

AC Free Input Axial Fans

R89F-M


CSM_R89F-__DS_E_2_1

Reducing required design work through unified power supply voltage

- Reduced time spent on replacement thanks to a longer service life.
- Selection of free voltage input 100 to 240 VAC models.
- Available in set packages (including finger guards, plug cords, and mounting screws).
- CE marking compliant, and certified compliant with various standards including UL and CSA.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

 Refer to the Safety Precautions for All Axial Fans on our website.

Model Number Structure

Model Number Legend

R89F-M □ □ □ □ □ □ □ □ - □ □
 1 2 3 4 5 6 7 8

1. Basic series

R89F	Plastic Blade Series
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3. Frame shape

S	Square
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5. Frame thickness

38	38
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7. Terminal type

P	Terminals *
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* A Plug Cord (R89F-PC) is required for models with terminals.

2. Rated voltage

M	100 to 240 VAC
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4. Frame

09	92 × 92
12	120 × 120

6. Rotational speed

H	High speed
L	Low speed

8. Delivered configuration

No marking	Standard
S1	Finger guard + Screw and nut set + Plug cord *
S2	Finger guard + Screw and nut set + Plug cord *

* Refer to *Set Model* on page 1 and 12 for details.

Note: These tables show only how to read model numbers. They do not indicate which products are available. Refer to *Ratings and Ordering Information* when ordering.

Ordering Information

AC Free Input Axial Fans

Series	Size (mm)	Speed	Model	Page
R89F-M series	92 × 92 × t38	High	R89F-MS0938HP	2
	92 × 92 × t38	Low	R89F-MS0938LP	2
	120 × 120 × t38	High	R89F-MS1238HP	3

Options (Order Separately)

Name	Model	Page
Plug Cord	R89F-PC-□	4
Finger Guard	R87F-FG□	5
Filter	R87F-FL□(S)	6

Note: Mounting screws are not provided.

Set Model

Model	Set Contents
R89F-MS0938HP-S1	Fan, Finger guard × 1, M4 Screw (55 mm) × 4 and nut set × 4, Plug cord (1 m)
R89F-MS0938LP-S1	Fan, Finger guard × 1, M4 Screw (55 mm) × 4 and nut set × 4, Plug cord (1 m)
R89F-MS1238HP-S1	Fan, Finger guard × 1, M4 Screw (55 mm) × 4 and nut set × 4, Plug cord (1 m)
R89F-MS0938HP-S2	Fan, Finger guard × 2, M4 Screw (55 mm) × 4 and nut set × 4, Plug cord (1 m)
R89F-MS0938LP-S2	Fan, Finger guard × 2, M4 Screw (55 mm) × 4 and nut set × 4, Plug cord (1 m)
R89F-MS1238HP-S2	Fan, Finger guard × 2, M4 Screw (55 mm) × 4 and nut set × 4, Plug cord (1 m)

Safety Precautions

Refer to the *Safety Precautions for All Axial Fans* on our website.

R89F-MS0938 □ AC Free Input Axial Fans (92 × 92 × t38 mm)

Ratings and Ordering Information

Model	Item	Rated voltage	Permitted voltage fluctuation range	Frequency [Hz]	Rated current [A] *	Rated input [W] *	Rated rotational speed [r/min] *	Maximum flow rate [m ³ /min] *	Maximum static pressure [Pa] *	Noise [dB] *
R89F-MS0938HP		100 to 240 VAC	90 to 264 V	50/60	0.08	4.5	3850	1.5	90	40
R89F-MS0938LP		100 to 240 VAC	90 to 264 V	50/60	0.06	3.0	3100	1.18	56	33

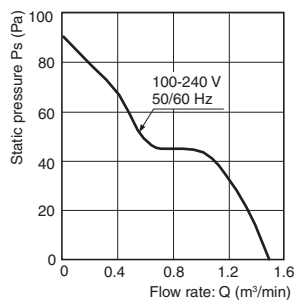
* An asterisk (*) indicates a nominal value.

Characteristics

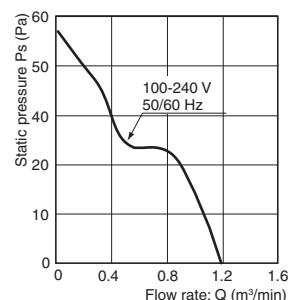
Motor type	Brushless DC motor
Terminal type	Terminals
Insulation class	Class E (UL class A)
Insulation resistance	10 MΩ min. (at 500 VDC) Between lead wire conductor and frame
Insulation withstand voltage	1,500 VAC (1 minute) Between input terminal and frame
Ambient operating temperature	-20 to 75°C (with no icing)
Ambient storage temperature	-30 to +75°C (no icing)
Ambient humidity	20% to 85%
Protection	Restraint burnout protection (Current blocking function)
Materials	Frame PBT/PC alloy (UL94V-0)
	Blades PBT/PC alloy (UL94V-0)
Bearings	Ball bearings
Weight	Approx. 250 g
Compliant standards	EN/IEC 60950 (CE marking compliant) EAC, RCM PSE
Certified standards	UL: UL507 (Recognition), C22.2 No.113

Flow Rate and Static Pressure Characteristics (Reference Value)

