


# Box Fan R87B

CSM\_R87B\_DS\_E\_4\_2

## Comprehensive Lineup of Single, Double, and Triple Axial Fans with Easy One-step Mounting

- Mounts in a square cutout and conceals the hole-cut to simplify installation work.
- Cover can be set to open either upward or downward for convenience in confined spaces.
- Enhanced accessories (finger guard, filter, plug cord, mounting screws).
- Optional Replacement Filter and Vent Attachment.
- The lineup includes Single, Double, and Triple Box Fans with eight models with plastic blades and eight models with metal blades.



 Refer to *Safety Precautions for All Axial Fans*.

## Model Number Structure

### Model Number Legend

R87B-        A15  PF    

1    2            3            4 5

### Attachment

R87B-N  

1 5

### Options and Accessories

R87B-P      

1 6 7

Number	Category	Symbol	Meaning of symbol
1	Fan (blade material)	F T N	R87F Axial Fan (with plastic blades) R87T Axial Fan (with metal blades) No fan
	Optional parts	P	Options and accessories
2	Power supply classification	A1	100 VAC
		A3	115 VAC
		A4	200 VAC
		A6	230 VAC
3	Speed classification	H	High speed
		M	Middle speed
		L	Low speed
4	Airflow direction	None	In
		R	Out
5	Number of fans	None	1
		2	2
		3	3
6	Part type	F	Filter
7	Reference number	01	---

**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 placing an order.

## Ordering Information

Type	Number of fans	Model	Accessories
Plastic blades High speed	1	R87B-FA <u>  </u> A15HPF(R)	Filter Finger guard Plug cord Mounting bolts
	2	R87B-FA <u>  </u> A15HPF(R)2	
	3	R87B-FA <u>  </u> A15HPF(R)3	
Plastic blades Low speed	1	R87B-FA <u>  </u> A15LPPF(R)	
	2	R87B-FA <u>  </u> A15LPPF(R)2	
	3	R87B-FA <u>  </u> A15LPPF(R)3	
Metal blades High speed	1	R87B-TA <u>  </u> A15HPF(R)	
	2	R87B-TA <u>  </u> A15HPF(R)2	
	3	R87B-TA <u>  </u> A15HPF(R)3	
Metal blades Medium speed	1	R87B-TA <u>  </u> A15MPF(R)	
	2	R87B-TA <u>  </u> A15MPF(R)2	
	3	R87B-TA <u>  </u> A15MPF(R)3	
Attachment	For 1	R87B-N	Filter Finger guard Mounting screws
	For 2	R87B-N2	
	For 3	R87B-N3	
Replacement Filter	Any	R87B-PF01	Set of two filters

## Ratings and Ordering Information

Item	Model	R87B-F	R87B-T
Motor type		Single-phase shading coil induction motor (2-pole, open type)	
Terminal type		Terminals	
Insulation class		IEC class B (130°C) UL class A (105°C) CSA class A (105°C)	IEC class B (130°C) UL class A (105°C)
Insulation resistance		100 MΩ min. (at 500 VDC) Between all power supply connection parts and non-current carrying metal parts	
Dielectric strength		2,000 VAC for 1 min Between all power supply connection parts and non-current carrying metal parts	
Ambient operating temperature		-30 to 70°C (with no icing)	-20 to 70°C (with no icing)
Storage temperature		-40 to 85°C (with no icing)	
Ambient humidity		25% to 85%	
Protection		Impedance protection	
Materials	Frame	Die-cast aluminum	
	Blades	Glass polycarbonate	Steel plate (black coating)
Bearings		Ball bearings	
Compliant standards*		PSE, EN/IEC 60335 (CE self-declaration)	
Certified standards*		UL/CSA	UL

**Note:** The rated current is the total for all fans.

\* The compliant standards and certified standards apply to the listed Axial Fans.

## Safety Precautions

Refer to *Safety Precautions for All Axial Fans*.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.  
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

In the interest of product improvement, specifications are subject to change without notice.

