



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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black Sensor Yellow
- Mass 55 g

Specifications

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

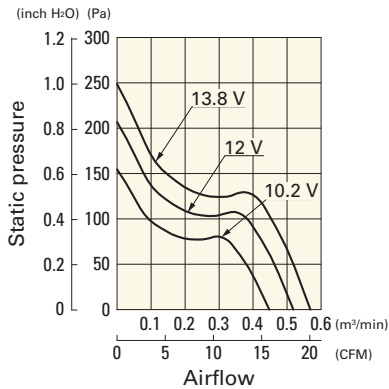
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9L0412J301	12	10.2 to 13.8	0.31	3.72	11700	0.52 18.4	206 0.827	48	-20 to +70	100000/60°C (135000/40°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		

Note: Sensor and control options are available for selection. Refer to the table on p. 634.

Airflow - Static Pressure Characteristics

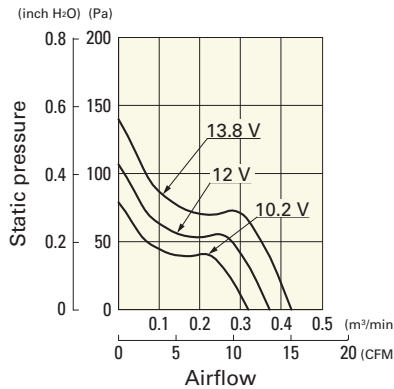
9L0412J301 With pulse sensor

Operating voltage range



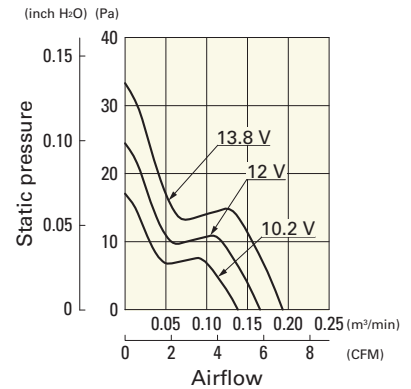
9L0412H301 With pulse sensor

Operating voltage range

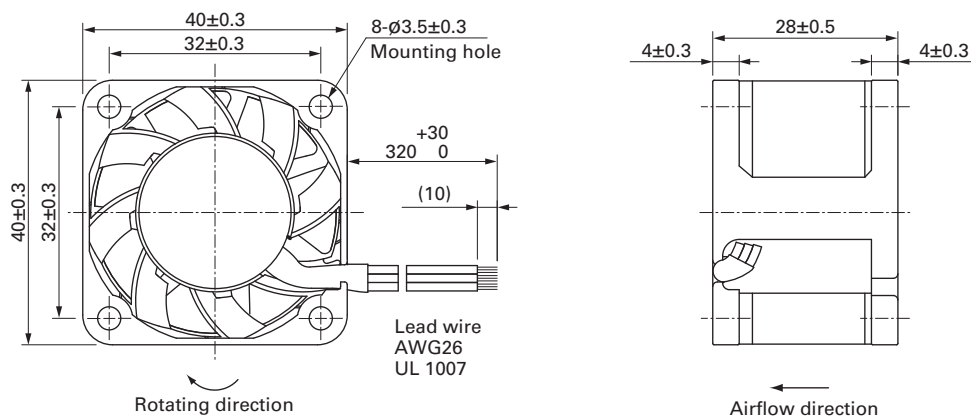


9L0412M301 With pulse sensor

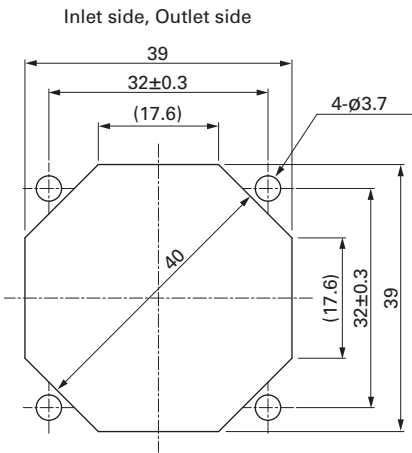
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 584

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



60x60x25 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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass 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		Max. static pressure		SPL	Operating temperature	Expected life	
							[m ³ /min]	[CFM]	[Pa]	[inchH ₂ O]	[dB (A)]	[°C]	[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	18000/60°C (215000/40°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 input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note 1: Sensor and control options are available for selection. Refer to the table on p. 634.

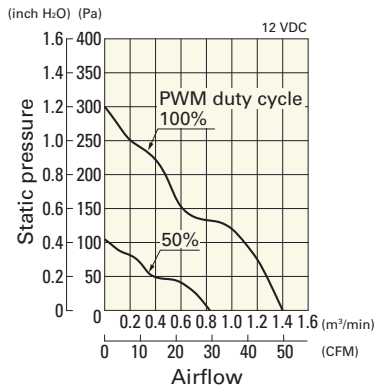
Note 2: The » mark indicates Short LeadTime Service applicable models. See p. 654 for details.

DC Long Life Fan 60 mm sq.

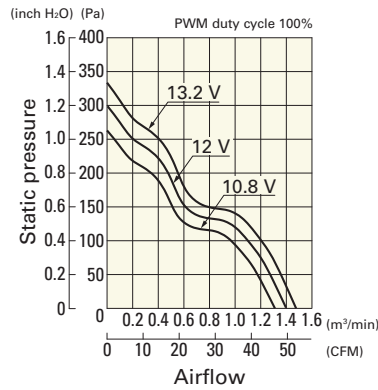
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0612P4S001 With pulse sensor with PWM control function

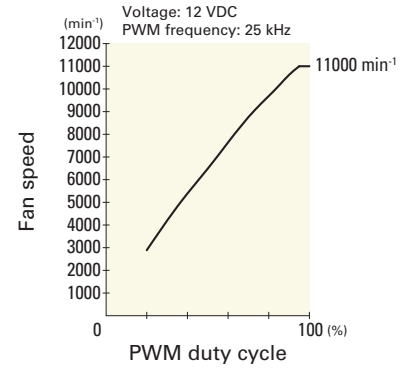
PWM duty cycle



Operating voltage range

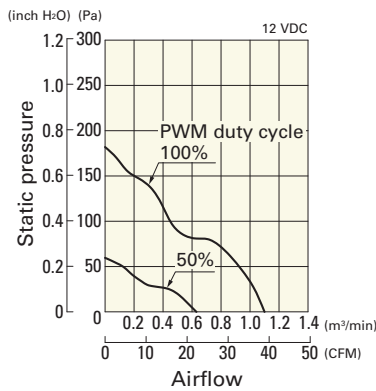


PWM duty - Speed characteristics example

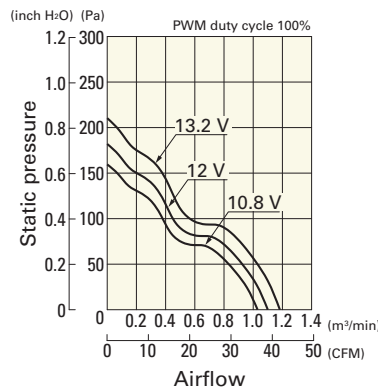


9LG0612P4J001 With pulse sensor with PWM control function

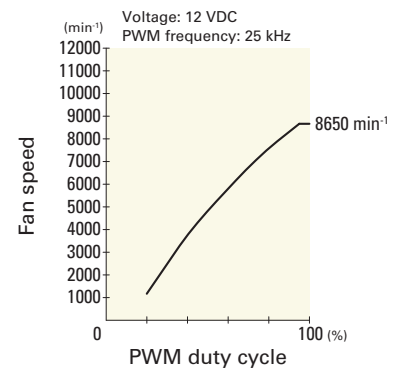
PWM duty cycle



Operating voltage range

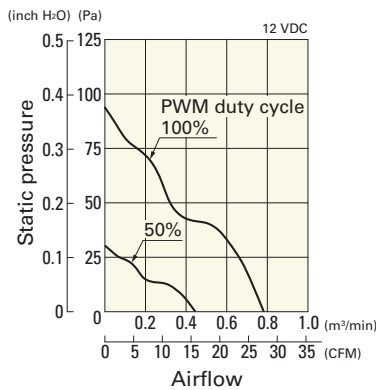


PWM duty - Speed characteristics example

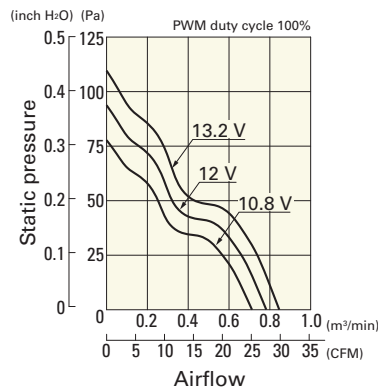


9LG0612P4H001 With pulse sensor with PWM control function

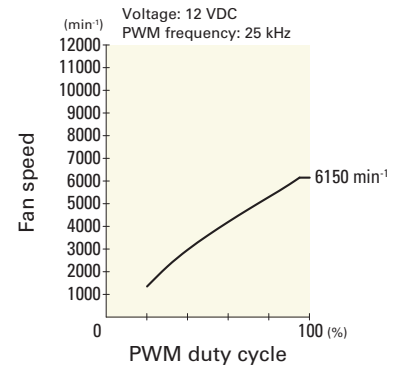
PWM duty cycle



Operating voltage range

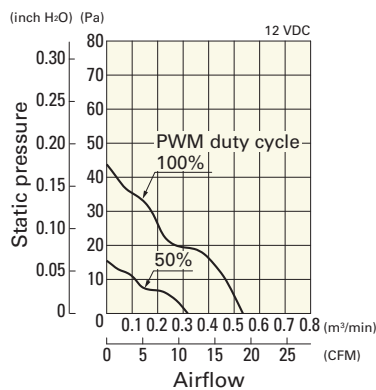


PWM duty - Speed characteristics example

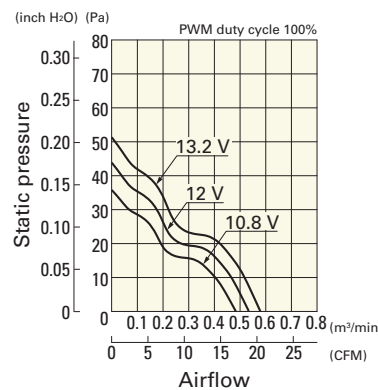


9LG0612P4M001 With pulse sensor with PWM control function

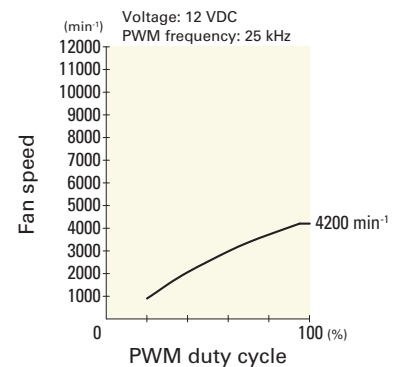
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

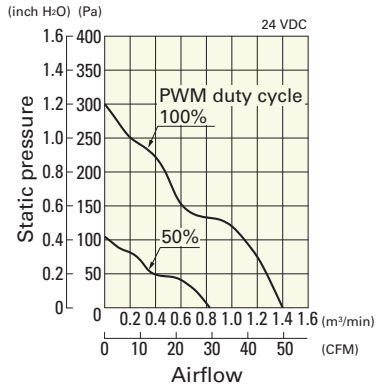


DC
Long Life Fan 60 mm sq.

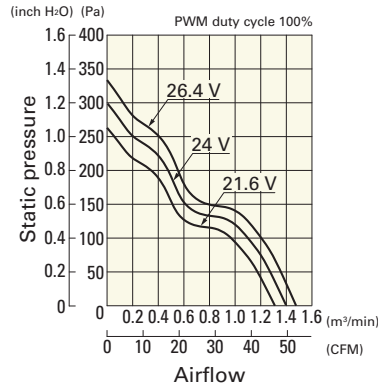
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0624P4S001 With pulse sensor with PWM control function

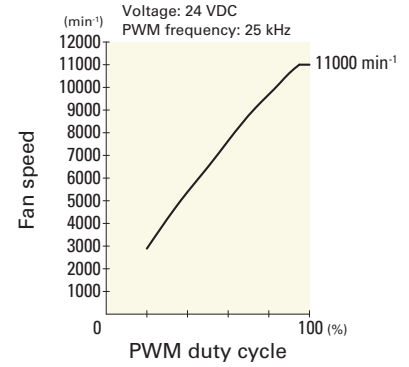
PWM duty cycle



Operating voltage range

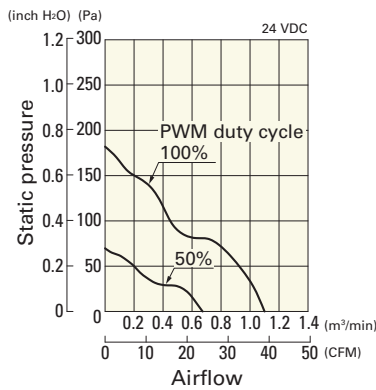


PWM duty - Speed characteristics example

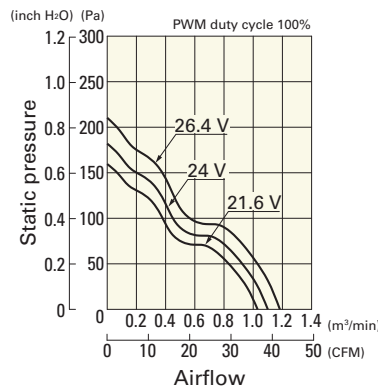


9LG0624P4J001 With pulse sensor with PWM control function

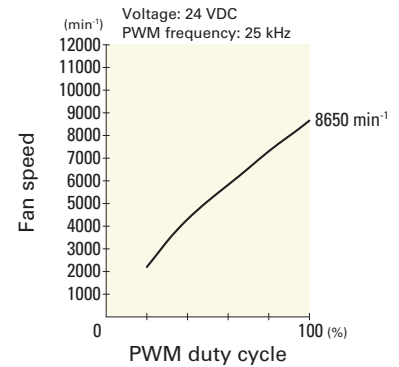
PWM duty cycle



Operating voltage range

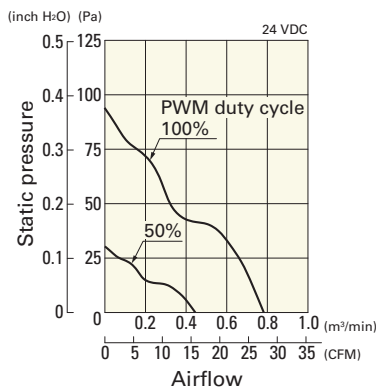


PWM duty - Speed characteristics example

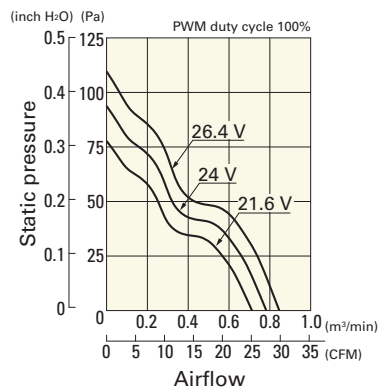


9LG0624P4H001 With pulse sensor with PWM control function

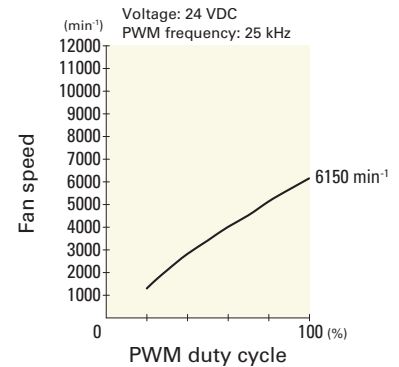
PWM duty cycle



Operating voltage range

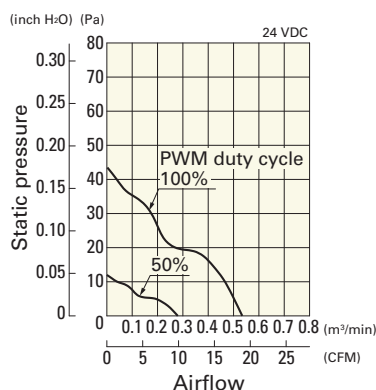


PWM duty - Speed characteristics example

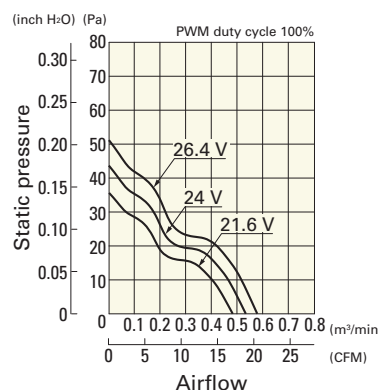


9LG0624P4M001 With pulse sensor with PWM control function

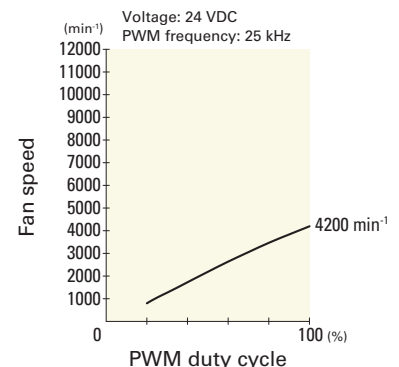
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

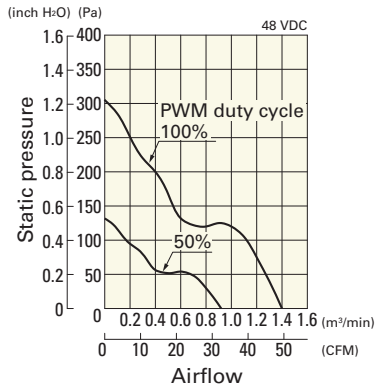


DC Long Life Fan 60 mm sq.

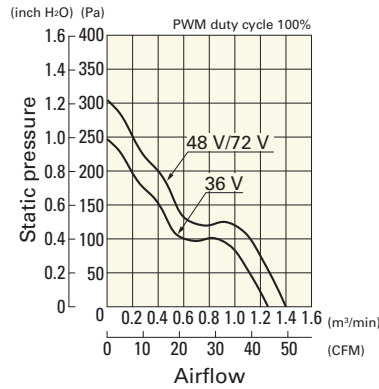
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0648P4S001 With pulse sensor with PWM control function

