Splash Proof Fan

40×40×20 mm

IP68

San Ace 40W 9WP type

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 50 g
- Ingress protection IP68

Specifications

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

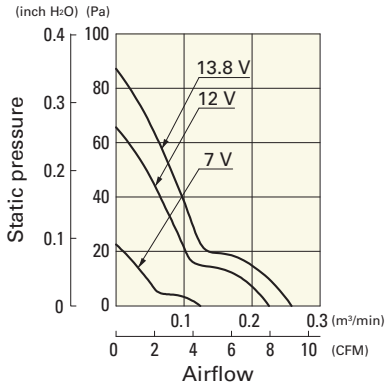
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WP0412H6001	12	7 to 13.8	0.1	1.2	8000	0.225	8.0	65.7	0.264	33	-10 to +60	40000/60°C (70000/40°C)
9WP0412F6001			0.06	0.72	6500	0.183	6.5	45.1	0.181	28		

Note: Sensor and control options are available for selection. Refer to the table on p. 638.

Airflow - Static Pressure Characteristics

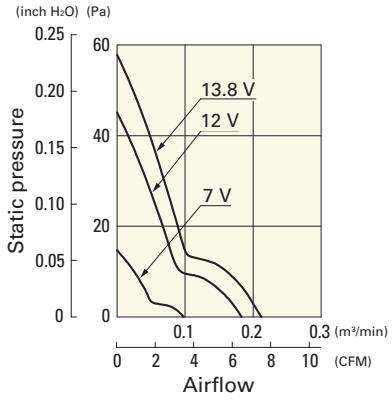
9WP0412H6001 With pulse sensor

Operating voltage range

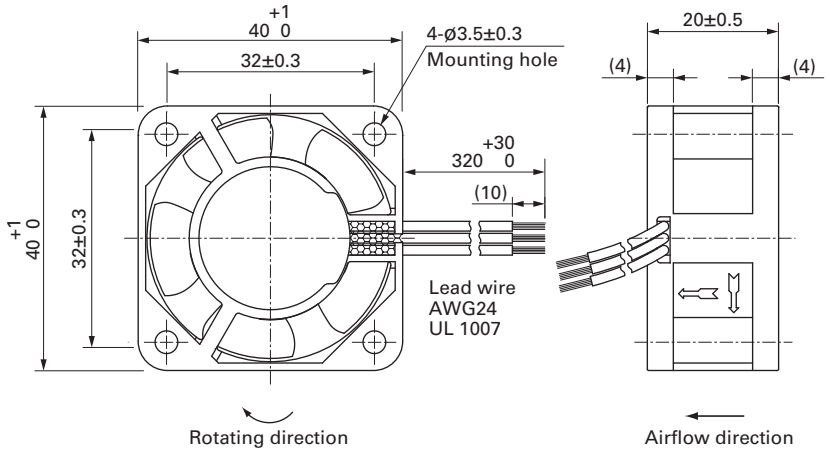


9WP0412F6001 With pulse sensor

Operating voltage range

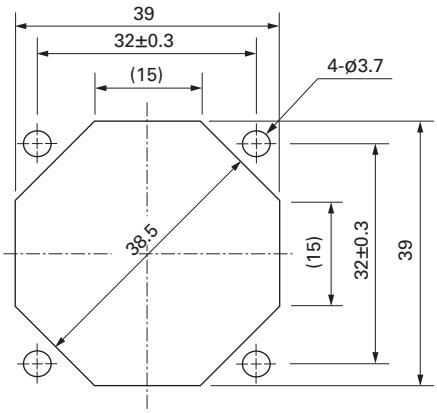


Dimensions (unit: mm)



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

Inlet side, Outlet side



Options

Finger guards page: p. 584

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

40×40×28 mm

San Ace 40W 9WL type

IP68

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 70 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL0412P3J001	12	10.8 to 13.2	100	0.52	6.24	17500	0.63	22.2	400	1.61	51	-20 to +70	150000/60°C (185000/40°C)
			20	0.06	0.72	3600	0.13	4.6	16.9	0.07	20		
9WL0412P3G001			100	0.4	4.8	15500	0.56	19.7	310	1.24	47		
			20	0.06	0.72	3300	0.12	4.2	14.0	0.06	18		
9WL0424P3J001	24	21.6 to 26.4	100	0.26	6.24	17500	0.63	22.2	400	1.61	51		
			20	0.04	0.96	4000	0.14	5.1	20.9	0.08	22		
9WL0424P3G001			100	0.2	4.8	15500	0.56	19.7	310	1.24	47		
			20	0.04	0.96	3000	0.11	3.8	11.6	0.05	16		

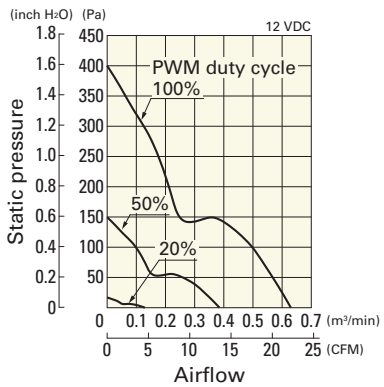
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 637.

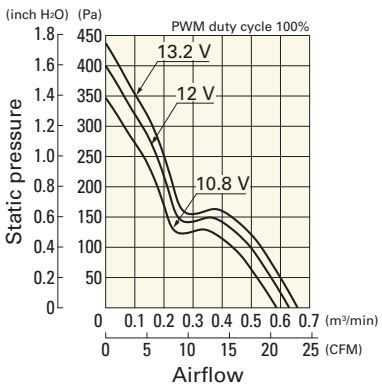
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0412P3J001 With pulse sensor with PWM control function

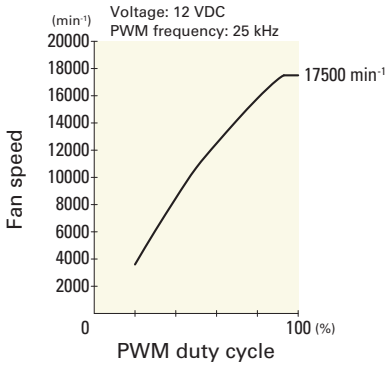
PWM duty cycle



Operating voltage range



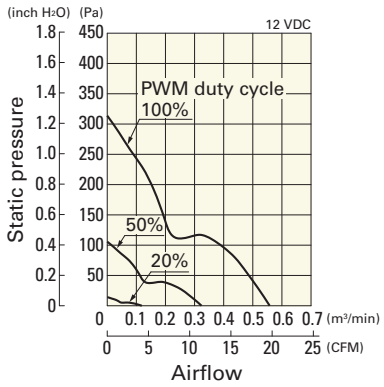
PWM duty - Speed characteristics example



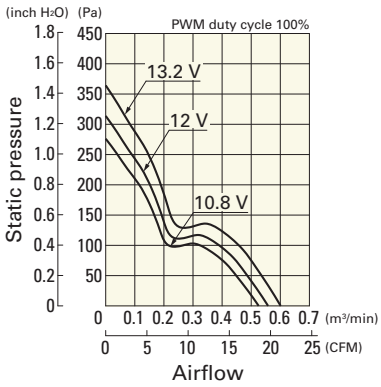
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0412P3G001 With pulse sensor with PWM control function

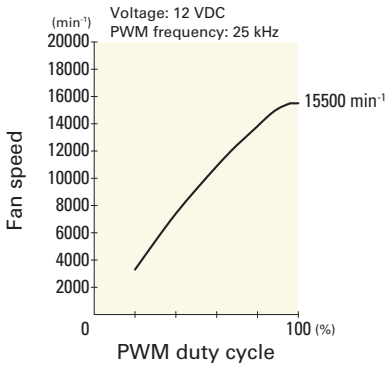
PWM duty cycle



Operating voltage range

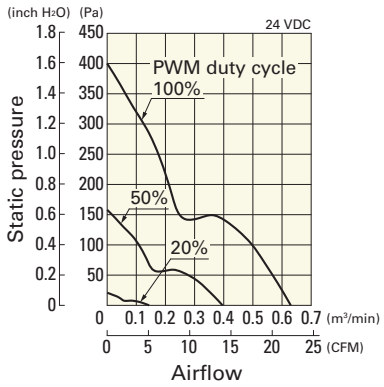


PWM duty - Speed characteristics example

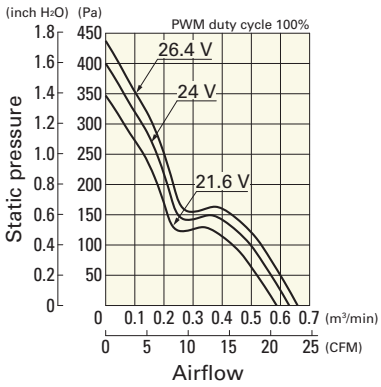


9WL0424P3J001 With pulse sensor with PWM control function

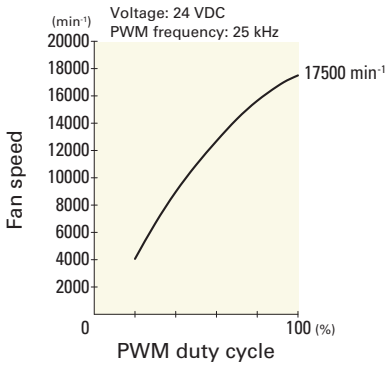
PWM duty cycle



Operating voltage range

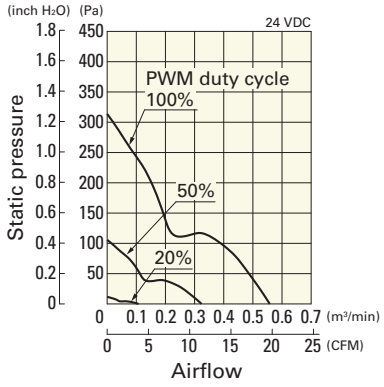


PWM duty - Speed characteristics example

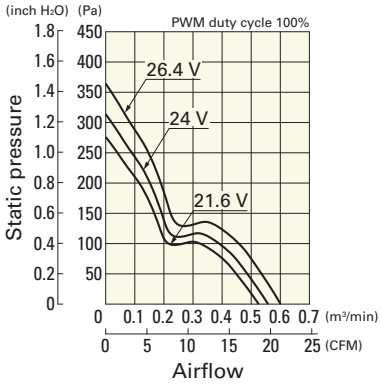


9WL0424P3G001 With pulse sensor with PWM control function

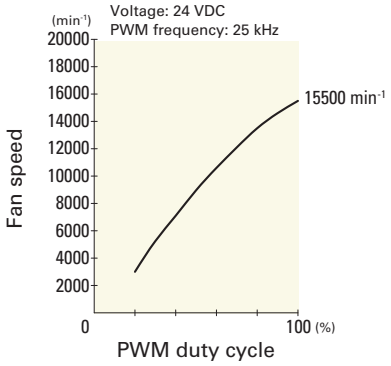
PWM duty cycle



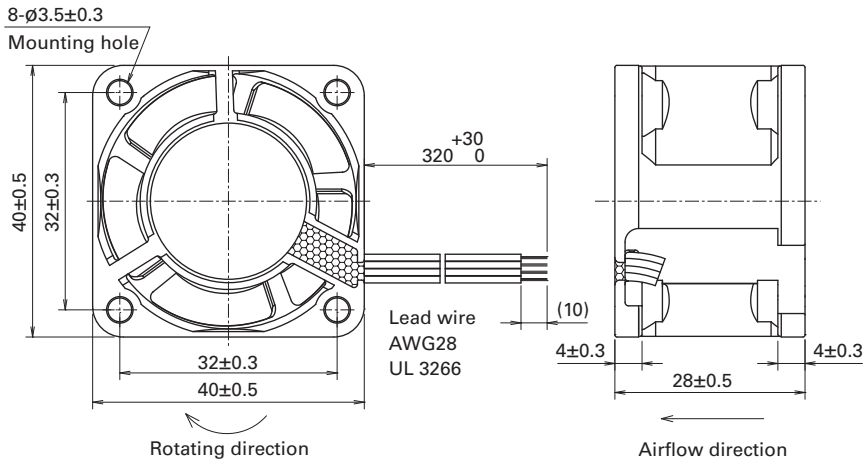
Operating voltage range



PWM duty - Speed characteristics example

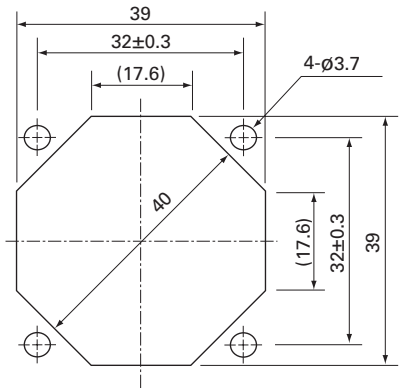


Dimensions (unit: mm)



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

Inlet side, Outlet side



Options

Finger guards page: p. 584

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

60×60×25 mm

San Ace 60W 9WPA type

IP68

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 110 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WPA0612P4G001	12	10.8 to 13.2	100	0.93	11.16	12000	1.52	53.7	357	1.44	56	-20 to +70	40000/60°C (70000/40°C)
			20	0.09	1.08	3500	0.43	15.1	30	0.12	22		
9WPA0624P4G001	24	21.6 to 26.4	100	0.46	11.04	12000	1.52	53.7	357	1.44	56		
			20	0.05	1.2	3500	0.43	15.1	30	0.12	22		

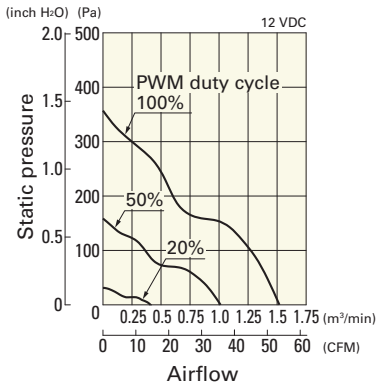
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 639.

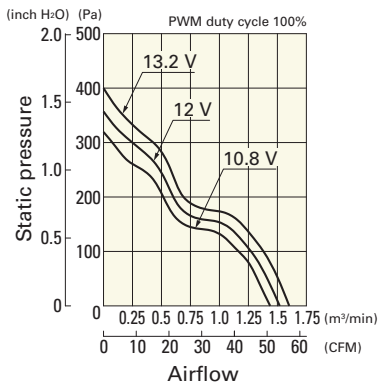
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WPA0612P4G001 With pulse sensor with PWM control function

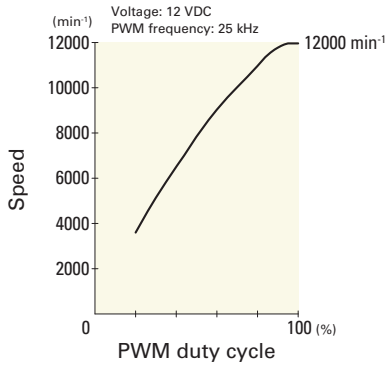
PWM duty cycle



Operating voltage range



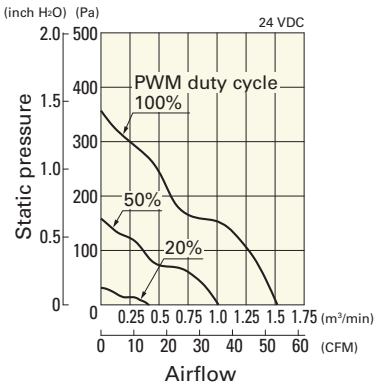
PWM duty - Speed characteristics example



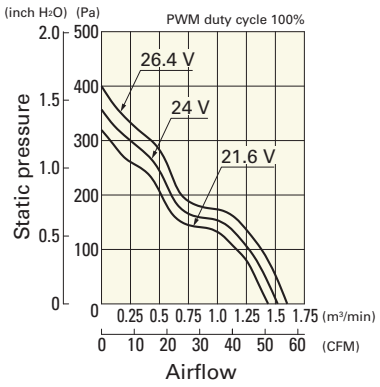
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WPA0624P4G001 With pulse sensor with PWM control function

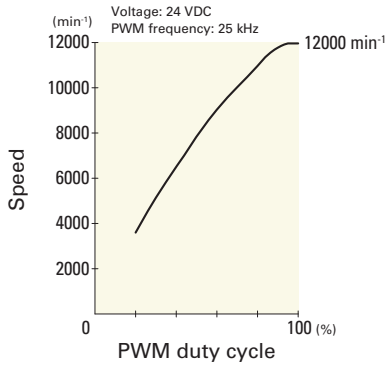
PWM duty cycle



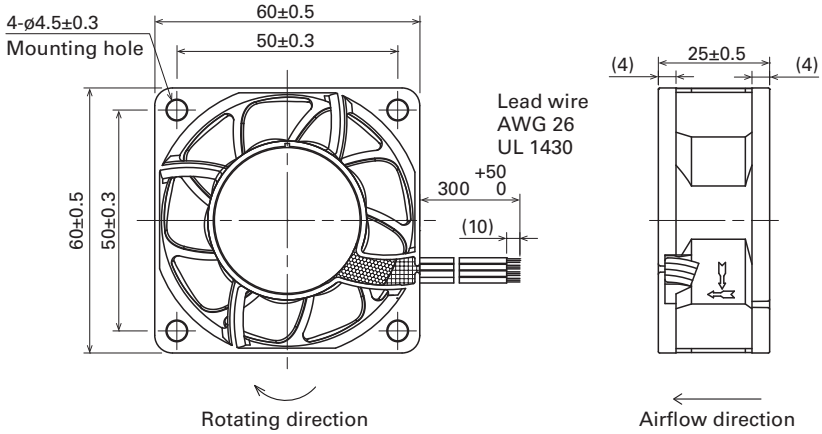
Operating voltage range



PWM duty - Speed characteristics example

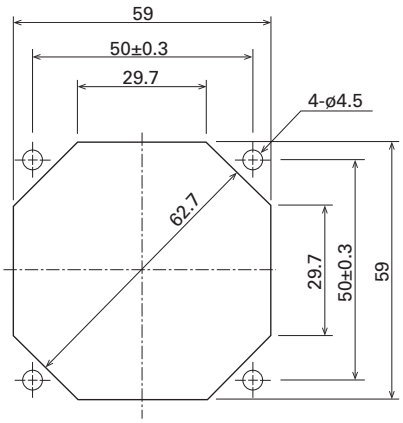


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards page: p. 584

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

Resin finger guards page: p. 591

Model no.: 109-1003G

60×60×25 mm

San Ace 60W 9WL type

IP68

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 120 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL0612P4S001	12	10.8 to 13.2	100	0.67	8.04	11000	1.4	49.4	300	1.204	53	-20 to +70	180000/60°C (215000/40°C)
			20	0.06	0.72	2900	0.36	12.7	20.8	0.083	20		
9WL0612P4J001			100	0.39	4.68	8650	1.1	38.8	182	0.73	47		
			20	0.03	0.36	1150	0.13	4.8	3.3	0.013	14		
9WL0612P4H001			100	0.17	2.04	6150	0.78	27.5	97	0.389	36		
			20	0.03	0.36	1350	0.17	6.0	4.7	0.018	14		
9WL0624P4S001	24	21.6 to 26.4	100	0.34	8.16	11000	1.4	49.4	300	1.204	53		
			20	0.03	0.72	2900	0.36	12.7	20.8	0.083	20		
9WL0624P4J001			100	0.19	4.56	8650	1.1	38.8	182	0.73	47		
			20	0.02	0.48	2200	0.28	9.8	12.0	0.048	17		
9WL0624P4H001			100	0.08	1.92	6150	0.78	27.5	97	0.389	36		
			20	0.02	0.48	1300	0.16	5.6	4.3	0.017	14		

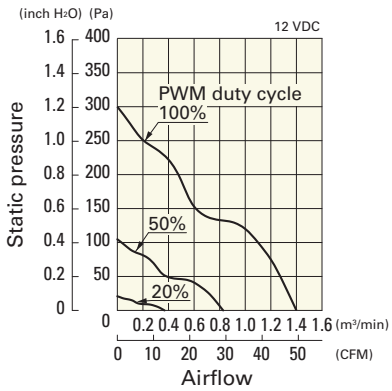
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 638.

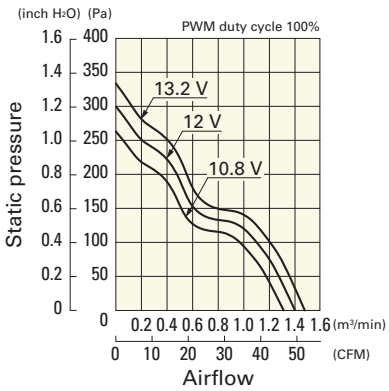
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0612P4S001 With pulse sensor with PWM control function

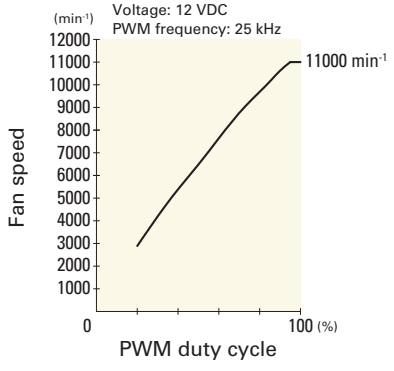
PWM duty cycle



Operating voltage range



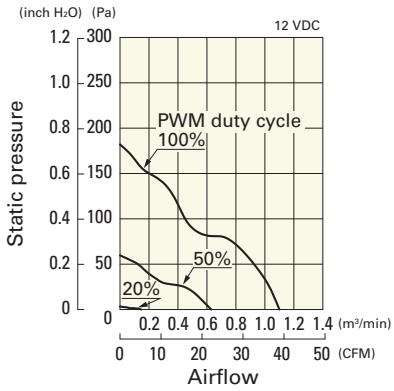
PWM duty - Speed characteristics example



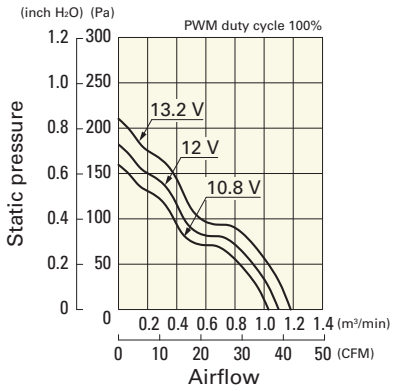
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0612P4J001 With pulse sensor with PWM control function

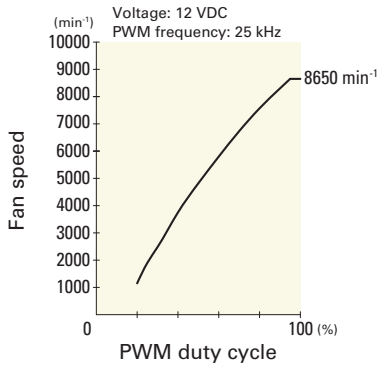
PWM duty cycle



Operating voltage range

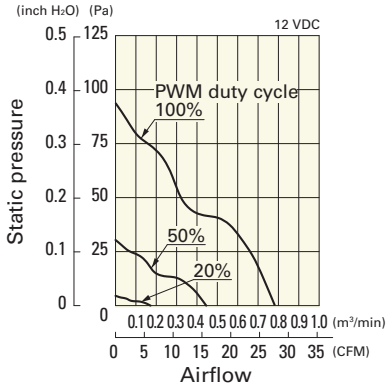


PWM duty - Speed characteristics example

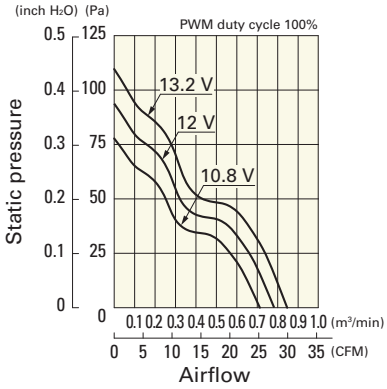


9WL0612P4H001 With pulse sensor with PWM control function

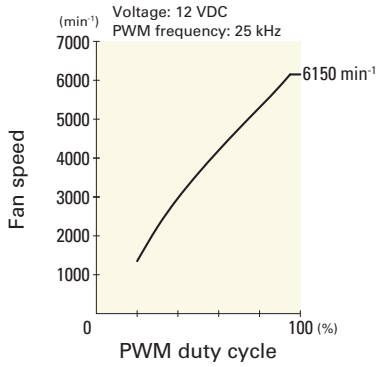
PWM duty cycle



Operating voltage range

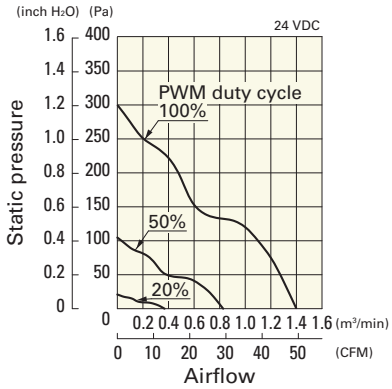


PWM duty - Speed characteristics example

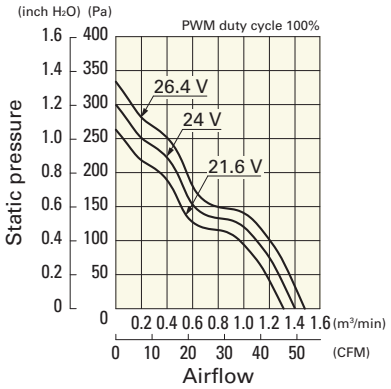


9WL0624P4S001 With pulse sensor with PWM control function

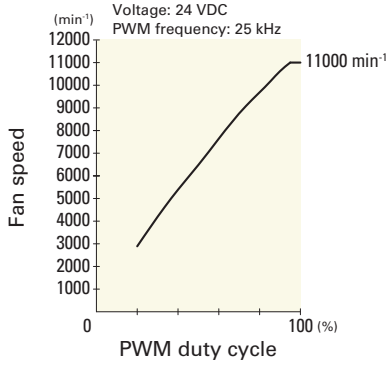
PWM duty cycle



Operating voltage range

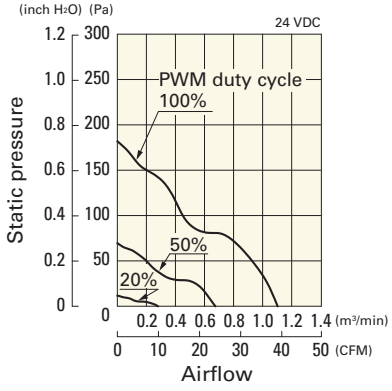


PWM duty - Speed characteristics example

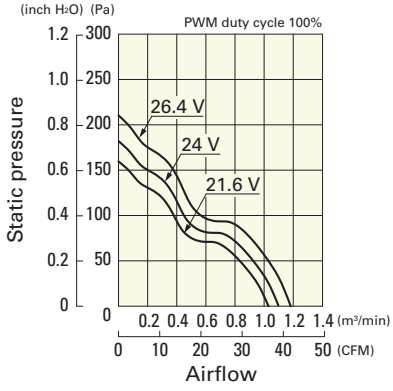


9WL0624P4J001 With pulse sensor with PWM control function

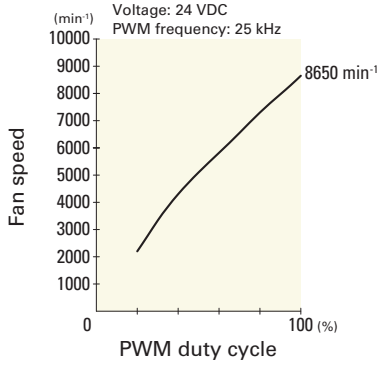
PWM duty cycle



Operating voltage range



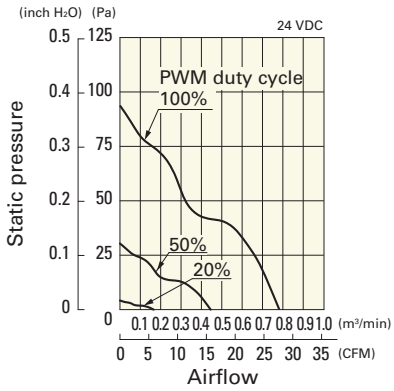
PWM duty - Speed characteristics example



