

2007/2008

Fans and Blowers

GENERAL CATALOGUE

DC Silent Fans (Low Noise Axial Flow Fan)

DC Axial Fans

DC Centrifugal Blowers

Variable-speed Fans and Blowers

Customized Fans and Blowers

AC Fans and Blowers



A new series of Super Silent Blowers to meet your needs!

E0525H and E0525K Series

[Page in catalog](#) [G-44](#)

Dimensions: □48 mm x 25 mm
Features: Can achieve an airflow output equivalent to that of a □70 mm blower. The noise level is also equal to that of a □70 mm blower - amazingly low!
The E0525K model is the mirror-image of the E0525H which allows for different positions in your applications.
Applications: Cooling of liquid crystal projector panels, spot cooling of equipment with densely mounted components and other applications.



E0818K Series

[Page in catalog](#) [G-50](#)

Dimensions: □87 mm x 18 mm
Features: An intermediate blower between the conventional □70 mm and □94 mm blowers.
Max. airflow 0.26 m³/min, maximum static pressure 240 Pa.
Applications: Cooling of 1U servers, liquid crystal projectors and other equipment.



E1232L Series

[Page in catalog](#) [G-54](#)

Dimensions: □119 mm or equivalent (actual dimensions 119 mm x 117 mm x 32 mm)
Features: New version of conventional E1232H blower. Features include quiet and energy saving operation. Four models with high airflow design of up to 1.13 m³/min are available.
Applications: Equipment requiring high static pressure, 3U size servers and other equipment.



E1331K Series

[Page in catalog](#) [G-55](#)

Dimensions: □126 mm x 31 mm
Features: New version of conventional SCBD blower. Features include quiet and energy saving operation at the point of operation. Four models with a high airflow design of up to 1.08 m³/min are available.
Applications: Reduced noise operation of equipment requiring high static pressure and equipment installed with an SCBD blower.



E2271Z Series

[Page in catalog](#) [G-57](#)

Dimensions: φ220 mm x 71 mm (Built-in type, no blower casing provided)
Features: Combining the large airflow of axial fans with the high static pressure of blowers. Features energy saving operation with max. airflow of 18 m³/min and max static pressure of 700 Pa. (Input 100 W)
Applications: Server racks, FFUs, large control panels, large heat exchangers and other equipment requiring a large airflow.



Other Principal Additions

[Page in catalog](#) [G-53](#)

A more versatile lineup for the E1033H series. The series now includes seven models as opposed to the single model previously available. (Maximum 800 Pa)
A suitable model to replace older conventional model products (FBDC blowers). (Quieter by 6 dB compared with the former model)

More versatile lineup of DC axial fans!

D0925C Series

[Page in catalog](#) [G-29](#)

Dimensions: □92 mm x 25 mm
Features: Next Generation Super Silent Fans with near perfect silence. Noiseless operation, energy savings, and reduced vibration by 30% thanks to CFD.
A high performance achieved with a noise reduction of 7 dB, energy savings of 30 % and a vibration reduction of 30 %
Applications: Equipment requiring vibration damping and drastic noise reduction. Equipment that has no extra power capacity.



Other Principal Additions

A more versatile lineup of the CUDC series, CNDC series and G1751M.
Semi-customized products (PWM variable-speed products, products for installation in special locations and other products)

[Pages in catalog](#) [G-31](#), [G-32](#) and [G-42](#)

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Fans & Blowers



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- Please visit our website for any technical inquiries or information.
- For non-technical inquiries, contact our local Japan Servo sales office or distributor in your area.
- This catalog contains only the latest standard products in the inventory and semi-standard products. Contact your Japan Servo sales office or distributor for details about customized and semi-customized products.
- Please visit our website for specifications and other information on former products release.
- The dimensions, specifications, and components contained in this catalog are subject to change without prior notice due to further product improvements.
- An electronic version of the catalog, containing 3D data of DC fans and blowers, can be forwarded upon request. Information can also be downloaded from the web2-CAD site (www.web2cad.co.jp).
- Contact Japan Servo Co. or a distributor if you wish to obtain product samples.

■ Catalog Information Guide

The descriptions of the AC and DC fans and blowers appear on the product pages as shown below.
Contact Japan Servo if clarification or further information is desired.

Product photo, maximum performance, weight.

List of model codes.
(Product codes for which orders are accepted)

Materials used, carton specification.

PQ characteristics chart.
(Drawing an estimated ventilating resistance curve will determine the airflow at the operating point)

Wiring connection to the power source. (See page G-15 for the wiring connection to the sensors)

List of fans and blowers with sensors.

Lineup of standard products and basic characteristics.

Fan/blower noise in free air state. (Static pressure 0 Pa)
(This value is sometimes considerably higher when the fan or blower is installed in your equipment. See pages G-8 to G-10)

Operable voltage range.
(PQ characteristics vary depending on the operating voltage. See page G-7)

Startup current value.
(Use to select the power source)

Current value in free air state.
(The current at the operating point will be an increment of 20 % or less of the rating with fans and will be below the rating with blowers. See page G-13)

Important notes regarding the basic characteristics.
List of products which do not meet the standard life.

Flange shape.
(Select ribbed specification when screws are used)

External dimensions, lead wire specifications.

Mounting hole dimensions as examples for fan mounting.
(Recommended shapes to maximize fan performance characteristics)

Customizing, safety standards, 3D data.

Brushless DC Fans & Blowers
DC Axial Fans
DC KOALA 25

KUDC Series 92 × 25 mm

Standard specification (Lead wire type)

Model code	Rated voltage (V)	Rated current (A)	Rated power (W)	Rated speed (rpm)	Rated airflow (m³/min)	Static pressure (Pa)	Weight (g)
KUDC1200	1.2	0.12	0.144	1200	0.12	0.12	12
KUDC1500	1.5	0.15	0.225	1500	0.15	0.15	15
KUDC1800	1.8	0.18	0.324	1800	0.18	0.18	18
KUDC2000	2.0	0.20	0.400	2000	0.20	0.20	20
KUDC2200	2.2	0.22	0.484	2200	0.22	0.22	22
KUDC2400	2.4	0.24	0.576	2400	0.24	0.24	24
KUDC2600	2.6	0.26	0.676	2600	0.26	0.26	26
KUDC2800	2.8	0.28	0.784	2800	0.28	0.28	28
KUDC3000	3.0	0.30	0.900	3000	0.30	0.30	30
KUDC3200	3.2	0.32	1.024	3200	0.32	0.32	32
KUDC3400	3.4	0.34	1.156	3400	0.34	0.34	34
KUDC3600	3.6	0.36	1.296	3600	0.36	0.36	36
KUDC3800	3.8	0.38	1.444	3800	0.38	0.38	38
KUDC4000	4.0	0.40	1.600	4000	0.40	0.40	40
KUDC4200	4.2	0.42	1.764	4200	0.42	0.42	42
KUDC4400	4.4	0.44	1.936	4400	0.44	0.44	44
KUDC4600	4.6	0.46	2.116	4600	0.46	0.46	46
KUDC4800	4.8	0.48	2.304	4800	0.48	0.48	48
KUDC5000	5.0	0.50	2.500	5000	0.50	0.50	50
KUDC5200	5.2	0.52	2.704	5200	0.52	0.52	52
KUDC5400	5.4	0.54	2.916	5400	0.54	0.54	54
KUDC5600	5.6	0.56	3.136	5600	0.56	0.56	56
KUDC5800	5.8	0.58	3.364	5800	0.58	0.58	58
KUDC6000	6.0	0.60	3.600	6000	0.60	0.60	60
KUDC6200	6.2	0.62	3.844	6200	0.62	0.62	62
KUDC6400	6.4	0.64	4.096	6400	0.64	0.64	64
KUDC6600	6.6	0.66	4.356	6600	0.66	0.66	66
KUDC6800	6.8	0.68	4.624	6800	0.68	0.68	68
KUDC7000	7.0	0.70	4.900	7000	0.70	0.70	70
KUDC7200	7.2	0.72	5.184	7200	0.72	0.72	72
KUDC7400	7.4	0.74	5.476	7400	0.74	0.74	74
KUDC7600	7.6	0.76	5.776	7600	0.76	0.76	76
KUDC7800	7.8	0.78	6.084	7800	0.78	0.78	78
KUDC8000	8.0	0.80	6.400	8000	0.80	0.80	80
KUDC8200	8.2	0.82	6.724	8200	0.82	0.82	82
KUDC8400	8.4	0.84	7.056	8400	0.84	0.84	84
KUDC8600	8.6	0.86	7.396	8600	0.86	0.86	86
KUDC8800	8.8	0.88	7.744	8800	0.88	0.88	88
KUDC9000	9.0	0.90	8.100	9000	0.90	0.90	90
KUDC9200	9.2	0.92	8.464	9200	0.92	0.92	92
KUDC9400	9.4	0.94	8.836	9400	0.94	0.94	94
KUDC9600	9.6	0.96	9.216	9600	0.96	0.96	96
KUDC9800	9.8	0.98	9.604	9800	0.98	0.98	98
KUDC10000	10.0	1.00	10.000	10000	1.00	1.00	100

General specification

Standard airflow and static pressure characteristics (All rated voltage)

Wiring connection diagram

Mounting hole dimensions as examples for fan mounting

External dimensions, lead wire specifications

Mounting hole dimensions as examples for fan mounting

Customizing, safety standards, 3D data

High customer satisfaction achieved thanks to our quiet and energy efficient products with unsurpassed reliability and customizability.

Focusing on product development for computer related equipment, the compact axial fans from Japan Servo are the result of technological innovations that minimize noise to the greatest possible extent.

Japan Servo's product designs incorporate several industry firsts, including specially molded 3-dimensional blades, and silent fans with a unique intake shape. Market requirements are always researched and catered to in advance; meaning customers always receive products that perform well ahead of market rivals.

● Versatile lineups of axial fans and centrifugal blowers
Fans for high static pressure applications are also supplied as standard products.

The aerodynamic characteristics required for fan motors differ depending on the equipment in which they are installed, but may roughly be grouped into airflow focus and pressure focus types respectively. The axial fans and centrifugal blowers (also called "centrifugal fans" and "sirocco fans"), as fan motors of Japan Servo, fall into both the former and latter categories. Recently, Japan Servo has also developed pressure focus type axial fans, suitable for use in high static pressure regions, in response to diverse customer requirements.

As its name implies, an axial fan generates airflow in the motor axial direction. Airflow can be generated cylindrically by the propeller from the entire diameter of the fan, allowing considerable airflow generation. The axial fan sucks in air and pushes it out through the propeller blades, without large pressure (static pressure) output.

The centrifugal blower, on the other hand, recovers the airflow released by the impeller blades in a centrifugal direction from the motor shaft center via the scroll casing (also called a "housing" or "frame") and discharges it unidirectionally. This system effectively converts a centrifugal force into pressure, increasing the pressure (static pressure) to blow the air. However, only a limited airflow passes through the impeller, preventing a large airflow from being obtained.

Japan Servo refers to the former as fans and the latter as blowers, to easily distinguish the differences between the two types.

In addition to these two types, Japan Servo has recently released axial fans with features resembling those of the blower (high static pressure region fans, e.g. the G1751M series). These fans are attracting the attention of the IT industry and are highly rated as quiet products, capable of saving energy with high-impedance equipment, with which conventional axial fans have not been efficient.

● Our ceaseless quest to reduce noise

Japan Servo continues to introduce a never ending series of quiet products to the market. People know to talk to Japan Servo if low noise is a priority, and that reputation has grown over many years. Day and night, Japan Servo is active in the research and development of low noise technology. Japan Servo also swiftly introduced computational fluid dynamics (CFD) to deliver quiet fans and blowers that customers can use without worrying about designing noise reduction measures into their application.

● Versatile lineup of energy saving products

The power consumption of fans may be problematic with some high airflow products and with large fans and blowers. When several units are used, a high capacity power source must be installed. Japan Servo markets a large variety of high-efficiency fan motors that can reduce the power capacity required for such machines.

● Only highly reliable products are delivered to customers

With product liability in mind, it is the logical responsibility of manufacturers to supply highly reliable products that can be used by customers without any product safety worries. Products with new designs are only supplied to the market after their viability has been verified by subjecting them to various high-temperature life tests and proving that they are problem-free. Moreover, only high-reliability parts are used in the drive circuits of DC fans and blowers. Japan Servo develops and designs products by specifying the strictest derating level in the industry.

● Customized and semi-customized product specifications

Products are supplied in optimum customized form for bulk purchases. Japan Servo is capable of swiftly accomplishing optimum designs by fully exploiting CFD technology. Japan Servo will propose optimum semi-customized fans and blowers by combining its large variety of customized parts. Let Japan Servo devise a suitable solution to meet your requirements.

● All Japan Servo catalog products conform to the EU RoHS Directive

All Japan Servo products conform to the EU RoHS Directive by restricting the contents of six specified hazardous substances (lead, mercury, cadmium, hexavalent chromium, PBD and PBDE) to below tolerable values. (All products produced from the beginning of January 2006 meet the RoHS Directive. Certain standard inventory products may include those produced in and before December 2005. Please specify in your purchase orders that only RoHS-compliant products should be shipped.)

Japan Servo is also active in reducing another 18 hazardous substances.

● AC and DC fans

One of the prominent advantages of AC fans is the fact that they can be directly connected to an AC power supply. The DC fan boasts high motor efficiency and is power-saving, as well as generating less heat, allowing the weight of the motor and venturi case to be reduced.

AC fans and blowers use AC induction motors and are suitable for constant speed operation. DC fans and blowers, meanwhile, use DC brushless motors and can have highly variable airflow. By varying the voltage supply, the speed is also easily adjustable. Standard DC fans and blowers regulated by variable-speed control are also available. See pages G-40, G-41, and G-58 for further details.

[Principal applications]

- Computers and peripheral terminal equipment
- Servers
- Personal computers
- Copiers
- Audio equipment
- Broadcasting equipment
- Communication equipment
- Industrial equipment
- Medical equipment
- Game machines

Fans

Fan Characteristics

- Large airflow
- Linear intake and outlet
- Suitable for equipment with small ventilation resistance

Blowers

Blower Features

- High static pressure
- Right angle intake and outlet
- Suitable for equipment requiring local cooling and with large ventilation resistance.

Selection from external dimensions and max. airflow

● See 3D data of DC fans and blowers in the electronic catalog distributed separately or at the web2-CAD site (<http://www.web2cad.co.jp/>).

AC/DC	External Dimensions mm (inch)	Series	Page in Catalog	Max. airflow (m ³ /min)											
				1	2	3	4	5	6	7	8	9	10	11	12
DC	□40×10 (□1.6"×0.4")	D0410C	G-23												
DC	□40×13 (□1.6"×0.5")	EUDC	G-22												
DC	□40×28 (□1.6"×1.1")	D0428C	G-23												
DC	□52×15 (□2.0"×0.6")	D0515C	G-24												
DC	□60×20 (□2.4"×0.8")	D0620C	G-24												
DC	□60×25 (□2.4"×1.0")	TUDC	G-25												
DC	□80×15 (□3.2"×0.6")	D0815C	G-27												
DC	□80×20 (□3.2"×0.8")	D0820C	G-27												
DC	□80×25 (□3.2"×1.0")	PUDC	G-26												
DC	□80×32 (□3.2"×1.3")	D0832C	G-27												
DC	□92×25 (□3.6"×1.0")	SKUD/KUDC	G-16/G-28												
DC	□92×32 (□3.6"×1.3")	SKLD/KLDC	G-17/G-30												
DC	□92×38 (□3.6"×1.5")	G0938B	G-40												
DC	□120×25 (□4.7"×1.0")	CUDC	G-31												
DC	□120×25 (□4.7"×1.0")	SCUDM/SCUD	G-18/G-19												
DC	□120×38 (□4.7"×1.5")	CNDC	G-32												
DC	□120×38 (□4.7"×1.5")	D1238T	G-33												
DC	□120×38 (□4.7"×1.5")	D1238B/G1238B	G-34/G-41												
DC	□120×38 (□4.7"×1.5")	SCNDM/SCND	G-20/G-21												
DC	□127×38 (□5.0"×1.5")	D1338B	G-35												
DC	□127×38 (□5.0"×1.5")	D1338S	G-36												
DC	φ172×147×25 (φ6.8"×6.0"×1.0")	D1725M	G-37												
DC	φ172[X150]×51 (φ6.8"[X6.0"]×2.0")	MADC/PADC	G-38/G-39												
DC	φ172×150×51 (φ6.8"×6.0"×2.0")	G1751M	G-42												
DC	φ200×70 (φ7.8"×2.8")	SADC	G-43												
AC	□80×25 (□3.2"×1.0")	VE	G-62												
AC	□92×25 (□3.6"×1.0")	WE	G-63												
AC	□92×38 (□3.6"×1.5")	KA	G-64												
AC	□120×25 (□4.7"×1.0")	SCUA/CU	G-60/G-65												
AC	□120×38 (□4.7"×1.5")	SCNA/CN	G-61/G-66												
AC	φ172[X150]×51 (φ6.8"[X6.0"]×2.0")	MA/PA	G-67/G-68												
AC	□160×62 (□6.3"×2.4")	AS	G-69												
AC	□180×90 (□7.1"×3.5")	PL	G-70												

Model code for DC fans and blowers (15-digit code)

Manufacturing lot No.

D 12 38 B 24 B 5 A Z - 00

7 A 25

- Customized code
—00: Standard type
A 01: Standard type (Model change product)
—04: 4P Terminal type

● Rotation sensor
S: Lock detection type
Q: Speed detection type
R: Speed detection type (Output reversion type)
P: Pulse output type
M: Multi-sensor type
Z: No sensor (Standard type)

● Special code
A: Standard type
C: Higher moisture resistance
Y,Z: Variable speed

● Speed 1.2 ~ 9.A,B,C: Low ↔ High

● Bearings B: Ball bearing

● Voltage: 05: DC5 V 12: DC12 V 24: DC24 V 48: DC48 V

● Thickness (as mm)

● Frame dimensions (as cm)

● Category
D: DC fan
E: DC blower
G: High static pressure DC fan
- Date manufactured

● Month manufactured: A ~ L = January ~ December

● Year manufactured (Last digit of year)

B: Square metal venturi
C: Square resin venturi with ribs
D: Square resin venturi without ribs
E: Black painted type B
S: Round metal venturi
T: Round plastic venturi

U: Black painted type S
M: Round side cut venturi
P: Black painted type M
H: Spiral casing (1)
L: Spiral casing (2)
K: Reverse rotation spiral casing

Selection from external dimensions and max. airflow

AC/DC	External Dimensions mm (inch)	Series	Page in Catalog	Max. Airflow (m ³ /min)															
				0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	18	19				
DC	□48×25 (□1.9"×1.0")	E0525H/E0525K	G-44																
DC	□51×15 (□2.0"×0.6")	E0515H	G-45																
DC	□70×20 (□0.28"×0.8")	E0720H	G-46																
DC	□72×20 (□0.28"×0.8")	E0720L	G-47																
DC	□76×25 (□3.0"×1.0")	SMBD	G-48																
DC	□76×30 (□3.0"×1.2")	MBDC	G-49																
DC	□87×18 (□3.4"×0.7")	E0818K	G-50																
DC	□94×30 (□3.7"×1.2")	SFBD	G-51																
DC	□97×25 (□3.8"×1.0")	E1027H	G-52																
DC	□97×33 (□3.8"×1.3")	E1033H/Y	G-53																
DC	□119×32 (□4.7"×1.3")	E1232L	G-54																
DC	□126×31 (□5.0"×1.2")	E1331K	G-55																
DC	□150×40 (□5.9"×1.6")	E1540H	G-56																
DC	φ220×71 (φ8.7"×2.8")	E2271Z	G-57																
AC	□125×41 (□4.9"×1.6")	CB	G-71																

Model code for DC axial fans and blowers (Previous Axial Flow Fans and Blowers)

CNDC 12 B 7 R S

- Sensor option S: Lock detection type
P: Pulse output type
Q: Speed detection type
SQ: Speed detection type (Output reversion type)
- Venturi shape code R: With ribs
F: Without ribs
V: Reinforcing spacer
- Revised No. 4: Standard type
7: Power saving type
8: Power saving type
- Speed/Bearings: Ball bearings
B: Normal speed
D: Half speed
Z: High speed
H: Super high speed
U: Ultra speed
N: Hyper speed
K: Dual speeds
- Rated voltage 5: DC 5 V
12: DC 12 V
24: DC 24 V
48: DC 48 V
- Series nameEUDC (□40×13 thick): DC Elfín
TUDC (□60×25 thick): DC Tiny
PUDC (□80×25 thick): DC Pixie 25
KUDC (□92×25 thick): DC Koala 25
KLDC (□92×32 thick): DC Koala
SKUD (□92×25 thick): DC Mold Silent
SKLD (□92×32 thick): DC Mold Silent
CUDC (□120×25 thick): DC Centaur 25
SCUD (□120×25 thick): DC Silent 25
SCUDM (□120×25 thick): DC Mold Silent
SCNDM (□120×38 thick): DC Mold Silent
CNDC (□120×38 thick): DC Centaur
CNDH (□120×38 thick): DC Centaur (3 blades)
SCND (□120×38 thick): DC Silent
MADC (φ172×150×51 thick): DC Maxi
PADC (φ172×51 thick): DC Perky
SADC (φ200×70 thick): DC Saturn
SMBD (76×25 thick): SMBD blower
MBDC (76×30 thick): MBDC blower
SFBD (97×30 thick): SFBD blower
FBDC (97×33 thick): FBDC blower
SCBD (127×39 thick): SCBD blower

Model code for AC axial fans and blowers (Previous Axial Flow Fans and Blowers)

CN J 55 B 5 1 □

- Sensor option S: Sensor provided (Available on certain products only)
- Finish 1: Black baking paint
- Wiring connection 2: Terminal type (Centaur I only without grounding terminal)
3: Terminal type (With grounding tap) Centaur III with grounding terminal
4: Lead wire type (Without grounding tap)
5: Lead wire type (With grounding tap)
6: Lead wire type (AS series only)
- Speed B: Full speed
D: Half speed
F: Low speed
- Rated voltage 55: AC100 V
2: AC115 V
60: AC200 V
52: AC208 V ~ 230 V
49: AC240 V
47: AC100 V ~ 120 V
48: AC200 V ~ 240 V
77: AC220 V ~ 240 V/AC208 V ~ 230 V
115: AC115 V
50: AC220 V/AC 230 V
- Applicable standard J: For domestic market
--: Overseas standards (UL, CSA, TUV, VDE)
- Series name VE (□80×25 thick): Venus 25
WE (□92×25 thick): Koala 25
KA (□92×38 thick): Koala II
CU (□120×25 thick): Centaur 25
SCU (□120×25 thick): Silent 25
CN (□120×38 thick): Centaur III
SCN (□120×38 thick): Silent
SU (□140×47 thick): Spall
PA (φ172×51 thick): Perky
MA (φ172×51 thick): Maxi
AS (□160×62 thick): Asteroid
PL (□180×90 thick): Planet
CB (126×41 thick): CB blower

Characteristics of Fans and Blowers

■ Airflow - static pressure characteristics (PQ characteristics)

1. Pressure loss (Ventilating resistance)

A force to obstruct the flow of air (pressure loss) is generated when air is channeled onto equipment, due to the parts layout and the shape of the air stream inside the equipment. This phenomenon is called ventilating resistance (also called "system impedance" and "channel resistance"). Air meets only modest resistance when it moves straight ahead within a wide space. (Fig. 1) When air passes through a narrow space or when the direction of an airflow changes, the ventilating resistance increases. (Fig. 2) The ventilating resistance increases further unless an outlet path (or a circulation path) is provided because an airflow cannot be created.

