

Counter Rotating Fan

Counter rotating fans feature high airflow and high static pressure.
Related product: Long Life Fan p. 331

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

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

Fans with PWM control

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

Type name	9CRA 9CRH etc.					
Frame size (mm)	03 38×38	04 40×40	06 60×60	08 80×80	12 120×120	57 ø172×150 (sidecut)
Voltage (V)	12	48				
Speed code	G	H	J	K	S	etc.
Frame thickness (mm)	0 76	4 48	5 51, 56	6 56	8 80	9 102
Sensor specifications	01, 001 With a pulse sensor		02, 002 Without a sensor		D01, D001 With a lock sensor	

How to Read Specifications (DC fan) The following is a sample. See respective product pages for detailed information.

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

Rated voltage	 This is the necessary voltage to drive the fan. E.g.) 12 VDC, 24 VDC, 48 VDC
Operating voltage range	 The voltage range over which fan operation is guaranteed.
Rated current	 The current when the fan is operating at rated voltage (at free air).
Rated input	 The power value when the fan is operating at rated voltage (at free air).
Rated speed	 The speed when the fan is operating at rated voltage (at free air).
Max. airflow	 The airflow at 0 Pa static pressure when the fan is operating at rated voltage. (Measured using the double chamber method)
Max. static pressure	 The static pressure at 0 m ³ /min airflow when the fan is operating at rated voltage. (Measured using the double chamber method)
SPL	 A-weighted sound pressure level (SPL) when the fan operates at the rated speed. For the measurement method, see the Technical Materials section in the catalog.
Operating temperature	 The temperature range over which fan operation is guaranteed (Non-condensing).
Expected life	 Service life hours that 90% of bearings will survive without failing when continuously operated at the rated voltage and 60°C temperature. Expected life at 40°C is for reference only. For more information, please refer to the technical material section.

Counter Rotating Fan

40×40×48 mm

San Ace 40 9CRA type  



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 80 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRA0412P4K03	12	10.8 to 13.2	100	1.6	19.2	17500 11700	0.92 32.5	650.0 2.61	64	-20 to +70	40000/60°C (70000/40°C)
			0	0.19	2.28	5250 3510	0.276 9.75	58.5 0.235	33		
9CRA0412P4J03			100	1.2	14.4	16200 10800	0.85 30.0	560.0 2.25	62		
			0	0.15	1.8	4500 3000	0.236 8.33	43.2 0.173	28		
9CRA0412P4G03			100	1.0	12.0	14700 9800	0.77 27.2	460.0 1.85	59		
			0	0.15	1.8	4410 2940	0.231 8.16	41.4 0.166	28		

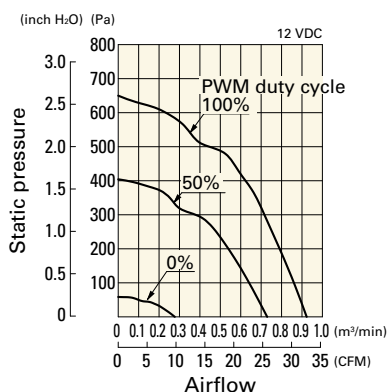
* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

Note: Sensor and control options are available for selection. Refer to the table on p. 646.

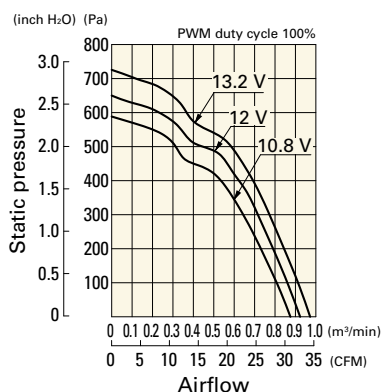
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0412P4K03 With pulse sensor with PWM control

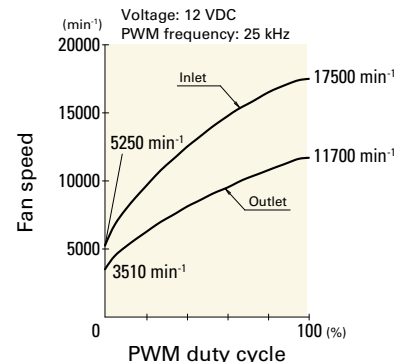
PWM duty cycle



Operating voltage range



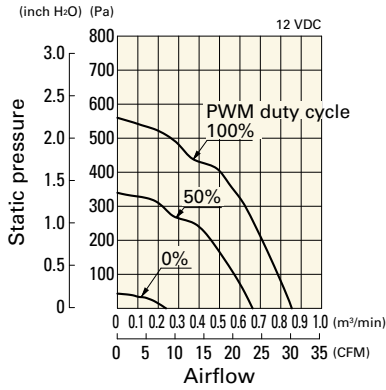
PWM duty - Speed characteristics example



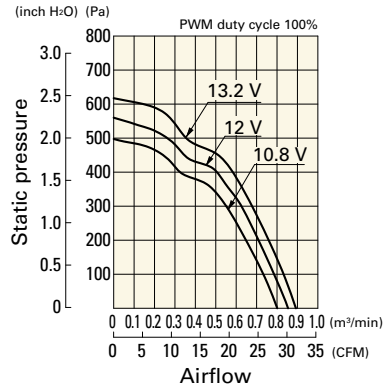
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0412P4J03 With pulse sensor with PWM control

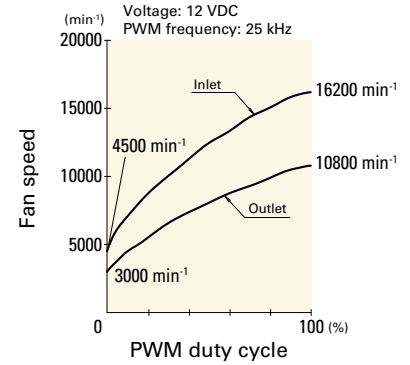
PWM duty cycle



Operating voltage range

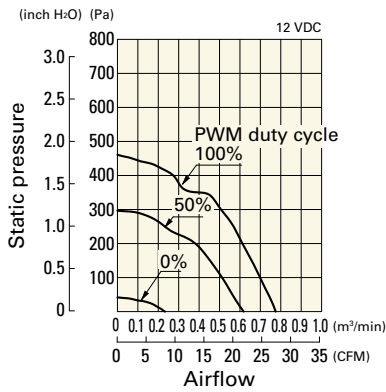


PWM duty - Speed characteristics example

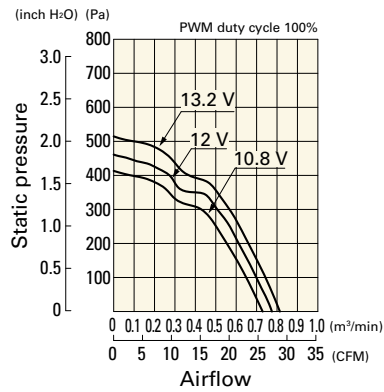


9CRA0412P4G03 With pulse sensor with PWM control

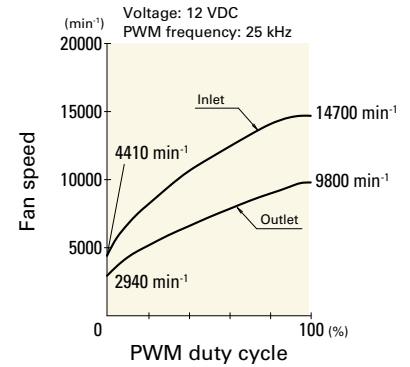
PWM duty cycle



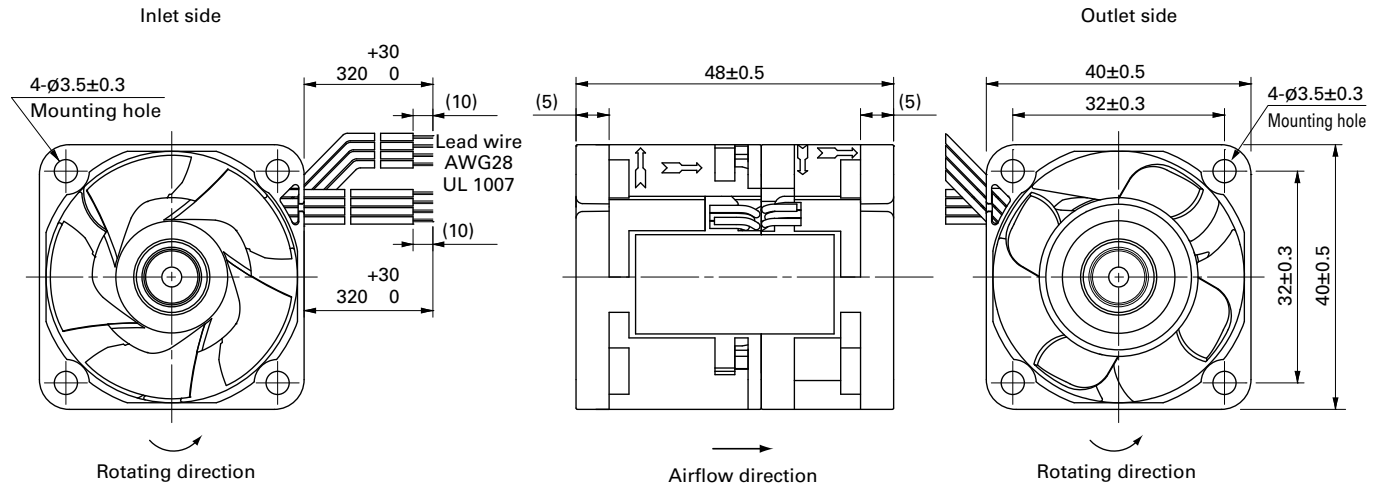
Operating voltage range



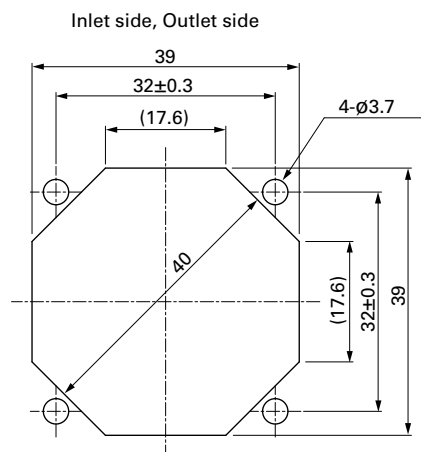
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

40×40×56 mm

San Ace 40 9CRJ type  


DC

Counter Rotating Fan 40 mm sq.

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 110 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

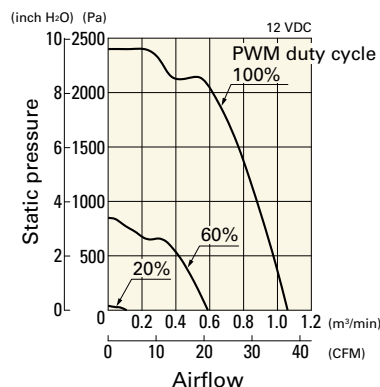
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRJ0412P5J001	12	10.8 to 12.6	100	3.1	37.2	36200 32000	1.06 37.4	2400 9.64	72	-20 to +70	30000/60°C (53000/40°C)
			20	0.1	1.2	4500 4000	0.11 3.9	40 0.16	28		

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

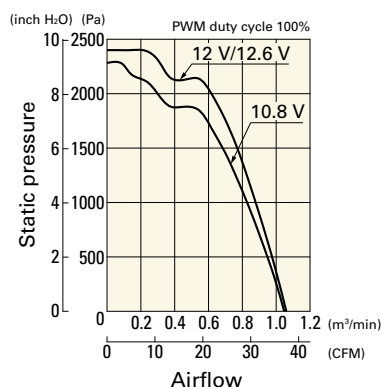
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRJ0412P5J001 With pulse sensor with PWM control

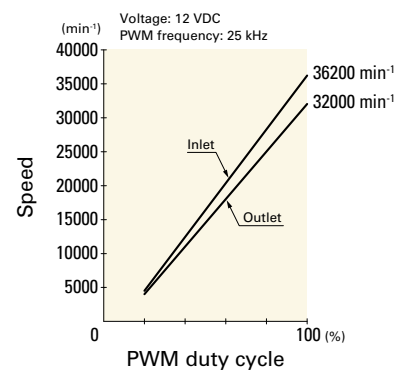
PWM duty cycle



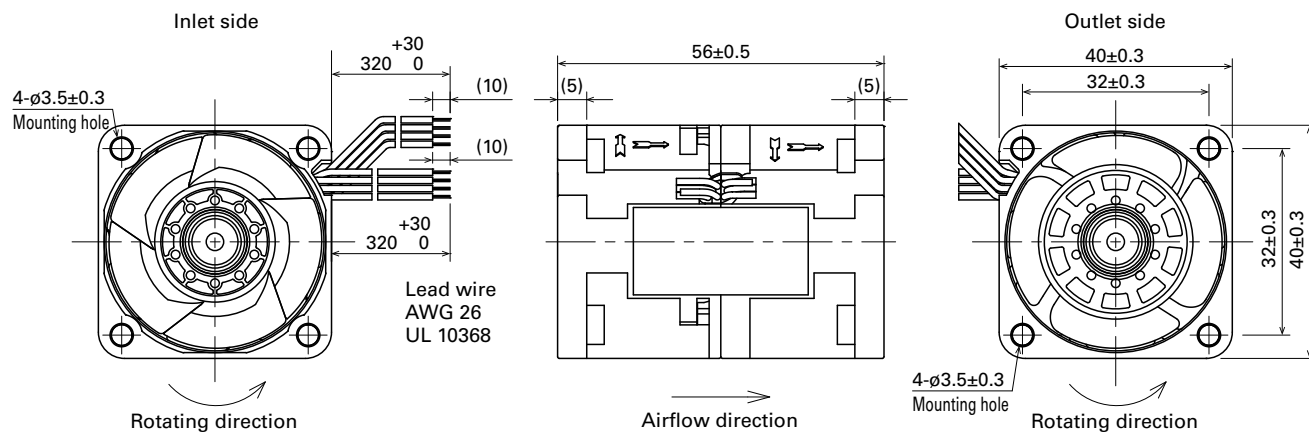
Operating voltage range



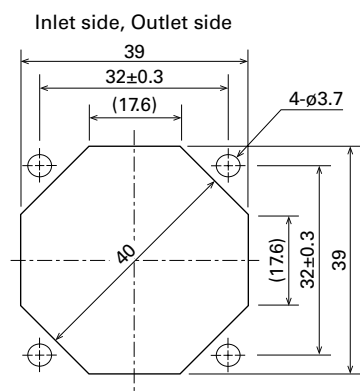
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

40×40×56 mm

San Ace 40 9CRH type  


DC

Counter Rotating Fan 40 mm sq.

