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	9GA	9GV	9HV	etc.										
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	ø172	36×36	ø172×147 (sidecut)	ø172×150 (sidecut)	ø200
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				02 or 002				D01 or D001						
	With a pulse sensor				Without a sensor				With a lock sensor						
Frame form	Nil				1				3						
	Plastic frame: Ribbed frame Aluminum frame: Ribless frame				Plastic frame: Ribless frame				40 × 40 × 28 mm for 1U applications Plastic frame: Ribbed frame						

How to Read Specifications (DC fan)

The following is a sample. See respective product pages for detailed information.

Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	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.

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) Expected life at 40°C is for reference only.
- Motor protection function ..... Locked rotor burnout protection, Reverse polarity protection For details, please refer to p. 599.
- 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 [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	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			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			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		
9G0624P4F001			100	0.17	4.08	7800	1.0	35.3	150	0.6	43		
			20	0.03	0.72	1800	0.23	8.1	8	0.03	14		
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		

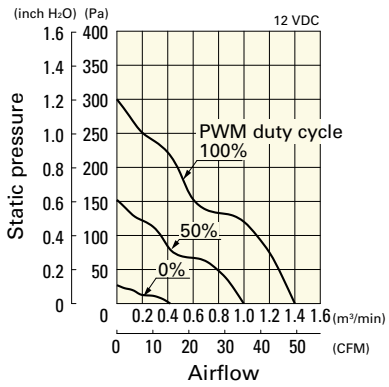
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note 1: Sensor and control options are available for selection. Refer to the table on p. 626.
Note 2: The » mark indicates Short Lead Time Service applicable models. See p. 654 for details.

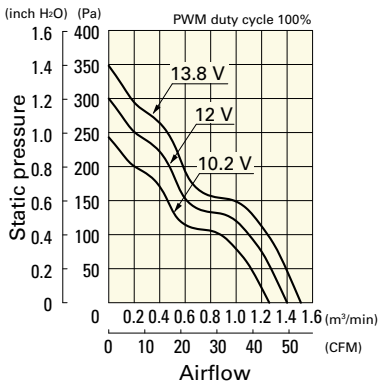
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9G0612P4S001 With pulse sensor with PWM control function

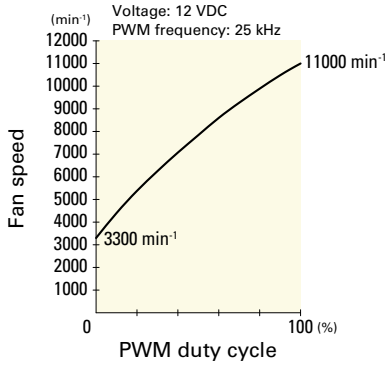
PWM duty cycle



Operating voltage range



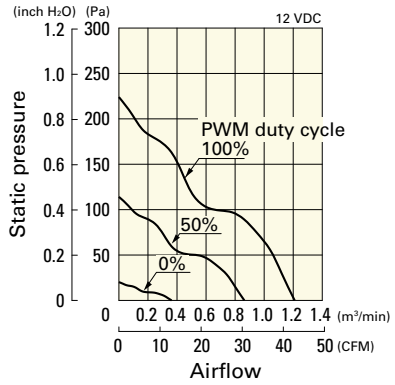
PWM duty - Speed characteristics example



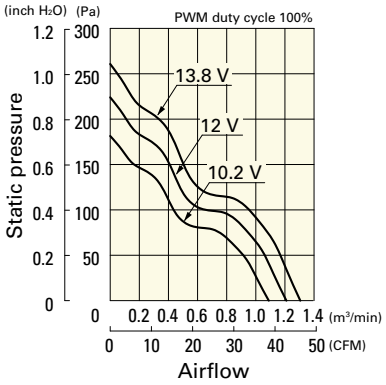
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9G0612P4H001 With pulse sensor with PWM control function

