

COOLING FAN

San Ace



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SANYO DENKI

**2018
Ver.2**

San Ace Recommendations

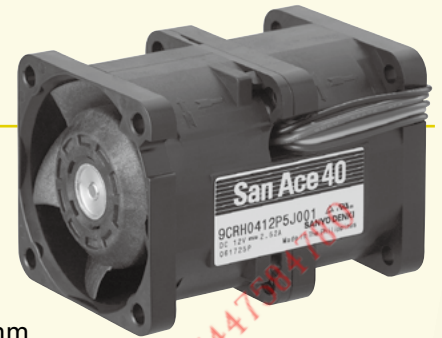
Featuring New Products

NEW

DC Counter Rotating Fan 9CRH type

The series lineup has been enriched with a new model featuring higher static pressure than our current model*. It offers ideal cooling solutions for servers, power supplies, ICT devices, and data storage systems.

* 40×40×56 mm San Ace 40 9CRV type.



40×40×56 mm
pp. 227 to 228

NEW

DC G Proof Fan 9GP type

These cooling fans can withstand high levels of G-force. These are suitable for cooling devices that are required to operate in environments with high G-force or vibration.

120×120×38 mm Ø172×150×51 mm
pp. 408 to 409 pp. 410 to 411

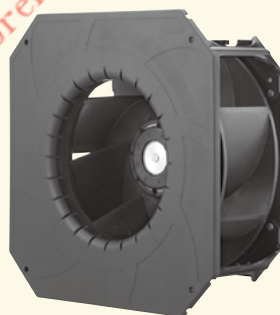


DC Bracket-mounted Centrifugal Fan 9B1T type

The Centrifugal Fan and an inlet nozzle come integrated in one, making the installation work to your device easy.



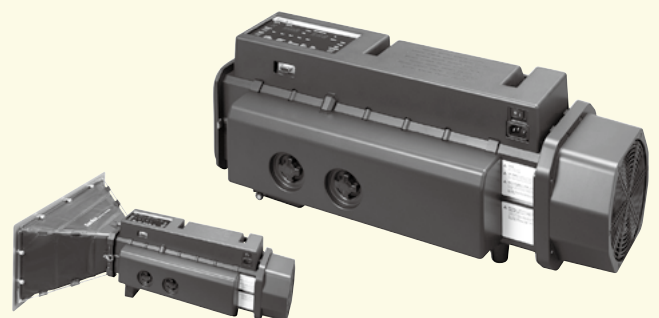
270×270×99 mm
pp. 430 to 432



270×270×119 mm
pp. 433 to 434

Airflow Tester pp. 506 to 511

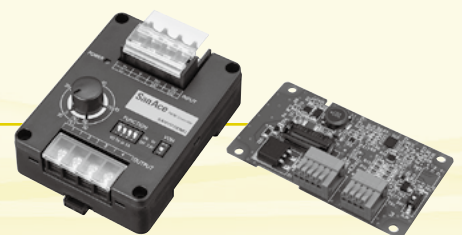
This is a portable measuring device that enables you to easily measure the system impedance and operating airflow of devices.



With connection duct mounted

PWM Controller pp. 500 to 505

This device provides external speed control of PWM control function fans. By using this product, PWM control function fans can be fully utilized without the need for preparing new circuits, contributing to reducing the system power consumption and the fan noise.



Box type

PCB type

A wide variety of products are available in various features. See the following pages to find out more.

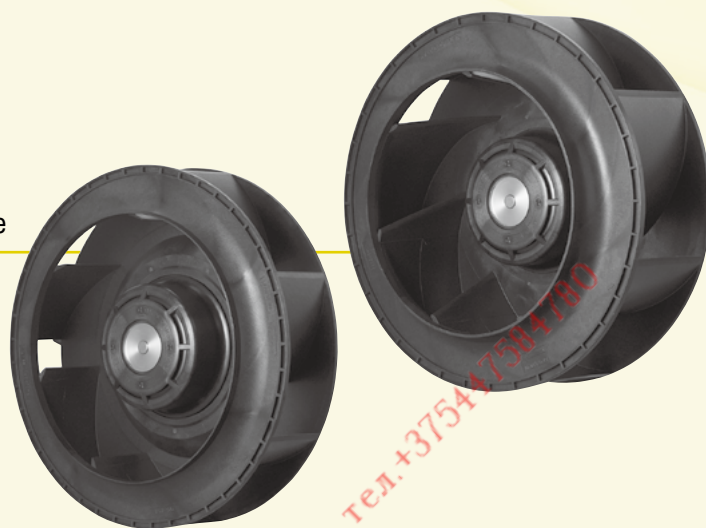
NEW

DC Splash Proof Centrifugal Fan 9W2T type

The series lineup of the Splash Proof Centrifugal Fan has been expanded.

Ø221×71 mm
pp. 328 to 329

Ø225×99 mm
pp. 330 to 331



NEW

DC Reversible Flow Fan 9RF type

The series lineup has been expanded for the Reversible Flow Fans that can blow air in two switchable directions. These are especially suitable for ventilating houses, and cooling beverage vending machines, food display cases, and LED lights.

Ø92×38 mm
pp. 260 to 261



AC ACDC Fan 9AD type

This fan operates by internally converting AC power into DC power. It provides the superior performance of a DC fan with the flexibility of AC input.



92×92×38 mm
pp. 458 to 460

120×120×38 mm
pp. 461 to 463

NEW

DC Blower 9BMC type

The series lineup has been expanded with a new model with higher airflow and higher static pressure than our current model*. It is suitable for servers, power supplies, printers, copy machines, air purifiers, house ventilation devices, and fuel cells.

* 97×33 mm San Ace B97 9BMB type.



97×33 mm
pp. 444 to 445

NEW

DC Low Power Consumption Fan 9GA type

The series lineup has been expanded with a new model featuring even lower power consumption than our current model*. It is suitable for use in medical equipment, electrical measuring instruments, PV inverters, industrial inverters, LCDs, and arcade amusement machines.

* 120×120×25 mm San Ace 120 9GV type.

120×120×25 mm
pp. 165 to 168



Domain Diagram 6 to 9

DC	DC Fan	11
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	80 mm sq.	97 to 140
	92 mm sq.	141 to 162
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DC

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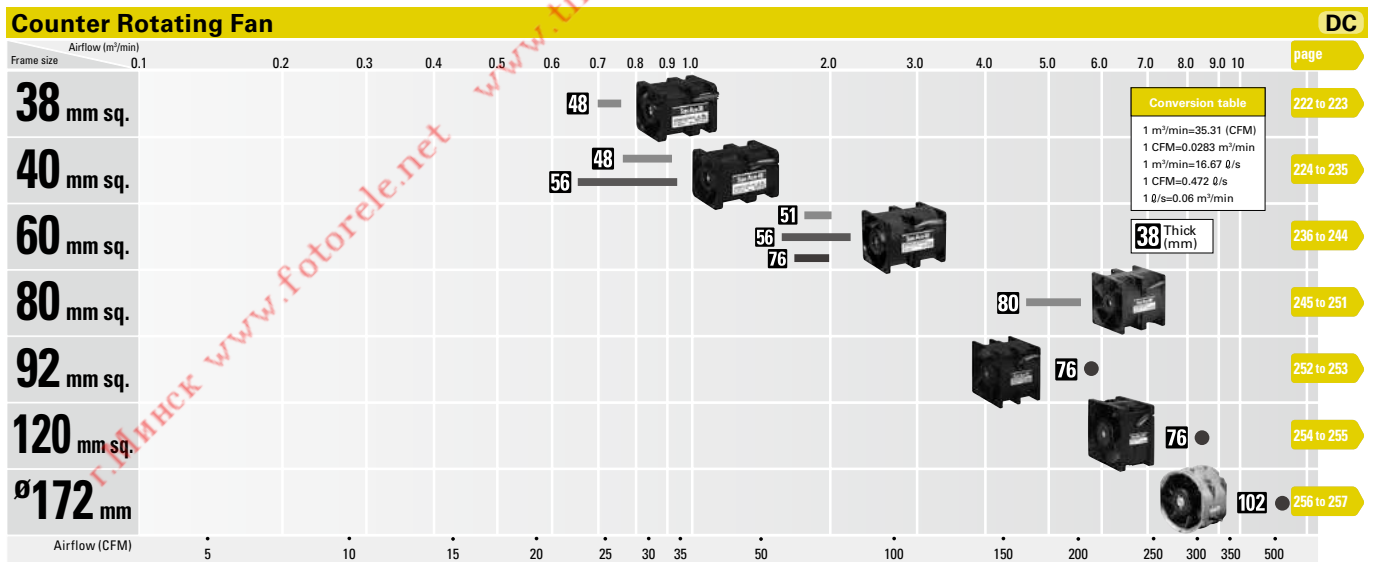
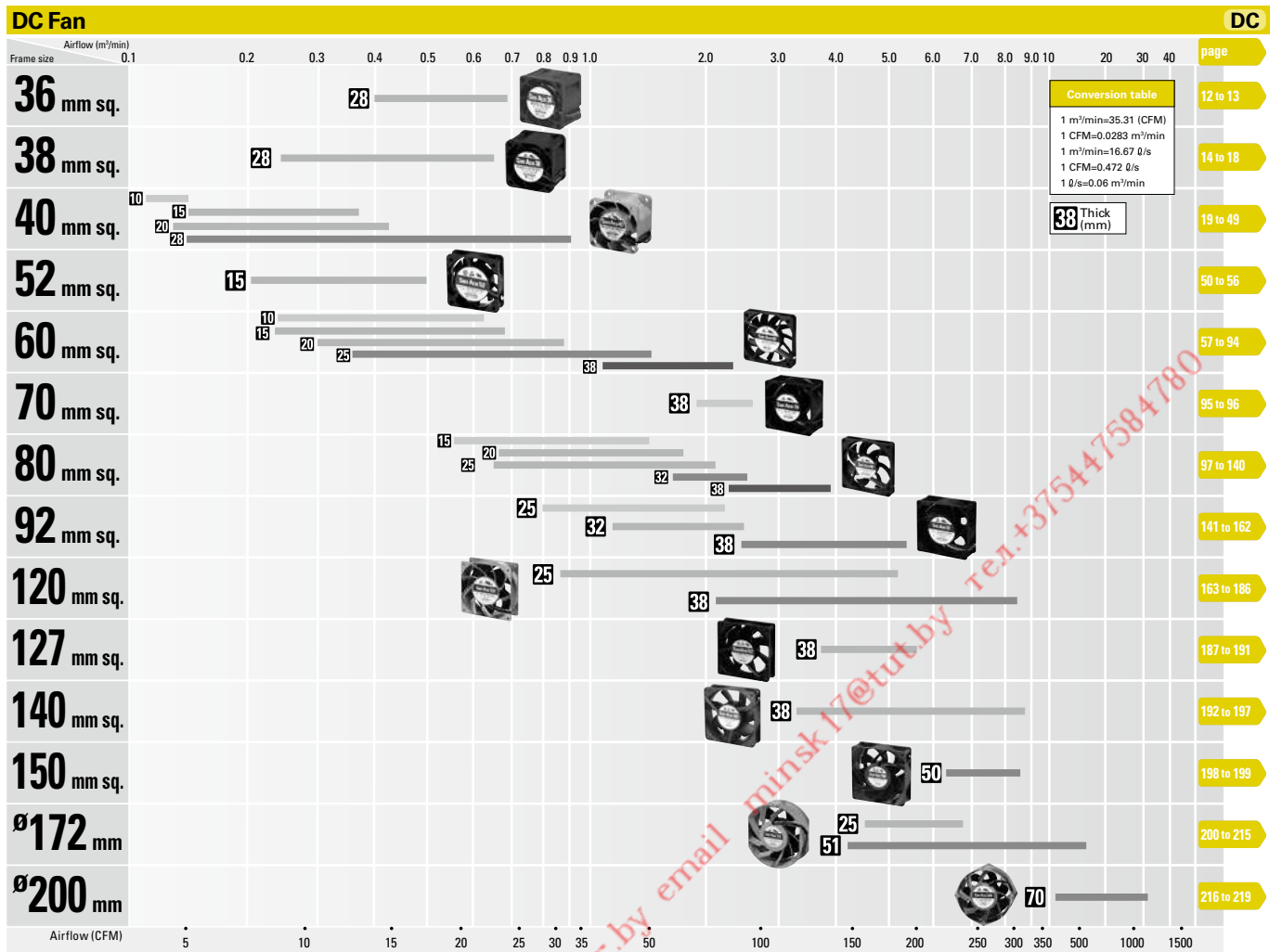
AC	ACDC Fan	457
	92 mm sq.	458 to 460
	120 mm sq.	461 to 463
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	60 mm sq.	466 to 469
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	92 mm sq.	478 to 481
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	160 mm sq.	491 to 493
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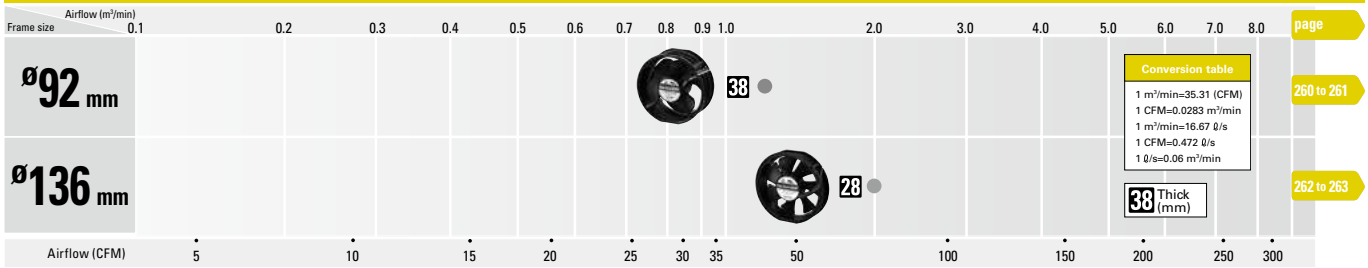
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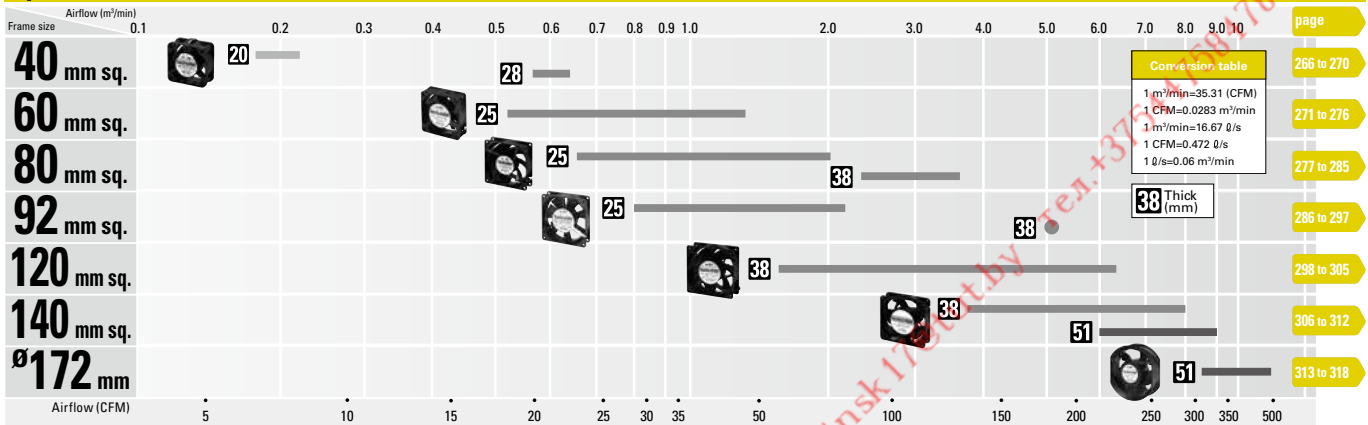
Reversible Flow Fan

DC



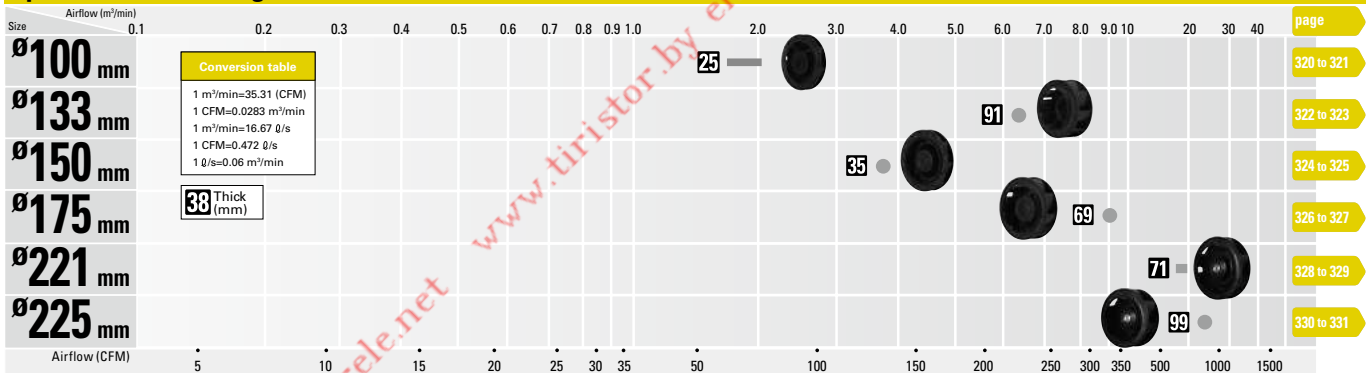
Splash Proof Fan

DC



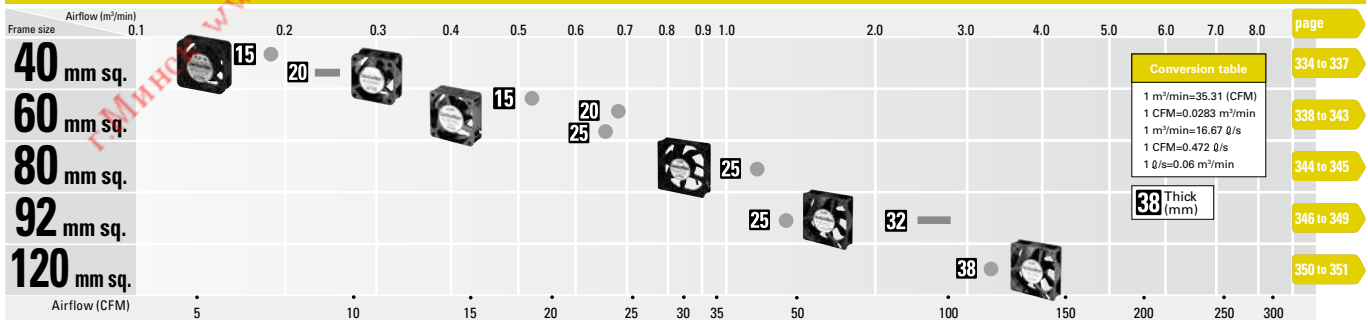
Splash Proof Centrifugal Fan

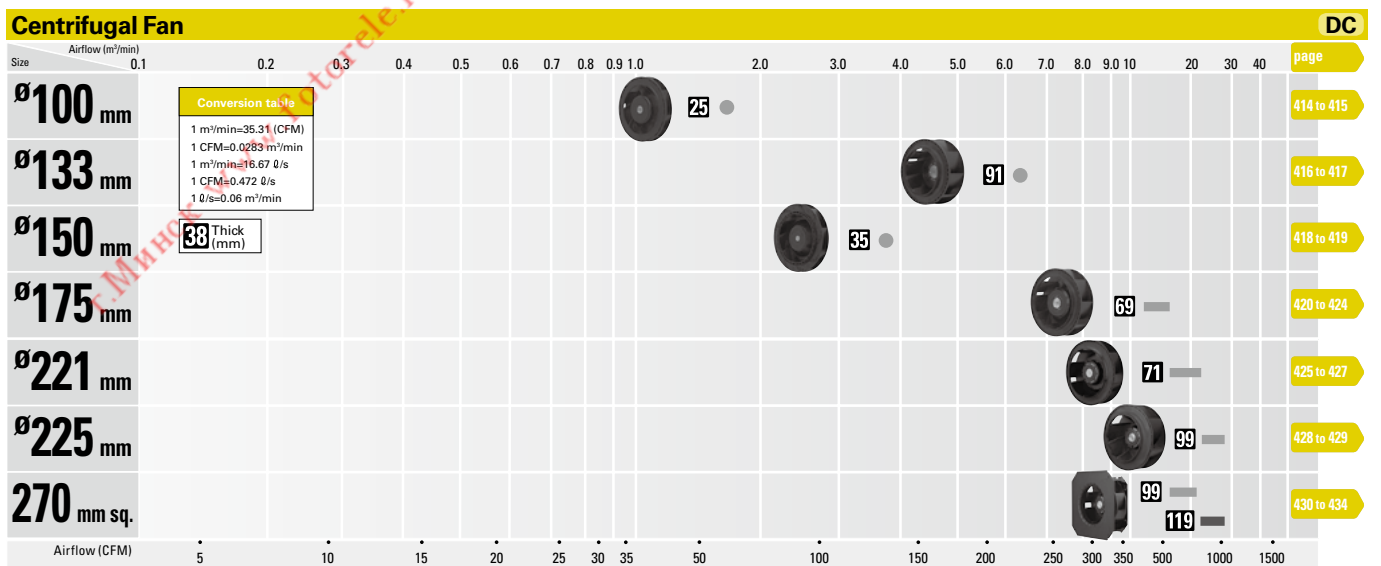
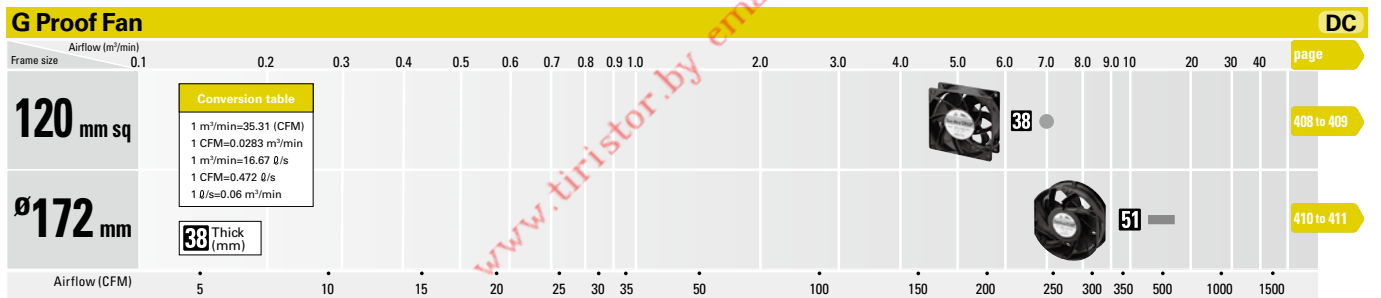
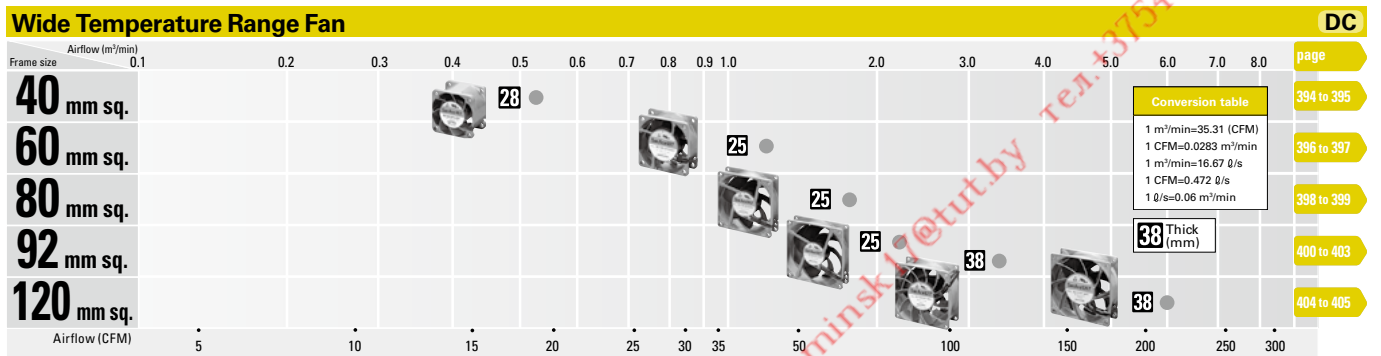
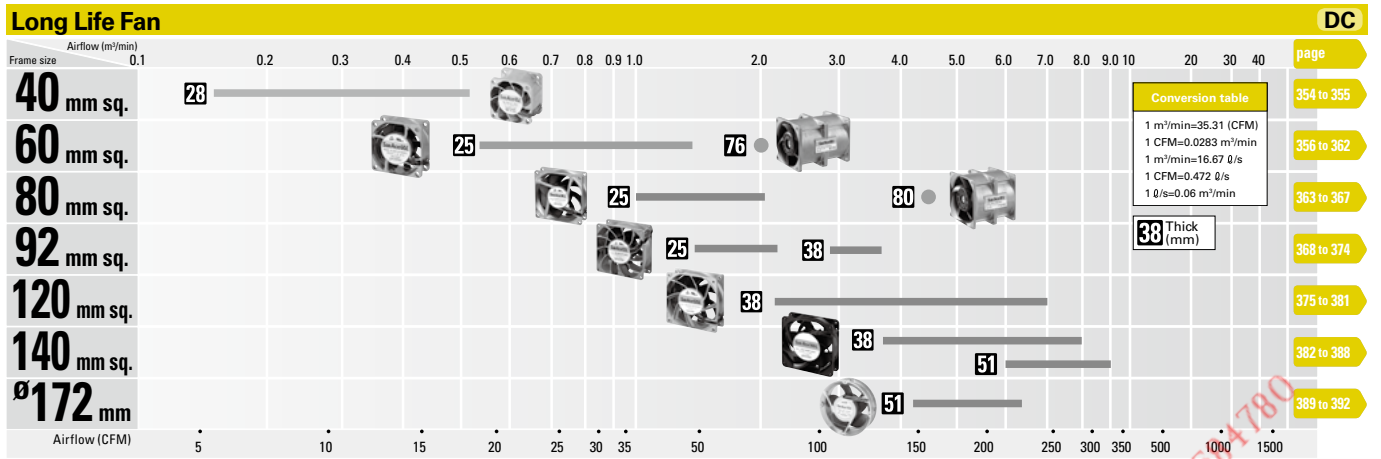
DC



Oil Proof Fan

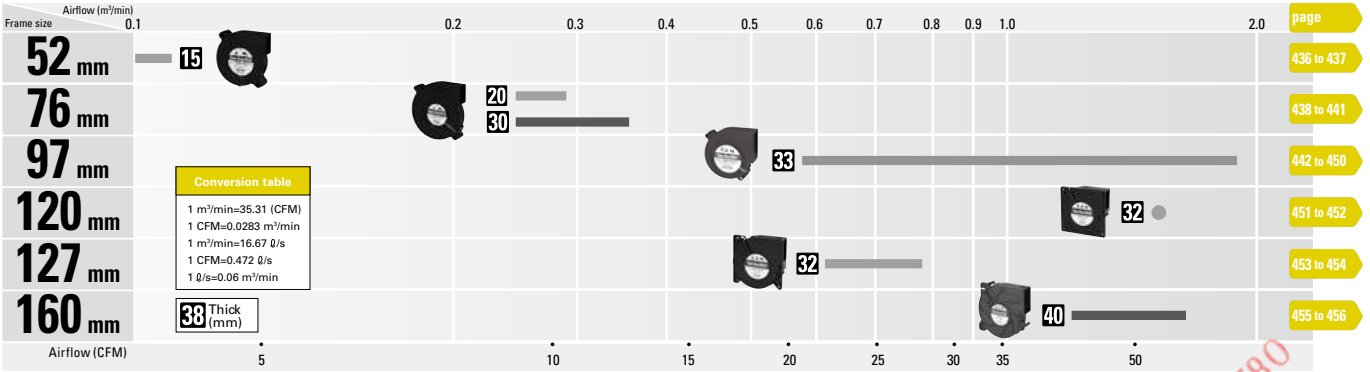
DC





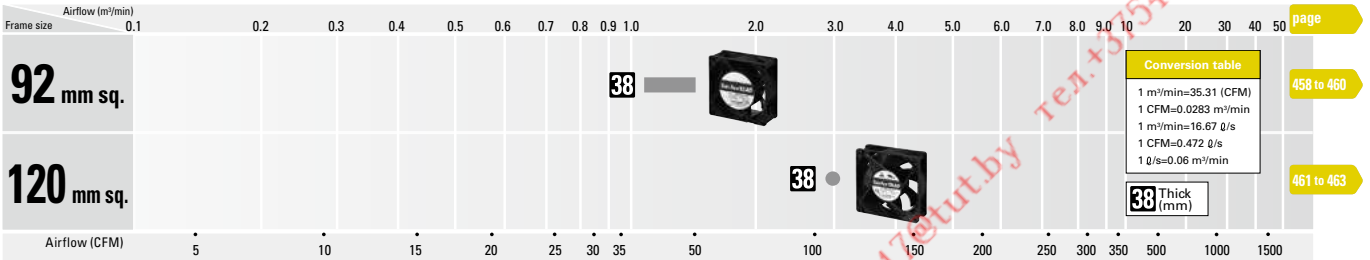
Blower

DC



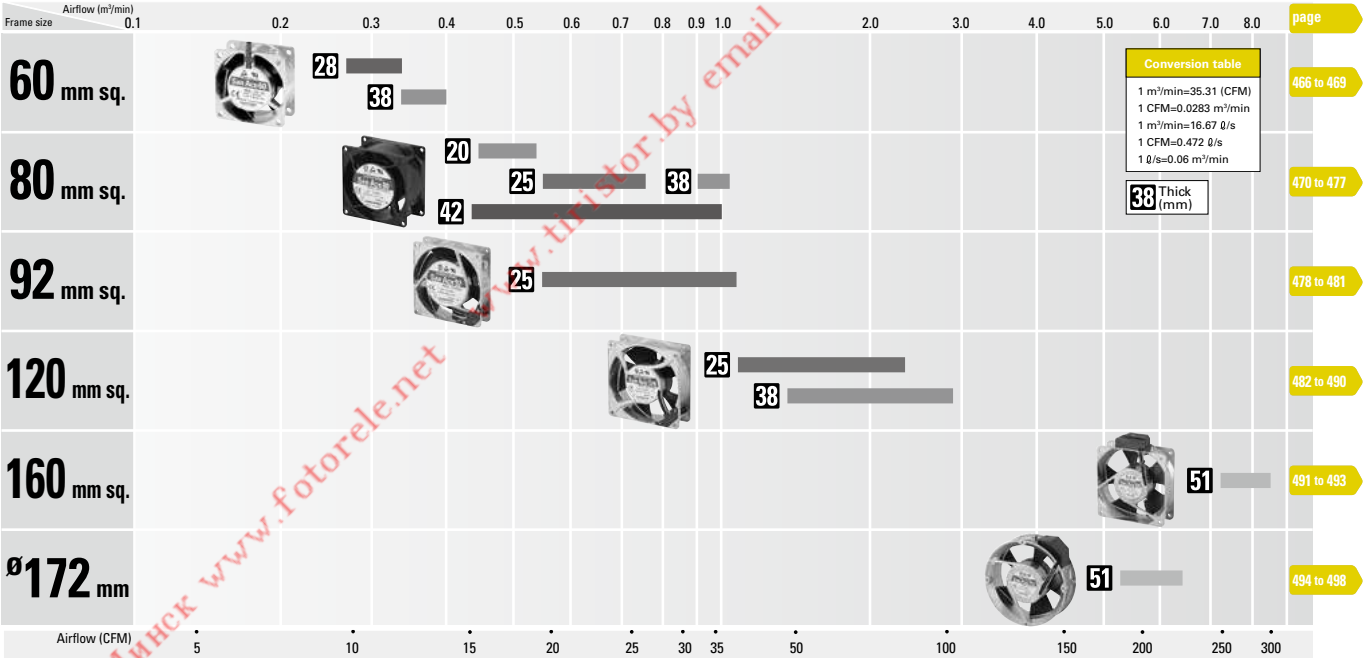
ACDC Fan

AC



AC Fan

AC



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DC Fan

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

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

9GV	12	12	J	1	01	1
Type name	Frame size	Voltage	Speed code	Frame thickness	Sensor specifications	Frame form

Fans with PWM control function

9GV	12	12	P	4	G	01	
Type name	Frame size	Voltage	PWM control function	Frame thickness	Speed code	Individual customer's spec (2 to 4 digits)	Frame form

Type name	9E	9P	9R	9A	9EC	9G	9GA	9GAX	9GV	9GE	9GX	9HV	9HVA	9S	9SG	
Frame size (mm)	03	04	05	06	08	09	12	13	14	15	17	36	47	57	20	
	38×38	40×40	52×52	60×60	80×80	92×92	120×120	127×127	140×140	150×150	∅172	36×36	∅172×147 (sidecut)	∅172×150 (sidecut)	∅200	
Voltage (V)	05	12	24	48												
	5	12	24	48	etc.											
Speed code	A	B	C	D	E	F	G	H	J	K	L	M	S	W	etc.	
Frame thickness (mm)	0	1	2	3	4	5	6	7	9							
	70	38	32	28	25	50, 51	20	15	10							
Sensor specifications	01 or 001 With a pulse sensor				02 or 002 Without a sensor				D01 or D001 With a lock sensor							
Frame form	Nil				1				3				40 × 40 × 28 mm for 1U applications Plastic frame: Ribbed frame			
	Plastic frame: Ribbed frame				Plastic frame: Ribless frame								Aluminum frame: Ribless frame			

How to Read Specifications (DC fan)

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]
9GA0412G7001	12	7 to 13.8	0.17	2.04	13100	0.36 12.7	192 0.77	42	-20 to +70	40000/60°C (70000/40°C)

- Rated voltage This is the necessary voltage to drive the fan. E.g.) 12 VDC, 24 VDC, 48 VDC
- Operating voltage range The voltage range over which fan operation is guaranteed.
- Rated current The current when the fan is operating at rated voltage (at free air).
- Rated input The power value when the fan is operating at rated voltage (at free air).
- Rated speed The speed when the fan is operating at rated voltage (at free air).
- Max. airflow The maximum airflow that the fan can generate during rated operation (measured with our double chamber measuring device). Airflow is the volume of air generated by the fan per unit of time.
- Max. static pressure The maximum static pressure value that the fan can produce during rated operation (measured with our double chamber measuring device). Static pressure indicates a fan's ability to move air against resistance due to the internal structure of the device to which the fan is installed.
- SPL SPL stands for Sound Pressure Level. The noise level during the fan's rated operation. Please refer to the technical material section for the measurement method.
- Operating temperature The temperature range over which fan operation is guaranteed (Non- condensing).
- Expected life Service life hours that 90% of bearings will survive without failing when continuously operated at the rated voltage and 60°C temperature. Expected life at 40°C is for reference only. For more information, please refer to the technical material section.



36×36×28 mm

San Ace 36 9GX/9GV type (Model no.: 9GX3612P3K001 only) /

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30~+70°C (Non-condensing, Model no.: 9GX3612P3K001 only), -20 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- Mass 46 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.**

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GX3612P3K001	12	10.8 to 13.2	100	1.3	15.6	24000	0.69 24.4	838 3.367	66	-10 to +60	40000/60°C (70000/40°C)
			0	0.07	0.84	3200	0.09 3.2	14.0 0.056	32		

* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 556).

The models listed below **have ribs and pulse sensors.**

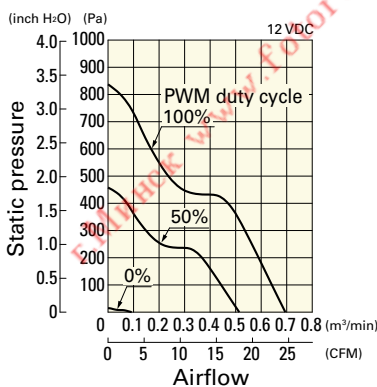
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GV3612J301	12	7.0 to 13.2	0.75	9.0	19000	0.55 19.4	525 2.108	58.5	-20 to +60	40000/60°C
9GV3612G301			0.34	4.08	14000	0.4 14.1	275 1.104	52.0		

Other sensor specifications are available as options. Refer to the index (p. 556).

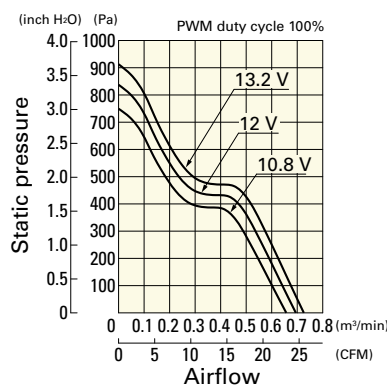
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GX3612P3K001 With pulse sensor with PWM control function

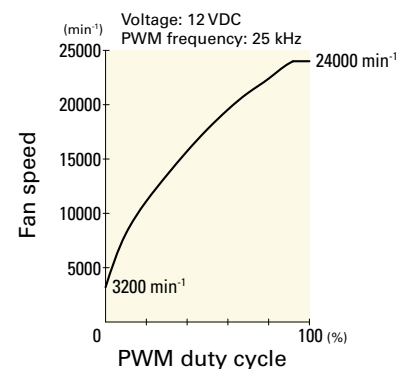
PWM duty cycle



Operating voltage range



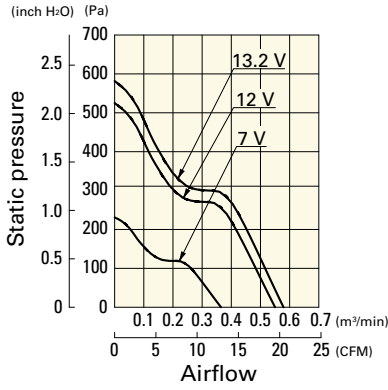
PWM duty - Speed characteristics example



Airflow - Static Pressure Characteristics

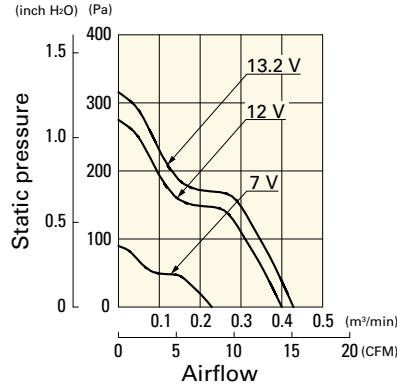
9GV3612J301 With pulse sensor

Operating voltage range

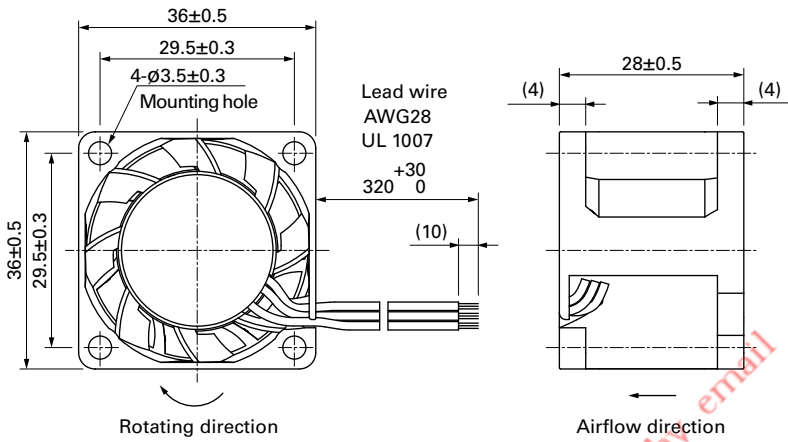


9GV3612G301 With pulse sensor

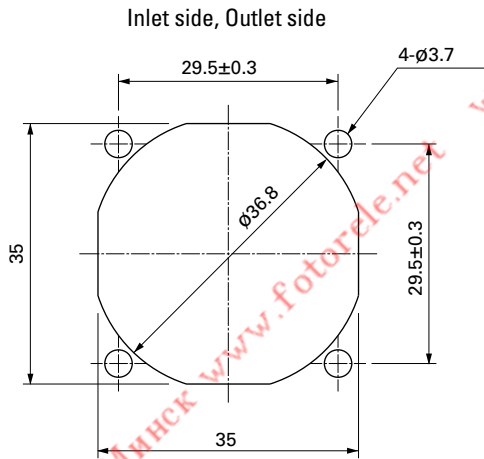
Operating voltage range



Dimensions (unit: mm) (With pulse sensor)



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



Options

Finger guards

page: p. 513

Model no.: 109-1050



38x38x28 mm

San Ace 38 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 52 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

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]
9GA0312P3K001	12	10.8 to 13.2	100	0.62	7.4	25000	0.6 21.2	800 3.21	59.0	-20 to +70	40000/60°C (70000/40°C)
			0	0.06	0.7	3000	0.07 2.5	11 0.04	15.0		
9GA0312P3J001			100	0.52	6.2	23500	0.57 20.1	720 2.89	57.5		
			0	0.06	0.7	3000	0.07 2.5	11 0.04	15.0		
9GA0312P3G001			100	0.33	4.0	19000	0.45 15.9	460 1.85	53.0		
			0	0.06	0.7	3000	0.07 2.5	11 0.04	15.0		

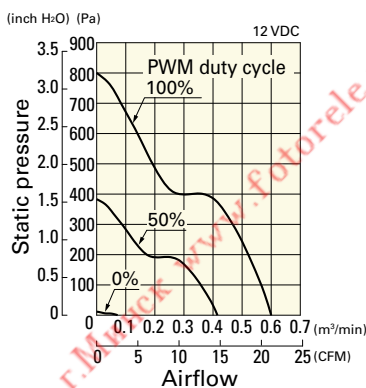
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 551).

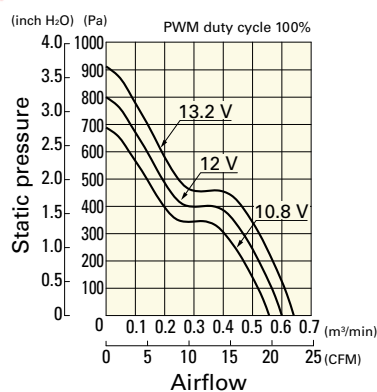
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0312P3K001 With pulse sensor with PWM control function

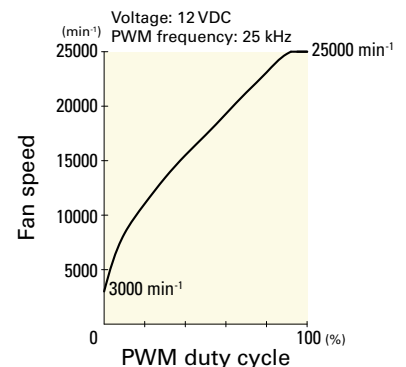
PWM duty cycle



Operating voltage range



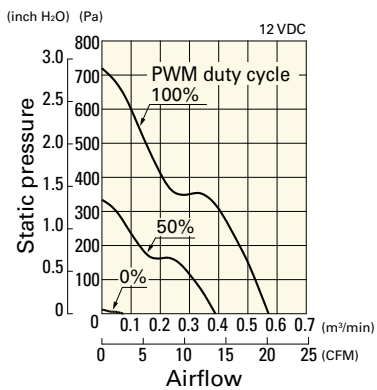
PWM duty - Speed characteristics example



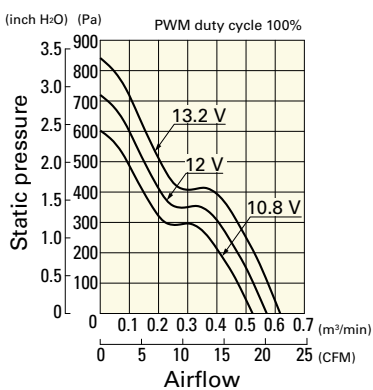
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0312P3J001 With pulse sensor with PWM control function

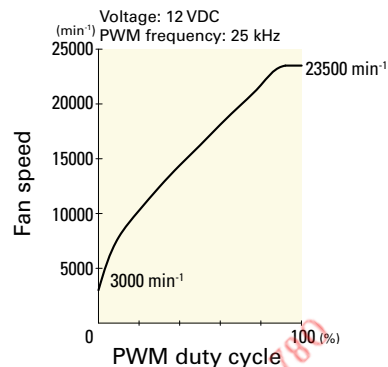
PWM duty cycle



Operating voltage range

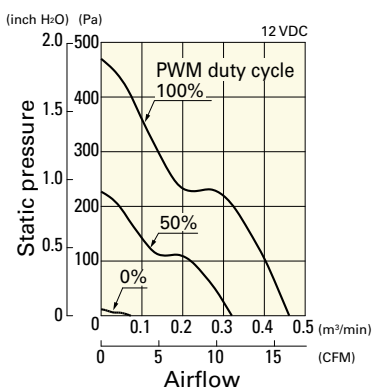


PWM duty - Speed characteristics example

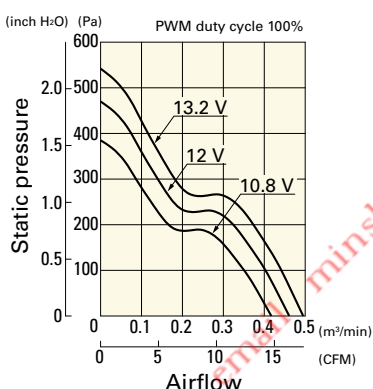


9GA0312P3G001 With pulse sensor with PWM control function

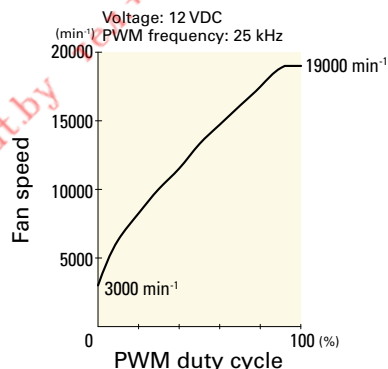
PWM duty cycle



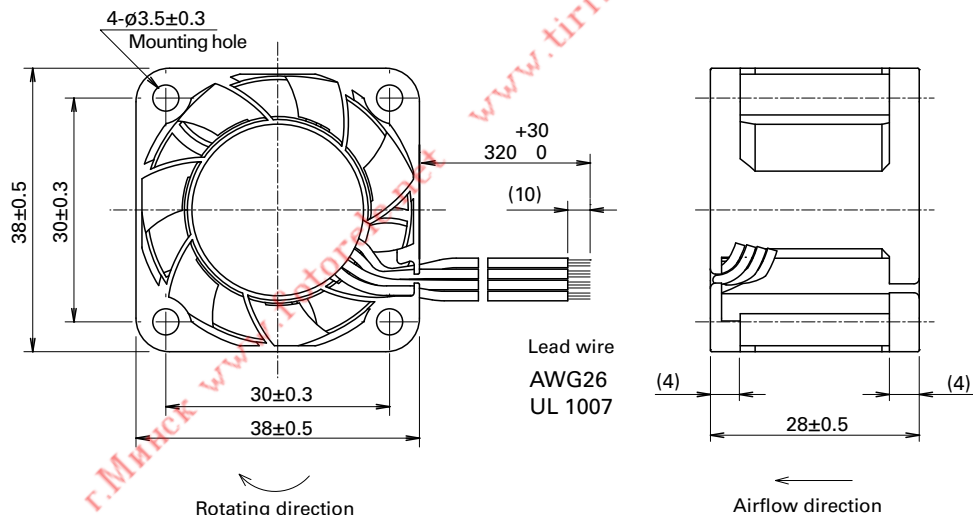
Operating voltage range



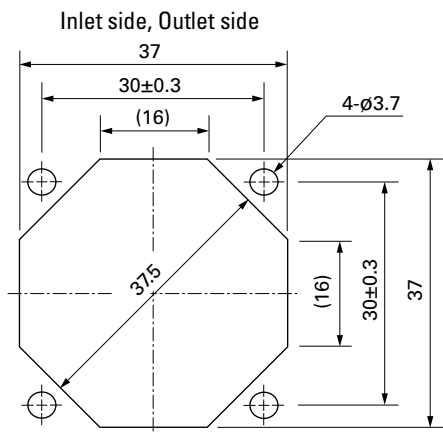
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-1065

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38x38x28 mm

San Ace 38 9GV type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -20 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 50 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

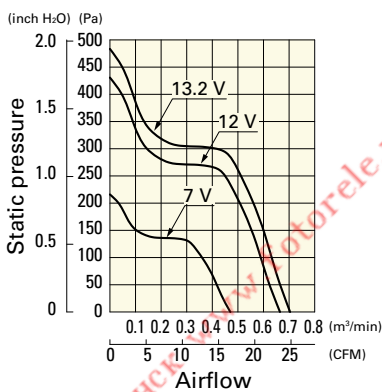
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GV0312K301	12	7 to 13.2	0.79	9.48	18200	0.65 23	425 1.707	59	-20 to +60	40000/60°C
9GV0312J301			0.6	7.2	15900	0.57 20	315 1.265	54		
9GV0312G301			0.4	4.8	13500	0.48 17	220 0.924	50		
9GV0312E301		4.5 to 13.2	0.21	2.52	10500	0.37 13.1	130 0.522	43		
9GV0312H301			0.16	1.92	7000	0.24 8.5	60 0.241	34		

Other sensor specifications are available as options. Refer to the index (p. 554).

Airflow - Static Pressure Characteristics

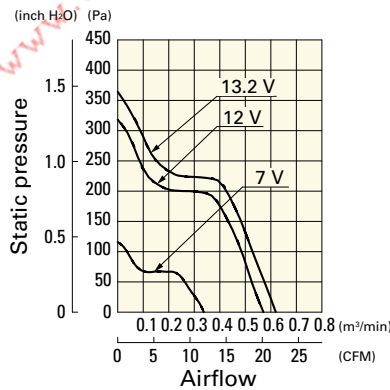
9GV0312K301 With pulse sensor

Operating voltage range



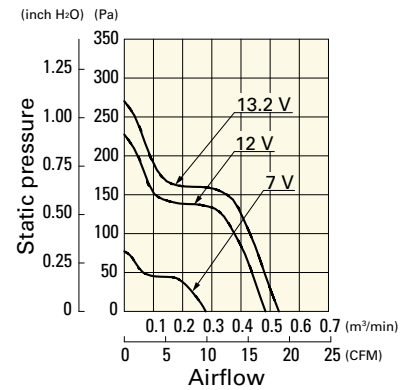
9GV0312J301 With pulse sensor

Operating voltage range



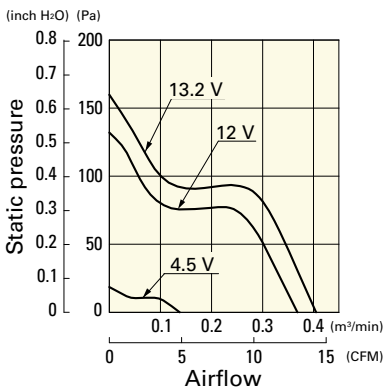
9GV0312G301 With pulse sensor

Operating voltage range



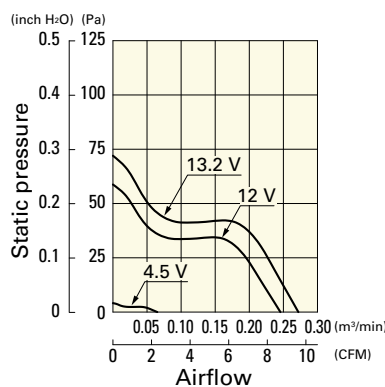
9GV0312E301 With pulse sensor

Operating voltage range

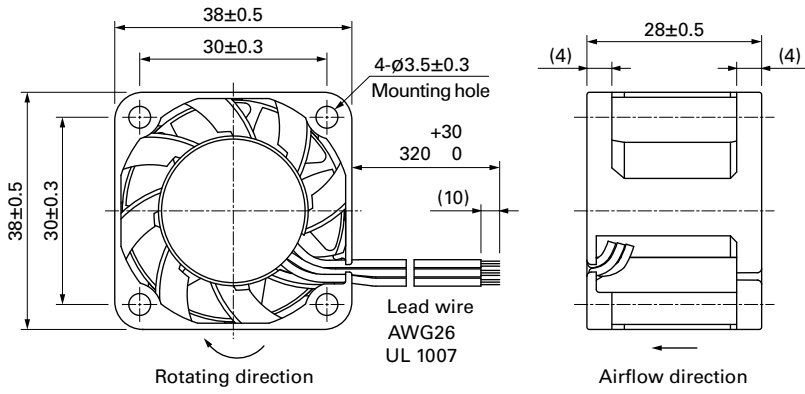


9GV0312H301 With pulse sensor

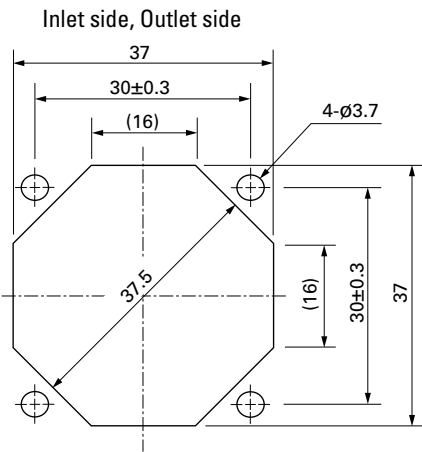
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-1065

40x40x10 mm

San Ace 40 9P type   



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 19 g

Specifications

The models listed below **have ribs and pulse sensors.**

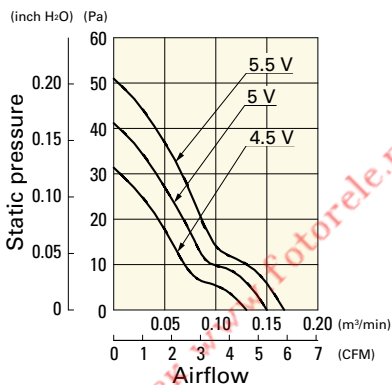
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P0405H901	5	4.5 to 5.5	0.16	0.8	6200	0.15 5.3	41.2 0.165	25	-10 to +60	40000/60°C
109P0405M901			0.11	0.55	5000	0.12 4.2	27 0.108	21		
109P0412H901	12	7 to 13.8	0.07	0.84	6200	0.15 5.3	41.2 0.165	25		
109P0412M901			0.06	0.72	5000	0.12 4.2	27 0.108	21		

Other sensor specifications are available as options. Refer to the index (pp. 543 to 544).

Airflow - Static Pressure Characteristics

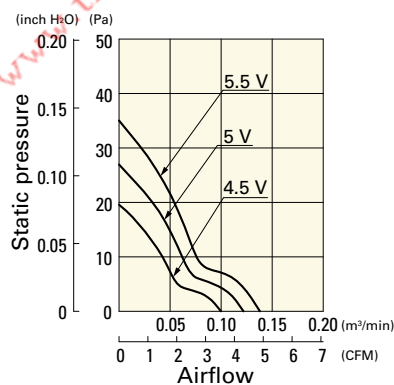
109P0405H901 With pulse sensor

Operating voltage range



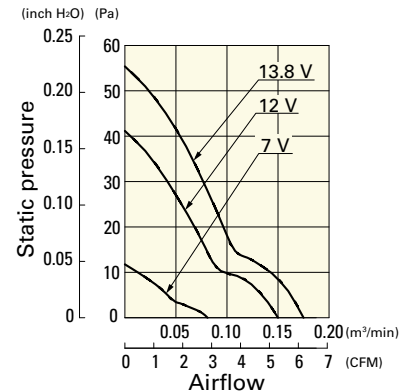
109P0405M901 With pulse sensor

Operating voltage range



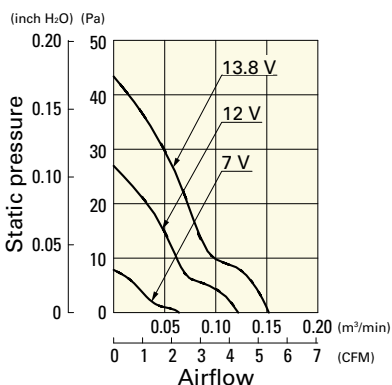
109P0412H901 With pulse sensor

Operating voltage range

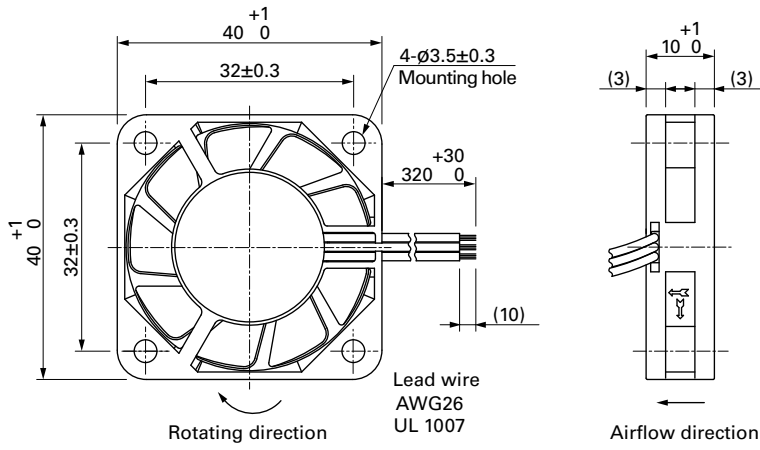


109P0412M901 With pulse sensor

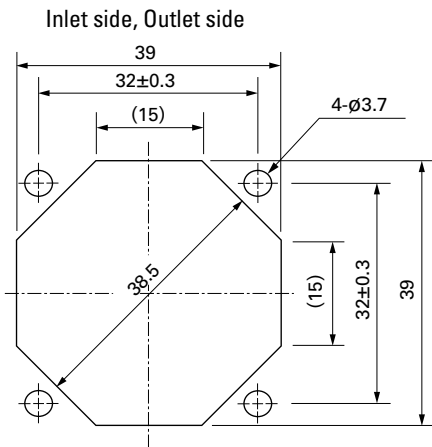
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-059, 109-059H



40x40x15 mm

San Ace 40 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- Mass 28 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.**

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]
9GA0412P7G001	12	10.2 to 13.8	100	0.17	2.04	13100	0.36 12.7	192 0.77	42	-20 to +70	40000/60°C (70000/40°C)

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

The models listed below **have ribs and pulse sensors.**

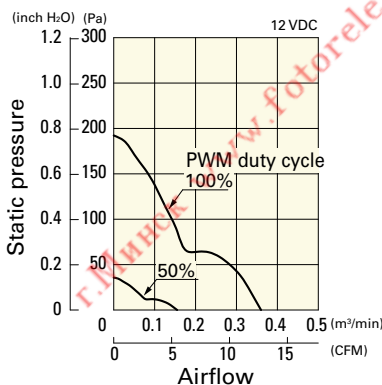
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA0412G7001	12	7 to 13.8	0.17	2.04	13100	0.36 12.7	192 0.77	42	-20 to +70	40000/60°C (70000/40°C)
9GA0412H7001			0.06	0.72	7300	0.2 7.1	59.6 0.24	28		

Other sensor specifications are available as options. Refer to the index (p. 551).

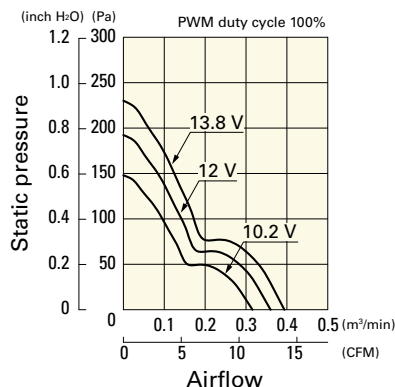
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0412P7G001 With pulse sensor with PWM control function

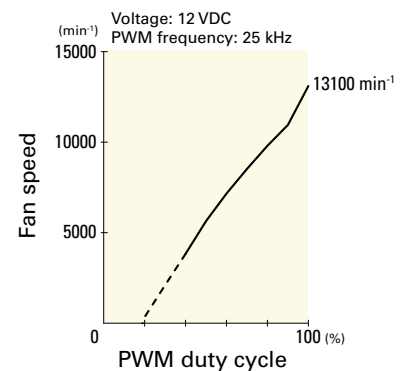
PWM duty cycle



Operating voltage range



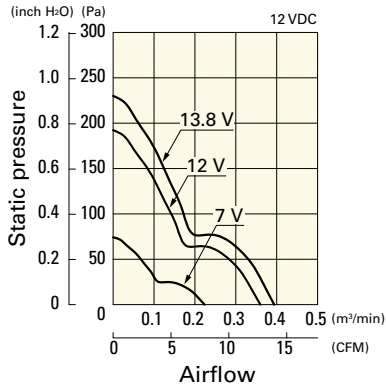
PWM duty - Speed characteristics example



Airflow - Static Pressure Characteristics

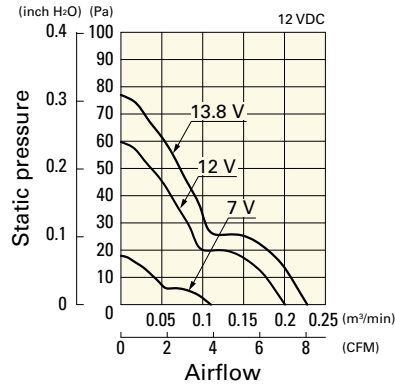
9GA0412G7001 With pulse sensor

Operating voltage range

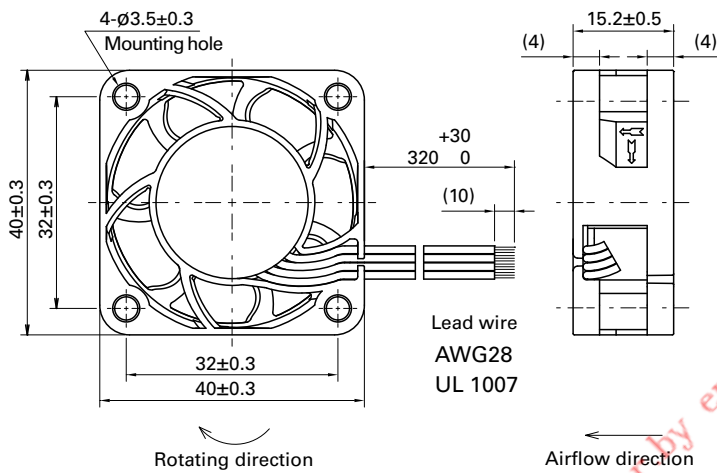


9GA0412H7001 With pulse sensor

Operating voltage range

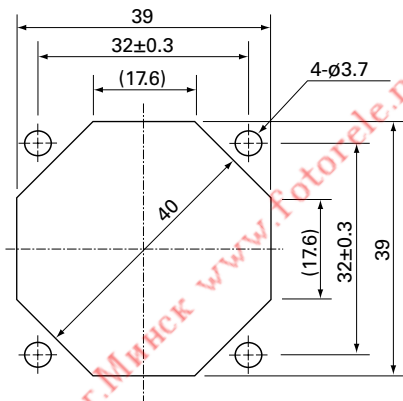


Dimensions (unit: mm) (With pulse sensor with PWM control function)



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

Inlet side, Outlet side



Options

Finger guards

page: p. 513

Model no.: 109-059, 109-059H

40x40x15 mm

San Ace 40 9P type   



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 32 g

Specifications

The models listed below **have ribs and pulse sensors.**

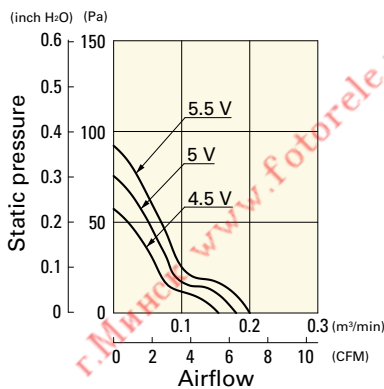
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]	
109P0405H701	5	4.5 to 5.5	0.28	1.4	7700	0.18 6.4	75.5 0.303	28	-20 to +60	60000/60°C	
109P0405M701			0.21	1.05	6500	0.15 5.3	52.9 0.213	24			
109P0412R701	12	7 to 13.8	0.13	1.56	9700	0.227 8.0	111.9 0.449	34		-20 to +70	40000/60°C
109P0412S701			0.18	2.16	8600	0.2 7.06	92.1 0.369	32			
109P0412H701			10.2 to 13.8	0.13	1.56	7700	0.18 6.4	75.5 0.303			28
109P0412M701				0.095	1.14	6500	0.15 5.3	52.9 0.213			24
109P0424H701				24	20.4 to 27.6	0.08	1.92	7700			0.18 6.4

Other sensor specifications are available as options. Refer to the index (pp. 543 to 544).

Airflow - Static Pressure Characteristics

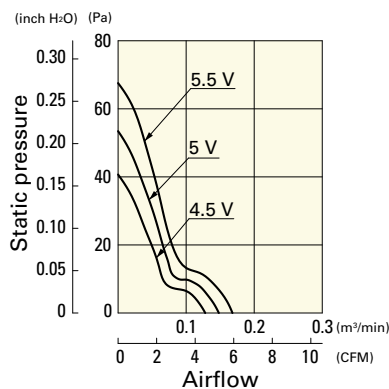
109P0405H701 With pulse sensor

Operating voltage range



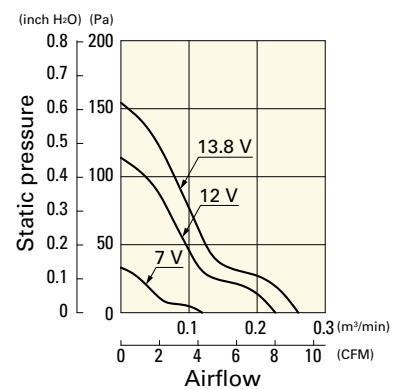
109P0405M701 With pulse sensor

Operating voltage range



109P0412R701 With pulse sensor

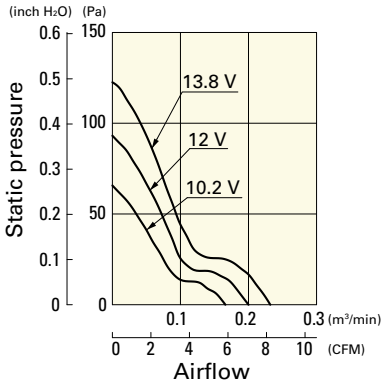
Operating voltage range



Airflow - Static Pressure Characteristics

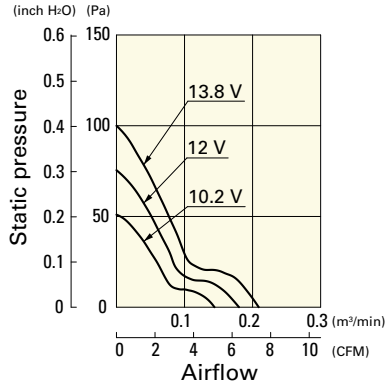
109P0412S701 With pulse sensor

Operating voltage range



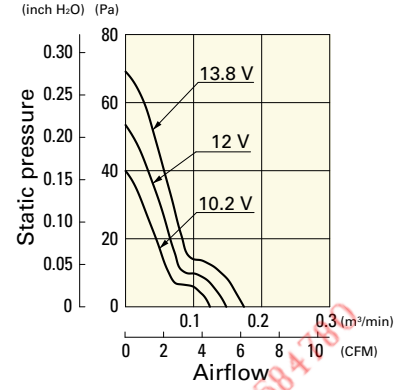
109P0412H701 With pulse sensor

Operating voltage range



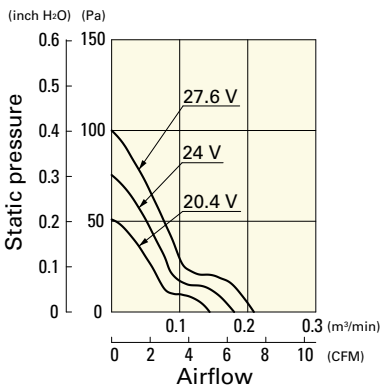
109P0412M701 With pulse sensor

Operating voltage range

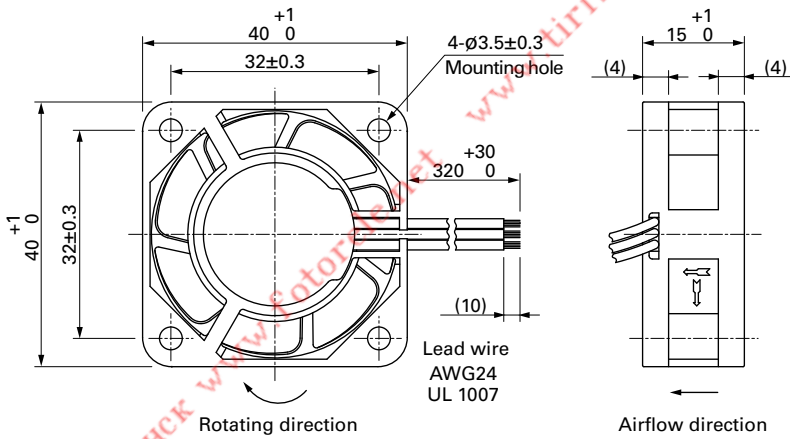


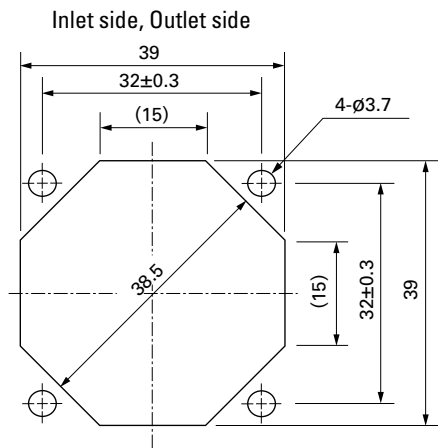
109P0424H701 With pulse sensor

Operating voltage range



Dimensions (unit: mm)



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

Finger guards

page: p. 513

Model no.: 109-059, 109-059H

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40x40x20 mm

San Ace 40 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 35 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.**

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA0405P6H001**	5	4.5 to 5.5	100	0.35	1.75	12400	0.33 11.7	191 0.77	40	-20 to +70	40000/60°C
9GA0405P6F001**			100	0.18	0.9	8000	0.21 7.4	79.5 0.32	28		60000/60°C
9GA0412P6G001	12	10.2 to 13.8	100	0.23	2.76	16000	0.42 14.8	318 1.28	47		40000/60°C
			0	0.04	0.48	3800	0.1 3.5	17.9 0.07	14		60000/60°C
9GA0412P6H001			100	0.14	1.68	12400	0.33 11.7	191 0.77	40		
0			0.04	0.48	3800	0.1 3.5	17.9 0.07	14			
9GA0412P6F001			100	0.08	0.96	8000	0.21 7.4	79.5 0.32	28		
0			0.03	0.36	2200	0.06 2.1	6.0 0.02	10			
9GA0424P6G001**	24	20.4 to 27.6	100	0.13	3.12	16000	0.42 14.8	318 1.28	47		40000/60°C
9GA0424P6H001**			100	0.08	1.92	12400	0.33 11.7	191 0.77	40		60000/60°C
9GA0424P6F001**			100	0.04	0.96	8000	0.21 7.4	79.5 0.32	28		

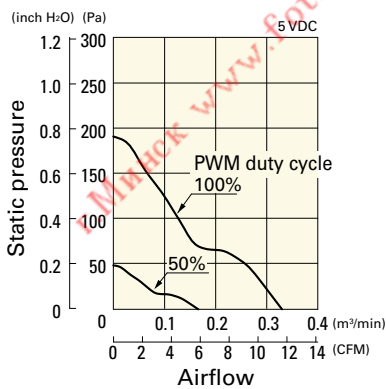
* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 551).

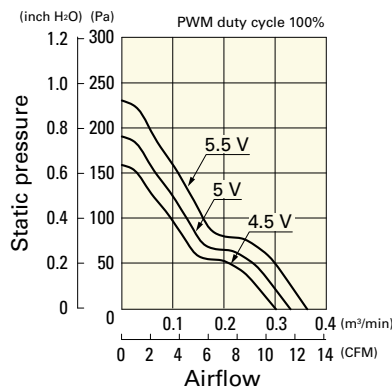
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0405P6H001 With pulse sensor with PWM control function

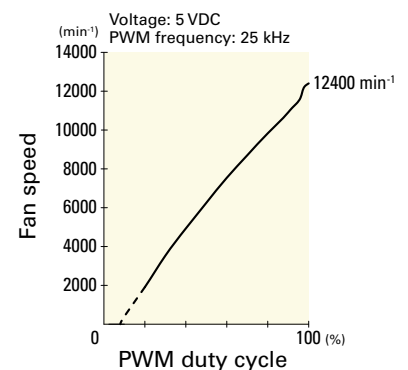
PWM duty cycle



Operating voltage range



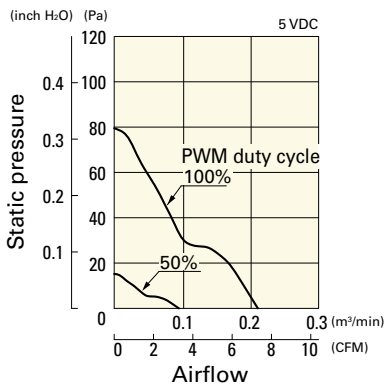
PWM duty - Speed characteristics example



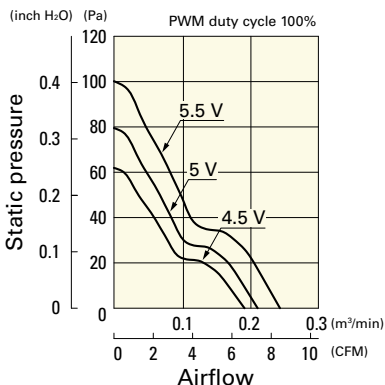
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0405P6F001 With pulse sensor with PWM control function

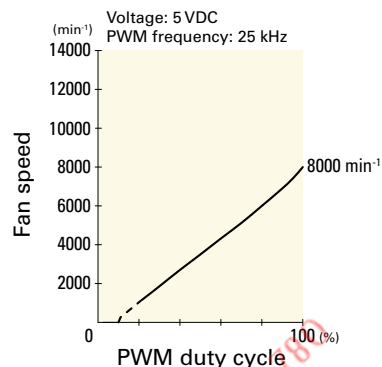
PWM duty cycle



Operating voltage range

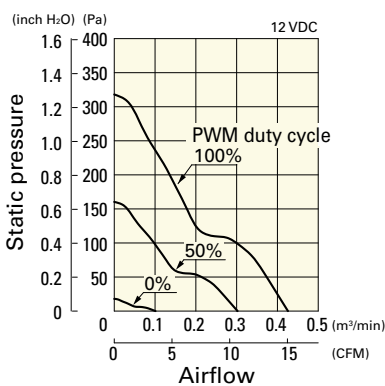


PWM duty - Speed characteristics example

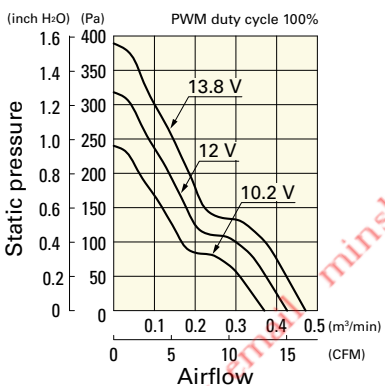


9GA0412P6G001 With pulse sensor with PWM control function

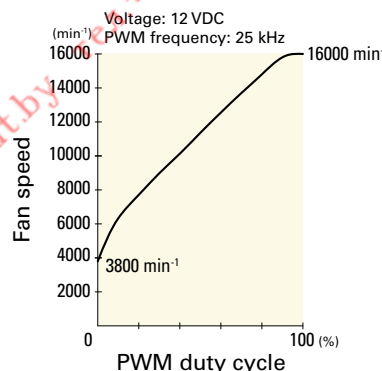
PWM duty cycle



Operating voltage range

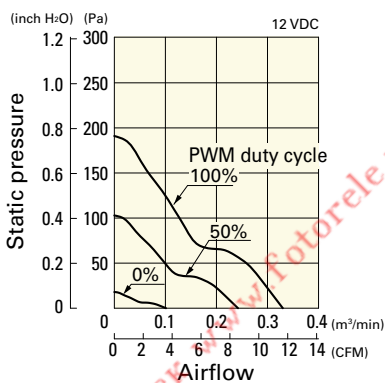


PWM duty - Speed characteristics example

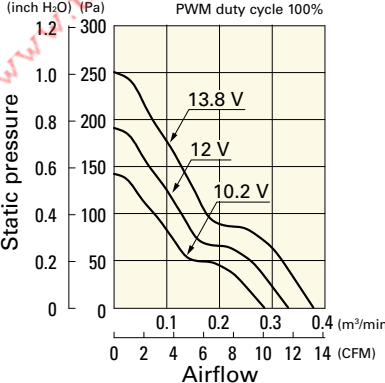


9GA0412P6H001 With pulse sensor with PWM control function

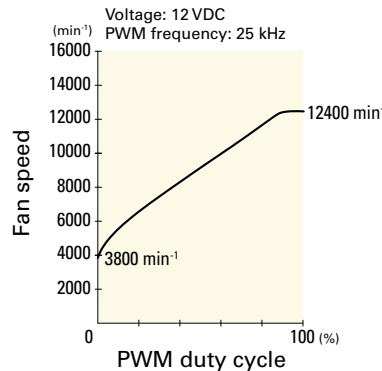
PWM duty cycle



Operating voltage range

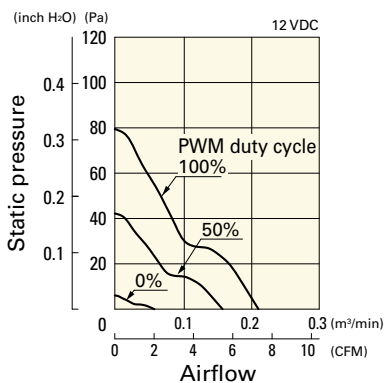


PWM duty - Speed characteristics example

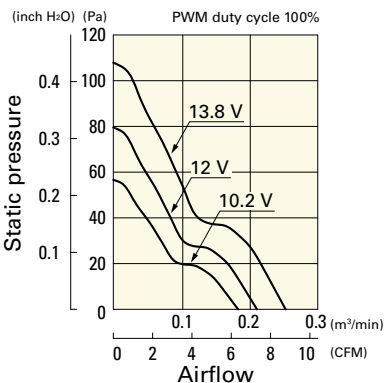


9GA0412P6F001 With pulse sensor with PWM control function

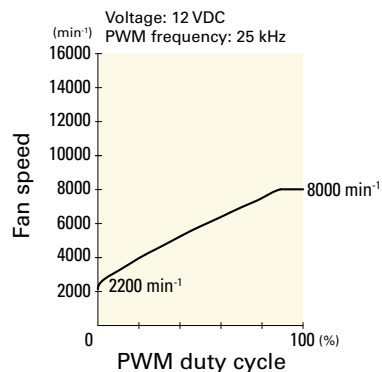
PWM duty cycle



Operating voltage range



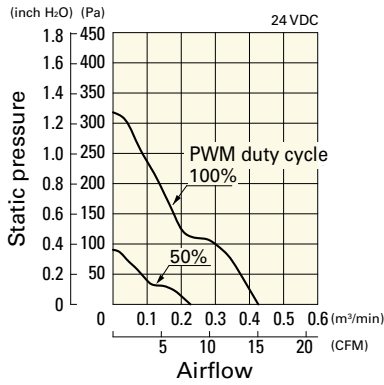
PWM duty - Speed characteristics example



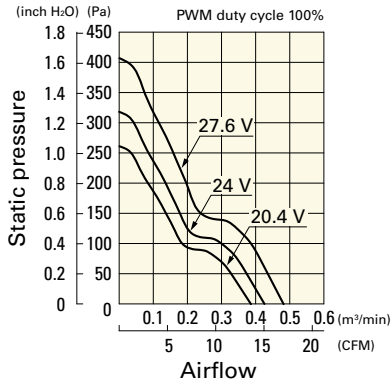
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0424P6G001 With pulse sensor with PWM control function

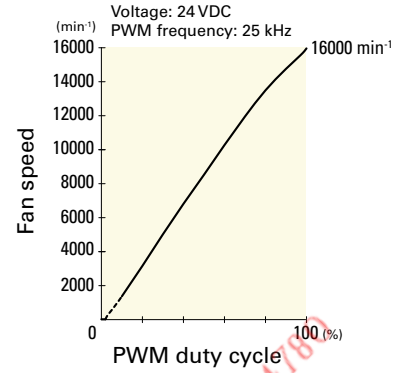
PWM duty cycle



Operating voltage range

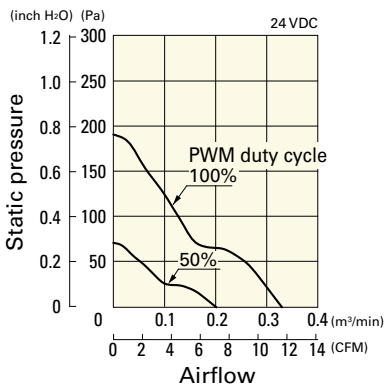


PWM duty - Speed characteristics example

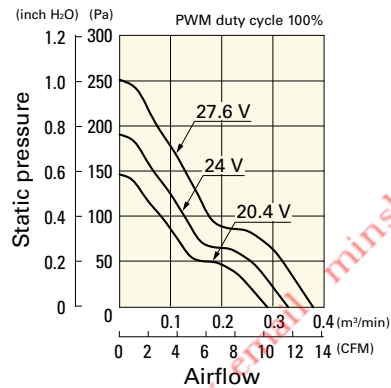


9GA0424P6H001 With pulse sensor with PWM control function

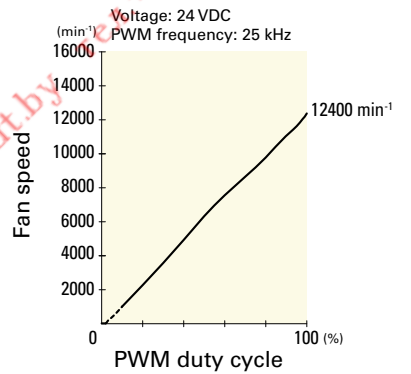
PWM duty cycle



Operating voltage range

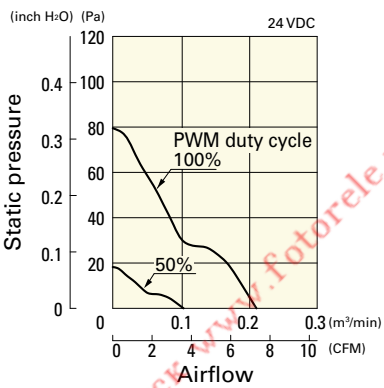


PWM duty - Speed characteristics example

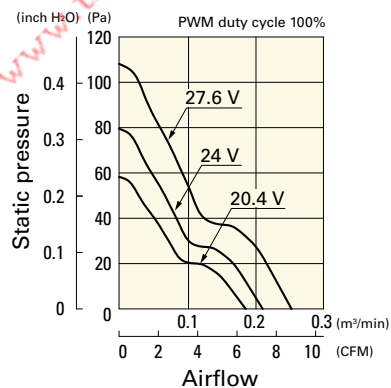


9GA0424P6F001 With pulse sensor with PWM control function

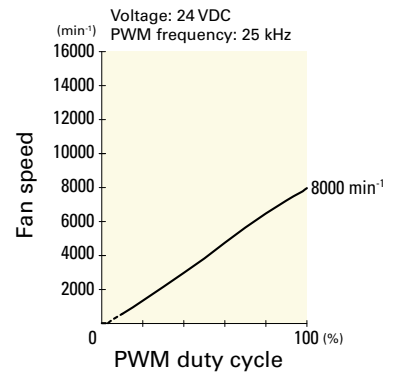
PWM duty cycle



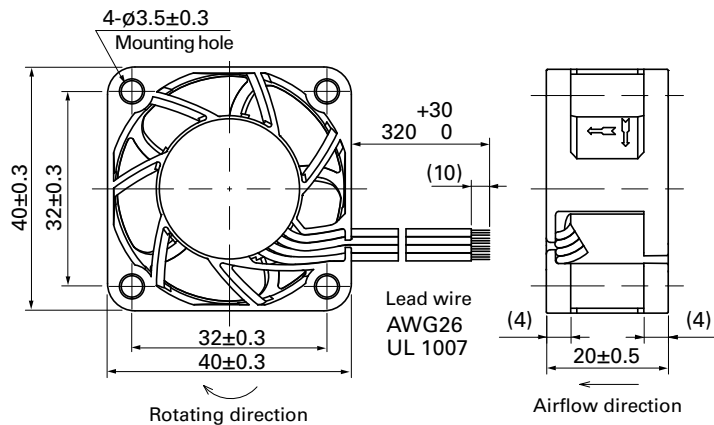
Operating voltage range



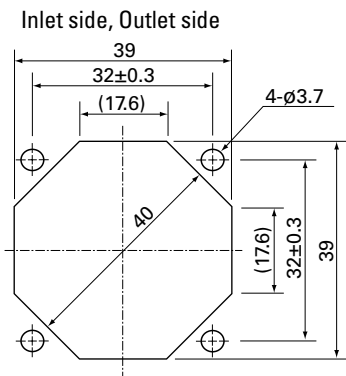
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-059, 109-059H

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40x40x20 mm

San Ace 40 9P type   



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 45 g

Specifications

The models listed below **have ribs and pulse sensors.**

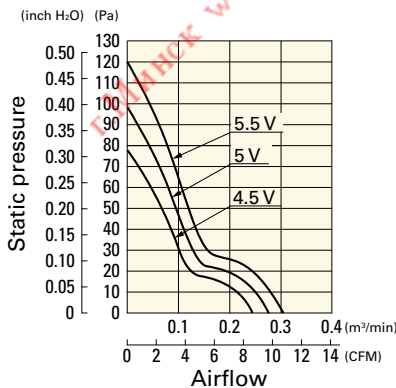
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P0405J601	5	4.5 to 5.5	0.46	2.3	9800	0.28 9.9	98.5 0.396	39	-20 to +70	40000/60°C
109P0405H601			0.32	1.6	8000	0.225 8.0	65.7 0.264	33		
109P0405F601			0.25	1.25	6500	0.183 6.5	45.1 0.181	28		
109P0405M601			0.12	0.6	5000	0.136 4.8	26.5 0.106	24		
109P0412G601	12	7 to 13.8	0.28	3.36	12500	0.35 12.4	153.8 0.618	44	-20 to +60	40000/60°C
109P0412D601			0.18	2.16	11000	0.31 10.9	124 0.498	42		
109P0412E601			0.13	1.56	9200	0.26 9.2	87.3 0.351	37		
109P0412H601			0.11	1.32	8000	0.225 8.0	65.7 0.264	33		
109P0412F601			0.09	1.08	6500	0.183 6.5	45.1 0.181	28		
109P0412M601	8 to 13.8	0.06	0.72	5000	0.136 4.8	26.5 0.106	24			
109P0424G601	24	12 to 27.6	0.15	3.6	12500	0.35 12.4	153.8 0.618	44	-20 to +60	40000/60°C
109P0424D601		12 to 27.6	0.13	3.12	11000	0.31 10.9	124 0.498	42		
109P0424H601		12 to 27.6	0.07	1.68	8300	0.233 8.2	69.6 0.28	35		
109P0424F601		14 to 27.6	0.06	1.44	6500	0.183 6.5	45.1 0.181	28		
109P0424B601		20.4 to 27.6	0.06	1.44	5200	0.14 4.9	28.3 0.114	25		

Other sensor specifications are available as options. Refer to the index (pp. 543 to 544).