## Ratings and Ordering Information

## Airflow Direction: In

Item Model	Rated voltage (V)	Permitted voltage fluctuation range (%)	Frequency (Hz)	Rated rotational speed (r/min) *		Maximum flow rate (m <sup>3</sup> /min) *		Maximum static pressure (Pa) *		Noise (dB) *		Weight
				50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
R87B-FA1A15HPF	100	85% to 110% rated voltage	50/60	2,700	3,100	1.3	1.5	91	85	49	52	Approx. 1,120 g
R87B-FA3A15HPF	115											
R87B-FA4A15HPF	200											
R87B-FA6A15HPF	230											
R87B-FA1A15LPF	100	85% to 110% rated voltage	50/60	2,100	2,200	0.9	1.0	43	42	42	43	
R87B-FA3A15LPF	115											
R87B-FA4A15LPF	200											
R87B-FA6A15LPF	230											
R87B-TA1A15HPF	100	85% to 110% rated voltage	50/60	2,650	3,000	1.1	1.3	67	63	45	48	Approx. 1,150 g
R87B-TA3A15HPF	115											
R87B-TA4A15HPF	200											
R87B-TA6A15HPF	230											
R87B-TA1A15MPF	100	85% to 110% rated voltage	50/60	2,300	2,600	0.8	1.0	41	45	41	44	
R87B-TA3A15MPF	115											
R87B-TA4A15MPF	200											
R87B-TA6A15MPF	230											

Note: An asterisk (\*) indicates a nominal value.

## Airflow Direction: Out

Item Model	Rated voltage (V)	Permitted voltage fluctuation range (%)	Frequency (Hz)	Rated rotational speed (r/min) *		Maximum flow rate (m <sup>3</sup> /min) *		Maximum static pressure (Pa) *		Noise (dB) *		Weight
				50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
R87B-FA1A15HPFR	100	85% to 110% rated voltage	50/60	2,700	3,100	1.3	1.5	91	85	49	52	Approx. 1,120 g
R87B-FA3A15HPFR	115											
R87B-FA4A15HPFR	200											
R87B-FA6A15HPFR	230											
R87B-FA1A15LPFR	100	85% to 110% rated voltage	50/60	2,100	2,200	0.9	1.0	43	42	42	43	
R87B-FA3A15LPFR	115											
R87B-FA4A15LPFR	200											
R87B-FA6A15LPFR	230											
R87B-TA1A15HPFR	100	85% to 110% rated voltage	50/60	2,650	3,000	1.1	1.3	67	63	45	48	Approx. 1,150 g
R87B-TA3A15HPFR	115											
R87B-TA4A15HPFR	200											
R87B-TA6A15HPFR	230											
R87B-TA1A15MPFR	100	85% to 110% rated voltage	50/60	2,300	2,600	0.8	1.0	41	45	41	44	
R87B-TA3A15MPFR	115											
R87B-TA4A15MPFR	200											
R87B-TA6A15MPFR	230											

Note: An asterisk (\*) indicates a nominal value.

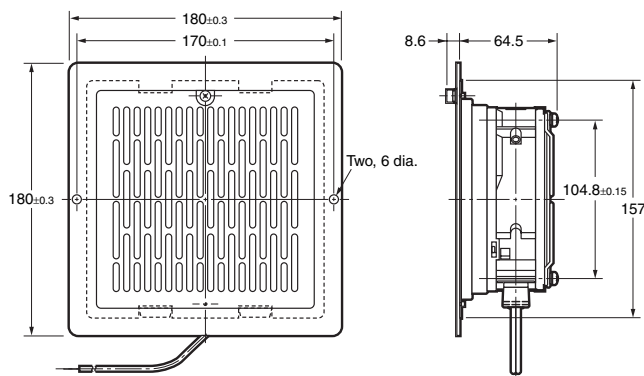
- The data in this table comes from measurements that were taken with the filter and cover attached.
- The model number of the AC Axial Fan in the Box Fan can be determined from the model number of the Box Fan as follows:

R87B-FA1A15HPF→R87F-A1A15HP

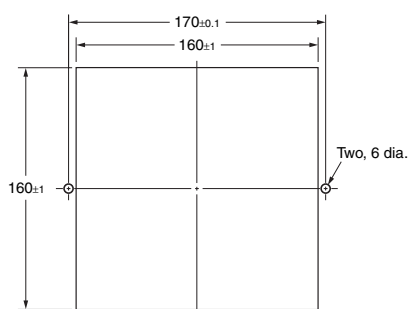
The model number of the Axial Fan can be determined by extracting the underlined portions from the model number of the Box Fan as shown.