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 110 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

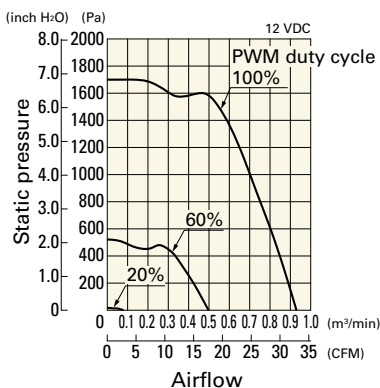
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRH0412P5J001	12	10.8 to 12.6	100	2.52	30.24	29500 25500	0.93 32.9	1700 6.83	70	-20 to +70	30000/60°C (53000/40°C)
			20	0.06	0.72	3000 2600	0.08 2.8	17 0.07	20		

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

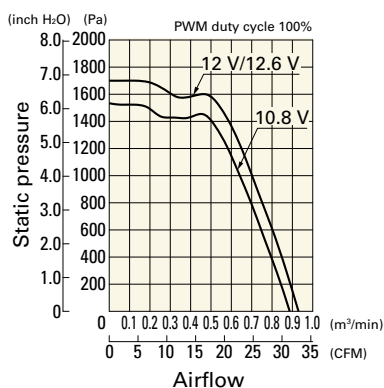
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRH0412P5J001 With pulse sensor with PWM control

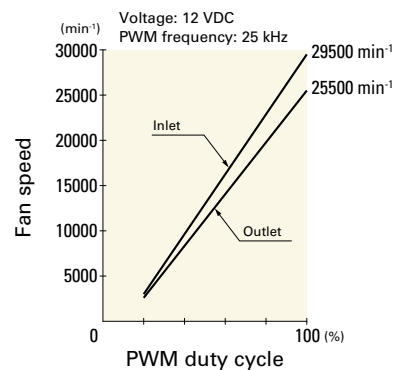
PWM duty cycle



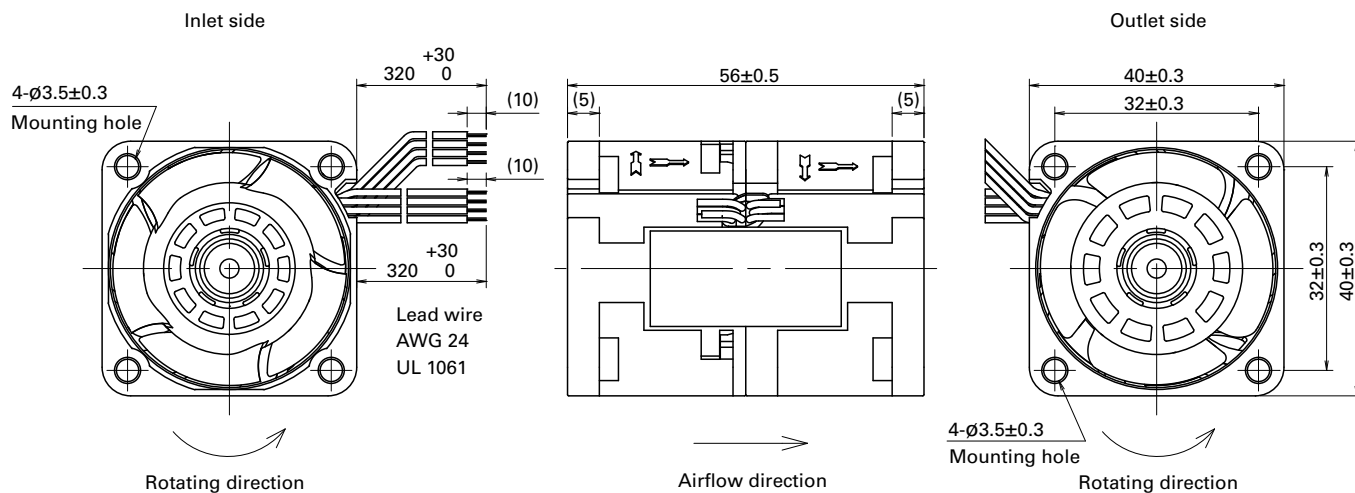
Operating voltage range



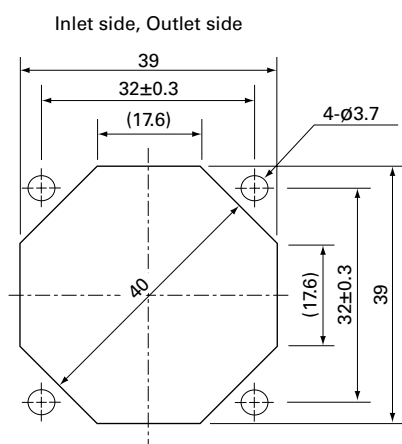
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

40×40×56 mm

San Ace 40 9CRV type  


DC

Counter Rotating Fan 40 mm sq.

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 100 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

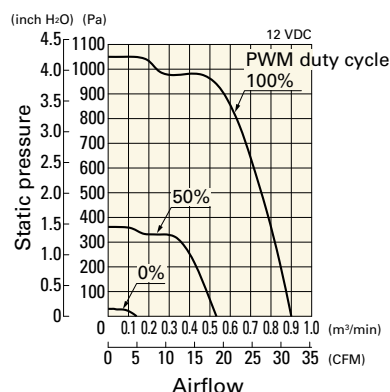
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRV0412P5J201	12	10.8 to 13.2	100	1.8	21.6	22500 20000	0.9 31.8	1050 4.22	68	-20 to +70	40000/60°C (70000/40°C)
			0	0.11	1.32	3800 3500	0.14 4.9	30 0.12	26		
9CRV0412P5G201			100	1.1	13.2	19000 16900	0.76 26.8	748 3.0	62		
			0	0.11	1.32	3800 3500	0.14 4.9	30 0.12	26		
9CRV0412P5S201			100	0.8	9.6	17000 15100	0.68 24	590 2.37	59		
			0	0.11	1.32	3800 3500	0.14 4.9	30 0.12	26		
9CRV0412P5H201			100	0.55	6.6	15000 13300	0.6 21.2	451 1.81	56		
			0	0.11	1.32	3800 3500	0.14 4.9	30 0.12	26		

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

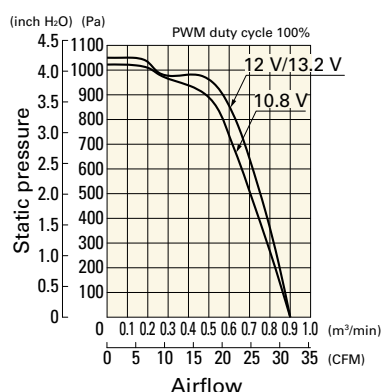
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRV0412P5J201 With pulse sensor with PWM control

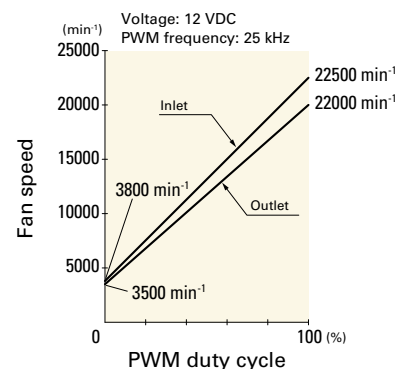
PWM duty cycle



Operating voltage range



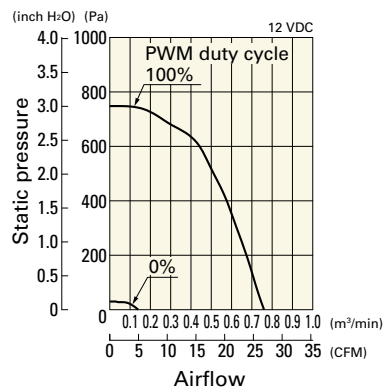
PWM duty - Speed characteristics example



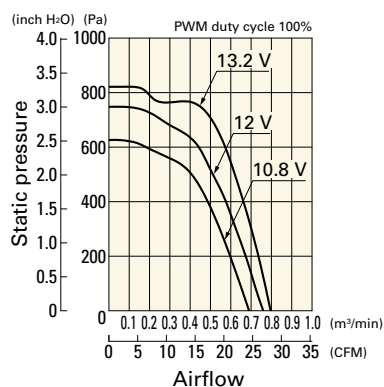
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRV0412P5G201 With pulse sensor with PWM control