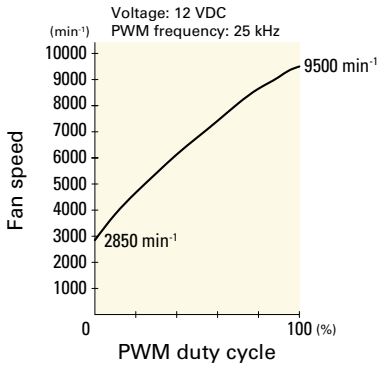
PWM duty cycle



Operating voltage range

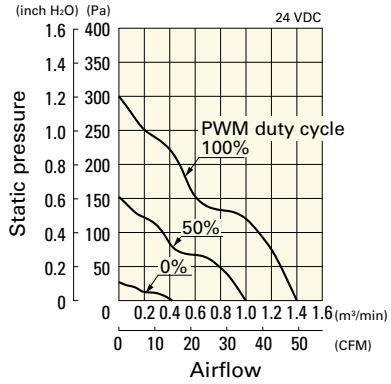


PWM duty - Speed characteristics example

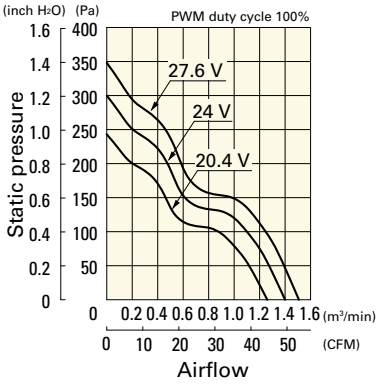


9G0624P4S001 With pulse sensor with PWM control function

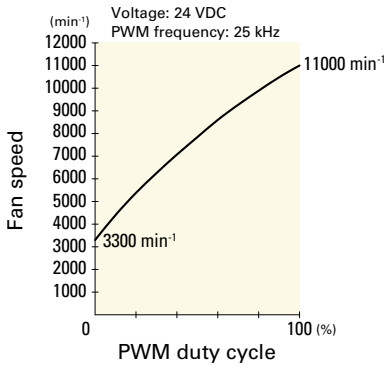
PWM duty cycle



Operating voltage range

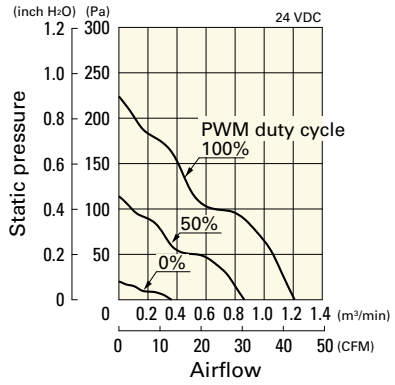


PWM duty - Speed characteristics example

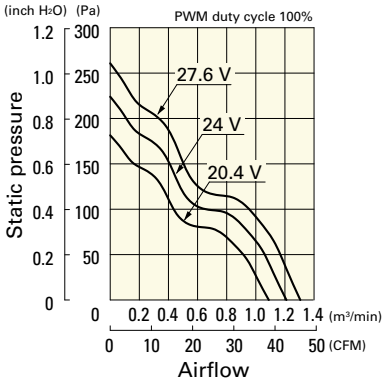


9G0624P4H001 With pulse sensor with PWM control function

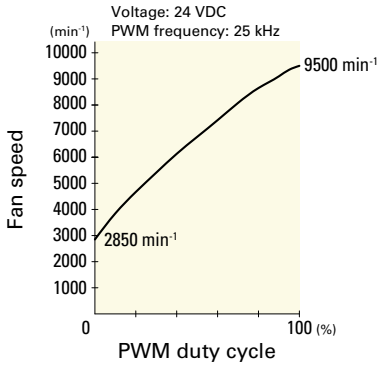
PWM duty cycle



Operating voltage range

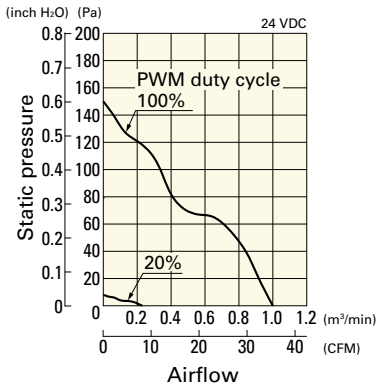


PWM duty - Speed characteristics example

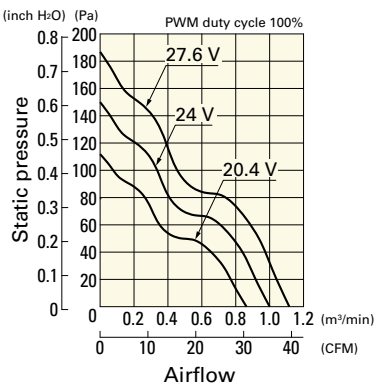


9G0624P4F001 With pulse sensor with PWM control function

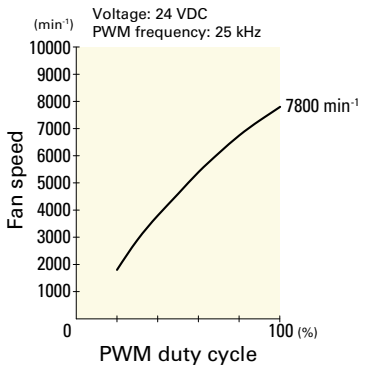
PWM duty cycle



Operating voltage range



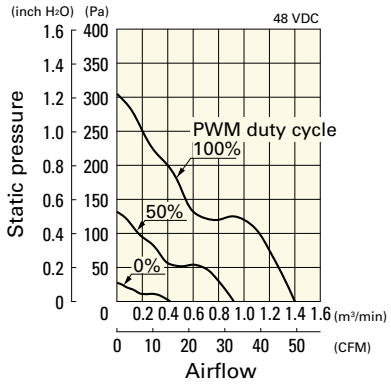
PWM duty - Speed characteristics example



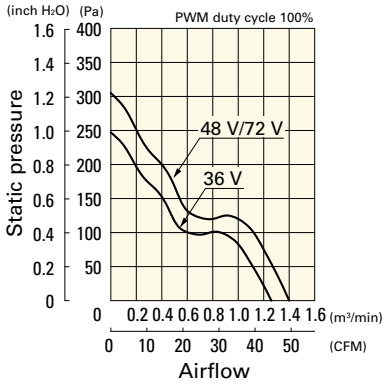
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9G0648P4S001 With pulse sensor with PWM control function