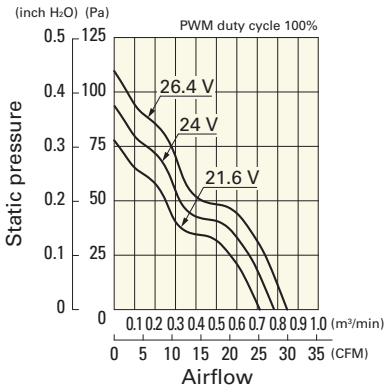
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0624P4H001 With pulse sensor with PWM control function

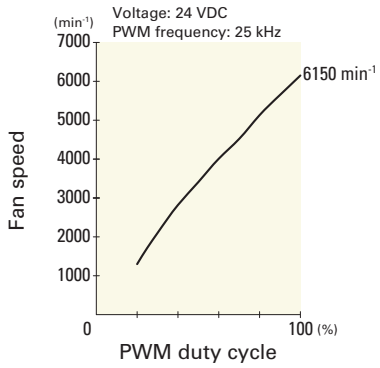
PWM duty cycle



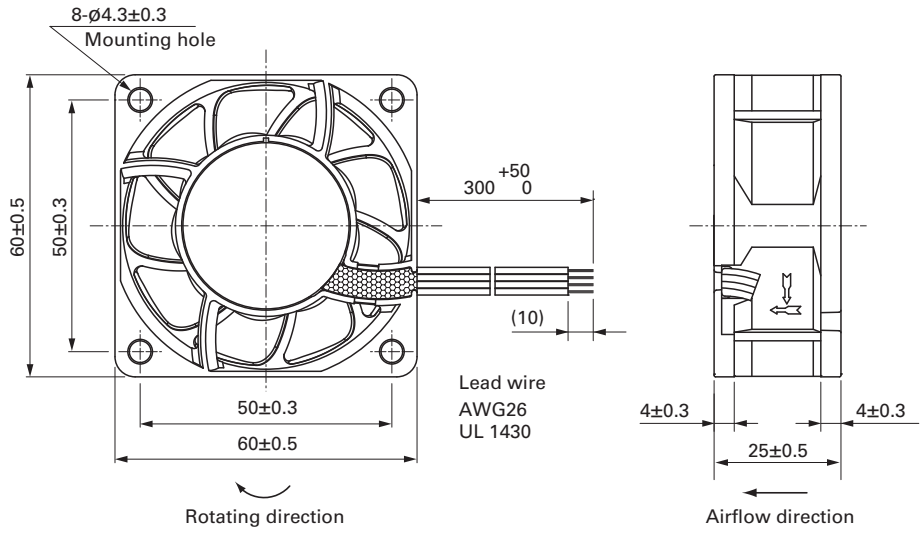
Operating voltage range



PWM duty - Speed characteristics example

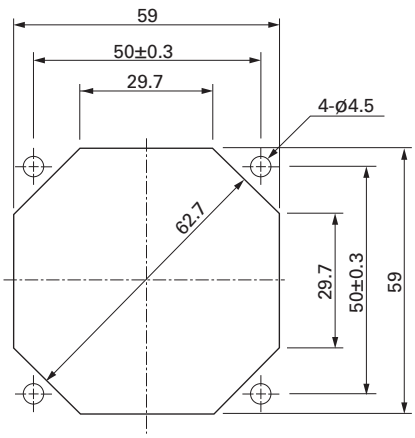


Dimensions (unit: mm)



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

Inlet side, Outlet side



Options

Finger guards	page: p. 584

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

Resin finger guards	page: p. 591

Model no.: 109-1003G

60×60×25 mm

IP68

San Ace 60W 9WP type

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 110 g
- Ingress protection IP68

Specifications

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

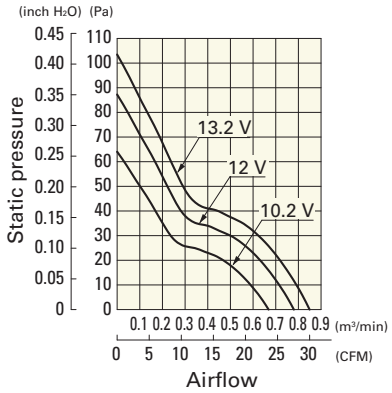
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WP0612G401	12	10.2 to 13.2	0.21	2.52	5600	0.78	27.5	87.3	0.351	39	-20 to +60	40000/60°C (70000/40°C)
9WP0612D401		10.2 to 13.8	0.21	2.52	5150	0.72	25	73.5	0.3	37	-20 to +70	60000/60°C (90000/40°C)
9WP0612H401			0.11	1.32	3800	0.53	18.7	40.2	0.161	28		
9WP0624J401	24	21.6 to 26.4	0.2	4.8	7600	1.06	37.1	155.0	0.622	44	-20 to +60	40000/60°C (70000/40°C)
9WP0624G401		20.4 to 27.6	0.13	3.12	5600	0.78	27.5	87.3	0.351	39		
9WP0624H401			0.06	1.44	3800	0.53	18.7	40.2	0.161	28	-20 to +70	60000/60°C (90000/40°C)
9WP0648H401	48	40 to 53	0.04	1.92	3800	0.53	18.7	40.2	0.161	28		

Note: Sensor and control options are available for selection. Refer to the table on pp. 638 to 639.

Airflow - Static Pressure Characteristics

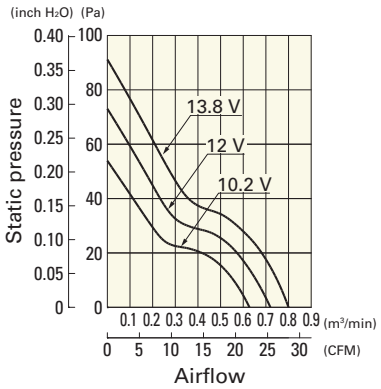
9WP0612G401 With pulse sensor

Operating voltage range



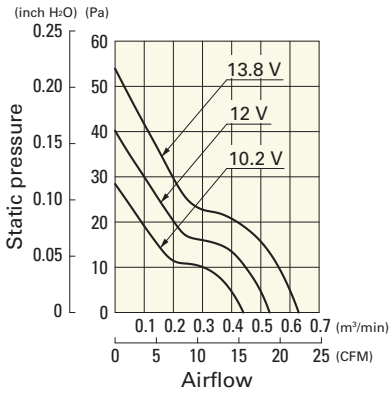
9WP0612D401 With pulse sensor

Operating voltage range



9WP0612H401 With pulse sensor

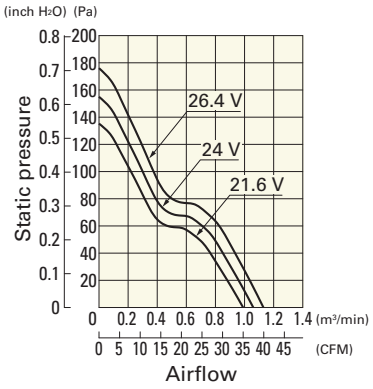
Operating voltage range



Airflow - Static Pressure Characteristics

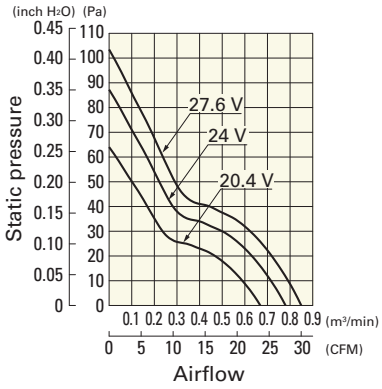
9WP0624J401 With pulse sensor

Operating voltage range



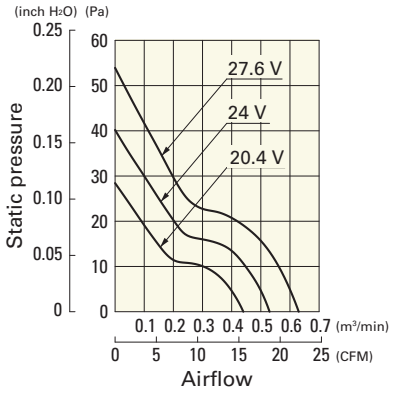
9WP0624G401 With pulse sensor

Operating voltage range



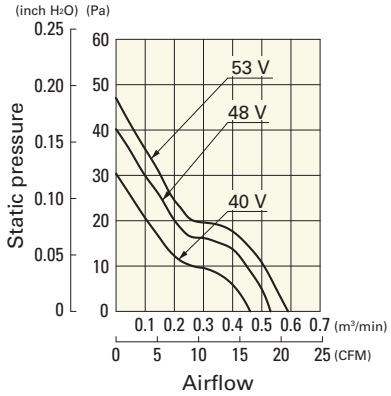
9WP0624H401 With pulse sensor

Operating voltage range

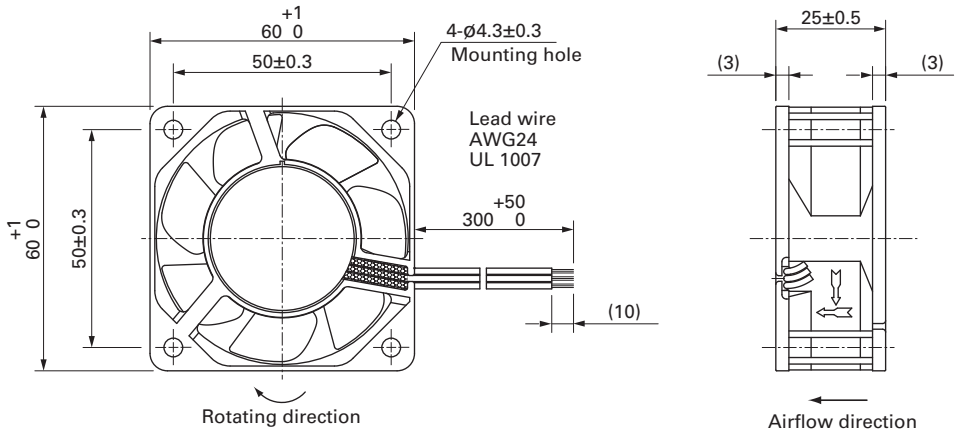


9WP0648H401 With pulse sensor

Operating voltage range

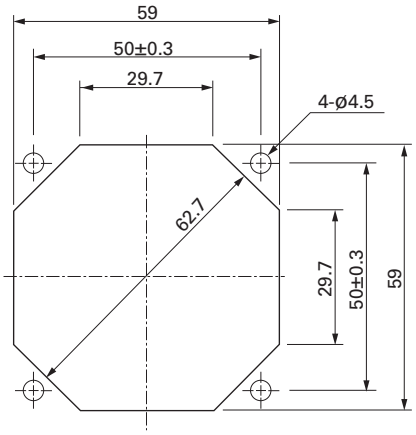


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards page: p. 584

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

Resin finger guards page: p. 591

Model no.: 109-1003G

80×80×25 mm

San Ace 80W 9WPA type

IP68

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 130 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WPA0812P4G001	12	10.8 to 13.2	100	0.71	8.52	8250	2.32	81.9	210	0.84	54	-20 to +70	40000/60°C (70000/40°C)
			20	0.07	0.84	2400	0.67	23.6	18.2	0.073	21		
9WPA0824P4G001	24	21.6 to 26.4	100	0.36	8.64	8250	2.32	81.9	210	0.84	54		
			20	0.05	1.2	2400	0.67	23.6	18.2	0.073	21		

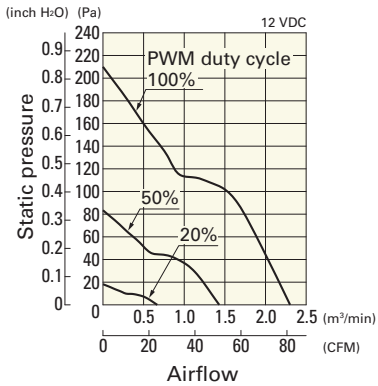
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 639.

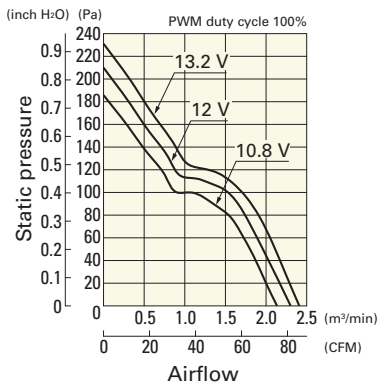
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WPA0812P4G001 With pulse sensor with PWM control function

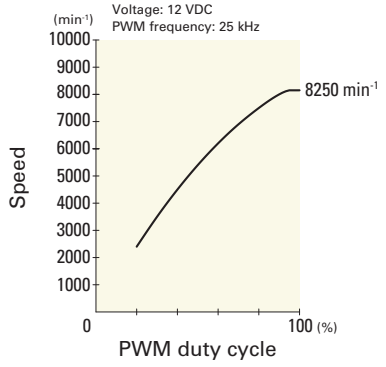
PWM duty cycle



Operating voltage range



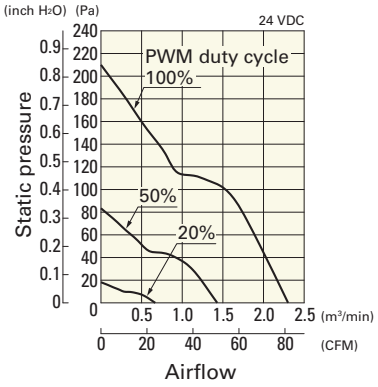
PWM duty - Speed characteristics example



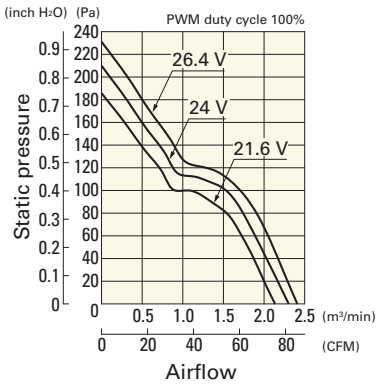
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WPA0824P4G001 With pulse sensor with PWM control function

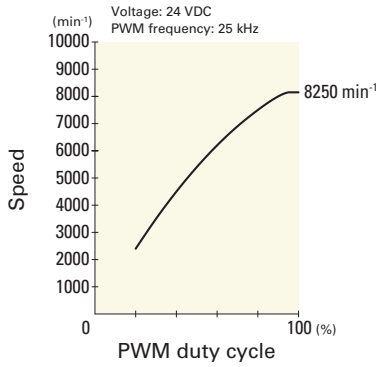
PWM duty cycle



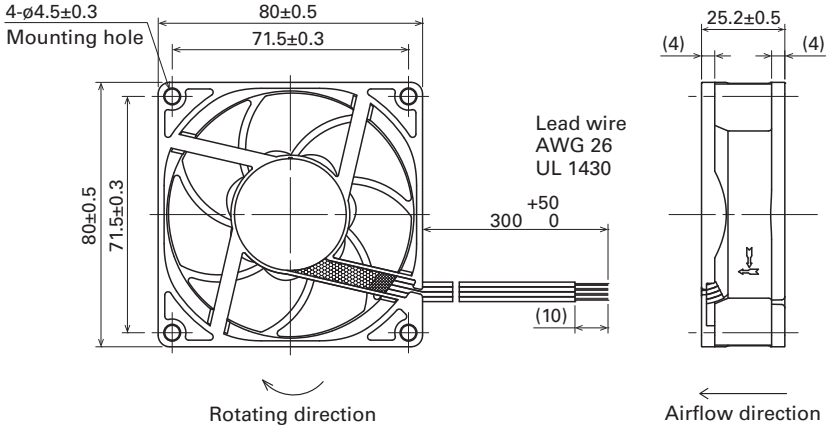
Operating voltage range



PWM duty - Speed characteristics example

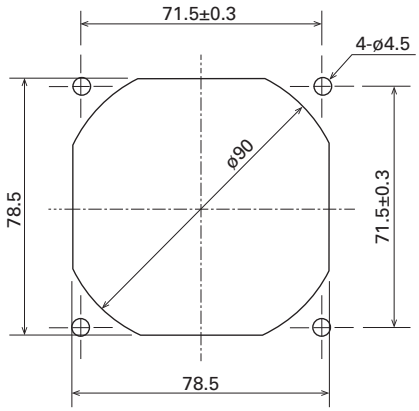


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards	page: p. 584

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

Resin finger guards	page: p. 591

Model no.: 109-1002G

80×80×25 mm

IP68

San Ace 80W 9WL type

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL0812P4J001	12	10.8 to 13.2	100	0.6	7.2	7400	2.07	73.0	177	0.71	49	-20 to +70	180000/60°C (215000/40°C)
			20	0.06	0.72	1800	0.5	17.6	10.4	0.04	16		
9WL0812P4G001			100	0.3	3.6	5500	1.54	54.3	98	0.39	43		
			25	0.05	0.6	1400	0.39	13.7	6.3	0.02	14		
9WL0812P4H001			100	0.12	1.44	3700	1.03	36.3	44	0.17	31		
			25	0.04	0.48	1100	0.3	10.5	3.9	0.01	13		
9WL0824P4J001	24	21.6 to 26.4	100	0.28	6.72	7400	2.07	73.0	177	0.71	49		
			20	0.05	1.2	2400	0.67	23.6	18.6	0.07	22		
9WL0824P4G001			100	0.14	3.36	5500	1.54	54.3	98	0.39	43		
			20	0.02	0.48	1200	0.33	11.6	4.6	0.01	13		
9WL0824P4H001			100	0.05	1.2	3700	1.03	36.3	44	0.17	31		
			30	0.02	0.48	1100	0.3	10.5	3.9	0.01	13		

* PWM 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.**

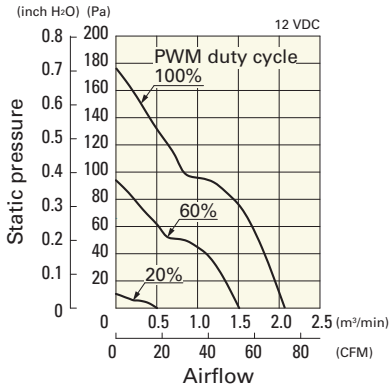
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL0812L4001	12	8 to 13.2	0.06	0.72	2300	0.64	22.6	17	0.068	22	-20 to +70	180000/60°C (215000/40°C)
9WL0824F4001	24	12 to 26.4	0.045	1.08	3300	0.92	32.5	35	0.14	29		
9WL0824L4001		14 to 26.4	0.03	0.72	2300	0.64	22.6	17	0.068	22		

Note: Sensor and control options are available for selection. Refer to the table on p. 638.

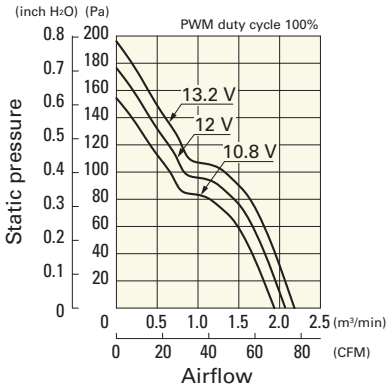
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0812P4J001 With pulse sensor with PWM control function

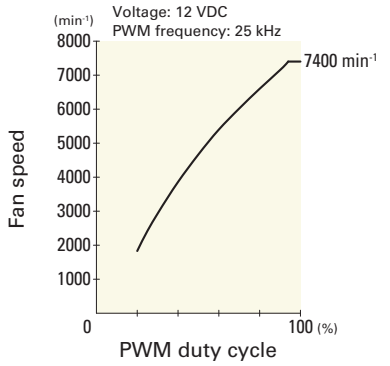
PWM duty cycle



Operating voltage range

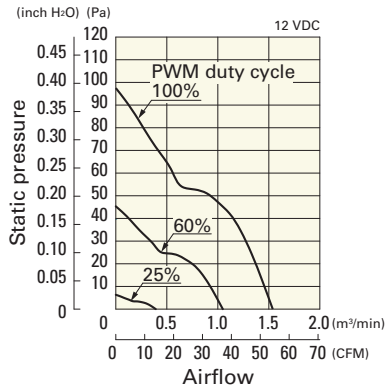


PWM duty - Speed characteristics example

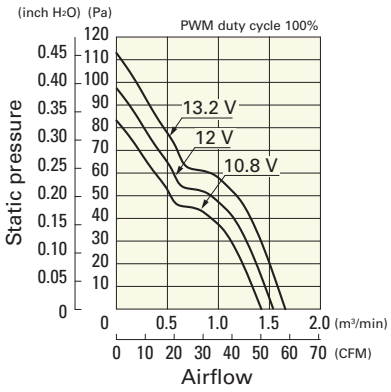


9WL0812P4G001 With pulse sensor with PWM control function

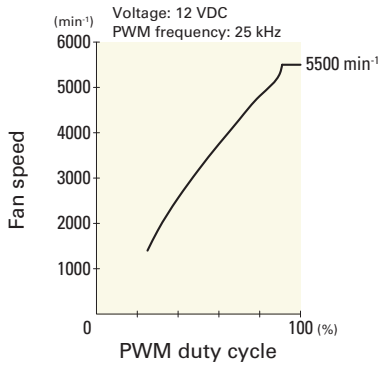
PWM duty cycle



Operating voltage range

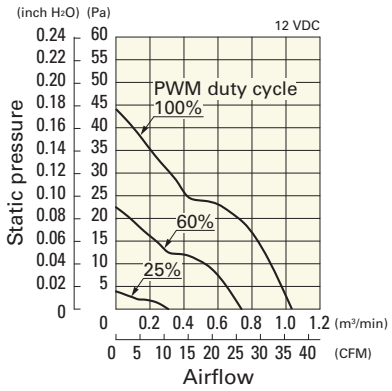


PWM duty - Speed characteristics example

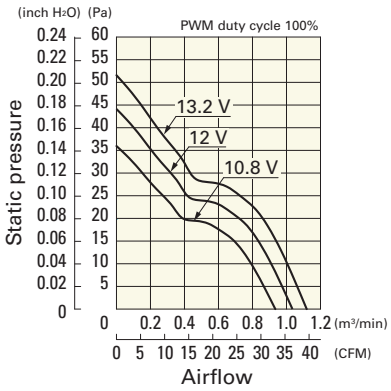


9WL0812P4H001 With pulse sensor with PWM control function

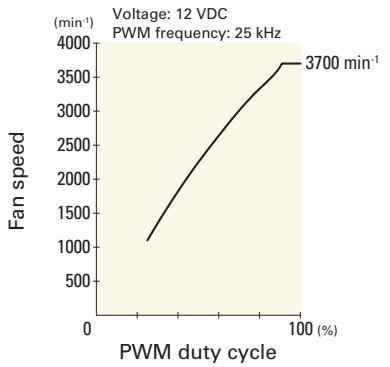
PWM duty cycle



Operating voltage range

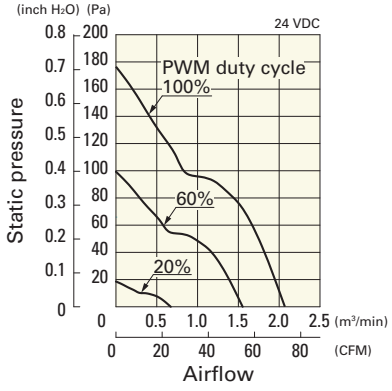


PWM duty - Speed characteristics example

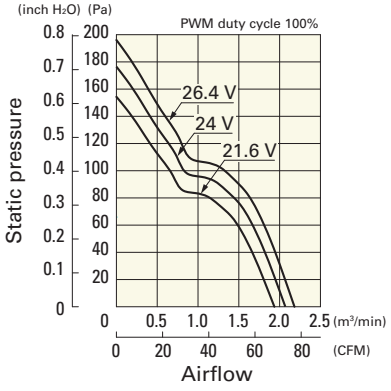


9WL0824P4J001 With pulse sensor with PWM control function

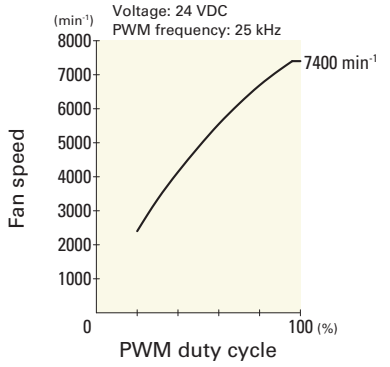
PWM duty cycle



Operating voltage range



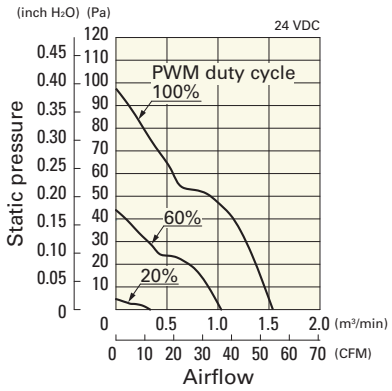
PWM duty - Speed characteristics example