R89F-MS0938HP



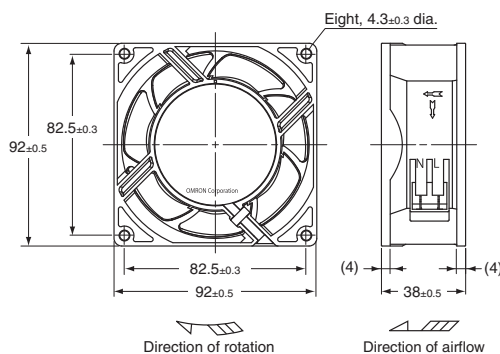
R89F-MS0938LP



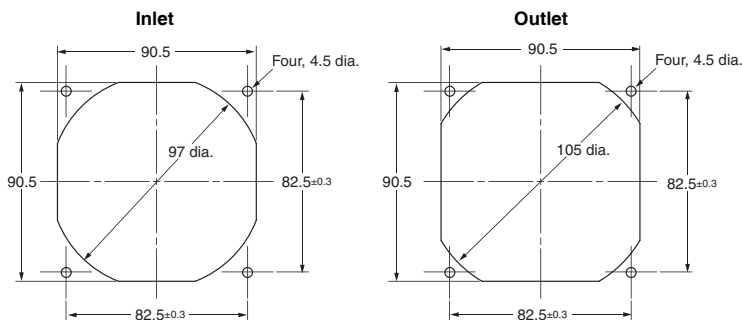
Note: For details on measurement conditions, refer to *Flow Rate and Static Pressure Characteristics on Safety Precautions for All Axial Fans*.

Dimensions

(Unit: mm)



Panel Cutouts



Options

Name	Model	Page
Plug Cord	R89F-PC-□	4
Finger Guard	R87F-FG90	5

R89F-MS1238 □ AC Free Input Axial Fans (120 × 120 × t38 mm)

Ratings and Ordering Information

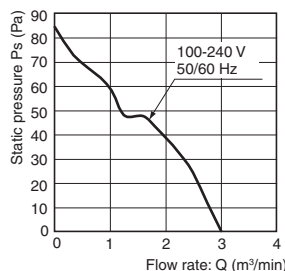
Model	Item	Rated voltage	Permitted voltage fluctuation range	Frequency [Hz]	Rated current [A] *	Rated input [W] *	Rated rotational speed [r/min] *	Maximum flow rate [m ³ /min] *	Maximum static pressure [Pa] *	Noise [dB] *
R89F-MS1238HP		100 to 240 VAC	90 to 264 V	50/60	0.08	4.4	3250	3.0	84	42

* An asterisk (*) indicates a nominal value.

Characteristics

Motor type	Brushless DC motor	
Terminal type	Terminals	
Insulation class	Class E (UL class A)	
Insulation resistance	10 MΩ min. (at 500 VDC) Between lead wire conductor and frame	
Insulation withstand voltage	1,500 VAC (1 minute) Between input terminal and frame	
Ambient operating temperature	-20 to 75°C (with no icing)	
Ambient storage temperature	-30 to +75°C (no icing)	
Ambient humidity	20% to 85%	
Protection	Restraint burnout protection (Current blocking function)	
Materials	Frame	PBT/PC alloy (UL94V-0)
	Blades	PPHOX (UL94V-1)
Bearings	Ball bearings	
Weight	Approx. 290 g	
Compliant standards	EN/IEC 60950 (CE marking compliant) EAC, RCM PSE	
Certified standards	UL: UL507 (Recognition), C22.2 No.113	

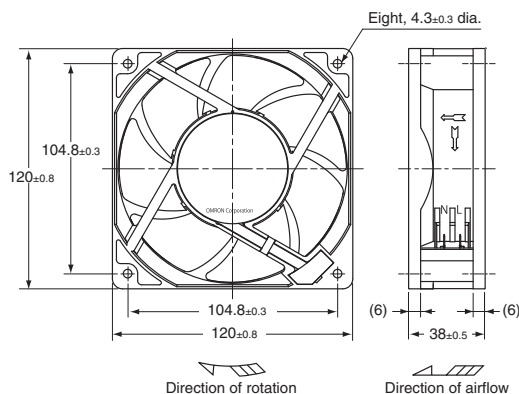
Flow Rate and Static Pressure Characteristics (Reference Value) R89F-MS1238HP



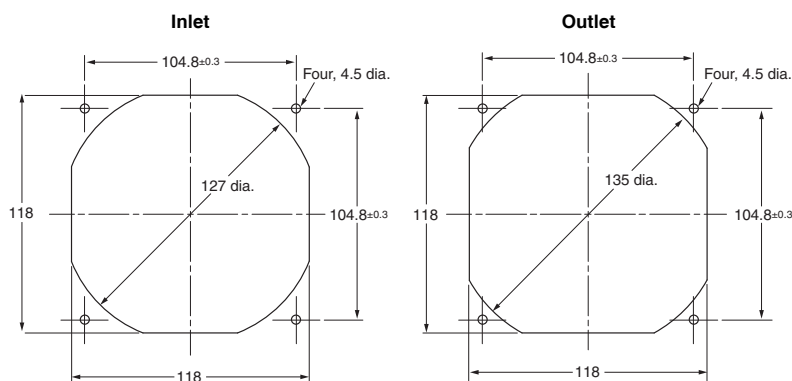
Note: For details on measurement conditions, refer to *Flow Rate and Static Pressure Characteristics on Safety Precautions for All Axial Fans*.

