

Ø 172×147×25 mm

San Ace 172 9E type   

Sidecut 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 or Blue (Sensor) Yellow
- Mass 500 g

Specifications

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

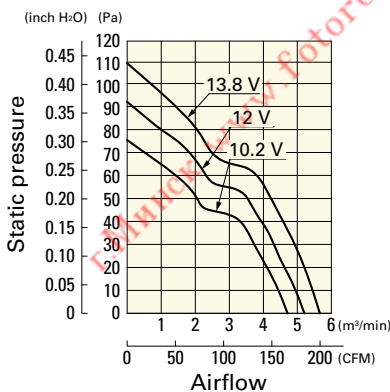
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109E4712M401	12	10.2 to 13.8	1.3	15.6	2800	5.2 183	92 0.369	51	-20 to +60	40000/60°C
109E4712L401			1.0	12.0	2500	4.6 162	73 0.293	48		
109E4724H401	24	20.4 to 27.6	1.0	24.0	3400	6.4 226	135 0.542	57		
109E4724F401			0.79	19.0	3100	5.8 204	112 0.45	54		
109E4724M401			0.58	13.9	2800	5.2 183	92 0.369	51		
109E4724L401			0.44	10.6	2500	4.6 162	73 0.293	48		
109E4748S401	48	40.8 to 55.2	0.62	29.8	3650	6.8 240	156 0.627	58		
109E4748H401			0.52	25.0	3400	6.4 226	135 0.542	57		
109E4748F401			0.4	19.2	3100	5.8 204	112 0.45	54		
109E4748M401			0.32	15.4	2800	5.2 183	92 0.369	51		
109E4748L401			0.25	12.0	2500	4.6 162	73 0.293	48		

Other sensor specifications are available as options. Refer to the index (pp. 542 to 543).

Airflow - Static Pressure Characteristics

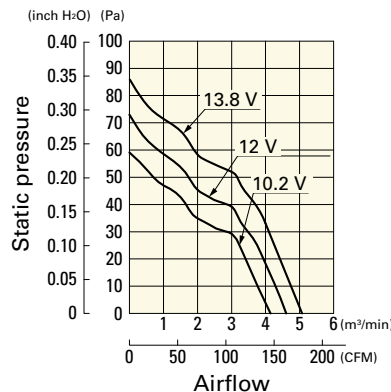
109E4712M401 With pulse sensor

Operating voltage range



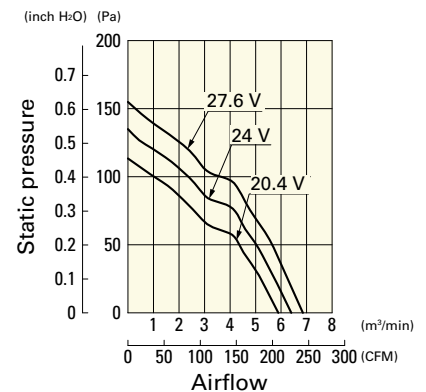
109E4712L401 With pulse sensor

Operating voltage range



109E4724H401 With pulse sensor

Operating voltage range

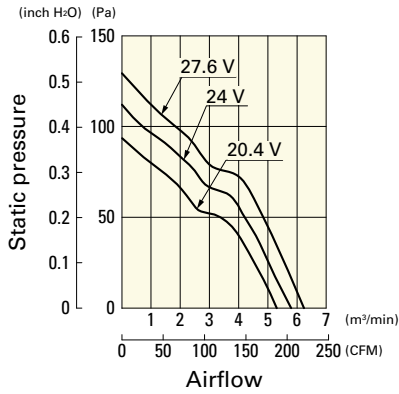


Airflow - Static Pressure Characteristics

DC Fan #172 mm

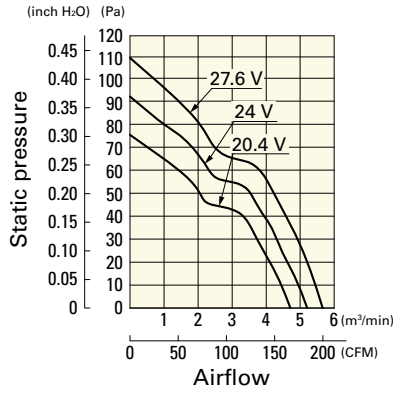
109E4724F401 With pulse sensor

Operating voltage range



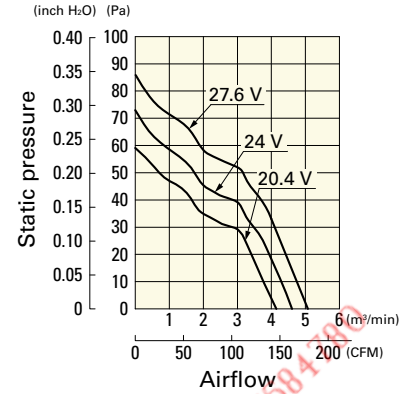
109E4724M401 With pulse sensor

Operating voltage range



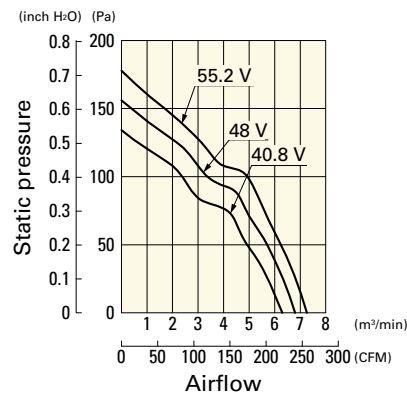
109E4724L401 With pulse sensor

Operating voltage range



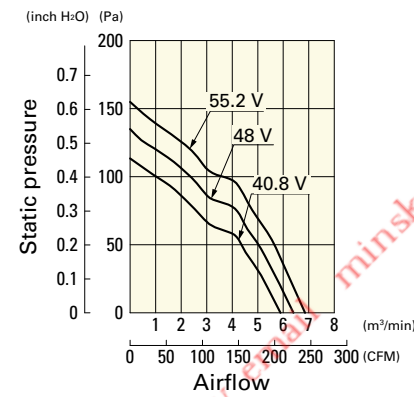
109E4748S401 With pulse sensor

Operating voltage range



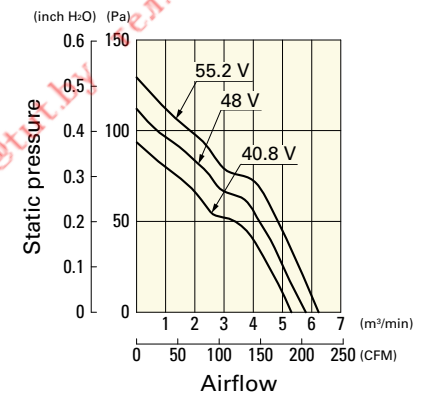
109E4748H401 With pulse sensor

Operating voltage range



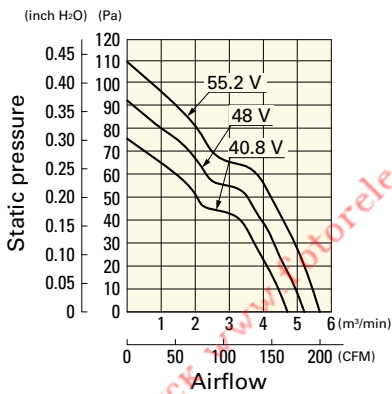
109E4748F401 With pulse sensor

Operating voltage range



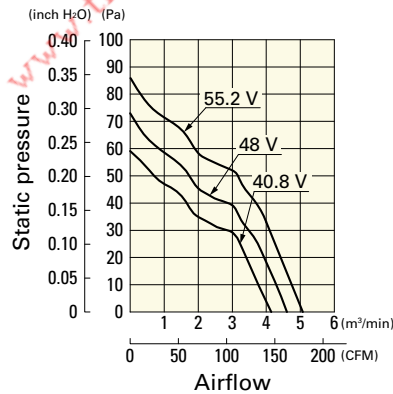
109E4748M401 With pulse sensor

Operating voltage range

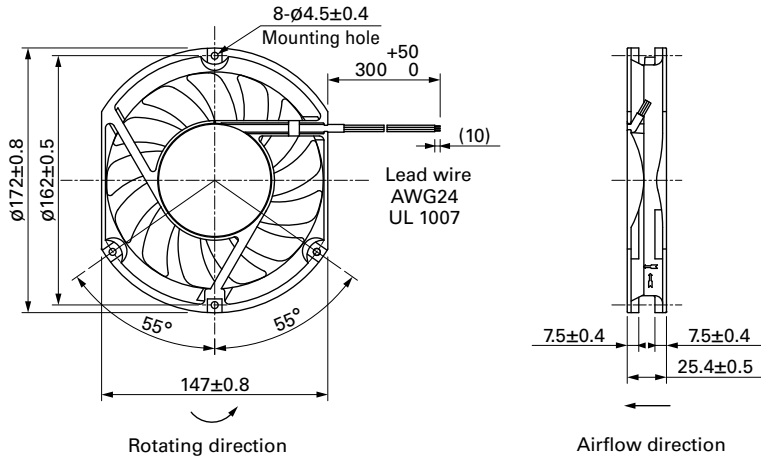


109E4748L401 With pulse sensor

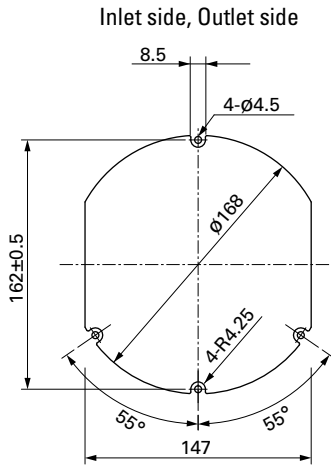
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-319E, 109-319H, 109-320



Ø 172×150×51 mm

San Ace 172 9HV type

Sidecut 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 800 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]
9HV5724P5H001	24	16 to 30	100	5.0	120	8000	12.3 434	1000 4.02	77	-20 to +70	40000/60°C (70000/40°C)
			20	0.5	12.0	3000	4.6 162	175 0.7	51		
9HV5748P5G001	48	36 to 72	100	5.0	240	10500	16.1 568	1600 6.43	83		
			20	0.41	19.7	3700	5.6 198	250 1.01	57		

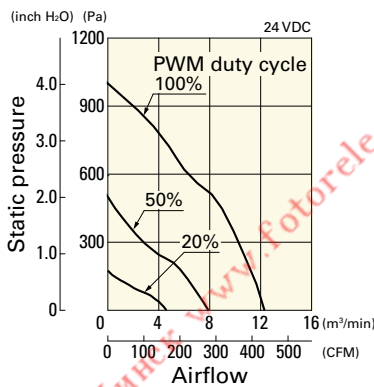
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

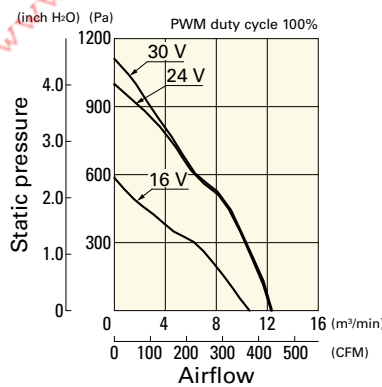
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HV5724P5H001 With pulse sensor with PWM control function

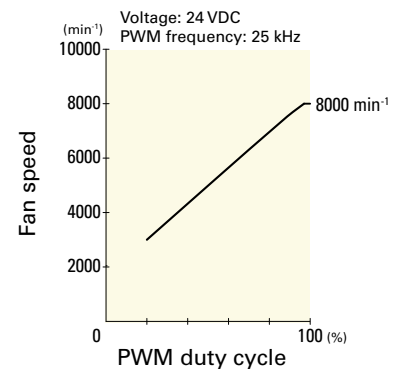
PWM duty cycle



Operating voltage range



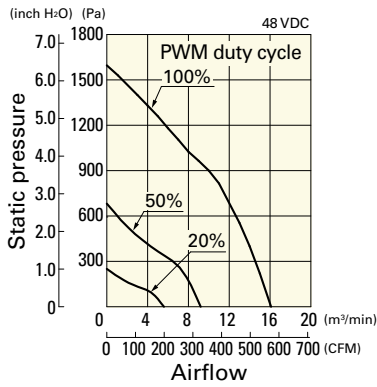
PWM duty - Speed characteristics example



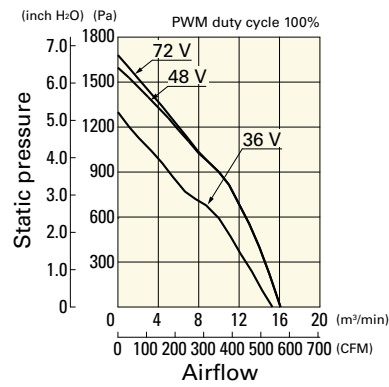
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9HV5748P5G001 With pulse sensor with PWM control function

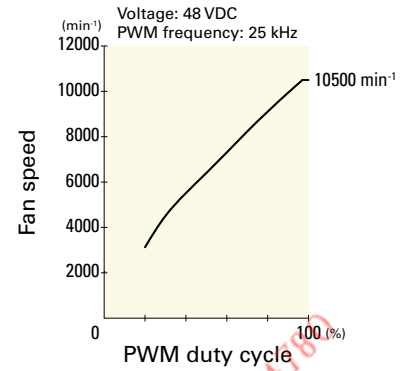
PWM duty cycle



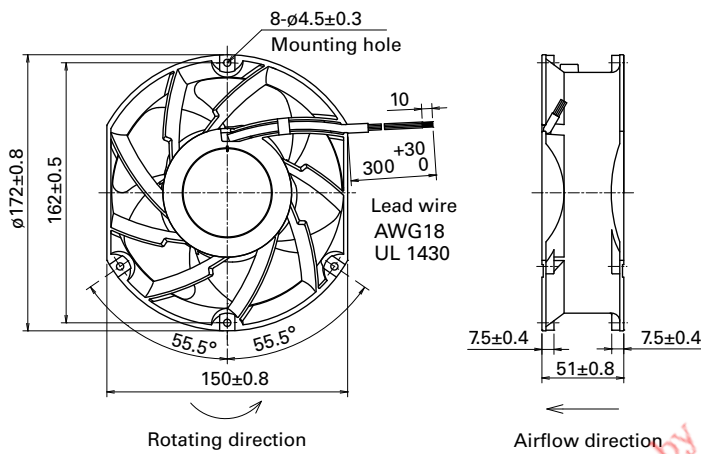
Operating voltage range



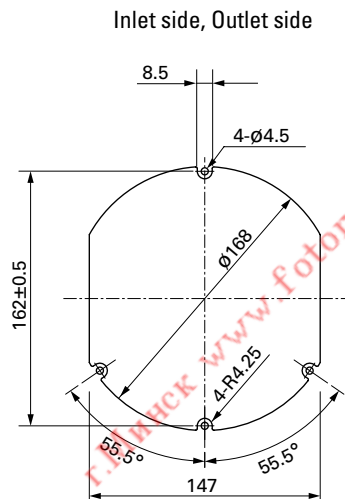
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-319J, 109-319E, 109-319H, 109-320



Ø 172×150×51 mm

San Ace 172 9SG type

Sidecut 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 760 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]
9SG5724P5H61	24	20.4 to 27.6	100	2.8	67.2	6500	11.6 410	540 2.16	71	-20 to +70	40000/60°C
			0	0.18	4.32	1300	2.32 81.9	30 0.12	28		
9SG5748P5G01	48	36 to 72	100	2.91	140	8600	15.46 546	1000 4.02	78	-20 to +60	
			0	0.21	10.1	2000	3.59 127	75.1 0.3	40		
9SG5748P5H01	48	36 to 72	100	1.62	78	6500	11.6 410	770 3.09	71	-20 to +60	
			0	0.21	10.1	2000	3.59 127	75.1 0.3	40		

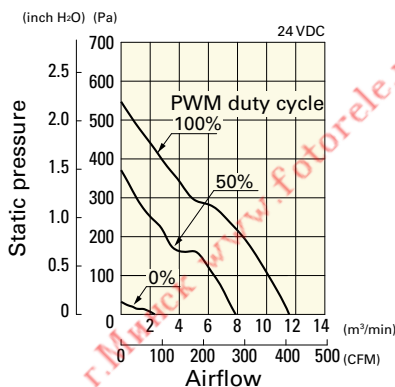
* PWM frequency: 25 kHz

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

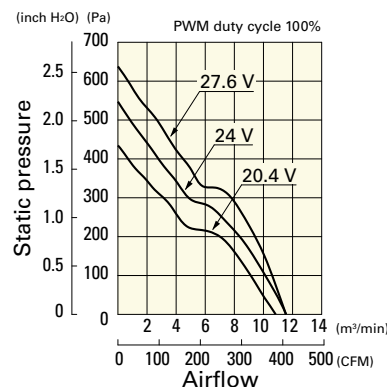
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9SG5724P5H61 With pulse sensor with PWM control function

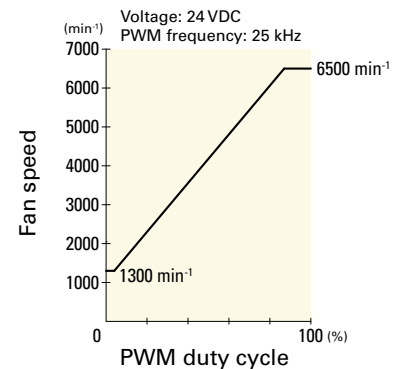
PWM duty cycle



Operating voltage range



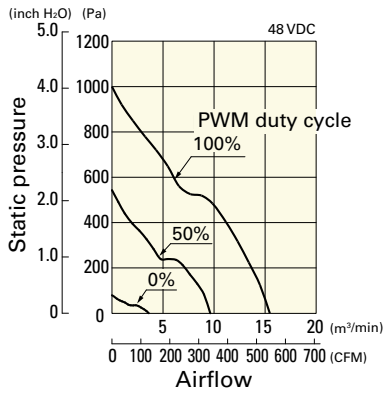
PWM duty - Speed characteristics example



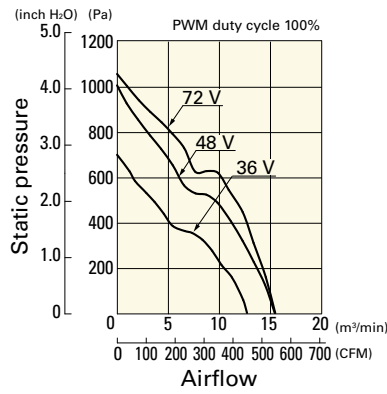
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9SG5748P5G01 With pulse sensor with PWM control function

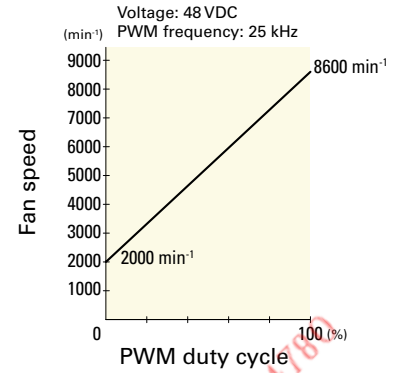
PWM duty cycle



Operating voltage range

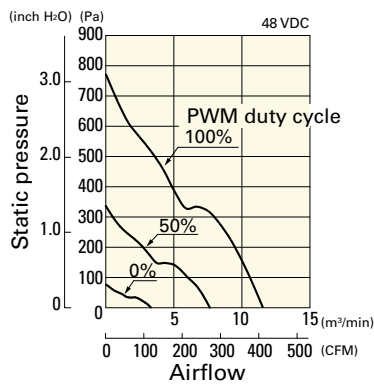


PWM duty - Speed characteristics example

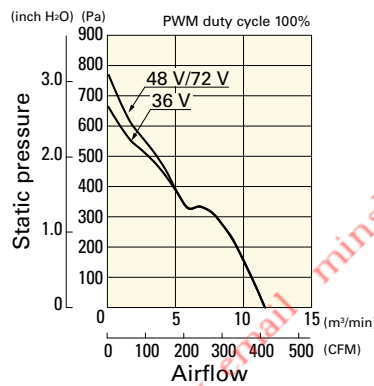


9SG5748P5H01 With pulse sensor with PWM control function

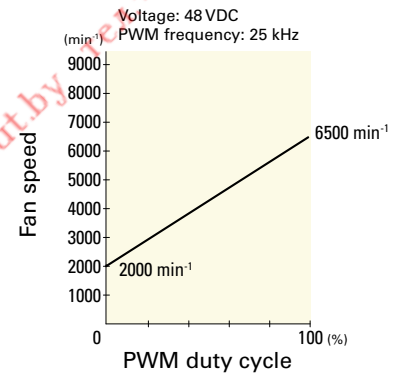
PWM duty cycle



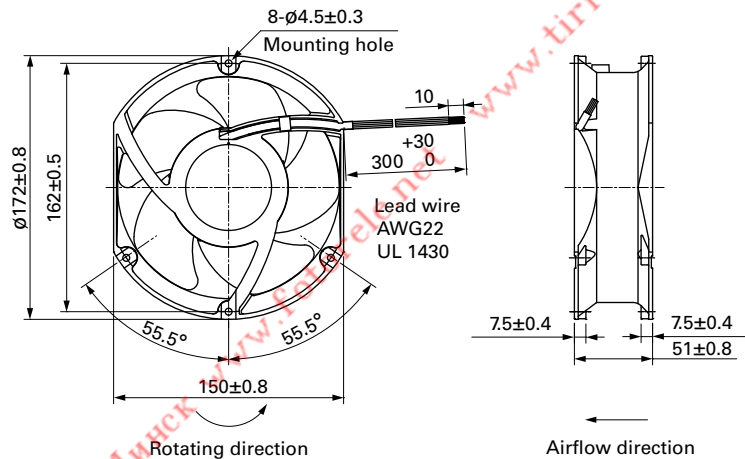
Operating voltage range



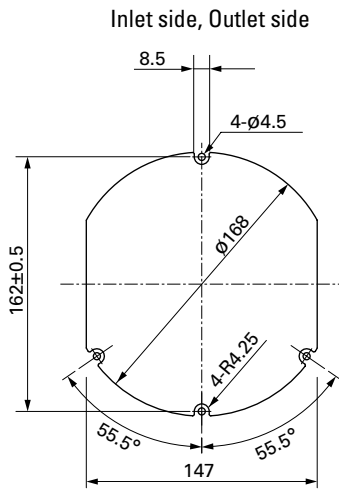
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-319J, 109-319E, 109-319H, 109-320

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∅ 172×150×51 mm

San Ace 172 9GV type

Sidecut 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
- Mass 800 g

Specifications

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

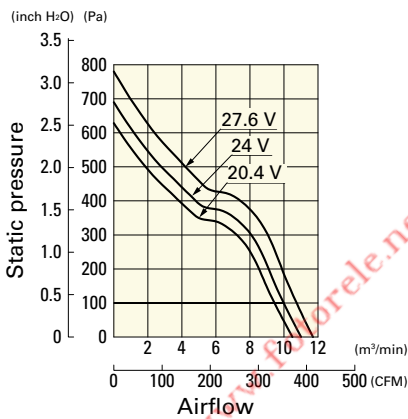
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GV5724H501	24	20.4 to 27.6	4.0	96	6300	11.32 400	690 2.77	74	-20 to +70	40000/60°C
9GV5748H501	48	40.8 to 55.2	2.0	96	6300	11.32 400	690 2.77	74		

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

Airflow - Static Pressure Characteristics

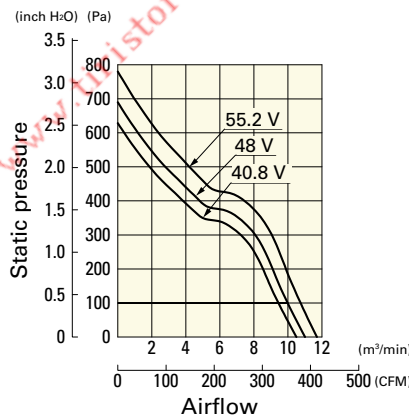
9GV5724H501 With pulse sensor

Operating voltage range

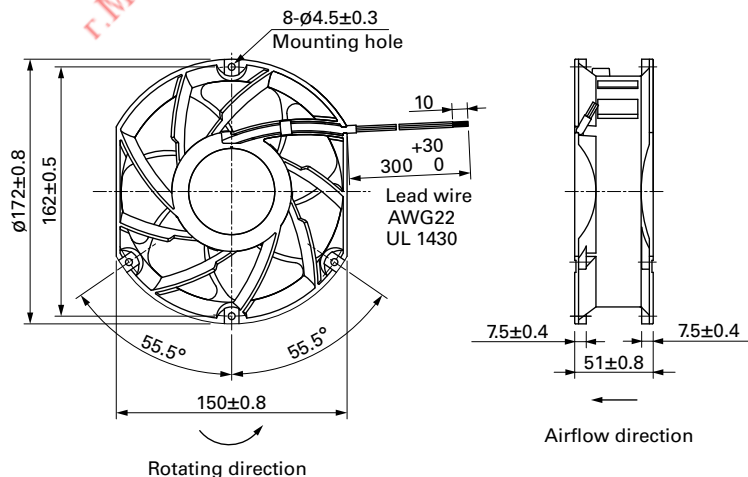


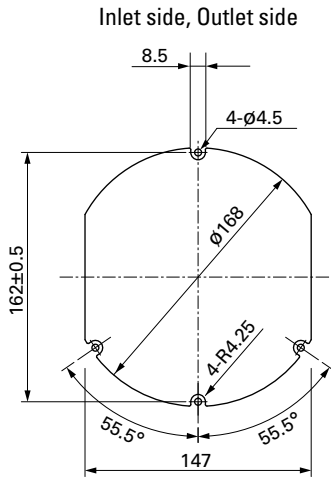
9GV5748H501 With pulse sensor

Operating voltage range



Dimensions (unit: mm)



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


Finger guards

page: p. 515

Model no.: 109-319J, 109-319E, 109-319H, 109-320

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Ø 172×150×51 mm

San Ace 172 9E type   

Sidecut 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 or Blue (Sensor) Yellow
- Mass 760 g

Specifications

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

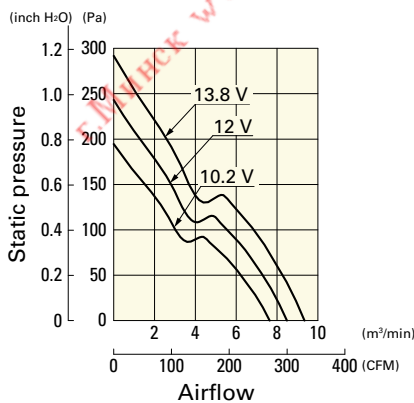
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109E5712K501	12	10.2 to 13.8	2.9	34.8	4100	8.5 300	243.0 0.976	60	-20 to +60	40000/60°C
109E5712Y501			2.3	27.6	3800	8 282	210 0.84	60		
109E5712H501			1.2	14.4	3050	6.4 226	137.2 0.551	52		
109E5712F501			0.68	8.16	2500	5.1 180	95 0.38	47		
109E5712M501			0.48	5.76	2000	4.2 148	67.6 0.271	41		
109E5724C501	24	20.4 to 27.6	2.3	55.2	4800	9.9 350	308.0 1.237	66	-20 to +70	
109E5724K501			1.3	31.2	4100	8.5 300	243.0 0.976	60		
109E5724H501			0.58	13.92	3050	6.4 226	137.2 0.551	52		
109E5724F501			0.35	8.4	2500	5.1 180	95 0.38	47		
109E5724M501			0.2	4.8	2000	4.2 148	67.6 0.271	41		
109E5748C501	48	40.8 to 55.2	1.2	57.6	4800	9.9 350	308.0 1.237	66	-20 to +60	
109E5748K501			0.7	33.6	4100	8.5 300	243.0 0.976	60		
109E5748H501			0.28	13.44	3050	6.4 226	137.2 0.551	52		
109E5748F501			0.19	9.12	2500	5.1 180	95 0.38	47		
109E5748M501			0.11	5.28	2000	4.2 148	67.6 0.271	41		

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

Airflow - Static Pressure Characteristics

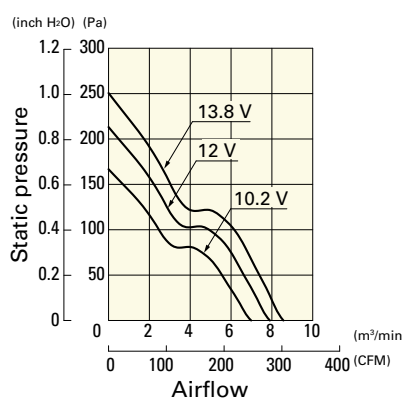
109E5712K501 With pulse sensor

Operating voltage range



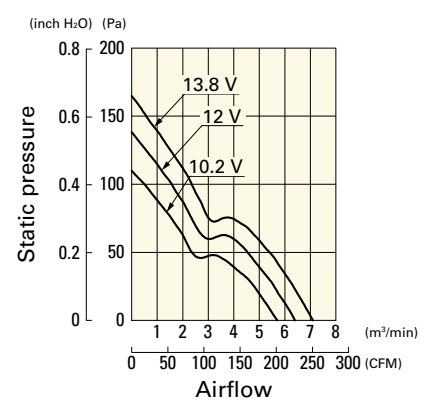
109E5712Y501 With pulse sensor

Operating voltage range



109E5712H501 With pulse sensor

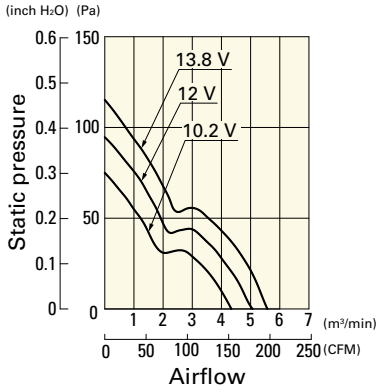
Operating voltage range



Airflow - Static Pressure Characteristics

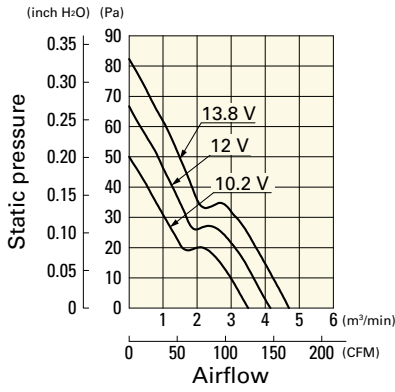
109E5712F501 With pulse sensor

Operating voltage range



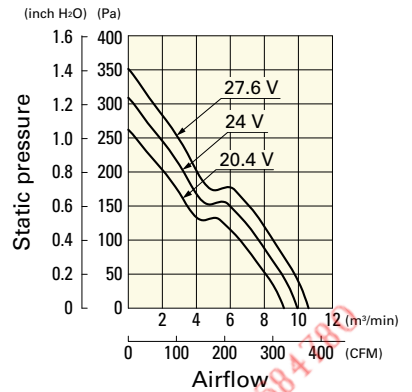
109E5712M501 With pulse sensor

Operating voltage range



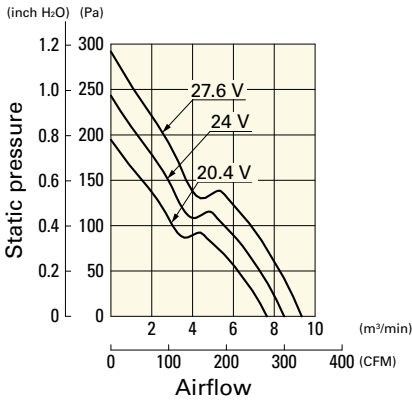
109E5724C501 With pulse sensor

Operating voltage range



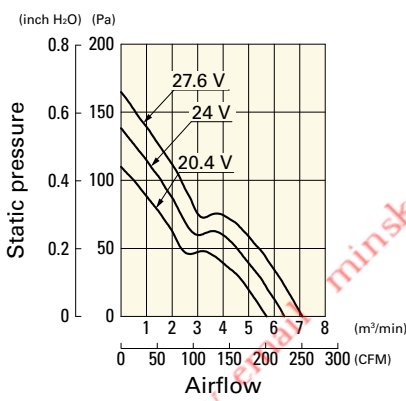
109E5724K501 With pulse sensor

Operating voltage range



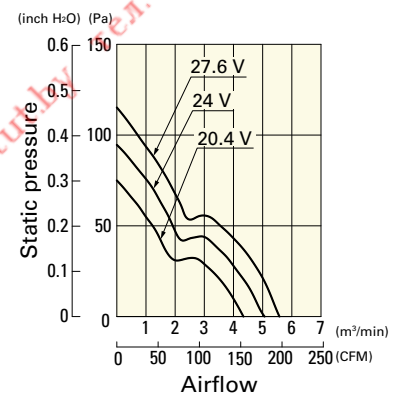
109E5724H501 With pulse sensor

Operating voltage range



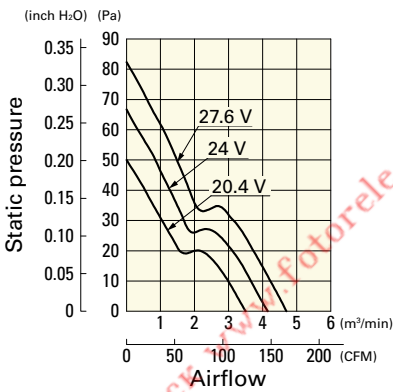
109E5724F501 With pulse sensor

Operating voltage range



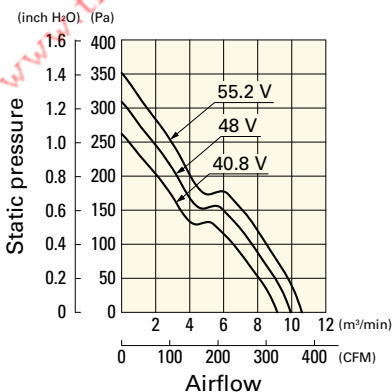
109E5724M501 With pulse sensor

Operating voltage range



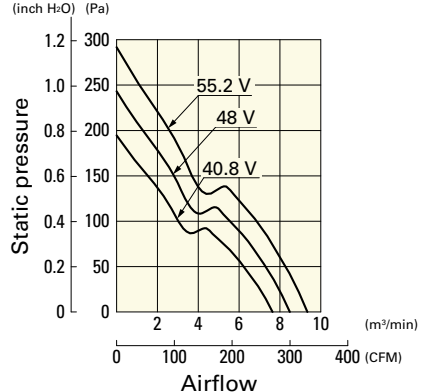
109E5748C501 With pulse sensor

Operating voltage range



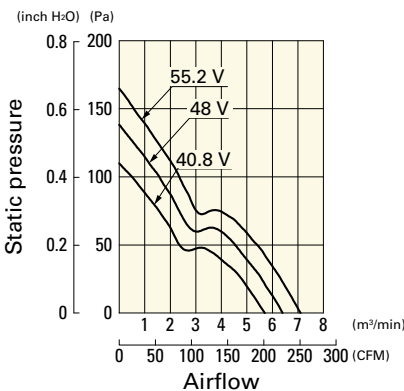
109E5748K501 With pulse sensor

Operating voltage range



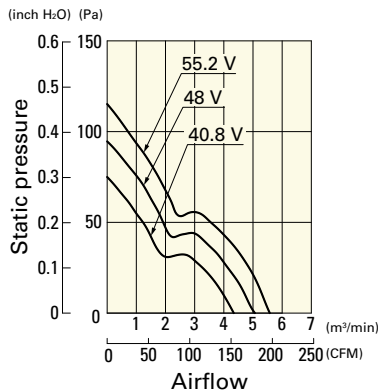
109E5748H501 With pulse sensor

Operating voltage range



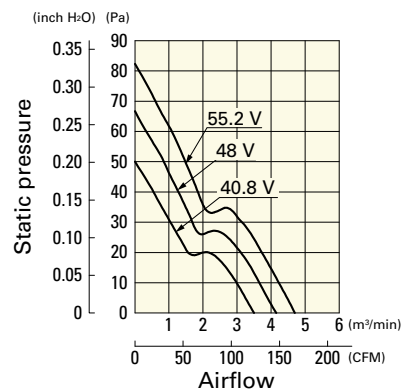
109E5748F501 With pulse sensor

Operating voltage range

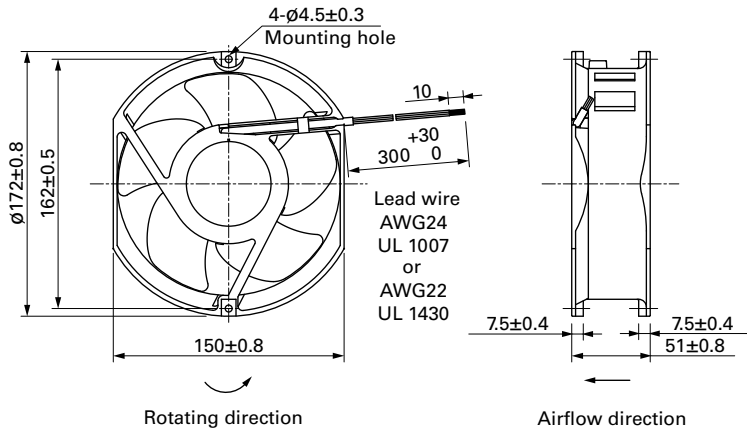


109E5748M501 With pulse sensor

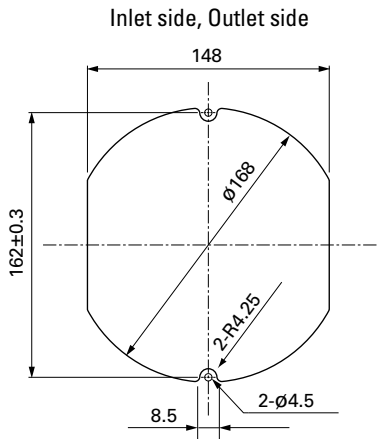
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-319E, 109-319H, 109-320

∅ **172x51 mm**

San Ace 172 9E type   

Round 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 or Blue (Sensor) Yellow
- Mass 780 g

Specifications

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

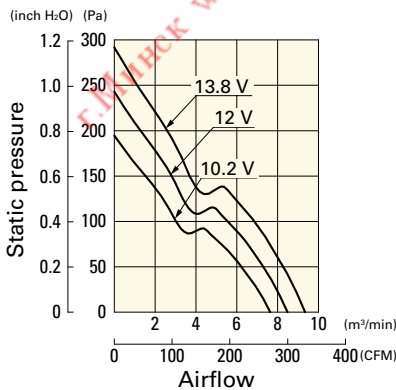
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109E1712K501	12	10.2 to 13.8	2.9	34.8	4100	8.5 300	243.0 0.976	55	-20 to +60	40000/60°C
109E1712Y501			2.3	27.6	3800	7.8 276	210.0 0.843	53		
109E1712H501			1.2	14.4	3050	6.4 226	137.2 0.551	47		
109E1712F501			0.9	10.8	2500	5.1 180	95.0 0.382	42		
109E1712M501			0.48	5.76	2000	4.2 148	67.6 0.271	36		
109E1724C501	24	20.4 to 27.6	2.3	55.2	4800	9.9 350	308.0 1.237	60	-20 to +70	
109E1724K501			1.3	31.2	4100	8.5 300	243.0 0.976	55		
109E1724H501			0.58	13.92	3050	6.4 226	137.2 0.551	47		
109E1724F501			0.35	8.4	2500	5.1 180	95 0.382	42		
109E1724M501			0.2	4.8	2000	4.2 148	67.6 0.271	36		
109E1748C501	48	40.8 to 55.2	1.2	57.6	4800	9.9 350	308.0 1.237	60	-20 to +60	
109E1748K501			0.7	33.6	4100	8.5 300	243.0 0.976	55		
109E1748H501			0.28	13.44	3050	6.4 226	137.2 0.551	47		
109E1748F501			0.19	9.12	2500	5.1 180	95 0.382	42		
109E1748M501			0.11	5.28	2000	4.2 148	67.6 0.271	36		

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

Airflow - Static Pressure Characteristics

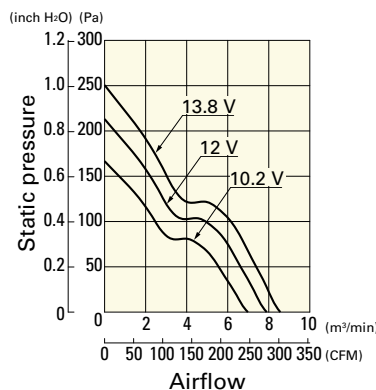
109E1712K501 With pulse sensor

Operating voltage range



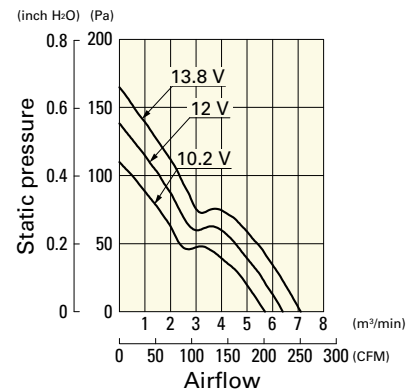
109E1712Y501 With pulse sensor

Operating voltage range

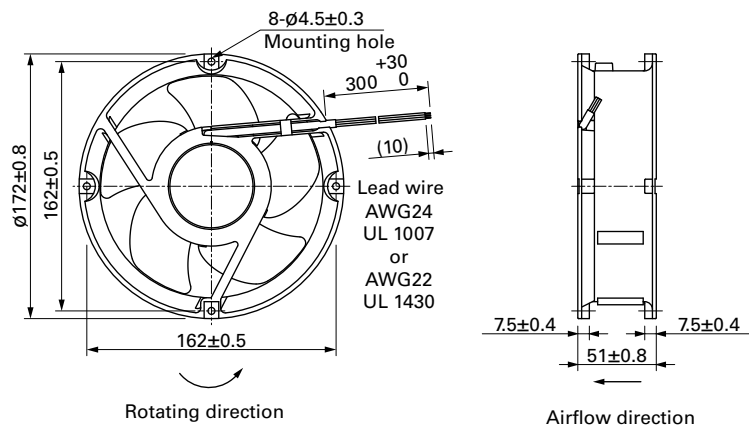


109E1712H501 With pulse sensor

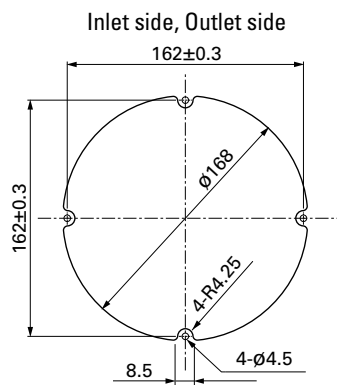
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-1066, 109-1068, 109-319E, 109-319H, 109-320



Ø 200x70 mm

San Ace 200 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 1800 g

Power on when current is shut off. Do not power on 15 s or more after power off.

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]
9GV2048P0G201**	48	36 to 72	100	12.5	600	8000	31.5 1112	1400 5.62	81	-20 to +70	40000/60°C (70000/40°C)

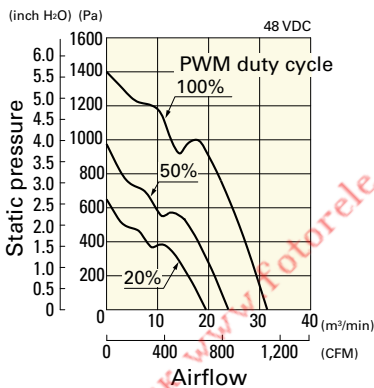
* PWM frequency: 1 kHz ** Fan does not rotate when PWM duty cycle is 0%.

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

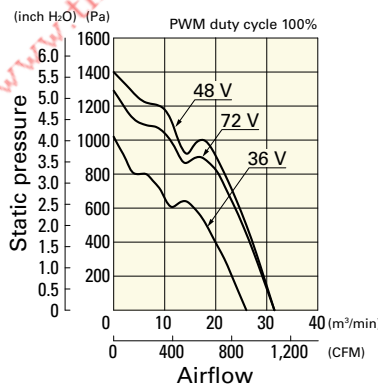
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GV2048P0G201 With pulse sensor with PWM control function

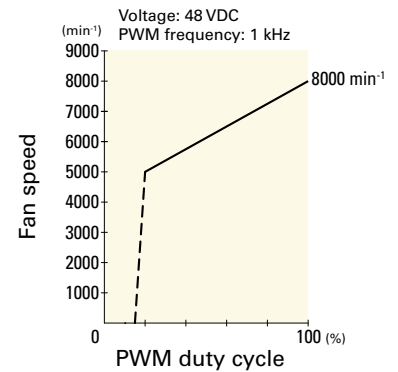
PWM duty cycle



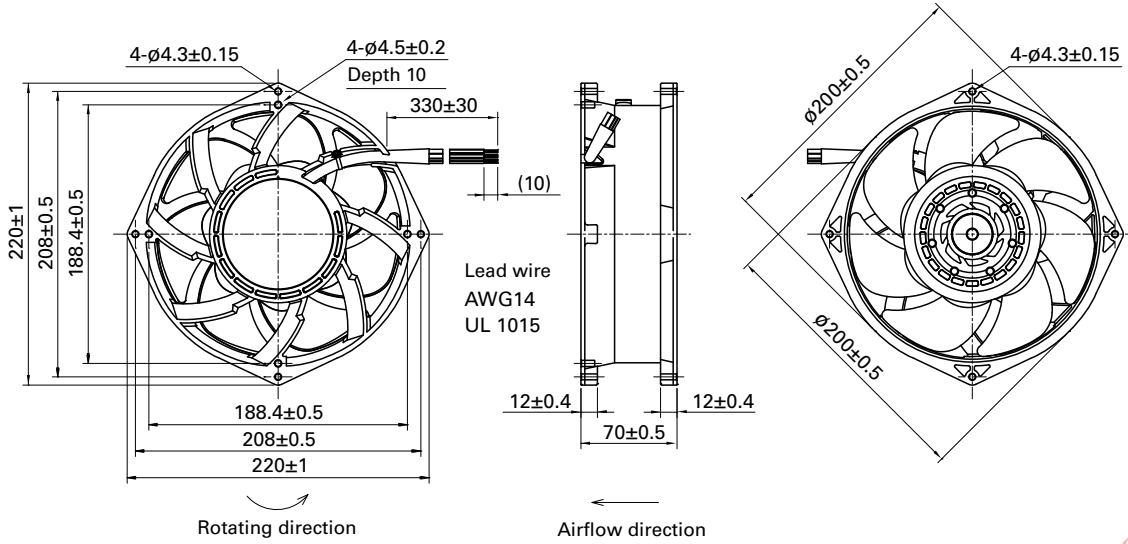
Operating voltage range



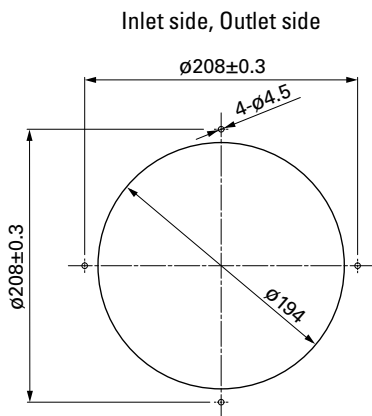
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

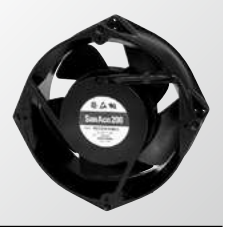
Finger guards

page: p. 516

Model no.: 109-1102, 109-1103

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

∅200x70 mm



San Ace 200 9EC type Model 9EC2048J001 is not certified.

General Specifications

- Material Frame: Aluminum (Black coating), 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 1800 g

Power on when current is shut off. Do not power on 10 s or more after power off.

Specifications

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

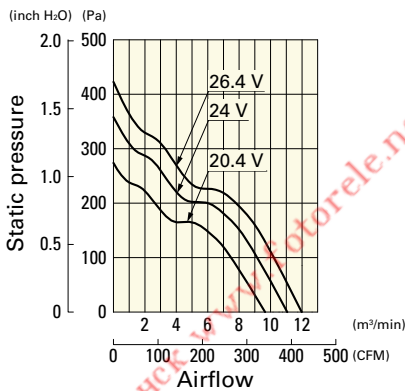
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9EC2024H001	24	20.4 to 26.4	2.0	48.0	3600	11.0 388	360 1.446	60	-20 to +60	40000/60°C
9EC2048J001	48	40.8 to 55.2	4.4	211.2	6100	18.3 646	1000 4.016	75		
9EC2048A001		43.0 to 51.0	2.2	105.6	4800	14.7 519	640 2.57	68		
9EC2048H001		40.8 to 52.8	1.2	57.6	3600	11.0 388	360 1.446	60		

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

Airflow - Static Pressure Characteristics

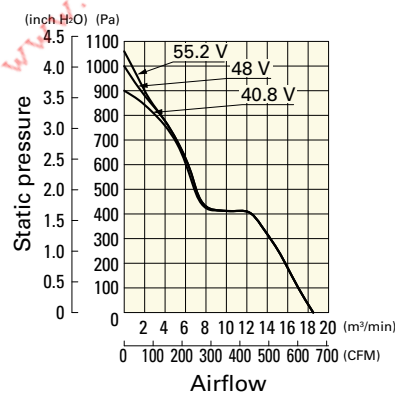
9EC2024H001 With pulse sensor

Operating voltage range



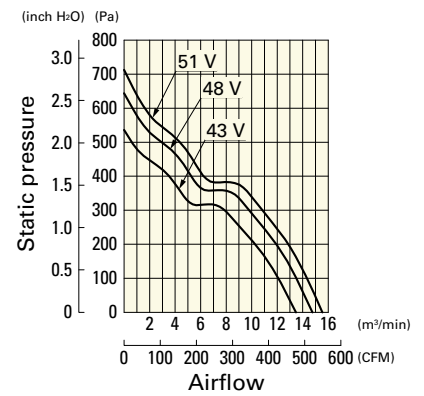
9EC2048J001 With pulse sensor

Operating voltage range



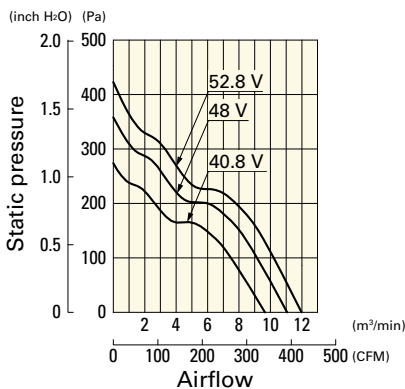
9EC2048A001 With pulse sensor

Operating voltage range



9EC2048H001 With pulse sensor

Operating voltage range



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

Counter Rotating Fan

Counter rotating fans feature high airflow and high static pressure.
Related product: Long Life Fan pp. 361, 366

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

9CRA	04	12	K	4	01
Type name	Frame size	Voltage	Speed code	Frame thickness	Sensor specifications

Fans with PWM control function

9CRA	03	12	P	4	K	03
Type name	Frame size	Voltage	PWM control function	Frame thickness	Speed code	Individual customer's spec (2 to 3 digits)

Type name	9CR 9CRA 9CRB 9CRD 9CRE 9CRH 9CRV					
Frame size (mm)	03	04	06	08	12	57
	38×38	40×40	60×60	80×80	120×120	∅172×150 (sidecut)
Voltage (V)	12	48				
	12	48				
Speed code	G H J K S etc.					
Frame thickness (mm)	0	4	5	6	8	9
	76	48	51, 56	56	80	102
Sensor specifications	01		02			D01
	With a pulse sensor		Without a sensor			With a lock sensor

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.

38x38x48 mm

San Ace 38 9CRA 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 80 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]
						Inlet	Outlet	0.22	7.8	54.9	0.22			
9CRA0312P4K03	12	10.8 to 13.2	100	1.5	18.0	17600	14520	0.77	27.2	700.0	2.81	64	-20 to +70	40000/60°C
			0	0.2	2.4	5280	4200	0.22	7.8	54.9	0.22	33		
100			1.1	13.2	16000	13200	0.7	24.7	560.0	2.25	62			
0			0.18	2.2	4800	3960	0.21	7.4	50.4	0.2	31			

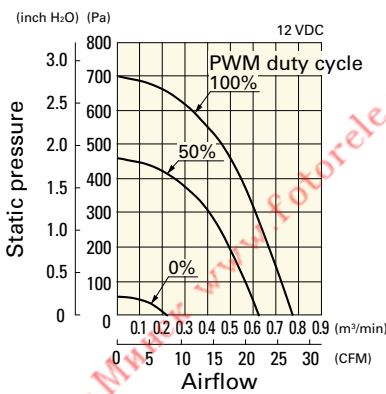
* PWM frequency: 25 kHz

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

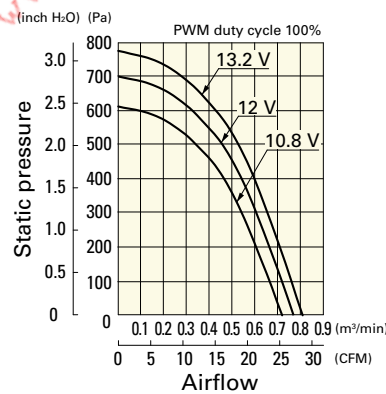
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0312P4K03 With pulse sensor with PWM control function

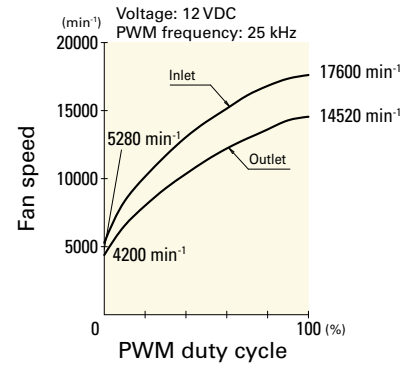
PWM duty cycle



Operating voltage range



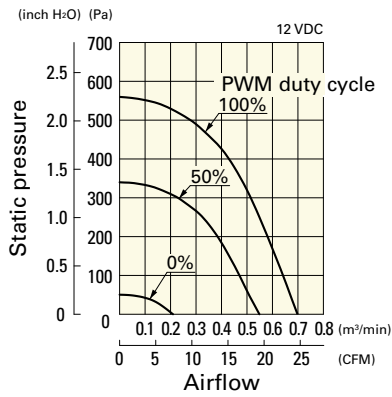
PWM duty - Speed characteristics example



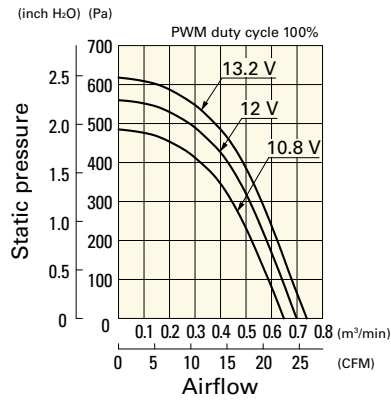
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0312P4J03 With pulse sensor with PWM control function

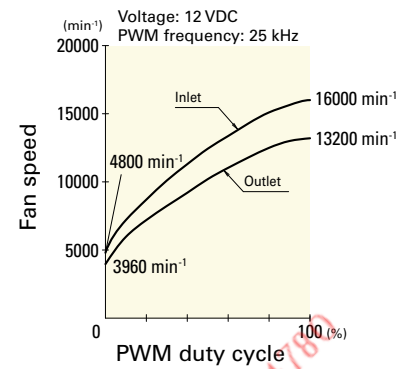
PWM duty cycle



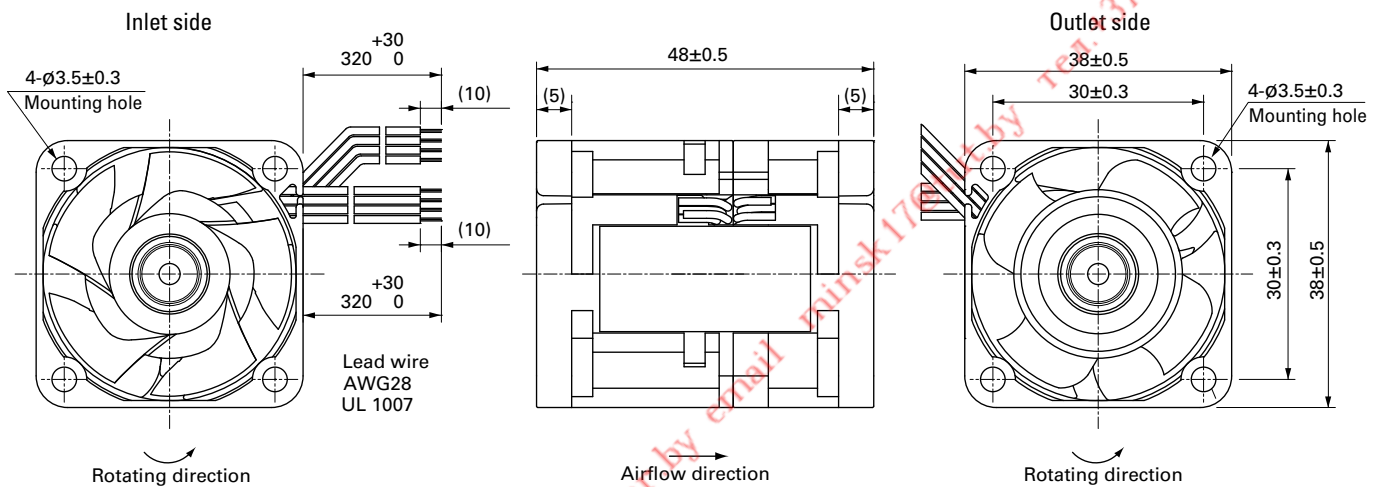
Operating voltage range



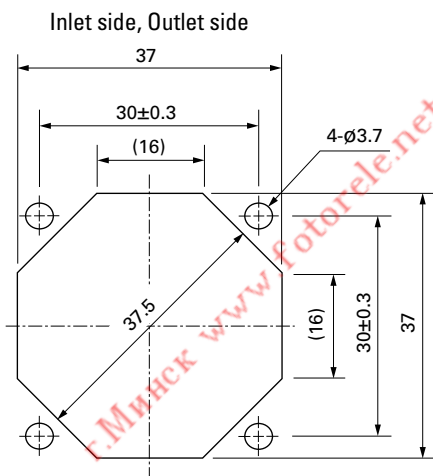
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-1065

40x40x48 mm

San Ace 40 9CRA 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 80 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]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CRA0412P4K03	12	10.8 to 13.2	100	1.6	19.2	17500	11700	0.92	32.5	650.0	2.61	64	-20 to +70	40000/60°C
			0	0.19	2.28	5250	3510	0.276	9.75	58.5	0.235	33		
9CRA0412P4J03	12	10.8 to 13.2	100	1.2	14.4	16200	10800	0.85	30.0	560.0	2.25	62		
			0	0.15	1.8	4500	3000	0.236	8.33	43.2	0.173	28		
9CRA0412P4G03	12	10.8 to 13.2	100	1.0	12.0	14700	9800	0.77	27.2	460.0	1.85	59		
			0	0.15	1.8	4410	2940	0.231	8.16	41.4	0.166	28		

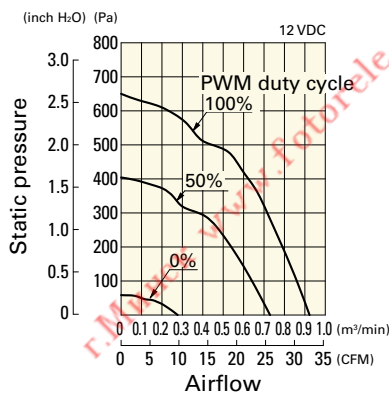
* PWM frequency: 25 kHz

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

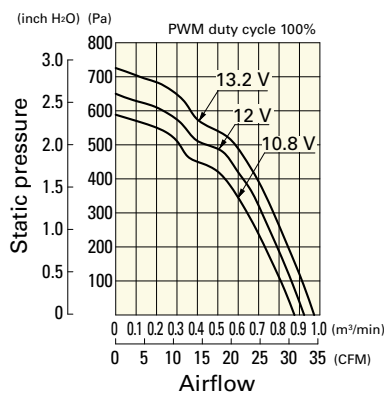
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0412P4K03 With pulse sensor with PWM control function

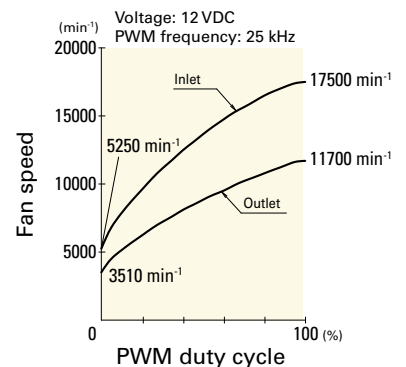
PWM duty cycle



Operating voltage range



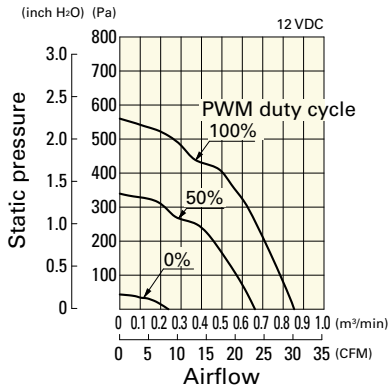
PWM duty - Speed characteristics example



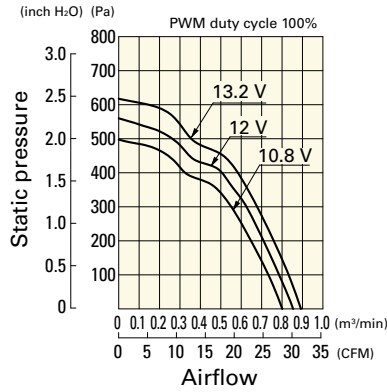
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0412P4J03 With pulse sensor with PWM control function

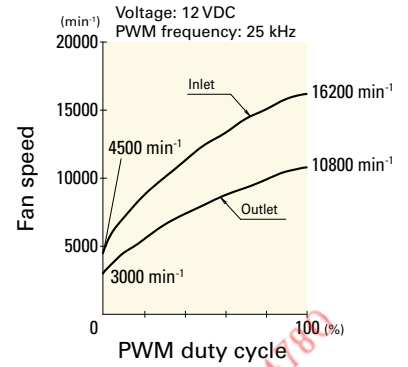
PWM duty cycle



Operating voltage range

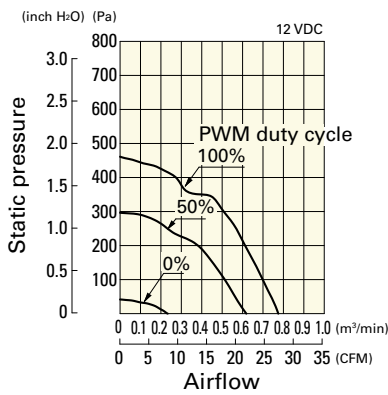


PWM duty - Speed characteristics example

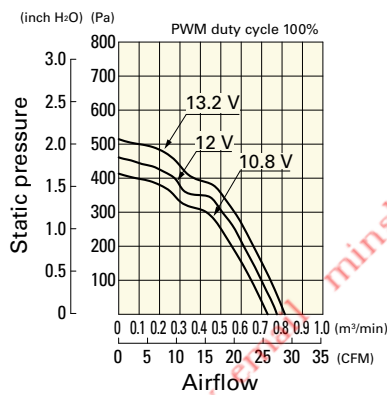


9CRA0412P4G03 With pulse sensor with PWM control function

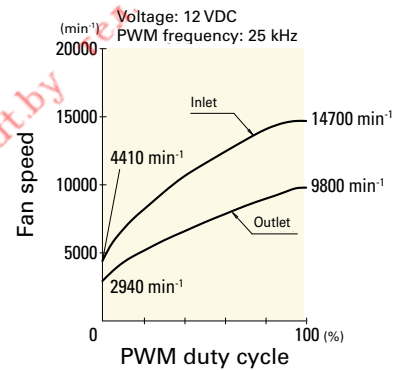
PWM duty cycle



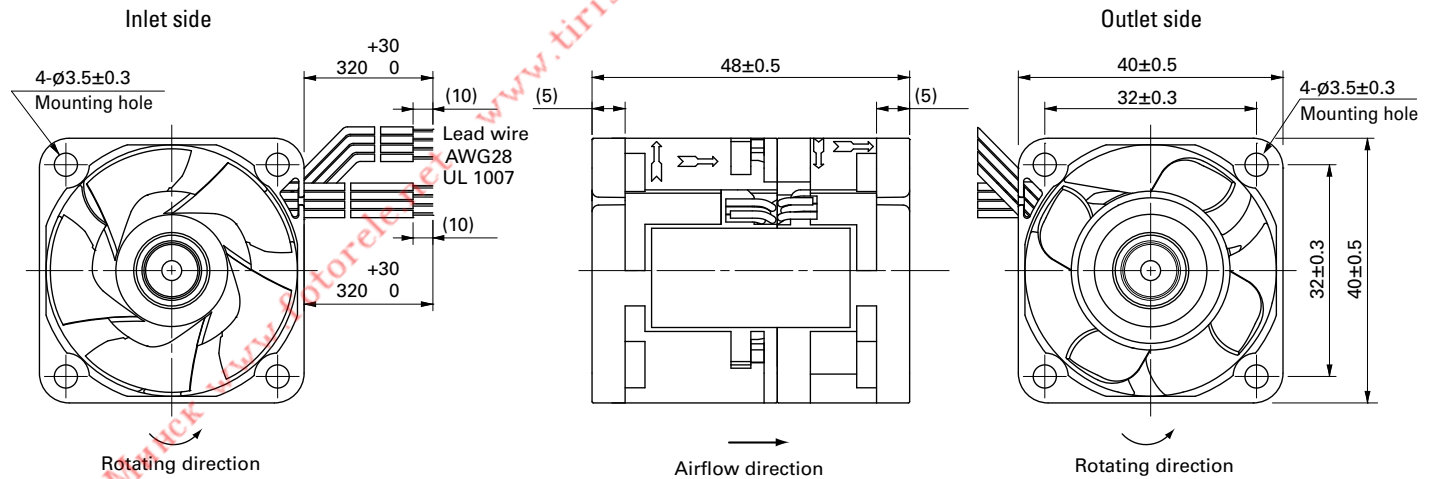
Operating voltage range



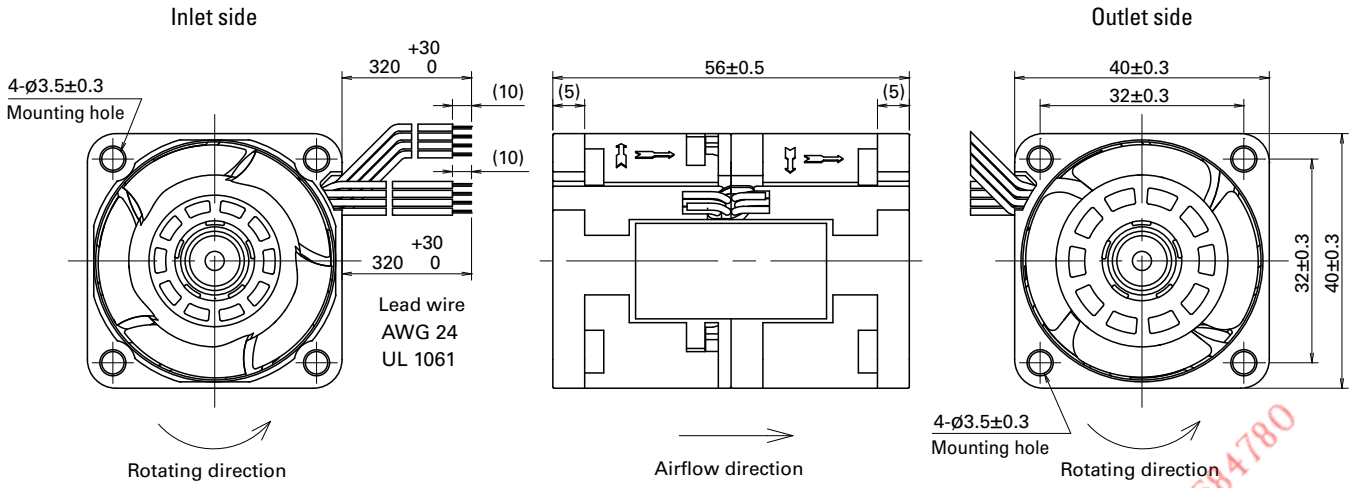
PWM duty - Speed characteristics example



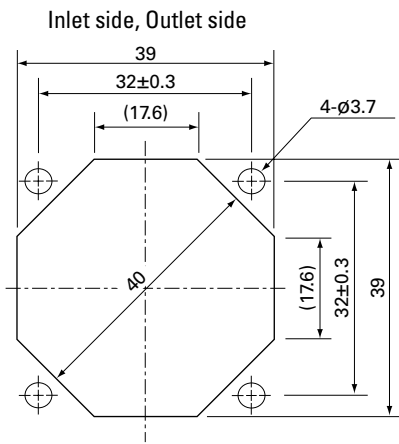
Dimensions (unit: mm)



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

40x40x56 mm

San Ace 40 9CRV type   US



DC

Counter Rotating Fan 40 mm sq.

