

COOLING FAN

San Ace



2016

SANYO DENKI

San Ace COOLING SYSTEMS

DC and AC Fan Series—Featuring High Quality and High Reliability

Details on new and recommended products

NEW

9GT type

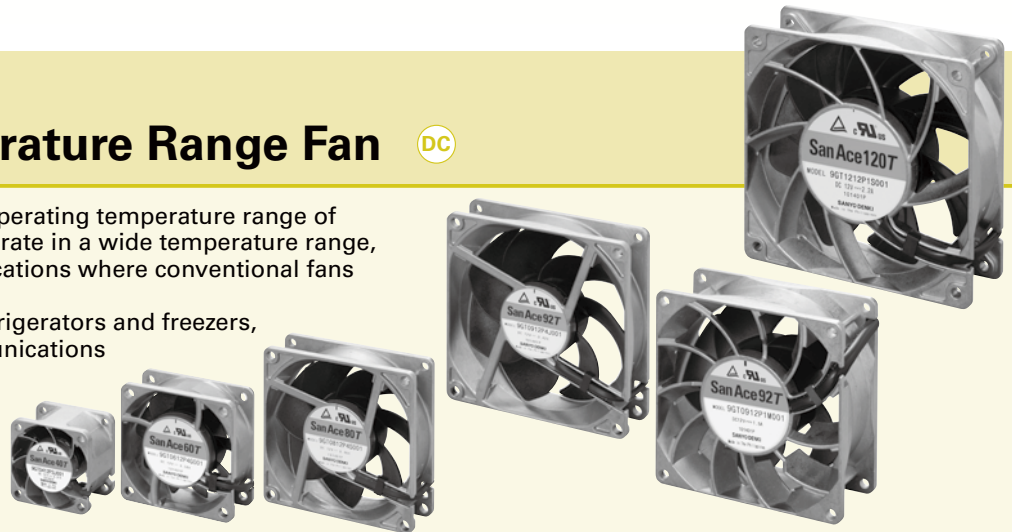
Wide Temperature Range Fan DC

These fans achieve an operating temperature range of -40°C to +85°C. They operate in a wide temperature range, serving in various applications where conventional fans could not be used.

They are suitable for refrigerators and freezers, lighting devices, communications devices, PV inverters, and rapid EV charging stations.

40mm sq. to 120mm sq.

⇒p. 350 to 362



9LG type

High Airflow Long Life Fan DC

New long life fans have been added to our product lineup. These fans feature high airflow and an expected lifespan of 180,000 hours (approximately 20 years).

They are suitable for cell towers, communications devices, and PV inverters.

60mm sq. to 120mm sq.

⇒p. 313 to 336



NEW

Centrifugal Fan DC

These fans deliver high airflow and high static pressure with low noise and low power consumption.

They are suitable for communications devices, heat exchangers, large electric power storage systems, PV inverters, air curtains, fan filter units, refrigerators and freezers, and fuel batteries.

φ221×71mm, φ225×99mm

⇒p. 373 to 376



NEW

9WL type

Splash Proof Fan 

These high airflow fans are water- and dust-resistant, with an IP68 protection rating and an expected lifespan of 150,000 hours (approximately 17 years). They are perfect cooling solutions for communications relay stations, PV inverters, and LED lighting devices.

**40×40×28mm**

⇒p. 240

NEW

9HV type

High Static Pressure Fan 

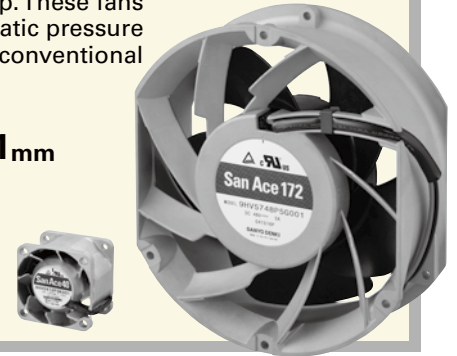
New high static pressure fans have been added to our product lineup. These fans have improved static pressure compared to our conventional models.

φ172×150×51mm


⇒p. 187

40×40×28mm

⇒p. 31

**NEW**

9GA type

Low Power Consumption Fan 

These 10 mm fans are the thinnest in our product lineup. They deliver high airflow with low power consumption in spite of their thin design. They are perfect cooling solutions for monitors, medical devices, and LEDs.

**60×60×10mm**

⇒p. 53

NEW

9GV type

High Airflow Fan 

The maximum airflow of the fan is approximately 2 times that of our conventional DC fans, with approximately 6.8 times* the maximum static pressure.

They are perfect for servers, communications devices, and power supply units.

* Our conventional counter rotating fans are: 140×140×38 mm "San Ace 140" (9P type), model no. 109P1412H101.

140×140×38mm

⇒p. 177

**NEW**

9RF type

Reversible Flow Fan 

Multiple fans are usually used to blow air in both directions to ventilate houses, and to cool drink vending machines, and food display cases. With reversible flow fans, the wind direction can be switched so fewer fans are required.

**φ136×28mm**

⇒p. 235

9AD type

ACDC Fan 

A new 92 mm square fan has been added to our ACDC fan lineup which operates by internally converting AC power into DC power. Excellent performance of DC fans can be obtained with AC power.

92×92×38mm

⇒p. 399

120×120×38mm

⇒p. 403

NEW

The San Ace fan series features an extensive lineup, offering high quality and high reliability.

DC

DC Fan

Cooling fan operating at 5V, 12V, 24V, and 48VDC.
Wide lineup including low power consumption fans, silent fans, and high airflow and high static pressure fans
36mm sq. to ϕ 200mm.



Counter Rotating Fan

Airflow and static pressure become higher than two conventional products of the same size connected in a series
38mm sq. to ϕ 172mm.



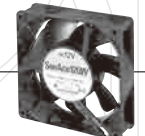
Reversible Flow Fan

The wind directions can be switched with these fans. Equivalent cooling performance can be obtained in both directions.
 ϕ 136mm



Splash Proof Fan

Cooling fan of IP54, IP55 and IP68 waterproof capability
40mm sq. to ϕ 172mm.



Splash Proof Centrifugal Fan

IP54 splash proof centrifugal fan
 ϕ 100mm to ϕ 175mm.



Oil Proof Fan

Cooling fan capable of operating in an oil-mist environment
40mm sq. to 120mm sq.



Long Life Fan

Cooling fan with Max. 200,000 hours of expected life
40mm sq. to ϕ 172mm.



Wide Temperature Range Fan

These fans can be used in a wide temperature range of -40°C to $+85^{\circ}\text{C}$.
40mm sq. to 120mm sq.



Centrifugal Fan

Cooling fan blows air in a centrifugal course.
It features high static pressure.
 ϕ 100mm to ϕ 225mm



Blower

Cooling fan specialized for high static pressure
52mm to 160mm



AC

ACDC Fan

This fan works while internally converting AC power into DC power, providing the superior performance of a DC fan with the flexibility of AC input.
92mm sq. to 120mm sq.



AC Fan

The cooling fan operates at 100V to 230V AC.
60mm sq. to ϕ 172mm



Domain Diagram 5 to 8

DC

The Meaning of the Specifications..... 9

DC Fan 10

36mm sq. 11 to 12
 38mm sq. 13 to 16
 40mm sq. 17 to 46
 52mm sq. 47 to 52
 60mm sq. 53 to 86
 70mm sq. 87 to 88
 80mm sq. 89 to 130
 92mm sq. 131 to 150
 120mm sq. 151 to 172
 127mm sq. 173 to 176
 140mm sq. 177 to 182
 150mm sq. 183 to 184
 φ 172mm 185 to 196
 φ 200mm 197 to 200

Counter Rotating Fan 202

38mm sq. 203 to 204
 40mm sq. 205 to 216
 60mm sq. 217 to 224
 80mm sq. 225 to 228
 120mm sq. 229 to 230
 φ 172mm 231 to 232

Reversible Flow Fan 234

φ 136mm 235 to 236

Splash Proof Fan 238

40mm sq. 239 to 242
 60mm sq. 243 to 248
 80mm sq. 249 to 258
 92mm sq. 259 to 268
 120mm sq. 269 to 276
 140mm sq. 277 to 280
 φ 172mm 281 to 284

Splash Proof Centrifugal Fan 286

φ 100mm 287 to 288
 φ 133mm 289 to 290
 φ 150mm 291 to 292
 φ 175mm 293 to 294

Oil Proof Fan 296

40mm sq. 297 to 298
 60mm sq. 299 to 301
 80mm sq. 302
 92mm sq. 303 to 306
 120mm sq. 307 to 308

Long Life Fan 310

40mm sq. 311 to 312
 60mm sq. 313 to 320
 80mm sq. 321 to 326
 92mm sq. 327 to 332
 120mm sq. 333 to 340
 140mm sq. 341 to 344
 φ 172mm 345 to 348

Wide Temperature Range Fan 350

40mm sq. 351 to 352
 60mm sq. 353 to 354

DC

80mm sq. 355 to 356
 92mm sq. 357 to 360
 120mm sq. 361 to 362

Centrifugal Fan 364

φ 100mm 365 to 366
 φ 133mm 367 to 368
 φ 150mm 369 to 370
 φ 175mm 371 to 372
 φ 221mm 373 to 374
 φ 225mm 375 to 376

Blower 378

52mm 379 to 380
 76mm 381 to 384
 97mm 385 to 392
 120mm 393 to 394
 127mm 395
 160mm 396

AC

ACDC Fan 398

92mm sq. 399 to 402
 120mm sq. 403 to 406

The Meaning of the Specifications 407

AC Fan 408

60mm sq. 409 to 412
 80mm sq. 413 to 420
 92mm sq. 421 to 424
 120mm sq. 425 to 432
 160mm sq. 433 to 434
 φ 172mm 435 to 438

Option 439 to 449

Technical Material

Overview and Characteristics of Fan 450
 Guideline in Selecting a Fan 450
 Characteristics Calculation Method
 and Description 451 to 452
 Splash Proof Fan 453
 Cautions for Use of a Cooling Fan in the
 Vicinity of a Power Switching Circuit 454

Specifications for Sensor/PWM Control Function

Specifications for DC Fan Sensors 455 to 456
 PWM Control Function 457
 Specifications for AC Fan Sensor 458

Please Read:

Operating Precautions 459
 Fan Mounting Using Self-tapping Screw 460
 Safety Precautions 461 to 462
 Safety Standards 463
 RoHS Directive 464

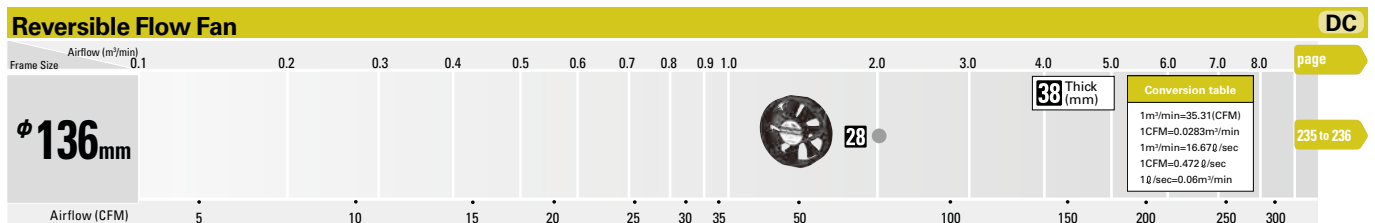
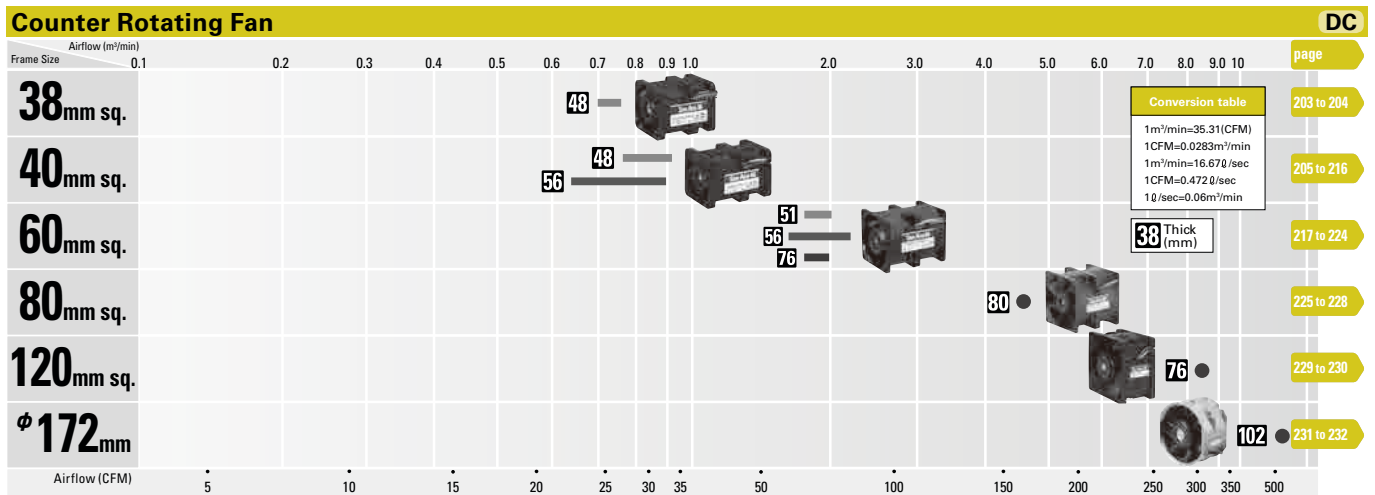
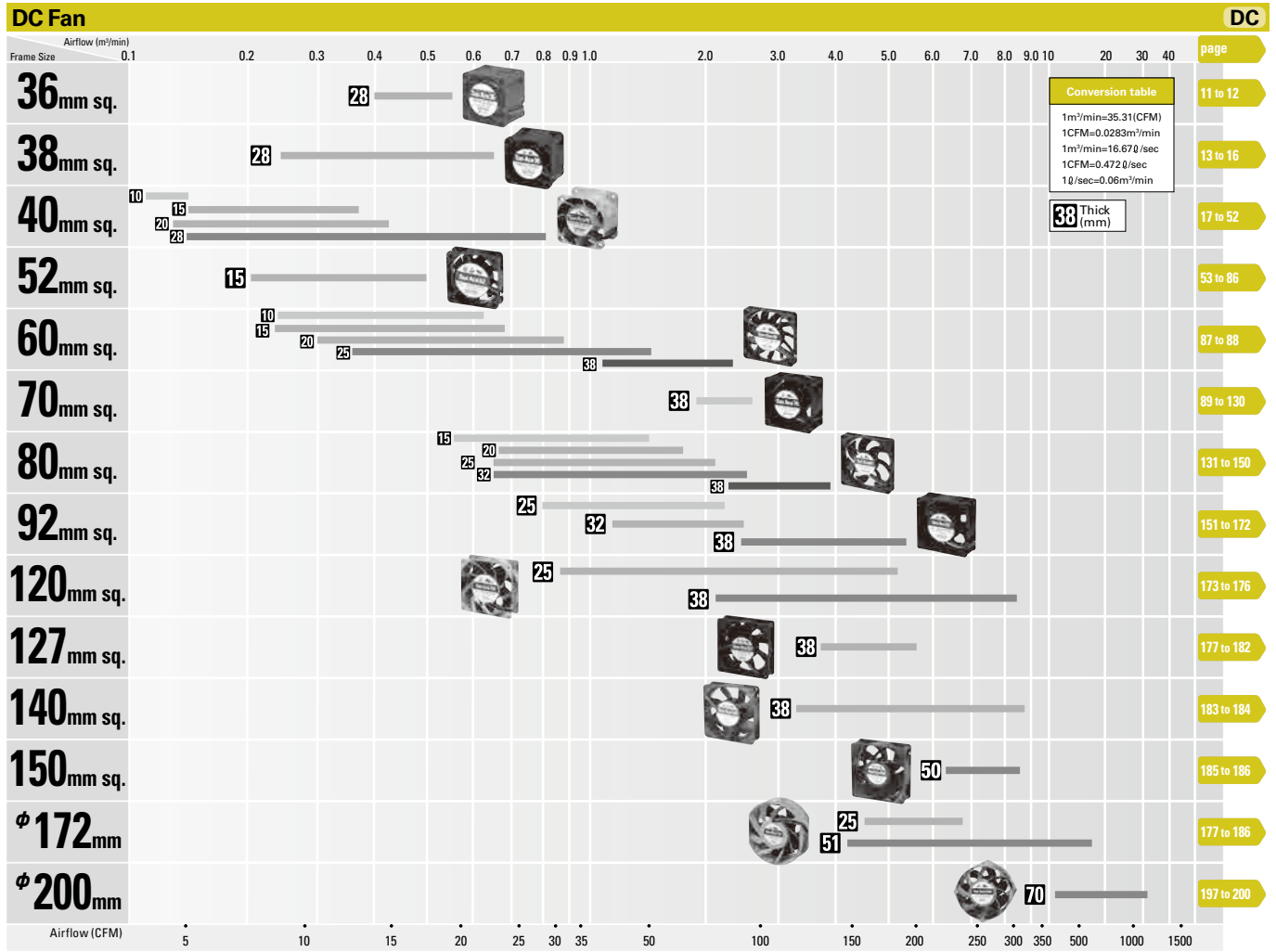
Index by Model No./Safety Standards List

DC Fan 465 to 483
 AC Fan 484 to 485
 Option 486

Deleted Models in this Catalog 487 to 489

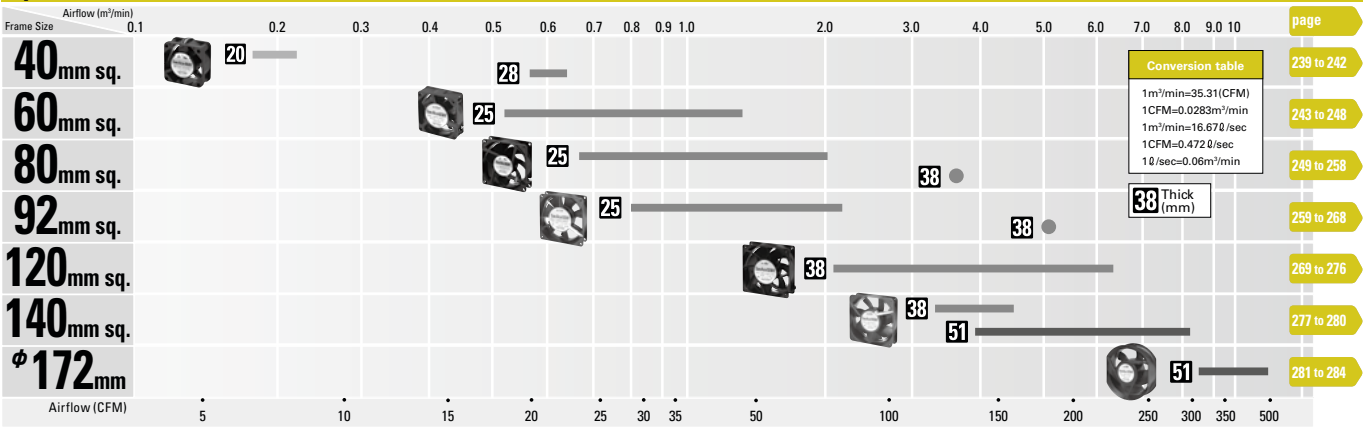
Distributors 490 to 493

Domain Diagram



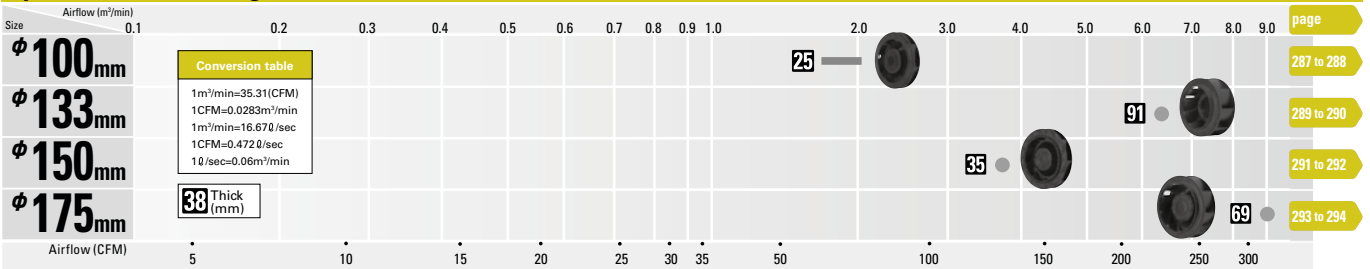
Splash Proof Fan

DC



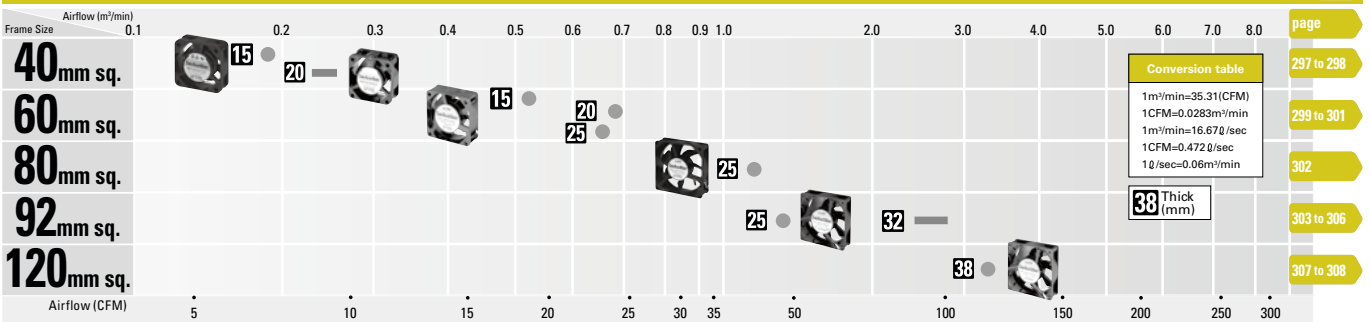
Splash Proof Centrifugal Fan

DC



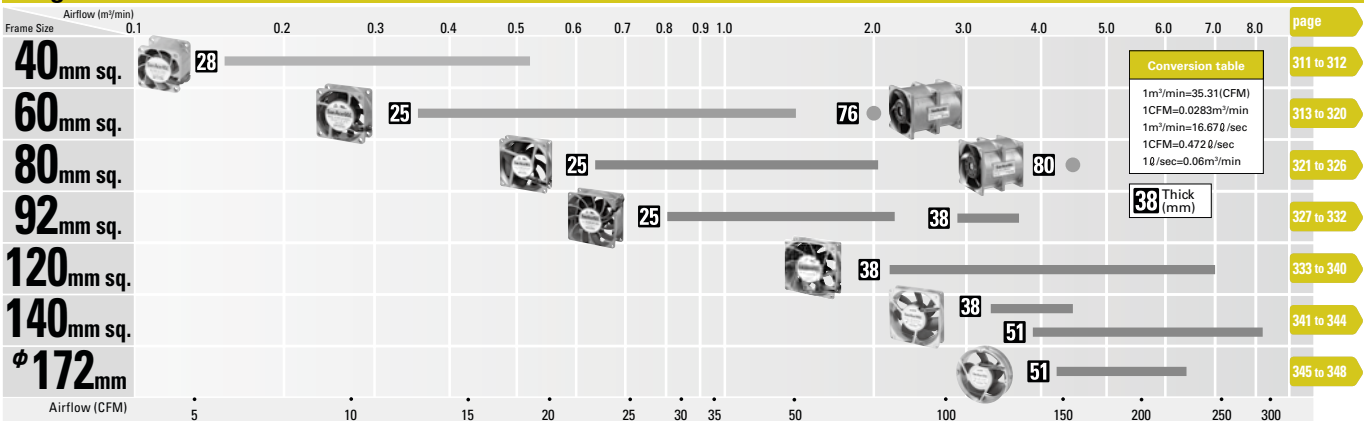
Oil Proof Fan

DC

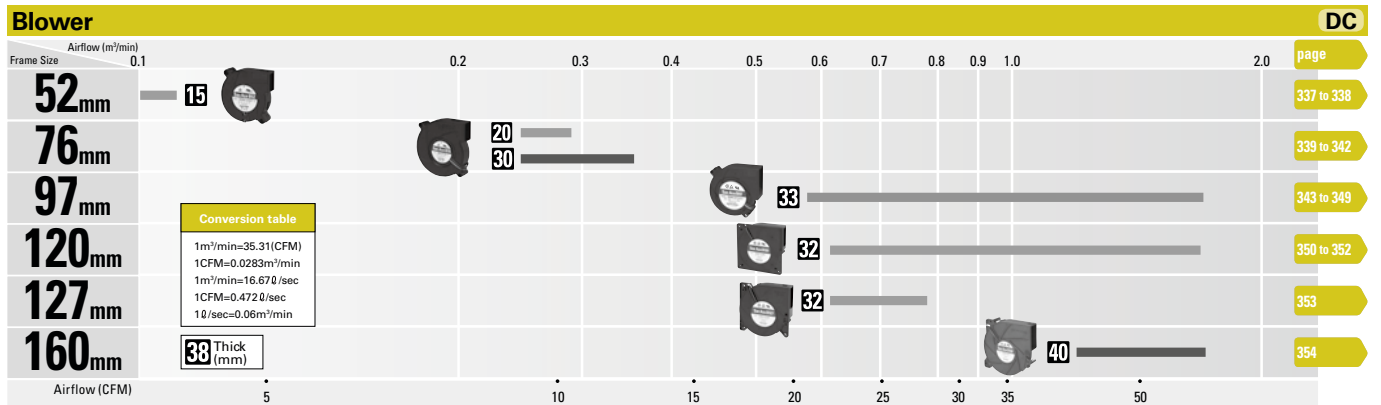
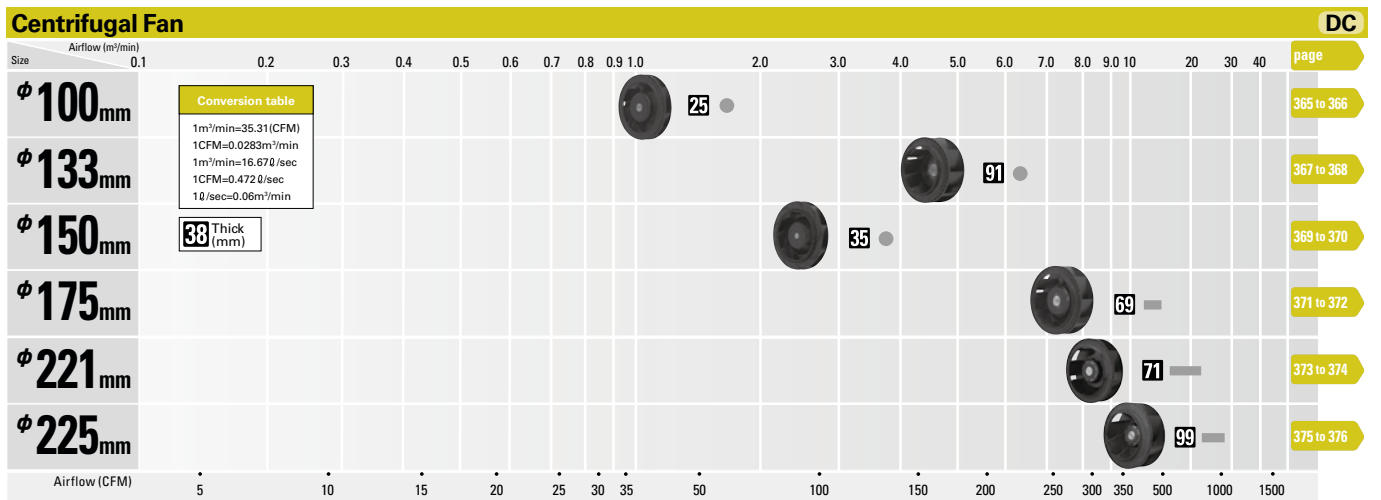
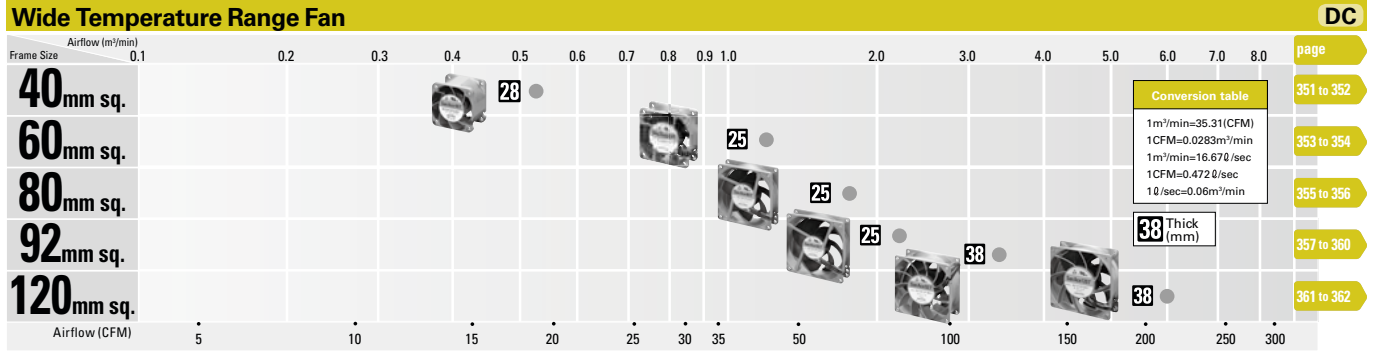


Long Life Fan

DC



Domain Diagram



The Meaning of the Specifications

DC Fan											DC	
Model No.	①	②	③	④	⑤	⑥		⑦		⑧	⑨	⑩
	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min]	[CFM]	Max. Static Pressure [Pa]	[inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9G0812G101	12	7 to 13.8	1.1	13.2	6,300	2.55	90	211	0.847	51	-20 to +70	40,000

- ① Rated Voltage This is the necessary voltage to drive the fan. 12VDC, 24VDC and 48VDC are available.
- ② Operating Voltage Range The voltage range over which fan operation is guaranteed
- ③ Rated Current The current value during the fan's rated operation without load
- ④ Rated Input The input value during the fan's rated operation without load
- ⑤ Rated Speed The rotating speed during the fan's rated operation without load
- ⑥ Max. Airflow The maximum air volume that the fan can output during rated operation (according to the company's dual-chamber device).
The volume of air generated by the fan in a given time period
- ⑦ Max. Static Pressure The maximum static pressure value that the fan can output during rated operation (according to the company's dual-chamber device). The static pressure is the fan's force to propel air by overcoming the resistance of the device that uses the fan when it propels air.
- ⑧ SPL "SPL" is Sound Pressure Level. The noise level during the fan's rated operation.
Please refer to the technical material section for the method used to measure the noise level.
- ⑨ Operating Temperature Range The temperature range over which fan operation is guaranteed (Non- condensing)
- ⑩ Expected Life The fan's expected operating life when the fan operates continuously at the rated voltage at a temperature of 60°C and at relative humidity of 90%.
Please refer to the technical material section for the expected operating life.

DC Fan Common Specifications

- Material** Frame,Impeller:Plastics / Frame:Aluminum,Impeller:Plastics
* For details, refer to the appropriate page.
- Expected Life** Varies for each model (L10:Survival rate:90% at 60°C ,rated voltage, and continuously run in a free air state)
* Splash proof fan: Varies for each model (Indoor, L10:Survival rate:90% at 60°C ,rated voltage, and continuously run in a free air state)
- Motor Protection** Burnout protection at locked rotor condition and Reverse polarity protection
- Dielectric Strength** AC50/60Hz 500VAC 1minute(between lead conductor and frame)
- Insulation Resistance** 10M Ω or more at 500VDC megger (between lead conductor and frame)
- Sound Pressure Level(SPL)** Expressed as the value at 1m from air inlet side
- Storage Temperature** -20°C to +70°C / -30°C to +70°C (Varies depending on models. Non-condensing)
- Lead Wire** For details, refer to the appropriate page.

Overheating protection function

Protection Functions:
If the fan blades are restricted, an overcurrent occurs and leads to a rise in the fan coil temperature. This can result in reduced performance, damage, or a fire. To prevent this from occurring, SANYO DENKI's fans incorporate an overheating protection function. Refer to the catalog for the types of protection functions.

Burnout protection function at locked rotor condition

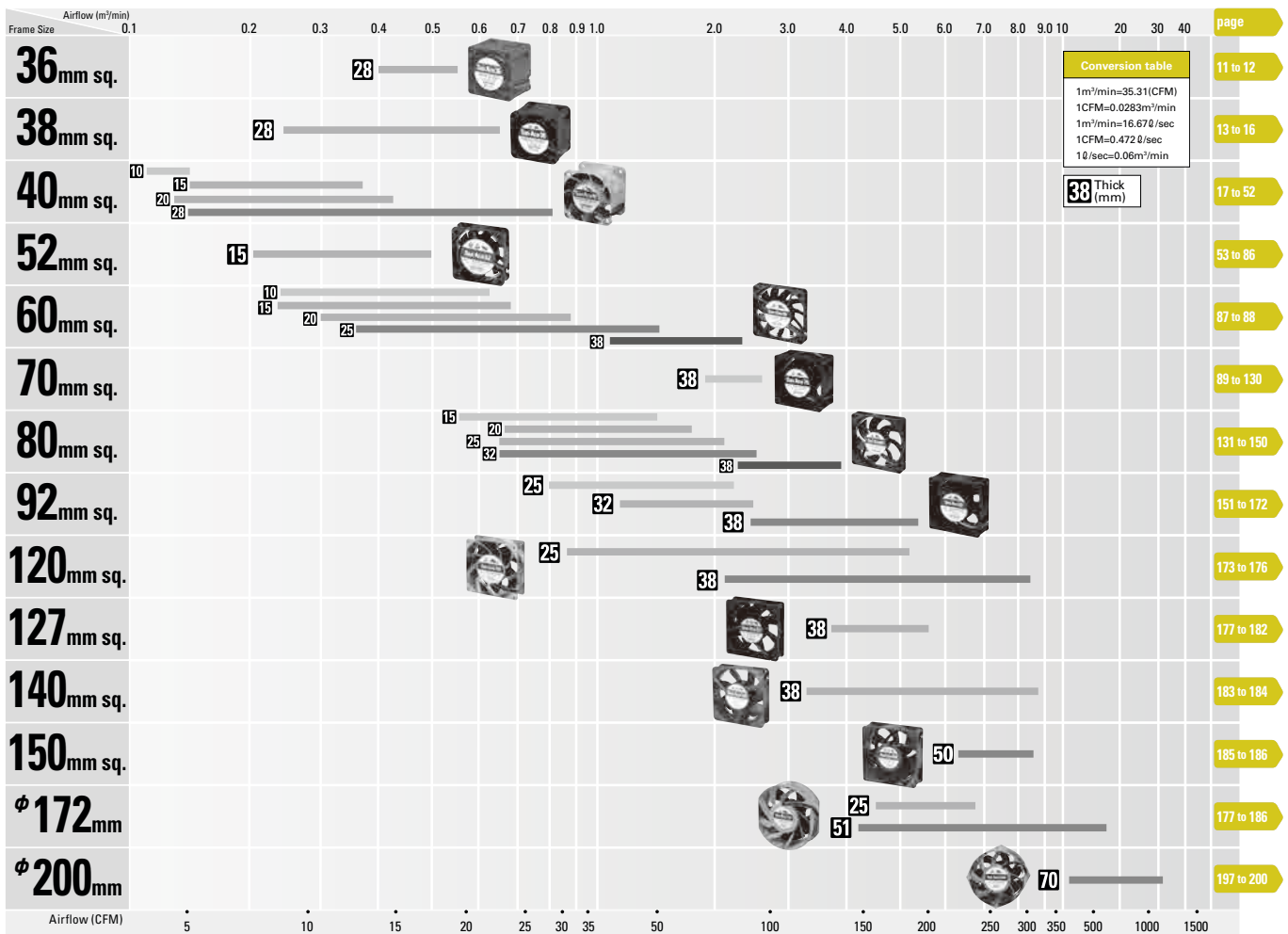
- Current cutoff system
If the fan blades are restricted, the coil current is cut off at regular cycles to prevent overheating of the coil. When the hindrance is removed, the fan restarts automatically.

Reverse polarity protection function

No problem about fan even if positive & negative lead are connected in reverse.
However, when wiring fans with sensors or PWM speed control function, connecting positive and negative leads in reverse may damage the fans.

Wide lineup including low power consumption fans (9GA type), silent fans (9S type), and high airflow and high static pressure fans.

Domain Diagram



Part Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

9GV	12	12	J	1	01	1
Type name / frame material 109P / Plastics 109R / Plastics 9GA / Plastics 9S / Plastics 9GV / Plastics Aluminum 9GE / Aluminum 9G / Plastics 9A / Plastics 9SG / Aluminum 109E / Aluminum 9EC / Aluminum 9GX / Plastics 9GAX / Plastics	Frame size 36: 36×36mm 03: 38×38mm 04: 40×40mm 05: 52×52mm 06: 60×60mm 08: 80×80mm 09: 92×92mm 12: 120×120mm 13: 127×127mm 14: 140×140mm 15: 150×150mm 17: φ172mm 47: φ172mm×147mm (sidecut) 57: φ172mm×150mm (sidecut) 20: φ200mm	Voltage 05: 5V 12: 12V 24: 24V 48: 48V etc	Speed code A,B,C,D,E,F,G,H,J,K, L,M,S,W etc	Frame thickness 0: 70mm 1: 38mm thick 2: 32mm thick 3: 28mm thick 4: 25mm thick 5: 50mm thick 51mm thick 6: 20mm thick 7: 15mm thick 9: 10mm thick	Sensor specifications 01 or 001: With a pulse sensor 02 or 002: Without a sensor D01 or D001: With a lock sensor	Frame form Nil: Plastics frame: Ribbed frame Aluminum frame: Ribless frame 1: Plastics frame: Ribless frame 3: 40×40×28mm for 1U applications Plastics frame: Ribbed frame

Fans with PWM control function

Example :

9GV	12	12	P	4	G	01	
Type name / frame material 9GV / Plastics Aluminum	Frame size 12: 120×120mm	Voltage 12: 12V	PWM control function	Frame thickness	Speed code	Individual customer's spec 2 to 4 digits	Frame form Nil: Plastics frame: Ribbed frame Aluminum frame: Ribless frame

36mm sq.

San Ace 36



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
(For models without PWM control function, there is no
speed control wiring.)
- Storage Temperature -20°C to +70°C (Non-condensing)

36×36×28mm (Mass : 46g) **9GX type** **9GV type**

Specifications The following nos. have PWM controls, pulse sensors, and ribs.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{*)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{*)} [h]
9GX3612P3K001	12	10.8 to 13.2	100	1.3	15.6	24,000	0.69 24.4	838 3.367	66	-10 to +60	40,000/60°C (70,000/40°C)
			0	0.07	0.84	3,200	0.09 3.2	14.0 0.056	32		

Note: Expected life at 40°C ambient is just reference value.

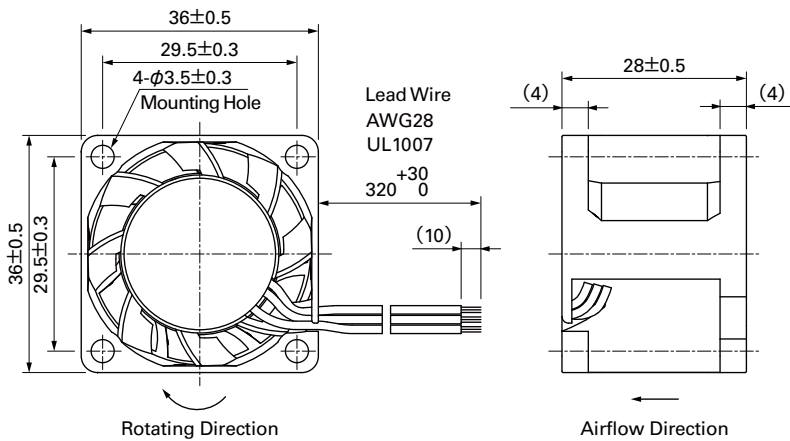
*)PWM Frequency : 25kHz

Specifications The following nos. have pulse sensors and ribs.

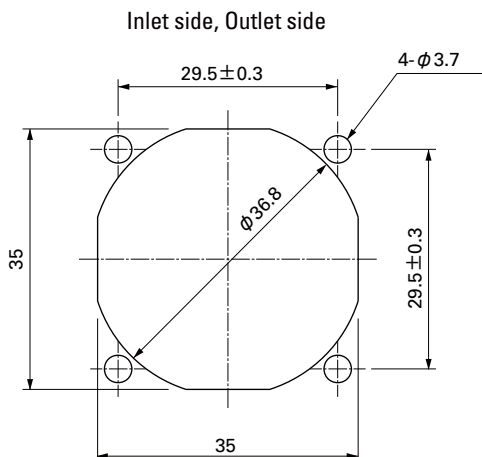
Models without sensors or with PWM control function are available as options. Please refer to the index (p. 478).

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GV3612J301	12	7.0 to 13.2	0.75	9.0	19,000	0.55 19.4	525 2.108	58.5	-20 to +60	40,000/60°C
9GV3612G301			0.34	4.08	14,000	0.40 14.1	275 1.104	52.0		

Dimensions (unit: mm) (With pulse sensor)



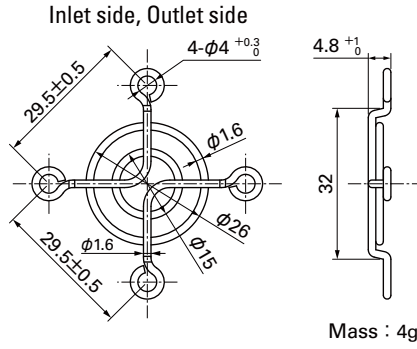
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

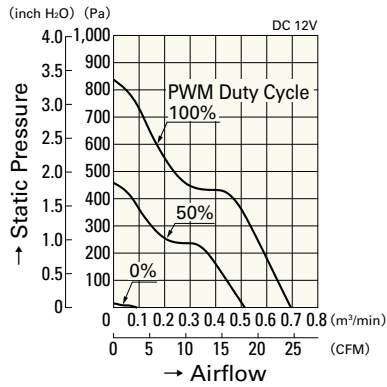
Model : 109-1050 Surface treatment : Nickel-chrome plating (silver) Color



Airflow - Static Pressure Characteristics

PWM Duty Cycle

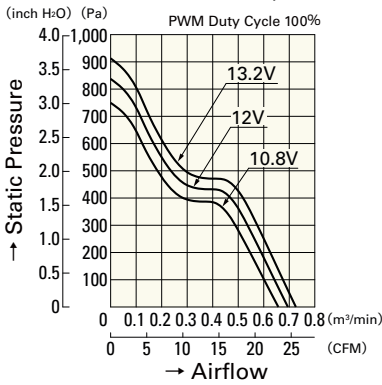
With PWM control function · With pulse sensor



9GX3612P3K001

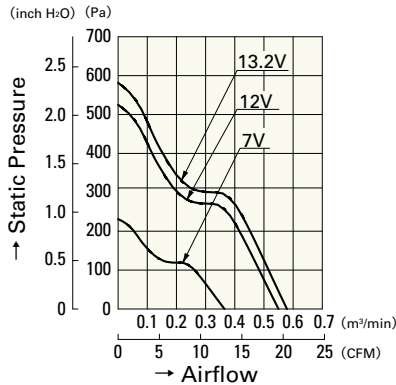
Operating Voltage Range

With PWM control function · With pulse sensor



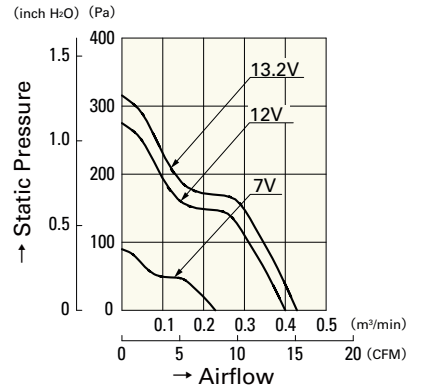
9GX3612P3K001

J speed



9GV3612J301

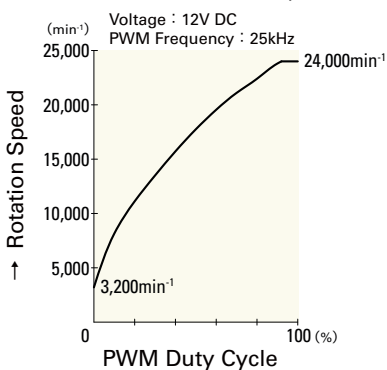
G speed



9GV3612G301

PWM Duty - Speed Characteristics Example

With PWM control function · With pulse sensor



9GX3612P3K001

38mm sq.

San Ace 38



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

38×38×28mm (Mass : 52g) **9GA type** **Low Power Consumption Fan**



Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

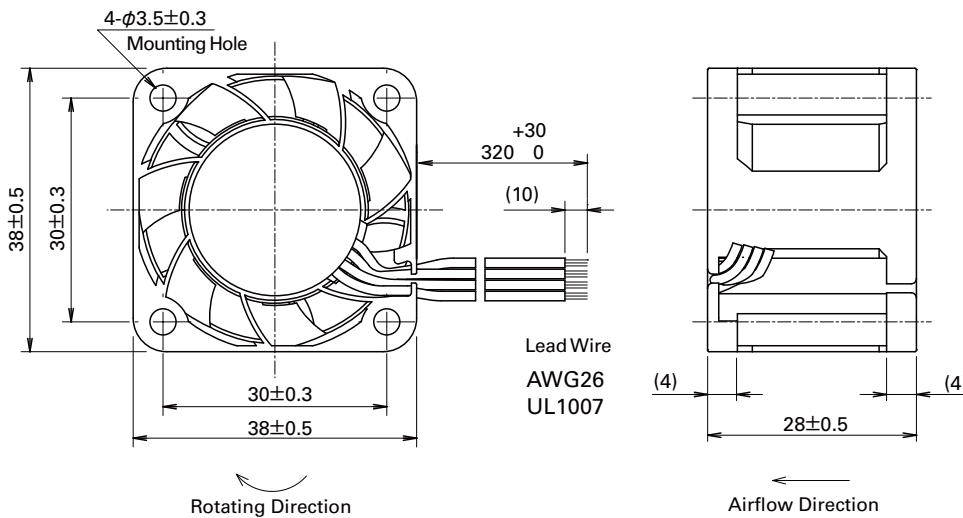
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{*)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^(Note) [h]
9GA0312P3K001	12	10.8 to 13.2	100	0.62	7.4	25,000	0.60	21.2	800	3.21	59.0	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.06	0.7	3,000	0.07	2.5	11	0.04	15.0		
9GA0312P3J001			100	0.52	6.2	23,500	0.57	20.1	720	2.89	57.5		
			0	0.06	0.7	3,000	0.07	2.5	11	0.04	15.0		
9GA0312P3G001			100	0.33	4.0	19,000	0.45	15.9	460	1.85	53.0		
			0	0.06	0.7	3,000	0.07	2.5	11	0.04	15.0		

Note: Expected life at 40°C ambient is just reference value.

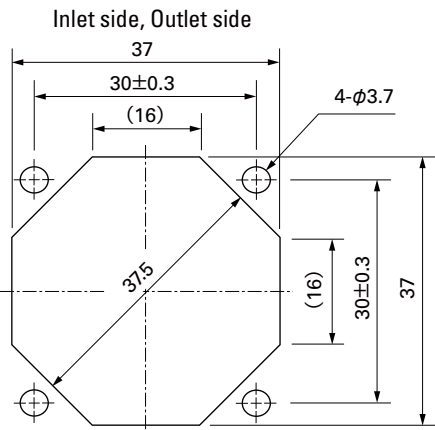
※PWM Frequency : 25kHz

Models with pulse sensors (no PWM control function) or lock sensors are available as options. Please refer to the index (p. 474).

Dimensions (unit: mm) (With ribs)



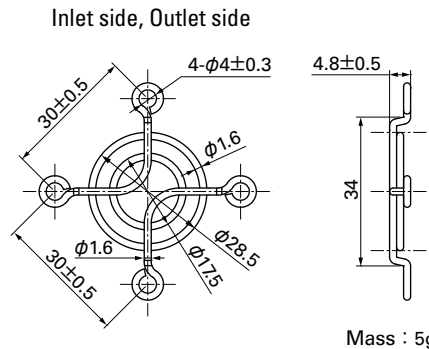
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

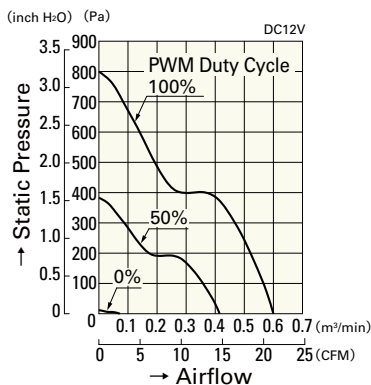
Finger Guards

Model : 109-1065 Surface treatment : Nickel-chrome plating Color

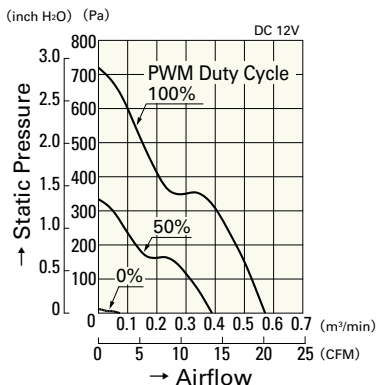


Airflow - Static Pressure Characteristics

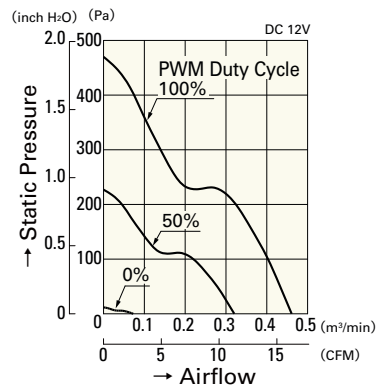
PWM Duty Cycle



9GA0312P3K001

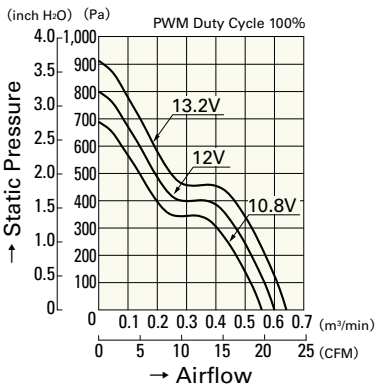


9GA0312P3J001

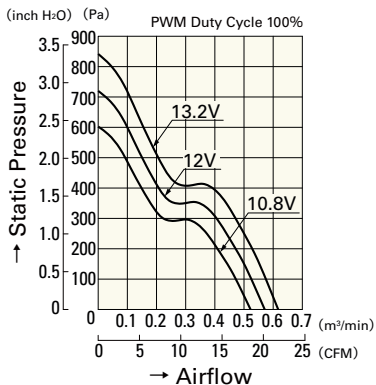


9GA0312P3G001

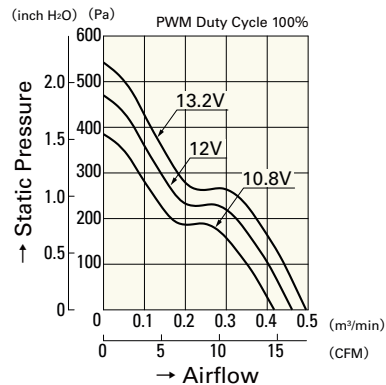
Operating Voltage Range



9GA0312P3K001

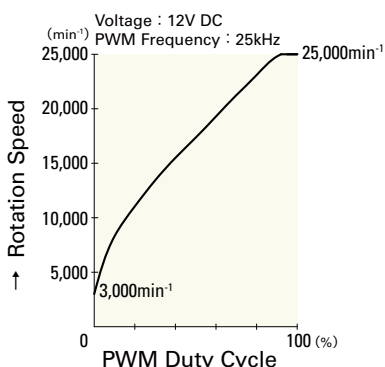


9GA0312P3J001

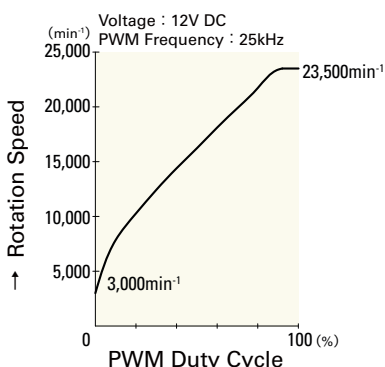


9GA0312P3G001

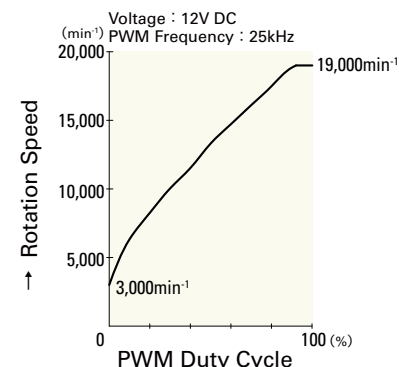
PWM Duty - Speed Characteristics Example



9GA0312P3K001



9GA0312P3J001



9GA0312P3G001

38mm sq.

San Ace 38



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -20°C to +70°C (Non-condensing)

38×38×28mm (Mass : 50g) **9GV type**

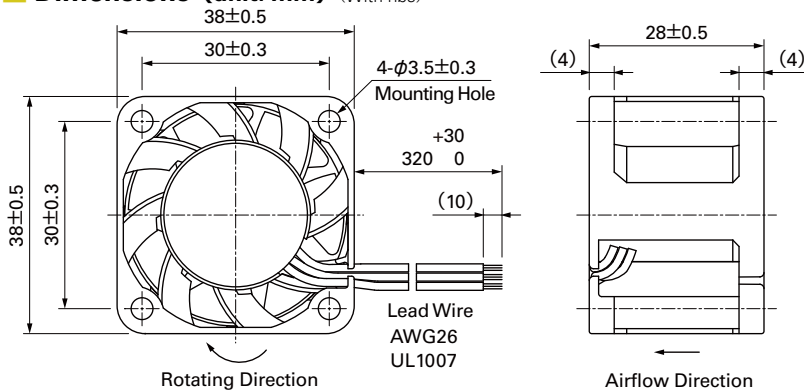
Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

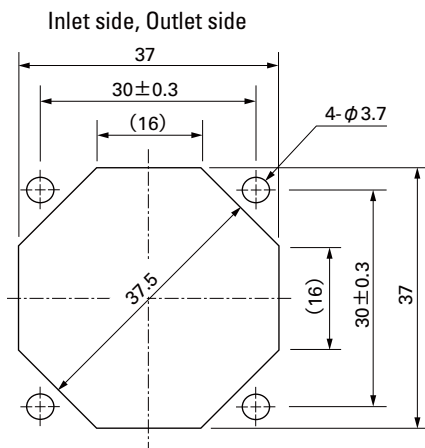
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GV0312K301	12	7 to 13.2	0.79	9.48	18,200	0.65	23	425	1.707	59
9GV0312J301			0.6	7.2	15,900	0.57	20	315	1.265	54
9GV0312G301			0.4	4.8	13,500	0.48	17	220	0.924	50
9GV0312E301		4.5 to 13.2	0.21	2.52	10,500	0.37	13.1	130	0.522	43
9GV0312H301			0.16	1.92	7,000	0.24	8.5	60	0.241	34

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 476 to 477).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

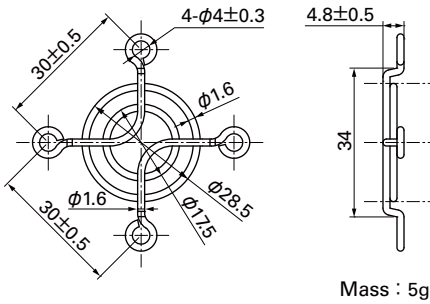


Options (unit: mm)

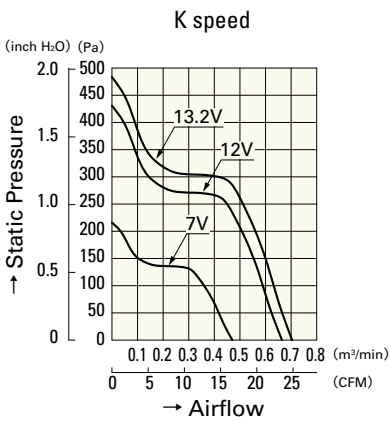
Finger Guards

Model : 109-1065 Surface treatment : Nickel-chrome plating (silver) Color

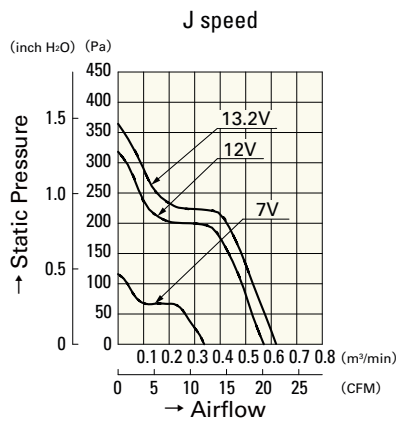
Inlet side, Outlet side



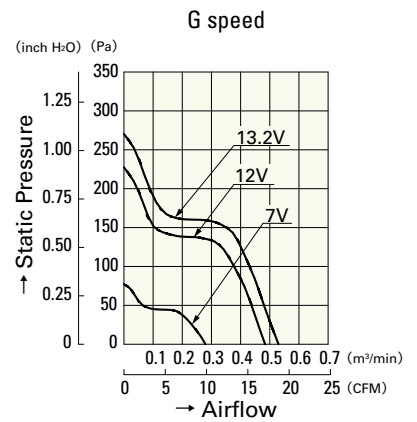
Airflow - Static Pressure Characteristics



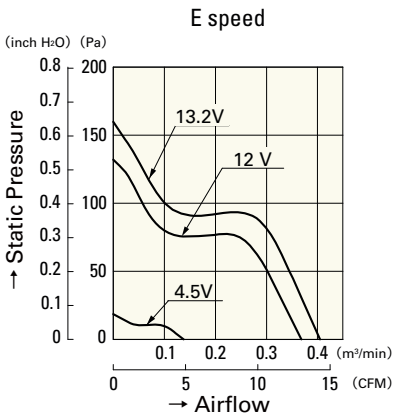
9GV0312K301



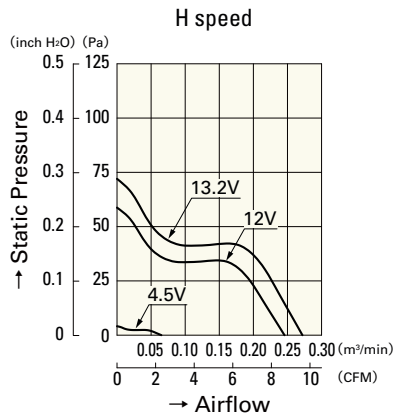
9GV0312J301



9GV0312G301



9GV0312E301



9GV0312H301

40mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×10mm (Mass : 19g) **9P** type

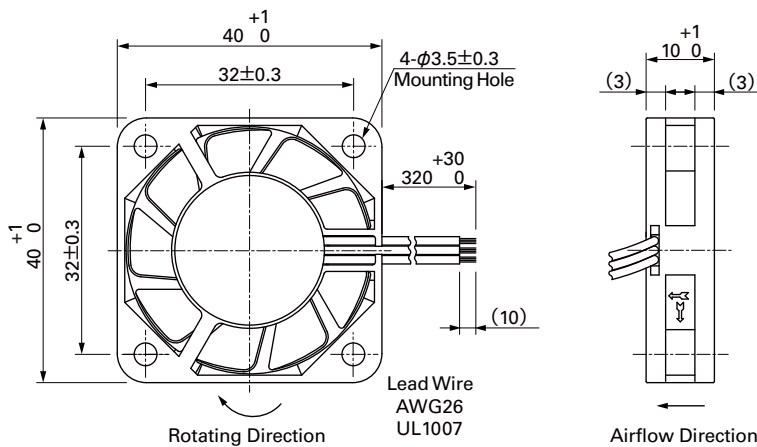
Specifications

The following nos. have pulse sensors and ribs.

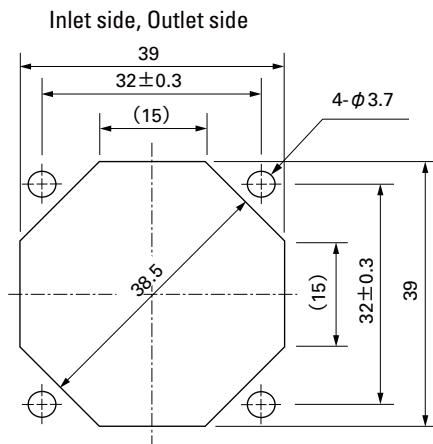
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]	
109P0405H901	5	4.5 to 5.5	0.16	0.8	6,200	0.15	5.3	41.2	0.165	-10 to +60	40,000/60°C
109P0405M901			0.11	0.55	5,000	0.12	4.2	27	0.108		
109P0412H901	12	7 to 13.8	0.07	0.84	6,200	0.15	5.3	41.2	0.165		
109P0412M901			0.06	0.72	5,000	0.12	4.2	27	0.108		

Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 466 to 467).

Dimensions (unit: mm)



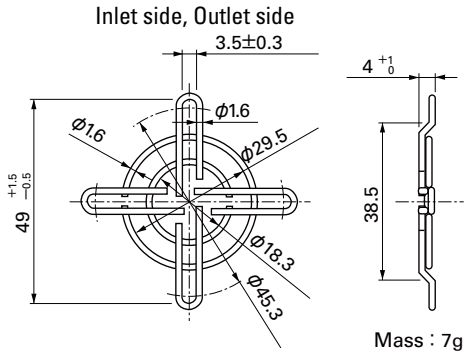
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



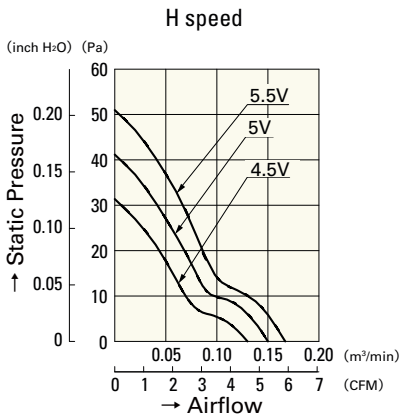
Options (unit: mm)

Finger Guards

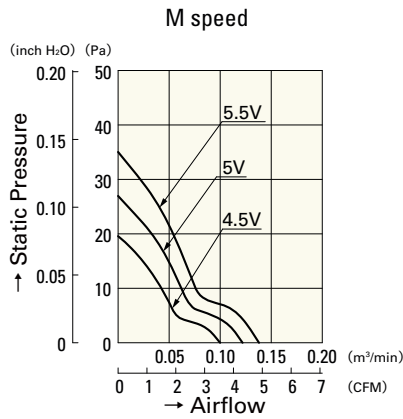
Model : 109-059 Surface treatment : Nickel-chrome plating (silver) Color
 : 109-059H : Cation electropainting (black)



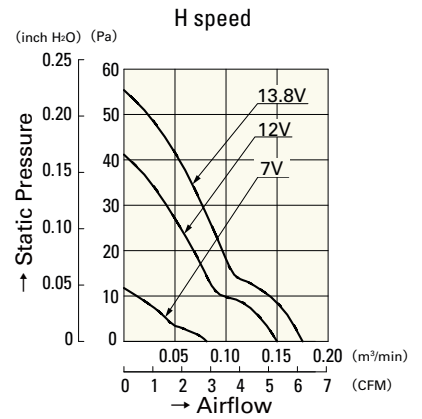
Airflow - Static Pressure Characteristics



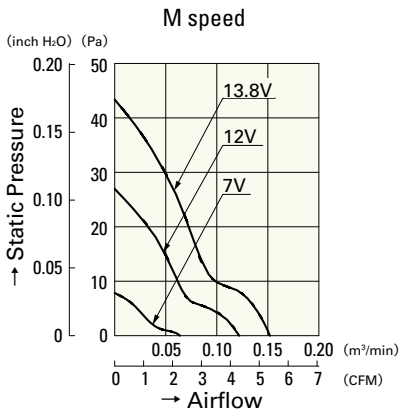
109P0405H901



109P0405M901



109P0412H901



109P0412M901

40mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0), Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
(For models without PWM control function, there is no speed control wiring.)
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×15mm (Mass : 28g) **9GA type** High Airflow Low Power Consumption Fan



Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note1)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{Note2)} [h]
9GA0412P7G001	12	10.2 to 13.8	100	0.17	2.04	13,100	0.36 12.7	192 0.77	42	-20 to +70	40,000/60°C (70,000/40°C)

Note 1: Fan does not rotate when PWM duty cycle is 0%.
Note 2: Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

The following nos. **have pulse sensors and ribs.**

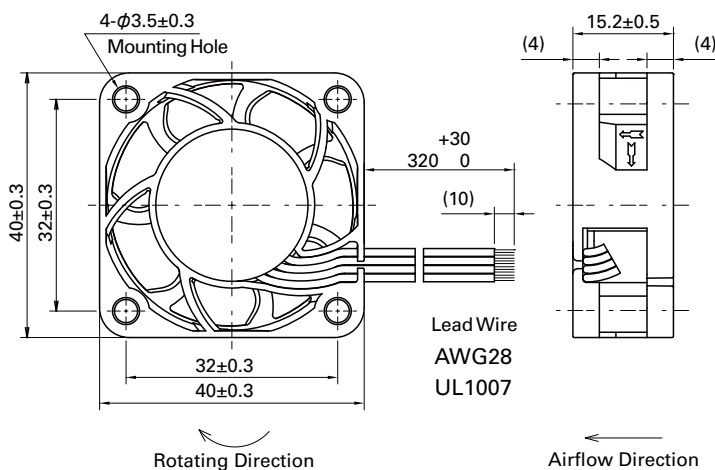
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{Note)} [h]
9GA0412G7001	12	7 to 13.8	0.17	2.04	13,100	0.36 12.7	192 0.77	42	-20 to +70	40,000/60°C (70,000/40°C)
9GA0412H7001			0.06	0.72	7,300	0.2 7.1	59.6 0.24	28		

Note: Expected life at 40°C ambient is just reference value.

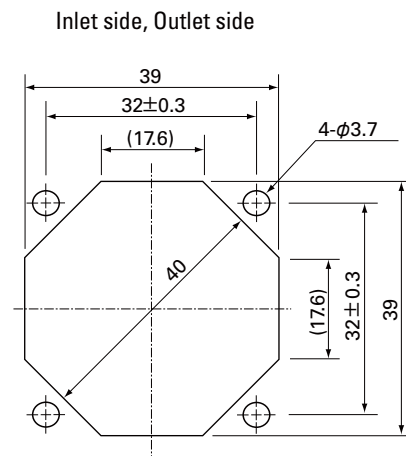
Models without sensors or with lock sensors are available as options. Please refer to the index (p. 474).

Dimensions (unit: mm)

(With PWM control function · With pulse sensor)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

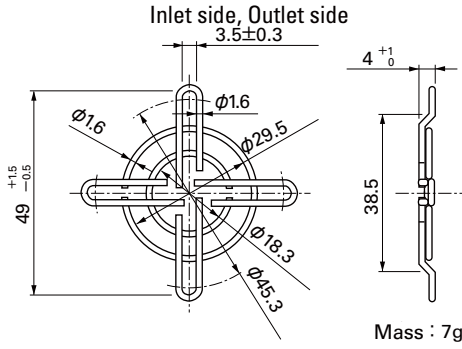


Options (unit: mm)

Finger Guards

Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
 : 109-059H : Cation electropainting (black)

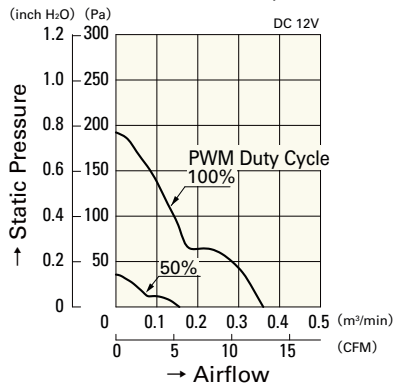
Color



Airflow - Static Pressure Characteristics

PWM Duty Cycle

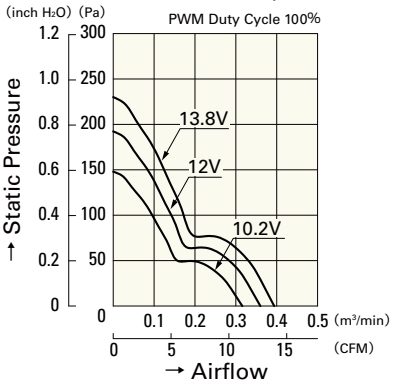
With PWM control function · With pulse sensor



9GA0412P7G001

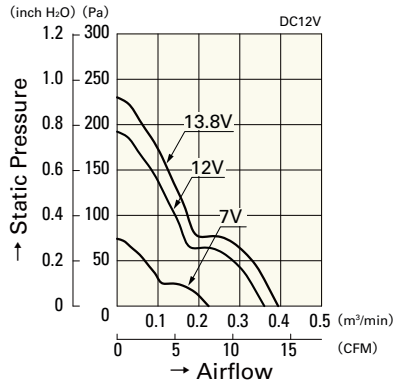
Operating Voltage Range

With PWM control function · With pulse sensor



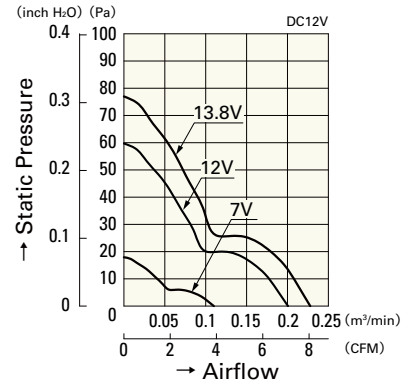
9GA0412P7G001

With pulse sensor



9GA0412G7001

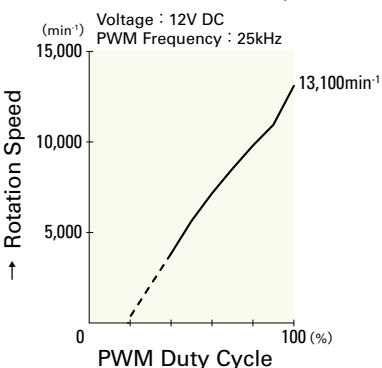
With pulse sensor



9GA0412H7001

PWM Duty - Speed Characteristics Example

With PWM control function · With pulse sensor



9GA0412P7G001

40mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×15mm (Mass : 32g) **9P** type

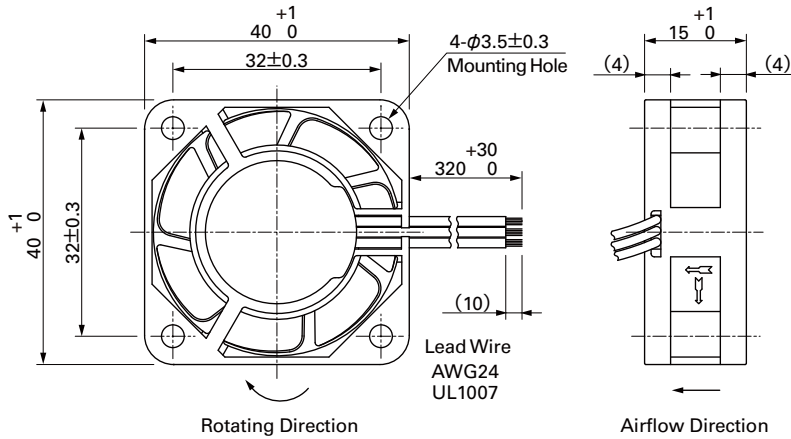
Specifications

The following nos. **have pulse sensors and ribs.**

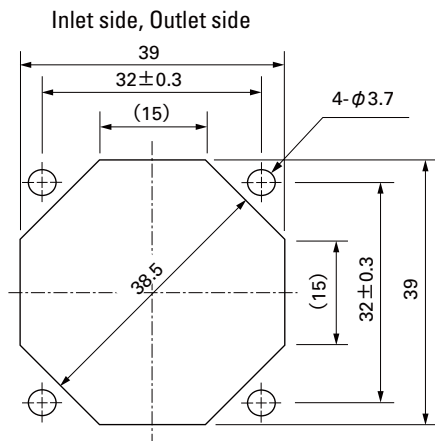
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]		
109P0405H701	5	4.5 to 5.5	0.28	1.4	7,700	0.18	6.4	75.5	0.303	28	-20 to +60	60,000/60°C
109P0405M701			0.21	1.05	6,500	0.15	5.3	53	0.213	24		
109P0412R701	12	7 to 13.8	0.13	1.56	9,700	0.227	8.0	111.9	0.449	34	-20 to +70	60,000/60°C
109P0412S701			0.18	2.16	8,600	0.2	7.06	92.1	0.369	32		
109P0412H701			0.13	1.56	7,700	0.18	6.4	75.5	0.303	28		
109P0412M701			0.095	1.14	6,500	0.15	5.3	53	0.213	24		
109P0424H701	24	20.4 to 27.6	0.08	1.92	7,700	0.18	6.4	75.5	0.303	28		

Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 466 to 467).

Dimensions (unit: mm)



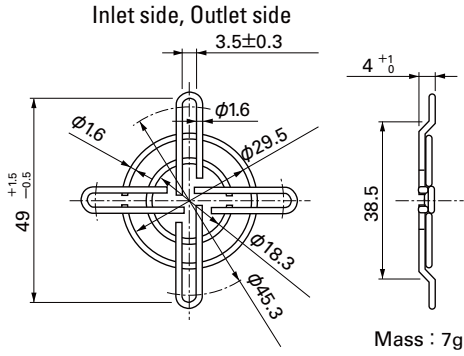
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



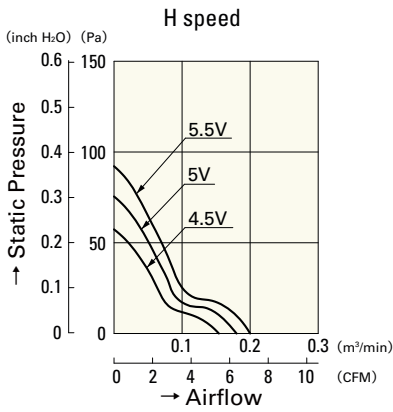
Finger Guards

Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
 : 109-059H : Cation electropainting (black)

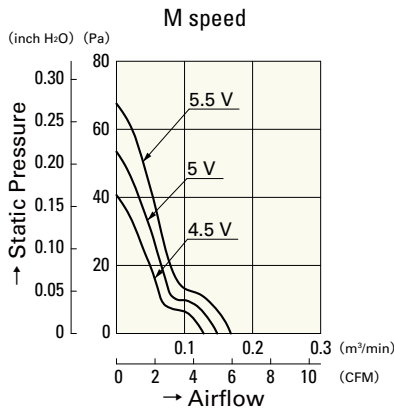
Color



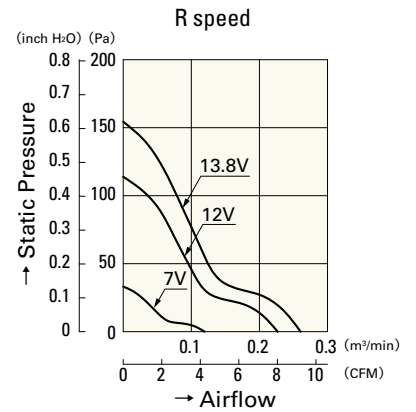
Airflow - Static Pressure Characteristics



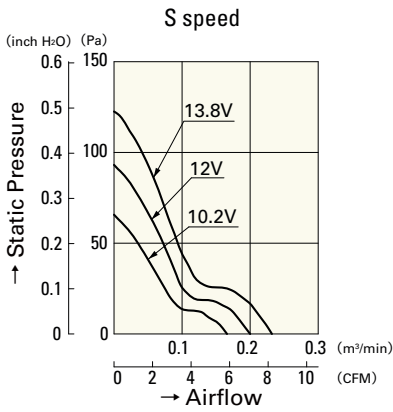
109P0405H701



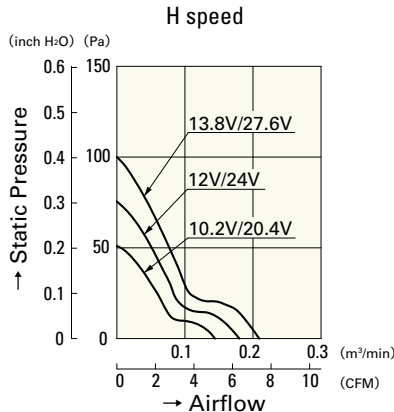
109P0405M701



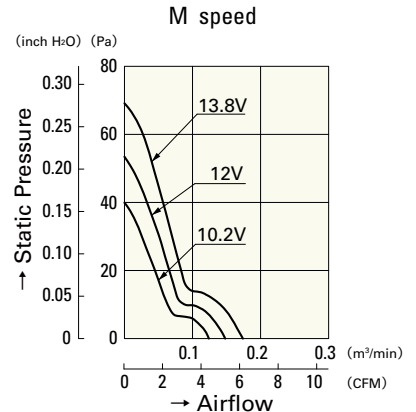
109P0412R701



109P0412S701



109P0412H701
109P0424H701



109P0412M701

40 mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×20 mm (Mass : 35g) **9GA type** High Airflow Low Power Consumption Fan



Specifications The following nos. have PWM controls, pulse sensors, and ribs.

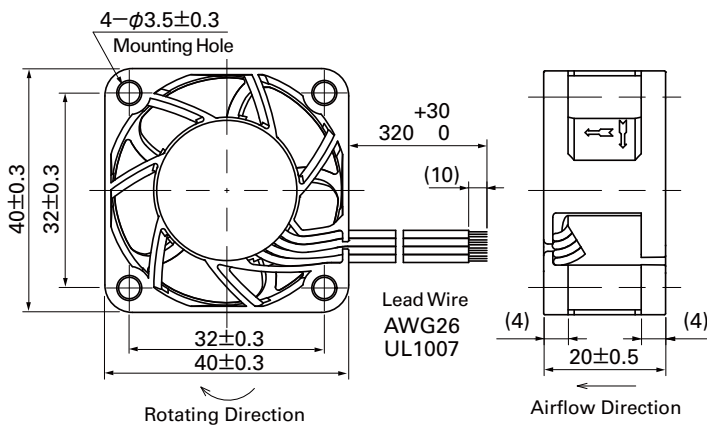
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GA0405P6H001 ^(Note)	5	4.5 to 5.5	100	0.35	1.75	12,400	0.33 11.7	191 0.77	40	-20 to +70	40,000/60°C
9GA0405P6F001 ^(Note)			100	0.18	0.9	8,000	0.21 7.4	79.5 0.32	28		60,000/60°C
9GA0412P6G001	12	10.2 to 13.8	100	0.23	2.76	16,000	0.42 14.8	318 1.28	47		40,000/60°C
			0	0.04	0.48	3,800	0.10 3.5	17.9 0.07	14		60,000/60°C
100			0.14	1.68	12,400	0.33 11.7	191 0.77	40			
0			0.04	0.48	3,800	0.10 3.5	17.9 0.07	14			
9GA0412P6H001	100	0.08	0.96	8,000	0.21 7.4	79.5 0.32	28				
9GA0412P6F001	0	0.03	0.36	2,200	0.06 2.1	6.0 0.02	10				
9GA0424P6G001 ^(Note)	24	20.4 to 27.6	100	0.13	3.12	16,000	0.42 14.8	318 1.28	47		40,000/60°C
9GA0424P6H001 ^(Note)			100	0.08	1.92	12,400	0.33 11.7	191 0.77	40		60,000/60°C
9GA0424P6F001 ^(Note)			100	0.04	0.96	8,000	0.21 7.4	79.5 0.32	28		

Note: Rated voltage 5V and 24V fans do not rotate when PWM duty cycle is 0%.

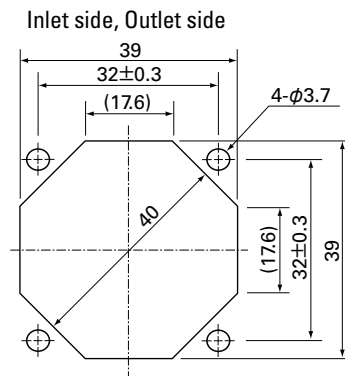
*PWM Frequency : 25kHz

Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (p. 474).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

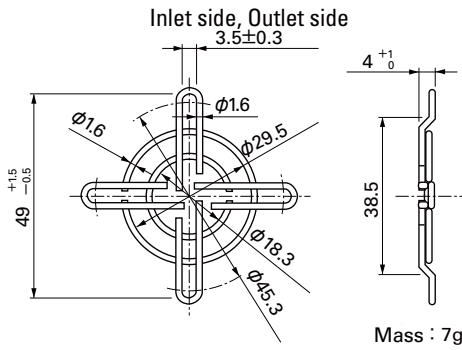


Options (unit: mm)

Finger Guards

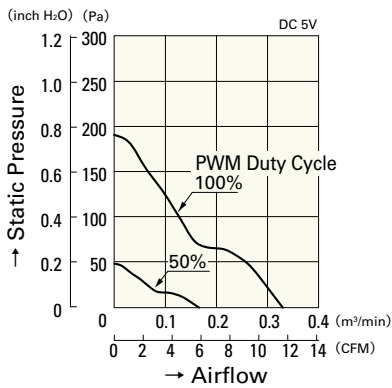
Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
 : 109-059H : Cation electropainting (black)

Color

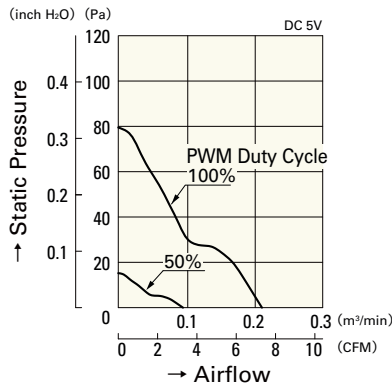


Airflow - Static Pressure Characteristics

PWM Duty Cycle

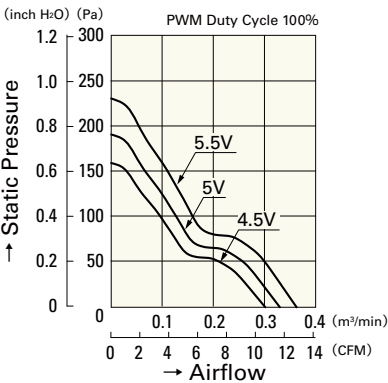


9GA0405P6H001

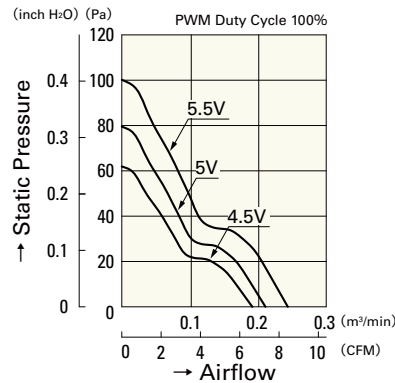


9GA0405P6F001

Operating Voltage Range

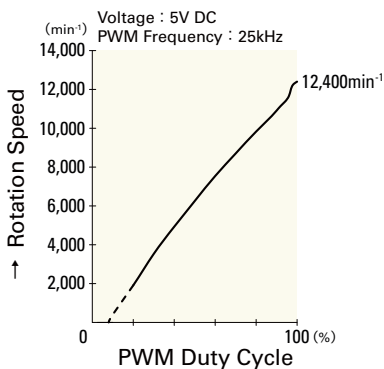


9GA0405P6H001

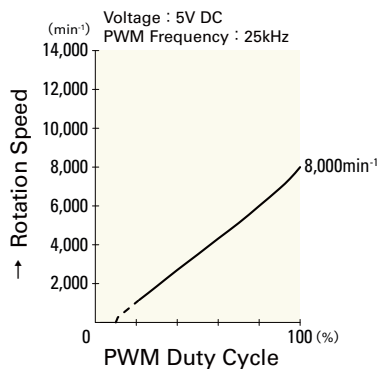


9GA0405P6F001

PWM Duty - Speed Characteristics Example



9GA0405P6H001



9GA0405P6F001

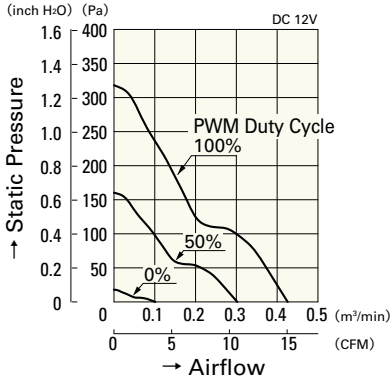
40mm sq.

San Ace 40

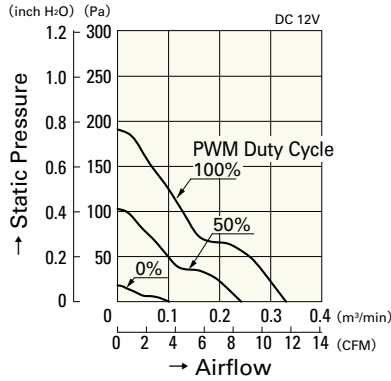
40×40×20mm [Mass : 35g]

Airflow - Static Pressure Characteristics

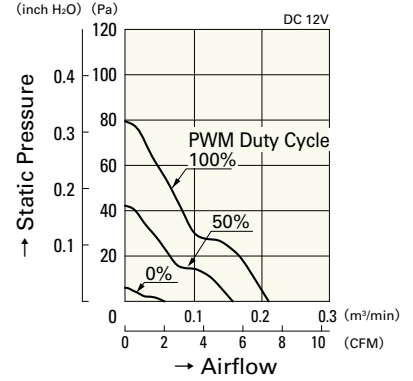
PWM Duty Cycle



9GA0412P6G001

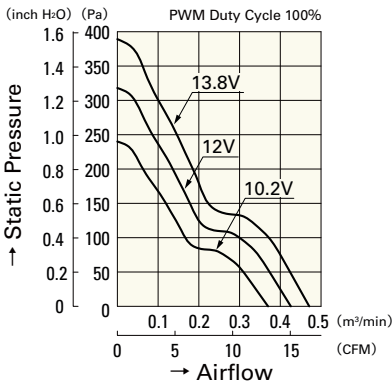


9GA0412P6H001

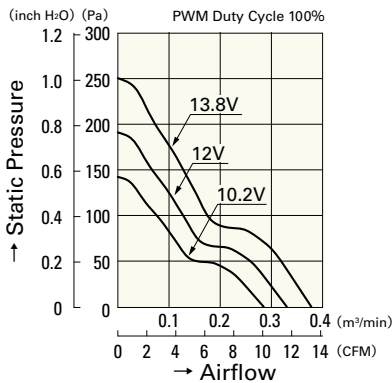


9GA0412P6F001

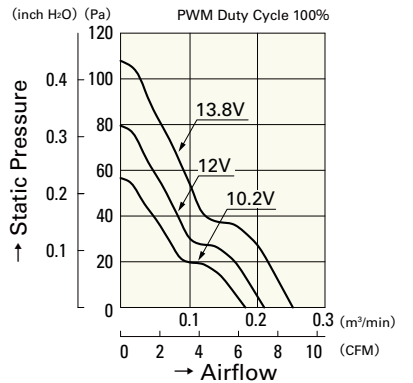
Operating Voltage Range



9GA0412P6G001

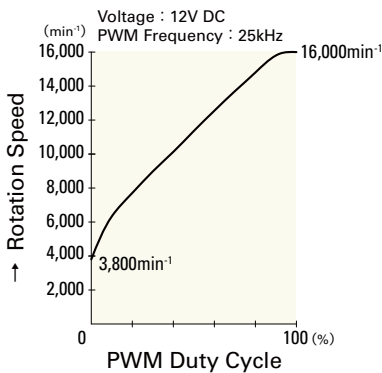


9GA0412P6H001

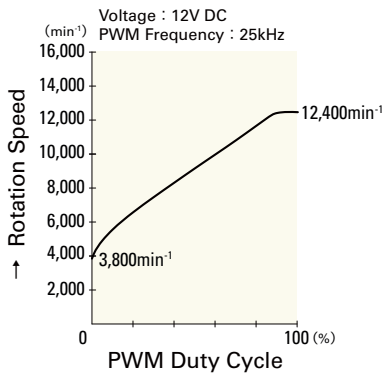


9GA0412P6F001

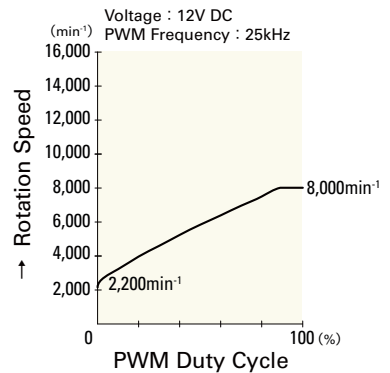
PWM Duty - Speed Characteristics Example



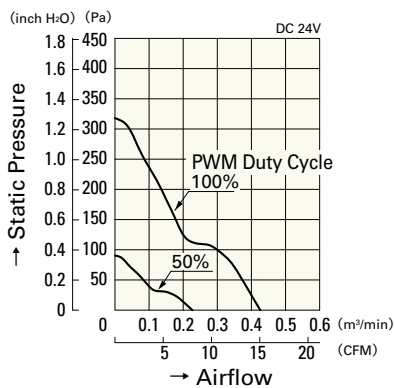
9GA0412P6G001



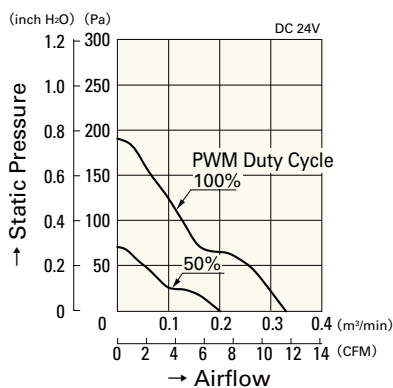
9GA0412P6H001



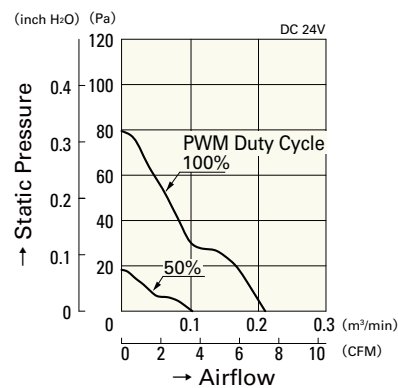
9GA0412P6F001



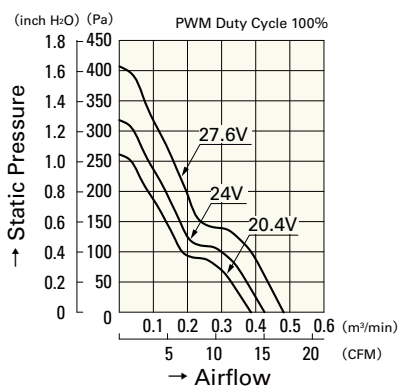
9GA0424P6G001



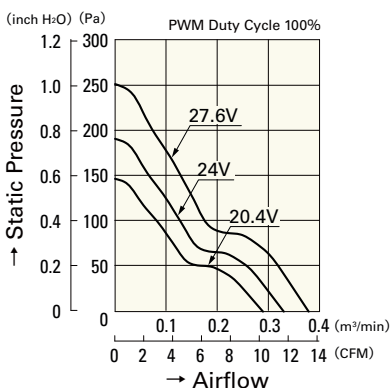
9GA0424P6H001



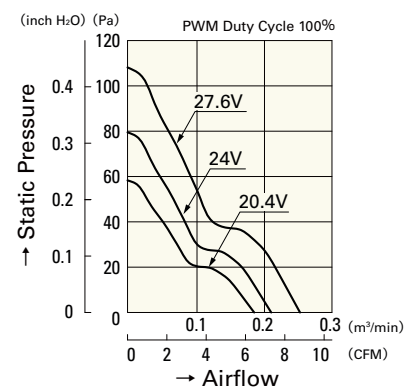
9GA0424P6F001



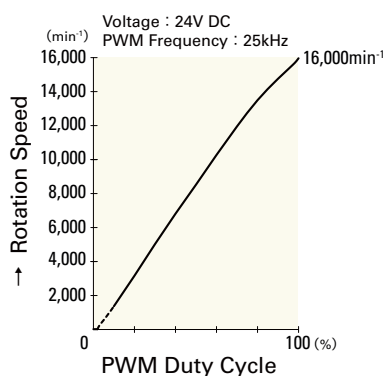
9GA0424P6G001



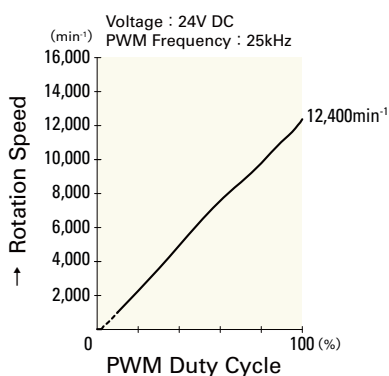
9GA0424P6H001



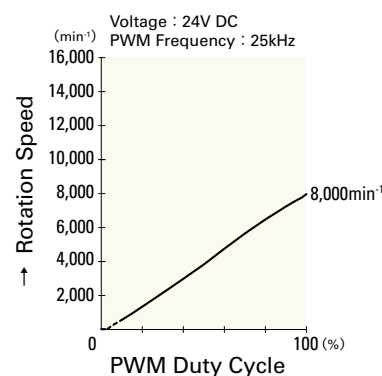
9GA0424P6F001



9GA0424P6G001



9GA0424P6H001



9GA0424P6F001

40mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

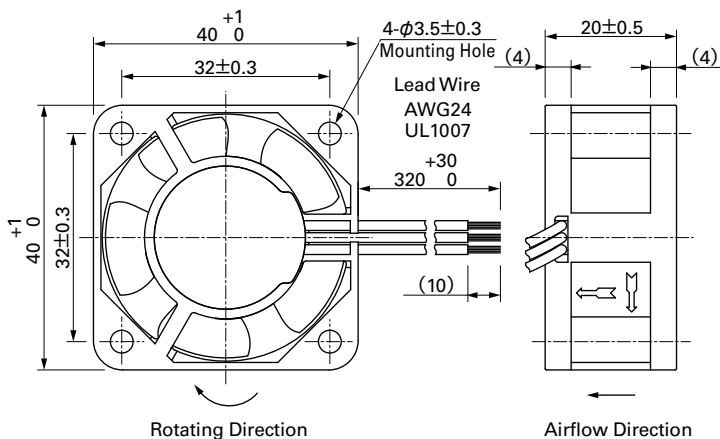
40×40×20mm (Mass : 45g) **9P** type

Specifications The following nos. have pulse sensors and ribs.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109P0405J601	5	4.5 to 5.5	0.46	2.3	9,800	0.28 9.9	98.5 0.396	39	-20 to +70	40,000/60°C
109P0405H601			0.32	1.6	8,000	0.225 8.0	65.7 0.264	33		
109P0405F601			0.25	1.25	6,500	0.183 6.5	45.1 0.181	28		60,000/60°C
109P0405M601			0.12	0.60	5,000	0.136 4.8	26.5 0.106	24		
109P0412G601	12	7 to 13.8	0.28	3.36	12,500	0.35 12.4	153.8 0.618	44	-20 to +60	40,000/60°C
109P0412D601			0.18	2.16	11,000	0.31 10.9	124 0.498	42		
109P0412E601			0.13	1.8	9,200	0.26 9.2	87.3 0.351	37	-20 to +70	60,000/60°C
109P0412H601			0.11	1.32	8,000	0.225 8.0	65.7 0.264	33		
109P0412F601			0.09	1.08	6,500	0.183 6.5	45.1 0.181	28		
109P0412M601			0.06	0.72	5,000	0.136 4.8	26.5 0.106	24		
109P0424G601	24	12 to 27.6	0.15	3.6	12,500	0.35 12.4	153.8 0.618	44	-20 to +60	40,000/60°C
109P0424D601		12 to 27.6	0.13	3.12	11,000	0.31 10.9	124 0.498	42		
109P0424H601		12 to 27.6	0.07	1.68	8,300	0.233 8.2	69.6 0.280	35	-20 to +70	60,000/60°C
109P0424F601		14 to 27.6	0.06	1.44	6,500	0.183 6.5	45.1 0.181	28		
109P0424B601		20.4 to 27.6	0.06	1.44	5,200	0.14 4.9	28.3 0.114	25		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 466 to 467).

Dimensions (unit: mm)

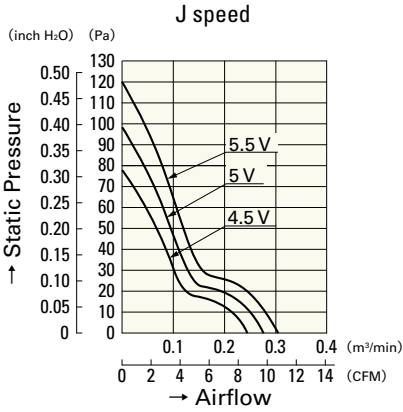


40mm sq.

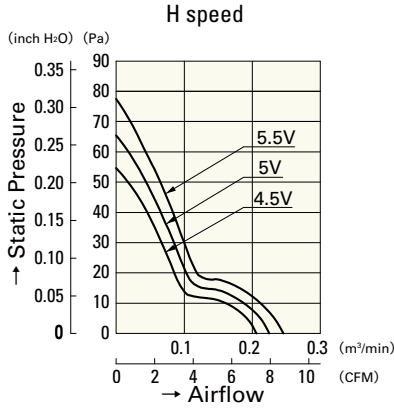
San Ace 40

40×40×20mm [Mass : 45g]

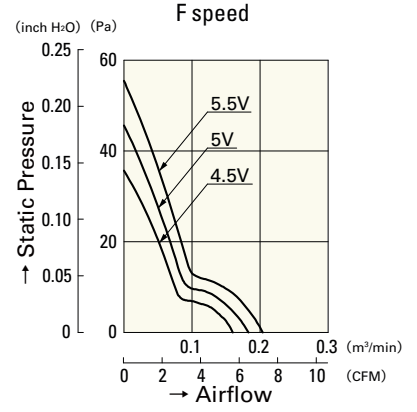
Airflow - Static Pressure Characteristics



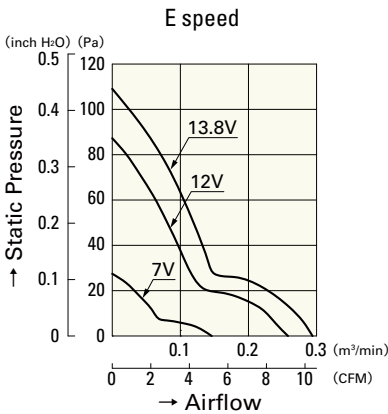
109P0405J601



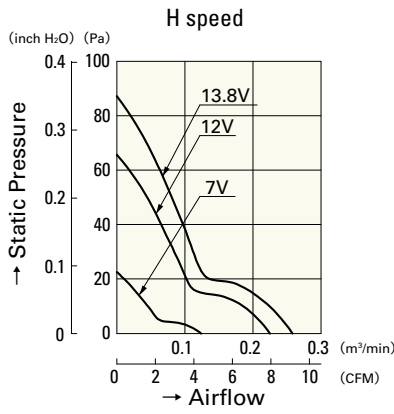
109P0405H601



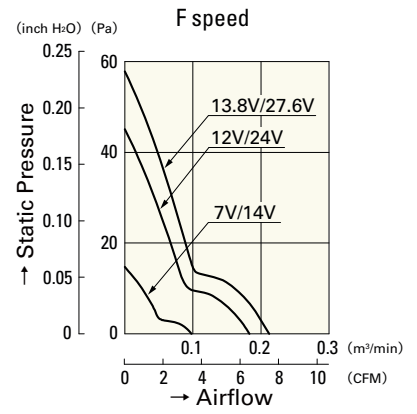
109P0405F601



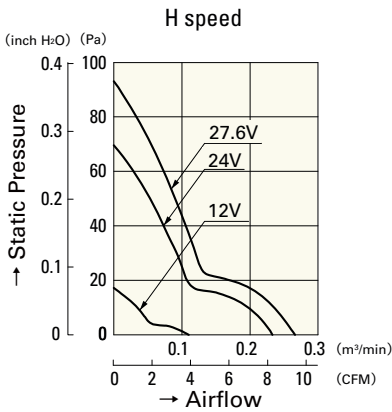
109P0412E601



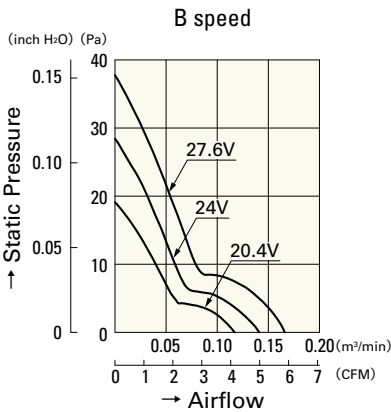
109P0412H601



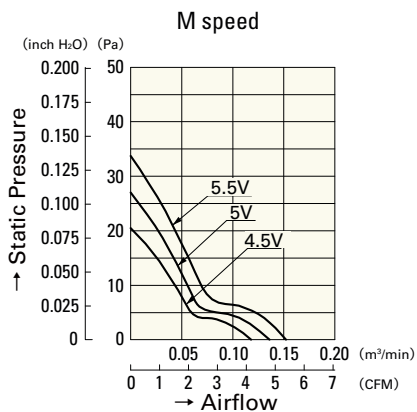
109P0412F601
109P0424F601



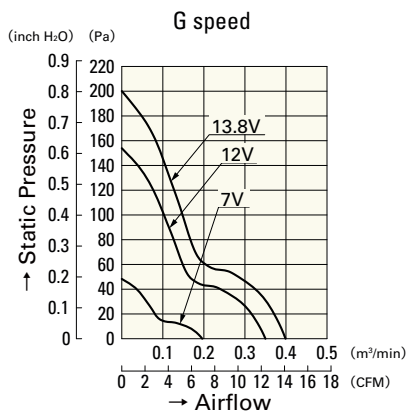
109P0424H601



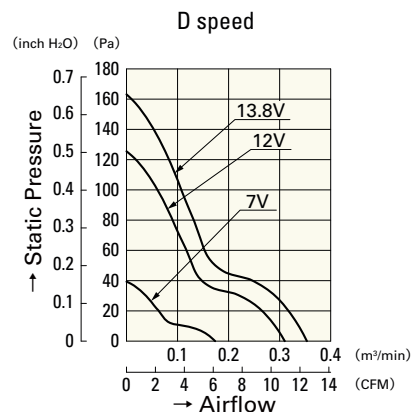
109P0424B601



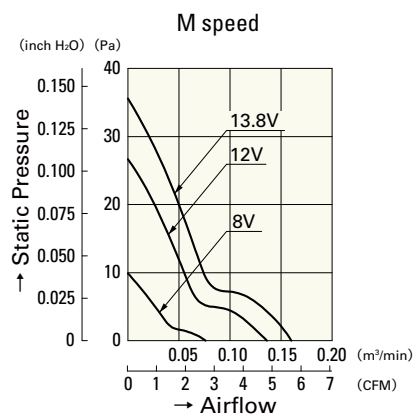
109P0405M601



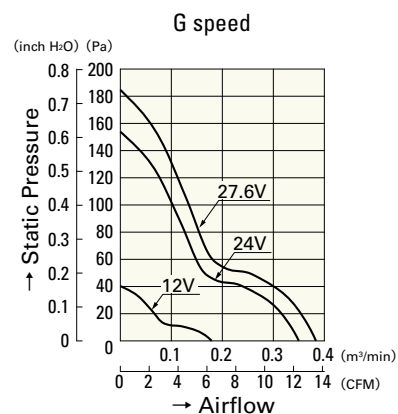
109P0412G601



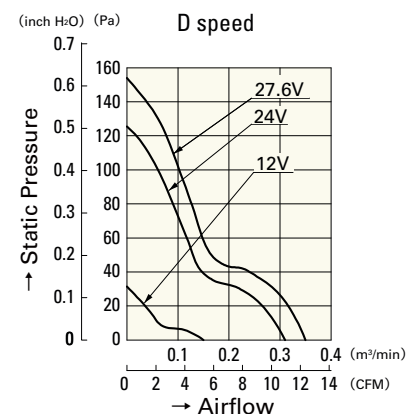
109P0412D601



109P0412M601



109P0424G601



109P0424D601

40mm sq.

San Ace 40



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Lead Wire ⊕ red ⊖ black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×28mm [Mass : 60g] **9HV type**

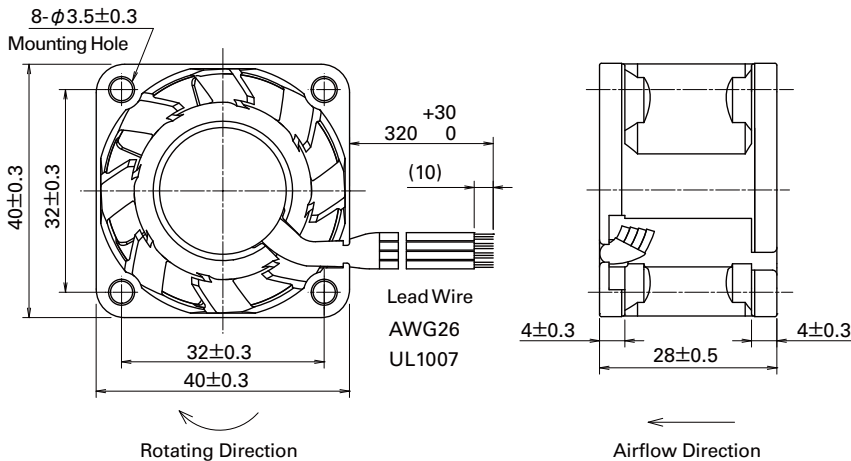
Specifications

The following nos. have PWM controls and pulse sensors.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9HV0412P3K001	12	10.8 to 12.6	100	1.52	18.3	25,000	0.83 29.3	1,100 4.42	65	-20 to +60	40,000/60°C
			0	0.2	2.4	7,500	0.25 8.8	99 0.40	37		

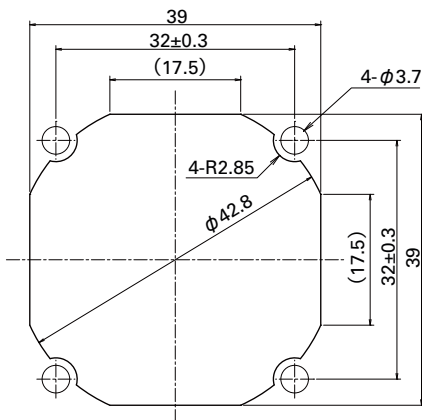
※PWM Frequency : 25kHz

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

Inlet side, Outlet side



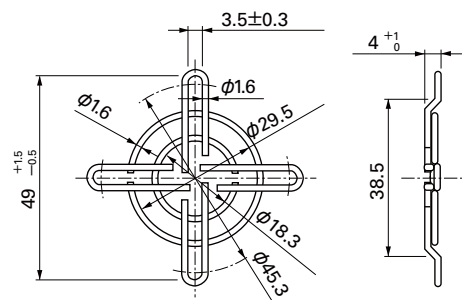
Options (unit: mm)

Finger Guards

Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
 : 109-059H : Cation electroplating (black)

Color

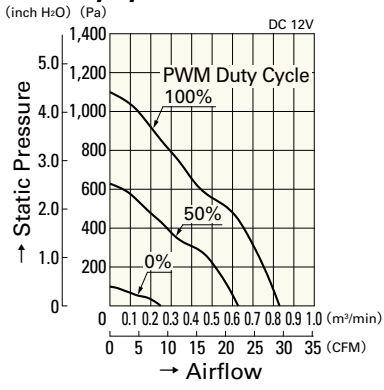
Inlet side, Outlet side



Mass: 7g

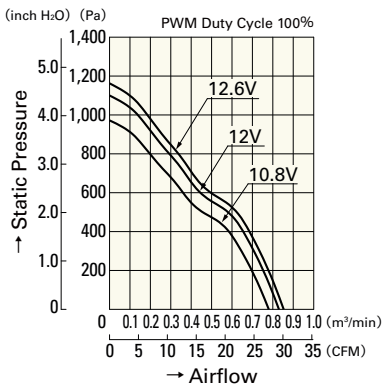
Airflow - Static Pressure Characteristics

PWM Duty Cycle



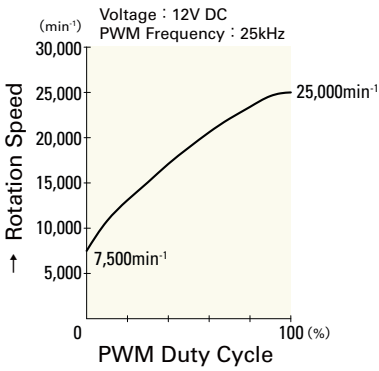
9HV0412P3K001

Operating Voltage Range



9HV0412P3K001

PWM Duty - Speed Characteristics Example



9HV0412P3K001

40 mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×28mm (Mass: 53g) **9GAX** type **Low Power Consumption Fan**

Specifications

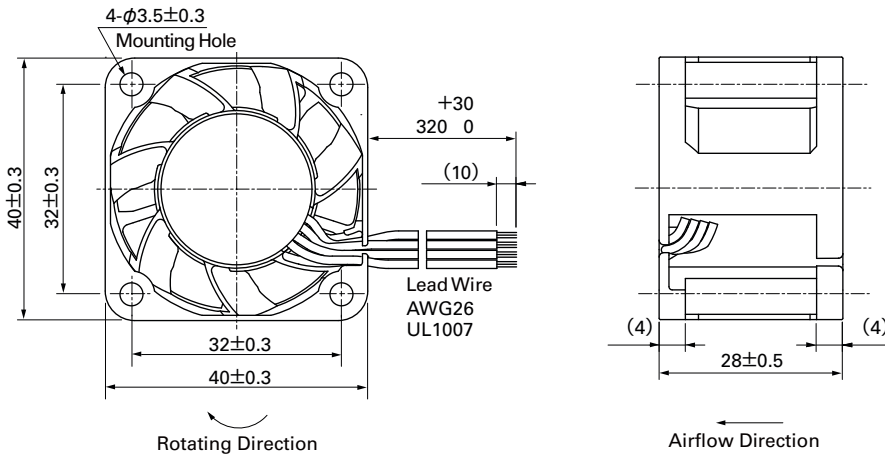
The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note①} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GAX0412P3S001	12	10.8 to 12.6	100	1.30	15.60	25,000	0.90 31.8	1,000 4.02	64	-20 to +60	30,000/60°C
			20	0.07	0.84	4,400	0.155 5.5	32 0.125	21.5		
9GAX0412P3S003			100	1.30	15.60	25,000	0.90 31.8	1,000 4.02	64		
			0	0.11	1.32	7,800	0.26 9.2	87 0.35	38		
9GAX0412P3K001		10.8 to 13.2	100	0.92	11.04	22,000	0.81 28.6	800 3.21	61		
			20	0.07	0.84	4,200	0.15 5.3	28 0.11	21		
9GAX0412P3K003	100		0.92	11.04	22,000	0.81 28.6	800 3.21	61			
	0		0.10	1.20	6,500	0.24 8.5	70 0.28	32			

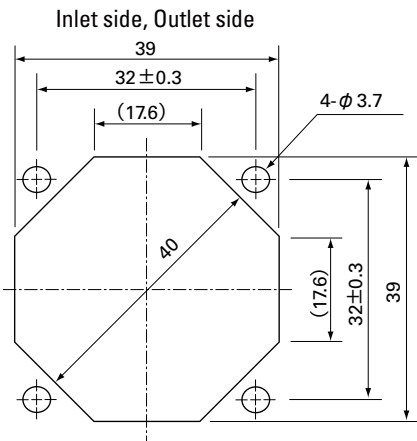
Note: 9GAX0412P3S001, 9GAX0412P3K001 does not rotate when PWM duty cycle is 0%.