Airflow - Static Pressure Characteristics

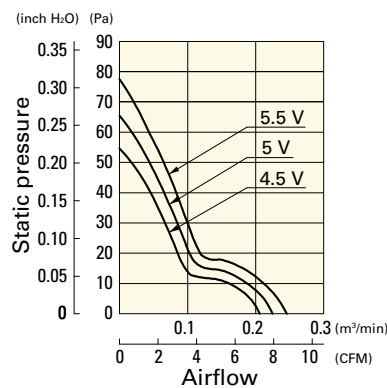
109P0405J601 With pulse sensor

Operating voltage range



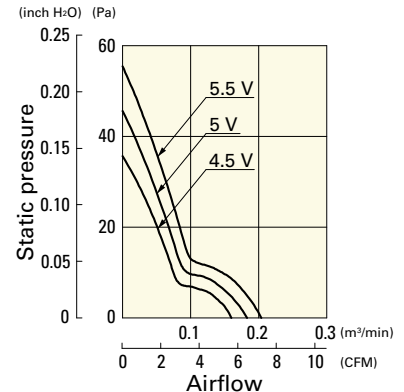
109P0405H601 With pulse sensor

Operating voltage range



109P0405F601 With pulse sensor

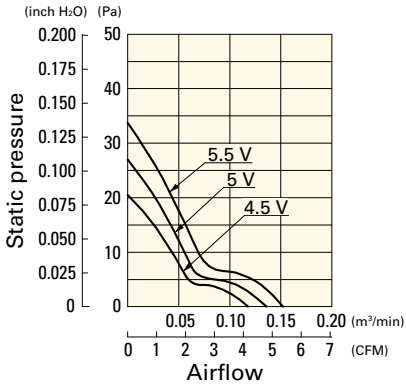
Operating voltage range



Airflow - Static Pressure Characteristics

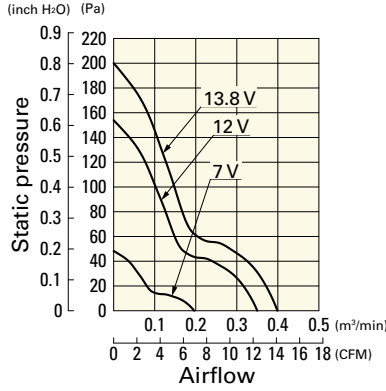
109P0405M601 With pulse sensor

Operating voltage range



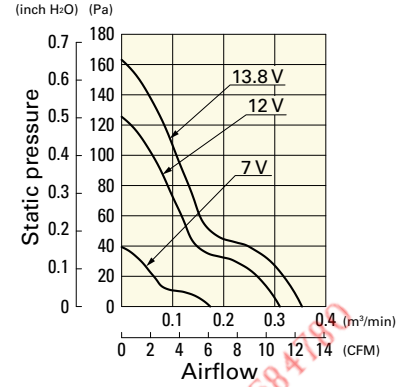
109P0412G601 With pulse sensor

Operating voltage range



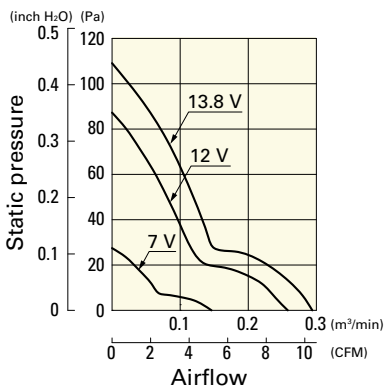
109P0412D601 With pulse sensor

Operating voltage range



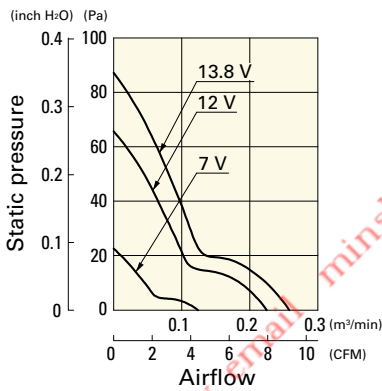
109P0412E601 With pulse sensor

Operating voltage range



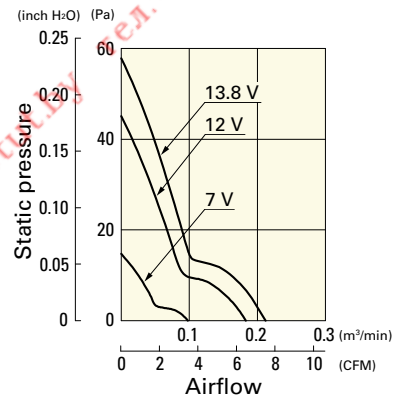
109P0412H601 With pulse sensor

Operating voltage range



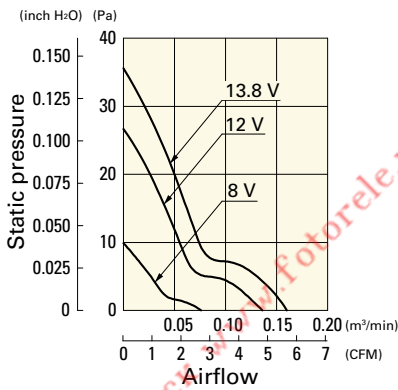
109P0412F601 With pulse sensor

Operating voltage range



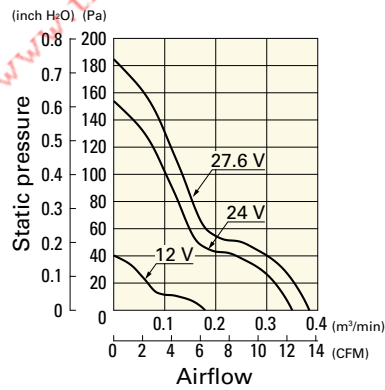
109P0412M601 With pulse sensor

Operating voltage range



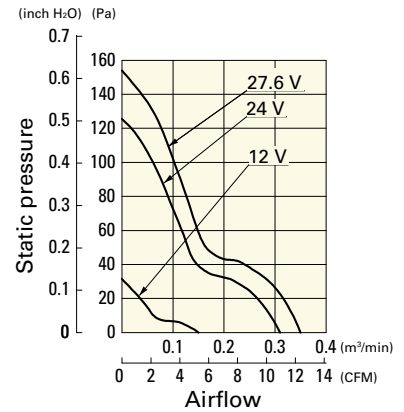
109P0424G601 With pulse sensor

Operating voltage range



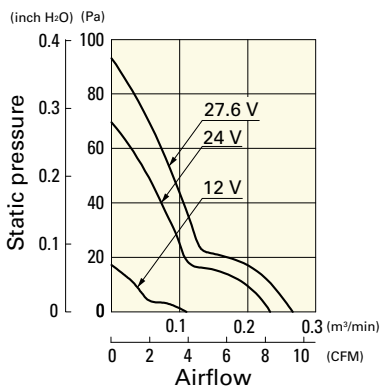
109P0424D601 With pulse sensor

Operating voltage range



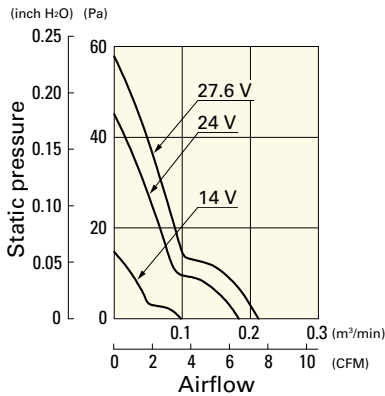
109P0424H601 With pulse sensor

Operating voltage range



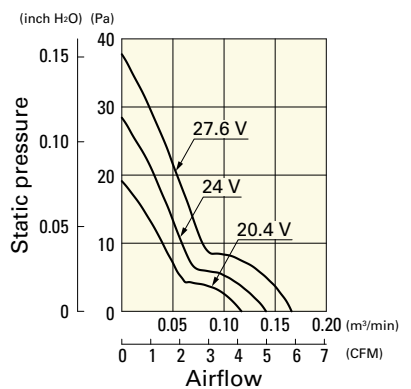
109P0424F601 With pulse sensor

Operating voltage range

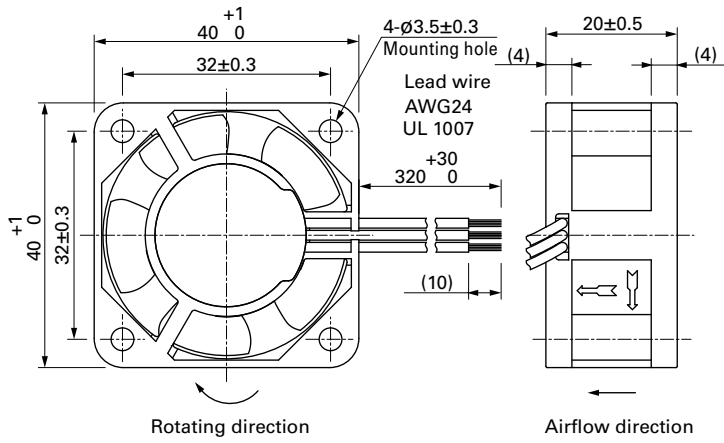


109P0424B601 With pulse sensor

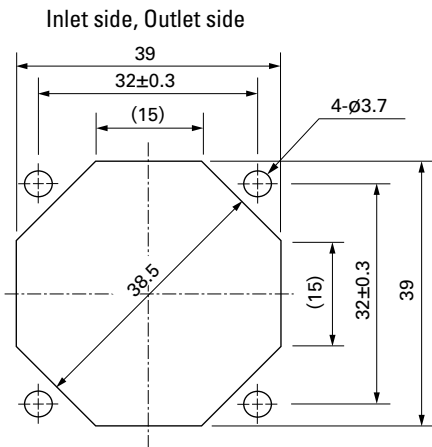
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-059, 109-059H



40×40×28 mm

San Ace 40 9HV type US

General Specifications

- Material Frame: Aluminum, Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 60 g

Specifications

The models listed below **have pulse sensors with PWM control function.**

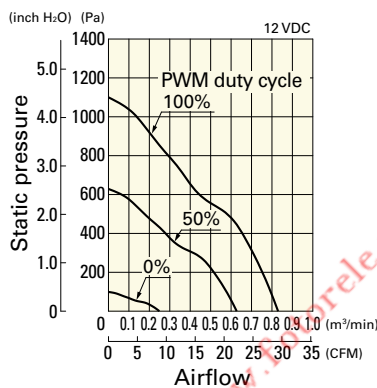
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9HV0412P3K001	12	10.8 to 12.6	100	1.52	18.3	25000	0.83 29.3	1100 4.42	65	-20 to +60	40000/60°C
			0	0.2	2.4	7500	0.25 8.8	99 0.4	37		

* PWM frequency: 25 kHz

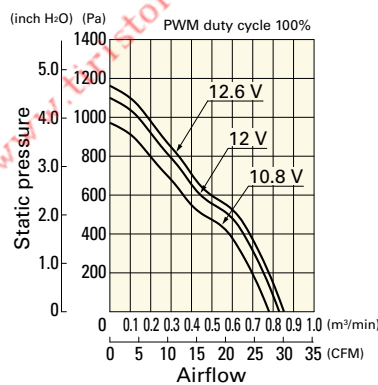
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HV0412P3K001 With pulse sensor with PWM control function

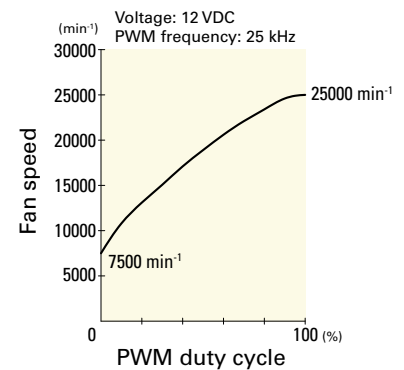
PWM duty cycle



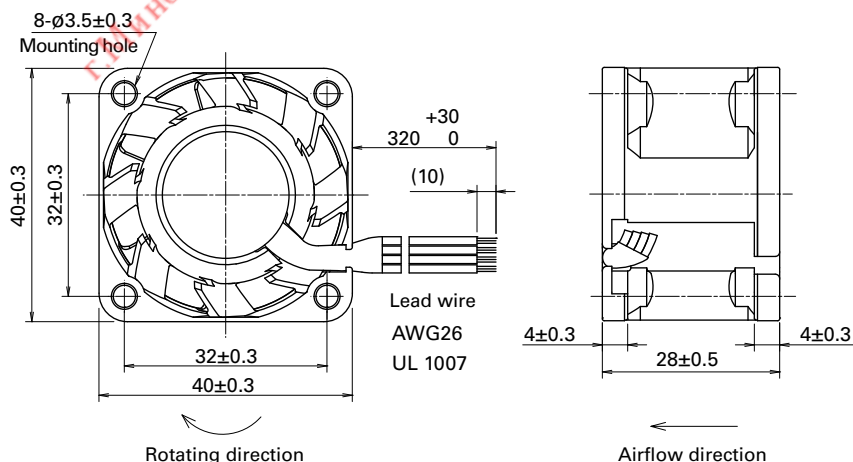
Operating voltage range



PWM duty - Speed characteristics example

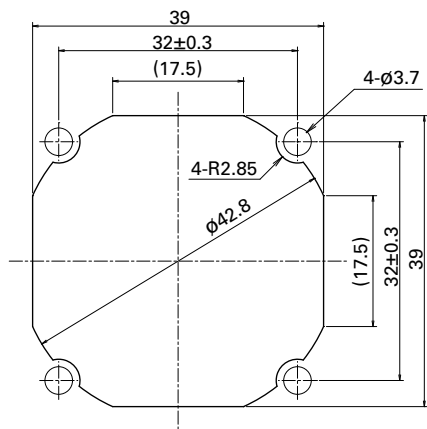


Dimensions (unit: mm)



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

Inlet side, Outlet side



Options


Finger guards

page: p. 513

Model no.: 109-059, 109-059H

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40x40x28 mm

San Ace 40 9GAX type Low Power Consumption Fan 



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 53 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

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]
9GAX0412P3S001**	12	10.8 to 12.6	100	1.3	15.6	25000	0.9 31.8	1000 4.02	64	-20 to +60	30000/60°C
			20	0.07	0.84	4400	0.155 5.5	32 0.125	21.5		
9GAX0412P3S003			100	1.3	15.6	25000	0.9 31.8	1000 4.02	64		
9GAX0412P3K001**		10.8 to 13.2	0	0.11	1.32	7800	0.26 9.2	87 0.35	38		
			100	0.92	11.04	22000	0.81 28.6	800 3.21	61		
			20	0.07	0.84	4200	0.15 5.3	28 0.11	21		
9GAX0412P3K003		100	0.92	11.04	22000	0.81 28.6	800 3.21	61			
		0	0.1	1.2	6500	0.24 8.5	70 0.28	32			

* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.

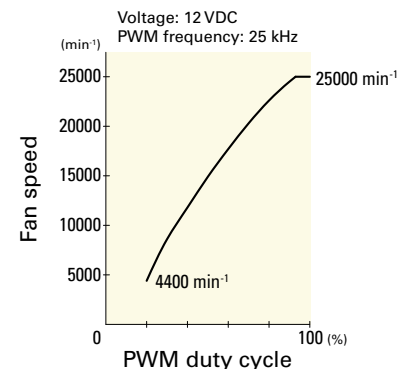
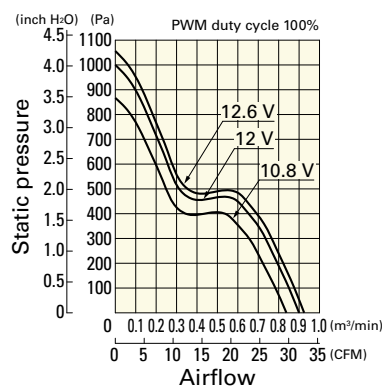
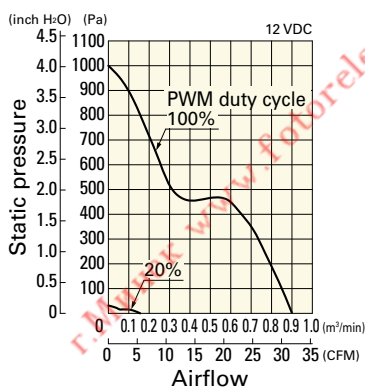
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GAX0412P3S001 With pulse sensor with PWM control function

PWM duty cycle

Operating voltage range

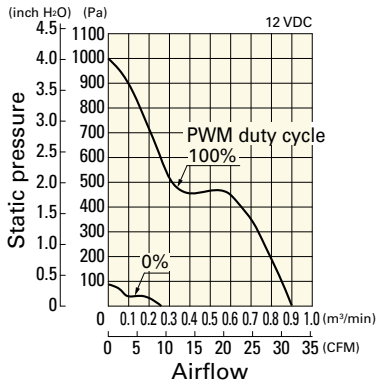
PWM duty - Speed characteristics example



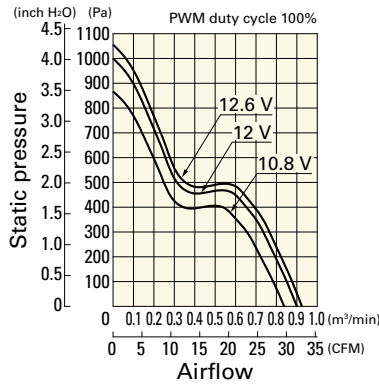
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GAX0412P3S003 With pulse sensor with PWM control function

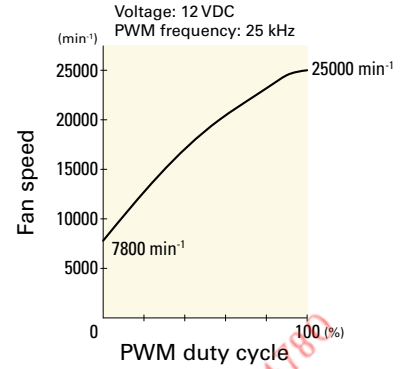
PWM duty cycle



Operating voltage range

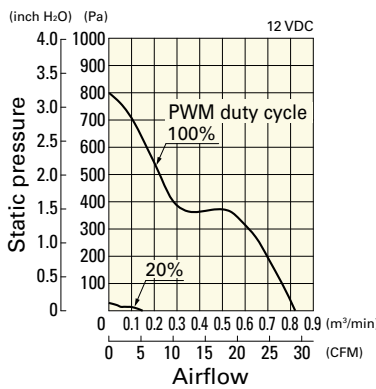


PWM duty - Speed characteristics example

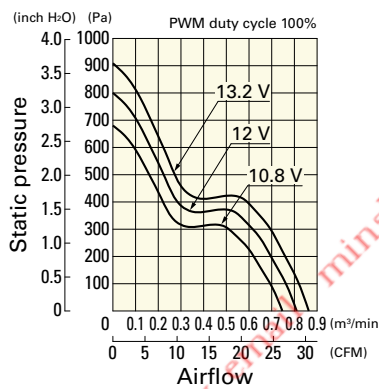


9GAX0412P3K001 With pulse sensor with PWM control function

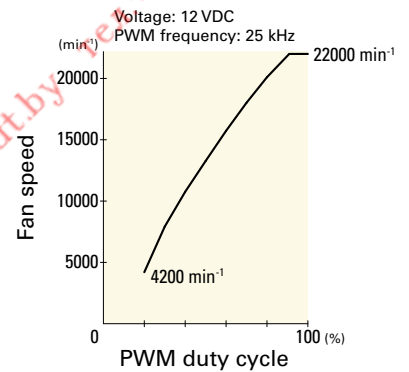
PWM duty cycle



Operating voltage range

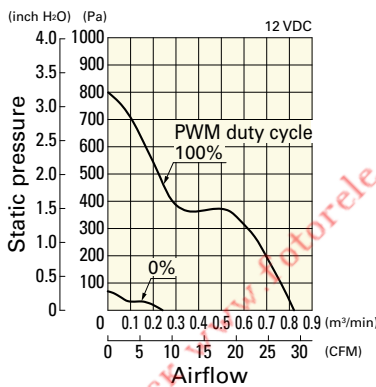


PWM duty - Speed characteristics example

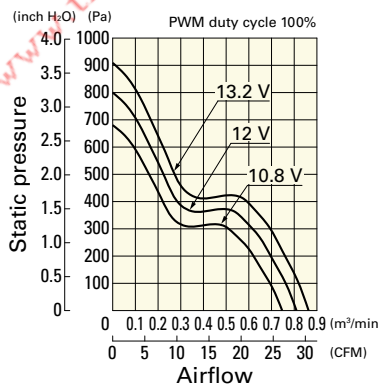


9GAX0412P3K003 With pulse sensor with PWM control function

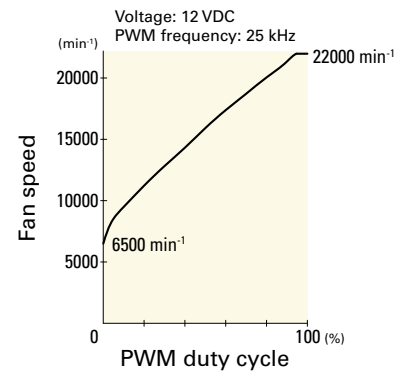
PWM duty cycle



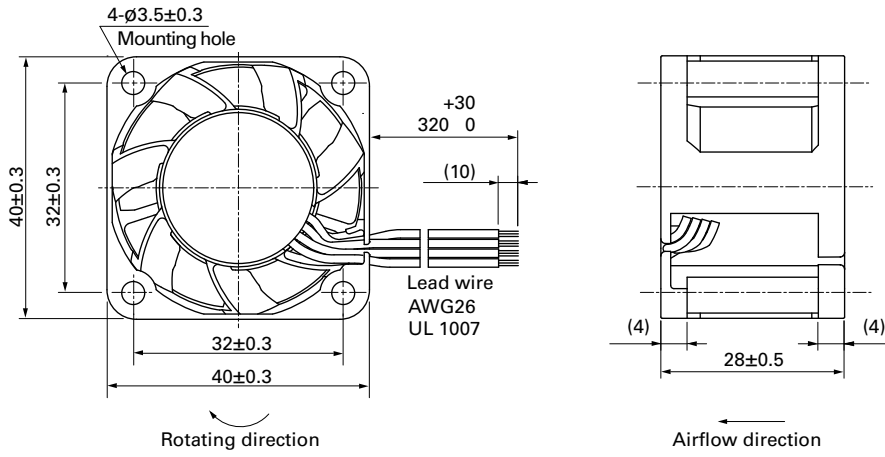
Operating voltage range



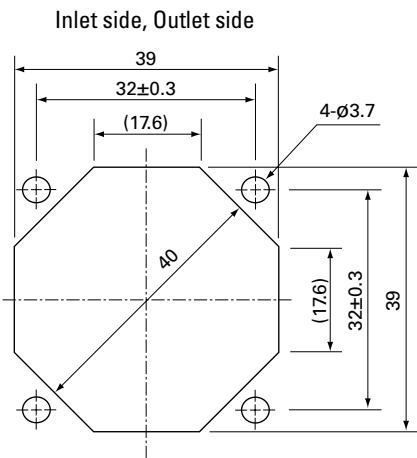
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-059, 109-059H

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40x40x28 mm

San Ace 40 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 53 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]						
9GA0412P3K01	12	10.8 to 13.2	100	0.92	11.04	22000	0.81 28.6	799 3.21	61	-20 to +60	30000/60°C						
			0	0.1	1.2	6500	0.23 8.12	68 0.27	32								
9GA0412P3J01			100	0.49	5.88	18000	0.67 23.7	535 2.15	54			-20 to +70	40000/60°C				
			0	0.05	0.6	4500	0.16 5.7	33 0.13	22								
9GA0412P3G01			100	0.39	4.68	16500	0.61 21.5	450 1.81	53					-20 to +70	40000/60°C		
			0	0.05	0.6	4500	0.16 5.7	33 0.13	22								
9GA0412P3H01			100	0.28	3.36	14500	0.54 19.1	347 1.39	50	-20 to +70	40000/60°C						
			0	0.04	0.48	3500	0.13 4.6	20 0.08	17								
9GA0412P3M01			100	0.21	2.52	12500	0.46 16.2	258 1.04	47			-20 to +70	40000/60°C				
			0	0.04	0.48	3500	0.13 4.6	20 0.08	17								
9GA0424P3J001**			24	21.6 to 26.4	100	0.27	6.48	18000	0.67 23.7					535 2.15	54	-20 to +70	40000/60°C
9GA0424P3G001**					100	0.22	5.28	16500	0.61 21.5					450 1.81	53		
9GA0424P3H001**	100	0.16			3.84	14500	0.54 19.1	347 1.39	50								
9GA0424P3M001**	100	0.11			2.64	12500	0.46 16.2	258 1.04	47								

* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 551).

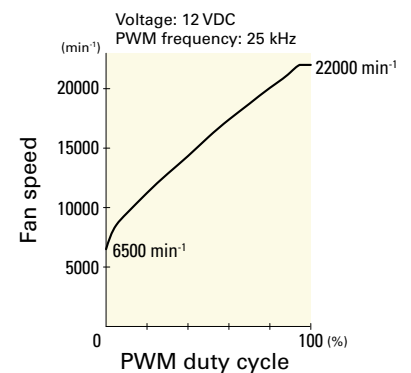
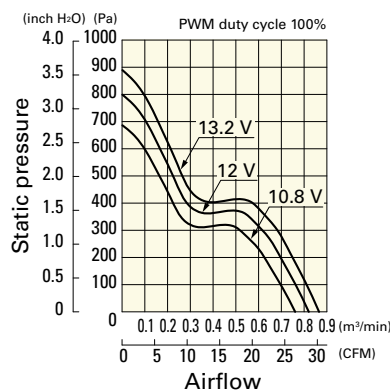
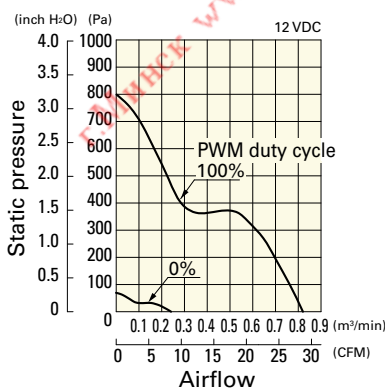
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0412P3K01 With pulse sensor with PWM control function

PWM duty cycle

Operating voltage range

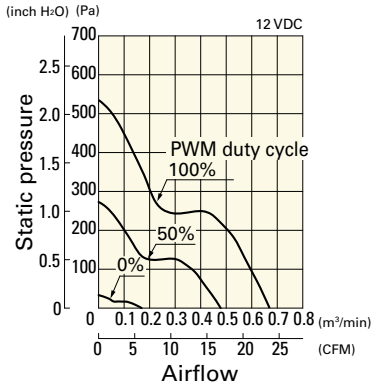
PWM duty - Speed characteristics example



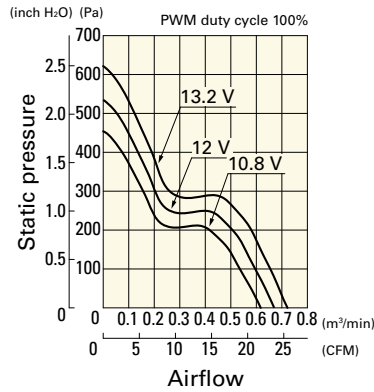
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0412P3J01 With pulse sensor with PWM control function

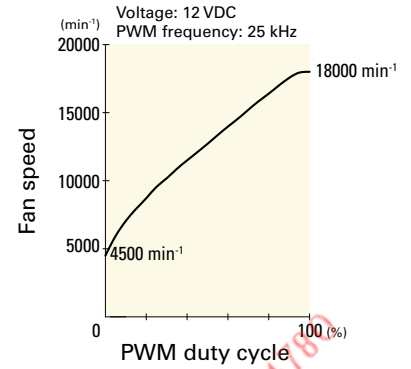
PWM duty cycle



Operating voltage range

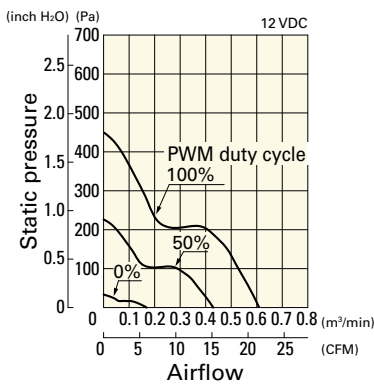


PWM duty - Speed characteristics example

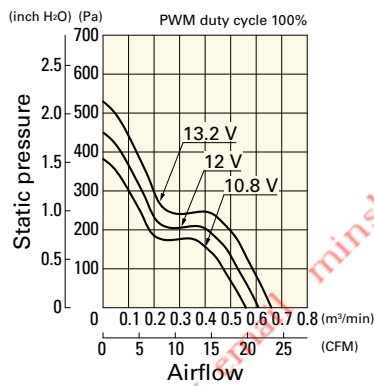


9GA0412P3G01 With pulse sensor with PWM control function

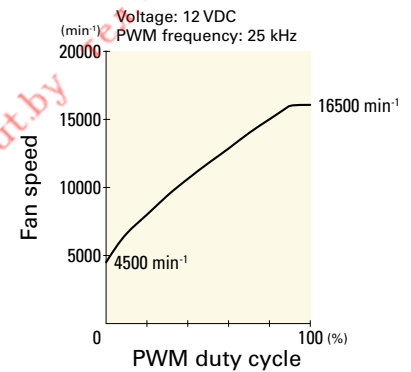
PWM duty cycle



Operating voltage range

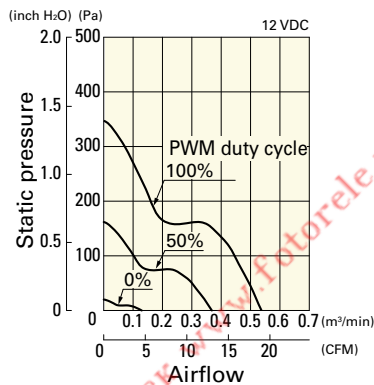


PWM duty - Speed characteristics example

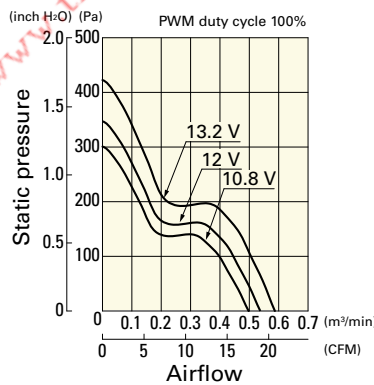


9GA0412P3H01 With pulse sensor with PWM control function

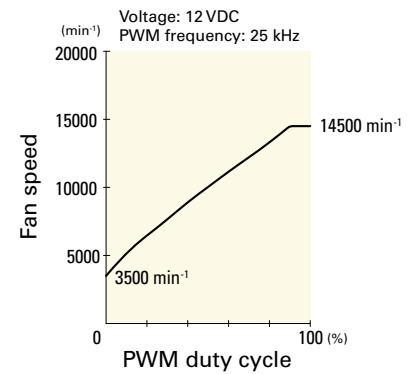
PWM duty cycle



Operating voltage range

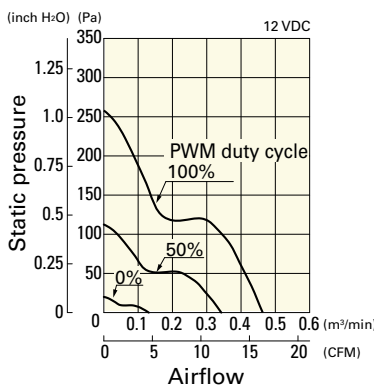


PWM duty - Speed characteristics example

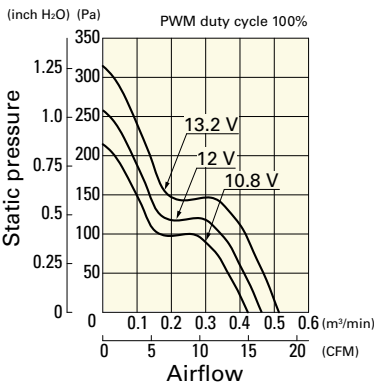


9GA0412P3M01 With pulse sensor with PWM control function

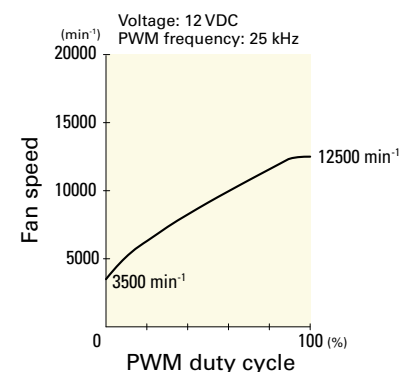
PWM duty cycle



Operating voltage range



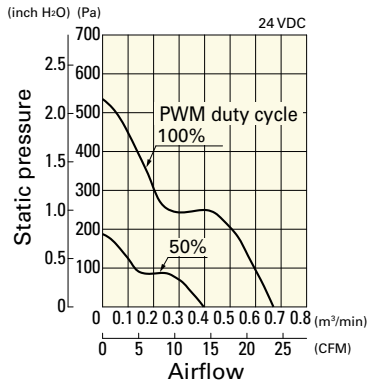
PWM duty - Speed characteristics example



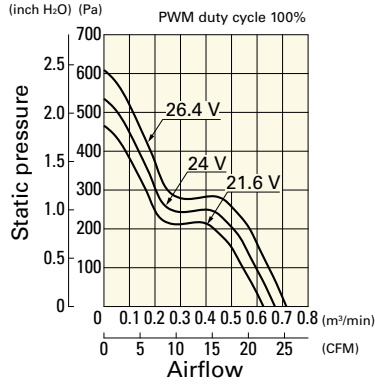
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0424P3J001 With pulse sensor with PWM control function

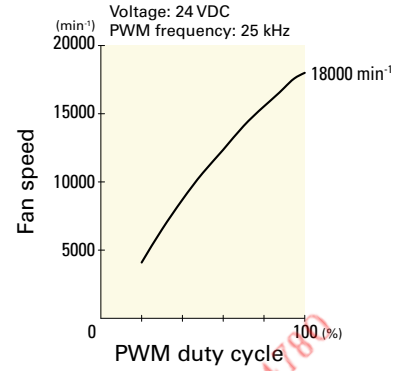
PWM duty cycle



Operating voltage range

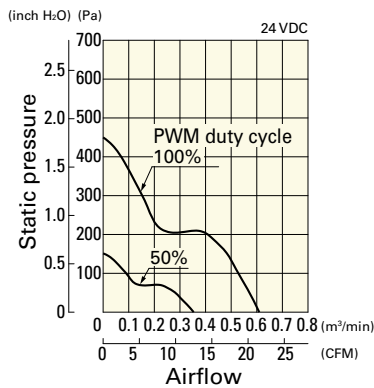


PWM duty - Speed characteristics example

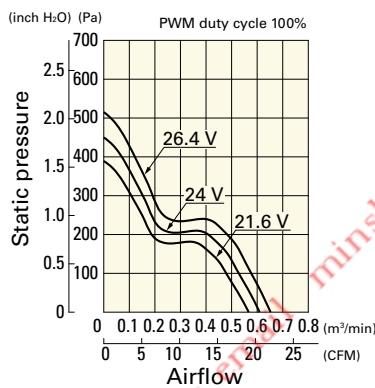


9GA0424P3G001 With pulse sensor with PWM control function

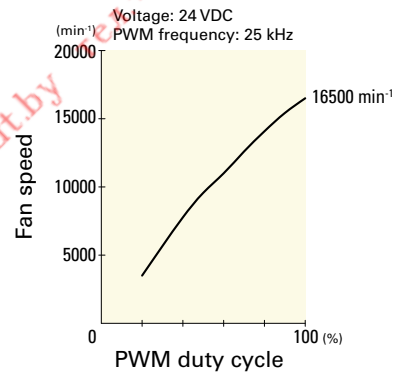
PWM duty cycle



Operating voltage range

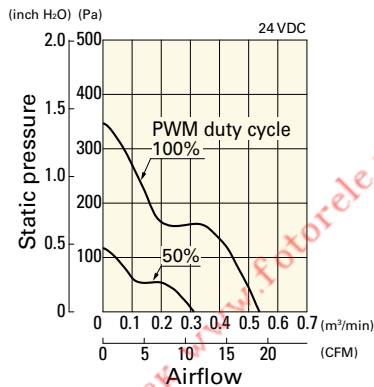


PWM duty - Speed characteristics example

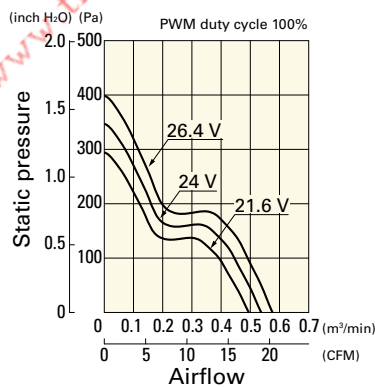


9GA0424P3H001 With pulse sensor with PWM control function

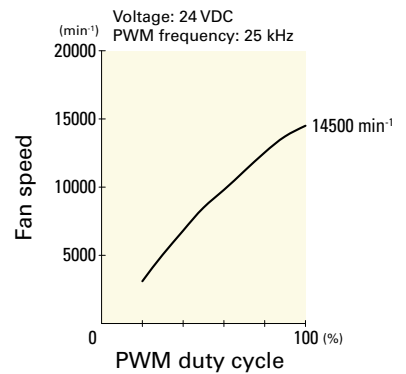
PWM duty cycle



Operating voltage range

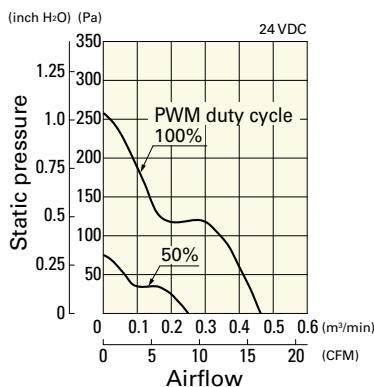


PWM duty - Speed characteristics example

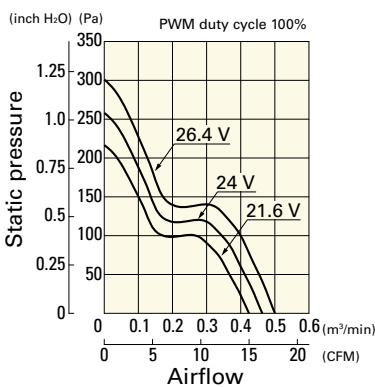


9GA0424P3M001 With pulse sensor with PWM control function

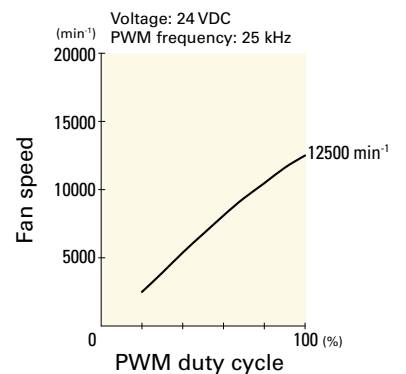
PWM duty cycle



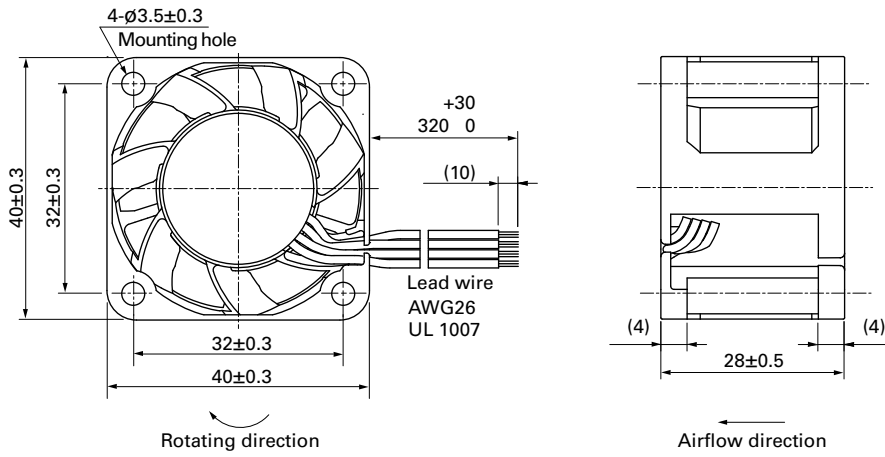
Operating voltage range



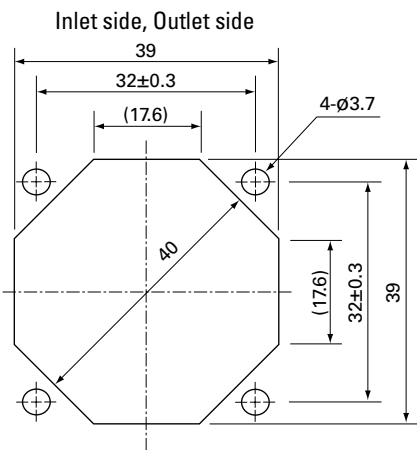
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-059, 109-059H

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40x40x28 mm

San Ace 40 9GE type  



General Specifications

- Material Frame: Aluminum, Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 55 g

Specifications

The models listed below **have pulse sensors with PWM control function.**

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GE0412P3K03	12	10.8 to 13.2	100	0.84	10.08	16500	0.76 26.8	415 1.666	58	-20 to +60	40000/60°C
			0	0.07	0.84	3000	0.13 4.6	13 0.052	17		
9GE0412P3J03			100	0.65	7.8	15000	0.69 24.4	343.0 1.378	56		
			0	0.05	0.6	2650	0.12 4.2	10.7 0.042	14		
9GE0412P3G03			100	0.47	5.64	13000	0.6 21.2	260 1.044	52		
			0	0.05	0.6	2400	0.11 3.9	8.2 0.033	13		

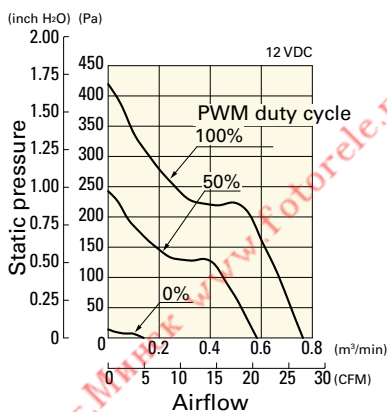
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 553).

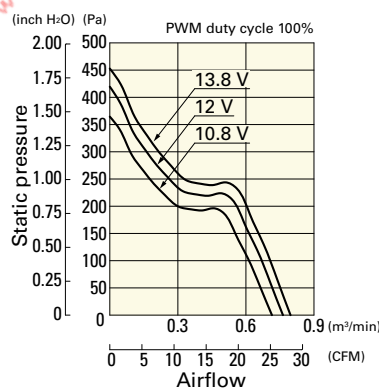
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GE0412P3K03 With pulse sensor with PWM control function

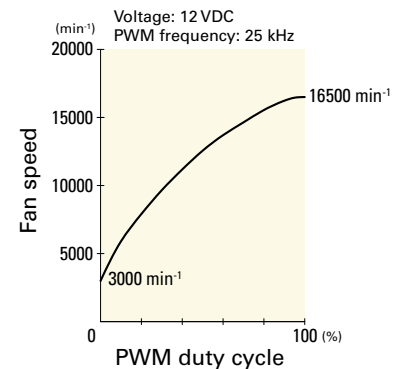
PWM duty cycle



Operating voltage range



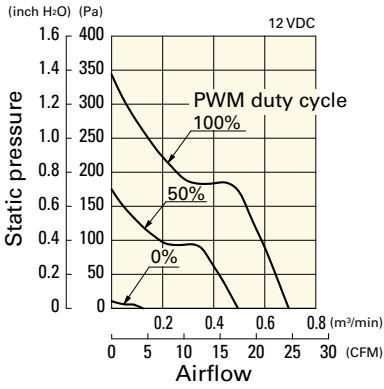
PWM duty - Speed characteristics example



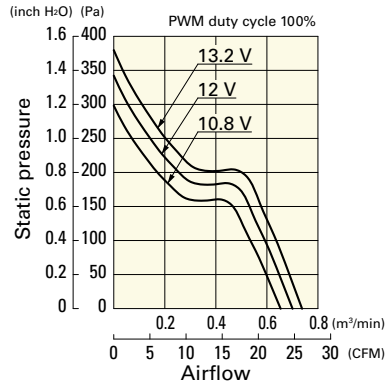
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GE0412P3J03 With pulse sensor with PWM control function

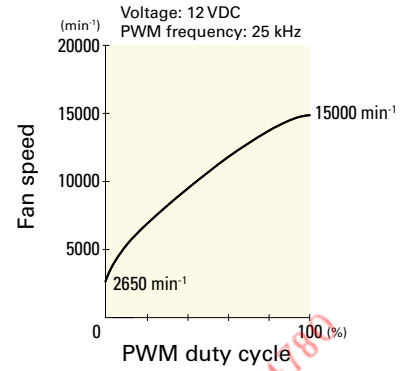
PWM duty cycle



Operating voltage range

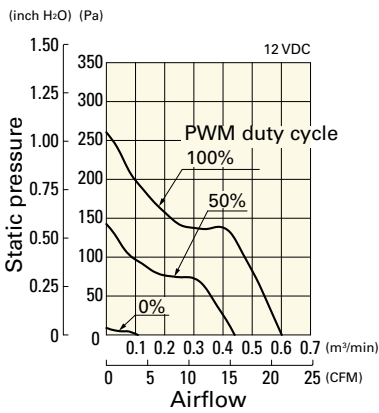


PWM duty - Speed characteristics example

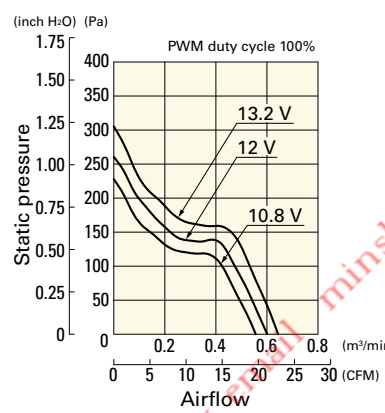


9GE0412P3G03 With pulse sensor with PWM control function

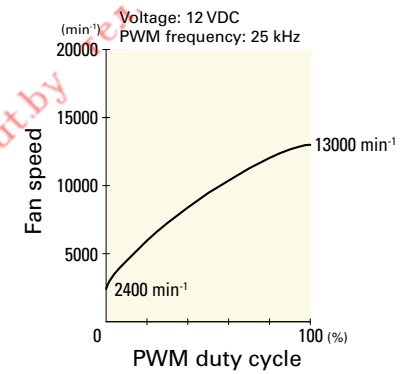
PWM duty cycle



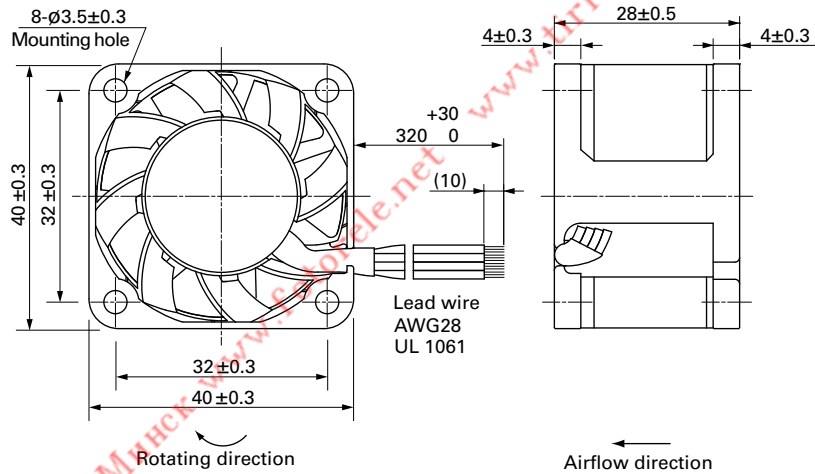
Operating voltage range



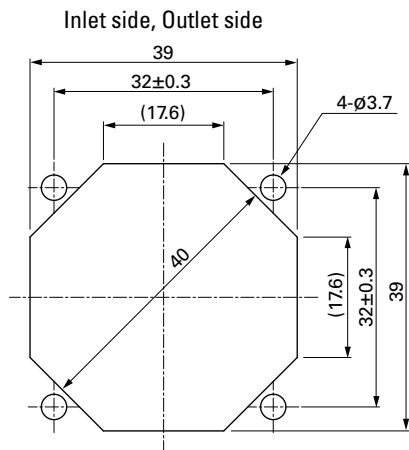
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-059, 109-059H

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40x40x28 mm

San Ace 40 9GV type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -20 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 50 g

Specifications

The models listed below **have ribs and pulse sensors.** For models without ribs, append "1" to the end of model numbers.

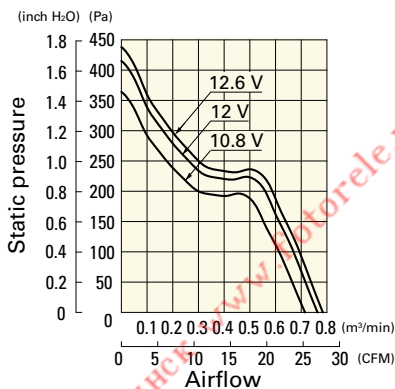
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GV0412K301	12	10.8 to 12.6	0.84	10.08	16500	0.76 26.8	415 1.668	58	-20 to +60	40000/60°C
9GV0412J301			0.6	7.2	14700	0.68 24.0	330 1.325	55		
9GV0412G301		7 to 13.2	0.47	5.64	13000	0.6 21.1	260 1.044	52		
9GV0412H301			0.31	3.72	11600	0.53 18.7	207 0.831	49		
9GV0412C301			0.15	1.8	8300	0.37 13.1	100 0.402	41		

Other sensor specifications are available as options. Refer to the index (p. 554).

Airflow - Static Pressure Characteristics

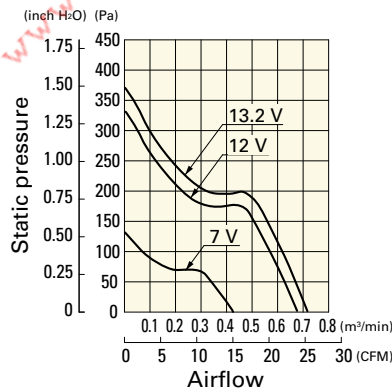
9GV0412K301 With pulse sensor

Operating voltage range



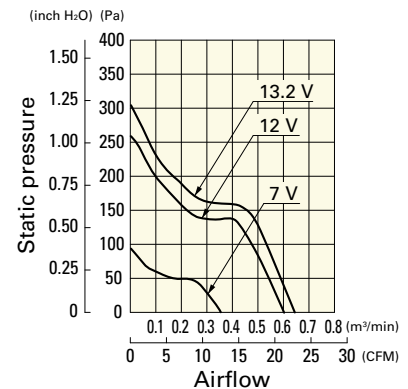
9GV0412J301 With pulse sensor

Operating voltage range



9GV0412G301 With pulse sensor

Operating voltage range



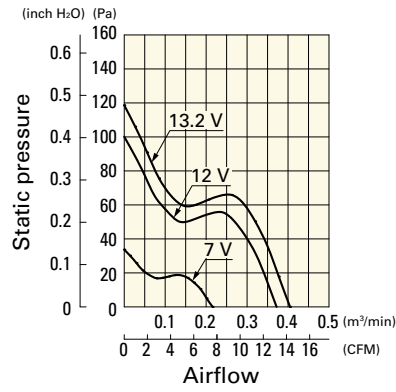
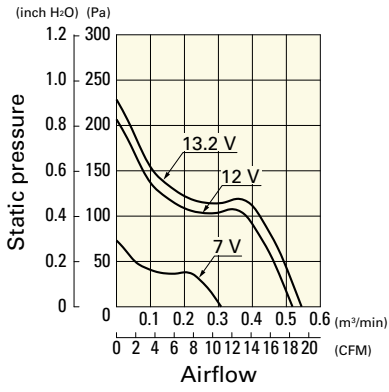
Airflow - Static Pressure Characteristics

9GV0412H301 With pulse sensor

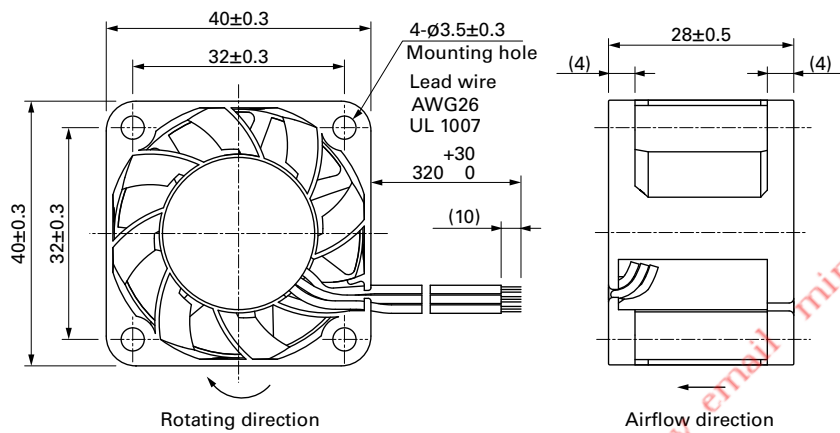
9GV0412C301 With pulse sensor

Operating voltage range

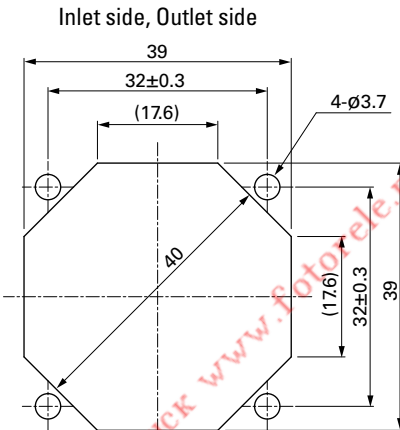
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-059, 109-059H

40x40x28 mm

San Ace 40 9P type    Model 109P0424R3013 is not certified.



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 52 g

Specifications

The models listed below **have ribs and pulse sensors.**

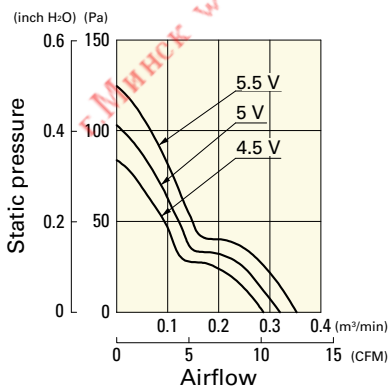
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P0405H3013	5	4.5 to 5.5	0.68	3.4	8700	0.32 11.3	102.9 0.414	37	-20 to +70	40000/60°C
109P0405F3013			0.28	1.4	6700	0.244 8.6	58.8 0.236	30		60000/60°C
109P0412K3013	12	8 to 13.2	0.55	6.6	15500	0.59 20.8	340 1.365	50	-20 to +60	40000/60°C
109P0412J3013		7 to 13.2	0.35	4.2	12500	0.46 16.2	210 0.843	44		
109P0412G3013			0.31	3.72	11500	0.42 14.8	179 0.719	42		
109P0412B3013		7 to 13.8	0.28	3.36	10300	0.38 13.4	143 0.574	40		
109P0412H3013			0.195	2.34	8700	0.32 11.3	102.9 0.414	37		
109P0412F3013		10.2 to 13.8	0.105	1.26	6700	0.244 8.6	58.8 0.236	30	-20 to +70	60000/60°C
109P0412M3013			0.045	0.54	4100	0.15 5.3	21.6 0.087	20		
109P0424R3013		24	12 to 26.4	0.25	6	14000	0.51 18.0	263.4 1.057	47	-20 to +60
109P0424J3013	0.18			4.32	12500	0.46 16.2	210 0.843	44		
109P0424G3013	0.19			4.56	11500	0.42 14.8	179 0.719	42		
109P0424B3013	0.13			3.12	10300	0.38 13.4	143 0.574	40		
109P0424H3013	12 to 27.6		0.095	2.28	8700	0.32 11.3	102.9 0.414	37	-20 to +70	60000/60°C
109P0424F3013	14 to 27.6		0.055	1.32	6700	0.244 8.6	58.8 0.236	30		

Other sensor specifications are available as options. Refer to the index (pp. 543 to 544).

Airflow - Static Pressure Characteristics

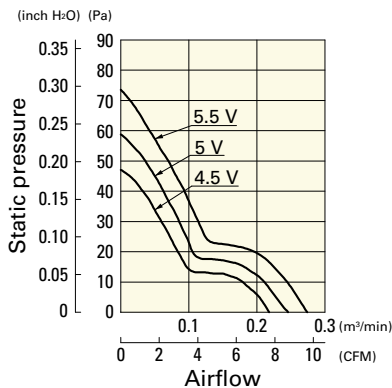
109P0405H3013 With pulse sensor

Operating voltage range



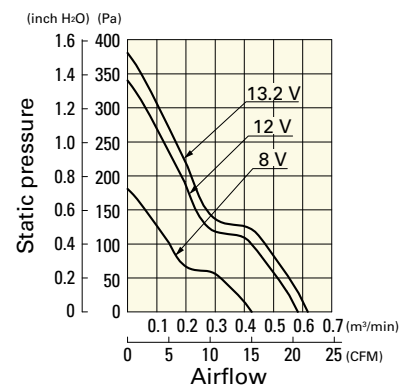
109P0405F3013 With pulse sensor

Operating voltage range

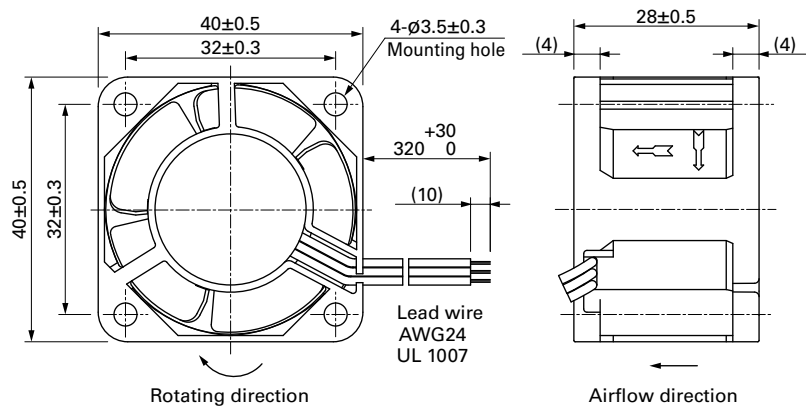


109P0412K3013 With pulse sensor

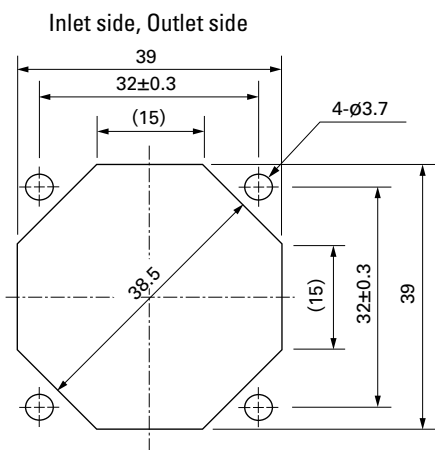
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-059, 109-059H



52x52x15 mm

San Ace 52 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 40 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.**

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]
9GA0512P7G001	12	10.2 to 13.8	100	0.13	1.56	7800	0.5 17.7	91.5 0.367	38	-20 to +70	40000/60°C
9GA0512P7A001				0.08	0.96	6300	0.4 14.1	59 0.237	32		
9GA0512P7H001				0.05	0.6	4300	0.275 9.7	27.5 0.11	22		
9GA0512P7M001				0.04	0.48	3400	0.215 7.6	17 0.068	16		
9GA0524P7G001	24	20.4 to 27.6	100	0.07	1.68	7800	0.5 17.7	91.5 0.367	38		
9GA0524P7A001				0.05	1.2	6300	0.4 14.1	59.0 0.237	32		
9GA0524P7H001				0.03	0.72	4300	0.275 9.7	27.5 0.11	22		
9GA0524P7M001				0.02	0.48	3400	0.215 7.6	17.0 0.068	16		

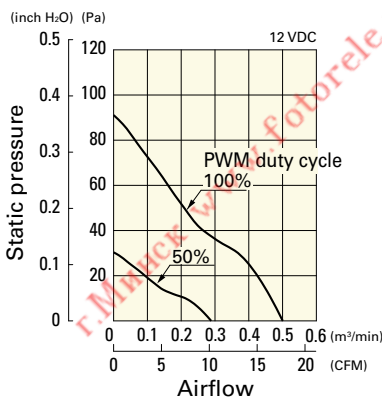
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 551).

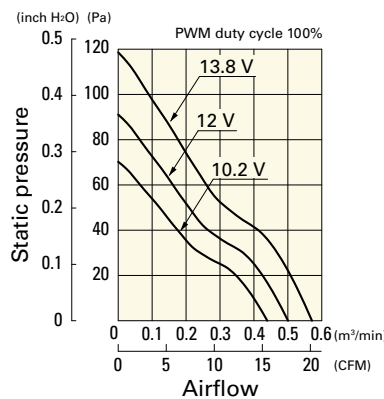
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0512P7G001 With pulse sensor with PWM control function

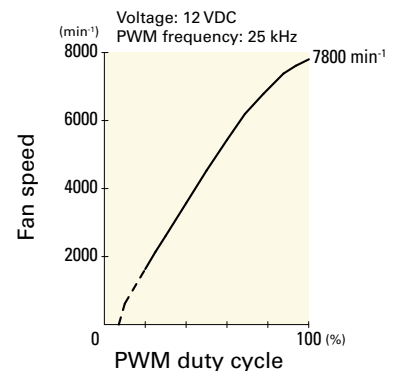
PWM duty cycle



Operating voltage range



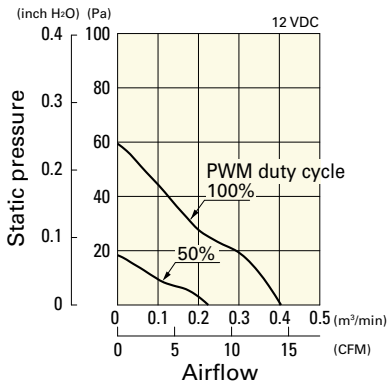
PWM duty - Speed characteristics example



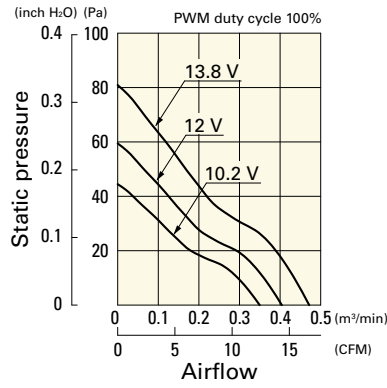
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0512P7A001 With pulse sensor with PWM control function

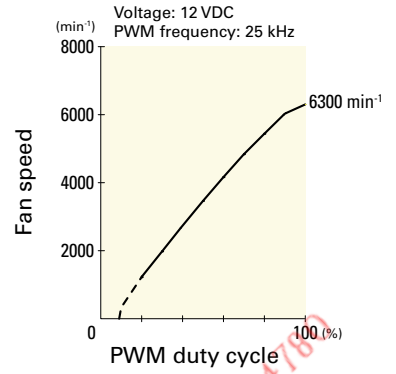
PWM duty cycle



Operating voltage range

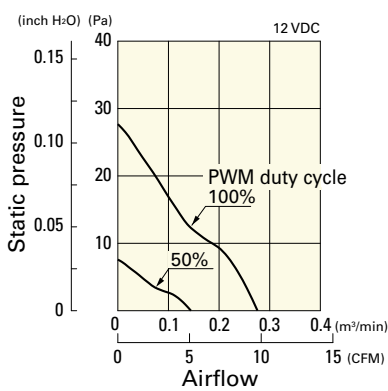


PWM duty - Speed characteristics example

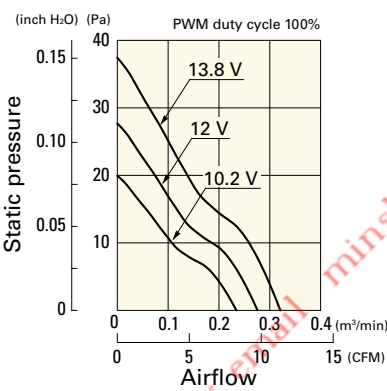


9GA0512P7H001 With pulse sensor with PWM control function

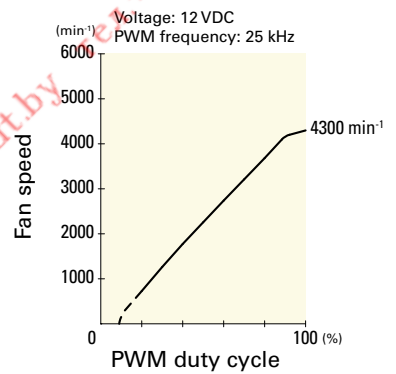
PWM duty cycle



Operating voltage range

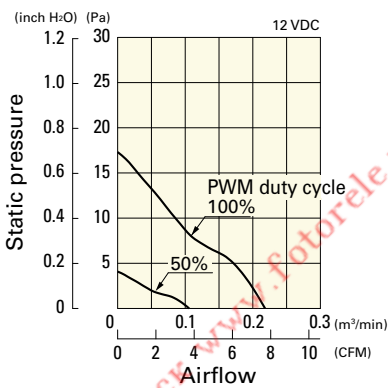


PWM duty - Speed characteristics example

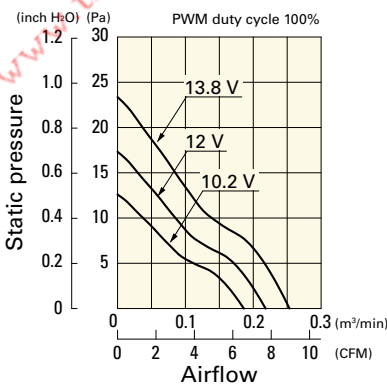


9GA0512P7M001 With pulse sensor with PWM control function

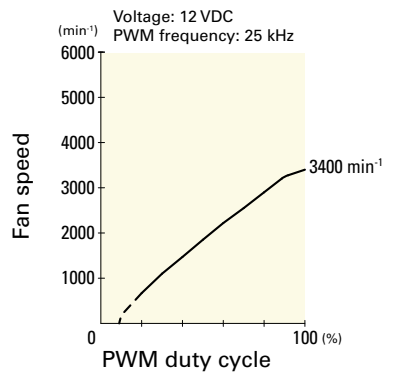
PWM duty cycle



Operating voltage range

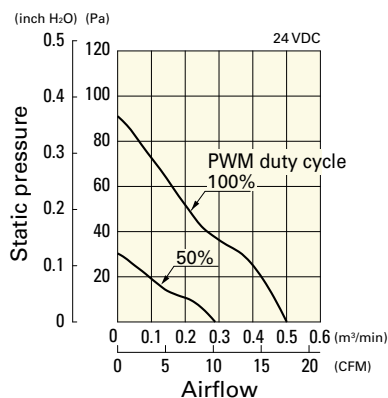


PWM duty - Speed characteristics example

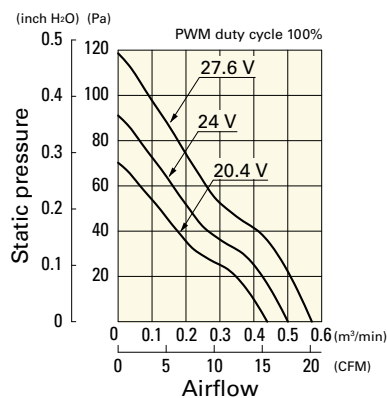


9GA0524P7G001 With pulse sensor with PWM control function

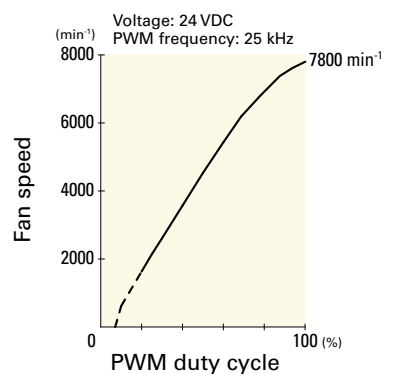
PWM duty cycle



Operating voltage range



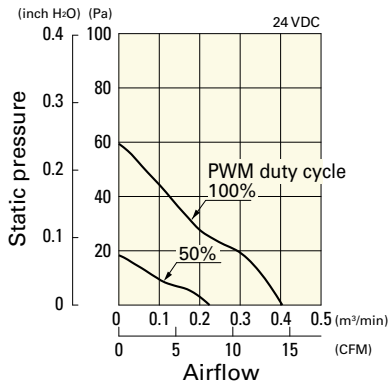
PWM duty - Speed characteristics example



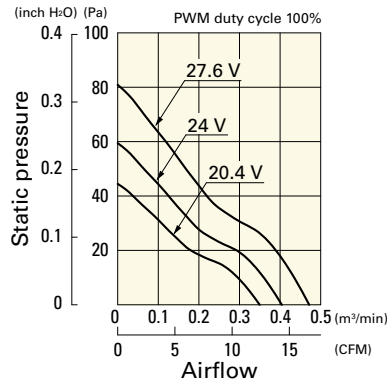
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0524P7A001 With pulse sensor with PWM control function

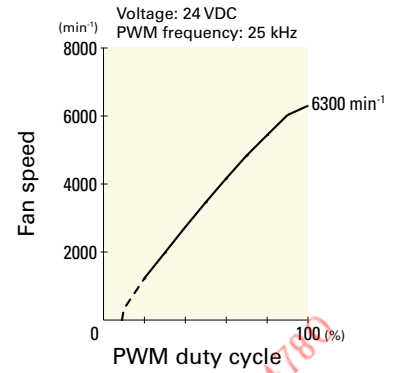
PWM duty cycle



Operating voltage range

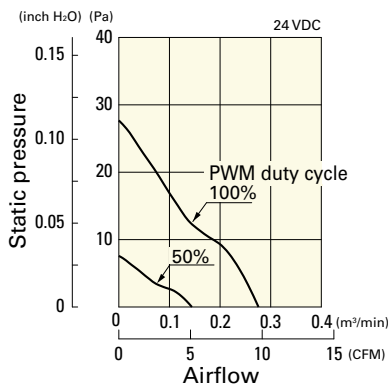


PWM duty - Speed characteristics example

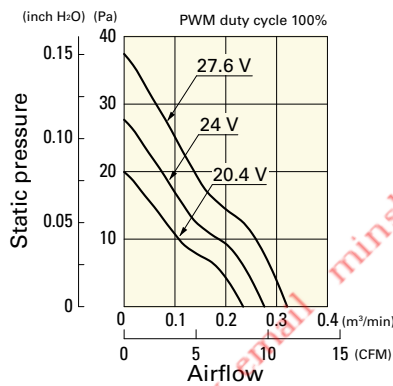


9GA0524P7H001 With pulse sensor with PWM control function

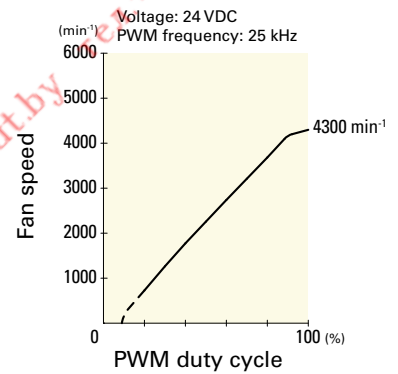
PWM duty cycle



Operating voltage range

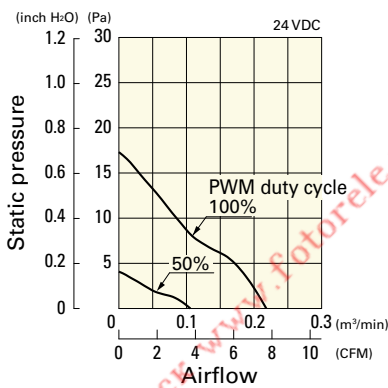


PWM duty - Speed characteristics example

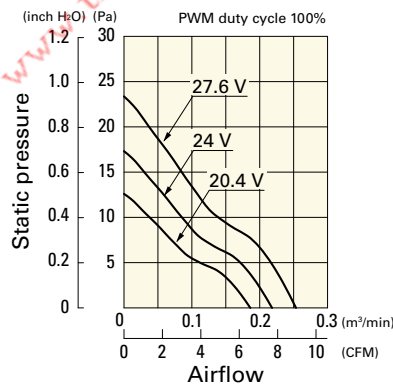


9GA0524P7M001 With pulse sensor with PWM control function

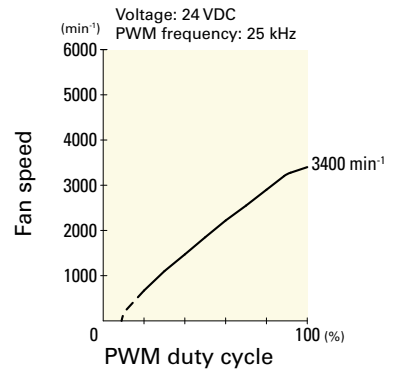
PWM duty cycle



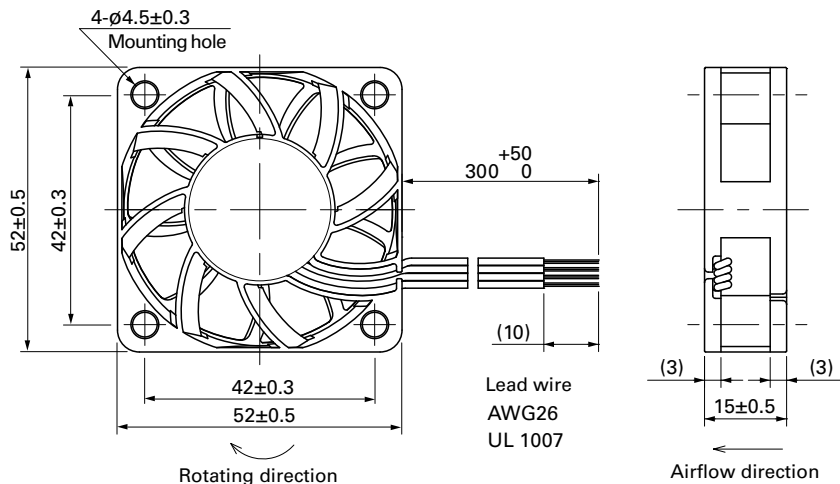
Operating voltage range



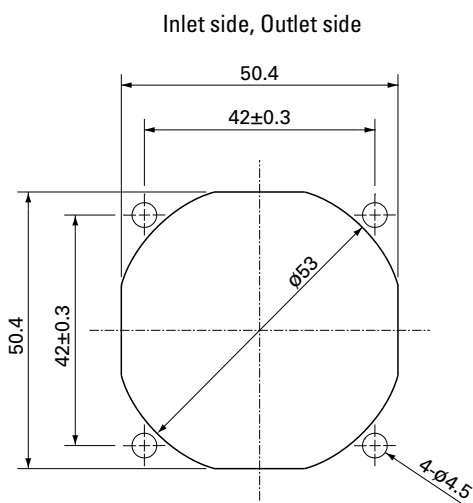
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-149, 109-149E

52x52x15 mm

San Ace 52 9P type   



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 55 g

Specifications

The models listed below **have ribs and pulse sensors.**

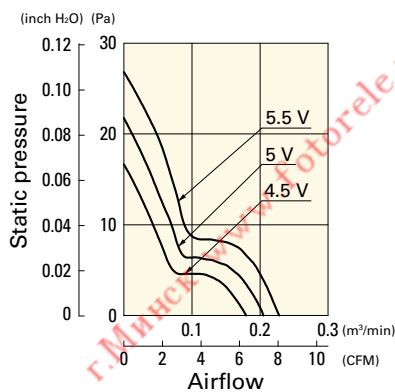
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P0505M701	5	4.5 to 5.5	0.15	0.75	3700	0.205 7.24	21.4 0.086	22	-20 to +70	60000/60°C
109P0512A701	12	10.2 to 13.8	0.21	2.52	6800	0.375 13.25	69.7 0.28	36		40000/60°C
109P0512H701		7 to 13.8	0.1	1.2	4600	0.255 9.0	31.9 0.128	27		60000/60°C
109P0512M701		0.07	0.84	3700	0.205 7.24	21.4 0.086	22			
109P0524A701	24	14 to 27.6	0.11	2.64	6800	0.375 13.24	69.7 0.28	36	-20 to +60	40000/60°C
109P0524H701			0.05	1.2	4600	0.255 9.0	31.9 0.128	27	-20 to +70	60000/60°C
109P0524M701			0.04	0.96	3700	0.205 7.24	21.4 0.086	22		

Other sensor specifications are available as options. Refer to the index (p. 544).