Dimensions

(Unit: mm)



Panel Cutouts



Options

Name	Model	Page
Plug Cord	R89F-PC-□	4
Finger Guard	R87F-FG120	5
Filter	R87F-FL120(S)	6

R89F-PC Plug Cord

Ratings and Ordering Information

Cable length	Model	Weight
1 m	R89F-PC	Approx. 38 g
2 m	R89F-PC-20	Approx. 74 g

R89F-PC Rating: 3 A, 250 V

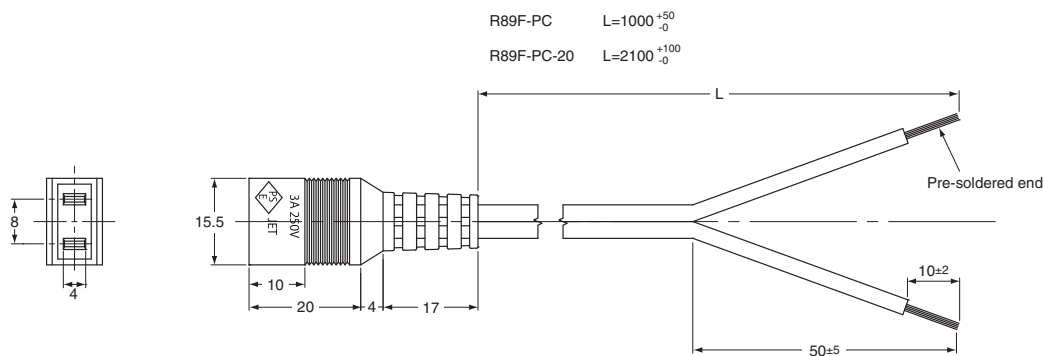
UL-certified / Electrical Appliances and Materials Safety Act-compliant



Dimensions

(Unit: mm)

R89F-PC



Note: This Plug Cord is used for Axial Fans with terminals.

R87F-FG Finger Guards

Ratings and Ordering Information

Size	Model number	Weight (g)
150 dia.	R87F-FG150	Approx. 58
120 × 120	R87F-FG120	Approx. 45
92 × 92	R87F-FG90	Approx. 25
80 × 80	R87F-FG80	Approx. 20

Applicable Axial Fans

AC Axial Fan		Finger Guard
Size	Model	
150 dia.	R87T-A□A0 Series	R87F-FG150
120 × 120	R89F-DS1225□ series R89F-DS1238□ series R89F-MS1238HP	R87F-FG120
	R87F-A□A1 Series R87T-A□A1 Series	
92 × 92	R89F-MS0938□P series	R87F-FG90
92 × 92	R87F-A□A9 Series	R87F-FG90
80 × 80	R87F-A□A8 Series R87T-A□A8 Series	R87F-FG80

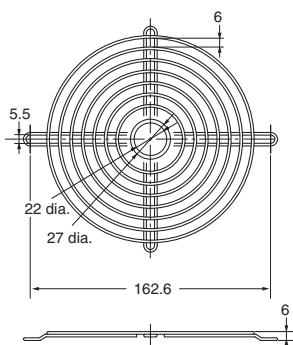
Note: Finger Guards reduce the flow rate by approximately 2% to 5%.

Dimensions

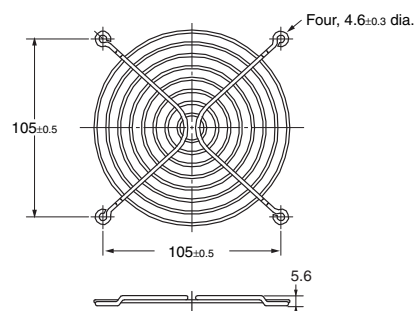
(Unit: mm)

Material: steel, Joints: spot welded, Surface: nickel-chrome plated

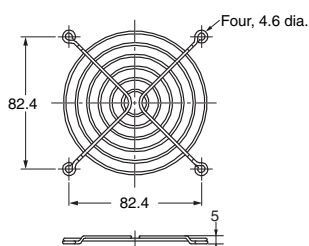
R87F-FG150



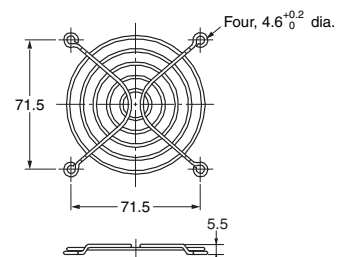
R87F-FG120



R87F-FG90



R87F-FG80



R87F-FL Filters

Ratings and Ordering Information

Filter	Size	Model number	Weight (g)
	120 × 120	R87F-FL120	Approx. 43
	92 × 92	R87F-FL90	Approx. 30
	80 × 80	R87F-FL80	Approx. 21
	120 × 120	R87F-FL120S	Approx. 19

Note: The filter contains one medium.

Media

Size	Model number
120 × 120	R87F-FL120-M120
92 × 92	R87F-FL90-M90
80 × 80	R87F-FL80-M80

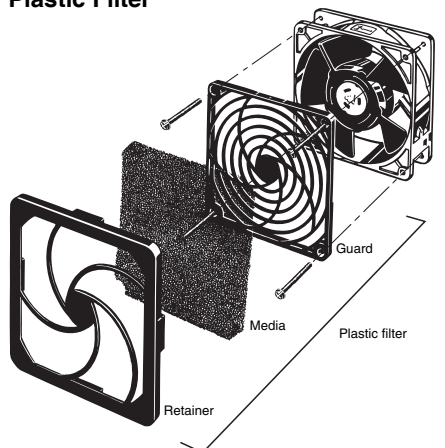
Note: Use the following model number to order the Media only.
 R87F-FL□-M□ (□: 120, 90, or 80)
 (One set containing five Media, weight: 5 g max.)