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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 100 g

Specifications

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

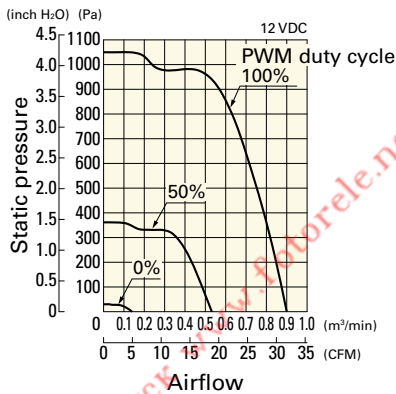
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	0.9	31.8	1050	4.22			
9CRV0412P5J201	12	10.8 to 13.2	100	1.8	21.6	22500	20000	0.14	4.9	30	0.12	68	-20 to +70	40000/60°C
			0	0.11	1.32	3800	3500					26		

* PWM frequency: 25 kHz

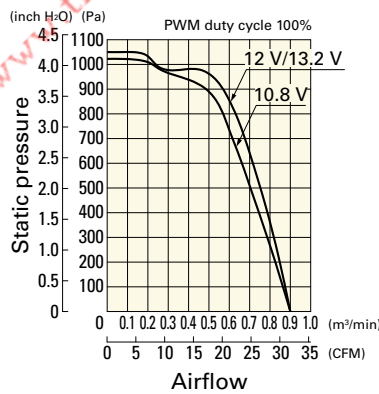
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRV0412P5J201 With pulse sensor with PWM control function

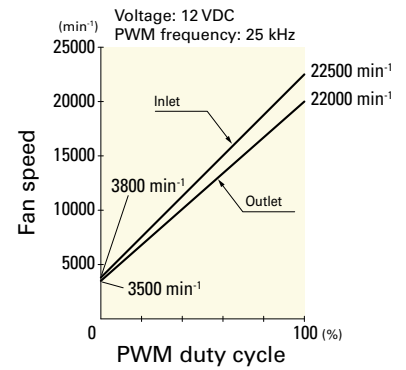
PWM duty cycle



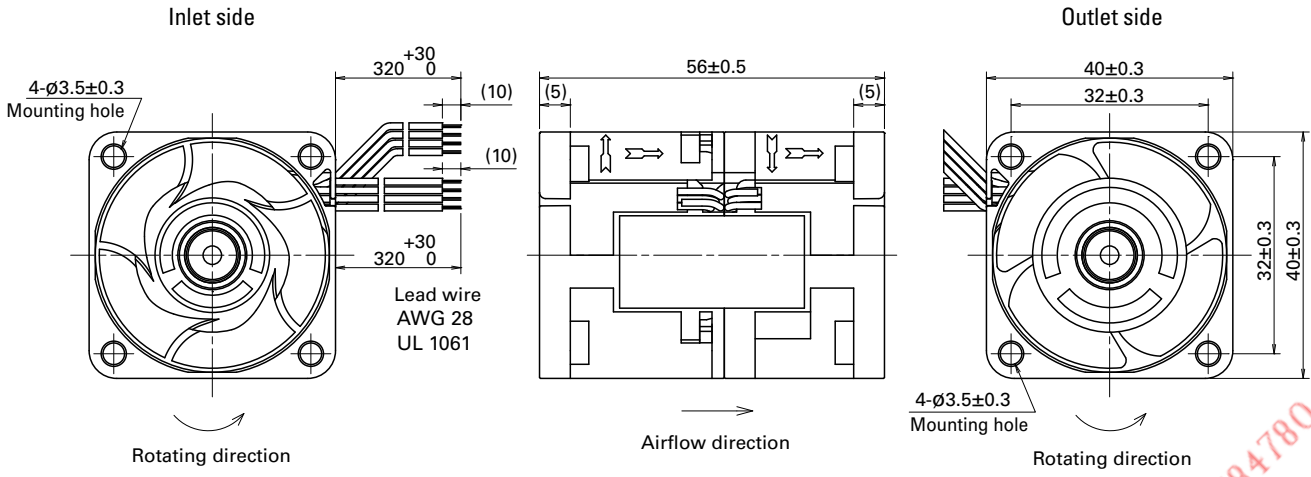
Operating voltage range



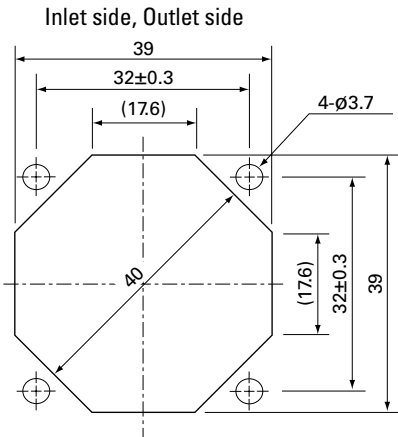
PWM duty - Speed characteristics example



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

40x40x56 mm

San Ace 40 9CRD type   



DC Counter Rotating Fan 40 mm sq.

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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 90 g

Specifications

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

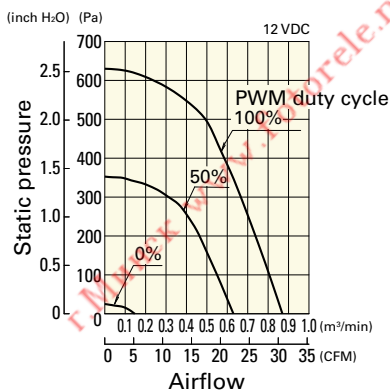
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CRD0412P5J03	12	10.8 to 13.2	100	1.15	13.8	19000	12600	0.87	30.72	630	2.53	61	-20 to +70	40000/60°C
			0	0.12	1.44	3700	2500	0.15	5.3	25	0.1	22		
9CRD0412P5G03			100	0.9	10.8	16700	11250	0.77	27.19	500	2.01	58		
			0	0.1	1.2	3350	2250	0.13	4.59	21	0.08	21		
9CRD0412P5H03			100	0.6	7.2	15000	10000	0.7	24.72	410	1.65	56		
			0	0.09	1.08	3000	2000	0.12	4.24	16	0.06	20		
9CRD0412P5M03			100	0.52	6.24	14000	9300	0.65	22.95	360	1.45	54		
			0	0.07	0.84	2000	1300	0.07	2.47	7	0.03	15		

* PWM frequency: 25 kHz

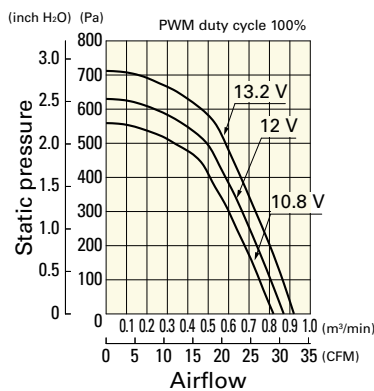
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRD0412P5J03 With pulse sensor with PWM control function

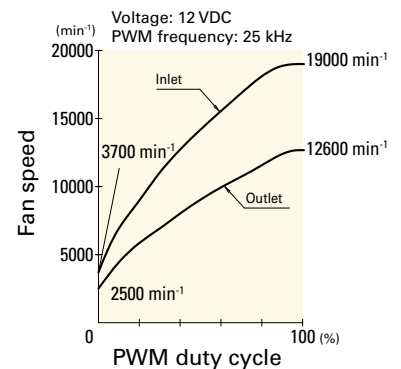
PWM duty cycle



Operating voltage range



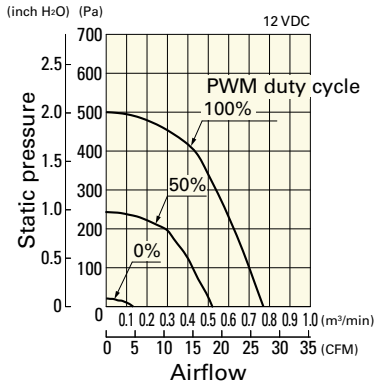
PWM duty - Speed characteristics example



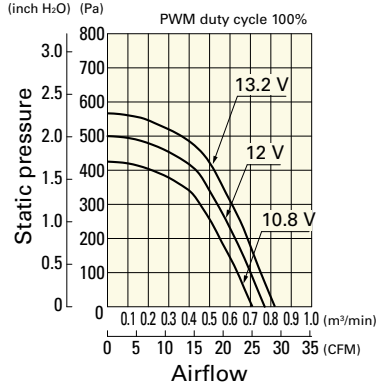
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRD0412P5G03 With pulse sensor with PWM control function

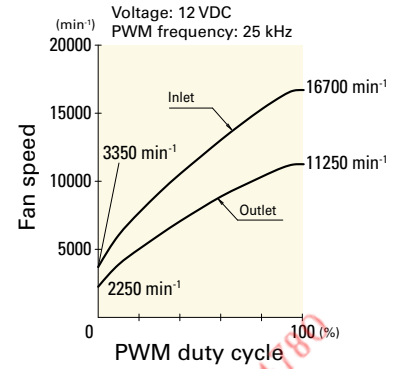
PWM duty cycle



Operating voltage range

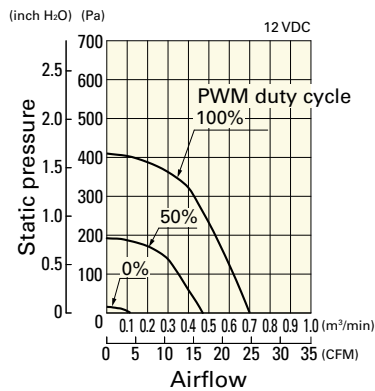


PWM duty - Speed characteristics example

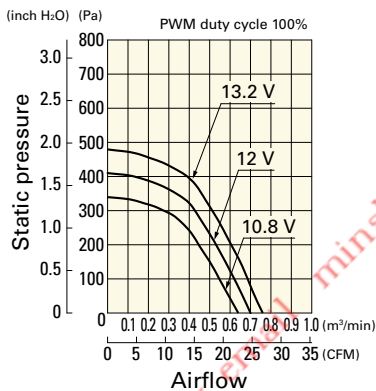


9CRD0412P5H03 With pulse sensor with PWM control function

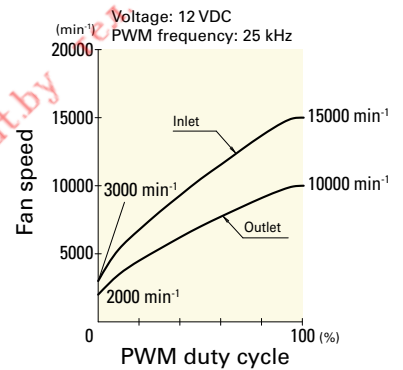
PWM duty cycle



Operating voltage range

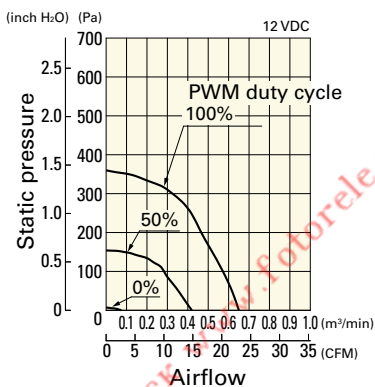


PWM duty - Speed characteristics example

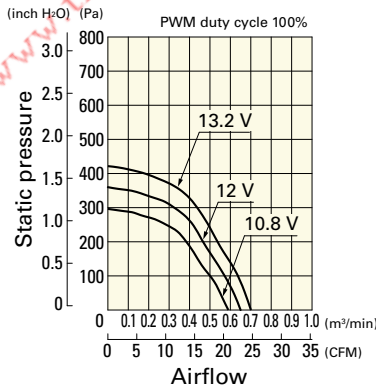


9CRD0412P5M03 With pulse sensor with PWM control function

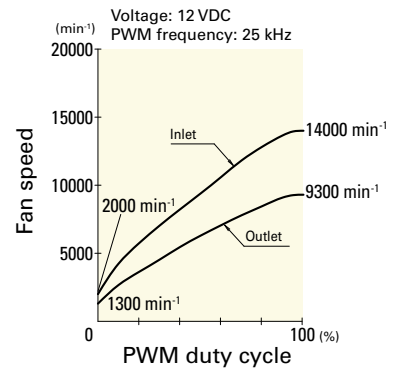
PWM duty cycle



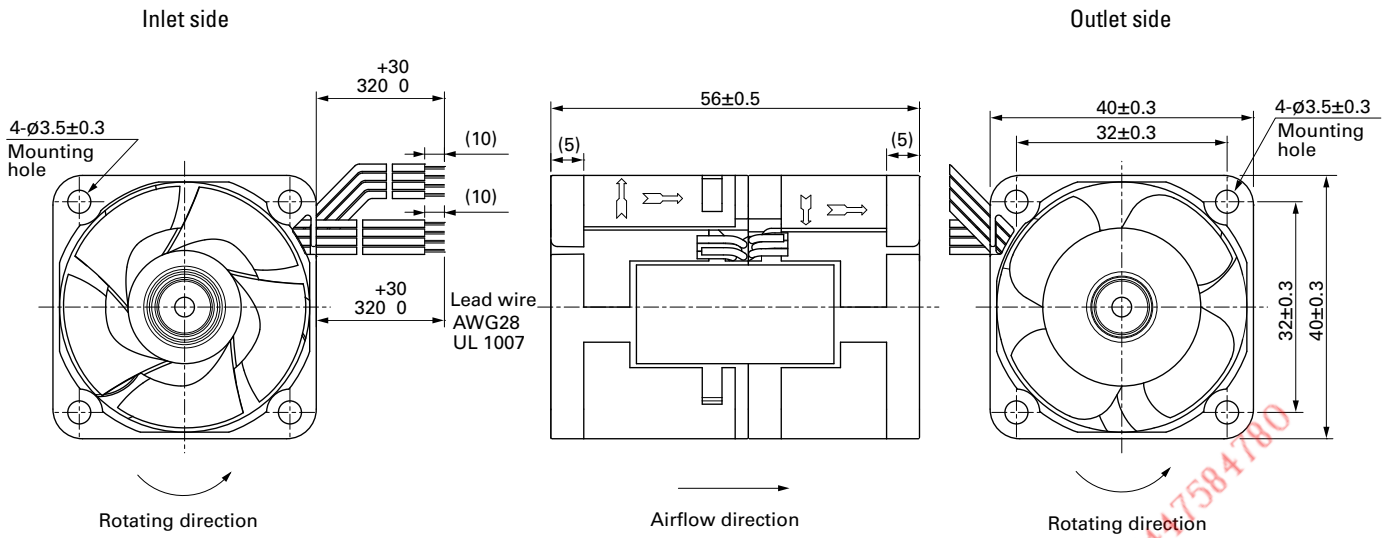
Operating voltage range



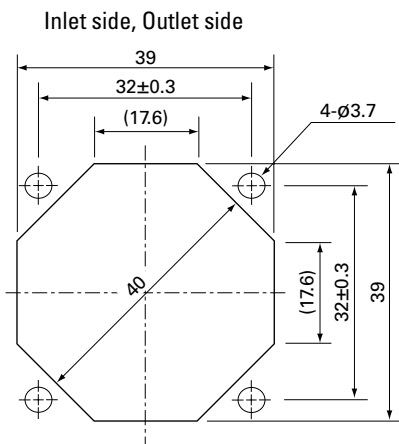
PWM duty - Speed characteristics example



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

www.kristor.by email: minsk17@tut.by тел. +375 29 7584780
г. Минск www.fotorele.net



40x40x56 mm

San Ace 40 9CRE 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 110 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]
						Inlet	Outlet	0.9	31.8	570.0	2.29			
9CRE0412P5J03	12	10.8 to 13.2	100	1.4	16.8	15800	12200	0.9	31.8	570.0	2.29	62	-20 to +70	40000/60°C
			0	0.1	1.2	2850	2250	0.12	4.2	13.7	0.055	20.5		

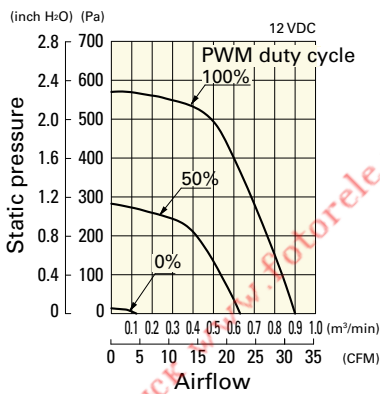
* PWM frequency: 25 kHz

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

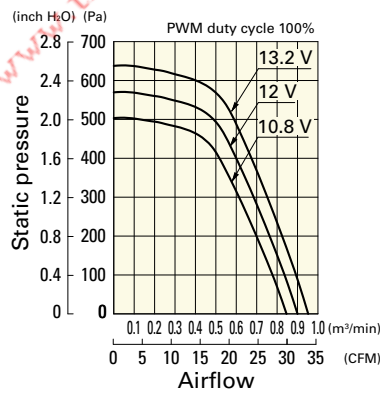
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRE0412P5J03 With pulse sensor with PWM control function

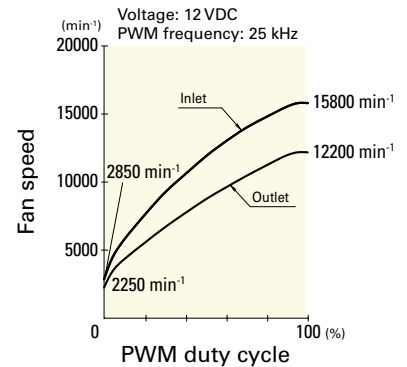
PWM duty cycle



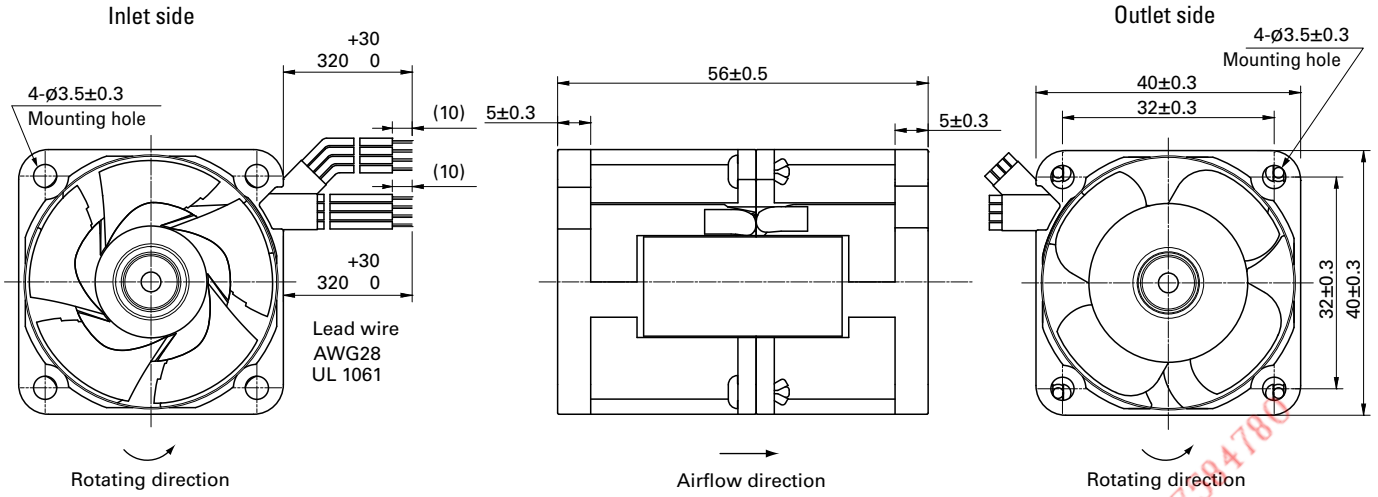
Operating voltage range



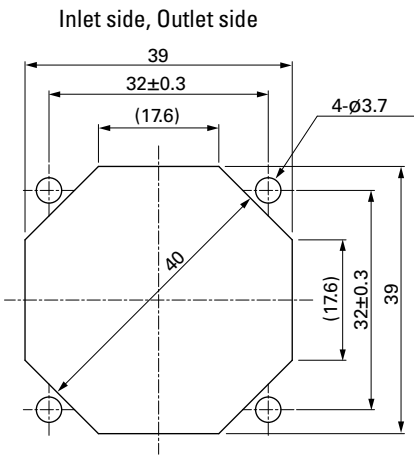
PWM duty - Speed characteristics example



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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60x60x51 mm

San Ace 60 9CR 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 180 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]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CR0612P5G03	12	10.8 to 13.2	100	2.7	32.4	11500	9000	2.03	71.7	600	2.41	68	-20 to +70	40000/60°C
			0	0.22	2.64	3000	2300	0.48	16.9	40	0.16	34		
9CR0612P5H03			100	2.0	24.0	10500	8200	1.85	65.4	500	2.01	65		
			0	0.22	2.64	3000	2300	0.48	16.9	40	0.16	34		

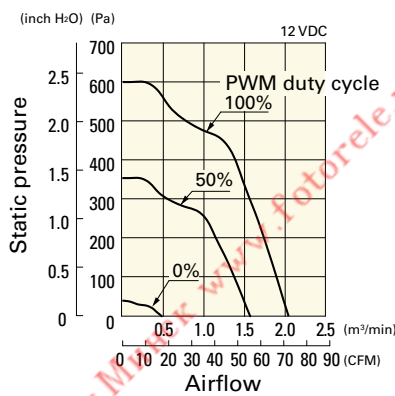
* PWM frequency: 25 kHz

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

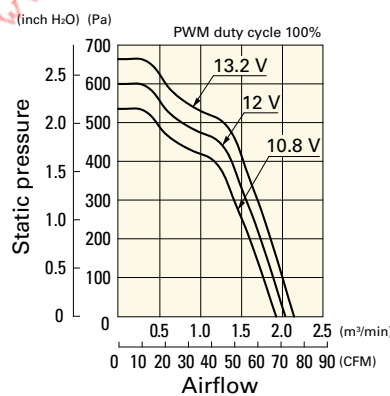
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CR0612P5G03 With pulse sensor with PWM control function

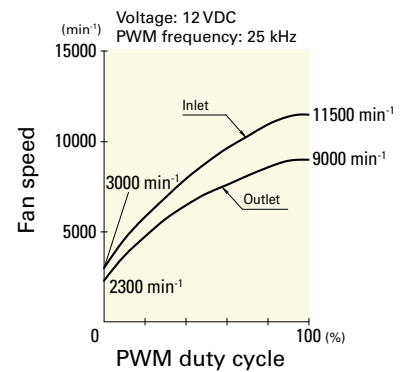
PWM duty cycle



Operating voltage range



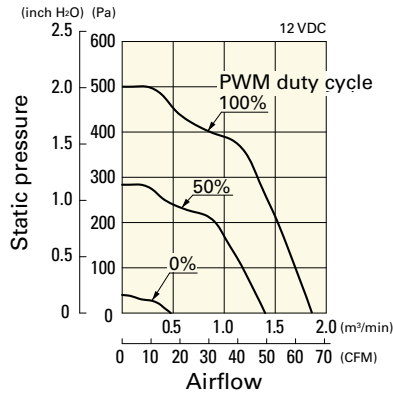
PWM duty - Speed characteristics example



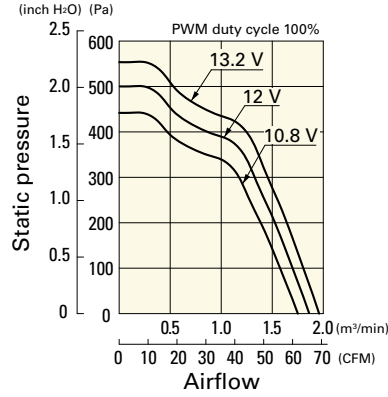
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CR0612P5H03 With pulse sensor with PWM control function

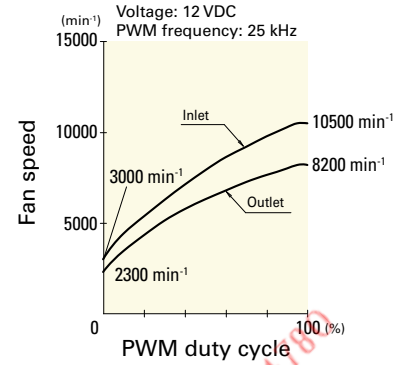
PWM duty cycle



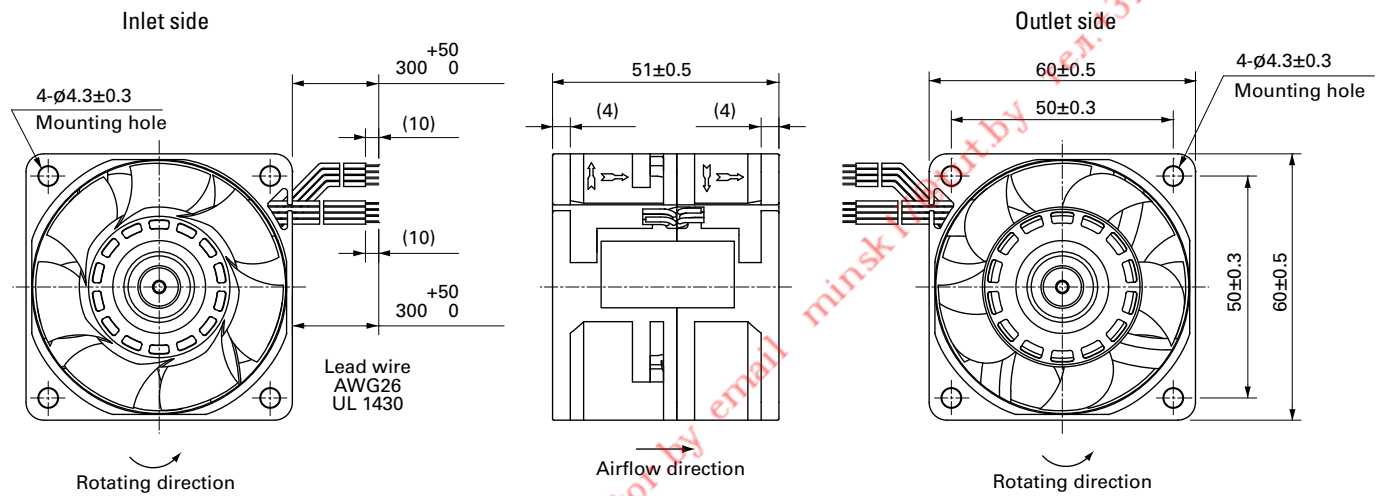
Operating voltage range



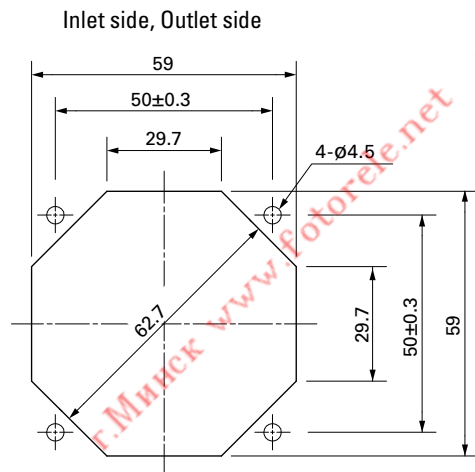
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-139E, 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)



60×60×56 mm

San Ace 60 9CRA 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 200 g

Specifications

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

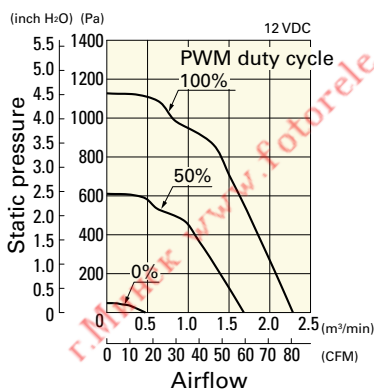
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CRA0612P6K001	12	10.8 to 13.2	100	3.1	37.2	18300	15800	2.28	80.5	1130	4.54	73	-20 to +70	30000/60°C
			0	0.17	2.0	3800	3300	0.47	16.6	49	0.2	35		
9CRA0612P6J001	12	10.8 to 13.2	100	2.3	27.6	16800	14500	2.1	74.2	950	3.82	70	-20 to +70	40000/60°C (70000/40°C)
			0	0.15	1.8	3800	3300	0.47	16.6	49	0.2	35		
9CRA0612P6G001	12	10.8 to 13.2	100	1.3	15.6	13500	11400	1.65	58.3	620	2.49	65	-20 to +70	40000/60°C (70000/40°C)
			0	0.1	1.2	3000	2500	0.36	12.7	31	0.12	29		

* PWM frequency: 25 kHz

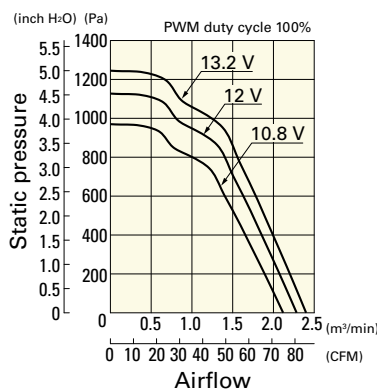
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0612P6K001 With pulse sensor with PWM control function

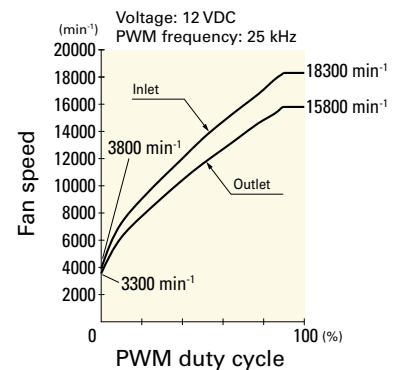
PWM duty cycle



Operating voltage range



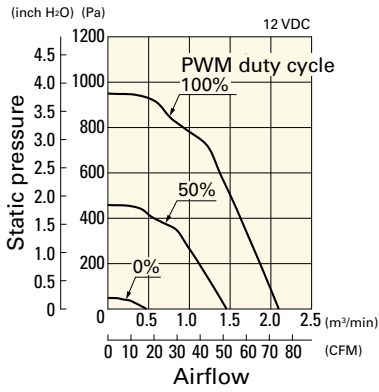
PWM duty - Speed characteristics example



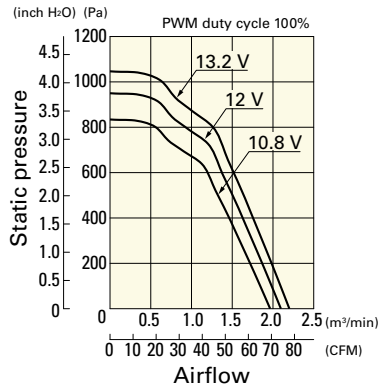
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0612P6J001 With pulse sensor with PWM control function

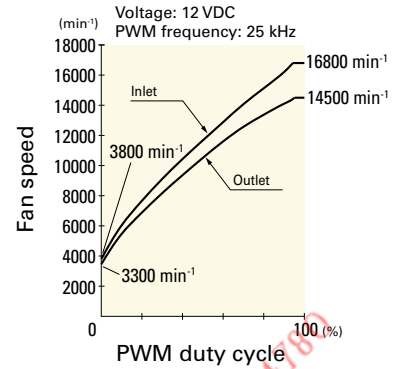
PWM duty cycle



Operating voltage range

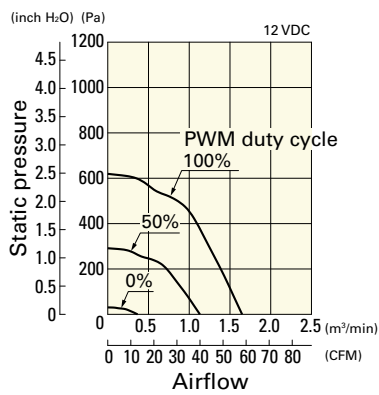


PWM duty - Speed characteristics example

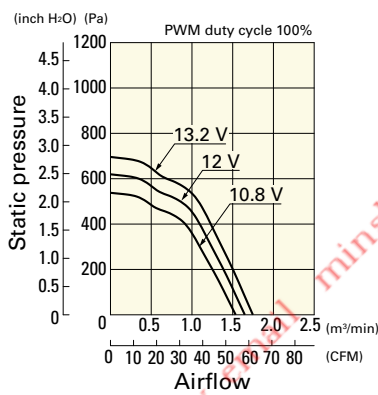


9CRA0612P6G001 With pulse sensor with PWM control function

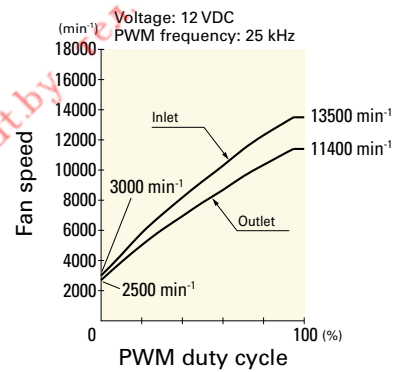
PWM duty cycle



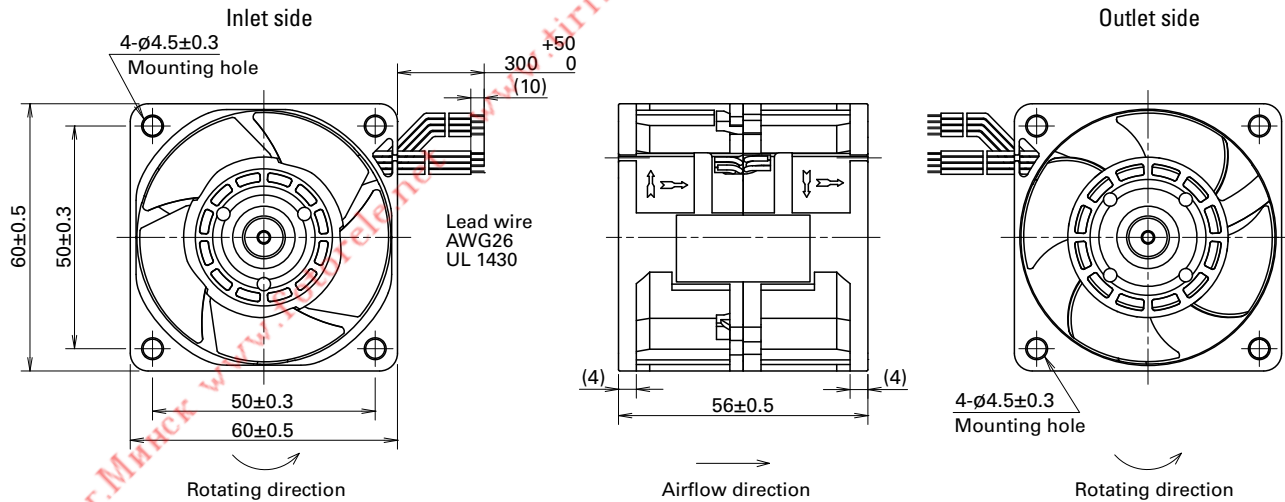
Operating voltage range



PWM duty - Speed characteristics example



Dimensions (unit: mm)



DC Counter Rotating Fan 60 mm sq.



60×60×76 mm

San Ace 60 9CRE type

DC Counter Rotating Fan 60 mm sq.

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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 300 g

Specifications

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

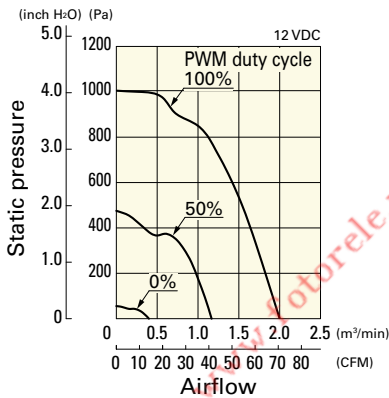
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CRE0612P0G001	12	10.8 to 13.2	100	2.3	27.6	16500	13000	2.0	70.6	1000	4.0	66	-20 to +70	40000/60°C (70000/40°C)
			0	0.22	2.7	3600	2800	0.43	15.1	47.6	0.19	32		

* PWM frequency: 25 kHz

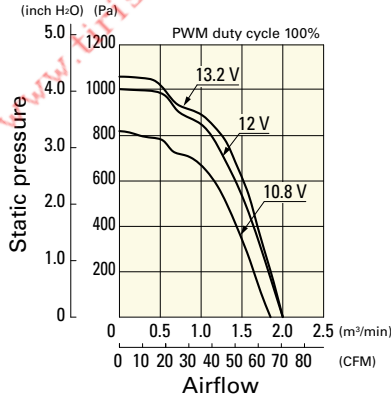
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRE0612P0G001 With pulse sensor with PWM control function

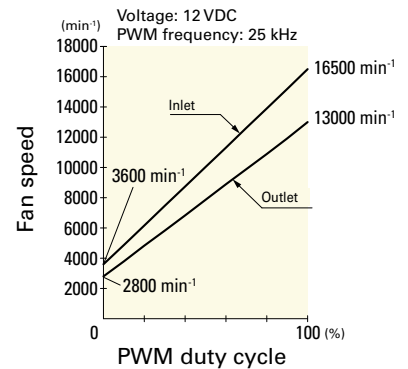
PWM duty cycle



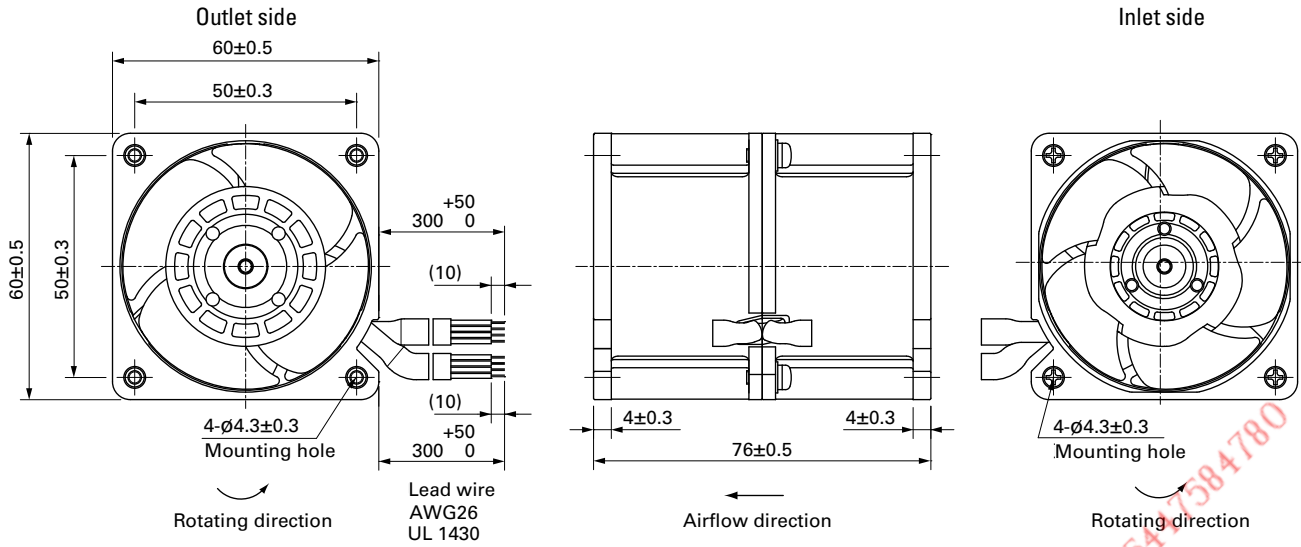
Operating voltage range



PWM duty - Speed characteristics example

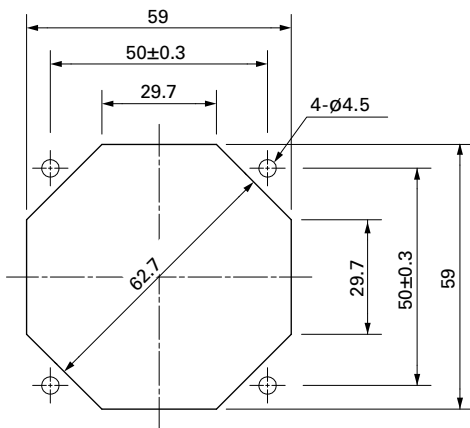


Dimensions (unit: mm)



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

Inlet side, Outlet side



Options

Finger guards

page: p. 513

Model no.: 109-139E, 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)



60×60×76 mm

San Ace 60 9CRA type

DC

Counter Rotating Fan 60 mm sq.

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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 270 g

Specifications

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

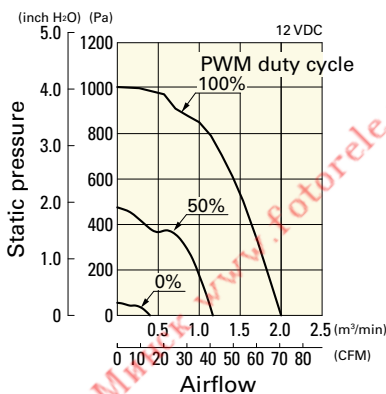
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRA0612P0G001	12	10.8 to 13.2	100	2.3	27.6	16500 13000	2.0 70.6	1000 4.0	66	-20 to +70	40000/60°C (70000/40°C)
			0	0.22	2.7	3600 2800	0.43 15.1	47.6 0.19	32		
9CRA0612P0S001			100	1.5	18.0	14000 11000	1.7 60.0	720 2.89	63		
			0	0.17	2.1	3200 2500	0.38 13.4	37.6 0.15	29		

* PWM frequency: 25 kHz

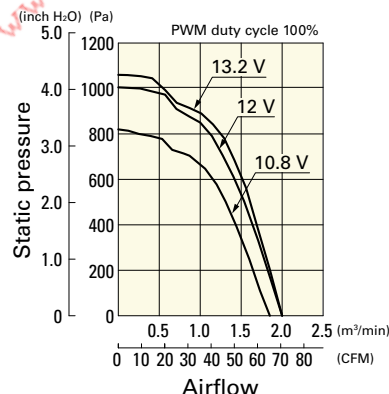
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0612P0G001 With pulse sensor with PWM control function

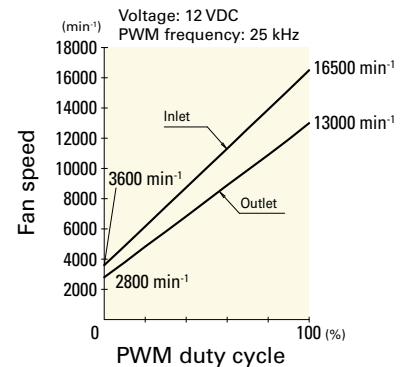
PWM duty cycle



Operating voltage range



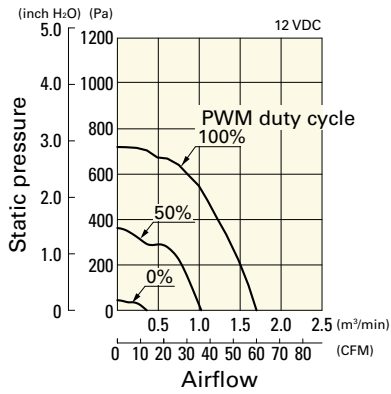
PWM duty - Speed characteristics example



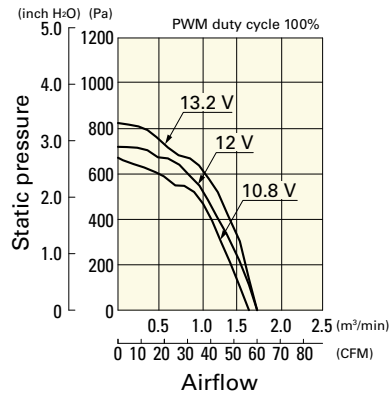
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0612P0S001 With pulse sensor with PWM control function

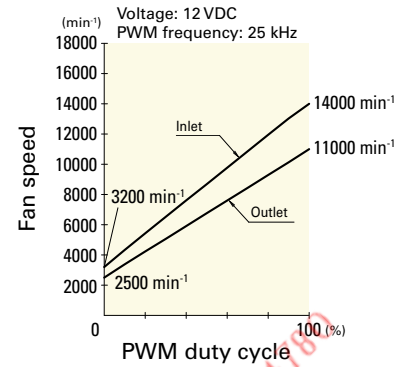
PWM duty cycle



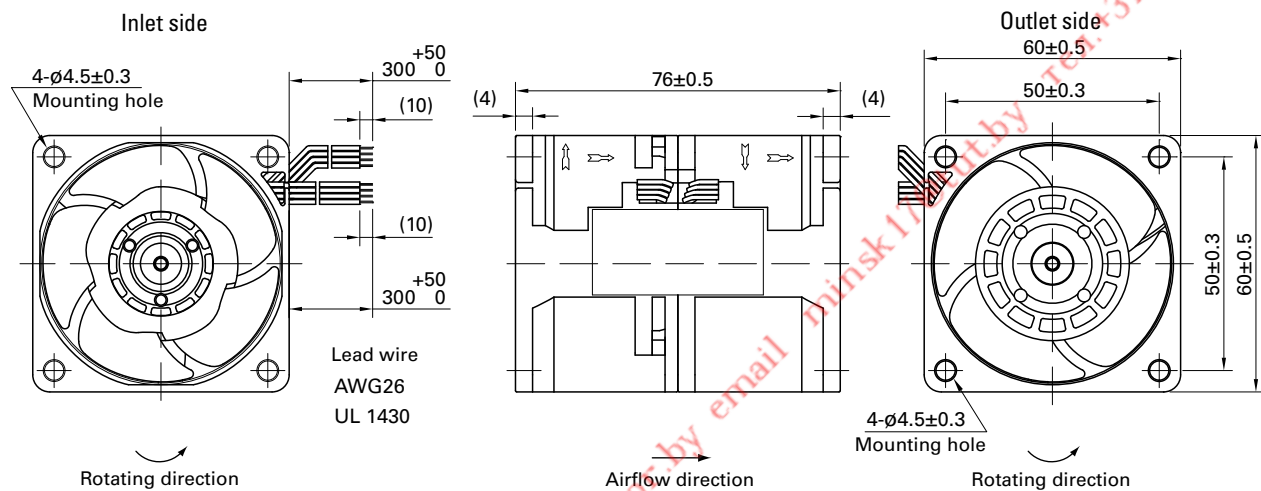
Operating voltage range



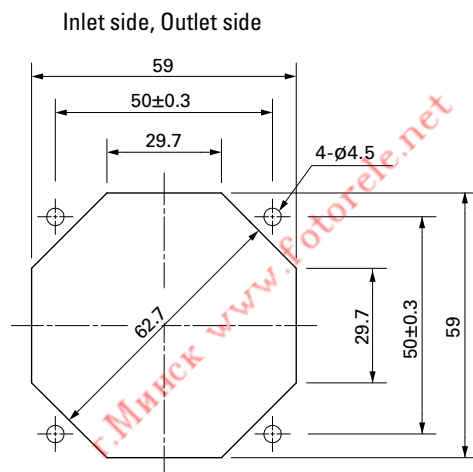
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-139E, 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)



80×80×80 mm

San Ace 80 9CRB type US

DC

Counter Rotating Fan 80 mm sq.

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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 430 g

Specifications

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

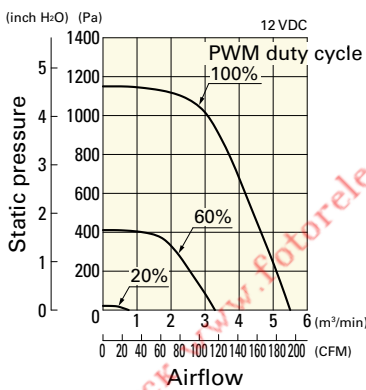
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle*[%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	0.7	24.7	21.6	0.09			
9CRB0812P8G001	12	10.8 to 13.2	100	9.2	110.4	14600	12200	5.5	194	1150	4.6	80	-20 to +70	40000/60°C (70000/40°C)
			20	0.17	2.04	2000	1670	0.7	24.7	21.6	0.09	24		

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

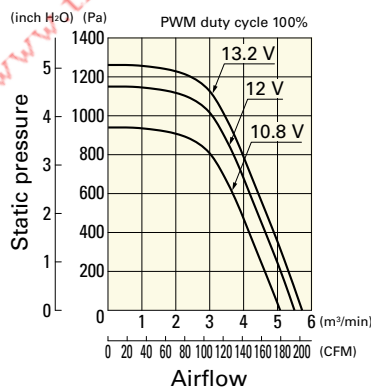
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRB0812P8G001 With pulse sensor with PWM control function

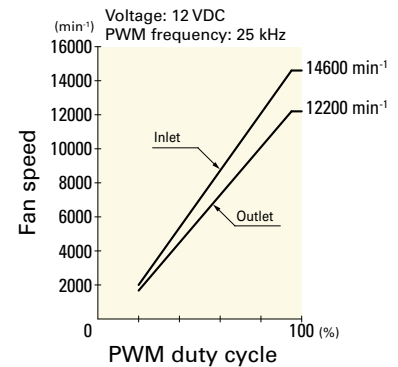
PWM duty cycle



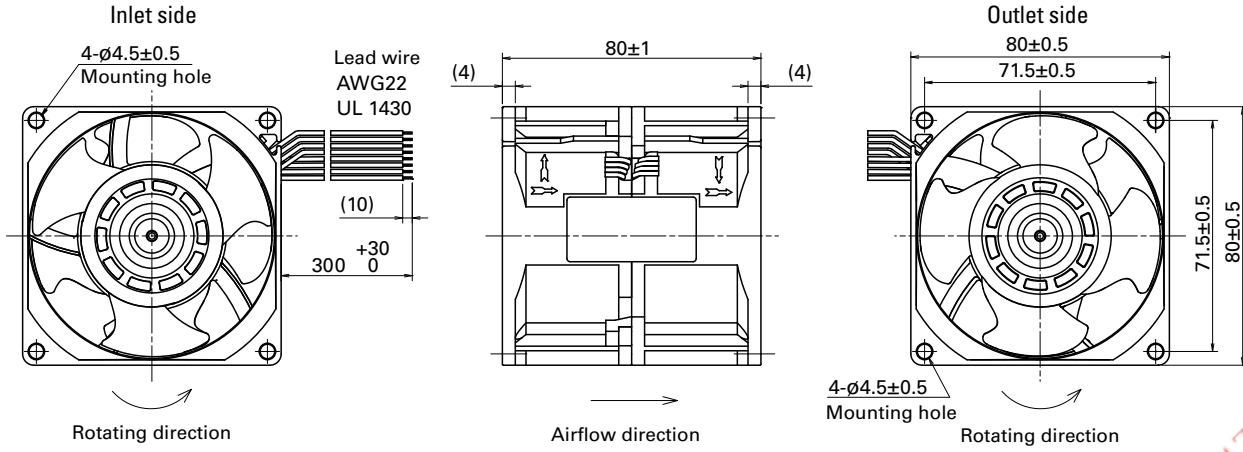
Operating voltage range



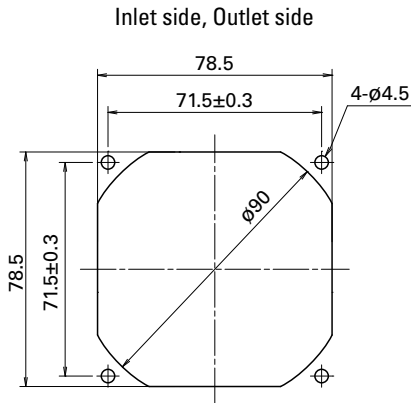
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-049E, 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)



80×80×80 mm

San Ace 80 9CRE type US

DC

Counter Rotating Fan 80 mm sq.

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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 490 g

Specifications

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

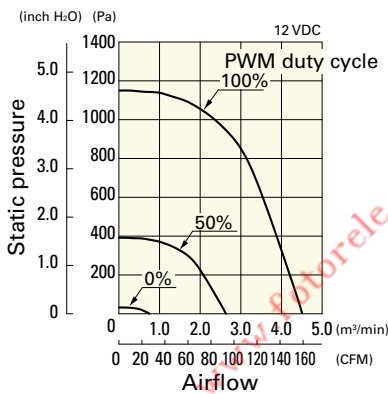
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CRE0812P8G001	12	10.8 to 13.2	100	5.3	63.6	12000	11300	4.5	158.9	1150	4.62	76	-20 to +70	40000/60°C (70000/40°C)
			0	0.2	2.4	2000	1900	0.74	26.1	31.9	0.13	30		

* PWM frequency: 25 kHz

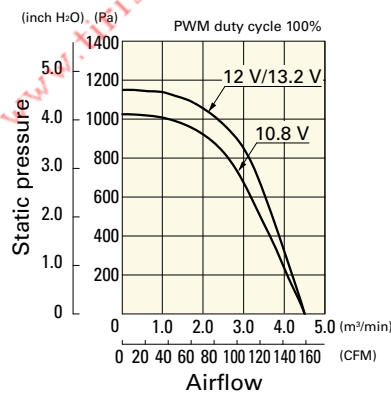
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRE0812P8G001 With pulse sensor with PWM control function

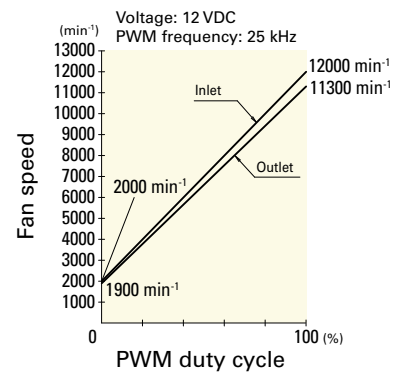
PWM duty cycle



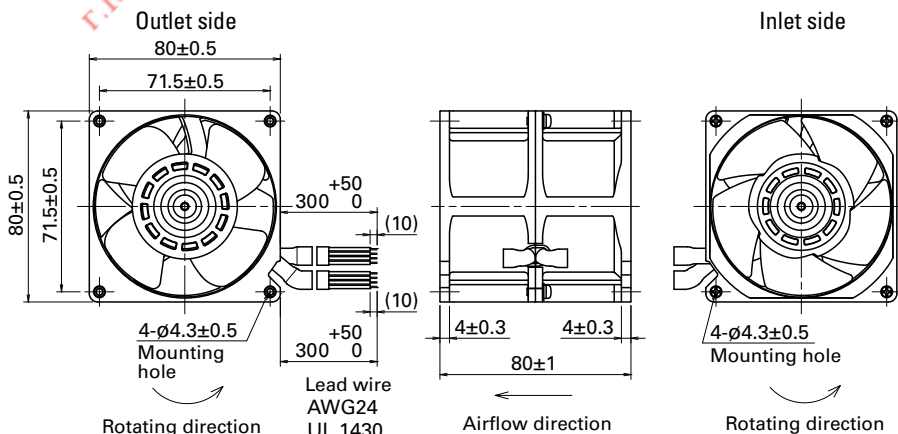
Operating voltage range



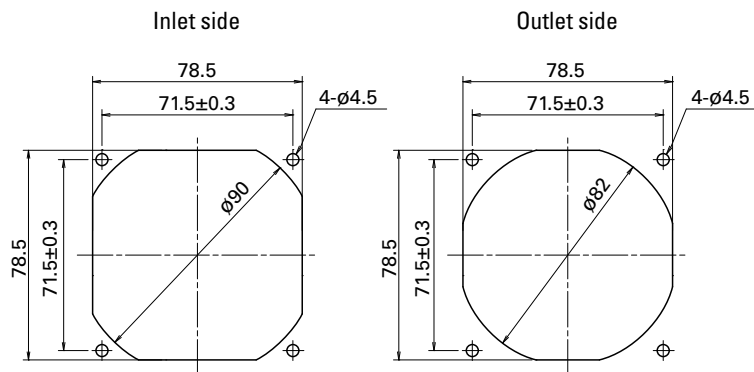
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-049E, 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)

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



80×80×80 mm

San Ace 80 9CRA type

DC

Counter Rotating Fan 80 mm sq.

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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 450 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]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CRA0812P8G001	12	10.8 to 13.2	100	5.3	63.6	12000	11300	4.5	158.9	1150	4.62	76	-20 to +70	40000/60°C (70000/40°C)
			0	0.2	2.4	2000	1900	0.74	26.1	31.9	0.13	30		
9CRA0824P8G001	24	21.6 to 26.4	100	2.65	63.6	12000	11300	4.5	158.9	1150	4.62	76		
			0	0.09	2.16	2000	1900	0.74	26.1	31.9	0.13	30		
9CRA0848P8G001	48	40.8 to 55.2	100	1.32	63.4	12000	11300	4.5	158.9	1150	4.62	76		
			0	0.29	13.9	5000	4700	1.88	66.2	200	0.8	52		

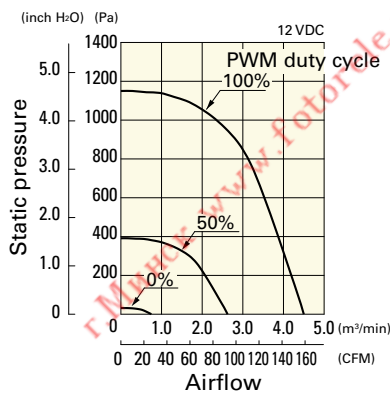
* PWM frequency: 25 kHz

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

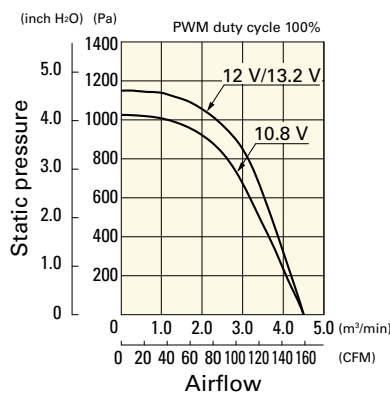
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0812P8G001 With pulse sensor with PWM control function

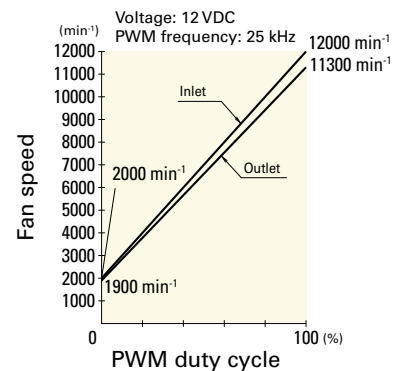
PWM duty cycle



Operating voltage range



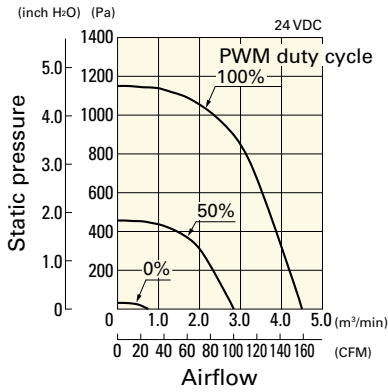
PWM duty - Speed characteristics example



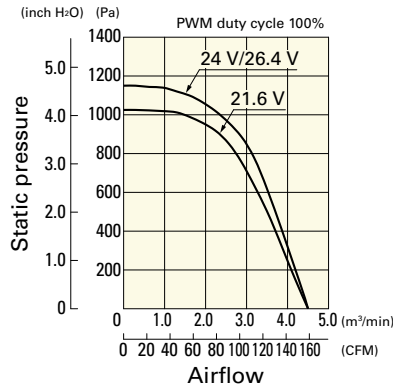
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0824P8G001 With pulse sensor with PWM control function

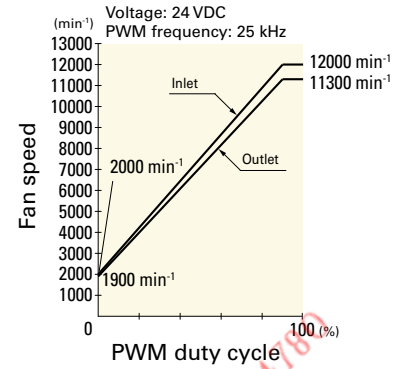
PWM duty cycle



Operating voltage range

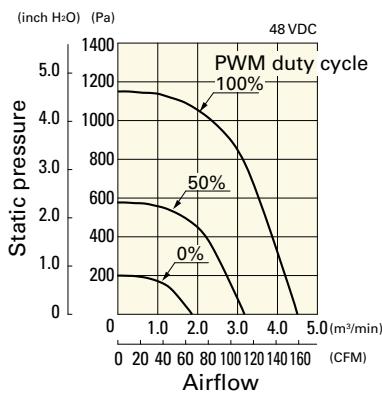


PWM duty - Speed characteristics example

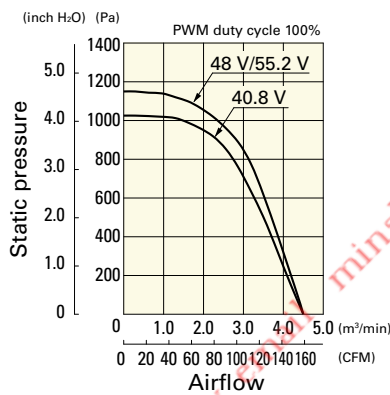


9CRA0848P8G001 With pulse sensor with PWM control function

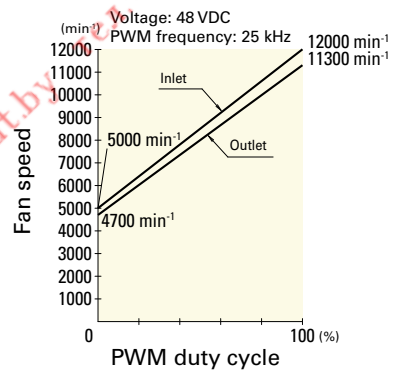
PWM duty cycle



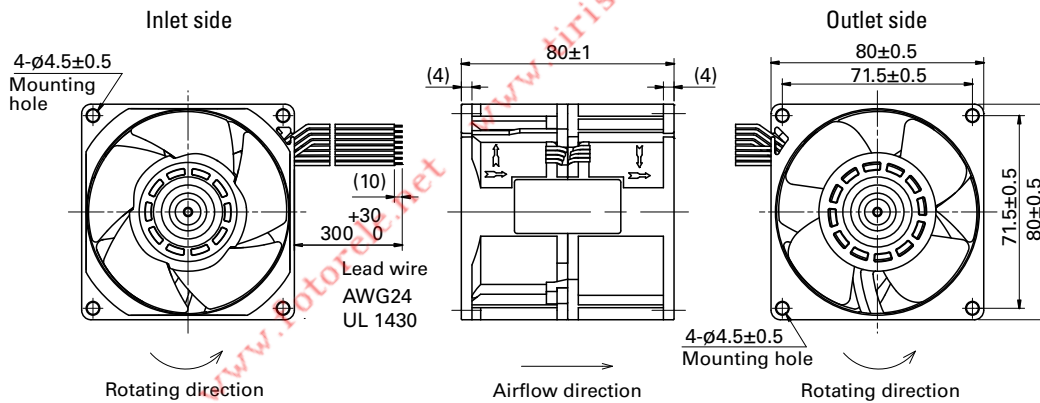
Operating voltage range



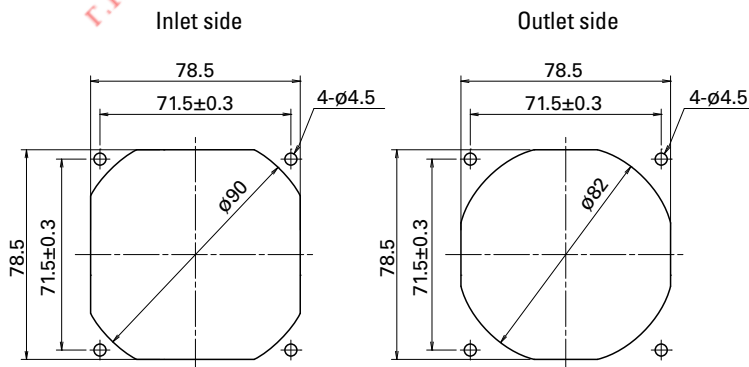
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-049E, 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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DC

Counter Rotating Fan 80 mm sq.