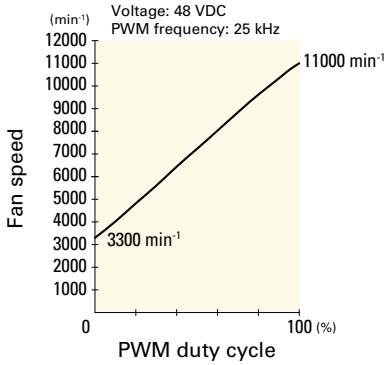
PWM duty cycle



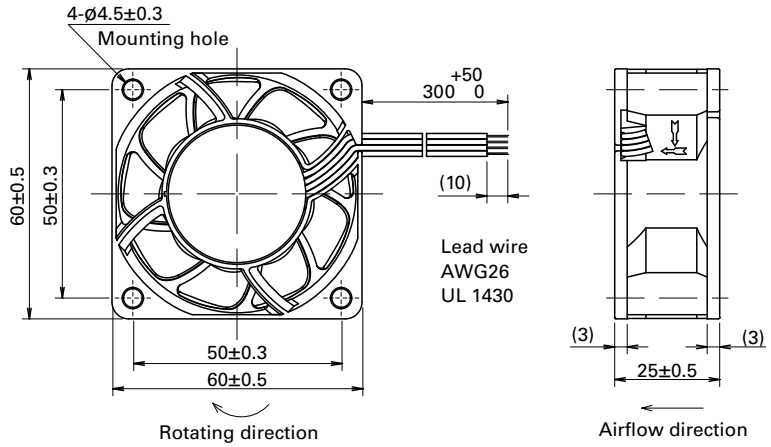
Operating voltage range



PWM duty - Speed characteristics example

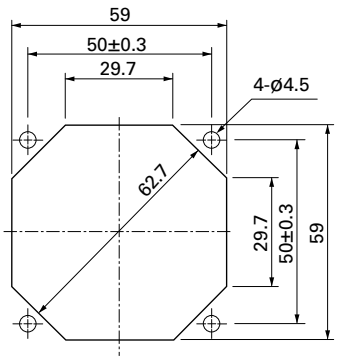


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards page: p. 584

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

Resin finger guards page: p. 591

Model no.: 109-1003G

Resin filter kits page: p. 592

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

DC Fan

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) Expected life at 40°C is for reference only.
- Motor protection function ..... Locked rotor burnout protection, Reverse polarity protection For details, please refer to p. 599.
- 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.

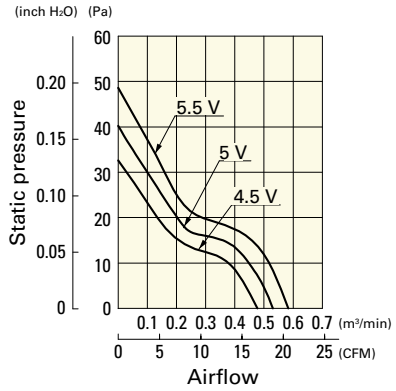
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [˚C]	Expected life [h]
109R0605H401	5	4.5 to 5.5	0.34	1.7	3800	0.53	18.7	40.2	0.161	28	-20 to +70	60000/60˚C (90000/40˚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 (70000/40˚C)
109R0612G401			0.24	2.88	5600	0.78	27.5	87.3	0.351	39	-20 to +70	60000/60˚C (90000/40˚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			0.09	1.08	3200	0.44	15.5	29.4	0.118	24		
109R0612M401		7 to 13.8	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	-20 to +60	40000/60˚C (70000/40˚C)
109R0624G401		20.4 to 27.6	0.13	3.12	5600	0.78	27.5	87.3	0.351	39	-20 to +70	
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		60000/60˚C (90000/40˚C)
109R0624H401			0.06	1.44	3800	0.53	18.7	40.2	0.161	28		
109R0624F401			0.05	1.2	3200	0.44	15.5	29.4	0.118	24		
109R0624M401		14 to 27.6	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 (70000/40˚C)
109R0648G401		43 to 53	0.07	3.36	5600	0.78	27.5	87.3	0.351	39		
109R0648H401		40 to 53	0.04	1.92	3800	0.53	18.7	40.2	0.161	28	-20 to +70	60000/60˚C (90000/40˚C)

Note 1: Sensor and control options are available for selection. Refer to the table on pp. 622 to 623.
Note 2: The » mark indicates Short LeadTime Service applicable models. See p. 654 for details.