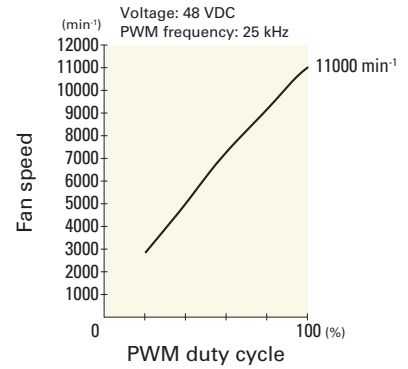
PWM duty cycle



Operating voltage range

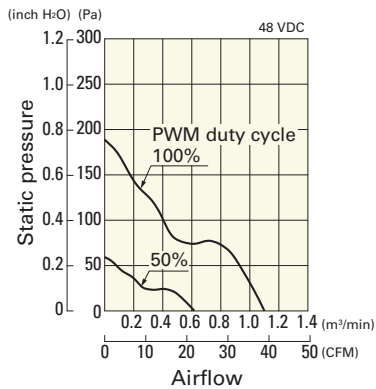


PWM duty - Speed characteristics example

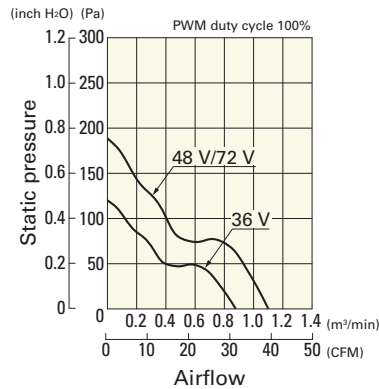


9LG0648P4J001 With pulse sensor with PWM control function

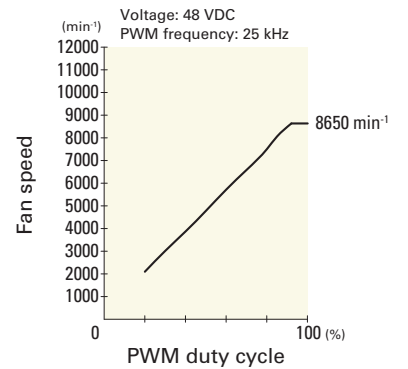
PWM duty cycle



Operating voltage range

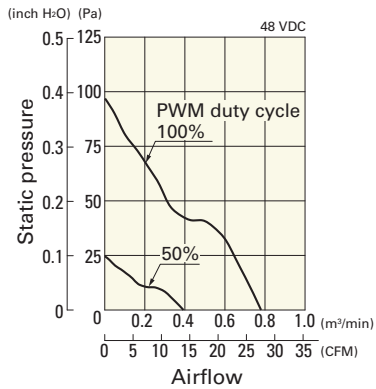


PWM duty - Speed characteristics example

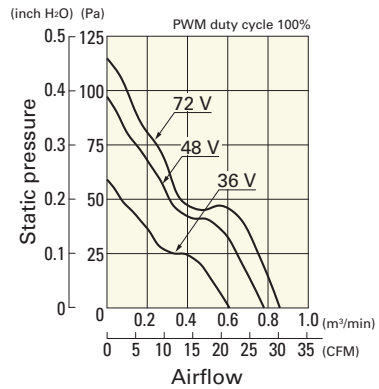


9LG0648P4H001 With pulse sensor with PWM control function

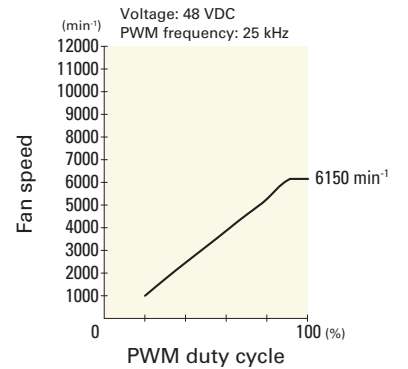
PWM duty cycle



Operating voltage range

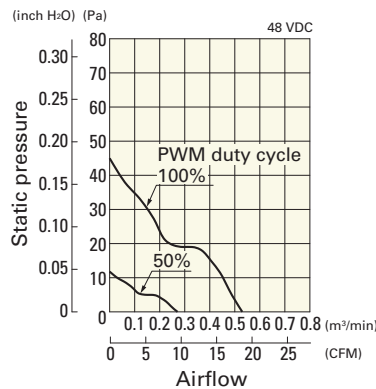


PWM duty - Speed characteristics example

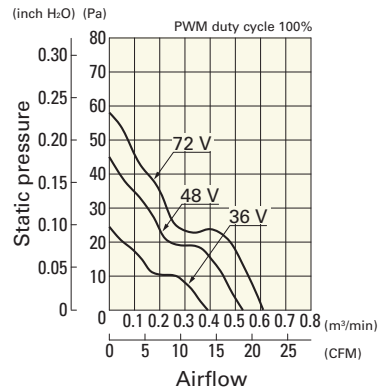


9LG0648P4M001 With pulse sensor with PWM control function

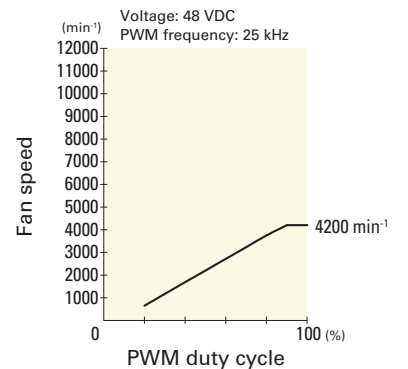
PWM duty cycle



Operating voltage range

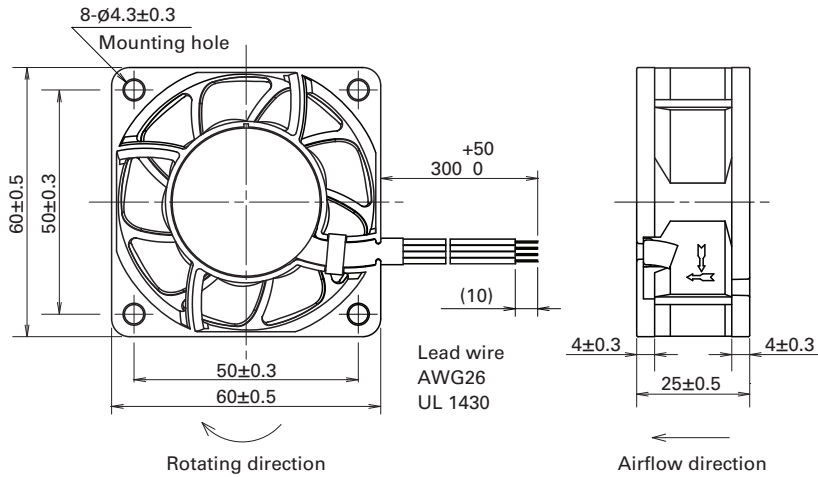


PWM duty - Speed characteristics example

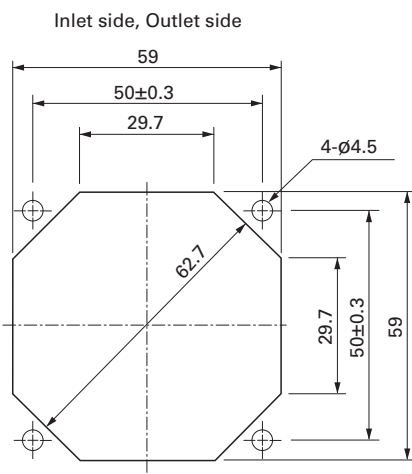


DC
Long Life Fan 60 mm sq.

Dimensions (unit: mm)



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



Options

Finger guards

page: p. 584

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

Resin finger guards

page: p. 591

Model no.: 109-1003G

Resin filter kits

page: p. 592

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



60x60x76 mm

San Ace 60L 9CRLA 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) Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 310 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			
9CRLA0612P0G001	12	10.8 to 13.2	100	3.0	36.0	16500	17800	2.1	74.1	1400	5.62	70	-20 to +70	100000/60°C (135000/40°C)
			20	0.4	4.8	5000	5400	0.64	22.6	128	0.51	43		

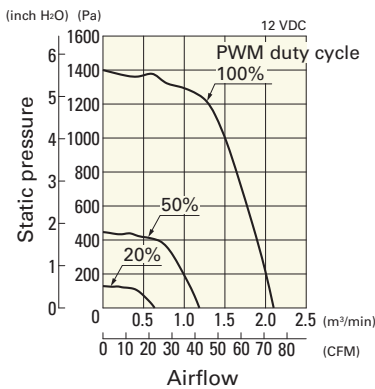
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: The mark indicates Short LeadTime Service applicable models. See p. 654 for details.

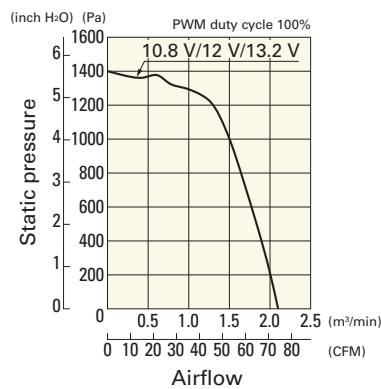
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRLA0612P0G001 With pulse sensor with PWM control function

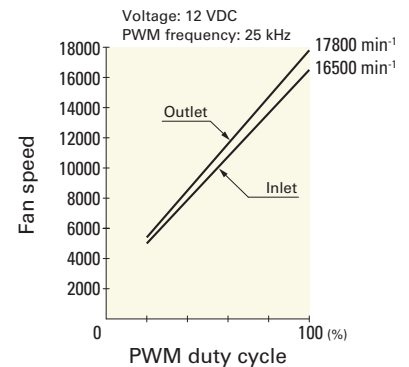
PWM duty cycle



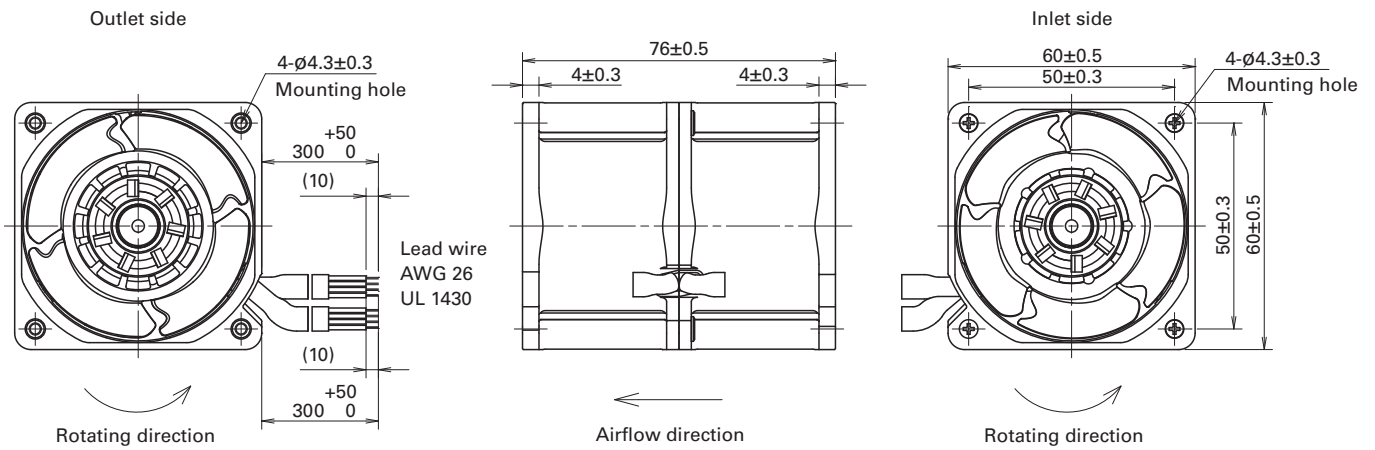
Operating voltage range



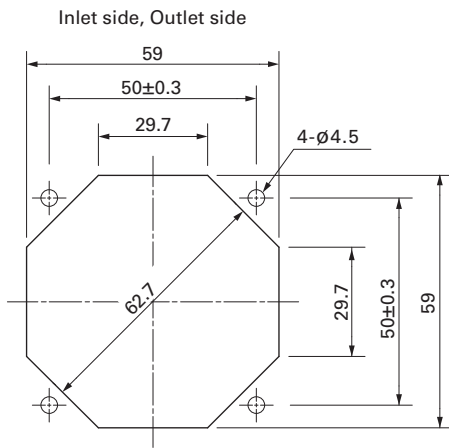
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 584

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

Resin finger guards

page: p. 591

Model no.: 109-1003G

Resin filter kits

page: p. 592

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



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) Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire 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							
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 (165000/40°C)
			0	0.22	2.7	3600	2800	0.43	15.1	47.6	0.19	32		

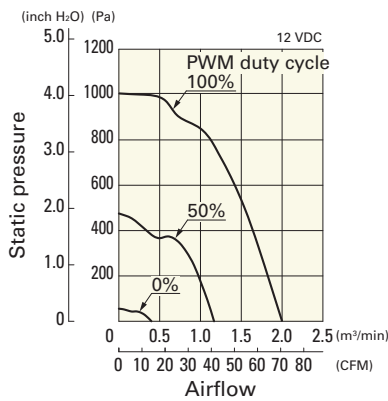
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: The mark indicates Short Lead Time Service applicable models. See p. 654 for details.

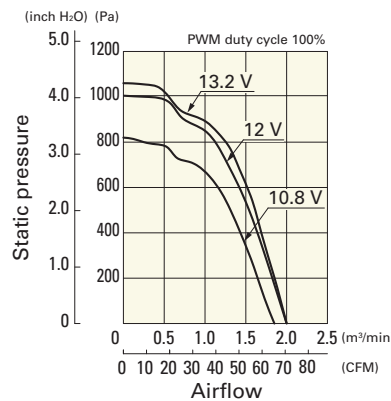
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRL0612P0G001 With pulse sensor with PWM control function

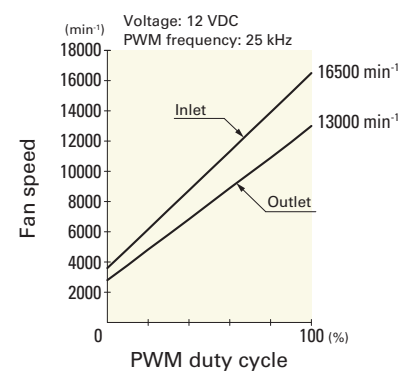
PWM duty cycle



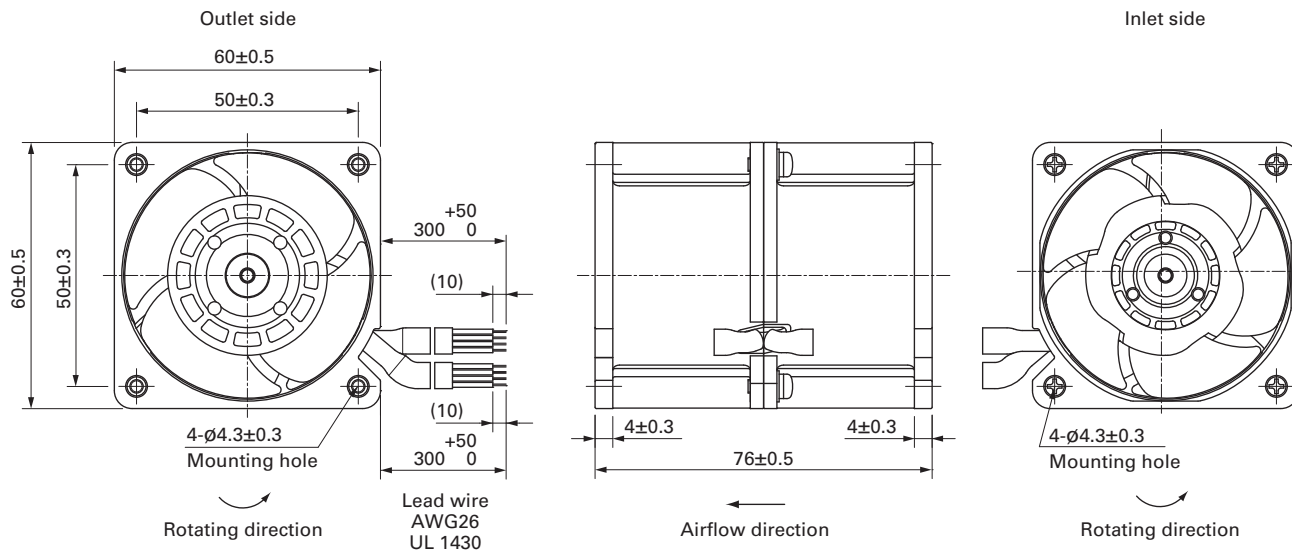
Operating voltage range



PWM duty - Speed characteristics example

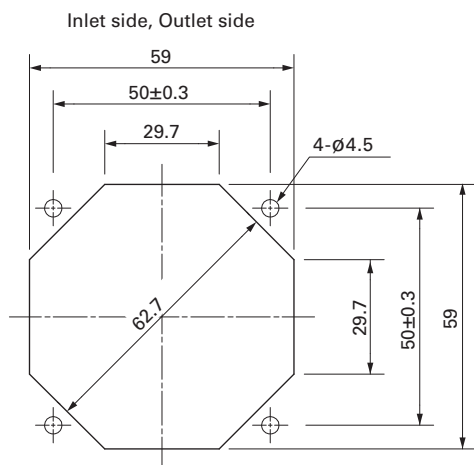


Dimensions (unit: mm)



DC
Long Life Fan 60 mm sq.

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



Options

Finger guards

page: p. 584

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

Resin finger guards

page: p. 591

Model no.: 109-1003G

Resin filter kits

page: p. 592

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



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) Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown (For models without PWM control function, there is no speed control wiring.)
- 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 (215000/40°C)		
▶▶▶ 9LG0812P4G001			20	0.06	0.72	1800	0.5 17.6	10.4 0.04	16				
▶▶▶ 9LG0812P4H001			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				
▶▶▶ 9LG0824P4J001			24	21.6 to 26.4	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
▶▶▶ 9LG0824P4G001	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				
▶▶▶ 9LG0824P4H001	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 input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

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]
▶▶▶ 9LG0812S4001	12	6 to 13.2	0.17	2.04	4200	1.17 41.3	56 0.22	35	-20 to +70	180000/60°C (215000/40°C)
▶▶▶ 9LG0812F4001			0.1	1.2	3300	0.92 32.5	35 0.14	29		
▶▶▶ 9LG0812M4001			0.08	0.96	2900	0.8 28.3	27 0.11	25		
▶▶▶ 9LG0812L4001	24	8 to 13.2	0.06	0.72	2300	0.64 22.6	17 0.068	22		
▶▶▶ 9LG0824S4001		12 to 26.4	0.07	1.68	4200	1.17 41.3	56 0.22	35		
▶▶▶ 9LG0824F4001			0.045	1.08	3300	0.92 32.5	35 0.14	29		
▶▶▶ 9LG0824M4001			0.04	0.96	2900	0.8 28.3	27 0.11	25		
▶▶▶ 9LG0824L4001		14 to 26.4	0.03	0.72	2300	0.64 22.6	17 0.068	22		

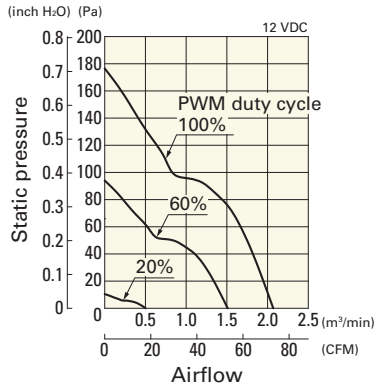
Note 1: Sensor and control options are available for selection. Refer to the table on p. 634.

Note 2: The ▶▶▶ mark indicates Short LeadTime Service applicable models. See p. 654 for details.

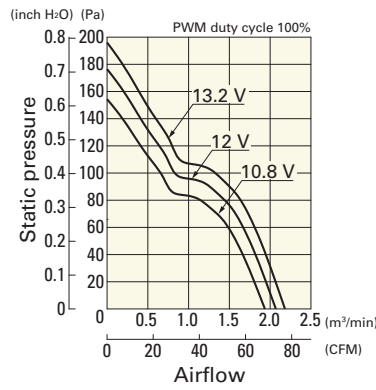
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0812P4J001 With pulse sensor with PWM control function

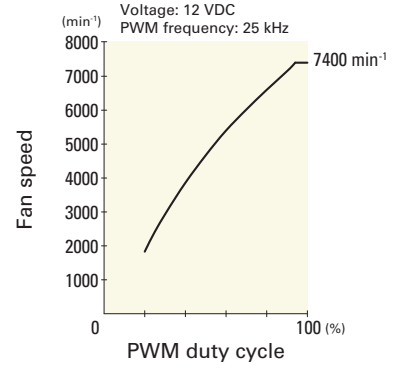
PWM duty cycle



Operating voltage range

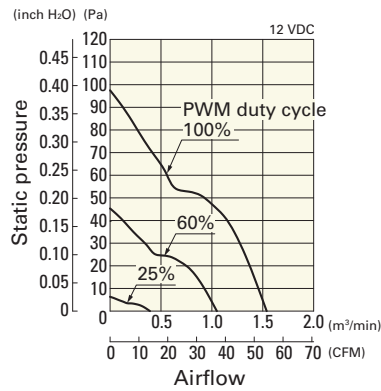


PWM duty - Speed characteristics example

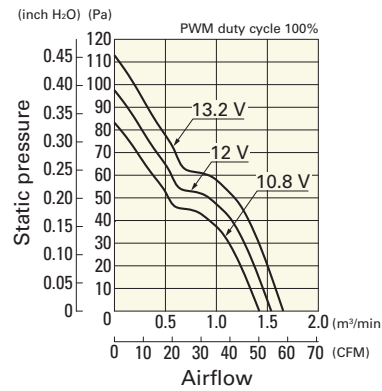


9LG0812P4G001 With pulse sensor with PWM control function

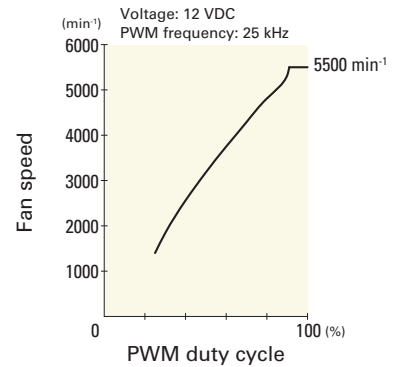
PWM duty cycle



Operating voltage range

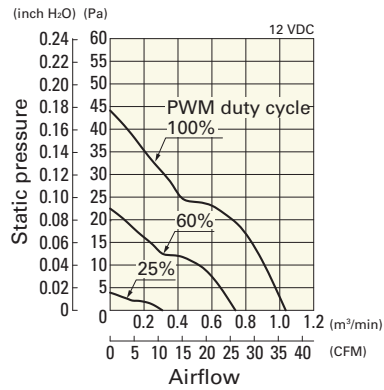


PWM duty - Speed characteristics example

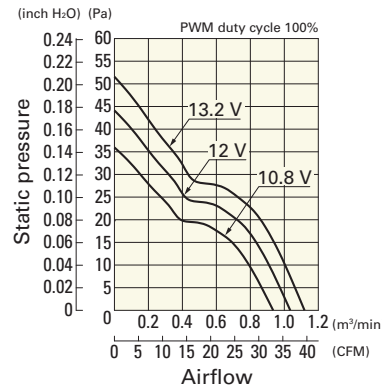


9LG0812P4H001 With pulse sensor with PWM control function

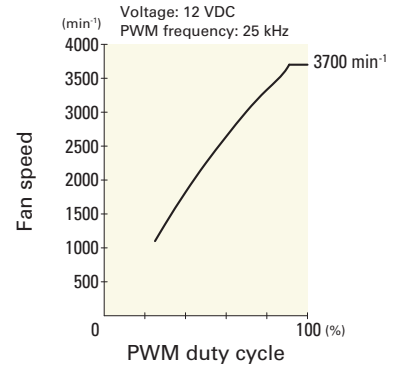
PWM duty cycle



Operating voltage range

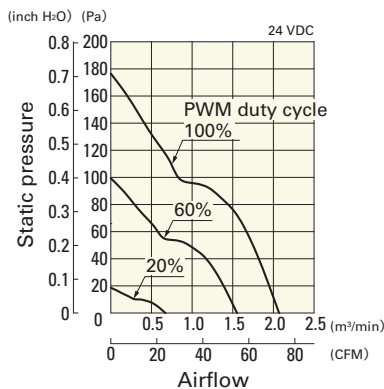


PWM duty - Speed characteristics example

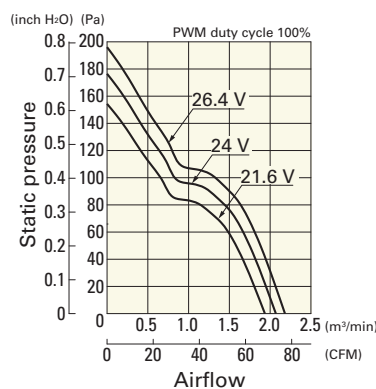


9LG0824P4J001 With pulse sensor with PWM control function

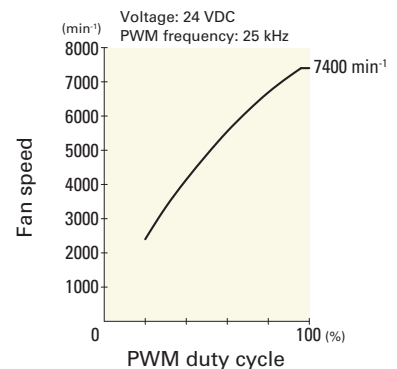
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

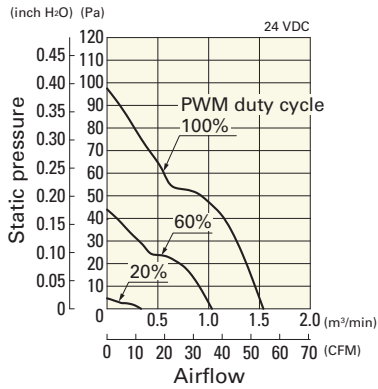


DC Long Life Fan 80 mm sq.