92x92x76 mm

San Ace 92 9CRA 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 510 g

Specifications

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

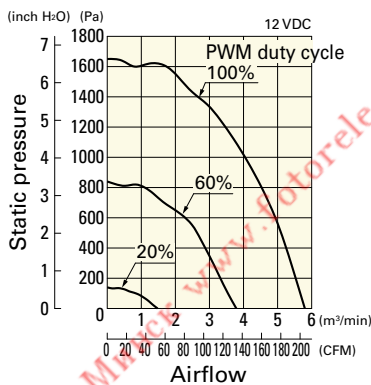
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CRA0912P0G001	12	10.2 to 13.2	100	9.0	108.0	13300	12200	5.8	205	1650	6.63	81	-20 to +70	40000/60°C (70000/40°C)
			20	0.42	5.04	3500	3200	1.48	52.3	140	0.56	47		
9CRA0948P0G601	48	36 to 60	100	2.2	105.6	13300	12200	5.8	205	1650	6.63	81		
			20	0.15	7.2	3500	3200	1.48	52.3	140	0.56	47		

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

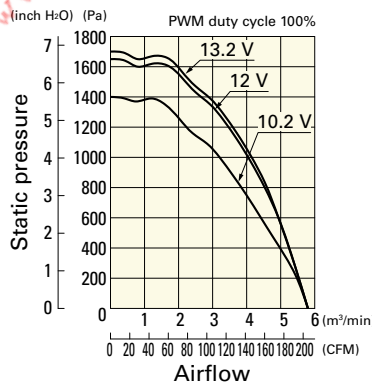
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0912P0G001 With pulse sensor with PWM control function

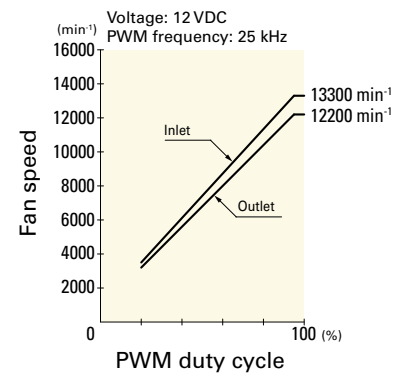
PWM duty cycle



Operating voltage range



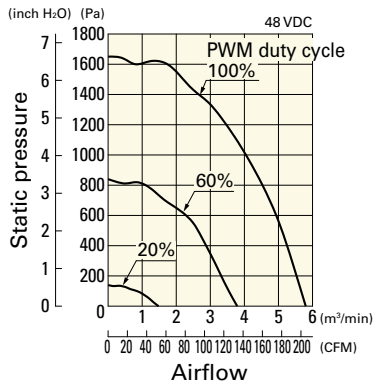
PWM duty - Speed characteristics example



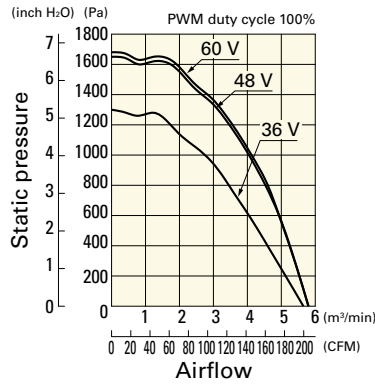
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0948P0G601 With pulse sensor with PWM control function

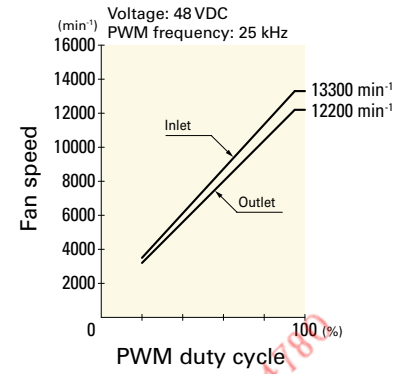
PWM duty cycle



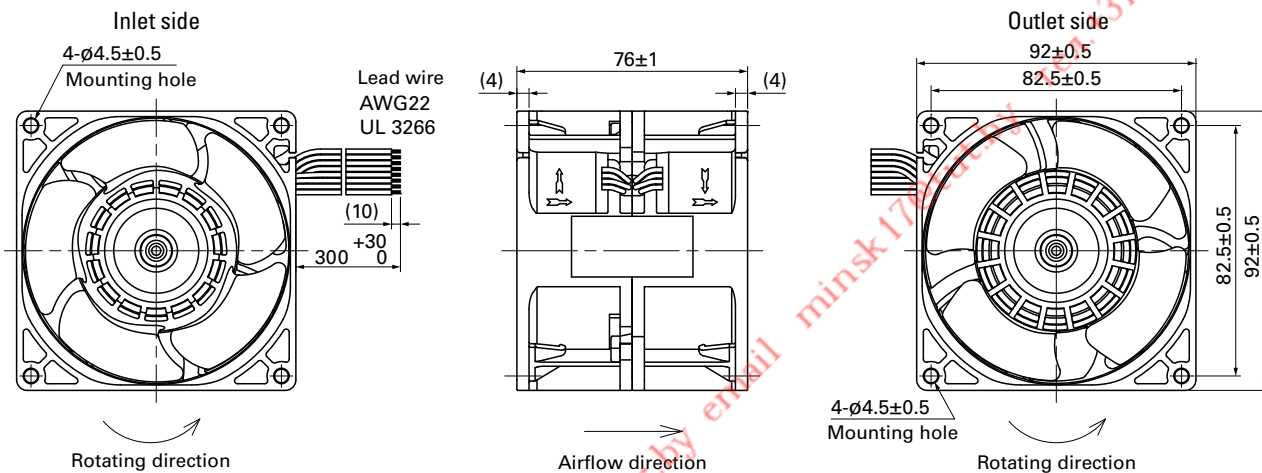
Operating voltage range



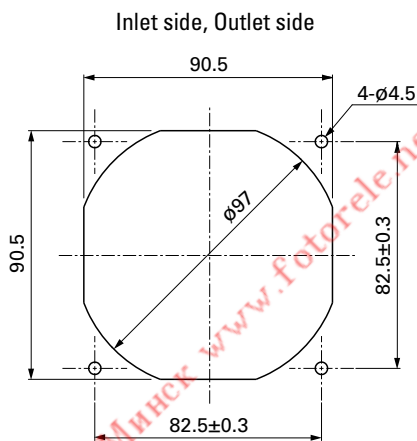
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-099E, 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)



120×120×76 mm

San Ace 120 9CR 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 670 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]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CR1212P0G03	12	10.8 to 13.2	100	7.2	86.4	6200	3800	8.5	300	480	1.93	70	-20 to +60	40000/60°C
			0	1.1	13.2	2700	1800	3.8	134	95	0.38	51		

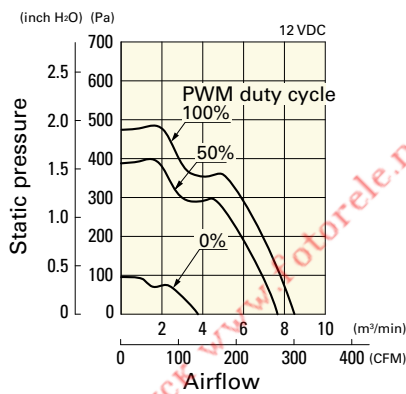
* PWM frequency: 25 kHz

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

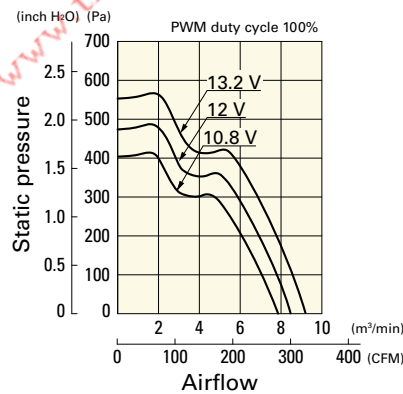
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CR1212P0G03 With pulse sensor with PWM control function

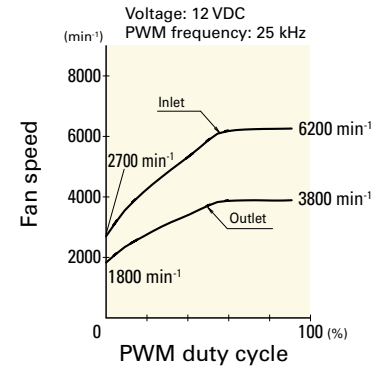
PWM duty cycle



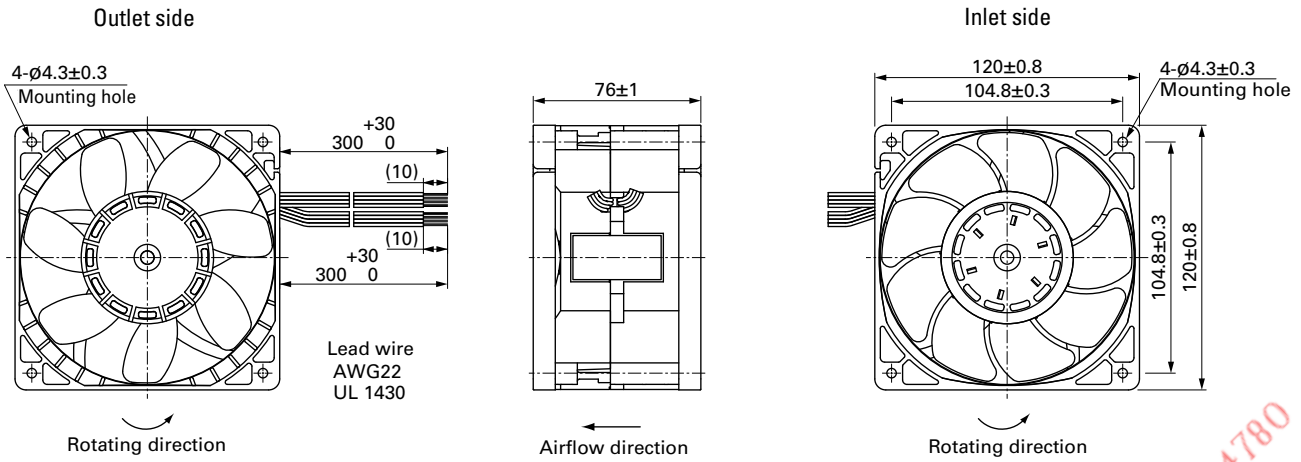
Operating voltage range



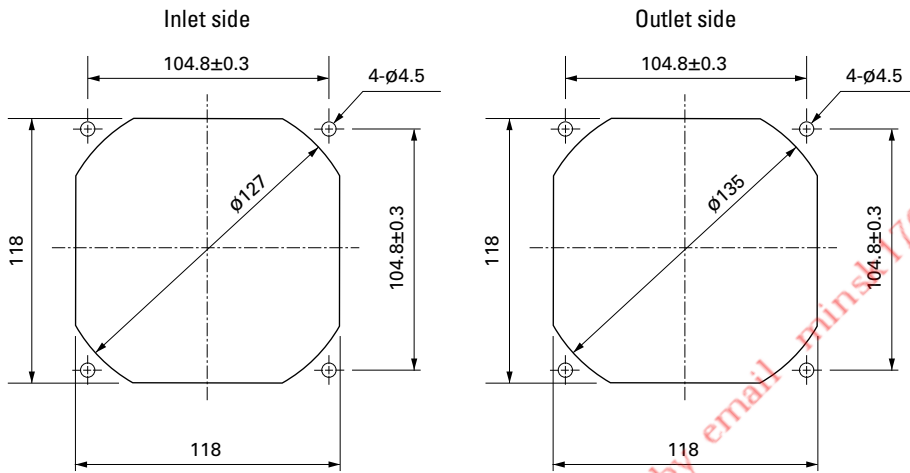
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 514

Model no.: 109-019E, 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)



Ø 172×150×102 mm

San Ace 172 9CR 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 1600 g

Specifications

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

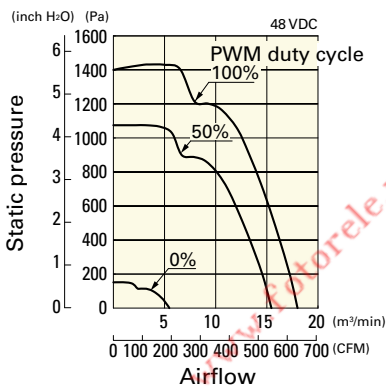
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CR5748P9G001	48	36 to 72	100	5.5	264	7300	6400	18	636	1400	5.62	83	-20 to +70	40000/60°C
			0	0.5	24	2400	1900	5.5	194.3	152	0.61			

* PWM frequency: 25 kHz

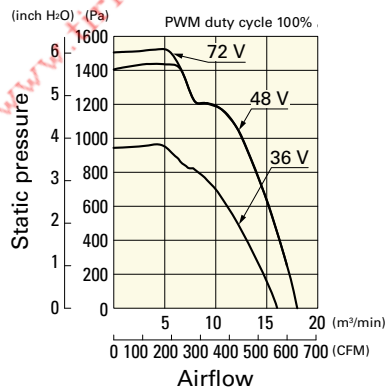
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CR5748P9G001 With pulse sensor with PWM control function

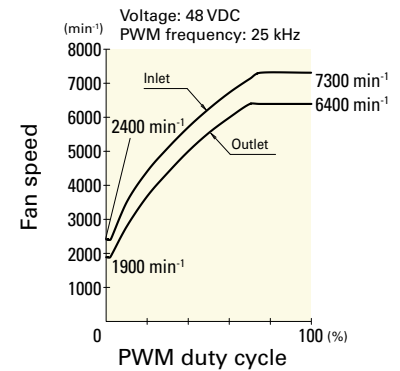
PWM duty cycle



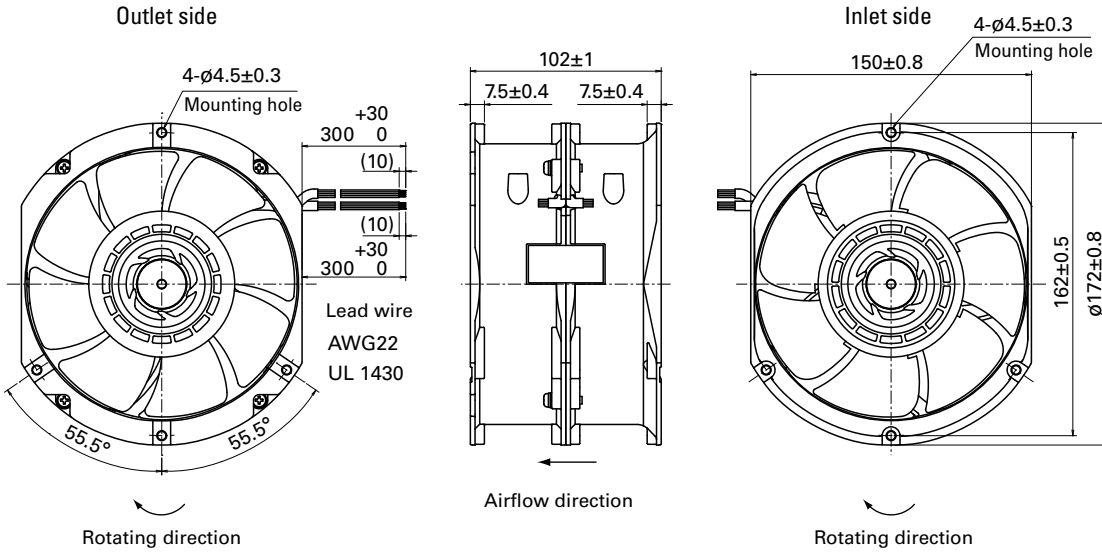
Operating voltage range



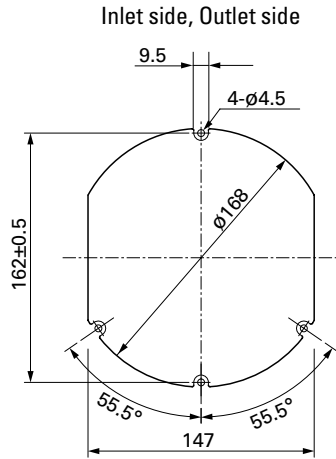
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-319J, 109-319E, 109-319H, 109-320

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

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

Reversible Flow Fan

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

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

9RF	13	12	P	3	H	001
Type name	Frame size	Voltage	PWM control function	Frame thickness	Speed code	Individual customer's spec

Type name	9RF	
Frame size (mm)	09	13
	∅92	∅136
Voltage (V)	12	24
	12	24
Frame thickness (mm)	1	3
	38	28
Speed code	H	

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.



Ø 92×38 mm

San Ace 92RF 9RF 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 150 g

Specifications

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

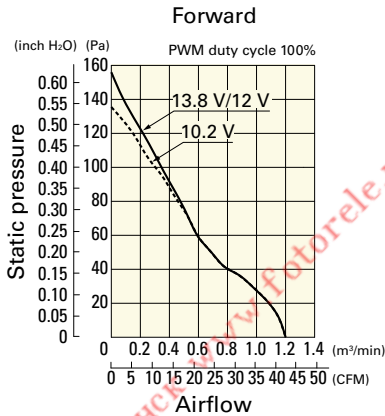
Model no.	Airflow direction	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9RF0912P1H001	Forward	12	10.2 to 13.8	100	0.17	2.0	5500	1.2 42.4	156 0.63	39	-20 to +70	40000/60°C (70000/40°C)
	Reverse			0								
9RF0924P1H001	Forward	24	20.4 to 27.6	100	0.09	2.2	5500	1.2 42.4	156 0.63	39		
	Reverse			0								

* PWM frequency: 25 kHz

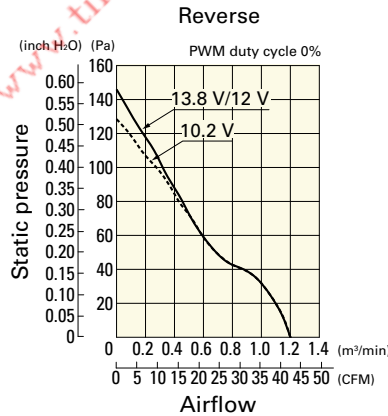
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9RF0912P1H001 With pulse sensor with PWM control function

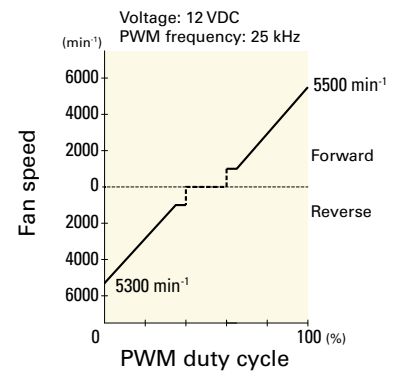
Operating voltage range



Operating voltage range



PWM duty - Speed characteristics example



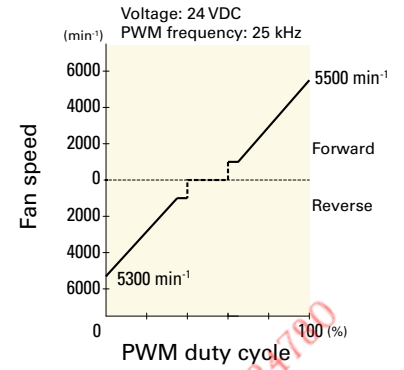
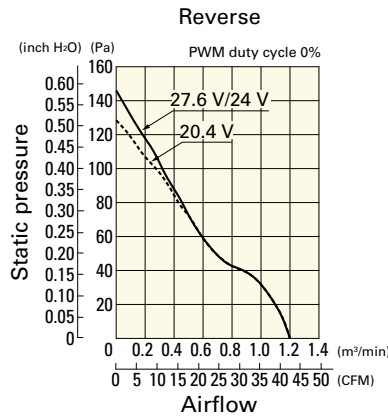
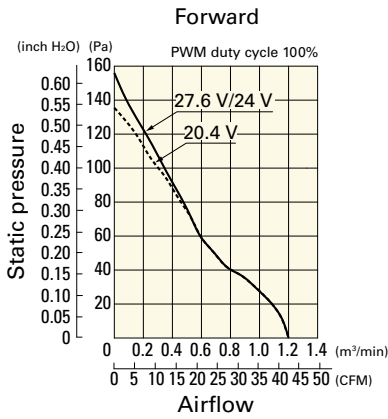
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9RF0924P1H001 With pulse sensor with PWM control function

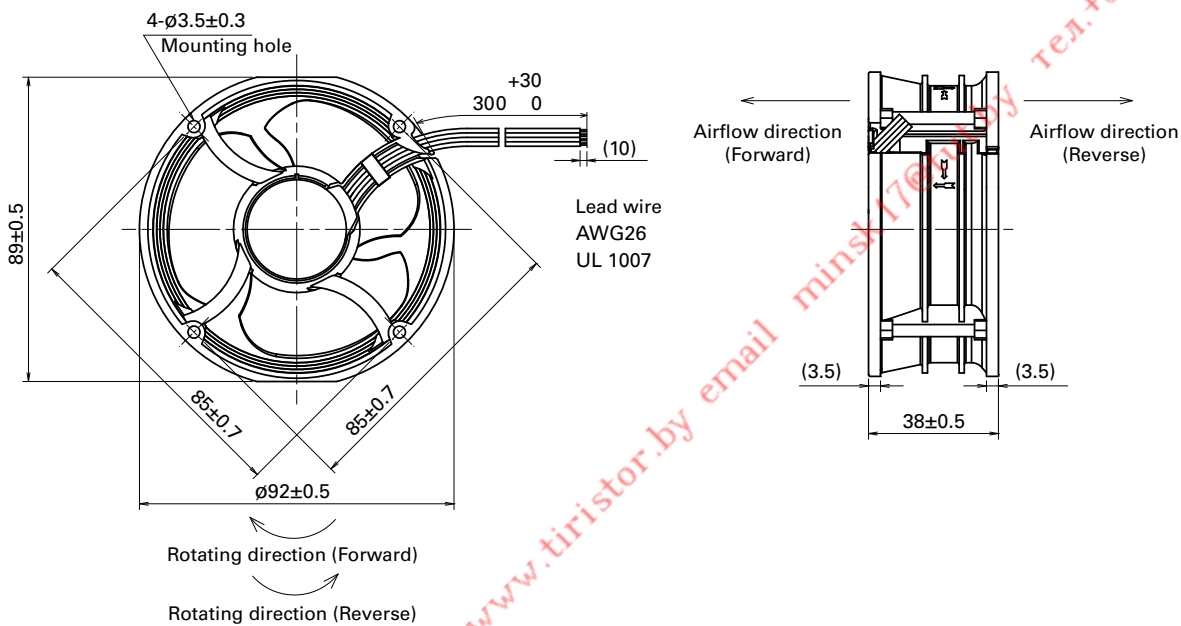
Operating voltage range

Operating voltage range

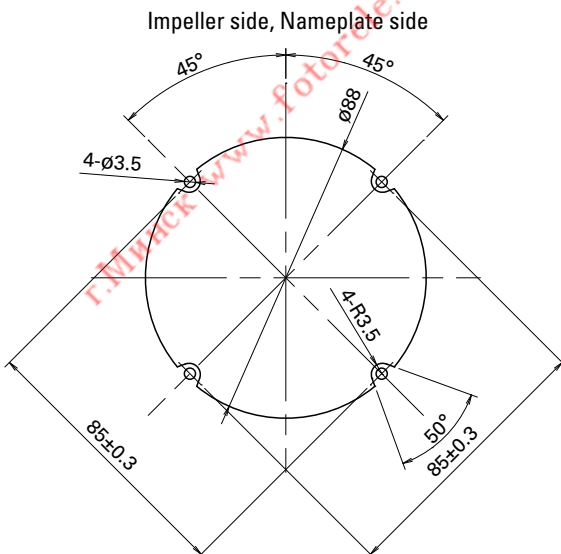
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-1147

DC
Reversible Flow Fan ∅92 mm



Ø 136x28 mm

San Ace 136RF 9RF 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 220 g

Specifications

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

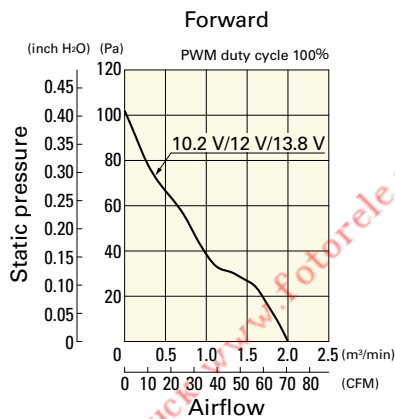
Model no.	Airflow direction	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9RF1312P3H001	Forward	12	10.2 to 13.8	100	0.15	1.8	3100	2.0 70.7	102 0.41	35	-20 to +70	40000/60°C (70000/40°C)
	Reverse			0								
9RF1324P3H001	Forward	24	20.4 to 27.6	100	0.09	2.2	3100	2.0 70.7	102 0.41	35		
	Reverse			0								

* PWM frequency: 25 kHz

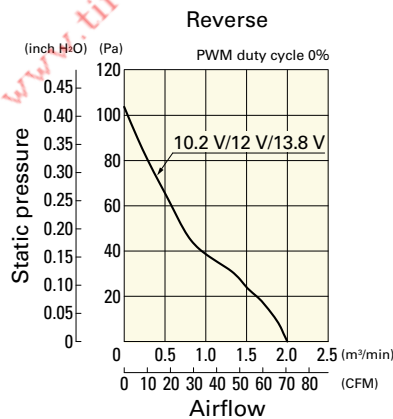
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9RF1312P3H001 With pulse sensor with PWM control function

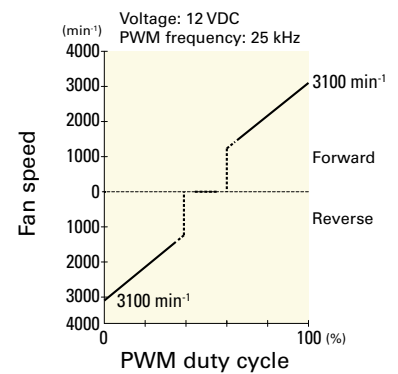
Operating voltage range



Operating voltage range



PWM duty - Speed characteristics example



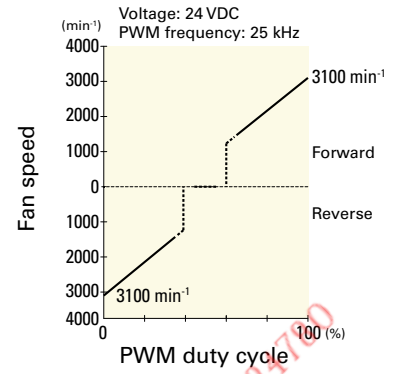
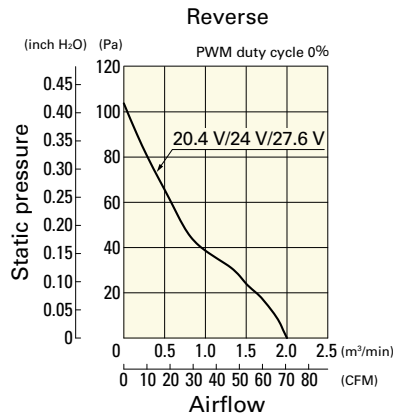
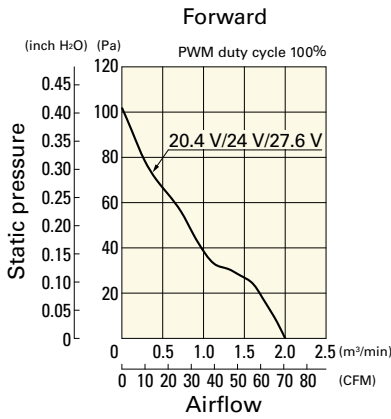
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9RF1324P3H001 With pulse sensor with PWM control function

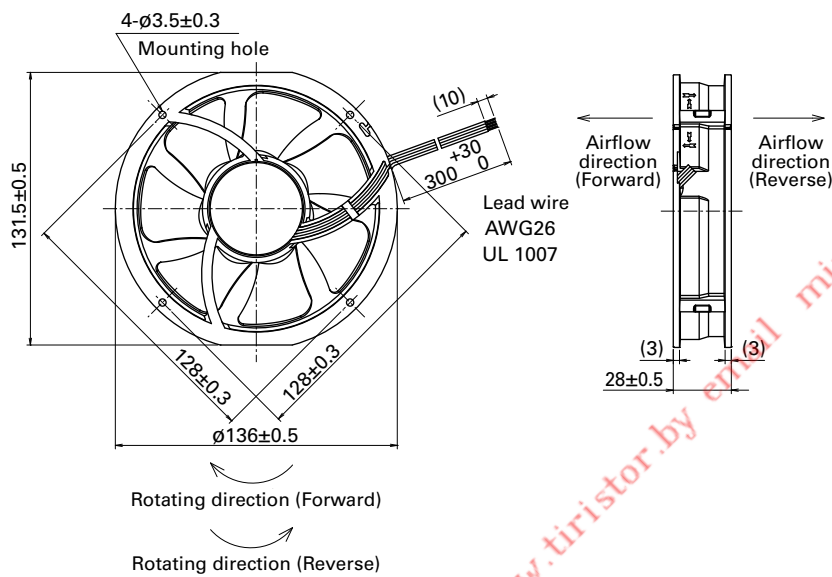
Operating voltage range

Operating voltage range

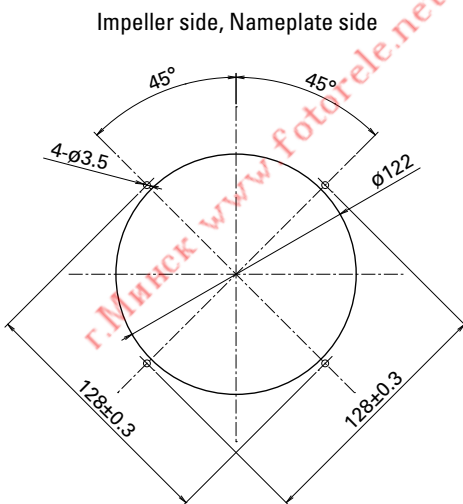
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 514

Model no.: 109-1139

DC
Reversible Flow Fan $\phi 136$ mm

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

Splash Proof Fan

Cooling fan of IP54, IP55 and IP68 waterproof capability. For more information on IP rating, refer to p. 534.
Related product: Splash Proof Centrifugal Fan p. 319, Oil Proof Fan p. 333

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

9WS	08	12	H	4	01	
Type name	Frame size	Voltage	Speed code	Frame thickness	Sensor specifications	Frame form

Fans with PWM control function

9WV	08	48	P	1	H	001	
Type name	Frame size	Voltage	PWM control function	Frame thickness	Speed code	Individual customer's spec (2 to 3 digits)	Frame form

Type name	9W	9WB	9WE	9WG	9WL	9WP	9WS	9WV	
Frame size (mm)	04	06	08	09	12	14	17	57	
	40×40	60×60	80×80	92×92	120×120	140×140	∅172	∅172×150 (sidecut)	
Voltage (V)	12	24	48						
	12	24	48	etc.					
Speed code	A	D	E	F	G	H	J	L	
Frame thickness (mm)	1	4	5	6					
	38	25	51	20					
Sensor specifications	01			02			D01		
	With a pulse sensor			Without a sensor			With a lock sensor		
Frame form	Nil				1				
	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.



40x40x28 mm

San Ace 40W 9WL type   

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 70 g
- Ingress protection IP68

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]
9WL0412P3J001	12	10.8 to 13.2	100	0.52	6.24	17500	0.63 22.2	400 1.61	51	-20 to +70	150000/60°C
			20	0.06	0.72	3600	0.13 4.6	16.9 0.07	20		
9WL0412P3G001	12	10.8 to 13.2	100	0.4	4.8	15500	0.56 19.7	310 1.24	47		
			20	0.06	0.72	3300	0.12 4.2	14.0 0.06	18		
9WL0424P3J001	24	21.6 to 26.4	100	0.26	6.24	17500	0.63 22.2	400 1.61	51		
			20	0.04	0.96	4000	0.14 5.1	20.9 0.08	22		
9WL0424P3G001	24	21.6 to 26.4	100	0.2	4.8	15500	0.56 19.7	310 1.24	47		
			20	0.04	0.96	3000	0.11 3.8	11.6 0.05	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. 559).

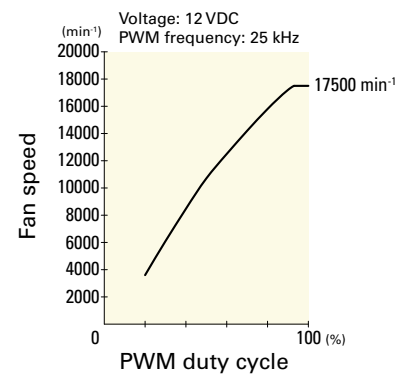
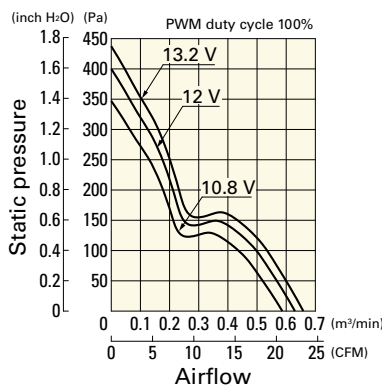
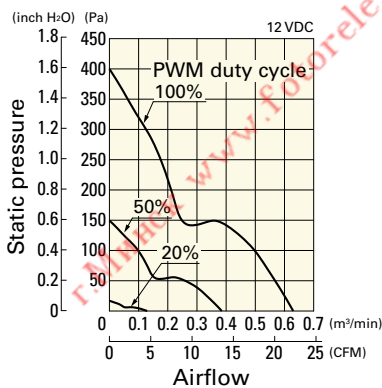
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0412P3J001 With pulse sensor with PWM control function

PWM duty cycle

Operating voltage range

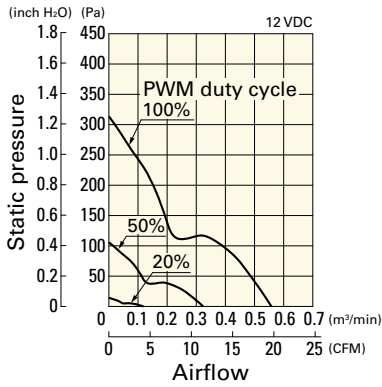
PWM duty - Speed characteristics example



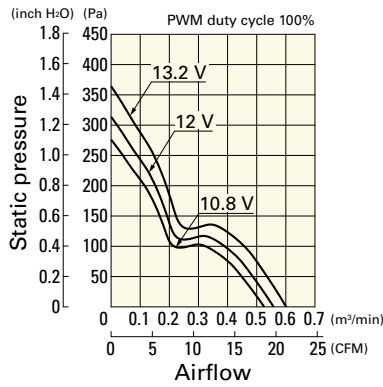
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0412P3G001 With pulse sensor with PWM control function

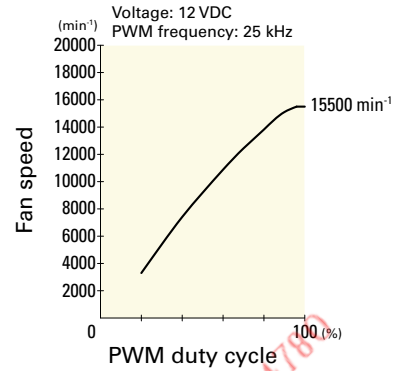
PWM duty cycle



Operating voltage range

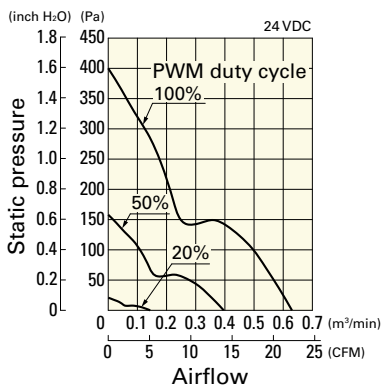


PWM duty - Speed characteristics example

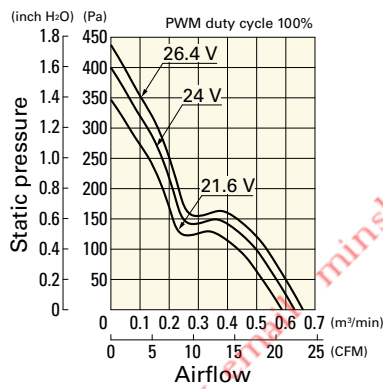


9WL0424P3J001 With pulse sensor with PWM control function

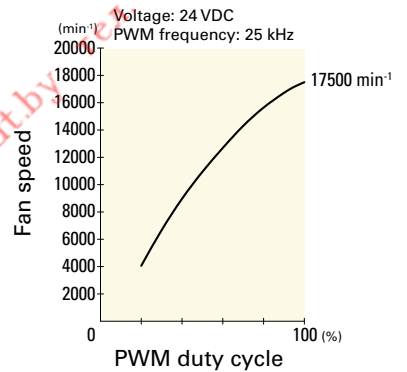
PWM duty cycle



Operating voltage range

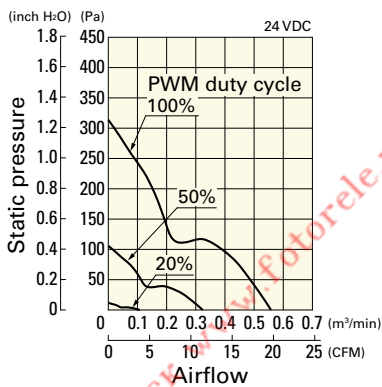


PWM duty - Speed characteristics example

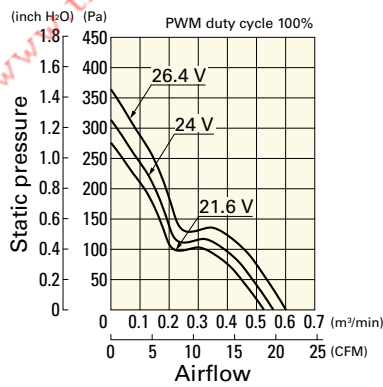


9WL0424P3G001 With pulse sensor with PWM control function

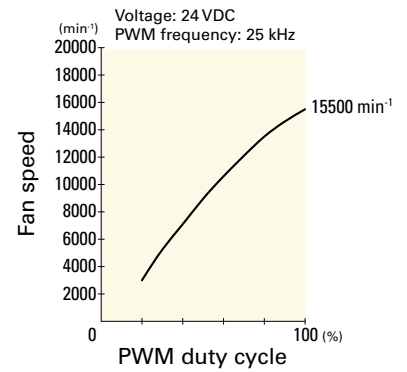
PWM duty cycle



Operating voltage range

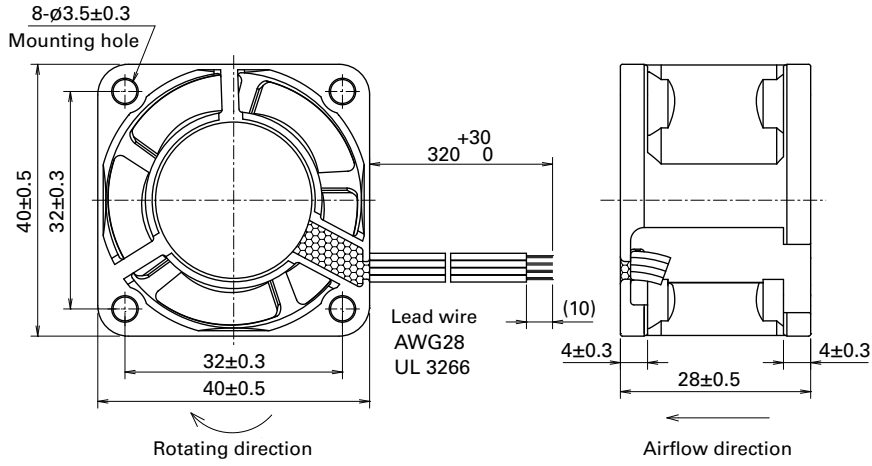


PWM duty - Speed characteristics example

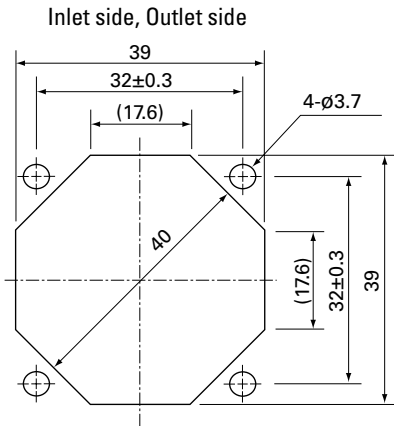


DC
Splash Proof Fan 40 mm sq.

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



60×60×25 mm

San Ace 60W 9WL type    

DC

Splash Proof Fan 60 mm sq.

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 120 g
- Ingress protection IP68

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]
9WL0612P4S001	12	10.8 to 13.2	100	0.67	8.04	11000	1.4 49.4	300 1.204	53	-20 to +70	18000/60°C
			20	0.06	0.72	2900	0.36 12.7	20.8 0.083	20		
9WL0612P4J001			100	0.39	4.68	8650	1.1 38.8	182 0.73	47		
			20	0.03	0.36	1150	0.13 4.8	3.3 0.013	14		
9WL0612P4H001			100	0.17	2.04	6150	0.78 27.5	97 0.389	36		
			20	0.03	0.36	1350	0.17 6.0	4.7 0.018	14		
9WL0624P4S001	24	21.6 to 26.4	100	0.34	8.16	11000	1.4 49.4	300 1.204	53		
			20	0.03	0.72	2900	0.36 12.7	20.8 0.083	20		
9WL0624P4J001			100	0.19	4.56	8650	1.1 38.8	182 0.73	47		
			20	0.02	0.48	2200	0.28 9.8	12.0 0.048	17		
9WL0624P4H001			100	0.08	1.92	6150	0.78 27.5	97 0.389	36		
			20	0.02	0.48	1300	0.16 5.6	4.3 0.017	14		

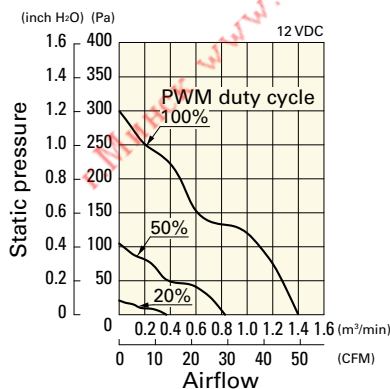
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 559).

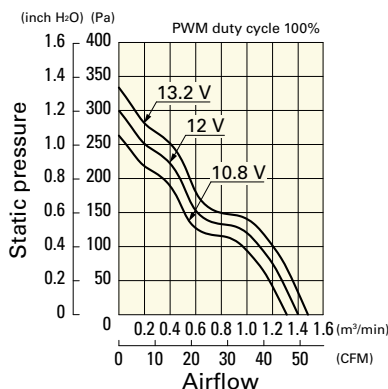
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0612P4S001 With pulse sensor with PWM control function

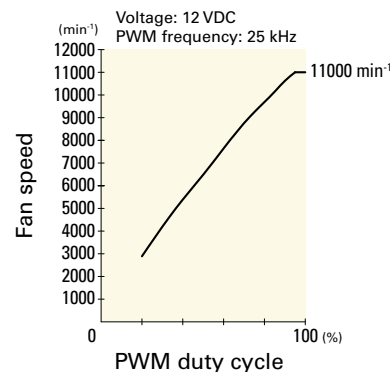
PWM duty cycle



Operating voltage range



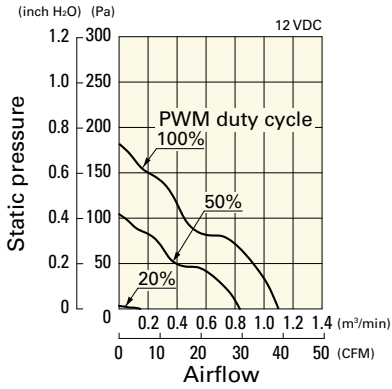
PWM duty - Speed characteristics example



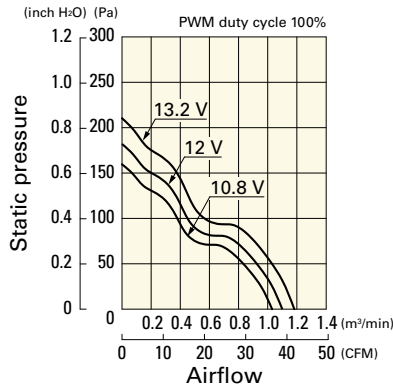
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0612P4J001 With pulse sensor with PWM control function

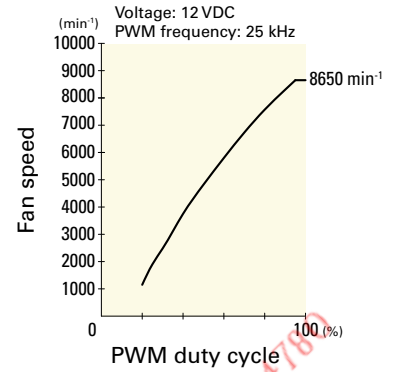
PWM duty cycle



Operating voltage range

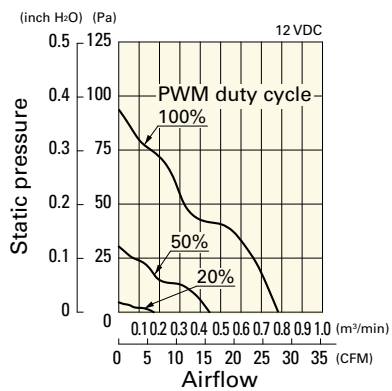


PWM duty - Speed characteristics example

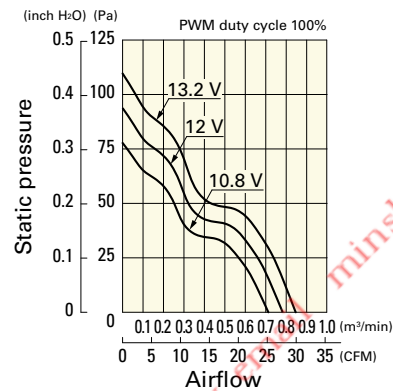


9WL0612P4H001 With pulse sensor with PWM control function

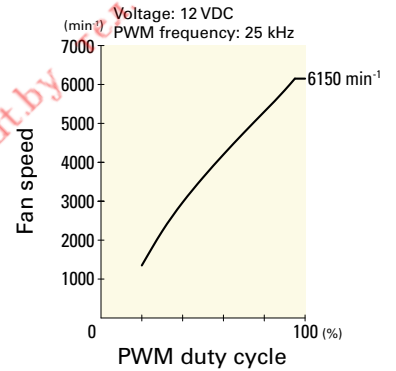
PWM duty cycle



Operating voltage range

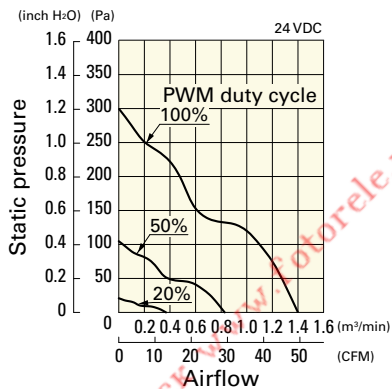


PWM duty - Speed characteristics example

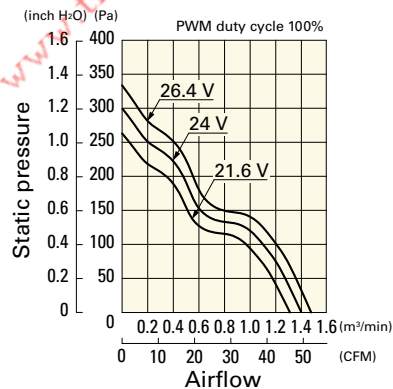


9WL0624P4S001 With pulse sensor with PWM control function

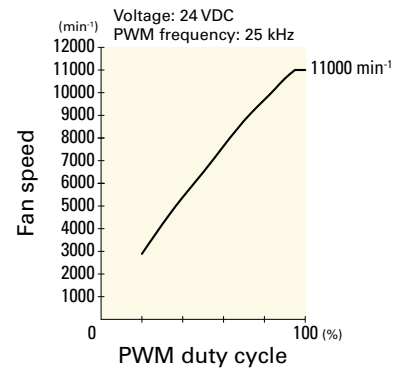
PWM duty cycle



Operating voltage range

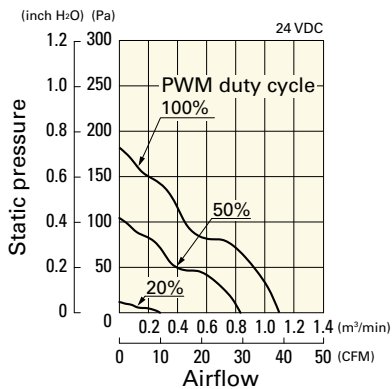


PWM duty - Speed characteristics example

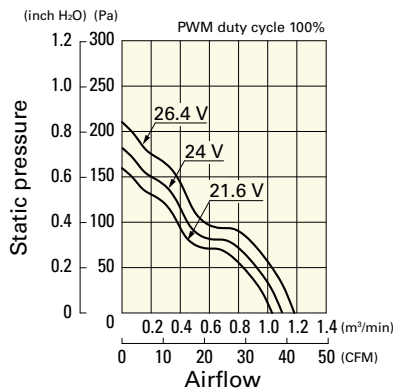


9WL0624P4J001 With pulse sensor with PWM control function

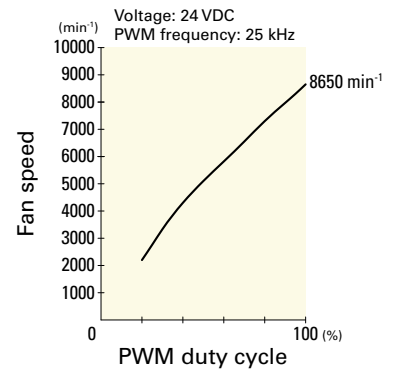
PWM duty cycle



Operating voltage range



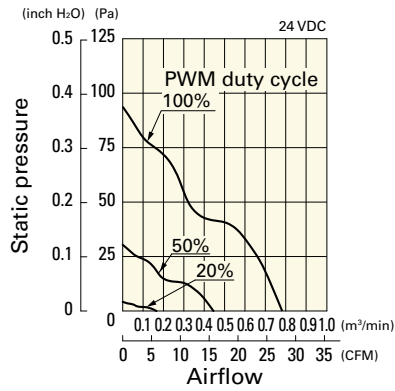
PWM duty - Speed characteristics example



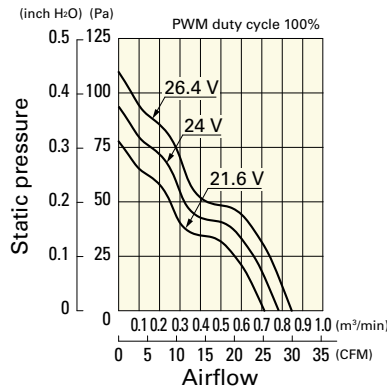
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0624P4H001 With pulse sensor with PWM control function

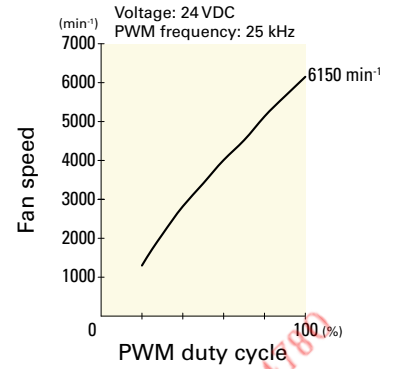
PWM duty cycle



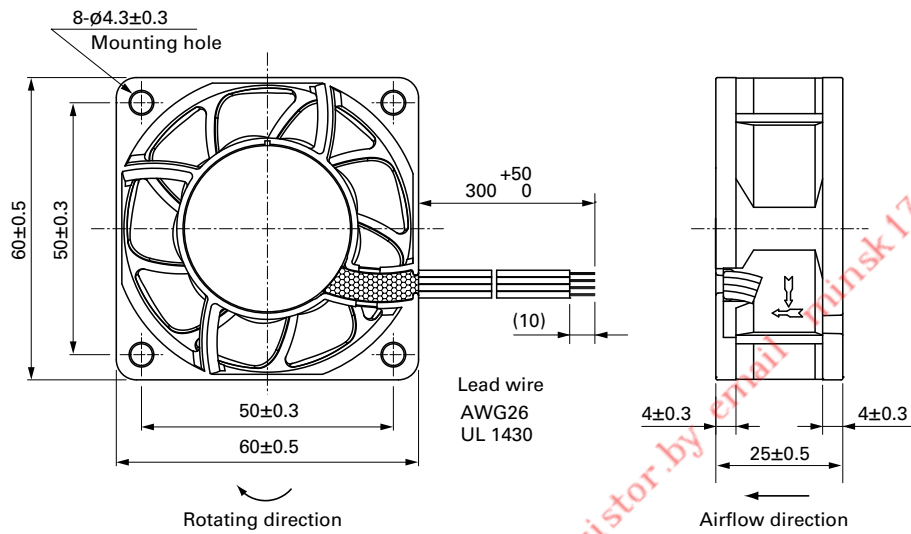
Operating voltage range



PWM duty - Speed characteristics example

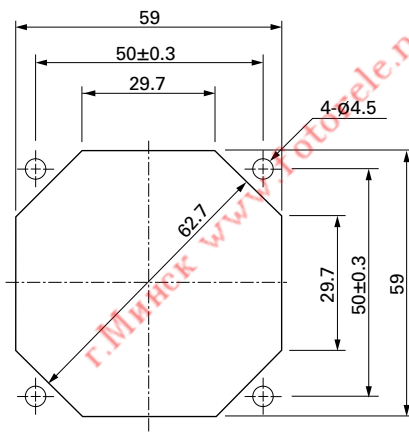


Dimensions (unit: mm)



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

Inlet side, Outlet side



Options

Finger guards

page: p. 513

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

Resin finger guards

page: p. 520

Model no.: 109-1003G

DC

Splash Proof Fan 60 mm sq.



60×60×25 mm

San Ace 60W 9WP 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 indoor 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
- Ingress protection IP68

Specifications

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

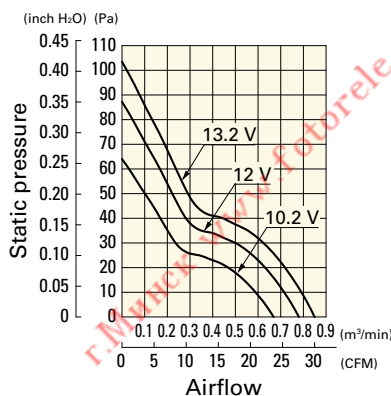
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WP0612G401	12	10.2 to 13.2	0.21	2.52	5600	0.78 27.5	87.3 0.351	39	-20 to +60	40000/60°C
9WP0612D401			0.21	2.52	5150	0.72 25	73.5 0.3	37		
9WP0612H401			0.11	1.32	3800	0.53 18.7	40.2 0.161	28		
9WP0624J401	24	21.6 to 26.4	0.2	4.8	7600	1.06 37.1	155.0 0.622	44	-20 to +60	40000/60°C
9WP0624G401			0.13	3.12	5600	0.78 27.5	87.3 0.351	39		
9WP0624H401			0.06	1.44	3800	0.53 18.7	40.2 0.161	28		
9WP0648H401	48	40 to 53	0.04	1.92	3800	0.53 18.7	40.2 0.161	28	-20 to +70	60000/60°C

Other sensor specifications are available as options. Refer to the index (pp. 559 to 560).

Airflow - Static Pressure Characteristics

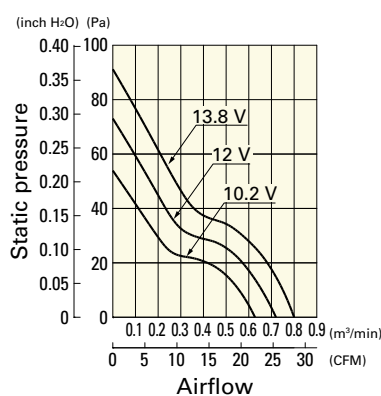
9WP0612G401 With pulse sensor

Operating voltage range



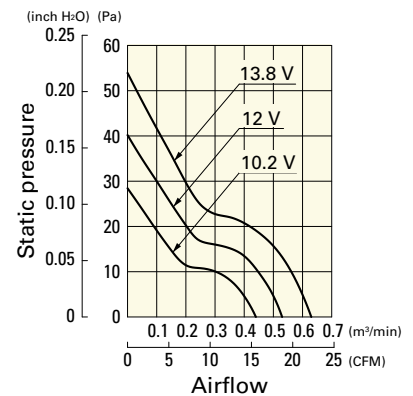
9WP0612D401 With pulse sensor

Operating voltage range



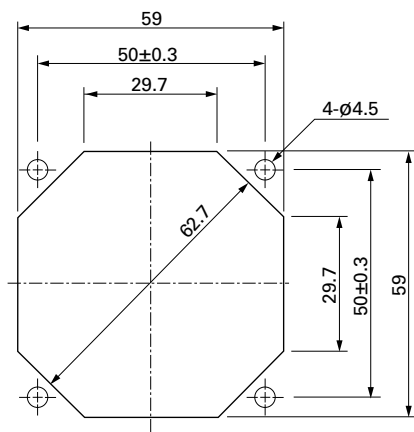
9WP0612H401 With pulse sensor

Operating voltage range



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

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



80×80×25 mm

San Ace 80W 9WL type  

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 150 g
- Ingress protection IP68

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]		
9WL0812P4J001	12	10.8 to 13.2	100	0.6	7.2	7400	2.07 73.0	177 0.71	49	-20 to +70	180000/60°C		
			20	0.06	0.72	1800	0.5 17.6	10.4 0.04	16				
9WL0812P4G001			100	0.3	3.6	5500	1.54 54.3	98 0.39	43				
			25	0.05	0.6	1400	0.39 13.7	6.3 0.02	14				
9WL0812P4H001			100	0.12	1.44	3700	1.03 36.3	44 0.17	31				
			25	0.04	0.48	1100	0.3 10.5	3.9 0.01	13				
9WL0824P4J001			24	21.6 to 26.4	100	0.28	6.72	7400	2.07 73.0			177 0.71	49
					20	0.05	1.2	2400	0.67 23.6			18.6 0.07	22
9WL0824P4G001					100	0.14	3.36	5500	1.54 54.3			98 0.39	43
					20	0.02	0.48	1200	0.33 11.6			4.6 0.01	13
9WL0824P4H001	100	0.05			1.2	3700	1.03 36.3	44 0.17	31				
	30	0.02			0.48	1100	0.3 10.5	3.9 0.01	13				

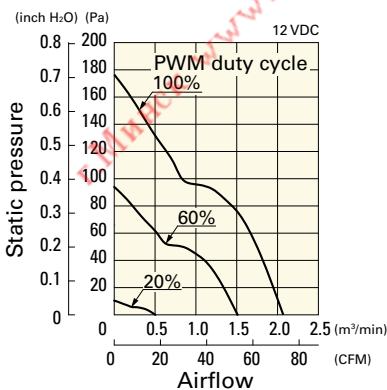
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 559).

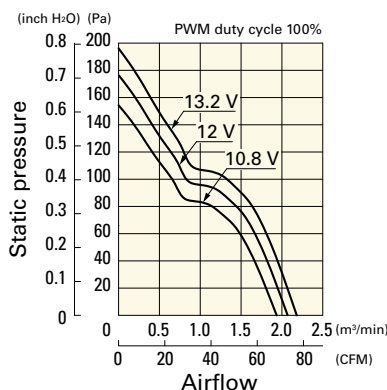
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0812P4J001 With pulse sensor with PWM control function

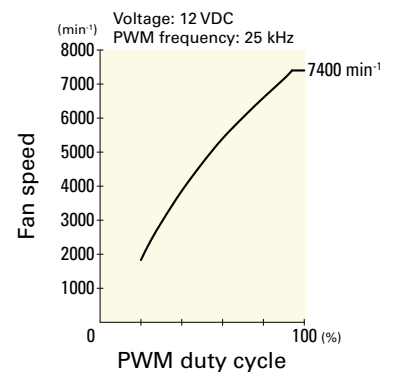
PWM duty cycle



Operating voltage range



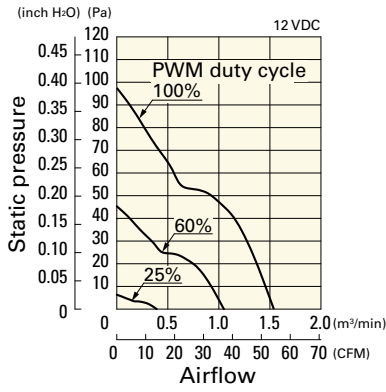
PWM duty - Speed characteristics example



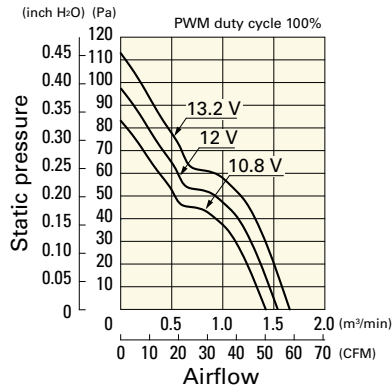
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0812P4G001 With pulse sensor with PWM control function

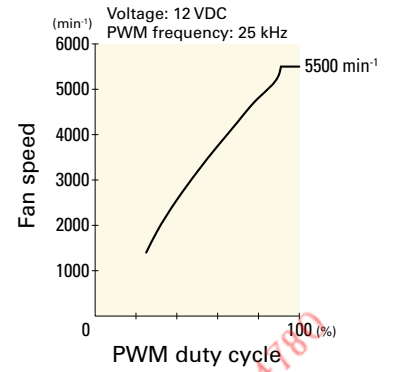
PWM duty cycle



Operating voltage range

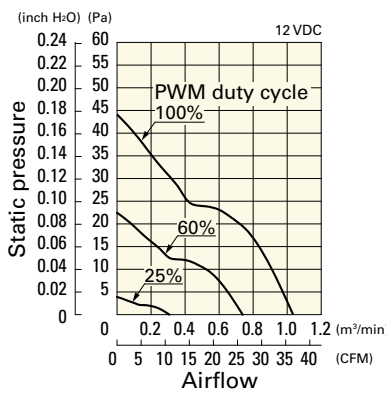


PWM duty - Speed characteristics example

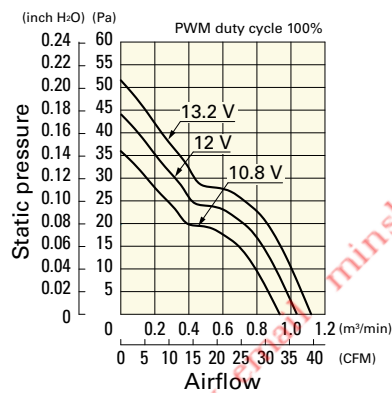


9WL0812P4H001 With pulse sensor with PWM control function

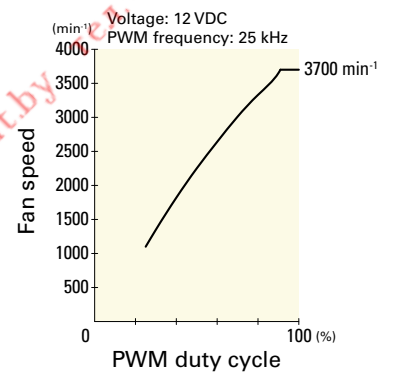
PWM duty cycle



Operating voltage range

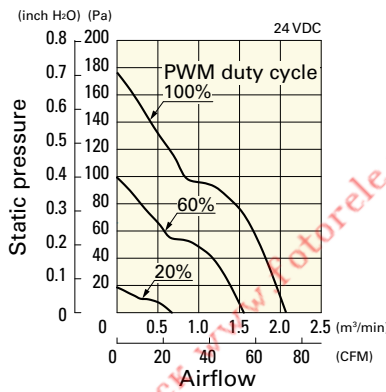


PWM duty - Speed characteristics example

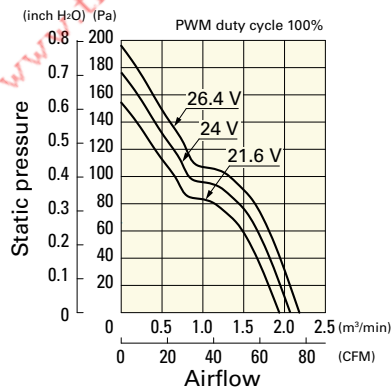


9WL0824P4J001 With pulse sensor with PWM control function

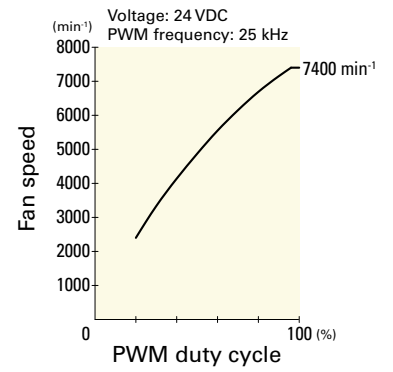
PWM duty cycle



Operating voltage range

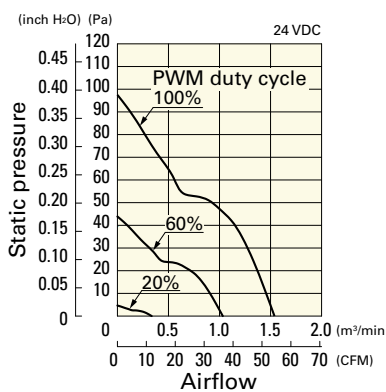


PWM duty - Speed characteristics example

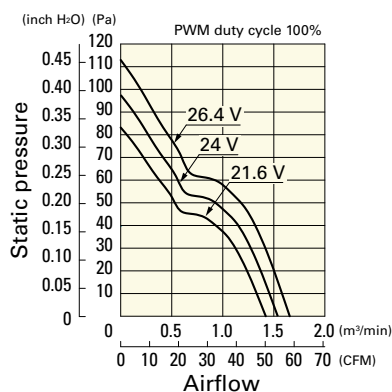


9WL0824P4G001 With pulse sensor with PWM control function

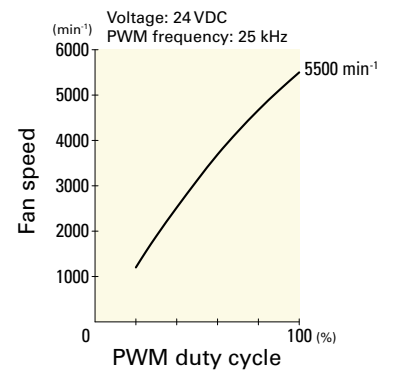
PWM duty cycle



Operating voltage range



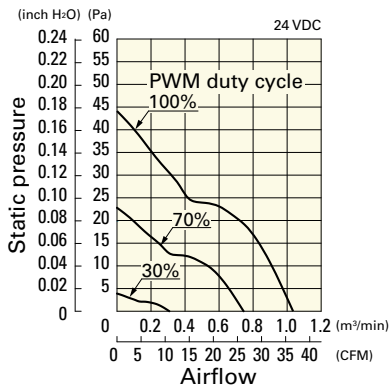
PWM duty - Speed characteristics example



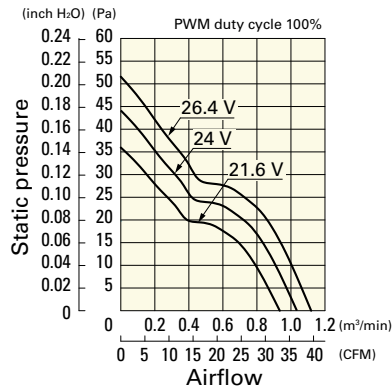
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0824P4H001 With pulse sensor with PWM control function

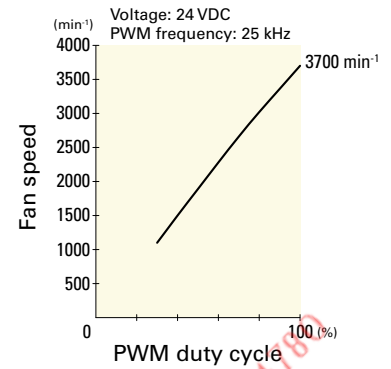
PWM duty cycle



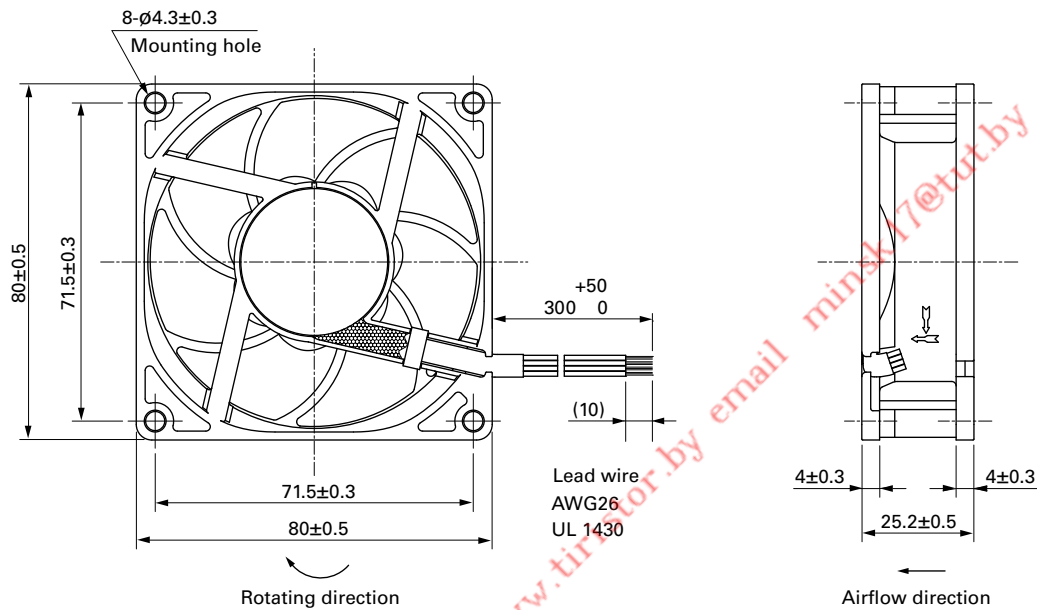
Operating voltage range



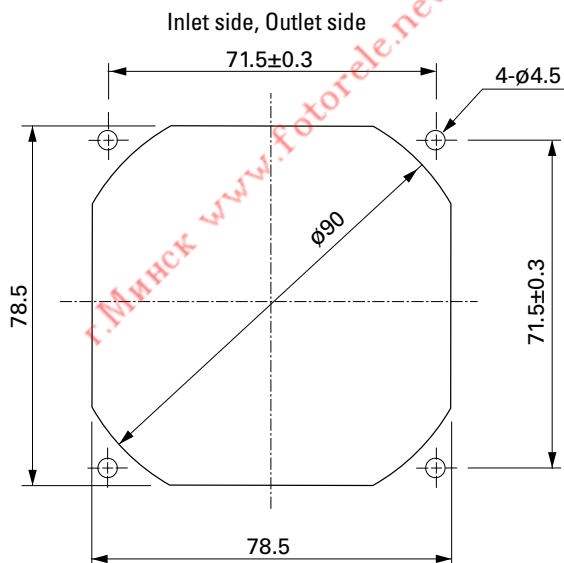
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

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

Resin finger guards

page: p. 520

Model no.: 109-1002G



80×80×25 mm

San Ace 80W 9WP 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 indoor 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 130 g
- Ingress protection IP68

Specifications

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

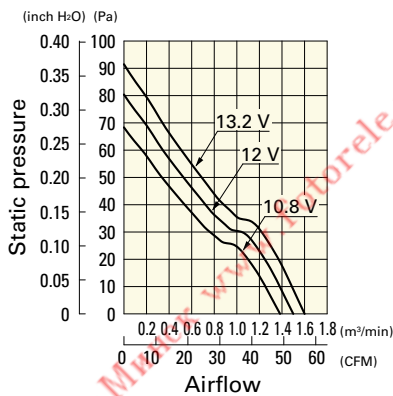
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WP0812G401	12	10.8 to 13.2	0.38	4.56	4500	1.5 53	80.4 0.323	40	-20 to +60	40000/60°C
9WP0812H401		10.2 to 13.8	0.13	1.56	2900	1.03 36.4	35.3 0.142	29		60000/60°C
9WP0824S401	24	20.4 to 27.6	0.1	2.4	3400	1.2 42.4	48.0 0.193	34		40000/60°C
9WP0824H401			0.07	1.68	2900	1.03 36.4	35.3 0.142	29		60000/60°C
9WP0848S401	48	40.8 to 55.2	0.06	2.88	3400	1.2 42.4	48.0 0.193	34		40000/60°C

Other sensor specifications are available as options. Refer to the index (p. 560).

Airflow - Static Pressure Characteristics

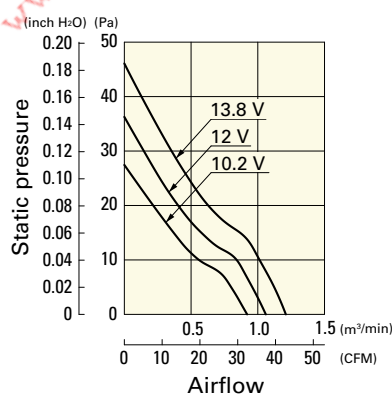
9WP0812G401 With pulse sensor

Operating voltage range



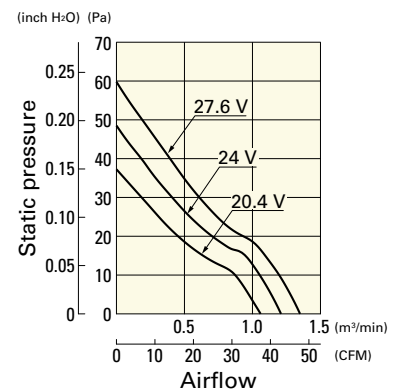
9WP0812H401 With pulse sensor

Operating voltage range



9WP0824S401 With pulse sensor

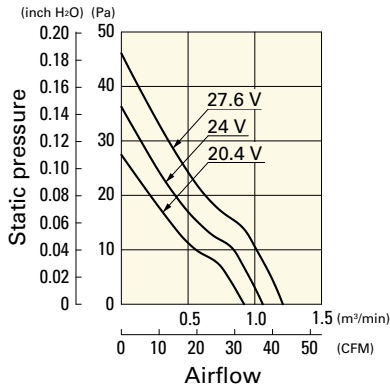
Operating voltage range



Airflow - Static Pressure Characteristics

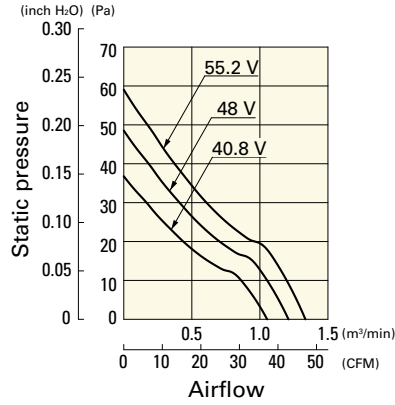
9WP0824H401 With pulse sensor

Operating voltage range

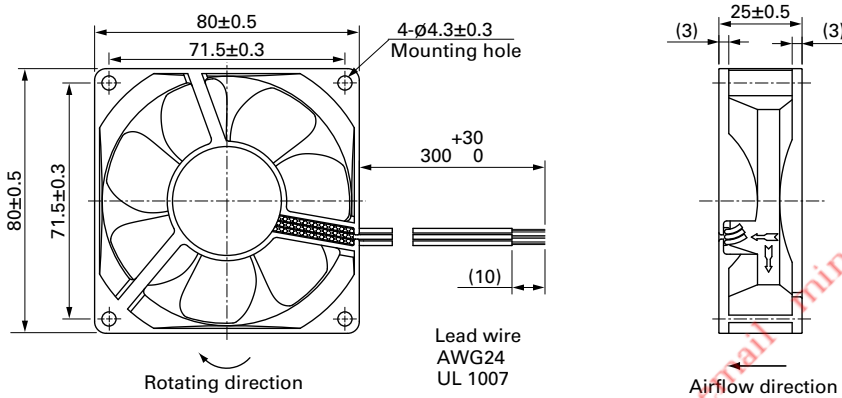


9WP0848S401 With pulse sensor

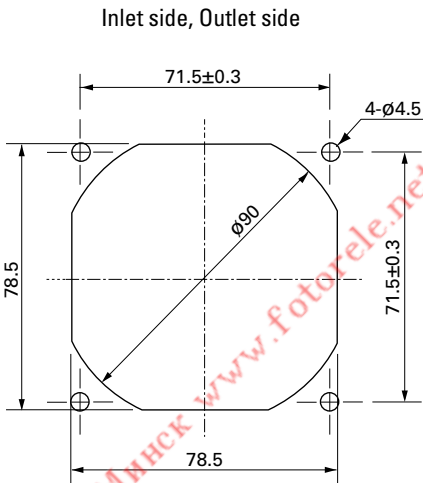
Operating voltage range



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

DC

Splash Proof Fan 80 mm sq.



80×80×25 mm

San Ace 80WS 9WS 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 indoor 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 120 g
- Ingress protection IP54

Specifications

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

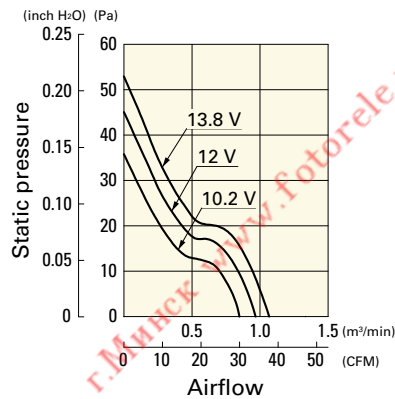
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]		
9WS0812H401	12	10.2 to 13.8	0.16	1.92	3100	0.94	33.2	45.1	0.181	32	-20 to +70	40000/60°C
9WS0812F401			0.13	1.56	2700	0.83	29.3	34.3	0.138	28		
9WS0812M401			0.1	1.2	2200	0.65	23.0	23.5	0.094	23		
9WS0824H401	24	20.4 to 27.6	0.09	2.16	3100	0.94	33.2	45.1	0.181	32		
9WS0824F401			0.07	1.68	2700	0.83	29.3	34.3	0.138	28		
9WS0824M401			0.05	1.2	2200	0.65	23.0	23.5	0.094	23		

Other sensor specifications are available as options. Refer to the index (p. 560).

