

San Ace B97

9BMC type

Blower

Features

High Airflow

The maximum airflow has increased by 15% compared with our current model.*

High Static Pressure

The maximum static pressure has increased by 50% compared with our current model.*

Low Noise and High Energy Efficiency

The PWM control function enables the external control of fan speed, contributing to lower noise and higher energy efficiency of devices.

* New model 9BMC12P2G001 compared with our current blower model 9BMB12P2K01, 97 x 33 mm San Ace B97 9BMB type.



97 x 33 mm



Specifications

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

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]
9BMC12P2G001	12	10.8 to 13.2	100	6.2	74.4	8200	1.85 65.3	1950 7.83	69	-20 to +70	40000/60°C (70000/40°C)
			20	0.38	4.56	2800	0.58 20.4	121.0 0.48	44		
9BMC24P2G001	24	21.6 to 26.4	100	3.1	74.4	8200	1.85 65.3	1950 7.83	69		
			20	0.19	4.56	2800	0.58 20.4	121.0 0.48	44		

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

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

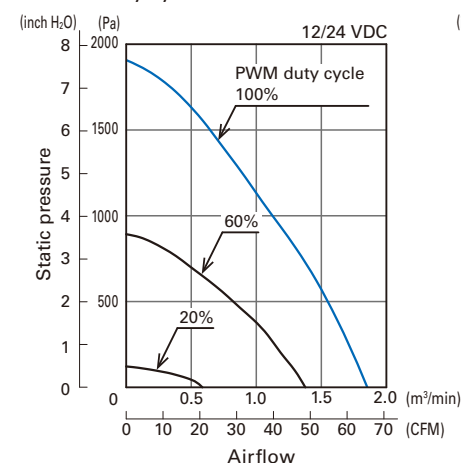
Please inquire as the availability of these options depends on the model: **Lock sensor**

Common Specifications

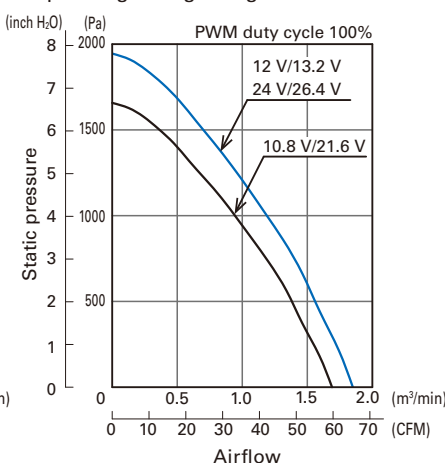
- ☐ Material Frame, Impeller: Plastics (Flammability: UL 94V-0)
- ☐ Expected life Refer to specifications
(L10: Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
Expected life at 40°C ambient is just reference value.
- ☐ Motor protection system Current blocking function and reverse polarity protection
- ☐ Dielectric strength 50/60 Hz, 500 VAC, 1 minute (between lead conductor and frame)
- ☐ Sound pressure level (SPL) Expressed as the value at 1 m from air inlet side
- ☐ Operating temperature Refer to specifications (Non-condensing)
- ☐ Storage temperature -30 to +70°C (Non-condensing)
- ☐ Lead wire ⊕Red ⊖Black Sensor: Yellow Control: Brown
- ☐ Mass Approx. 200 g

Airflow - Static Pressure Characteristics

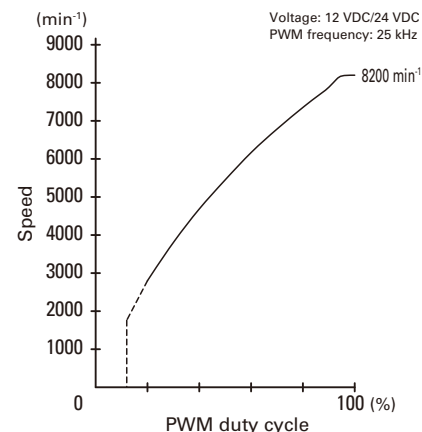
• PWM duty cycle



• Operating voltage range

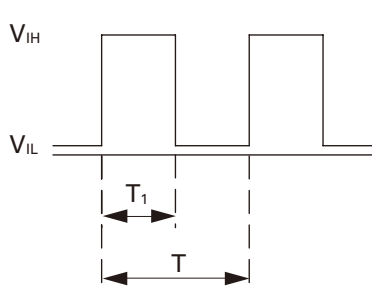


PWM Duty - Speed Characteristics Example



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 (I_{source}) = 1 mA max. (when control voltage is 0 V)

Current sink (I_{sink}) = 1 mA max. (when control voltage is 5.25 V)