Airflow - Static Pressure Characteristics

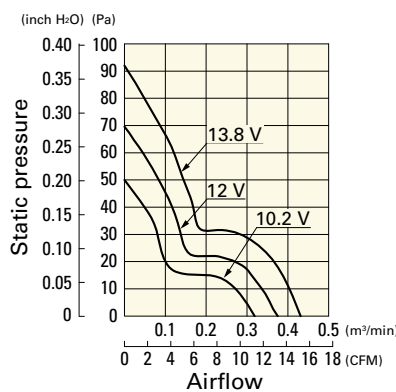
109P0505M701 With pulse sensor

Operating voltage range



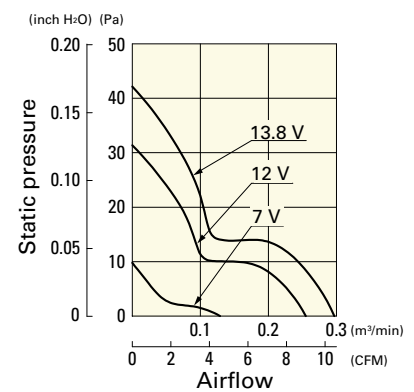
109P0512A701 With pulse sensor

Operating voltage range



109P0512H701 With pulse sensor

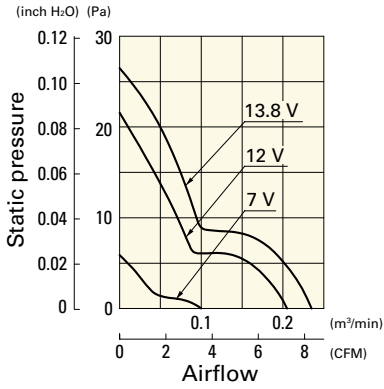
Operating voltage range



Airflow - Static Pressure Characteristics

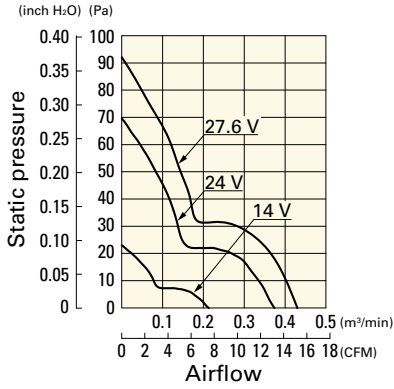
109P0512M701 With pulse sensor

Operating voltage range



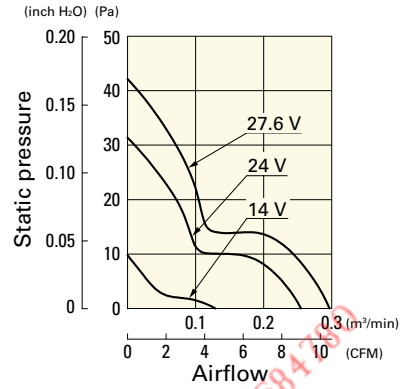
109P0524A701 With pulse sensor

Operating voltage range



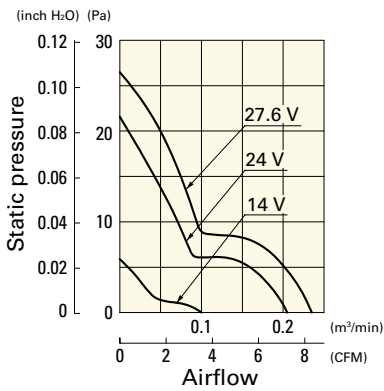
109P0524H701 With pulse sensor

Operating voltage range

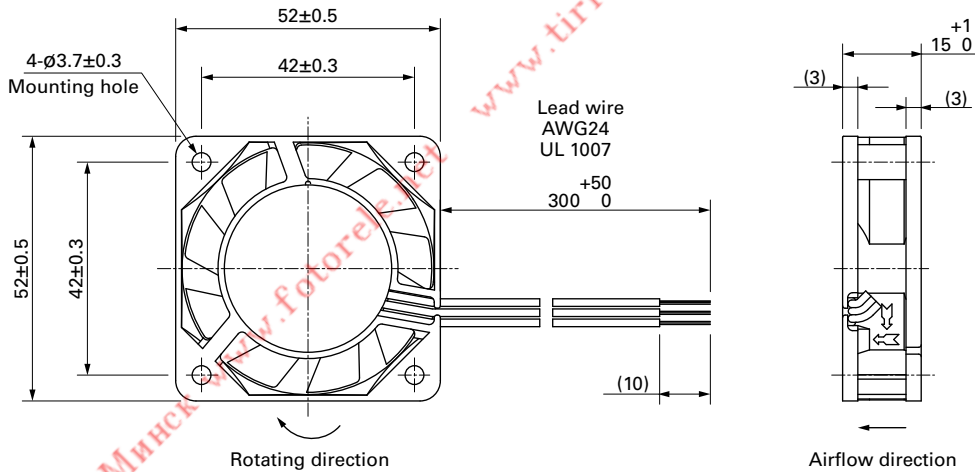


109P0524M701 With pulse sensor

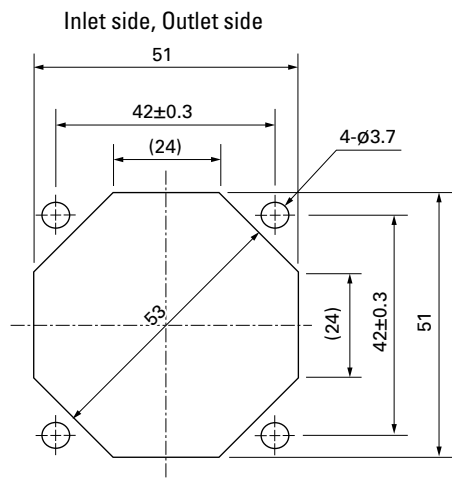
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-149, 109-149E

г. Минск www.fotorele.net www.tiristor.by email minsk17@tut.by тел. +375 44 758 4780



60×60×10 mm

San Ace 60 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 35 g

Specifications

The models listed below **have ribs and pulse sensors.**

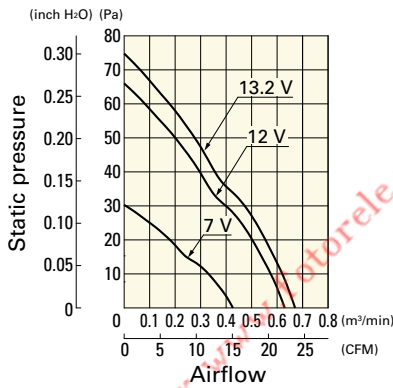
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA0612G9001	12	7.0 to 13.2	0.27	3.24	6200	0.62 21.9	66 0.26	43	-20 to +60	40000/60°C (70000/40°C)
9GA0612H9001		7.0 to 13.8	0.14	1.68	5000	0.5 17.6	42.9 0.17	37	-20 to +70	
9GA0612L9001			0.03	0.36	2300	0.23 8.1	9.1 0.037	17	-10 to +70	

Other sensor specifications are available as options. Refer to the index (p. 551).

Airflow - Static Pressure Characteristics

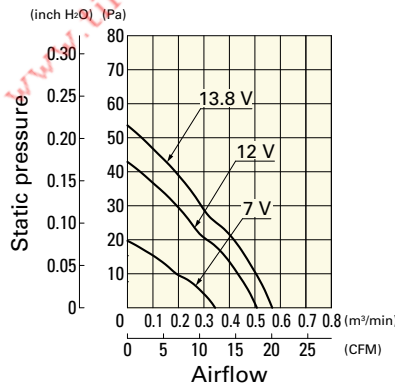
9GA0612G9001 With pulse sensor

Operating voltage range



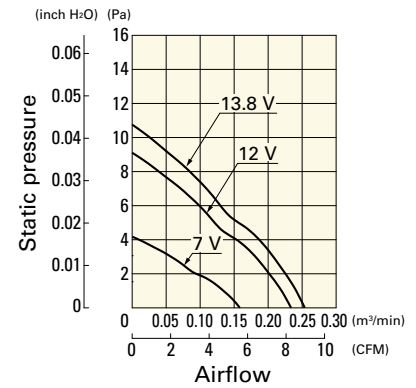
9GA0612H9001 With pulse sensor

Operating voltage range

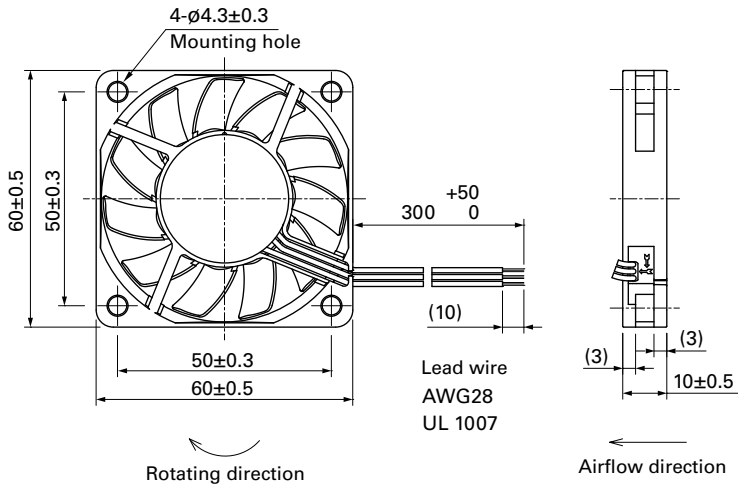


9GA0612L9001 With pulse sensor

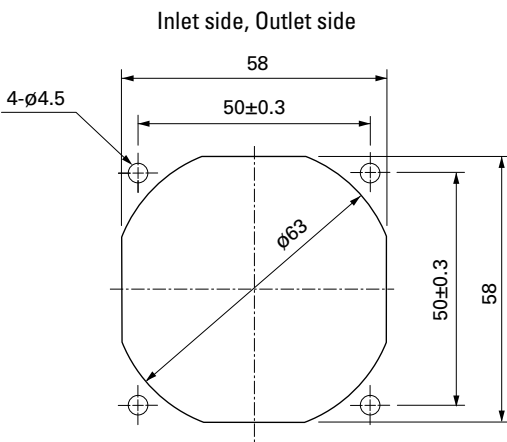
Operating voltage range



■ Dimensions (unit: mm)



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



■ Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)



60x60x15 mm

San Ace 60 9GA type Low Power Consumption Fan Model 9GA0624P7G01 is not TÜV certified.

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- Mass 50 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.**

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]
9GA0612P7G01	12	10.2 to 13.8	100	0.16	1.92	5900	0.68 24	80 0.32	38	-20 to +70	40000/60°C (70000/40°C)
			0	0.05	0.6	1500	0.17 6.0	5.2 0.02	10		
9GA0612P7H01			100	0.1	1.2	4900	0.56 19.7	55.6 0.223	34		
			0	0.03	0.36	1300	0.15 5.3	3.9 0.015	8		
9GA0624P7G01**	24	20.4 to 27.6	100	0.08	1.92	5900	0.68 24.0	80 0.32	38		

* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.

The models listed below **have ribs and pulse sensors.**

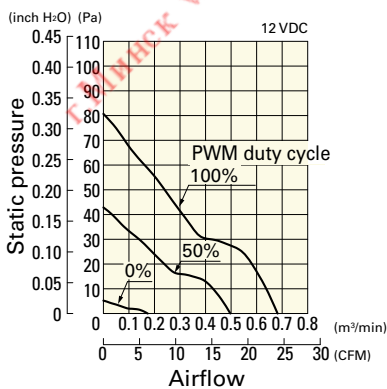
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA0612G701	12	6 to 13.8	0.16	1.92	5900	0.68 24	80 0.32	38	-20 to +70	40000/60°C (70000/40°C)
9GA0612H701			0.1	1.2	4900	0.56 19.7	55.6 0.223	34		
9GA0612M701			0.08	0.96	3900	0.45 15.9	35.3 0.142	28		
9GA0612L701			0.03	0.36	2800	0.31 10.9	18 0.072	17		
9GA0624M701	24	12 to 27.6	0.05	1.2	3900	0.45 15.9	35.3 0.142	28		40000/60°C (70000/40°C)

Other sensor specifications are available as options. Refer to the index (pp. 551 to 552).

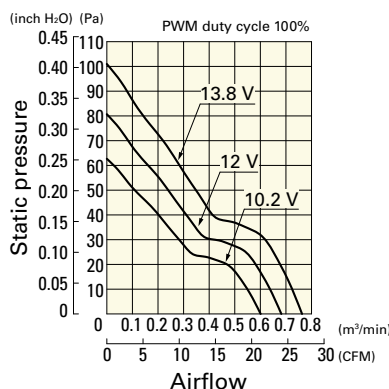
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0612P7G01 With pulse sensor with PWM control function

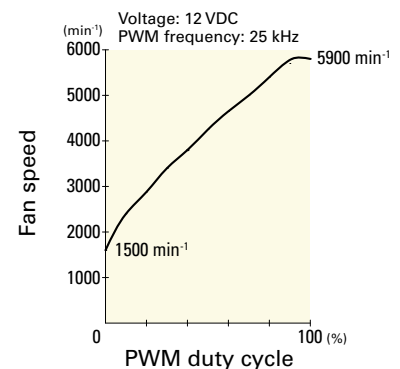
PWM duty cycle



Operating voltage range



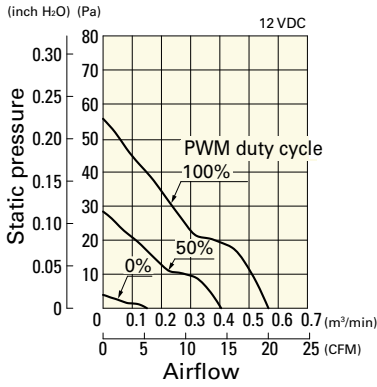
PWM duty - Speed characteristics example



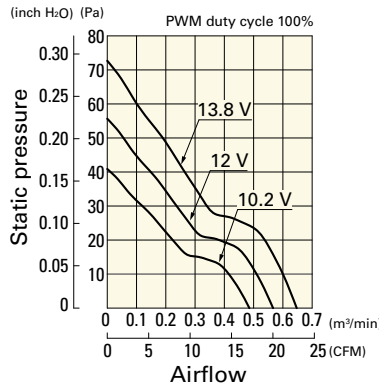
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0612P7H01 With pulse sensor with PWM control function

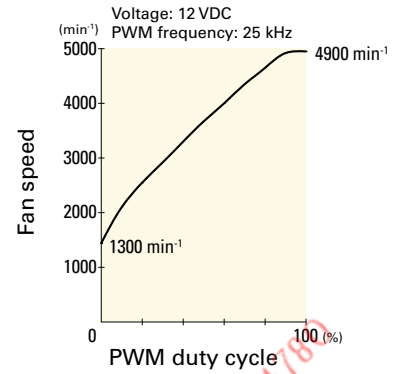
PWM duty cycle



Operating voltage range

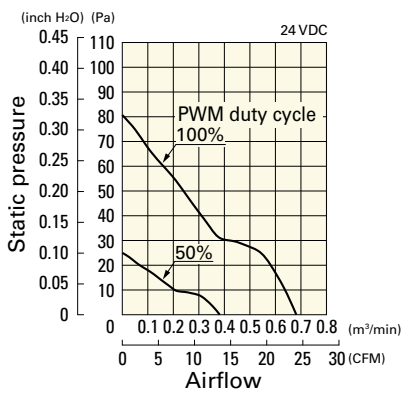


PWM duty - Speed characteristics example

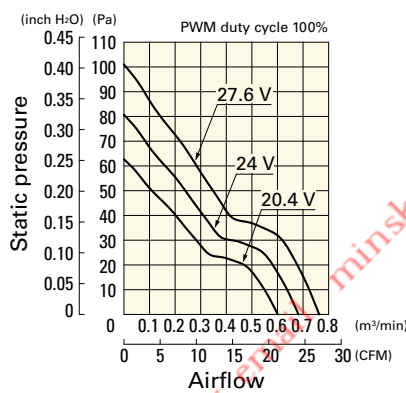


9GA0624P7G01 With pulse sensor with PWM control function

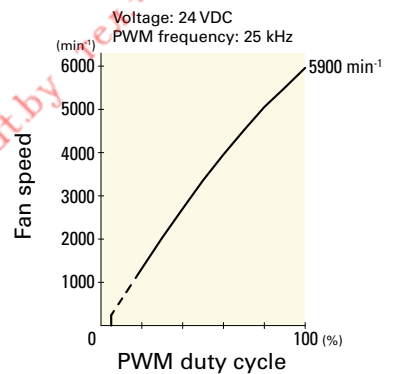
PWM duty cycle



Operating voltage range

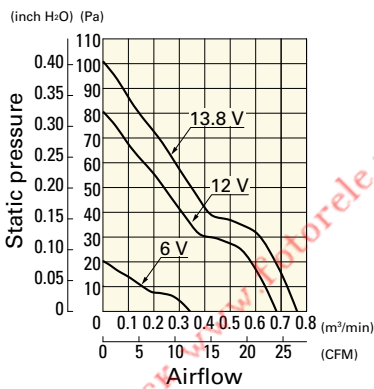


PWM duty - Speed characteristics example



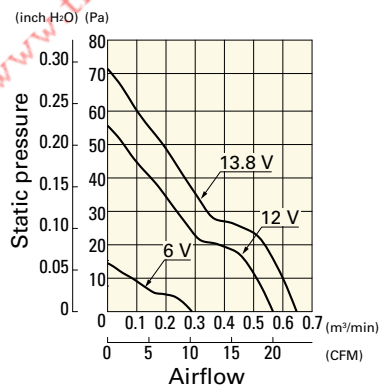
9GA0612G701 With pulse sensor

Operating voltage range



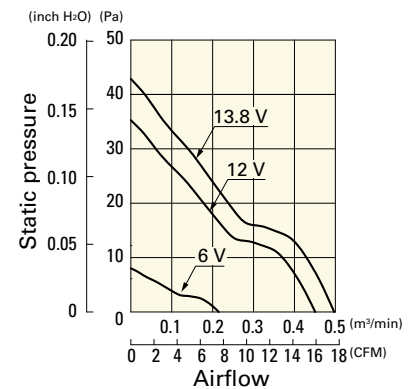
9GA0612H701 With pulse sensor

Operating voltage range



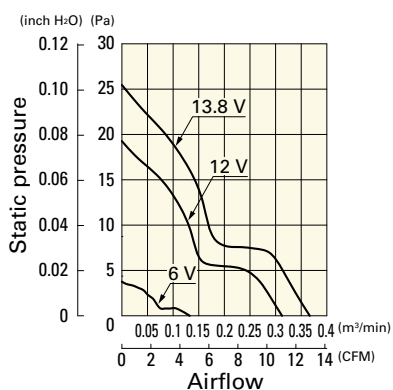
9GA0612M701 With pulse sensor

Operating voltage range



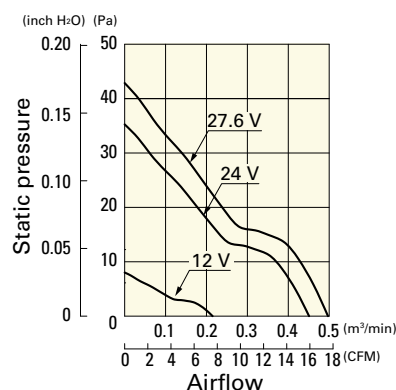
9GA0612L701 With pulse sensor

Operating voltage range

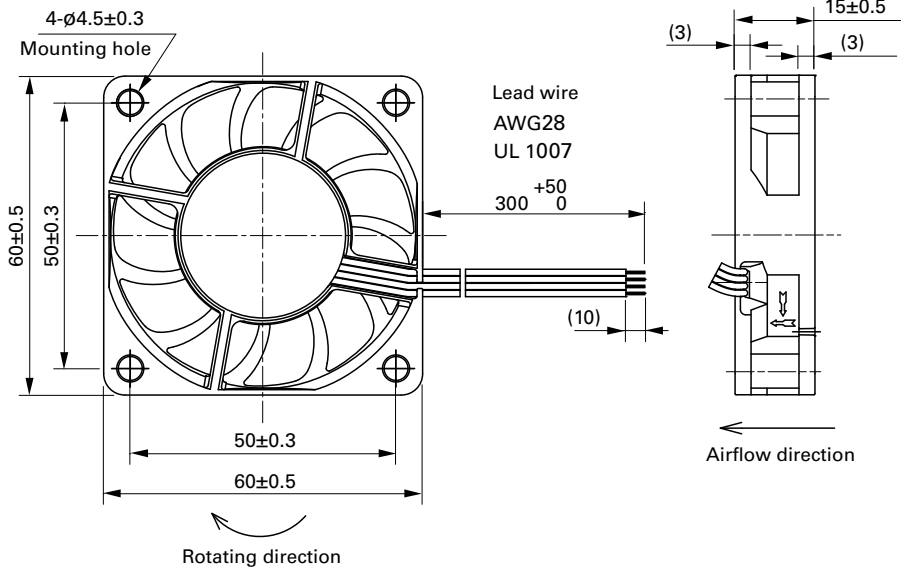


9GA0624M701 With pulse sensor

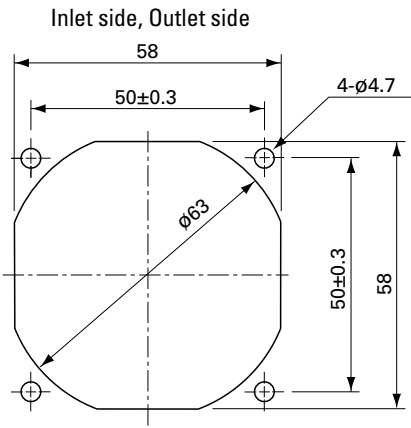
Operating voltage range



Dimensions (unit: mm) (With pulse sensor with PWM control function)



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



Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)



60×60×15 mm

San Ace 60 9P type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 60 g

Specifications

The models listed below **have ribs and pulse sensors.**

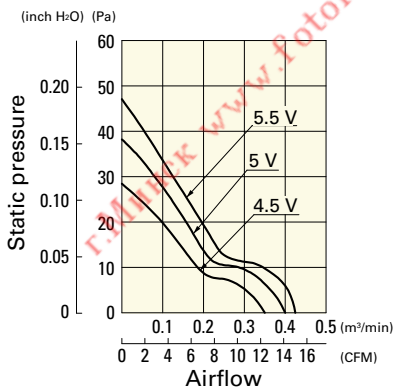
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P0605H701	5	4.5 to 5.5	0.26	1.3	4100	0.4 14.1	38.2 0.153	32	-20 to +70	60000/60°C
109P0605M701			0.15	0.75	3100	0.3 10.6	22.6 0.091	25		
109P0612K701	12	10.2 to 13.8	0.26	3.12	6500	0.62 21.9	99.3 0.399	45	-20 to +60	40000/60°C
109P0612S701			0.15	1.8	5000	0.48 17.0	58.8 0.236	36		
109P0612H701		7 to 13.8	0.09	1.08	4100	0.4 14.1	38.2 0.153	32		
109P0612M701		10.2 to 13.8	0.07	0.84	3100	0.3 10.6	22.6 0.091	25		
109P0612B701			0.05	0.6	2200	0.21 7.42	11.7 0.047	21		
109P0624J701			0.14	3.36	6200	0.61 21.5	86.5 0.347	44		
109P0624S701	24	14 to 27.6	0.08	1.92	5000	0.48 16.9	58.8 0.236	36	-20 to +70	60000/60°C
109P0624H701			0.06	1.44	4100	0.4 14.1	38.2 0.153	32		
109P0624M701		20.4 to 27.6	0.04	0.96	3100	0.3 10.6	22.6 0.091	25		

Other sensor specifications are available as options. Refer to the index (p. 544).

Airflow - Static Pressure Characteristics

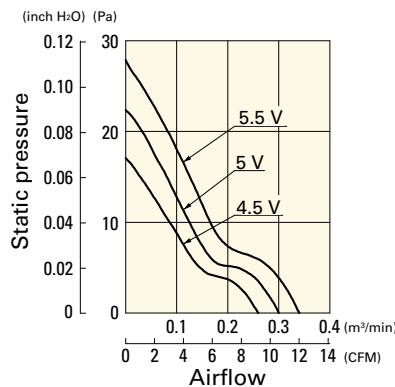
109P0605H701 With pulse sensor

Operating voltage range



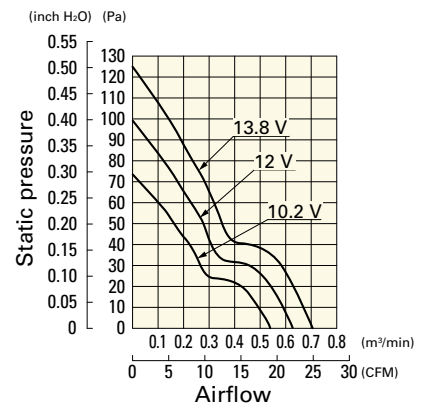
109P0605M701 With pulse sensor

Operating voltage range



109P0612K701 With pulse sensor

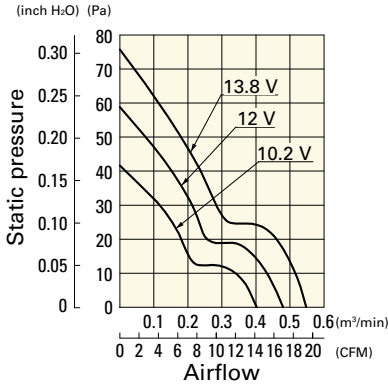
Operating voltage range



Airflow - Static Pressure Characteristics

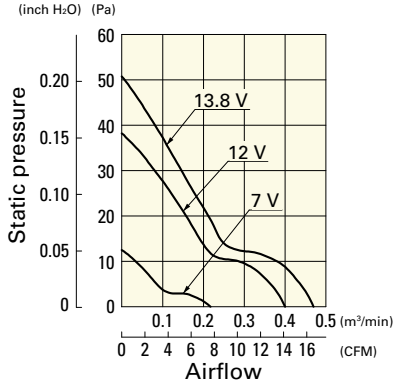
109P0612S701 With pulse sensor

Operating voltage range



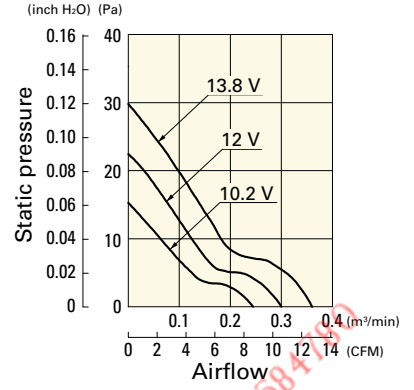
109P0612H701 With pulse sensor

Operating voltage range



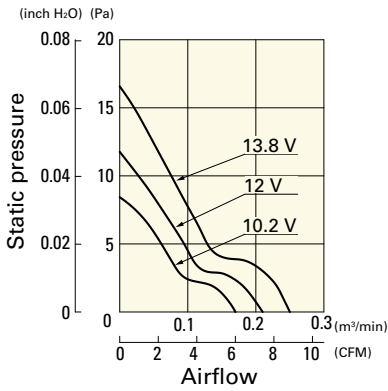
109P0612M701 With pulse sensor

Operating voltage range



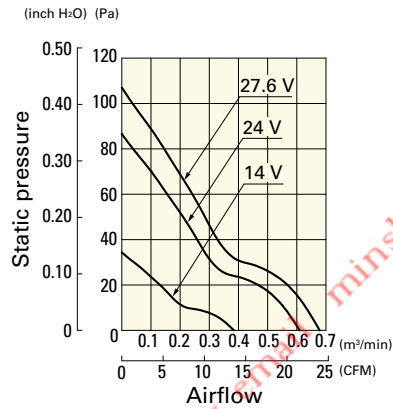
109P0612B701 With pulse sensor

Operating voltage range



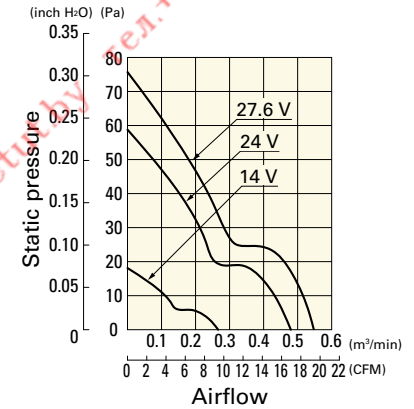
109P0624J701 With pulse sensor

Operating voltage range



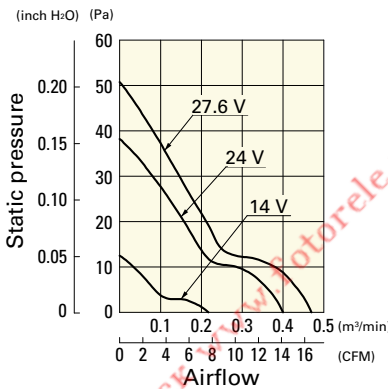
109P0624S701 With pulse sensor

Operating voltage range



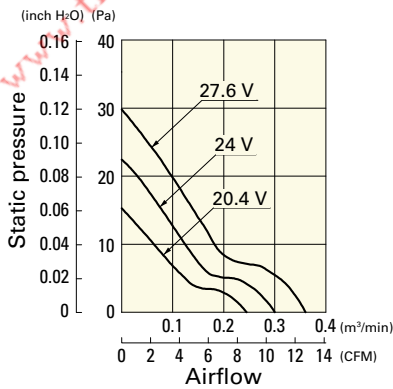
109P0624H701 With pulse sensor

Operating voltage range

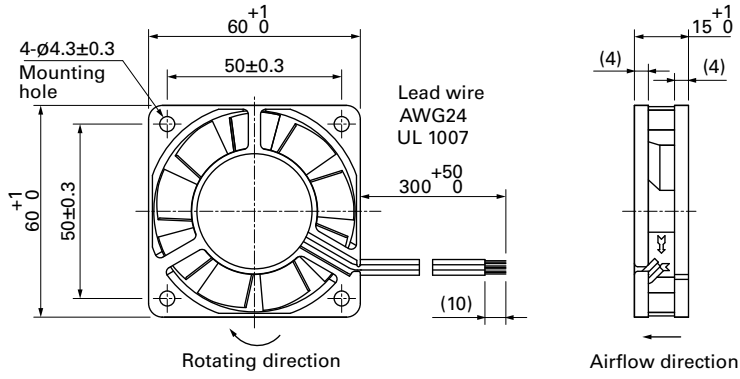


109P0624M701 With pulse sensor

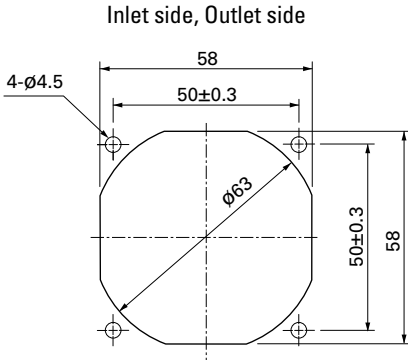
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)



60×60×20 mm

San Ace 60 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- Mass 70 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.**

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 ² /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA0612P6G001	12	10.8 to 13.2	100	0.26	3.12	6850	0.88 31.1	125 0.5	43	-20 to +70	40000/60°C (70000/40°C)
9GA0612P6S001			100	0.15	1.8	5500	0.7 24.7	81 0.33	36		
9GA0624P6G001	24	21.6 to 26.4	100	0.12	2.88	6850	0.88 31.1	125 0.5	43		
9GA0624P6S001			100	0.07	1.68	5500	0.7 24.7	81 0.33	36		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

The models listed below **have ribs and pulse sensors.**

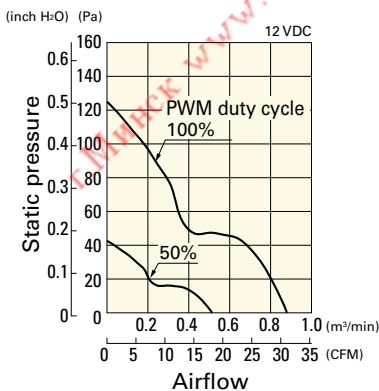
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ² /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA0612H6001	12	10.8 to 13.2	0.09	1.08	4100	0.52 18.4	45 0.18	29	-20 to +70	60000/60°C
9GA0612M6001			0.05	0.6	2700	0.34 12.0	20 0.08	18		
9GA0624H6001	24	21.6 to 26.4	0.04	0.96	4100	0.52 18.4	45 0.18	29		
9GA0624M6001			0.03	0.72	2700	0.34 12.0	20 0.08	18		

Other sensor specifications are available as options. Refer to the index (pp. 551 to 552).

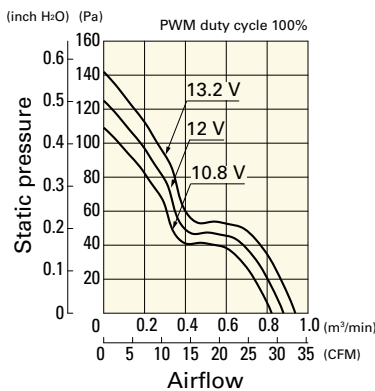
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0612P6G001 With pulse sensor with PWM control function

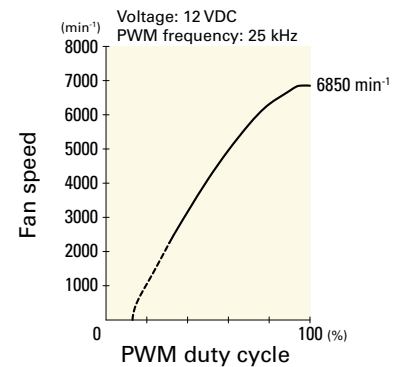
PWM duty cycle



Operating voltage range



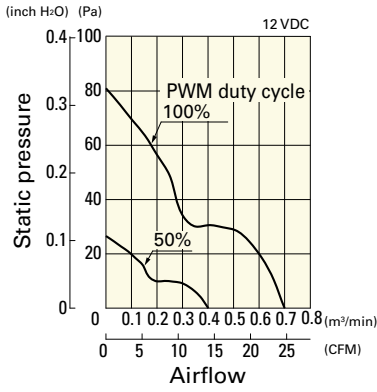
PWM duty - Speed characteristics example



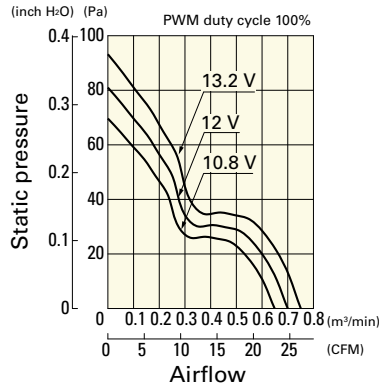
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0612P6S001 With pulse sensor with PWM control function

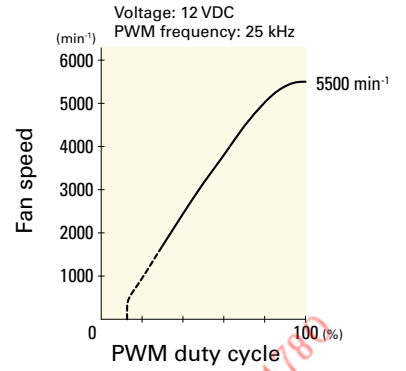
PWM duty cycle



Operating voltage range

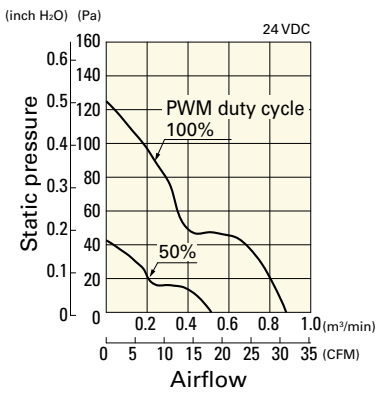


PWM duty - Speed characteristics example

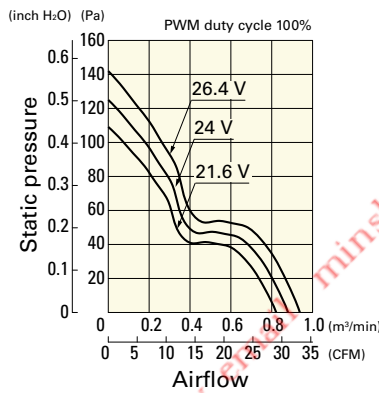


9GA0624P6G001 With pulse sensor with PWM control function

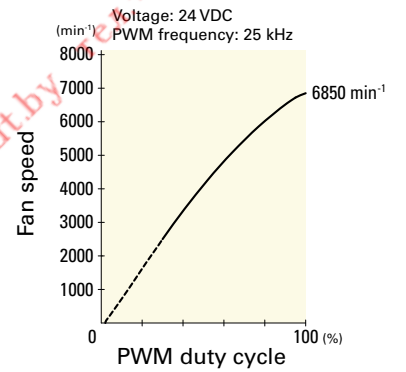
PWM duty cycle



Operating voltage range

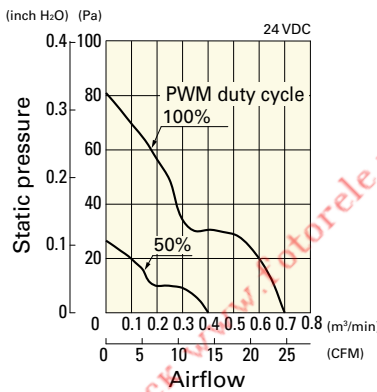


PWM duty - Speed characteristics example

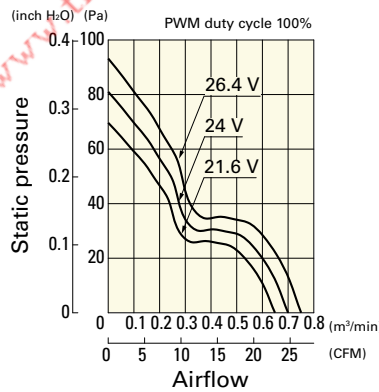


9GA0624P6S001 With pulse sensor with PWM control function

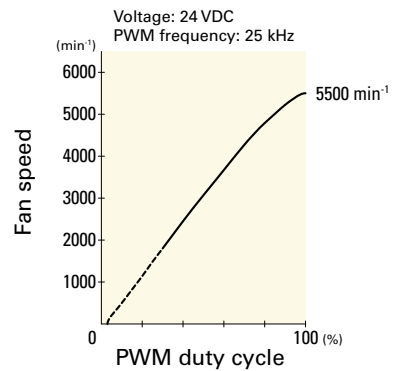
PWM duty cycle



Operating voltage range

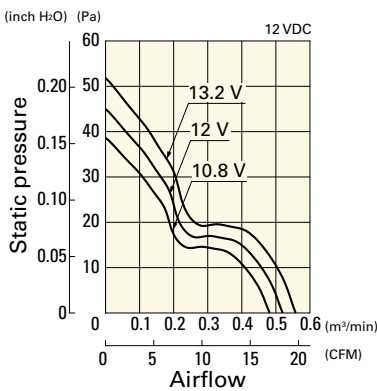


PWM duty - Speed characteristics example



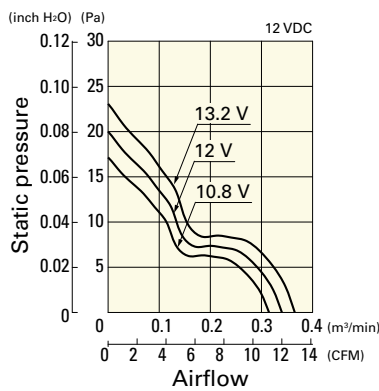
9GA0612H6001 With pulse sensor

Operating voltage range



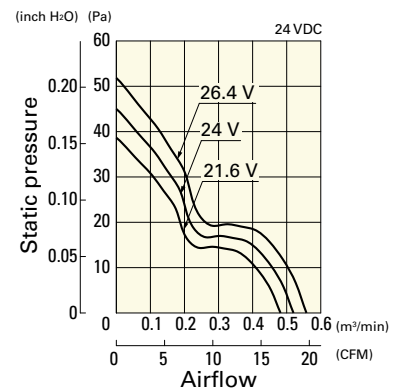
9GA0612M6001 With pulse sensor

Operating voltage range



9GA0624H6001 With pulse sensor

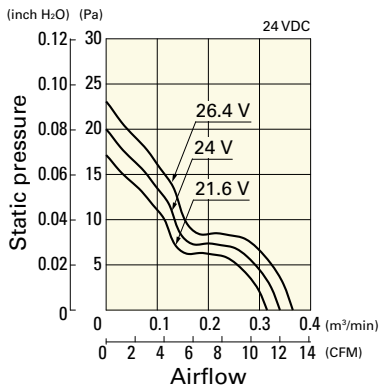
Operating voltage range



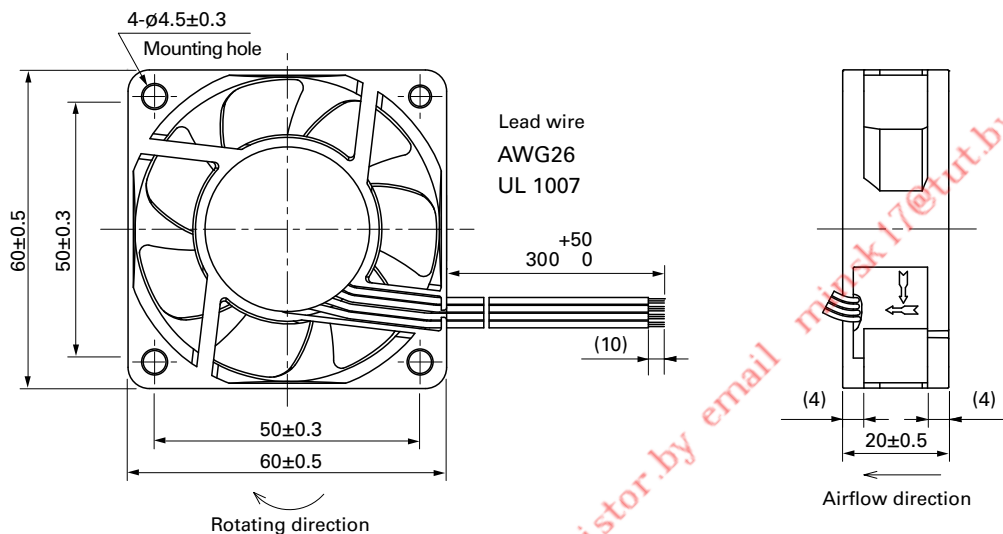
Airflow - Static Pressure Characteristics

9GA0624M6001 With pulse sensor

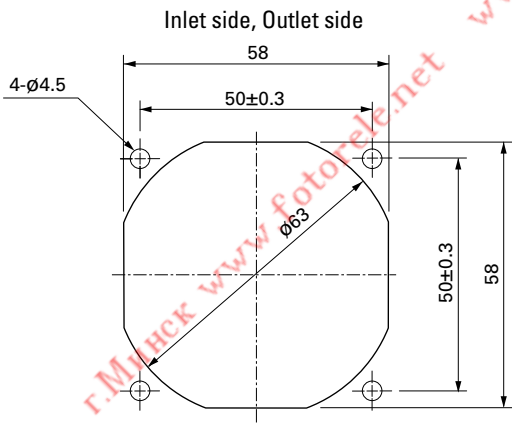
Operating voltage range



Dimensions (unit: mm) (With pulse sensor with PWM control function)



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



Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI), 109-1003F30 (30PPI), 109-1003F40 (40PPI)



60×60×20 mm

San Ace 60 9P type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 90 g

Specifications

The models listed below **have ribs and pulse sensors.**

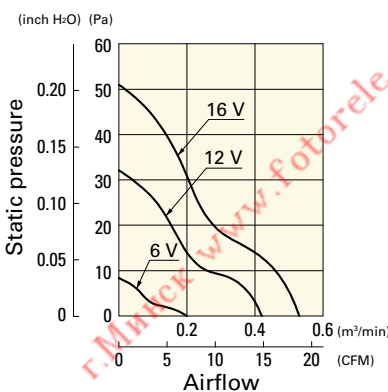
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P0612W601	12	6 to 16	0.13	1.56	4200	0.42 14.8	31.8 0.128	31	-20 to +70	60000/60°C
109P0612H601			0.13	1.56	4200	0.42 14.8	31.8 0.128	31		
109P0612M601		10.2 to 13.8	0.09	1.08	3200	0.3 10.6	18.8 0.076	25		
109P0624W601	24	12 to 30	0.07	1.68	4200	0.42 14.8	31.8 0.128	31		
109P0624H601			0.07	1.68	4200	0.42 14.8	31.8 0.128	31		
109P0624M601		20.4 to 27.6	0.05	1.2	3200	0.3 10.6	18.8 0.076	25		
109P0648H601	48	43 to 53	0.07	3.36	5600	0.55 19.4	52.9 0.212	41	40000/60°C	

Other sensor specifications are available as options. Refer to the index (p. 544).

Airflow - Static Pressure Characteristics

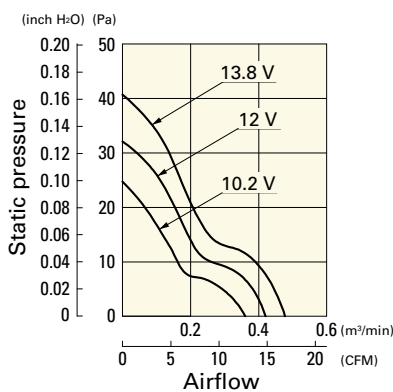
109P0612W601 With pulse sensor

Operating voltage range



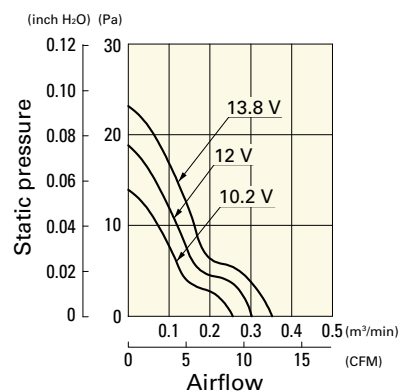
109P0612H601 With pulse sensor

Operating voltage range



109P0612M601 With pulse sensor

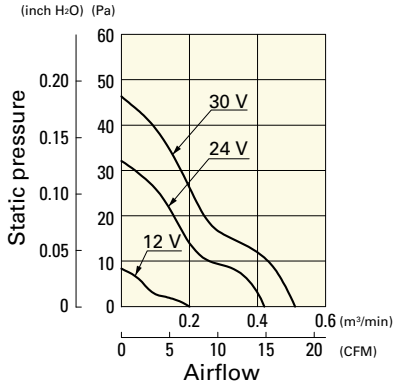
Operating voltage range



Airflow - Static Pressure Characteristics

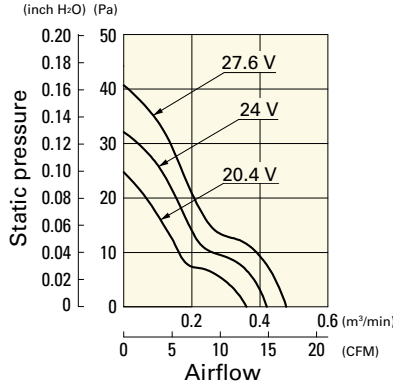
109P0624W601 With pulse sensor

Operating voltage range



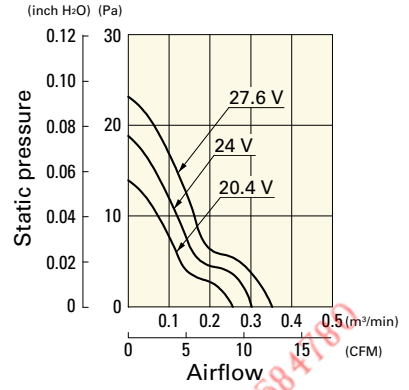
109P0624H601 With pulse sensor

Operating voltage range



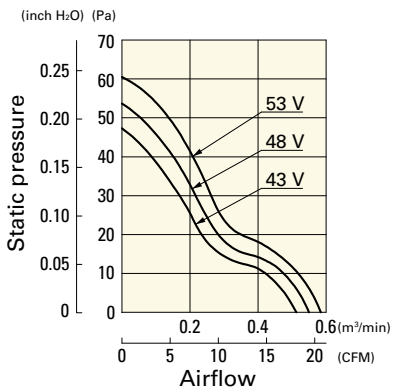
109P0624M601 With pulse sensor

Operating voltage range

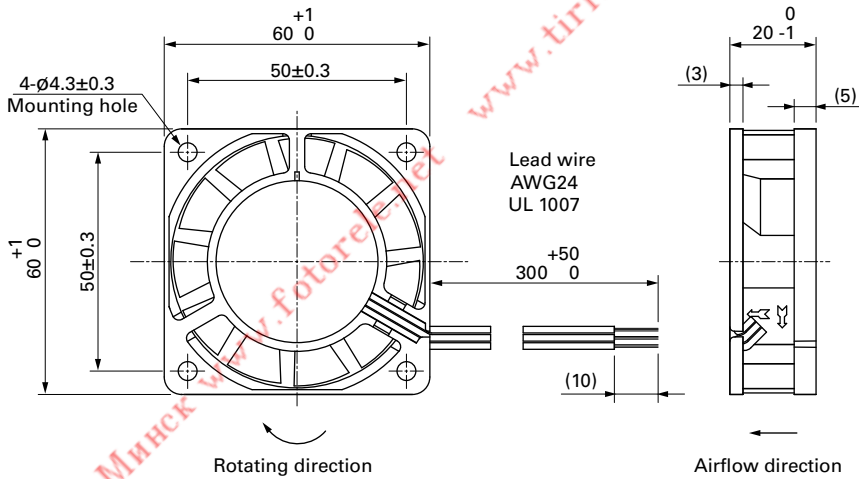


109P0648H601 With pulse sensor

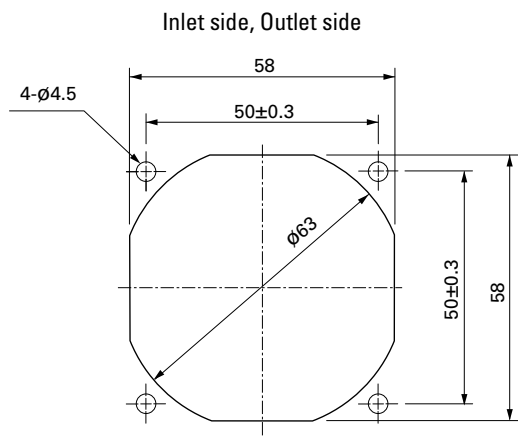
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)

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60×60×25 mm

San Ace 60 9S type Silent Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 55 g

Specifications

The models listed below **have ribs and pulse sensors.** For models without ribs, append "1" to the end of model numbers.

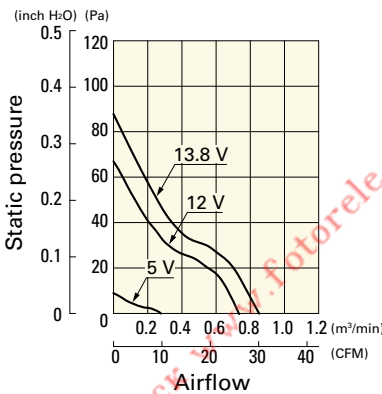
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9S0612S401	12	5.0 to 13.8	0.2	2.4	5000	0.74 26.1	65.7 0.26	31	-10 to +70	40000/60°C
9S0612H401			0.11	1.32	3900	0.58 20.5	40.0 0.16	24		
9S0612F401		6.0 to 13.8	0.08	0.96	3300	0.49 17.3	29.3 0.12	20		
9S0612M401			0.07	0.84	2700	0.4 14.1	19.7 0.08	16		

Other sensor specifications are available as options. Refer to the index (p. 557).

Airflow - Static Pressure Characteristics

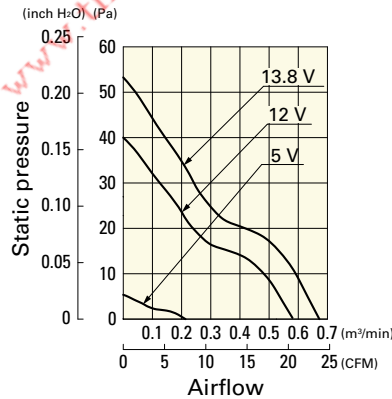
9S0612S401 With pulse sensor

Operating voltage range



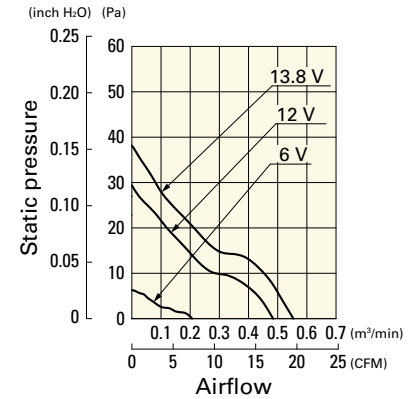
9S0612H401 With pulse sensor

Operating voltage range



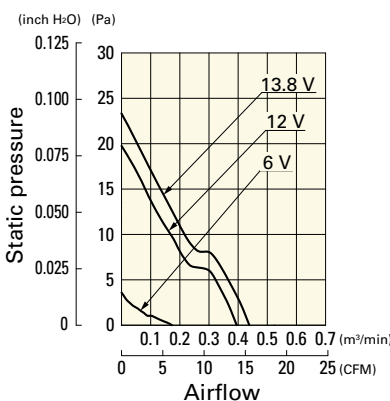
9S0612F401 With pulse sensor

Operating voltage range

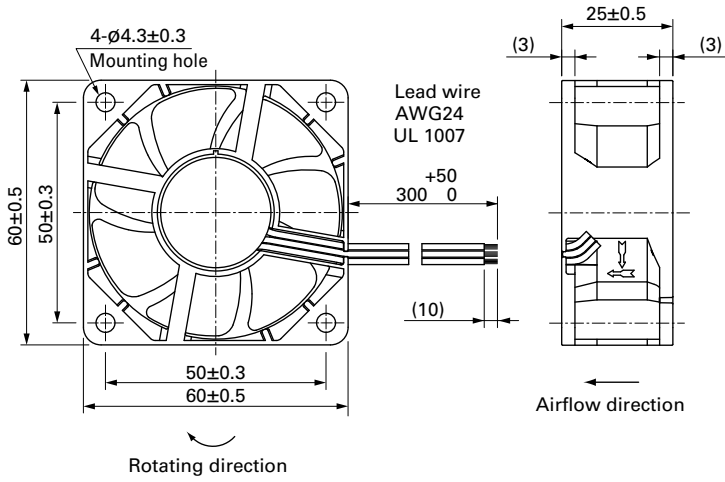


9S0612M401 With pulse sensor

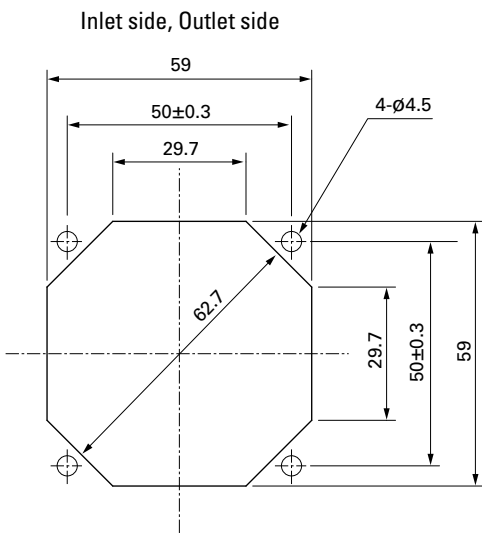
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)



60×60×25 mm

San Ace 60 9G type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 90 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

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]
9G0612P4S001	12	10.2 to 13.8	100	0.67	8.04	11000	1.4 49.4	300 1.2	53	-20 to +70	40000/60°C (70000/40°C)
			0	0.07	0.84	3300	0.42 14.8	27 0.11	19		
9G0612P4H001	12	10.2 to 13.8	100	0.5	6.0	9500	1.21 42.7	224 0.9	49		
			0	0.06	0.72	2850	0.36 12.7	20.2 0.08	18		
9G0624P4S001	24	20.4 to 27.6	100	0.34	8.16	11000	1.4 49.4	300 1.2	53		
			0	0.04	0.96	3300	0.42 14.8	27 0.11	19		
9G0624P4H001	24	20.4 to 27.6	100	0.25	6.0	9500	1.21 42.7	224 0.9	49		
			0	0.04	0.96	2850	0.36 12.7	20.2 0.08	18		
9G0648P4S001	48	36 to 72	100	0.18	8.64	11000	1.4 49.4	305 1.22	53		
			0	0.02	0.96	3300	0.42 14.8	27.4 0.11	19		

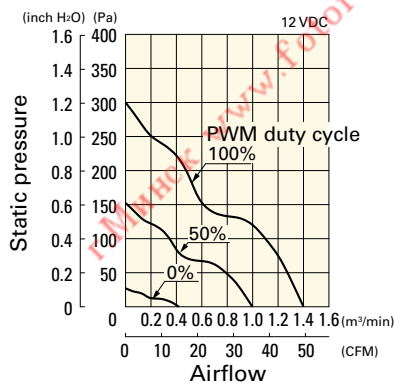
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (pp. 548 to 549).

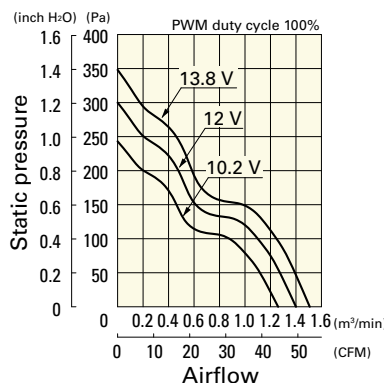
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9G0612P4S001 With pulse sensor with PWM control function

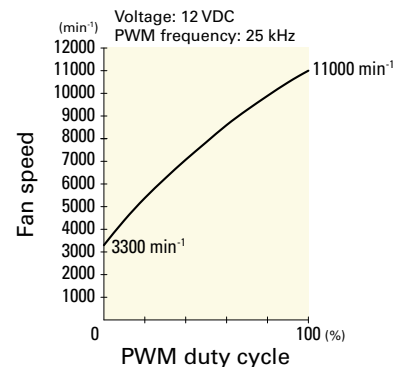
PWM duty cycle



Operating voltage range



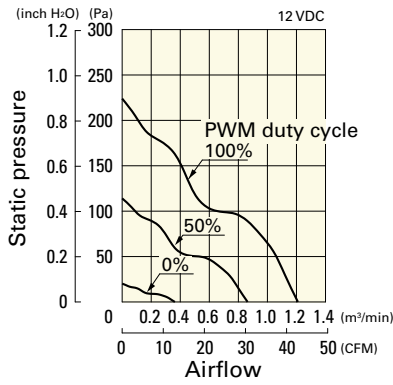
PWM duty - Speed characteristics example



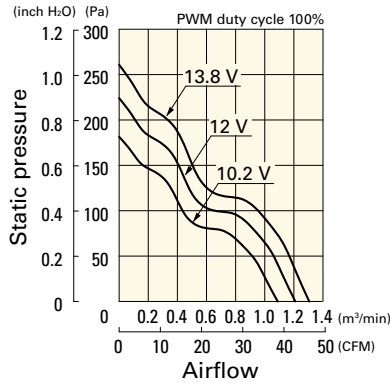
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9G0612P4H001 With pulse sensor with PWM control function

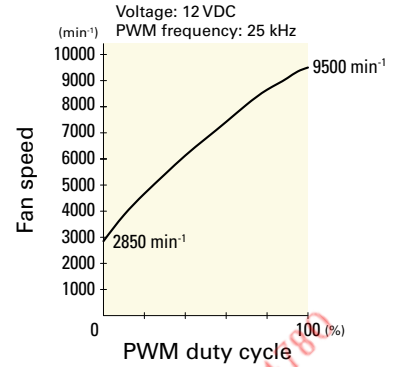
PWM duty cycle



Operating voltage range

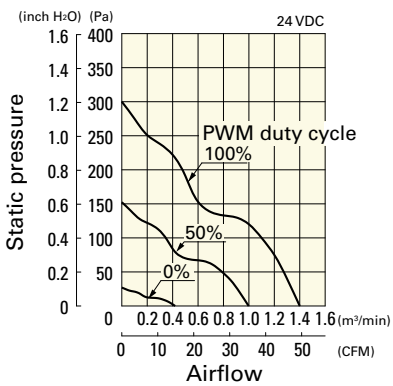


PWM duty - Speed characteristics example

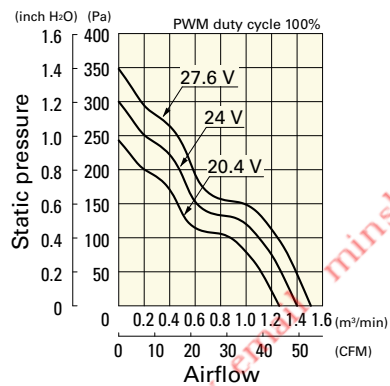


9G0624P4S001 With pulse sensor with PWM control function

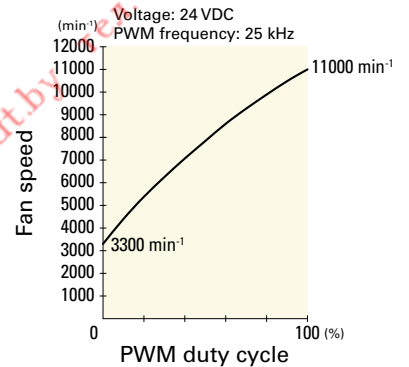
PWM duty cycle



Operating voltage range

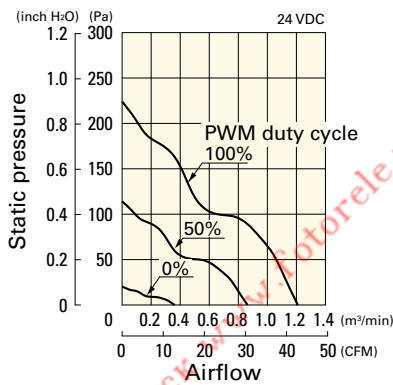


PWM duty - Speed characteristics example

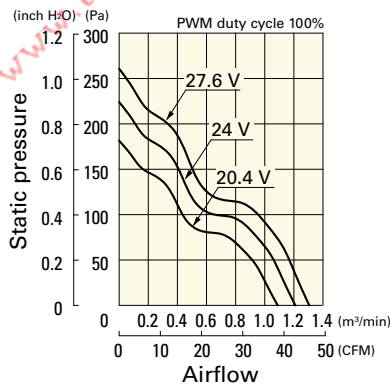


9G0624P4H001 With pulse sensor with PWM control function

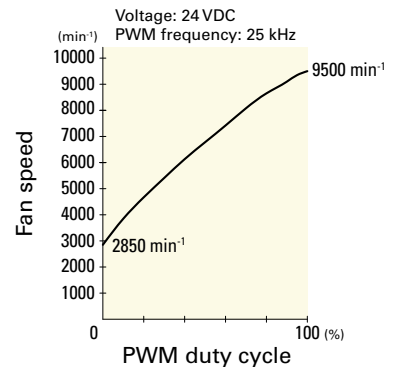
PWM duty cycle



Operating voltage range

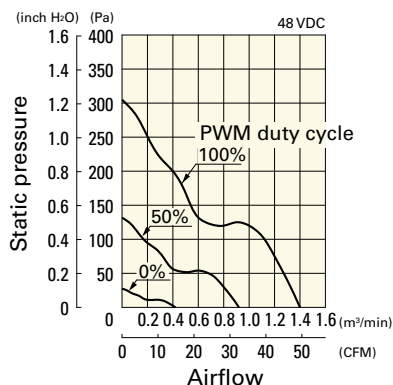


PWM duty - Speed characteristics example

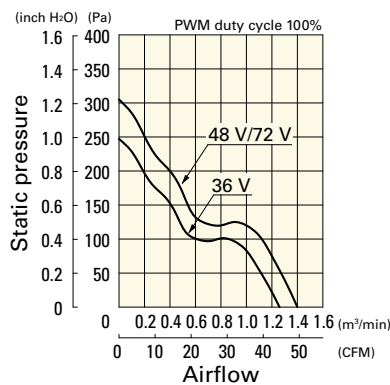


9G0648P4S001 With pulse sensor with PWM control function

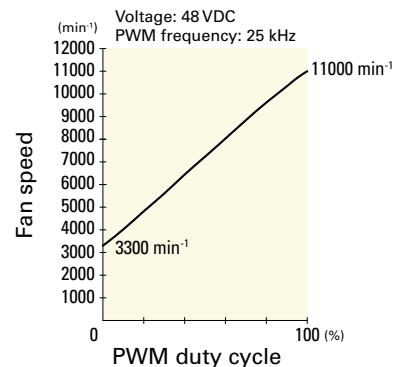
PWM duty cycle

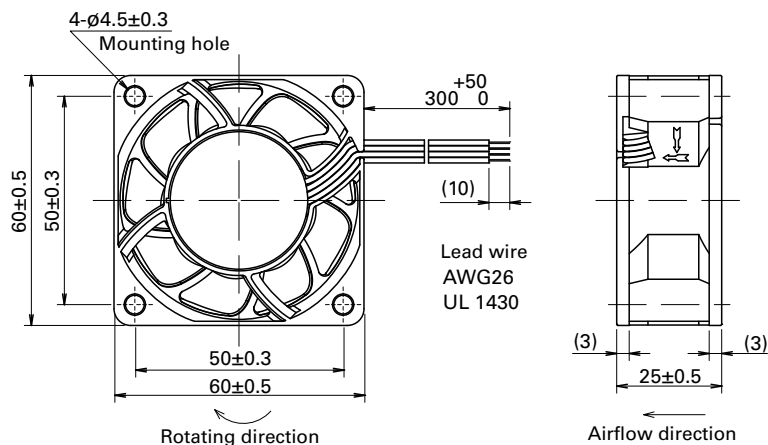


Operating voltage range

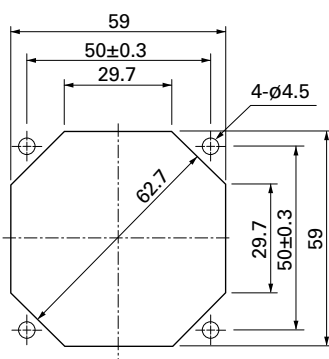


PWM duty - Speed characteristics example



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

Inlet side, Outlet side

**Options****Finger guards**

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)



60×60×25 mm

San Ace 60 9R type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 90 g

Specifications

The models listed below **have ribs and pulse sensors.** For models without ribs, append "1" to the end of model numbers.

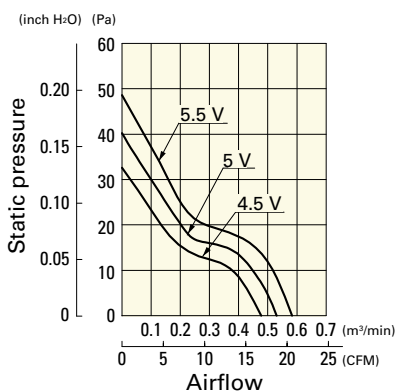
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]	
109R0605H401	5	4.5 to 5.5	0.34	1.7	3800	0.53 18.7	40.2 0.161	28	-20 to +70	60000/60°C	
109R0605F401			0.2	1.0	3200	0.44 15.5	29.4 0.118	24	-20 to +60		
109R0605M401			0.13	0.65	2600	0.36 12.7	19.6 0.079	20	-20 to +70		
109R0612J401	12	10.8 to 13.2	0.47	5.64	7600	1.06 37.1	155.0 0.622	44	-20 to +60	40000/60°C	
109R0612G401			0.24	2.88	5600	0.78 27.5	87.3 0.351	39	-20 to +70		60000/60°C
109R0612D401		10.2 to 13.8	0.21	2.52	5150	0.72 25.4	73.5 0.295	37			
109R0612S401			6 to 13.8	0.17	2.04	4600	0.65 23.0	56.8 0.228		33	
109R0612H401				0.11	1.32	3800	0.53 18.7	40.1 0.161		28	
109R0612F401		7 to 13.8	0.09	1.08	3200	0.44 15.5	29.4 0.118	24			
109R0612M401			0.06	0.72	2600	0.36 12.7	19.6 0.079	20			
109R0624J401		24	21.6 to 26.4	0.24	5.76	7600	1.06 37.1	155.0 0.622		44	
109R0624G401			20.4 to 27.6	0.13	3.12	5600	0.78 27.5	87.3 0.351	39	-20 to +70	60000/60°C
109R0624D401	12 to 27.6		0.12	2.88	5150	0.72 25.4	73.5 0.295	37			
109R0624S401			0.08	1.92	4600	0.65 23.0	56.8 0.228	33			
109R0624H401			0.06	1.44	3800	0.53 18.7	40.2 0.161	28			
109R0624F401	14 to 27.6		0.05	1.2	3200	0.44 15.5	29.4 0.118	24			
109R0624M401			0.04	0.96	2600	0.36 12.7	19.6 0.079	20			
109R0648J401	48	43.2 to 52.8	0.12	5.76	7600	1.06 37.1	155.0 0.622	44	-20 to +60	40000/60°C	
109R0648G401		43 to 53	0.07	3.36	5600	0.78 27.5	87.3 0.351	39	-20 to +70	60000/60°C	
109R0648H401		40 to 53	0.04	1.92	3800	0.53 18.7	40.2 0.161	28			

Other sensor specifications are available as options. Refer to the index (p. 545).

Airflow - Static Pressure Characteristics

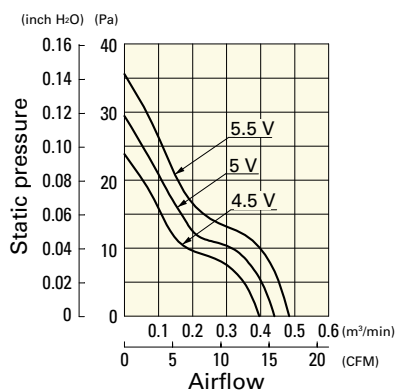
109R0605H401 With pulse sensor

Operating voltage range



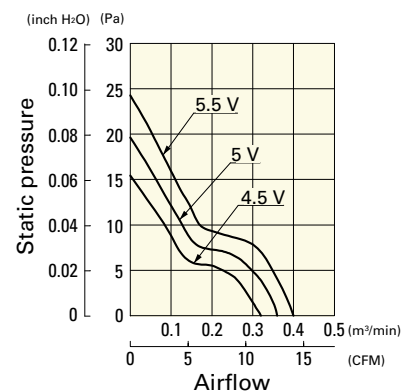
109R0605F401 With pulse sensor

Operating voltage range



109R0605M401 With pulse sensor

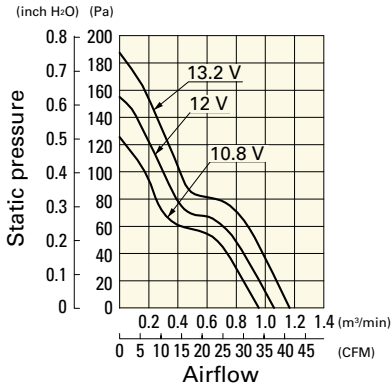
Operating voltage range



Airflow - Static Pressure Characteristics

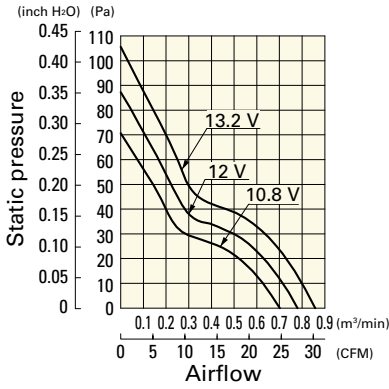
109R0612J401 With pulse sensor

Operating voltage range



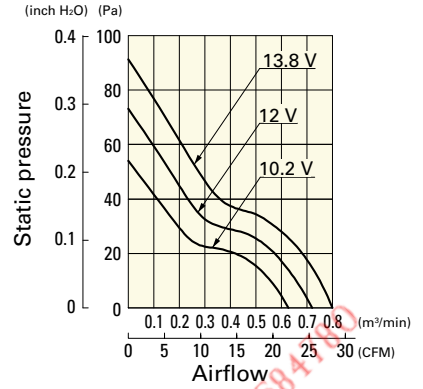
109R0612G401 With pulse sensor

Operating voltage range



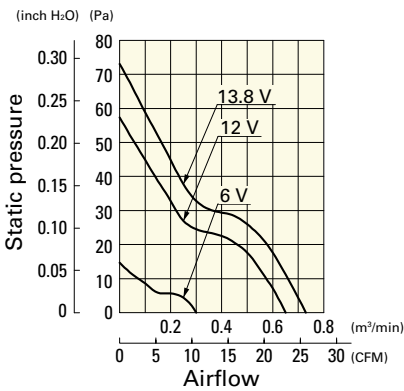
109R0612D401 With pulse sensor

Operating voltage range



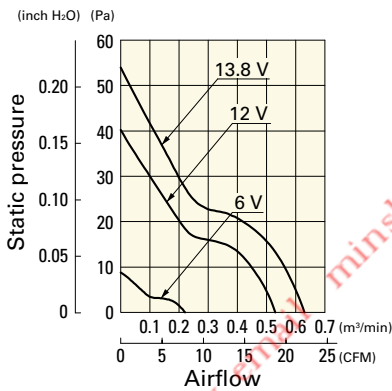
109R0612S401 With pulse sensor

Operating voltage range



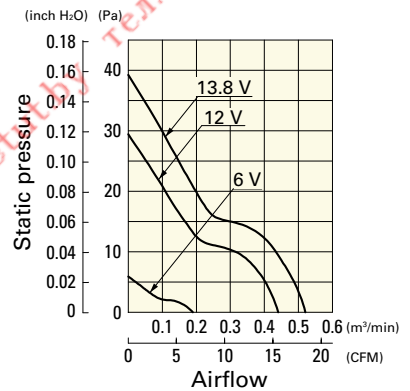
109R0612H401 With pulse sensor

Operating voltage range



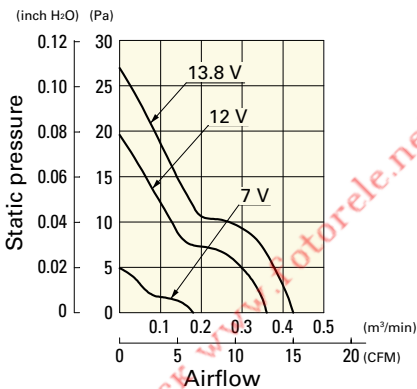
109R0612F401 With pulse sensor

Operating voltage range



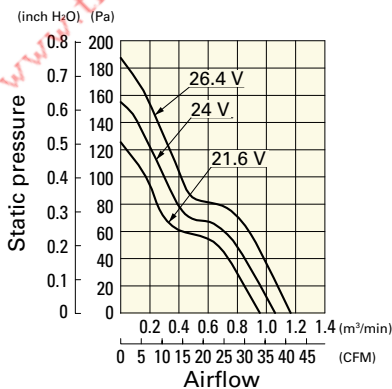
109R0612M401 With pulse sensor

Operating voltage range



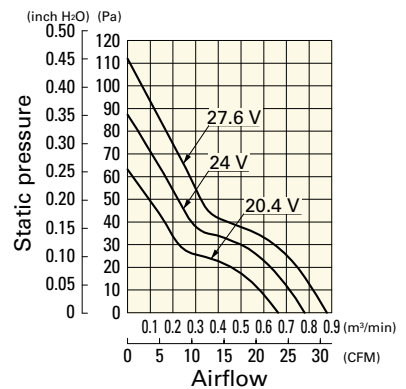
109R0624J401 With pulse sensor

Operating voltage range



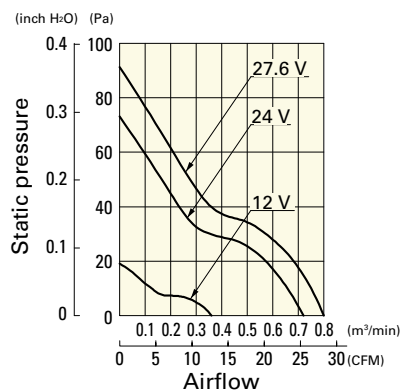
109R0624G401 With pulse sensor

Operating voltage range



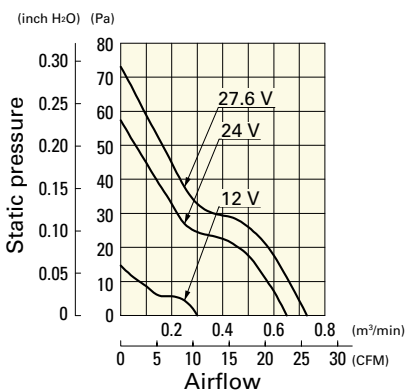
109R0624D401 With pulse sensor

Operating voltage range



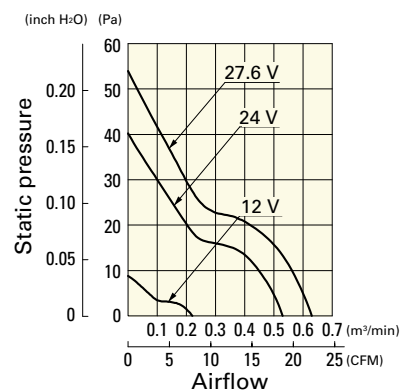
109R0624S401 With pulse sensor

Operating voltage range



109R0624H401 With pulse sensor

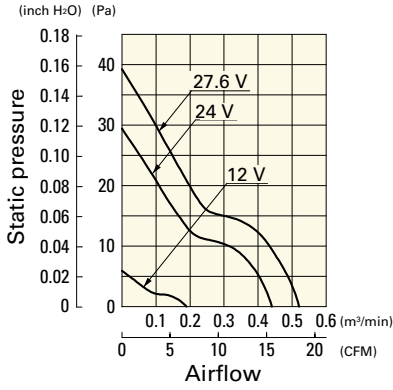
Operating voltage range



Airflow - Static Pressure Characteristics

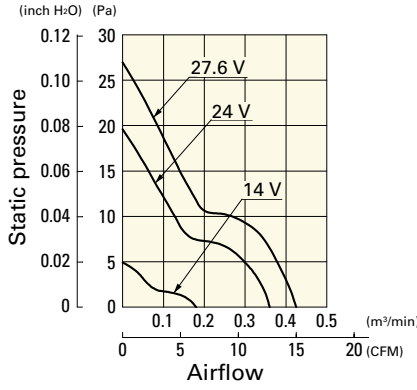
109R0624F401 With pulse sensor

Operating voltage range



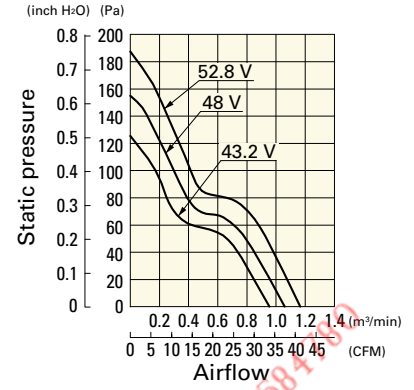
109R0624M401 With pulse sensor

Operating voltage range



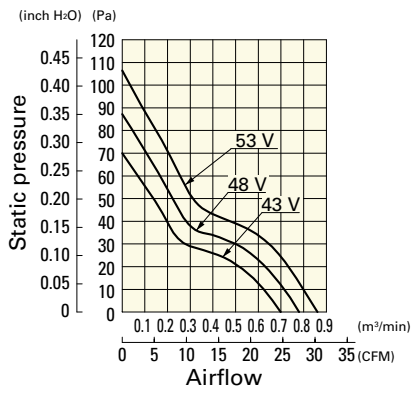
109R0648J401 With pulse sensor

Operating voltage range



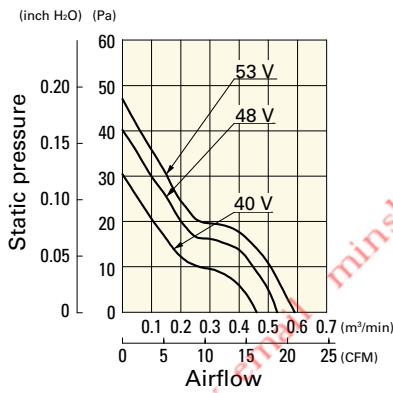
109R0648G401 With pulse sensor

Operating voltage range

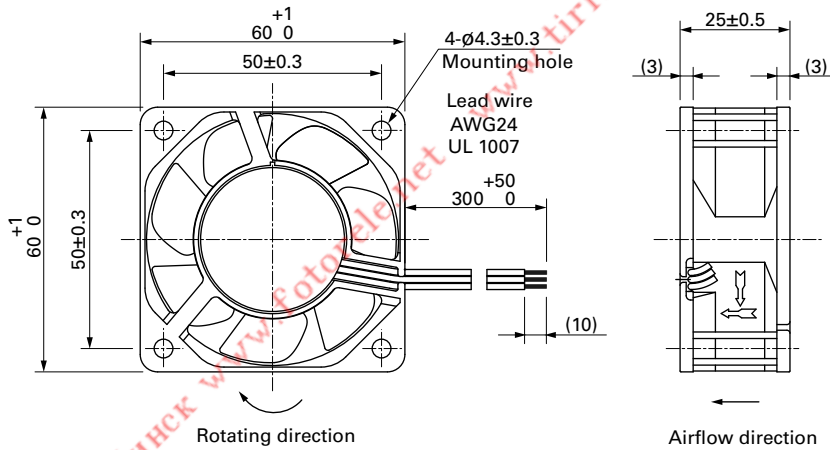


109R0648H401 With pulse sensor

Operating voltage range

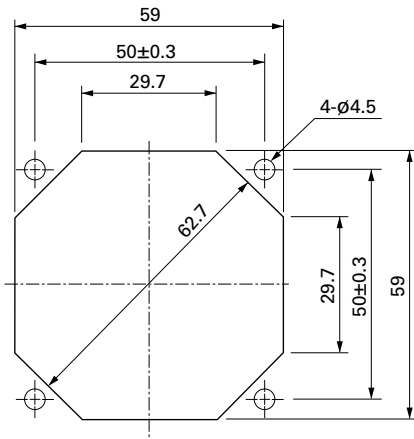


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)

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60×60×25 mm

San Cooler 60 9A type   

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 80 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

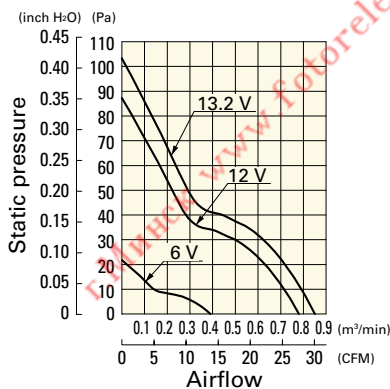
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]		
9A0612G401	12	6 to 13.2	0.24	2.88	5600	0.78 27.6	87.3 0.351	39	-20 to +60	30000/60°C		
9A0612S401			0.17	2.04	4600	0.65 23.0	56.8 0.228	33				
9A0612H401		6 to 13.8	0.11	1.32	3800	0.53 18.7	40.2 0.161	28			-20 to +70	40000/60°C
9A0612F401			0.09	1.08	3200	0.44 15.5	29.4 0.118	24				
9A0612M401			0.06	0.72	2600	0.36 12.7	19.6 0.079	20				
9A0624G401	24	12 to 27.6	0.13	3.12	5600	0.78 27.6	87.3 0.351	39	-20 to +60	30000/60°C		
9A0624S401			0.08	1.92	4600	0.65 23.0	56.8 0.228	33				
9A0624H401		12 to 27.6	0.06	1.44	3800	0.53 18.7	40.2 0.161	28			-20 to +70	40000/60°C
9A0624F401			0.05	1.2	3200	0.44 15.5	29.4 0.118	24				
9A0624M401			0.04	0.96	2600	0.36 12.7	19.6 0.079	20				

Other sensor specifications are available as options. Refer to the index (p. 546).