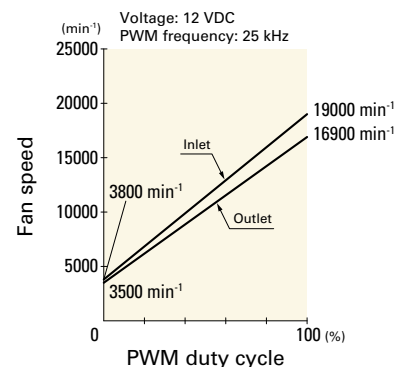
PWM duty cycle



Operating voltage range

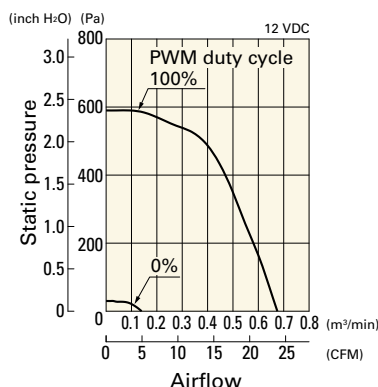


PWM duty - Speed characteristics example

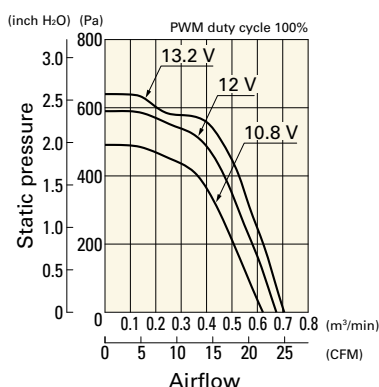


9CRV0412P5S201 With pulse sensor with PWM control

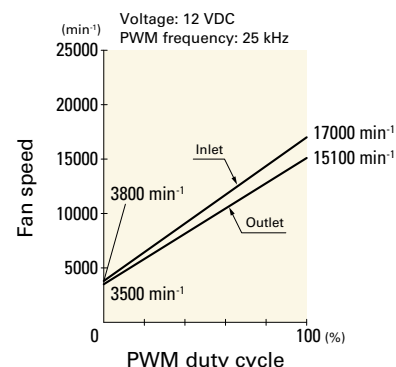
PWM duty cycle



Operating voltage range

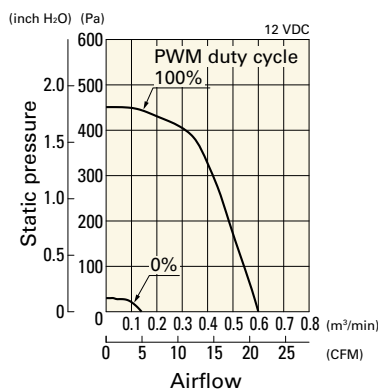


PWM duty - Speed characteristics example

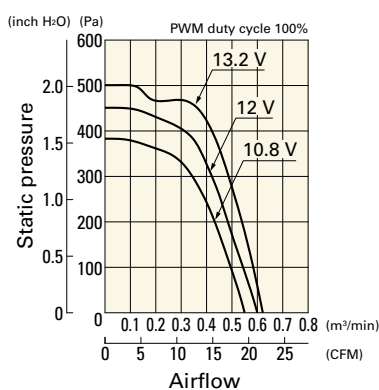


9CRV0412P5H201 With pulse sensor with PWM control

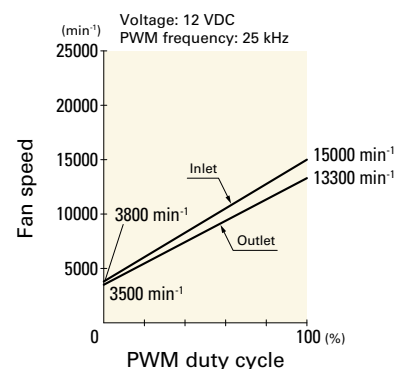
PWM duty cycle



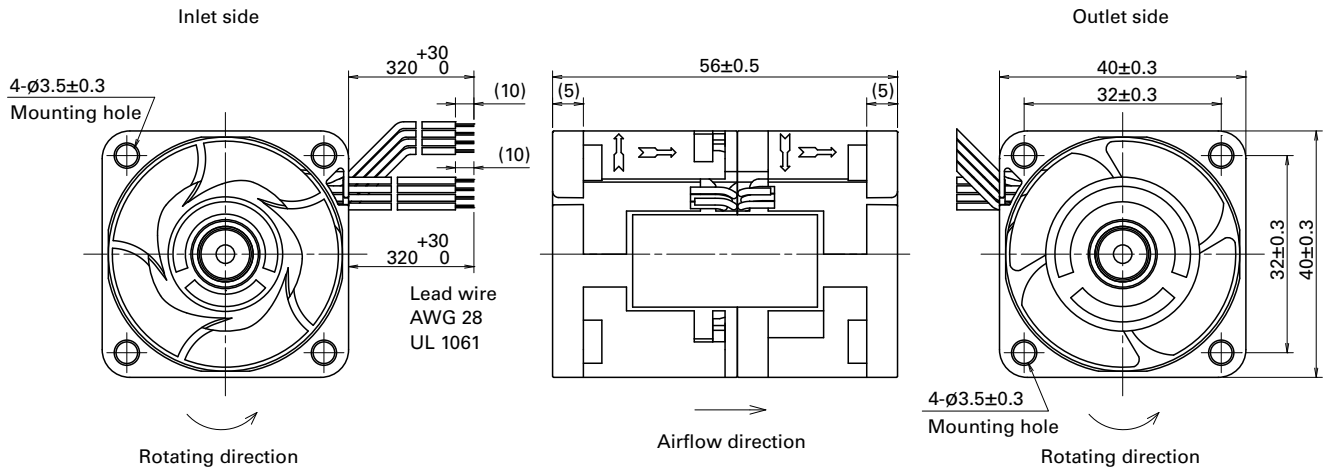
Operating voltage range



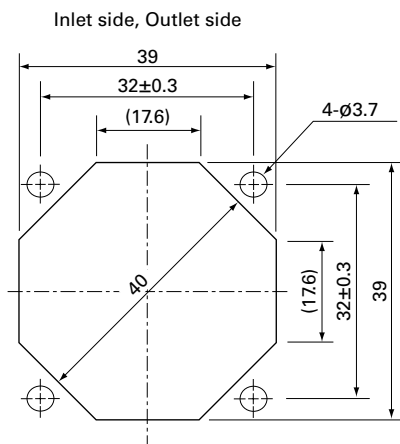
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Counter Rotating Fan

40×40×56 mm

San Ace 40 9CRE type Low Vibration Fan 



General Specifications

- Material Frame: Aluminum, Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 110 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRE0412P5J03	12	10.8 to 13.2	100	1.4	16.8	15800 12200	0.9 31.8	570.0 2.29	62	-20 to +70	40000/60°C (70000/40°C)
			0	0.1	1.2	2850 2250	0.12 4.2	13.7 0.055	20.5		

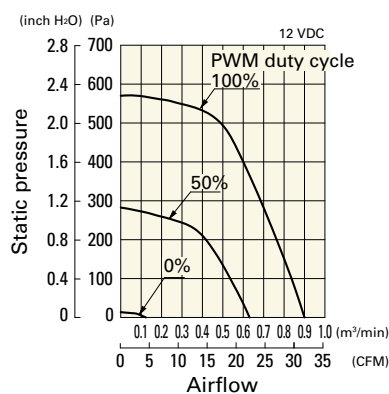
* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

Note: Sensor and control options are available for selection. Refer to the table on p. 646.

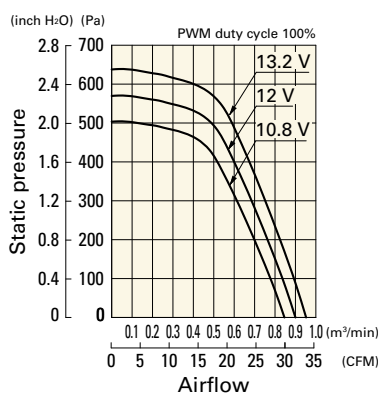
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRE0412P5J03 With pulse sensor with PWM control

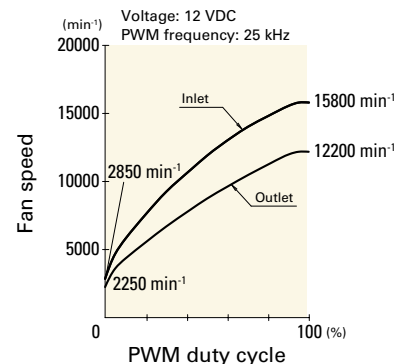
PWM duty cycle



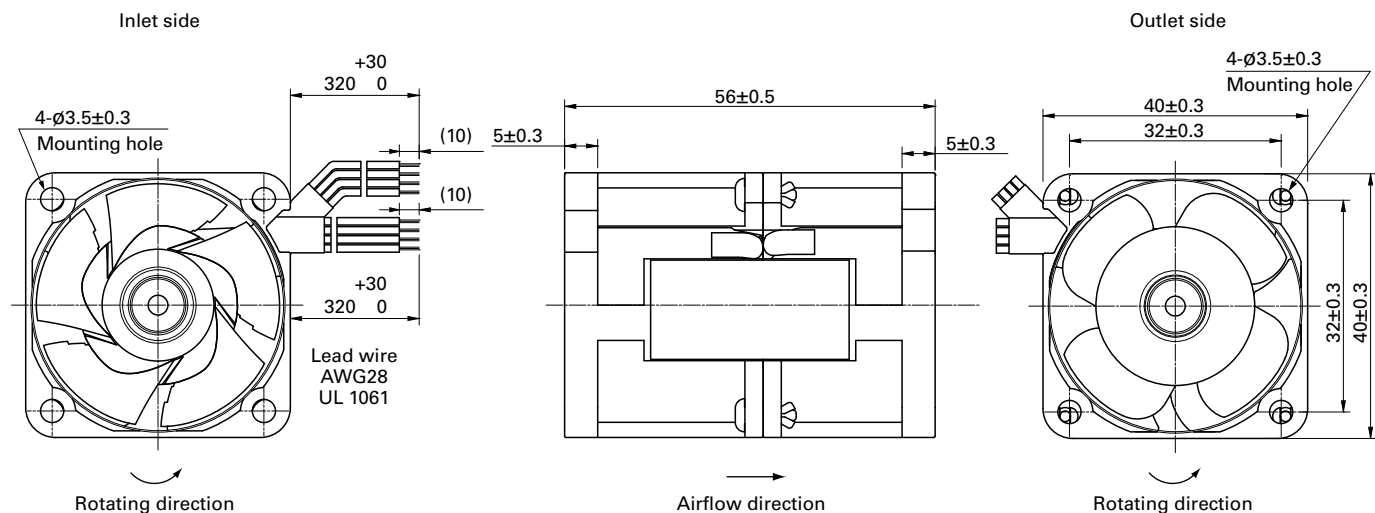
Operating voltage range



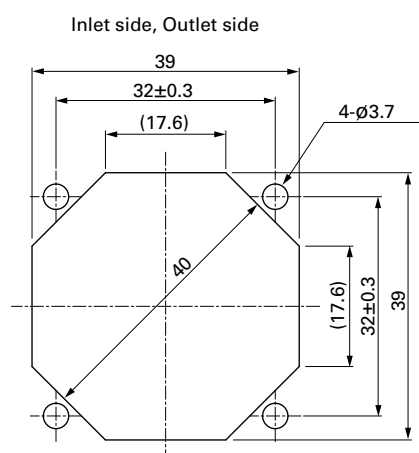
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Counter Rotating Fan



60×60×51 mm

San Ace 60 9CR type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 180 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CR0612P5G03	12	10.8 to 13.2	100	2.7	32.4	11500 9000	2.03 71.7	600 2.41	68	-20 to +70	40000/60°C (70000/40°C)
			0	0.22	2.64	3000 2300	0.48 16.9	40 0.16	34		
9CR0612P5H03			100	2.0	24.0	10500 8200	1.85 65.4	500 2.01	65		
			0	0.22	2.64	3000 2300	0.48 16.9	40 0.16	34		

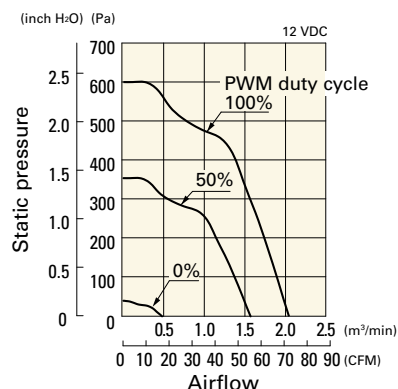
* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

Note: Sensor and control options are available for selection. Refer to the table on p. 646.

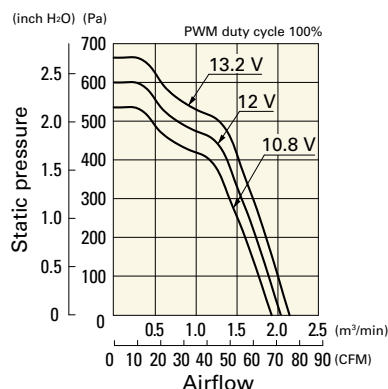
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CR0612P5G03 With pulse sensor with PWM control

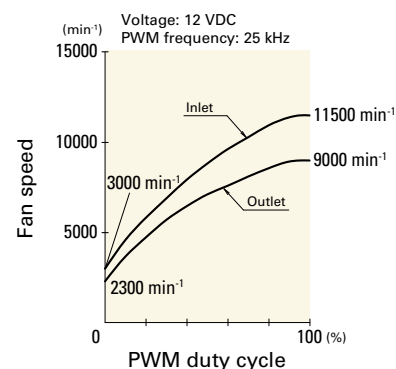
PWM duty cycle



Operating voltage range



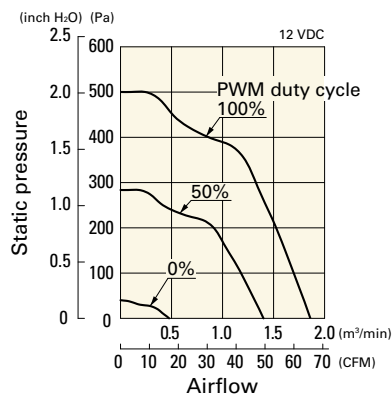
PWM duty - Speed characteristics example



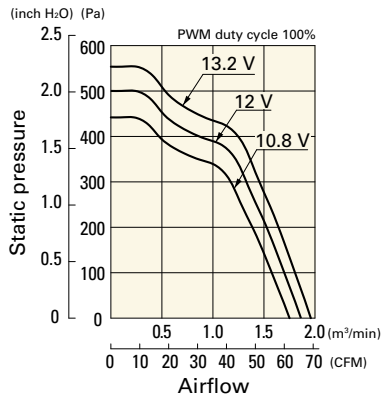
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CR0612P5H03 With pulse sensor with PWM control

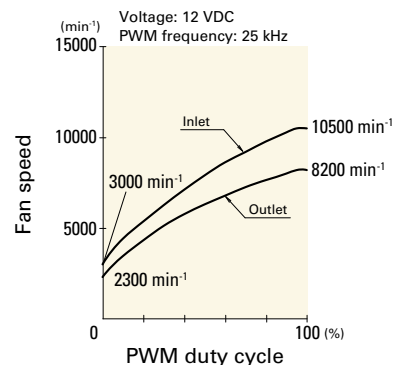
PWM duty cycle



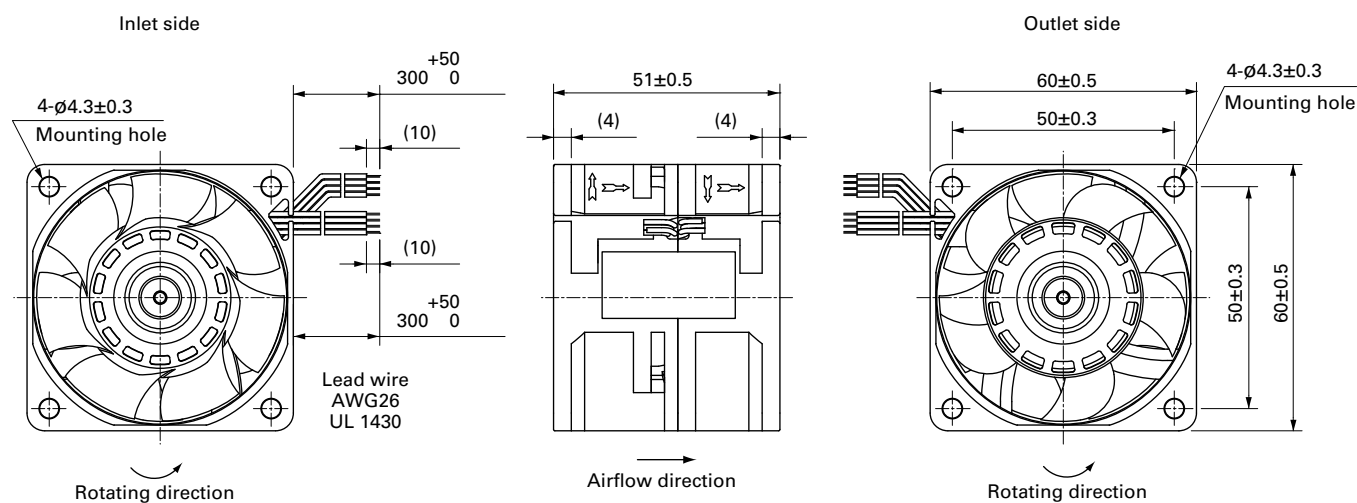
Operating voltage range



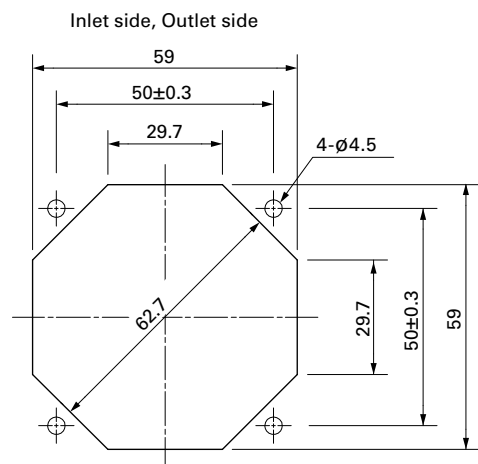
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Resin finger guards

page: p. 605

Model no.: 109-1003G

Resin filter kits

page: p. 606

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



60×60×56 mm

San Ace 60 9CRH type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 200 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