Airflow - Static Pressure Characteristics

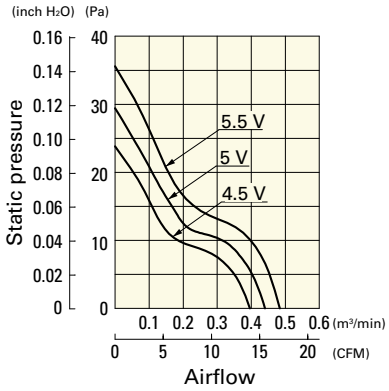
109R0605H401 With pulse sensor

Operating voltage range



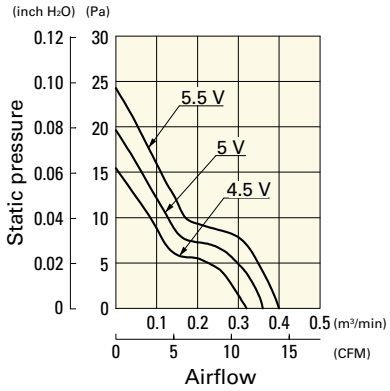
109R0605F401 With pulse sensor

Operating voltage range



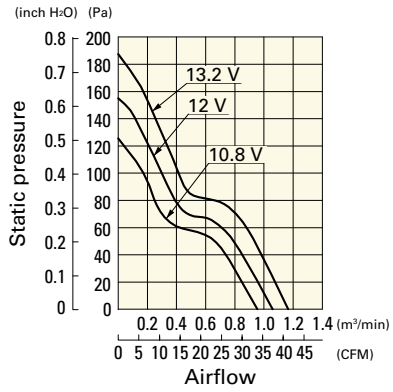
109R0605M401 With pulse sensor

Operating voltage range



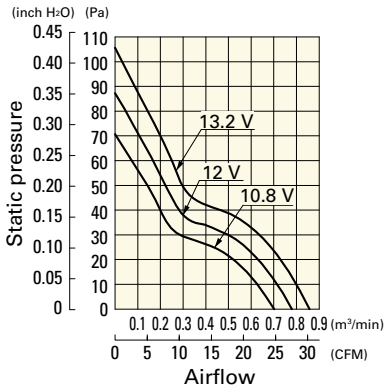
109R0612J401 With pulse sensor

Operating voltage range



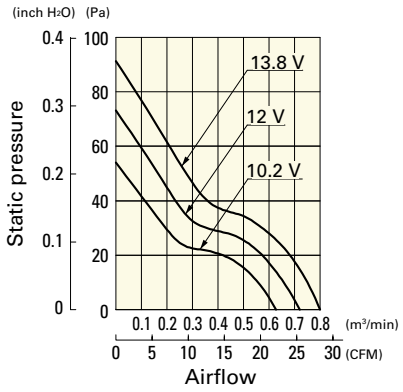
109R0612G401 With pulse sensor

Operating voltage range



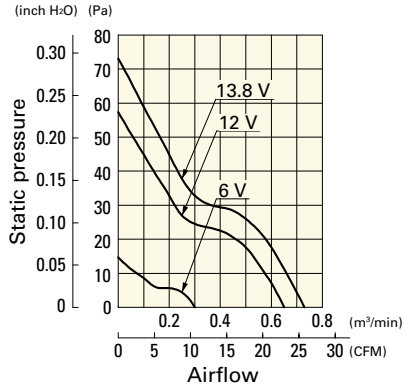
109R0612D401 With pulse sensor

Operating voltage range



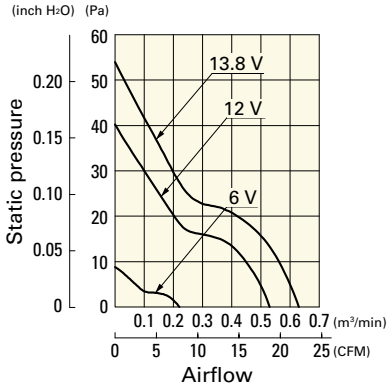
109R0612S401 With pulse sensor

Operating voltage range



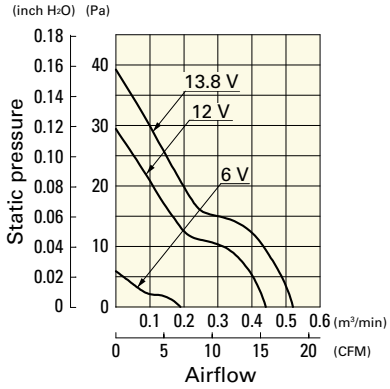
109R0612H401 With pulse sensor

Operating voltage range



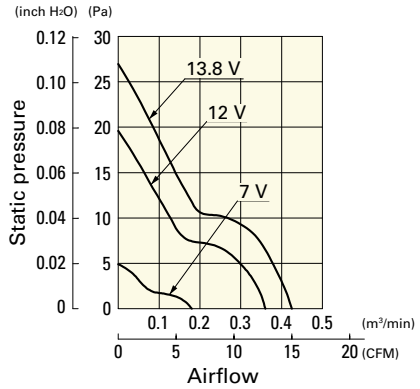
109R0612F401 With pulse sensor

Operating voltage range



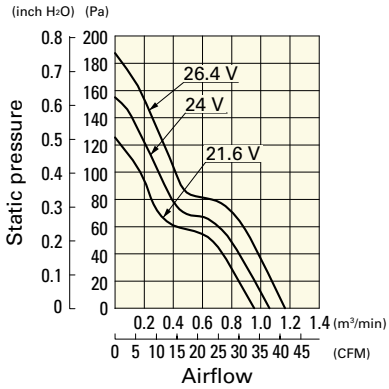
109R0612M401 With pulse sensor

Operating voltage range



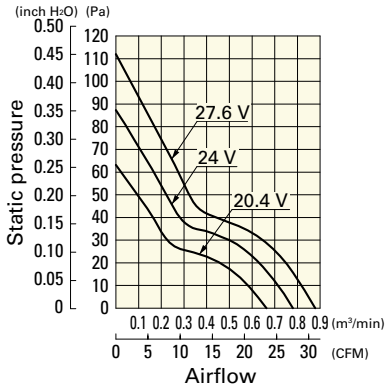
109R0624J401 With pulse sensor

Operating voltage range



109R0624G401 With pulse sensor