Ventilating resistance is small

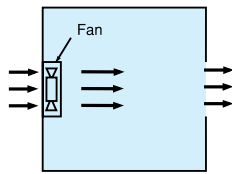


Fig. 1

Ventilating resistance is large

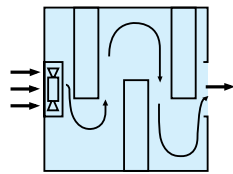


Fig. 2

2. Differences in PQ characteristics of fans and blowers

As illustrated in Fig. 3, the PQ characteristics exhibit characteristic trends when a motor of equivalent power is used. The fan has a large airflow and its static pressure is 1/2 to 1/5 that of the blower. The blower has large static pressure and its airflow is 1/2 to 1/5 that of the fan.

In the absence of a ventilating resistance (0 Pa), the max. airflow (QFmax) flows, under circumstances where there are no objects located around the fan (This free air condition is the x-axis). However, this condition does not exist as long as a fan is assembled in equipment. The state showing considerable ventilating resistance and a lack of airflow corresponds to the y-axis in Fig. 3 and the airflow is zero because the air does not move. In this condition, there are obstacles in front and to the rear of a fan that prevent airflow or that shut off the circulation path of the air. This operating condition cannot be considered when a fan is used for cooling or ventilation purposes. (Continuing operation in this condition may damage the fan.)

The actual operating conditions vary between the two aforementioned extremes. Fig. 3 plots four ventilating resistances (plotted via quadratic curves). Units of equipment containing either a fan or a blower have varying ventilating resistances, of which these four curves show typical examples. The airflow flowing into the equipment is at the intersection between the ventilating resistance curve and the PQ characteristics of the fan or the blower. The curve of Ventilating Resistance 1, which has the smallest inclination, is assumed to be the ventilating resistance of ordinary equipment. At this ventilating resistance, there are no large obstacles in front and to the rear of the fan and an adequate circulation path is provided. The fan can be operated most efficiently at this Ventilating Resistance 1, where about 80 % of the maximum fan airflow is possible. (Airflow of QF2 with a fan and of QB2 with a blower respectively)

Of the four curves, the airflow of any equipment that has Ventilating Resistance Curve 4, with the largest inclination, will be a fraction of the max. airflow, even though a high performance fan or blower is installed. In this condition, the airflow will be QB1 with a blower and QF1 with a fan, the airflow of the blower being larger.

The airflows of Ventilating Resistance Curves 2 and 3, in between, will also be airflows at the intersection with the respective PQ characteristics. Japan Servo supplies fans dedicated to a high static pressure region, with fan motors optimally designed for intermediate ventilating resistances. As Fig. 4 explains, quieter and energy saving operations are more feasible in the high static pressure region compared with ordinary axial fans. (See page G-42)

By minimizing the ventilating resistance of the equipment and by using power-saving fans and blowers, both cost and noise reduction can be achieved, resulting in an ideal cooling solution. (Actual example: Ventilating resistance was reduced and quiet operation achieved by changing the thickness of a 92 square fan from 32 to 25 with equipment having densely mounted parts (Ventilating Resistance 3 in Fig. 4).

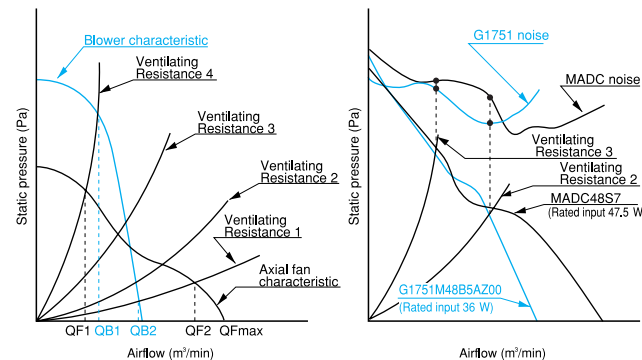


Fig. 3

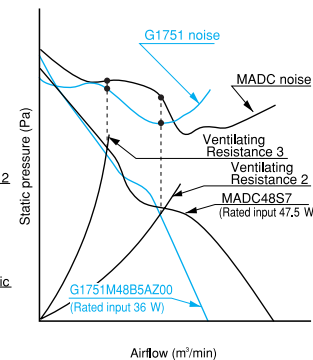


Fig. 4

3. Method for calculating the required fan airflow

The method to calculate the required airflows (ventilation rates) is described for the cooling of equipment which generates heat.

The airflow (ventilation rate) necessary for internal equipment cooling is calculated as follows: (Note: the entire heat is exhausted by ventilation airflow and heat from radiation or conduction is not taken into consideration)

$$Q = \frac{W}{\rho \times C \times \Delta T}$$

$$= \frac{W}{1200 \times \Delta T}$$

(ρ and C are values at 25 °C. Use the value 1100 instead of 1200 at 50 °C)

Q : Required airflow [m³/s]
W : Heat generation rate [W]
 ρ : Specific weight of air [kg / m³]
C : Specific heat of air [J / kg·°C]
 ΔT : temperature rise of air [°C]

Example: When wishing to limit the air temperature rise inside equipment that generates 100 W of heat, the following calculation formula is used:

$$Q = \frac{100}{1200 \times 10} = 8.3 \times 10^{-3} \text{ m}^3/\text{s} = 0.50 \text{ m}^3/\text{min}$$

An airflow of 0.50 m³ / min or more is required. This calculation formula for the required airflows (ventilation rate) can be translated into a graph as shown in Fig. 5.

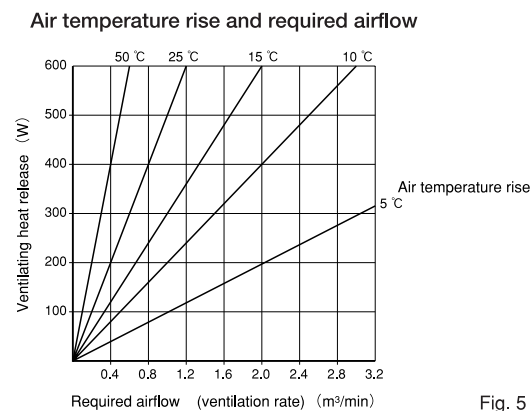


Fig. 5

4. Fan and blower selection

The required airflow and ventilating resistance of equipment must be determined when selecting a fan or a blower. However, accurate determination of a ventilating resistance is difficult. In general you can select a fan's max. airflow by multiplying the required airflow by 1.3 to 1.5. (The following figure [Fig. 6] shows the case of an air channel with an area approximately equal to that of the fan.)

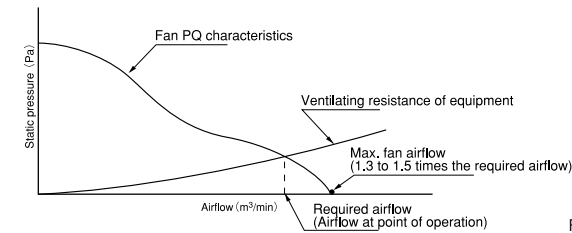


Fig. 6

If an adequate air channel is not available due to a high density of mounted parts, a fan with a max. airflow of more than two times the required airflow is sometimes needed. In this case, a special fan for a high static pressure region or a blower is recommended.

The following methods are used to accurately determine the ventilating resistance of equipment:

- 1) Send the equipment to a fan manufacturer and ask them to measure the ventilating resistance.
- 2) If 3D data of the equipment is available, ask the fan manufacturer to calculate the resistance.
- 3) Install a fan or a blower, whose relationship between the PQ characteristics and speed is already known, within the equipment and determine the ventilating resistance by measuring the speed.

5. PQ characteristics via the parallel or serial operations of axial fans

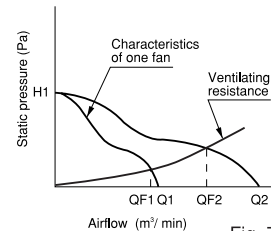


Fig. 7

Serial operation of 2 fans

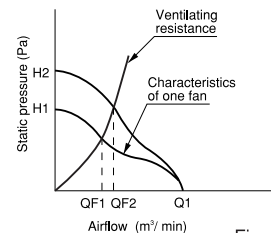


Fig. 8

(Note: A fan specially designed for a high static pressure region will be further advantageous for equipment that has high ventilating resistance. [See Fig. 9])

Serial operation of 2 fans with stationary blades for a high static pressure region

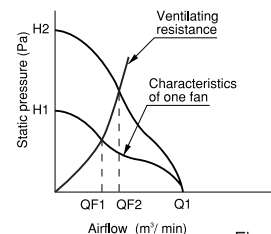


Fig. 9

When two fans are operated in parallel, only the max. airflow will double. Intersections QF1 and QF2 with ventilating resistance curves of the equipment will be the airflow actually flowing. This mode is advantageous when wishing to increase the airflow of equipment with only modest ventilating resistance.

When two fans are operated in series (stacked), only the maximum static pressure will increase by 1.5 times. Intersections QF1 and QF2 with ventilating resistance curves of the equipment will be the airflow actually flowing.

This mode is advantageous when wishing to increase the airflow of equipment with high ventilation resistance.

When two fans are run in series (stacked), only the maximum static pressure will increase by 1.8 to 2 times. Japan Servo special fans for high static pressure regions have stationary blades and achieve a lower reduction in static pressure during serial operation. The intersections QF1 and QF2 with ventilating resistance curves of the equipment will be the airflows actually flowing.

6. Voltage imposed to fan and blower and PQ characteristics

DC powered fans and blowers have the following relationship between the imposed voltage and the PQ characteristics. The following information will be useful when fine tuning performance or when using a fan or a blower for experimental purposes:

(Note: Only test operation is allowed to be used outside of the specified voltage range. Note that this information is not applicable to AC powered fans, nor to certain DC fans. [Example: SADC fans] Please check the product information pages.)

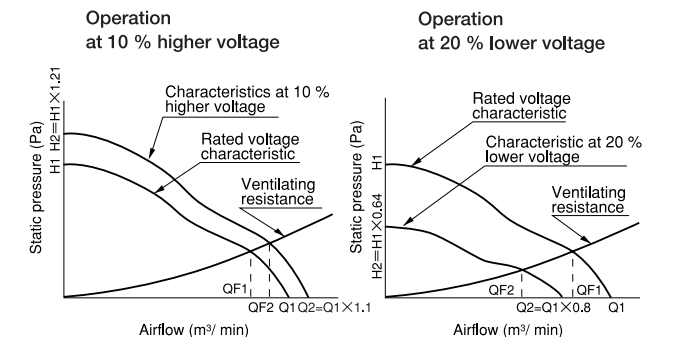


Fig. 10

Fig. 11

The speeds of fans and blowers vary in proportion of the voltage. Varying the voltage $\pm 10\%$ will also cause the speed to vary by $\pm 10\%$. The speed affects the static pressure and airflow as follows. The static pressure varies based on the square of the speed and the airflow varies in proportion of the speed. Varying voltage $\pm 10\%$ will cause the maximum static pressure to vary $\pm 21\%$, and the max. airflow to vary $\pm 10\%$. (See Fig. 10.)

An understanding of these relationships will allow free adjustment of the PQ characteristics during fan and blower operation.

7. Performance degradation of PQ characteristics when options are installed

Options such as a fan guard and filter are sometimes installed for safety. These options, however, increase the ventilation resistance and noise. A fan guard has slight ventilation resistance and degrades the PQ characteristics only negligibly. However, when tightly fitted onto a fan, the noise level increases by about 5 dB. In particular, options should be installed more than 10 mm away from the fan to minimize the increase in noise.

Using a 120 mm \times 38 mm AC fan (CN55B3) as an example, fluctuations of the PQ characteristics when options are installed are plotted in Figs. 12 and 13.

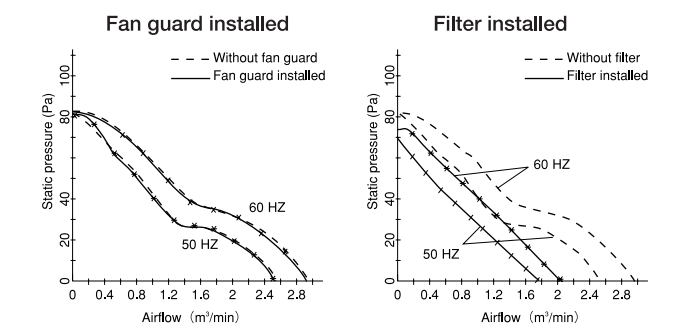


Fig. 12

Fig. 13

8. Unit conversion tables of PQ characteristics

At present, the PQ characteristics are expressed in Japan by Pa (static pressure) and m³/min (airflow). Use the following conversion tables for conversion between CFM, which is used in some countries, and between the units previously used in Japan.

Table 1 Static pressure conversion table

Pa=N/m²	mmHzO	inHzO	kgf/cm²	atm	bar	lbf/in²
1	1.02×10 ⁻¹	4.02×10 ⁻³	1.02×10 ⁻⁵	9.87×10 ⁻⁶	1.00×10 ⁻⁵	1.45×10 ⁻⁴
9.81	1	3.94×10 ⁻²	1.00×10 ⁻⁴	9.68×10 ⁻⁶	9.80×10 ⁻⁶	1.42×10 ⁻³
2.49×10 ²	25.4×10 ¹	1	2.54×10 ⁻³	2.46×10 ⁻³	2.49×10 ⁻³	3.61×10 ⁻²
9.81×10 ⁴	1.00×10 ⁴	3.94×10 ²	1	9.68×10 ⁻¹	9.81×10 ⁻¹	14.2×10 ¹
1.01×10 ⁵	1.03×10 ⁴	4.07×10 ²	1.03	1	1.01	14.7×10 ¹
1.00×10 ⁵	1.02×10 ⁴	4.02×10 ²	1.02	9.87×10 ⁻¹	1	14.5×10 ¹
6.9×10 ³	7.03×10 ²	2.77×10 ¹	7.03×10 ⁻²	6.81×10 ⁻²	6.90×10 ⁻²	1

Table 2 Airflow conversion table

m³/s	m³/min	l/S	l/min	m³/h	ft³/S	CFM
1	6.00×10 ¹	1.00×10 ³	6.00×10 ⁴	3.60×10 ³	3.53×10 ¹	2.12×10 ³
1.67×10 ⁻²	1	1.67×10 ¹	1.00×10 ³	6.00×10 ¹	5.89×10 ⁻¹	3.53×10 ¹
1.00×10 ⁻³	6.00×10 ⁻²	1	6.00×10 ¹	3.60	3.53×10 ⁻²	2.12
1.67×10 ⁻⁴	1.00×10 ⁻³	1.67×10 ⁻²	1	6.00×10 ⁻²	5.89×10 ⁻³	3.53×10 ⁻²
2.78×10 ⁻⁴	1.67×10 ⁻³	2.78×10 ⁻¹	1.67×10 ¹	1	9.81×10 ⁻³	5.88×10 ⁻¹
2.83×10 ⁻²	1.7	2.83×10 ¹	1.70×10 ³	1.02×10 ²	1	6.00×10 ¹
4.72×10 ⁻¹	2.83×10 ⁻²	4.72×10 ⁻¹	2.83×10 ¹	1.70	1.67×10 ⁻²	1

9. Measurement method of PQ characteristics

The aerodynamic characteristic measuring apparatus is illustrated in Fig. 14. This apparatus conforms to the ANSI/AMCA Standard 210-85, as well as JIS B 8330 (Testing methods for turbo-fans).

It is very difficult to measure PQ performance with high accuracy and the various measuring equipment used by fan manufacturers feature a wide range of accuracy. For this reason, simultaneous acquisition of comparable data obtained by the same measuring apparatus is recommended when verification of strict variation in performance is desired. (Japan Servo also measures the comparative data of fans manufactured by other fan manufacturers as a customer service - please make use of this.)

Aerodynamic test apparatus (Double chamber type)

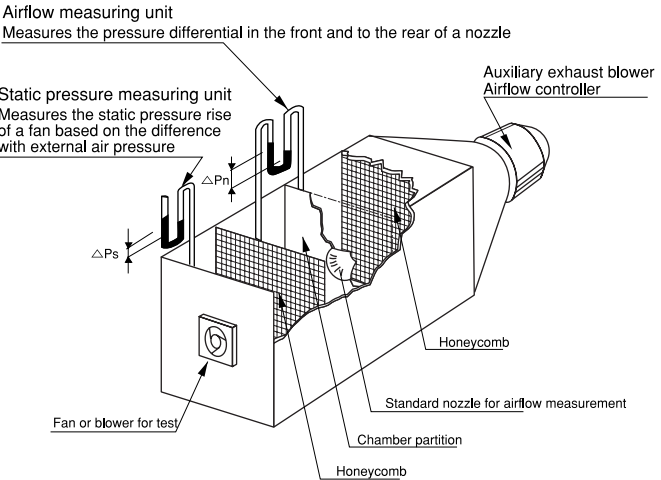


Fig. 14

Noise

1. Types of noise

Noise is generated by the combination of various conditions. Measures to eliminate or reduce noise can be taken more easily by analyzing the details of the noise. When reducing the noise of your equipment, take into account the following factors that contribute toward noise generation:

Aerodynamic noise	Noise of rotation	Propeller sound ··· Sound emitted by the revolutions of blades Periodic flow fluctuations of flow ····· Interference and air separation with stationary blades, strut and venturi.
	Eddy flow sound	Turbulence in inflow flow, random eddy discharge from the eddy flow boundary layer on blade surfaces and air separation.
Mechanical noise	Vibration sound	Mechanical motor vibration sound ··· Imbalanced revolutions, resonance and vibration transfer sound. Electromagnetic sound of motor ··· Vibration sound by phase change (switching).
Cavity noise		Air column resonance and other sounds

2. Noise of fan

The noise of the fan itself (catalog noise) is measured in a small anechoic room, in which background noise is adequately low, in a free-air state with no objects surrounding the fan. The aerodynamic noise (blade sound) and motor sound are the principal noise sources.