※PWM Frequency: 25kHz

Dimensions (unit: mm) (With ribs)



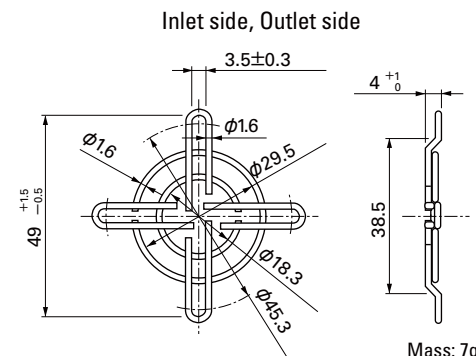
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
: 109-059H : Cation electroplating (black)

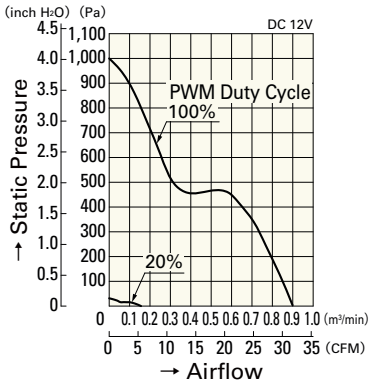


Airflow - Static Pressure Characteristics

PWM Duty - Speed Characteristics Example

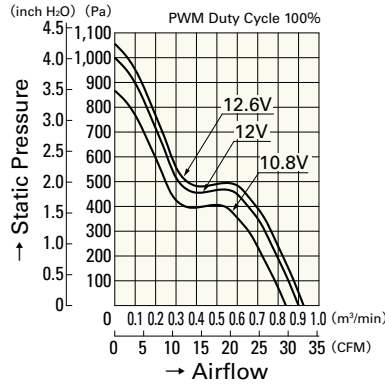
DC
DC Fan 40mm

PWM Duty Cycle

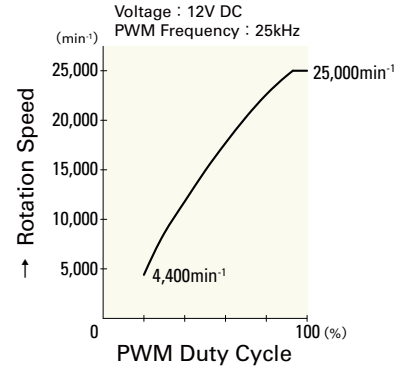


9GAX0412P3S001

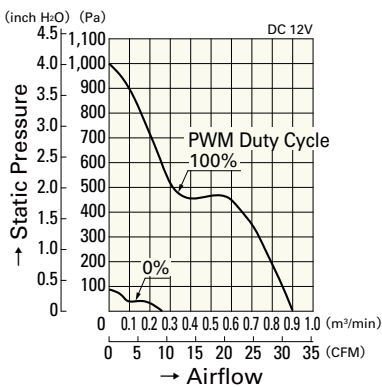
Operating Voltage Range



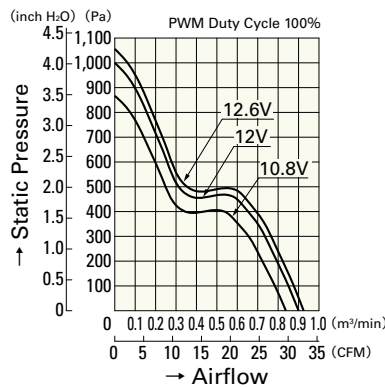
9GAX0412P3S001



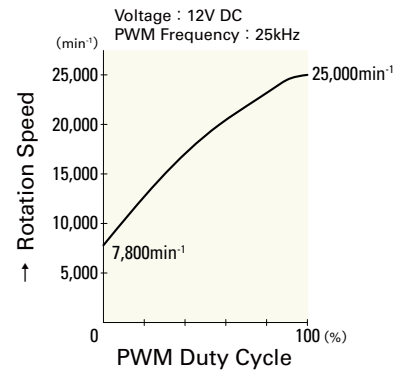
9GAX0412P3S001



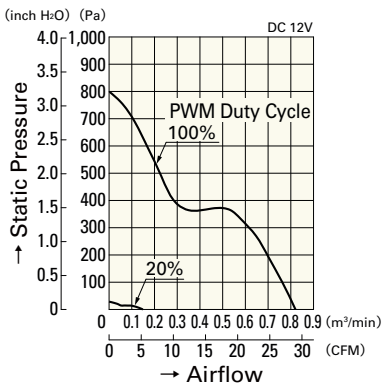
9GAX0412P3S003



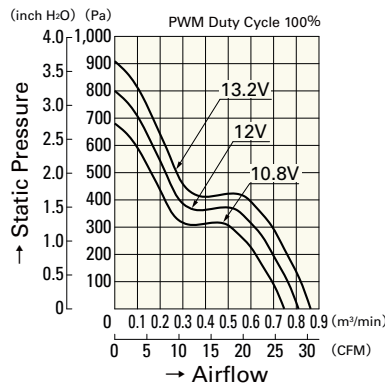
9GAX0412P3S003



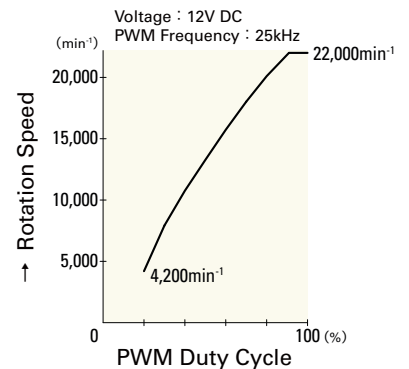
9GAX0412P3S003



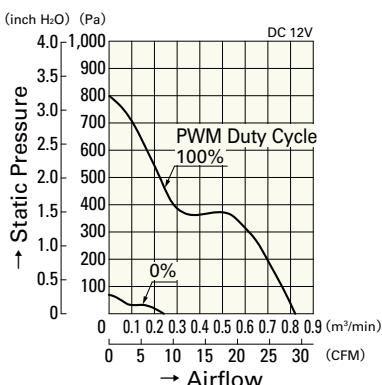
9GAX0412P3K001



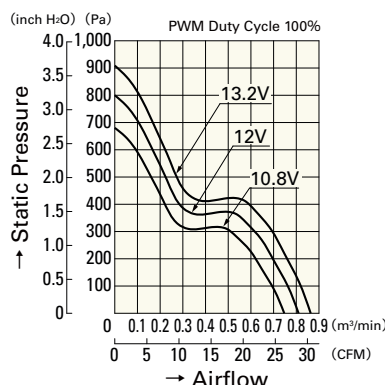
9GAX0412P3K001



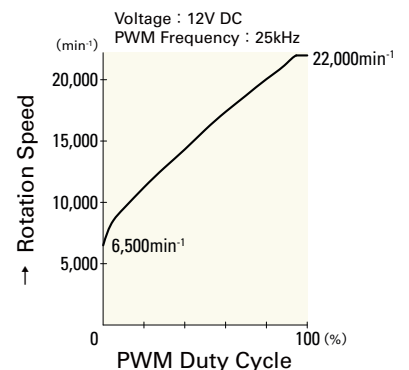
9GAX0412P3K001



9GAX0412P3K003



9GAX0412P3K003



9GAX0412P3K003

40mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×28mm (Mass : 53g) **9GA type** **Low Power Consumption Fan**



Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

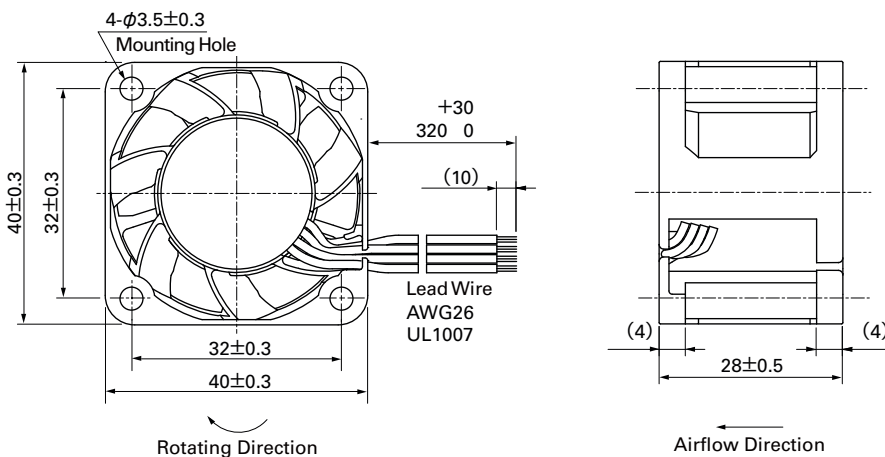
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]						
9GA0412P3K01	12	10.8 to 13.2	100	0.92	11.04	22,000	0.81 28.6	799 3.21	61	-20 to +60	30,000/60°C						
			0	0.10	1.2	6,500	0.23 8.12	68 0.27	32								
100			0.49	5.88	18,000	0.67 23.7	535 2.15	54	-20 to +70			40,000/60°C					
0			0.05	0.6	4,500	0.16 5.7	33 0.13	22									
100			0.39	4.68	16,500	0.61 21.5	450 1.81	53									
0			0.05	0.6	4,500	0.16 5.7	33 0.13	22									
100			0.28	3.36	14,500	0.54 19.1	347 1.39	50									
0			0.04	0.48	3,500	0.13 4.6	20 0.08	17									
100			0.21	2.52	12,500	0.46 16.2	258 1.04	47	24	21.6 to 26.4	100	0.11	2.64	12,500	0.46 16.2	258 1.04	47
0			0.04	0.48	3,500	0.13 4.6	20 0.08	17									
100			0.27	6.48	18,000	0.67 23.7	535 2.15	54									
0			0.04	0.48	3,500	0.13 4.6	20 0.08	17									
9GA0424P3G001 ^(Note)			100	0.22	5.28	16,500	0.61 21.5	450 1.81	53								
9GA0424P3H001 ^(Note)			100	0.16	3.84	14,500	0.54 19.1	347 1.39	50								
9GA0424P3M001 ^(Note)			100	0.11	2.64	12,500	0.46 16.2	258 1.04	47								

Note: Rated voltage 24V fans do not rotate when PWM duty cycle is 0% .

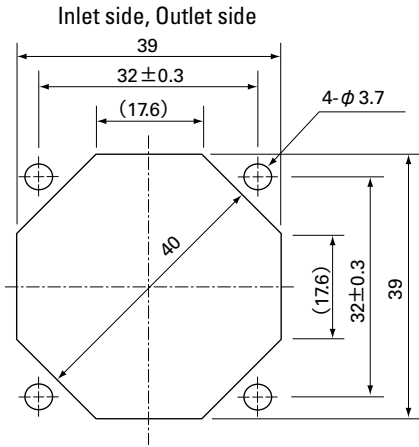
※PWM Frequency : 25kHz

Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (p. 474).

Dimensions (unit: mm) (With ribs)



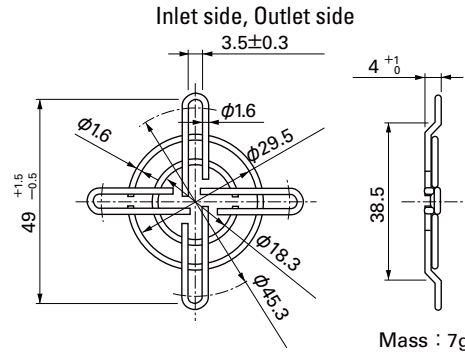
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

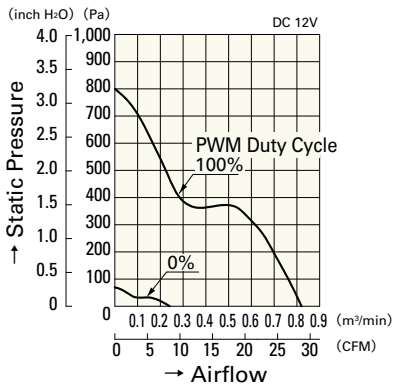
Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
 : 109-059H Color : Cation electropainting (black)



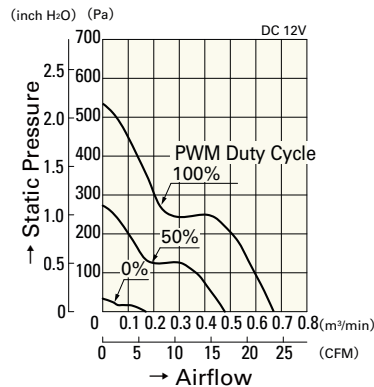
Mass : 7g

Airflow - Static Pressure Characteristics

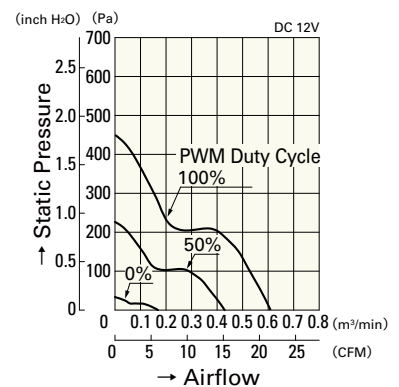
PWM Duty Cycle



9GA0412P3K01

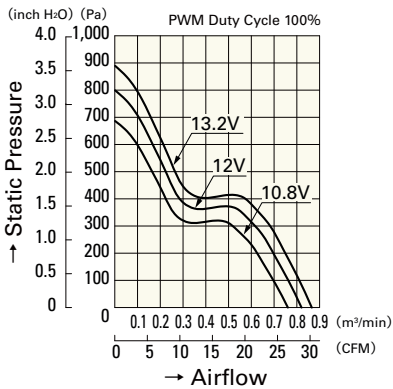


9GA0412P3J01

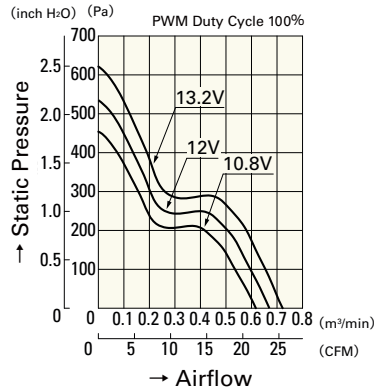


9GA0412P3G01

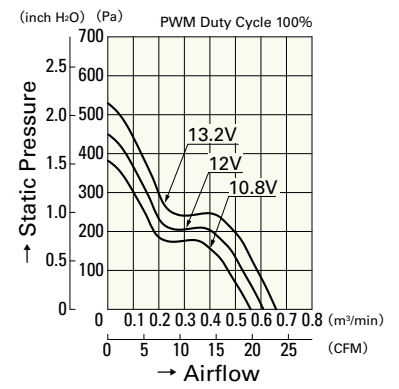
Operating Voltage Range



9GA0412P3K01

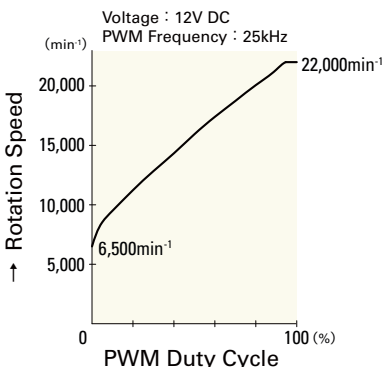


9GA0412P3J01

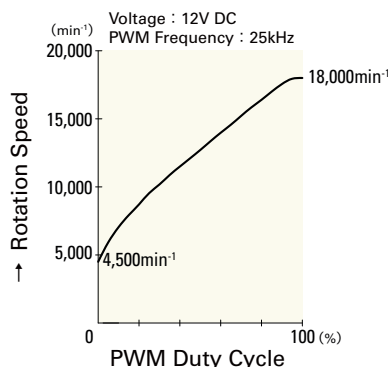


9GA0412P3G01

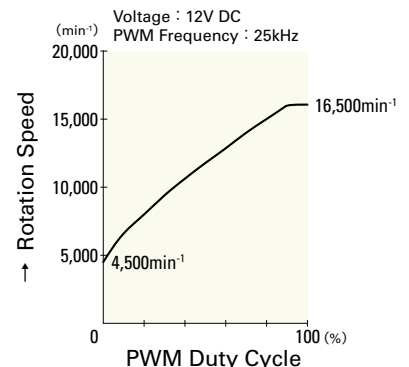
PWM Duty - Speed Characteristics Example



9GA0412P3K01



9GA0412P3J01



9GA0412P3G01

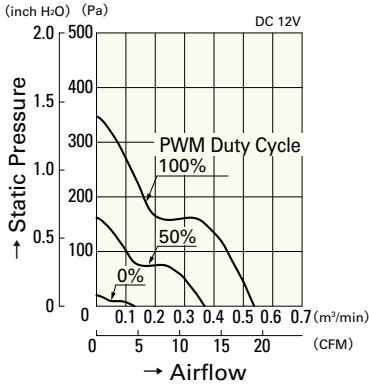
40mm sq.

San Ace 40

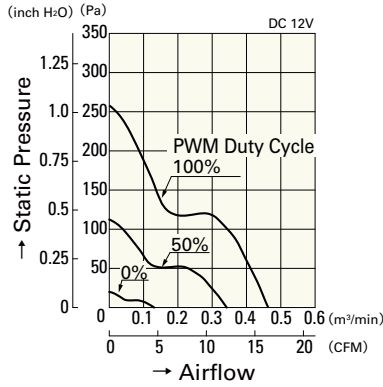
40×40×28mm [Mass : 53g]

Airflow - Static Pressure Characteristics

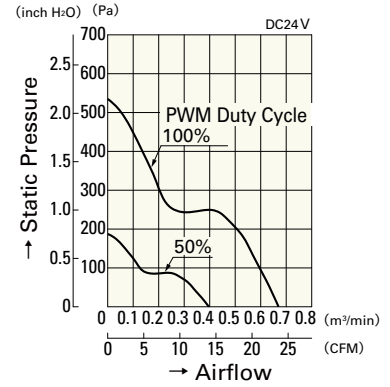
PWM Duty Cycle



9GA0412P3H01

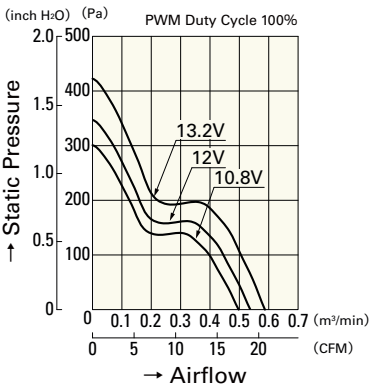


9GA0412P3M01

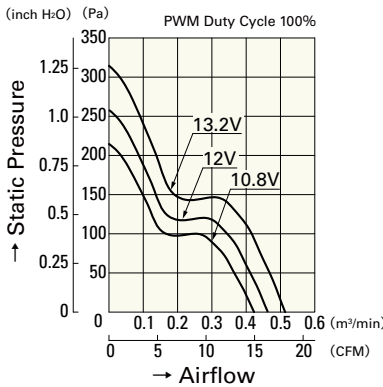


9GA0424P3J001

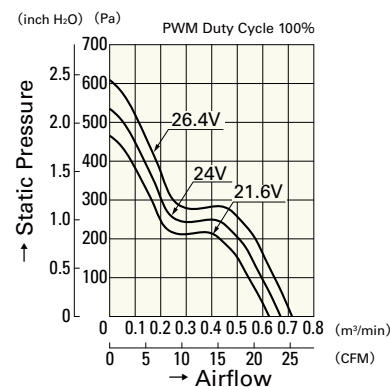
Operating Voltage Range



9GA0412P3H01

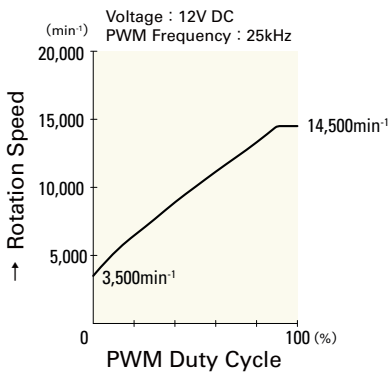


9GA0412P3M01

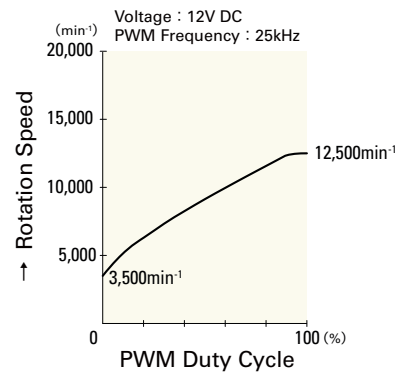


9GA0424P3J001

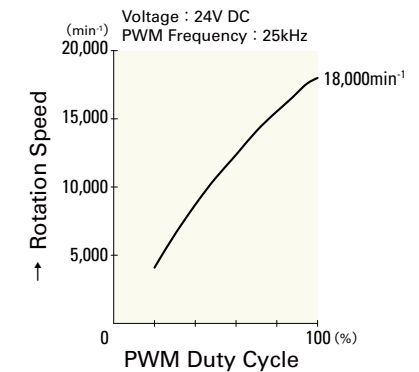
PWM Duty - Speed Characteristics Example



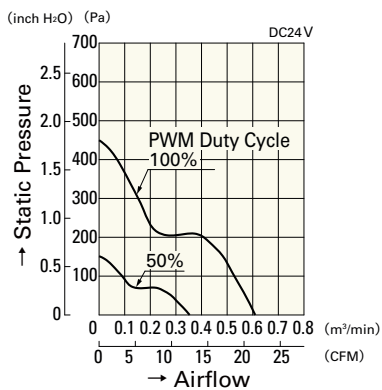
9GA0412P3H01



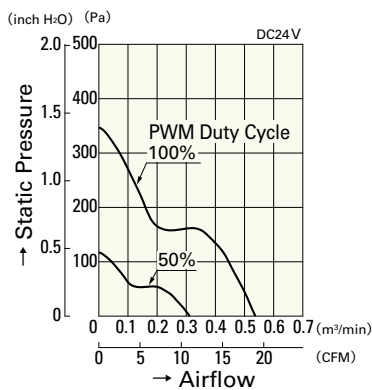
9GA0412P3M01



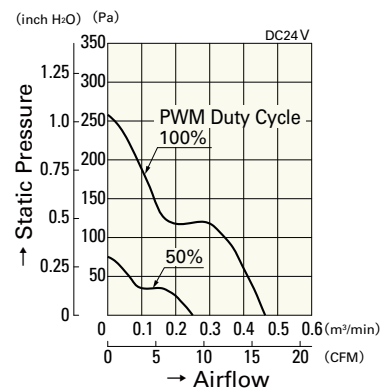
9GA0424P3J001



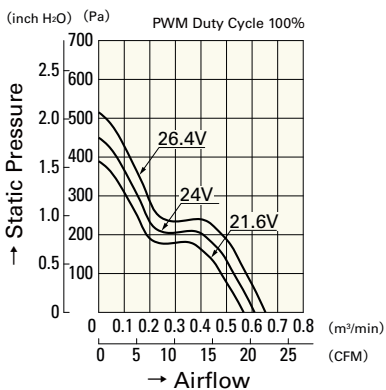
9GA0424P3G001



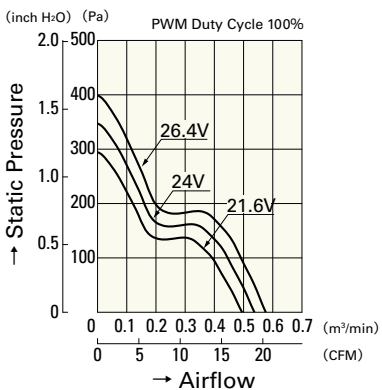
9GA0424P3H001



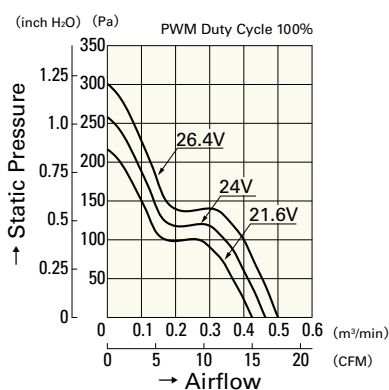
9GA0424P3M001



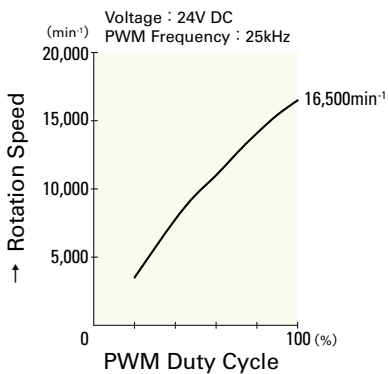
9GA0424P3G001



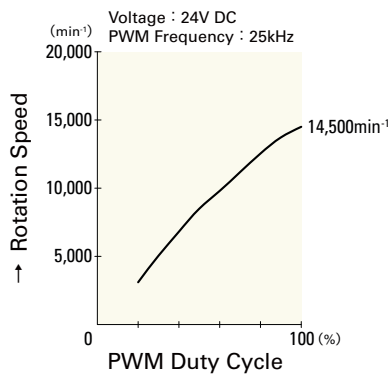
9GA0424P3H001



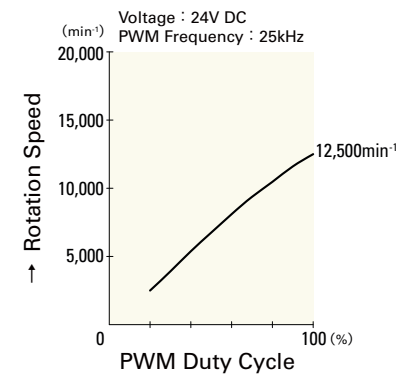
9GA0424P3M001



9GA0424P3G001



9GA0424P3H001



9GA0424P3M001

40mm sq.

San Ace 40



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×28mm (Mass : 55g) **9GE type** **Low vibration**

Specifications

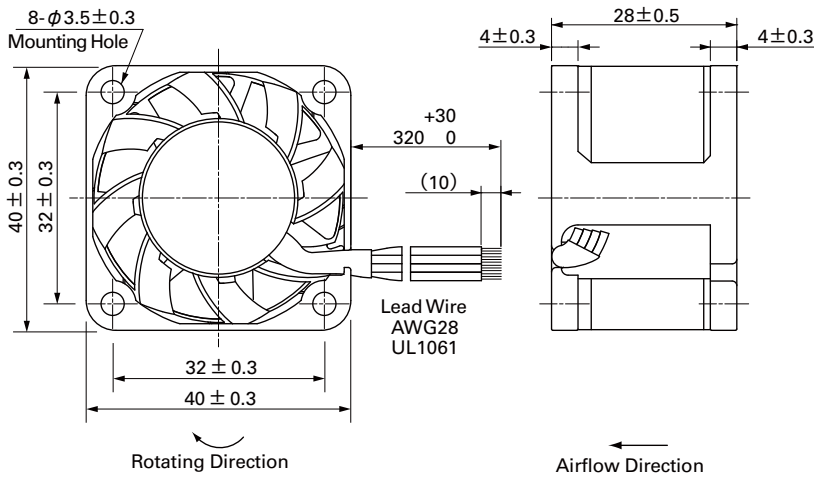
The following nos. **have PWM controls and pulse sensors.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GE0412P3K03	12	10.8 to 13.2	100	0.84	10.08	16,500	0.76 26.8	415 1.666	58	-20 to +60	40,000/60°C
			0	0.07	0.84	3,000	0.13 4.6	13 0.052	17		
9GE0412P3J03			100	0.65	7.8	15,000	0.69 24.4	343.0 1.378	56		
			0	0.05	0.6	2,650	0.12 4.2	10.7 0.042	14		
9GE0412P3G03			100	0.47	5.64	13,000	0.60 21.2	260 1.044	52		
			0	0.05	0.6	2,400	0.11 3.9	8.2 0.033	13		

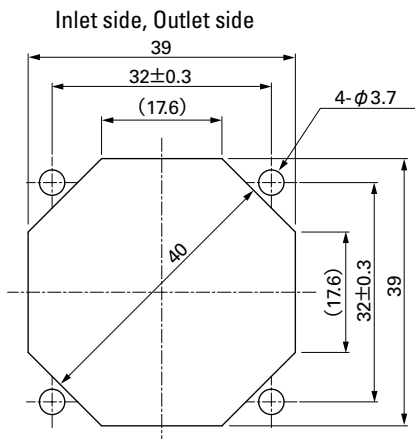
※PWM Frequency : 25kHz

Models with pulse sensors (no PWM control function) or lock sensors are available as options. Please refer to the index (p. 476).

Dimensions (unit: mm)



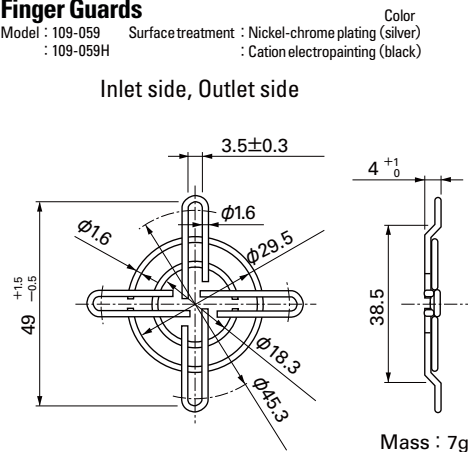
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

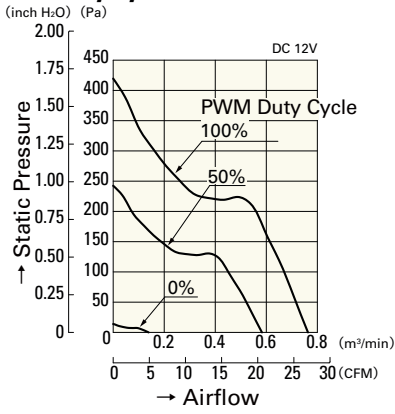
Finger Guards

Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
: 109-059H : Cation electropainting (black)

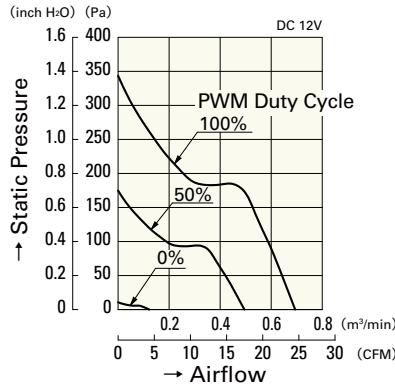


Airflow - Static Pressure Characteristics

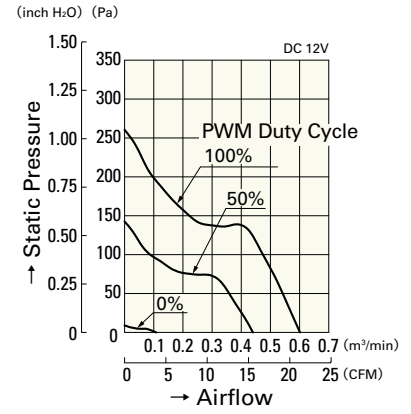
PWM Duty Cycle



9GE0412P3K03

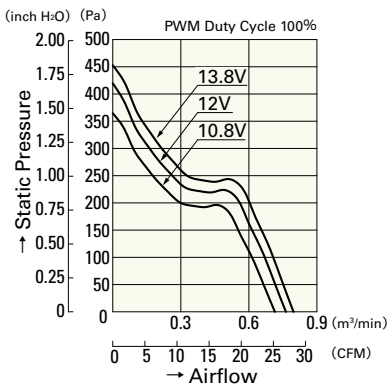


9GE0412P3J03

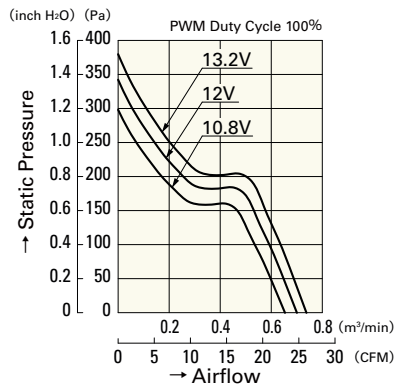


9GE0412P3G03

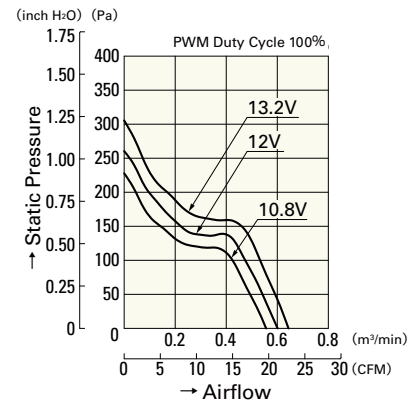
Operating Voltage Range



9GE0412P3K03

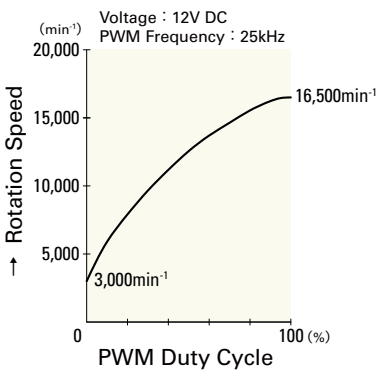


9GE0412P3J03

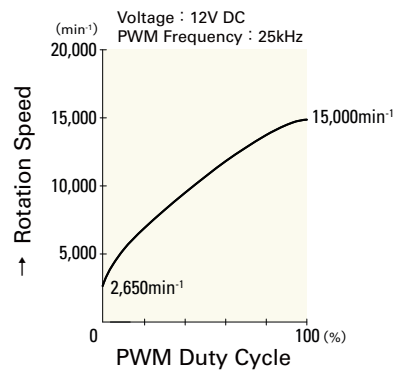


9GE0412P3G03

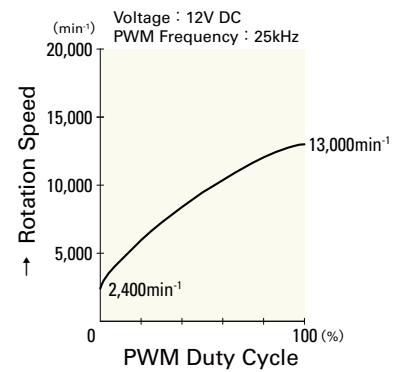
PWM Duty - Speed Characteristics Example



9GE0412P3K03



9GE0412P3J03



9GE0412P3G03

40mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -20°C to +70°C (Non-condensing)

40×40×28mm (Mass : 50g) **9GV type**

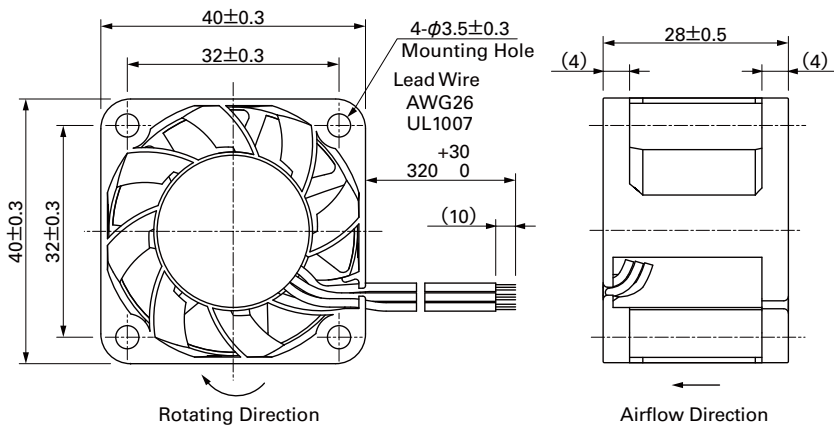
Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

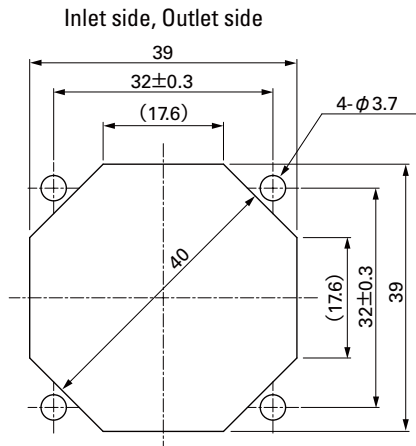
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]	
9GV0412K301	12	10.8 to 12.6	0.84	10.08	16,500	0.76	26.8	415	1.668	58	40,000/60°C
9GV0412J301			0.60	7.20	14,700	0.68	24.0	330	1.325	55	
9GV0412G301		7 to 13.2	0.47	5.64	13,000	0.60	21.1	260	1.044	52	
9GV0412H301			0.31	3.72	11,600	0.53	18.7	207	0.831	49	
9GV0412C301			0.15	1.80	8,300	0.37	13.1	100	0.402	41	

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 477).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



40mm sq.

San Ace 40



Model no. 109P0424R3013 is not certified.

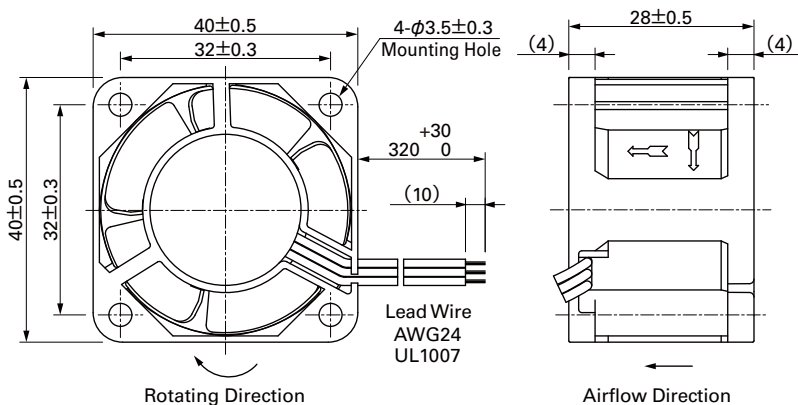
40×40×28mm (Mass : 52g) **9P type**

Specifications The following nos. **have pulse sensors and ribs.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109P0405H3013	5	4.5 to 5.5	0.68	3.4	8,700	0.32 11.3	102.9 0.414	37	-20 to +70	40,000/60°C
109P0405F3013			0.28	1.4	6,700	0.244 8.6	58.8 0.236	30		60,000/60°C
109P0412K3013	12	8 to 13.2	0.55	6.6	15,500	0.59 20.8	340 1.365	50	-20 to +60	40,000/60°C
109P0412J3013			0.35	4.2	12,500	0.46 16.2	210 0.843	44		
109P0412G3013		7 to 13.2	0.31	3.72	11,500	0.42 14.8	179 0.719	42	-20 to +70	60,000/60°C
109P0412B3013			0.28	3.36	10,300	0.38 13.4	143 0.574	40		
109P0412H3013		7 to 13.8	0.195	2.34	8,700	0.32 11.3	102.9 0.414	37	-20 to +70	60,000/60°C
109P0412F3013			0.105	1.26	6,700	0.244 8.6	58.8 0.236	30		
109P0412M3013		10.2 to 13.8	0.045	0.54	4,100	0.15 5.3	21.6 0.087	20		
109P0424R3013		24	12 to 26.4	0.25	6	14,000	0.51 18.0	263.4 1.057	47	-20 to +60
109P0424J3013	0.18			4.32	12,500	0.46 16.2	210 0.843	44		
109P0424G3013	0.19			4.56	11,500	0.42 14.8	179 0.719	42		
109P0424B3013	12 to 27.6		0.13	3.12	10,300	0.38 13.4	143 0.574	40	-20 to +70	60,000/60°C
109P0424H3013			0.095	2.28	8,700	0.32 11.3	102.9 0.414	37		
109P0424F3013			14 to 27.6	0.055	1.32	6,700	0.244 8.6	58.8 0.236		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 466 to 467).

Dimensions (unit: mm)

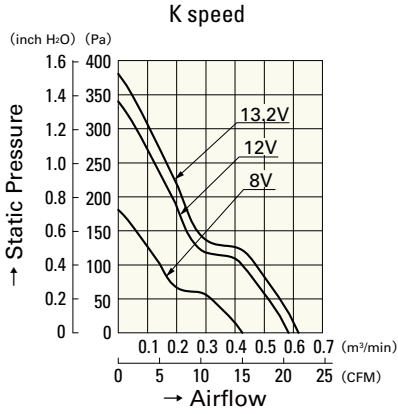


40mm sq.

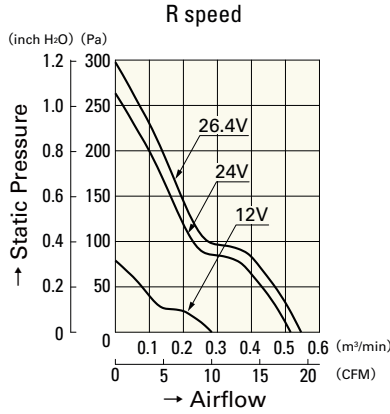
San Ace 40

40×40×28mm [Mass : 52g]

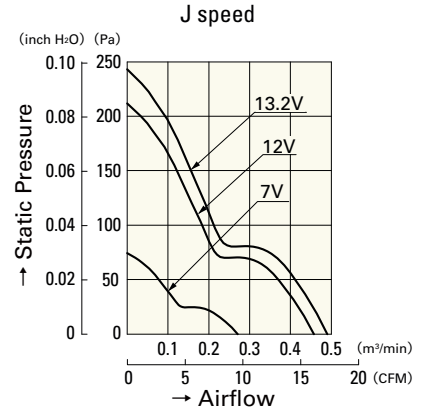
Airflow - Static Pressure Characteristics



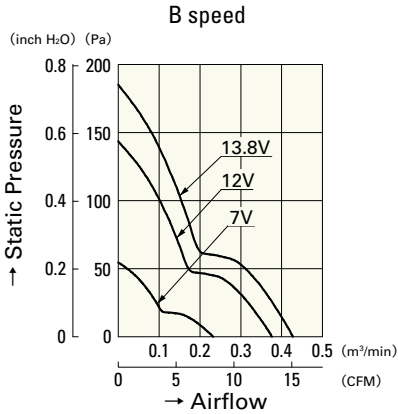
109P0412K3013



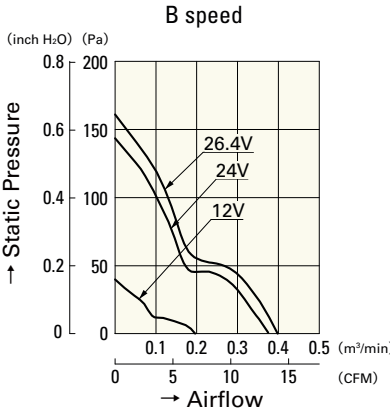
109P0424R3013



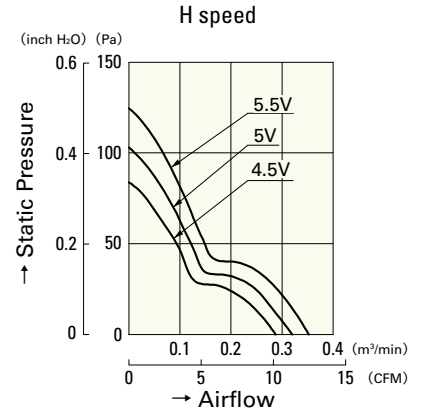
109P0412J3013



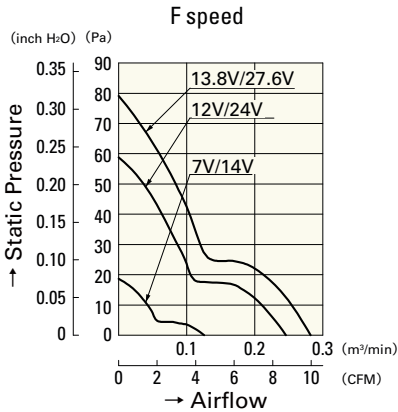
109P0412B3013



109P0424B3013

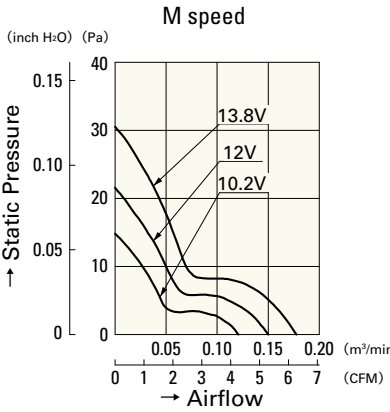


109P0405H3013

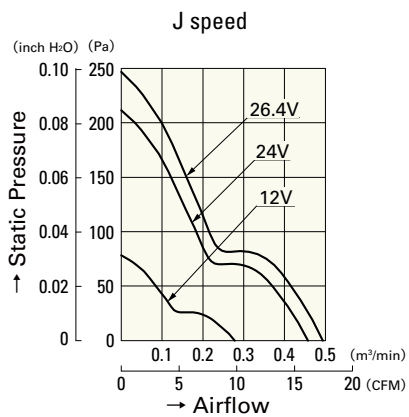


109P0412F3013

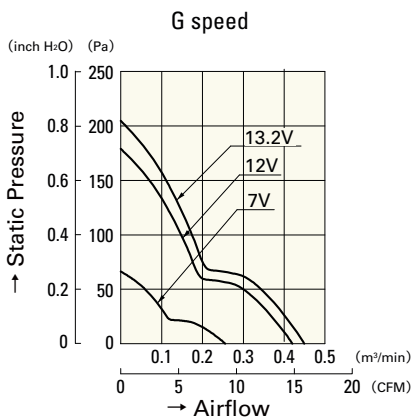
109P0424F3013



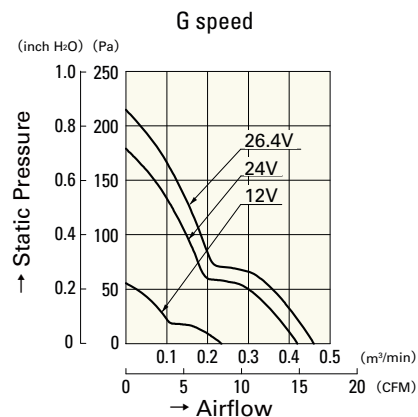
109P0412M3013



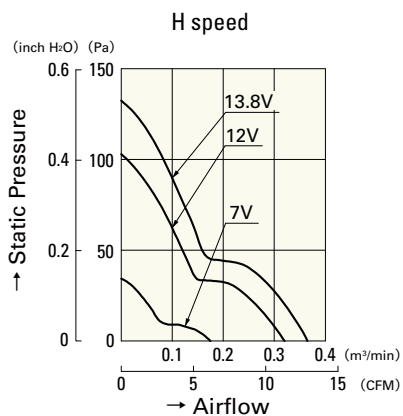
109P0424J3013



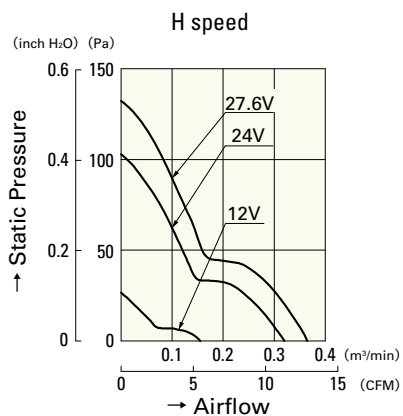
109P0412G3013



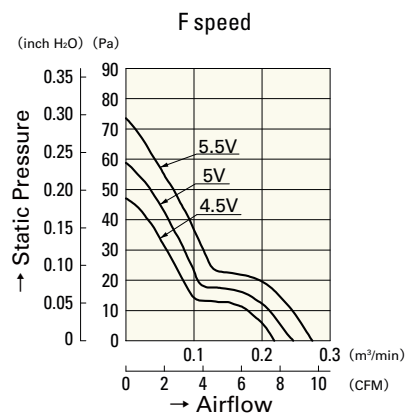
109P0424G3013



109P0412H3013



109P0424H3013



109P0405F3013

52mm sq.

San Ace 52



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

52×52×15mm (Mass : 40g) **9GA**type **Low Power Consumption Fan**



Specifications

The following nos. have PWM controls, pulse sensors, and ribs.

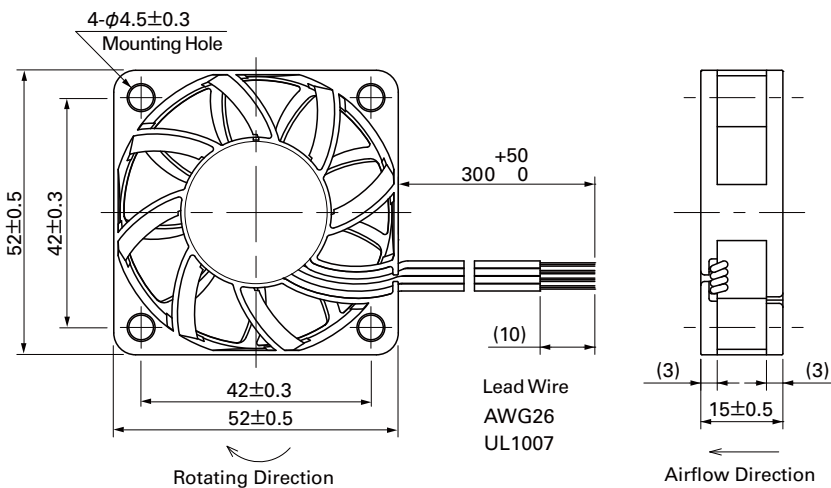
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note①} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GA0512P7G001	12	10.2 to 13.8	100	0.13	1.56	7,800	0.50 17.7	91.5 0.367	38	-20 to +70	40,000/60°C
9GA0512P7A001				0.08	0.96	6,300	0.40 14.1	59 0.237	32		
9GA0512P7H001				0.05	0.60	4,300	0.275 9.7	27.5 0.110	22		
9GA0512P7M001				0.04	0.48	3,400	0.215 7.6	17 0.068	16		
9GA0524P7G001	24	20.4 to 27.6	100	0.07	1.68	7,800	0.50 17.7	91.5 0.367	38		
9GA0524P7A001				0.05	1.20	6,300	0.40 14.1	59.0 0.237	32		
9GA0524P7H001				0.03	0.72	4,300	0.275 9.7	27.5 0.110	22		
9GA0524P7M001				0.02	0.48	3,400	0.215 7.6	17.0 0.068	16		

Note : Fan does not rotate when PWM duty cycle is 0%.

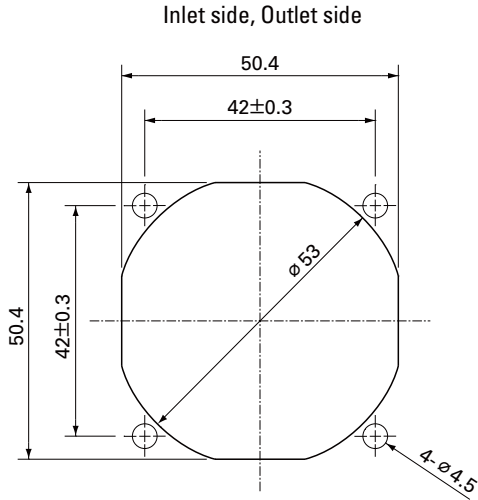
※PWM Frequency : 25kHz

Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (p. 474).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

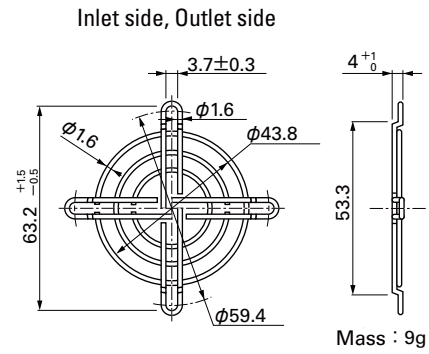
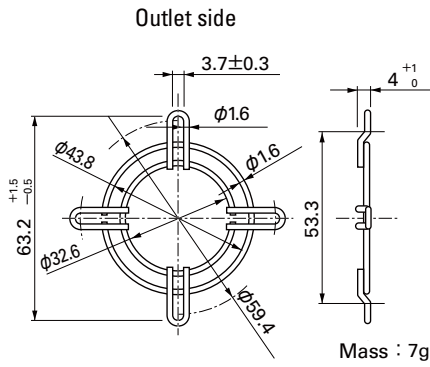


Options (unit: mm)

Finger Guards

Model : 109-149 Color : Nickel-chrome plating (silver)

Model : 109-149E Color : Nickel-chrome plating (silver)



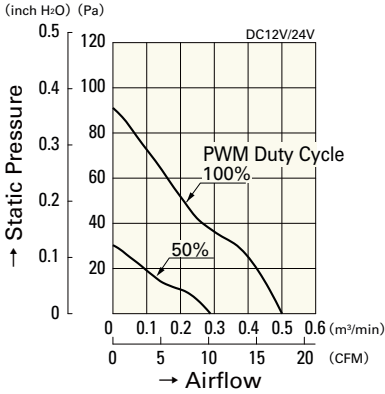
52mm sq.

San Ace 52

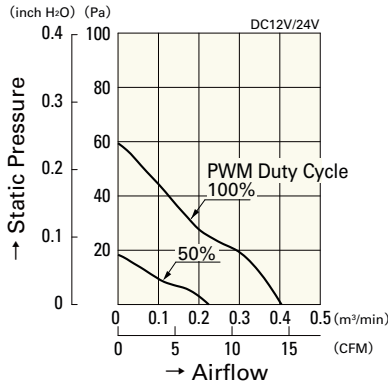
52×52×15mm [Mass : 40g]

Airflow - Static Pressure Characteristics

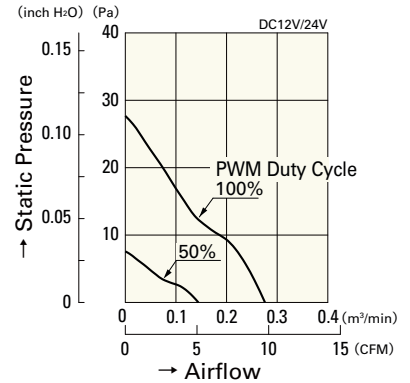
PWM Duty Cycle



9GA0512P7G001
9GA0524P7G001

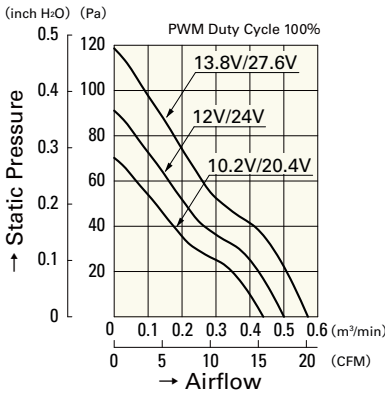


9GA0512P7A001
9GA0524P7A001

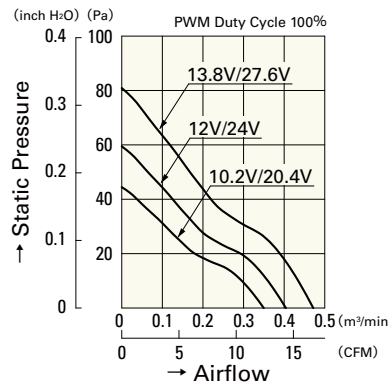


9GA0512P7H001
9GA0524P7H001

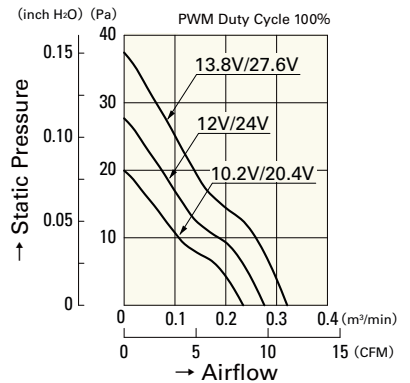
Operating Voltage Range



9GA0512P7G001
9GA0524P7G001

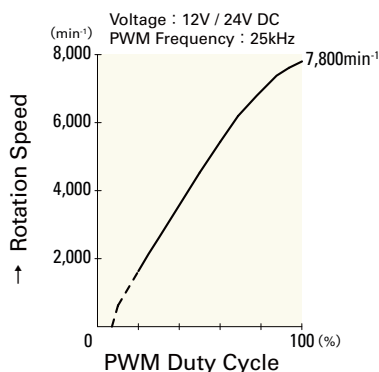


9GA0512P7A001
9GA0524P7A001

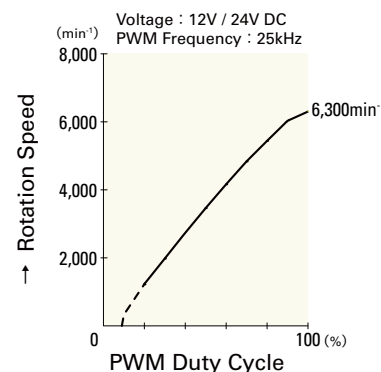


9GA0512P7H001
9GA0524P7H001

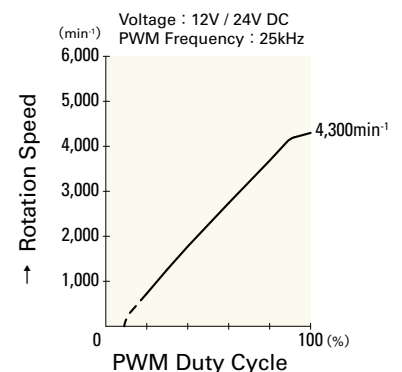
PWM Duty - Speed Characteristics Example



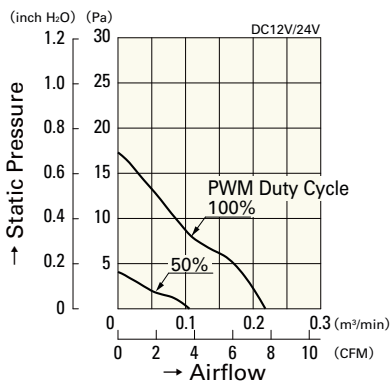
9GA0512P7G001
9GA0524P7G001



9GA0512P7A001
9GA0524P7A001

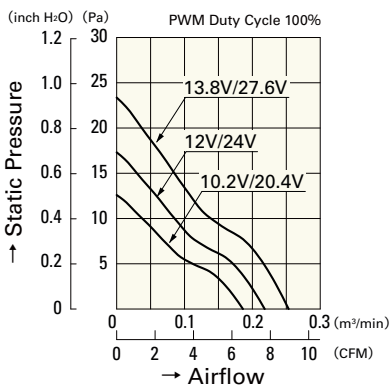


9GA0512P7H001
9GA0524P7H001



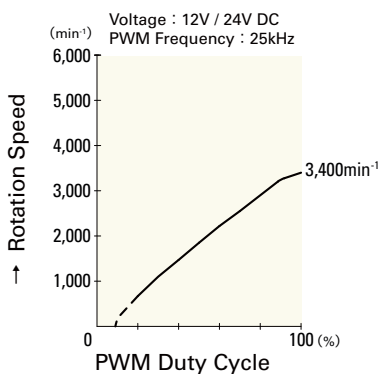
9GA0512P7M001

9GA0524P7M001



9GA0512P7M001

9GA0524P7M001



9GA0512P7M001

9GA0524P7M001

52mm sq.

San Ace 52



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

52×52×15mm (Mass : 55g) **9P** type

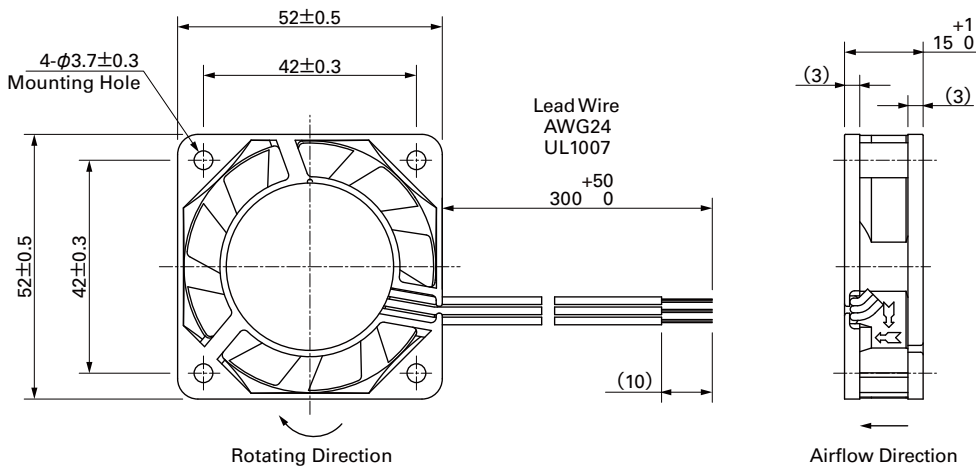
Specifications

The following nos. have pulse sensors and ribs.

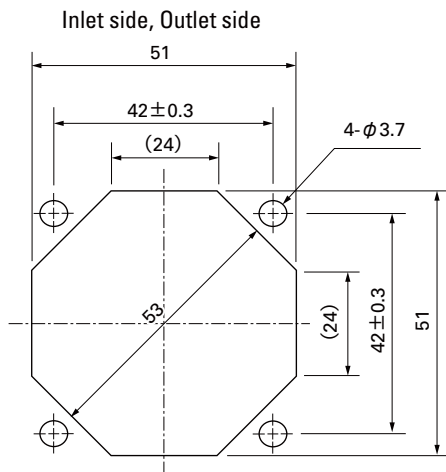
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109P0505M701	5	4.5 to 5.5	0.15	0.75	3,700	0.205 7.24	21.4 0.086	22	-20 to +70	60,000/60°C
109P0512A701	12	10.2 to 13.8	0.21	2.52	6,800	0.375 13.25	69.7 0.280	36		40,000/60°C
109P0512H701		7 to 13.8	0.10	1.20	4,600	0.255 9.00	31.9 0.128	27		60,000/60°C
109P0512M701			0.07	0.84	3,700	0.205 7.24	21.4 0.086	22		60,000/60°C
109P0524A701	24	14 to 27.6	0.11	2.64	6,800	0.375 13.24	69.7 0.280	36	-20 to +60	40,000/60°C
109P0524H701			0.05	1.20	4,600	0.255 9.00	31.9 0.128	27	-20 to +70	60,000/60°C
109P0524M701			0.04	0.96	3,700	0.205 7.24	21.4 0.086	22		

Models without sensors or with lock sensors are available as options. Please refer to the index (p. 467).

Dimensions (unit: mm)



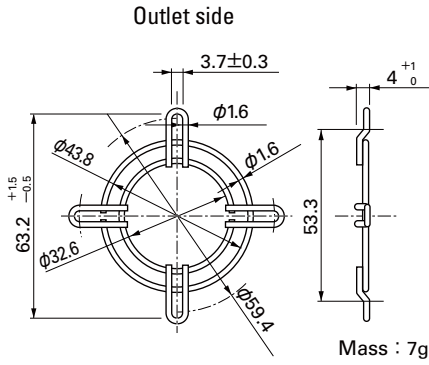
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



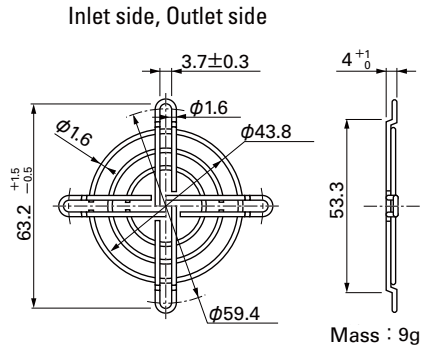
Options (unit: mm)

Finger Guards

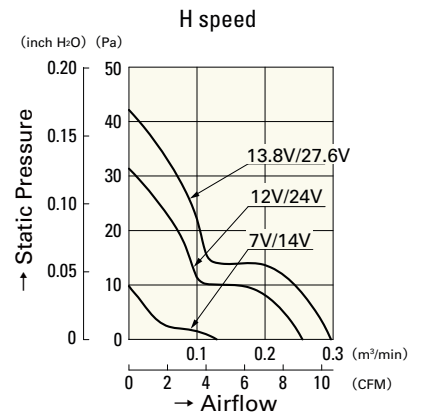
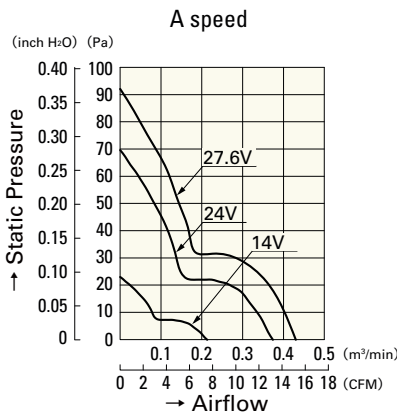
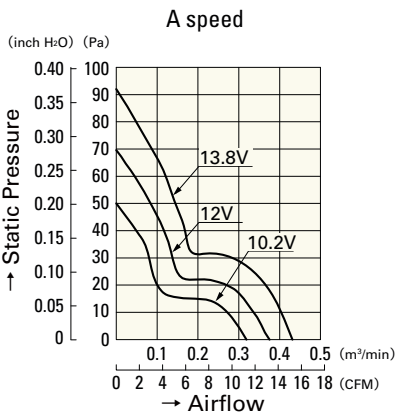
Model : 109-149 Surface treatment : Nickel-chrome plating Color (silver)



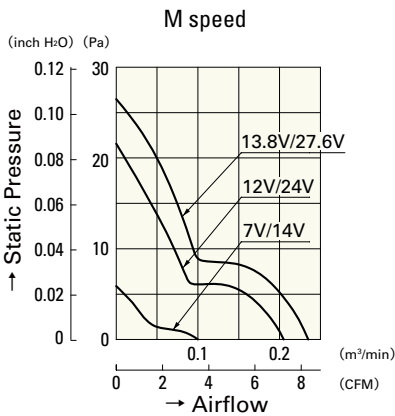
Model : 109-149E Surface treatment : Nickel-chrome plating Color (silver)



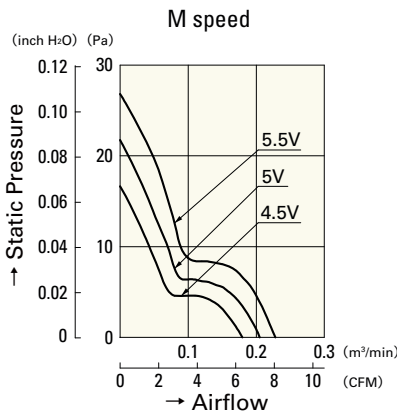
Airflow - Static Pressure Characteristics



109P0524H701



109P0524M701



60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×10mm (Mass : 35g) **9GA**type **Low Power Consumption Fan**

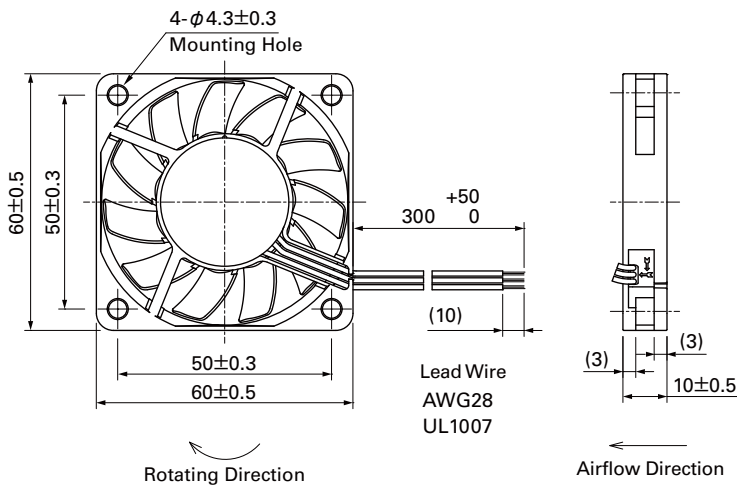


Specifications

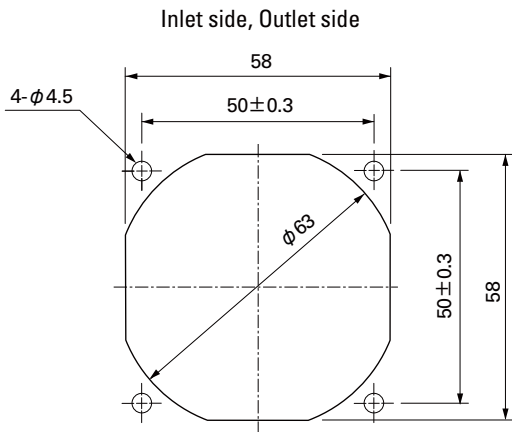
The following nos. **have pulse sensors.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GA0612G9001	12	7.0 to 13.2	0.27	3.24	6,200	0.62 21.9	66 0.26	43	-20 to +60	40,000/60°C (70,000/40°C)
9GA0612H9001		7.0 to 13.8	0.14	1.68	5,000	0.50 17.6	42.9 0.17	37	-20 to +70	
9GA0612L9001			0.03	0.36	2,300	0.23 8.1	9.1 0.037	17	-10 to +70	

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

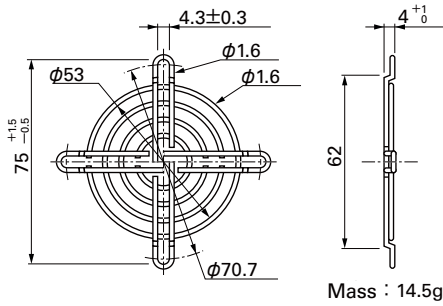


Options (unit: mm)

Finger Guards

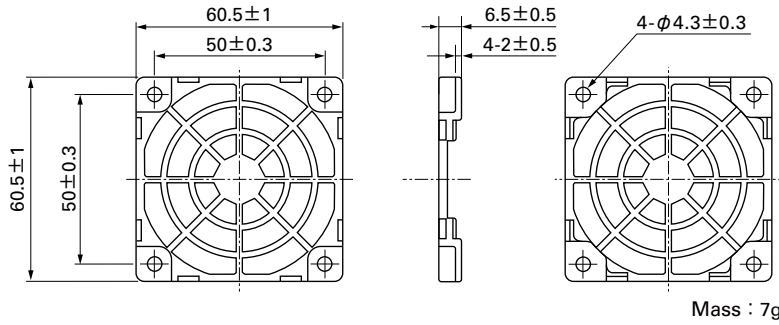
Model : 109-139E Surface treatment : Nickel-chrome plating Color
 : 109-139H : Cation electropainting (black)

Inlet side, Outlet side



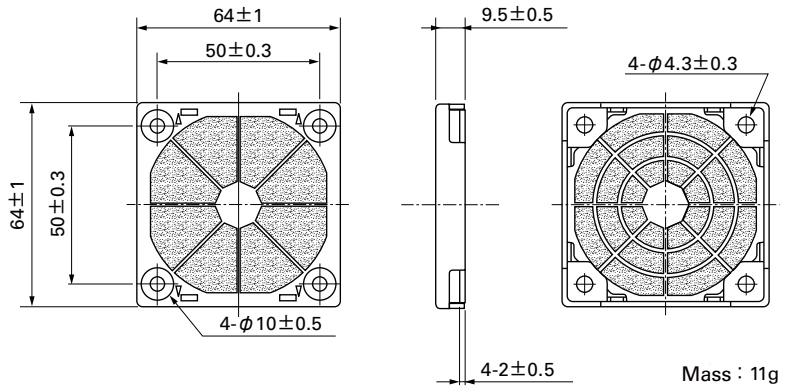
Resin Finger Guards

Model : 109-1003G

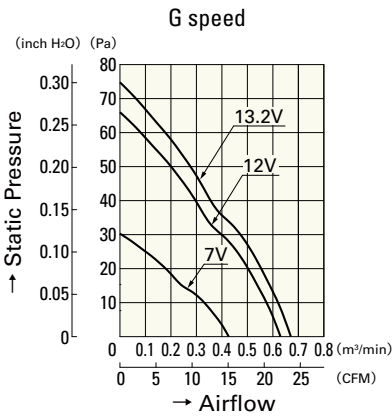


Resin Filter Kits

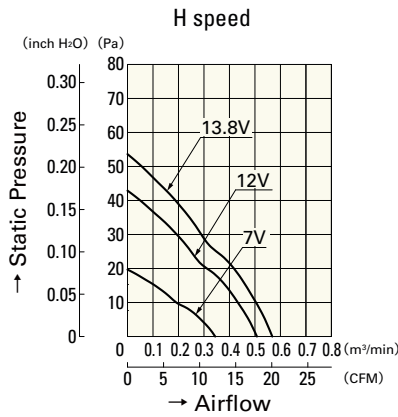
Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
 : 109-1003F30 (30PPI), 109-1003F40 (40PPI)



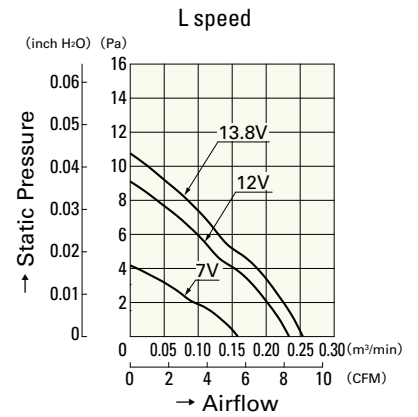
Airflow - Static Pressure Characteristics



9GA0612G9001



9GA0612H9001



9GA0612L9001

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
(For models without PWM control function, there is no
speed control wiring.)
- Storage Temperature ... -30°C to +70°C (Non-condensing)

60×60×15mm (Mass : 50g) **9GA type** **Low Power Consumption Fan**



Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{Note2} [h]
9GA0612P7G01	12	10.2 to 13.8	100	0.16	1.92	5,900	0.68 24	80 0.320	38	-20 to +70	40,000/60°C (70,000/40°C)
0			0.05	0.60	1,500	0.17 6.0	5.2 0.20	10			
9GA0612P7H01			100	0.10	1.2	4,900	0.56 19.7	55.6 0.223	34		
0			0.03	0.36	1,300	0.15 5.3	3.9 0.15	8			
9GA0624P7G01^{Note1}	24	20.4 to 27.6	100	0.08	1.92	5,900	0.68 24.0	80 0.320	38	-10 to +70	

Note1: Fan does not rotate when PWM duty cycle is 0%.
Note2: Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

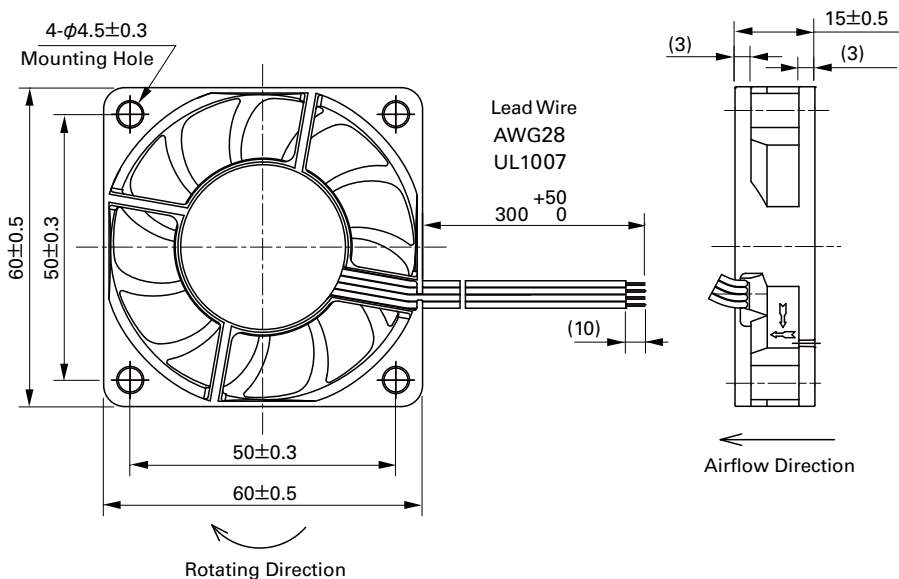
The following nos. have pulse sensors and ribs.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GA0612G701	12	6 to 13.8	0.16	1.92	5,900	0.68 24	80 0.320	38	-20 to +70	40,000/60°C (70,000/40°C)
9GA0612H701			0.1	1.2	4,900	0.56 19.7	55.6 0.223	34		
9GA0612M701			0.08	0.96	3,900	0.45 15.9	35.3 0.142	28		
9GA0612L701			0.03	0.36	2,800	0.31 10.9	18 0.072	17		

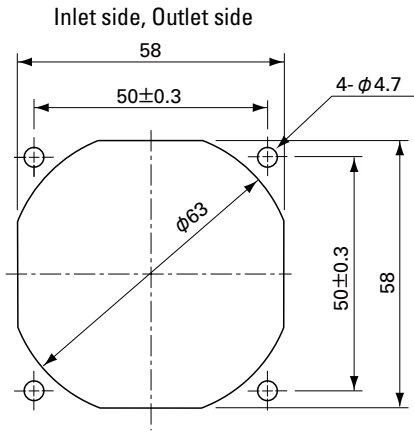
Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 474 to 475).

Dimensions (unit: mm)

(With PWM control function · With pulse sensor)

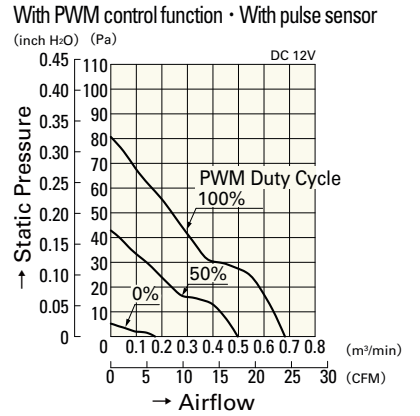


Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Airflow - Static Pressure Characteristics

PWM Duty Cycle



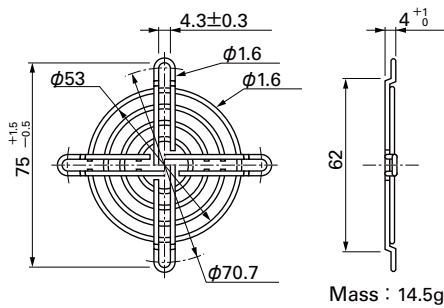
9GA0612P7G01

Options (unit: mm)

Finger Guards

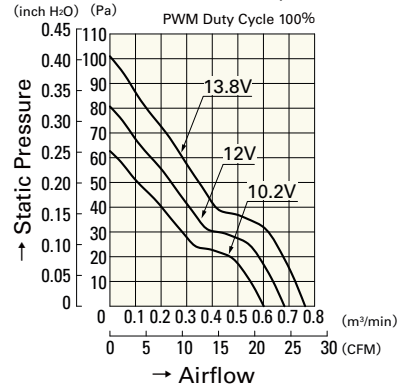
Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
: 109-139H : Cation electropainting (black)

Inlet side, Outlet side



Operating Voltage Range

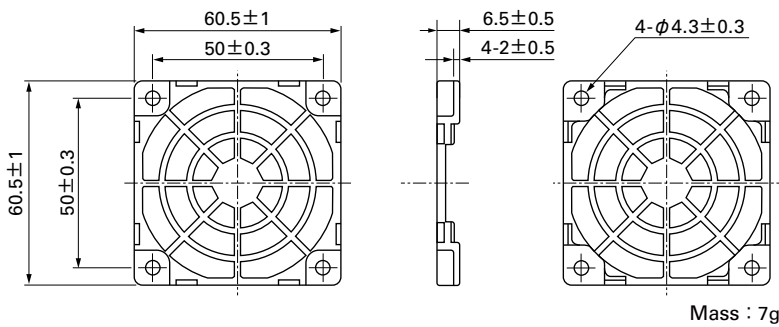
With PWM control function · With pulse sensor



9GA0612P7G01

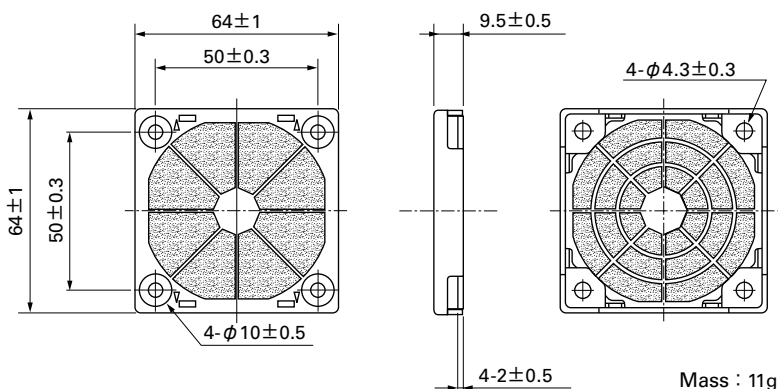
Resin Finger Guards

Model : 109-1003G



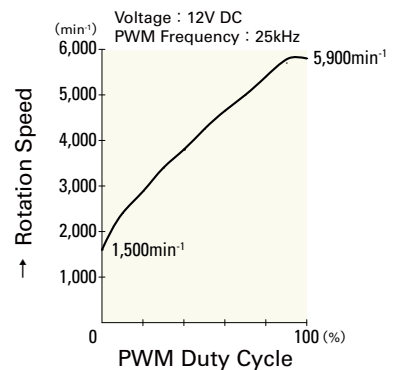
Resin Filter Kits

Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
: 109-1003F30 (30PPI), 109-1003F40 (40PPI)



PWM Duty - Speed Characteristics Example

With PWM control function · With pulse sensor



9GA0612P7G01

60mm sq.

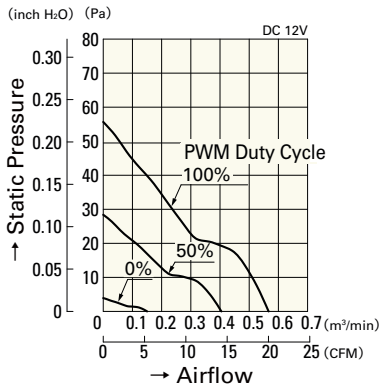
San Ace 60

60×60×15mm [Mass : 50g]

Airflow - Static Pressure Characteristics

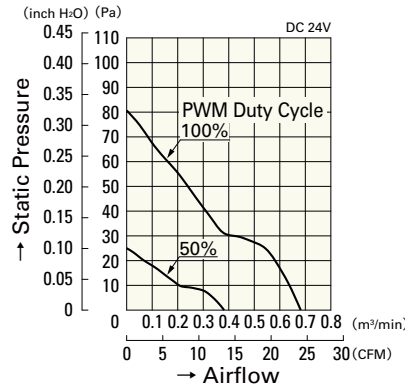
PWM Duty Cycle

With PWM control function · With pulse sensor



9GA0612P7H01

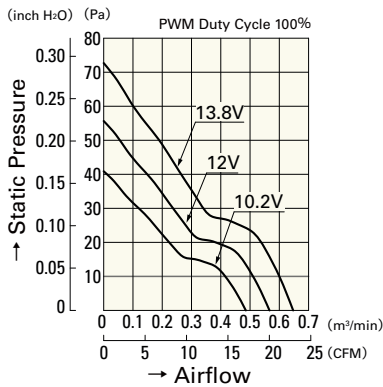
With PWM control function · With pulse sensor



9GA0624P7G01

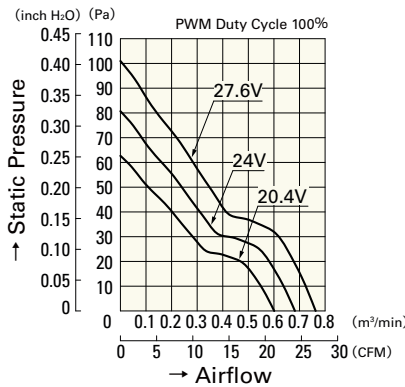
Operating Voltage Range

With PWM control function · With pulse sensor



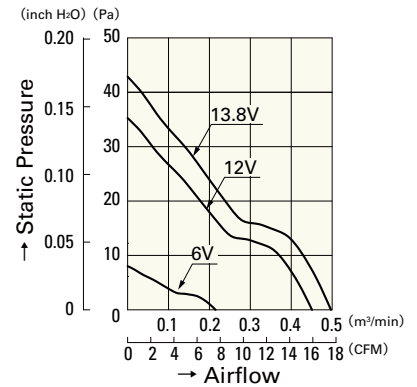
9GA0612P7H01

With PWM control function · With pulse sensor



9GA0624P7G01

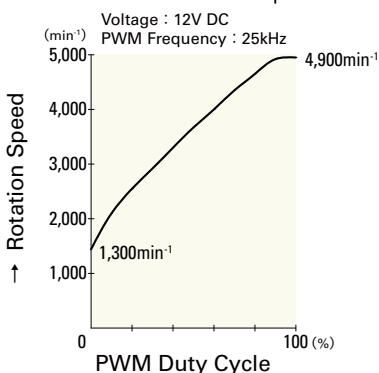
With pulse sensor



9GA0612M701

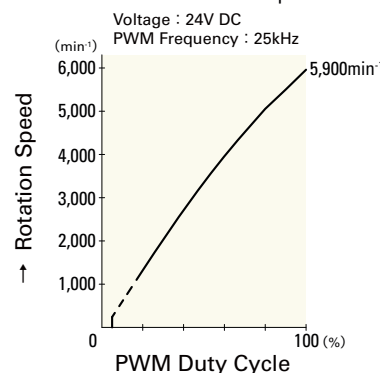
PWM Duty - Speed Characteristics Example

With PWM control function · With pulse sensor

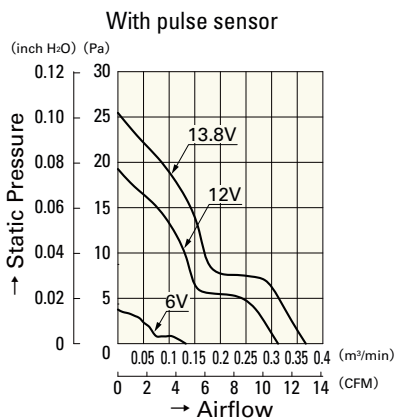


9GA0612P7H01

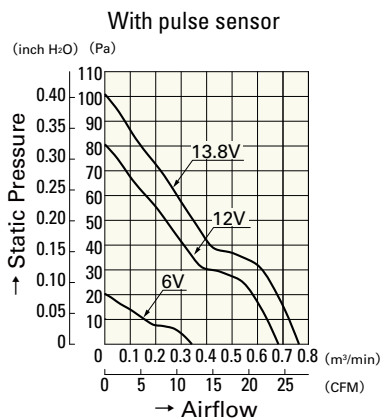
With PWM control function · With pulse sensor



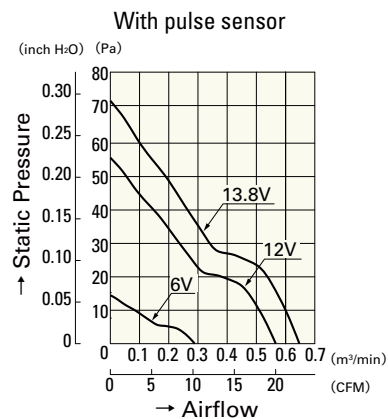
9GA0624P7G01



9GA0612L701



9GA0612G701



9GA0612H701

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×15mm (Mass : 60g) **9P**type

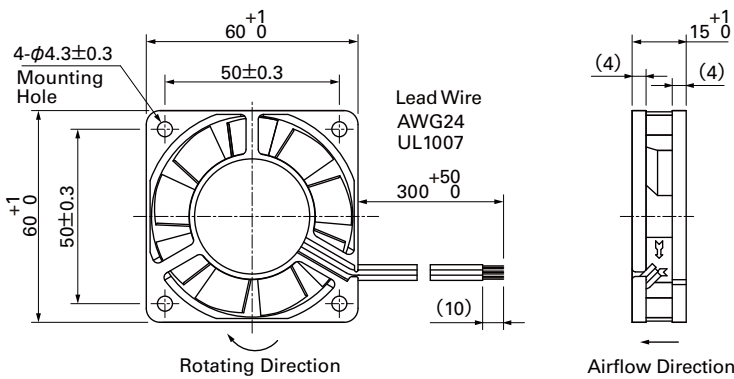
Specifications

The following nos. **have pulse sensors and ribs.**

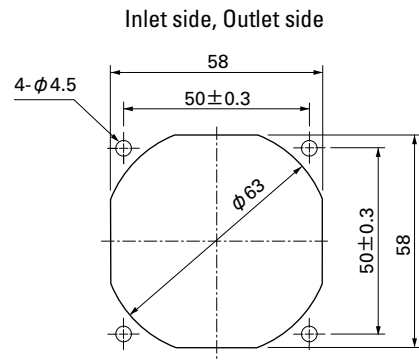
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109P0605H701	5	4.5 to 5.5	0.26	1.30	4,100	0.40 14.1	38.2 0.153	32	-20 to +70	60,000/60°C
109P0605M701			0.15	0.75	3,100	0.30 10.6	22.6 0.091	25		
109P0612K701	12	10.2 to 13.8	0.26	3.12	6,500	0.62 21.9	99.3 0.399	45	-20 to +60	40,000/60°C
109P0612S701			0.15	1.80	5,000	0.48 17.0	58.8 0.236	36		
109P0612H701		7 to 13.8	0.09	1.08	4,100	0.40 14.1	38.2 0.153	32		
109P0612M701		10.2 to 13.8	0.07	0.84	3,100	0.30 10.6	22.6 0.091	25		
109P0612B701			0.05	0.6	2,200	0.21 7.42	11.7 0.047	21		
109P0624J701		24	14 to 27.6	0.14	3.36	6,200	0.61 21.5	86.5 0.347		
109P0624S701	0.08			1.92	5,000	0.48 16.9	58.8 0.236	36		
109P0624H701	0.06			1.44	4,100	0.40 14.1	38.2 0.153	32		
109P0624M701	20.4 to 27.6			0.04	0.96	3,100	0.30 10.6	22.6 0.091	25	

Models without sensors or with lock sensors are available as options. Please refer to the index (p. 467).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent opening (unit: mm)

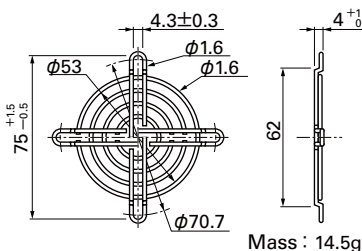


Options (unit: mm)

Finger Guards

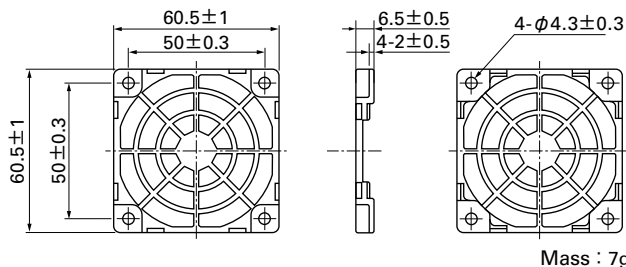
Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
: 109-139H : Cation electropainting (black)

Inlet side, Outlet side



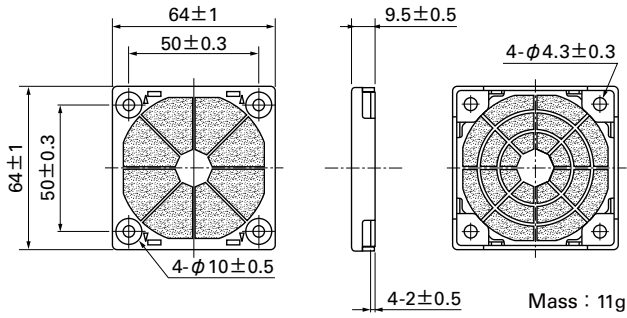
Resin Finger Guards

Model : 109-1003G

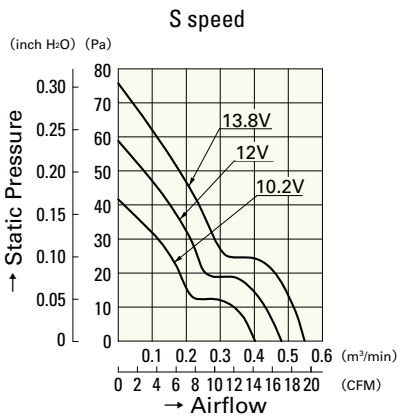


Resin Filter Kits

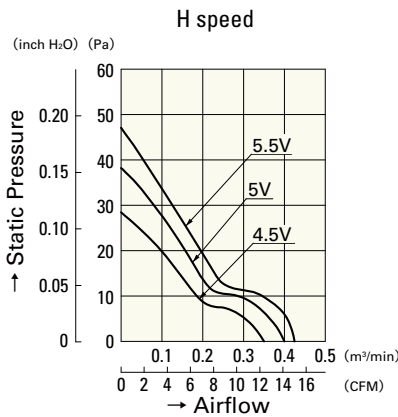
Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
 : 109-1003F30 (30PPI), 109-1003F40 (40PPI)



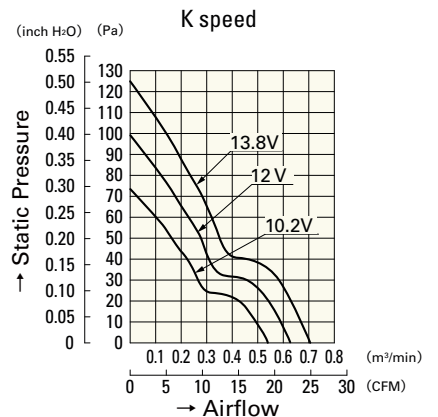
Airflow - Static Pressure Characteristics



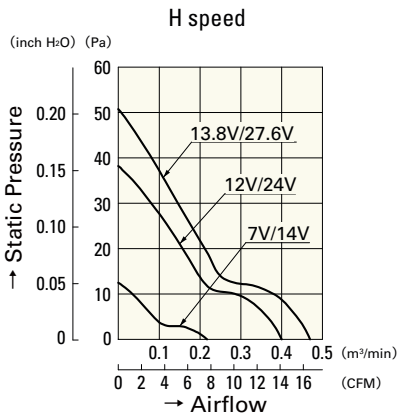
109P0612S701



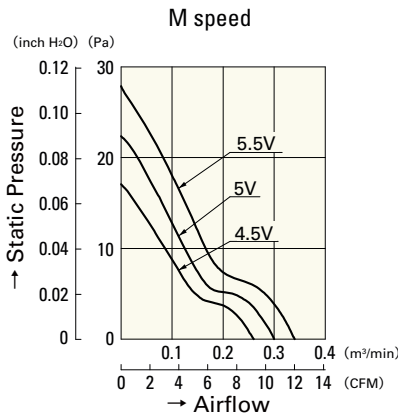
109P0605H701



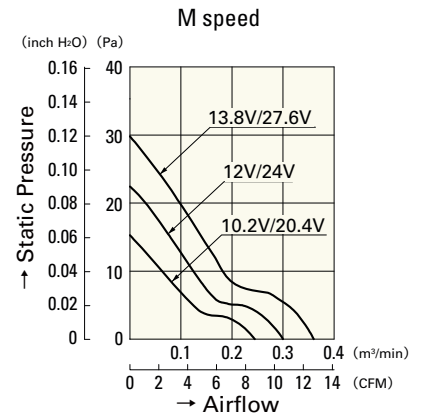
109P0612K701



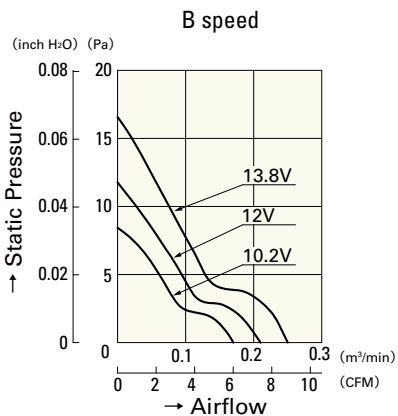
109P0612H701
109P0624H701



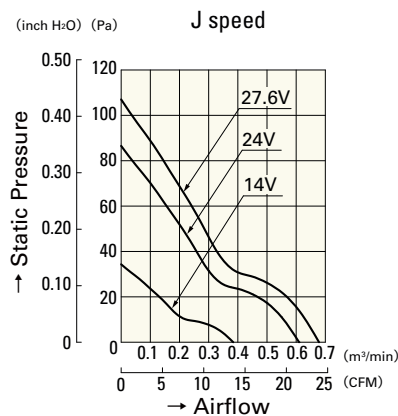
109P0605M701



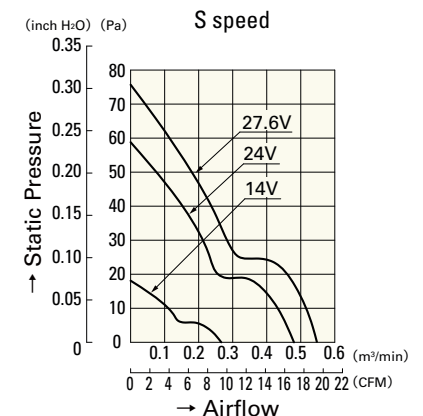
109P0612M701
109P0624M701



109P0612B701



109P0624J701



109P0624S701

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
(For models without PWM control function, there is no speed control wiring.)
- Storage Temperature ... -30°C to +70°C (Non-condensing)

60×60×20mm (Mass : 70g) **9GA type** **Low Power Consumption Fan**



Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note1)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{Note2)} [h]
9GA0612P6G001	12	10.8 to 13.2	100	0.26	3.12	6,850	0.88 31.1	125 0.50	43	-20 to +70	40,000/60°C (70,000/40°C)
9GA0612P6S001			100	0.15	1.80	5,500	0.70 24.7	81 0.33	36		
9GA0624P6G001	24	21.6 to 26.4	100	0.12	2.88	6,850	0.88 31.1	125 0.50	43		
9GA0624P6S001			100	0.07	1.68	5,500	0.70 24.7	81 0.33	36		

Note 1: Fan does not rotate when PWM duty cycle is 0%.
Note 2: Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

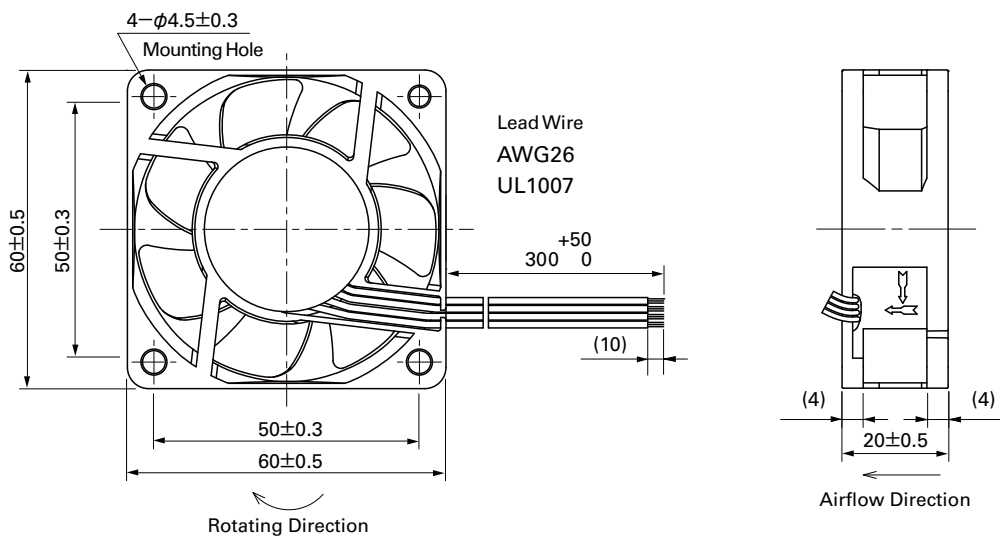
The following nos. **have pulse sensors and ribs.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GA0612H6001	12	10.8 to 13.2	0.09	1.08	4,100	0.52 18.4	45 0.18	29	-20 to +70	60,000/60°C
9GA0612M6001			0.05	0.60	2,700	0.34 12.0	20 0.08	18		
9GA0624H6001	24	21.6 to 26.4	0.04	0.96	4,100	0.52 18.4	45 0.18	29		
9GA0624M6001			0.03	0.72	2,700	0.34 12.0	20 0.08	18		

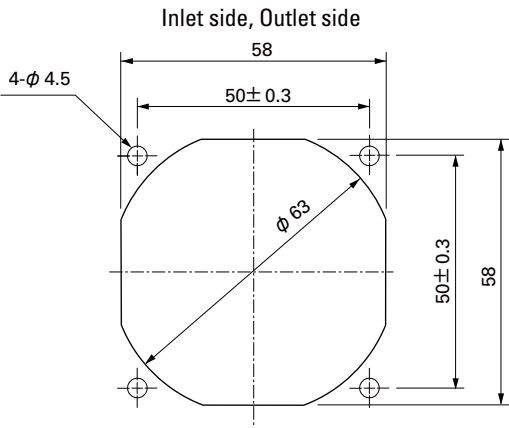
Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 474 to 475).

Dimensions (unit: mm)

(With PWM control function · With pulse sensor)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



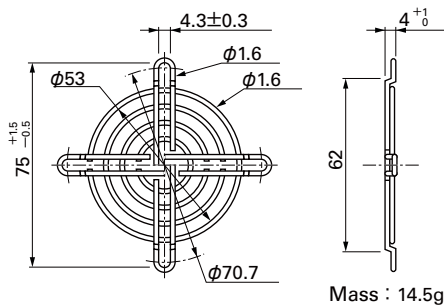
Options (unit: mm)

Finger Guards

Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
 : 109-139H : Cation electropainting (black)

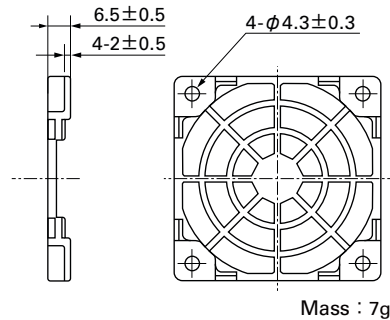
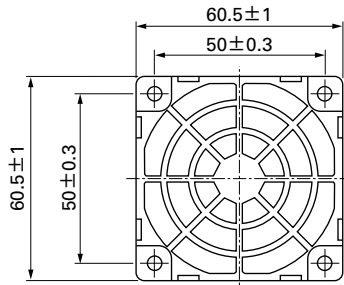
Color

Inlet side, Outlet side



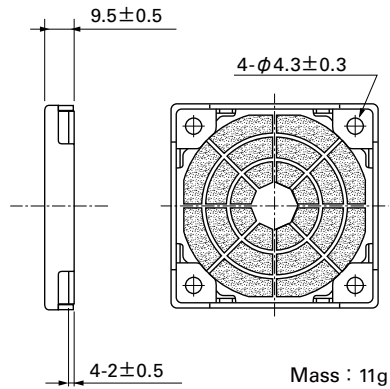
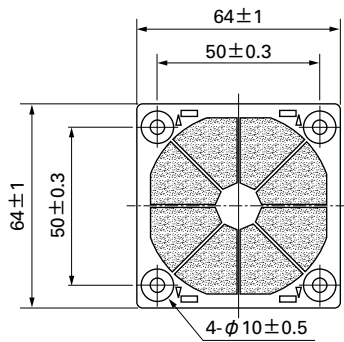
Resin Finger Guards

Model : 109-1003G



Resin Filter Kits

Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
 : 109-1003F30 (30PPI), 109-1003F40 (40PPI)



60mm sq.