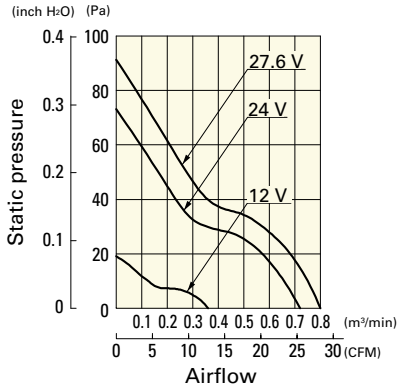
Operating voltage range



Airflow - Static Pressure Characteristics

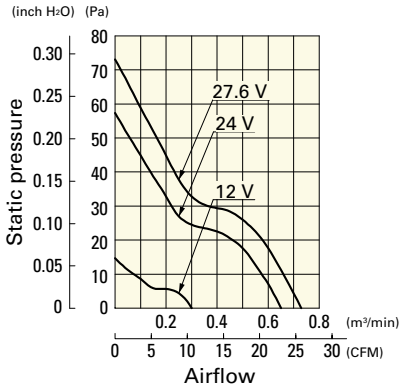
109R0624D401 With pulse sensor

Operating voltage range



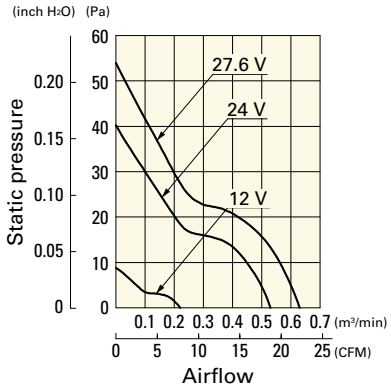
109R0624S401 With pulse sensor

Operating voltage range



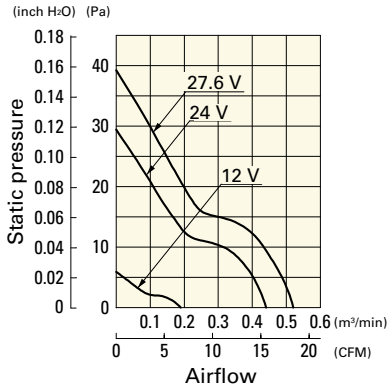
109R0624H401 With pulse sensor

Operating voltage range



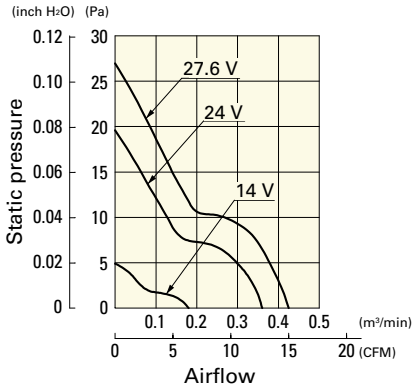
109R0624F401 With pulse sensor

Operating voltage range



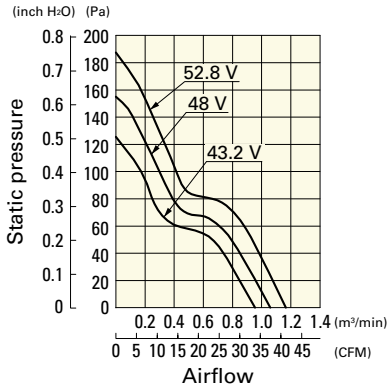
109R0624M401 With pulse sensor

Operating voltage range



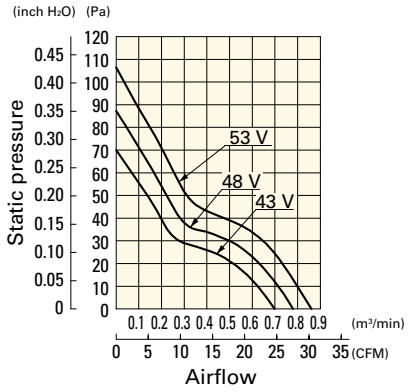
109R0648J401 With pulse sensor

Operating voltage range



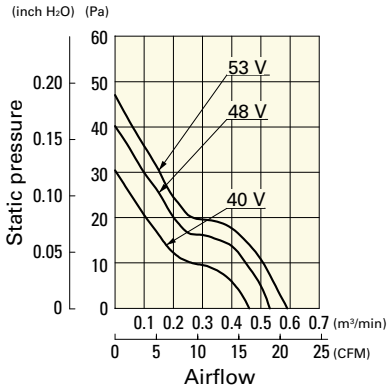
109R0648G401 With pulse sensor

Operating voltage range

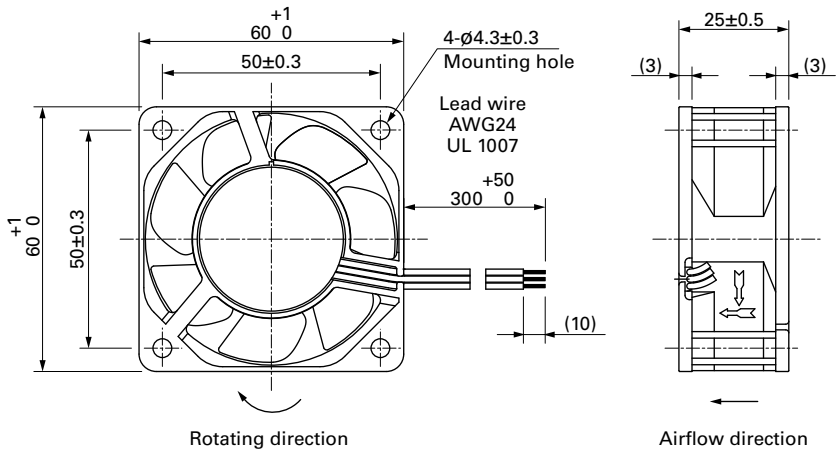


109R0648H401 With pulse sensor

Operating voltage range

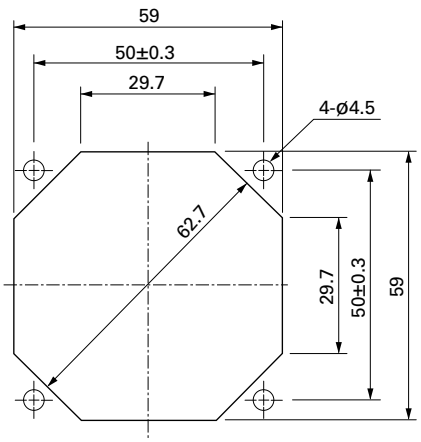


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards page: p. 584

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

Resin filter kits page: p. 592

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

Resin finger guards page: p. 591

Model no.: 109-1003G

