

Sanyo 9WF0624H4D03, вентилятор, Минск т.80447584780

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каталог, описание, технические, характеристики, datasheet, параметры, маркировка, габариты, фото, даташит,



QR код

Бренд: sanyo

Размеры: 60*60*25 мм

Напряжение: 24 В

Ток: 0.13А

Скорость: 6000 об./мин.

Поток воздуха: 23.6CFM

Шум: 41dba

Проводка: три провода

----- Sanyo

9WF0624H4D03, вентилятор,

Sanyo 9WF0624H4D03, 6025, 24 В, 0.15А для

Водонепроницаемый, промышленные,

вентиляторы, охлаждения, 24vdc,

www.tiristor.by

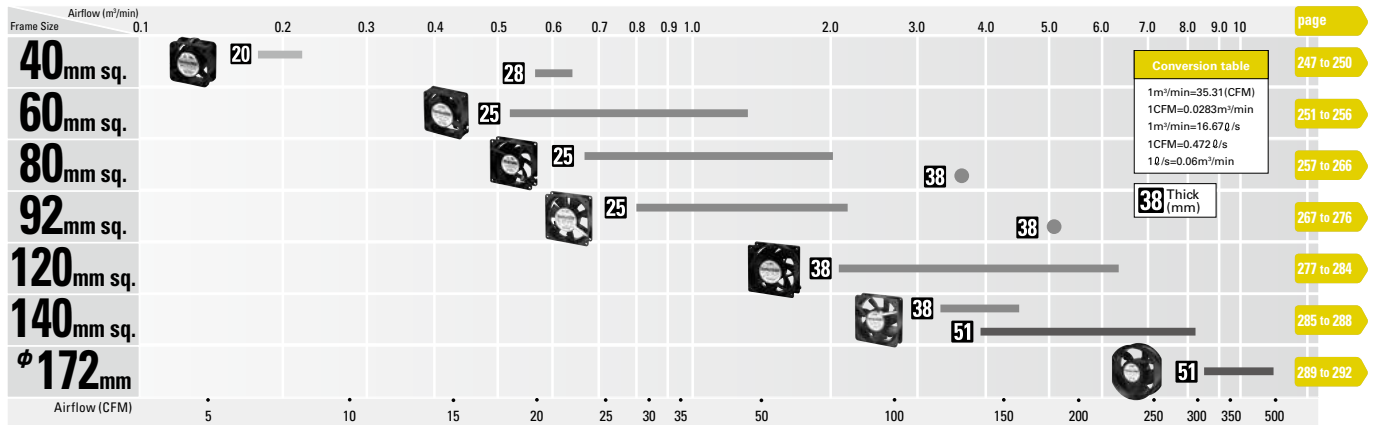
Splash Proof Fan

Cooling fan of IP54, IP55 and IP68 waterproof capability.

Related product

Splash Proof Centrifugal Fan ⇒ p. 293
Oil Proof Fan ⇒ p. 303

Domain Diagram



Model 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. 483.

How to Read Specifications

DC Fan											DC	
Model No.	① Rated Voltage [V]	② Operating Voltage Range [V]	③ Rated Current [A]	④ Rated Input [W]	⑤ Rated Speed [min ⁻¹]	⑥ Max. Airflow [m ³ /min] [CFM]		⑦ Max. Static Pressure [Pa] [inchH ₂ O]		⑧ SPL [dB(A)]	⑨ Operating Temperature [°C]	⑩ Expected Life [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)

- 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 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%. Expected life at 40°C ambient is just reference value.
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

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.

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

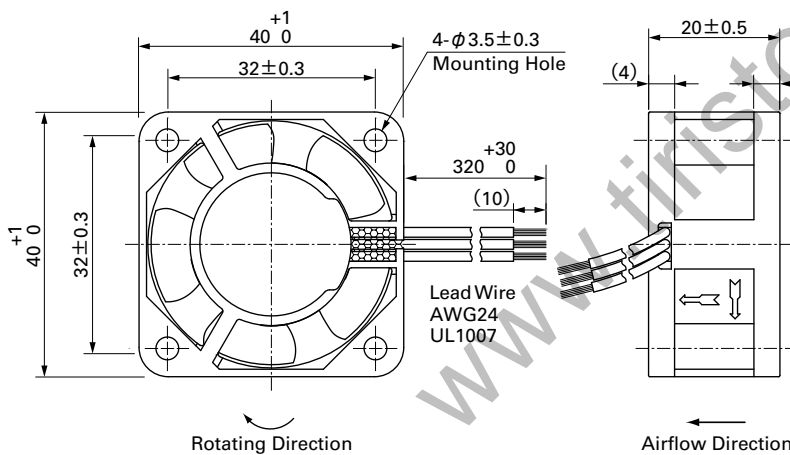
The following nos. have pulse sensors and ribs.

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		

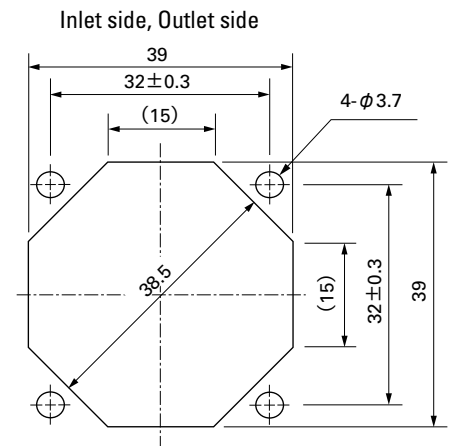
Other sensor specifications are available as options. Please refer to the index (p. 512).

Dimensions (unit: mm)

(With ribs)



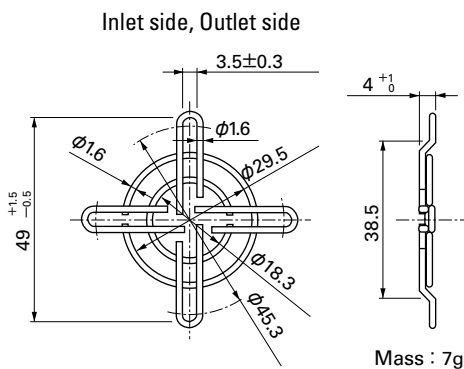
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



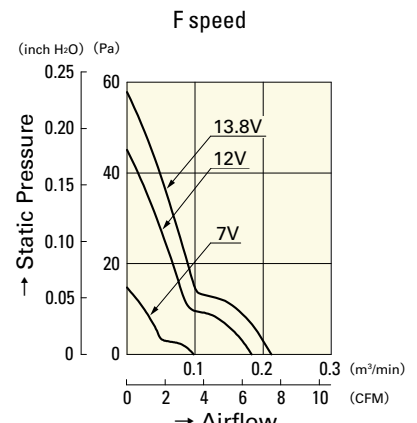
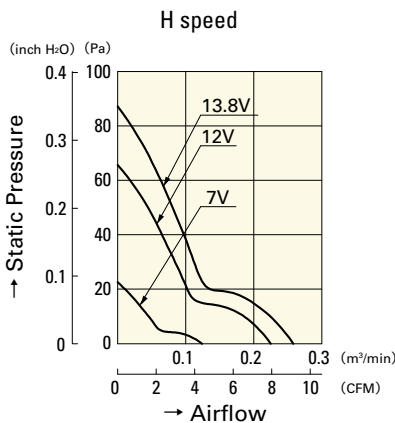
Options (unit: mm)

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.

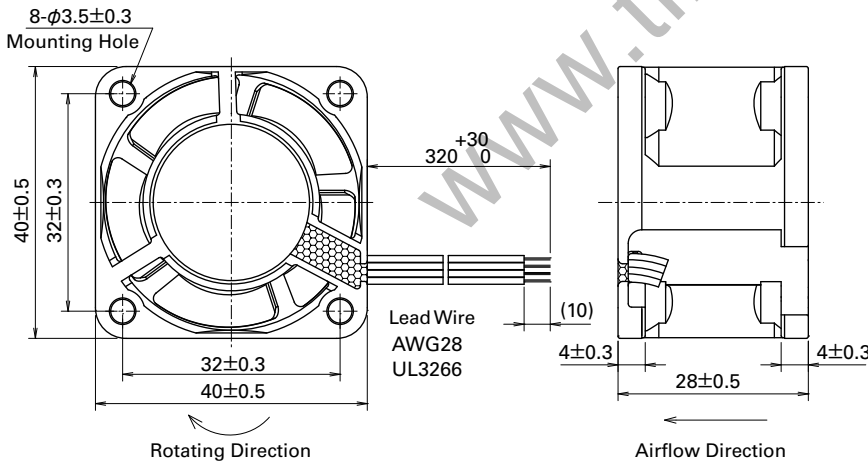
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle [V _{in}]/[%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WL0412P3J001	12	10.8 to 13.2	100	0.52	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	12	10.8 to 13.2	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	24	21.6 to 26.4	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%.

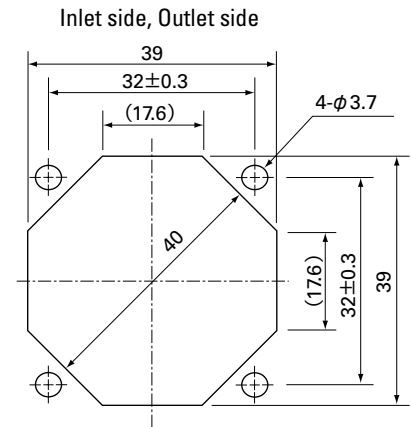
※PWM Frequency : 25kHz

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



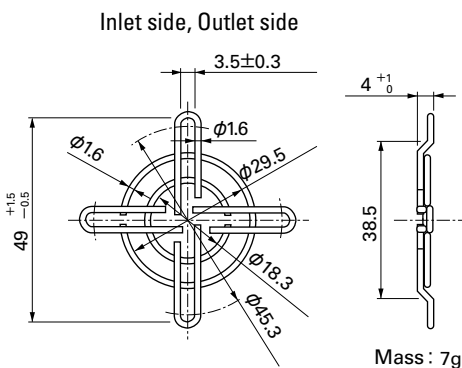
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

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



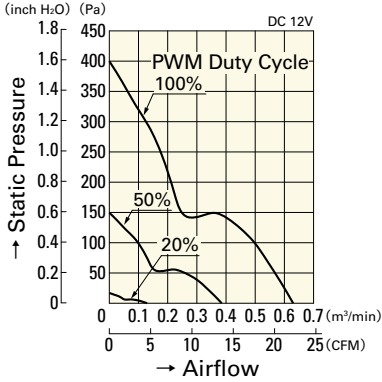
40mm sq.

San Ace 40W

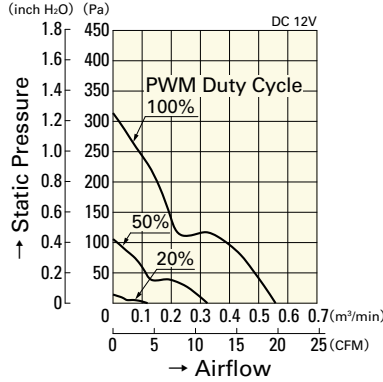
40×40×28mm [Mass : 70g]

Airflow - Static Pressure Characteristics

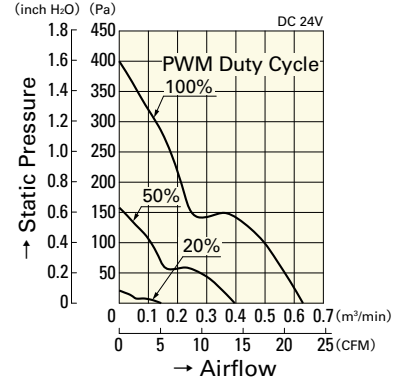
PWM Duty Cycle



9WL0412P3J001

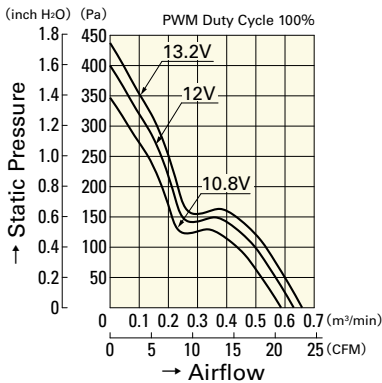


9WL0412P3G001

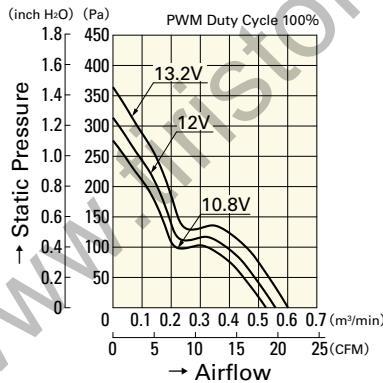


9WL0424P3J001

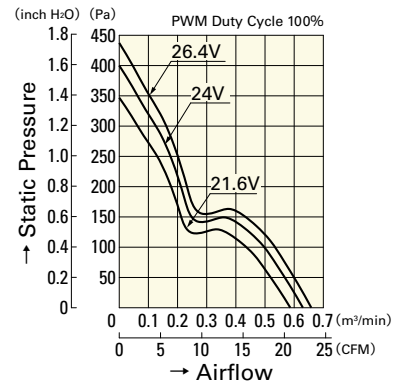
Operating Voltage Range



9WL0412P3J001

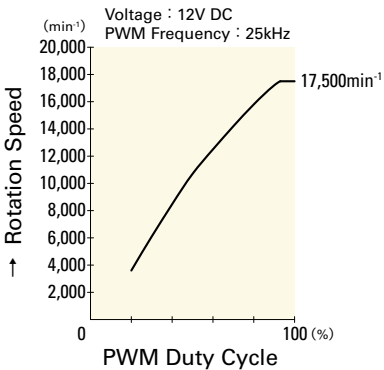


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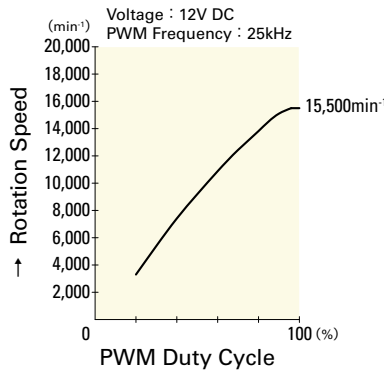


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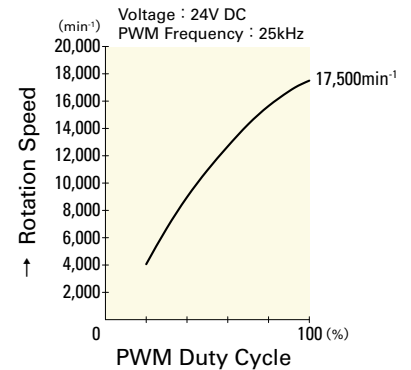
PWM Duty - Speed Characteristics Example



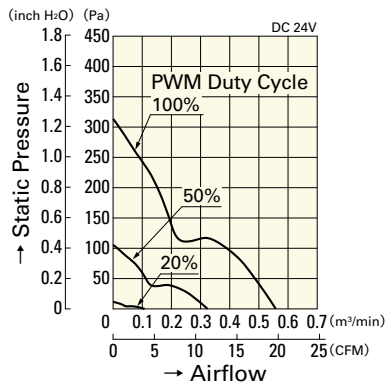
9WL0412P3J001



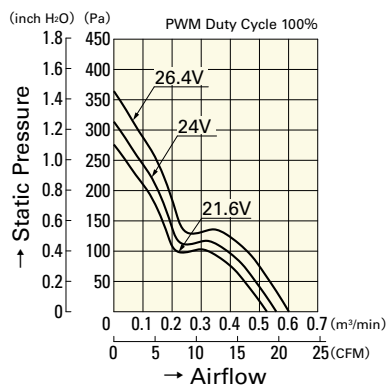
9WL0412P3G001



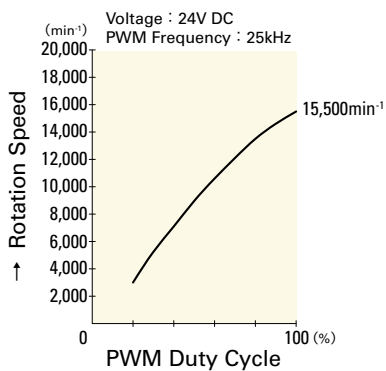
9WL0424P3J001



9WL0424P3G001



9WL0424P3G001



9WL0424P3G001

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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.**

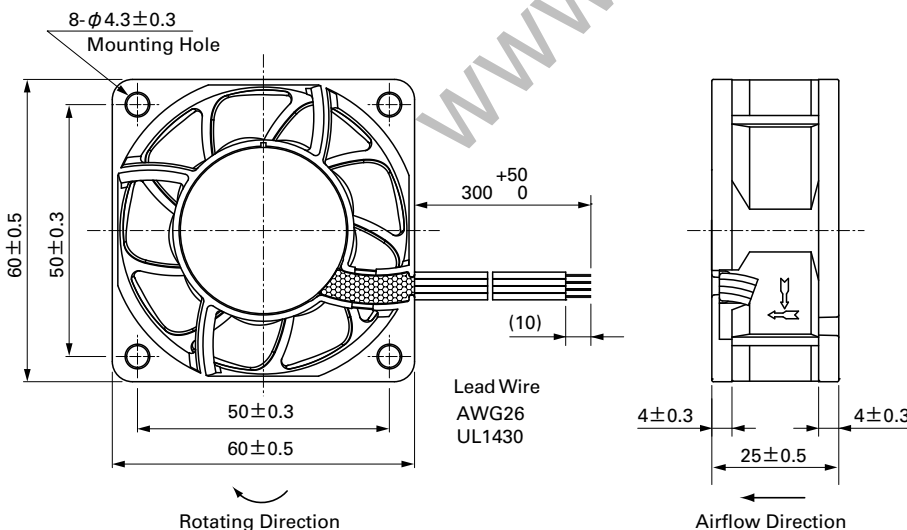
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle (%)	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]	
9WL0612P4S001	12	10.8 to 13.2	100	0.67	8.04	11,000	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

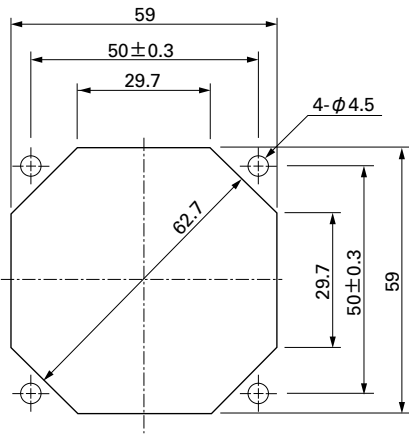
Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



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

Inlet side, Outlet side



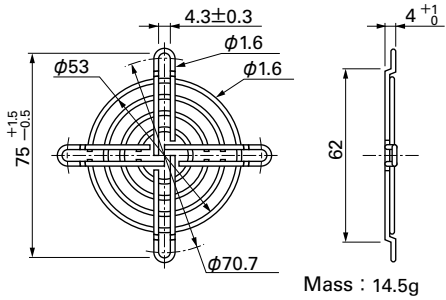
Options (unit: mm)

Finger Guards

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

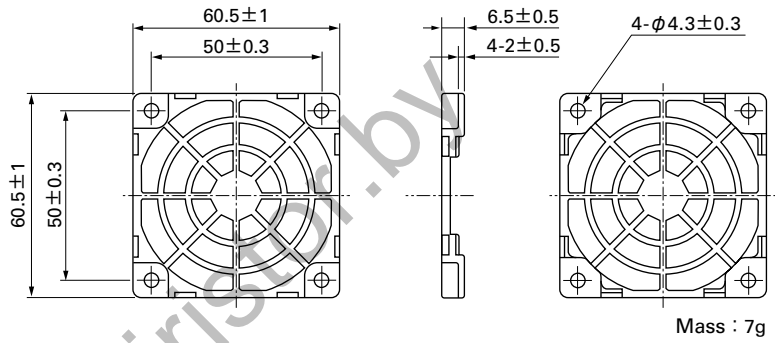
Color

Inlet side, Outlet side



Resin Finger Guards

Model : 109-1003G



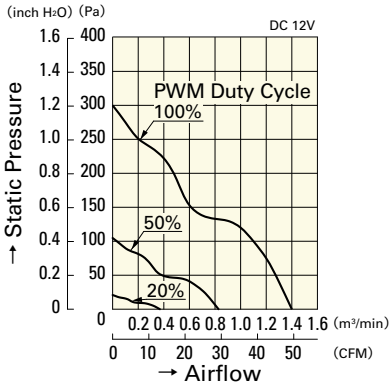
60mm sq.

San Ace 60W

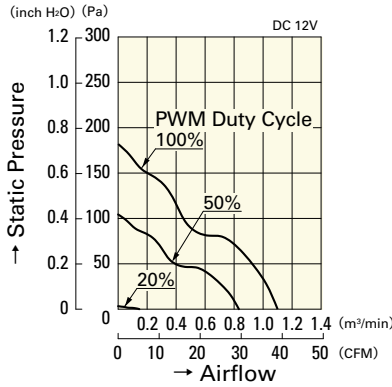
60×60×25mm [Mass : 120g]

Airflow - Static Pressure Characteristics

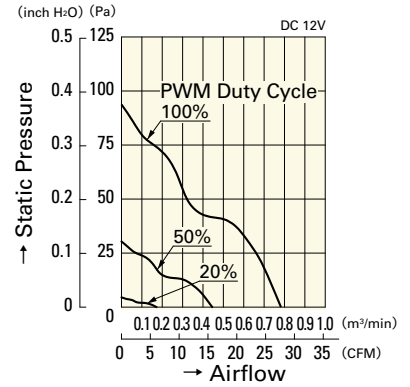
PWM Duty Cycle



9WL0612P4S001

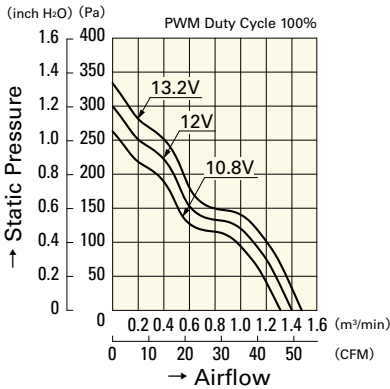


9WL0612P4J001

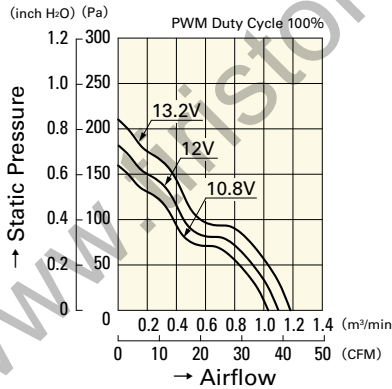


9WL0612P4H001

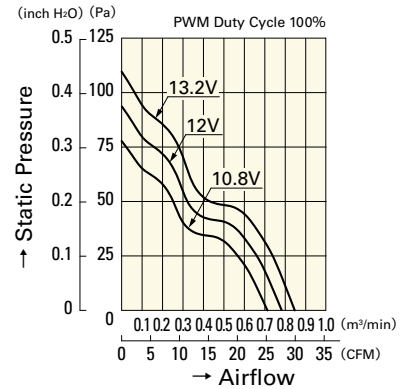
Operating Voltage Range



9WL0612P4S001

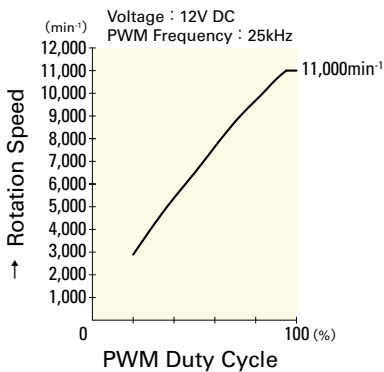


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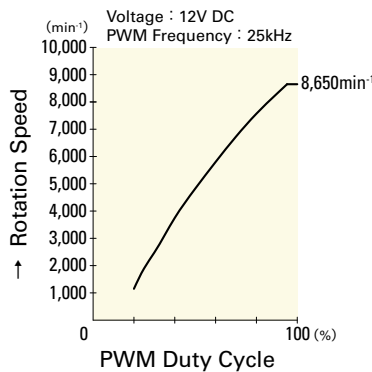


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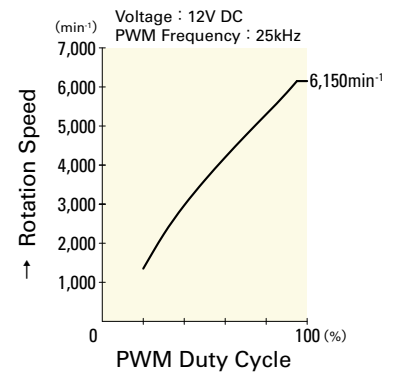
PWM Duty - Speed Characteristics Example



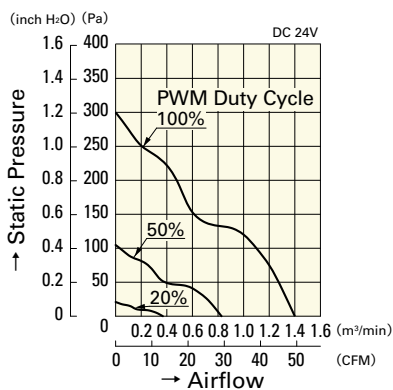
9WL0612P4S001



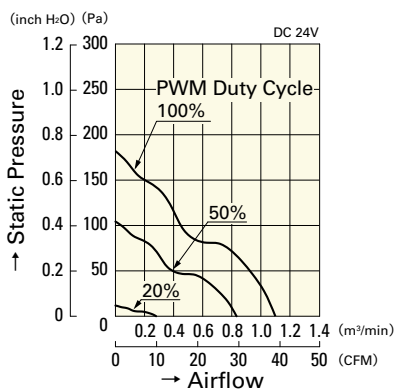
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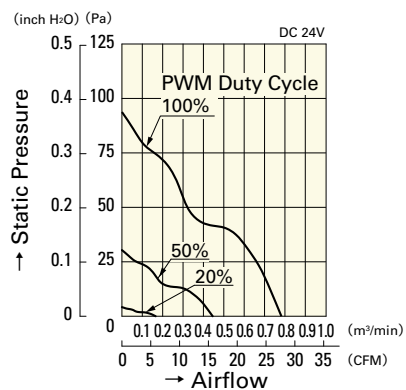
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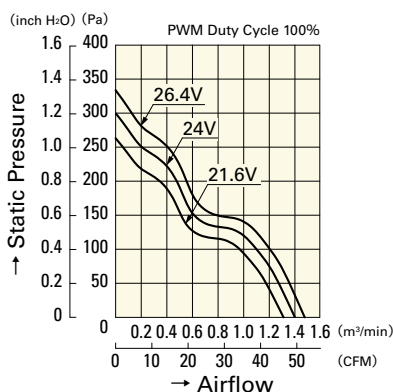
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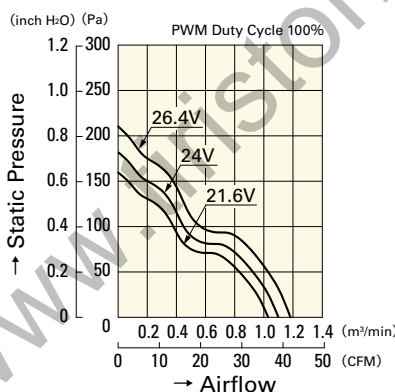
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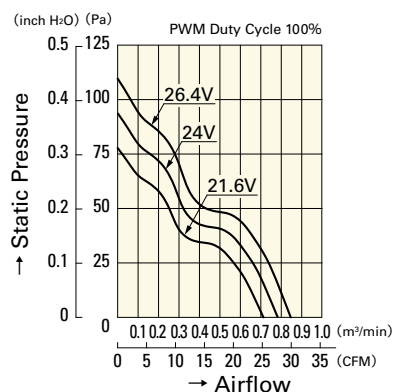
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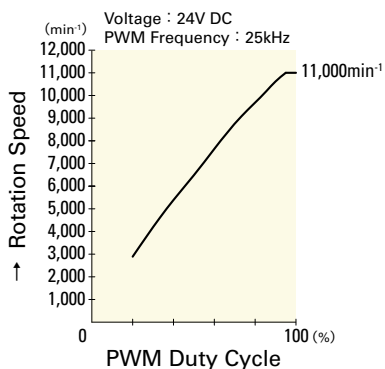
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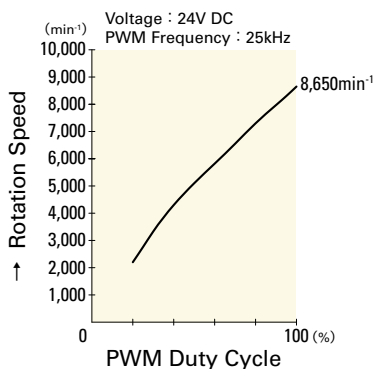
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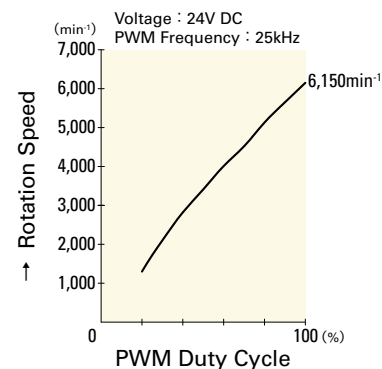
9WL0624P4H001



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

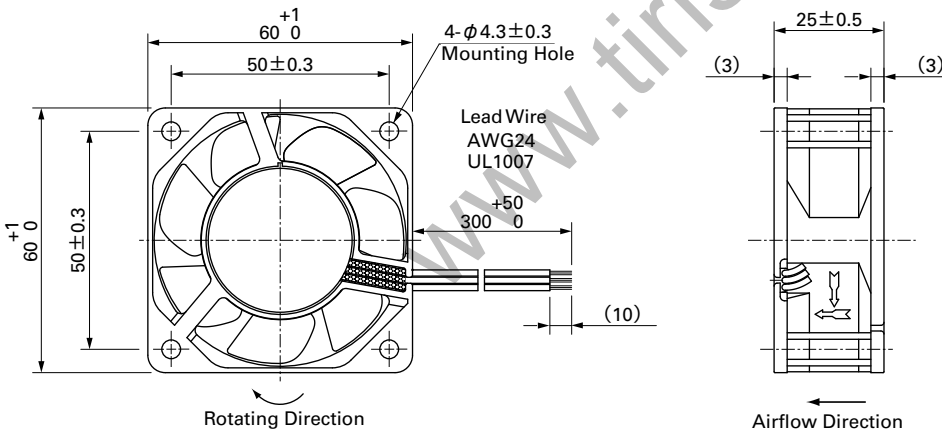
Specifications

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

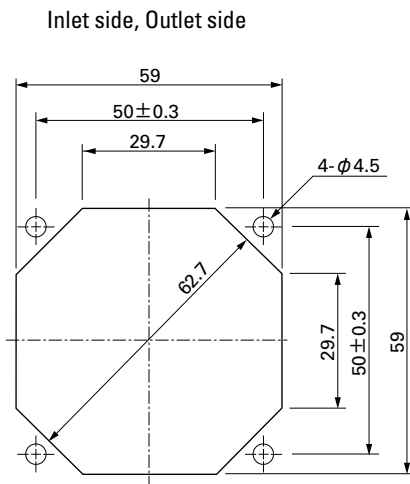
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WP0612G401	12	10.2 to 13.2	0.21	2.52	5,600	0.78 27.5	87.3 0.351	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		
9WP0624J401	24	21.6 to 26.4	0.2	4.8	7,600	1.06 37.1	155.0 0.622	44	-20 to +60	40,000/60°C
9WP0624G401			0.13	3.12	5,600	0.78 27.5	87.3 0.351	39		
9WP0624H401		20.4 to 27.6	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	40.2 0.161	28	-20 to +70	60,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 512).