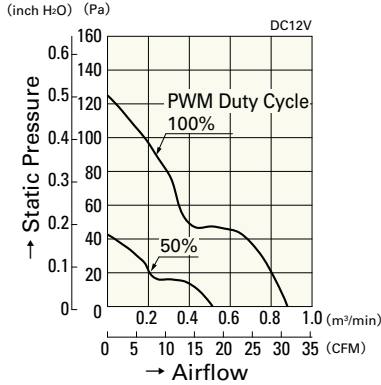
San Ace 60

60×60×20mm [Mass : 70g]

Airflow - Static Pressure Characteristics

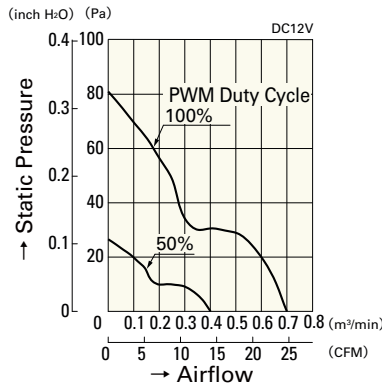
PWM Duty Cycle

With PWM control function · With pulse sensor



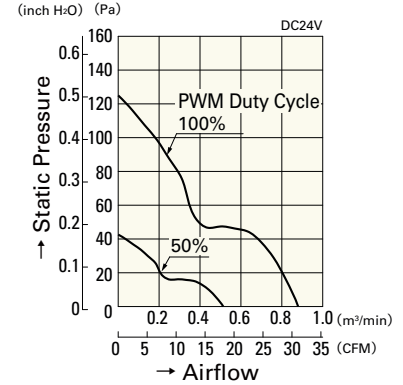
9GA0612P6G001

With PWM control function · With pulse sensor



9GA0612P6S001

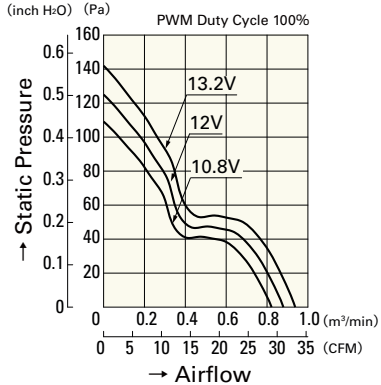
With PWM control function · With pulse sensor



9GA0624P6G001

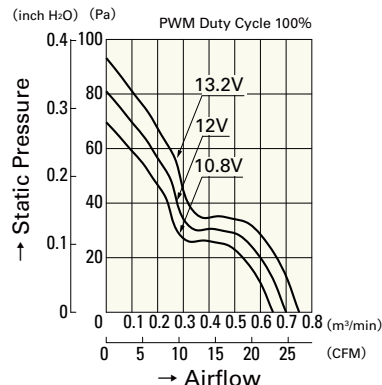
Operating Voltage Range

With PWM control function · With pulse sensor



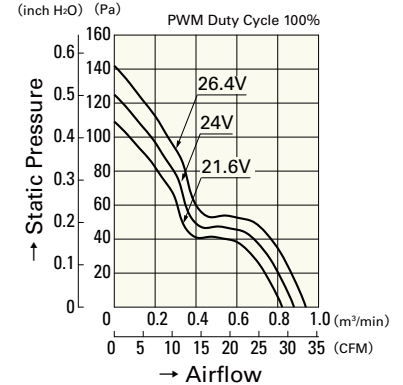
9GA0612P6G001

With PWM control function · With pulse sensor



9GA0612P6S001

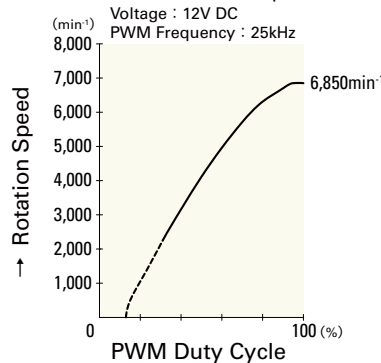
With PWM control function · With pulse sensor



9GA0624P6G001

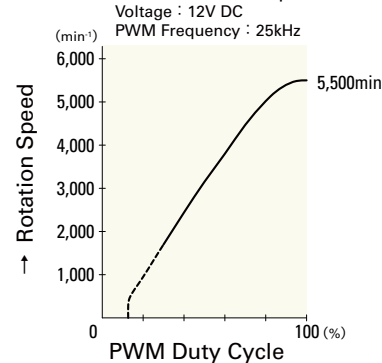
PWM Duty - Speed Characteristics Example

With PWM control function · With pulse sensor



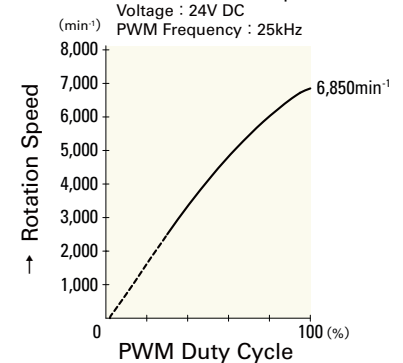
9GA0612P6G001

With PWM control function · With pulse sensor



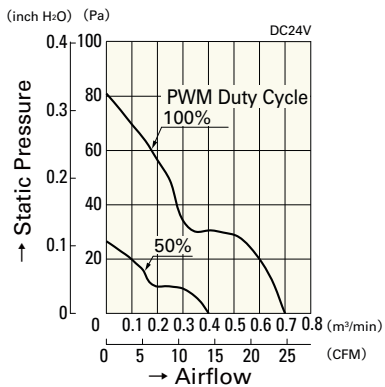
9GA0612P6S001

With PWM control function · With pulse sensor



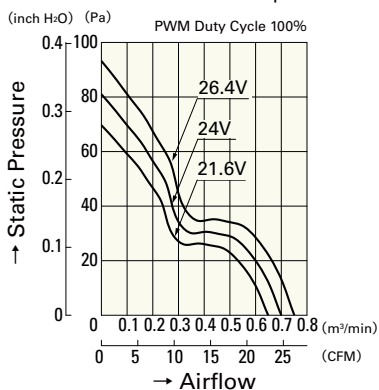
9GA0624P6G001

With PWM control function · With pulse sensor



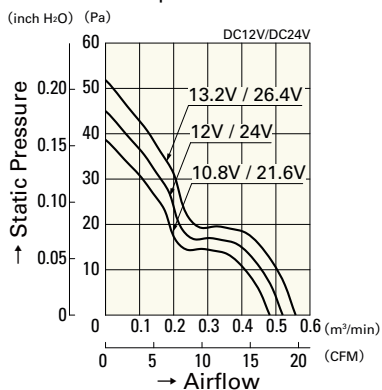
9GA0624P6S001

With PWM control function · With pulse sensor



9GA0624P6S001

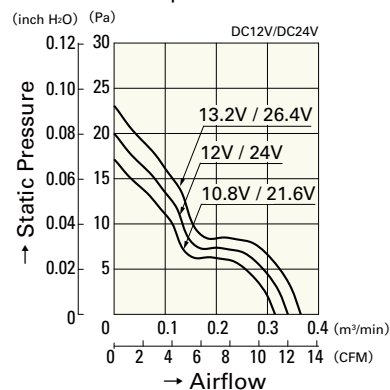
With pulse sensor



9GA0612H6001

9GA0624H6001

With pulse sensor

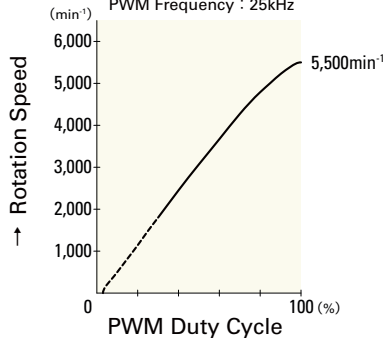


9GA0612M6001

9GA0624M6001

With PWM control function · With pulse sensor

Voltage : 24V DC
PWM Frequency : 25kHz



9GA0624P6S001

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×20mm (Mass : 90g) **9P** type

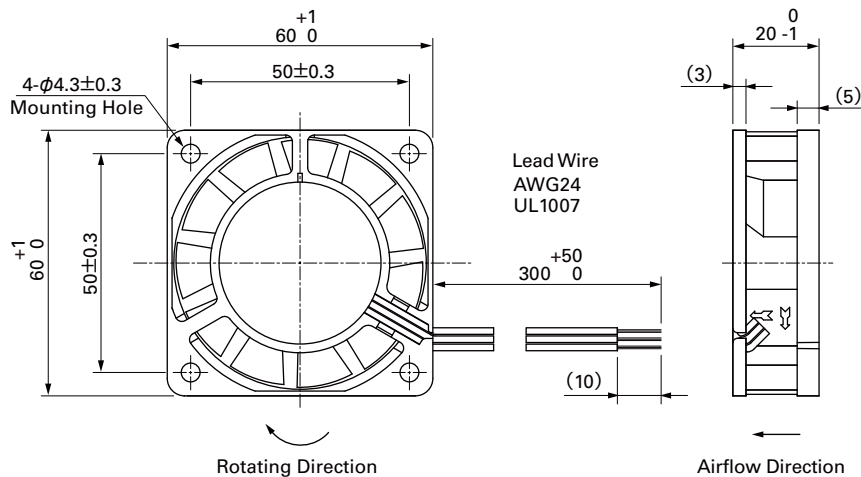
Specifications

The following nos. **have pulse sensors and ribs.**

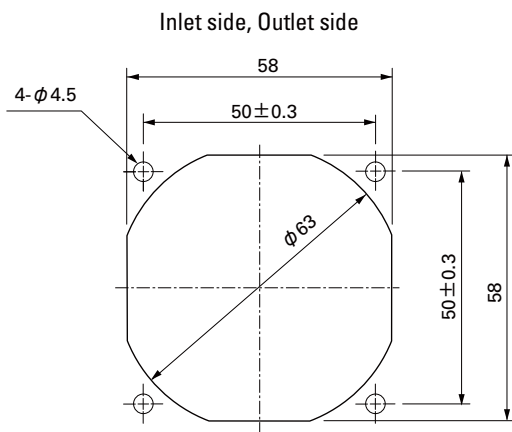
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109P0612W601	12	6 to 16	0.13	1.56	4,200	0.42 14.8	31.8 0.128	31	-20 to +70	60,000/60°C
109P0612H601		10.2 to 13.8	0.13	1.56	4,200	0.42 14.8	31.8 0.128	31		
109P0612M601			0.09	1.08	3,200	0.30 10.6	18.8 0.076	25		
109P0624W601	24	12 to 30	0.07	1.68	4,200	0.42 14.8	31.8 0.128	31		
109P0624H601		20.4 to 27.6	0.07	1.68	4,200	0.42 14.8	31.8 0.128	31		
109P0624M601			0.05	1.20	3,200	0.30 10.6	18.8 0.076	25		
109P0648H601	48	43 to 53	0.07	3.36	5,600	0.55 19.4	52.9 0.212	41		40,000/60°C

Models without sensors or with lock sensors are available as options. Please refer to the index (p. 467).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

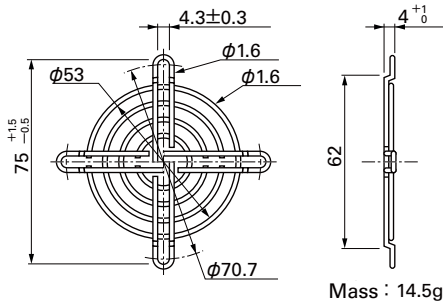


Options (unit: mm)

Finger Guards

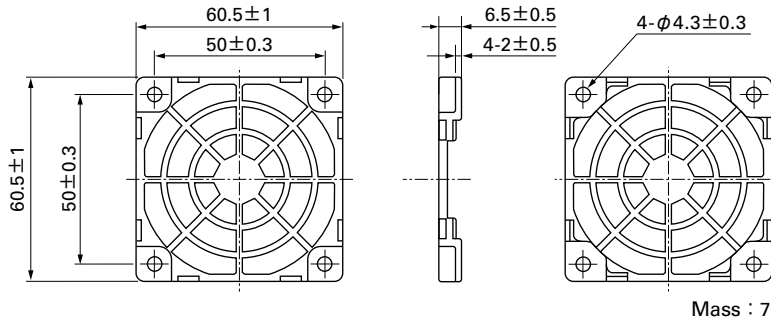
Model : 109-139E Surface treatment : Nickel-chrome plating (silver) Color
 : 109-139H : Cation electropainting (black)

Inlet side, Outlet side



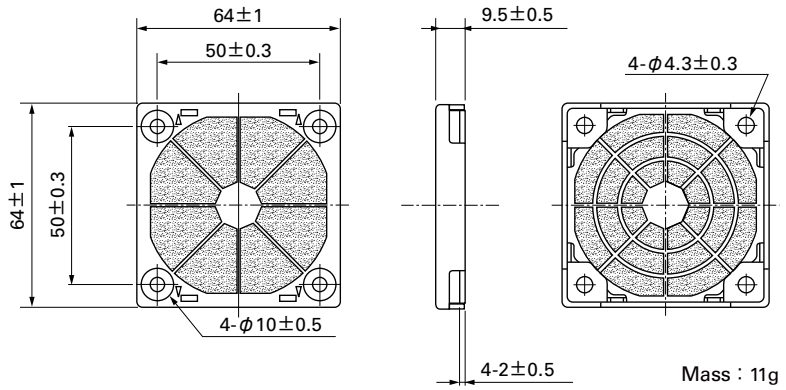
Resin Finger Guards

Model : 109-1003G

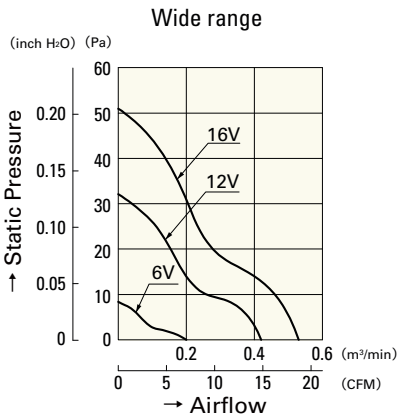


Resin Filter Kits

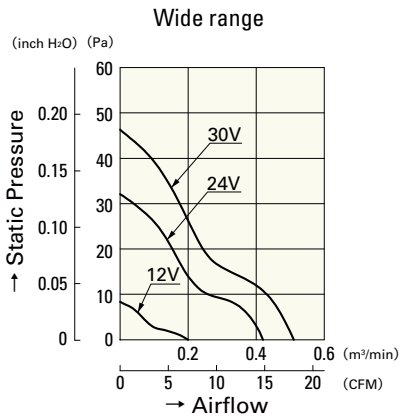
Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
 : 109-1003F30 (30PPI), 109-1003F40 (40PPI)



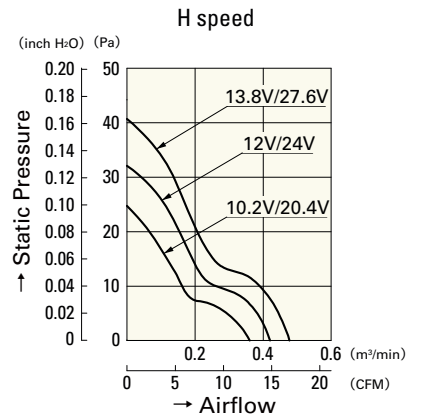
Airflow - Static Pressure Characteristics



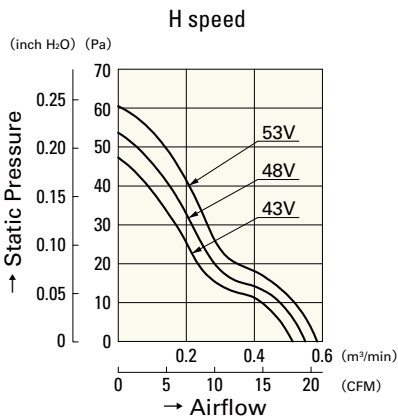
109P0612W601



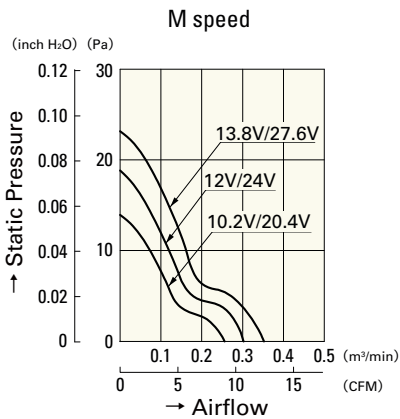
109P0624W601



109P0612H601
109P0624H601



109P0648H601



109P0612M601
109P0624M601

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

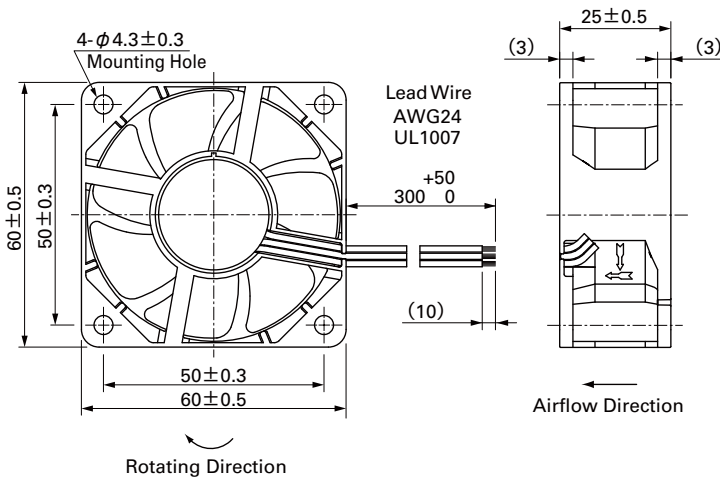
60×60×25mm (Mass : 55g) **9S**type **Silent Fan**

Specifications The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

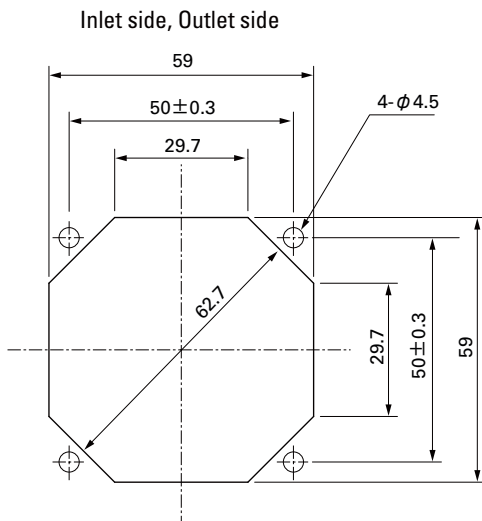
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9S0612S401	12	5.0 to 13.8	0.20	2.40	5,000	0.74 26.1	65.7 0.26	31	-10 to +70	40,000/60°C
9S0612H401			0.11	1.32	3,900	0.58 20.5	40.0 0.16	24		
9S0612F401		6.0 to 13.8	0.08	0.96	3,300	0.49 17.3	29.3 0.12	20		
9S0612M401			0.07	0.84	2,700	0.40 14.1	19.7 0.08	16		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 479).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

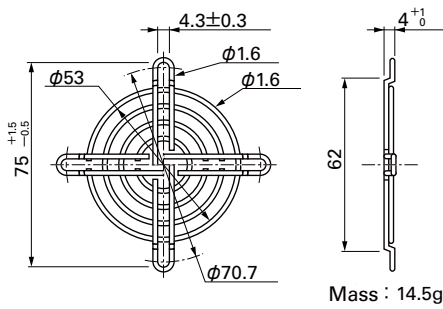


Options (unit: mm)

Finger Guards

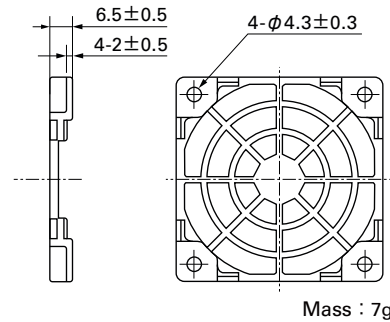
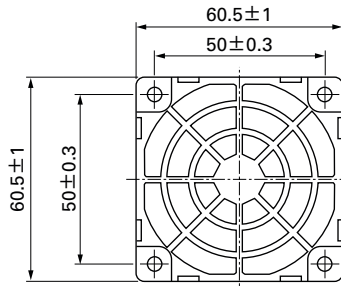
Model : 109-139E Surface treatment : Nickel-chrome plating (silver) Color : Silver
 : 109-139H : Cation electropainting (black)

Inlet side, Outlet side



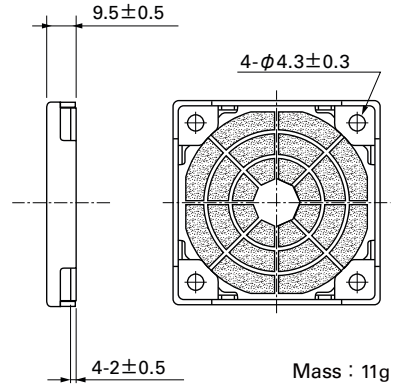
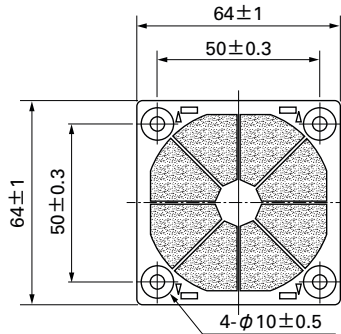
Resin Finger Guards

Model : 109-1003G

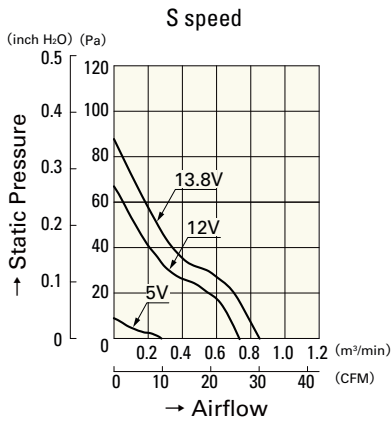


Resin Filter Kits

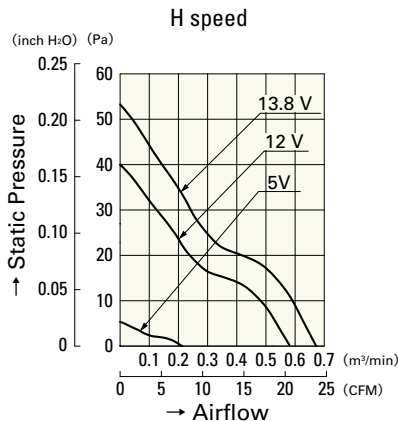
Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
 : 109-1003F30 (30PPI), 109-1003F40 (40PPI)



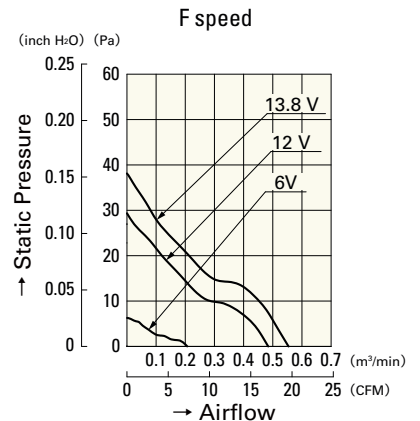
Airflow - Static Pressure Characteristics



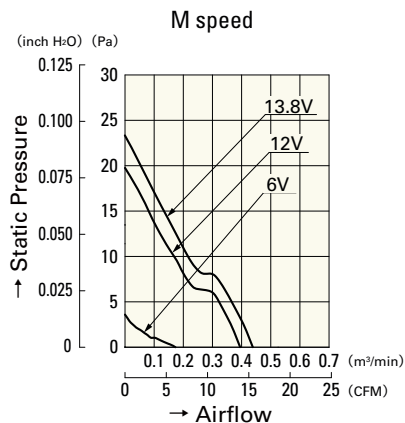
9S0612S401



9S0612H401



9S0612F401



9S0612M401

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×25mm (Mass : 90g) **9G type**

Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

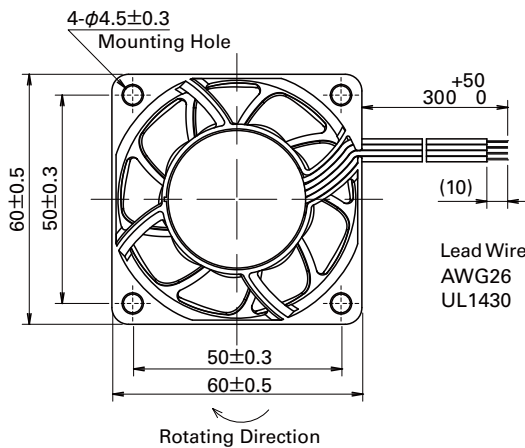
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [InchH ₂ O]	SPL [dB(A)]	Operating Temperature Range [°C]	Expected Life [※] [h]
9G0612P4S001	12	10.2 to 13.8	100	0.67	8.04	11,000	1.4 49.4	300 1.20	53	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.07	0.84	3,300	0.42 14.8	27 0.11	19		
9G0612P4H001			100	0.50	6.00	9,500	1.21 42.7	224 0.90	49		
			0	0.06	0.72	2,850	0.36 12.7	20.2 0.08	18		
9G0624P4S001	24	20.4 to 27.6	100	0.34	8.16	11,000	1.4 49.4	300 1.20	53		
			0	0.04	0.96	3,300	0.42 14.8	27 0.11	19		
9G0624P4H001			100	0.25	6.00	9,500	1.21 42.7	224 0.90	49		
			0	0.04	0.96	2,850	0.36 12.7	20.2 0.08	18		
9G0648P4S001	48	36 to 72	100	0.18	8.64	11,000	1.4 49.4	305 1.22	53		
			0	0.02	0.96	3,300	0.42 14.8	27.4 0.11	19		

Note: Expected life at 40°C ambient is just reference value.

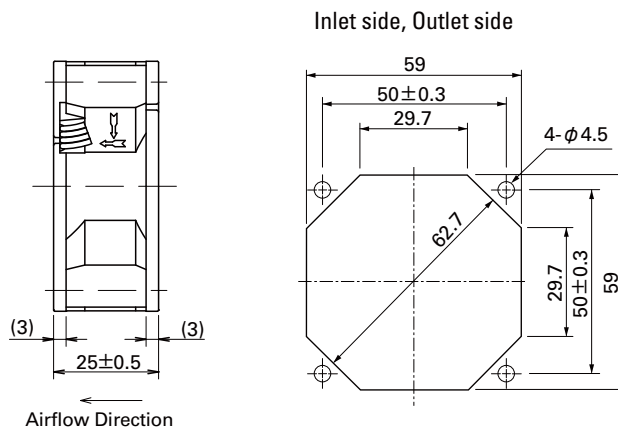
※PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (pp. 471 to 472).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

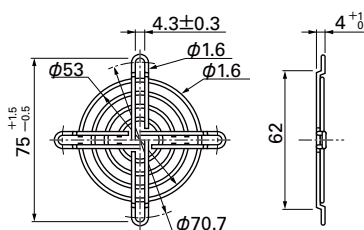


Options (unit: mm)

Finger Guards

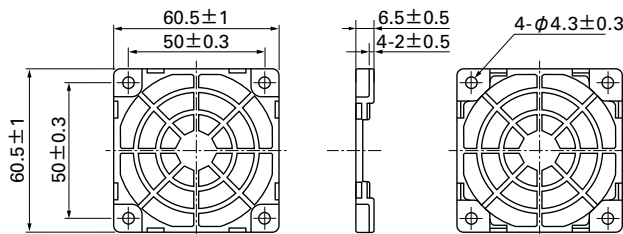
Model : 109-139E Surface treatment : Nickel-chrome plating (silver) Color : 109-139H : Cation electropainting (black)

Inlet side, Outlet side



Resin Finger Guards

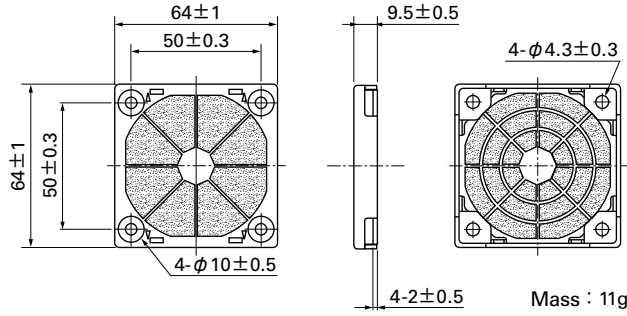
Model : 109-1003G



Options (unit: mm)

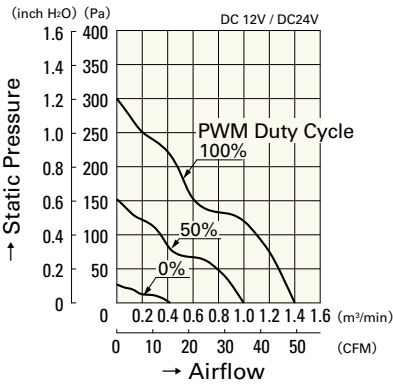
Resin Filter Kits

Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
 : 109-1003F30 (30PPI), 109-1003F40 (40PPI)

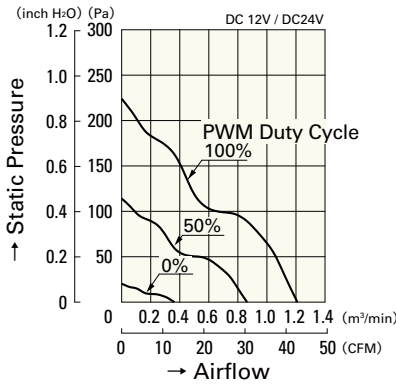


Airflow - Static Pressure Characteristics

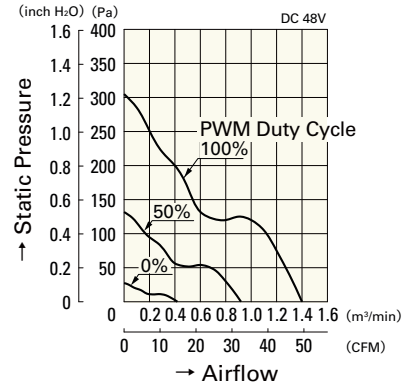
PWM Duty Cycle



9G0612P4S001
9G0624P4S001

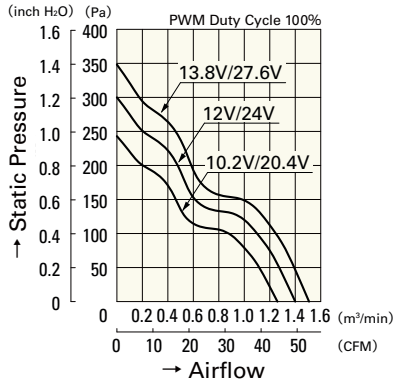


9G0612P4H001
9G0624P4H001

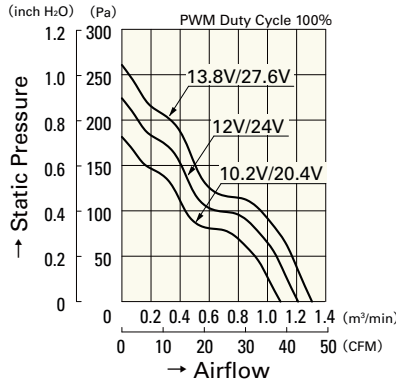


9G0648P4S001

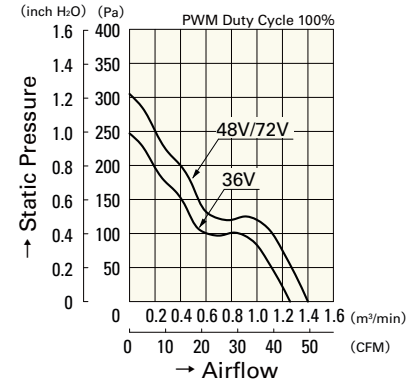
Operating Voltage Range



9G0612P4S001
9G0624P4S001

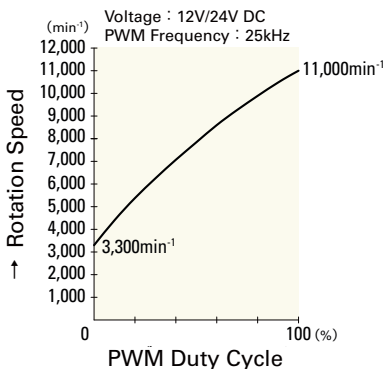


9G0612P4H001
9G0624P4H001

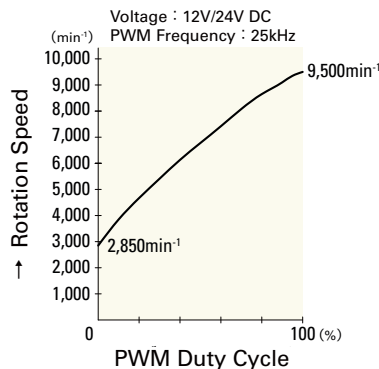


9G0648P4S001

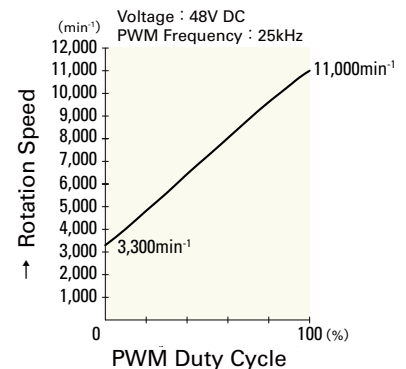
PWM Duty - Speed Characteristics Example



9G0612P4S001
9G0624P4S001



9G0612P4H001
9G0624P4H001



9G0648P4S001

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

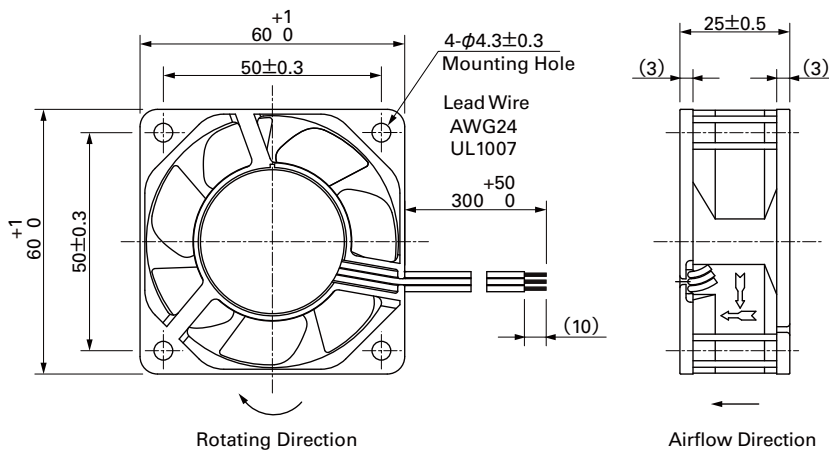
60×60×25mm (Mass : 90g) 9R type

Specifications The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]		
109R0605H401	5	4.5 to 5.5	0.34	1.70	3,800	0.53 18.7	40.2 0.161	28	-20 to +70	60,000/60°C		
109R0605F401			0.20	1.00	3,200	0.44 15.5	29.4 0.118	24	-20 to +60			
109R0605M401			0.13	0.65	2,600	0.36 12.7	19.6 0.079	20	-20 to +70			
109R0612J401	12	10.8 to 13.2	0.47	5.64	7,600	1.06 37.1	155.0 0.622	44	-20 to +60	40,000/60°C		
109R0612G401		10.2 to 13.8	0.24	2.88	5,600	0.78 27.5	87.3 0.351	39	-20 to +70			
109R0612D401		0.17	2.04	4,600	0.65 23.0	56.8 0.228	33					
109R0612S401		6 to 13.8	0.11	1.32	3,800	0.53 18.7	40.1 0.161	28				
109R0612H401		0.09	1.08	3,200	0.44 15.5	29.4 0.118	24					
109R0612F401		7 to 13.8	0.06	0.72	2,600	0.36 12.7	19.6 0.079	20				
109R0612M401		21.6 to 26.4	0.24	5.76	7,600	1.06 37.1	155.0 0.622	44			-20 to +60	40,000/60°C
109R0624J401		20.4 to 27.6	0.13	3.12	5,600	0.78 27.5	87.3 0.351	39			-20 to +70	
109R0624G401		0.12	2.88	5,150	0.72 25.4	73.5 0.295	37					
109R0624S401	12 to 27.6	0.08	1.92	4,600	0.65 23.0	56.8 0.228	33					
109R0624H401	0.06	1.44	3,800	0.53 18.7	40.2 0.161	28						
109R0624F401	0.05	1.20	3,200	0.44 15.5	29.4 0.118	24						
109R0624M401	14 to 27.6	0.04	0.96	2,600	0.36 12.7	19.6 0.079	20					
109R0648J401	48	43.2 to 52.8	0.12	5.76	7,600	1.06 37.1	155.0 0.622	44	-20 to +60	40,000/60°C		
109R0648G401		43 to 53	0.07	3.36	5,600	0.78 27.5	87.3 0.351	39	-20 to +70			
109R0648H401		40 to 53	0.04	1.92	3,800	0.53 18.7	40.2 0.161	28				

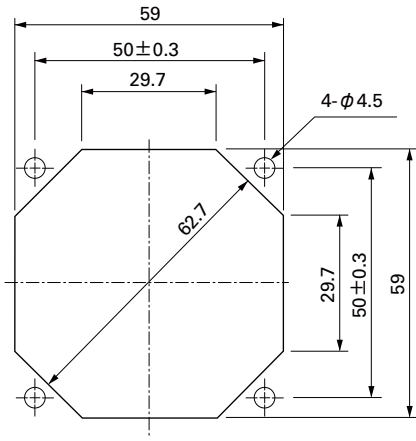
Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 468 to 469).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

Inlet side, Outlet side

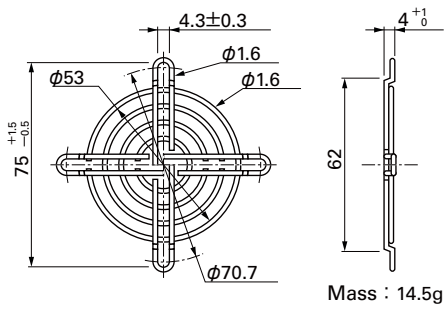


Options (unit: mm)

Finger Guards

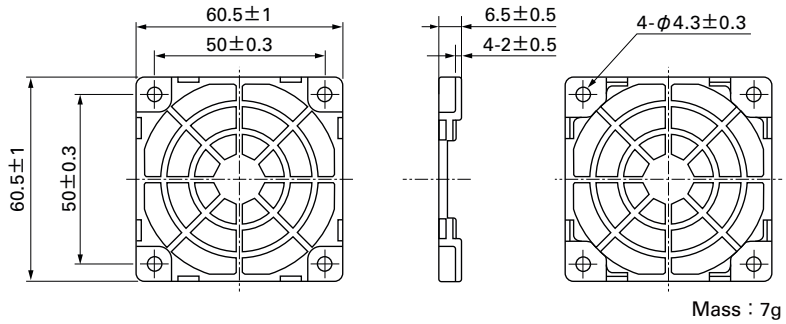
Model : 109-139E Surface treatment : Nickel-chrome plating (silver) Color : 109-139H : Cation electropainting (black)

Inlet side, Outlet side



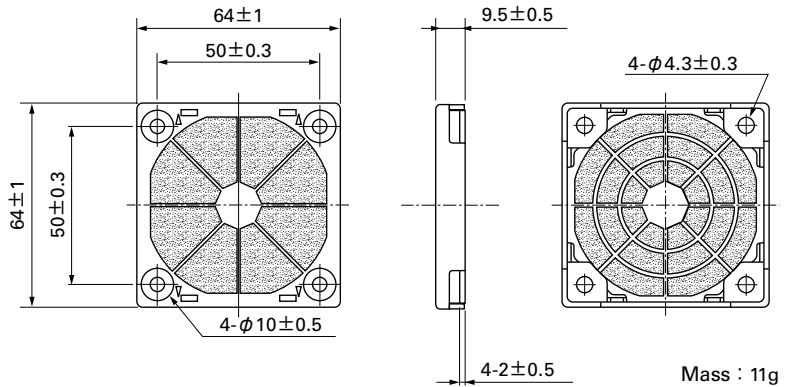
Resin Finger Guards

Model : 109-1003G



Resin Filter Kits

Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
: 109-1003F30 (30PPI), 109-1003F40 (40PPI)

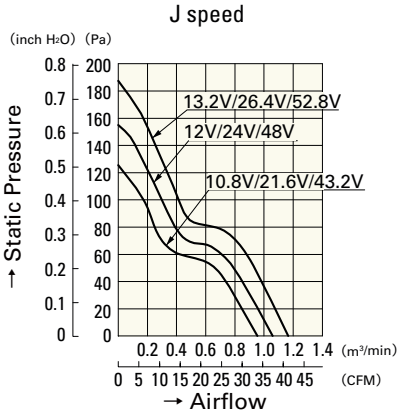


60mm sq.

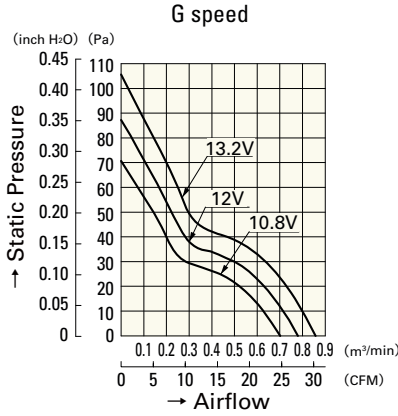
San Ace 60

60×60×25mm [Mass : 90g]

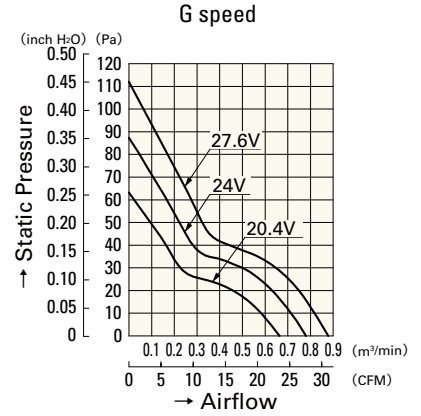
Airflow - Static Pressure Characteristics



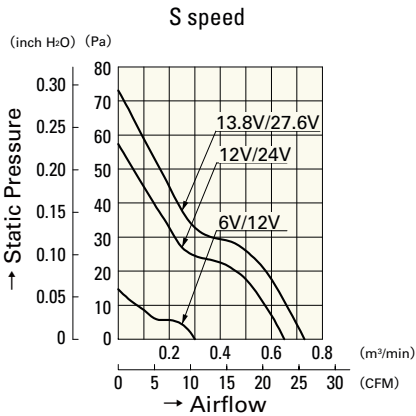
109R0612J401
109R0624J401
109R0648J401



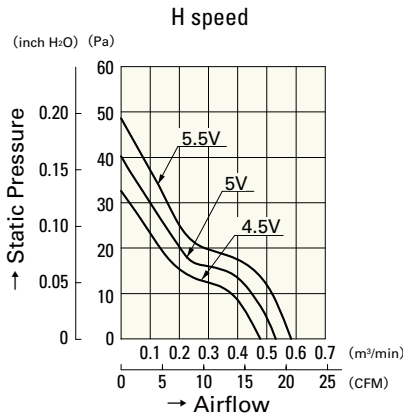
109R0612G401



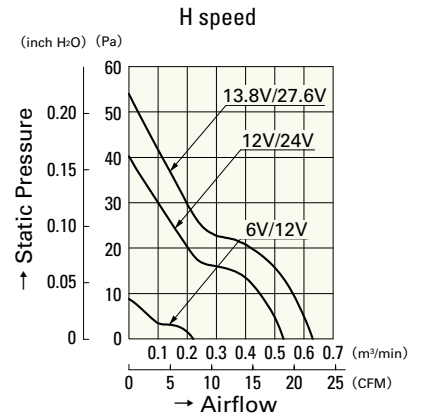
109R0624G401



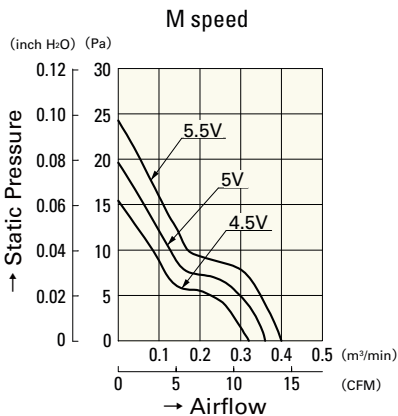
109R0612S401
109R0624S401



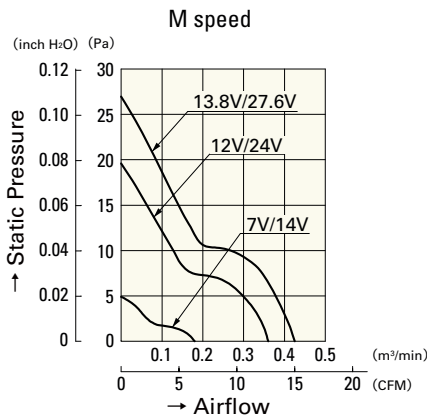
109R0605H401



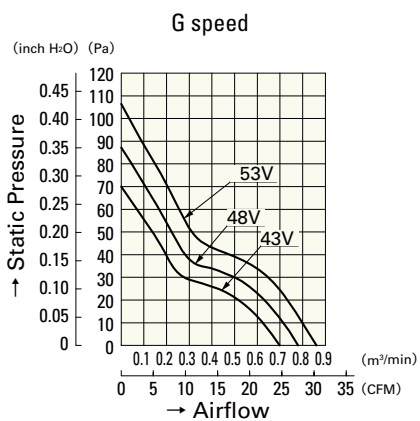
109R0612H401
109R0624H401



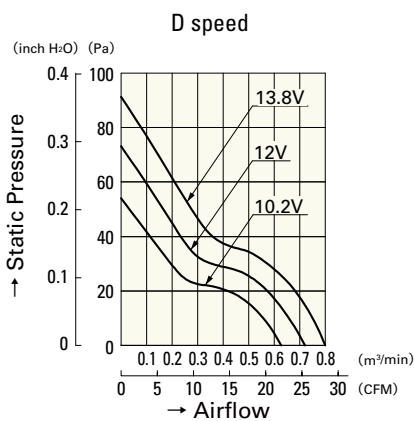
109R0605M401



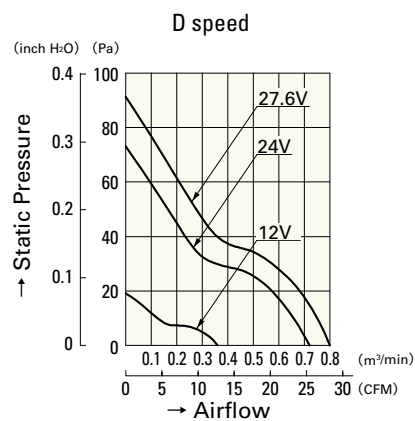
109R0612M401
109R0624M401



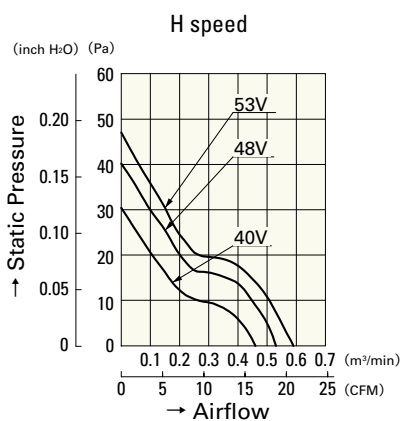
109R0648G401



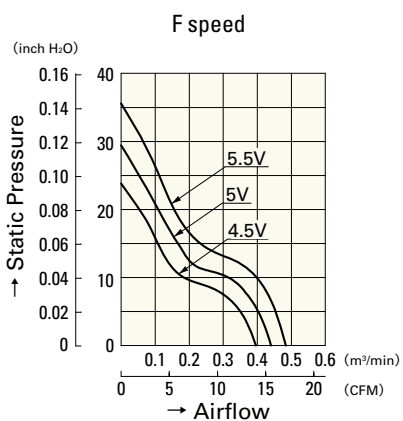
109R0612D401



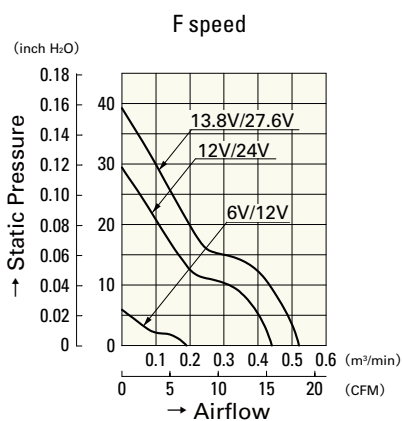
109R0624D401



109R0648H401



109R0605F401



109R0612F401

109R0624F401

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

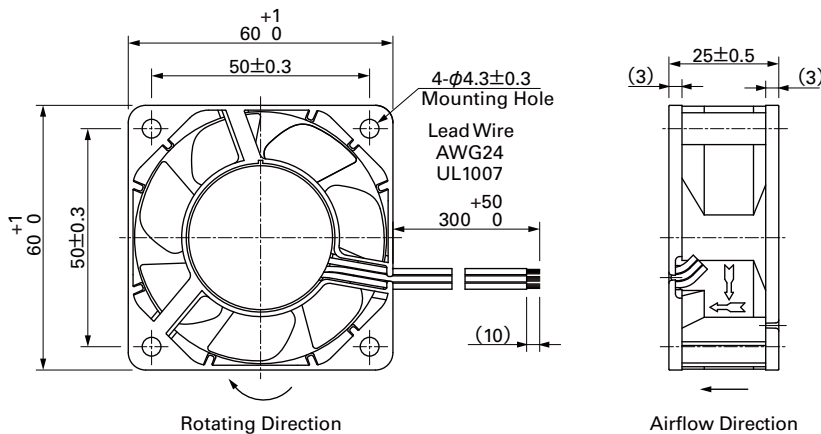
60×60×25mm (Mass : 80g) 9Atype San Cooler

Specifications The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

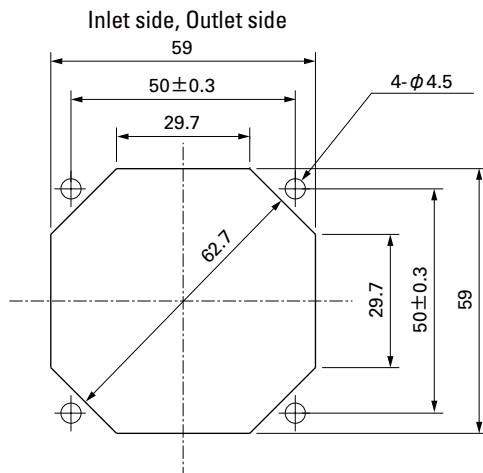
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]		
9A0612G401	12	6 to 13.2	0.24	2.88	5,600	0.78 27.6	87.3 0.351	39	-20 to +60	30,000/60°C		
9A0612S401			0.17	2.04	4,600	0.65 23.0	56.8 0.228	33				
9A0612H401		6 to 13.8	0.11	1.32	3,800	0.53 18.7	40.2 0.161	28			-20 to +70	40,000/60°C
9A0612F401			0.09	1.08	3,200	0.44 15.5	29.4 0.118	24				
9A0612M401			0.06	0.72	2,600	0.36 12.7	19.6 0.079	20				
9A0624G401	24	12 to 27.6	0.13	3.12	5,600	0.78 27.6	87.3 0.351	39	-20 to +60	30,000/60°C		
9A0624S401			0.08	1.92	4,600	0.65 23.0	56.8 0.228	33				
9A0624H401		12 to 27.6	0.06	1.44	3,800	0.53 18.7	40.2 0.161	28			-20 to +70	40,000/60°C
9A0624F401			0.05	1.2	3,200	0.44 15.5	29.4 0.118	24				
9A0624M401			0.04	0.96	2,600	0.36 12.7	19.6 0.079	20				

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 469 to 470).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

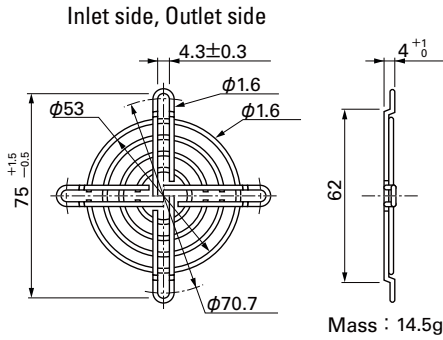


Options (unit: mm)

Finger Guards

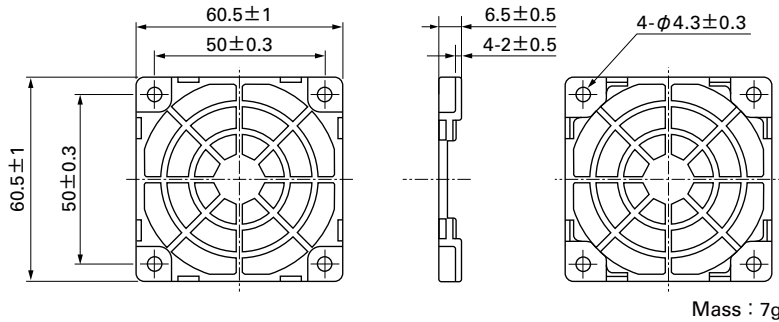
Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
 : 109-139H : Cation electropainting (black)

Color



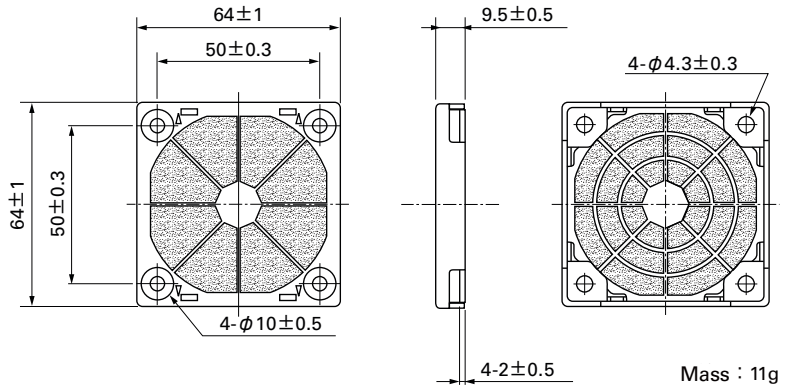
Resin Finger Guards

Model : 109-1003G

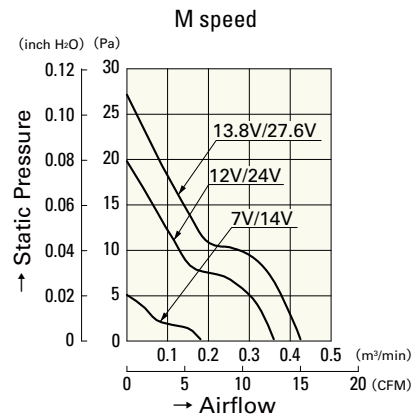
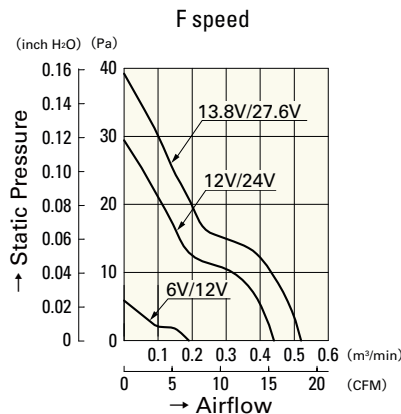
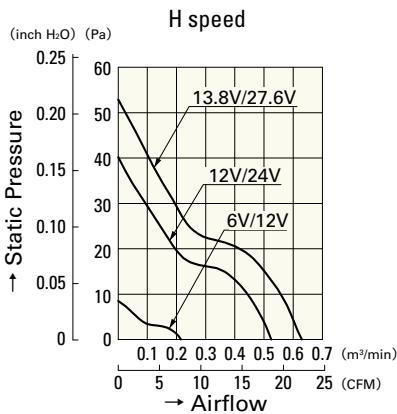
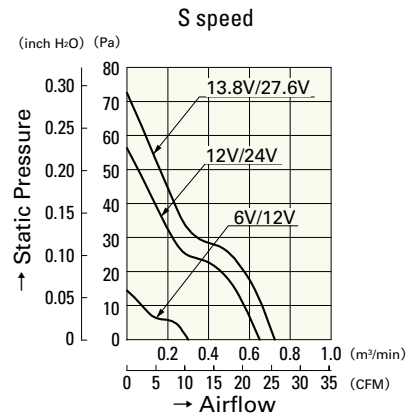
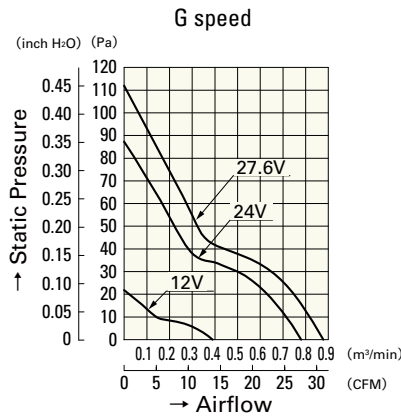
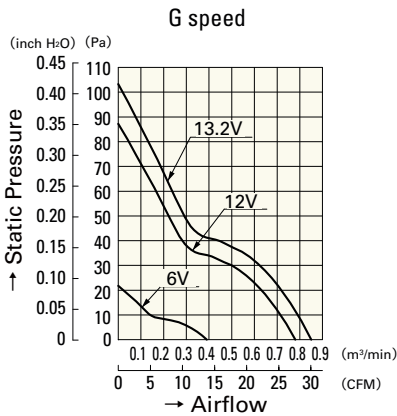


Resin Filter Kits

Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
 : 109-1003F30 (30PPI), 109-1003F40 (40PPI)



Airflow - Static Pressure Characteristics



60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×38mm (Mass : 130g) **9GA type** **Low Power Consumption Fan**



Specifications

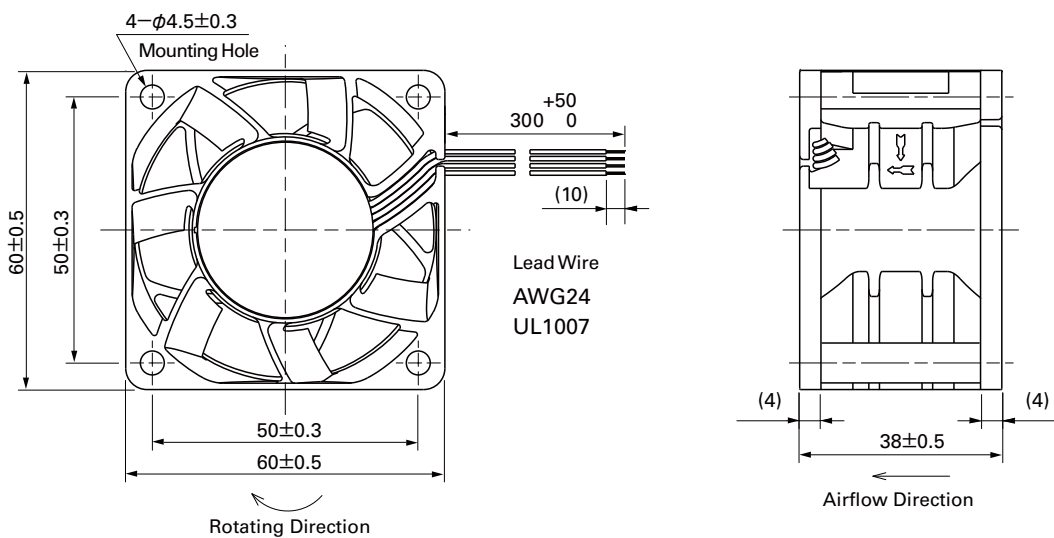
The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note1)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [InchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{Note2)} [h]
9GA0612P1J03	12	10.8 to 12.6	100	1.50	18.00	17,500	1.75 62	820 3.3	63	-20 to +60	40,000/60°C (70,000/40°C)
			20	0.10	1.20	4,000	0.40 14	43 0.17	24		
9GA0612P1K03		10.8 to 13.2	100	0.95	11.40	14,800	1.50 53	600 2.4	59	-20 to +70	
			20	0.10	1.20	4,000	0.40 14	43 0.17	24		
9GA0612P1H03		10.8 to 13.2	100	0.55	6.60	11,500	1.15 40	375 1.5	52	-20 to +60	
			20	0.06	0.72	2,600	0.27 9.5	20 0.08	19		
9GA0612P1K60	10.8 to 13.2	100	0.95	11.40	14,800	1.50 53	675 2.7	59	-20 to +60		
		0	0.05	0.60	1,480	0.134 4.7	8.3 0.03	16			
9GA0624P1J03	24	21.6 to 25.2	100	0.75	18.00	17,500	1.75 62	820 3.3	63	-20 to +60	
			20	0.10	2.40	6,200	0.63 22	104 0.42	35		
9GA0624P1K03		21.6 to 26.4	100	0.5	12	14,800	1.5 53.0	600 2.4	59	-20 to +70	
			20	0.06	1.44	5,000	0.5 17.7	70 0.28	28		

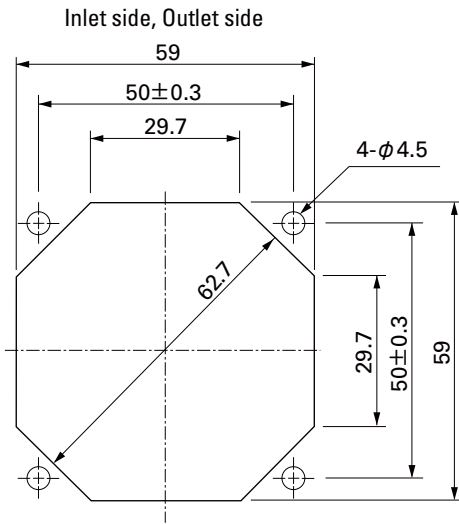
Note 1: 9GA0612P1J03, 9GA0612P1K03, 9GA0612P1H03, 9GA0624P1J03, 9GA0624P1K03 does not rotate when PWM duty cycle is 0%. *PWM Frequency : 25kHz
 Note 2: Expected life at 40°C ambient is just reference value.

Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (pp. 474 to 475).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

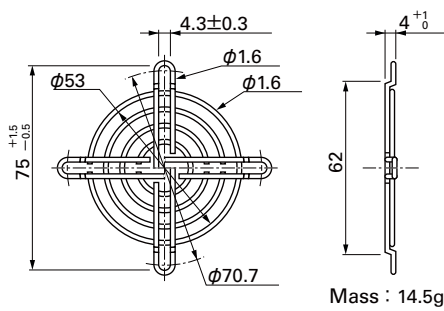


Options (unit: mm)

Finger Guards

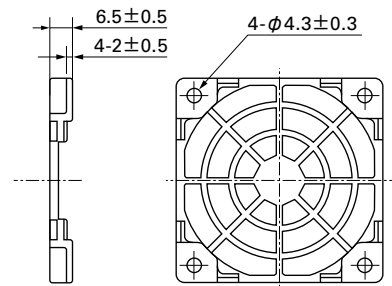
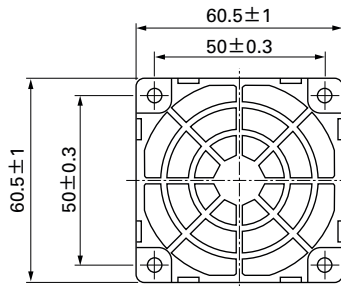
Model : 109-139E Surface treatment : Nickel-chrome plating (silver) Color : 109-139H : Cation electropainting (black)

Inlet side, Outlet side



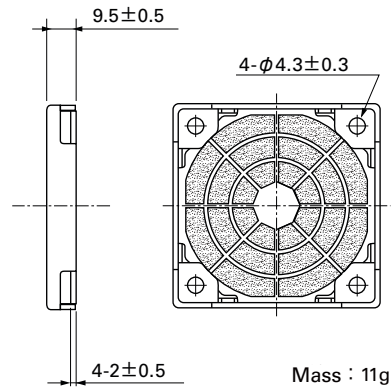
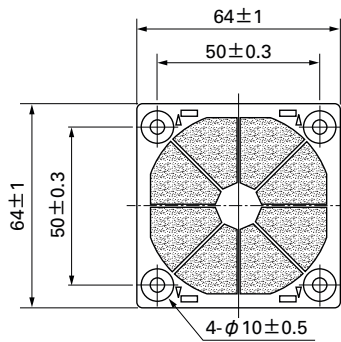
Resin Finger Guards

Model : 109-1003G



Resin Filter Kits

Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
: 109-1003F30 (30PPI), 109-1003F40 (40PPI)



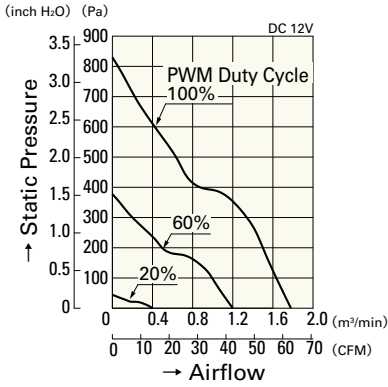
60mm sq.

San Ace 60

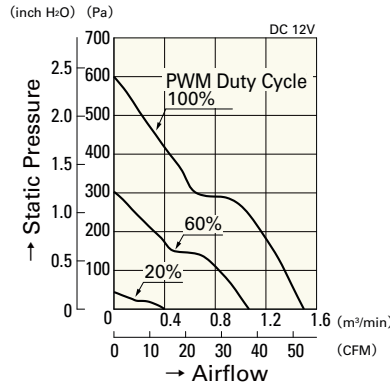
60×60×38mm [Mass : 130g]

Airflow - Static Pressure Characteristics

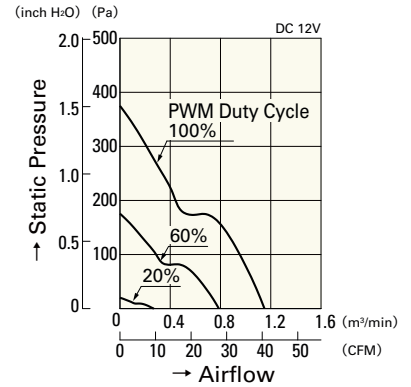
PWM Duty Cycle



9GA0612P1J03

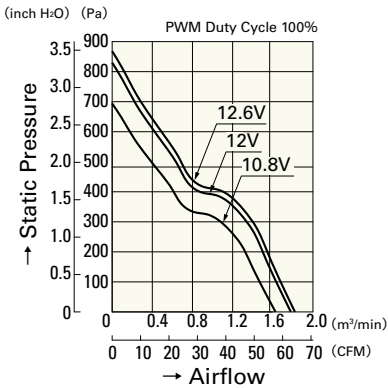


9GA0612P1K03

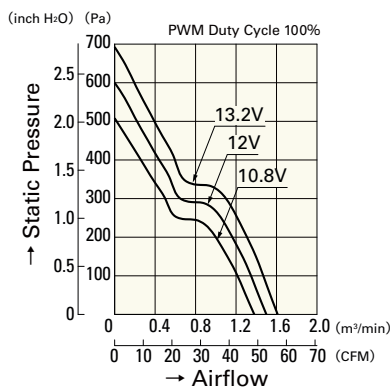


9GA0612P1H03

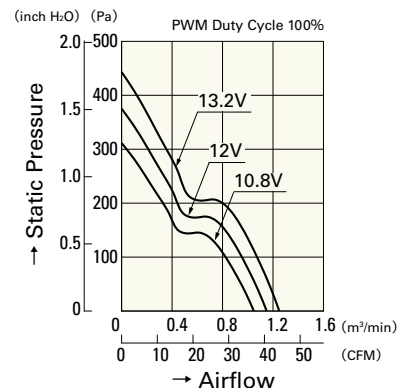
Operating Voltage Range



9GA0612P1J03

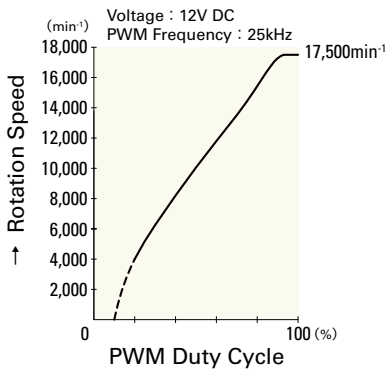


9GA0612P1K03

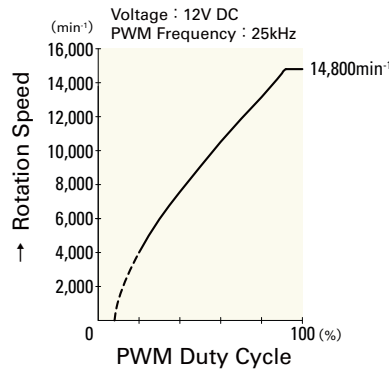


9GA0612P1H03

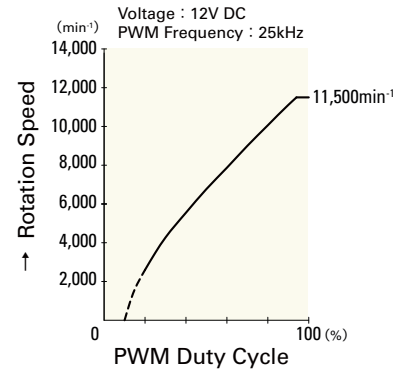
PWM Duty - Speed Characteristics Example



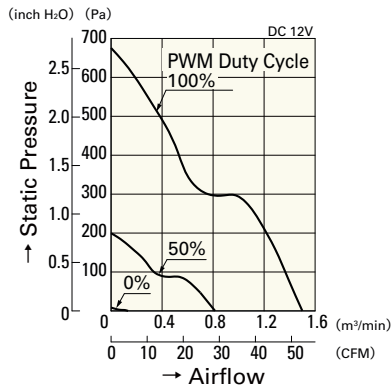
9GA0612P1J03



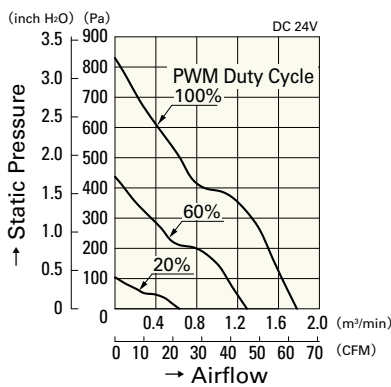
9GA0612P1K03



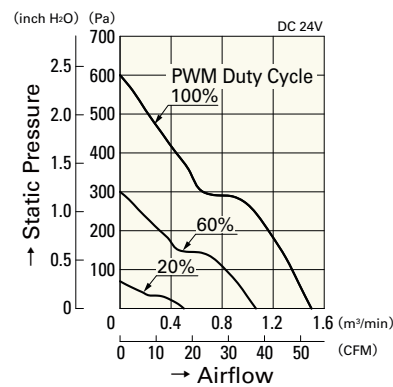
9GA0612P1H03



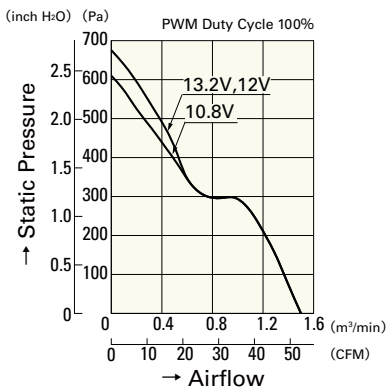
9GA0612P1K60



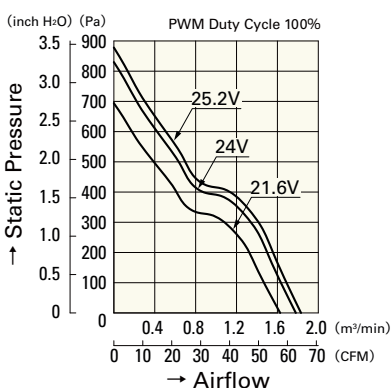
9GA0624P1J03



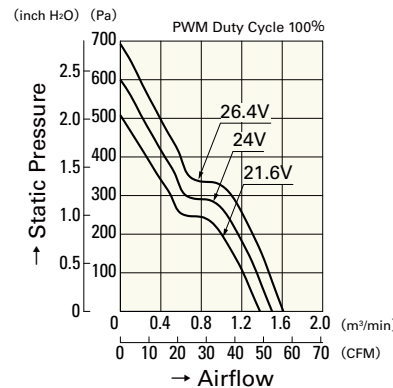
9GA0624P1K03



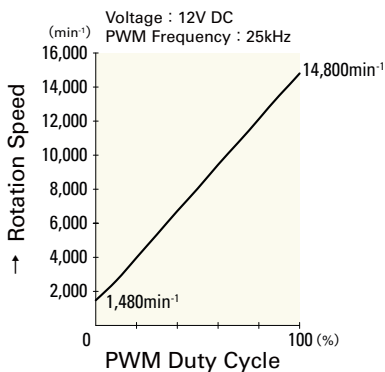
9GA0612P1K60



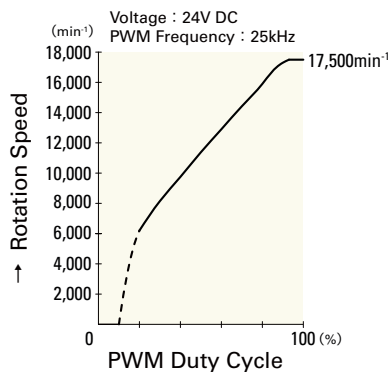
9GA0624P1J03



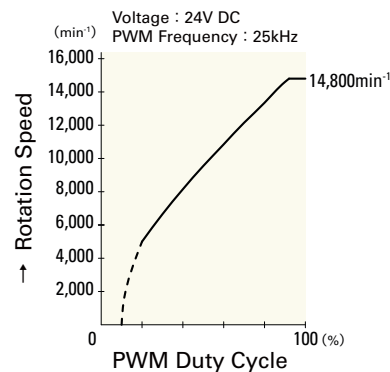
9GA0624P1K03



9GA0612P1K60



9GA0624P1J03



9GA0624P1K03

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×38mm (Mass : 130g) **9GV type**

Specifications The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

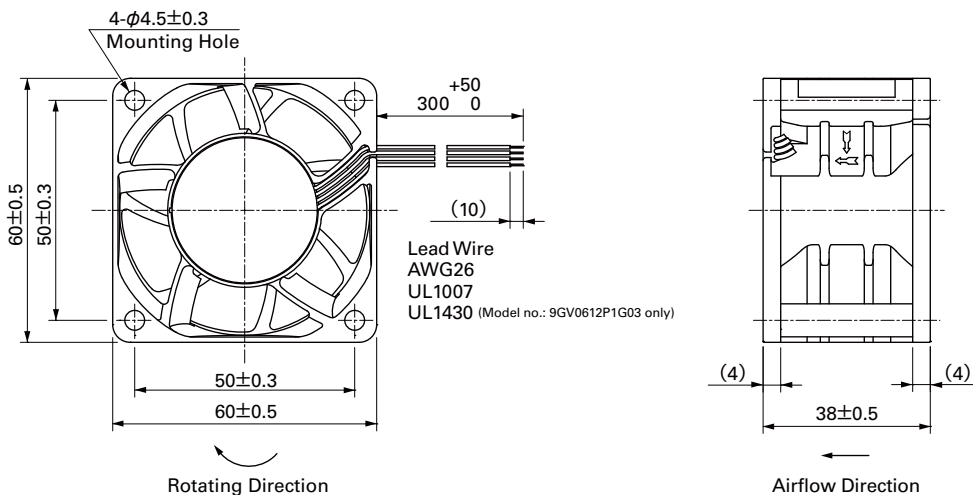
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [InchH ₂ O]	SPL [dB(A)]	Operating Temperature Range [°C]	Expected Life [h]
9GV0612P1G03	12	8.0 to 13.8	100	2.8	33.6	16,000	2.37 84	751 3.02	66	-20 to +70	40,000/60°C
			0	0.12	1.5	3,100	0.44 15	26 0.10	25		
100			2.0	24.0	14,500	2.15 76	617 2.48	63			
0			0.1	1.2	2,700	0.40 14	21 0.09	22			
9GV0612P1H03		10.8 to 13.8	100	1.5	18.0	13,000	1.93 68	496 1.99	60		
0			0.08	1.0	2,500	0.38 13	18 0.07	19			
9GV0612P1M03	24	20.4 to 27.6	100	1.4	33.6	16,000	2.37 84	751 3.02	66		
0			0.12	2.88	6,000	0.89 31	105 0.42	38			
9GV0612P1L01 <small>(Note)</small>	100		0.73	17.52	13,000	1.93 68.0	496 1.99	60			
0	0.08		3.84	6,000	0.89 31	105 0.42	38				
9GV0624P1G03	48	38 to 57	100	0.5	24	14,500	2.15 76	617 2.48	63		
0			0.08	3.84	6,000	0.89 31	105 0.42	38			

Note : Fan does not rotate when PWM duty cycle is 0%.

※PWM Frequency : 25kHz

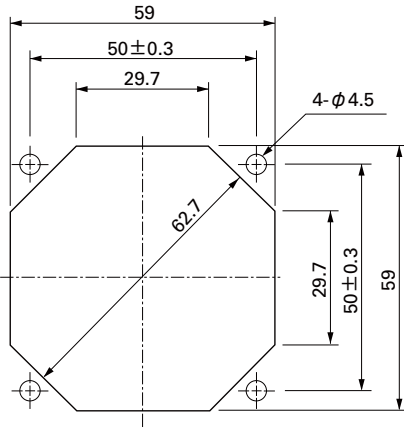
Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (p. 477).

Dimensions (unit: mm) (With ribs)



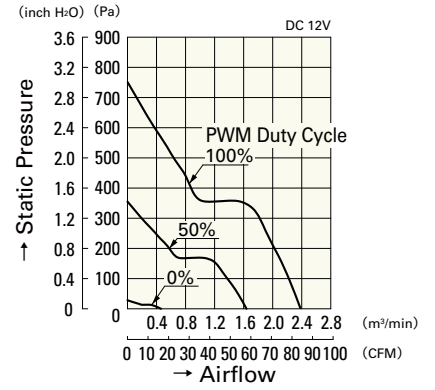
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

Inlet side, Outlet side



Airflow - Static Pressure Characteristics

PWM Duty Cycle



9GV0612P1G03

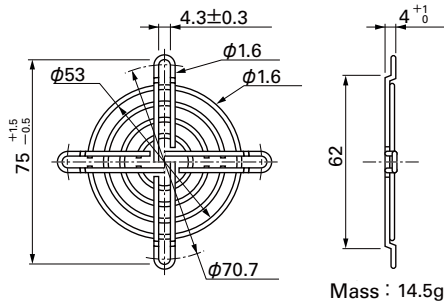
Options (unit: mm)

Finger Guards

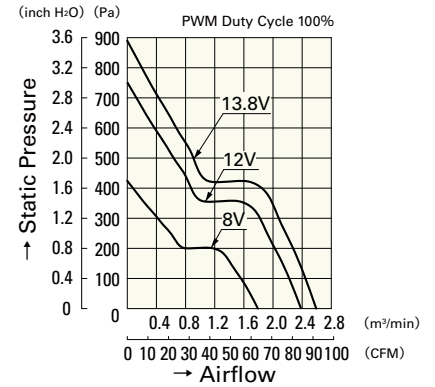
Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
 : 109-139H : Cation electropainting (black)

Color

Inlet side, Outlet side



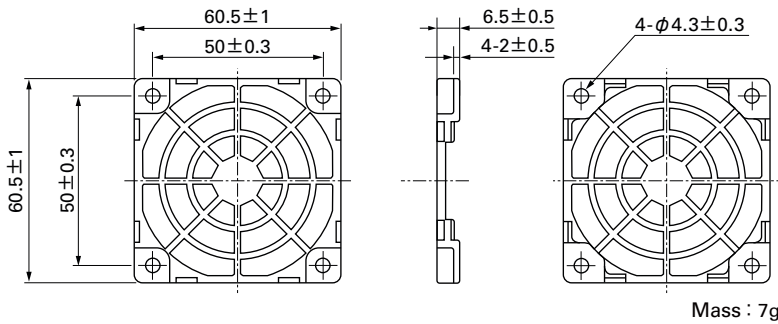
Operating Voltage Range



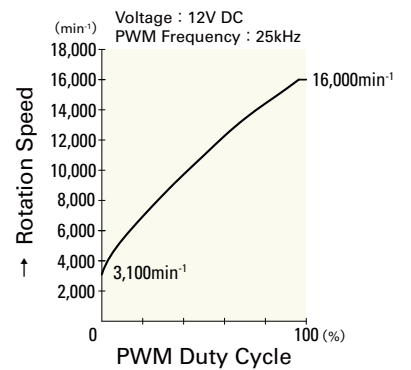
9GV0612P1G03

Resin Finger Guards

Model : 109-1003G



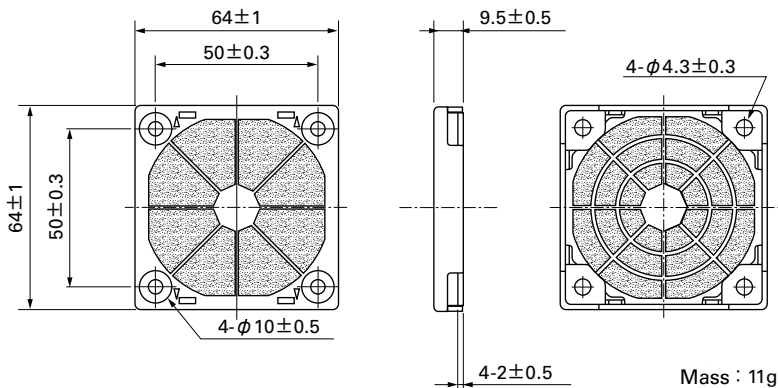
PWM Duty - Speed Characteristics Example



9GV0612P1G03

Resin Filter Kits

Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
 : 109-1003F30 (30PPI), 109-1003F40 (40PPI)



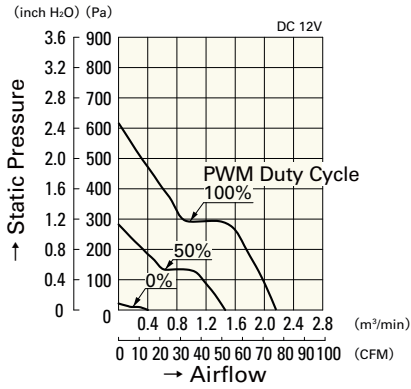
60mm sq.

San Ace 60

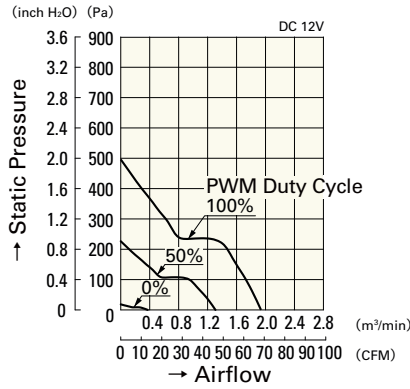
60×60×38mm [Mass : 130g]

Airflow - Static Pressure Characteristics

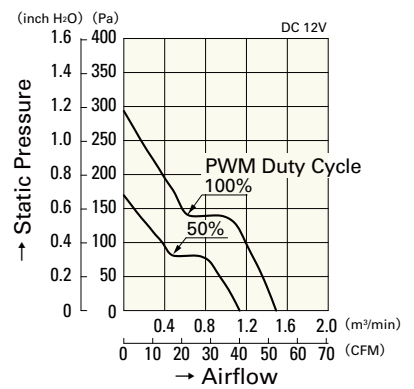
PWM Duty Cycle



9GV0612P1H03

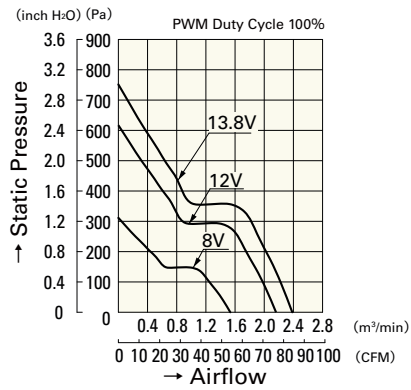


9GV0612P1M03

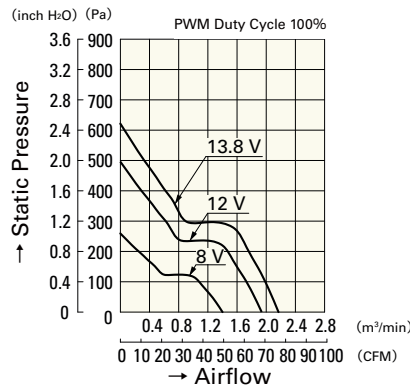


9GV0612P1L01

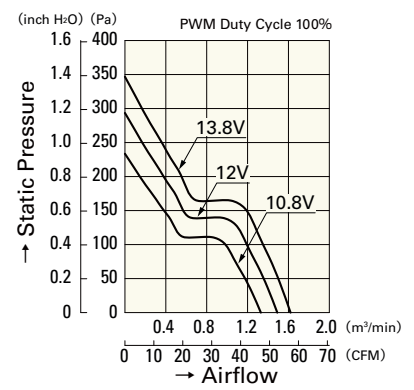
Operating Voltage Range



9GV0612P1H03

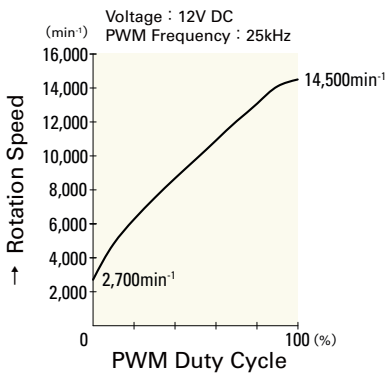


9GV0612P1M03

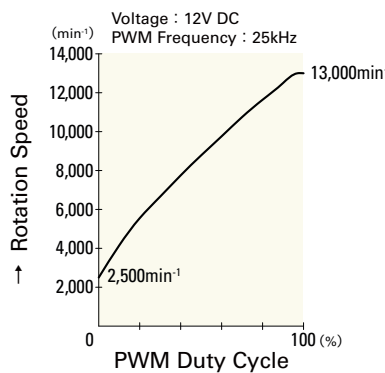


9GV0612P1L01

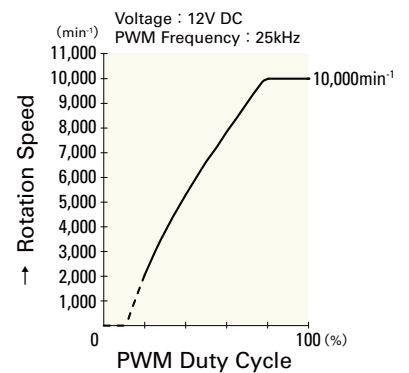
PWM Duty - Speed Characteristics Example



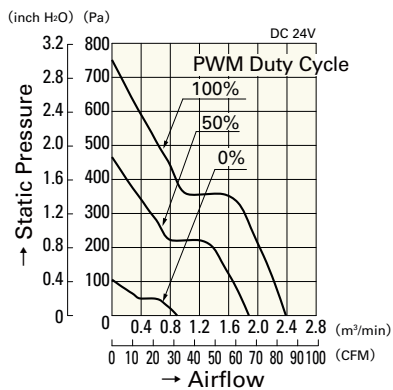
9GV0612P1H03



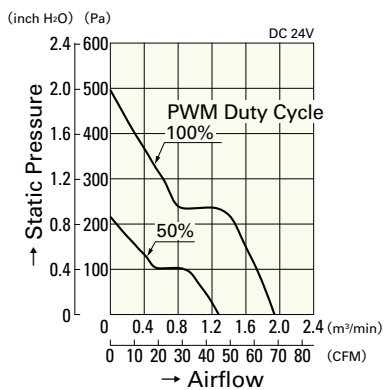
9GV0612P1M03



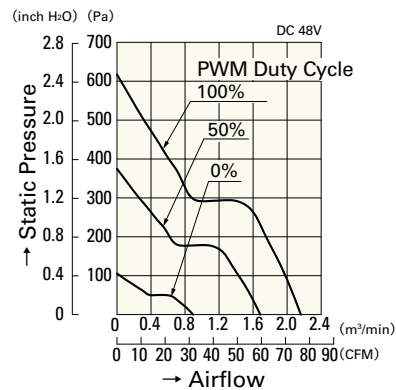
9GV0612P1L01



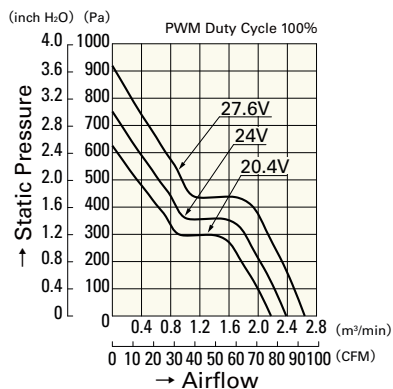
9GV0624P1G03



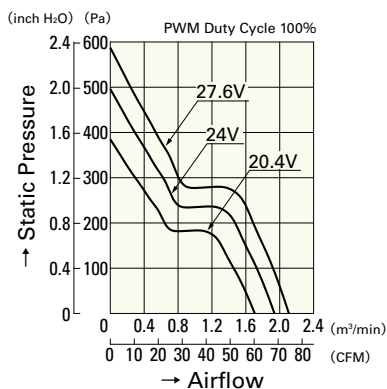
9GV0624P1M03



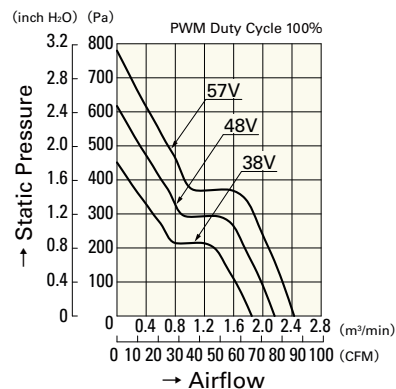
9GV0648P1H03



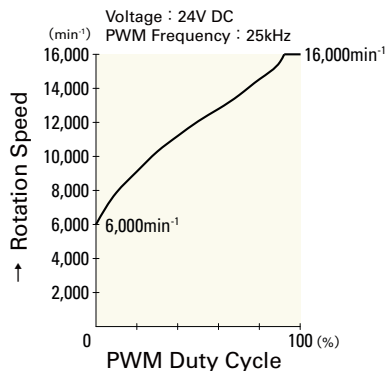
9GV0624P1G03



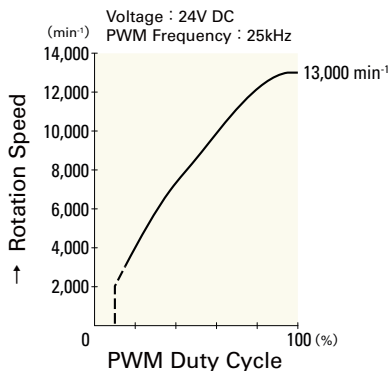
9GV0624P1M03



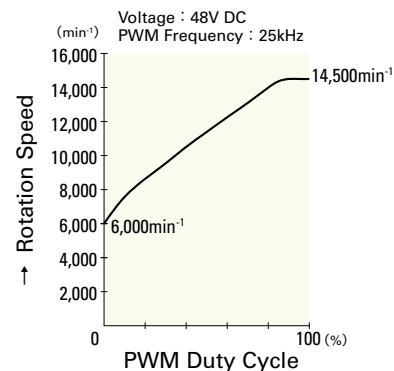
9GV0648P1H03



9GV0624P1G03



9GV0624P1M03



9GV0648P1H03

60mm sq.

San Ace 60



(Ribless model depicted)



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

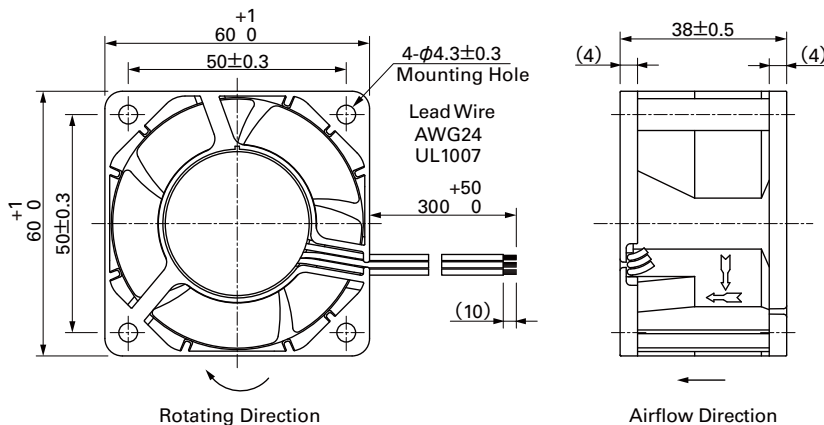
60×60×38mm (Mass : 110g) **9G type**

Specifications The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

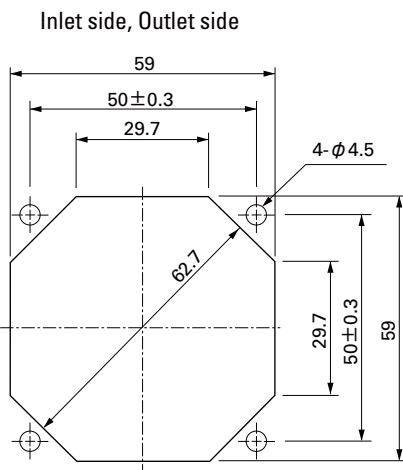
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9G0612G101	12	7.0 to 13.8	1.54	18.5	11,800	1.84 65	435 1.747	58	-20 to +70	40,000/60°C
9G0612S101			1.36	16.3	10,800	1.70 60	370 1.486	56		
9G0624G101	24	14.0 to 27.6	0.85	20.4	11,800	1.84 65	435 1.747	58		
9G0624S101			0.70	16.8	10,800	1.70 60	370 1.486	56		
9G0624H101	48	28 to 55.2	0.57	13.68	9,800	1.54 54.4	304.6 1.223	54		
9G0648G101			0.35	16.8	11,800	1.84 65	435 1.747	58		
9G0648S101	0.29	13.9	10,800	1.70 60	370 1.486	56				

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 471 to 472).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

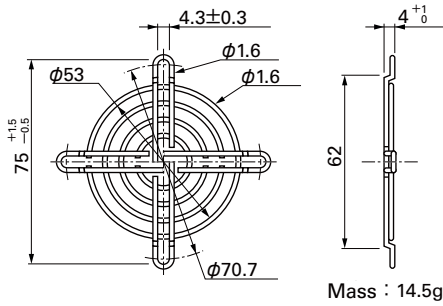


Options (unit: mm)

Finger Guards

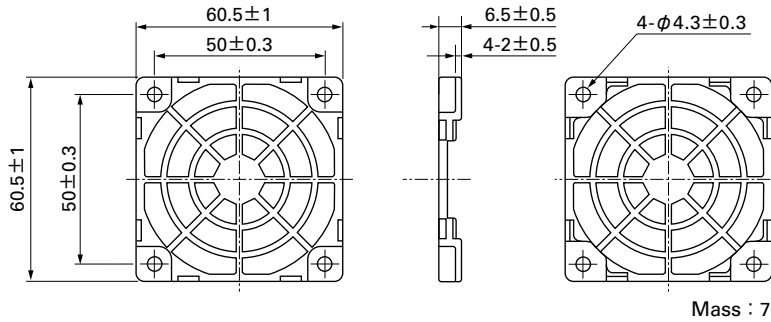
Model : 109-139E Surface treatment : Nickel-chrome plating (silver) Color : 109-139H : Cation electropainting (black)

Inlet side, Outlet side



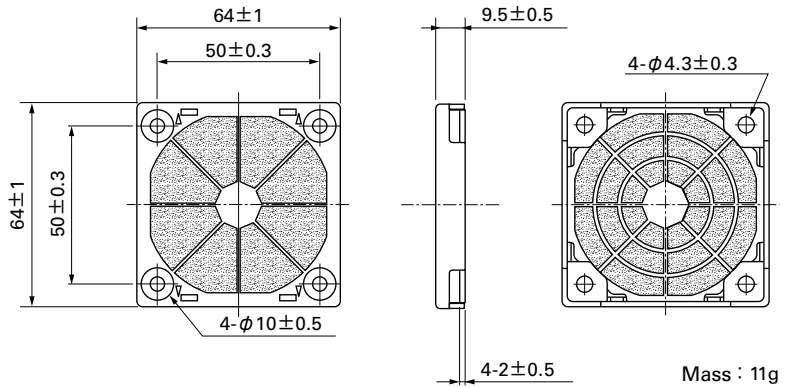
Resin Finger Guards

Model : 109-1003G

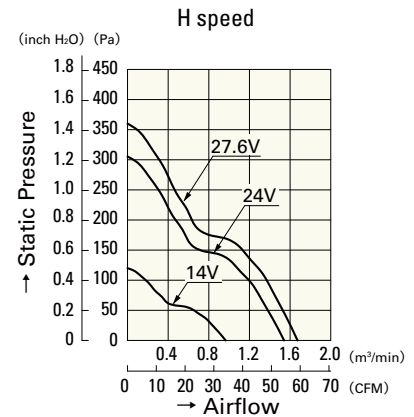
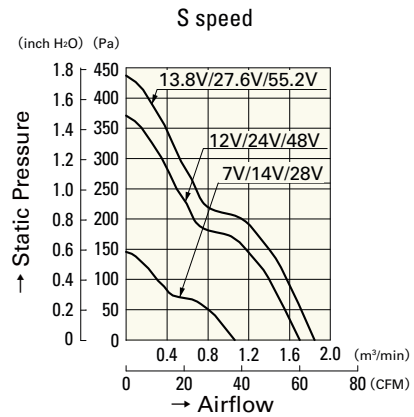
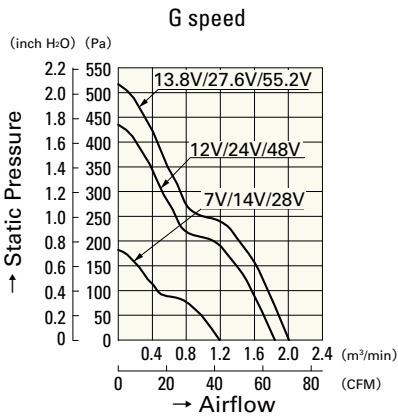


Resin Filter Kits

Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI) : 109-1003F30 (30PPI), 109-1003F40 (40PPI)



Airflow - Static Pressure Characteristics



9G0612G101
9G0624G101
9G0648G101

9G0612S101
9G0624S101
9G0648S101

9G0624H101

70mm sq.

San Ace 70



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

70×70×38mm (Mass : 170g) **9GA**type **Low Power Consumption Fan**



Specifications

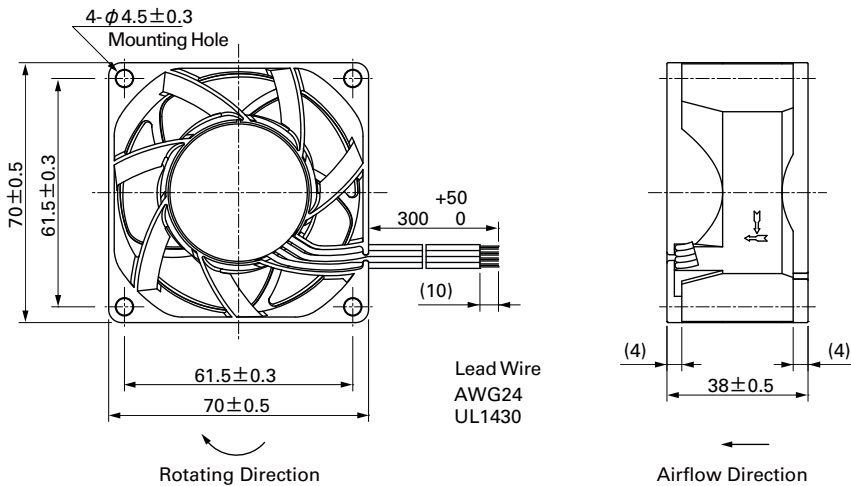
The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{life} [h]
9GA0712P1G001	12	10.8 to 13.2	100	2.6	31.2	16,500	2.65 93.6	860 3.45	65	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.16	1.92	4,400	0.70 24.7	61 0.24	30		
9GA0712P1H001			100	1.1	13.2	12,000	1.92 67.8	455 1.83	57		
			0	0.07	0.84	2,500	0.40 14.1	20 0.08	19		

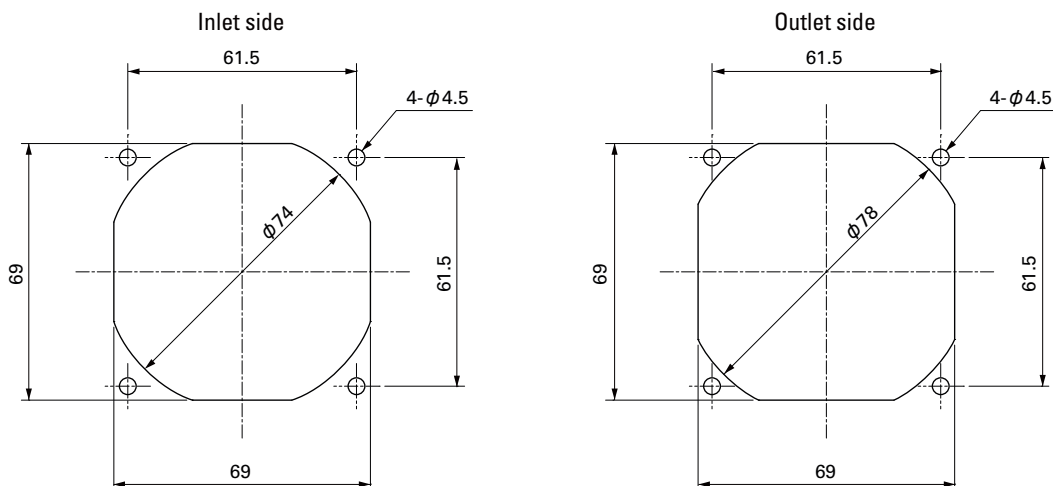
Note : Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

Dimensions (unit: mm) (With ribs)



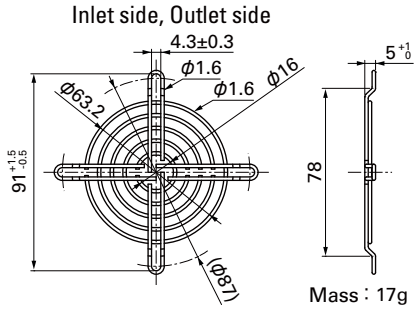
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

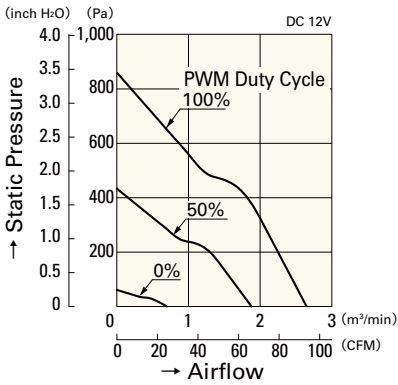
Finger Guards

Model : 109-1128 Surface treatment : Nickel-chrome plating (silver) Color

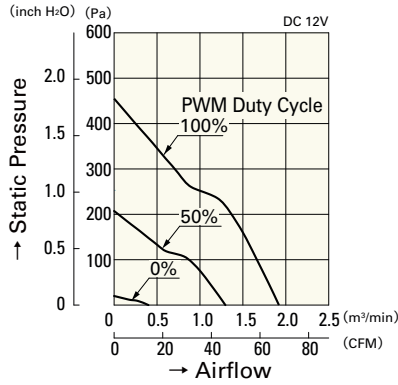


Airflow - Static Pressure Characteristics

PWM Duty Cycle

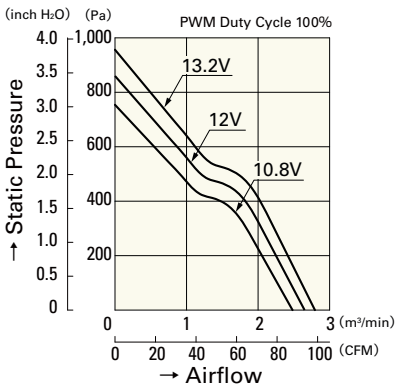


9GA0712P1G001

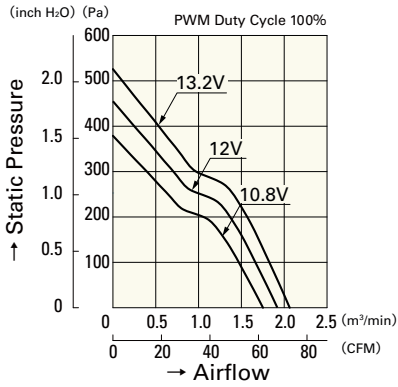


9GA0712P1H001

Operating Voltage Range

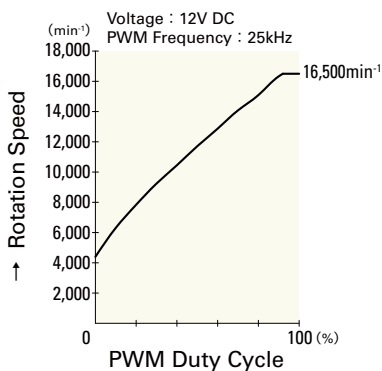


9GA0712P1G001

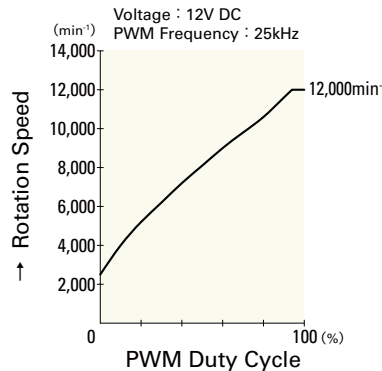


9GA0712P1H001

PWM Duty - Speed Characteristics Example



9GA0712P1G001



9GA0712P1H001

80 mm sq.

San Ace 80



Model no. 9GA0812H7001 is not certified.

General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
(For models without PWM control function, there is no
speed control wiring.)
- Storage Temperature ... -30°C to +70°C (Non-condensing)

80×80×15 mm (Mass : 65g) **9GA** type **Low Power Consumption Fan**

Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note1)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{Note2)} [h]
9GA0812P7G001	12	10.2 to 13.8	100	0.29	3.48	6,100	1.44 50.9	84.0 0.34	41	-20 to +70	40,000/60°C (70,000/40°C)
9GA0812P7S001			100	0.17	2.04	5,000	1.18 41.7	56.4 0.23	37		
9GA0824P7G001	24	20.4 to 27.6	100	0.13	3.12	6,100	1.44 50.9	84.0 0.34	41		
9GA0824P7S001			100	0.08	1.92	5,000	1.18 41.7	56.4 0.23	37		

Note 1: Fan does not rotate when PWM duty cycle is 0%.

Note 2: Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

The following nos. **have pulse sensors and ribs.**

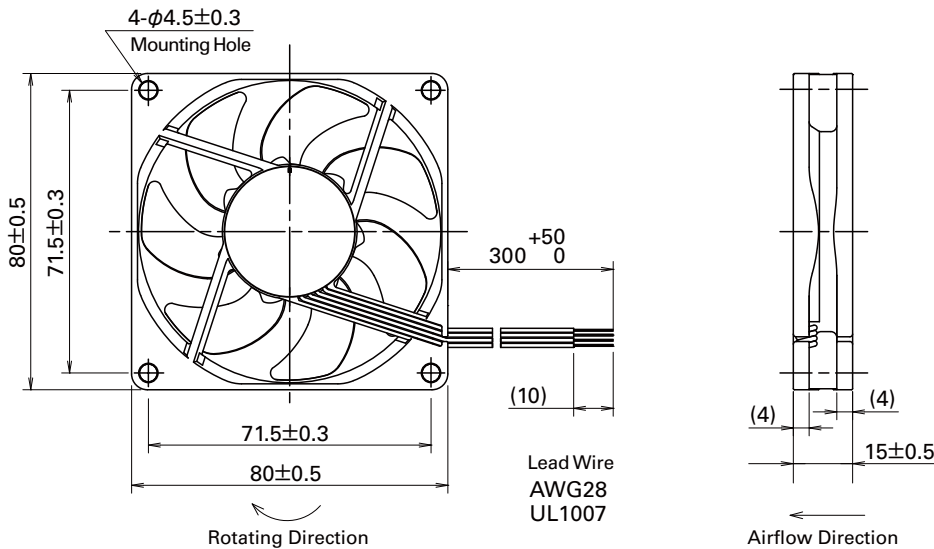
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{Note)} [h]
9GA0812H7001	12	6 to 13.2	0.09	1.08	3,800	0.89 31.4	32.6 0.13	29	-20 to +70	40,000/60°C (70,000/40°C)
9GA0824H7001	24	12 to 26.4	0.05	1.20	3,800	0.89 31.4	32.6 0.13	29		

Note: Expected life at 40°C ambient is just reference value.

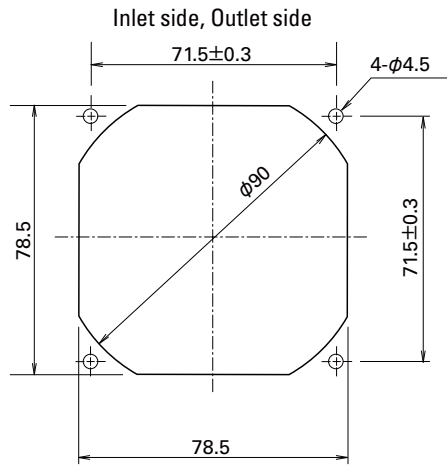
Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 475 to 476).

Dimensions (unit: mm)

(With PWM control function · With pulse sensor)



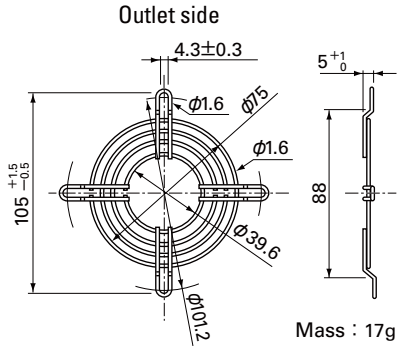
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

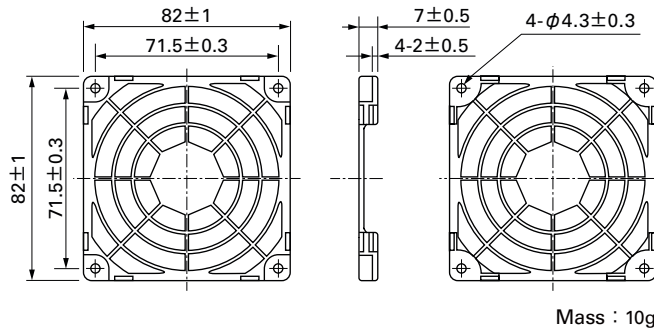
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)

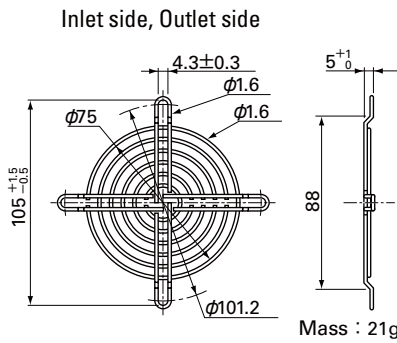


Resin Finger Guards

Model : 109-1002G

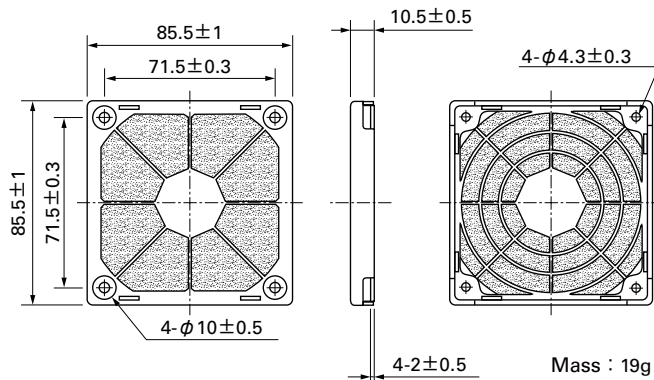


Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)
: 109-049H : Cation electropainting (black)



Resin Filter Kits

Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



80mm sq.

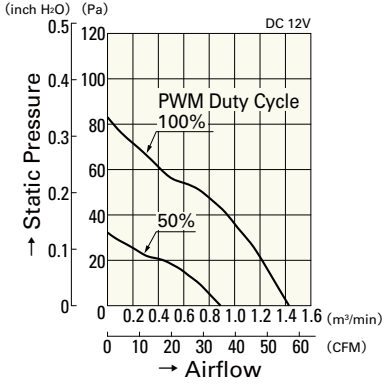
San Ace 80

80×80×15mm [Mass : 65g]

Airflow - Static Pressure Characteristics

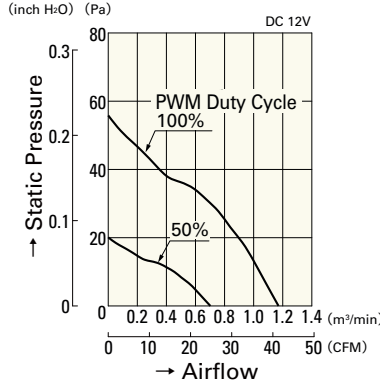
PWM Duty Cycle

With PWM control function · With pulse sensor



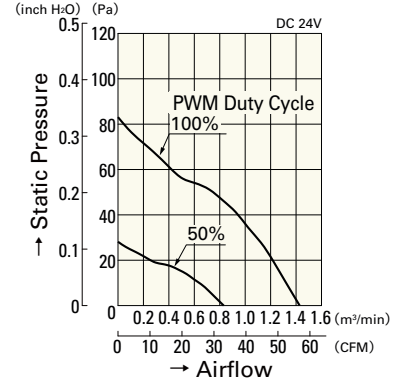
9GA0812P7G001

With PWM control function · With pulse sensor



9GA0812P7S001

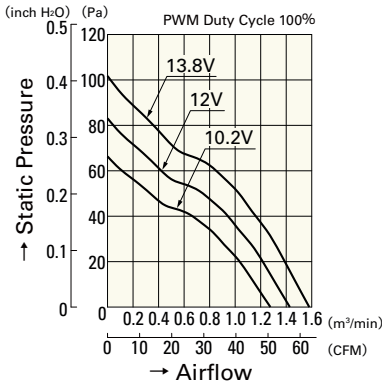
With PWM control function · With pulse sensor



9GA0824P7G001

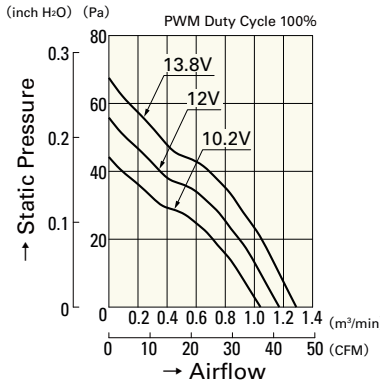
Operating Voltage Range

With PWM control function · With pulse sensor



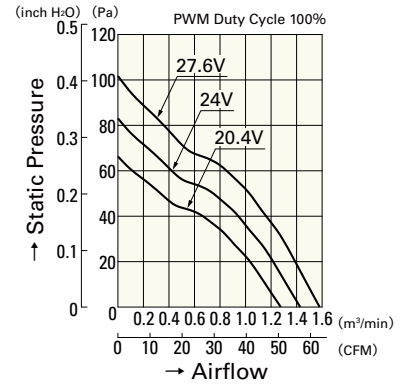
9GA0812P7G001

With PWM control function · With pulse sensor



9GA0812P7S001

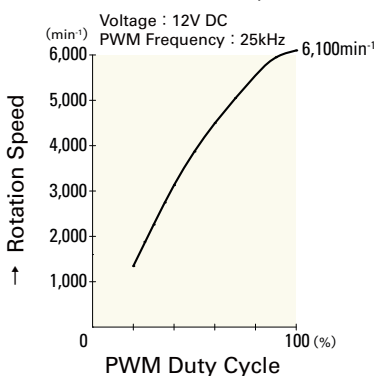
With PWM control function · With pulse sensor



9GA0824P7G001

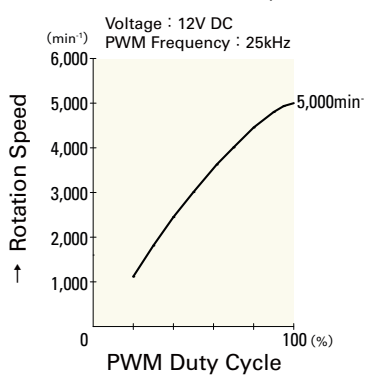
PWM Duty - Speed Characteristics Example

With PWM control function · With pulse sensor



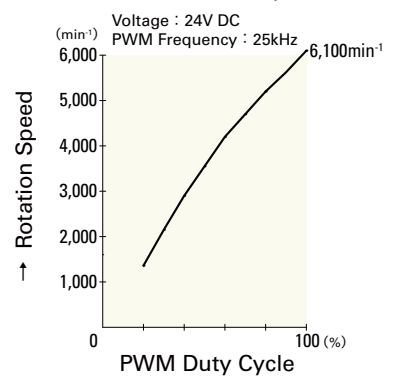
9GA0812P7G001

With PWM control function · With pulse sensor



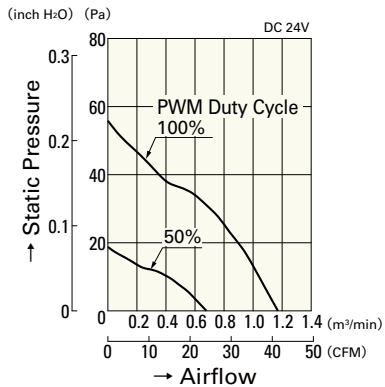
9GA0812P7S001

With PWM control function · With pulse sensor



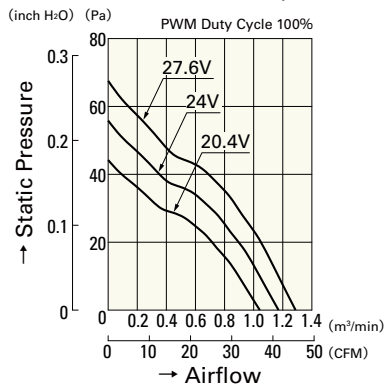
9GA0824P7G001

With PWM control function · With pulse sensor



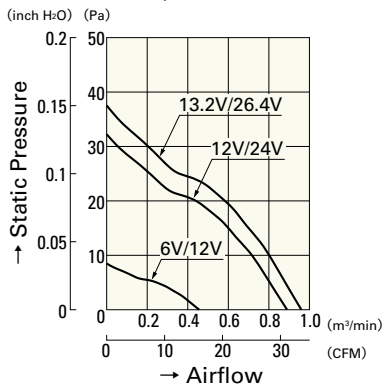
9GA0824P7S001

With PWM control function · With pulse sensor



9GA0824P7S001

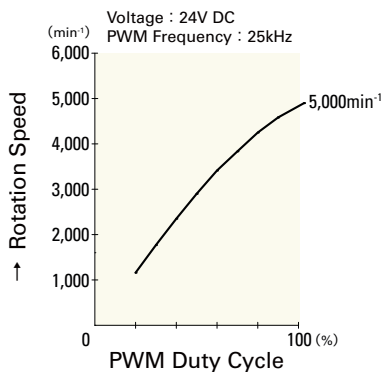
With pulse sensor



9GA0812H7001

9GA0824H7001

With PWM control function · With pulse sensor



9GA0824P7S001

80 mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×15 mm (Mass : 68g) **9P** type

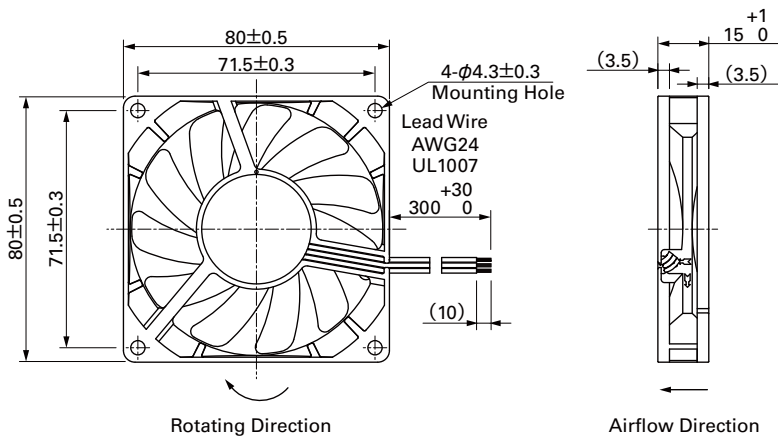
Specifications

The following nos. **have pulse sensors and ribs.**

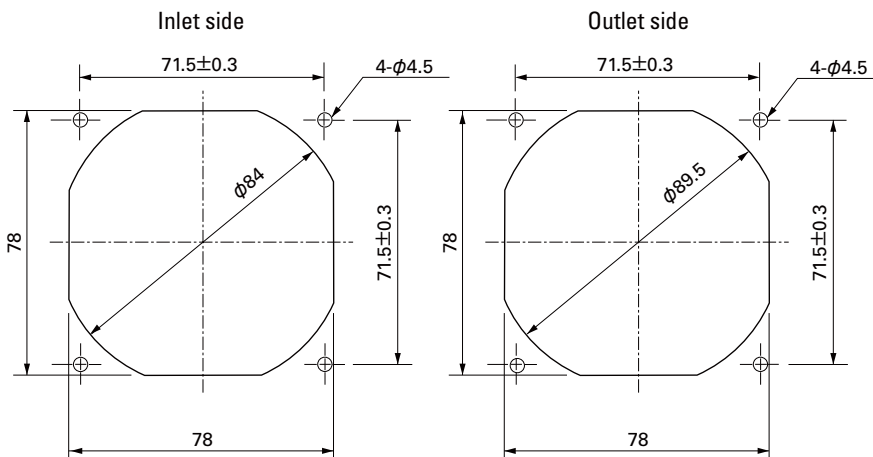
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]	
109P0812H701	12	7 to 13.8	0.2	2.4	3,100	0.91	32.1	29.4	0.118	31	40,000/60°C
109P0812M701			0.09	1.08	2,000	0.57	20.1	12.6	0.051	21	60,000/60°C
109P0824H701	24	14 to 27.6	0.1	2.4	3,100	0.91	32.1	29.4	0.118	31	40,000/60°C
109P0824M701			0.05	1.2	2,000	0.57	20.1	12.6	0.051	21	60,000/60°C

Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 467 to 468).