3. Noise after installation in equipment

After installing the fan in your equipment the noise level sometimes increases drastically (up 8 dB to 15 dB) compared with the noise emitted by the fan itself. This is caused by the resonance of the fan vibration within the equipment, an obstacle in front of the intake (the fan guard may also become an obstacle), an increase in load noise due to ventilating resistance, the use of a fan with excessively large power, an insufficient circulation path, and other causes.

Noise can be reduced significantly by reducing the factors that increase noise. (In the best case scenario, only the noise level of the fan itself is generated)

Japan Servo provides a service to analyze customers' equipment noise. Please contact Japan Servo with your requirements.

4. Noise measurement

Noise is measured in accordance with the test method specified in JIS C 9603 Ventilating fans in Range A measurement, placed in a position 1 m in front of the intake side of fans and blowers. (Background noise 15 dB (A))

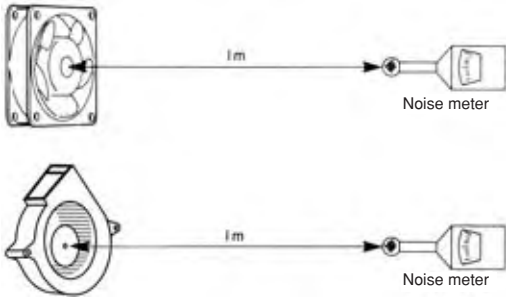


Fig. 15

5. Noise calculation

Noise is a sound pressure value measured in a position where the energy of a sound source arrives. It is called a sound pressure level (SPL) and is expressed in dB.

If the sound energy increases 10 times, the sound level increases 10 dB and 60 dB represents sound pressure energy that is 1000 times that of 30 dB and 10000 times that of 20 dB.

The total noise of several fans is calculated as follows:
(Noise values of individual values are L1, L2 Ln)

Total noise (L) = 10 log (10L^{1/10} + 10L^{2/10} +10L^{n/10})

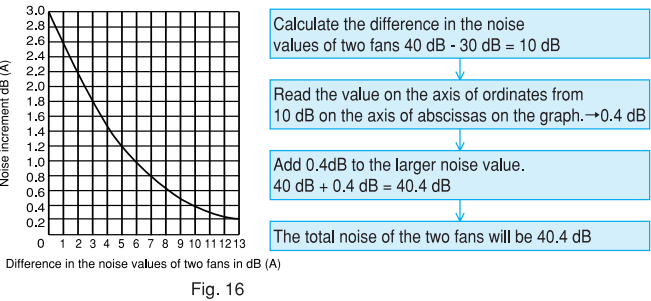
Example: If four fans individually emit noise of 30 dB, 35 dB, 40 dB and 45 dB, the total noise of the four fans will be:

L = 10 log (10^{30/10} + 10^{35/10} + 10^{40/10} + 10^{45/10}) = 46.6 dB

If all three fans emit 40dB, their total noise will be:

L = 10 log (10^{40/10} + 10^{40/10} + 10^{40/10}) = 40 + 10 log3 = 44.8 dB

The noise can be calculated from the following graph in Fig. 16 if the noise difference between two fans is 13 dB or less:



6. Speed and noise value

A fan's noise value is the total of the aerodynamic and motor noise. Most noise is aerodynamic in nature, except in products with a low speed.

The speed and noise value vary in proportion to the sixth power and the noise value increases when the speed increases. (Some people say that they vary in proportion to the fifth power.) Increasing the speed will double the max. airflow and quadruple the maximum static pressure. Noise increases 18.1 dB (+15 dB at the fifth power).

DB2 = dB1 + 60 log (N2/N1)

dB1: Noise value when the speed is N1

dB2: Noise value when the speed is N2

Speed	2000 min ⁻¹ (Standard)	2200 min ⁻¹	2600 min ⁻¹	3000 min ⁻¹	4000 min ⁻¹
Noise value	0	+2.5 dB	+6.8 dB	+10.6 dB	+18.1 dB

7. Propeller diameter and noise level

The fan noise is strongly linked to the propeller size. Comparing the noise of fans with equivalent speed, the noise theoretically varies to the seventh power of the propeller diameter as follows:

In reality, the propeller shape is not symmetric and calculations cannot be performed as explained in the theory. However, the noise value with equivalent airflow rate will be as shown in the following table, indicating that a larger fan will reduce noise. (Value calculated based on the theory that the airflow varies to the third power of the propeller diameter)

DB2 = dB1 + 70 log (D2/D1)

dB1: Noise value when the speed is D1

dB2: Noise value when the speed is D2

Propeller diameter	55 mm	75 mm	86 mm	114 mm (Standard)	121 mm	142 mm
Noise value with equivalent speed	-22.2 dB	-12.7 dB	-8.6 dB	0	+1.8 dB	+6.7 dB
Noise value with equivalent airflow	+34.8 dB	+20.0 dB	+13.5 dB	0	-2.8 dB	-10.5 dB

8. Object distance and noise value

The noise value (SPL) decreases as the sound source becomes distant while the fan noise value varies in proportion to the square of the distance and can be expressed by the following formula: (When the reflection sound to nearby walls is ignored)

DB2 = dB1 - 20 log (L2/L1)

dB1: Noise value when the distance from the sound source is L1

dB2: Noise value when the distance from the sound source is L2

Distance from sound source	50 cm	1 m (Standard)	150 cm
source Noise value	+6 dB	0	-3.5 dB

9. Ventilating resistance and noise value

Fan manufacturers note the noise values in their catalogs assuming a free air condition (ventilating resistance 0). When fans are physically assembled in equipment, the ventilating resistance cannot be zero and the noise values listed in catalogs are for reference purposes only. A method used to estimate sound values when fans are assembled in equipment is described below.

A noise value at each point of the PQ characteristics is called "load noise" and fans and blowers have their own characteristics. (See Figs. 17 and 18.)

The load noise is the noise of the fan itself at the point of operation. Fan characteristics include a "neck" (dip) in the plotted curves. This dip is caused by turbulence in the airflow on the propeller surfaces and noise increases steeply between this part and a low airflow region.

The fan has an area where noise becomes lowest (region of higher airflow than the neck). The circulation path should be designed such as to reduce ventilating resistance. However, if the ventilating resistance cannot be reduced with any equipment after trying various ideas, the study of fans for a high static pressure region is recommended. These are fans that have been developed and designed to emit low noise in a high static pressure region compared with ordinary fans. (See Fig. 4 on pages G-6 and G-42.)

As plotted in Fig. 18, the load noise of blowers generally varies only slightly, while trends in load noise differ from one product to another of the blower manufacturers. Even if the catalog values are the same, noise invariably varies at the same operating point.

The blowers manufactured by Japan Servo are designed to emit the lowest noise at customers' operating points so that the customers can base catalog load noise values reliably as actual blower noise.

Load noise of fan (CNDC24B7)

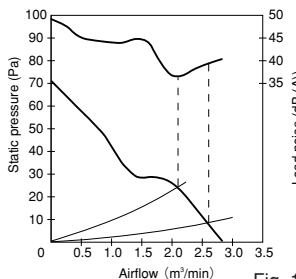


Fig. 17

Load noise of blower (E1331K and SCBD [former model])

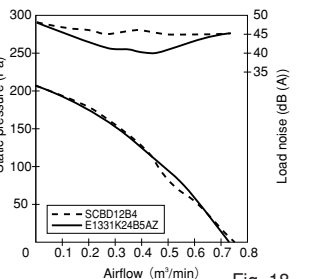


Fig. 18

10. Fan guards increase noise

When mounted directly onto a fan, a fan guard increases noise by about 5 dB. Install a fan guard more than 10 mm from equipment to reduce the increase in noise.

11. Equipment resonance with fan

The fan contains a motor that causes mechanical vibration and electrical vibration, which sometimes causes equipment containing a fan to resonate. This problem can be solved by combining the following three methods:

- 1) Cut off the vibration transfer route to equipment by providing a rubber vibration isolator or other cushioning.
- 2) Change the natural frequency of equipment by changing the board thickness or by other means.
- 3) Change to a low-vibration fan (customized product), in which case consult Japan Servo for more information.

12. Quiet operation by Silent Fan

The rotating sound (blade sound) is the principal factor generating the noise of ordinary square axial fans.

The frequency characteristic of these fans peaks at the number of blades x speed and the related high frequency component. This is mainly caused by periodical fluctuations of blade lift due to non-uniform airflow (turbulence), caused by an object on the upstream side of the fan and attributed to the shape of the fan venturi.

The Japan Servo Silent Fans, part of the range of axial fans with a unique venturi shape, are renowned for their particular quietness. Compared with conventional square venturi Japan Servo products, the noise emitted by the silent fans are 5 dB to 8 dB lower. To prevent non-uniform airflow on the upstream side of the fan, the venturi mounting flange has a single flange on the outlet side only, as illustrated in Fig. 19. The intake flow velocity and direction of the fan are made constant through analysis of the air intake flow to prevent separation of flow from the peripheral parts of the venturi, thereby achieving exceptional quietness. Thanks to the design preventing flow disturbance on the intake side when a fan is mounted, a premium silence effect unrivalled by conventional square fans is achieved.

Comparison of noise generating sources

● Silent Fan

Intake air flows in a fixed direction and at a constant flow velocity along the arc on the edge, hardly producing any noisy eddy turbulence.

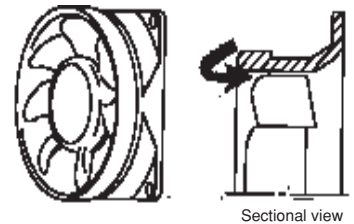


Fig. 19

● Square Venturi Fan

The airflow on the intake side is not constant. Differences in flow velocity and direction cause shear flow and trigger periodic lift fluctuations, leading to noise generation.

The air separation phenomenon occurs in the edge part, which is the thinnest part of the square venturi and round intake side, generating many eddy turbulences and increasing propeller resistance, thereby causing noise.

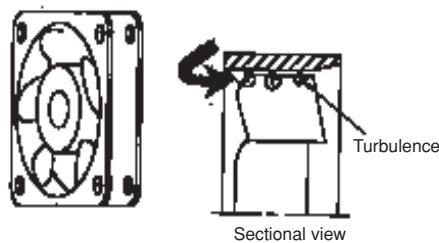


Fig. 20

(Note: In recent years further progress in CFD (Computational Fluid Dynamics) technology has enabled the development of new concepts to retard shear flows. These concepts will be applied to our easy-to-use square fans to substantially reduce noise. Be sure to look for these new products coming soon.)

Life of fans and blowers

The life of fans is solely dependent on bearings. The bearing load P in relation to the basic rated load C is $P \ll C$, (meaning P is a great deal smaller than C). Therefore we can say that grease life determines the fan life.

Grease life is significantly affected by ambient temperature. The fans of Japan Servo feature a special design that minimizes grease temperature rises as illustrated below.

● AC fan

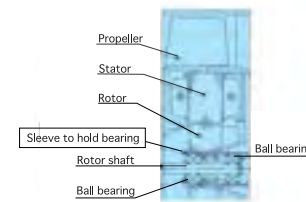


Fig. 21

● DC fan

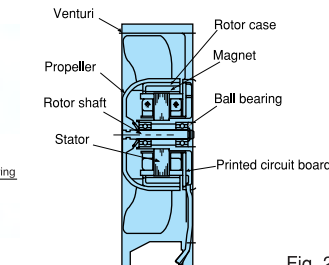


Fig. 22

■ Long-life structure

The fan motor contains two parts which generate heat, namely, the stator and rotor.

The AC fan holds a bearing in a dedicated sleeve to help retard the transfer of heat generated by the rotor, and limit the temperature rises of the bearing.

The DC fan has an external rotor structure and the temperature of the bearing is significantly affected by stator temperature. When the speed rank rises, the motor temperature also rises, thereby increasing the heat transfer to the bearing. Japan Servo fans feature a high-efficiency circuit and low motor losses to keep the bearing temperature below the preset temperature, thereby ensuring a long life.

The bearing temperature differs depending on the structure, materials and other factors and life varies to some extent. However, the life expectancy as illustrated in Fig. 23 is the basic data.

Japan Servo accepts inquiries and orders for semi-customized products (long life products) featuring a reduction in bearing temperature increase. Please contact Japan Servo for further information.

The life expectancy curve that is common to AC and DC fans is plotted in Fig. 23. (The curve represents the life expectancy based on a survival rate of 90 % and is not the guaranteed life. Japan Servo will provide the MTTF (mean time to failure) data upon request.)

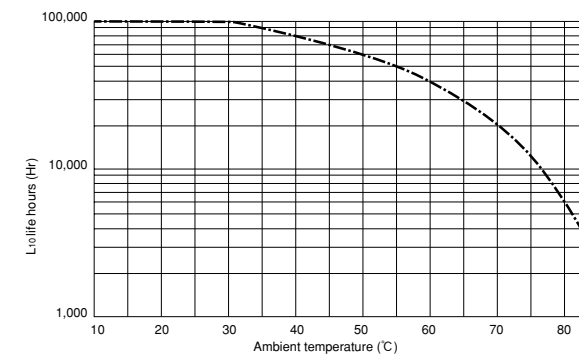


Fig. 23 Life expectancy curve (Survival rate 90 %)

(Note: This life expectancy curve has been prepared based on the results of life tests conducted at a rated voltage in a free air condition in an environmental test room with a negligible amount of dust. When using the fans in your application please take into consideration the actual operating conditions and safety factors. Some of the products contained in the catalogs do not meet the foregoing life expectancy data. [Products which do not meet the standard life are listed on the product information pages.]

(Definition of life: End of life is defined when the speed or noise of a product deteriorates by 20 %)

Applicable standards

Japan Servo fans and blowers have been accepted in certification tests for Japanese and overseas safety standards for use in various applications. (Please inquire to Japan Servo for standards that are not included in the following.)

◆ Electrical Appliance and Material Safety Law (Japan)

The AC fans that fall under the scope of the Electrical Appliance and Material Safety Law are manufactured in compliance with its technical standard. AC fans are classified as fans and blowers in one of 480 electrical appliance item categories other than specified electrical appliances. The marking of the (PS)E mark is a legal obligation. See page G-60 and subsequent pages for Japan Servo products with the (PS)E mark. Power plug cords are classified as specified electrical appliances and the marking of the <PS>E mark is a legal obligation. (See page G-74.)

◆ Certification test by the UL Standard

Japan Servo fans and blowers have been accepted in certification tests under the fan and blower safety test standard UL-507,73 of UNDERWRITERS LABORATORIES INC., the electrical appliance safety inspection organization of the United States. Products that are accepted in certification tests are marked with the mark on their nameplates and model names are registered, to attest that they are certified products.

The registration No. of Japan Servo is

E 48889: Fans and blowers

E 78112: Plugs and cords

(Category Nos. W1007, W1008)

Non-regular factory audits by UL are conducted in connection with the production of certified products and safety verification is performed by ensuring the materials used, electrical characteristics and other items pass strict factory test inspections.

◆ Certification test by the CSA Standard

Japan Servo fans and blowers have been accepted in certification tests, based on general specification requirements and rules to prevent overheating inside motors under fan and blower safety test standard CSA STANDARDS C22.2 Nos. 113 and 0.077 of the CANADIAN STANDARDS ASSOCIATION, the electrical appliance safety inspection organization of Canada. Products that are accepted in certification tests are marked with the mark on their nameplates and model names are registered, to attest that they are certified products under the CSA standards.

The registration No. of Japan Servo is

LR49399: Made in Japan

LR108118: Made in Indonesia

As with the UL standards, safety verification is performed by ensuring non-regular factory audits are performed by CSA.

(Some products are certified by the mark.)

◆ Certification test by TUV

Japan Servo fans and blowers have been accepted in safety certification tests based on the Business-Use Electrical Equipment Standard EN60950 and the VDE Standard No. 0806/08.81 of T RHEINLAND e.V, the industrial electrical appliance safety inspection organization of Germany. Products that are accepted in certification tests are marked with the mark on their nameplates and model names are registered, to attest that they are certified products under the TUV standards.

The registration Nos. of Japan Servo are:

LICENCE No.:R60299, R60300, R60301, R60302, R9451586

:R9750695, R9750455, R9650662, R2-50004410

REPORT No.:E61087, E61088, E61089, E61090

As under the UL and CSA standards, safety verification is performed by clearing non-regular factory audits by TUV.

◆ Certification test by VDE

Japan Servo fans and blowers have been accepted in safety certification tests based on the Fan and Blower Safety Inspection Standard DIN VDE0700 of VERBAND DEUTSCHER ELEKTROTECHNIKER e.V., an electrical appliance safety inspection organization of Germany with the highest authority. Products that are accepted in certification tests are marked with the ⚡ mark on their nameplates and model names are registered, to attest that they are certified products under the VDE standards.

The registration No. of Japan Servo is 3019.
As under the UL, CSA and TUV standards, safety verification is performed by clearing non-regular factory audits by VDE.

Common electrical specifications (Operational cautions)

● Insulation class

The insulation class of AC and DC fans and the blowers of Japan Servo meet the heat resistance performance of Class E (120 °C) under JIS C 4004 (Rotating electrical machines - General), CLASS A (105 °C) under the UL-703 standard, CLASS A (105 °C) under the CSA-C22.2 standard, and DIN IEC950/VDE0806 standard and CLASS E (90 °C) under the VDE0700 standard.

● Dielectric strength

The AC fans and blowers of Japan Servo satisfy 1500 V 50 Hz for one minute or 1800 V 50 Hz for one second. Dielectric strength tests under JIS C 4004 specify a voltage impression of "2 x rated voltage + 1000 V."

The DC fans and blowers of Japan Servo are accepted in withstand voltage tests of 500 V 50 Hz for one minute or 600 V 50 Hz for one second. The interrupting current of 5 mA is set for the dielectric strength testers.

Dielectric strengths are tested between the power terminal of the fan/blower or lead wire conductor (two lead wires tied together) and metal frame (or other metal part) using a dielectric strength tester.

● Insulation resistance

The insulation resistance of the AC and DC fans and blowers of Japan Servo is 10 MΩ or higher at 500 V DC between the power terminal or lead wire conductor and frame. Insulation resistance tests are conducted between the power terminal of the fan/blower or lead wire conductor (two lead wires tied together) and metal frame (or other metal part) using an insulation resistance tester.

● Electrical performance

The values described in the catalog are average values. Please request Japan Servo to send a product drawing or delivery specification for products when wishing to confirm standard values.

● Temperature protection

Two methods are used to protect the temperature of the windings of AC fans and blowers, namely, impedance protection and thermal protection. These two methods are used differently depending on the type of motor used.

Impedance protection method

This method is generally used with shaded pole induction motors. Temperature increase is limited below a preset value by impedance (AC resistance) natural to the motor windings. In particular, the UL standard specifies that motors must not burn out when the rotor is operated for 18 days at normal temperature (24 °C). Japan Servo fans and blowers meet this standard. Those products that are controlled by the Electrical Appliance and Material Safety Law of Japan are designed to limit coil temperature rises to less than 75 K.

The impedance protection method is effective only within the usage range. Note that smoke will be generated and ignition caused if a high voltage is imposed.

Thermal protection method

This method is used with motors of a capacitor phase advancing type or triple-phase induction motors. Embedding a bimetal switch with a contact in the motor winding part, the current is shut off when the preset winding temperature is exceeded, to prevent burning caused by abnormal overheating of the motor.

The windings of DC fans and blowers are protected against abnormal temperature rises by automatic reset, by shutting off the current if it detects a locked state or by current limiting automatic reset. This method involves the energizing circuit being turned off by a lock detection function inside the motor drive circuit when the fan is locked, shutting off (or limiting) the current. Operation is reactivated automatically after the locking is reset. Note that this protection system does not function properly if used with duty (PWM) control power supply. Japan Servo supplies variable-speed fans whose speed can be variably controlled by a PWM signal. (See pages G-40, G-41, and G-58.)

Vital Precautions for DC Fans and Blowers

● Reverse connection protection

The DC fans and blowers embed a reverse connection protection circuit. Fans or blowers will not fail, even if connected in reverse within the usage range. (The fans or blowers will not activate, as no current flows to the circuit.)

● Yield strength to electrical noise

Yield strength to static noise: The yield strength between the lines or between a frame and line is 5 kV.
Yield strength to induced noise: Yield strength by an induced noise test apparatus is 2 kV.
Note 1: Malfunction of the sensor alarms will result if the induced noise exceeds 1 kV. Insert a 0.1 μF capacitor between the sensor line and ground as a precaution.
Note 2: Some of the products without a 15-digit product code cannot guarantee these yield strengths. Contact Japan Servo for further information.