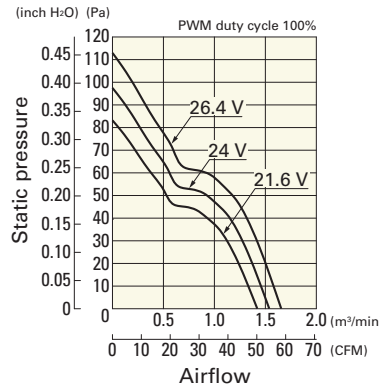
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0824P4G001 With pulse sensor with PWM control function

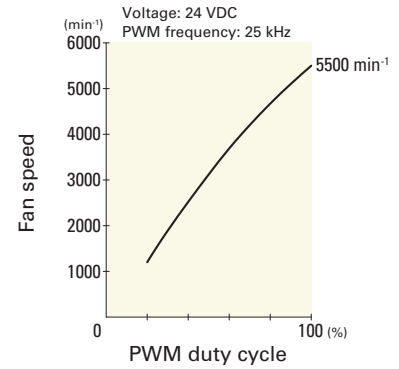
PWM duty cycle



Operating voltage range

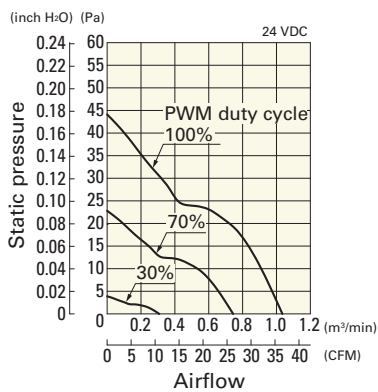


PWM duty - Speed characteristics example

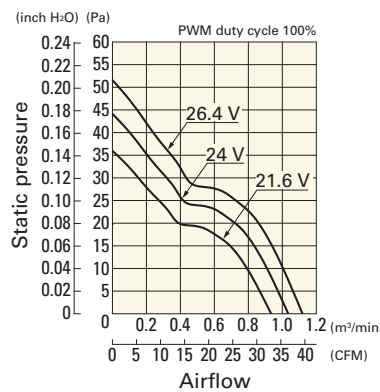


9LG0824P4H001 With pulse sensor with PWM control function

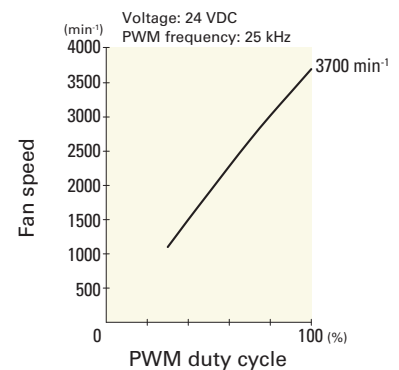
PWM duty cycle



Operating voltage range



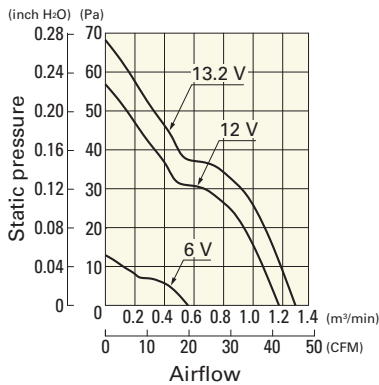
PWM duty - Speed characteristics example



Airflow - Static Pressure Characteristics

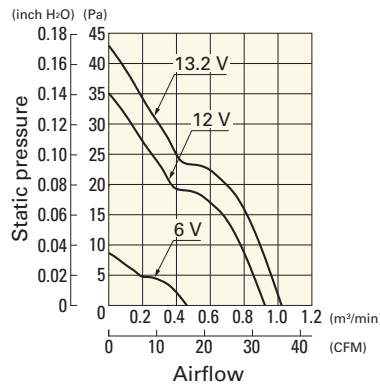
9LG0812S4001 With pulse sensor

Operating voltage range



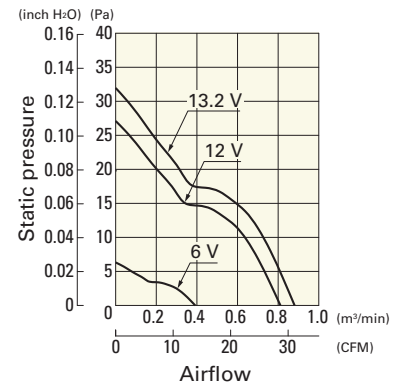
9LG0812F4001 With pulse sensor

Operating voltage range



9LG0812M4001 With pulse sensor

Operating voltage range

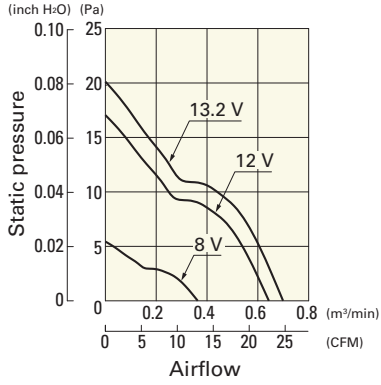


DC
Long Life Fan 80 mm sq.

Airflow - Static Pressure Characteristics

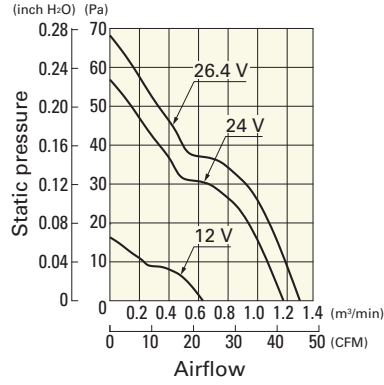
9LG0812L4001 With pulse sensor

Operating voltage range



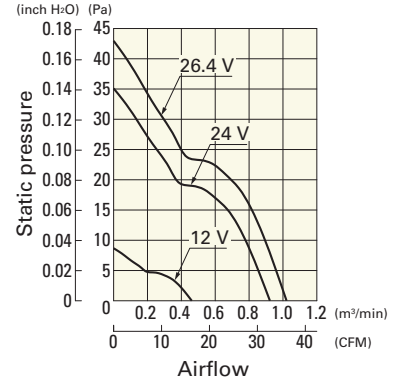
9LG0824S4001 With pulse sensor

Operating voltage range



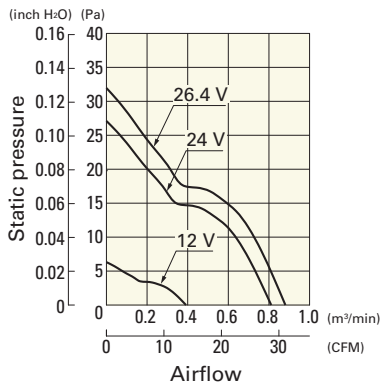
9LG0824F4001 With pulse sensor

Operating voltage range



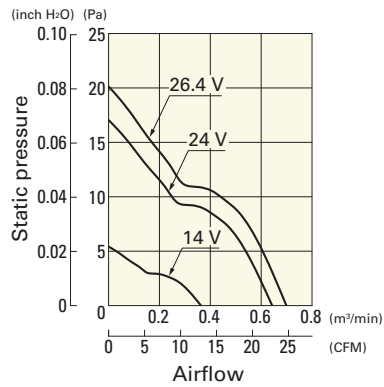
9LG0824M4001 With pulse sensor

Operating voltage range



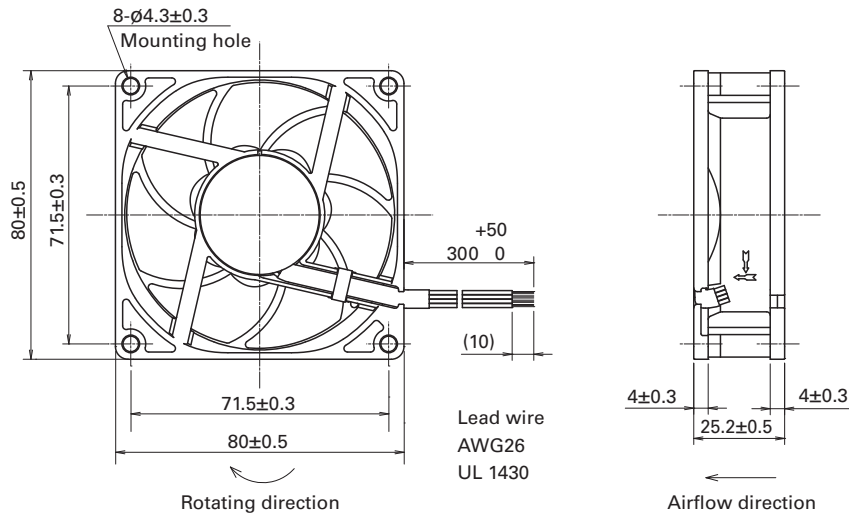
9LG0824L4001 With pulse sensor

Operating voltage range

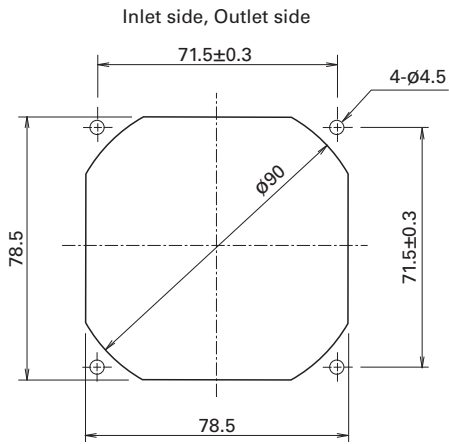


DC Long Life Fan 80 mm sq.

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



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



Options

Finger guards

page: p. 584

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

Resin finger guards

page: p. 591

Model no.: 109-1002G

Resin filter kits

page: p. 592

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



80x80x80 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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire 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							
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 (165000/40°C)
			0	0.2	2.4	2000	1900	0.74	26.1	31.9	0.13	30		

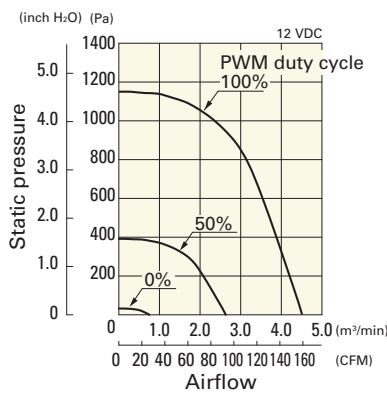
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: The mark indicates Short Lead Time Service applicable models. See p. 654 for details.

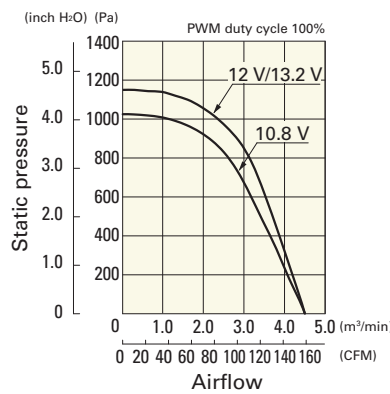
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRL0812P8G001 With pulse sensor with PWM control function

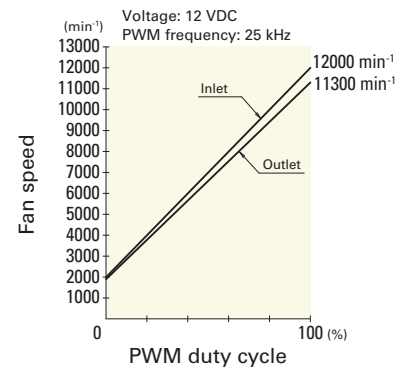
PWM duty cycle



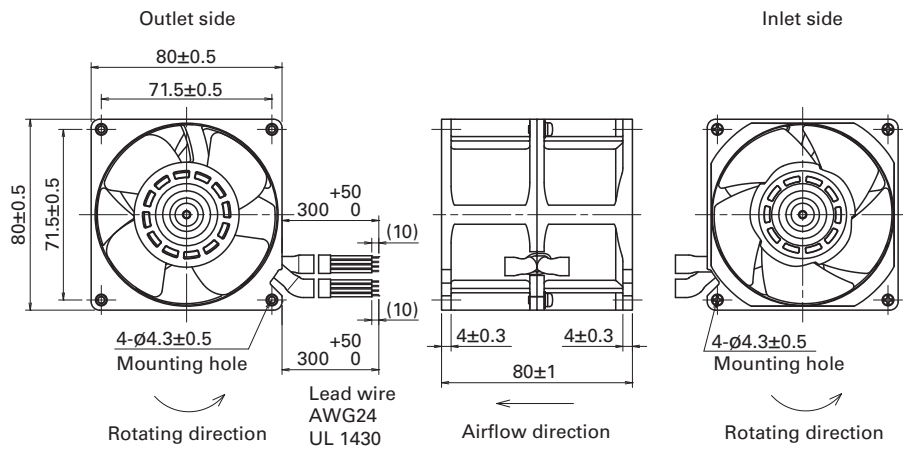
Operating voltage range



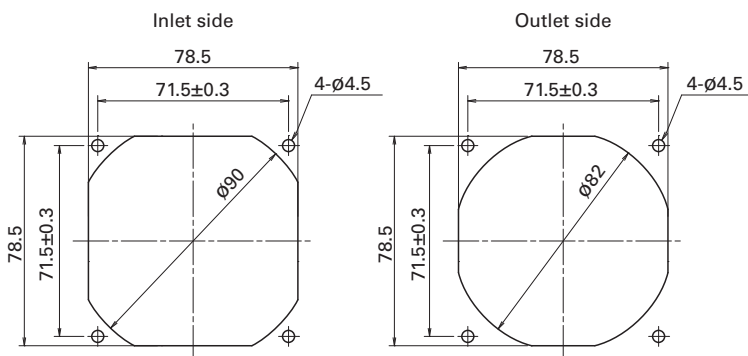
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 584

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

Resin finger guards

page: p. 591

Model no.: 109-1002G

Resin filter kits

page: p. 592

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



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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- 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 (215000/40°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 input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

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]
9LG0912F4001	12	10.2 to 13.8	0.1	1.2	2800	1.22	43.1	32.8	0.13	29	-20 to +70	180000/60°C (215000/40°C)
9LG0912M4001			0.08	0.96	2400	1.05	37.1	24.1	0.097	24		
9LG0912L4001			0.07	0.84	2000	0.87	30.7	16.7	0.067	19		
9LG0924F4001	24	20.4 to 27.6	0.05	1.2	2800	1.22	43.1	32.8	0.13	29		
9LG0924M4001			0.04	0.96	2400	1.05	37.1	24.1	0.097	24		
9LG0924L4001			0.03	0.72	2000	0.87	30.7	16.7	0.067	19		

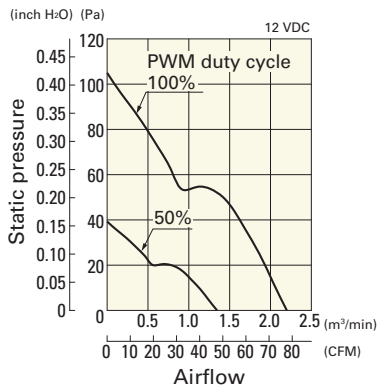
Note 1: Sensor and control options are available for selection. Refer to the table on pp. 634 to 635.

Note 2: The mark indicates Short LeadTime Service applicable models. See p. 654 for details.

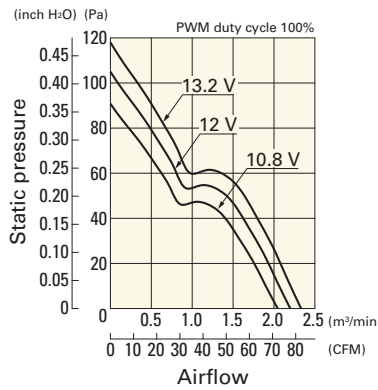
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0912P4J001 With pulse sensor with PWM control function

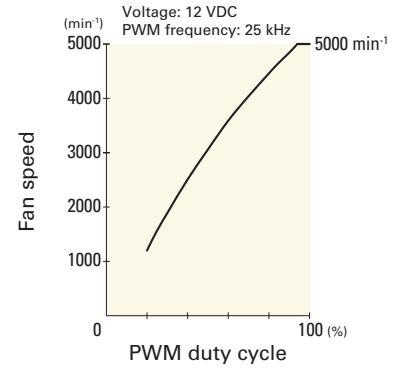
PWM duty cycle



Operating voltage range

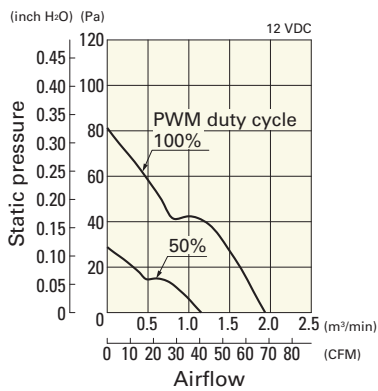


PWM duty - Speed characteristics example

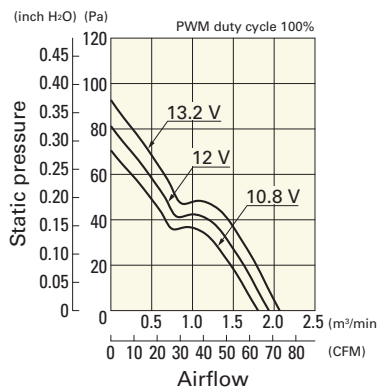


9LG0912P4G001 With pulse sensor with PWM control function

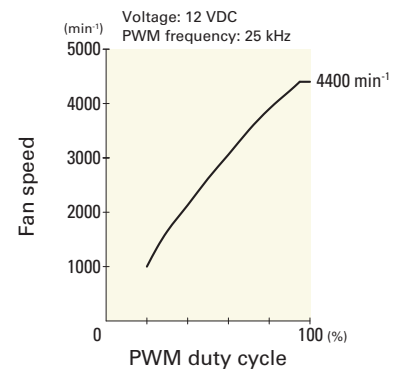
PWM duty cycle



Operating voltage range

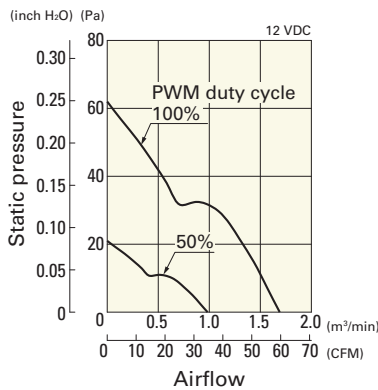


PWM duty - Speed characteristics example

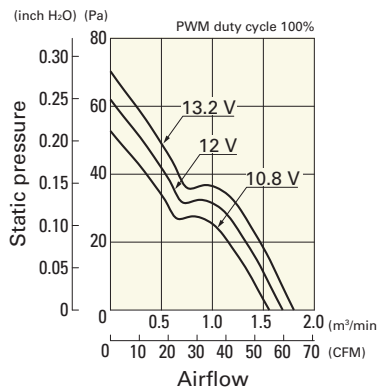


9LG0912P4S001 With pulse sensor with PWM control function

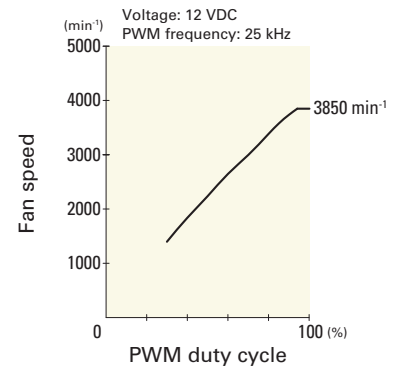
PWM duty cycle



Operating voltage range

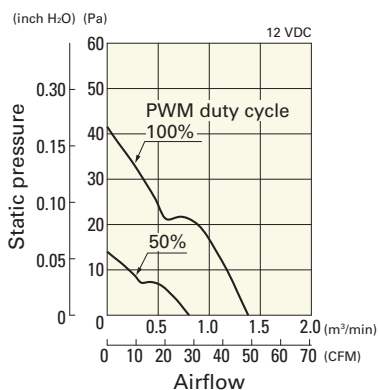


PWM duty - Speed characteristics example

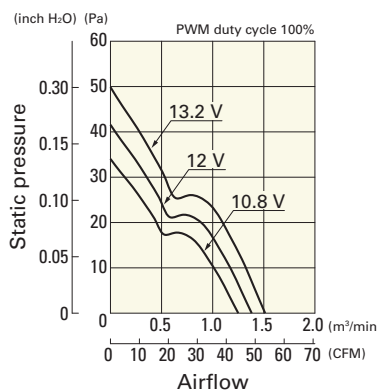


9LG0912P4H001 With pulse sensor with PWM control function

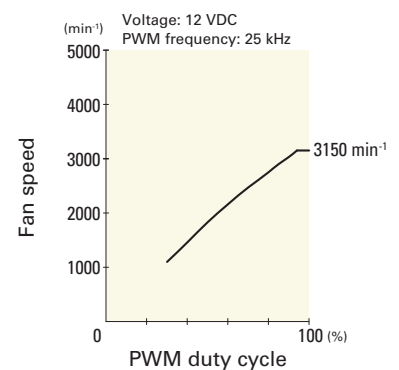
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

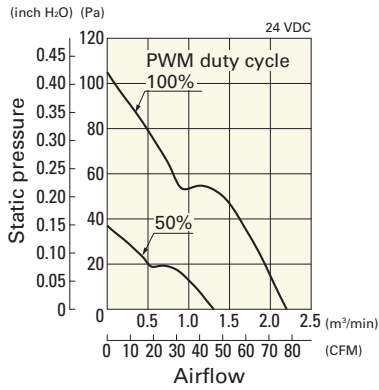


DC
Long Life Fan 92 mm sq.