Applicable Axial Fans

Size	AC Axial Fan		Filter	
	Model	Plastic	Aluminum	
150 dia.	R87T-A□A0 Series	---	---	
	R89F-DS1225□ series			
120 × 120	R89F-DS1238□ series	R87F-FL120	R87F-FL120S	
	R89F-MS1238HP			
	R87F-A□A1 Series			
	R87T-A□A1 Series			
92 × 92	R87F-A□A9 Series	R87F-FL90	---	
80 × 80	R87F-A□A8 Series	R87F-FL80	---	
	R87T-A□A8 Series			

Note: Filters reduce the flow rate by approximately 20% to 40%.
 Ensure that there is no clogging.

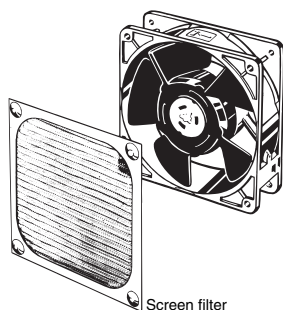
R87F-FL□ Plastic Filter



Mounting Method

1. Attach the guard to the Fan using the mounting bolts. (There are no mounting bolts provided with the Plastic Filter.)
2. With the media held between the retainer and the guard, hook the retainer to the guard. (The Media and retainer can be one-touch mounted/dismounted.)

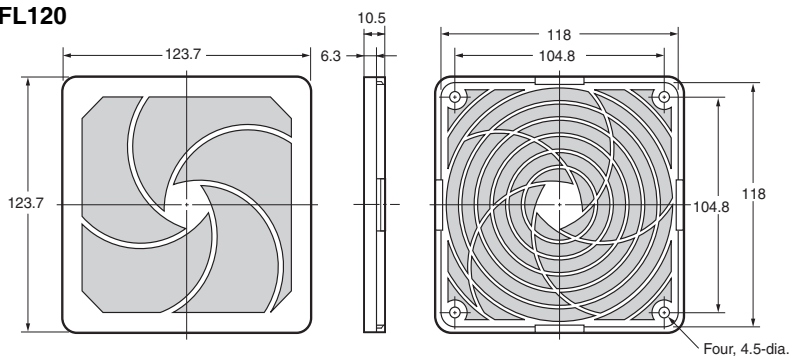
R87F-FL120S Screen Filter



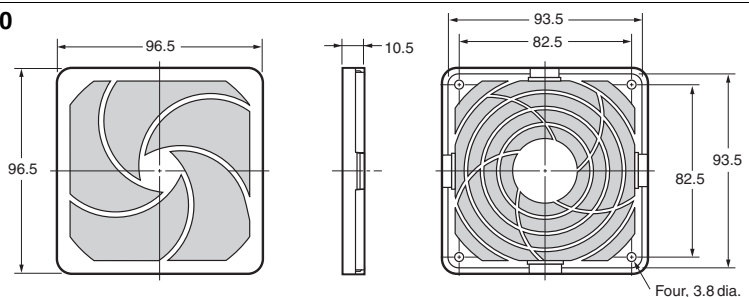
Dimensions

(Unit: mm)

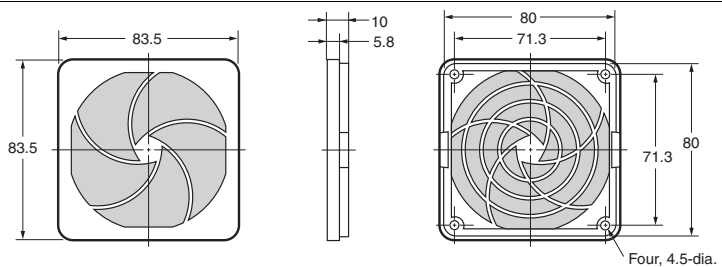
R87F-FL120



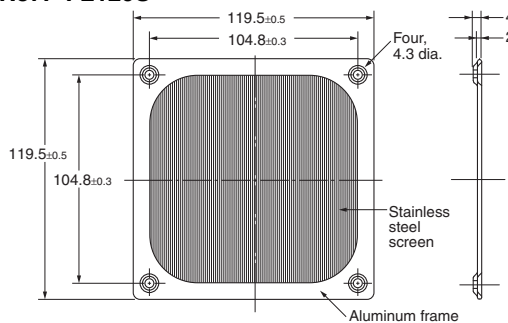
R87F-FL90



R87F-FL80



R87F-FL120S



- Note:**
1. The Screen Filter is made using aluminium and has an EMI/RFI shielding effect.
 2. When mounting the Screen Filter, make sure that it does not come in contact with the fan blades.
 3. The screen is a 30 × 30 aluminum mesh. (30 aluminum wires per inch)

DC Axial Fans

R89F-D

Reducing required design work through unified power supply voltage



- Reduced time spent on replacement thanks to a longer service life.
- Selection of low-voltage input 24 VDC models.
- Available in set packages (including finger guards and mounting screws).
- CE marking compliant, and certified compliant with various standards including UL and CSA.



Refer to the Safety Precautions for All Axial Fans on our website.