● Static electricity control

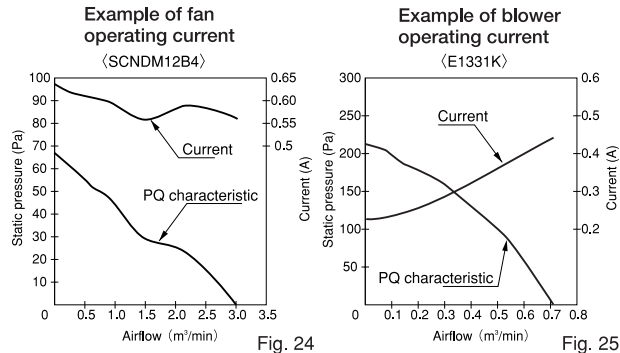
A static electricity measure is needed if a terminal trailing from the fan motor is touched, otherwise the circuit is prone to damage by static electricity.

● Handling of the alarm output lead wires

Inadvertently using a tester or other apparatus with a sensor lead wire will cause overcurrent to flow to the sensor circuit inside the motor, potentially causing a circuit fault. Pay attention to the permissible current and prevent any overcurrent from flowing. Contact Japan Servo if it becomes necessary to connect an LED or relay directly to a sensor lead wire. (There are products that allow a current larger than the permissible current described on page G-15 depending on conditions.)

● Power supply selection for DC fans and blowers

Select a power source that supplies smooth power (ripples within ±5 %, peak within operating voltage). Significant line noise (including surge voltage) causes circuit faults. Make it a point to check line noise after assembling a fan.
Select a power source remembering that a current 2 to 5 times the rated current flows at startup. (If an inrush current [normally less than 10 μs] poses a problem, measure it and take action accordingly.)
The operating current peaks when the motor load is largest (at maximum static pressure for fans and in free air condition for blowers). When assembled, the current sometimes exceeds the rated current (fans) or smaller (blowers). (See the diagrams below.)
When current is flowing, connect all terminals from the fan motor before turning it on. Imperfect wiring connection or a wiring change while the power is turned on will damage the circuit inside the fan or cause it to deteriorate.



Operational and handling precautions

Operational precautions

The products of Japan Servo are designed and manufactured to be as versatile as possible. Nevertheless, exercise caution with the following:

1. Operating environment

- Only highly durable flame-retardant resin is used. Nevertheless, avoid the presence of petroleum oil, such as cutting fluid and toxic gas from contact with resin sections of fans and blowers where such oil or gas is frequently used in operation by installing a filter or other apparatus. (If the operating environment cannot be improved, Japan Servo will be glad to conduct a yield strength verification test upon receipt of fluid and other item/s. Consult Japan Servo for more information.)
- Open-type motors are used. The use of a fan or blower in a dusty place will adversely affect the circuit and ball bearings.
- Avoid operating a fan or a blower in relative humidity exceeding 90 %.
- The maximum storage temperature is normally 70 °C. Products with an operating temperature of 70 °C or higher can be operated only up to the specified temperature. Check the operating temperature range on the product information pages.
- Exercise reasonable care with condensation when returning to an environment higher than 0 °C from storage or operating conditions below freezing point. Condensation results in failure and shortens the life.
- The life may shorten considerably if a fan or a blower is installed in equipment that vibrates prominently. Japan Servo products conform to JIS C 0040 (Vibration testing methods for small motors) and withstand a maximum vibration acceleration of 9.1 G maximum (10 Hz to 55 Hz, amplitude 1.5 mm, sweep 1 minute/cycle, two hours each in X, Y and Z directions). However, operation at 5 G or less is recommended.
- AC and DC fans and blowers cannot be operated while the intake side is tightly closed. This will shorten the motor life and result in circuit failure.
- Operation near a high frequency power source may on rare occasions cause inflow of an induced current into the inside of a fan, shortening the life (and increasing noise due to BB galvanic corrosion). If an induced current flows, measures to prevent such inflow are needed.

2. Imposed voltage and frequency

- The permissible range of AC fans and blowers is ±10 % of the rated voltage. Operations outside of the rated frequency result in considerable fluctuations in performance and life. Operations in serial connection (example: two 100 V products connected serially to a 200 V power supply) will increase the imposed voltage beyond the permissible range and should be avoided.
- Use a sufficiently smooth power supply with DC fans and blowers. (Ripples of ±5 % or less, and peak within the usage range) The usage range differs from one product to another. Check it on the product information pages.

3. Installation orientation

There are no installation orientation limitations for products containing ball bearings. Operate fans and blowers in compliance with the operating environment temperature and other conditions. Contact Japan Servo for further information or if clarification is needed.

Handling precautions

The fan motors of Japan Servo contain double side shielded precision ball bearings. Dropping the product could result in abnormal noise (Brinell dent) of ball bearings during operation. Exercise care when handling the products as follows:

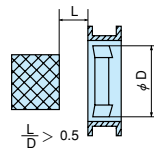
- Product falling: Avoid dropping the product from a height of 5 cm or higher.
- Falling of crated product: Avoid dropping a crated product from a height of 30 cm or higher.
- Storage and stacking of crated products: Crated products may be stacked up to seven layers. Take sufficient precautionary measures to prevent getting them wet.

- Do not apply a load of 2 kgf or more to the connecting part of the lead wire of a DC fan.
- Fan installation: Exercise caution as follows when installing a fan on a panel or elsewhere.
 - Clamping of both flanges: The permissible tightening torque of M4 screws is 8 kgf · cm with an AC fan that has a metal venturi and up to 10 kgf · cm with a DC fan that has fan ribs. Through screws are not acceptable for the DC flange type. Use reinforcing spacers (for the KUDC and CNDC series) to tighten the double flanges on these products. (See page G-73.)
 - Clamping of single flange: The permissible tightening torque of screws when the installation surface is flat is 10 kgf · cm to 14 kgf · cm for both AC and DC fans.
 - Avoid contact with a propeller or impeller when mounting the intake side of fans and blowers. Excessive screw tightening will result in contact with a deformed venturi or housing.

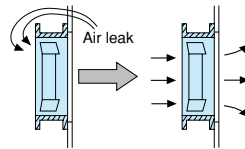
Fan operational precautions

- Strive to ensure the channel shape is as smooth as possible to avoid stagnation in the airflow.
- Make the flow velocity larger around the object for which cooling is desired.
- Place the fan on the downstream side when wishing to cool the entire space inside the equipment.
- An upward flow in conjunction with the ascension of heated air is recommended for airflow inside equipment.
- Take actions to mitigate the impacts of fans and for reverse flow in the event of failure where multiple fans are installed.

- When placing an object on the fan intake side, try to maintain a distance of more than half a blade diameter.



- The pressure varies on the fan intake and outlet sides. The leakage of air from the outlet side causes noise. Minimize air leakage from the outlet side when installing a fan.



- Design the channel (circulation path) selecting a good flow direction in terms of both noise and PQ characteristics.

- Ventilating resistance can be expressed by the following formula:

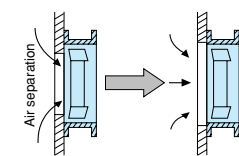
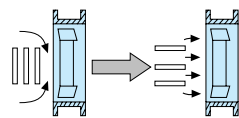
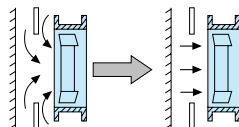
$$P = 0.000243Q^2 \sum_{i=1}^N \frac{1}{A_i^2}$$

A reduction of A_i (the channel cross sectional area) is critical. Avoid any sharp change in the cross sectional area in the flow direction.

- Avoid any sharp change in flow direction.

- Avoid placing a printed circuit board and other parts orthogonal to the flow direction.

- Drill fan mounting holes to ensure the smooth flow of air to reduce noise by referring to the recommended dimensions for fan mounting holes on the fan or blower's catalog page.



DC axial fans & blowers with sensors

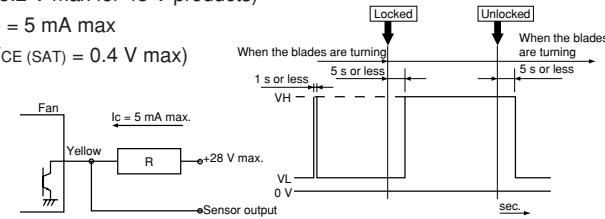
The DC fans and blowers of Japan Servo have a function to send an alarm signal when the fan motor revolutions slow down. Several systems are used to cut off the system power supply by this alarm signal, with three types of sensors available. Select the right type of sensor in accordance with the purpose of use. The lead wire for the sensor is yellow. The output type is an open collector output for all three types.

Sensor type

1. Lock detection type (Product code: S)

The output signal indicates an [L] state (transistor is ON) while the propeller is rotating, changing to an [H] state (transistor is OFF) less than five seconds after the propeller stops rotating. The propeller automatically restarts operation within five seconds when the lock is unlocked. ([H] → [L] 5 s). If the pull-up voltage is live, the [H] state (transistor is OFF) will engage in less than five seconds, even when the power is turned off.

- Specification: $V_{CE} = 28 \text{ V max}$ (55.2 V max for 48 V products)
 $I_C = 5 \text{ mA max}$
($V_{CE}(\text{SAT}) = 0.4 \text{ V max}$)
- Output waveform

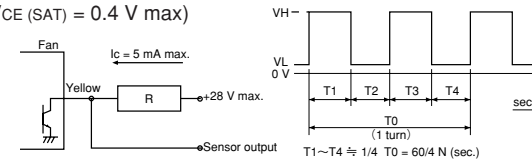


※When the power is turned on, the state sometimes becomes high [H] for several hundred ms.

2. Pulse output type (Product code: P)

A rectangular wave of two pulses will be output for each turn of the propeller while the propeller is rotating, outputting two types of signal depending on the propeller position when the propeller is locked. (See the note below ※)

- Specification: $V_{CE} = 28 \text{ V max}$ (55.2 V max for 48 V products)
 $I_C = 5 \text{ mA max}$
($V_{CE}(\text{SAT}) = 0.4 \text{ V max}$)
- Output waveform

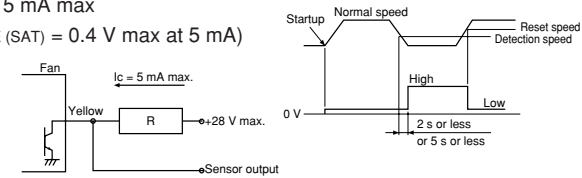


※Output signal waveform when the fan is stopped: The following two types of waveform are output, depending on the blade position when the propeller is stopped: Pulse outputs of High - constant or restart timing (0.05 Hz to 2 Hz).

3. Speed detection type (Product code: Q)

The output signal indicates the [H] state when the propeller revolutions are slower than the preset speed, changing to the [L] state when the propeller revolutions exceed the reset speed. [Products with a reversed output waveform are also available, suitable for a wired OR connection when several fans are installed. Contact Japan Servo for further information. {Former code: SQ, new code (15 - digit code products): R}]

- Specification: $V_{CE} = 28 \text{ V max}$ (55.2 V max for 48 V products)
 $I_C = 5 \text{ mA max}$
($V_{CE}(\text{SAT}) = 0.4 \text{ V max}$ at 5 mA)
- Output waveform



Note: The output waveform for type SQ (R) will be reversed. The speed setting for the alarm output is about half the rated speed. For more detailed information, please request a product delivery specification from Japan Servo.

AC fans with sensors

By equipping the motor with a rotation detection function, the AC fans of Japan Servo have a system to send an alarm signal when the fan motor revolutions slow down and to cut off the system power supply. In 1980, Japan Servo developed a system to output an alarm signal by detecting the lowering of generated voltage by installing a tachometer generator with the cooling fan and this system has since been incorporated in Japan Servo products. The output type of the alarm signal is an open collector output.

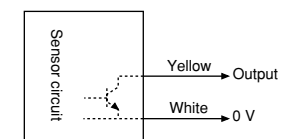
Sensor specification

Type	Tachometer generator type			
Sensor output operation	Open collector transistor, permissible sync Current: 50 mA max. Permissible imposed voltage: DC 40 V max. Permissible power consumption: 1.5 W max. (at 25 °C)			
Sensor output operation	AC power supply	Speed	Output transistor operation	Output state
	OFF		OPEN	HIGH (Abnormal)
	ON	Below detection speed	OPEN	HIGH (Abnormal)
Detection speed RD	ON	Above detection speed	CLOSE	LOW (Normal)
Detection delay time TD	1500 ~ 2200 rpm			
Type	Standard speed			
Insulation resistance	10 M Ω or higher by a DC 500 V; Between the sensor lead and venturi			
Dielectric strength	Between the sensor lead and venturi No anomaly allowed after applying AC 500 V 50 Hz for 1 minute			

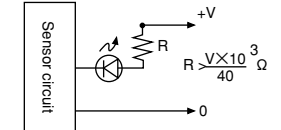
Operational and handling precautions

Operate fans and blowers at an ambient temperature of between -10 °C and 60 °C and relative humidity of less than 90 %. Latch output is not used so malfunction by electrical noise can be ruled out. However, note that the semiconductor devices in the internal circuitry may be damaged by electrical noise and high voltage. No delay circuit is provided so a trouble signal is output on startup. As when operating and handling the fan, exercise caution to avoid dropping and exposing the blower to shock and vibration.

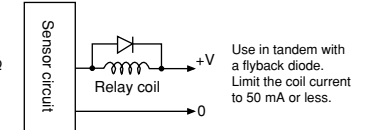
Sensor connection



1. LED Display



2. Relay operation



※ A sensor is available with the AS ad PL series only.

Brushless
DC Fans & BlowersSKUD series □92× ϕ 100×25 mm

DC Silent Fan

DC MOLD
SILENT□92×25 (□3.6"×1.0")
Max. airflow: 1.8 m³/min
Max. static pressure: 72 Pa
Mass: 115 g

Fan model code

SKUD12B4

SKUD12B4P

SKUD12B4S

SKUD12D4

SKUD12D4P

SKUD12D4S

SKUD12H7

SKUD12H7P

SKUD12H7S

SKUD12U7

SKUD12U7P

SKUD12U7S

SKUD12Z7

SKUD12Z7P

SKUD12Z7S

SKUD24B4

SKUD24B4P

SKUD24B4S

SKUD24D4

SKUD24D4P

SKUD24D4S

SKUD24H7

SKUD24H7P

SKUD24H7S

SKUD24U7

SKUD24Z7

SKUD24Z7P

SKUD24Z7S

SKUD48B4

SKUD48Z7

Standard specification

Max. Airflow m ³ /min	CFM	Max. Static Pressure		Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
		Pa	inH ₂ O				Rating	Operating Range	Rating	Starting		
1.8	64	72	0.29	39	3500	4.2	12	7.2-13.8	350	880	SKUD12U7	-20 ~ +60
						4.8	24	12-27.6	200	460	SKUD24U7	
1.65	58	60	0.24	36	3150	3.2	12	7.2-13.8	270	690	SKUD12H7	
						3.6	24	12-27.6	150	350	SKUD24H7	
1.45	51	45	0.18	34	2900	3	12	7.2-13.8	250	550	SKUD12Z7	
						3.3	24	12-27.6	140	320	SKUD24Z7	-20 ~ +70
						3.5	48	24-55.2	70	150	SKUD48Z7	
1.3	46	35	0.14	31	2600	12	12	7.2-13.8	230	480	SKUD12B4	
						24	24	12-27.6	130	240	SKUD24B4	
						2.8	48	24-55.2	60	130	SKUD48B4	
0.95	34	22	0.09	24	1950	12	12	8.4-13.8	110	240	SKUD12D4	
						24	24	14.4-27.6	60	110	SKUD24D4	

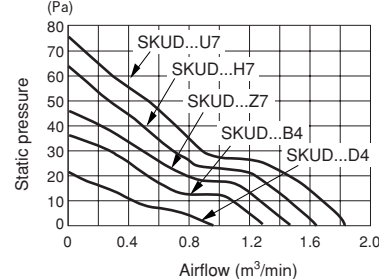
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	70 to a carton of (450 x 380 x 300) mm, mass 9 kg

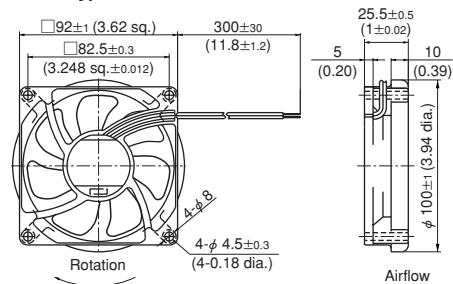
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]

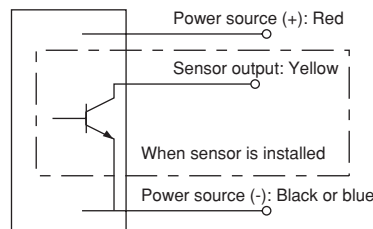
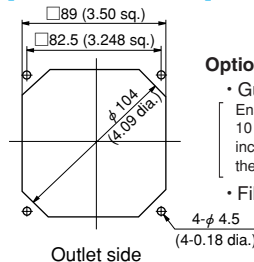


External dimensions in mm (inches)

Lead wire type

Lead wire spec. AWG24 UL1007 or UL3266
Color (+) Red
(-) Black (SKUD□D4: Blue)

Wiring connection diagram

Mounting hole dimensions in mm (inches)
[Recommendation]

Options (sold separately)

- Guard: F92UL guard
Ensure the guard is situated more than 10 mm from the fan to minimize noise increase when mounting a guard on the intake side. See page G-10.
- Filter: F92 filter

DC axial fan with sensor

Rated Voltage	Model Code				
12 V	SKUD12D4S	SKUD12B4S	SKUD12Z7S	SKUD12H7S	SKUD12U7S
	SKUD12D4P	SKUD12B4P	SKUD12Z7P	SKUD12H7P	SKUD12U7P
24 V	SKUD24D4S	SKUD24B4S	SKUD24Z7S	SKUD24H7S	
	SKUD24D4P	SKUD24B4P	SKUD24Z7P	SKUD24H7P	

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
- An electronic version of the Japan Servo catalog can be forwarded upon request. 3D data is also available at our web2-CAD site (www.web2cad.co.jp).