Dimensions (unit: mm)



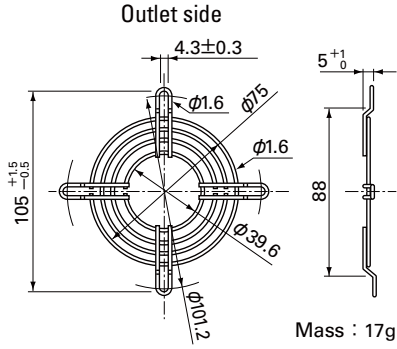
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

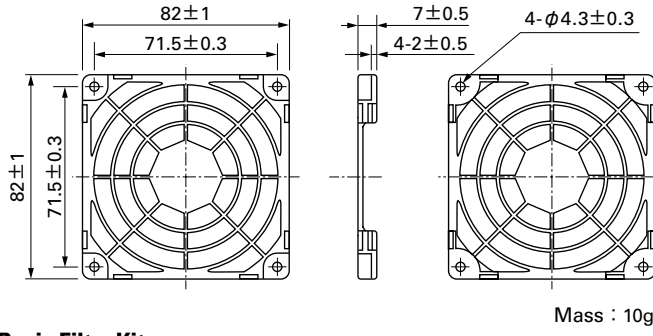
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color (silver)



Resin Finger Guards

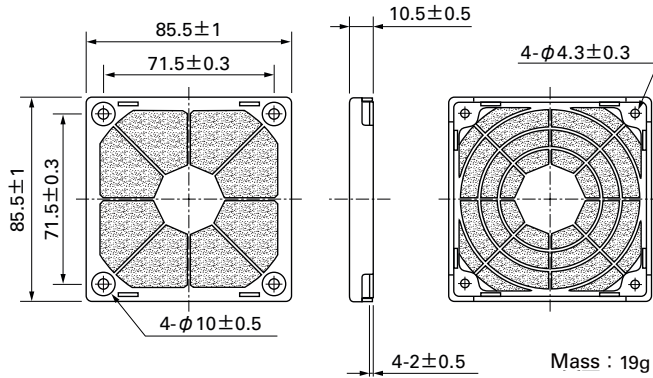
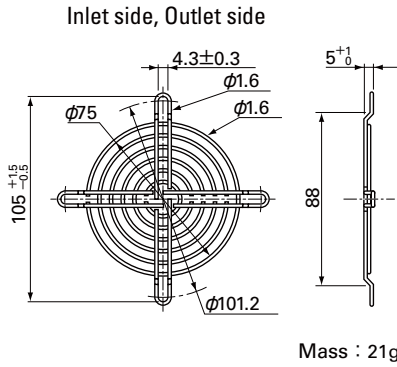
Model : 109-1002G



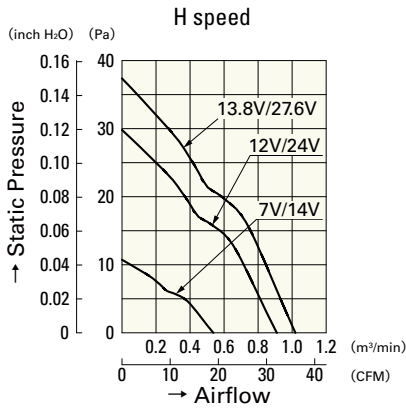
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color (silver)
: 109-049H : Cation electropainting (black)

Resin Filter Kits

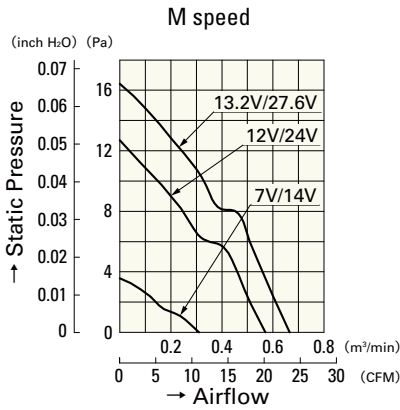
Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



Airflow - Static Pressure Characteristics



109P0812H701
109P0824H701



109P0812M701
109P0824M701

80 mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×20 mm (Mass : 80g) **9GA** type **Low Power Consumption Fan**



Specifications The following nos. have PWM controls, pulse sensors, and ribs.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note1)2)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{Note2)} [h]
9GA0812P6G001	12	10.2 to 13.8	100	0.3	3.6	5,850	1.72 60.78	110 0.44	45	-20 to +70	40,000/60°C (70,000/40°C)
9GA0812P6M001				0.06	0.72	2,900	0.84 29.68	27 0.11	26.5		60,000/60°C
9GA0824P6G001	24	20.4 to 27.6	100	0.15	3.6	5,850	1.72 60.78	110 0.44	45		40,000/60°C (70,000/40°C)
9GA0824P6M001				0.03	0.72	2,900	0.84 29.68	27 0.11	26.5		60,000/60°C

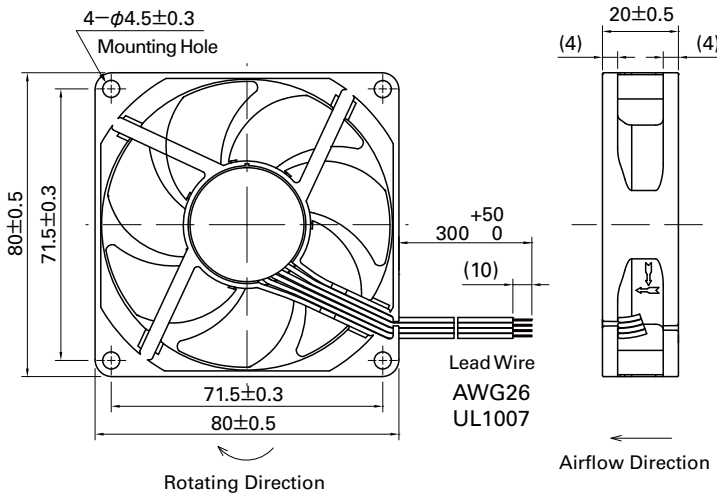
Note 1: Does not rotate when PWM duty cycle is 0%.

Note 2: Expected life at 40°C ambient is just reference value.

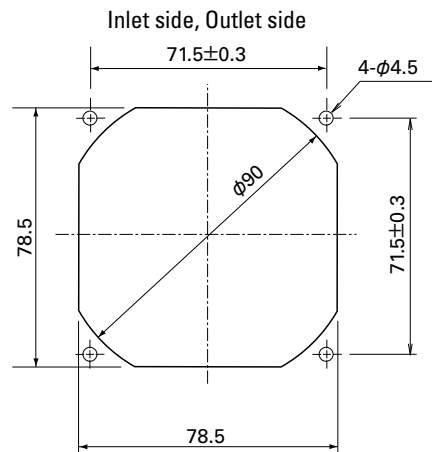
※PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (p. 475).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



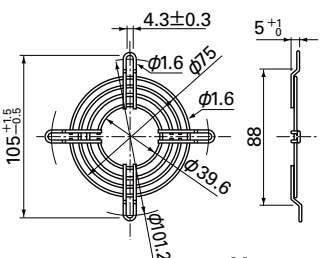
Options (unit: mm)

Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color

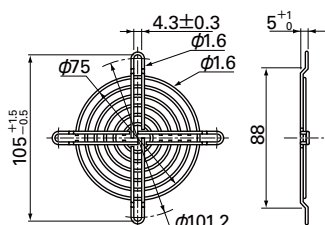
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color
: 109-049H : Cation electropainting (black)

Outlet side



Mass: 17g

Inlet side, Outlet side

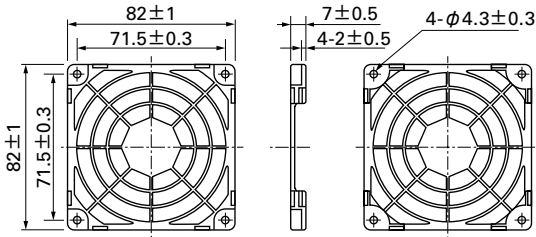


Mass: 21g

Options (unit: mm)

Resin Finger Guards

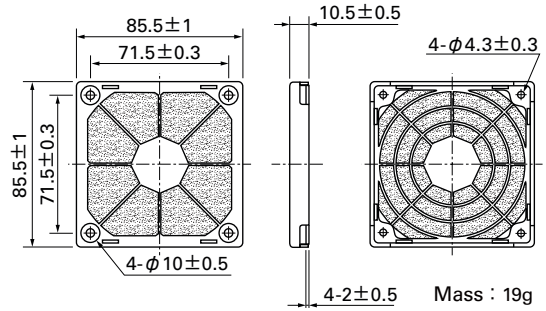
Model : 109-1002G



Mass : 10g

Resin Filter Kits

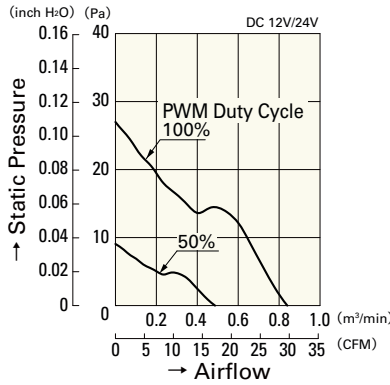
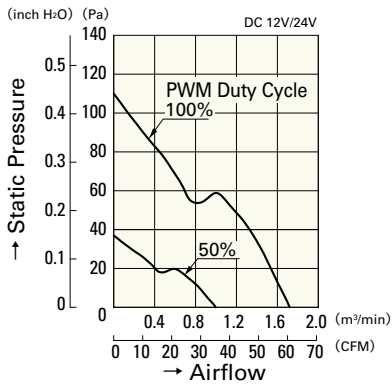
Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



Mass : 19g

Airflow - Static Pressure Characteristics

PWM Duty Cycle



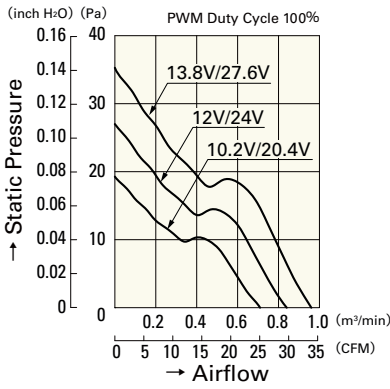
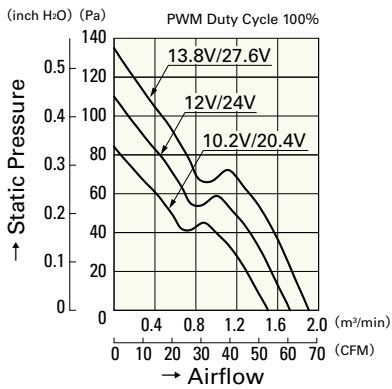
9GA0812P6G001

9GA0824P6G001

9GA0812P6M001

9GA0824P6M001

Operating Voltage Range



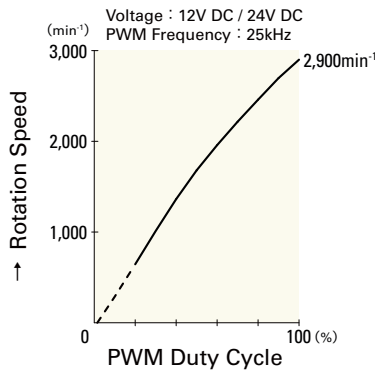
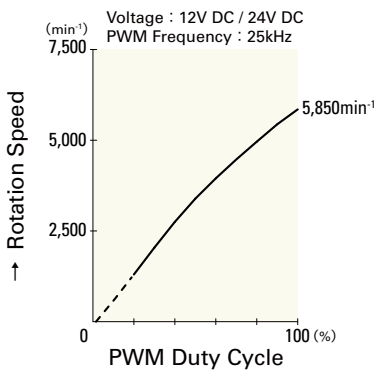
9GA0812P6G001

9GA0824P6G001

9GA0812P6M001

9GA0824P6M001

PWM Duty - Speed Characteristics Example



9GA0812P6G001

9GA0824P6G001

9GA0812P6M001

9GA0824P6M001

80mm sq.

San Ace 80



Model no. 109P0812C601 is not certified.

General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×20mm (Mass : 100g) **9P** type

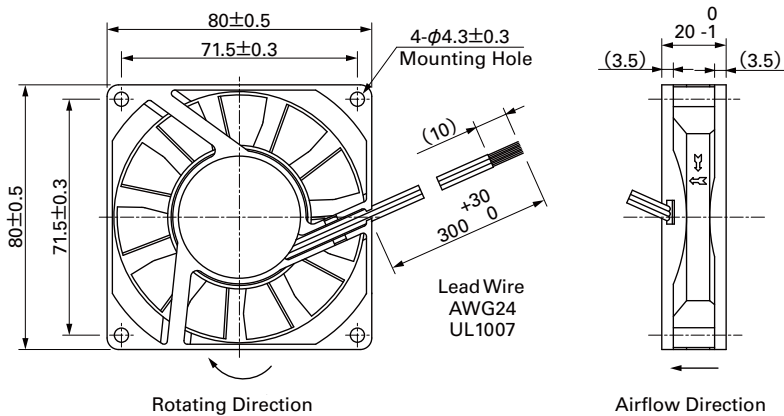
Specifications

The following nos. **have pulse sensors and ribs.**

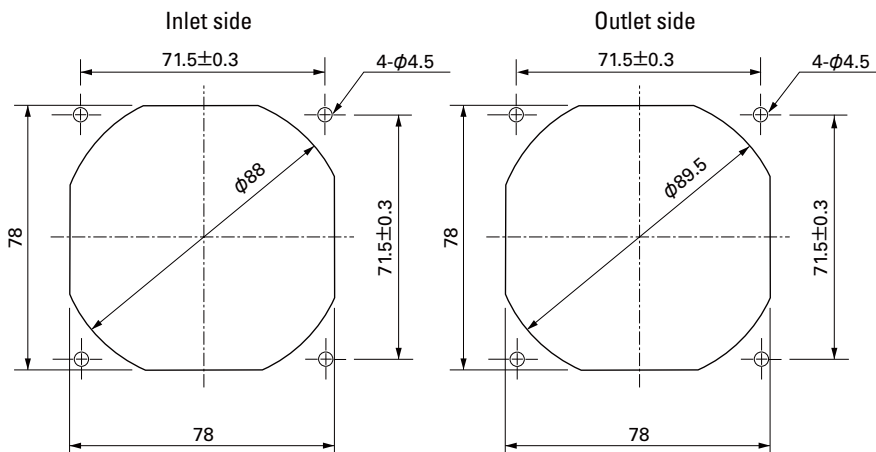
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109P0812C601	12	10.2 to 13.8	0.29	3.48	3,700	1.07 37.8	46 0.185	39	-20 to +60	60,000/60°C
109P0812H601			0.21	2.52	2,900	0.84 29.7	29.4 0.118	31		
109P0812M601			0.13	1.56	2,300	0.67 23.7	18.6 0.075	25		
109P0824H601	24	20.4 to 27.6	0.12	2.88	2,900	0.84 29.7	29.4 0.118	31	-20 to +70	
109P0824M601			0.07	1.68	2,300	0.67 23.7	18.6 0.075	25		
109P0848C601	48	38 to 57.6	0.08	3.84	3,700	1.07 37.8	46 0.185	39	-20 to +70	
109P0848H601			0.05	2.4	2,900	0.84 29.7	29.4 0.118	31		-20 to +60

Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 467 to 468).

Dimensions (unit: mm)



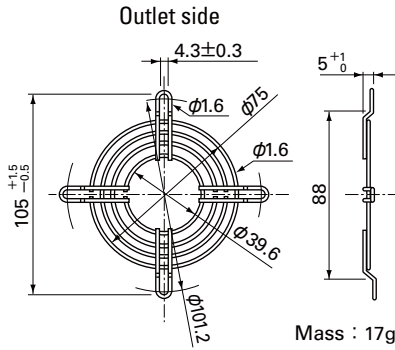
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

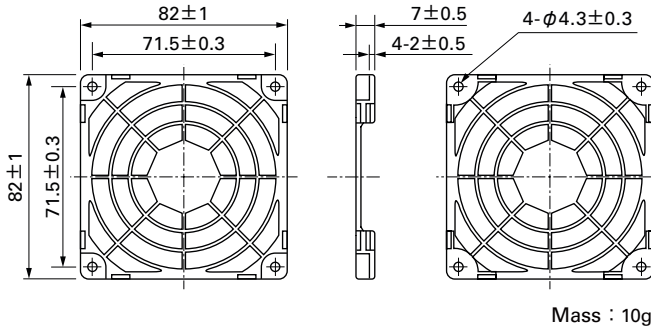
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)



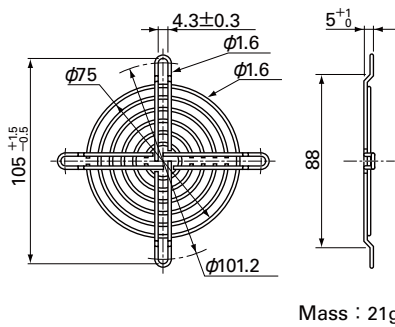
Resin Finger Guards

Model : 109-1002G



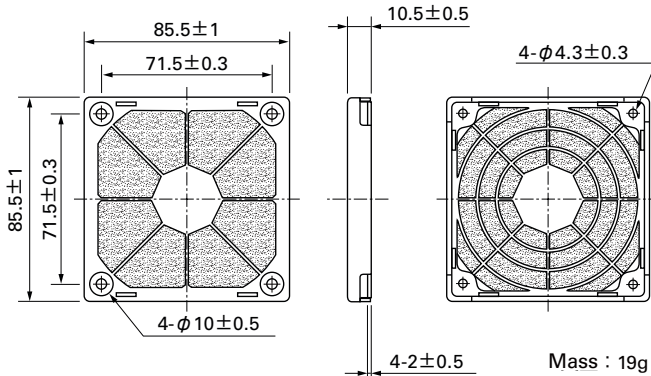
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)
: 109-049H : Cation electropainting (black)

Inlet side, Outlet side

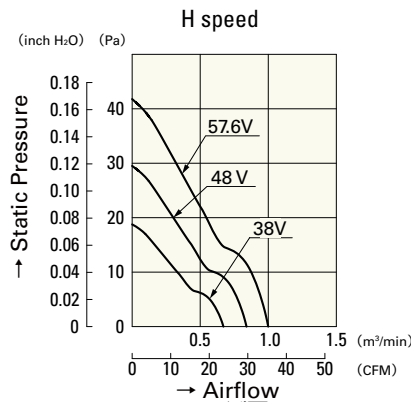
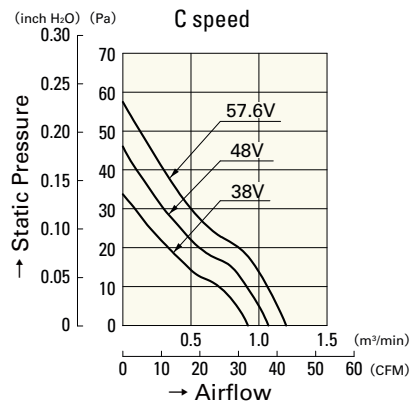
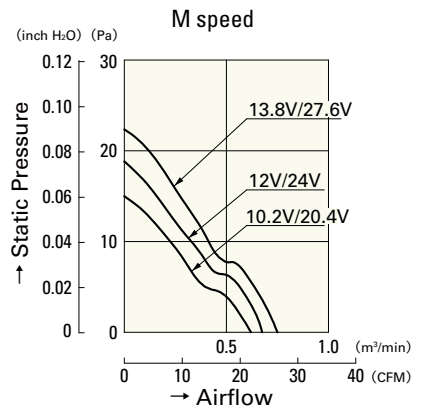
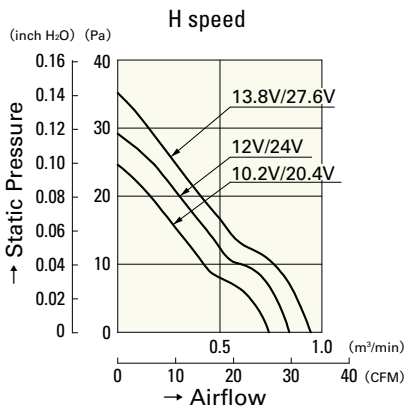
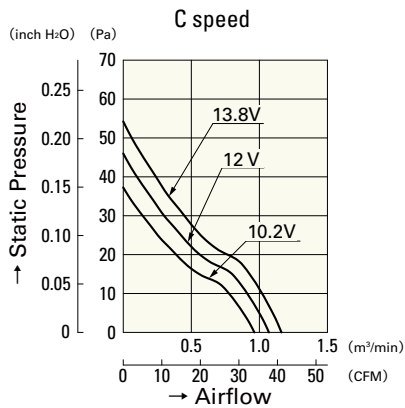


Resin Filter Kits

Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



Airflow - Static Pressure Characteristics



80mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×25mm (Mass : 110g) **9GA type** **Low Noise Low Power Consumption Fan**

Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

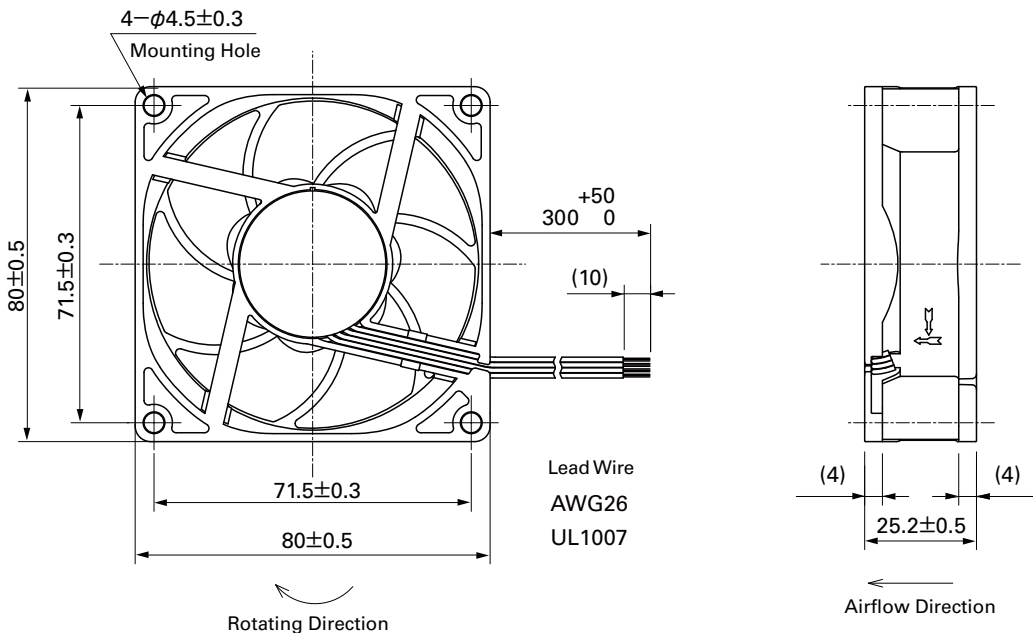
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{nom} [h]
9GA0812P4J001	12	10.8 to 13.2	100	0.6	7.2	7,400	2.07 73.0	177.6 0.7	48	-20 to +70	40,000/60°C (70,000/40°C)
			25	0.08	0.96	2,500	0.69 24.3	20.2 0.08	21		
9GA0812P4G001			100	0.48	5.76	6,800	1.91 67.4	150 0.6	45		
			25	0.06	0.72	1,500	0.42 14.8	7.2 0.02	17		
9GA0812P4H001			100	0.22	2.64	5,200	1.46 51.5	87.7 0.35	37		
			25	0.06	0.72	1,600	0.44 15.5	8.3 0.03	17		
9GA0824P4J001	24	21.6 to 26.4	100	0.28	6.72	7,400	2.07 73.0	177.6 0.7	48		
			25	0.06	1.44	2,800	0.78 27.5	25.4 0.1	23		
9GA0824P4G001			100	0.21	5.04	6,800	1.91 67.4	150 0.6	45		
			25	0.04	0.96	2,100	0.58 20.4	14.3 0.05	19		
9GA0824P4H001			100	0.1	2.4	5,200	1.46 51.5	87.7 0.35	37		
			25	0.02	0.48	1,500	0.42 14.8	7.2 0.02	17		

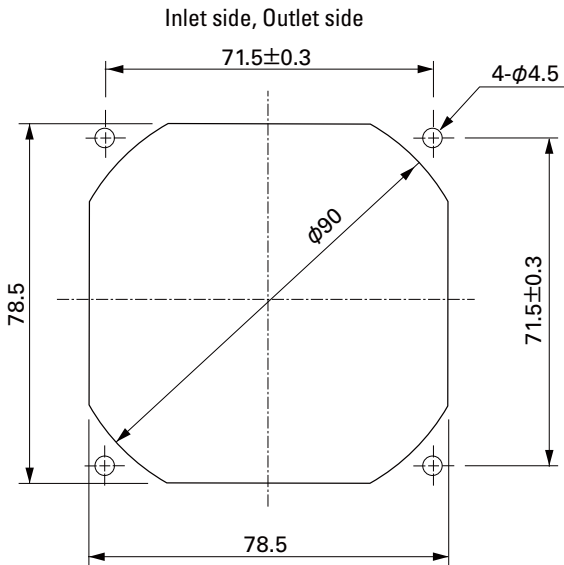
Note: Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (p. 475).

Dimensions (unit: mm) (With ribs)

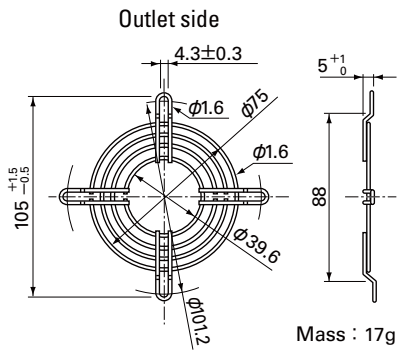




Options (unit: mm)

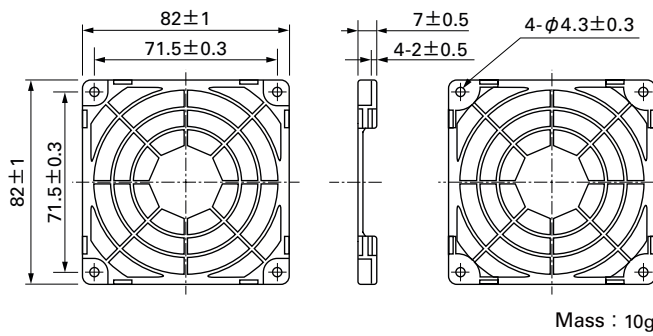
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)



Resin Finger Guards

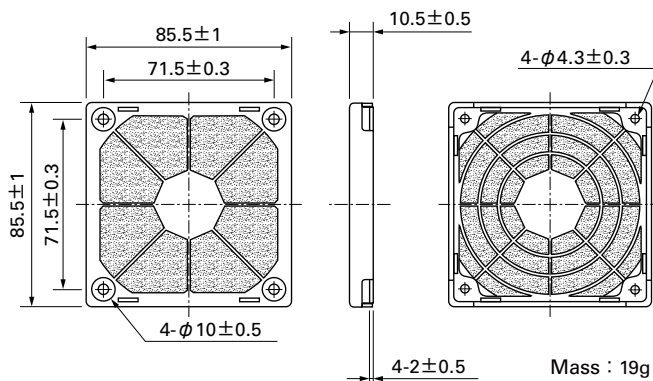
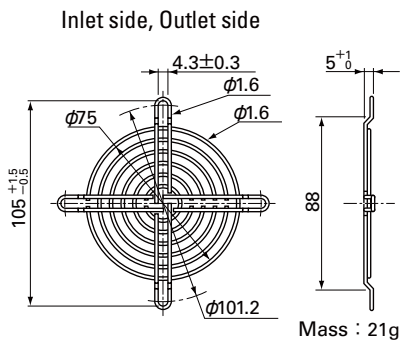
Model : 109-1002G



Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)
: 109-049H : Cation electropainting (black)

Resin Filter Kits

Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



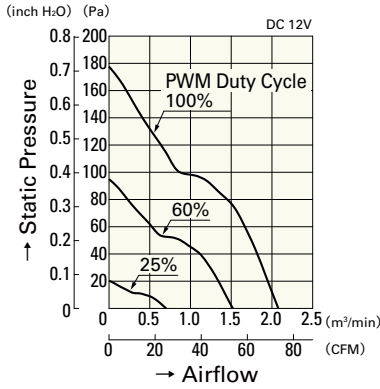
80 mm sq.

San Ace 80

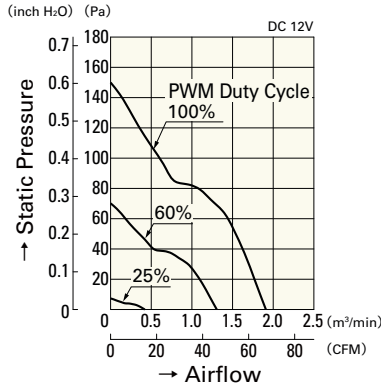
80×80×25mm [Mass : 110g]

Airflow - Static Pressure Characteristics

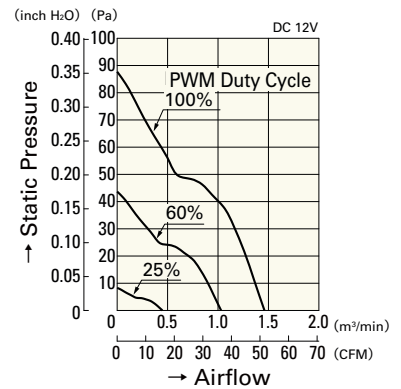
PWM Duty Cycle



9GA0812P4J001

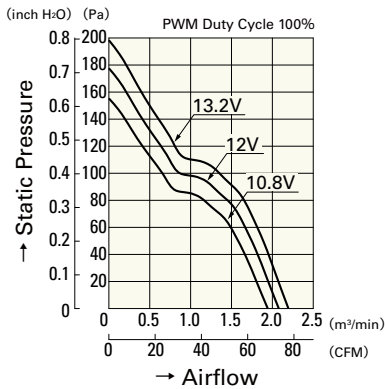


9GA0812P4G001

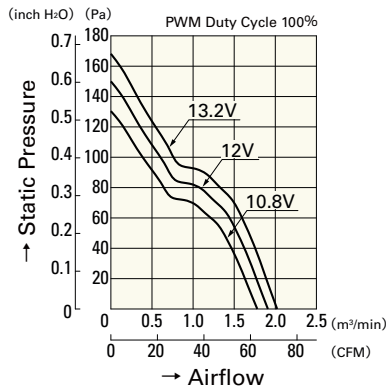


9GA0812P4H001

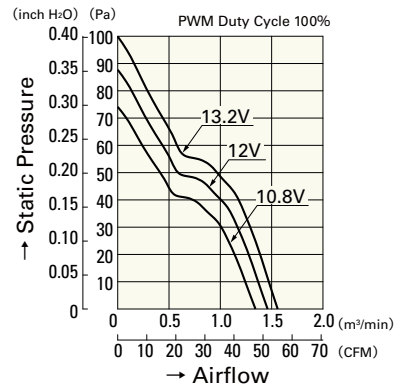
Operating Voltage Range



9GA0812P4J001

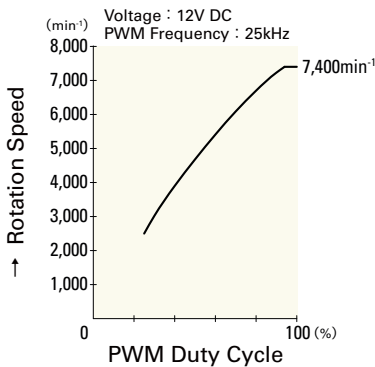


9GA0812P4G001

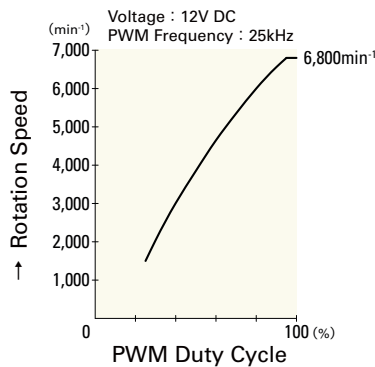


9GA0812P4H001

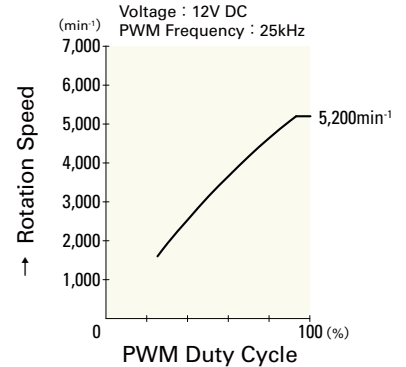
PWM Duty - Speed Characteristics Example



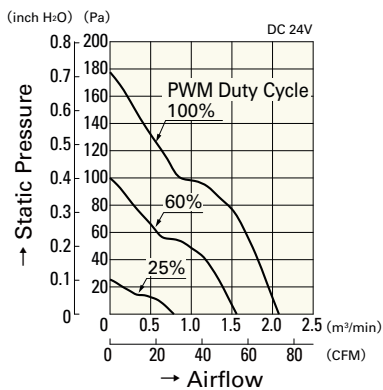
9GA0812P4J001



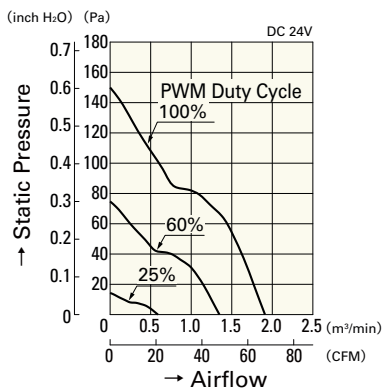
9GA0812P4G001



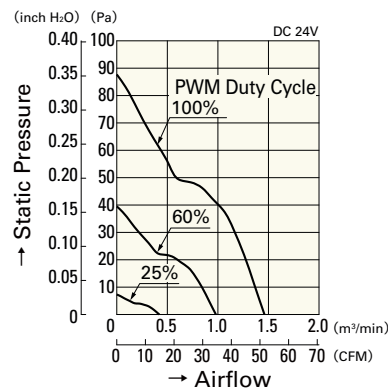
9GA0812P4H001



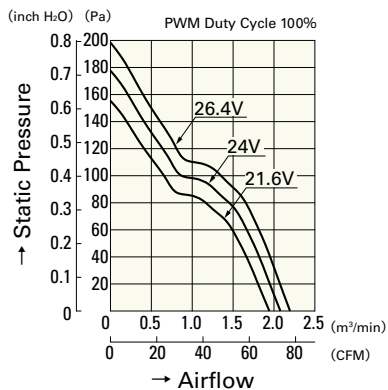
9GA0824P4J001



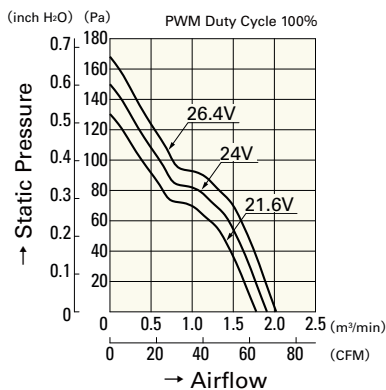
9GA0824P4G001



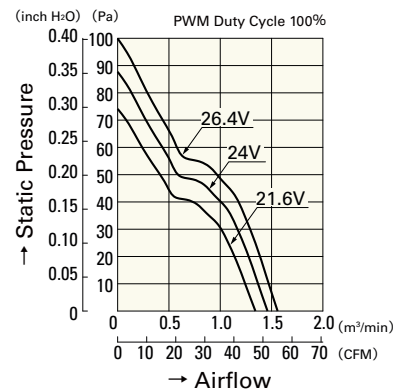
9GA0824P4H001



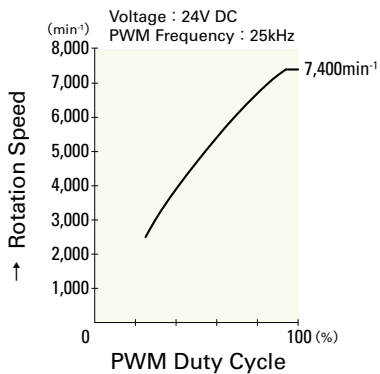
9GA0824P4J001



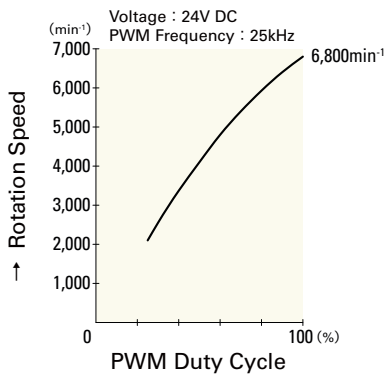
9GA0824P4G001



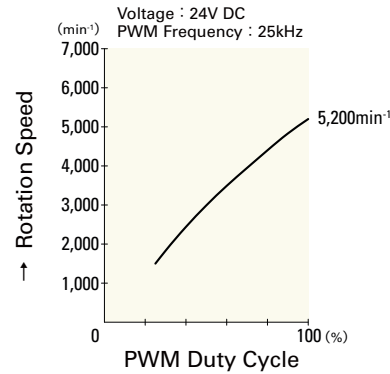
9GA0824P4H001



9GA0824P4J001



9GA0824P4G001



9GA0824P4H001

80 mm sq.

San Ace 80



Model no. 9S0812H401 is not TÜV certified.

General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×25mm (Mass : 75g) **9S type** **Silent Fan**

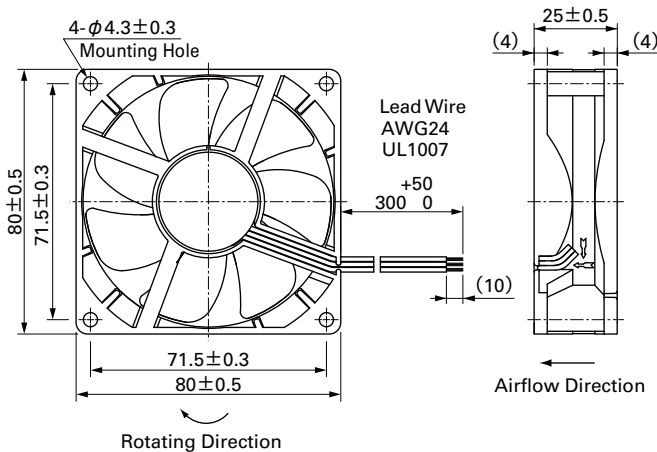
Specifications

The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9S0812H401	12	5.0 to 13.2	0.23	2.76	3,400	1.12 39.5	52.15 0.20	31	-10 to +70	40,000/60°C
9S0812F401		5.0 to 13.8	0.11	1.32	2,800	0.93 32.8	35.5 0.143	24		
9S0812M401		6.0 to 13.8	0.08	0.96	2,500	0.83 29.3	27.5 0.110	22		
9S0812L401	24	10 to 26.4	0.06	1.44	2,500	0.83 29.3	27.5 0.110	22	-10 to +70	40,000/60°C
9S0824M401		10 to 26.4	0.06	1.44	2,500	0.83 29.3	27.5 0.110	22		
9S0824L401		10 to 26.4	0.04	0.96	2,000	0.66 23.3	18.1 0.073	16		

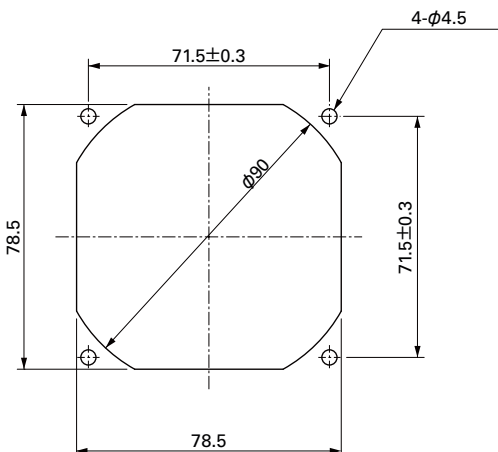
Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 479 to 480).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

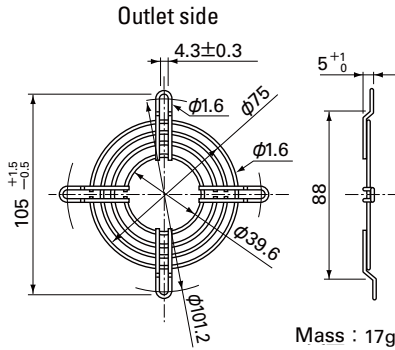
Inlet side, Outlet side



Options (unit: mm)

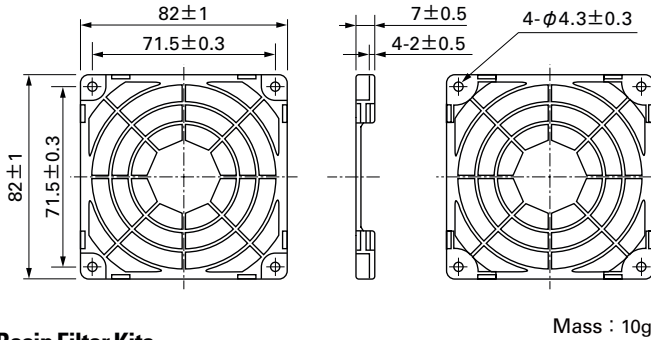
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)



Resin Finger Guards

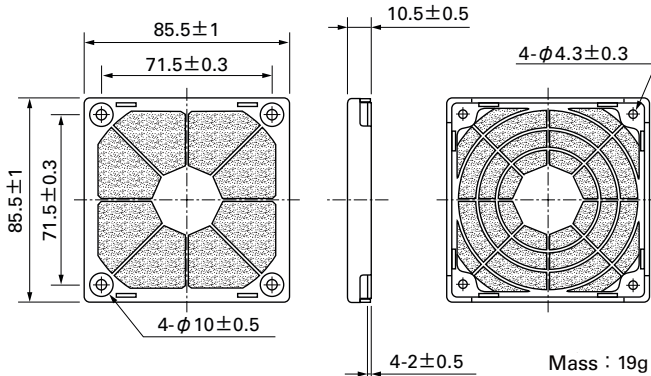
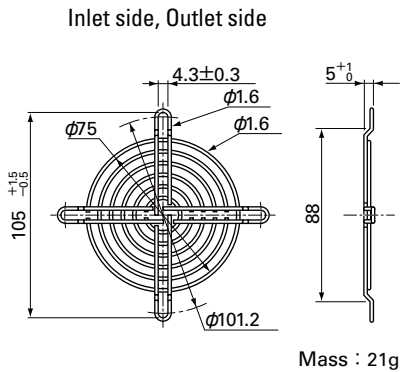
Model : 109-1002G



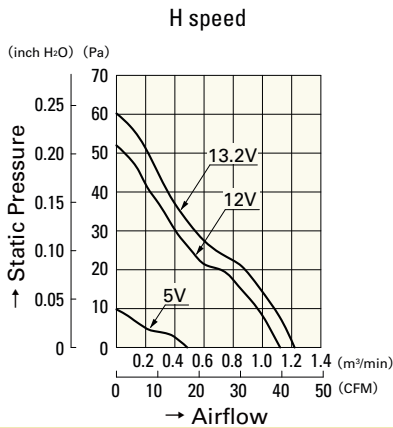
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)
 : 109-049H : Cation electropainting (black)

Resin Filter Kits

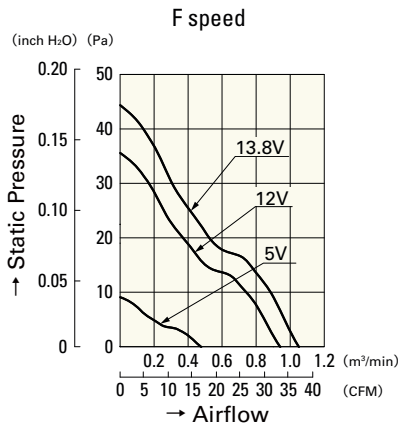
Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
 : 109-1002F30 (30PPI), 109-1002F40 (40PPI)



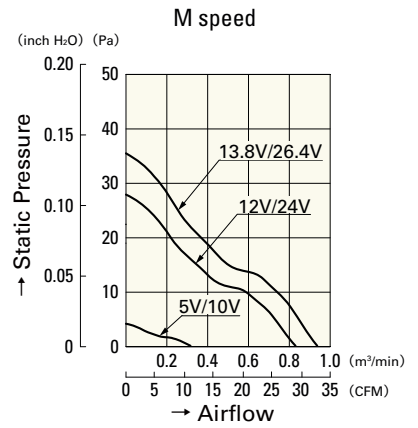
Airflow - Static Pressure Characteristics



9S0812H401

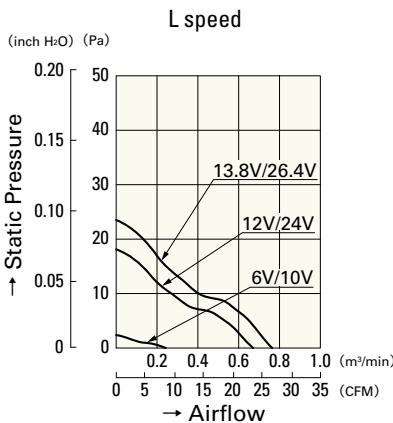


9S0812F401



9S0812M401

9S0824M401



9S0812L401

9S0824L401

80mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×25mm (Mass : 125g) **9GV**type

Specifications

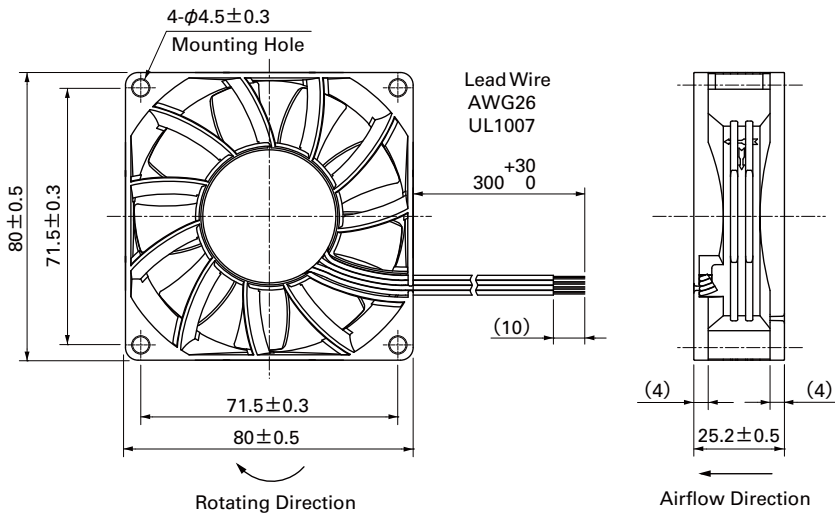
The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GV0812P4K03	12	10.2 to 13.8	100	0.87	10.4	5,600	2.12 74.8	173.0 0.69	52	-20 to +70	40,000/60°C
			0	0.10	1.2	1,400	0.50 18.7	10.3 0.04	18		
9GV0812P4J03	12	10.2 to 13.8	100	0.47	5.6	4,500	1.72 60.7	110.0 0.44	46		
			0	0.07	0.8	1,200	0.45 16.2	7.5 0.03	14		
9GV0824P4K01	24	20.4 to 27.6	100	0.44	10.56	5,600	2.12 74.8	173.0 0.69	52		
			0	0.06	1.44	1,400	0.53 18.7	10.8 0.04	18		
9GV0848P4K03	48	43 to 53	100	0.22	10.56	5,600	2.12 74.8	173.0 0.69	52		
			0	0.04	1.92	1,500	0.57 20.1	12.4 0.05	19		

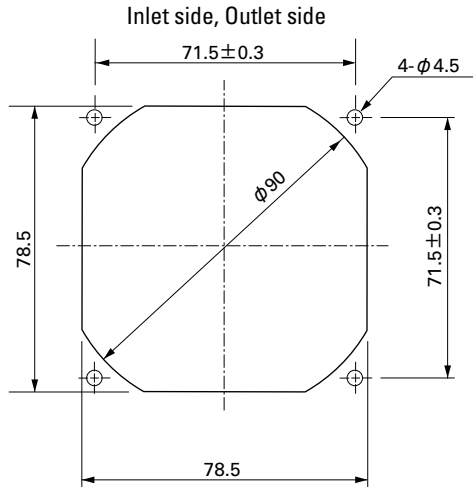
※PWM Frequency : 25kHz

Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (p. 477).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

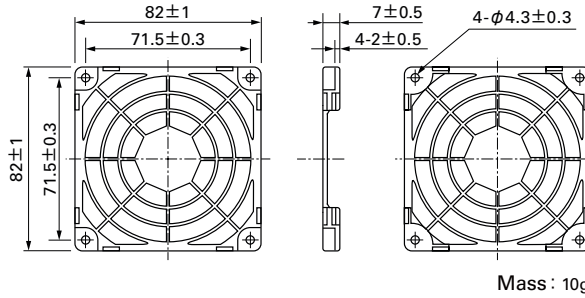
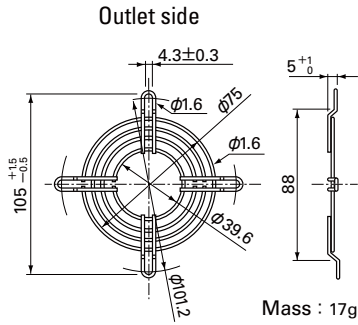
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver)

Color

Resin Finger Guards

Model : 109-1002G

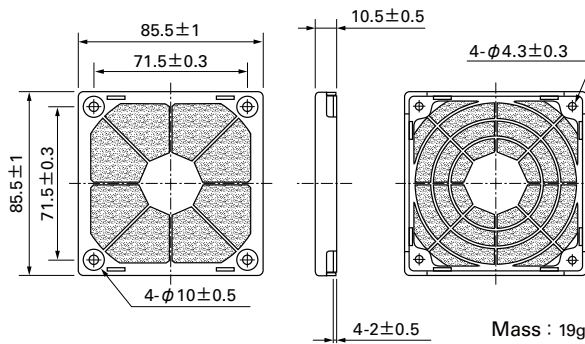
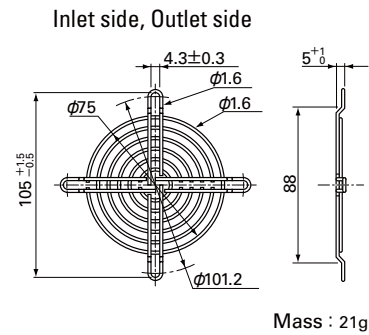


Model : 109-049E Surface treatment : Nickel-chrome plating (silver)
: 109-049H : Cation electropainting (black)

Color

Resin Filter Kits

Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



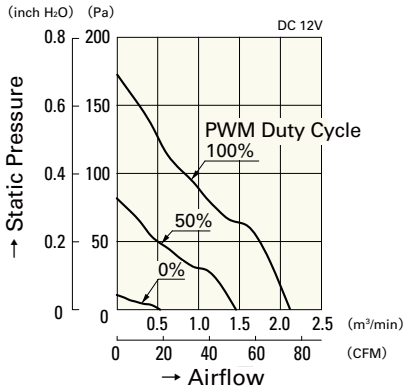
80 mm sq.

San Ace 80

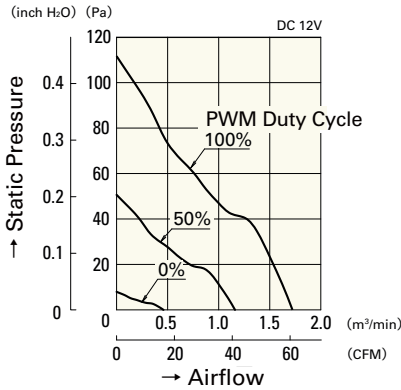
80×80×25mm [Mass : 125g]

Airflow - Static Pressure Characteristics

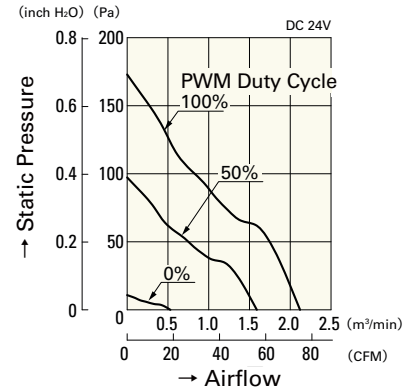
PWM Duty Cycle



9GV0812P4K03

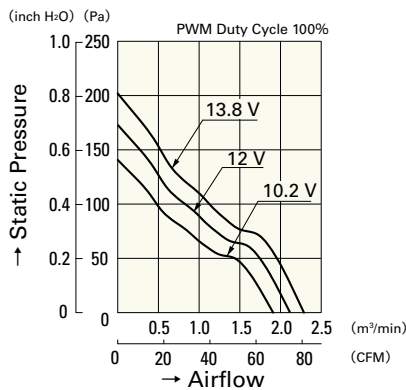


9GV0812P4J03

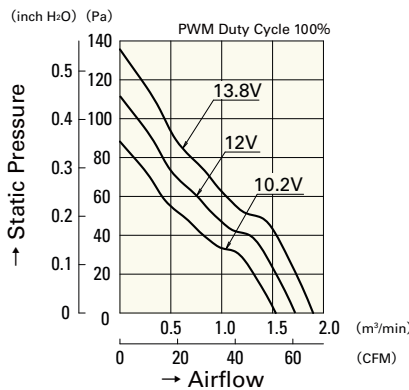


9GV0824P4K01

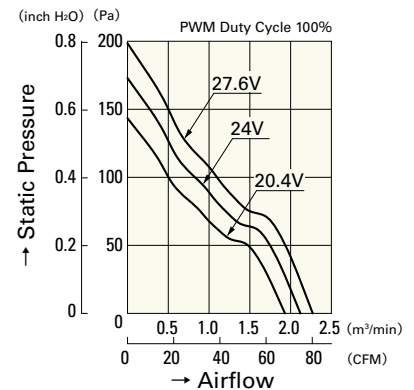
Operating Voltage Range



9GV0812P4K03

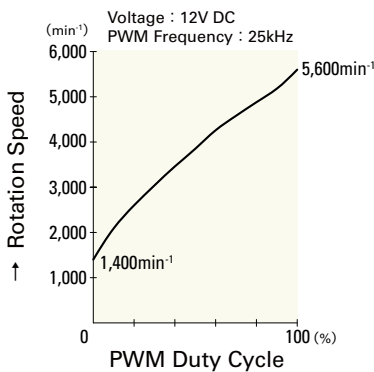


9GV0812P4J03

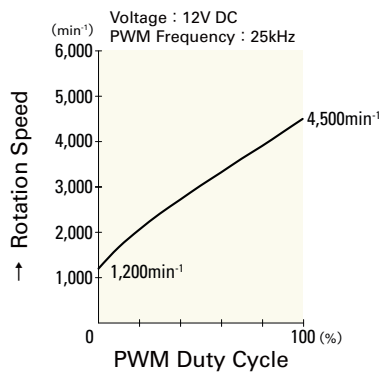


9GV0824P4K01

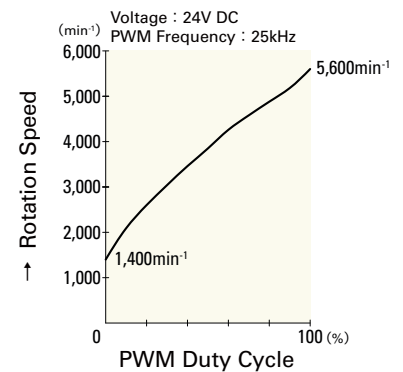
PWM Duty - Speed Characteristics Example



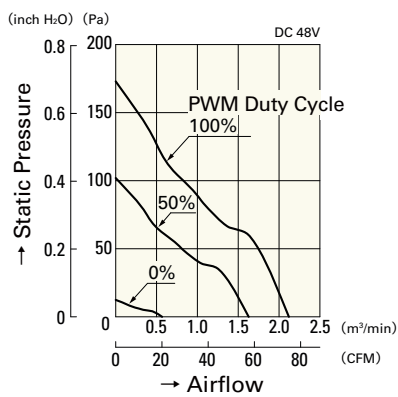
9GV0812P4K03



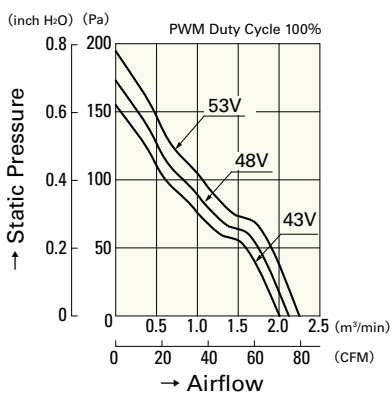
9GV0812P4J03



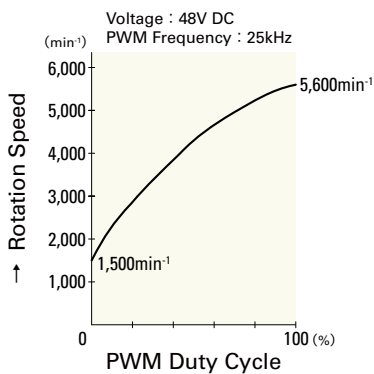
9GV0824P4K01



9GV0848P4K03



9GV0848P4K03



9GV0848P4K03

80 mm sq.

San Ace 80



Model no. 109R0812E401 is not certified.

General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×25mm (Mass : 110g) **9R** type

Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109R0805F401	5	4.5 to 5.5	0.25	1.25	2,600	0.92 32.5	28.4 0.114	26	-20 to +70	60,000/60°C
109R0805M401			0.17	0.85	2,350	0.83 29.3	22.5 0.090	23		
109R0812G401	12	10.8 to 13.2	0.37	4.44	4,500	1.50 53.0	80.4 0.323	40	-20 to +60	40,000/60°C
109R0812E401			0.24	2.88	3,700	1.31 46.3	57.8 0.232	35		
109R0812S401		6 to 13.8	0.18	2.16	3,400	1.20 42.4	48.0 0.193	34	-20 to +70	60,000/60°C
109R0812H401			0.13	1.56	2,900	1.03 36.4	35.3 0.142	29		
109R0812F401			0.11	1.32	2,600	0.92 32.5	28.4 0.114	26		
109R0812M401			0.09	1.08	2,350	0.83 29.3	22.5 0.090	23		
109R0812L401		7 to 13.8	0.06	0.72	1,850	0.65 23.0	14.7 0.059	20		
109R0824G401		24	20.4 to 26.4	0.20	4.80	4,500	1.50 53.0	80.4 0.323	40	-20 to +60
109R0824S401	0.10			2.40	3,400	1.20 42.4	48.0 0.193	34		
109R0824H401	12 to 27.6		0.07	1.68	2,900	1.03 36.4	35.3 0.142	29	-20 to +70	60,000/60°C
109R0824F401			0.06	1.44	2,600	0.92 32.5	28.4 0.114	26		
109R0824M401			0.05	1.20	2,350	0.83 29.3	22.5 0.090	23		
109R0824L401			14 to 27.6	0.04	0.96	1,850	0.65 23.0	14.7 0.059		
109R0848K401	48	40.8 to 55.2	0.10	4.80	4,600	1.56 55.1	88.4 0.355	41	-20 to +60	40,000/60°C
109R0848S401			0.06	2.88	3,400	1.20 42.4	48.0 0.193	34	-20 to +70	60,000/60°C

Models without sensors or with lock sensors are available as options. Please refer to the index (p. 469).

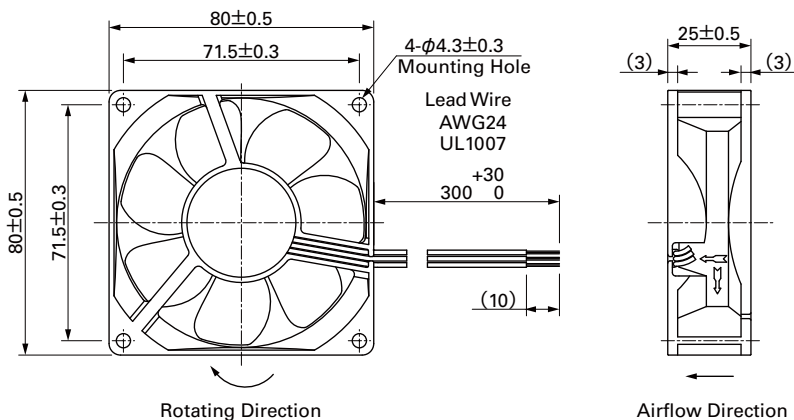
Set Models

The set models listed below can be ordered as a single order.

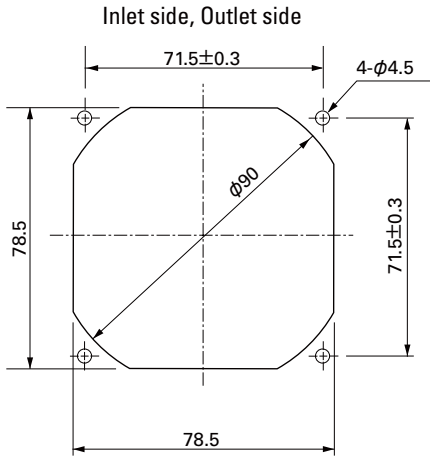
Set configuration items: Fan (without sensor), finger guard, screws (with flat washer and spring washer), hex nuts, operation manual

Model Number to Order	Fan Model	Sensor Specifications	Finger Guard Model	Mounting Screws
9U-109R0812H402	109R0812H402 (performs the same as the 109R0812H401)	Without sensor	109-049E	M4 screws (40 mm) x 4, Nuts x 4
9U-109R0824H402	109R0824H402 (performs the same as the 109R0824H401)			

Dimensions (unit: mm) (With ribs)



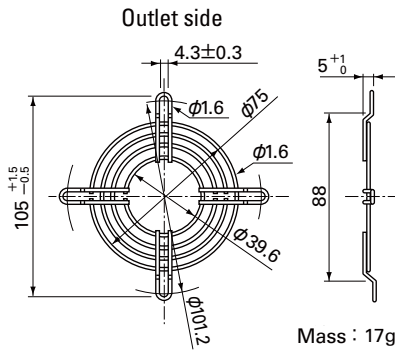
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

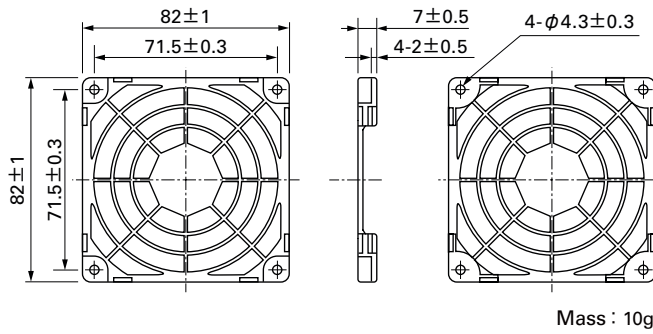
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)



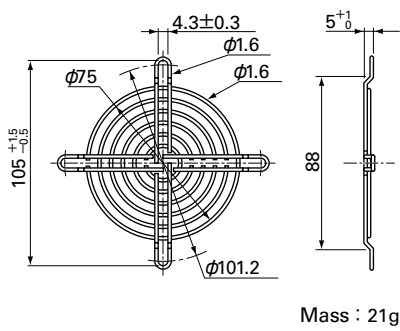
Resin Finger Guards

Model : 109-1002G



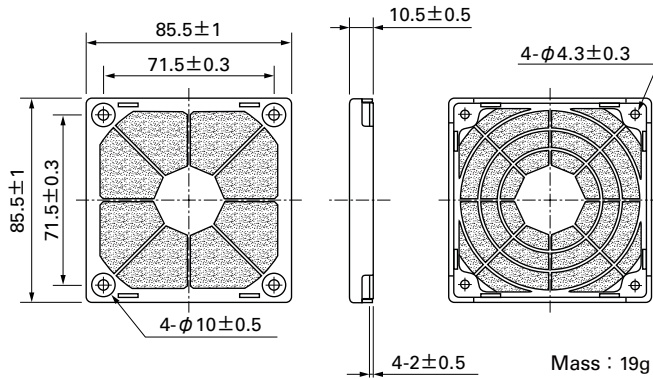
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)
 : 109-049H Surface treatment : Cation electropainting (black) Color : Cation electropainting (black)

Inlet side, Outlet side



Resin Filter Kits

Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
 : 109-1002F30 (30PPI), 109-1002F40 (40PPI)

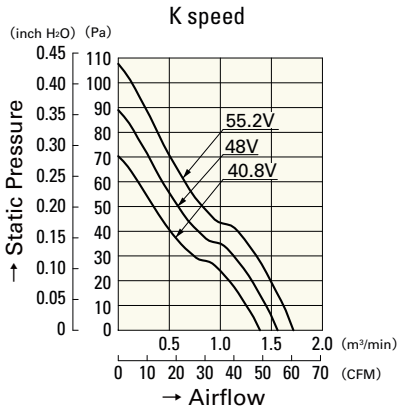


80 mm sq.

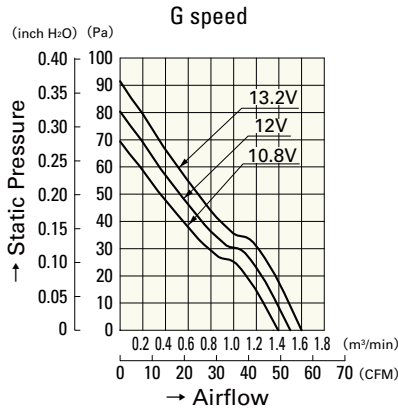
San Ace 80

80×80×25mm [Mass : 110g]

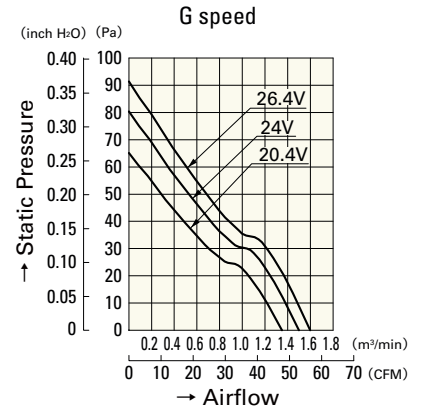
Airflow - Static Pressure Characteristics



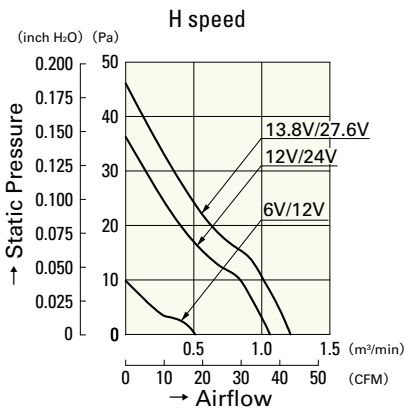
109R0848K401



109R0812G401

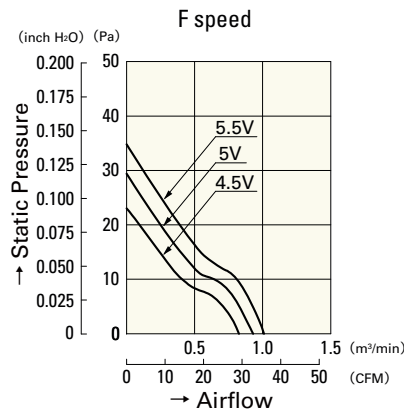


109R0824G401

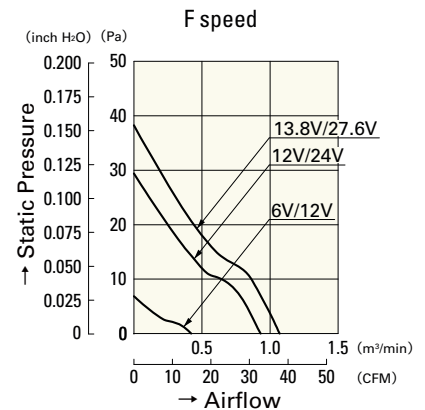


109R0812H401

109R0824H401

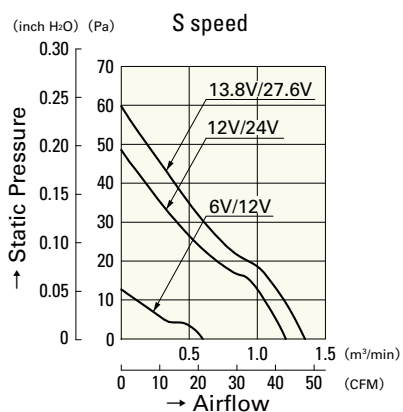


109R0805F401

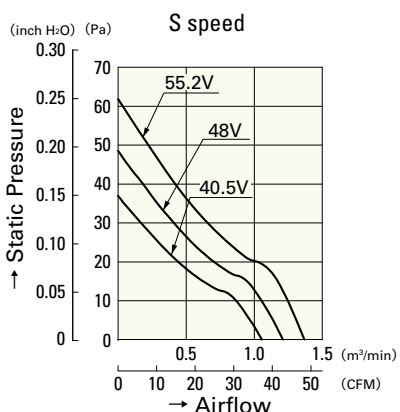


109R0812F401

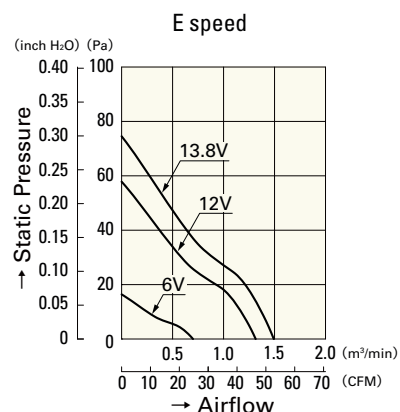
109R0824F401



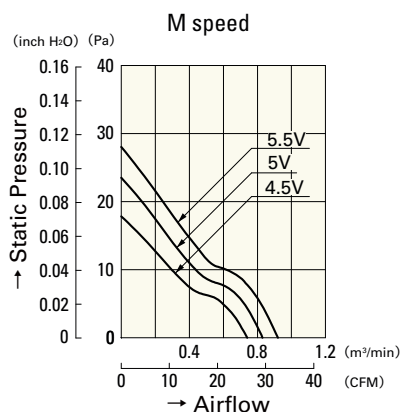
109R0812S401
109R0824S401



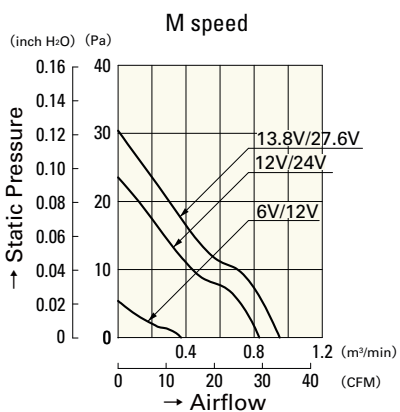
109R0848S401



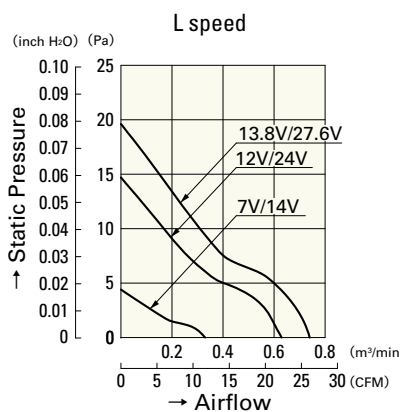
109R0812E401



109R0805M401



109R0812M401
109R0824M401



109R0812L401
109R0824L401

80 mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

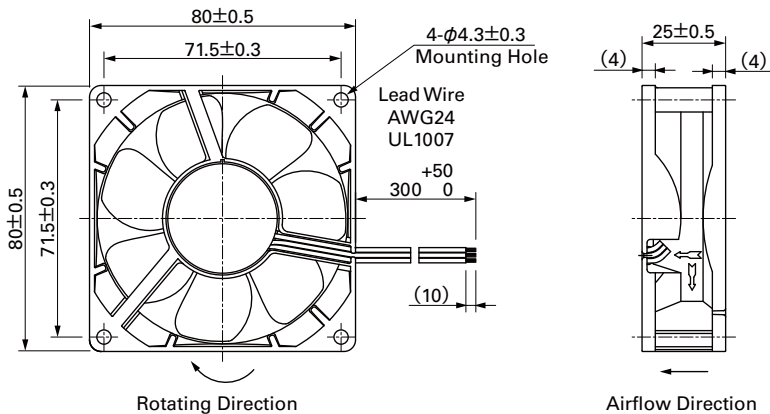
80×80×25mm (Mass : 90g) 9A type San Cooler

Specifications The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

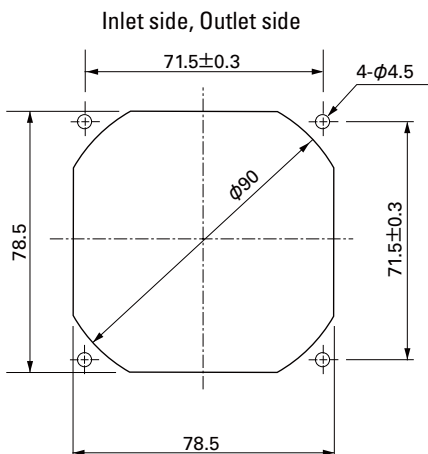
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]				
9A0812G401	12	6 to 13.2	0.38	4.56	4,500	1.5	53.0	80.3	0.323	40	-20 to +60	30,000/60°C		
9A0812S401			0.18	2.16	3,400	1.2	42.4	48	0.193	34				
9A0812H401		6 to 13.8	0.13	1.56	2,900	1.03	36.4	35.3	0.142	29			-20 to +70	40,000/60°C
9A0812F401			0.11	1.32	2,600	0.92	32.5	28.4	0.114	26				
9A0812M401			0.09	1.08	2,350	0.83	29.3	22.5	0.090	23				
9A0812L401			0.06	0.72	1,850	0.65	23.0	14.7	0.059	20				
9A0824G401	24	12 to 26.4	0.21	5.04	4,500	1.5	53.0	80.3	0.323	40	-20 to +60	30,000/60°C		
9A0824S401			0.1	2.4	3,400	1.2	42.4	48	0.193	34				
9A0824H401		12 to 27.6	0.07	1.68	2,900	1.03	36.4	35.3	0.142	29			-20 to +70	40,000/60°C
9A0824F401			0.06	1.44	2,600	0.92	32.5	28.4	0.114	26				
9A0824M401			0.05	1.2	2,350	0.83	29.3	22.5	0.090	23				
9A0824L401			0.04	0.96	1,850	0.65	23.0	14.7	0.059	20				

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 470).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



80 mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×32 mm (Mass : 130g) **9GA** type **High Airflow Low Power Consumption Fan**



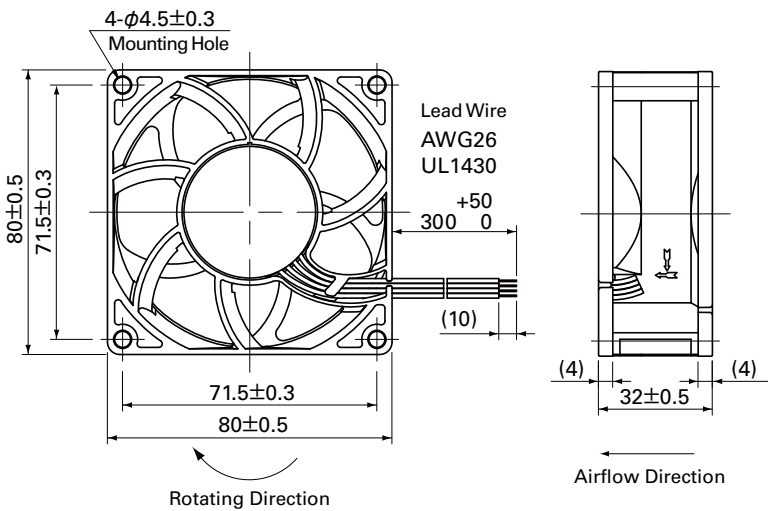
Specifications The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]	
9GA0812P2S001	12	10.2 to 13.8	100	0.83	9.96	9,700	2.45 86.5	360 1.45	57	-20 to +70	40,000/60°C	
			0	0.08	0.96	2,800	0.71 25.1	30 0.12	24			
100			0.59	7.08	8,700	2.20 77.7	294 1.18	54				
0			0.05	0.6	2,600	0.66 23.3	26 0.105	21				
9GA0812P2H001		10.2 to 12.6	100	0.35	4.2	6,700	1.69 59.6	171 0.68	47			-20 to +55
			0	0.04	0.48	1,400	0.35 12.3	7.5 0.03	10			
9GA0812P2M001	24	20.4 to 27.6	100	0.42	10.1	9,700	2.45 86.5	360 1.45	57	-20 to +70		
			0	0.05	1.2	2,800	0.71 25.1	30 0.12	24			

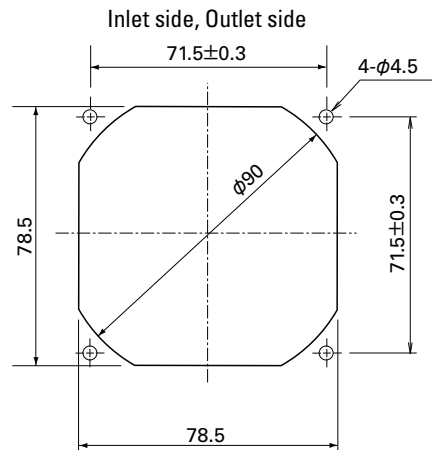
*PWM Frequency : 25kHz

Models with pulse sensors (no PWM control function) are available as an option. Please refer to the index (p. 475).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



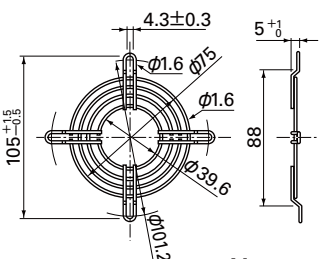
Options (unit: mm)

Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating Color (silver)

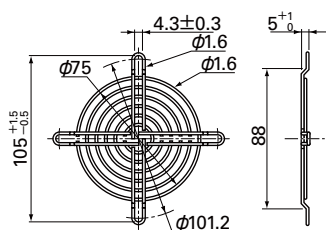
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color (silver)
: 109-049H : Cation electropainting (black)

Outlet side



Mass : 17g

Inlet side, Outlet side

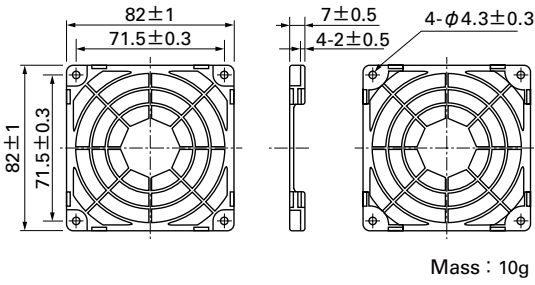


Mass : 21g

Options (unit: mm)

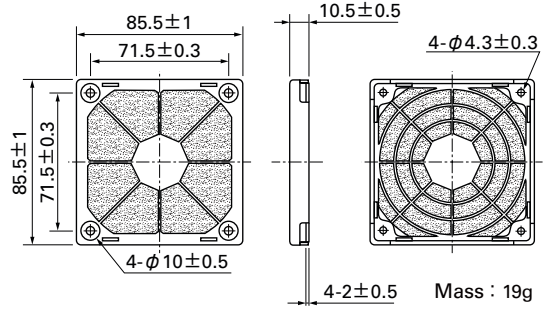
Resin Finger Guards

Model : 109-1002G



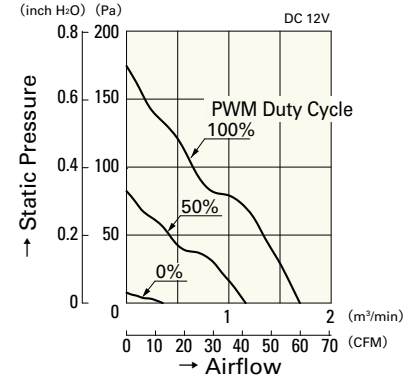
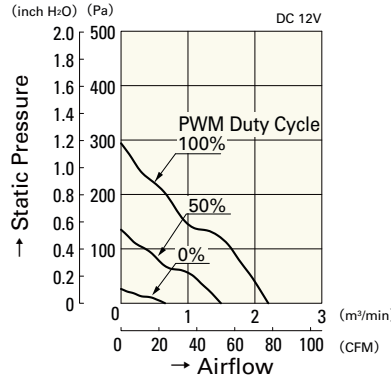
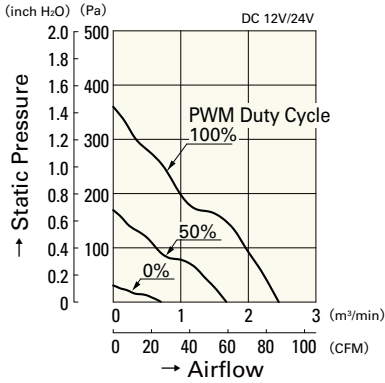
Resin Filter Kits

Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



Airflow - Static Pressure Characteristics

PWM Duty Cycle



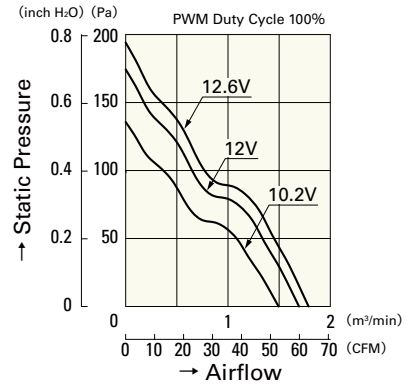
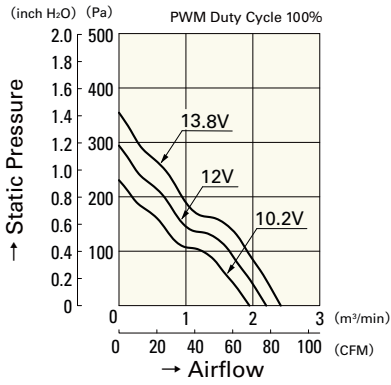
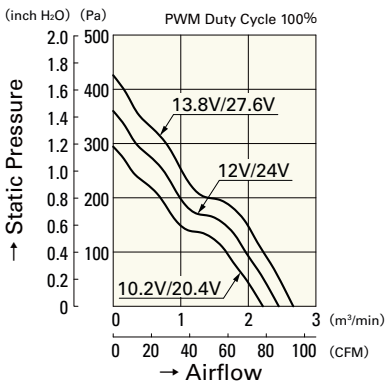
9GA0812P2S001

9GA0824P2S001

9GA0812P2H001

9GA0812P2M001

Operating Voltage Range



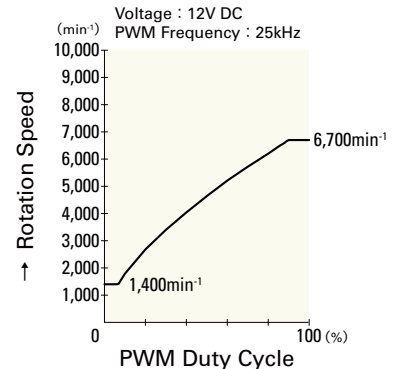
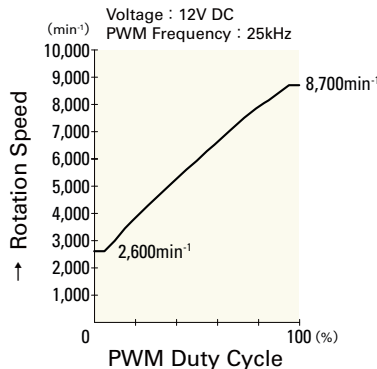
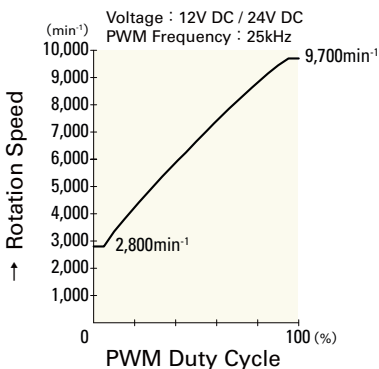
9GA0812P2S001

9GA0824P2S001

9GA0812P2H001

9GA0812P2M001

PWM Duty - Speed Characteristics Example



9GA0812P2S001

9GA0824P2S001

9GA0812P2H001

9GA0812P2M001

80 mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×32mm (Mass : 150g) **9P** type

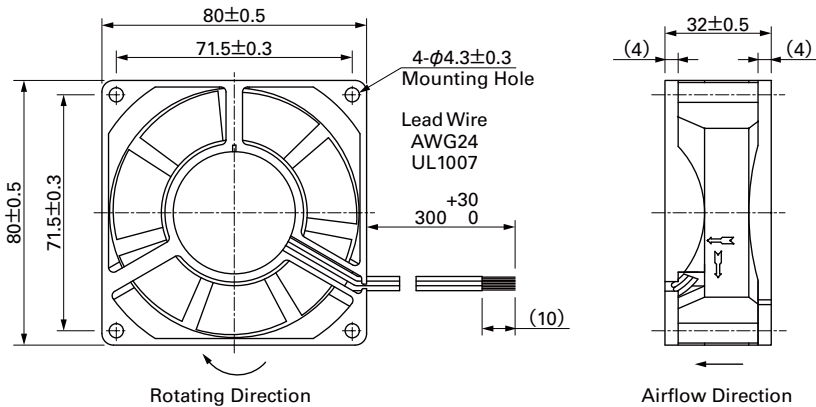
Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

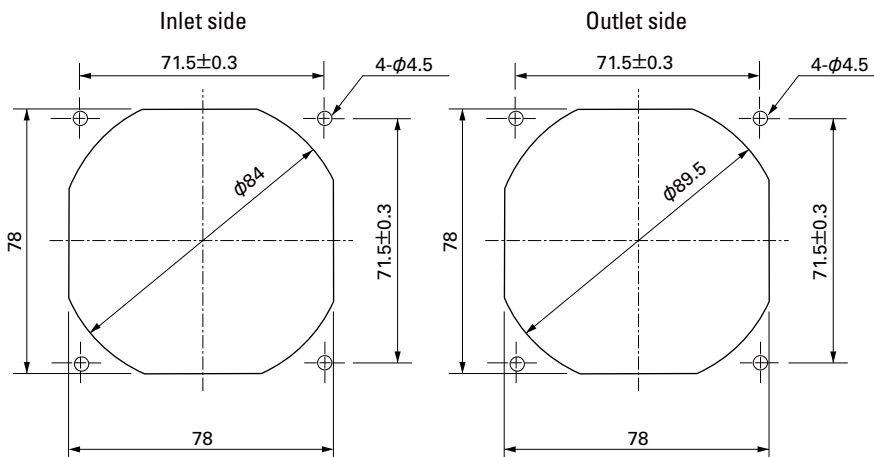
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109P0812A201	12	6 to 13.2	0.56	6.72	4,600	1.52 53.7	91.1 0.366	45	-20 to +55	40,000(+55°C)
109P0812H201		10.2 to 13.8	0.16	1.92	3,150	1.05 37.1	43.1 0.173	33		40,000/60°C
109P0812M201			0.07	0.84	2,000	0.65 23.0	18.6 0.075	21		60,000/60°C
109P0824A201	24	12 to 26.4	0.29	6.96	4,600	1.52 53.7	91.1 0.366	45	-20 to +60	40,000/60°C
109P0824H201		20.4 to 27.6	0.09	2.16	3,150	1.05 37.1	43.1 0.173	33		40,000/60°C
109P0824M201			0.04	0.96	2,000	0.65 23.0	18.6 0.075	21		60,000/60°C
109P0848H201	48	43 to 53	0.06	2.88	3,350	1.10 38.9	50.9 0.204	35	-20 to +70	40,000/60°C

Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 467 to 468).

Dimensions (unit: mm) (With ribs)



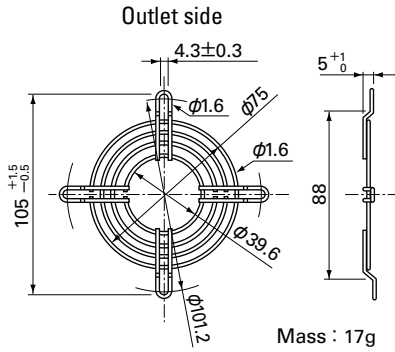
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

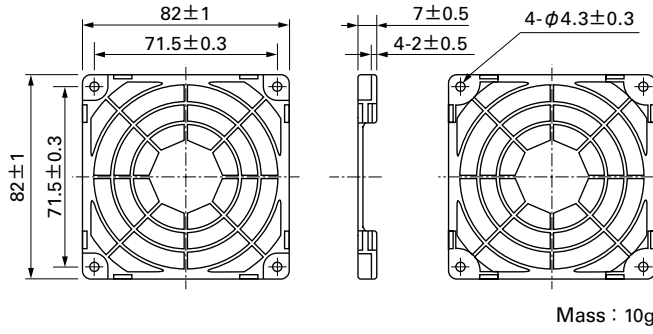
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color : 109-049H Surface treatment : Nickel-chrome plating (silver) Cation electropainting (black)



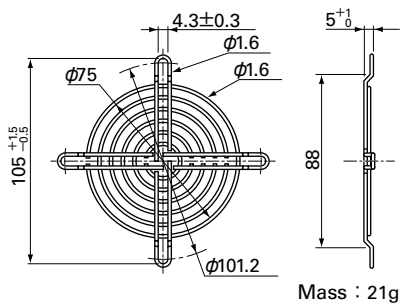
Resin Finger Guards

Model : 109-1002G



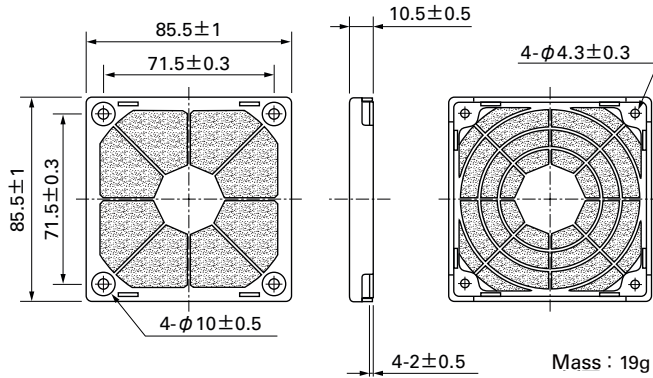
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color : 109-049H Surface treatment : Nickel-chrome plating (silver) Cation electropainting (black)

Inlet side, Outlet side

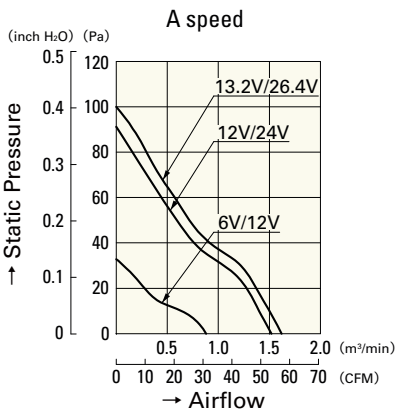


Resin Filter Kits

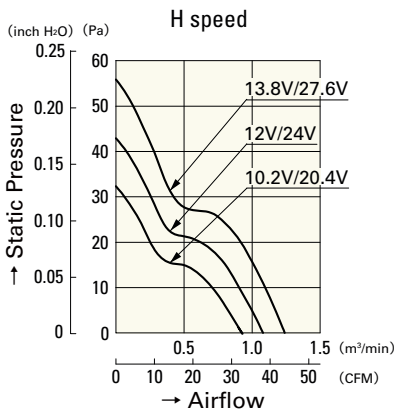
Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI) : 109-1002F30 (30PPI), 109-1002F40 (40PPI)



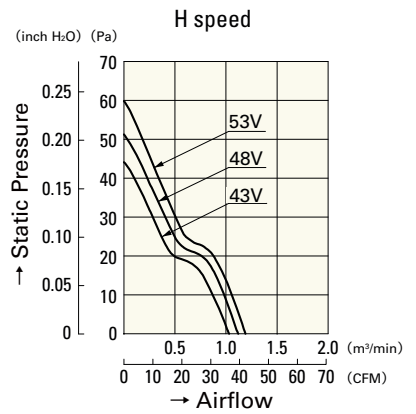
Airflow - Static Pressure Characteristics



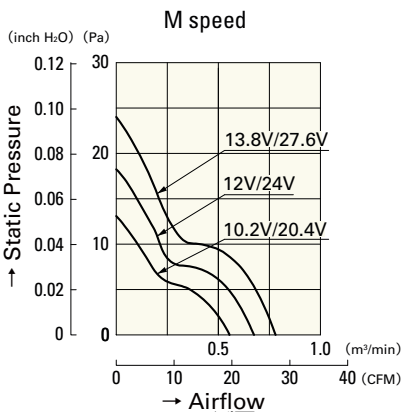
109P0812A201
109P0824A201



109P0812H201
109P0824H201



109P0848H201



109P0812M201
109P0824M201

80mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×38mm (Mass : 230g) **9HV type**

Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

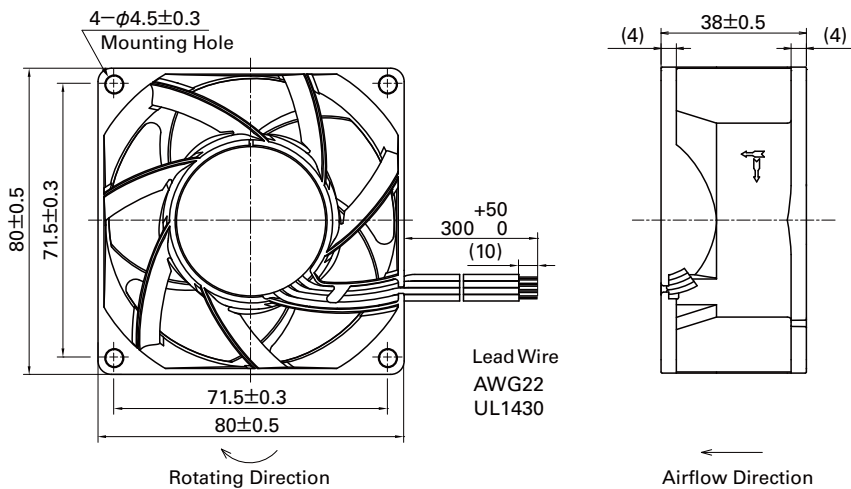
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^(Note2) [h]
9HV0812P1G001	12	10.8 to 13.2	100	3.4	40.8	14,900	3.7 130.7	1,000 4.0	69	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.64	7.68	4,400	1.06 37.5	87.2 0.35	40		
9HV0824P1G003 ^(Note1)	24	21.6 to 26.4	100	1.7	40.8	14,900	3.7 130.7	1,000 4.0	69		
9HV0848P1G001	48	36 to 57	100	0.85	40.8	14,900	3.7 130.7	1,000 4.0	69	-10 to +70	
			0	0.13	6.24	4,400	1.06 37.5	87.2 0.35	40		

Note 1: Rated voltage 48V fans do not rotate when PWM duty cycle is 0%.
Note 2: Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (p. 478).

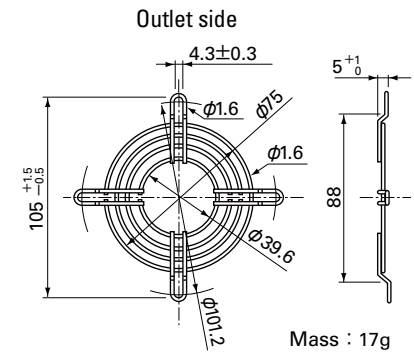
Dimensions (unit: mm) (With ribs)



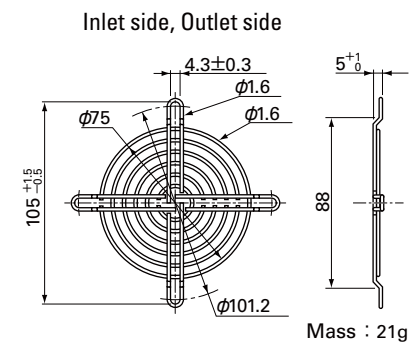
Options (unit: mm)

Finger Guards

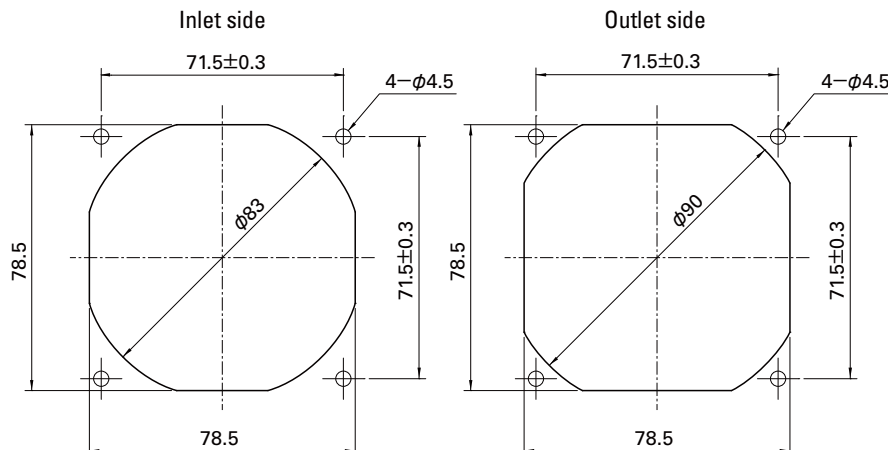
Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color



Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color
: 109-049H : Cation electropainting (black)



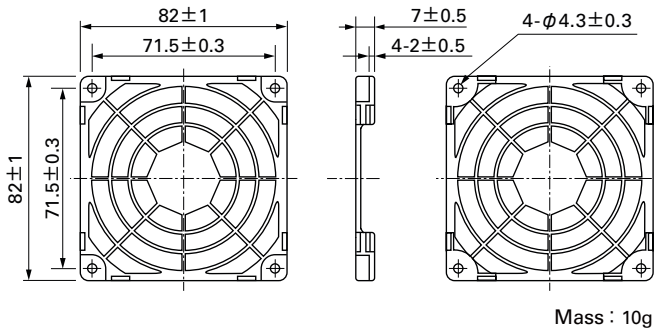
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

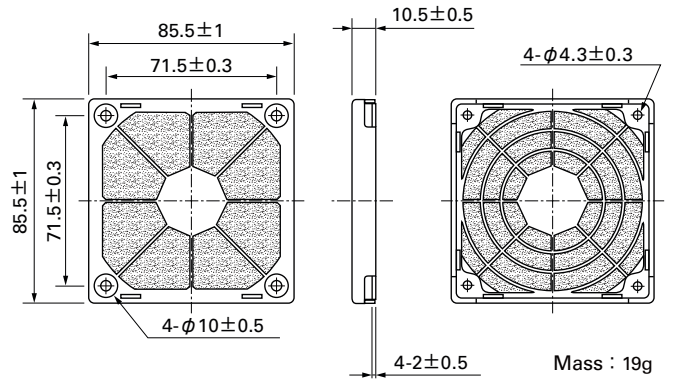
Resin Finger Guards

Model : 109-1002G



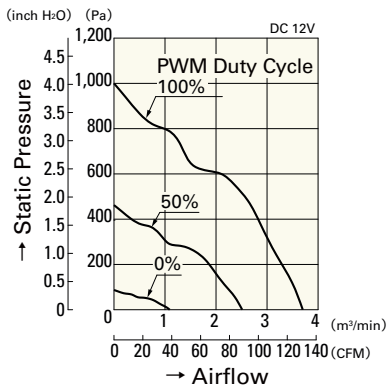
Resin Filter Kits

Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)

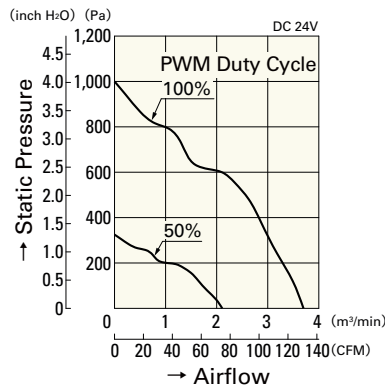


Airflow - Static Pressure Characteristics

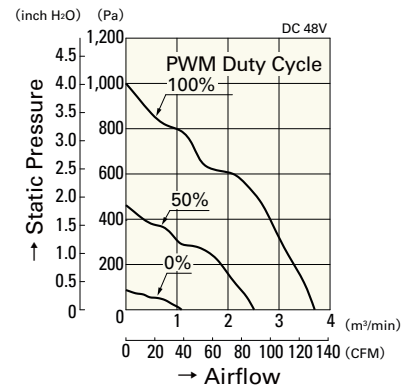
PWM Duty Cycle



9HV0812P1G001

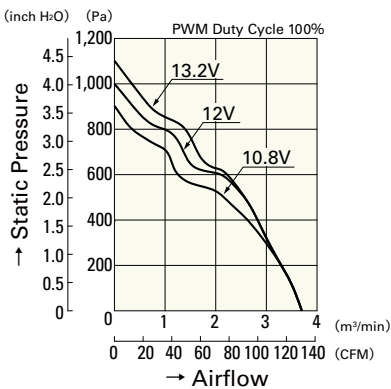


9HV0824P1G003

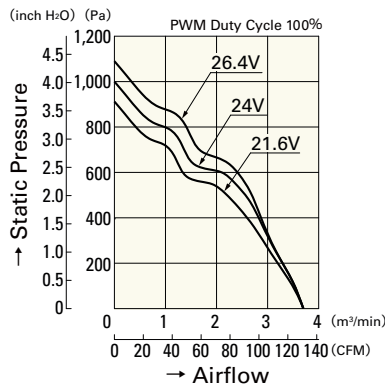


9HV0848P1G001

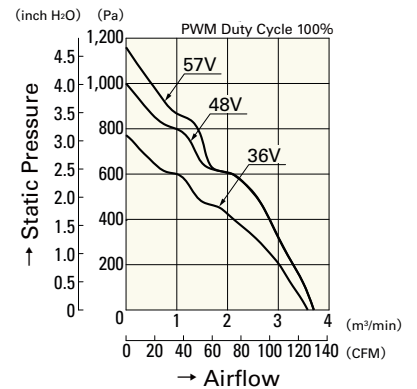
Operating Voltage Range



9HV0812P1G001

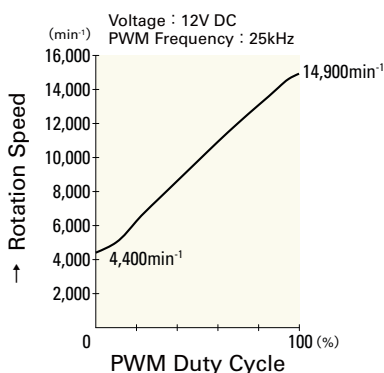


9HV0824P1G003

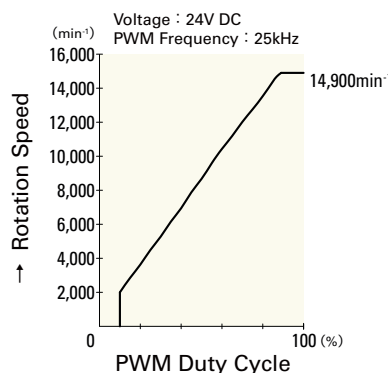


9HV0848P1G001

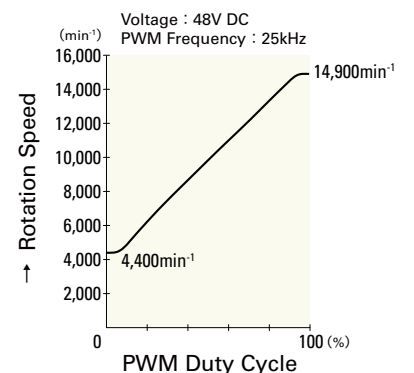
PWM Duty - Speed Characteristics Example



9HV0812P1G001



9HV0824P1G003



9HV0848P1G001

80 mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×38 mm (Mass : 160g) **9GA** type **Low Power Consumption Fan**



Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

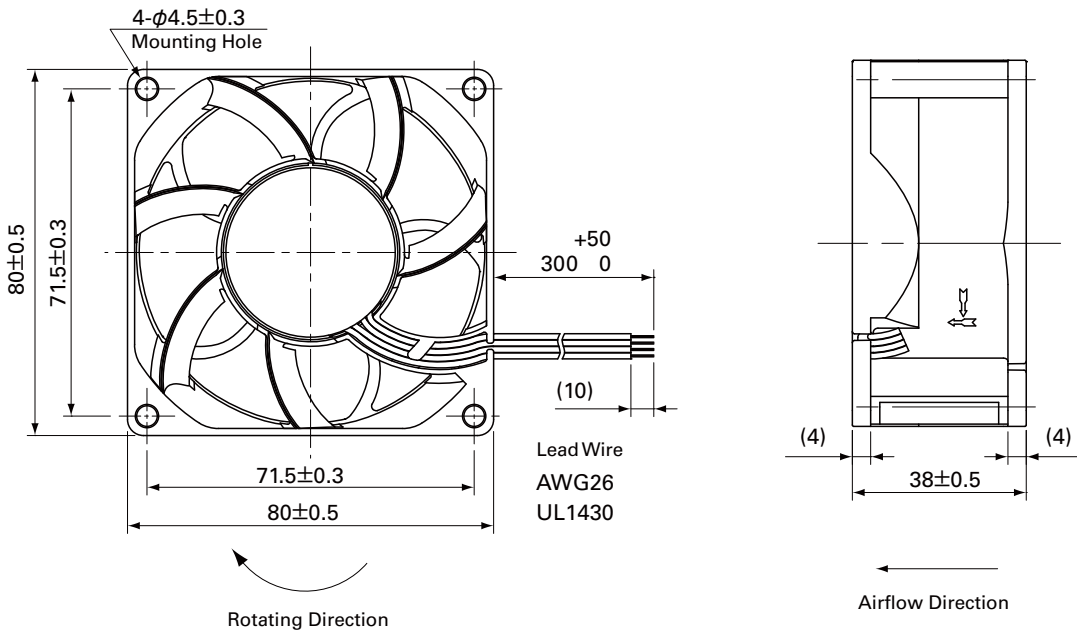
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{typ} [h]
9GA0812P1G61	12	10.8 to 13.2	100	1.2	14.4	10,500	2.85 100.6	480 1.92	60	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.04	0.48	2,000	0.51 18.0	28.7 0.11	21		
9GA0812P1S61			100	0.94	11.28	9,550	2.6 91.8	480 1.93	59		
			0	0.1	1.2	2,900	0.74 26.1	60 0.24	27		
9GA0812P1H61			100	0.6	7.2	8,250	2.25 79.4	380 1.53	55		
			0	0.08	0.96	2,500	0.64 22.6	45 0.18	24		
9GA0824P1S61	24	20.4 to 27.6	100	0.47	11.28	9,550	2.6 91.8	480 1.93	59		
			0	0.06	1.44	2,900	0.74 26.1	60 0.24	27		
9GA0824P1H61			100	0.3	7.2	8,250	2.25 79.4	380 1.53	55		
			0	0.05	1.2	2,500	0.64 22.6	45 0.18	24		

Note: Expected life at 40°C ambient is just reference value.

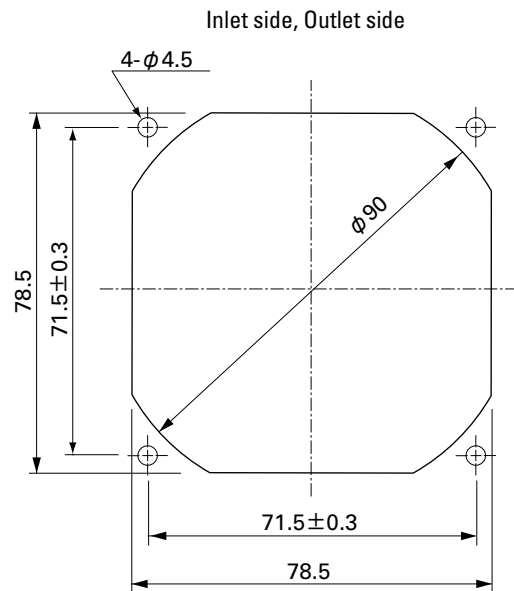
*PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (p. 475).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

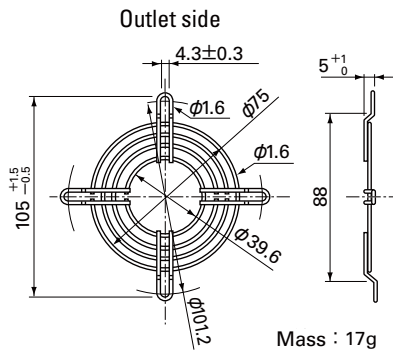


Options (unit: mm)

Finger Guards

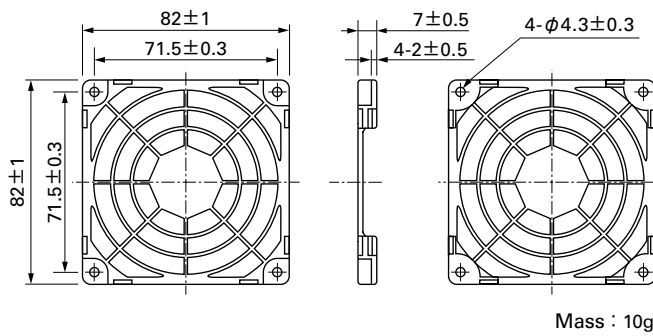
Model : 109-049C Surface treatment : Nickel-chrome plating (silver)

Color



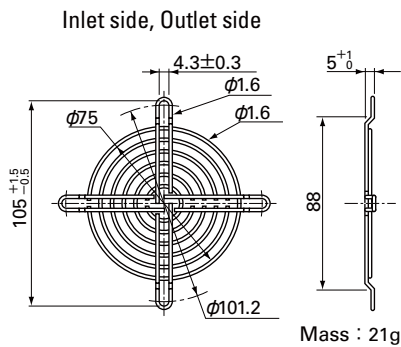
Resin Finger Guards

Model : 109-1002G



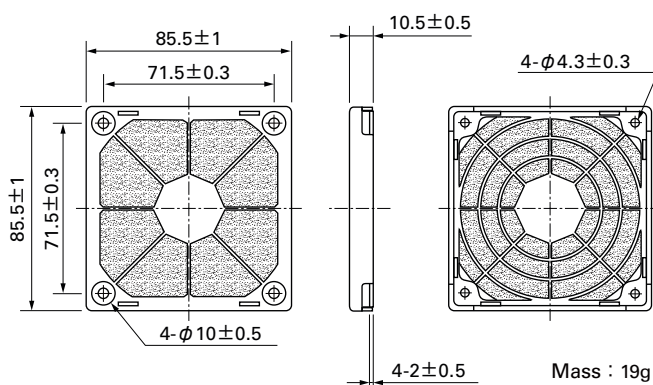
Model : 109-049E Surface treatment : Nickel-chrome plating (silver)
: 109-049H : Cation electropainting (black)

Color



Resin Filter Kits

Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



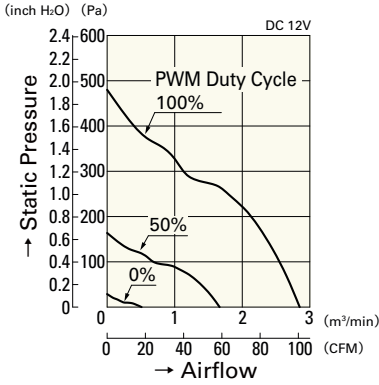
80 mm sq.