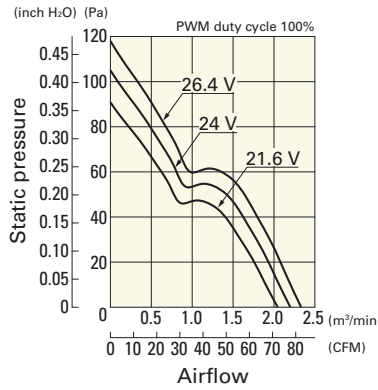
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0924P4J001 With pulse sensor with PWM control function

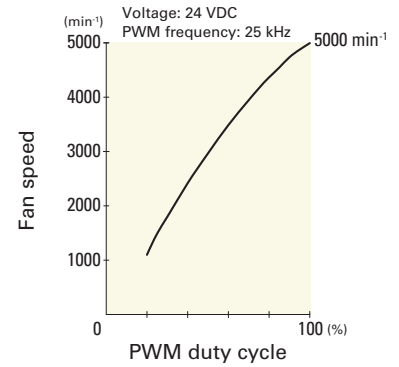
PWM duty cycle



Operating voltage range

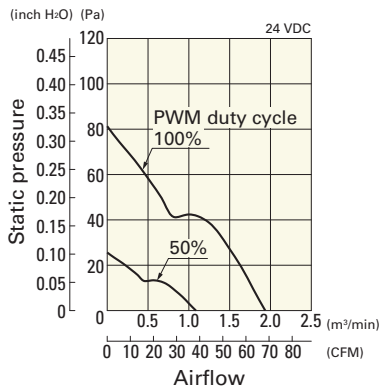


PWM duty - Speed characteristics example

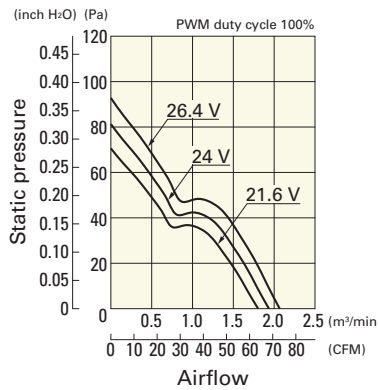


9LG0924P4G001 With pulse sensor with PWM control function

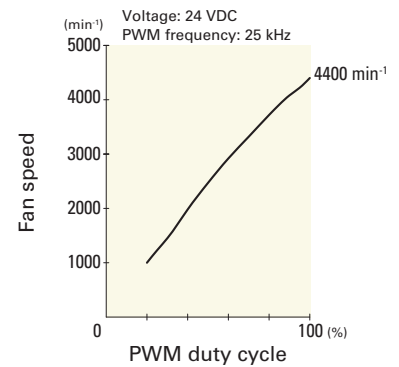
PWM duty cycle



Operating voltage range

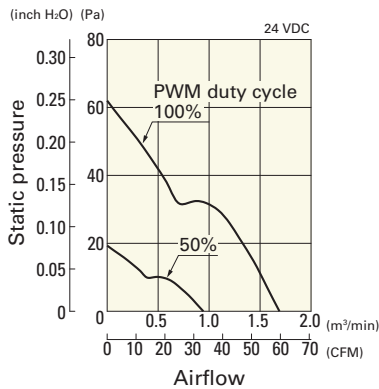


PWM duty - Speed characteristics example

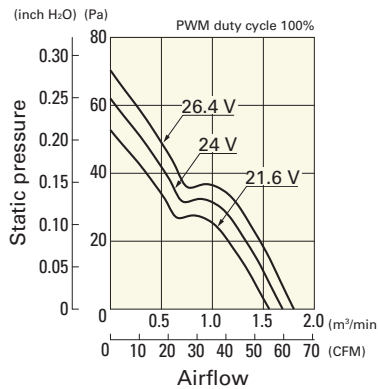


9LG0924P4S001 With pulse sensor with PWM control function

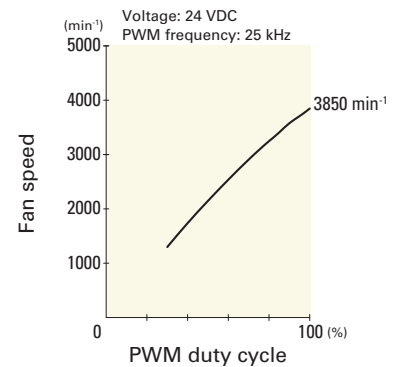
PWM duty cycle



Operating voltage range

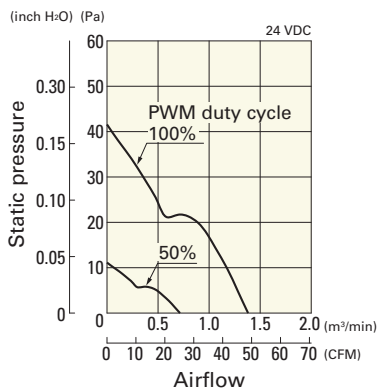


PWM duty - Speed characteristics example

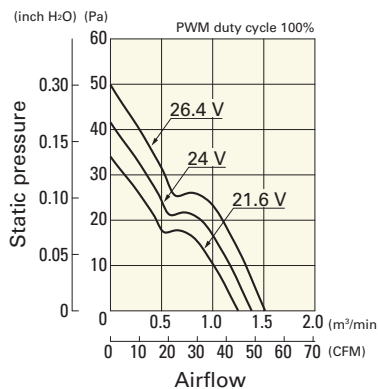


9LG0924P4H001 With pulse sensor with PWM control function

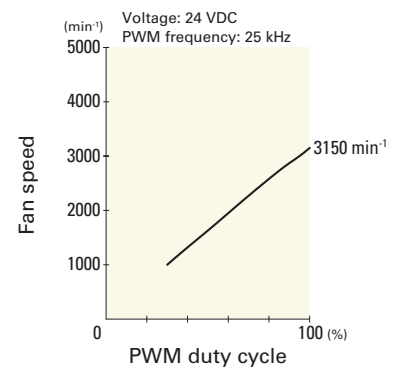
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

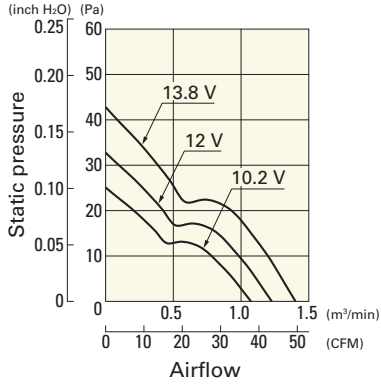


DC Long Life Fan 92 mm sq.

Airflow - Static Pressure Characteristics

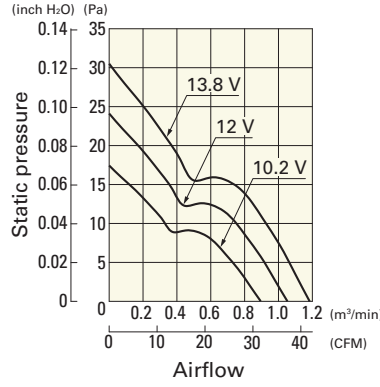
9LG0912F4001 With pulse sensor

Operating voltage range



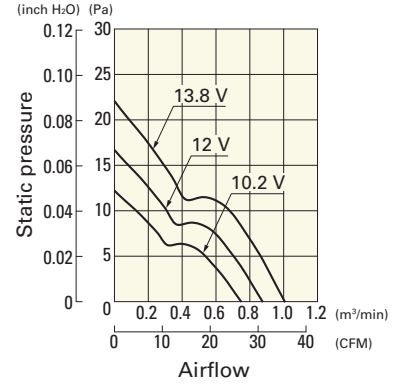
9LG0912M4001 With pulse sensor

Operating voltage range



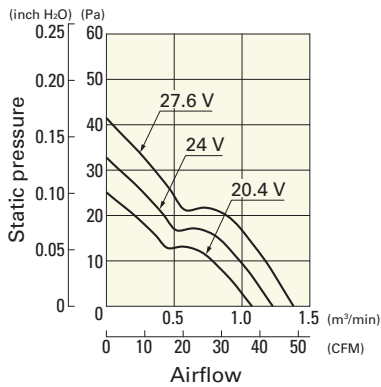
9LG0912L4001 With pulse sensor

Operating voltage range



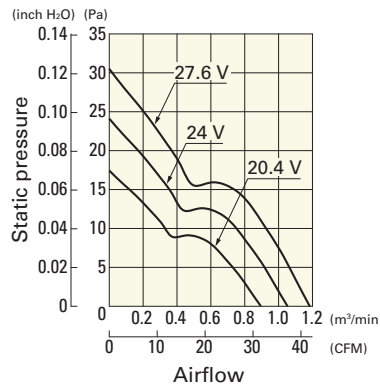
9LG0924F4001 With pulse sensor

Operating voltage range



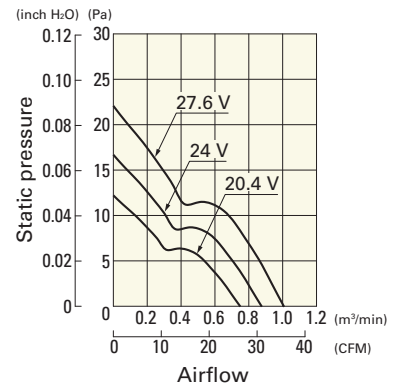
9LG0924M4001 With pulse sensor

Operating voltage range

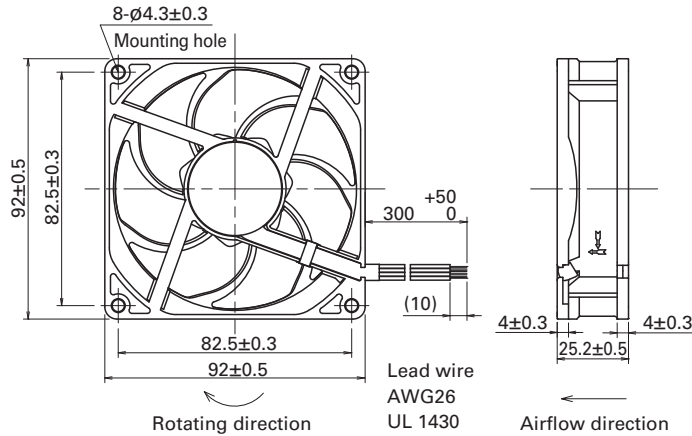


9LG0924L4001 With pulse sensor

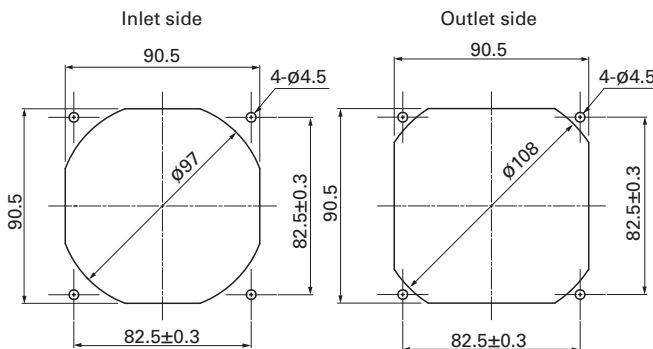
Operating voltage range



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



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



DC
Long Life Fan 92 mm sq.

Options

Finger guards

page: p. 584

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

Resin finger guards

page: p. 591

Model no.: 109-1001G

Resin filter kits

page: p. 592

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

DC

Long Life Fan 92 mm sq.



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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black Sensor Yellow Control Brown
- Mass 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 (215000/40°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 input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

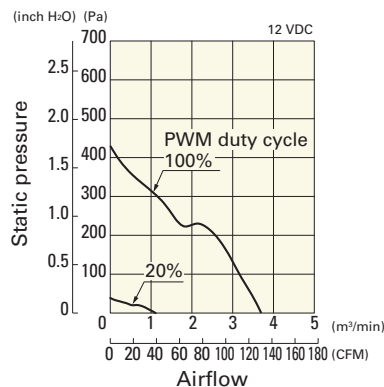
Note 1: Sensor and control options are available for selection. Refer to the table on pp. 634 to 635.

Note 2: The ▶▶ mark indicates Short LeadTime Service applicable models. See p. 654 for details.

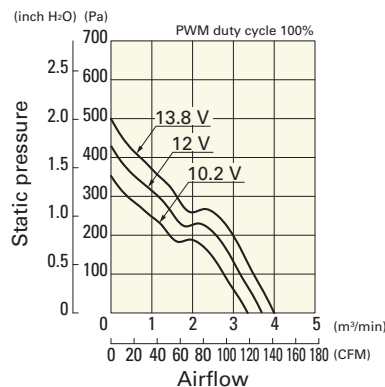
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0912P1H001 With pulse sensor with PWM control function

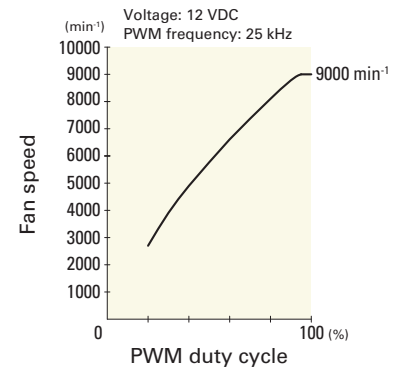
PWM duty cycle



Operating voltage range



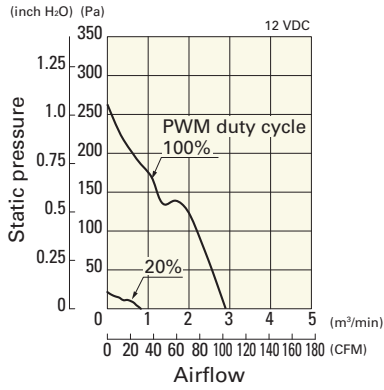
PWM duty - Speed characteristics example



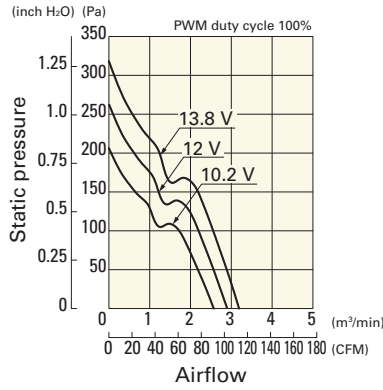
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG0912P1F001 With pulse sensor with PWM control function

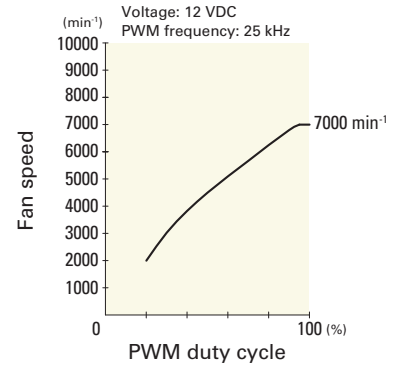
PWM duty cycle



Operating voltage range

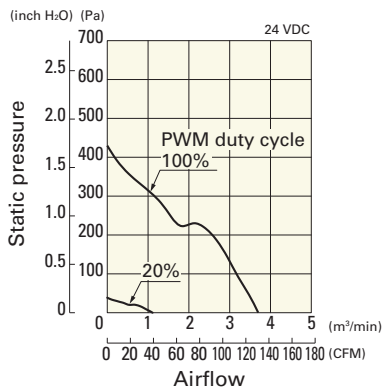


PWM duty - Speed characteristics example

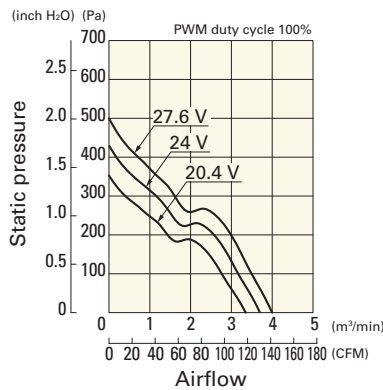


9LG0924P1H001 With pulse sensor with PWM control function

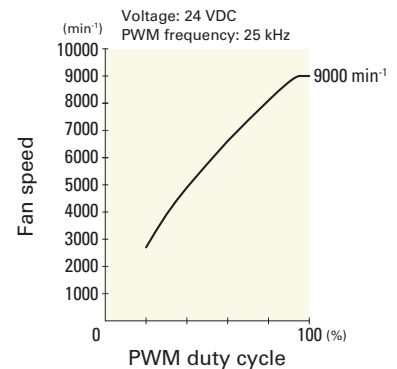
PWM duty cycle



Operating voltage range

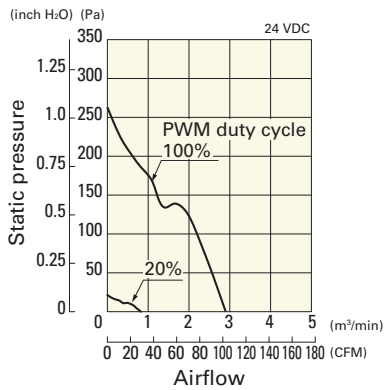


PWM duty - Speed characteristics example

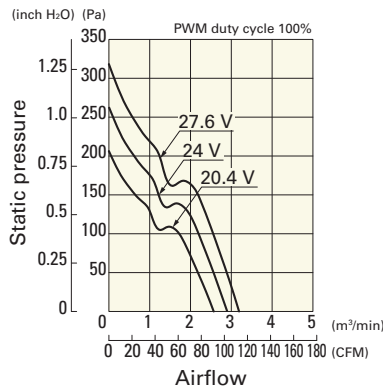


9LG0924P1F001 With pulse sensor with PWM control function

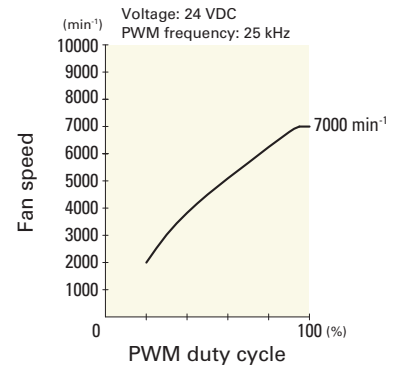
PWM duty cycle



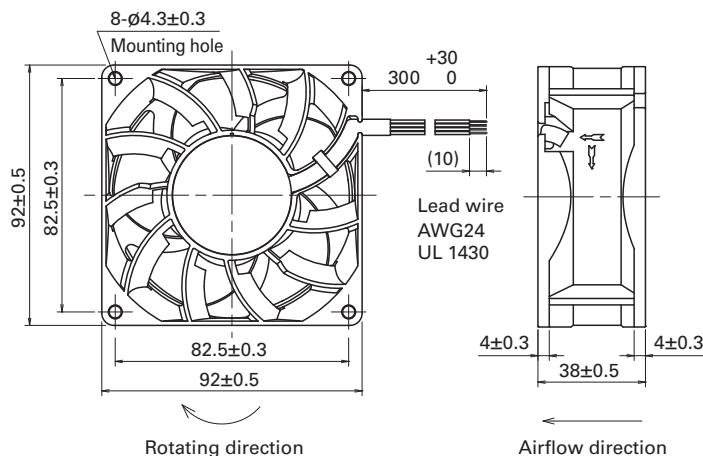
Operating voltage range



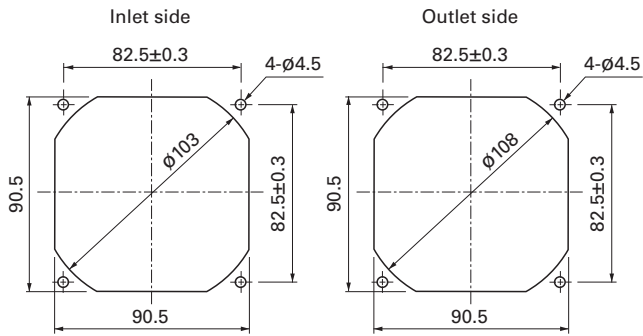
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 584

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

Resin finger guards

page: p. 591

Model no.: 109-1001G

Resin filter kits

page: p. 592

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



120x120x38 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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- 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 (215000/40°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 input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

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]
» 9LG1212F1001	12	8 to 13.8	0.39	4.68	2800	3	106	67.6	0.27	39	-20 to +70	180000/60°C (215000/40°C)
» 9LG1212M1001			0.22	2.64	2100	2.2	77.7	37.9	0.15	33		
» 9LG1224A1001	24	15 to 30	0.37	8.88	3700	3.9	137.8	117.8	0.47	48		
» 9LG1224F1001			0.19	4.56	2800	3	106	67.6	0.27	39		
» 9LG1224M1001			0.11	2.64	2100	2.2	77.7	37.9	0.15	33		
» 9LG1248F1001	48	36 to 60	0.11	5.28	2800	3	106	67.6	0.27	39		
» 9LG1248M1001			0.07	3.36	2100	2.2	77.7	37.9	0.15	33		

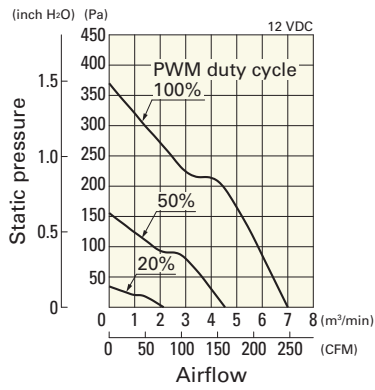
Note 1: Sensor and control options are available for selection. Refer to the table on p. 635.