# Dimensions

(Unit: mm)



## Panel Cutout Dimensions



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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# Double Box Fan

# R87B-□A□A15□PF(R)2

## Ratings and Ordering Information

### Airflow Direction: In

Item Model	Rated voltage (V)	Permitted voltage fluctuation range (%)	Frequency (Hz)	Rated rotational speed (r/min) *		Maximum flow rate (m <sup>3</sup> /min) *		Maximum static pressure (Pa) *		Noise (dB) *		Weight
				50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
R87B-FA1A15HPPF2	100	85% to 110% rated voltage	50/60	2,700	3,100	2.6	3.0	86	48	55	56	Approx. 2,220 g
R87B-FA3A15HPPF2	115											
R87B-FA4A15HPPF2	200											
R87B-FA6A15HPPF2	230											
R87B-FA1A15LPPF2	100	85% to 110% rated voltage	50/60	2,100	2,200	2.0	2.1	47	44	45	46	
R87B-FA3A15LPPF2	115											
R87B-FA4A15LPPF2	200											
R87B-FA6A15LPPF2	230											
R87B-TA1A15HPPF2	100	85% to 110% rated voltage	50/60	2,650	3,000	2.4	2.7	68	63	49	52	Approx. 2,260 g
R87B-TA3A15HPPF2	115											
R87B-TA4A15HPPF2	200											
R87B-TA6A15HPPF2	230											
R87B-TA1A15MPF2	100	85% to 110% rated voltage	50/60	2,300	2,600	1.6	1.9	41	43	44	47	
R87B-TA3A15MPF2	115											
R87B-TA4A15MPF2	200											
R87B-TA6A15MPF2	230											

Note: An asterisk (\*) indicates a nominal value.

### Airflow Direction: Out

Item Model	Rated voltage (V)	Permitted voltage fluctuation range (%)	Frequency (Hz)	Rated rotational speed (r/min) *		Maximum flow rate (m <sup>3</sup> /min) *		Maximum static pressure (Pa) *		Noise (dB) *		Weight
				50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
R87B-FA1A15HPFR2	100	85% to 110% rated voltage	50/60	2,700	3,100	2.6	3.0	86	48	55	56	Approx. 2,220 g
R87B-FA3A15HPFR2	115											
R87B-FA4A15HPFR2	200											
R87B-FA6A15HPFR2	230											
R87B-FA1A15LPFR2	100	85% to 110% rated voltage	50/60	2,100	2,200	2.0	2.1	47	44	45	46	
R87B-FA3A15LPFR2	115											
R87B-FA4A15LPFR2	200											
R87B-FA6A15LPFR2	230											
R87B-TA1A15HPFR2	100	85% to 110% rated voltage	50/60	2,650	3,000	2.4	2.7	68	63	49	52	Approx. 2,260 g
R87B-TA3A15HPFR2	115											
R87B-TA4A15HPFR2	200											
R87B-TA6A15HPFR2	230											
R87B-TA1A15MPFR2	100	85% to 110% rated voltage	50/60	2,300	2,600	1.6	1.9	41	43	44	47	
R87B-TA3A15MPFR2	115											
R87B-TA4A15MPFR2	200											
R87B-TA6A15MPFR2	230											

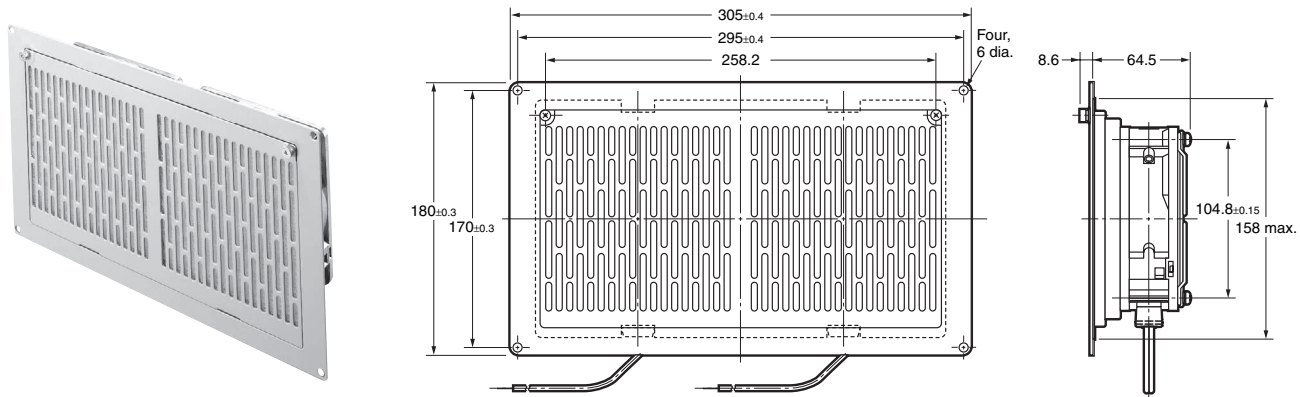
Note: An asterisk (\*) indicates a nominal value.

