San Ace 80 9HVB type

High Static Pressure Fan



Features

High Static Pressure and High Airflow

This fan delivers a maximum static pressure of 1600 Pa, and a maximum airflow of 4.0 m^3/min.
Compared with our current model,* the maximum static pressure has increased by 1.2 times and maximum airflow has increased by 1.1 times.
This fan can efficiently cool high-density equipment that is hard to ventilate, contributing to system downsizing.

Low Noise and Energy-saving

Power consumption has been reduced by approximately 5% compared with the current model.*
The PWM control function enables the control of fan speed, contributing to lowering noise and improving energy efficiency of devices.

* Current model: *San Ace 80* 9HVA type 80 × 80 × 38 mm DC Fan (model no. 9HVA0812P1G001).

80 × 80 × 38 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]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH_2O]	SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
9HVB0812P1G001	12	10.8 to 12.6	100	4.8	57.6	18300	4.0	141.3	1600	6.42	75	-20 to +70	40000/60°C (70000/40°C)
			20	0.17	2.0	4300	0.94	33.2	105	0.42	40		

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

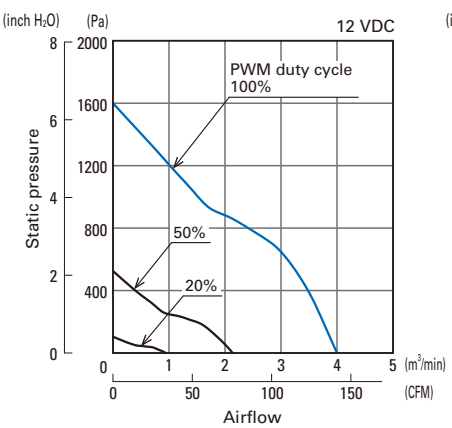
Models with the following sensor specifications are also available as options: Without sensor Lock sensor

Common Specifications

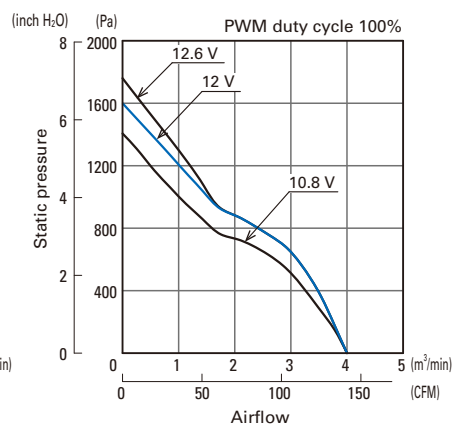
- ☐ Material ····· Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- ☐ Expected life ····· Refer to specifications
  (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
  Expected life at 40°C is for reference only.
- ☐ Motor protection 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 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 ····· 230 g

Airflow - Static Pressure Characteristics

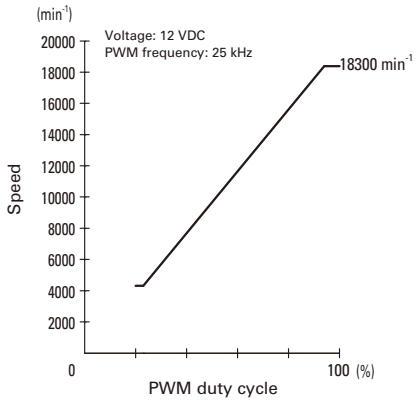
• PWM duty cycle



• Operating voltage range

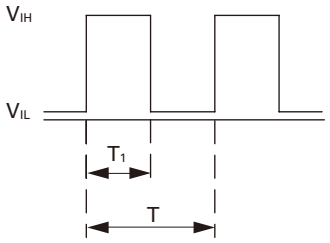


PWM Duty - Speed Characteristics Example



PWM Input Signal Example

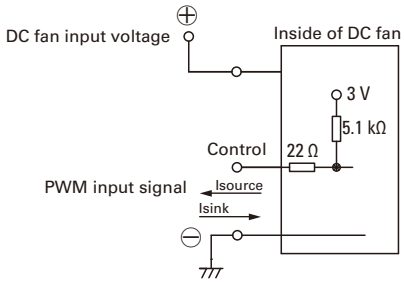
Input signal waveform



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)

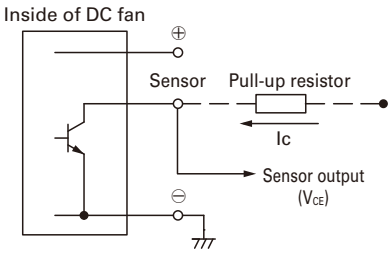
When the control terminal is open,
fan speed is the same as when PWM duty cycle is 100%.
Either TTL input, open collector or open drain can be used for PWM control input signal.

Example of Connection Schematic



Specifications for Pulse Sensors

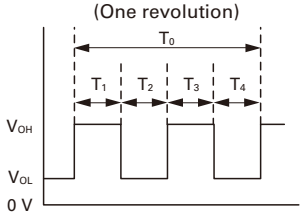
Output circuit: Open collector



V_{CE} = +12.6 V max.
Ic=5 mA max. [V_{OL}=V_{CE} (SAT)=0.8 V max.]

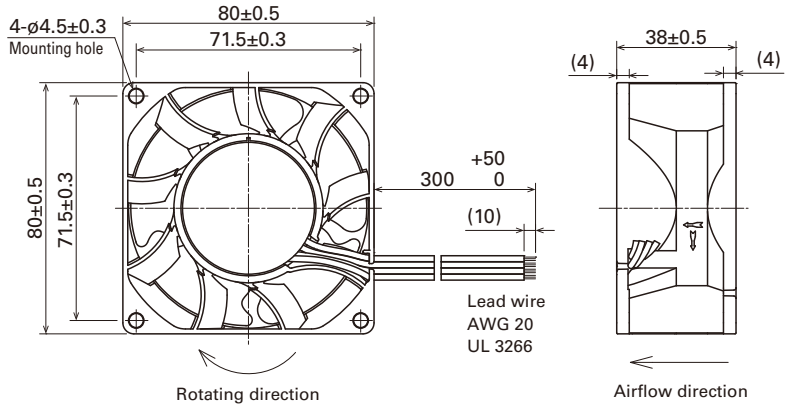
Output waveform (Need pull-up resistor)

In case of steady running



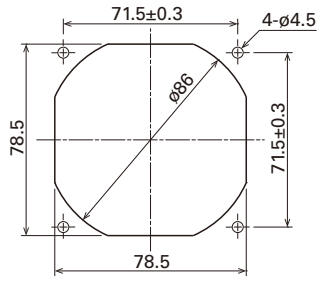
$T_{1\ to\ 4} \fallingdotseq (1/4)\ T_0$
$T_{1\ to\ 4} \fallingdotseq (1/4)\ T_0 = 60/4N$ (s)
N=Fan speed (min^{-1})

Dimensions (unit: mm) (With ribs)

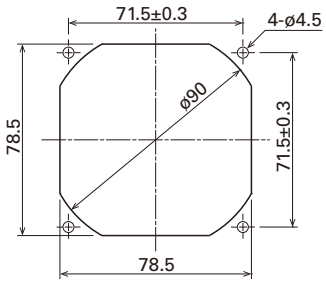


Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

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.

SANYO DENKI CO.,LTD. 3-33-1 Minami-Otsuka, Toshima-ku, Tokyo 170-8451, Japan TEL: +81 3 5927 1020 https://www.sanyodenki.com

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