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Model Number Structure

Model Number Legend

R89F-D□□□□□□□□-□□
 1 2 3 4 5 6 7 8

1. Basic series

R89F	Plastic Blade Series
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3. Frame shape

S	Square
---	--------

5. Frame thickness

25	25
38	38

7. Terminal type

No marking	Lead wires
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2. Rated voltage

D	24 VDC
---	--------

4. Frame

12	120 × 120
----	-----------

6. Rotational speed

H	High speed
L	Low speed

8. Delivered configuration

No marking	Standard
S1	Finger guard + Screw and nut set *
S2	

* Refer to *Set Model* on page 7 and 12 for details.

Note: These tables show only how to read model numbers. They do not indicate which products are available. Refer to *Ratings and Ordering Information* when ordering.

Ordering Information

DC Axial Fans

Series	Size (mm)	Speed	Model	Page
R89F-D series	120 × 120 × t25	High	R89F-DS1225H	8
	120 × 120 × t25	Low	R89F-DS1225L	8
	120 × 120 × t38	High	R89F-DS1238H	9
	120 × 120 × t38	Low	R89F-DS1238L	9

Options (Order Separately)

Name	Model	Page
Finger Guard	R87F-FG□	10
Filter	R87F-FL□(S)	11

Note: Mounting screws are not provided.

Set Model

Model	Set Contents
R89F-DS1225H-S1	Fan, Finger guard × 1, M4 Screw (40 mm) × 4 and nut set × 4
R89F-DS1225L-S1	Fan, Finger guard × 1, M4 Screw (40 mm) × 4 and nut set × 4
R89F-DS1238H-S1	Fan, Finger guard × 1, M4 Screw (55 mm) × 4 and nut set × 4
R89F-DS1238L-S1	Fan, Finger guard × 1, M4 Screw (55 mm) × 4 and nut set × 4
R89F-DS1225H-S2	Fan, Finger guard × 2, M4 Screw (40 mm) × 4 and nut set × 4
R89F-DS1225L-S2	Fan, Finger guard × 2, M4 Screw (40 mm) × 4 and nut set × 4
R89F-DS1238H-S2	Fan, Finger guard × 2, M4 Screw (55 mm) × 4 and nut set × 4
R89F-DS1238L-S2	Fan, Finger guard × 2, M4 Screw (55 mm) × 4 and nut set × 4

Safety Precautions

Refer to the *Safety Precautions for All Axial Fans* on our website.

R89F-DS1225 □ DC Axial Fans (120 × 120 × t25 mm)

Ratings and Ordering Information

Model	Item	Rated voltage	Permitted voltage fluctuation range	Frequency [Hz]	Rated current [A] *	Rated input [W] *	Rated rotational speed [r/min] *	Maximum flow rate [m ³ /min] *	Maximum static pressure [Pa] *	Noise [dB] *
R89F-DS1225H		24 VDC	20.4 to 27.6 V	---	0.47	11.28	4100	3.68	120	51
R89F-DS1225L		24 VDC	12 to 27.6 V	---	0.17	4.08	2850	2.5	64	40

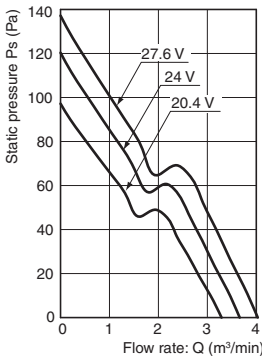
* An asterisk (*) indicates a nominal value.

Characteristics

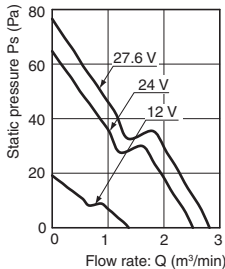
Motor type	Brushless DC motor	
Terminal type	Lead wires	
Insulation class	Class E (UL class A)	
Insulation resistance	10 MΩ min. (at 500 VDC) Between lead wire conductor and frame	
Insulation withstand voltage	500 VAC (1 minute) Between lead wire conductor and frame	
Ambient operating temperature	-20 to +70°C (no icing)	
Ambient storage temperature	-30 to +70°C (no icing)	
Ambient humidity	20% to 85%	
Protection	Restraint burnout protection (Current blocking function) Power supply lead wire reverse polarity protection	
Materials	Frame	PBT/ABS alloy (UL94V-0)
	Blades	PPOX (UL94V-1)
Bearings	Ball bearings	
Weight	Approx. 280 g	
Compliant standards	EN/IEC 60950 (CE marking compliant) EAC RCM	
Certified standards	UL: UL507 (Recognition) CSA: C22.2 No.113	

Flow Rate and Static Pressure Characteristics (Reference Value)

R89F-DS1225H



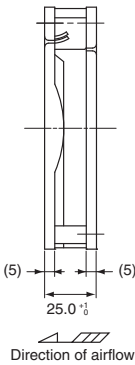
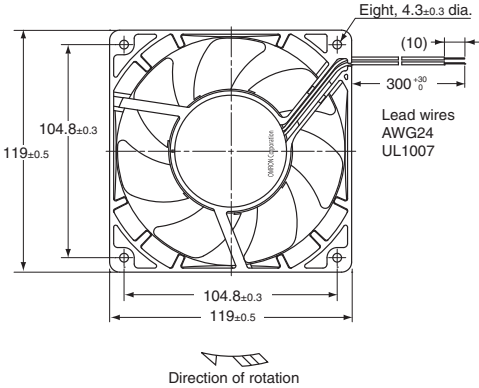
R89F-DS1225L



Note: For details on measurement conditions, refer to *Flow Rate and Static Pressure Characteristics on Safety Precautions for All Axial Fans*.