- The data in this table comes from measurements that were taken with the filter and cover attached.
- The model number of the AC Axial Fan in the Box Fan can be determined from the model number of the Box Fan as follows:

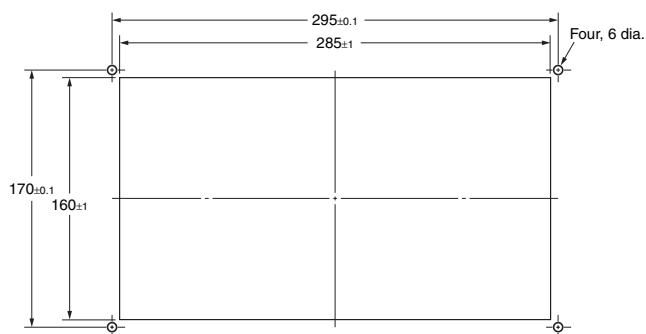
R87B-FA1A15HPF → R87F-A1A15HP

The model number of the Axial Fan can be determined by extracting the underlined portions from the model number of the Box Fan as shown.

# Dimensions



## Panel Cutout Dimensions



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## Ratings and Ordering Information

## Airflow Direction: In

Item Model	Rated voltage (V)	Permitted voltage fluctuation range (%)	Frequency (Hz)	Rated rotational speed (r/min) *		Maximum flow rate (m <sup>3</sup> /min) *		Maximum static pressure (Pa) *		Noise (dB) *		Weight
				50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
R87B-FA1A15HPF3	100	85% to 110% rated voltage	50/60	2,700	3,100	3.9	4.5	86	56	56	58	Approx. 3,380 g
R87B-FA3A15HPF3	115											
R87B-FA4A15HPF3	200											
R87B-FA6A15HPF3	230											
R87B-FA1A15LPF3	100	85% to 110% rated voltage	50/60	2,100	2,200	2.9	3.1	42	41	47	48	
R87B-FA3A15LPF3	115											
R87B-FA4A15LPF3	200											
R87B-FA6A15LPF3	230											
R87B-TA1A15HPF3	100	85% to 110% rated voltage	50/60	2,650	3,000	3.5	4.0	68	63	50	53	Approx. 3,410 g
R87B-TA3A15HPF3	115											
R87B-TA4A15HPF3	200											
R87B-TA6A15HPF3	230											
R87B-TA1A15MPF3	100	85% to 110% rated voltage	50/60	2,300	2,600	2.4	2.8	41	45	45	48	
R87B-TA3A15MPF3	115											
R87B-TA4A15MPF3	200											
R87B-TA6A15MPF3	230											

Note: An asterisk (\*) indicates a nominal value.

## Airflow Direction: Out

Item Model	Rated voltage (V)	Permitted voltage fluctuation range (%)	Frequency (Hz)	Rated rotational speed (r/min) *		Maximum flow rate (m <sup>3</sup> /min) *		Maximum static pressure (Pa) *		Noise (dB) *		Weight
				50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
R87B-FA1A15HPFR3	100	85% to 110% rated voltage	50/60	2,700	3,100	3.9	4.5	86	56	56	58	Approx. 3,380 g
R87B-FA3A15HPFR3	115											
R87B-FA4A15HPFR3	200											
R87B-FA6A15HPFR3	230											
R87B-FA1A15LPFR3	100	85% to 110% rated voltage	50/60	2,100	2,200	2.9	3.1	42	41	47	48	
R87B-FA3A15LPFR3	115											
R87B-FA4A15LPFR3	200											
R87B-FA6A15LPFR3	230											
R87B-TA1A15HPFR3	100	85% to 110% rated voltage	50/60	2,650	3,000	3.5	4.0	68	63	50	53	Approx. 3,410 g
R87B-TA3A15HPFR3	115											
R87B-TA4A15HPFR3	200											
R87B-TA6A15HPFR3	230											
R87B-TA1A15MPFR3	100	85% to 110% rated voltage	50/60	2,300	2,600	2.4	2.8	41	45	45	48	
R87B-TA3A15MPFR3	115											
R87B-TA4A15MPFR3	200											
R87B-TA6A15MPFR3	230											

Note: An asterisk (\*) indicates a nominal value.