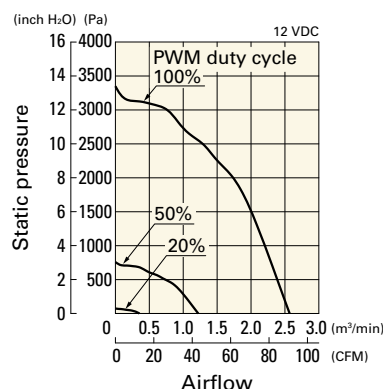
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRH0612P6G001	12	10.8 to 13.2	100	5.6	67.2	26100 26800	2.57 90.8	3350 13.4	78	-20 to +70	40000/60°C (70000/40°C)
			20	0.16	1.9	3900 4000	0.35 12.3	74 0.3	34		
9CRH0648P6G001	48	36 to 60	100	1.4	67.2	26100 26800	2.57 90.8	3350 13.4	78		
			20	0.11	5.3	3900 4000	0.35 12.3	74 0.3	34		

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

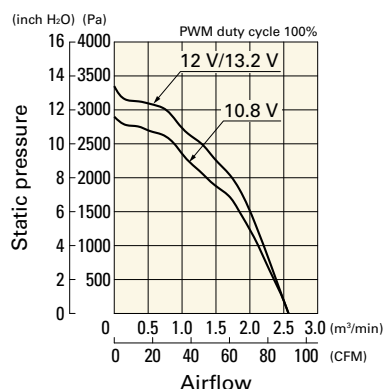
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRH0612P6G001 With pulse sensor with PWM control

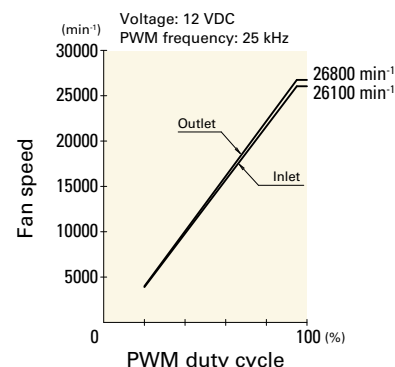
PWM duty cycle



Operating voltage range



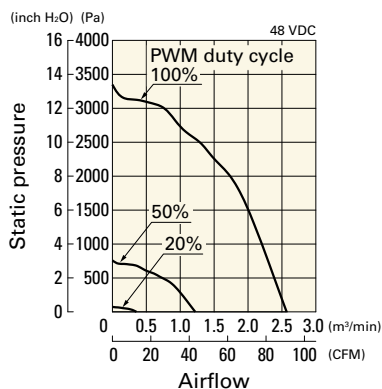
PWM duty - Speed characteristics example



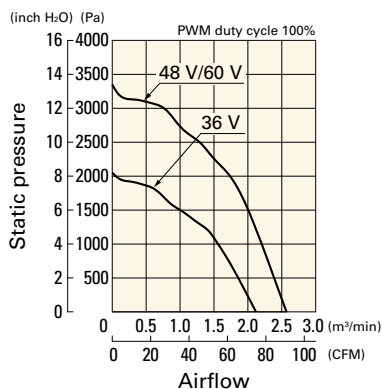
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRH0648P6G001 With pulse sensor with PWM control

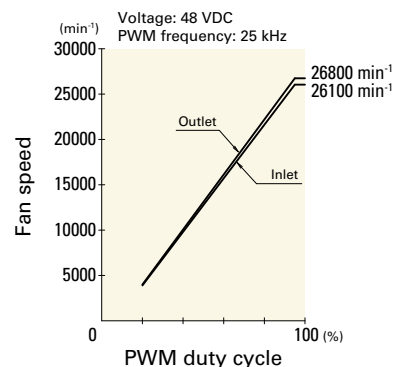
PWM duty cycle



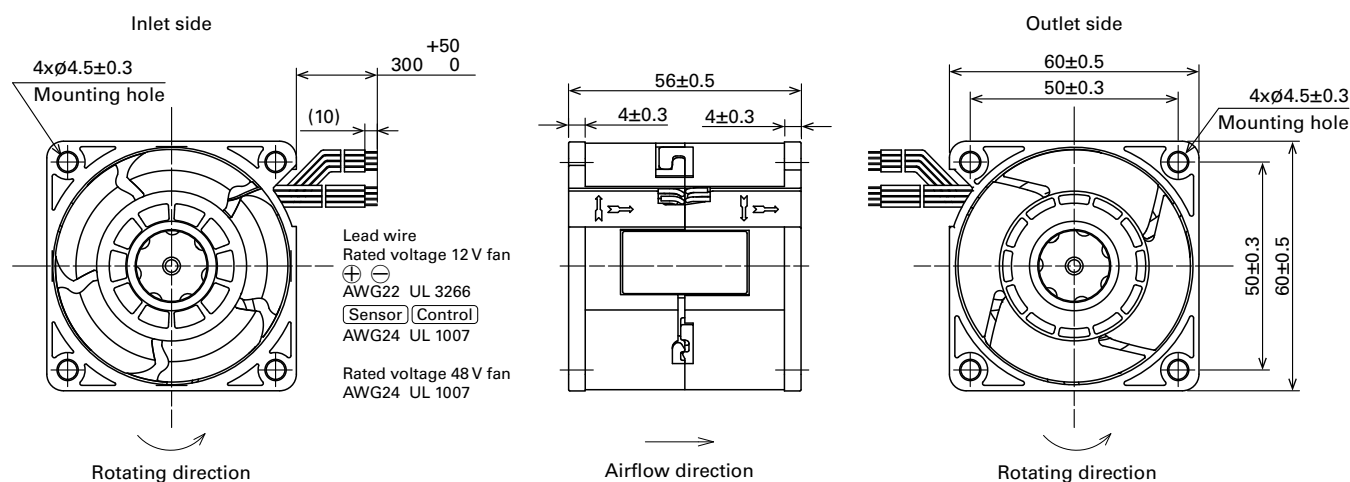
Operating voltage range



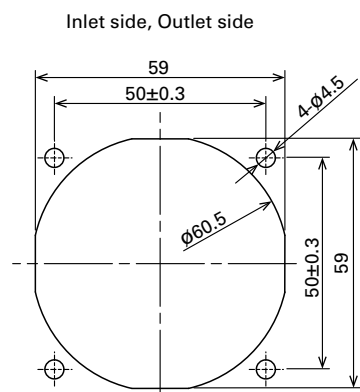
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Resin finger guards

page: p. 605

Model no.: 109-1003G

Resin filter kits

page: p. 606

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



60×60×56 mm

San Ace 60 9CRA type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 200 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

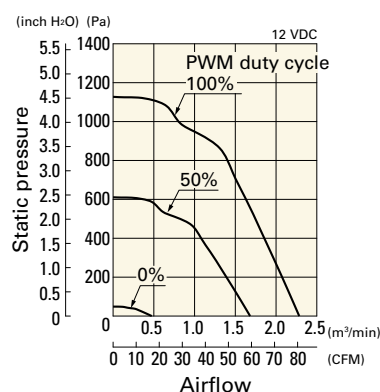
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRA0612P6K001	12	10.8 to 13.2	100	3.1	37.2	18300 15800	2.28 80.5	1130 4.54	73	-20 to +70	30000/60°C (53000/40°C)
			0	0.17	2.0	3800 3300	0.47 16.6	49 0.2	35		
9CRA0612P6J001			100	2.3	27.6	16800 14500	2.1 74.2	950 3.82	70		40000/60°C (70000/40°C)
			0	0.15	1.8	3800 3300	0.47 16.6	49 0.2	35		
9CRA0612P6G001			100	1.3	15.6	13500 11400	1.65 58.3	620 2.49	65		
			0	0.1	1.2	3000 2500	0.36 12.7	31 0.12	29		

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

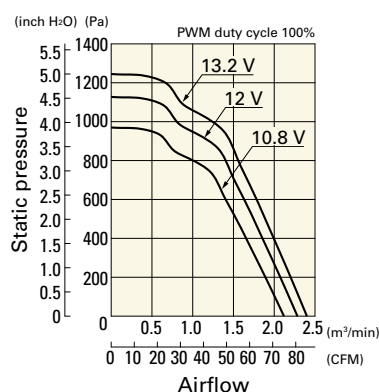
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0612P6K001 With pulse sensor with PWM control

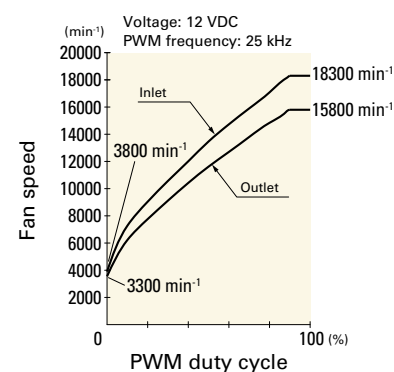
PWM duty cycle



Operating voltage range



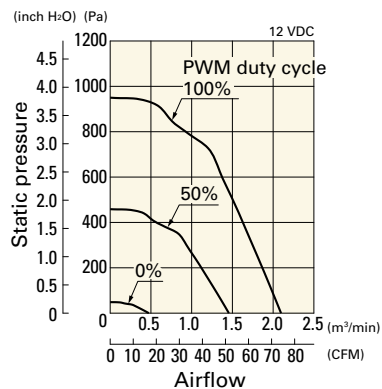
PWM duty - Speed characteristics example



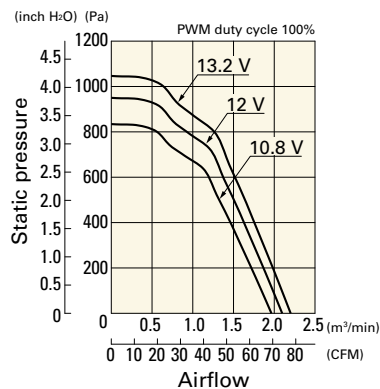
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0612P6J001 With pulse sensor with PWM control