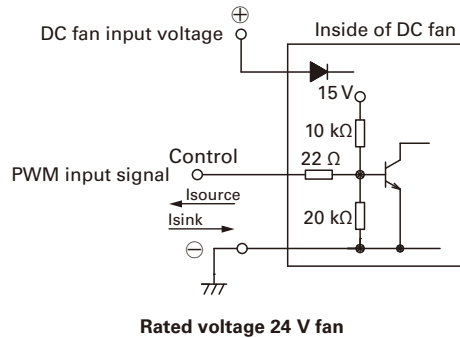
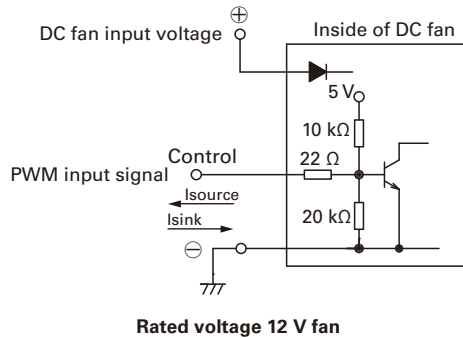
Control terminal voltage = 5.25 V max. (when control terminal is open)

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.

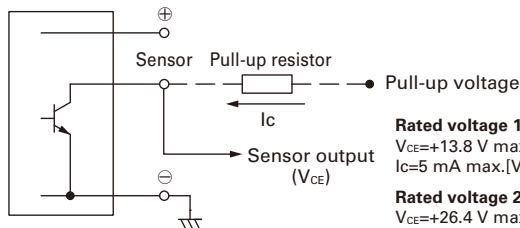
Example of Connection Schematic



Specifications for Pulse Sensors

Output circuit: Open collector

Inside of DC fan



Rated voltage 12 V fan

$V_{CE}=+13.8$ V max.

$I_C=5$ mA max. [$V_{OL}=V_{CE}(\text{SAT})=0.6$ V max.]

Rated voltage 24 V fan

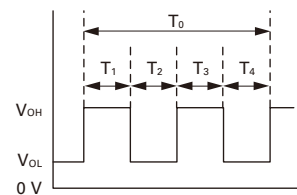
$V_{CE}=+26.4$ V max.

$I_C=10$ mA max. [$V_{OL}=V_{CE}(\text{SAT})=1.0$ V max.]

Output waveform (Need pull-up resistor)

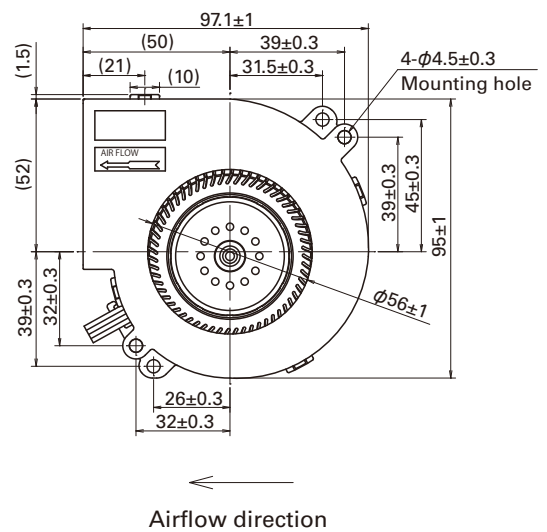
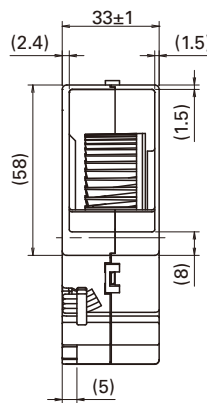
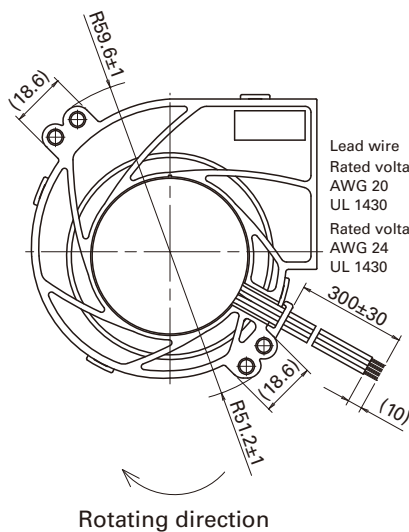
In case of steady running

(One revolution)



T_1 to $T_4 \approx (1/4) T_0$
 T_1 to $T_4 \approx (1/4) T_0=60/4N$ (s)
 N =Fan speed (min^{-1})

Dimensions (unit: mm)



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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