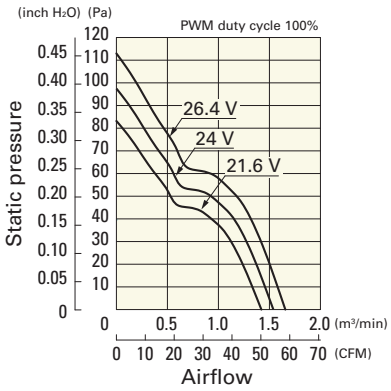
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0824P4G001 With pulse sensor with PWM control function

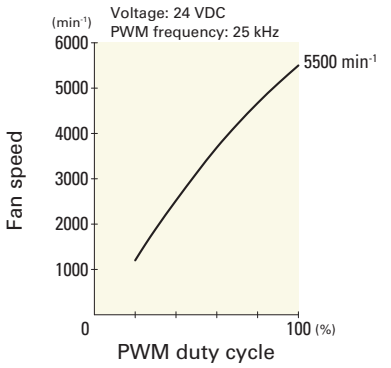
PWM duty cycle



Operating voltage range

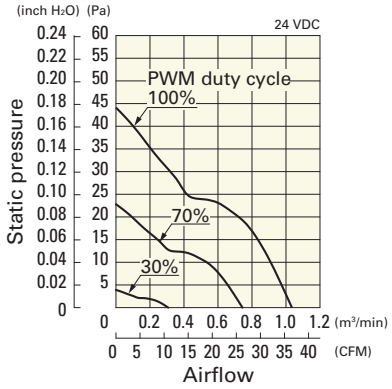


PWM duty - Speed characteristics example

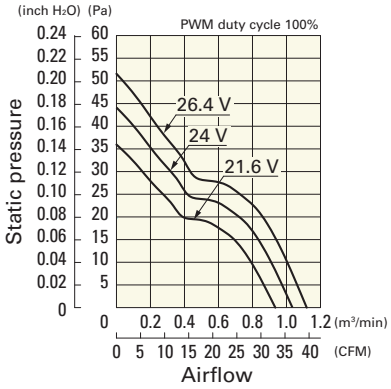


9WL0824P4H001 With pulse sensor with PWM control function

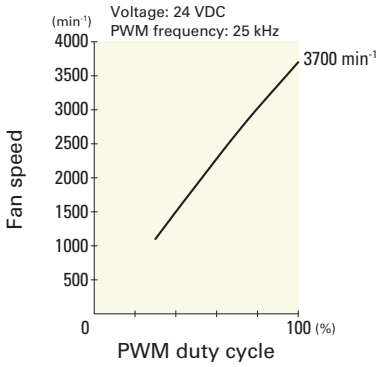
PWM duty cycle



Operating voltage range



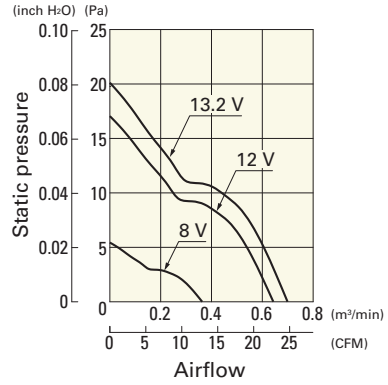
PWM duty - Speed characteristics example



Airflow - Static Pressure Characteristics

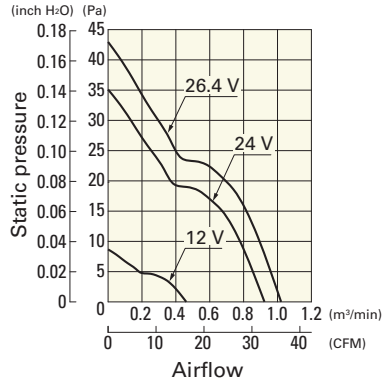
9WL0812L4001 With pulse sensor

Operating voltage range



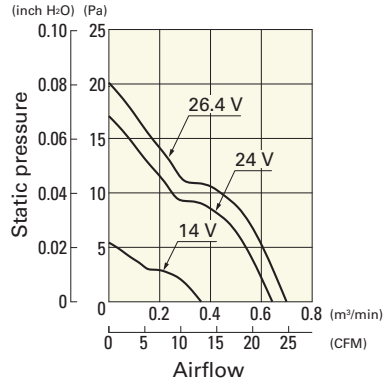
9WL0824F4001 With pulse sensor

Operating voltage range

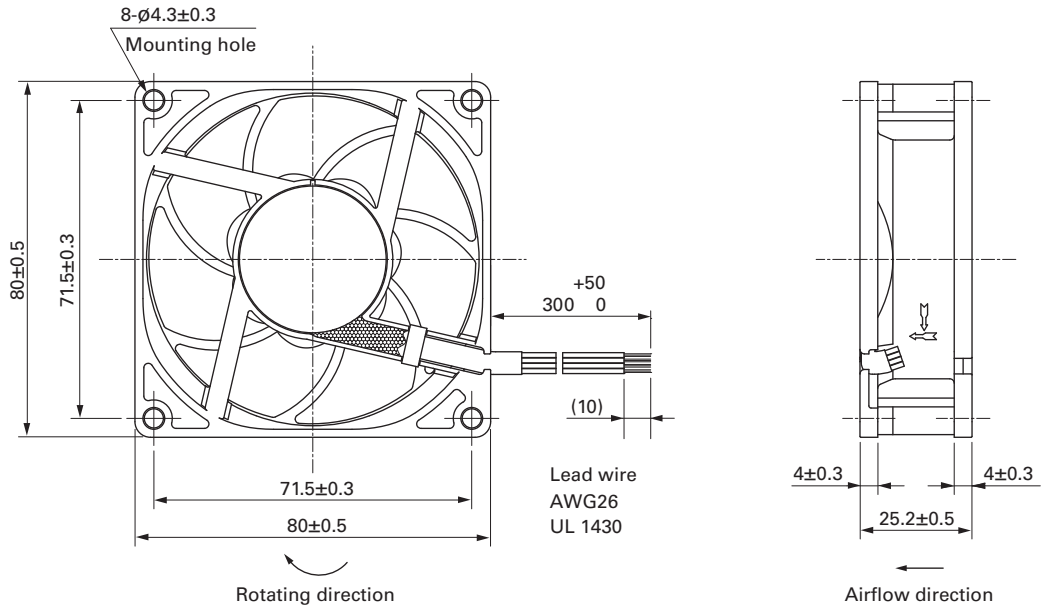


9WL0824L4001 With pulse sensor

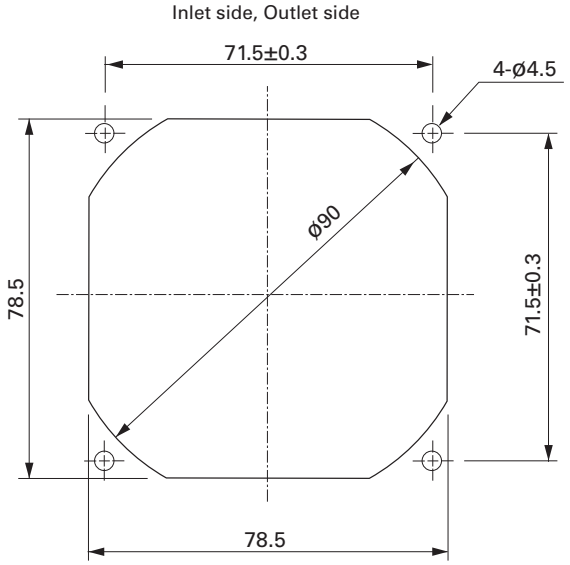
Operating voltage range



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



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



Options

Finger guards	page: p. 584

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

Resin finger guards	page: p. 591

Model no.: 109-1002G

80×80×25 mm

IP68

San Ace 80W 9WP type

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 130 g
- Ingress protection IP68

Specifications

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

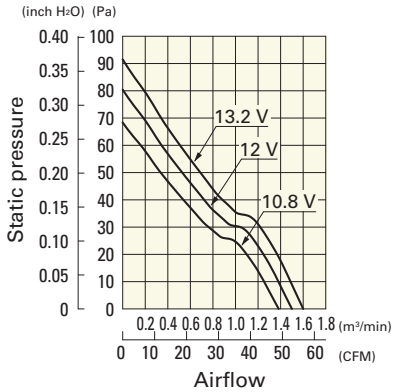
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WP0812G401	12	10.8 to 13.2	0.38	4.56	4500	1.5	53	80.4	0.323	40	-20 to +60	40000/60°C (70000/40°C)
9WP0812H401		10.2 to 13.8	0.13	1.56	2900	1.03	36.4	35.3	0.142	29	-20 to +70	60000/60°C (90000/40°C)
9WP0824S401	24	20.4 to 27.6	0.1	2.4	3400	1.2	42.4	48.0	0.193	34		40000/60°C (70000/40°C)
9WP0824H401			0.07	1.68	2900	1.03	36.4	35.3	0.142	29		60000/60°C (90000/40°C)
9WP0848S401	48	40.8 to 55.2	0.06	2.88	3400	1.2	42.4	48.0	0.193	34		40000/60°C (70000/40°C)

Note: Sensor and control options are available for selection. Refer to the table on p. 639.

Airflow - Static Pressure Characteristics

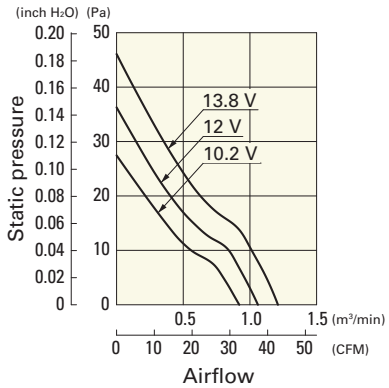
9WP0812G401 With pulse sensor

Operating voltage range



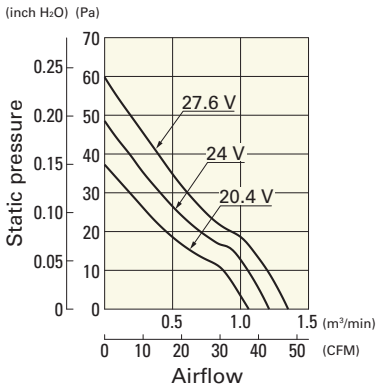
9WP0812H401 With pulse sensor

Operating voltage range



9WP0824S401 With pulse sensor

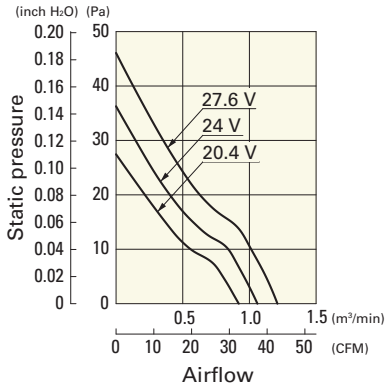
Operating voltage range



Airflow - Static Pressure Characteristics

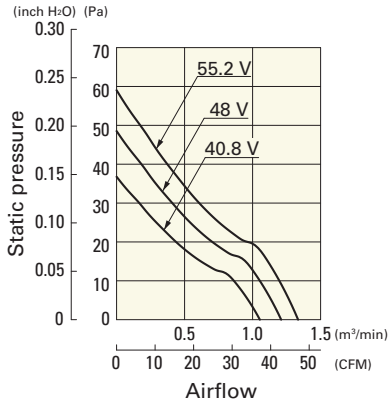
9WP0824H401 With pulse sensor

Operating voltage range

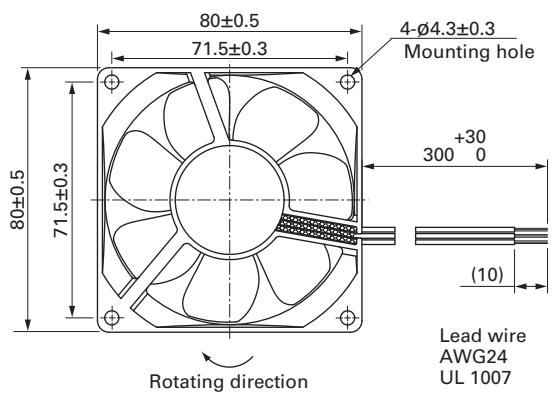


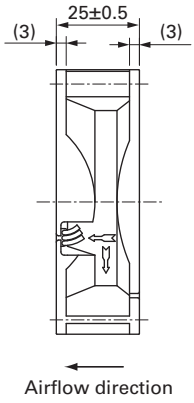
9WP0848S401 With pulse sensor

Operating voltage range

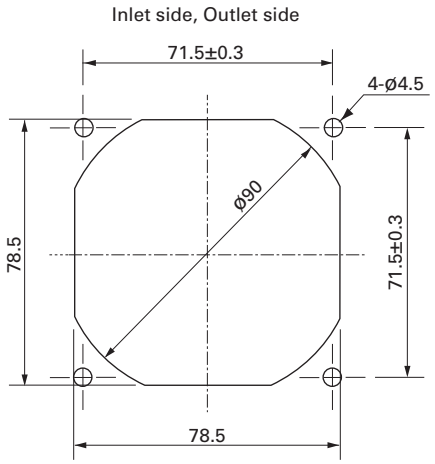


Dimensions (unit: mm) (With ribs)





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



Options

Finger guards page: p. 584

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

Resin finger guards page: p. 591

Model no.: 109-1002G

80×80×38 mm

IP68

San Ace 80W 9WV type

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 235 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WV0812P1M001	12	10.2 to 13.8	100	0.75	9	6000	2.29	80.9	169	0.68	51	-20 to +70	40000/60°C (70000/40°C)
			0	0.09	1.08	1700	0.65	23	13.6	0.05	19		
9WV0848P1H001	48	40.8 to 52.8	100	0.75	36	9700	3.7	131	440	1.77	63		
			0	0.15	7.2	4500	1.72	60.7	94.7	0.38	43		

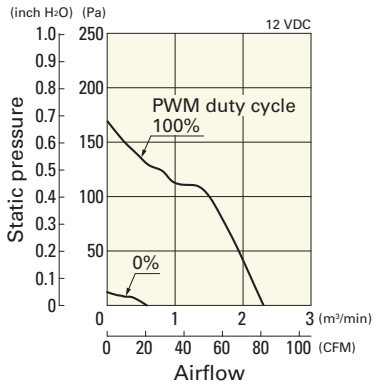
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 640.

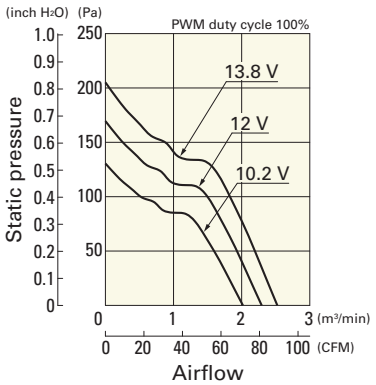
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV0812P1M001 With pulse sensor with PWM control function

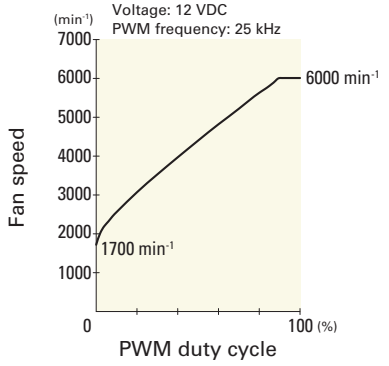
PWM duty cycle



Operating voltage range



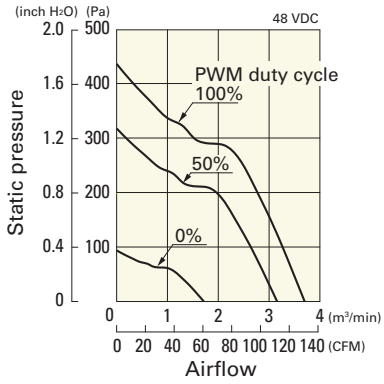
PWM duty - Speed characteristics example



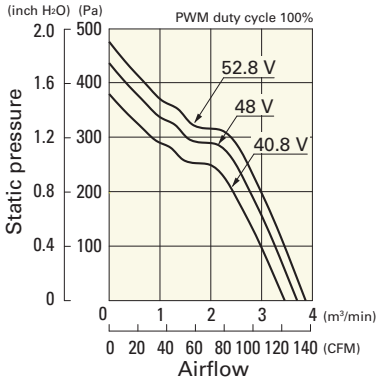
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV0848P1H001 With pulse sensor with PWM control function

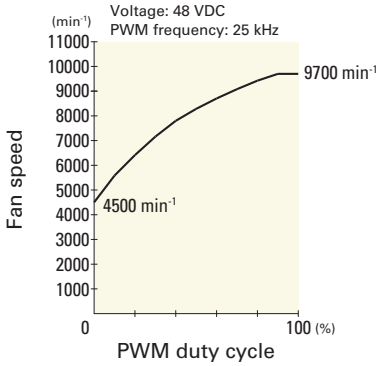
PWM duty cycle



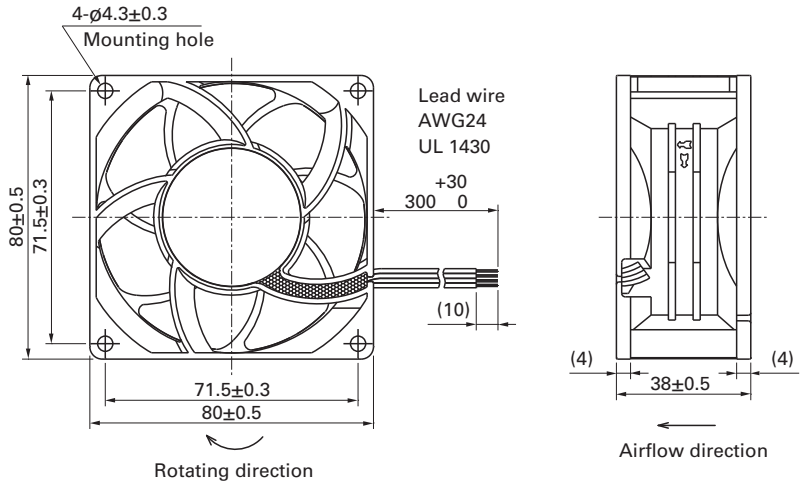
Operating voltage range



PWM duty - Speed characteristics example

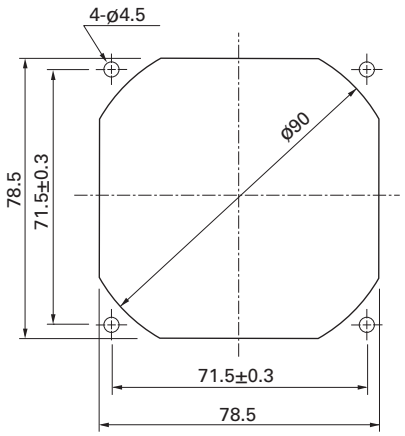


Dimensions (unit: mm) (With ribs)



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

Inlet side, Outlet side



Options

Finger guards page: p. 584

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

Resin finger guards page: p. 591

Model no.: 109-1002G

92×92×25 mm

San Ace 92W 9WPA type

IP68

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 135 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WPA0912P4G001	12	10.8 to 13.2	100	0.5	6	5700	2.45	86.5	126	0.51	47	-20 to +70	40000/60°C (70000/40°C)
			20	0.04	0.5	1200	0.52	18.4	6	0.02	11		
9WPA0924P4G001	24	21.6 to 26.4	100	0.25	6	5700	2.45	86.5	126	0.51	47		
			20	0.03	0.7	1200	0.52	18.4	6	0.02	11		

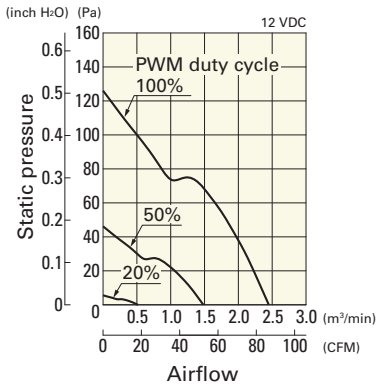
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 639.