Dimensions (unit: mm) (With ribs)



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



Options (unit: mm)

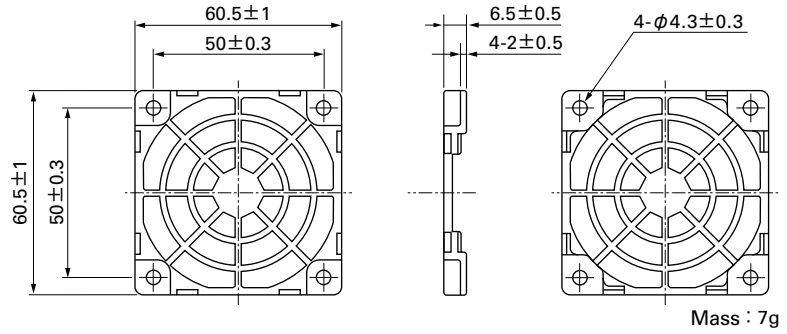
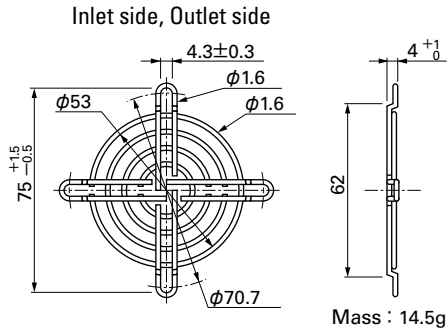
Finger Guards

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

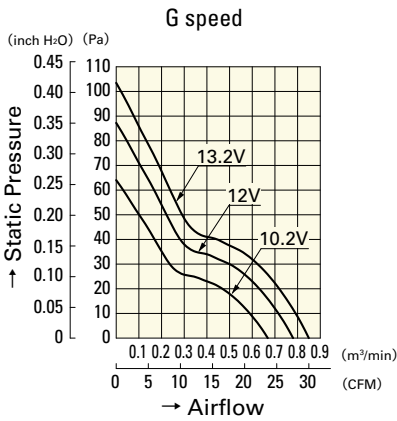
Color

Resin Finger Guards

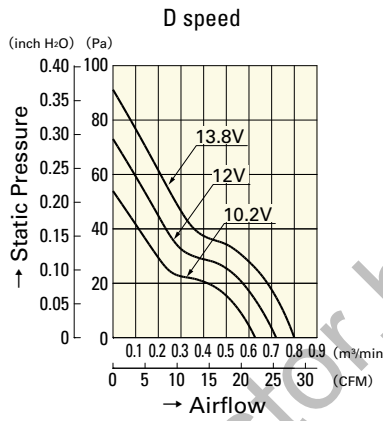
Model : 109-1003G



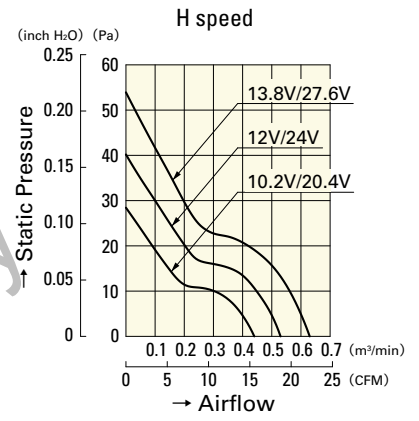
Airflow - Static Pressure Characteristics



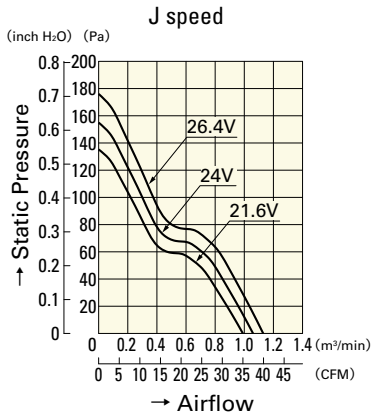
9WP0612G401



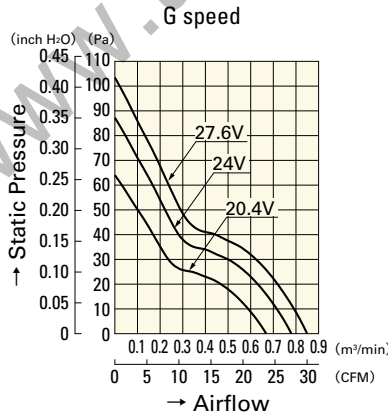
9WP0612D401



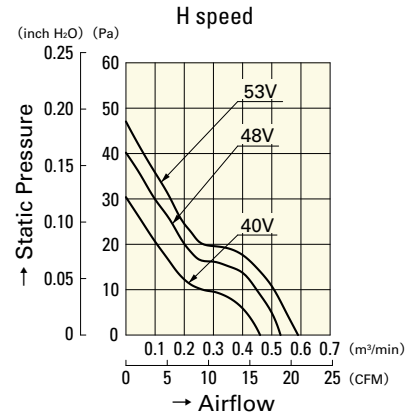
9WP0612H401
9WP0624H401



9WP0624J401



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 (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)

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

Specifications

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

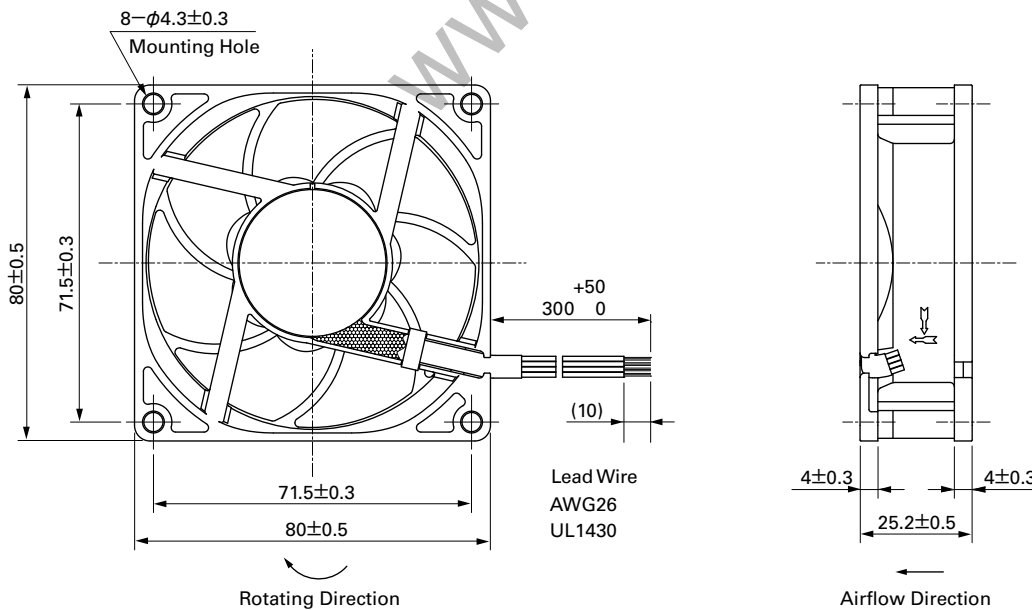
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Min/Max} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WL0812P4J001	12	10.8 to 13.2	100	0.6	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%.

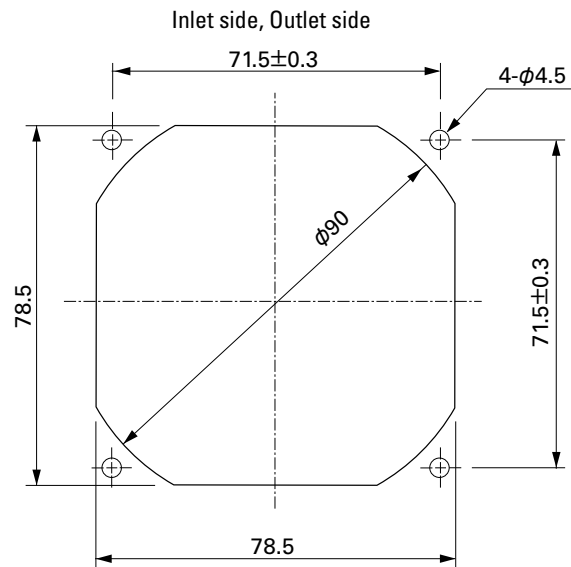
※PWM Frequency : 25kHz

Other sensor specifications are available as options. Please refer to the index (pp. 511 to 512).

Dimensions (unit: mm)



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



Options (unit: mm)

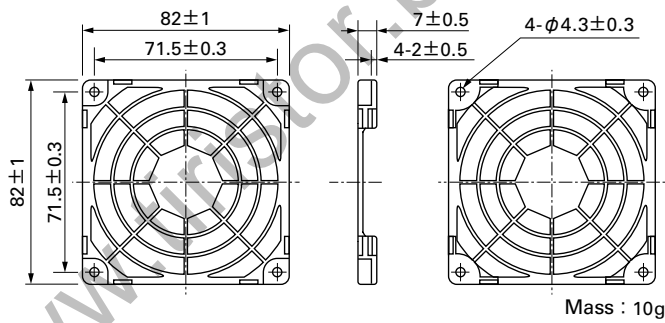
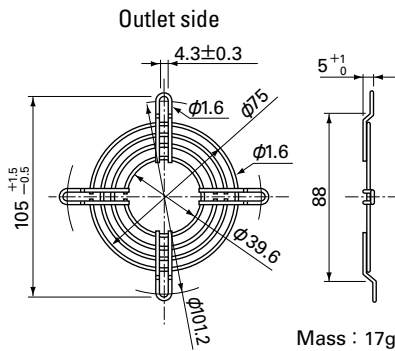
Finger Guards

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

Color

Resin Finger Guards

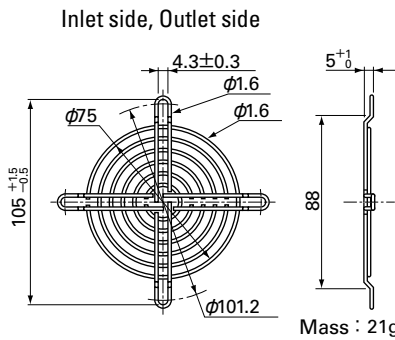
Model : 109-1002G



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

Color

: 109-049H : Cation electropainting (black)



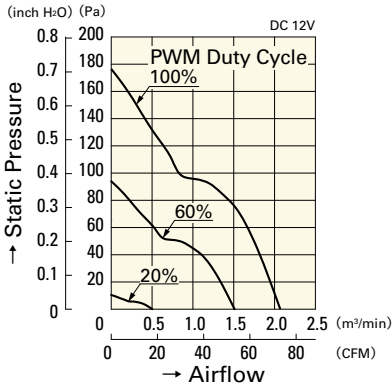
80mm sq.

San Ace 80W

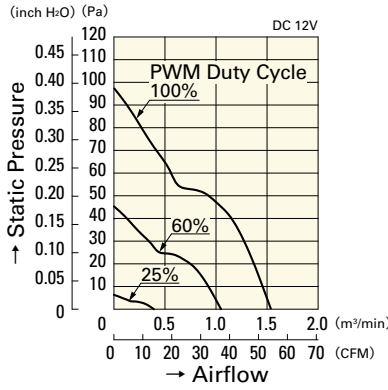
80×80×25mm [Mass : 150g]

Airflow - Static Pressure Characteristics

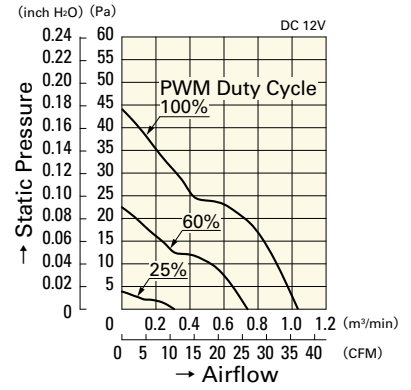
PWM Duty Cycle



9WL0812P4J001

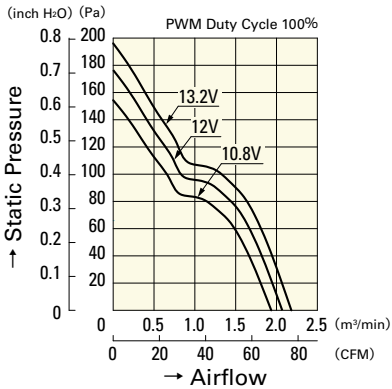


9WL0812P4G001

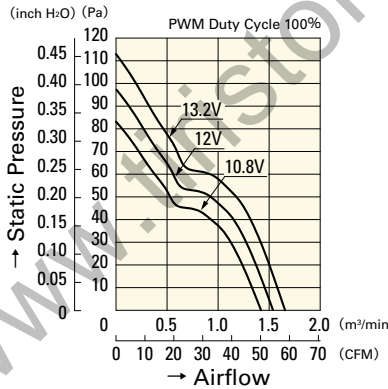


9WL0812P4H001

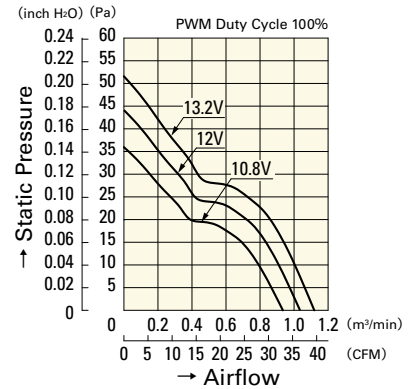
Operating Voltage Range



9WL0812P4J001

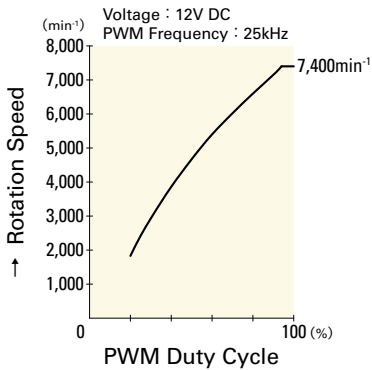


9WL0812P4G001

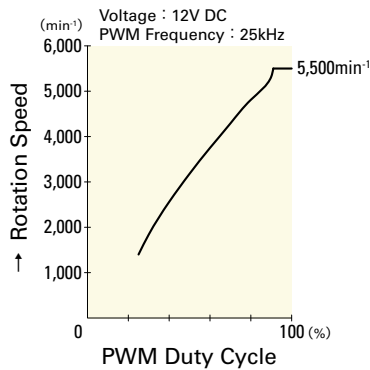


9WL0812P4H001

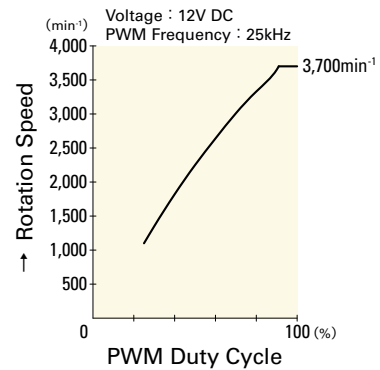
PWM Duty - Speed Characteristics Example



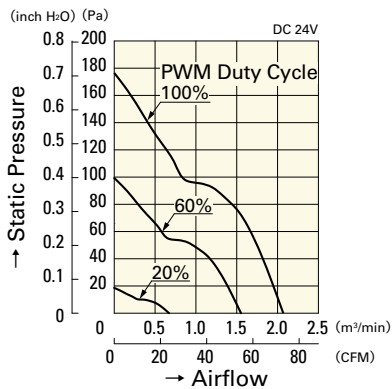
9WL0812P4J001



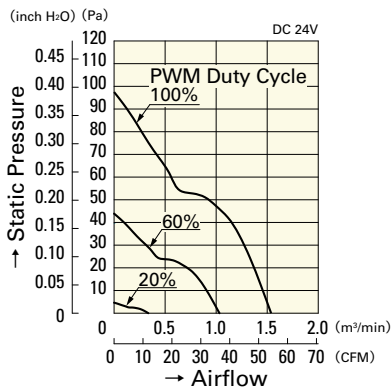
9WL0812P4G001



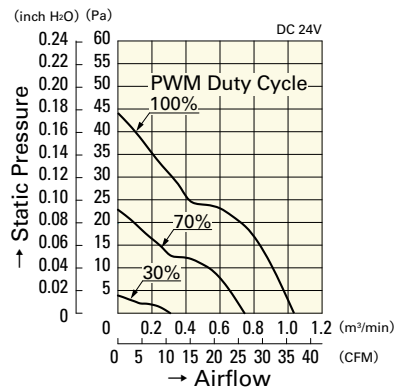
9WL0812P4H001



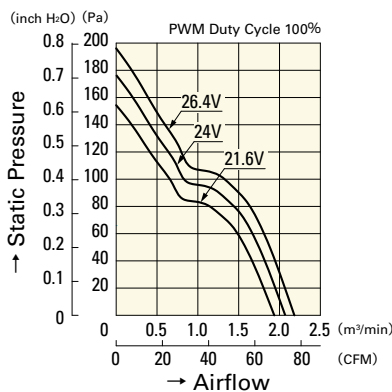
9WL0824P4J001



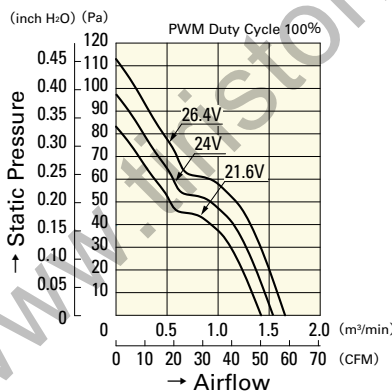
9WL0824P4G001



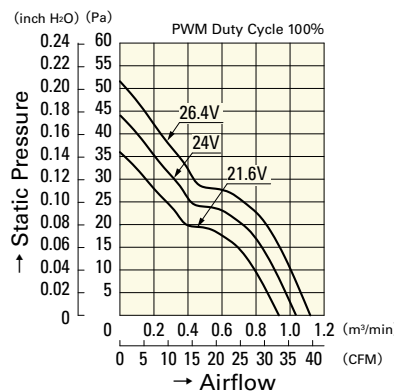
9WL0824P4H001



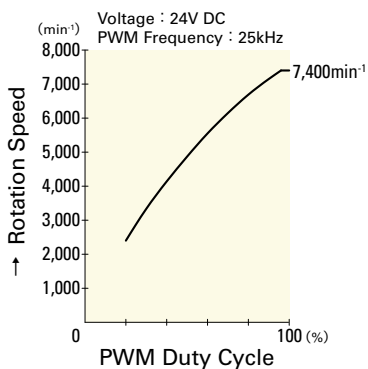
9WL0824P4J001



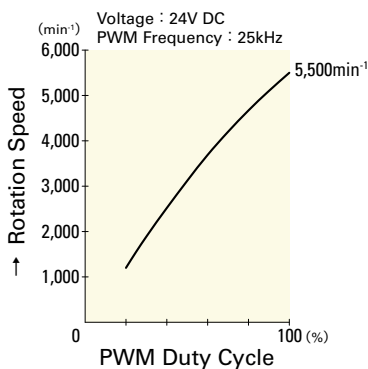
9WL0824P4G001



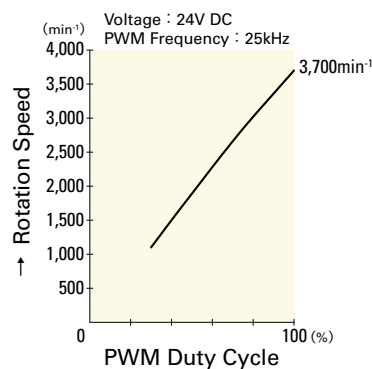
9WL0824P4H001



9WL0824P4J001



9WL0824P4G001



9WL0824P4H001

80 mm sq.

San Ace 80W



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)

80×80×25 mm (Mass : 130g) **IP 68** **9WP** type

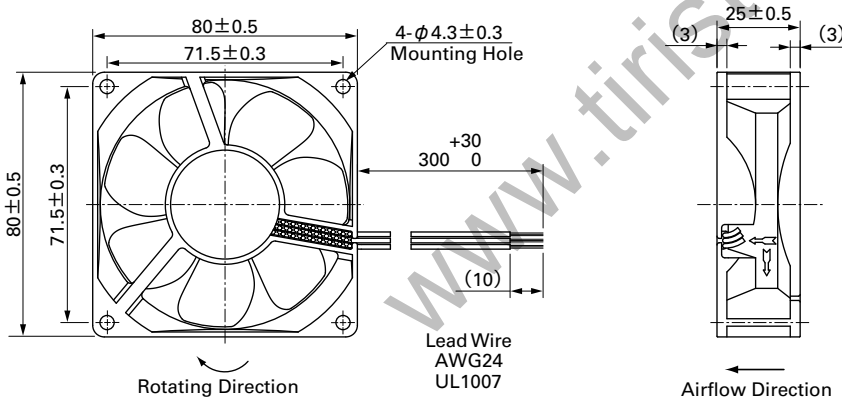
Specifications

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

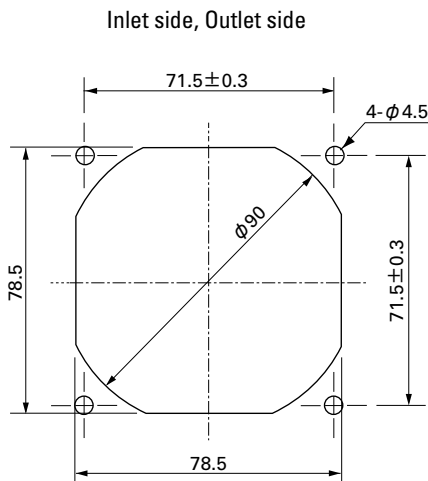
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]		
9WP0812G401	12	10.8 to 13.2	0.38	4.56	4,500	1.50	53	80.4	0.323	40	-20 to +60	40,000/60°C
9WP0812H401		10.2 to 13.8	0.13	1.56	2,900	1.03	36.4	35.3	0.142	29	-20 to +70	60,000/60°C
9WP0824S401	24	20.4 to 27.6	0.1	2.4	3,400	1.20	42.4	48.0	0.193	34	-20 to +70	40,000/60°C
9WP0824H401			0.07	1.68	2,900	1.03	36.4	35.3	0.142	29		60,000/60°C
9WP0848S401	48	40.8 to 55.2	0.06	2.88	3,400	1.20	42.4	48.0	0.193	34	-20 to +70	40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 512).

Dimensions (unit: mm) (With ribs)



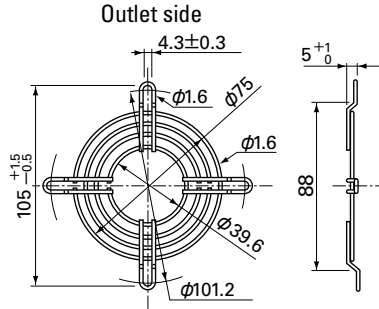
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Finger Guards

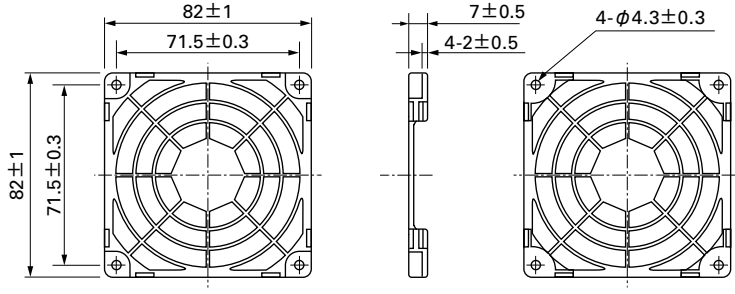
Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color : Silver



Mass : 17g

Resin Finger Guards

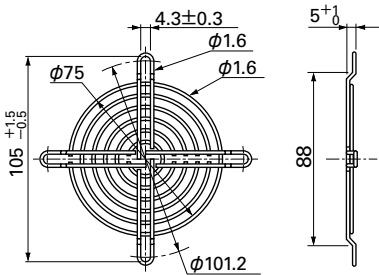
Model : 109-1002G



Mass : 10g

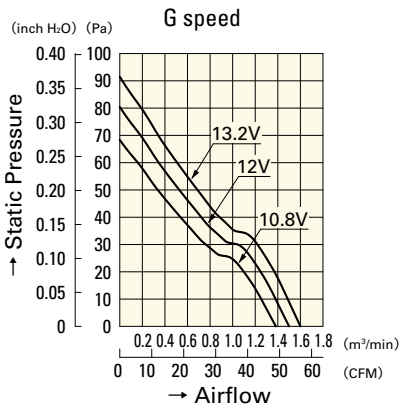
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color : Silver
 : 109-049H : Cation electropainting (black)

Inlet side, Outlet side

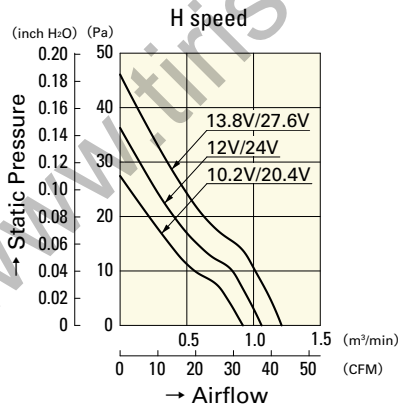


Mass : 21g

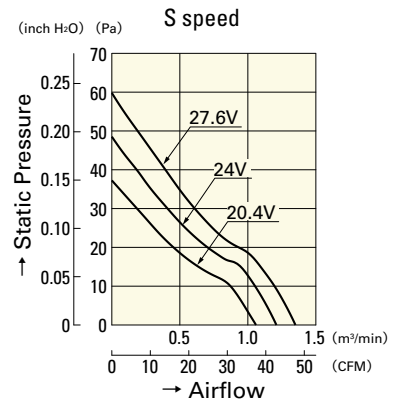
Airflow - Static Pressure Characteristics



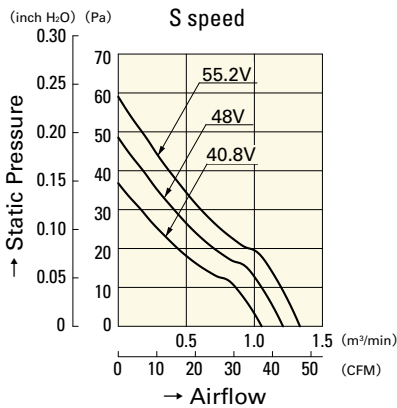
9WP0812G401



9WP0812H401
9WP0824H401



9WP0824S401



9WP0848S401

80 mm sq.

San Ace 80WS



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 or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×25mm (Mass : 120g) **IP 54** **9WS** type

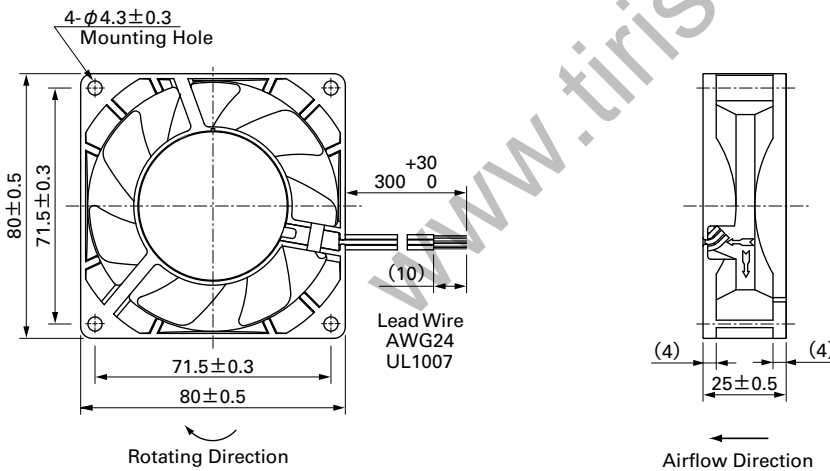
Specifications

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

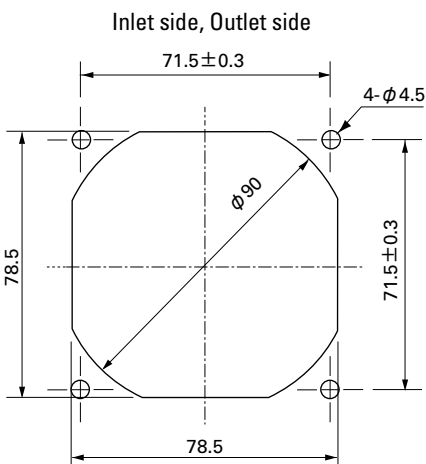
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]	
9WS0812H401	12	10.2 to 13.8	0.16	1.92	3,100	0.94	33.2	45.1	0.181	- 20 to + 70	40,000/60°C
9WS0812F401			0.13	1.56	2,700	0.83	29.3	34.3	0.138		
9WS0812M401			0.1	1.2	2,200	0.65	23.0	23.5	0.094		
9WS0824H401	24	20.4 to 27.6	0.09	2.16	3,100	0.94	33.2	45.1	0.181		
9WS0824F401			0.07	1.68	2,700	0.83	29.3	34.3	0.138		
9WS0824M401			0.05	1.2	2,200	0.65	23.0	23.5	0.094		

Other sensor specifications are available as options. Please refer to the index (pp. 512 to 513).

Dimensions (unit: mm) (With ribs)



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



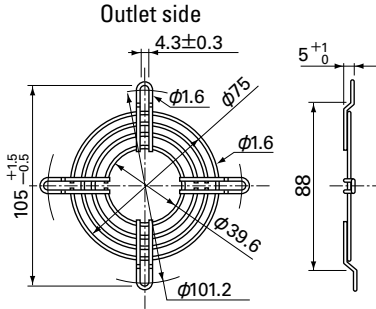
Options (unit: mm)

Finger Guards

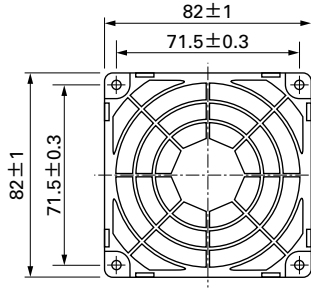
Model : 109-049C Surface treatment : Nickel-chrome plating (silver) Color

Resin Finger Guards

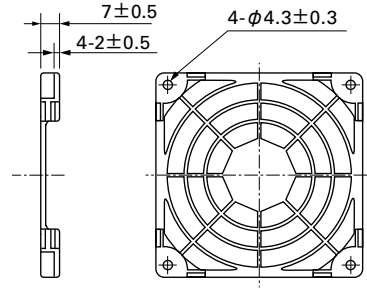
Model : 109-1002G



Mass : 17g

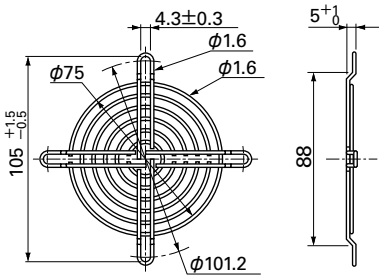


Mass : 10g



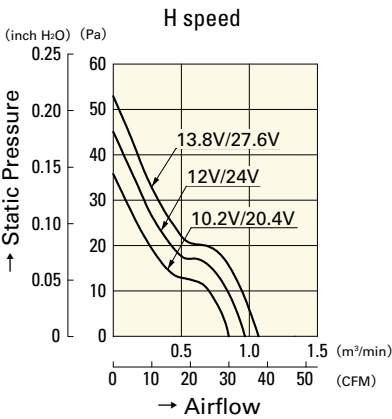
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color
 : 109-049H : Cation electropainting (black)

Inlet side, Outlet side

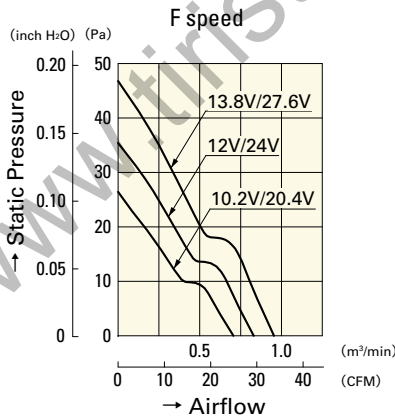


Mass : 21g

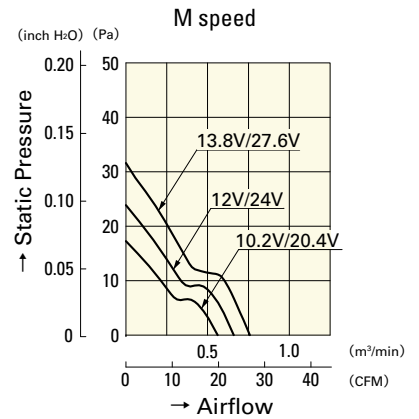
Airflow - Static Pressure Characteristics



9WS0812H401
9WS0824H401



9WS0812F401
9WS0824F401



9WS0812M401
9WS0824M401

DC

Splash Proof Fan 80mm

80 mm sq.

San Ace 80W



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 (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

80×80×38mm (Mass : 235g) **IP 68** **9WV**type

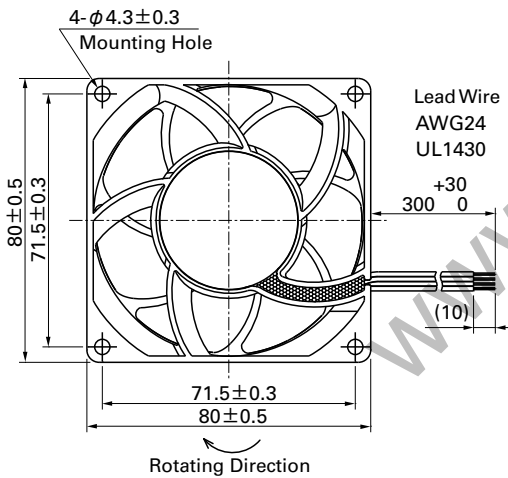
Specifications The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

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]
9WV0812P1M001	12	10.2 to 13.8	100	0.75	9	6,000	2.29 80.9	169 0.68	51	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.09	1.08	1,700	0.65 23	13.6 0.05	19		
9WV0848P1H001	48	40.8 to 52.8	100	0.75	36	9,700	3.7 131	440 1.77	63	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.15	7.2	4,500	1.72 60.7	94.7 0.38	43		

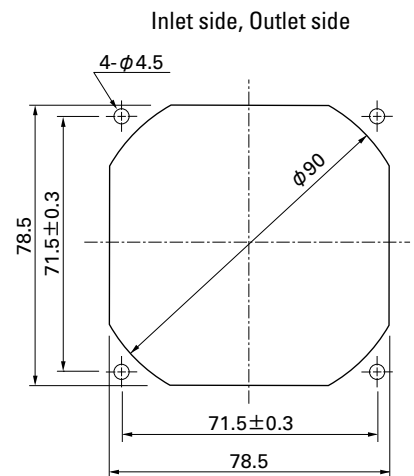
*PWM Frequency : 25kHz

Other sensor specifications are available as options. Please refer to the index (p. 513).