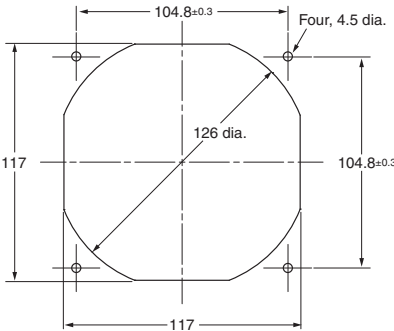
Dimensions

(Unit: mm)

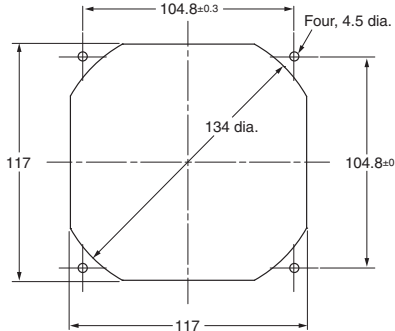


Panel Cutouts

Inlet



Outlet



Options

Name	Model	Page
Finger Guard	R87F-FG120	10
Filter	R87F-FL120(S)	11

R89F-DS1238 □ DC Axial Fans (120 × 120 × t38 mm)

Ratings and Ordering Information

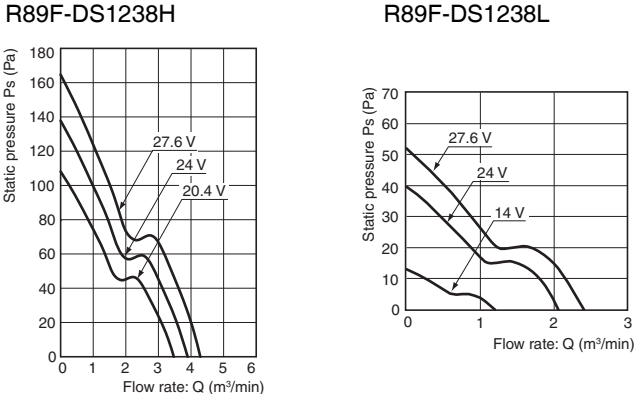
Model	Item	Rated voltage	Permitted voltage fluctuation range	Frequency [Hz]	Rated current [A] *	Rated input [W] *	Rated rotational speed [r/min] *	Maximum flow rate [m ³ /min] *	Maximum static pressure [Pa] *	Noise [dB] *
R89F-DS1238H		24 VDC	20.4 to 27.6 V	---	0.5	12	3600	3.88	135	49
R89F-DS1238L		24 VDC	14 to 27.6 V	---	0.11	2.64	1950	2.1	39.6	32

* An asterisk (*) indicates a nominal value.

Characteristics

Motor type	Brushless DC motor
Terminal type	Lead wires
Insulation class	Class E (UL class A)
Insulation resistance	10 MΩ min. (at 500 VDC) Between lead wire conductor and frame
Insulation withstand voltage	500 VAC (1 minute) Between lead wire conductor and frame
Ambient operating temperature	-20 to +70°C (no icing)
Ambient storage temperature	-30 to +70°C (no icing)
Ambient humidity	20% to 85%
Protection	Restraint burnout protection (Current blocking function) Power supply lead wire reverse polarity protection
Materials	Frame PBT/ABS alloy (UL94V-0) Blades PPHOX (UL94V-1)
Bearings	Ball bearings
Weight	Approx. 330 g
Compliant standards	EN/IEC 60950 (CE marking compliant) EAC RCM
Certified standards	UL: UL507 (Recognition) CSA: C22.2 No.113

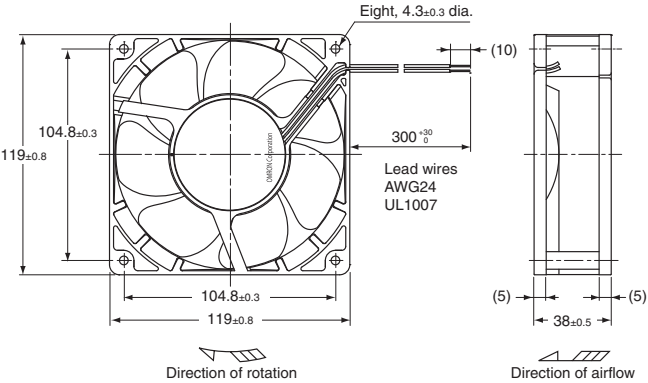
Flow Rate and Static Pressure Characteristics (Reference Value)



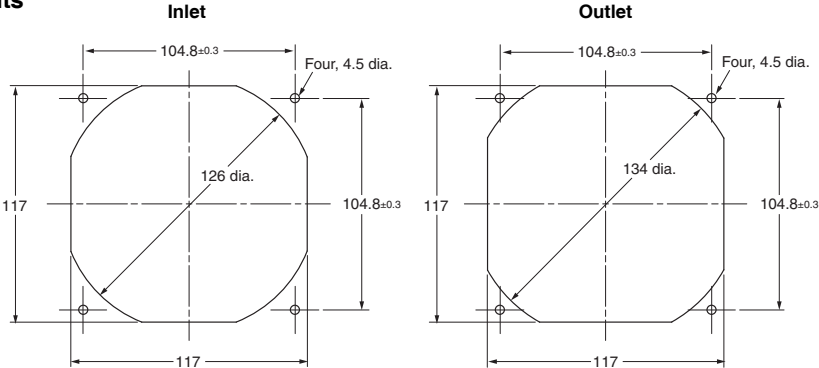
Note: For details on measurement conditions, refer to *Flow Rate and Static Pressure Characteristics on Safety Precautions for All Axial Fans*.