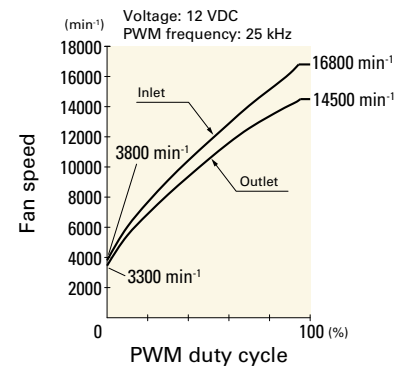
PWM duty cycle



Operating voltage range

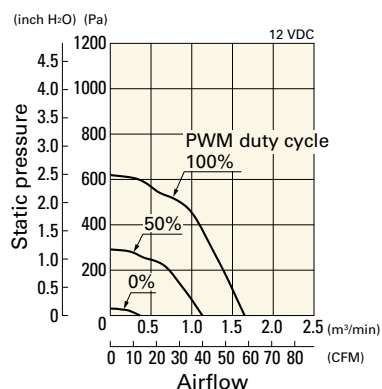


PWM duty - Speed characteristics example

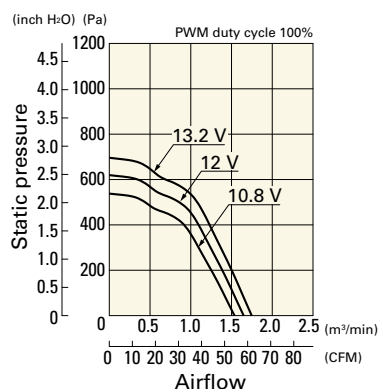


9CRA0612P6G001 With pulse sensor with PWM control

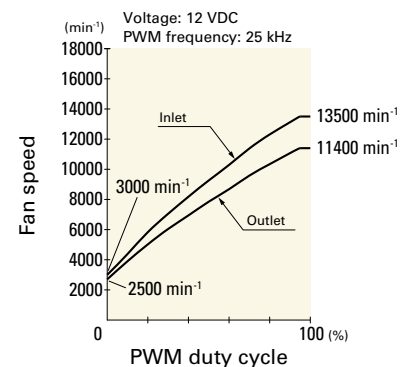
PWM duty cycle



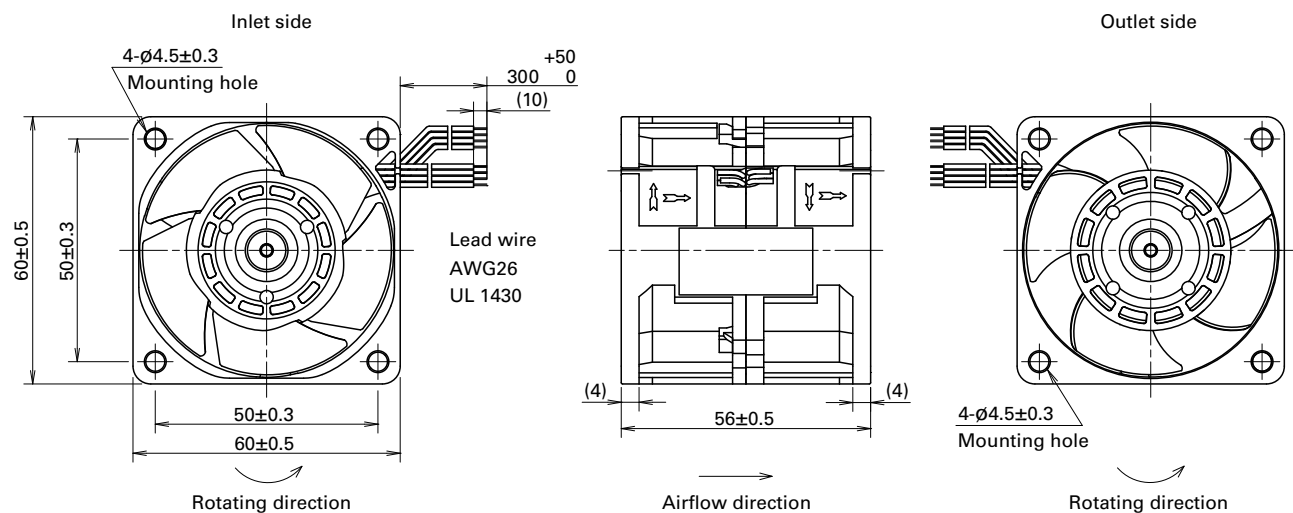
Operating voltage range



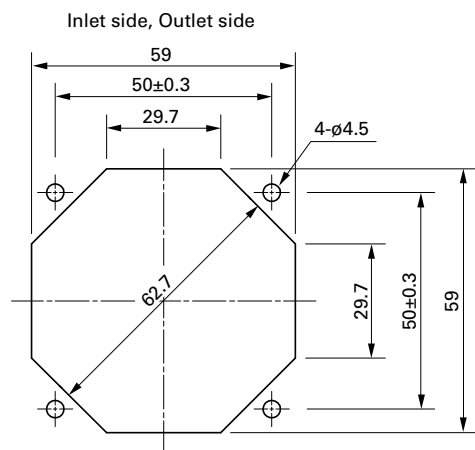
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Resin finger guards

page: p. 605

Model no.: 109-1003G

Resin filter kits

page: p. 606

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

60×60×76 mm

San Ace 60 9CRA type



DC

Counter Rotating Fan 60 mm sq.

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 270 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

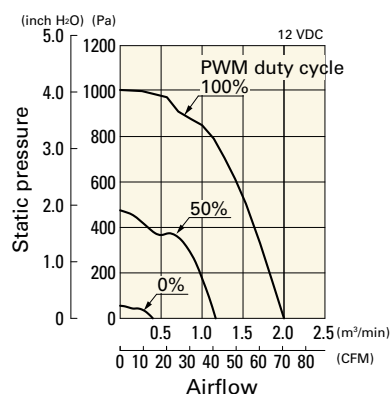
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRA0612P0G001	12	10.8 to 13.2	100	2.3	27.6	16500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

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

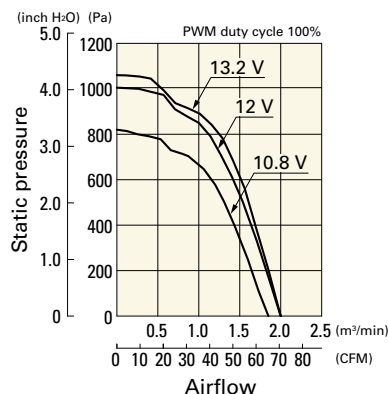
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0612P0G001 With pulse sensor with PWM control

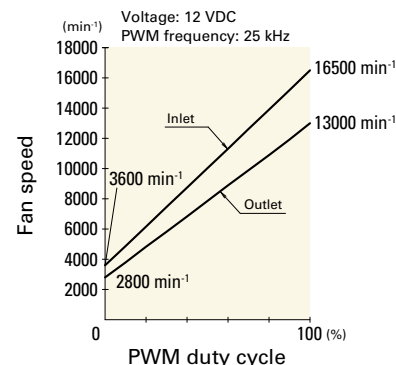
PWM duty cycle



Operating voltage range



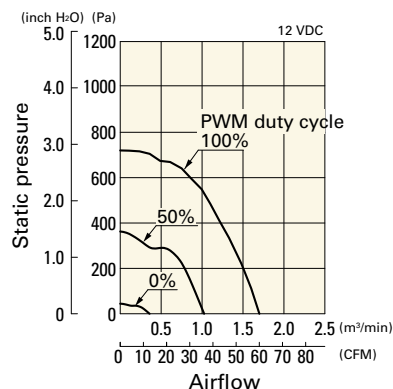
PWM duty - Speed characteristics example



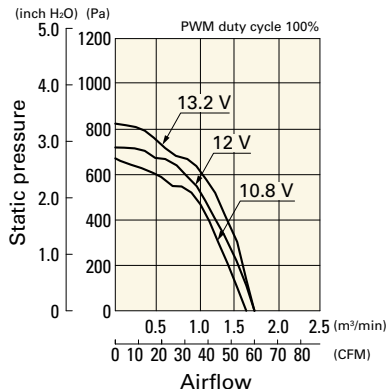
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0612P0S001 With pulse sensor with PWM control

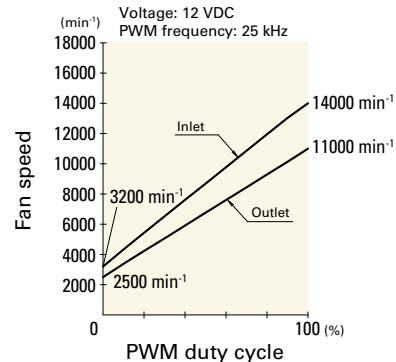
PWM duty cycle



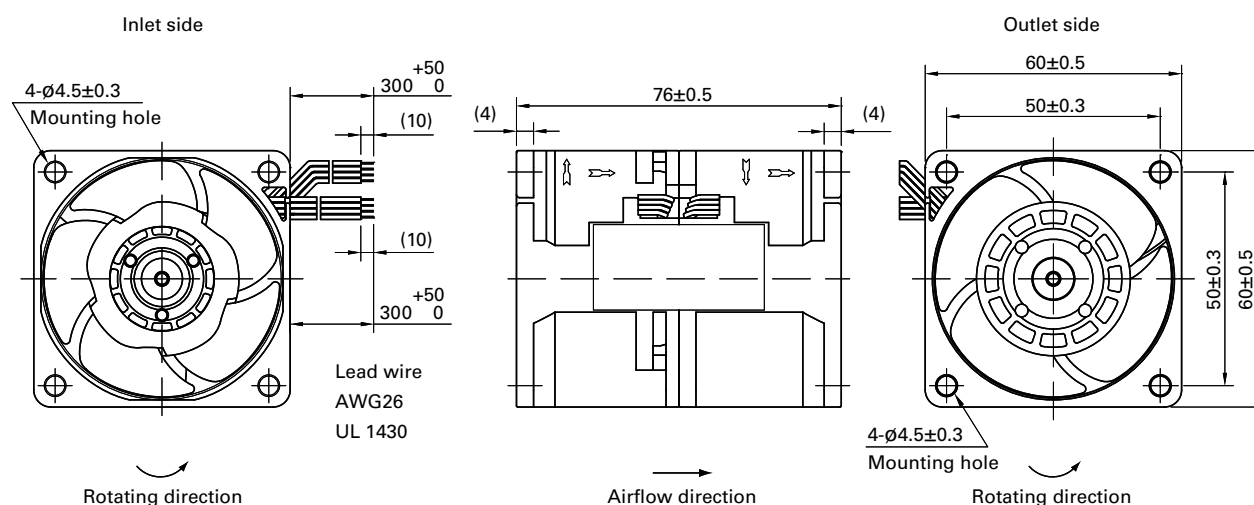
Operating voltage range



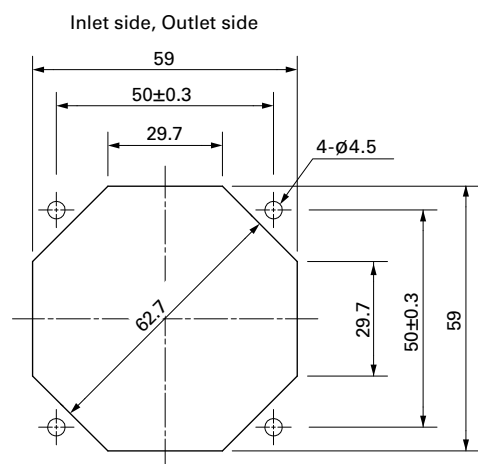
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Resin finger guards

page: p. 605

Model no.: 109-1003G

Resin filter kits

page: p. 606

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

80×80×80 mm

San Ace 80 9CRHA type



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 430 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

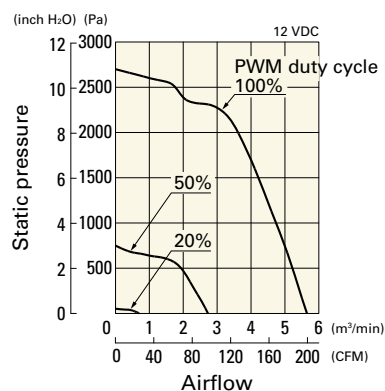
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRHA0812P8J001	12	10.8 to 12.6	100	12.0	144	18500 19300	5.65 199	2700 10.8	85	-20 to +70	40000/60°C (70000/40°C)
			20	0.20	2.40	2300 2500	0.70 24.7	52.0 0.208	36		
9CRHA0848P8J001	48	40.8 to 60.0	100	2.8	135	18500 19300	5.65 199	2700 10.8	85		
			20	0.11	5.28	2300 2500	0.70 24.7	52.0 0.208	36		

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

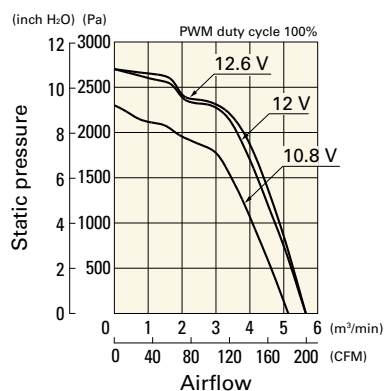
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRHA0812P8J001 With pulse sensor with PWM control

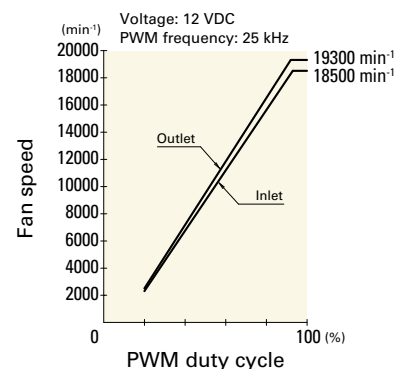
PWM duty cycle



Operating voltage range



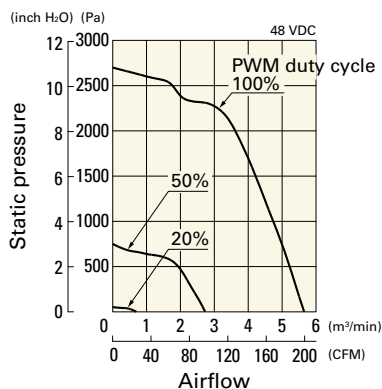
PWM duty - Speed characteristics example



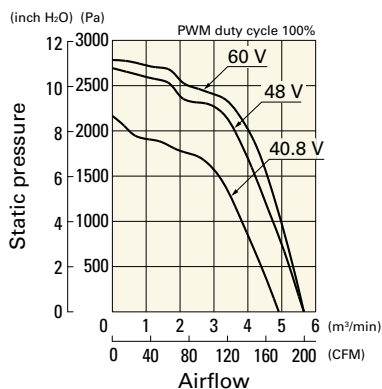
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRHA0848P8J001 With pulse sensor with PWM control

