-79	12 VDC							■					
	24 VDC							■					
DC Axial Flow Fans MDS Series MD Series → Pages E-80~E-97	5 VDC											●	●
	12 VDC							●■	●■◆	●■◆	●■◆	●■	●■
	24 VDC				●■◆		●■◆	●■◆	●■◆	●■◆	●■◆	●■	●■
	48 VDC						●■◆						

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

Introduction

Cooling Module

FM

AC Input
MRSAC Input
Variable Flow
MRS

Axial Flow Fans

AC Input
MUDC Input
Long-Life
MDEDC Input
MDS/MDAC Input
MBDC Input
MBDAC Input
MFDC Input
MFD

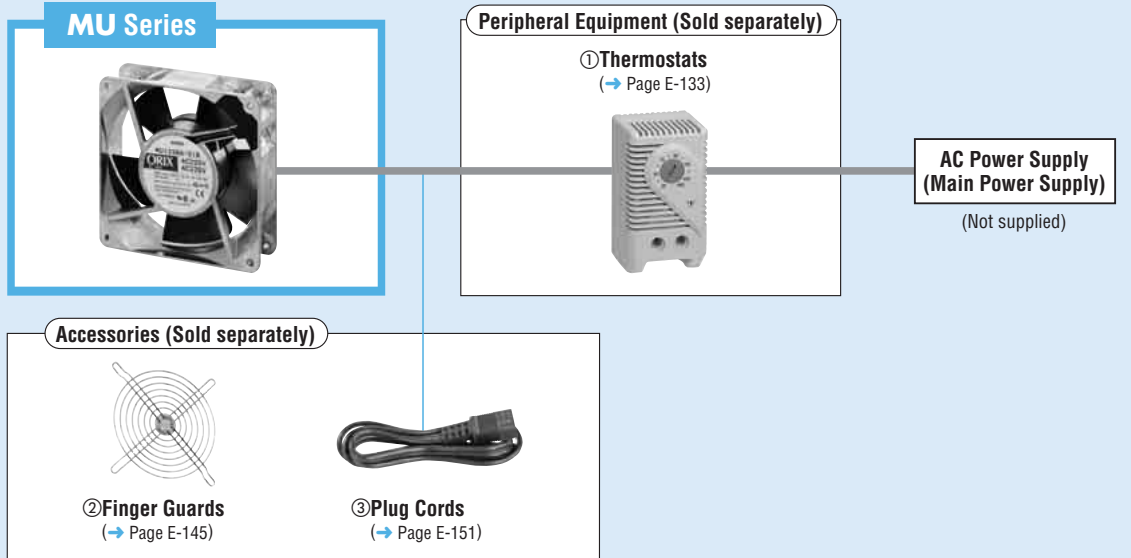
Thermostats

Accessories

Installation

System Configuration

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



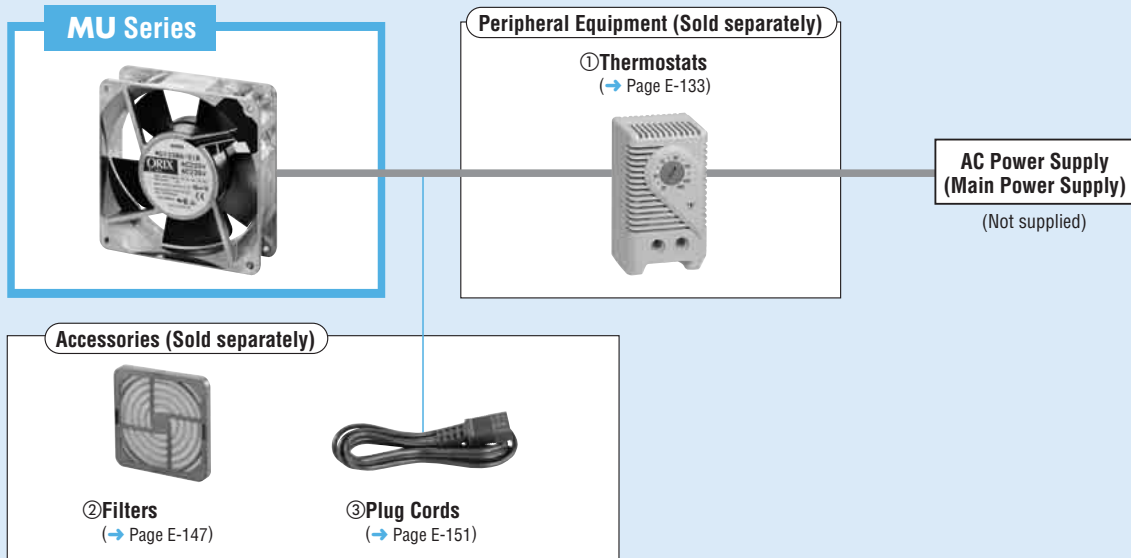
No.	Product Name	Overview	Page
①	Thermostats	Contact is ON and OFF in accordance with thermostat's set temperature. Using a fan with a thermostat provides on/off control of the fan.	E-133
②	Finger Guards	This guard prevents fingers and foreign objects from entering the fan.	E-145
③	Plug Cords for Connection to Power Supply	Insertion-type plug cord that can be used with the MU Series.	E-151

Example of System Configuration



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

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



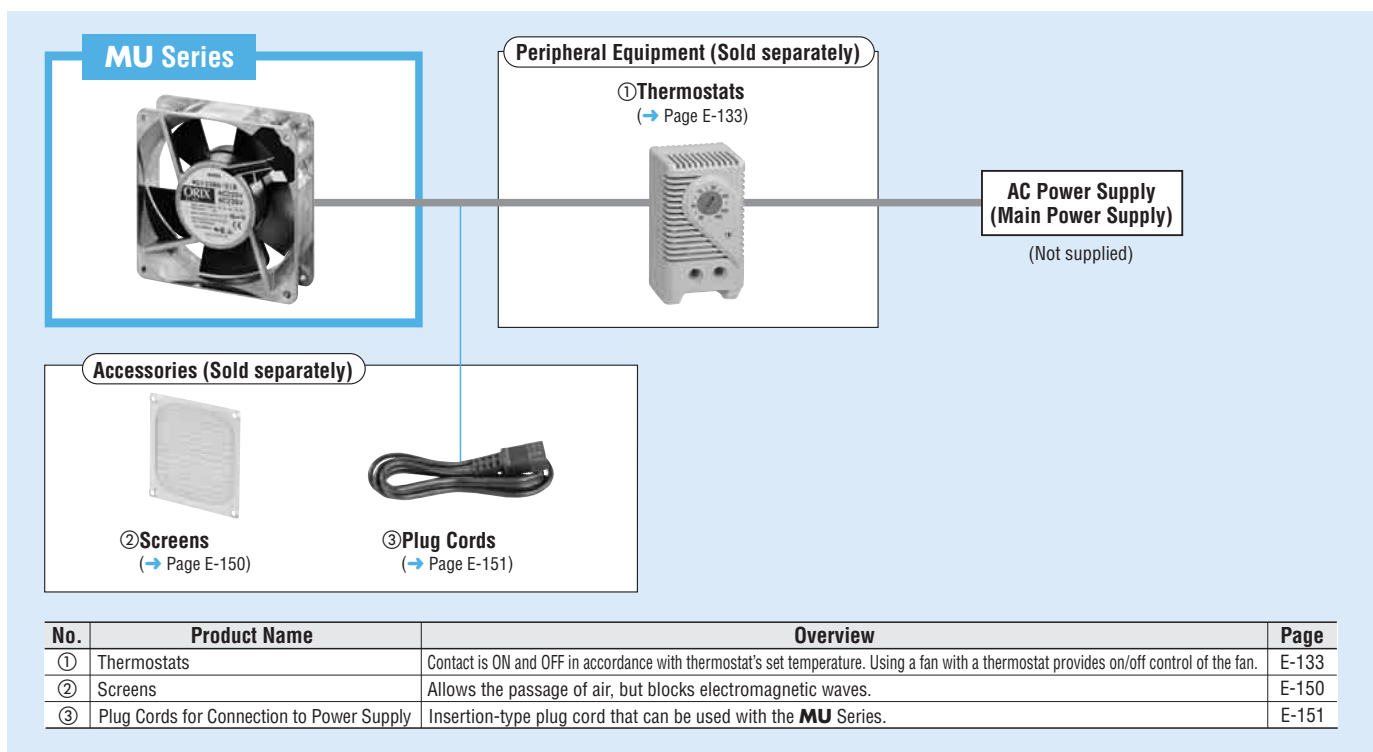
No.	Product Name	Overview	Page
①	Thermostats	Contact is ON and OFF in accordance with thermostat's set temperature. Using a fan with a thermostat provides on/off control of the fan.	E-133
②	Filters	This filter shuts out dust in the air.	E-147
③	Plug Cords for Connection to Power Supply	Insertion-type plug cord that can be used with the MU Series.	E-151

Example of System Configuration

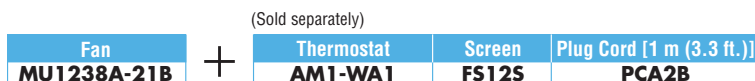


● The system configuration shown above is an example. Other combinations are available.

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



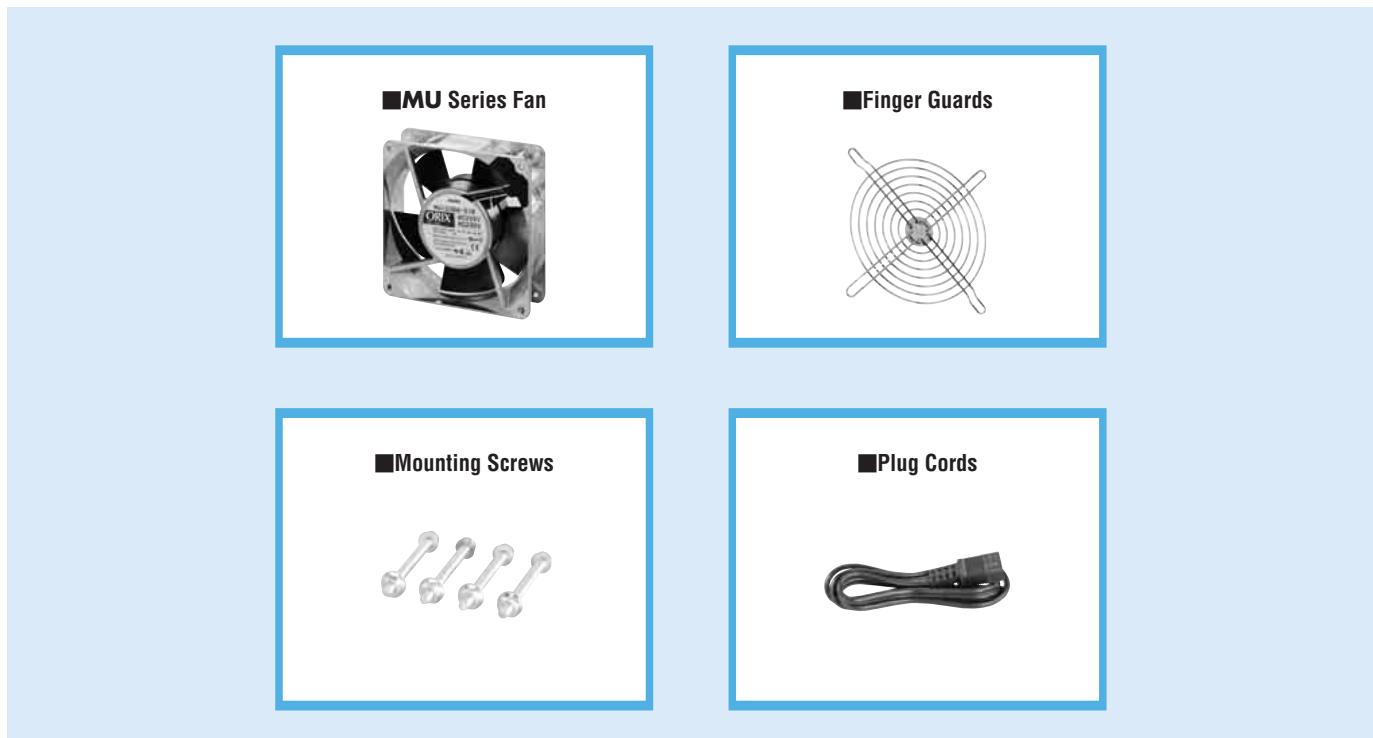
● **Example of System Configuration**



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

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

● Details of fan kits → Page E-140



Fan Kit	Package Contents			
	Fan	Finger Guard	Plug Cord [1 m (3.3 ft.)]	Mounting Screws
T-MU1238A-21-GP	MU1238A-21B	FG12D	PCA2B	M4×55

General Specifications

AC Axial Flow Fans

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.
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.
Temperature Rise	30°C (54°F) or less measured by the thermometer method after the temperature of the case has stabilized after continuous operation under normal ambient temperature and humidity.
Operating Voltage Range	±10% of the rated voltage
Insulation Class	UL, CSA: Class A [105°C (221°F)], EN: Class E [120°C (248°F)]
Overheat Protection	MRS Series has built-in thermal protector. (automatic return type) Open: 120±5°C (248±9°F), Close: 77±15°C (170.6±27°F) MU Series is impedance protected.
Ambient Temperature	-10~+60°C (+14~+140°F)
Ambient Humidity	85% or less (non-condensing)
Color	MRS Series Frame: Black Blades: Black MU Series Frame: Unpainted (Aluminum) Blades: Black
Materials	Frame: Die cast aluminum Blades: Polycarbonate (Flammability grade: V-0)

DC Axial Flow Fans

Item	Specifications
Insulation Resistance	10 MΩ or more when 250 VDC megger (For MDS1751-24B , -24S , MDS1451 : 500 VDC megger) is applied between the windings and the frame after continuous operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 500 V at 50 Hz applied between the windings and the frame for 1 minute after continuous operation under normal ambient temperature and humidity.
Temperature Rise	10°C (18°F) or less measured by the thermometer method after the temperature of the case has stabilized after continuous operation under normal ambient temperature and humidity. (MDS1751 : 5°C [9°F] or less, MDS1451 : 15°C [27°F] or less)
Operating Voltage Range	±15% of the rated voltage MDS510 , MDS410 , MDS1225-12M , -24M : ±10% of the rated voltage
Insulation Class	UL, CSA: Class A [105°C (221°F)], EN: Class E [120°C (248°F)]
Overheat Protection	Built-in overheat protection circuit
Ambient Temperature	-10~+60°C (+14~+140°F)
Ambient Humidity	85% or less (non-condensing)
Color	Frame: Black: MD925 , MD825 , MD625 , MDS510 , MDS410 , MDE1225 Unpainted (Aluminum): MDS1751 , MDS1451 , MDS1225 , MD1225 Blades: Black
Materials	Fan Frame: Die cast aluminum: MDS1751 , MDS1451 , MDS1225 , MDE1225 , MD1225 Polycarbonate (Flammability grade V-0): MD925 , MD825 , MD625 , MDS510 , MDS410 Blades: Polycarbonate (Flammability grade V-0): MDS1751 , MDS1451 , MDS1225 , MDE1225 , MD1225 , MD925 , MD825 , MD625 PBT (Flammability grade: V-0): MDS510 , MDS410

Product Number Code

AC Axial Flow Fans

◇ MRS Series

MRS 18 □ - B M H

① ② ③ ④ ⑤ ⑥

①	Series	MRS: MRS Series
②	Frame Size	14: 140 mm (5.51 in.) 16: 160 mm (6.30 in.) 18: 180 mm (7.09 in.) 20: 200 mm (7.87 in.) 25: 250 mm (9.84 in.)
③		V: Variable Flow
④	Power Supply Voltage	B: Single-Phase 100/110/115 VAC D: Single-Phase 200/220/230 VAC T: Three-phase 200/220/230 VAC
⑤	Additional Functions	M: Low-Speed Alarm, Electronic Alarm Type B: Low-Speed Alarm, Contact Alarm Type TM: Low-Speed Alarm, Electronic Alarm Type TA: Low-Speed Alarm, Contact Alarm Type UL: Standard Type
⑥	Connection Type	Blank: Connection with lead wire type or terminal box type H: Connector Type

◇ MU Series

MU 12 38 A - 2 1 B

① ② ③ ④ ⑤ ⑥ ⑦

①	Series	MU: MU Series
②	Frame Size	8: 80 mm (3.15 in.) 9: 92 mm (3.62 in.) 12: 119 mm (4.69 in.)
③	Frame Thickness	25: 25 mm (0.98 in.) 38: 38 mm (1.50 in.)
④	Speed Type	A, S: Standard Speed M, B: Middle Speed L: Low Speed
⑤	Power Supply Voltage	2: Single-Phase 115 VAC 5: Single-Phase 220/230 VAC
⑥	Power Connection	1: 2-Terminal 3: Lead Wire Type
⑦	Reference Number	

DC Axial Flow Fans

◇ MDE, MDS and MD Series

MD 9 25 A - 12 L H

① ② ③ ④ ⑤ ⑥ ⑦

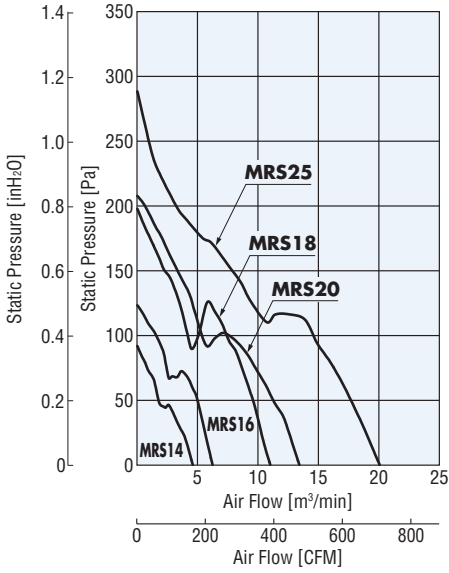
①	Series	MDE: MDE Series MDS: MDS Series MD: MD Series
②	Frame Size	4: 42 mm (1.65 in.) 5: 52 mm (2.05 in.) 6: 62 mm (2.44 in.) 8: 80 mm (3.15 in.) 9: 92 mm (3.62 in.) 12: 119 mm (4.69 in.) 14: 140 mm (5.51 in.) 17: ϕ 172 mm (ϕ 6.77 in.)
③	Frame Thickness	10: 10 mm (0.39 in.) 25: 25.4 mm (1.00 in.) 51: 51 mm (2.01 in.)
④	Speed Type	Blank, A, B: Standard Speed AM, BM: Middle Speed AL, BL: Low Speed
⑤	Power Supply Voltage	5: 5 VDC 12: 12 VDC 24: 24 VDC 48: 48 VDC
⑥	Additional Functions	B: Low-Speed Alarm, Contact Alarm Type M: Low-Speed Alarm, Electronic Alarm Type L: Stall Alarm, Electronic Alarm Type S: Pulse Sensor Type
⑦	Connection Type	Blank: Lead wire type H: Connector Type

Comparison of Characteristics

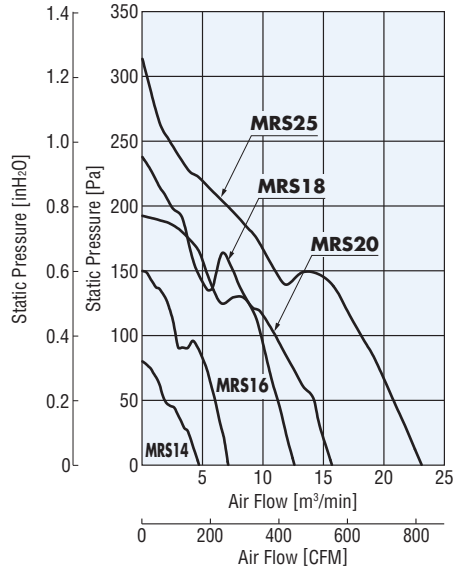
AC Axial Flow Fans

◇ MRS Series

• 50 Hz

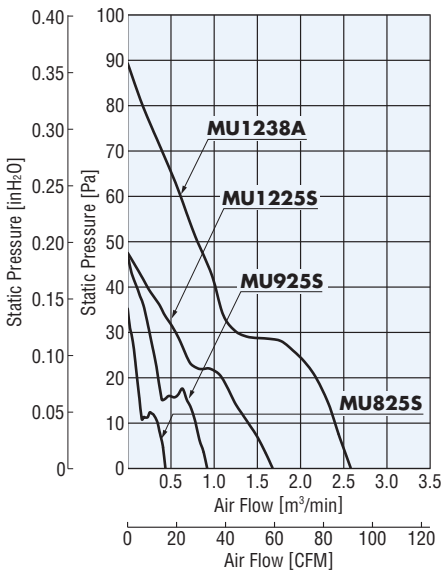


• 60 Hz

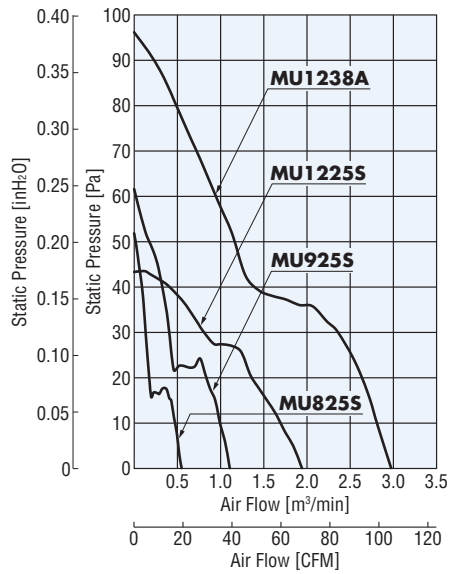


◇ MU Series

• 50 Hz

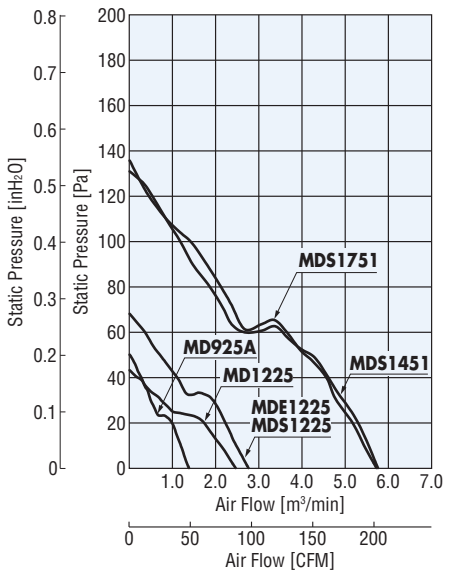


• 60 Hz

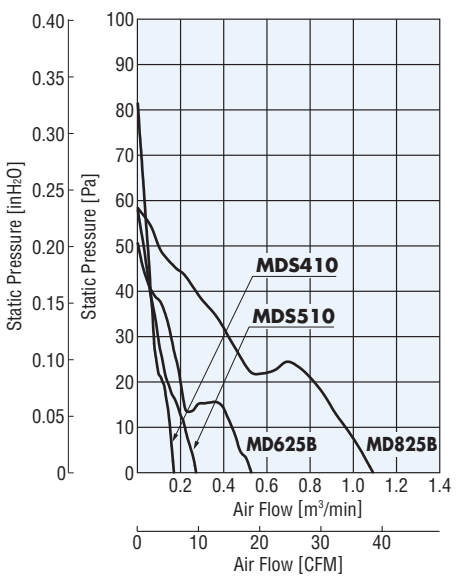


● DC Axial Flow Fans

- **MDS1751**
- **MDS1451**
- **MDS1225**
- **MDE1225**
- **MD1225**
- **MD925A**



- **MD825B**
- **MD625B**
- **MDS510**
- **MDS410**



Introduction

Cooling Module

AC Input MRS

AC Input Variable Flow MRS

AC Input MU

DC Input Long-Life MDE

DC Input MDS/MD

AC Input MB

DC Input MBD

AC Input MF

DC Input MFD

Thermostats

Accessories

Installation

MRS Series

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



Ambient Temperature: $-10 \sim +60^{\circ}\text{C}$ ($+14 \sim +140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Thermal Protector
 Bearings: Ball Bearings