Dimensions (unit: mm) (With ribs)



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

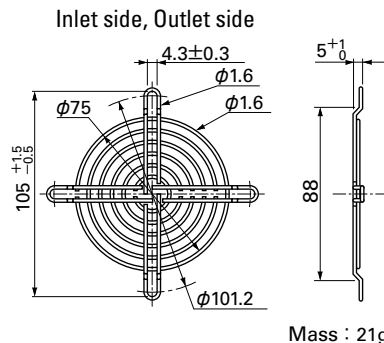
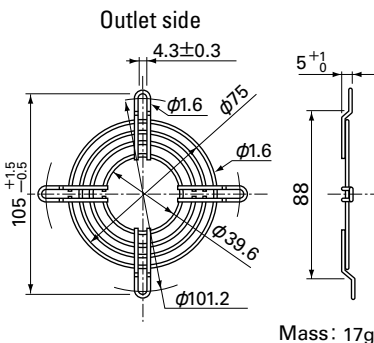


Options (unit: mm)

Finger Guards

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

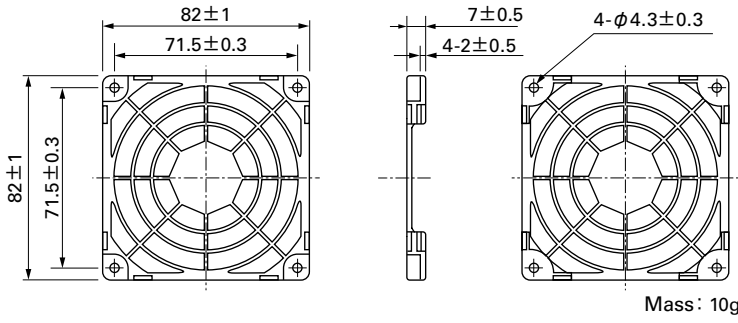
Model : 109-049E Surface treatment : Nickel-chrome plating (silver) Color
: 109-049H : Cation electropainting (black)



Options (unit: mm)

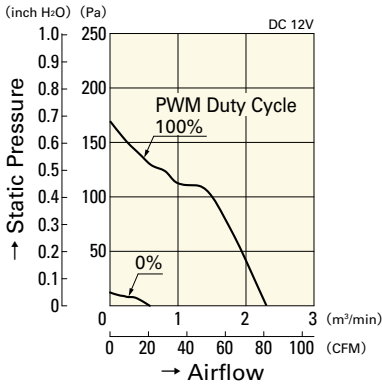
Resin Finger Guards

Model : 109-1002G

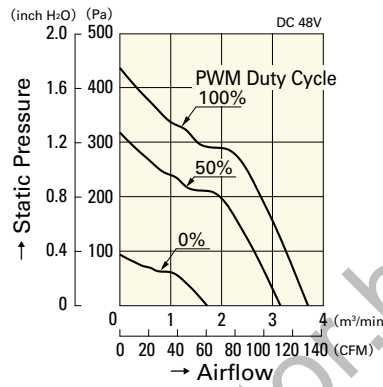


Airflow - Static Pressure Characteristics

PWM Duty Cycle

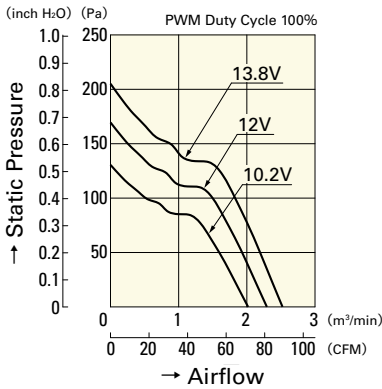


9WV0812P1M001

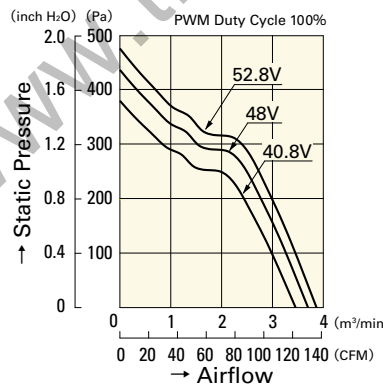


9WV0848P1H001

Operating Voltage Range

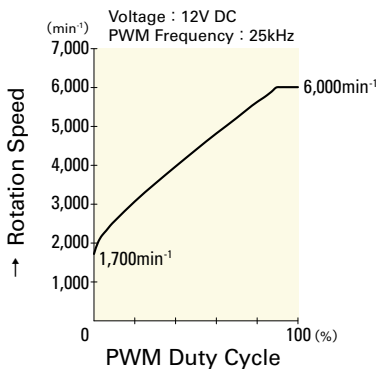


9WV0812P1M001

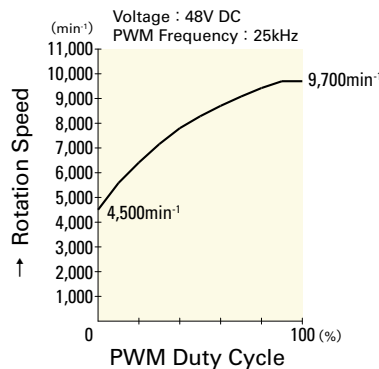


9WV0848P1H001

PWM Duty - Speed Characteristics Example



9WV0812P1M001



9WV0848P1H001

92mm sq.

San Ace 92W



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)

92×92×25mm (Mass : 170g)

IP 68

9WL type

High Airflow Long Life Fan



Specifications

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

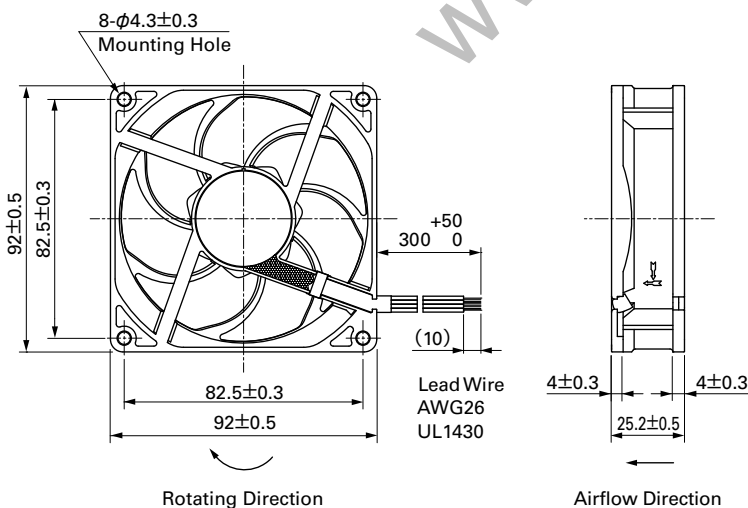
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle ^{Note 1)} [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature Range [°C]	Expected Life [h]		
9WL0912P4J001	12	10.8 to 13.2	100	0.42	5.04	5,000	2.2 77.7	105 0.42	44	-20 to +70	180,000/60°C		
			20	0.04	0.48	1,200	0.52 18.4	6.04 0.024	11				
9WL0912P4G001			100	0.30	3.60	4,400	1.93 68.2	81 0.33	40				
			20	0.04	0.48	1,000	0.43 15.1	4.18 0.016	8				
9WL0912P4S001			100	0.22	2.64	3,850	1.69 59.7	62.1 0.25	37				
			30	0.04	0.48	1,400	0.61 21.5	8.21 0.032	13				
9WL0912P4H001			100	0.15	1.80	3,150	1.38 48.7	41.6 0.17	32				
			30	0.04	0.48	1,100	0.48 16.9	5.07 0.020	9				
9WL0924P4J001			24	21.6 to 26.4	100	0.21	5.04	5,000	2.2 77.7			105 0.42	44
					20	0.02	0.48	1,100	0.48 16.9			5.07 0.020	9
9WL0924P4S001					100	0.11	2.64	3,850	1.69 59.7			62.1 0.25	37
					30	0.02	0.48	1,300	0.57 20.1			7.08 0.028	12
9WL0924P4H001	100	0.07			1.68	3,150	1.38 48.7	41.6 0.17	32				
	30	0.02			0.48	1,000	0.43 15.1	4.18 0.016	8				

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

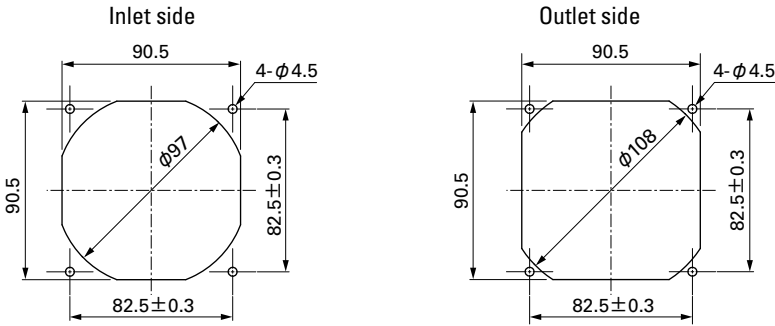
※PWM Frequency : 25kHz

Other sensor specifications are available as options. Please refer to the index (p. 512).

Dimensions (unit: mm)



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

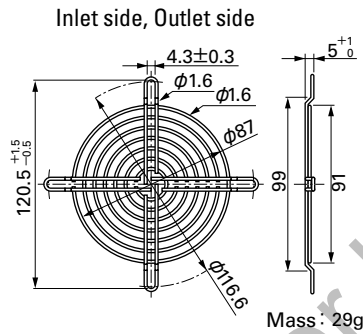
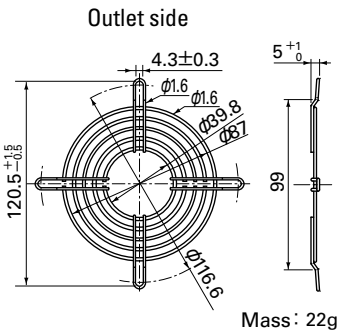


Options (unit: mm)

Finger Guards

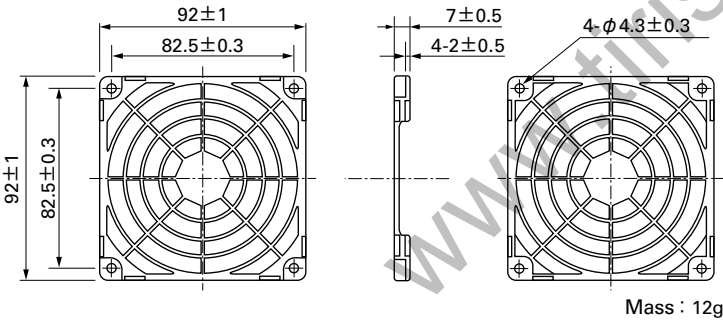
Model : 109-099C Surface treatment : Nickel-chrome plating (silver) Color

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



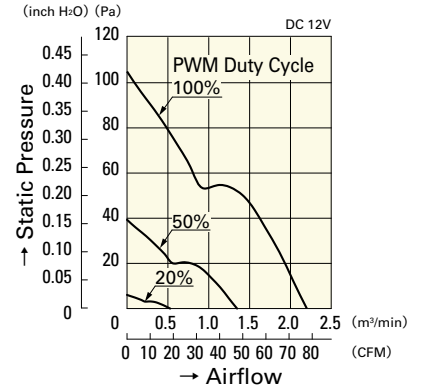
Resin Finger Guards

Model : 109-1001G



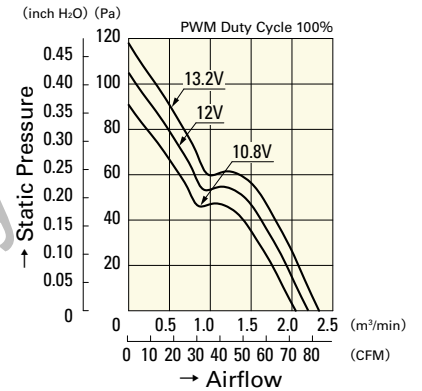
Airflow - Static Pressure Characteristics

PWM Duty Cycle



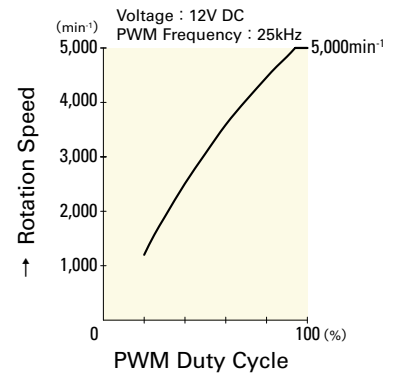
9WL0912P4J001

Operating Voltage Range



9WL0912P4J001

PWM Duty - Speed Characteristics Example



9WL0912P4J001

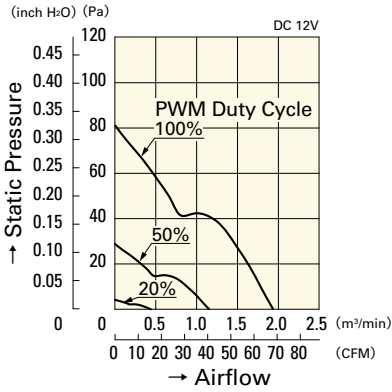
92mm sq.

San Ace 92W

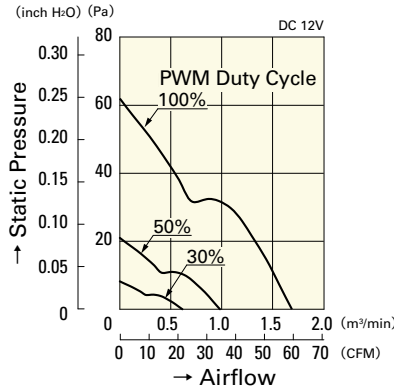
92×92×25mm [Mass : 170g]

Airflow - Static Pressure Characteristics

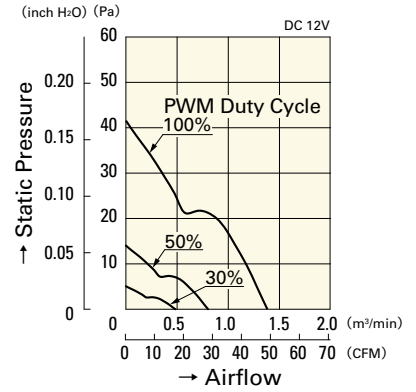
PWM Duty Cycle



9WL0912P4G001

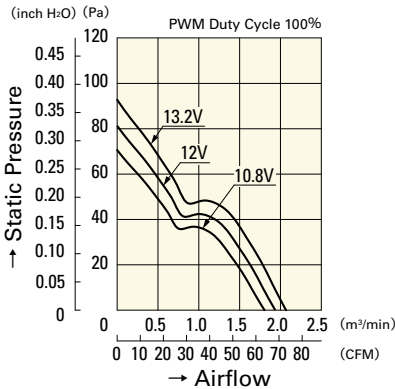


9WL0912P4S001

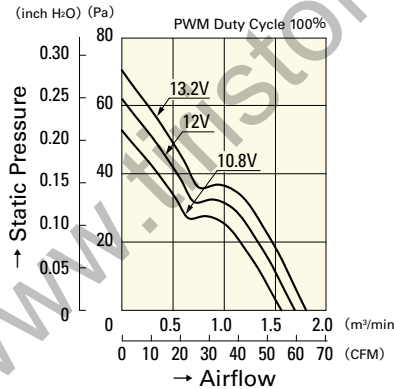


9WL0912P4H001

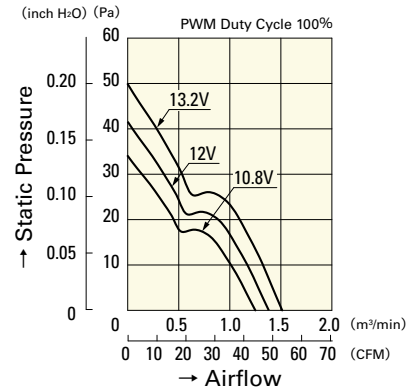
Operating Voltage Range



9WL0912P4G001

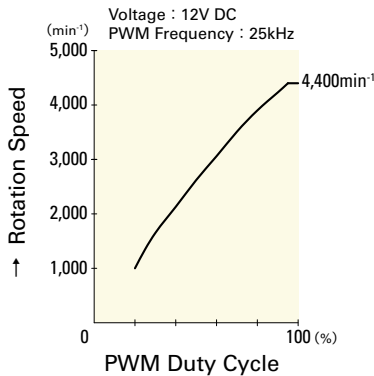


9WL0912P4S001

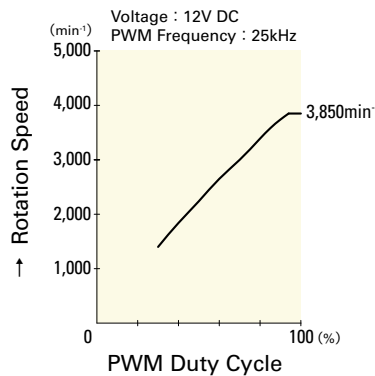


9WL0912P4H001

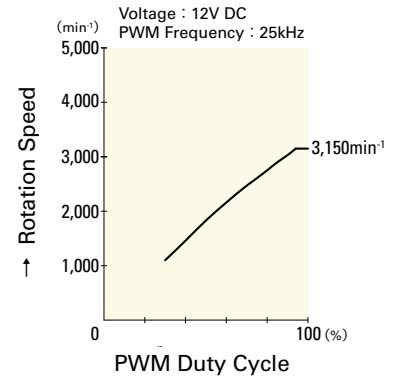
PWM Duty - Speed Characteristics Example



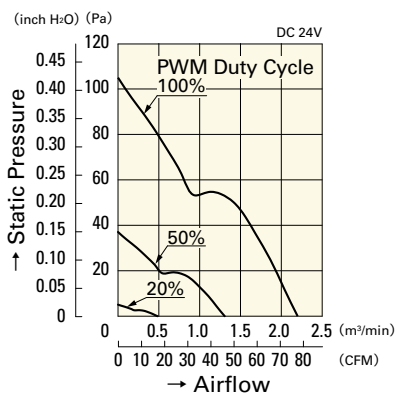
9WL0912P4G001



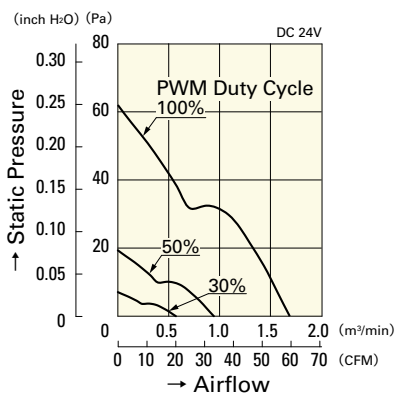
9WL0912P4S001



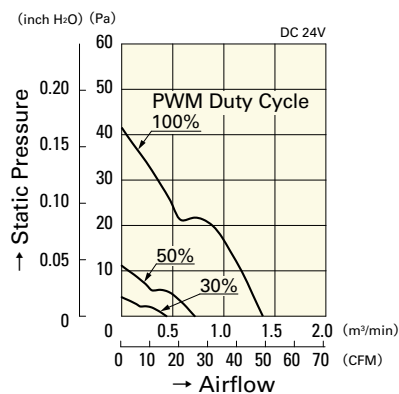
9WL0912P4H001



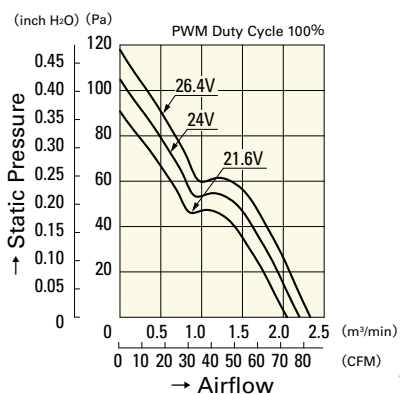
9WL0924P4J001



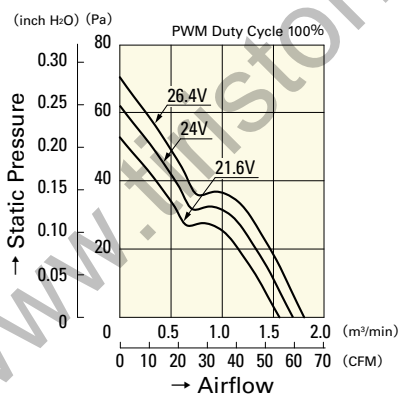
9WL0924P4S001



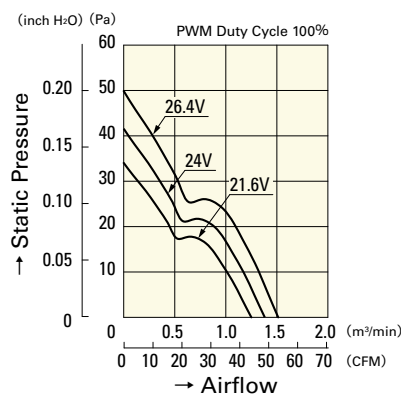
9WL0924P4H001



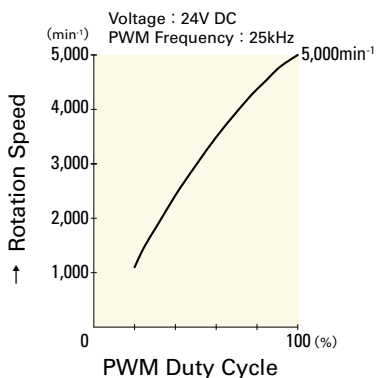
9WL0924P4J001



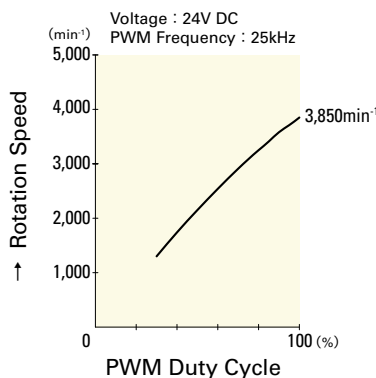
9WL0924P4S001



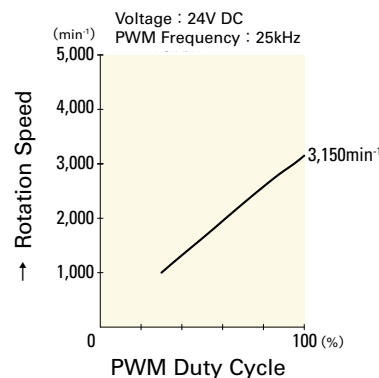
9WL0924P4H001



9WL0924P4J001



9WL0924P4S001



9WL0924P4H001

92mm sq.

San Ace 92WS



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 or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×25mm (Mass : 150g) **IP 54** **9WS** type

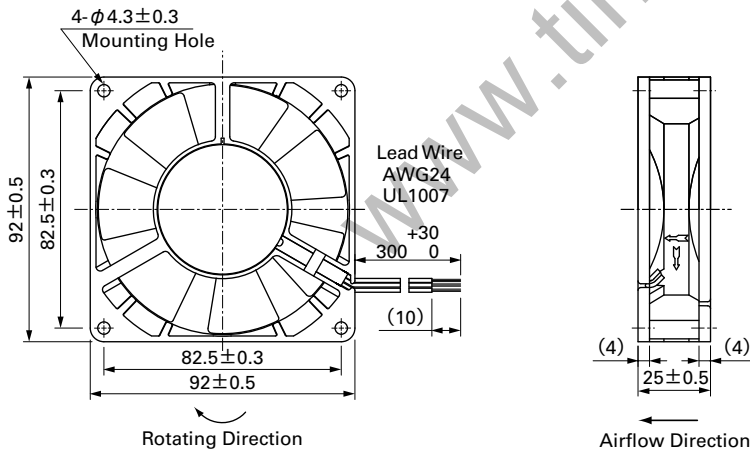
Specifications

The following nos. have pulse sensors and ribs.

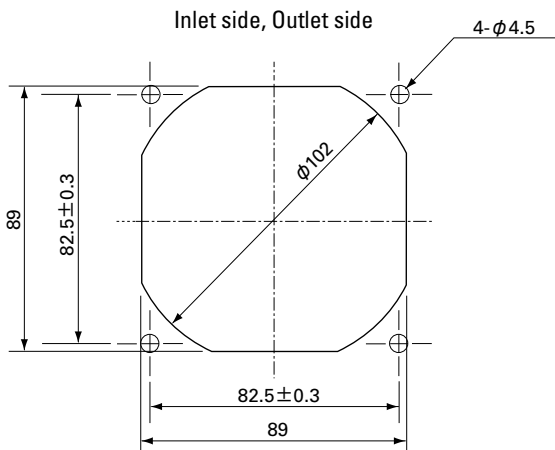
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WS0912H401	12	10.2 to 13.8	0.17	2.04	2,850	1.38 48.7	45.1 0.181	33	- 20 to + 70	40,000/60°C
9WS0912F401			0.13	1.56	2,450	1.18 41.7	32.3 0.130	30		
9WS0912M401			0.1	1.2	2,100	1.01 35.7	23.5 0.094	27		
9WS0912L401			0.06	0.72	1,700	0.8 28.2	16.7 0.067	23		
9WS0924H401	24	20.4 to 27.6	0.1	2.4	2,850	1.38 48.7	45.1 0.181	33		
9WS0924F401			0.07	1.68	2,450	1.18 41.7	32.3 0.130	30		
9WS0924M401			0.06	1.44	2,100	1.01 35.7	23.5 0.094	27		
9WS0924L401			0.05	1.2	1,700	0.8 28.2	16.7 0.067	23		

Other sensor specifications are available as options. Please refer to the index (p. 513).

Dimensions (unit: mm)



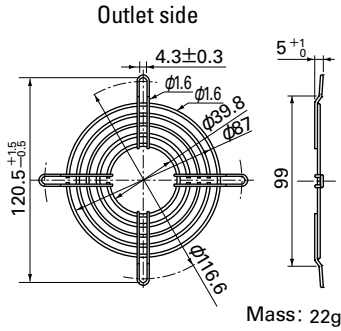
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

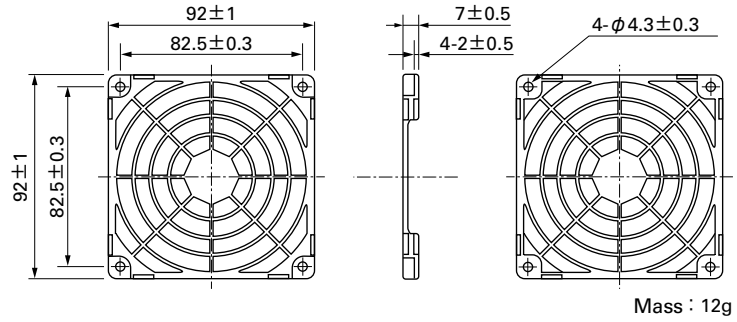
Finger Guards

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



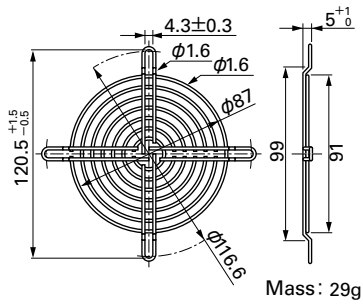
Resin Finger Guards

Model : 109-1001G

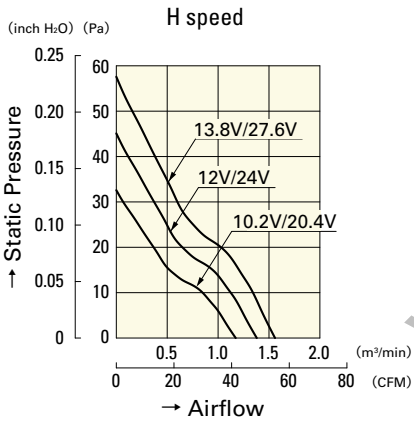


Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color : Nickel-chrome plating (silver)
: 109-099H : Cation electropainting (black)

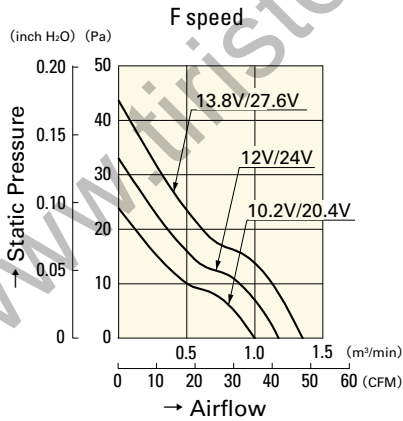
Inlet side, Outlet side



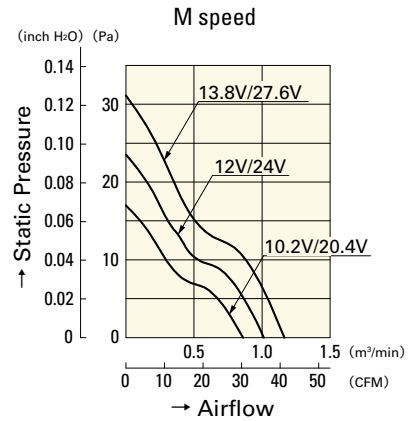
Airflow - Static Pressure Characteristics



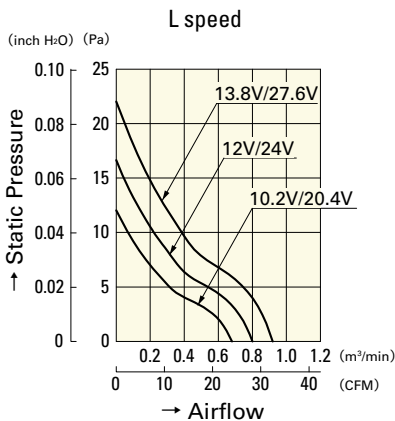
9WS0912H401
9WS0924H401



9WS0912F401
9WS0924F401



9WS0912M401
9WS0924M401



9WS0912L401
9WS0924L401

92mm sq.

San Ace 92W



Model no. 9WP0912S401, 9WP0912F401, 9WP0924S401 are not certified.

General Specifications

- Material Frame: Plastics (Flammability: UL94V-0),
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 or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×25mm (Mass : 120g) **IP 68** **9WP**type

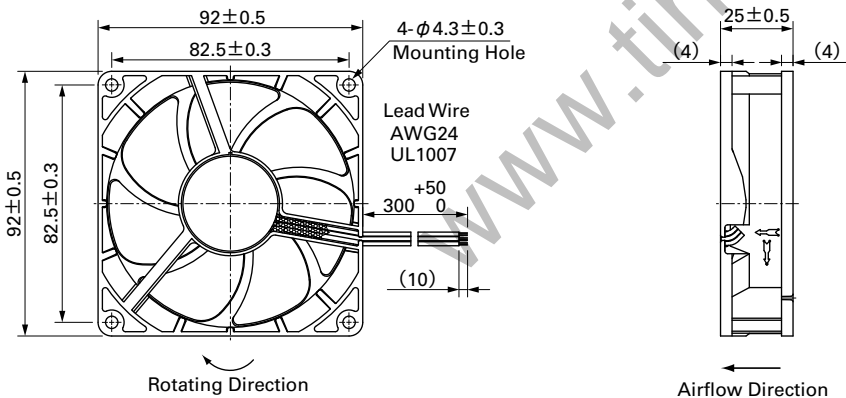
Specifications

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]		
9WP0912S401	12	6 to 13.8	0.27	3.24	3,550	1.66	58.6	56.1	0.225	-20 to +70	40,000/60°C	
9WP0912F401			0.14	1.68	2,650	1.24	43.8	32.2	0.129			
9WP0924G401	24	12 to 27.6	0.19	4.56	3,900	1.76	62.2	66.5	0.267			43
9WP0924S401			0.15	3.6	3,550	1.66	58.6	56.1	0.225			39
9WP0924H401			0.1	2.4	3,150	1.45	51.2	44	0.177			33
9WP0924F401			0.08	1.92	2,650	1.24	43.8	32.2	0.129			30
9WP0924B401	0.05	1.20	2,000	0.90	31.8	18.0	0.072	23	-10 to +70			

Other sensor specifications are available as options. Please refer to the index (p. 512).