Airflow - Static Pressure Characteristics

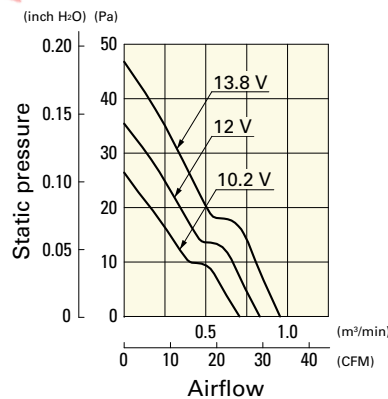
9WS0812H401 With pulse sensor

Operating voltage range



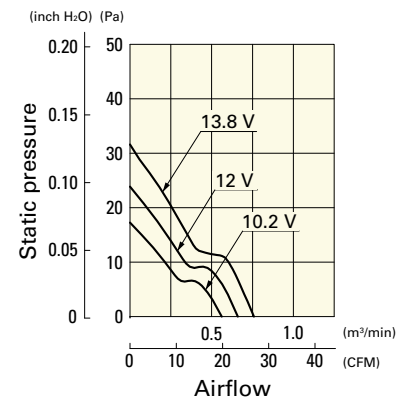
9WS0812F401 With pulse sensor

Operating voltage range



9WS0812M401 With pulse sensor

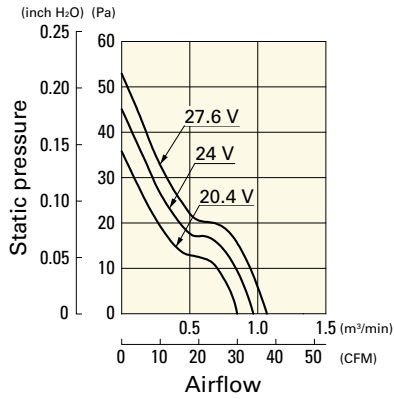
Operating voltage range



Airflow - Static Pressure Characteristics

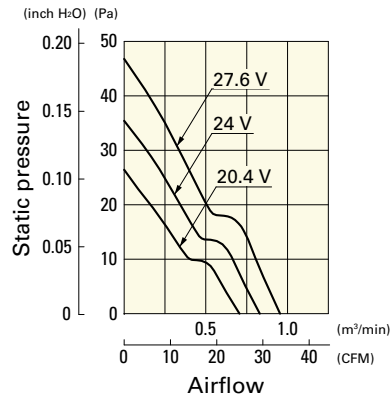
9WS0824H401 With pulse sensor

Operating voltage range



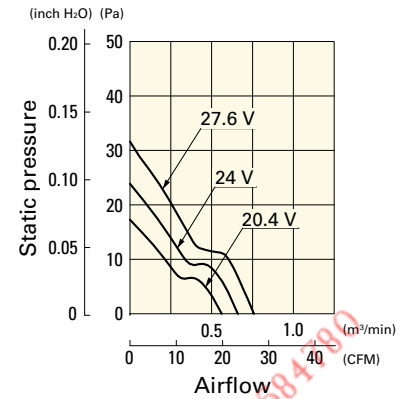
9WS0824F401 With pulse sensor

Operating voltage range

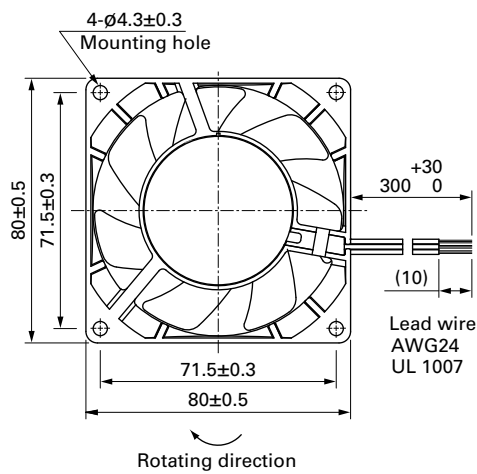


9WS0824M401 With pulse sensor

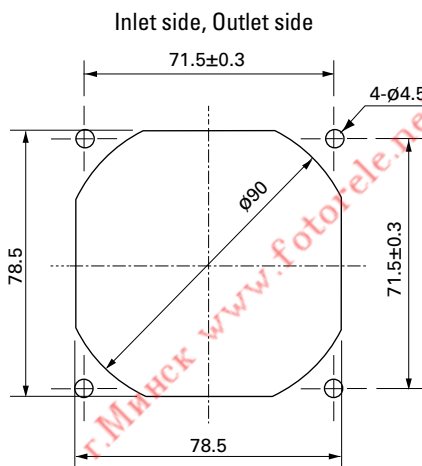
Operating voltage range



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

DC

Splash Proof Fan 80 mm sq.



80×80×38 mm

San Ace 80W 9WV 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 indoor 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 235 g
- Ingress protection IP68

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]
9WV0812P1M001	12	10.2 to 13.8	100	0.75	9	6000	2.29 80.9	169 0.68	51	-20 to +70	40000/60°C (70000/40°C)
			0	0.09	1.08	1700	0.65 23	13.6 0.05	19		
9WV0848P1H001	48	40.8 to 52.8	100	0.75	36	9700	3.7 131	440 1.77	63	-20 to +70	40000/60°C (70000/40°C)
			0	0.15	7.2	4500	1.72 60.7	94.7 0.38	43		

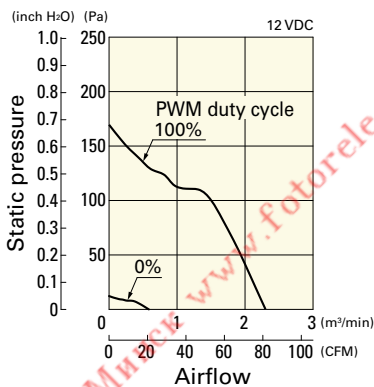
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (pp. 560 to 561).

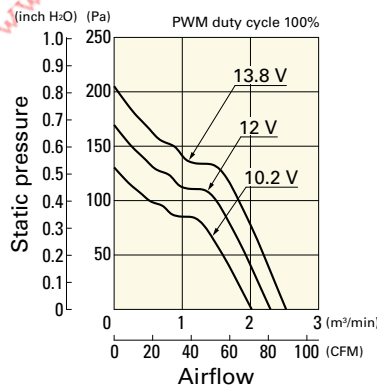
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV0812P1M001 With pulse sensor with PWM control function

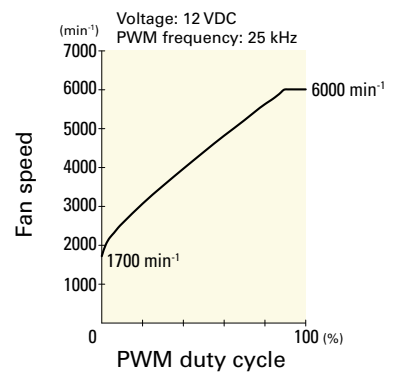
PWM duty cycle



Operating voltage range



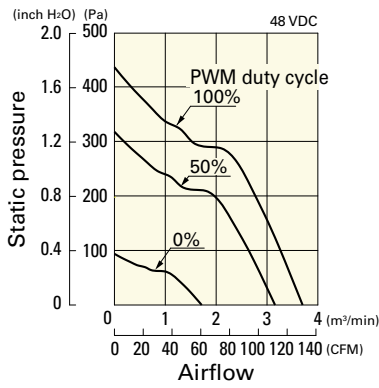
PWM duty - Speed characteristics example



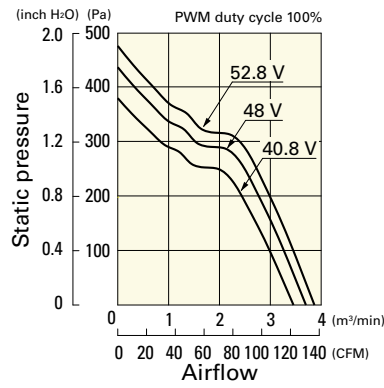
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV0848P1H001 With pulse sensor with PWM control function

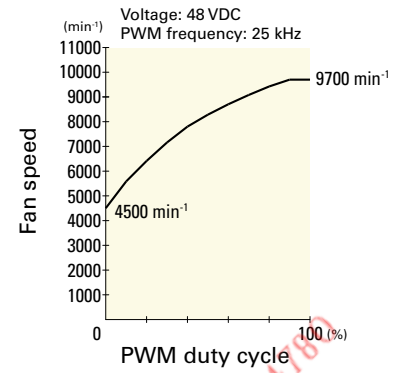
PWM duty cycle



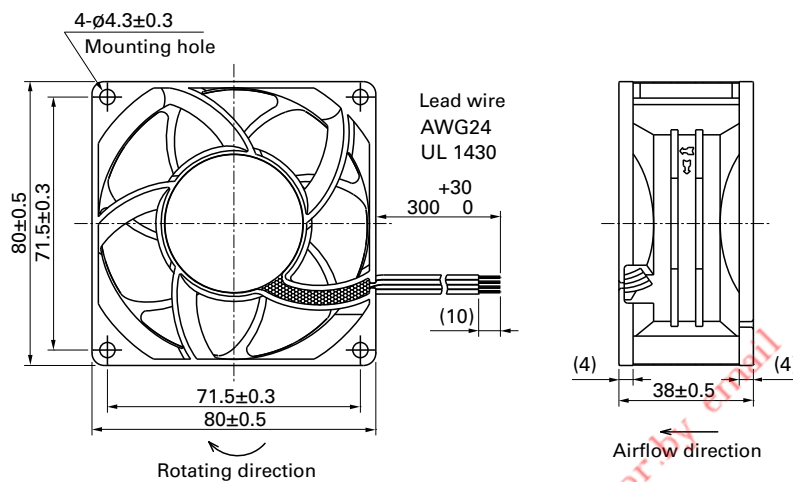
Operating voltage range



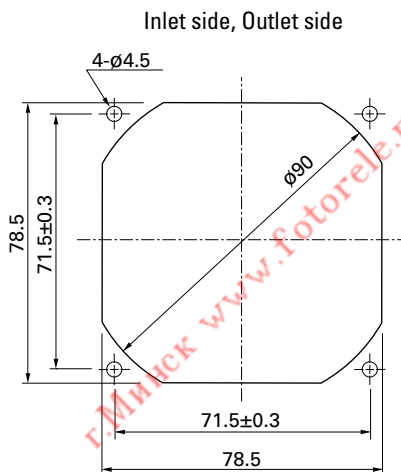
PWM duty - Speed characteristics example



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

DC

Splash Proof Fan 80 mm sq.



92x92x25 mm

San Ace 92W 9WL type   

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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
- Ingress protection IP68

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]		
9WL0912P4J001	12	10.8 to 13.2	100	0.42	5.04	5000	2.2 77.7	105 0.42	44	-20 to +70	180000/60°C		
			20	0.04	0.48	1200	0.52 18.4	6.04 0.024	11				
9WL0912P4G001			100	0.3	3.6	4400	1.93 68.2	81 0.33	40				
			20	0.04	0.48	1000	0.43 15.1	4.18 0.016	8				
9WL0912P4S001			100	0.22	2.64	3850	1.69 59.7	62.1 0.25	37				
			30	0.04	0.48	1400	0.61 21.5	8.21 0.032	13				
9WL0912P4H001			100	0.15	1.8	3150	1.38 48.7	41.6 0.17	32				
			30	0.04	0.48	1100	0.48 16.9	5.07 0.02	9				
9WL0924P4J001			24	21.6 to 26.4	100	0.21	5.04	5000	2.2 77.7			105 0.42	44
					20	0.02	0.48	1100	0.48 16.9			5.07 0.02	9
9WL0924P4S001					100	0.11	2.64	3850	1.69 59.7			62.1 0.25	37
					30	0.02	0.48	1300	0.57 20.1			7.08 0.028	12
9WL0924P4H001	100	0.07			1.68	3150	1.38 48.7	41.6 0.17	32				
	30	0.02			0.48	1000	0.43 15.1	4.18 0.016	8				

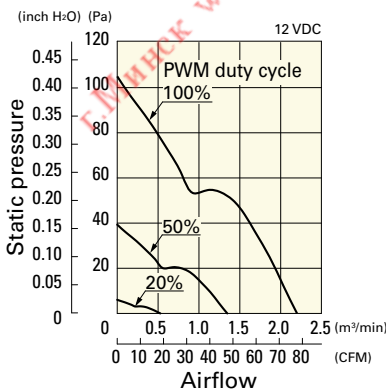
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 559).

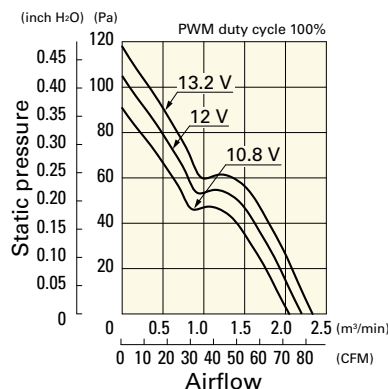
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0912P4J001 With pulse sensor with PWM control function

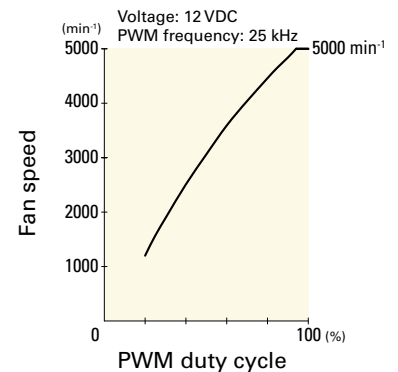
PWM duty cycle



Operating voltage range



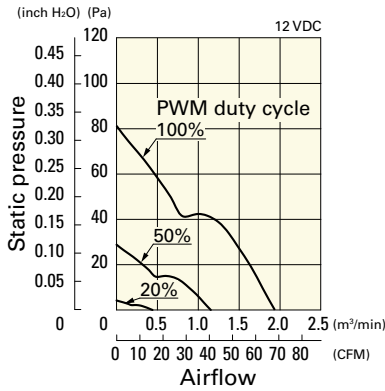
PWM duty - Speed characteristics example



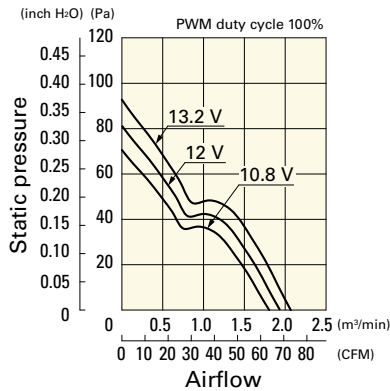
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0912P4G001 With pulse sensor with PWM control function

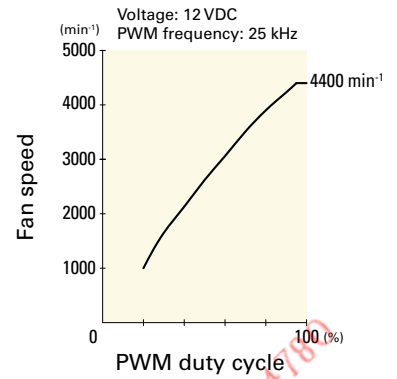
PWM duty cycle



Operating voltage range

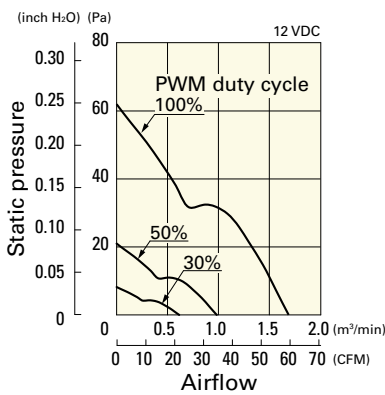


PWM duty - Speed characteristics example

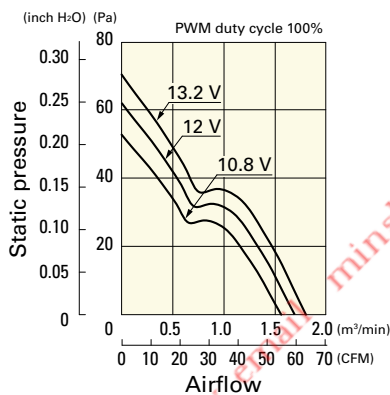


9WL0912P4S001 With pulse sensor with PWM control function

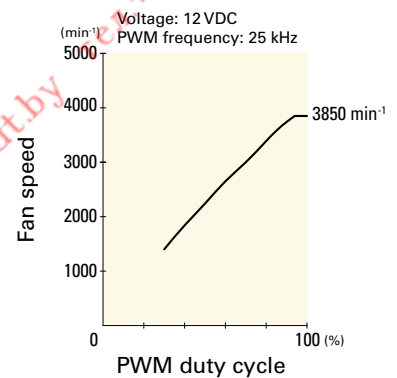
PWM duty cycle



Operating voltage range

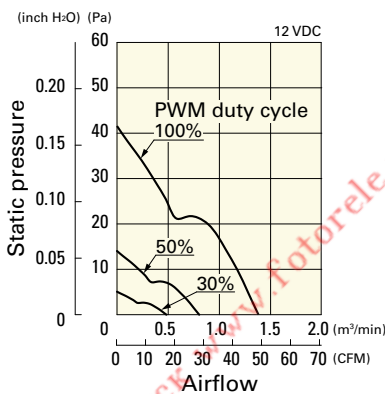


PWM duty - Speed characteristics example

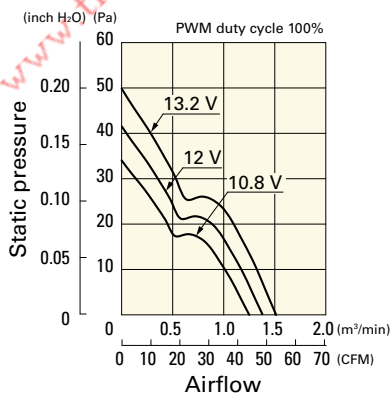


9WL0912P4H001 With pulse sensor with PWM control function

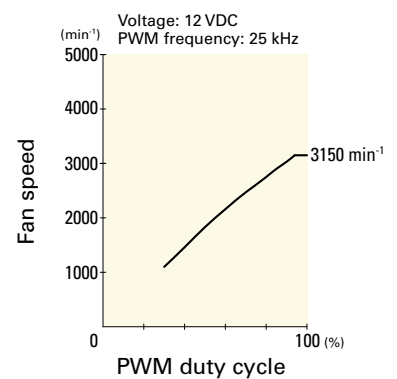
PWM duty cycle



Operating voltage range

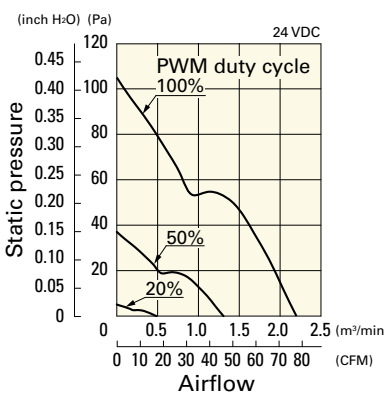


PWM duty - Speed characteristics example

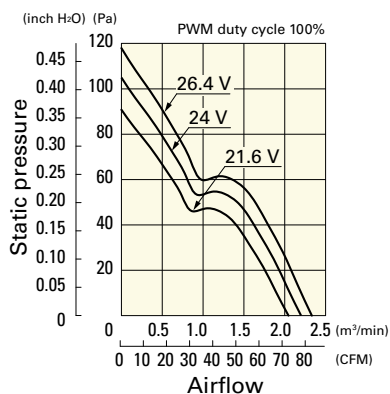


9WL0924P4J001 With pulse sensor with PWM control function

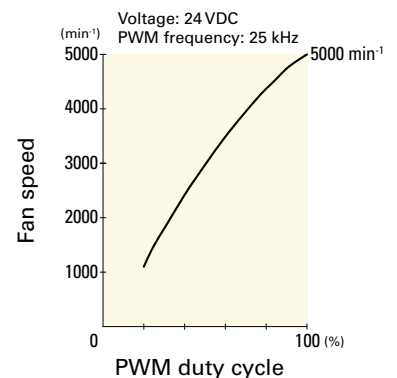
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

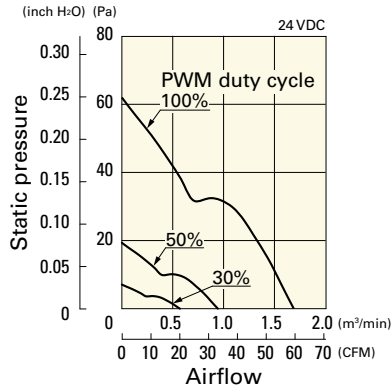


DC
Splash Proof Fan 92 mm sq.

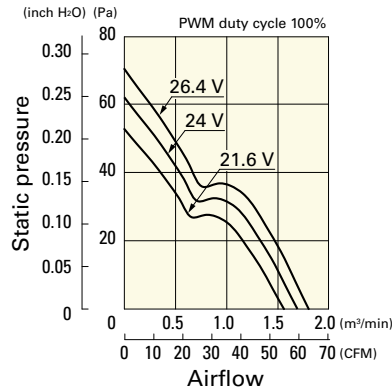
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0924P4S001 With pulse sensor with PWM control function

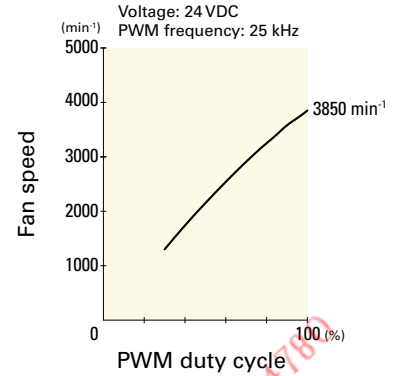
PWM duty cycle



Operating voltage range

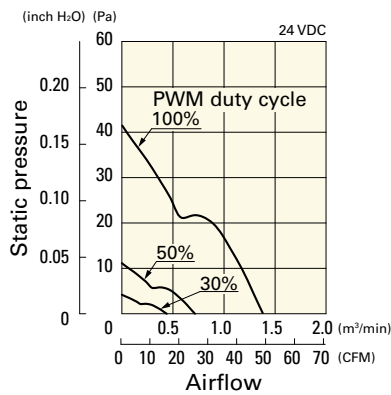


PWM duty - Speed characteristics example

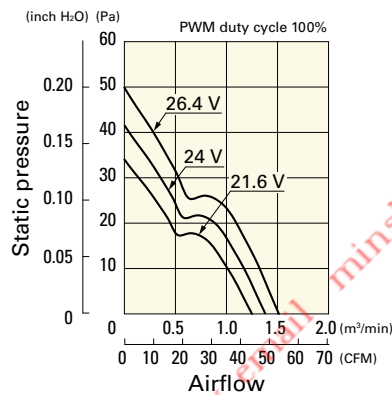


9WL0924P4H001 With pulse sensor with PWM control function

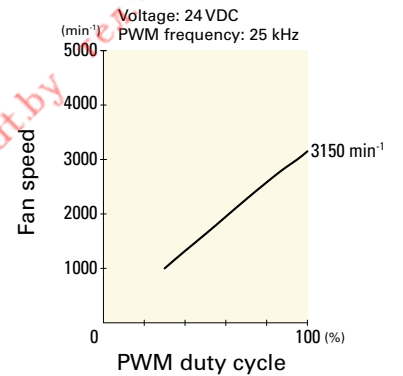
PWM duty cycle



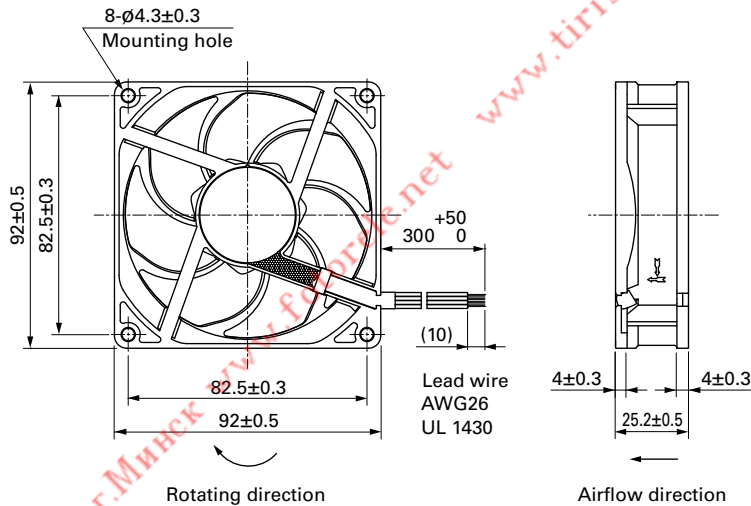
Operating voltage range



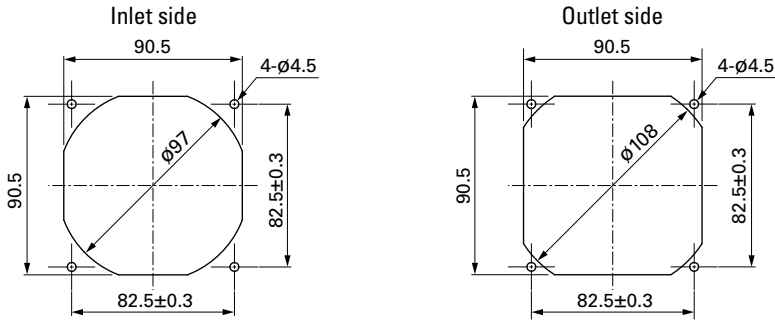
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

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

Resin finger guards

page: p. 520

Model no.: 109-1001G

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DC

Splash Proof Fan 92 mm sq.

92x92x25 mm

San Ace 92WS 9WS 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 indoor 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 150 g
- Ingress protection IP54

Specifications

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

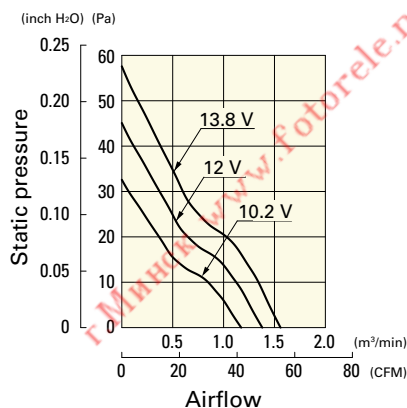
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WS0912H401	12	10.2 to 13.8	0.17	2.04	2850	1.38 48.7	45.1 0.181	33	-20 to +70	40000/60°C
9WS0912F401			0.13	1.56	2450	1.18 41.7	32.3 0.13	30		
9WS0912M401			0.1	1.2	2100	1.01 35.7	23.5 0.094	27		
9WS0912L401			0.06	0.72	1700	0.8 28.2	16.7 0.067	23		
9WS0924H401	24	20.4 to 27.6	0.1	2.4	2850	1.38 48.7	45.1 0.181	33		
9WS0924F401			0.07	1.68	2450	1.18 41.7	32.3 0.13	30		
9WS0924M401			0.06	1.44	2100	1.01 35.7	23.5 0.094	27		
9WS0924L401			0.05	1.2	1700	0.8 28.2	16.7 0.067	23		

Other sensor specifications are available as options. Refer to the index (p. 560).

Airflow - Static Pressure Characteristics

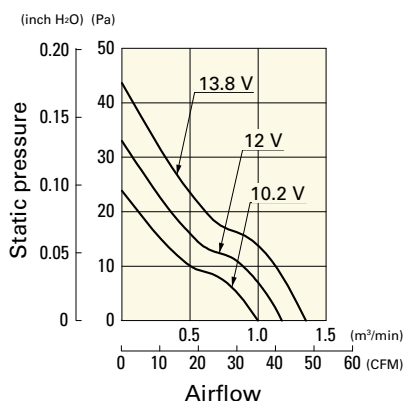
9WS0912H401 With pulse sensor

Operating voltage range



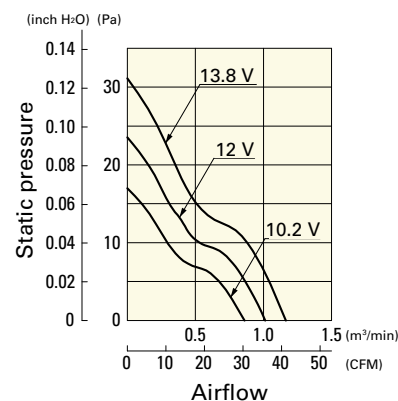
9WS0912F401 With pulse sensor

Operating voltage range



9WS0912M401 With pulse sensor

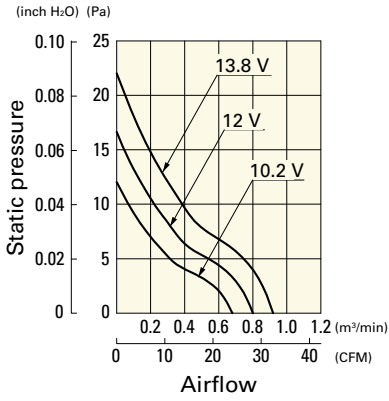
Operating voltage range



Airflow - Static Pressure Characteristics

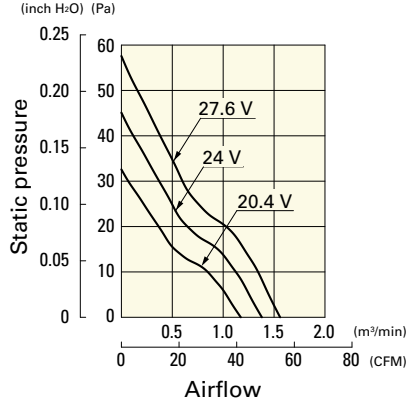
9WS0912L401 With pulse sensor

Operating voltage range



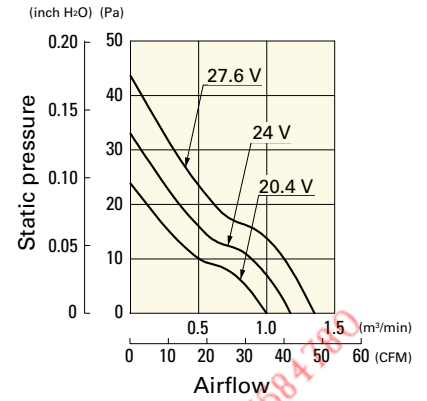
9WS0924H401 With pulse sensor

Operating voltage range



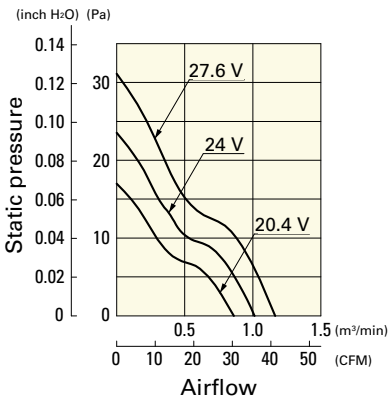
9WS0924F401 With pulse sensor

Operating voltage range



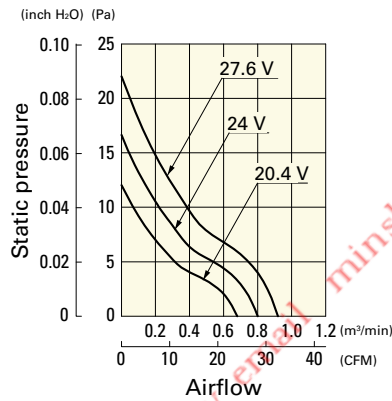
9WS0924M401 With pulse sensor

Operating voltage range

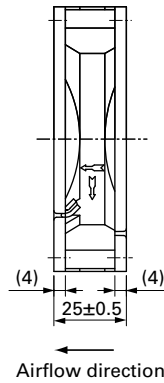
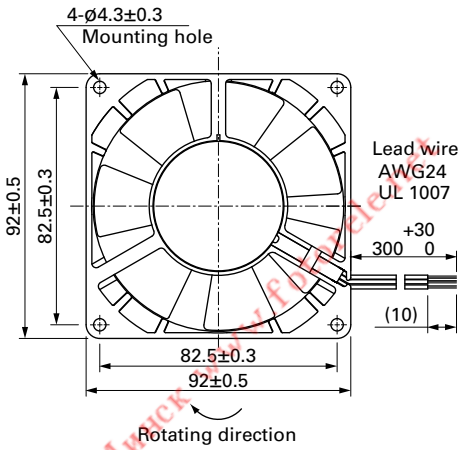


9WS0924L401 With pulse sensor

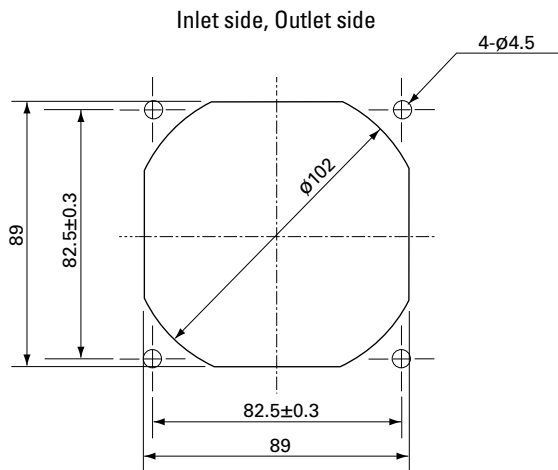
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

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

Resin finger guards

page: p. 520

Model no.: 109-1001G

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92x92x25 mm

San Ace 92W 9WP 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 indoor 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 120 g
- Ingress protection IP68

Specifications

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

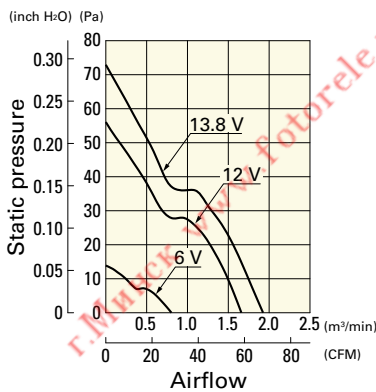
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WP0912S401	12	6 to 13.8	0.27	3.24	3550	1.66	58.6	56.1	0.225	39
9WP0912F401			0.14	1.68	2650	1.24	43.8	32.2	0.129	30
9WP0924G401	24	12 to 27.6	0.19	4.56	3900	1.76	62.2	66.5	0.267	43
9WP0924S401			0.15	3.6	3550	1.66	58.6	56.1	0.225	39
9WP0924H401			0.1	2.4	3150	1.45	51.2	44	0.177	33
9WP0924F401			0.08	1.92	2650	1.24	43.8	32.2	0.129	30
9WP0924B401			0.05	1.2	2000	0.9	31.8	18.0	0.072	23

Other sensor specifications are available as options. Refer to the index (p. 560).

Airflow - Static Pressure Characteristics

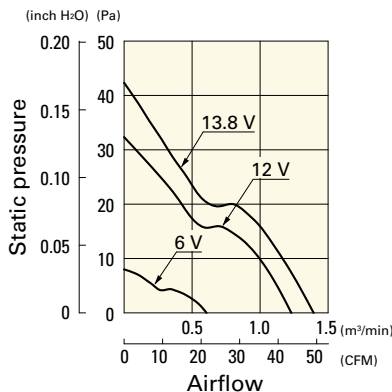
9WP0912S401 With pulse sensor

Operating voltage range



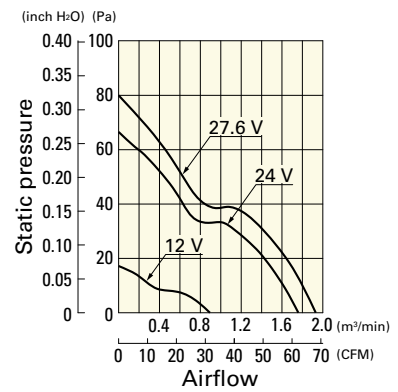
9WP0912F401 With pulse sensor

Operating voltage range



9WP0924G401 With pulse sensor

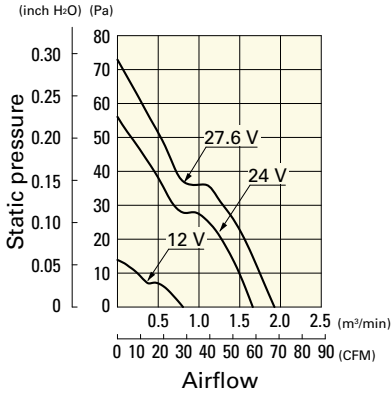
Operating voltage range



Airflow - Static Pressure Characteristics

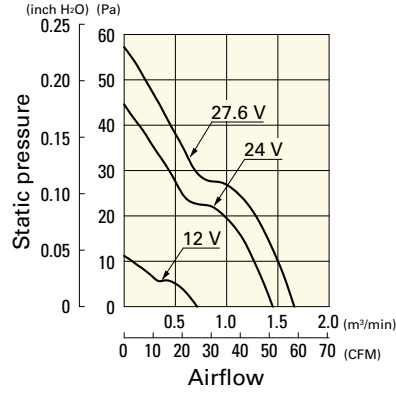
9WP0924S401 With pulse sensor

Operating voltage range



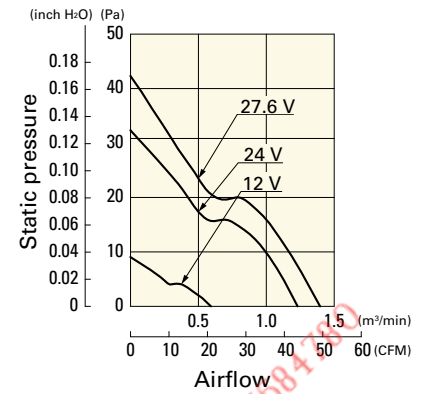
9WP0924H401 With pulse sensor

Operating voltage range



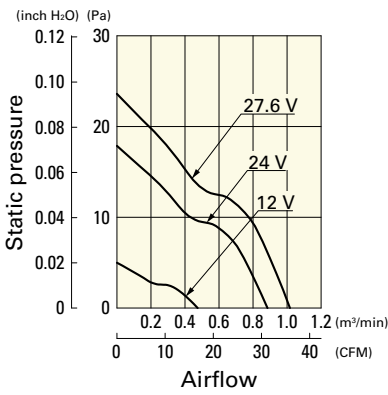
9WP0924F401 With pulse sensor

Operating voltage range

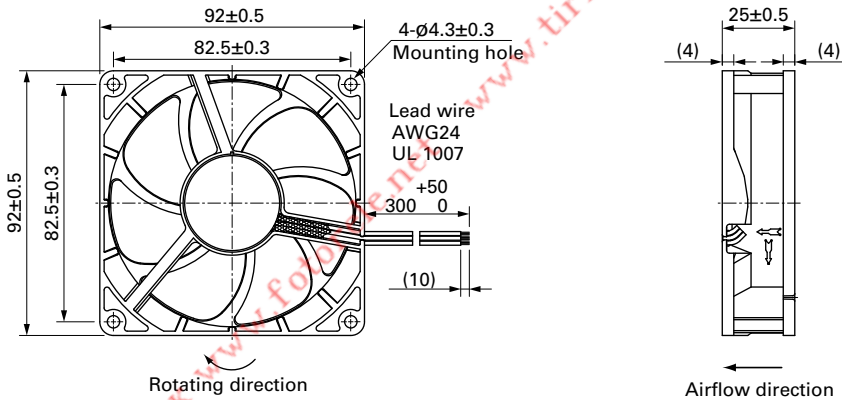


9WP0924B401 With pulse sensor

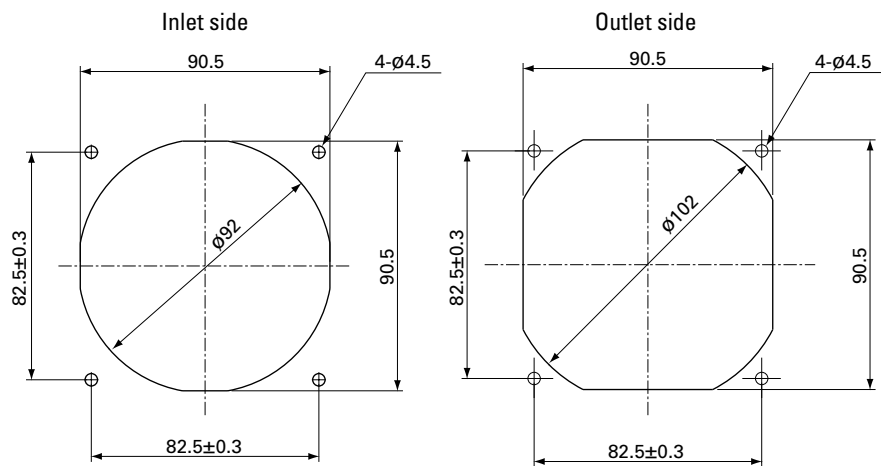
Operating voltage range



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

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DC

Splash Proof Fan 92 mm sq.



92x92x38 mm

San Ace 92W 9WV 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 indoor 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 265 g
- Ingress protection IP68

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]
9WV0924P1H001	24	20.4 to 26.4	100	1.6	38.4	8500	5.05 178	385 1.55	64	-20 to +60	30000/60°C
			20	0.16	3.84	3000	1.78 62.9	47.9 0.19	38		
9WV0948P1H001	48	40.8 to 52.8	100	0.82	39.4	8500	5.05 178	385 1.55	64	-20 to +70	30000/60°C
			0	0.14	6.7	4000	2.37 83.7	85.2 0.34	45		

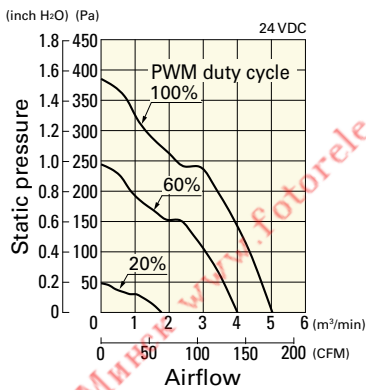
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 561).

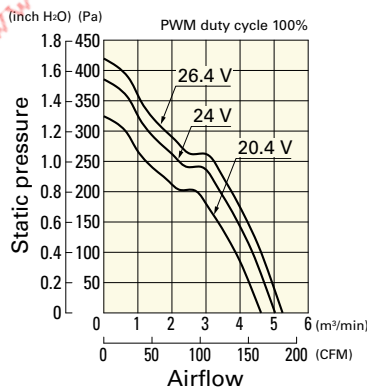
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV0924P1H001 With pulse sensor with PWM control function

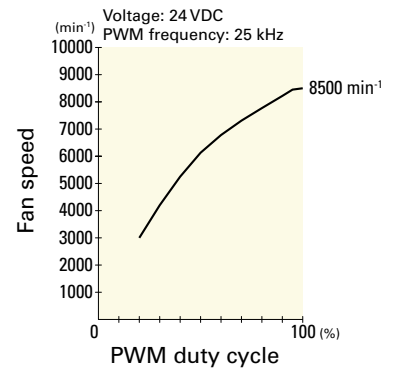
PWM duty cycle



Operating voltage range



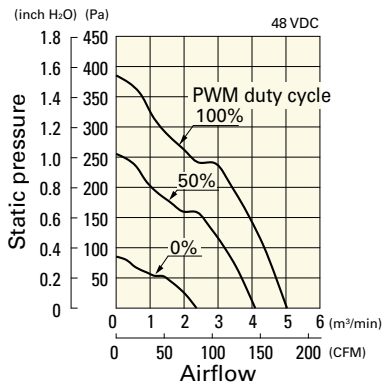
PWM duty - Speed characteristics example



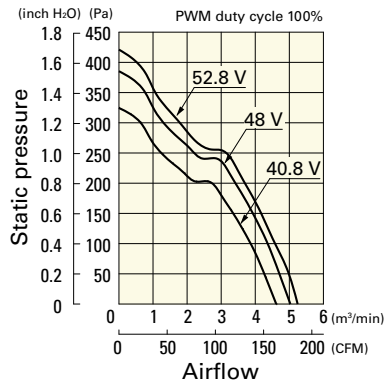
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV0948P1H001 With pulse sensor with PWM control function

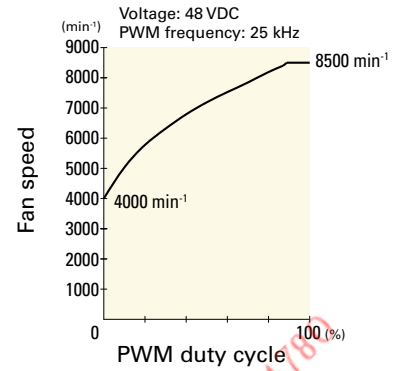
PWM duty cycle



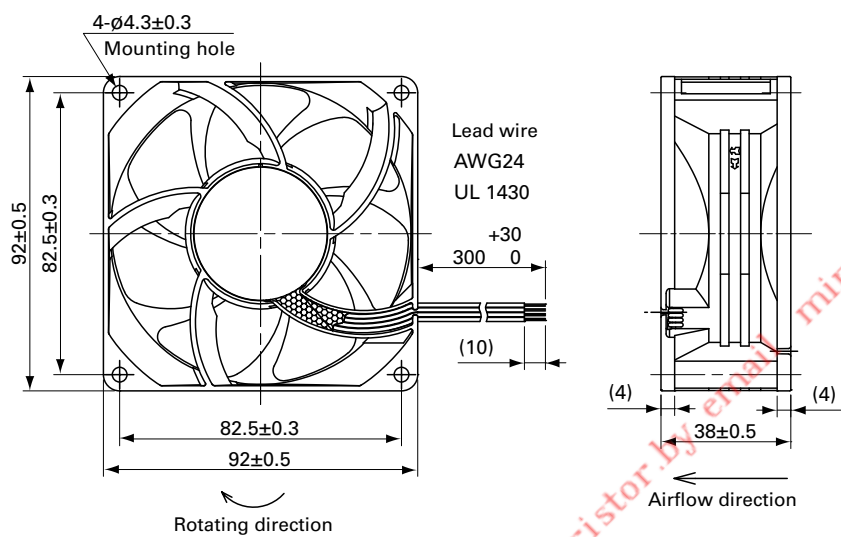
Operating voltage range



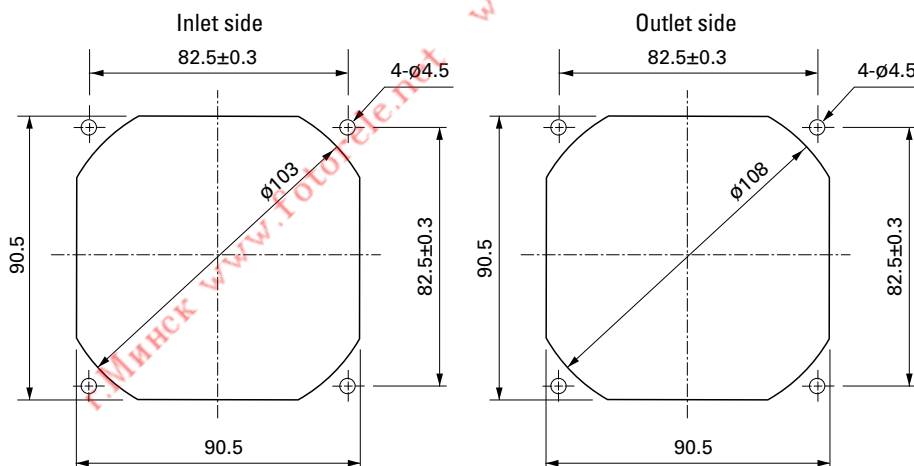
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

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

Resin finger guards




page: p. 520

Model no.: 109-1001G

DC
Splash Proof Fan 92 mm sq.



120×120×38 mm

San Ace 120W 9WV type   

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 440 g
- Ingress protection IP68

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]
9WV1212P1J001	12	10.2 to 13.8	100	3	36	6400	6.35 224.0	360 1.45	64	-20 to +70	60000/60°C
			0	0.2	2.4	1500	1.49 52.6	19.8 0.08	33		
9WV1224P1J601	24	20.4 to 27.6	100	1.5	36	6400	6.35 224.0	360 1.45	64		
			0	0.12	2.88	1500	1.49 52.6	26.1 0.105	33		
9WV1224P1H001**			100	0.8	19.2	5200	5.16 182	237 0.95	58		
9WV1248P1J001	48	40.8 to 55.2	100	0.65	31.2	6400	6.35 224.0	360 1.45	64		
			0	0.06	2.88	1500	1.49 52.6	26.1 0.105	33		

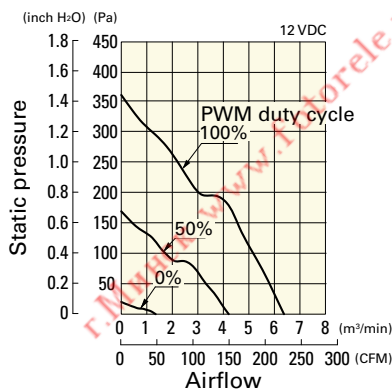
* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 561).

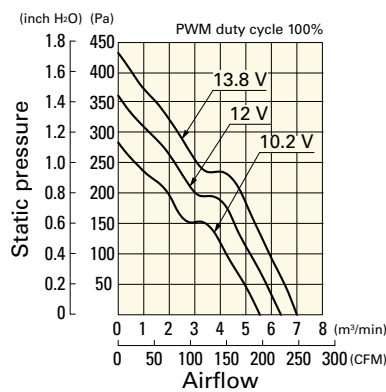
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV1212P1J001 With pulse sensor with PWM control function

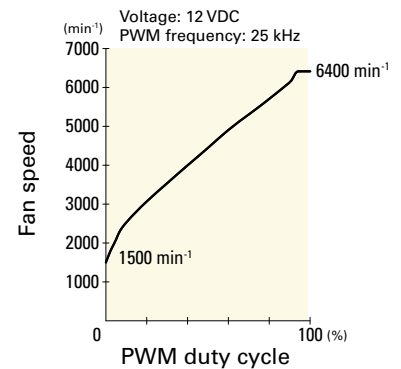
PWM duty cycle



Operating voltage range



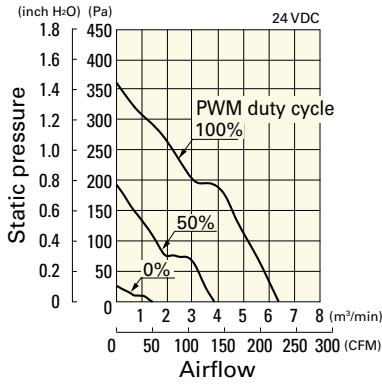
PWM duty - Speed characteristics example



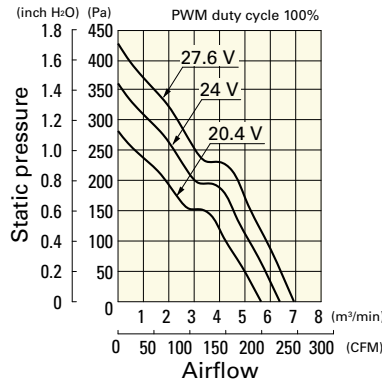
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV1224P1J601 With pulse sensor with PWM control function

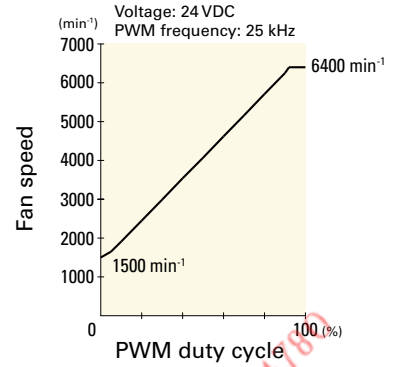
PWM duty cycle



Operating voltage range

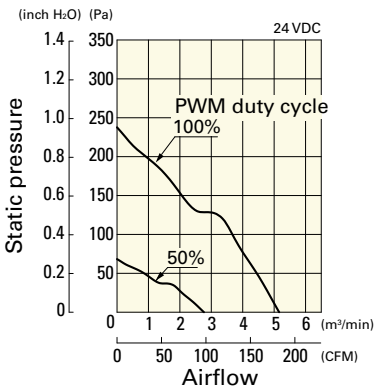


PWM duty - Speed characteristics example

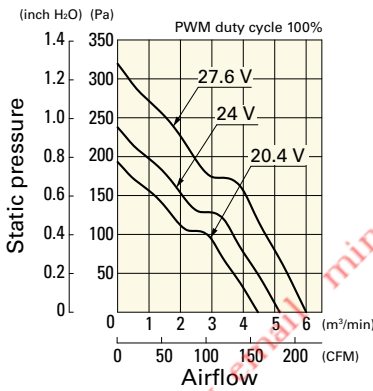


9WV1224P1H001 With pulse sensor with PWM control function

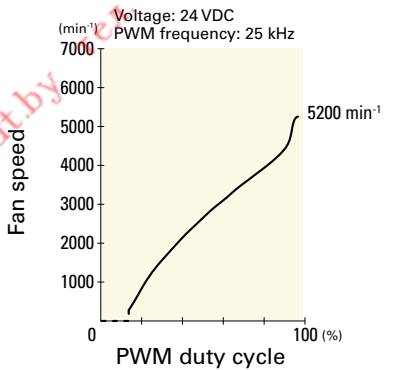
PWM duty cycle



Operating voltage range

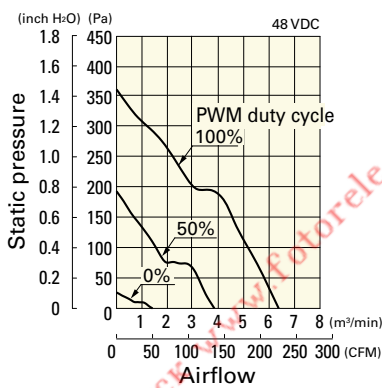


PWM duty - Speed characteristics example

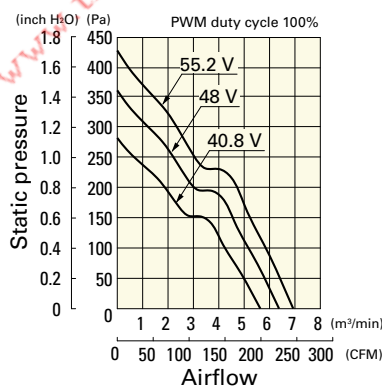


9WV1248P1J001 With pulse sensor with PWM control function

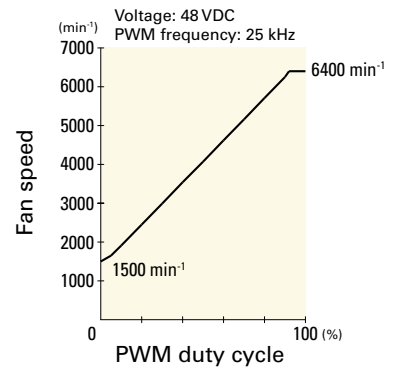
PWM duty cycle



Operating voltage range

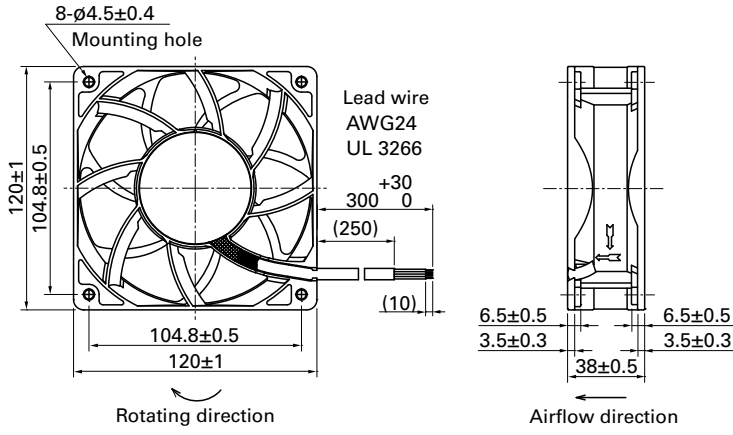


PWM duty - Speed characteristics example

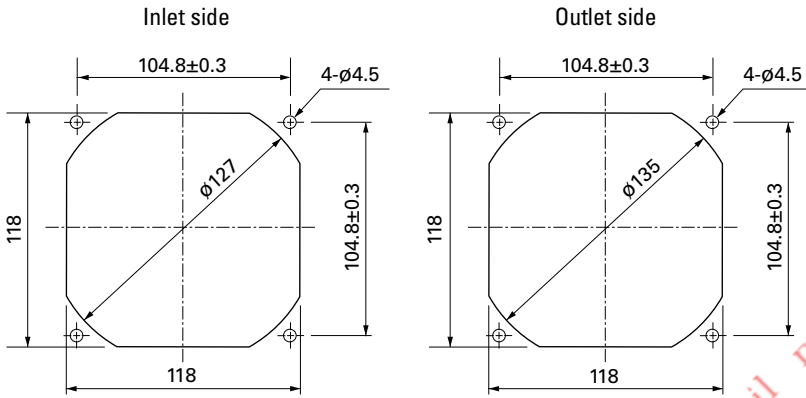


DC
Splash Proof Fan 120 mm sq.

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



120×120×38 mm

San Ace 120W 9WP 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 indoor 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 360 g
- Ingress protection IP68

Specifications

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

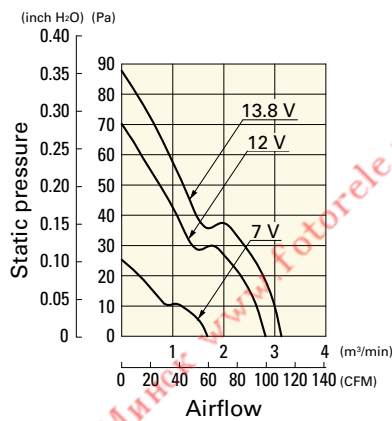
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WP1212H101	12	7.0 to 13.8	0.38	4.56	2600	2.8 99	70.4 0.283	39	-20 to +70	40000/60°C
9WP1212L101		10.2 to 13.8	0.14	1.68	1500	1.62 57.2	23.4 0.094	26		
9WP1224H101	24	14.0 to 27.6	0.22	5.28	2600	2.8 99	70.4 0.283	39		
9WP1248H101	48	40.8 to 55.2	0.11	5.28	2600	2.8 99	70.4 0.283	39		

Other sensor specifications are available as options. Refer to the index (p. 560).

Airflow - Static Pressure Characteristics

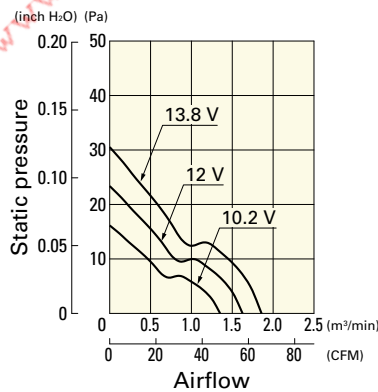
9WP1212H101 With pulse sensor

Operating voltage range



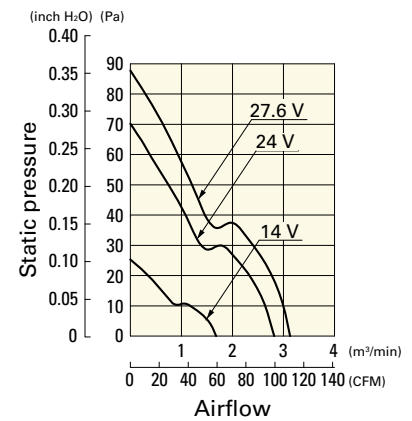
9WP1212L101 With pulse sensor

Operating voltage range



9WP1224H101 With pulse sensor

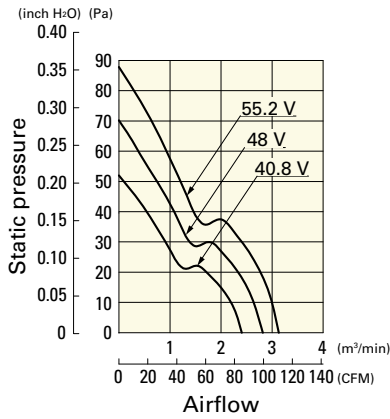
Operating voltage range



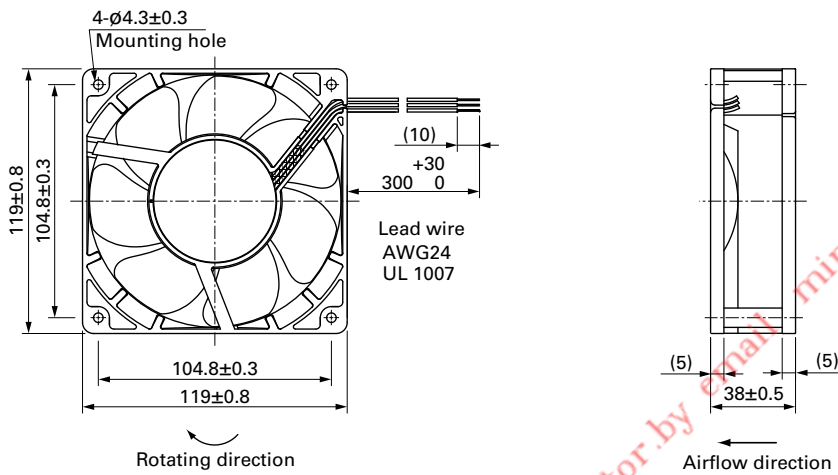
Airflow - Static Pressure Characteristics

9WP1248H101 With pulse sensor

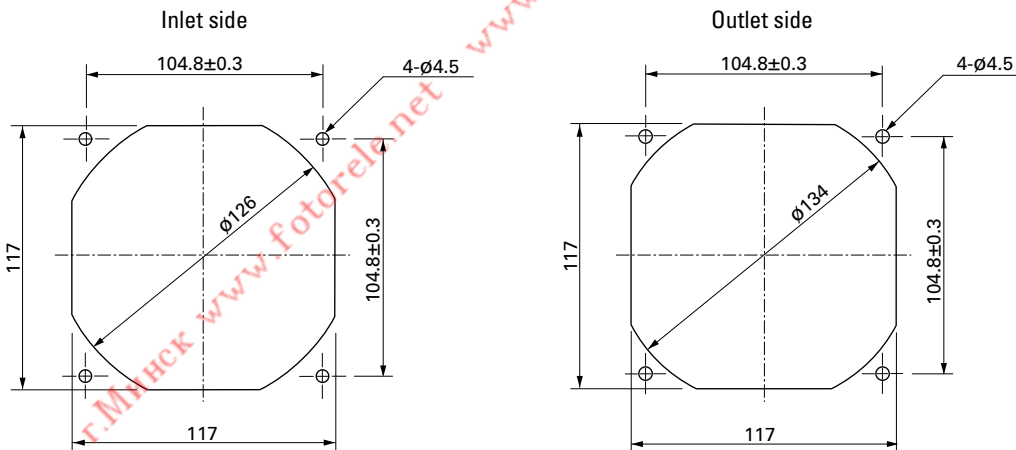
Operating voltage range



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



120×120×38 mm

San Ace 120W 9WG type

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 410 g
- Ingress protection IP55

Specifications

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

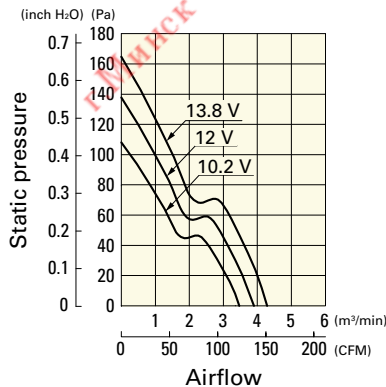
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]	
9WG1212G101-E	12	10.2 to 13.8	0.98	11.76	3600	3.88 137	135 0.542	49	-20 to +70	80000/60°C	
9WG1212E101-E			0.61	7.32	3100	3.34 118	100 0.402	46			
9WG1212H101-E		7 to 13.8	0.38	4.56	2600	2.8 99	70.4 0.283	39			
9WG1212F101-E			0.28	3.36	2280	2.45 87	54.2 0.218	36			
9WG1212M101-E			0.21	2.52	1950	2.1 74	39.6 0.159	32			
9WG1224G101-E	24	20.4 to 27.6	0.5	12	3600	3.88 137	135 0.542	49		-20 to +70	80000/60°C
9WG1224E101-E			0.34	8.16	3100	3.34 118	100 0.402	46			
9WG1224H101-E		14 to 27.6	0.22	5.28	2600	2.8 99	70.4 0.283	39			
9WG1224F101-E			0.16	3.84	2280	2.45 87	54.2 0.218	36			
9WG1224M101-E			0.11	2.64	1950	2.1 74	39.6 0.159	32			
9WG1248G101-E	48	40.8 to 55.2	0.25	12	3600	3.88 137	135 0.542	49	-20 to +70		80000/60°C
9WG1248E101-E			0.17	8.16	3100	3.34 118	100 0.402	46			
9WG1248H101-E			0.11	5.28	2600	2.8 99	70.4 0.283	39			
9WG1248F101-E			0.09	4.32	2280	2.45 87	54.2 0.218	36			
9WG1248M101-E			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. 558 to 559).

Airflow - Static Pressure Characteristics

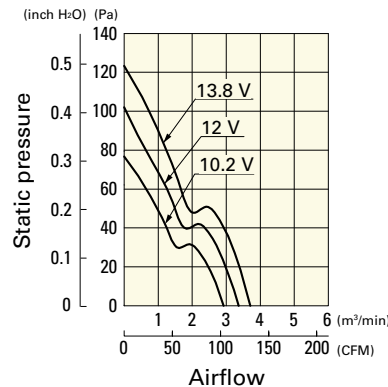
9WG1212G101-E With pulse sensor

Operating voltage range



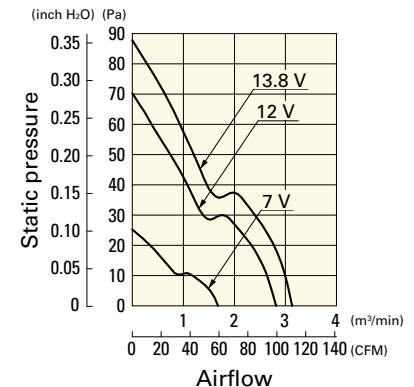
9WG1212E101-E With pulse sensor

Operating voltage range

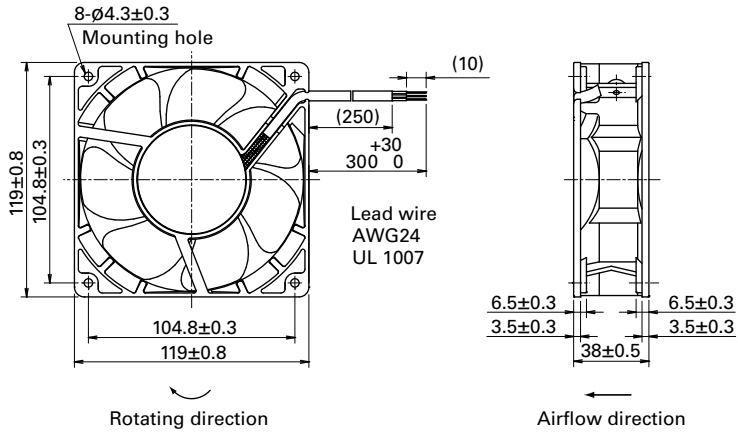


9WG1212H101-E With pulse sensor

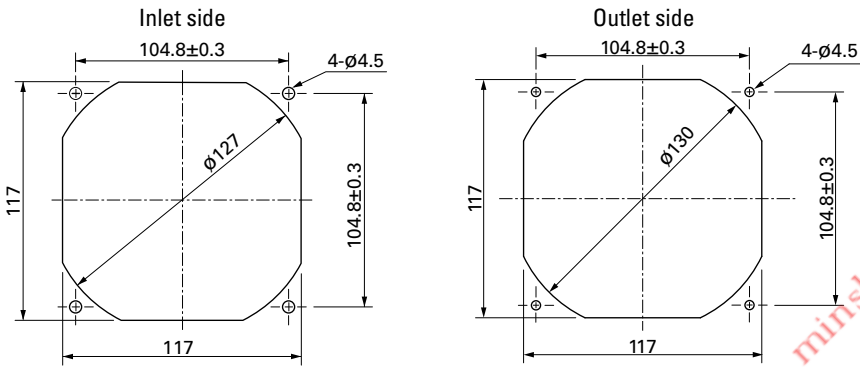
Operating voltage range



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

г.Минск www.fotorele.net www.tiristor.by email mink17@tut.by тел.+375447584780



140×140×38 mm

San Ace 140W 9WL type

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 740 g
- Ingress protection IP68

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]	
9WL1412P1A001	12	10.2 to 13.8	100	3.72	44.64	6900	8.0 282	516 2.07	68	-20 to +70	100000/60°C	
			20	0.27	3.24	2300	2.66 93	80 0.32	39			
9WL1412P1H001			100	1.7	20.4	5200	6.0 212	300 1.2	62			
			20	0.27	3.24	2300	2.66 93	80 0.32	39			
9WL1412P1M001			100	0.6	7.2	3300	3.7 130	170 0.68	46			
			20	0.16	1.92	1300	1.45 51	26 0.1	29			
9WL1424P1A001		24	20.4 to 27.6	100	1.86	44.64	6900	8.0 282	516 2.07			68
				20	0.17	4.08	2300	2.66 93	80 0.32			39
9WL1424P1H001				100	0.85	20.4	5200	6.0 212	300 1.2			62
				20	0.16	3.84	2300	2.66 93	80 0.32			39
9WL1424P1M001				100	0.3	7.2	3300	3.7 130	170 0.68			46
				20	0.11	2.64	1300	1.45 51	26 0.1			29
9WL1448P1A001	48	40.8 to 55.2	100	0.92	44.16	6900	8.0 282	516 2.07	68			
			20	0.11	5.28	2300	2.66 93	80 0.32	39			
9WL1448P1H001			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			
9WL1448P1M001			100	0.15	7.2	3300	3.7 130	170 0.68	46			
			20	0.09	4.32	1300	1.45 51	26 0.1	29			

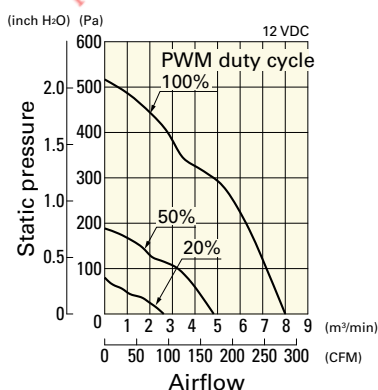
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 559).