Specifications RoHS



Model			Voltage	Frequency	Current	Input	Speed	Max. Air Flow		Max. Static Pressure		Noise Level	Capacitor
Low-Speed Alarm		Standard Type						m ³ /min	CFM	Pa	inH ₂ O		
Electronic Alarm Type (Alarm specifications: ②)	Contact Alarm Type (Alarm specifications: ⑤)			VAC	Hz	A	W	r/min					
MRS25-BM	MRS25-BB	MRS25-B	Single-Phase 100	50	0.8	80	2800	21	742	290	1.16	58	16
			Single-Phase 100	60	1.1	110	3220	24	848	320	1.28	62	
			Single-Phase 110	60	1.1	120	3280	24	848	340	1.36	62	
			Single-Phase 115	60	1.1	125	3300	24	848	360	1.45	62	
MRS25-DM	MRS25-DB	MRS25-D	Single-Phase 200	50	0.4	85	2790	21	742	290	1.16	58	4.5
			Single-Phase 200	60	0.7	120	3220	24	848	320	1.28	62	
			Single-Phase 220	50	0.4	95	2820	21	742	310	1.24	58	
			Single-Phase 220	60	0.7	130	3260	24	848	360	1.45	62	
			Single-Phase 230	50	0.5	100	2830	21	742	320	1.28	58	
			Single-Phase 230	60	0.7	135	3290	24	848	360	1.45	62	
MRS25-TM	MRS25-TB	MRS25-T	Three-Phase 200	50	0.4	70	2830	21	742	310	1.24	58	-
			Three-Phase 200	60	0.4	100	3270	24	848	360	1.45	62	
			Three-Phase 220	50	0.4	80	2850	21	742	320	1.28	58	
			Three-Phase 220	60	0.4	105	3320	25	883	390	1.57	62	
			Three-Phase 230	60	0.4	105	3340	25	883	410	1.65	63	

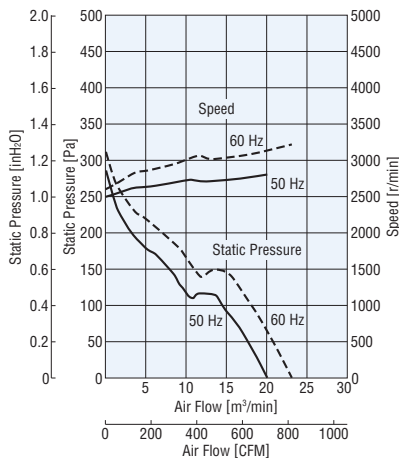
● How to read specifications → Page E-19 ● Alarm specifications ②, ⑤ → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

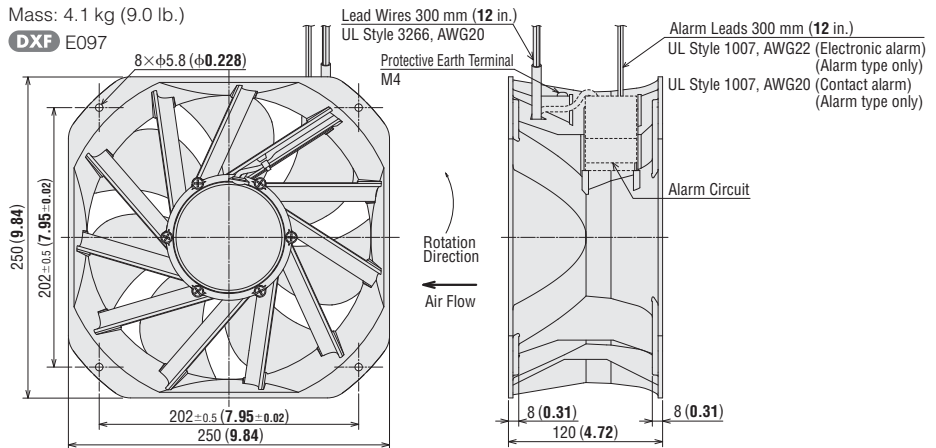
● How to read air flow – static pressure characteristics
 → Page E-20



Dimensions Unit = mm (in.)

Mass: 4.1 kg (9.0 lb.)

DXF E097



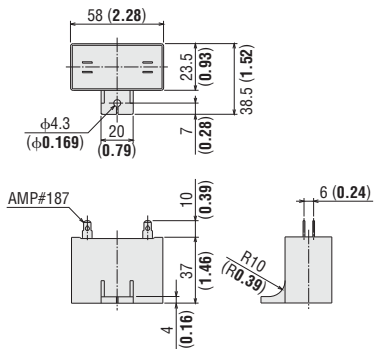
● Capacitor (Included)

◇ For **MRS25-B** and **MRS25-D**

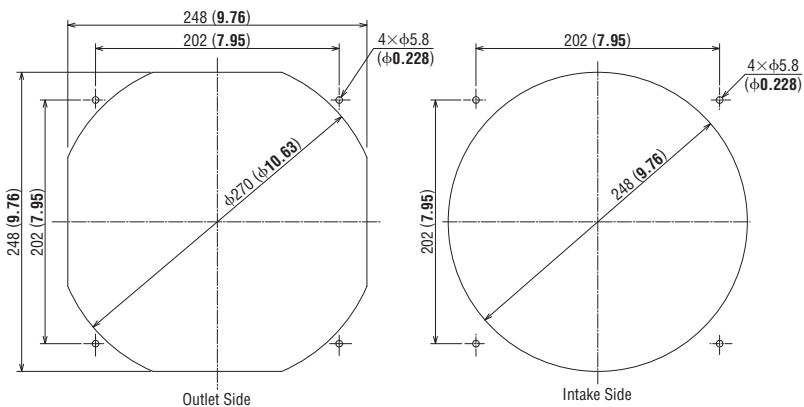
CH160CFAUL Mass: 75 g (2.6 oz.)

CH45BFAUL Mass: 73 g (2.6 oz.)

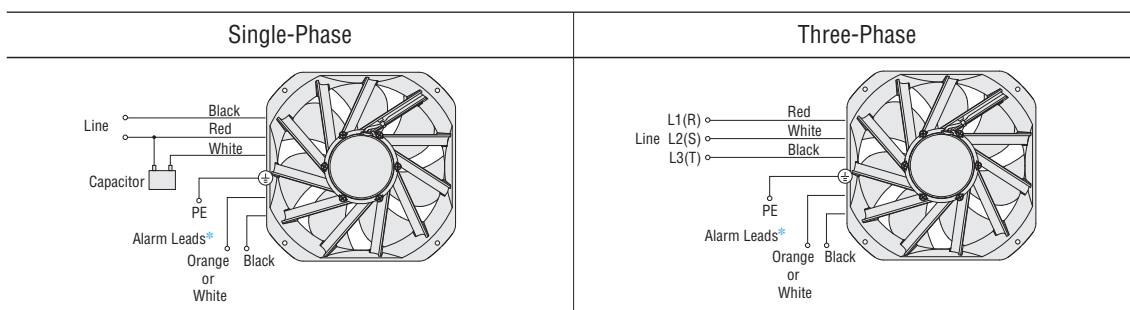
(A capacitor and capacitor cap are included with single-phase fans.)



■ Panel Cut-Out Unit = mm (in.)



■ Connection Diagrams



* Alarm type only

● How to connect a capacitor → Page E-158

■ Accessories

The following product is RoHS-Compliant.

Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	FG25D	Conformed component	E-145

■ Thermostats

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



(RoHS)

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

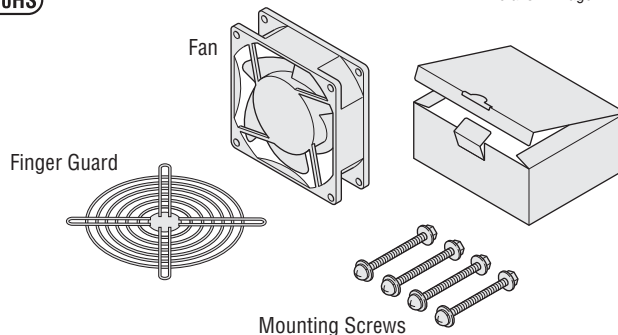
● Page → E-133

Fan Kit

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

Details → Page E-138

(RoHS)



● Product Line

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

MRS Series

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



Ambient Temperature: $-10 \sim +60^{\circ}\text{C}$ ($+14 \sim +140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Thermal Protector
 Bearings: Ball Bearings

Specifications (RoHS)



Model		Voltage	Frequency	Current	Input	Speed	Max. Air Flow		Max. Static Pressure		Noise Level	Capacitor
Low-Speed Alarm, Electronic Alarm Type (Alarm specifications: ②)	Standard Type						m ³ /min	CFM	Pa	inH ₂ O		
		VAC	Hz	A	W	r/min	m ³ /min	CFM	Pa	inH ₂ O	dB (A)	μF
MRS20-BM	MRS20-BUL	Single-Phase 100	50	0.8	75	2850	13.2	466	221	0.886	56	6.0
		Single-Phase 100	60	1.0	95	3350	15.5	547	186	0.746	60	
		Single-Phase 110	60	1.0	95	3400	15.5	547	255	1.02	61	
		Single-Phase 115	60	1.0	95	3400	15.5	547	265	1.06	61	
MRS20-DM	MRS20-DUL	Single-Phase 200	50	0.4	75	2850	13.2	466	221	0.886	56	6.0
		Single-Phase 200	60	0.5	95	3350	15.5	547	186	0.746	60	
		Single-Phase 230	60	0.5	95	3400	15.5	547	265	1.06	61	
MRS20-TM	MRS20-TUL	Three-Phase 200	50	0.4	75	2850	13.2	466	221	0.886	56	-
		Three-Phase 200	60	0.4	95	3350	15.5	547	265	1.06	60	
		Three-Phase 220	60	0.4	95	3400	15.5	547	265	1.06	61	
		Three-Phase 230	60	0.4	95	3400	15.5	547	265	1.06	61	

● How to read specifications → Page E-19 ● Alarm specifications ② → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

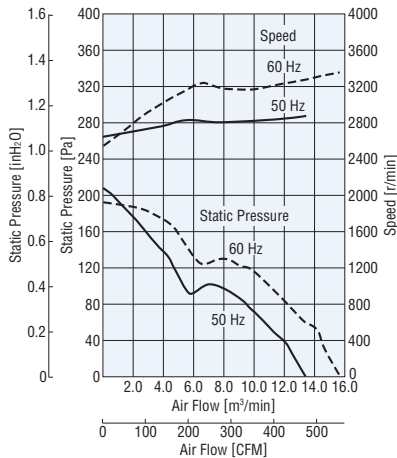
The following items are included in each product.

Fan, Capacitor*, Capacitor Cap*, Operating Manual

*Single-phase fans only

Air Flow – Static Pressure Characteristics

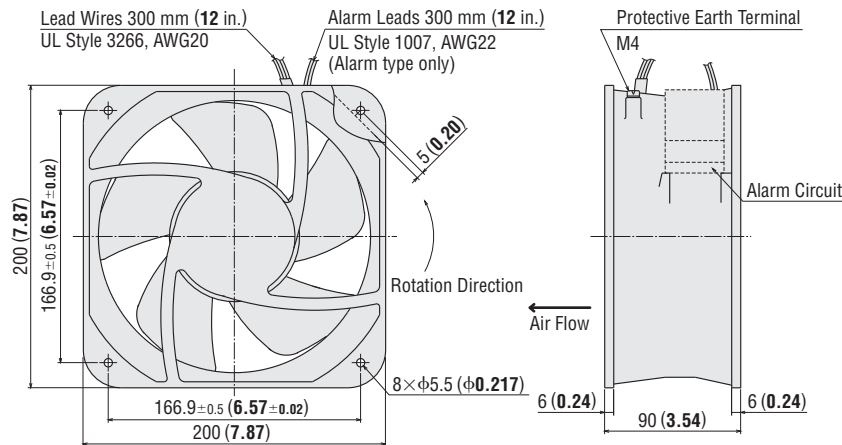
● How to read air flow – static pressure characteristics → Page E-20



Dimensions Unit = mm (in.)

Mass: 2.5 kg (5.5 lb.)

DXF E001

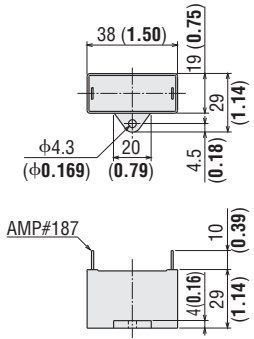


● Capacitor (Included)

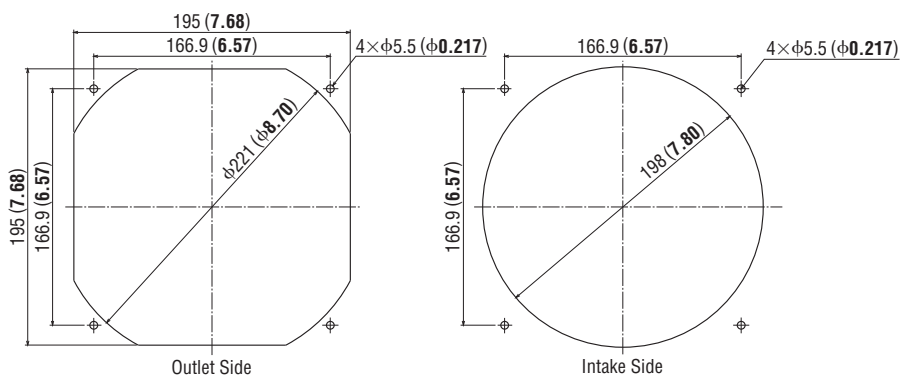
(A capacitor and capacitor cap are included with single-phase fans.)

◇ For **MRS20-B** and **MRS20-D**

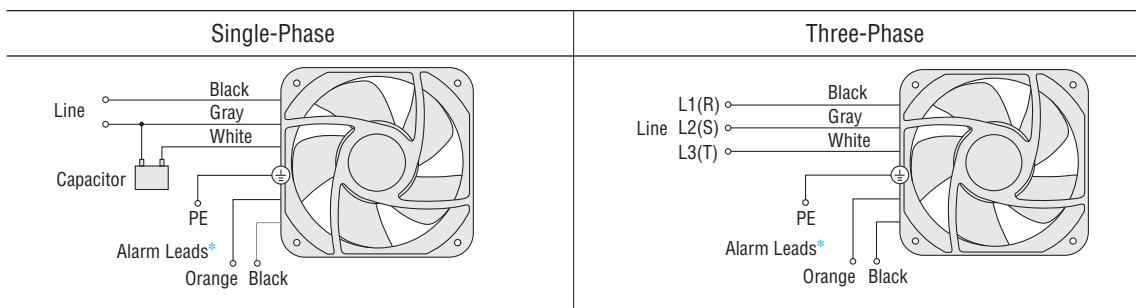
CH60UL Mass: 32 g (1.1 oz.)



■ Panel Cut-Out Unit = mm (in.)



■ Connection Diagrams



* Alarm type only
 ● How to connect a capacitor → Page E-157

■ Accessories

The following product is RoHS-Compliant.
 Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	FG20D	Conformed component	E-145

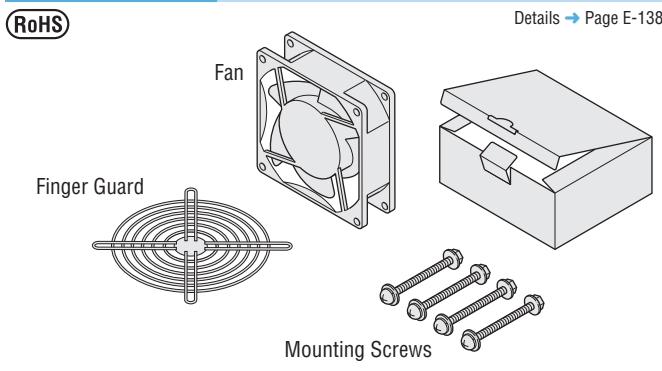
■ Thermostats

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

Fan Kit The lineup includes a product configuration containing all necessary accessories in one package. Details → Page E-138



● Product Line

Fan Kit Model	
T-MRS20-BM-G	T-MRS20-BUL-G
T-MRS20-DM-G	T-MRS20-DUL-G
T-MRS20-TM-G	T-MRS20-TUL-G

MRS Series

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



Connector Type

Terminal Box Type

Ambient Temperature: $-10 \sim +60^{\circ}\text{C}$ ($+14 \sim +140^{\circ}\text{F}$)Operating Voltage Range: $\pm 10\%$

Materials

Frame: Die Cast Aluminum

Blades: Polycarbonate (Flammability grade V-0)

Overheat Protection: Built-in Thermal Protector

Bearings: Ball Bearings



Specifications (RoHS)

Model			Voltage	Frequency	Current	Input	Speed	Max. Air Flow		Max. Static Pressure		Noise Level	Capacitor
Type	Connector Type	Terminal Box Type	VAC	Hz	A	W	r/min	m ³ /min	CFM	Pa	inH ₂ O	dB (A)	μF
Low-Speed Alarm, Electronic Alarm Type (Alarm specifications: ②)	MRS18-BMH	MRS18-BTM	Single-Phase 100	50	0.8	54.5	2850	11.0	388	196	0.786	56	6.0
			Single-Phase 100	60	1.0	76	3300	12.8	452	245	0.982	60	
			Single-Phase 110	60	1.0	81	3350	12.8	452	245	0.982	61	
			Single-Phase 115	60	1.0	84	3350	12.8	452	245	0.982	61	
	MRS18-DMH	MRS18-DTM	Single-Phase 200	50	0.4	54.5	2850	11.0	388	196	0.786	56	6.0
			Single-Phase 200	60	0.5	70	3300	12.8	452	245	0.982	60	
			Single-Phase 230	60	0.5	77	3350	12.8	452	245	0.982	61	
	MRS18-TMH	MRS18-TTM	Three-Phase 200	50	0.4	52	2850	11.0	388	196	0.786	56	-
			Three-Phase 200	60	0.4	70	3300	12.8	452	245	0.982	60	
			Three-Phase 220	60	0.4	74	3350	12.8	452	245	0.982	61	
			Three-Phase 230	60	0.4	76	3350	12.8	452	245	0.982	61	
	Standard Type	MRS18-BH	MRS18-BUL	Single-Phase 100	50	0.8	54.5	2850	11.0	388	196	0.786	56
Single-Phase 100				60	1.0	76	3300	12.8	452	245	0.982	60	
Single-Phase 110				60	1.0	81	3350	12.8	452	245	0.982	61	
Single-Phase 115				60	1.0	84	3350	12.8	452	245	0.982	61	
MRS18-DH		MRS18-DUL	Single-Phase 200	50	0.4	54.5	2850	11.0	388	196	0.786	56	6.0
			Single-Phase 200	60	0.5	70	3300	12.8	452	245	0.982	60	
			Single-Phase 230	60	0.5	77	3350	12.8	452	245	0.982	61	
MRS18-TH		MRS18-TUL	Three-Phase 200	50	0.4	52	2850	11.0	388	196	0.786	56	-
			Three-Phase 200	60	0.4	70	3300	12.8	452	245	0.982	60	
			Three-Phase 220	60	0.4	74	3350	12.8	452	245	0.982	61	
			Three-Phase 230	60	0.4	76	3350	12.8	452	245	0.982	61	

● Only terminal box type is VDE certified.

● How to read specifications → Page E-19

● Alarm specifications ② → Page E-21

● Details of safety standards → Page G-2

● Details of RoHS Directive → Page G-38

The following items are included in each product.

