Reversible Flow Fan

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

Model Numbering System

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

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

Type name	9RF
Frame size (mm)	09 (ø92) 13 (ø136)
Voltage (V)	12 12 24 24
Frame thickness (mm)	1 38 3 28
Speed code	H

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]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH_2O]	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.

ø92×38 mm

San Ace 92RF 9RF type

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60˚C, rated voltage) 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. 580.
- 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 ..... ⊕Red ⊖Black Sensor Yellow Control Brown
- Mass ..... 150 g

Specifications

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

Model no.	Airflow direction	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [˚C]	Expected life [h]
9RF0912P1H001	Forward	12	10.2 to 13.8	100	0.17	2.0	5500	1.2	42.4	156	0.63	39	-20 to +70	40000/60˚C (70000/40˚C)
	Reverse			0	0.17	2.0	5300	1.2	42.4	146	0.59	43		
9RF0924P1H001	Forward	24	20.4 to 27.6	100	0.09	2.2	5500	1.2	42.4	156	0.63	39		
	Reverse			0	0.09	2.2	5300	1.2	42.4	146	0.59	43		

* PWM frequency is 25 kHz. When control terminal is open, speed is the same as at 100% PWM duty cycle.

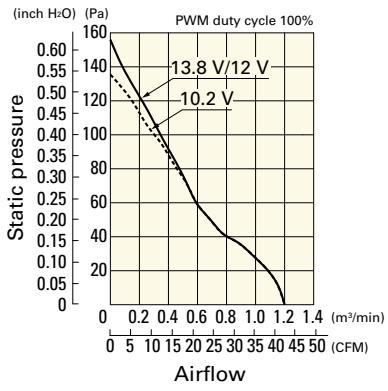
Note: The » mark indicates Short Lead Time Service applicable models. See p. 630 for details.

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

9RF0912P1H001 With pulse sensor with PWM control function

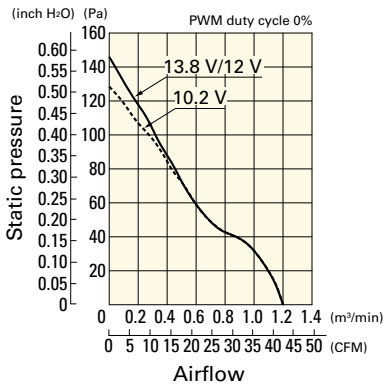
Operating voltage range

Forward

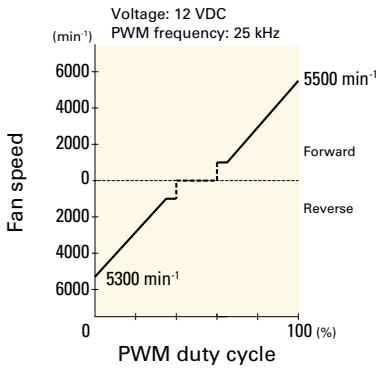


Operating voltage range

Reverse



PWM duty - Speed characteristics example

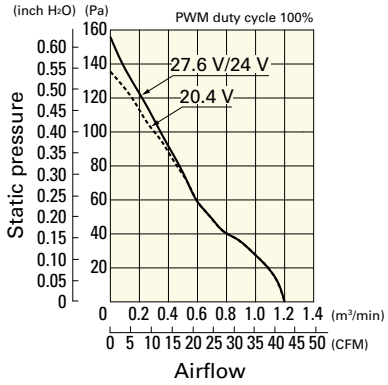


Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9RF0924P1H001 With pulse sensor with PWM control function

