San Ace 40 9CRH type

Counter Rotating Fan

Features

High Static Pressure

The maximum static pressure has increased by 62% compared with our current model*.
It provides effective cooling especially for high density equipment.

High Energy Efficiency and Low Noise

Power consumption and noise level have been reduced by approximately 10% and 3 dB(A), respectively, compared with our current model*. Furthermore, the PWM control function enables the external control of fan speed, contributing to even lower noise and higher energy efficiency of devices.

* Current model: San Ace 40 9CRV type 40 x 40 x 56 mm Counter Rotating Fan, model no. 9CRV0412P5J201.

40×40×56 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}] Inlet	Rated speed [min^{-1}] Outlet	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]
9CRH0412P5J001	12	10.8 to 12.6	100	2.52	30.24	29500	25500	0.93	32.9	1700	6.83	70	-20 to +70	30000/60°C
			20	0.06	0.72	3000	2600	0.08	2.8	17	0.07	20		

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

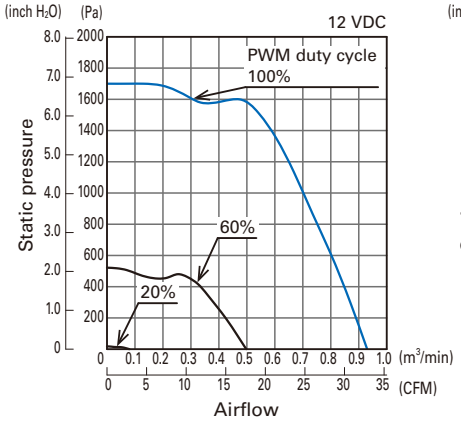
Models with the following sensor specifications are also available as options: Without sensor Lock sensor

Common Specifications

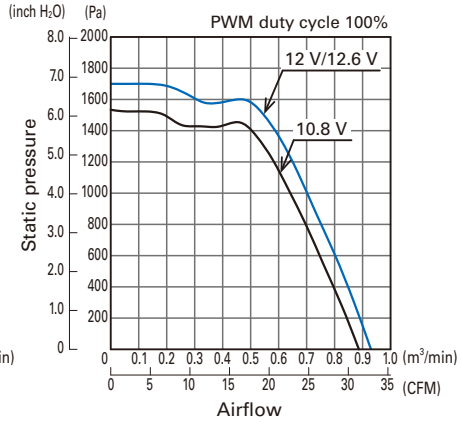
- ☐ Material ····· Frame: Plastics (Flammability: UL 94V-0), Impeller: Plastics (Flammability: UL 94V-0)
- ☐ Expected life ····· Refer to specifications
  (L10: Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- ☐ Motor protection system ····· Current blocking function 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 ····· Inlet: ⊕ Red ⊖ Black Sensor: Yellow Control: Brown
  Outlet: ⊕ Orange ⊖ Gray Sensor: Purple Control: White
- ☐ Mass ····· Approx. 110 g