● **MRS18-□H**

Fan, Cable with Connector, Operating Manual

● **MRS18-□TM**

Fan, Capacitor*, Capacitor Cap*, Operating Manual

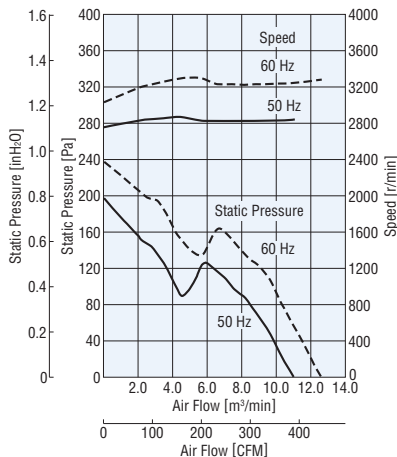
* Single-phase fans only

● **MRS18-□UL**

Fan, Operating Manual

Air Flow – Static Pressure Characteristics

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

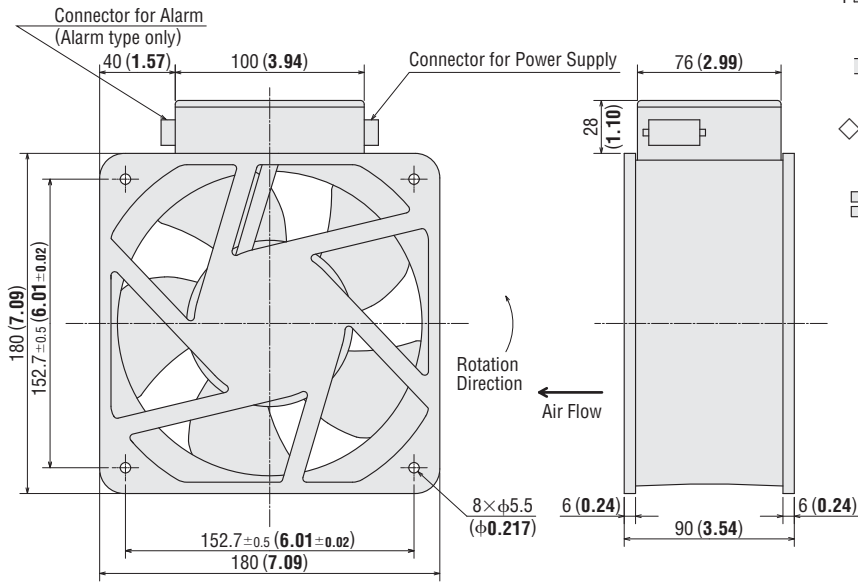


Dimensions Unit = mm (in.)

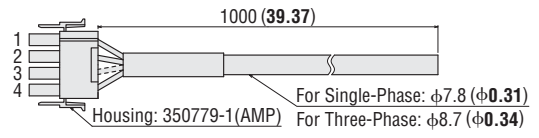
Connector Type

Fan

Mass: 2.5 kg (5.5 lb.)
 Alarm Type/ **DXF** E126
 Standard Type/ **DXF** E127

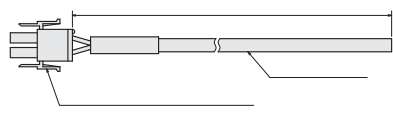


Cable for Connection to Power Supply (Included)



..... Only for three-phase

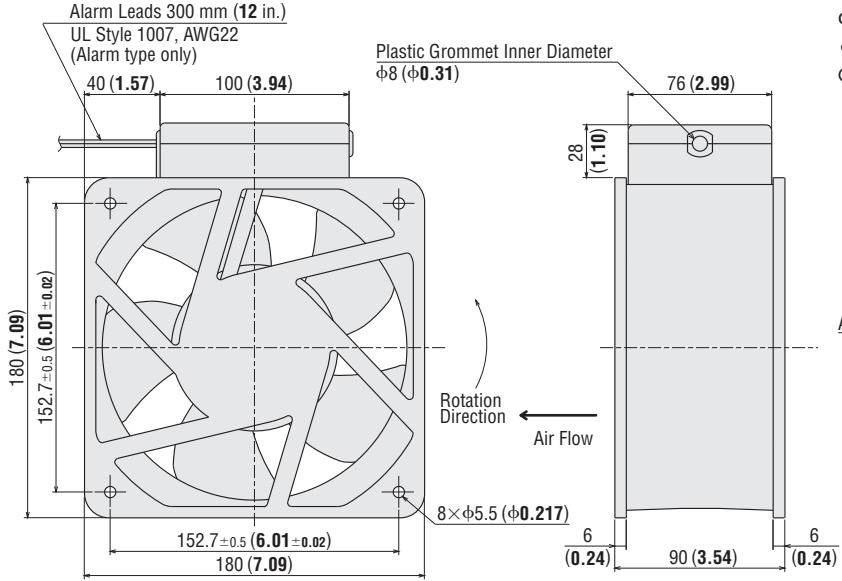
Cable for Alarm (Included with alarm type)



Terminal Box Type

Fan

Mass: 2.5 kg (5.5 lb.)
DXF E002

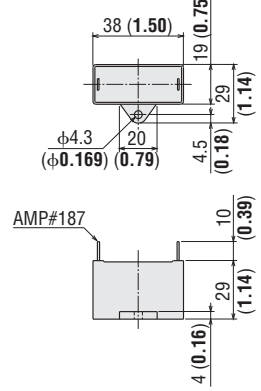


Capacitor (Included)

Capacitor and capacitor cap are included with single-phase alarm type fans. Single-phase standard type fans contain a built-in capacitor.

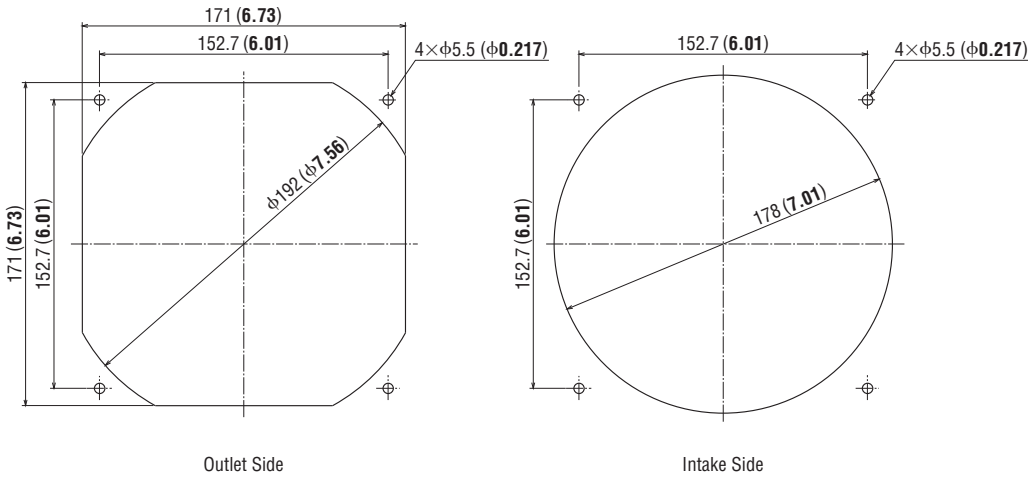
• For MRS18-BTM and MRS18-DTM

CH60UL Mass: 32 g (1.1 oz.)



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

Panel Cut-Out Unit = mm (in.)



Connection Diagrams

Connector Type

<p>MRS18-BMH MRS18-DMH</p>		<p>MRS18-BH MRS18-DH</p>	
<p>MRS18-TMH</p>		<p>MRS18-TH</p>	

Terminal Box Type

<p>MRS18-BTM MRS18-DTM</p>		<p>MRS18-BUL MRS18-DUL</p>		<p>Terminal Box</p>
<p>MRS18-TTM</p>		<p>MRS18-TUL</p>		

● How to connect a capacitor → Page E-158

Accessories

The following products are RoHS-Compliant.

Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	FG18D	Conformed component	E-145
Filter	FL18	–	E-147

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

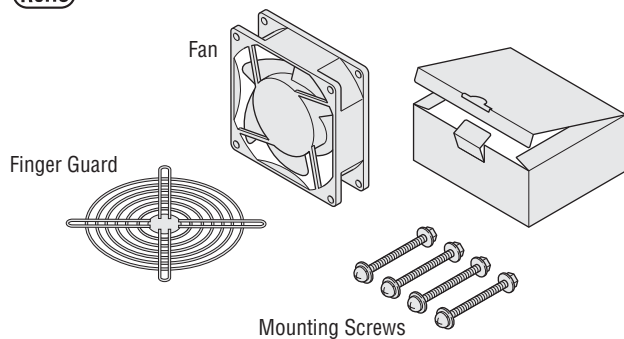
Fan Kit

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

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

RoHS

Details → Page E-138



◇ Product Line

● Connector Type

Fan Kit Model
T-MRS18-BMHG
T-MRS18-DMHG
T-MRS18-TMHG
T-MRS18-BHG
T-MRS18-DHG
T-MRS18-THG

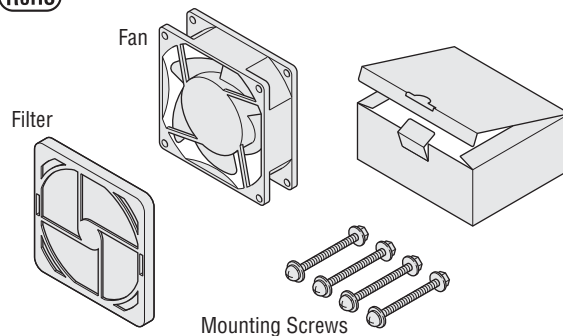
● Terminal Box Type

Fan Kit Model
T-MRS18-BTM-G
T-MRS18-DTM-G
T-MRS18-TTM-G
T-MRS18-BUL-G
T-MRS18-DUL-G
T-MRS18-TUL-G

● Package Contents (Fan, Filter, Mounting screws)

RoHS

Details → Page E-138



◇ Product Line

● Connector Type

Fan Kit Model
T-MRS18-BMHF
T-MRS18-DMHF
T-MRS18-TMHF
T-MRS18-BHF
T-MRS18-DHF
T-MRS18-THF

● Terminal Box Type

Fan Kit Model
T-MRS18-BTM-F
T-MRS18-DTM-F
T-MRS18-TTM-F
T-MRS18-BUL-F
T-MRS18-DUL-F
T-MRS18-TUL-F

MRS Series

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



Ambient Temperature: $-10 \sim +60^{\circ}\text{C}$ ($+14 \sim +140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Thermal Protector
 Bearings: Ball Bearings

Specifications (RoHS)



Model			Voltage	Frequency	Current	Input	Speed	Max. Air Flow		Max. Static Pressure		Noise Level	Capacitor
Low-Speed Alarm		Standard Type						m ³ /min	CFM	Pa	inH ₂ O		
Electronic Alarm Type (Alarm specifications: ②)	Contact Alarm Type (Alarm specifications: ③)		VAC	Hz	A	W	r/min						
MRS16-BTM	MRS16-BTA	MRS16-BUL	Single-Phase 100	50	0.47	39	2800	6.2	219	127	0.509	49	3.0
			Single-Phase 100	60	0.46	41	3250	7.3	258	157	0.63	52	
			Single-Phase 110	60	0.48	48	3300	7.3	258	157	0.63	53	
			Single-Phase 115	60	0.49	51	3300	7.3	258	157	0.63	53	
MRS16-DTM	MRS16-DTA	MRS16-DUL	Single-Phase 200	50	0.24	39	2800	6.2	219	127	0.509	49	3.0
			Single-Phase 200	60	0.24	41	3250	7.3	258	157	0.63	52	
			Single-Phase 230	60	0.25	51	3300	7.3	258	157	0.63	53	
MRS16-TTM	MRS16-TTA	MRS16-TUL	Three-Phase 200	50	0.19	33	2800	6.2	219	127	0.509	49	-
			Three-Phase 200	60	0.17	37	3250	7.3	258	157	0.63	52	
			Three-Phase 220	60	0.18	41	3300	7.3	258	157	0.63	53	
			Three-Phase 230	60	0.18	43	3300	7.3	258	157	0.63	53	

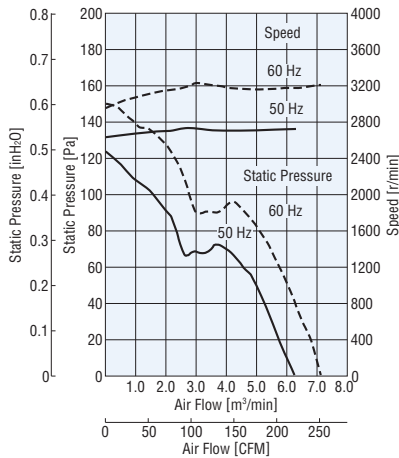
● How to read specifications → Page E-19 ● Alarm specifications ②, ③ → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

- **MRS16-□TM**
Fan, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase fans only
- **MRS16-□TA**
Fan, Capacitor*, Operating Manual
*Single-phase fans only
- **MRS16-□UL**
Fan, Operating Manual

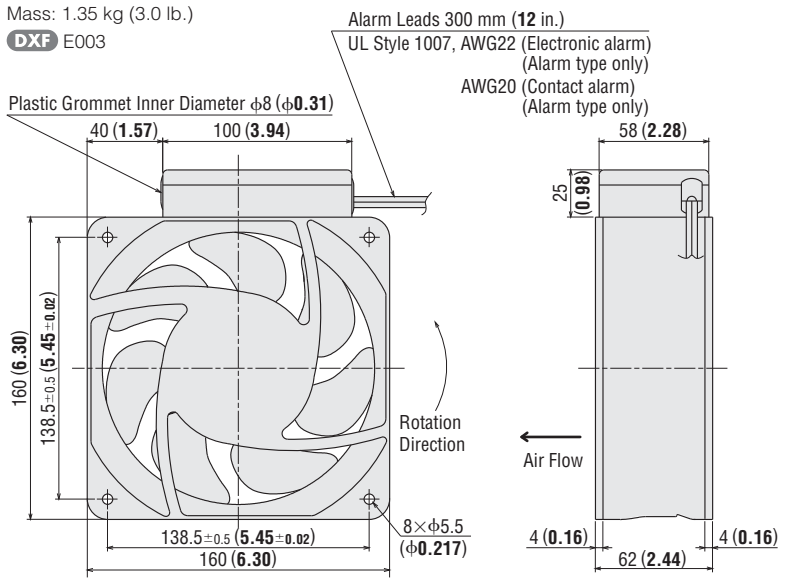
Air Flow – Static Pressure Characteristics

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



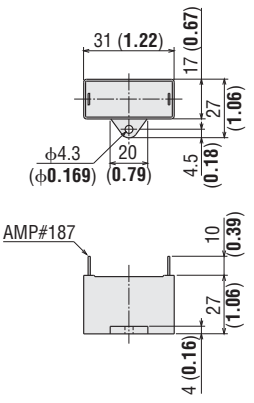
Dimensions Unit = mm (in.)

Mass: 1.35 kg (3.0 lb.)
DXF E003

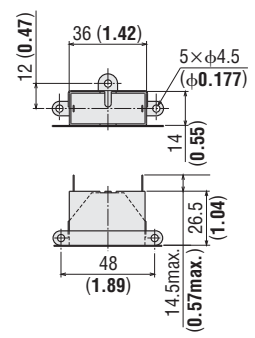


Capacitor (Included)

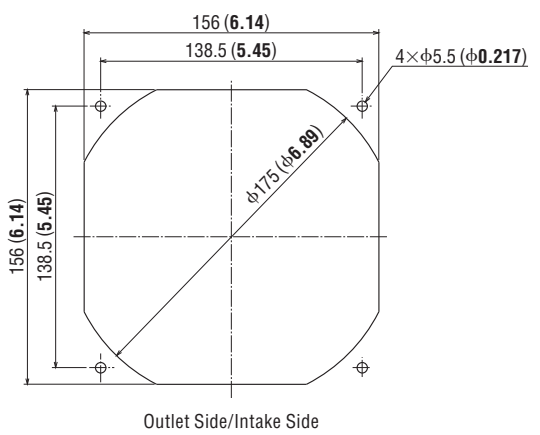
◇ For **MRS16-□TM**
 CH30UL Mass: 23 g (0.81 oz.)
 (A capacitor and capacitor cap are included with single-phase alarm type fans.)



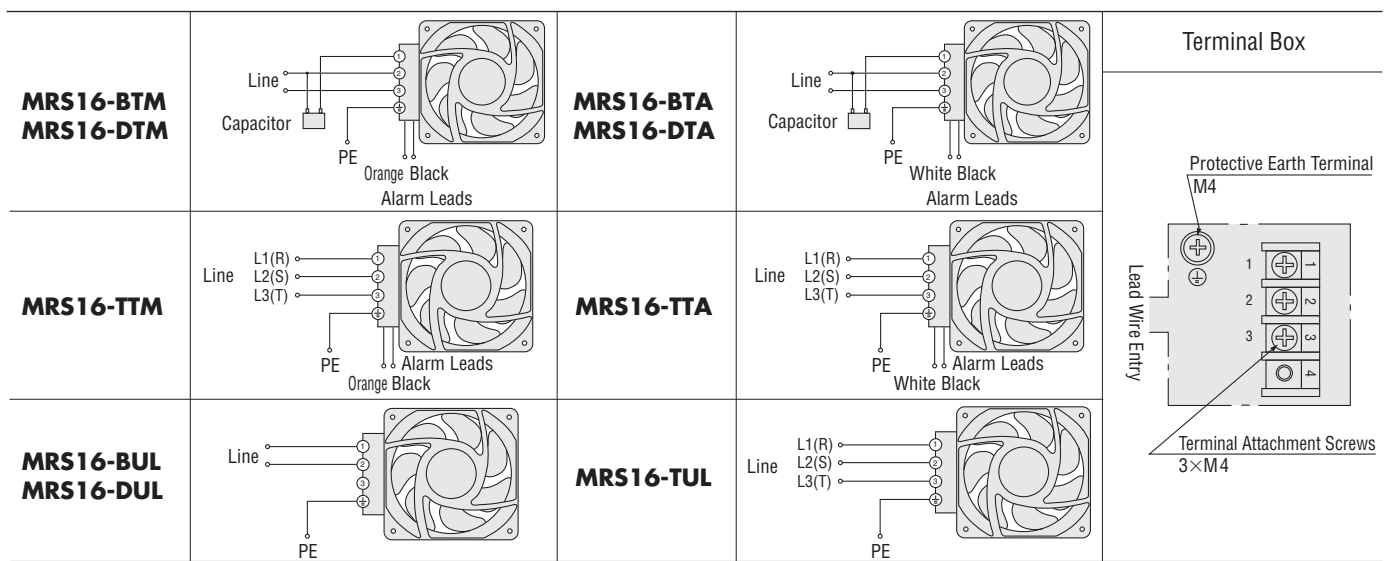
◇ For **MRS16-□TA**
 CH30 Mass: 30 g (1.1 oz.)
 (A capacitor is included with single-phase alarm type fans.
 A capacitor cap is sold separately.
 Details → Page E-152)



Panel Cut-Out Unit = mm (in.)



Connection Diagrams



● How to connect a capacitor → Page E-158

Accessories

The following products are RoHS-Compliant.

Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	FG16D	Conformed component	E-145
Filter	FL16	—	E-147

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

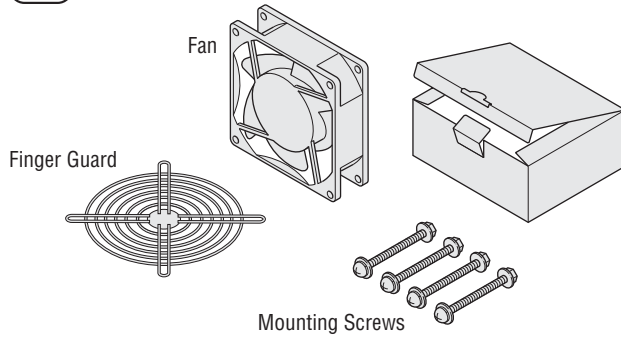
Fan Kit

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

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

RoHS

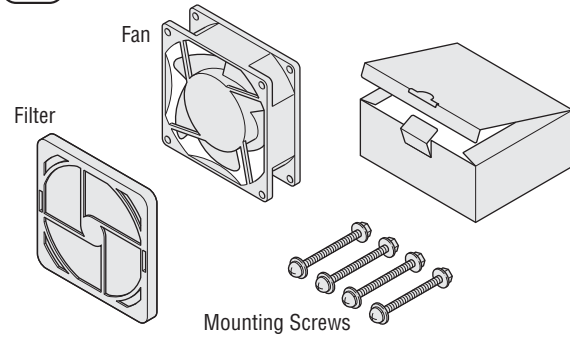
Details → Page E-138



● Package Contents (Fan, Filter, Mounting screws)

RoHS

Details → Page E-138



◇ Product Line

Fan Kit Model

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

◇ Product Line

Fan Kit Model

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

Axial Flow Fans

Centrifugal Blowers

Cross Flow Fans

MRS Series

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



Ambient Temperature: $-10 \sim +60^{\circ}\text{C}$ ($+14 \sim +140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Thermal Protector
 Bearings: Ball Bearings



Specifications (RoHS)

Model		Voltage	Frequency	Current	Input	Speed	Max. Air Flow		Max. Static Pressure		Noise Level
Low-Speed Alarm, Electronic Alarm Type (Alarm specifications: ③)	Standard Type						m ³ /min	CFM	Pa	inH ₂ O	
		VAC	Hz	A	W	r/min	m ³ /min	CFM	Pa	inH ₂ O	dB (A)
MRS14-TTM	MRS14-TUL	Three-Phase 200	50	0.08	14	2600	4.5	159	92	0.369	48
		Three-Phase 200	60	0.09	17	2650	4.6	162	81	0.325	49
		Three-Phase 220	60	0.09	19	2900	5.0	177	107	0.43	51
		Three-Phase 230	60	0.09	20	2950	5.0	177	109	0.437	51

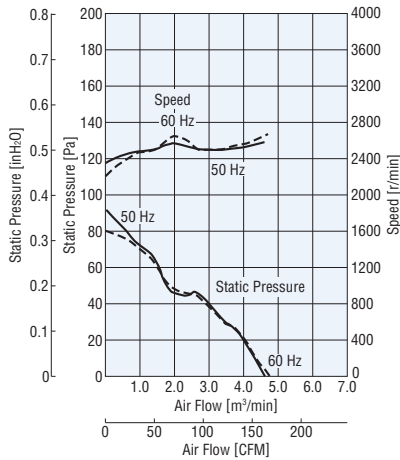
● How to read specifications → Page E-19 ● Alarm specifications ③ → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

Fan, Operating Manual

Air Flow – Static Pressure Characteristics

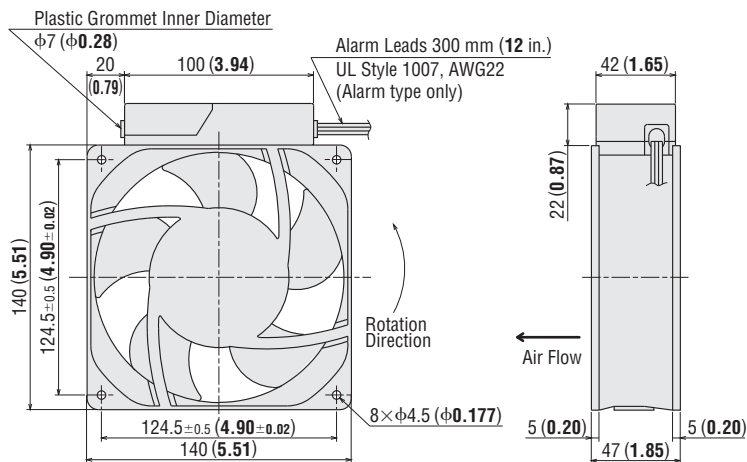
● How to read air flow – static pressure characteristics → Page E-20



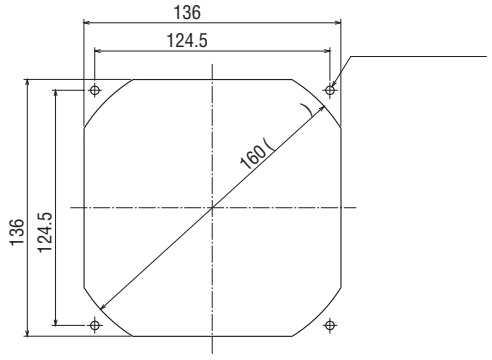
Dimensions Unit = mm (in.)