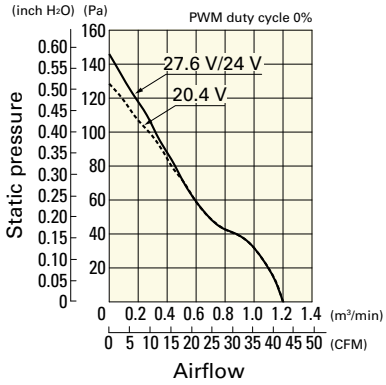
Operating voltage range

Forward

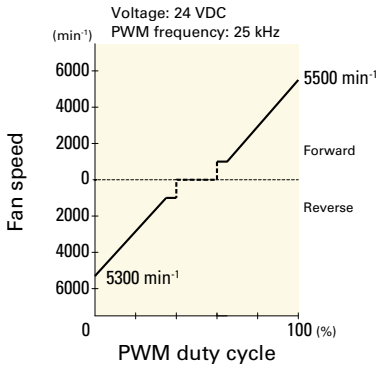


Operating voltage range

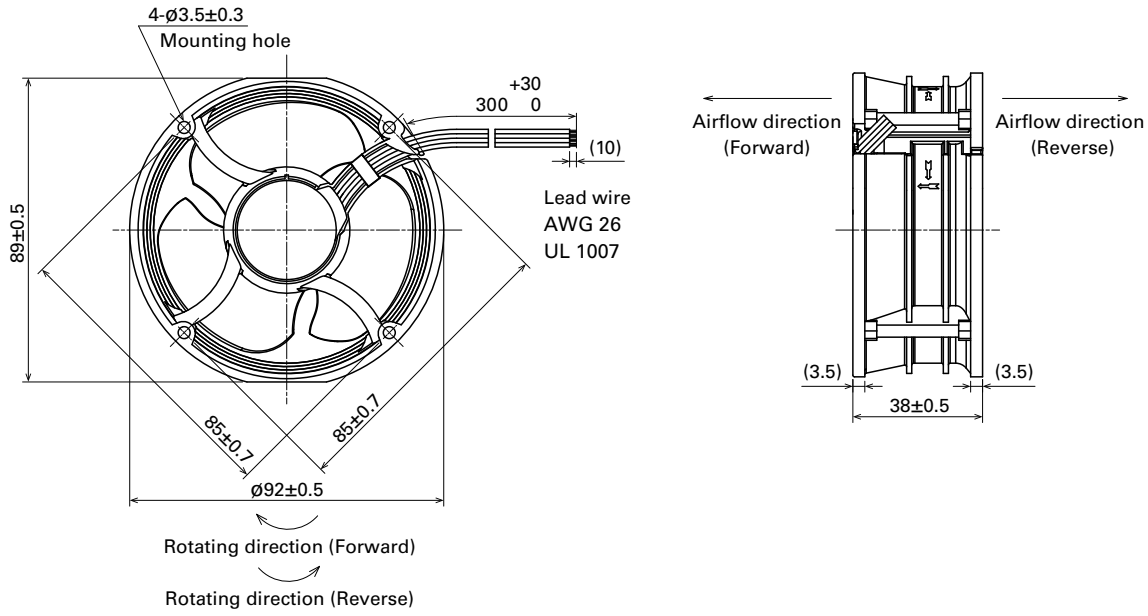
Reverse



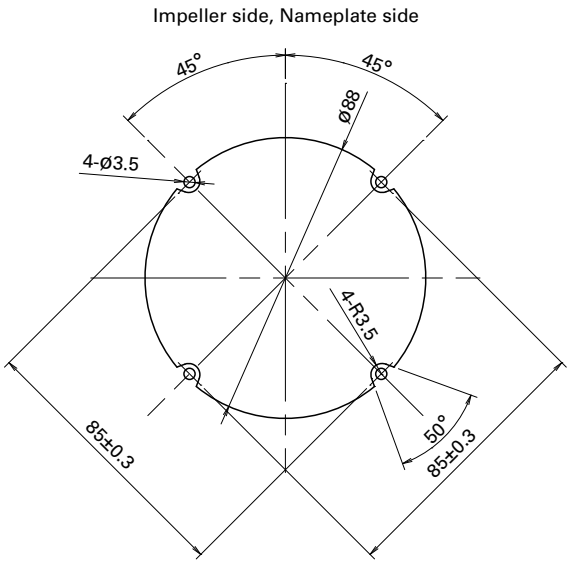
PWM duty - Speed characteristics example



Dimensions (unit: mm)



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



Options

Finger guards page: p. 564

Model no.: 109-1147

ø136×28 mm

San Ace 136RF 9RFA 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. 580.
- 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 ..... ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass ..... 204 g