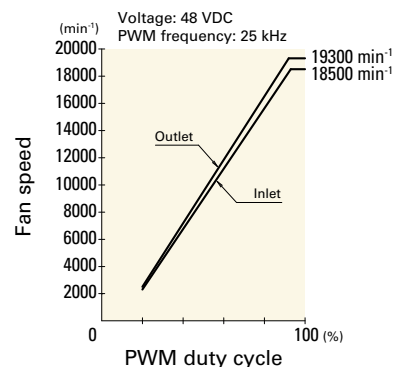
PWM duty cycle



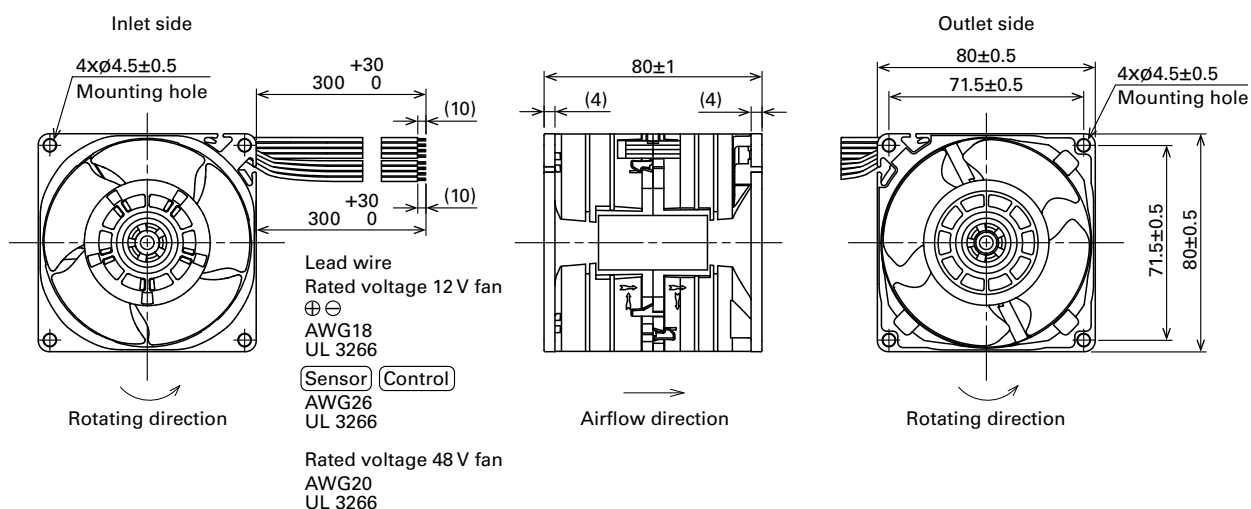
Operating voltage range



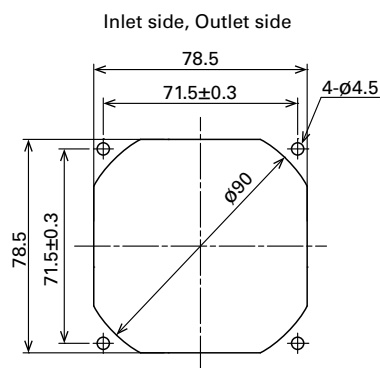
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Resin finger guards

page: p. 605

Model no.: 109-1002G

Resin filter kits

page: p. 606

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

80×80×80 mm

San Ace 80 9CRH type



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 430 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

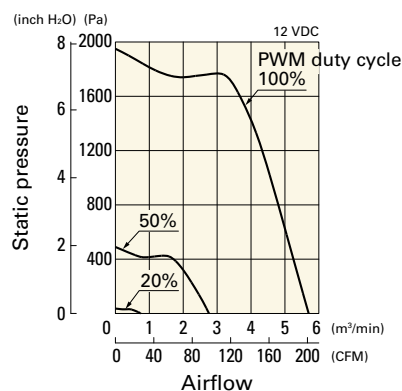
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRH0812P8G001	12	10.8 to 12.6	100	10	120	15400 15200	5.7 201	1950 7.80	82	-20 to +70	40000/60°C (70000/40°C)
			20	0.20	2.40	2000 1900	0.7 24.7	36.0 0.14	30		
9CRH0848P8G001	48	40.8 to 60.0	100	2.5	120	15400 15200	5.7 201	1950 7.80	82		
			20	0.15	7.20	2000 1900	0.7 24.7	36.0 0.14	30		

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

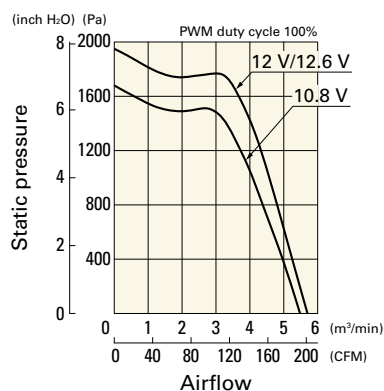
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRH0812P8G001 With pulse sensor with PWM control

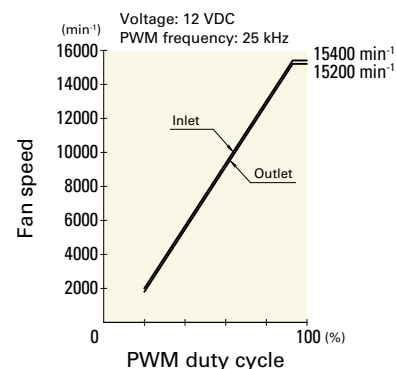
PWM duty cycle



Operating voltage range



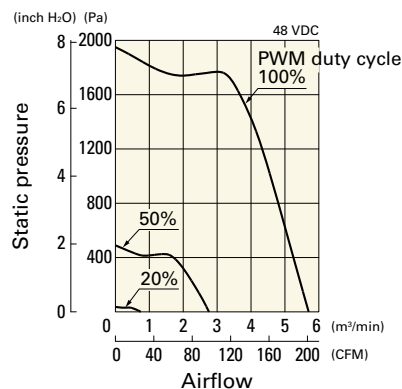
PWM duty - Speed characteristics example



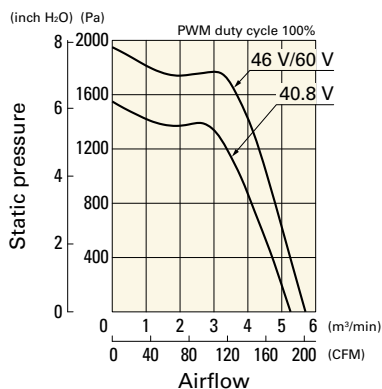
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRH0848P8G001 With pulse sensor with PWM control

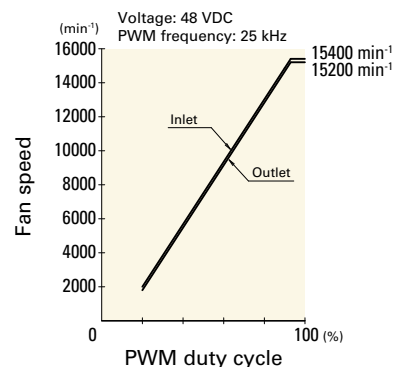
PWM duty cycle



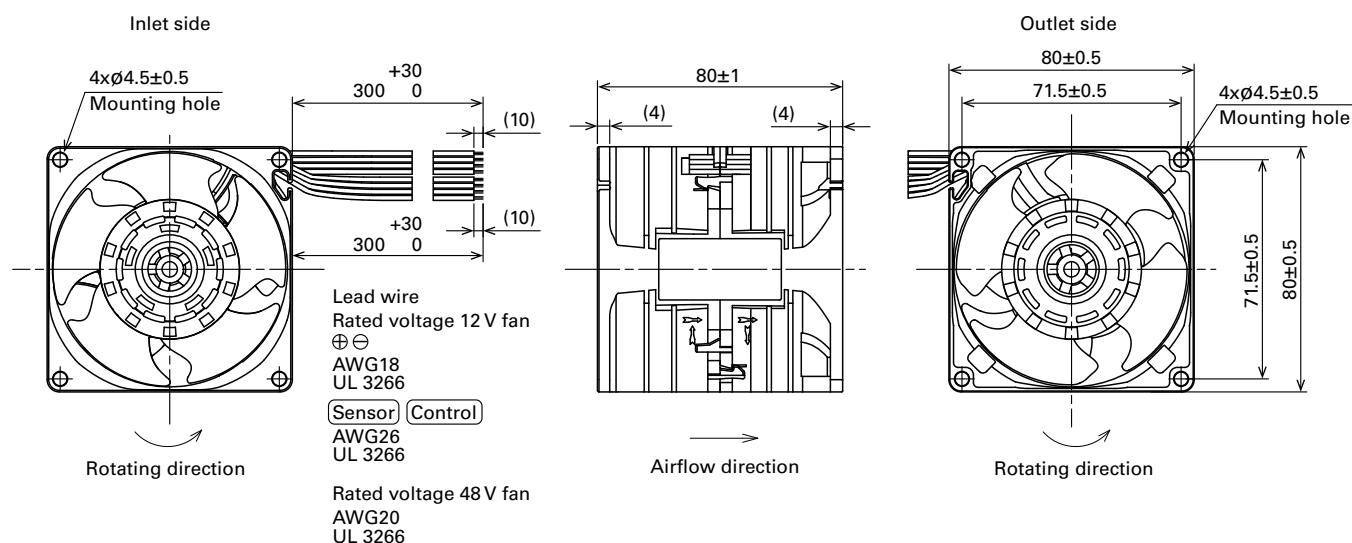
Operating voltage range



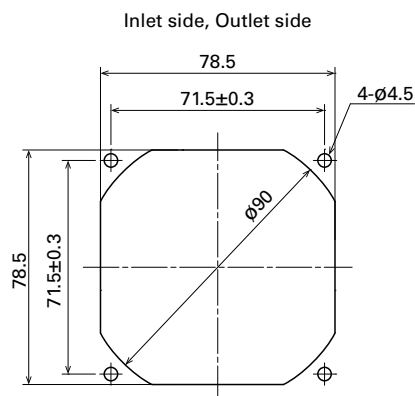
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Resin finger guards

page: p. 605

Model no.: 109-1002G

Resin filter kits

page: p. 606

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

80×80×80 mm

San Ace 80 9CRB type  


DC

Counter Rotating Fan 80 mm sq.

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 430 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

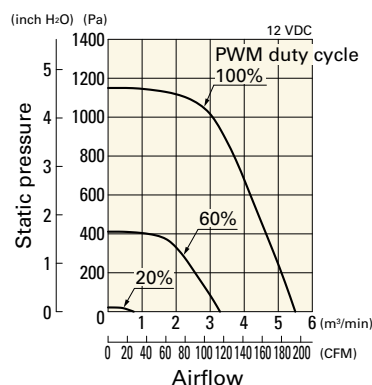
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRB0812P8G001	12	10.8 to 13.2	100	9.2	110.4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

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

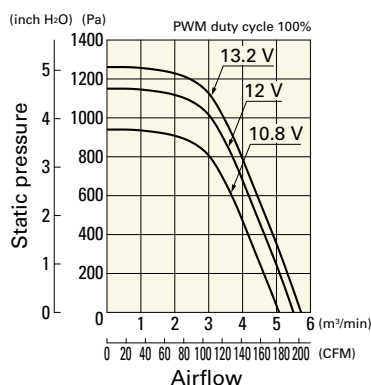
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRB0812P8G001 With pulse sensor with PWM control

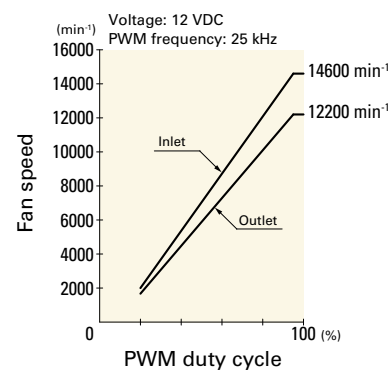
PWM duty cycle



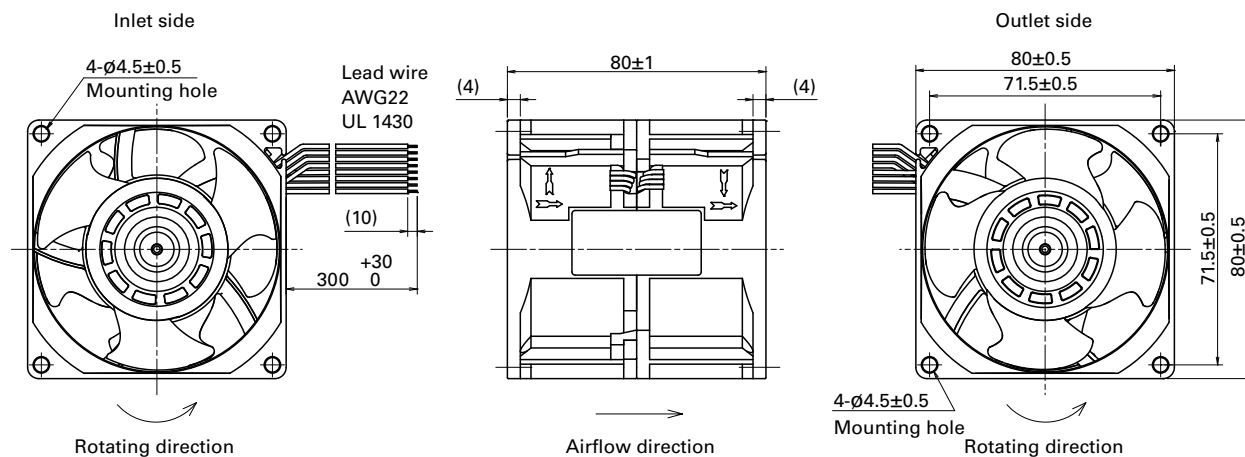
Operating voltage range



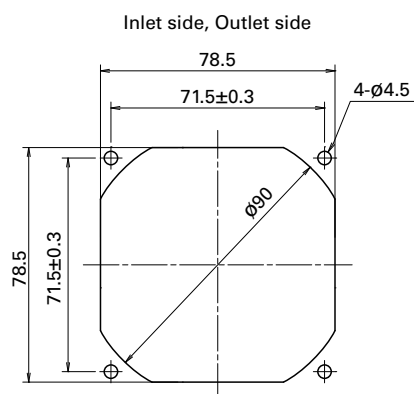
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Resin finger guards

page: p. 605

Model no.: 109-1002G

Resin filter kits

page: p. 606

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



80×80×80 mm

San Ace 80 9CRA type



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 450 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRA0812P8G001	12	10.8 to 13.2	100	5.3	63.6	12000 11300	4.5 158.9	1150 4.62	76	-20 to +70	40000/60°C (70000/40°C)
			0	0.2	2.4	2000 1900	0.74 26.1	31.9 0.13	30		
9CRA0812P8H001			100	3.3	39.6	10000 9400	3.75 133.9	798 3.21	72		
			0	0.2	2.4	2000 1900	0.74 26.1	31.9 0.13	30		
9CRA0824P8G001	24	21.6 to 26.4	100	2.65	63.6	12000 11300	4.5 158.9	1150 4.62	76		
			0	0.09	2.16	2000 1900	0.74 26.1	31.9 0.13	30		
9CRA0848P8G001	48	40.8 to 55.2	100	1.32	63.4	12000 11300	4.5 158.9	1150 4.62	76		
			0	0.29	13.9	5000 4700	1.88 66.2	200 0.8	52		

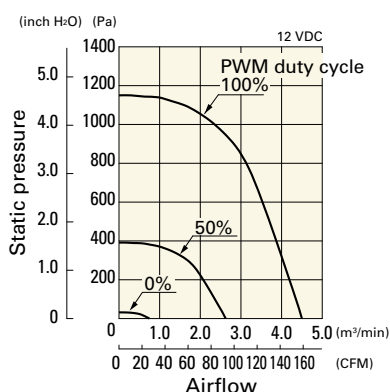
* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

Note: Sensor and control options are available for selection. Refer to the table on p. 646.