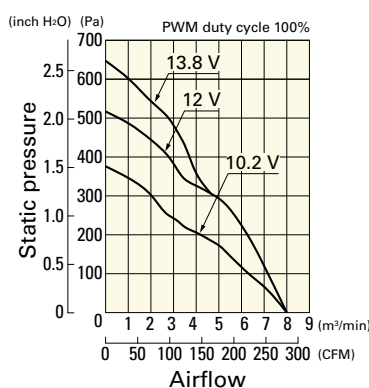
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1412P1A001 With pulse sensor with PWM control function

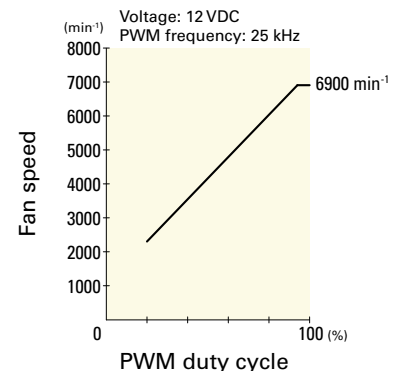
PWM duty cycle



Operating voltage range



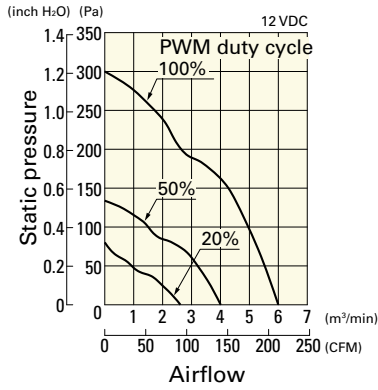
PWM duty - Speed characteristics example



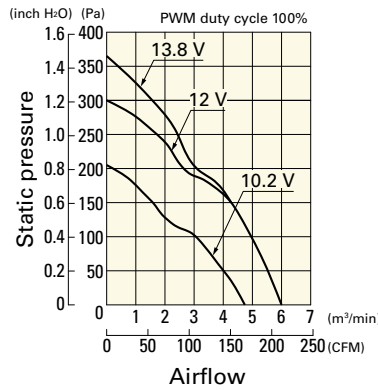
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1412P1H001 With pulse sensor with PWM control function

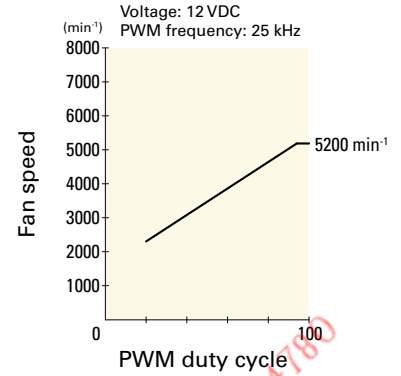
PWM duty cycle



Operating voltage range

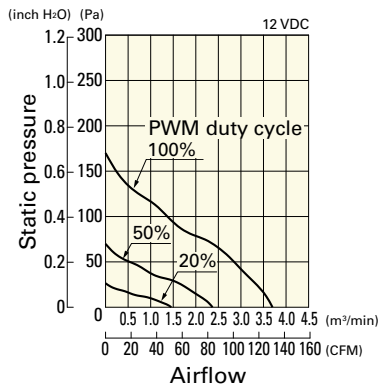


PWM duty - Speed characteristics example

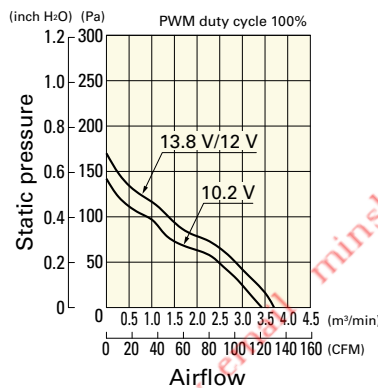


9WL1412P1M001 With pulse sensor with PWM control function

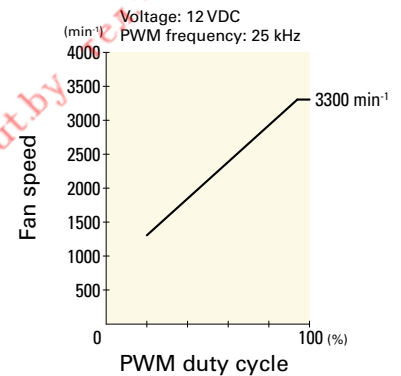
PWM duty cycle



Operating voltage range

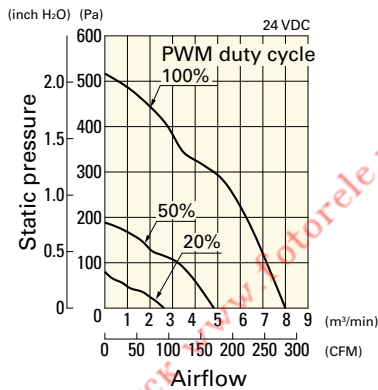


PWM duty - Speed characteristics example

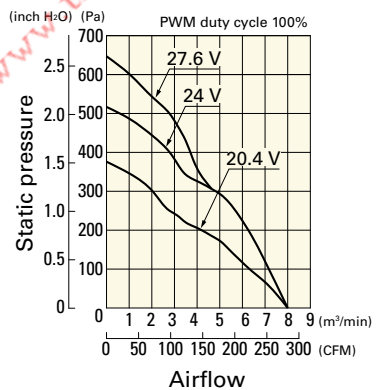


9WL1424P1A001 With pulse sensor with PWM control function

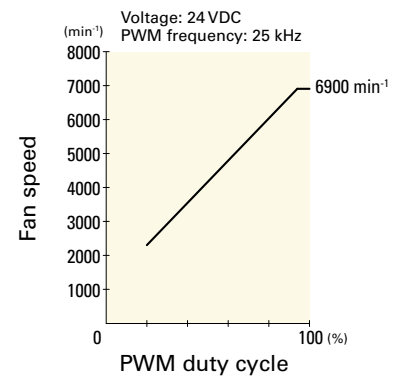
PWM duty cycle



Operating voltage range

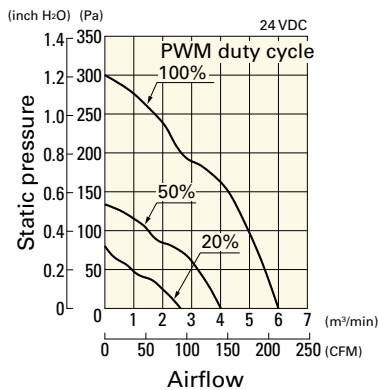


PWM duty - Speed characteristics example

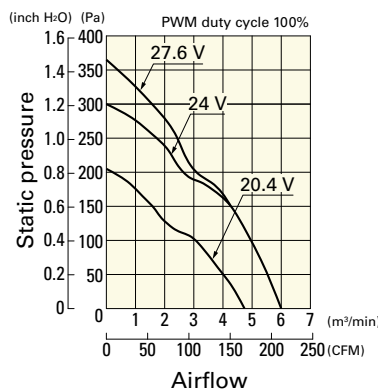


9WL1424P1H001 With pulse sensor with PWM control function

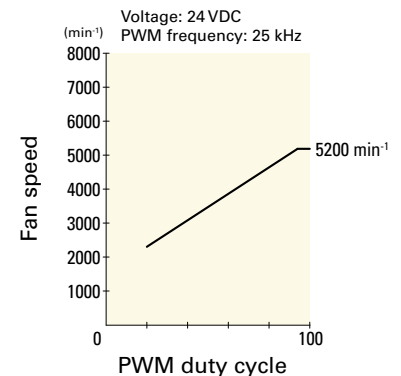
PWM duty cycle



Operating voltage range



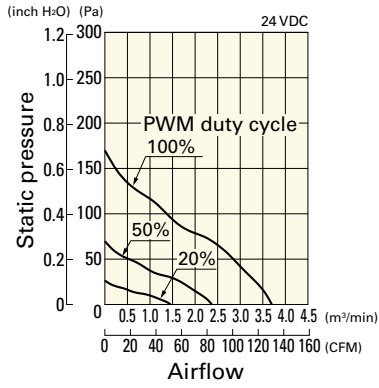
PWM duty - Speed characteristics example



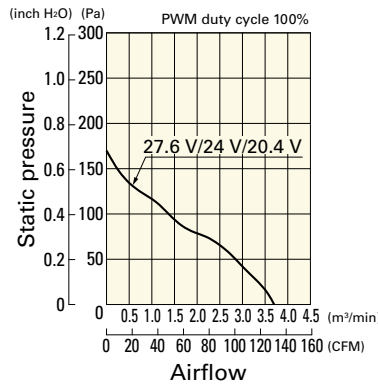
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1424P1M001 With pulse sensor with PWM control function

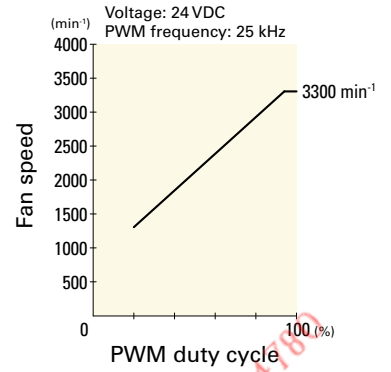
PWM duty cycle



Operating voltage range

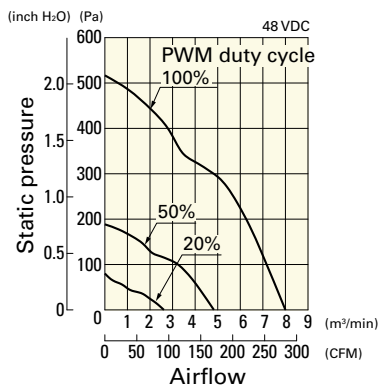


PWM duty - Speed characteristics example

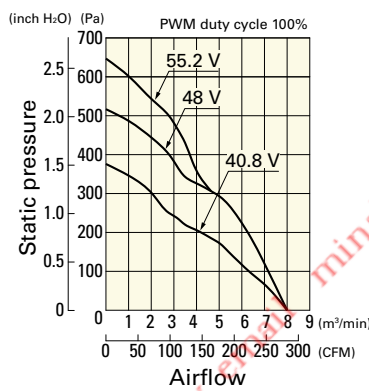


9WL1448P1A001 With pulse sensor with PWM control function

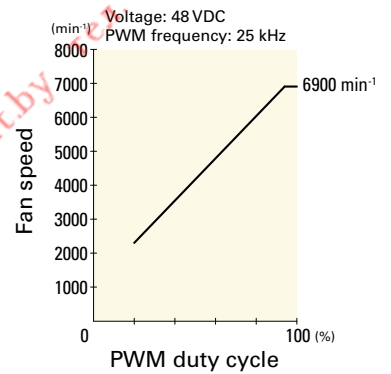
PWM duty cycle



Operating voltage range

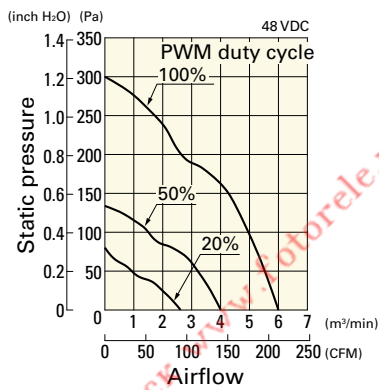


PWM duty - Speed characteristics example

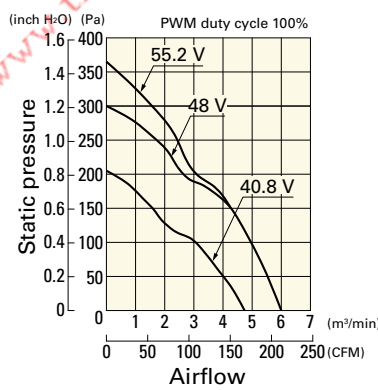


9WL1448P1H001 With pulse sensor with PWM control function

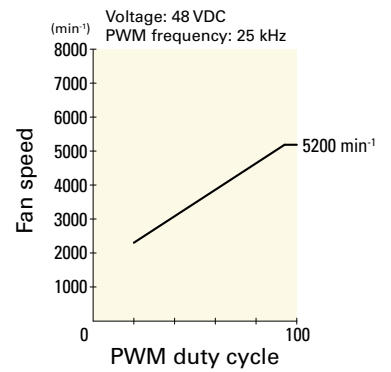
PWM duty cycle



Operating voltage range

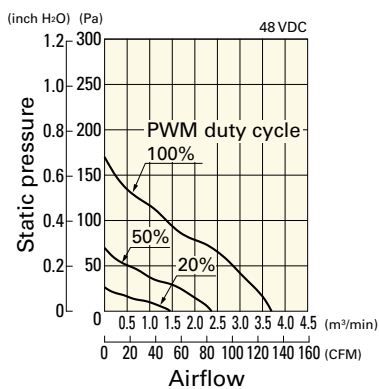


PWM duty - Speed characteristics example

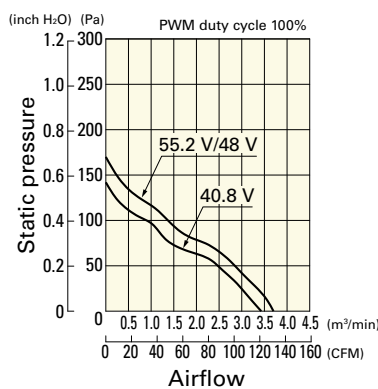


9WL1448P1M001 With pulse sensor with PWM control function

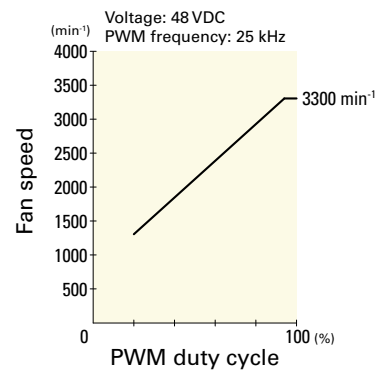
PWM duty cycle



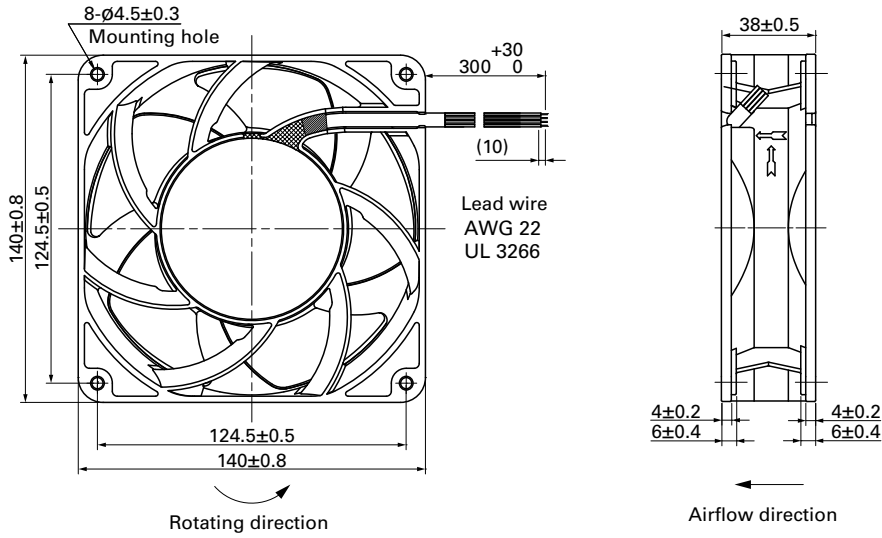
Operating voltage range



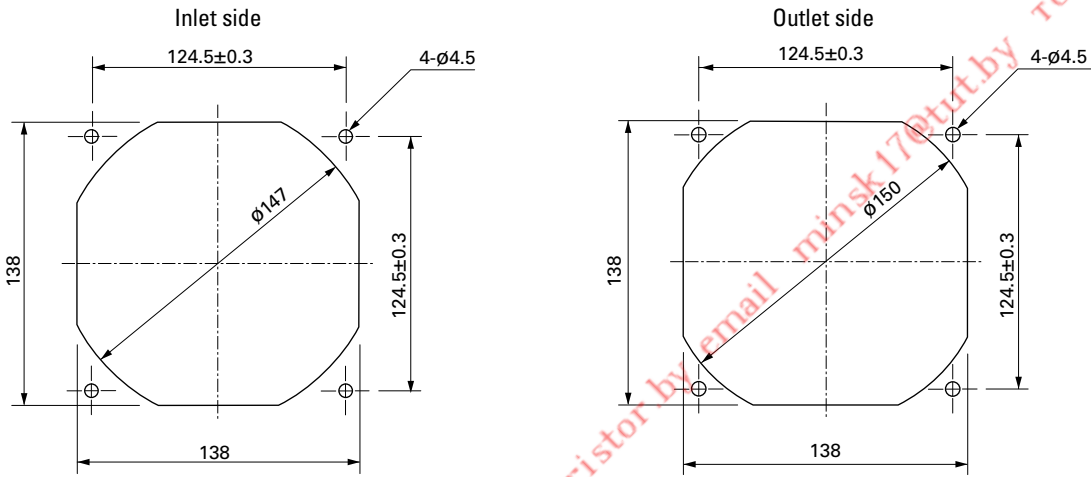
PWM duty - Speed characteristics example



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

DC

Splash Proof Fan 140 mm sq.



140×140×51 mm

San Ace 140W 9WL type

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 930 g
- Ingress protection IP68

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]
9WL1412P5G001	12	10.2 to 13.8	100	5.16	62	7500	9.0 318	655 2.63	69	-20 to +70	100000/60°C
			20	0.31	3.72	2300	2.75 97	80 0.32	38		
9WL1412P5S001	12	10.2 to 13.8	100	1.83	22	5000	6.0 212	295 1.18	57		
			20	0.31	3.72	2300	2.75 97	80 0.32	38		
9WL1424P5G001	24	20.4 to 27.6	100	2.58	62	7500	9.0 318	655 2.63	69		
			20	0.16	3.84	2300	2.75 97	80 0.32	38		
9WL1424P5S001	24	20.4 to 27.6	100	0.91	22	5000	6.0 212	295 1.18	57		
			20	0.16	3.84	2300	2.75 97	80 0.32	38		
9WL1448P5G001	48	40.8 to 55.2	100	1.29	62	7500	9.0 318	655 2.63	69		
			20	0.12	5.76	2300	2.75 97	80 0.32	38		
9WL1448P5S001	48	40.8 to 55.2	100	0.45	22	5000	6.0 212	295 1.18	57		
			20	0.12	5.76	2300	2.75 97	80 0.32	38		

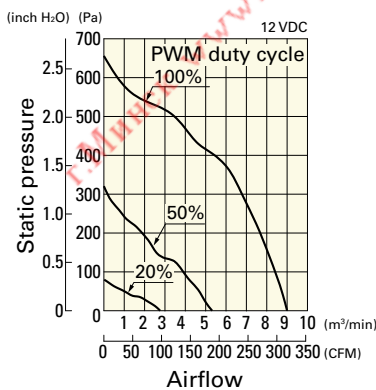
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

Other sensor specifications are available as options. Refer to the index (p. 559).

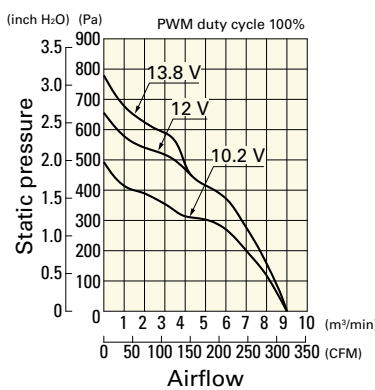
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1412P5G001 With pulse sensor with PWM control function

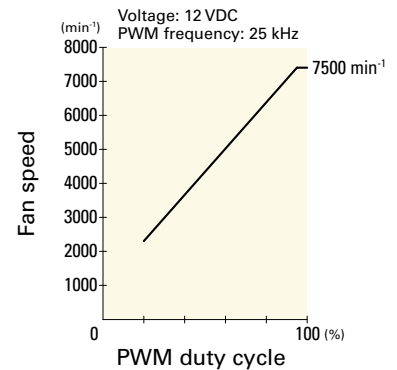
PWM duty cycle



Operating voltage range



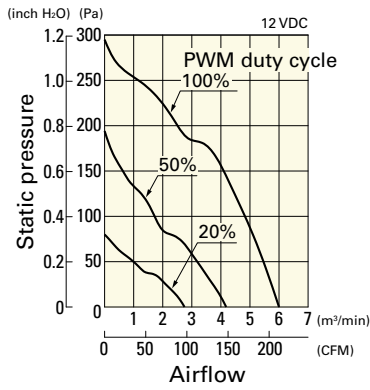
PWM duty - Speed characteristics example



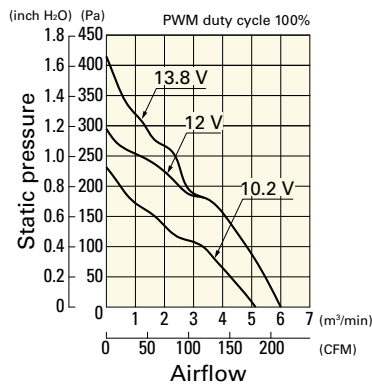
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1412P5S001 With pulse sensor with PWM control function

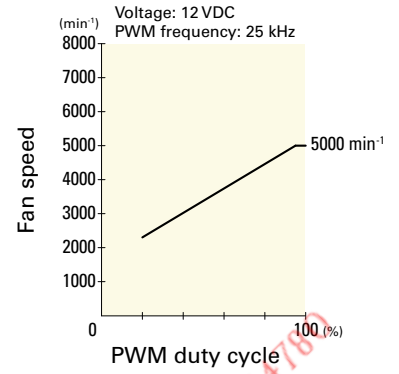
PWM duty cycle



Operating voltage range

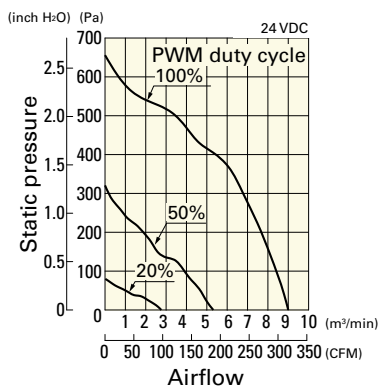


PWM duty - Speed characteristics example

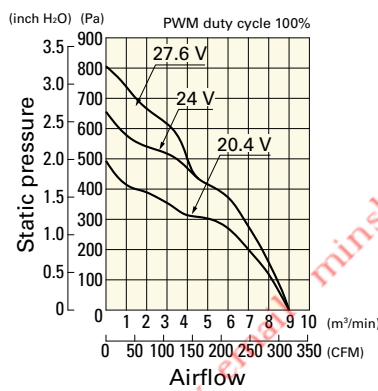


9WL1424P5G001 With pulse sensor with PWM control function

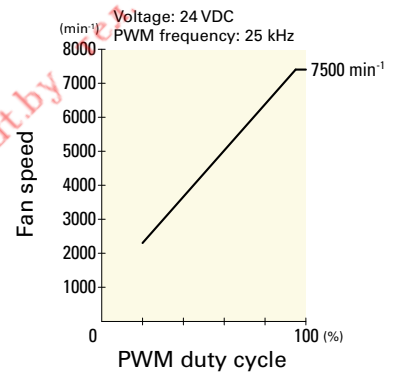
PWM duty cycle



Operating voltage range

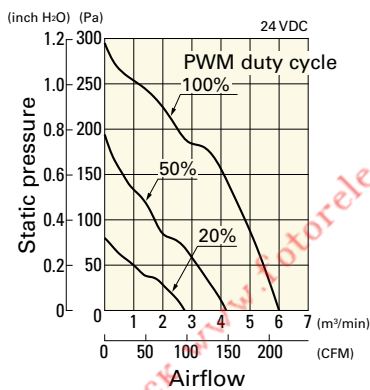


PWM duty - Speed characteristics example

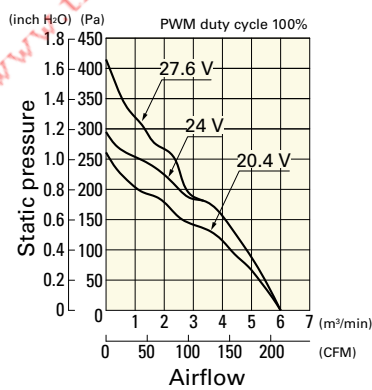


9WL1424P5S001 With pulse sensor with PWM control function

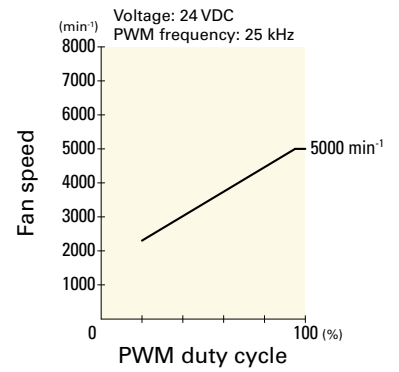
PWM duty cycle



Operating voltage range

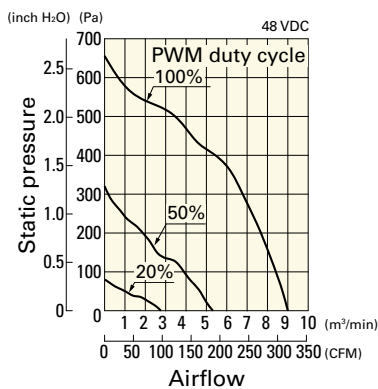


PWM duty - Speed characteristics example

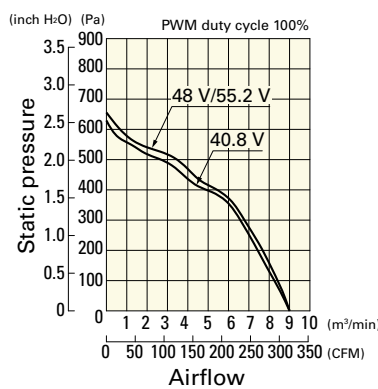


9WL1448P5G001 With pulse sensor with PWM control function

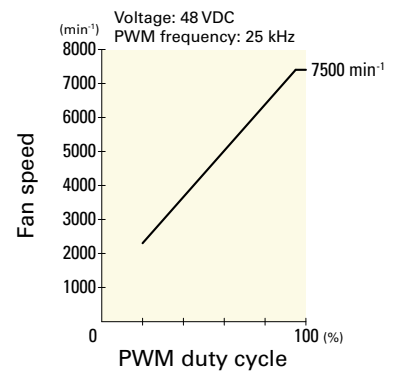
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example



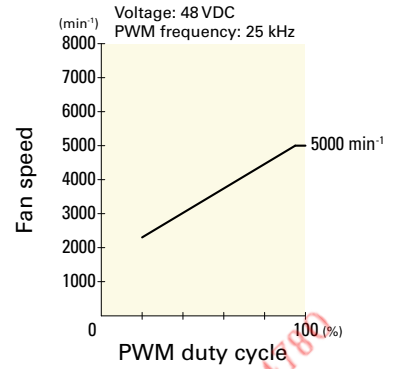
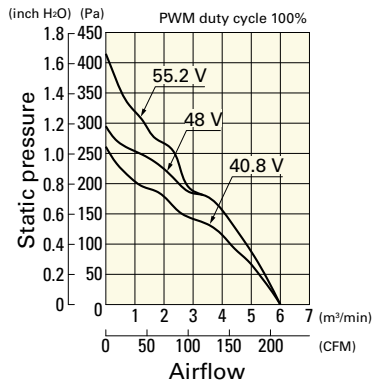
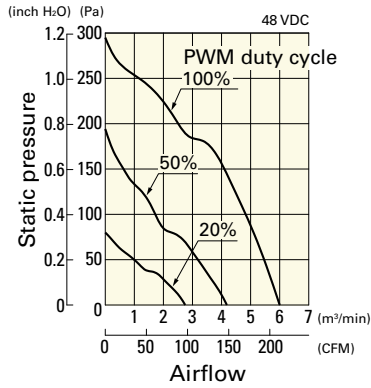
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1448P5S001 With pulse sensor with PWM control function

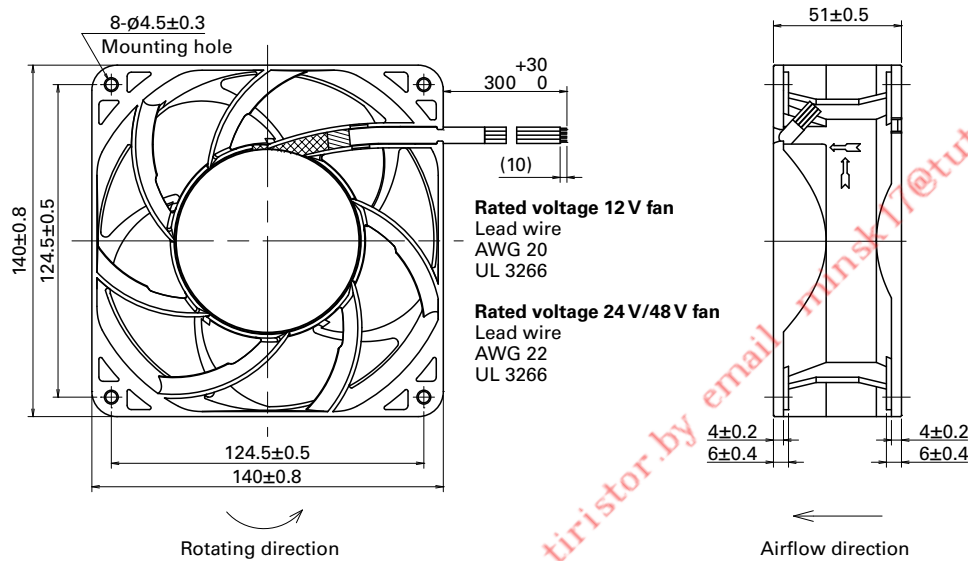
PWM duty cycle

Operating voltage range

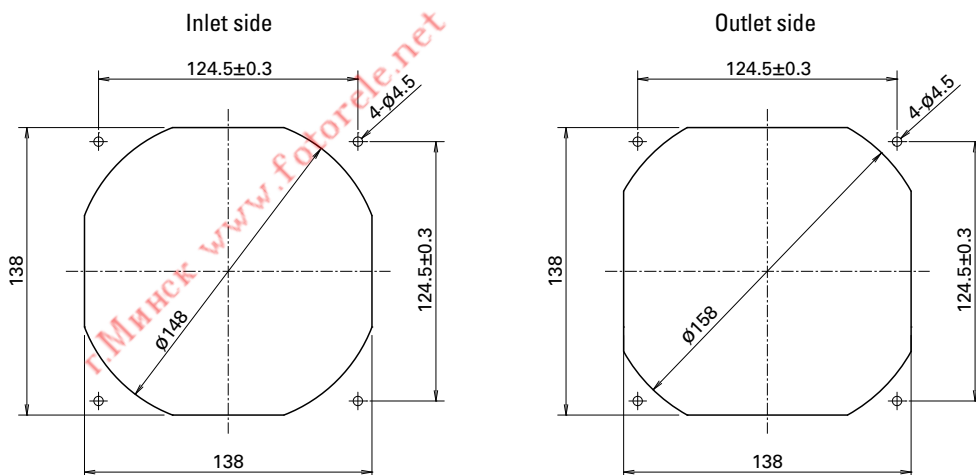
PWM duty - Speed characteristics example



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



Ø 172×150×51 mm

San Ace 172W 9WG type

Sidecut type

DC
Splash Proof Fan Ø172 mm

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 860 g
- Ingress protection IP68

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]
9WG5748P5G001	48	40.8 to 55.2	100	2.91	140.0	8600	15.46 546	1000 4.02	78	-20 to +70	40000/60°C (70000/40°C)
			0	0.21	10.1	2000	3.59 127	75.1 0.3	40		
9WG5748P5H001			100	1.62	78.0	6500	11.6 410	770 3.09	71		
			0	0.21	10.1	2000	3.59 127	75.1 0.3	40		

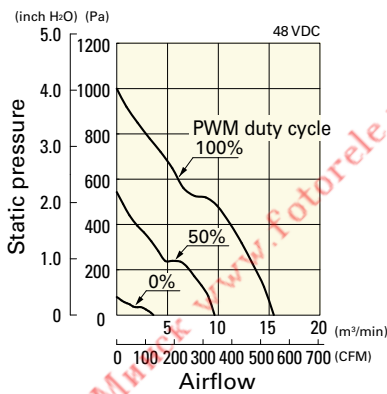
* PWM frequency: 25 kHz

Other sensor specifications are available as options. Refer to the index (p. 559).

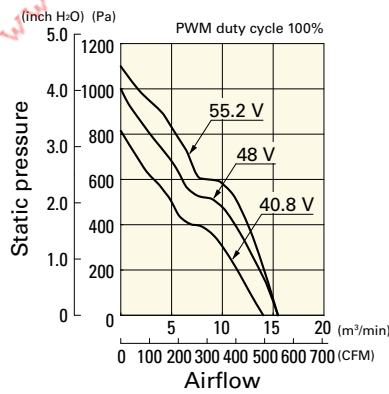
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WG5748P5G001 With pulse sensor with PWM control function

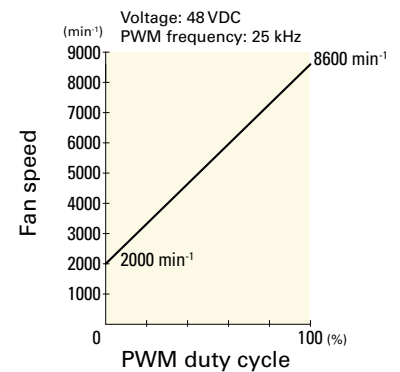
PWM duty cycle



Operating voltage range



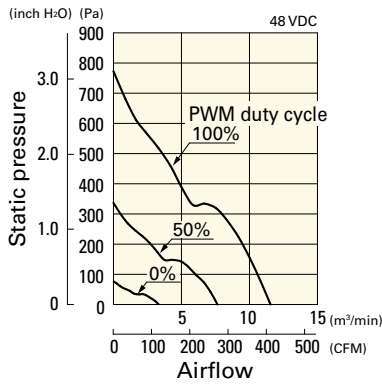
PWM duty - Speed characteristics example



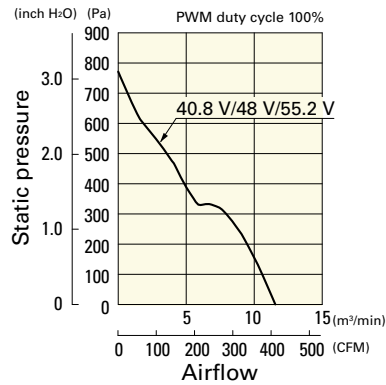
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WG5748P5H001 With pulse sensor with PWM control function

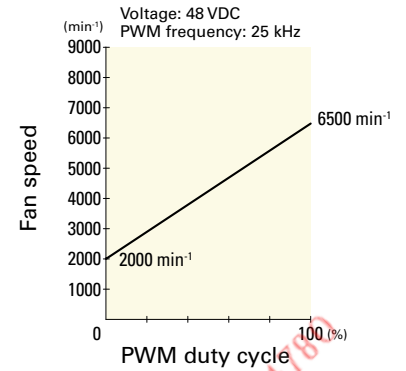
PWM duty cycle



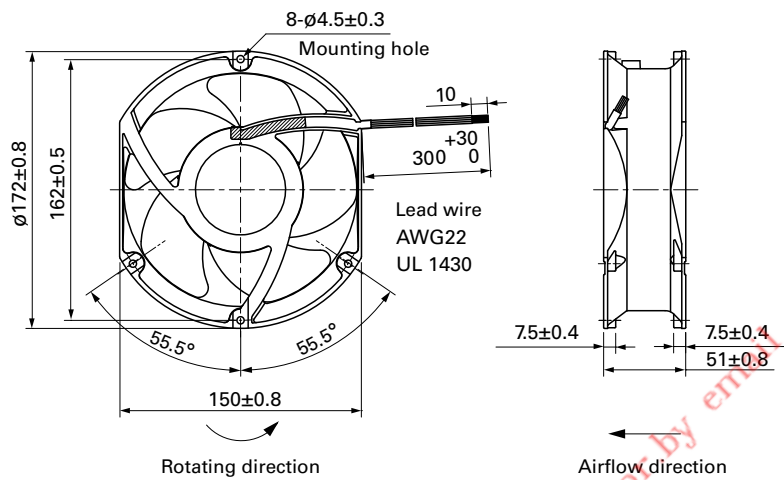
Operating voltage range



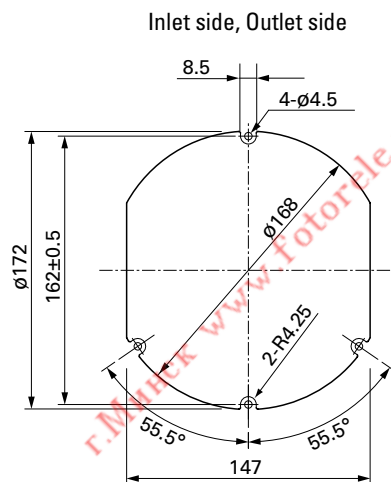
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-319J, 109-319E, 109-319H, 109-320



Ø 172×150×51 mm

San Ace 172W 9WE type   

Sidecut type

DC
Splash Proof Fan Ø172 mm

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 860 g
- Ingress protection IP68

Specifications

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

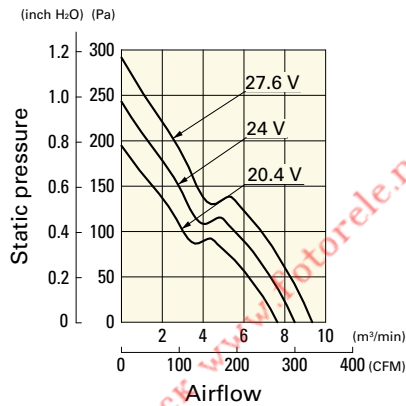
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WE5724K501	24	20.4 to 27.6	1.3	31.2	4100	8.5 300	243 0.976	60	-20 to +60	40000/60°C
9WE5748K501	48	40.8 to 55.2	0.7	33.6	4100	8.5 300	243 0.976	60		

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

Airflow - Static Pressure Characteristics

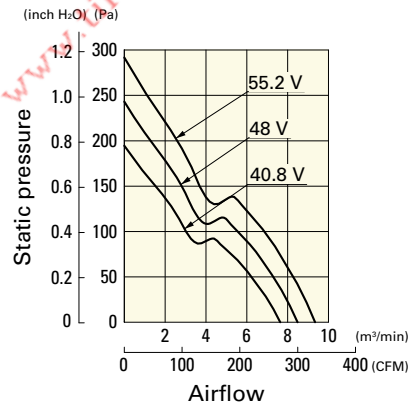
9WE5724K501 With pulse sensor

Operating voltage range

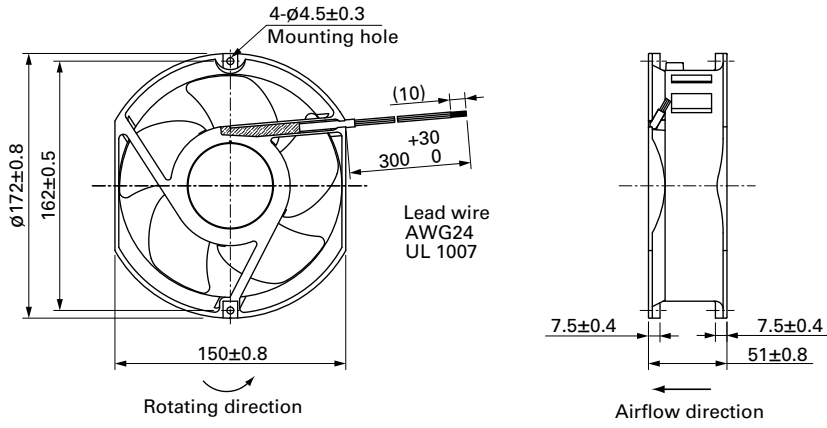


9WE5748K501 With pulse sensor

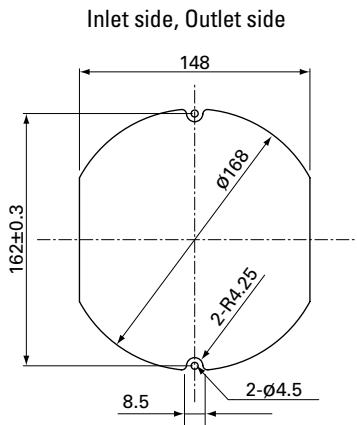
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-319E, 109-319H, 109-320

Ø **172x51** mm

San Ace 172W 9WE type   

Round type



DC
Splash Proof Fan Ø172 mm

General Specifications

- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 890 g
- Ingress protection IP68

Specifications

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

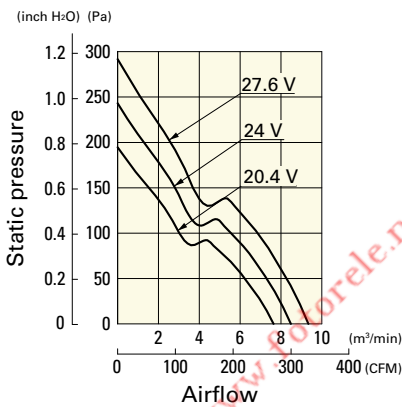
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WE1724K501	24	20.4 to 27.6	1.3	31.2	4100	8.5 300.1	243 0.97	55	-20 to +60	40000/60°C

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

Airflow - Static Pressure Characteristics

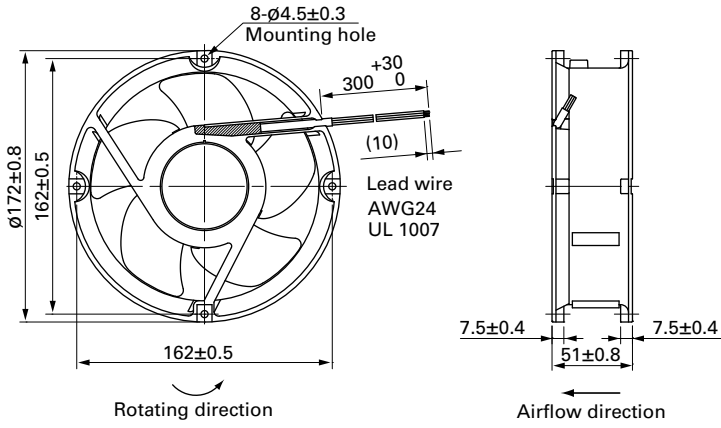
9WE1724K501 With pulse sensor

Operating voltage range

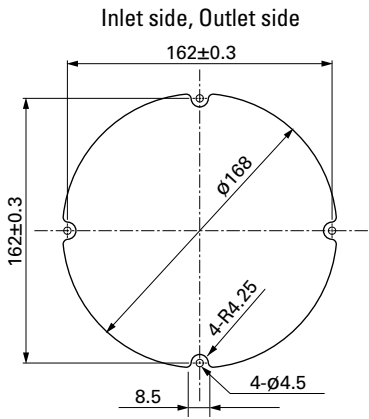


г. Минск www.koborele.net www.tiristor.by email min@koborele.net тел.+375447587780

Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-1066, 109-1068, 109-319E, 109-319H,
109-320

Splash Proof Centrifugal Fan

Centrifugal fans of IP54 and IP56 waterproof capability. For more information on IP rating, refer to p. 534. Related product: Splash Proof Fan p. 265, Centrifugal Fan p. 413, Oil Proof Fan p. 333

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

9W1T	M	48	P	4	H	01
Type name	Impeller size	Voltage	PWM control function	Thickness	Speed code	Individual customer's spec. (2 to 3 digits)

Type name	9W1T 9W2T					
Impeller size (mm)	G	J	M	N	P	S
	∅175	∅133	∅100	∅150	∅221	∅225
Voltage (V)	24	48				
	24	48				
Thickness (mm)	0	1	4			
	69 min.	35	25			
Speed code	H	G	S	etc.		

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.



Ø 100×25 mm

San Ace 100W 9W1T type us

General Specifications

- Material Motor case: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 motor case)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and motor case)
- 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
- Ingress protection IP54

Specifications

When the optional inlet nozzle (109-1080) is mounted.

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

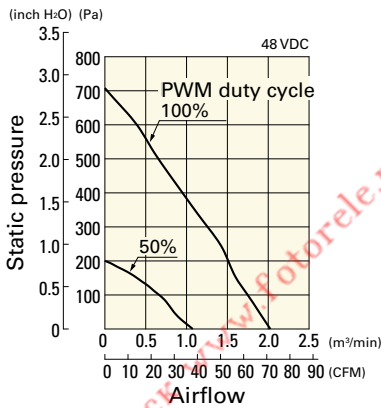
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] (CFM)	Max. static pressure [Pa] (inchH ₂ O)	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9W1TM48P4G01**	48	36 to 60	100	0.36	17.28	7400	2.03 71.7	708 2.84	65	-20 to +70	40000/60°C (70000/40°C)
9W1TM48P4H01			100	0.22	10.56	6400	1.77 62.5	560 2.25	60		
			0	0.04	1.92	2000	0.51 18.0	48 0.19	34		

* PWM frequency: 25 kHz ** Fan does not rotate when PWM duty cycle is 0%.
Max input of 9W1TM48P4G01: 22 W, 9W1TM48P4H01: 14 W at rated voltage.

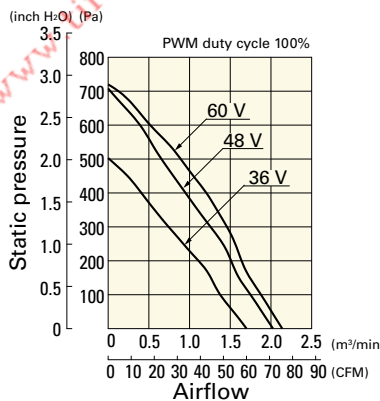
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9W1TM48P4G01 With pulse sensor with PWM control function

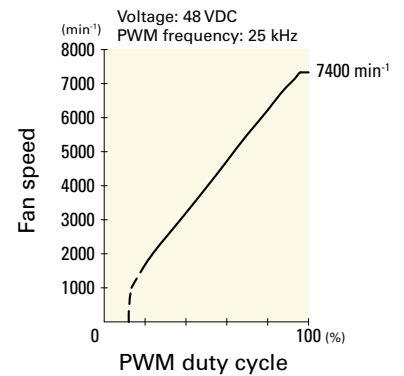
PWM duty cycle



Operating voltage range

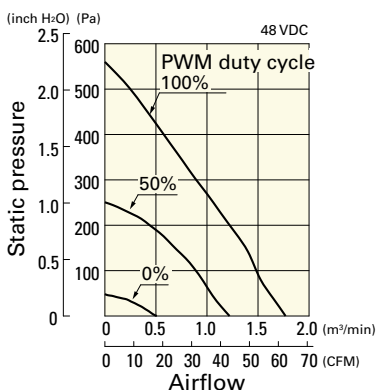


PWM duty - Speed characteristics example

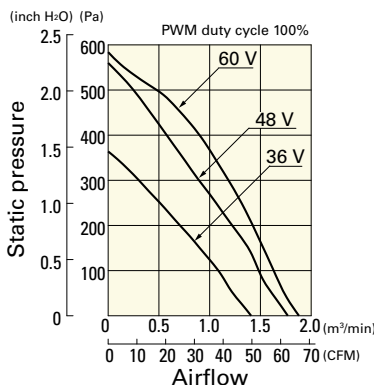


9W1TM48P4H01 With pulse sensor with PWM control function

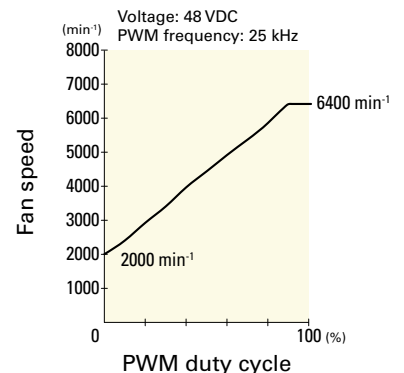
PWM duty cycle



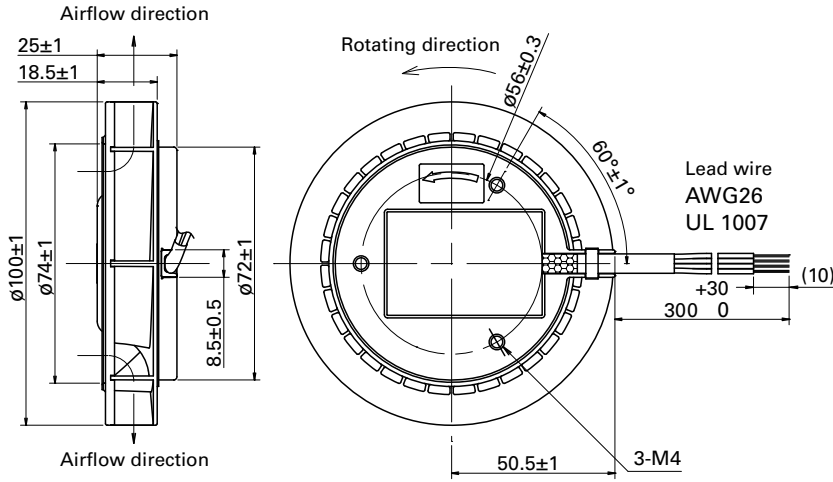
Operating voltage range



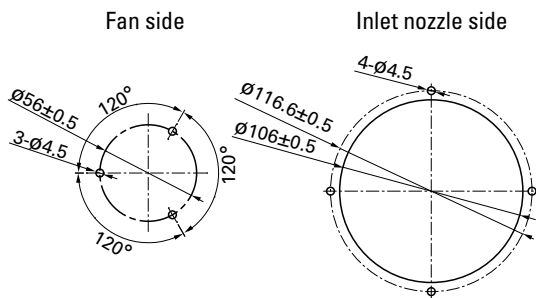
PWM duty - Speed characteristics example



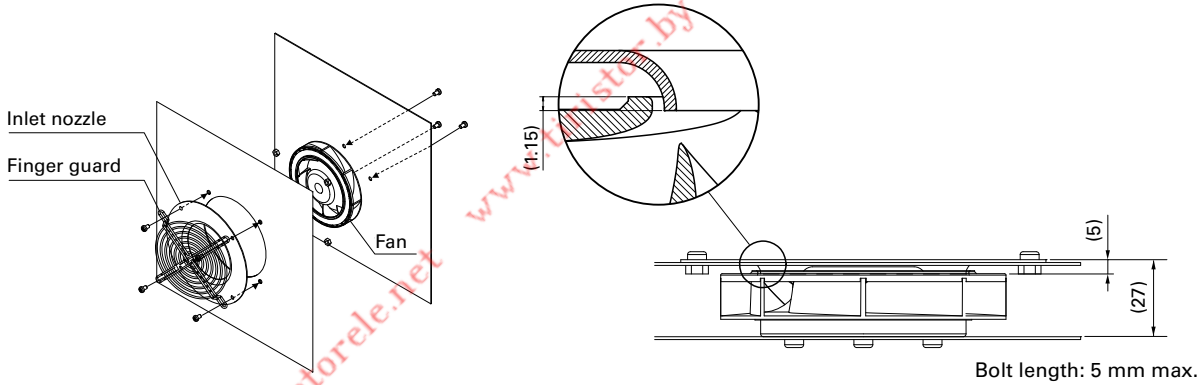
Dimensions (unit: mm)



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



Reference Diagram for Mounting



Options

Finger guards

page: p. 513

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

Inlet nozzle

page: p. 518

Model no.: 109-1080



Ø 133x91 mm

San Ace 133W 9W1T type c us

General Specifications

- Material Motor case: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 motor case)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and motor case)
- 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 720 g
- Ingress protection IP54

Specifications

When the optional inlet nozzle (109-1069) is mounted.

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

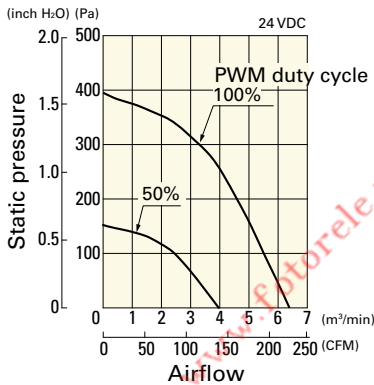
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9W1TJ24P0H61	24	20.4 to 27.6	100	1.2	28.8	4150	6.39 225	395 1.59	61	-20 to +70	40000/60°C (70000/40°C)
9W1TJ48P0H61	48	36 to 60	100	0.55	26.4	4150	6.39 225	395 1.59	61		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.
Max input is 45 W at rated voltage.

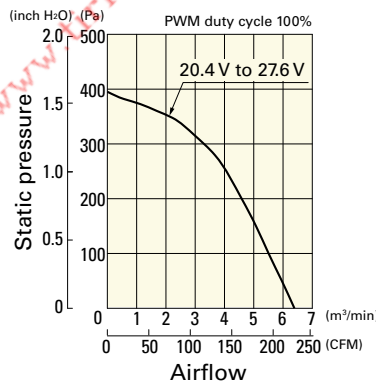
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9W1TJ24P0H61 With pulse sensor with PWM control function

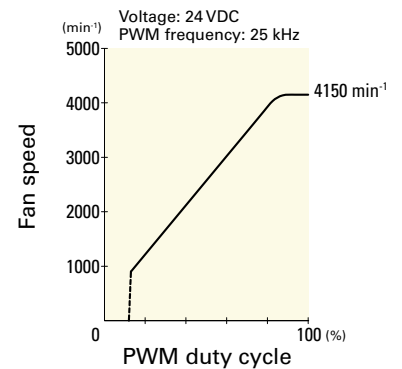
PWM duty cycle



Operating voltage range

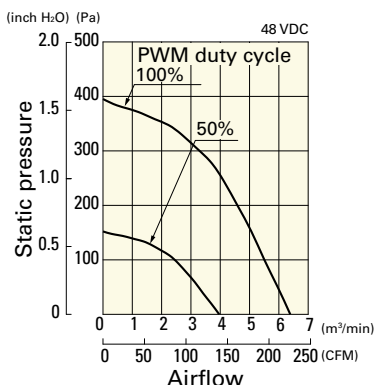


PWM duty - Speed characteristics example

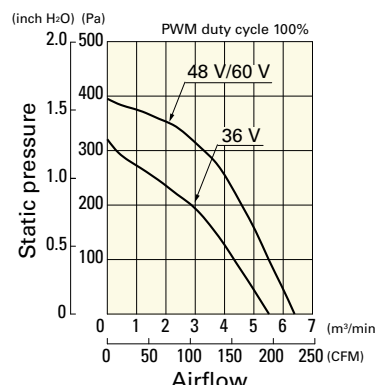


9W1TJ48P0H61 With pulse sensor with PWM control function

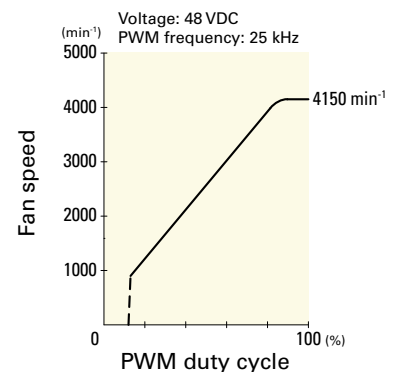
PWM duty cycle



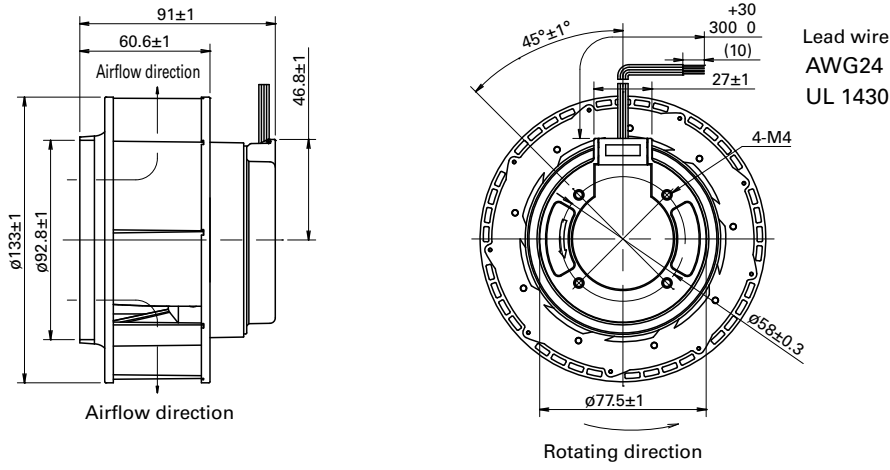
Operating voltage range



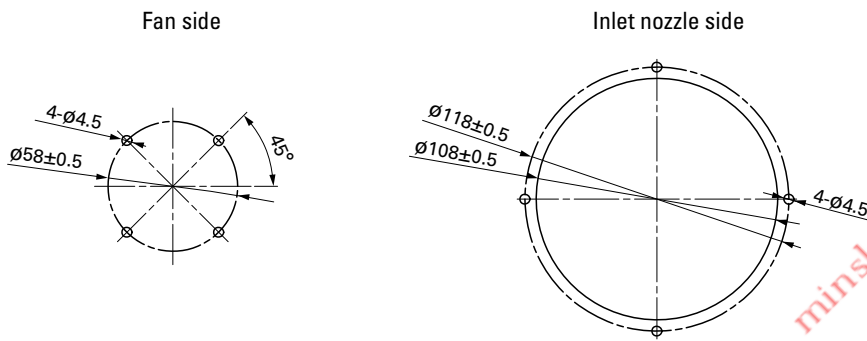
PWM duty - Speed characteristics example



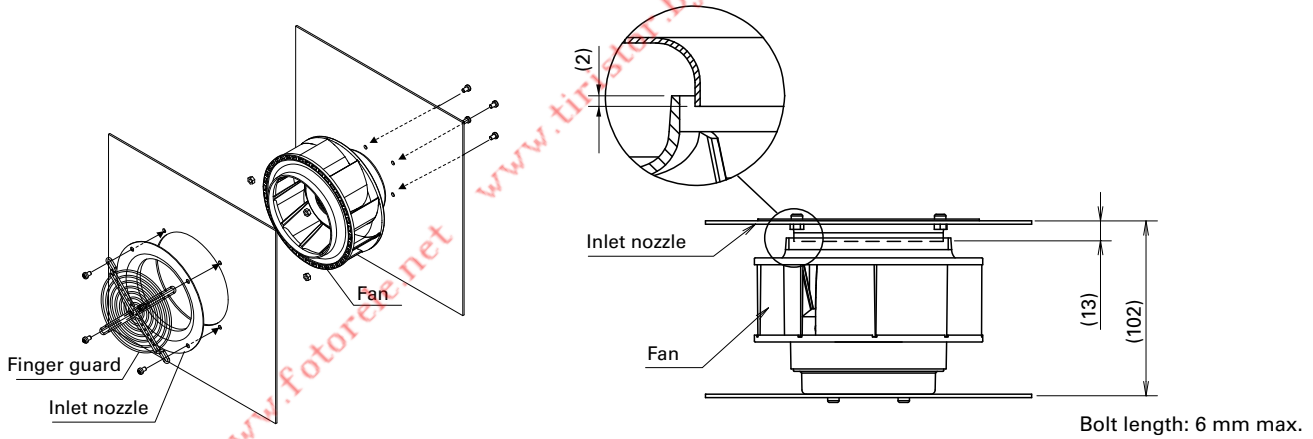
Dimensions (unit: mm)



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



Reference Diagram for Mounting



Options

Finger guards page: p. 514
 Model no.: 109-1112

Inlet nozzle page: p. 518
 Model no.: 109-1069, 109-1069H



Ø 150x35 mm

San Ace 150W 9W1T type

General Specifications

- Material Motor case: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 motor case)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and motor case)
- 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 330 g
- Ingress protection IP54

Specifications

When the optional inlet nozzle (109-1081) is mounted.

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

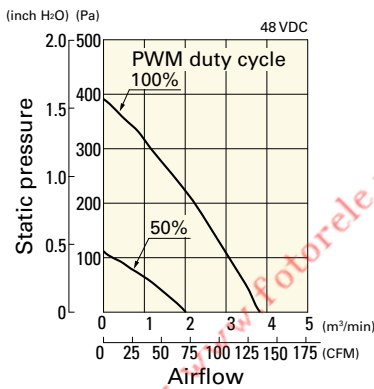
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] (CFM)	Max. static pressure [Pa] (inchH ₂ O)	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9W1TN48P1H01	48	36.0 to 55.2	100	0.32	15.4	3800	3.83 135	390 1.57	59	-20 to +70	40000/60°C (70000/40°C)

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.
Max input is 22 W at rated voltage.

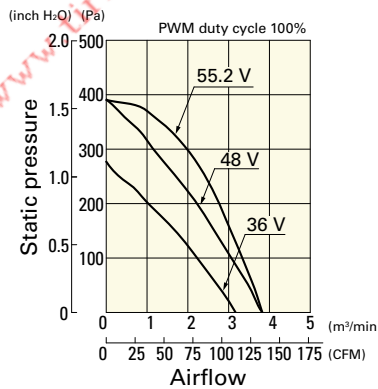
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9W1TN48P1H01 With pulse sensor with PWM control function

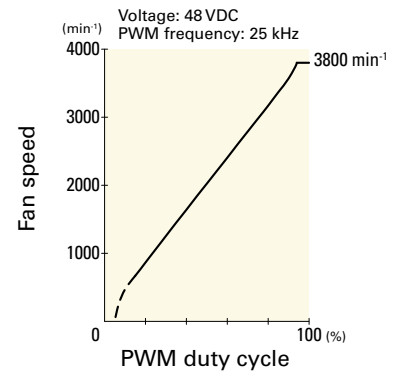
PWM duty cycle



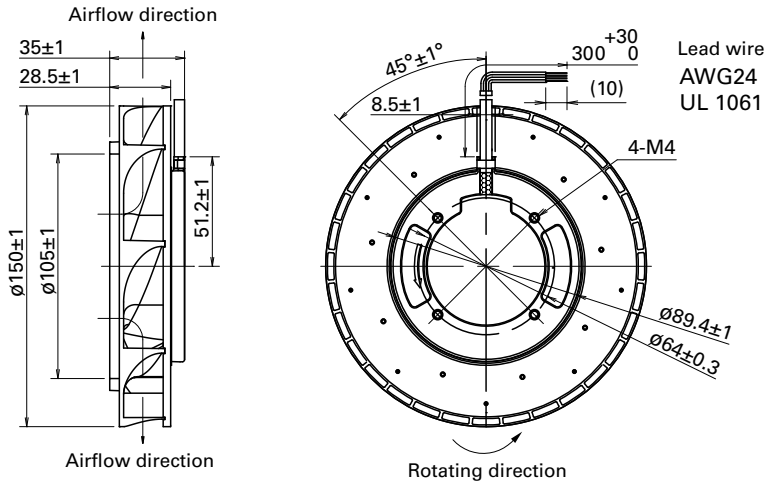
Operating voltage range



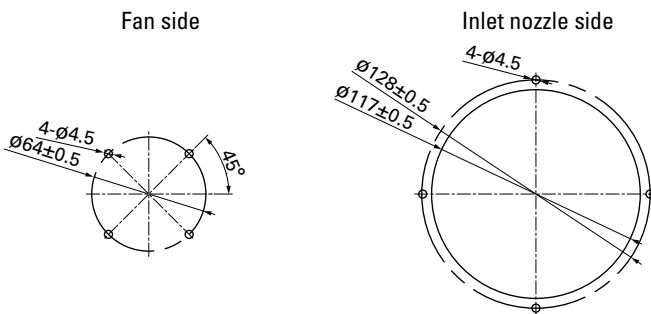
PWM duty - Speed characteristics example



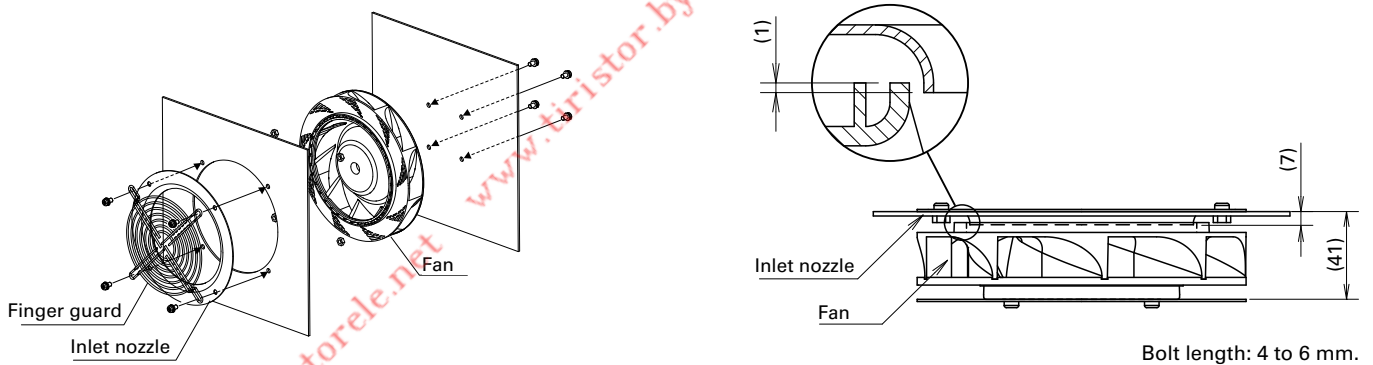
Dimensions (unit: mm)



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



Reference Diagram for Mounting



Options

Finger guards

page: p. 514

Model no.: 109-1104, 109-1104H

Inlet nozzle

page: p. 518

Model no.: 109-1081, 109-1081H



∅ 175×69 mm

San Ace 175W 9W1T type us

General Specifications

- Material Motor case: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 motor case)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and motor case)
- 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 760 g
- Ingress protection IP54

Specifications When the optional inlet nozzle (109-1073) is mounted.

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

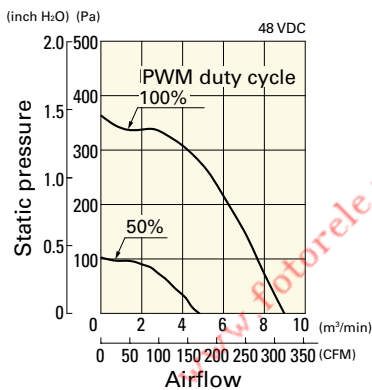
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] (CFM)	Max. static pressure [Pa] (inchH ₂ O)	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9W1TG48P0H61	48	36 to 60	100	0.65	31.2	3100	9.0 318	360 1.44	64	-20 to +70	40000/60°C (70000/40°C)

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.
Max input is 60 W at rated voltage.

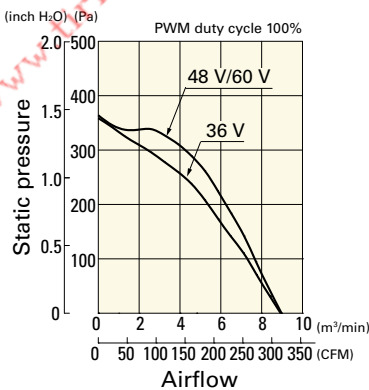
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9W1TG48P0H61 With pulse sensor with PWM control function

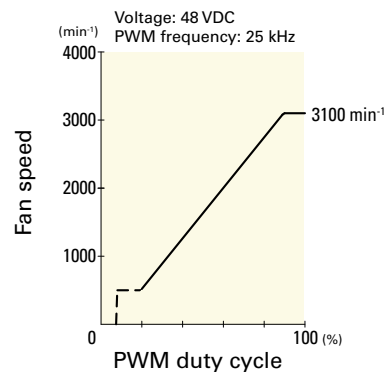
PWM duty cycle



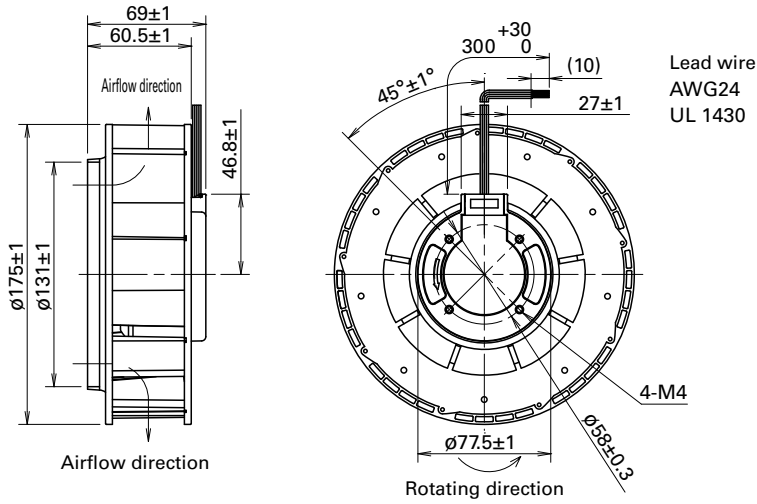
Operating voltage range



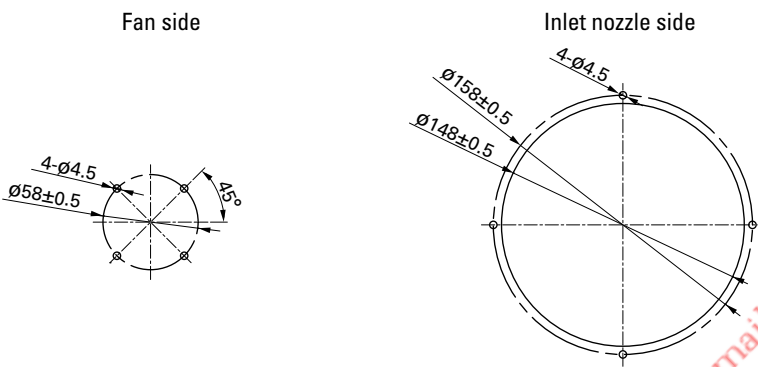
PWM duty - Speed characteristics example



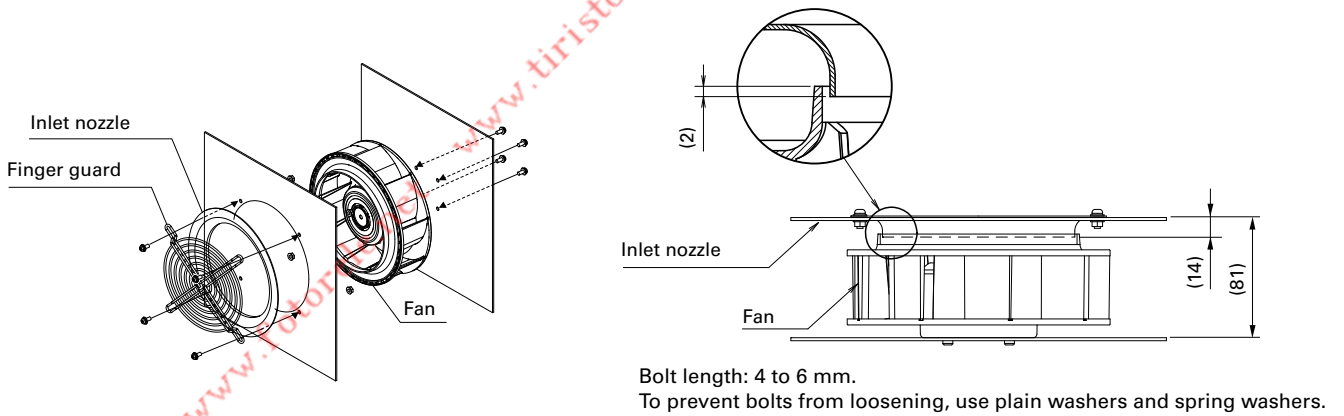
Dimensions (unit: mm)



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



Reference Diagram for Mounting



Options

Finger guards

page: p. 514

Model no.: 109-722

Inlet nozzle

page: p. 518

Model no.: 109-1073, 109-1073H



Ø221×71 mm

San Ace 221W 9W2T type   

General Specifications

- Material Motor case: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 motor case)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and motor case)
- 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 1250 g
- Ingress protection IP56

Specifications

When the optional inlet nozzle (109-1135H) is mounted.