Specifications

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

Model no.	Airflow direction	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [˚C]	Expected life [h]
9RFA1312P3G001	Forward	12	10.2 to 13.8	100	0.25	3.00	5450	2.10	74.2	285	1.14	49	-25 to +70	40000/60˚C (70000/40˚C)
	Reverse			0	0.25	3.00	5450	2.05	72.4	280	1.12	52		
9RFA1312P3H001	Forward			100	0.16	1.92	4350	1.67	59.2	185	0.74	44		
	Reverse			0	0.16	1.92	4350	1.63	57.8	180	0.72	47		
9RFA1324P3G001	Forward	24	20.4 to 27.6	100	0.13	3.12	5450	2.10	74.2	285	1.14	49		
	Reverse			0	0.13	3.12	5450	2.05	72.4	280	1.12	52		
9RFA1324P3H001	Forward			100	0.08	1.92	4350	1.67	59.2	185	0.74	44		
	Reverse			0	0.08	1.92	4350	1.63	57.8	180	0.72	47		

* PWM frequency is 25 kHz. When control terminal is open, speed is the same as at 100% PWM duty cycle.

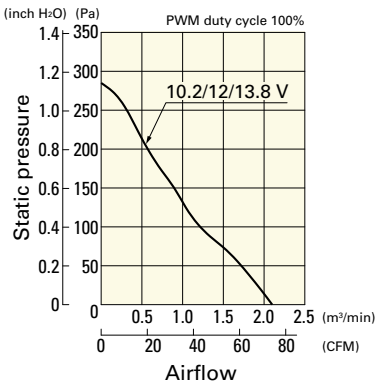
Note: The mark indicates Short Lead Time Service applicable models. See p. 630 for details.

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

9RFA1312P3G001 With pulse sensor with PWM control function

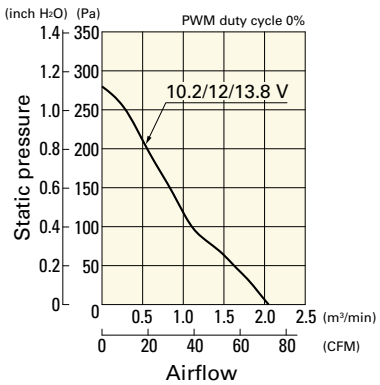
Operating voltage range

Forward

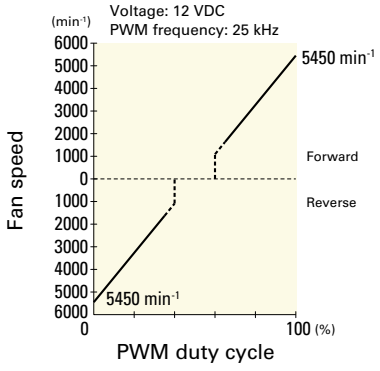


Operating voltage range

Reverse



PWM duty - Speed characteristics example

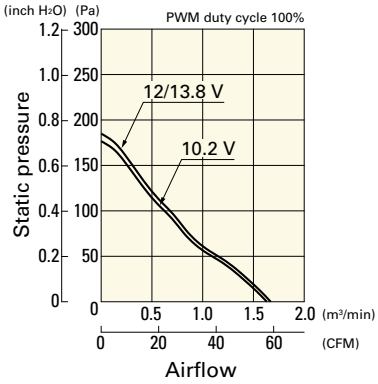


Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9RFA1312P3H001 With pulse sensor with PWM control function

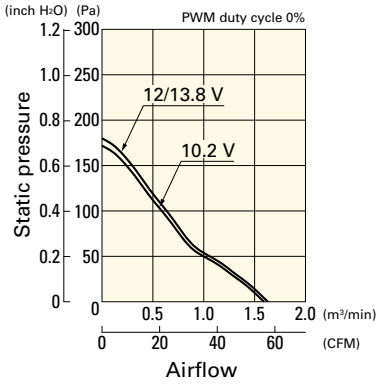
Operating voltage range

Forward

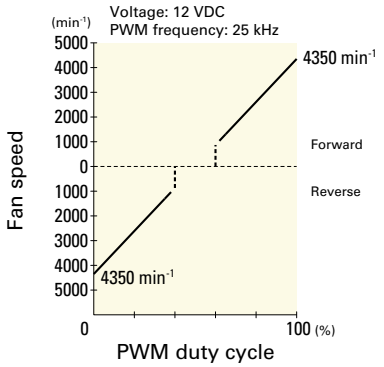


Operating voltage range

Reverse



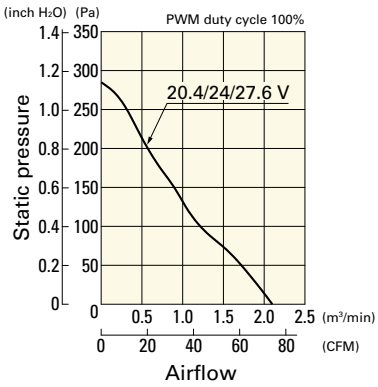
PWM duty - Speed characteristics example



