

San Ace 38

9HVA type

DC Fan

Features

High Static Pressure

This fan achieves a maximum static pressure of 2,100 Pa,⁽¹⁾ increasing by a factor of about 2.6 over our current model.⁽²⁾

High Airflow

The fan delivers a maximum airflow of 0.91 m³/min,⁽¹⁾ improving by a factor of about 1.5 compared to the current model.⁽²⁾

Contribution to SDGs

This fan uses a lead-free brass material and is RoHS Directive-compliant.⁽³⁾ Using eco-friendly resources and technologies, it is certified as an Eco Product.⁽⁴⁾

(1) For a model 9HVA0312P3K001

(2) Current model: 38 × 38 × 28 mm San Ace 38 9GA type DC Fan (model: 9GA0312P3K001)

(3) The RoHS (Restriction of Hazardous Substances) Directive restricts the use of certain hazardous substances in electrical and electronic equipment distributed within the European Union.

(4) Eco Products are eco-friendly products designed to reduce the environmental impact of the product and its packaging materials compared to our existing products and conventional products on the market. Our products are assessed over the product's life cycle against our own eco-design requirements including product size, weight, power consumption, and CO₂ emissions, and those meeting our standards and higher standards qualify as Eco Products and Eco Products Plus, respectively.



38 × 38 × 28 mm

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 [m ³ /min] [CFM]		Max. static pressure [Pa] [inchH ₂ O]		SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
9HVA0312P3K001	12	10.8 to 13.2	100	2.1	25.2	38500	0.91	32.2	2100	8.40	69	-20 to +70	30000/60°C (53000/40°C)
			20	0.06	0.72	6000	0.14	4.9	51.0	0.204	29		
9HVA0312P3G001			100	1.1	13.2	30000	0.71	25.1	1300	5.20	64		
			20	0.05	0.60	5000	0.11	3.8	36.1	0.144	25		

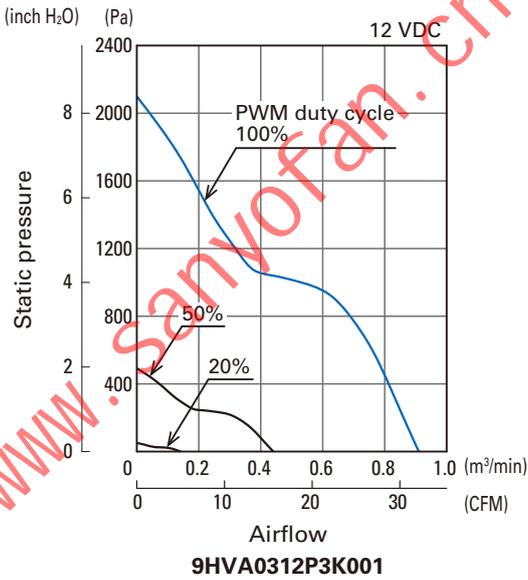
* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

Common Specifications

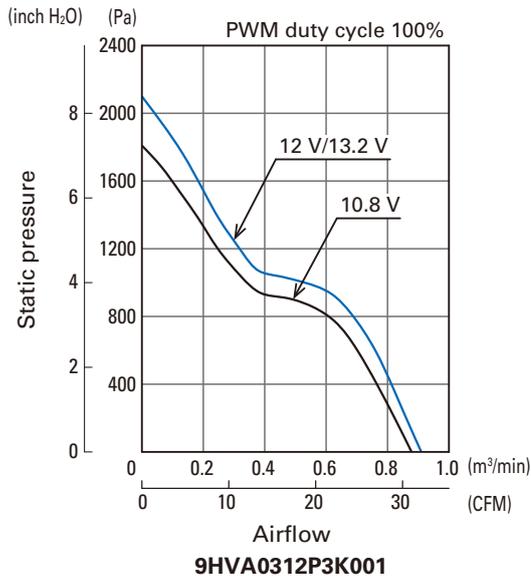
- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life Refer to specifications
(L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
- 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.
- Operating temperature Refer to specifications (Non-condensing)
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕ Red ⊖ Black (Sensor) Yellow (Control) Brown
- Mass 53 g