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

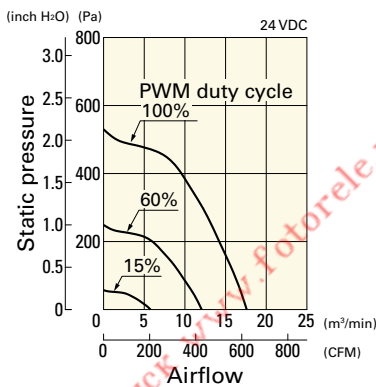
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] (CFM)	Max. static pressure [Pa] (inchH ₂ O)	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9W2TP24P0H001	24	16 to 36	100	3.35	80.4	3050	17.6 621	530 2.13	71.5	-25 to +70	40000/60°C (70000/40°C)
			15	0.4	9.6	1000	5.75 203	57.0 0.23	53.5		
9W2TP48P0S001	48	36 to 72	100	2.3	110.4	3400	19.6 692	659 2.65	73.5		
			15	0.2	9.6	1000	5.75 203	57.0 0.23	53.5		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.
Max input of 9W2TP24P0H001: 150 W, 9W2TP48P0S001: 210 W at rated voltage.

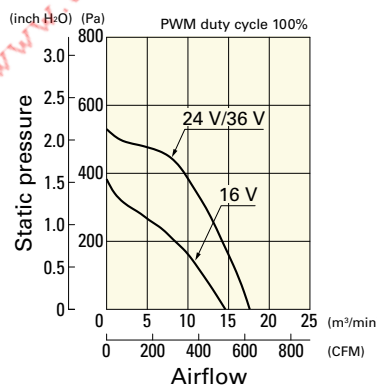
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9W2TP24P0H001 With pulse sensor with PWM control function

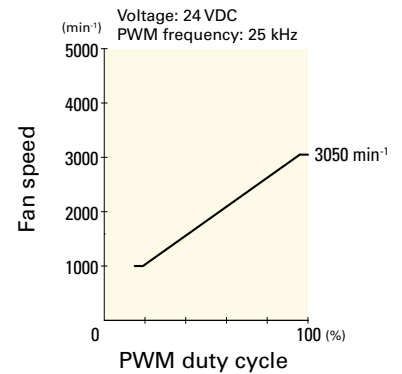
PWM duty cycle



Operating voltage range

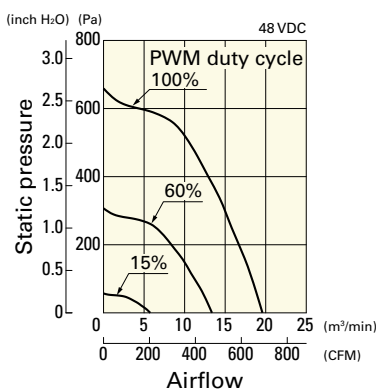


PWM duty - Speed characteristics example

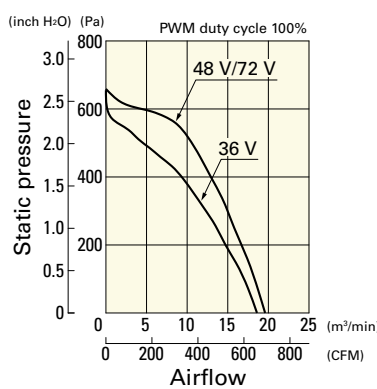


9W2TP48P0S001 With pulse sensor with PWM control function

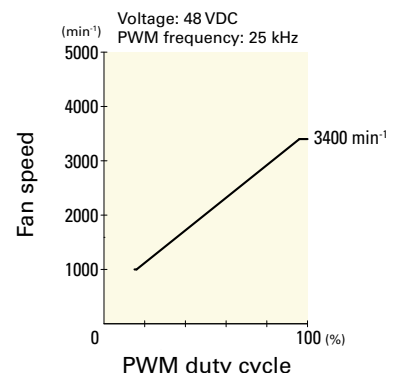
PWM duty cycle



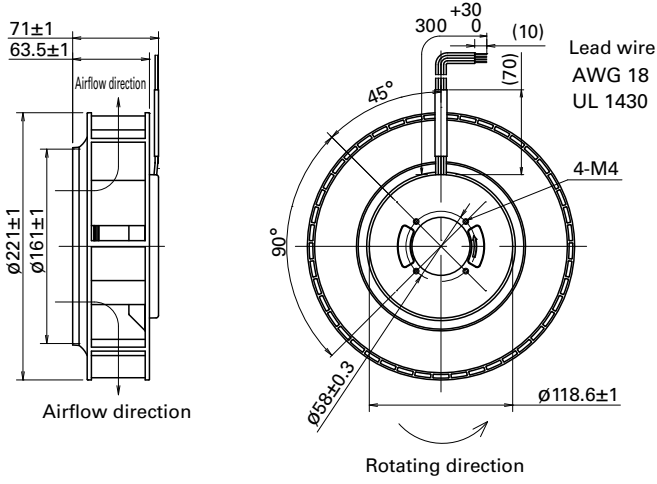
Operating voltage range



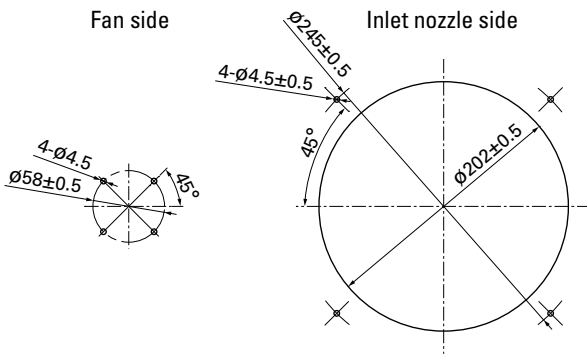
PWM duty - Speed characteristics example



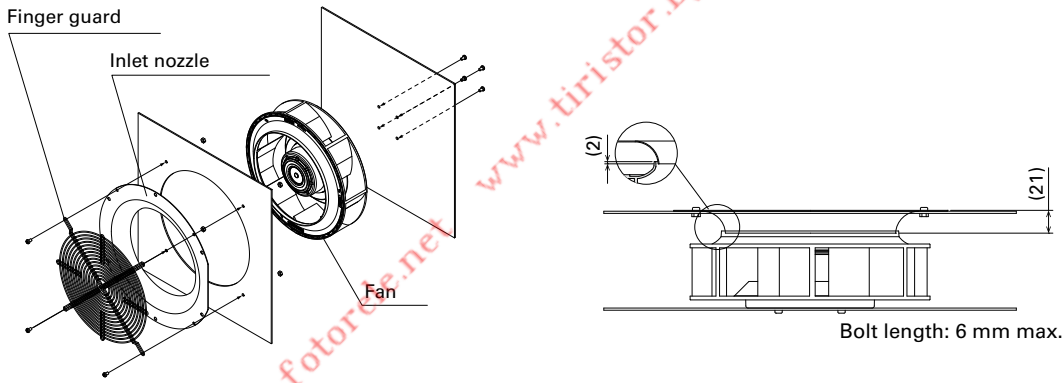
Dimensions (unit: mm)



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



Reference Diagram for Mounting



Options

Finger guards

page: p. 516

Model no.: 109-1138H

Inlet nozzle

page: p. 518

Model no.: 109-1135H



∅225×99 mm

San Ace 225W 9W2T type   

General Specifications

- Material Motor case: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in indoor 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 motor case)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and motor case)
- 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 1500 g
- Ingress protection IP56

Specifications When the optional inlet nozzle (109-1134H) is mounted.

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

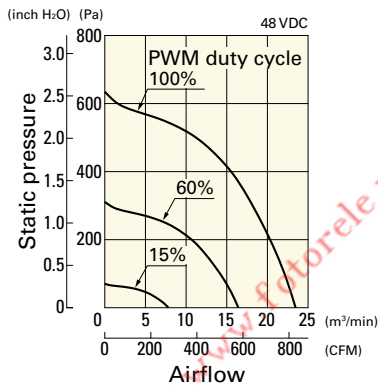
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] (CFM)	Max. static pressure [Pa] (inchH ₂ O)	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9W2TS48P0S001	48	36 to 72	100	2.45	117.6	3000	23.5 830	635 2.55	72.0	-25 to +70	40000/60°C (70000/40°C)
			15	0.24	11.5	1000	7.83 276	70.6 0.28	52.5		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.
Max input is 220 W at rated voltage.

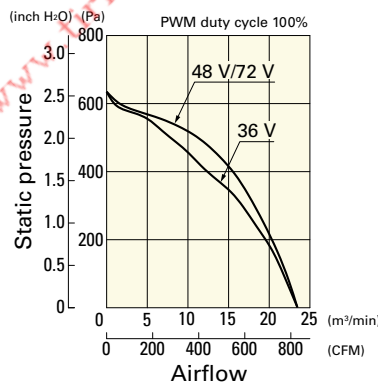
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9W2TS48P0S001 With pulse sensor with PWM control function

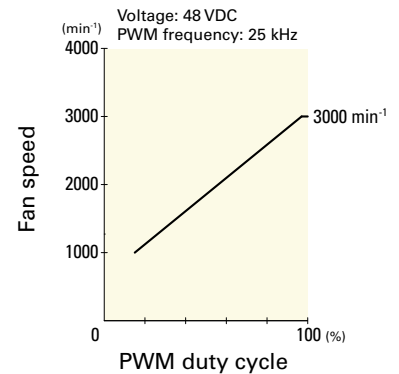
PWM duty cycle



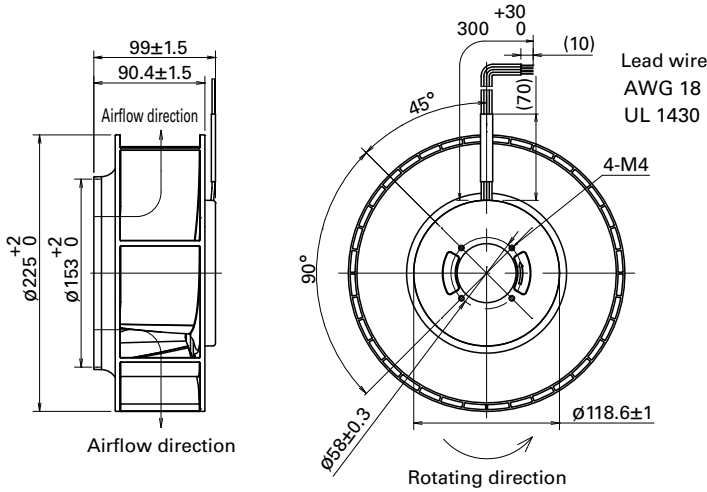
Operating voltage range



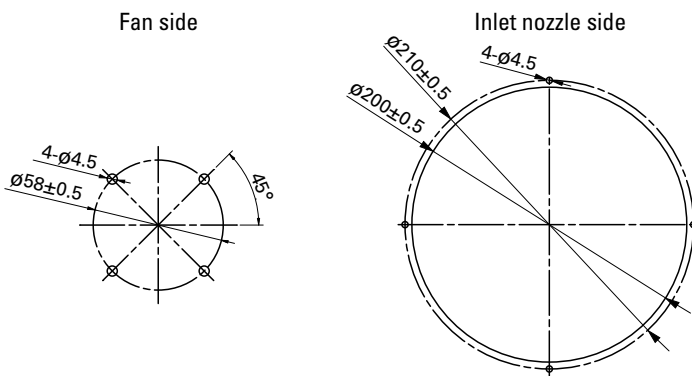
PWM duty - Speed characteristics example



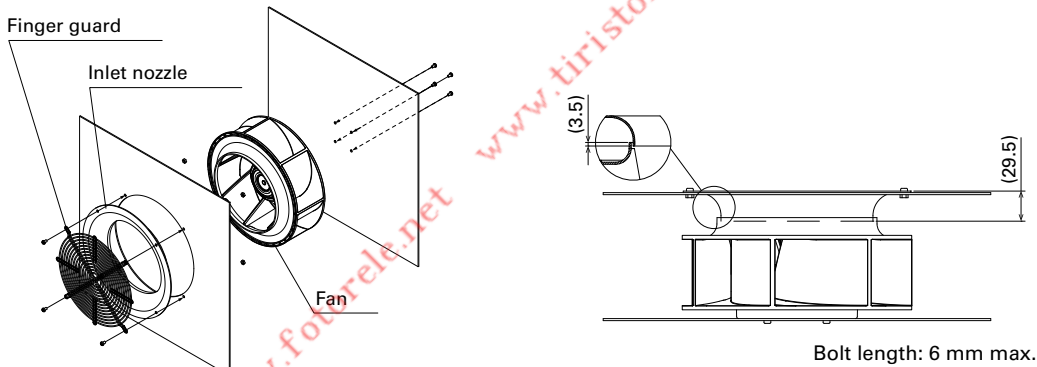
Dimensions (unit: mm)



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



Reference Diagram for Mounting



Options

Finger guards

page: p. 516

Model no.: 109-1137H

Inlet nozzle

page: p. 518

Model no.: 109-1134H

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Oil Proof Fan

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

Related product: Splash Proof Fan p. 265, Splash Proof Centrifugal Fan p. 319

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

9WF	12	24	H	1	01	
Type name	Frame size	Voltage	Speed code	Frame thickness	Sensor specifications	Frame form

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

40×40×15 mm

San Ace 40WF 9WF 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 35 g

This fan can be used in environments with oil mist.*

* Environment where cutting oil creates oil mist. Conduct a product evaluation with the type of oil to be used.

Specifications

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

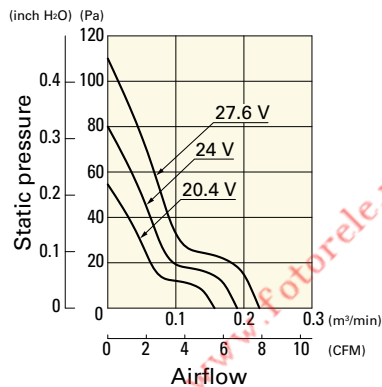
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WF0424H701	24	20.4 to 27.6	0.085	2.04	11300	0.195 6.9	80 0.32	38	-20 to +70	40000/60°C

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

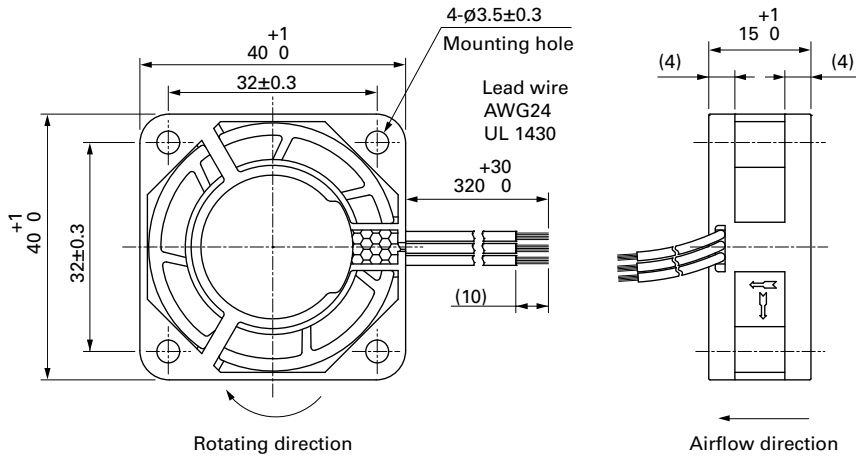
Airflow - Static Pressure Characteristics

9WF0424H701 With pulse sensor

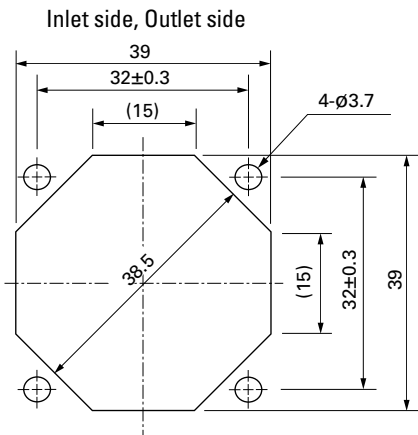
Operating voltage range



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

DC

Oil Proof Fan 40 mm sq.

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40x40x20 mm

San Ace 40WF 9WF 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 50 g

This fan can be used in environments with oil mist.*

* Environment where cutting oil creates oil mist. Conduct a product evaluation with the type of oil to be used.

Specifications

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

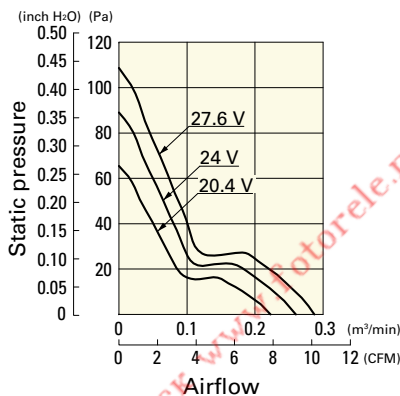
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WF0424H601	24	20.4 to 27.6	0.11	2.64	13100	0.26 9.2	90 0.361	42	-20 to +70	40000/60°C
9WF0424F601			0.076	1.82	11000	0.22 7.77	62.8 0.252	37		

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

Airflow - Static Pressure Characteristics

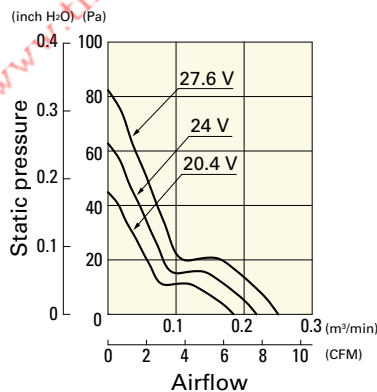
9WF0424H601 With pulse sensor

Operating voltage range

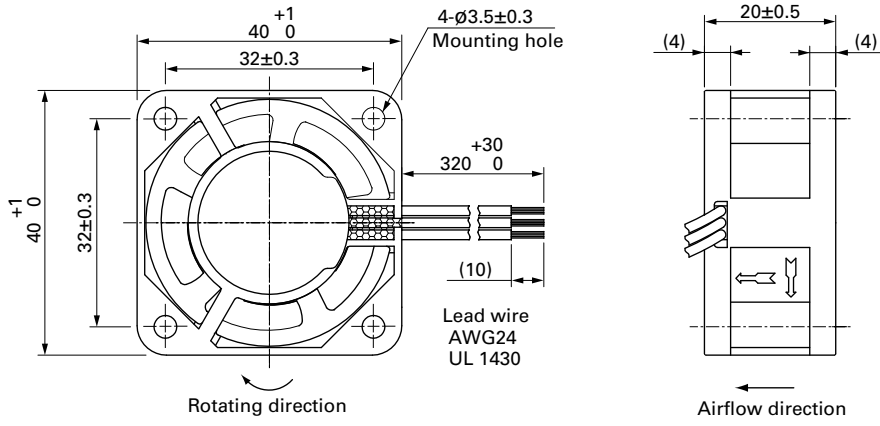


9WF0424F601 With pulse sensor

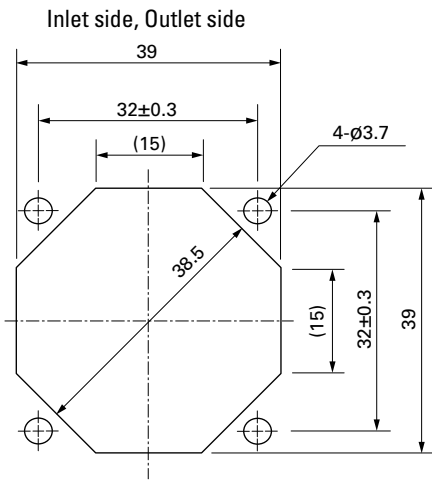
Operating voltage range



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

DC

Oil Proof Fan 40 mm sq.

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60×60×15 mm

San Ace 60WF 9WF 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 62 g

This fan can be used in environments with oil mist.*

* Environment where cutting oil creates oil mist. Conduct a product evaluation with the type of oil to be used.

Specifications

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

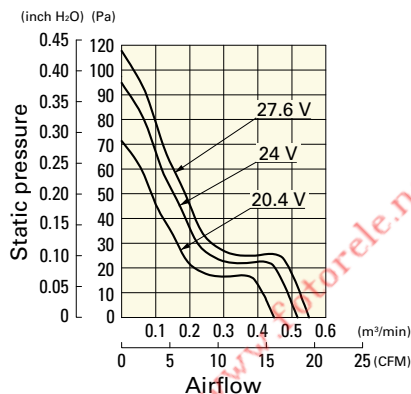
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WF0624H701	24	20.4 to 27.6	0.12	2.88	6800	0.52 18.3	95 0.38	44	-20 to +70	40000/60°C

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

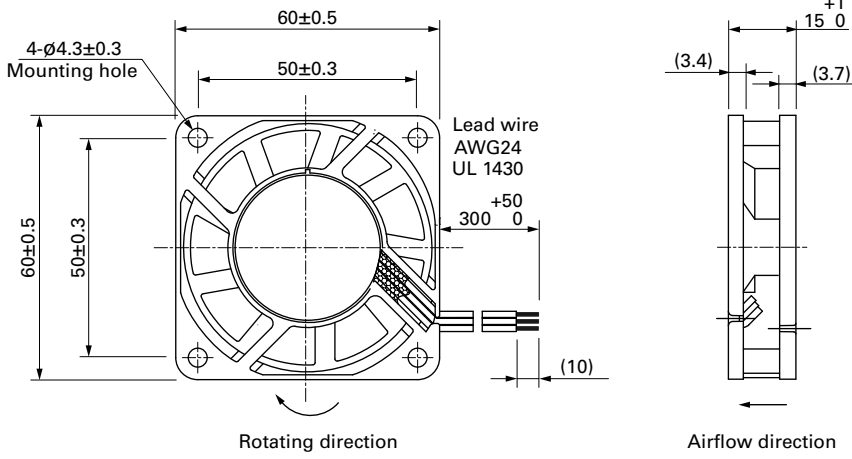
Airflow - Static Pressure Characteristics

9WF0624H701 With pulse sensor

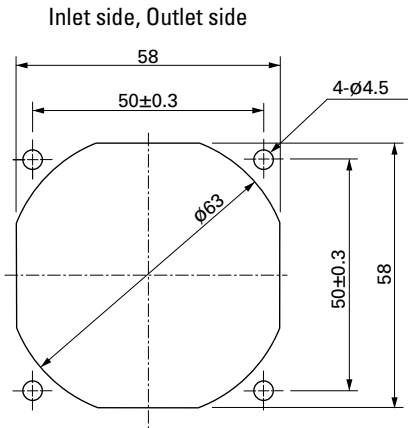
Operating voltage range



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

DC

Oil Proof Fan 60 mm sq.

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60×60×20 mm

San Ace 60WF 9WF 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 80 g

This fan can be used in environments with oil mist.*

* Environment where cutting oil creates oil mist. Conduct a product evaluation with the type of oil to be used.

Specifications

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

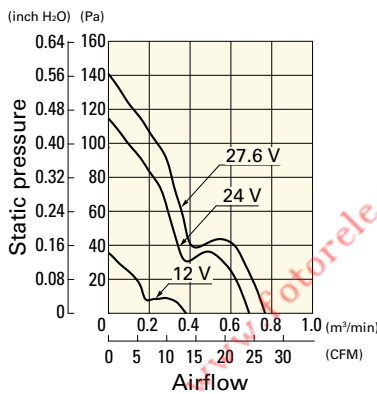
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WF0624H601	24	12 to 27.6	0.15	3.6	6600	0.69 24.3	114 0.45	42	-20 to +70	40000/60°C

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

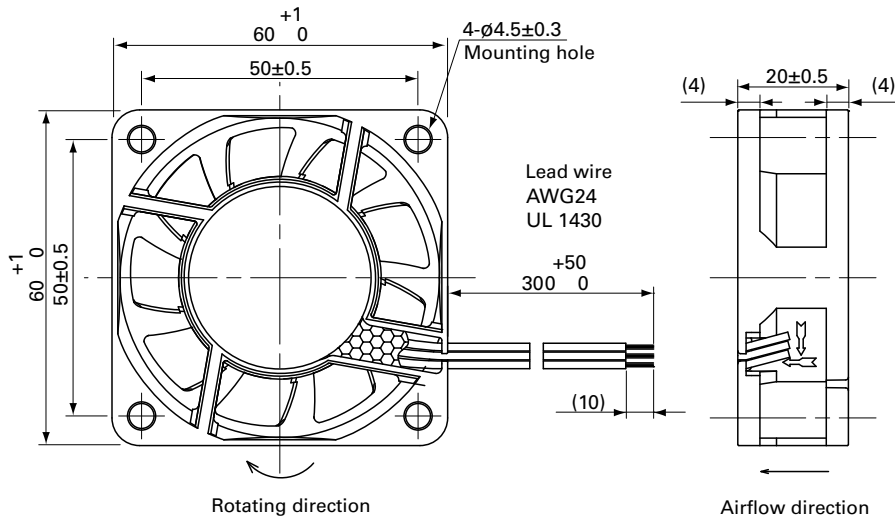
Airflow - Static Pressure Characteristics

9WF0624H601 With pulse sensor

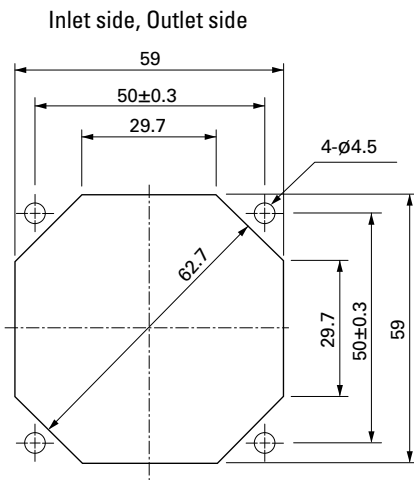
Operating voltage range



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

DC

Oil Proof Fan 60 mm sq.

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60×60×25 mm

San Ace 60WF 9WF 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

This fan can be used in environments with oil mist.*

* Environment where cutting oil creates oil mist. Conduct a product evaluation with the type of oil to be used.

Specifications

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

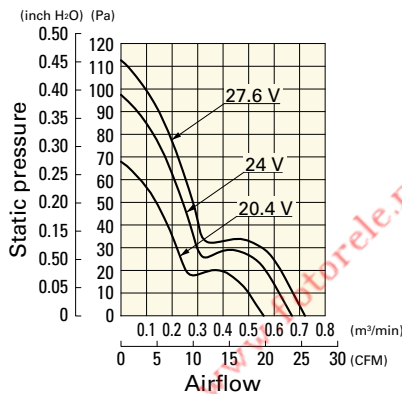
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WF0624H401	24	20.4 to 27.6	0.15	3.6	6500	0.67 23.6	97 0.38	41	-20 to +70	40000/60°C

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

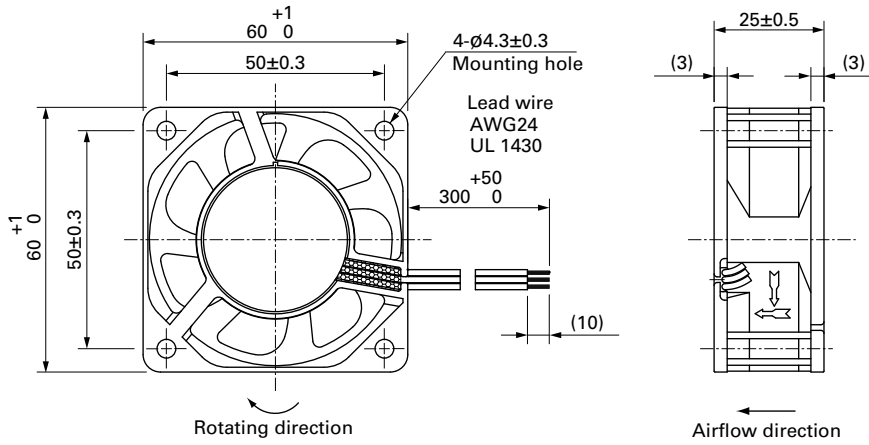
Airflow - Static Pressure Characteristics

9WF0624H401 With pulse sensor

Operating voltage range

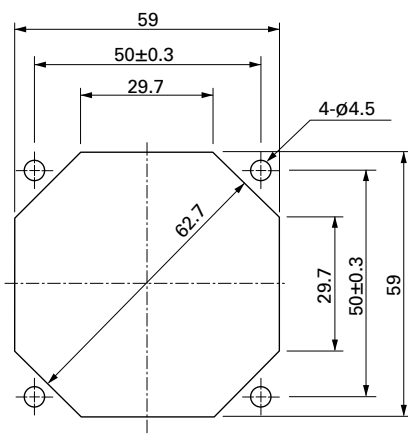


Dimensions (unit: mm)



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

Inlet side, Outlet side



Options

Finger guards

page: p. 513

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

DC

Oil Proof Fan 60 mm sq.

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80×80×25 mm

San Ace 80WF 9WF 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 130 g

This fan can be used in environments with oil mist.*

* Environment where cutting oil creates oil mist. Conduct a product evaluation with the type of oil to be used.

Specifications

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

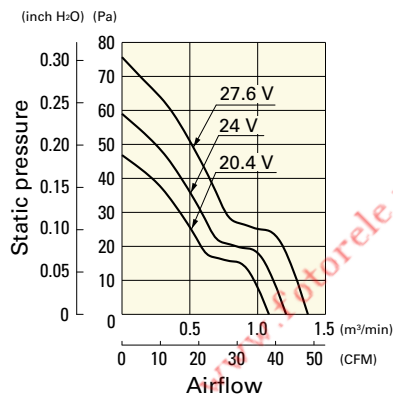
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WF0824S401	24	20.4 to 27.6	0.16	3.84	4000	1.2 42.4	58 0.23	38	-20 to +70	40000/60°C

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

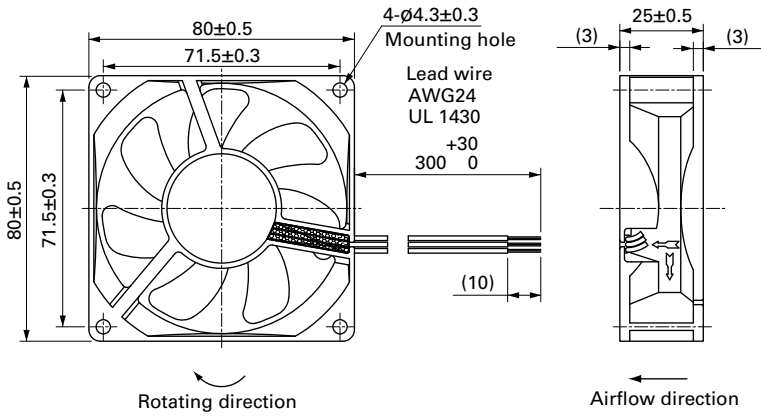
Airflow - Static Pressure Characteristics

9WF0824S401 With pulse sensor

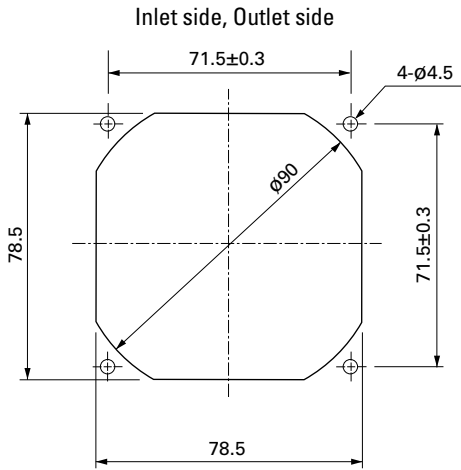
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

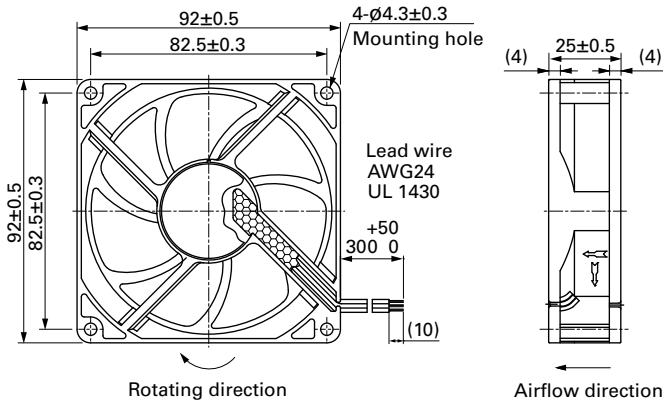
Model no.: 109-049C, 109-049E, 109-049H

DC

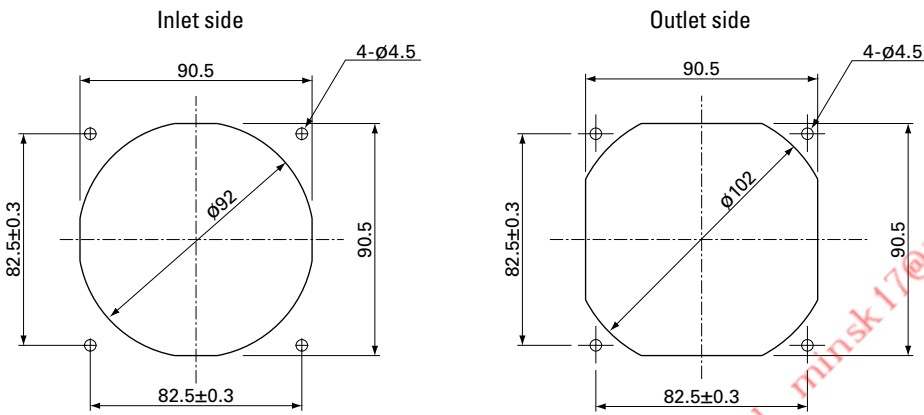
Oil Proof Fan 80 mm sq.

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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.: 109-099C, 109-099E, 109-099H

DC

Oil Proof Fan 92 mm sq.

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92x92x32 mm

San Ace 92WF 9WF 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 185 g

This fan can be used in environments with oil mist.*

* Environment where cutting oil creates oil mist. Conduct a product evaluation with the type of oil to be used.

Specifications

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

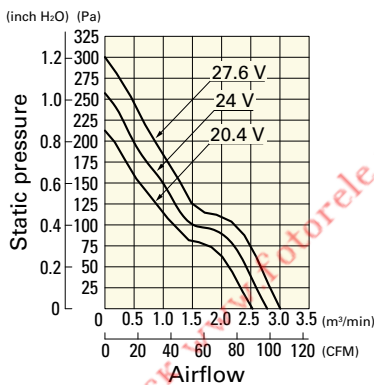
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]		
9WF0924S201	24	20.4 to 27.6	0.5	12	7300	2.8	98.9	255	1.02	58	-20 to +70	40000/60°C
9WF0924H201			0.35	8.4	6500	2.45	86.5	200	0.8	56		

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

Airflow - Static Pressure Characteristics

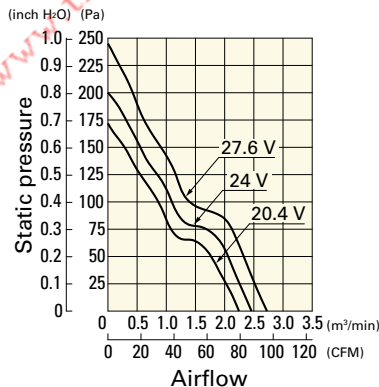
9WF0924S201 With pulse sensor

Operating voltage range

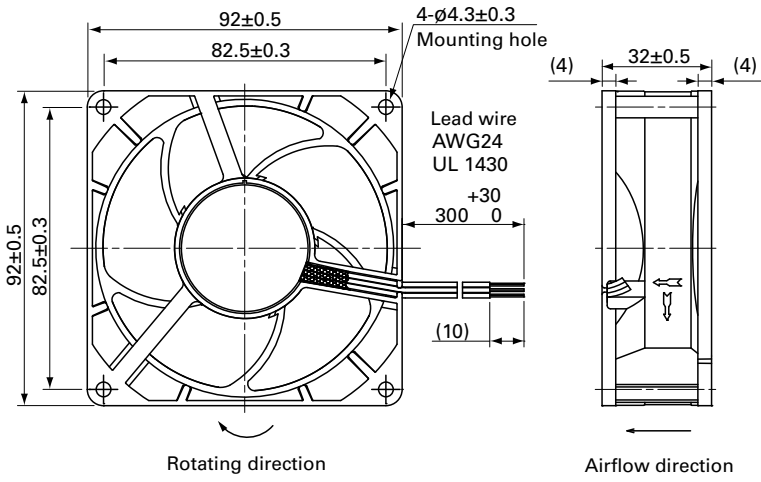


9WF0924H201 With pulse sensor

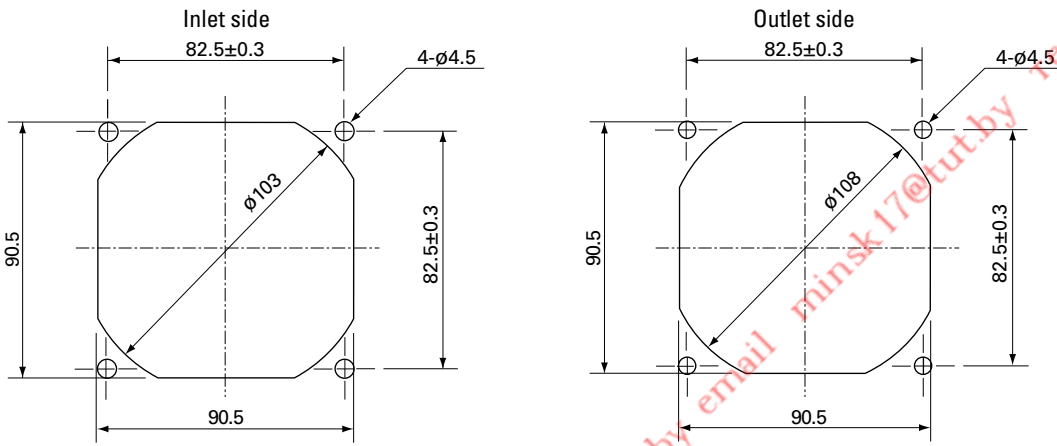
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

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


DC

Oil Proof Fan 92 mm sq.

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120×120×38 mm

San Ace 120WF 9WF 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 355 g

This fan can be used in environments with oil mist.*

* Environment where cutting oil creates oil mist. Conduct a product evaluation with the type of oil to be used.

Specifications

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

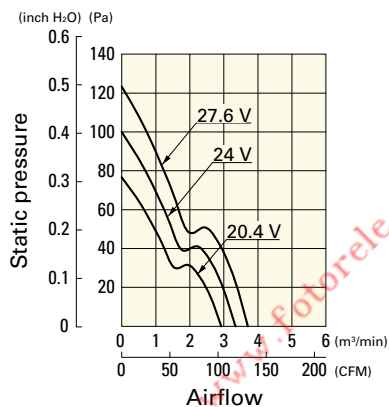
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WF1224H101	24	20.4 to 27.6	0.32	7.68	3100	3.34 118	100 0.4	46	-20 to +70	40000/60°C

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

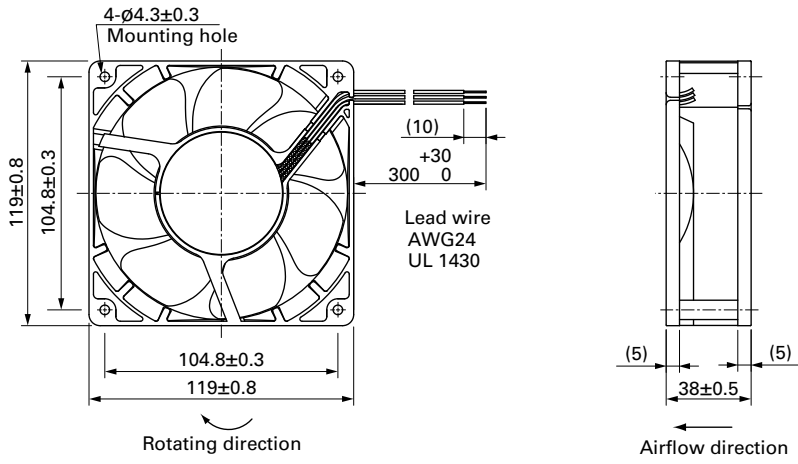
Airflow - Static Pressure Characteristics

9WF1224H101 With pulse sensor

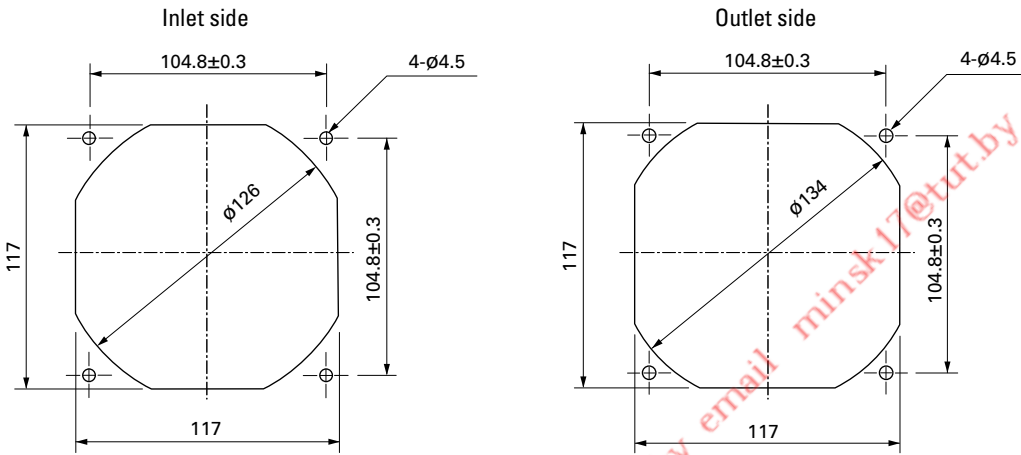
Operating voltage range



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

DC

Oil Proof Fan 120 mm sq.

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Long Life Fan

Cooling fan with Max. 200,000 hours of expected life.

Related product: Splash Proof Fan pp. 268, 271, 277, 286

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

109L	06	12	H	4	01
Type name	Frame size	Voltage	Speed code	Frame thickness	Sensor specifications

Fans with PWM control function

9LG	06	12	P	4	S	001
Type name	Frame size	Voltage	PWM control function	Frame thickness	Speed code	Individual customer's spec (2 to 3 digits)

Type name	109L	9CRL	9GL	9L	9LB	9LG			
Frame size (mm)	04	06	08	09	12	14	17	57	
	40×40	60×60	80×80	92×92	120×120	140×140	∅172	∅172×150 (sidecut)	
Voltage (V)	12	24	48						
	12	24	48	etc.					
Speed code	E	F	G	H	J	L	M	S	etc.
Frame thickness (mm)	0	1	3	4	5	8			
	76	38	28	25	51	80			
Sensor specifications	01			02			D01		
	With a pulse sensor			Without a sensor			With a lock sensor		

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.



40x40x28 mm

San Ace 40L 9L 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
- Mass 55 g

Specifications

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

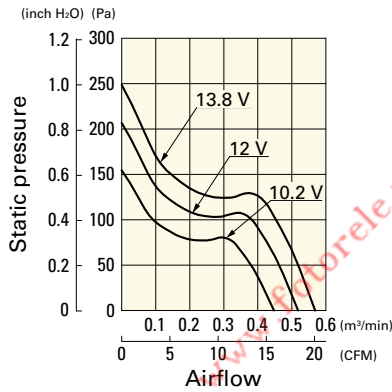
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9L0412J301	12	10.2 to 13.8	0.31	3.72	11700	0.52 18.4	206 0.827	48	-20 to +70	100000/60°C
9L0412H301			0.15	1.8	8400	0.37 13.1	106 0.426	40		
9L0412M301			0.045	0.54	4000	0.16 5.65	24 0.096	19		

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

Airflow - Static Pressure Characteristics

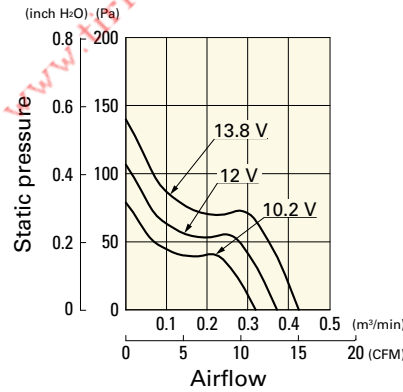
9L0412J301 With pulse sensor

Operating voltage range



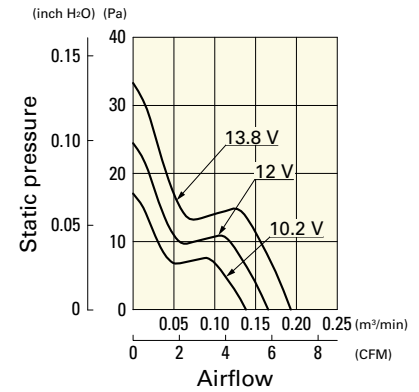
9L0412H301 With pulse sensor

Operating voltage range

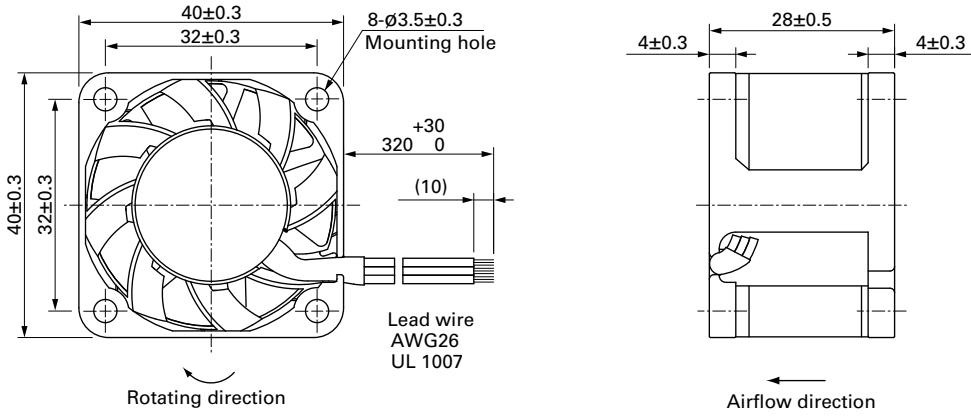


9L0412M301 With pulse sensor

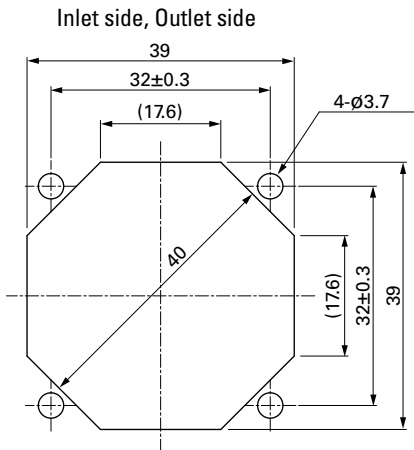
Operating voltage range



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

DC
Long Life Fan 40 mm sq.

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60×60×25 mm

San Ace 60L 9LG 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 100 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]	
9LG0612P4S001	12	10.8 to 13.2	100	0.67	8.04	11000	1.4 49.4	300 1.204	53	-20 to +70	180000/60°C	
			20	0.06	0.72	2900	0.36 12.7	20.8 0.083	20			
9LG0612P4J001			100	0.39	4.68	8650	1.1 38.8	182 0.73	47			
			20	0.03	0.36	1150	0.13 4.8	3.3 0.013	14			
9LG0612P4H001			100	0.17	2.04	6150	0.78 27.5	97 0.389	35			
			20	0.03	0.36	1350	0.17 6.0	4.7 0.018	14			
9LG0612P4M001		100	0.09	1.08	4200	0.53 18.7	45 0.18	24				
		20	0.03	0.36	900	0.11 3.8	2.0 0.008	14				
9LG0624P4S001		24	21.6 to 26.4	100	0.34	8.16	11000	1.4 49.4	300 1.204			53
				20	0.03	0.72	2900	0.36 12.7	20.8 0.083			20
9LG0624P4J001				100	0.19	4.56	8650	1.1 38.8	182 0.73			47
				20	0.02	0.48	2200	0.28 9.8	12.0 0.048			17
9LG0624P4H001	100			0.08	1.92	6150	0.78 27.5	97 0.389	35			
	20			0.02	0.48	1300	0.16 5.6	4.3 0.017	14			
9LG0624P4M001	100		0.04	0.96	4200	0.53 18.7	45 0.18	24				
	20		0.01	0.24	800	0.1 3.5	1.6 0.006	14				
9LG0648P4S001	48		36 to 72	100	0.18	8.64	11000	1.4 49.4	305 1.224	53		
				20	0.02	0.96	2900	0.36 12.7	20.8 0.083	20		
9LG0648P4J001				100	0.1	4.8	8650	1.1 38.8	182 0.73	47		
				20	0.02	0.96	2100	0.26 9.1	10.7 0.042	17		
9LG0648P4H001		100		0.06	2.88	6150	0.78 27.5	97 0.389	35			
		20		0.02	0.96	1000	0.12 4.2	2.5 0.01	14			
9LG0648P4M001		100	0.04	1.92	4200	0.53 18.7	45 0.18	24				
		20	0.02	0.96	650	0.08 2.8	1.0 0.004	14				

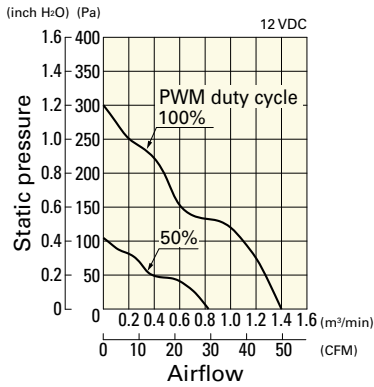
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

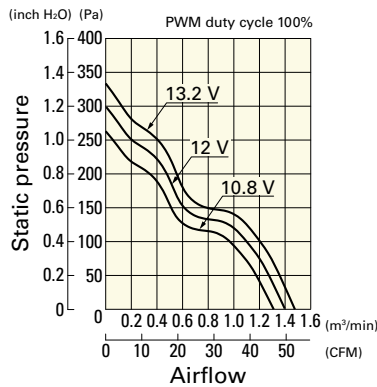
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0612P4S001 With pulse sensor with PWM control function

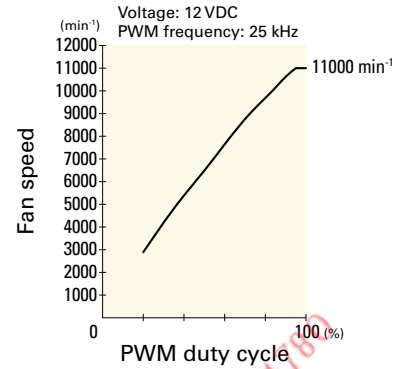
PWM duty cycle



Operating voltage range

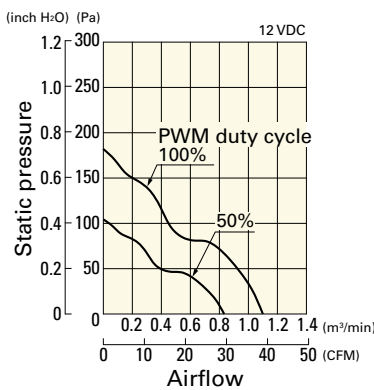


PWM duty - Speed characteristics example

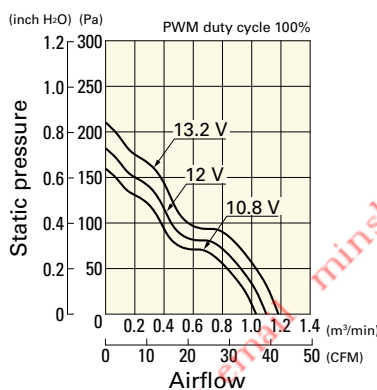


9LG0612P4J001 With pulse sensor with PWM control function

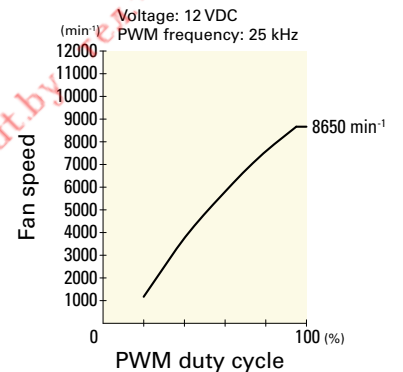
PWM duty cycle



Operating voltage range

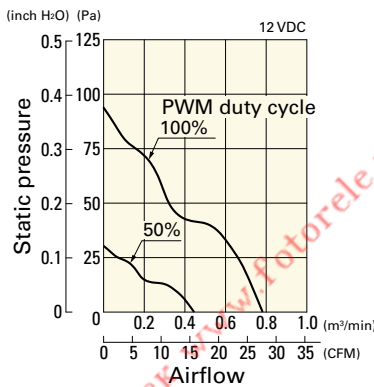


PWM duty - Speed characteristics example

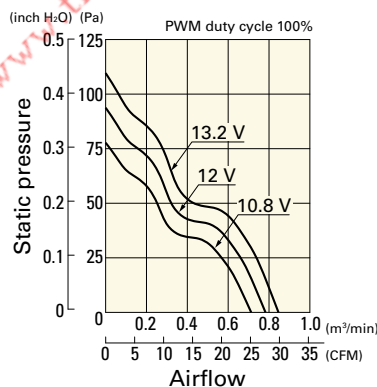


9LG0612P4H001 With pulse sensor with PWM control function

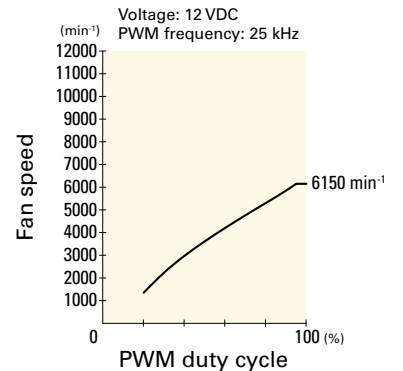
PWM duty cycle



Operating voltage range

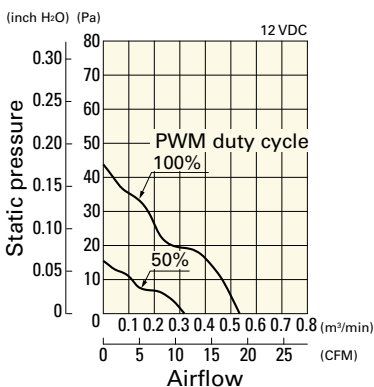


PWM duty - Speed characteristics example

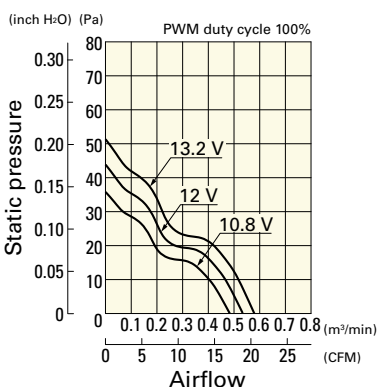


9LG0612P4M001 With pulse sensor with PWM control function

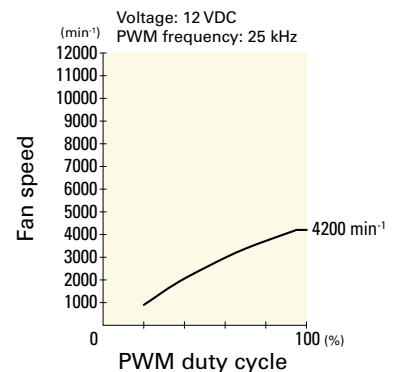
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example



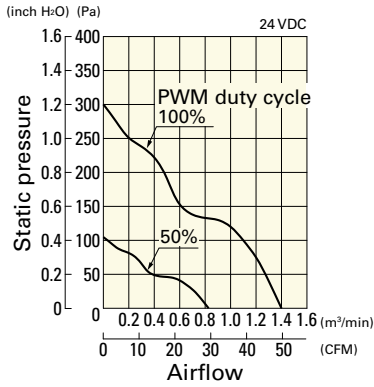
DC

Long Life Fan 60 mm sq.

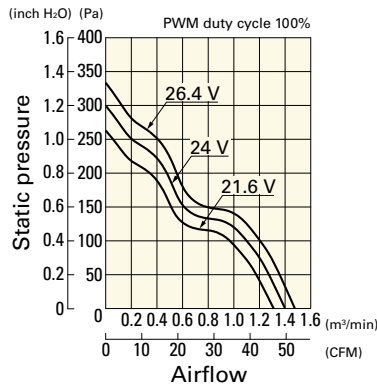
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0624P4S001 With pulse sensor with PWM control function

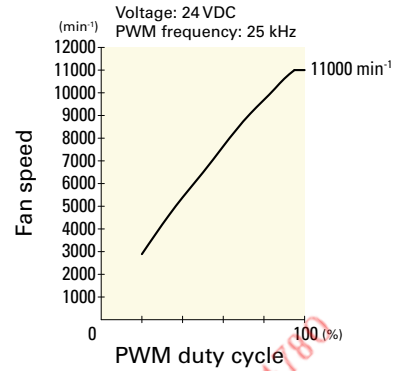
PWM duty cycle



Operating voltage range

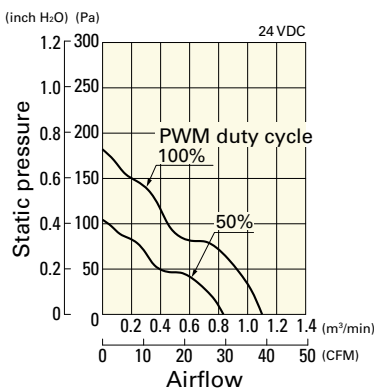


PWM duty - Speed characteristics example

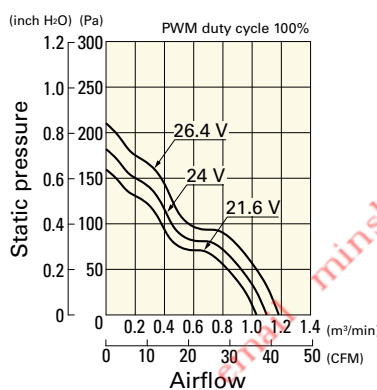


9LG0624P4J001 With pulse sensor with PWM control function

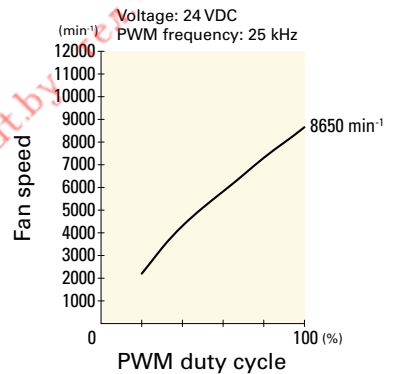
PWM duty cycle



Operating voltage range

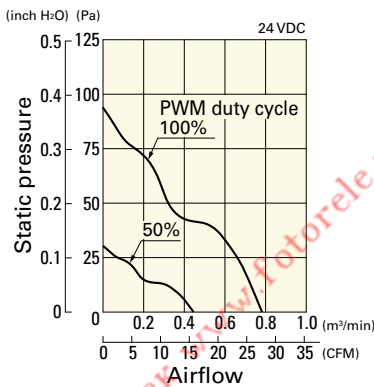


PWM duty - Speed characteristics example

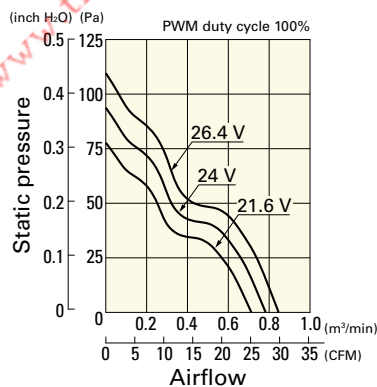


9LG0624P4H001 With pulse sensor with PWM control function

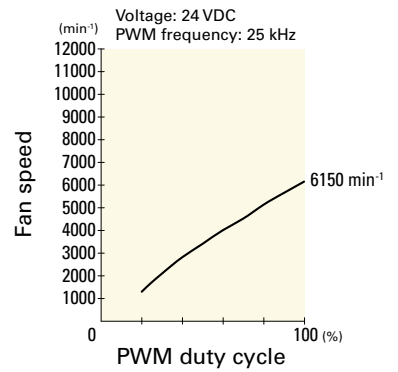
PWM duty cycle



Operating voltage range

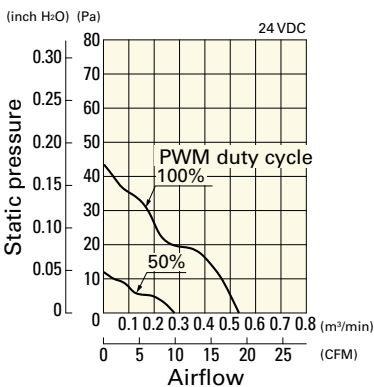


PWM duty - Speed characteristics example

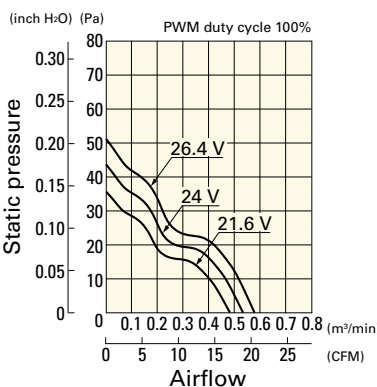


9LG0624P4M001 With pulse sensor with PWM control function

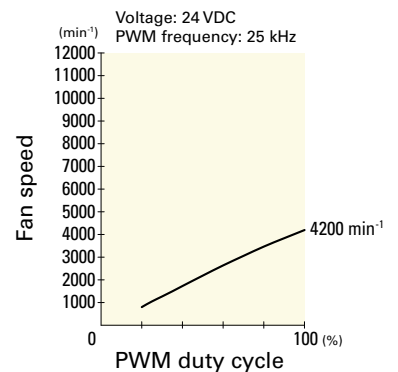
PWM duty cycle



Operating voltage range



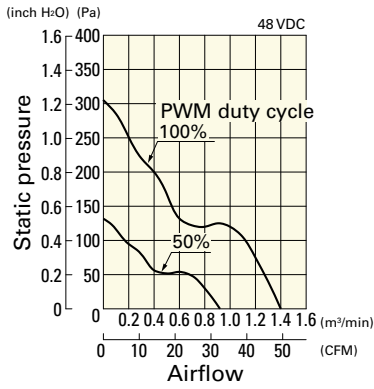
PWM duty - Speed characteristics example



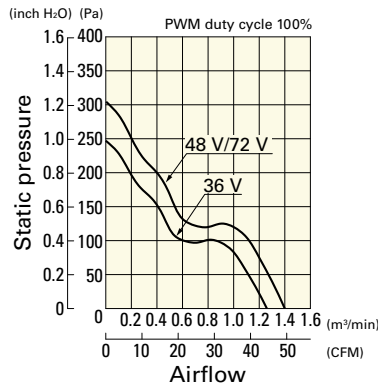
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0648P4S001 With pulse sensor with PWM control function

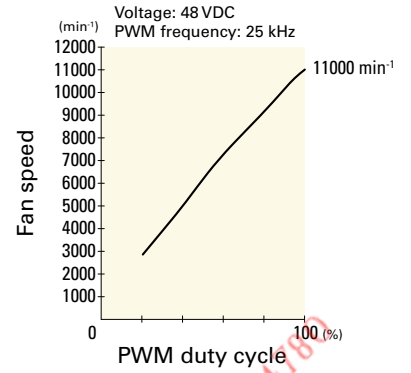
PWM duty cycle



Operating voltage range

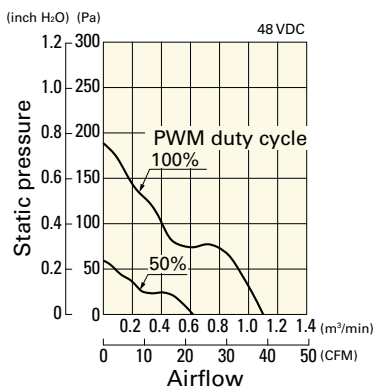


PWM duty - Speed characteristics example

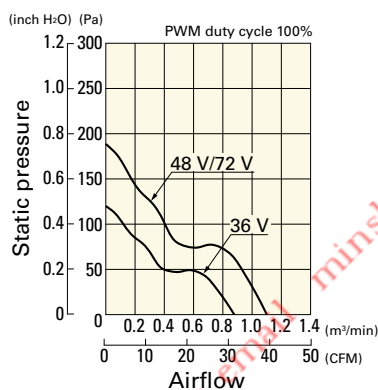


9LG0648P4J001 With pulse sensor with PWM control function

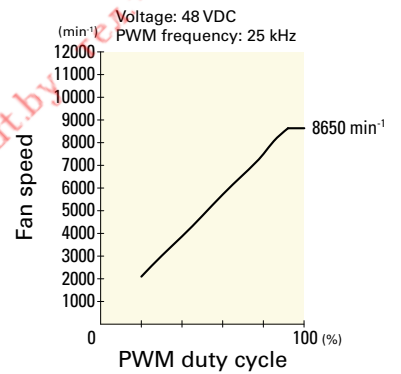
PWM duty cycle



Operating voltage range

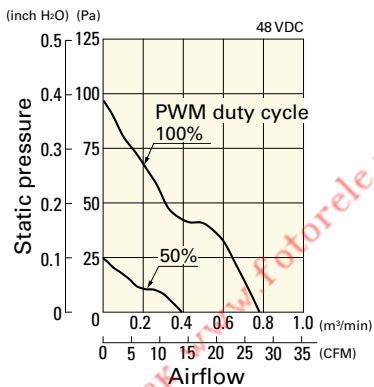


PWM duty - Speed characteristics example

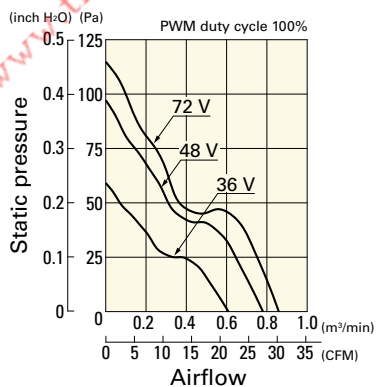


9LG0648P4H001 With pulse sensor with PWM control function

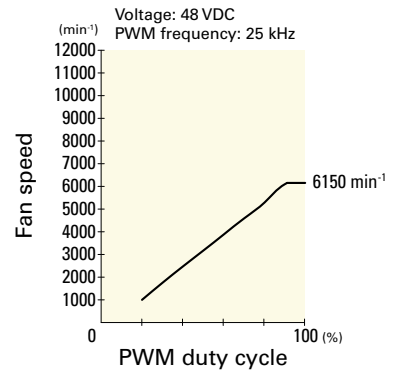
PWM duty cycle



Operating voltage range

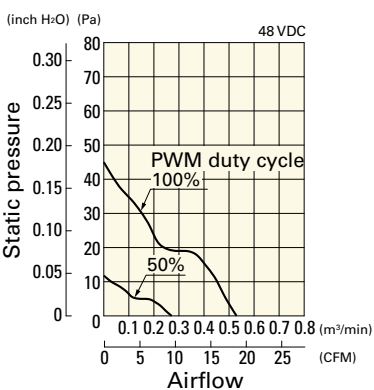


PWM duty - Speed characteristics example

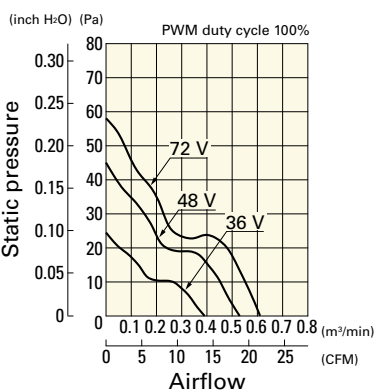


9LG0648P4M001 With pulse sensor with PWM control function

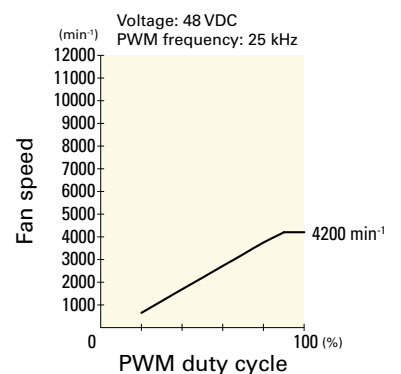
PWM duty cycle



Operating voltage range



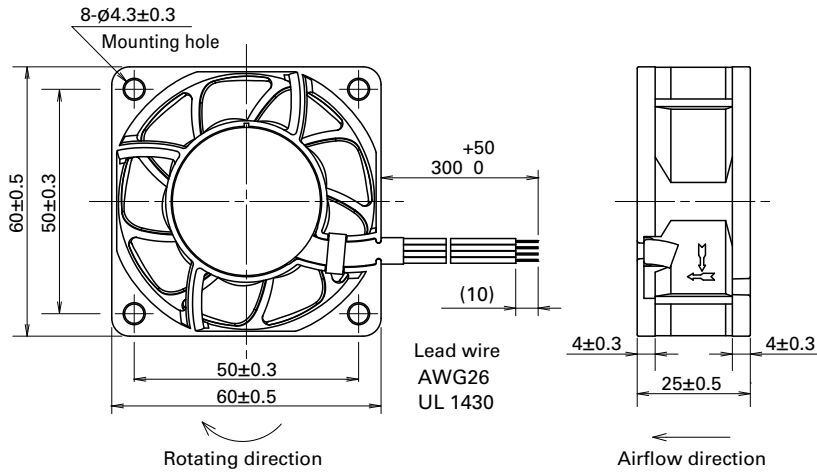
PWM duty - Speed characteristics example



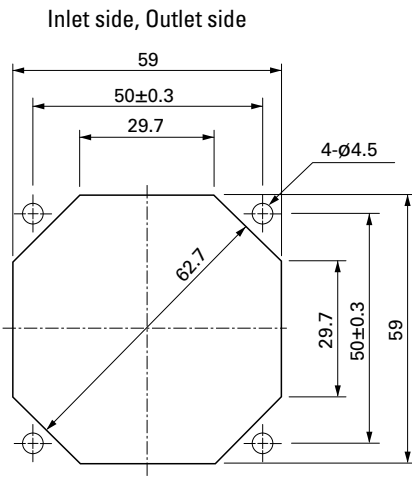
DC

Long Life Fan 60 mm sq.