9RFA1324P3G001 With pulse sensor with PWM control function

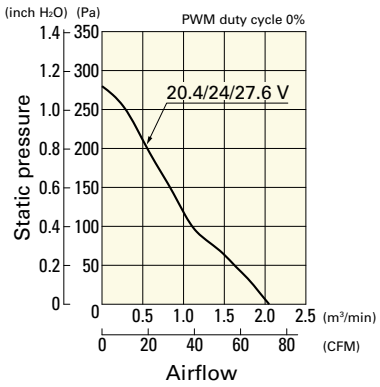
Operating voltage range

Forward

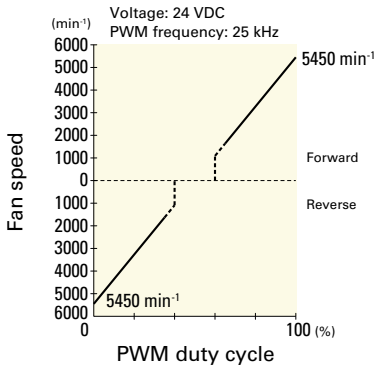


Operating voltage range

Reverse



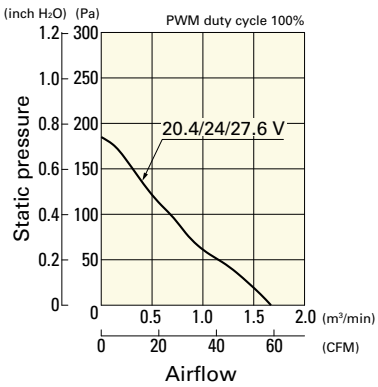
PWM duty - Speed characteristics example