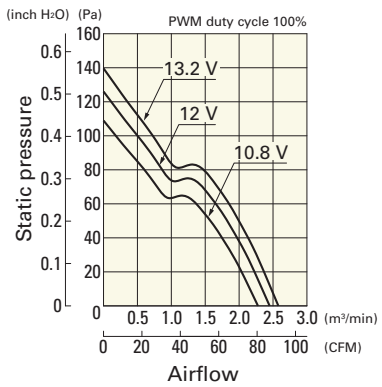
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WPA0912P4G001 With pulse sensor with PWM control function

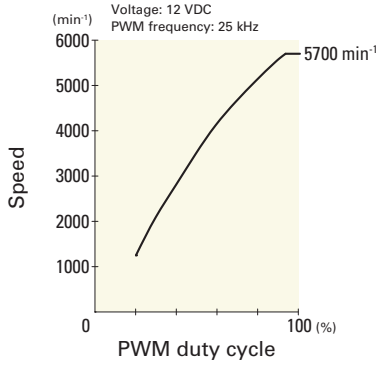
PWM duty cycle



Operating voltage range



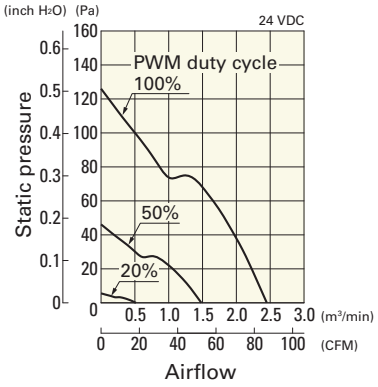
PWM duty - Speed characteristics example



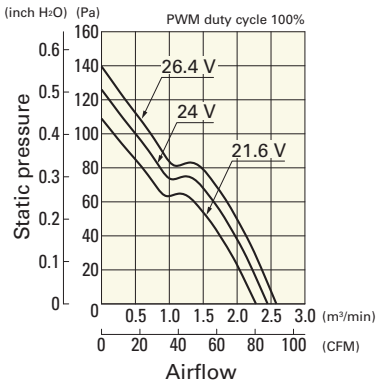
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WPA0924P4G001 With pulse sensor with PWM control function

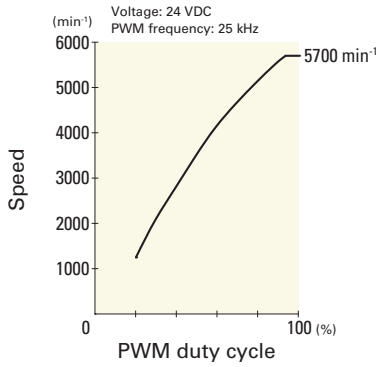
PWM duty cycle



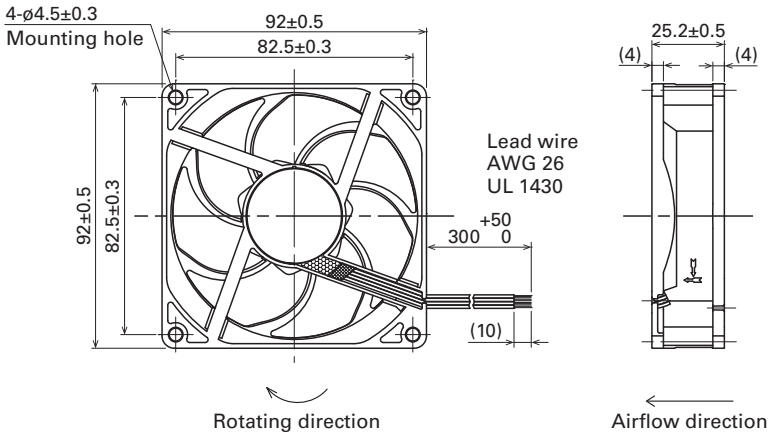
Operating voltage range



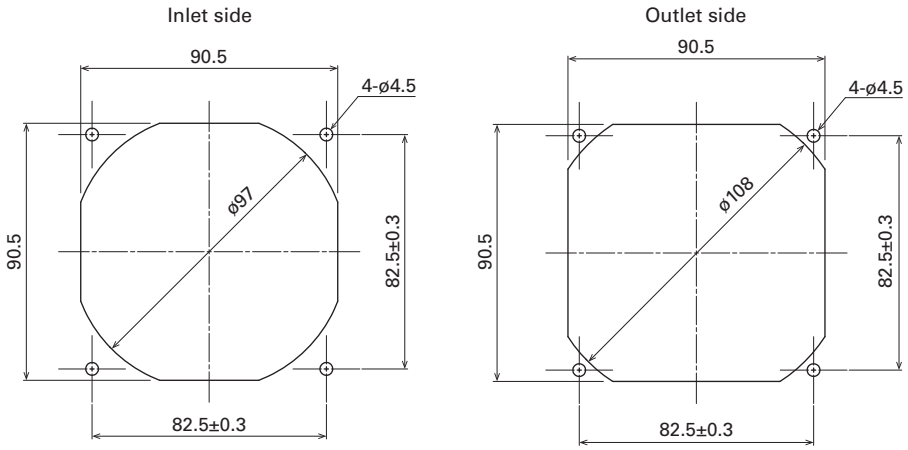
PWM duty - Speed characteristics example



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards	page: p. 584

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

Resin finger guards	page: p. 591

Model no.: 109-1001G

92×92×25 mm

San Ace 92W 9WL type

IP68

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 170 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL0912P4J001	12	10.8 to 13.2	100	0.42	5.04	5000	2.2	77.7	105	0.42	44	-20 to +70	180000/60°C (215000/40°C)
			20	0.04	0.48	1200	0.52	18.4	6.04	0.024	11		
9WL0912P4G001			100	0.3	3.6	4400	1.93	68.2	81	0.33	40		
			20	0.04	0.48	1000	0.43	15.1	4.18	0.016	8		
9WL0912P4S001			100	0.22	2.64	3850	1.69	59.7	62.1	0.25	37		
			30	0.04	0.48	1400	0.61	21.5	8.21	0.032	13		
9WL0912P4H001			100	0.15	1.8	3150	1.38	48.7	41.6	0.17	32		
			30	0.04	0.48	1100	0.48	16.9	5.07	0.02	9		
9WL0924P4J001	24	21.6 to 26.4	100	0.21	5.04	5000	2.2	77.7	105	0.42	44		
			20	0.02	0.48	1100	0.48	16.9	5.07	0.02	9		
9WL0924P4S001			100	0.11	2.64	3850	1.69	59.7	62.1	0.25	37		
			30	0.02	0.48	1300	0.57	20.1	7.08	0.028	12		
9WL0924P4H001			100	0.07	1.68	3150	1.38	48.7	41.6	0.17	32		
			30	0.02	0.48	1000	0.43	15.1	4.18	0.016	8		

* PWM 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.**

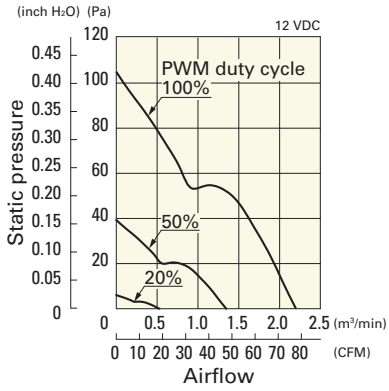
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL0912M4001	12	10.2 to 13.8	0.08	0.96	2400	1.05	37.1	24.1	0.097	24	-20 to +70	180000/60°C (215000/40°C)
9WL0924F4001	24	20.4 to 27.6	0.05	1.2	2800	1.22	43.1	32.8	0.13	29		
9WL0924M4001			0.04	0.96	2400	1.05	37.1	24.1	0.097	24		

Note: Sensor and control options are available for selection. Refer to the table on p. 638.

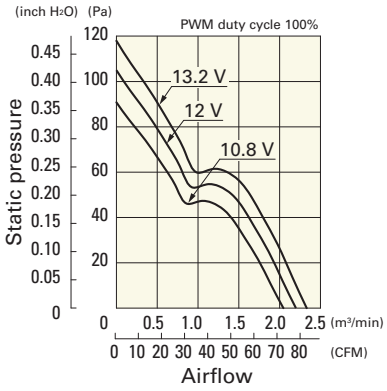
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0912P4J001 With pulse sensor with PWM control function

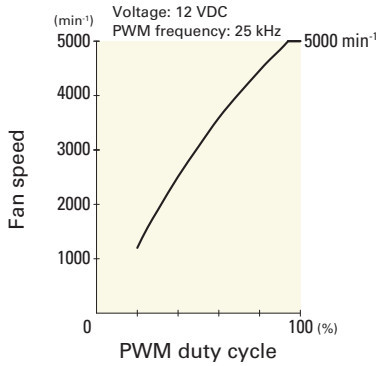
PWM duty cycle



Operating voltage range

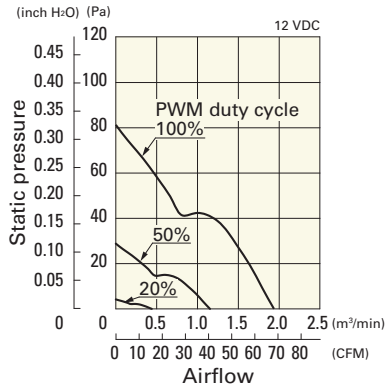


PWM duty - Speed characteristics example

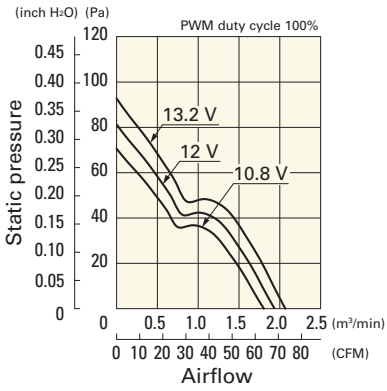


9WL0912P4G001 With pulse sensor with PWM control function

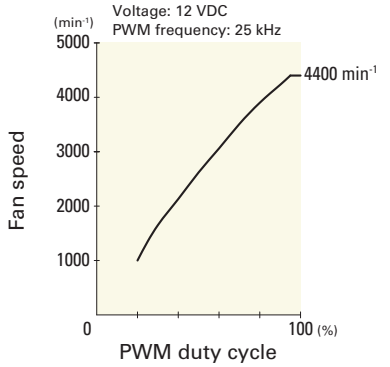
PWM duty cycle



Operating voltage range

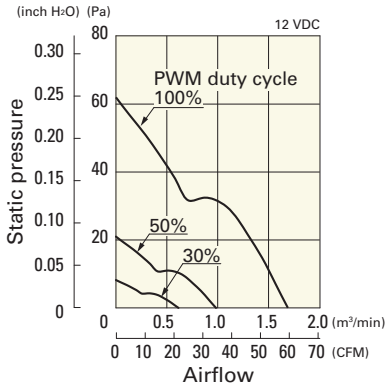


PWM duty - Speed characteristics example

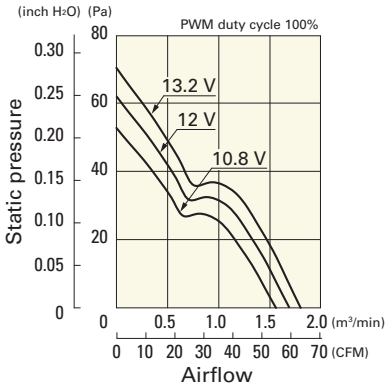


9WL0912P4S001 With pulse sensor with PWM control function

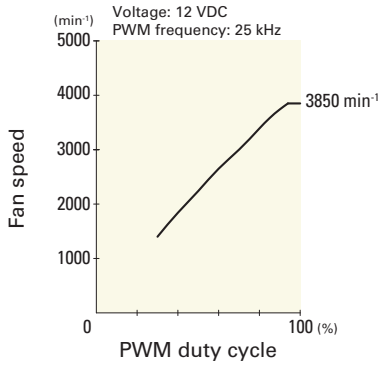
PWM duty cycle



Operating voltage range

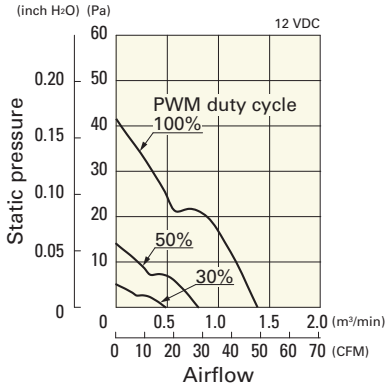


PWM duty - Speed characteristics example

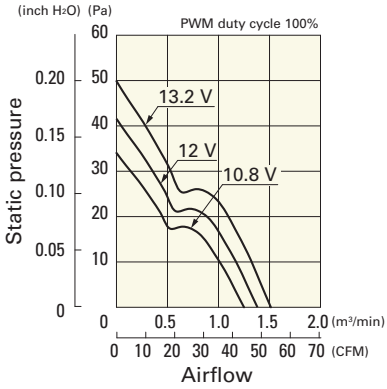


9WL0912P4H001 With pulse sensor with PWM control function

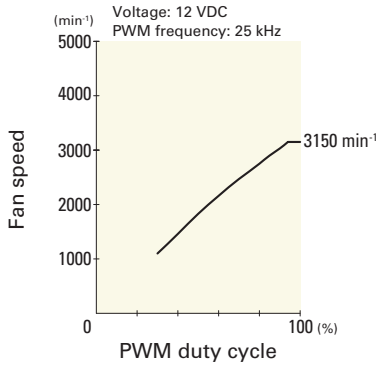
PWM duty cycle



Operating voltage range



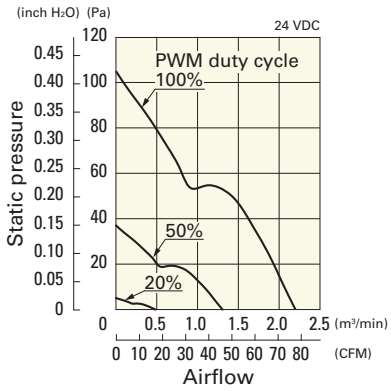
PWM duty - Speed characteristics example



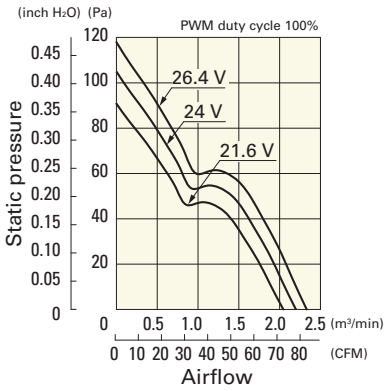
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0924P4J001 With pulse sensor with PWM control function

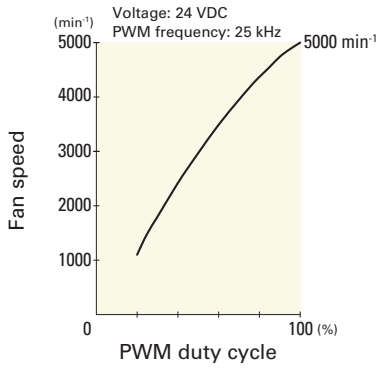
PWM duty cycle



Operating voltage range

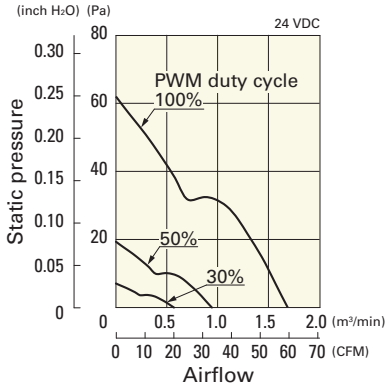


PWM duty - Speed characteristics example

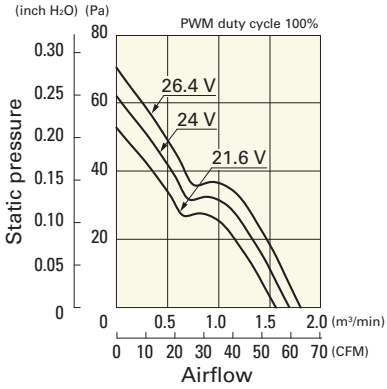


9WL0924P4S001 With pulse sensor with PWM control function

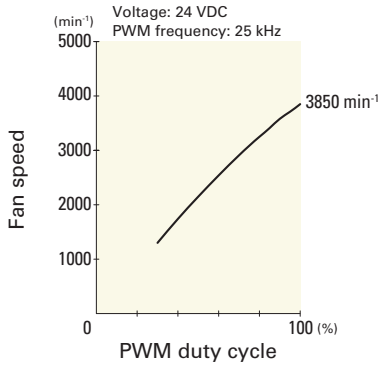
PWM duty cycle



Operating voltage range

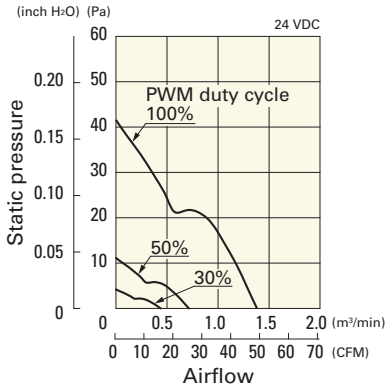


PWM duty - Speed characteristics example

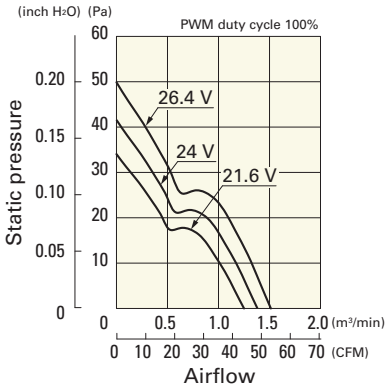


9WL0924P4H001 With pulse sensor with PWM control function

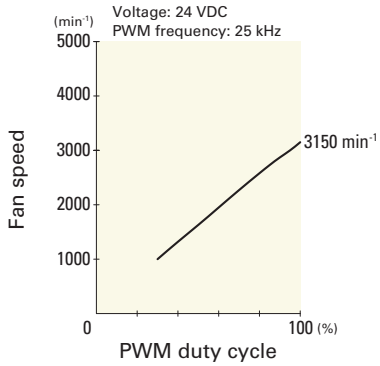
PWM duty cycle



Operating voltage range



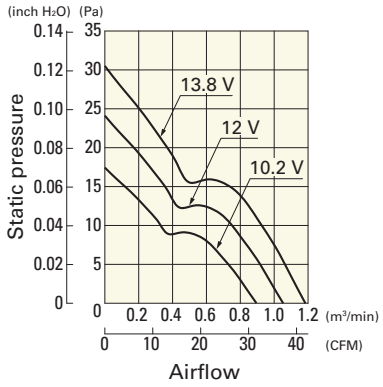
PWM duty - Speed characteristics example



Airflow - Static Pressure Characteristics

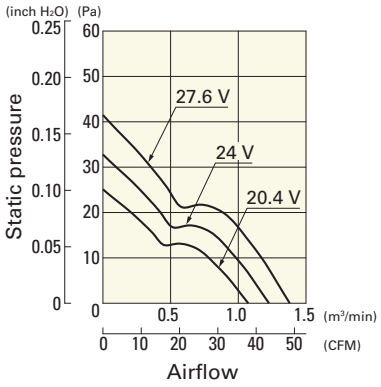
9WL0912M4001 With pulse sensor

Operating voltage range



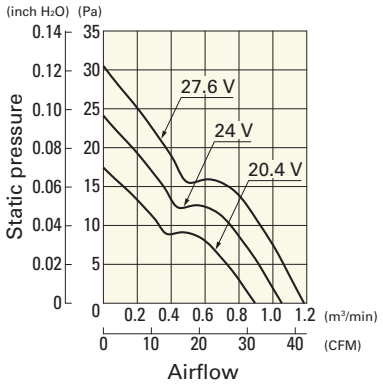
9WL0924F4001 With pulse sensor

Operating voltage range

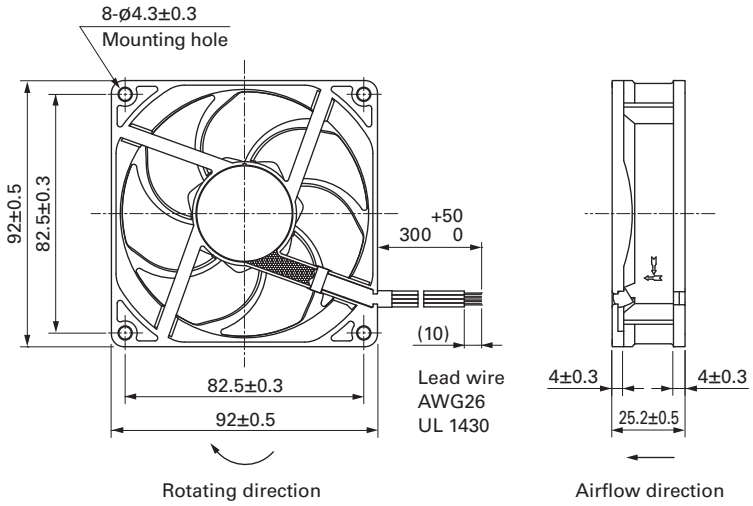


9WL0924M4001 With pulse sensor

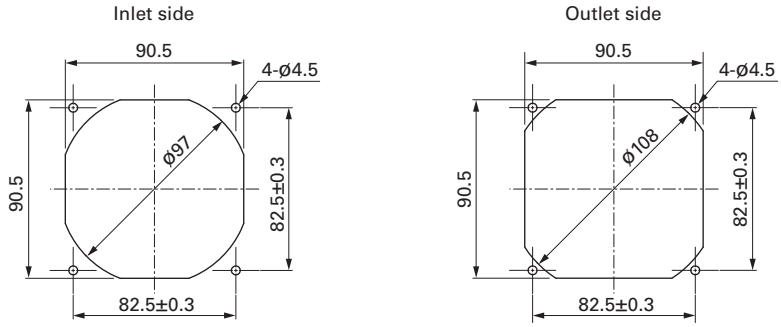
Operating voltage range



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



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



Options

Finger guards page: p. 584

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

Resin finger guards page: p. 591

Model no.: 109-1001G

92×92×25 mm

IP68

San Ace 92W 9WP type

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 120 g
- Ingress protection IP68

Specifications

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

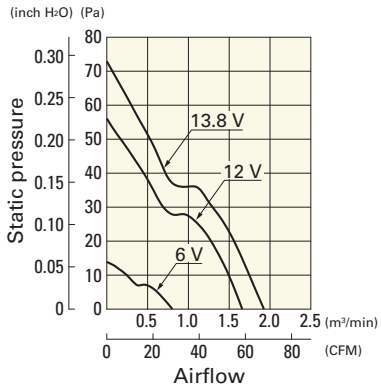
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WP0912S401	12	6 to 13.8	0.27	3.24	3550	1.66	58.6	56.1	0.225	39	-20 to +70	40000/60°C (70000/40°C)
9WP0912F401			0.14	1.68	2650	1.24	43.8	32.2	0.129	30		
9WP0924G401	24	12 to 27.6	0.19	4.56	3900	1.76	62.2	66.5	0.267	43		
9WP0924S401			0.15	3.6	3550	1.66	58.6	56.1	0.225	39		
9WP0924H401			0.1	2.4	3150	1.45	51.2	44	0.177	33		
9WP0924F401			0.08	1.92	2650	1.24	43.8	32.2	0.129	30		
9WP0924B401			0.05	1.2	2000	0.9	31.8	18.0	0.072	23	-10 to +70	

Note: Sensor and control options are available for selection. Refer to the table on p. 639.

Airflow - Static Pressure Characteristics

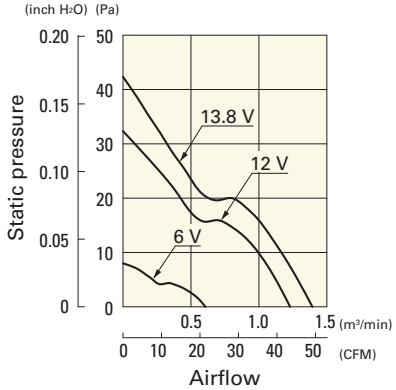
9WP0912S401 With pulse sensor

Operating voltage range



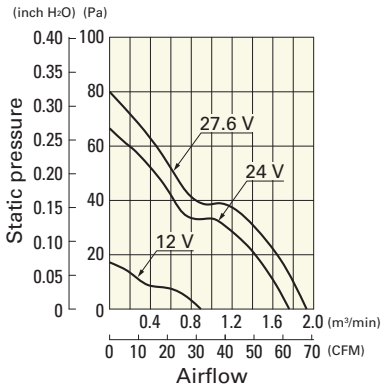
9WP0912F401 With pulse sensor

Operating voltage range



9WP0924G401 With pulse sensor

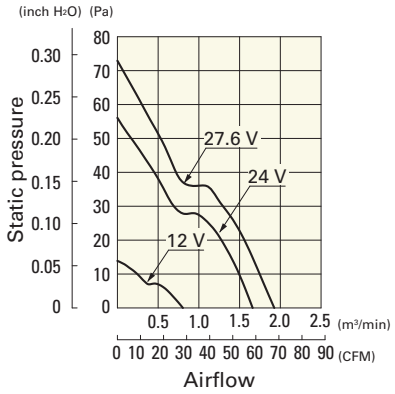
Operating voltage range



Airflow - Static Pressure Characteristics

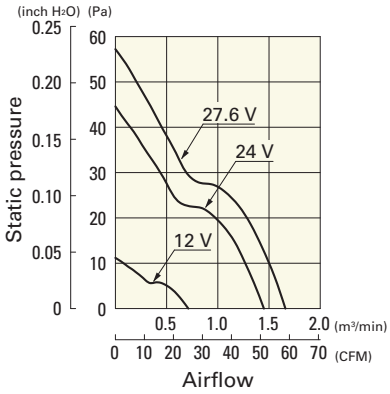
9WP0924S401 With pulse sensor

Operating voltage range



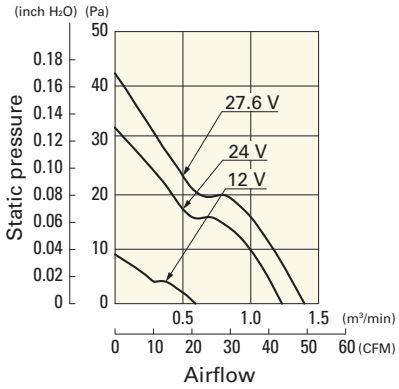
9WP0924H401 With pulse sensor

Operating voltage range



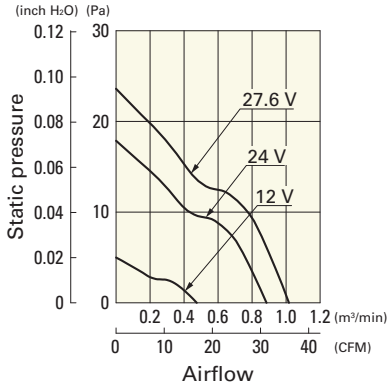
9WP0924F401 With pulse sensor

Operating voltage range

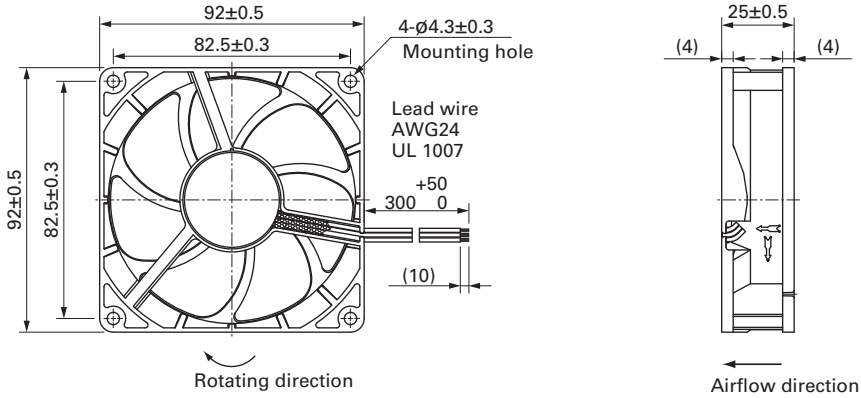


9WP0924B401 With pulse sensor

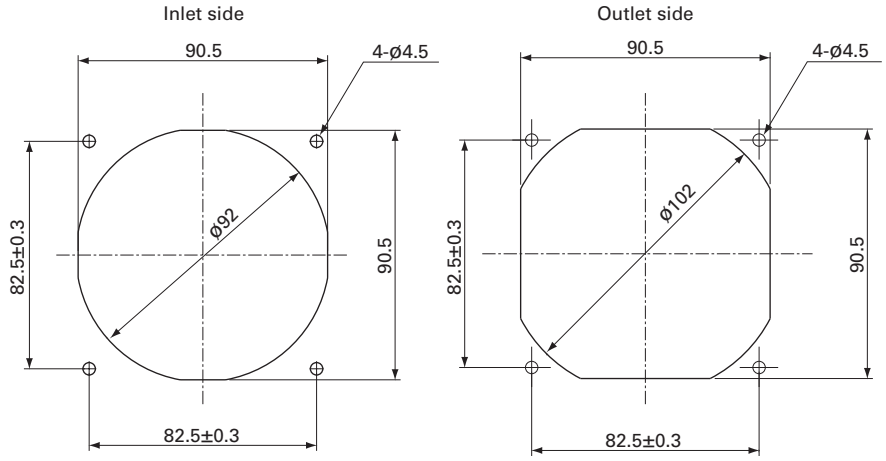
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards page: p. 584

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

Resin finger guards page: p. 591

Model no.: 109-1001G

92×92×38 mm

San Ace 92W 9WL type

IP68

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 300 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL0912P1H001	12	10.2 to 13.2	100	1.9	22.8	9000	3.7	130.6	430	1.72	61	-20 to +70	100000/60°C (135000/40°C)
			20	0.13	1.56	2700	1.11	39.1	48.0	0.19	30		
9WL0912P1F001			100	0.95	11.4	7000	2.9	102.4	263	1.05	55		
			20	0.1	1.2	2000	0.83	29.3	26.3	0.1	22		
9WL0924P1H001	24	20.4 to 26.4	100	0.95	22.8	9000	3.7	130.6	430	1.72	61		
			20	0.07	1.68	2700	1.11	39.1	48.0	0.19	30		
9WL0924P1F001			100	0.5	12	7000	2.9	102.4	263	1.05	55		
			20	0.06	1.44	2000	0.83	29.3	26.3	0.1	22		
9WL0948P1H601	48	40.8 to 52.8	100	0.48	23.04	9000	3.7	130.6	430	1.72	61		
			20	0.05	2.4	2700	1.11	39.1	48.0	0.19	30		
9WL0948P1F601			100	0.24	11.52	7000	2.9	102.4	263	1.05	55		
			20	0.05	2.4	2000	0.83	29.3	26.3	0.1	22		

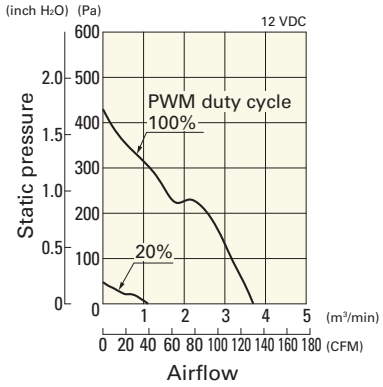
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 638.