Note 2: The » mark indicates Short LeadTime Service applicable models. See p. 654 for details.

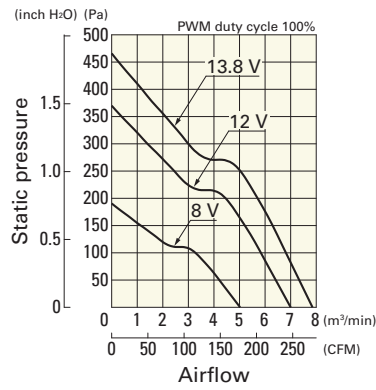
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1212P1G001 With pulse sensor with PWM control function

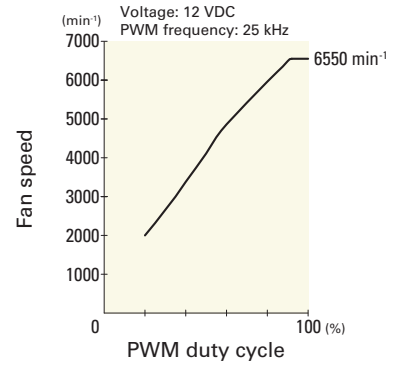
PWM duty cycle



Operating voltage range

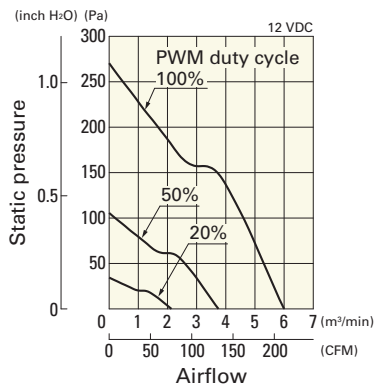


PWM duty - Speed characteristics example

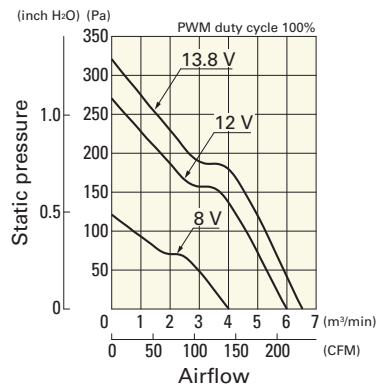


9LG1212P1S001 With pulse sensor with PWM control function

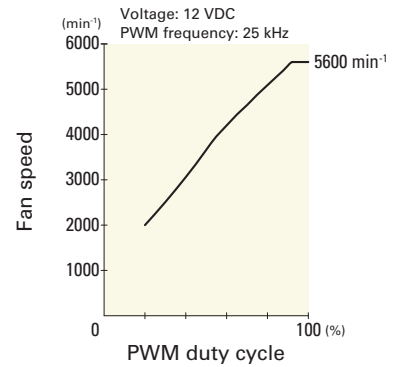
PWM duty cycle



Operating voltage range

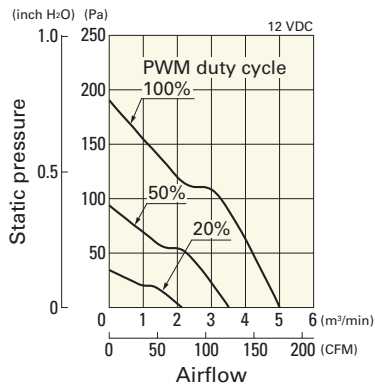


PWM duty - Speed characteristics example

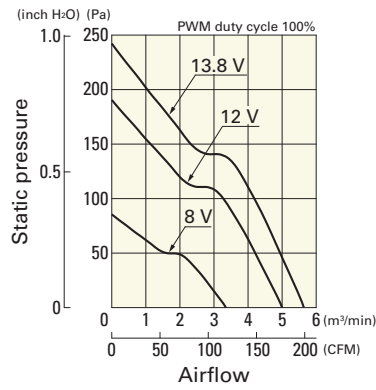


9LG1212P1H001 With pulse sensor with PWM control function

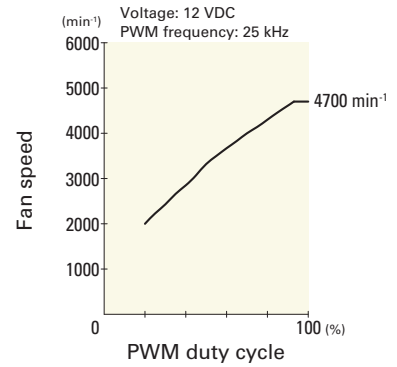
PWM duty cycle



Operating voltage range

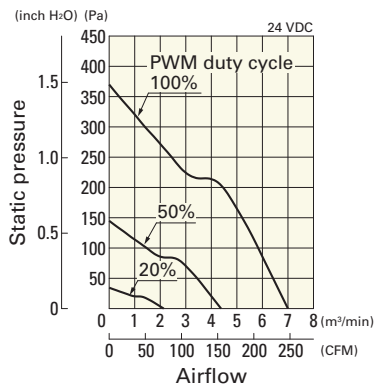


PWM duty - Speed characteristics example

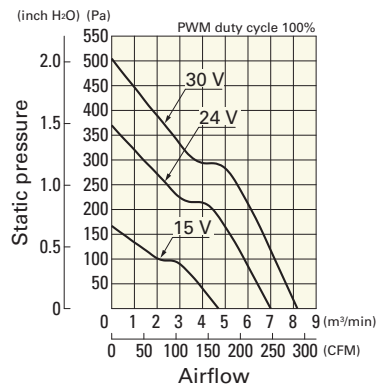


9LG1224P1G001 With pulse sensor with PWM control function

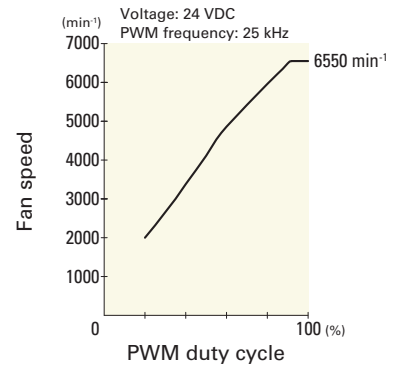
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

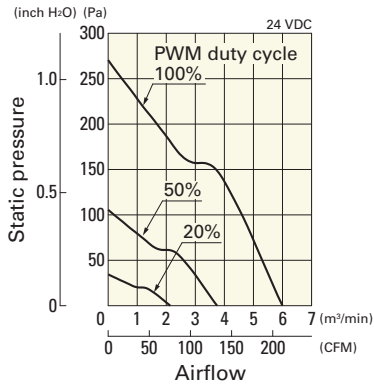


DC
Long Life Fan 120 mm sq.

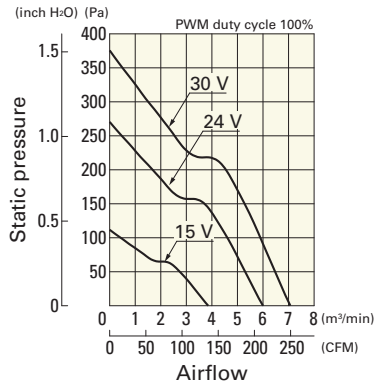
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1224P1S001 With pulse sensor with PWM control function

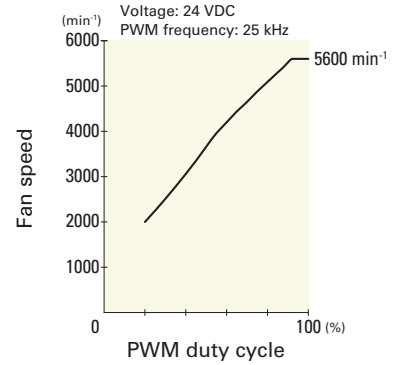
PWM duty cycle



Operating voltage range

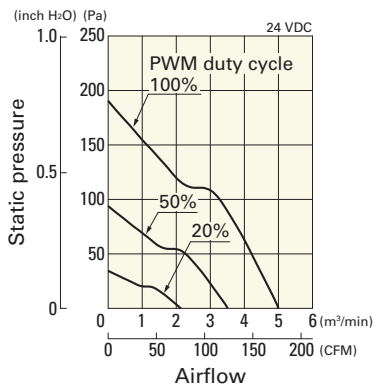


PWM duty - Speed characteristics example

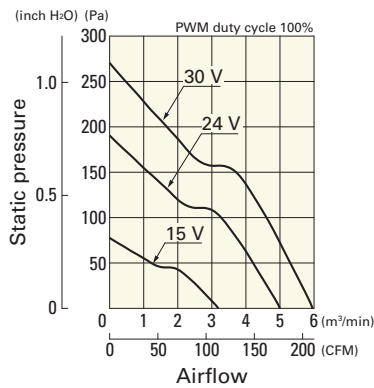


9LG1224P1H001 With pulse sensor with PWM control function

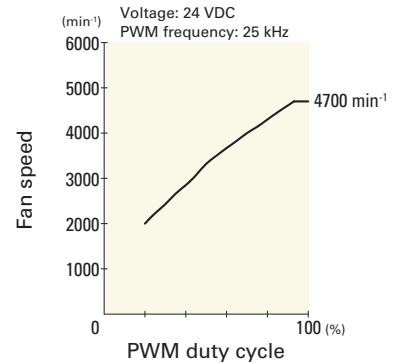
PWM duty cycle



Operating voltage range

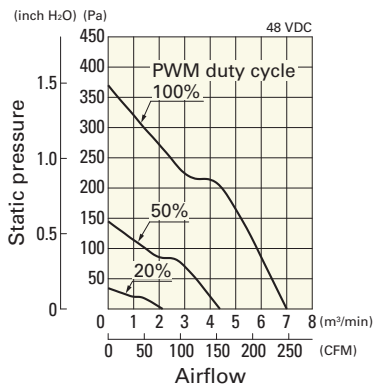


PWM duty - Speed characteristics example

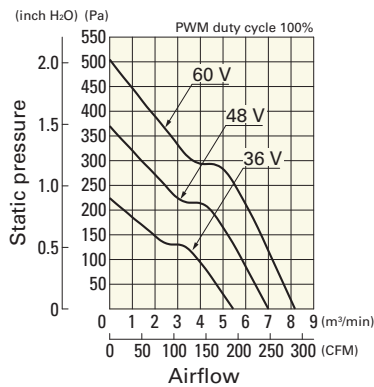


9LG1248P1G001 With pulse sensor with PWM control function

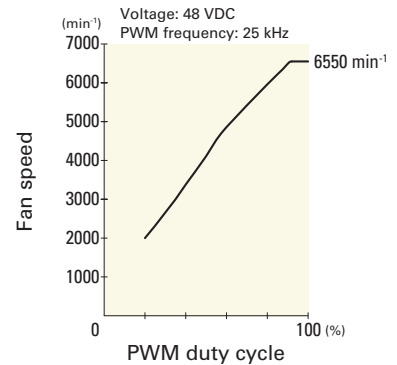
PWM duty cycle



Operating voltage range

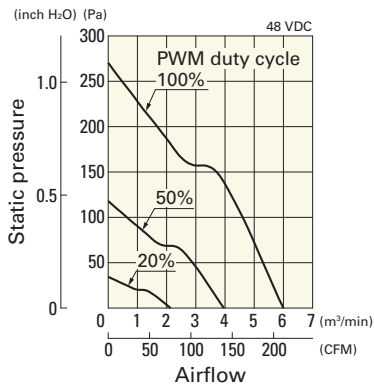


PWM duty - Speed characteristics example

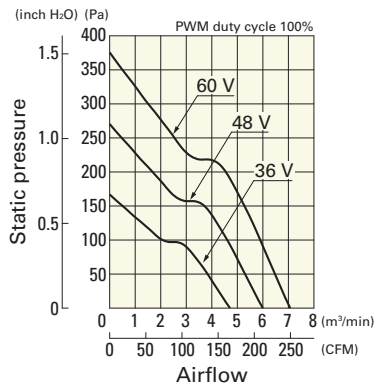


9LG1248P1S001 With pulse sensor with PWM control function

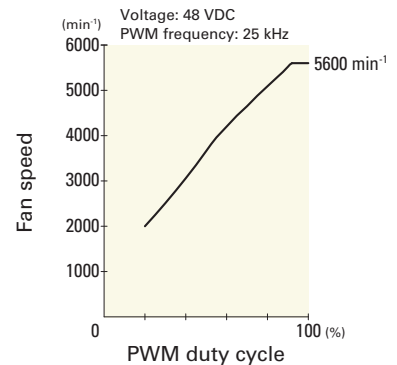
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

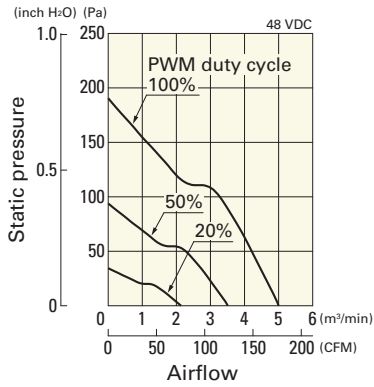


DC Long Life Fan 120 mm sq.

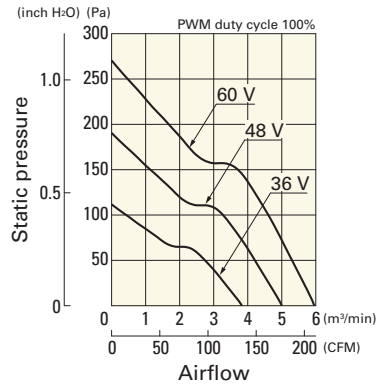
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1248P1H001 With pulse sensor with PWM control function

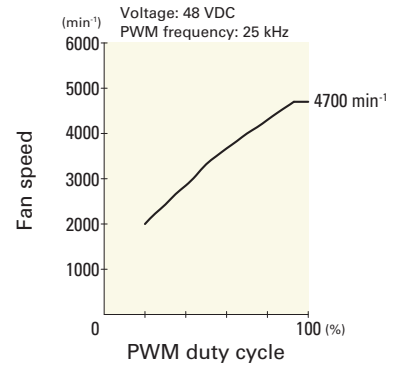
PWM duty cycle



Operating voltage range



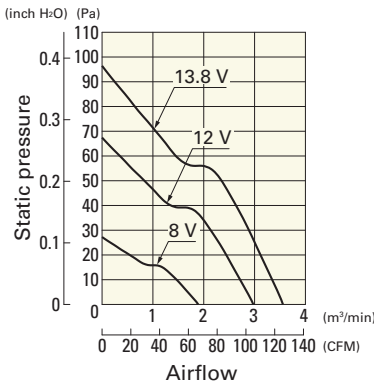
PWM duty - Speed characteristics example



Airflow - Static Pressure Characteristics

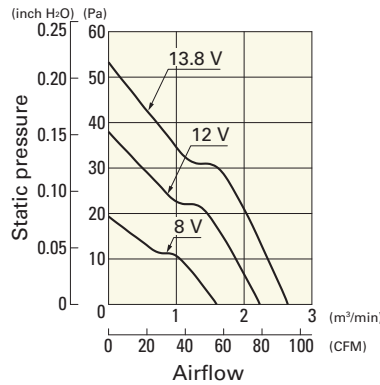
9LG1212F1001 With pulse sensor

Operating voltage range



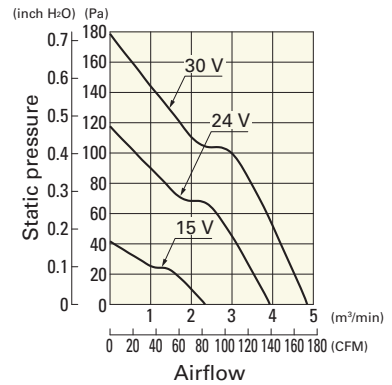
9LG1212M1001 With pulse sensor

Operating voltage range



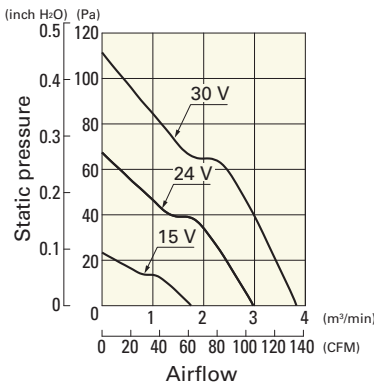
9LG1224A1001 With pulse sensor

Operating voltage range



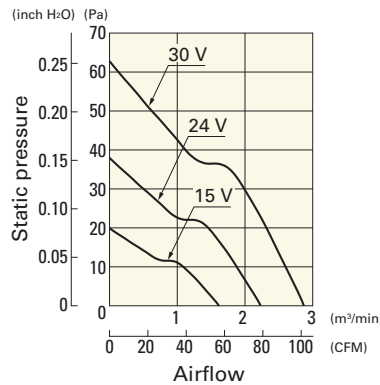
9LG1224F1001 With pulse sensor

Operating voltage range



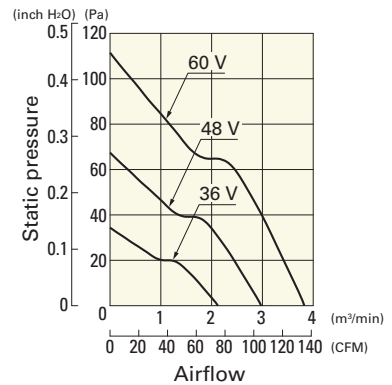
9LG1224M1001 With pulse sensor

Operating voltage range



9LG1248F1001 With pulse sensor

Operating voltage range

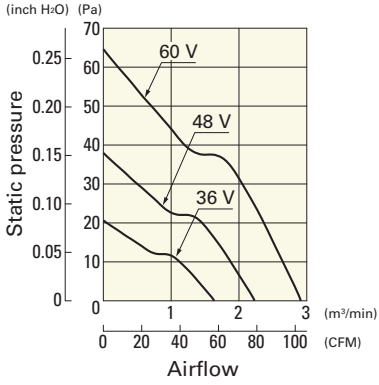


DC
Long Life Fan 120 mm sq.

