San Ace 40 9HVA type

High Static Pressure Fan

Features

High Static Pressure and High Airflow

This fan delivers a maximum static pressure of 2300 Pa and a maximum airflow of 1.05 m^3/min.
Compared with our current model,* the maximum static pressure has increased by 2.1 times and the maximum airflow has increased by 1.3 times.

Energy-saving

Power consumption has been reduced by approximately 20% compared with the current model.*

Space-saving

This fan delivers higher cooling performance than our 40 × 40 × 56 mm Counter Rotating Fan.**
The smaller fan size provides enhanced design flexibility.

* Current model: *San Ace 40* 9HV type 40 × 40 × 28 mm DC Fan (model no. 9HV0412P3K001).
** *San Ace 40* 9CRV type 40 × 40 × 56 mm Counter Rotating Fan (model no. 9CRV0412P5J201).

40 × 40 × 28 mm

Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min^{-1}]	Max. airflow [m^3/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH_2O]	SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
9HVA0412P3J001	12	10.2 to 13.8	100	2.6	31.2	38000	1.05	37.1	2300	9.24	71	-20 to +70	30000/60°C (53000/40°C)
			20	0.12	1.4	8000	0.22	7.8	101	0.41	34		

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

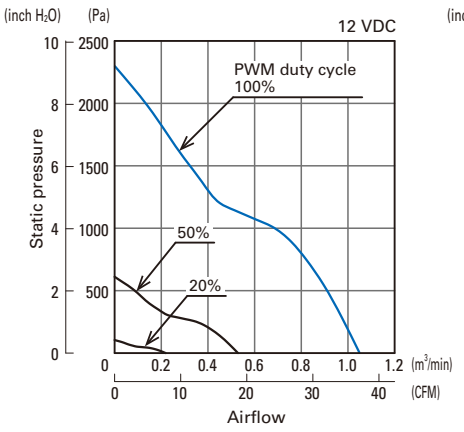
Models with the following sensor specifications are also available as options: Without sensor Lock sensor

Common Specifications

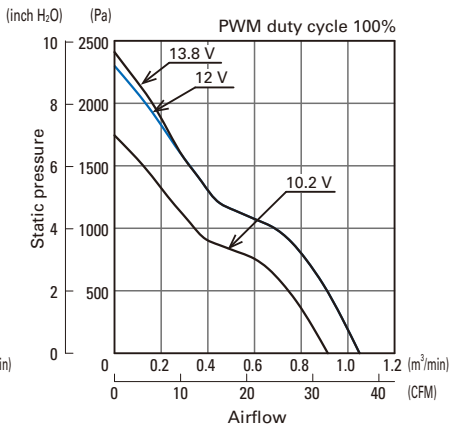
- ☐ Material ····· Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- ☐ Expected life ····· Refer to specifications
  (L10 life: 90% survival rate for continuous operation in free air at 60˚C, rated voltage)
  Expected life at 40°C is for reference only.
- ☐ Motor protection 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 or more with a 500 VDC megger (between lead wire conductors and frame)
- ☐ Sound pressure level (SPL) ····· At 1 m away from the air inlet
- ☐ Operating temperature ····· Refer to specifications (Non-condensing)
- ☐ Storage temperature ····· -30 to +70°C (Non-condensing)
- ☐ Lead wire ····· ⊕ Red ⊖ Black Sensor Yellow Control Brown
- ☐ Mass ····· 57 g