San Ace 80

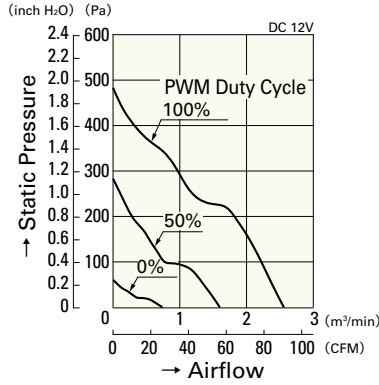
80×80×38mm [Mass : 160g]

Airflow - Static Pressure Characteristics

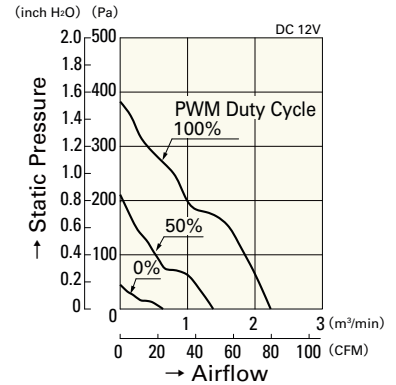
PWM Duty Cycle



9GA0812P1G61

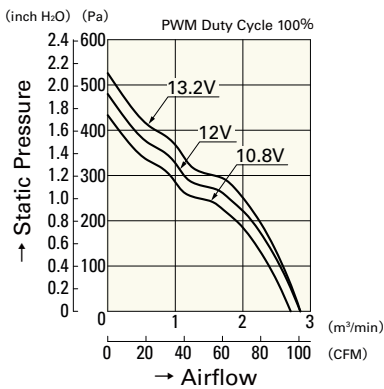


9GA0812P1S61

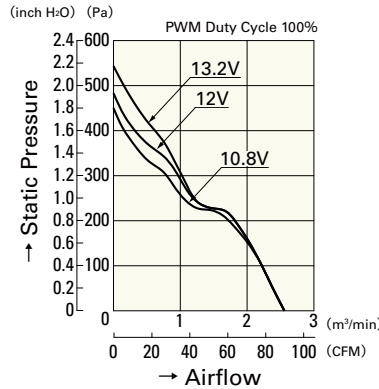


9GA0812P1H61

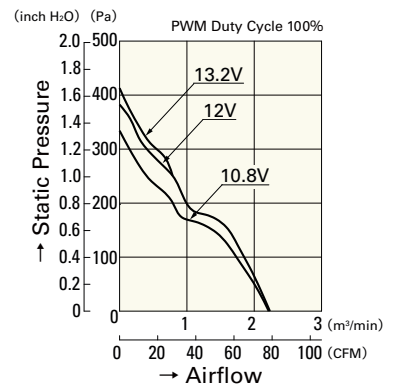
Operating Voltage Range



9GA0812P1G61

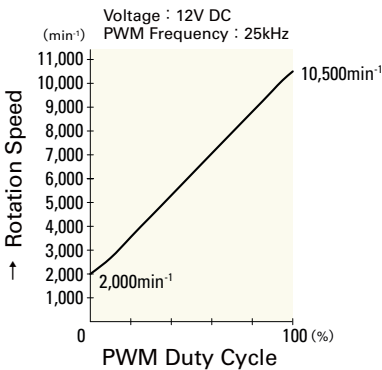


9GA0812P1S61

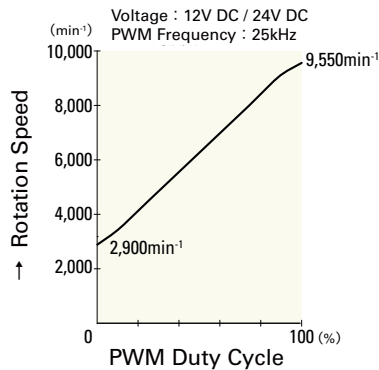


9GA0812P1H61

PWM Duty - Speed Characteristics Example

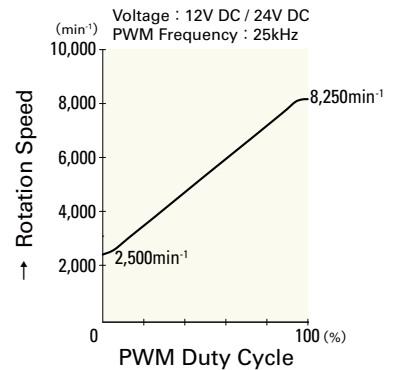


9GA0812P1G61



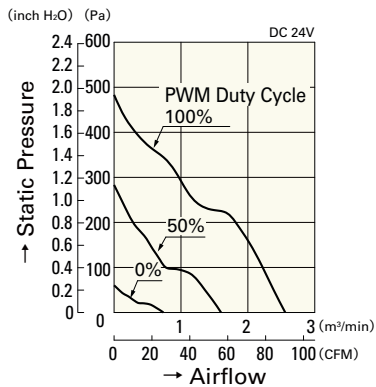
9GA0812P1S61

9GA0824P1S61

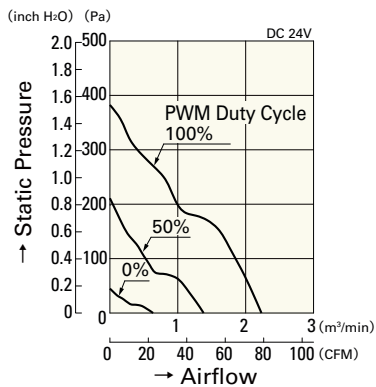


9GA0812P1H61

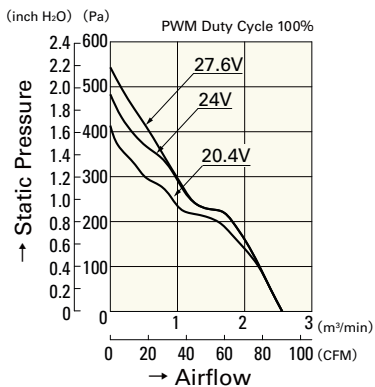
9GA0824P1H61



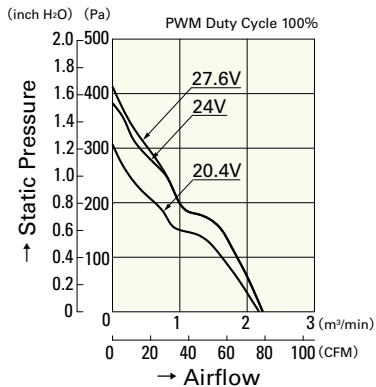
9GA0824P1S61



9GA0824P1H61



9GA0824P1S61



9GA0824P1H61

80 mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×38mm (Mass : 220g) **9GV type**

Specifications

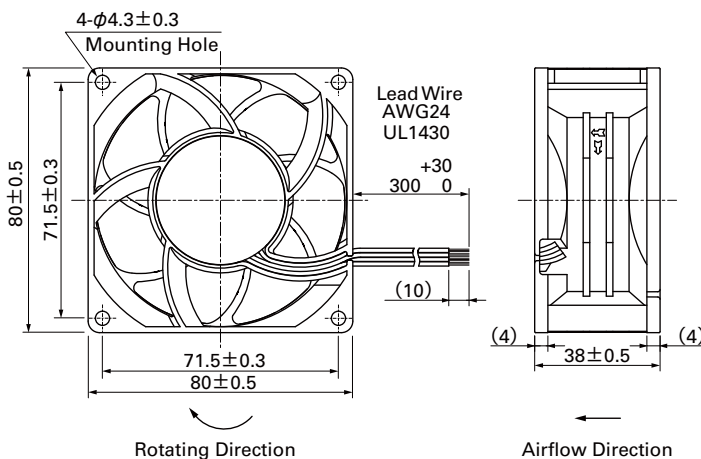
The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]	
9GV0812P1G03	12	10.8 to 13.2	100	3.80	45.60	10,200	3.90 138.0	490.0 1.97	65	-20 to +70	40,000/60°C	
			0	0.32	3.84	3,000	1.15 40.6	42.4 0.17	34			
9GV0812P1H03			100	3.00	36.00	9,700	3.70 131.0	440.0 1.77	63			
			0	0.20	2.40	2,900	1.11 39.2	39.0 0.16	34			
9GV0812P1F03			10.2 to 13.8	100	1.5	18	8,000	3.05 108.0	301.0 1.21			58
				0	0.12	1.44	2,400	0.92 32.0	27.1 0.11			26
9GV0812P1M03	100	0.75		9	6,000	2.29 81.0	169.0 0.68	51				
	0	0.09		1.08	1,700	0.65 23.0	13.6 0.05	19				
9GV0824P1G03	24	20.4 to 27.6		100	1.6	38.40	10,200	3.9 138.0	490.0 1.97			65
				0	0.3	7.2	4,700	1.79 63.2	104.0 0.41			44
9GV0848P1G03	48	40.8 to 55.2	100	0.84	40.32	10,200	3.9 138.0	490.0 1.97	65			
			0	0.15	7.2	4,700	1.79 63.2	104.0 0.41	44			

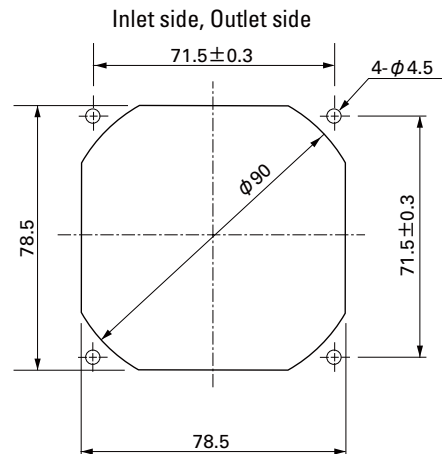
※PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (p. 477).

Dimensions (unit: mm) (With ribs)

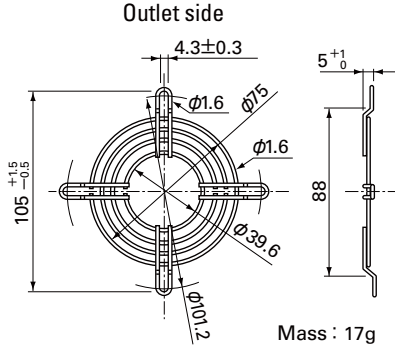


Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



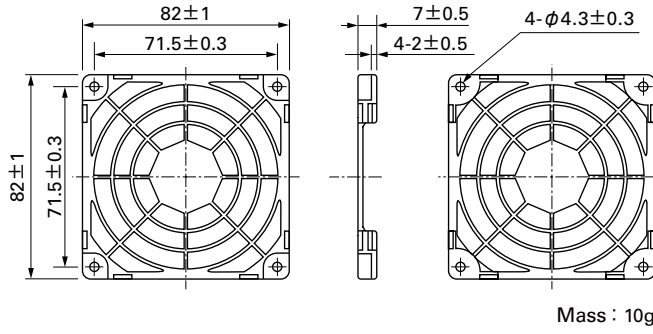
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color (silver)



Resin Finger Guards

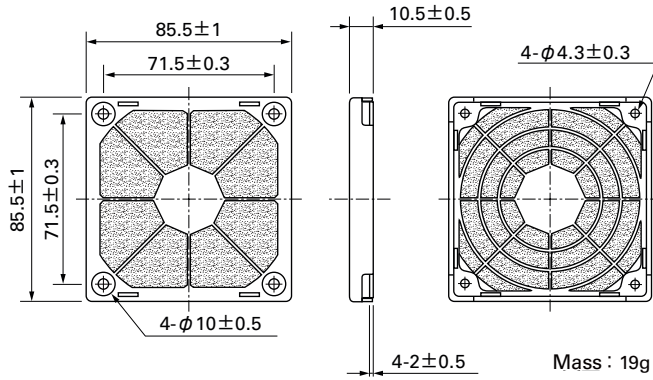
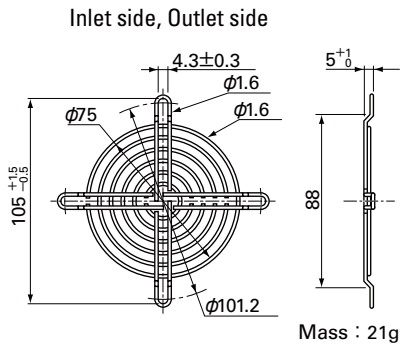
Model : 109-1002G



Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color (silver)
: 109-049H : Cation electropainting (black)

Resin Filter Kits

Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



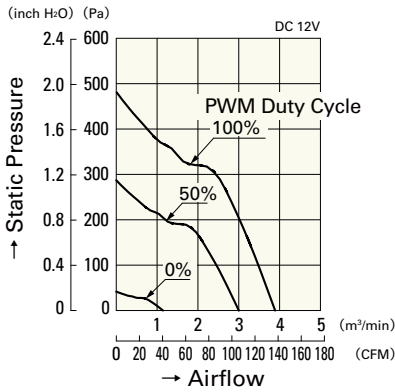
80mm sq.

San Ace 80

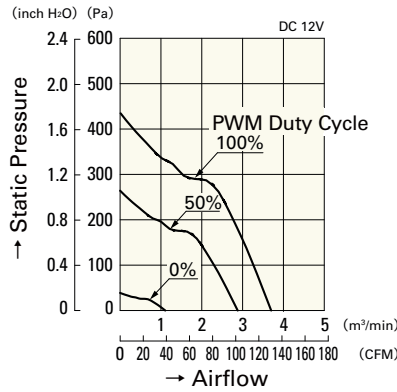
80×80×38mm [Mass : 220g]

Airflow - Static Pressure Characteristics

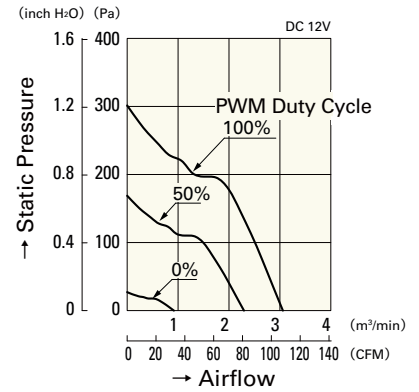
PWM Duty Cycle



9GV0812P1G03

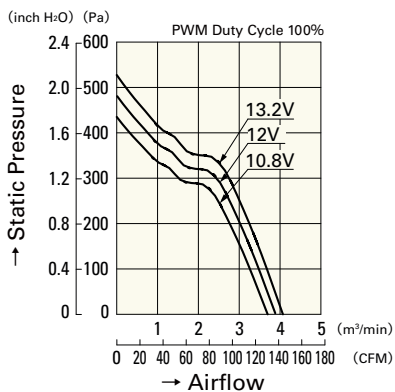


9GV0812P1H03

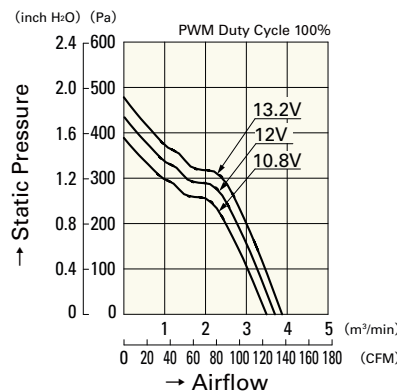


9GV0812P1F03

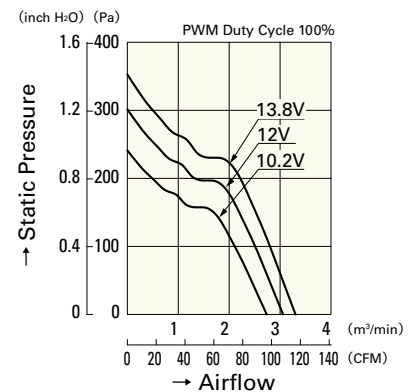
Operating Voltage Range



9GV0812P1G03

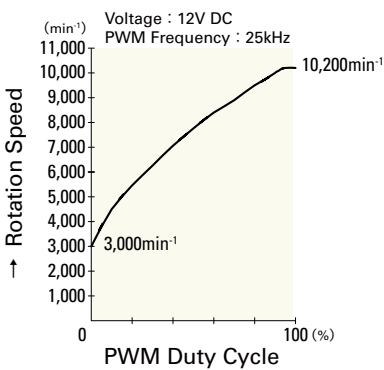


9GV0812P1H03

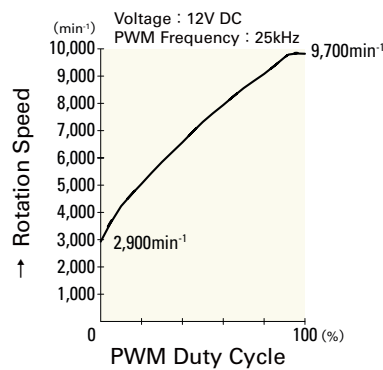


9GV0812P1F03

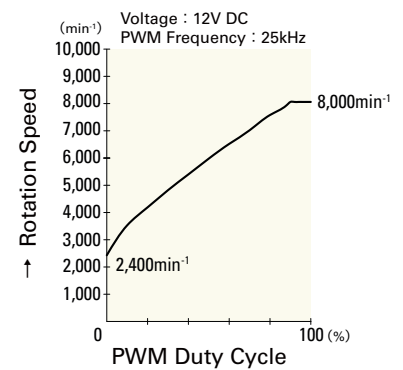
PWM Duty - Speed Characteristics Example



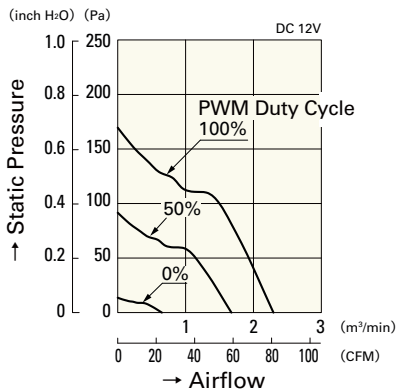
9GV0812P1G03



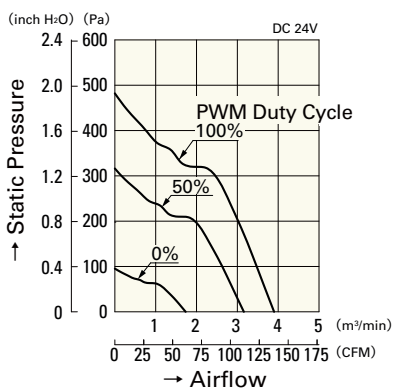
9GV0812P1H03



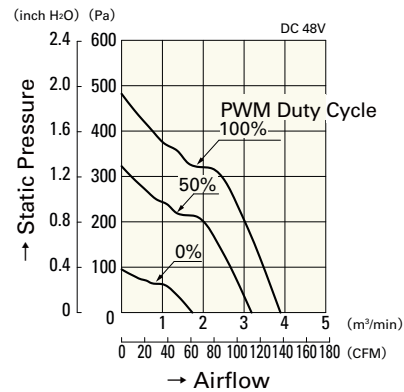
9GV0812P1F03



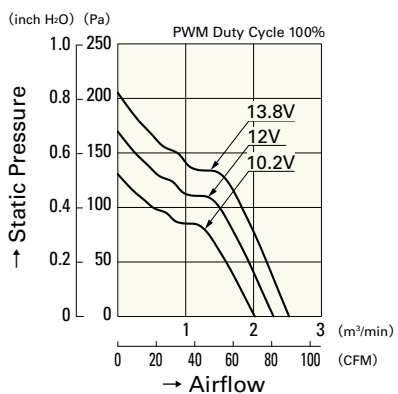
9GV0812P1M03



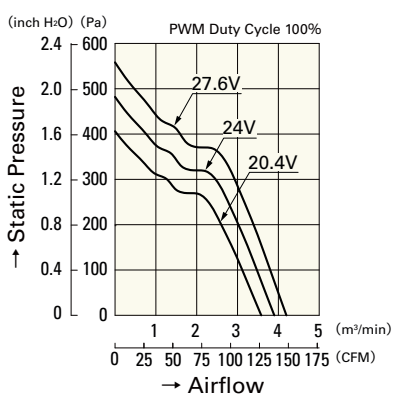
9GV0824P1G03



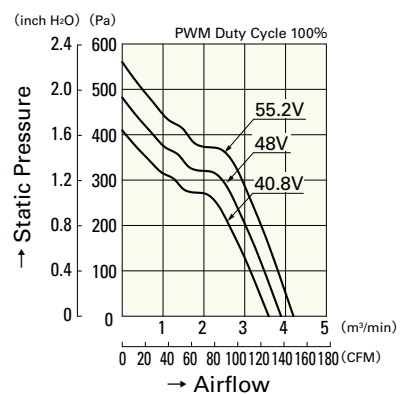
9GV0848P1G03



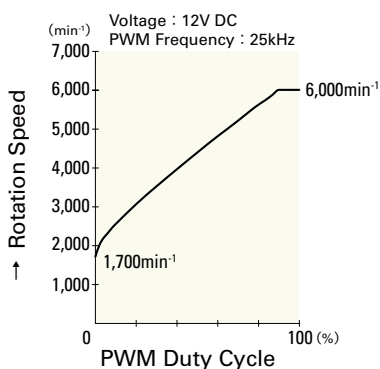
9GV0812P1M03



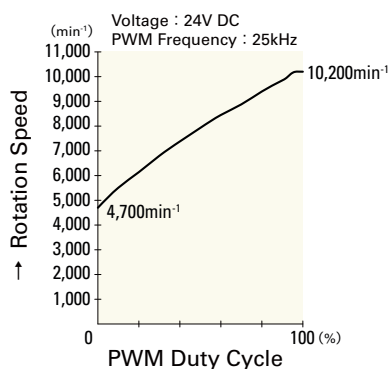
9GV0824P1G03



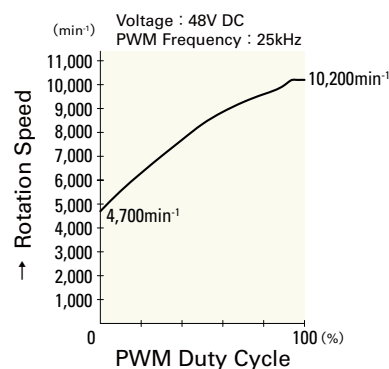
9GV0848P1G03



9GV0812P1M03



9GV0824P1G03



9GV0848P1G03

80 mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×38mm (Mass : 170g) **9G type**

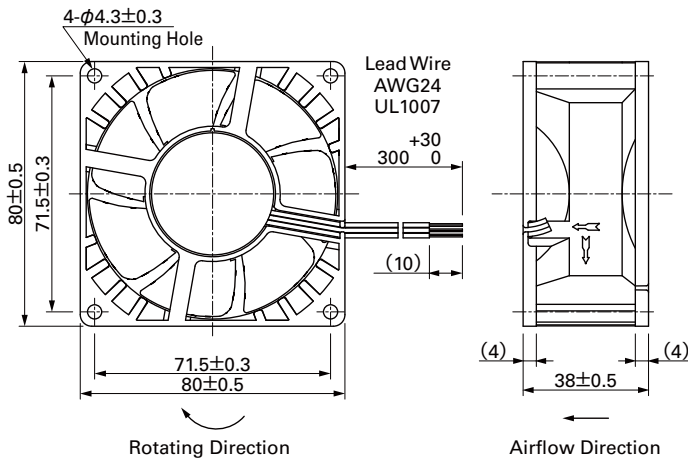
Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

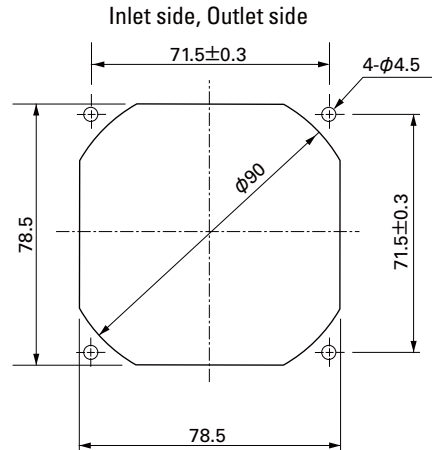
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9G0812K101	12	10.8 to 13.2	1.8	21.6	7,800	3.10 107.3	310 1.285	58	-20 to +60	40,000/60°C
9G0812G101		7 to 13.8	1.1	13.2	6,300	2.55 90	211 0.847	51		
9G0812H101			0.9	10.8	5,700	2.28 80	171 0.687	49		
9G0824G101	24	20.4 to 27.6	0.56	13.4	6,300	2.55 90	211 0.847	51		
9G0824H101			0.42	10.1	5,700	2.28 80	171 0.687	49		
9G0848G101	48	40.8 to 55.2	0.27	13.0	6,300	2.55 90	211 0.847	51		
9G0848H101			0.20	9.6	5,700	2.28 80	171 0.687	49		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 472).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



92mm sq.

San Ace 92



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×25mm (Mass : 125g) **9GA type** **Low Power Consumption Fan**



Specifications

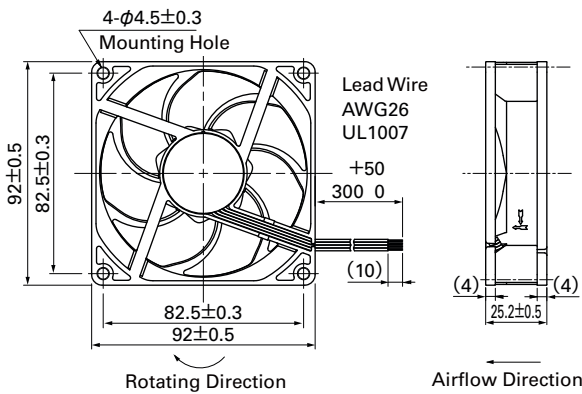
The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GA0912P4J03	12	10.2 to 13.8	100	0.39	4.68	5,000	2.20 77.7	105 0.42	43	-20 to +70	60,000/60°C
			0	0.06	0.72	1,500	0.66 23.3	9.5 0.04	14		
9GA0912P4G03			100	0.28	3.36	4,400	1.93 68.2	81 0.33	39		
			0	0.06	0.72	1,500	0.66 23.3	9.5 0.04	14		
9GA0912P4S03			100	0.2	2.4	3,800	1.67 59.0	60.6 0.24	35		
			0	0.06	0.72	1,500	0.66 23.3	9.5 0.04	14		
9GA0924P4J03	24	20.4 to 27.6	100	0.2	4.80	5,000	2.20 77.7	105 0.42	43		
			0	0.04	0.96	1,500	0.66 23.3	9.5 0.04	14		
9GA0924P4G03			100	0.15	3.60	4,400	1.93 68.2	81 0.33	39		
			0	0.04	0.96	1,500	0.66 23.3	9.5 0.04	14		
9GA0924P4S03			100	0.12	2.88	3,800	1.67 59.0	60.6 0.24	35		
			0	0.04	0.96	1,500	0.66 23.3	9.5 0.04	14		

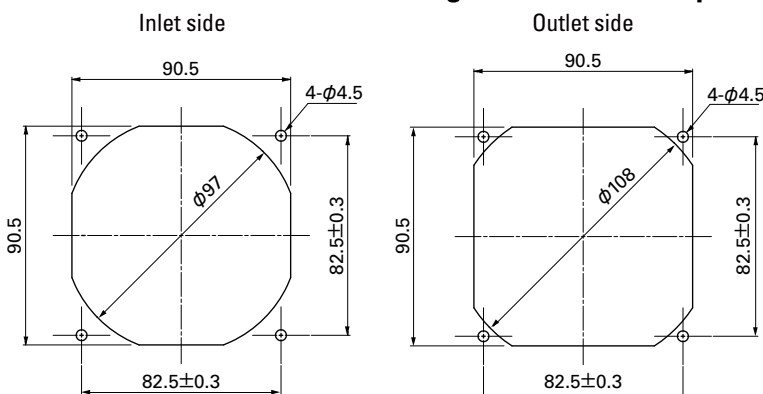
※PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (p. 476).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



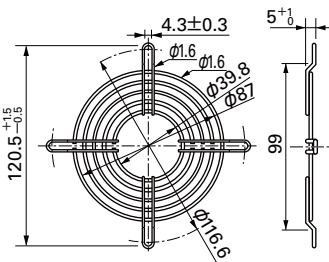
Options (unit: mm)

Finger Guards

Model : 109-099C Surface treatment : Nickel-chrome plating (silver) Color

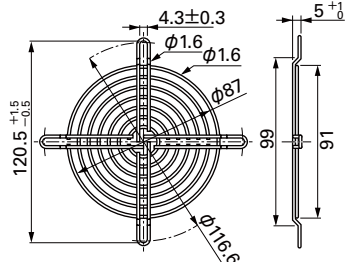
Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color
: 109-099H : Cation electropainting (black)

Outlet side



Mass : 22g

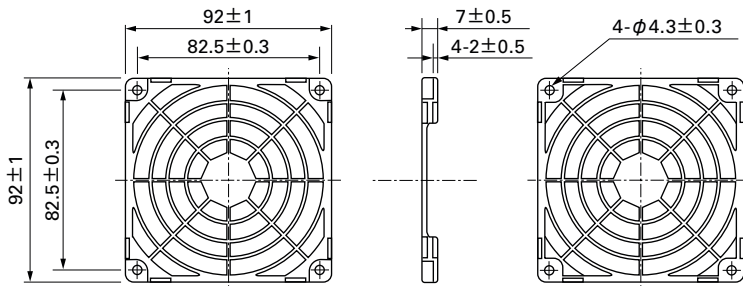
Inlet side, Outlet side



Mass : 29g

Resin Finger Guards

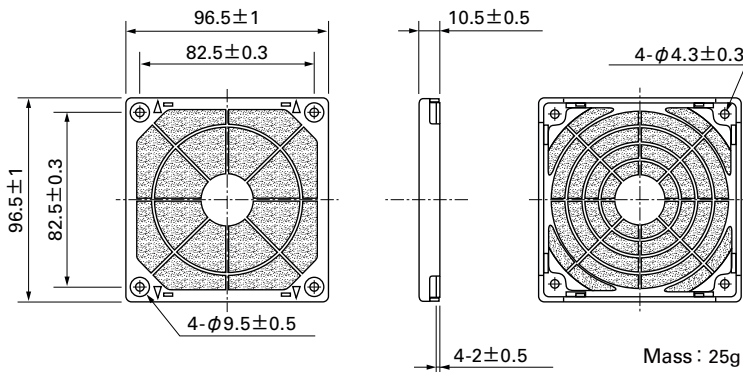
Model : 109-1001G



Mass : 12g

Resin Filter Kits

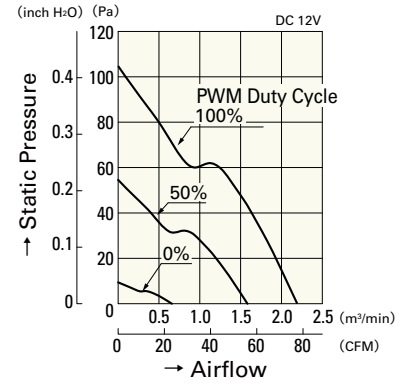
Model : 109-1001F13 (13PPI), 109-1001F20 (20PPI)
: 109-1001F30 (30PPI), 109-1001F40 (40PPI)



Mass : 25g

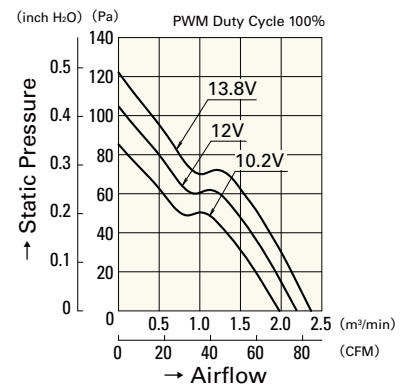
Airflow - Static Pressure Characteristics

PWM Duty Cycle



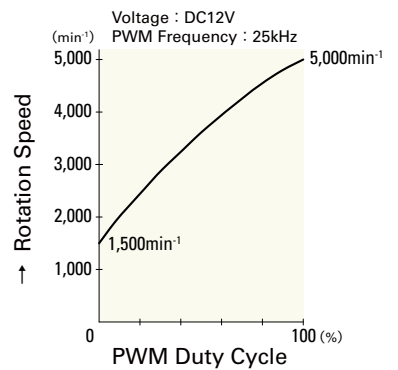
9GA0912P4J03

Operating Voltage Range



9GA0912P4J03

PWM Duty - Speed Characteristics Example



9GA0912P4J03

DC

DC Fan 92mm

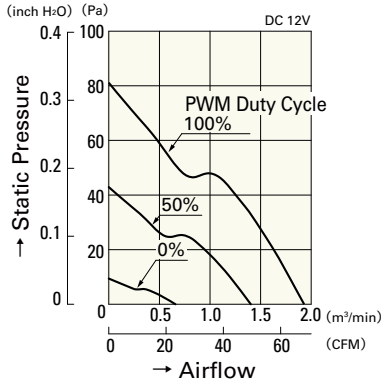
92mm sq.

San Ace 92

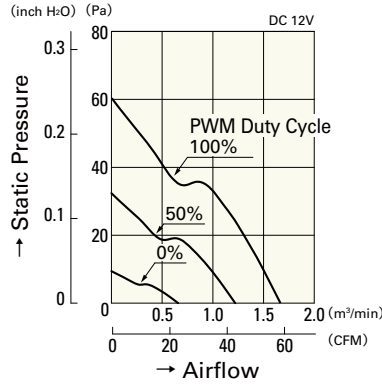
92×92×25mm [Mass : 125g]

Airflow - Static Pressure Characteristics

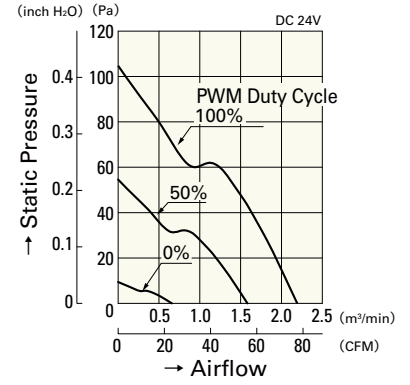
PWM Duty Cycle



9GA0912P4G03

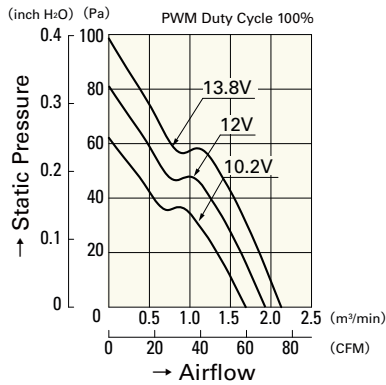


9GA0912P4S03

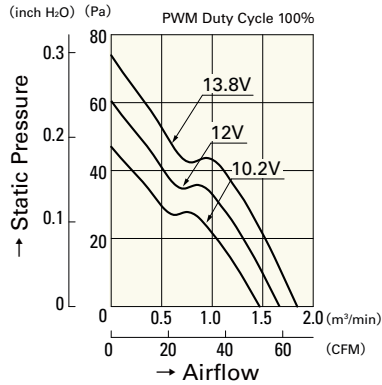


9GA0924P4J03

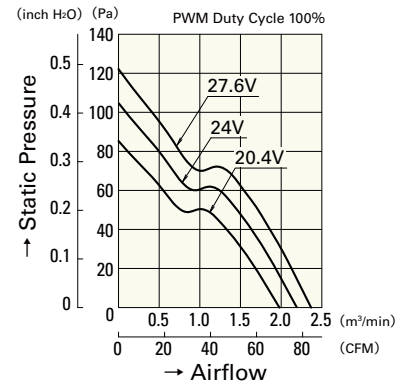
Operating Voltage Range



9GA0912P4G03

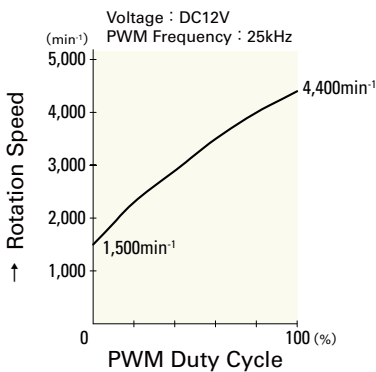


9GA0912P4S03

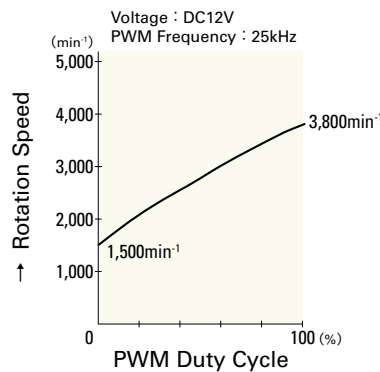


9GA0924P4J03

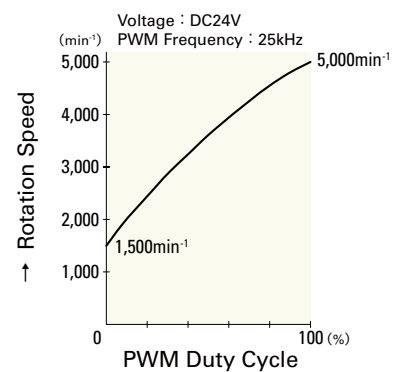
PWM Duty - Speed Characteristics Example



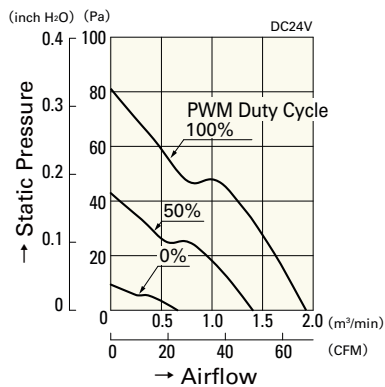
9GA0912P4G03



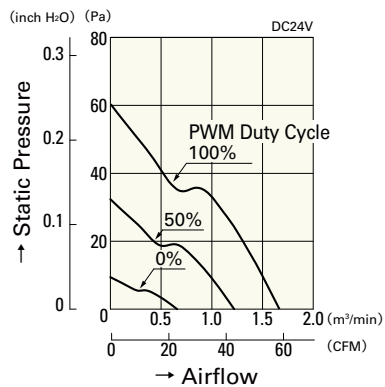
9GA0912P4S03



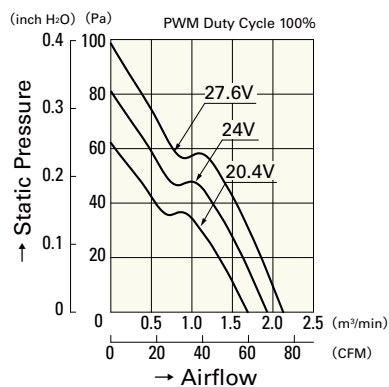
9GA0924P4J03



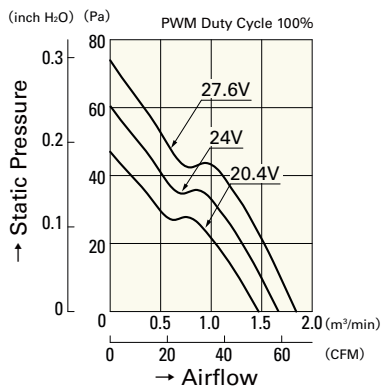
9GA0924P4G03



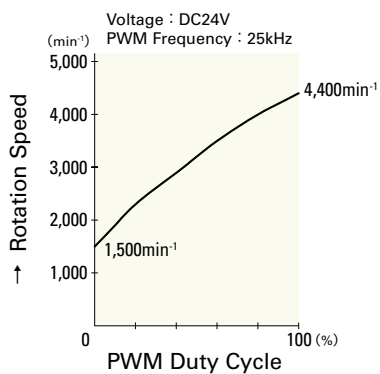
9GA0924P4S03



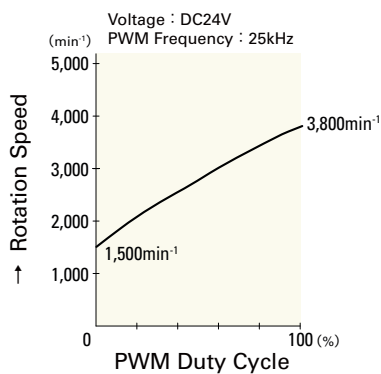
9GA0924P4G03



9GA0924P4S03



9GA0924P4G03



9GA0924P4S03

92mm sq.

San Ace 92



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×25mm (Mass : 100g) **9S type** **Silent Fan**

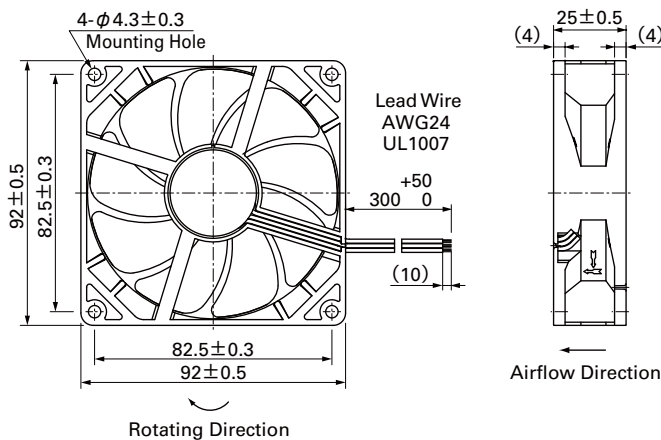
Specifications

The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

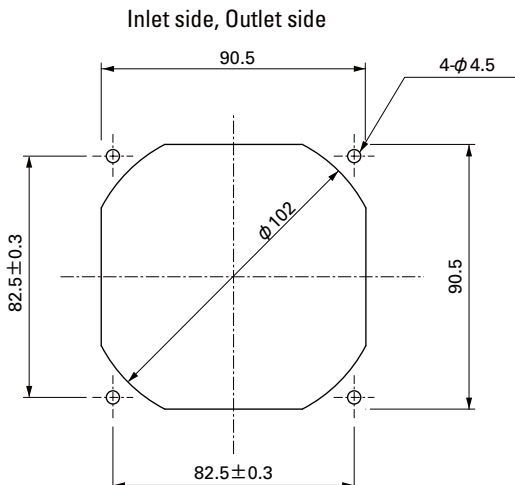
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9S0912F401	12	5.0 to 13.8	0.14	1.68	2,650	1.26	44.5	30.0	0.120	27
9S0912M401			0.11	1.32	2,250	1.07	37.8	21.6	0.087	22
9S0912L401		6.0 to 13.8	0.07	0.84	1,750	0.83	29.3	13.1	0.053	17
9S0924F401	24	14 to 26.4	0.09	2.16	2,650	1.26	44.5	30.0	0.120	27
9S0924M401			0.07	1.68	2,250	1.07	37.8	21.6	0.087	22
9S0924L401			0.04	0.96	1,750	0.83	29.3	13.1	0.053	17

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 480).

Dimensions (unit: mm) (With ribs)



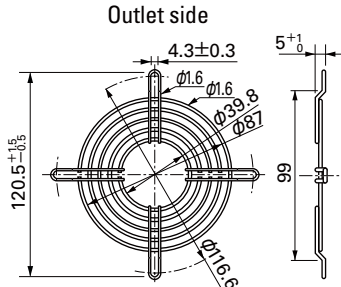
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

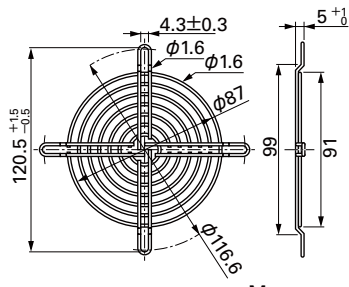
Model : 109-099C Surface treatment : Nickel-chrome plating (silver) Color



Mass : 22g

Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color
: 109-099H : Cation electropainting (black)

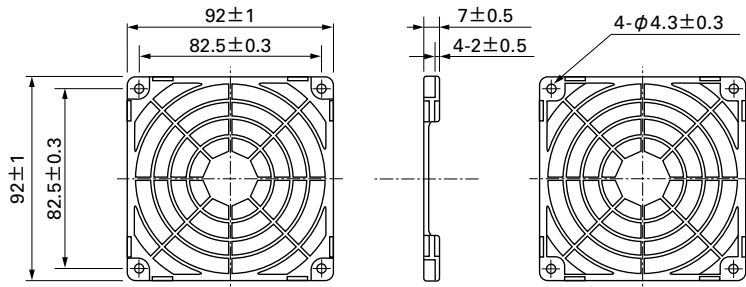
Inlet side, Outlet side



Mass : 29g

Resin Finger Guards

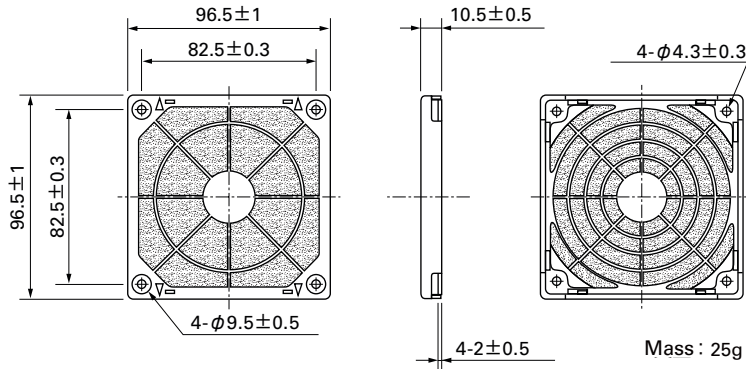
Model : 109-1001G



Mass : 12g

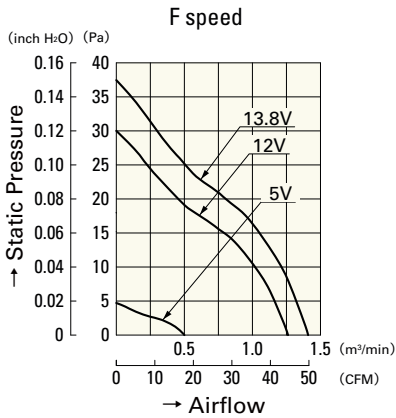
Resin Filter Kits

Model : 109-1001F13 (13PPI), 109-1001F20 (20PPI)
: 109-1001F30 (30PPI), 109-1001F40 (40PPI)

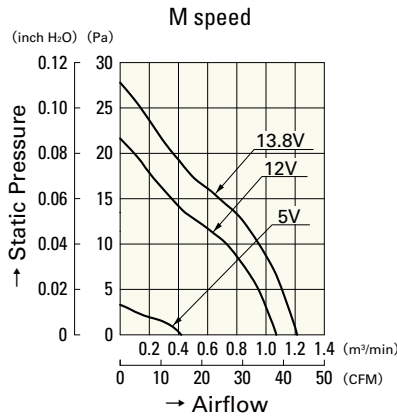


Mass : 25g

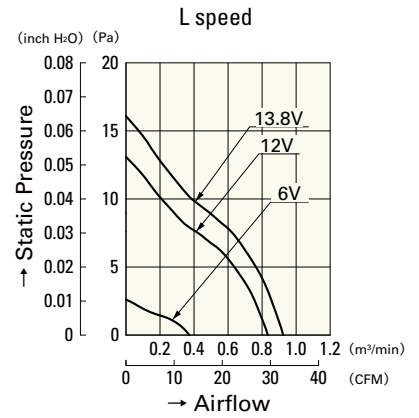
Airflow - Static Pressure Characteristics



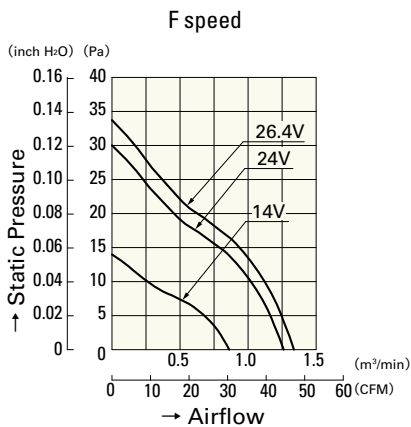
9S0912F401



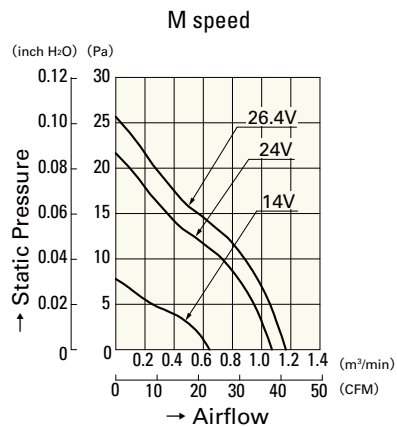
9S0912M401



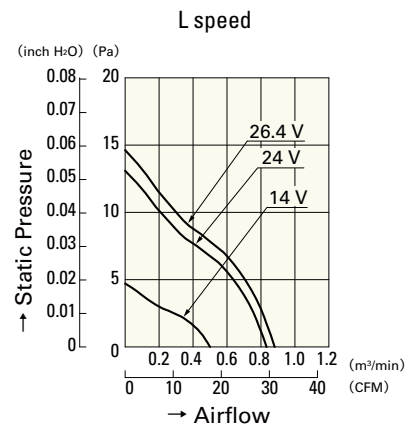
9S0912L401



9S0924F401



9S0924M401



9S0924L401

92mm sq.

San Ace 92



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×25mm (Mass : 100g) **9A type** **San Cooler**

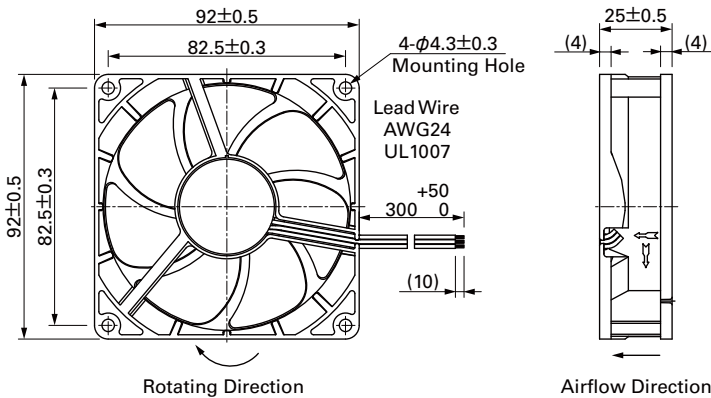
Specifications

The following nos. have pulse sensors and ribs. For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9A0912G401	12	6 to 13.8	0.39	4.68	3,900	1.76 62.1	66.5 0.267	43	-20 to +60	30,000/60°C
9A0912S401			0.27	3.24	3,550	1.66 58.6	56.1 0.225	39		
9A0912H401			0.21	2.52	3,150	1.45 51.2	44 0.177	33		
9A0912F401			0.14	1.68	2,650	1.24 43.8	32.2 0.129	30		
9A0912M401			0.12	1.44	2,250	1.04 36.7	22.6 0.091	27		
9A0912L401			0.07	0.84	1,750	0.8 28.2	13.4 0.054	23		
9A0924G401	24	12 to 27.6	0.19	4.56	3,900	1.76 62.1	66.5 0.267	43	-20 to +60	30,000/60°C
9A0924S401			0.15	3.6	3,550	1.66 58.6	56.1 0.225	39		
9A0924H401			0.1	2.4	3,150	1.45 51.2	44 0.177	33		
9A0924F401			0.08	1.92	2,650	1.24 43.8	32.2 0.129	30		
9A0924M401			0.05	1.2	2,250	1.04 36.7	22.6 0.091	27		
9A0924L401			0.04	0.96	1,750	0.8 28.2	13.4 0.054	23		
9A0948S401	48	40.5 to 53	0.08	3.84	3,550	1.66 58.6	56.1 0.225	39	-20 to +60	40,000/60°C

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 470).

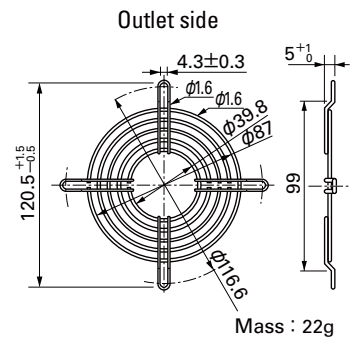
Dimensions (unit: mm) (With ribs)



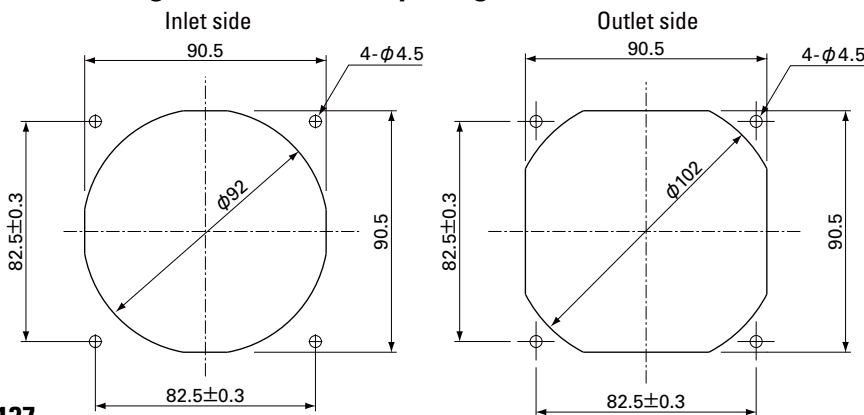
Options (unit: mm)

Finger Guards

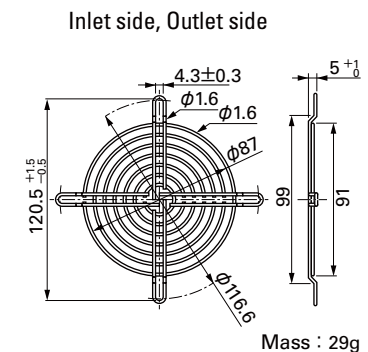
Model : 109-099C Surface treatment : Nickel-chrome plating (silver) Color



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



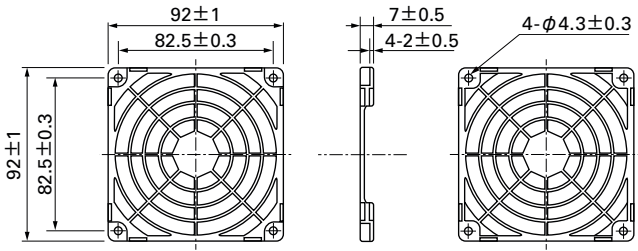
Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color
: 109-099H : Cation electropainting (black)



Options (unit: mm)

Resin Finger Guards

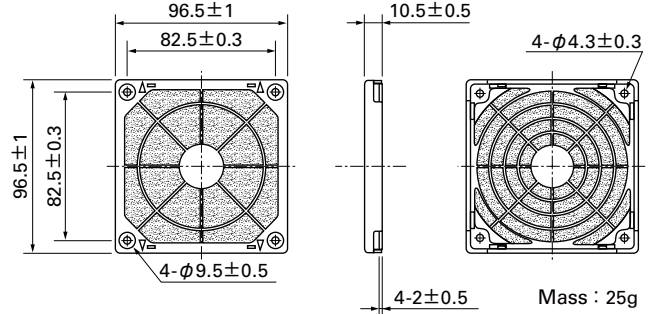
Model : 109-1001G



Mass : 12g

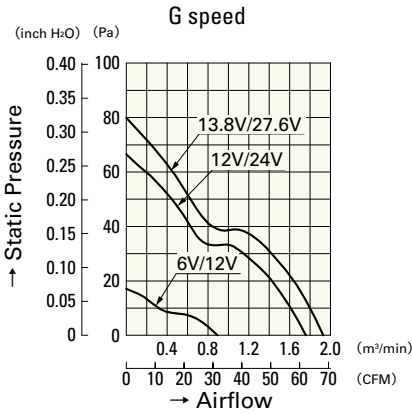
Resin Filter Kits

Model : 109-1001F13 (13PPI), 109-1001F20 (20PPI)
: 109-1001F30 (30PPI), 109-1001F40 (40PPI)

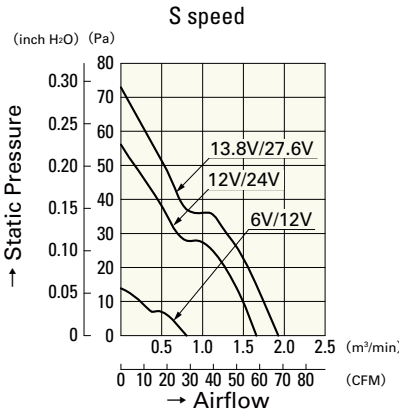


Mass : 25g

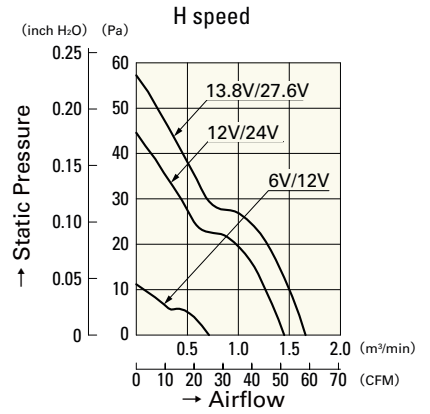
Airflow - Static Pressure Characteristics



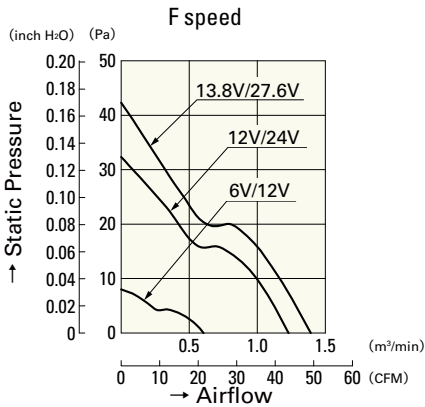
9A0912G401
9A0924G401



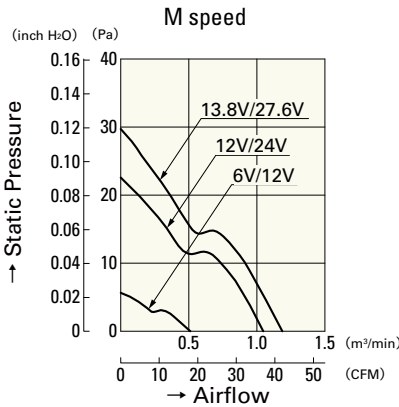
9A0912S401
9A0924S401



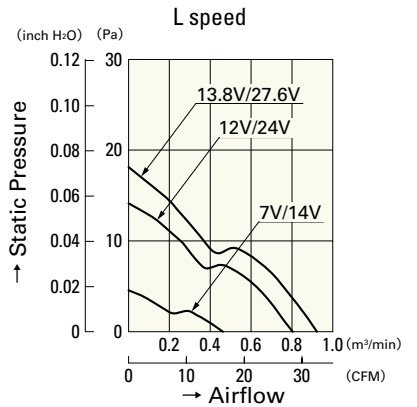
9A0912H401
9A0924H401



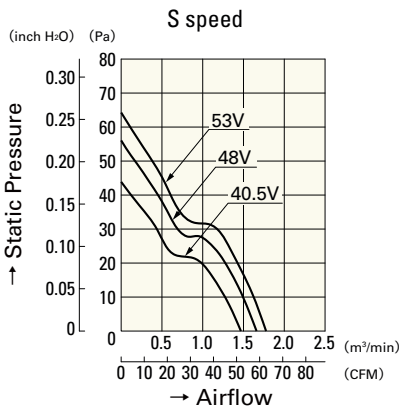
9A0912F401
9A0924F401



9A0912M401
9A0924M401



9A0912L401
9A0924L401



9A0948S401

92mm sq.

San Ace 92



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×32mm (Mass : 170g) **9G type**

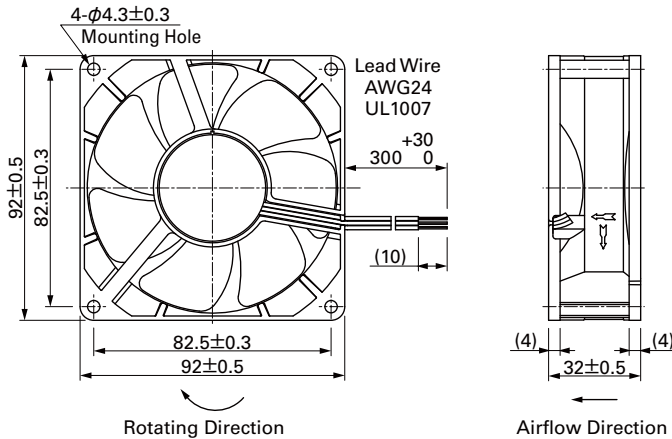
Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

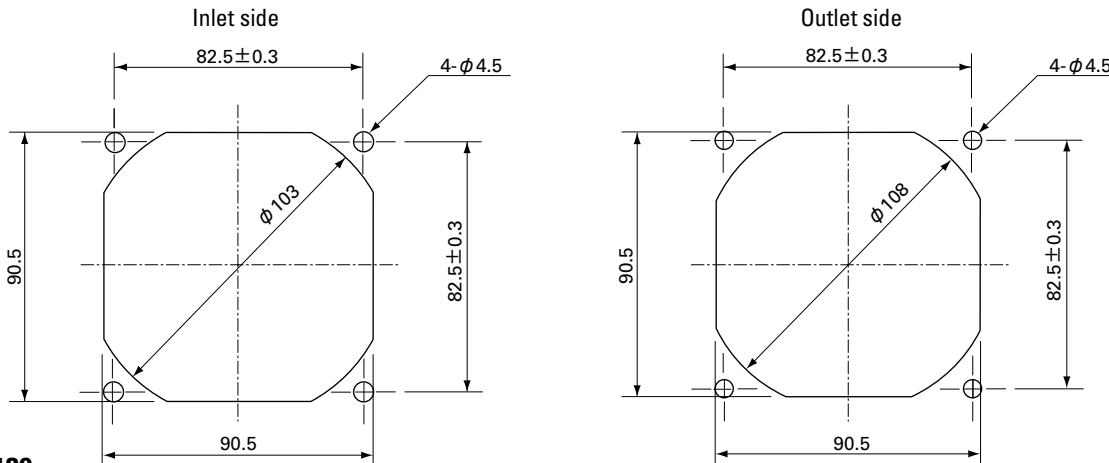
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9G0912A201	12	10.2 to 13.8	0.58	6.96	4,300	2.50 88.3	115 0.462	44	-20 to +70	40,000/60°C
9G0912S201			0.38	4.56	3,500	2.00 70.7	77 0.309	38		
9G0912H201			0.23	2.76	2,850	1.59 56.2	51 0.205	32		
9G0912M201			0.13	1.56	2,100	1.20 42.4	27 0.108	25		
9G0924A201	24	20.4 to 27.6	0.30	7.20	4,300	2.50 88.3	115 0.462	44	-20 to +60	
9G0924S201			0.19	4.56	3,500	2.00 70.7	77 0.309	38		
9G0924H201			0.12	2.88	2,850	1.59 56.2	51 0.205	32		
9G0924M201			0.08	1.92	2,100	1.20 42.4	27 0.108	25		
9G0948A201	48	40.8 to 55.2	0.16	7.68	4,300	2.50 88.3	115 0.462	44	-20 to +70	
9G0948S201			0.11	5.28	3,500	2.00 70.7	77 0.309	38		
9G0948H201			0.08	3.84	2,850	1.59 56.2	51 0.205	32		
9G0948M201			0.05	2.40	2,100	1.20 42.4	27 0.108	25		

Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 472 to 473).

Dimensions (unit: mm) (With ribs)



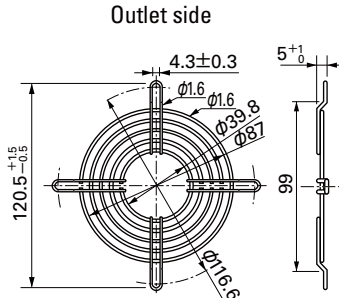
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

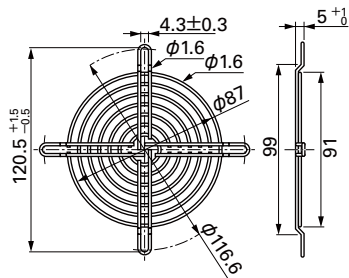
Model : 109-099C Color : Nickel-chrome plating (silver)



Mass : 22g

Model : 109-099E Color : Nickel-chrome plating (silver)
: 109-099H Color : Cation electropainting (black)

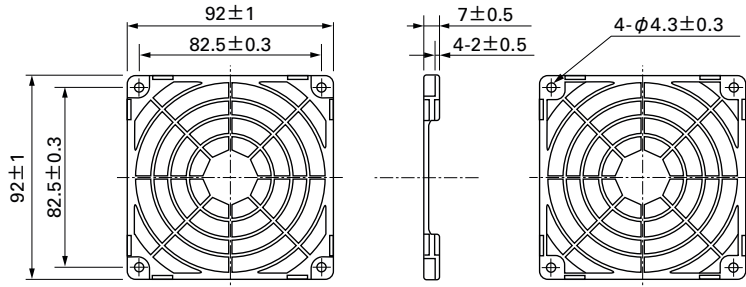
Inlet side, Outlet side



Mass : 29g

Resin Finger Guards

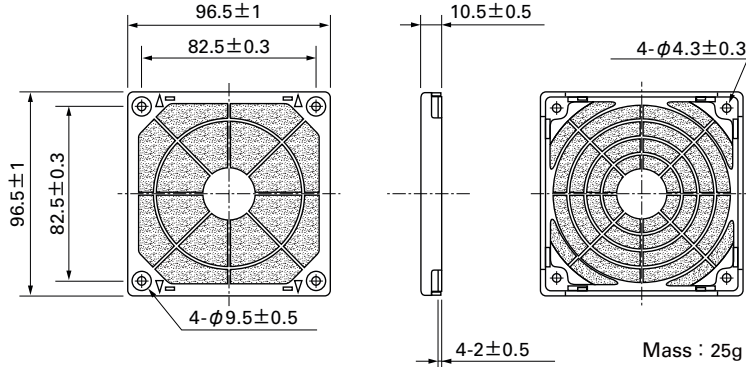
Model : 109-1001G



Mass : 12g

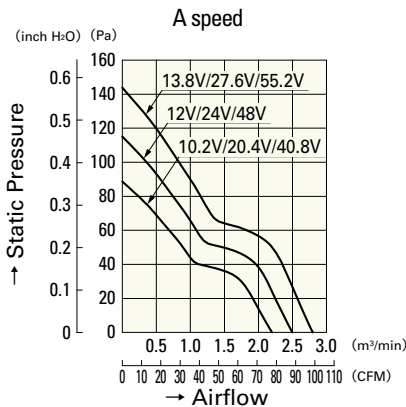
Resin Filter Kits

Model : 109-1001F13 (13PPI), 109-1001F20 (20PPI)
: 109-1001F30 (30PPI), 109-1001F40 (40PPI)

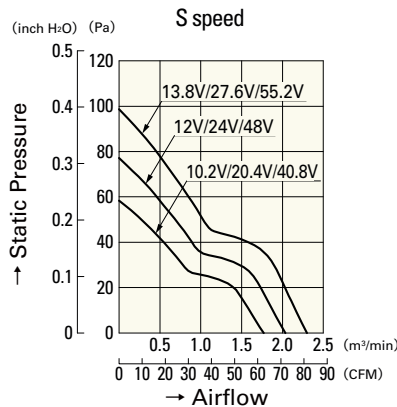


Mass : 25g

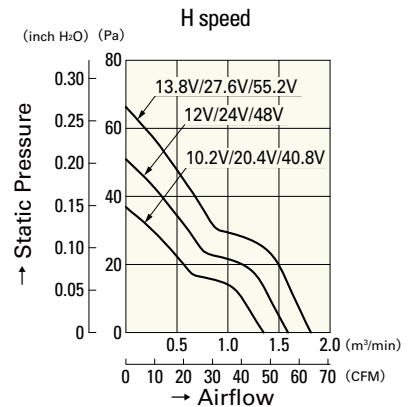
Airflow - Static Pressure Characteristics



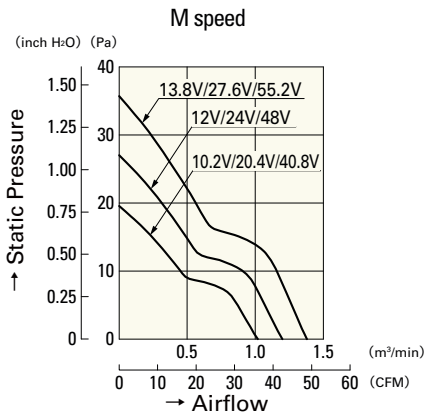
9G0912A201
9G0924A201
9G0948A201



9G0912S201
9G0924S201
9G0948S201



9G0912H201
9G0924H201
9G0948H201



9G0912M201
9G0924M201
9G0948M201

92mm sq.

San Ace 92



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×38mm (Mass : 240g) **9GA** type **Low Power Consumption Fan**



Specifications The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

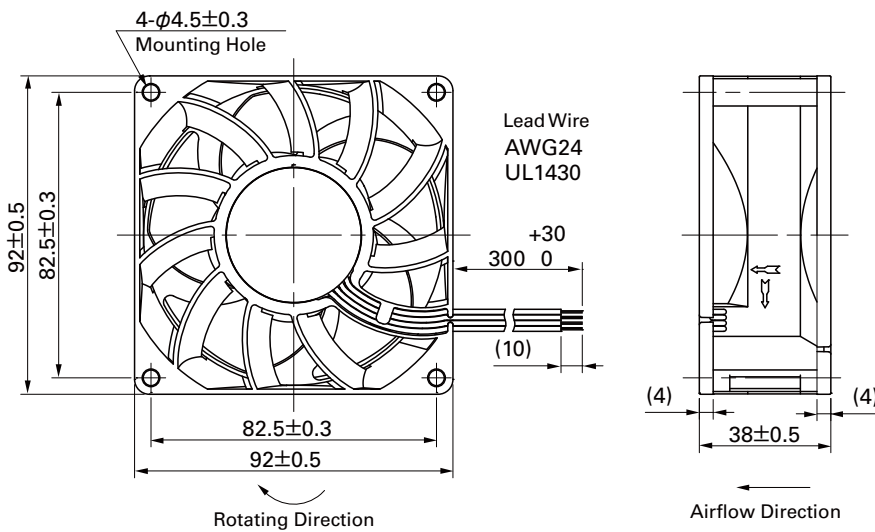
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{max} [h]
9GA0912P1H03	12	10.2 to 13.8	100	2.10	25.2	9,700	4.00 141	500 2.01	63	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.16	1.92	2,500	0.97 34.3	33 0.13	29		
9GA0924P1H01	24	20.4 to 27.6	100	1.1	26.4	9,700	4.00 141	500 2.01	63	-10 to +70	
			0	0.07	1.68	2,500	0.97 34.3	33 0.13	29		
9GA0948P1H03 (Note1)	48	40.8 to 55.2	100	0.55	26.4	9,700	4.00 141	500 2.01	63	-20 to +70	

Note 1: Rated voltage 48V fans do not rotate when PWM duty cycle is 0%.
Note 2: Expected life at 40°C ambient is just reference value.

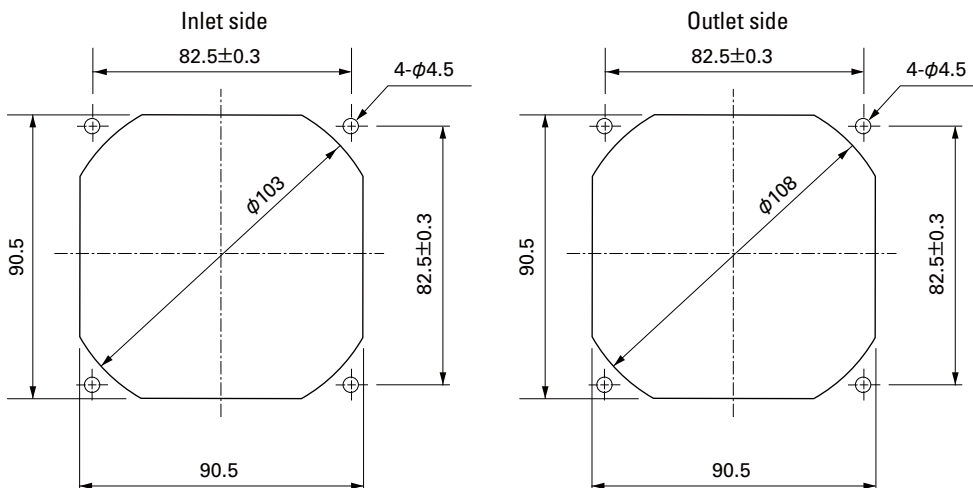
※PWM Frequency : 25kHz

Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (p. 476).

Dimensions (unit: mm) (With ribs)



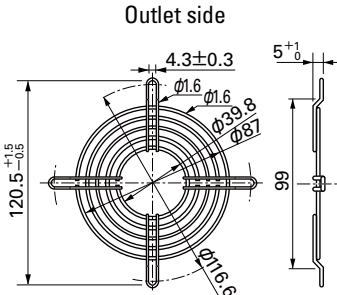
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

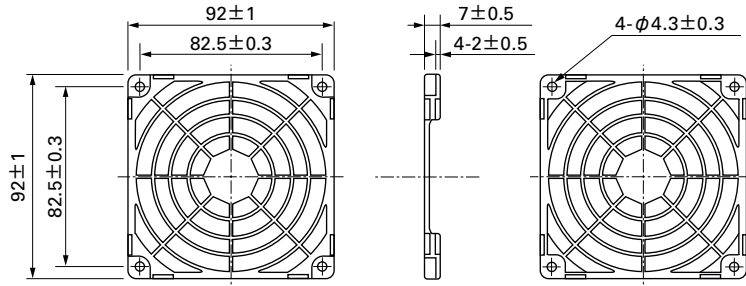
Model : 109-099C Color : Nickel-chrome plating (silver)



Mass : 22g

Resin Finger Guards

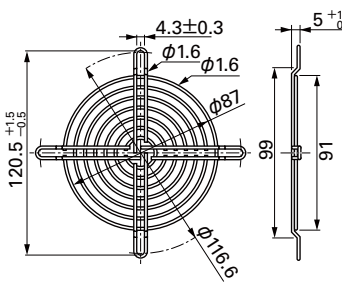
Model : 109-1001G



Mass : 12g

Model : 109-099E Surface treatment : Nickel-chrome plating (silver)
: 109-099H : Cation electropainting (black)

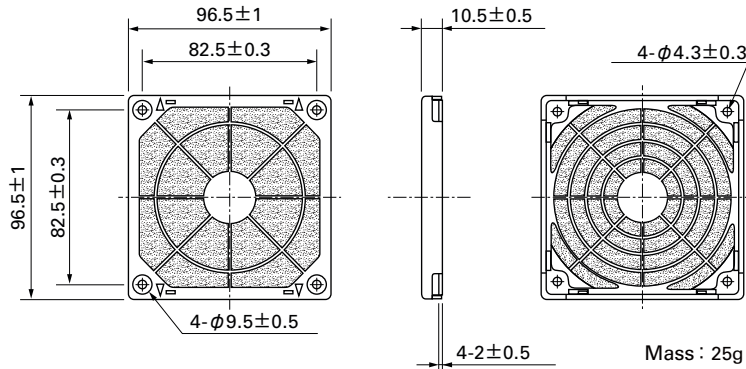
Inlet side, Outlet side



Mass : 29g

Resin Filter Kits

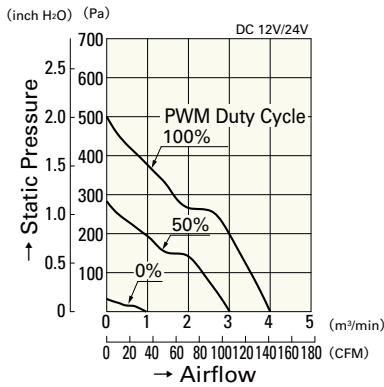
Model : 109-1001F13 (13PPI), 109-1001F20 (20PPI)
: 109-1001F30 (30PPI), 109-1001F40 (40PPI)



Mass : 25g

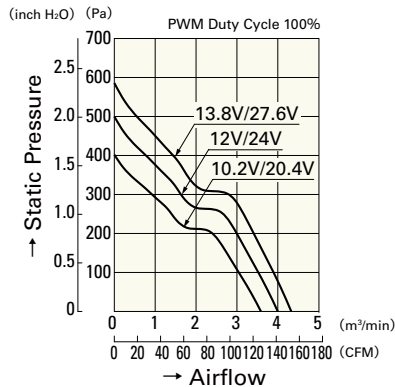
Airflow - Static Pressure Characteristics

PWM Duty Cycle



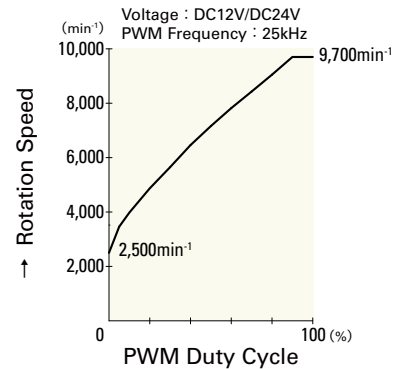
9GA0912P1H03
9GA0924P1H01

Operating Voltage Range

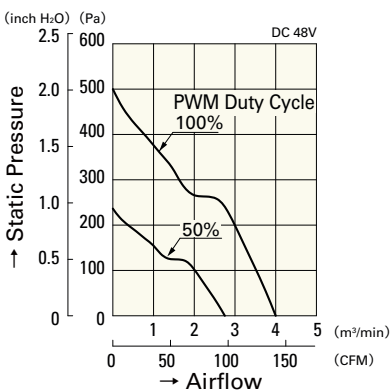


9GA0912P1H03
9GA0924P1H01

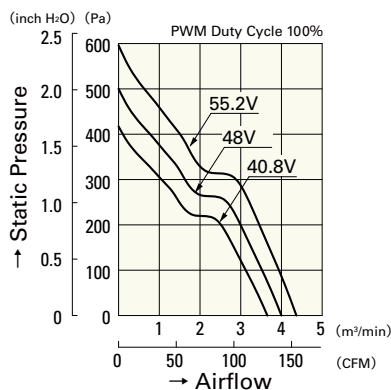
PWM Duty - Speed Characteristics Example



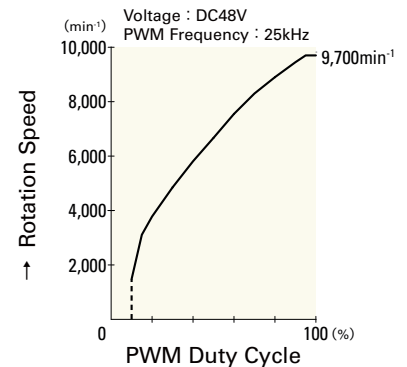
9GA0912P1H03
9GA0924P1H01



9GA0948P1H03



9GA0948P1H03



9GA0948P1H03

92mm sq.

San Ace 92



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×38mm (Mass : 250g)

9HV type



Specifications

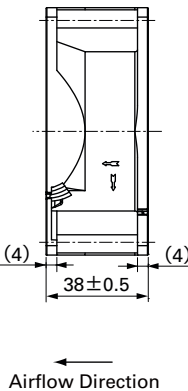
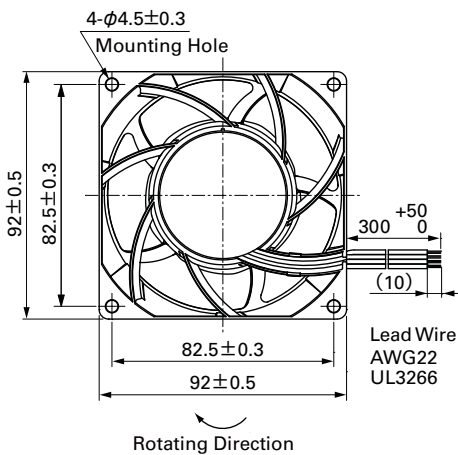
The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^(h) [h]
9HV0912P1G001	12	8 to 12.6	100	5.2	62.4	14,900	5.1 180	1,100 4.42	72	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.8	9.6	4,500	1.54 54.4	160 0.64	44		
9HV0948P1G001	48	36 to 60	100	1.2	57.6	14,900	5.1 180	1,100 4.42	72		
			0	0.15	7.2	4,500	1.54 54.4	160 0.64	44		

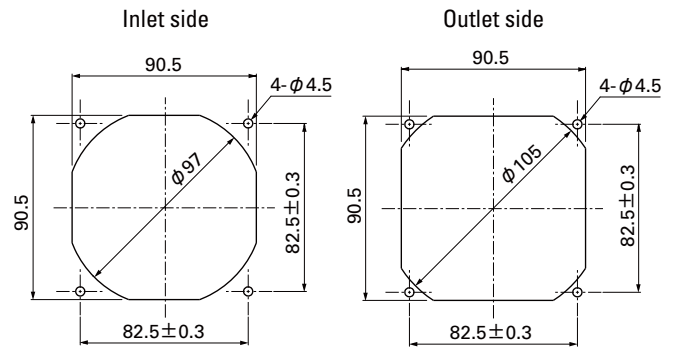
Note : Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

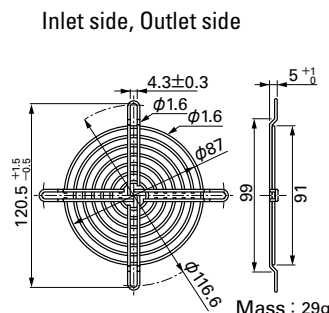
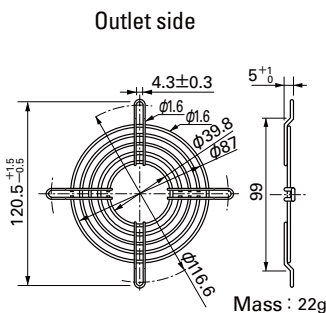


Options (unit: mm)

Finger Guards

Model : 109-099C Surface treatment : Nickel-chrome plating (silver) Color

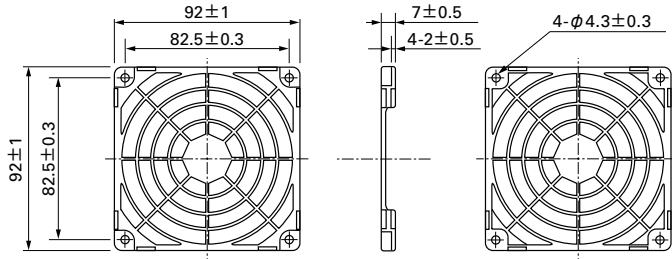
Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color
: 109-099H : Cation electropainting (black)



Options (unit: mm)

Resin Finger Guards

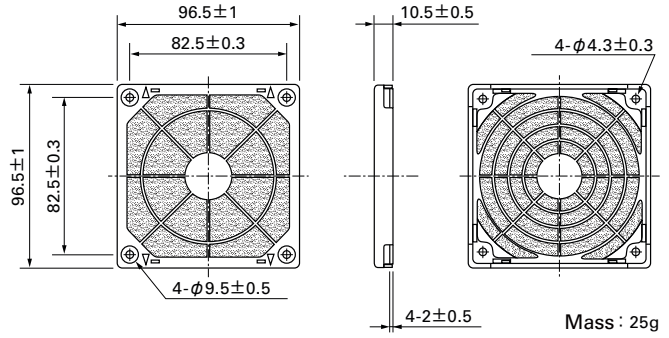
Model : 109-1001G



Mass : 12g

Resin Filter Kits

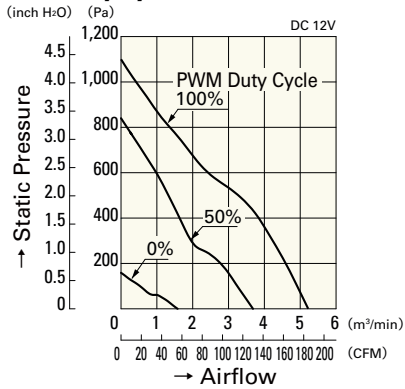
Model : 109-1001F13 (13PPI), 109-1001F20 (20PPI)
: 109-1001F30 (30PPI), 109-1001F40 (40PPI)



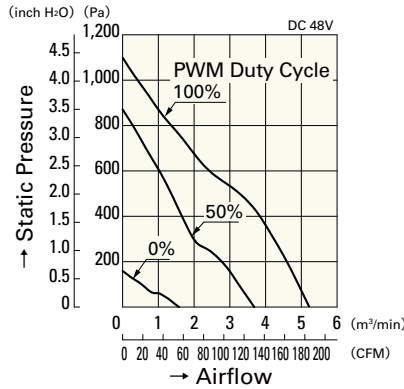
Mass : 25g

Airflow - Static Pressure Characteristics

PWM Duty Cycle

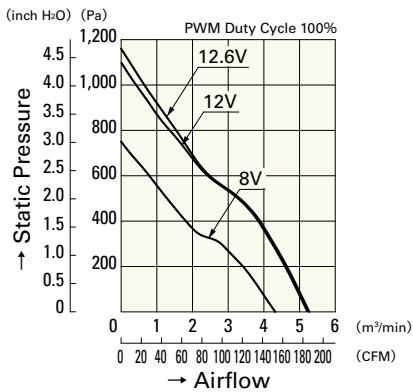


9HV0912P1G001

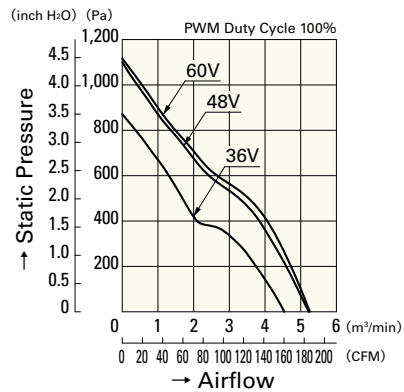


9HV0948P1G001

Operating Voltage Range

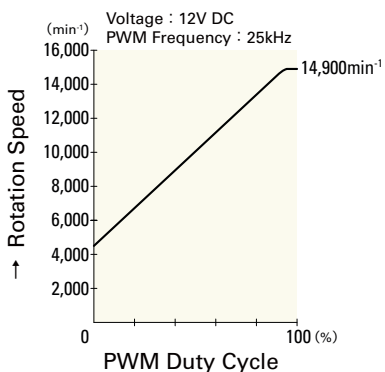


9HV0912P1G001

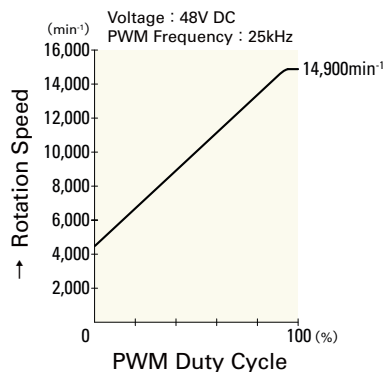


9HV0948P1G001

PWM Duty - Speed Characteristics Example



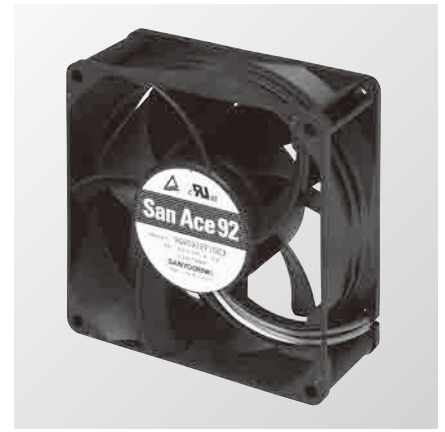
9HV0912P1G001



9HV0948P1G001

92mm sq.

San Ace 92



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×38mm (Mass : 250g) **9GV type**

Specifications

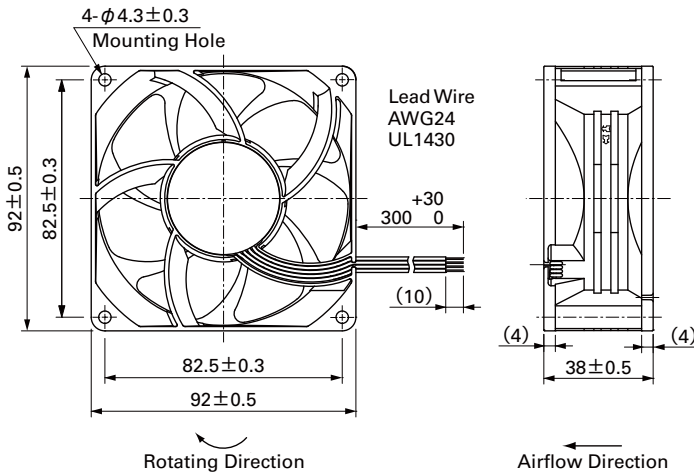
The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]		
9GV0912P1G03	12	10.8 to 13.2	100	4.10	49.2	9,000	5.35 189.0	430.0 1.73	68	-20 to +70	40,000/60°C		
			0	0.33	4.0	2,900	1.72 60.8	44.6 0.18	37				
10.2 to 13.8		100	3.50	42.0	8,500	5.05 178.0	385.0 1.55	64	-10 to +70				
		0	0.29	3.5	2,700	1.60 56.5	38.8 0.16	34					
9GV0912P1F03		12	10.2 to 13.8	100	1.9	22.8	7,000	4.15 146.6	261 1.05			59	-10 to +70
				0	0.16	1.92	2,200	1.3 45.9	25.7 0.1			31	
48	40.8 to 55.2		100	0.82	39.4	8,500	5.05 178.0	385.0 1.55	64	-20 to +70			
			0	0.14	6.7	4,000	2.37 83.7	85.2 0.34	45				
9GV0948P1H03			48	40.8 to 55.2	100	0.48	23.04	7,000	4.15 146.6	261 1.05	59	-10 to +70	
					0	0.12	5.76	3,500	2.07 73.1	65.2 0.26	42		

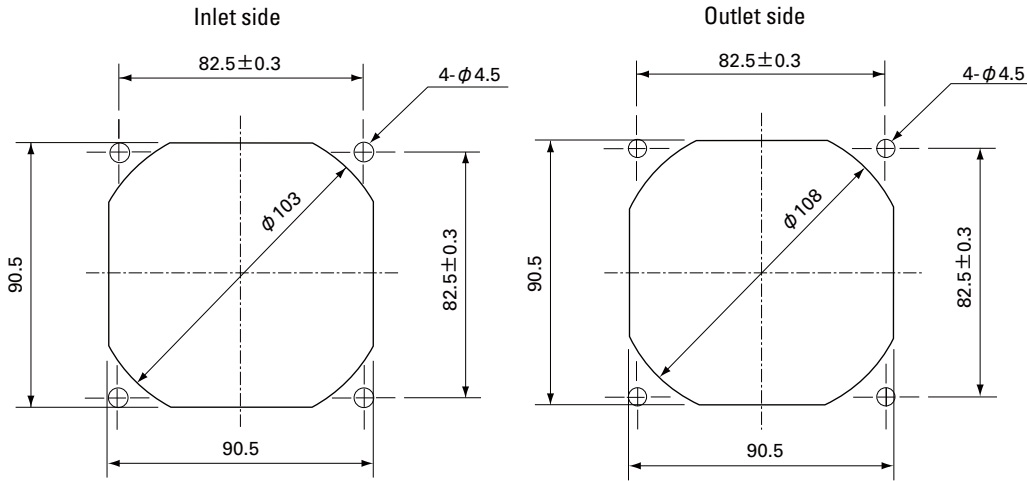
※PWM Frequency : 25kHz

Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (p. 477).

Dimensions (unit: mm) (With ribs)



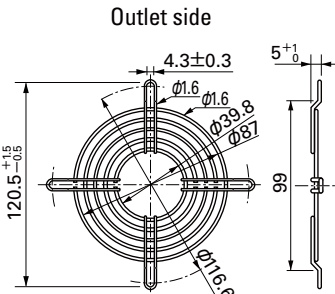
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

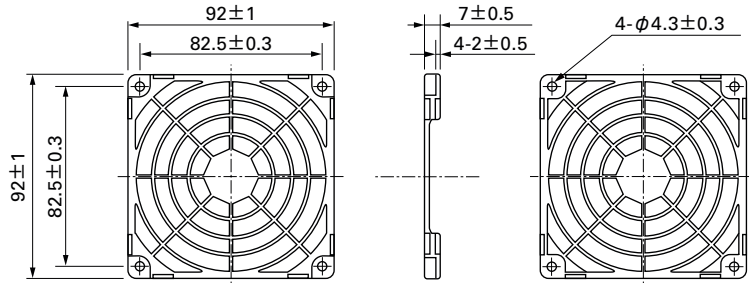
Model : 109-099C Surface treatment : Nickel-chrome plating (silver) Color



Mass : 22g

Resin Finger Guards

Model : 109-1001G

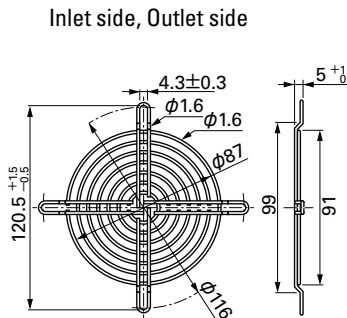


Mass : 12g

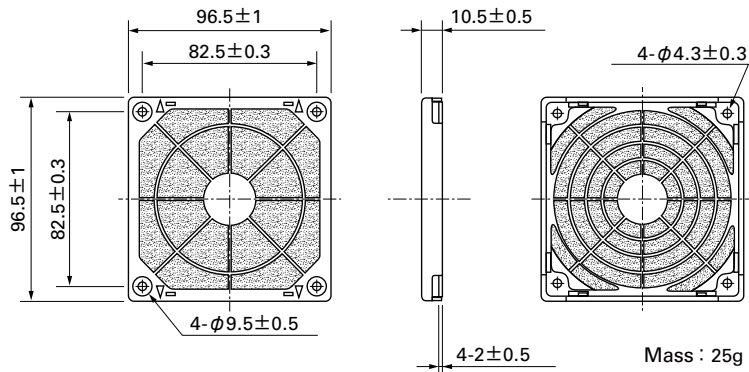
Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color
: 109-099H : Cation electropainting (black)

Resin Filter Kits

Model : 109-1001F13 (13PPI), 109-1001F20 (20PPI)
: 109-1001F30 (30PPI), 109-1001F40 (40PPI)



Mass : 29g



Mass : 25g

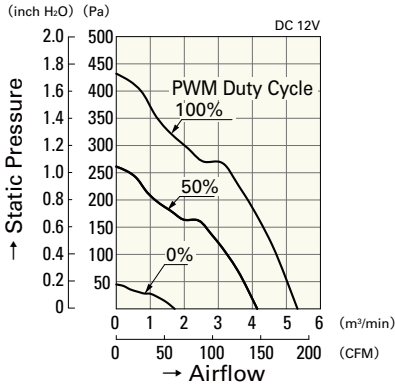
92mm sq.

San Ace 92

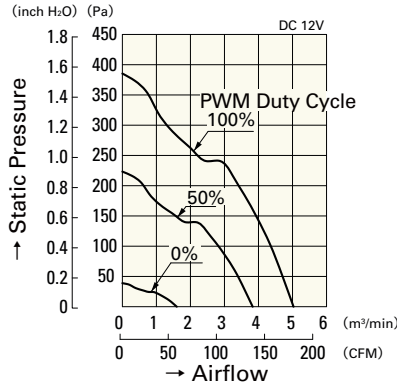
92×92×38mm [Mass : 250g]

Airflow - Static Pressure Characteristics

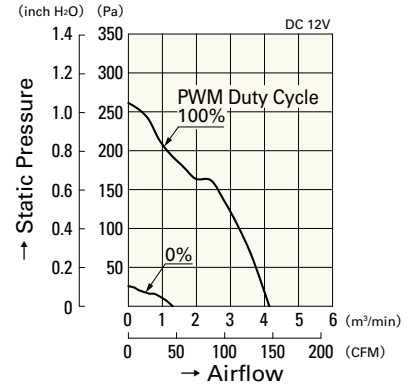
PWM Duty Cycle



9GV0912P1G03

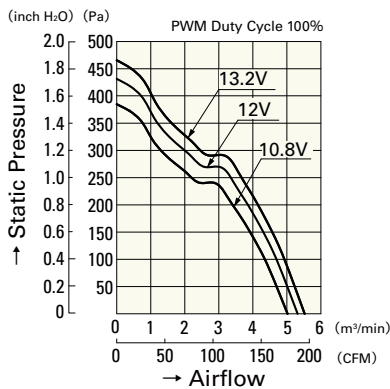


9GV0912P1H03

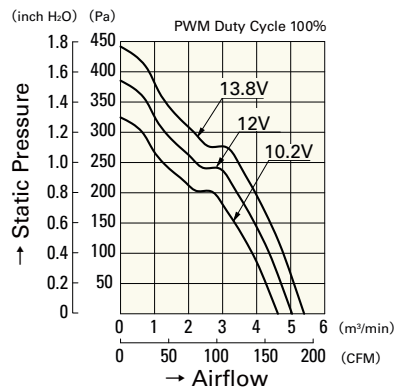


9GV0912P1F03

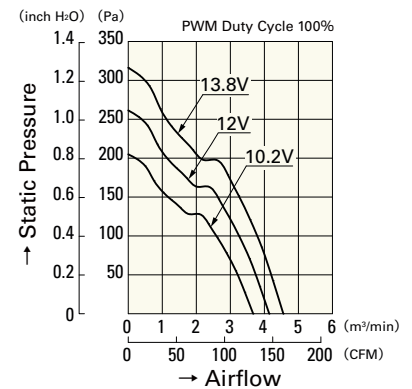
Operating Voltage Range



9GV0912P1G03

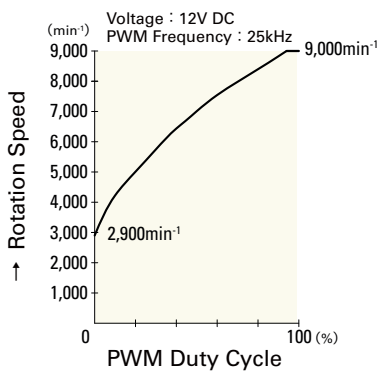


9GV0912P1H03

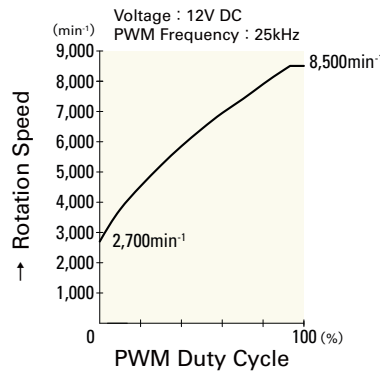


9GV0912P1F03

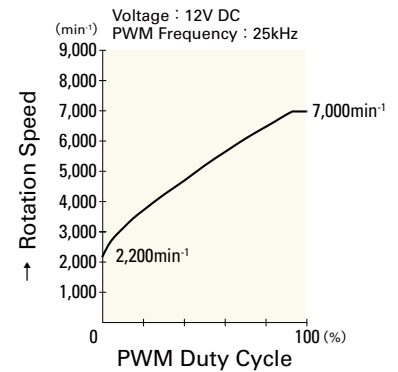
PWM Duty - Speed Characteristics Example



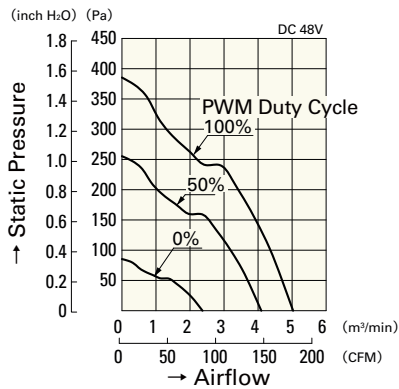
9GV0912P1G03



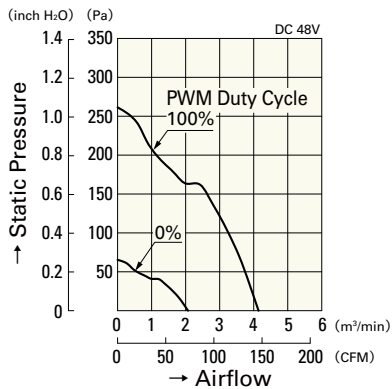
9GV0912P1H03



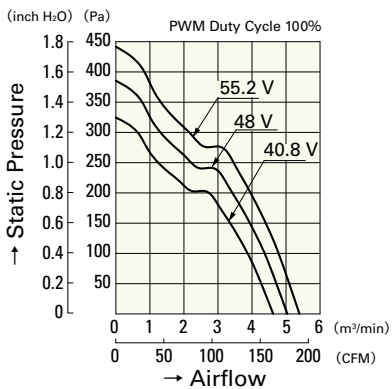
9GV0912P1F03



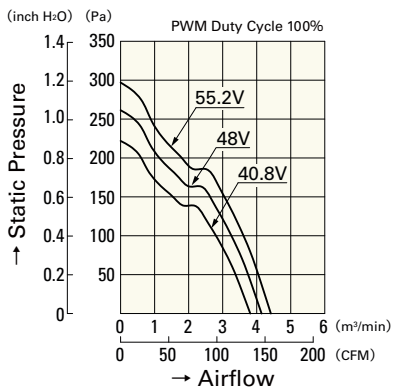
9GV0948P1H03



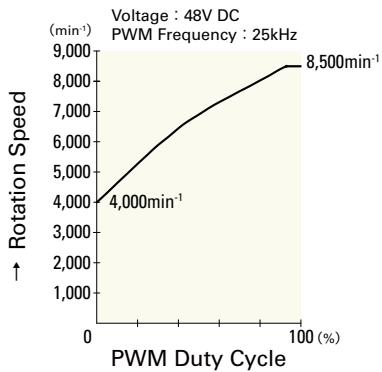
9GV0948P1F03



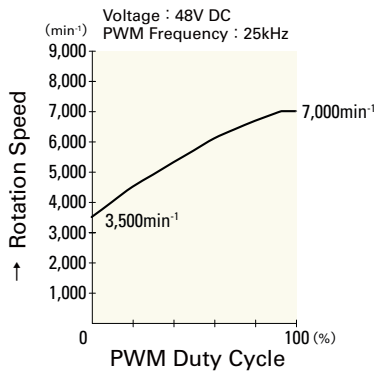
9GV0948P1H03



9GV0948P1F03



9GV0948P1H03



9GV0948P1F03

92mm sq.

San Ace 92



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×38mm (Mass : 180g) **9G type**

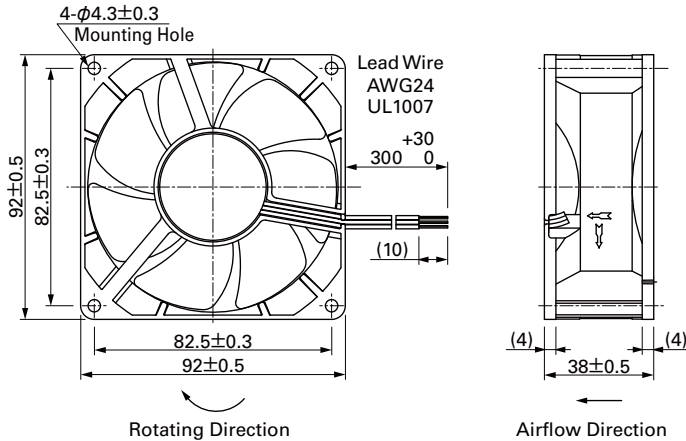
Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

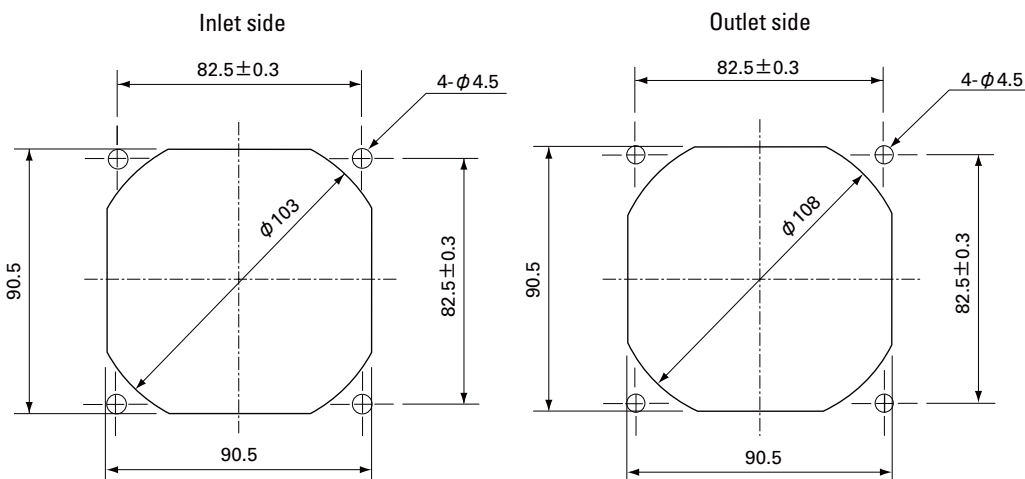
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9G0912G101	12	7.0 to 13.8	1.1	13.2	5,000	3.10 110	150 0.602	50	-20 to +60	40,000/60°C
9G0912H101			0.58	6.96	4,000	2.54 90	100 0.402	43		
9G0924G101	24	20.4 to 27.6	0.55	13.2	5,000	3.10 110	150 0.602	50		
9G0924H101			0.3	7.2	4,000	2.54 90	100 0.402	43		
9G0948J101	48	40.8 to 55.2	0.32	15.36	5,500	3.41 120.49	178 0.715	55	-20 to +70	
9G0948G101			0.27	12.96	5,000	3.10 110	150 0.602	50	-20 to +60	
9G0948H101			0.16	7.68	4,000	2.54 90	100 0.402	43		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 472).

Dimensions (unit: mm) (With ribs)



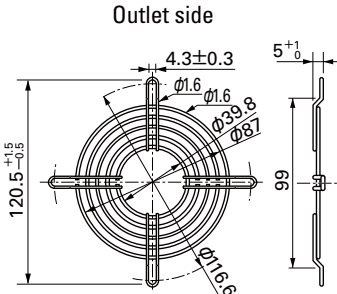
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

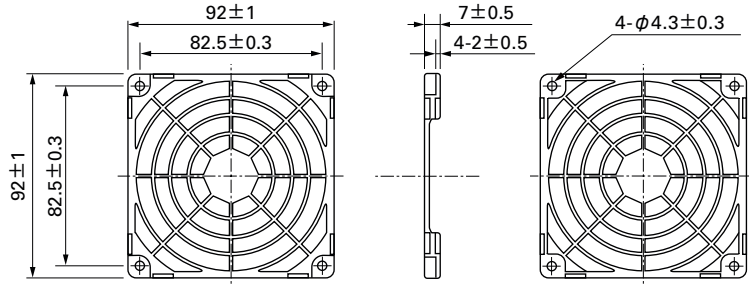
Model : 109-099C Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)



Mass : 22g

Resin Finger Guards

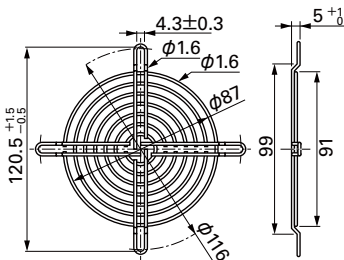
Model : 109-1001G



Mass : 12g

Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)
: 109-099H Surface treatment : Cation electropainting (black) Color : Cation electropainting (black)

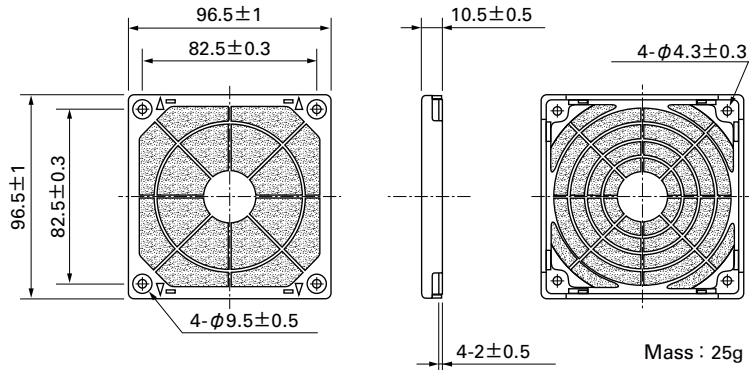
Inlet side, Outlet side



Mass : 29g

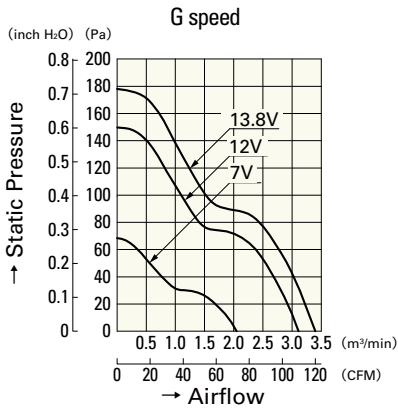
Resin Filter Kits

Model : 109-1001F13 (13PPI), 109-1001F20 (20PPI), 109-1001F30 (30PPI), 109-1001F40 (40PPI)

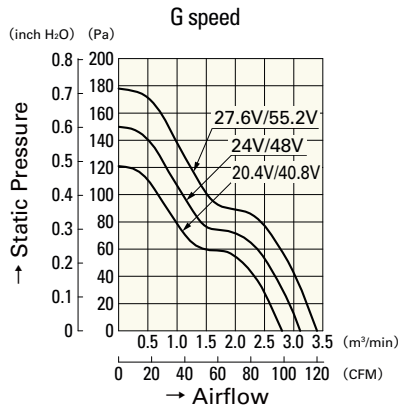


Mass : 25g

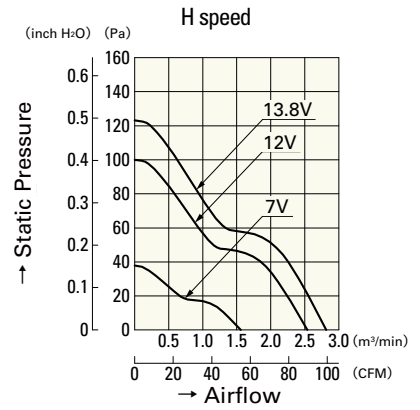
Airflow - Static Pressure Characteristics



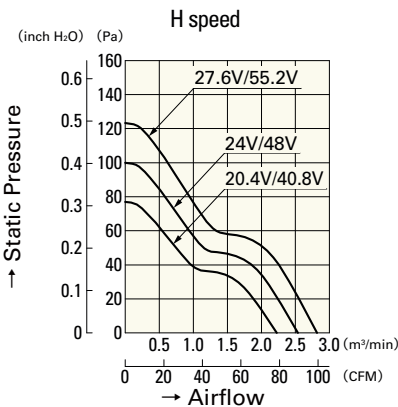
9G0912G101



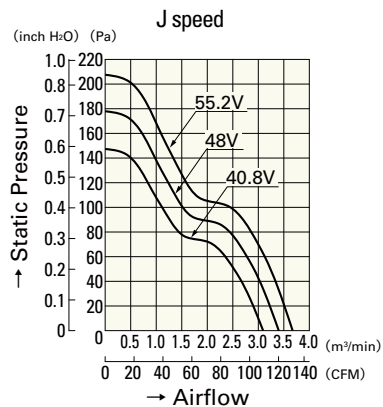
9G0924G101
9G0948G101



9G0912H101



9G0924H101
9G0948H101



9G0948J101

120mm sq.

San Ace 120



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

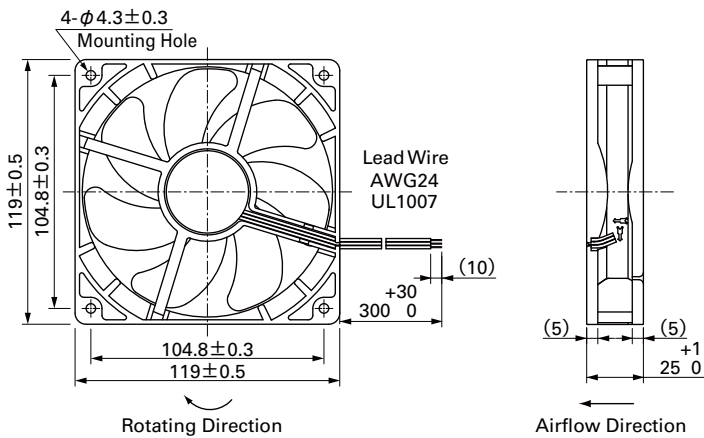
120×120×25mm (Mass : 140g) **9S type** **Silent Fan**

Specifications The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

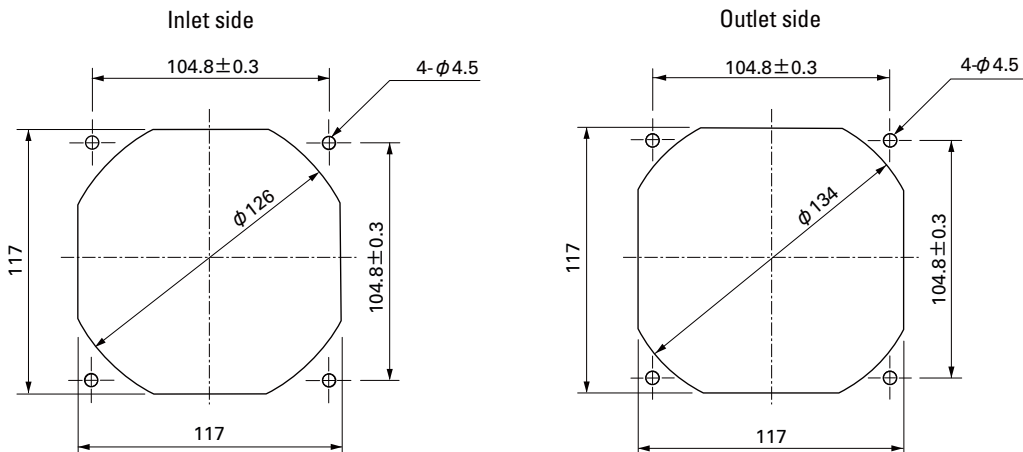
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9S1212H401	12	5.0 to 13.2	0.39	4.68	2,700	2.45 86.5	45.2 0.18	36	-10 to +60	40,000/60°C
9S1212F401		5.0 to 13.8	0.19	2.28	2,200	2.00 70.6	30.0 0.12	30		
9S1212M401		6.0 to 13.8	0.13	1.56	1,850	1.66 58.6	22.7 0.09	24		
9S1212L401		7.0 to 13.8	0.08	0.96	1,500	1.36 48.1	14.9 0.06	17		
9S1224M401	24	14 to 26.4	0.06	1.44	1,850	1.66 58.6	22.7 0.090	24		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 480).