Airflow - Static Pressure Characteristics

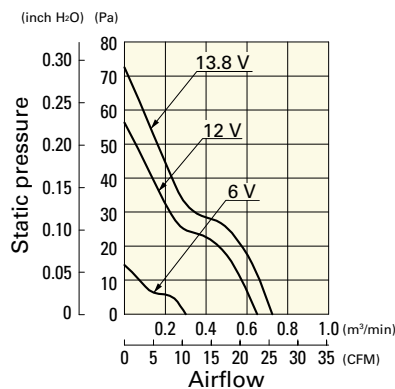
9A0612G401 With pulse sensor

Operating voltage range



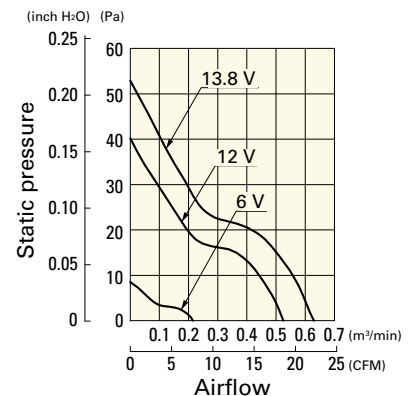
9A0612S401 With pulse sensor

Operating voltage range



9A0612H401 With pulse sensor

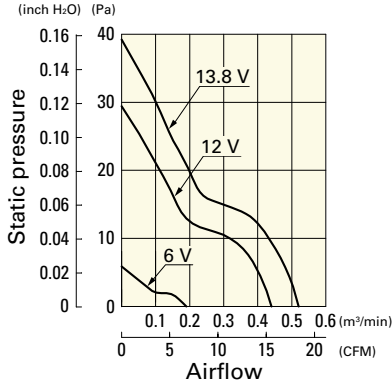
Operating voltage range



Airflow - Static Pressure Characteristics

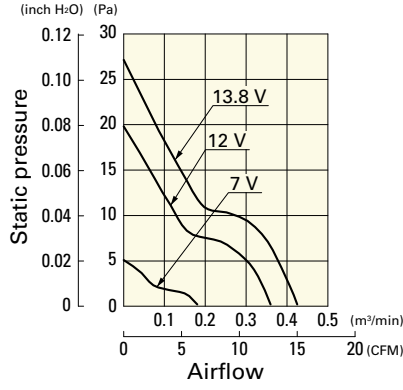
9A0612F401 With pulse sensor

Operating voltage range



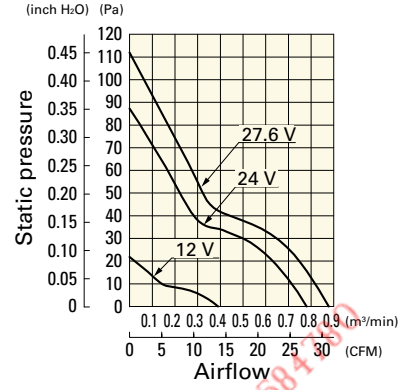
9A0612M401 With pulse sensor

Operating voltage range



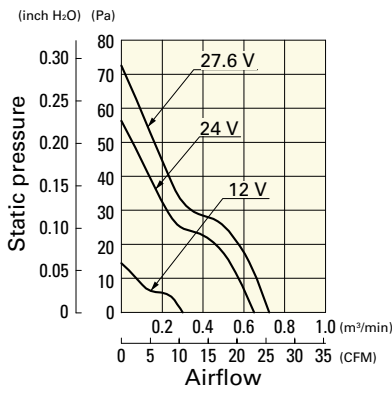
9A0624G401 With pulse sensor

Operating voltage range



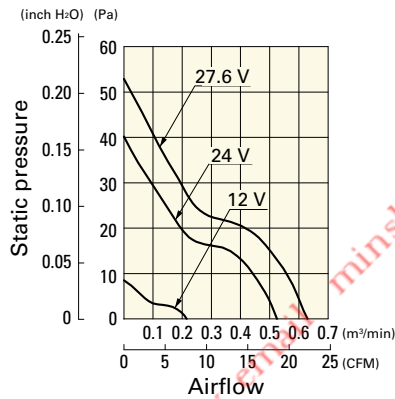
9A0624S401 With pulse sensor

Operating voltage range



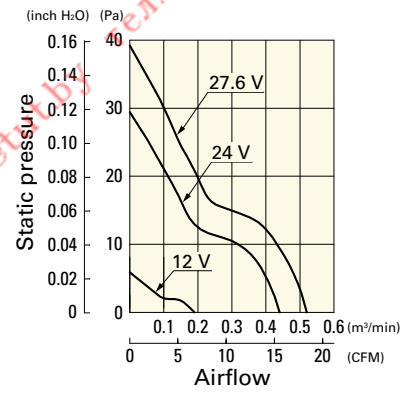
9A0624H401 With pulse sensor

Operating voltage range



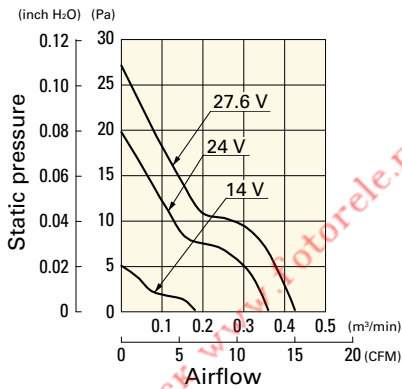
9A0624F401 With pulse sensor

Operating voltage range

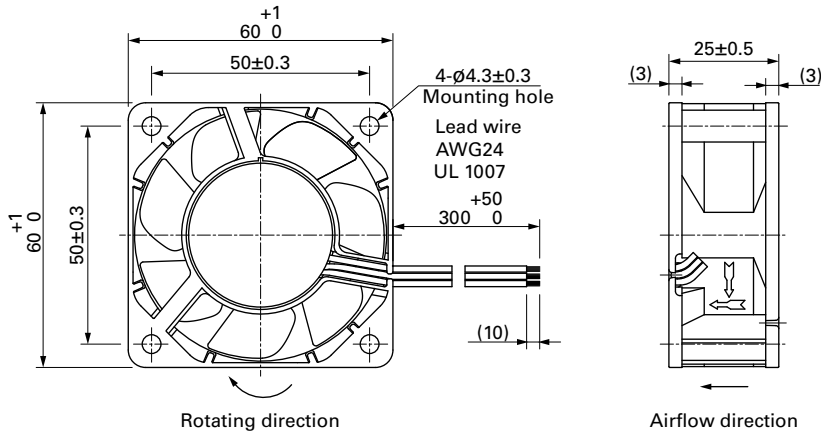


9A0624M401 With pulse sensor

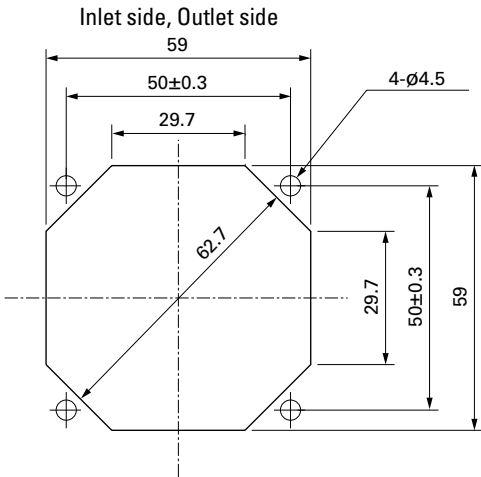
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards page: p. 513
Model no.: 109-139E, 109-139H

Resin finger guards page: p. 520
Model no.: 109-1003G

Resin filter kits page: p. 521
Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)



60×60×38 mm

San Ace 60 9HV type US

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 135 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function**. For models without ribs, append "1" to the end of model numbers.

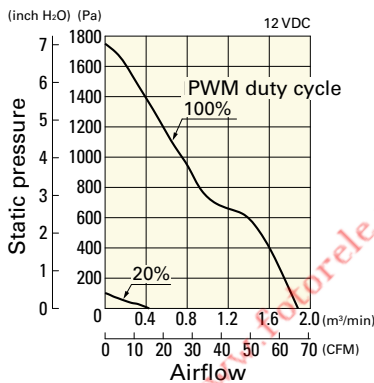
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9HV0612P1J001	12	10.8 to 12.6	100	2.7	32.4	21700	1.88 66.4	1750 7.0	68	-20 to +70	40000/60°C (70000/40°C)
			20	0.17	2.04	5300	0.43 15.2	102 0.41	34		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

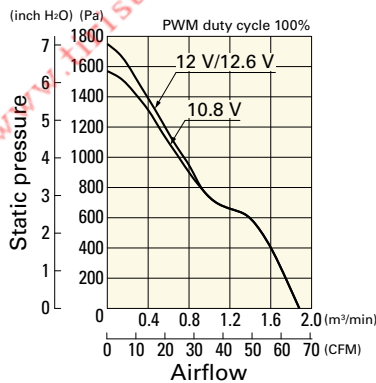
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HV0612P1J001 With pulse sensor with PWM control function

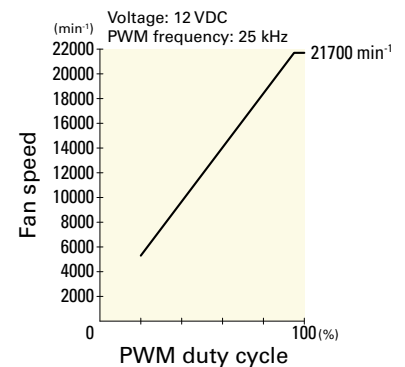
PWM duty cycle



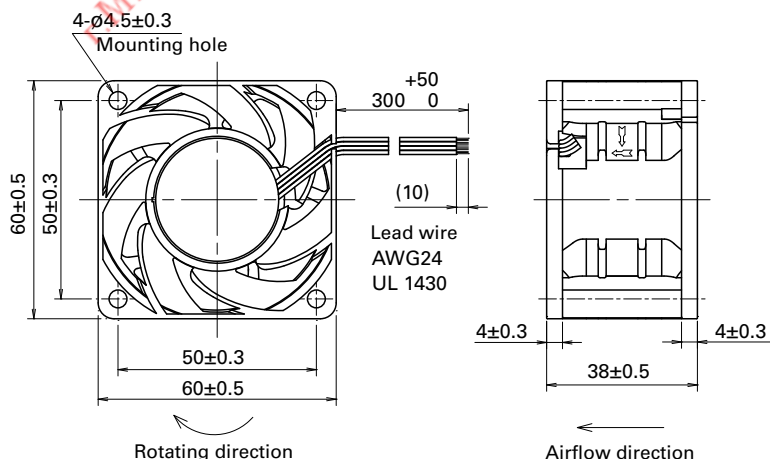
Operating voltage range



PWM duty - Speed characteristics example

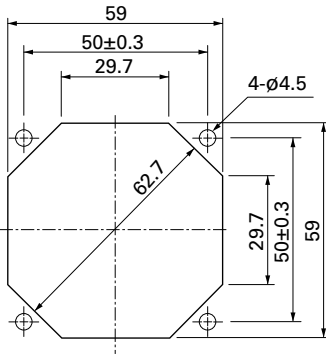


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)

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60×60×38 mm

San Ace 60 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 130 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

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]	
9GA0612P1J03**	12	10.8 to 12.6	100	1.5	18.0	17500	1.75 62	820 3.3	63	-20 to +60	40000/60°C (70000/40°C)	
			20	0.1	1.2	4000	0.4 14	43 0.17	24			
9GA0612P1K03**		10.8 to 13.2	100	0.95	11.4	14800	1.5 53	600 2.4	59	-20 to +70		
			20	0.1	1.2	4000	0.4 14	43 0.17	24			
			9GA0612P1H03**	100	0.55	6.6	11500	1.15 40	375 1.5			52
				20	0.06	0.72	2600	0.27 9.5	20 0.08			19
9GA0612P1K60		10.8 to 13.2	100	0.95	11.4	14800	1.5 53	675 2.7	59	-20 to +60		
			0	0.05	0.6	1480	0.134 4.7	8.3 0.03	16			
9GA0624P1J03**		24	21.6 to 25.2	100	0.75	18.0	17500	1.75 62	820 3.3	63		-20 to +60
				20	0.1	2.4	6200	0.63 22	104 0.42	35		
9GA0624P1K03**			21.6 to 26.4	100	0.5	12	14800	1.5 53.0	600 2.4	59		-20 to +70
				20	0.06	1.44	5000	0.5 17.7	70 0.28	28		

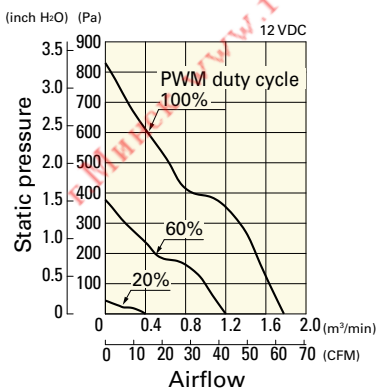
* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (pp. 551 to 552).

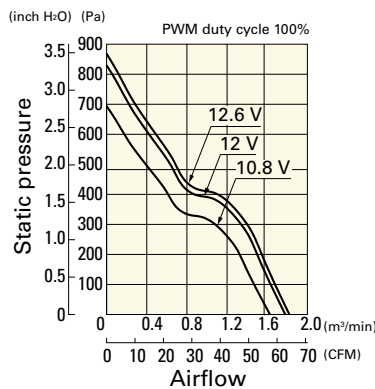
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0612P1J03 With pulse sensor with PWM control function

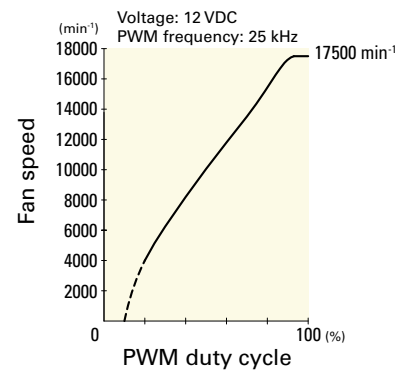
PWM duty cycle



Operating voltage range



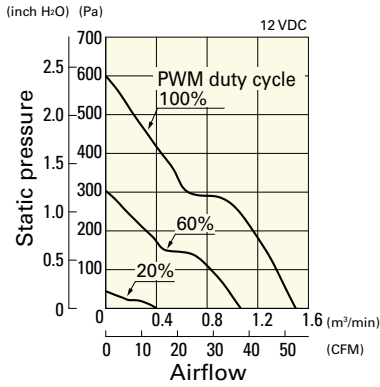
PWM duty - Speed characteristics example



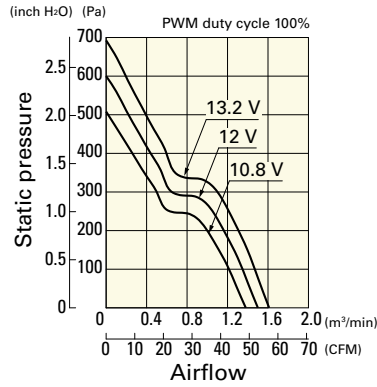
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0612P1K03 With pulse sensor with PWM control function

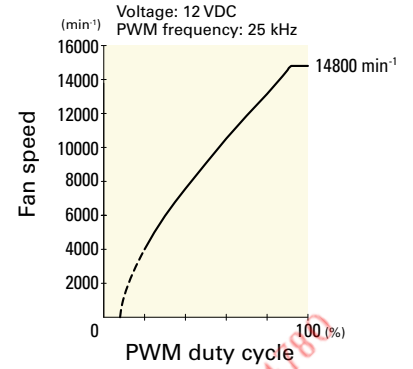
PWM duty cycle



Operating voltage range

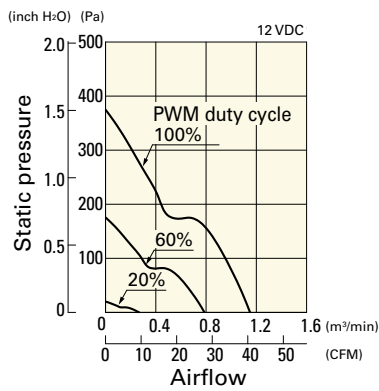


PWM duty - Speed characteristics example

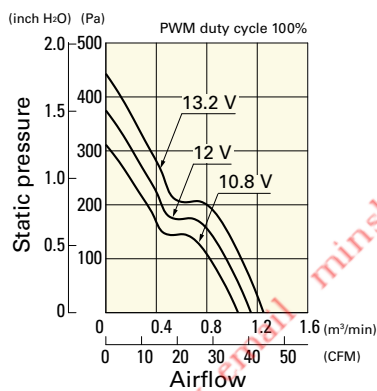


9GA0612P1H03 With pulse sensor with PWM control function

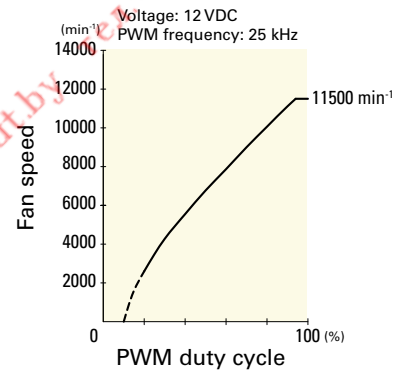
PWM duty cycle



Operating voltage range

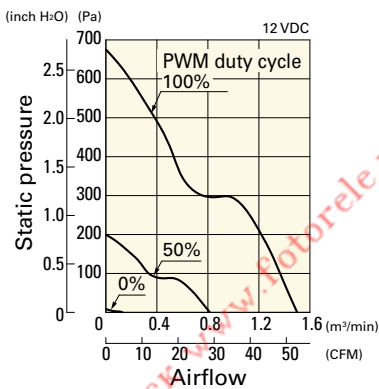


PWM duty - Speed characteristics example

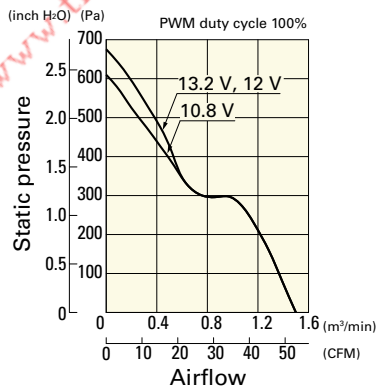


9GA0612P1K60 With pulse sensor with PWM control function

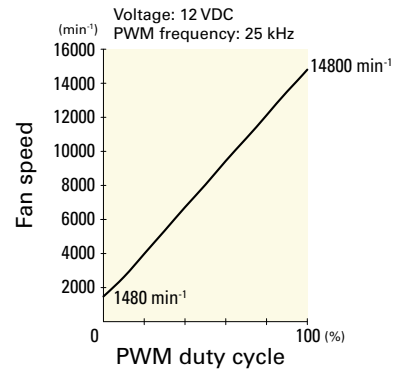
PWM duty cycle



Operating voltage range

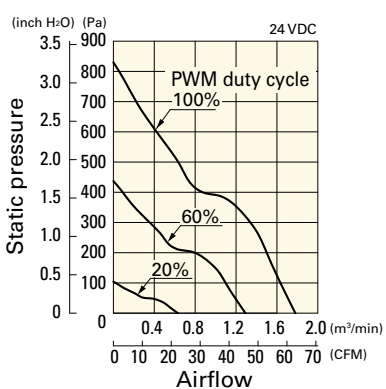


PWM duty - Speed characteristics example

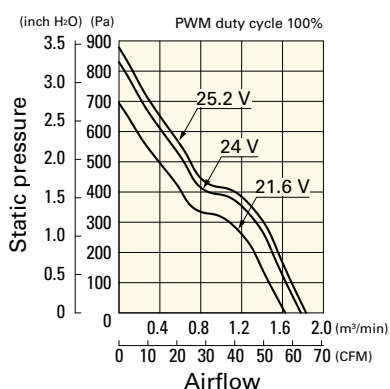


9GA0624P1J03 With pulse sensor with PWM control function

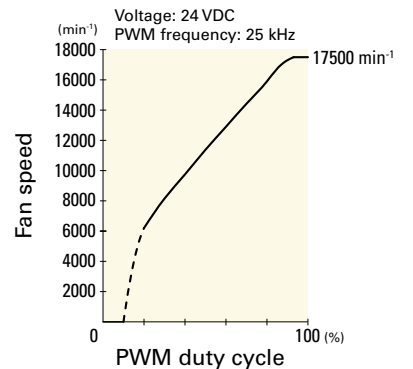
PWM duty cycle



Operating voltage range



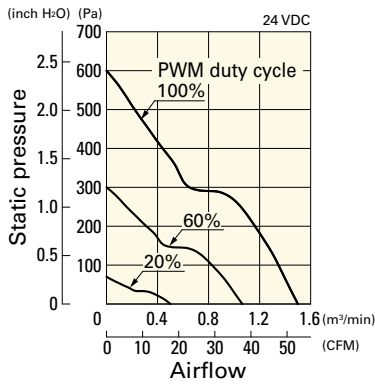
PWM duty - Speed characteristics example



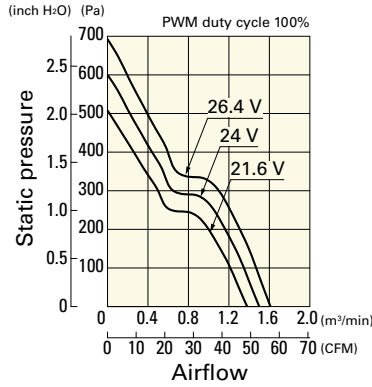
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0624P1K03 With pulse sensor with PWM control function

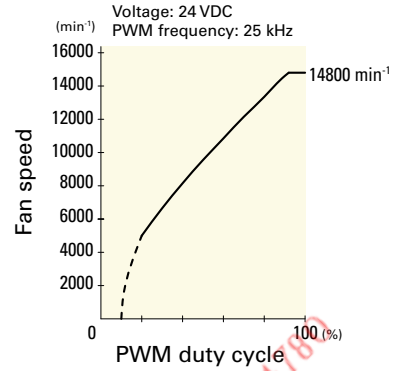
PWM duty cycle



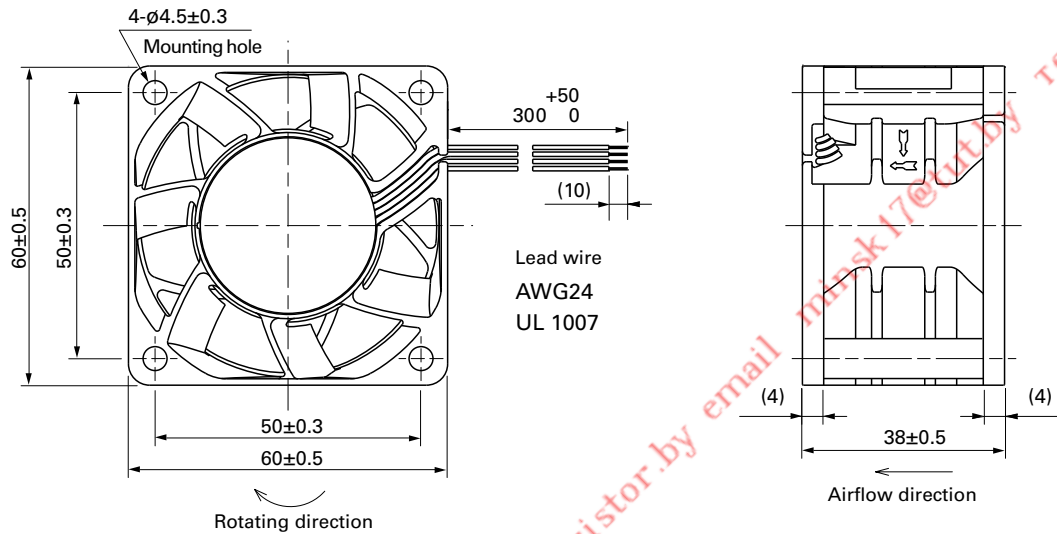
Operating voltage range



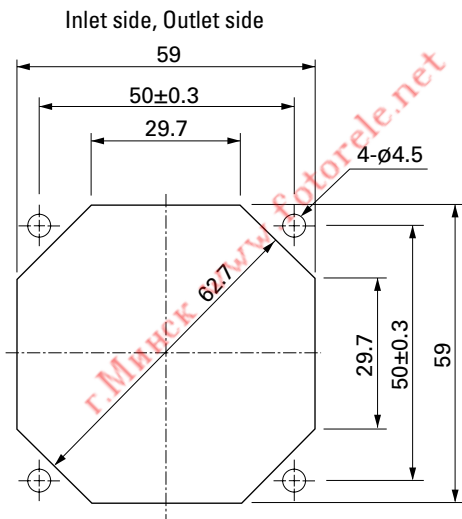
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards page: p. 513
Model no.: 109-139E, 109-139H

Resin finger guards page: p. 520
Model no.: 109-1003G

Resin filter kits page: p. 521
Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)



60×60×38 mm

San Ace 60 9GV type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 130 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function**. For models without ribs, append "1" to the end of model numbers.

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]
9GV0612P1G03	12	8.0 to 13.8	100	2.8	33.6	16000	2.37 84	751 3.02	66	-20 to +70	40000/60°C
			0	0.12	1.5	3100	0.44 15	26 0.1	25		
9GV0612P1H03			100	2.0	24.0	14500	2.15 76	617 2.48	63		
			0	0.1	1.2	2700	0.4 14	21 0.09	22		
9GV0612P1M03			100	1.5	18.0	13000	1.93 68	496 1.99	60		
			0	0.08	1.0	2500	0.38 13	18 0.07	19		
9GV0612P1L01**	10.8 to 13.8	100	0.7	8.4	10000	1.49 52.6	293 1.17	52			
9GV0624P1G03	24	20.4 to 27.6	100	1.4	33.6	16000	2.37 84	751 3.02	66		
			0	0.12	2.88	6000	0.89 31	105 0.42	38		
9GV0624P1M03**			100	0.73	17.52	13000	1.93 68.0	496 1.99	60		
			0	0.08	3.84	6000	0.89 31	105 0.42	38		
9GV0648P1H03			48	38 to 57	100	0.5	24	14500	2.15 76		
					0	0.08	3.84	6000	0.89 31	105 0.42	38

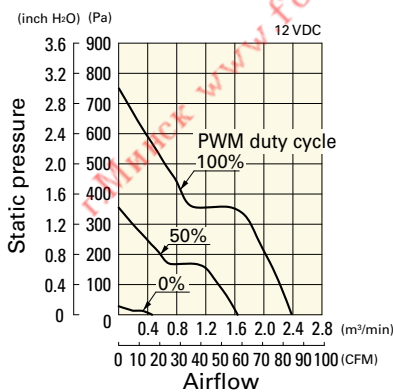
* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 554).

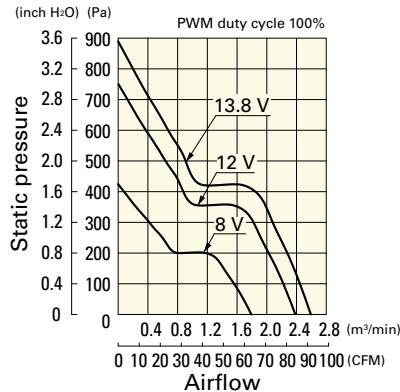
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0612P1G03 With pulse sensor with PWM control function

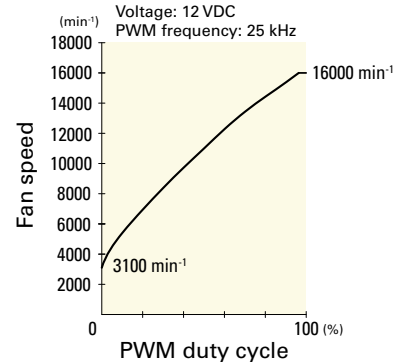
PWM duty cycle



Operating voltage range



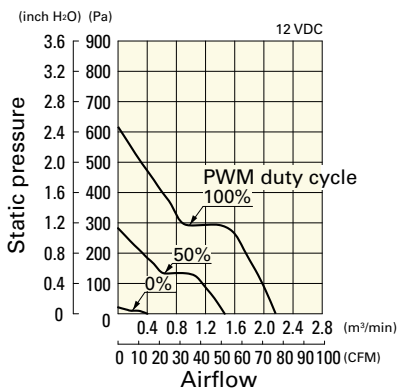
PWM duty - Speed characteristics example



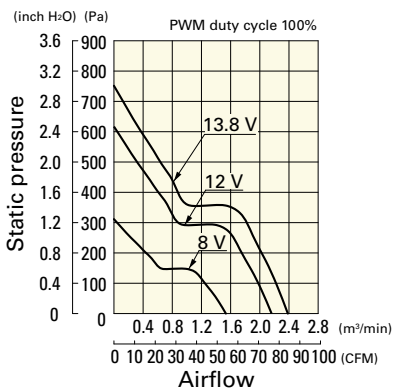
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0612P1H03 With pulse sensor with PWM control function

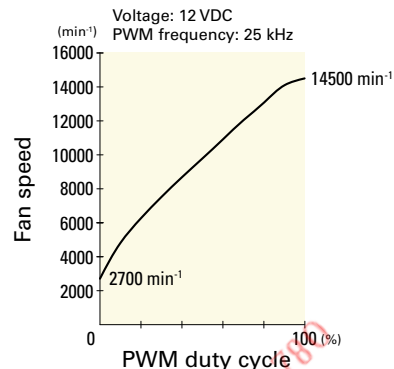
PWM duty cycle



Operating voltage range

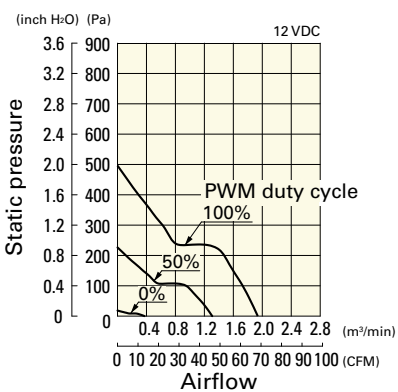


PWM duty - Speed characteristics example

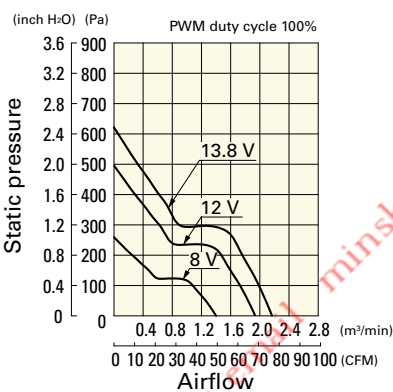


9GV0612P1M03 With pulse sensor with PWM control function

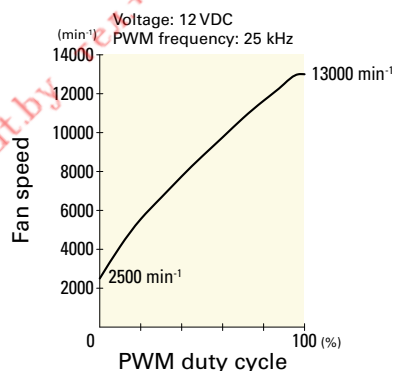
PWM duty cycle



Operating voltage range

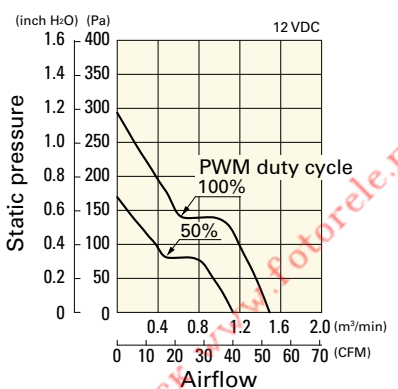


PWM duty - Speed characteristics example

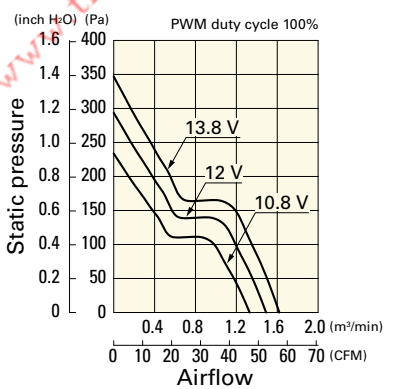


9GV0612P1L01 With pulse sensor with PWM control function

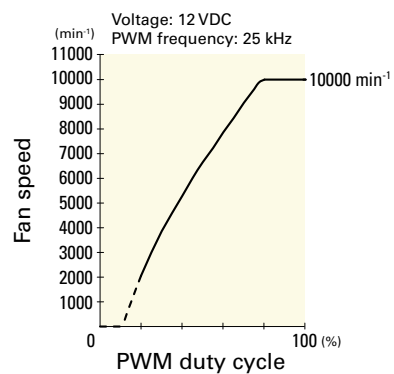
PWM duty cycle



Operating voltage range

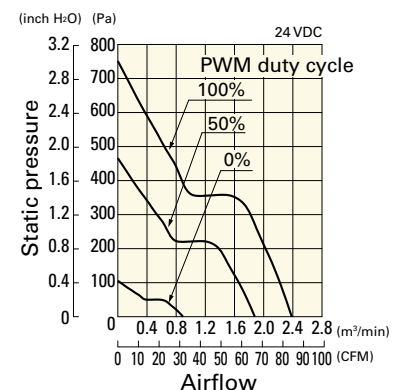


PWM duty - Speed characteristics example

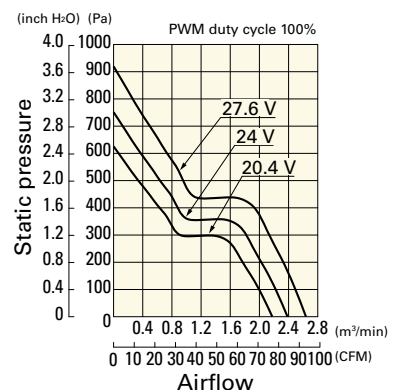


9GV0624P1G03 With pulse sensor with PWM control function

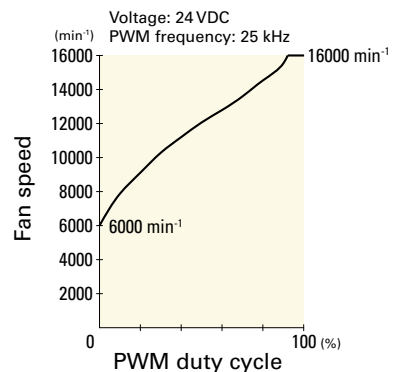
PWM duty cycle



Operating voltage range



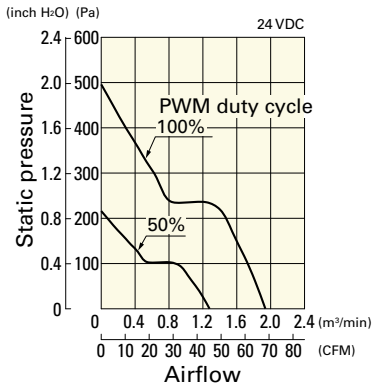
PWM duty - Speed characteristics example



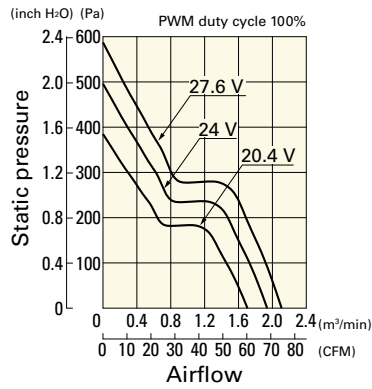
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0624P1M03 With pulse sensor with PWM control function

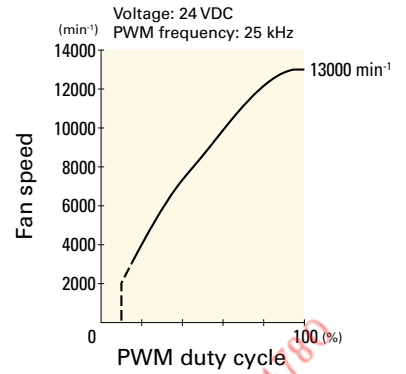
PWM duty cycle



Operating voltage range

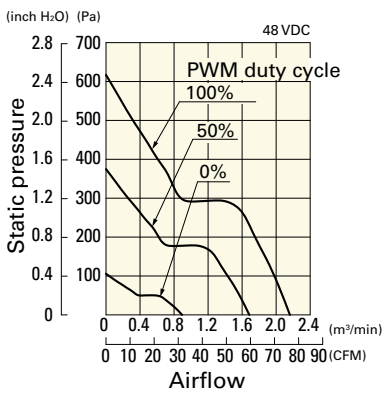


PWM duty - Speed characteristics example

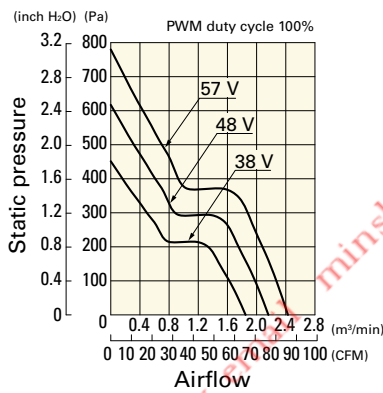


9GV0648P1H03 With pulse sensor with PWM control function

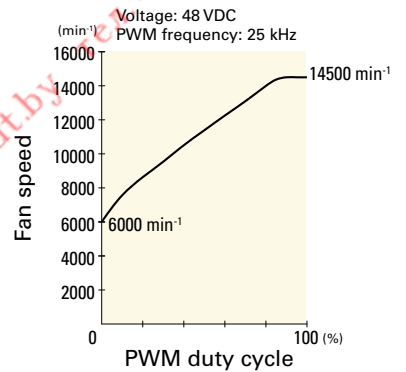
PWM duty cycle



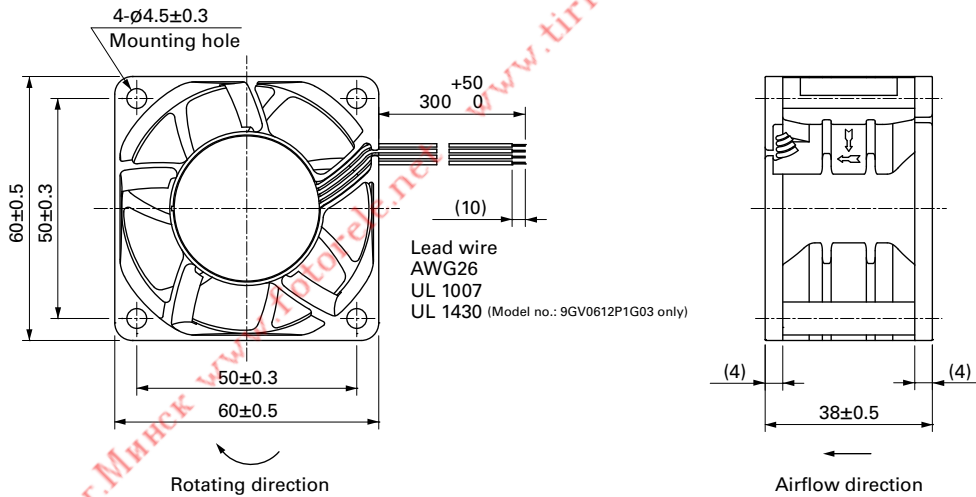
Operating voltage range



PWM duty - Speed characteristics example

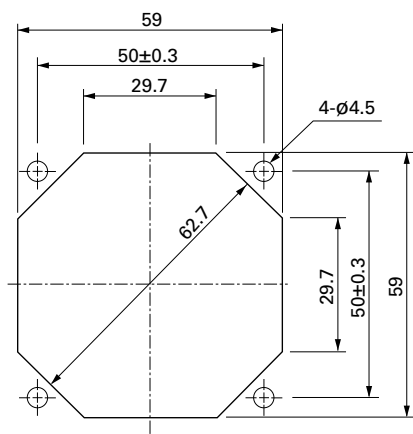


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)

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(Ribless model depicted)

60×60×38 mm

San Ace 60 9G type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 110 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

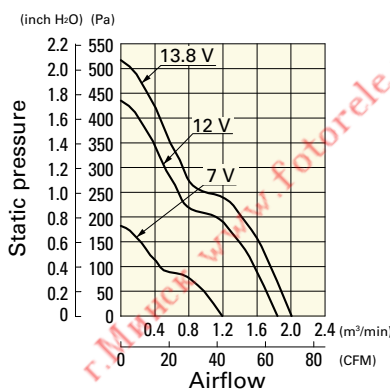
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9G0612G101	12	7.0 to 13.8	1.54	18.5	11800	1.84 65	435 1.747	58	-20 to +70	40000/60°C
9G0612S101			1.36	16.3	10800	1.7 60	370 1.486	56		
9G0624G101	24	14.0 to 27.6	0.85	20.4	11800	1.84 65	435 1.747	58		
9G0624S101			0.7	16.8	10800	1.7 60	370 1.486	56		
9G0624H101			0.57	13.68	9800	1.54 54.4	304.6 1.223	54		
9G0648G101	48	28 to 55.2	0.35	16.8	11800	1.84 65	435 1.747	58		
9G0648S101			0.29	13.9	10800	1.7 60	370 1.486	56		

Other sensor specifications are available as options. Refer to the index (pp. 548 to 549).

Airflow - Static Pressure Characteristics

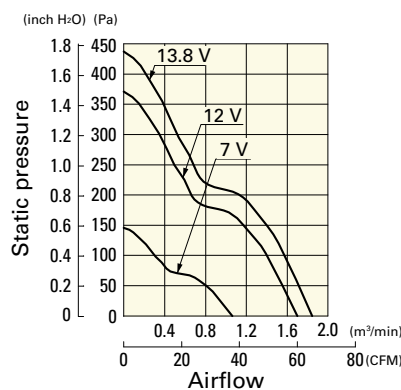
9G0612G101 With pulse sensor

Operating voltage range



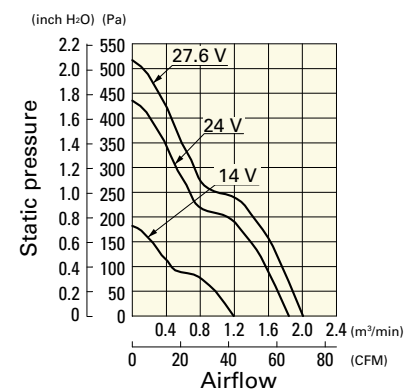
9G0612S101 With pulse sensor

Operating voltage range



9G0624G101 With pulse sensor

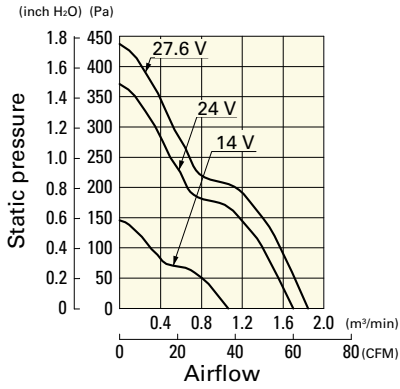
Operating voltage range



Airflow - Static Pressure Characteristics

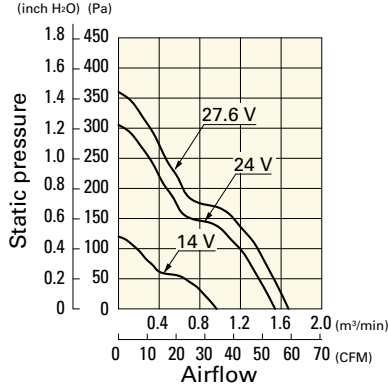
9G0624S101 With pulse sensor

Operating voltage range



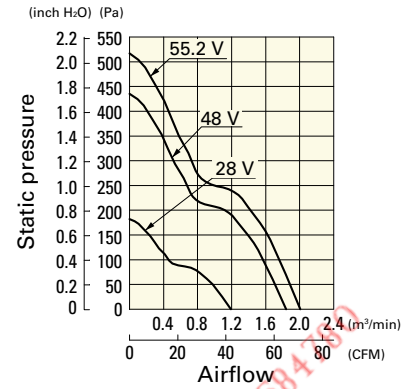
9G0624H101 With pulse sensor

Operating voltage range



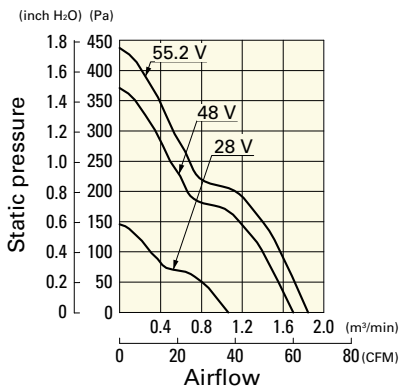
9G0648G101 With pulse sensor

Operating voltage range

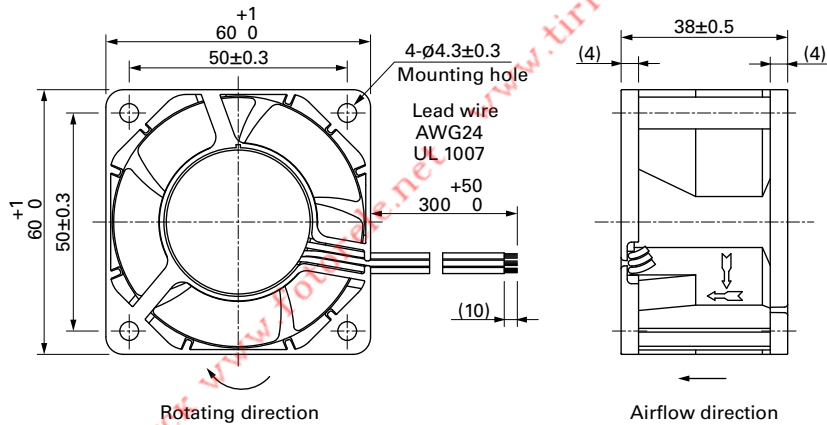


9G0648S101 With pulse sensor

Operating voltage range

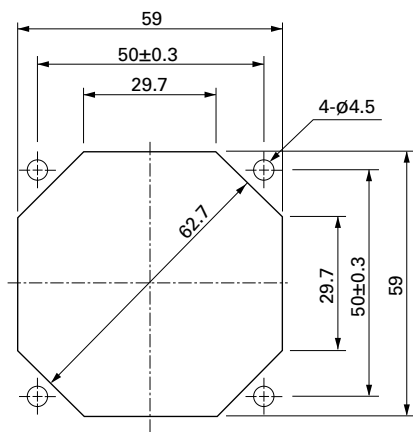


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards

page: p. 513

Model no.: 109-139E, 109-139H

Resin finger guards

page: p. 520

Model no.: 109-1003G

Resin filter kits

page: p. 521

Model no.: 109-1003F13 (13PPI), 109-1003F20 (20PPI),
109-1003F30 (30PPI), 109-1003F40 (40PPI)



70x70x38 mm

San Ace 70 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 170 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

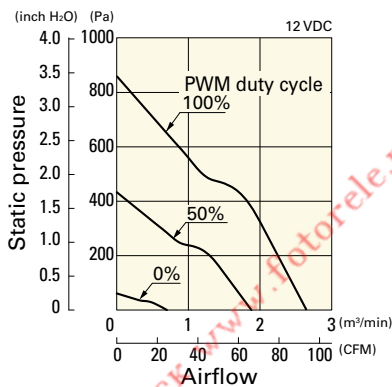
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA0712P1G001	12	10.8 to 13.2	100	2.6	31.2	16500	2.65 93.6	860 3.45	65	-20 to +70	40000/60°C (70000/40°C)
			0	0.16	1.92	4400	0.7 24.7	61 0.24	30		
9GA0712P1H001			100	1.1	13.2	12000	1.92 67.8	455 1.83	57		
			0	0.07	0.84	2500	0.4 14.1	20 0.08	19		

* PWM frequency: 25 kHz

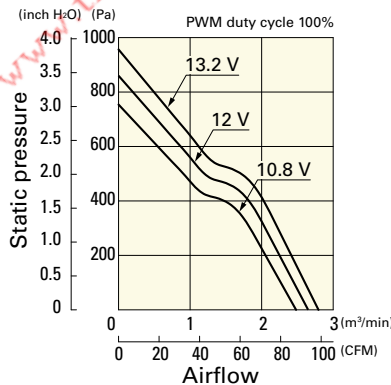
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0712P1G001 With pulse sensor with PWM control function

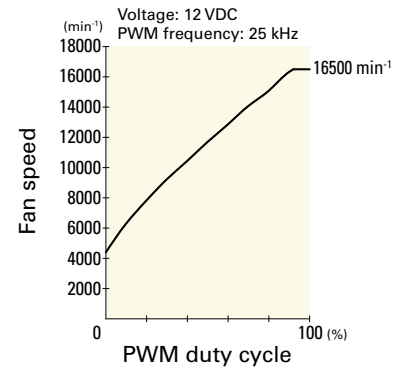
PWM duty cycle



Operating voltage range

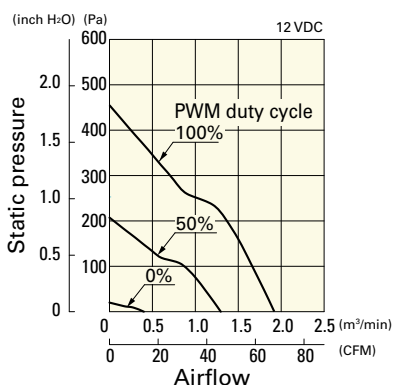


PWM duty - Speed characteristics example

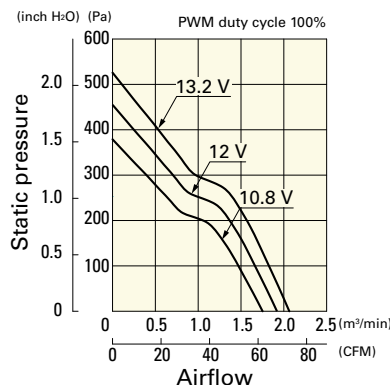


9GA0712P1H001 With pulse sensor with PWM control function

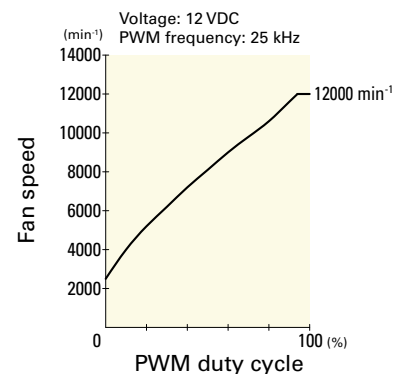
PWM duty cycle



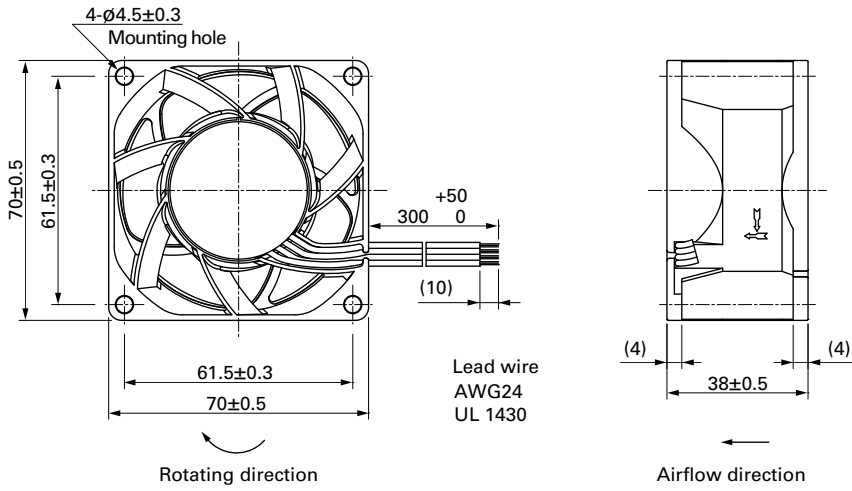
Operating voltage range



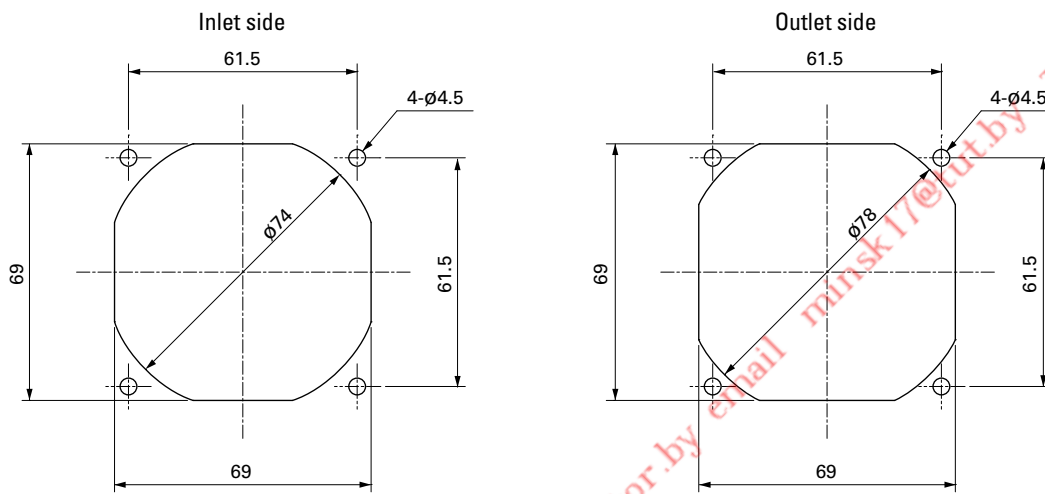
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-1128



80x80x15 mm

San Ace 80 9GA type Low Power Consumption Fan Model 9GA0812H7001 is not certified.

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- Mass 65 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.**

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]
9GA0812P7G001	12	10.2 to 13.8	100	0.29	3.48	6100	1.44 50.9	84.0 0.34	41	-20 to +70	40000/60°C (70000/40°C)
9GA0812P7S001			100	0.17	2.04	5000	1.18 41.7	56.4 0.23	37		
9GA0824P7G001	24	20.4 to 27.6	100	0.13	3.12	6100	1.44 50.9	84.0 0.34	41		
9GA0824P7S001			100	0.08	1.92	5000	1.18 41.7	56.4 0.23	37		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

The models listed below **have ribs and pulse sensors.**

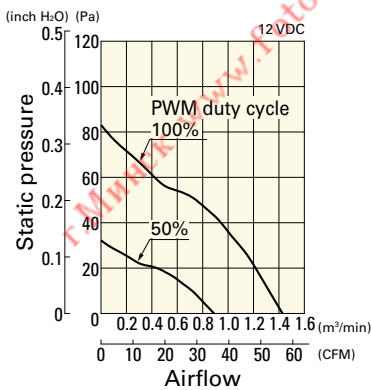
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA0812H7001	12	6 to 13.2	0.09	1.08	3800	0.89 31.4	32.6 0.13	29	-20 to +70	40000/60°C (70000/40°C)
9GA0824H7001	24	12 to 26.4	0.05	1.2	3800	0.89 31.4	32.6 0.13	29		

Other sensor specifications are available as options. Refer to the index (p. 552).

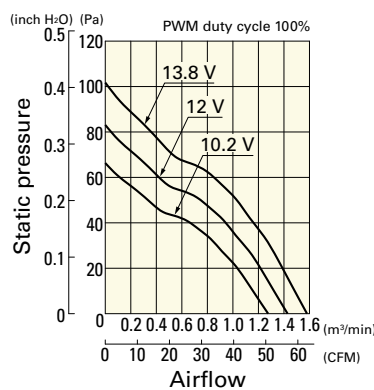
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P7G001 With pulse sensor with PWM control function

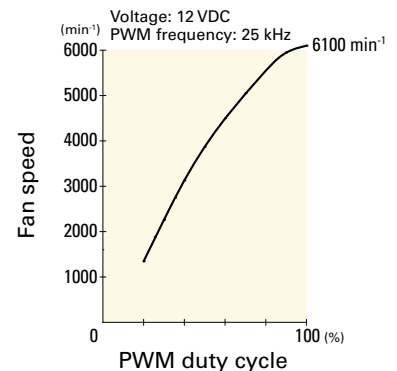
PWM duty cycle



Operating voltage range



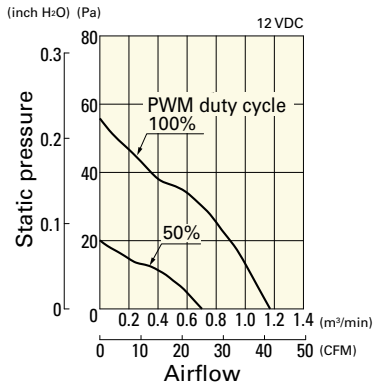
PWM duty - Speed characteristics example



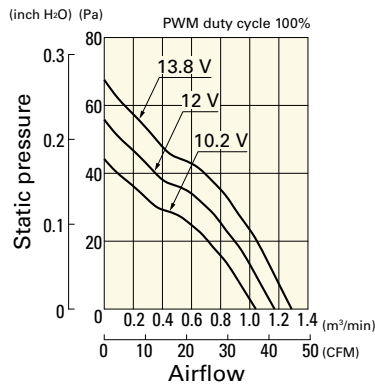
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P7S001 With pulse sensor with PWM control function

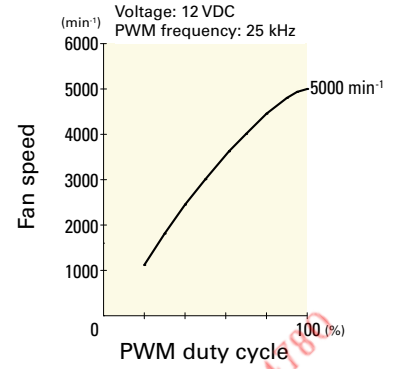
PWM duty cycle



Operating voltage range

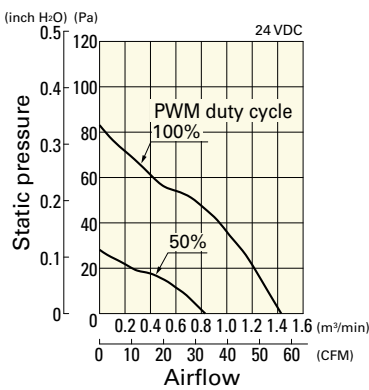


PWM duty - Speed characteristics example

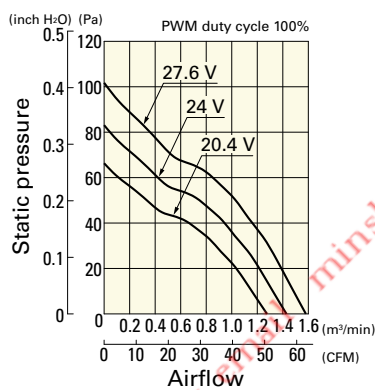


9GA0824P7G001 With pulse sensor with PWM control function

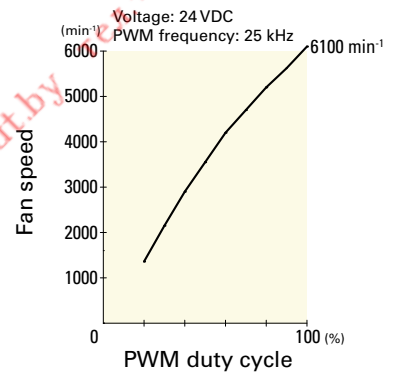
PWM duty cycle



Operating voltage range

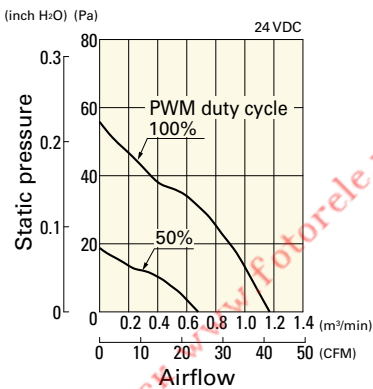


PWM duty - Speed characteristics example

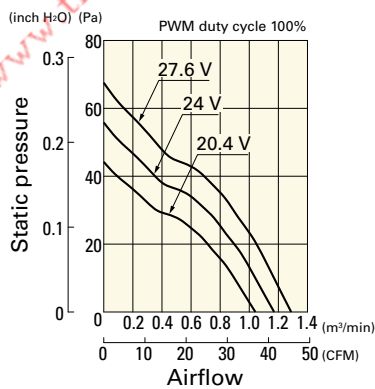


9GA0824P7S001 With pulse sensor with PWM control function

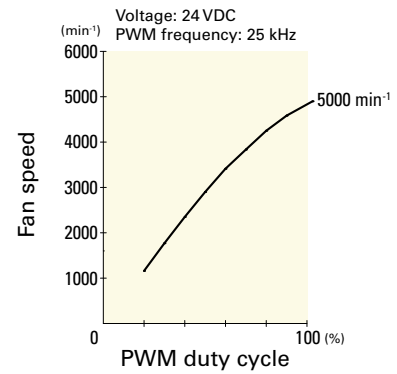
PWM duty cycle



Operating voltage range

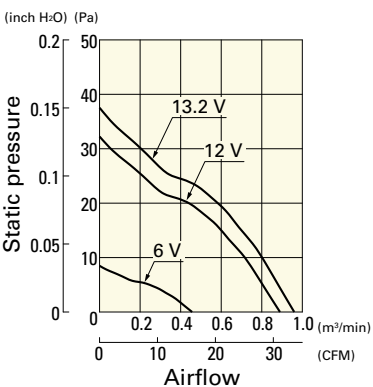


PWM duty - Speed characteristics example



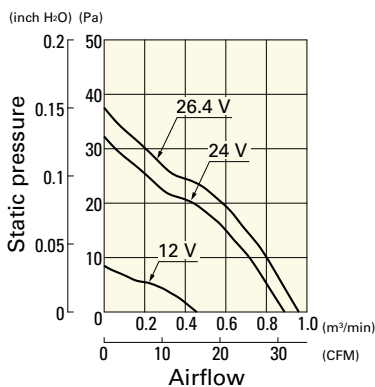
9GA0812H7001 With pulse sensor

Operating voltage range

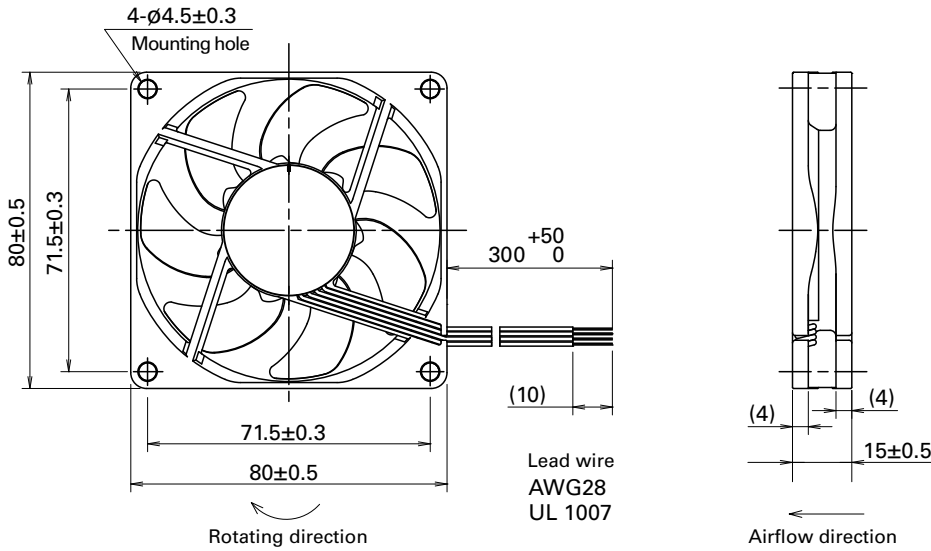


9GA0824H7001 With pulse sensor

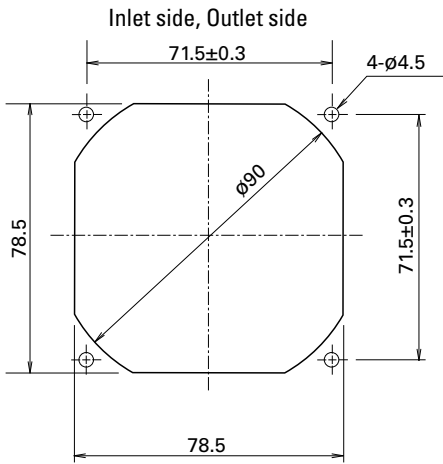
Operating voltage range



Dimensions (unit: mm) (With pulse sensor with PWM control function)



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



Options

Finger guards page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards page: p. 520

Model no.: 109-1002G

Resin filter kits page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)



80×80×15 mm

San Ace 80 9P type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 68 g

Specifications

The models listed below **have ribs and pulse sensors.**

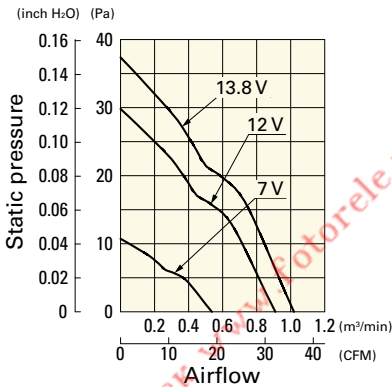
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P0812H701	12	7 to 13.8	0.2	2.4	3100	0.91 32.1	29.4 0.118	31	-20 to +70	40000/60°C
109P0812M701			0.09	1.08	2000	0.57 20.1	12.6 0.051	21		60000/60°C
109P0824H701	24	14 to 27.6	0.1	2.4	3100	0.91 32.1	29.4 0.118	31		40000/60°C
109P0824M701			0.05	1.2	2000	0.57 20.1	12.6 0.051	21		60000/60°C

Other sensor specifications are available as options. Refer to the index (p. 544).

Airflow - Static Pressure Characteristics

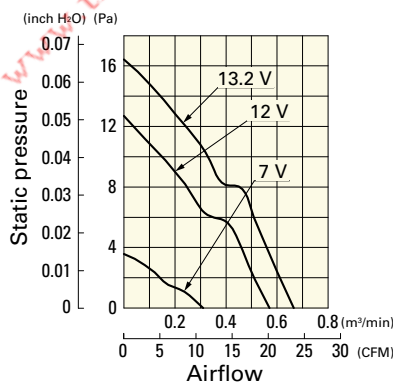
109P0812H701 With pulse sensor

Operating voltage range



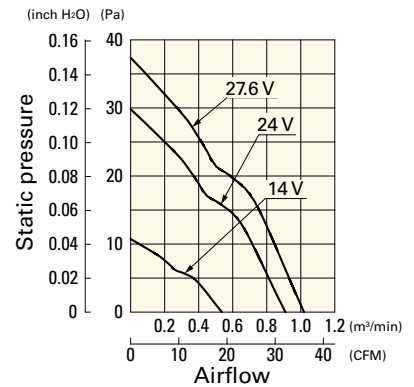
109P0812M701 With pulse sensor

Operating voltage range



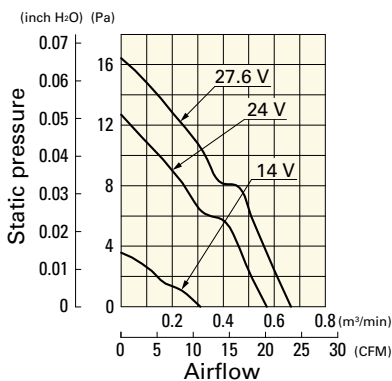
109P0824H701 With pulse sensor

Operating voltage range

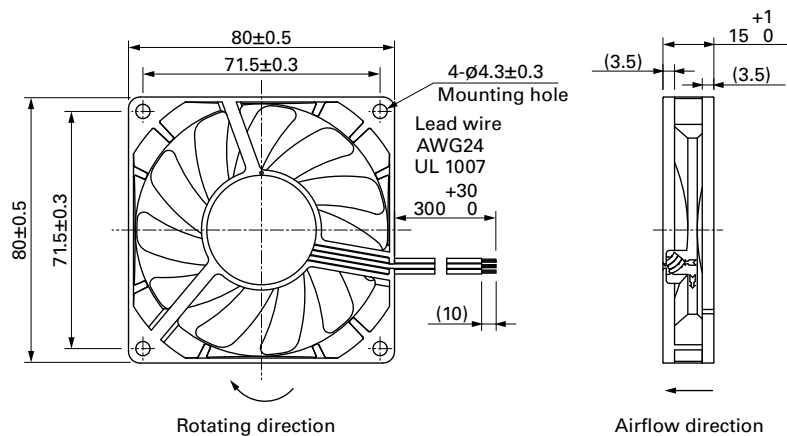


109P0824M701 With pulse sensor

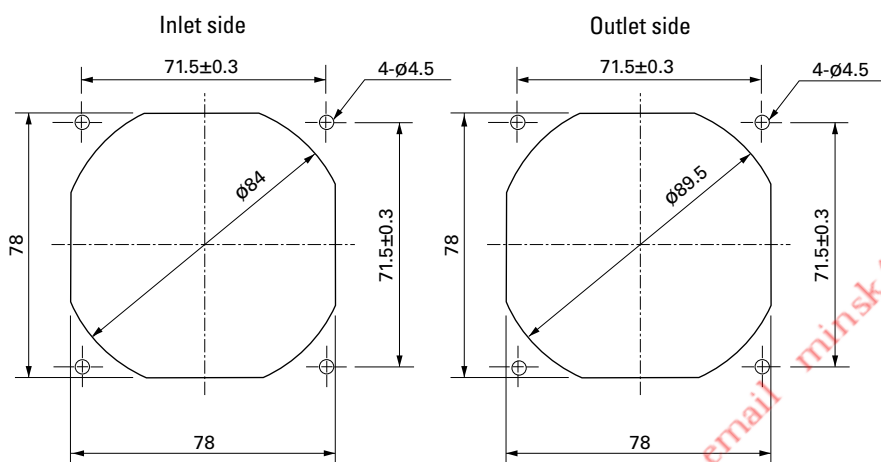
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)



80x80x20 mm

San Ace 80 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 80 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.**

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]
9GA0812P6G001	12	10.2 to 13.8	100	0.3	3.6	5850	1.72 60.78	110 0.44	45	-20 to +70	40000/60°C (70000/40°C)
9GA0812P6M001				0.06	0.72	2900	0.84 29.68	27 0.11	26.5		60000/60°C
9GA0824P6G001	24	20.4 to 27.6	100	0.15	3.6	5850	1.72 60.78	110 0.44	45		40000/60°C (70000/40°C)
9GA0824P6M001				0.03	0.72	2900	0.84 29.68	27 0.11	26.5		60000/60°C

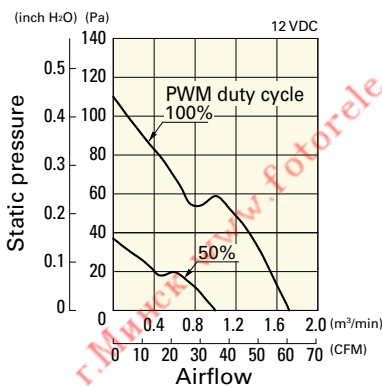
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 552).

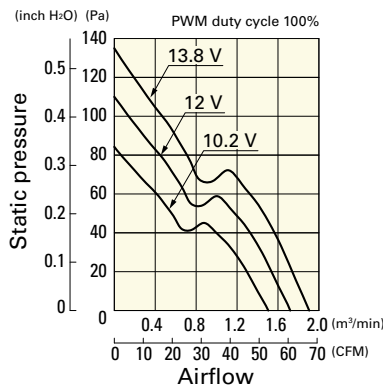
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P6G001 With pulse sensor with PWM control function

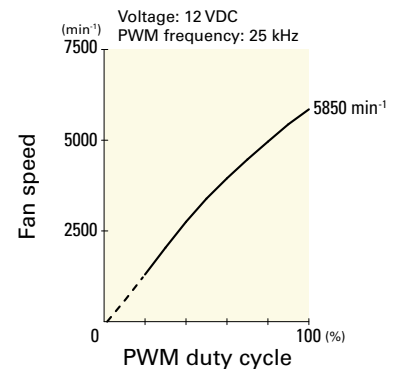
PWM duty cycle



Operating voltage range



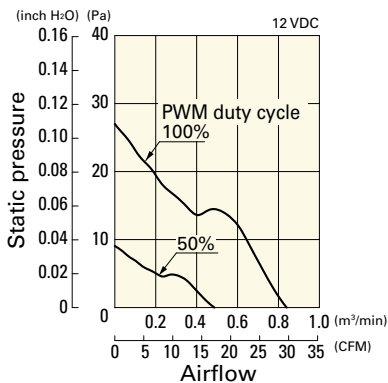
PWM duty - Speed characteristics example



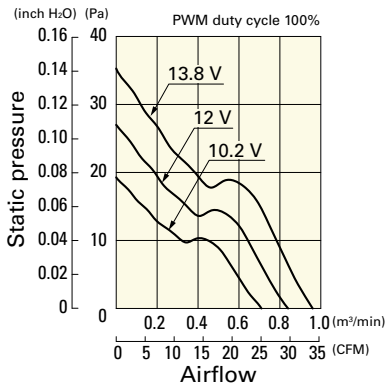
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P6M001 With pulse sensor with PWM control function

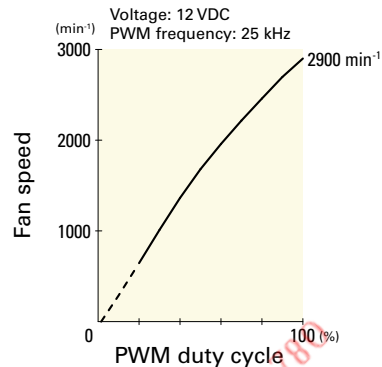
PWM duty cycle



Operating voltage range

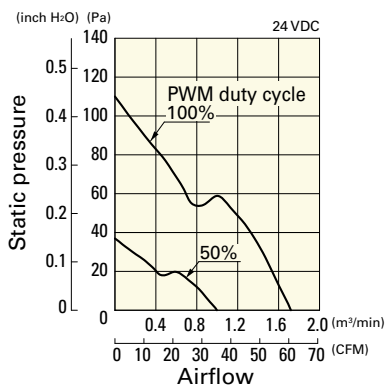


PWM duty - Speed characteristics example

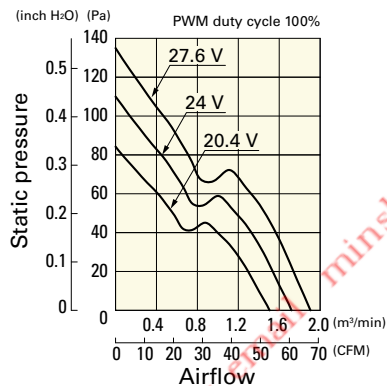


9GA0824P6G001 With pulse sensor with PWM control function

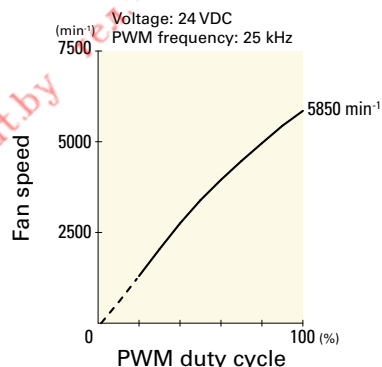
PWM duty cycle



Operating voltage range

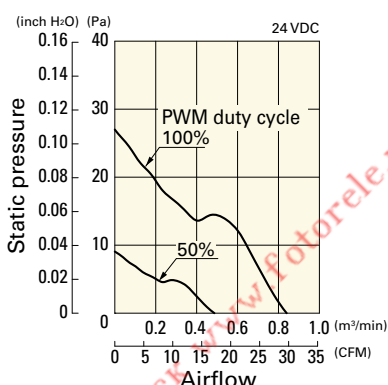


PWM duty - Speed characteristics example

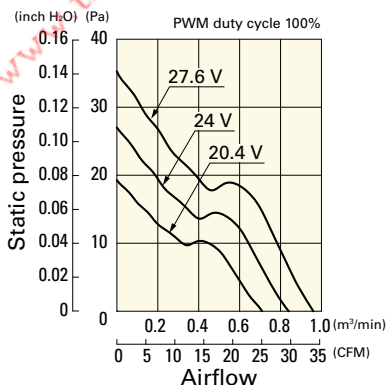


9GA0824P6M001 With pulse sensor with PWM control function

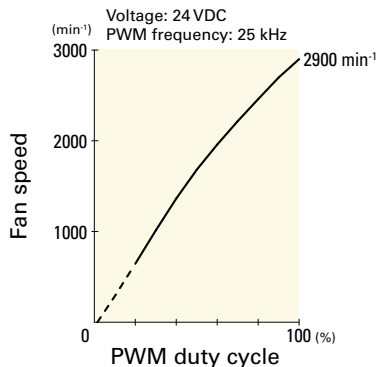
PWM duty cycle



Operating voltage range

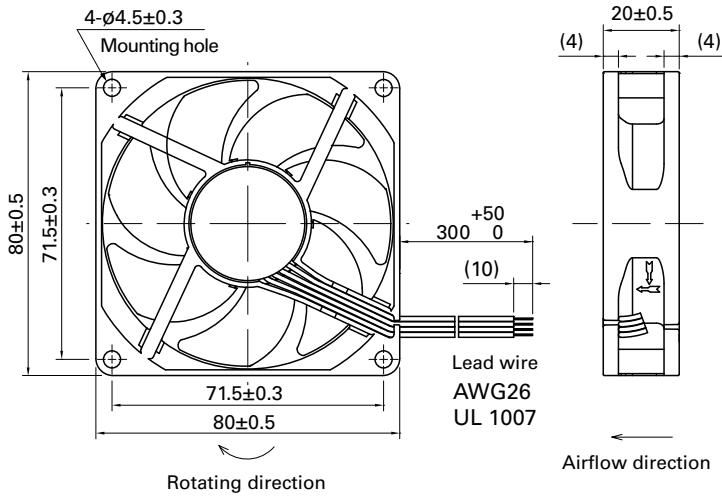


PWM duty - Speed characteristics example

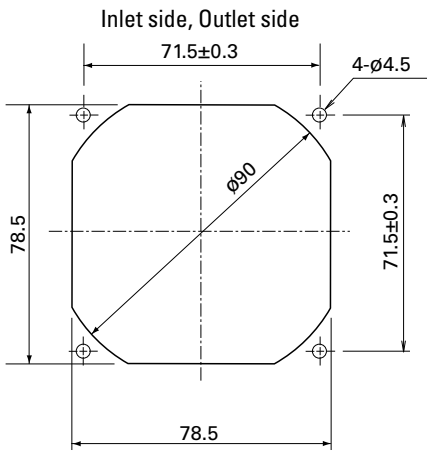


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Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)

80×80×20 mm

San Ace 80 9P type    Model 109P0812C601 is not certified.



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 100 g

Specifications

The models listed below **have ribs and pulse sensors.**

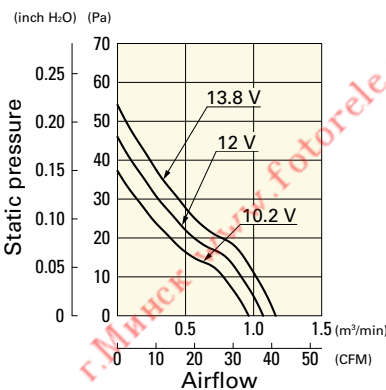
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P0812C601	12	10.2 to 13.8	0.29	3.48	3700	1.07 37.8	46 0.185	39	-20 to +60	60000/60°C
109P0812H601			0.21	2.52	2900	0.84 29.7	29.4 0.118	31		
109P0812M601			0.13	1.56	2300	0.67 23.7	18.6 0.075	25		
109P0824H601	24	20.4 to 27.6	0.12	2.88	2900	0.84 29.7	29.4 0.118	31	-20 to +70	60000/60°C
109P0824M601			0.07	1.68	2300	0.67 23.7	18.6 0.075	25		
109P0848C601	48	38 to 57.6	0.08	3.84	3700	1.07 37.8	46 0.185	39	-20 to +70	40000/60°C
109P0848H601			0.05	2.4	2900	0.84 29.7	29.4 0.118	31		

Other sensor specifications are available as options. Refer to the index (p. 544).