Brushless
DC Fans & BlowersSKLD series □92× ϕ 100×32 mm

DC Silent Fan

DC MOLD
SILENT□92×32 (□3.6"×1.3")
Max. airflow: 1.7 m³/min
Max. static pressure: 86 Pa
Mass: 150 g

Fan model code

SKLD12B4

SKLD12B4S

SKLD12Z7

SKLD12Z7P

SKLD12Z7S

SKLD24B4

SKLD24B4S

SKLD24Z7

SKLD24Z7P

SKLD24Z7S

Standard specification

Max. Airflow m ³ /min	CFM	Max. Static Pressure		Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
		Pa	inH ₂ O				Rating	Operating Range	Rating	Starting		
1.7	60	86	0.35	41	3800	4	12	7.2-13.8	340	960	SKLD12Z7	-20 ~ +60
						3.6	24	12-27.6	150	480	SKLD24Z7	
1.5	53	65	0.26	35	3200	3.5	12	7.2-13.8	280	570	SKLD12B4	-20 ~ +70
						24	24	12-27.6	140		SKLD24B4	

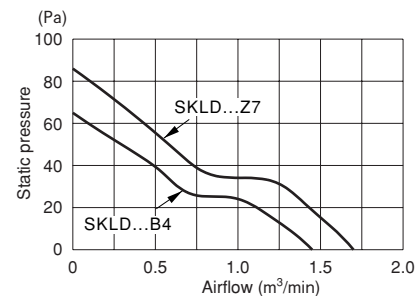
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	60 to a carton of (450 x 380 x 300) mm, mass 10 kg

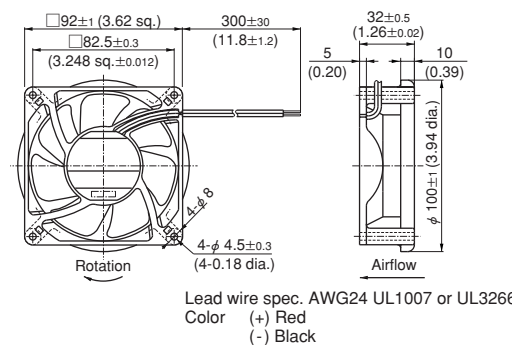
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]

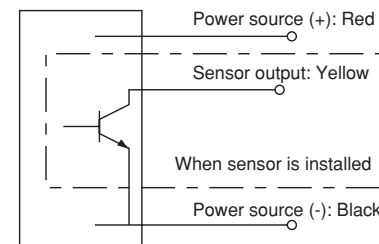
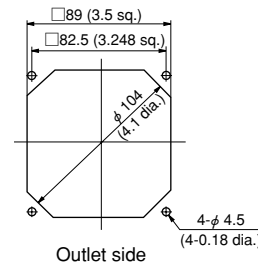


External dimensions in mm (inches)

Lead wire type



Wiring connection diagram

Mounting hole dimensions in mm (inches)
[Recommendation]

Options (sold separately)

- Guard: F92UL guard
Ensure the guard is situated more than 10 mm from the fan to minimize noise increase when mounting a guard on the intake side. See page G-10.
- Filter: F92 filter

DC axial fan with sensor

Rated Voltage	Model Code	
12 V	SKLD12B4S	SKLD12Z7S
		SKLD12Z7P
24 V	SKLD24B4S	SKLD24Z7S
		SKLD24Z7P

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
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DC Silent Fan
DC MOLD
SILENT



□120×38 (□4.7"×1.5")
Max. airflow: 3.5 m³/min
Max. static pressure: 95 Pa
Mass: 250 g

Fan model code
SCNDM12B4
SCNDM12B4S
SCNDM12D4
SCNDM12D4S
SCNDM12Z7
SCNDM12Z7S
SCNDM24B4
SCNDM24B4Q
SCNDM24B4S
SCNDM24D4
SCNDM24D4Q
SCNDM24D4S
SCNDM24Z7
SCNDM24Z7P
SCNDM24Z7S
SCNDM48B4
SCNDM48Z7

Standard specification

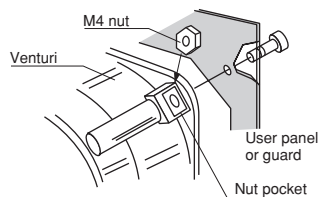
Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting		
3.5	124	95	3200	8.6	12	7.2-13.8	710	2350	SCNDM12Z7	-20 ~ +70
					24	12-27.6	370	1200	SCNDM24Z7	
					48	24-55.2	210		SCNDM48Z7	
3	106	64	2650	7	12	7.2-13.8	500	1050	SCNDM12B4	
					24	12-27.6	320	560	SCNDM24B4	
					48	24-55.2	120		SCNDM48B4	
2.2	78	39	1950	3	12	8.4-13.8	230	630	SCNDM12D4	
					24	14.4-27.6	130	310	SCNDM24D4	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.
- The life expectancy of SCNDM-B speed products at rated voltage and in continuous operation is 30,000 hours at 60 °C. (40,000 hours for other products)

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	40 to a carton of (450 x 380 x 300) mm, mass 12 kg

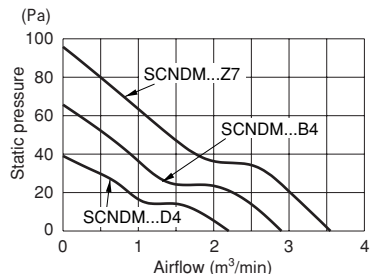
Fan mounting



M4 nut pockets provided in 4 places for easy mounting. (The customer to provide nuts)

Standard airflow and static pressure characteristics (At rated voltage)

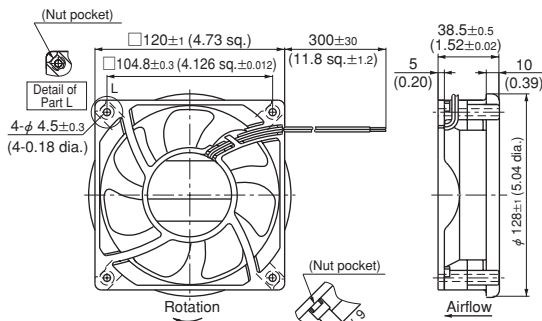
[By double chamber method]



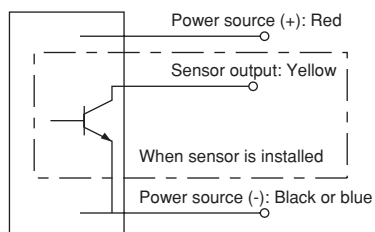
External dimensions in mm (inches)

Lead wire type

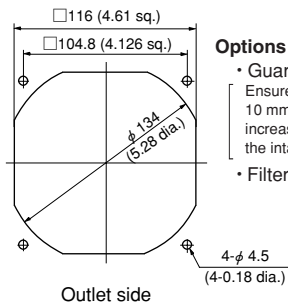
Lead wire spec. AWG24 UL1007 or UL3266
Color (+) Red
(-) Black (SCNDM□D4: Blue)



Wiring connection diagram



Mounting hole dimensions in mm (inches) [Recommendation]



Options (sold separately)

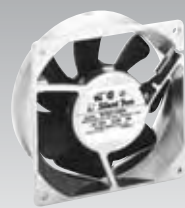
- Guard: F120UL guard
Ensure the guard is situated more than 10 mm from the fan to minimize noise increase when mounting a guard on the intake side. See page G-10.
- Filter: F120 filter

DC axial fan with sensor

Rated Voltage	Model Code		
12 V	SCNDM12D4S	SCNDM12B4S	SCNDM12Z7S
	SCNDM24D4S	SCNDM24B4S	SCNDM24Z7S
24 V	SCNDM24D4Q	SCNDM24B4Q	SCNDM24Z7P

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DC Silent Fan
DC SILENT



□120×38 (□4.7"×1.5")
Max. airflow: 3.5 m³/min
Max. static pressure: 95 Pa
Mass: 360 g

Fan model code
SCND12B4
SCND12B4Q
SCND12B4S
SCND12B4SQ
SCND12D4
SCND12D4P
SCND12D4S
SCND12D4SQ
SCND12Z7
SCND12Z7S
SCND12Z7SQ
SCND24B4
SCND24B4Q
SCND24B4S
SCND24B4SQ
SCND24D4
SCND24D4Q
SCND24D4S
SCND24Z7
SCND24Z7P
SCND24Z7Q
SCND24Z7S

Standard specification

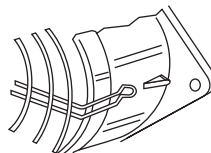
Max. airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting		
3.5	124	95	3200	8.6	12	7.2-13.8	710	2350	SCND12Z7	-20 ~ +70
					24	12-27.6	370	1200	SCND24Z7	
3	106	64	2650	7	12	7.2-13.8	500	1050	SCND12B4	
					24	12-27.6	320	560	SCND24B4	
2.2	78	39	1950	3	12	8.4-13.8	230	630	SCND12D4	
					24	14.4-27.6	130	310	SCND24D4	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: Aluminum alloy die castings Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	20 to a carton of (450 x 310 x 160) mm, mass 7.5 kg

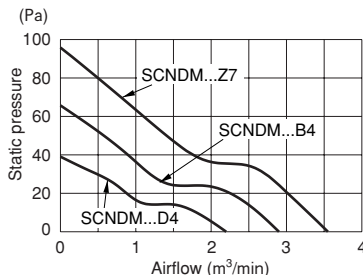
Guard mounting



The guard for the intake side (SCU guard) can be mounted with one touch without using a tool.

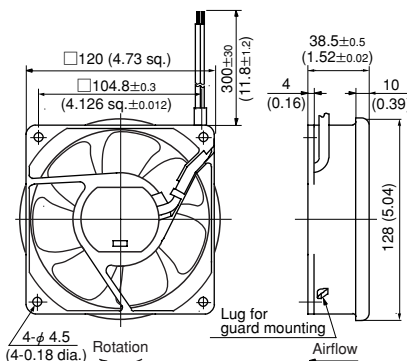
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



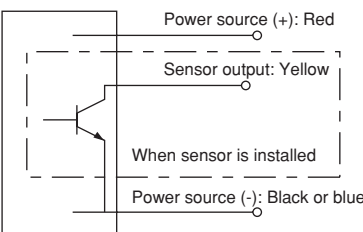
External dimensions in mm (inches)

Lead wire type

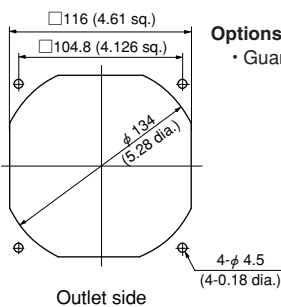


Lead wire spec. AWG24 UL1007 or UL3266
Color (+) Red
(-) Black (SCND□D4: Blue)

Wiring connection diagram



Mounting hole dimensions in mm (inches) [Recommendation]



Options (sold separately)

- Guard: F120UL guard (Outlet side)
SCN guard (Intake side)

DC axial fan with sensor

Rated Voltage	Model Code		
12 V	SCND12D4S	SCND12B4S	SCND12Z7S
	SCND12D4P	SCND12B4Q	
	SCND12D4SQ	SCND12B4SQ	SCND12Z7SQ
	SCND24D4S	SCND24B4S	SCND24Z7S
24 V		SCND24B4Q	SCND24Z7P
	SCND24D4Q	SCND24B4SQ	SCND24Z7Q

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
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EUDC series □ 40 × 13mm

DC Axial Fan

DC ELFIN 13



□40×13 (□1.6"×0.5")
Max. airflow: 0.23 m³/min
Max. static pressure: 79 Pa
Mass: 26 g

Fan model code

EUDC12B8

EUDC12B8S

EUDC12D8

EUDC12D8S

EUDC12Z8

EUDC24B8

EUDC24B8S

Standard specification

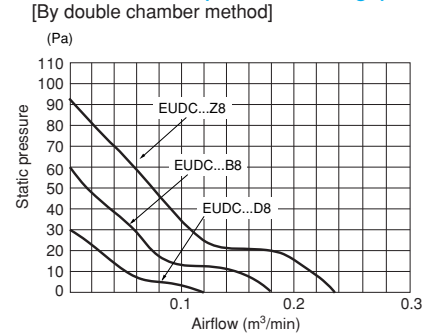
Max. Airflow		Max. Static Pressure		Noise	Speed	Input	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
m³/min	CFM	Pa	inH₂O	dB	min⁻¹		Rating	Operating Range	Rating	Starting		
0.23	8.1	79	0.32	37	9000	1.5	12	7.2-13.8	130	270	EUDC12Z8	-20 ~ +70
0.18	6.4	59	0.24	30	7200	0.9	12	7.2-13.8	75	190	EUDC12B8	-20 ~ +80
						1.1	24	14.4-27.6	50	100	EUDC24B8	
0.12	4.2	30	0.12	26	5200	0.5	12	8.4-13.8	40	90	EUDC12D8	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.
- The life expectancy of EUDC12Z8 at rated voltage and in continuous operation is 30,000 hours at 60 °C. (40,000 hours for other products at 60 °C)

General specification

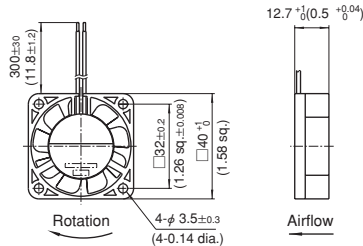
Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	400 to a carton of (450 x 380 x 300) mm, mass 12 kg

Standard airflow and static pressure characteristics (At rated voltage)



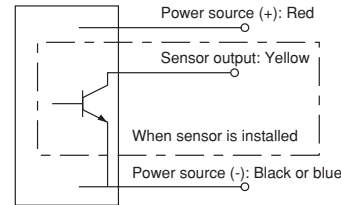
External dimensions in mm (inches)

Lead wire type

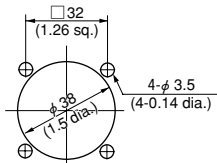


Lead wire spec. AWG24 UL1007 or UL3266
Color (+) Red
(-) Black

Wiring connection diagram



Mounting hole dimensions in mm (inches)
[Recommendation]



DC axial fan with sensor

Rated Voltage	Model Code	
12 V	EUDC12D8S	EUDC12B8S
24 V		EUDC24B8S

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D0410C series □ 40 × 10 mm

DC Axial Fan

D0410C



□40×10 (□1.6"×0.4")
Max. airflow: 0.15 m³/min
Max. static pressure: 41 Pa
Mass: 19 g

Fan model code

D0410C05B7AZ-00

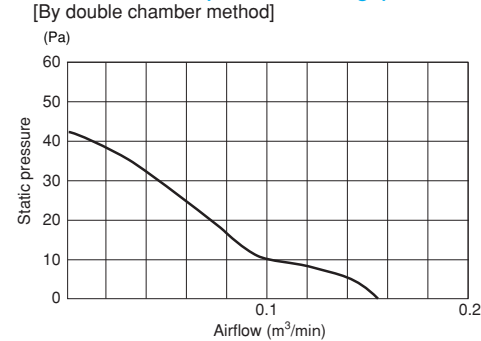
D0410C12B7AZ-00

Standard specification

Max. Airflow		Max. Static Pressure		Noise	Speed	Input	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
m³/min	CFM	Pa	inH₂O	dB	min⁻¹		Rating	Operating Range	Rating	Starting		
0.15	5.3	41	0.16	25	6200	0.8	5	4.5-5.5	160	250	D0410C05B7AZ-00	-10 ~ +60
						0.84	12	7.0-13.8	70	100	D0410C12B7AZ-00	

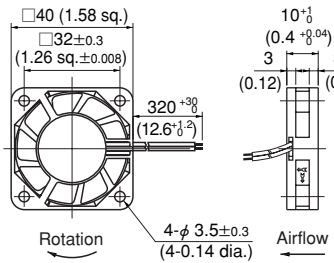
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (5 V or 12 V), and normal temperature and humidity.

Standard airflow and static pressure characteristics (At rated voltage)



External dimensions in mm (inches)

Lead wire type



Lead wire spec. AWG24 UL1007
Color (+) Red
(-) Black

DC axial fan

D0428C



□40×28 (□1.6"×1.1")
Max. airflow: 0.32 m³/min
Max. static pressure: 103 Pa
Mass: 52 g

Fan model code

D0428C05B7AZ-00

D0428C12B7AZ-00

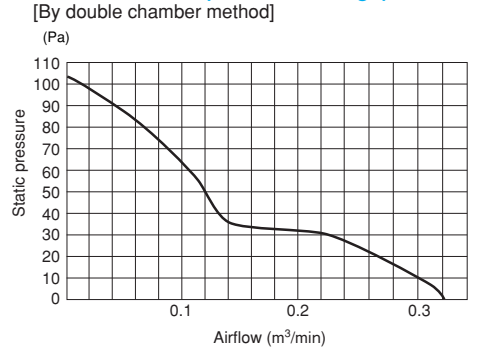
D0428C24B7AZ-00

Standard specification

Max. Airflow		Max. Static Pressure		Noise	Speed	Input	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
m³/min	CFM	Pa	inH₂O	dB	min⁻¹		Rating	Operating Range	Rating	Starting		
0.32	11	103	0.41	37	8700	3.4	5	4.5-5.5	680	950	D0428C05B7AZ-00	-10 ~ +60
						2.34	12	7-13.8	195	600	D0428C12B7AZ-00	
						2.28	24	12-27.6	95	310	D0428C24B7AZ-00	

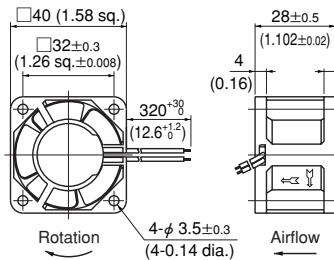
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (5 V, 12 V or 24 V), and normal temperature and humidity.

Standard airflow and static pressure characteristics (At rated voltage)



External dimensions in mm (inches)

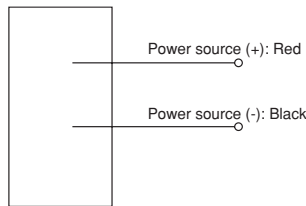
Lead wire type



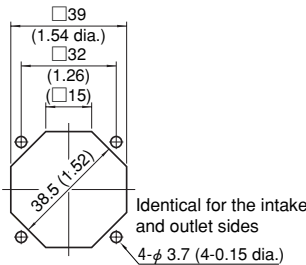
Lead wire spec. AWG24 UL1007
Color (+) Red
(-) Black

Common to D0410C/D0428C Series

Wiring connection diagram



Mounting hole dimensions in mm (inches)
[Recommendation]



Identical for the intake and outlet sides
4-φ 3.7 (4-0.15 dia.)

Brushless
DC Fans & Blowers

DC Axial Fan

D0515C



□52×15 (□2.0"×0.6")
Max. airflow: 0.26 m³/min
Max. static pressure: 32 Pa
Mass: 55 g

Fan model code

D0515C12B7AZ-00

D0515C24B7AZ-00

D0515C series □52×15 mm

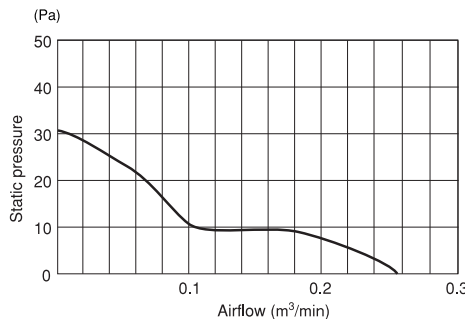
Standard specification

Max. Airflow m ³ /min CFM	Max. Static Pressure Pa inH ₂ O	Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting		
0.26	9.2	32	4600	1.2	12	7-13.8	100	270	D0515C12B7AZ-00	-10 ~ +60
					24	14-27.6	50	140	D0515C24B7AZ-00	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

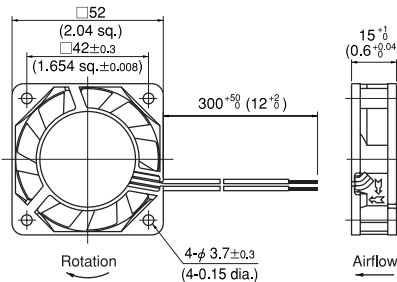
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



External dimensions in mm (inches)

● Lead wire type



Lead wire spec. AWG24 UL1007
Color (+) Red
(-) Black

DC axial fan

D0620C



□60×20 (□2.4"×0.8")
Max. airflow: 0.55 m³/min
Max. static pressure: 53 Pa
Mass: 90 g

Fan model code

D0620C12B7AZ-00

D0620C24B7AZ-00

D0620C48B7AZ-00

D0620C series □60×20 mm

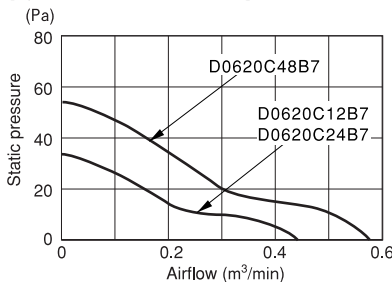
Standard specification

Max. Airflow m ³ /min CFM	Max. Static Pressure Pa inH ₂ O	Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting		
0.42	15	32	4200	1.56	12	10.2-13.8	130	300	D0620C12B7AZ-00	-10 ~ +60
				1.68	24	20.4-27.6	70	240	D0620C24B7AZ-00	
0.55	19	53	5600	3.36	48	43-53	70	220	D0620C48B7AZ-00	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.