Mass: 0.9 kg (2.0 lb.)

DXF E004

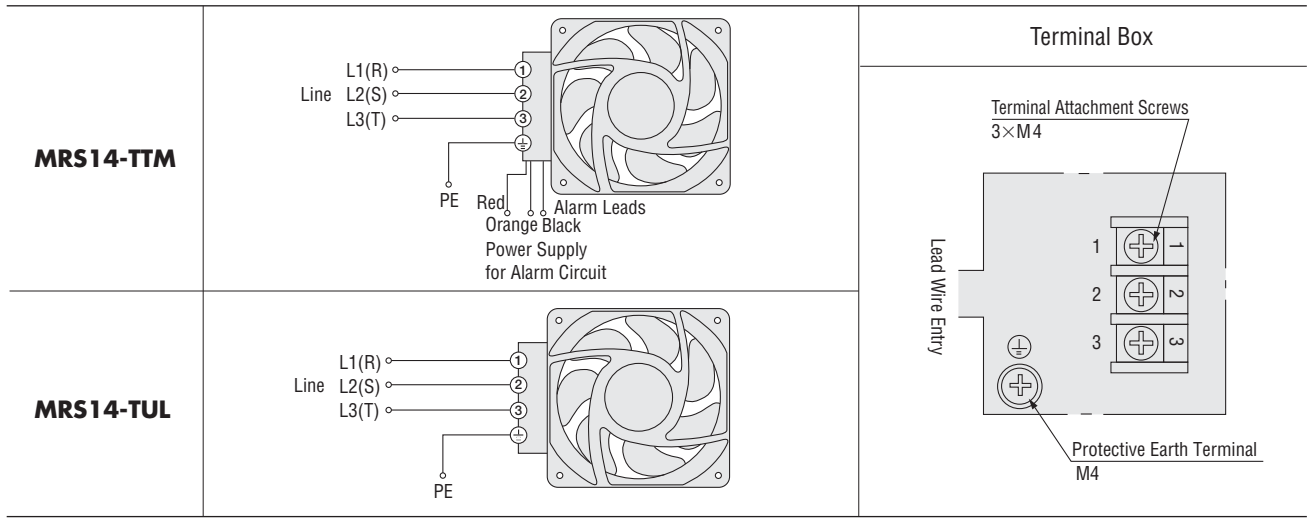


Panel Cut-Out Unit = mm (in.)



Outlet Side/Intake Side

Connection Diagrams



Accessories

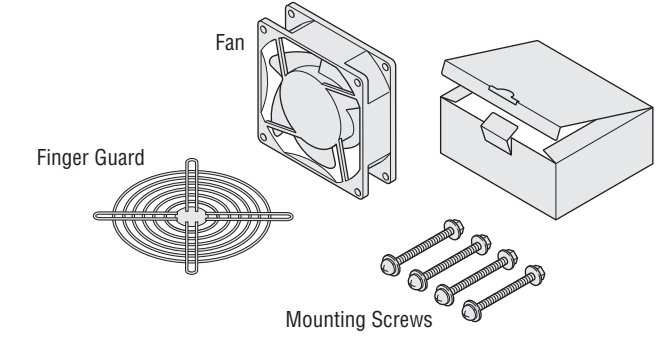
The following products are RoHS-Compliant.
 Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	FG14D	Conformed component	E-145
Filter	FL14	—	E-147

Fan Kit

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

Details → Page E-138



Product Line

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

VARIOFLOW

MRS Series Variable Flow Type

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



Ambient Temperature: $-10 \sim +60^{\circ}\text{C}$ ($+14 \sim +140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Thermal Protector
 Bearings: Ball Bearings



Specifications

Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)	Resistance of Potentiometer k Ω
						m ³ /min	CFM	Pa	inH ₂ O		
MRS18V2-B	Single-Phase 100	50	1.2	74	2800 1000	11.0 3.9	388 138	186 19.6	0.746 0.0786	56 46	0 200
		60	1.4	100	3200 750	12.0 2.8	424 98.8	196 11.8	0.786 0.0472	60 40	0 200
	Single-Phase 115	60	1.4	100	3350 1100	12.8 4.0	452 141	255 23.5	1.02 0.0942	61 44	0 200
MRS18V2-D	Single-Phase 200	50	0.6	74	2800 1000	11.0 3.9	388 138	186 19.6	0.746 0.0786	56 46	0 200
		60	0.7	100	3200 750	12.0 2.8	424 98.8	196 11.8	0.786 0.0472	60 40	0 200
	Single-Phase 230	50	0.6	84	2850 1350	11.0 5.0	388 177	196 36.3	0.786 0.146	56 49	0 200
		60	0.7	100	3350 1100	12.8 4.0	452 141	255 23.5	1.02 0.0942	61 44	0 200

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

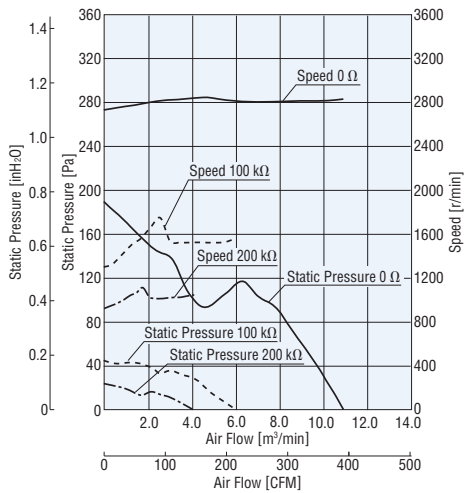
— The following items are included in each product.

Fan, External Speed Potentiometer, Operating Manual

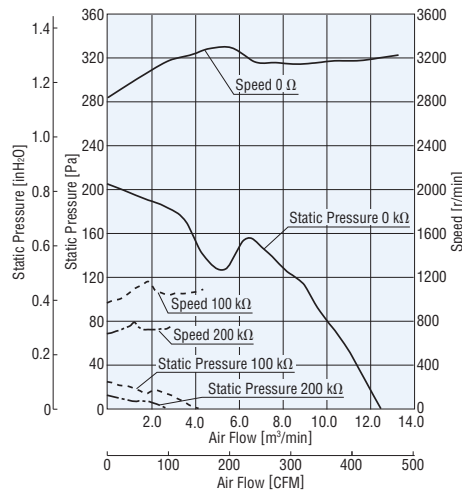
Air Flow – Static Pressure Characteristics

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

● 50 Hz



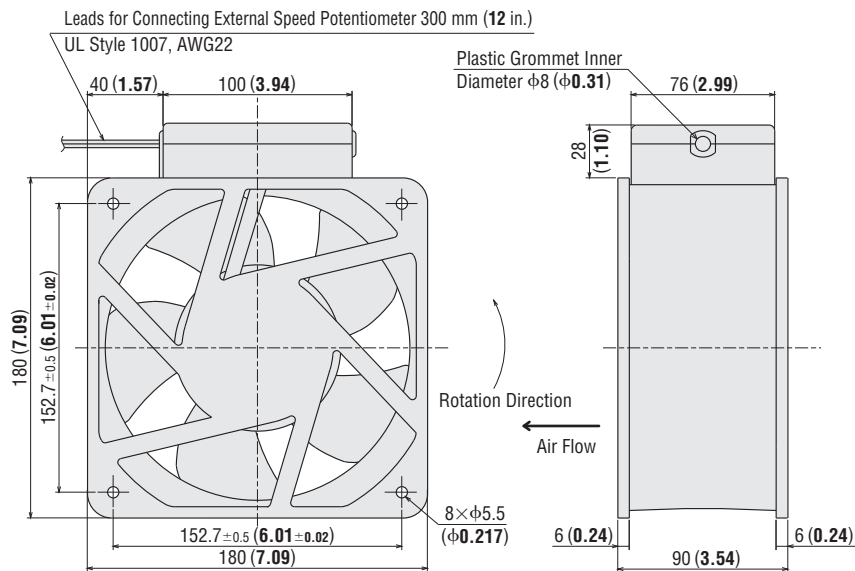
● 60 Hz



Dimensions Unit = mm (in.)

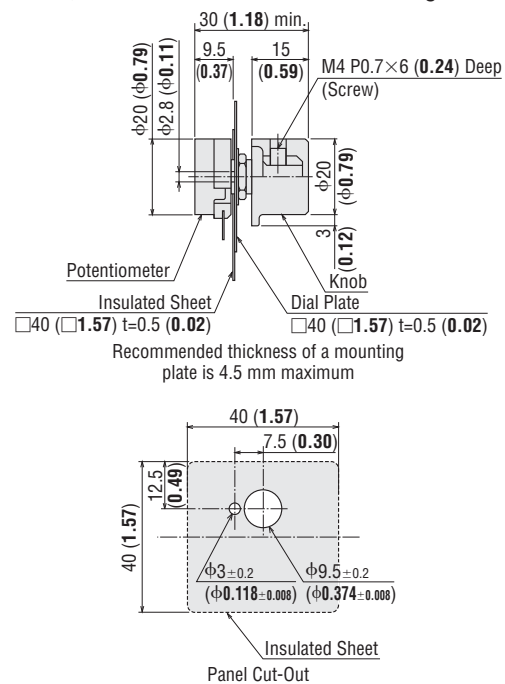
Mass: 2.5 kg (5.5 lb.)

DXF E002

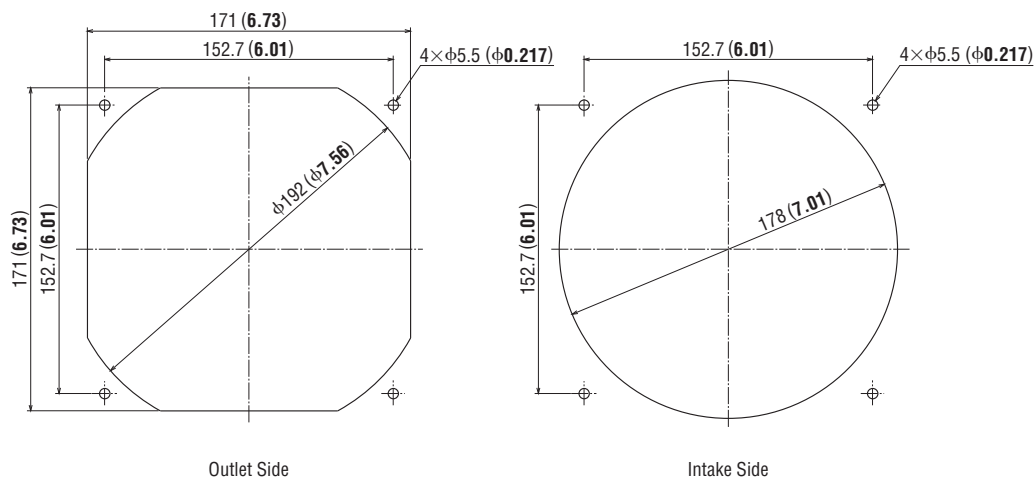


External Speed Potentiometer (Included)

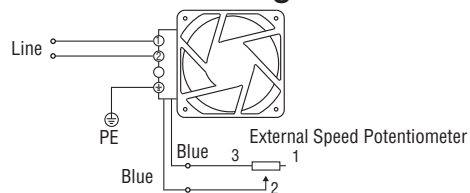
200 kΩ, 1/4 W with a linear resistance vs. angle curve



Panel Cut-Out Unit = mm (in.)



Connection Diagram



Leads for connecting external speed potentiometer

Accessories

The following products are RoHS-Compliant.

Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	FG18D	Conformed component	E-145
Filter	FL18	—	E-147

Introduction

Cooling Module

FM

AC Input MRS

Variable Flow MRS

AC Input MU

Long-Life MDE

DC Input MDS/MD

AC Input MB

DC Input MBD

Centrifugal Blowers

AC Input MF

MFD

Cross Flow Fans

DC Input

Thermostats

Accessories

Installation

MU Series

□ **119 mm – 38 mm Thick**
 (□ **4.69 in. – 1.50 in. Thick**)



Ambient Temperature: $-10 \sim +60^{\circ}\text{C}$ ($+14 \sim +140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Impedance Protected
 Bearings: Ball Bearings

Specifications (RoHS)



Speed Type	Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
							m ³ /min	CFM	Pa	inH ₂ O	
Standard Speed	MU1238A-21B	Single-Phase 115	50	0.20	14.0	2800	2.7	95.3	81	0.325	43
			60	0.18	13.0	3250	3.0	106	81	0.325	46
	MU1238A-51B	Single-Phase 220 Single-Phase 230 Single-Phase 230	50	0.10	13.5	2800	2.7	95.3	81	0.325	43
			50	0.11	16.0	2800	2.7	95.3	81	0.325	43
			60	0.10	13.5	3250	3.0	106	81	0.325	46
			60	0.10	13.5	3250	3.0	106	81	0.325	46
Middle Speed	MU1238B-21B	Single-Phase 115	50	0.16	12.5	2500	2.2	77.7	52	0.209	38
			60	0.15	11.5	2800	2.5	88.3	52	0.209	40
	MU1238B-51B	Single-Phase 220 Single-Phase 230 Single-Phase 230	50	0.09	11.5	2500	2.2	77.7	52	0.209	38
			50	0.09	14.0	2500	2.3	81.2	59	0.237	39
			60	0.09	11.5	2800	2.5	88.3	52	0.209	40
			60	0.09	11.5	2800	2.5	88.3	52	0.209	40
Low Speed	MU1238L-21B	Single-Phase 115	50	0.10	8.0	2100	1.9	67.1	34	0.137	33
			60	0.09	7.5	2100	1.8	63.5	27	0.11	32
	MU1238L-51B	Single-Phase 220 Single-Phase 230 Single-Phase 230	50	0.06	7.5	2100	1.85	65.3	34	0.137	33
			50	0.06	9.5	2100	1.9	67.1	34	0.137	34
			60	0.06	7.5	2200	1.9	67.1	29	0.118	33
			60	0.06	7.5	2200	1.9	67.1	29	0.118	33

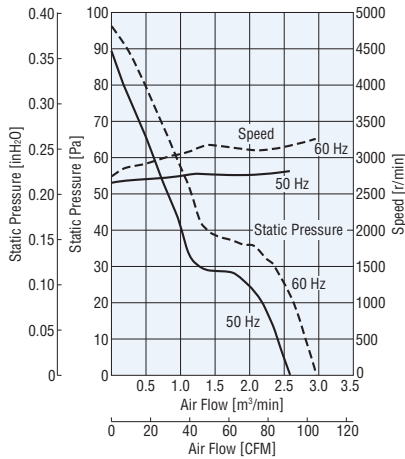
● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

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

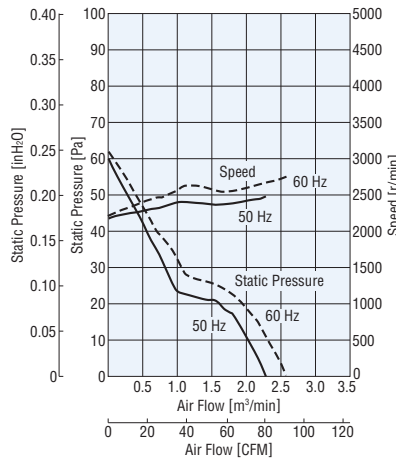
Air Flow – Static Pressure Characteristics

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

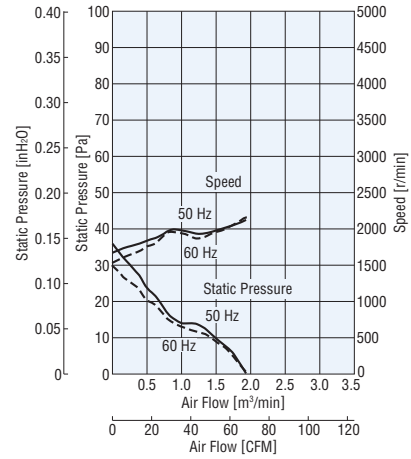
● MU1238A



● MU1238B



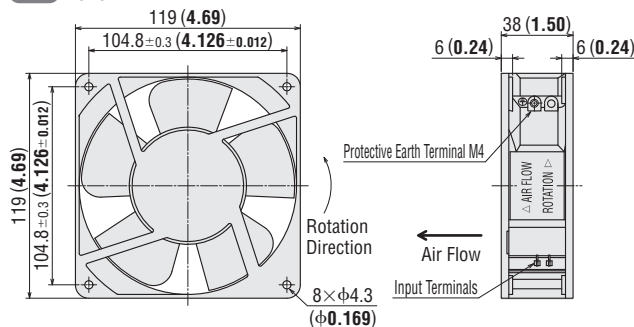
● MU1238L



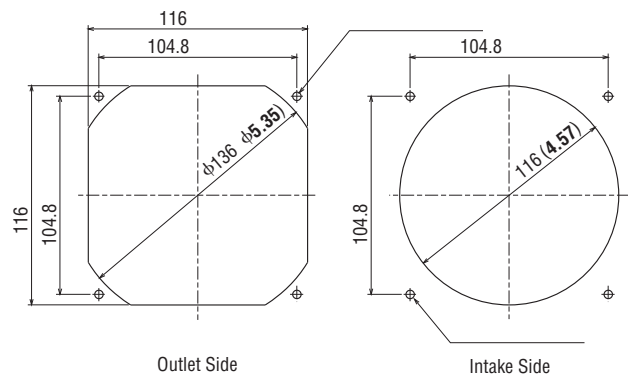
Dimensions Unit = mm (in.)

Mass: 0.53 kg (1.2 lb.)

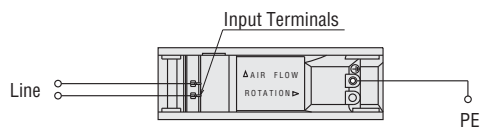
DXF E010



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	FG12D	Conformed component	E-145
Filter	FL12	—	E-147
Screen	FS12S	—	E-150
Plug Cord	PCA2B [1 m (3.3 ft.)]	Electrical Appliance and Material Safety Law-Compliant component (Japan) UL recognized component CSA certified component	E-151

Thermostats

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



RoHS

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

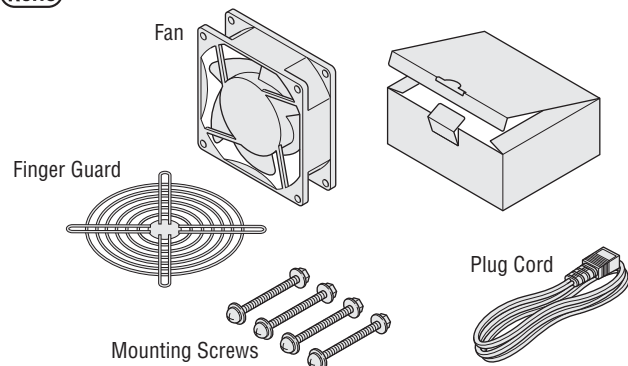
● Page → E-133

Fan Kit

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

Details → Page E-140

RoHS



Product Line

Fan Kit Model

T-MU1238A-21-GP

T-MU1238A-51-GP

T-MU1238B-21-GP

T-MU1238B-51-GP

T-MU1238L-21-GP

T-MU1238L-51-GP

MU Series

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



Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Impedance Protected
 Bearings: Ball Bearings



Specifications (RoHS)

Speed Type	Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
							m ³ /min	CFM	Pa	inH ₂ O	
Standard Speed	MU1225S-21	Single-Phase 115	50	0.14	11.0	2500	1.6	56.5	49	0.196	36
			60	0.12	9.5	2950	1.9	67.1	44	0.176	40
	MU1225S-51	Single-Phase 220 Single-Phase 230 Single-Phase 230	50	0.07	10.5	2500	1.6	56.5	49	0.196	36
			50	0.08	12.0	2500	1.6	56.5	49	0.196	36
			60	0.07	10.0	2950	1.9	67.1	44	0.176	40
			60	0.07	9.5	2600	1.7	60	31	0.125	37
Middle Speed	MU1225M-21	Single-Phase 115	50	0.13	10.5	2250	1.4	49.4	32	0.129	33
			60	0.11	9.0	2600	1.7	60	31	0.125	37
	MU1225M-51	Single-Phase 220 Single-Phase 230 Single-Phase 230	50	0.07	10.0	2250	1.4	49.4	32	0.129	33
			50	0.07	12.0	2250	1.4	49.4	32	0.129	33
			60	0.07	9.5	2600	1.7	60	31	0.125	37
			60	0.07	9.5	2600	1.7	60	31	0.125	37

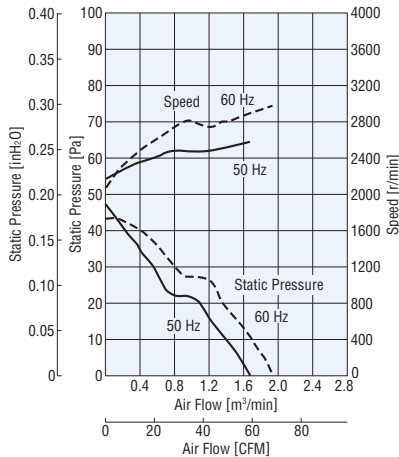
● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

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

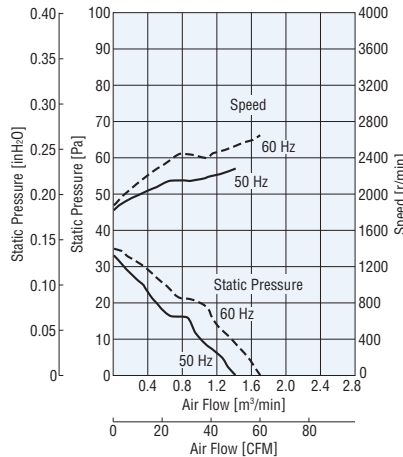
Air Flow – Static Pressure Characteristics

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

● MU1225S



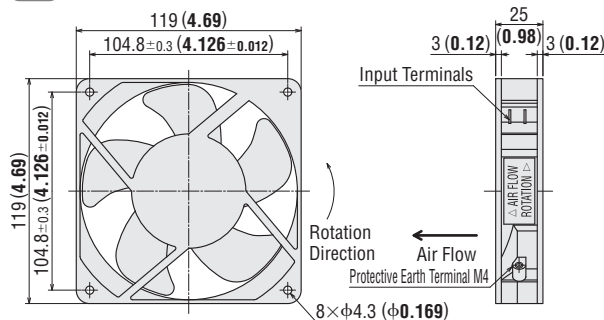
● MU1225M



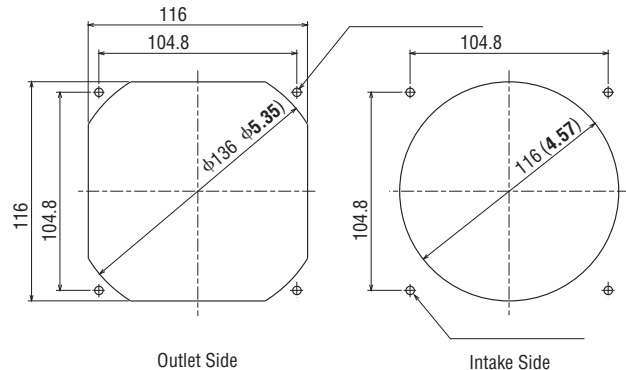
Dimensions Unit = mm (in.)