DC Fan

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) Expected life at 40°C is for reference only.
- Motor protection function ..... Locked rotor burnout protection, Reverse polarity protection For details, please refer to p. 599.
- 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.

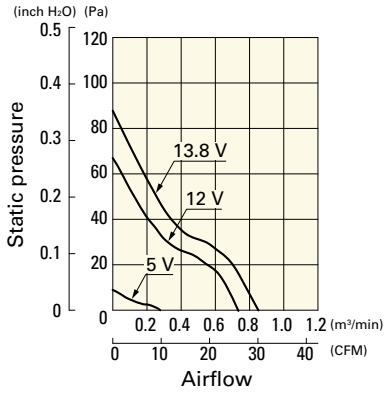
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [˚C]	Expected life [h]
9S0612S401	12	5.0 to 13.8	0.2	2.4	5000	0.74	26.1	65.7	0.26	31	-10 to +70	40000/60˚C (70000/40˚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		

Note 1: Sensor and control options are available for selection. Refer to the table on pp. 635 to 636.
Note 2: The » mark indicates Short Lead Time Service applicable models. See p. 654 for details.

Airflow - Static Pressure Characteristics

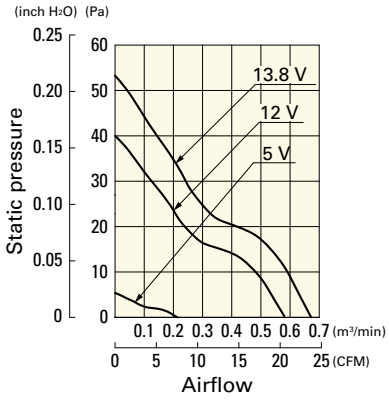
9S0612S401 With pulse sensor

Operating voltage range



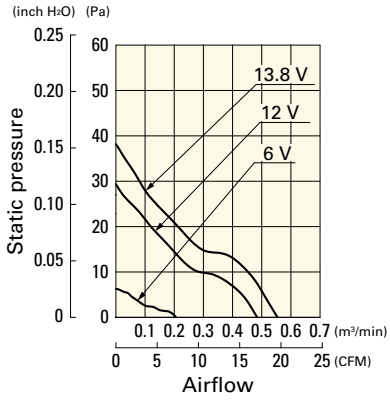
9S0612H401 With pulse sensor

Operating voltage range



9S0612F401 With pulse sensor

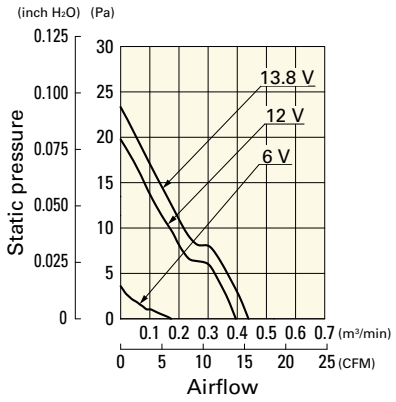
Operating voltage range



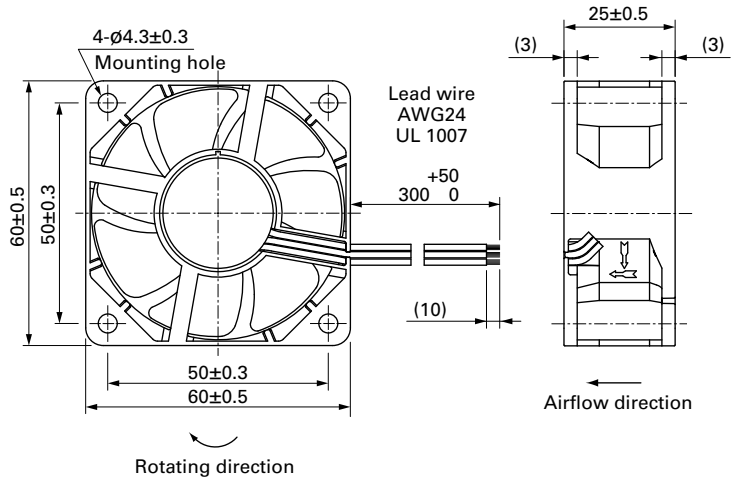
Airflow - Static Pressure Characteristics