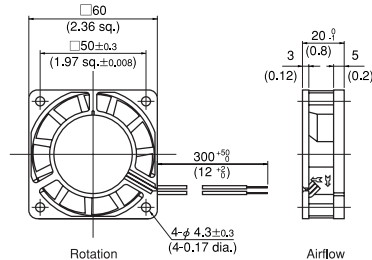
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



External dimensions in mm (inches)

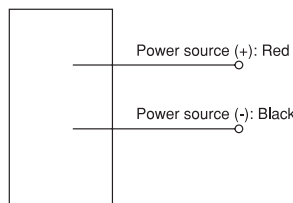
● Lead wire type



Lead wire spec. AWG24 UL1007
Color (+) Red
(-) Black

Common to D515C/D0620C Series

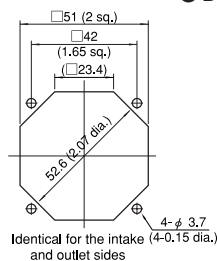
Wiring connection diagram



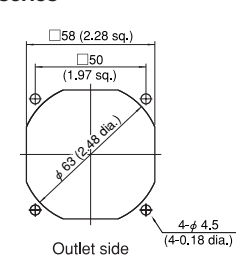
Mounting hole dimensions in mm (inches) [Recommendation]

● D0515C series

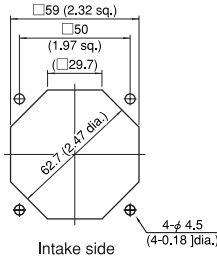
● D0620C series



Identical for the intake and outlet sides



Outlet side



Intake side

Brushless
DC Fans & Blowers

DC Axial Fan

DC TINY 25 III



□60×25 (□2.4"×1.0")
Max. airflow: 0.87 m³/min
Max. static pressure: 130 Pa
Mass: 75 g

Fan model code

TUDC12B4

TUDC12B4F

TUDC12B4P

TUDC12B4S

TUDC12D4

TUDC12D4F

TUDC12D4FS

TUDC12D4S

TUDC12H4

TUDC12H4F

TUDC12H4FS

TUDC12H4P

TUDC12H4S

TUDC12N7

TUDC12N7F

TUDC12N7P

TUDC12U7

TUDC12U7F

TUDC12U7P

TUDC12U7S

TUDC12Z4

TUDC12Z4F

TUDC12Z4FS

TUDC12Z4P

TUDC12Z4S

TUDC24B4

TUDC24B4F

TUDC24B4S

TUDC24D4

TUDC24D4F

TUDC24D4S

TUDC24H4

TUDC24H4F

TUDC24H4P

TUDC24H4S

TUDC24N7

TUDC24N7F

TUDC24N7P

TUDC24N7S

TUDC24Z4

TUDC24Z4F

TUDC24Z4FS

TUDC24Z4P

TUDC24Z4SQ

TUDC48B4

TUDC48B4P

TUDC48B4S

TUDC48H4

TUDC48H4P

TUDC48Z4

TUDC48Z4F

TUDC48Z4FP

TUDC48Z4FS

TUDC48Z4P

TUDC series □60×25 mm

Standard specification

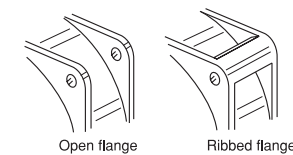
Max. Airflow m ³ /min CFM	Max. Static Pressure Pa inH ₂ O	Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code		Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting	Open Flange	Ribbed Flange	
0.87	31	130	46	4.2	12	7.2-13.8	350	1430	TUDC12N7F	TUDC12N7	-20 ~ +60
					24	12-27.6	170	700	TUDC24N7F	TUDC24N7	
0.74	26	100	39	2.5	12	6-13.8	210	790	TUDC12U7F	TUDC12U7	-20 ~ +60
					24	12-27.6	110	360	TUDC24H4F	TUDC24H4	
0.65	23	75	37	2.6	12	7.2-13.8	220	710	TUDC12H4F	TUDC12H4	-20 ~ +60
					24	12-27.6	110	360	TUDC24H4F	TUDC24H4	
0.55	19	59	32	1.8	12	7.2-13.8	140	550	TUDC12Z4F	TUDC12Z4	-20 ~ +70
					24	12-27.6	80	270	TUDC24Z4F	TUDC24Z4	
0.47	17	39	27	1.4	12	7.2-13.8	130	380	TUDC12B4F	TUDC12B4	-20 ~ +70
					24	12-27.6	70	190	TUDC24B4F	TUDC24B4	
0.35	12	24	20	0.9	12	8.4-13.8	80	210	TUDC12D4F	TUDC12D4	-20 ~ +70
					24	14.4-27.6	40	110	TUDC24D4F	TUDC24D4	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	100 to a carton of (450 x 380 x 160) mm, mass 9 kg

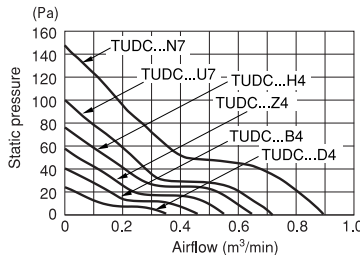
● Venturi shape



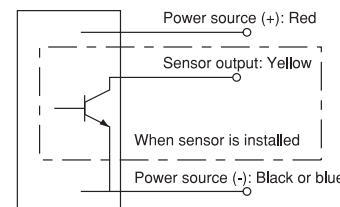
Specify no suffix symbol in your ordering information when the venturi is mounted with screws. Suffix 'F' for an open flange venturi.

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]

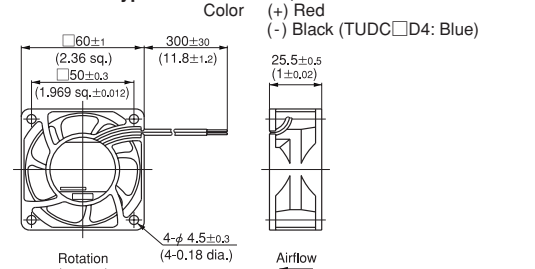


Wiring connection diagram

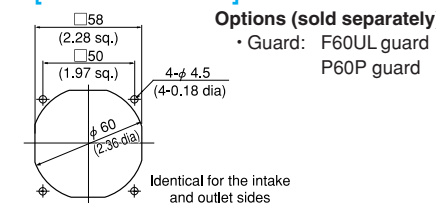


External dimensions in mm (inches)

● Lead wire type



Mounting hole dimensions in mm (inches) [Recommendation]



Options (sold separately)

- Guard: F60UL guard
- P60P guard

DC axial fan with sensor

Rated Vol.	Model Code					
12 V	TUDC12D4S	TUDC12B4S	TUDC12Z4S	TUDC12H4S	TUDC12U7S	
	TUDC12D4FS	TUDC12B4F	TUDC12Z4F	TUDC12H4SF	TUDC12U7P	TUDC12N7P
24 V	TUDC24D4S	TUDC24B4S	TUDC24Z4S	TUDC24H4S		TUDC24N7S
			TUDC24Z4SQ	TUDC24H4P		TUDC24N7P
48 V		TUDC48B4S	TUDC48Z4FS	TUDC48H4P		
		TUDC48B4P	TUDC48Z4P	TUDC48H4P		

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
- Customizing to the sleeve bearing specification also accepted depending on the intended purchase quantity. Contact Japan Servo for further information.
- An electronic version of the Japan Servo catalog can be forwarded upon request. 3D data is also available at our web2-CAD site (www.web2cad.co.jp).

Brushless
DC Fans & Blowers

DC Axial Fan

DC PIXIE 25 III



□80×25 (□3.2"×1.0")
Max. airflow: 1.58 m³/min
Max. static pressure: 100 Pa
Mass: 85 g

Fan model code

PUDC12B4
PUDC12B4P
PUDC12B4R
PUDC12B4RP
PUDC12B4RS
PUDC12B4S
PUDC12D4
PUDC12D4R
PUDC12D4RS
PUDC12D4S
PUDC12H4
PUDC12H4P
PUDC12H4R
PUDC12H4RP
PUDC12H4RS
PUDC12H4S
PUDC12U7
PUDC12U7P
PUDC12U7R
PUDC12U7RP
PUDC12U7RS
PUDC12U7S
PUDC12Z4
PUDC12Z4P
PUDC12Z4R
PUDC12Z4RP
PUDC12Z4RS
PUDC12Z4S
PUDC24B4
PUDC24B4R
PUDC24B4RS
PUDC24B4S
PUDC24D4
PUDC24D4R
PUDC24D4RS
PUDC24D4S
PUDC24H4
PUDC24H4R
PUDC24H4RS
PUDC24H4S
PUDC24U7
PUDC24U7R
PUDC24Z4
PUDC24Z4P
PUDC24Z4R
PUDC24Z4RS
PUDC24Z4S
PUDC48B4
PUDC48B4P
PUDC48H4
PUDC48H4P
PUDC48Z4
PUDC48Z4P
PUDC48Z4S

PUDC series □80×25 mm

Standard specification

Max. Airflow		Max. Static Pressure		Noise	Speed	Input	Voltage Spec. V		Current mA		Model Code		Operating
m³/min	CFM	Pa	inH₂O	dB	min⁻¹	W	Rating	Operating Range	Rating	Starting	Open Flange	Ribbed Flange	Temp. Range °C
1.58	56	100	0.40	47	4560	4	12	7.2-13.8	340	1080	PUDC12U7	PUDC12U7R	-20 ~ +60
						4.3	24	12-27.6	190	510	PUDC24U7	PUDC24U7R	
1.32	47	74	0.30	40	3900	3.8	12	7.2-13.8	320	730	PUDC12H4	PUDC12H4R	
						24	12-27.6	160	340	PUDC24H4	PUDC24H4R		
						3.2	48	24-55.2	70		PUDC48H4		
1.2	42	59	0.24	35	3500	2.4	12	7.2-13.8	160	520	PUDC12Z4	PUDC12Z4R	
						24	12-27.6	100	200	PUDC24Z4	PUDC24Z4R		
						2.6	48	24-55.2	60		PUDC48Z4		
0.94	33	38	0.15	30	2800	1.5	12	7.2-13.8	140	320	PUDC12B4	PUDC12B4R	-20 ~ +70
						24	12-27.6	70	180	PUDC24B4	PUDC24B4R		
						1.8	48	24-55.2	40		PUDC48B4		
0.73	26	25	0.10	23	2150	1	12	8.4-13.8	80	180	PUDC12D4	PUDC12D4R	
						24	14.4-27.6	40		PUDC24D4	PUDC24D4R		

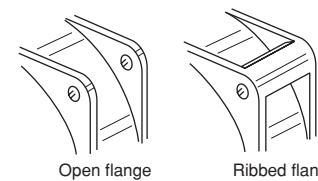
● Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.

● The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	120 to a carton of (450 x 380 x 300) mm, mass 10 kg

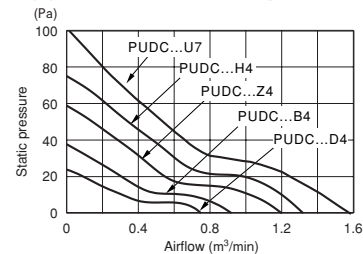
Venturi shape



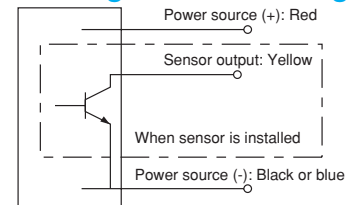
Open flange
Ribbed flange
Use ribbed venturi with a reinforced corner when the venturi is mounted with screws. (The spacer is indicated in the model code by the letter 'R'.)

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



Wiring connection diagram



DC axial fan with sensor

Rated Vol.	Model Code				
12 V	PUDC12D4S	PUDC12B4S	PUDC12Z4S	PUDC12H4S	PUDC12U7S
	PUDC12D4RS	PUDC12B4RS	PUDC12Z4RS	PUDC12H4RS	PUDC12U7RS
		PUDC12B4P	PUDC12Z4P	PUDC12H4P	PUDC12U7P
		PUDC12B4RP	PUDC12Z4RP	PUDC12H4RP	PUDC12U7RP
24 V	PUDC24D4S	PUDC24B4S	PUDC24Z4S	PUDC24H4S	
	PUDC24D4RS	PUDC24B4RS	PUDC24Z4RS	PUDC24H4RS	
			PUDC24Z4P		
			PUDC24Z4RS		
48 V		PUDC48B4P	PUDC48Z4S	PUDC48H4P	
			PUDC48Z4P		

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
- Customized fans with sleeve bearings are also available depending on the intended purchase quantity. Contact Japan Servo for further information.
- An electronic version of the Japan Servo catalog can be forwarded upon request. 3D data is also available at our web2-CAD site (www.web2cad.co.jp).

Brushless
DC Fans & Blowers

DC Axial Fan

D0815C



□80×15 (□3.2"×0.6")
Max. airflow: 0.91 m³/min
Max. static pressure: 29.4 Pa
Mass: 68 g

Fan model code

D0815C12B7AZ-00

D0815C24B7AZ-00

DC Axial Fan

D0820C



□80×20 (□3.2"×0.8")
Max. airflow: 0.84 m³/min
Max. static pressure: 29.4 Pa
Mass: 100 g

Fan model code

D0820C12B7AZ-00

D0820C24B7AZ-00

DC Axial Fan

D0832C



□80×32 (□3.2"×1.3")
Max. airflow: 1.1 m³/min
Max. static pressure: 51 Pa
Mass: 150 g

Fan model code

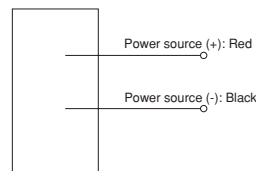
D0832C12B7AZ-00

D0832C24B7AZ-00

D0832C48B7AZ-00

Common to D0815C/D0820C/D0832C Series

Wiring connection diagram

D0815C / D0820C / D0832C series
□80×15 mm / □80×20 mm / □80×32 mm

Standard specification

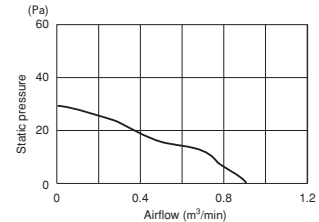
Max. Airflow m³/min	CFM	Max. Static Pressure		Noise dB	Speed min⁻¹	Input W	Voltage spec. V		Current mA		Model Code	Operating Temp. Range °C
		Pa	inH₂O				Rating	Operating Range	Rating	Starting		
0.91	32	29.4	0.12	31	3100	2.4	12	7.2-13.8	200	370	D0815C12B7AZ-00	-10 ~ +60
							24	14-27.6	100	154	D0815C24B7AZ-00	

● Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.

● The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

Standard airflow and static pressure characteristics (At rated voltage)

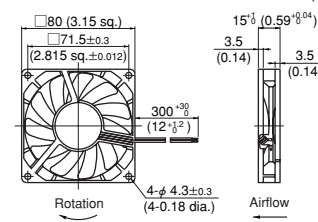
[By double chamber method]



External dimensions in mm (inches)

Lead wire type

Lead wire spec. AWG24 UL1007
Color (+) Red
(-) Black



Standard specification

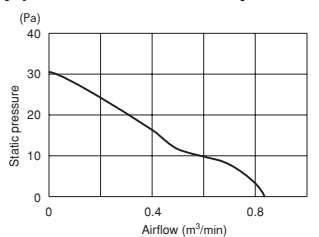
Max. Airflow m³/min	CFM	Max. Static Pressure		Noise dB	Speed min⁻¹	Input W	Voltage spec. V		Current mA		Model Code	Operating Temp. Range °C
		Pa	inH₂O				Rating	Operating Range	Rating	Starting		
0.84	30	29.4	0.12	31	2900	2.52	12	10.2-13.8	210	280	D0820C12B7AZ-00	-10 ~ +60
							24	20.4-27.6	120	150	D0820C24B7AZ-00	

● Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.

● The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

Standard airflow and static pressure characteristics (At rated voltage)

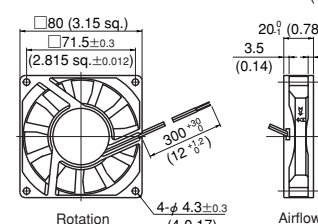
[By double chamber method]



External dimensions in mm (inches)

Lead wire type

Lead wire spec. AWG24 UL1007
Color (+) Red
(-) Black



Standard specification

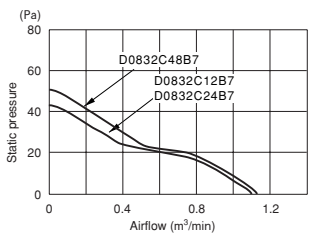
Max. Airflow m³/min	CFM	Max. Static Pressure		Noise dB	Speed min⁻¹	Input W	Voltage spec. V		Current mA		Model Code	Operating Temp. Range °C
		Pa	inH₂O				Rating	Operating Range	Rating	Starting		
1.05	37	43	0.17	33	3150	2.16	12	10.2-13.8	160	630	D0832C12B7AZ-00	-10 ~ +60
							24	20.4-27.6	90	300	D0832C24B7AZ-00	
1.1	39	51	0.21	35	3350	2.88	48	43-53	90	190	D0832C48B7AZ-00	

● Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.

● The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.

Standard airflow and static pressure characteristics (At rated voltage)

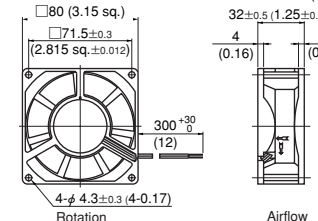
[By double chamber method]



External dimensions in mm (inches)

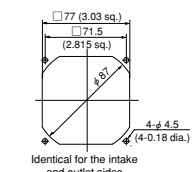
Lead wire type

Lead wire spec. AWG24 UL1007
Color (+) Red
(-) Black

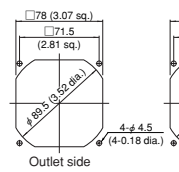


Mounting hole dimensions in mm (inches) [Recommendation]

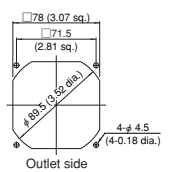
D0815C series



D0820C series



D0832C series



Brushless
DC Fans & Blowers

DC Axial Fan
DC KOALA 25



□92×25 (□3.6"×1.0")
Max. airflow: 1.8 m³/min
Max. static pressure: 70 Pa
Mass: 100 g

Fan model code

- KUDC12B4
- KUDC12B4P
- KUDC12B4S
- KUDC12B4V
- KUDC12B4VS
- KUDC12D4
- KUDC12D4S
- KUDC12D4V
- KUDC12D4VP
- KUDC12H7
- KUDC12H7P
- KUDC12H7S
- KUDC12H7V
- KUDC12U7
- KUDC12U7P
- KUDC12U7S
- KUDC12U7V
- KUDC12U7VP
- KUDC12U7VS
- KUDC12Z7
- KUDC12Z7P
- KUDC12Z7S
- KUDC12Z7V
- KUDC12Z7VP
- KUDC12Z7VS
- KUDC24B4
- KUDC24B4P
- KUDC24B4S
- KUDC24B4V
- KUDC24D4
- KUDC24D4S
- KUDC24D4V
- KUDC24H7
- KUDC24H7P
- KUDC24H7S
- KUDC24H7V
- KUDC24H7VS
- KUDC24U7
- KUDC24U7V
- KUDC24Z7
- KUDC24Z7P
- KUDC24Z7S
- KUDC24Z7V
- KUDC24Z7VS
- KUDC48B4
- KUDC48B4P
- KUDC48B4S
- KUDC48B4VS
- KUDC48Z7
- KUDC48Z7P

KUDC series □92 × 25 mm

Standard specification

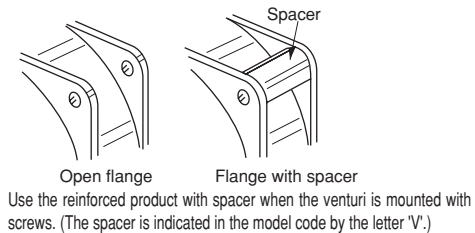
Max. Airflow		Max. Static Pressure		Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code		Operating Temp. Range °C
m³/min	CFM	Pa	inH ₂ O				Rating	Operating Range	Rating	Starting	Open Flange	With Spacer	
1.8	64	70	0.28	41.5	3450	4.2	12	7.2-13.8	350	880	KUDC12U7	KUDC12U7V	-20 ~ +60
						4.8	24	12-27.6	200	460	KUDC24U7	KUDC24U7V	
1.66	59	60	0.24	39	3200	3.2	12	7.2-13.8	270	690	KUDC12H7	KUDC12H7V	
						3.6	24	12-27.6	150	350	KUDC24H7	KUDC24H7V	
1.55	55	52	0.21	37	2950	3.0	12	7.2-13.8	250	550	KUDC12Z7	KUDC12Z7V	
						3.3	24	12-27.6	140	320	KUDC24Z7	KUDC24Z7V	
						3.5	48	24-55.2	70	150	KUDC48Z7		
1.4	49	43	0.17	34	2750	2.9	12	7.2-13.8	230	480	KUDC12B4	KUDC12B4V	-20 ~ +70
							24	12-27.6	130	240	KUDC24B4	KUDC24B4V	
							48	24-55.2	60	130	KUDC48B4		
1	35	24	0.10	26	1950	1.4	12	8.4-13.8	110	240	KUDC12D4	KUDC12D4V	
						1.3	24	14.4-27.6	60	110	KUDC24D4	KUDC24D4V	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V, or 48 V), and normal temperature and humidity.
- The life expectancy of KUDC-U speed products at rated voltage and in continuous operation is 30,000 hours at 60 °C. (40,000 hours for other products)

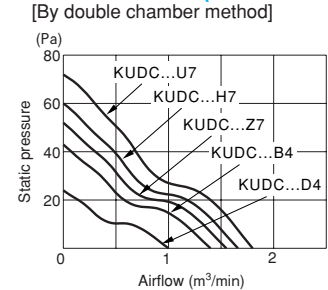
General specification

Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	70 to a carton of (450 x 380 x 300) mm, mass 7 kg

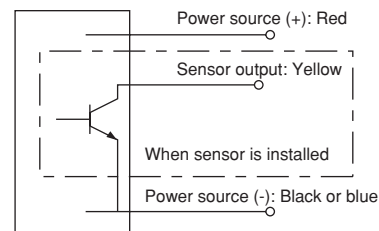
●Venturi shape



Standard airflow and static pressure characteristics (At rated voltage)



Wiring connection diagram



DC axial fan with sensor

Rated Vol.	Model Code				
12 V	KUDC12D4S	KUDC12B4S	KUDC12Z7S	KUDC12H7S	KUDC12U7S
		KUDC12B4VS	KUDC12Z7VS		KUDC12U7VS
		KUDC12B4P	KUDC12Z7P	KUDC12H7P	KUDC12U7P
24 V	KUDC12D4VP		KUDC12Z7VP		KUDC12U7VP
	KUDC24D4S	KUDC24B4S	KUDC24Z7S	KUDC24H7S	
		KUDC24B4VS	KUDC24Z7VS	KUDC24H7VS	
48 V		KUDC24B4P	KUDC24Z7P	KUDC24H7P	
		KUDC48B4S			
		KUDC48B4VS			
		KUDC48B4P	KUDC48Z7P		

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
- An electronic version of the Japan Servo catalog can be forwarded upon request. 3D data is also available at our web2-CAD site (www.web2cad.co.jp).