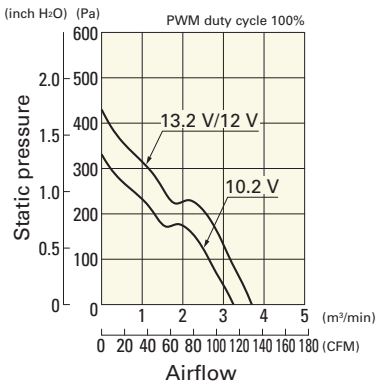
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0912P1H001 With pulse sensor with PWM control function

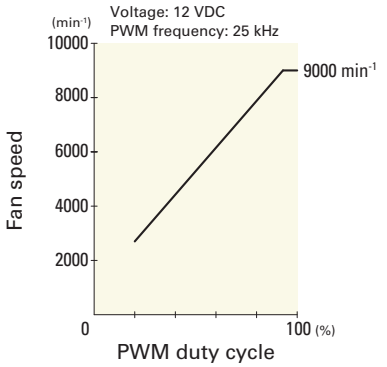
PWM duty cycle



Operating voltage range



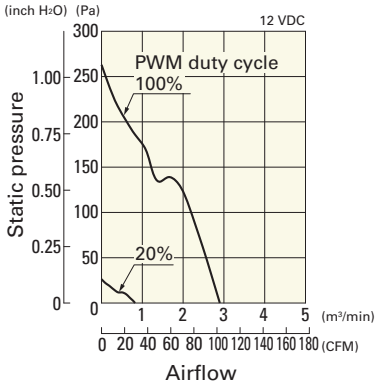
PWM duty - Speed characteristics example



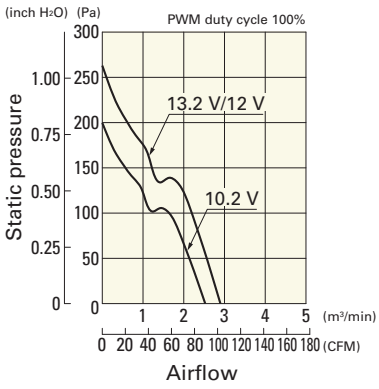
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0912P1F001 With pulse sensor with PWM control function

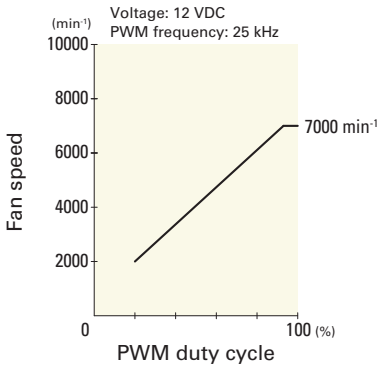
PWM duty cycle



Operating voltage range

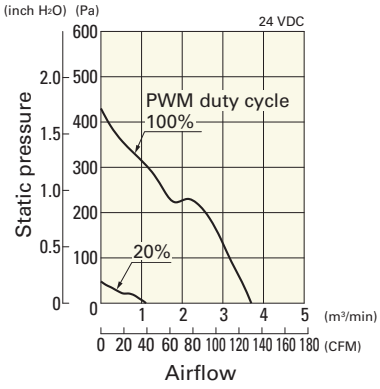


PWM duty - Speed characteristics example

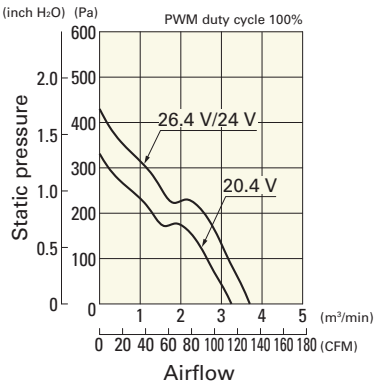


9WL0924P1H001 With pulse sensor with PWM control function

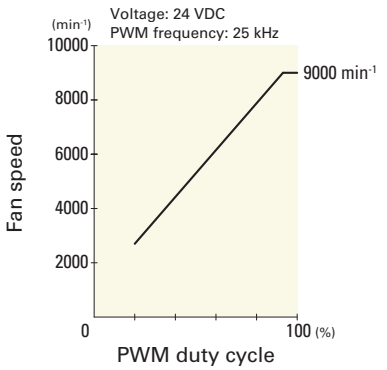
PWM duty cycle



Operating voltage range

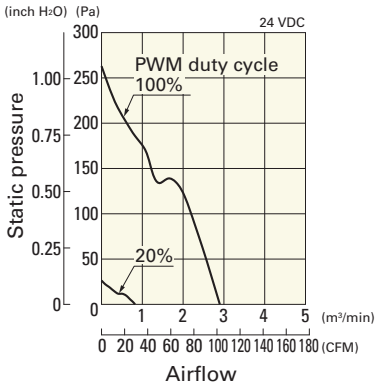


PWM duty - Speed characteristics example

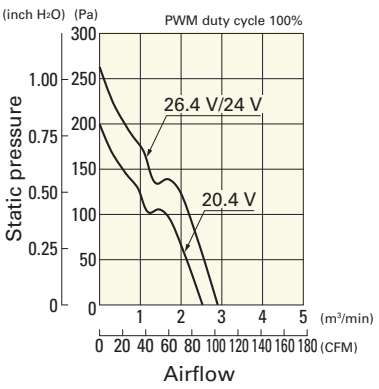


9WL0924P1F001 With pulse sensor with PWM control function

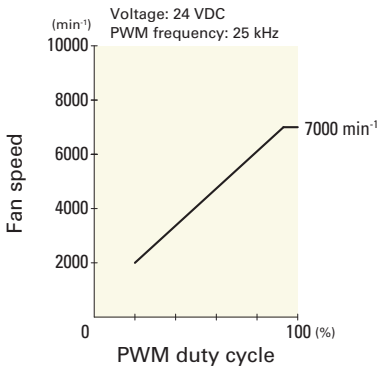
PWM duty cycle



Operating voltage range

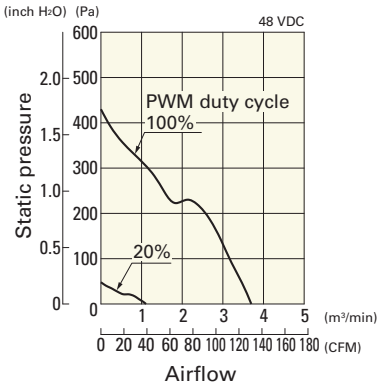


PWM duty - Speed characteristics example

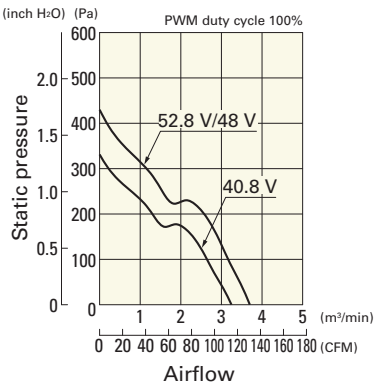


9WL0948P1H601 With pulse sensor with PWM control function

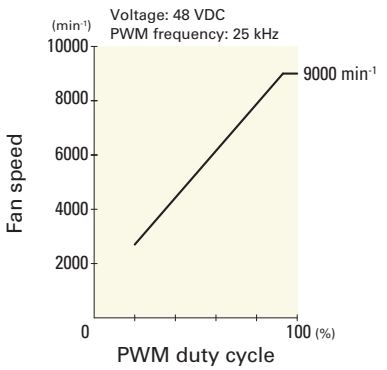
PWM duty cycle



Operating voltage range



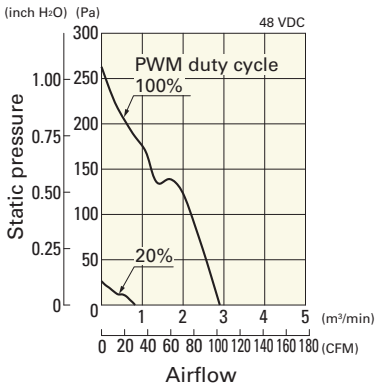
PWM duty - Speed characteristics example



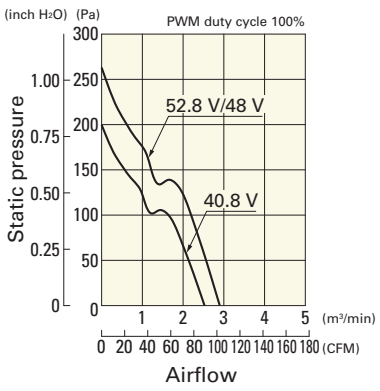
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL0948P1F601 With pulse sensor with PWM control function

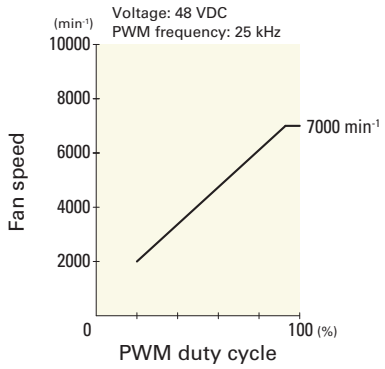
PWM duty cycle



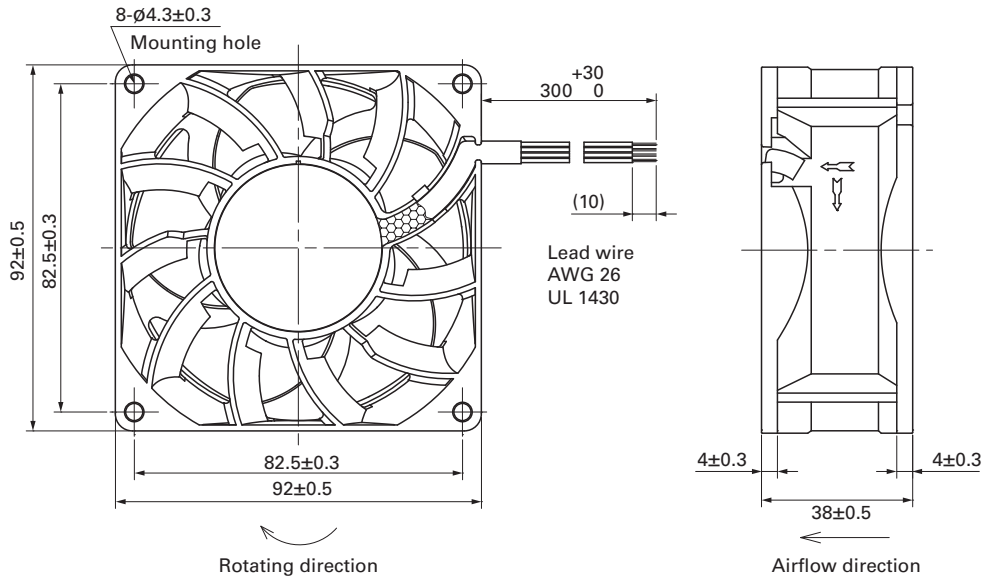
Operating voltage range



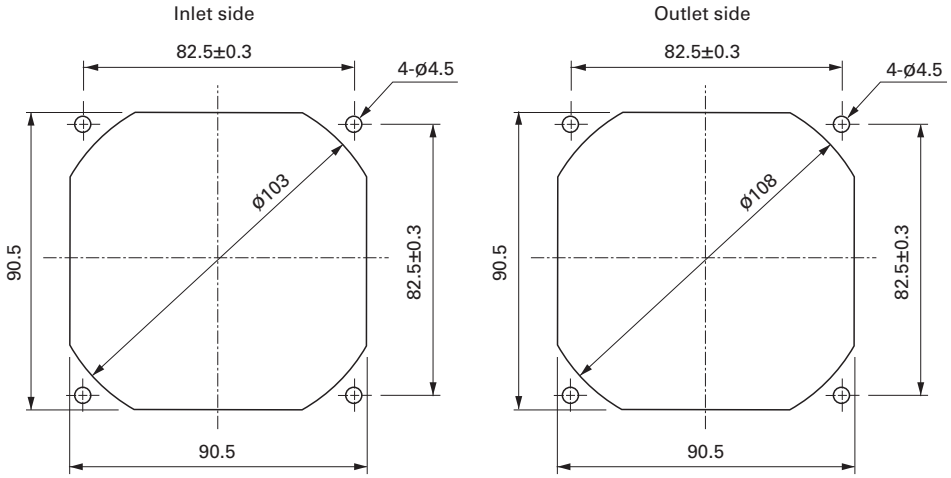
PWM duty - Speed characteristics example



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

92×92×38 mm

IP68

San Ace 92W 9WV type

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 265 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WV0924P1H001	24	20.4 to 26.4	100	1.6	38.4	8500	5.05	178	385	1.55	64	-20 to +60	30000/60°C (53000/40°C)
			20	0.16	3.84	3000	1.78	62.9	47.9	0.19	38		
9WV0948P1H001	48	40.8 to 52.8	100	0.82	39.4	8500	5.05	178	385	1.55	64	-20 to +70	
			0	0.14	6.7	4000	2.37	83.7	85.2	0.34	45		

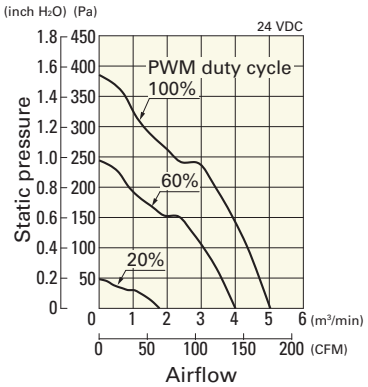
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 640.

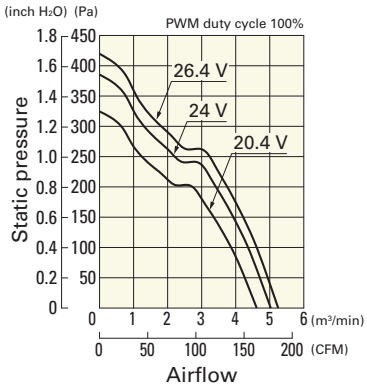
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV0924P1H001 With pulse sensor with PWM control function

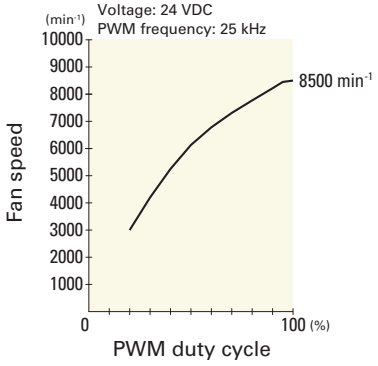
PWM duty cycle



Operating voltage range



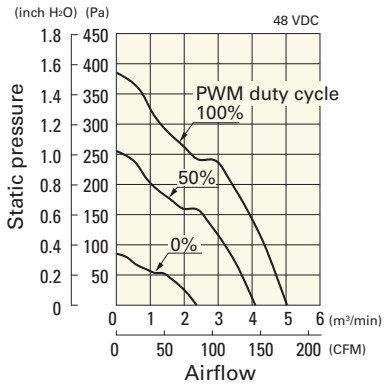
PWM duty - Speed characteristics example



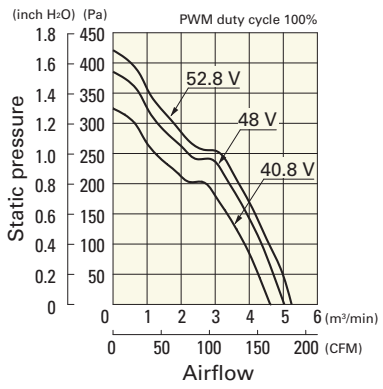
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV0948P1H001 With pulse sensor with PWM control function

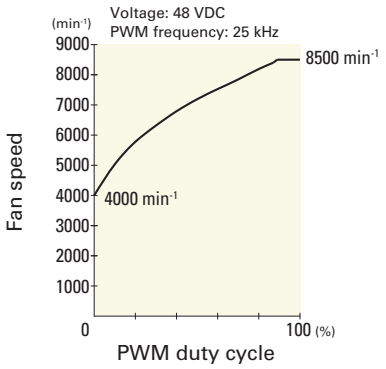
PWM duty cycle



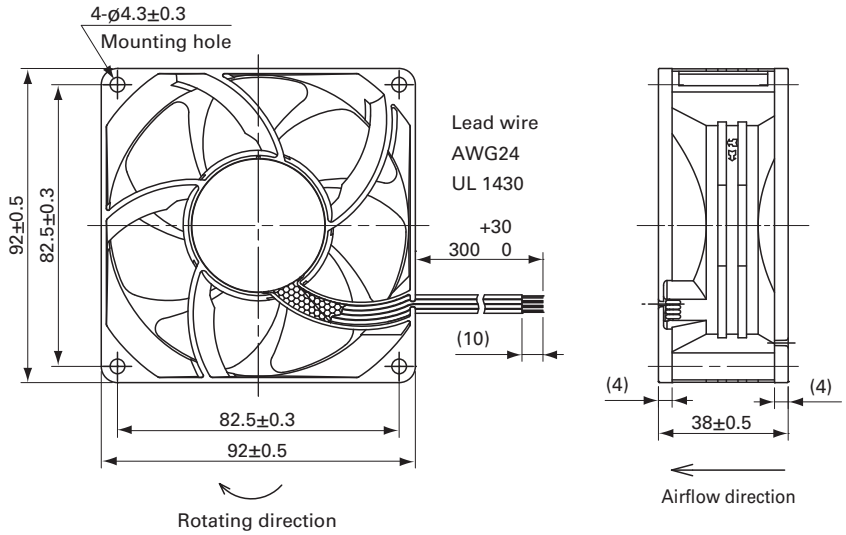
Operating voltage range



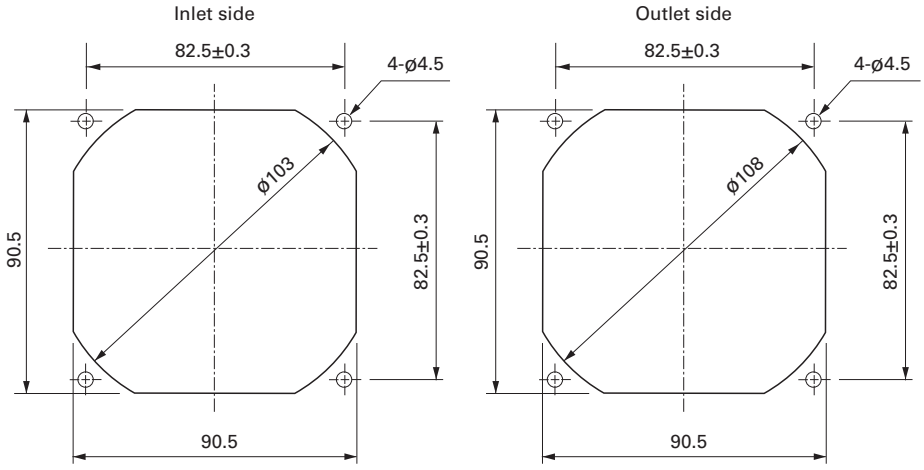
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards	page: p. 584

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

Resin finger guards	page: p. 591

Model no.: 109-1001G

120×120×38 mm

San Ace 120W 9WV type

IP68

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 440 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WV1212P1J001	12	10.2 to 13.8	100	3	36	6400	6.35	224.0	360	1.45	64	-20 to +70	60000/60°C (90000/40°C)
			0	0.2	2.4	1500	1.49	52.6	19.8	0.08	33		
9WV1224P1J601	24	20.4 to 27.6	100	1.5	36	6400	6.35	224.0	360	1.45	64		
			0	0.12	2.88	1500	1.49	52.6	26.1	0.105	33		
9WV1224P1H001			100	0.8	19.2	5200	5.16	182	237	0.95	58		
9WV1248P1J001	48	40.8 to 55.2	100	0.65	31.2	6400	6.35	224.0	360	1.45	64		
			0	0.06	2.88	1500	1.49	52.6	26.1	0.105	33		

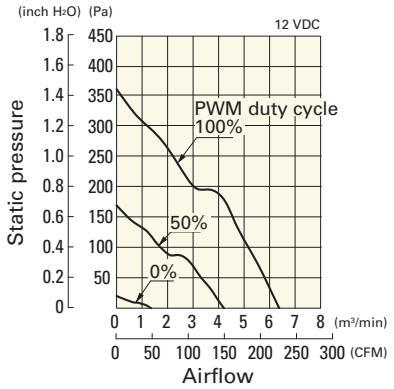
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 640.