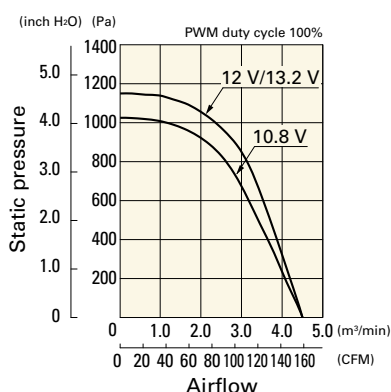
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0812P8G001 With pulse sensor with PWM control

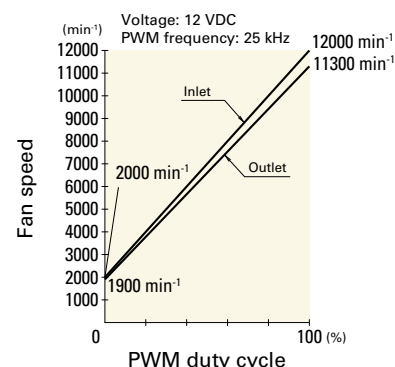
PWM duty cycle



Operating voltage range



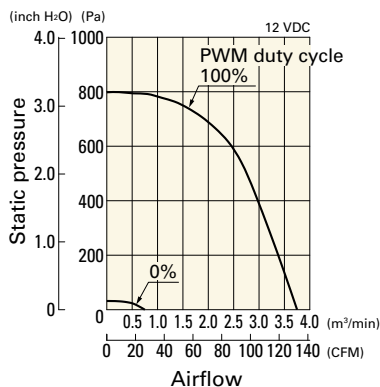
PWM duty - Speed characteristics example



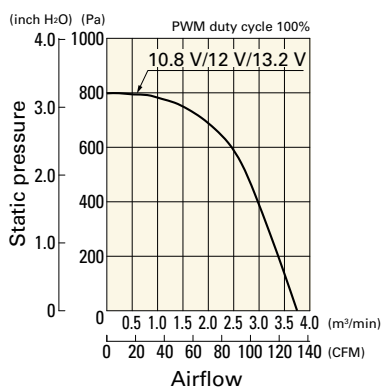
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0812P8H001 With pulse sensor with PWM control

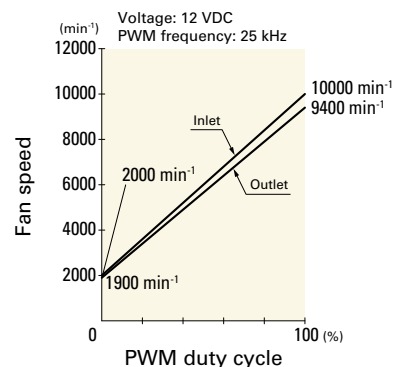
PWM duty cycle



Operating voltage range

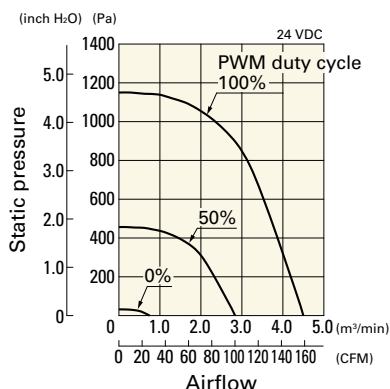


PWM duty - Speed characteristics example

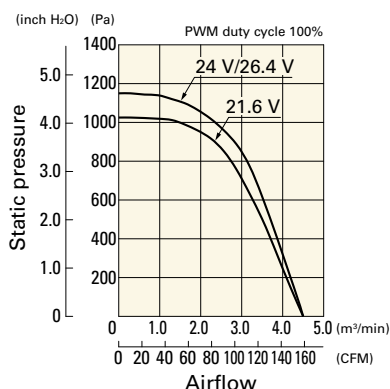


9CRA0824P8G001 With pulse sensor with PWM control

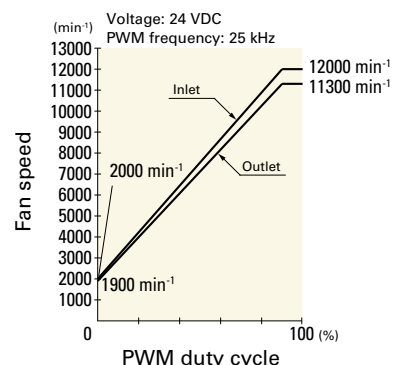
PWM duty cycle



Operating voltage range

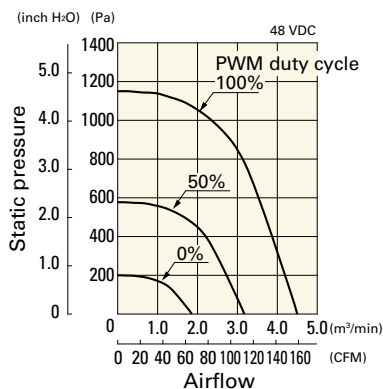


PWM duty - Speed characteristics example

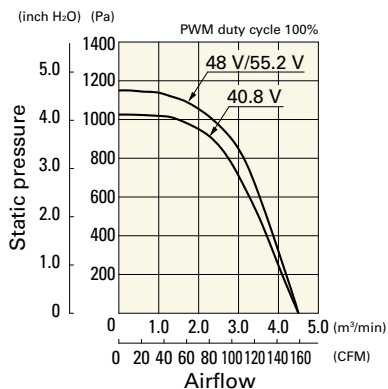


9CRA0848P8G001 With pulse sensor with PWM control

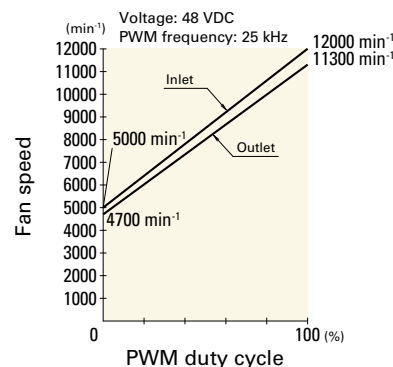
PWM duty cycle



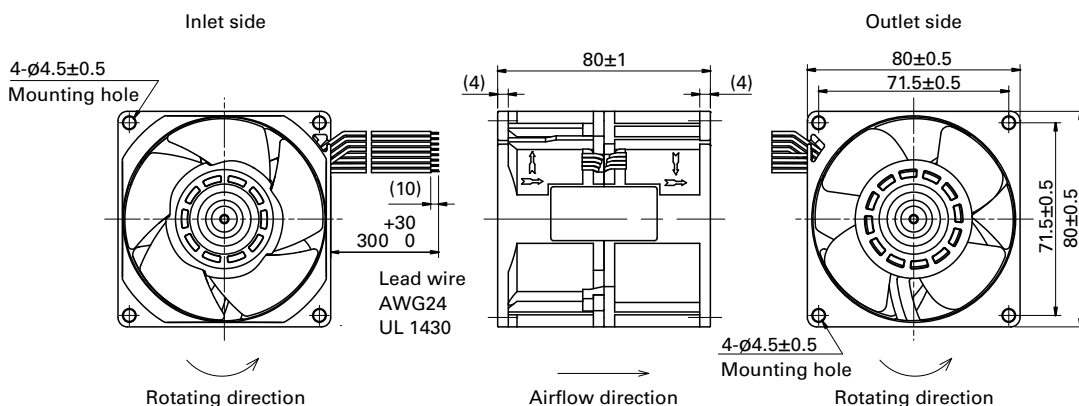
Operating voltage range



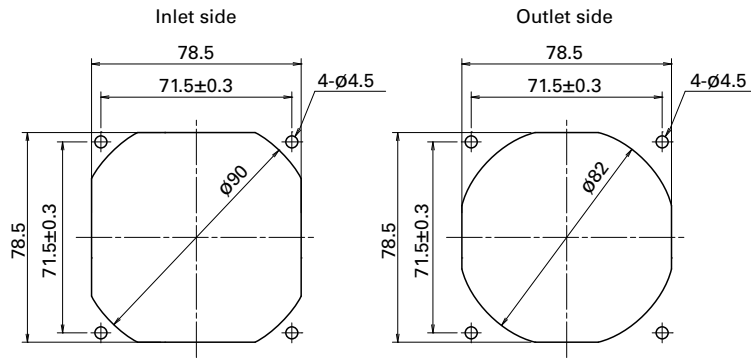
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Resin finger guards

page: p. 605

Model no.: 109-1002G

Resin filter kits

page: p. 606

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

92×92×76 mm

San Ace 92 9CRA type  



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 510 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

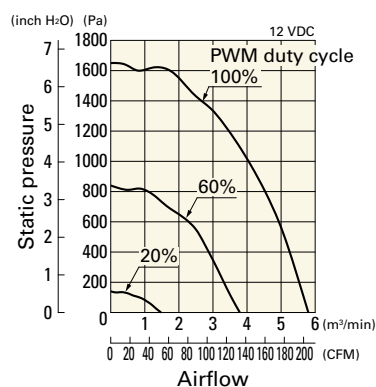
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CRA0912P0G001	12	10.2 to 13.2	100	9.0	108.0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

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

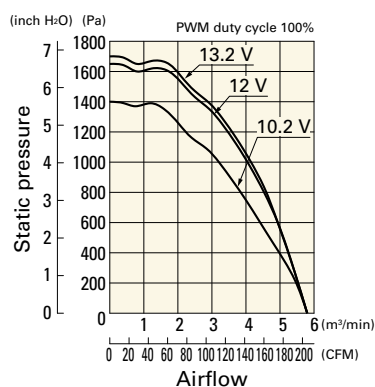
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0912P0G001 With pulse sensor with PWM control

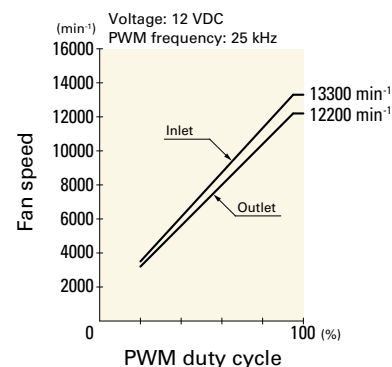
PWM duty cycle



Operating voltage range



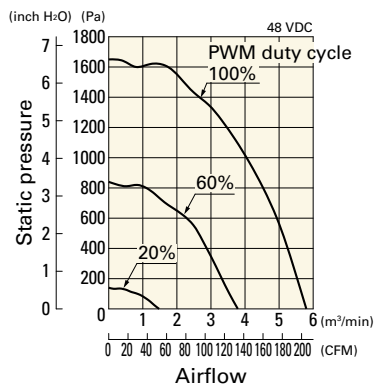
PWM duty - Speed characteristics example



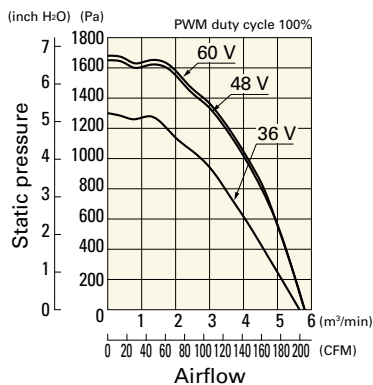
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CRA0948P0G601 With pulse sensor with PWM control