Airflow - Static Pressure Characteristics

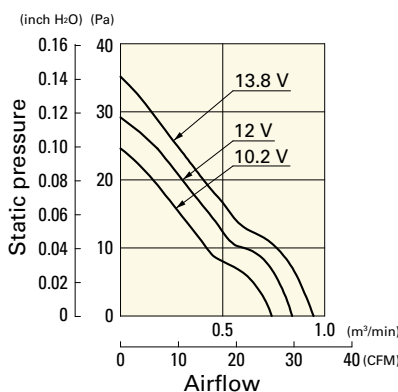
109P0812C601 With pulse sensor

Operating voltage range



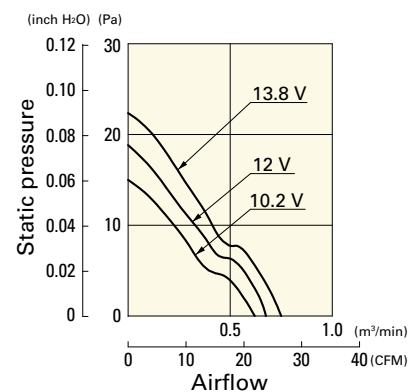
109P0812H601 With pulse sensor

Operating voltage range



109P0812M601 With pulse sensor

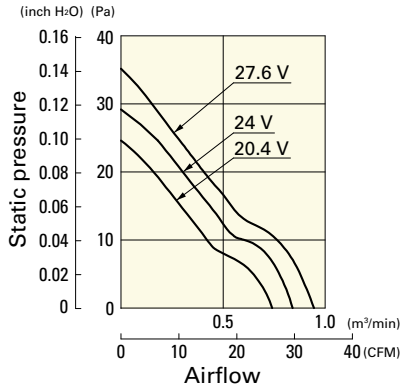
Operating voltage range



Airflow - Static Pressure Characteristics

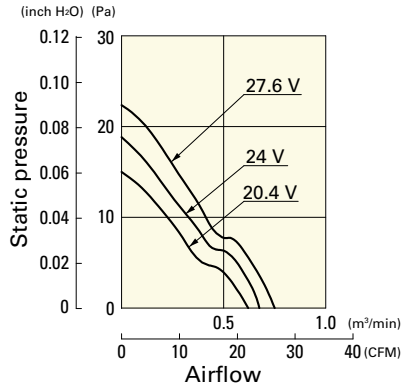
109P0824H601 With pulse sensor

Operating voltage range



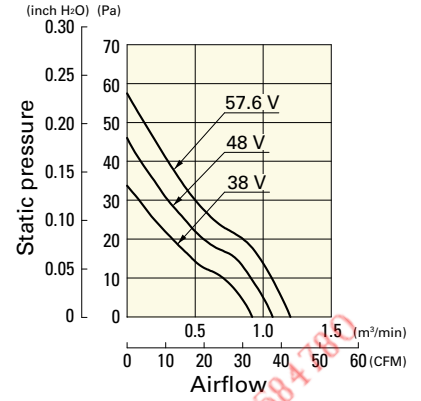
109P0824M601 With pulse sensor

Operating voltage range



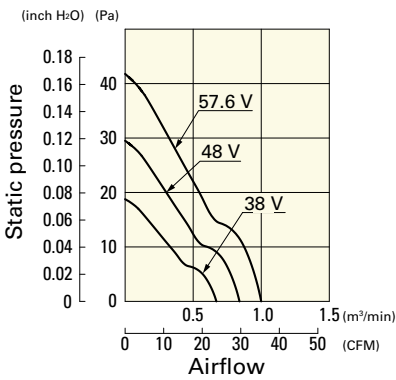
109P0848C601 With pulse sensor

Operating voltage range

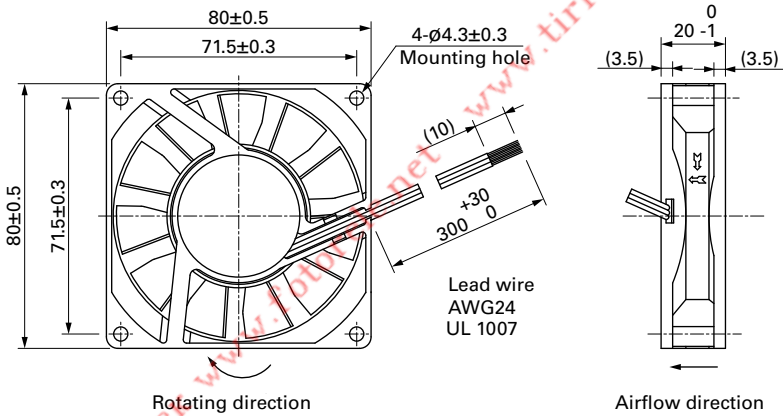


109P0848H601 With pulse sensor

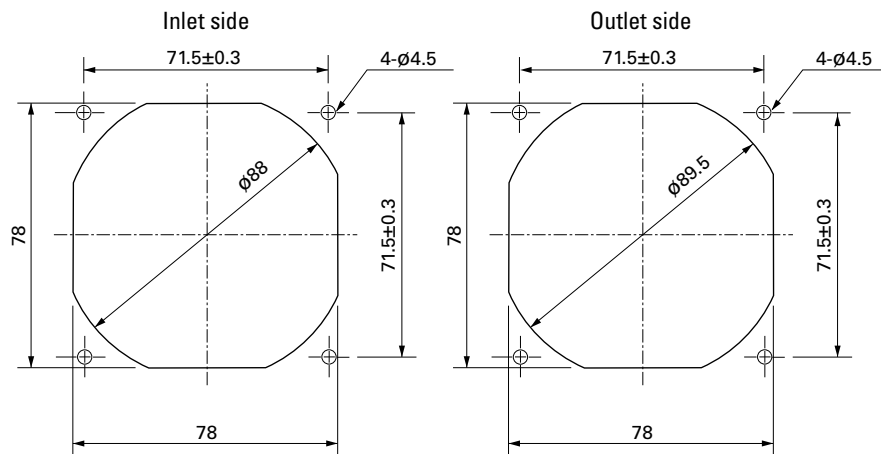
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)

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80x80x25 mm

San Ace 80 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 110 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function**. For models without ribs, append "1" to the end of model numbers.

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]
9GA0812P4J001	12	10.8 to 13.2	100	0.6	7.2	7400	2.07 73.0	177.6 0.7	48	-20 to +70	40000/60°C (70000/40°C)
			25	0.08	0.96	2500	0.69 24.3	20.2 0.08	21		
9GA0812P4G001			100	0.48	5.76	6800	1.91 67.4	150 0.6	45		
			25	0.06	0.72	1500	0.42 14.8	7.2 0.02	17		
9GA0812P4H001			100	0.22	2.64	5200	1.46 51.5	87.7 0.35	37		
			25	0.06	0.72	1600	0.44 15.5	8.3 0.03	17		
9GA0824P4J001	24	21.6 to 26.4	100	0.28	6.72	7400	2.07 73.0	177.6 0.7	48		
			25	0.06	1.44	2800	0.78 27.5	25.4 0.1	23		
9GA0824P4G001			100	0.21	5.04	6800	1.91 67.4	150 0.6	45		
			25	0.04	0.96	2100	0.58 20.4	14.3 0.05	19		
9GA0824P4H001			100	0.1	2.4	5200	1.46 51.5	87.7 0.35	37		
			25	0.02	0.48	1500	0.42 14.8	7.2 0.02	17		

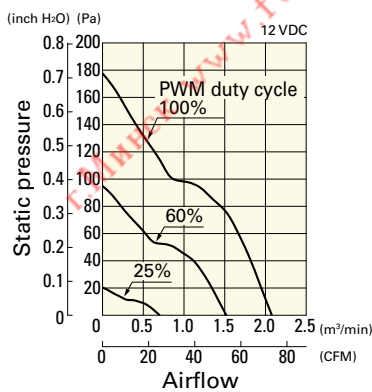
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 552).

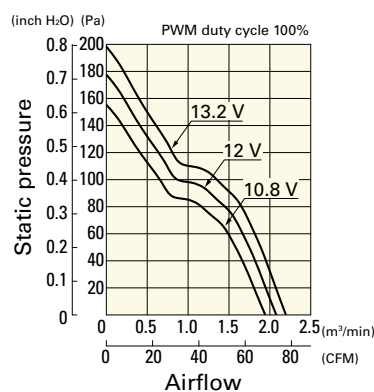
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P4J001 With pulse sensor with PWM control function

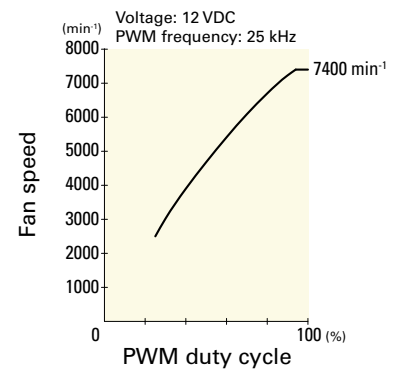
PWM duty cycle



Operating voltage range



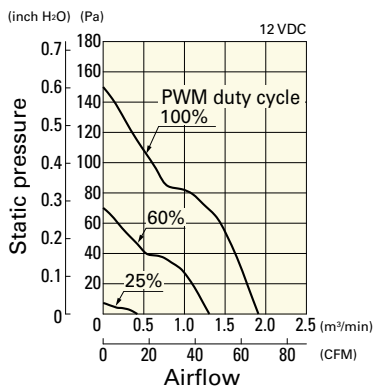
PWM duty - Speed characteristics example



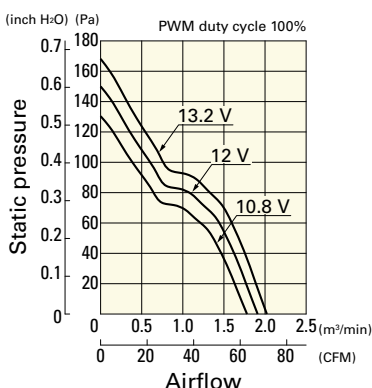
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P4G001 With pulse sensor with PWM control function

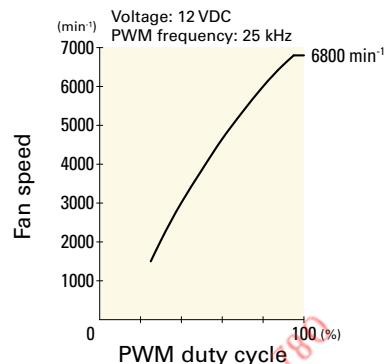
PWM duty cycle



Operating voltage range

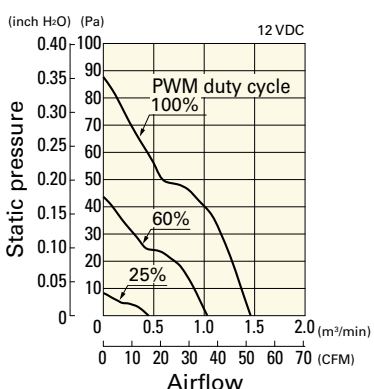


PWM duty - Speed characteristics example

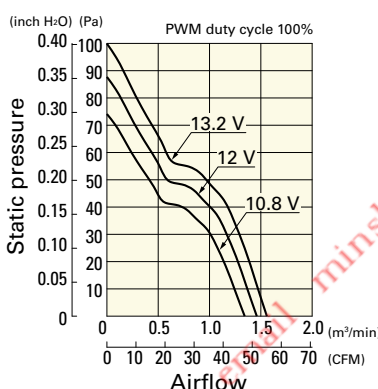


9GA0812P4H001 With pulse sensor with PWM control function

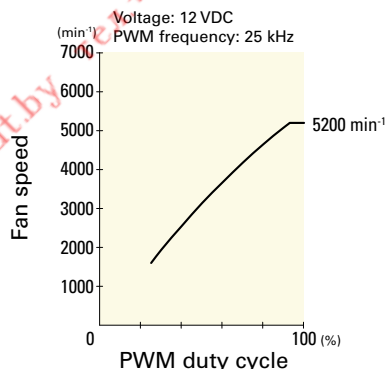
PWM duty cycle



Operating voltage range

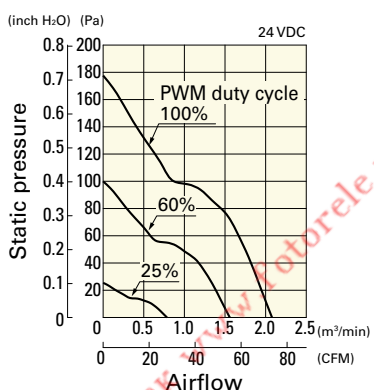


PWM duty - Speed characteristics example

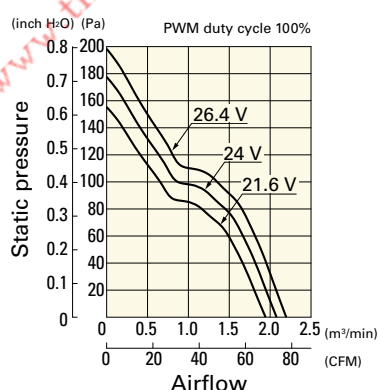


9GA0824P4J001 With pulse sensor with PWM control function

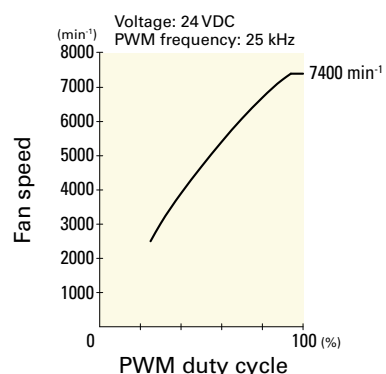
PWM duty cycle



Operating voltage range

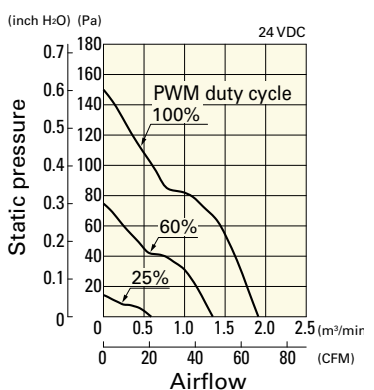


PWM duty - Speed characteristics example

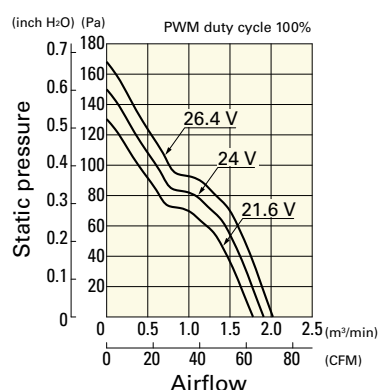


9GA0824P4G001 With pulse sensor with PWM control function

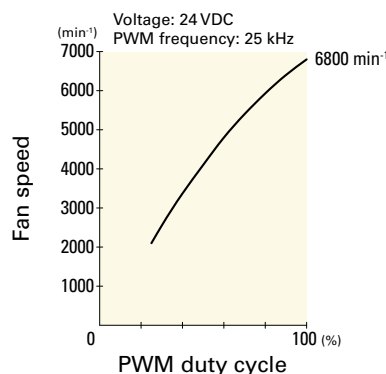
PWM duty cycle



Operating voltage range



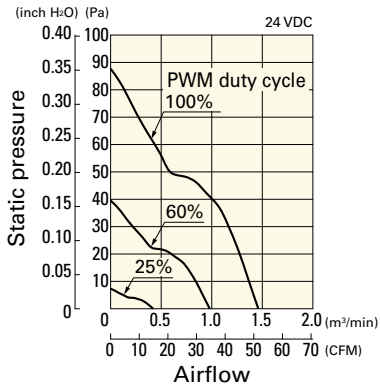
PWM duty - Speed characteristics example



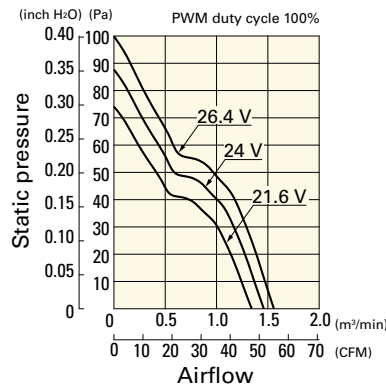
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0824P4H001 With pulse sensor with PWM control function

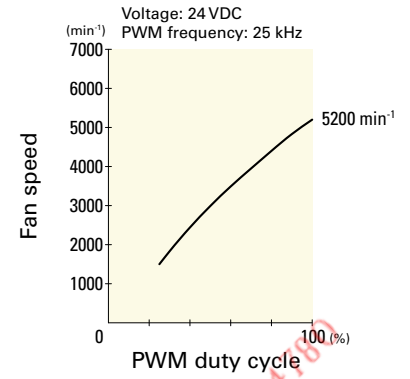
PWM duty cycle



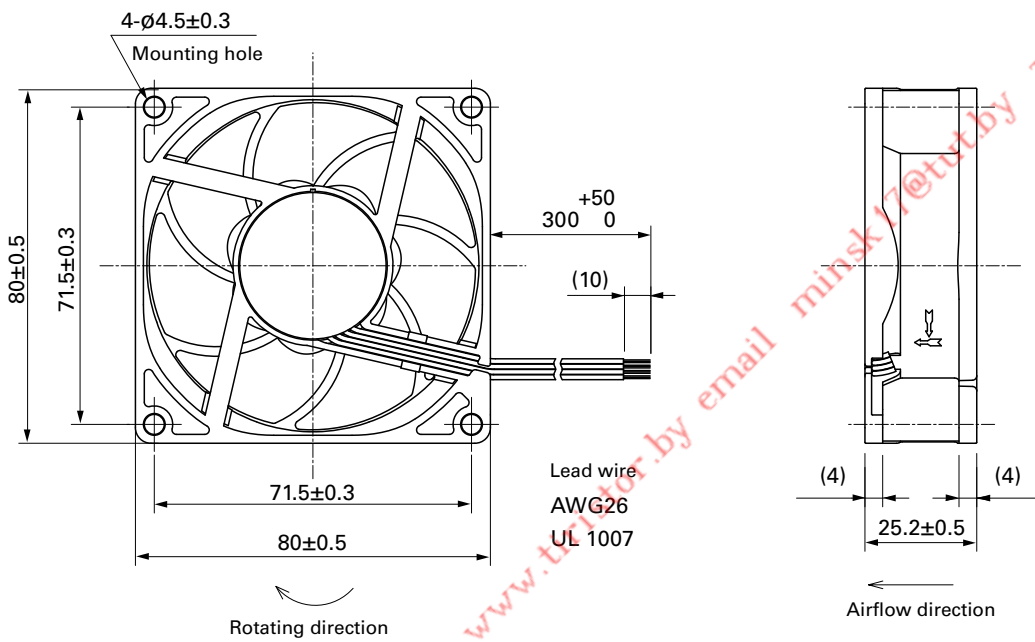
Operating voltage range



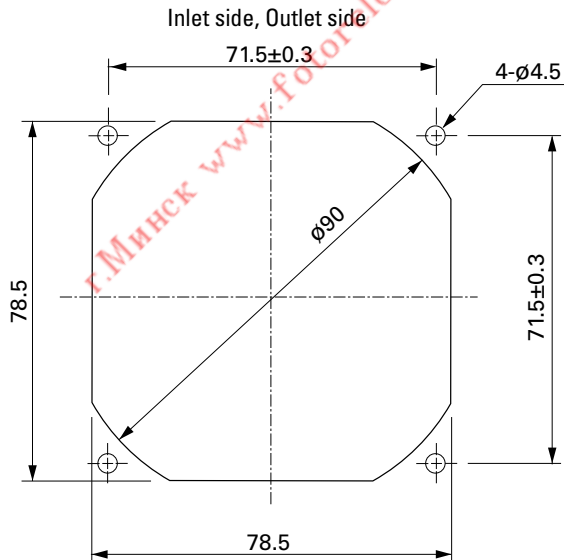
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits




page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)

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80×80×25 mm

San Ace 80 9S type Silent Fan    Model 9S0812H401 is not TÜV certified.

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 75 g

Specifications

The models listed below **have ribs and pulse sensors.** For models without ribs, append "1" to the end of model numbers.

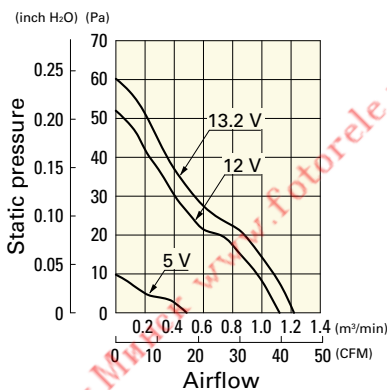
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9S0812H401	12	5.0 to 13.2	0.23	2.76	3400	1.12 39.5	52.15 0.2	31	-10 to +70	40000/60°C
9S0812F401		5.0 to 13.8	0.11	1.32	2800	0.93 32.8	35.5 0.143	24		
9S0812M401			0.08	0.96	2500	0.83 29.3	27.5 0.11	22		
9S0812L401		6.0 to 13.8	0.05	0.6	2000	0.66 23.3	18.1 0.073	16		
9S0824M401	24	10 to 26.4	0.06	1.44	2500	0.83 29.3	27.5 0.11	22		
9S0824L401			0.04	0.96	2000	0.66 23.3	18.1 0.073	16		

Other sensor specifications are available as options. Refer to the index (p. 557).

Airflow - Static Pressure Characteristics

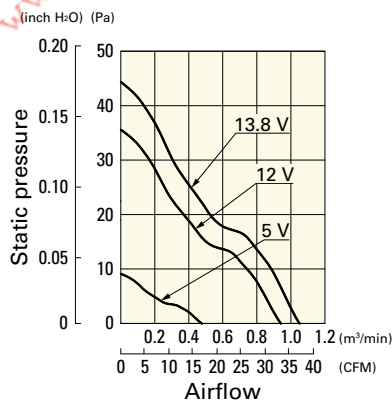
9S0812H401 With pulse sensor

Operating voltage range



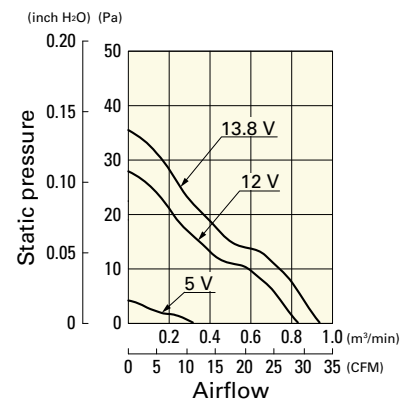
9S0812F401 With pulse sensor

Operating voltage range



9S0812M401 With pulse sensor

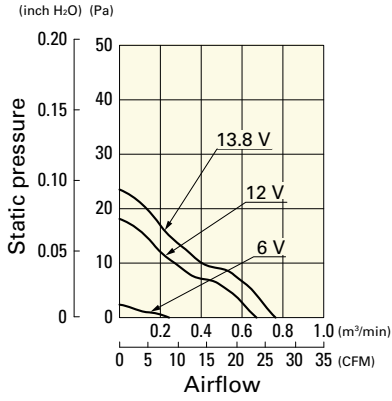
Operating voltage range



Airflow - Static Pressure Characteristics

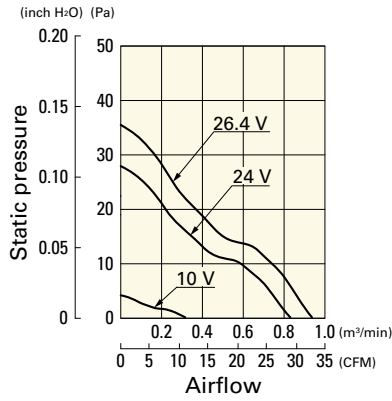
9S0812L401 With pulse sensor

Operating voltage range



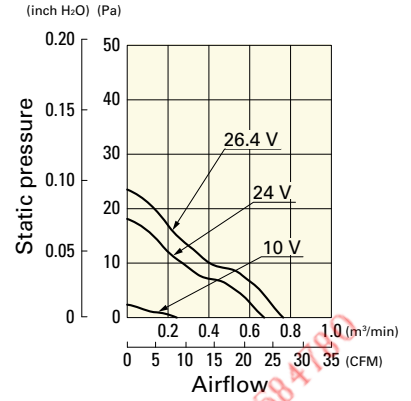
9S0824M401 With pulse sensor

Operating voltage range

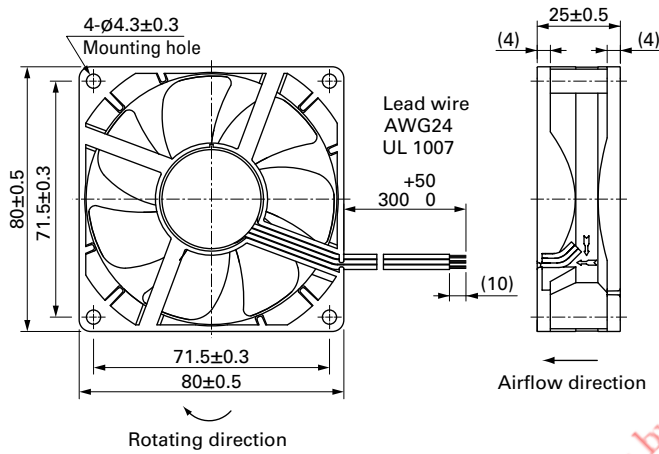


9S0824L401 With pulse sensor

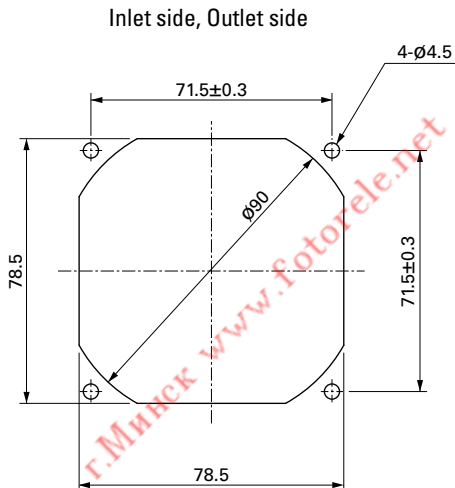
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI), 109-1002F30 (30PPI), 109-1002F40 (40PPI)



80×80×25 mm

San Ace 80 9GV type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 125 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GV0812P4K03	12	10.2 to 13.8	100	0.87	10.4	5600	2.12 74.8	173.0 0.69	52	-20 to +70	40000/60°C
			0	0.1	1.2	1400	0.5 18.7	10.3 0.04	18		
9GV0812P4J03	12	10.2 to 13.8	100	0.47	5.6	4500	1.72 60.7	110.0 0.44	46		
			0	0.07	0.8	1200	0.45 16.2	7.5 0.03	14		
9GV0824P4K01	24	20.4 to 27.6	100	0.44	10.56	5600	2.12 74.8	173.0 0.69	52		
			0	0.06	1.44	1400	0.53 18.7	10.8 0.04	18		
9GV0848P4K03	48	43 to 53	100	0.22	10.56	5600	2.12 74.8	173.0 0.69	52		
			0	0.04	1.92	1500	0.57 20.1	12.4 0.05	19		

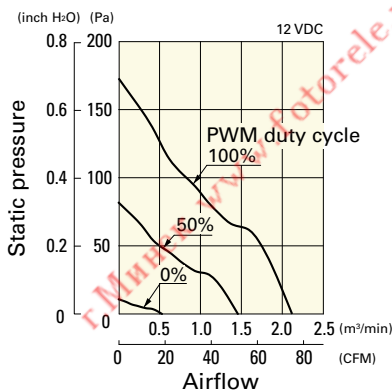
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 555).

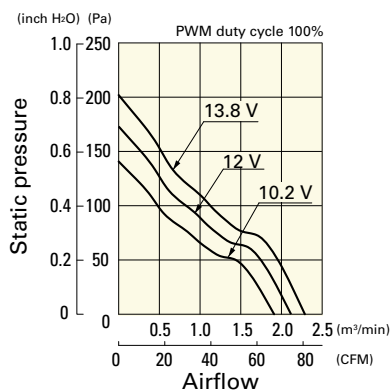
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0812P4K03 With pulse sensor with PWM control function

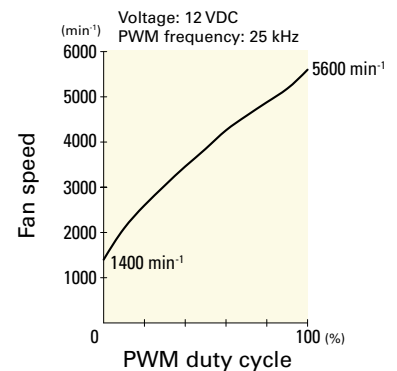
PWM duty cycle



Operating voltage range



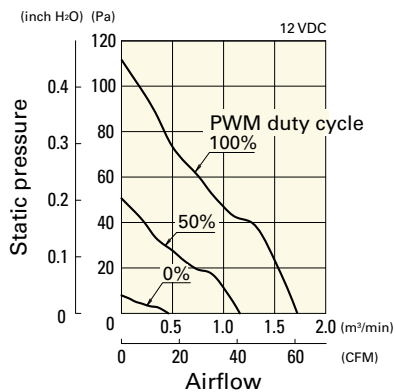
PWM duty - Speed characteristics example



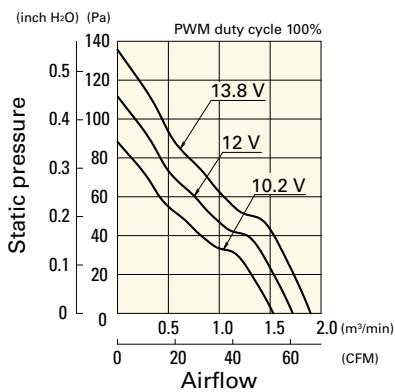
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0812P4J03 With pulse sensor with PWM control function

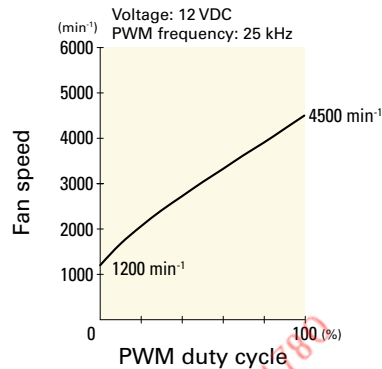
PWM duty cycle



Operating voltage range

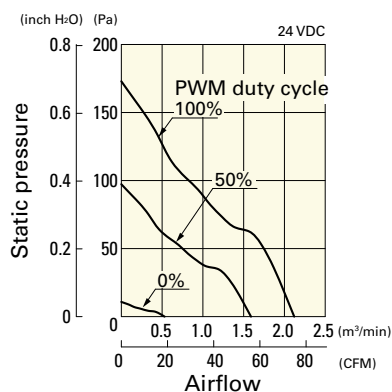


PWM duty - Speed characteristics example

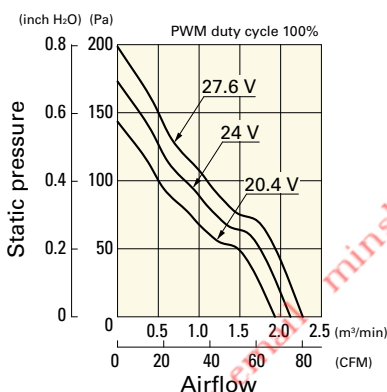


9GV0824P4K01 With pulse sensor with PWM control function

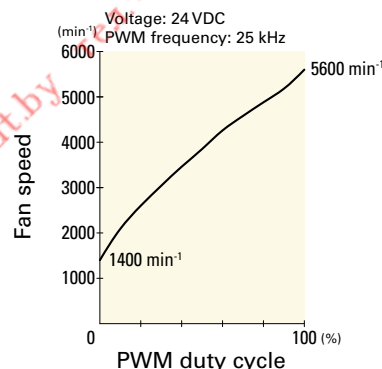
PWM duty cycle



Operating voltage range

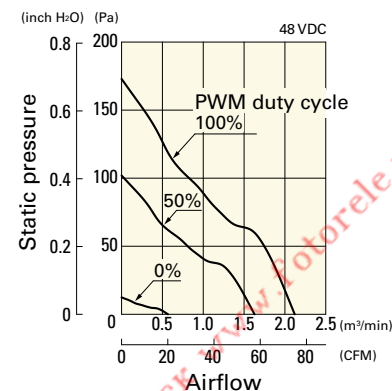


PWM duty - Speed characteristics example

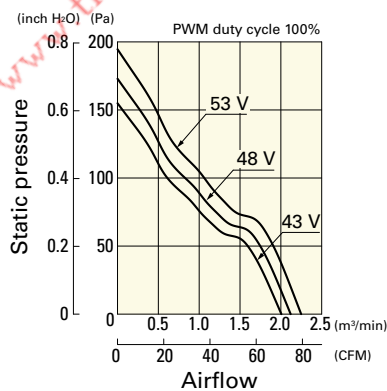


9GV0848P4K03 With pulse sensor with PWM control function

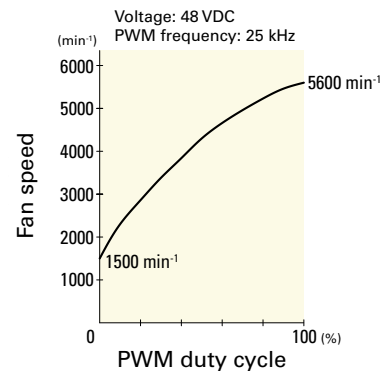
PWM duty cycle



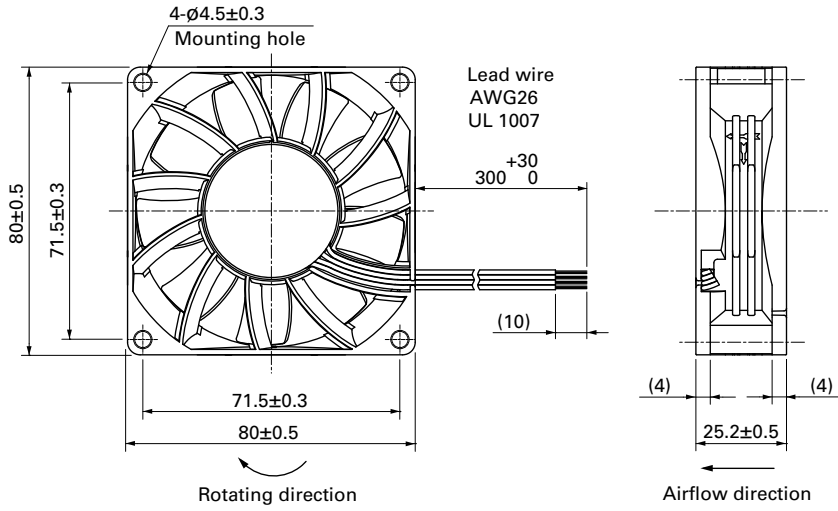
Operating voltage range



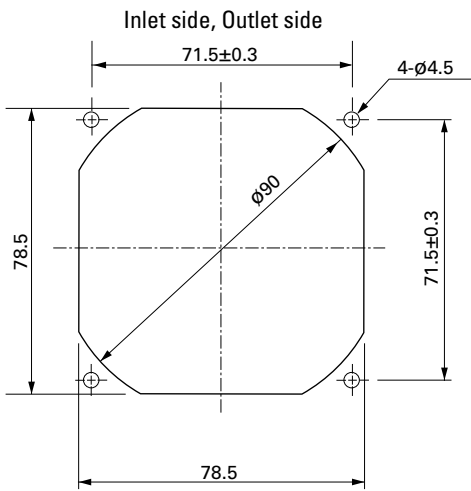
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)

80×80×25 mm

San Ace 80 9R type    Model 109R0812E401 is not certified.



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 110 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

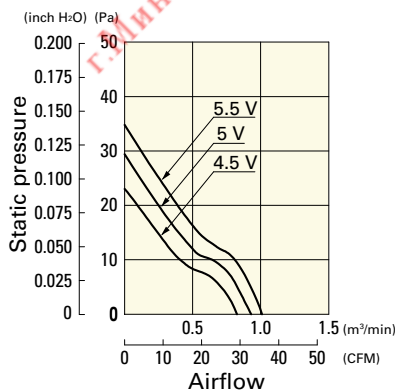
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109R0805F401	5	4.5 to 5.5	0.25	1.25	2600	0.92 32.5	28.4 0.114	26	-20 to +70	60000/60°C
109R0805M401			0.17	0.85	2350	0.83 29.3	22.5 0.09	23		
109R0812G401	12	10.8 to 13.2	0.37	4.44	4500	1.5 53.0	80.4 0.323	40	-20 to +60	40000/60°C
109R0812E401			0.24	2.88	3700	1.31 46.3	57.8 0.232	35		
109R0812S401			0.18	2.16	3400	1.2 42.4	48.0 0.193	34		
109R0812H401			0.13	1.56	2900	1.03 36.4	35.3 0.142	29		
109R0812F401		6 to 13.8	0.11	1.32	2600	0.92 32.5	28.4 0.114	26	-20 to +70	60000/60°C
109R0812M401			0.09	1.08	2350	0.83 29.3	22.5 0.09	23		
109R0812L401			0.06	0.72	1850	0.65 23.0	14.7 0.059	20		
109R0824G401			0.2	4.8	4500	1.5 53.0	80.4 0.323	40		
109R0824S401	12 to 27.6	0.1	2.4	3400	1.2 42.4	48.0 0.193	34			
109R0824H401		0.07	1.68	2900	1.03 36.4	35.3 0.142	29			
109R0824F401		0.06	1.44	2600	0.92 32.5	28.4 0.114	26			
109R0824M401		0.05	1.2	2350	0.83 29.3	22.5 0.09	23			
109R0824L401	14 to 27.6	0.04	0.96	1850	0.65 23.0	14.7 0.059	20	-20 to +70	60000/60°C	
109R0848K401	48	40.8 to 55.2	0.1	4.8	4600	1.56 55.1	88.4 0.355			41
109R0848S401			0.06	2.88	3400	1.2 42.4	48.0 0.193	34	-20 to +70	60000/60°C

Other sensor specifications are available as options. Refer to the index (pp. 545 to 546).

Airflow - Static Pressure Characteristics

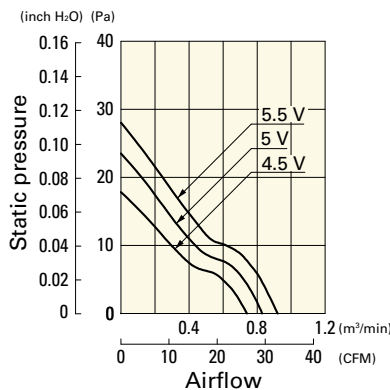
109R0805F401 With pulse sensor

Operating voltage range



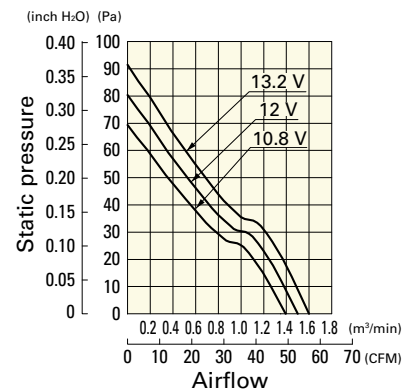
109R0805M401 With pulse sensor

Operating voltage range



109R0812G401 With pulse sensor

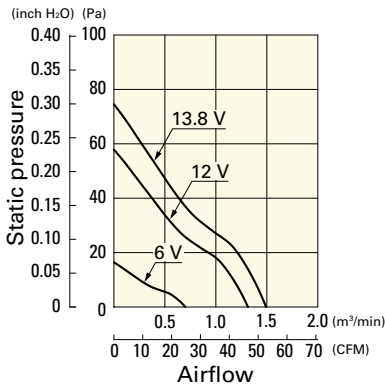
Operating voltage range



Airflow - Static Pressure Characteristics

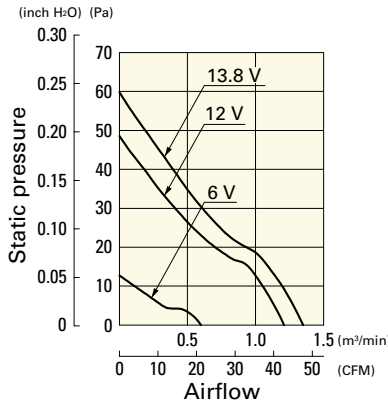
109R0812E401 With pulse sensor

Operating voltage range



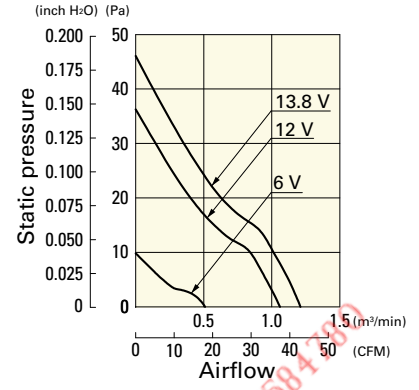
109R0812S401 With pulse sensor

Operating voltage range



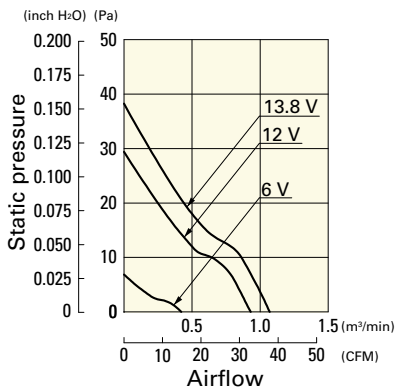
109R0812H401 With pulse sensor

Operating voltage range



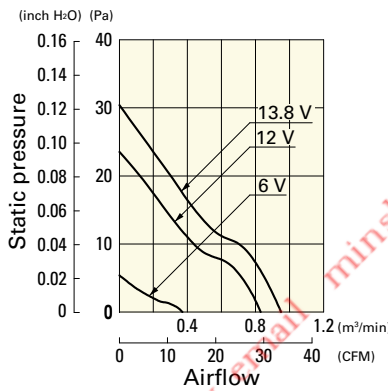
109R0812F401 With pulse sensor

Operating voltage range



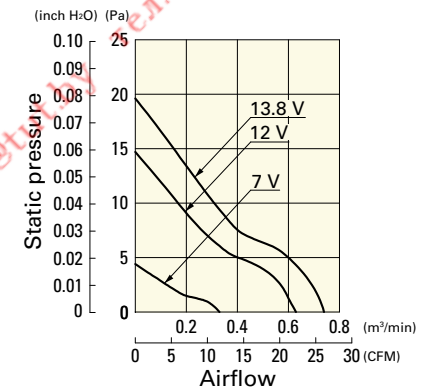
109R0812M401 With pulse sensor

Operating voltage range



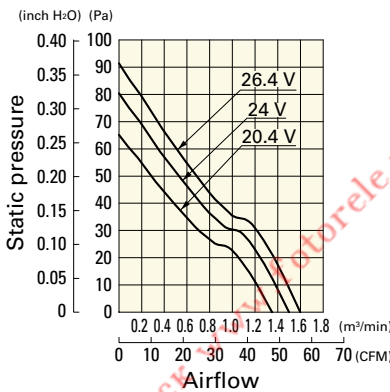
109R0812L401 With pulse sensor

Operating voltage range



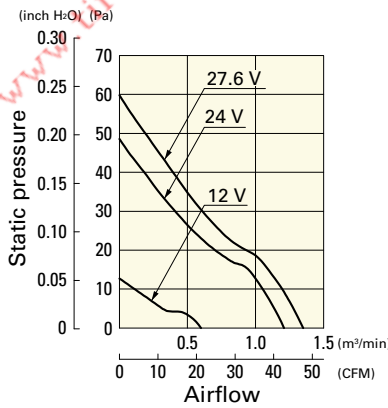
109R0824G401 With pulse sensor

Operating voltage range



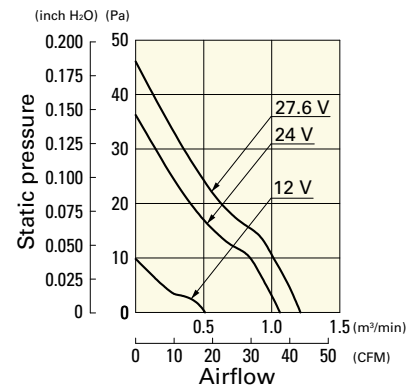
109R0824S401 With pulse sensor

Operating voltage range



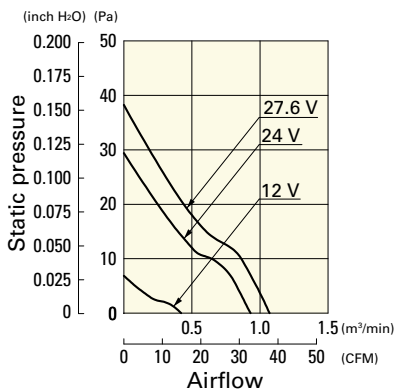
109R0824H401 With pulse sensor

Operating voltage range



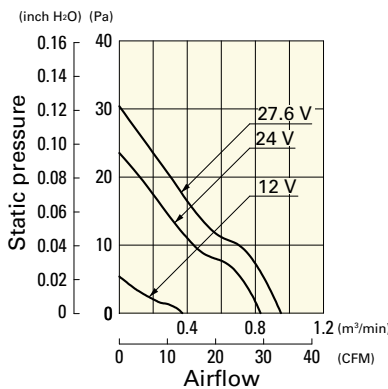
109R0824F401 With pulse sensor

Operating voltage range



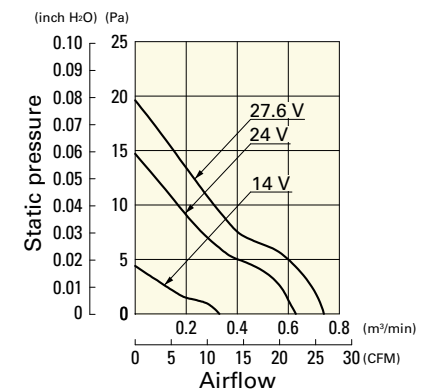
109R0824M401 With pulse sensor

Operating voltage range



109R0824L401 With pulse sensor

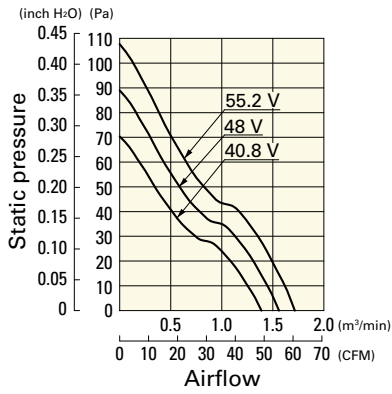
Operating voltage range



Airflow - Static Pressure Characteristics

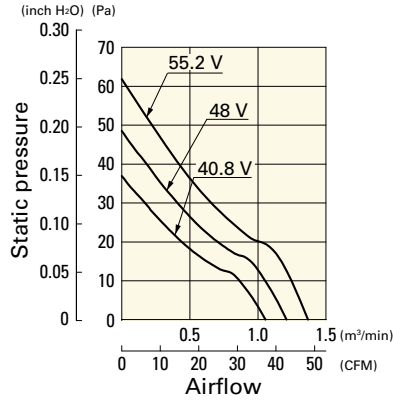
109R0848K401 With pulse sensor

Operating voltage range

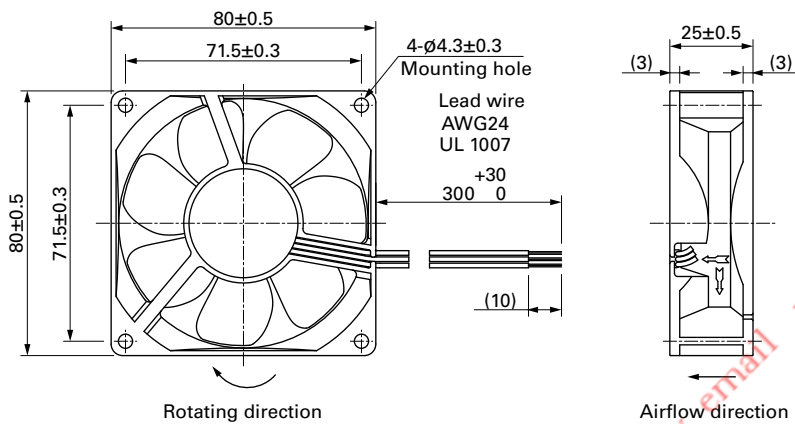


109R0848S401 With pulse sensor

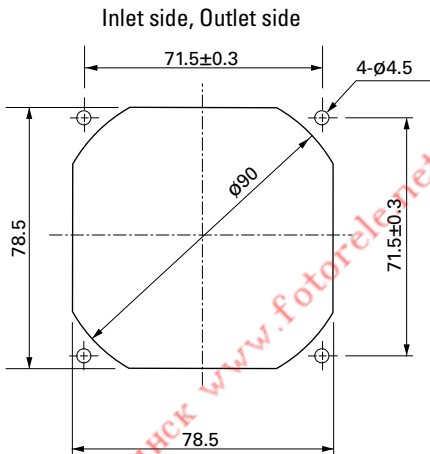
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards page: p. 513
Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards page: p. 520
Model no.: 109-1002G

Resin filter kits page: p. 521
Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)



80×80×25 mm

San Cooler 80 9A type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 90 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

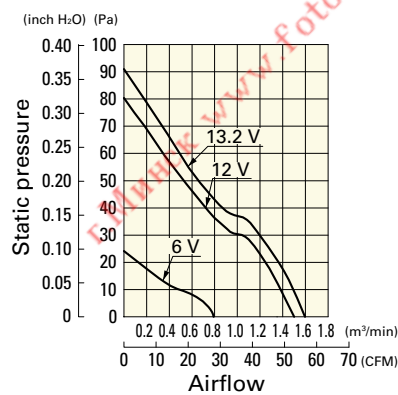
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9A0812G401	12	6 to 13.2	0.38	4.56	4500	1.5 53.0	80.3 0.323	40	-20 to +60	30000/60°C
9A0812S401			0.18	2.16	3400	1.2 42.4	48 0.193	34		
9A0812H401		6 to 13.8	0.13	1.56	2900	1.03 36.4	35.3 0.142	29		
9A0812F401			0.11	1.32	2600	0.92 32.5	28.4 0.114	26		
9A0812M401			0.09	1.08	2350	0.83 29.3	22.5 0.09	23		
9A0812L401			0.06	0.72	1850	0.65 23.0	14.7 0.059	20		
9A0824G401	24	12 to 26.4	0.21	5.04	4500	1.5 53.0	80.3 0.323	40	-20 to +60	30000/60°C
9A0824S401			0.1	2.4	3400	1.2 42.4	48 0.193	34		
9A0824H401		12 to 27.6	0.07	1.68	2900	1.03 36.4	35.3 0.142	29		
9A0824F401			0.06	1.44	2600	0.92 32.5	28.4 0.114	26		
9A0824M401			0.05	1.2	2350	0.83 29.3	22.5 0.09	23		
9A0824L401			0.04	0.96	1850	0.65 23.0	14.7 0.059	20		

Other sensor specifications are available as options. Refer to the index (pp. 546 to 547).

Airflow - Static Pressure Characteristics

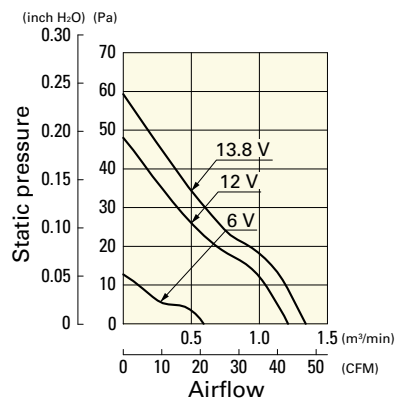
9A0812G401 With pulse sensor

Operating voltage range



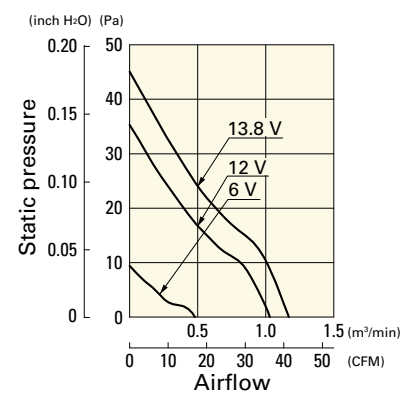
9A0812S401 With pulse sensor

Operating voltage range



9A0812H401 With pulse sensor

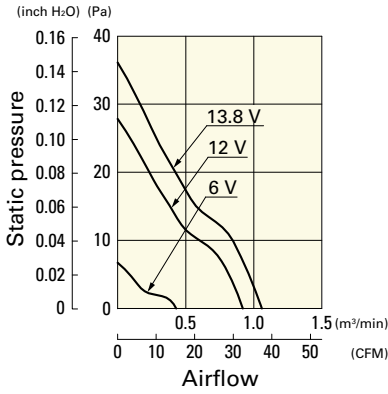
Operating voltage range



Airflow - Static Pressure Characteristics

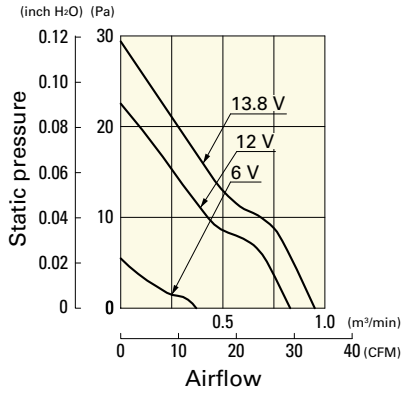
9A0812F401 With pulse sensor

Operating voltage range



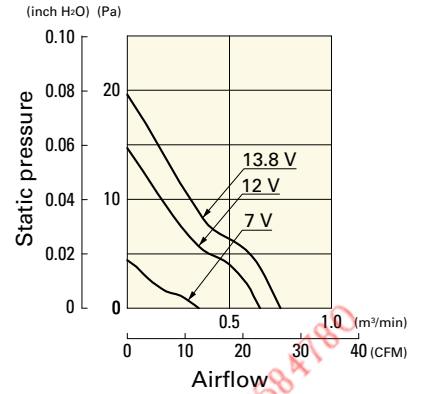
9A0812M401 With pulse sensor

Operating voltage range



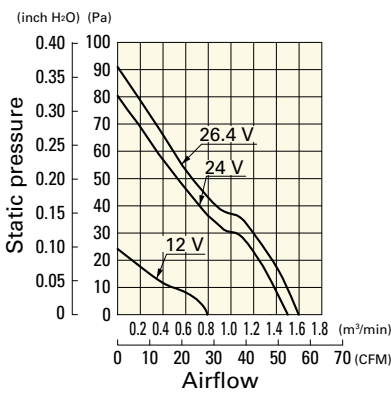
9A0812L401 With pulse sensor

Operating voltage range



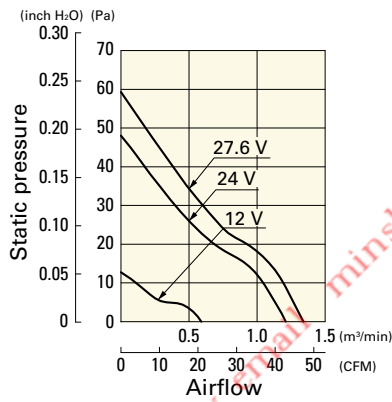
9A0824G401 With pulse sensor

Operating voltage range



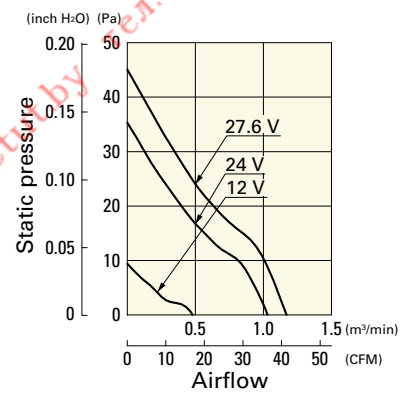
9A0824S401 With pulse sensor

Operating voltage range



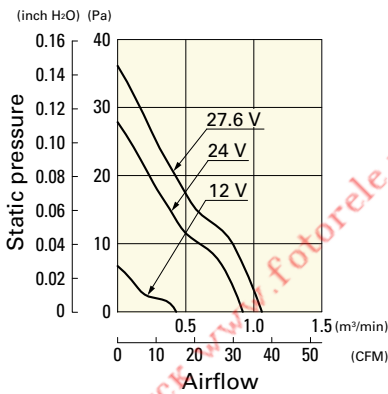
9A0824H401 With pulse sensor

Operating voltage range



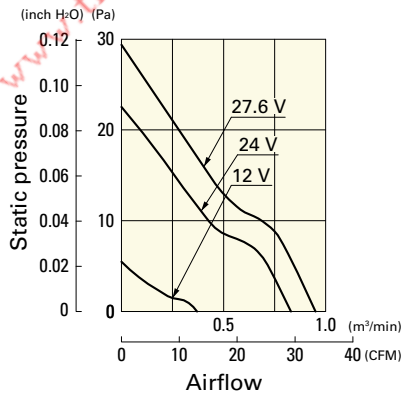
9A0824F401 With pulse sensor

Operating voltage range



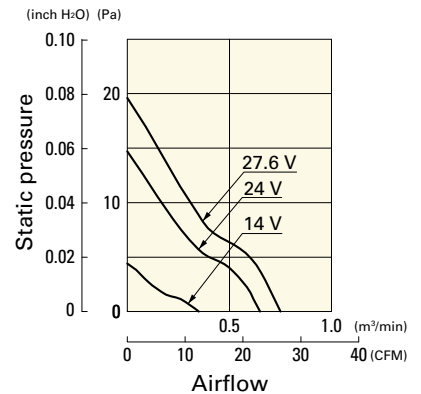
9A0824M401 With pulse sensor

Operating voltage range

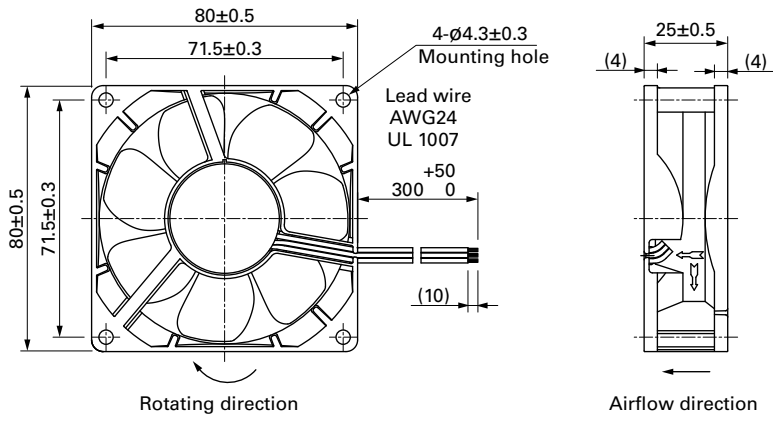


9A0824L401 With pulse sensor

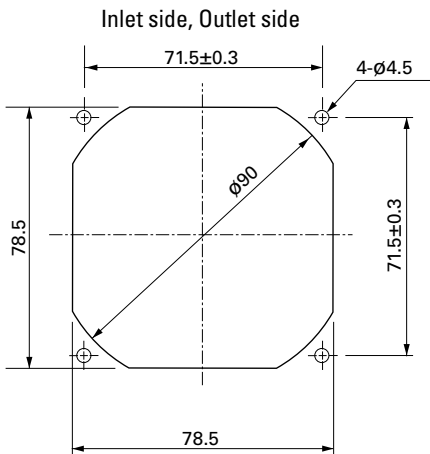
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)



80×80×32 mm

San Ace 80 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 130 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA0812P2S001	12	10.2 to 13.8	100	0.83	9.96	9700	2.45 86.5	360 1.45	57	-20 to +70	40000/60°C
			0	0.08	0.96	2800	0.71 25.1	30 0.12	24		
9GA0812P2H001			100	0.59	7.08	8700	2.2 77.7	294 1.18	54		
9GA0812P2M001		10.2 to 12.6	100	0.35	4.2	6700	1.69 59.6	171 0.68	47	-20 to +55	
			0	0.04	0.48	1400	0.35 12.3	7.5 0.03	10		
9GA0824P2S001	24	20.4 to 27.6	100	0.42	10.1	9700	2.45 86.5	360 1.45	57	-20 to +70	
			0	0.05	1.2	2800	0.71 25.1	30 0.12	24		
9GA0848P2S001	48	40.8 to 55.2	100	0.22	10.56	9700	2.45 86.5	360 1.45	57	-10 to +70	
			0	0.04	1.92	2800	0.71 25.1	30 0.12	24		

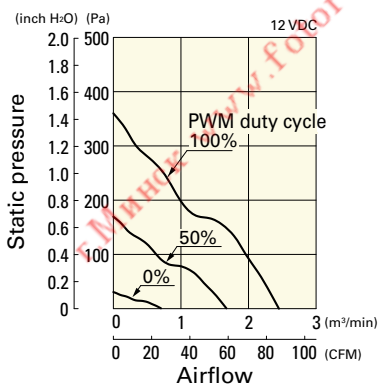
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (pp. 552 to 553).

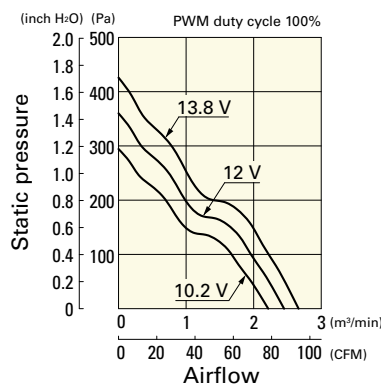
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P2S001 With pulse sensor with PWM control function

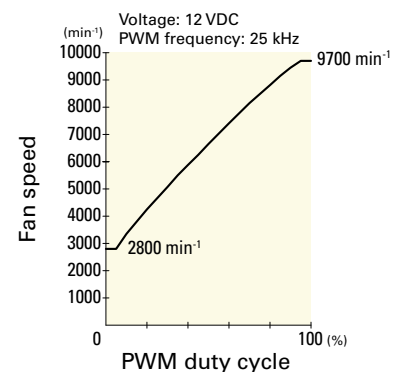
PWM duty cycle



Operating voltage range



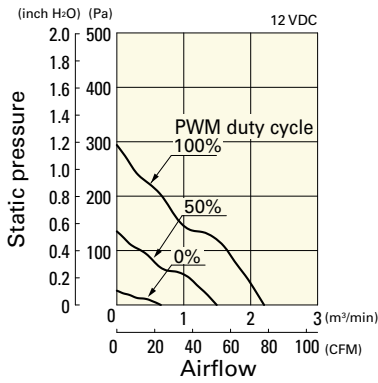
PWM duty - Speed characteristics example



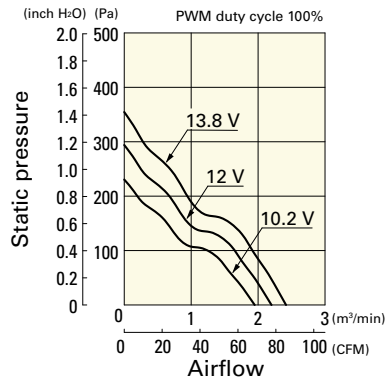
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P2H001 With pulse sensor with PWM control function

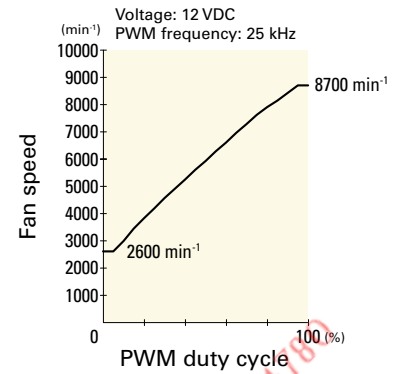
PWM duty cycle



Operating voltage range

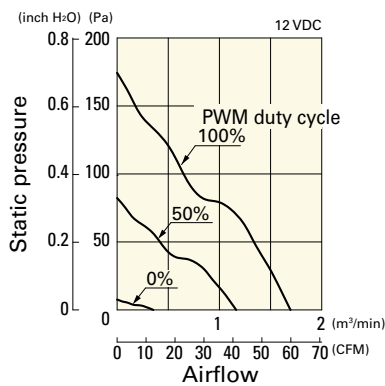


PWM duty - Speed characteristics example

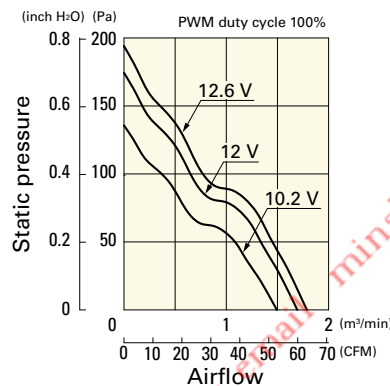


9GA0812P2M001 With pulse sensor with PWM control function

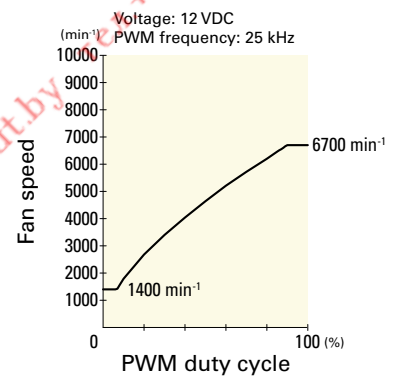
PWM duty cycle



Operating voltage range

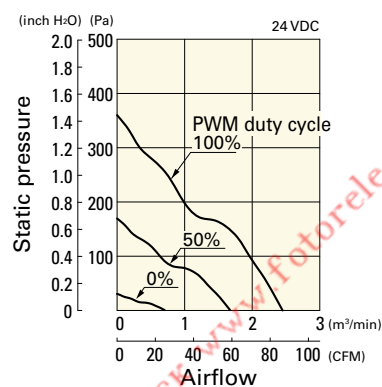


PWM duty - Speed characteristics example

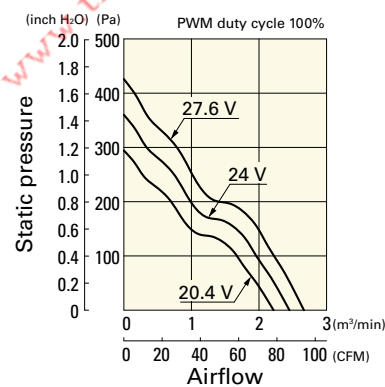


9GA0824P2S001 With pulse sensor with PWM control function

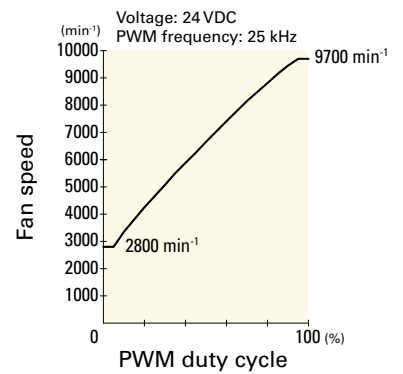
PWM duty cycle



Operating voltage range

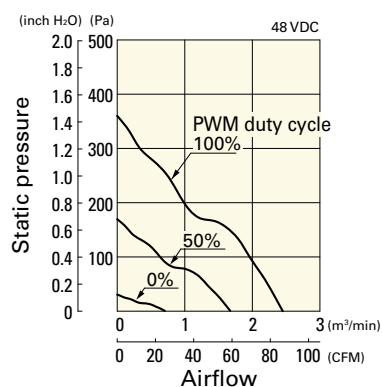


PWM duty - Speed characteristics example

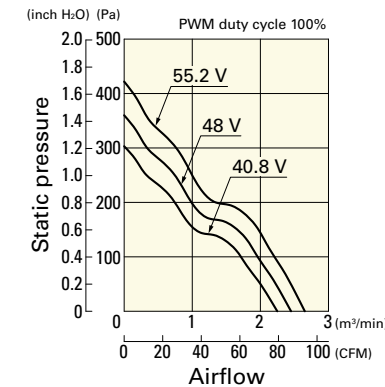


9GA0848P2S001 With pulse sensor with PWM control function

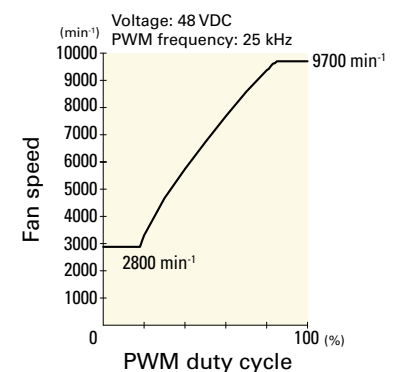
PWM duty cycle

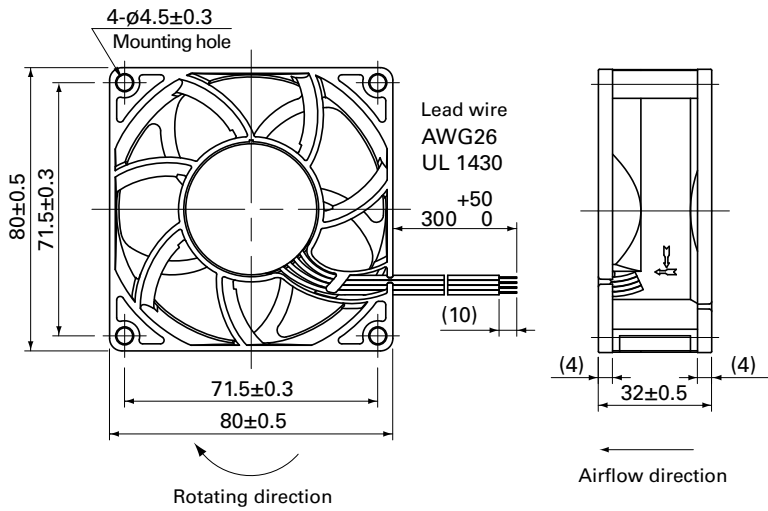
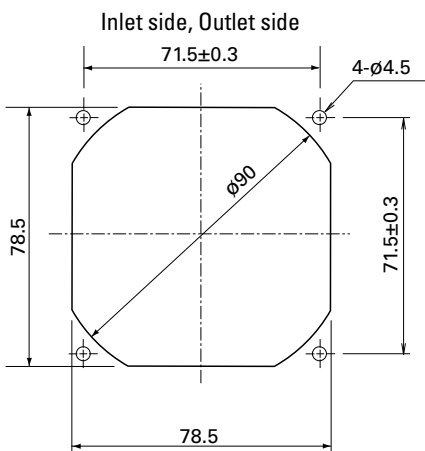


Operating voltage range



PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)**Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)****Options****Finger guards**

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)



80×80×38 mm

San Ace 80 9HVA type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 220 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

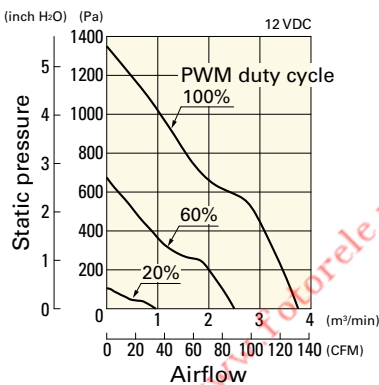
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9HVA0812P1G001	12	10.8 to 13.2	100	3.5	42	16100	3.75 132	1350 5.4	73	-20 to +70	40000/60°C (70000/40°C)
			20	0.2	2.4	4200	0.96 33.9	105 0.42	44		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

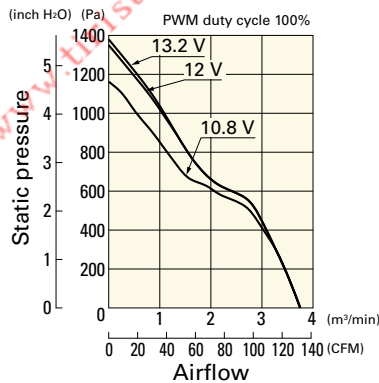
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HVA0812P1G001 With pulse sensor with PWM control function

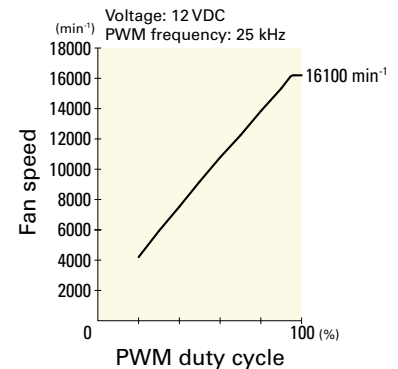
PWM duty cycle

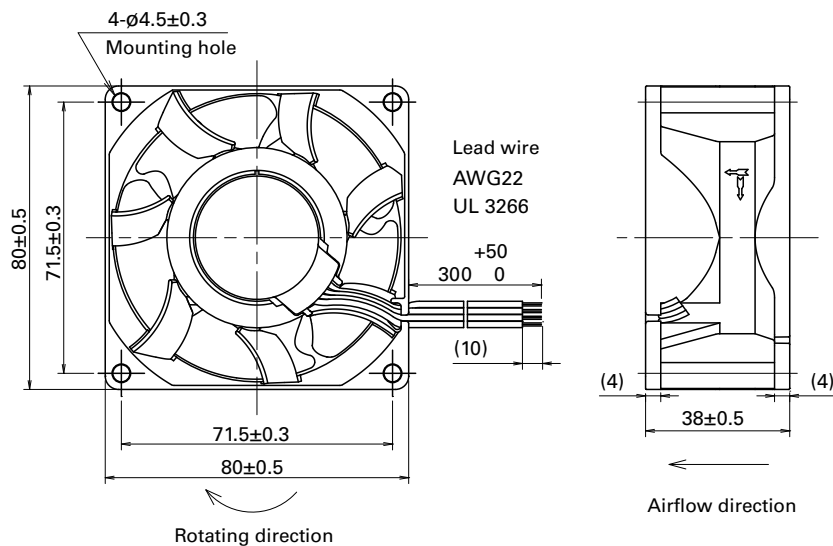
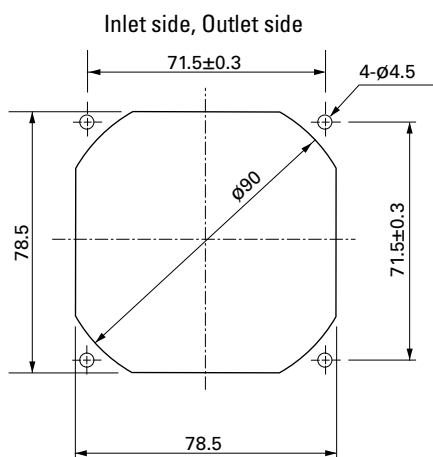


Operating voltage range



PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)**Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)****Options****Finger guards**

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)



80×80×38 mm

San Ace 80 9HV type US

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 230 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

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]
9HV0812P1G601	12	10.8 to 13.2	100	3.4	40.8	14900	3.7 130.7	1000 4.0	69	-20 to +70	40000/60°C (70000/40°C)
			0	0.25	3	4400	1.06 37.5	87.2 0.35	40		
9HV0824P1G003**	24	21.6 to 26.4	100	1.7	40.8	14900	3.7 130.7	1000 4.0	69		
9HV0848P1G001	48	36 to 57	100	0.85	40.8	14900	3.7 130.7	1000 4.0	69	-10 to +70	
			0	0.13	6.24	4400	1.06 37.5	87.2 0.35	40		

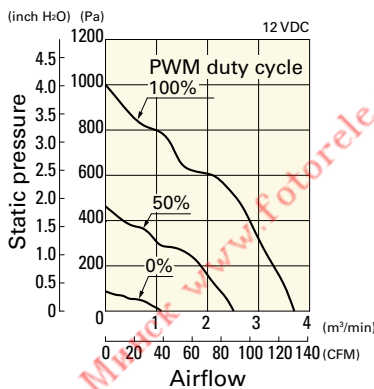
* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%. Model no. for a ribless frame model is 9HV0824P1G0011.

Other sensor specifications are available as options. Refer to the index (p. 556).

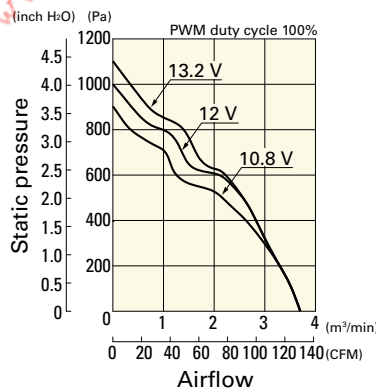
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HV0812P1G601 With pulse sensor with PWM control function

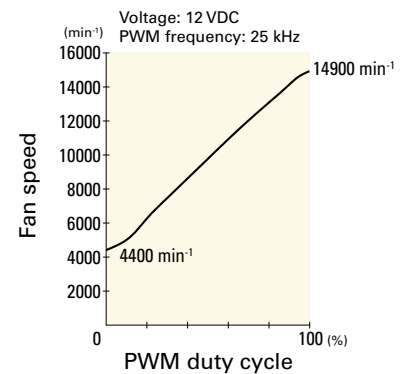
PWM duty cycle



Operating voltage range



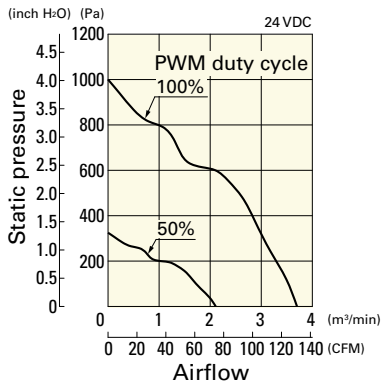
PWM duty - Speed characteristics example



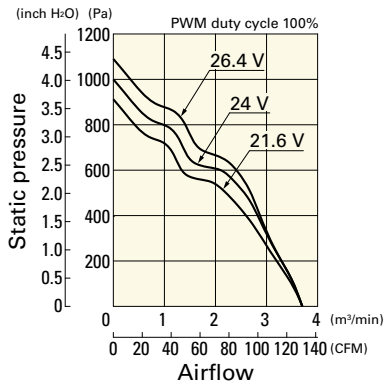
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HV0824P1G003 With pulse sensor with PWM control function

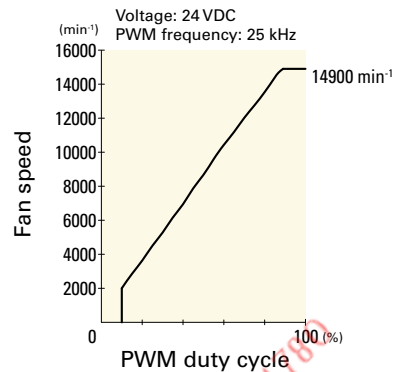
PWM duty cycle



Operating voltage range

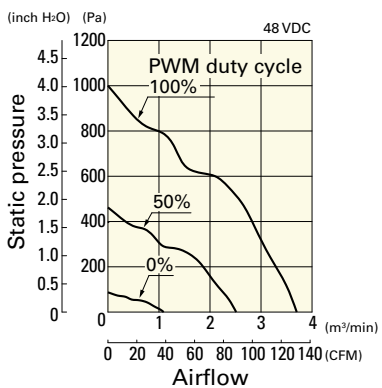


PWM duty - Speed characteristics example

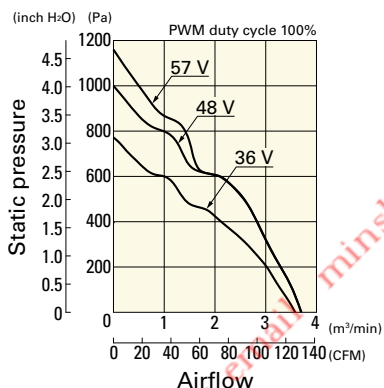


9HV0848P1G001 With pulse sensor with PWM control function

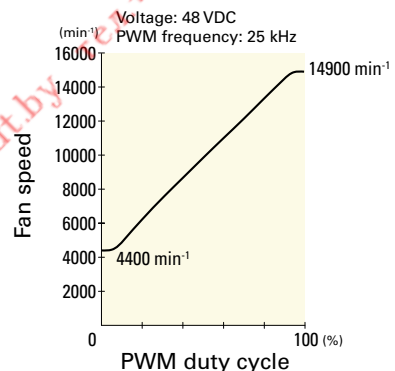
PWM duty cycle



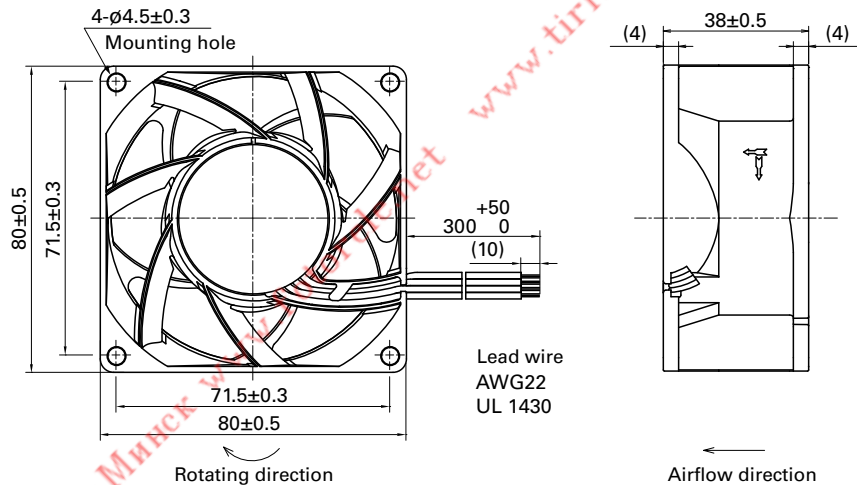
Operating voltage range



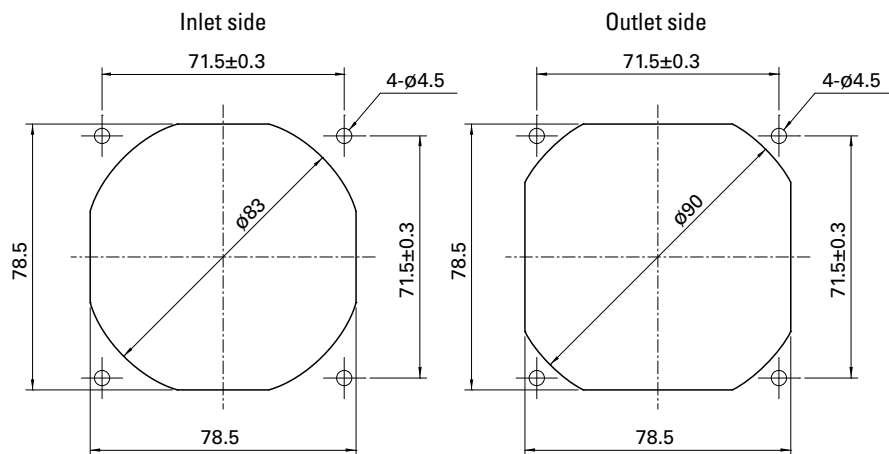
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)

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80×80×38 mm

San Ace 80 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 160 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

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]		
9GA0812P1G61	12	10.8 to 13.2	100	1.2	14.4	10500	2.85 100.6	480 1.93	60	-20 to +70	40000/60°C (70000/40°C)		
			0	0.04	0.48	2000	0.51 18.0	28.7 0.11	21				
9GA0812P1S61			100	0.94	11.28	9550	2.6 91.8	480 1.93	59				
			0	0.1	1.2	2900	0.74 26.1	60 0.24	27				
9GA0812P1H61			100	0.6	7.2	8250	2.25 79.4	380 1.53	55				
			0	0.08	0.96	2500	0.64 22.6	45 0.18	24				
9GA0824P1S61	24	20.4 to 27.6	100	0.47	11.28	9550	2.6 91.8	480 1.93	59				
			0	0.06	1.44	2900	0.74 26.1	60 0.24	27				
9GA0824P1H61			100	0.3	7.2	8250	2.25 79.4	380 1.53	55				
			0	0.05	1.2	2500	0.64 22.6	45 0.18	24				
9GA0848P1S61			48	40.8 to 55.2	100	0.25	12	9550	2.6 91.8			480 1.93	59
					0	0.04	1.92	2990	0.74 26.1			60 0.24	27

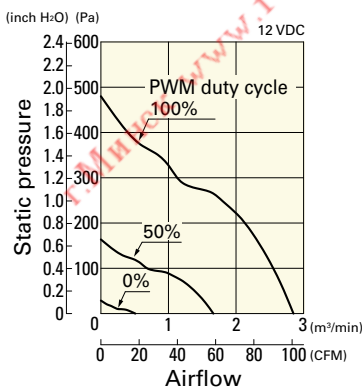
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 552).