Dimensions (unit: mm) (With ribs)



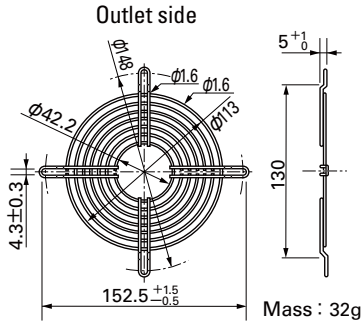
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

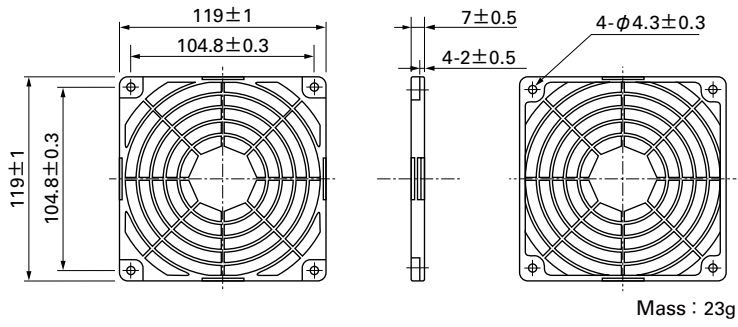
Finger Guards

Model : 109-019C Surface treatment : Nickel-chrome plating (silver) Color
 : 109-019H : Cation electropainting (black)



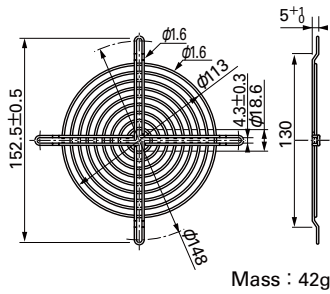
Resin Finger Guards

Model : 109-1000G



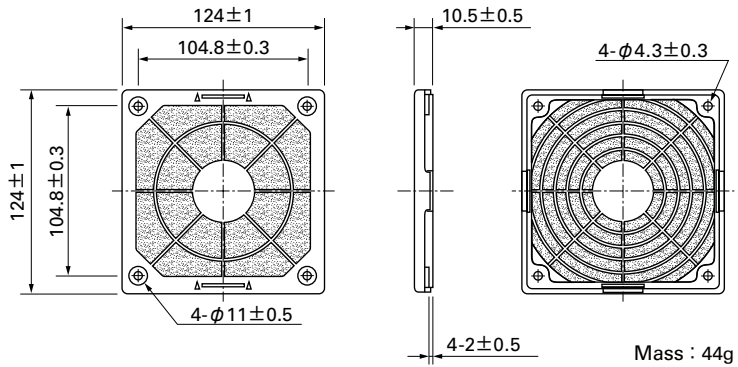
Model : 109-019E Surface treatment : Nickel-chrome plating (silver) Color
 : 109-019K : Cation electropainting (black)

Inlet side, Outlet side

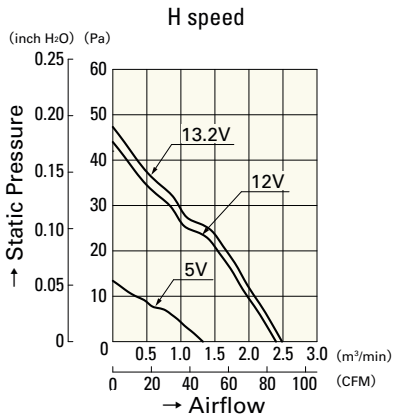


Resin Filter Kits

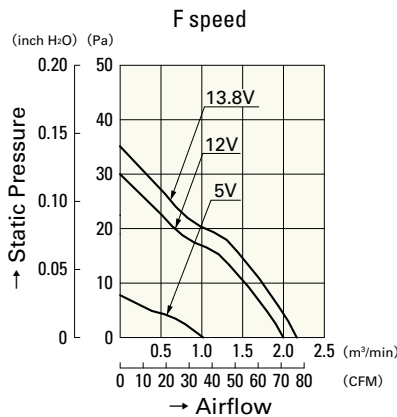
Model : 109-1000F13 (13PPI), 109-1000F20 (20PPI)
 : 109-1000F30 (30PPI), 109-1000F40 (40PPI)



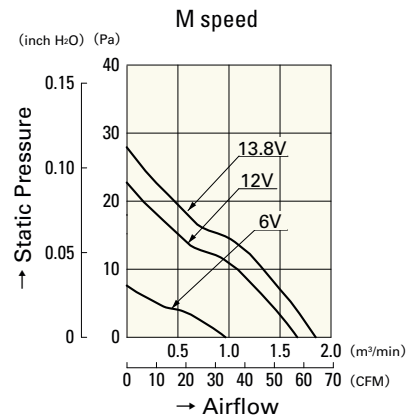
Airflow - Static Pressure Characteristics



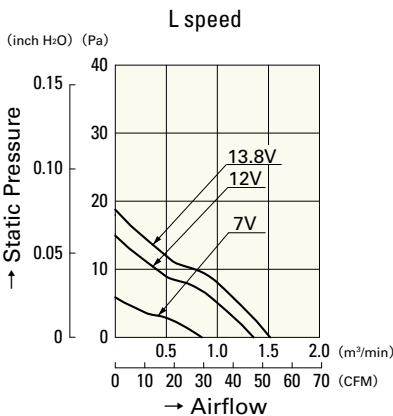
9S1212H401



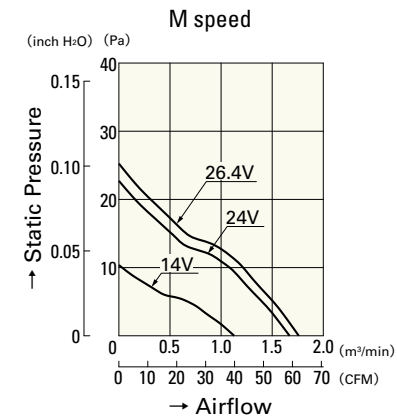
9S1212F401



9S1212M401



9S1212L401



9S1224M401

120mm sq.

San Ace 120



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

120×120×25mm (Mass : 260g) **9GV**type

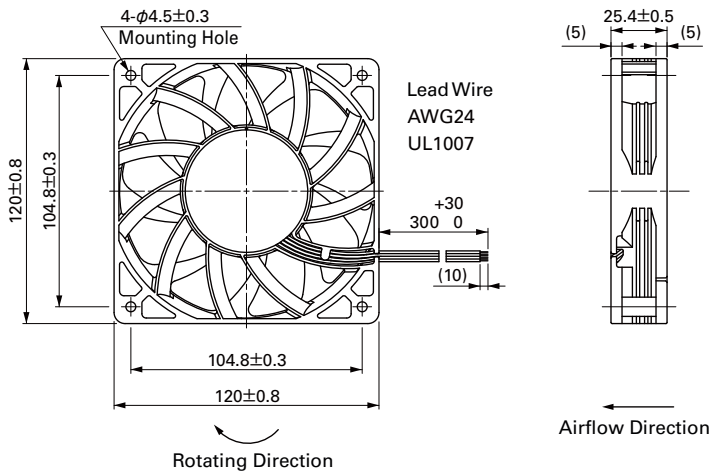
Specifications The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GV1212P4G01	12	10.2 to 13.8	100	1.68	20.16	5,100	4.83 171	224 0.90	58	-20 to +70	40,000/60°C
			0	0.18	2.16	1,650	1.56 55.1	23.5 0.09	30		
9GV1224P4G01	24	20.4 to 27.6	100	0.84	20.16	5,100	4.83 171	224 0.90	58		
			0	0.13	3.12	1,650	1.56 55.1	23.5 0.09	30		
9GV1248P4J01	48	40.8 to 55.2	100	0.5	24.00	5,400	5.11 180	251 1.01	59		
			0	0.15	7.20	3,000	2.84 100	77.5 0.31	47		
9GV1248P4G01	48	40.8 to 60.0	100	0.42	20.16	5,100	4.83 171	224 0.90	58		
			0	0.07	3.36	1,650	1.56 55.1	23.5 0.09	30		
9GV1248P4H01	48	40.8 to 60.0	100	0.33	15.84	4,600	4.35 154	182 0.73	55		
			0	0.07	3.36	1,650	1.56 55.1	23.5 0.09	30		

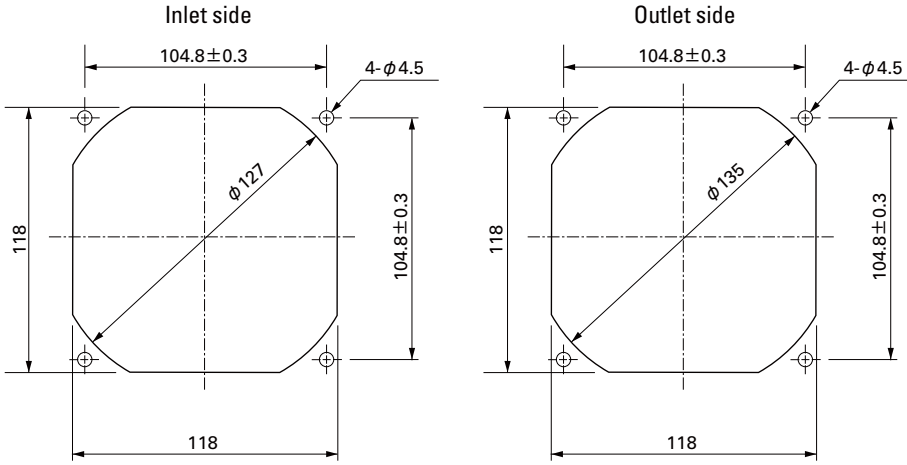
※PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (p. 478).

Dimensions (unit: mm) (With ribs)



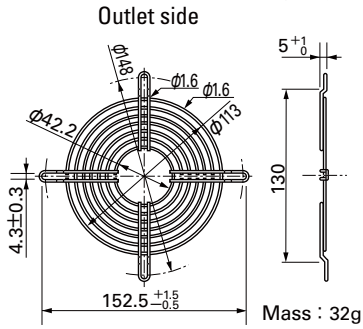
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

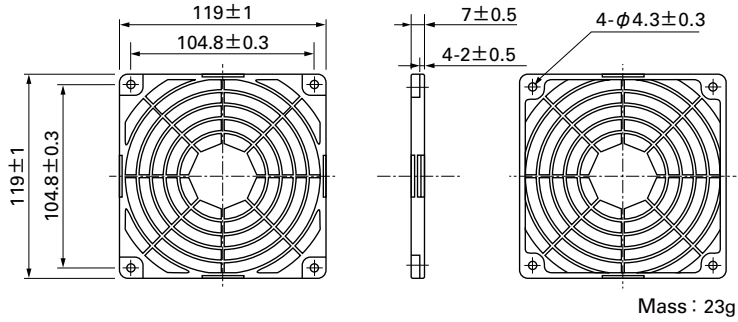
Finger Guards

Model : 109-019C Color : Nickel-chrome plating (silver)
 : 109-019H Color : Cation electropainting (black)



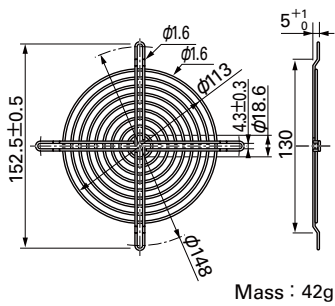
Resin Finger Guards

Model : 109-1000G



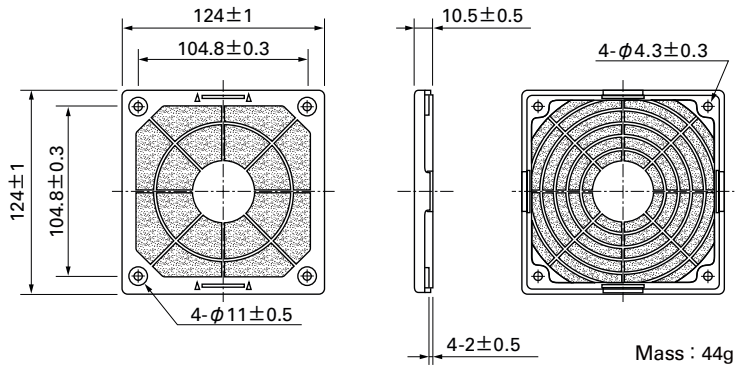
Model : 109-019E Color : Nickel-chrome plating (silver)
 : 109-019K Color : Cation electropainting (black)

Inlet side, Outlet side



Resin Filter Kits

Model : 109-1000F13 (13PPI), 109-1000F20 (20PPI)
 : 109-1000F30 (30PPI), 109-1000F40 (40PPI)



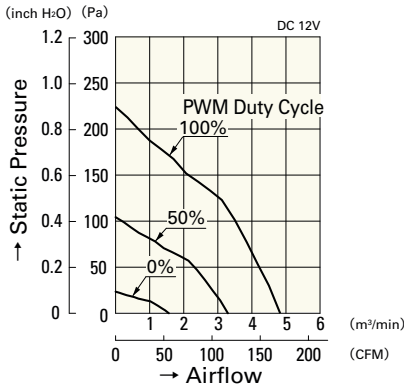
120 mm sq.

San Ace 120

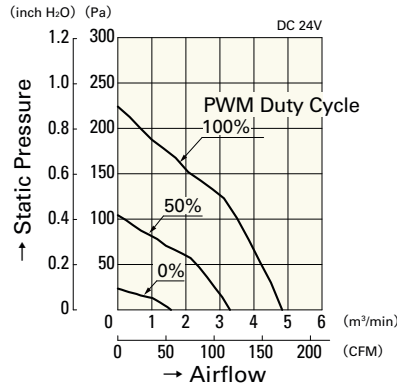
120×120×25 mm [Mass : 260g]

Airflow - Static Pressure Characteristics

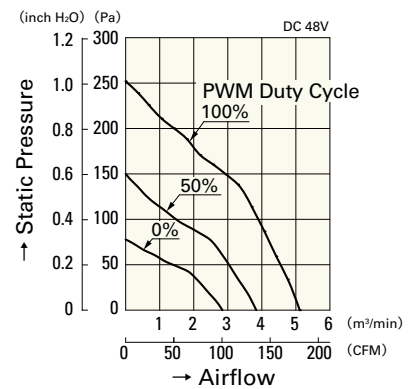
PWM Duty Cycle



9GV1212P4G01

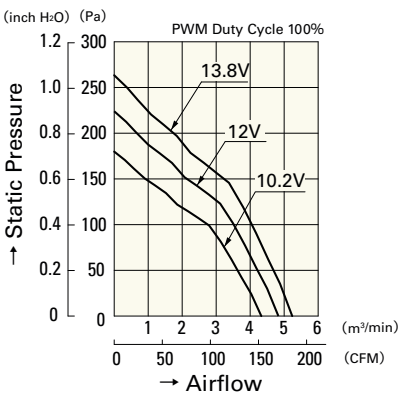


9GV1224P4G01

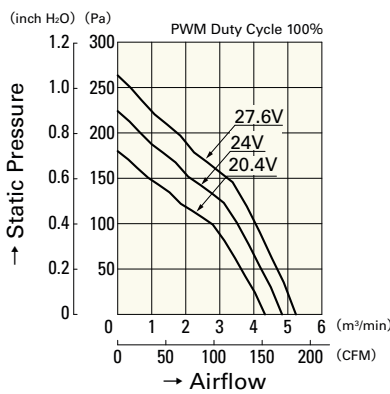


9GV1248P4J01

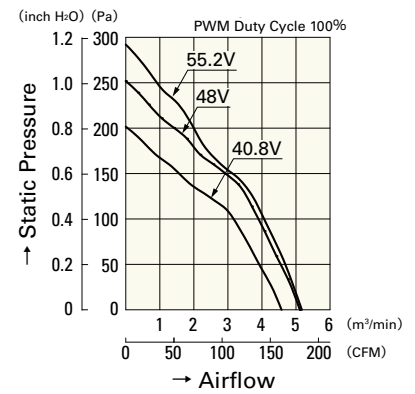
Operating Voltage Range



9GV1212P4G01

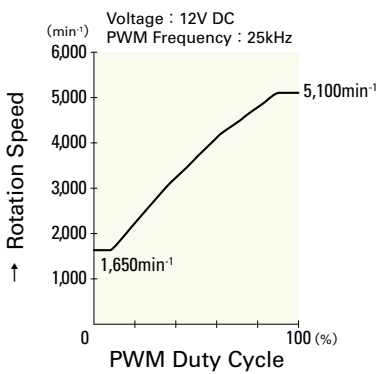


9GV1224P4G01

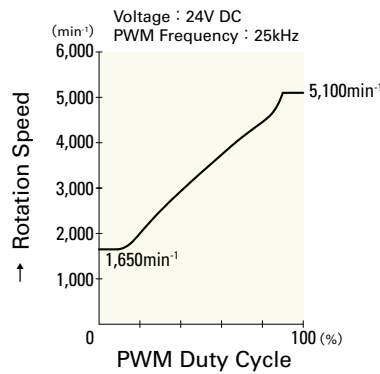


9GV1248P4J01

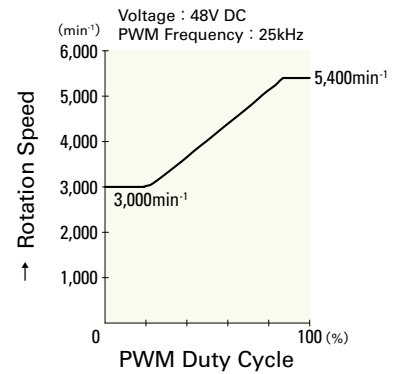
PWM Duty - Speed Characteristics Example



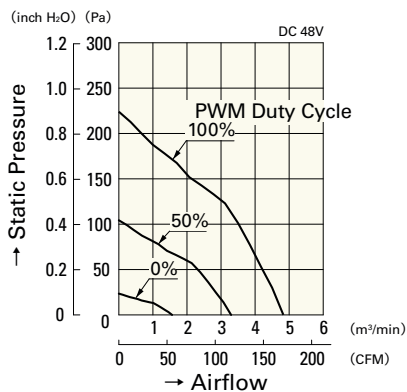
9GV1212P4G01



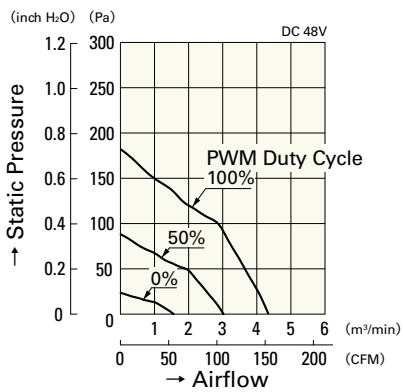
9GV1224P4G01



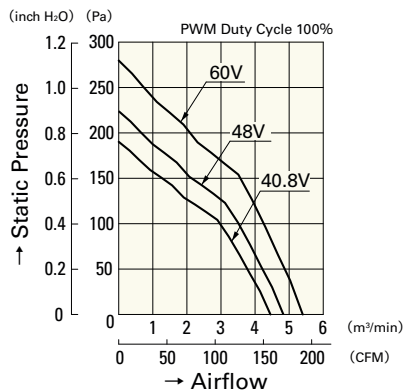
9GV1248P4J01



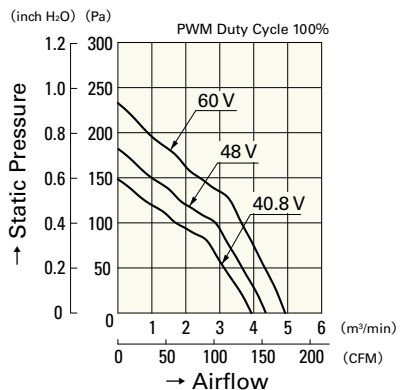
9GV1248P4G01



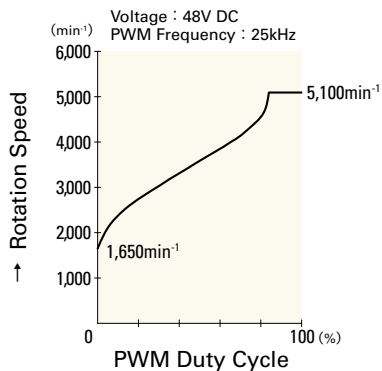
9GV1248P4H01



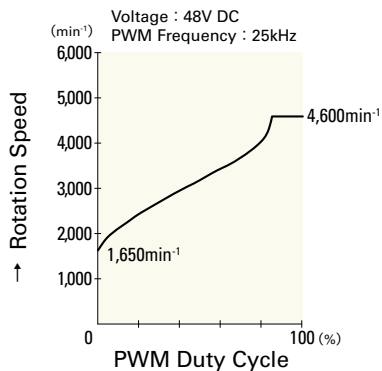
9GV1248P4G01



9GV1248P4H01



9GV1248P4G01



9GV1248P4H01

120mm sq.

San Ace 120



Model no. 9G1212B401 is not certified.

General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

120×120×25mm (Mass : 240g) **9G type**

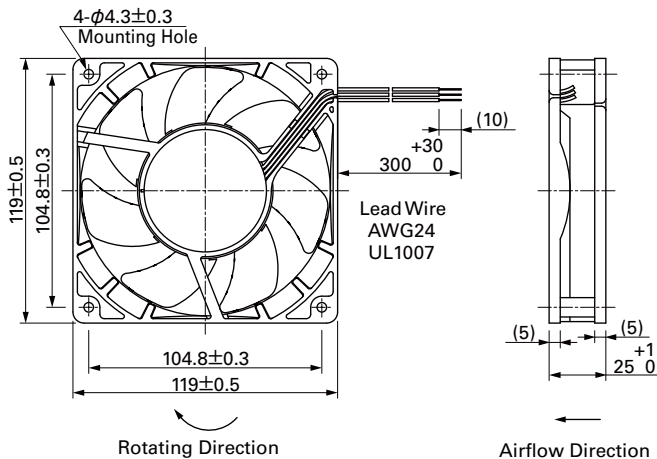
Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

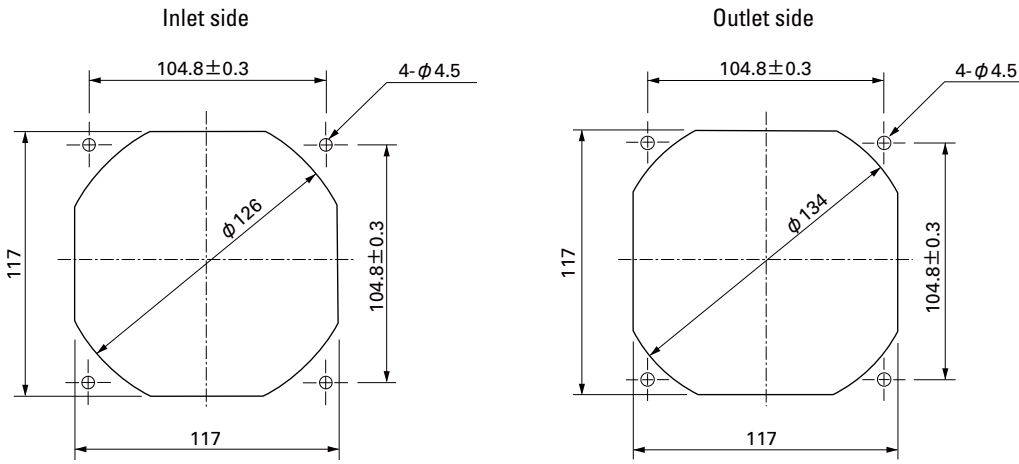
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9G1212G401	12	10.2 to 13.8	0.90	10.8	4,100	3.68 130	120 0.482	51	-20 to +70	40,000/60°C
9G1212E401			0.58	6.96	3,650	3.25 115	98 0.394	48		
9G1212A401			0.40	4.80	3,150	2.83 100	77 0.309	44		
9G1212H401		6 to 13.8	0.31	3.72	2,850	2.50 88	64 0.257	40		
9G1212F401		7 to 13.8	0.19	2.28	2,250	1.98 70	42 0.169	35		
9G1212M401		0.14	1.68	1,950	1.66 59	31 0.124	29			
9G1212B401		10.2 to 13.8	0.06	0.72	1,000	0.88 31	9.6 0.039	18		
9G1224G401	24	20.4 to 27.6	0.47	11.28	4,100	3.68 130	120 0.482	51		
9G1224E401			0.37	8.88	3,650	3.25 115	98 0.394	48		
9G1224A401			0.21	5.04	3,150	2.83 100	77 0.309	44		
9G1224H401		12 to 27.6	0.17	4.08	2,850	2.50 88	64 0.257	40		
9G1224F401		20.4 to 27.6	0.10	2.40	2,250	1.98 70	42 0.169	35		
9G1224M401			0.08	1.92	1,950	1.66 59	31 0.124	29		
9G1248G401	48	40.8 to 55.2	0.23	11.04	4,100	3.68 130	120 0.482	51		
9G1248E401			0.16	7.68	3,650	3.25 115	98 0.394	48		
9G1248A401			0.13	6.24	3,150	2.83 100	77 0.309	44		
9G1248H401			0.10	4.80	2,850	2.50 88	64 0.257	40		
9G1248F401			0.06	2.88	2,250	1.98 70	42 0.169	35		
9G1248M401			0.05	2.40	1,950	1.66 59	31 0.124	29		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 473 to 474).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

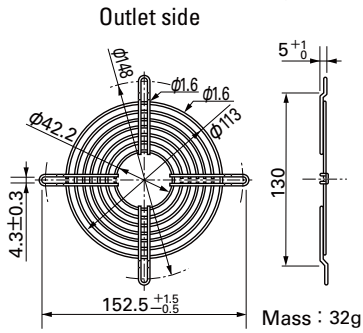


Options (unit: mm)

Finger Guards

Model : 109-019C Surface treatment : Nickel-chrome plating (silver)
 : 109-019H : Cation electropainting (black)

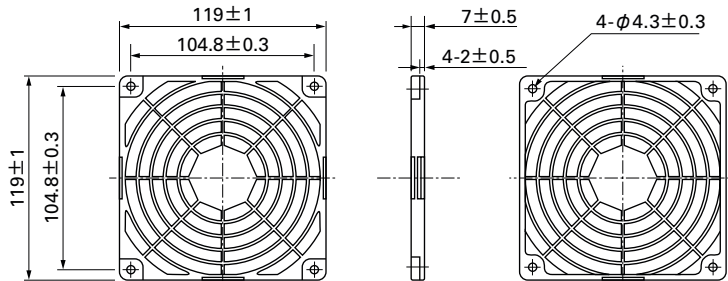
Color



Mass : 32g

Resin Finger Guards

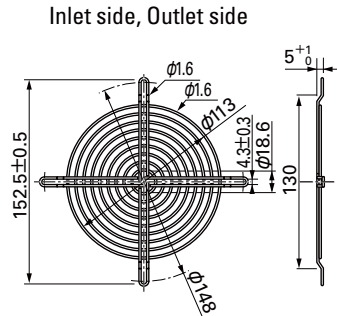
Model : 109-1000G



Mass : 23g

Model : 109-019E Surface treatment : Nickel-chrome plating (silver)
 : 109-019K : Cation electropainting (black)

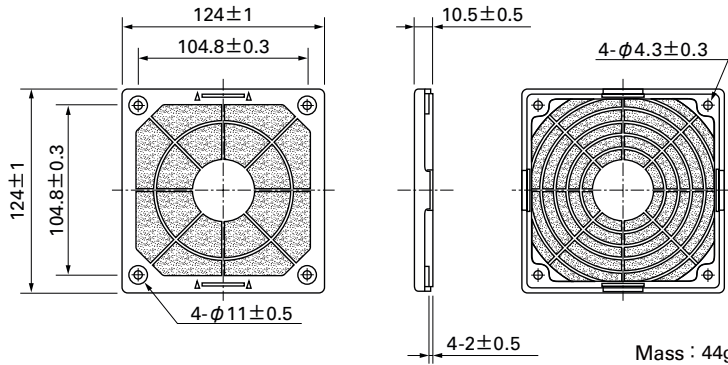
Color



Mass : 42g

Resin Filter Kits

Model : 109-1000F13 (13PPI), 109-1000F20 (20PPI)
 : 109-1000F30 (30PPI), 109-1000F40 (40PPI)



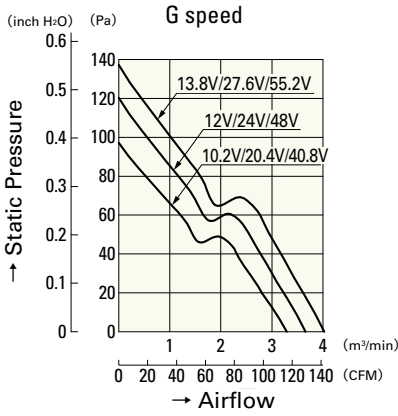
Mass : 44g

120mm sq.

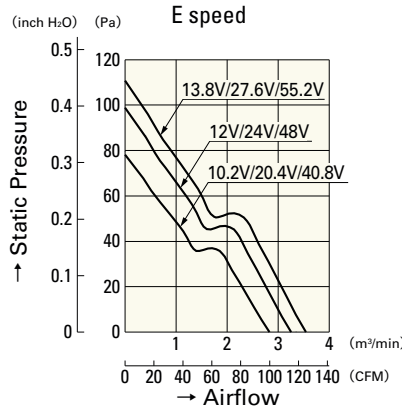
San Ace 120

120×120×25mm [Mass : 240g]

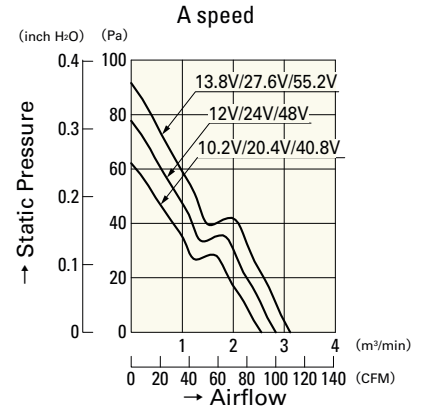
Airflow - Static Pressure Characteristics



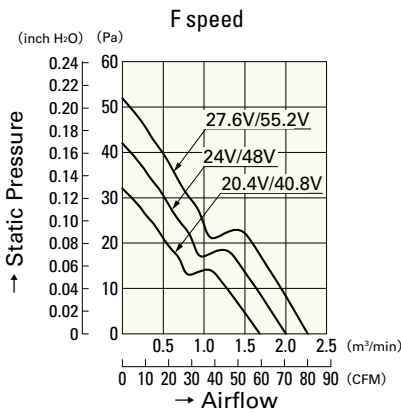
- 9G1212G401**
- 9G1224G401**
- 9G1248G401**



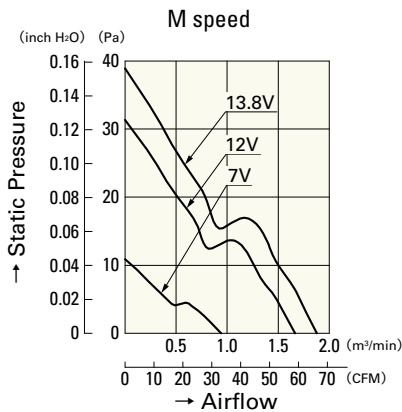
- 9G1212E401**
- 9G1224E401**
- 9G1248E401**



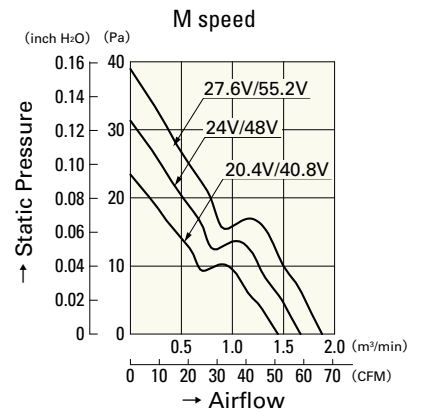
- 9G1212A401**
- 9G1224A401**
- 9G1248A401**



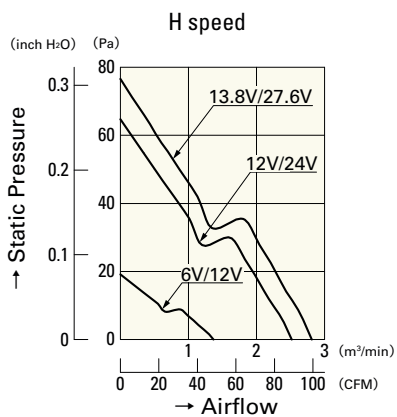
- 9G1224F401**
- 9G1248F401**



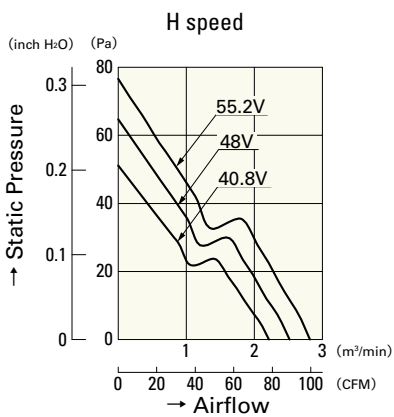
- 9G1212M401**



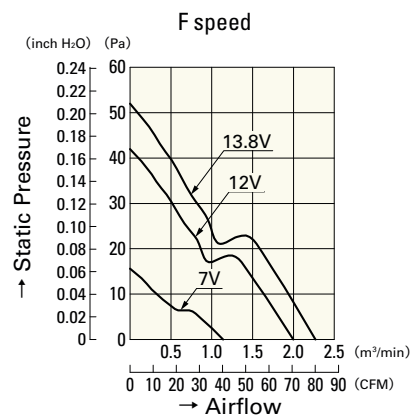
- 9G1224M401**
- 9G1248M401**



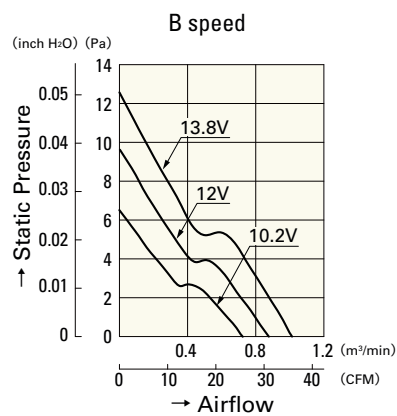
9G1212H401
9G1224H401



9G1248H401



9G1212F401

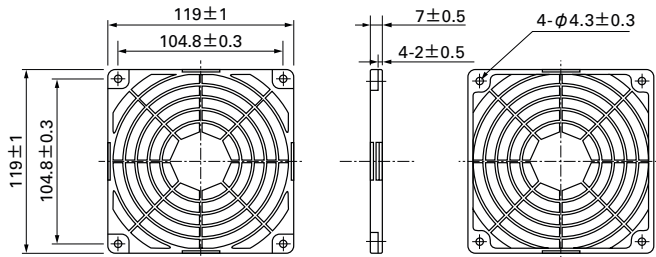


9G1212B401

Options (unit: mm)

Resin Finger Guards

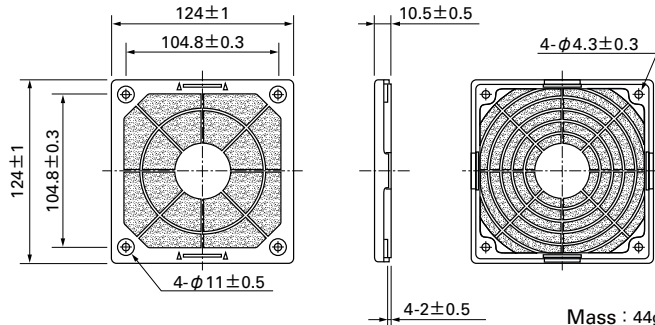
Model : 109-1000G



Mass : 23g

Resin Filter Kits

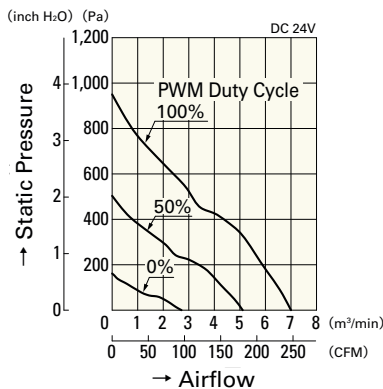
Model : 109-1000F13 (13PPI), 109-1000F20 (20PPI)
: 109-1000F30 (30PPI), 109-1000F40 (40PPI)



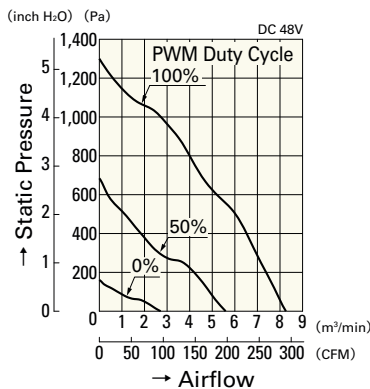
Mass : 44g

Airflow - Static Pressure Characteristics

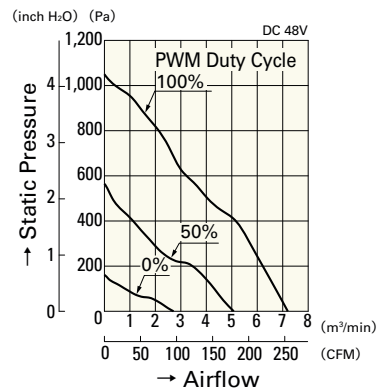
PWM Duty Cycle



9HV1224P1A001

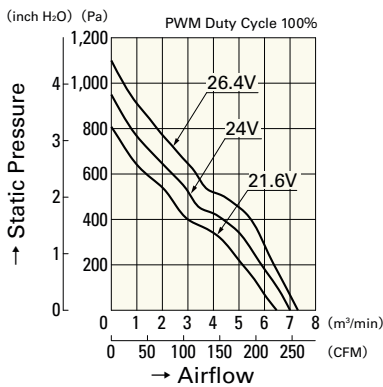


9HV1248P1G001

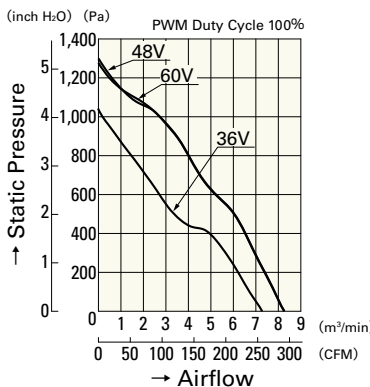


9HV1248P1H001

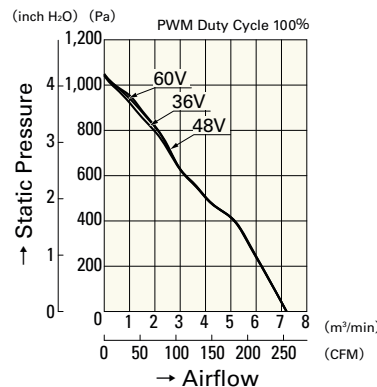
Operating Voltage Range



9HV1224P1A001

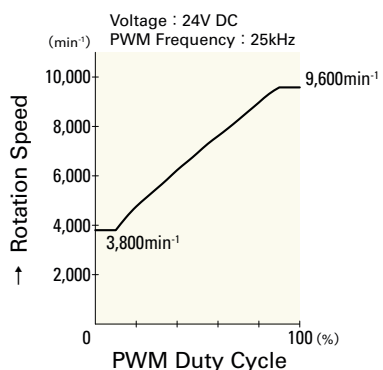


9HV1248P1G001

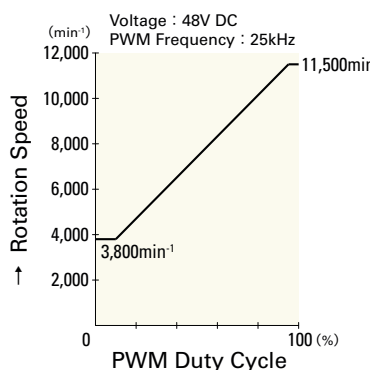


9HV1248P1H001

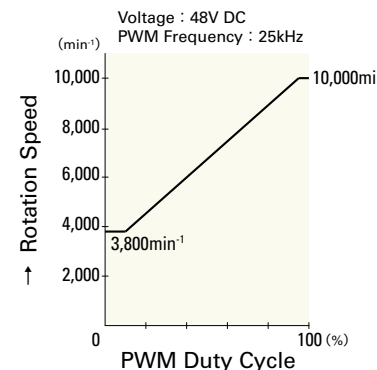
PWM Duty - Speed Characteristics Example



9HV1224P1A001



9HV1248P1G001



9HV1248P1H001

120mm sq.

San Ace 120



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

120×120×38mm (Mass : 360g) **9GV type**

Specifications

The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

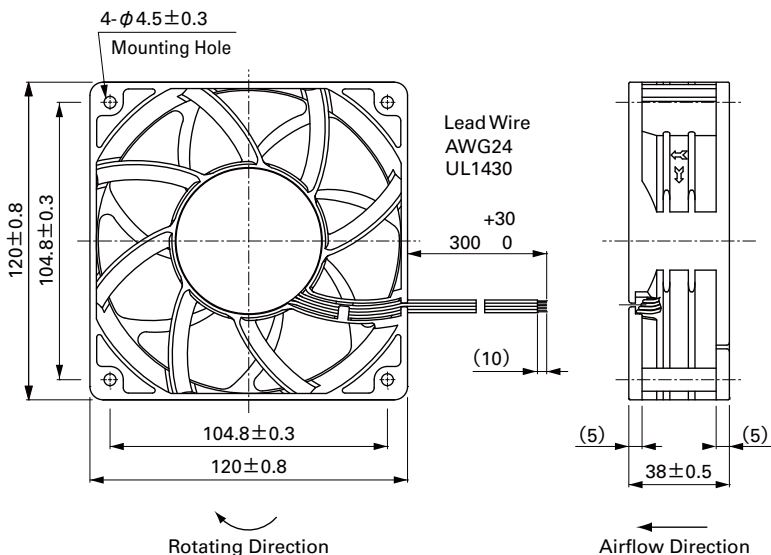
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GV1212P1J01	12	10.2 to 13.8	100	3.00	36.00	6,400	6.35 224.0	360.0 1.45	64	-20 to +70	40,000/60°C
			0	0.19	2.28	1,500	1.49 52.6	19.8 0.08	33		
9GV1212P1G01			100	2.1	25.2	5,500	5.45 192.6	265 1.06	60		
			0	0.19	2.28	1,500	1.49 52.6	19.8 0.08	33		
9GV1224P1J01 (Note)	24	20.4 to 27.6	100	1.5	36.00	6,400	6.35 224.0	360 1.45	64		
9GV1224P1H01 (Note)			100	0.8	19.2	5,200	5.16 182.3	237 0.95	58		
9GV1248P1J01	48	40.8 to 55.2	100	0.75	36.00	6,400	6.35 224.0	360.0 1.45	64		
			0	0.06	2.88	1,500	1.49 52.6	26.1 0.106	33		
9GV1248P1B10 (Note)			100	0.43	20.64	5,250	5.2 183.7	242 0.97	59		

Note: Fan does not rotate when PWM duty cycle is 0%.

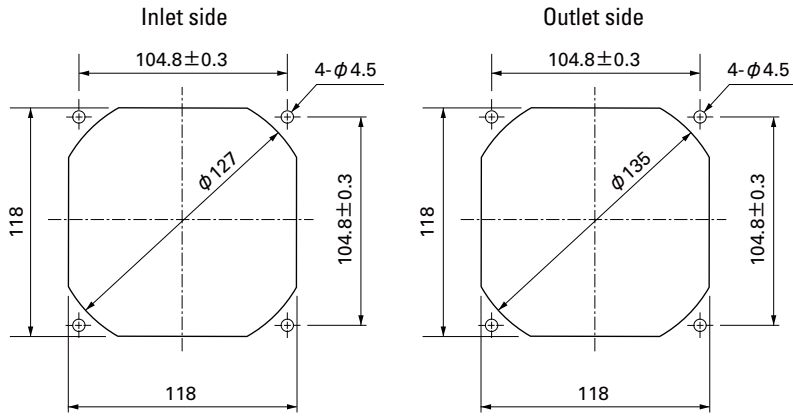
※ PWM Frequency : 25kHz
9GV1248P1B10 only: 1.4 kHz

Models without sensors, or with pulse sensors (no PWM control function), or lock sensors are available as options. Please refer to the index (pp. 477 to 478).

Dimensions (unit: mm) (With ribs)



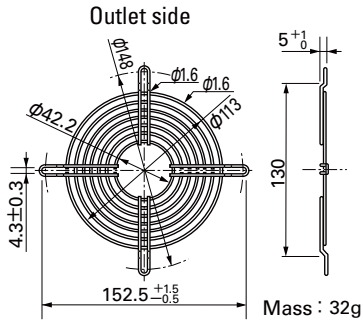
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

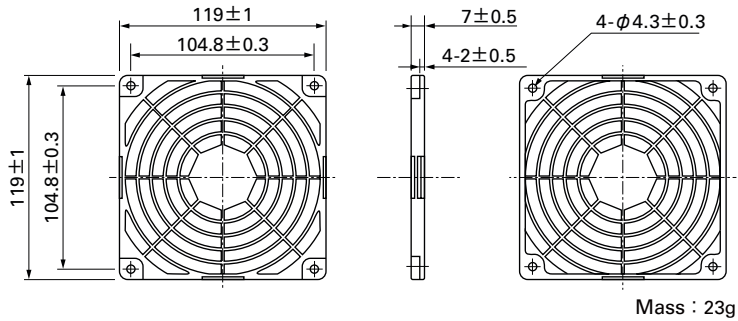
Finger Guards

Model : 109-019C Surface treatment : Nickel-chrome plating (silver) Color : 109-019H : Cation electropainting (black)

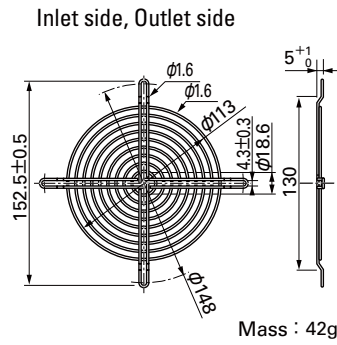


Resin Finger Guards

Model : 109-1000G

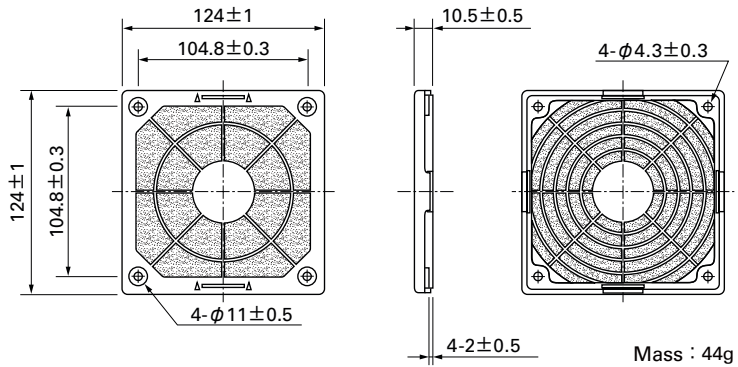


Model : 109-019E Surface treatment : Nickel-chrome plating (silver) Color : 109-019K : Cation electropainting (black)



Resin Filter Kits

Model : 109-1000F13 (13PPI), 109-1000F20 (20PPI) : 109-1000F30 (30PPI), 109-1000F40 (40PPI)



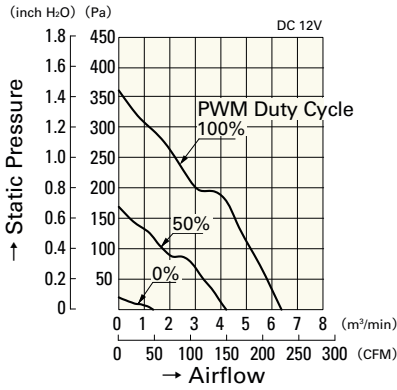
120mm sq.

San Ace 120

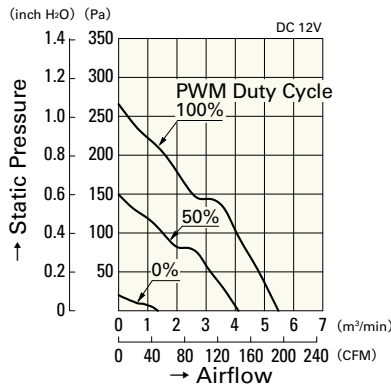
120×120×38mm [Mass : 360g]

Airflow - Static Pressure Characteristics

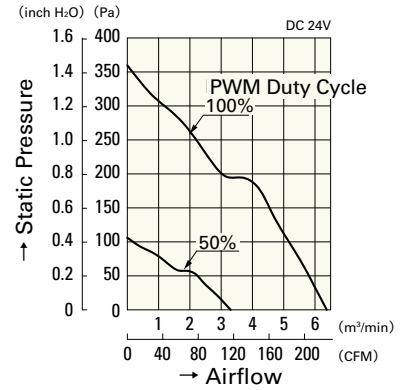
PWM Duty Cycle



9GV1212P1J01

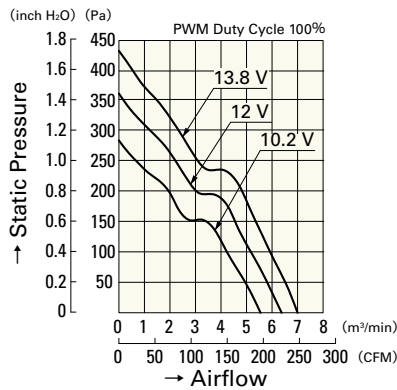


9GV1212P1G01

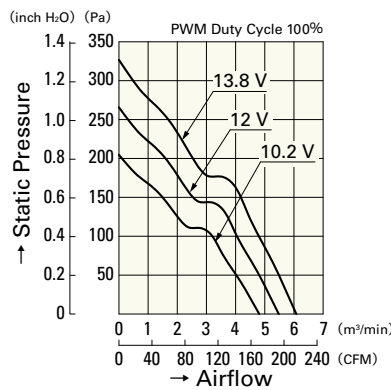


9GV1224P1J01

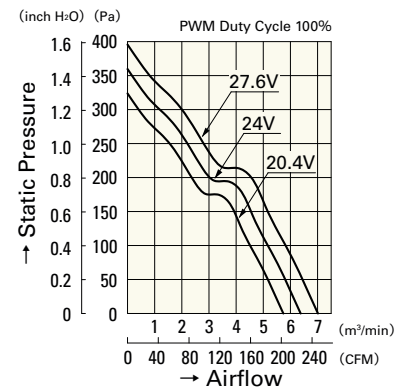
Operating Voltage Range



9GV1212P1J01

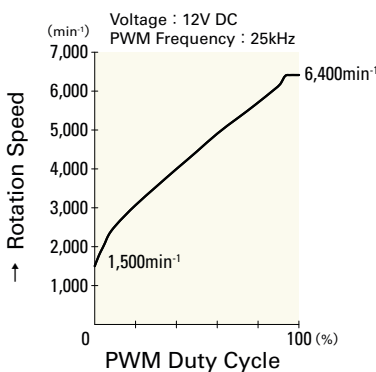


9GV1212P1G01

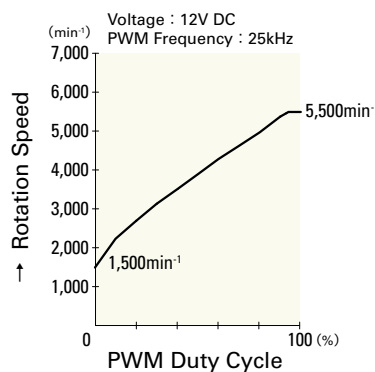


9GV1224P1J01

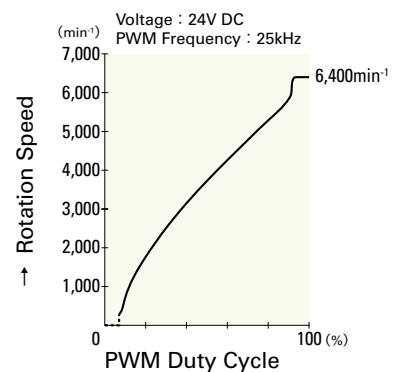
PWM Duty - Speed Characteristics Example



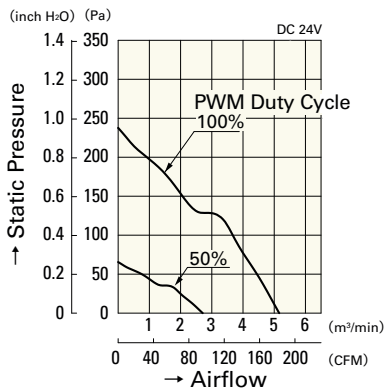
9GV1212P1J01



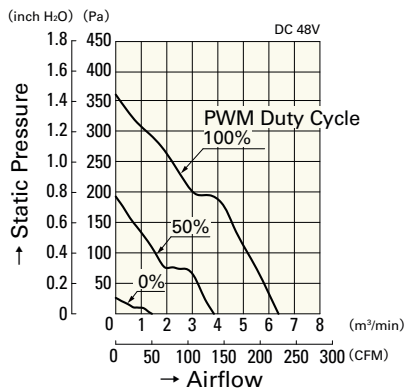
9GV1212P1G01



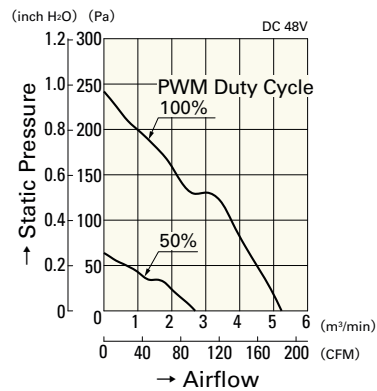
9GV1224P1J01



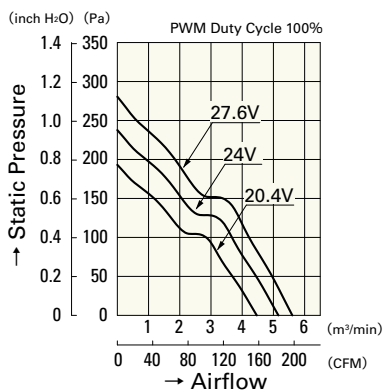
9GV1224P1H01



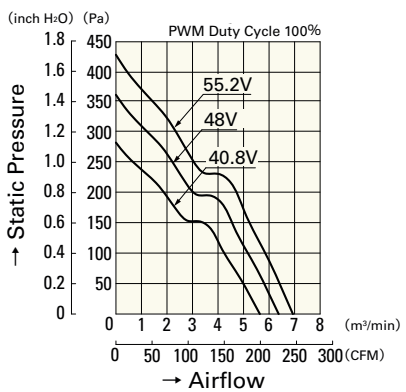
9GV1248P1J01



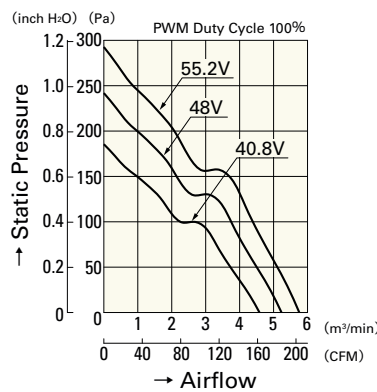
9GV1248P1B10



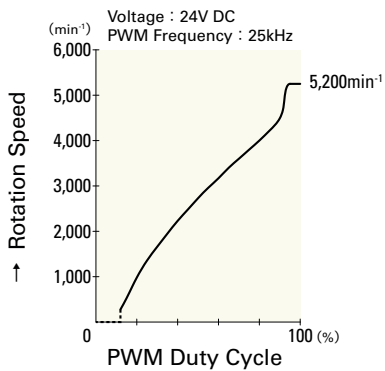
9GV1224P1H01



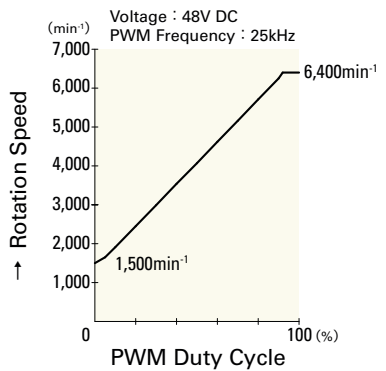
9GV1248P1J01



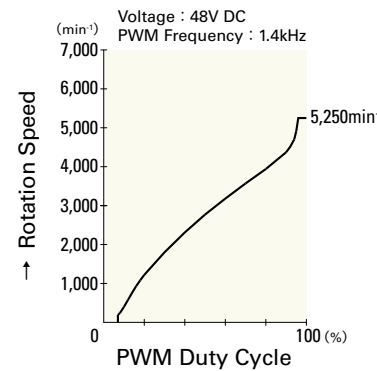
9GV1248P1B10



9GV1224P1H01



9GV1248P1J01



9GV1248P1B10

120mm sq.

San Ace 120



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

120×120×38mm (Mass : 330g) **9G type**

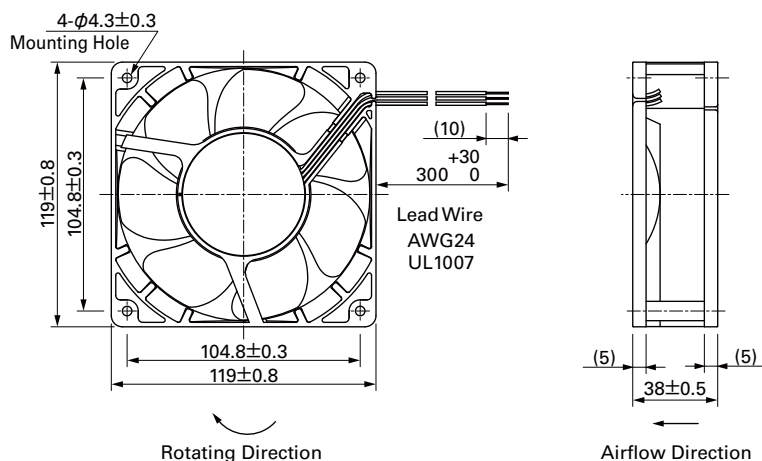
Specifications

The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

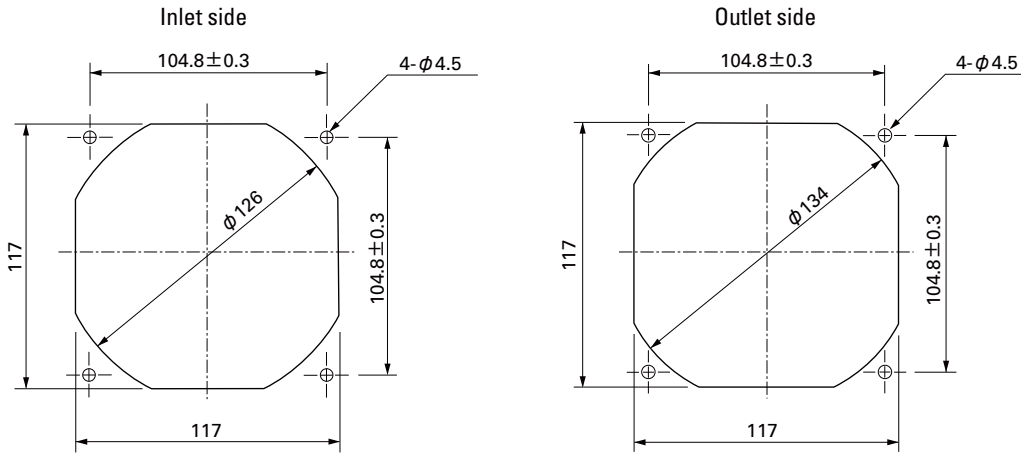
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9G1212G101	12	10.2 to 13.8	0.98	11.76	3,600	3.88 137	135 0.542	49	-20 to +70	40,000/60°C
9G1212E101			0.61	7.32	3,100	3.34 118	100 0.402	46		
9G1212H101		7 to 13.8	0.38	4.56	2,600	2.80 99	70.4 0.283	39		
9G1212F101			0.28	3.36	2,280	2.45 87	54.2 0.218	36		
9G1212M101			0.21	2.52	1,950	2.10 74	39.6 0.159	32		
9G1224G101	24	20.4 to 27.6	0.50	12	3,600	3.88 137	135 0.542	49		
9G1224E101			0.34	8.16	3,100	3.34 118	100 0.402	46		
9G1224H101		14 to 27.6	0.22	5.28	2,600	2.80 99	70.4 0.283	39		
9G1224F101			0.16	3.84	2,280	2.45 87	54.2 0.218	36		
9G1224M101			0.11	2.64	1,950	2.10 74	39.6 0.159	32		
9G1248G101	48	40.8 to 55.2	0.25	12	3,600	3.88 137	135 0.542	49		
9G1248E101			0.17	8.16	3,100	3.34 118	100 0.402	46		
9G1248H101			0.11	5.28	2,600	2.80 99	70.4 0.283	39		
9G1248F101			0.09	4.32	2,280	2.45 87	54.2 0.218	36		
9G1248M101			0.07	3.36	1,950	2.10 74	39.6 0.159	32		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 473 to 474).

Dimensions (unit: mm) (With ribs)



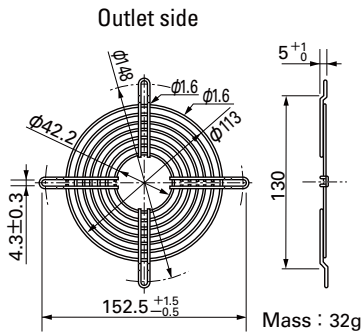
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

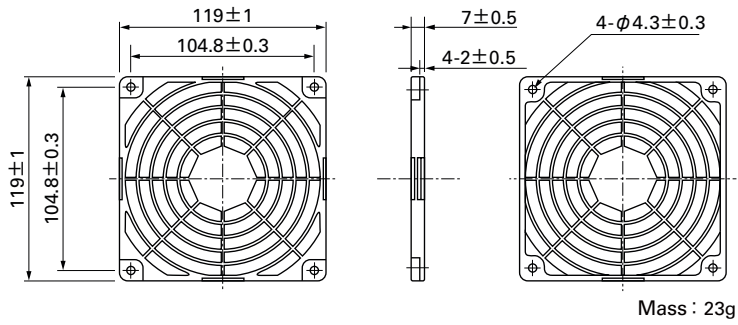
Finger Guards

Model : 109-019C Surface treatment : Nickel-chrome plating (silver) Color : 109-019H : Cation electropainting (black)

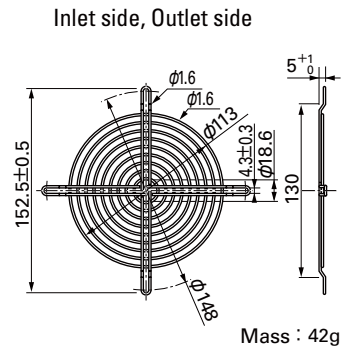


Resin Finger Guards

Model : 109-1000G

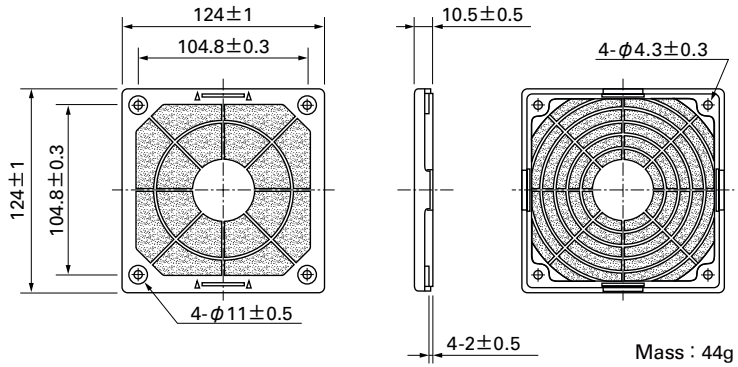


Model : 109-019E Surface treatment : Nickel-chrome plating (silver) Color : 109-019K : Cation electropainting (black)



Resin Filter Kits

Model : 109-1000F13 (13PPI), 109-1000F20 (20PPI) : 109-1000F30 (30PPI), 109-1000F40 (40PPI)

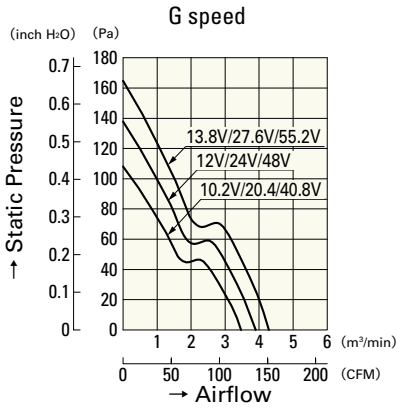


120mm sq.

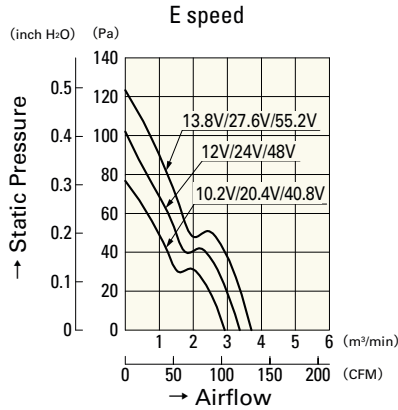
San Ace 120

120×120×38mm [Mass : 330g]

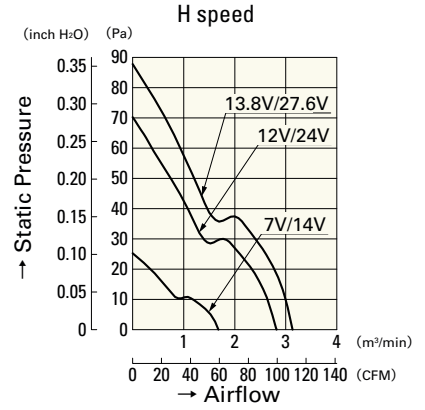
Airflow - Static Pressure Characteristics



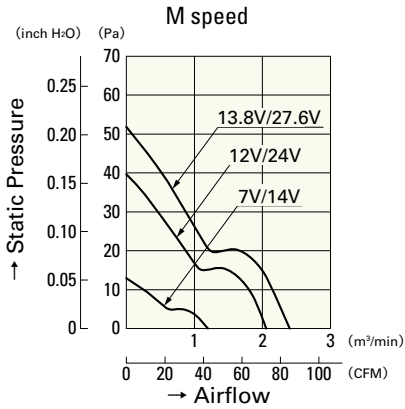
- 9G1212G101**
- 9G1224G101**
- 9G1248G101**



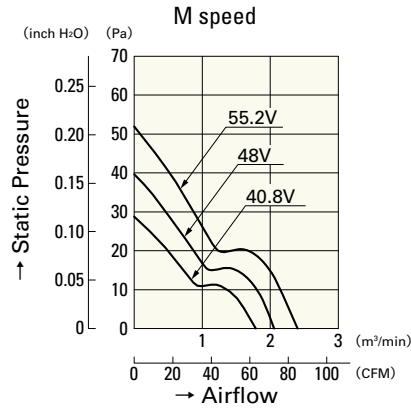
- 9G1212E101**
- 9G1224E101**
- 9G1248E101**



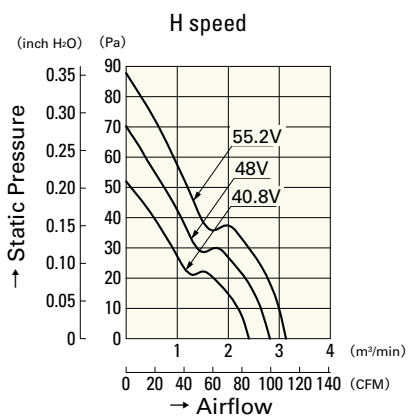
- 9G1212H101**
- 9G1224H101**



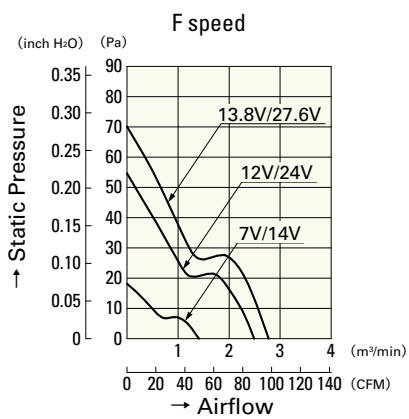
- 9G1212M101**
- 9G1224M101**



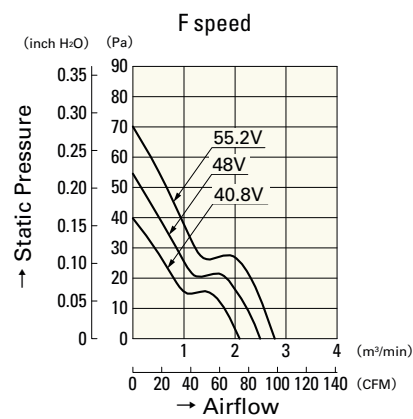
- 9G1248M101**



9G1248H101



9G1212F101
9G1224F101



9G1248F101

120mm sq.

San Ace 120



Model no. 9SG1224H101 is not certified.

General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

120×120×38mm (Mass : 400g) **9SG type**

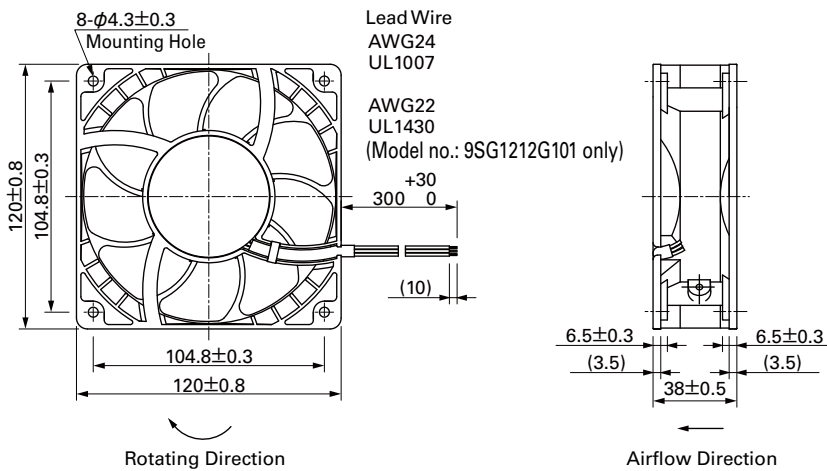
Specifications

The following nos. **have pulse sensors.**

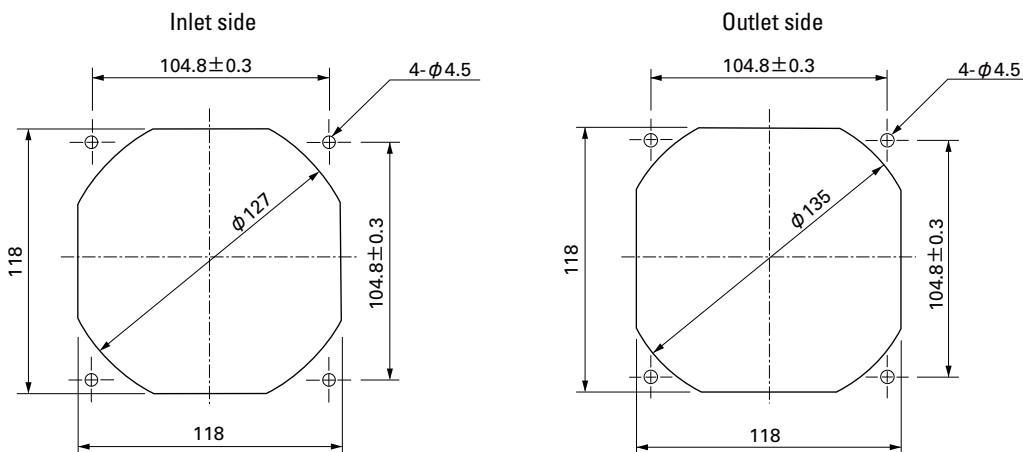
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9SG1212G101	12	10.2 to 13.8	4.0	48.0	6,000	7.35 260	340 1.37	64	- 20 to +70	40,000/60°C
9SG1224G101	24	20.4 to 27.6	2.0	48.0	6,000	7.35 260	340 1.37	64		
9SG1224H101			0.46	11.0	3,400	4.02 142	126 0.51	48		
9SG1248G101	48	40.8 to 55.2	1.0	48.0	6,000	7.35 260	340 1.37	64		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 480).

Dimensions (unit: mm)



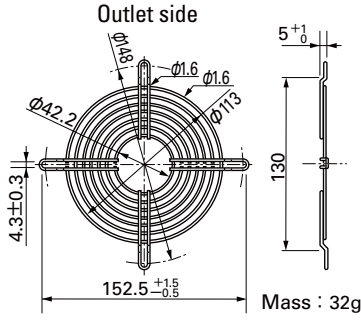
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

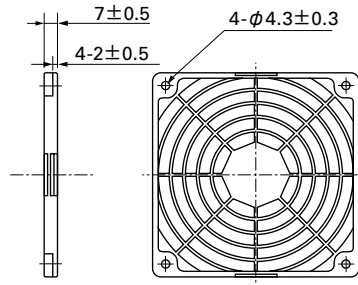
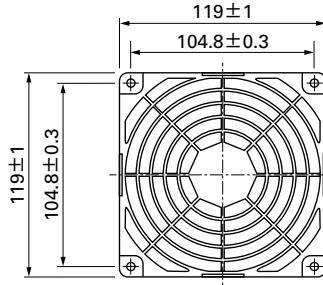
Model : 109-019C Surface treatment : Nickel-chrome plating (silver)
 : 109-019H : Cation electropainting (black)



Mass : 32g

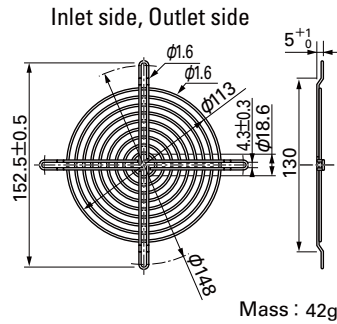
Resin Finger Guards

Model : 109-1000G



Mass : 23g

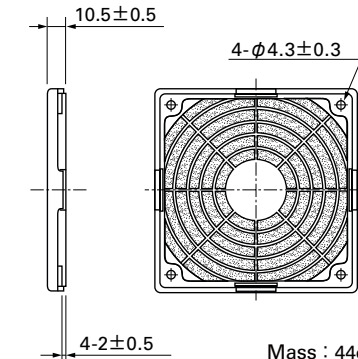
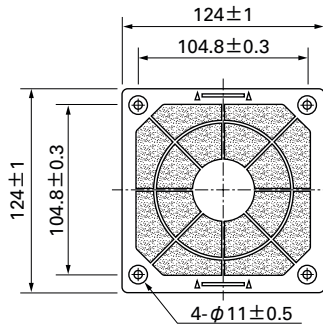
Model : 109-019E Surface treatment : Nickel-chrome plating (silver)
 : 109-019K : Cation electropainting (black)



Mass : 42g

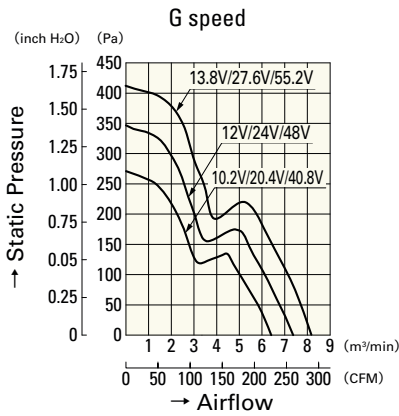
Resin Filter Kits

Model : 109-1000F13 (13PPI), 109-1000F20 (20PPI)
 : 109-1000F30 (30PPI), 109-1000F40 (40PPI)

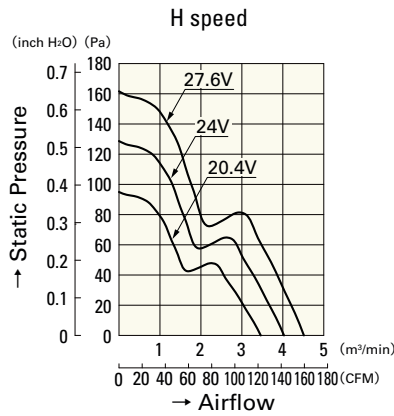


Mass : 44g

Airflow - Static Pressure Characteristics



9SG1212G101
9SG1224G101
9SG1248G101



9SG1224H101

127 mm sq.

San Ace 127



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

127×127×38mm (Mass : 350g) **9P type**

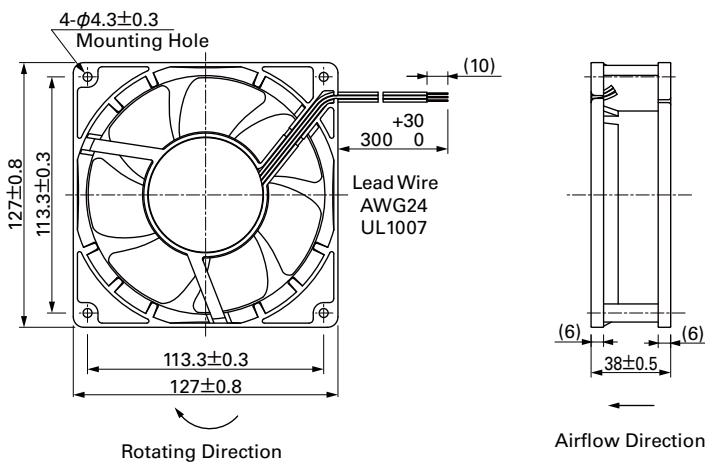
Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

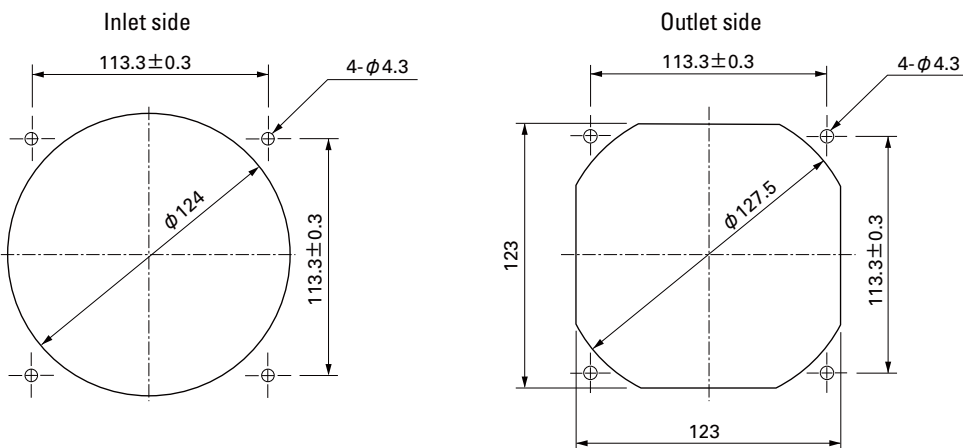
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109P1312S101	12	10.2 to 13.8	1.3	15.6	3,300	4.2 148	117.6 0.472	47	-20 to +60	40,000/60°C
109P1312H101			0.82	9.84	2,950	3.8 134	98 0.394	45		
109P1324S101	24	20.4 to 27.6	0.55	13.2	3,300	4.2 148	117.6 0.472	47		
109P1324H101			0.41	9.84	2,950	3.8 134	98 0.394	45		
109P1348S101	48	40.8 to 55.2	0.3	14.4	3,300	4.2 148	117.6 0.472	47		
109P1348H101			0.2	9.6	2,950	3.8 134	98 0.394	45		

Models without sensors or with lock sensors are available as options. Please refer to the index (p. 468).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



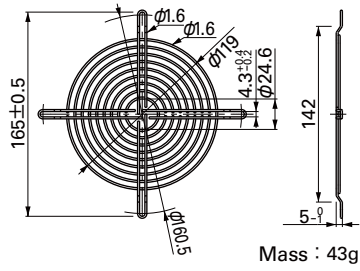
Options (unit: mm)

Finger Guards

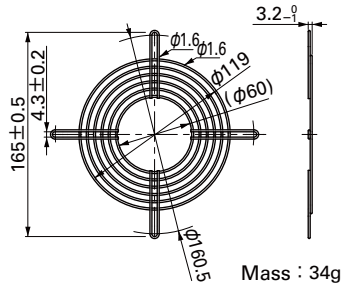
Model : 109-722 Surface treatment : Nickel-chrome plating (silver) Color (silver)

Model : 109-723 Surface treatment : Nickel-chrome plating (silver) Color (silver)

Inlet side, Outlet side

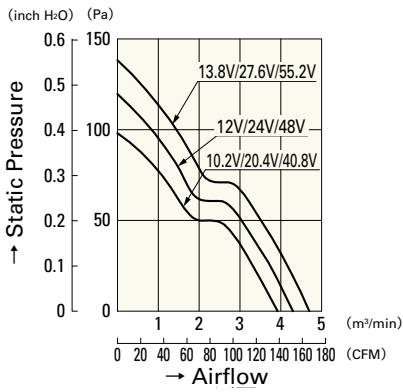


Outlet side

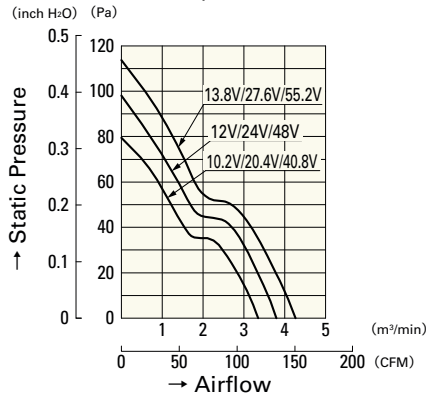


Airflow - Static Pressure Characteristics

S speed



H speed



109P1312S101

109P1324S101

109P1348S101

109P1312H101

109P1324H101

109P1348H101

127 mm sq.

San Ace 127



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C , rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

127×127×38mm (Mass : 400g) **9E type**

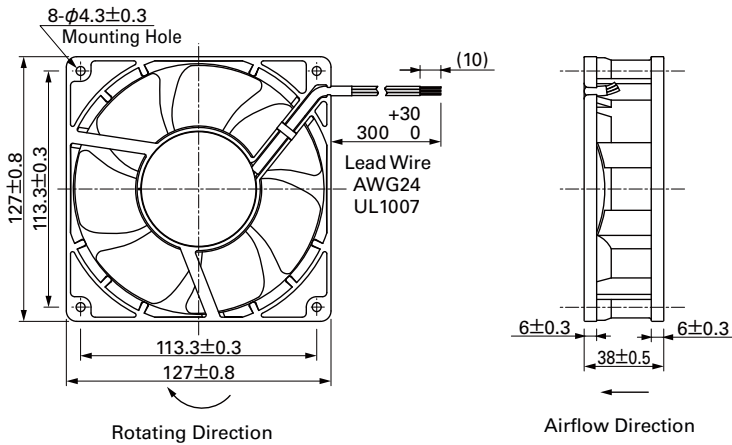
Specifications

The following nos. have pulse sensors.

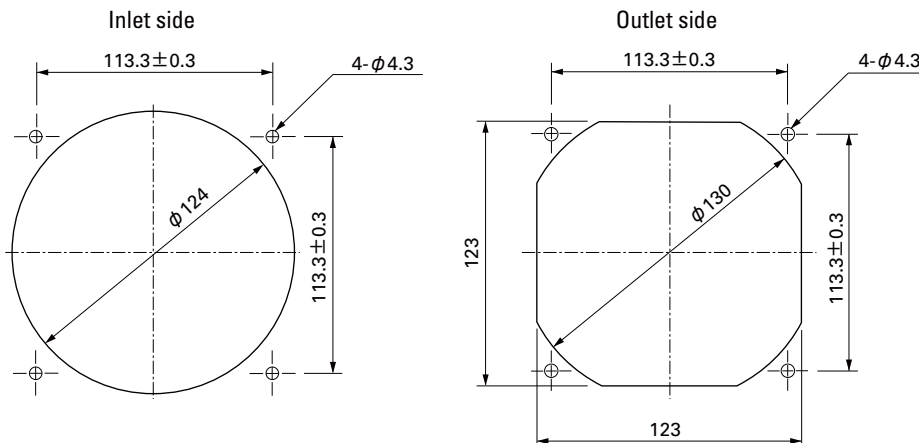
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109E1312A101	12	10.2 to 13.8	1.4	16.8	3,850	4.81 170	155 0.622	52	-20 to +70	60,000/60°C
109E1312S101			1.2	14.4	3,450	4.37 154	125 0.502	49		
109E1324G101	24	20.4 to 27.6	1.1	26.4	4,550	5.66 200	216 0.867	57	-20 to +60	40,000/60°C
109E1324A101			0.7	16.8	3,850	4.81 170	155 0.622	52		
109E1324S101			0.53	12.7	3,450	4.37 154	125 0.502	49		
109E1348G101	48	40.8 to 55.2	0.54	25.9	4,550	5.66 200	216 0.867	57	-20 to +60	40,000/60°C
109E1348A101			0.36	17.3	3,850	4.81 170	155 0.622	52		
109E1348S101			0.28	13.4	3,450	4.37 154	125 0.502	49		

Models without sensors or with lock sensors are available as options. Please refer to the index (p. 465).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



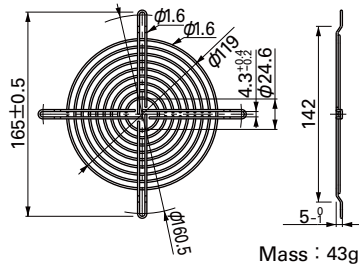
Options (unit: mm)

Finger Guards

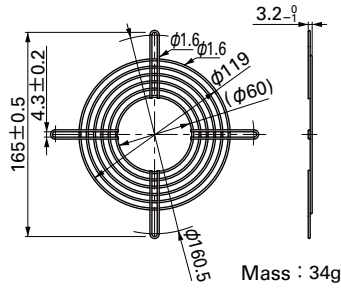
Model : 109-722 Surface treatment : Nickel-chrome plating (silver) Color (silver)

Model : 109-723 Surface treatment : Nickel-chrome plating (silver) Color (silver)

Inlet side, Outlet side

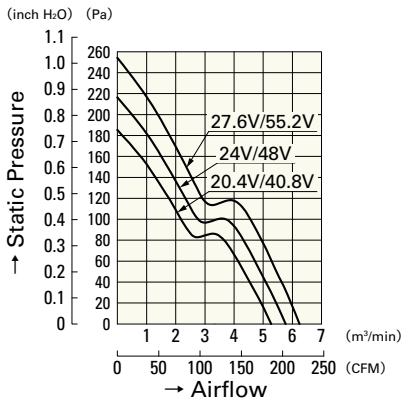


Outlet side



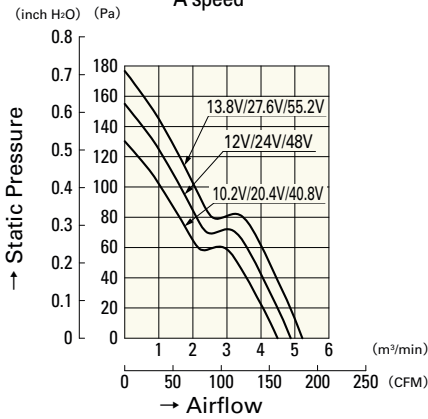
Airflow - Static Pressure Characteristics

G speed



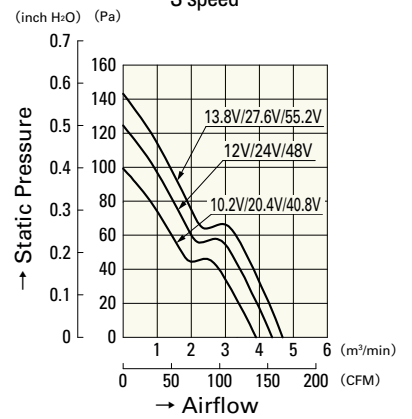
- 109E1324G101
- 109E1348G101

A speed



- 109E1312A101
- 109E1324A101
- 109E1348A101

S speed



- 109E1312S101
- 109E1324S101
- 109E1348S101

140 mm sq.

San Ace 140



General Specifications

- Material Frame: Aluminum (Flammability: UL94V-1), Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C , rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

140×140×38mm (Mass : 630g) **9GV type**

Specifications

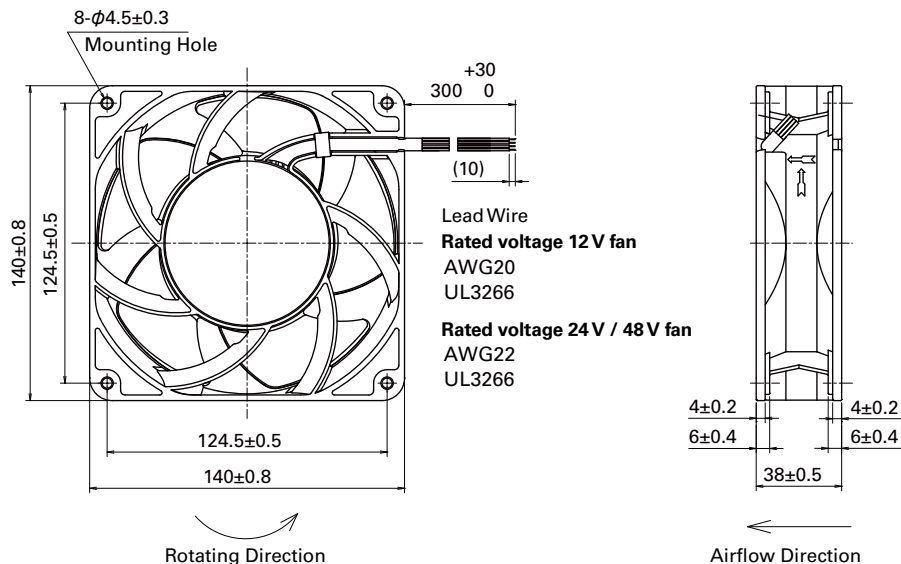
The following nos. **have PWM controls and pulse sensors.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note1)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GV1412P1G001	12	10.8 to 13.2	100	4.6	55.20	7,600	8.80 310	640 2.57	70	-20 to +70	40,000/60°C
			20	0.26	3.12	2,300	2.66 93	80 0.32	39		
9GV1412P1S001			100	3.1	37.20	6,650	7.70 272	480 1.93	67		
			20	0.26	3.12	2,300	2.66 93	80 0.32	39		
9GV1412P1H001			100	1.7	20.40	5,200	6.00 212	300 1.20	62		
			20	0.26	3.12	2,300	2.66 93	80 0.32	39		
9GV1424P1G001	24	21.6 to 26.4	100	2.3	55.20	7,600	8.80 310	640 2.57	70		
			20	0.13	3.12	2,300	2.66 93	80 0.32	39		
9GV1424P1S001			100	1.55	37.20	6,650	7.70 272	480 1.93	67		
			20	0.13	3.12	2,300	2.66 93	80 0.32	39		
9GV1424P1H001			100	0.85	20.40	5,200	6.00 212	300 1.20	62		
			20	0.13	3.12	2,300	2.66 93	80 0.32	39		
9GV1448P1G001	48	36 to 60	100	1.15	55.20	7,600	8.80 310	640 2.57	70		
			20	0.11	5.28	2,300	2.66 93	80 0.32	39		
9GV1448P1S001			100	0.78	37.44	6,650	7.70 272	480 1.93	67		
			20	0.11	5.28	2,300	2.66 93	80 0.32	39		
9GV1448P1H001			100	0.42	20.16	5,200	6.00 212	300 1.20	62		
			20	0.11	5.28	2,300	2.66 93	80 0.32	39		

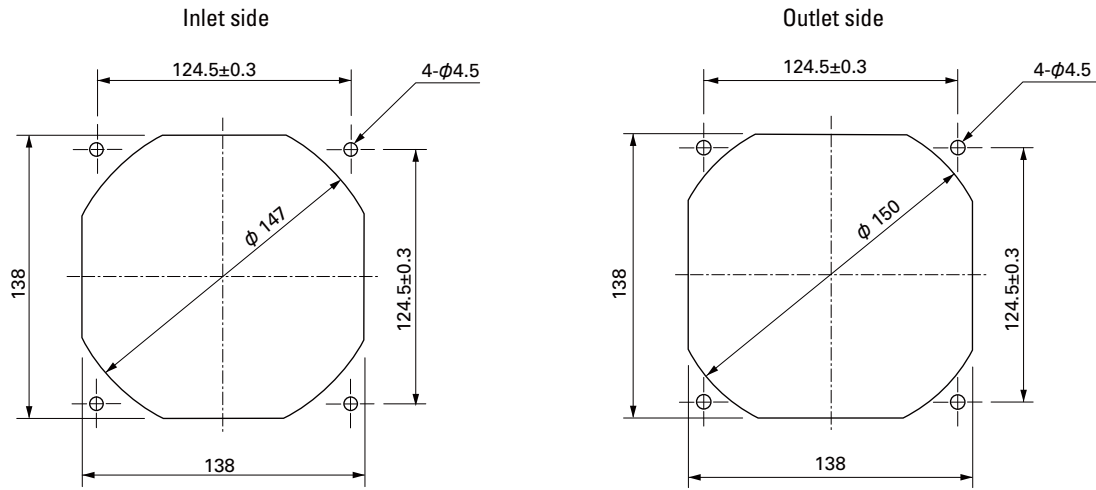
Note: Fan does not rotate when PWM duty cycle is 0%.

※PWM Frequency : 25kHz

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

Model : 109-719

Surface treatment : Nickel-chrome plating

Color

(silver)

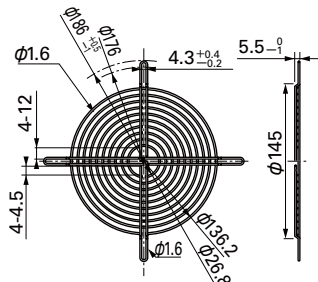
Model : 109-719H

Surface treatment : Cation electropainting

Color

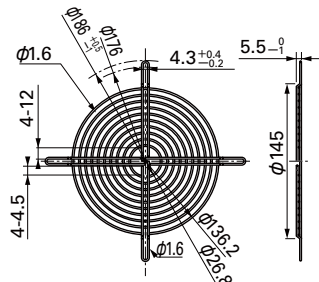
(black)

Inlet side, Outlet side



Mass : 51g

Inlet side, Outlet side



Mass : 51g

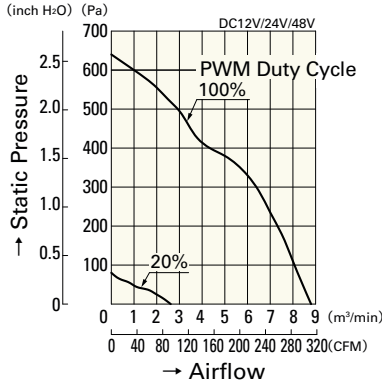
140mm sq.

San Ace 140

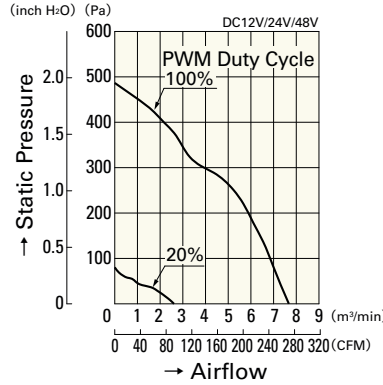
140×140×38mm [Mass : 630g]

Airflow - Static Pressure Characteristics

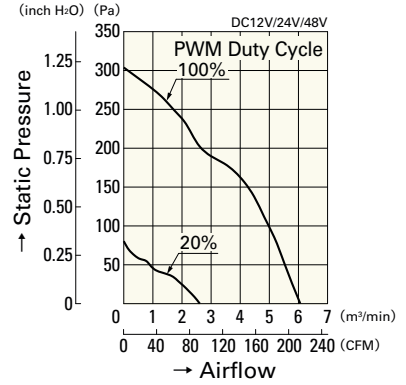
PWM Duty Cycle



- 9GV1412P1G001**
- 9GV1424P1G001**
- 9GV1448P1G001**

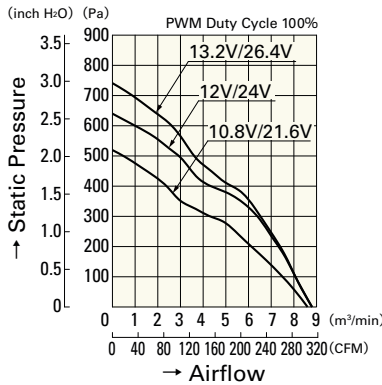


- 9GV1412P1S001**
- 9GV1424P1S001**
- 9GV1448P1S001**

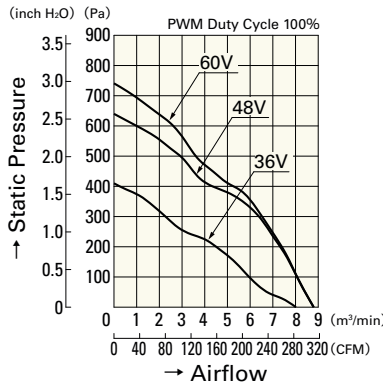


- 9GV1412P1H001**
- 9GV1424P1H001**
- 9GV1448P1H001**

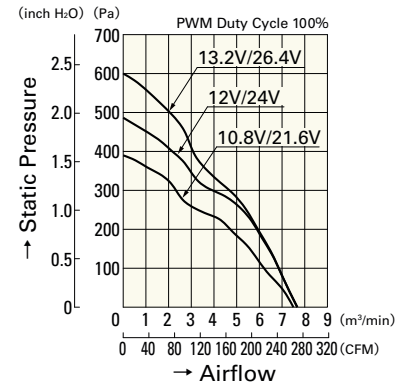
Operating Voltage Range



- 9GV1412P1G001**
- 9GV1424P1G001**

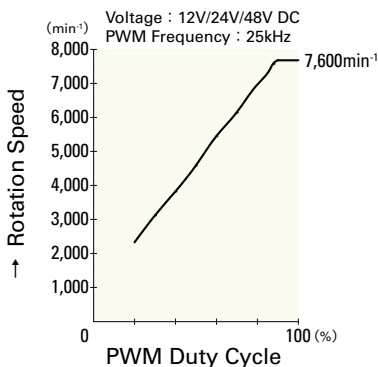


- 9GV1448P1G001**

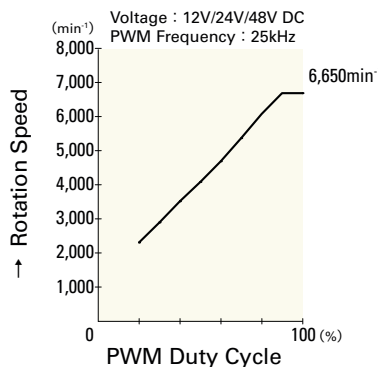


- 9GV1412P1S001**
- 9GV1424P1S001**

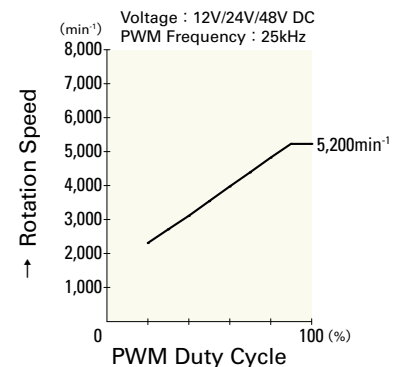
PWM Duty - Speed Characteristics Example



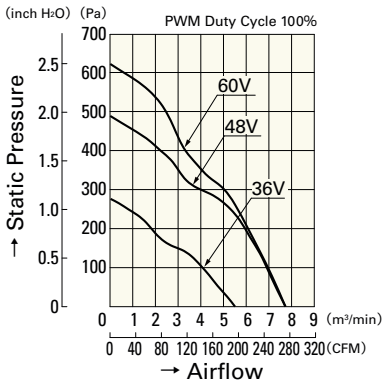
- 9GV1412P1G001**
- 9GV1424P1G001**
- 9GV1448P1G001**



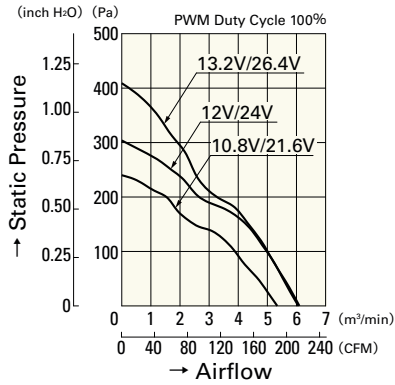
- 9GV1412P1S001**
- 9GV1424P1S001**
- 9GV1448P1S001**



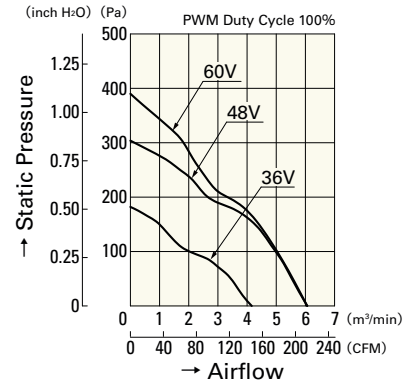
- 9GV1412P1H001**
- 9GV1424P1H001**
- 9GV1448P1H001**



9GV1448P1S001



9GV1412P1H001
9GV1424P1H001



9GV1448P1H001

140mm sq.

San Ace 140



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

140×140×38mm (Mass : 450g) **9P type**

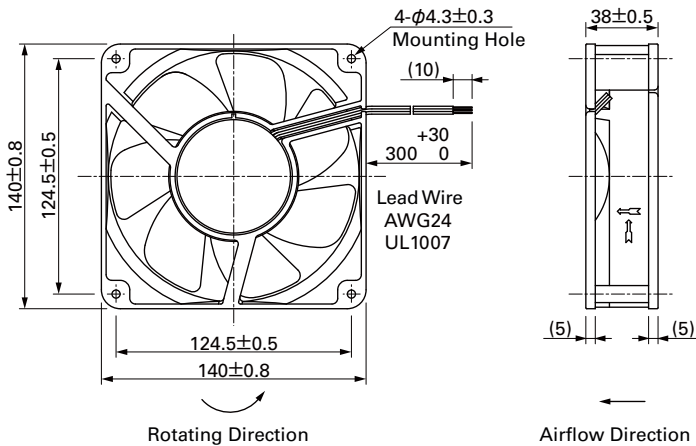
Specifications

The following nos. have pulse sensors and ribs.

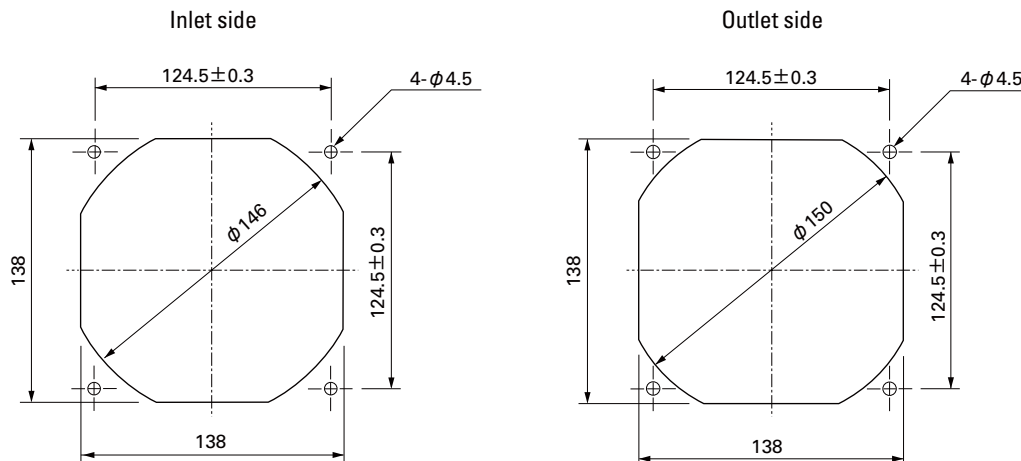
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109P1412H101	12	10.2 to 13.8	0.73	8.76	2,600	4.5 159	94 0.378	46	-20 to +70	40,000/60°C
109P1412M101			0.33	3.96	1,900	3.3 117	52 0.209	38		
109P1424H101	24	20.4 to 27.6	0.37	8.88	2,600	4.5 159	94 0.378	46		
109P1424M101			0.16	3.84	1,900	3.3 117	52 0.209	38		
109P1448H101	48	40.8 to 55.2	0.2	9.6	2,600	4.5 159	94 0.378	46		
109P1448M101			0.09	4.32	1,900	3.3 117	52 0.209	38		

Models without sensors or with lock sensors are available as options. Please refer to the index (p. 468).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



150mm sq.

San Ace 150



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

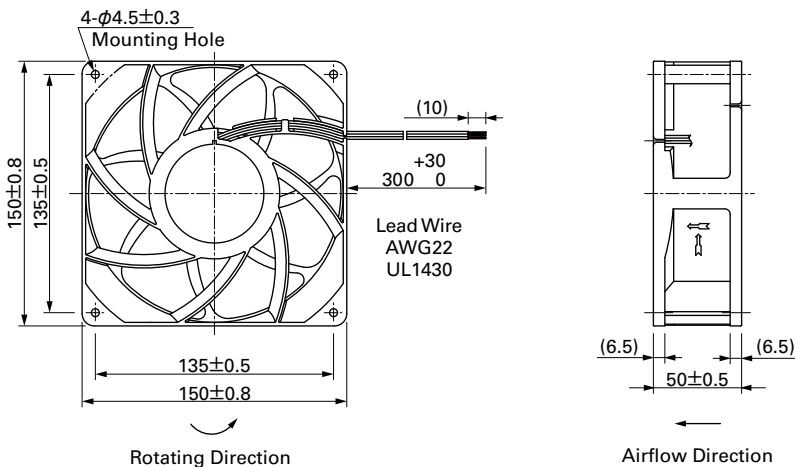
150×150×50mm (Mass : 450g) **9GV type**

Specifications The following nos. **have pulse sensors and ribs.** For ribless, append "1" to the model no.

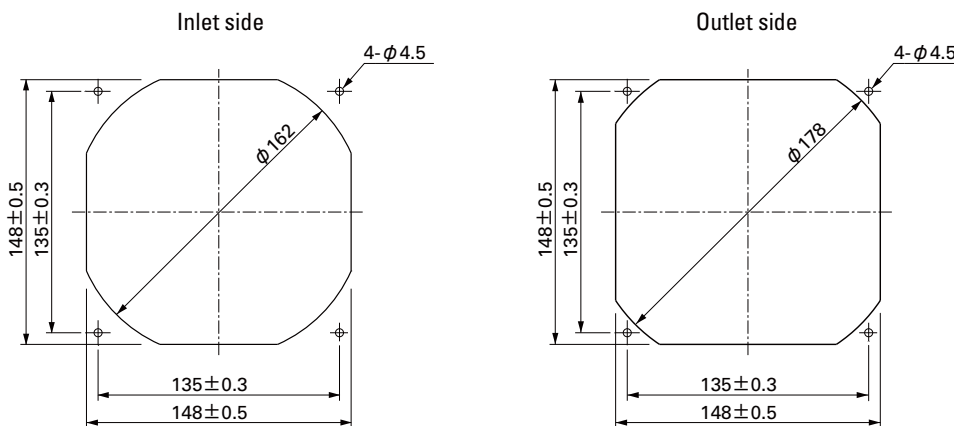
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GV1512H501	12	10.2 to 13.8	2.9	34.8	3,900	8.54 300	210 0.84	61	-20 to +70	40,000/60°C
9GV1512M501			1.2	14.4	3,000	6.35 224	132 0.53	53		
9GV1524M501	24	20.4 to 27.6	0.6	14.4	3,000	6.35 224	132 0.53	53		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 478).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



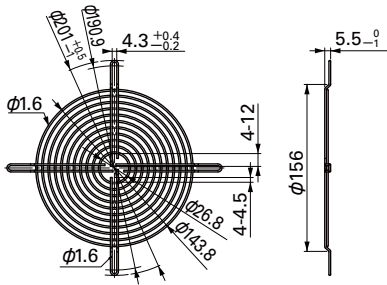
Options (unit: mm)

Finger Guards

Model : 109-1051 Surface treatment : Nickel-chrome plating (silver) Color

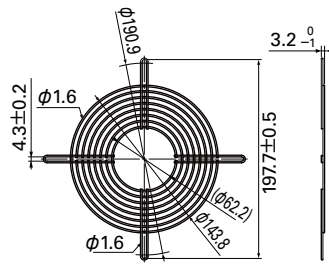
Model : 109-1052 Surface treatment : Nickel-chrome plating (silver) Color

Inlet side, Outlet side



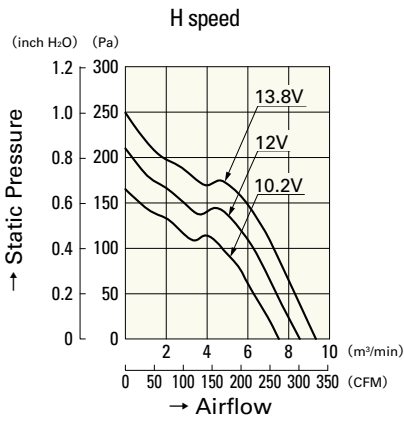
Mass : 63g

Outlet side

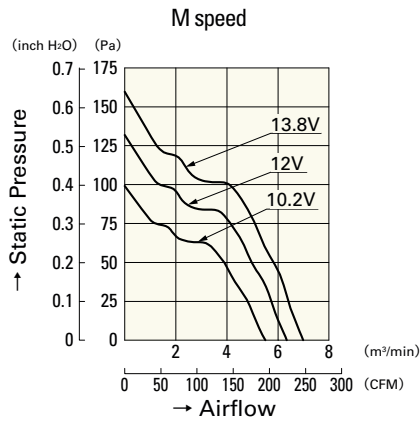


Mass : 53g

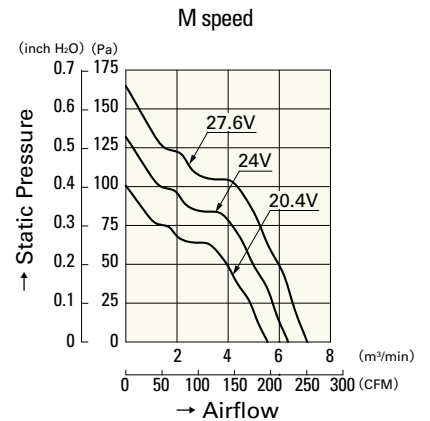
Airflow - Static Pressure Characteristics



9GV1512H501



9GV1512M501



9GV1524M501

φ172mm

San Ace 172



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C , rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

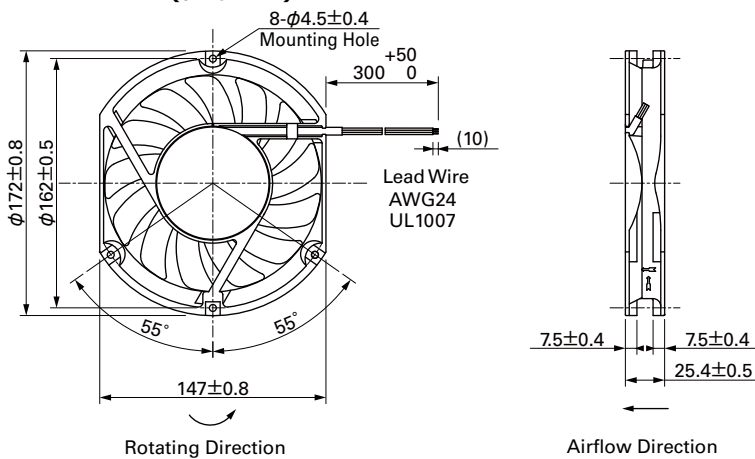
φ172mm × 147mm × 25mm (Mass : 500g) **9E type Sidecut type**

Specifications The following nos. have pulse sensors.

