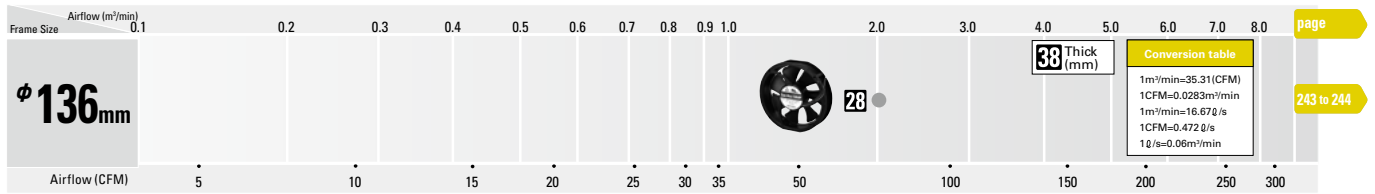


# Reversible Flow Fan

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

## Domain Diagram



## Model Numbering System

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

<b>9RF</b>	<b>13</b>	<b>12</b>	<b>P</b>	<b>3</b>	<b>H</b>	<b>001</b>
Type name / frame material 9RF / Plastics	Frame size 13: $\phi$ 136mm	Voltage 12: 12V 24: 24V	PWM control function	Frame thickness 3: 28mm thick	Speed code	Individual customer's spec

# How to Read Specifications

DC Fan											DC	
Model No.	① Rated Voltage [V]	② Operating Voltage Range [V]	③ Rated Current [A]	④ Rated Input [W]	⑤ Rated Speed [min <sup>-1</sup> ]	⑥ Max. Airflow [m <sup>3</sup> /min] [CFM]		⑦ Max. Static Pressure [Pa] [inchH <sub>2</sub> O]		⑧ SPL [dB(A)]	⑨ Operating Temperature [°C]	⑩ Expected Life [h]
9GA0412G7001	12	7 to 13.8	0.17	2.04	13,100	0.36	12.7	192	0.77	42	-20 to +70	40,000/60°C (70,000/40°C)

- ① Rated Voltage ..... This is the necessary voltage to drive the fan. 12VDC, 24VDC and 48VDC are available.
- ② Operating Voltage Range... The voltage range over which fan operation is guaranteed
- ③ Rated Current ..... The current value during the fan's rated operation without load
- ④ Rated Input ..... The input value during the fan's rated operation without load
- ⑤ Rated Speed ..... The rotating speed during the fan's rated operation without load
- ⑥ Max. Airflow ..... The maximum air volume that the fan can output during rated operation (according to the company's dual-chamber device).  
The volume of air generated by the fan in a given time period
- ⑦ Max. Static Pressure ..... The maximum static pressure value that the fan can output during rated operation (according to the company's dual-chamber device). The static pressure is the fan's force to propel air by overcoming the resistance of the device that uses the fan when it propels air.
- ⑧ SPL ..... "SPL" is Sound Pressure Level. The noise level during the fan's rated operation.  
Please refer to the technical material section for the method used to measure the noise level.
- ⑨ Operating Temperature ..... The temperature range over which fan operation is guaranteed (Non- condensing)
- ⑩ Expected Life ..... The fan's expected operating life when the fan operates continuously at the rated voltage at a temperature of 60°C and at relative humidity of 90%. Expected life at 40°C ambient is just reference value.  
Please refer to the technical material section for the expected operating life.

## DC Fan Common Specifications

- Material** ..... Frame,Impeller:Plastics / Frame:Aluminum,Impeller:Plastics  
\* For details, refer to the appropriate page.
- Expected Life** .....Varies for each model (L10:Survival rate:90% at 60°C ,rated voltage, and continuously run in a free air state)  
\* Splash proof fan: Varies for each model (Indoor, L10:Survival rate:90% at 60°C ,rated voltage, and continuously run in a free air state)
- Motor Protection** .....Burnout protection at locked rotor condition and Reverse polarity protection
- Dielectric Strength** .....AC50/60Hz 500VAC 1minute(between lead conductor and frame)
- Insulation Resistance** .....10M Ω or more at 500VDC megger (between lead conductor and frame)
- Sound Pressure Level(SPL)** ..Expressed as the value at 1m from air inlet side
- Lead Wire** .....For details, refer to the appropriate page.

### Overheating protection function

Protection Functions:  
If the fan blades are restricted, an overcurrent occurs and leads to a rise in the fan coil temperature. This can result in reduced performance, damage, or a fire. To prevent this from occurring, SANYO DENKI's fans incorporate an overheating protection function. Refer to the catalog for the types of protection functions.

#### Burnout protection function at locked rotor condition

- Current cutoff system  
If the fan blades are restricted, the coil current is cut off at regular cycles to prevent overheating of the coil. When the hindrance is removed, the fan restarts automatically.

#### Reverse polarity protection function

No problem about fan even if positive & negative lead are connected in reverse.  
However, when wiring fans with sensors or PWM speed control function, connecting positive and negative leads in reverse may damage the fans.