Brushless
DC Fans & Blowers

Super Silent Fan
D0925C



□92×25 (□3.6"×1.0")
Max. airflow: m³/min
Max. static pressure: Pa
Mass: g

Fan model code

- D0925C12B4AZ-00
- D0925C12B6AZ-00
- D0925C12B8AZ-00

Features

- Noise at operating point (from KUDC fan) dB
- Energy saving %
- Motor vibration
- High airflow rate (Plan target m³/min or less)
- Sensor (lock, pulse) can be installed
- Variable speed (PWM, voltage, resistance) available

D0925C series □92 × 25 mm

Standard specification * They are tentative values.

Max. Airflow m³/min	CFM	Max. Static Pressure		Noise dB	Speed min⁻¹	Voltage Spec. V		Current mA		Model Code		Operating Temp. Range °C
		Pa	inH₂O			Rating	Operating Range	Rating	Starting			
										D0925C12B8AZ-00		
										D0925C12B6AZ-00		
										D0925C12B4AZ-00		

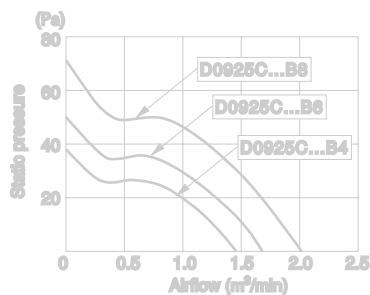
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V, or 48 V), and normal temperature and humidity.
- A ribbed flange only is available as the venturi shape of these products.

General specification

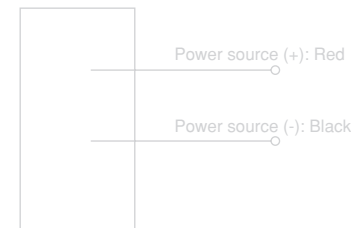
Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]

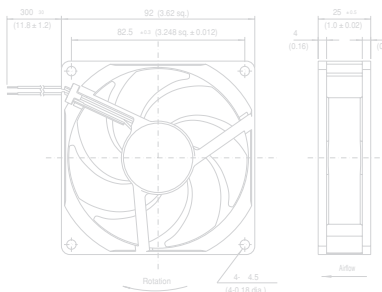


Wiring connection diagram



External dimensions in mm (inches)

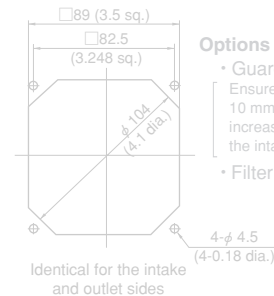
● Lead wire type



Lead wire spec. AWG24 UL3266
Color (+) Red
(-) Black

Mounting hole dimensions in mm (inches)

[Recommendation]



Options (sold separately)

- Guard: F92UL guard
Ensure the guard is situated more than 10 mm from the fan to minimize noise increase when mounting a guard on the intake side. See page G-9.
- Filter: F92 filter

Product debut scheduled for spring of 2007

- Box-type silent axial fans with an innovative concept (design focusing on sound quality after embedding in equipment); optimizing all components by fully utilizing know-how in computational fluid dynamics (CFD).
- "Low Vibration Super Silent Fan" with a wide silent range, best fitting all applications and enhances the high added value of embedded equipment.

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- Tentative values are listed in this edition of the catalog. More products will be added to the series as they are prototyped. Contact Japan Servo for further information.

Brushless
DC Fans & BlowersDC Axial Fan
DC KOALA III

□92×32 (□3.6"×1.3")
Max. airflow: 2.1 m³/min
Max. static pressure: 140 Pa
Mass: 145 g

Fan model code

KLDC12B4
KLDC12B4F
KLDC12B4P
KLDC12B4S
KLDC12U7
KLDC12U7P
KLDC12Z7
KLDC12Z7F
KLDC12Z7FP
KLDC12Z7FS
KLDC12Z7P
KLDC12Z7S
KLDC24B4
KLDC24B4F
KLDC24B4S
KLDC24H7
KLDC24H7F
KLDC24U7
KLDC24Z7
KLDC24Z7F
KLDC24Z7FP
KLDC24Z7FS
KLDC24Z7P
KLDC24Z7S

KLDC series □92×32 mm

Standard specification

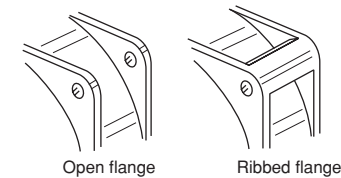
Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Input W	Voltage Spec. V		Current mA		Model Code		Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting	Open Flange	Ribbed Flange	
2.1	74	140	4600	5.7	12	6-13.8	470	1700		KLDC12U7	-20 ~ +60
					6.2	24	12-27.6	260	870	KLDC24U7	
1.9	67	115	4150	4.6	24	12-27.6	190	690	KLDC24H7F	KLDC24H7	-20 ~ +70
					4	12	7.2-13.8	340	960	KLDC12Z7F	
1.7	60	86	3800	3.6	24	12-27.6	150	480	KLDC24Z7F	KLDC24Z7	
					12	7.2-13.8	280	570	KLDC12B4F	KLDC12B4	
1.5	53	65	3200	3.5	24	12-27.6	140		KLDC24B4F	KLDC24B4	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	60 to a carton of (450 x 380 x 220) mm, mass 9 kg

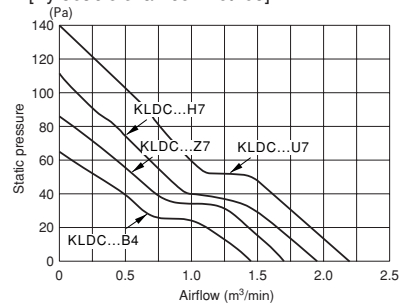
Venturi shape



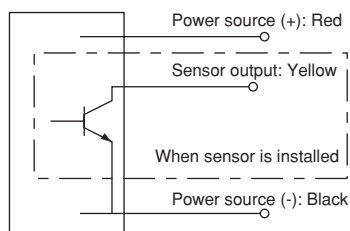
Specify no suffix symbol in your ordering information when the venturi is mounted with screws. Suffix 'F' for an open flange venturi.

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



Wiring connection diagram



DC axial fan with sensor

Rated Voltage	Model Code		
12 V	KLDC12B4S	KLDC12Z7S	KLDC12U7P
	KLDC12B4P	KLDC12Z7FS	
		KLDC12Z7P	
		KLDC12Z7FP	
24 V	KLDC24B4S	KLDC24Z7S	
		KLDC24Z7FS	
		KLDC24Z7P	
		KLDC24Z7FP	

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
- An electronic version of the Japan Servo catalog can be forwarded upon request. 3D data is also available at our web2-CAD site (www.web2cad.co.jp).

Brushless
DC Fans & BlowersDC Axial Fan
DC CENTAUR 25 III

□120×25 (□4.7"×1.0")
Max. airflow: 3.25 m³/min
Max. static pressure: 125 Pa
Mass: 180 g

Fan model code

CUDC12B7
CUDC12B7P
CUDC12B7R
CUDC12B7RP
CUDC12B7RS
CUDC12B7S
CUDC12D4
CUDC12D4P
CUDC12D4Q
CUDC12D4R
CUDC12D4RQ
CUDC12D4RS
CUDC12D4S
CUDC12H7
CUDC12H7P
CUDC12H7S
CUDC24B7
CUDC24B7P
CUDC24B7R
CUDC24B7RS
CUDC24B7S
CUDC24D4
CUDC24D4Q
CUDC24D4R
CUDC24D4RQ
CUDC24D4RS
CUDC24D4S
CUDC24D4SQ
CUDC24H7
CUDC24H7P
CUDC24H7S

CUDC series □120×25 mm

Standard specification

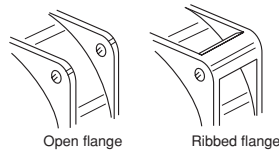
Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Input W	Voltage Spec. V		Current mA		Model Code		Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting	Open Flange	Ribbed Flange	
3.25	115	125	3700	6.5	12	8.4-13.8	540	2120	CUDC12H7		-20 ~ +70
					24	19.2-27.6	270	1180	CUDC24H7		
2.4	85	60	2650	3.4	12	6-13.8	280	740	CUDC12B7	CUDC12B7R	
					24	12-27.6	160	390	CUDC24B7	CUDC24B7R	
1.7	60	36	1950	2	12	8.4-13.8	160	380	CUDC12D4	CUDC12D4R	-20 ~ +60
					24	14.4-27.6	90		CUDC24D4	CUDC24D4R	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	60 to a carton of (450 x 380 x 300) mm, mass 12 kg

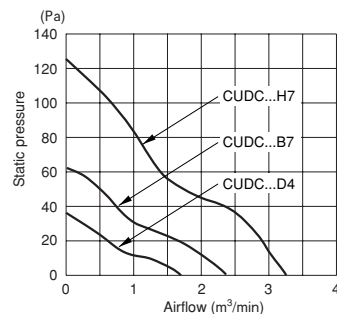
Venturi shape



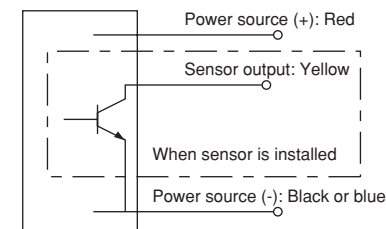
Use ribbed venturi with a reinforced corner when the venturi is mounted with screws. (The spacer is indicated in the model code by the letter 'R'.)

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]

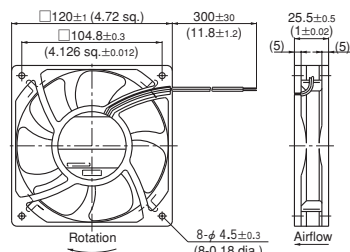


Wiring connection diagram



External dimensions in mm (inches)

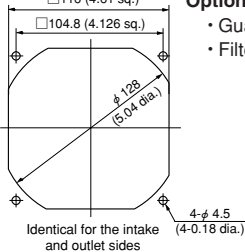
Lead wire type



Lead wire spec. AWG24 UL1007 or UL3266
Color (+) Red
(-) Black (CUDC□D4: Blue)

Mounting hole dimensions in mm (inches)

[Recommendation]



Options (sold separately)
• Guard: F120UL guard
• Filter: F120 filter

DC axial fan with sensor

Rated Voltage	Model Code		
12 V	CUDC12D4S	CUDC12B7S	CUDC12H7S
	CUDC12D4RS	CUDC12B7RS	CUDC12H7P
	CUDC12D4P	CUDC12B7P	
	CUDC12D4Q	CUDC12B7RP	
	CUDC12D4RQ		
24 V	CUDC24D4S	CUDC24B7S	CUDC24H7S
		CUDC24B7RS	CUDC24H7P
		CUDC24B7P	
	CUDC24D4Q CUDC24D4SQ		

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
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- An electronic version of the Japan Servo catalog can be forwarded upon request. 3D data is also available at our web2-CAD site (www.web2cad.co.jp).

DC Axial Fan
DC CENTAUR V



□120×38 (□4.7"×1.5")
Max. airflow: 4.4 m³/min
Max. static pressure: 160 Pa
Mass: 250 g

Fan model code

CNDC12B7

CNDC12B7P

CNDC12B7S

CNDC12D7

CNDC12D7P

CNDC12D7S

CNDC12D7V

CNDC12H7

CNDC12U7

CNDC12Z7

CNDC12Z7P

CNDC12Z7S

CNDC12Z7VS

CNDC24B7

CNDC24B7P

CNDC24B7Q

CNDC24B7S

CNDC24B7SQ

CNDC24B7V

CNDC24B7VS

CNDC24D7

CNDC24D7P

CNDC24D7Q

CNDC24D7S

CNDC24D7VS

CNDC24H7

CNDC24U7

CNDC24Z7

CNDC24Z7P

CNDC24Z7Q

CNDC24Z7S

CNDC48B7

CNDC48B7P

CNDC48B7S

CNDC48Z7

CNDC48Z7P

CNDC48Z7S

CNDC48Z7V

Standard specification

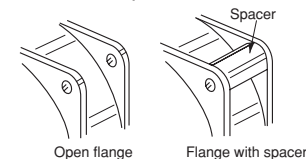
Max. Airflow m³/min	CFM	Max. Static Pressure Pa	Noise inH ₂ O	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code		Operating Temp. Range °C
						Rating	Operating Range	Rating	Starting	Open Flange	With Spacer	
4.4	155	160	0.64	3800	11.2	12	8.4-13.8	930	2100	CNDC12U7		-20 ~ +70
					10.8	24	19.2-27.6	450	2000	CNDC24U7		
4.0	141	140	0.56	3550	9.1	12	8.4-13.8	760	2080	CNDC12H7		
					9.4	24	19.2-27.6	390	1970	CNDC24H7		
					8.6	12	7.2-13.8	710	2350	CNDC12Z7		
3.5	124	105	0.42	3200	9.0	24	12-27.6	370	1200	CNDC24Z7		
					10.0	48	24-55.2	210	530	CNDC48Z7	CNDC48Z7V	
2.8	99	70	0.28	2650	4.6	12	7.2-13.8	380	1330	CNDC12B7		
					4.8	24	12-27.6	200	640	CNDC24B7	CNDC24B7V	
					6	48	24-55.2	120	340	CNDC48B7		
					2.4	12	8.4-13.8	200		CNDC12D7	CNDC12D7V	
2.1	74	44	0.18	1950	2.6	24	14.4-27.6	110		CNDC24D7		

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.
- The life expectancy of CNDC-Z speed products at rated voltage and in continuous operation is 30,000 hours at 60°C. (40,000 hours for other products)

General specification

With Spacer	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	40 to a carton of (450 x 380 x 300) mm, mass 12 kg

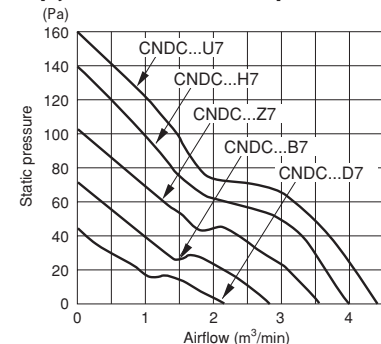
●Venturi shape



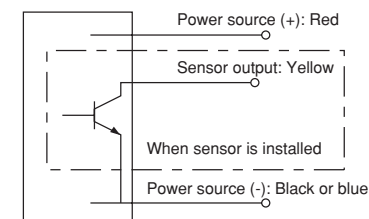
Use the reinforced product with spacer when the venturi is mounted with screws. (The spacer is indicated in the model code by the letter 'V'.)

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



Wiring connection diagram

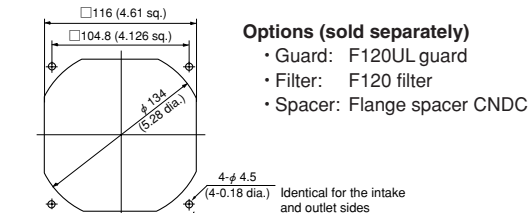


DC axial fan with sensor

Rated Vol.	Model Code		
12 V	CNDC12D7S	CNDC12B7S	CNDC12Z7S
	CNDC12D7P	CNDC12B7P	CNDC12Z7VS CNDC12Z7P
24 V		CNDC24B7S	CNDC24Z7S
	CNDC24D7S	CNDC24B7VS	
	CNDC24D7VS	CNDC24B7P	
	CNDC24D7P	CNDC24B7Q	CNDC24Z7P
48 V	CNDC24D7Q	CNDC24B7SQ	CNDC24Z7Q
		CNDC48B7S	CNDC48Z7S
		CNDC48B7P	CNDC48Z7P

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
- An electronic version of the Japan Servo catalog can be forwarded upon request. 3D data is also available at our web2-CAD site (www.web2cad.co.jp).

Mounting hole dimensions in mm (inches)
[Recommendation]



DC Axial Fan
D1238T



□120×38 (□4.7"×1.5")
Max. airflow: 4.4 m³/min
Max. static pressure: 160 Pa
Mass: 290 g

Features

- Power saving
- Low noise
- High airflow models, featuring an aerodynamic design inheriting the design concept of Silent Fans and incorporating a newly developed high-efficiency motor.
- Interchangeable with currently installed box fans.

Fan model code

D1238T12B6AZ-00

D1238T12B7AZ-00

D1238T24B7AP-00

D1238T24B7AS-00

D1238T24B7AZ-00

D1238T48B6AP-00

D1238T48B6AS-00

D1238T48B6AZ-00

D1238T48B7AP-00

D1238T48B7AS-00

D1238T48B7AZ-00

Standard specification

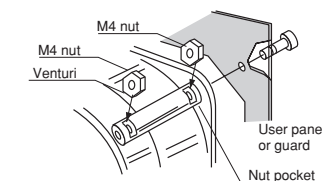
Max. Airflow m³/min	CFM	Max. Static Pressure Pa	Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
						Rating	Operating Range	Rating	Starting		
4.4	155	160	50	4000	10.0	12	8.4-13.8	830	1500	D1238T12B7AZ-00	-20 ~ +70
					11.7	24	18.0-27.6	490	1040	D1238T24B7AZ-00	
					11.0	48	33.6-55.2	230	350	D1238T48B7AZ-00	
4.0	141	130	47.5	3600	7.5	12	8.4-13.8	630	1050	D1238T12B6AZ-00	
					8.5	48	33.6-55.2	180	330	D1238T48B6AZ-00	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 48 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Overcurrent detection and automatic resetting by current limiting
Common Elec. Spec.	See pages G-11, G-12, G-13.

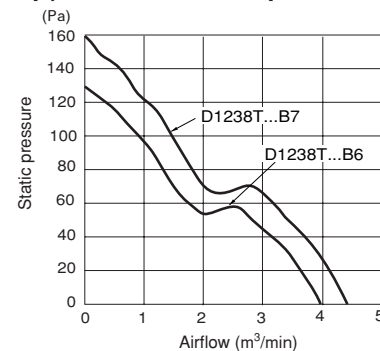
●Fan mounting



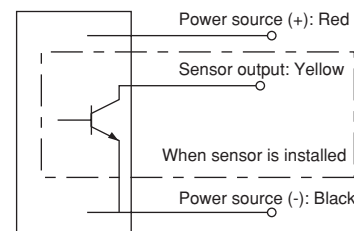
M4 nut pockets (2 each) provided in 4 places for easy mounting. (The customer is to provide nuts) Front guard can be mounted easily.

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]

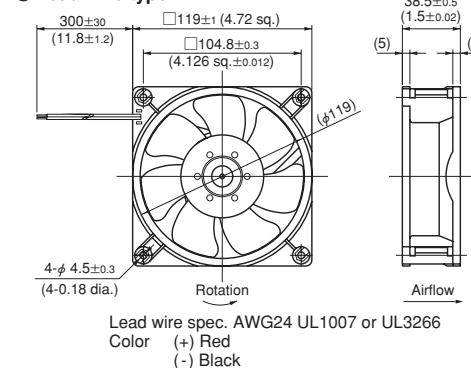


Wiring connection diagram

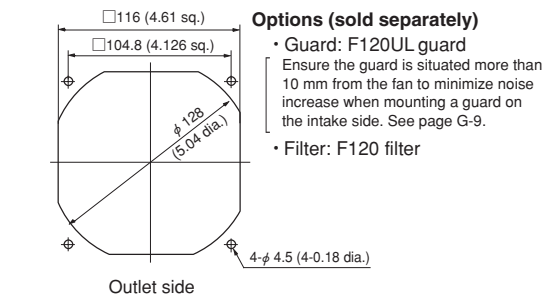


External dimensions in mm (inches)

● Lead wire type



Mounting hole dimensions in mm (inches)
[Recommendation]



Silent, low vibration and energy saving fans with a max. airflow of 2.8 m³/min can be customized (variable speed available only for 12 V specification). Contact Japan Servo for further information.