9S0612M401 With pulse sensor

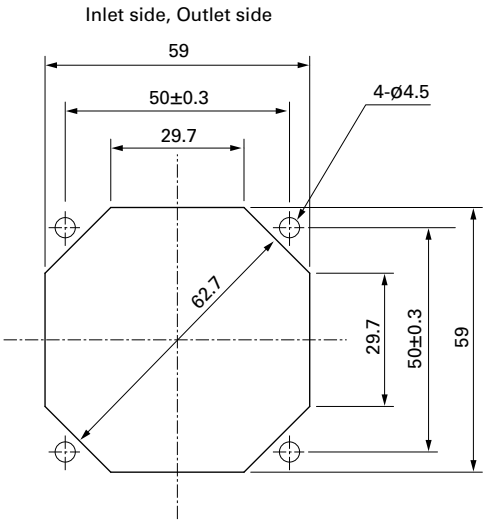
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards page: p. 584

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

Resin finger guards page: p. 591

Model no.: 109-1003G

Resin filter kits page: p. 592

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

DC Fan

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) Expected life at 40°C is for reference only.
- Motor protection function ..... Locked rotor burnout protection, Reverse polarity protection For details, please refer to p. 599.
- 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.

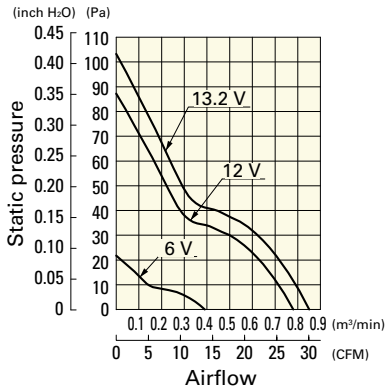
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [˚C]	Expected life [h]
9A0612G401	12	6 to 13.2	0.24	2.88	5600	0.78	27.6	87.3	0.351	39	-20 to +60	30000/60˚C (53000/40˚C)
9A0612S401		6 to 13.8	0.17	2.04	4600	0.65	23.0	56.8	0.228	33	-20 to +70	40000/60˚C (70000/40˚C)
9A0612H401			0.11	1.32	3800	0.53	18.7	40.2	0.161	28		
9A0612F401			0.09	1.08	3200	0.44	15.5	29.4	0.118	24		
9A0612M401		7 to 13.8	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 (53000/40˚C)
9A0624S401			0.08	1.92	4600	0.65	23.0	56.8	0.228	33	-20 to +70	40000/60˚C (70000/40˚C)
9A0624H401			0.06	1.44	3800	0.53	18.7	40.2	0.161	28		
9A0624F401			0.05	1.2	3200	0.44	15.5	29.4	0.118	24		
9A0624M401		14 to 27.6	0.04	0.96	2600	0.36	12.7	19.6	0.079	20		

Note 1: Sensor and control options are available for selection. Refer to the table on pp. 623 to 624.
Note 2: The mark indicates Short LeadTime Service applicable models. See p. 654 for details.