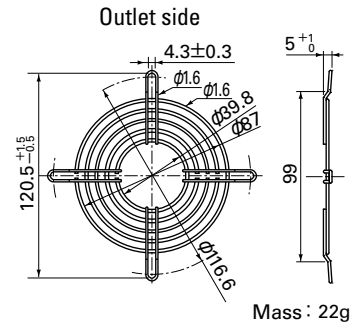
Dimensions (unit: mm)



Options (unit: mm)

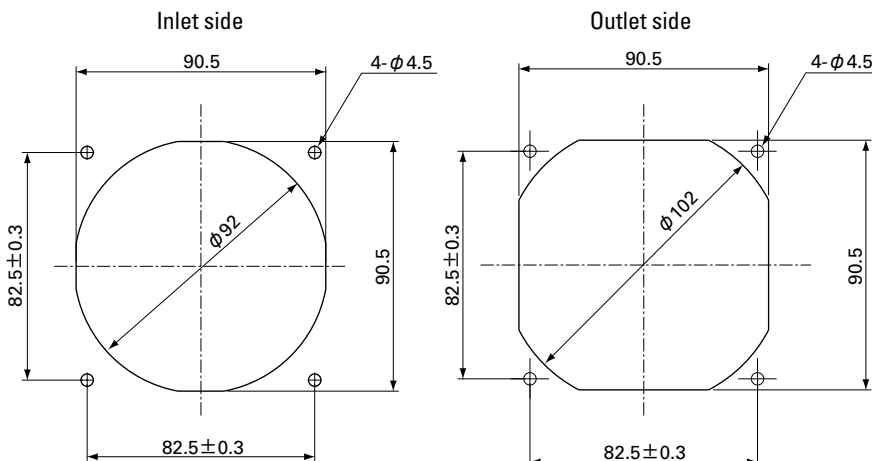
Finger Guards

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

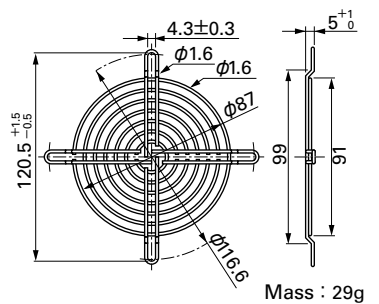


Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color
: 109-099H : Cation electroplating (black)

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



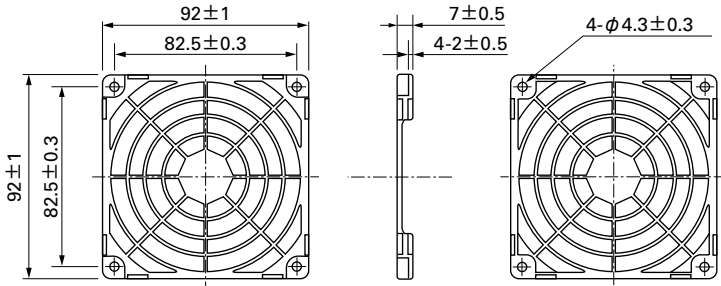
Inlet side, Outlet side



Options (unit: mm)

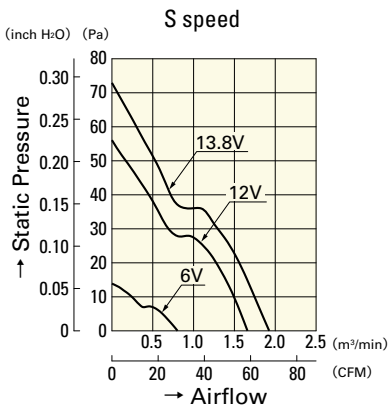
Resin Finger Guards

Model : 109-1001G

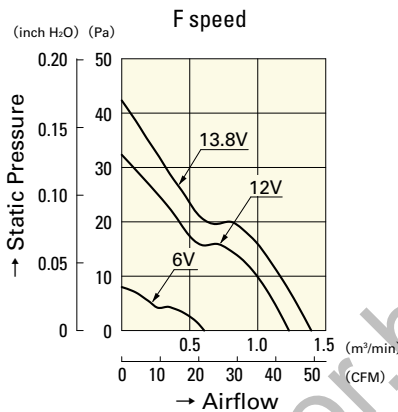


Mass : 12g

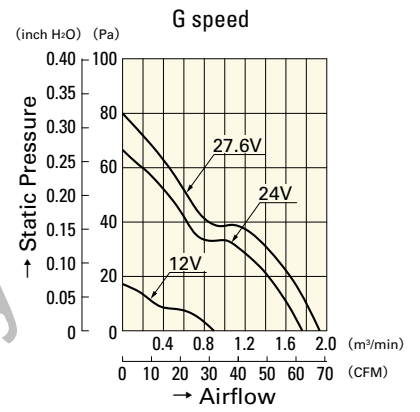
Airflow - Static Pressure Characteristics



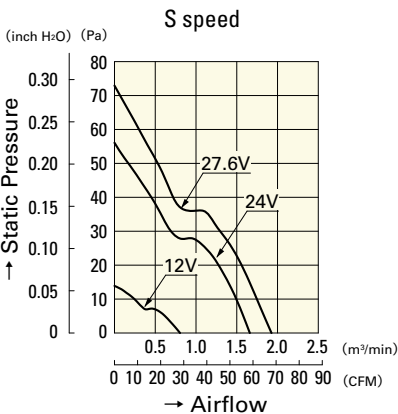
9WP0912S401



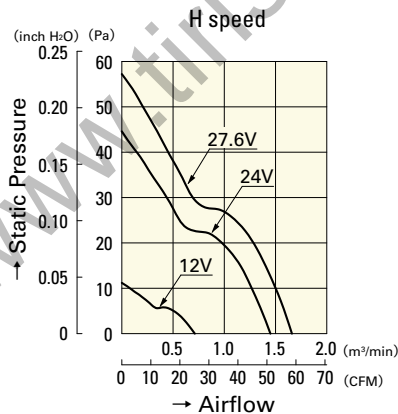
9WP0912F401



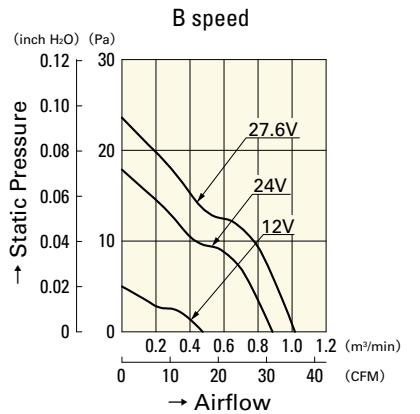
9WP0924G401



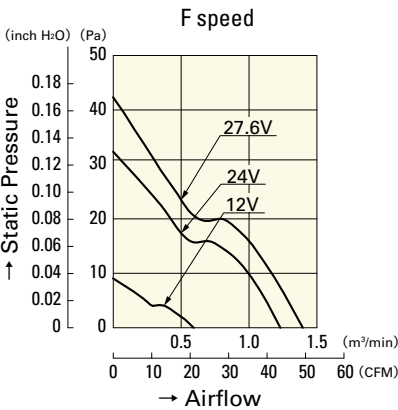
9WP0924S401



9WP0924H401



9WP0924B401



9WP0924F401

92mm sq.

San Ace 92W



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 (Control) brown
- Storage Temperature -30°C to +70°C (Non-condensing)

92×92×38mm (Mass : 265g) **IP 68** **9WV**type

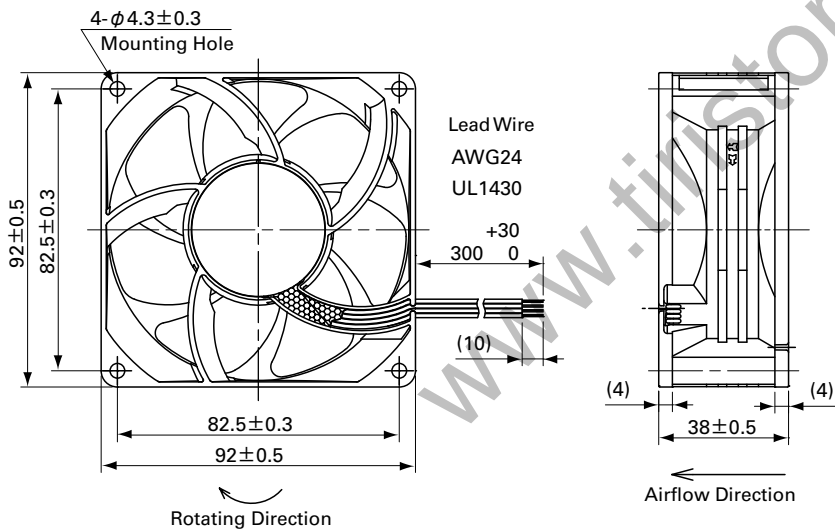
Specifications

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]
9WV0924P1H001	24	20.4 to 26.4	100	1.6	38.4	8,500	5.05 178	385 1.55	64	-20 to +60	30,000/60°C
			20	0.16	3.84	3,000	1.78 62.9	47.9 0.19	38		
9WV0948P1H001	48	40.8 to 52.8	100	0.82	39.4	8,500	5.05 178	385 1.55	64	-20 to +70	30,000/60°C
			0	0.14	6.7	4,000	2.37 83.7	85.2 0.34	45		

*PWM Frequency : 25kHz

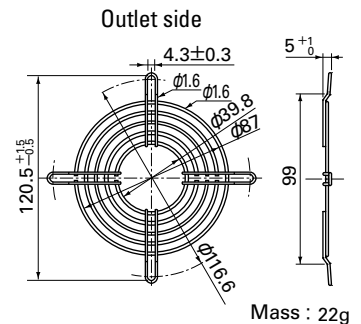
Dimensions (unit: mm)



Options (unit: mm)

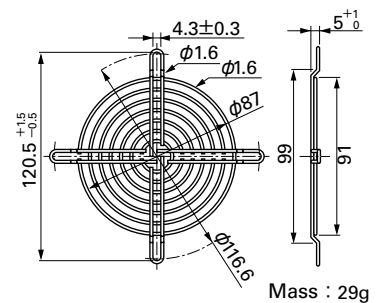
Finger Guards

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

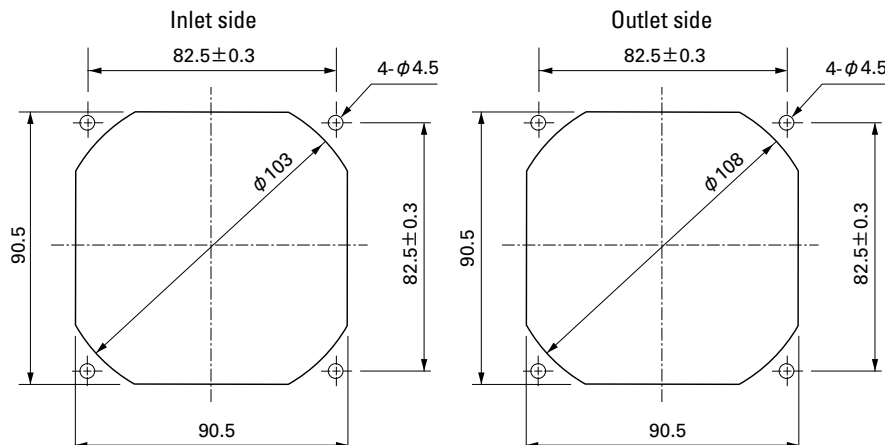


Model : 109-099E Surface treatment : Nickel-chrome plating Color (silver)
: 109-099H : Cation electropainting (black)

Inlet side, Outlet side



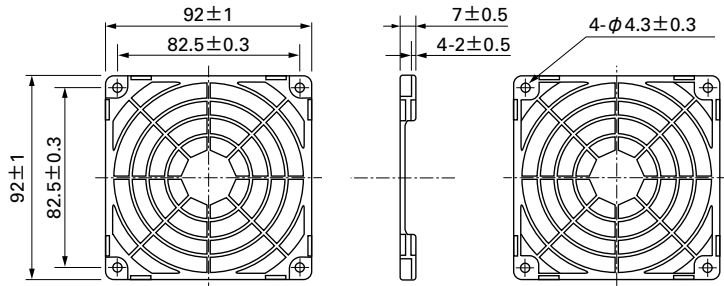
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Resin Finger Guards

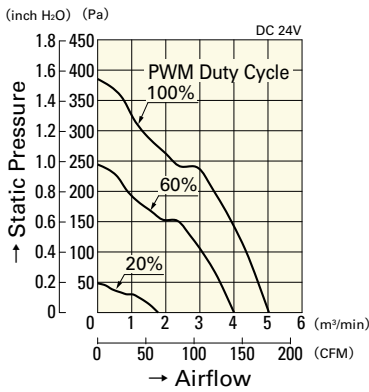
Model : 109-1001G



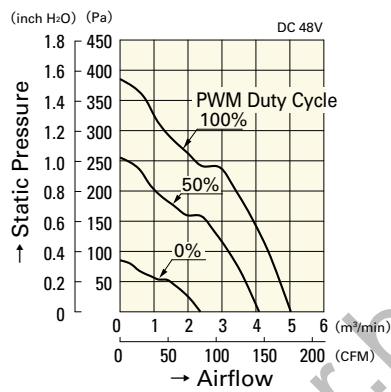
Mass : 12g

Airflow - Static Pressure Characteristics

PWM Duty Cycle

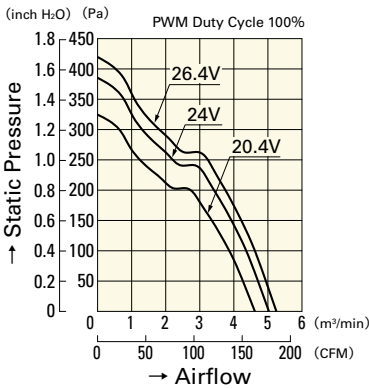


9WV0924P1H001

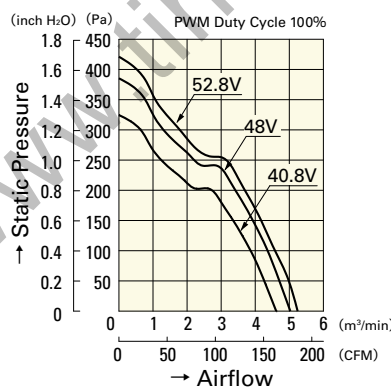


9WV0948P1H001

Operating Voltage Range

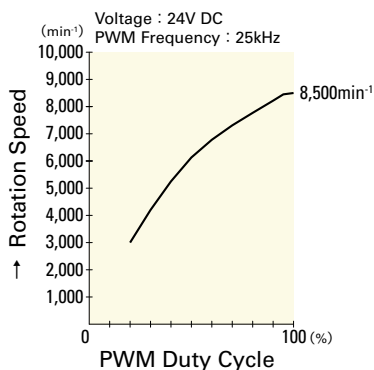


9WV0924P1H001

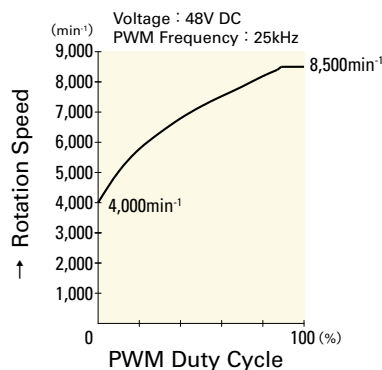


9WV0948P1H001

PWM Duty - Speed Characteristics Example



9WV0924P1H001



9WV0948P1H001

120 mm sq.

San Ace 120W



General Specifications

- Material Frame: Aluminum,
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)

120×120×38mm (Mass : 440g) **IP 68** **9WV** type

Specifications

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

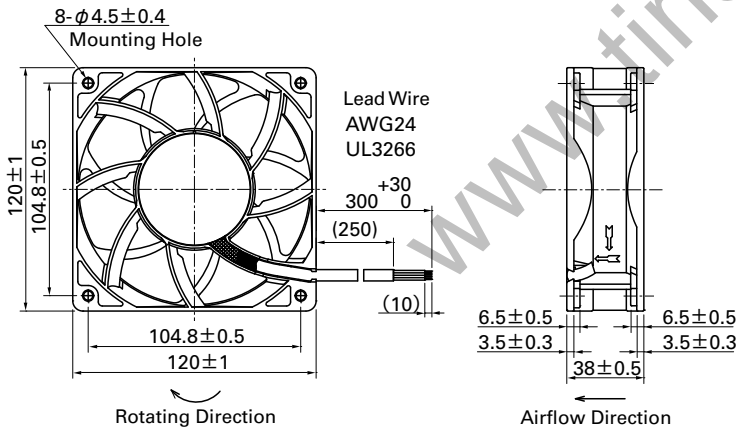
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WV1212P1J001	12	10.2 to 13.8	100	3	36	6,400	6.35 224.0	360 1.45	64	-20 to +70	60,000/60°C
9WV1224P1J601	24	20.4 to 27.6	0	0.2	2.4	1,500	1.49 52.6	19.8 0.080	33		
9WV1224P1H001 ^(Note)			100	1.5	36	6,400	6.35 224.0	360 1.450	64		
9WV1248P1J001	48	40.8 to 55.2	0	0.12	2.88	1,500	1.49 52.6	26.1 0.105	33		
			100	0.80	19.2	5,200	5.16 182	237 0.95	58		
			100	0.65	31.2	6,400	6.35 224.0	360 1.45	64		
			0	0.06	2.88	1,500	1.49 52.6	26.1 0.105	33		

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

※PWM Frequency : 25kHz

Other sensor specifications are available as options. Please refer to the index (p. 513).

Dimensions (unit: mm)

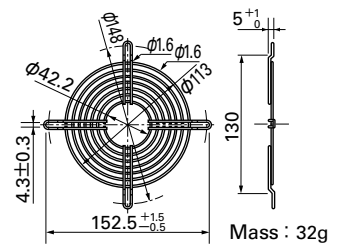


Options (unit: mm)

Finger Guards

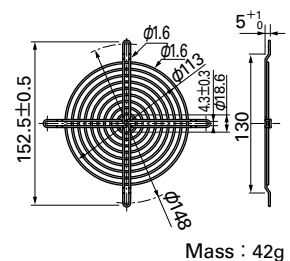
Model : 109-019C Surface treatment : Nickel-chrome plating (silver)
: 109-019H : Cation electropainting (black)

Outlet side

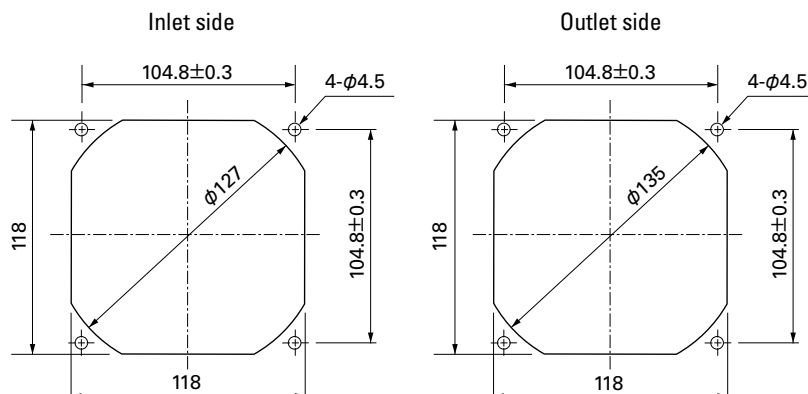


Model : 109-019E Surface treatment : Nickel-chrome plating (silver)
: 109-019K : Cation electropainting (black)

Inlet side, Outlet side



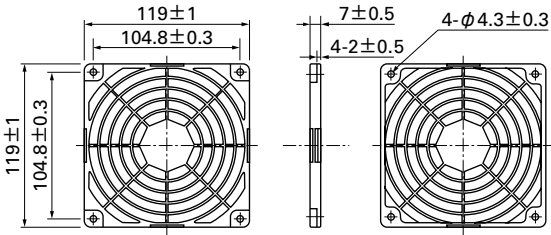
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Resin Finger Guards

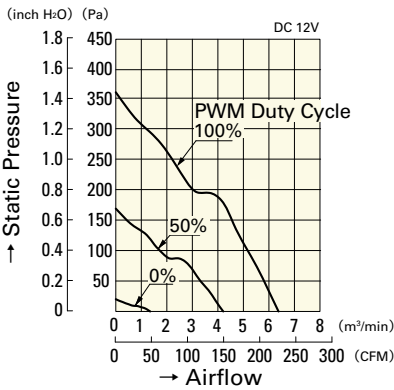
Model : 109-1000G



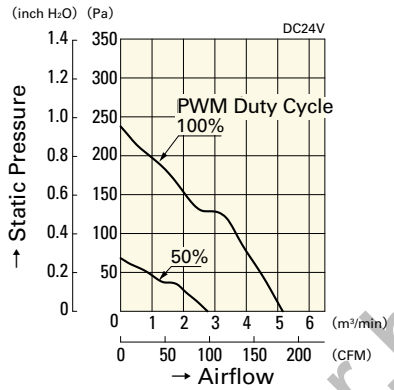
Mass : 23g

Airflow - Static Pressure Characteristics

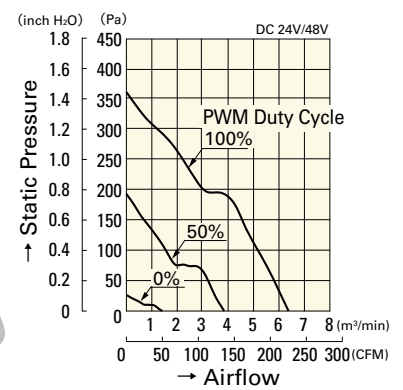
PWM Duty Cycle



9WV1212P1J001

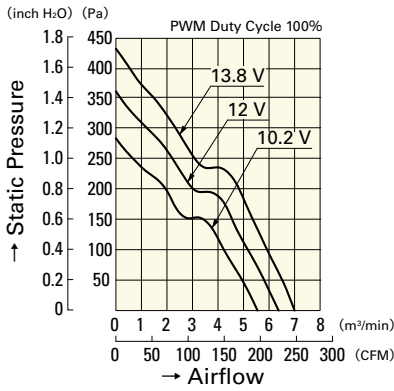


9WV1224P1H001

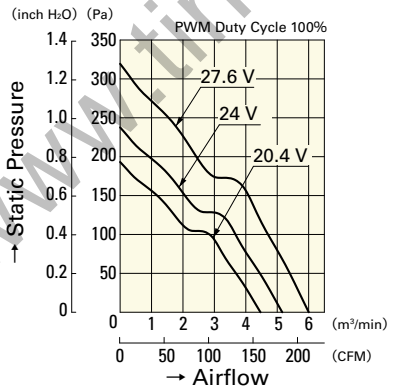


9WV1224P1J601
9WV1248P1J001

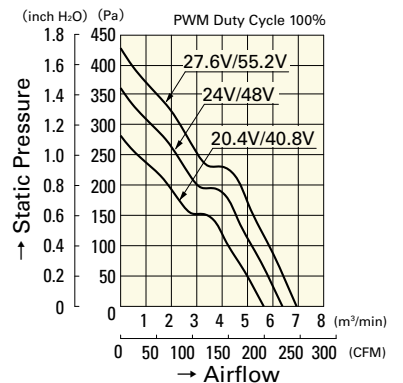
Operating Voltage Range



9WV1212P1J001

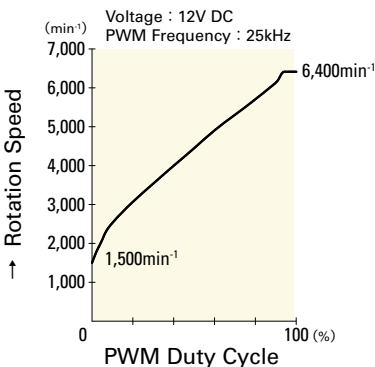


9WV1224P1H001

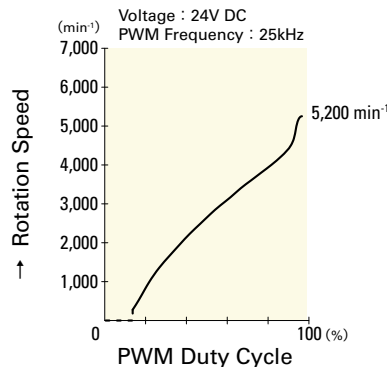


9WV1224P1J601
9WV1248P1J001

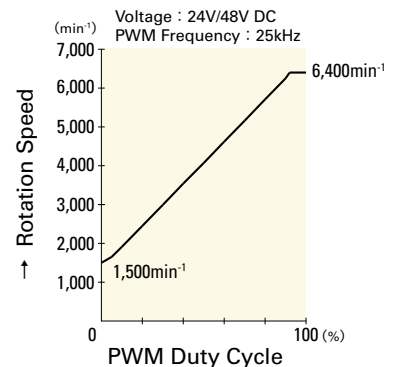
PWM Duty - Speed Characteristics Example



9WV1212P1J001



9WV1224P1H001



9WV1224P1J601
9WV1248P1J001

120 mm sq.

San Ace 120W



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)

120×120×38mm (Mass : 360g) **IP 68** **9WP type**

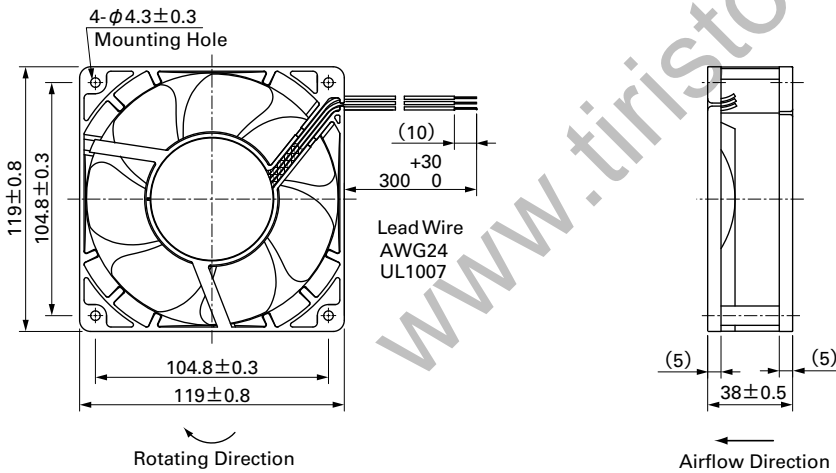
Specifications

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

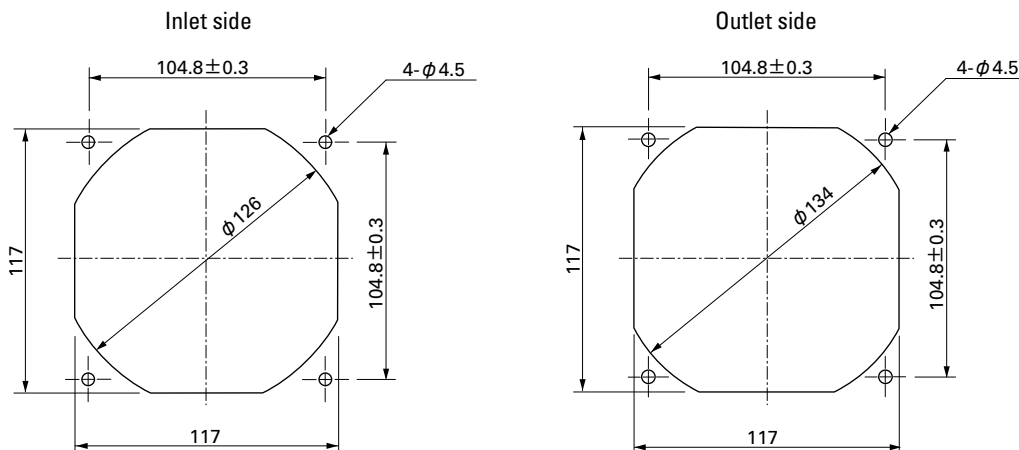
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WP1212H101	12	7.0 to 13.8	0.38	4.56	2,600	2.80	99	70.4	0.283	39
9WP1212L101		10.2 to 13.8	0.14	1.68	1,500	1.62	57.2	23.4	0.094	26
9WP1224H101	24	14.0 to 27.6	0.22	5.28	2,600	2.80	99	70.4	0.283	39
9WP1248H101	48	40.8 to 55.2	0.11	5.28	2,600	2.80	99	70.4	0.283	39

Other sensor specifications are available as options. Please refer to the index (p. 512).

Dimensions (unit: mm) (With ribs)



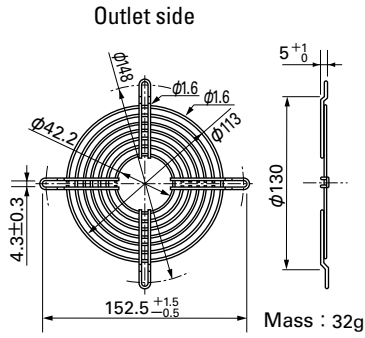
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

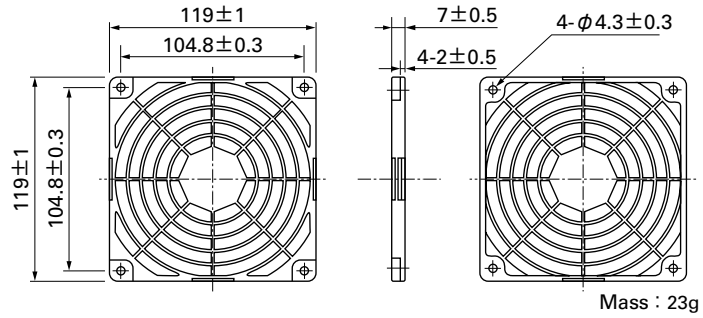
Finger Guards

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



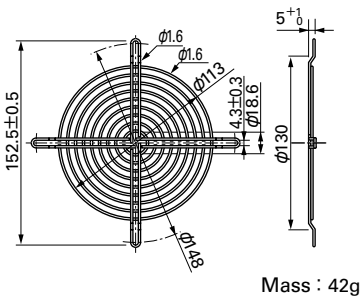
Resin Finger Guards

Model : 109-1000G



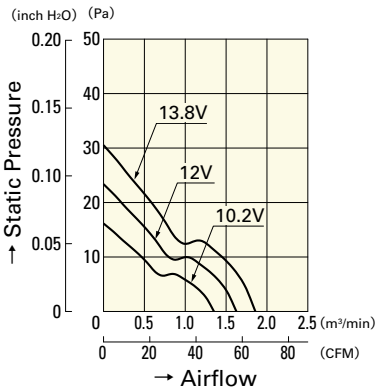
Model : 109-019E Surface treatment : Nickel-chrome plating (silver) Color (silver)
 : 109-019K : Cation electropainting (black)

Inlet side, Outlet side



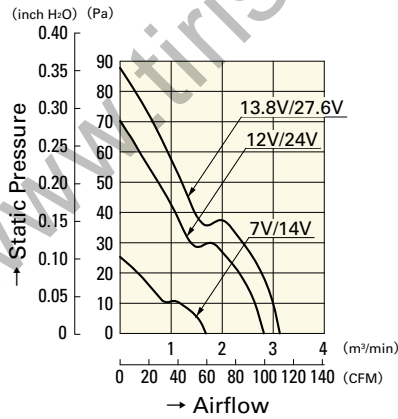
Airflow - Static Pressure Characteristics

L speed



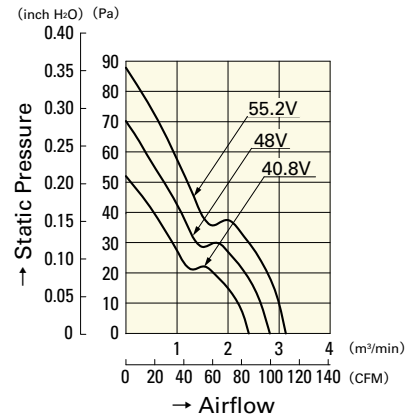
9WP1212L101

H speed



9WP1212H101
9WP1224H101

H speed



9WP1248H101

120 mm sq.