Airflow - Static Pressure Characteristics

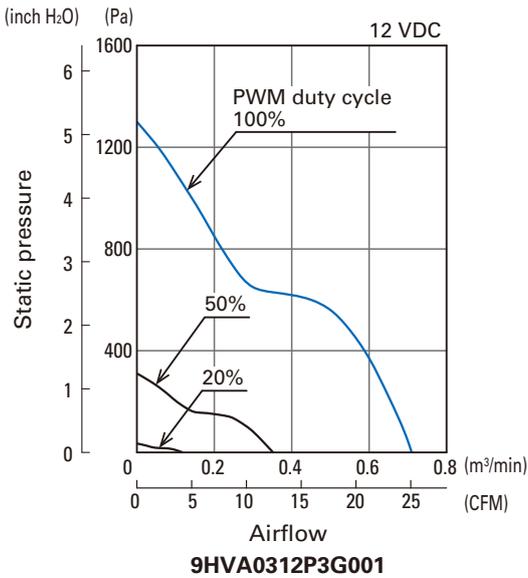
PWM duty cycle



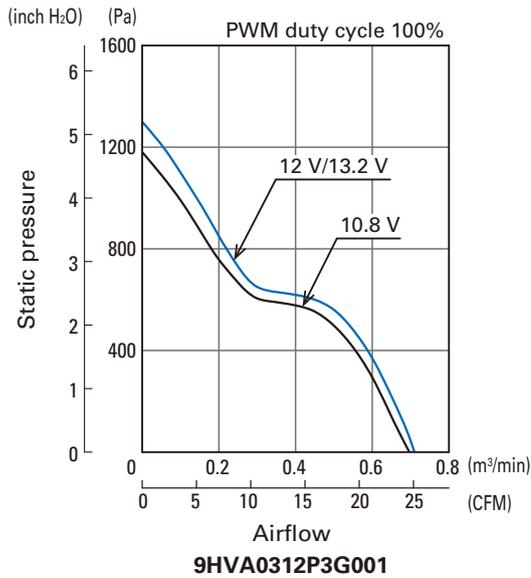
Operating voltage range



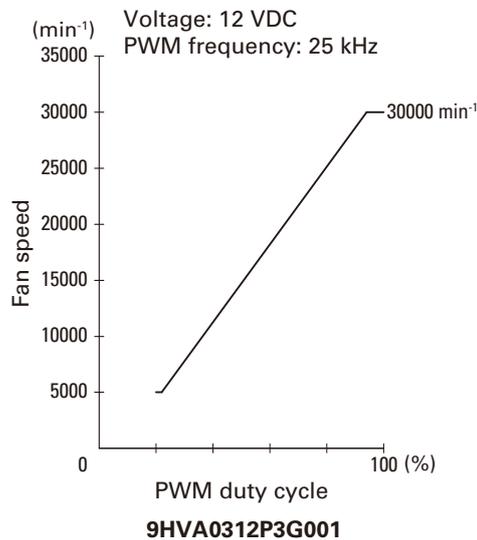
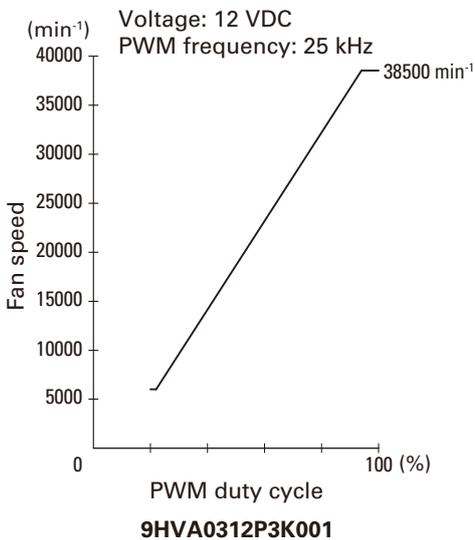
PWM duty cycle



Operating voltage range

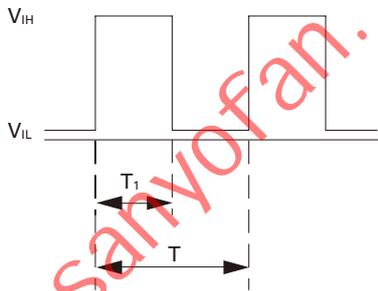


PWM Duty - Speed Characteristics Example



PWM Input Signal Example

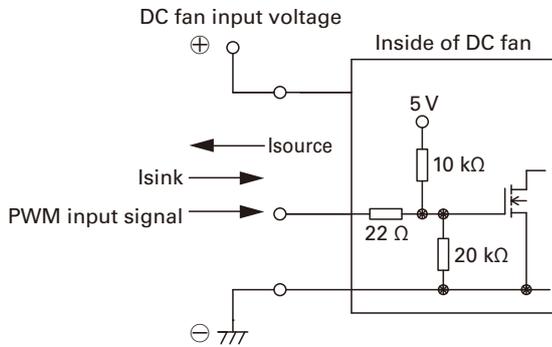
Input signal waveform



$V_{IH} = 2.8 \text{ to } 5.25 \text{ V}$ $V_{IL} = 0 \text{ to } 0.4 \text{ V}$
 PWM duty cycle (%) = $\frac{T_1}{T} \times 100$ PWM frequency 25 (kHz) = $\frac{1}{T}$
 Current source (I_{source}) = 1.0 mA max. (when control voltage is 0 V)
 Current sink (I_{sink}) = 1.0 mA max. (when control voltage is 5.25 V)