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)



60×60×76 mm

San Ace 60L 9CRL 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 300 g

Specifications

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

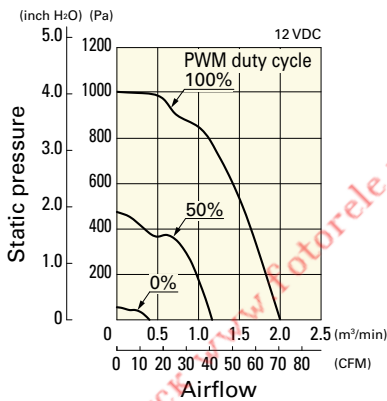
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	Inlet	Outlet	Inlet	Outlet			
9CRL0612P0G001	12	10.8 to 13.2	100	2.3	27.6	16500	13000	2.0	70.6	1000	4.0	66	-20 to +70	130000/60°C
			0	0.22	2.7	3600	2800	0.43	15.1	47.6	0.19	32		

* PWM frequency: 25 kHz

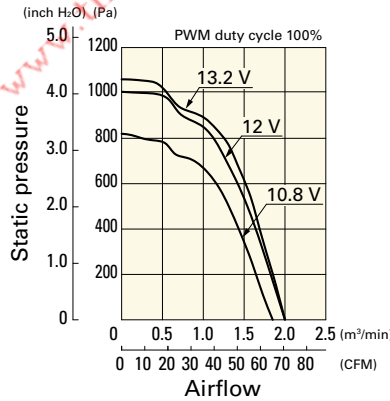
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRL0612P0G001 With pulse sensor with PWM control function

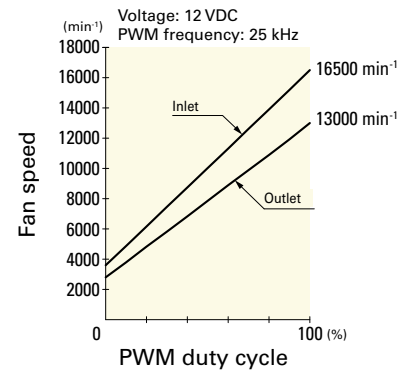
PWM duty cycle



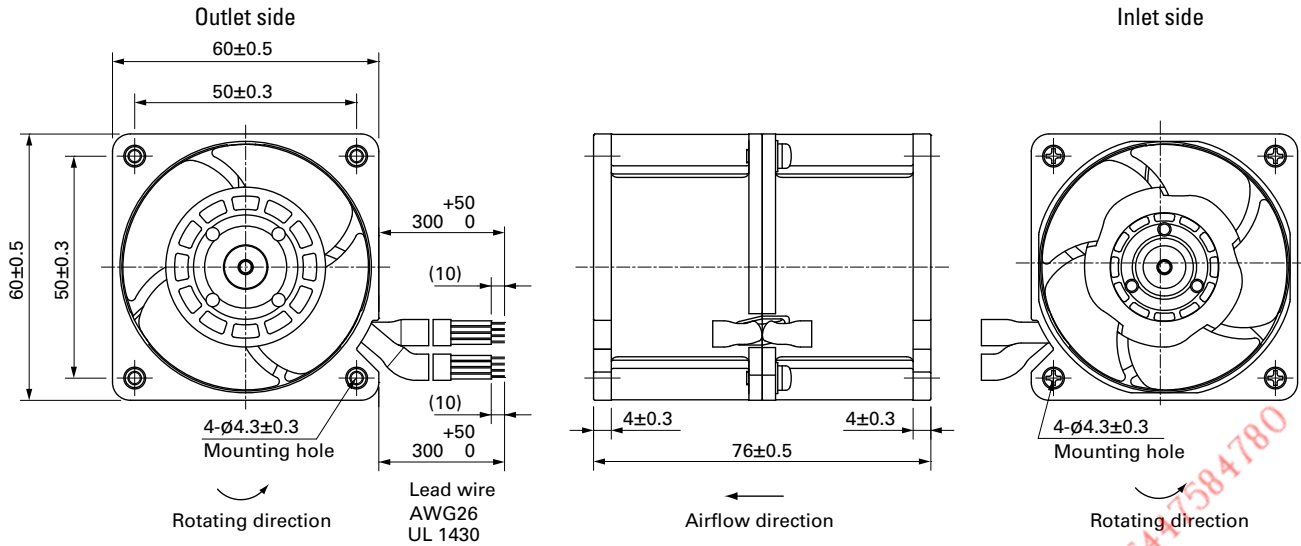
Operating voltage range



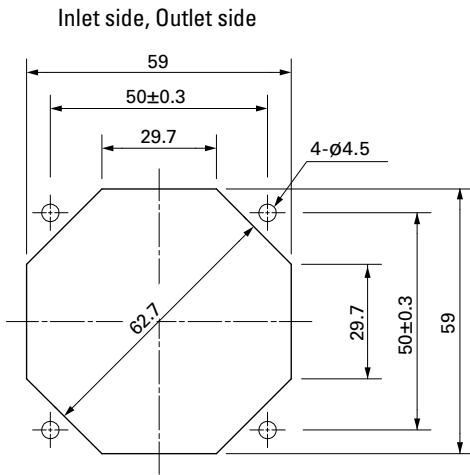
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-139E, 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)



80×80×25 mm

San Ace 80L 9LG 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 130 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]		
9LG0812P4J001	12	10.8 to 13.2	100	0.6	7.2	7400	2.07 73.0	177 0.71	49	-20 to +70	180000/60°C		
			20	0.06	0.72	1800	0.5 17.6	10.4 0.04	16				
9LG0812P4G001			100	0.3	3.6	5500	1.54 54.3	98 0.39	43				
			25	0.05	0.6	1400	0.39 13.7	6.3 0.02	14				
9LG0812P4H001			100	0.12	1.44	3700	1.03 36.3	44 0.17	31				
			25	0.04	0.48	1100	0.3 10.5	3.9 0.01	13				
9LG0824P4J001			24	21.6 to 26.4	100	0.28	6.72	7400	2.07 73.0			177 0.71	49
					20	0.05	1.2	2400	0.67 23.6			18.6 0.07	22
9LG0824P4G001					100	0.14	3.36	5500	1.54 54.3			98 0.39	43
					20	0.02	0.48	1200	0.33 11.6			4.6 0.01	13
9LG0824P4H001	100	0.05			1.2	3700	1.03 36.3	44 0.17	31				
	30	0.02			0.48	1100	0.3 10.5	3.9 0.01	13				

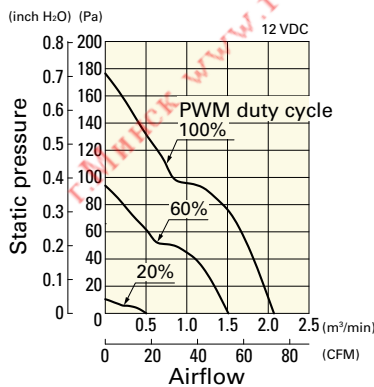
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

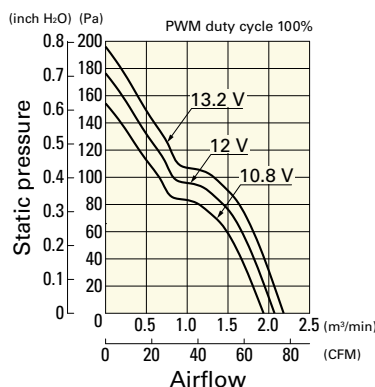
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0812P4J001 With pulse sensor with PWM control function

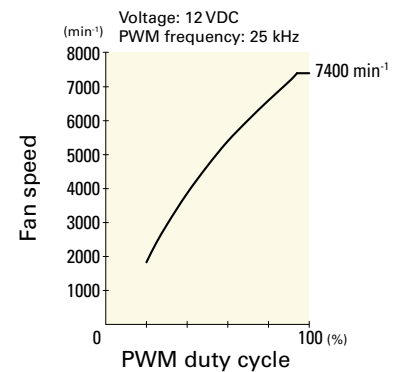
PWM duty cycle



Operating voltage range



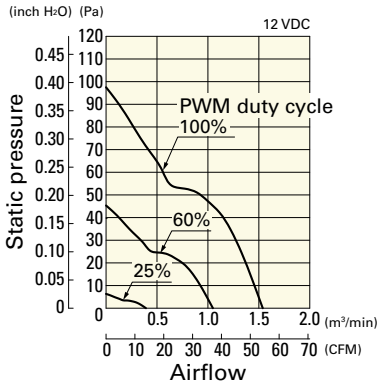
PWM duty - Speed characteristics example



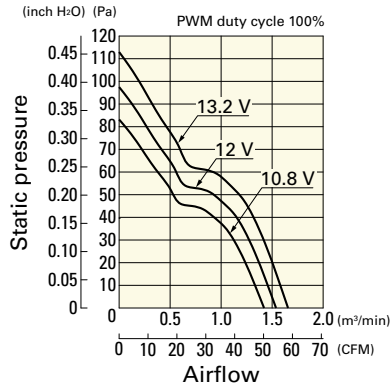
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0812P4G001 With pulse sensor with PWM control function

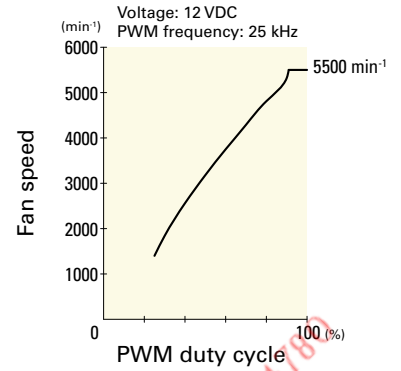
PWM duty cycle



Operating voltage range

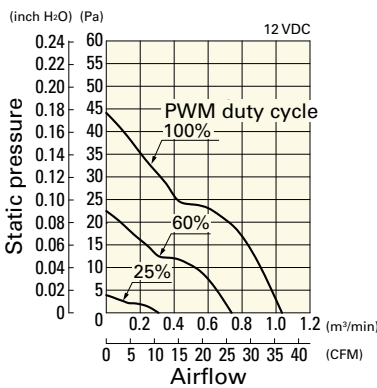


PWM duty - Speed characteristics example

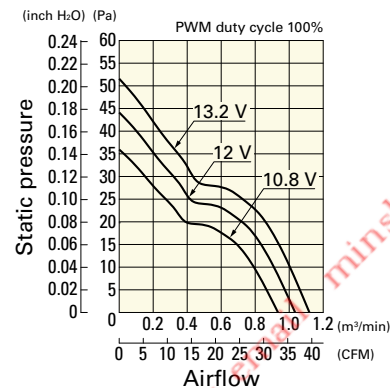


9LG0812P4H001 With pulse sensor with PWM control function

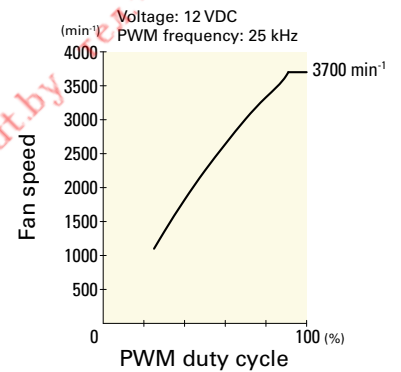
PWM duty cycle



Operating voltage range

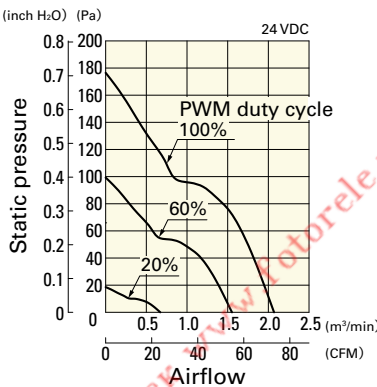


PWM duty - Speed characteristics example

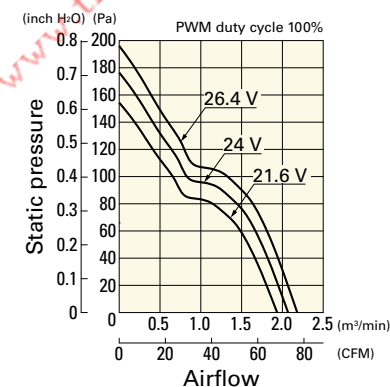


9LG0824P4J001 With pulse sensor with PWM control function

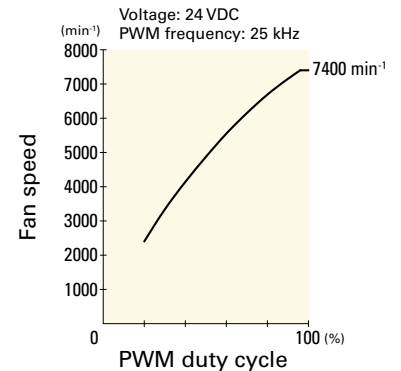
PWM duty cycle



Operating voltage range

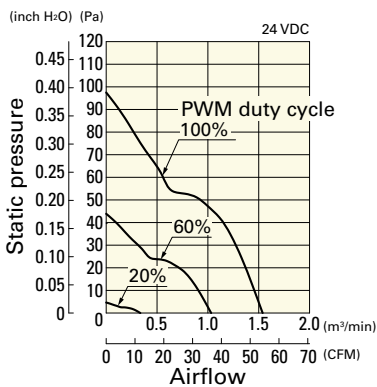


PWM duty - Speed characteristics example

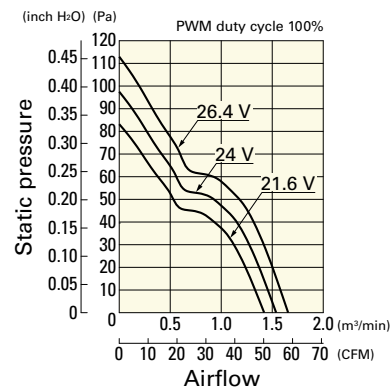


9LG0824P4G001 With pulse sensor with PWM control function

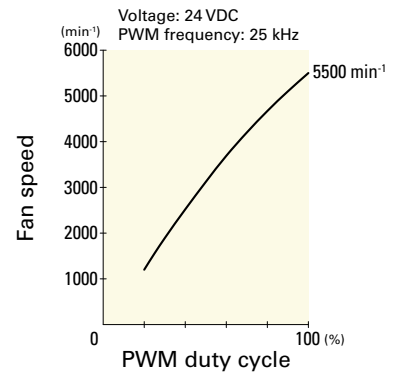
PWM duty cycle



Operating voltage range



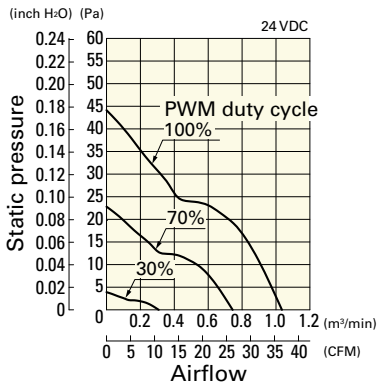
PWM duty - Speed characteristics example



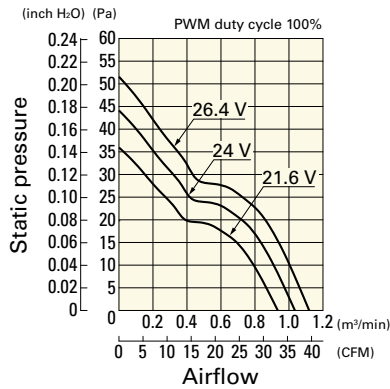
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0824P4H001 With pulse sensor with PWM control function

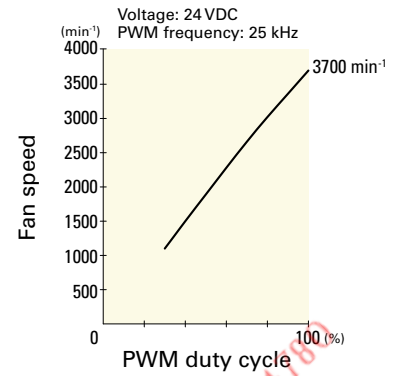
PWM duty cycle



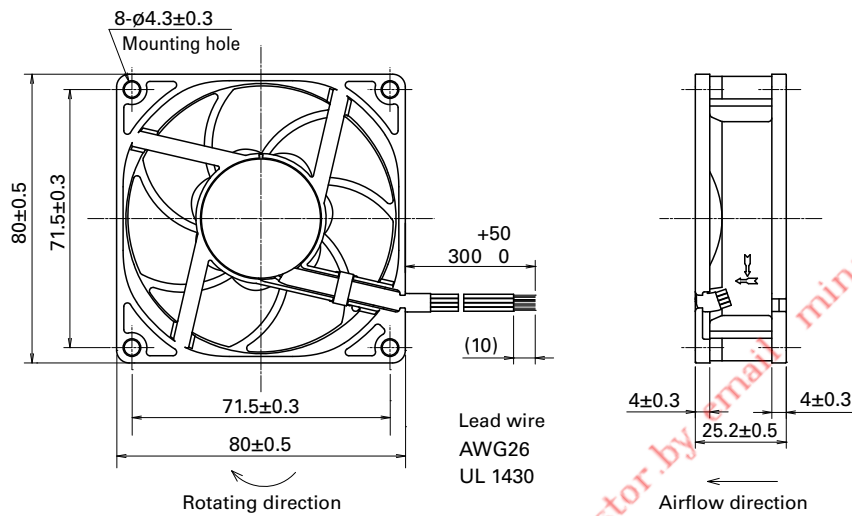
Operating voltage range



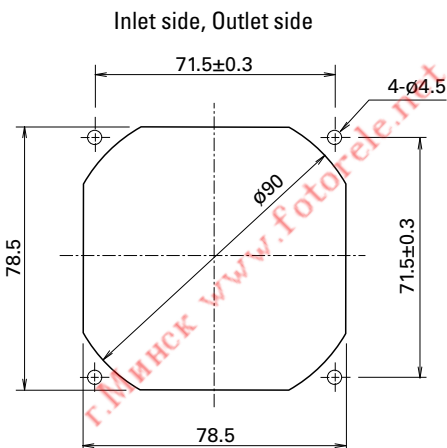
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 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)

DC

Long Life Fan 80 mm sq.



80×80×80 mm

San Ace 80L 9CRL 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 Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 490 g

Specifications

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

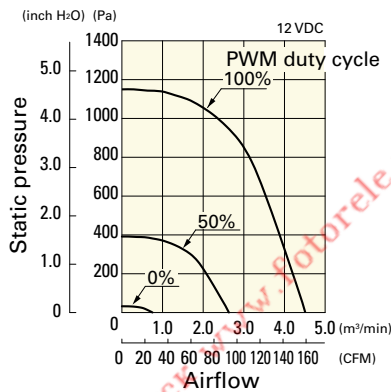
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	4.5	158.9	1150	4.62			
9CRL0812P8G001	12	10.8 to 13.2	100	5.3	63.6	12000	11300	4.5	158.9	1150	4.62	76	-20 to +70	130000/60°C
			0	0.2	2.4	2000	1900	0.74	26.1	31.9	0.13	30		

* PWM frequency: 25 kHz

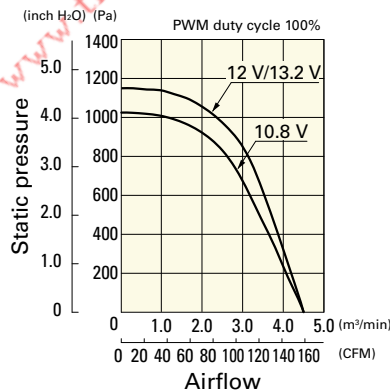
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRL0812P8G001 With pulse sensor with PWM control function

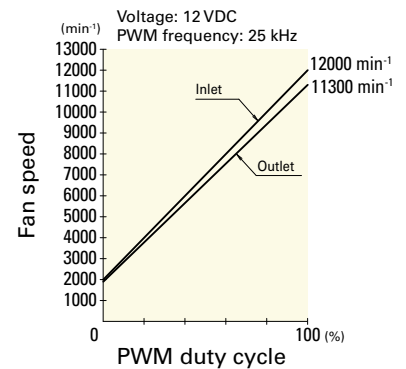
PWM duty cycle



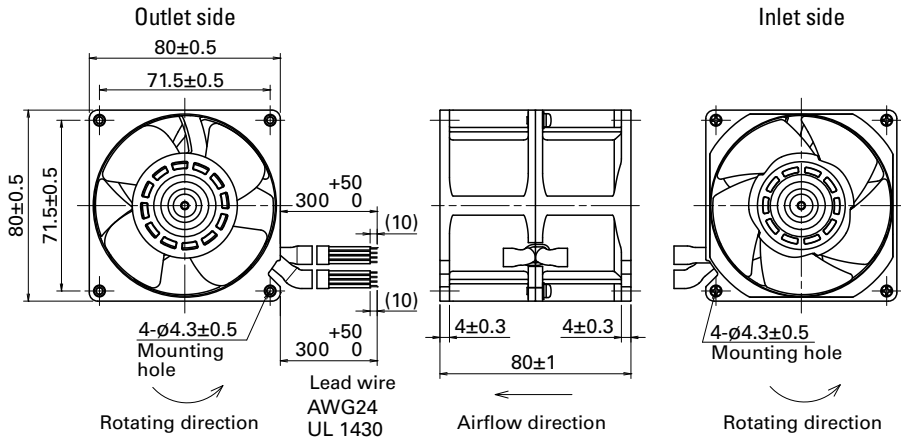
Operating voltage range



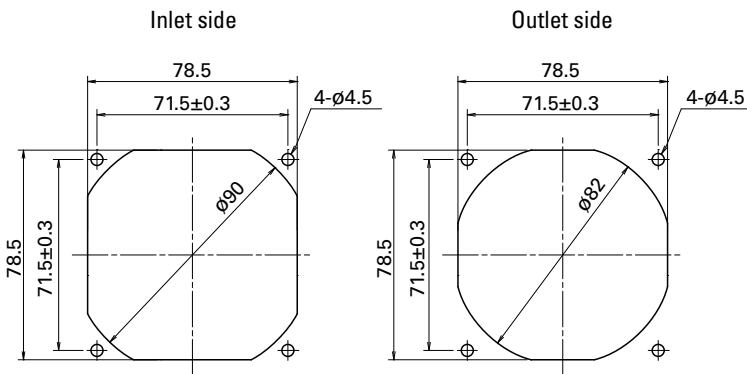
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-049C, 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)

DC

Long Life Fan 80 mm sq.

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 distributor by email minsk17@tut.by тел.+375447584780



92x92x25 mm

San Ace 92L 9LG 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 150 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]
9LG0912P4J001	12	10.8 to 13.2	100	0.42	5.04	5000	2.2 77.7	105 0.42	44	-20 to +70	180000/60°C
9LG0912P4G001			100	0.3	3.6	4400	1.93 68.2	81 0.33	40		
9LG0912P4S001			100	0.22	2.64	3850	1.69 59.7	62.1 0.25	37		
9LG0912P4H001			100	0.15	1.8	3150	1.38 48.7	41.6 0.17	32		
9LG0924P4J001	24	21.6 to 26.4	100	0.21	5.04	5000	2.2 77.7	105 0.42	44		
9LG0924P4G001			100	0.15	3.6	4400	1.93 68.2	81 0.33	40		
9LG0924P4S001			100	0.11	2.64	3850	1.69 59.7	62.1 0.25	37		
9LG0924P4H001			100	0.07	1.68	3150	1.38 48.7	41.6 0.17	32		

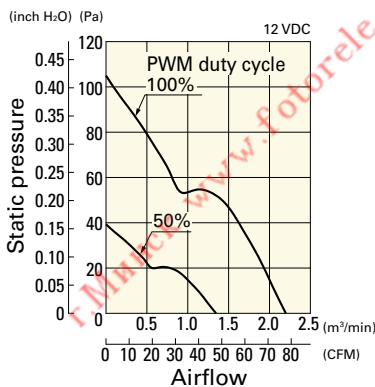
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

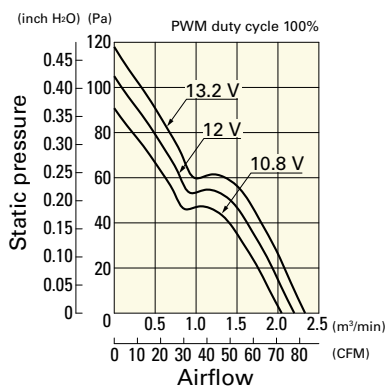
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0912P4J001 With pulse sensor with PWM control function

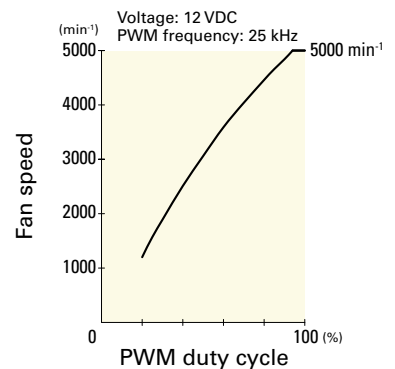
PWM duty cycle



Operating voltage range



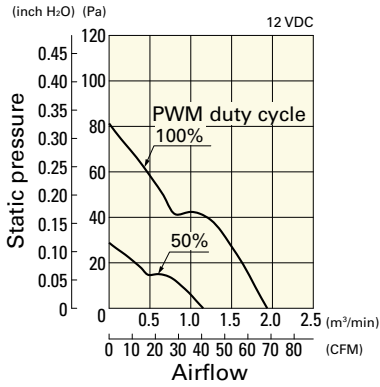
PWM duty - Speed characteristics example



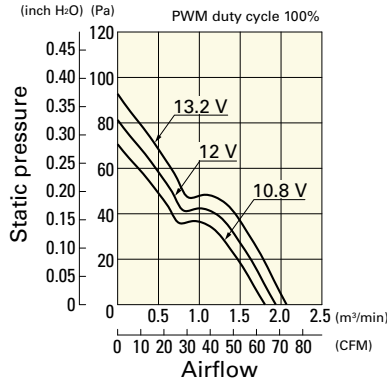
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0912P4G001 With pulse sensor with PWM control function

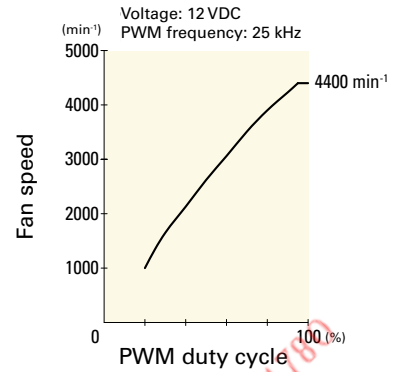
PWM duty cycle



Operating voltage range

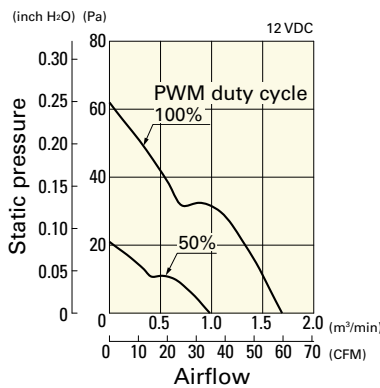


PWM duty - Speed characteristics example

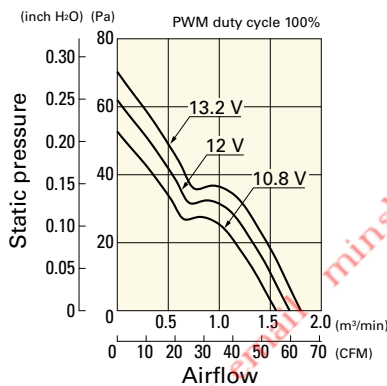


9LG0912P4S001 With pulse sensor with PWM control function

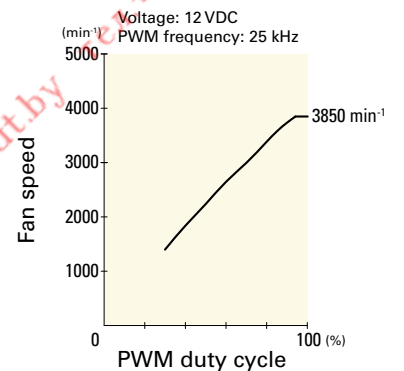
PWM duty cycle



Operating voltage range

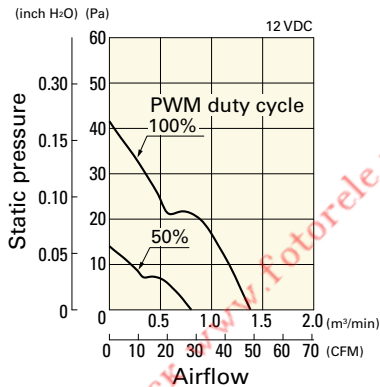


PWM duty - Speed characteristics example

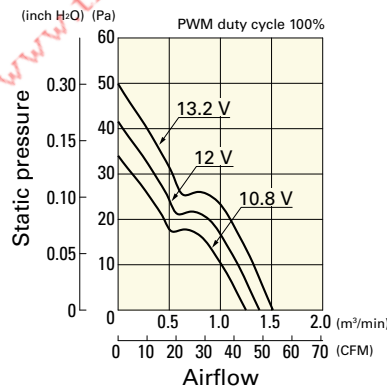


9LG0912P4H001 With pulse sensor with PWM control function

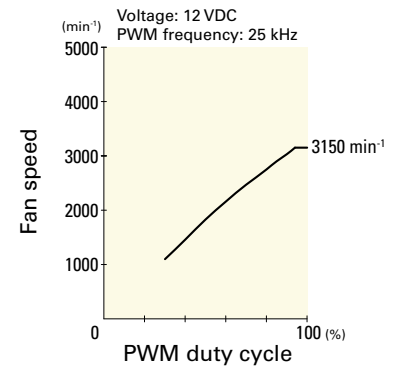
PWM duty cycle



Operating voltage range

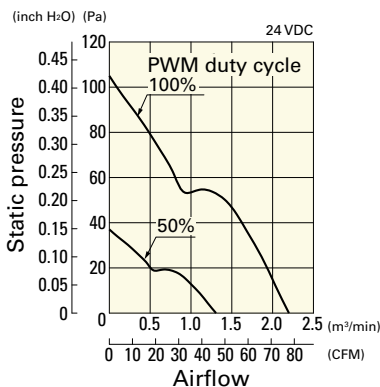


PWM duty - Speed characteristics example

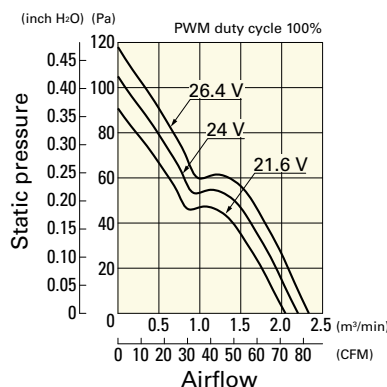


9LG0924P4J001 With pulse sensor with PWM control function

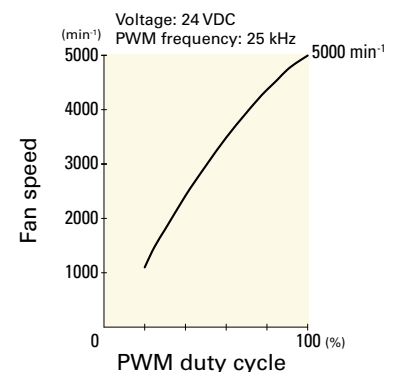
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example



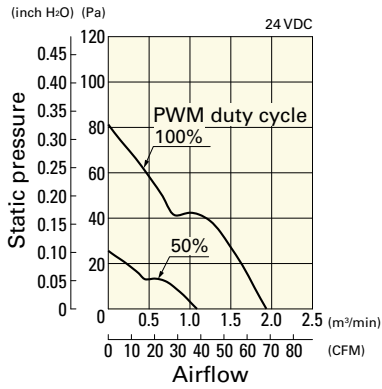
DC

Long Life Fan 92 mm sq.

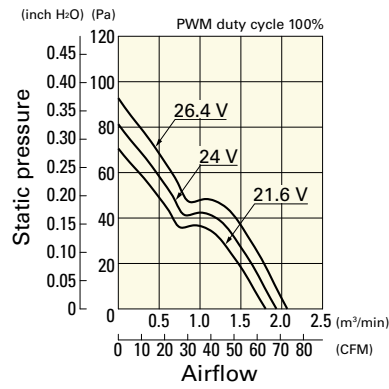
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0924P4G001 With pulse sensor with PWM control function

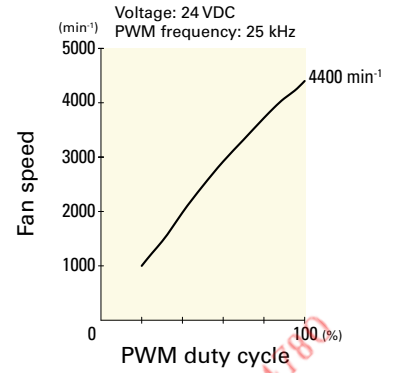
PWM duty cycle



Operating voltage range

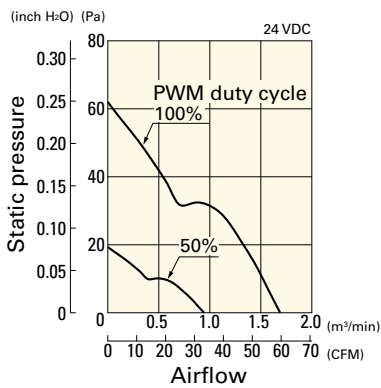


PWM duty - Speed characteristics example

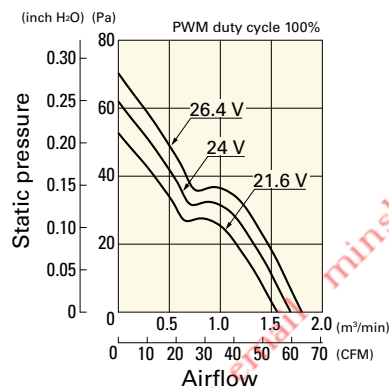


9LG0924P4S001 With pulse sensor with PWM control function

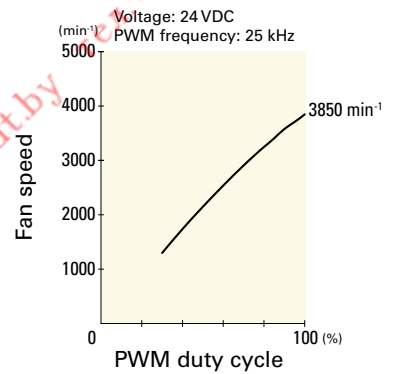
PWM duty cycle



Operating voltage range

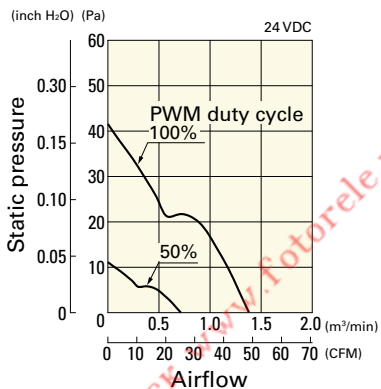


PWM duty - Speed characteristics example

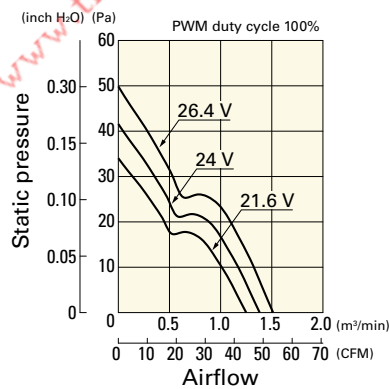


9LG0924P4H001 With pulse sensor with PWM control function

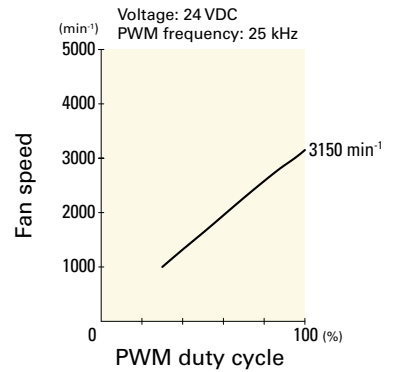
PWM duty cycle



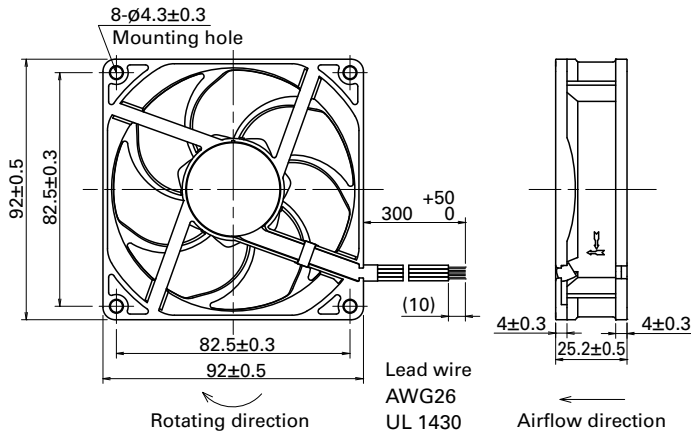
Operating voltage range



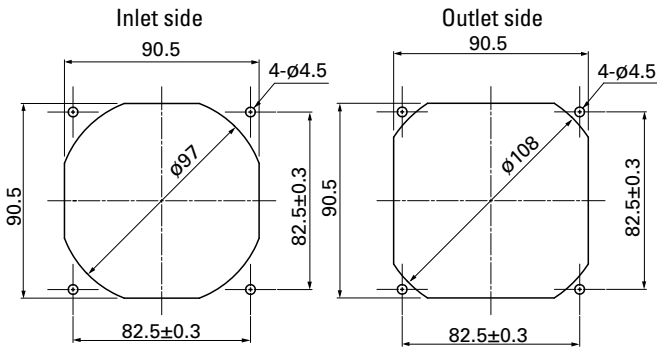
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

Model no.: 109-099C, 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)

DC

Long Life Fan 92 mm sq.

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92x92x38 mm

San Ace 92L 9LG 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 270 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]
9LG0912P1H001	12	10.2 to 13.8	100	2.0	24.0	9000	3.7 130.6	430 1.72	61	-20 to +70	180000/60°C
			20	0.18	2.16	2700	1.11 39.1	38.7 0.15	30		
9LG0912P1F001			100	1.0	12.0	7000	2.9 102.4	263 1.05	55		
			20	0.11	1.32	2000	0.83 29.3	21.5 0.08	22		
9LG0924P1H001	24	20.4 to 27.6	100	0.9	21.6	9000	3.7 130.6	430 1.72	61		
			20	0.08	1.92	2700	1.11 39.1	38.7 0.15	30		
9LG0924P1F001			100	0.5	12.0	7000	2.9 102.4	263 1.05	55		
			20	0.06	1.44	2000	0.83 29.3	21.5 0.08	22		

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

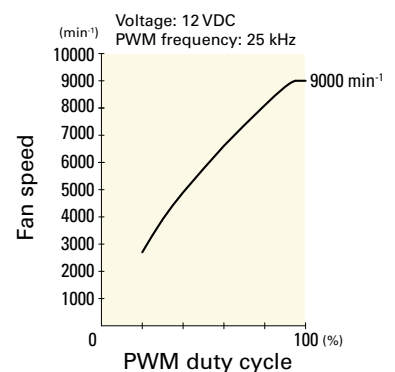
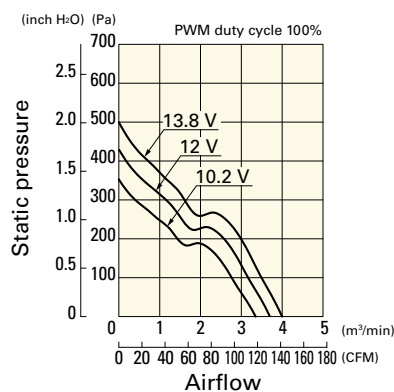
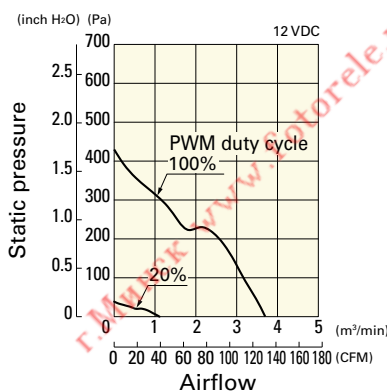
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0912P1H001 With pulse sensor with PWM control function

PWM duty cycle

Operating voltage range

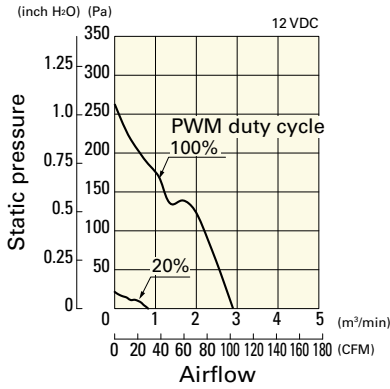
PWM duty - Speed characteristics example



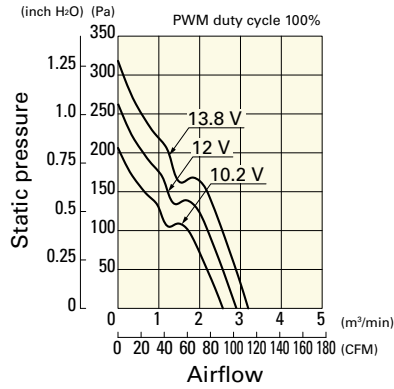
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0912P1F001 With pulse sensor with PWM control function

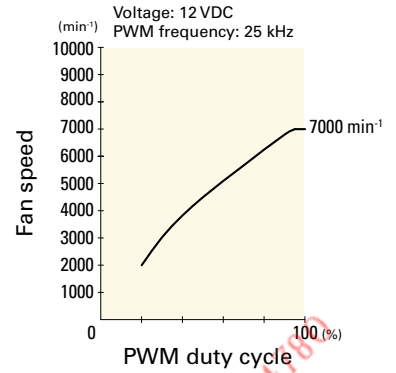
PWM duty cycle



Operating voltage range

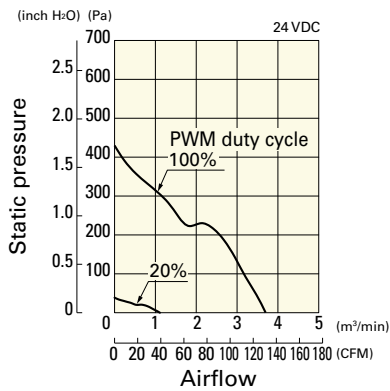


PWM duty - Speed characteristics example

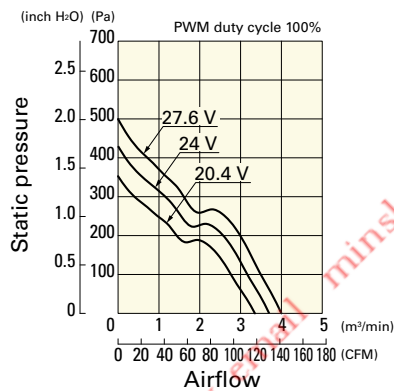


9LG0924P1H001 With pulse sensor with PWM control function

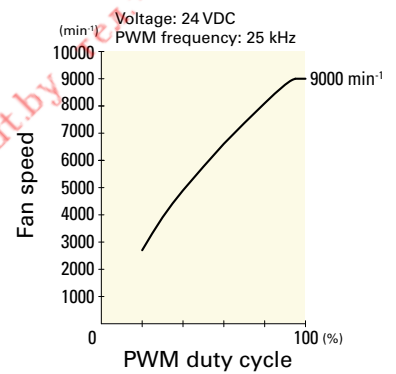
PWM duty cycle



Operating voltage range

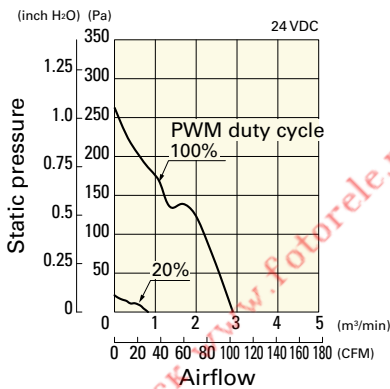


PWM duty - Speed characteristics example

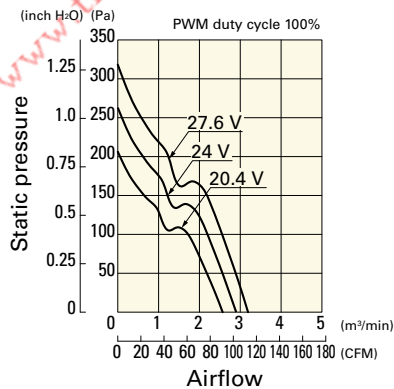


9LG0924P1F001 With pulse sensor with PWM control function

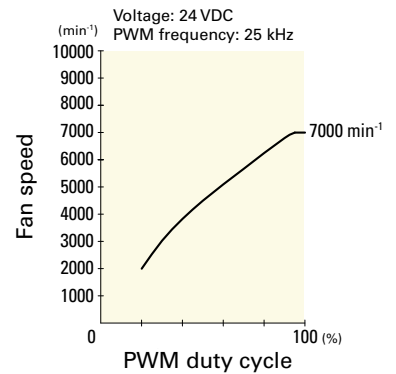
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example



DC

Long Life Fan 92 mm sq.



120×120×38 mm

San Ace 120L 9LG 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 420 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]
9LG1212P1G001	12	8.0 to 13.8	100	3.2	38.4	6550	7.0 247.1	370 1.48	62	-20 to +70	180000/60°C
			20	0.24	2.88	2000	2.13 75.2	34.4 0.13	36		
9LG1212P1S001			100	2.2	26.4	5600	6.0 211.8	270 1.08	58		
			20	0.24	2.88	2000	2.13 75.2	34.4 0.13	36		
9LG1212P1H001			100	1.4	16.8	4700	5.0 176.5	190 0.76	54		
			20	0.24	2.88	2000	2.13 75.2	34.4 0.13	36		
9LG1224P1G001	24	15 to 30	100	1.6	38.4	6550	7.0 247.1	370 1.48	62		
			20	0.12	2.88	2000	2.13 75.2	34.4 0.13	36		
9LG1224P1S001			100	1.1	26.4	5600	6.0 211.8	270 1.08	58		
			20	0.12	2.88	2000	2.13 75.2	34.4 0.13	36		
9LG1224P1H001			100	0.7	16.8	4700	5.0 176.5	190 0.76	54		
			20	0.12	2.88	2000	2.13 75.2	34.4 0.13	36		
9LG1248P1G001	48	36 to 60	100	0.8	38.4	6550	7.0 247.1	370 1.48	62		
			20	0.08	3.84	2000	2.13 75.2	34.4 0.13	36		
9LG1248P1S001			100	0.55	26.4	5600	6.0 211.8	270 1.08	58		
			20	0.08	3.84	2000	2.13 75.2	34.4 0.13	36		
9LG1248P1H001			100	0.35	16.8	4700	5.0 176.5	190 0.76	54		
			20	0.08	3.84	2000	2.13 75.2	34.4 0.13	36		

* 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. 556 to 557).

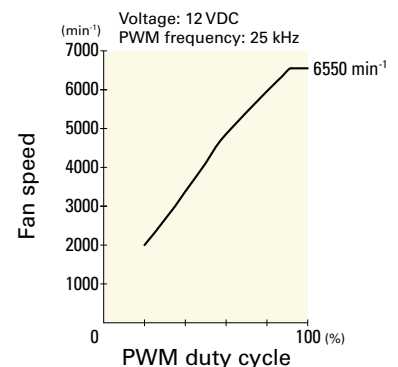
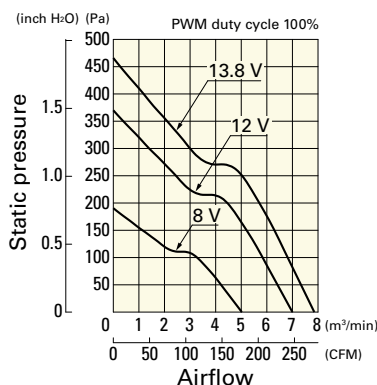
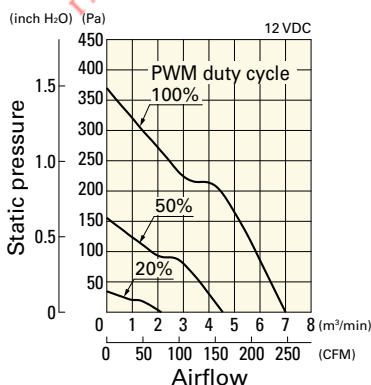
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1212P1G001 With pulse sensor with PWM control function

PWM duty cycle

Operating voltage range

PWM duty - Speed characteristics example

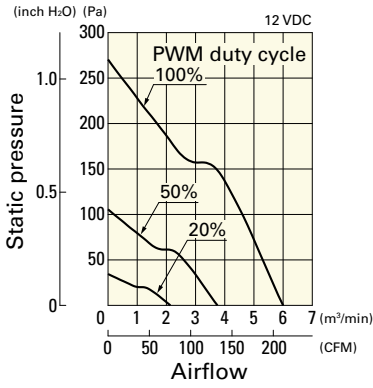


DC
Long Life Fan 120 mm sq.

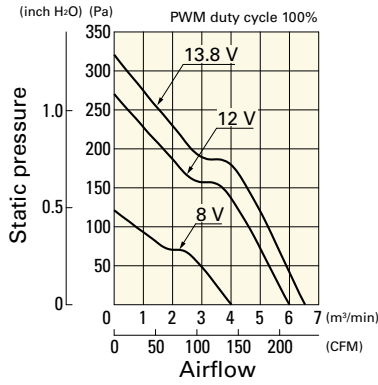
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1212P1S001 With pulse sensor with PWM control function

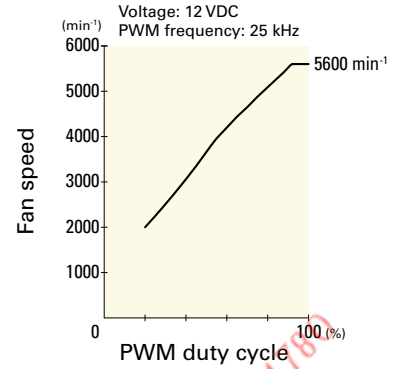
PWM duty cycle



Operating voltage range

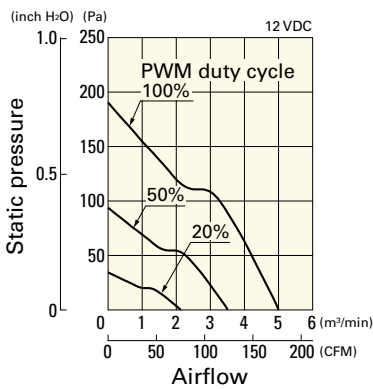


PWM duty - Speed characteristics example

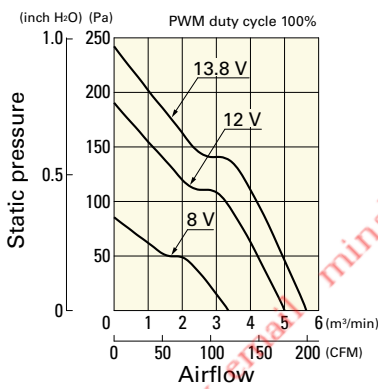


9LG1212P1H001 With pulse sensor with PWM control function

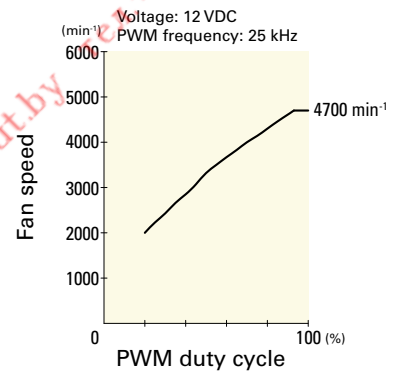
PWM duty cycle



Operating voltage range

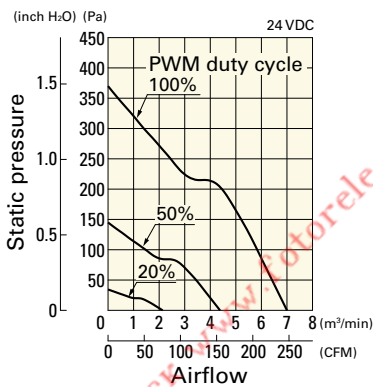


PWM duty - Speed characteristics example

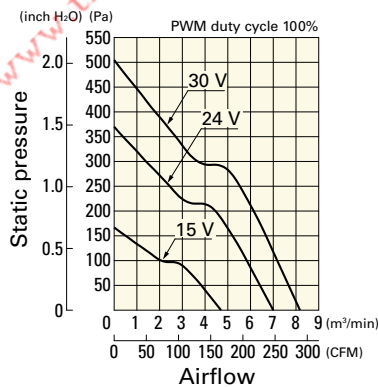


9LG1224P1G001 With pulse sensor with PWM control function

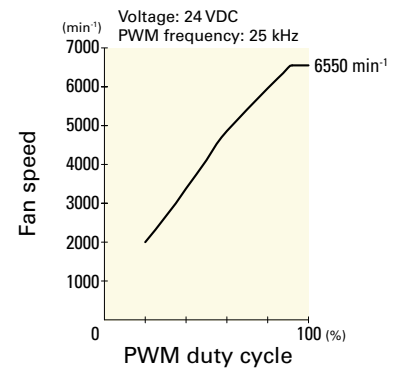
PWM duty cycle



Operating voltage range

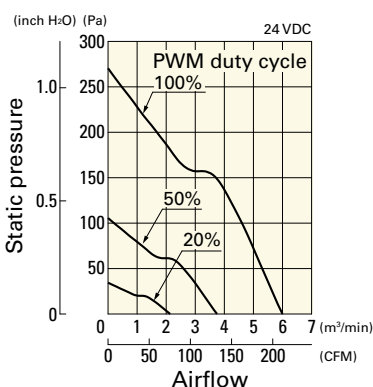


PWM duty - Speed characteristics example

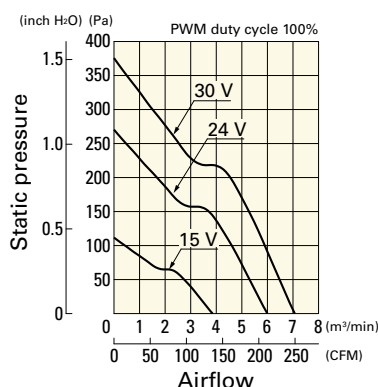


9LG1224P1S001 With pulse sensor with PWM control function

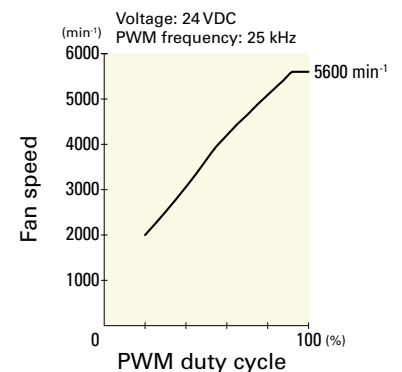
PWM duty cycle



Operating voltage range



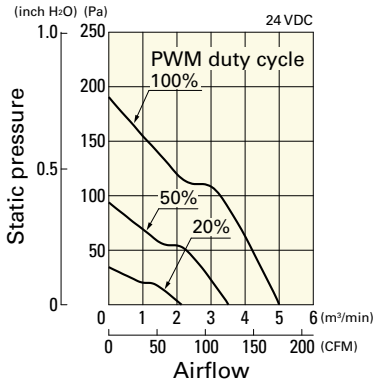
PWM duty - Speed characteristics example



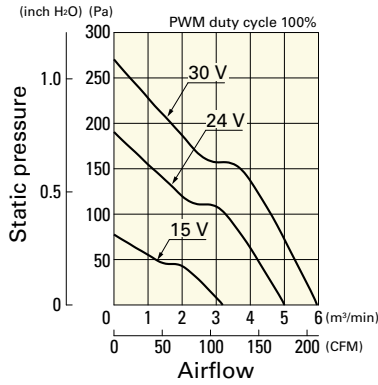
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1224P1H001 With pulse sensor with PWM control function

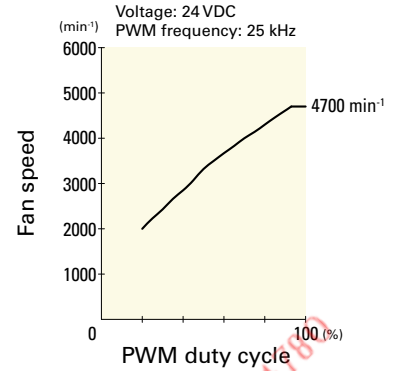
PWM duty cycle



Operating voltage range

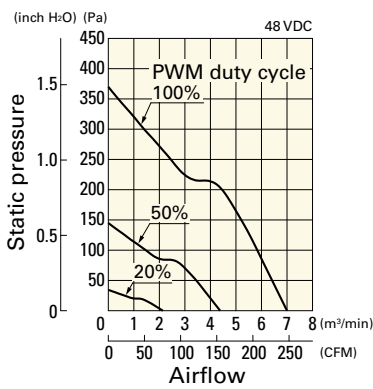


PWM duty - Speed characteristics example

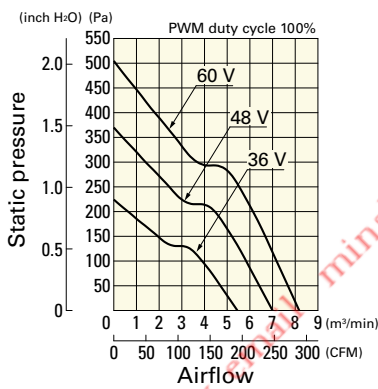


9LG1248P1G001 With pulse sensor with PWM control function

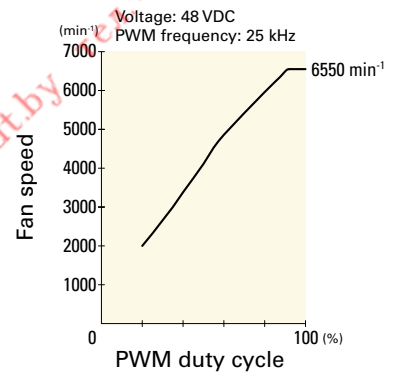
PWM duty cycle



Operating voltage range

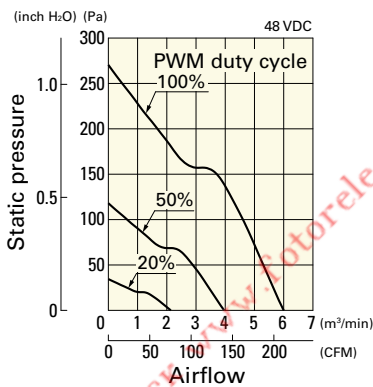


PWM duty - Speed characteristics example

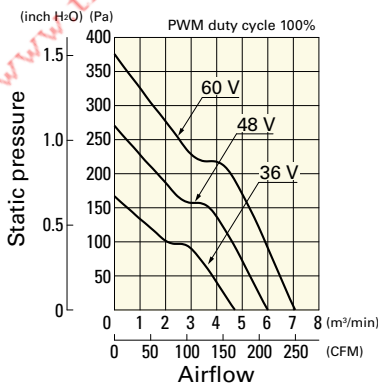


9LG1248P1S001 With pulse sensor with PWM control function

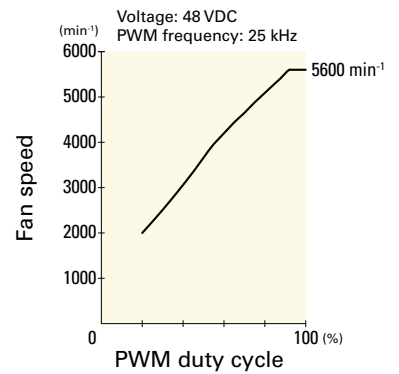
PWM duty cycle



Operating voltage range

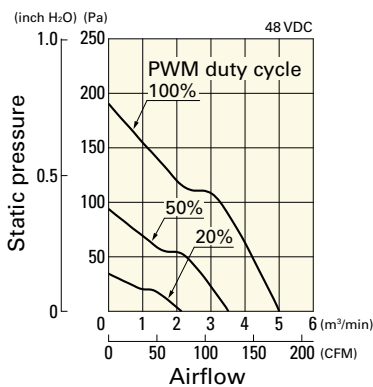


PWM duty - Speed characteristics example

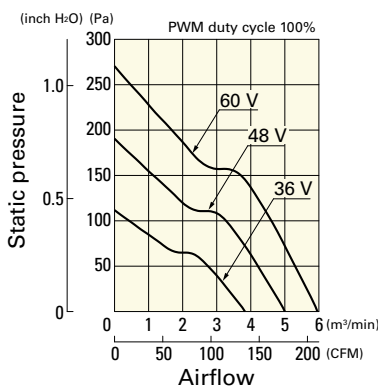


9LG1248P1H001 With pulse sensor with PWM control function

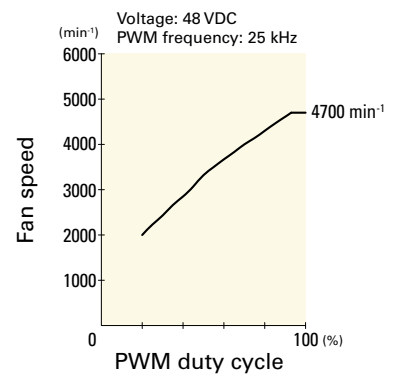
PWM duty cycle



Operating voltage range



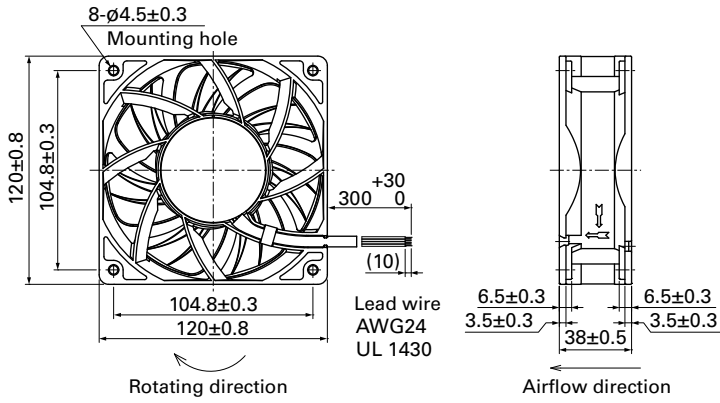
PWM duty - Speed characteristics example



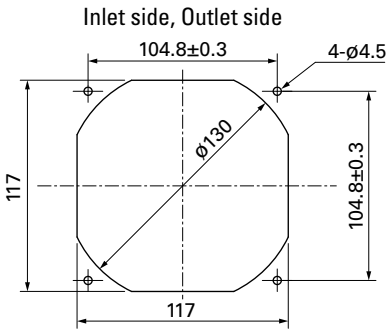
DC

Long Life Fan 120 mm sq.

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)



120×120×38 mm

San Ace 120L 9GL 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 or Blue (Sensor) Yellow
- Mass 370 g

Specifications

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

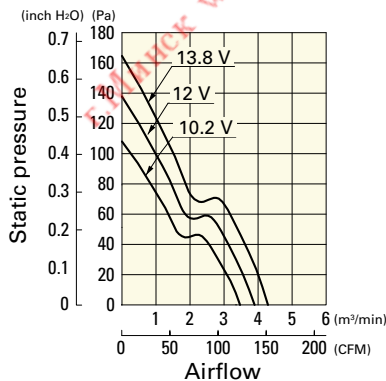
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]	
9GL1212G101	12	10.2 to 13.8	0.98	11.8	3600	3.88 137	135 0.542	49	-20 to +70	80000/60°C	
9GL1212E101			0.61	7.32	3100	3.34 118	100 0.402	46			
9GL1212H101		7 to 13.8	0.38	4.56	2600	2.8 99	70.4 0.283	39			
9GL1212F101			0.28	3.36	2280	2.45 87	54.2 0.218	36			
9GL1212M101			0.21	2.52	1950	2.1 74	39.6 0.159	32			
9GL1224G101	24	20.4 to 27.6	0.5	12.0	3600	3.88 137	135 0.542	49		-20 to +70	80000/60°C
9GL1224E101			0.34	8.16	3100	3.34 118	100 0.402	46			
9GL1224H101		14 to 27.6	0.22	5.28	2600	2.8 99	70.4 0.283	39			
9GL1224F101			0.16	3.84	2280	2.45 87	54.2 0.218	36			
9GL1224M101			0.11	2.64	1950	2.1 74	39.6 0.159	32			
9GL1248G101	48	40.8 to 55.2	0.25	12.0	3600	3.88 137	135 0.542	49	-20 to +70		80000/60°C
9GL1248E101			0.17	8.16	3100	3.34 118	100 0.402	46			
9GL1248H101			0.11	5.28	2600	2.8 99	70.4 0.283	39			
9GL1248F101			0.09	4.32	2280	2.45 87	54.2 0.218	36			
9GL1248M101			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. 553 to 554).