San Ace 120W



General Specifications

- Material Frame: Aluminum,
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 or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

120×120×38mm [Mass : 410g] **IP 55** **9WG type**

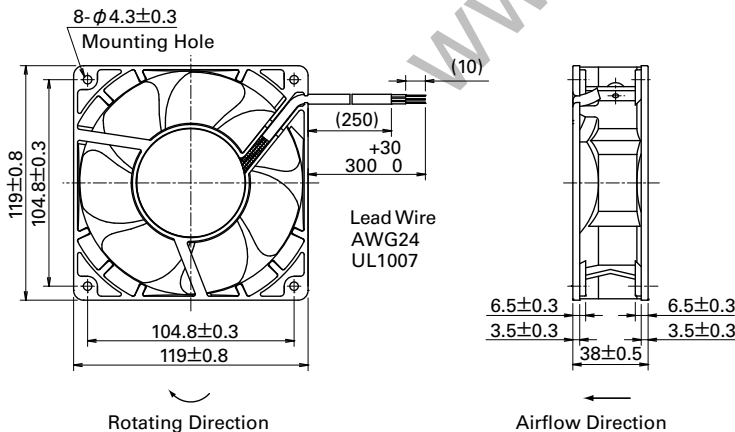
Specifications

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]	
9WG1212G101-E	12	10.2 to 13.8	0.98	11.76	3,600	3.88 137	135 0.542	49	- 20 to + 70	80,000/60°C	
9WG1212E101-E			0.61	7.32	3,100	3.34 118	100 0.402	46		100,000/60°C	
9WG1212H101-E		7 to 13.8	0.38	4.56	2,600	2.80 99	70.4 0.283	39		80,000/60°C	
9WG1212F101-E			0.28	3.36	2,280	2.45 87	54.2 0.218	36		100,000/60°C	
9WG1212M101-E			0.21	2.52	1,950	2.10 74	39.6 0.159	32		80,000/60°C	
9WG1224G101-E	24	20.4 to 27.6	0.50	12	3,600	3.88 137	135 0.542	49		- 20 to + 70	80,000/60°C
9WG1224E101-E			0.34	8.16	3,100	3.34 118	100 0.402	46			100,000/60°C
9WG1224H101-E		14 to 27.6	0.22	5.28	2,600	2.80 99	70.4 0.283	39			80,000/60°C
9WG1224F101-E			0.16	3.84	2,280	2.45 87	54.2 0.218	36			100,000/60°C
9WG1224M101-E			0.11	2.64	1,950	2.10 74	39.6 0.159	32			80,000/60°C
9WG1248G101-E	48	40.8 to 55.2	0.25	12	3,600	3.88 137	135 0.542	49	- 20 to + 70		80,000/60°C
9WG1248E101-E			0.17	8.16	3,100	3.34 118	100 0.402	46			100,000/60°C
9WG1248H101-E			0.11	5.28	2,600	2.80 99	70.4 0.283	39			80,000/60°C
9WG1248F101-E			0.09	4.32	2,280	2.45 87	54.2 0.218	36			100,000/60°C
9WG1248M101-E			0.07	3.36	1,950	2.10 74	39.6 0.159	32			80,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

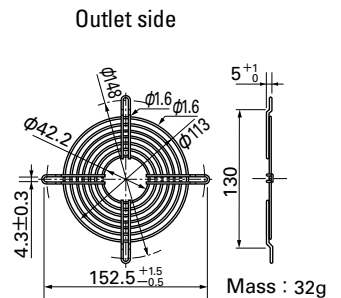
Dimensions (unit: mm)



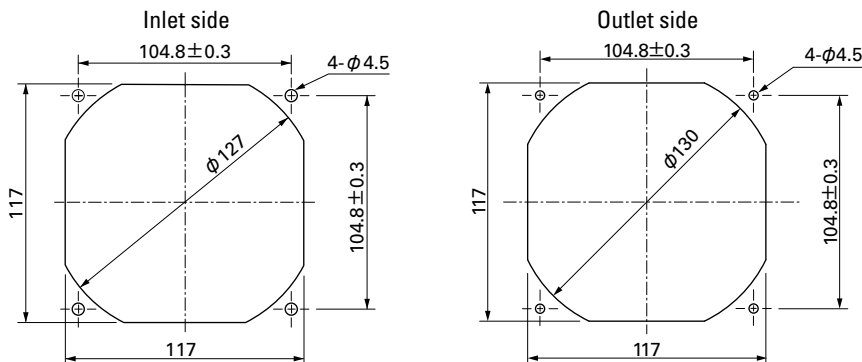
Options (unit: mm)

Finger Guards

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

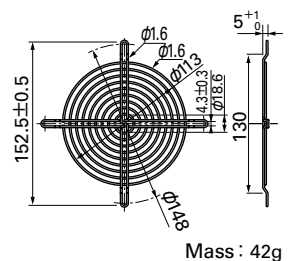


Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



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

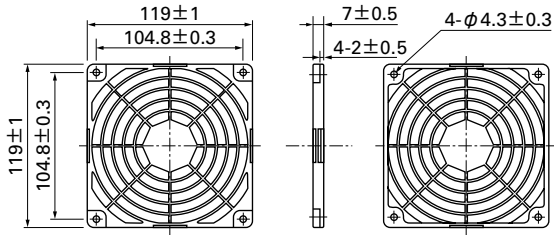
Inlet side, Outlet side



Options (unit: mm)

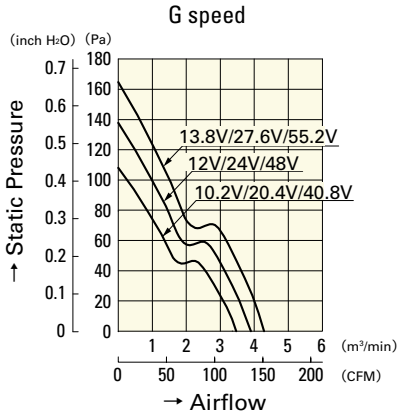
Resin Finger Guards

Model : 109-1000G

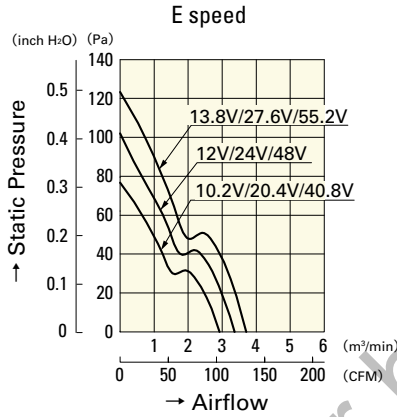


Mass : 23g

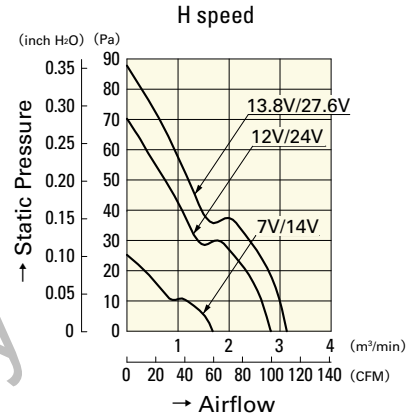
Airflow - Static Pressure Characteristics



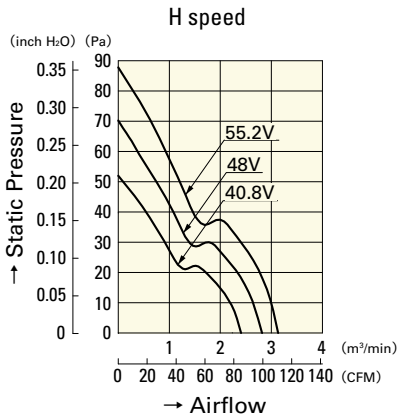
9WG1212G101-E
9WG1224G101-E
9WG1248G101-E



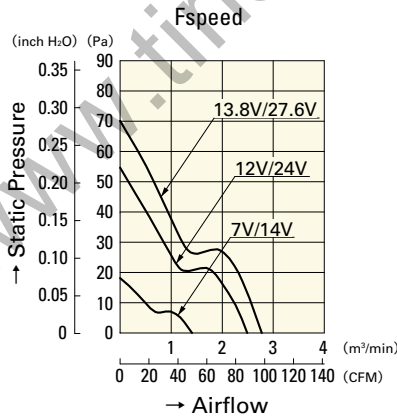
9WG1212E101-E
9WG1224E101-E
9WG1248E101-E



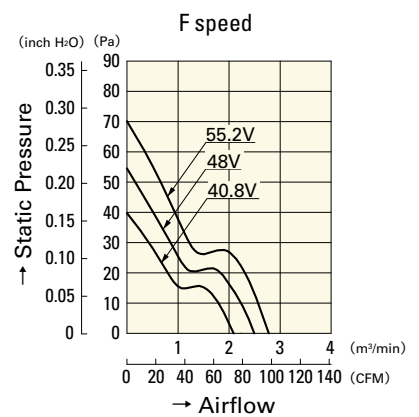
9WG1212H101-E
9WG1224H101-E



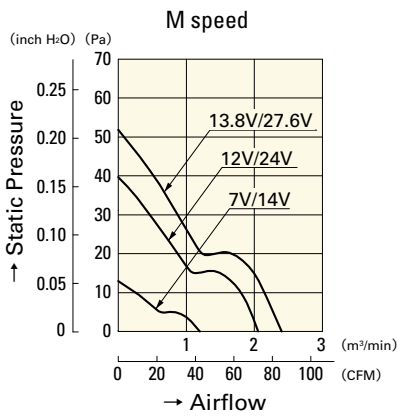
9WG1248H101-E



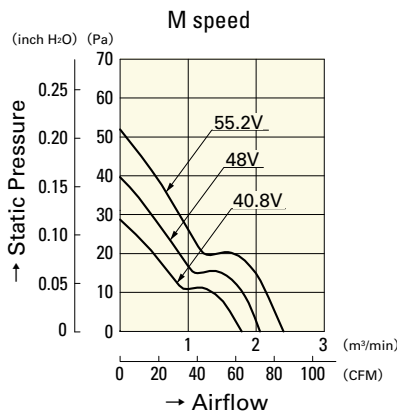
9WG1212F101-E
9WG1224F101-E



9WG1248F101-E



9WG1212M101-E
9WG1224M101-E



9WG1248M101-E

120 mm sq.

San Ace 120WS



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 or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

120×120×38mm (Mass : 260g) **IP 54** **9WS type**

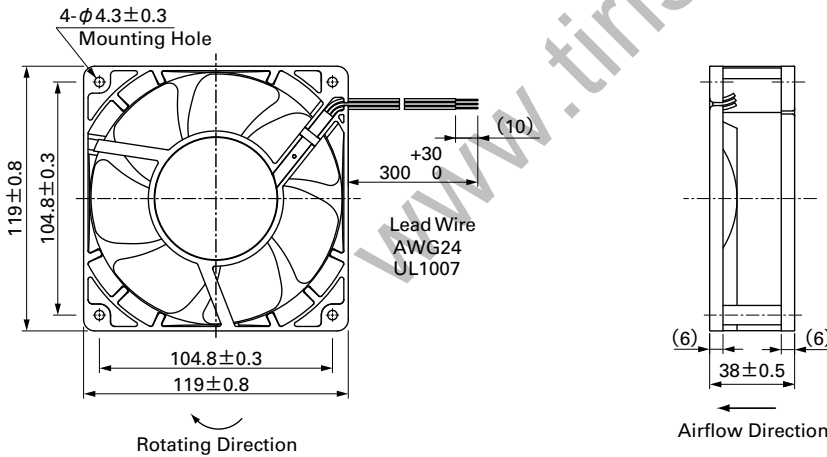
Specifications

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

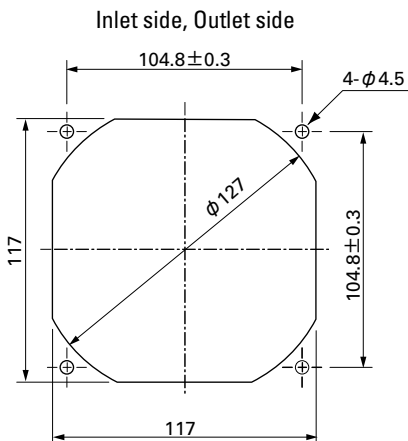
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WS1212H101	12	6 to 13.2	0.47	5.64	2,600	2.9 102.4	67.62 0.272	39	- 20 to + 60	40,000/60°C
9WS1212M101		6 to 13.8	0.23	2.76	1,950	2.2 77.7	42.14 0.169	32	- 20 to + 70	
9WS1224H101	24	12 to 26.4	0.23	5.52	2,600	2.9 102.4	67.62 0.272	39	- 20 to + 60	
9WS1224M101		12 to 27.6	0.13	3.12	1,950	2.2 77.7	42.14 0.169	32	- 20 to + 70	
9WS1248H101	48	40.8 to 52.8	0.13	6.24	2,600	2.9 102.4	67.62 0.272	39	- 20 to + 60	
9WS1248M101		40.8 to 55.2	0.07	3.36	1,950	2.2 77.7	42.14 0.169	32	- 20 to + 70	

Other sensor specifications are available as options. Please refer to the index (p. 513).

Dimensions (unit: mm) (With ribs)



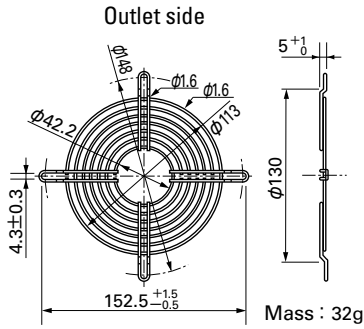
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

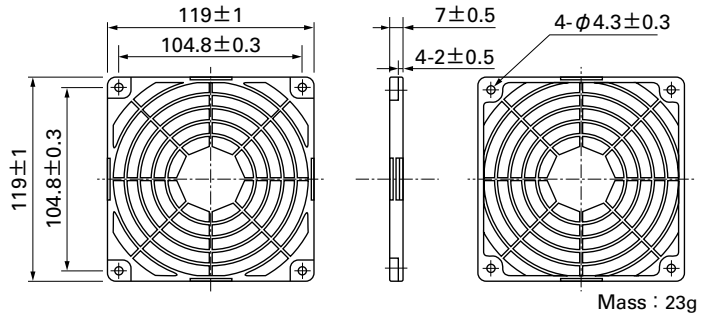
Finger Guards

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



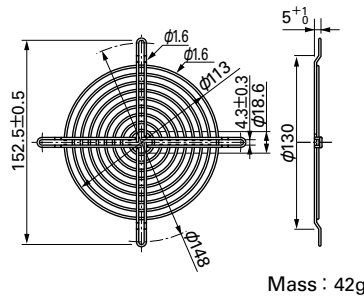
Resin Finger Guards

Model : 109-1000G

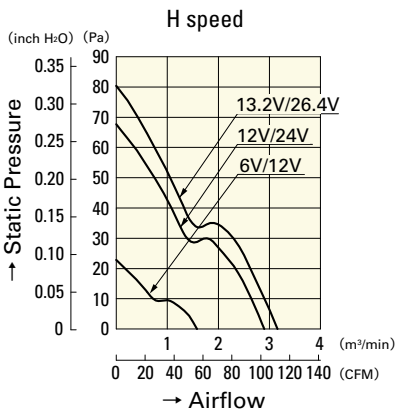


Model : 109-019E Surface treatment : Nickel-chrome plating (silver) Color : 109-019K : Cation electropainting (black)

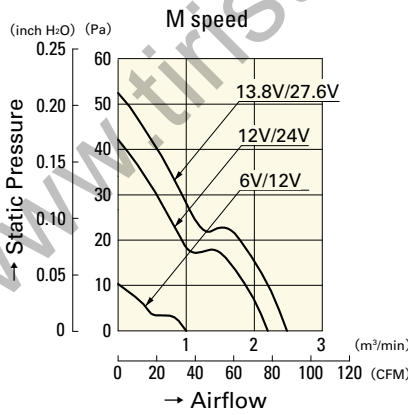
Inlet side, Outlet side



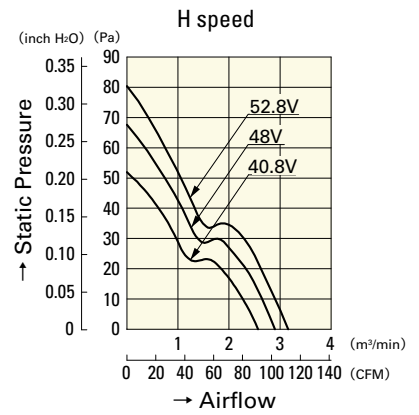
Airflow - Static Pressure Characteristics



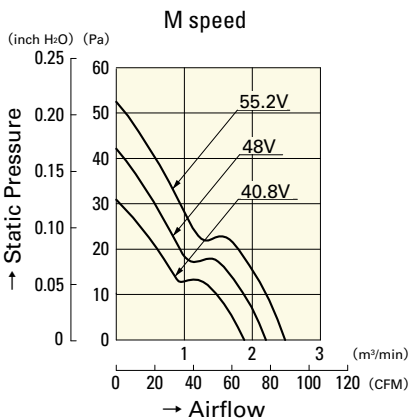
9WS1212H101
9WS1224H101



9WS1212M101
9WS1224M101



9WS1248H101



9WS1248M101

140 mm sq.

San Ace 140W



General Specifications

- Material Frame: Aluminum,
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 or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

140×140×38mm (Mass : 650g) **IP 68** **9W** type

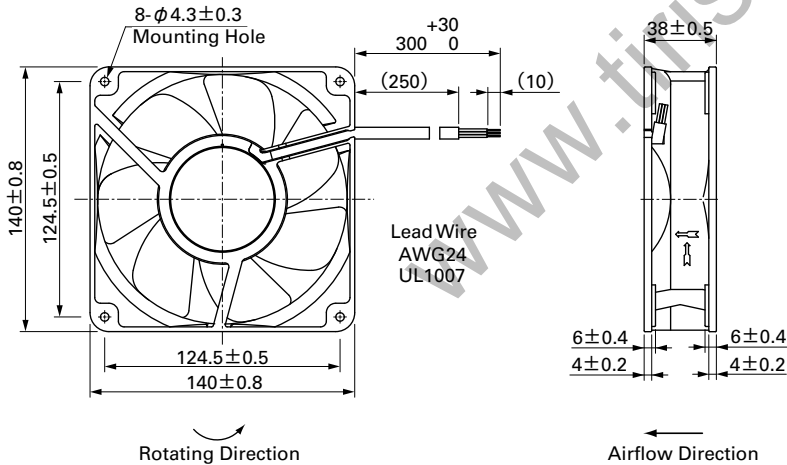
Specifications

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

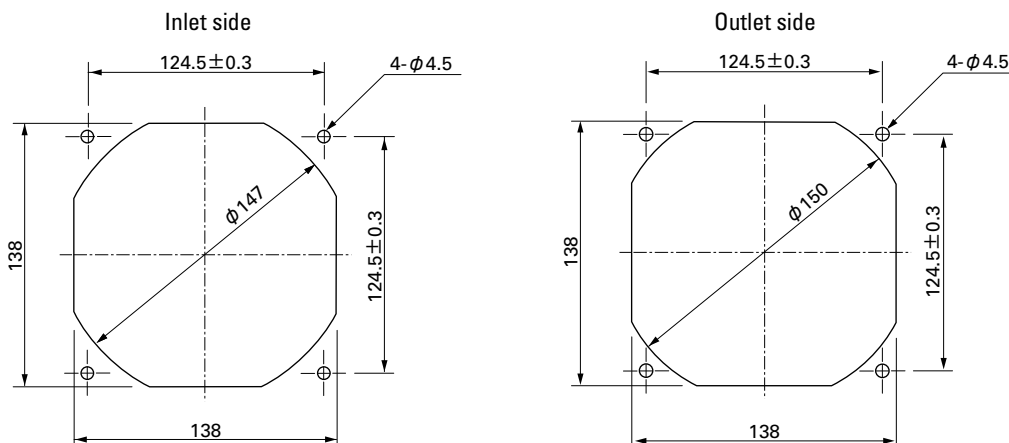
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109W1412H101-U	12	10.2 to 13.8	0.73	8.76	2,600	4.5 159	98 0.394	46	- 20 to + 70	100,000/60°C
109W1412M101-U			0.3	3.6	1,900	3.3 117	52 0.209	38		
109W1424H101-U	24	20.4 to 27.6	0.37	8.88	2,600	4.5 159	98 0.394	46		
109W1424M101-U			0.16	3.84	1,900	3.3 117	52 0.209	38		
109W1448H101-U	48	40.8 to 55.2	0.2	9.6	2,600	4.6 159	98 0.394	46		
109W1448M101-U			0.09	4.32	1,900	3.3 117	52 0.209	38		

Other sensor specifications are available as options. Please refer to the index (p. 499).

Dimensions (unit: mm)



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



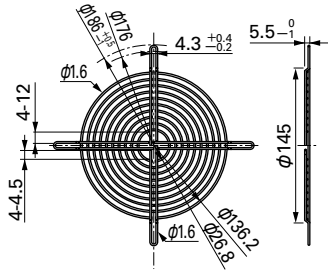
Options (unit: mm)

Finger Guards

Model : 109-719 Surface treatment : Nickel-chrome plating Color (silver)

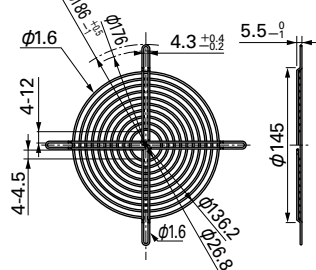
Model : 109-719H Surface treatment : Cation electropainting Color (black)

Inlet side, Outlet side



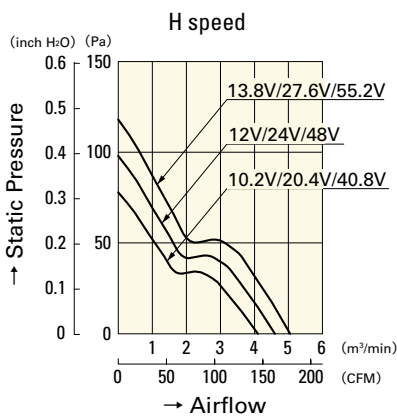
Mass : 51g

Inlet side, Outlet side



Mass : 51g

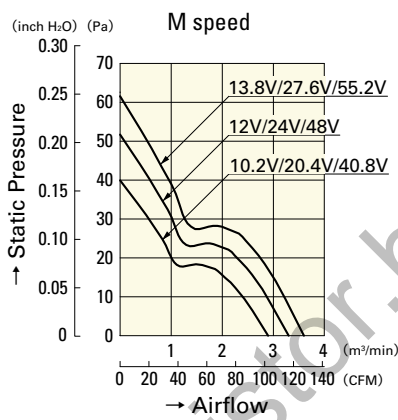
Airflow - Static Pressure Characteristics



109W1412H101-U

109W1424H101-U

109W1448H101-U



109W1412M101-U

109W1424M101-U

109W1448M101-U

DC

Splash Proof Fan 140mm

140 mm sq.

San Ace 140W



General Specifications

- Material Frame: Aluminum,
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 or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

140×140×51mm (Mass : 700g) **IP 68** **9WB type**

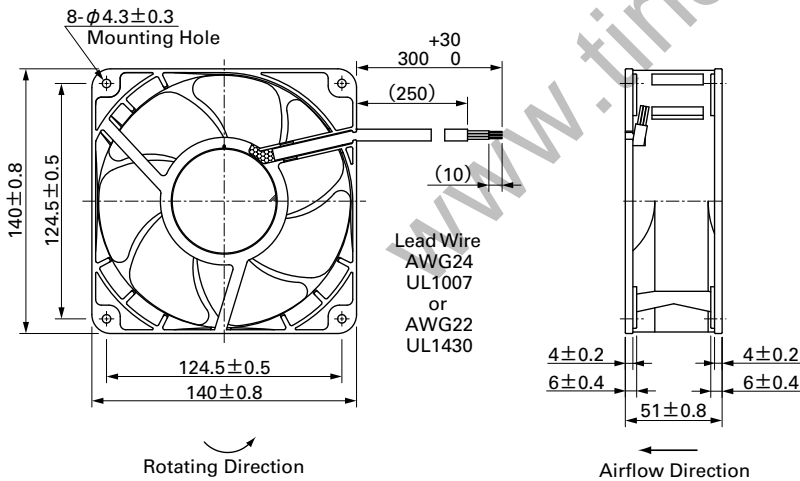
Specifications

The following nos. have pulse sensors.

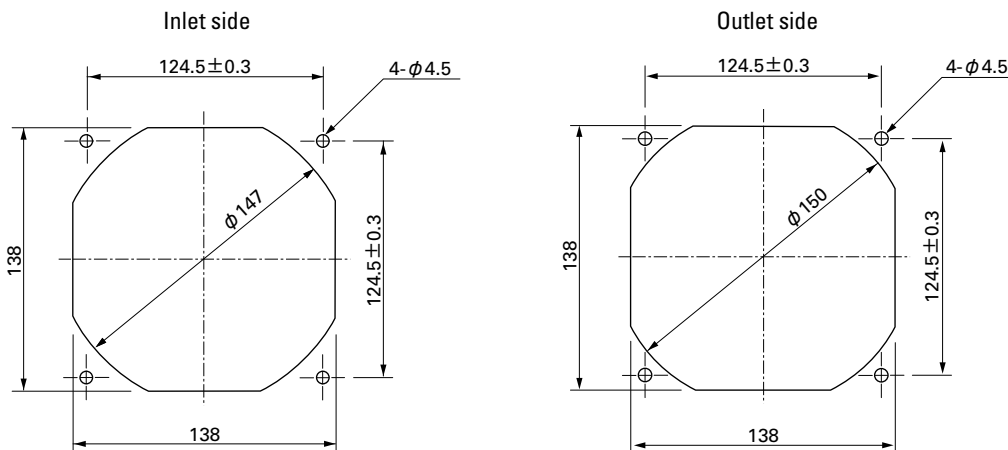
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WB1412S501	12	10.2 to 13.8	2.7	32.4	4,200	8.1 286.2	240 0.96	57	- 20 to + 70	60,000/60°C
9WB1412H501			1.25	15	3,100	5.9 208.5	130 0.52	49		100,000/60°C
9WB1412M501			0.46	5.52	2,050	3.9 138	63 0.25	39		100,000/60°C
9WB1424H501	24	20.4 to 27.6	0.6	14.4	3,100	5.9 208.5	130 0.52	49		60,000/60°C
9WB1424M501			0.22	5.28	2,050	3.9 138	63 0.25	39		100,000/60°C
9WB1448S501	48	40.8 to 55.2	0.71	34.08	4,200	8.1 286.2	240 0.96	57		60,000/60°C
9WB1448H501			0.27	12.96	3,100	5.9 208.5	130 0.52	49	100,000/60°C	

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



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



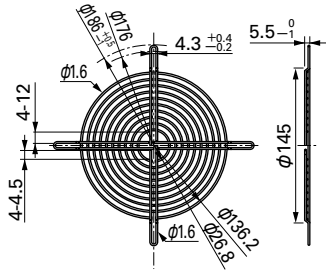
Options (unit: mm)

Finger Guards

Model : 109-719 Surface treatment : Nickel-chrome plating Color (silver)

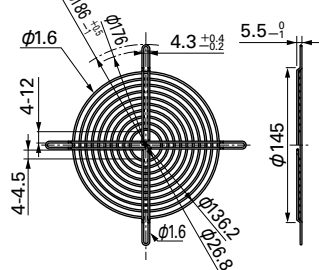
Model : 109-719H Surface treatment : Cation electropainting Color (black)

Inlet side, Outlet side



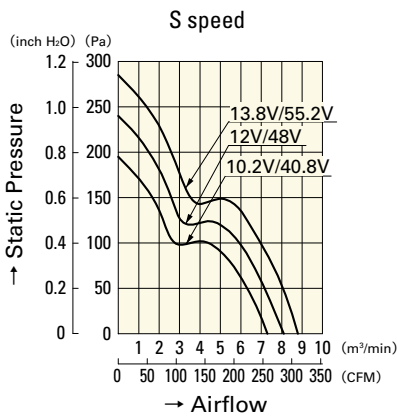
Mass : 51g

Inlet side, Outlet side

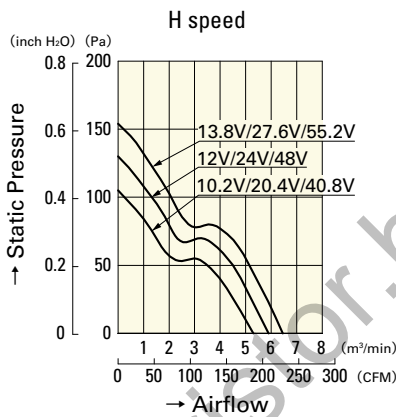


Mass : 51g

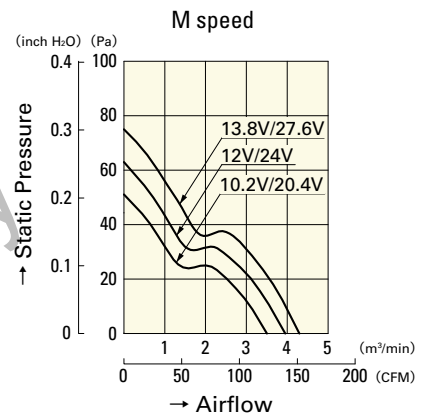
Airflow - Static Pressure Characteristics



9WB1412S501
9WB1448S501



9WB1412H501
9WB1424H501
9WB1448H501



9WB1412M501
9WB1424M501

www.fanworld.com

φ172mm

San Ace 172W



General Specifications

- Material Frame: Aluminum,
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)

φ172mm × 150mm × 51mm (Mass : 860g) **IP 68** **9WG type** **Sidecut type**

Specifications

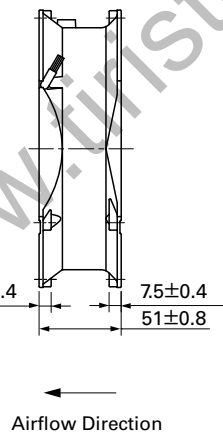
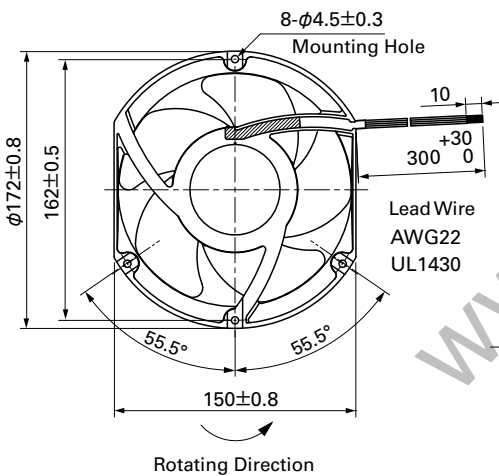
The following nos. **have PWM controls and pulse sensors.**

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]
9WG5748P5G001	48	40.8 to 55.2	100	2.91	140.0	8,600	15.46 546	1,000 4.02	78	-20 to +70	40,000/60°C (70,000/40°C)
			0	0.21	10.1	2,000	3.59 127	75.1 0.30	40		
9WG5748P5H001			100	1.62	78.0	6,500	11.60 410	770 3.09	71		
			0	0.21	10.1	2,000	3.59 127	75.1 0.30	40		

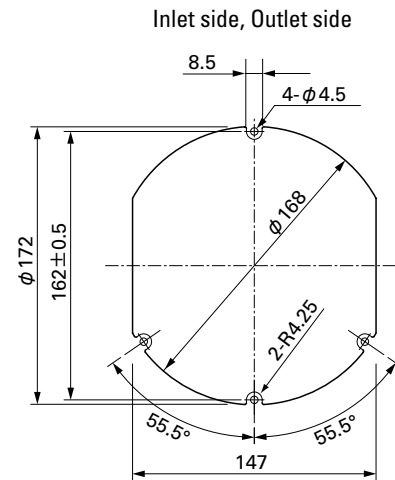
※PWM Frequency : 25kHz

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



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



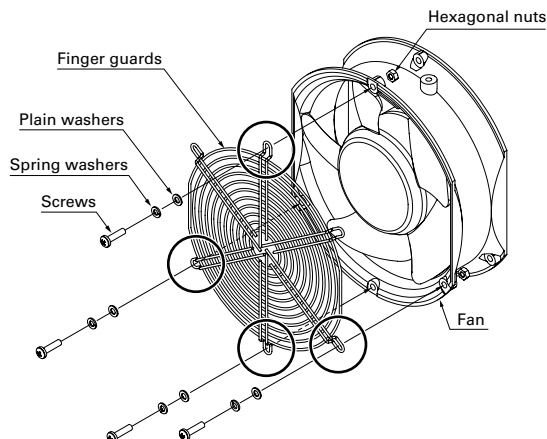
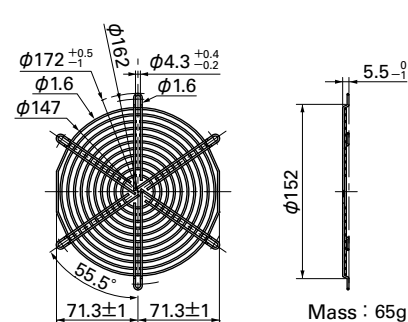
Options (unit: mm)

Finger Guards

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

Finger guard 109-319J should be mounted with four holes as in the drawing.

Inlet side, Outlet side



Options (unit: mm)

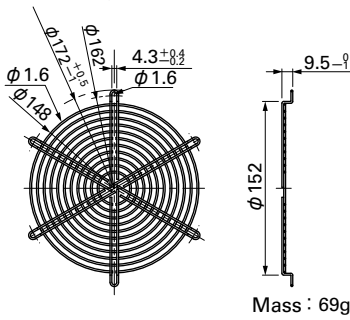
Finger Guards

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

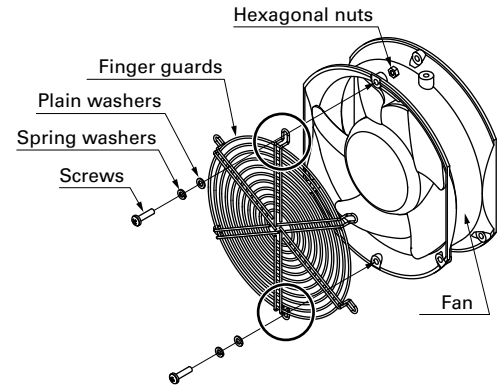
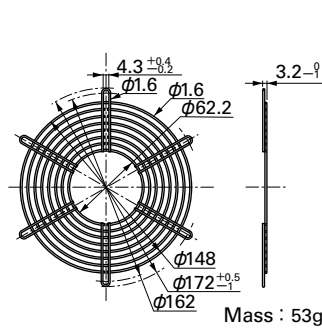
Model : 109-320 Surface treatment : Nickel-chrome plating Color : (silver)

Finger guards 109-319E, 109-319H, and 109-320 should be mounted with two holes as in the drawing and do not use any other holes.