9RFA1324P3H001 With pulse sensor with PWM control function

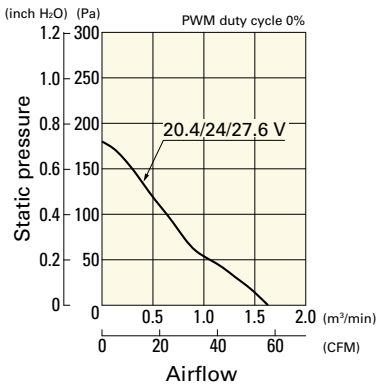
Operating voltage range

Forward

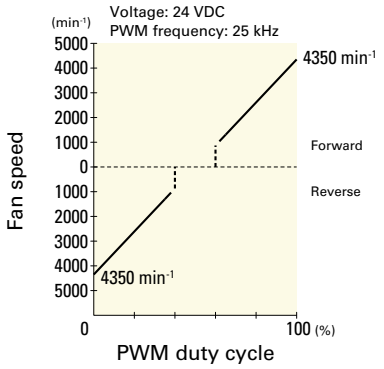


Operating voltage range

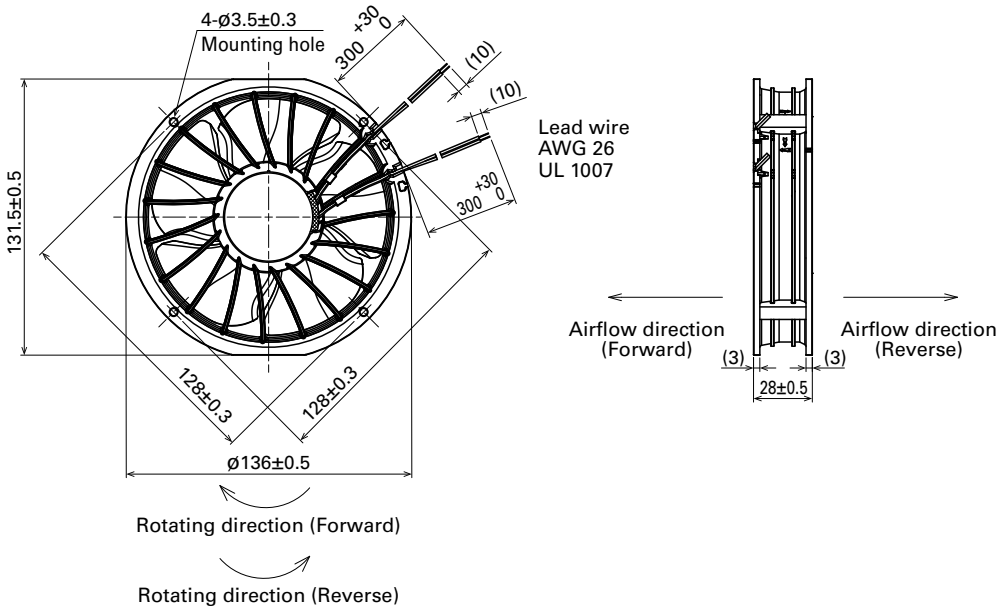
Reverse



PWM duty - Speed characteristics example

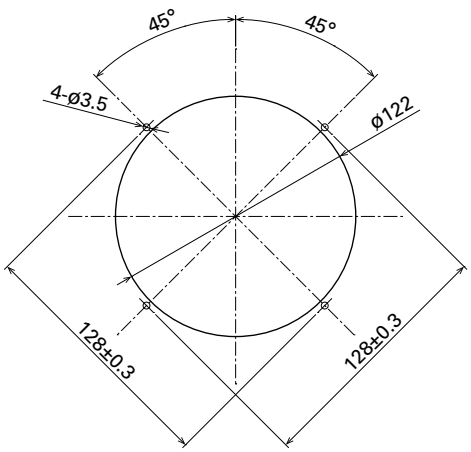


Dimensions (unit: mm)



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

Impeller side, Nameplate side



Options

Finger guards page: p. 565

Model no.: 109-1139

Reversible Flow Fan

ø136×28 mm

San Ace 136RF 9RF type

General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60˚C, rated voltage) 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. 580.
- 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 ..... ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
- Mass ..... 220 g

Specifications

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

Model no.	Airflow direction	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB (A)]	Operating temperature [˚C]	Expected life [h]
9RF1312P3H001	Forward	12	10.2 to 13.8	100	0.15	1.8	3100	2.0	70.7	102	0.41	35	-20 to +70	40000/60˚C (70000/40˚C)
	Reverse			0	0.15	1.8	3100	2.0	70.7	104	0.418	46		
9RF1324P3H001	Forward	24	20.4 to 27.6	100	0.09	2.2	3100	2.0	70.7	102	0.41	35		
	Reverse			0	0.09	2.2	3100	2.0	70.7	104	0.418	46		

* PWM frequency is 25 kHz. When control terminal is open, speed is the same as at 100% PWM duty cycle.

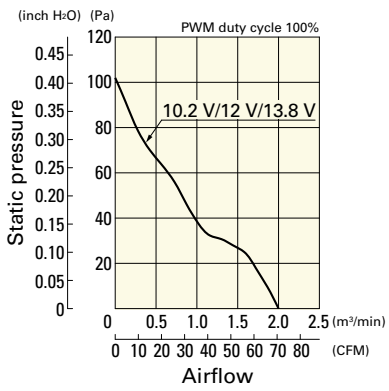
Note: The » mark indicates Short Lead Time Service applicable models. See p. 630 for details.