Mass: 0.31 kg (0.68 lb.)

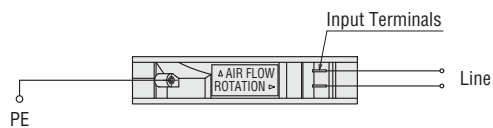
DXF E012



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	FG12D	Conformed component	E-145
Filter	FL12	—	E-147
Screen	FS12S	—	E-150
Plug Cord	PCA2B [1 m (3.3 ft.)]	Electrical Appliance and Material Safety Law-Compliant component (Japan) UL recognized component CSA certified component	E-151

Thermostats

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



RoHS

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

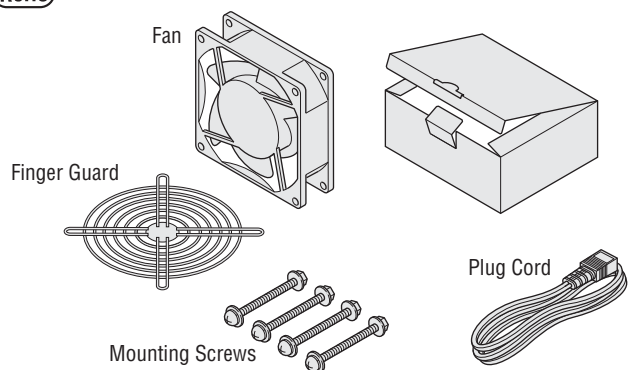
● Page → E-133

Fan Kit

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

Details → Page E-140

RoHS



Product Line

Fan Kit Model

T-MU1225S-21-GP

T-MU1225S-51-GP

T-MU1225M-21-GP

T-MU1225M-51-GP

MU Series

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



Ambient Temperature: $-10 \sim +60^{\circ}\text{C}$ ($+14 \sim +140^{\circ}\text{F}$)

Operating Voltage Range: $\pm 10\%$

Materials

Frame: Die Cast Aluminum

Blades: Polycarbonate (Flammability grade V-0)

Overheat Protection: Impedance Protected

Bearings: Ball Bearings



Specifications (RoHS)

Speed Type	Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
							m ³ /min	CFM	Pa	inH ₂ O	
Standard Speed	MU925S-21	Single-Phase 115	50	0.11	9.5	2600	0.95	33.5	44	0.176	35
			60	0.10	8.0	3000	1.10	38.8	59	0.237	39
	MU925S-51	Single-Phase 220	50	0.06	8.5	2600	0.95	33.5	44	0.176	35
			Single-Phase 230	50	0.07	10.5	2600	0.95	33.5	44	0.176
Middle Speed	MU925M-51	Single-Phase 230	60	0.06	8.0	3000	1.10	38.8	59	0.237	39
			MU925M-21	Single-Phase 115	50	0.11	9.0	2300	0.85	30.0	34
MU925M-51	Single-Phase 220	60			0.10	8.0	2700	1.00	35.8	44	0.176
		MU925M-51	Single-Phase 230	50	0.06	8.5	2300	0.85	30.0	34	0.137
MU925M-51	Single-Phase 230			50	0.06	9.5	2300	0.85	30.0	34	0.137
		MU925M-51	Single-Phase 230	60	0.06	8.0	2700	1.00	35.8	44	0.176

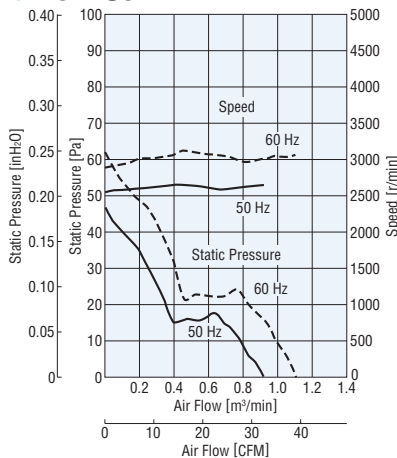
● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

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

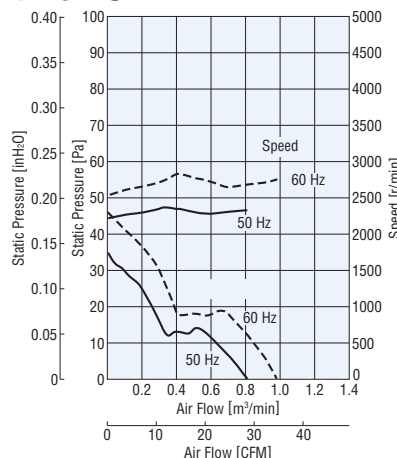
Air Flow – Static Pressure Characteristics

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

MU925S



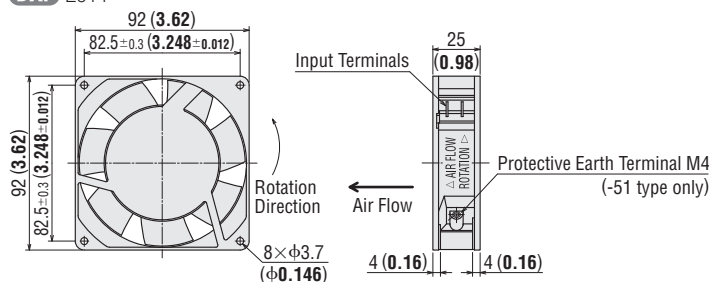
MU925M



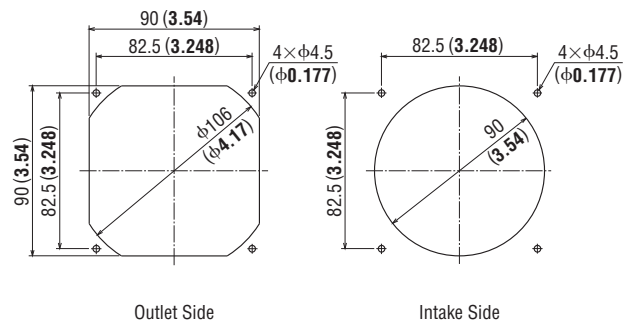
Dimensions Unit = mm (in.)

Mass: 0.27 kg (0.59 lb.)

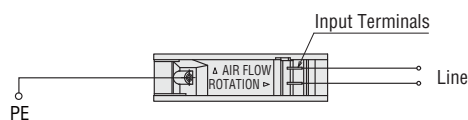
DXF E014



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	FG9D	Conformed component	E-145
Filter	FL9	–	E-147
Screen	FS9S	–	E-150
Plug Cord	PCA2B [1 m (3.3 ft.)]	Electrical Appliance and Material Safety Law-Compliant component (Japan) UL recognized component CSA certified component	E-151

Thermostats

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



RoHS

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

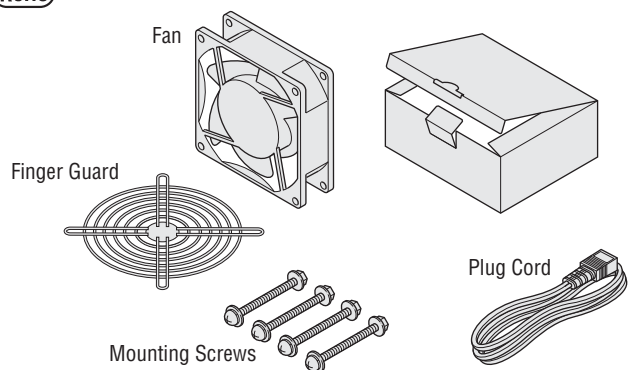
● Page → E-133

Fan Kit

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

Details → Page E-140

RoHS



Product Line

Fan Kit Model

T-MU925S-21-GP

T-MU925S-51-GP

T-MU925M-21-GP

T-MU925M-51-GP

MU Series

□ 80 mm – 25 mm Thick
 (□ 3.15 in. – 0.98 in. Thick)



Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Impedance Protected
 Bearings: Ball Bearings

Specifications RoHS



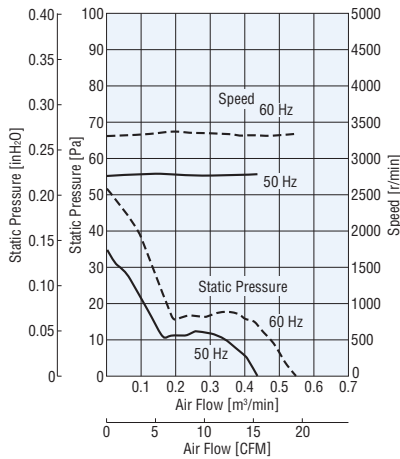
Speed Type	Model	Voltage VAC	Frequency Hz	Current A	Input W	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
							m ³ /min	CFM	Pa	inH ₂ O	
Standard Speed	MU825S-23	Single-Phase 115	50	0.11	9.5	2750	0.45	15.9	34	0.137	28
			60	0.09	8.0	3250	0.55	19.4	49	0.196	35
	MU825S-53	Single-Phase 220	50	0.06	8.5	2750	0.45	15.9	34	0.137	28
			60	0.07	10.5	2750	0.45	15.9	34	0.137	28
			50	0.07	10.5	2750	0.45	15.9	34	0.137	28
			60	0.06	8.0	3250	0.55	19.4	49	0.196	35

● 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

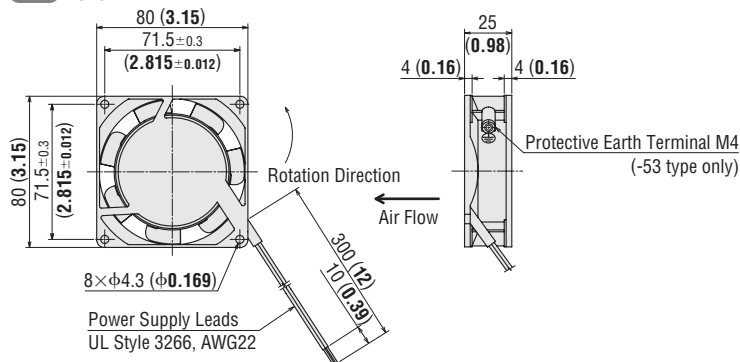
● How to read air flow – static pressure characteristics → Page E-20



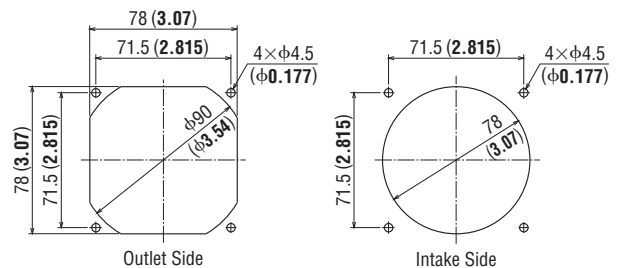
Dimensions Unit = mm (in.)

Mass: 0.25 kg (0.55 lb.)

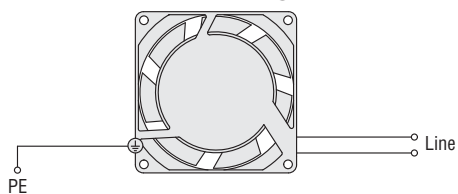
DXF E015



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	FG8D	Conformed component	E-145
Filter	FL8	–	E-147
Screen	FS8S	–	E-150

Thermostats

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



RoHS

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

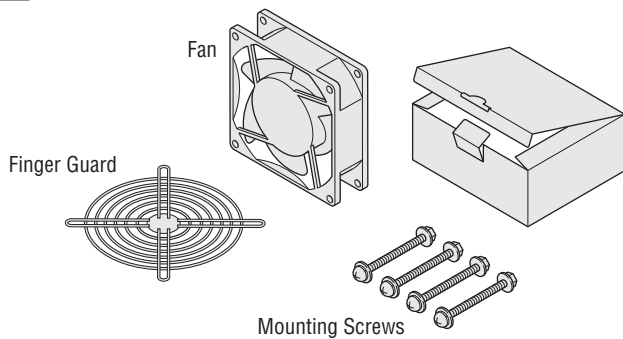
● Page → E-133

Fan Kit

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

Details → Page E-140

RoHS



Product Line

Fan Kit Model

T-MU825S-23-G

T-MU825S-53-G

Long-Life Fans

MDE Series

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



Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 15\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Overheat Protection Circuit
 Bearings: Ball Bearings

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

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

● Using these fans at relative humidity 25% or more in the condition of temperature 35°C (95°F) or more may reduce their life expectancy.

Specifications RoHS



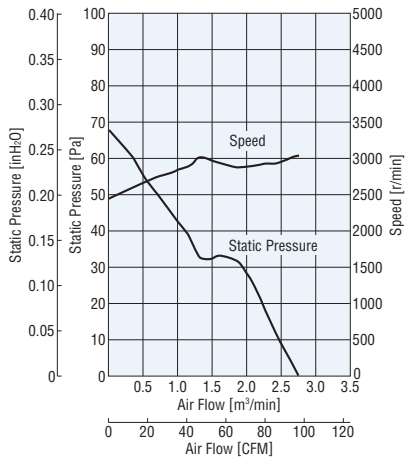
Speed Type	Function	Model	Voltage VDC	Current A	Speed r/min	Max. Air Flow m ³ /min CFM	Max. Static Pressure Pa inH ₂ O	Noise Level dB (A)
Standard Speed	Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)	MDE1225-12L	12	0.58	3000	2.7 95.3	70 0.281	46
		MDE1225-24L	24	0.30				

● How to read specifications → Page E-19 ● Alarm specifications ① → Page E-21 ● 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

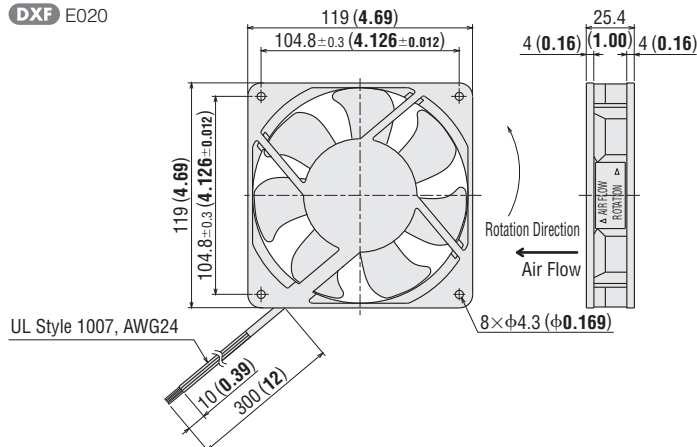
● How to read air flow – static pressure characteristics → Page E-20



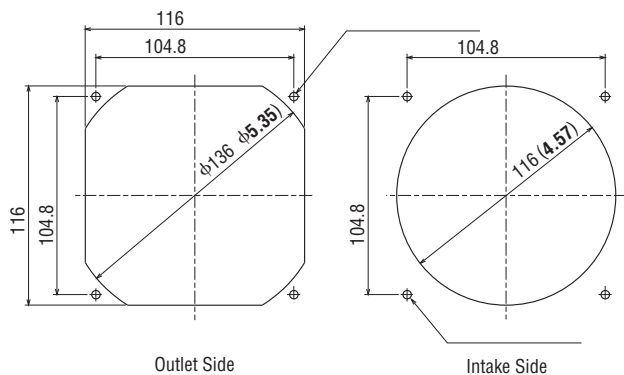
Dimensions Unit = mm (in.)

Mass: 0.3 kg (0.66 lb.)

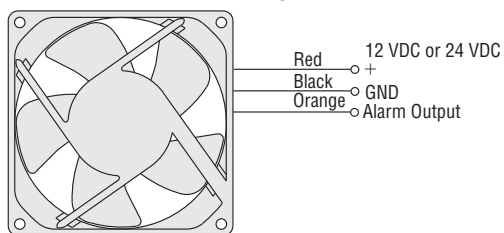
DXF E020



Panel Cut-Out Unit = mm (in.)



Connection Diagram



Accessories

The following products are RoHS-Compliant.

Details → Page E-137

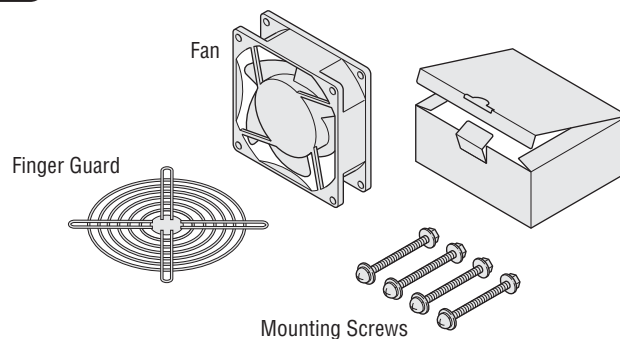
Product	Model	Safety Standards	Page
Finger Guard	FG12D	Conformed component	E-145
Filter	FL12	—	E-147
Screen	FS12S	—	E-150

Fan Kit

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

Details → Page E-141

RoHS



Product Line

Fan Kit Model

T-MDE1225-12L-G

T-MDE1225-24L-G

MDS Series

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



Connector Type

Lead Wire Type

Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
Operating Voltage Range: $\pm 15\%$
Materials
Frame: Die Cast Aluminum
Blades: Polycarbonate (Flammability grade V-0)
Overheat Protection: Built-in Overheat Protection Circuit
Bearings: Ball Bearings



Specifications RoHS

Function	Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
	Connector Type	Lead Wire Type				m ³ /min	CFM	Pa	inH ₂ O	
Low-Speed Alarm, Contact Alarm Type (Alarm specifications: ㊸)	MDS1751-24BH	MDS1751-24B	24	0.7	3200	6	212	137	0.549	47
Pulse Sensor Type (Alarm specifications: ㊹)	MDS1751-24SH	MDS1751-24S								
Standard Type	MDS1751-24H	MDS1751-24								

● Only standard type lead wire model is DEMKO certified.

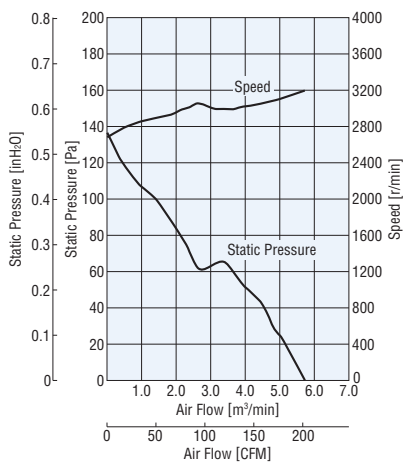
● How to read specifications → Page E-19 ● Alarm specifications ㊸, ㊹ → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

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

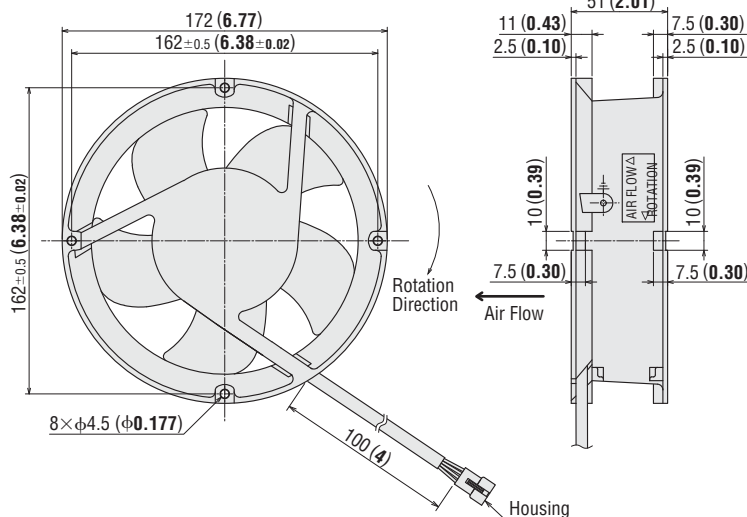


Dimensions Unit = mm (in.)