Inlet side, Outlet side

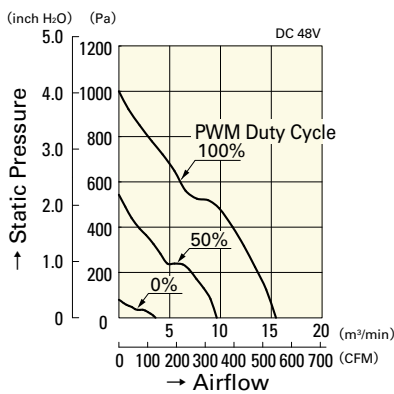


Outlet side

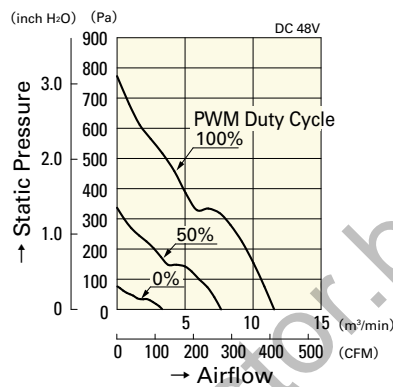


Airflow - Static Pressure Characteristics

PWM Duty Cycle

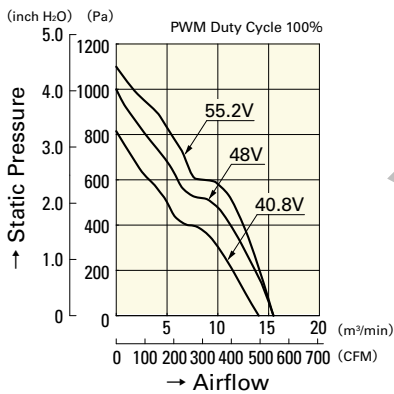


9WG5748P5G001

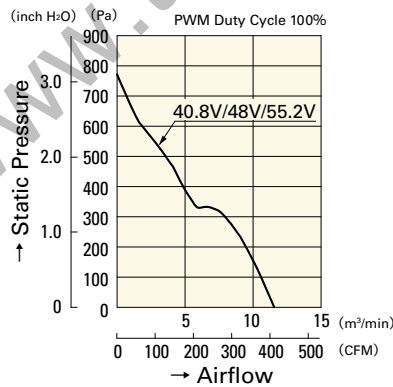


9WG5748P5H001

Operating Voltage Range

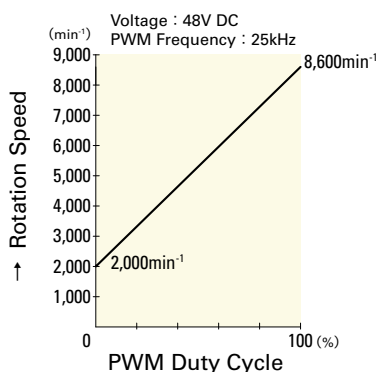


9WG5748P5G001

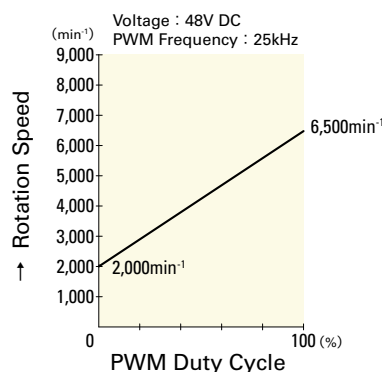


9WG5748P5H001

PWM Duty - Speed Characteristics Example



9WG5748P5G001



9WG5748P5H001

φ172mm

San Ace 172W



General Specifications

- Material Frame: Aluminum,
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 or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

φ172mm × 150mm × 51mm (Mass : 860g) **IP 68** **9WE type** **Sidecut type**

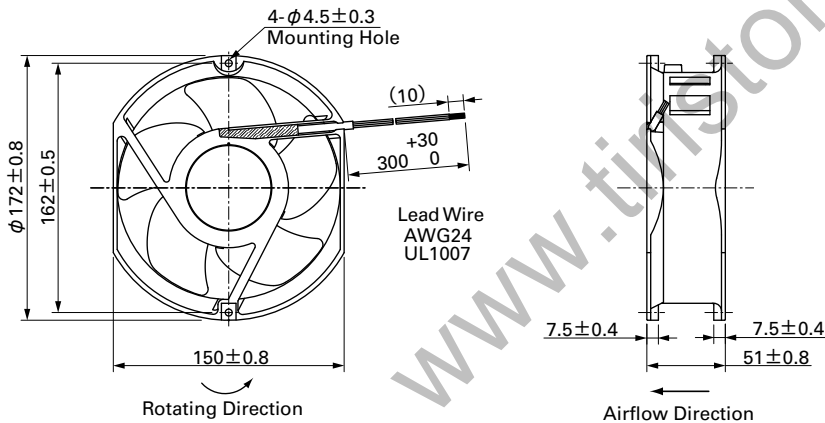
Specifications

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

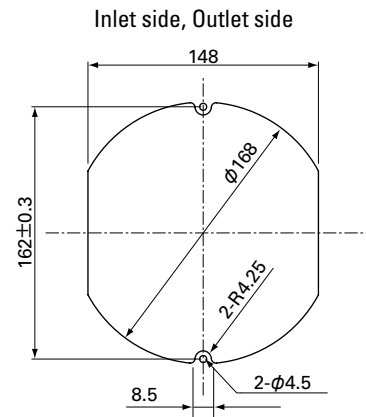
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WE5724K501	24	20.4 to 27.6	1.3	31.2	4,100	8.5 300	243 0.976	60	- 20 to + 60	40,000/60°C
9WE5748K501	48	40.8 to 55.2	0.7	33.6	4,100	8.5 300	243 0.976	60		40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



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

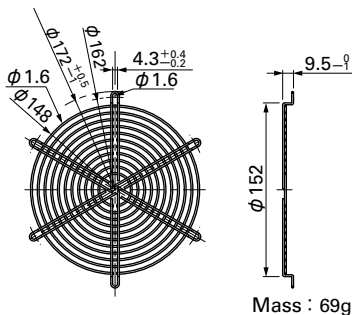


Options (unit: mm)

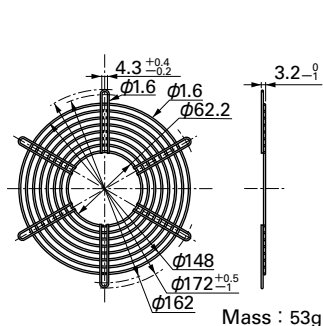
Finger Guards

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

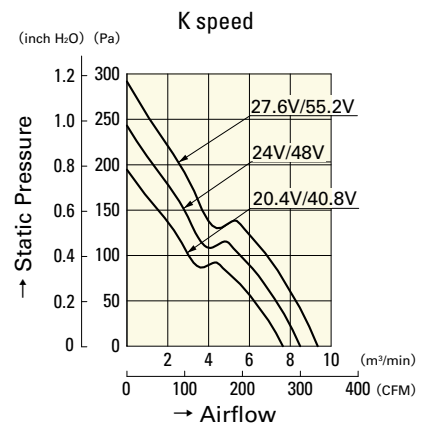
Inlet side, Outlet side



Outlet side



Airflow - Static Pressure Characteristics



9WE5724K501
9WE5748K501

φ 172mm

San Ace 172W



General Specifications

- Material Frame: Aluminum,
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 or blue (Sensor) yellow
- Storage Temperature -30°C to +70°C (Non-condensing)

φ 172mm × 51mm (Mass : 890g) **IP 68** **9WE type** **Round type**

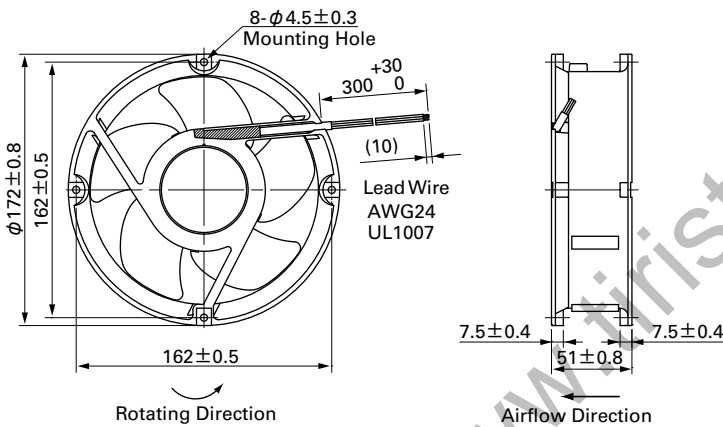
Specifications

The following nos. have pulse sensors.

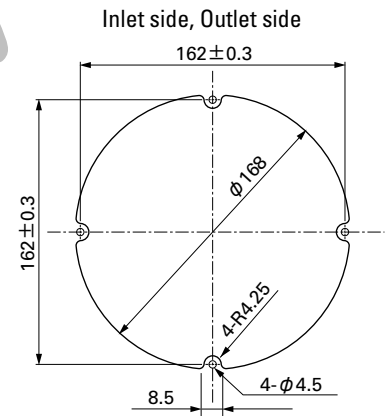
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WE1724K501	24	20.4 to 27.6	1.3	31.2	4,100	8.5 300.1	243 0.97	55	- 20 to + 60	40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



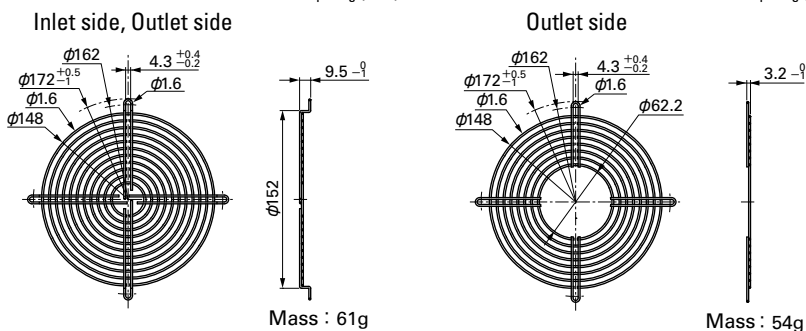
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



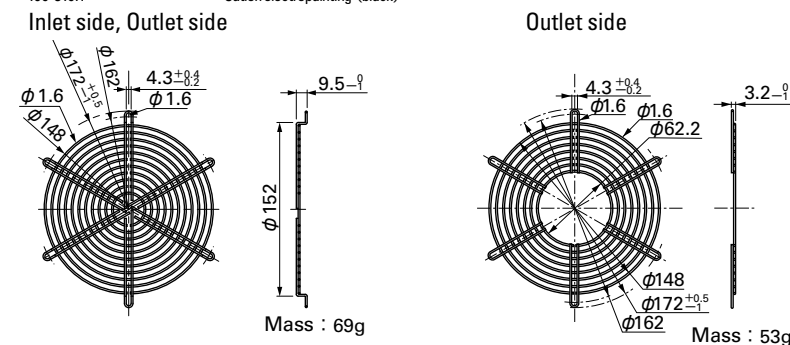
Options (unit: mm)

Finger Guards

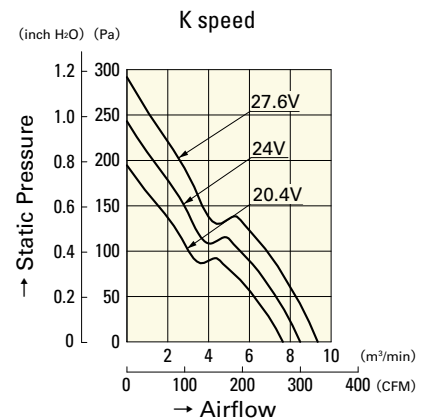
Model : 109-1066 Surface treatment : Nickel-chrome plating (silver) Color (silver) Model : 109-1068 Surface treatment : Nickel-chrome plating (silver) Color (silver)



Model : 109-319E Surface treatment : Nickel-chrome plating (silver) Color (silver) Model : 109-320 Surface treatment : Nickel-chrome plating (silver) Color (silver)
: 109-319H : Cation electropainting (black)



Airflow - Static Pressure Characteristics



9WE1724K501

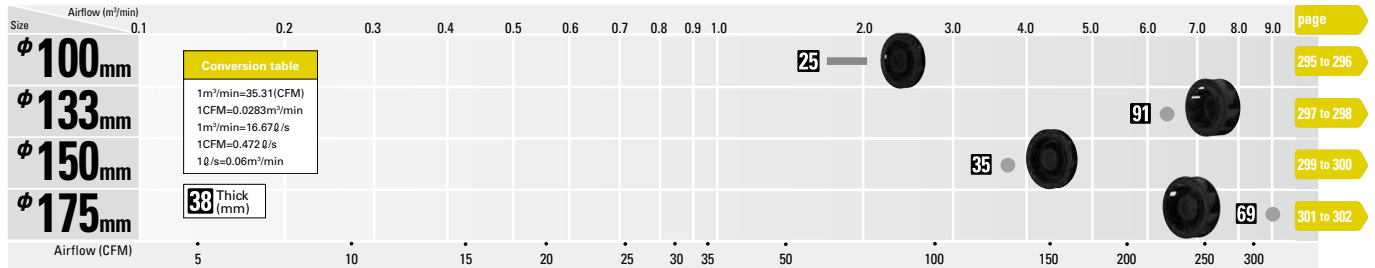
Splash Proof Centrifugal Fan

Centrifugal fans of IP54 waterproof capability.

Related product

Splash Proof Fan ⇒ p. 245 Centrifugal Fan ⇒ p. 371
Oil Proof Fan ⇒ p. 303

Domain Diagram



Model Numbering System

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

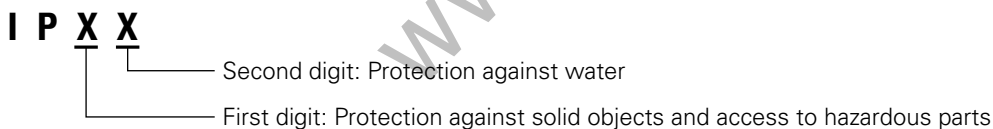
9W1T	M	48	P	4	H	01
Type name 9W1T: Splash Proof Centrifugal Fan	Impeller size M : φ100mm J : φ133mm N : φ150mm G : φ175mm	Voltage 24 : 24V 48 : 48V	PWM control function P	Frame thickness 0 : 69mm thick MIN 1 : 35mm thick 4 : 25mm thick	Speed code H,G etc	Individual customer's spec 2 or 3 digits

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 Centrifugal 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



First digit	Definition
0	No protection
1	Protection against solid objects > 50 mm
2	Protection against solid objects > 12.5 mm
3	Protection against solid objects > 2.5 mm
4	Protection against solid objects > 1 mm
5	Protection against a level of dust that could hinder operation or impair safety
6	Complete protection against dust

Second digit	Definition
0	No protection
1	Protection against dripping water
2	Protection against water spray up to 15°
3	Protection against spraying water
4	Protection against splashing water
5	Protection against low pressure water jets
6	Protection against high pressure water jets
7	Protection against temporary immersion in water
8	Protection against submersion in water

How to Read Specifications

DC Fan											DC	
Model No.	① Rated Voltage [V]	② Operating Voltage Range [V]	③ Rated Current [A]	④ Rated Input [W]	⑤ Rated Speed [min ⁻¹]	⑥ Max. Airflow [m ³ /min] [CFM]		⑦ Max. Static Pressure [Pa] [inchH ₂ O]		⑧ SPL [dB(A)]	⑨ Operating Temperature [°C]	⑩ Expected Life [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)

- 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 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%. Expected life at 40°C ambient is just reference value.
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

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.

φ 100_{mm}

San Ace 100W



General Specifications

- Material..... Motor case: 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)

φ 100mm × 25mm (Mass : 160g) **IP 54 9W1T type**

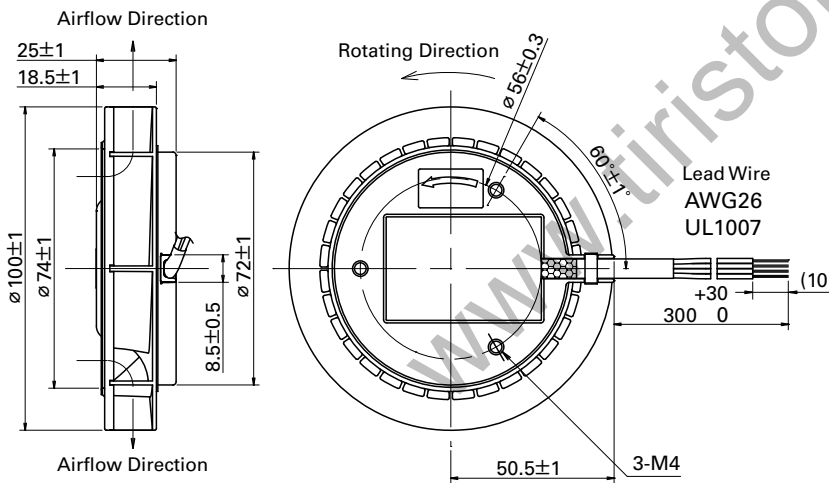
Specifications When our inlet nozzle [Option (Model : 109-1080)] is mounted. The following nos. **have PWM controls and pulse sensors.**

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]
9W1TM48P4G01 ^{Note}	48	36 to 60	100	0.36	17.28	7,400	2.03 71.7	708 2.84	65	-20 to +70	40,000/60°C (70,000/40°C)
9W1TM48P4H01			100	0.22	10.56	6,400	1.77 62.5	560 2.25	60		
			0	0.04	1.92	2,000	0.51 18.0	48 0.19	34		

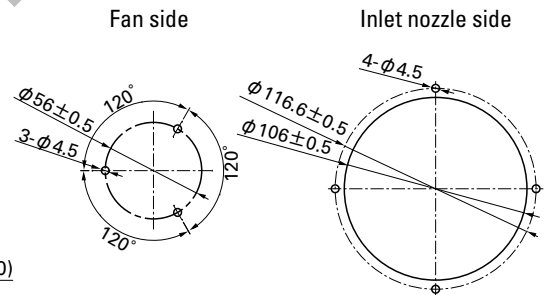
Note: Fan does not rotate when PWM duty cycle is 0%.
Max input of 9W1TM48P4G01 : 22W, 9W1TM48P4H01 : 14W at rated voltage.

※ PWM Frequency : 25kHz

Dimensions (unit: mm)



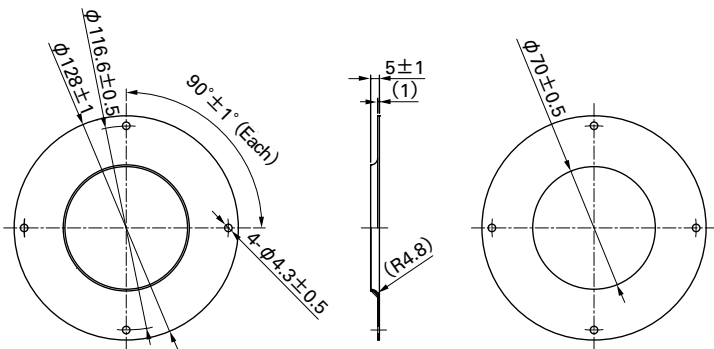
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Inlet Nozzle

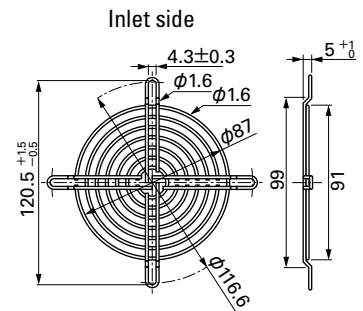
Model : 109-1080



Mass : 80g

Finger Guards

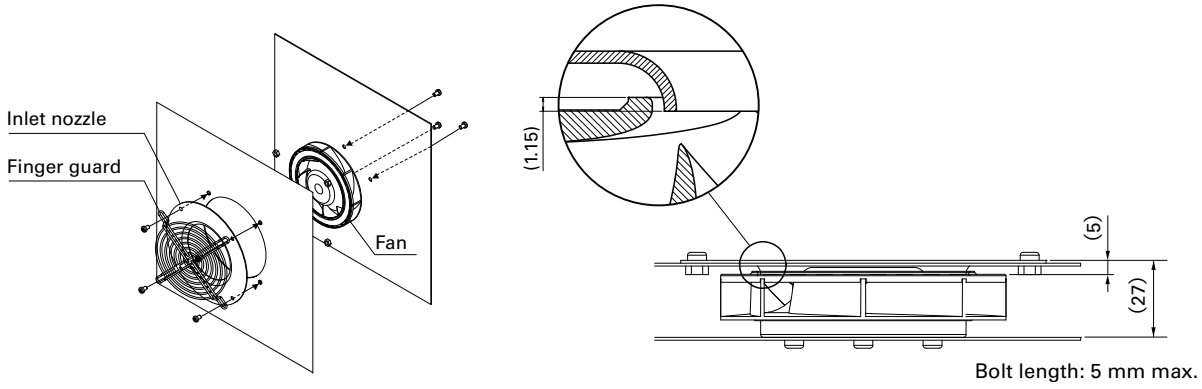
Model : 109-099E Surface treatment : Nickel-chrome plating (silver)
: 109-099H : Cation electropainting (black)



Mass : 29g

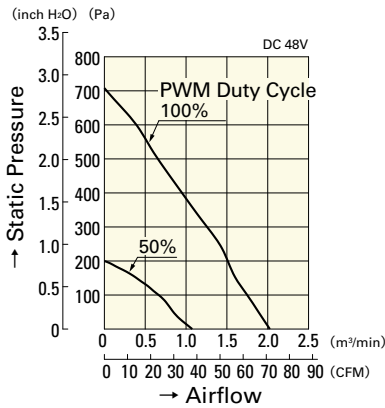
Inlet nozzle: Equipment to be mounted in inlet side for adjusting incoming airflow.

Reference Diagram for Mounting

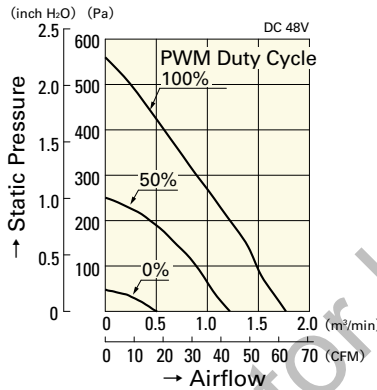


Airflow - Static Pressure Characteristics

PWM Duty Cycle

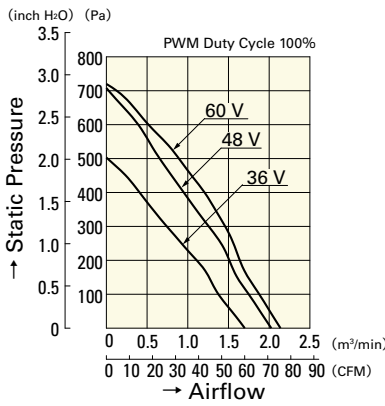


9W1TM48P4G01

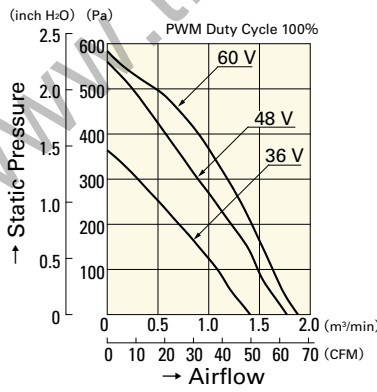


9W1TM48P4H01

Operating Voltage Range

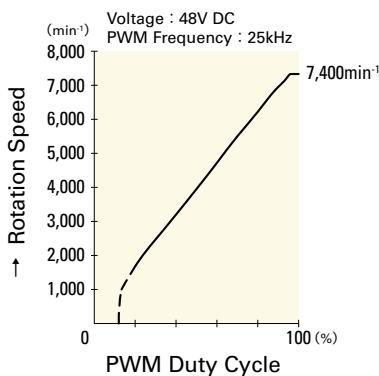


9W1TM48P4G01

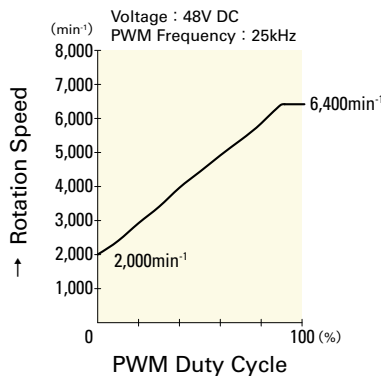


9W1TM48P4H01

PWM Duty - Speed Characteristics Example



9W1TM48P4G01



9W1TM48P4H01

φ133mm

San Ace 133W



General Specifications

- Material..... Motor case: 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)

φ133mm×91mm (Mass : 720g) **IP 54 9W1T type**

Specifications

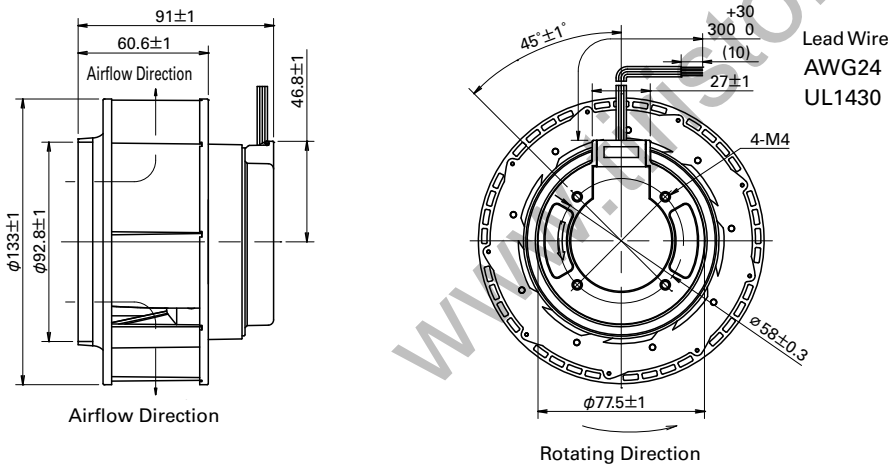
When our inletnozzle [Option (Model : 109-1069)] is mounted. The following nos. **have PWM controls and pulse sensors.**

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]
9W1TJ24P0H61	24	20.4 to 27.6	100	1.2	28.8	4,150	6.39 225	395 1.59	61	-20 to +70	40,000/60°C (70,000/40°C)
9W1TJ48P0H61	48	36 to 60	100	0.55	26.4	4,150	6.39 225	395 1.59	61		

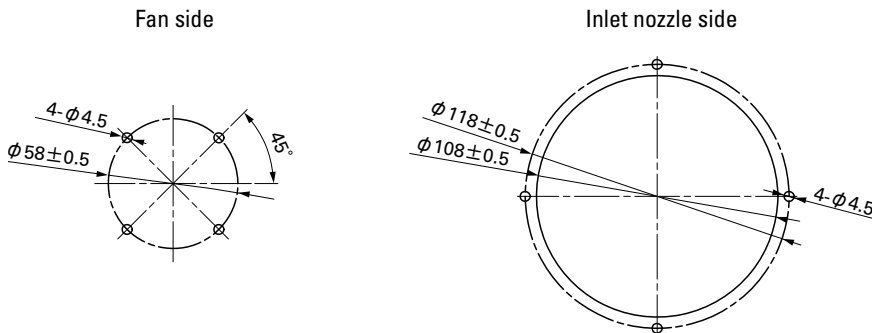
Note: Fan does not rotate when PWM duty cycle is 0%.
Max input is 45W at rated voltage.

※PWM Frequency : 25kHz

Dimensions (unit: mm)



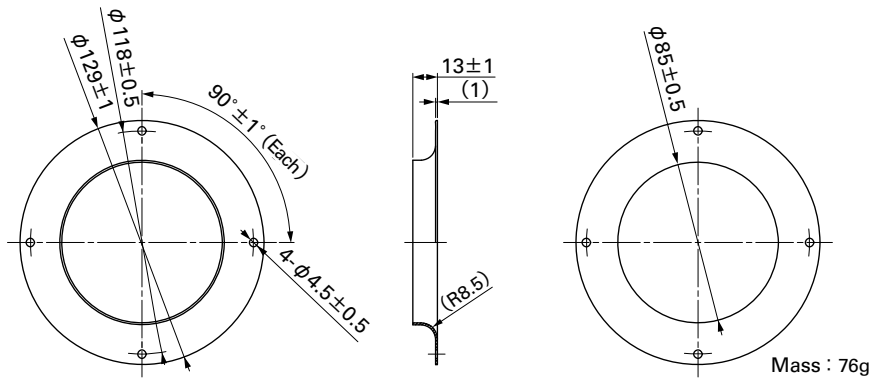
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

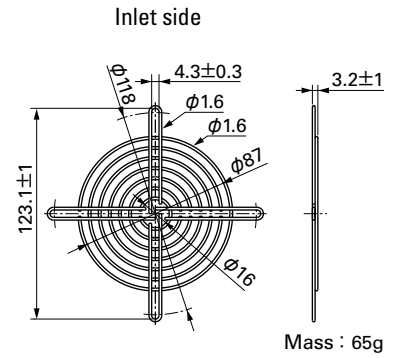
Inlet Nozzle

Model : 109-1069 Material : Steel sheet Surface treatment : Electro nickel plating (silver)
 : 109-1069H : Steel sheet : Cation electropainting (black)



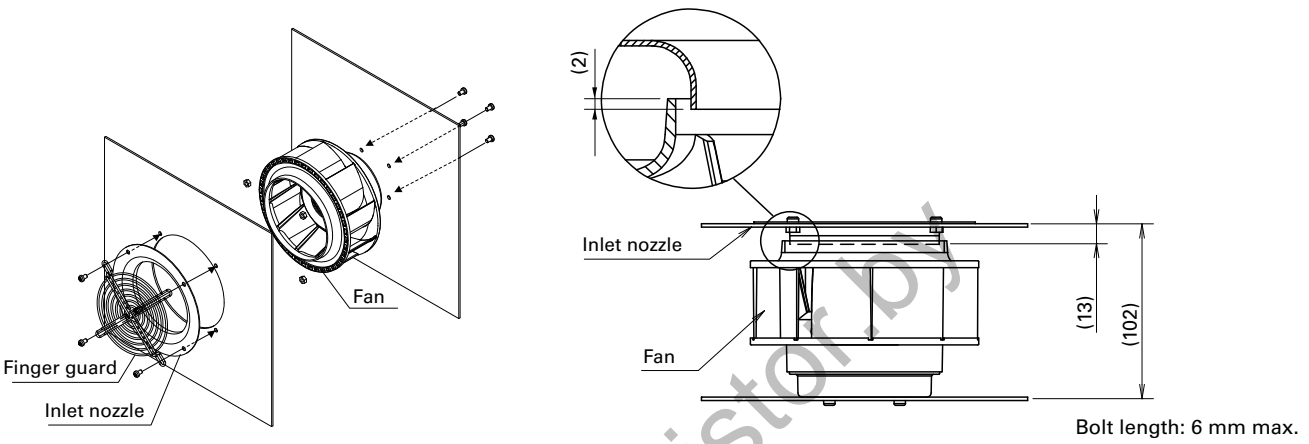
Finger Guards

Color : Nickel-chrome plating (silver)
 Model : 109-1112 Surface treatment : Nickel-chrome plating (silver)



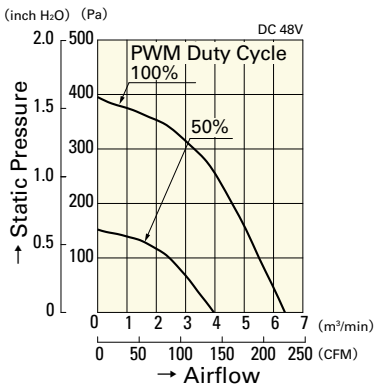
Inlet nozzle: Equipment to be mounted in inlet side for adjusting incoming airflow.

Reference Diagram for Mounting

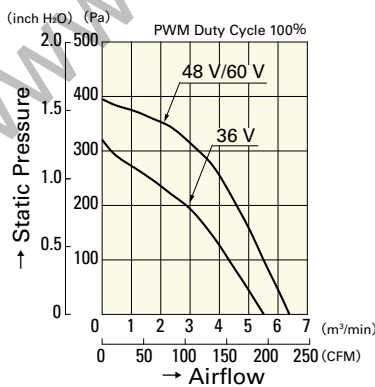


Airflow - Static Pressure Characteristics

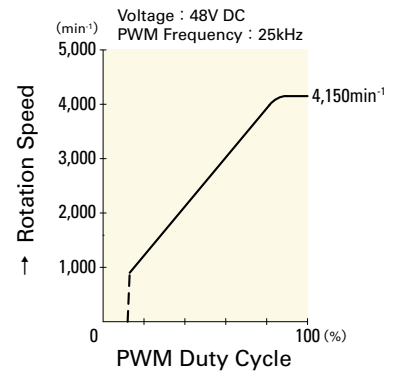
PWM Duty Cycle



Operating Voltage Range



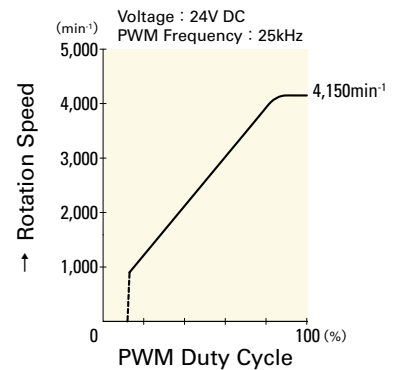
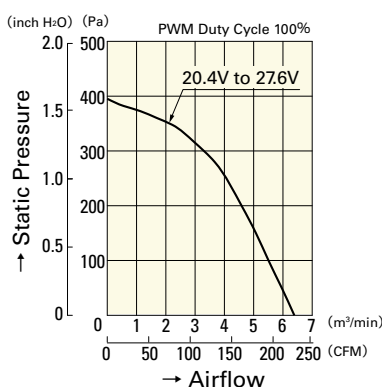
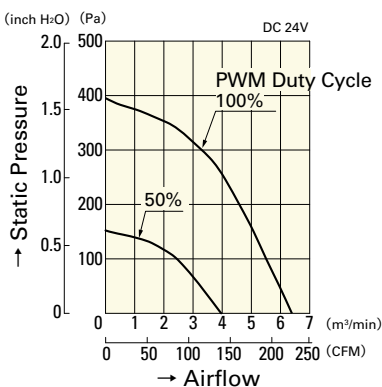
PWM Duty Speed Characteristics Example



9W1TJ48P0H61

9W1TJ48P0H61

9W1TJ48P0H61



9W1TJ24P0H61

9W1TJ24P0H61

9W1TJ24P0H61

φ 150_{mm}

San Ace 150W



General Specifications

- Material Motor case: 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)

φ 150mm × 35mm (Mass : 330g) **IP 54 9W1T** type

Specifications

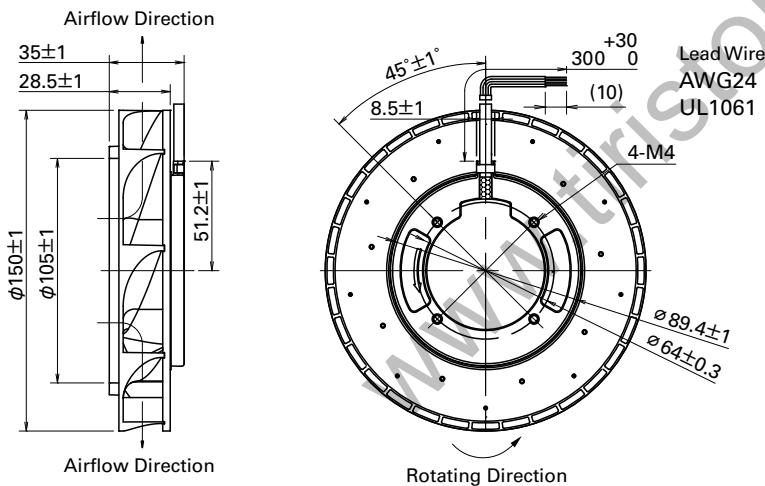
When our inletnozzle [Option (Model : 109-1081)] is mounted. The following nos. **have PWM controls and pulse sensors.**

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]
9W1TN48P1H01	48	36.0 to 55.2	100	0.32	15.4	3,800	3.83 135	390 1.57	59	-20 to +70	40,000/60°C (70,000/40°C)

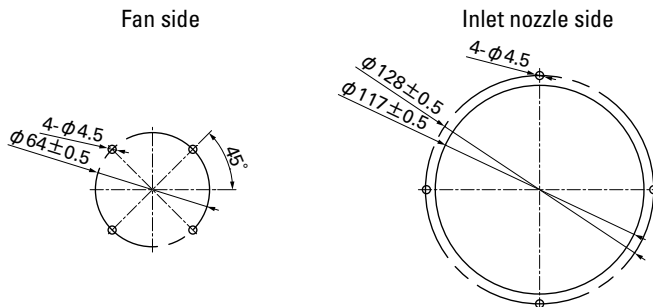
Note: Fan does not rotate when PWM duty cycle is 0%.
Max input is 22W at rated voltage.