Airflow - Static Pressure Characteristics

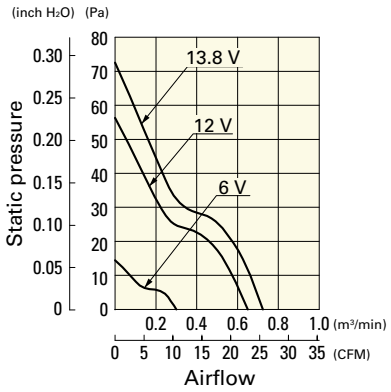
9A0612G401 With pulse sensor

Operating voltage range



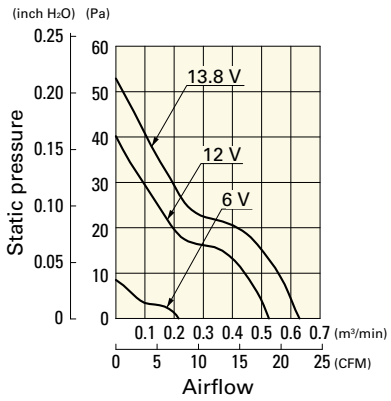
9A0612S401 With pulse sensor

Operating voltage range



9A0612H401 With pulse sensor

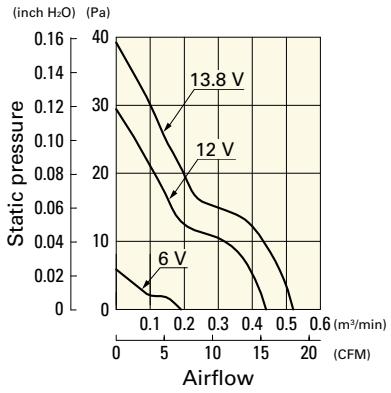
Operating voltage range



Airflow - Static Pressure Characteristics

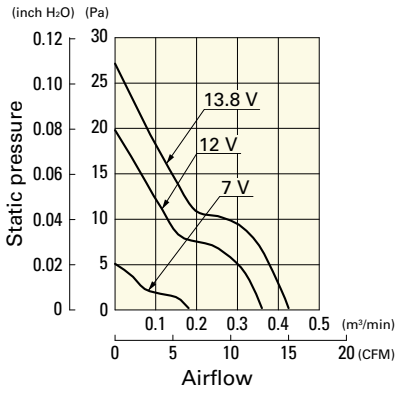
9A0612F401 With pulse sensor

Operating voltage range



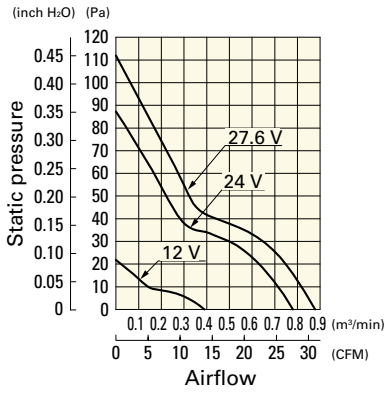
9A0612M401 With pulse sensor

Operating voltage range



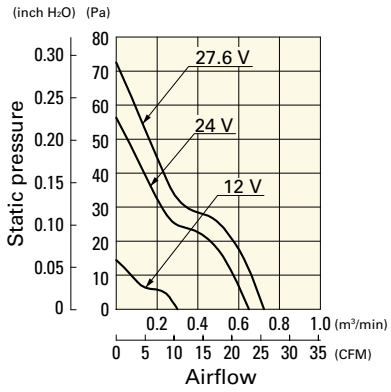
9A0624G401 With pulse sensor

Operating voltage range



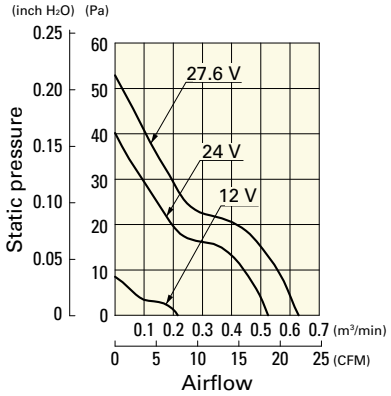
9A0624S401 With pulse sensor

Operating voltage range



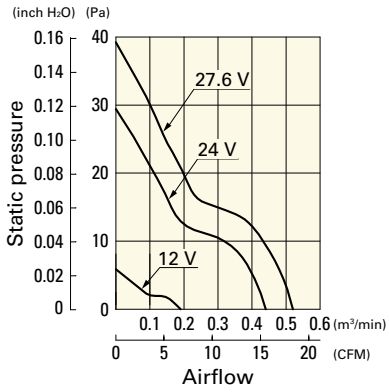
9A0624H401 With pulse sensor

Operating voltage range



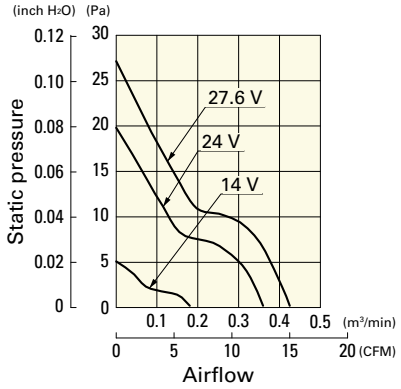
9A0624F401 With pulse sensor

Operating voltage range

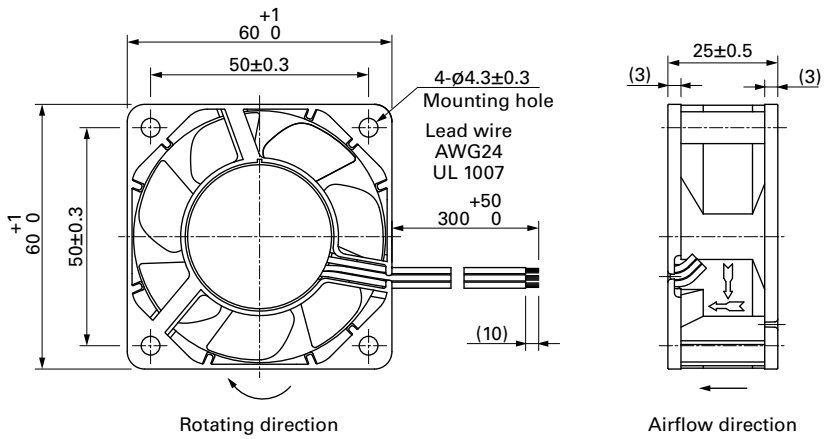


9A0624M401 With pulse sensor

Operating voltage range

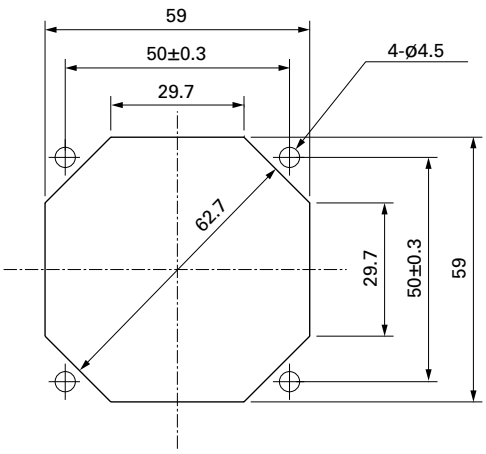


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards page: p. 584

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

Resin filter kits page: p. 592

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

Resin finger guards page: p. 591

Model no.: 109-1003G