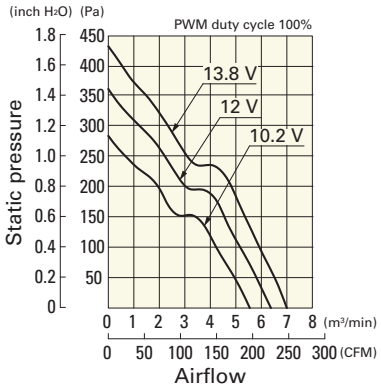
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV1212P1J001 With pulse sensor with PWM control function

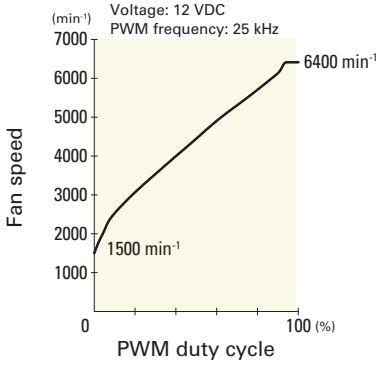
PWM duty cycle



Operating voltage range



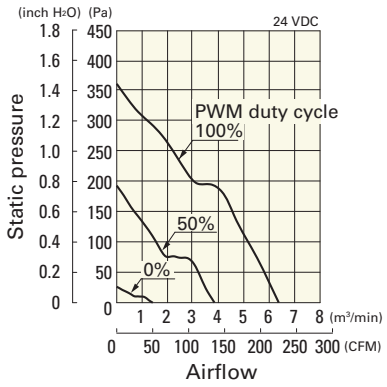
PWM duty - Speed characteristics example



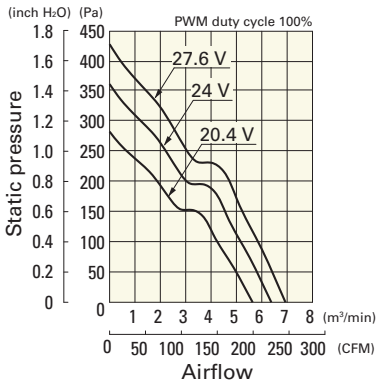
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WV1224P1J601 With pulse sensor with PWM control function

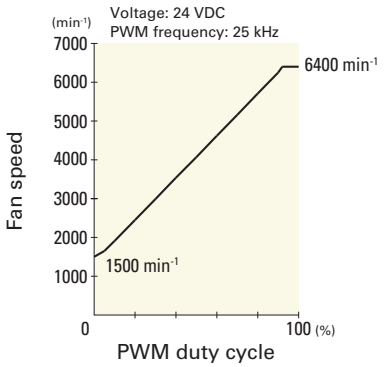
PWM duty cycle



Operating voltage range

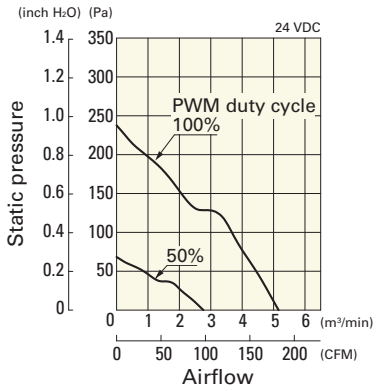


PWM duty - Speed characteristics example

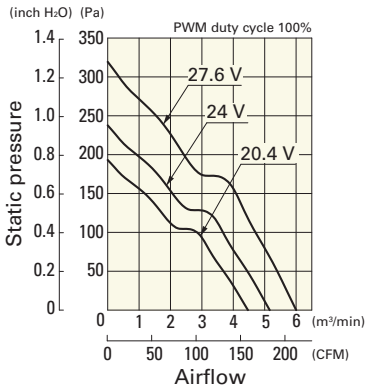


9WV1224P1H001 With pulse sensor with PWM control function

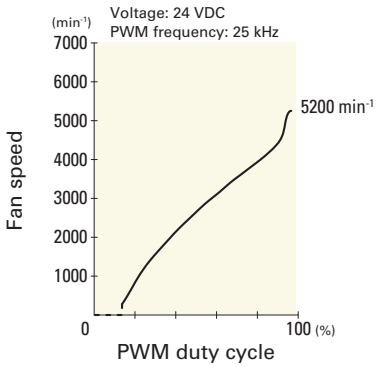
PWM duty cycle



Operating voltage range

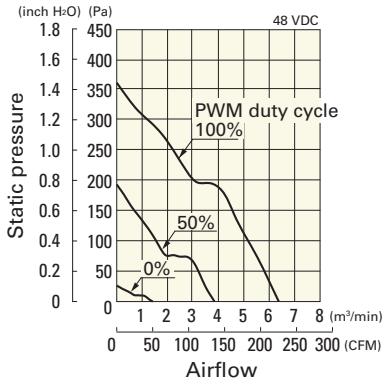


PWM duty - Speed characteristics example

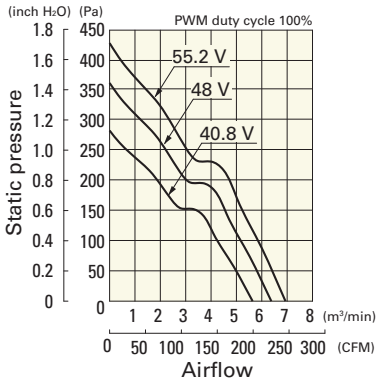


9WV1248P1J001 With pulse sensor with PWM control function

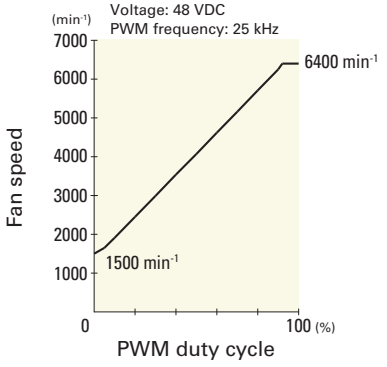
PWM duty cycle



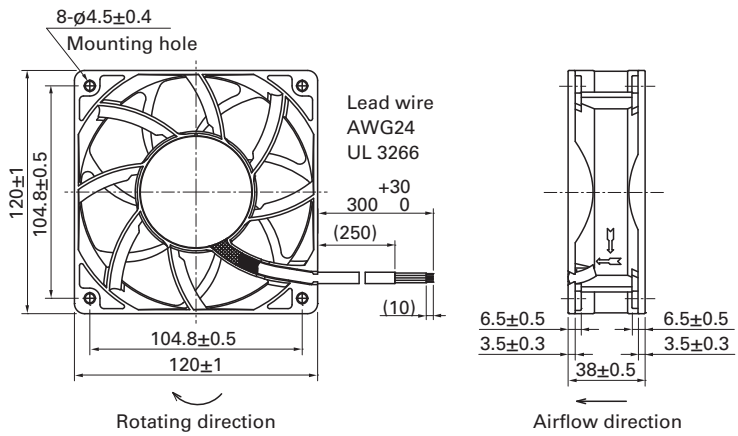
Operating voltage range



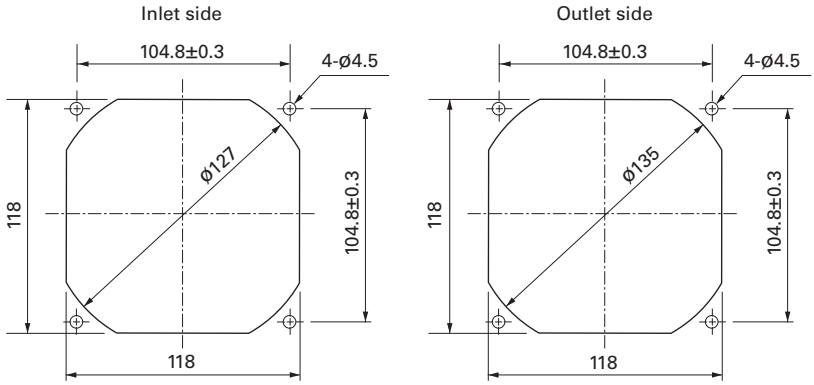
PWM duty - Speed characteristics example



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

120×120×38 mm

IP55

San Ace 120W 9WG type

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 410 g
- Ingress protection IP55

Specifications

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

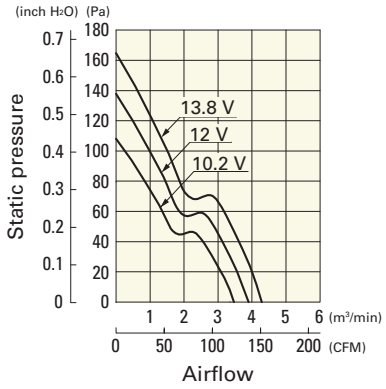
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WG1212G101-E	12	10.2 to 13.8	0.98	11.76	3600	3.88	137	135	0.542	49	-20 to +70	80000/60°C (115000/40°C)
9WG1212E101-E			0.61	7.32	3100	3.34	118	100	0.402	46		
9WG1212H101-E		7 to 13.8	0.38	4.56	2600	2.8	99	70.4	0.283	39		100000/60°C (135000/40°C)
9WG1212F101-E			0.28	3.36	2280	2.45	87	54.2	0.218	36		
9WG1212M101-E			0.21	2.52	1950	2.1	74	39.6	0.159	32		
9WG1224G101-E	24	20.4 to 27.6	0.5	12	3600	3.88	137	135	0.542	49		80000/60°C (115000/40°C)
9WG1224E101-E			0.34	8.16	3100	3.34	118	100	0.402	46		
9WG1224H101-E		14 to 27.6	0.22	5.28	2600	2.8	99	70.4	0.283	39		100000/60°C (135000/40°C)
9WG1224F101-E			0.16	3.84	2280	2.45	87	54.2	0.218	36		
9WG1224M101-E			0.11	2.64	1950	2.1	74	39.6	0.159	32		
9WG1248G101-E	48	40.8 to 55.2	0.25	12	3600	3.88	137	135	0.542	49		80000/60°C (115000/40°C)
9WG1248E101-E			0.17	8.16	3100	3.34	118	100	0.402	46		
9WG1248H101-E			0.11	5.28	2600	2.8	99	70.4	0.283	39		100000/60°C (135000/40°C)
9WG1248F101-E			0.09	4.32	2280	2.45	87	54.2	0.218	36		
9WG1248M101-E			0.07	3.36	1950	2.1	74	39.6	0.159	32		

Note: Sensor and control options are available for selection. Refer to the table on p. 637.

Airflow - Static Pressure Characteristics

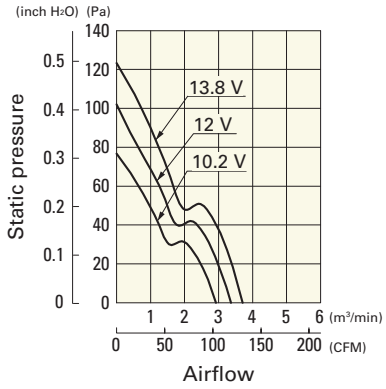
9WG1212G101-E With pulse sensor

Operating voltage range



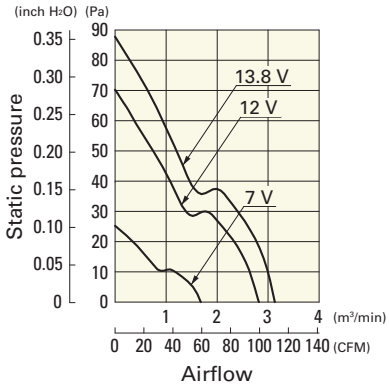
9WG1212E101-E With pulse sensor

Operating voltage range



9WG1212H101-E With pulse sensor

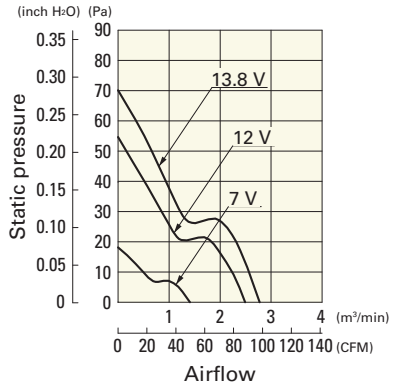
Operating voltage range



Airflow - Static Pressure Characteristics

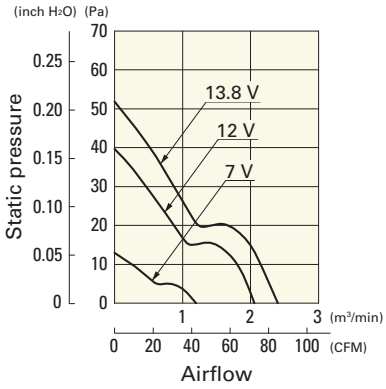
9WG1212F101-E With pulse sensor

Operating voltage range



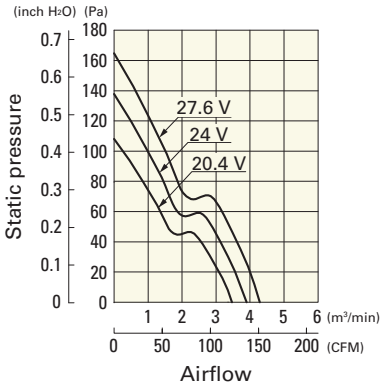
9WG1212M101-E With pulse sensor

Operating voltage range



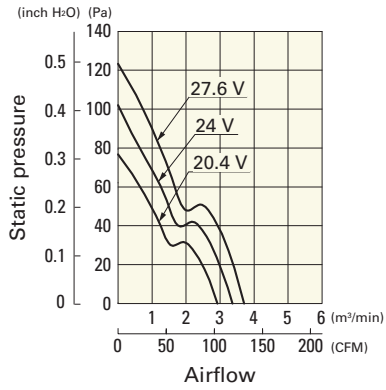
9WG1224G101-E With pulse sensor

Operating voltage range



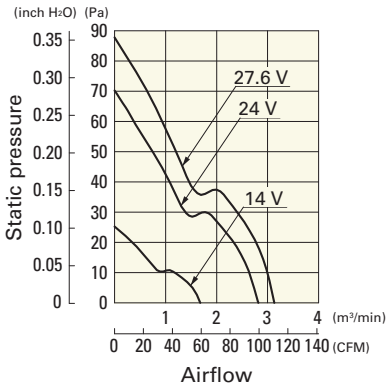
9WG1224E101-E With pulse sensor

Operating voltage range



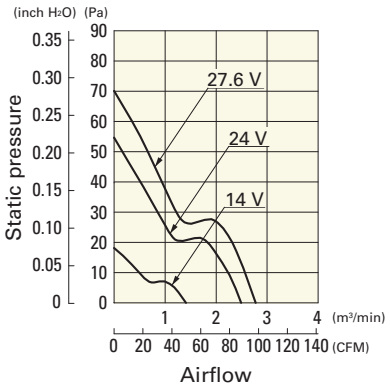
9WG1224H101-E With pulse sensor

Operating voltage range



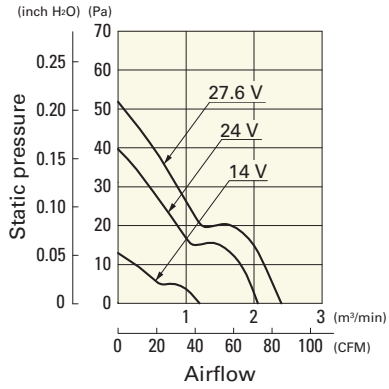
9WG1224F101-E With pulse sensor

Operating voltage range



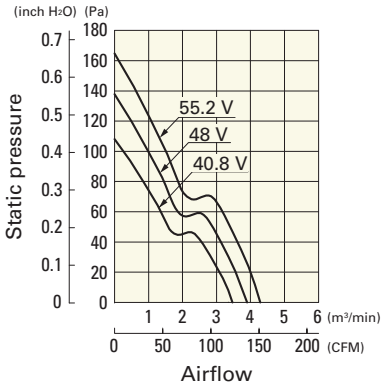
9WG1224M101-E With pulse sensor

Operating voltage range



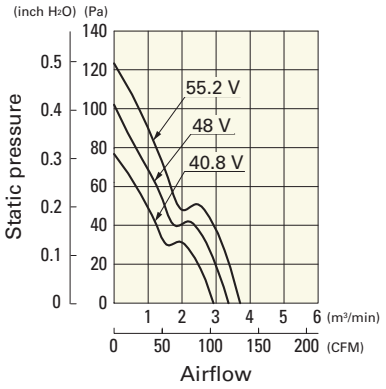
9WG1248G101-E With pulse sensor

Operating voltage range



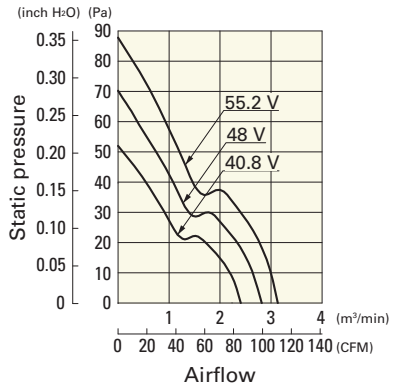
9WG1248E101-E With pulse sensor

Operating voltage range



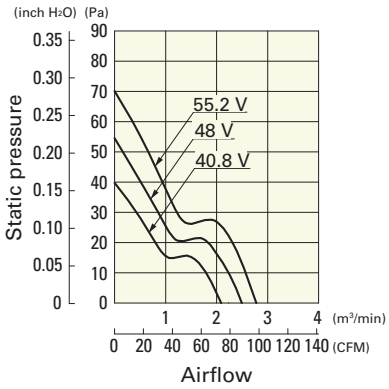
9WG1248H101-E With pulse sensor

Operating voltage range



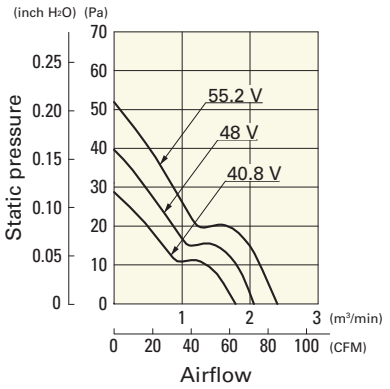
9WG1248F101-E With pulse sensor

Operating voltage range

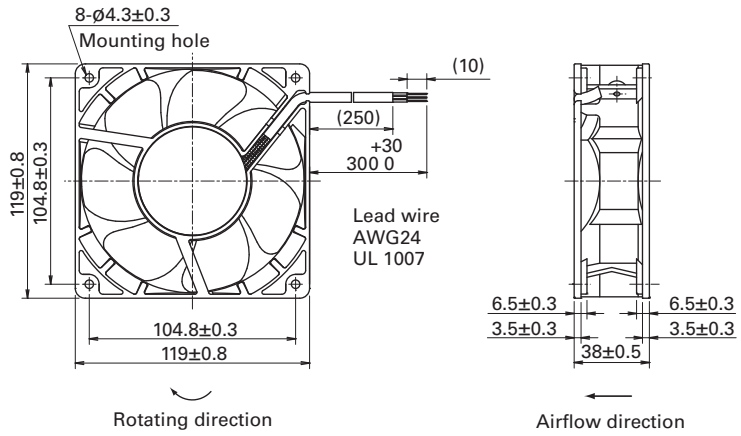


9WG1248M101-E With pulse sensor

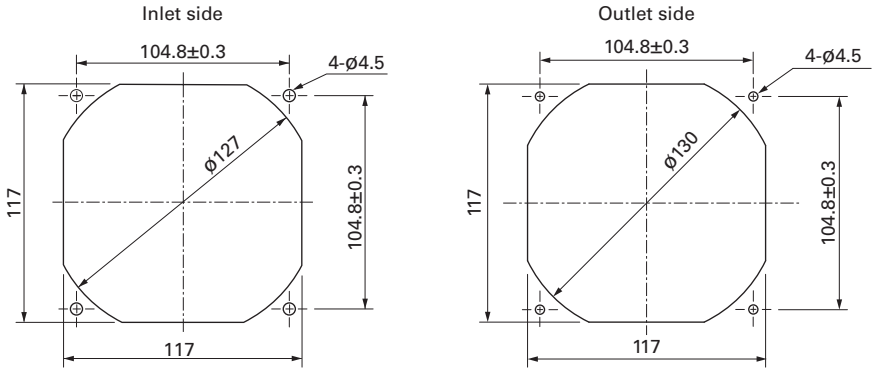
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards page: p. 585

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

Resin finger guards page: p. 591

Model no.: 109-1000G

120×120×38 mm

IP68

San Ace 120W 9WP type

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 360 g
- Ingress protection IP68

Specifications

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

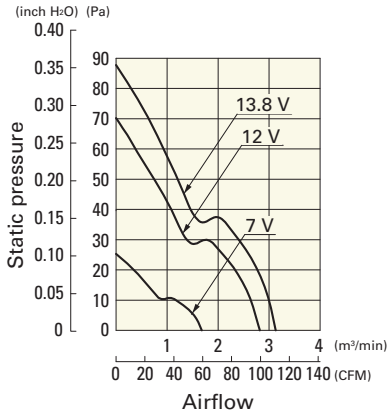
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WP1212H101	12	7 to 13.8	0.38	4.56	2600	2.8	99	70.4	0.283	39	-20 to +70	40000/60°C (70000/40°C)
9WP1212M101			0.21	2.52	1950	2.1	74.2	39.6	0.159	32		
9WP1212L101		10.2 to 13.8	0.14	1.68	1500	1.62	57.2	23.4	0.094	26		
9WP1224H101	24	14 to 27.6	0.22	5.28	2600	2.8	99	70.4	0.283	39		
9WP1224M101			0.11	2.64	1950	2.1	74.2	39.6	0.159	32		
9WP1248H101	48	40.8 to 55.2	0.11	5.28	2600	2.8	99	70.4	0.283	39		
9WP1248M101			0.07	3.36	1950	2.1	74.2	39.6	0.159	32		

Note: Sensor and control options are available for selection. Refer to the table on p. 639.

Airflow - Static Pressure Characteristics

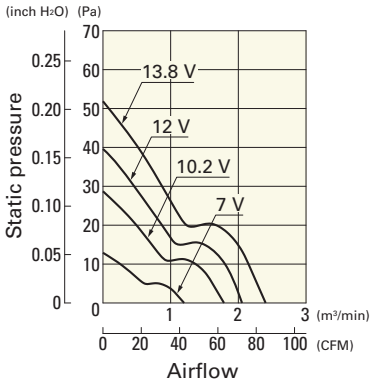
9WP1212H101 With pulse sensor

Operating voltage range



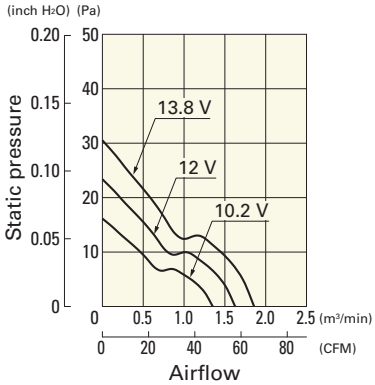
9WP1212M101 With pulse sensor

Operating voltage range



9WP1212L101 With pulse sensor

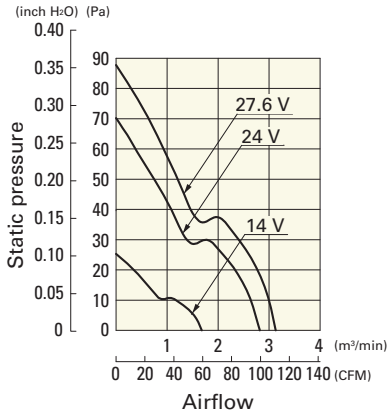
Operating voltage range



Airflow - Static Pressure Characteristics

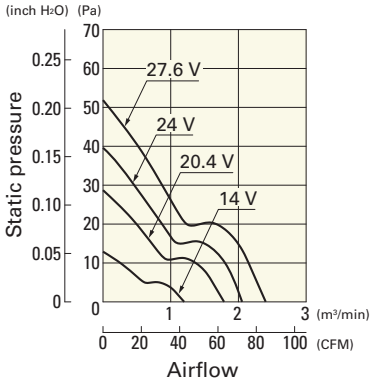
9WP1224H101 With pulse sensor

Operating voltage range



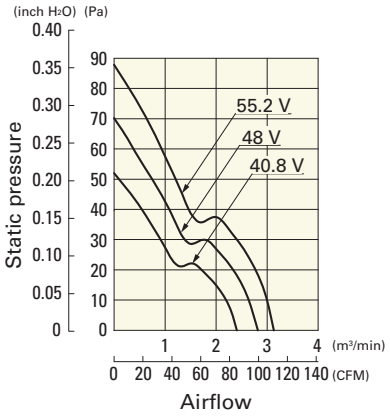
9WP1224M101 With pulse sensor

Operating voltage range



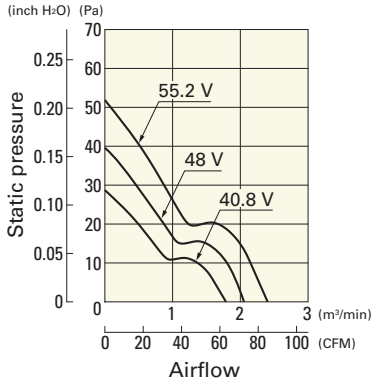
9WP1248H101 With pulse sensor

Operating voltage range

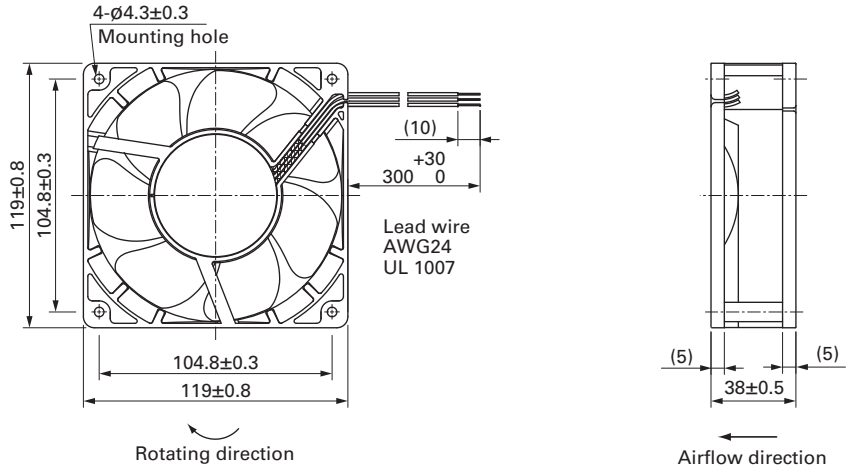


9WP1248M101 With pulse sensor

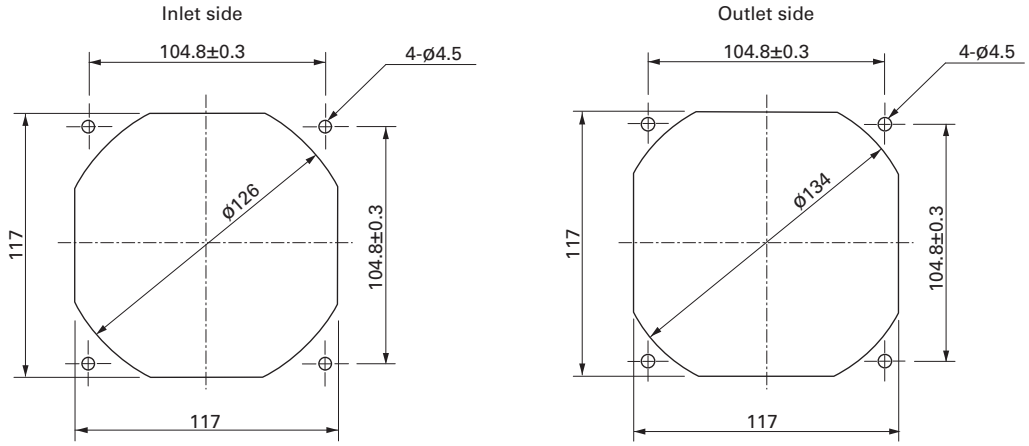
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards page: p. 585

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

Resin finger guards page: p. 591

Model no.: 109-1000G

140×140×38 mm

San Ace 140W 9WL type

IP68

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 740 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL1412P1A001	12	10.2 to 13.8	100	3.72	44.64	6900	8.0	282	516	2.07	68	-20 to +70	100000/60°C (135000/40°C)
			20	0.27	3.24	2300	2.66	93	80	0.32	39		
9WL1412P1H001			100	1.7	20.4	5200	6.0	212	300	1.2	62		
			20	0.27	3.24	2300	2.66	93	80	0.32	39		
9WL1412P1M001			100	0.6	7.2	3300	3.7	130	170	0.68	46		
			20	0.16	1.92	1300	1.45	51	26	0.1	29		
9WL1424P1A001	24	20.4 to 27.6	100	1.86	44.64	6900	8.0	282	516	2.07	68		
			20	0.17	4.08	2300	2.66	93	80	0.32	39		
9WL1424P1H001			100	0.85	20.4	5200	6.0	212	300	1.2	62		
			20	0.16	3.84	2300	2.66	93	80	0.32	39		
9WL1424P1M001			100	0.3	7.2	3300	3.7	130	170	0.68	46		
			20	0.11	2.64	1300	1.45	51	26	0.1	29		
9WL1448P1A001	48	40.8 to 55.2	100	0.92	44.16	6900	8.0	282	516	2.07	68		
			20	0.11	5.28	2300	2.66	93	80	0.32	39		
9WL1448P1H001			100	0.42	20.16	5200	6.0	212	300	1.2	62		
			20	0.11	5.28	2300	2.66	93	80	0.32	39		
9WL1448P1M001			100	0.15	7.2	3300	3.7	130	170	0.68	46		
			20	0.09	4.32	1300	1.45	51	26	0.1	29		

* PWM 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.**

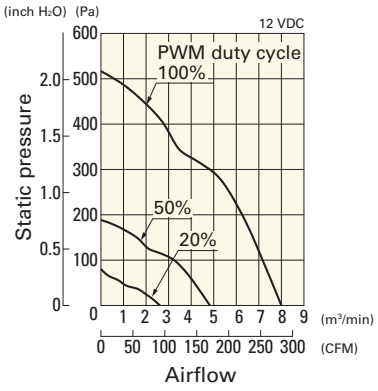
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL1448L1001	48	40.8 to 55.2	0.11	5.3	2300	2.6	91.9	80	0.32	39	-20 to +70	100000/60°C (135000/40°C)

Note: Sensor and control options are available for selection. Refer to the table on p. 638.