※PWM Frequency : 25kHz

Dimensions (unit: mm)



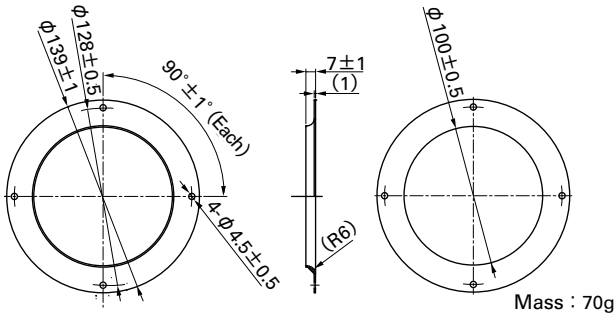
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

Inlet Nozzle

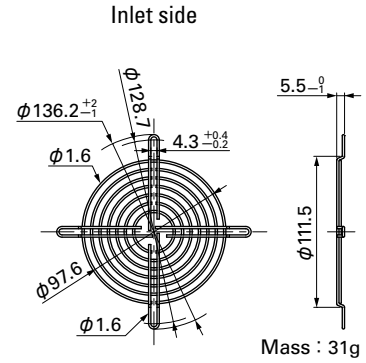
Model : 109-1081 Material : Steel sheet Surface treatment : Electro nickel plating (silver)
 : 109-1081H : Steel sheet : Cation electropainting (black)



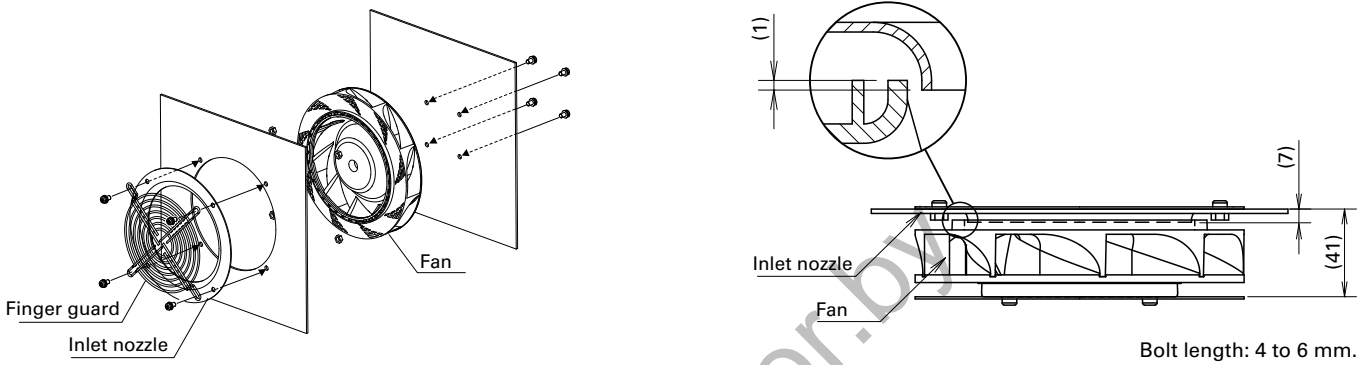
Inlet nozzle: Equipment to be mounted in inlet side for adjusting incoming airflow.

Finger Guards

Model : 109-1104 Surface treatment : Nickel-chrome plating (silver) Color
 : 109-1104H : Cation electropainting (black) : Cation electropainting (black)

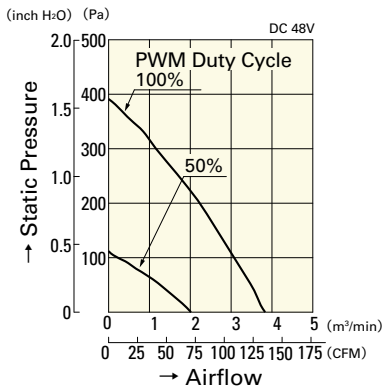


Reference Diagram for Mounting



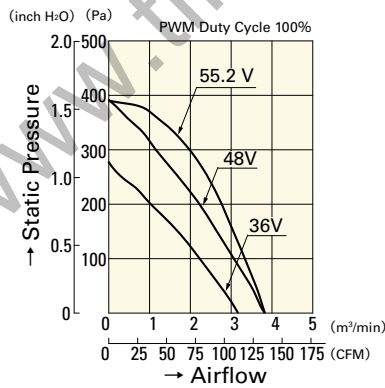
Airflow - Static Pressure Characteristics

PWM Duty Cycle



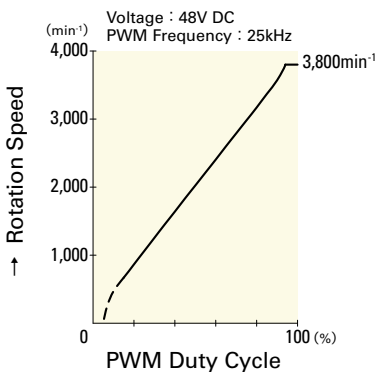
9W1TN48P1H01

Operating Voltage Range



9W1TN48P1H01

PWM Duty Speed Characteristics Example



9W1TN48P1H01

φ 175mm

San Ace 175W



General Specifications

- Material..... Motor case: 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)

φ 175mm × 69mm (Mass : 760g) **IP 54 9W1T type**

Specifications

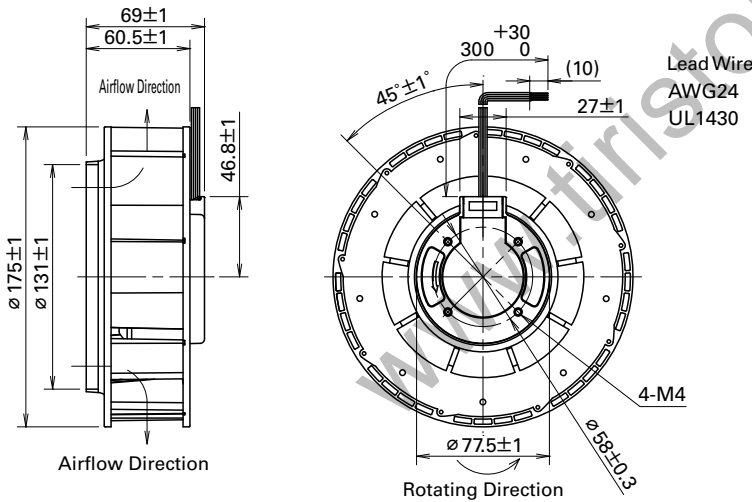
When inlet nozzle [Option (Model : 109-1073)] is mounted. The following nos. **have PWM controls and pulse sensors.**

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]
9W1TG48P0H61	48	36 to 60	100	0.65	31.2	3,100	9.0 318	360 1.44	64	-20 to +70	40,000/60°C (70,000/40°C)

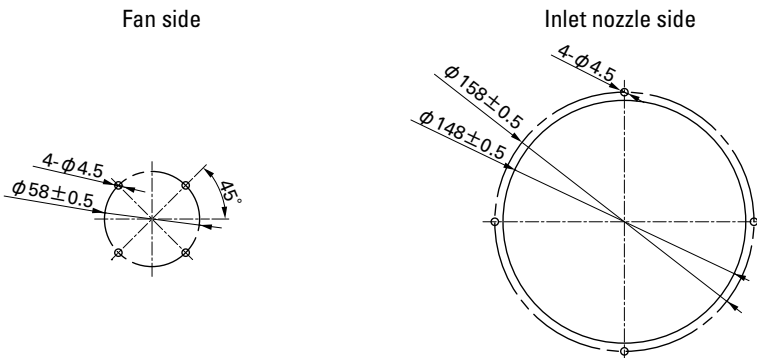
Note: Fan does not rotate when PWM duty cycle is 0%.
Max input is 60W at rated voltage.

*)PWM Frequency : 25kHz

Dimensions (unit: mm)



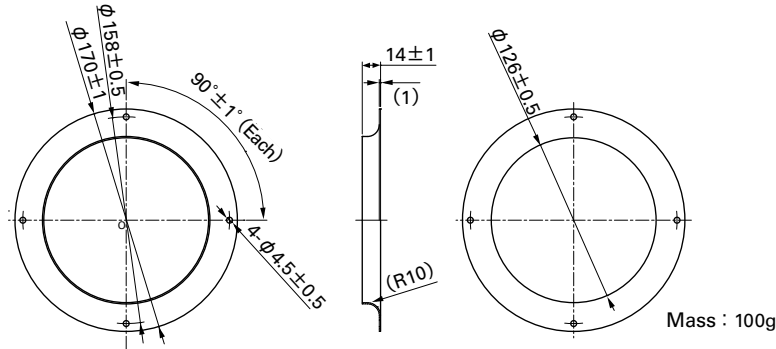
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

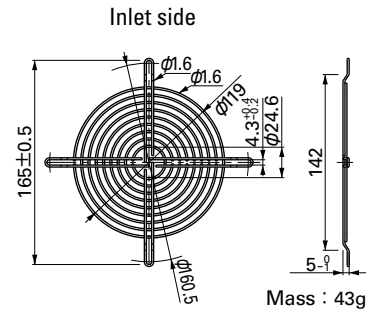
Inlet Nozzle

Model : 109-1073 Material : Steel sheet Surface treatment : Electro nickel plating (silver)
 : 109-1073H : Steel sheet : Cation electropainting (black)



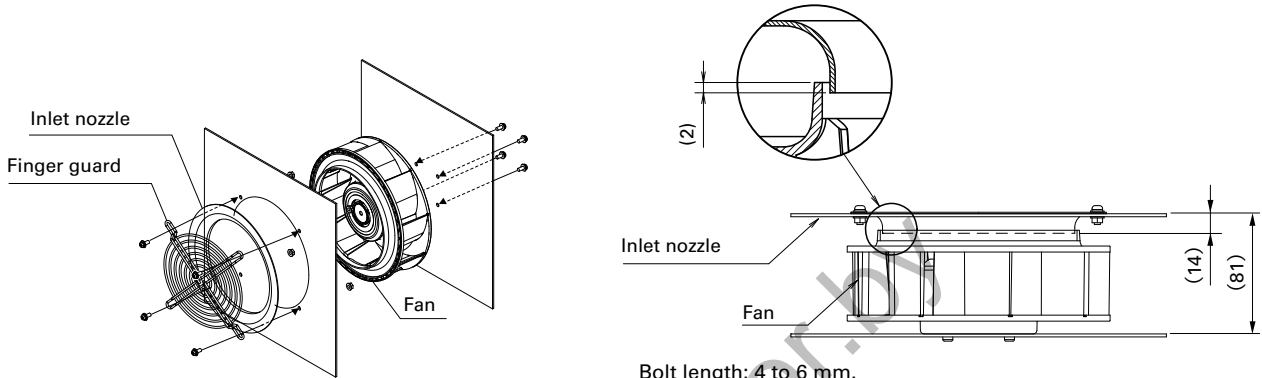
Finger Guards

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



Inlet nozzle: Equipment to be mounted in inlet side for adjusting incoming airflow.

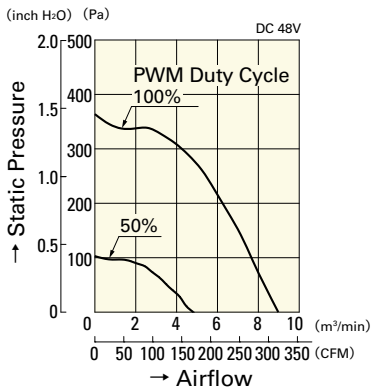
Reference Diagram for Mounting



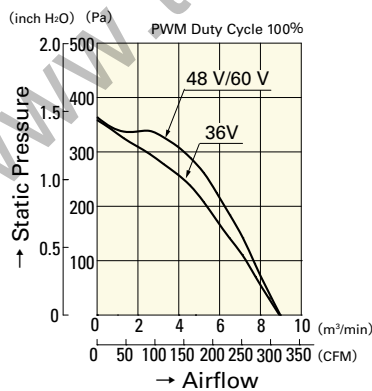
Bolt length: 4 to 6 mm.
 To prevent bolts from loosening, use plain washers and spring washers.

Airflow - Static Pressure Characteristics

PWM Duty Cycle



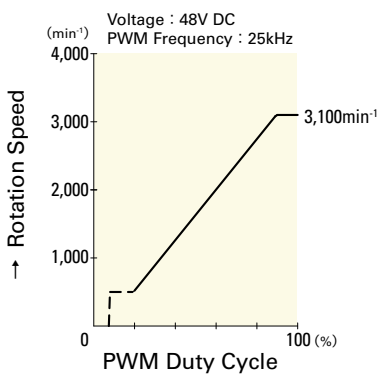
Operating Voltage Range



9W1TG48P0H61

9W1TG48P0H61

PWM Duty Speed Characteristics Example



9W1TG48P0H61

Oil Proof Fan

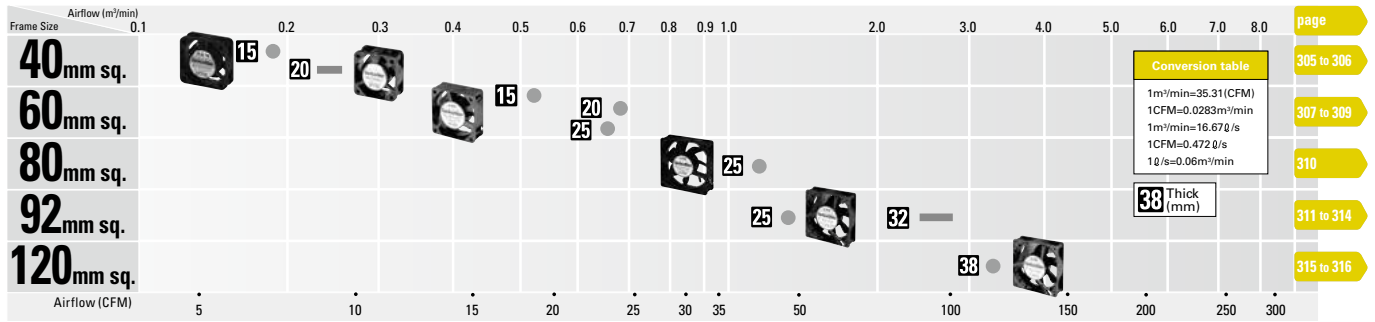
Cooling fan capable of operating in an oil-mist environment.

Related product

Splash Proof Fan ⇒ p. 245

Splash Proof Centrifugal Fan ⇒ p. 293

Domain Diagram



Model Numbering System

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

9WF	12	24	H	1	01	
Type name / frame material 9WF / Plastics	Frame size 04 : 40×40mm 06 : 60×60mm 08 : 80×80mm 09 : 92×92mm 12 : 120×120mm	Voltage 24 : 24V	Speed code H	Frame thickness 1 : 38mm thick 2 : 32mm thick 4 : 25mm thick 6 : 20mm thick 7 : 15mm thick	Sensor specifications 01 : With a pulse sensor 02 : Without a sensor D01 : With a lock sensor	Frame form Nil : Ribbed frame

How to Read Specifications

DC Fan											DC	
Model No.	① Rated Voltage [V]	② Operating Voltage Range [V]	③ Rated Current [A]	④ Rated Input [W]	⑤ Rated Speed [min ⁻¹]	⑥ Max. Airflow [m ³ /min] [CFM]		⑦ Max. Static Pressure [Pa] [inchH ₂ O]		⑧ SPL [dB(A)]	⑨ Operating Temperature [°C]	⑩ Expected Life [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)

- 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 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%. Expected life at 40°C ambient is just reference value.
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

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.

40 mm sq.

San Ace 40WF



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)

The product can be used in an oil mist environment*

*Environment where machining oil mist is scattered.
Usage of this product requires an evaluation with the oil that will be used.

40×40×15 mm (Mass : 35g) **9WF** type

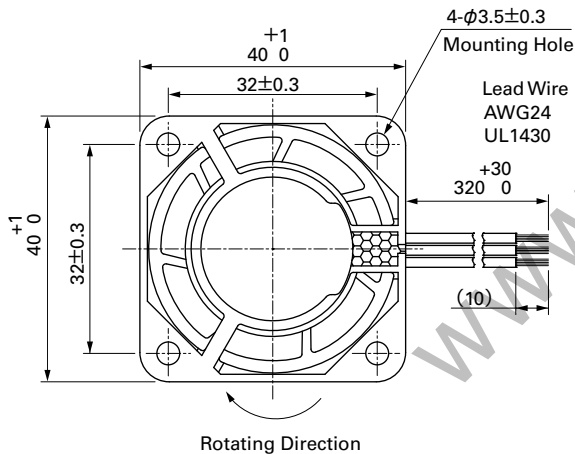
Specifications

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

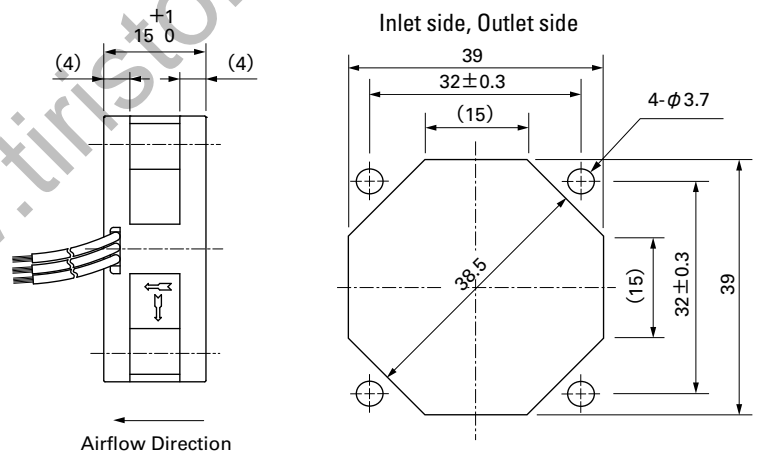
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WF0424H701	24	20.4 to 27.6	0.085	2.04	11,300	0.195 6.9	80 0.32	38	-20 to +70	40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



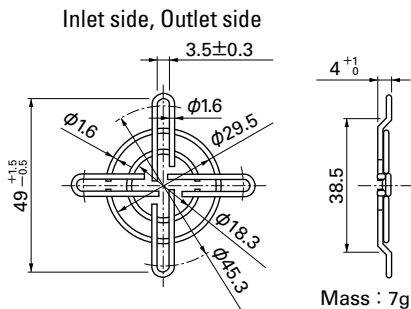
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



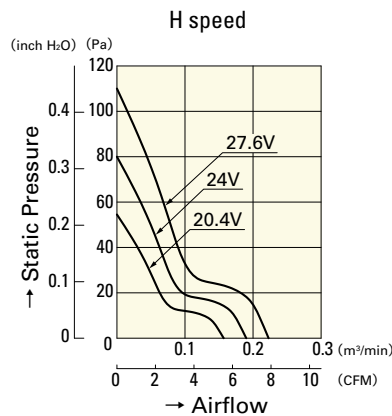
Options (unit: mm)

Finger Guards

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



Airflow - Static Pressure Characteristics



9WF0424H701

40mm sq.

San Ace 40WF



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)

The product can be used in an oil mist environment*

*Environment where machining oil mist is scattered.
Usage of this product requires an evaluation with the oil that will be used.

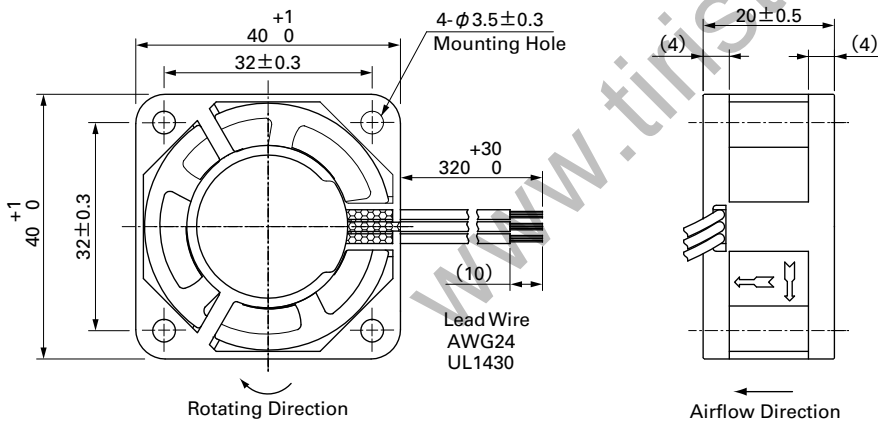
40×40×20mm (Mass : 50g) 9WF type

Specifications The following nos. have pulse sensors and ribs.

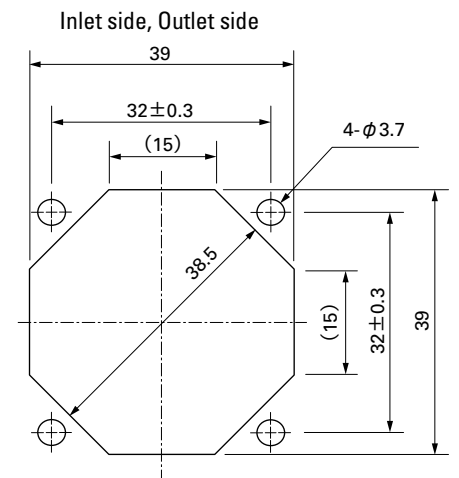
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WF0424H601	24	20.4 to 27.6	0.11	2.64	13,100	0.26 9.2	90 0.361	42	-20 to +70	40,000/60°C
9WF0424F601			0.076	1.82	11,000	0.22 7.77	62.8 0.252	37		

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



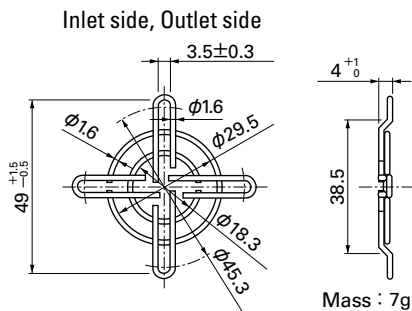
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



Options (unit: mm)

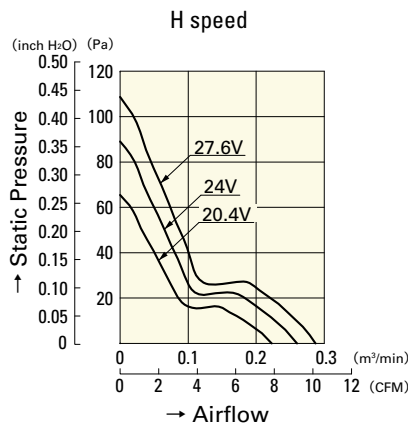
Finger Guards

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

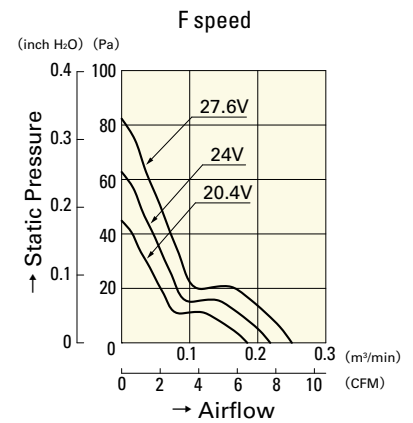


Mass : 7g

Airflow - Static Pressure Characteristics



9WF0424H601



9WF0424F601

60 mm sq.

San Ace 60WF



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)

The product can be used in an oil mist environment*

*Environment where machining oil mist is scattered.
Usage of this product requires an evaluation with the oil that will be used.

60×60×15 mm (Mass : 62g) **9WF** type

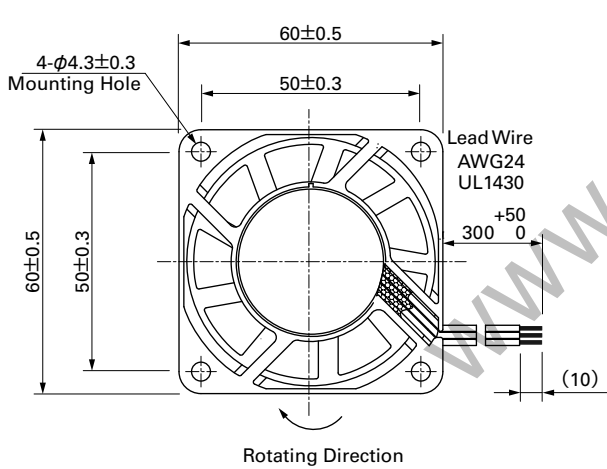
Specifications

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

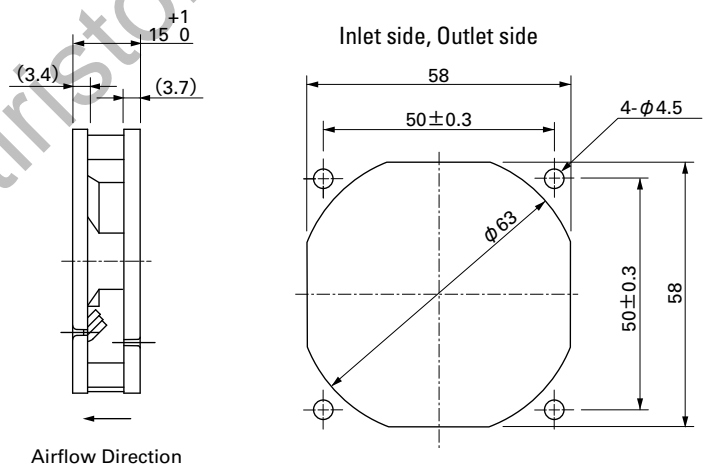
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WF0624H701	24	20.4 to 27.6	0.12	2.88	6,800	0.52 18.3	95 0.38	44	- 20 to + 70	40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



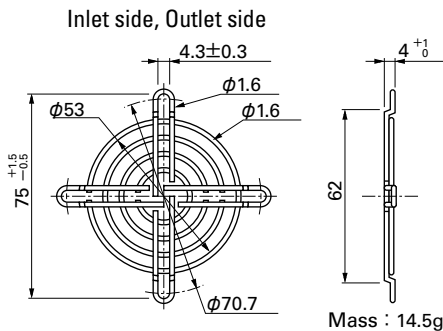
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



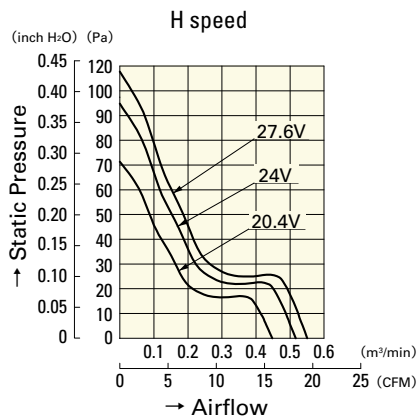
Options (unit: mm)

Finger Guards

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



Airflow - Static Pressure Characteristics



9WF0624H701

60mm sq.

San Ace 60WF



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)

The product can be used in an oil mist environment*

*Environment where machining oil mist is scattered.
Usage of this product requires an evaluation with the oil that will be used.

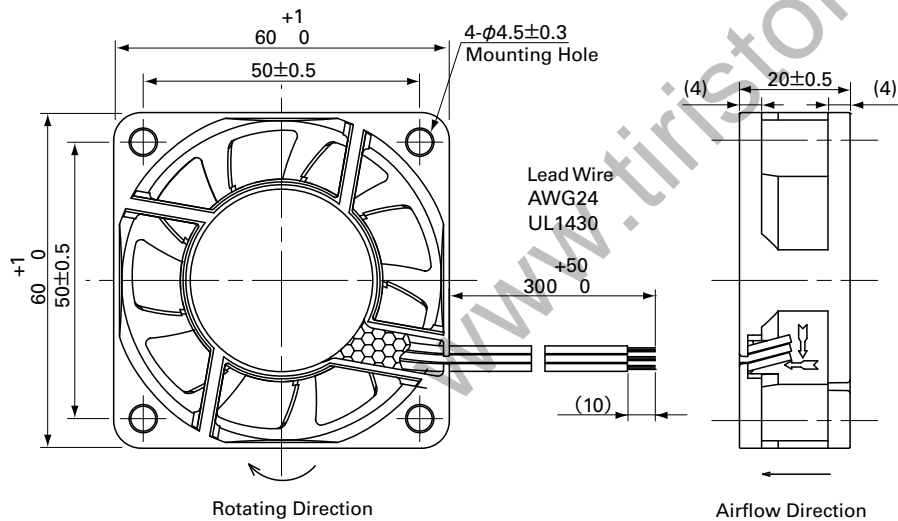
60×60×20mm (Mass : 80g) 9WF type

Specifications The following nos. have pulse sensors and ribs.

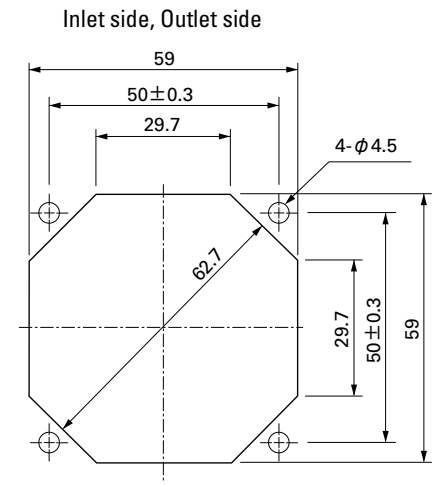
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WF0624H601	24	12 to 27.6	0.15	3.6	6,600	0.69 24.3	114 0.45	42	-20 to +70	40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



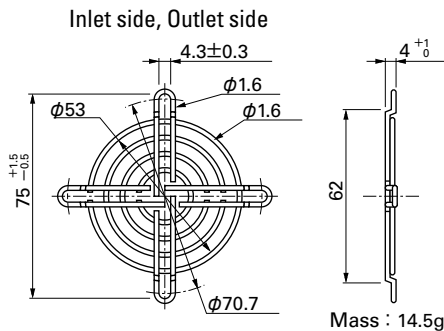
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



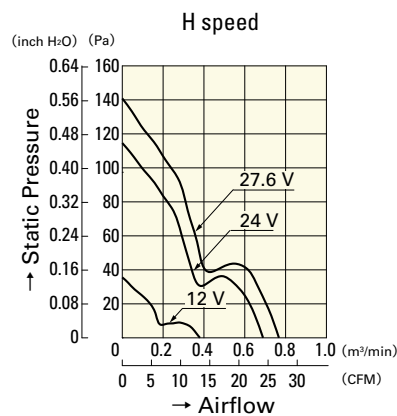
Options (unit: mm)

Finger Guards

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



Airflow - Static Pressure Characteristics



9WF0624H601

60_{mm sq.}

San Ace 60WF



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)

The product can be used in an oil mist environment*

*Environment where machining oil mist is scattered.
Usage of this product requires an evaluation with the oil that will be used.

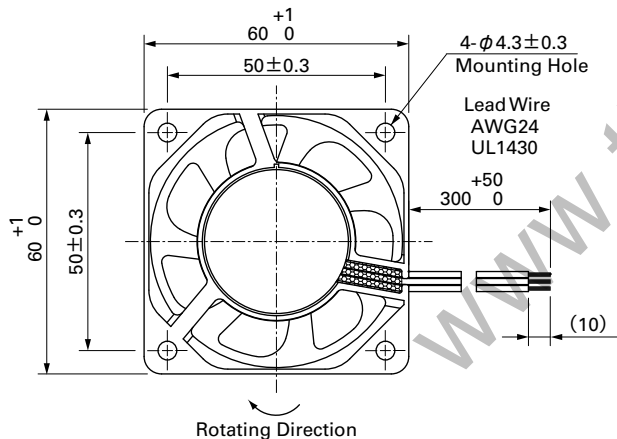
60×60×25mm (Mass : 110g) 9WF type

Specifications The following nos. have pulse sensors and ribs.

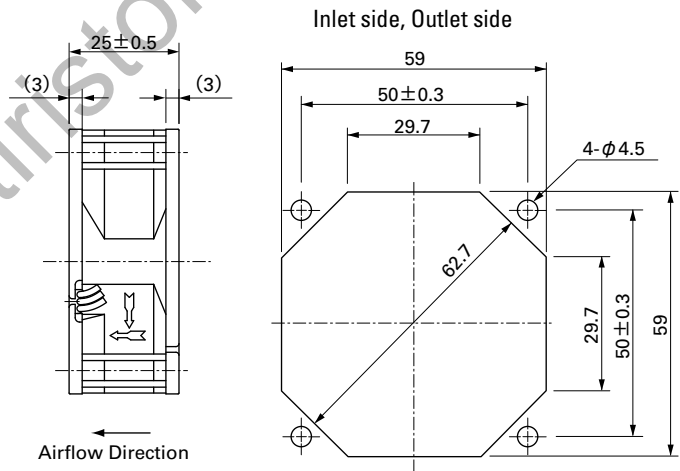
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WF0624H401	24	20.4 to 27.6	0.15	3.6	6,500	0.67 23.6	97 0.38	41	- 20 to + 70	40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



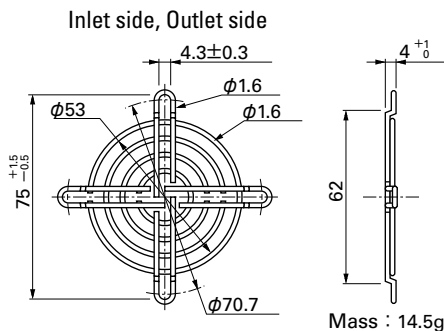
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



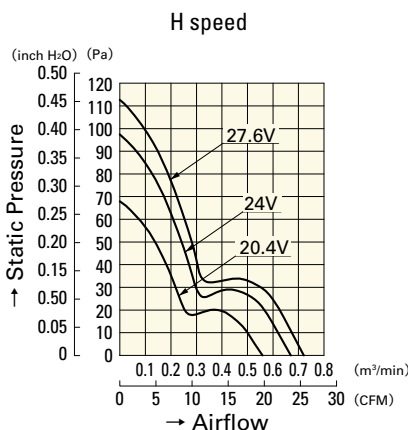
Options (unit: mm)

Finger Guards

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



Airflow - Static Pressure Characteristics



9WF0624H401

80mm sq.