Dimensions

(Unit: mm)



Panel Cutouts



Options

Name	Model	Page
Finger Guard	R87F-FG120	10
Filter	R87F-FL120(S)	11

R87F-FG Finger Guards

Ratings and Ordering Information

Size	Model number	Weight (g)
150 dia.	R87F-FG150	Approx. 58
120 × 120	R87F-FG120	Approx. 45
92 × 92	R87F-FG90	Approx. 25
80 × 80	R87F-FG80	Approx. 20

Applicable Axial Fans

AC Axial Fan		Finger Guard
Size	Model	
150 dia.	R87T-A□A0 Series	R87F-FG150
120 × 120	R89F-DS1225□ series R89F-DS1238□ series R89F-MS1238HP	R87F-FG120
	R87F-A□A1 Series R87T-A□A1 Series	
92 × 92	R89F-MS0938□P series	R87F-FG90
92 × 92	R87F-A□A9 Series	R87F-FG90
80 × 80	R87F-A□A8 Series R87T-A□A8 Series	R87F-FG80

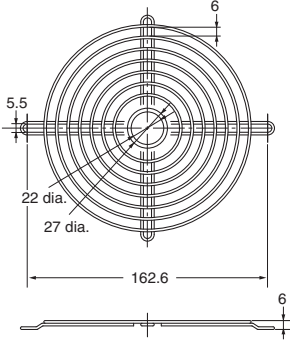
Note: Finger Guards reduce the flow rate by approximately 2% to 5%.

Dimensions

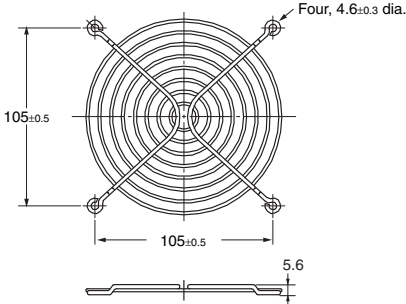
(Unit: mm)

Material: steel, Joints: spot welded, Surface: nickel-chrome plated

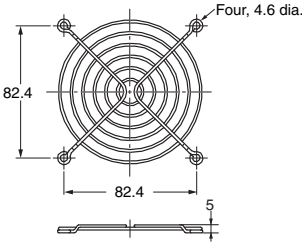
R87F-FG150



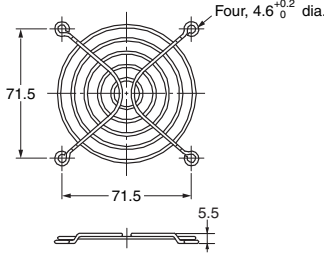
R87F-FG120



R87F-FG90



R87F-FG80



R87F-FL Filters

Ratings and Ordering Information

Filter	Size	Model number	Weight (g)
	120 × 120	R87F-FL120	Approx. 43
	92 × 92	R87F-FL90	Approx. 30
	80 × 80	R87F-FL80	Approx. 21
	120 × 120	R87F-FL120S	Approx. 19

Note: The filter contains one medium.

Media

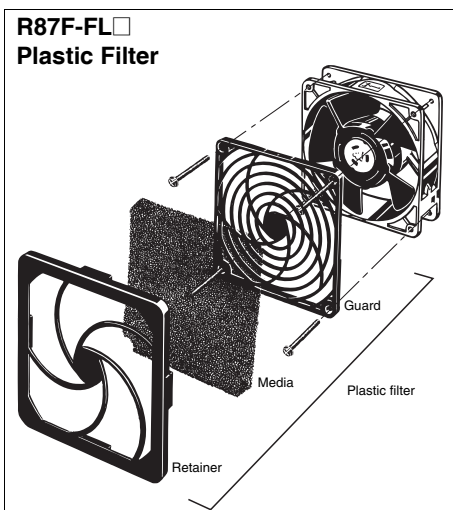
Size	Model number
120 × 120	R87F-FL120-M120
92 × 92	R87F-FL90-M90
80 × 80	R87F-FL80-M80

Note: Use the following model number to order the Media only.
 R87F-FL□-M□ (□: 120, 90, or 80)
 (One set containing five Media, weight: 5 g max.)

Applicable Axial Fans

Size	AC Axial Fan		Filter	
	Model	Plastic	Aluminum	
150 dia.	R87T-A□A0 Series	---	---	
	R89F-DS1225□ series			
120 × 120	R89F-DS1238□ series	R87F-FL120	R87F-FL120S	
	R89F-MS1238HP			
	R87F-A□A1 Series			
	R87T-A□A1 Series			
92 × 92	R87F-A□A9 Series	R87F-FL90	---	
80 × 80	R87F-A□A8 Series	R87F-FL80	---	
	R87T-A□A8 Series			

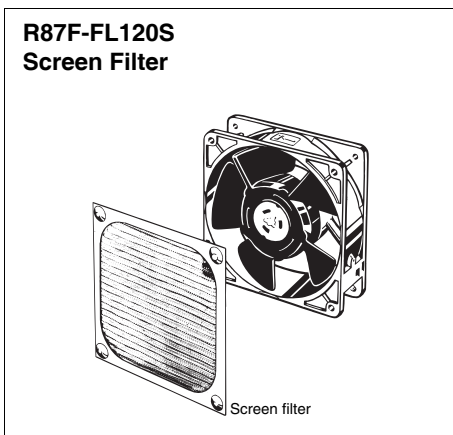
Note: Filters reduce the flow rate by approximately 20% to 40%.
 Ensure that there is no clogging.