Airflow - Static Pressure Characteristics

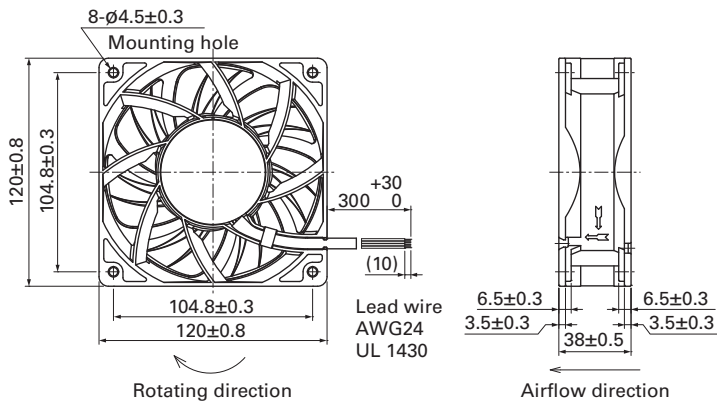
9LG1248M1001 With pulse sensor

Operating voltage range

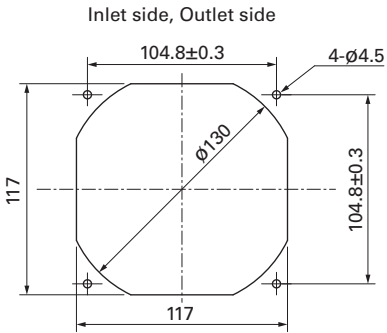


DC
Long Life Fan 120 mm sq.

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



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



Options

Finger guards

page: p. 585

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

Resin finger guards

page: p. 591

Model no.: 109-1000G

Resin filter kits

page: p. 592

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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue Sensor Yellow
- Mass 370 g

Specifications

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

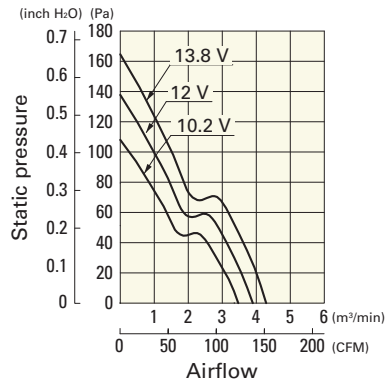
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9GL1212G101	12	10.2 to 13.8	0.98	11.8	3600	3.88 137	135 0.542	49	-20 to +70	80000/60°C (115000/40°C)
9GL1212E101			0.61	7.32	3100	3.34 118	100 0.402	46		100000/60°C (135000/40°C)
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
9GL1224E101	0.34			8.16	3100	3.34 118	100 0.402	46		100000/60°C (135000/40°C)
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
9GL1248E101		0.17		8.16	3100	3.34 118	100 0.402	46		100000/60°C (135000/40°C)
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		

Note 1: Sensor and control options are available for selection. Refer to the table on p. pp. 631 to 632.
 Note 2: The mark indicates Short Lead Time Service applicable models. See p. 654 for details.

Airflow - Static Pressure Characteristics

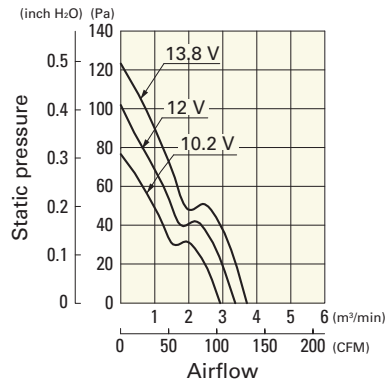
9GL1212G101 With pulse sensor

Operating voltage range



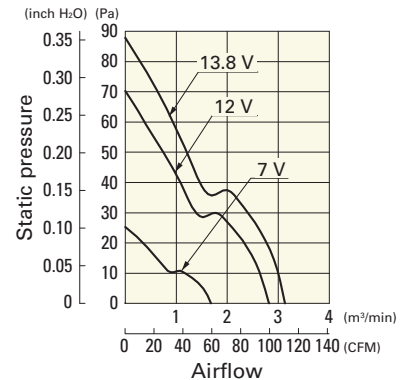
9GL1212E101 With pulse sensor

Operating voltage range



9GL1212H101 With pulse sensor

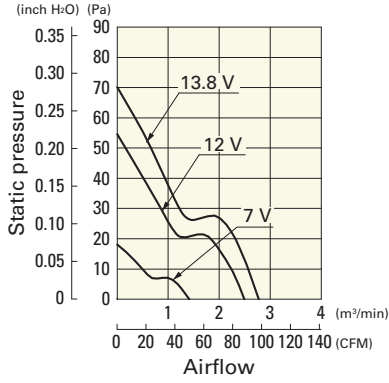
Operating voltage range



Airflow - Static Pressure Characteristics

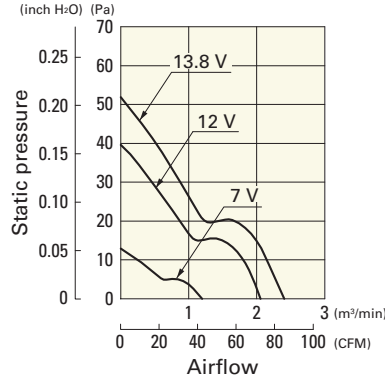
9GL1212F101 With pulse sensor

Operating voltage range



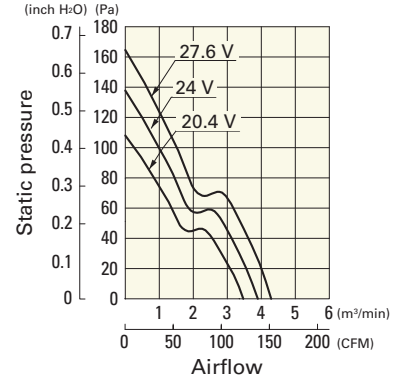
9GL1212M101 With pulse sensor

Operating voltage range



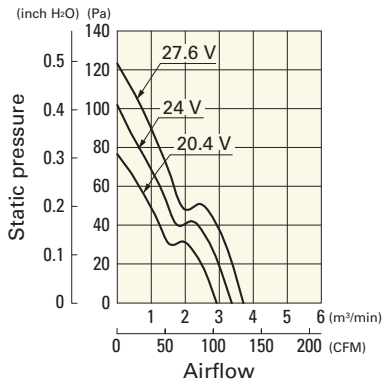
9GL1224G101 With pulse sensor

Operating voltage range



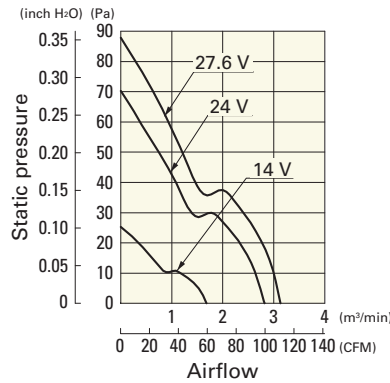
9GL1224E101 With pulse sensor

Operating voltage range



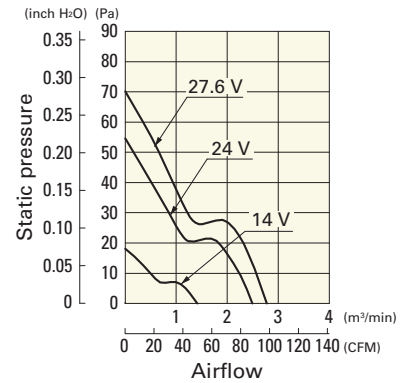
9GL1224H101 With pulse sensor

Operating voltage range



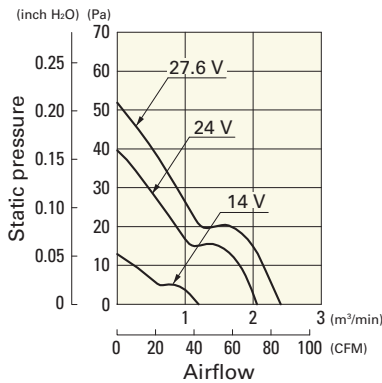
9GL1224F101 With pulse sensor

Operating voltage range



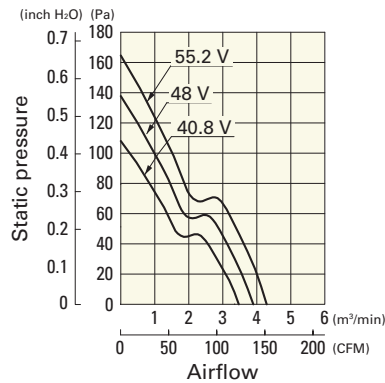
9GL1224M101 With pulse sensor

Operating voltage range



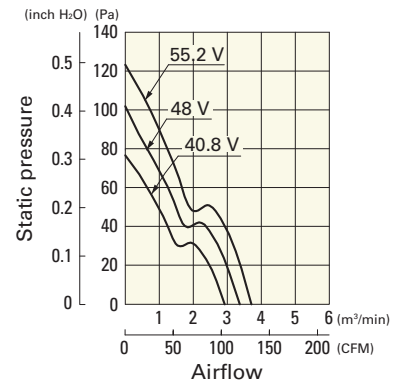
9GL1248G101 With pulse sensor

Operating voltage range



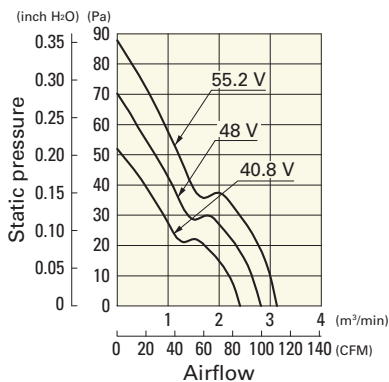
9GL1248E101 With pulse sensor

Operating voltage range



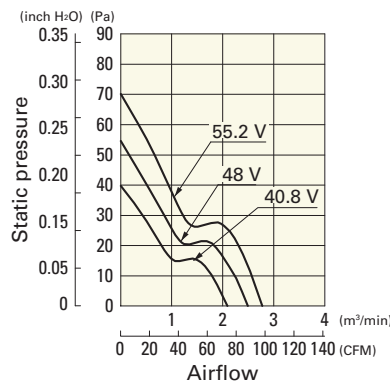
9GL1248H101 With pulse sensor

Operating voltage range



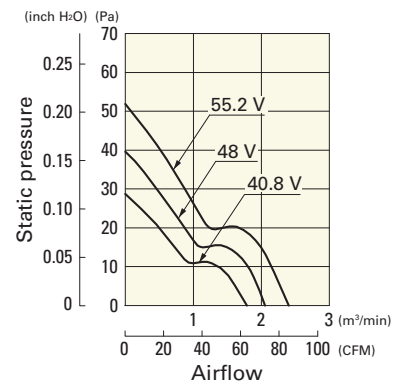
9GL1248F101 With pulse sensor

Operating voltage range



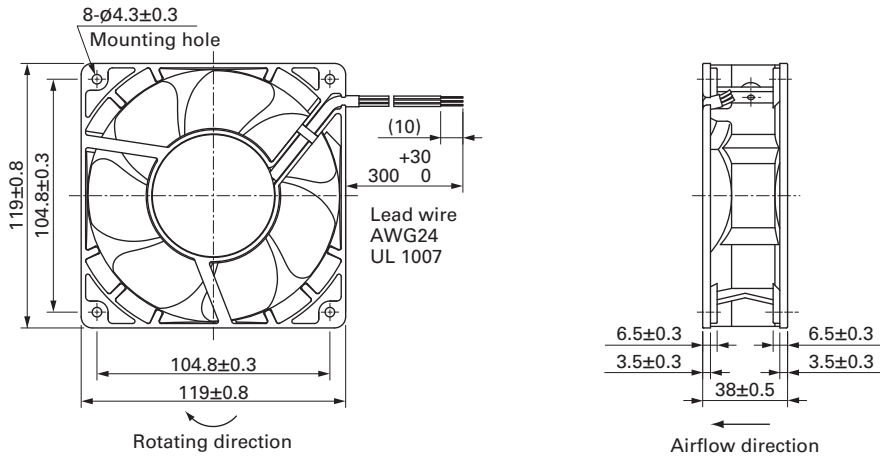
9GL1248M101 With pulse sensor

Operating voltage range

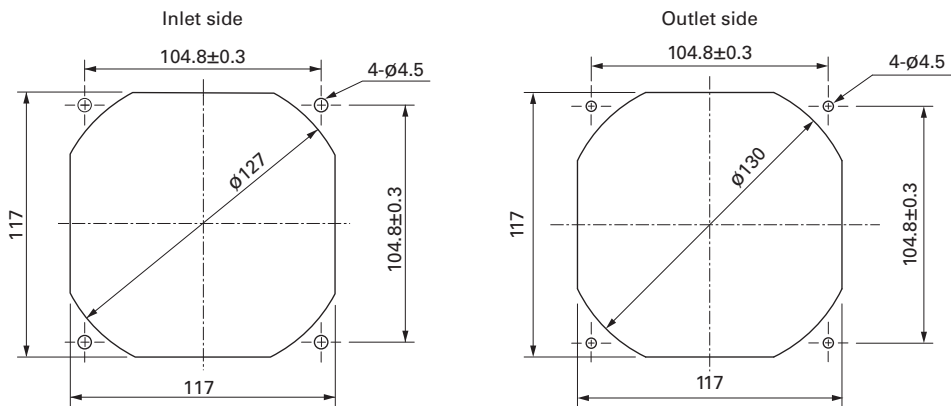


DC Long Life Fan 120 mm sq.

Dimensions (unit: mm)



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



Options

Finger guards

page: p. 585

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

Resin finger guards

page: p. 591

Model no.: 109-1000G

Resin filter kits

page: p. 592

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



140x140x38 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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- 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 (215000/40°C)	
			20	0.27	3.24	2300	2.66	93	80	0.32	39			
9LG1412P1H001			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			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				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				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			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			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 input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

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]
9LG1412L1001	12	10.2 to 13.8	0.27	3.3	2300	2.6	91.9	80	0.32	39	-20 to +70	180000/60°C (215000/40°C)
9LG1424L1001	24	20.4 to 27.6	0.17	4.1	2300	2.6	91.9	80	0.32	39		
9LG1448L1001	48	40.8 to 55.2	0.11	5.3	2300	2.6	91.9	80	0.32	39		

Note 1: Sensor and control options are available for selection. Refer to the table on p. 635.

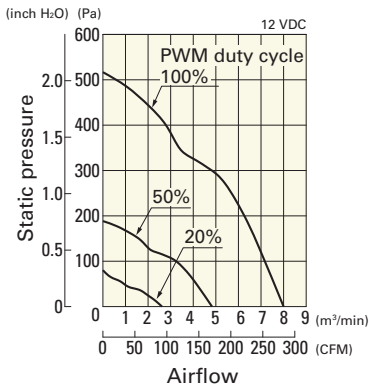
Note 2: The mark indicates Short Lead Time Service applicable models. See p. 654 for details.

DC Long Life Fan 140 mm sq.

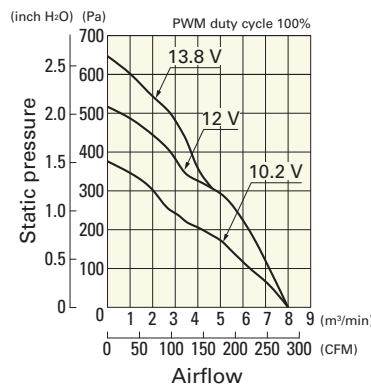
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1412P1A001 With pulse sensor with PWM control function

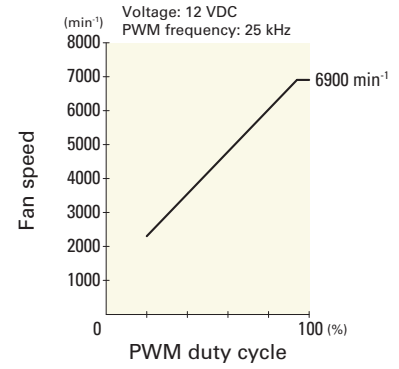
PWM duty cycle



Operating voltage range

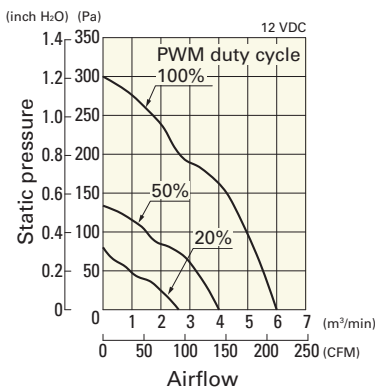


PWM duty - Speed characteristics example

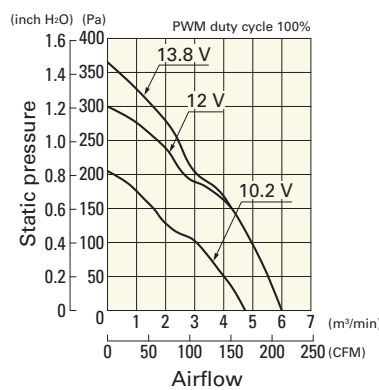


9LG1412P1H001 With pulse sensor with PWM control function

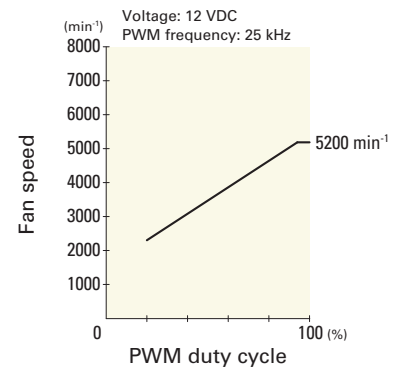
PWM duty cycle



Operating voltage range

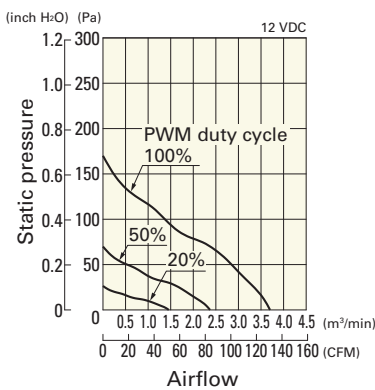


PWM duty - Speed characteristics example

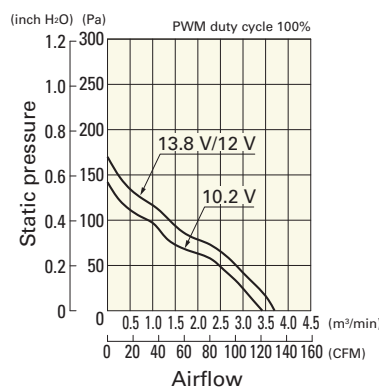


9LG1412P1M001 With pulse sensor with PWM control function

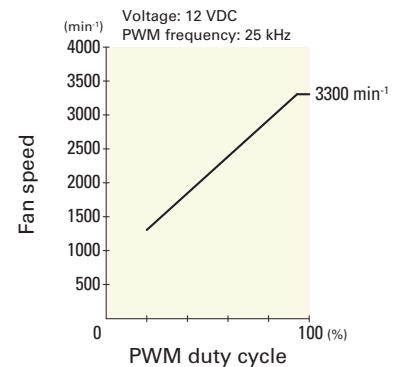
PWM duty cycle



Operating voltage range

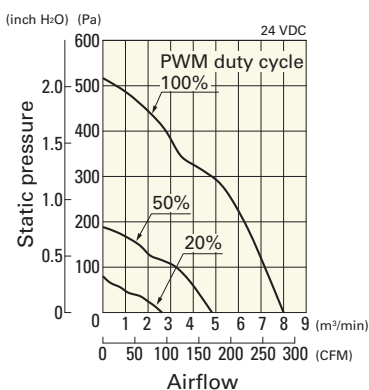


PWM duty - Speed characteristics example

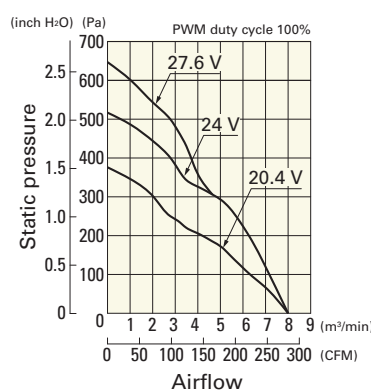


9LG1424P1A001 With pulse sensor with PWM control function

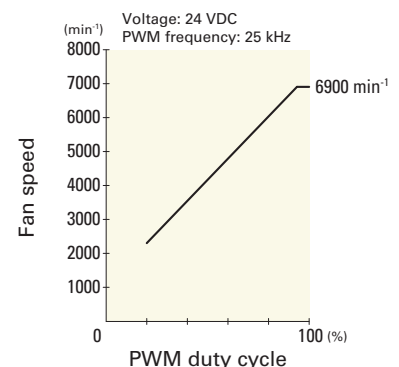
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

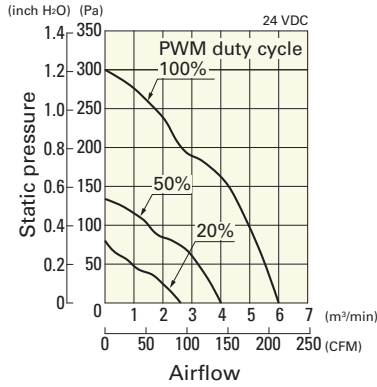


DC
Long Life Fan 140 mm sq.