Airflow - Static Pressure Characteristics

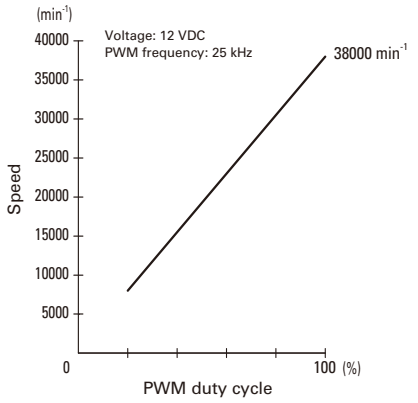
• PWM duty cycle



• Operating voltage range

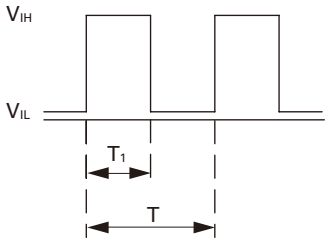


PWM Duty - Speed Characteristics Example



PWM Input Signal Example

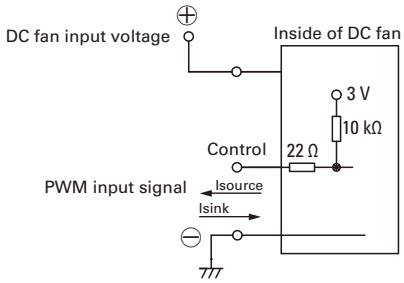
Input signal waveform



V_{IH} = 4.75 to 5.25 V V_{IL} = 0 to 0.4 V
PWM duty cycle (%) = $\frac{T_1}{T} \times 100$ PWM frequency 25 (kHz) = $\frac{1}{T}$
Current source (Isource) = 1 mA max. (when control voltage is 0 V)
Current sink (Isink) = 1 mA max. (when control voltage is 5.25 V)
Control terminal voltage = 5.25 V max. (when control terminal is open)

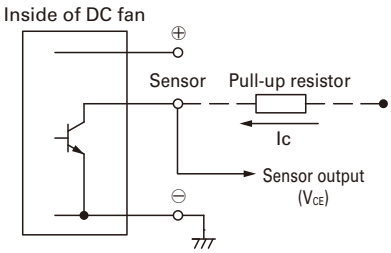
When the control terminal is open,
fan speed is the same as when PWM duty cycle is 100%.
Either TTL input, open collector or open drain can be used for PWM control input signal.

Example of Connection Schematic



Specifications for Pulse Sensors

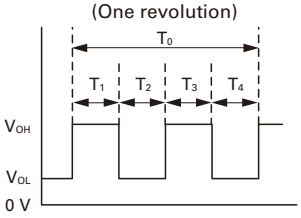
Output circuit: Open collector



V_{CE} = +13.8 V max.
Ic=5 mA max. [V_{OL}=V_{CE} (SAT)=0.6 V max.]

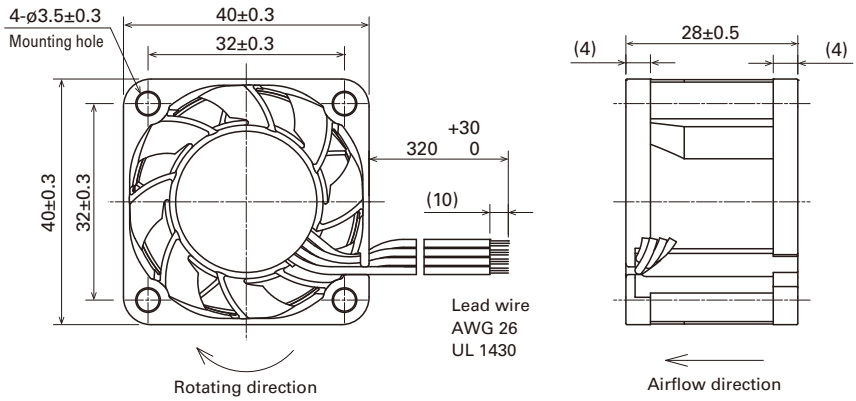
Output waveform (Need pull-up resistor)

In case of steady running



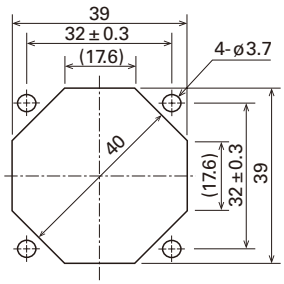
$T_{1\ to\ 4} \fallingdotseq (1/4)\ T_0$
$T_{1\ to\ 4} \fallingdotseq (1/4)\ T_0 = 60/4N$ (s)
N=Fan speed (min^{-1})

Dimensions (unit: mm)



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

Inlet side, Outlet side



Notice

- Please read the "Safety Precautions" on our website before using the product.
- The products shown in this catalog are subject to Japanese Export Control Law. Diversion contrary to the law of exporting country is prohibited.
- For protecting fan bearings against electrolytic corrosion near strong electromagnetic noise sources, we provide effective countermeasures such as Electrolytic Corrosion Proof Fans and EMC guards. Contact us for details.

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