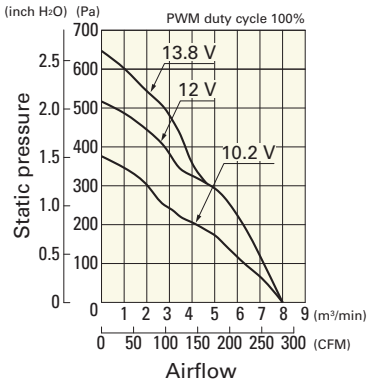
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1412P1A001 With pulse sensor with PWM control function

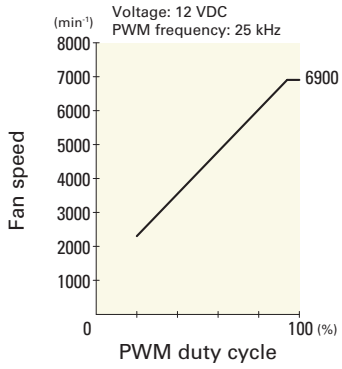
PWM duty cycle



Operating voltage range

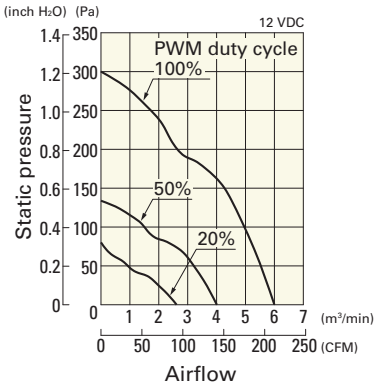


PWM duty - Speed characteristics example

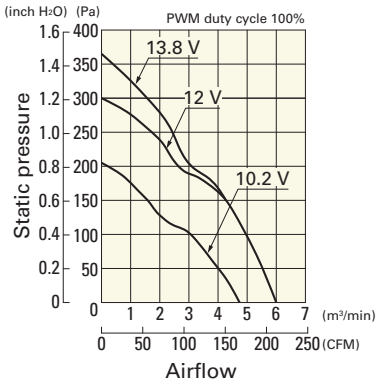


9WL1412P1H001 With pulse sensor with PWM control function

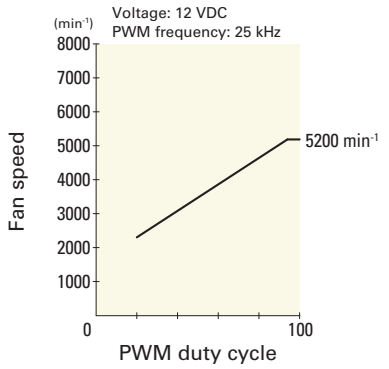
PWM duty cycle



Operating voltage range

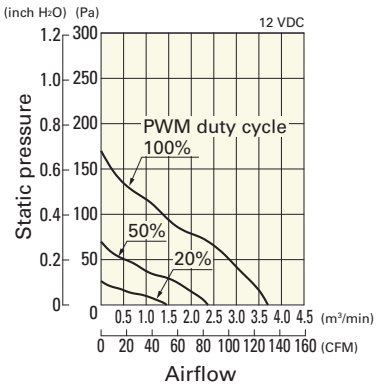


PWM duty - Speed characteristics example

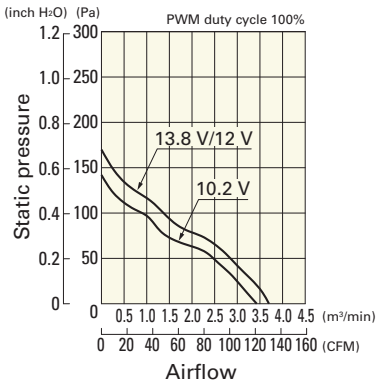


9WL1412P1M001 With pulse sensor with PWM control function

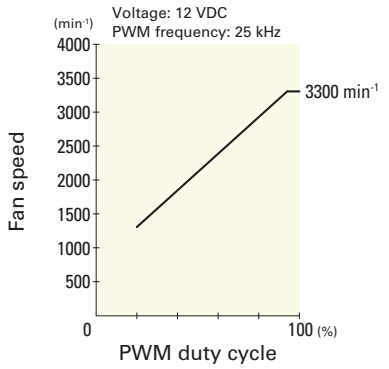
PWM duty cycle



Operating voltage range

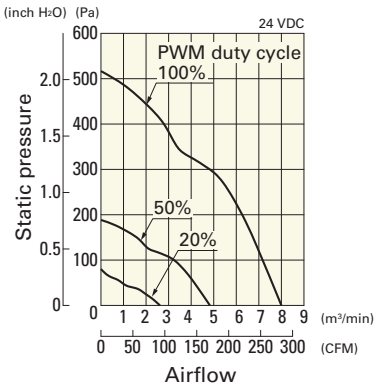


PWM duty - Speed characteristics example

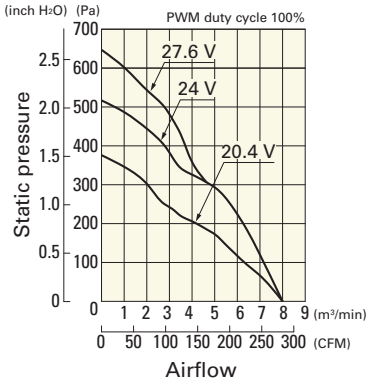


9WL1424P1A001 With pulse sensor with PWM control function

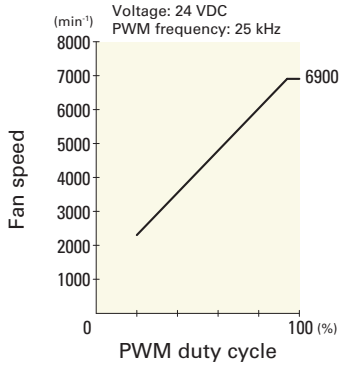
PWM duty cycle



Operating voltage range



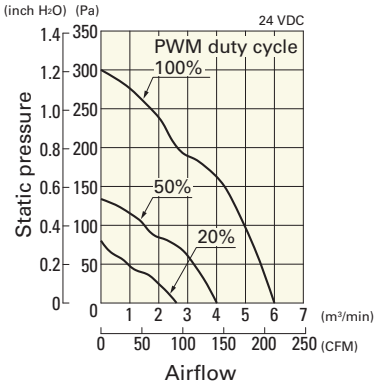
PWM duty - Speed characteristics example



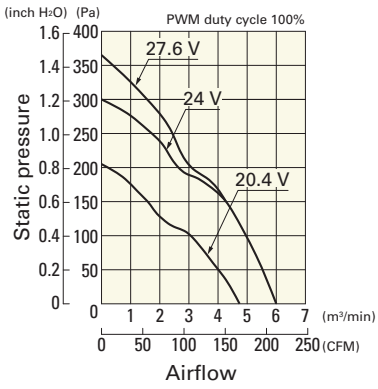
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1424P1H001 With pulse sensor with PWM control function

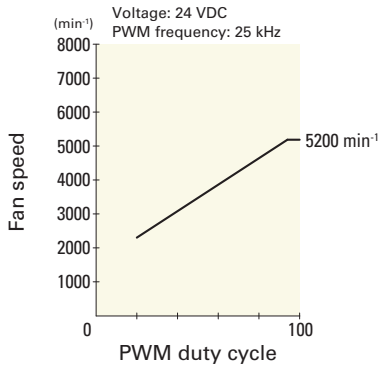
PWM duty cycle



Operating voltage range

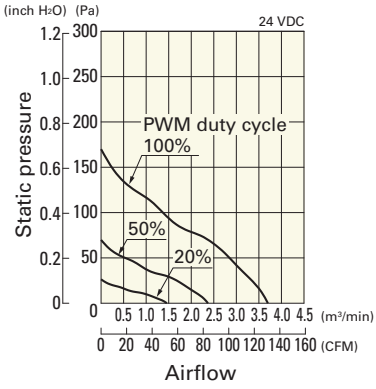


PWM duty - Speed characteristics example

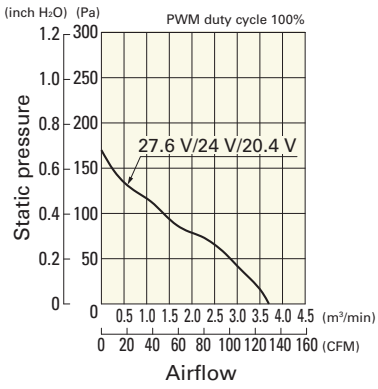


9WL1424P1M001 With pulse sensor with PWM control function

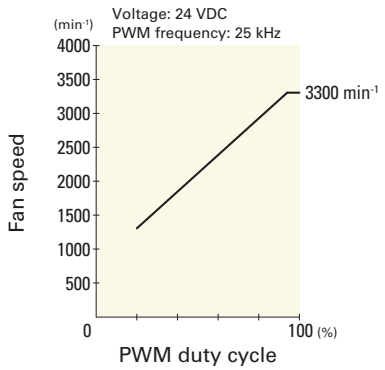
PWM duty cycle



Operating voltage range

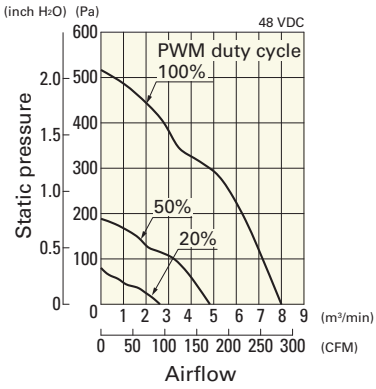


PWM duty - Speed characteristics example

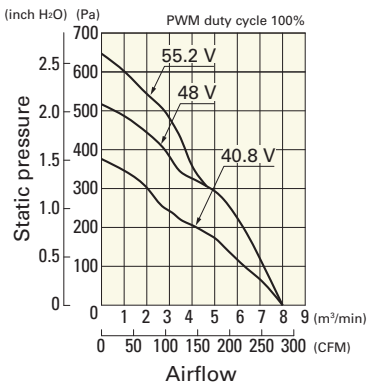


9WL1448P1A001 With pulse sensor with PWM control function

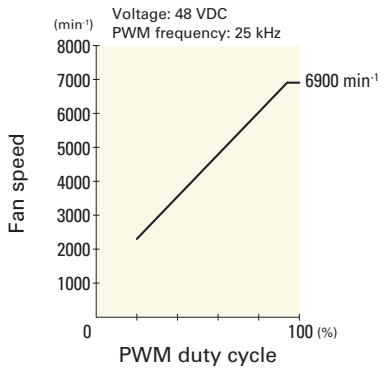
PWM duty cycle



Operating voltage range

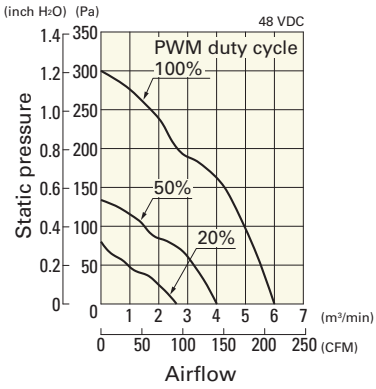


PWM duty - Speed characteristics example

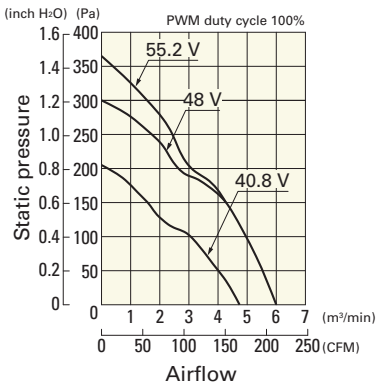


9WL1448P1H001 With pulse sensor with PWM control function

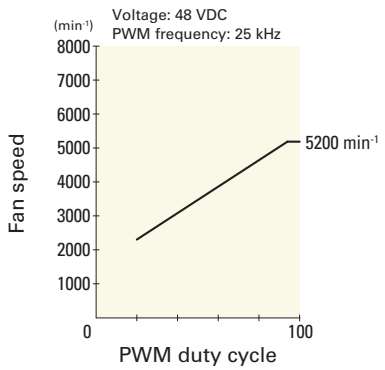
PWM duty cycle



Operating voltage range



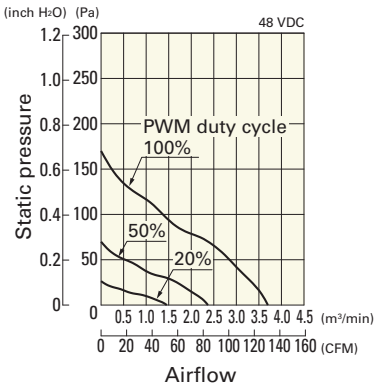
PWM duty - Speed characteristics example



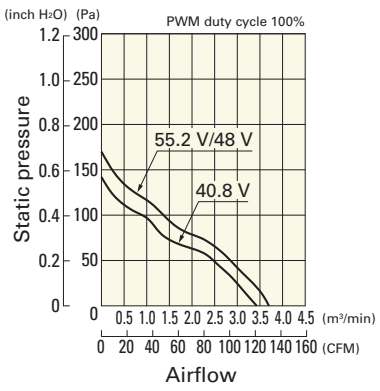
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1448P1M001 With pulse sensor with PWM control function

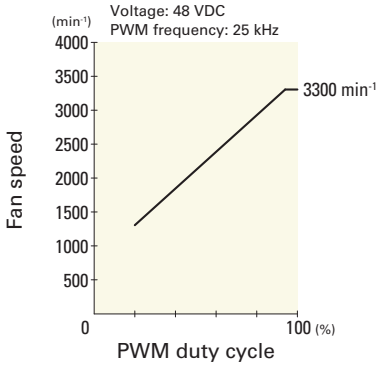
PWM duty cycle



Operating voltage range



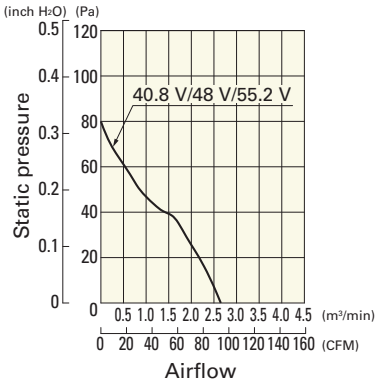
PWM duty - Speed characteristics example



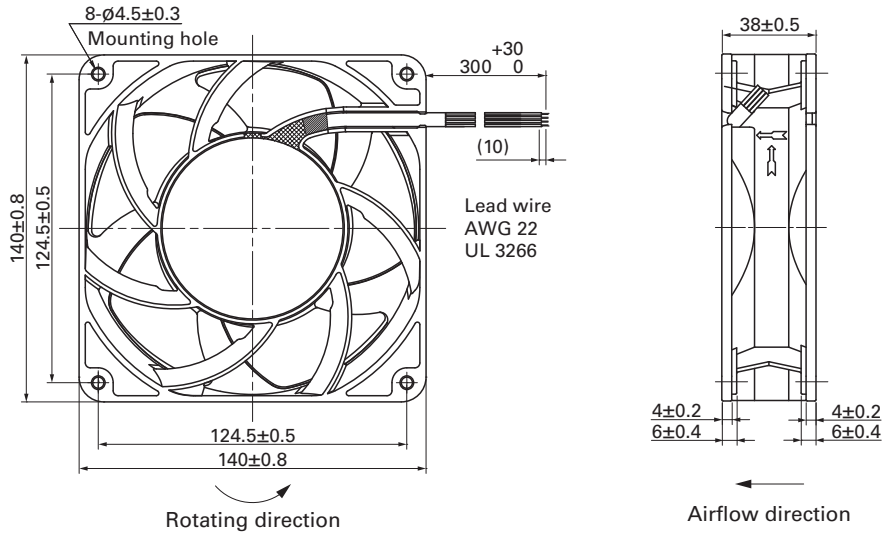
Airflow - Static Pressure Characteristics

9WL1448L1001 With pulse sensor

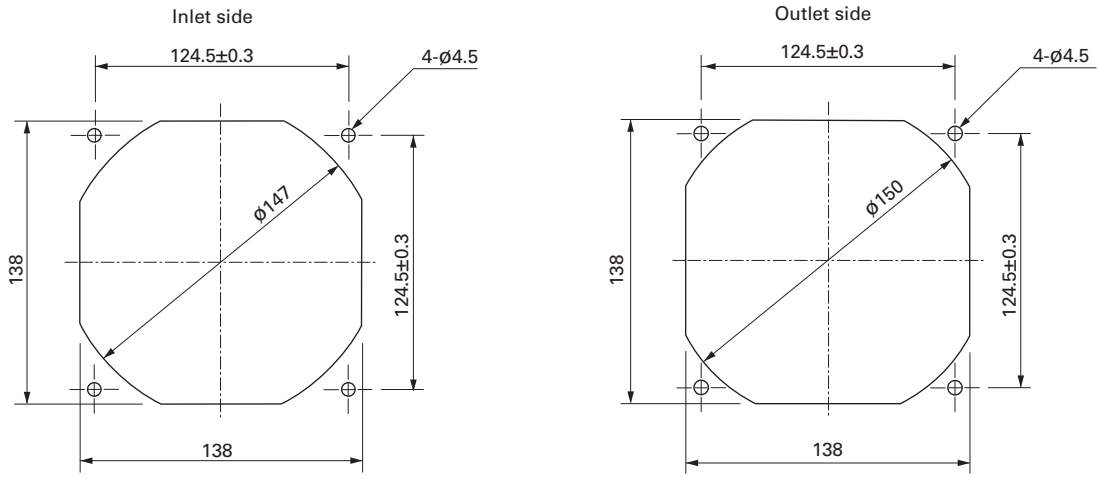
Operating voltage range



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



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



Options

Finger guards page: p. 585

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

140×140×51 mm

IP68

San Ace 140W 9WL type

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 930 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL1412P5G001	12	10.2 to 13.8	100	5.16	62	7500	9.0	318	655	2.63	69	-20 to +70	100000/60°C (135000/40°C)
			20	0.31	3.72	2300	2.75	97	80	0.32	38		
9WL1412P5S001			100	1.83	22	5000	6.0	212	295	1.18	57		
			20	0.31	3.72	2300	2.75	97	80	0.32	38		
9WL1424P5G001	24	20.4 to 27.6	100	2.58	62	7500	9.0	318	655	2.63	69		
			20	0.16	3.84	2300	2.75	97	80	0.32	38		
9WL1424P5S001			100	0.91	22	5000	6.0	212	295	1.18	57		
			20	0.16	3.84	2300	2.75	97	80	0.32	38		
9WL1448P5G001	48	40.8 to 55.2	100	1.29	62	7500	9.0	318	655	2.63	69		
			20	0.12	5.76	2300	2.75	97	80	0.32	38		
9WL1448P5S001			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.**

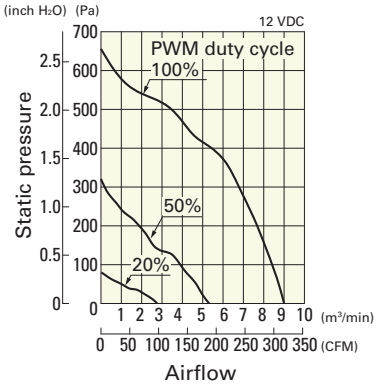
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WL1412A5001	12	10.2 to 13.8	2.61	31.4	5700	6.9	243.8	500	2	61	-20 to +70	100000/60°C (135000/40°C)
9WL1412H5001			1	12	4100	4.9	173.1	260	1.04	52		
9WL1412M5001			0.43	5.16	2600	3.1	109.5	100	0.4	40		
9WL1424A5001	24	20.4 to 27.6	1.21	29.10	5700	6.9	243.8	540	2.17	61		
9WL1424H5001			0.55	13.2	4100	4.9	173.1	260	1.04	52		
9WL1424M5001			0.23	5.52	2600	3.1	109.5	100	0.4	40		
9WL1448A5001	48	40.8 to 55.2	0.66	31.7	5700	6.9	243.8	540	2.17	61		
9WL1448H5001			0.31	14.9	4100	4.9	173.1	260	1.04	52		
9WL1448M5001			0.15	7.2	2600	3.1	109.5	100	0.4	40		

Note: Sensor and control options are available for selection. Refer to the table on p. 638.