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

9RF1312P3H001 With pulse sensor with PWM control function

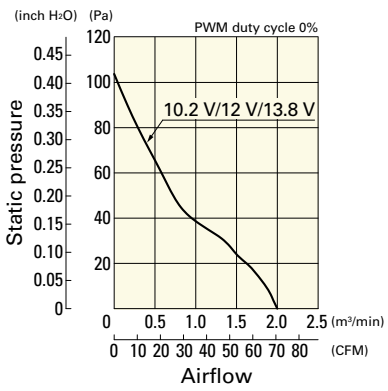
Operating voltage range

Forward

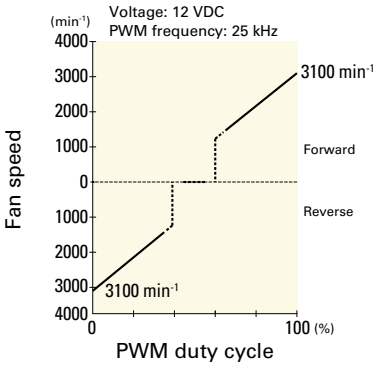


Operating voltage range

Reverse



PWM duty - Speed characteristics example

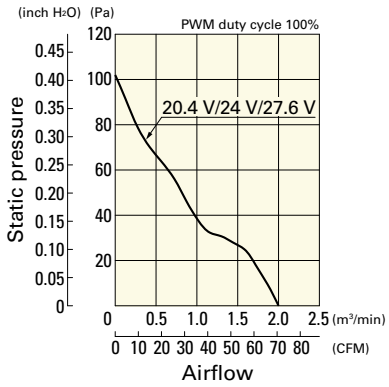


Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

9RF1324P3H001 With pulse sensor with PWM control function

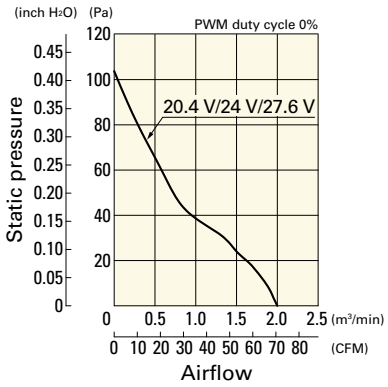
Operating voltage range

Forward

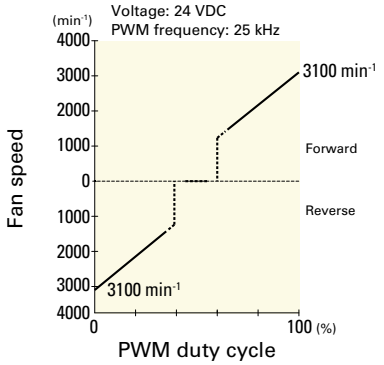


Operating voltage range

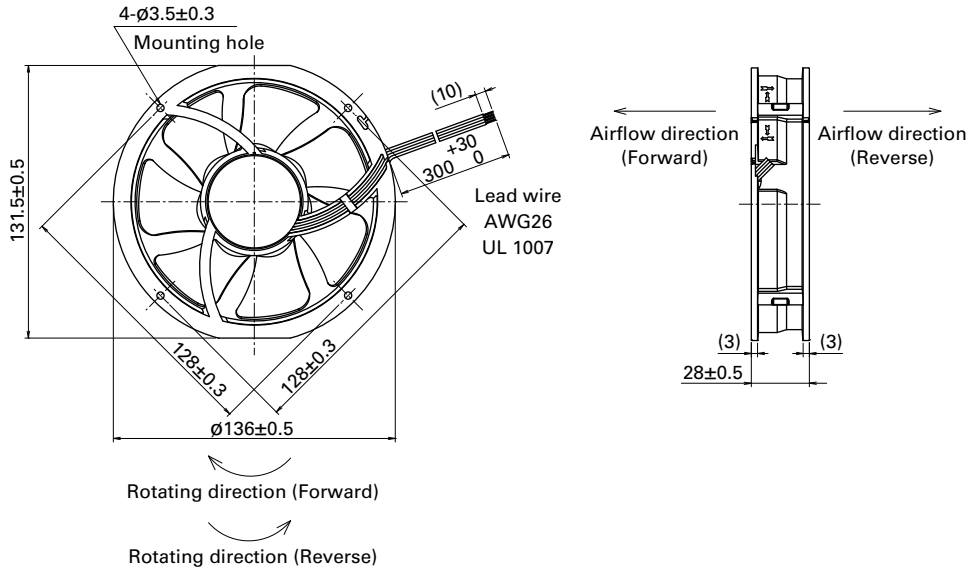
Reverse



PWM duty - Speed characteristics example

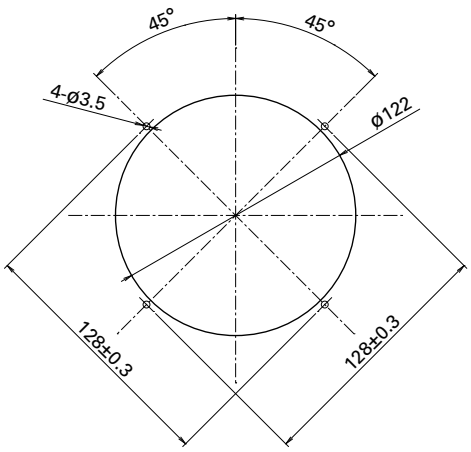


Dimensions (unit: mm)



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

Impeller side, Nameplate side



Options

Finger guards page: p. 565

Model no.: 109-1139