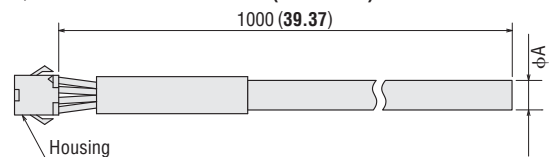
● Connector Type

◇ Fan

Type	Housing P/N	Mass kg (lb.)	DXF
Low-Speed Alarm, Contact Alarm Type	SMR-04V-N (J.S.T.)	0.9 (2.0)	E115
Pulse Sensor Type / Standard Type	SMR-03V-N (J.S.T.)		E116



◇ Cable with Connector (Included)

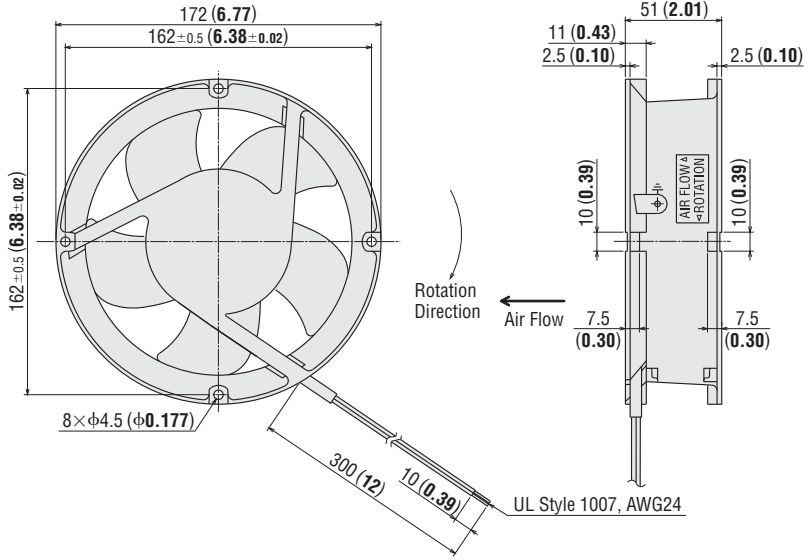


Type	φA	Housing P/N
Low-Speed Alarm, Contact Alarm Type	φ5.1 (φ0.20)	SMP-04V-NC (J.S.T.)
Pulse Sensor Type	φ4.8 (φ0.19)	SMP-03V-NC (J.S.T.)
Standard Type	φ4.5 (φ0.18)	

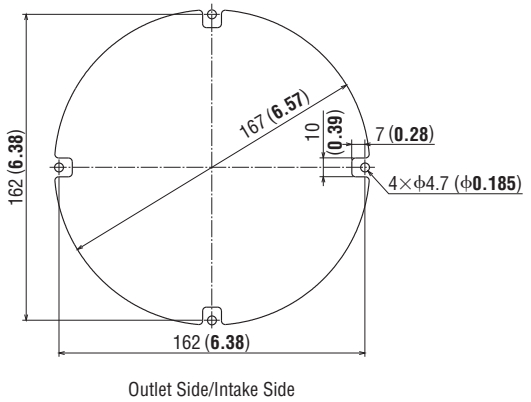
● Lead Wire Type

Mass: 0.9 kg (2.0 lb.)

DXF E016

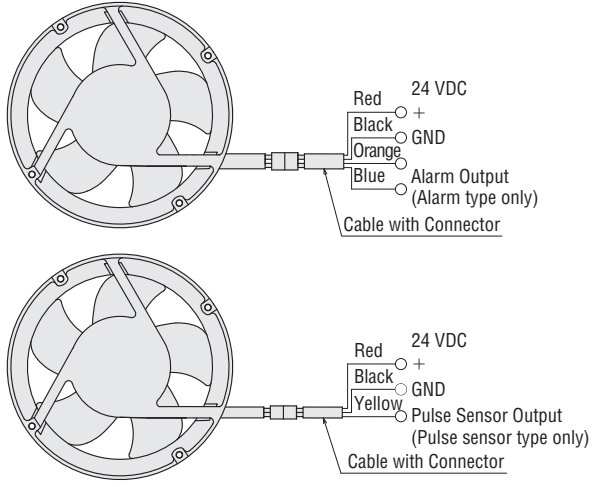


■ Panel Cut-Out Unit = mm (in.)

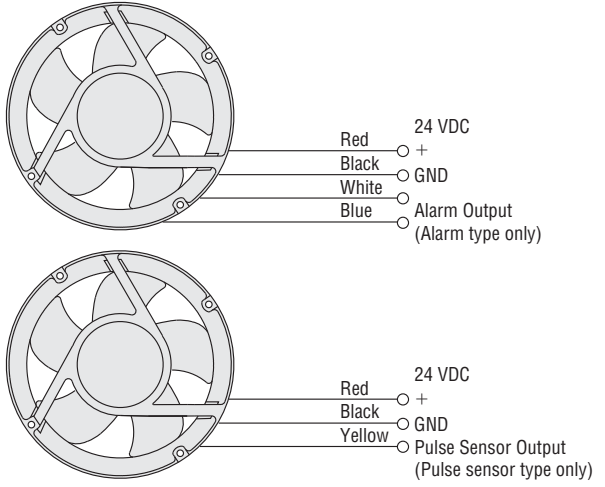


■ Connection Diagrams

● Connector Type



● Lead Wire Type



■ Accessories

The following product is RoHS-Compliant.

Details → Page E-137

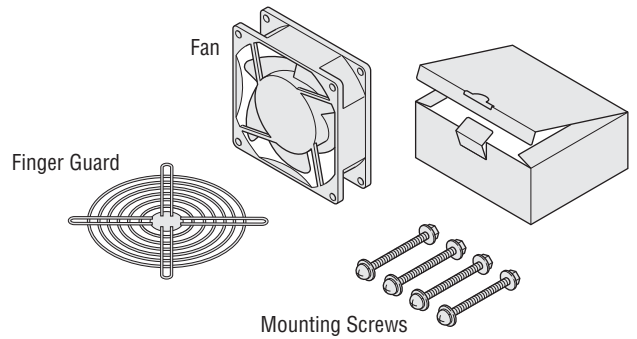
Product	Model	Safety Standards	Page
Finger Guard	FG17D	Conformed component	E-145

Fan Kit

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

Details → Page E-141

RoHS



● Product Line

◇ Connector Type

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

◇ Lead Wire Type

- Fan Kit Model
- T-MDS1751-24B-G**
- T-MDS1751-24S-G**
- T-MDS1751-24-G**

MDS Series

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



Connector Type

Lead Wire Type

Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 15\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Overheat Protection Circuit
 Bearings: Ball Bearings



Specifications **RoHS**

Speed Type	Function	Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
		Connector Type	Lead Wire Type				m ³ /min	CFM	Pa	inH ₂ O	
Standard Speed	Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)	MDS1451-24LH	MDS1451-24L	24	0.7	3150	5.8	205	130	0.521	49
		MDS1451-48LH	MDS1451-48L	48	0.35						
	Pulse Sensor Type (Alarm specifications: ⑩)	MDS1451-24SH	MDS1451-24S	24	0.7						
		MDS1451-48SH	MDS1451-48S	48	0.35						
	Standard Type	MDS1451-24H	MDS1451-24	24	0.7						
		MDS1451-48H	MDS1451-48	48	0.35						

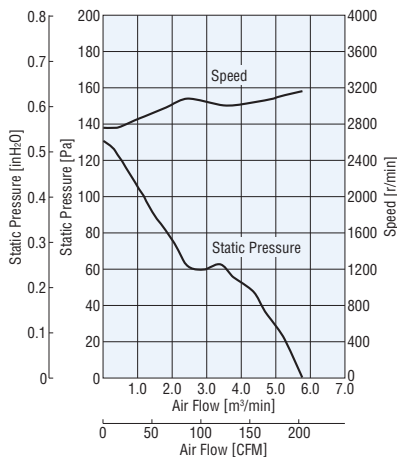
● How to read specifications → Page E-19 ● Alarm specifications ①, ⑩ → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

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



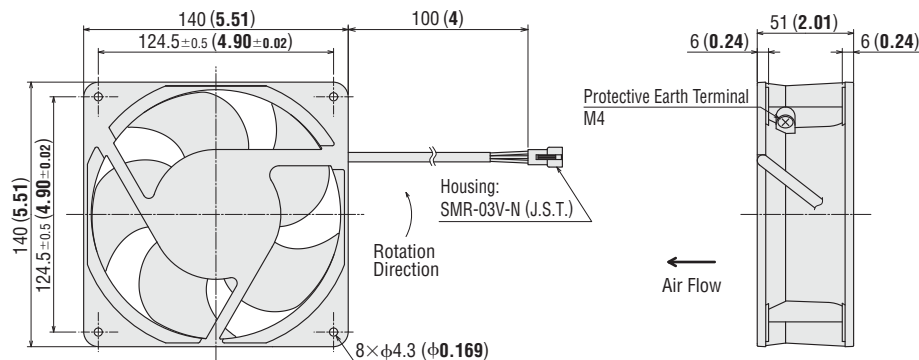
Dimensions Unit = mm (in.)

● Connector Type

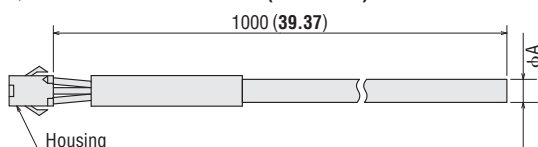
◇ Fan

Mass: 0.65 kg (1.43 lb.)

DXF E117



◇ Cable with Connector (Included)

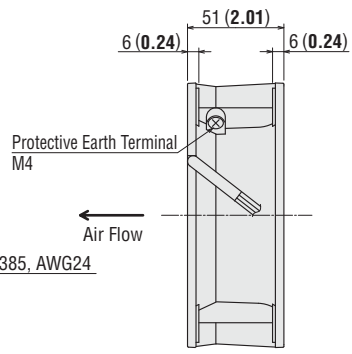
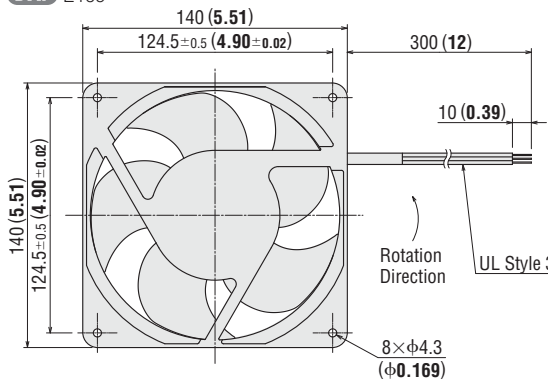


Type	φA	Housing P/N
Stall Alarm, Electronic Alarm Type	φ4.8 (φ0.19)	SMR-03V-NC (J.S.T.)
Pulse Sensor Type	φ4.8 (φ0.19)	
Standard Type	φ4.5 (φ0.18)	

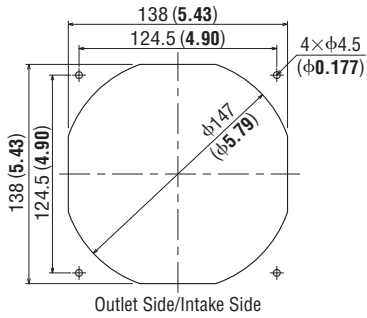
● Lead Wire Type

Mass: 0.65 kg (1.43 lb.)

DXF E109

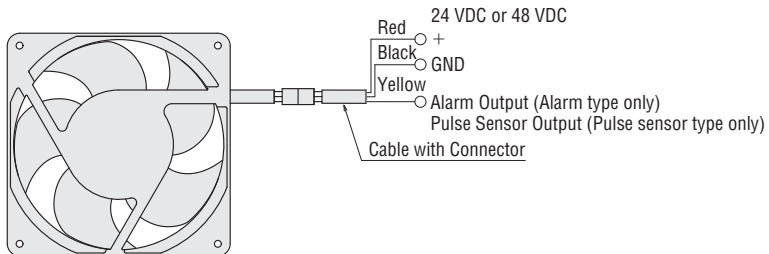


■ Panel Cut-Out Unit = mm (in.)

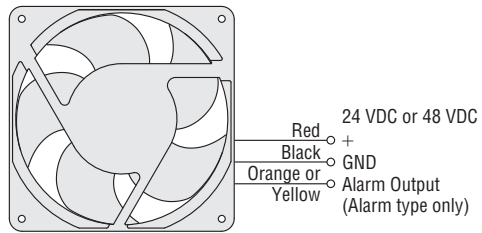


■ Connection Diagrams

● Connector Type



● Lead Wire Type



■ Accessories

The following products are RoHS-Compliant.

Details → Page E-137

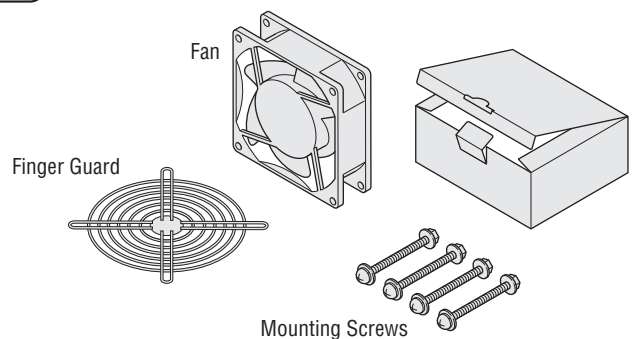
Product	Model	Safety Standards	Page
Finger Guard	FG14D	Conformed component	E-145
Filter	FL14	-	E-147

Fan Kit

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

RoHS

Details → Page E-141



● Product Line

◇ Connector Type

Fan Kit Model	
T-MDS1451-24LHG	T-MDS1451-48LHG
T-MDS1451-24SHG	T-MDS1451-48SHG
T-MDS1451-24HG	T-MDS1451-48HG

◇ Lead Wire Type

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

MDS Series

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



Connector Type

Lead Wire Type

Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 15\%$ (**MDS1225-12M, -24M**: $\pm 10\%$)
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Overheat Protection Circuit
 Bearings: Ball Bearings



Specifications RoHS

Speed Type	Function	Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
		Connector Type	Lead Wire Type				m ³ /min	CFM	Pa	inH ₂ O	
Standard Speed	Low-Speed Alarm, Electronic Alarm Type (Alarm specifications: ④)	MDS1225-12MH	MDS1225-12M	12	0.63	3000	2.7	95.3	70	0.281	46
		MDS1225-24MH	MDS1225-24M	24	0.34						
	Standard Type	MDS1225-12H	MDS1225-12	12	0.58						
		MDS1225-24H	MDS1225-24	24	0.30						

● Only lead wire type is DEMKO certified.

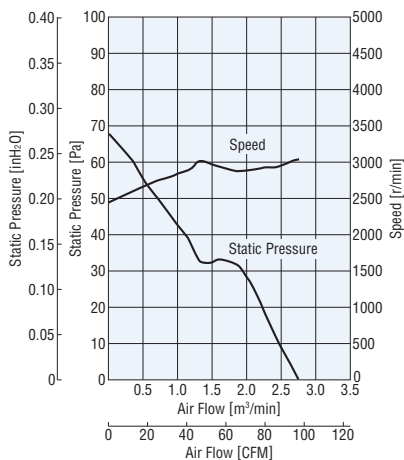
● How to read specifications → Page E-19 ● Alarm specifications ④ → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

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

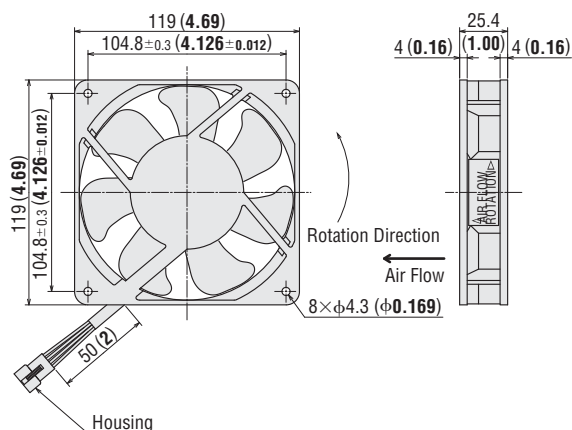


Dimensions Unit = mm (in.)

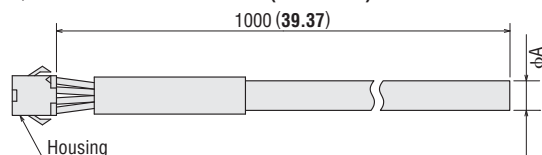
● Connector Type

◇ Fan

Type	Housing P/N	Mass kg (lb.)	DXF
Low-Speed Alarm, Electronic Alarm Type	SMP-04V-N (J.S.T.)	0.3 (0.66)	E118
Standard Type	SMP-03V-N (J.S.T.)		E119



◇ Cable with Connector (Included)

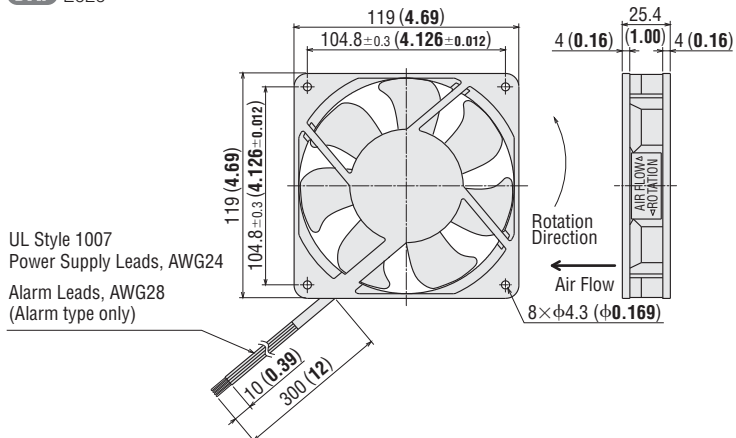


Type	φA	Housing P/N
Low-Speed Alarm, Electronic Alarm Type	φ5.1 (φ0.20)	SMP-04V-NC (J.S.T.)
Standard Type	φ4.5 (φ0.18)	SMP-03V-NC (J.S.T.)

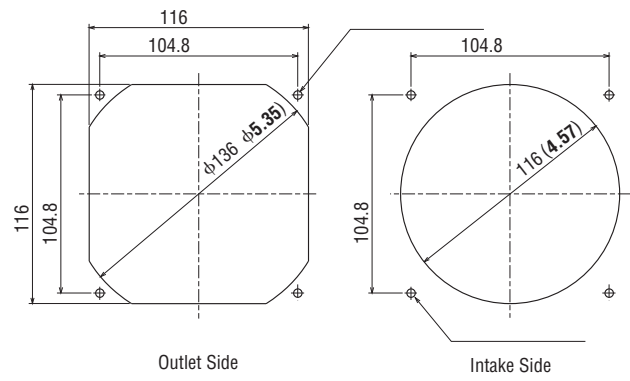
● Lead Wire Type

Mass: : 0.3 kg (0.66 lb.)

DXF E020

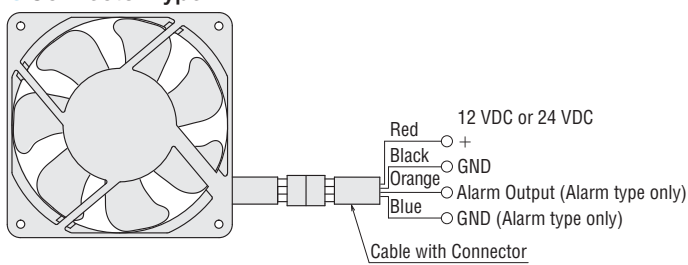


■ Panel Cut-Out Unit = mm (in.)

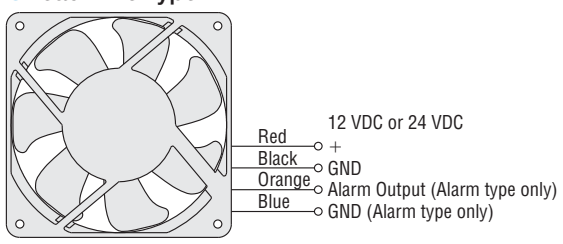


■ Connection Diagrams

● Connector Type



● Lead Wire Type



■ Accessories

The following products are RoHS-Compliant.

Details → Page E-137

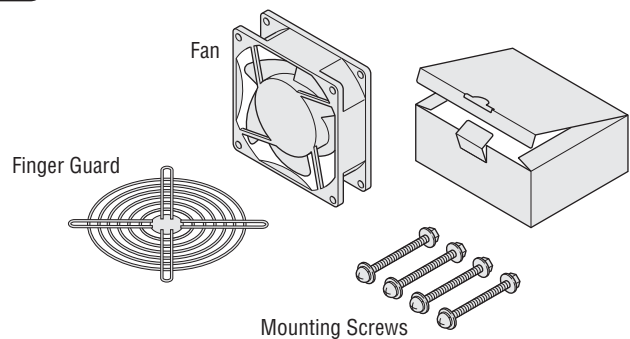
Product	Model	Safety Standards	Page
Finger Guard	FG12D	Conformed component	E-145
Filter	FL12	-	E-147
Screen	FS12S	-	E-150

Fan Kit

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

RoHS

Details → Page E-141



● Product Line

◇ Connector Type

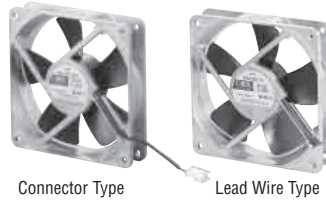
- Fan Kit Model
- T-MDS1225-12MHG**
- T-MDS1225-24MHG**
- T-MDS1225-12HG**
- T-MDS1225-24HG**

◇ Lead Wire Type

- Fan Kit Model
- T-MDS1225-12M-G**
- T-MDS1225-24M-G**
- T-MDS1225-12-G**
- T-MDS1225-24-G**

MD Series

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



Connector Type

Lead Wire Type

Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 15\%$
 Materials
 Frame: Die Cast Aluminum
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Overheat Protection Circuit
 Bearings: Ball Bearings

Specifications RoHS



Speed Type	Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
	Connector Type	Lead Wire Type				m ³ /min	CFM	Pa	inH ₂ O	
Standard Speed	MD1225-12H	MD1225-12	12	0.47	3100	2.5	88.3	43	0.172	45
	MD1225-24H	MD1225-24	24	0.26						

● Only lead wire model is DEMKO certified.