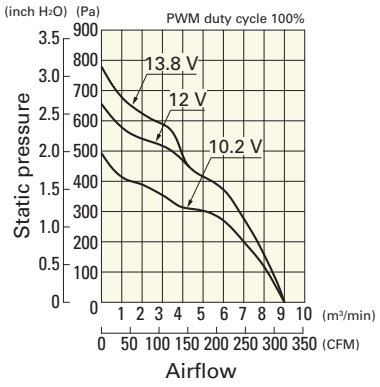
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1412P5G001 With pulse sensor with PWM control function

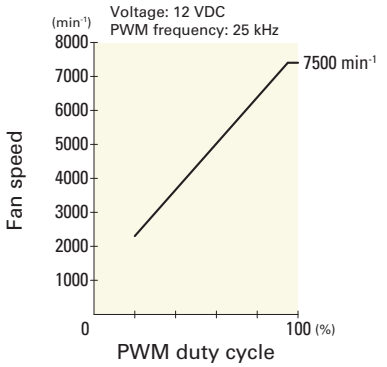
PWM duty cycle



Operating voltage range

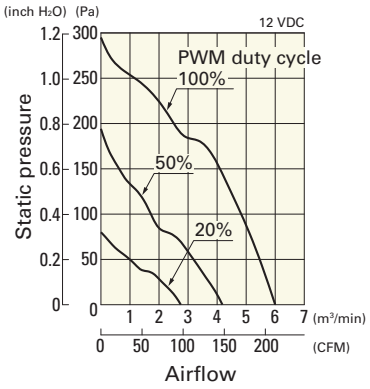


PWM duty - Speed characteristics example

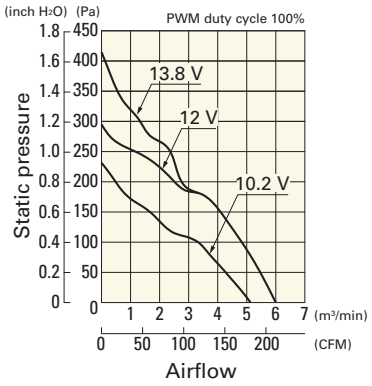


9WL1412P5S001 With pulse sensor with PWM control function

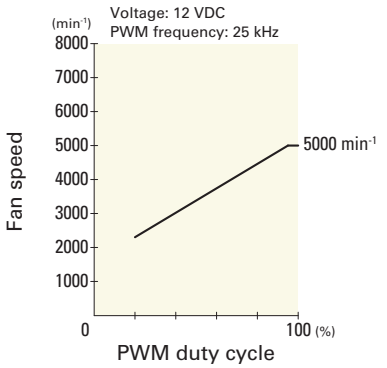
PWM duty cycle



Operating voltage range

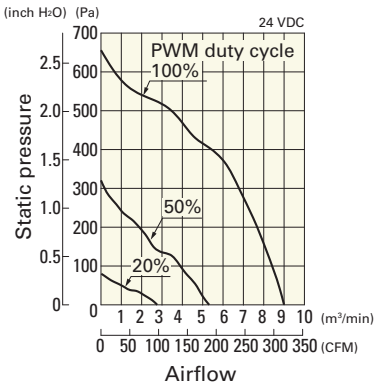


PWM duty - Speed characteristics example

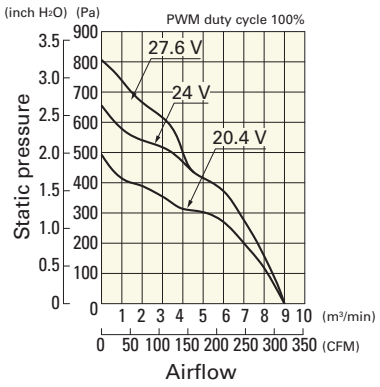


9WL1424P5G001 With pulse sensor with PWM control function

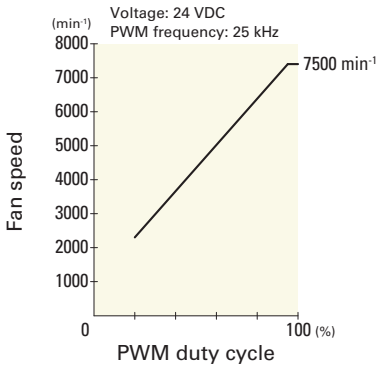
PWM duty cycle



Operating voltage range

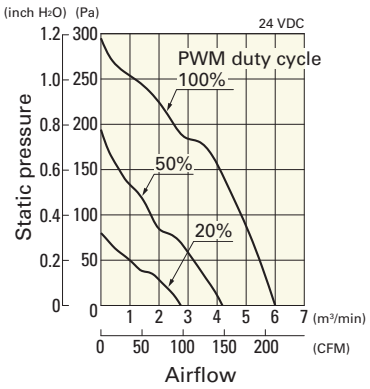


PWM duty - Speed characteristics example

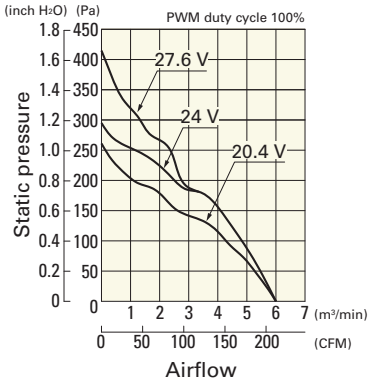


9WL1424P5S001 With pulse sensor with PWM control function

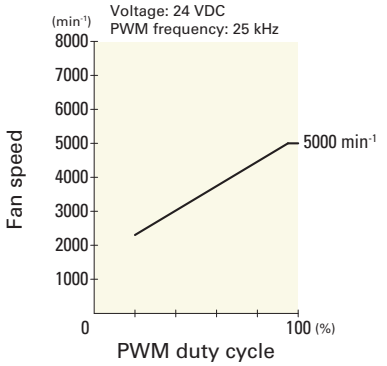
PWM duty cycle



Operating voltage range



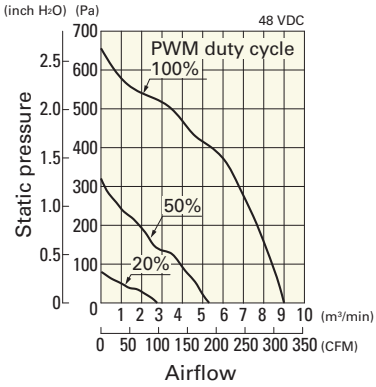
PWM duty - Speed characteristics example



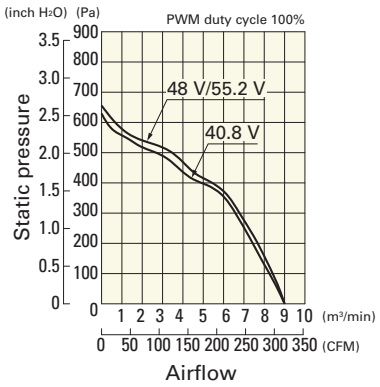
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WL1448P5G001 With pulse sensor with PWM control function

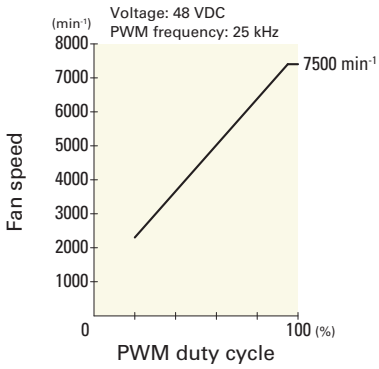
PWM duty cycle



Operating voltage range

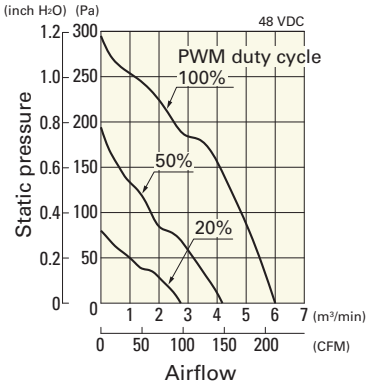


PWM duty - Speed characteristics example

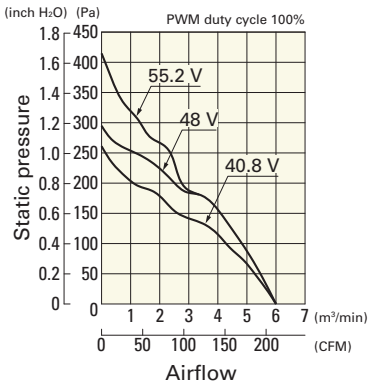


9WL1448P5S001 With pulse sensor with PWM control function

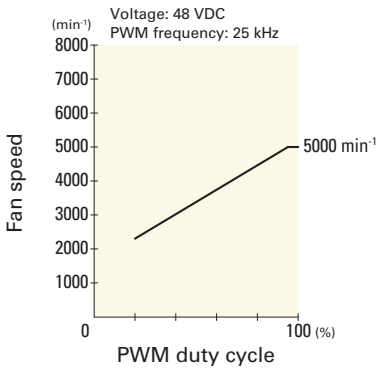
PWM duty cycle



Operating voltage range



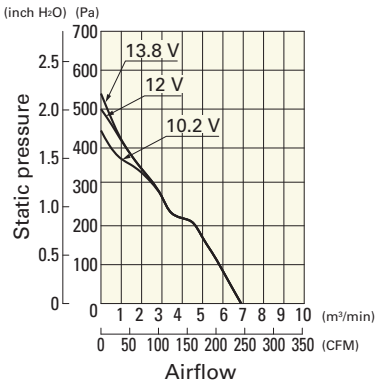
PWM duty - Speed characteristics example



Airflow - Static Pressure Characteristics

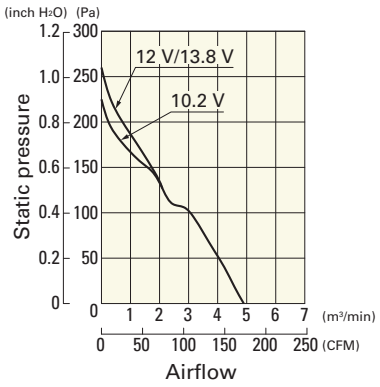
9WL1412A5001 With pulse sensor

Operating voltage range



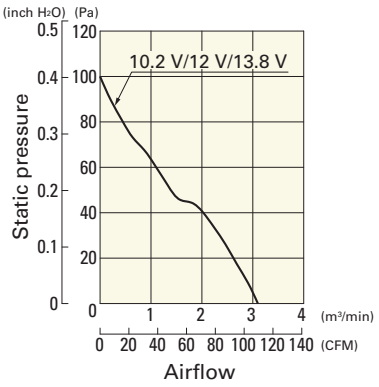
9WL1412H5001 With pulse sensor

Operating voltage range



9WL1412M5001 With pulse sensor

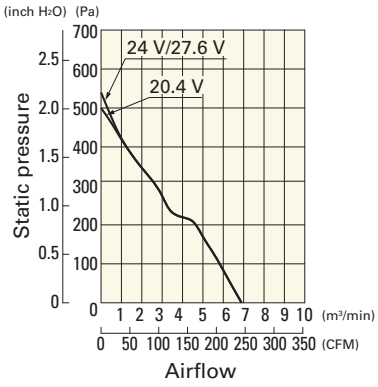
Operating voltage range



Airflow - Static Pressure Characteristics

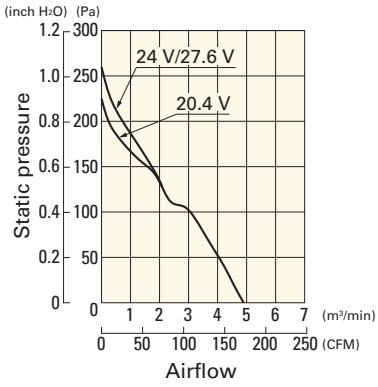
9WL1424A5001 With pulse sensor

Operating voltage range



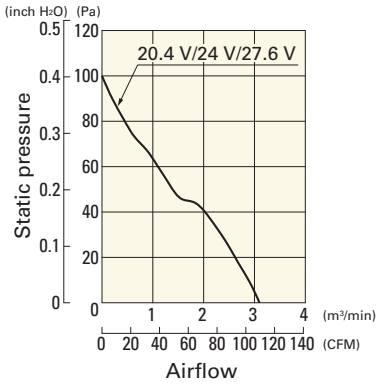
9WL1424H5001 With pulse sensor

Operating voltage range



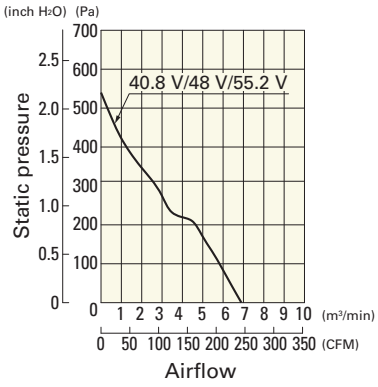
9WL1424M5001 With pulse sensor

Operating voltage range



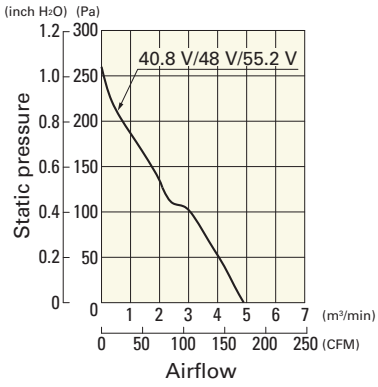
9WL1448A5001 With pulse sensor

Operating voltage range



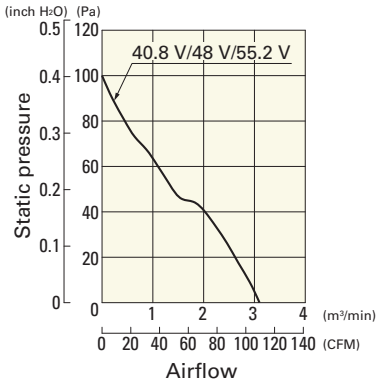
9WL1448H5001 With pulse sensor

Operating voltage range

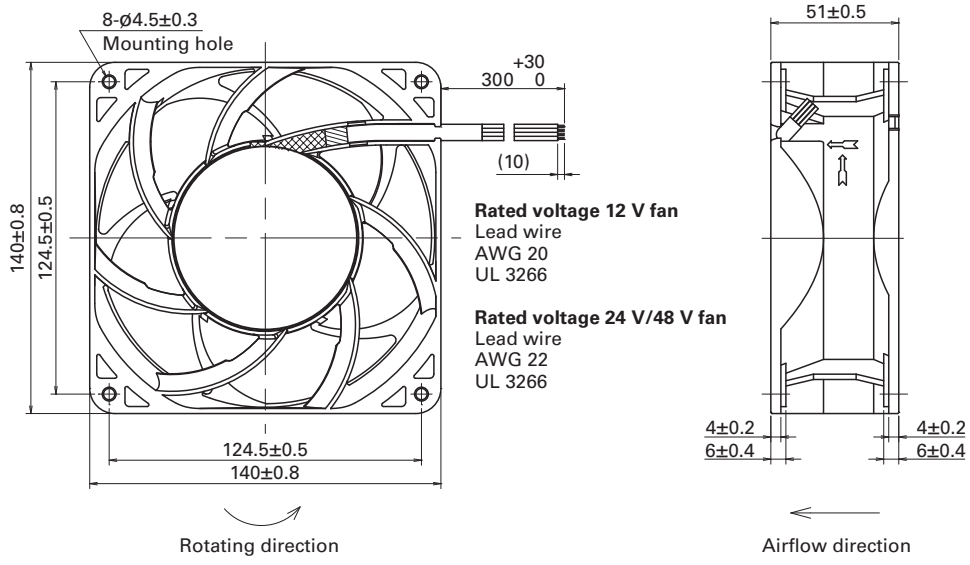


9WL1448M5001 With pulse sensor

Operating voltage range



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

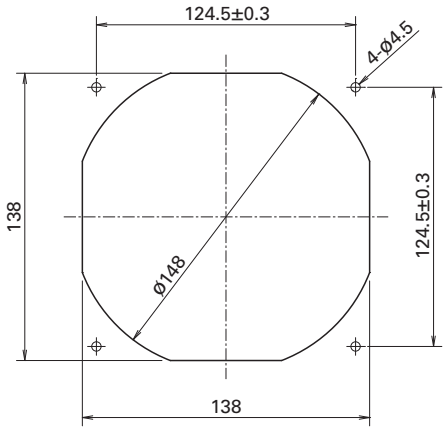


Rated voltage 12 V fan
Lead wire
AWG 20
UL 3266

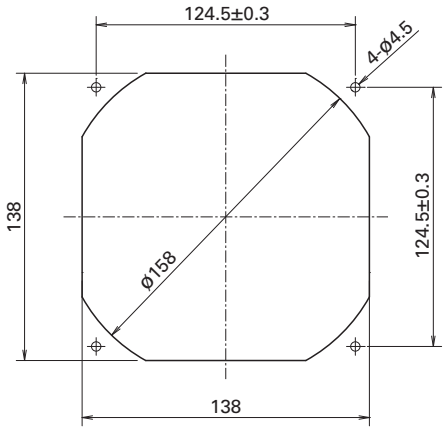
Rated voltage 24 V/48 V fan
Lead wire
AWG 22
UL 3266

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

Inlet side



Outlet side



Options

Finger guards page: p. 585

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

ø172×150×51 mm

IP68

San Ace 172W 9WG type

Sidecut type

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 860 g
- Ingress protection IP68

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WG5748P5G001	48	40.8 to 55.2	100	2.91	140.0	8600	15.46	546	1000	4.02	78	-20 to +70	40000/60°C (70000/40°C)
			0	0.21	10.1	2000	3.59	127	75.1	0.3	40		
9WG5748P5H001			100	1.62	78.0	6500	11.6	410	770	3.09	71		
			0	0.21	10.1	2000	3.59	127	75.1	0.3	40		

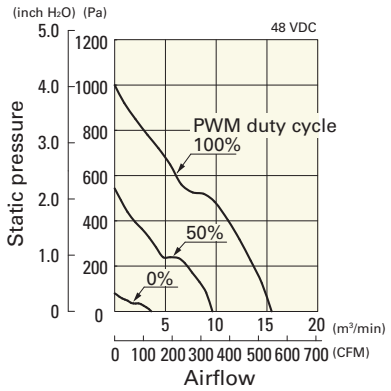
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

Note: Sensor and control options are available for selection. Refer to the table on p. 637.

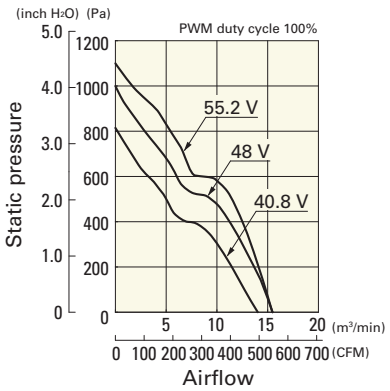
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WG5748P5G001 With pulse sensor with PWM control function

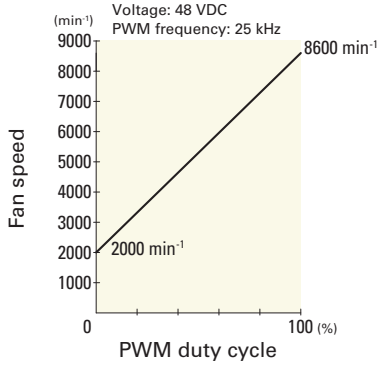
PWM duty cycle



Operating voltage range



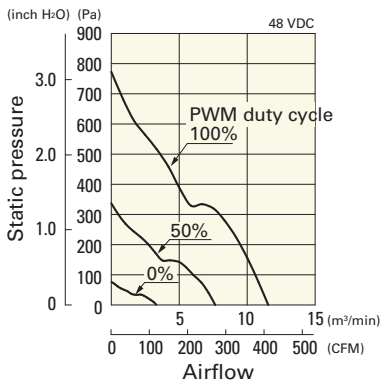
PWM duty - Speed characteristics example



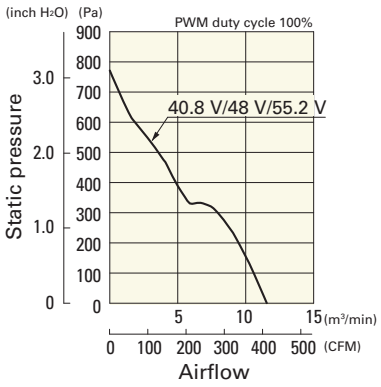
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9WG5748P5H001 With pulse sensor with PWM control function

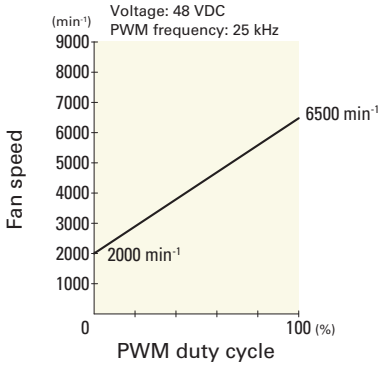
PWM duty cycle



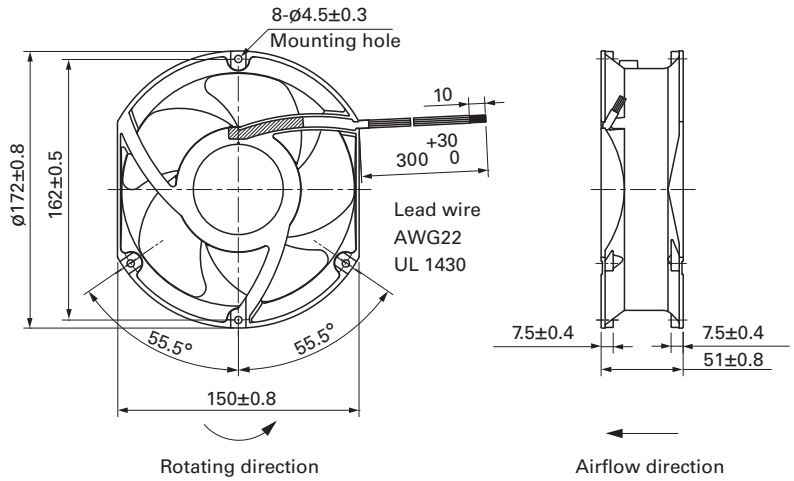
Operating voltage range



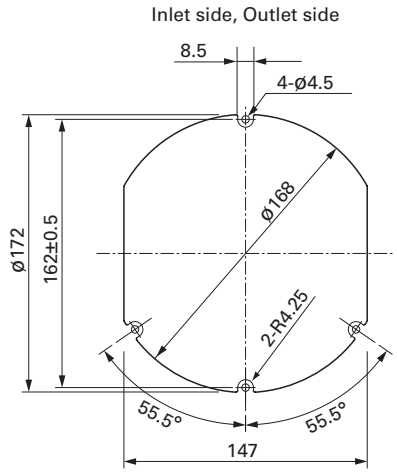
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards page: p. 586

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

Splash Proof Fan

ø172×150×51 mm

IP68

San Ace 172W 9WE type

Sidecut type

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 860 g
- Ingress protection IP68

Specifications

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

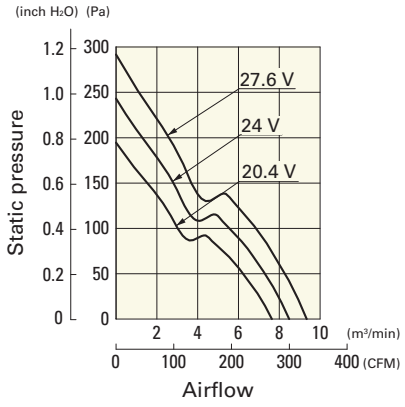
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WE5724K501	24	20.4 to 27.6	1.3	31.2	4100	8.5	300	243	0.976	60	-20 to +60	40000/60°C (70000/40°C)
9WE5748K501	48	40.8 to 55.2	0.7	33.6	4100	8.5	300	243	0.976	60		

Note: Sensor and control options are available for selection. Refer to the table on p. 637.

Airflow - Static Pressure Characteristics

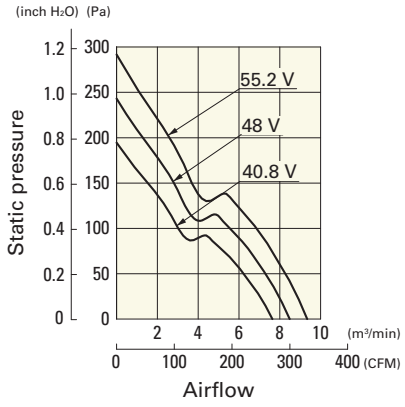
9WE5724K501 With pulse sensor

Operating voltage range

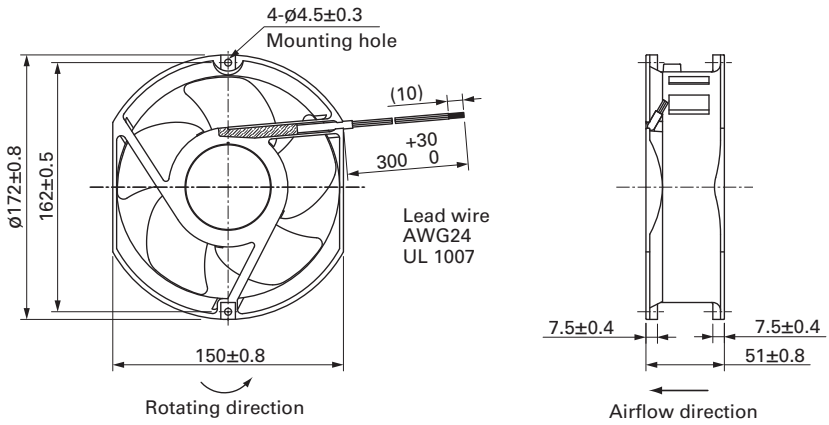


9WE5748K501 With pulse sensor

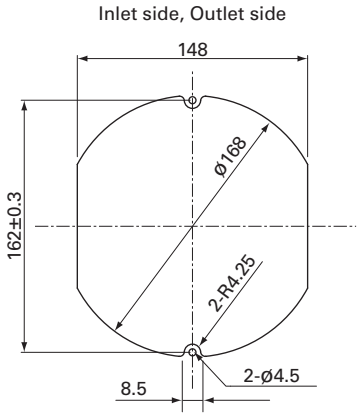
Operating voltage range



Dimensions (unit: mm)



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



Options

Finger guards page: p. 586

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

Splash Proof Fan

ø172×51 mm

IP68

San Ace 172W 9WE type

Round type

General Specifications

- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage) 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 ..... 890 g
- Ingress protection IP68

Specifications

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

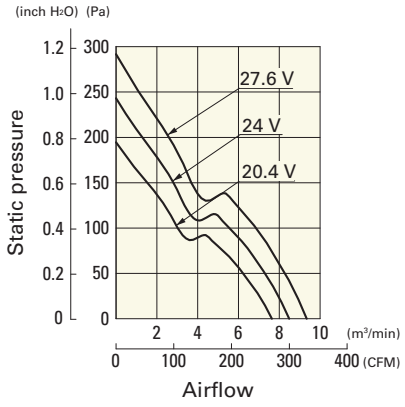
Model no.	Rated voltage [V]	Operating voltage range [V]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9WE1724K501	24	20.4 to 27.6	1.3	31.2	4100	8.5	300.1	243	0.97	55	-20 to +60	40000/60°C (70000/40°C)

Note: Sensor and control options are available for selection. Refer to the table on p. 637.

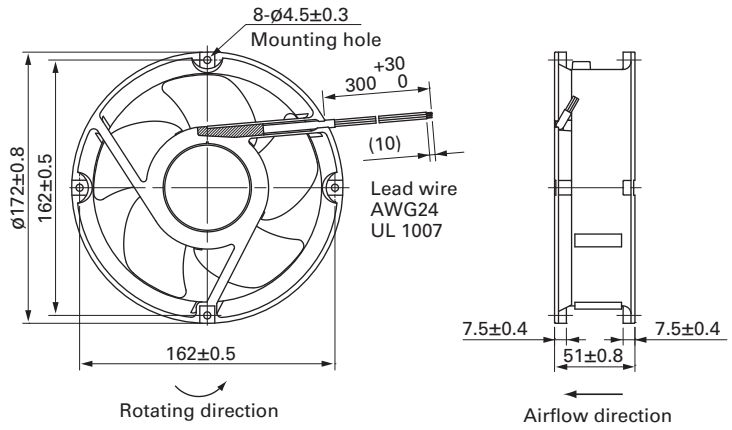
Airflow - Static Pressure Characteristics

9WE1724K501 With pulse sensor

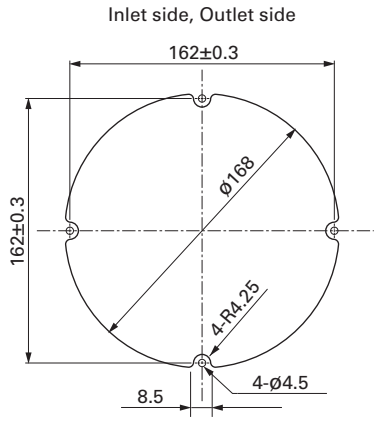
Operating voltage range



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