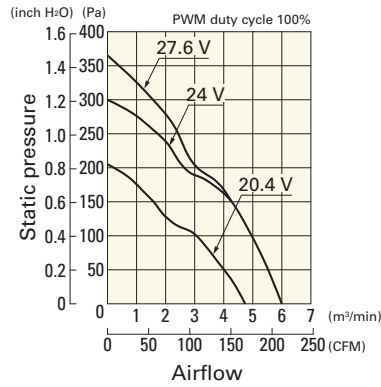
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1424P1H001 With pulse sensor with PWM control function

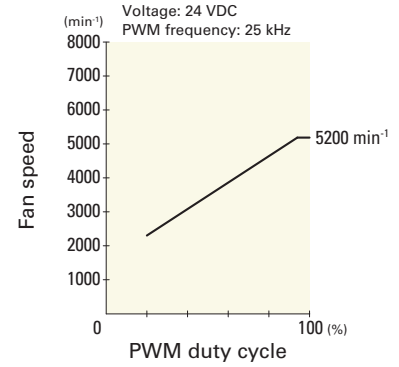
PWM duty cycle



Operating voltage range

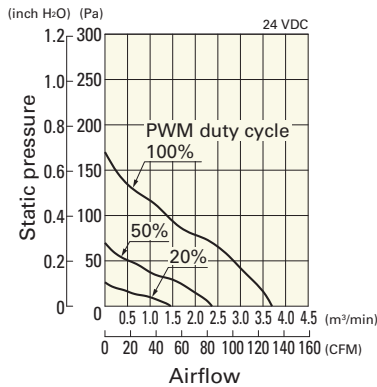


PWM duty - Speed characteristics example

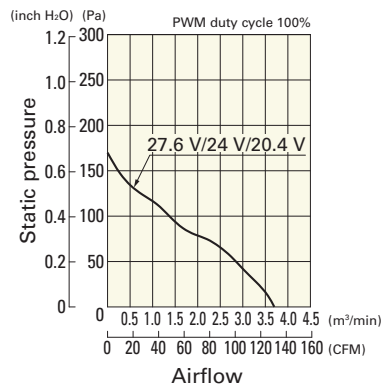


9LG1424P1M001 With pulse sensor with PWM control function

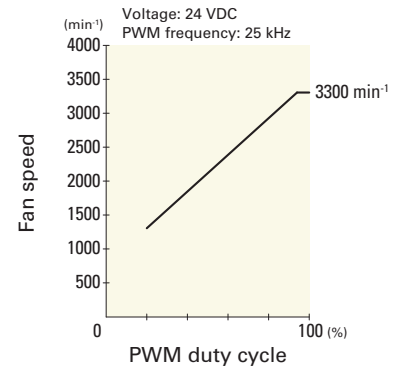
PWM duty cycle



Operating voltage range

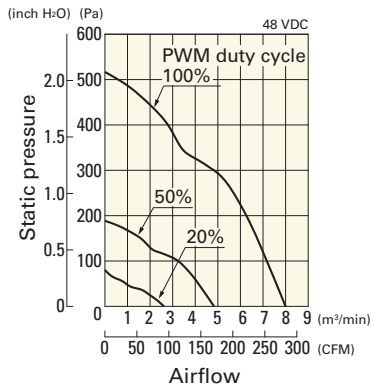


PWM duty - Speed characteristics example

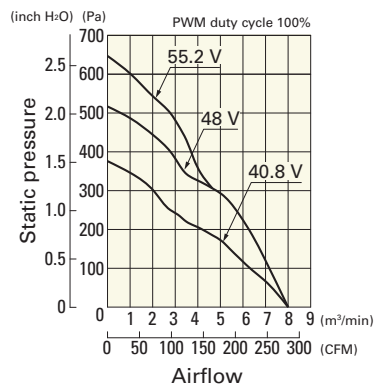


9LG1448P1A001 With pulse sensor with PWM control function

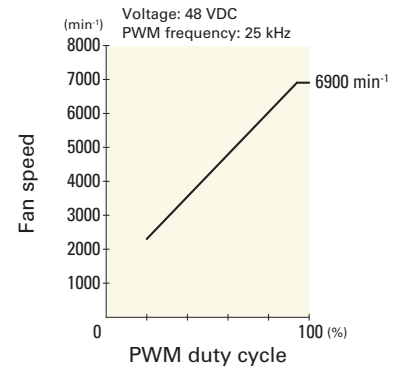
PWM duty cycle



Operating voltage range

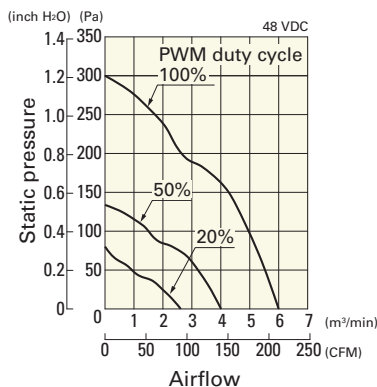


PWM duty - Speed characteristics example

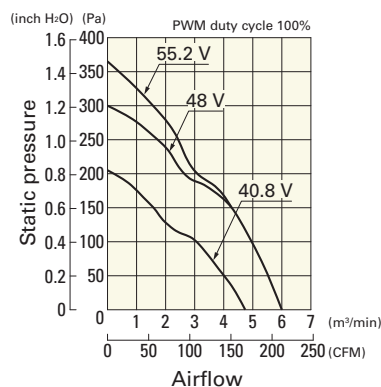


9LG1448P1H001 With pulse sensor with PWM control function

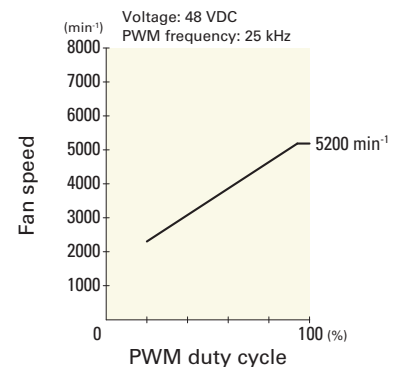
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

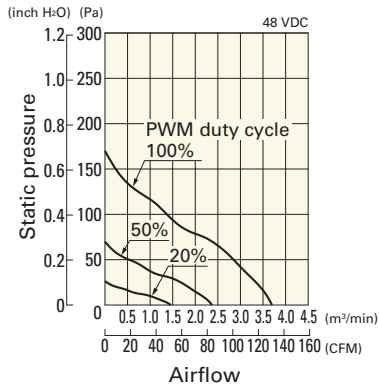


DC Long Life Fan 140 mm sq.

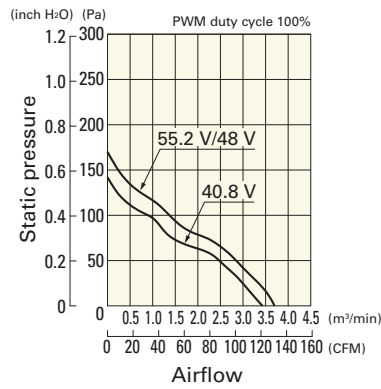
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1448P1M001 With pulse sensor with PWM control function

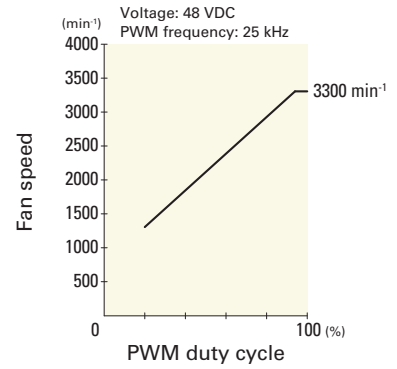
PWM duty cycle



Operating voltage range



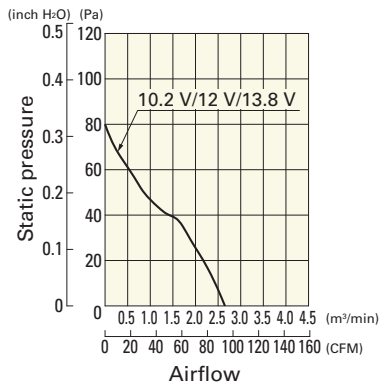
PWM duty - Speed characteristics example



Airflow - Static Pressure Characteristics

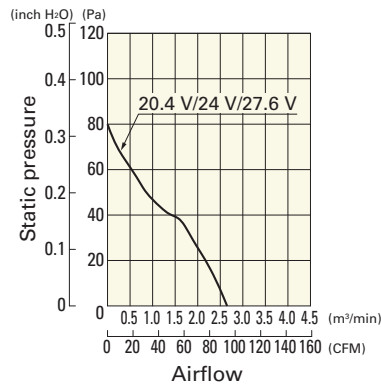
9LG1412L1001 With pulse sensor

Operating voltage range



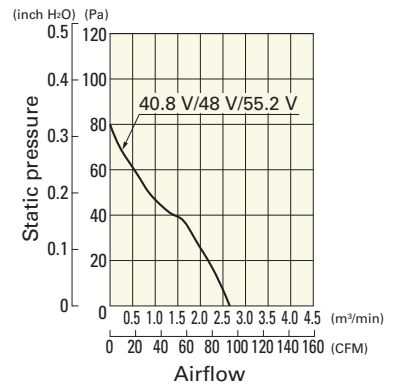
9LG1424L1001 With pulse sensor

Operating voltage range

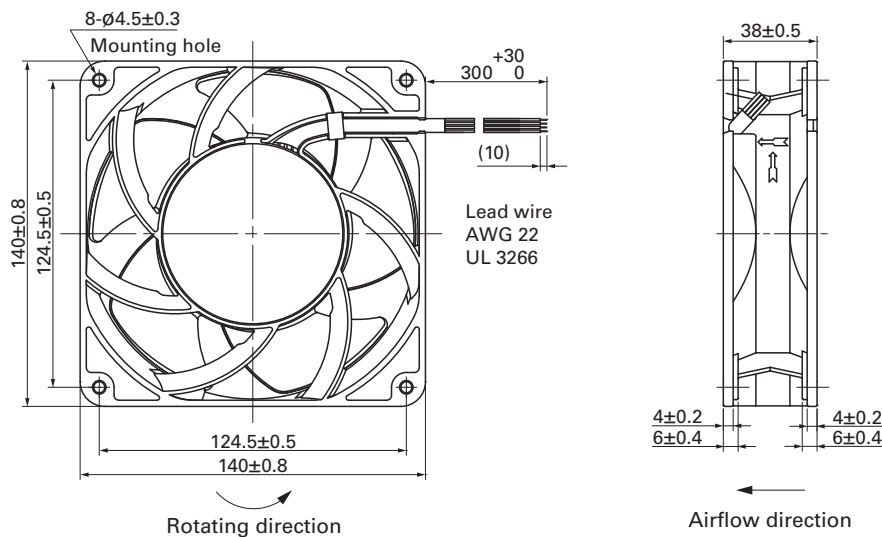


9LG1448L1001 With pulse sensor

Operating voltage range



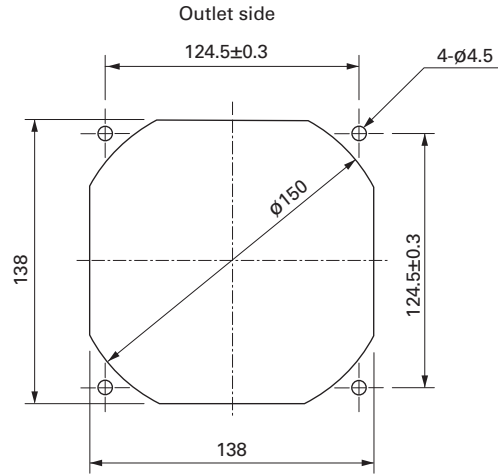
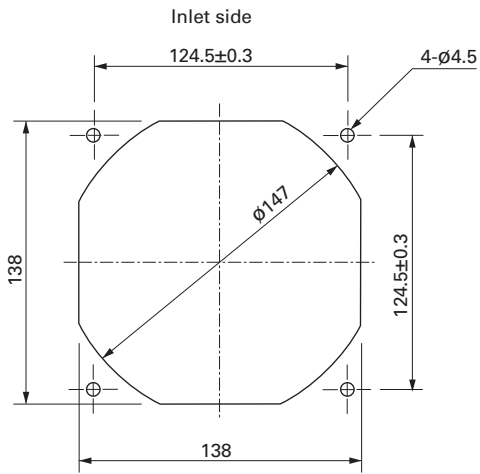
Dimensions (unit: mm) (With pulse sensor with PWM control function)



DC

Long Life Fan 140 mm sq.

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



Options

Finger guards

page: p. 585

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

DC

Long Life Fan 140 mm sq.



140x140x51 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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
(For models without PWM control function, there is no speed control wiring.)
- 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 to +70	180000/60°C (215000/40°C)		
			20	0.31	3.72	2300	2.75 97	80 0.32	38				
9LG1412P5S001			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	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			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 input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

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]
9LG1412A5001	12	10.2 to 13.8	2.61	31.4	5700	6.9 243.8	500 2	61	-20 to +70	180000/60°C (215000/40°C)
9LG1412H5001			1	12	4100	4.9 173.1	260 1.04	52		
9LG1412M5001			0.43	5.16	2600	3.1 109.5	100 0.4	40		
9LG1424A5001	24	20.4 to 27.6	1.21	29.1	5700	6.9 243.8	540 2.17	61		
9LG1424H5001			0.55	13.2	4100	4.9 173.1	260 1.04	52		
9LG1424M5001			0.23	5.52	2600	3.1 109.5	100 0.4	40		
9LG1448A5001	48	40.8 to 55.2	0.66	31.7	5700	6.9 243.8	540 2.17	61		
9LG1448H5001			0.31	14.9	4100	4.9 173.1	260 1.04	52		
9LG1448M5001			0.15	7.2	2600	3.1 109.5	100 0.4	40		

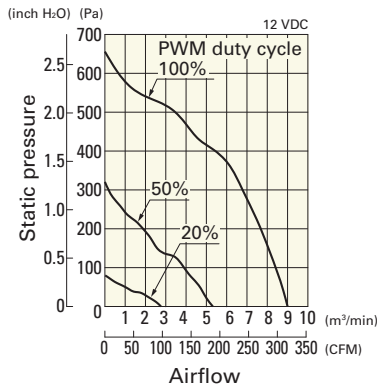
Note 1: Sensor and control options are available for selection. Refer to the table on p. 635.

Note 2: The mark indicates Short Lead Time Service applicable models. See p. 654 for details.

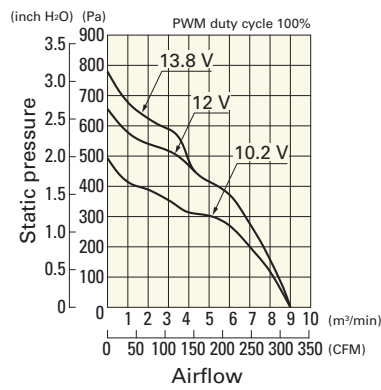
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1412P5G001 With pulse sensor with PWM control function

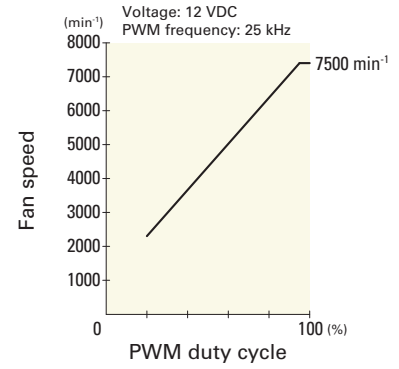
PWM duty cycle



Operating voltage range

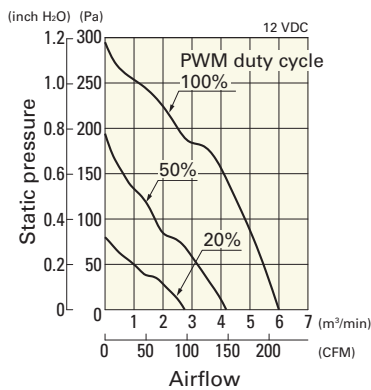


PWM duty - Speed characteristics example

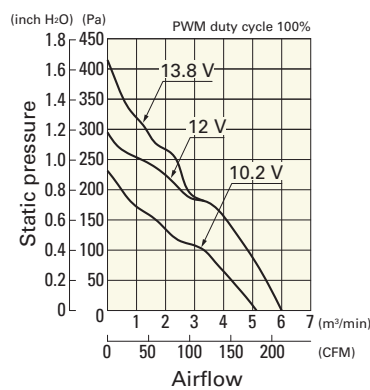


9LG1412P5S001 With pulse sensor with PWM control function

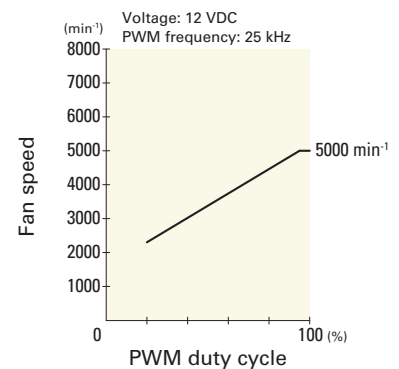
PWM duty cycle



Operating voltage range

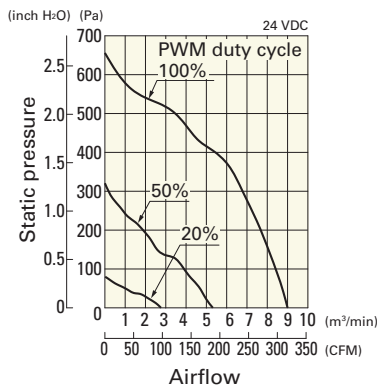


PWM duty - Speed characteristics example

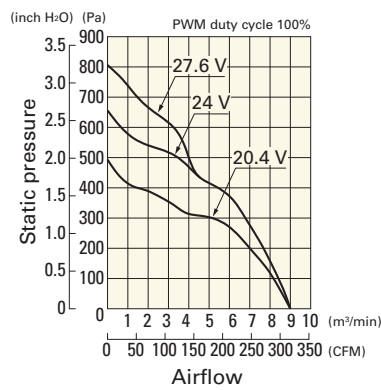


9LG1424P5G001 With pulse sensor with PWM control function

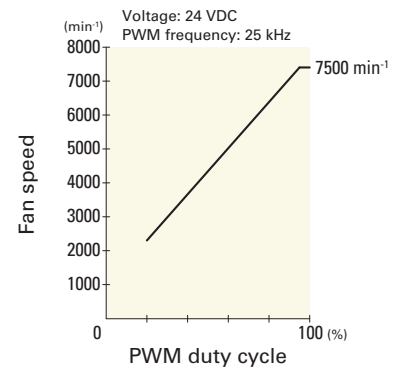
PWM duty cycle



Operating voltage range

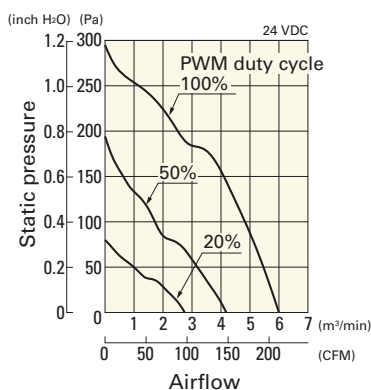


PWM duty - Speed characteristics example

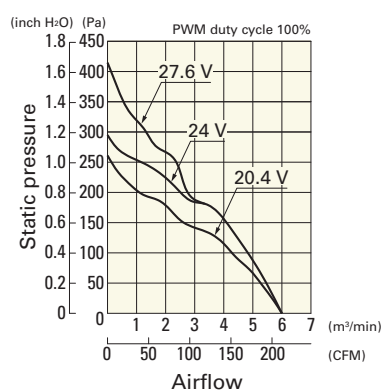


9LG1424P5S001 With pulse sensor with PWM control function

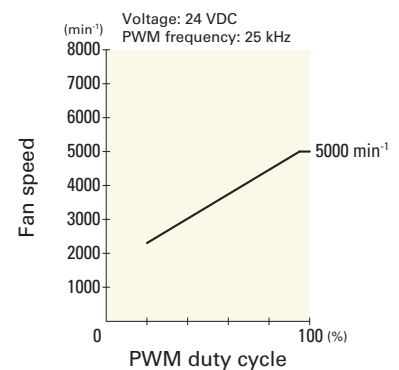
PWM duty cycle



Operating voltage range



PWM duty - Speed characteristics example

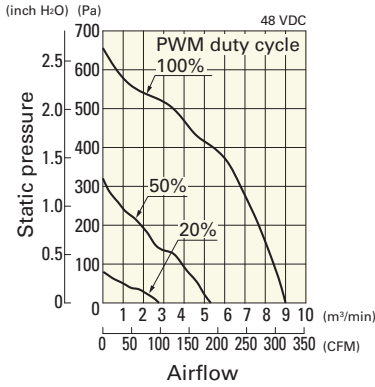


DC Long Life Fan 140 mm sq.