San Ace 80WF



General Specifications

- Material.....Frame: Plastics (Flammability: UL94V-0),
Impeller: Plastics (Flammability: UL94V-0)
- Expected LifeRefer 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)

The product can be used in an oil mist environment*

*Environment where machining oil mist is scattered.
Usage of this product requires an evaluation with the oil that will be used.

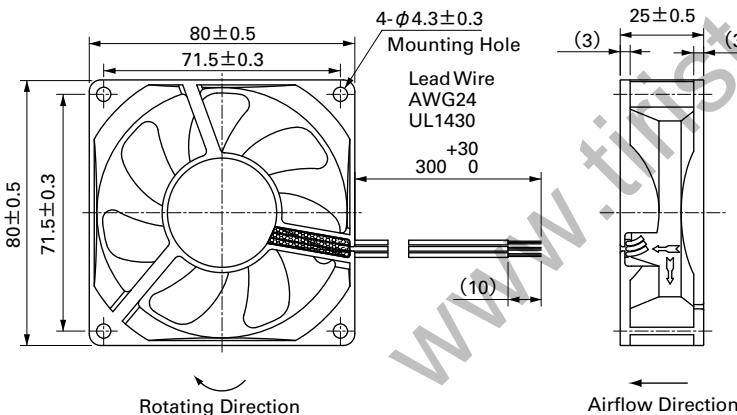
80×80×25mm (Mass : 130g) 9WF type

Specifications The following nos. have pulse sensors and ribs.

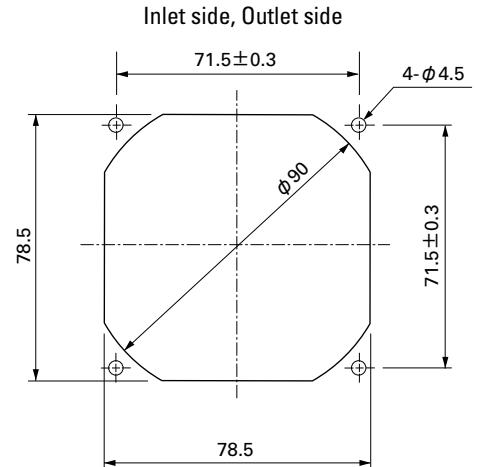
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WF0824S401	24	20.4 to 27.6	0.16	3.84	4,000	1.2 42.4	58 0.23	38	-20 to +70	40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



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

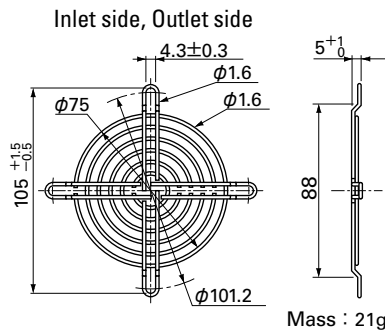
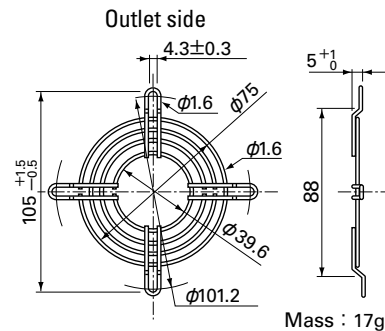


Options (unit: mm)

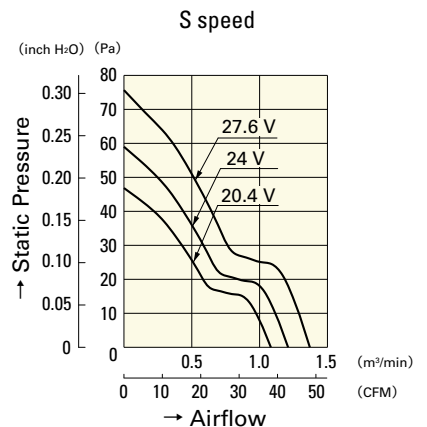
Finger Guards

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

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



Airflow - Static Pressure Characteristics



9WF0824S401

92mm sq.

San Ace 92WF



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)

The product can be used in an oil mist environment*

*Environment where machining oil mist is scattered.
Usage of this product requires an evaluation with the oil that will be used.

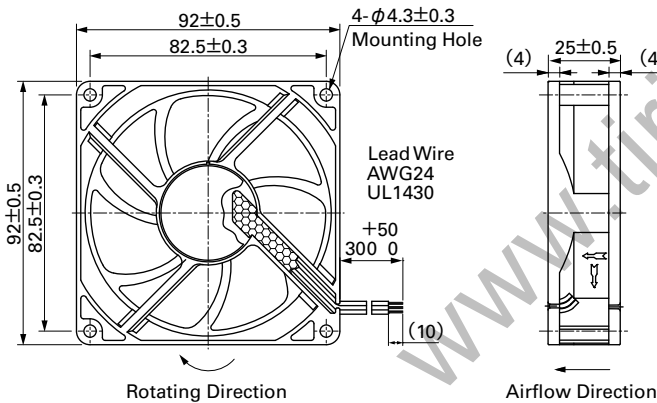
92×92×25mm (Mass : 120g) **9WF** type

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

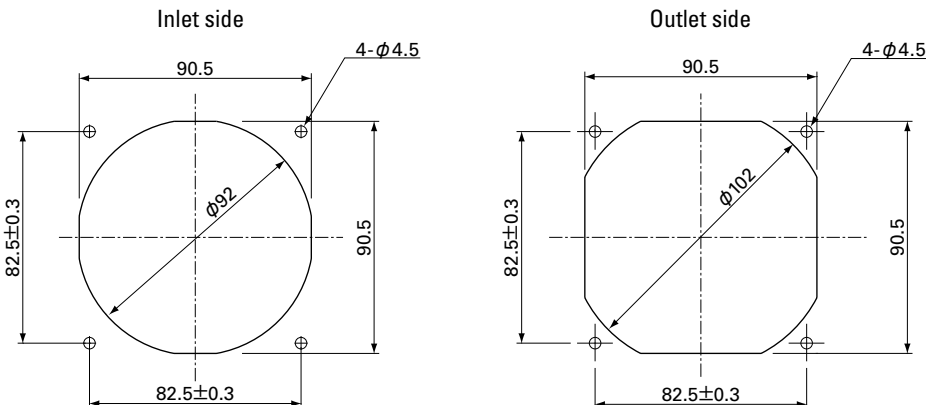
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WF0924H401	24	20.4 to 27.6	0.13	3.12	3,900	1.45 51.2	66 0.26	42.5	-20 to +70	40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



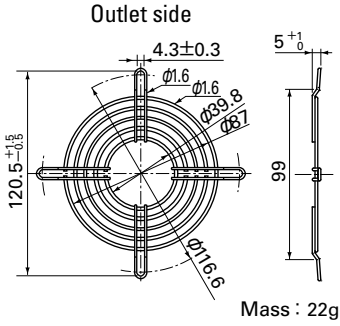
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



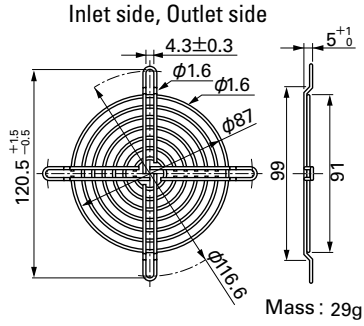
Options (unit: mm)

Finger Guards

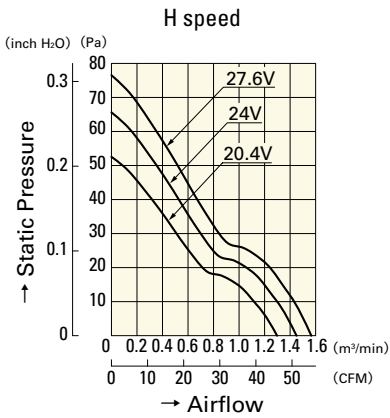
Model : 109-099C Surface treatment : Nickel-chrome plating (silver) Color



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



Airflow - Static Pressure Characteristics



9WF0924H401

www.tiristor.by

92mm sq.

San Ace 92WF



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)

The product can be used in an oil mist environment*

*Environment where machining oil mist is scattered.
Usage of this product requires an evaluation with the oil that will be used.

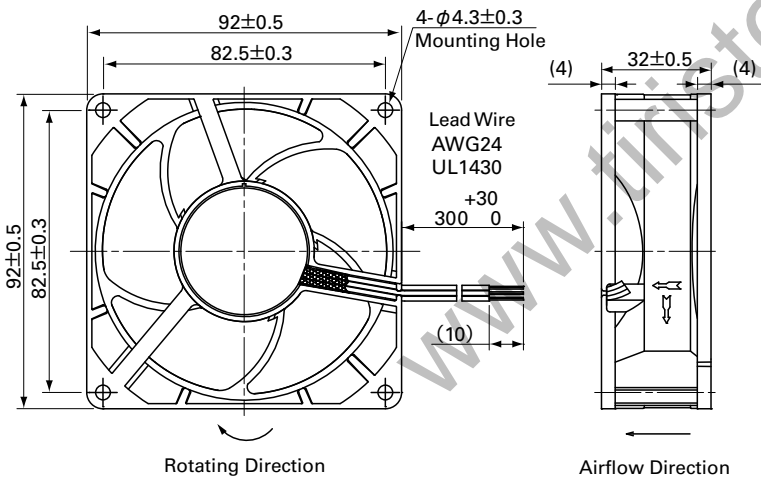
92×92×32mm [Mass : 185g] **9WF** type

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

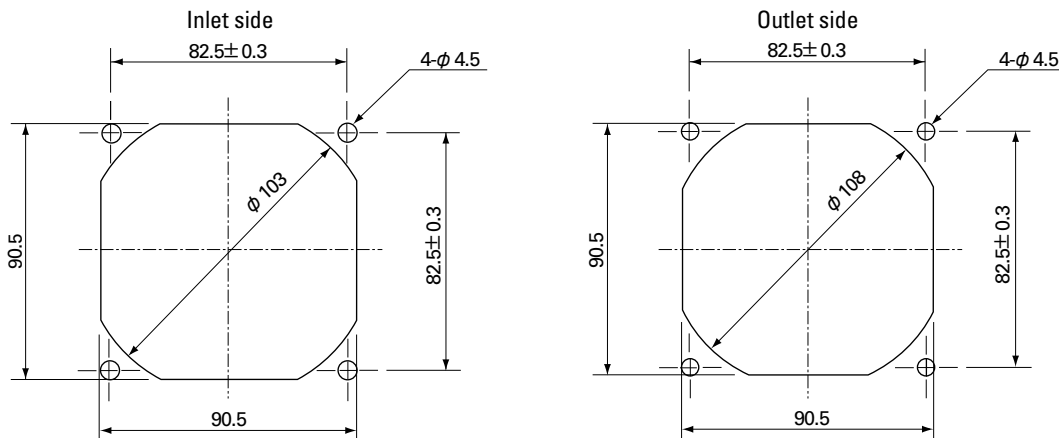
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WF0924S201	24	20.4 to 27.6	0.5	12	7,300	2.8 98.9	255 1.02	58	-20 to +70	40,000/60°C
9WF0924H201			0.35	8.4	6,500	2.45 86.5	200 0.8	56		

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



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

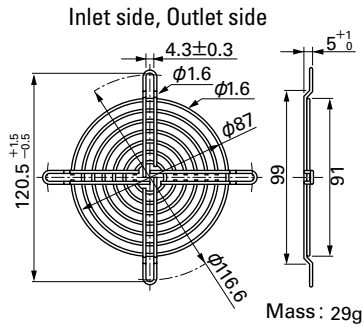
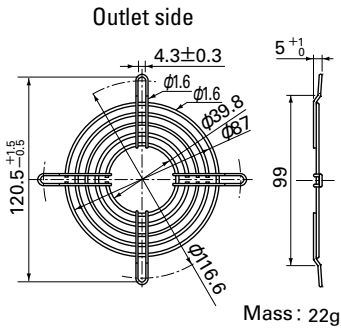


Options (unit: mm)

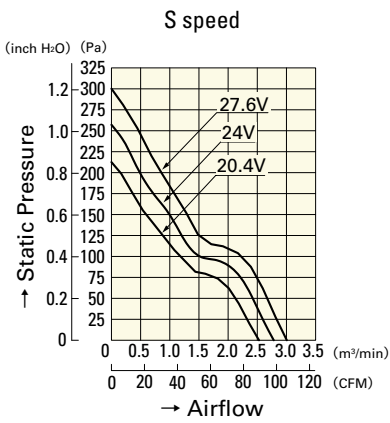
Finger Guards

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

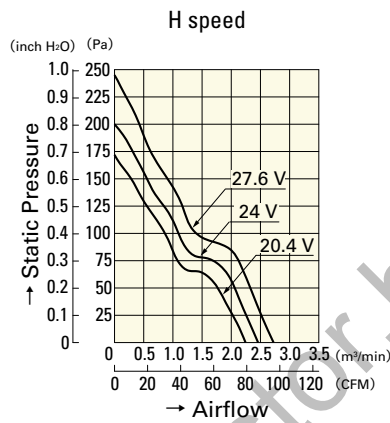
Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color
: 109-099H : Cation electropainting (black)



Airflow - Static Pressure Characteristics



9WF0924S201



9WF0924H201

DC

Oil Proof Fan 92mm

www.tiinstor.by

120mm sq.

San Ace 120WF



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)

The product can be used in an oil mist environment*

*Environment where machining oil mist is scattered.
Usage of this product requires an evaluation with the oil that will be used.

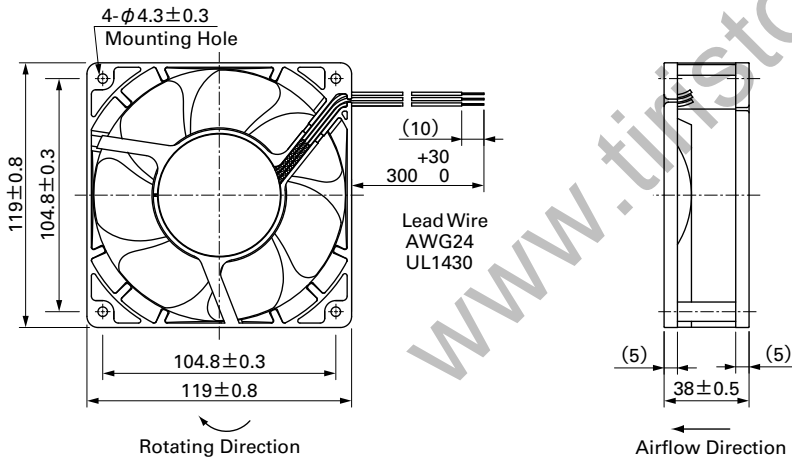
120×120×38mm (Mass : 355g) **9WF type**

Specifications The following nos. have pulse sensors and ribs.

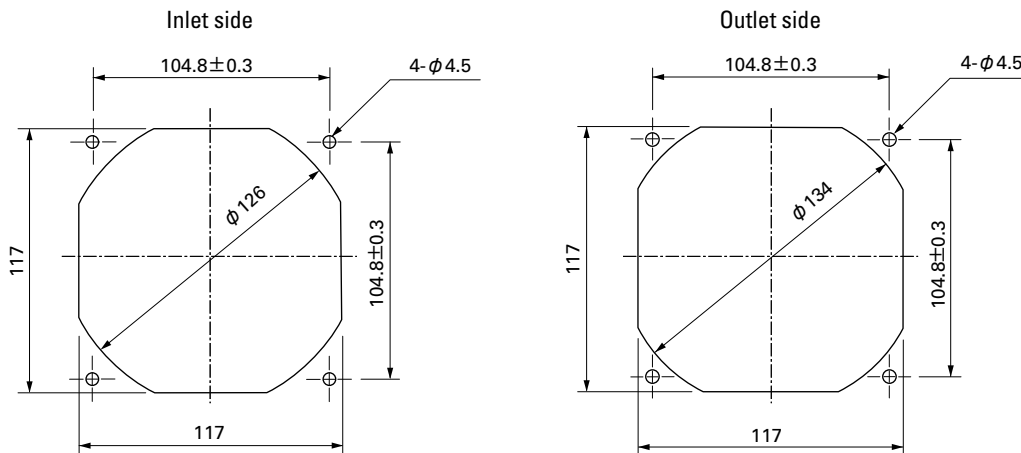
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WF1224H101	24	20.4 to 27.6	0.32	7.68	3,100	3.34 118	100 0.40	46	- 20 to + 70	40,000/60°C

Other sensor specifications are available as options. Please refer to the index (p. 511).

Dimensions (unit: mm)



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

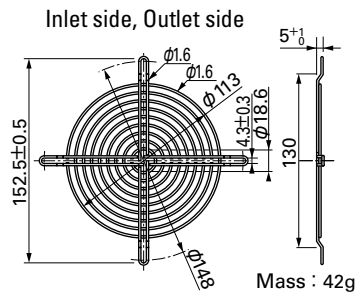
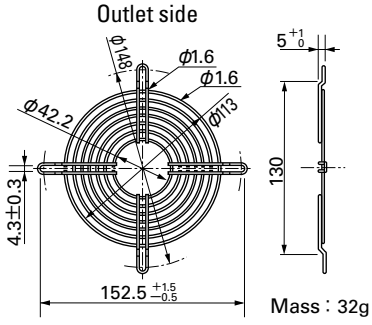


Options (unit: mm)

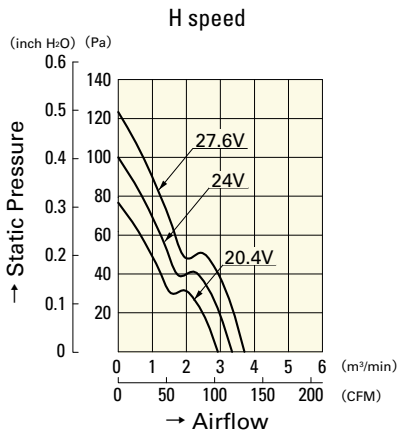
Finger Guards

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

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



Airflow - Static Pressure Characteristics



9WF1224H101

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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

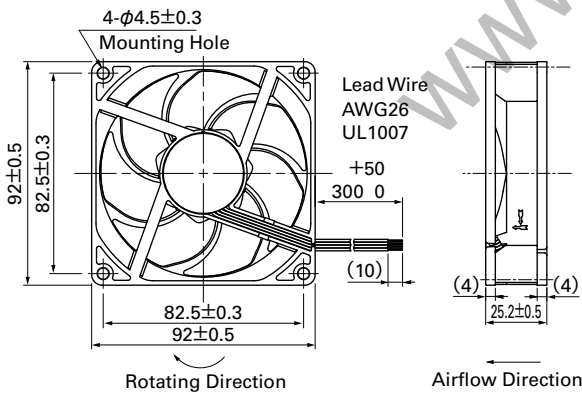
The following nos. **have PWM controls, pulse sensors, and ribs.** For ribless, append "1" to the model no.

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	0.65 23.3	9.4 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	0.65 23.3	9.4 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	0.65 23.3	9.4 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	0.65 23.3	9.4 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	0.65 23.3	9.4 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	0.65 23.3	9.4 0.04	14		

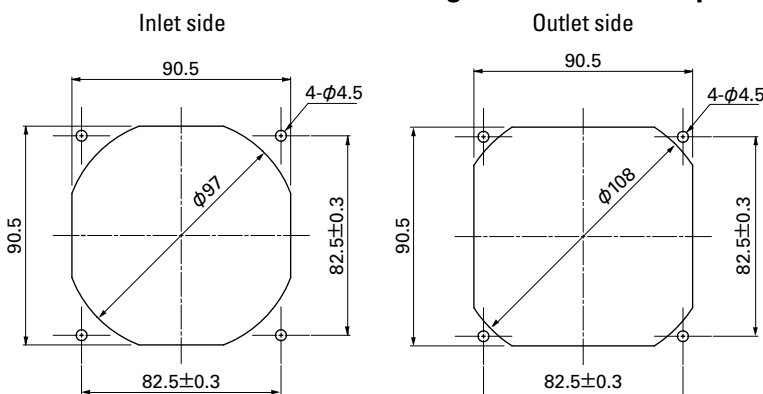
※PWM Frequency : 25kHz

Other sensor specifications are available as options. Please refer to the index (p. 506).

Dimensions (unit: mm) (With ribs)



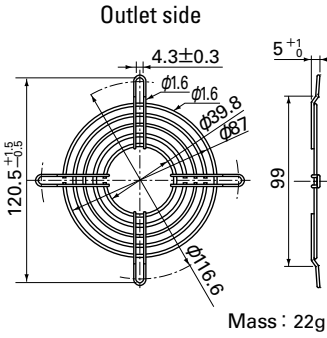
Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)



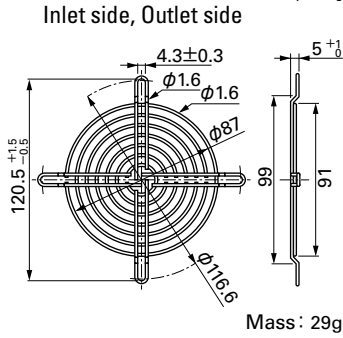
Options (unit: mm)

Finger Guards

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

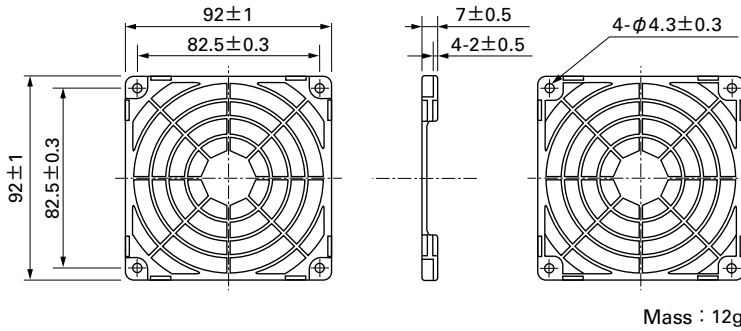


Model : 109-099E Surface treatment : Nickel-chrome plating (silver) Color (silver)
: 109-099H : Cation electropainting (black)



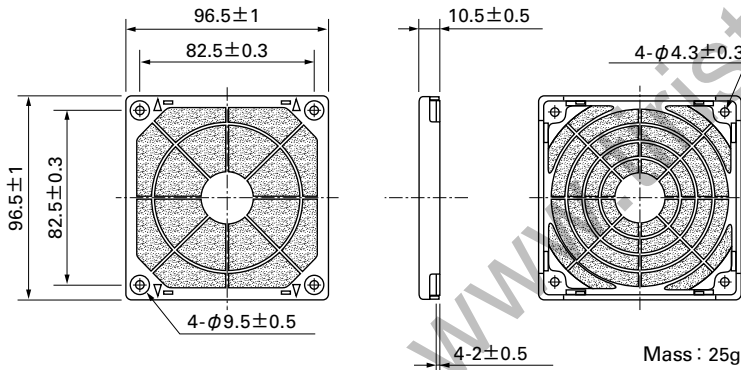
Resin Finger Guards

Model : 109-1001G



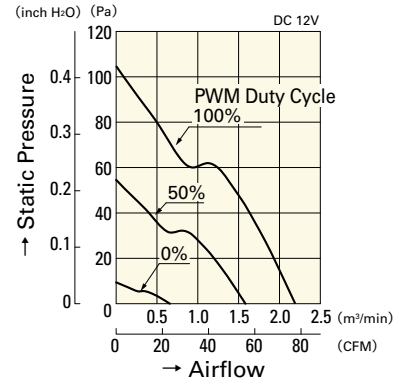
Resin Filter Kits

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



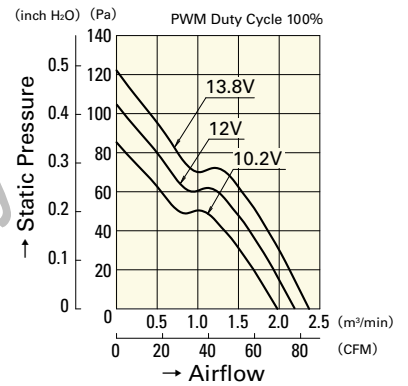
Airflow - Static Pressure Characteristics

PWM Duty Cycle



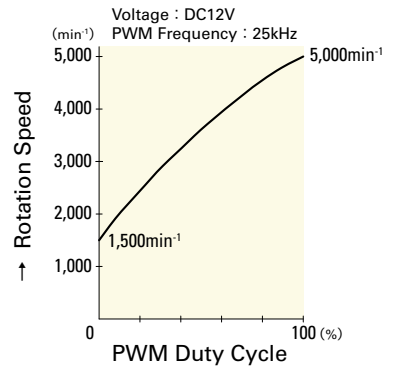
9GA0912P4J03

Operating Voltage Range



9GA0912P4J03

PWM Duty - Speed Characteristics Example



9GA0912P4J03

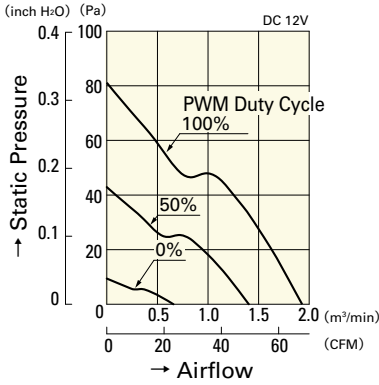
92mm sq.

San Ace 92

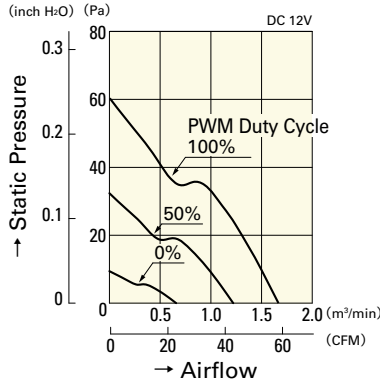
92×92×25mm [Mass : 125g]

Airflow - Static Pressure Characteristics

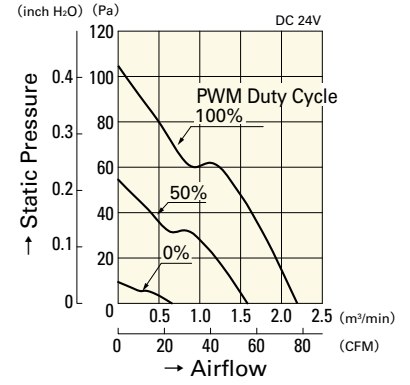
PWM Duty Cycle



9GA0912P4G03

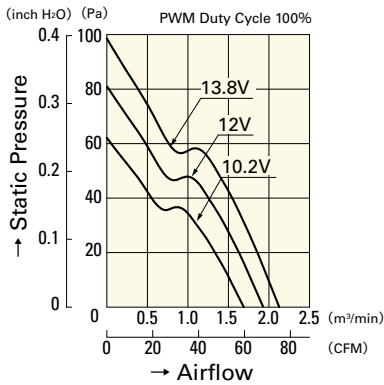


9GA0912P4S03

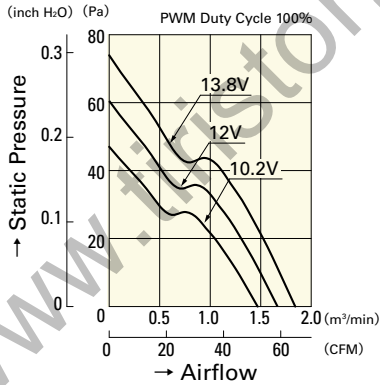


9GA0924P4J03

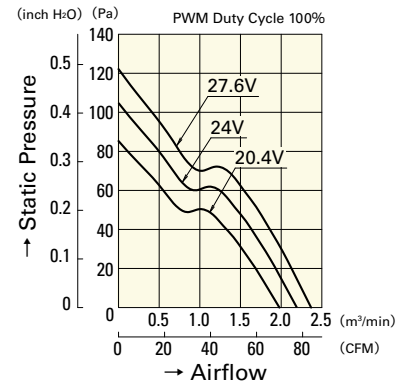
Operating Voltage Range



9GA0912P4G03

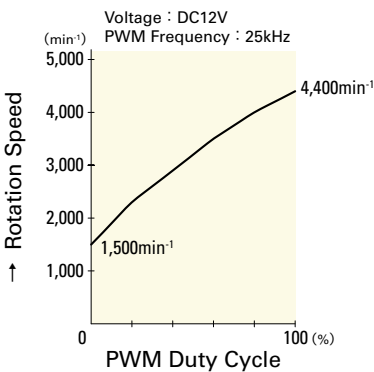


9GA0912P4S03

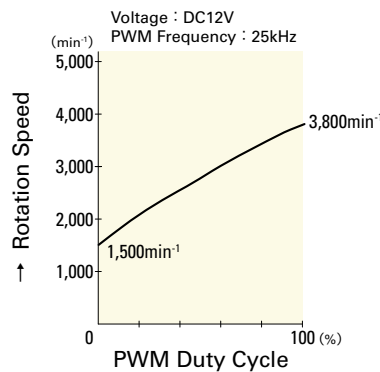


9GA0924P4J03

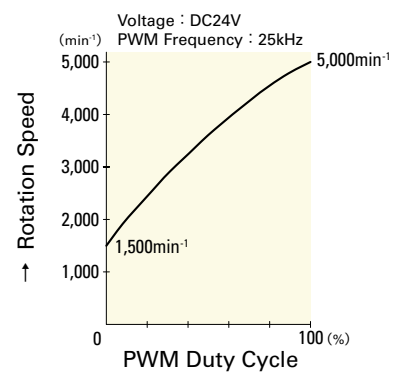
PWM Duty - Speed Characteristics Example



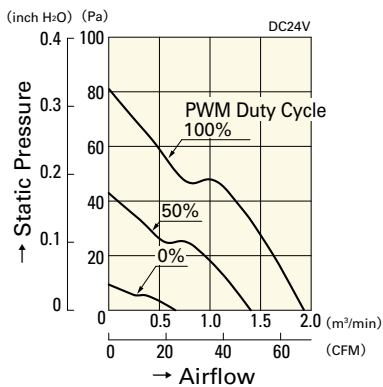
9GA0912P4G03



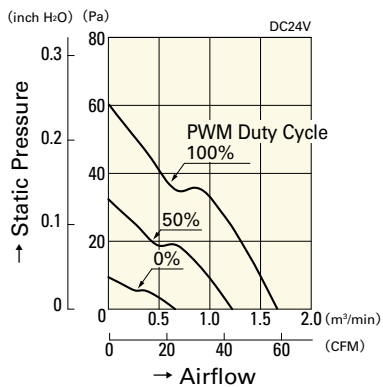
9GA0912P4S03



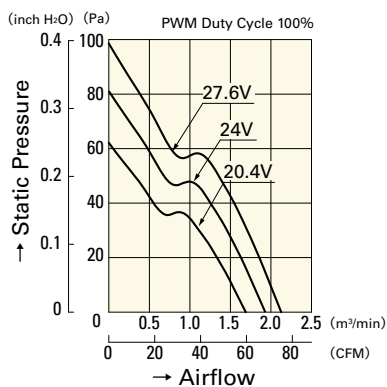
9GA0924P4J03



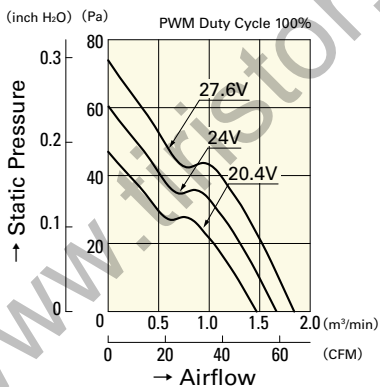
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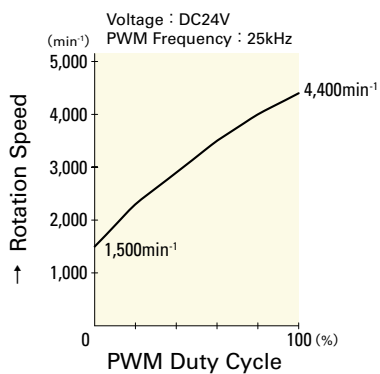
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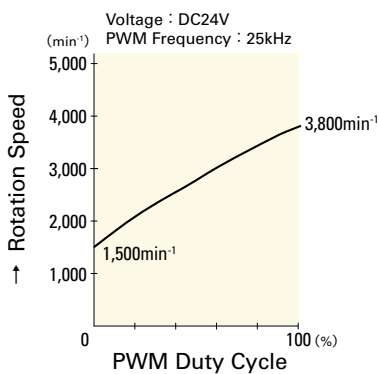
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