**φ136mm**

# San Ace 136RF



## General Specifications

- Material ..... Frame, Impeller: Plastics (Flammability: UL94V-0)
- Expected Life ..... Refer to specifications (L10: Survival rate: 90% at 60°C ,  
rated voltage, and continuously run in a free air state)
- Lead Wire ..... ⊕red ⊖black (Sensor) yellow (Control) brown
- Storage Temperature ..... -30°C to +70°C (Non-condensing)

**φ136mm×28mm** (Mass : 220g) **9RF type**

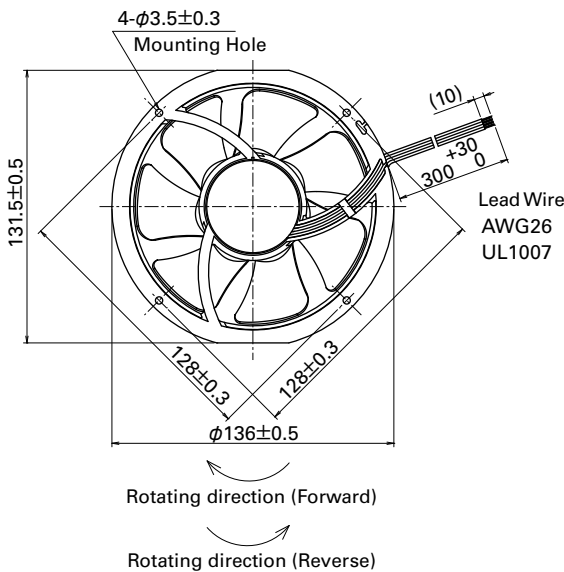
## Specifications

The following nos. **have PWM controls and pulse sensors.**

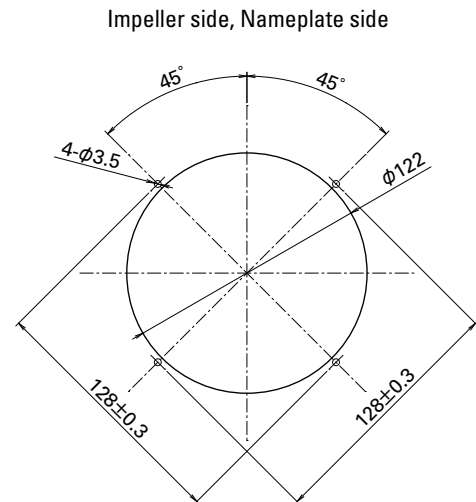
Model No.	Airflow direction	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle* [%]	Rated Current [A]	Rated Input [W]	Rated Speed [min <sup>-1</sup> ]	Max. Airflow [m <sup>3</sup> /min] [CFM]	Max. Static Pressure [Pa] [inchH <sub>2</sub> O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9RF1312P3H001	Forward	12	10.2 to 13.8	100	0.15	1.8	3,100	2.00 70.7	102 0.410	35	-20 to +70	40,000/60°C (70,000/40°C)
	Reverse			0								
9RF1324P3H001	Forward	24	20.4 to 27.6	100	0.09	2.2	3,100	2.00 70.7	102 0.410	35		
	Reverse			0								

※PWM Frequency : 25kHz

## Dimensions (unit: mm)



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

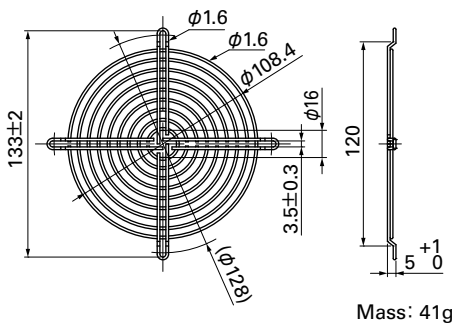


## Options (unit: mm)

### Finger Guards

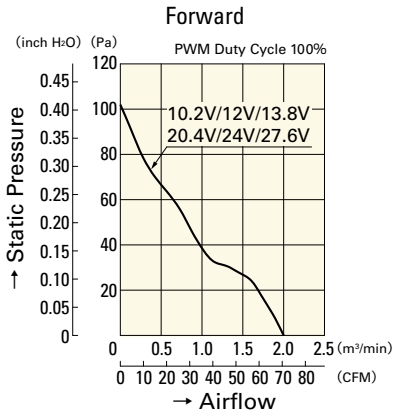
Model : 109-1139 Surface treatment : Nickel-chrome plating (silver) Color

Impeller side, Nameplate side



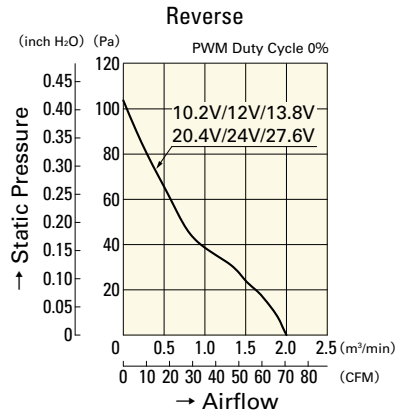
## Airflow - Static Pressure Characteristics

### Operating Voltage Range



**9RF1312P3H001**

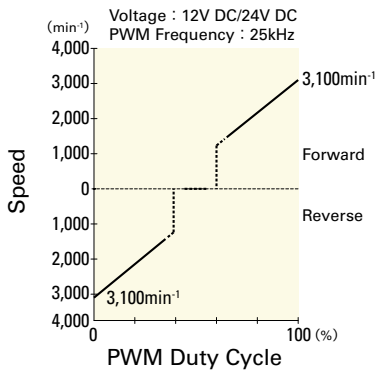
**9RF1324P3H001**



**9RF1312P3H001**

**9RF1324P3H001**

## PWM Duty - Speed Characteristics Example



**9RF1312P3H001**

**9RF1324P3H001**