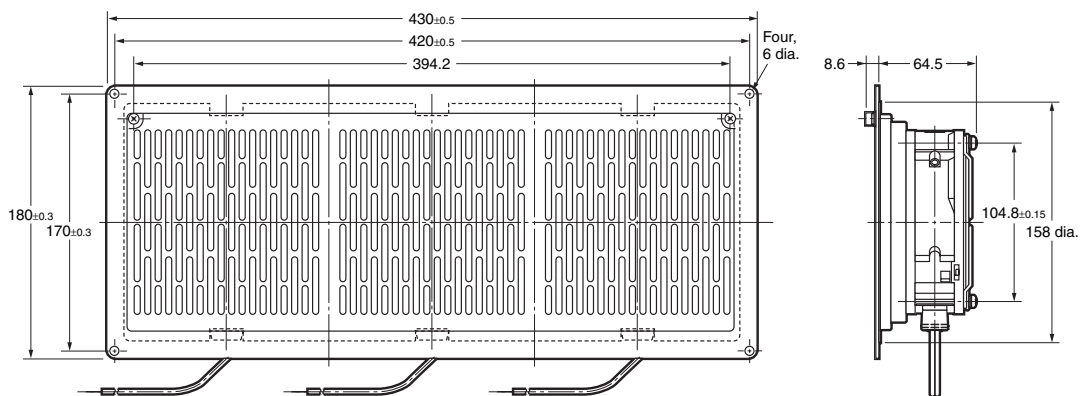
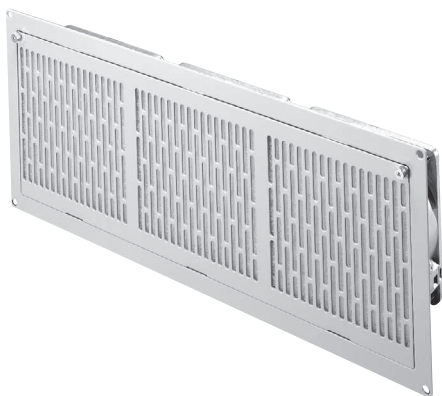
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R87B-FA1A15HPF → R87F-A1A15HP

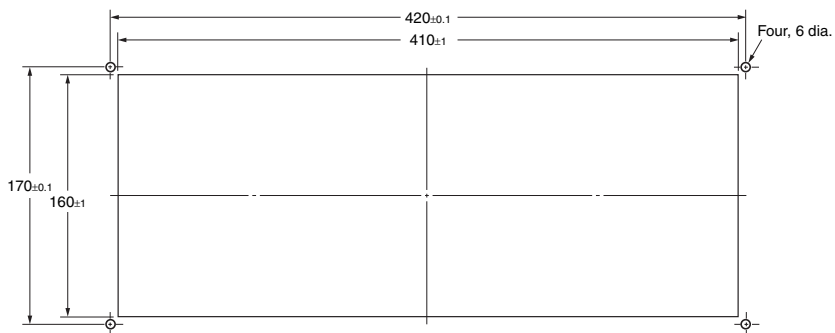
The model number of the Axial Fan can be determined by extracting the underlined portions from the model number of the Box Fan as shown.

# Dimensions

(Unit: mm)



## Panel Cutout Dimensions



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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

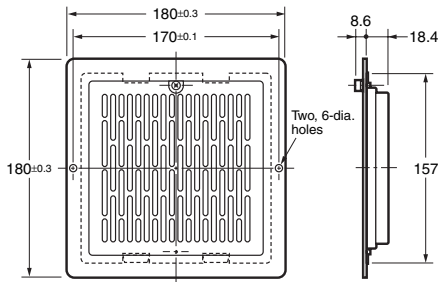
In the interest of product improvement, specifications are subject to change without notice.