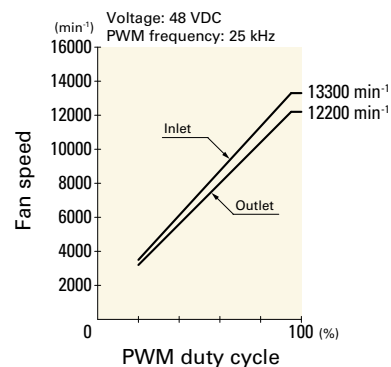
PWM duty cycle



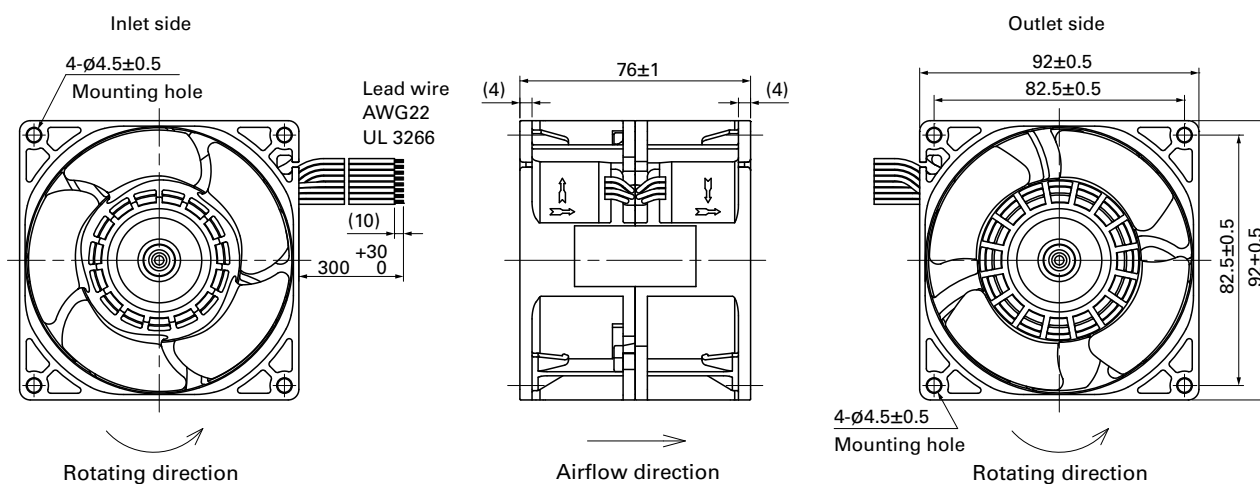
Operating voltage range



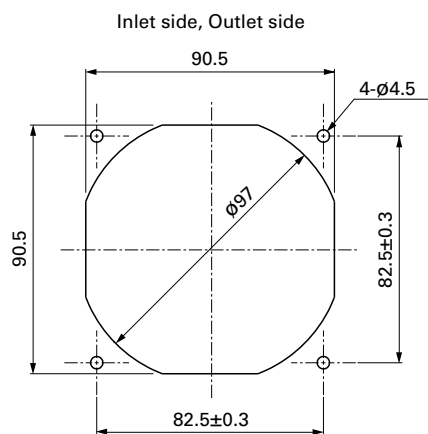
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 598

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

Resin finger guards

page: p. 605

Model no.: 109-1001G

Resin filter kits

page: p. 606

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

Counter Rotating Fan



120×120×76 mm

San Ace 120 9CR type

General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
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. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 670 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CR1212P0G03	12	10.8 to 13.2	100	7.2	86.4	6200 3800	8.5 300	480 1.93	70	-20 to +60	40000/60°C (70000/40°C)
			0	1.1	13.2	2700 1800	3.8 134	95 0.38	51		

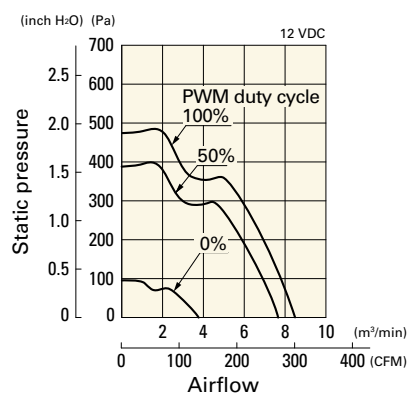
* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

Note: Sensor and control options are available for selection. Refer to the table on p. 646.

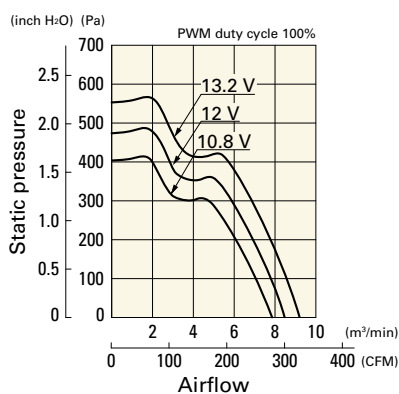
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CR1212P0G03 With pulse sensor with PWM control

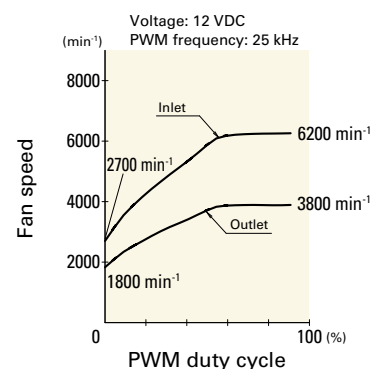
PWM duty cycle



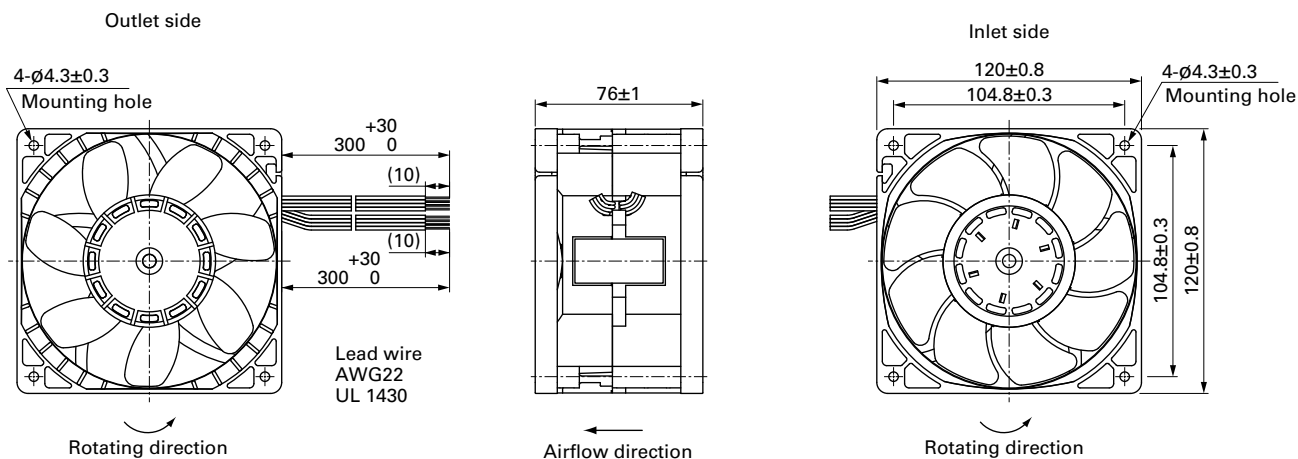
Operating voltage range



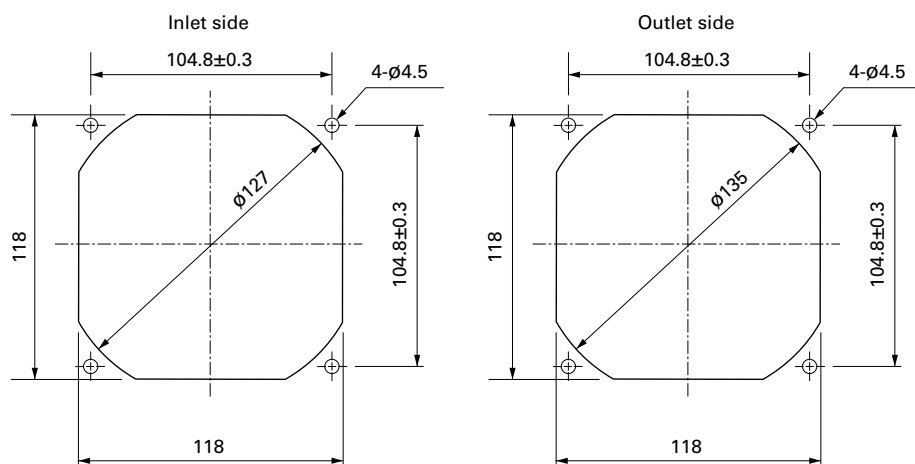
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 599

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

Resin finger guards

page: p. 605

Model no.: 109-1000G

Resin filter kits

page: p. 606

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

Counter Rotating Fan

Ø172×150×102 mm



San Ace 172 9CR type

Sidecut type

General Specifications

- Material Frame: Aluminum, Impeller: Plastic (Flammability: UL 94V-0)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 616.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) A-weighted sound pressure level (SPL) at 1 m away from the air inlet.
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire Inlet ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
Outlet ⊕Orange ⊖Gray (Sensor) Purple (Control) White
- Mass 1600 g

Specifications

The models listed below **have a pulse sensor with PWM control.**

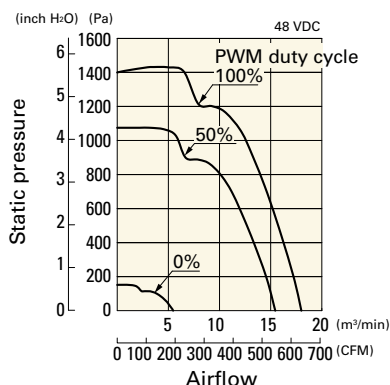
Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
9CR5748P9G001	48	36 to 72	100	5.5	264	7300 6400	18 636	1400 5.62	83	-20 to +70	40000/60°C (70000/40°C)
			0	0.5	24	2400 1900	5.5 194.3	152 0.61	54		

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

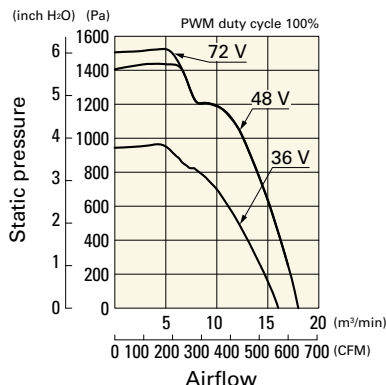
Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9CR5748P9G001 With pulse sensor with PWM control

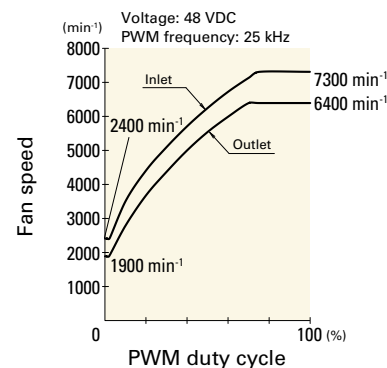
PWM duty cycle



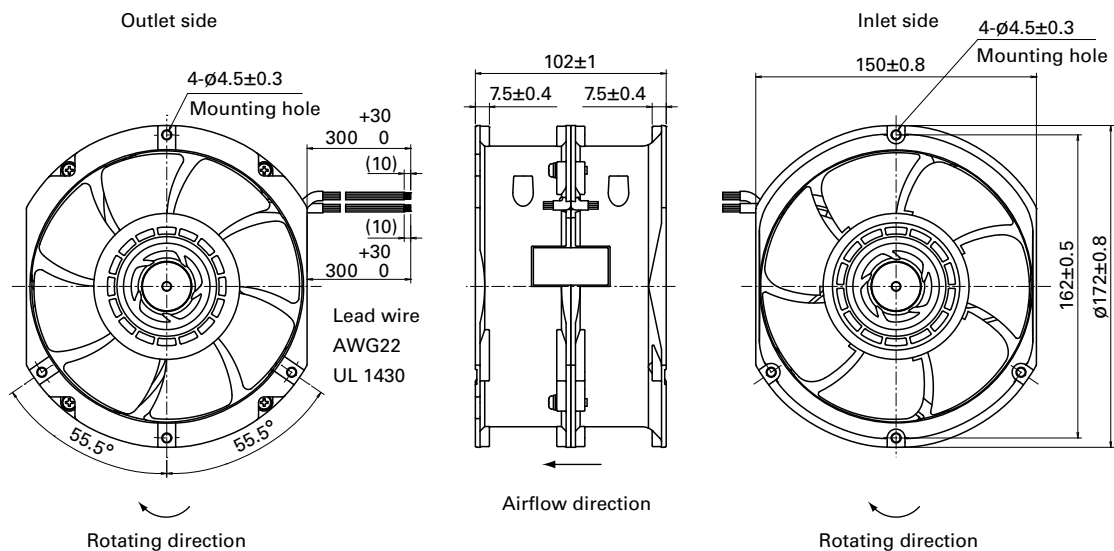
Operating voltage range



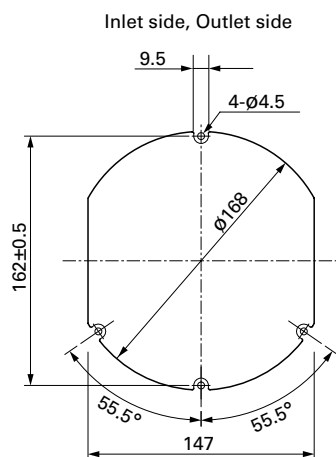
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards

page: p. 600

Model no.: 109-1155, 109-1155H