R87F-FL□
Plastic Filter

Mounting Method

1. Attach the guard to the Fan using the mounting bolts. (There are no mounting bolts provided with the Plastic Filter.)
2. With the media held between the retainer and the guard, hook the retainer to the guard. (The Media and retainer can be one-touch mounted/dismounted.)

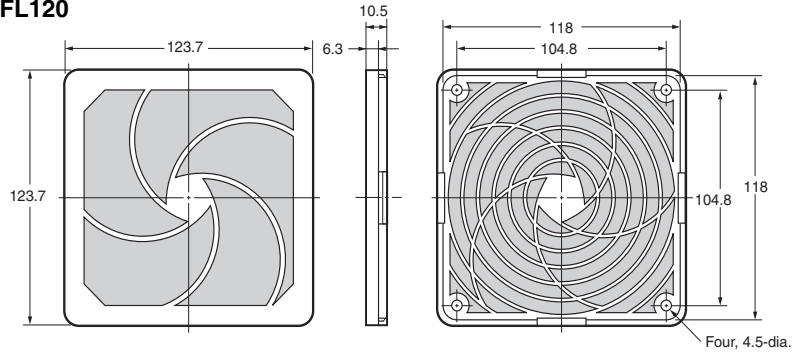


R87F-FL120S
Screen Filter

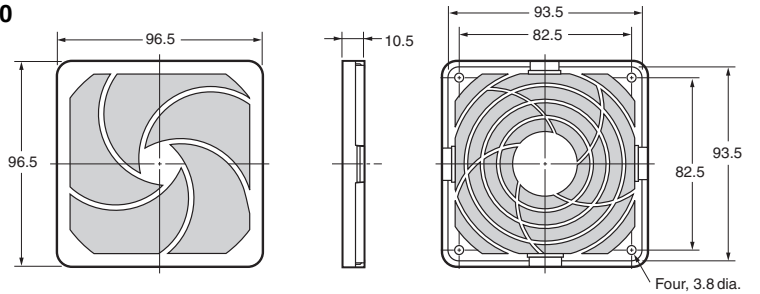
Dimensions

(Unit: mm)

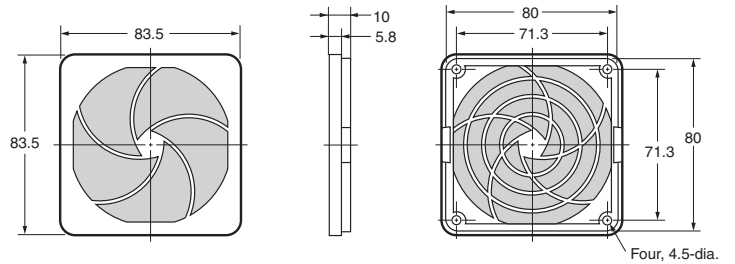
R87F-FL120



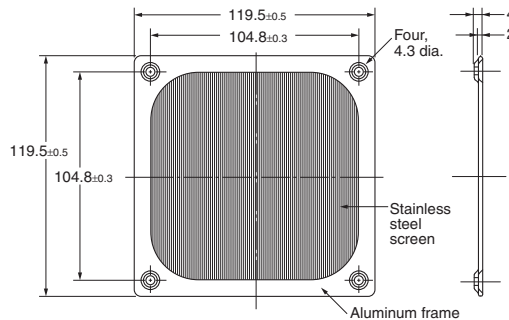
R87F-FL90



R87F-FL80



R87F-FL120S




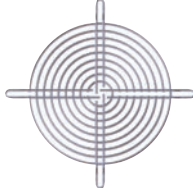




- Note:**
1. The Screen Filter is made using aluminium and has an **EMI/RFI** shielding effect.
 2. When mounting the Screen Filter, make sure that it does not come in contact with the fan blades.
 3. The screen is a 30 × 30 aluminium mesh. (30 aluminium wires per inch)

Set Model

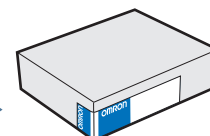
- Select the optimum size for a variety of control panels.
- All required parts can be ordered as a set, ideal for fan replacement.
- All required maintenance parts are included in one box, requiring less space and reduced parts management work.

R89F-□□□□□□□□-S1 *Only applicable for DC Axial Fans and AC Free Input Axial Fans.

Set Contents

Fan 	Finger Guard × 1 	Plug Cord (1 m)  <small>* AC Free Input Axial Fan only</small>
M4 screws × 4 	Hexagonal nuts × 4 	Instruction manual 


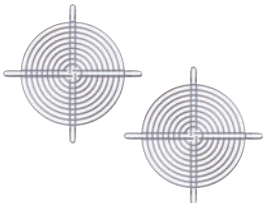




All required parts included in one box



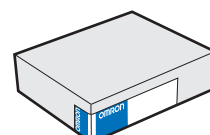
* Packaging for illustrative purposes only.

R89F-□□□□□□□□-S2 *Only applicable for DC Axial Fans and AC Free Input Axial Fans.

Set Contents

Fan 	Finger Guard × 2 	Plug Cord (1 m)  <small>* AC Free Input Axial Fan only</small>
M4 screws × 4 	Hexagonal nuts × 4 	Instruction manual 

All required parts included in one box



* Packaging for illustrative purposes only.

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