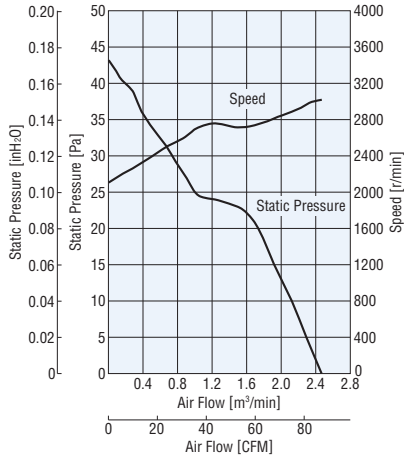
● How to read specifications → Page E-19 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

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



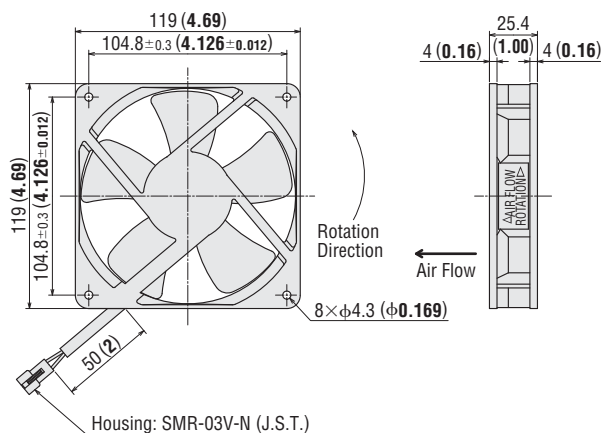
Dimensions Unit = mm (in.)

● Connector Type

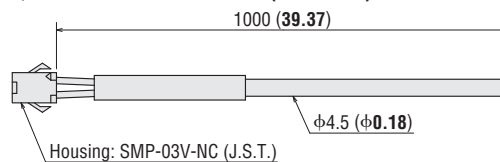
◇ Fan

Mass: 0.19 kg (0.42 lb.)

DXF E120



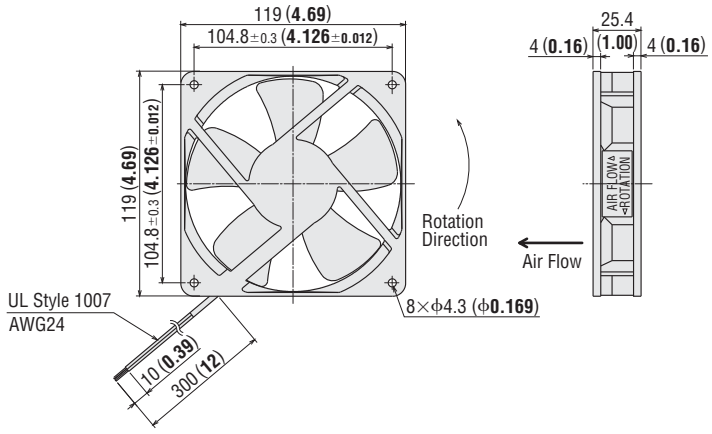
◇ Cable with Connector (Included)



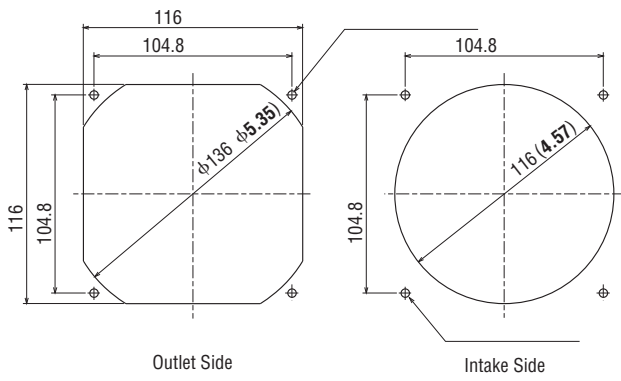
● Lead Wire Type

Mass: 0.19 kg (0.42 lb.)

DXF E021

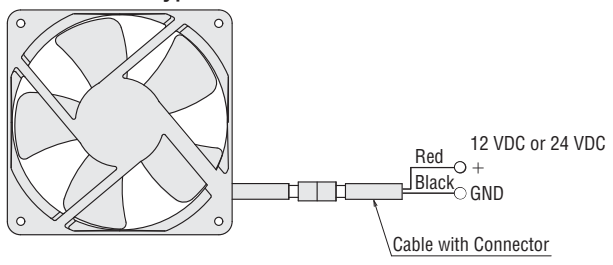


■ Panel Cut-Out Unit = mm (in.)

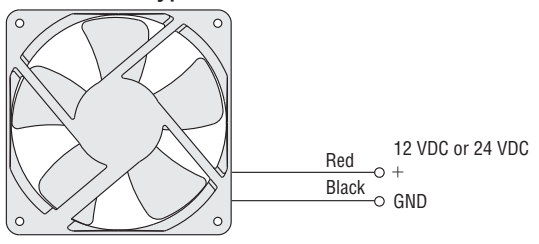


■ Connection Diagrams

● Connector Type



● Lead Wire Type



■ Accessories

The following products are RoHS-Compliant.

Details → Page E-137

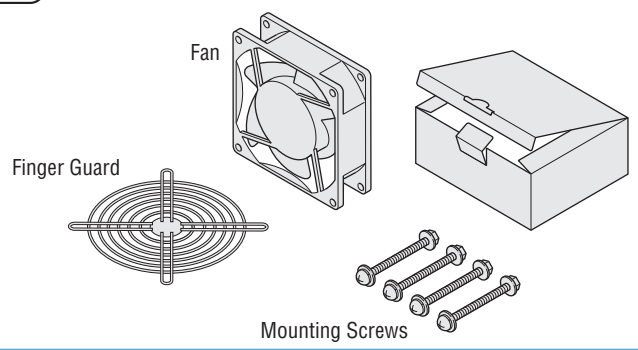
Product	Model	Safety Standards	Page
Finger Guard	FG12D	Conformed component	E-145
Filter	FL12	-	E-147
Screen	FS12S	-	E-150

Fan Kit

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

RoHS

Details → Page E-141



● Product Line

◇ Connector Type

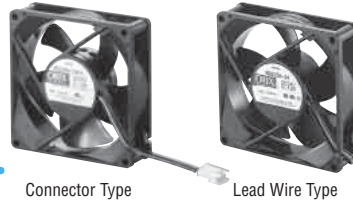
- Fan Kit Model
- T-MD1225-12HG**
- T-MD1225-24HG**

◇ Lead Wire Type

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

MD Series

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



Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 15\%$
 Materials
 Frame: Polycarbonate (Flammability grade: V-0)
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Overheat Protection Circuit
 Bearings: Ball Bearings



Specifications (RoHS)

Speed Type	Function	Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow m ³ /min	Max. Air Flow CFM	Max. Static Pressure Pa	Max. Static Pressure inH ₂ O	Noise Level dB (A)
		Connector Type	Lead Wire Type								
Standard Speed	Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)	MD925A-12LH	MD925A-12L	12	0.24	3400	1.30	45.9	49	0.196	36
		MD925A-24LH	MD925A-24L	24	0.12						
	Pulse Sensor Type (Alarm specifications: ②)	MD925A-12SH	MD925A-12S	12	0.24						
		MD925A-24SH	MD925A-24S	24	0.12						
Standard Type	MD925A-12H	MD925A-12	12	0.24							
	MD925A-24H	MD925A-24	24	0.12							
Middle Speed	Standard Type	–	MD925AM-12	12	0.15	2800	1.10	38.8	34	0.137	31
Low Speed	Standard Type	–	MD925AM-24	24	0.09	2200	0.90	31.8	22	0.0882	25
		–	MD925AL-12	12	0.10						
		–	MD925AL-24	24	0.07						

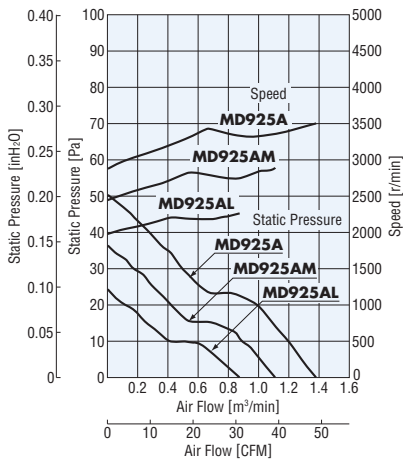
- Applicable standard and certification body depends on the approved product. For details, refer to the list of safety standard approved products G-11.
- How to read specifications → Page E-19 ● Alarm specifications ①, ② → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

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



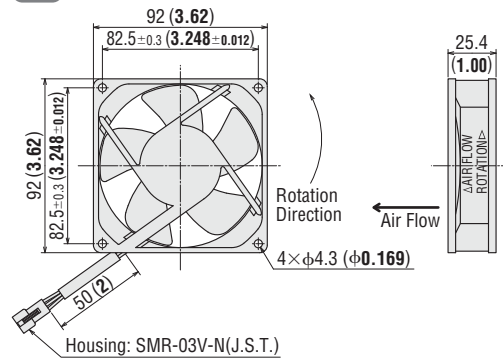
Dimensions Unit = mm (in.)

● Connector Type

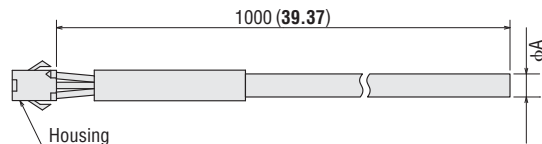
◇ Fan

Mass: 0.12 kg (0.26 lb.)

DXF E121



◇ Cable with Connector (Included)

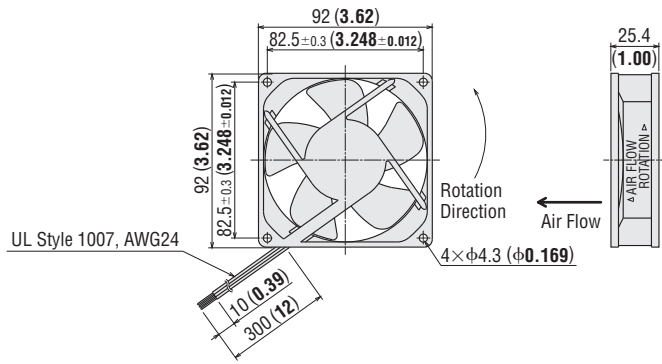


Type	φA	Housing P/N
Stall Alarm, Electronic Alarm Type	φ4.8 (φ0.19)	SMP-03V-NC (J.S.T.)
Pulse Sensor Type		
Standard Type	φ4.5 (φ0.18)	

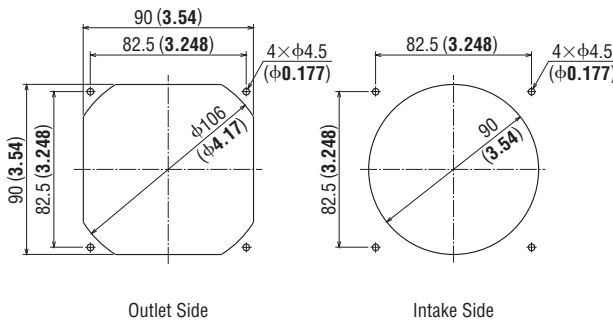
● Lead Wire Type

Mass: 0.12 kg (0.26 lb.)

DXF E022

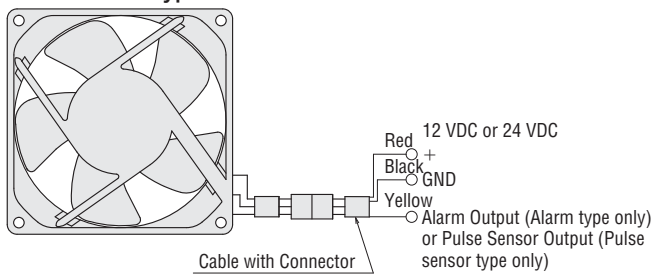


■ Panel Cut-Out Unit = mm (in.)

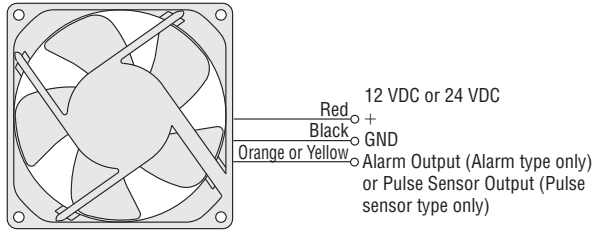


■ Connection Diagrams

● Connector Type



● Lead Wire Type

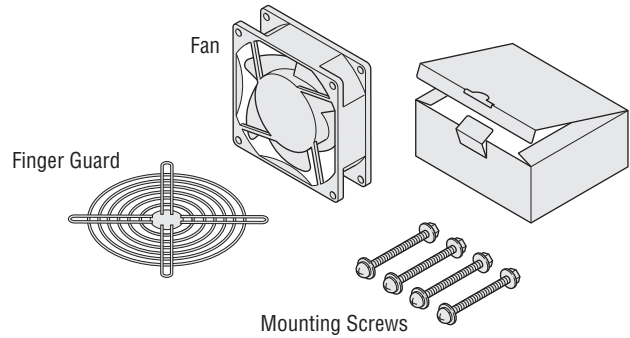


Fan Kit

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

RoHS

Details → Page E-141



● Product Line

◇ Connector Type

Fan Kit Model	
T-MD925A-12LHG	T-MD925A-24LHG
T-MD925A-12SHG	T-MD925A-24SHG
T-MD925A-12HG	T-MD925A-24HG

◇ Lead Wire Type

Fan Kit Model	
T-MD925A-12L-G	T-MD925A-24L-G
T-MD925A-12S-G	T-MD925A-24S-G
T-MD925A-12-G	T-MD925A-24-G
T-MD925AM-12-G	T-MD925AM-24-G
T-MD925AL-12-G	T-MD925AL-24-G

■ Accessories

The following products are RoHS-Compliant.

Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	FG9D	Conformed component	E-145
Filter	FL9	-	E-147
Screen	FS9S	-	E-150

● Use M3 screws to install the FL9S filter to the fan frame.

MD Series

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



Connector Type

Lead Wire Type

Ambient Temperature: $-10 \sim +60^{\circ}\text{C}$ ($+14 \sim +140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 15\%$
 Materials
 Frame: Polycarbonate (Flammability grade: V-0)
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Overheat Protection Circuit
 Bearings: Ball Bearings



Specifications (RoHS)

Speed Type	Function	Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow m ³ /min	Max. Static Pressure Pa	Noise Level dB (A)		
		Connector Type	Lead Wire Type								
Standard Speed	Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)	MD825B-12LH	MD825B-12L	12	0.25	3800	1.00	35.3	49	0.196	35
		MD825B-24LH	MD825B-24L	24	0.14						
	Pulse Sensor Type (Alarm specifications: ②)	MD825B-12SH	MD825B-12S	12	0.25						
		MD825B-24SH	MD825B-24S	24	0.14						
Standard Type		MD825B-12H	MD825B-12	12	0.25						
		MD825B-24H	MD825B-24	24	0.14						
Middle Speed	Standard Type	–	MD825BM-12	12	0.15	2850	0.73	25.8	29	0.116	26
		–	MD825BM-24	24	0.09						
Low Speed	Standard Type	–	MD825BL-12	12	0.07	2100	0.55	19.4	16	0.0642	18

● Applicable standard and certification body depends on the approved product. For details, refer to the list of safety standard approved products G-11.

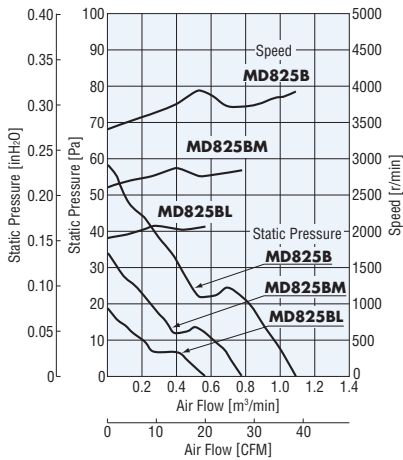
● How to read specifications → Page E-19 ● Alarm specifications ①, ② → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

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



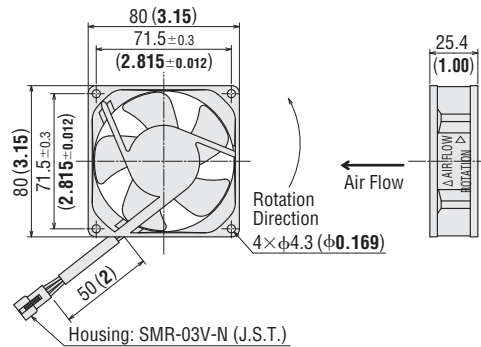
Dimensions Unit = mm (in.)

● Connector Type

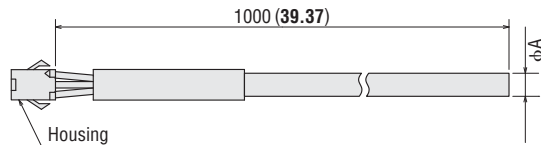
◇ Fan

Mass: 0.11 kg (0.24 lb.)

DXF E122



◇ Cable with Connector (Included)

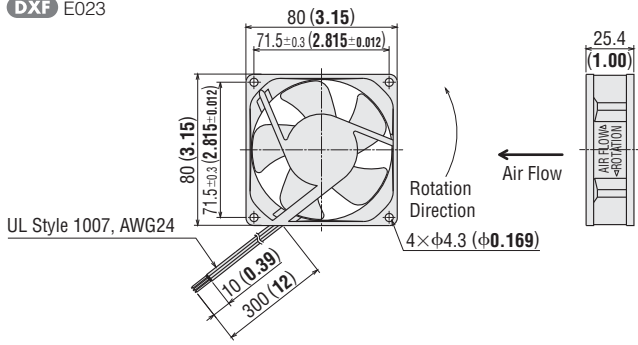


Type	φA	Housing P/N
Stall Alarm, Electronic Alarm Type	φ4.8 (φ0.19)	SMP-03V-NC (J.S.T.)
Pulse Sensor Type	φ4.8 (φ0.19)	
Standard Type	φ4.5 (φ0.18)	

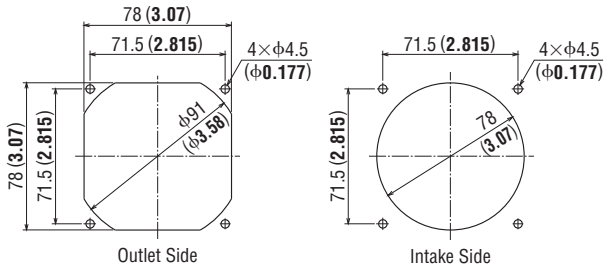
● Lead Wire Type

Mass: 0.11 kg (0.24 lb.)

DXF E023

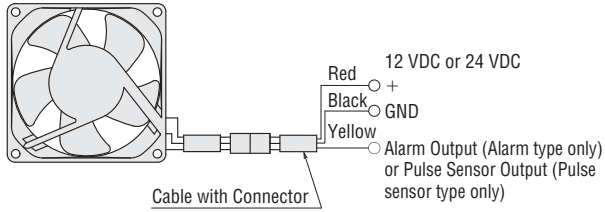


■ Panel Cut-Out Unit = mm (in.)

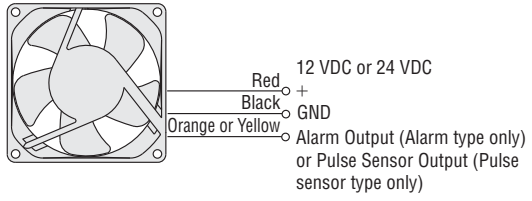


■ Connection Diagrams

● Connector Type



● Lead Wire Type



■ Accessories

The following products are RoHS-Compliant.