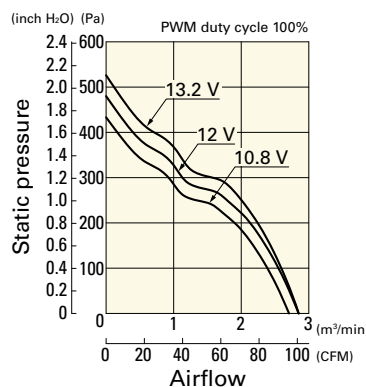
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P1G61 With pulse sensor with PWM control function

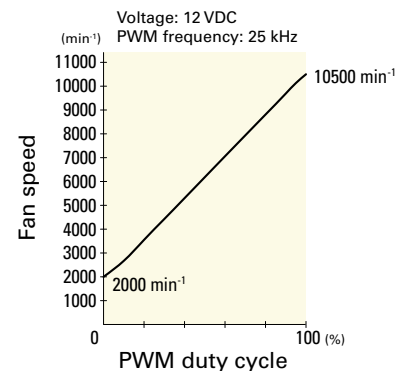
PWM duty cycle



Operating voltage range



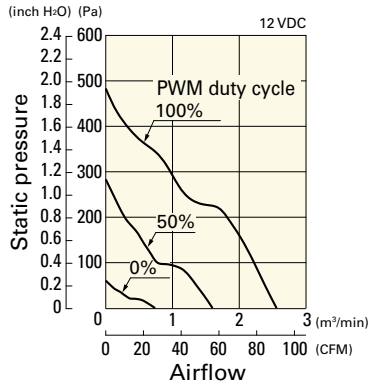
PWM duty - Speed characteristics example



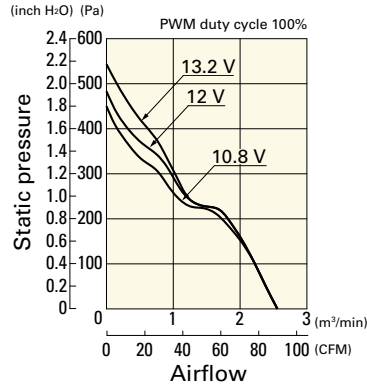
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0812P1S61 With pulse sensor with PWM control function

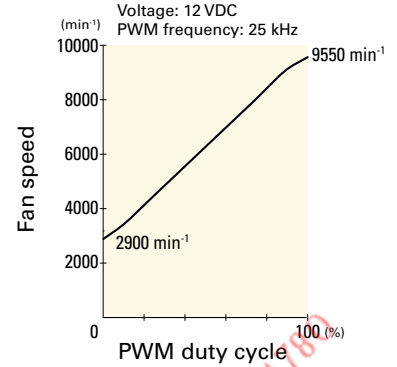
PWM duty cycle



Operating voltage range

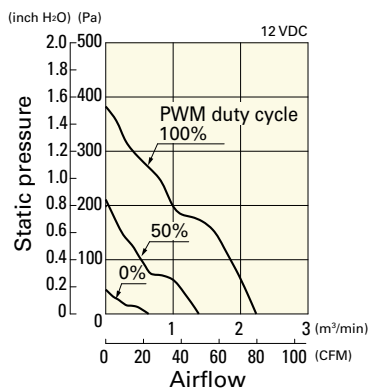


PWM duty - Speed characteristics example

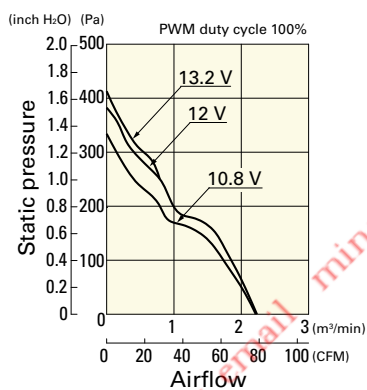


9GA0812P1H61 With pulse sensor with PWM control function

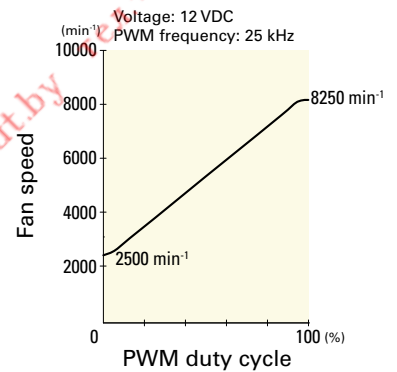
PWM duty cycle



Operating voltage range

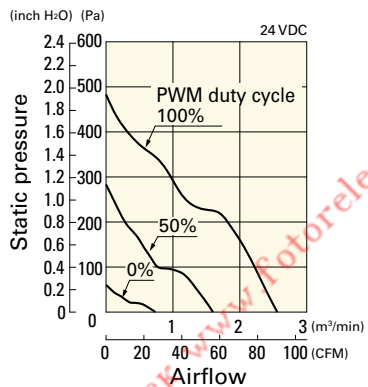


PWM duty - Speed characteristics example

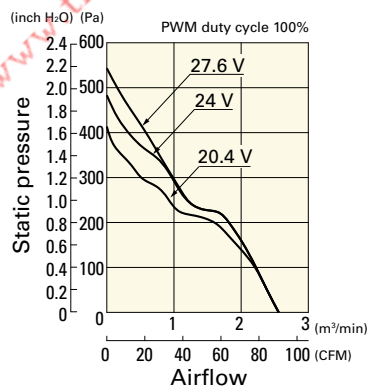


9GA0824P1S61 With pulse sensor with PWM control function

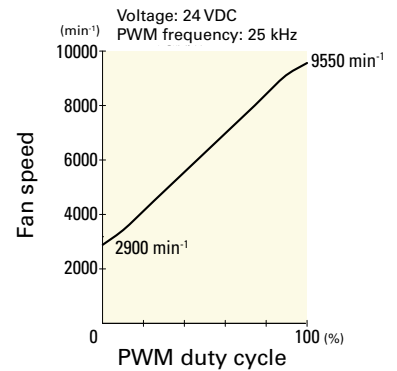
PWM duty cycle



Operating voltage range

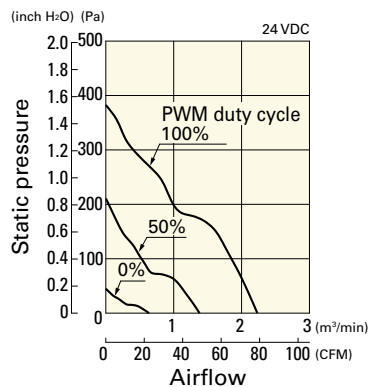


PWM duty - Speed characteristics example

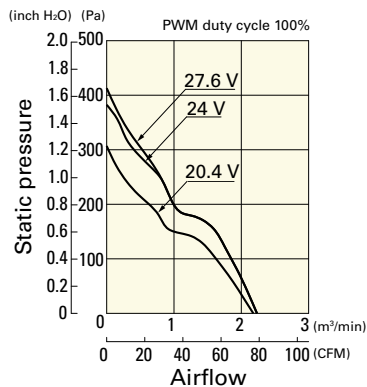


9GA0824P1H61 With pulse sensor with PWM control function

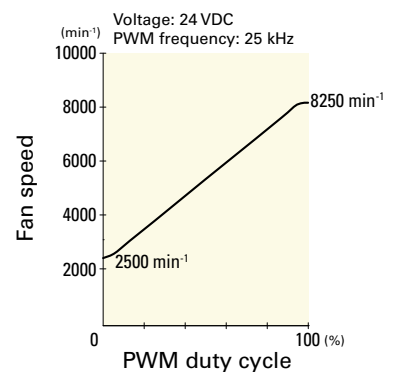
PWM duty cycle



Operating voltage range



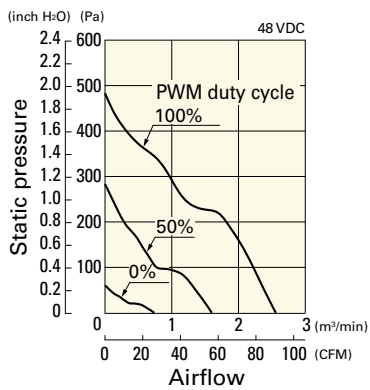
PWM duty - Speed characteristics example



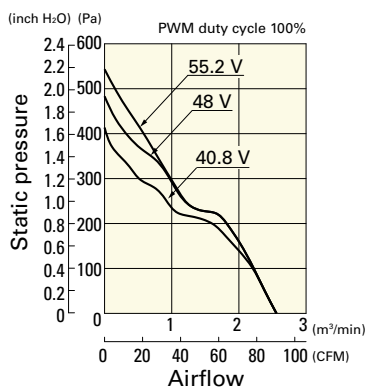
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0848P1S61 With pulse sensor with PWM control function

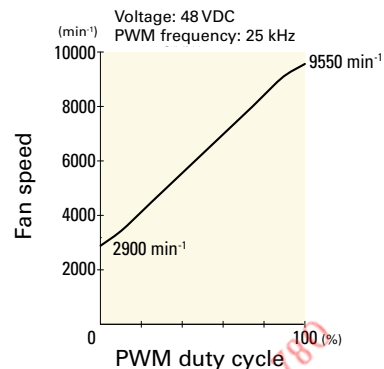
PWM duty cycle



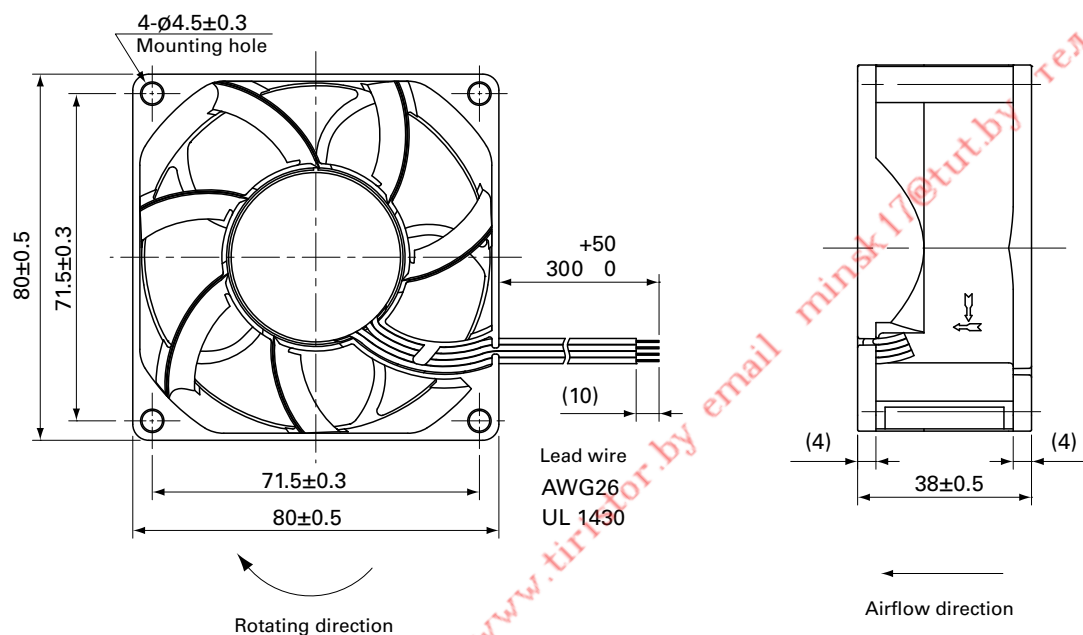
Operating voltage range



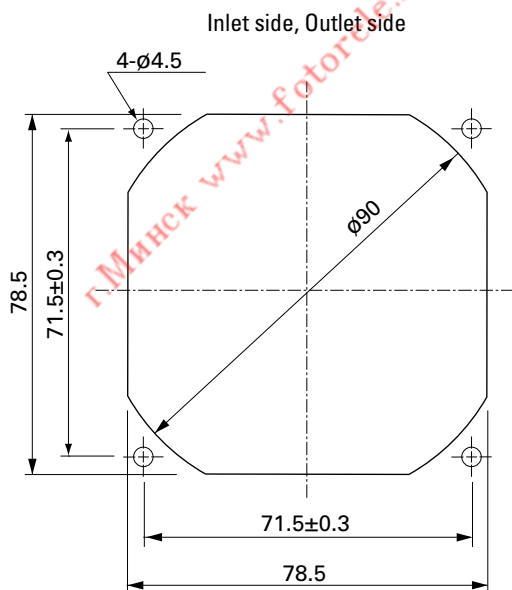
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)

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80×80×38 mm

San Ace 80 9GV type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 220 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]			
9GV0812P1G03	12	10.8 to 13.2	100	3.8	45.6	10200	3.9 138.0	490.0 1.97	65	-20 to +70	40000/60°C			
			0	0.32	3.84	3000	1.15 40.6	42.4 0.17	34					
9GV0812P1H03			10.2 to 13.8	100	3.0	36.0	9700	3.7 131.0	440.0 1.77			63		
				0	0.2	2.4	2900	1.11 39.2	39.0 0.16			34		
9GV0812P1F03				10.2 to 13.8	100	1.5	18	8000	3.05 108.0			301.0 1.21	58	
					0	0.12	1.44	2400	0.92 32.0			27.1 0.11	26	
9GV0812P1M03		10.2 to 13.8			100	0.75	9	6000	2.29 81.0			169.0 0.68	51	
					0	0.09	1.08	1700	0.65 23.0			13.6 0.05	19	
9GV0824P1G03			24		20.4 to 27.6	100	1.6	38.4	10200			3.9 138.0	490.0 1.97	65
						0	0.3	7.2	4700			1.79 63.2	104.0 0.41	44
9GV0848P1G03			48	40.8 to 55.2	100	0.84	40.32	10200	3.9 138.0			490.0 1.97	65	
					0	0.15	7.2	4700	1.79 63.2			104.0 0.41	44	

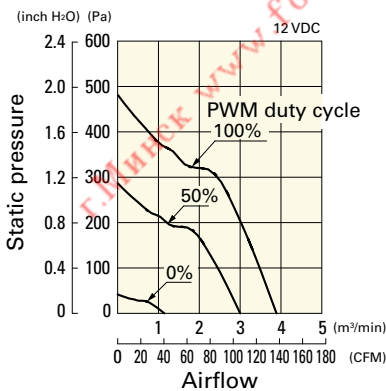
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (pp. 554 to 555).

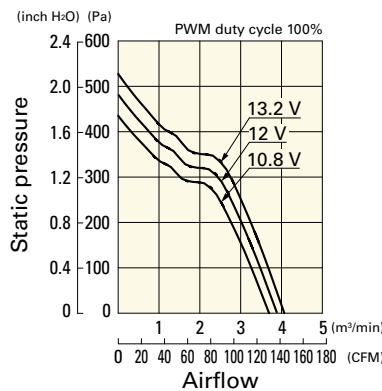
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0812P1G03 With pulse sensor with PWM control function

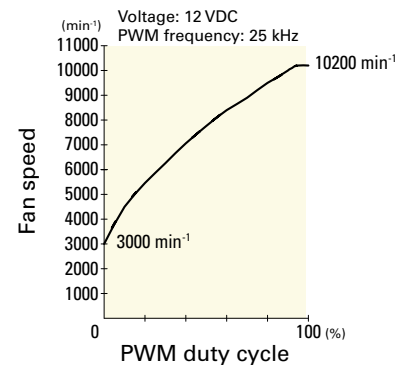
PWM duty cycle



Operating voltage range



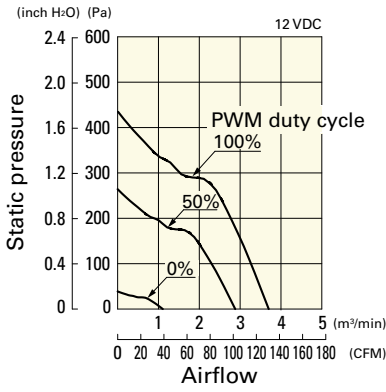
PWM duty - Speed characteristics example



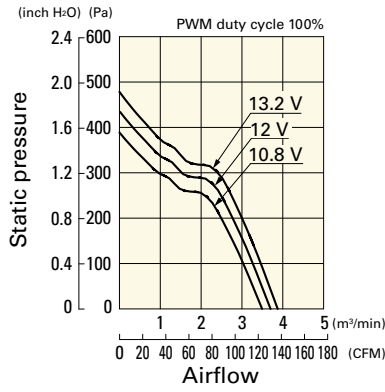
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0812P1H03 With pulse sensor with PWM control function

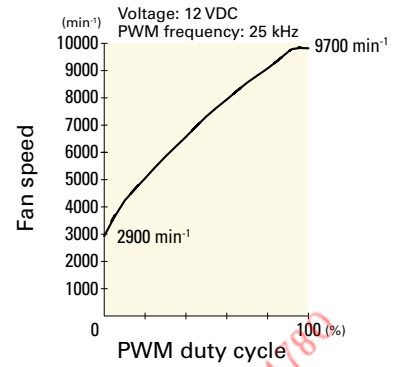
PWM duty cycle



Operating voltage range

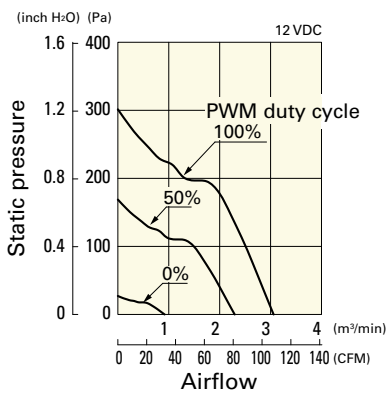


PWM duty - Speed characteristics example

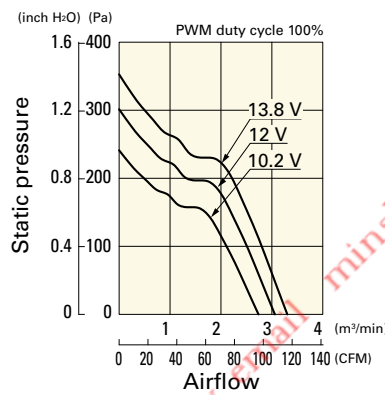


9GV0812P1F03 With pulse sensor with PWM control function

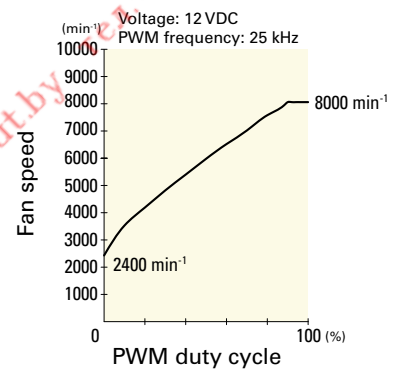
PWM duty cycle



Operating voltage range

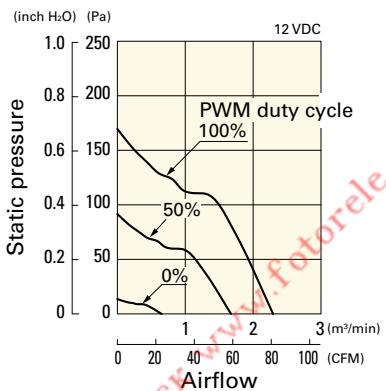


PWM duty - Speed characteristics example

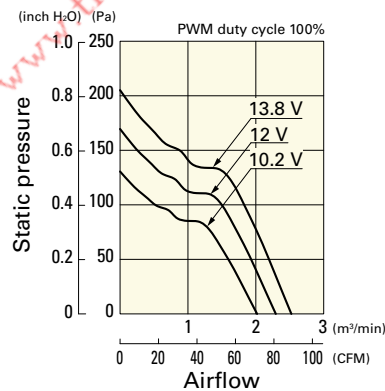


9GV0812P1M03 With pulse sensor with PWM control function

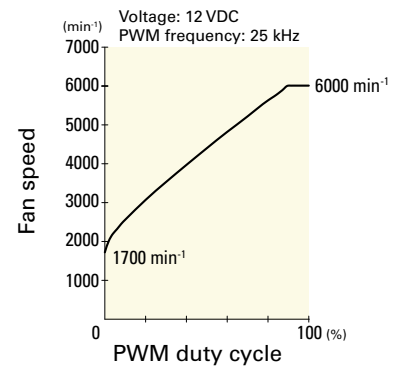
PWM duty cycle



Operating voltage range

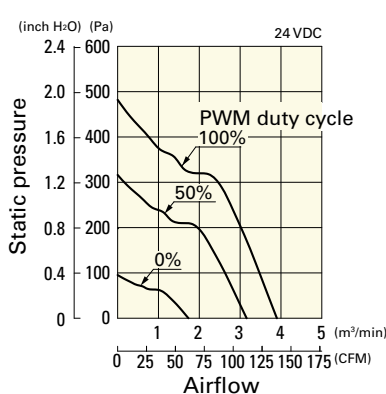


PWM duty - Speed characteristics example

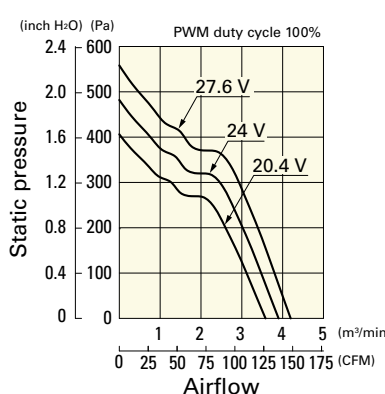


9GV0824P1G03 With pulse sensor with PWM control function

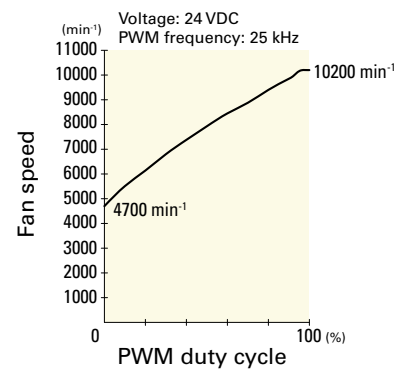
PWM duty cycle



Operating voltage range



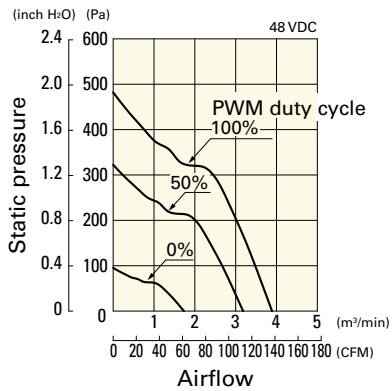
PWM duty - Speed characteristics example



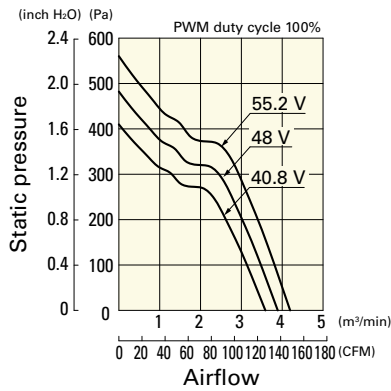
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0848P1G03 With pulse sensor with PWM control function

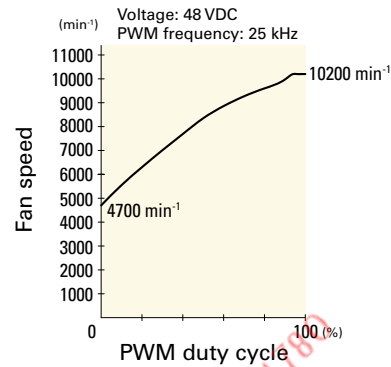
PWM duty cycle



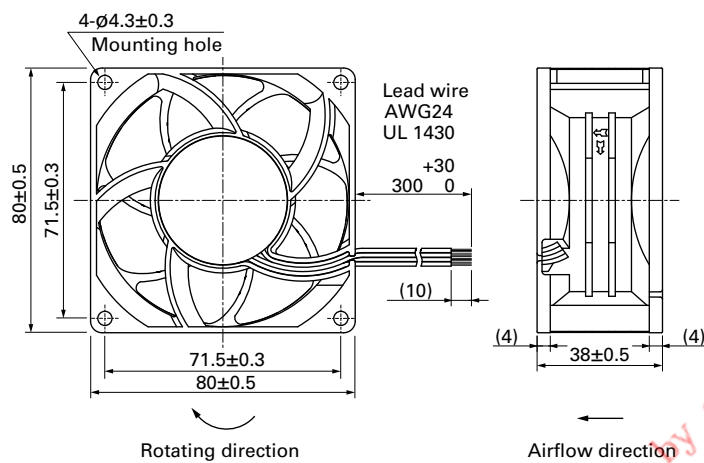
Operating voltage range



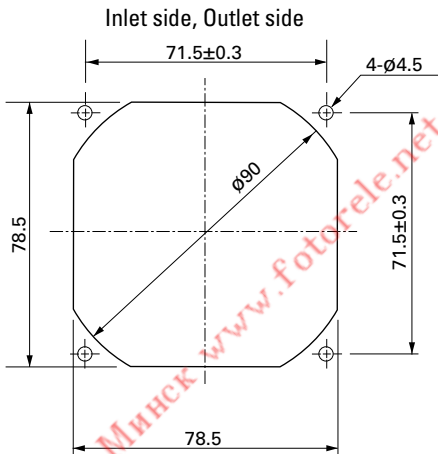
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards page: p. 513
Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards page: p. 520
Model no.: 109-1002G

Resin filter kits page: p. 521
Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)



80×80×38 mm

San Ace 80 9G type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 170 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

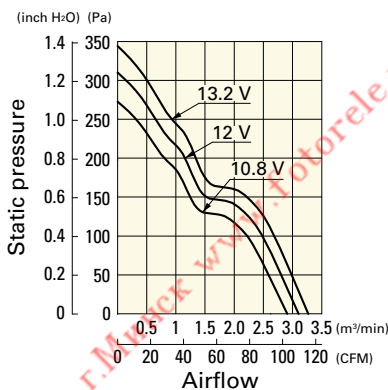
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9G0812K101	12	10.8 to 13.2	1.8	21.6	7800	3.1 107.3	310 1.285	58	-20 to +60	40000/60°C
9G0812G101		7 to 13.8	1.1	13.2	6300	2.55 90	211 0.847	51		
9G0812H101		0.9	10.8	5700	2.28 80	171 0.687	49			
9G0824G101	24	20.4 to 27.6	0.56	13.4	6300	2.55 90	211 0.847	51		
9G0824H101			0.42	10.1	5700	2.28 80	171 0.687	49		
9G0848G101	48	40.8 to 55.2	0.27	13.0	6300	2.55 90	211 0.847	51		
9G0848H101			0.2	9.6	5700	2.28 80	171 0.687	49		

Other sensor specifications are available as options. Refer to the index (p. 549).

Airflow - Static Pressure Characteristics

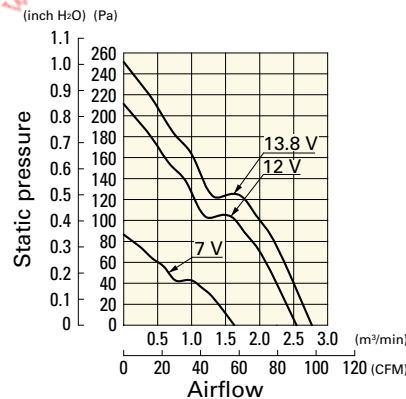
9G0812K101 With pulse sensor

Operating voltage range



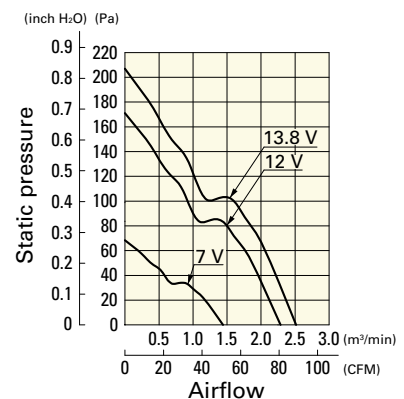
9G0812G101 With pulse sensor

Operating voltage range



9G0812H101 With pulse sensor

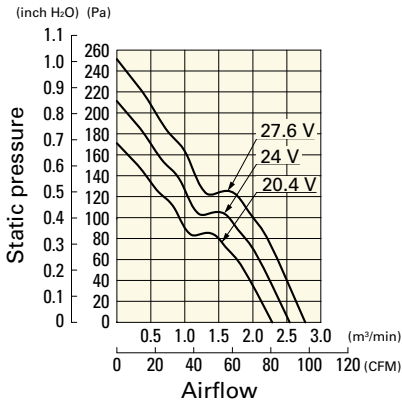
Operating voltage range



Airflow - Static Pressure Characteristics

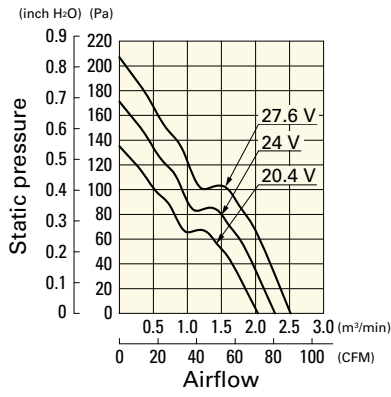
9G0824G101 With pulse sensor

Operating voltage range



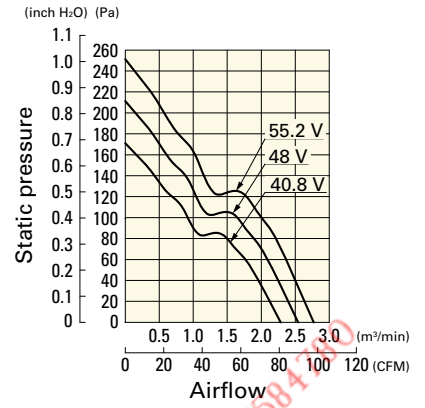
9G0824H101 With pulse sensor

Operating voltage range



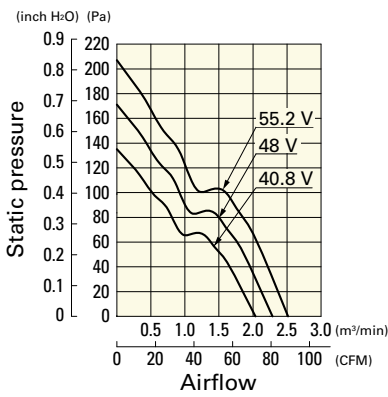
9G0848G101 With pulse sensor

Operating voltage range

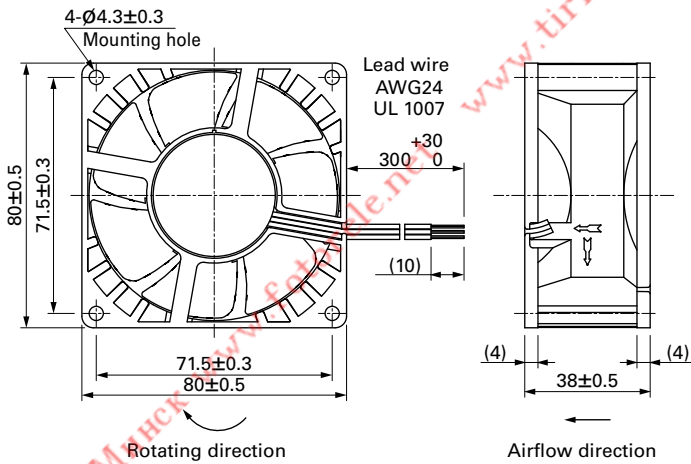


9G0848H101 With pulse sensor

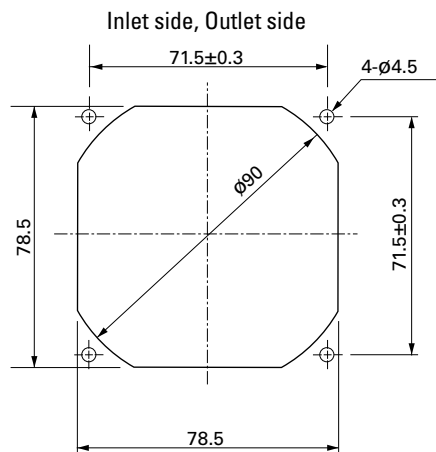
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 109-049E, 109-049H

Resin finger guards

page: p. 520

Model no.: 109-1002G

Resin filter kits

page: p. 521

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)

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92x92x25 mm

San Ace 92 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 125 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

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	5000	2.2 77.7	105 0.42	43	-20 to +70	60000/60°C
			0	0.06	0.72	1500	0.65 23.3	9.4 0.04	14		
9GA0912P4G03			100	0.28	3.36	4400	1.93 68.2	81 0.33	39		
			0	0.06	0.72	1500	0.65 23.3	9.4 0.04	14		
9GA0912P4S03			100	0.2	2.4	3800	1.67 59.0	60.6 0.24	35		
			0	0.06	0.72	1500	0.65 23.3	9.4 0.04	14		
9GA0924P4J03	24	20.4 to 27.6	100	0.2	4.8	5000	2.2 77.7	105 0.42	43		
			0	0.04	0.96	1500	0.65 23.3	9.4 0.04	14		
9GA0924P4G03			100	0.15	3.6	4400	1.93 68.2	81 0.33	39		
			0	0.04	0.96	1500	0.65 23.3	9.4 0.04	14		
9GA0924P4S03			100	0.12	2.88	3800	1.67 59.0	60.6 0.24	35		
			0	0.04	0.96	1500	0.65 23.3	9.4 0.04	14		

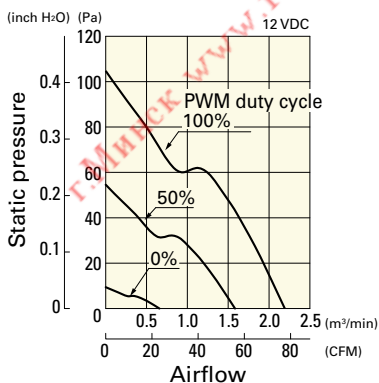
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 553).

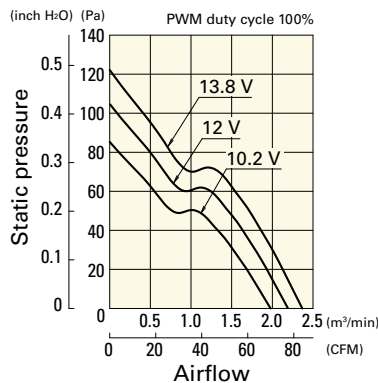
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0912P4J03 With pulse sensor with PWM control function

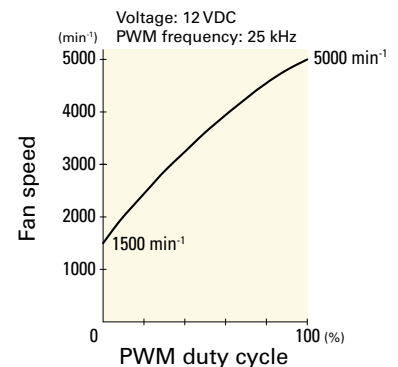
PWM duty cycle



Operating voltage range



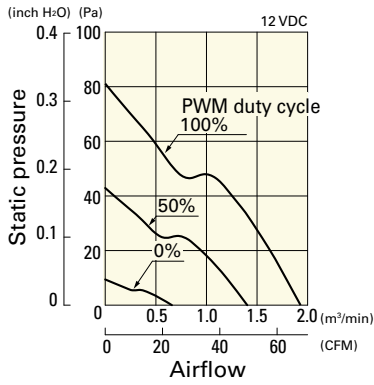
PWM duty - Speed characteristics example



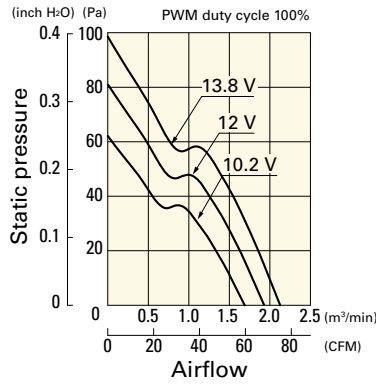
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0912P4G03 With pulse sensor with PWM control function

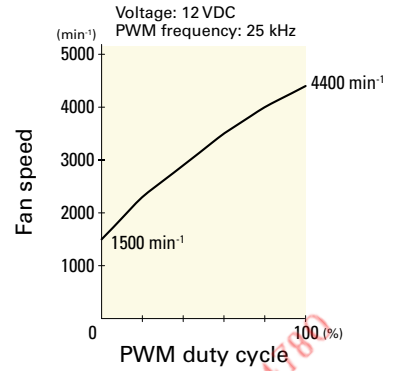
PWM duty cycle



Operating voltage range

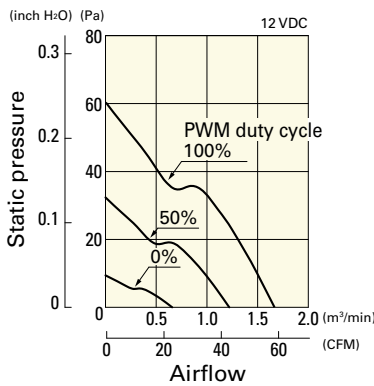


PWM duty - Speed characteristics example

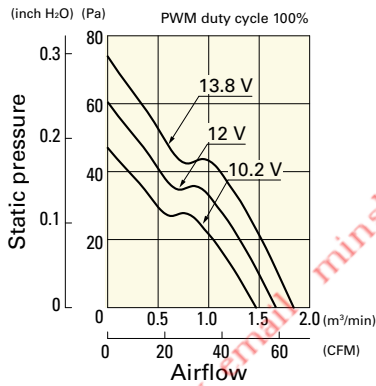


9GA0912P4S03 With pulse sensor with PWM control function

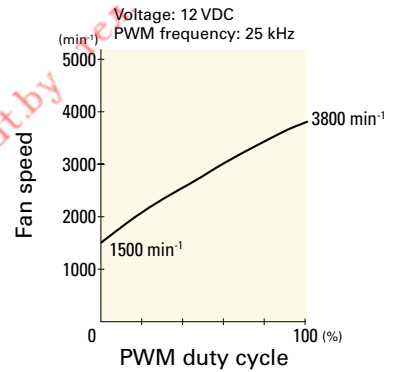
PWM duty cycle



Operating voltage range

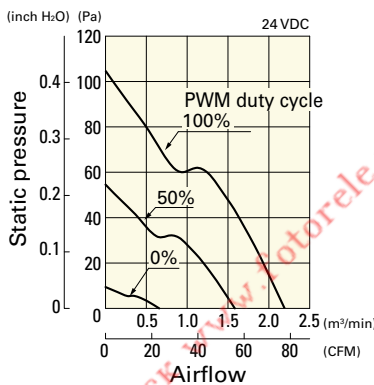


PWM duty - Speed characteristics example

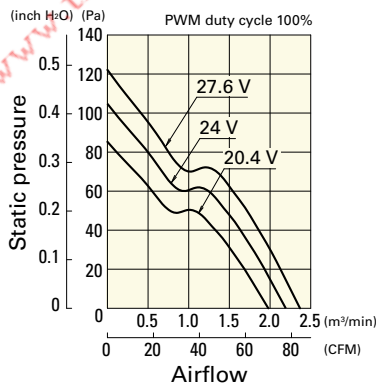


9GA0924P4J03 With pulse sensor with PWM control function

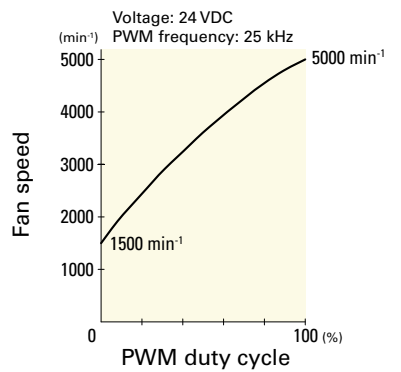
PWM duty cycle



Operating voltage range

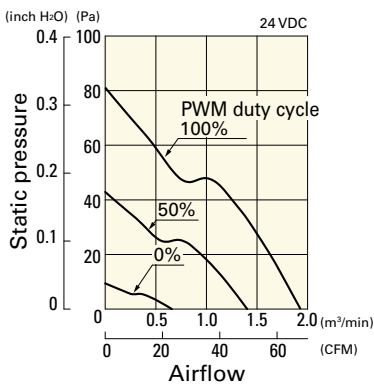


PWM duty - Speed characteristics example

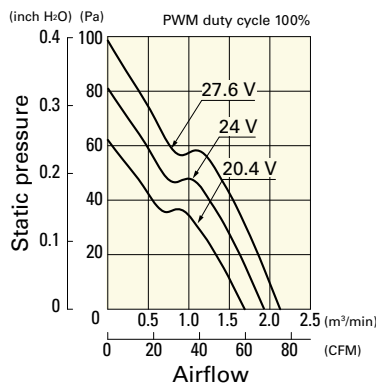


9GA0924P4G03 With pulse sensor with PWM control function

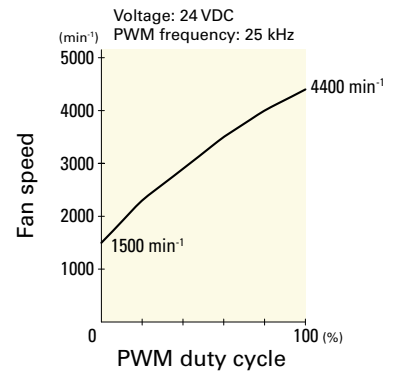
PWM duty cycle



Operating voltage range



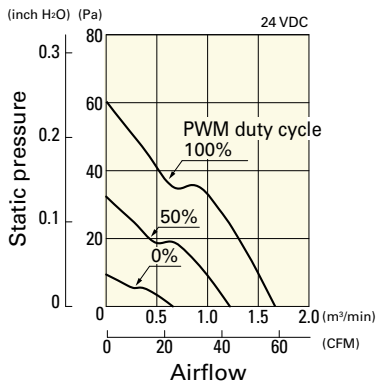
PWM duty - Speed characteristics example



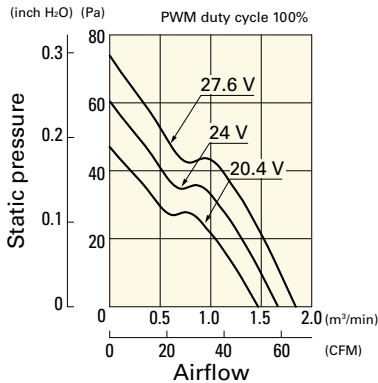
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0924P4S03 With pulse sensor with PWM control function

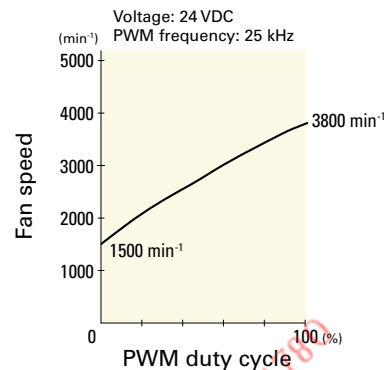
PWM duty cycle



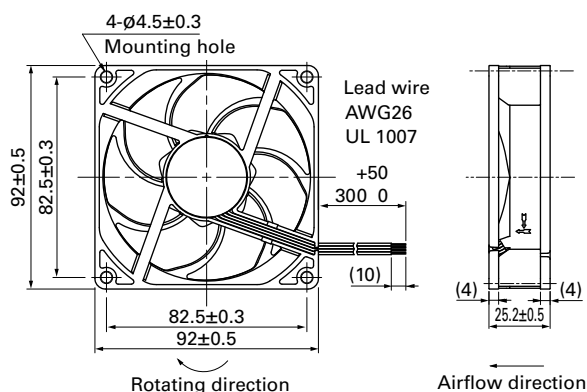
Operating voltage range



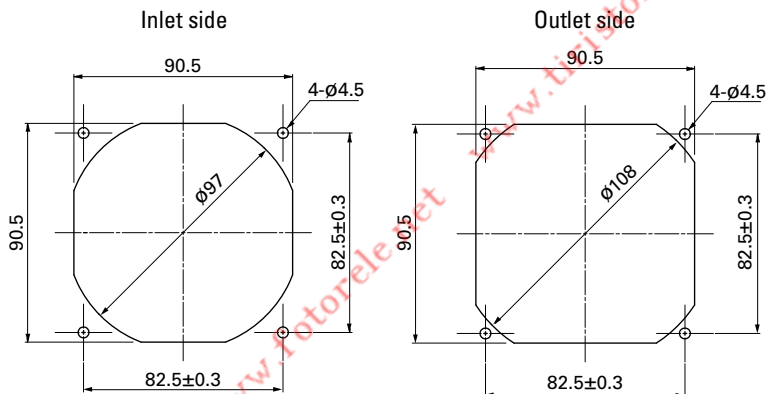
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards page: p. 513
Model no.: 109-099C, 109-099E, 109-099H

Resin finger guards page: p. 520
Model no.: 109-1001G

Resin filter kits page: p. 521
Model no.: 109-1001F13 (13PPI), 109-1001F20 (20PPI), 109-1001F30 (30PPI), 109-1001F40 (40PPI)

92x92x25 mm

San Ace 92 9S type Silent Fan   



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 100 g

Specifications

The models listed below **have ribs and pulse sensors.** For models without ribs, append "1" to the end of model numbers.

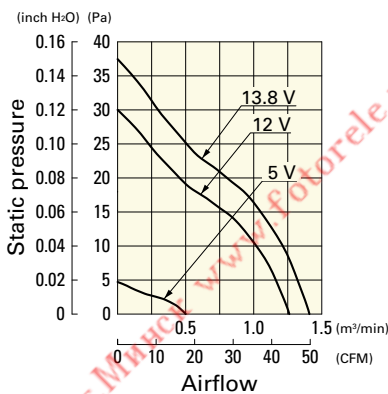
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9S0912F401	12	5.0 to 13.8	0.14	1.68	2650	1.26 44.5	30.0 0.12	27	-10 to +70	40000/60°C
9S0912M401			0.11	1.32	2250	1.07 37.8	21.6 0.087	22		
9S0912L401		6.0 to 13.8	0.07	0.84	1750	0.83 29.3	13.1 0.053	17		
9S0924F401	24	14 to 26.4	0.09	2.16	2650	1.26 44.5	30.0 0.12	27		
9S0924M401			0.07	1.68	2250	1.07 37.8	21.6 0.087	22		
9S0924L401			0.04	0.96	1750	0.83 29.3	13.1 0.053	17		

Other sensor specifications are available as options. Refer to the index (p. 557).

Airflow - Static Pressure Characteristics

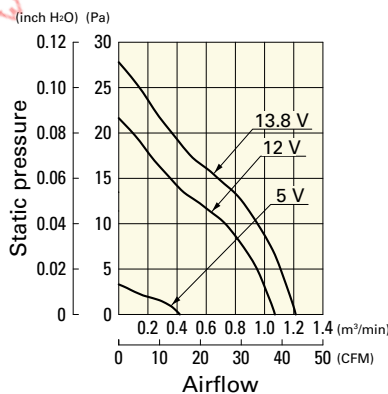
9S0912F401 With pulse sensor

Operating voltage range



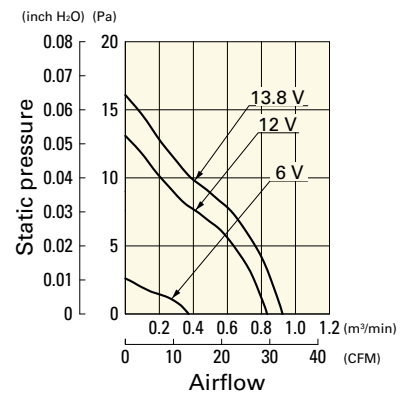
9S0912M401 With pulse sensor

Operating voltage range



9S0912L401 With pulse sensor

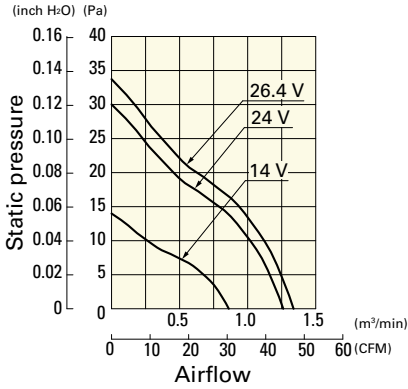
Operating voltage range



Airflow - Static Pressure Characteristics

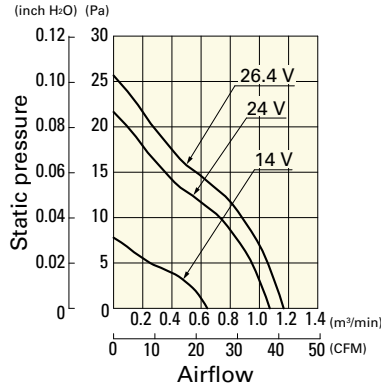
9S0924F401 With pulse sensor

Operating voltage range



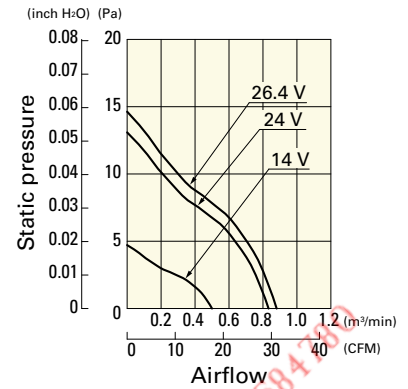
9S0924M401 With pulse sensor

Operating voltage range

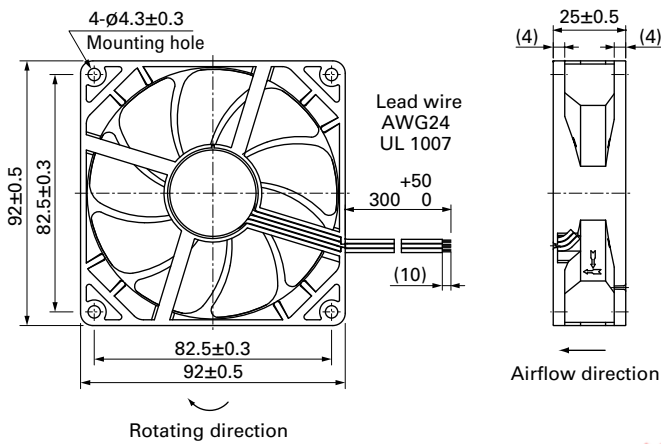


9S0924L401 With pulse sensor

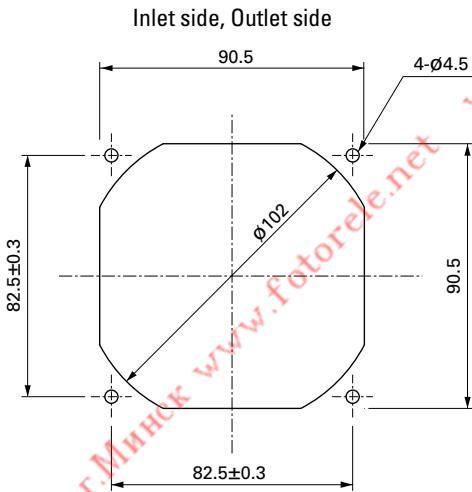
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-099C, 109-099E, 109-099H

Resin finger guards

page: p. 520

Model no.: 109-1001G

Resin filter kits

page: p. 521

Model no.: 109-1001F13 (13PPI), 109-1001F20 (20PPI), 109-1001F30 (30PPI), 109-1001F40 (40PPI)

92x92x25 mm

San Cooler 92 9A type   



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 100 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

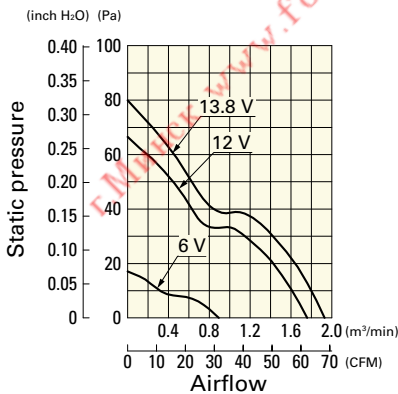
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9A0912G401	12	6 to 13.8	0.39	4.68	3900	1.76 62.1	66.5 0.267	43	-20 to +60	30000/60°C
9A0912S401			0.27	3.24	3550	1.66 58.6	56.1 0.225	39		
9A0912H401			0.21	2.52	3150	1.45 51.2	44 0.177	33	-20 to +70	40000/60°C
9A0912F401			0.14	1.68	2650	1.24 43.8	32.2 0.129	30		
9A0912M401			0.12	1.44	2250	1.04 36.7	22.6 0.091	27		
9A0912L401			0.07	0.84	1750	0.8 28.2	13.4 0.054	23		
9A0924G401	24	12 to 27.6	0.19	4.56	3900	1.76 62.1	66.5 0.267	43	-20 to +60	30000/60°C
9A0924S401			0.15	3.6	3550	1.66 58.6	56.1 0.225	39		
9A0924H401			0.1	2.4	3150	1.45 51.2	44 0.177	33	-20 to +70	40000/60°C
9A0924F401			0.08	1.92	2650	1.24 43.8	32.2 0.129	30		
9A0924M401			0.05	1.2	2250	1.04 36.7	22.6 0.091	27		
9A0924L401			0.04	0.96	1750	0.8 28.2	13.4 0.054	23		
9A0948S401	48	40.5 to 53	0.08	3.84	3550	1.66 58.6	56.1 0.225	39	-20 to +60	

Other sensor specifications are available as options. Refer to the index (p. 547).

Airflow - Static Pressure Characteristics

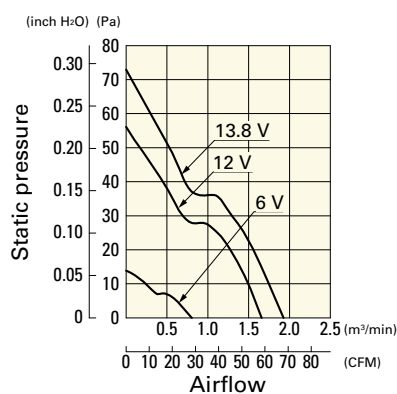
9A0912G401 With pulse sensor

Operating voltage range



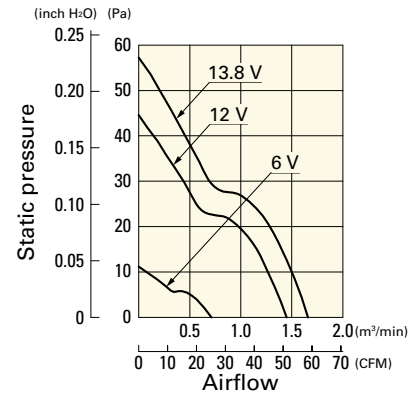
9A0912S401 With pulse sensor

Operating voltage range



9A0912H401 With pulse sensor

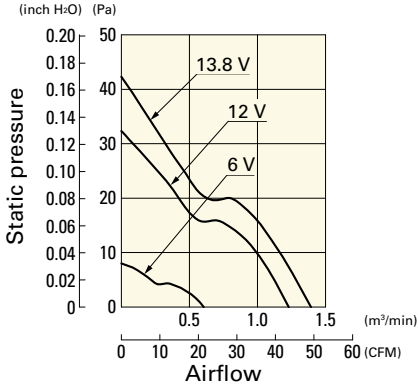
Operating voltage range



Airflow - Static Pressure Characteristics

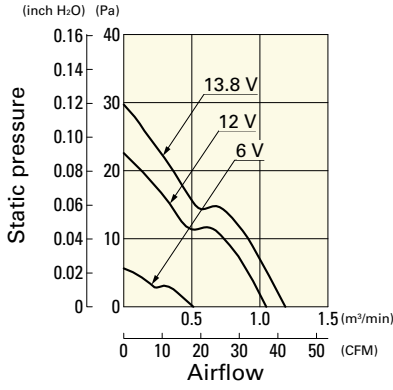
9A0912F401 With pulse sensor

Operating voltage range



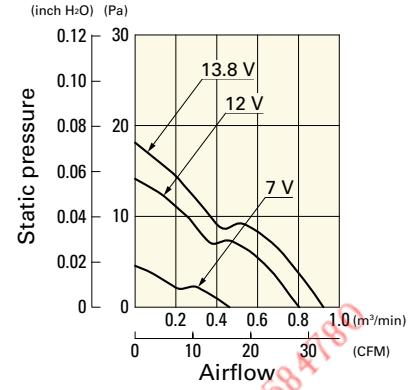
9A0912M401 With pulse sensor

Operating voltage range



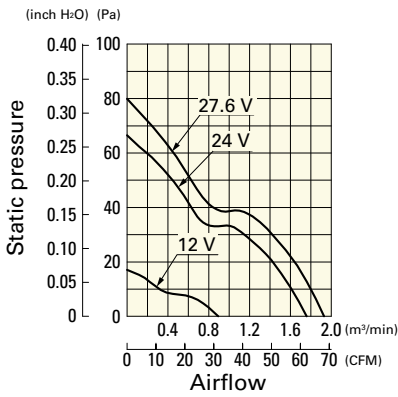
9A0912L401 With pulse sensor

Operating voltage range



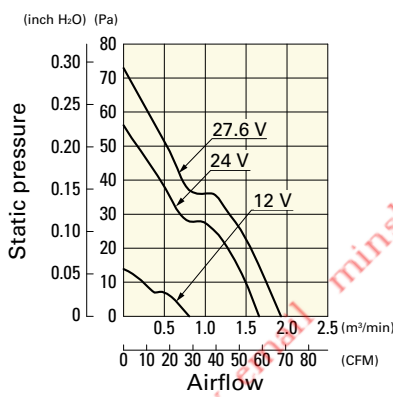
9A0924G401 With pulse sensor

Operating voltage range



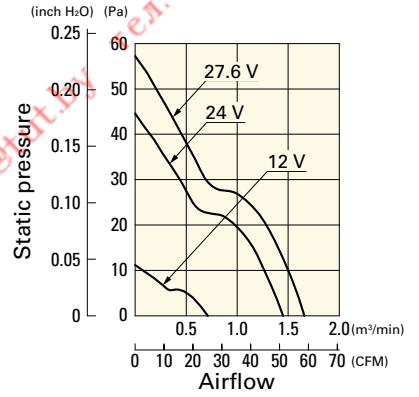
9A0924S401 With pulse sensor

Operating voltage range



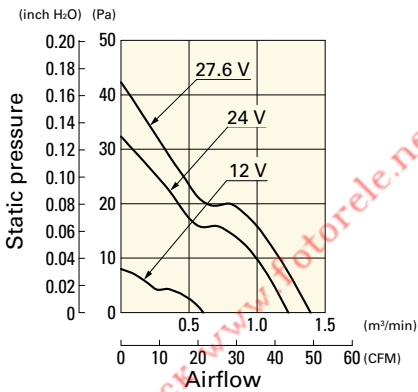
9A0924H401 With pulse sensor

Operating voltage range



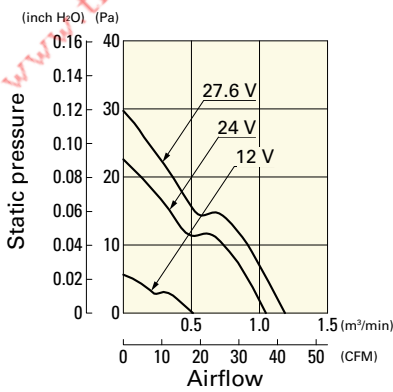
9A0924F401 With pulse sensor

Operating voltage range



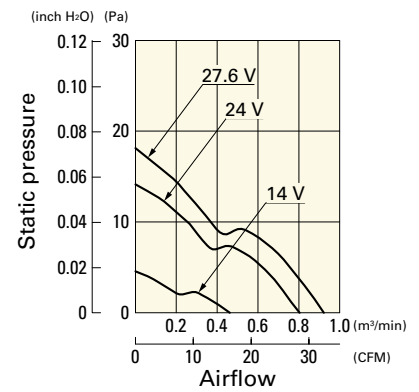
9A0924M401 With pulse sensor

Operating voltage range



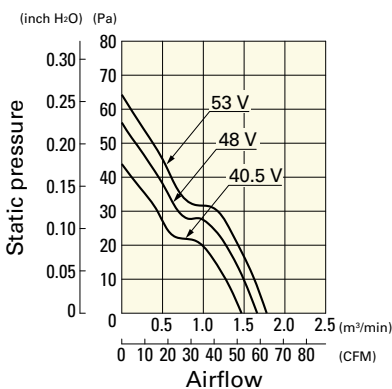
9A0924L401 With pulse sensor

Operating voltage range

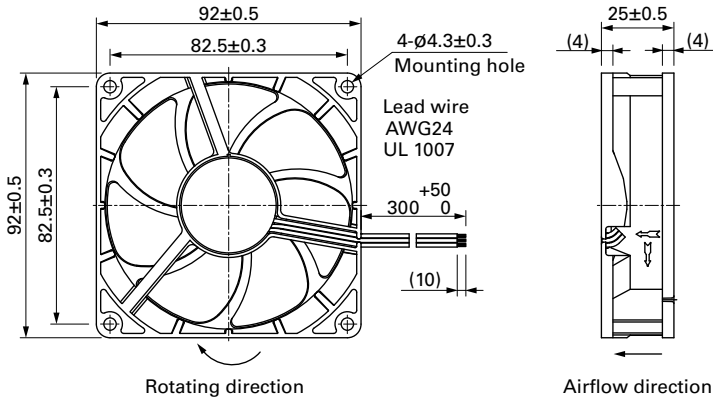


9A0948S401 With pulse sensor

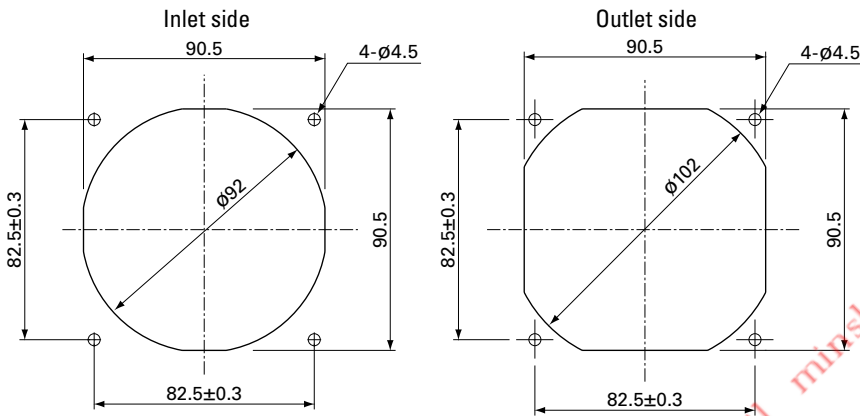
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-099C, 109-099E, 109-099H

Resin finger guards

page: p. 520

Model no.: 109-1001G

Resin filter kits

page: p. 521

Model no.: 109-1001F13 (13PPI), 109-1001F20 (20PPI),
109-1001F30 (30PPI), 109-1001F40 (40PPI)



92x92x32 mm

San Ace 92 9G type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 170 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

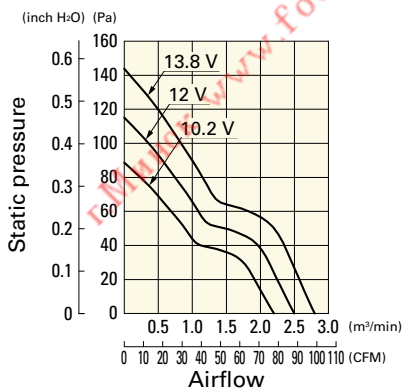
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9G0912A201	12	10.2 to 13.8	0.58	6.96	4300	2.5 88.3	115 0.462	44	-20 to +70	40000/60°C
9G0912S201			0.38	4.56	3500	2.0 70.7	77 0.309	38		
9G0912H201			0.23	2.76	2850	1.59 56.2	51 0.205	32		
9G0912M201			0.13	1.56	2100	1.2 42.4	27 0.108	25		
9G0924A201	24	20.4 to 27.6	0.3	7.2	4300	2.5 88.3	115 0.462	44	-20 to +60	
9G0924S201			0.19	4.56	3500	2.0 70.7	77 0.309	38		
9G0924H201			0.12	2.88	2850	1.59 56.2	51 0.205	32		
9G0924M201			0.08	1.92	2100	1.2 42.4	27 0.108	25		
9G0948A201	48	40.8 to 55.2	0.16	7.68	4300	2.5 88.3	115 0.462	44	-20 to +70	
9G0948S201			0.11	5.28	3500	2.0 70.7	77 0.309	38		
9G0948H201			0.08	3.84	2850	1.59 56.2	51 0.205	32		
9G0948M201			0.05	2.4	2100	1.2 42.4	27 0.108	25		

Other sensor specifications are available as options. Refer to the index (p. 549).

Airflow - Static Pressure Characteristics

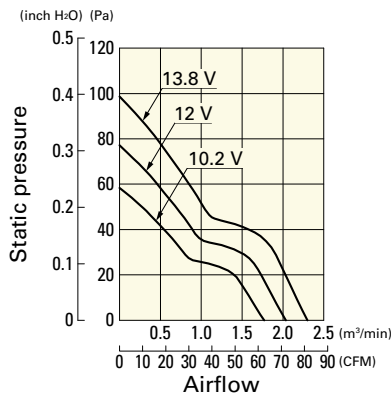
9G0912A201 With pulse sensor

Operating voltage range



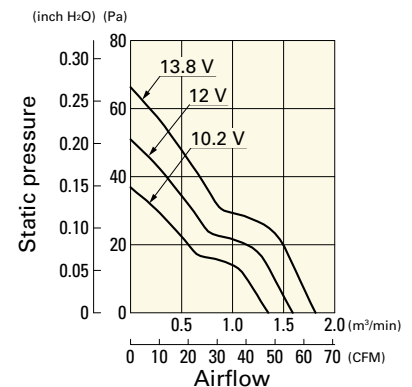
9G0912S201 With pulse sensor

Operating voltage range



9G0912H201 With pulse sensor

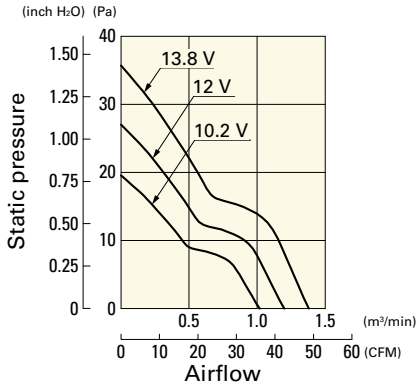
Operating voltage range



Airflow - Static Pressure Characteristics

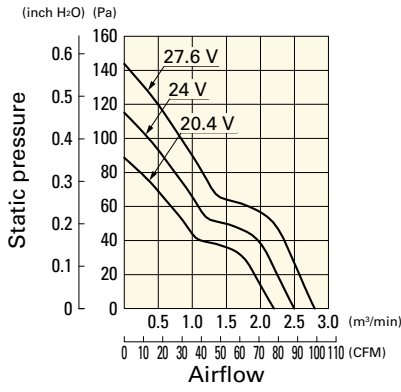
9G0912M201 With pulse sensor

Operating voltage range



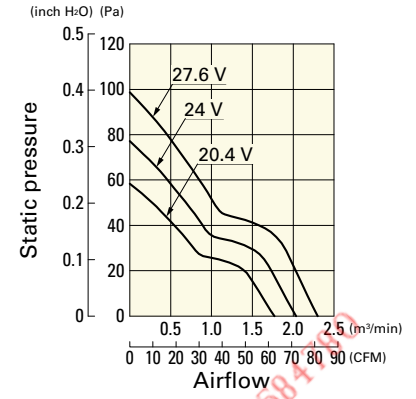
9G0924A201 With pulse sensor

Operating voltage range



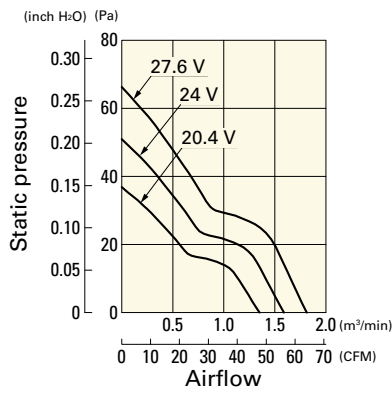
9G0924S201 With pulse sensor

Operating voltage range



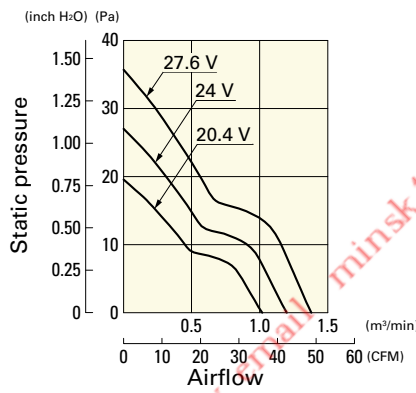
9G0924H201 With pulse sensor

Operating voltage range



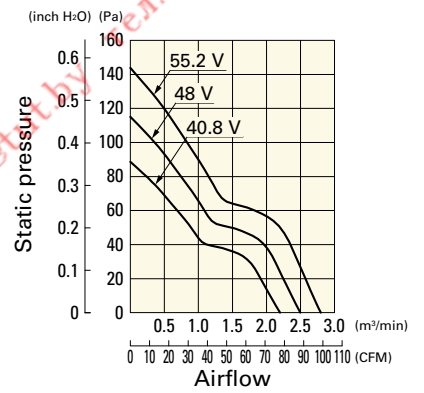
9G0924M201 With pulse sensor

Operating voltage range



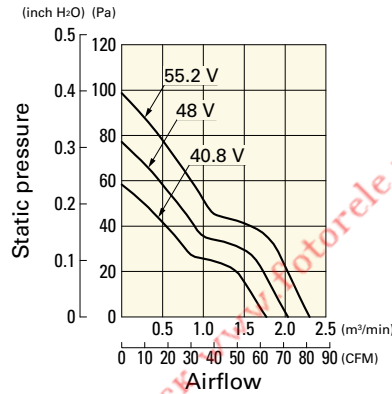
9G0948A201 With pulse sensor

Operating voltage range



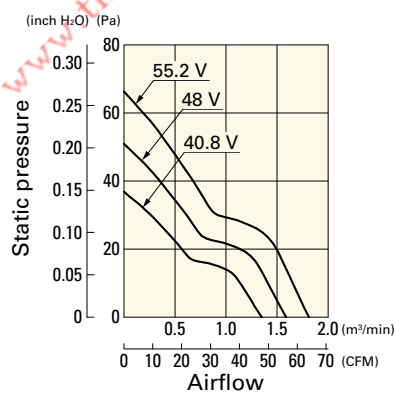
9G0948S201 With pulse sensor

Operating voltage range



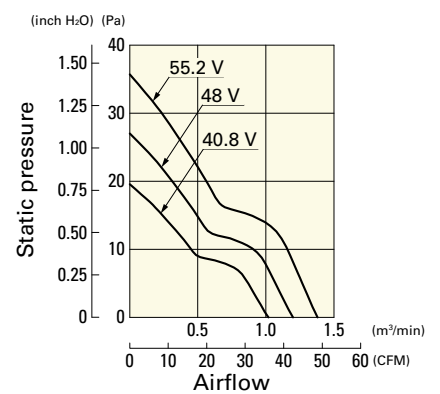
9G0948H201 With pulse sensor

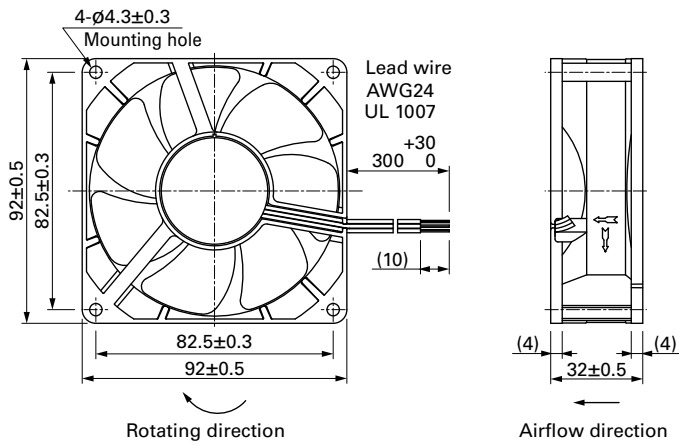
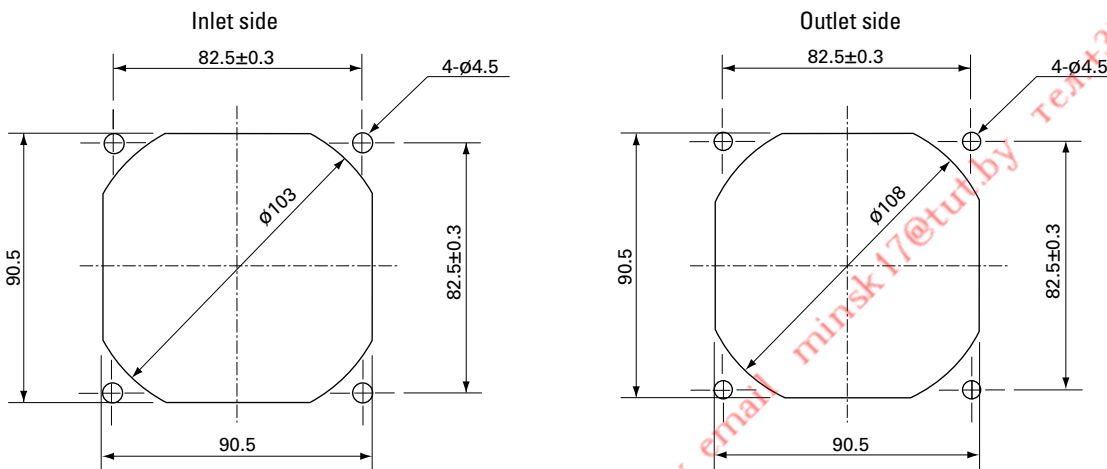
Operating voltage range



9G0948M201 With pulse sensor

Operating voltage range



Dimensions (unit: mm) (With ribs)**Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)****Options****Finger guards**

page: p. 513

Model no.: 109-099C, 109-099E, 109-099H

Resin finger guards

page: p. 520

Model no.: 109-1001G

Resin filter kits

page: p. 521

Model no.: 109-1001F13 (13PPI), 109-1001F20 (20PPI),
109-1001F30 (30PPI), 109-1001F40 (40PPI)



92x92x38 mm

San Ace 92 9GA type Low Power Consumption Fan

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 240 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

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]
9GA0912P1H03	12	10.2 to 13.8	100	2.1	25.2	9700	4.0 141	500 2.01	63	-20 to +70	40000/60°C (70000/40°C)
			0	0.16	1.92	2500	0.97 34.3	33 0.13	29		
9GA0924P1H01	24	20.4 to 27.6	100	1.1	26.4	9700	4.0 141	500 2.01	63	-10 to +70	
			0	0.07	1.68	2500	0.97 34.3	33 0.13	29		
9GA0948P1H03**	48	40.8 to 55.2	100	0.55	26.4	9700	4.0 141	500 2.01	63	-20 to +70	

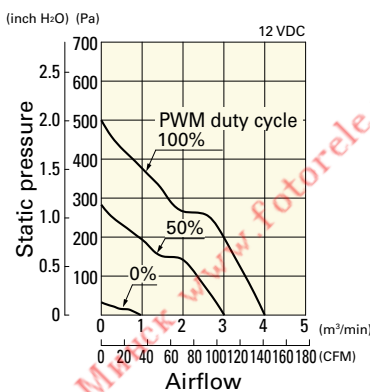
* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 553).