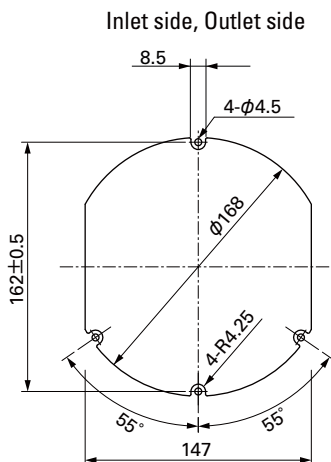
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109E4712M401	12	10.2 to 13.8	1.3	15.6	2,800	5.2 183	92 0.369	51	-20 to +60	40,000/60°C
109E4712L401			1.0	12.0	2,500	4.6 162	73 0.293	48		
109E4724H401	24	20.4 to 27.6	1.0	24.0	3,400	6.4 226	135 0.542	57		
109E4724F401			0.79	19.0	3,100	5.8 204	112 0.450	54		
109E4724M401			0.58	13.9	2,800	5.2 183	92 0.369	51		
109E4724L401			0.44	10.6	2,500	4.6 162	73 0.293	48		
109E4748S401	48	40.8 to 55.2	0.62	29.8	3,650	6.8 240	156 0.627	58		
109E4748H401			0.52	25.0	3,400	6.4 226	135 0.542	57		
109E4748F401			0.40	19.2	3,100	5.8 204	112 0.450	54		
109E4748M401			0.32	15.4	2,800	5.2 183	92 0.369	51		
109E4748L401			0.25	12.0	2,500	4.6 162	73 0.293	48		

Models without sensors or with lock sensors are available as options. Please refer to the index (pp. 465 to 466).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



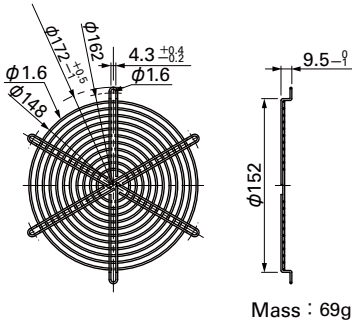
Options (unit: mm)

Finger Guards

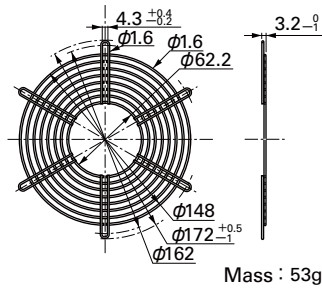
Model : 109-319E Surface treatment : Nickel-chrome plating (silver) Color : 109-319H Surface treatment : Nickel-chrome plating (silver) Color : Cation electropainting (black)

Model : 109-320 Surface treatment : Nickel-chrome plating (silver) Color

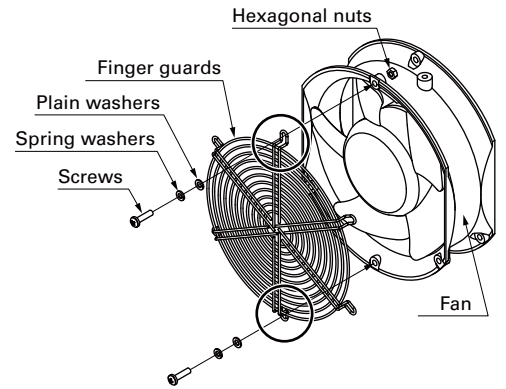
Inlet side, Outlet side



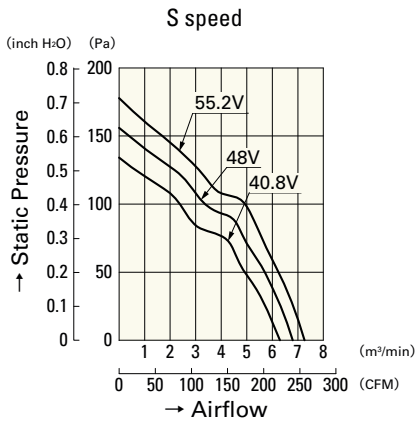
Outlet side



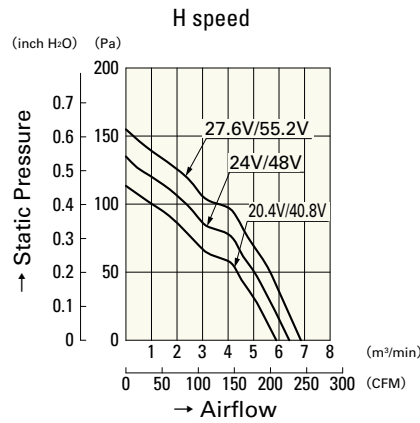
For the finger guard Model: 109-319E, 109-319H, 109-320, fix the finger guard to two holes as shown in the diagram. Do not fix it to any other holes.



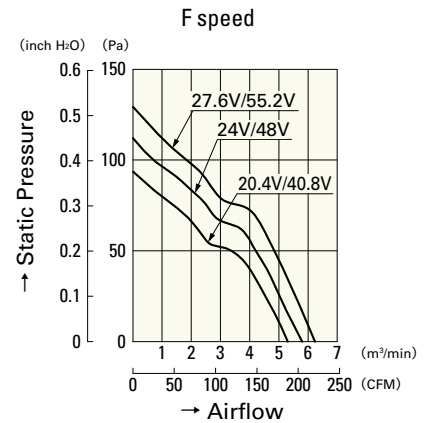
Airflow - Static Pressure Characteristics



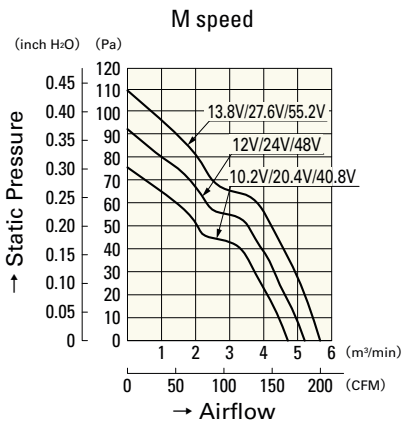
109E4748S401



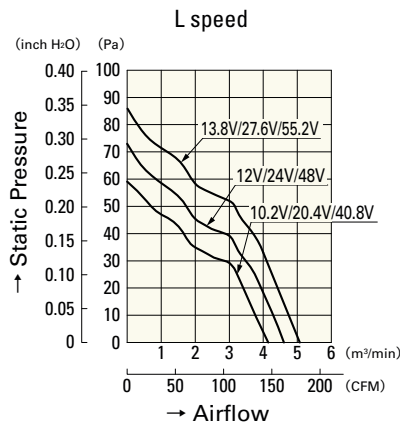
109E4724H401
109E4748H401



109E4724F401
109E4748F401



109E4712M401
109E4724M401
109E4748M401



109E4712L401
109E4724L401
109E4748L401

φ172_{mm}

San Ace 172



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C , rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

φ172mm × 150mm × 51mm (Mass : 800g)

9HV type Sidecut type



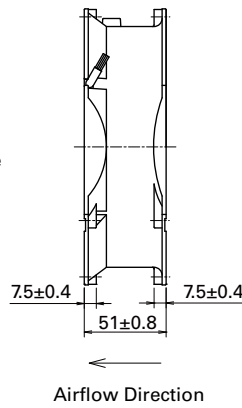
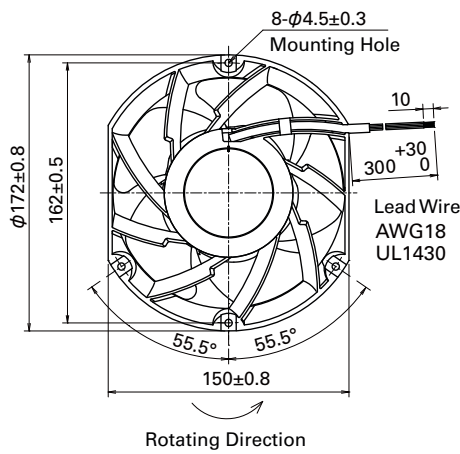
Specifications The following nos. have PWM controls and pulse sensors.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note1)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9HV5724P5H001	24	16 to 30	100	5.0	120	8,000	12.3 434	1,000 4.02	77	-20 to +70	40,000/60°C (70,000/40°C)
			20	0.50	12.0	3,000	4.60 162	175 0.70	51		
9HV5748P5G001	48	36 to 72	100	5.0	240	10,500	16.1 568	1,600 6.43	83		
			20	0.41	19.7	3,700	5.60 198	250 1.01	57		

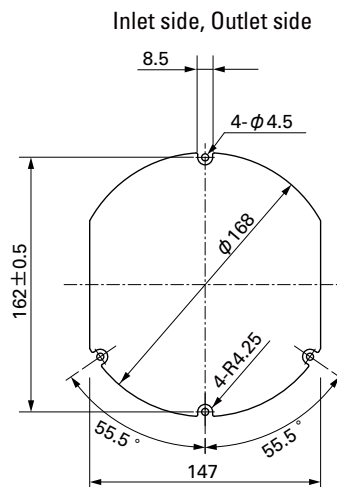
Note: Fan does not rotate when PWM duty cycle is 0%.

※PWM Frequency : 25kHz

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

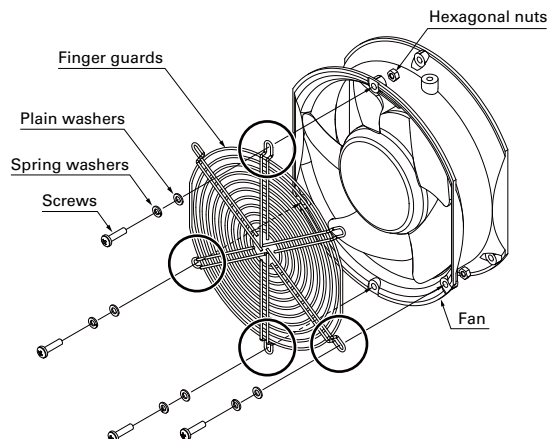
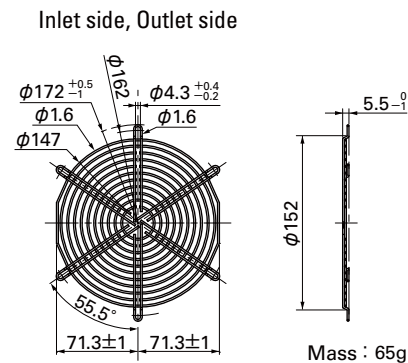


Options (unit: mm)

Finger Guards

Model : 109-319J Surface treatment : Nickel-chrome plating (silver) Color

For the finger guard Model: 109-319J, fix the finger guard to four holes as shown in the diagram.



φ172_{mm}

San Ace 172



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

φ172mm × 150mm × 51mm (Mass : 760g)

9SG type Sidecut type



Specifications

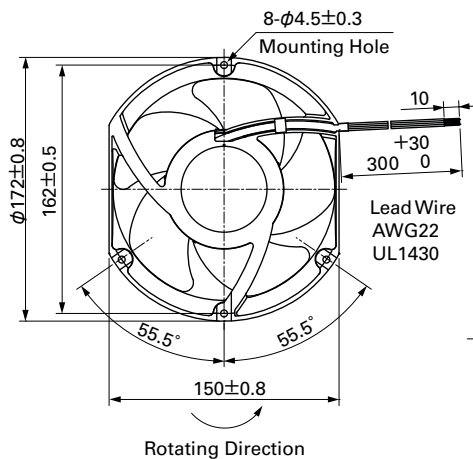
The following nos. have PWM controls and pulse sensors.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9SG5724P5H61	24	20.4 to 27.6	100	2.8	67.2	6,500	11.6 410	540 2.16	71	-20 to +70	40,000/60°C
			0	0.18	4.32	1,300	2.32 81.9	30 0.12	28		
9SG5748P5G01	48	36 to 72	100	2.91	140	8,600	15.46 546	1,000 4.02	78	-20 to +60	
			0	0.21	10.1	2,000	3.59 127	75.1 0.30	40		
9SG5748P5H01	48	36 to 72	100	1.62	78	6,500	11.60 410	770 3.09	71	-20 to +60	
			0	0.21	10.1	2,000	3.59 127	75.1 0.30	40		

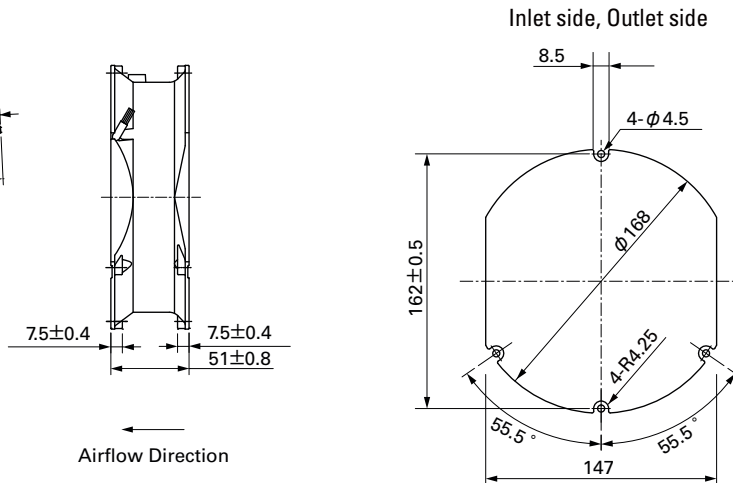
※PWM Frequency : 25kHz

Models without sensors are available as an option. Please refer to the index (p. 480).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

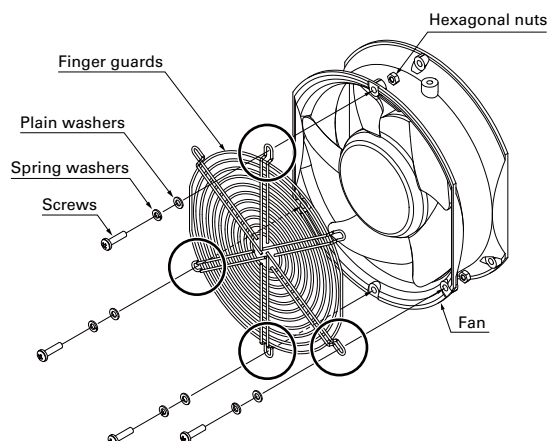
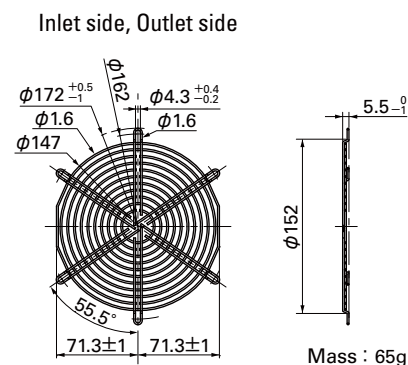


Options (unit: mm)

Finger Guards

Model : 109-319J Color Surface treatment : Nickel-chrome plating (silver)

For the finger guard Model: 109-319J, fix the finger guard to four holes as shown in the diagram.



Options (unit: mm)

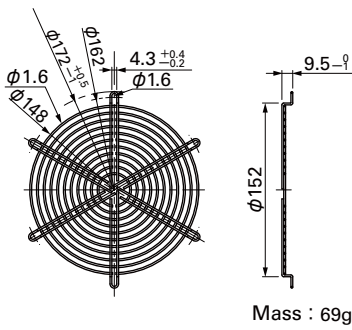
Finger Guards

Color
 Model : 109-319E Surface treatment : Nickel-chrome plating (silver)
 : 109-319H : Cation electropainting (black)

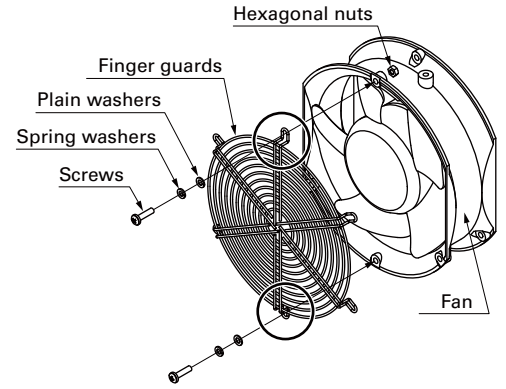
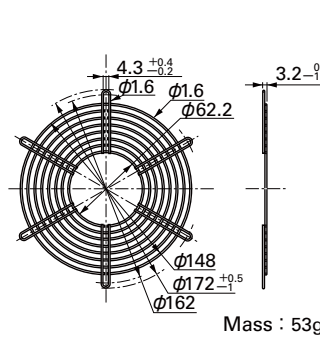
Color
 Model : 109-320 Surface treatment : Nickel-chrome plating (silver)

For the finger guard Model: 109-319E, 109-319H, 109-320, fix the finger guard to two holes as shown in the diagram. Do not fix it to any other holes.

Inlet side, Outlet side

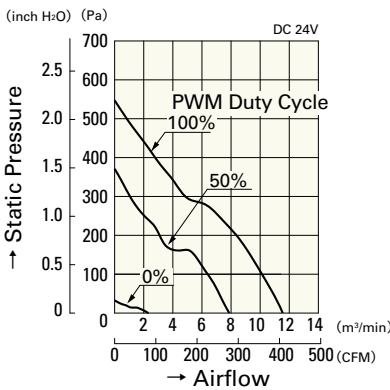


Outlet side

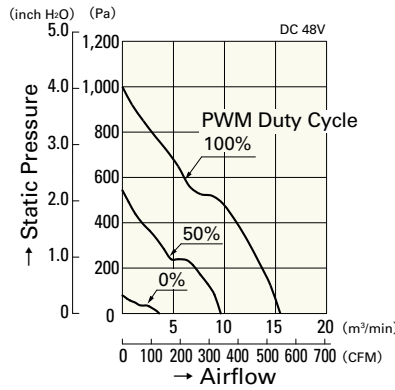


Airflow - Static Pressure Characteristics

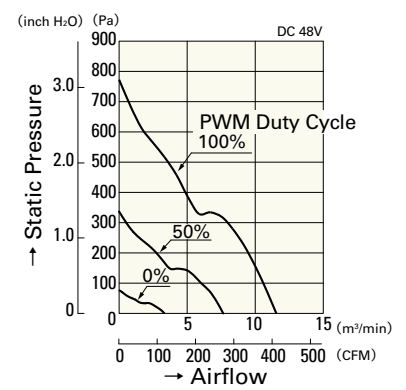
PWM Duty Cycle



9SG5724P5H61

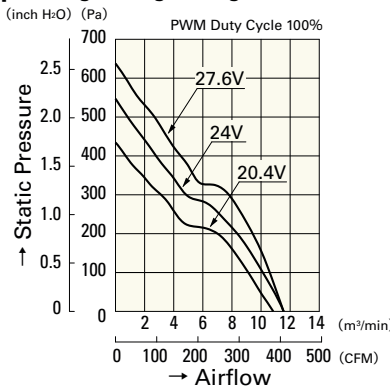


9SG5748P5G01

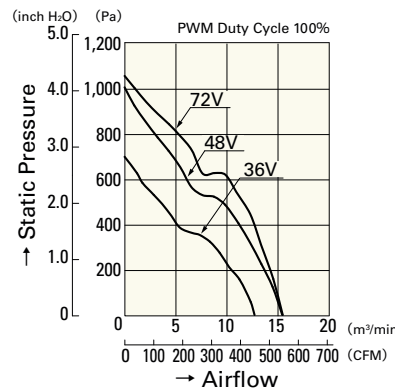


9SG5748P5H01

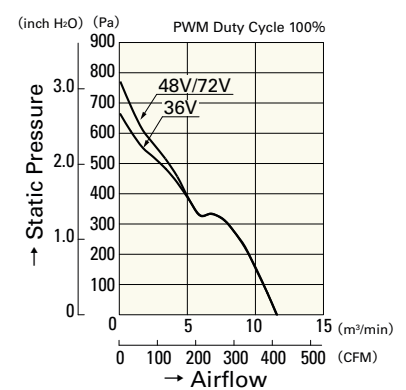
Operating Voltage Range



9SG5724P5H61

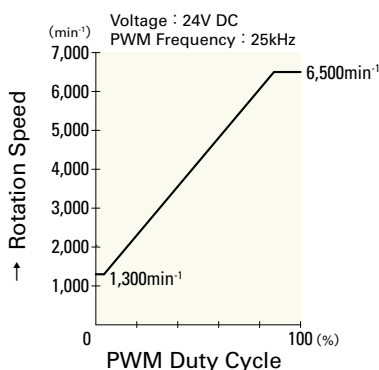


9SG5748P5G01

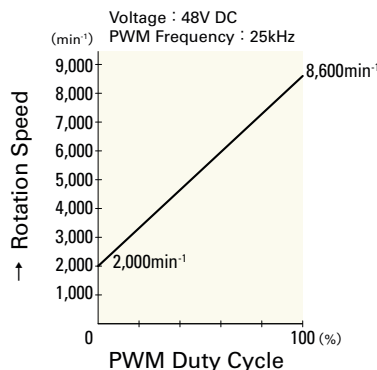


9SG5748P5H01

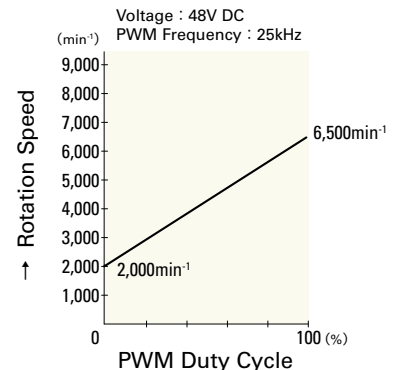
PWM Duty - Speed Characteristics Example



9SG5724P5H61



9SG5748P5G01



9SG5748P5H01

φ172_{mm}

San Ace 172



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

φ172mm × 150mm × 51mm (Mass : 800g)

9GV type Sidecut type



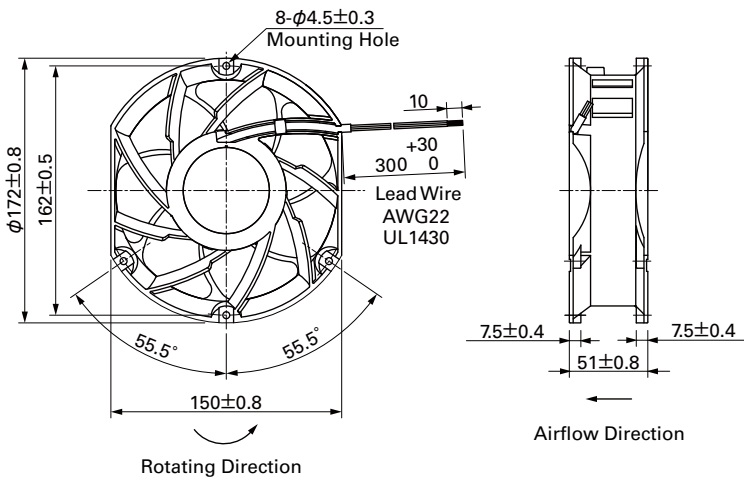
Specifications

The following nos. **have pulse sensors.**

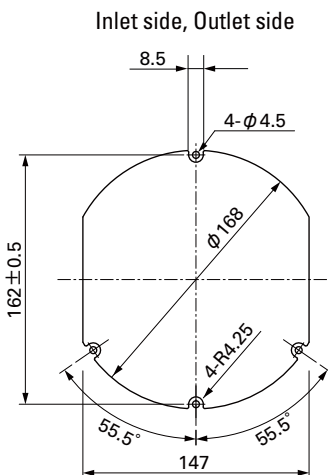
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9GV5724H501	24	20.4 to 27.6	4.0	96	6,300	11.32 400	690 2,77	74	- 20 to +70	40,000/60°C
9GV5748H501	48	40.8 to 55.2	2.0	96						

Models without sensors or with PWM control function are available as options. Please refer to the index (p. 478).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



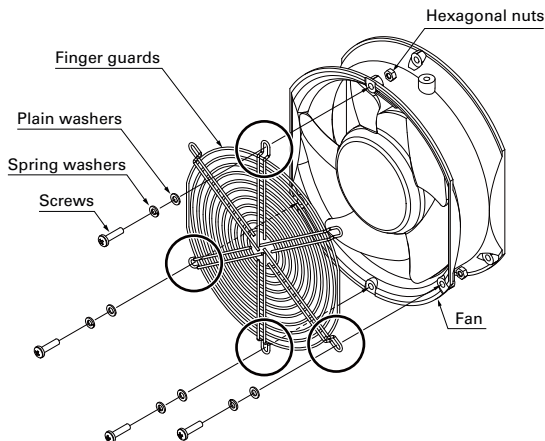
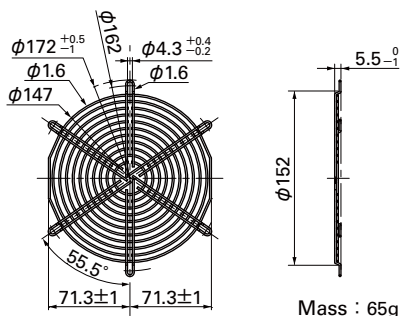
Options (unit: mm)

Finger Guards

Model : 109-319J Color : Nickel-chrome plating (silver)

For the finger guard Model: 109-319J, fix the finger guard to four holes as shown in the diagram.

Inlet side, Outlet side



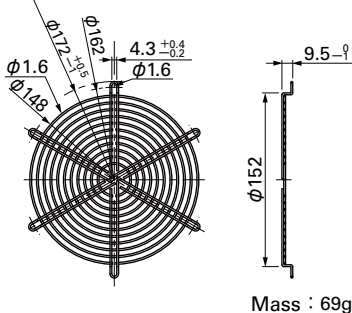
Finger Guards

Model : 109-319E Surface treatment : Nickel-chrome plating (silver) Color : Cation electropainting (black)

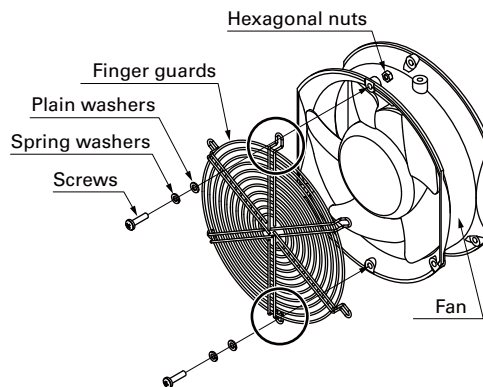
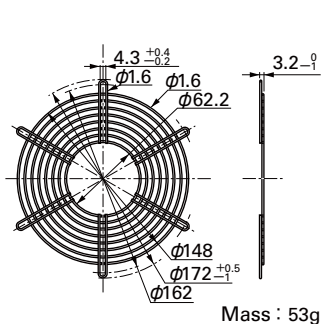
Model : 109-320 Surface treatment : Nickel-chrome plating (silver) Color : Cation electropainting (black)

For the finger guard Model: 109-319E, 109-319H, 109-320, fix the finger guard to two holes as shown in the diagram. Do not fix it to any other holes.

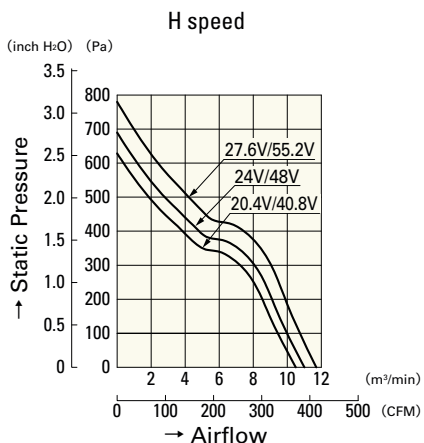
Inlet side, Outlet side



Outlet side



Airflow - Static Pressure Characteristics



9GV5724H501

9GV5748H501

φ172mm

San Ace 172



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

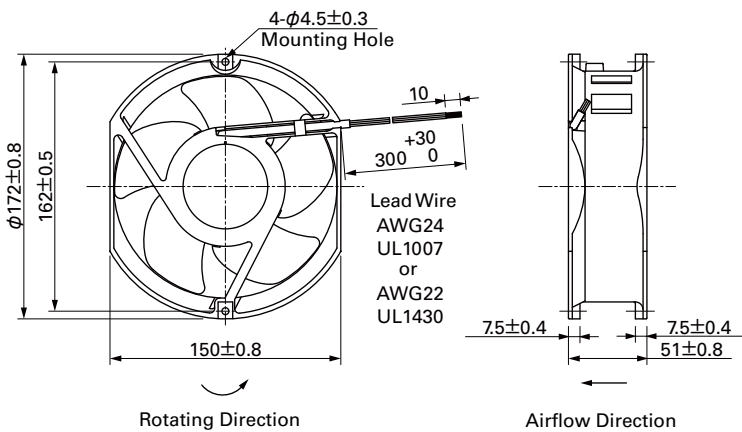
φ172mm × 150mm × 51mm (Mass : 760g) **9E type Sidecut type**

Specifications The following nos. have pulse sensors.

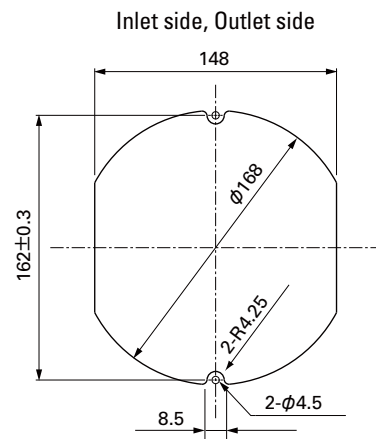
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109E5712K501	12	10.2 to 13.8	2.9	34.8	4,100	8.5 300	243.0 0.976	60	-20 to +60	40,000/60°C
109E5712Y501			2.3	27.6	3,800	8 282	210 0.84	60		
109E5712H501			1.2	14.4	3,050	6.4 226	137.2 0.551	52	-20 to +70	
109E5712F501			0.68	8.16	2,500	5.1 180	95 0.38	47		
109E5712M501			0.48	5.76	2,000	4.2 148	67.6 0.271	41		
109E5724C501	24	20.4 to 27.6	2.3	55.2	4,800	9.9 350	308.0 1.237	66	-20 to +70	
109E5724K501			1.3	31.2	4,100	8.5 300	243.0 0.976	60		
109E5724H501			0.58	13.92	3,050	6.4 226	137.2 0.551	52		
109E5724F501			0.35	8.4	2,500	5.1 180	95 0.38	47		
109E5724M501			0.2	4.8	2,000	4.2 148	67.6 0.271	41		
109E5748C501	48	40.8 to 55.2	1.2	57.6	4,800	9.9 350	308.0 1.237	66	-20 to +60	
109E5748K501			0.7	33.6	4,100	8.5 300	243.0 0.976	60		
109E5748H501			0.28	13.44	3,050	6.4 226	137.2 0.551	52	-20 to +70	
109E5748F501			0.19	9.12	2,500	5.1 180	95 0.38	47		
109E5748M501			0.11	5.28	2,000	4.2 148	67.6 0.271	41		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 466).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



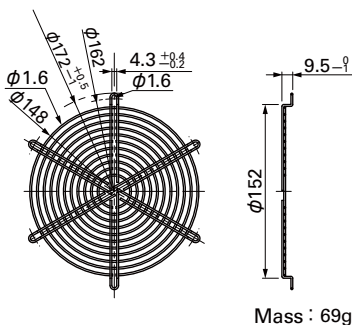
Options (unit: mm)

Finger Guards

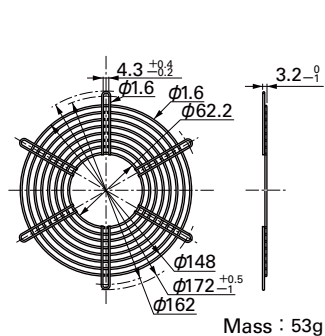
Model : 109-319E Surface treatment : Nickel-chrome plating (silver) Color : 109-319H : Cation electropainting (black)

Model : 109-320 Surface treatment : Nickel-chrome plating (silver) Color

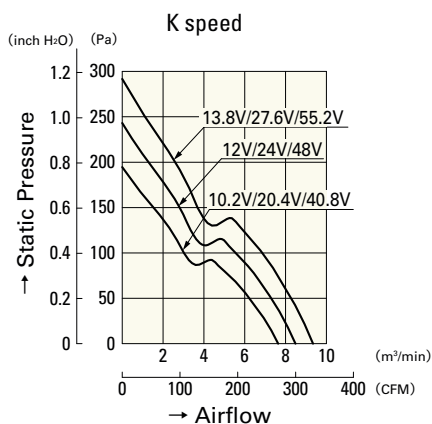
Inlet side, Outlet side



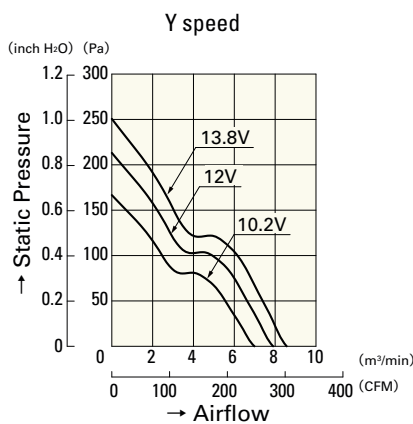
Outlet side



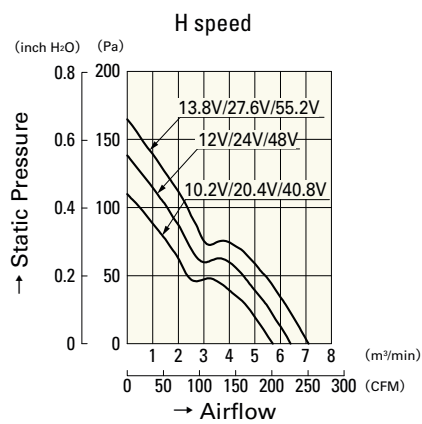
Airflow - Static Pressure Characteristics



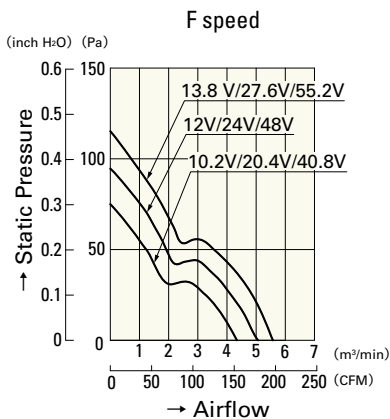
- 109E5712K501**
- 109E5724K501**
- 109E5748K501**



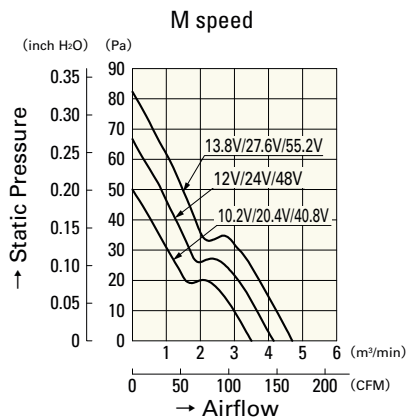
- 109E5712Y501**



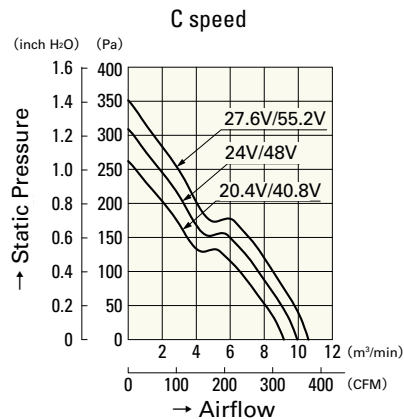
- 109E5712H501**
- 109E5724H501**
- 109E5748H501**



- 109E5712F501**
- 109E5724F501**
- 109E5748F501**



- 109E5712M501**
- 109E5724M501**
- 109E5748M501**



- 109E5724C501**
- 109E5748C501**

φ172mm

San Ace 172



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

φ172mm×51mm (Mass : 780g) **9E type Round type**

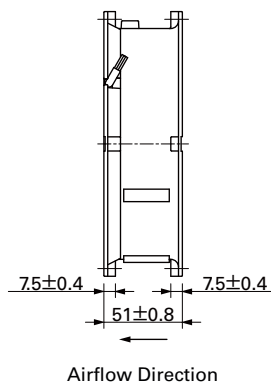
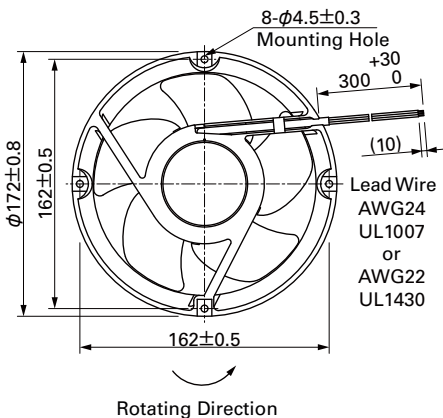
Specifications

The following nos. have pulse sensors.

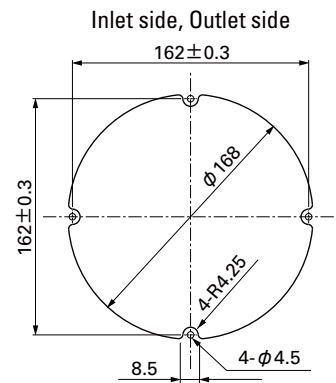
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109E1712K501	12	10.2 to 13.8	2.9	34.8	4,100	8.5 300	243.0 0.976	55	-20 to +60	40,000/60°C
109E1712Y501			2.3	27.6	3,800	7.8 276	210.0 0.843	53		
109E1712H501			1.2	14.4	3,050	6.4 226	137.2 0.551	47		
109E1712F501			0.9	10.8	2,500	5.1 180	95.0 0.382	42		
109E1712M501			0.48	5.76	2,000	4.2 148	67.6 0.271	36		
109E1724C501	24	20.4 to 27.6	2.3	55.2	4,800	9.9 350	308.0 1.237	60		
109E1724K501			1.3	31.2	4,100	8.5 300	243.0 0.976	55		
109E1724H501			0.58	13.92	3,050	6.4 226	137.2 0.551	47		
109E1724F501			0.35	8.4	2,500	5.1 180	95 0.382	42		
109E1724M501			0.2	4.8	2,000	4.2 148	67.6 0.271	36		
109E1748C501	48	40.8 to 55.2	1.2	57.6	4,800	9.9 350	308.0 1.237	60	-20 to +60	
109E1748K501			0.7	33.6	4,100	8.5 300	243.0 0.976	55	-20 to +70	
109E1748H501			0.28	13.44	3,050	6.4 226	137.2 0.551	47	-20 to +60	
109E1748F501			0.19	9.12	2,500	5.1 180	95 0.382	42	-20 to +60	
109E1748M501			0.11	5.28	2,000	4.2 148	67.6 0.271	36	-20 to +70	

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 465).

Dimensions (unit: mm)



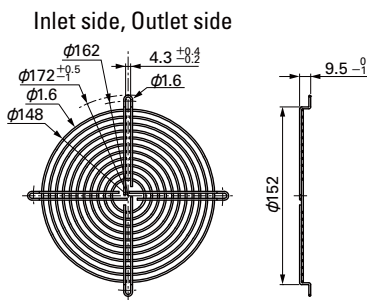
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

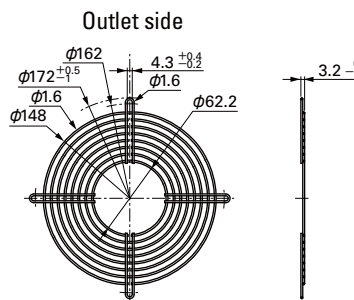
Finger Guards

Model : 109-1066 Surface treatment : Nickel-chrome plating (silver) Color



Mass : 61g

Model : 109-1068 Surface treatment : Nickel-chrome plating (silver) Color



Mass : 54g

φ200mm

San Ace 200



General Specifications

- Material: Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
 - Expected Life: Refer to specifications (L10:Survival rate:90% at 60°C, rated voltage, and continuously run in a free air state)
 - Lead Wire: ⊕red ⊖black (Sensor) yellow (Control) brown
 - Storage Temperature: -30°C to +70°C (Non-condensing)
- Power on when current is shut off. Do not power on 15sec or more after power off.

φ200mm×70mm (Mass : 1800g) **9GV type**

Specifications

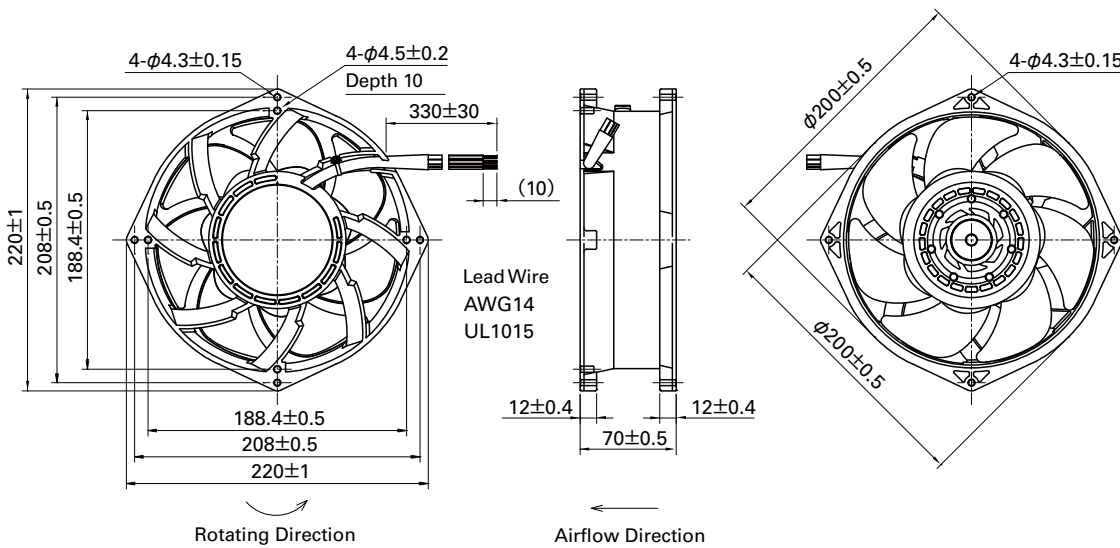
The following nos. have PWM controls and pulse sensors.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^(Note2) [h]
9GV2048P0G201 ^(Note1)	48	36 to 72	100	12.5	600	8,000	31.5 1,112	1,400 5.62	81	-20 to +70	40,000/60°C (70,000/40°C)

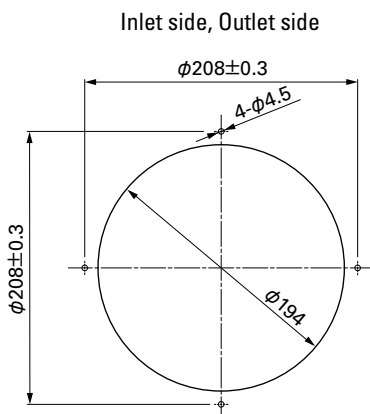
Note 1: Fan does not rotate when PWM duty cycle is 0%.
 Note 2: Expected life at 40°C ambient is just reference value.

※PWM Frequency : 1kHz

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

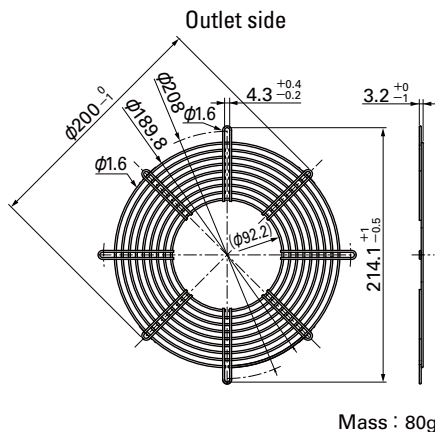
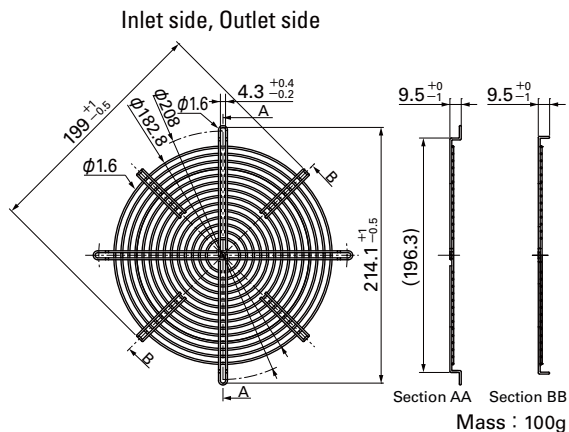


Options (unit: mm)

Finger Guards

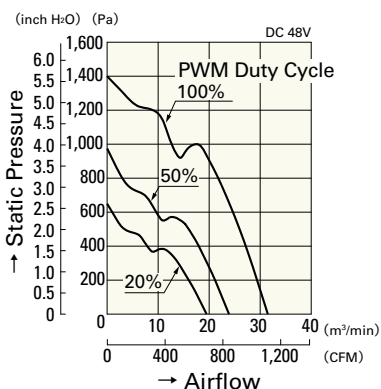
Model : 109-1102 Surface treatment : Nickel-chrome plating (silver) Color

Model : 109-1103 Surface treatment : Nickel-chrome plating (silver) Color



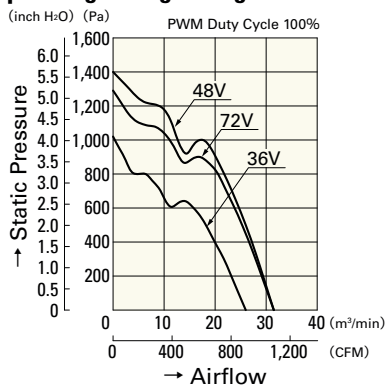
Airflow - Static Pressure Characteristics

PWM Duty Cycle



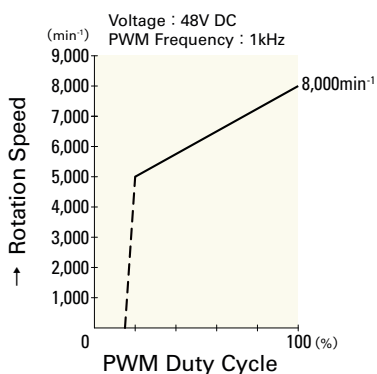
9GV2048P0G201

Operating Voltage Range



9GV2048P0G201

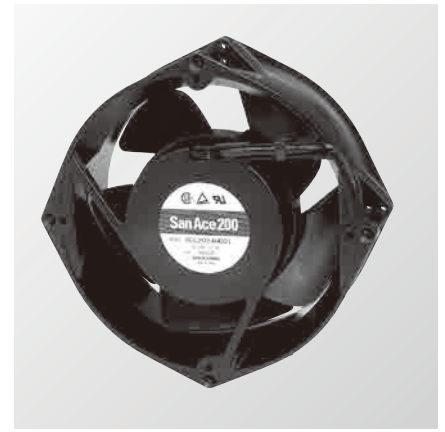
PWM Duty - Speed Characteristics Example



9GV2048P0G201

φ200mm

San Ace 200



Model no. 9EC2048J001 is not certified.

General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
 - Expected Life Refer to specifications (L10:Survival rate:90% at 60°C , rated voltage, and continuously run in a free air state)
 - Lead Wire ⊕red ⊖black or blue (Sensor) yellow
 - Storage Temperature -30°C to +70°C (Non-condensing)
- Power on when current is shut off. Do not power on 10sec or more after power off.

φ200mm×70mm (Mass : 1800g) **9EC type**

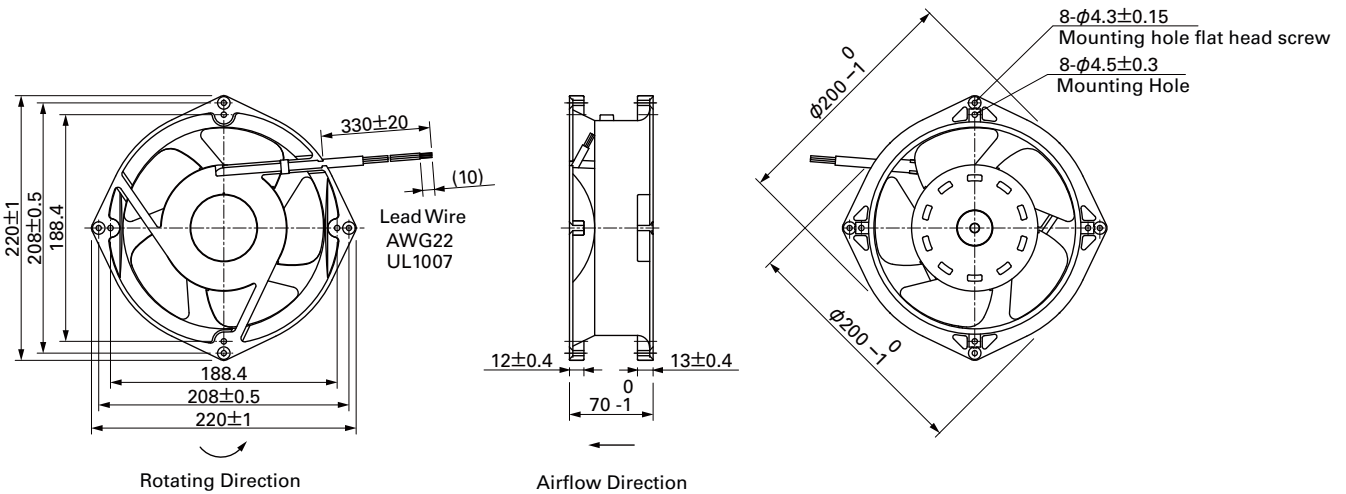
Specifications

The following nos. **have pulse sensors.**

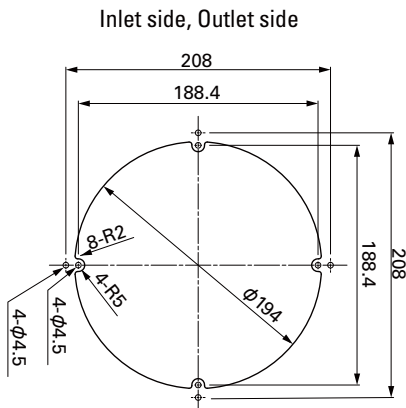
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9EC2024H001	24	20.4 to 26.4	2.0	48.0	3,600	11.0 388	360 1.446	60	-20 to +60	40,000/60°C
9EC2048J001	48	40.8 to 55.2	4.4	211.2	6,100	18.3 646	1,000 4.016	75		
9EC2048A001		43.0 to 51.0	2.2	105.6	4,800	14.7 519	640 2.570	68		
9EC2048H001		40.8 to 52.8	1.2	57.6	3,600	11.0 388	360 1.446	60		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (p. 471).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



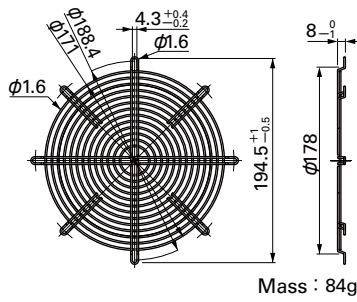
Options (unit: mm)

Finger Guards

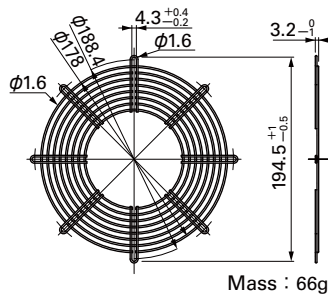
Model : 109-720 Surface treatment : Nickel-chrome plating (silver) Color : 109-720H : Cation electropainting (black)

Model : 109-721 Surface treatment : Nickel-chrome plating (silver) Color : 109-721H : Cation electropainting (black)

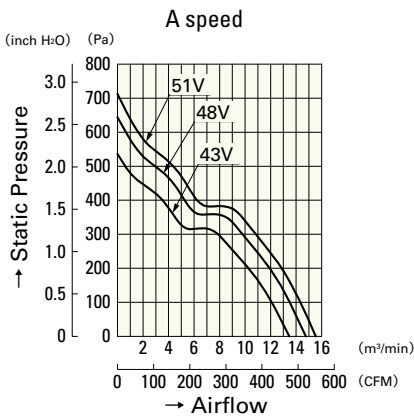
Inlet side, Outlet side



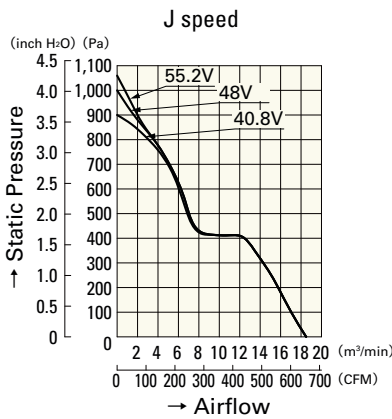
Outlet side



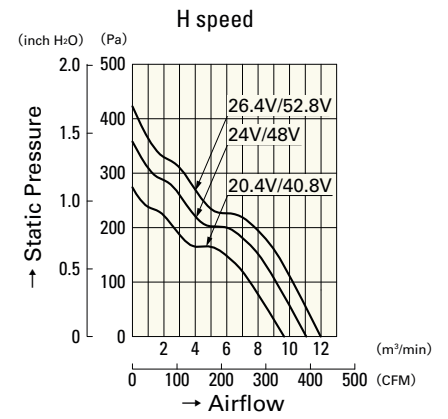
Airflow - Static Pressure Characteristics



9EC2048A001



9EC2048J001



9EC2024H001

9EC2048H001

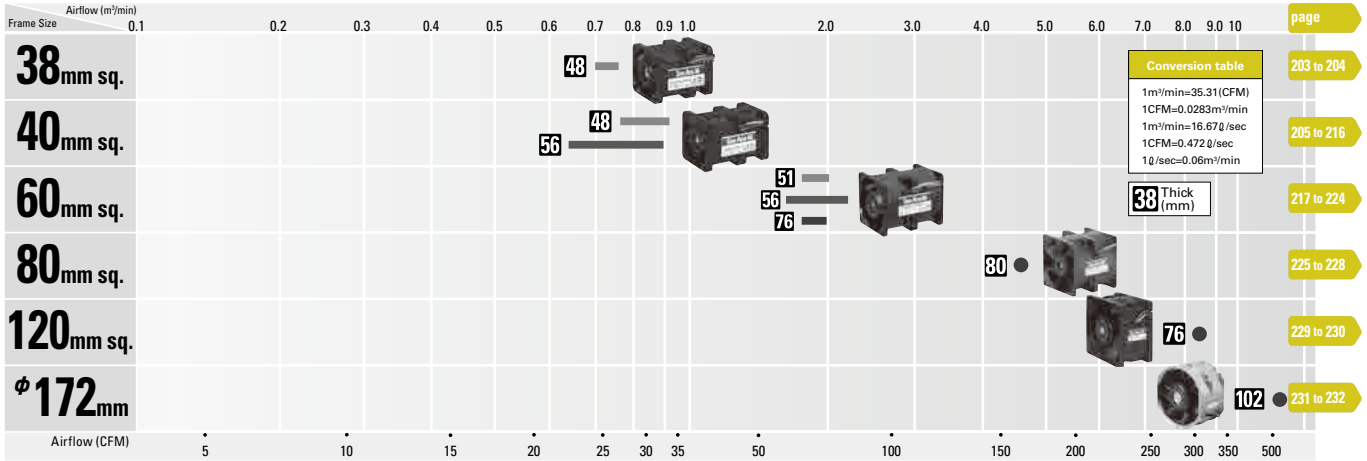
Counter Rotating Fan

Counter rotating fans features high airflow and high static pressure.

Related product

Long Life Counter Rotating Fan ⇒ pp. 319, 325

Domain Diagram



Part Numbering System Not every combination of the following codes or characters is available. Contact us for an available combination.

9CRA

Type name / frame material
 9CR / Plastics
 Aluminum
 9CRA / Plastics
 9CRB / Plastics
 9CRE / Aluminum
 9CRD / Plastics
 9CRF / Plastics

04

Frame size
 03 : 38×38mm
 04 : 40×40mm
 06 : 60×60mm
 08 : 80×80mm
 12 : 120×120mm
 57 : φ172mm×150mm (sidecut)

12

Voltage
 12 : 12V
 48 : 48V

K

Speed code
 J,G,S,H,K
 etc

4

Frame thickness
 0 : 76mm thick
 4 : 48mm thick
 5 : 56mm thick,
 51mm thick
 6 : 56mm thick
 8 : 80mm thick
 9 : 102mm thick

01

Sensor specifications
 01 : With a pulse sensor
 02 : Without a sensor
 D01 : With a lock sensor

Fans with PWM control function

Example :

9CRA

Type name / frame material
 9CRA / Plastics

03

Frame size
 03 : 38×38mm

12

Voltage
 12 : 12V

P

PWM control function

4

Frame thickness

K

Speed code

03

Individual customer's spec
 2 or 3 digits

38mm sq.

San Ace 38



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

38×38×48mm (Mass : 80g) **9CRA type**

Specifications

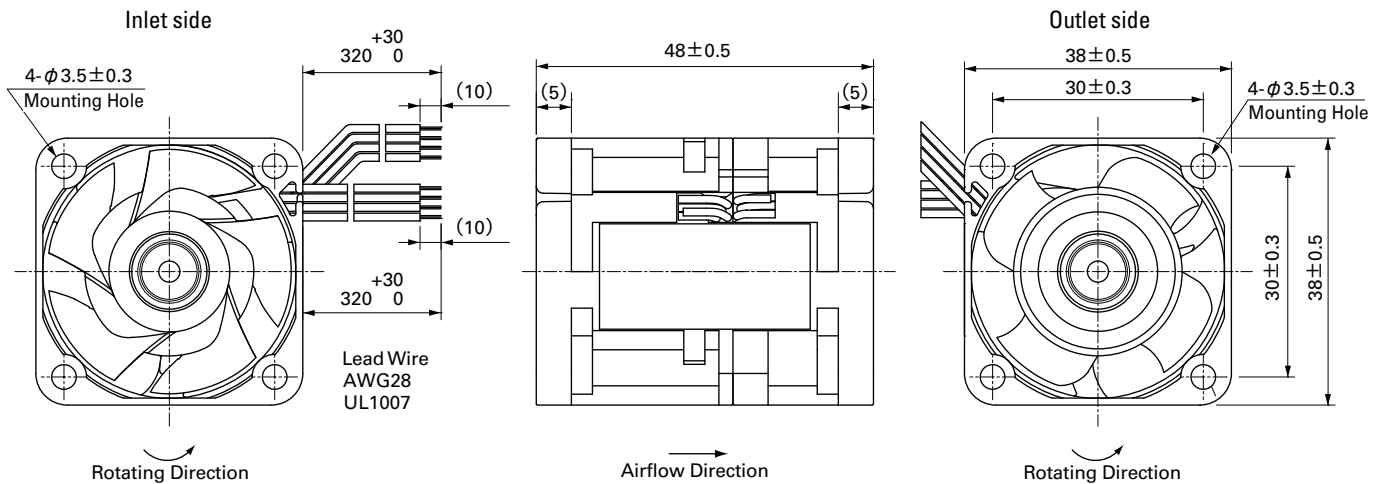
The following nos. have PWM controls and pulse sensors.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹] Inlet Outlet	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9CRA0312P4K03	12	10.8 to 13.2	100	1.5	18.0	17,600 14,520	0.77 27.2	700.0 2.81	64	-20 to +70	40,000/60°C
			0	0.2	2.4	5,280 4,200	0.22 7.8	54.9 0.22	33		
9CRA0312P4J03			100	1.1	13.2	16,000 13,200	0.7 24.7	560.0 2.25	62		
			0	0.18	2.2	4,800 3,960	0.21 7.4	50.4 0.20	31		

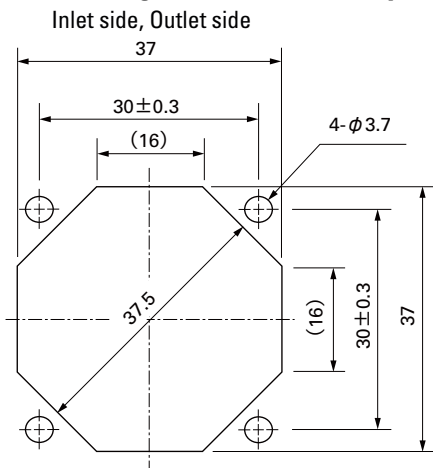
※PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (p. 471).

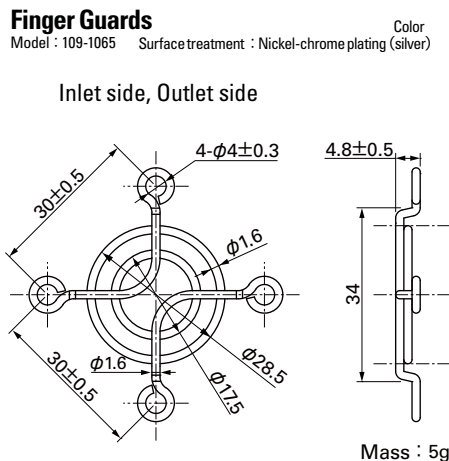
Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

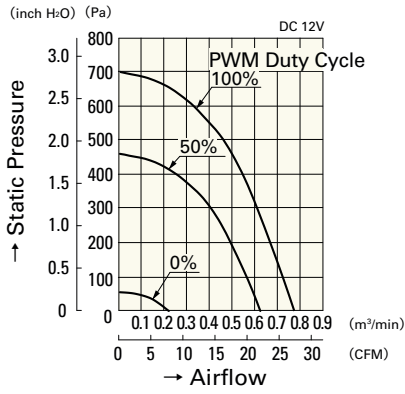


Options (unit: mm)

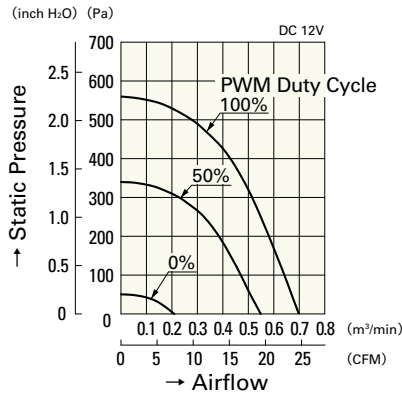


Airflow - Static Pressure Characteristics

PWM Duty Cycle

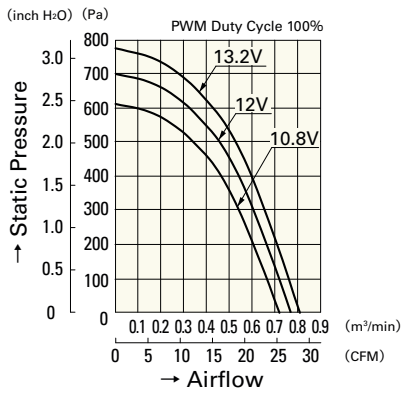


9CRA0312P4K03

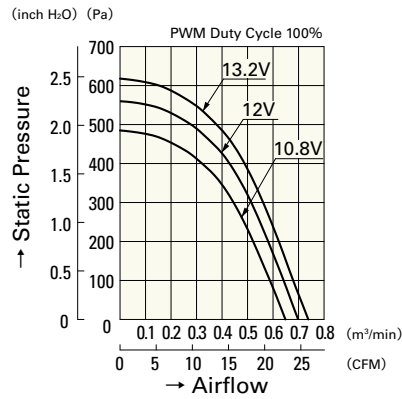


9CRA0312P4J03

Operating Voltage Range

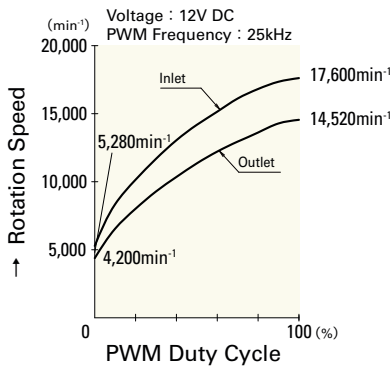


9CRA0312P4K03

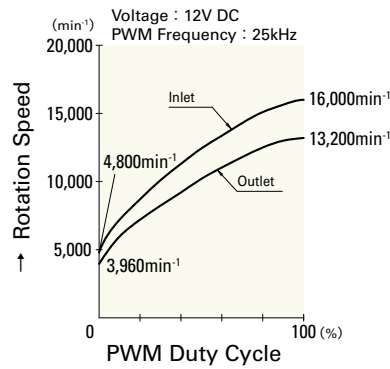


9CRA0312P4J03

PWM Duty - Speed Characteristics Example



9CRA0312P4K03



9CRA0312P4J03

40mm sq.

San Ace 40



General Specifications

- Material..... Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature ... -30°C to +70°C (Non-condensing)

40×40×48mm (Mass : 80g) **9CRA type**

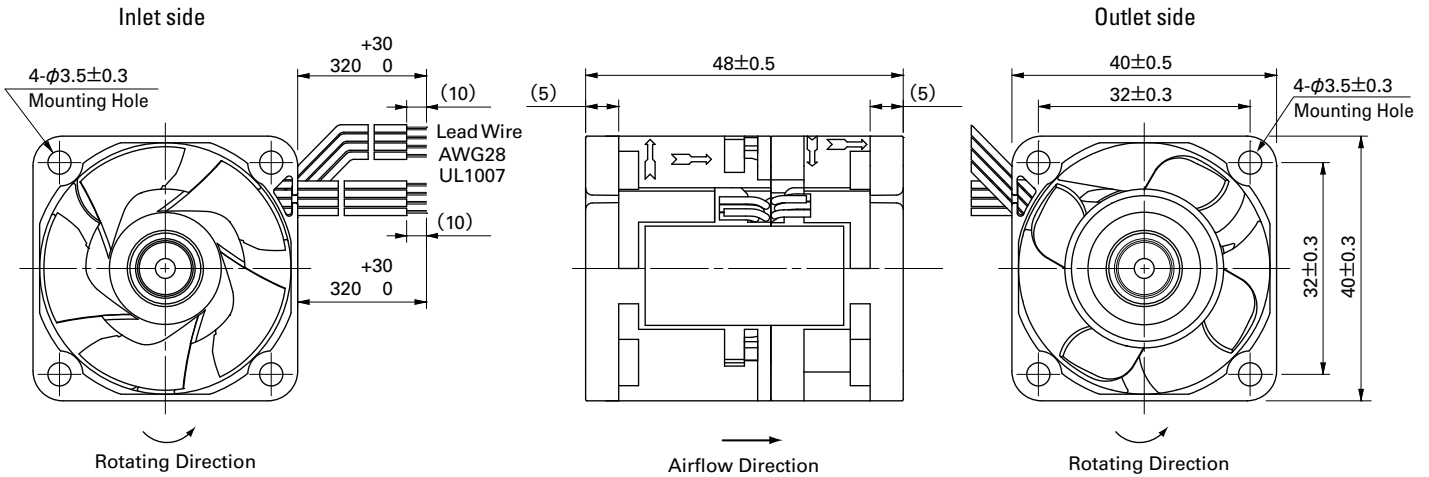
Specifications The following nos. have PWM controls and pulse sensors.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
						Inlet	Outlet							
9CRA0412P4K03	12	10.8 to 13.2	100	1.60	19.20	17,500	11,700	0.920	32.50	650.0	2.610	64	-20 to +70	40,000/60°C
			0	0.19	2.28	5,250	3,510	0.276	9.75	58.5	0.235	33		
9CRA0412P4J03			100	1.20	14.40	16,200	10,800	0.850	30.00	560.0	2.250	62		
			0	0.15	1.80	4,500	3,000	0.236	8.33	43.2	0.173	28		
9CRA0412P4G03			100	1.00	12.00	14,700	9,800	0.770	27.20	460.0	1.850	59		
			0	0.15	1.80	4,410	2,940	0.231	8.16	41.4	0.166	28		

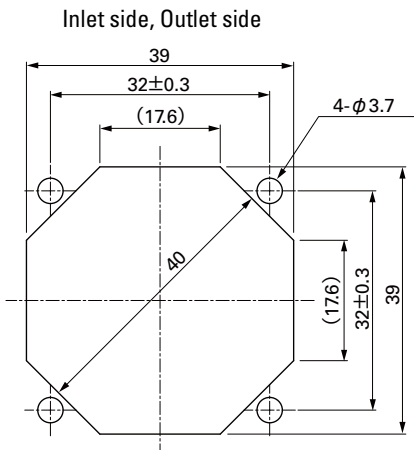
※PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (p. 471).

Dimensions (unit: mm)



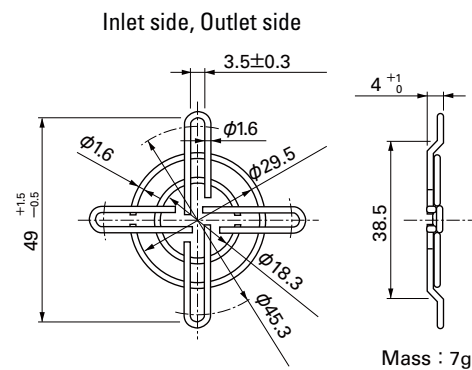
Reference Dimensions of mounting holes and vent opening (unit: mm)



Options (unit: mm)

Finger Guards

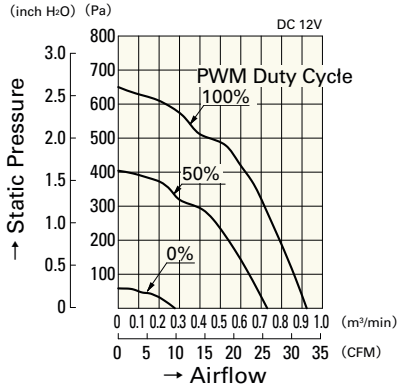
Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
: 109-059H : Cation electropainting (black)



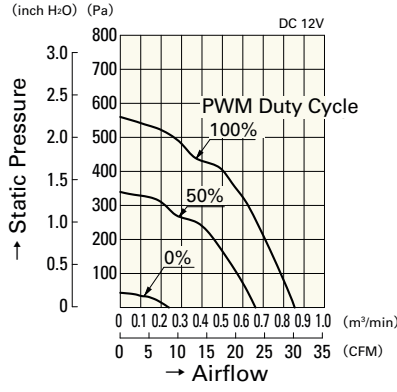
Mass : 7g

Airflow - Static Pressure Characteristics

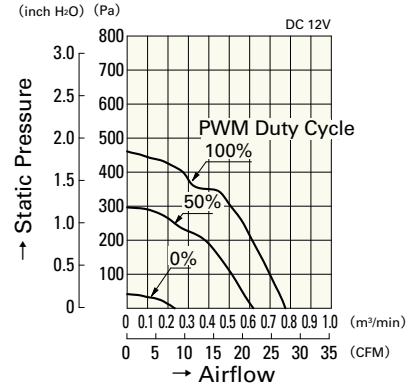
PWM Duty Cycle



9CRA0412P4K03

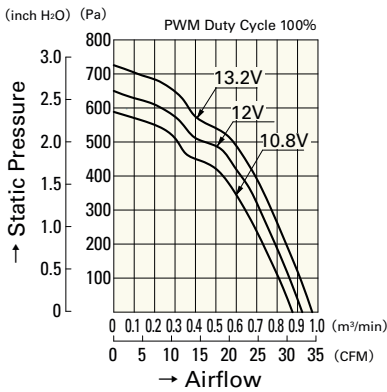


9CRA0412P4J03

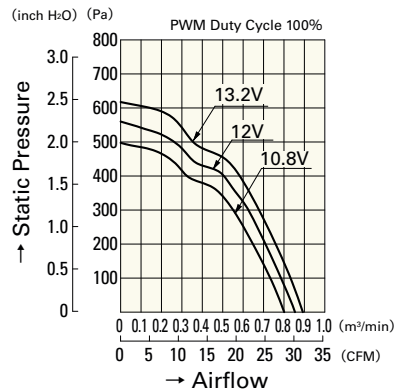


9CRA0412P4G03

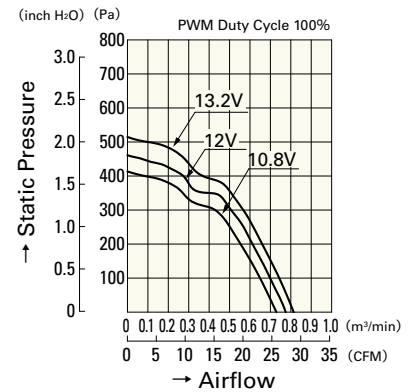
Operating Voltage Range



9CRA0412P4K03

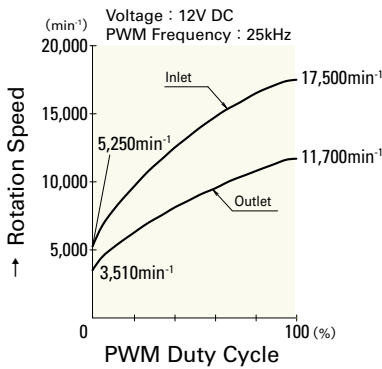


9CRA0412P4J03

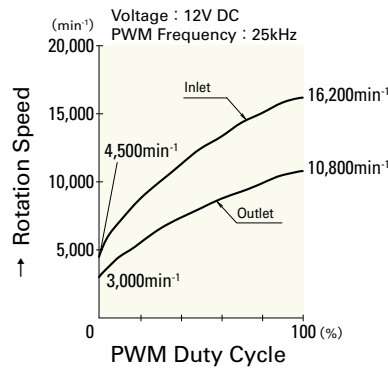


9CRA0412P4G03

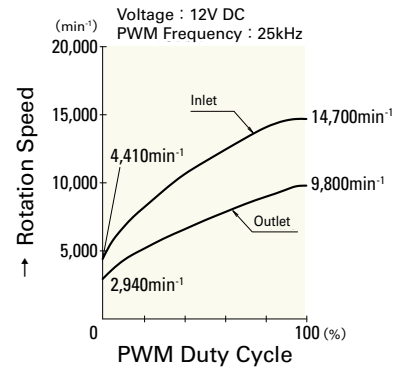
PWM Duty - Speed Characteristics Example



9CRA0412P4K03



9CRA0412P4J03



9CRA0412P4G03

40mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×56mm (Mass : 100g) **9CRB type**

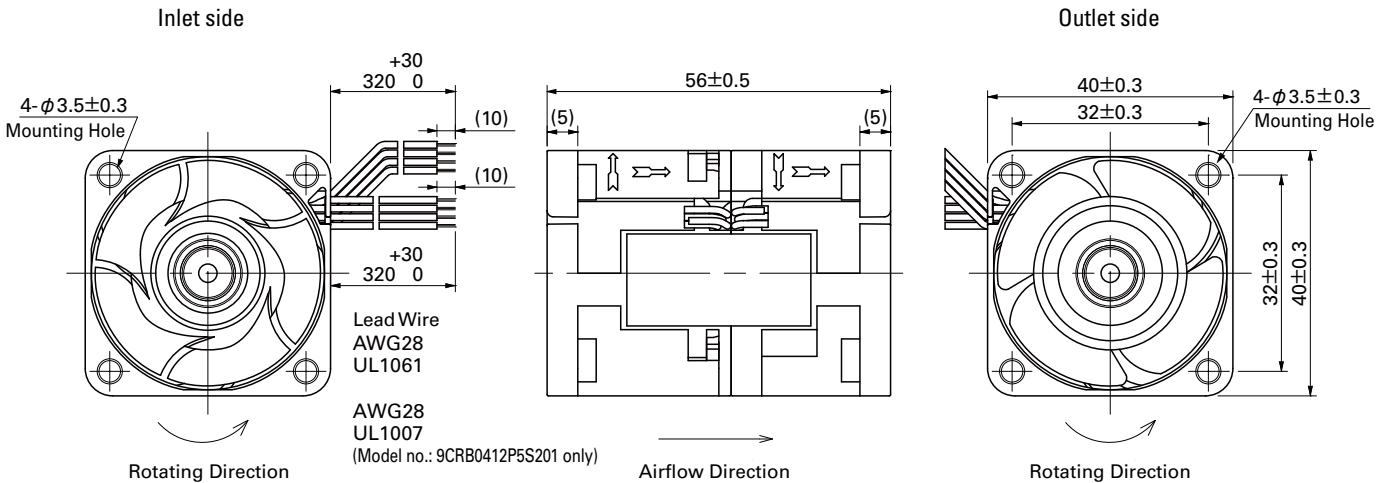
Specifications

The following nos. **have PWM controls and pulse sensors.**

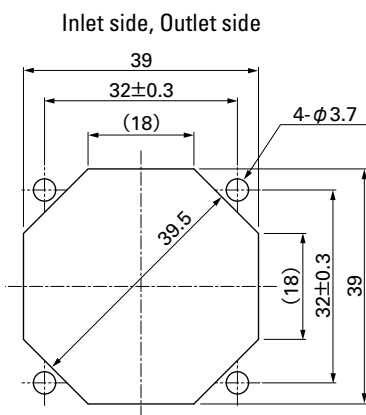
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
						Inlet	Outlet							
9CRB0412P5S201	12	10.8 to 13.2	100	1.4	16.8	22,000	19,700	0.9	31.8	1,045	4.197	68	-20 to +70	30,000/60°C
			0	0.09	1.08	3,800	3,500	0.15	5.3	31	0.124	26		
9CRB0412P5K001			100	0.88	10.56	19,000	17,000	0.76	26.83	730	2.93	62		40,000/60°C
			0	0.11	1.32	5,700	5,100	0.21	7.41	67	0.26	33		
9CRB0412P5J201			100	0.72	8.64	17,300	16,000	0.71	25.1	650	2.61	61		
			0	0.07	0.84	3,450	3,200	0.13	4.59	26	0.10	24		

※PWM Frequency : 25kHz

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

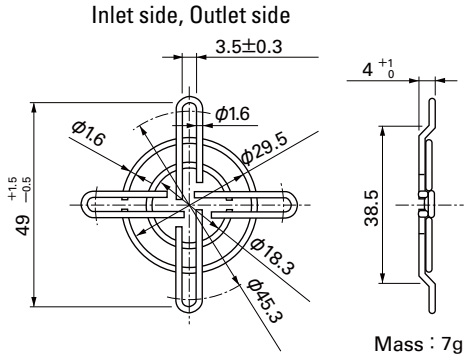


Options (unit: mm)

Finger Guards

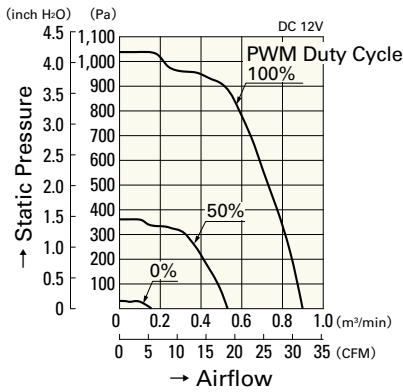
Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
 : 109-059H : Cation electropainting (black)

Color

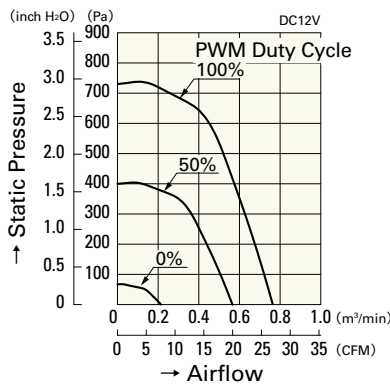


Airflow - Static Pressure Characteristics

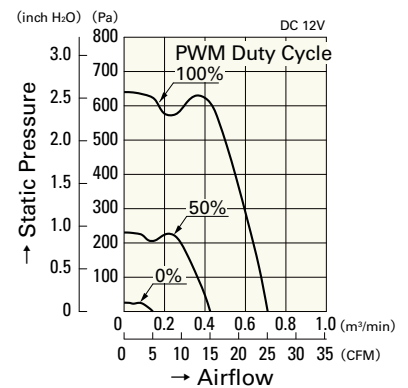
PWM Duty Cycle



9CRB0412P5S201

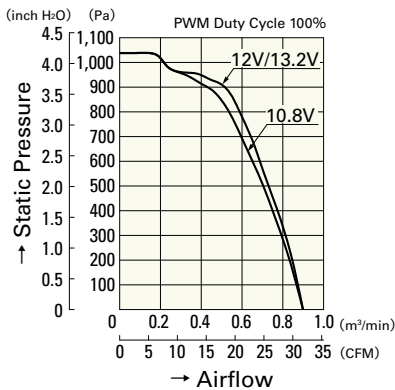


9CRB0412P5K001

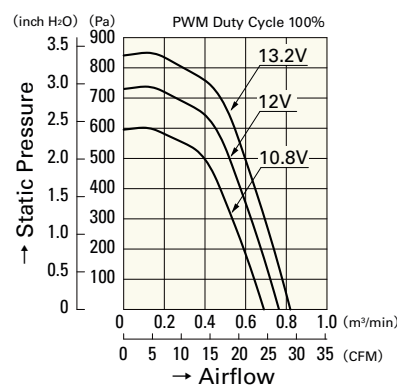


9CRB0412P5J201

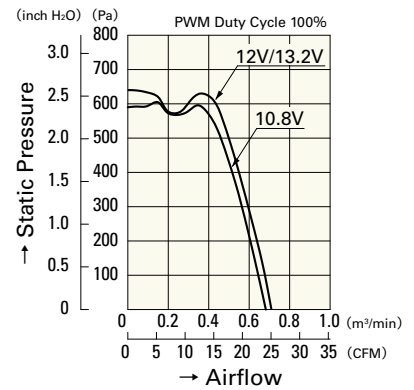
Operating Voltage Range



9CRB0412P5S201

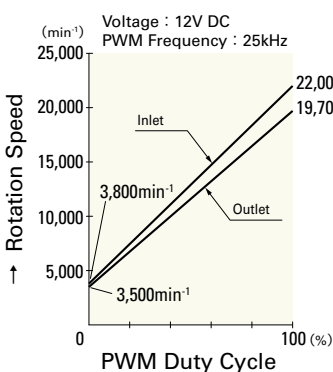


9CRB0412P5K001

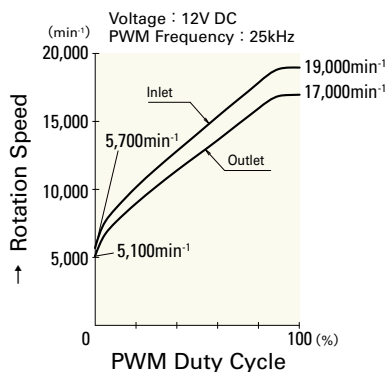


9CRB0412P5J201

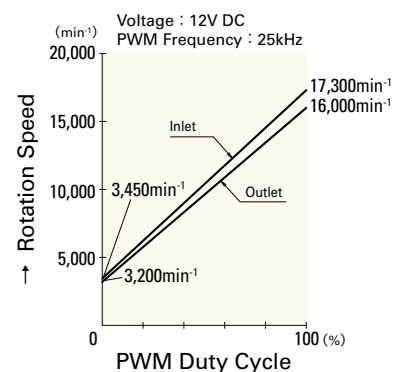
PWM Duty - Speed Characteristics Example



9CRB0412P5S201



9CRB0412P5K001



9CRB0412P5J201

40mm sq.

San Ace 40



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×56mm (Mass : 90g) **9CRD type**

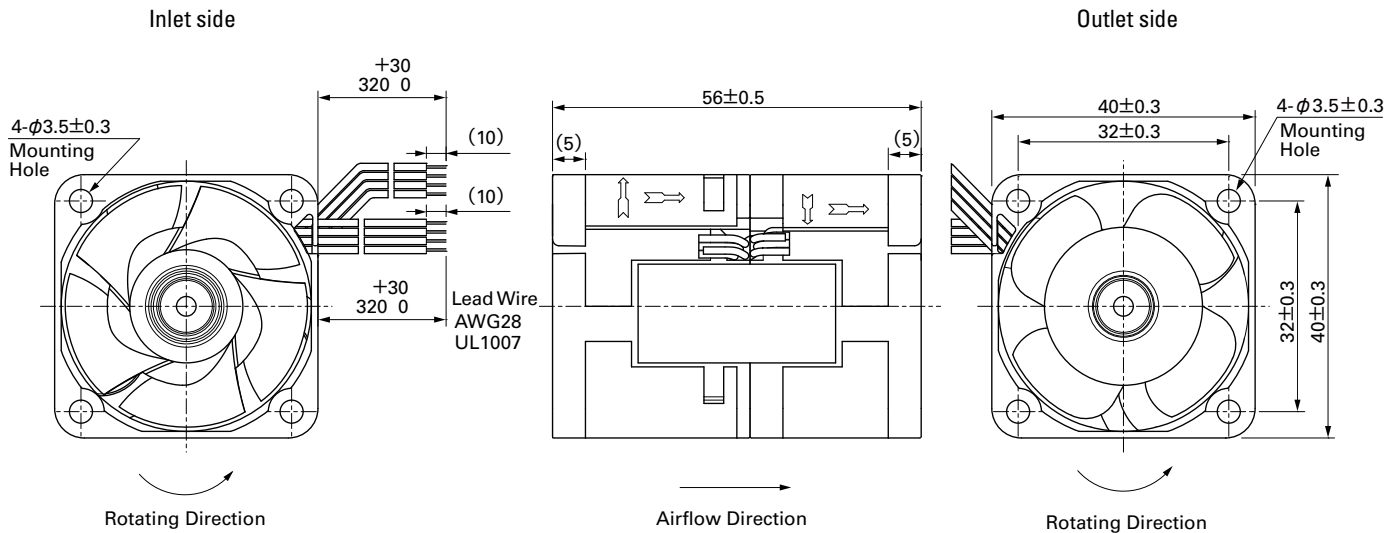
Specifications

The following nos. **have PWM controls and pulse sensors.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹] Inlet Outlet	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9CRD0412P5J03	12	10.8 to 13.2	100	1.15	13.8	19,000 12,600	0.87 30.72	630 2.53	61	-20 to +70	40,000/60°C
			0	0.12	1.44	3,700 2,500	0.15 5.30	25 0.10	22		
9CRD0412P5G03			100	0.90	10.8	16,700 11,250	0.77 27.19	500 2.01	58		
			0	0.10	1.2	3,350 2,250	0.13 4.59	21 0.08	21		
9CRD0412P5H03			100	0.60	7.2	15,000 10,000	0.70 24.72	410 1.65	56		
			0	0.09	1.08	3,000 2,000	0.12 4.24	16 0.06	20		
9CRD0412P5M03	100	0.52	6.24	14,000 9,300	0.65 22.95	360 1.45	54				
	0	0.07	0.84	2,000 1,300	0.07 2.47	7 0.03	15				

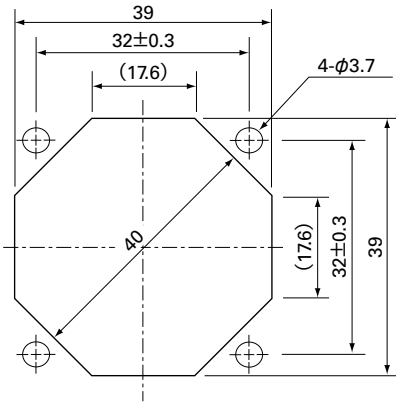
※PWM Frequency : 25kHz

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

Inlet side, Outlet side

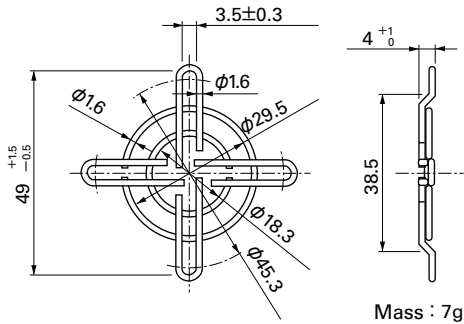


Options (unit: mm)

Finger Guards

Model : 109-059 Surface treatment : Nickel-chrome plating (silver) Color
 : 109-059H : Cation electropainting (black)

Inlet side, Outlet side



Mass : 7g

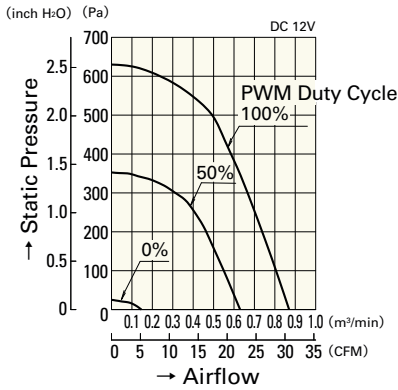
40mm sq.

San Ace 40

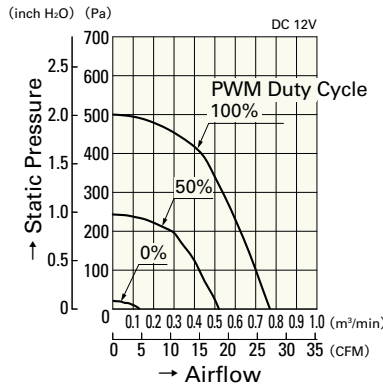
40×40×56mm [Mass : 90g]

Airflow - Static Pressure Characteristics

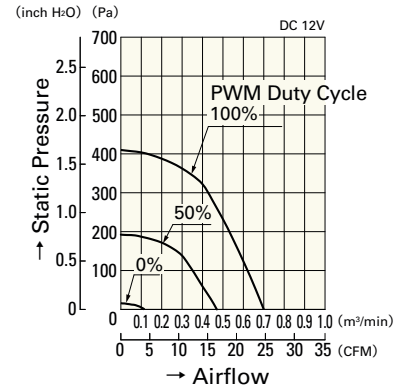
PWM Duty Cycle



9CRD0412P5J03

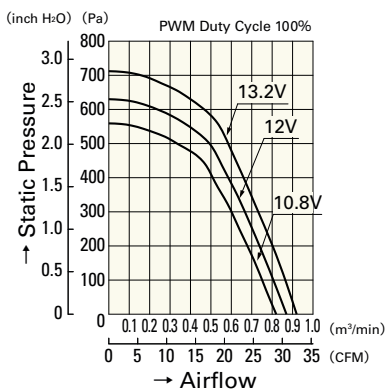


9CRD0412P5G03

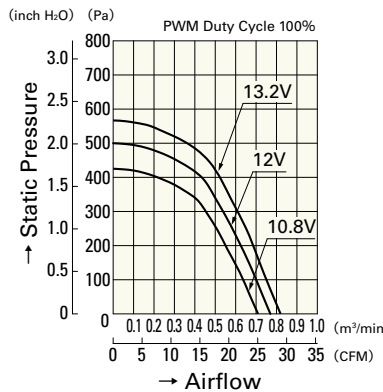


9CRD0412P5H03

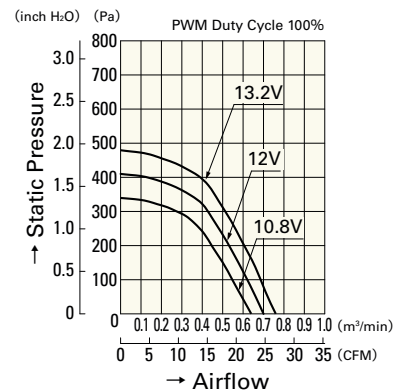
Operating Voltage Range



9CRD0412P5J03

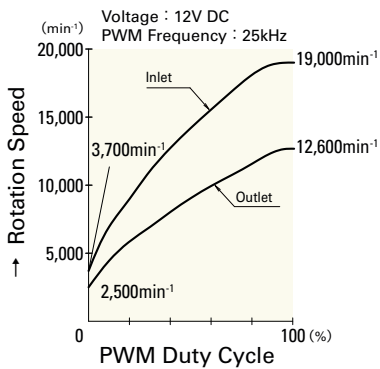


9CRD0412P5G03

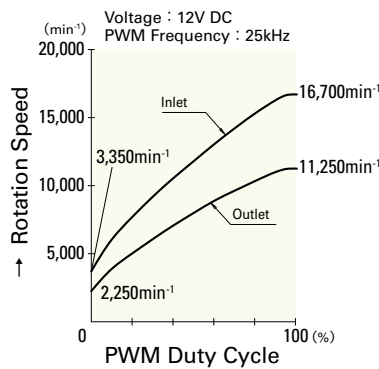


9CRD0412P5H03

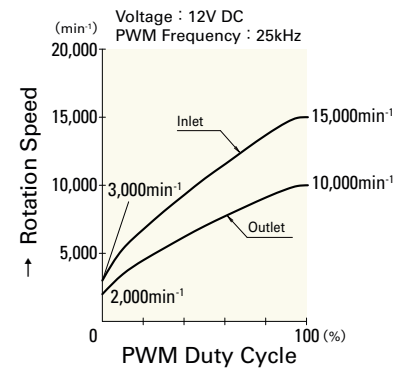
PWM Duty - Speed Characteristics Example



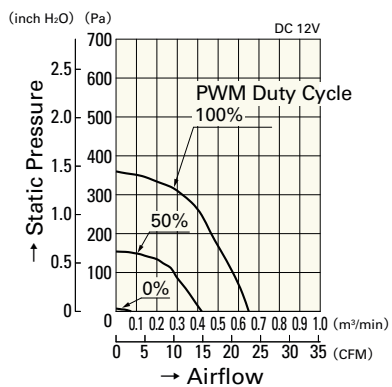
9CRD0412P5J03



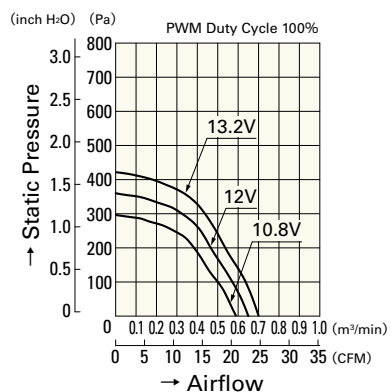
9CRD0412P5G03



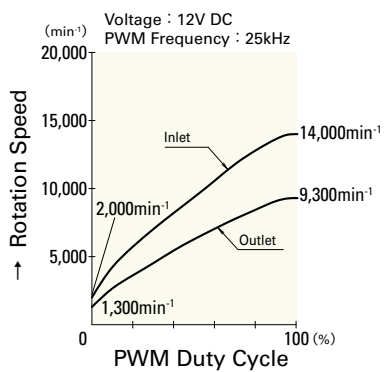
9CRD0412P5H03



9CRD0412P5M03



9CRD0412P5M03



9CRD0412P5M03

40 mm sq.

San Ace 40



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C , rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×56mm (Mass : 110g) **9CRE type** **Low vibration**

Specifications

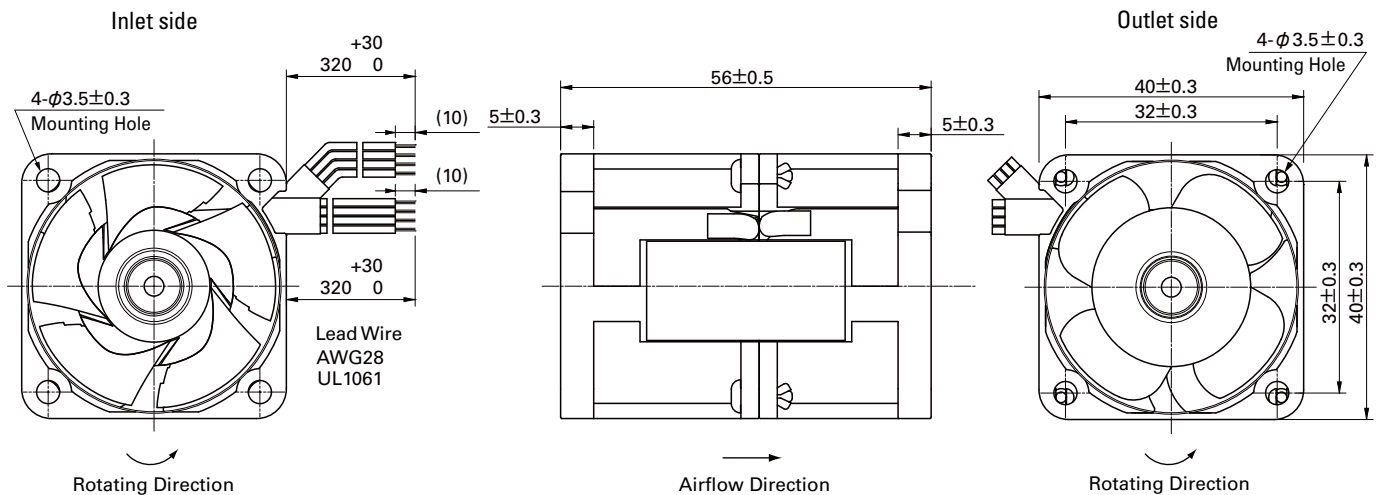
The following nos. have PWM controls and pulse sensors.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]		Rated Input [W]		Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
								Inlet	Outlet							
9CRE0412P5J03	12	10.8 to 13.2	100	1.4	16.8	15,800	12,200	0.90	31.8	570.0	2.290	62	-20 to +70	40,000/60°C		
			0	0.1	1.2	2,850	2,250	0.12	4.2	13.7	0.055	20.5				

※PWM Frequency : 25kHz

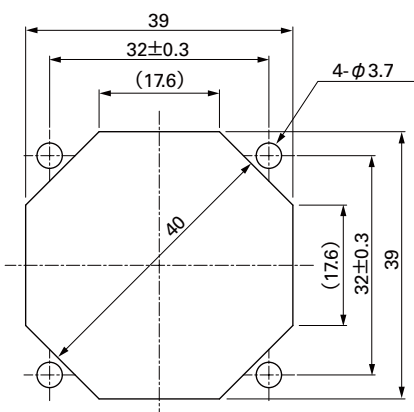
Models without sensors are available as an option. Please refer to the index (p. 471).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

Inlet side, Outlet side



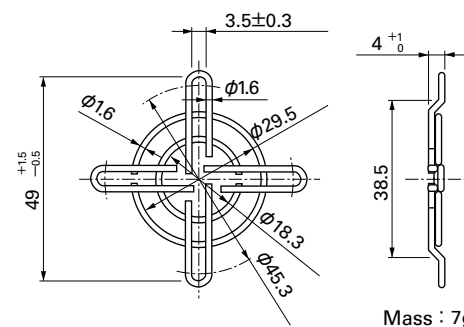
Options (unit: mm)

Finger Guards

Model : 109-059 Surface treatment : Nickel-chrome plating (silver)
: 109-059H : Cation electropainting (black)

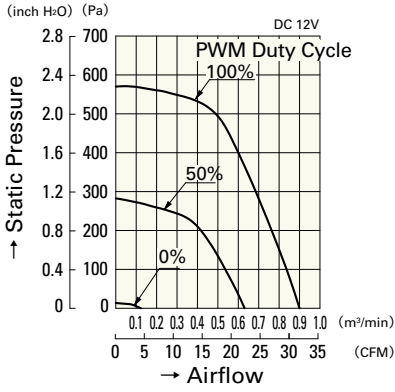
Color

Inlet side, Outlet side



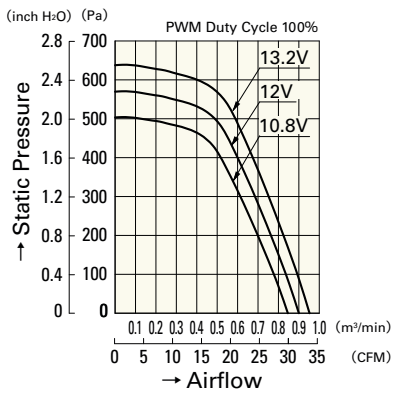
Airflow - Static Pressure Characteristics

PWM Duty Cycle



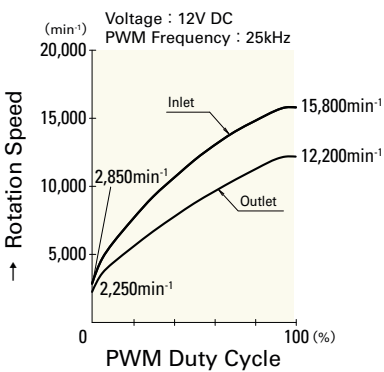
9CRE0412P5J03

Operating Voltage Range



9CRE0412P5J03

PWM Duty - Speed Characteristics Example



9CRE0412P5J03

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×51mm (Mass : 180g) **9CR type**

Specifications

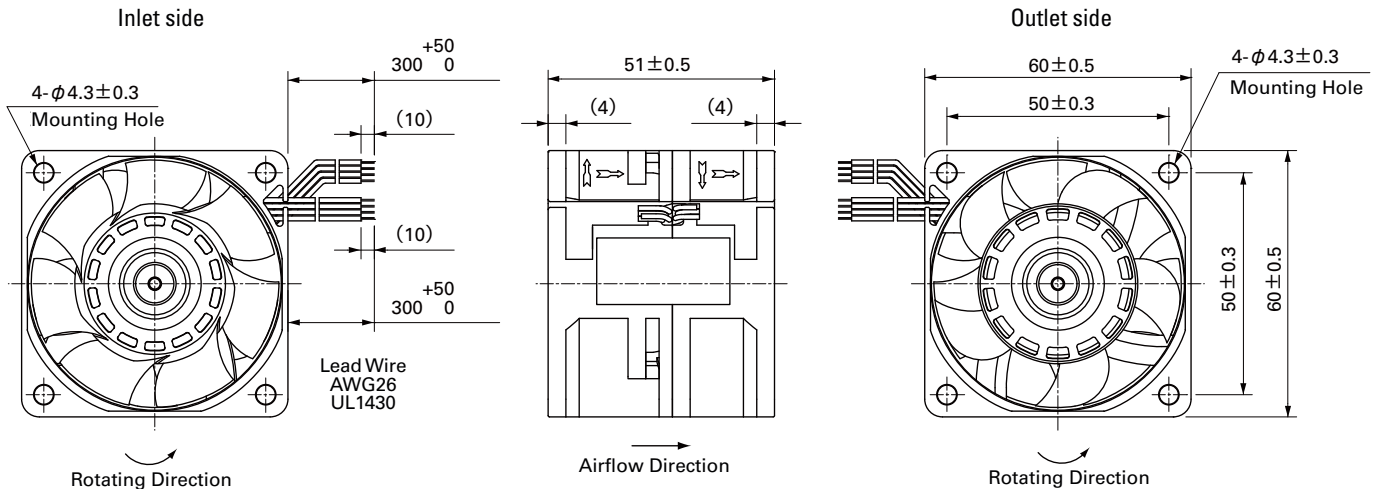
The following nos. **have PWM controls and pulse sensors.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
						Inlet	Outlet							
9CR0612P5G03	12	10.8 to 13.2	100	2.7	32.4	11,500	9,000	2.03	71.7	600	2.41	68	-20 to +70	40,000/60°C
			0	0.22	2.64	3,000	2,300	0.48	16.9	40	0.16	34		
9CR0612P5H03			100	2.0	24.0	10,500	8,200	1.85	65.4	500	2.01	65		
			0	0.22	2.64	3,000	2,300	0.48	16.9	40	0.16	34		

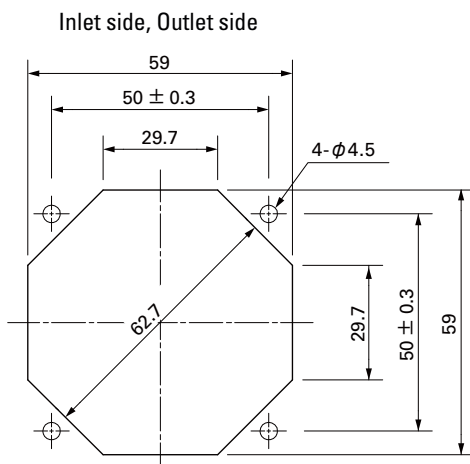
※PWM Frequency : 25kHz

Models with pulse sensors (no PWM control function) are available as an option. Please refer to the index (p. 471).

Dimensions (unit: mm)



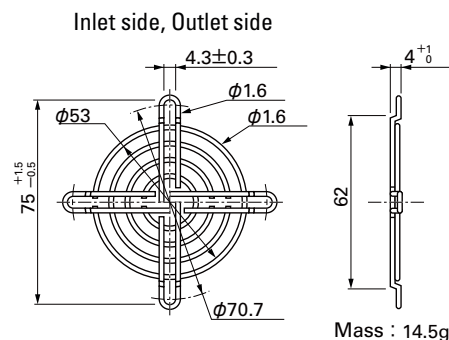
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

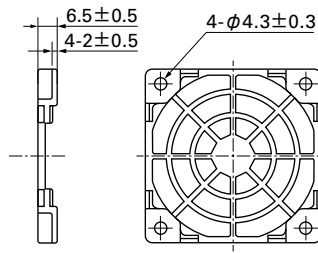
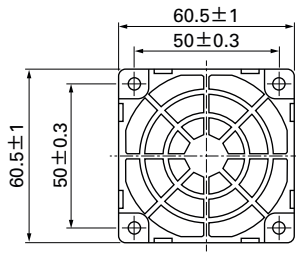
Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
: 109-139H : Cation electropainting (black)



Options (unit: mm)

Resin Finger Guards

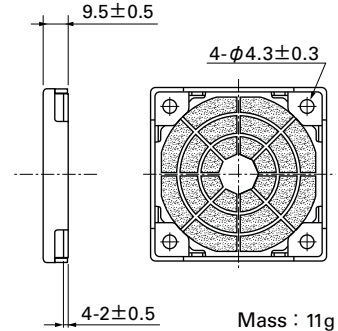
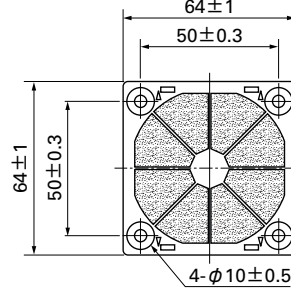
Model : 109-1003G



Mass : 7g

Resin Filter Kits

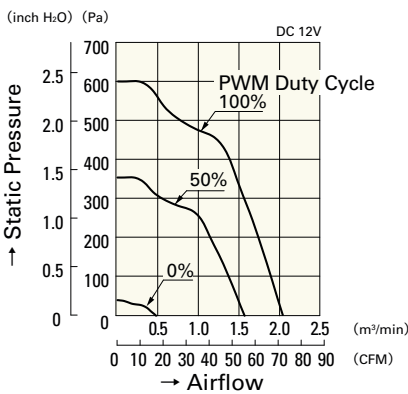
Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
: 109-1003F30 (30PPI), 109-1003F40 (40PPI)



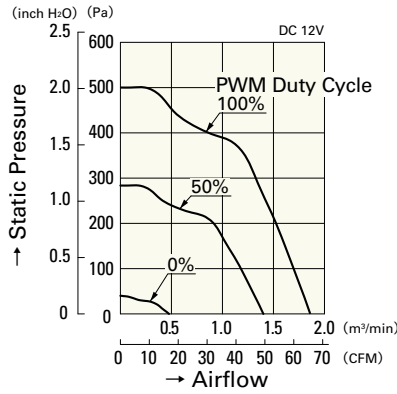
Mass : 11g

Airflow - Static Pressure Characteristics

PWM Duty Cycle

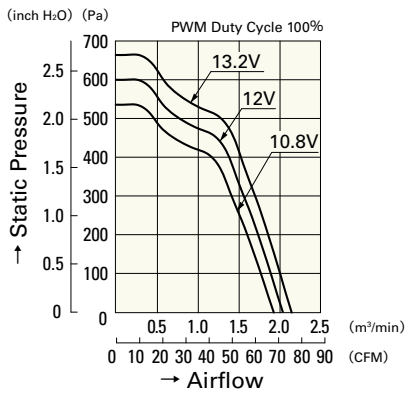


9CR0612P5G03

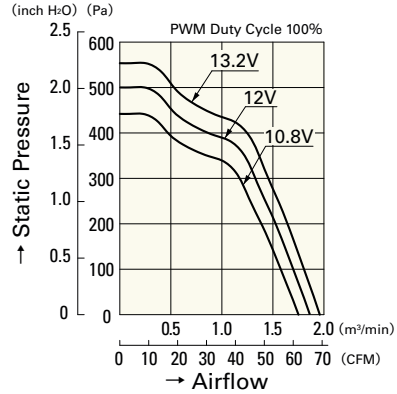


9CR0612P5H03

Operating Voltage Range

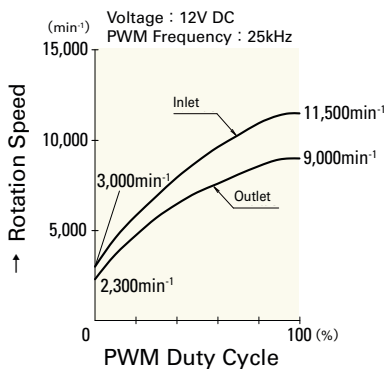


9CR0612P5G03

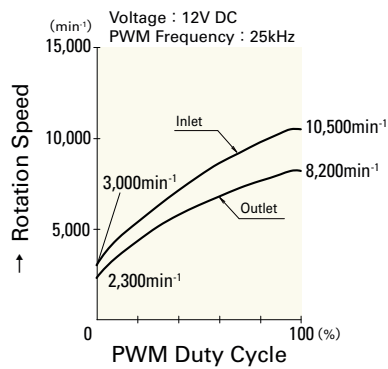


9CR0612P5H03

PWM Duty - Speed Characteristics Example



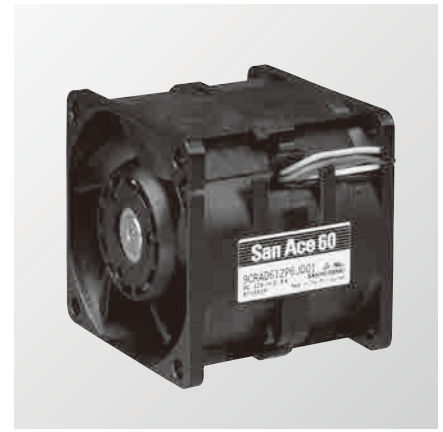
9CR0612P5G03



9CR0612P5H03

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×56mm (Mass : 200g) **9CRA type**

Specifications

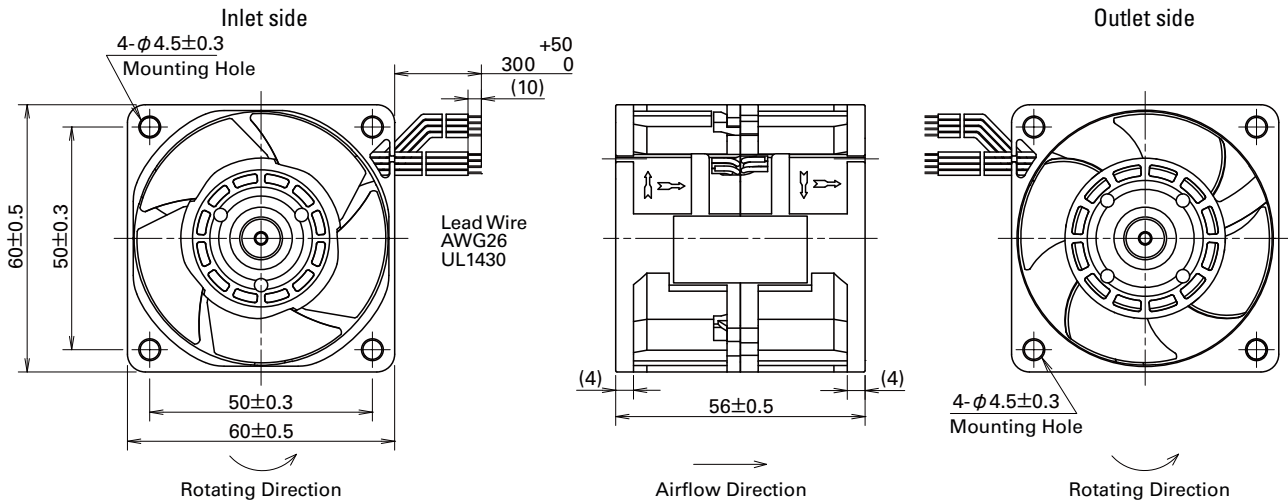
The following nos. **have PWM controls and pulse sensors.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{nom} [h]
						Inlet	Outlet							
9CRA0612P6K001	12	10.8 to 13.2	100	3.10	37.2	18,300	15,800	2.28	80.5	1,130	4.54	73	-20 to +70	30,000/60°C
			0	0.17	2.0	3,800	3,300	0.47	16.6	49	0.20	35		
9CRA0612P6J001			100	2.30	27.6	16,800	14,500	2.10	74.2	950	3.82	70		
			0	0.15	1.8	3,800	3,300	0.47	16.6	49	0.20	35		
9CRA0612P6G001			100	1.30	15.6	13,500	11,400	1.65	58.3	620	2.49	65		
			0	0.10	1.2	3,000	2,500	0.36	12.7	31	0.12	29		

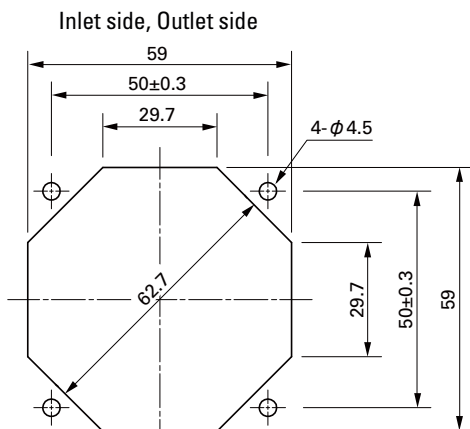
Note: Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

Dimensions (unit: mm)



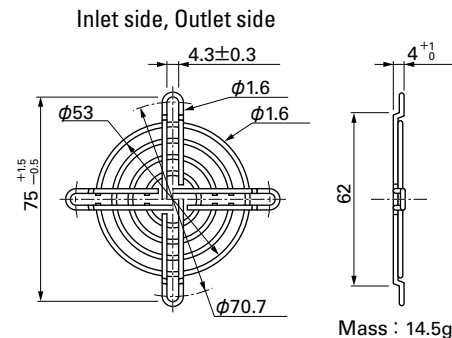
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

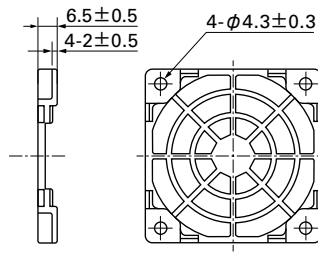
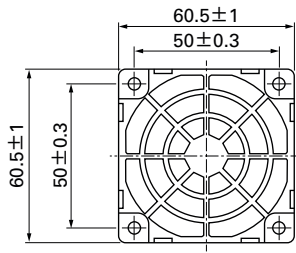
Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
: 109-139H : Cation electropainting (black)



Options (unit: mm)

Resin Finger Guards

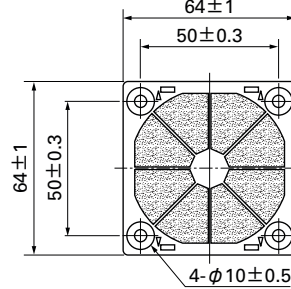
Model : 109-1003G



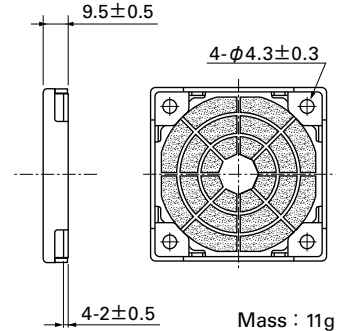
Mass : 7g

Resin Filter Kits

Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
: 109-1003F30 (30PPI), 109-1003F40 (40PPI)



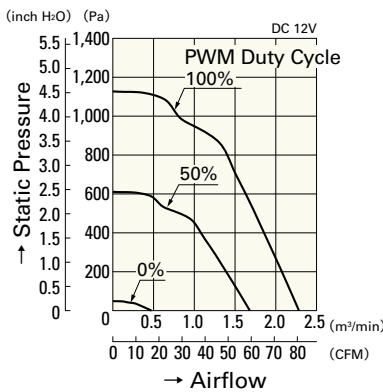
Mass : 7g



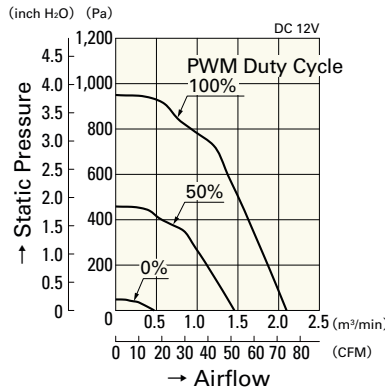
Mass : 11g

Airflow - Static Pressure Characteristics

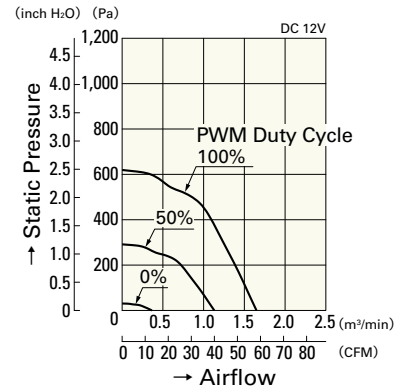
PWM Duty Cycle



9CRA0612P6K001

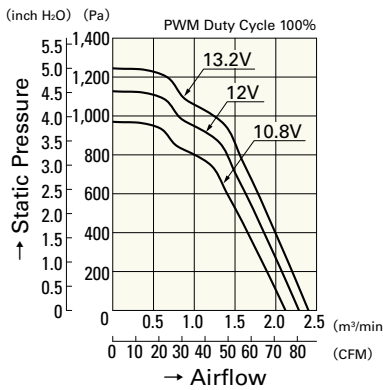


9CRA0612P6J001

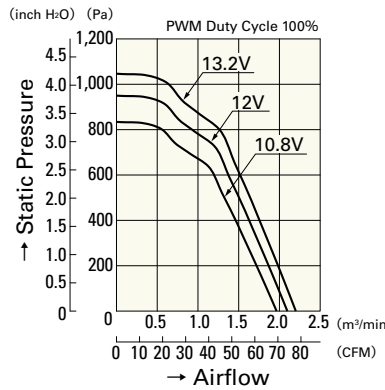


9CRA0612P6G001

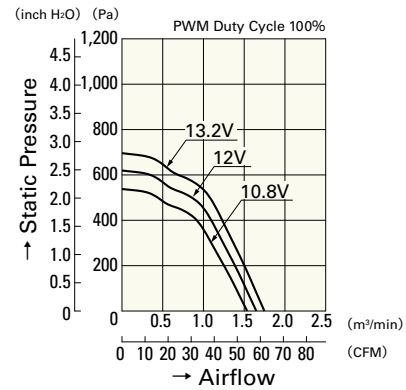
Operating Voltage Range



9CRA0612P6K001

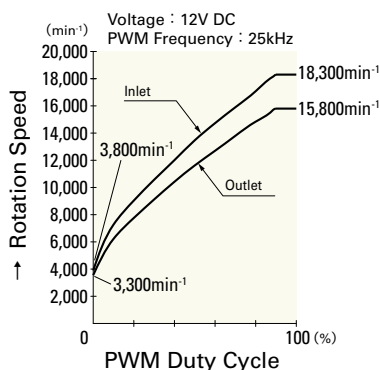


9CRA0612P6J001

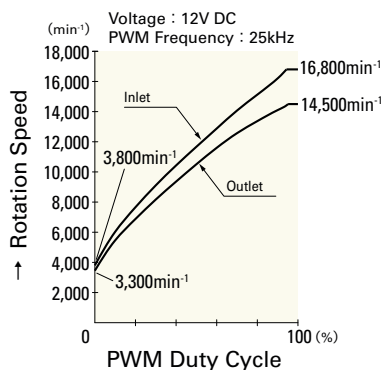


9CRA0612P6G001

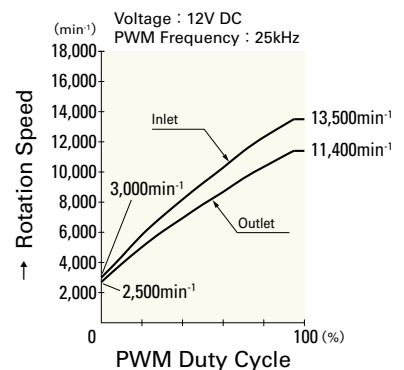
PWM Duty - Speed Characteristics Example



9CRA0612P6K001



9CRA0612P6J001



9CRA0612P6G001

60mm sq.