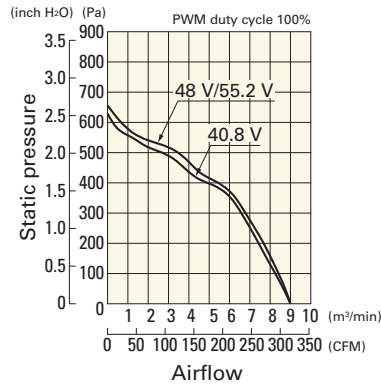
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9LG1448P5G001 With pulse sensor with PWM control function

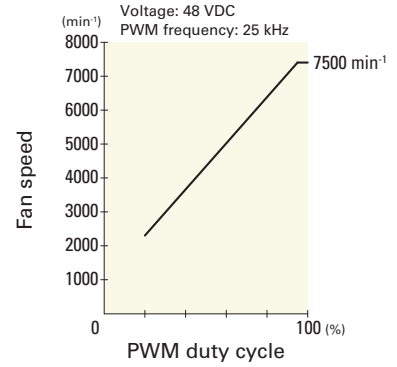
PWM duty cycle



Operating voltage range

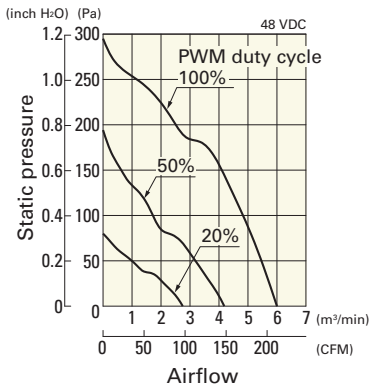


PWM duty - Speed characteristics example

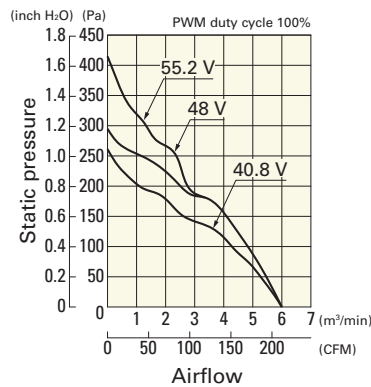


9LG1448P5S001 With pulse sensor with PWM control function

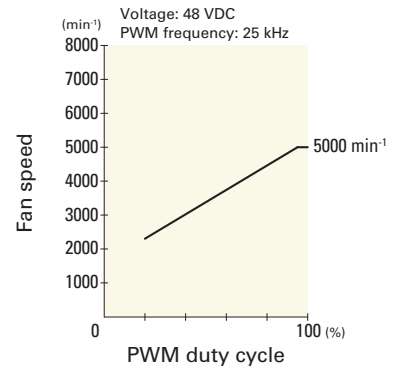
PWM duty cycle



Operating voltage range



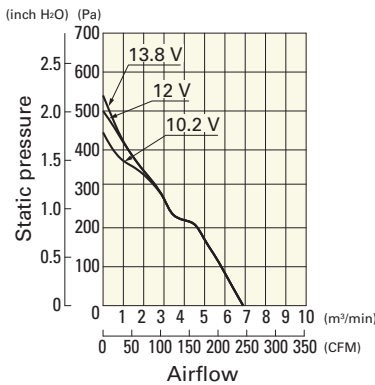
PWM duty - Speed characteristics example



Airflow - Static Pressure Characteristics

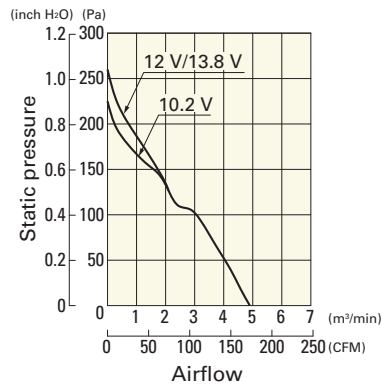
9LG1412A5001 With pulse sensor

Operating voltage range



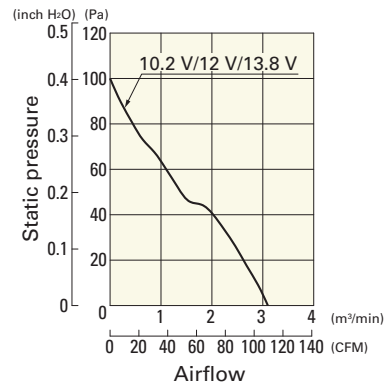
9LG1412H5001 With pulse sensor

Operating voltage range



9LG1412M5001 With pulse sensor

Operating voltage range

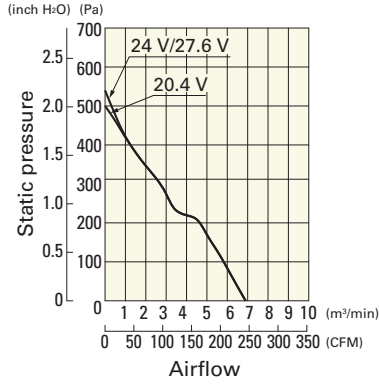


DC
Long Life Fan 140 mm sq.

Airflow - Static Pressure Characteristics

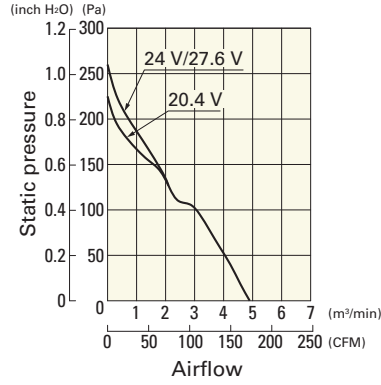
9LG1424A5001 With pulse sensor

Operating voltage range



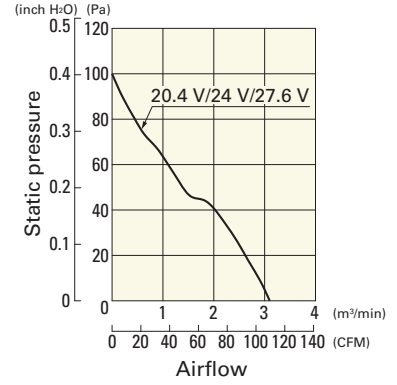
9LG1424H5001 With pulse sensor

Operating voltage range



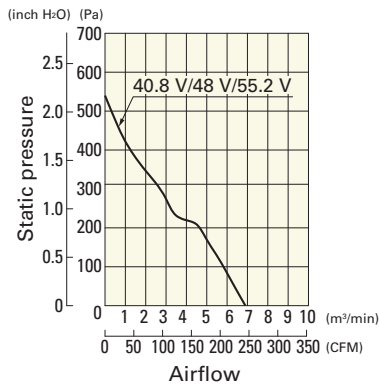
9LG1424M5001 With pulse sensor

Operating voltage range



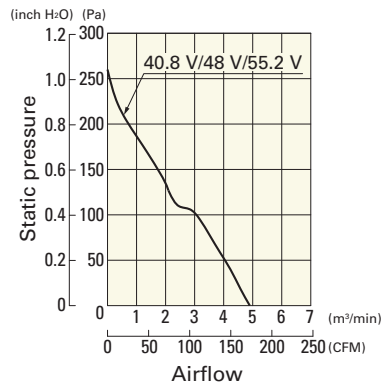
9LG1448A5001 With pulse sensor

Operating voltage range



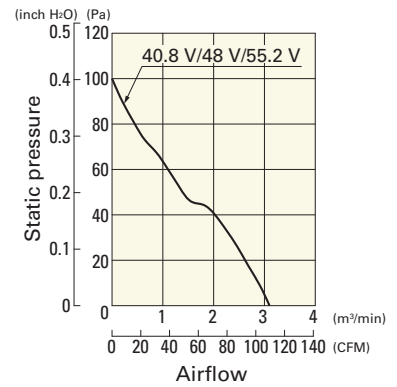
9LG1448H5001 With pulse sensor

Operating voltage range



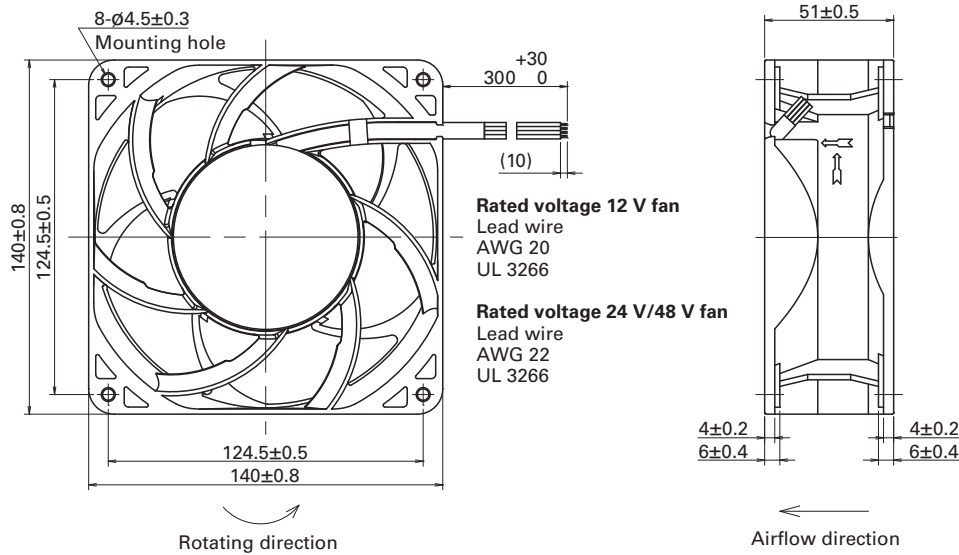
9LG1448M5001 With pulse sensor

Operating voltage range

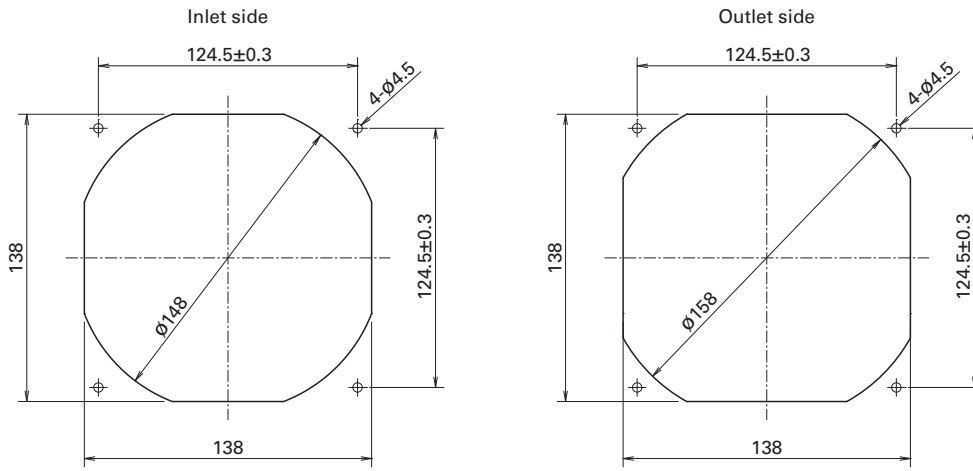


DC Long Life Fan 140 mm sq.

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



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



Options

Finger guards

page: p. 585

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



∅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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue Sensor Yellow
- Mass 760 g

Specifications

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

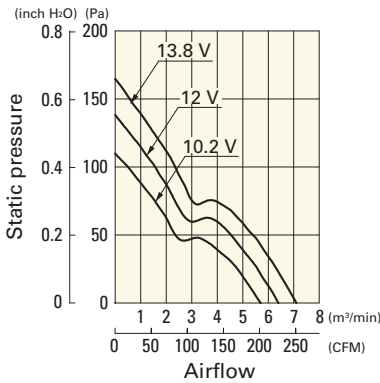
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109L5712H501	12	10.2 to 13.8	1.2	14.4	3050	6.4 226	137.2 0.551	52	-20 to +70	100000/60°C (135000/40°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		

Note: Sensor and control options are available for selection. Refer to the table on p. 621.

Airflow - Static Pressure Characteristics

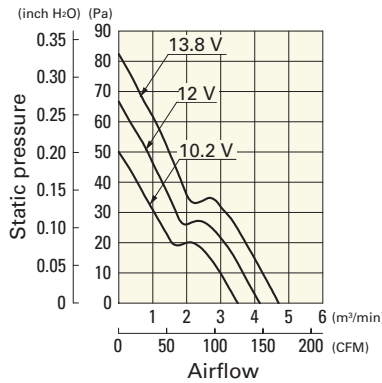
109L5712H501 With pulse sensor

Operating voltage range



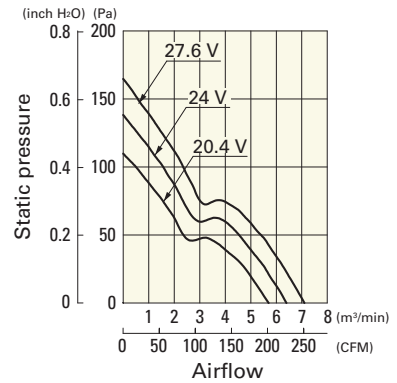
109L5712M501 With pulse sensor

Operating voltage range



109L5724H501 With pulse sensor

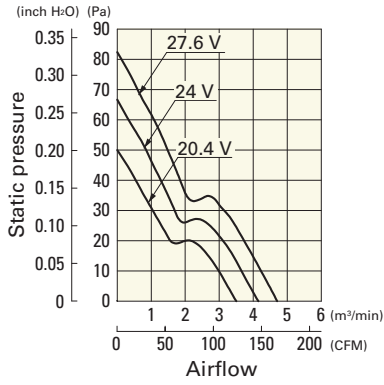
Operating voltage range



Airflow - Static Pressure Characteristics

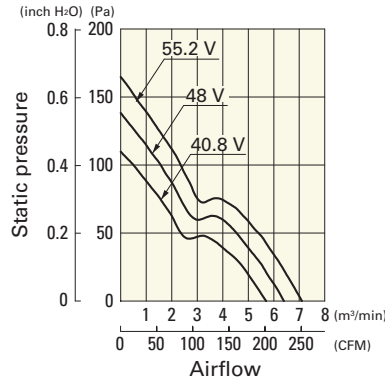
109L5724M501 With pulse sensor

Operating voltage range



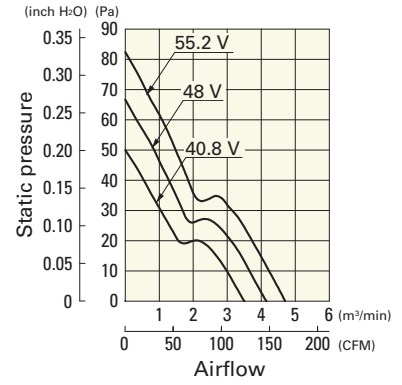
109L5748H501 With pulse sensor

Operating voltage range

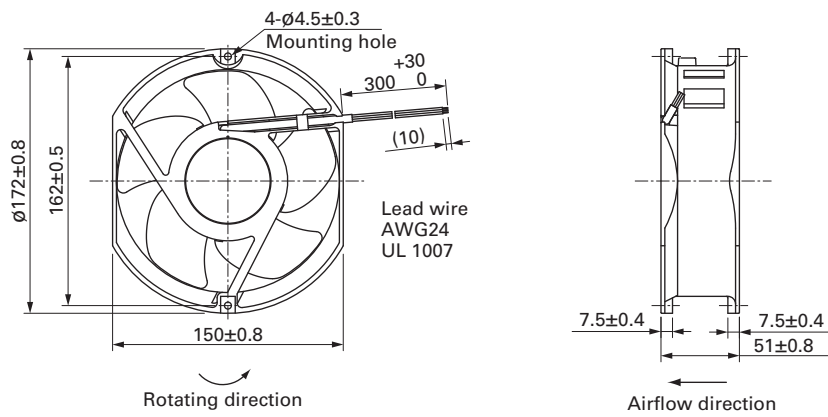


109L5748M501 With pulse sensor

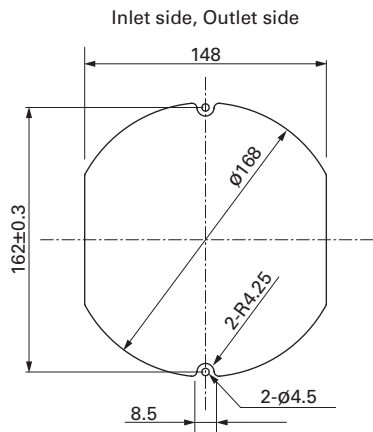
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 586

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

DC

Long Life Fan $\phi 172$ mm



∅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)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 599.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black or Blue Sensor Yellow
- Mass 780 g

Specifications

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

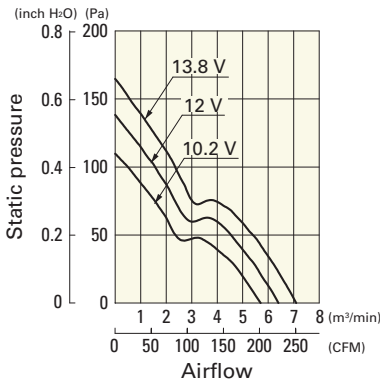
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109L1712H501	12	10.2 to 13.8	1.2	14.4	3050	6.4 226	137.2 0.551	47	-20 to +70	100000/60°C (135000/40°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		

Note: Sensor and control options are available for selection. Refer to the table on p. 621.

Airflow - Static Pressure Characteristics

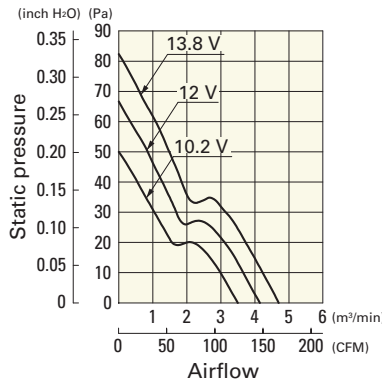
109L1712H501 With pulse sensor

Operating voltage range



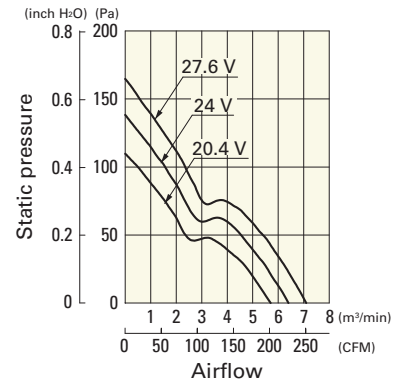
109L1712M501 With pulse sensor

Operating voltage range



109L1724H501 With pulse sensor

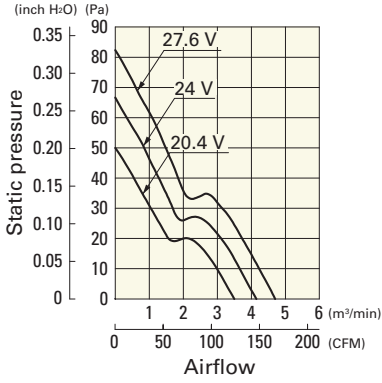
Operating voltage range



Airflow - Static Pressure Characteristics

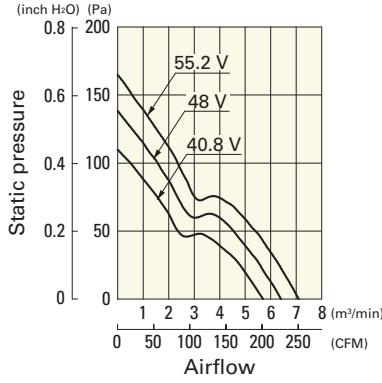
109L1724M501 With pulse sensor

Operating voltage range



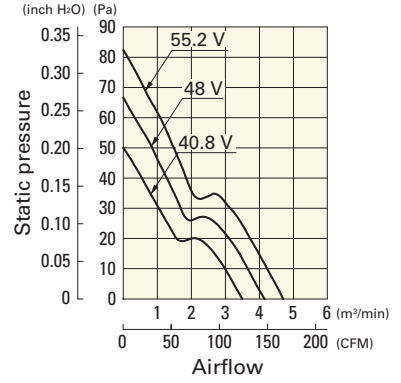
109L1748H501 With pulse sensor

Operating voltage range

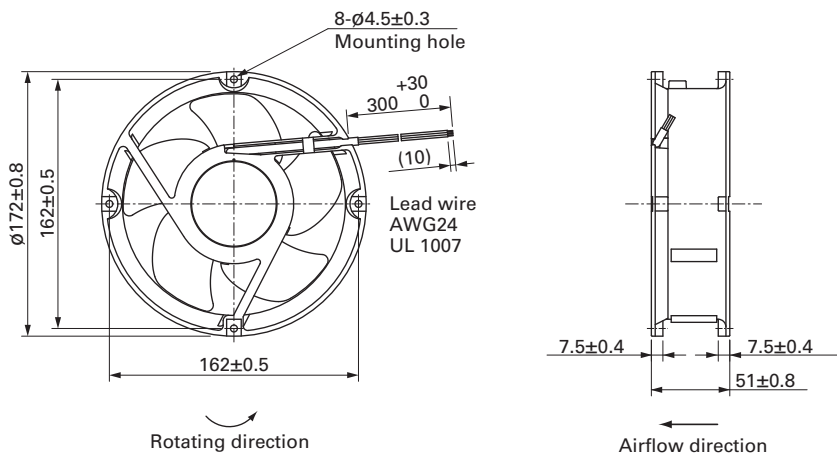


109L1748M501 With pulse sensor

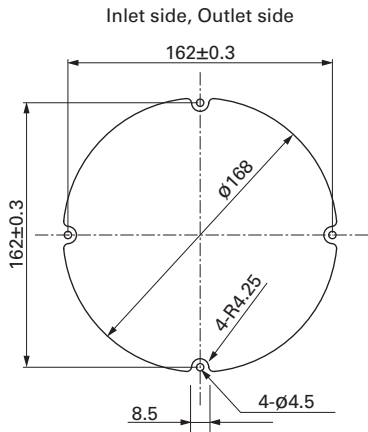
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 586

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

DC
Long Life Fan $\phi 172$ mm