When the PWM control terminal is open, the fan speed is the same as the speed at 100% PWM duty cycle. The PWM signal can be used with open collector or drain input. Note that when using an open collector or drain input, or inputting a different voltage or frequency, the speed relative to the PWM duty cycle may differ from this specification.

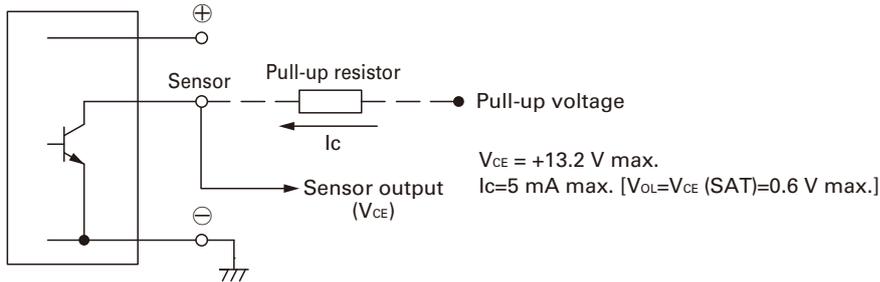
Example of Connection Schematic



Specifications for Pulse Sensors

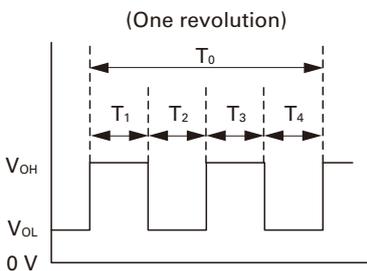
Output circuit: Open collector

Inside of DC fan



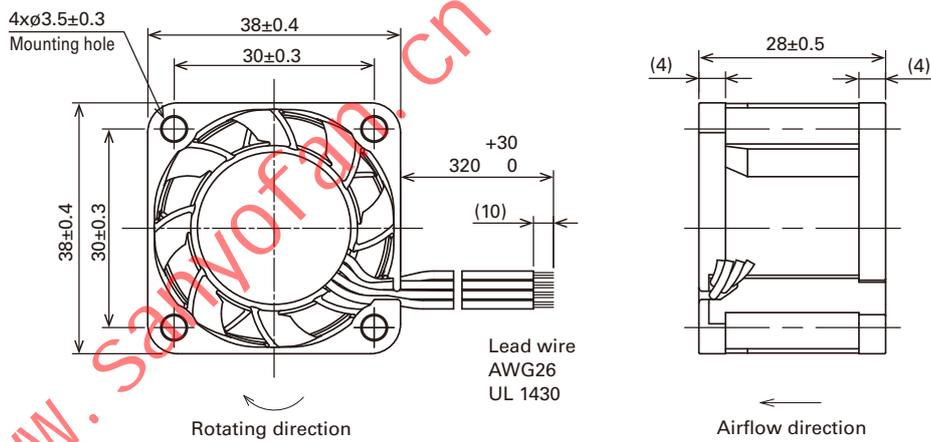
Output waveform (Need pull-up resistor)

In case of steady running

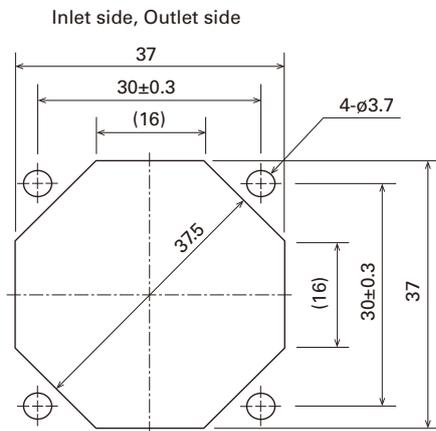


$T_{1 \text{ to } 4} \approx (1/4) T_0$
 $T_{1 \text{ to } 4} \approx (1/4) T_0 = 60/4N \text{ (s)}$
 $N = \text{Fan speed (min}^{-1}\text{)}$

Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

Model no.: 109-1065