Airflow - Static Pressure Characteristics

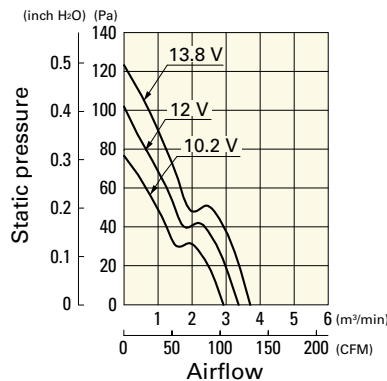
9GL1212G101 With pulse sensor

Operating voltage range



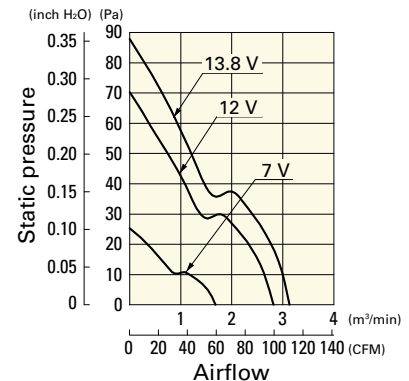
9GL1212E101 With pulse sensor

Operating voltage range



9GL1212H101 With pulse sensor

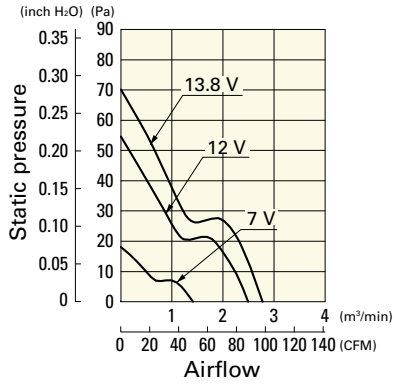
Operating voltage range



Airflow - Static Pressure Characteristics

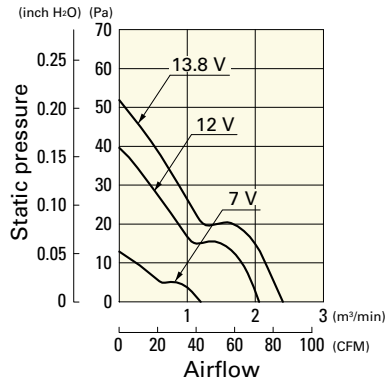
9GL1212F101 With pulse sensor

Operating voltage range



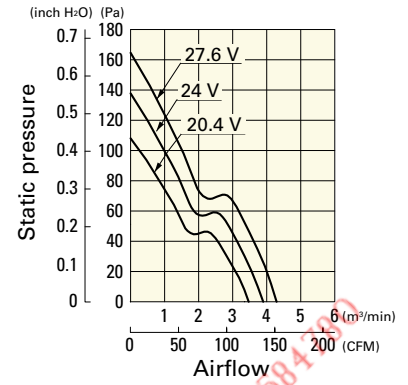
9GL1212M101 With pulse sensor

Operating voltage range



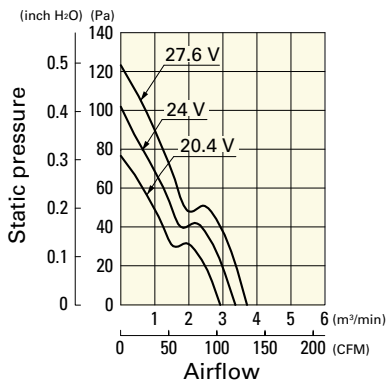
9GL1224G101 With pulse sensor

Operating voltage range



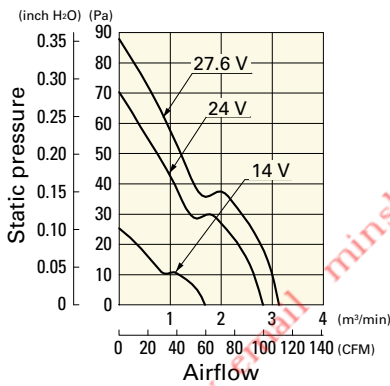
9GL1224E101 With pulse sensor

Operating voltage range



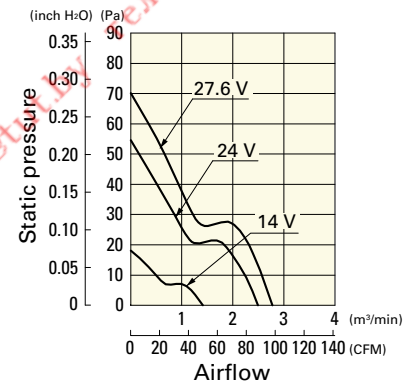
9GL1224H101 With pulse sensor

Operating voltage range



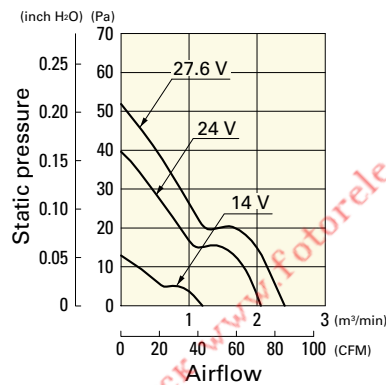
9GL1224F101 With pulse sensor

Operating voltage range



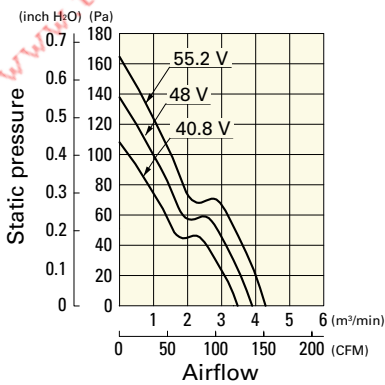
9GL1224M101 With pulse sensor

Operating voltage range



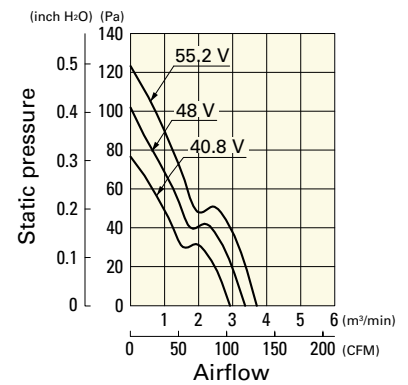
9GL1248G101 With pulse sensor

Operating voltage range



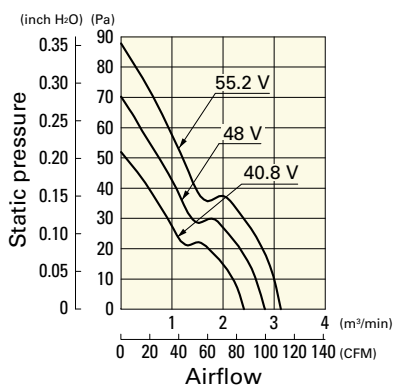
9GL1248E101 With pulse sensor

Operating voltage range



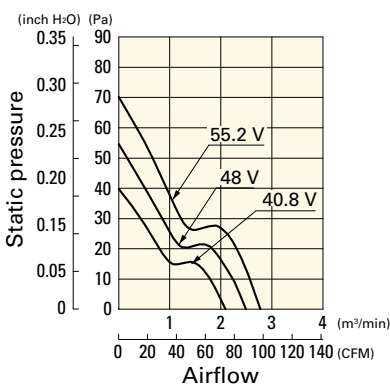
9GL1248H101 With pulse sensor

Operating voltage range



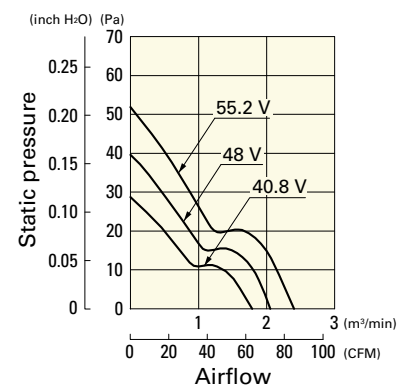
9GL1248F101 With pulse sensor

Operating voltage range

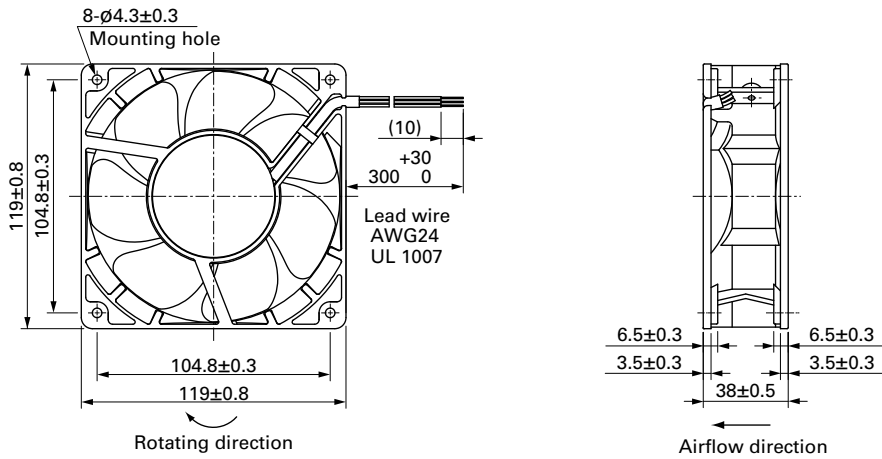


9GL1248M101 With pulse sensor

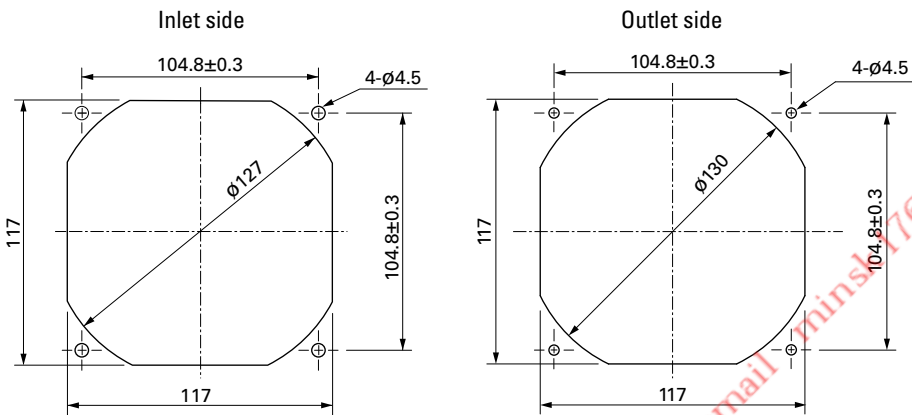
Operating voltage range



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)

DC

Long Life Fan 120 mm sq.



140×140×38 mm

San Ace 140L 9LG type

General Specifications

- Material Frame: Aluminum (Black coating), 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 640 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]
9LG1412P1A001	12	10.2 to 13.8	100	3.72	44.64	6900	8.0 282	516 2.07	68	-20 to +70	180000/60°C
			20	0.27	3.24	2300	2.66 93	80 0.32	39		
9LG1412P1H001	12	10.2 to 13.8	100	1.7	20.4	5200	6.0 212	300 1.2	62		
			20	0.27	3.24	2300	2.66 93	80 0.32	39		
9LG1412P1M001	12	10.2 to 13.8	100	0.6	7.2	3300	3.7 130	170 0.68	46		
			20	0.16	1.92	1300	1.45 51	26 0.1	29		
9LG1424P1A001	24	20.4 to 27.6	100	1.86	44.64	6900	8.0 282	516 2.07	68		
			20	0.17	4.08	2300	2.66 93	80 0.32	39		
9LG1424P1H001	24	20.4 to 27.6	100	0.85	20.4	5200	6.0 212	300 1.2	62		
			20	0.16	3.84	2300	2.66 93	80 0.32	39		
9LG1424P1M001	24	20.4 to 27.6	100	0.3	7.2	3300	3.7 130	170 0.68	46		
			20	0.11	2.64	1300	1.45 51	26 0.1	29		
9LG1448P1A001	48	40.8 to 55.2	100	0.92	44.16	6900	8.0 282	516 2.07	68		
			20	0.11	5.28	2300	2.66 93	80 0.32	39		
9LG1448P1H001	48	40.8 to 55.2	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		
9LG1448P1M001	48	40.8 to 55.2	100	0.15	7.2	3300	3.7 130	170 0.68	46		
			20	0.09	4.32	1300	1.45 51	26 0.1	29		

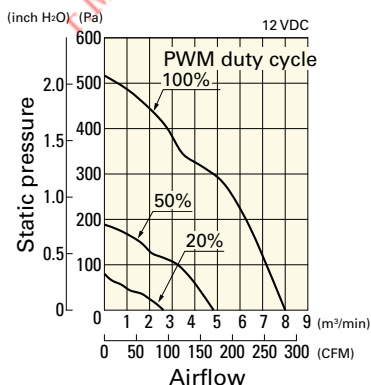
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

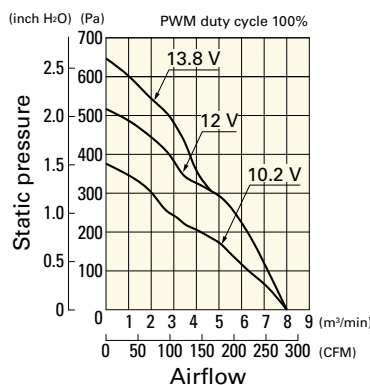
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1412P1A001 With pulse sensor with PWM control function

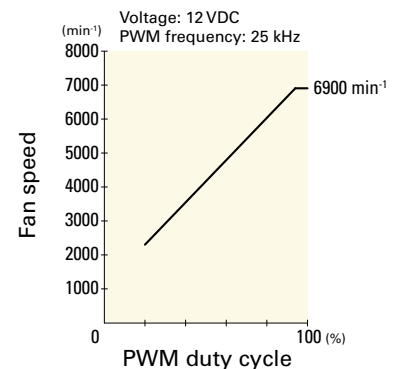
PWM duty cycle



Operating voltage range



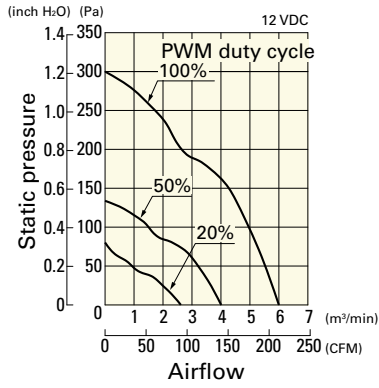
PWM duty - Speed characteristics example



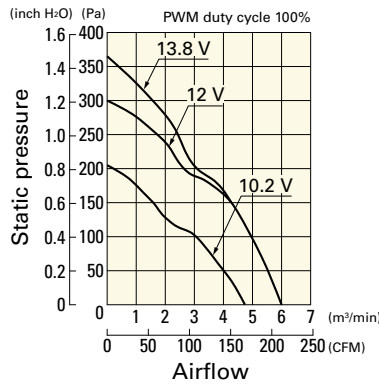
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1412P1H001 With pulse sensor with PWM control function

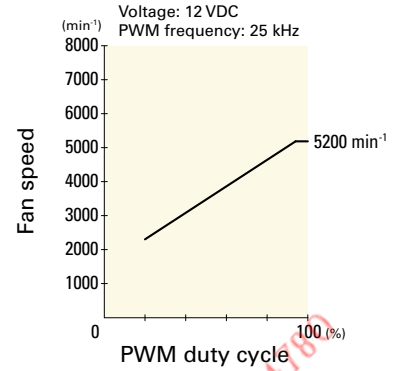
PWM duty cycle



Operating voltage range

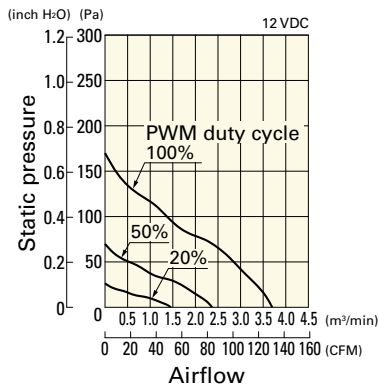


PWM duty - Speed characteristics example

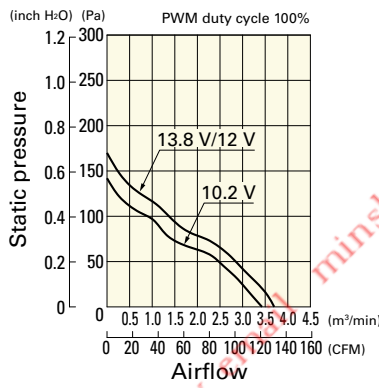


9LG1412P1M001 With pulse sensor with PWM control function

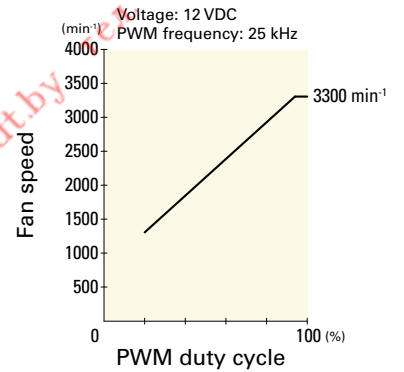
PWM duty cycle



Operating voltage range

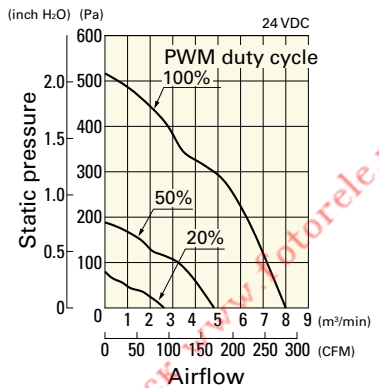


PWM duty - Speed characteristics example

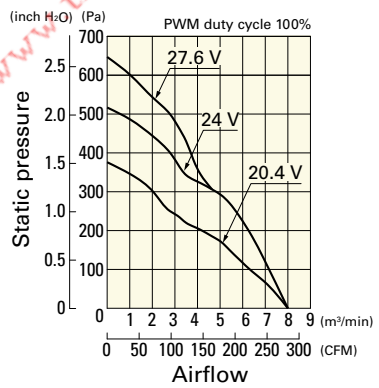


9LG1424P1A001 With pulse sensor with PWM control function

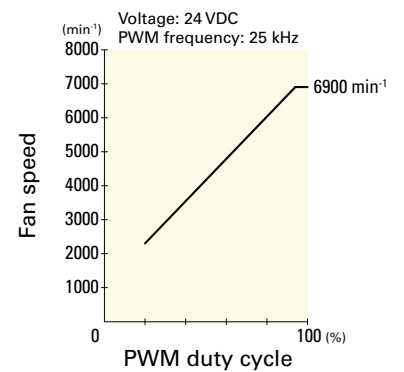
PWM duty cycle



Operating voltage range

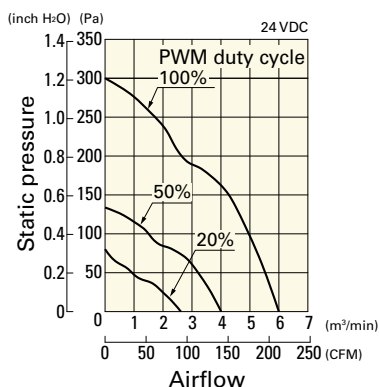


PWM duty - Speed characteristics example

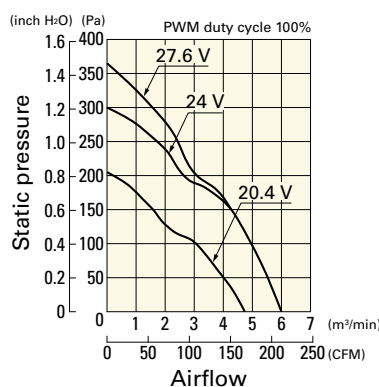


9LG1424P1H001 With pulse sensor with PWM control function

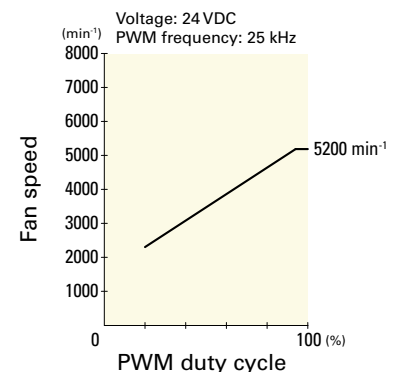
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example



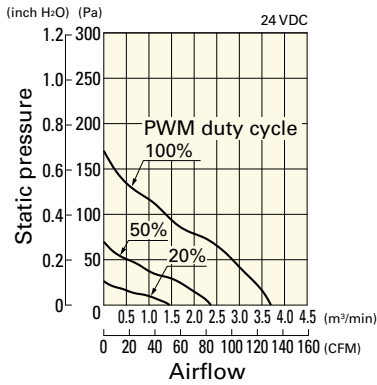
DC

Long Life Fan 140 mm sq.

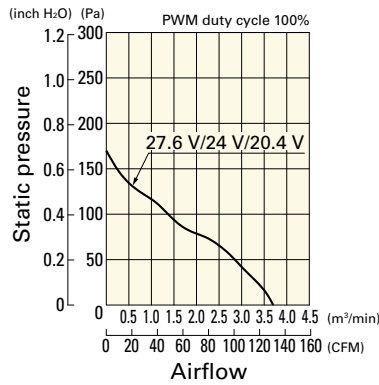
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1424P1M001 With pulse sensor with PWM control function

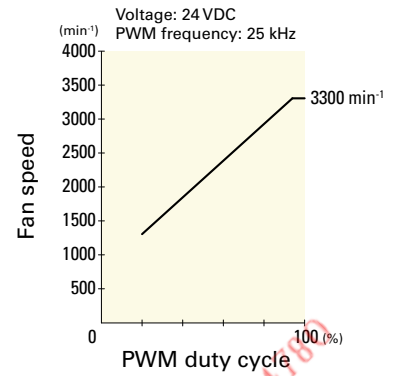
PWM duty cycle



Operating voltage range

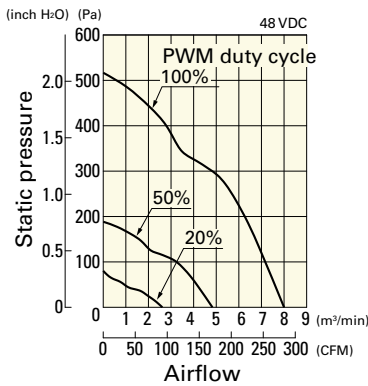


PWM duty - Speed characteristics example

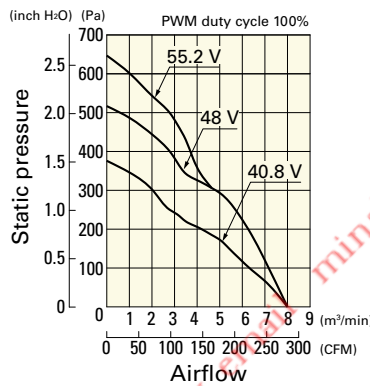


9LG1448P1A001 With pulse sensor with PWM control function

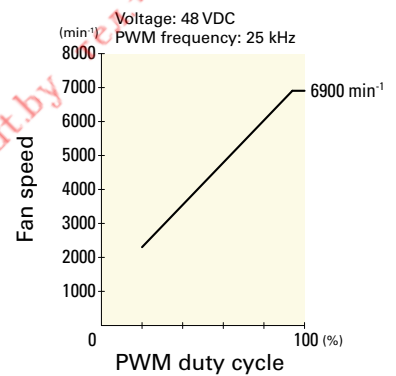
PWM duty cycle



Operating voltage range

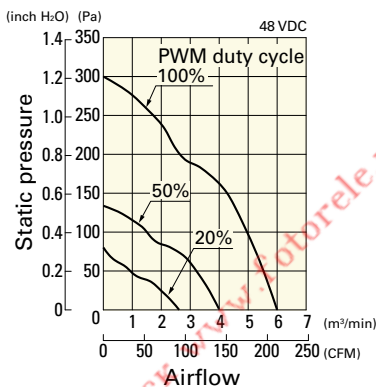


PWM duty - Speed characteristics example

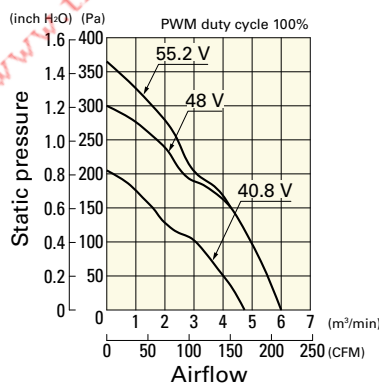


9LG1448P1H001 With pulse sensor with PWM control function

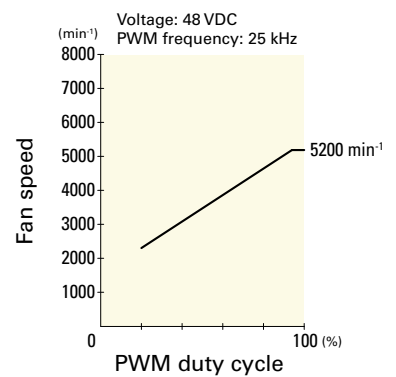
PWM duty cycle



Operating voltage range

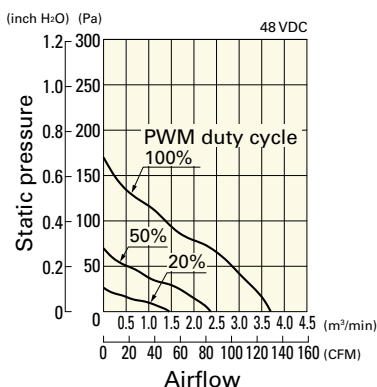


PWM duty - Speed characteristics example

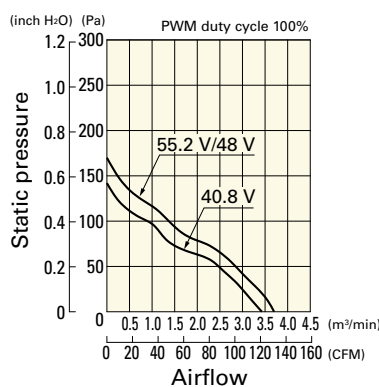


9LG1448P1M001 With pulse sensor with PWM control function

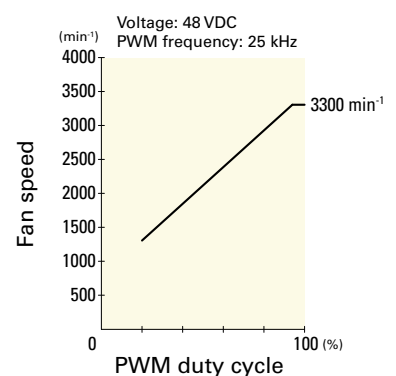
PWM duty cycle



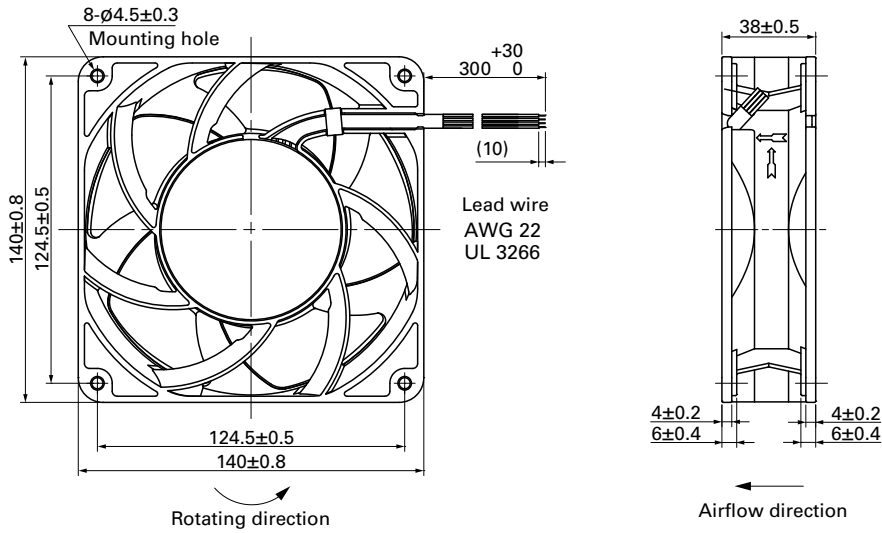
Operating voltage range



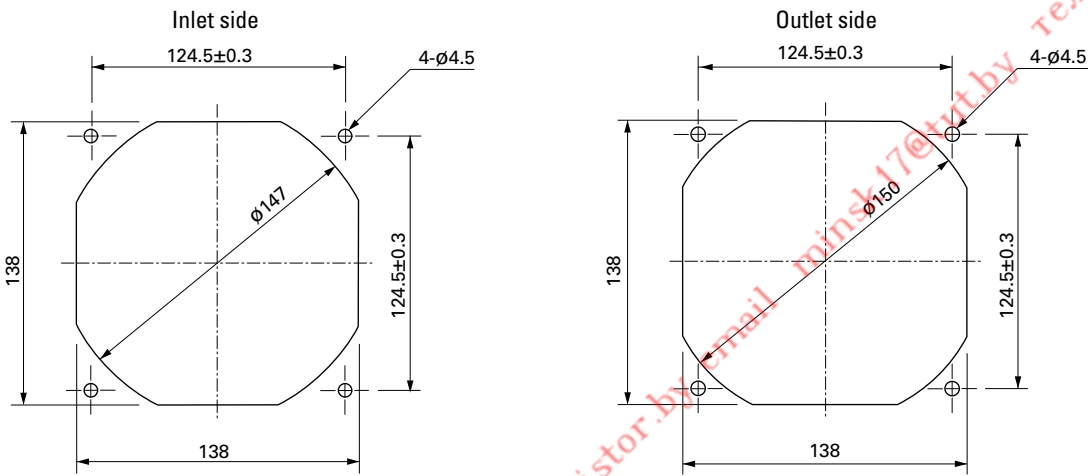
PWM duty - Speed characteristics example



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

DC

Long Life Fan 140 mm sq.



140×140×51 mm

San Ace 140L 9LG type

General Specifications

- Material Frame: Aluminum (Black coating), 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 790 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]
9LG1412P5G001	12	10.2 to 13.8	100	5.16	62	7500	9.0 318	655 2.63	69	-20 ~ +70	180000/60°C
			20	0.31	3.72	2300	2.75 97	80 0.32	38		
9LG1412P5S001	12	10.2 to 13.8	100	1.83	22	5000	6.0 212	295 1.18	57		
			20	0.31	3.72	2300	2.75 97	80 0.32	38		
9LG1424P5G001	24	20.4 to 27.6	100	2.58	62	7500	9.0 318	655 2.63	69		
			20	0.16	3.84	2300	2.75 97	80 0.32	38		
9LG1424P5S001	24	20.4 to 27.6	100	0.91	22	5000	6.0 212	295 1.18	57		
			20	0.16	3.84	2300	2.75 97	80 0.32	38		
9LG1448P5G001	48	40.8 to 55.2	100	1.29	62	7500	9.0 318	655 2.63	69		
			20	0.12	5.76	2300	2.75 97	80 0.32	38		
9LG1448P5S001	48	40.8 to 55.2	100	0.45	22	5000	6.0 212	295 1.18	57		
			20	0.12	5.76	2300	2.75 97	80 0.32	38		

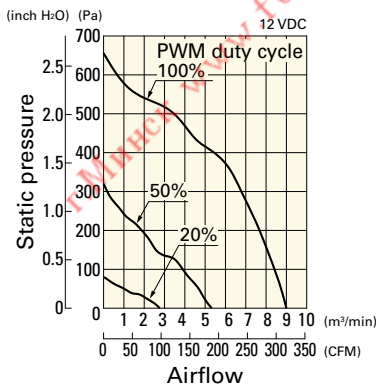
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

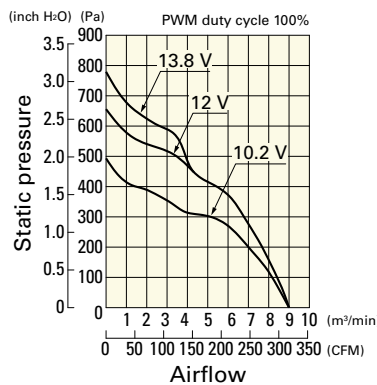
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1412P5G001 With pulse sensor with PWM control function

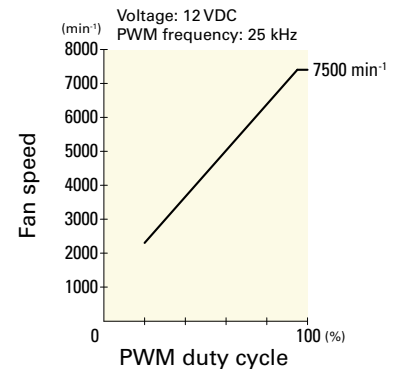
PWM duty cycle



Operating voltage range



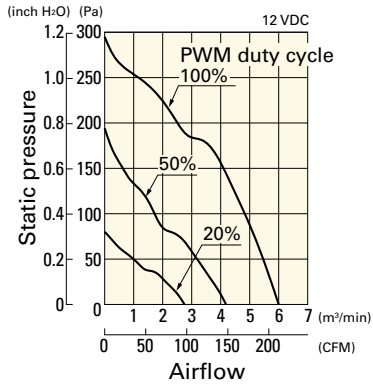
PWM duty - Speed characteristics example



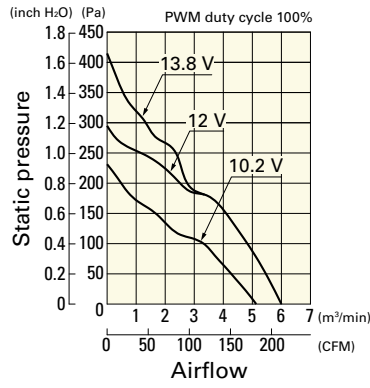
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1412P5S001 With pulse sensor with PWM control function

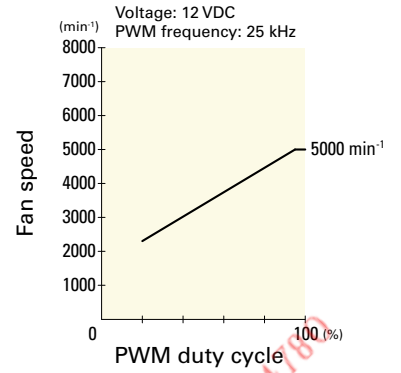
PWM duty cycle



Operating voltage range

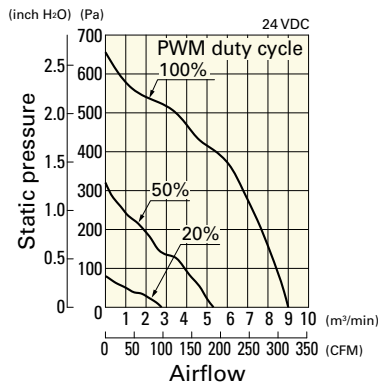


PWM duty - Speed characteristics example

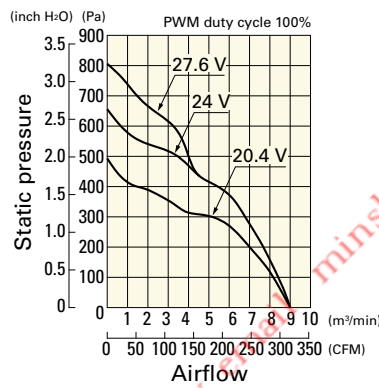


9LG1424P5G001 With pulse sensor with PWM control function

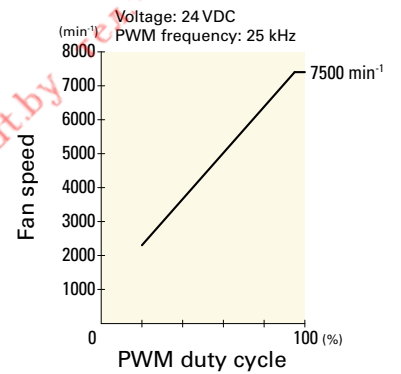
PWM duty cycle



Operating voltage range

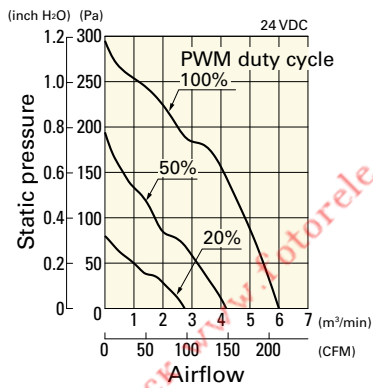


PWM duty - Speed characteristics example

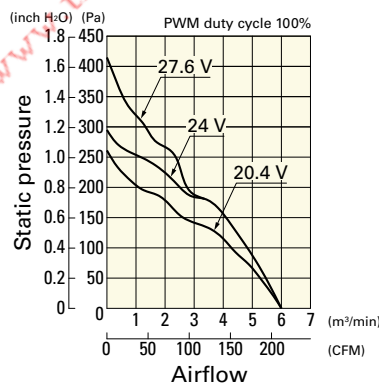


9LG1424P5S001 With pulse sensor with PWM control function

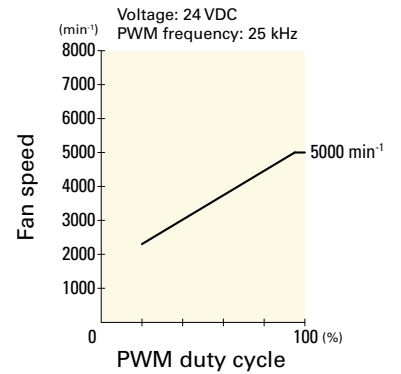
PWM duty cycle



Operating voltage range

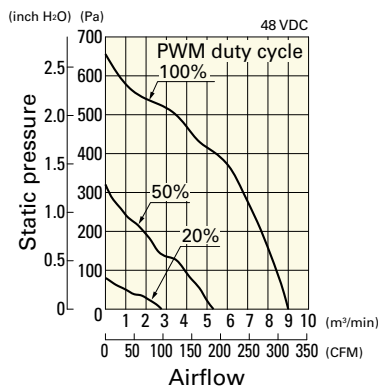


PWM duty - Speed characteristics example

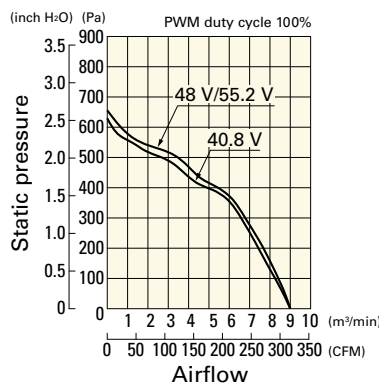


9LG1448P5G001 With pulse sensor with PWM control function

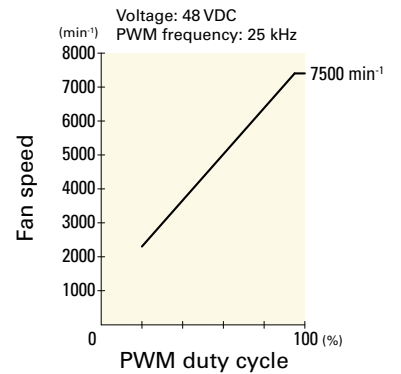
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example



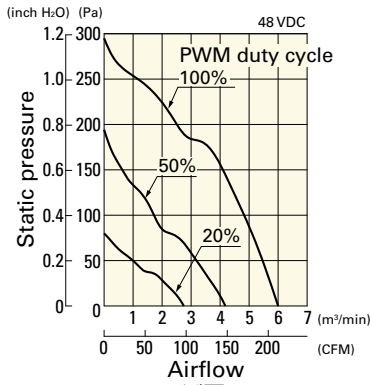
DC

Long Life Fan 140 mm sq.

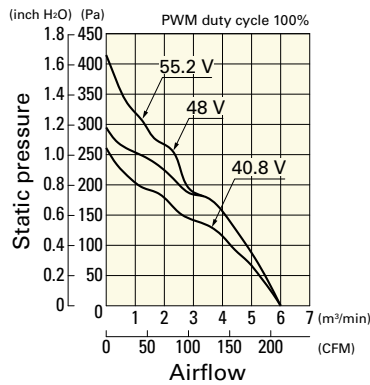
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1448P5S001 With pulse sensor with PWM control function

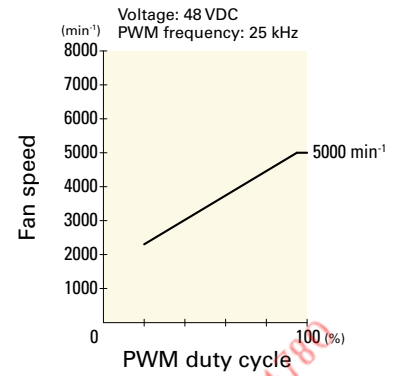
PWM duty cycle



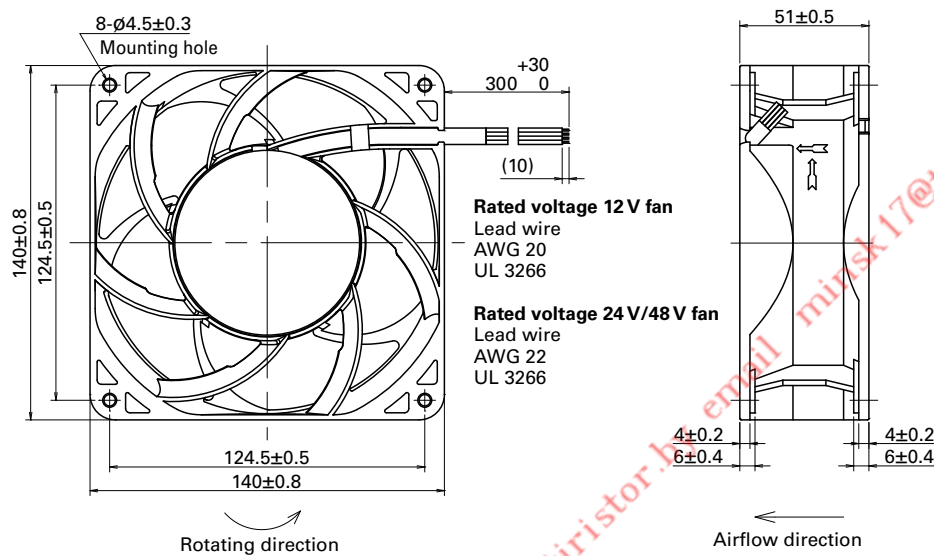
Operating voltage range



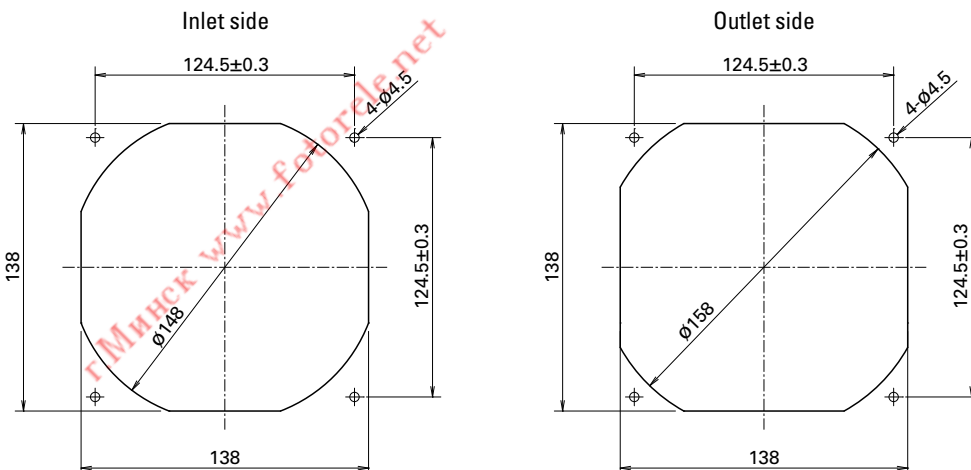
PWM duty - Speed characteristics example



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

Ø 172×150×51 mm

San Ace 172L 9L type   

Sidecut 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 or Blue (Sensor) Yellow
- Mass 760 g

Specifications

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

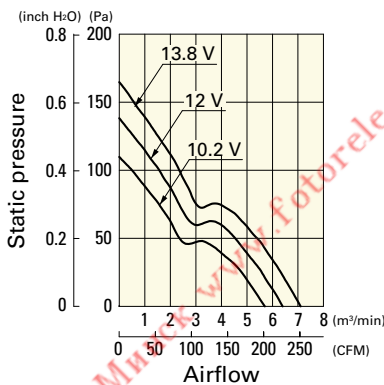
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109L5712H501	12	10.2 to 13.8	1.2	14.4	3050	6.4 226	137.2 0.551	52	-20 to +70	100000/60°C
109L5712M501			0.48	5.76	2000	4.2 148	67.6 0.271	41		
109L5724H501	24	20.4 to 27.6	0.58	13.92	3050	6.4 226	137.2 0.551	52		
109L5724M501			0.2	4.8	2000	4.2 148	67.6 0.271	41		
109L5748H501	48	40.8 to 55.2	0.28	13.44	3050	6.4 226	137.2 0.551	52		
109L5748M501			0.11	5.28	2000	4.2 148	67.6 0.271	41		

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

Airflow - Static Pressure Characteristics

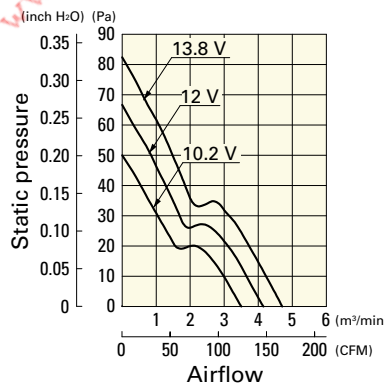
109L5712H501 With pulse sensor

Operating voltage range



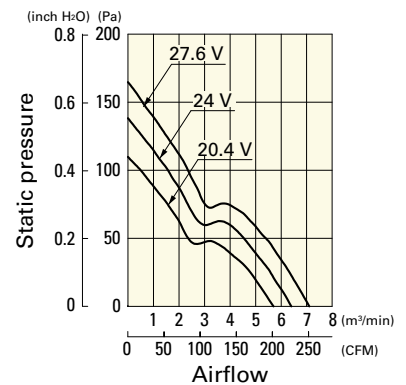
109L5712M501 With pulse sensor

Operating voltage range



109L5724H501 With pulse sensor

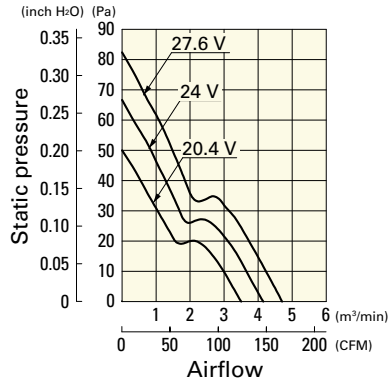
Operating voltage range



Airflow - Static Pressure Characteristics

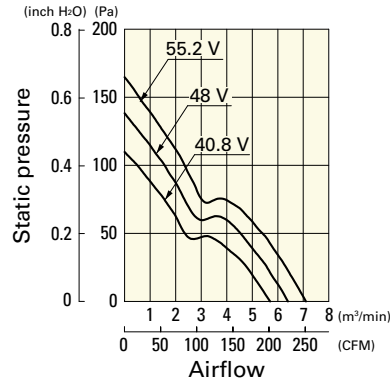
109L5724M501 With pulse sensor

Operating voltage range



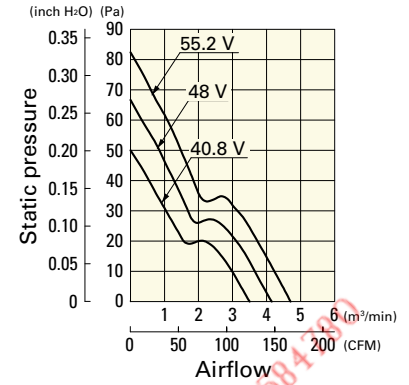
109L5748H501 With pulse sensor

Operating voltage range

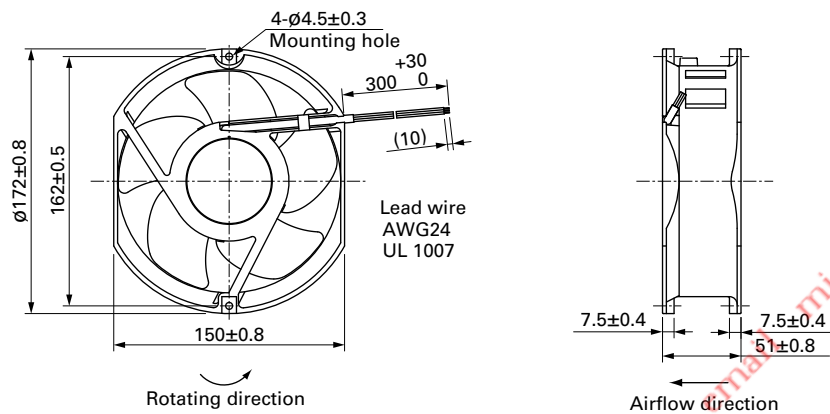


109L5748M501 With pulse sensor

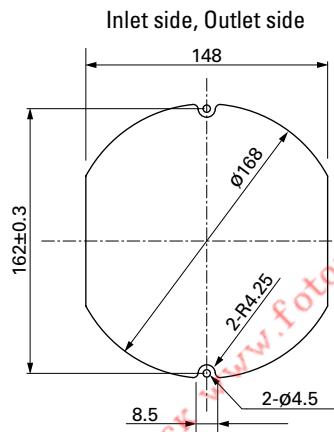
Operating voltage range



Dimensions (unit: mm)



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




Options

Finger guards

page: p. 515

Model no.: 109-319E, 109-319H, 109-320

Ø 172x51 mm

San Ace 172L 9L type   

Round 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 or Blue (Sensor) Yellow
- Mass 780 g

Specifications

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

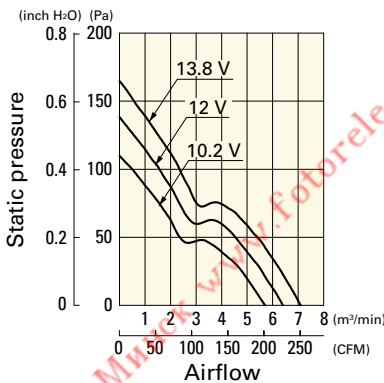
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109L1712H501	12	10.2 to 13.8	1.2	14.4	3050	6.4 226	137.2 0.551	47	-20 to +70	100000/60°C
109L1712M501			0.48	5.76	2000	4.2 148	67.6 0.271	36		
109L1724H501	24	20.4 to 27.6	0.58	13.92	3050	6.4 226	137.2 0.551	47		
109L1724M501			0.2	4.8	2000	4.2 148	67.6 0.271	36		
109L1748H501	48	40.8 to 55.2	0.28	13.44	3050	6.4 226	137.2 0.551	47		
109L1748M501			0.11	5.28	2000	4.2 148	67.6 0.271	36		

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

Airflow - Static Pressure Characteristics

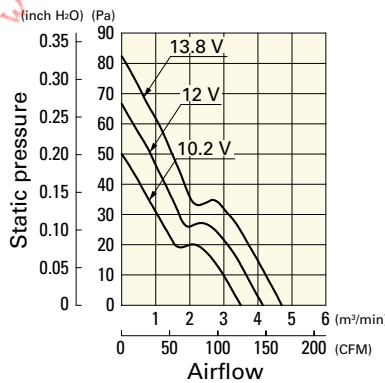
109L1712H501 With pulse sensor

Operating voltage range



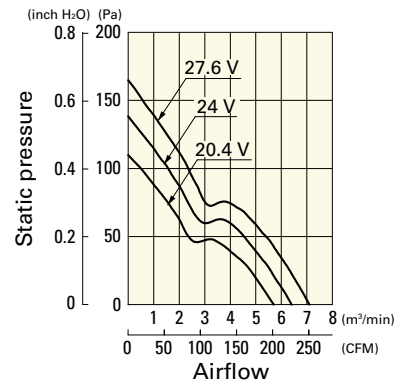
109L1712M501 With pulse sensor

Operating voltage range



109L1724H501 With pulse sensor

Operating voltage range



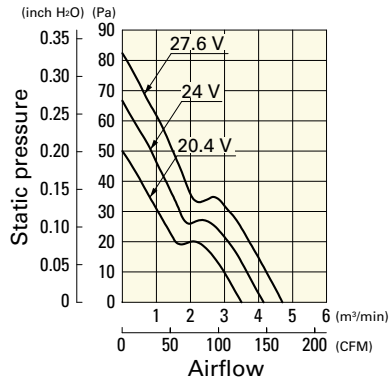
DC

Long Life Fan Ø172 mm

Airflow - Static Pressure Characteristics

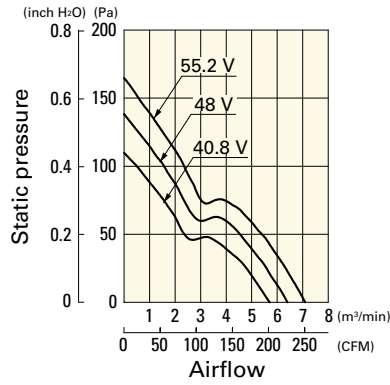
109L1724M501 With pulse sensor

Operating voltage range



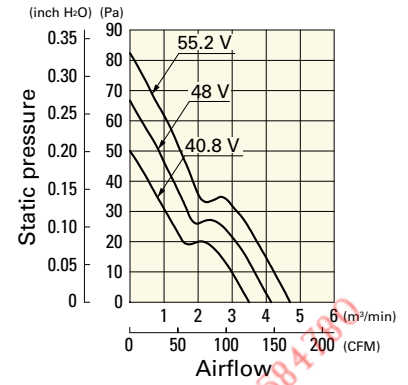
109L1748H501 With pulse sensor

Operating voltage range

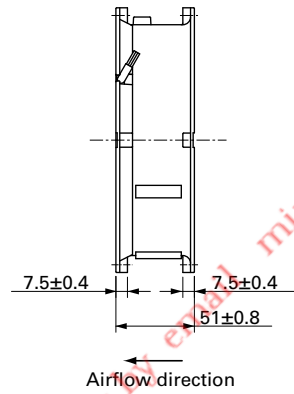
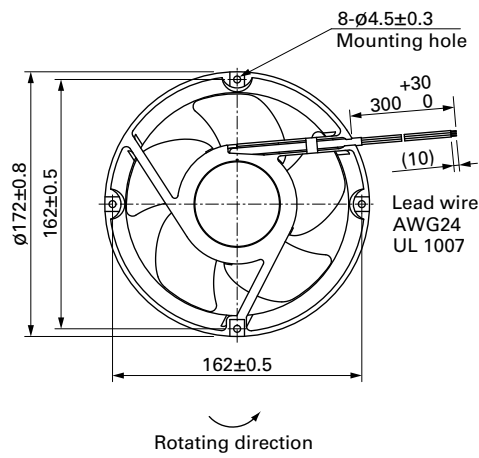


109L1748M501 With pulse sensor

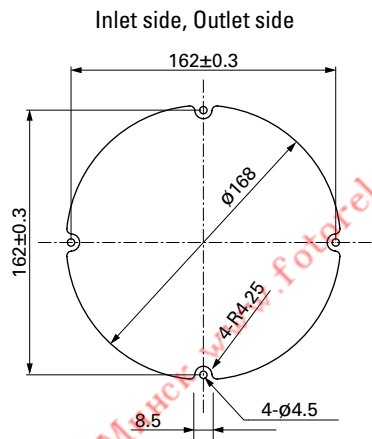
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 515

Model no.: 109-1066, 109-1068, 109-319E, 109-319H, 109-320

Wide Temperature Range Fan

These fans can be used in a wide temperature range from -40 to +85°C.

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

9GT	04	12	P	3	J	001
Type name	Frame size	Voltage	PWM control function	Frame thickness	Speed code	Individual customer's spec

Type name	9GT					
Frame size (mm)	04	06	08	09	12	
	40×40	60×60	80×80	92×92	120×120	
Voltage (V)	12	24				
	12	24				
Frame thickness (mm)	1	3	4			
	38	28	25			
Speed code	J					

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.



40x40x28 mm

San Ace 40T 9GT 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 -40 to +85°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]
9GT0412P3J001	12	10.2 to 13.8	100	0.31	3.72	11700	0.52 18.4	206 0.827	48	-40 to +85	40000/85°C
			30	0.08	0.96	4100	0.18 6.36	25.2 0.1	21		
9GT0424P3J001	24	20.4 to 27.6	100	0.15	3.6	11700	0.52 18.4	206 0.827	48		
			30	0.05	1.2	4100	0.18 6.36	25.2 0.1	21		

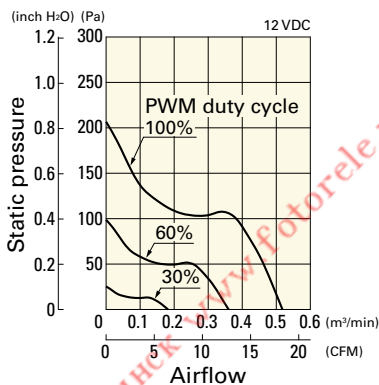
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

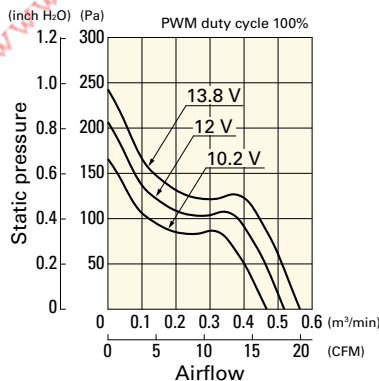
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GT0412P3J001 With pulse sensor with PWM control function

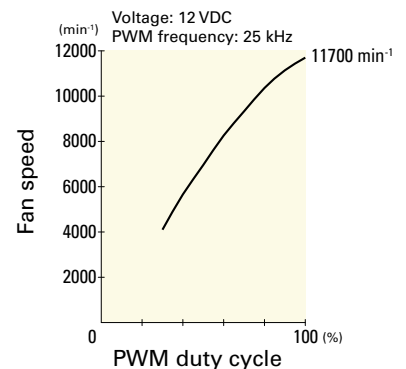
PWM duty cycle



Operating voltage range



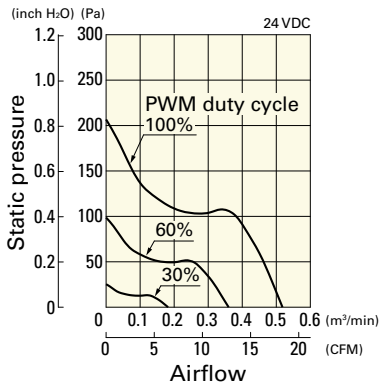
PWM duty - Speed characteristics example



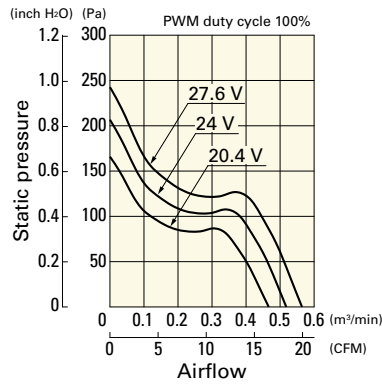
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GT0424P3J001 With pulse sensor with PWM control function

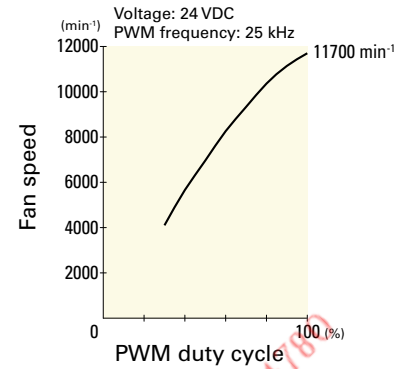
PWM duty cycle



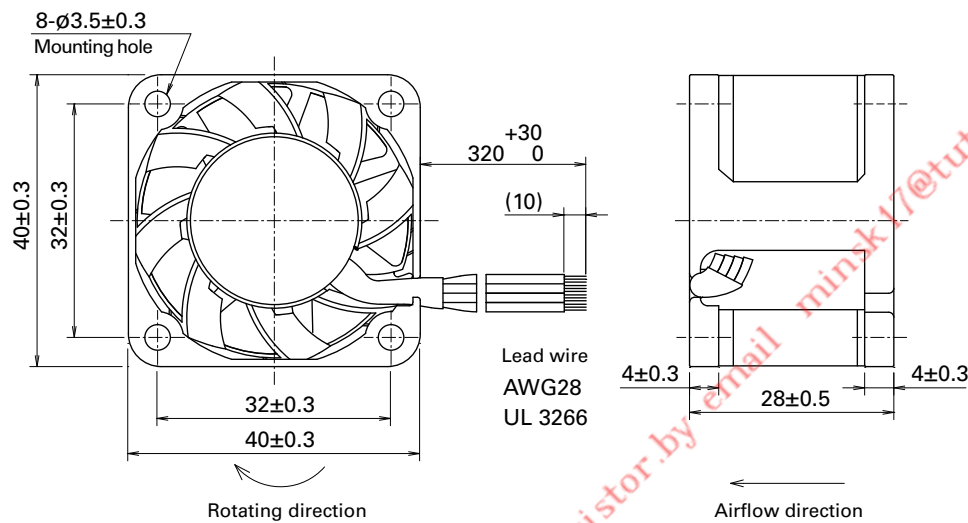
Operating voltage range



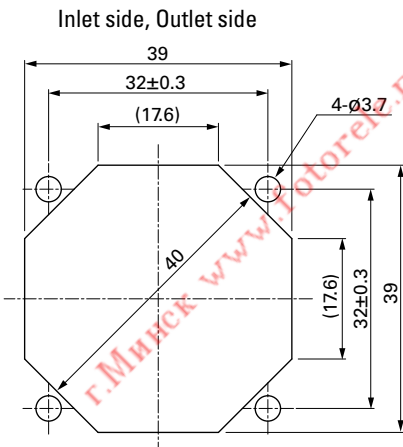
PWM duty - Speed characteristics example



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

DC
Wide Temperature Range Fan 40 mm sq.



60×60×25 mm

San Ace 60T 9GT 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 -40 to +85°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 100 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]
9GT0612P4G001	12	10.2 to 13.8	100	0.56	6.72	10000	1.26 44.5	243 0.97	52	-40 to +85	40000/85°C
			30	0.11	1.32	4100	0.52 18.3	42.8 0.17	25		
9GT0624P4G001	24	20.4 to 27.6	100	0.28	6.72	10000	1.26 44.5	243 0.97	52		
			30	0.06	1.44	4100	0.52 18.3	42.8 0.17	25		

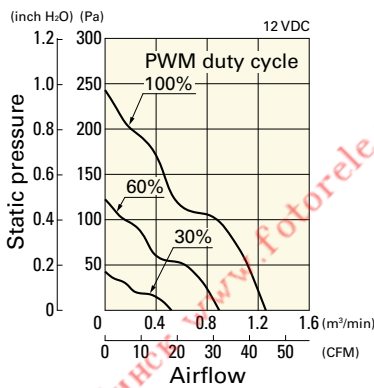
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

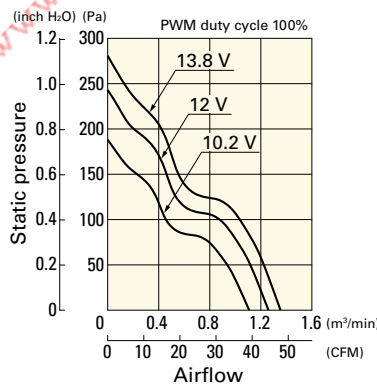
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GT0612P4G001 With pulse sensor with PWM control function

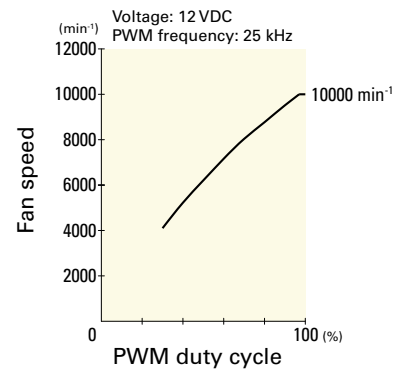
PWM duty cycle



Operating voltage range



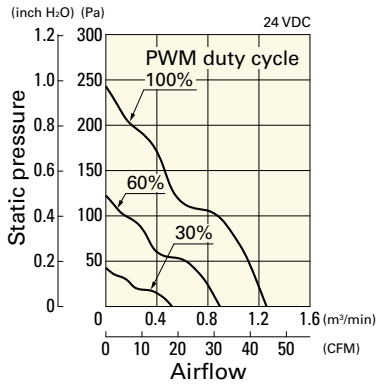
PWM duty - Speed characteristics example



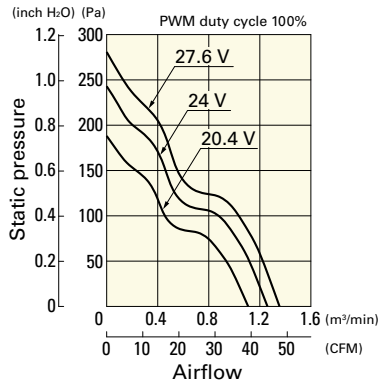
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GT0624P4G001 With pulse sensor with PWM control function

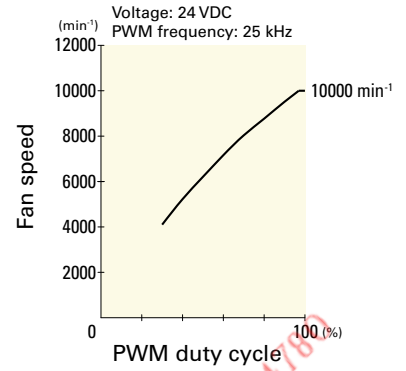
PWM duty cycle



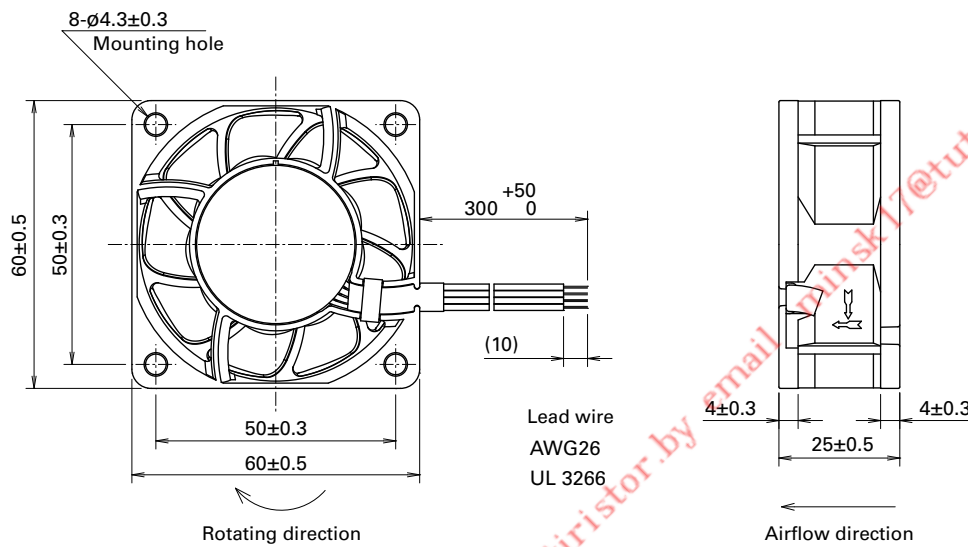
Operating voltage range



PWM duty - Speed characteristics example

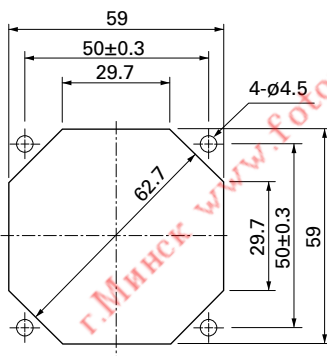


Dimensions (unit: mm)



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

Inlet side, Outlet side



Options

Finger guards

page: p. 513

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

DC

Wide Temperature Range Fan 60 mm sq.



80×80×25 mm

San Ace 80T 9GT 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 -40 to +85°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 130 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]
9GT0812P4S001	12	10.2 to 13.8	100	0.46	5.52	6700	1.86 65.7	143 0.57	46	-40 to +85	40000/85°C
			30	0.09	1.08	2650	0.73 25.7	22.3 0.08	26		
9GT0824P4S001	24	20.4 to 27.6	100	0.22	5.28	6700	1.86 65.7	143 0.57	46		
			30	0.05	1.2	2650	0.73 25.7	22.3 0.08	26		

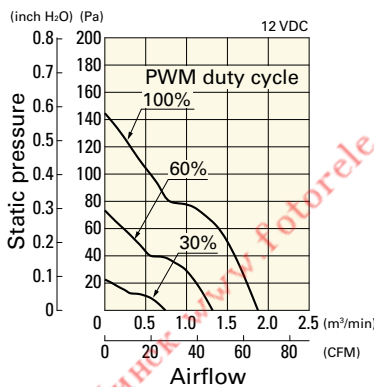
* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

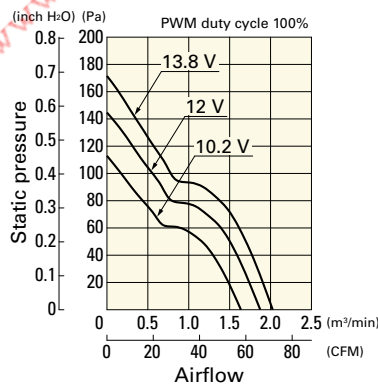
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GT0812P4S001 With pulse sensor with PWM control function

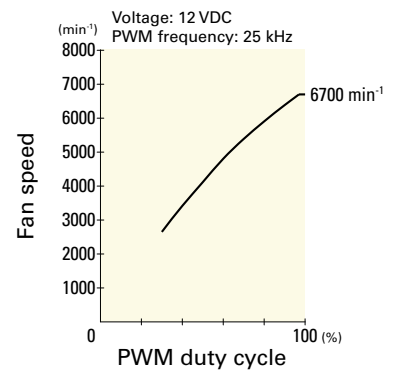
PWM duty cycle



Operating voltage range



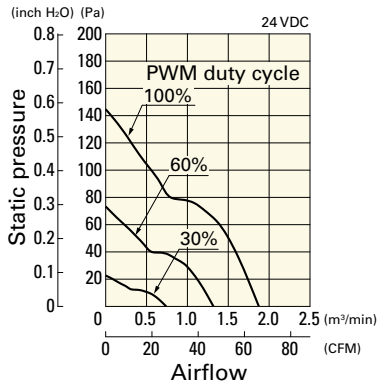
PWM duty - Speed characteristics example



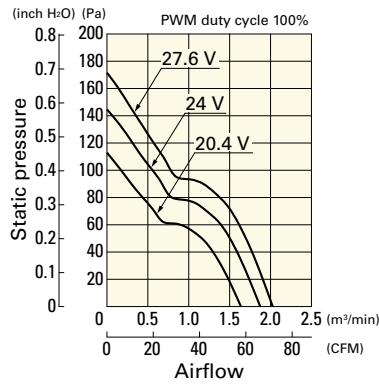
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9GT0824P4S001 With pulse sensor with PWM control function

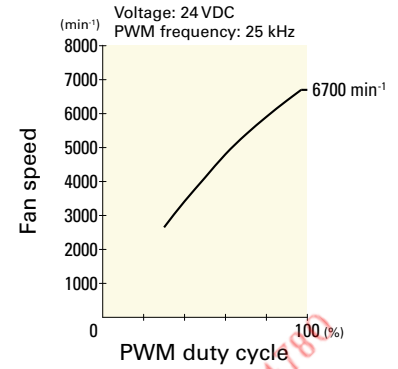
PWM duty cycle



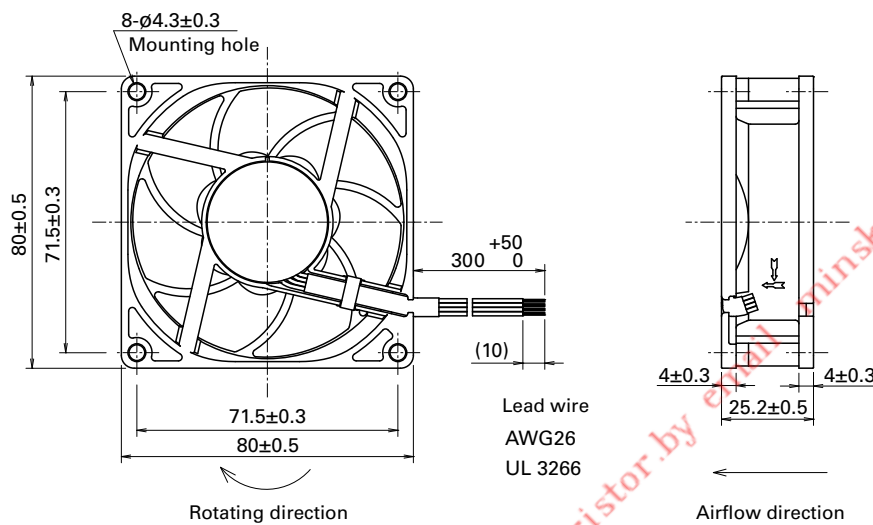
Operating voltage range



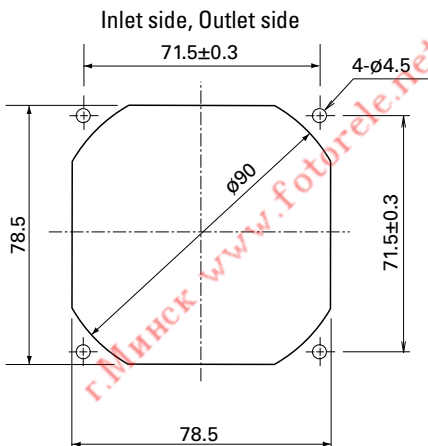
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 513

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

DC

Wide Temperature Range Fan 80 mm sq.