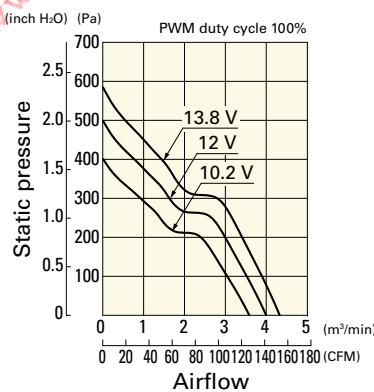
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0912P1H03 With pulse sensor with PWM control function

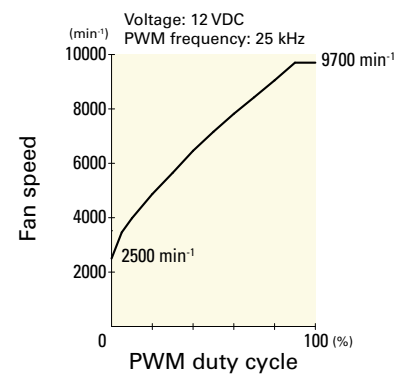
PWM duty cycle



Operating voltage range



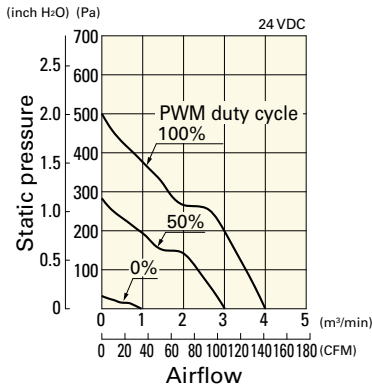
PWM duty - Speed characteristics example



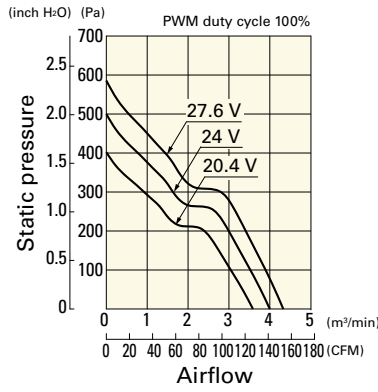
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA0924P1H01 With pulse sensor with PWM control function

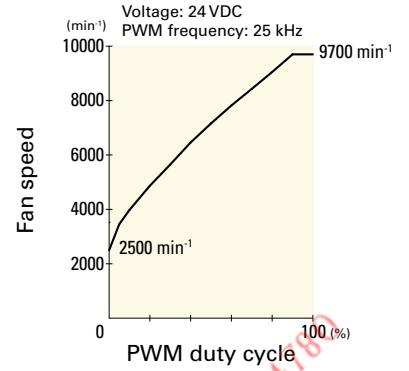
PWM duty cycle



Operating voltage range

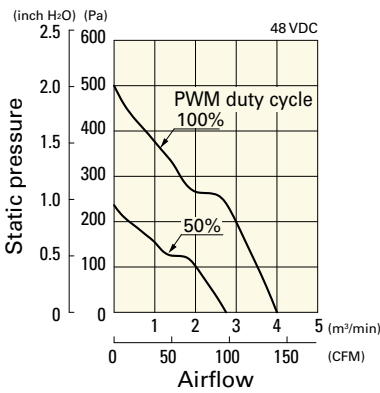


PWM duty - Speed characteristics example

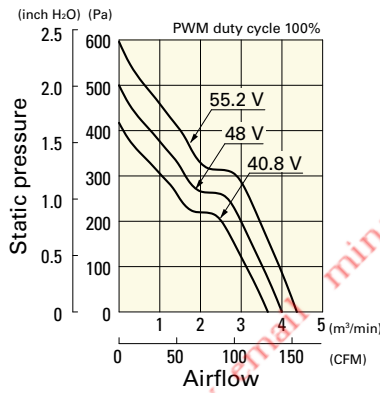


9GA0948P1H03 With pulse sensor with PWM control function

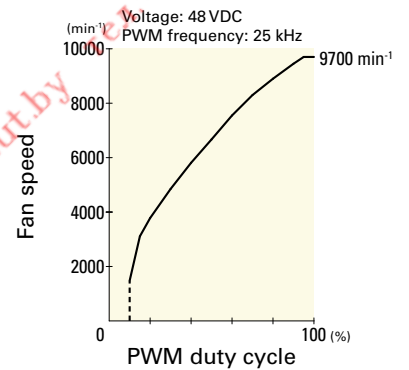
PWM duty cycle



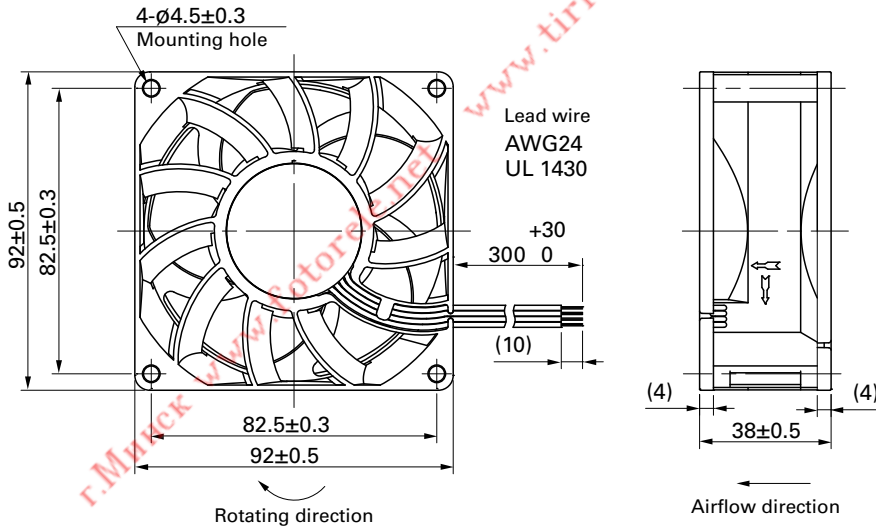
Operating voltage range



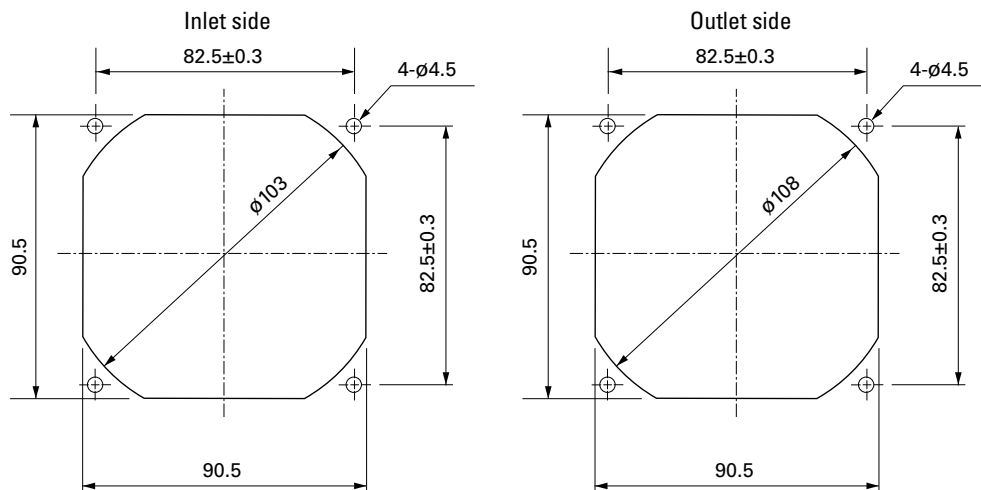
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-099C, 109-099E, 109-099H

Resin finger guards

page: p. 520

Model no.: 109-1001G

Resin filter kits

page: p. 521

Model no.: 109-1001F13 (13PPI), 109-1001F20 (20PPI),
109-1001F30 (30PPI), 109-1001F40 (40PPI)

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92x92x38 mm

San Ace 92 9HV type US

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 250 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

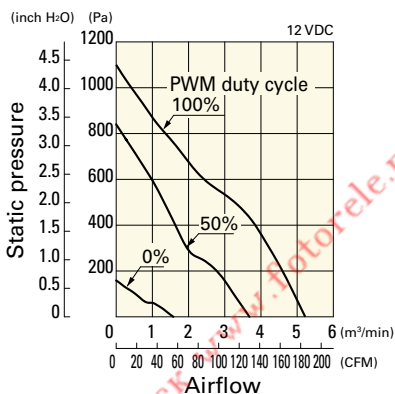
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9HV0912P1G001	12	8 to 12.6	100	5.2	62.4	14900	5.1 180	1100 4.42	72	-20 to +70	40000/60°C (70000/40°C)
			0	0.8	9.6	4500	1.54 54.4	160 0.64	44		
9HV0948P1G001	48	36 to 60	100	1.2	57.6	14900	5.1 180	1100 4.42	72		
			0	0.15	7.2	4500	1.54 54.4	160 0.64	44		

* PWM frequency: 25 kHz

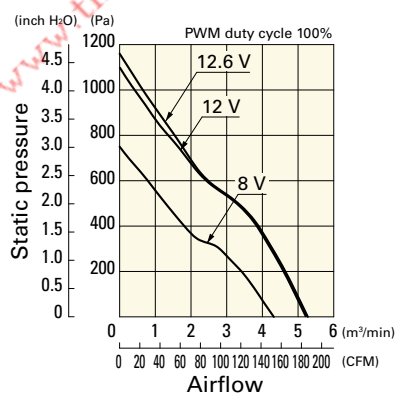
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HV0912P1G001 With pulse sensor with PWM control function

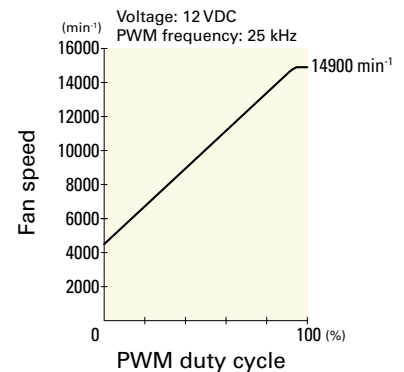
PWM duty cycle



Operating voltage range

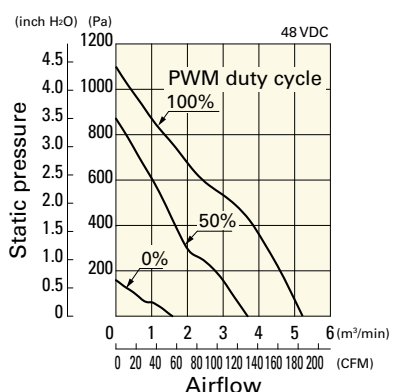


PWM duty - Speed characteristics example

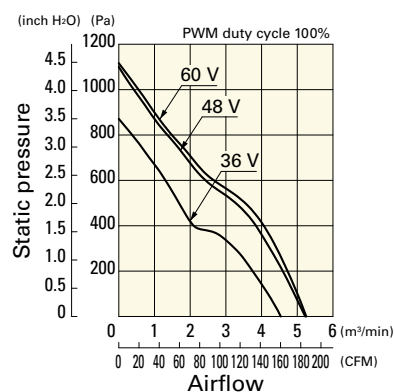


9HV0948P1G001 With pulse sensor with PWM control function

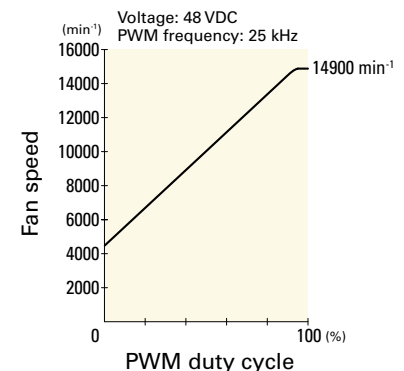
PWM duty cycle



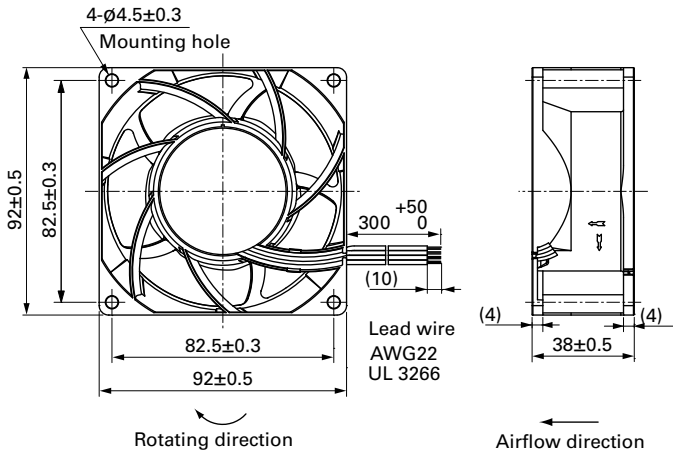
Operating voltage range



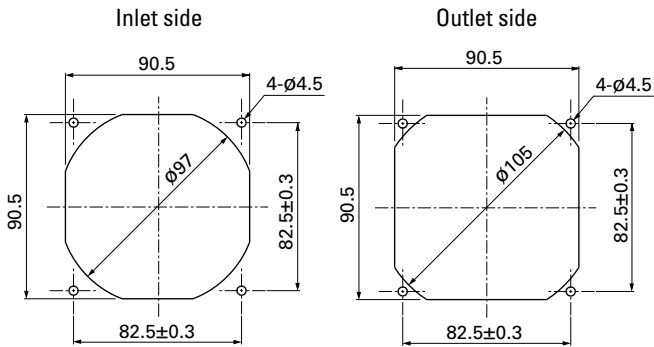
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-099C, 109-099E, 109-099H

Resin finger guards

page: p. 520

Model no.: 109-1001G

Resin filter kits

page: p. 521

Model no.: 109-1001F13 (13PPI), 109-1001F20 (20PPI),
109-1001F30 (30PPI), 109-1001F40 (40PPI)



92x92x38 mm

San Ace 92 9GV type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 250 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GV0912P1G03	12	10.8 to 13.2	100	4.1	49.2	9000	5.35 189.0	430.0 1.73	68	-20 to +70	40000/60°C
			0	0.33	4.0	2900	1.72 60.8	44.6 0.18	37		
10.2 to 13.8		100	3.5	42.0	8500	5.05 178.0	385.0 1.55	64			
		0	0.29	3.5	2700	1.6 56.5	38.8 0.16	34			
		100	1.9	22.8	7000	4.15 146.6	261 1.05	59			
		0	0.16	1.92	2200	1.3 45.9	25.7 0.1	31			
9GV0948P1H03	48	40.8 to 55.2	100	0.82	39.4	8500	5.05 178.0	385.0 1.55	64	-20 to +70	
			0	0.14	6.7	4000	2.37 83.7	85.2 0.34	45		
10.2 to 13.8		100	0.48	23.04	7000	4.15 146.6	261 1.05	59			
		0	0.12	5.76	3500	2.07 73.1	65.2 0.26	42			
		100	0.48	23.04	7000	4.15 146.6	261 1.05	59			
		0	0.12	5.76	3500	2.07 73.1	65.2 0.26	42			

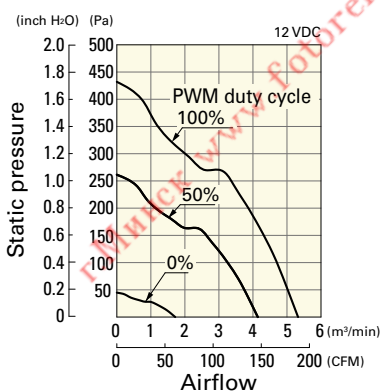
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 555).

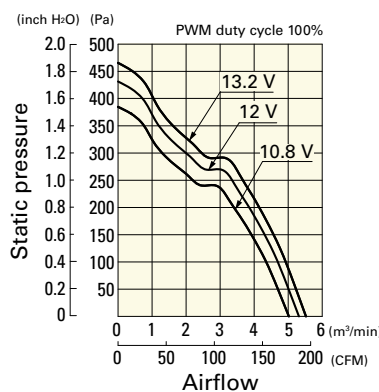
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0912P1G03 With pulse sensor with PWM control function

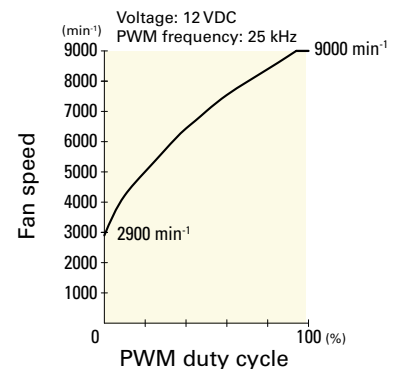
PWM duty cycle



Operating voltage range



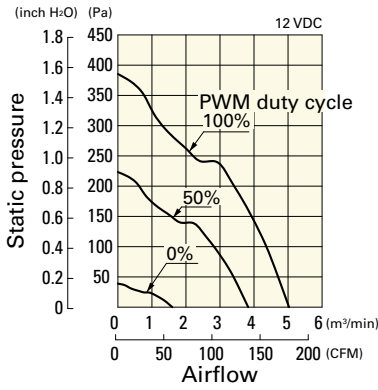
PWM duty - Speed characteristics example



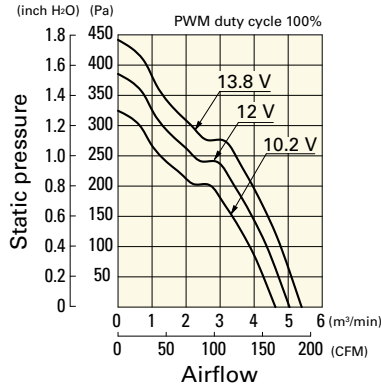
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV0912P1H03 With pulse sensor with PWM control function

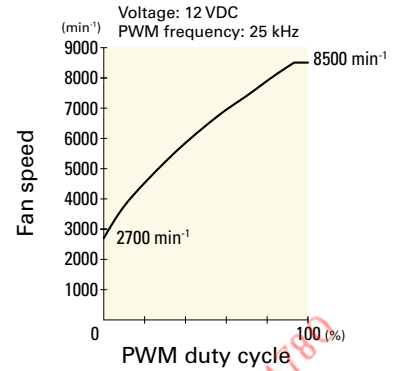
PWM duty cycle



Operating voltage range

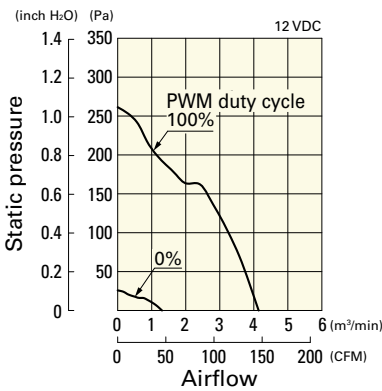


PWM duty - Speed characteristics example

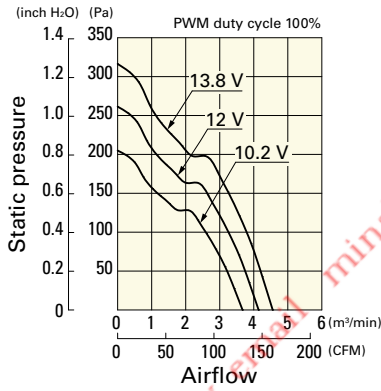


9GV0912P1F03 With pulse sensor with PWM control function

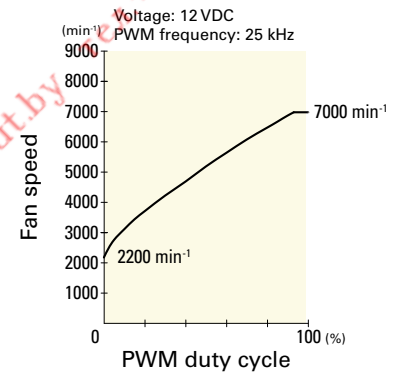
PWM duty cycle



Operating voltage range

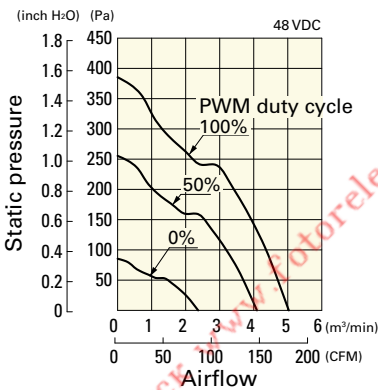


PWM duty - Speed characteristics example

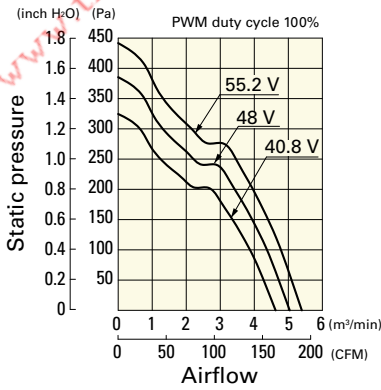


9GV0948P1H03 With pulse sensor with PWM control function

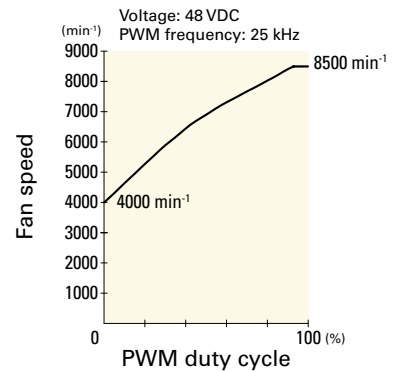
PWM duty cycle



Operating voltage range

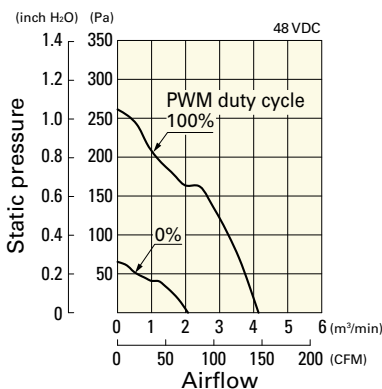


PWM duty - Speed characteristics example

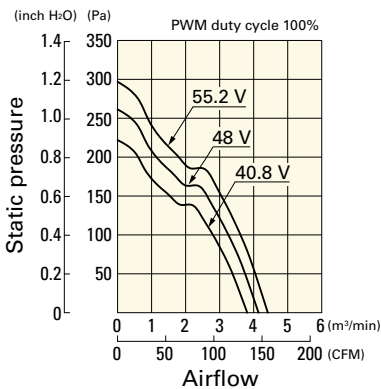


9GV0948P1F03 With pulse sensor with PWM control function

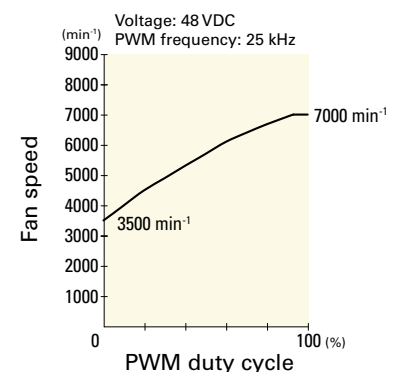
PWM duty cycle

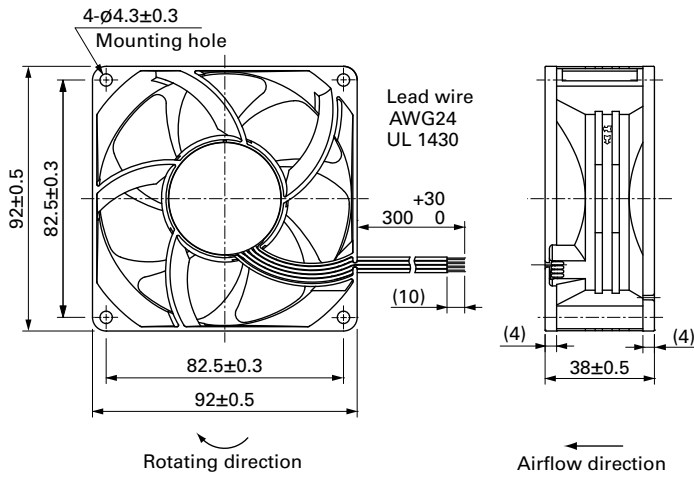
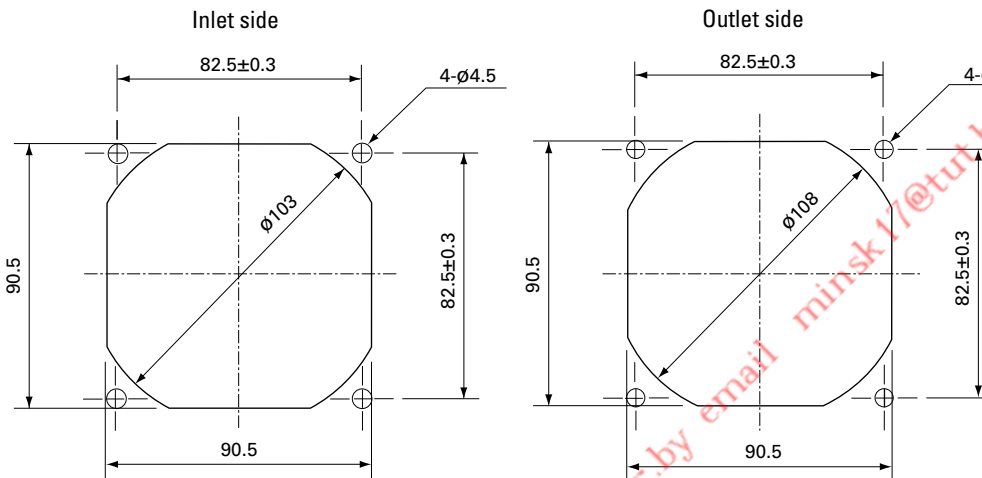


Operating voltage range



PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)**Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)****Options****Finger guards**

page: p. 513

Model no.: 109-099C, 109-099E, 109-099H

Resin finger guards

page: p. 520

Model no.: 109-1001G

Resin filter kits

page: p. 521

Model no.: 109-1001F13 (13PPI), 109-1001F20 (20PPI),
109-1001F30 (30PPI), 109-1001F40 (40PPI)



92x92x38 mm

San Ace 92 9G type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 180 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

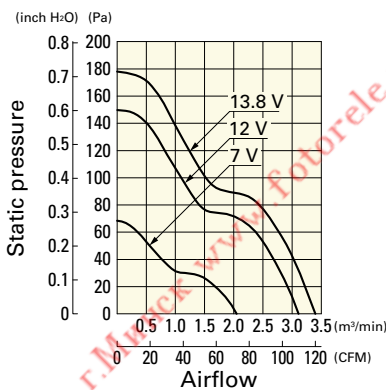
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9G0912G101	12	7.0 to 13.8	1.1	13.2	5000	3.1 110	150 0.602	50	-20 to +60	40000/60°C
9G0912H101			0.58	6.96	4000	2.54 90	100 0.402	43		
9G0924G101	24	20.4 to 27.6	0.55	13.2	5000	3.1 110	150 0.602	50		
9G0924H101			0.3	7.2	4000	2.54 90	100 0.402	43		
9G0948J101	48	40.8 to 55.2	0.32	15.36	5500	3.41 120.49	178 0.715	55	-20 to +70	
9G0948G101			0.27	12.96	5000	3.1 110	150 0.602	50	-20 to +60	
9G0948H101			0.16	7.68	4000	2.54 90	100 0.402	43		

Other sensor specifications are available as options. Refer to the index (p. 549).

Airflow - Static Pressure Characteristics

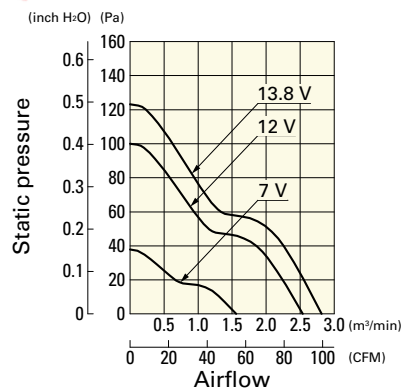
9G0912G101 With pulse sensor

Operating voltage range



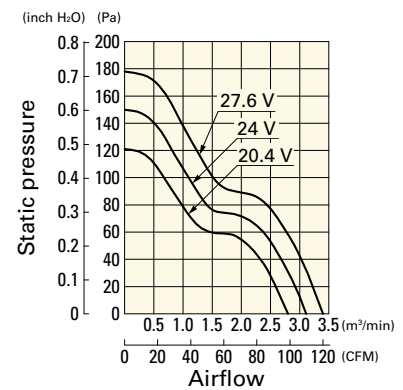
9G0912H101 With pulse sensor

Operating voltage range



9G0924G101 With pulse sensor

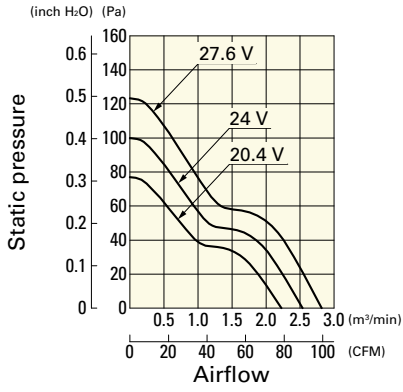
Operating voltage range



Airflow - Static Pressure Characteristics

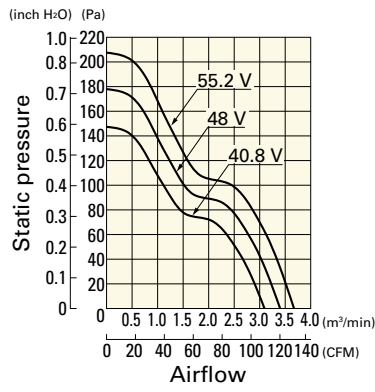
9G0924H101 With pulse sensor

Operating voltage range



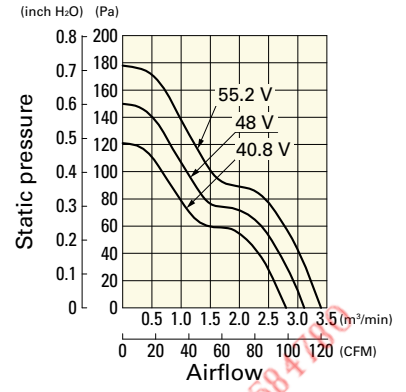
9G0948J101 With pulse sensor

Operating voltage range



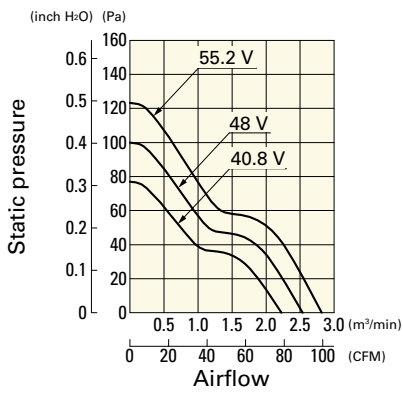
9G0948G101 With pulse sensor

Operating voltage range

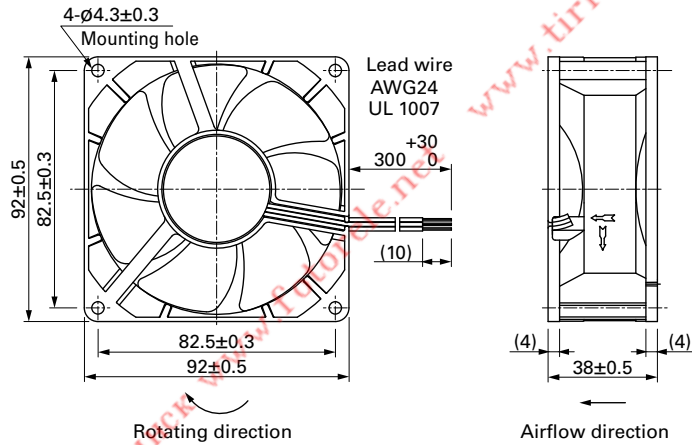


9G0948H101 With pulse sensor

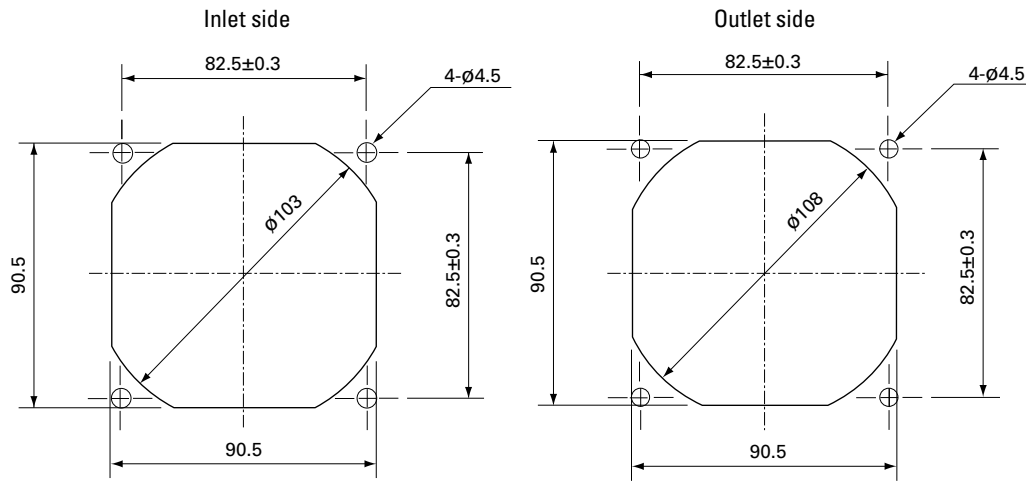
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 513

Model no.: 109-099C, 109-099E, 109-099H

Resin finger guards

page: p. 520

Model no.: 109-1001G

Resin filter kits

page: p. 521

Model no.: 109-1001F13 (13PPI), 109-1001F20 (20PPI),
109-1001F30 (30PPI), 109-1001F40 (40PPI)

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120×120×25 mm

San Ace 120 9S type Silent Fan 



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 140 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

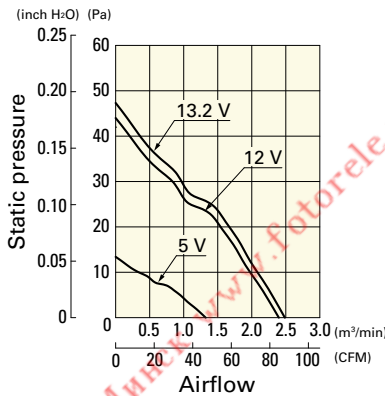
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9S1212H401	12	5.0 to 13.2	0.39	4.68	2700	2.45 86.5	45.2 0.18	36	-10 to +60	40000/60°C
9S1212F401		5.0 to 13.8	0.19	2.28	2200	2.0 70.6	30.0 0.12	30		
9S1212M401		6.0 to 13.8	0.13	1.56	1850	1.66 58.6	22.7 0.09	24		
9S1212L401		7.0 to 13.8	0.08	0.96	1500	1.36 48.1	14.9 0.06	17		
9S1224M401	24	14 to 26.4	0.06	1.44	1850	1.66 58.6	22.7 0.09	24		

Other sensor specifications are available as options. Refer to the index (pp. 557 to 558).

Airflow - Static Pressure Characteristics

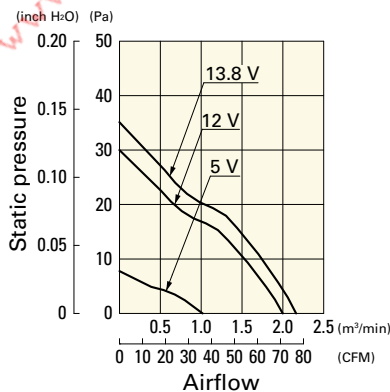
9S1212H401 With pulse sensor

Operating voltage range



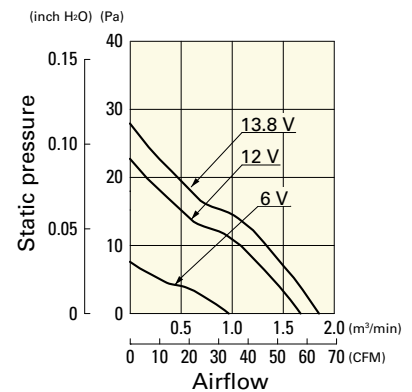
9S1212F401 With pulse sensor

Operating voltage range



9S1212M401 With pulse sensor

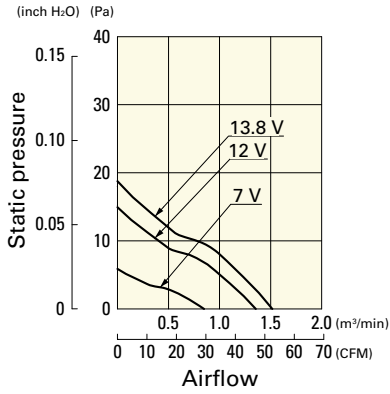
Operating voltage range



Airflow - Static Pressure Characteristics

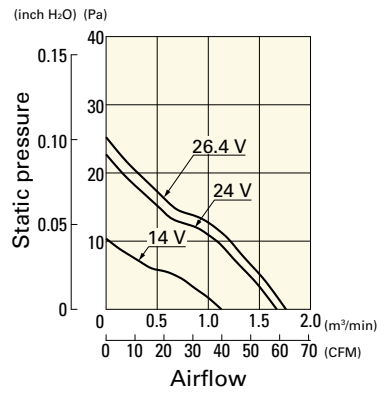
9S1212L401 With pulse sensor

Operating voltage range

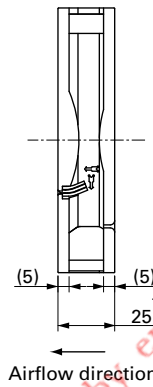
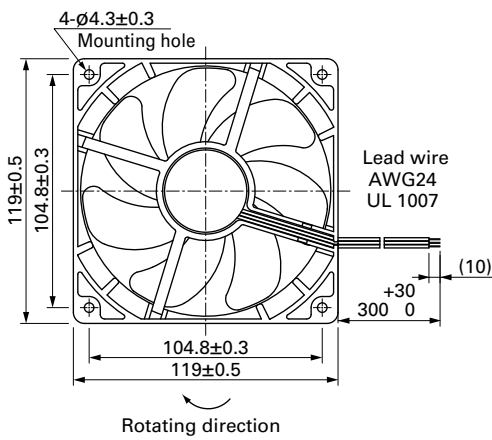


9S1224M401 With pulse sensor

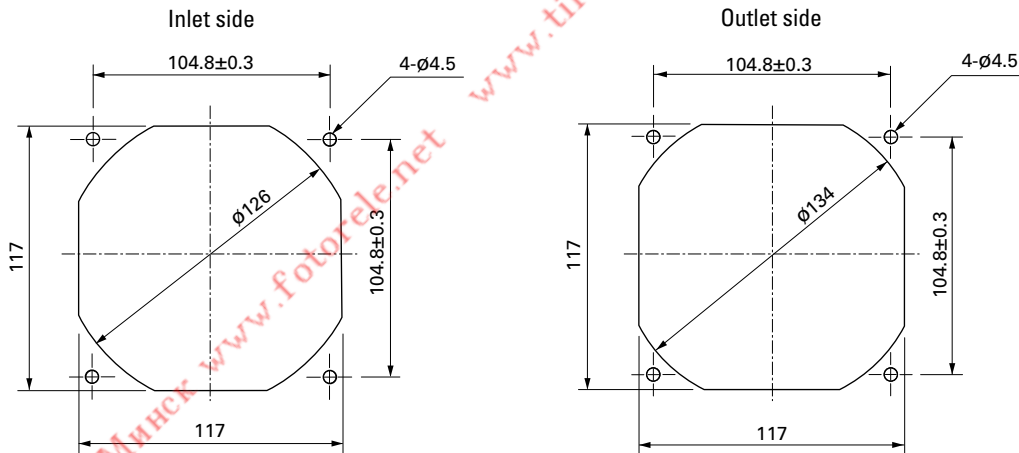
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 514

Model no.: 109-019C, 109-019H, 109-019E, 109-019K

Resin finger guards

page: p. 520

Model no.: 109-1000G




Resin filter kits

page: p. 521

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)



120×120×25 mm

San Ace 120 9GA type Low Power Consumption Fan   

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- Mass 280 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function**. For models without ribs, append "1" to the end of model numbers.

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]
9GA1212P4G001	12	10.2 to 13.8	100	0.93	11.16	6400	3.8 134	365 1.47	57	-20 to +70	40000/60°C (70000/40°C)
			25	0.16	1.92	2550	1.5 53	60 0.24	34		
9GA1212P4S001	12	10.2 to 13.8	100	0.61	7.32	5400	3.2 113	260 1.04	54		
			25	0.16	1.92	2550	1.5 53	60 0.24	34		
9GA1224P4G001	24	20.4 to 27.6	100	0.47	11.28	6400	3.8 134	365 1.47	57		
			25	0.1	2.4	2550	1.5 53	60 0.24	34		
9GA1224P4S001	24	20.4 to 27.6	100	0.31	7.44	5400	3.2 113	260 1.04	54		
			25	0.1	2.4	2550	1.5 53	60 0.24	34		
9GA1248P4G001	48	40.8 to 53	100	0.24	11.52	6400	3.8 134	365 1.47	57		
			25	0.08	3.84	2550	1.5 53	60 0.24	34		
9GA1248P4S001	48	40.8 to 53	100	0.16	7.68	5400	3.2 113	260 1.04	54		
			25	0.08	3.84	2550	1.5 53	60 0.24	34		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

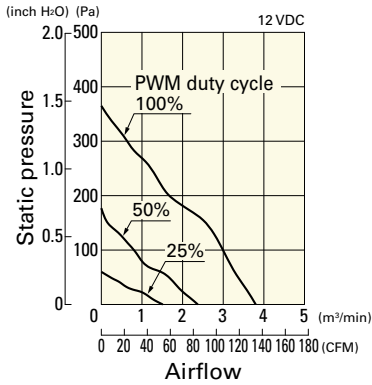
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GA1212G4001	12	7 to 13.8	0.93	11.16	6400	3.8 134	365 1.47	57	-20 to +70	40000/60°C (70000/40°C)
9GA1212S4001			0.61	7.32	5400	3.2 113	260 1.04	54		
9GA1224G4001	24	14 to 27.6	0.47	11.28	6400	3.8 134	365 1.47	57		
9GA1224S4001			0.31	7.44	5400	3.2 113	260 1.04	54		
9GA1248G4001	48	36 to 53	0.24	11.52	6400	3.8 134	365 1.47	57		
9GA1248S4001			0.16	7.68	5400	3.2 113	260 1.04	54		

Other sensor specifications are available as options. Refer to the index (p. 553).

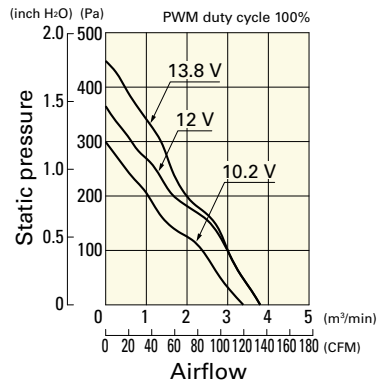
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GA1212P4G001 With pulse sensor with PWM control function

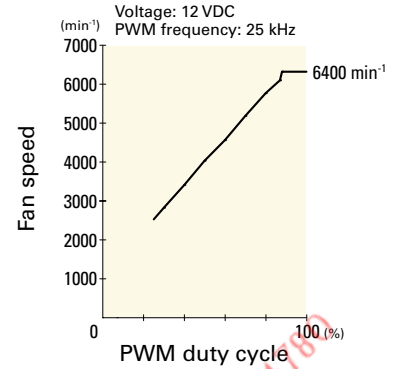
PWM duty cycle



Operating voltage range

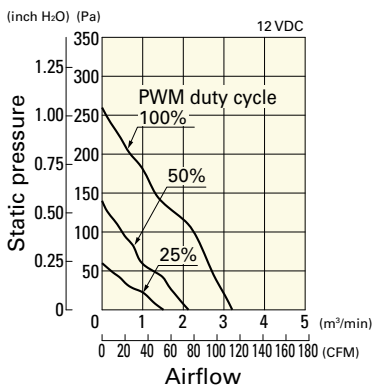


PWM duty - Speed characteristics example

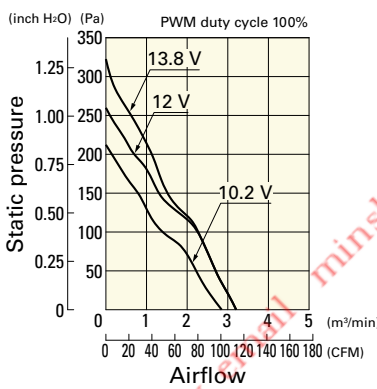


9GA1212P4S001 With pulse sensor with PWM control function

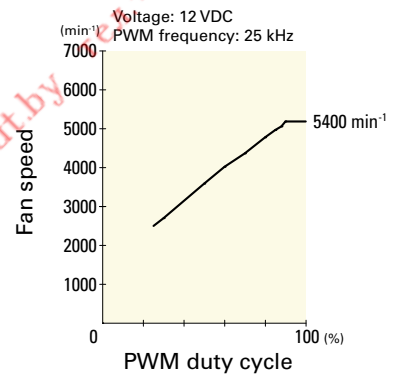
PWM duty cycle



Operating voltage range

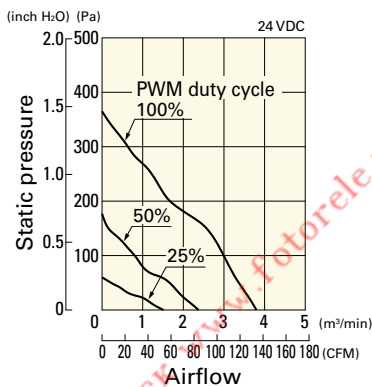


PWM duty - Speed characteristics example

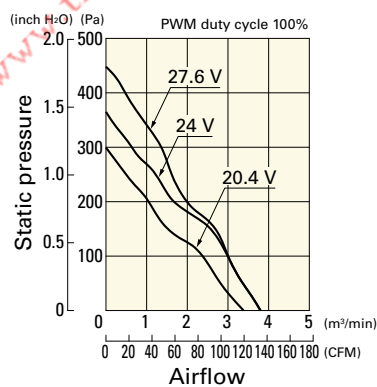


9GA1224P4G001 With pulse sensor with PWM control function

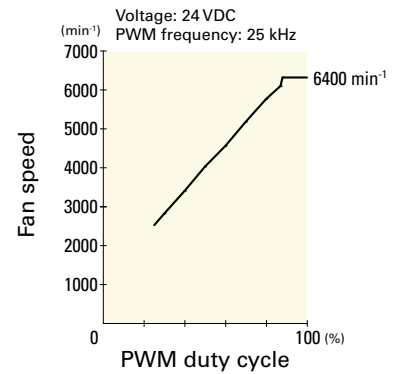
PWM duty cycle



Operating voltage range

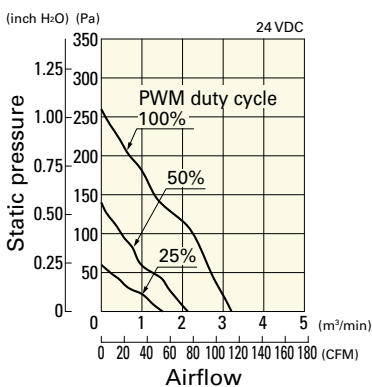


PWM duty - Speed characteristics example

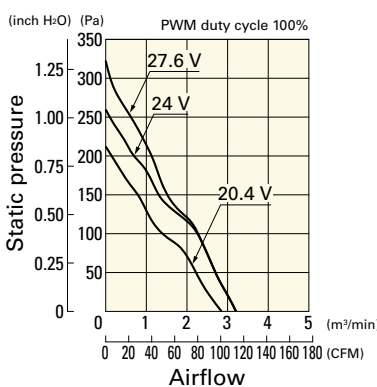


9GA1224P4S001 With pulse sensor with PWM control function

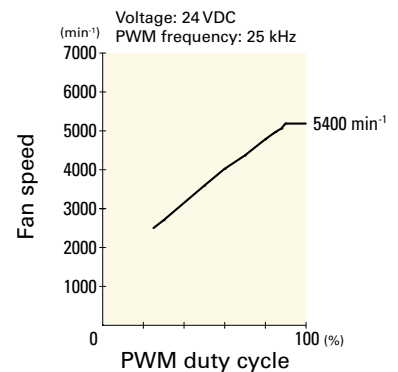
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example



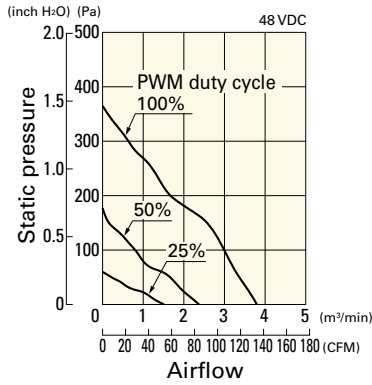
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

DC

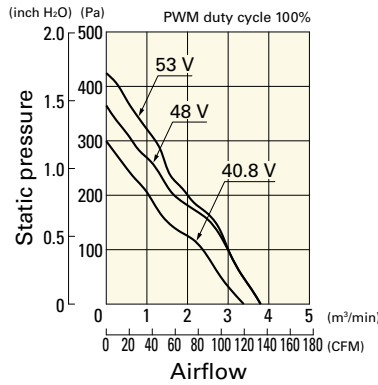
DC Fan 120 mm sq.

9GA1248P4G001 With pulse sensor with PWM control function

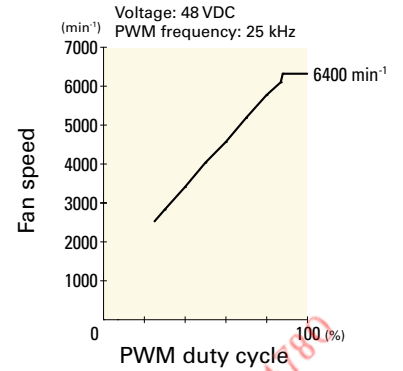
PWM duty cycle



Operating voltage range

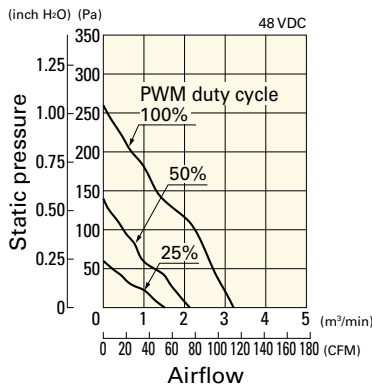


PWM duty - Speed characteristics example

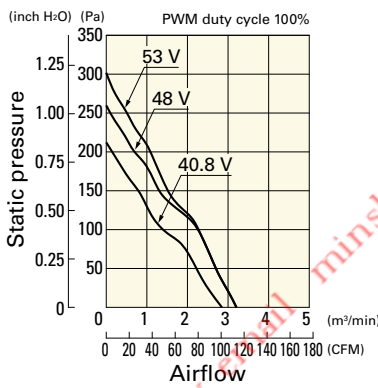


9GA1248P4S001 With pulse sensor with PWM control function

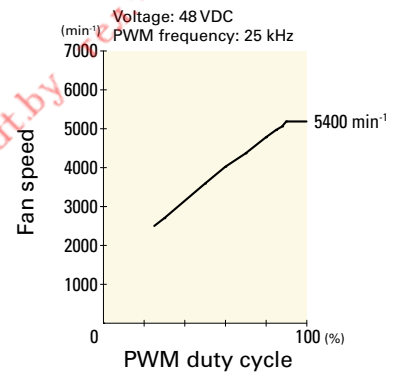
PWM duty cycle



Operating voltage range

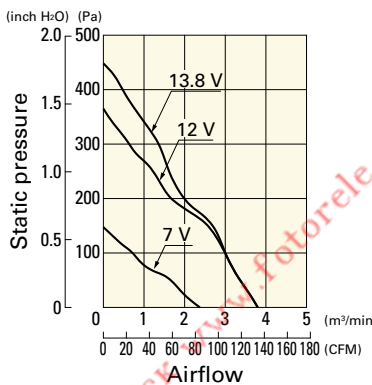


PWM duty - Speed characteristics example



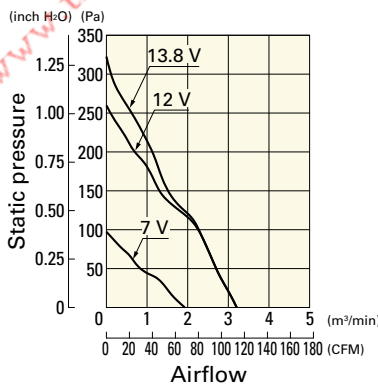
9GA1212G4001 With pulse sensor

Operating voltage range



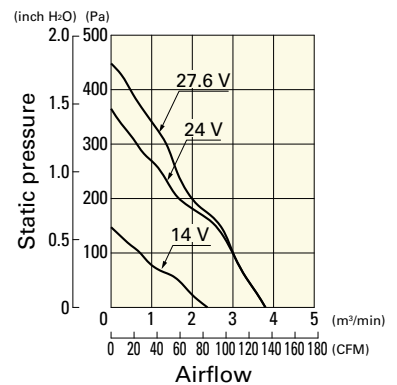
9GA1212S4001 With pulse sensor

Operating voltage range



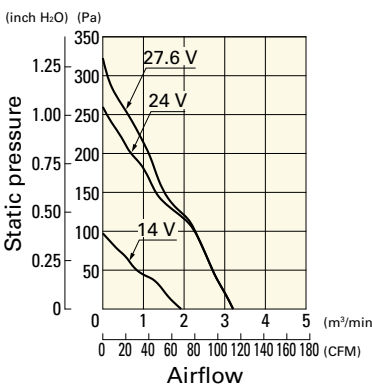
9GA1224G4001 With pulse sensor

Operating voltage range



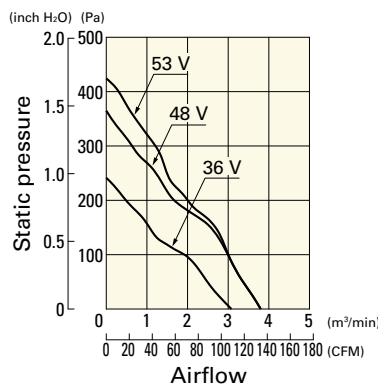
9GA1224S4001 With pulse sensor

Operating voltage range



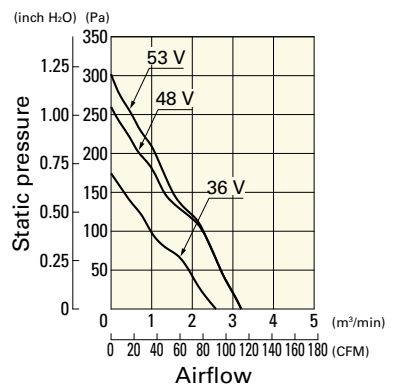
9GA1248G4001 With pulse sensor

Operating voltage range

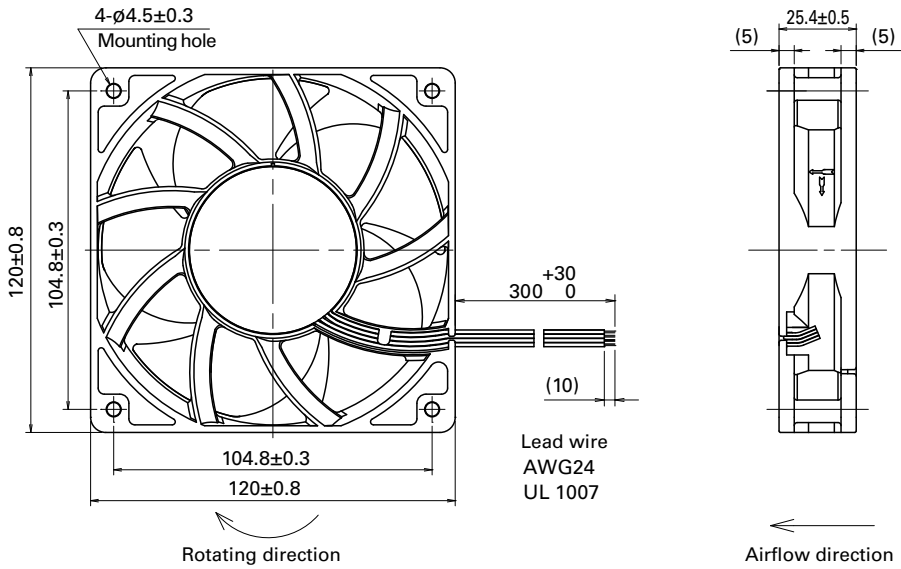


9GA1248S4001 With pulse sensor

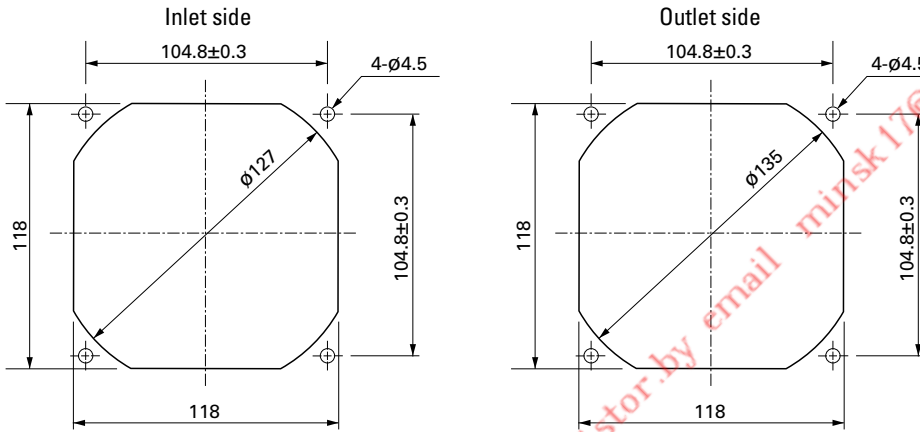
Operating voltage range



Dimensions (unit: mm) (With pulse sensor with PWM control function)



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



Options

Finger guards page: p. 514

Model no.: 109-019C, 109-019H, 109-019E, 109-019K

Resin finger guards page: p. 520

Model no.: 109-1000G

Resin filter kits page: p. 521

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)



120×120×25 mm

San Ace 120 9GV type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 260 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GV1212P4G01	12	10.2 to 13.8	100	1.68	20.16	5100	4.83 171	224 0.9	58	-20 to +70	40000/60°C
			0	0.18	2.16	1650	1.56 55.1	23.5 0.09	30		
9GV1224P4G01	24	20.4 to 27.6	100	0.84	20.16	5100	4.83 171	224 0.9	58		
			0	0.13	3.12	1650	1.56 55.1	23.5 0.09	30		
9GV1248P4J01	48	40.8 to 55.2	100	0.5	24.0	5400	5.11 180	251 1.01	59		
			0	0.15	7.2	3000	2.84 100	77.5 0.31	47		
9GV1248P4G01	48	40.8 to 60.0	100	0.42	20.16	5100	4.83 171	224 0.9	58		
			0	0.07	3.36	1650	1.56 55.1	23.5 0.09	30		
9GV1248P4H01	48	40.8 to 60.0	100	0.33	15.84	4600	4.35 154	182 0.73	55		
			0	0.07	3.36	1650	1.56 55.1	23.5 0.09	30		

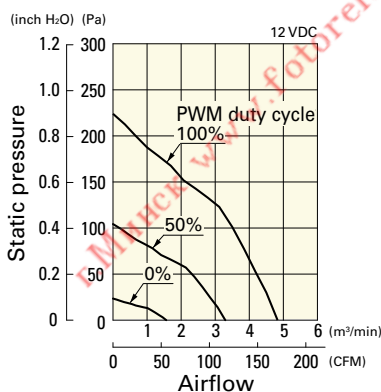
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 555).

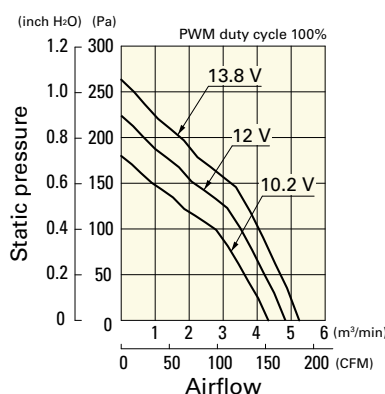
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV1212P4G01 With pulse sensor with PWM control function

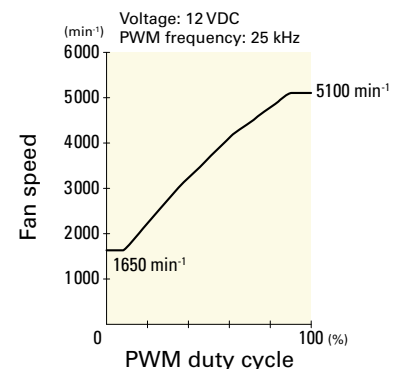
PWM duty cycle



Operating voltage range



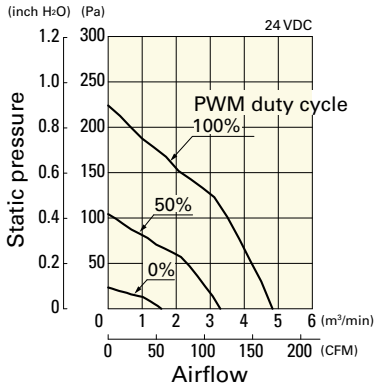
PWM duty - Speed characteristics example



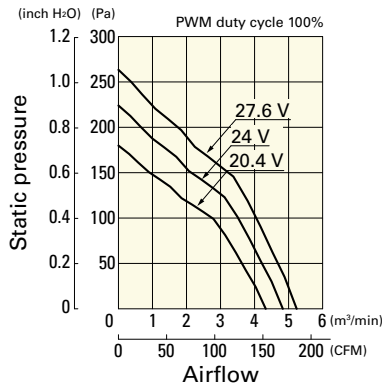
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV1224P4G01 With pulse sensor with PWM control function

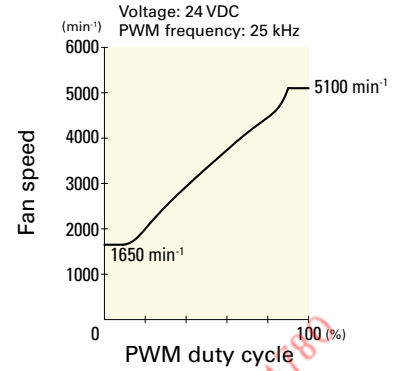
PWM duty cycle



Operating voltage range

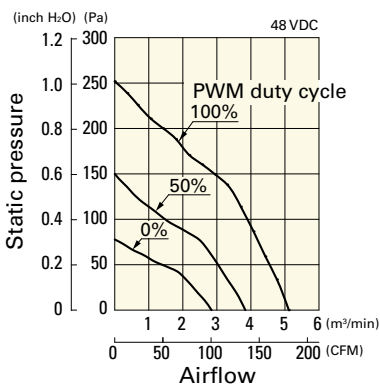


PWM duty - Speed characteristics example

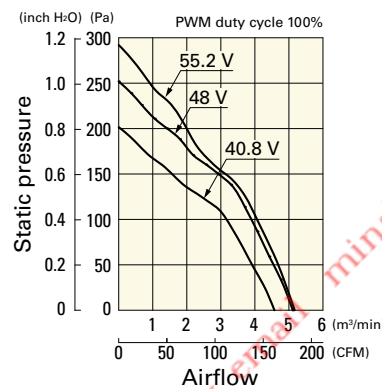


9GV1248P4J01 With pulse sensor with PWM control function

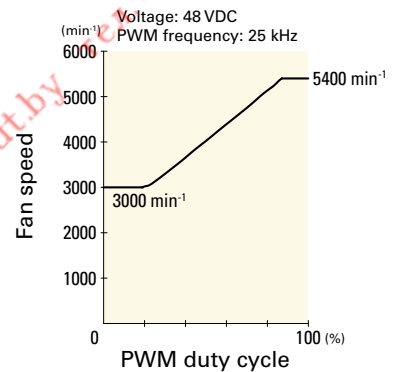
PWM duty cycle



Operating voltage range

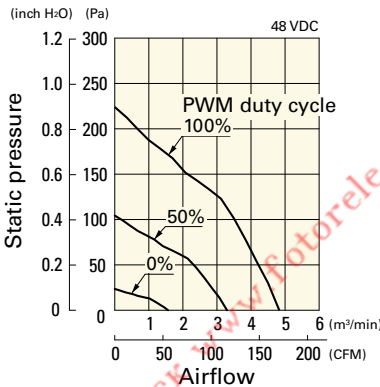


PWM duty - Speed characteristics example

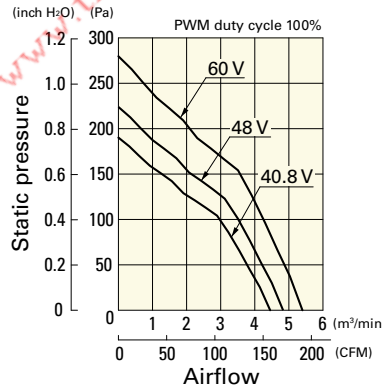


9GV1248P4G01 With pulse sensor with PWM control function

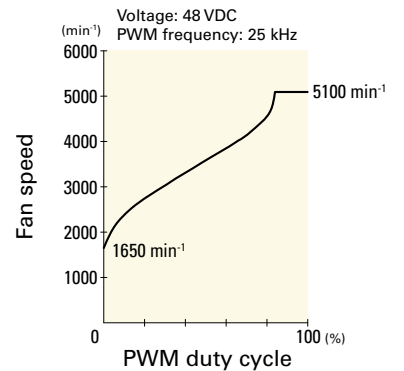
PWM duty cycle



Operating voltage range

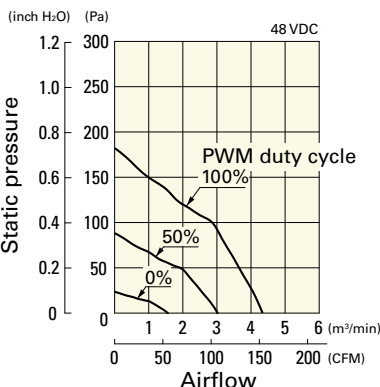


PWM duty - Speed characteristics example

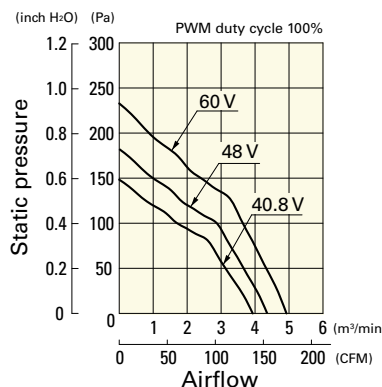


9GV1248P4H01 With pulse sensor with PWM control function

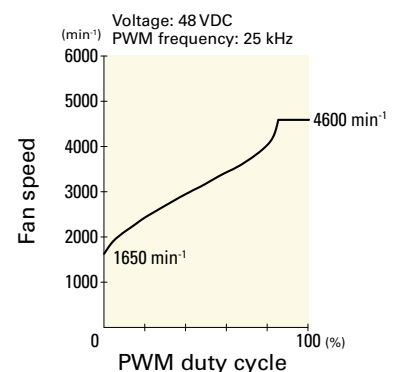
PWM duty cycle

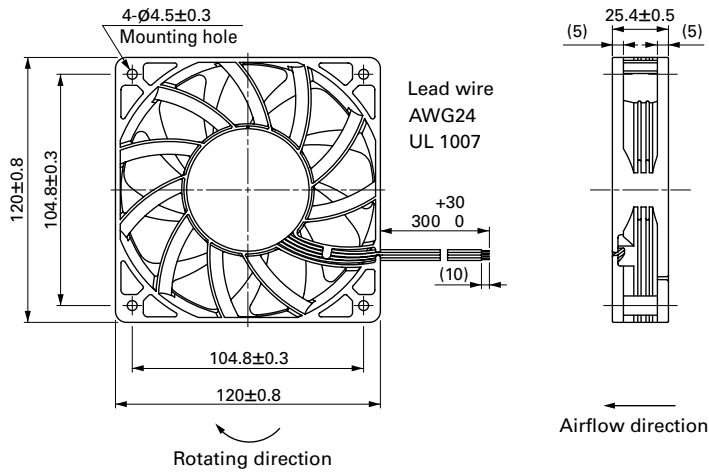
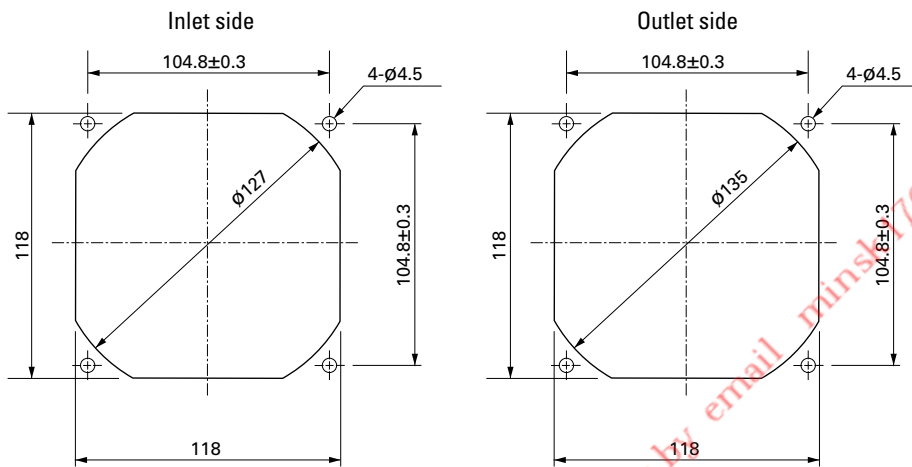


Operating voltage range



PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)**Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)****Options****Finger guards**

page: p. 514

Model no.: 109-019C, 109-019H, 109-019E, 109-019K

Resin finger guards

page: p. 520

Model no.: 109-1000G

Resin filter kits

page: p. 521

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)



120×120×25 mm

San Ace 120 9G type Model 9G1212B401 is not certified.

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 240 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

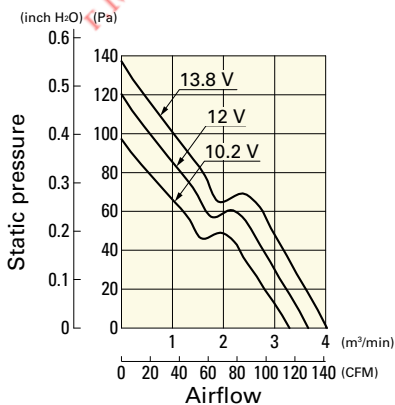
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9G1212G401	12	10.2 to 13.8	0.9	10.8	4100	3.68 130	120 0.482	51	-20 to +70	40000/60°C
9G1212E401			0.58	6.96	3650	3.25 115	98 0.394	48		
9G1212A401			0.4	4.8	3150	2.83 100	77 0.309	44		
9G1212H401		6 to 13.8	0.31	3.72	2850	2.5 88	64 0.257	40		
9G1212F401		7 to 13.8	0.19	2.28	2250	1.98 70	42 0.169	35		
9G1212M401			0.14	1.68	1950	1.66 59	31 0.124	29		
9G1212B401		10.2 to 13.8	0.06	0.72	1000	0.88 31	9.6 0.039	18		
9G1224G401	24	20.4 to 27.6	0.47	11.28	4100	3.68 130	120 0.482	51		
9G1224E401			0.37	8.88	3650	3.25 115	98 0.394	48		
9G1224A401			0.21	5.04	3150	2.83 100	77 0.309	44		
9G1224H401		12 to 27.6	0.17	4.08	2850	2.5 88	64 0.257	40		
9G1224F401		20.4 to 27.6	0.1	2.4	2250	1.98 70	42 0.169	35		
9G1224M401			0.08	1.92	1950	1.66 59	31 0.124	29		
9G1248G401		48	40.8 to 55.2	0.23	11.04	4100	3.68 130	120 0.482		
9G1248E401	0.16			7.68	3650	3.25 115	98 0.394	48		
9G1248A401	0.13			6.24	3150	2.83 100	77 0.309	44		
9G1248H401	0.1			4.8	2850	2.5 88	64 0.257	40		
9G1248F401	0.06			2.88	2250	1.98 70	42 0.169	35		
9G1248M401	0.05			2.4	1950	1.66 59	31 0.124	29		

Other sensor specifications are available as options. Refer to the index (pp. 549 to 551).

Airflow - Static Pressure Characteristics

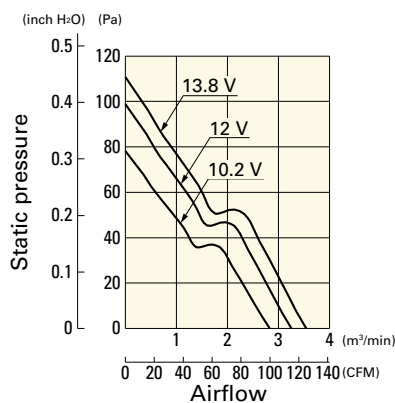
9G1212G401 With pulse sensor

Operating voltage range



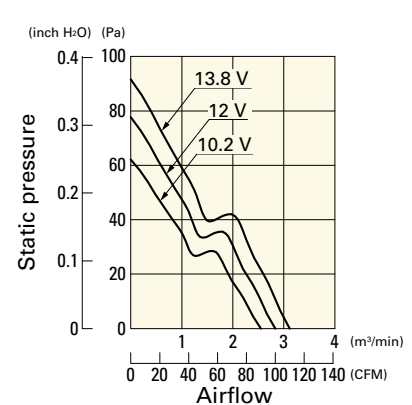
9G1212E401 With pulse sensor

Operating voltage range



9G1212A401 With pulse sensor

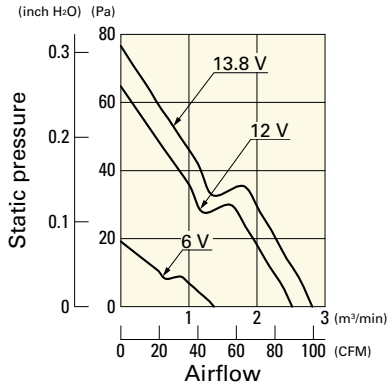
Operating voltage range



Airflow - Static Pressure Characteristics

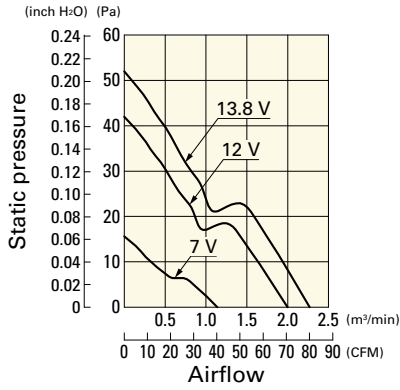
9G1212H401 With pulse sensor

Operating voltage range



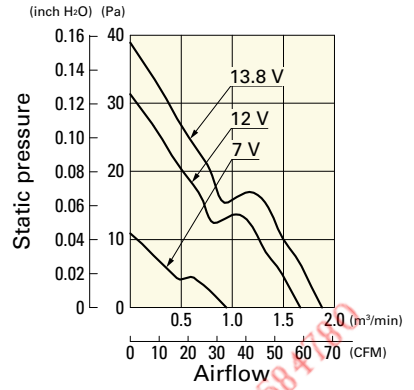
9G1212F401 With pulse sensor

Operating voltage range



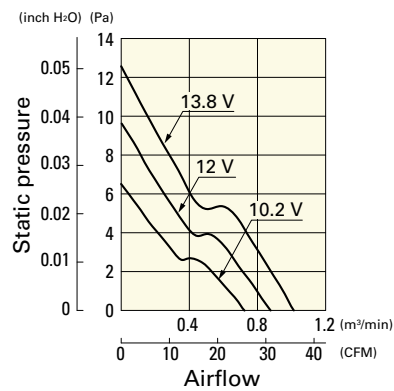
9G1212M401 With pulse sensor

Operating voltage range



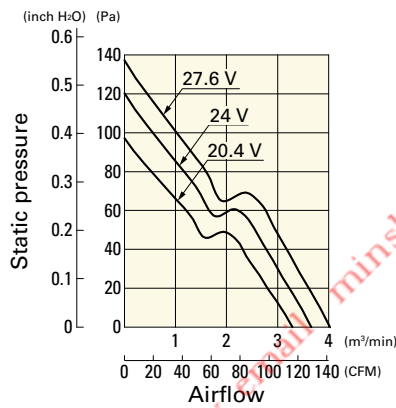
9G1212B401 With pulse sensor

Operating voltage range



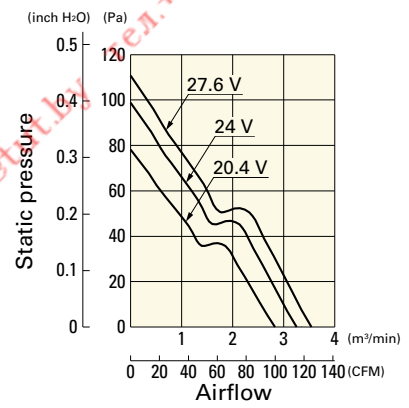
9G1224G401 With pulse sensor

Operating voltage range



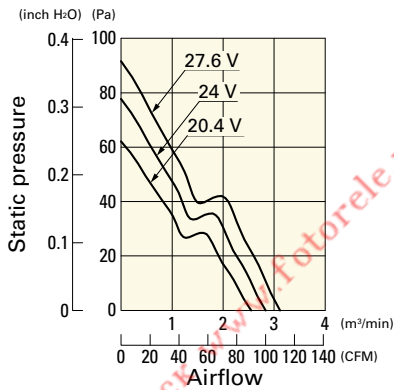
9G1224E401 With pulse sensor

Operating voltage range



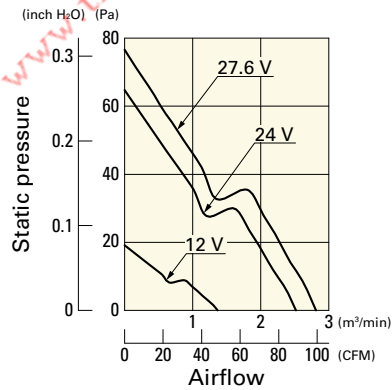
9G1224A401 With pulse sensor

Operating voltage range



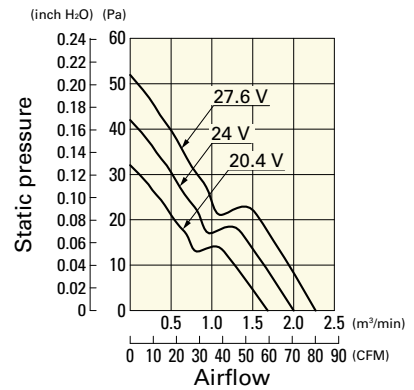
9G1224H401 With pulse sensor

Operating voltage range



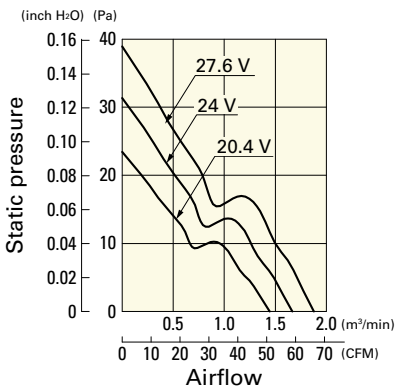
9G1224F401 With pulse sensor

Operating voltage range



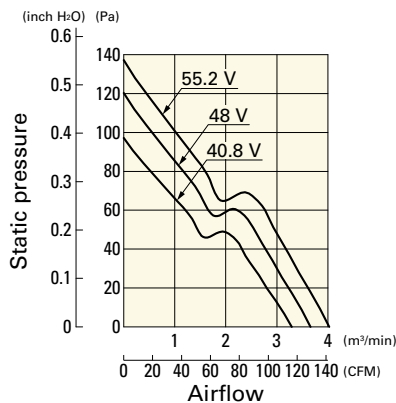
9G1224M401 With pulse sensor

Operating voltage range



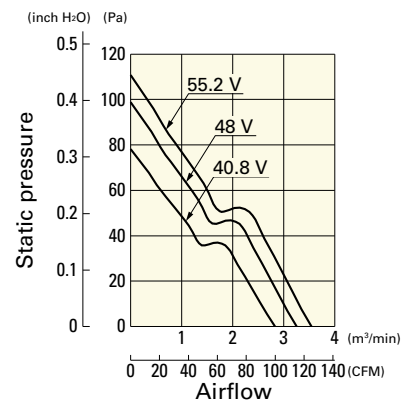
9G1248G401 With pulse sensor

Operating voltage range



9G1248E401 With pulse sensor

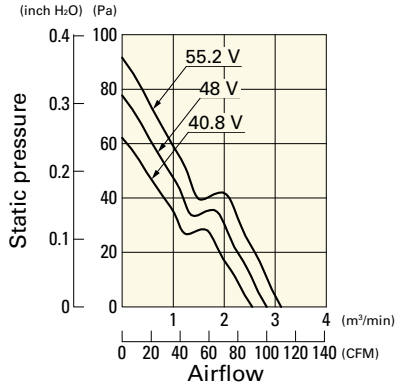
Operating voltage range



Airflow - Static Pressure Characteristics

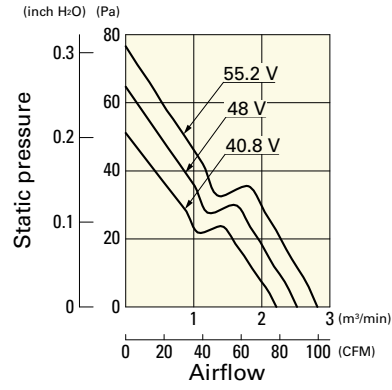
9G1248A401 With pulse sensor

Operating voltage range



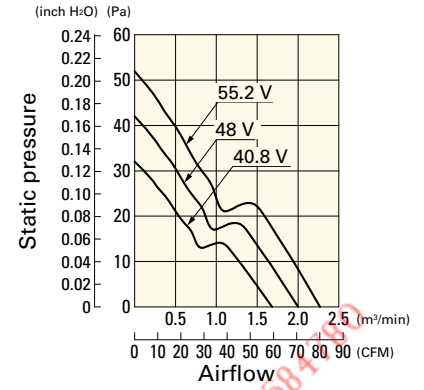
9G1248H401 With pulse sensor

Operating voltage range



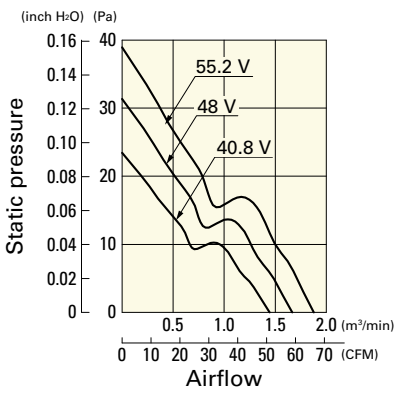
9G1248F401 With pulse sensor

Operating voltage range

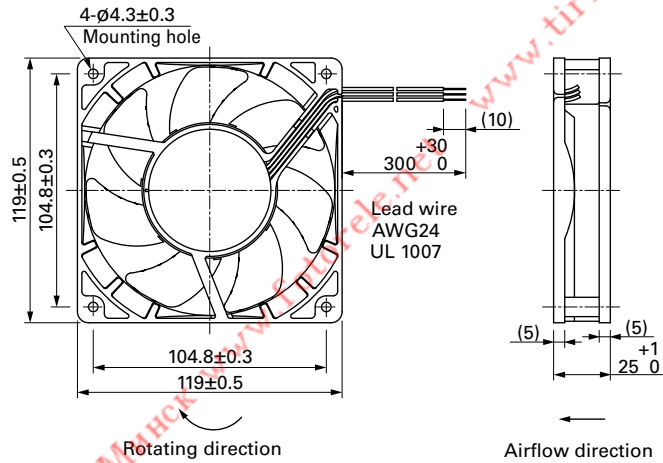


9G1248M401 With pulse sensor

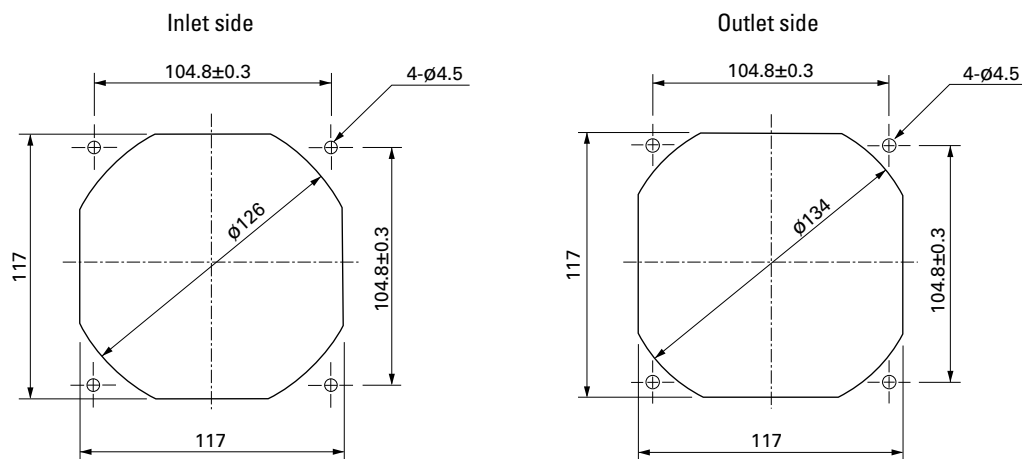
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 514

Model no.: 109-019C, 109-019H, 109-019E, 109-019K

Resin finger guards

page: p. 520

Model no.: 109-1000G

Resin filter kits

page: p. 521

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)

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120×120×38 mm

San Ace 120 9HV type

General Specifications

- Material Frame: Aluminum, Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 460 g

Specifications

The models listed below **have pulse sensors with PWM control function.**

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]
9HV1224P1A001	24	21.6 to 26.4	100	2.4	57.6	9600	7.0 247	950 3.82	71	-20 to +70	40000/60°C (70000/40°C)
			0	0.37	8.88	3800	2.7 95	161 0.65	46		
9HV1248P1G001	48	36 to 60	100	2.0	96	11500	8.3 293	1300 5.22	75		
			0	0.23	11	3800	2.7 95	161 0.65	46		
9HV1248P1H001	48	36 to 60	100	1.4	67	10000	7.2 254	1050 4.22	72		
			0	0.23	11	3800	2.7 95	161 0.65	46		

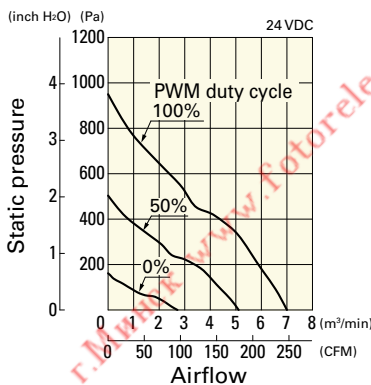
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 556).