San Ace 60



General Specifications

- Material Frame: Aluminum,
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×76mm (Mass : 300g) **9CRE type** **Low vibration**

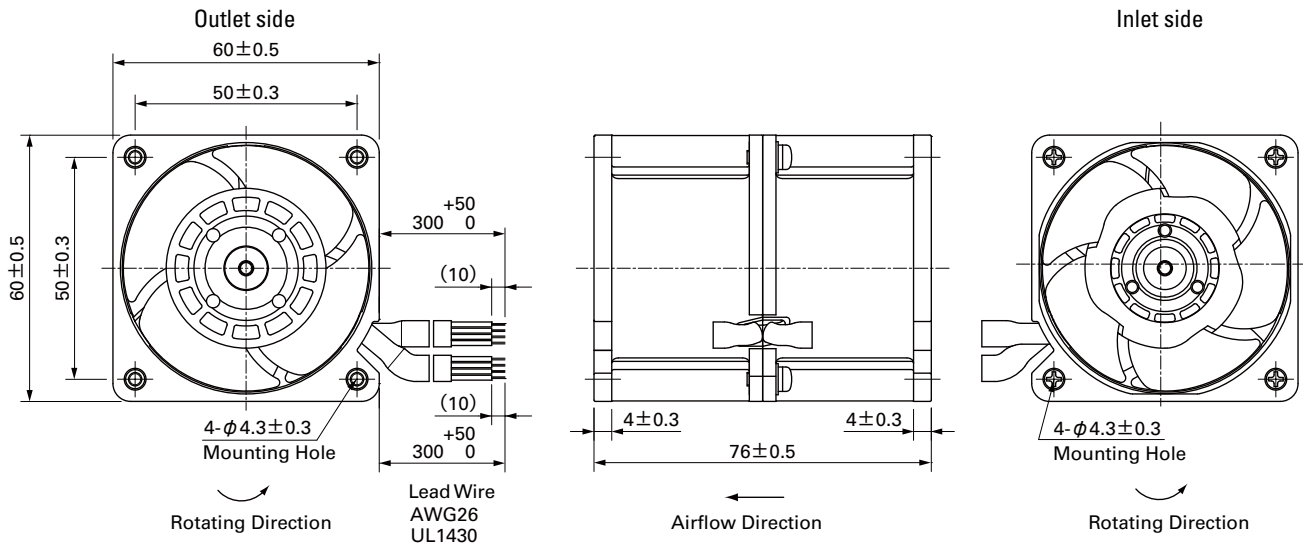
Specifications

The following nos. have PWM controls and pulse sensors.

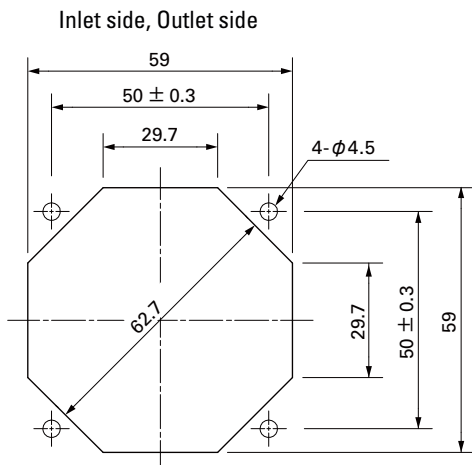
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
						Inlet	Outlet							
9CRE0612P0G001	12	10.8 to 13.2	100	2.3	27.6	16,500	13,000	2.0	70.6	1,000	4.0	66	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.22	2.7	3,600	2,800	0.43	15.1	47.6	0.19	32		

*PWM Frequency : 25kHz

Dimensions (unit: mm)

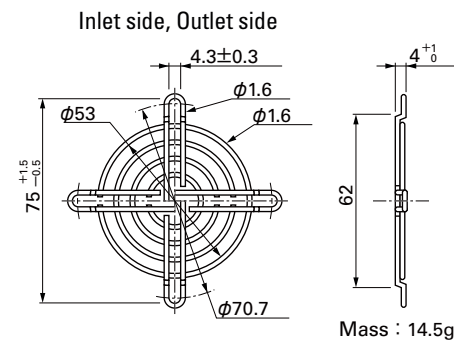


Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

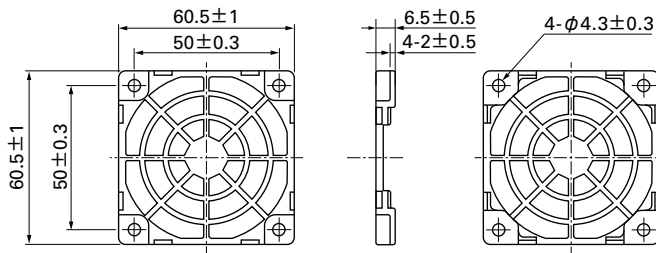
Finger Guards
 Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
 : 109-139H : Cation electropainting (black)



Options (unit: mm)

Resin Finger Guards

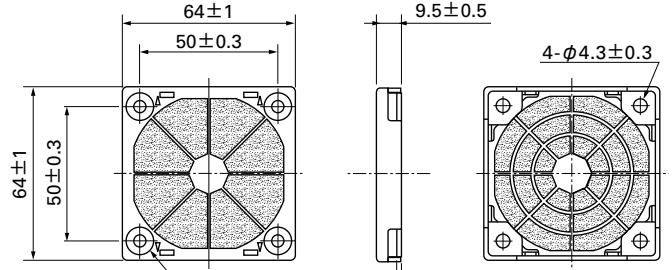
Model : 109-1003G



Mass : 7g

Resin Filter Kits

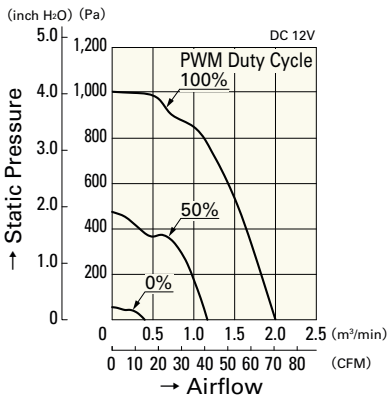
Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
: 109-1003F30 (30PPI), 109-1003F40 (40PPI)



Mass : 11g

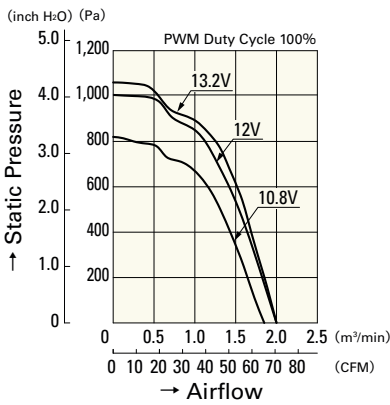
Airflow - Static Pressure Characteristics

PWM Duty Cycle



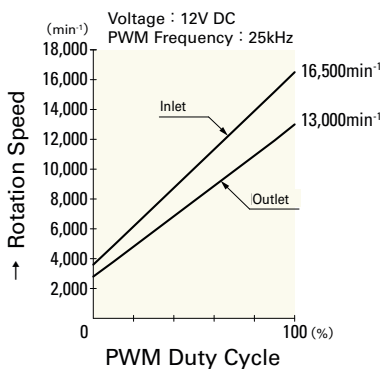
9CRE0612P0G001

Operating Voltage Range



9CRE0612P0G001

PWM Duty - Speed Characteristics Example



9CRE0612P0G001

60mm sq.

San Ace 60



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×76mm (Mass : 270g) **9CRA type**

Specifications

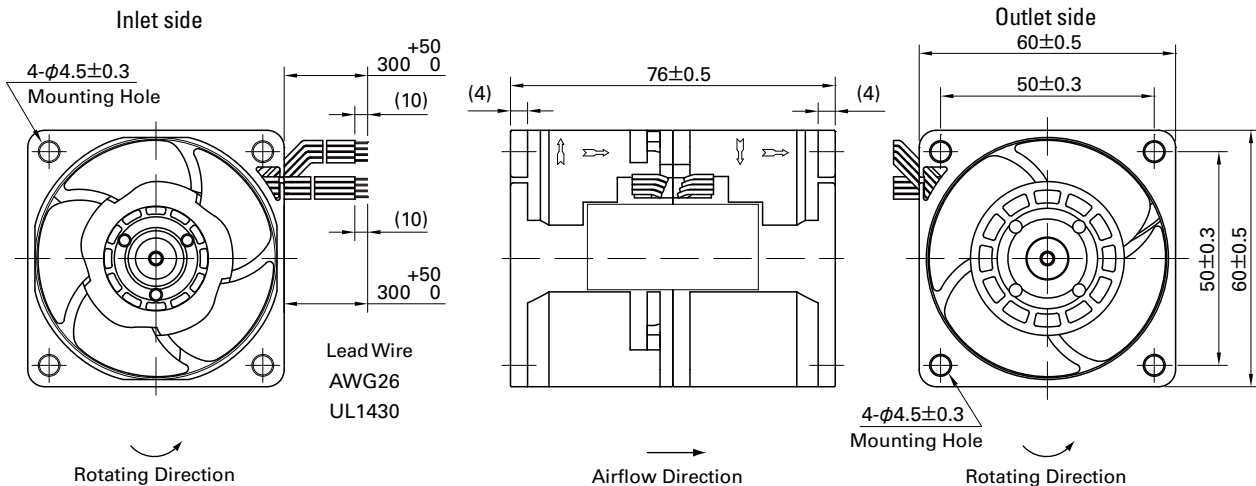
The following nos. **have PWM controls and pulse sensors.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current		Rated Input		Rated Speed		Max. Airflow		Max. Static Pressure		SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{nom} [h]
				[A]	[W]	Inlet	Outlet	[m³/min]	[CFM]	[Pa]	[inchH ₂ O]					
9CRA0612P0G001	12	10.8 to 13.2	100	2.3	27.6	16,500	13,000	2.0	70.6	1,000	4.0	66	-20 to +70	40,000/60°C (70,000/40°C)		
			0	0.22	2.7	3,600	2,800	0.43	15.1	47.6	0.19	32				
9CRA0612P0S001			100	1.5	18.0	14,000	11,000	1.7	60.0	720	2.89	63				
			0	0.17	2.1	3,200	2,500	0.38	13.4	37.6	0.15	29				

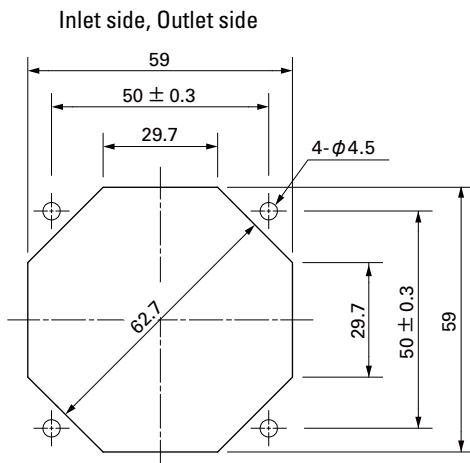
Note: Expected life at 40°C ambient is just reference value.

※PWM Frequency : 25kHz

Dimensions (unit: mm)



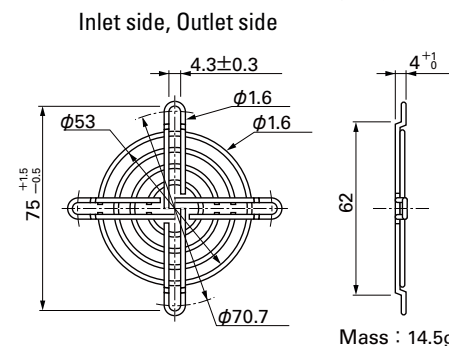
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

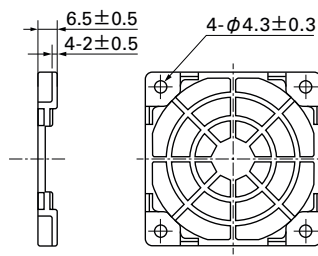
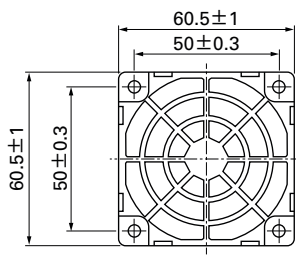
Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
: 109-139H : Cation electropainting (black)



Options (unit: mm)

Resin Finger Guards

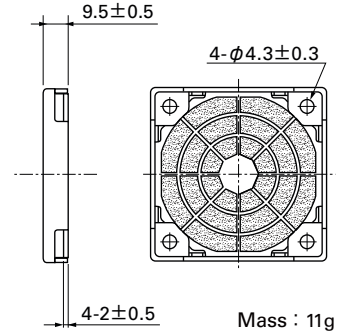
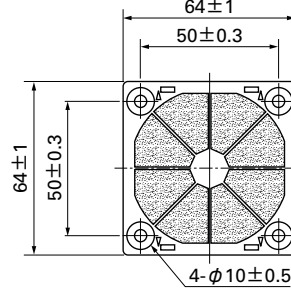
Model : 109-1003G



Mass : 7g

Resin Filter Kits

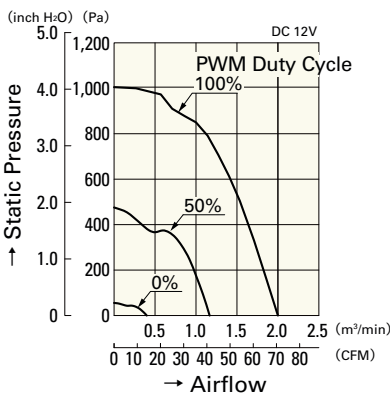
Model : 109-1003F13 (13PPI), 109-1003F20 (20PPI)
: 109-1003F30 (30PPI), 109-1003F40 (40PPI)



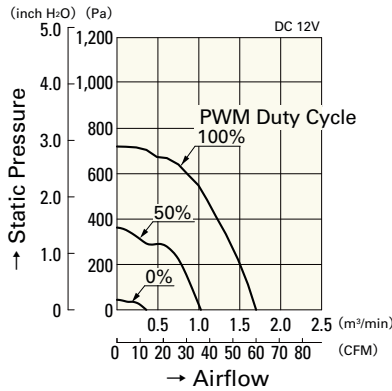
Mass : 11g

Airflow - Static Pressure Characteristics

PWM Duty Cycle

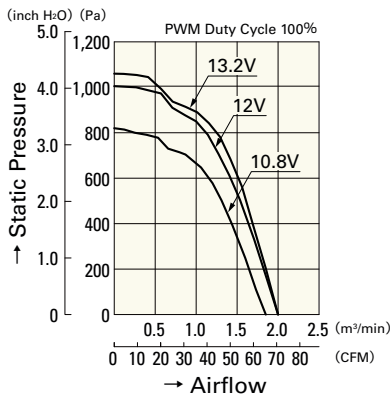


9CRA0612P0G001

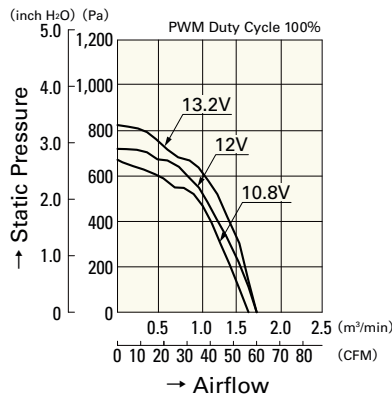


9CRA0612P0S001

Operating Voltage Range

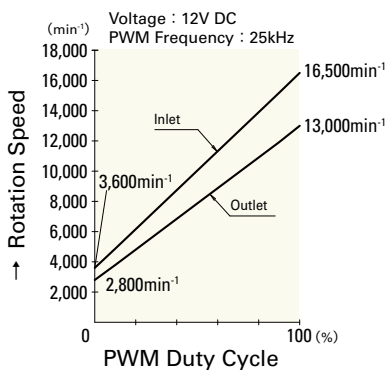


9CRA0612P0G001

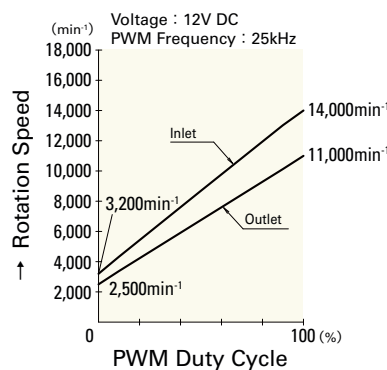


9CRA0612P0S001

PWM Duty - Speed Characteristics Example



9CRA0612P0G001



9CRA0612P0S001

80mm sq.

San Ace 80L



General Specifications

- Material Frame: Aluminum,
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×80mm (Mass : 490g) **9CRE type** **Low vibration**

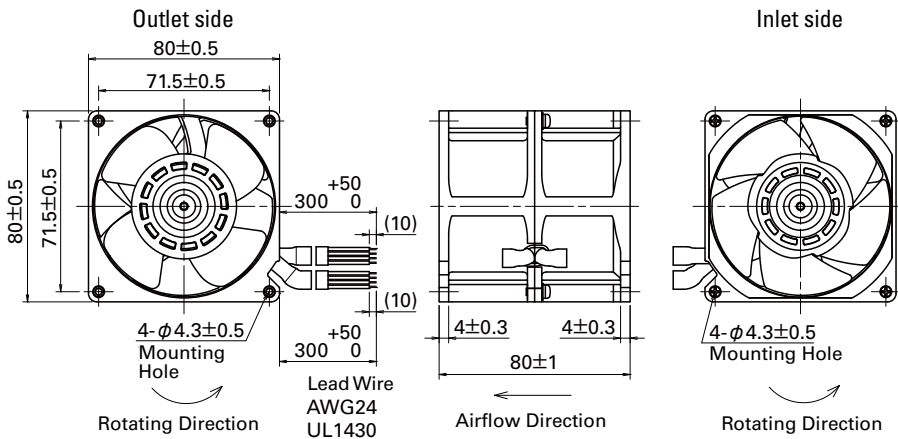
Specifications

The following nos. have PWM controls and pulse sensors.

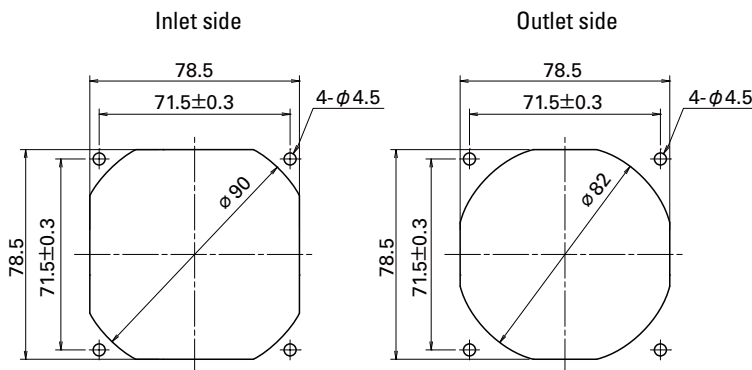
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
						Inlet	Outlet							
9CRE0812P8G001	12	10.8 to 13.2	100	5.3	63.6	12,000	11,300	4.5	158.9	1,150	4.62	76	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.2	2.4	2,000	1,900	0.74	26.1	31.9	0.130	30		

※PWM Frequency : 25kHz

Dimensions (unit: mm)



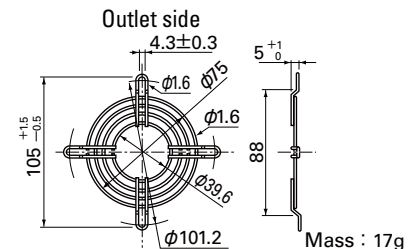
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



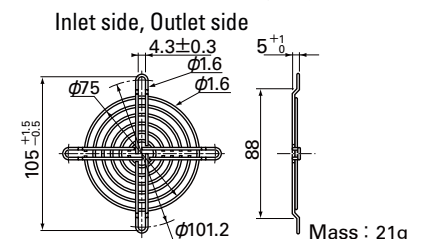
Options (unit: mm)

Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color



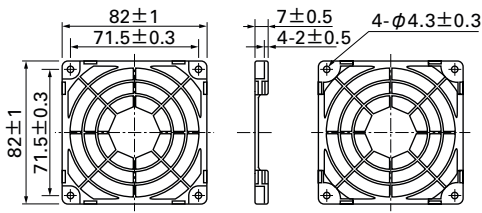
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color : 109-049H Cation electropainting (black)



Options (unit: mm)

Resin Finger Guards

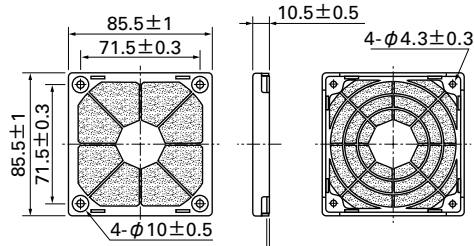
Model : 109-1002G



Mass : 10g

Resin Filter Kits

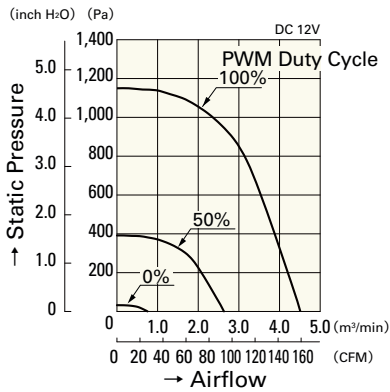
Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)



Mass : 19g

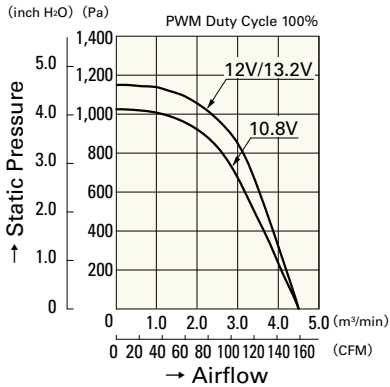
Airflow - Static Pressure Characteristics

PWM Duty Cycle



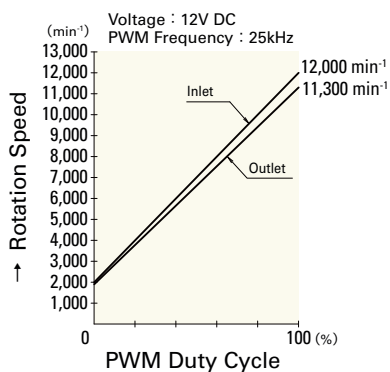
9CRE0812P8G001

Operating Voltage Range



9CRE0812P8G001

PWM Duty - Speed Characteristics Example



9CRE0812P8G001

80 mm sq.

San Ace 80



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×80 mm (Mass : 450g) **9CRA type**

Specifications The following nos. have PWM controls and pulse sensors.

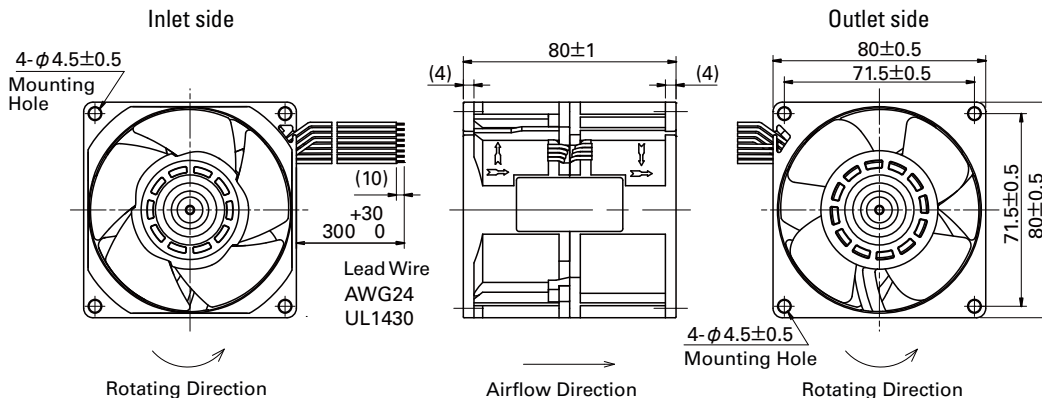
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{nom} [h]
						Inlet	Outlet							
9CRA0812P8G001	12	10.8 to 13.2	100	5.3	63.6	12,000	11,300	4.5	158.9	1,150	4.62	76	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.2	2.4	2,000	1,900	0.74	26.1	31.9	0.13	30		
9CRA0848P8G001	48	40.8 to 55.2	100	1.32	63.4	12,000	11,300	4.5	158.9	1,150	4.62	76	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.29	13.9	5,000	4,700	1.88	66.2	200	0.80	52		

Note: Expected life at 40°C ambient is just reference value.

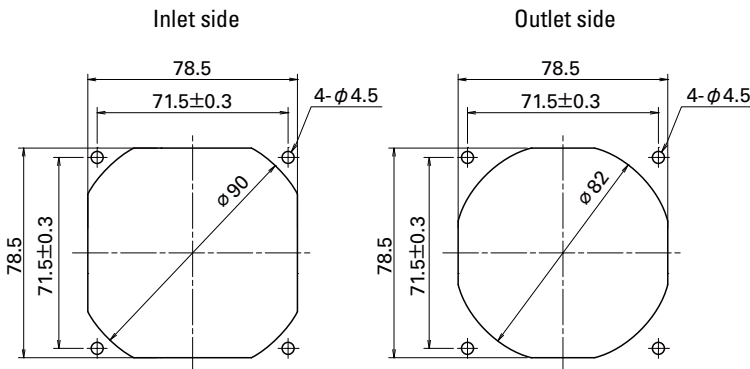
※PWM Frequency : 25kHz

Models with pulse sensors (no PWM control function) are available as an option. Please refer to the index (p. 471).

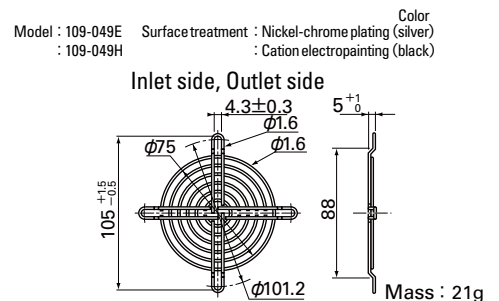
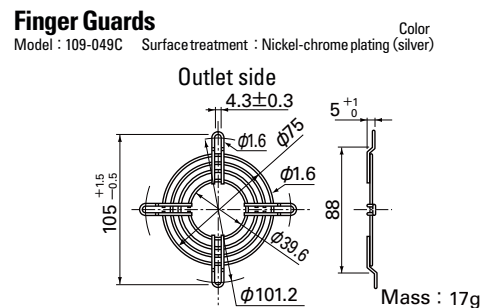
Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

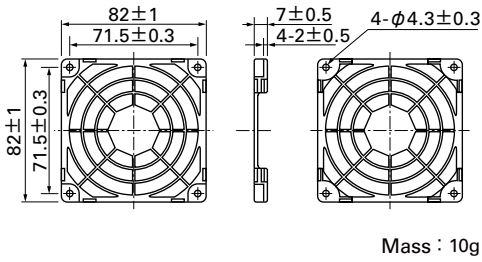


Options (unit: mm)

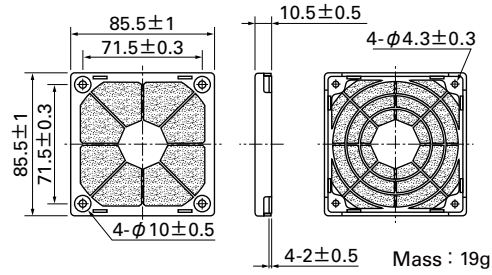


Options (unit: mm)

Resin Finger Guards
Model : 109-1002G

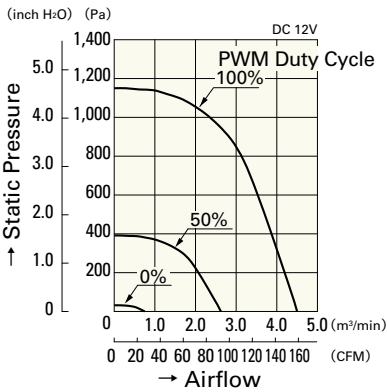


Resin Filter Kits
Model : 109-1002F13 (13PPI), 109-1002F20 (20PPI)
: 109-1002F30 (30PPI), 109-1002F40 (40PPI)

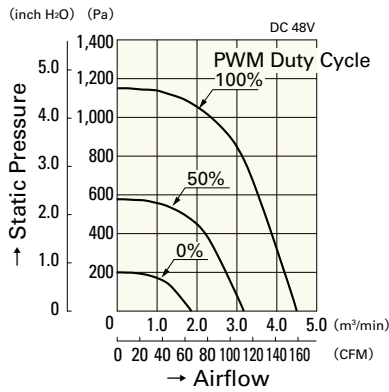


Airflow - Static Pressure Characteristics

PWM Duty Cycle

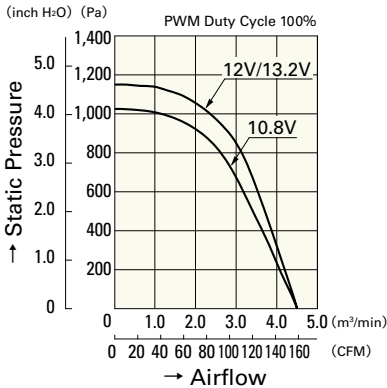


9CRA0812P8G001

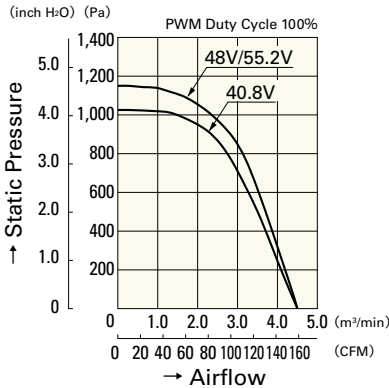


9CRA0848P8G001

Operating Voltage Range

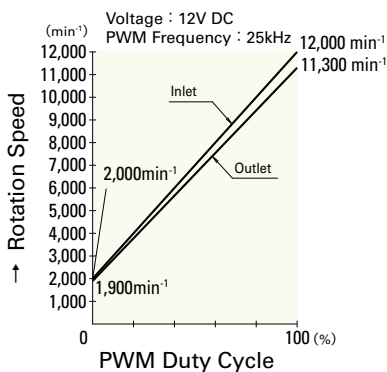


9CRA0812P8G001

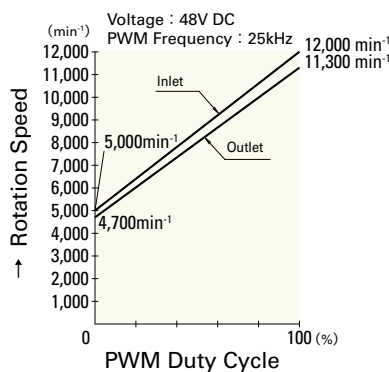


9CRA0848P8G001

PWM Duty - Speed Characteristics Example



9CRA0812P8G001



9CRA0848P8G001

120mm sq.

San Ace 120



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

120×120×76mm (Mass : 670g) **9CR type**

Specifications

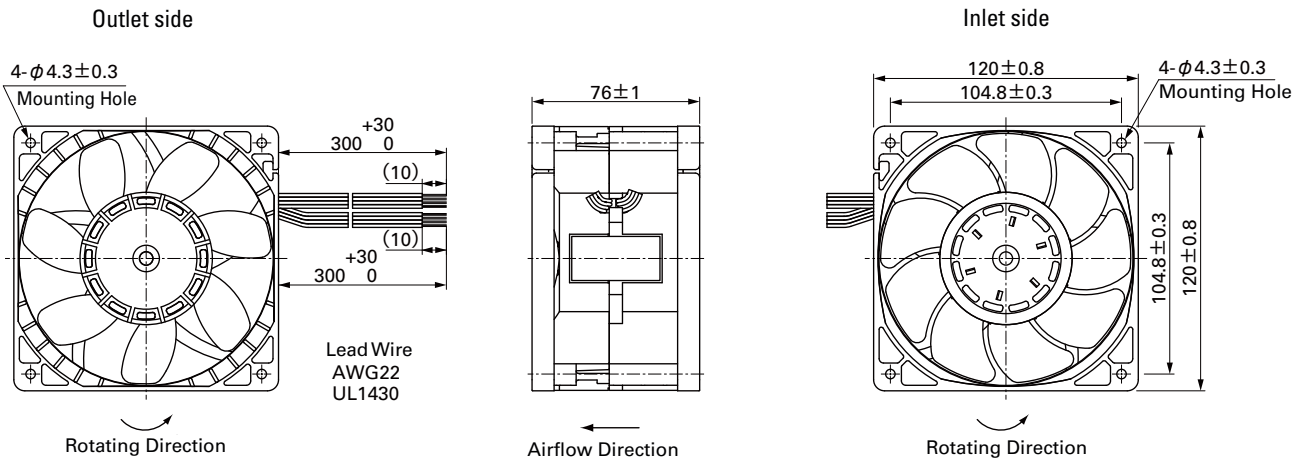
The following nos. **have PWM controls and pulse sensors.**

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchtH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
			100			Inlet	Outlet	8.5	300	480	1.93			
9CR1212P0G03	12	10.8 to 13.2	0	7.2	86.4	6,200	3,800	8.5	300	480	1.93	70	-20 to +60	40,000/60°C

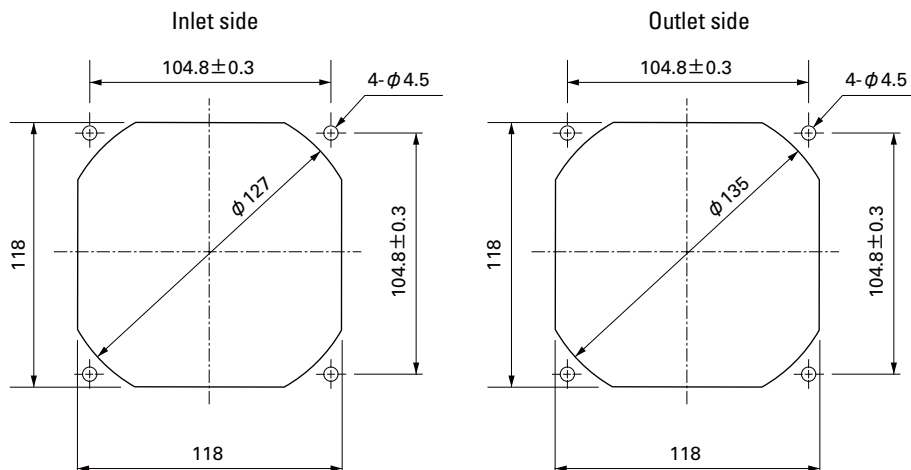
※PWM Frequency : 25kHz

Models without sensors or with pulse sensors (no PWM function) are available as options. Please refer to the index (p. 471).

Dimensions (unit: mm)



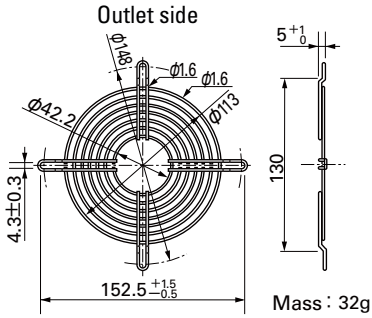
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

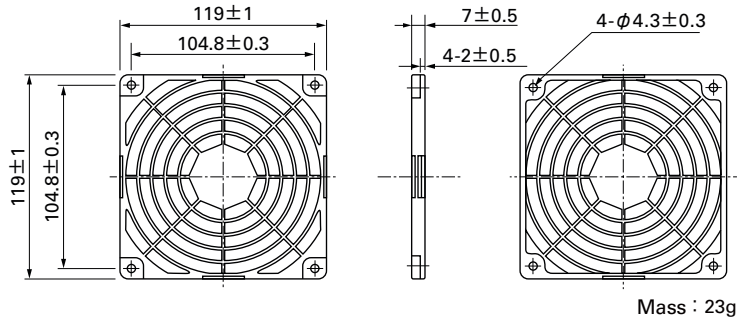
Finger Guards

Model : 109-019C Surface treatment : Nickel-chrome plating (silver)
 : 109-019H : Cation electropainting (black)



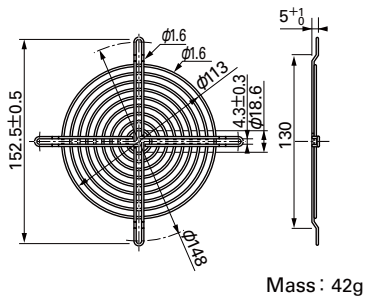
Resin Finger Guards

Model : 109-1000G



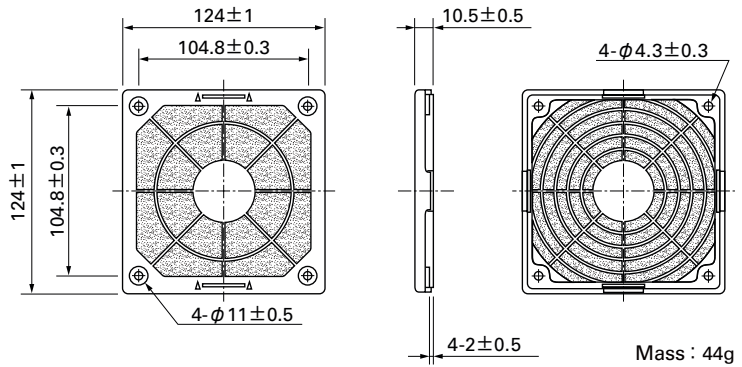
Model : 109-019E Surface treatment : Nickel-chrome plating (silver)
 : 109-019K : Cation electropainting (black)

Inlet side, Outlet side



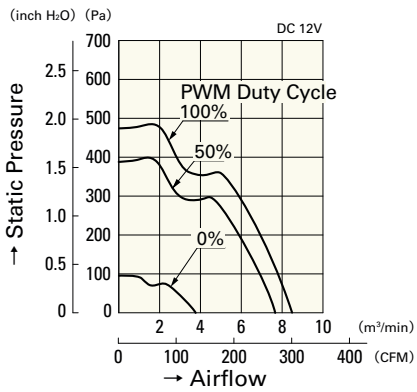
Resin Filter Kits

Model : 109-1000F13 (13PPI), 109-1000F20 (20PPI)
 : 109-1000F30 (30PPI), 109-1000F40 (40PPI)



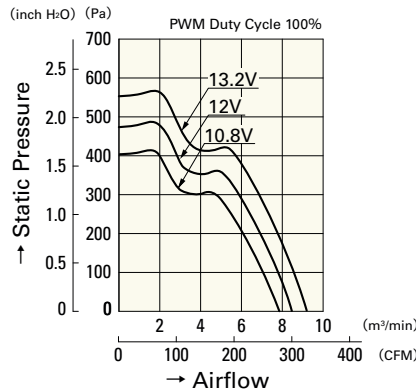
Airflow - Static Pressure Characteristics

PWM Duty Cycle



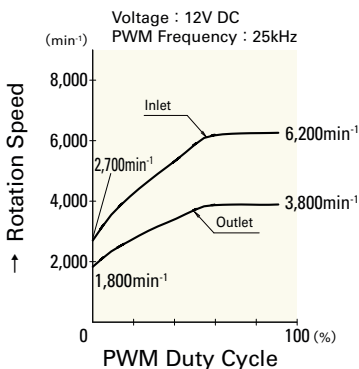
9CR1212P0G03

Operating Voltage Range



9CR1212P0G03

PWM Duty Speed Characteristics Example



9CR1212P0G03

φ172_{mm}

San Ace 172



General Specifications

- Material Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10:Survival rate:90% at 60°C , rated voltage, and continuously run in a free air state)
- Lead Wire Inlet ⊕red ⊖black (Sensor) yellow (Control) brown
Outlet ⊕orange ⊖gray (Sensor) purple (Control) white
- Storage Temperature -30°C to +70°C (Non-condensing)

φ172mm × 150mm × 102mm (Mass : 1,600g) **9CR type**

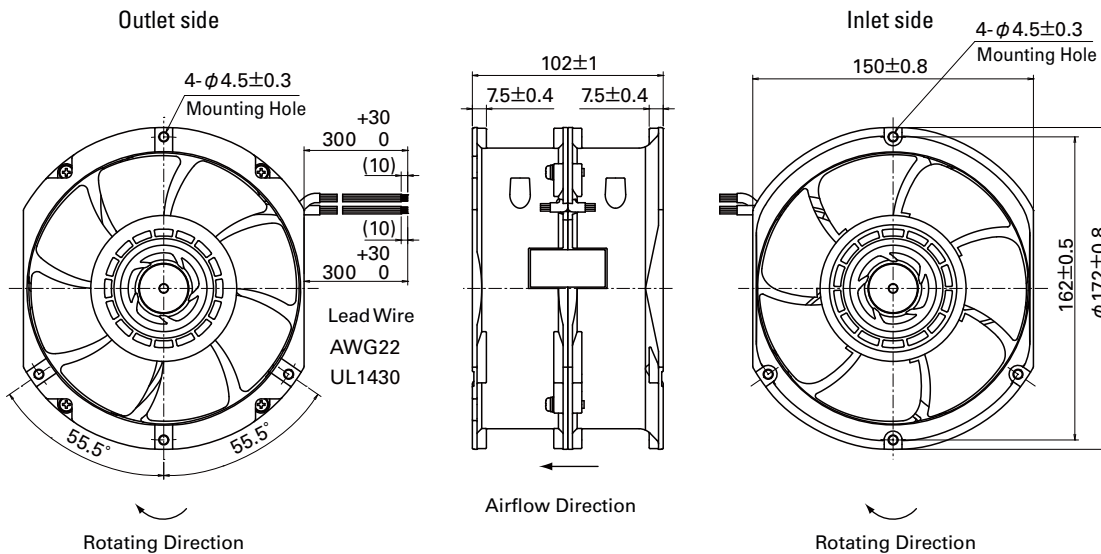
Specifications

The following nos. **have PWM controls and pulse sensors.**

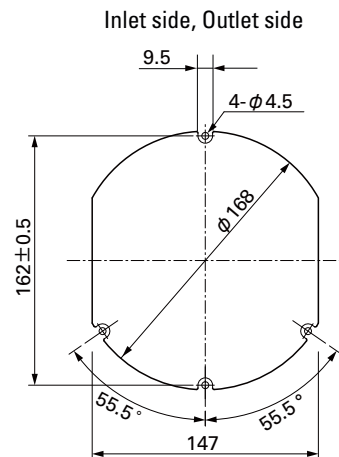
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle※ [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]		Max. Airflow [m ³ /min] [CFM]		Max. Static Pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
						Inlet	Outlet							
9CR5748P9G001	48	36 to 72	100	5.5	264	7,300	6,400	18	636	1,400	5.62	83	-20 to +70	40,000/60°C
			0	0.5	24	2,400	1,900	5.5	194.3	152	0.61	54		

※PWM Frequency : 25kHz

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

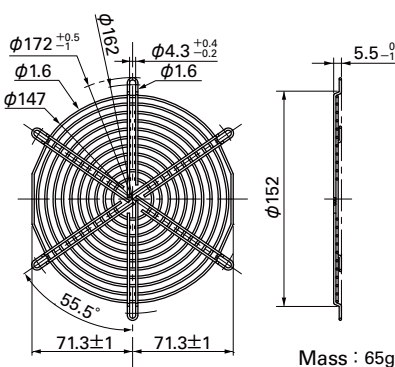


Options (unit: mm)

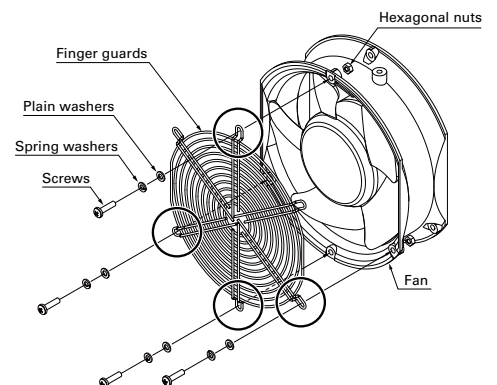
Finger Guards

Model : 109-319J Color Surface treatment : Nickel-chrome plating (silver)

Inlet side, Outlet side



For the finger guard Model: 109-319J, fix the finger guard to four holes as shown in the diagram.



Options (unit: mm)

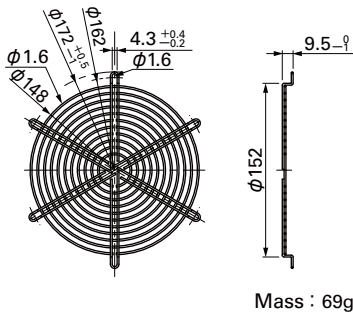
Finger Guards

Color : 109-319E Surface treatment : Nickel-chrome plating (silver)
 : 109-319H : Cation electropainting (black)

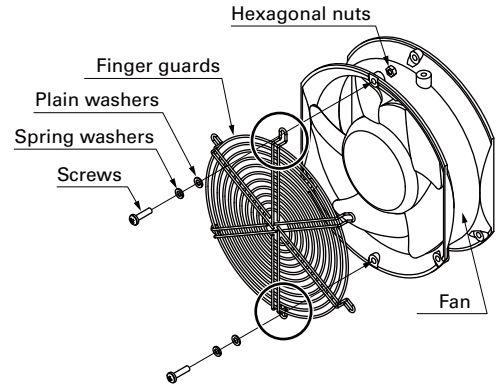
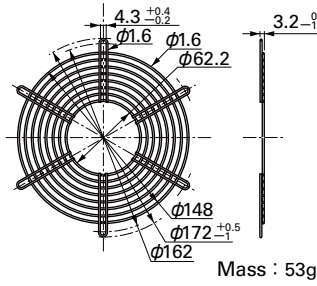
Color : 109-320 Surface treatment : Nickel-chrome plating (silver)

For the finger guard Model: 109-319E, 109-319H, 109-320, fix the finger guard to two holes as shown in the diagram. Do not fix it to any other holes.

Inlet side, Outlet side

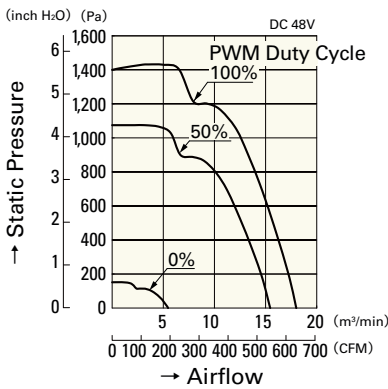


Outlet side



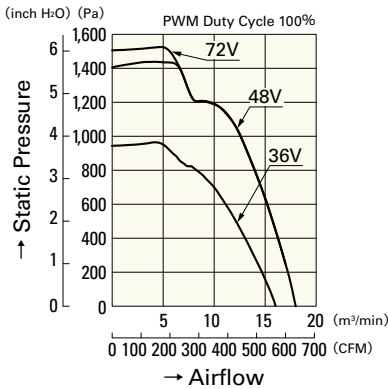
Airflow - Static Pressure Characteristics

PWM Duty Cycle



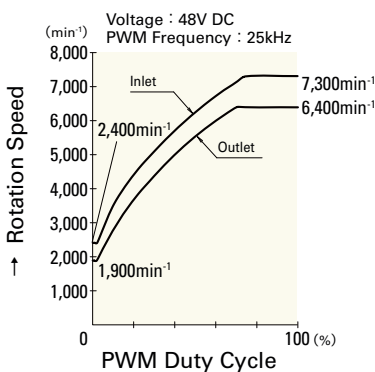
9CR5748P9G001

Operating Voltage Range



9CR5748P9G001

PWM Duty - Speed Characteristics Example

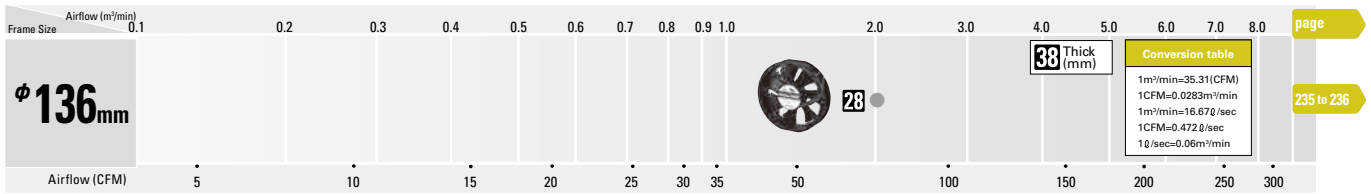


9CR5748P9G001

Reversible Flow Fan

The wind directions can be switched with these fans. Equivalent cooling performance can be obtained in both directions.

Domain Diagram



Part Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

9RF	13	12	P	3	H	001
Type name / frame material 9RF / Plastics	Frame size 13: $\phi 136\text{mm}$	Voltage 12: 12V 24: 24V	PWM control function	Frame thickness 3: 28mm thick	Speed code	Individual customer's spec

φ136mm

San Ace 136RF



General Specifications

- Material Frame, Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

φ136mm × 136mm × 28mm (Mass : 220g) **9RF type**

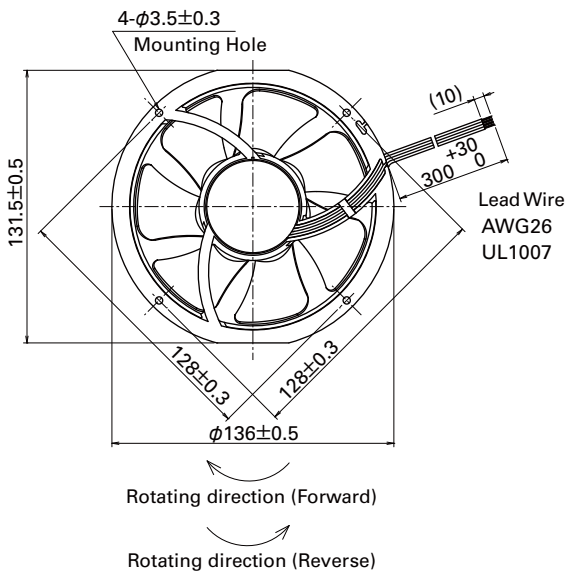
Specifications

The following nos. **have PWM controls and pulse sensors.**

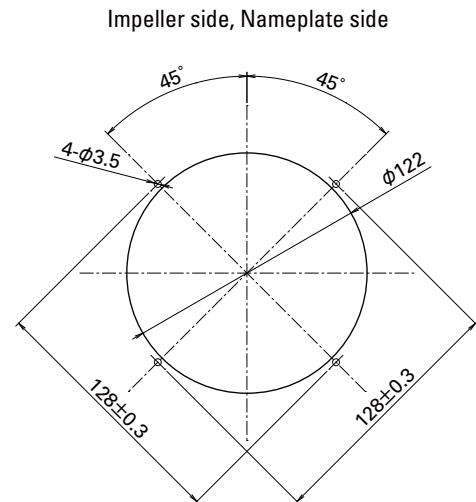
Model No.	Airflow direction	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life ^{typical} [h]
9RF1312P3H001	Forward	12	10.2 to 13.8	100	0.15	1.8	3,100	2.00	70.7	102	-20 to +70	40,000/60°C (70,000/40°C)
	Reverse			0				2.00	70.7	104		
9RF1324P3H001	Forward	24	20.4 to 27.6	100	0.09	2.2	3,100	2.00	70.7	102		
	Reverse			0				2.00	70.7	104		

※PWM Frequency : 25kHz

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

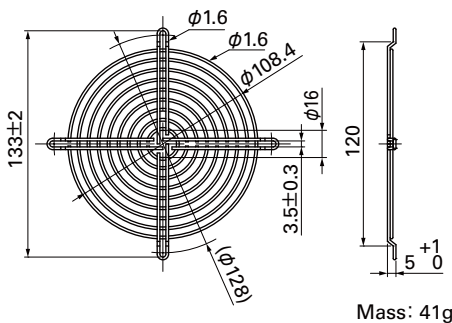


Options (unit: mm)

Finger Guards

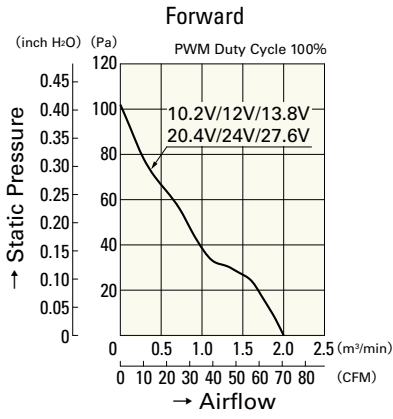
Model : 109-1139 Surface treatment : Nickel-chrome plating (silver) Color

Impeller side, Nameplate side



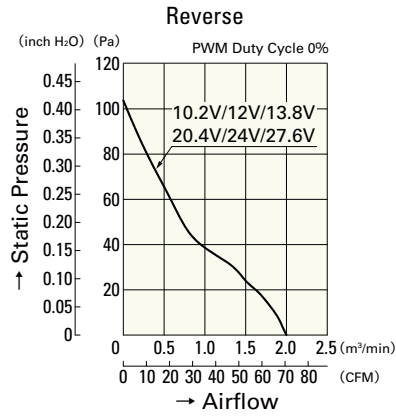
Airflow - Static Pressure Characteristics

Operating Voltage Range



9RF1312P3H001

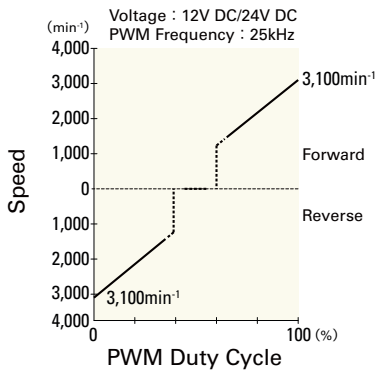
9RF1324P3H001



9RF1312P3H001

9RF1324P3H001

PWM Duty - Speed Characteristics Example



9RF1312P3H001

9RF1324P3H001

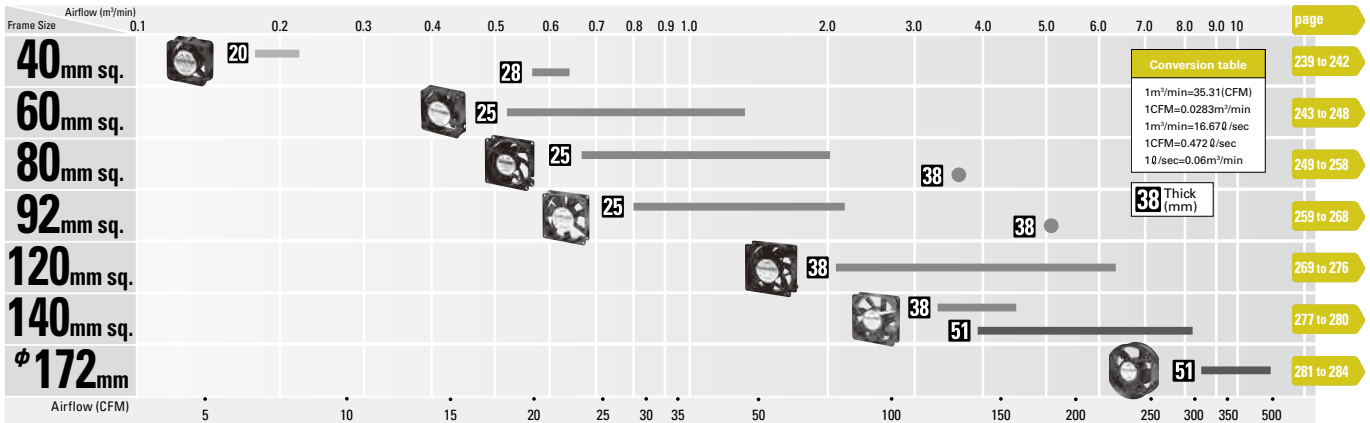
Splash Proof Fan

Cooling fan of IP54, IP55 and IP68 waterproof capability.

Related product

Splash Proof Centrifugal Fan ⇒ p. 286
Oil Proof Fan ⇒ p. 296

Domain Diagram



Part Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

9WS	12	12	H	1	01	
Type name / frame material 109W / Aluminum 9WS / Plastics 9WE / Aluminum 9WG / Aluminum 9WB / Aluminum 9WP / Plastics 9WV / Plastics Aluminum 9WL / Aluminum	Frame size 04 : 40×40mm 06 : 60×60mm 08 : 80×80mm 09 : 92×92mm 12 : 120×120mm 14 : 140×140mm 17 : φ172mm 57 : φ172mm×150mm (sidecut)	Voltage 12 : 12V 24 : 24V 48 : 48V etc	Speed code A,D,E,F,G,H,J,L, M,S etc	Frame thickness 1 : 38mm thick 4 : 25mm thick 5 : 51mm thick 6 : 20mm thick	Sensor specifications 01 : With a pulse sensor 02 : Without a sensor D01 : With a lock sensor	Frame form Nil : Plastics frame: Ribbed frame Aluminum frame: Ribless frame 1 : Plastics frame: Ribless frame

Fans with PWM control function

Example :

9WV	08	48	P	1	H	001	
Type name / frame material 9WV / Plastics Aluminum	Frame size 08 : 80×80mm	Voltage 48 : 48V	PWM control function	Frame thickness	Speed code	Individual customer's spec 2 or 3 digits	Frame form Nil : Plastics frame: Ribbed frame Aluminum frame: Ribless frame

Ingress protection ratings (IP code)

■ IP Codes used by SANYO DENKI express the level of protection that internal electrical components (for fans: electrical components and motor coils) have against solid objects, water, and access to hazardous parts.
San Ace Splash Proof fans feature high protection levels.

Definition of Ingress Protection (IP Code)

Ingress Protection (IP Code) is defined in IEC (International Electrotechnical Commission) 60529*
DEGREES OF PROTECTION PROVIDED BY ENCLOSURES (IP Code). *IEC 60529:2001

I P X X

Second digit: Protection against water

First digit: Protection against solid objects and access to hazardous parts

*For details, please refer to p. 453.

40 mm sq.

San Ace 40W



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (Indoor, L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×20 mm (Mass : 50g) **IP 68** **9WP** type

Specifications

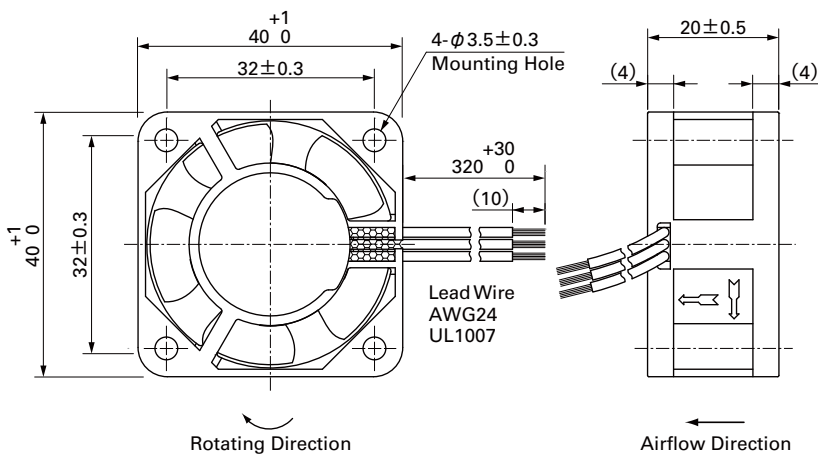
The following nos. have pulse sensors and ribs.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WP0412H6001	12	7 to 13.8	0.1	1.2	8,000	0.225 8.0	65.7 0.264	33	-10 to +60	40,000/60°C (70,000/40°C)
9WP0412F6001			0.06	0.72	6,500	0.183 6.5	45.1 0.181	28		

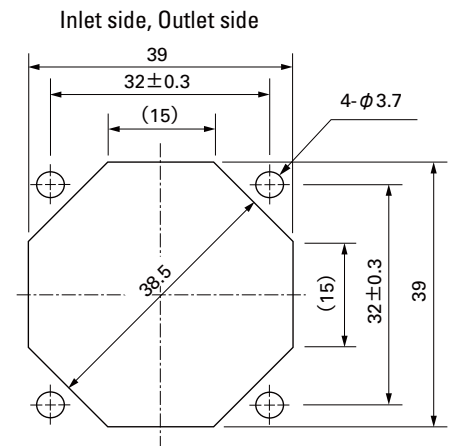
Models without sensors are available as an option. Please refer to the index (p. 481).

Dimensions (unit: mm)

(With ribs)



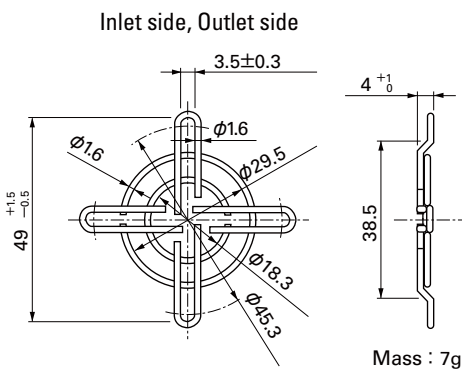
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



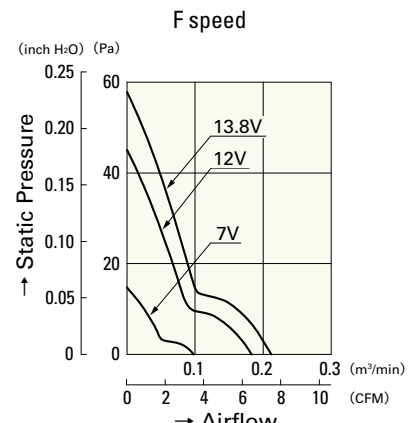
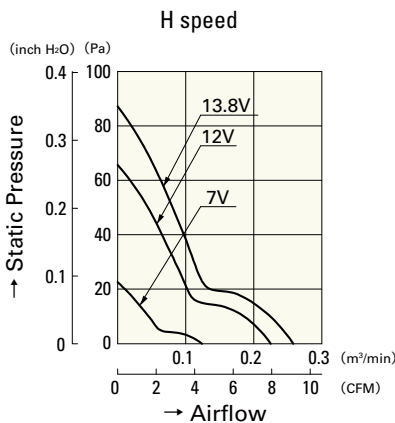
Options (unit: mm)

Finger Guards

Model : 109-059 Surface treatment : Nickel-chrome plating (silver) Color : Silver
 : 109-059H : Cation electropainting (black) : Black



Airflow - Static Pressure Characteristics



9WP0412H6001

9WP0412F6001

40mm sq.

San Ace 40W



DC
Splash Proof Fan 40mm

General Specifications

- Material Frame: Aluminum (Black coating),
Impeller: Plastics (Flammability: UL94V-0)
- Expected Life Refer to specifications (Indoor, L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

40×40×28mm (Mass : 70g) **IP 68** **9WL type** **High Airflow Long Life Fan**

Specifications

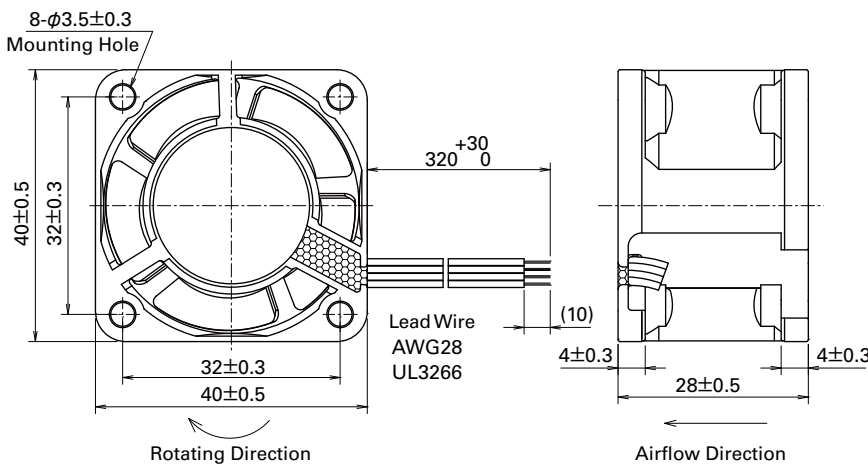
The following nos. have PWM controls and pulse sensors.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle (%)	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WL0412P3J001	12	10.8 to 13.2	100	0.52	6.24	17,500	0.63 22.2	400 1.61	51	-20 to +70	150,000/60°C
			20	0.06	0.72	3,600	0.13 4.6	16.9 0.07	20		
9WL0412P3G001			100	0.40	4.80	15,500	0.56 19.7	310 1.24	47		
			20	0.06	0.72	3,300	0.12 4.2	14.0 0.06	18		
9WL0424P3J001	24	21.6 to 26.4	100	0.26	6.24	17,500	0.63 22.2	400 1.61	51		
			20	0.04	0.96	4,000	0.14 5.1	20.9 0.08	22		
9WL0424P3G001			100	0.20	4.80	15,500	0.56 19.7	310 1.24	47		
			20	0.04	0.96	3,000	0.11 3.8	11.6 0.05	16		

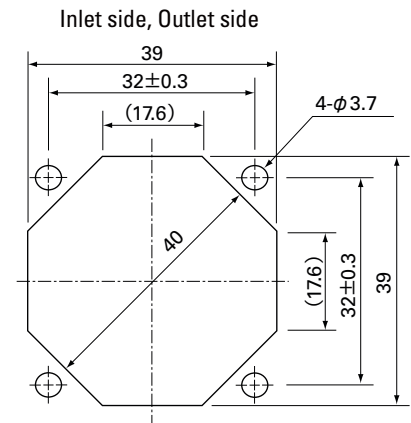
Note: Fan does not rotate when PWM duty cycle is 0%.

※PWM Frequency : 25kHz

Dimensions (unit: mm)



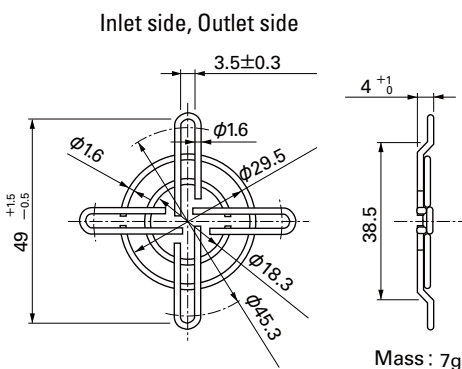
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

Model : 109-059 Surface treatment : Nickel-chrome plating (silver) Color : Cation electropainting (black)
: 109-059H



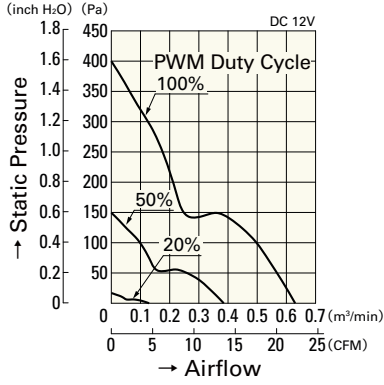
40mm sq.

San Ace 40W

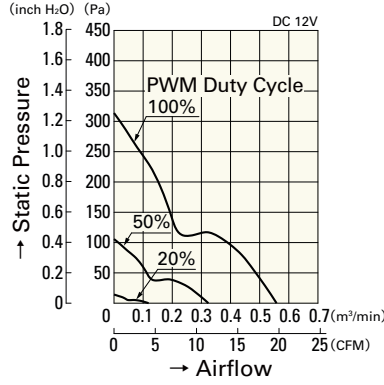
40×40×28mm [Mass : 70g]

Airflow - Static Pressure Characteristics

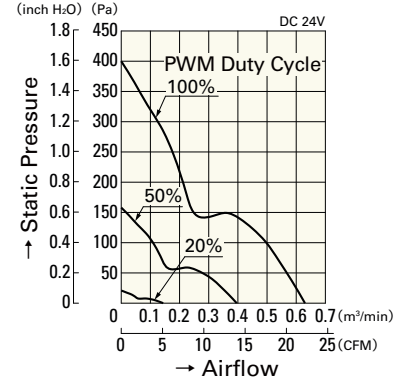
PWM Duty Cycle



9WL0412P3J001

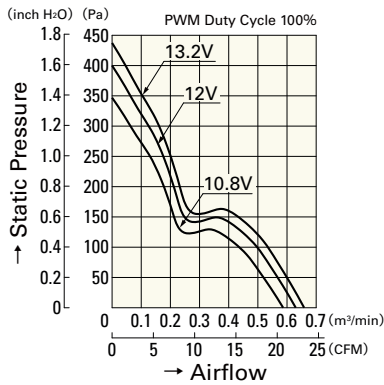


9WL0412P3G001

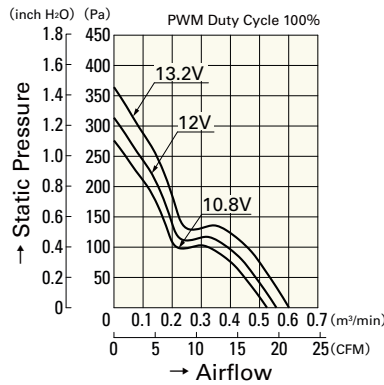


9WL0424P3J001

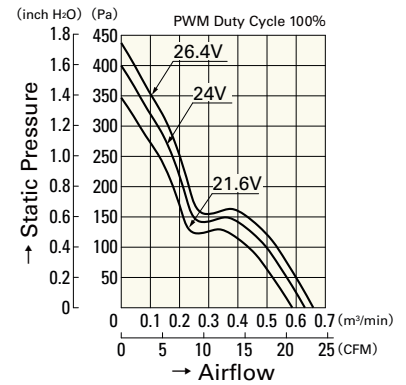
Operating Voltage Range



9WL0412P3J001

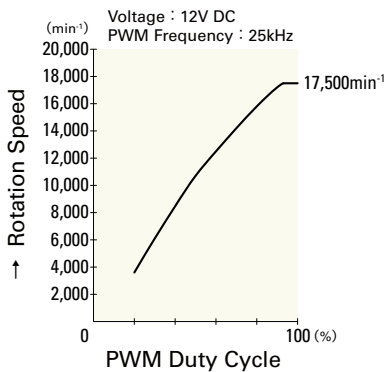


9WL0412P3G001

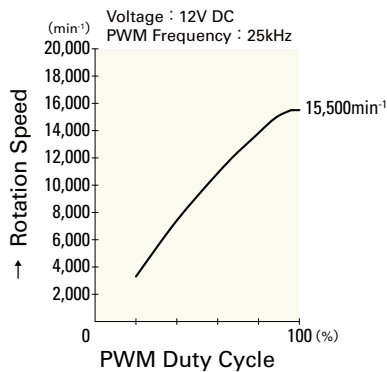


9WL0424P3J001

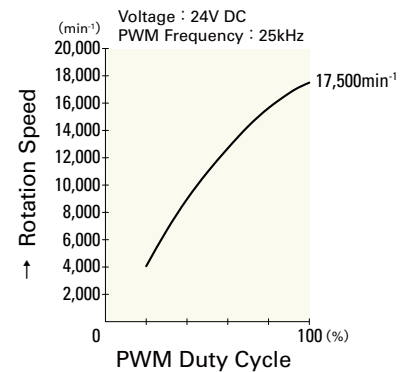
PWM Duty - Speed Characteristics Example



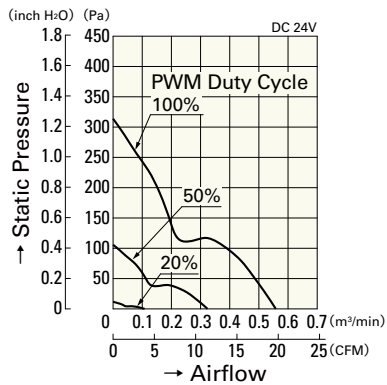
9WL0412P3J001



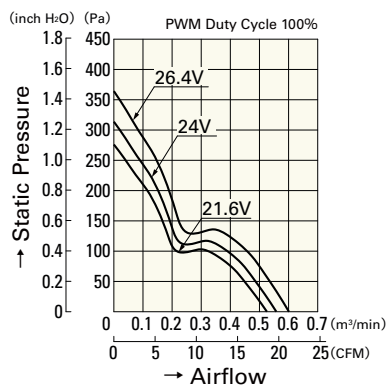
9WL0412P3G001



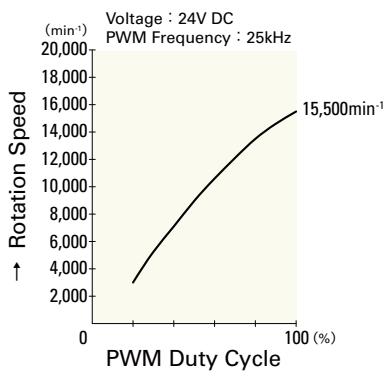
9WL0424P3J001



9WL0424P3G001



9WL0424P3G001



9WL0424P3G001

60mm sq.

San Ace 60W



General Specifications

- Material Frame: Aluminum (Black coating),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (Indoor, L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×25mm (Mass : 110g) **IP 68** **9WL type** **High Airflow Long Life Fan**

Specifications The following nos. have PWM controls and pulse sensors.

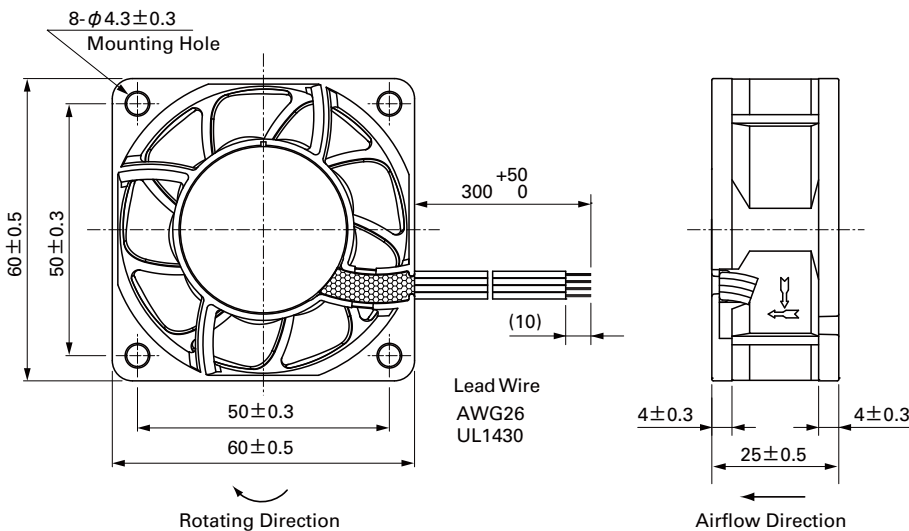
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Notes} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WL0612P4S001	12	10.8 to 13.2	100	0.67	8.04	11,000	1.40 49.4	300 1.204	53	-20 to +70	180,000/60°C
			20	0.06	0.72	2,900	0.36 12.7	20.8 0.083	20		
9WL0612P4J001			100	0.39	4.68	8,650	1.10 38.8	182 0.730	47		
			20	0.03	0.36	1,150	0.13 4.8	3.3 0.013	14		
9WL0612P4H001			100	0.17	2.04	6,150	0.78 27.5	97 0.389	36		
			20	0.03	0.36	1,350	0.17 6.0	4.7 0.018	14		
9WL0624P4S001	24	21.6 to 26.4	100	0.34	8.16	11,000	1.40 49.4	300 1.204	53		
			20	0.03	0.72	2,900	0.36 12.7	20.8 0.083	20		
9WL0624P4J001			100	0.19	4.56	8,650	1.10 38.8	182 0.730	47		
			20	0.02	0.48	2,200	0.28 9.8	12.0 0.048	17		
9WL0624P4H001			100	0.08	1.92	6,150	0.78 27.5	97 0.389	36		
			20	0.02	0.48	1,300	0.16 5.6	4.3 0.017	14		

Note: Fan does not rotate when PWM duty cycle is 0%.

※PWM Frequency : 25kHz

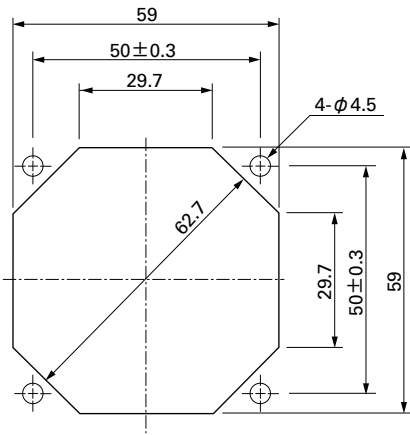
Models without sensors are available as an option. Please refer to the index (p. 481).

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

Inlet side, Outlet side



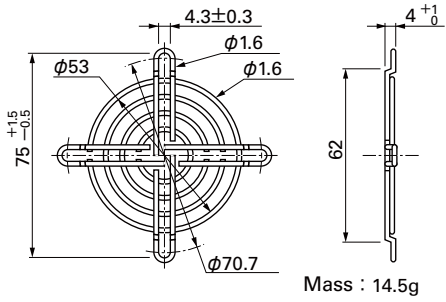
Options (unit: mm)

Finger Guards

Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
 : 109-139H : Cation electropainting (black)

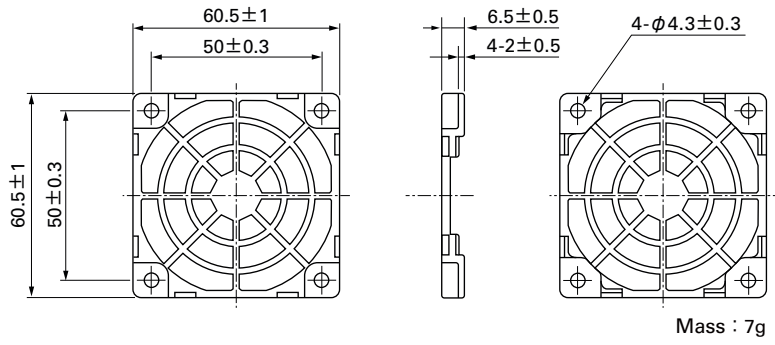
Color

Inlet side, Outlet side



Resin Finger Guards

Model : 109-1003G



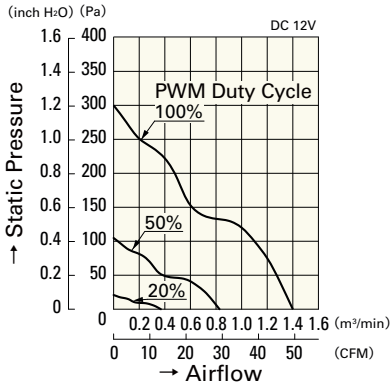
60mm sq.

San Ace 60W

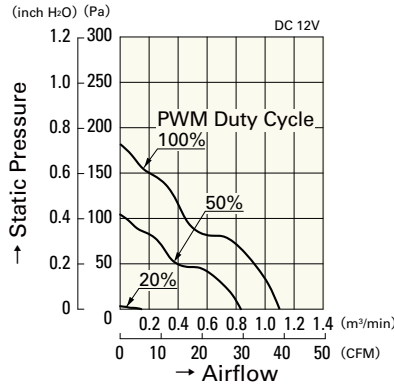
60×60×25mm [Mass : 120g]

Airflow - Static Pressure Characteristics

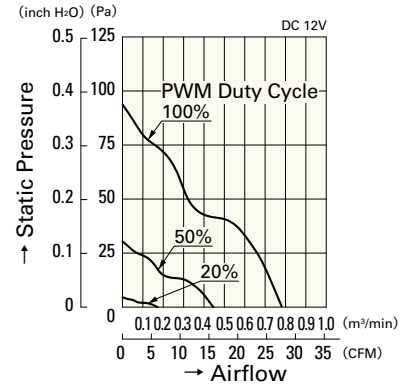
PWM Duty Cycle



9WL0612P4S001

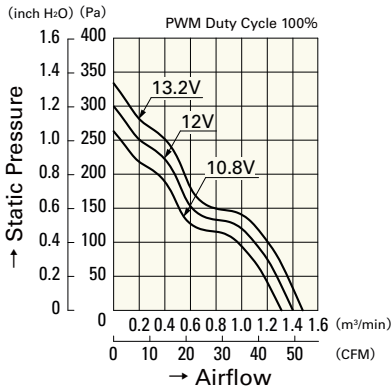


9WL0612P4J001

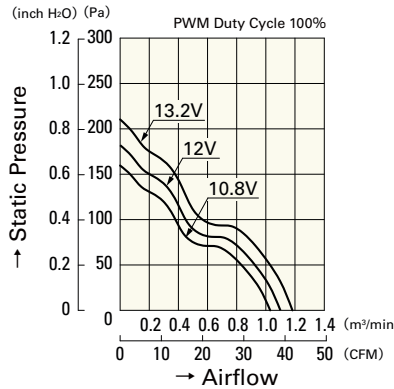


9WL0612P4H001

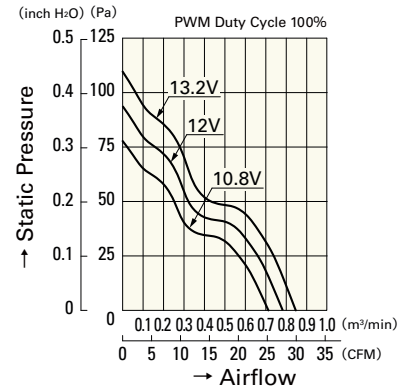
Operating Voltage Range



9WL0612P4S001

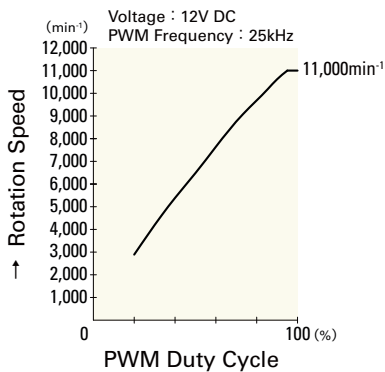


9WL0612P4J001

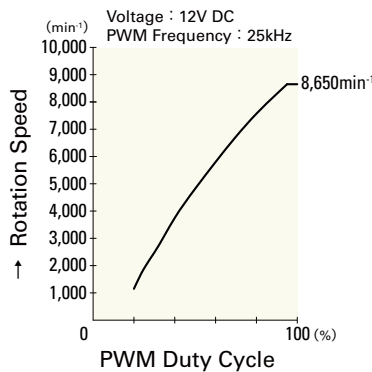


9WL0612P4H001

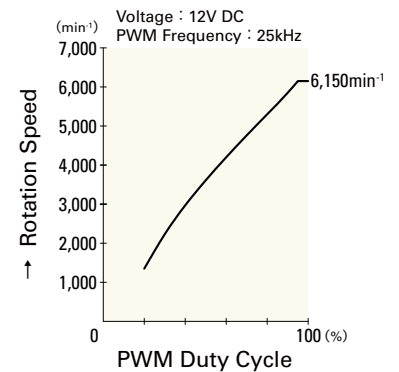
PWM Duty - Speed Characteristics Example



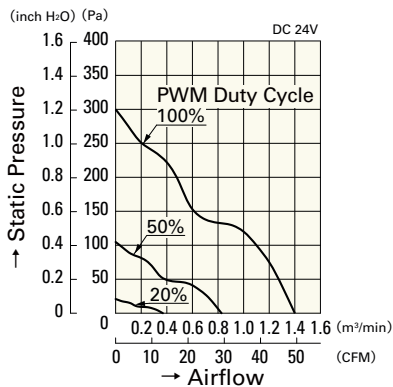
9WL0612P4S001



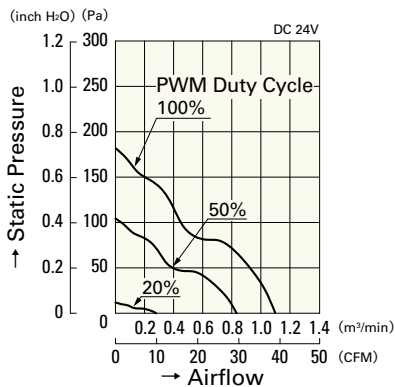
9WL0612P4J001



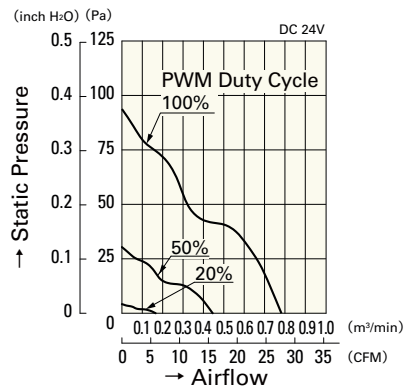
9WL0612P4H001



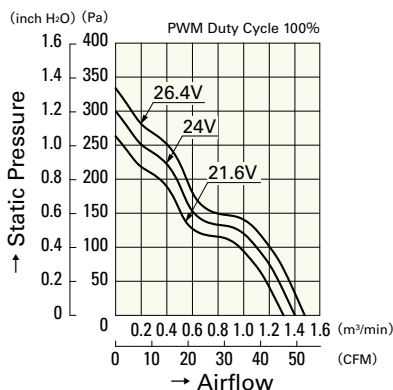
9WL0624P4S001



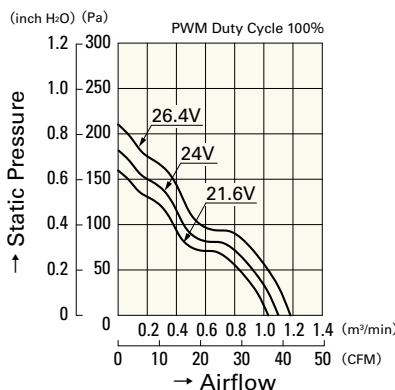
9WL0624P4J001



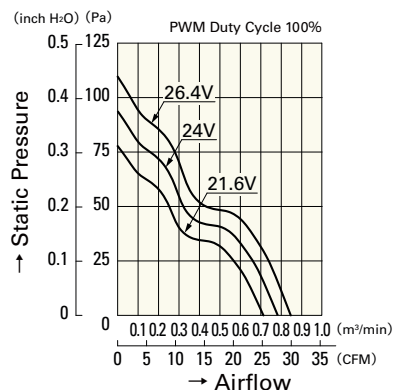
9WL0624P4H001



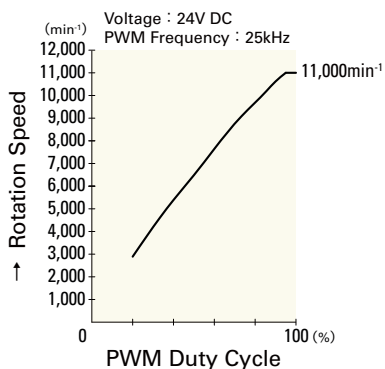
9WL0624P4S001



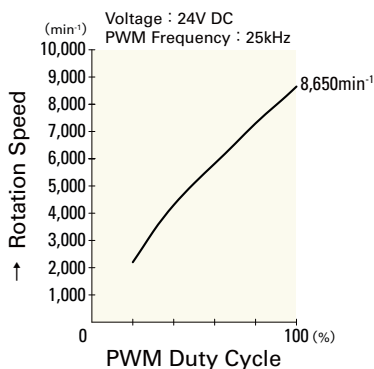
9WL0624P4J001



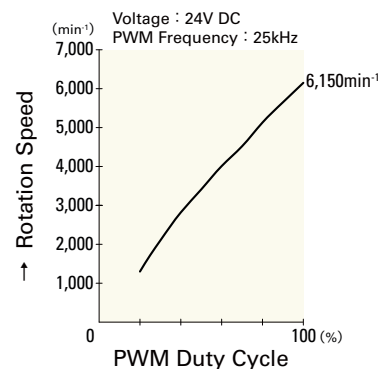
9WL0624P4H001



9WL0624P4S001



9WL0624P4J001



9WL0624P4H001

60mm sq.

San Ace 60W



General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (Indoor, L10:Survival rate:90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕red ⊖black (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

60×60×25mm (Mass : 110g) **IP 68** **9WP** type

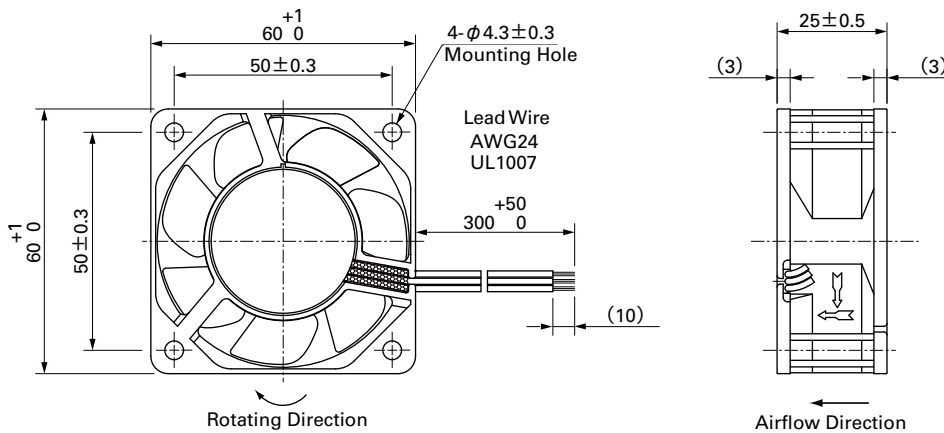
Specifications

The following nos. **have pulse sensors and ribs**. For ribless, append "1" to the model no.

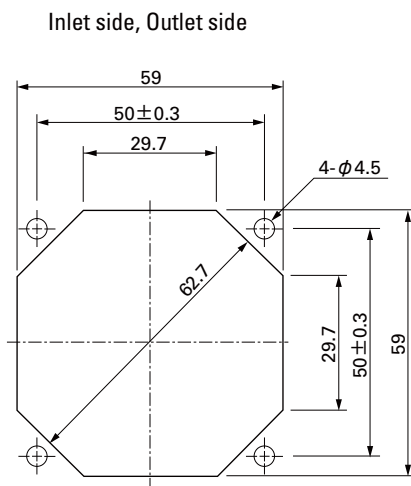
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WP0612G401	12	10.2 to 13.2	0.21	2.52	5,600	0.78 27.5	87.3 0.351	39	-20 to +60	40,000/60°C
9WP0612D401			0.21	2.52	5,150	0.72 25	73.5 0.30	37		
9WP0612H401		10.2 to 13.8	0.11	1.32	3,800	0.53 18.7	40.2 0.161	28		
9WP0624G401	24	20.4 to 27.6	0.13	3.12	5,600	0.78 27.5	87.3 0.351	39	-20 to +60	40,000/60°C
9WP0624H401			0.06	1.44	3,800	0.53 18.7	40.2 0.161	28		
9WP0648H401			48	40 to 53	0.04	1.92	3,800	0.53 18.7		

Models without sensors, or with lock sensors, or PWM control function are available as options. Please refer to the index (pp. 481 to 482).

Dimensions (unit: mm) (With ribs)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

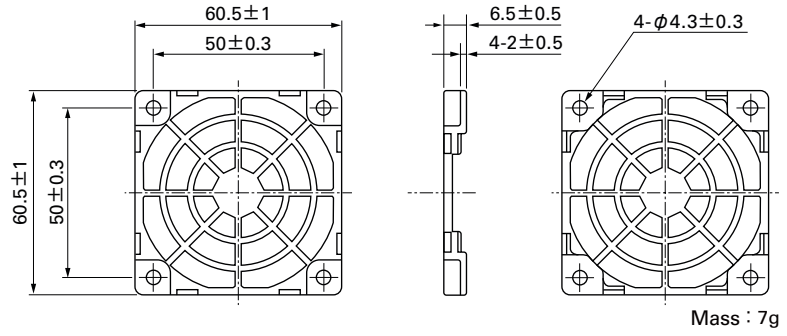
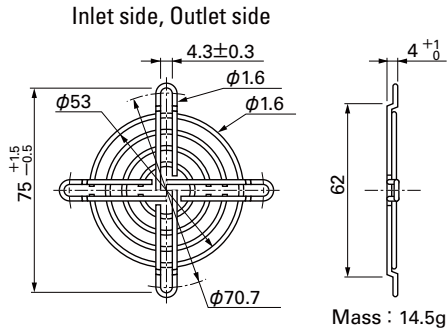
Finger Guards

Model : 109-139E Surface treatment : Nickel-chrome plating (silver)
 : 109-139H : Cation electropainting (black)

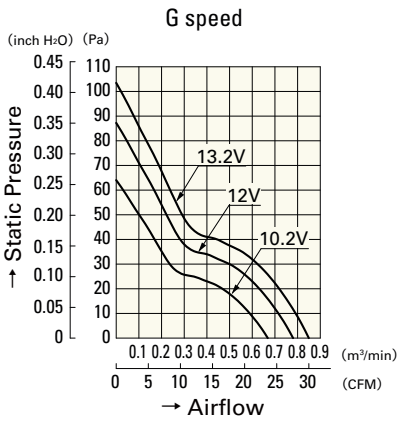
Color

Resin Finger Guards

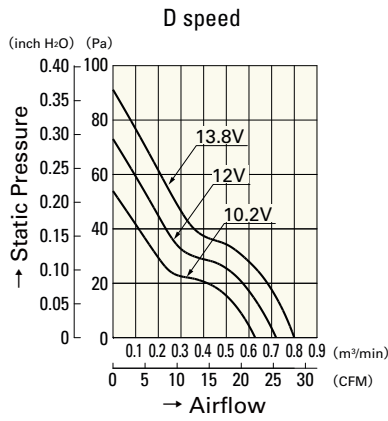
Model : 109-1003G



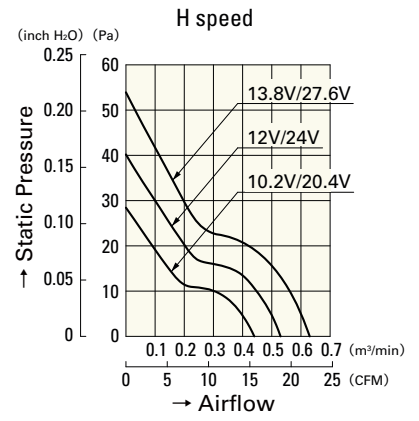
Airflow - Static Pressure Characteristics



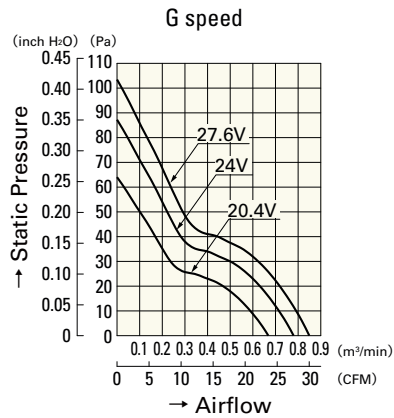
9WP0612G401



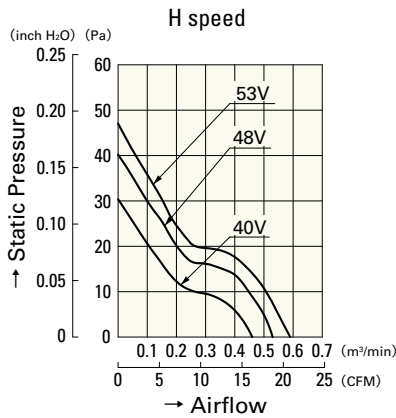
9WP0612D401



9WP0612H401
9WP0624H401



9WP0624G401



9WP0648H401

80 mm sq.

San Ace 80W



General Specifications

- Material Frame: Aluminum (Black coating),
Impeller: Plastics (Flammability: UL94V-1)
- Expected Life Refer to specifications (L10: Survival rate: 90% at 60°C ,
rated voltage, and continuously run in a free air state)
- Lead Wire ⊕ red ⊖ black (Sensor) yellow (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×25mm (Mass : 150g) **IP68** **9WL** type **High Airflow Long Life Fan**

Specifications

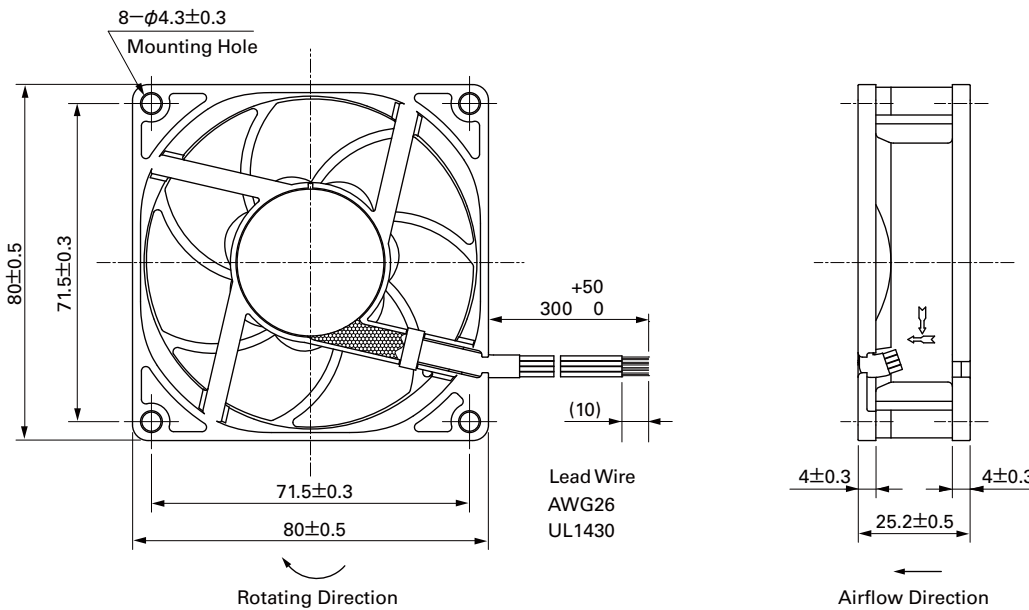
The following nos. have PWM controls and pulse sensors.

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Min} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WL0812P4J001	12	10.8 to 13.2	100	0.6	7.2	7,400	2.07 73.0	177 0.71	49	-20 to +70	180,000/60°C
			20	0.06	0.72	1,800	0.50 17.6	10.4 0.04	16		
9WL0812P4G001			100	0.30	3.60	5,500	1.54 54.3	98 0.39	43		
			25	0.05	0.60	1,400	0.39 13.7	6.3 0.02	14		
9WL0812P4H001			100	0.12	1.44	3,700	1.03 36.3	44 0.17	31		
			25	0.04	0.48	1,100	0.30 10.5	3.9 0.01	13		
9WL0824P4J001	24	21.6 to 26.4	100	0.28	6.72	7,400	2.07 73.0	177 0.71	49		
			20	0.05	1.20	2,400	0.67 23.6	18.6 0.07	22		
9WL0824P4G001			100	0.14	3.36	5,500	1.54 54.3	98 0.39	43		
			20	0.02	0.48	1,200	0.33 11.6	4.6 0.01	13		
9WL0824P4H001			100	0.05	1.2	3,700	1.03 36.3	44 0.17	31		
			30	0.02	0.48	1,100	0.30 10.5	3.9 0.01	13		

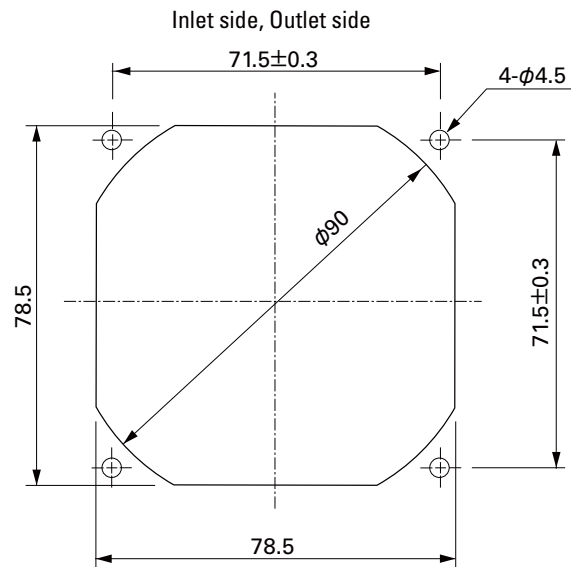
Note : Fan does not rotate when PWM duty cycle is 0%.

※PWM Frequency : 25kHz

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

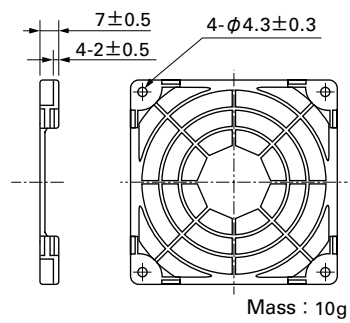
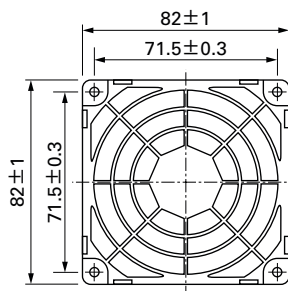
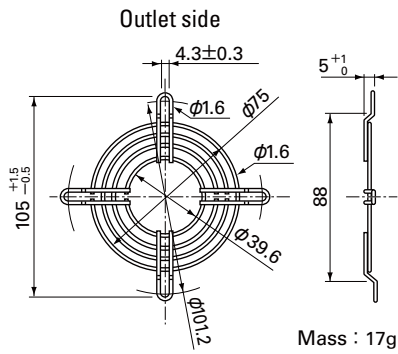
Finger Guards

Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color

Color

Resin Finger Guards

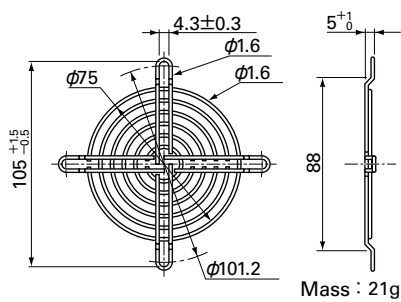
Model : 109-1002G



Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color
: 109-049H : Cation electropainting (black)

Color

Inlet side, Outlet side



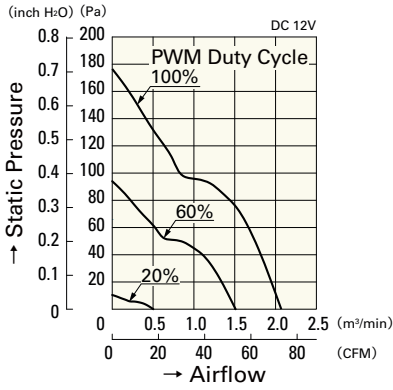
80mm sq.

San Ace 80W

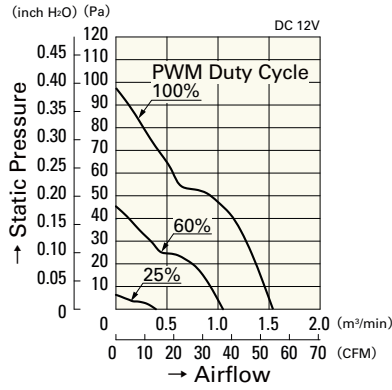
80×80×25mm [Mass : 150g]

Airflow - Static Pressure Characteristics

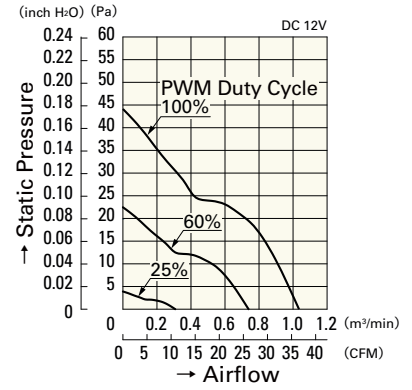
PWM Duty Cycle



9WL0812P4J001

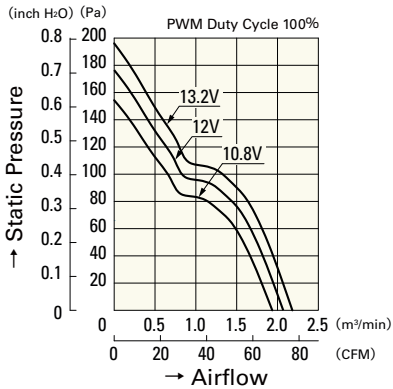


9WL0812P4G001

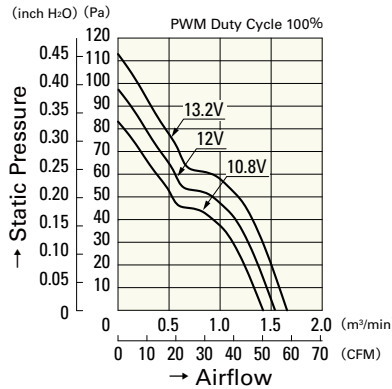


9WL0812P4H001

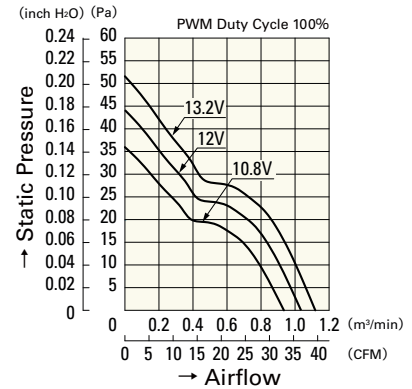
Operating Voltage Range



9WL0812P4J001

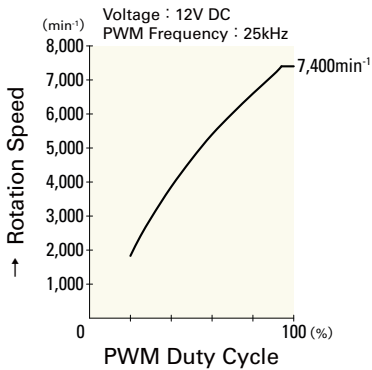


9WL0812P4G001

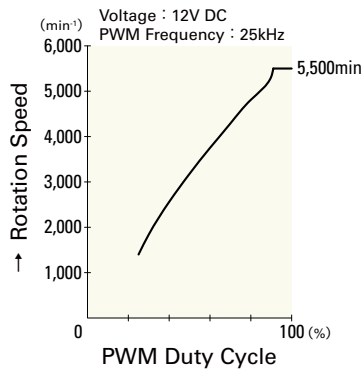


9WL0812P4H001

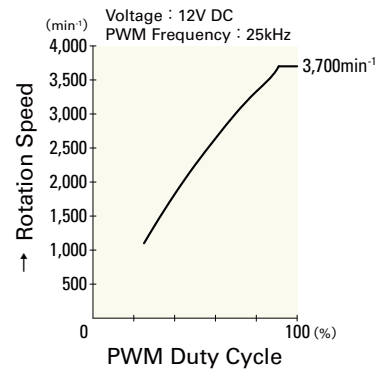
PWM Duty - Speed Characteristics Example



9WL0812P4J001



9WL0812P4G001



9WL0812P4H001