Airflow - Static Pressure Characteristics

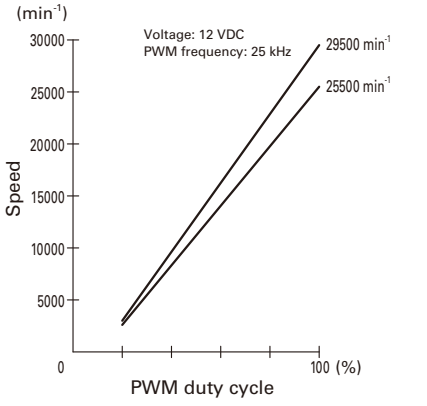
• PWM duty cycle



• Operating voltage range

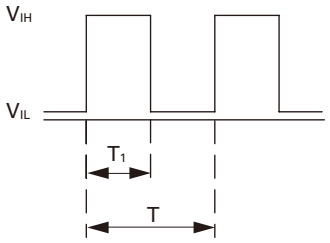


PWM Duty - Speed Characteristics Example



PWM Input Signal Example

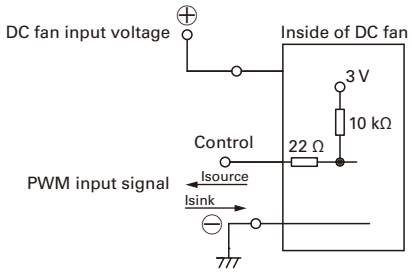
Input signal waveform



V_{IH} = 2.8 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) = 2 mA max. (when control voltage is 0 V)
Current sink (Isink) = 2 mA max. (when control voltage is 5.25 V)
Control terminal voltage = 5.25 V max. (when control terminal is open)

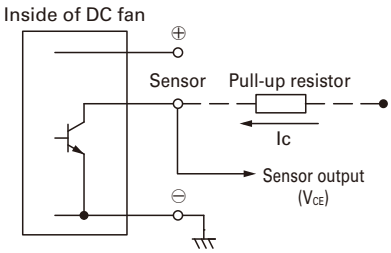
When the control terminal is open,
fan speed is the same as when PWM duty cycle is 100%.
Either TTL input, open collector or open drain can be used for
PWM control input signal.

Example of Connection Schematic



Specifications for Pulse Sensors

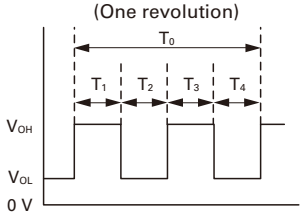
Output circuit: Open collector



V_{CE}=+12.6 V max.
Ic=5 mA max. [V_{OL}=V_{CE} (SAT)=0.6 V max.]

Output waveform (Need pull-up resistor)

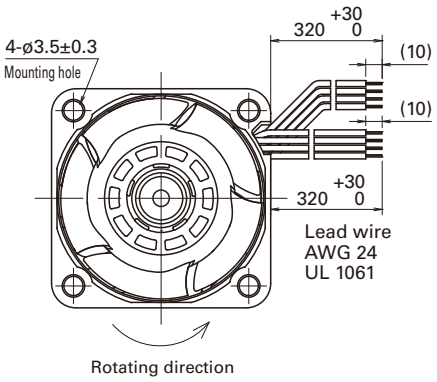
In case of steady running

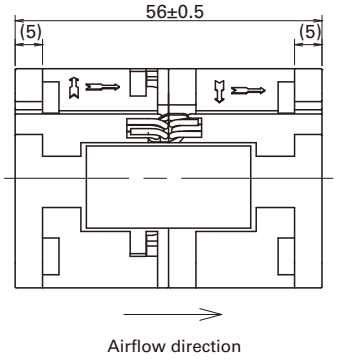


$T_{1\ to\ 4} \fallingdotseq (1/4)\ T_0$
$T_{1\ to\ 4} \fallingdotseq (1/4)\ T_0 = 60/4N$ (s)
N=Fan speed (min^{-1})

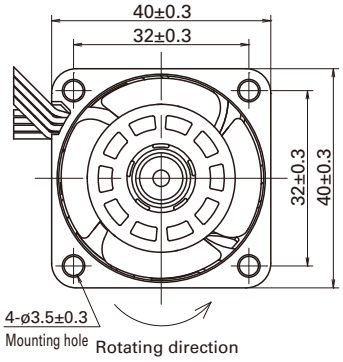
Dimensions (unit: mm)

Inlet side



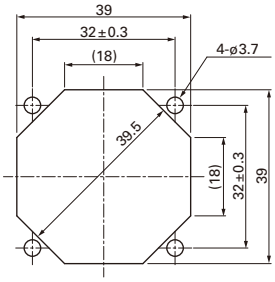


Outlet side



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

The names of companies and/or their products specified in this catalog are the trade names, and/or trademarks and/or registered trademarks of such respective companies.
"San Ace" is a trademark of SANYO DENKI CO.,LTD.
Specifications are subject to change without notice.

CATALOG No. C1072B002 '17.8