Details → Page E-137

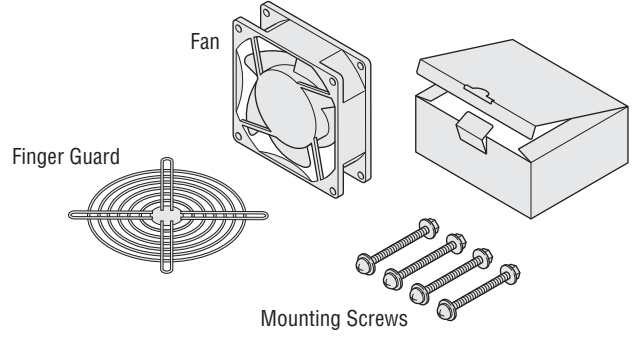
Product	Model	Safety Standards	Page
Finger Guard	FG8D	Conformed component	E-145
Filter	FL8	-	E-147
Screen	FS8S	-	E-150

Fan Kit

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

RoHS

Details → Page E-141



● Product Line

◇ Connector Type

Fan Kit Model	
T-MD825B-12LHG	T-MD825B-24LHG
T-MD825B-12SHG	T-MD825B-24SHG
T-MD825B-12HG	T-MD825B-24HG

◇ Lead Wire Type

Fan Kit Model	
T-MD825B-12L-G	T-MD825B-24L-G
T-MD825B-12S-G	T-MD825B-24S-G
T-MD825B-12-G	T-MD825B-24-G
T-MD825BM-12-G	T-MD825BM-24-G
T-MD825BL-12-G	-

Introduction

FM Cooling Module

AC Input MRS

AC Input Variable Flow MRS

AC Input MU

DC Input Long-Life MDE

DC Input MDS/MD

AC Input MB Centrifugal Blowers

DC Input MBD

AC Input MF Cross Flow Fans

DC Input MFD

Thermostats

Accessories

Installation

MD Series

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



Connector Type

Lead Wire Type

Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 15\%$
 Materials
 Frame: Polycarbonate (Flammability grade: V-0)
 Blades: Polycarbonate (Flammability grade V-0)
 Overheat Protection: Built-in Overheat Protection Circuit
 Bearings: Ball Bearings



Specifications (RoHS)

Speed Type	Function	Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow m ³ /min	Max. Static Pressure Pa	Noise Level dB (A)		
		Connector Type	Lead Wire Type								
Standard Speed	Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)	MD625B-12LH	MD625B-12L	12	0.16	4000	0.50	17.7	49	0.196	30
		MD625B-24LH	MD625B-24L	24	0.10						
	Pulse Sensor Type (Alarm specifications: ②)	MD625B-12SH	MD625B-12S	12	0.16						
		MD625B-24SH	MD625B-24S	24	0.10						
	Standard Type	MD625B-12H	MD625B-12	12	0.16						
MD625B-24H		MD625B-24	24	0.10							
Middle Speed	Standard Type	–	MD625BM-12	12	0.10	3000	0.37	13.1	27	0.109	20
		–	MD625BM-24	24	0.07						

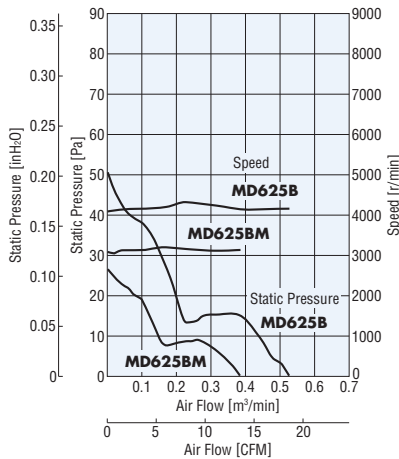
- Applicable standard and certification body depends on the approved product. For details, refer to the list of safety standard approved products G-11.
- How to read specifications → Page E-19 ● Alarm specifications ①, ② → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

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



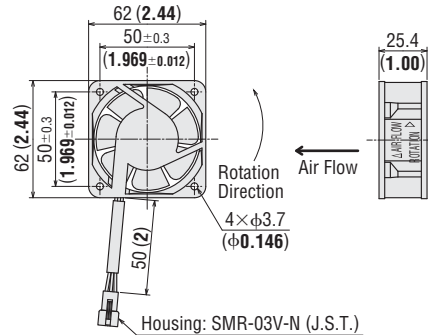
Dimensions Unit = mm (in.)

● Connector Type

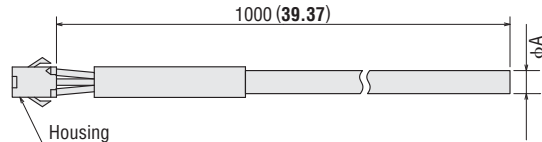
◇ Fan

Mass: 0.1 kg (0.22 lb.)

DXF E123



◇ Cable with Connector (Included)

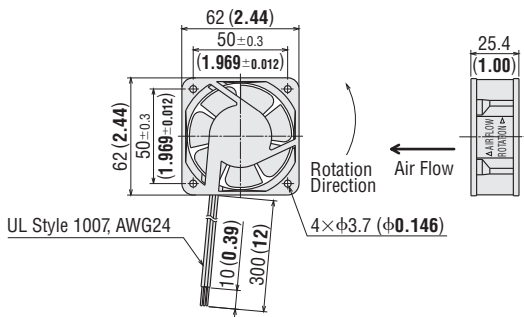


Type	φA	Housing P/N
Stall Alarm, Electronic Alarm Type Pulse Sensor Type	φ4.8 (φ0.19)	SMP-03V-NC (J.S.T.)
Standard Type	φ4.5 (φ0.18)	

● Lead Wire Type

Mass: 0.1 kg (0.22 lb.)

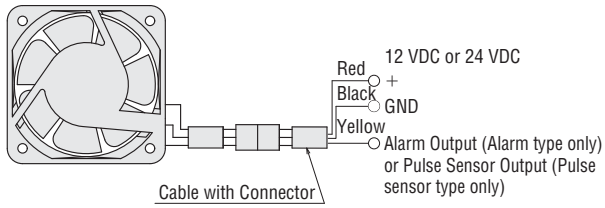
DXF E024



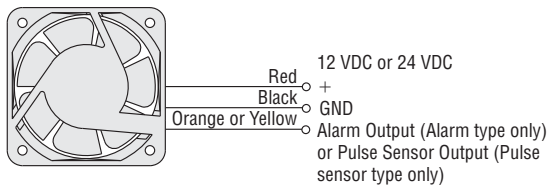
UL Style 1007, AWG24

■ Connection Diagrams

● Connector Type



● Lead Wire Type



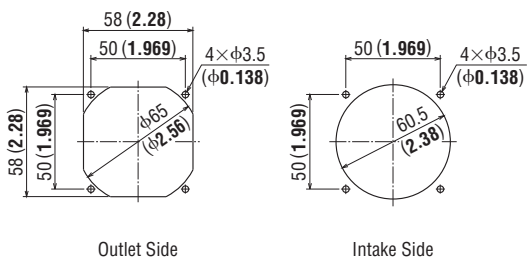
■ Accessories

The following products are RoHS-Compliant.

Details → Page E-137

Product	Model	Safety Standards	Page
Finger Guard	FG6D	Conformed component	E-145
Filter	FL6	—	E-147
Screen	FS6S	—	E-150

■ Panel Cut-Out Unit = mm (in.)

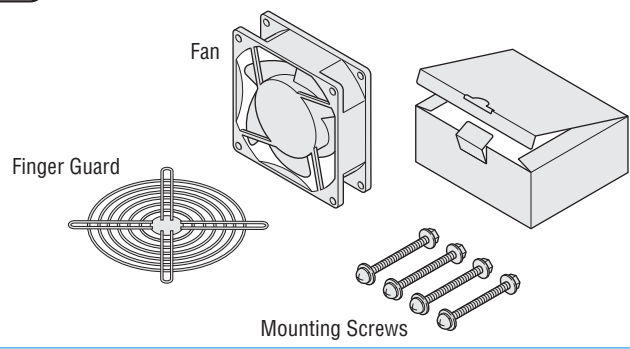


Fan Kit

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

RoHS

Details → Page E-141



● Product Line

◇ Connector Type

Fan Kit Model	
T-MD625B-12LHG	T-MD625B-24LHG
T-MD625B-12SHG	T-MD625B-24SHG
T-MD625B-12HG	T-MD625B-24HG

◇ Lead Wire Type

Fan Kit Model	
T-MD625B-12L-G	T-MD625B-24L-G
T-MD625B-12S-G	T-MD625B-24S-G
T-MD625B-12-G	T-MD625B-24-G
T-MD625BM-12-G	T-MD625BM-24-G

Introduction

Cooling Module
FM

AC Input
MRS

Variable Flow
MRS

AC Input
MU

DC Input
Long-Life
MDE

DC Input
MDS/MD

AC Input
MB

DC Input
MBD

AC Input
MF

DC Input
MFD

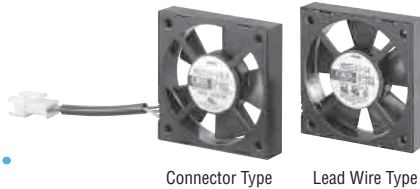
Thermostats

Accessories

Installation

MDS Series

□ 52 mm – 10 mm Thick
(□ 2.05 in. – 0.39 in. Thick)



Connector Type

Lead Wire Type

Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Polycarbonate (Flammability grade: V-0)
 Blades: PBT (Flammability grade: V-0)
 Overheat Protection: Built-in Overheat Protection Circuit
 Bearings: Ball Bearings



Specifications (RoHS)

Speed Type	Function	Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow		Max. Static Pressure		Noise Level dB (A)
		Connector Type	Lead Wire Type				m ³ /min	CFM	Pa	inH ₂ O	
Standard Speed	Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)	MDS510-12LH	MDS510-12L	12	0.14	7000	0.27	9.53	54	0.217	36
		MDS510-24LH	MDS510-24L	24	0.08						
	Standard Type	MDS510-12H	MDS510-12	12	0.14						
		MDS510-24H	MDS510-24	24	0.08						
Middle Speed	Standard Type	MDS510M-5H	MDS510M-5	5	0.20	5500	0.20	7.06	32	0.129	30
		–	MDS510M-12	12	0.12						
		–	MDS510M-24	24	0.06						

● Only lead wire type is DEMKO certified.

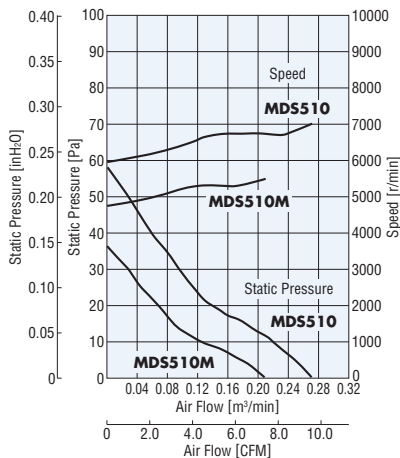
● How to read specifications → Page E-19 ● Alarm specifications ① → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

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



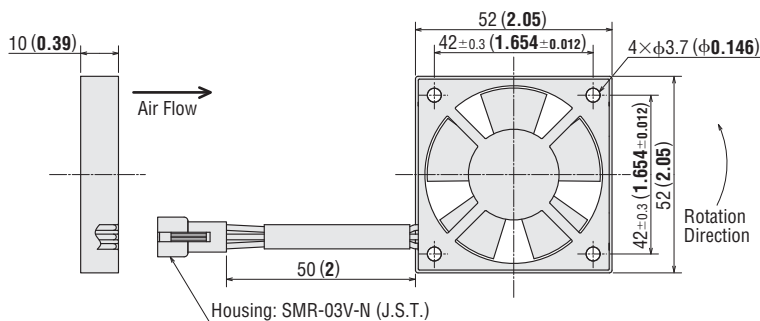
Dimensions Unit = mm (in.)

● Connector Type

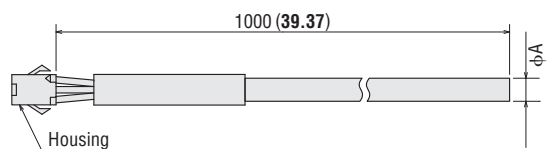
◇ Fan

Mass: 30 g (1.06 oz.)

DXF E124



◇ Cable with Connector (Included)

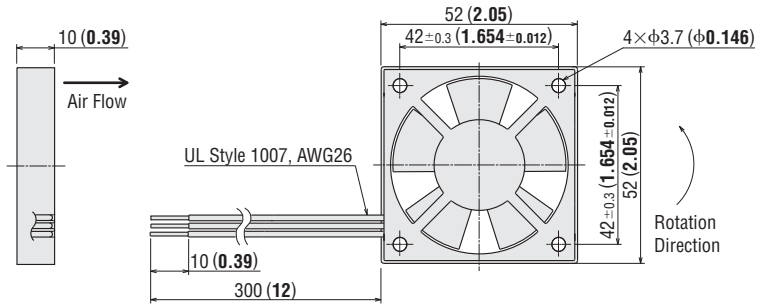


Type	φA	Housing P/N
Stall Alarm, Electronic Alarm Type	φ4.8 (φ0.19)	SMP-03V-NC (J.S.T.)
Standard Type, Standard Speed	φ4.5 (φ0.18)	
Standard Type, Middle Speed		

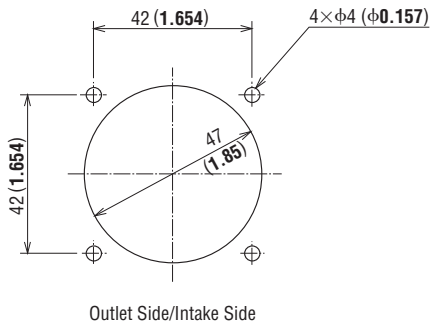
● Lead Wire Type

Mass: 30 g (1.06 oz.)

DXF E018

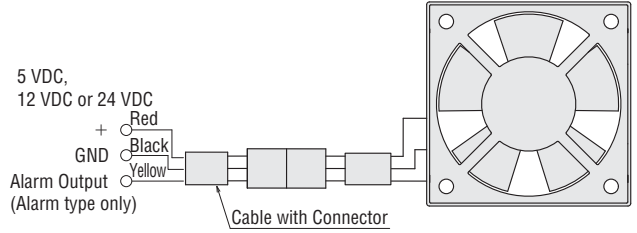


■ Panel Cut-Out Unit = mm (in.)

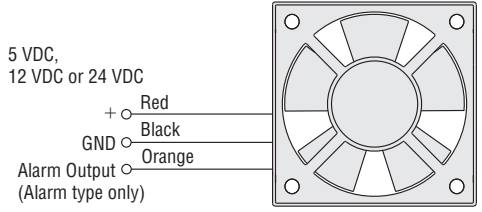


■ Connection Diagrams

● Connector Type



● Lead Wire Type



■ Accessories

The following product is RoHS-Compliant.

Details → Page E-137

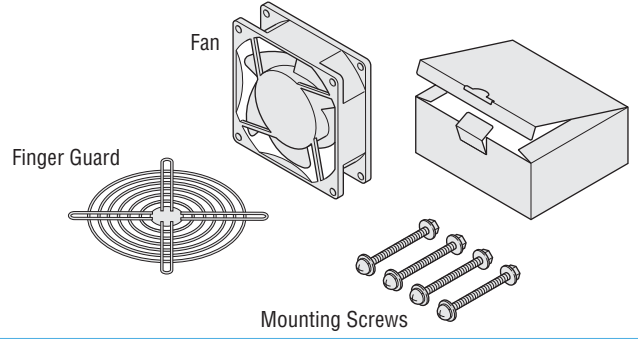
Product	Model	Safety Standards	Page
Finger Guard	FG5D	Conformed component	E-145

Fan Kit

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

RoHS

Details → Page E-141



● Product Line

◇ Connector Type

Fan Kit Model	
T-MDS510-12LHG	T-MDS510-24LHG
T-MDS510-12HG	T-MDS510-24HG
T-MDS510M-5HG	-

◇ Lead Wire Type

Fan Kit Model	
T-MDS510-12L-G	T-MDS510-24L-G
T-MDS510-12-G	T-MDS510-24-G
T-MDS510M-5-G	-
T-MDS510M-12-G	T-MDS510M-24-G

Introduction

FM Cooling Module

AC Input MRS

AC Input Variable Flow MRS

AC Input MU

DC Input Long-Life MDE

DC Input MDS/MD

AC Input MB

DC Input MBD

AC Input MF

DC Input MFD

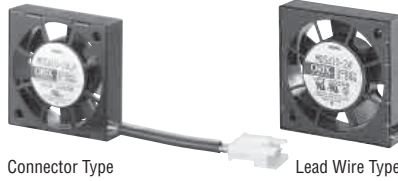
Thermostats

Accessories

Installation

MDS Series

□ 42 mm – 10 mm Thick
 (□ 1.65 in. – 0.39 in. Thick)



Connector Type

Lead Wire Type

Ambient Temperature: $-10\sim+60^{\circ}\text{C}$ ($+14\sim+140^{\circ}\text{F}$)
 Operating Voltage Range: $\pm 10\%$
 Materials
 Frame: Polycarbonate (Flammability grade: V-0)
 Blades: PBT (Flammability grade: V-0)
 Overheat Protection: Built-in Overheat Protection Circuit
 Bearings: Ball Bearings

Specifications (RoHS)



Speed Type	Function	Model		Voltage VDC	Current A	Speed r/min	Max. Air Flow m ³ /min	Max. Air Flow CFM	Max. Static Pressure		Noise Level dB (A)
		Connector Type	Lead Wire Type						Pa	inH ₂ O	
Standard Speed	Stall Alarm, Electronic Alarm Type (Alarm specifications: ①)	MDS410-12LH	MDS410-12L	12	0.16	10000	0.18	6.35	86	0.345	34
		MDS410-24LH	MDS410-24L	24	0.09						
	Standard Type	MDS410-12H	MDS410-12	12	0.16						
		MDS410-24H	MDS410-24	24	0.09						
Middle Speed	Standard Type	MDS410M-5H	MDS410M-5	5	0.20	7500	0.13	4.59	47	0.188	25

● Only lead wire type is DEMKO certified.

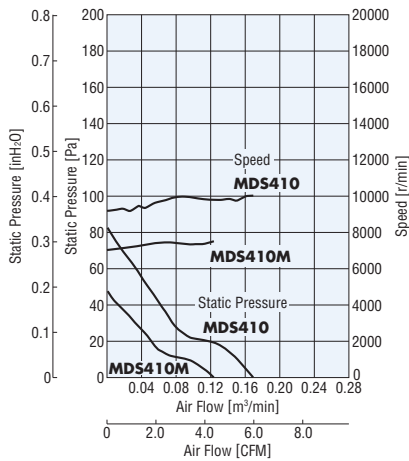
● How to read specifications → Page E-19 ● Alarm specifications ① → Page E-21 ● Details of safety standards → Page G-2 ● Details of RoHS Directive → Page G-38

The following items are included in each product.

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

Air Flow – Static Pressure Characteristics

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



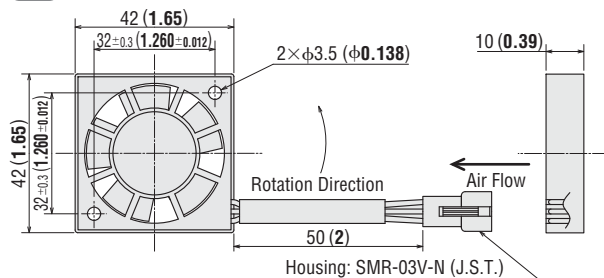
Dimensions Unit = mm (in.)

● Connector Type

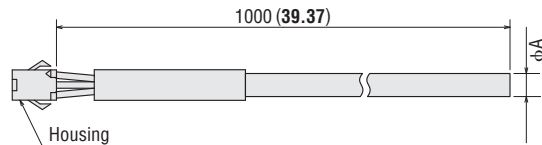
◇ Fan

Mass: 25 g (0.88 oz.)

DXF E125



◇ Cable with Connector (Included)

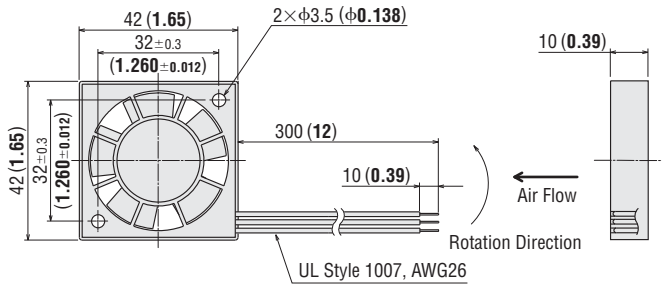


Type	φA	Housing P/N
Stall Alarm, Electronic Alarm Type	φ4.8 (φ0.19)	SMP-03V-NC (J.S.T.)
Standard Type, Standard Speed	φ4.5 (φ0.18)	
Standard Type, Middle Speed		

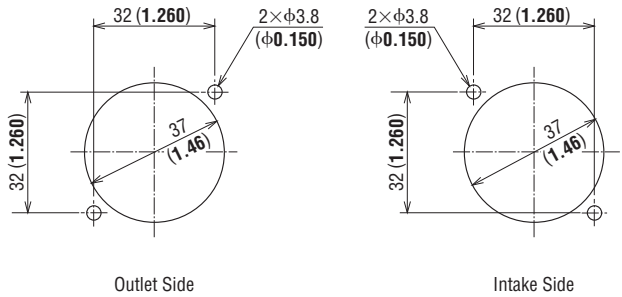
● Lead Wire Type

Mass: 25 g (0.88 oz.)

DXF E019

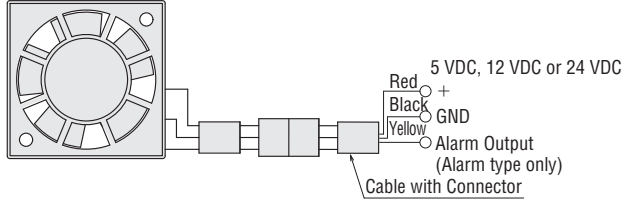


■ Panel Cut-Out Unit = mm (in.)

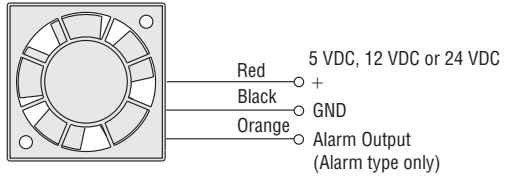


■ Connection Diagrams

● Connector Type



● Lead Wire Type



■ Accessories

The following product is RoHS-Compliant.

Details → Page E-137

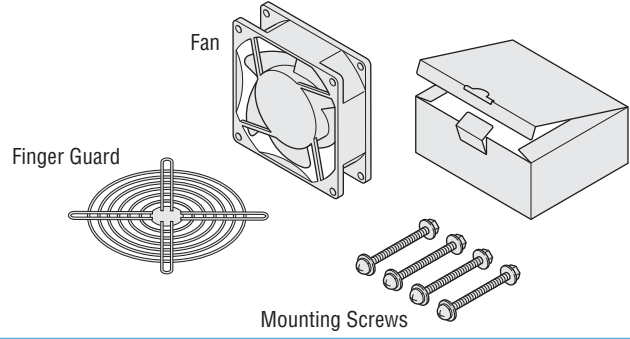
Product	Model	Safety Standards	Page
Finger Guard	FG4D	Conformed component	E-145

Fan Kit

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

Details → Page E-141

RoHS



● Product Line

◇ Connector Type

Fan Kit Model	
T-MDS410-12LHG	T-MDS410-24LHG
T-MDS410-12HG	T-MDS410-24HG
T-MDS410M-5HG	—

◇ Lead Wire Type

Fan Kit Model	
T-MDS410-12L-G	T-MDS410-24L-G
T-MDS410-12-G	T-MDS410-24-G
T-MDS410M-5-G	—

Introduction

FM Cooling Module

AC Input MRS

AC Input Variable Flow MRS

AC Input MU

DC Input Long-Life MDE

DC Input MDS/MD

AC Input MB

DC Input MBD

AC Input MF

DC Input MFD

Thermostats

Accessories

Installation