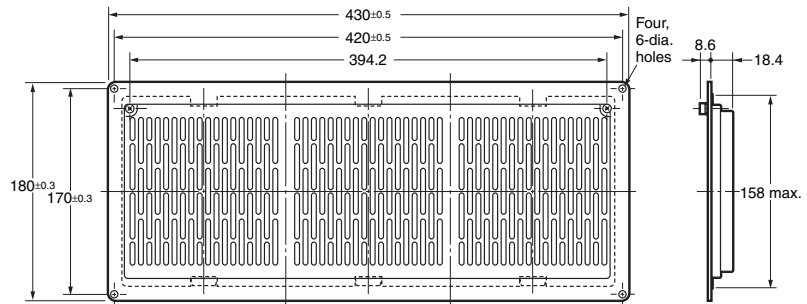
# R87B-N□/R87B-PF

## R87B-N□ (Attachment)

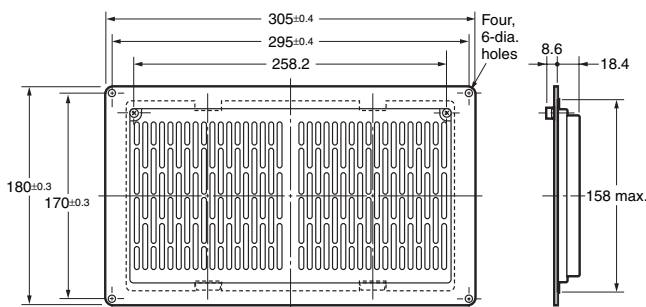
### Single Box



### Triple Box



### Double Box

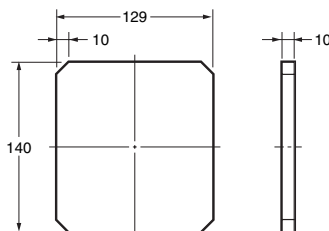


### Ratings and Ordering Information

Model	Item	Type	Weight
R87B-N		Single	Approx. 570 g
R87B-N2		Double	Approx. 1,100 g
R87B-N3		Triple	Approx. 1,700 g

**Note:** The panel cut-out dimensions are the same as those for the Box Fan.

## R87B-PF01 (Replacement Filter)



### Ratings and Ordering Information

Model	Item	Qty.	Weight (grams per filter)
R87B-PF01		2	6

### Filter Performance

Heat resistance (°C)	Filtration wind velocity (m/s)	Pressure drop (Pa)		Dust removal (%)	Dust suction amount (g/mm <sup>2</sup> )
		Initial	Final		
100	2.5	49	70	70 min.	300

- Pay careful attention to clogging in the filter. A clogged filter will prevent the Fan from providing a cooling effect.

### Replacing the Filter

1. Turn OFF the power, wait approximately one minute, and then open the cover. Remove the filter, replace it with a new filter, close the cover, and then firmly tighten the handle screw. This completes the filter replacement.
2. As a general guide to the replacement frequency, check the color of the filter regularly and replace it when the color shows a noticeable change.
3. It is recommended that the filter be replaced soon after the color changes noticeably in order to maintain the Fan's performance. (Replacement Filter: R87B-PF01)

## Accessories

Model	Item	Mounting bolts (M4)	Hexagonal nuts (M4)	Plain washers	Spring washers	Cable with plug	Finger Guard (See note.)	Filter (See note.)
R87B-□A□A1□□PF(R)	(Single, with fan)	2	2	4	2	1	2	1
R87B-□A□A1□□PF(R)2	(Double, with fan)	4	4	8	4	2	4	2
R87B-□A□A1□□PF(R)3	(Triple, with fan)	4	4	8	4	3	6	3
R87B-N	(Single, without fan)	2	2	4	2	None	1	1
R87B-N2	(Double, without fan)	4	4	8	4	None	2	2
R87B-N3	(Triple, without fan)	4	4	8	4	None	3	3

**Note:** The Finger Guard and Filter are to be assembled into the Box Fan.

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In the interest of product improvement, specifications are subject to change without notice.

## Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

## Warranty and Limitations of Liability

### WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

### LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

## Application Considerations

### SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

### PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

## Disclaimers

### CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

### DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

### PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

### ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

2009.1

In the interest of product improvement, specifications are subject to change without notice.

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