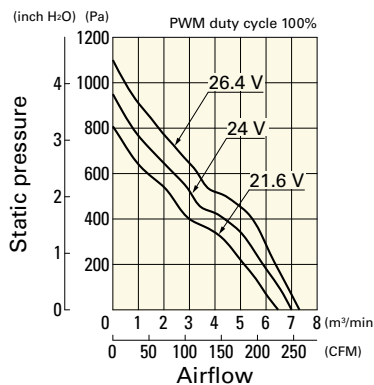
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HV1224P1A001 With pulse sensor with PWM control function

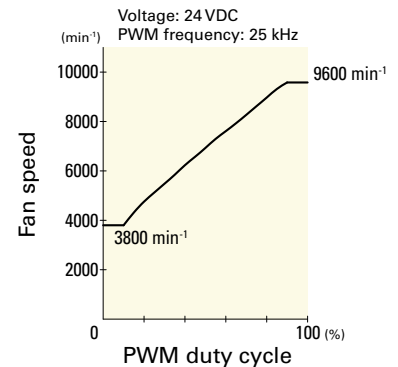
PWM duty cycle



Operating voltage range



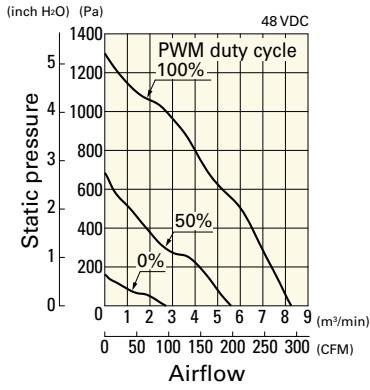
PWM duty - Speed characteristics example



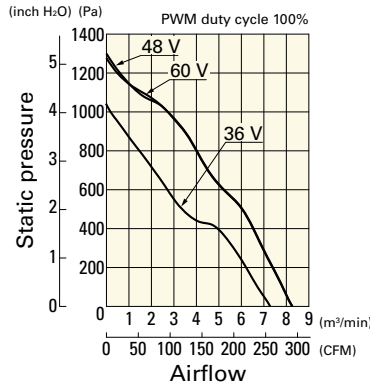
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HV1248P1G001 With pulse sensor with PWM control function

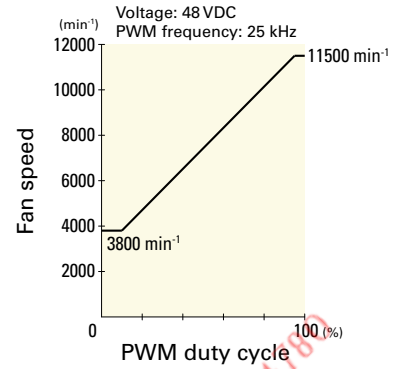
PWM duty cycle



Operating voltage range

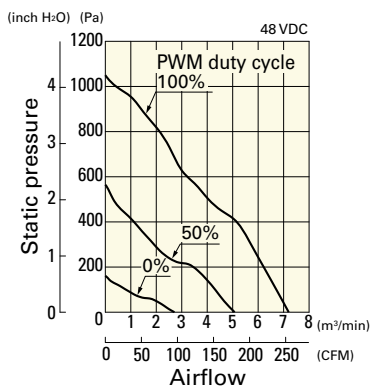


PWM duty - Speed characteristics example

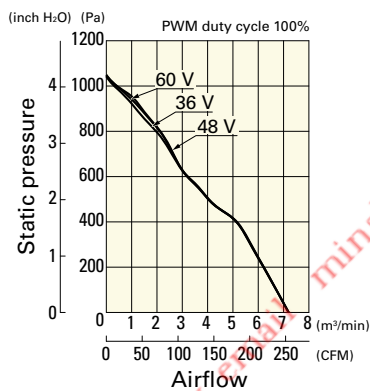


9HV1248P1H001 With pulse sensor with PWM control function

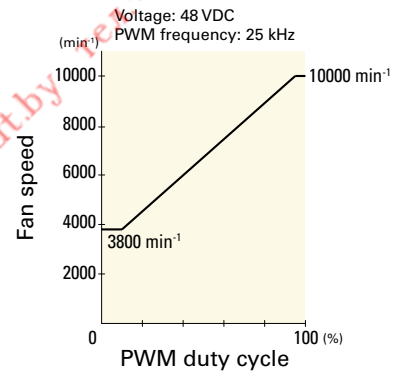
PWM duty cycle



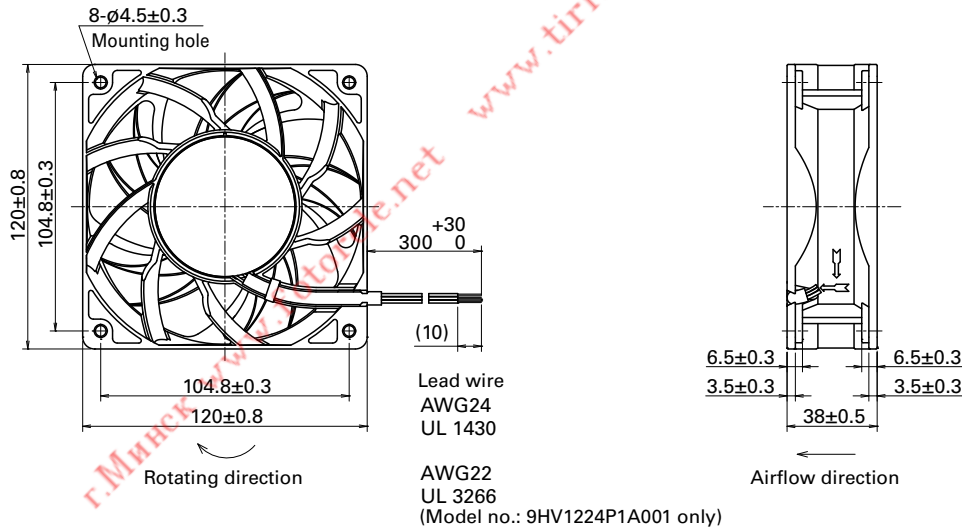
Operating voltage range



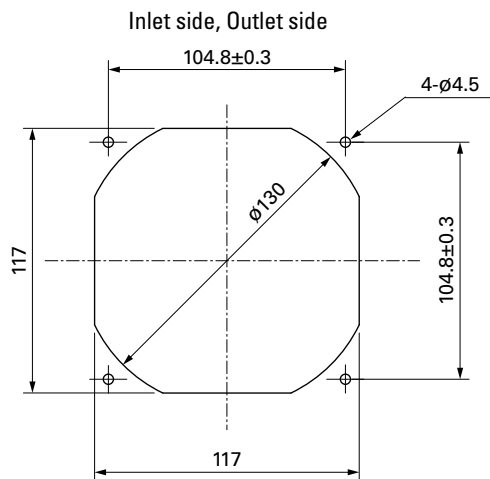
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 514

Model no.: 109-019C, 109-019H, 109-019E, 109-019K

Resin finger guards

page: p. 520

Model no.: 109-1000G

Resin filter kits

page: p. 521

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)

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120×120×38 mm

San Ace 120 9GV type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 360 g

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** For models without ribs, append "1" to the end of model numbers.

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GV1212P1J01	12	10.2 to 13.8	100	3.0	36.0	6400	6.35 224.0	360.0 1.45	64	-20 to +70	40000/60°C
			0	0.19	2.28	1500	1.49 52.6	19.8 0.08	33		
9GV1212P1G01	12	10.2 to 13.8	100	2.1	25.2	5500	5.45 192.6	265 1.06	60		
			0	0.19	2.28	1500	1.49 52.6	19.8 0.08	33		
9GV1224P1J01**	24	20.4 to 27.6	100	1.5	36.0	6400	6.35 224.0	360 1.45	64		
9GV1224P1H01**			100	0.8	19.2	5200	5.16 182.3	237 0.95	58		
9GV1248P1J01	48	40.8 to 55.2	100	0.75	36.0	6400	6.35 224.0	360.0 1.45	64		
			0	0.06	2.88	1500	1.49 52.6	26.1 0.106	33		

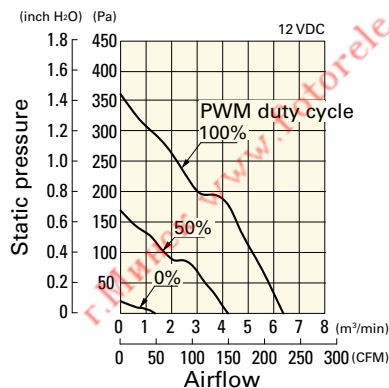
* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 555).

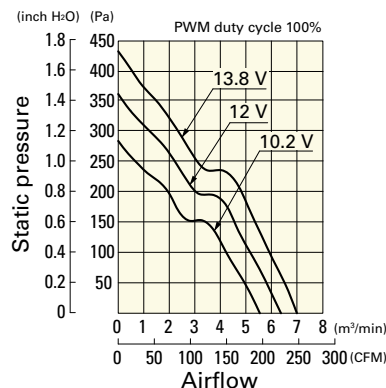
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV1212P1J01 With pulse sensor with PWM control function

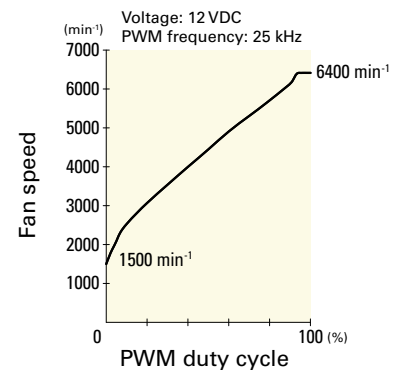
PWM duty cycle



Operating voltage range



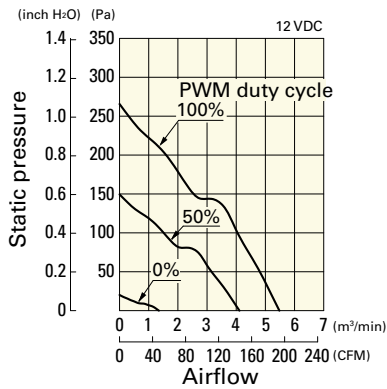
PWM duty - Speed characteristics example



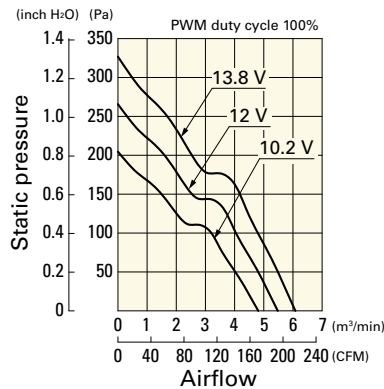
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV1212P1G01 With pulse sensor with PWM control function

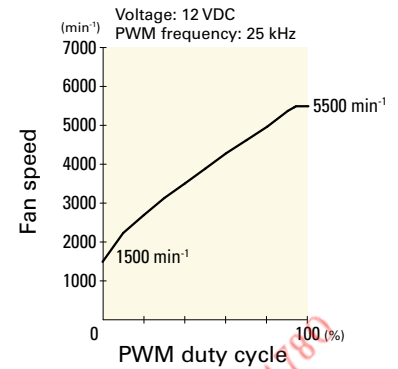
PWM duty cycle



Operating voltage range

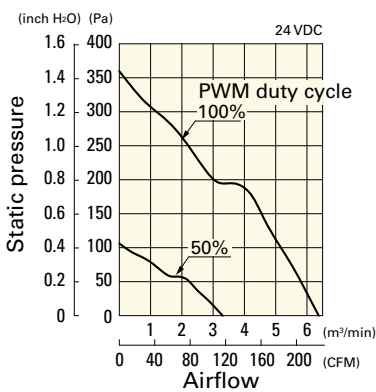


PWM duty - Speed characteristics example

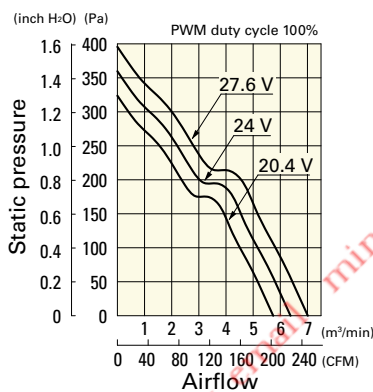


9GV1224P1J01 With pulse sensor with PWM control function

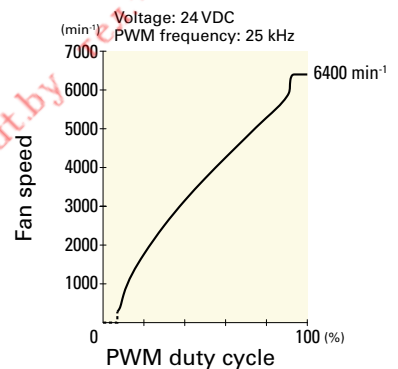
PWM duty cycle



Operating voltage range

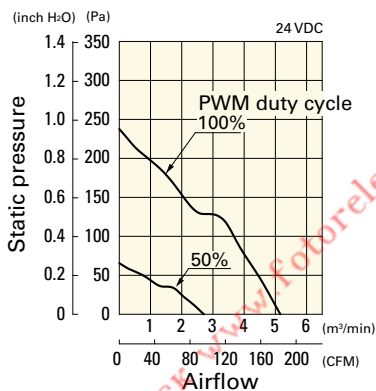


PWM duty - Speed characteristics example

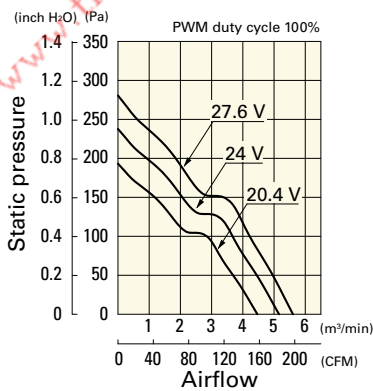


9GV1224P1H01 With pulse sensor with PWM control function

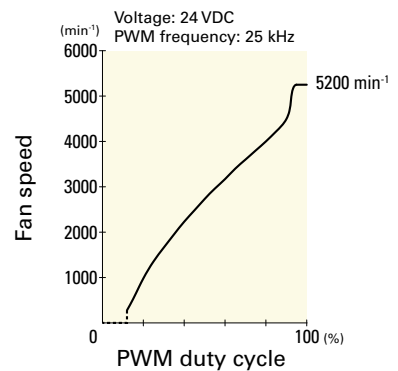
PWM duty cycle



Operating voltage range

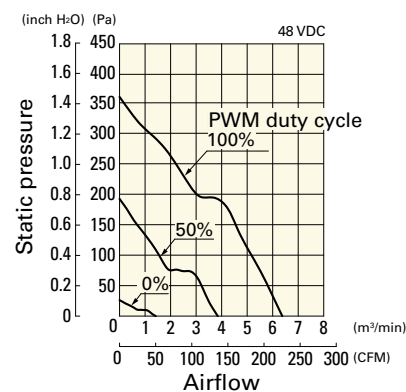


PWM duty - Speed characteristics example

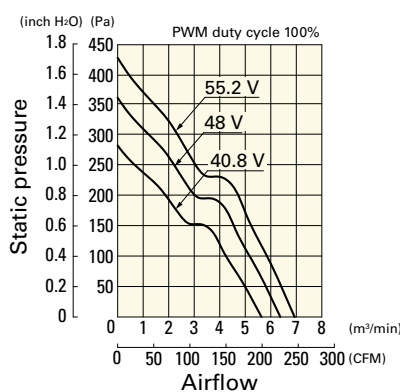


9GV1248P1J01 With pulse sensor with PWM control function

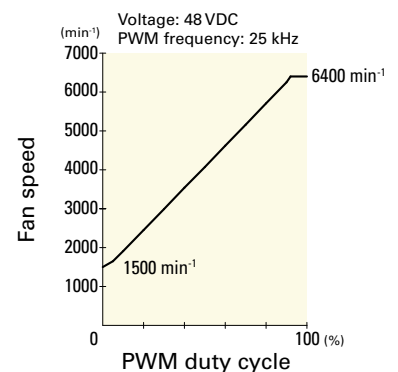
PWM duty cycle



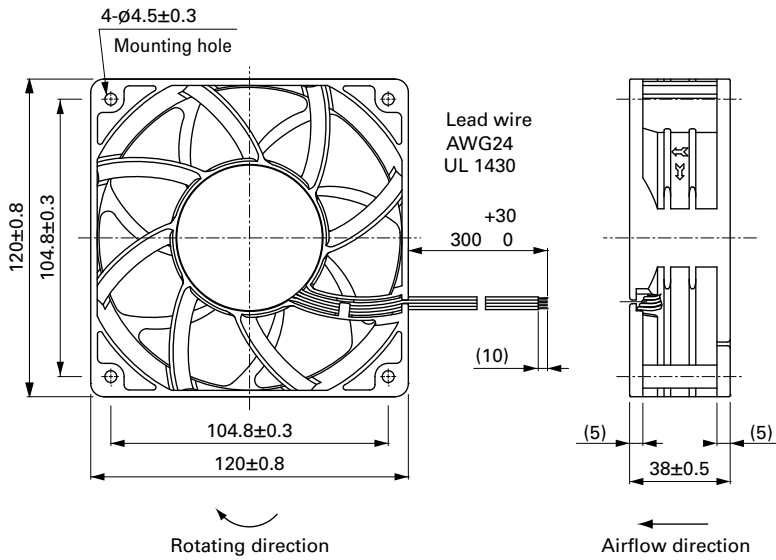
Operating voltage range



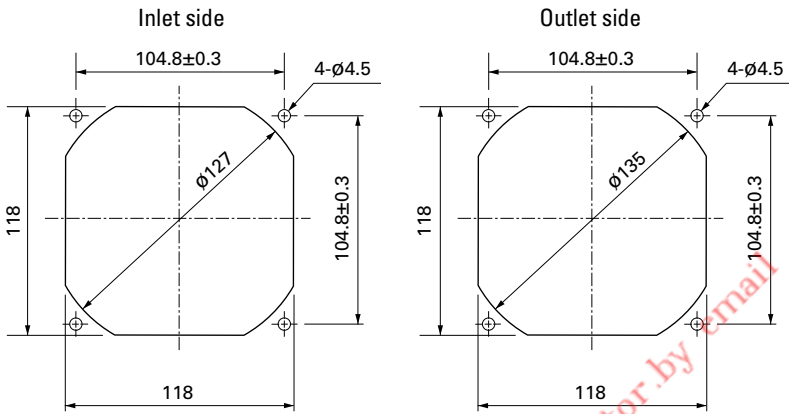
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 514

Model no.: 109-019C, 109-019H, 109-019E, 109-019K

Resin finger guards

page: p. 520

Model no.: 109-1000G

Resin filter kits

page: p. 521

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)

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120×120×38 mm

San Ace 120 9G type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 330 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

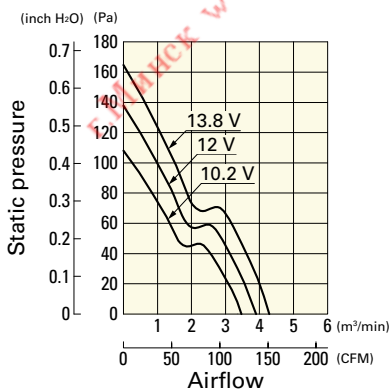
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9G1212G101	12	10.2 to 13.8	0.98	11.76	3600	3.88 137	135 0.542	49	-20 to +70	40000/60°C
9G1212E101			0.61	7.32	3100	3.34 118	100 0.402	46		
9G1212H101		7 to 13.8	0.38	4.56	2600	2.8 99	70.4 0.283	39		
9G1212F101			0.28	3.36	2280	2.45 87	54.2 0.218	36		
9G1212M101			0.21	2.52	1950	2.1 74	39.6 0.159	32		
9G1224G101	24	20.4 to 27.6	0.5	12	3600	3.88 137	135 0.542	49		
9G1224E101			0.34	8.16	3100	3.34 118	100 0.402	46		
9G1224H101		14 to 27.6	0.22	5.28	2600	2.8 99	70.4 0.283	39		
9G1224F101			0.16	3.84	2280	2.45 87	54.2 0.218	36		
9G1224M101			0.11	2.64	1950	2.1 74	39.6 0.159	32		
9G1248G101	48	40.8 to 55.2	0.25	12	3600	3.88 137	135 0.542	49		
9G1248E101			0.17	8.16	3100	3.34 118	100 0.402	46		
9G1248H101			0.11	5.28	2600	2.8 99	70.4 0.283	39		
9G1248F101			0.09	4.32	2280	2.45 87	54.2 0.218	36		
9G1248M101			0.07	3.36	1950	2.1 74	39.6 0.159	32		

Other sensor specifications are available as options. Refer to the index (pp. 549 to 550).

Airflow - Static Pressure Characteristics

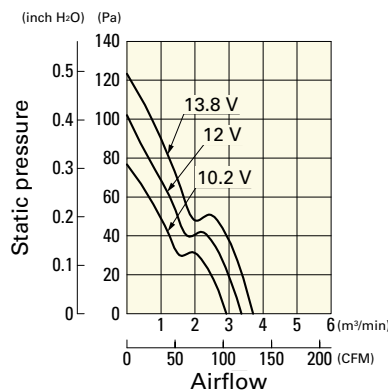
9G1212G101 With pulse sensor

Operating voltage range



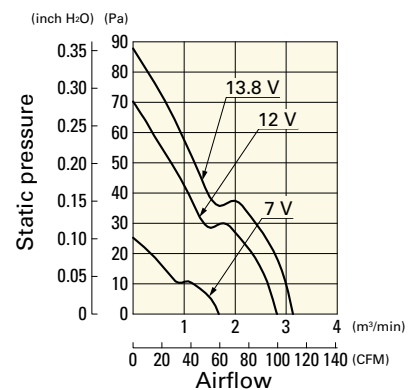
9G1212E101 With pulse sensor

Operating voltage range



9G1212H101 With pulse sensor

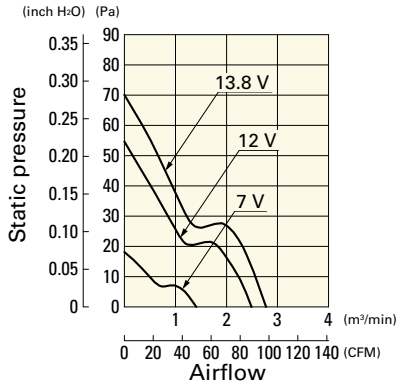
Operating voltage range



Airflow - Static Pressure Characteristics

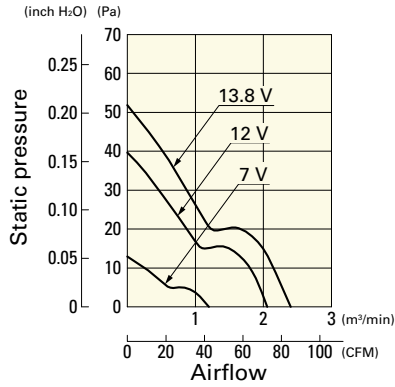
9G1212F101 With pulse sensor

Operating voltage range



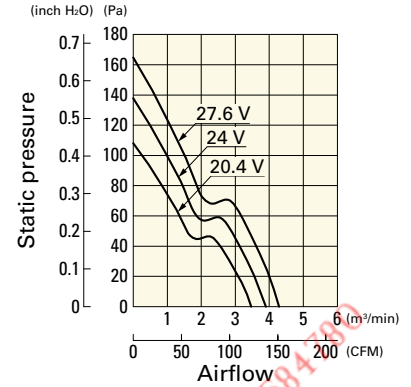
9G1212M101 With pulse sensor

Operating voltage range



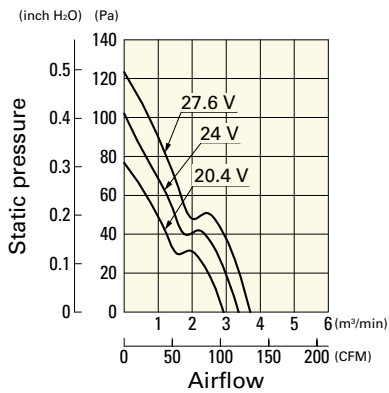
9G1224G101 With pulse sensor

Operating voltage range



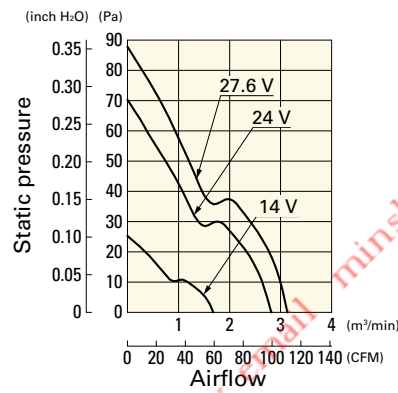
9G1224E101 With pulse sensor

Operating voltage range



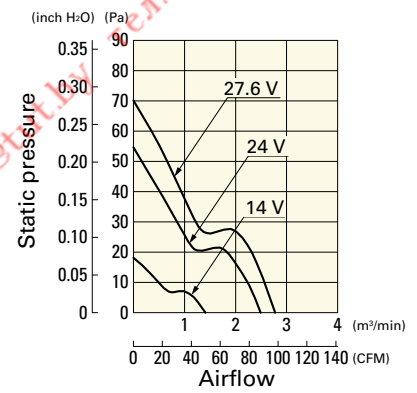
9G1224H101 With pulse sensor

Operating voltage range



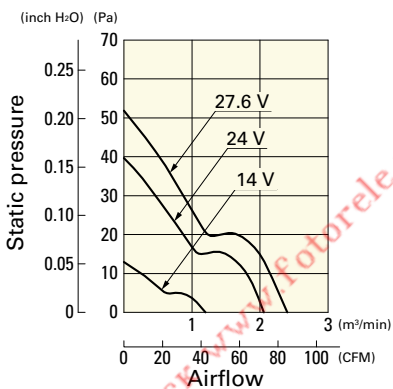
9G1224F101 With pulse sensor

Operating voltage range



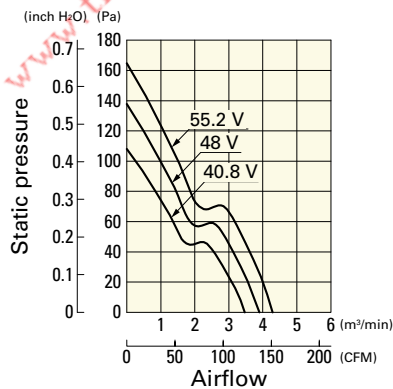
9G1224M101 With pulse sensor

Operating voltage range



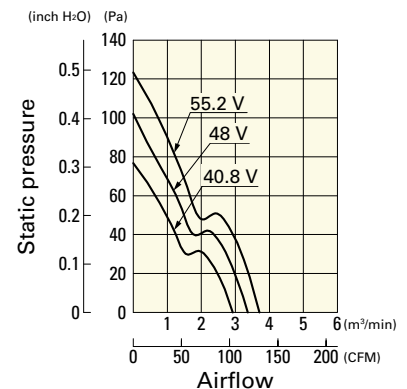
9G1248G101 With pulse sensor

Operating voltage range



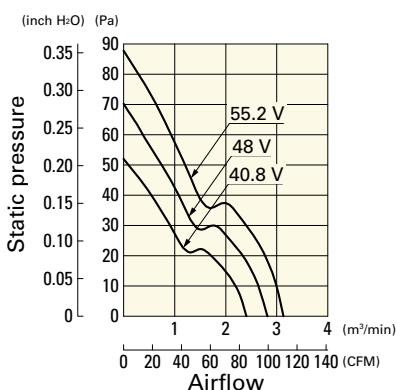
9G1248E101 With pulse sensor

Operating voltage range



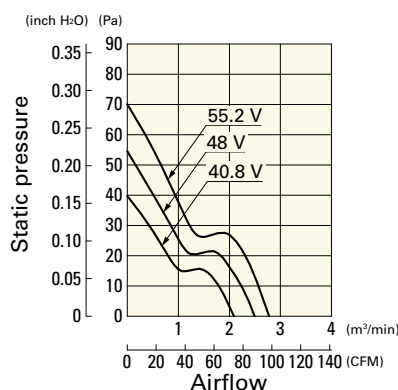
9G1248H101 With pulse sensor

Operating voltage range



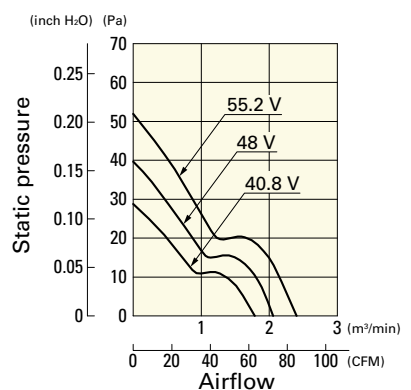
9G1248F101 With pulse sensor

Operating voltage range

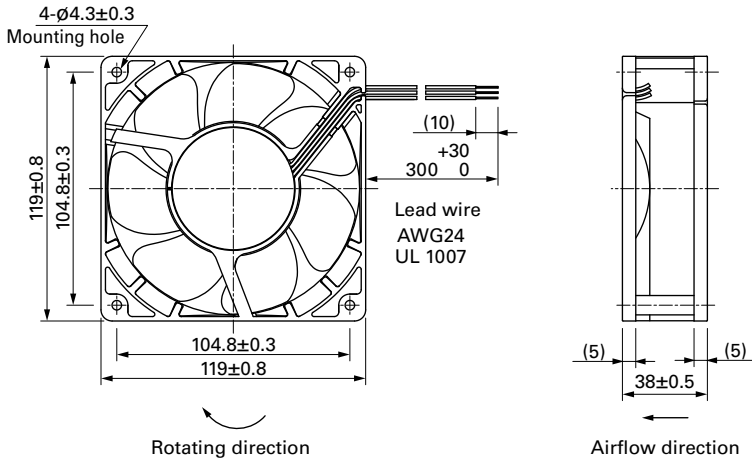


9G1248M101 With pulse sensor

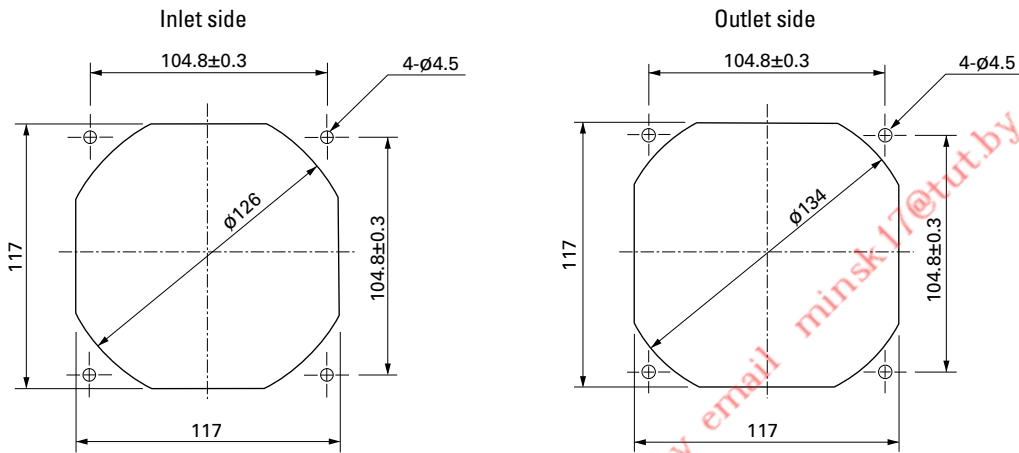
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 514

Model no.: 109-019C, 109-019H, 109-019E, 109-019K

Resin finger guards

page: p. 520

Model no.: 109-1000G

Resin filter kits

page: p. 521

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)



120×120×38 mm

San Ace 120 9SG type Model 9SG1224H101 is not certified.

General Specifications

- Material Frame: Aluminum, Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 400 g

Specifications

The models listed below **have pulse sensors**.

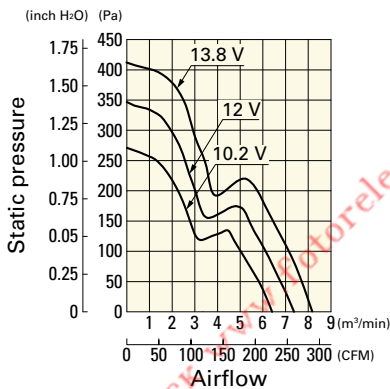
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9SG1212G101	12	10.2 to 13.8	4.0	48.0	6000	7.35 260	340 1.37	64	-20 to +70	40000/60°C
9SG1224G101	24	20.4 to 27.6	2.0	48.0	6000	7.35 260	340 1.37	64		
9SG1224H101			0.46	11.0	3400	4.02 142	126 0.51	48		
9SG1248G101	48	40.8 to 55.2	1.0	48.0	6000	7.35 260	340 1.37	64		

Other sensor specifications are available as options. Refer to the index (p. 558).

Airflow - Static Pressure Characteristics

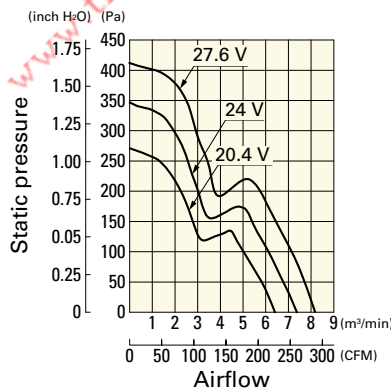
9SG1212G101 With pulse sensor

Operating voltage range



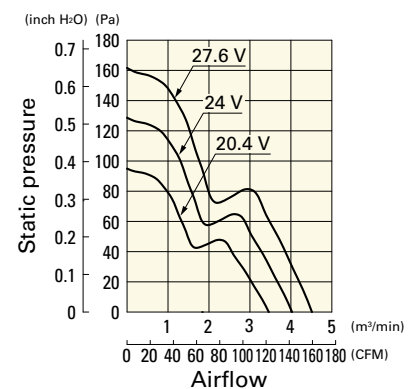
9SG1224G101 With pulse sensor

Operating voltage range



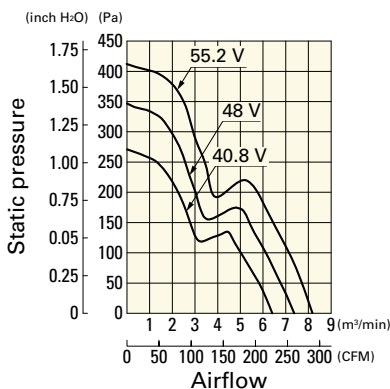
9SG1224H101 With pulse sensor

Operating voltage range

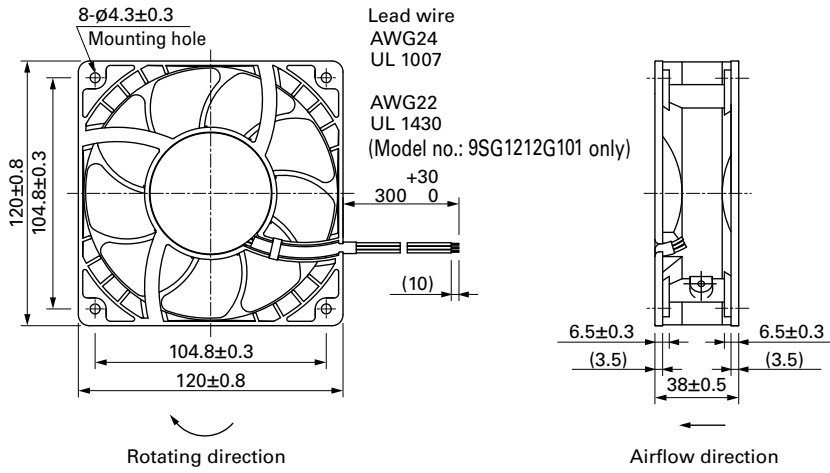


9SG1248G101 With pulse sensor

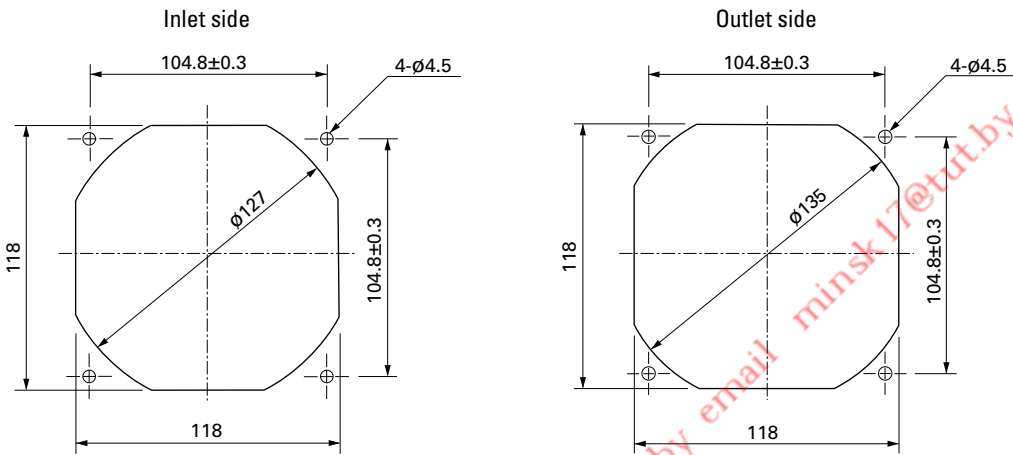
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 514

Model no.: 109-019C, 109-019H, 109-019E, 109-019K

Resin finger guards

page: p. 520

Model no.: 109-1000G

Resin filter kits

page: p. 521

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)

127×127×38 mm

San Ace 127 9P type   



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 350 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

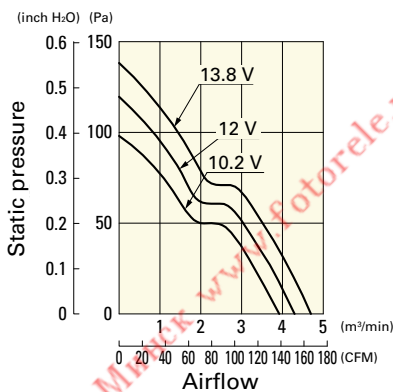
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P1312S101	12	10.2 to 13.8	1.3	15.6	3300	4.2 148	117.6 0.472	47	-20 to +60	40000/60°C
109P1312H101			0.82	9.84	2950	3.8 134	98 0.394	45		
109P1324S101	24	20.4 to 27.6	0.55	13.2	3300	4.2 148	117.6 0.472	47		
109P1324H101			0.41	9.84	2950	3.8 134	98 0.394	45		
109P1348S101	48	40.8 to 55.2	0.3	14.4	3300	4.2 148	117.6 0.472	47		
109P1348H101			0.2	9.6	2950	3.8 134	98 0.394	45		

Other sensor specifications are available as options. Refer to the index (pp. 544 to 545).

Airflow - Static Pressure Characteristics

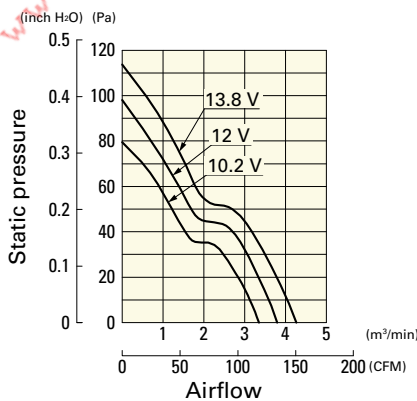
109P1312S101 With pulse sensor

Operating voltage range



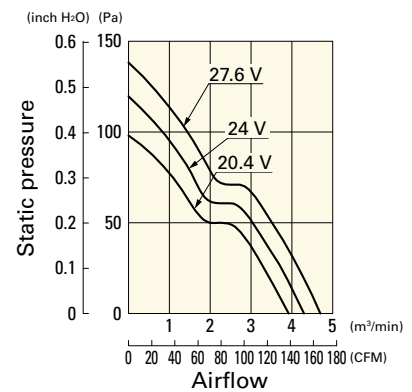
109P1312H101 With pulse sensor

Operating voltage range



109P1324S101 With pulse sensor

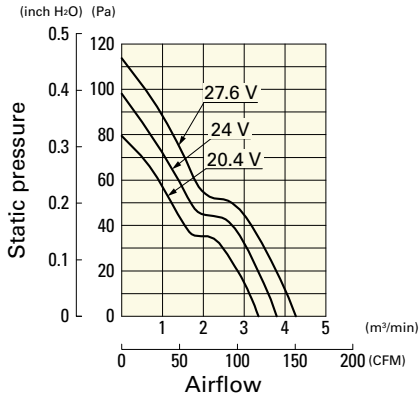
Operating voltage range



Airflow - Static Pressure Characteristics

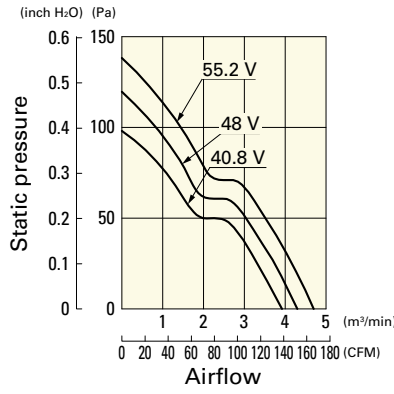
109P1324H101 With pulse sensor

Operating voltage range



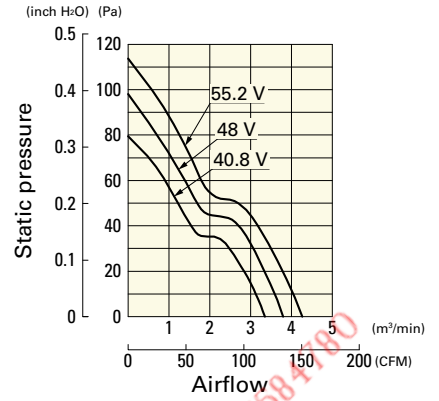
109P1348S101 With pulse sensor

Operating voltage range

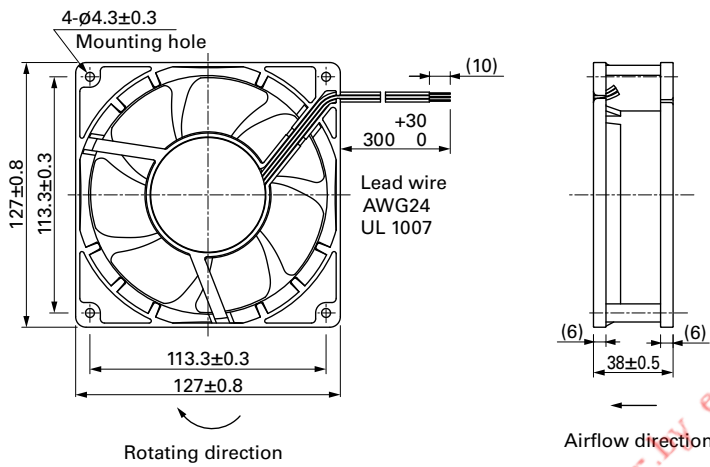


109P1348H101 With pulse sensor

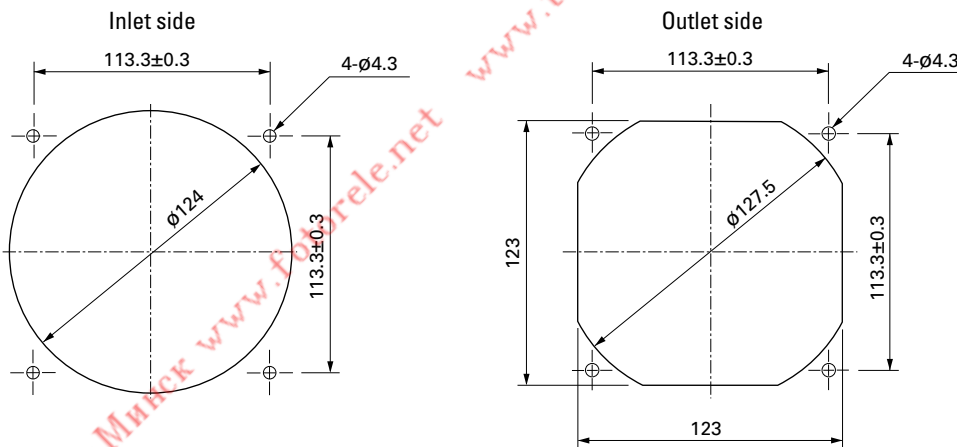
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 514

Model no.: 109-722, 109-723



127×127×38 mm

San Ace 127 9E type

General Specifications

- Material Frame: Aluminum, Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 400 g

Specifications

The models listed below **have pulse sensors**.

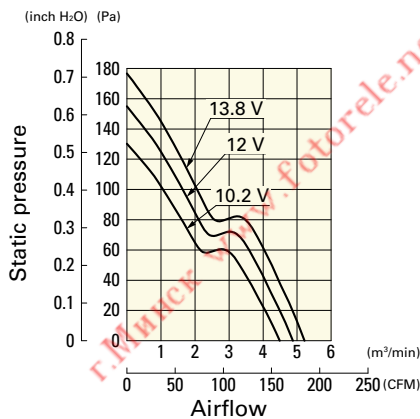
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109E1312A101	12	10.2 to 13.8	1.4	16.8	3850	4.81 170	155 0.622	52	-20 to +70	60000/60°C
109E1312S101			1.2	14.4	3450	4.37 154	125 0.502	49		
109E1324G101	24	20.4 to 27.6	1.1	26.4	4550	5.66 200	216 0.867	57	-20 to +60	40000/60°C
109E1324A101			0.7	16.8	3850	4.81 170	155 0.622	52		
109E1324S101			0.53	12.7	3450	4.37 154	125 0.502	49		
109E1348G101	48	40.8 to 55.2	0.54	25.9	4550	5.66 200	216 0.867	57	-20 to +60	40000/60°C
109E1348A101			0.36	17.3	3850	4.81 170	155 0.622	52		
109E1348S101			0.28	13.4	3450	4.37 154	125 0.502	49		

Other sensor specifications are available as options. Refer to the index (p. 542).

Airflow - Static Pressure Characteristics

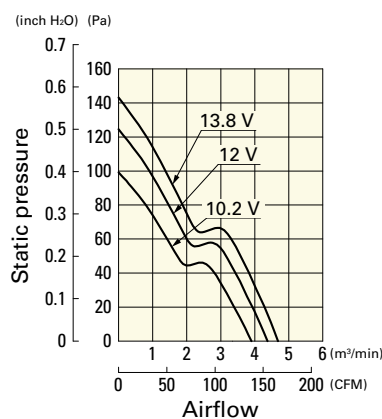
109E1312A101 With pulse sensor

Operating voltage range



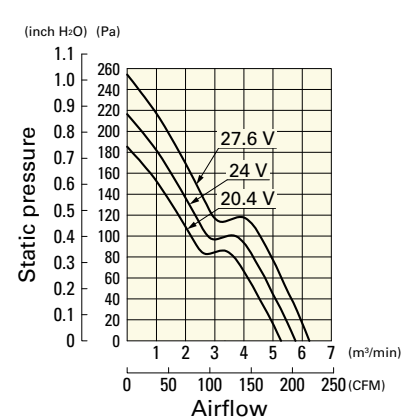
109E1312S101 With pulse sensor

Operating voltage range



109E1324G101 With pulse sensor

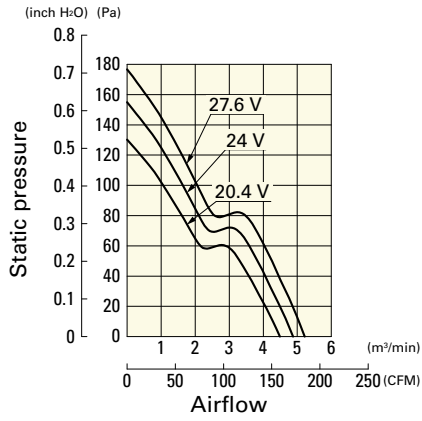
Operating voltage range



Airflow - Static Pressure Characteristics

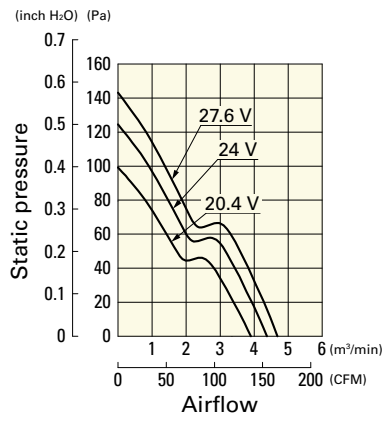
109E1324A101 With pulse sensor

Operating voltage range



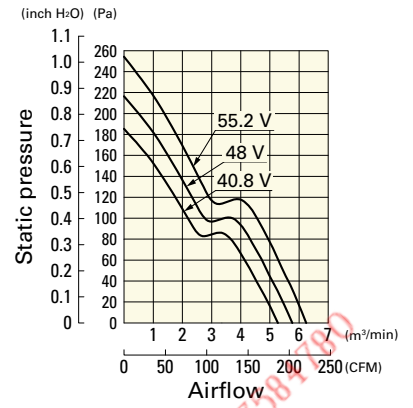
109E1324S101 With pulse sensor

Operating voltage range



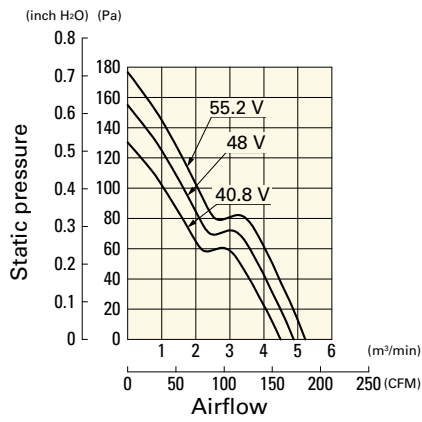
109E1348G101 With pulse sensor

Operating voltage range



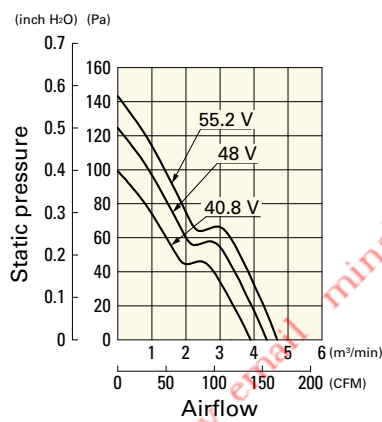
109E1348A101 With pulse sensor

Operating voltage range

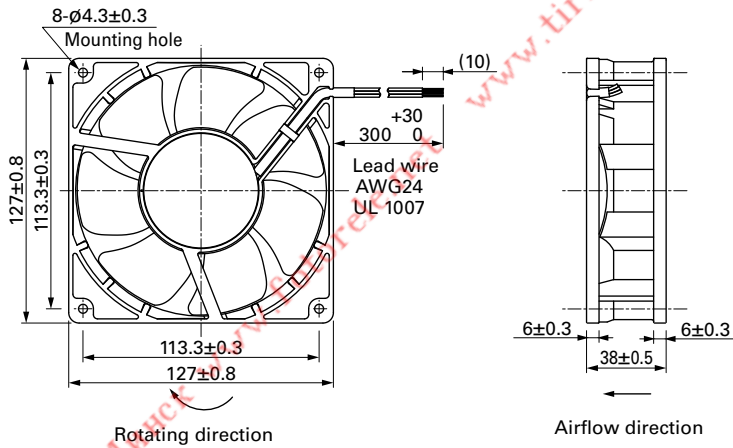


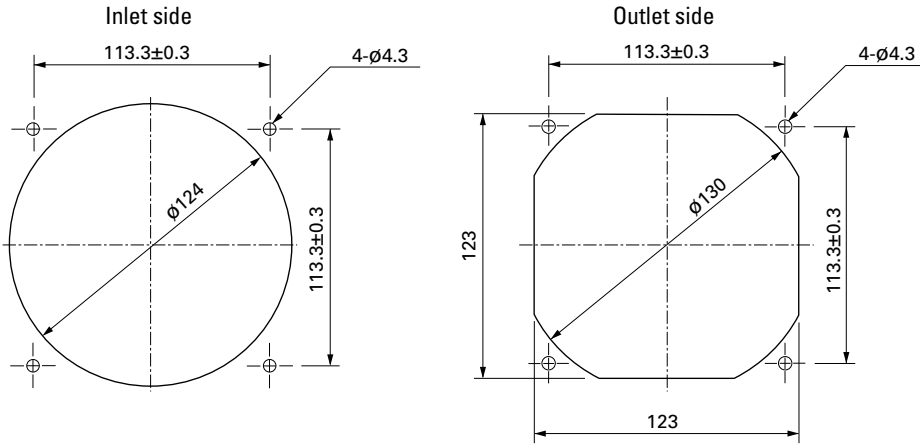
109E1348S101 With pulse sensor

Operating voltage range



Dimensions (unit: mm)



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

Finger guards

page: p. 514

Model no.: 109-722, 109-723

г. Минск www.fotorele.net www.tiristor.by email minsk17@tut.by тел. +375447584780



140×140×38 mm

San Ace 140 9GV type

General Specifications

- Material Frame: Aluminum, Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 630 g

Specifications

The models listed below **have pulse sensors with PWM control function.**

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]
9GV1412P1G001	12	10.8 to 13.2	100	4.6	55.2	7600	8.8 310	640 2.57	70	-20 to +70	40000/60°C
			20	0.26	3.12	2300	2.66 93	80 0.32	39		
9GV1412P1S001			100	3.1	37.2	6650	7.7 272	480 1.93	67		
			20	0.26	3.12	2300	2.66 93	80 0.32	39		
9GV1412P1H001			100	1.7	20.4	5200	6.0 212	300 1.2	62		
			20	0.26	3.12	2300	2.66 93	80 0.32	39		
9GV1424P1G001	24	21.6 to 26.4	100	2.3	55.2	7600	8.8 310	640 2.57	70		
			20	0.13	3.12	2300	2.66 93	80 0.32	39		
9GV1424P1S001			100	1.55	37.2	6650	7.7 272	480 1.93	67		
			20	0.13	3.12	2300	2.66 93	80 0.32	39		
9GV1424P1H001			100	0.85	20.4	5200	6.0 212	300 1.2	62		
			20	0.13	3.12	2300	2.66 93	80 0.32	39		
9GV1448P1G001	48	36 to 60	100	1.15	55.2	7600	8.8 310	640 2.57	70		
			20	0.11	5.28	2300	2.66 93	80 0.32	39		
9GV1448P1S001			100	0.78	37.44	6650	7.7 272	480 1.93	67		
			20	0.11	5.28	2300	2.66 93	80 0.32	39		
9GV1448P1H001			100	0.42	20.16	5200	6.0 212	300 1.2	62		
			20	0.11	5.28	2300	2.66 93	80 0.32	39		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

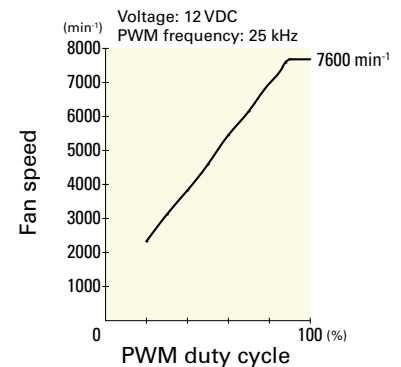
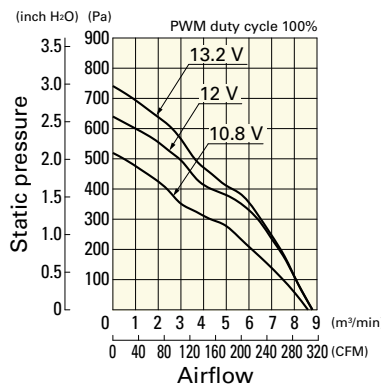
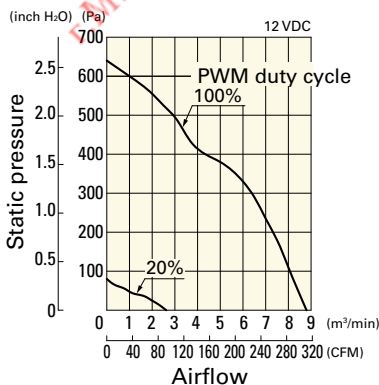
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV1412P1G001 With pulse sensor with PWM control function

PWM duty cycle

Operating voltage range

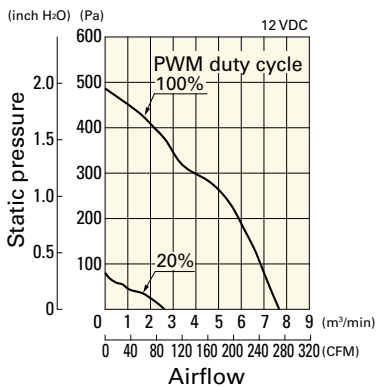
PWM duty - Speed characteristics example



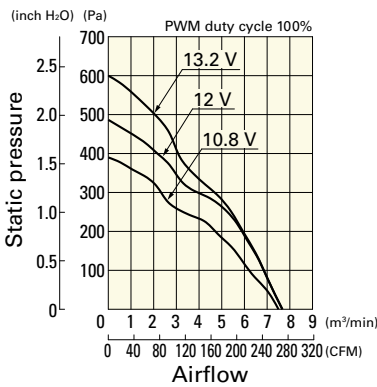
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV1412P1S001 With pulse sensor with PWM control function

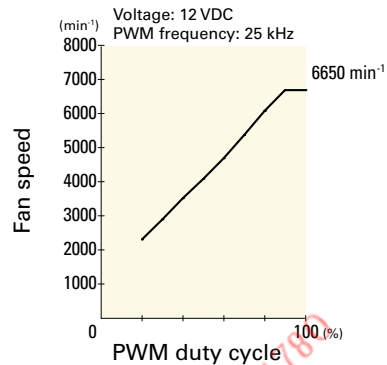
PWM duty cycle



Operating voltage range

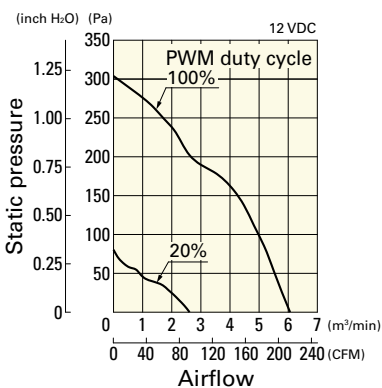


PWM duty - Speed characteristics example

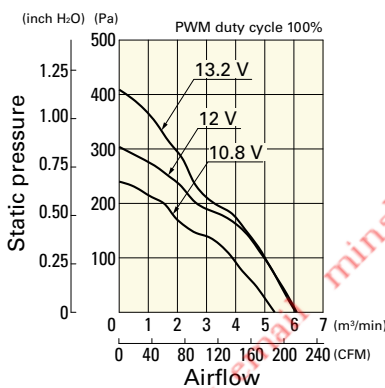


9GV1412P1H001 With pulse sensor with PWM control function

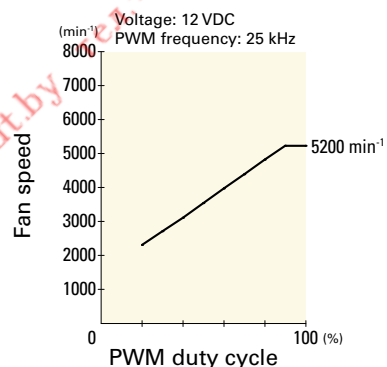
PWM duty cycle



Operating voltage range

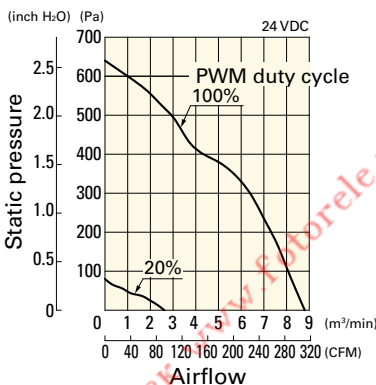


PWM duty - Speed characteristics example

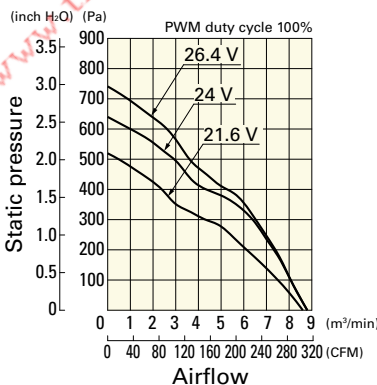


9GV1424P1G001 With pulse sensor with PWM control function

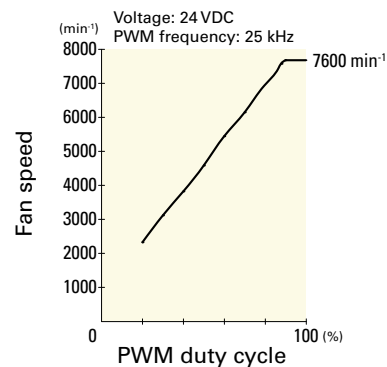
PWM duty cycle



Operating voltage range

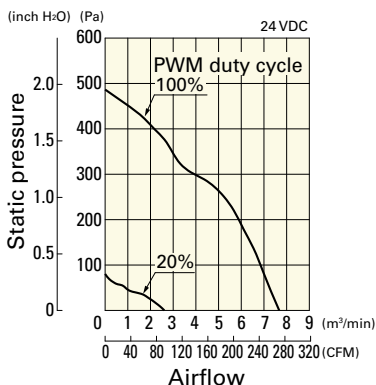


PWM duty - Speed characteristics example

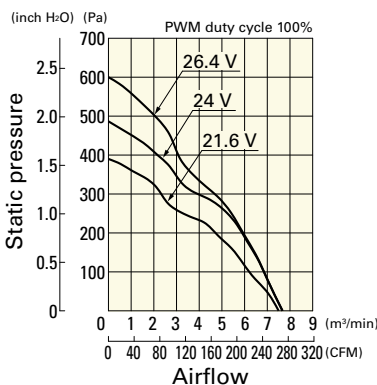


9GV1424P1S001 With pulse sensor with PWM control function

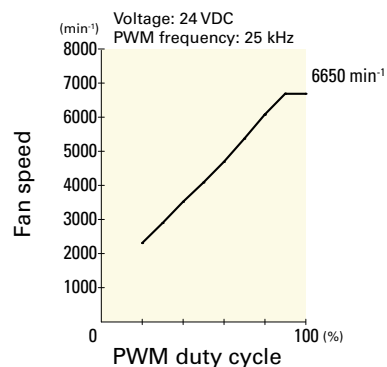
PWM duty cycle



Operating voltage range



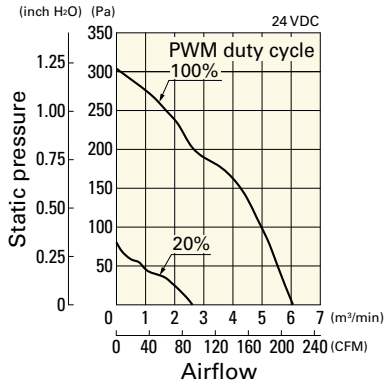
PWM duty - Speed characteristics example



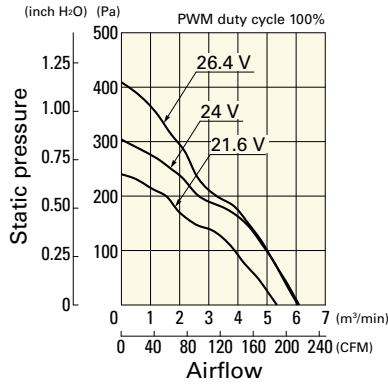
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV1424P1H001 With pulse sensor with PWM control function

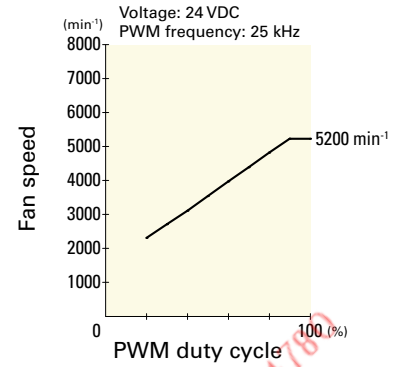
PWM duty cycle



Operating voltage range

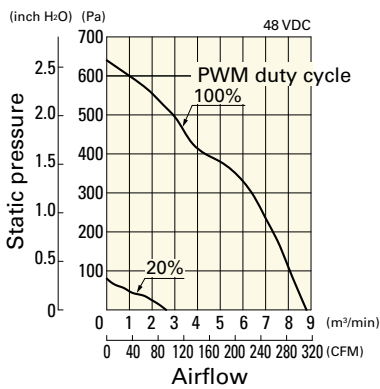


PWM duty - Speed characteristics example

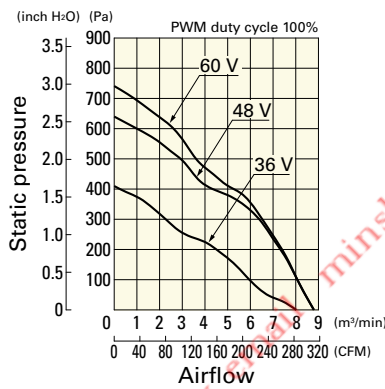


9GV1448P1G001 With pulse sensor with PWM control function

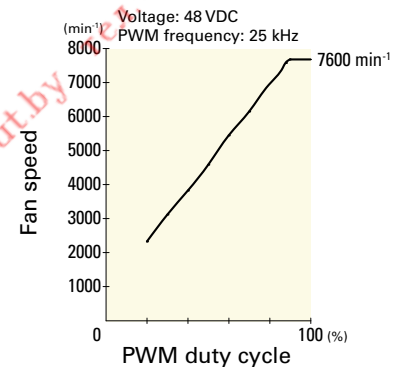
PWM duty cycle



Operating voltage range

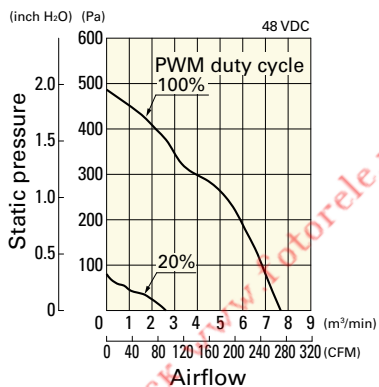


PWM duty - Speed characteristics example

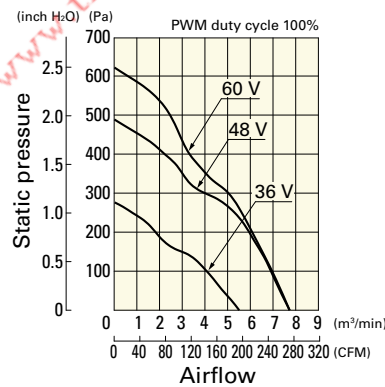


9GV1448P1S001 With pulse sensor with PWM control function

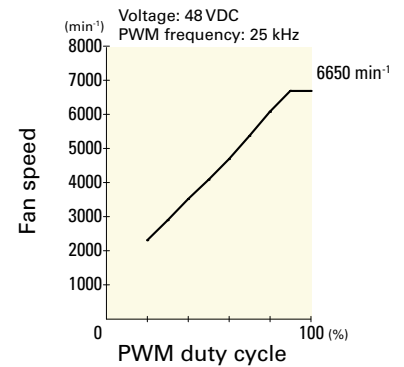
PWM duty cycle



Operating voltage range

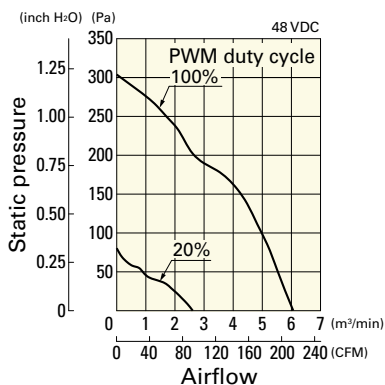


PWM duty - Speed characteristics example

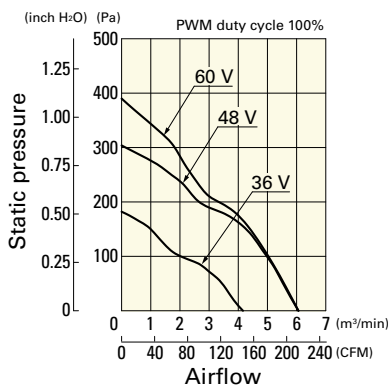


9GV1448P1H001 With pulse sensor with PWM control function

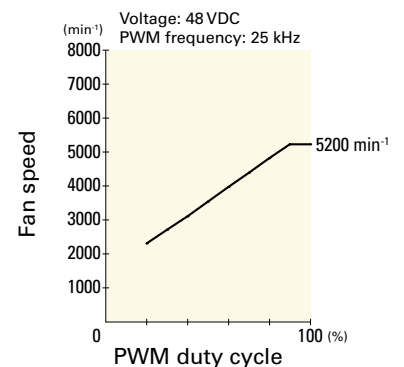
PWM duty cycle



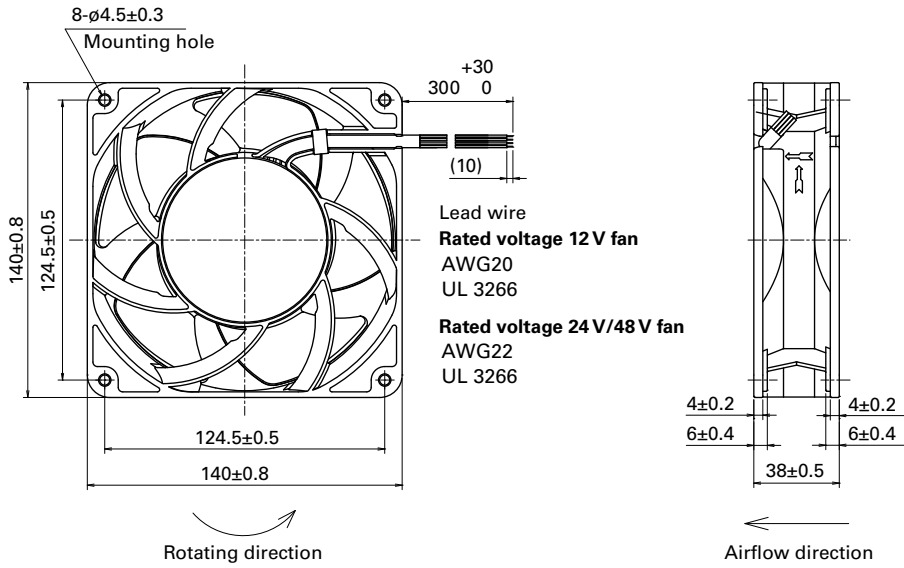
Operating voltage range



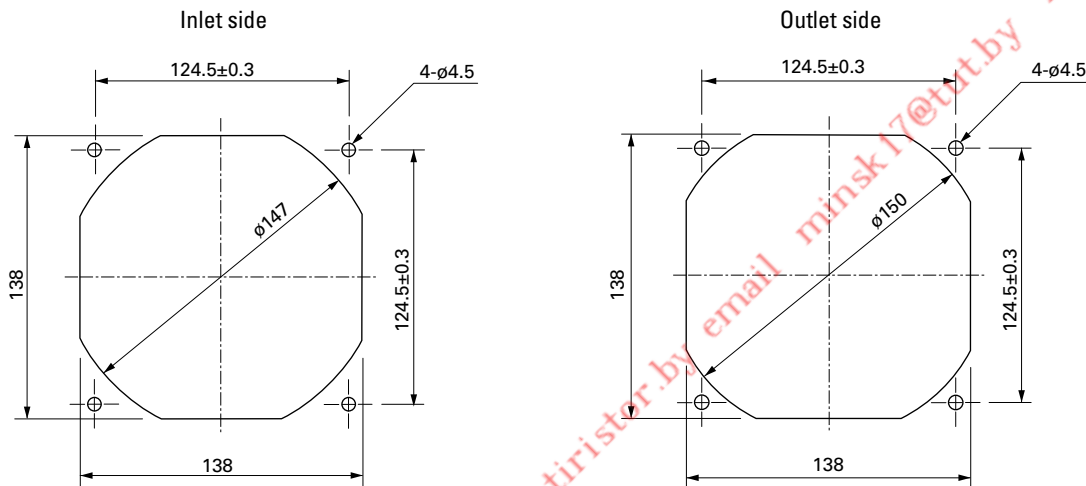
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 514

Model no.: 109-719, 109-719H

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140×140×38 mm

San Ace 140 9P type   

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 450 g

Specifications

The models listed below **have ribs and pulse sensors.**

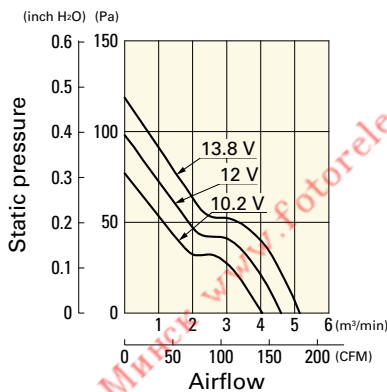
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109P1412H101	12	10.2 to 13.8	0.73	8.76	2600	4.5 159	94 0.378	46	-20 to +70	40000/60°C
109P1412M101			0.33	3.96	1900	3.3 117	52 0.209	38		
109P1424H101	24	20.4 to 27.6	0.37	8.88	2600	4.5 159	94 0.378	46		
109P1424M101			0.16	3.84	1900	3.3 117	52 0.209	38		
109P1448H101	48	40.8 to 55.2	0.2	9.6	2600	4.5 159	94 0.378	46		
109P1448M101			0.09	4.32	1900	3.3 117	52 0.209	38		

Other sensor specifications are available as options. Refer to the index (p. 545).

Airflow - Static Pressure Characteristics

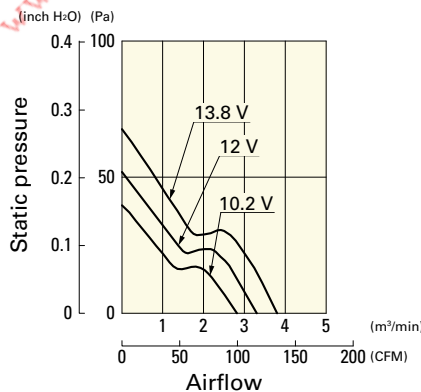
109P1412H101 With pulse sensor

Operating voltage range



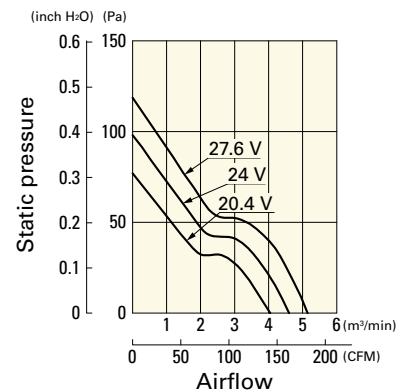
109P1412M101 With pulse sensor

Operating voltage range



109P1424H101 With pulse sensor

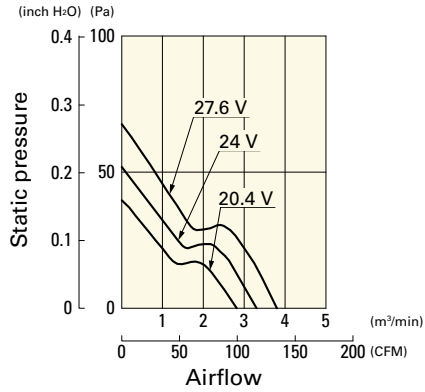
Operating voltage range



Airflow - Static Pressure Characteristics

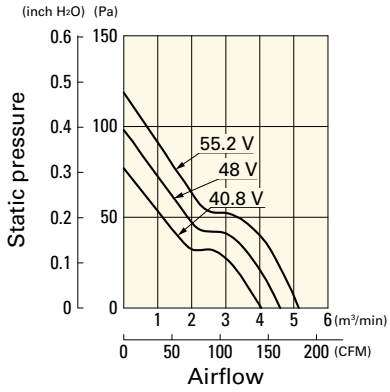
109P1424M101 With pulse sensor

Operating voltage range



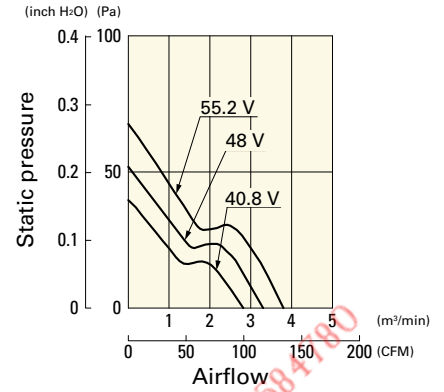
109P1448H101 With pulse sensor

Operating voltage range

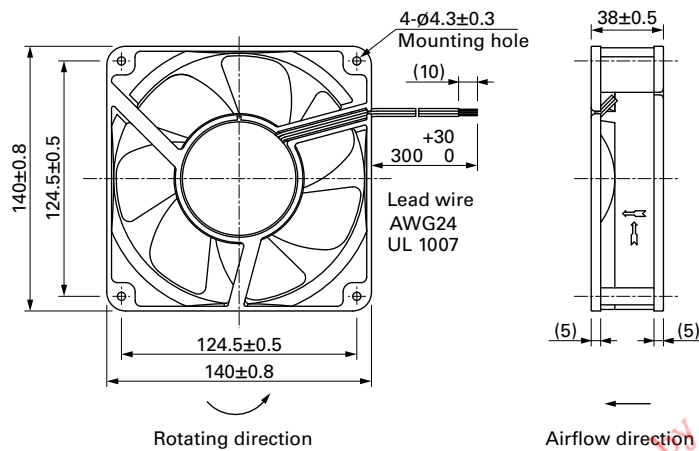


109P1448M101 With pulse sensor

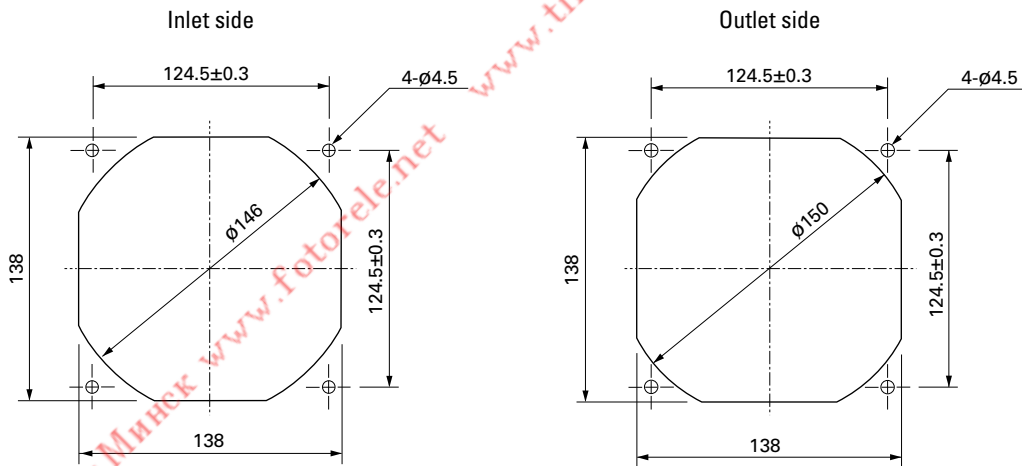
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards page: p. 514
Model no.: 109-719, 109-719H



150×150×50 mm

San Ace 150 9GV type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 529.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue (Sensor) Yellow
- Mass 450 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

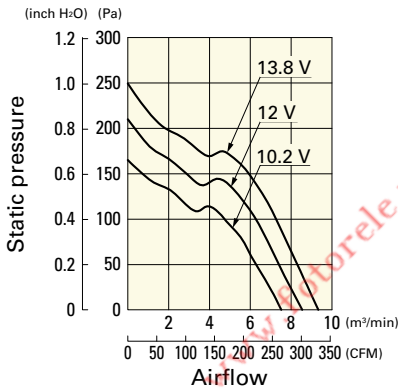
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GV1512H501	12	10.2 to 13.8	2.9	34.8	3900	8.54 300	210 0.84	61	-20 to +70	40000/60°C
9GV1512M501			1.2	14.4	3000	6.35 224	132 0.53	53		
9GV1524M501	24	20.4 to 27.6	0.6	14.4	3000	6.35 224	132 0.53	53		

Other sensor specifications are available as options. Refer to the index (pp. 555 to 556).

Airflow - Static Pressure Characteristics

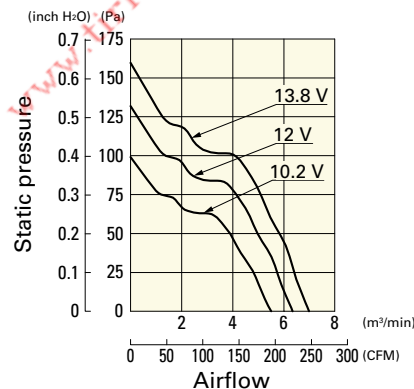
9GV1512H501 With pulse sensor

Operating voltage range



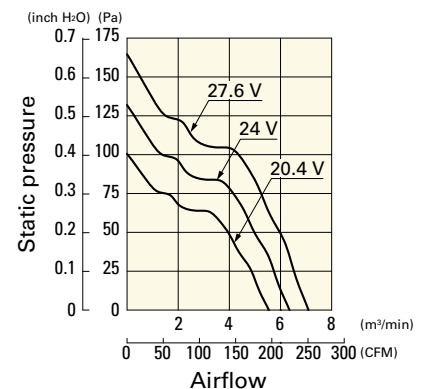
9GV1512M501 With pulse sensor

Operating voltage range

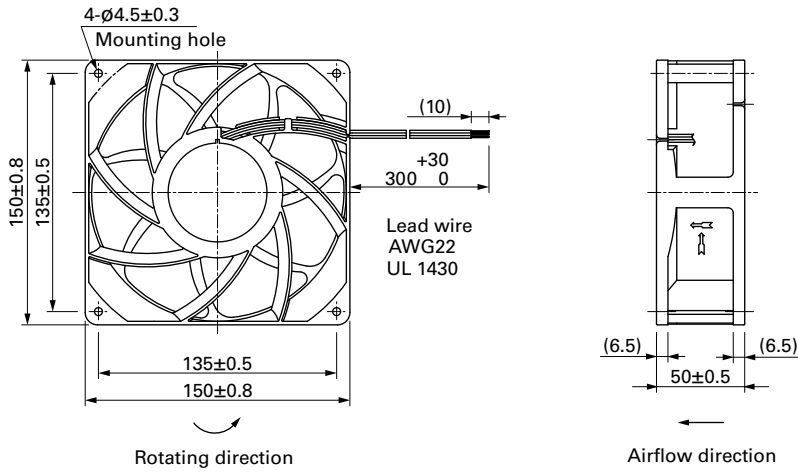


9GV1524M501 With pulse sensor

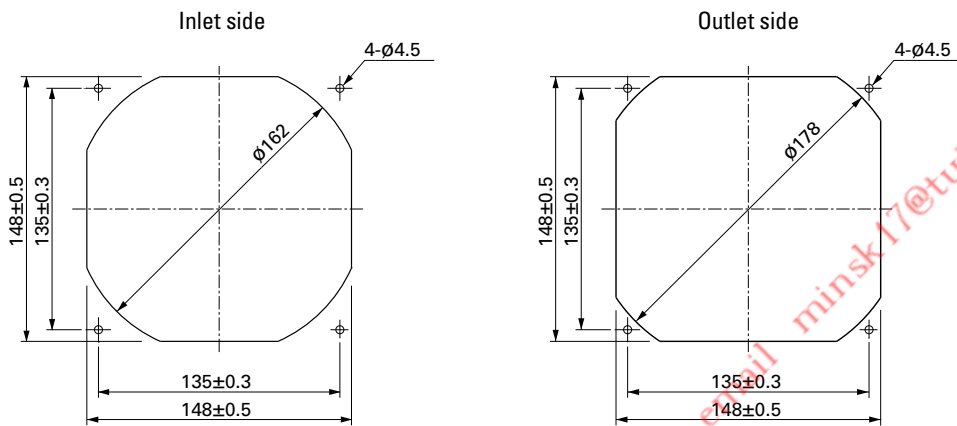
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 514

Model no.: 109-1051, 109-1052

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