DC axial fan with sensor

Rated Vol.	Model Code	
12 V	D1238T12B6AS-00	D1238T12B7AS-00
	D1238T12B6AP-00	D1238T12B7AP-00
24 V		D1238T24B7AS-00
		D1238T24B7AP-00
48 V	D1238T48B6AS-00	D1238T48B7AS-00
	D1238T48B6AP-00	D1238T48B7AP-00

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
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DC Axial Fan

D1238B



□120×38 (□4.7"×1.5")
Max. airflow: 6.2 m³/min
Max. static pressure: 300 Pa
Mass: 430 g

Fan model code

D1238B12B7AP-00

D1238B12B7AS-00

D1238B12B7AZ-00

D1238B12B8AP-00

D1238B12B8AS-00

D1238B12B8AZ-00

D1238B12B9AP-00

D1238B12B9AS-00

D1238B12B9AZ-00

D1238B24B7AP-00

D1238B24B7AS-00

D1238B24B7AZ-00

D1238B24B8AP-00

D1238B24B8AS-00

D1238B24B8AZ-00

D1238B24B9AP-00

D1238B24B9AS-00

D1238B24B9AZ-00

D1238B48B7AP-00

D1238B48B7AZ-00

D1238B48B8AP-00

D1238B48B8AS-00

D1238B48B8AZ-00

D1238B48B9AP-00

D1238B48B9AS-00

D1238B48B9AZ-00

D1238B48BAAP-00

D1238B48BAAS-00

D1238B48BAAZ-00

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting		
6.2	219	300	5500	26.9	48	36-55.2	560		D1238B48BAAZ-00	-20 ~ +70
					12	8.4-13.8	1650		D1238B12B9AZ-00	
5.25	185	250	4900	19.7	24	16.8-27.6	820	2600	D1238B24B9AZ-00	
					48	36-55.2	400		D1238B48B9AZ-00	
					12	8.4-13.8	1200		D1238B12B8AZ-00	
4.8	169	185	4400	13.9	24	16.8-27.6	580		D1238B24B8AZ-00	
					48	36-55.2	320		D1238B48B8AZ-00	
					12	8.4-13.8	1200		D1238B12B7AZ-00	
4.4	155	160	4000	14.4	24	16.8-27.6	600	1600	D1238B24B7AZ-00	
					48	36-55.2	250		D1238B48B7AZ-00	
					12	8.4-13.8	1200		D1238B12B8AZ-00	

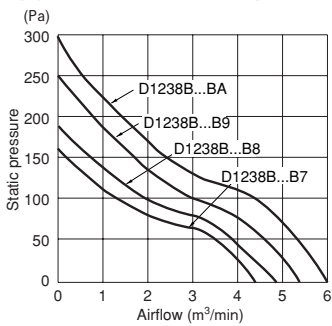
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: Aluminum alloy die castings Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Overcurrent detection and automatic resetting by current limiting
Common Elec. Spec.	See pages G-11, G-12, G-13.

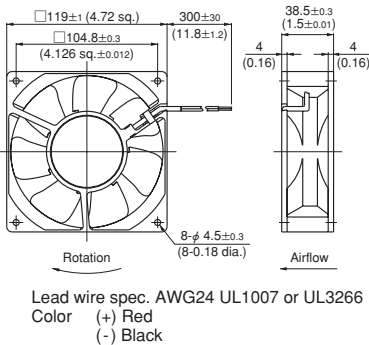
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



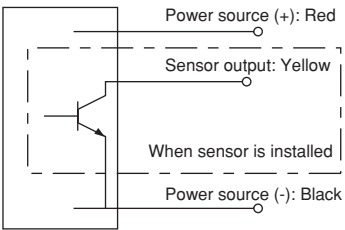
External dimensions in mm (inches)

● Lead wire type

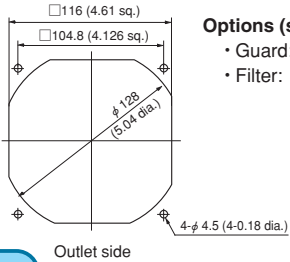


Lead wire spec. AWG24 UL1007 or UL3266
Color (+) Red
(-) Black

Wiring connection diagram



Mounting hole dimensions in mm (inches) [Recommendation]



Options (sold separately)
• Guard: F120UL guard
• Filter: F120 filter

Customized fans with a higher airflow are also available.
Please contact Japan Servo for more information.

DC axial fan with sensor

Rated Vol.	Model Code			
12 V	D1238B12B7AS-00	D1238B12B8AS-00	D1238B12B9AS-00	
	D1238B12B7AP-00	D1238B12B8AP-00	D1238B12B9AP-00	
24 V	D1238B24B7AS-00	D1238B24B8AS-00	D1238B24B9AS-00	
	D1238B24B7AP-00	D1238B24B8AP-00	D1238B24B9AP-00	
48 V	D1238B48B7AS-00	D1238B48B8AS-00	D1238B48B9AS-00	D1238B48BAAS-00
	D1238B48B7AP-00	D1238B48B8AP-00	D1238B48B9AP-00	D1238B48BAAP-00

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DC Axial Fan

D1338B



□127×38 (□5.0"×1.5")
Max. airflow: 5.8 m³/min
Max. static pressure: 185 Pa
Mass: 410 g

Fan model code

D1338B12B6AP-00

D1338B12B6AS-00

D1338B12B6AZ-00

D1338B12B7AP-00

D1338B12B7AS-00

D1338B12B7AZ-00

D1338B12B8AP-00

D1338B12B8AS-00

D1338B12B8AZ-00

D1338B24B6AP-00

D1338B24B6AS-00

D1338B24B6AZ-00

D1338B24B7AP-00

D1338B24B7AS-00

D1338B24B7AZ-00

D1338B24B8AP-00

D1338B24B8AS-00

D1338B24B8AZ-00

D1338B48B6AP-00

D1338B48B6AS-00

D1338B48B6AZ-00

D1338B48B7AP-00

D1338B48B7AS-00

D1338B48B7AZ-00

D1338B48B8AP-00

D1338B48B8AS-00

D1338B48B8AZ-00

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting		
5.8	205	185	4500	19.8	12	8.4-13.8	1650		D1338B12B8AZ-00	-20 ~ +70
					24	16.8-27.6	820		D1338B24B8AZ-00	
					48	36-55.2	440		D1338B48B8AZ-00	
5	177	150	3900	16.2	12	8.4-13.8	1350		D1338B12B7AZ-00	
					24	16.8-27.6	650		D1338B24B7AZ-00	
					48	36-55.2	350		D1338B48B7AZ-00	
4.6	162	130	3400	12.0	12	8.4-13.8	1000		D1338B12B6AZ-00	
					24	16.8-27.6	500		D1338B24B6AZ-00	
					48	36-55.2	250		D1338B48B6AZ-00	

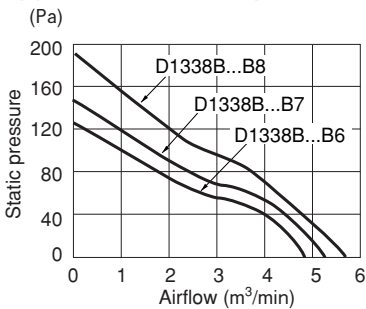
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: Aluminum alloy die castings Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Overcurrent detection and automatic resetting by current limiting
Common Elec. Spec.	See pages G-11, G-12, G-13.

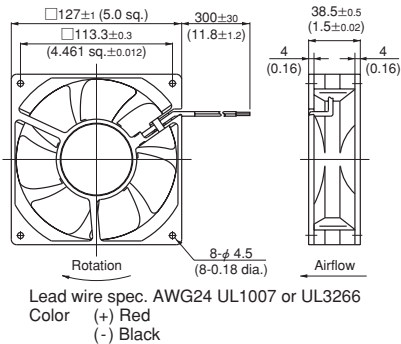
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



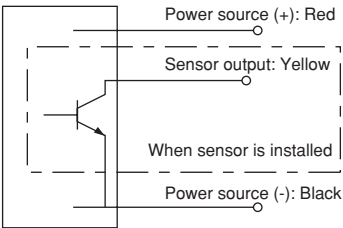
External dimensions in mm (inches)

● Lead wire type

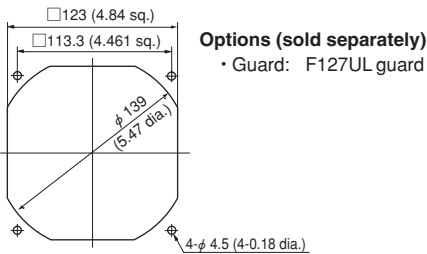


Lead wire spec. AWG24 UL1007 or UL3266
Color (+) Red
(-) Black

Wiring connection diagram



Mounting hole dimensions in mm (inches) [Recommendation]



Options (sold separately)
• Guard: F127UL guard

DC axial fan with sensor

Rated Vol.	Model Code			
12 V	D1338B12B6AS-00	D1338B12B7AS-00	D1338B12B8AS-00	
	D1338B12B6AP-00	D1338B12B7AP-00	D1338B12B8AP-00	
24 V	D1338B24B6AS-00	D1338B24B7AS-00	D1338B24B8AS-00	
	D1338B24B6AP-00	D1338B24B7AP-00	D1338B24B8AP-00	
48 V	D1338B48B7AS-00	D1338B48B8AS-00		
	D1338B48B7AP-00	D1338B48B8AP-00		

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
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DC Axial Fan
DC MAXI III



$\phi 172 \times 150 \times 51$
($\phi 6.8'' \times 6.0'' \times 2.0''$)
Max. airflow: 10.2 m³/min
Max. static pressure: 380 Pa
Mass: 0.8 kg

Fan model code
MADC12B4
MADC12D4
MADC12H7
MADC12H7P
MADC12H7S
MADC12Z4
MADC12Z4P
MADC24B4
MADC24B4P
MADC24B4Q
MADC24B4SQ
MADC24D4
MADC24D4Q
MADC24H7
MADC24Z4
MADC24Z4P
MADC24Z4Q
MADC24Z4SQ
MADC48B4
MADC48B4P
MADC48H4
MADC48S7
MADC48S7S
MADC48S7Q
MADC48U7
MADC48Z4
MADC48Z4P
MADC48Z4SQ

Standard specification

Max. Airflow m ³ /min	CFM	Max. Static Pressure Pa	inH ₂ O	Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
							Rating	Operating Range	Rating	Starting		
10.2	360	380	1.53	64	4800	47.5	48	40.8-55.2	990	2600	MADC48S7	-20 ~ +60
9	318	290	1.17	61	4200	33.6	48	40.8-55.2	700	2600	MADC48U7	
8	282	235	0.95	57	3800	30	12	8.4-13.8	2500	5800	MADC12H7	
						25.2	24	12-27.6	1050	2700	MADC24H7	
						28.8	48	40.8-55.2	600	1100	MADC48H4	
						12	8.4-13.8	1500			MADC12Z4	
6.8	240	176	0.71	54	3200	19	24	12-27.6	790		MADC24Z4	
						48	28.8-55.2	400			MADC48Z4	
						12	8.4-13.8	1080			MADC12B4	
5.8	205	140	0.56	49.5	2800	13	24	12-27.6	540		MADC24B4	
						48	28.8-55.2	270			MADC48B4	
						12	8.4-13.8	420			MADC12D4	
4.2	148	69	0.28	42	2000	5	24	12-27.6	210		MADC24D4	

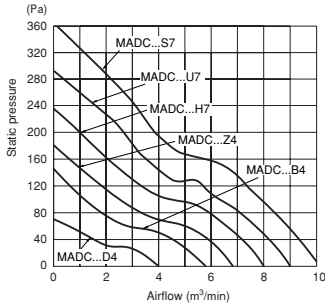
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.

General specification

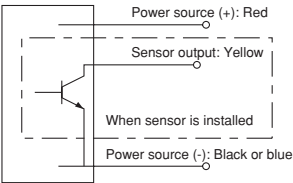
Materials Used	Venturi: Aluminum alloy die castings Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Overcurrent detection and automatic resetting by current limiting
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	12 to a carton of (450 x 380 x 220) mm, mass 10 kg

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



Wiring connection diagram



DC axial fan with sensor

Rated Vol.	Model Code			
12 V			MADC12Z4P	MADC12H7S MADC12H7P
24 V	MADC24D4Q	MADC24B4P MADC24B4Q MADC24B4SQ	MADC24Z4P MADC24Z4Q MADC24Z4SQ	
48 V		MADC48B4P	MADC48Z4P MADC48Z4SQ	MADC48S7S MADC48S7Q

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DC Axial Fan
DC PARKY III



$\phi 172 \times 51$
($\phi 6.8'' \times 2.0''$)
Max. airflow: 10.2 m³/min
Max. static pressure: 380 Pa
Mass: 0.8 kg

Fan model code
PADC12B4
PADC12D4
PADC12H7
PADC12Z4
PADC12Z4P
PADC24B4
PADC24B4P
PADC24B4Q
PADC24B4S
PADC24D4
PADC24H7
PADC24H7Q
PADC24Z4
PADC24Z4P
PADC24Z4Q
PADC24Z4S
PADC48B4
PADC48H4
PADC48S7
PADC48U7
PADC48Z4

Standard specification

Max. Airflow m ³ /min	CFM	Max. Static Pressure Pa	inH ₂ O	Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
							Rating	Operating Range	Rating	Starting		
10.2	360	380	1.53	62	4800	47.5	48	40.8-55.2	990	2600	PADC48S7	-20 ~ +60
9	318	290	1.17	59	4200	33.6	48	40.8-55.2	700	2600	PADC48U7	
8	282	235	0.95	55	3800	30	12	8.4-13.8	2500	5800	PADC12H7	
						25.2	24	12-27.6	1050	2760	PADC24H7	
						28.8	48	40.8-55.2	600	1100	PADC48H4	
						12	8.4-13.8	1500			PADC12Z4	
6.8	240	176	0.71	50	3200	19	24	12-27.6	790		PADC24Z4	
						48	28.8-55.2	400			PADC48Z4	
						12	8.4-13.8	1080			PADC12B4	
5.8	205	140	0.56	46	2800	13	24	12-27.6	540		PADC24B4	
						48	28.8-55.2	270			PADC48B4	
						12	8.4-13.8	420			PADC12D4	
4.2	148	69	0.28	39	2000	5	24	12-27.6	210		PADC24D4	

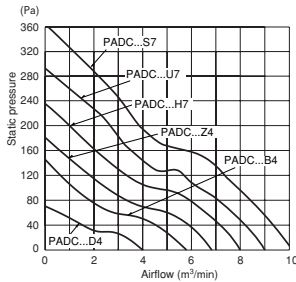
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V, 24 V or 48 V), and normal temperature and humidity.

General specification

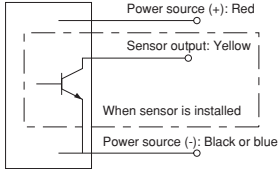
Materials Used	Venturi: Aluminum alloy die castings Propeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Overcurrent detection and automatic resetting by current limiting
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	12 to a carton of (450 x 380 x 220) mm, mass 10.5 kg

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



Wiring connection diagram



The PADC series is being revised to the D1751S series in the near future.
The new series of fans feature a max. airflow of 14 m³/min and a noise reduction of 3 dB. Please contact Japan Servo for more information.

DC axial fan with sensor

Rated Vol.	Model Code		
12 V		PADC12Z4P	
24 V	PADC24B4S PADC24B4P PADC24B4Q	PADC24Z4S PADC24Z4P PADC24Z4Q	PADC24H7Q

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DC Axial Fan
Fixed Blade Type
G0938B



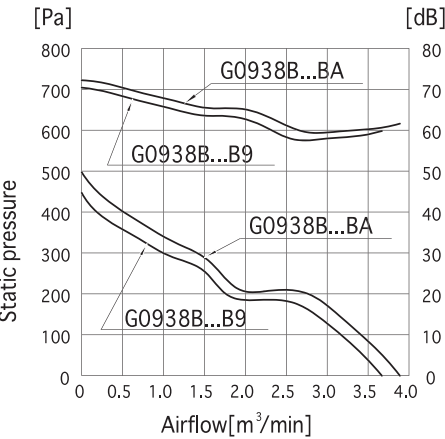
□ 92 × 38 (□ 3.62" × 1.5")
Max. airflow : 3.9 m³/min
Max. static pressure : 490 Pa
Mass : 320 g

Fan model code
G0938B12BAZP-00
G0938B24BAZP-00
G0938B48BAZP-00
G0938B12B9ZP-00
G0938B24B9ZP-00
G0938B48B9ZP-00

Standard specification

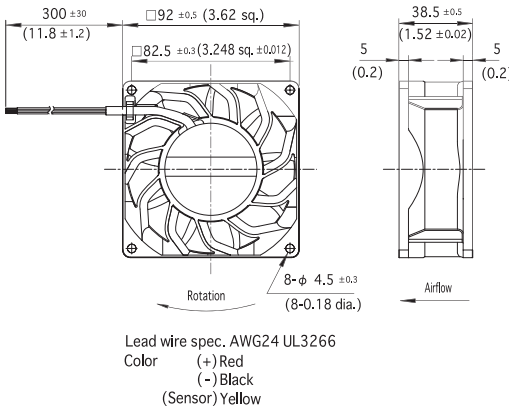
Max. airflow m ³ /min	CFM	Max. static pressure Pa	inH ₂ O	Noise dB	Speed min ⁻¹	Voltage spec. V		Current mA		Model code	Operating temp. range °C
						Rating	Operating Range	Rating	Starting		
3.9	138	490	1.97	63	7500	12	8.4-13.2	2600	4900	G0938B12BAZP-00	-20 ~ +60
						24	16.8-26.4	1300	2700	G0938B24BAZP-00	
						48	36-52.8	610	1360	G0938B48BAZP-00	
3.6	127	440	1.77	61	7000	12	8.4-13.8	2000	4600	G0938B12B9ZP-00	
						24	16.8-27.6	1000	2600	G0938B24B9ZP-00	
						48	36-55.2	520	1100	G0938B48B9ZP-00	

Standard airflow and static pressure characteristics (At rated voltage)

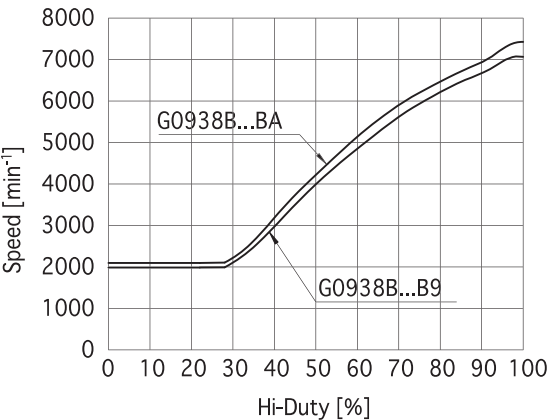


External dimensions in mm (inches)

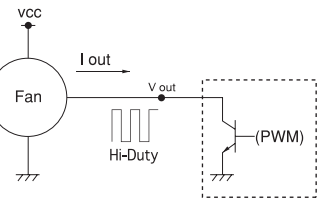
Lead wire type



PWM speed control specification



SPECIFICAION OF PWM PORT



AMB. TEMPERATURE: 25 deg °C
INPUT: RATED VOLT
LOAD: FREEAIR CONDITION
I_{out} 1 mA Max
V_{out} 5 V Max
V_{Lo} sat 0.5 V Max
CONTROL FREQUENCY
500 Hz ~ 5000 Hz

For cooling and/or ventilating in electronic cabinets which have high resistance to air flow (system impedance).
The G0938 is designed using a digital analysis system to maximize cooling efficiency and minimize noise during operation.
Uniquely formed fixed blades designed by digital engineering:
• Controls spread of air stream.
• When two G0938 fans are stacked, the static pressure is almost doubled.
It is suitable for use in highly reliable/redundant designs; the trend of cooling systems.

● To ensure correct installation and smooth operation please obtain a drawing for approval or reference drawing from Japan Servo Co.

DC Axial Fan
Fixed Blade Type
G1238B



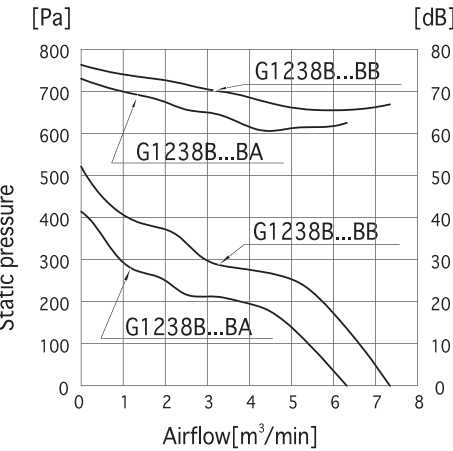
□ 120 × 38 (□ 4.75" × 1.5")
Max. airflow : 7.4 m³/min
Max. static pressure : 520 Pa
Mass : 480 g

Fan model code
G1238B12BBZP-00
G1238B24BBZP-00
G1238B48BBZP-00
G1238B24BAZP-00
G1238B48BAZP-00

Standard specification

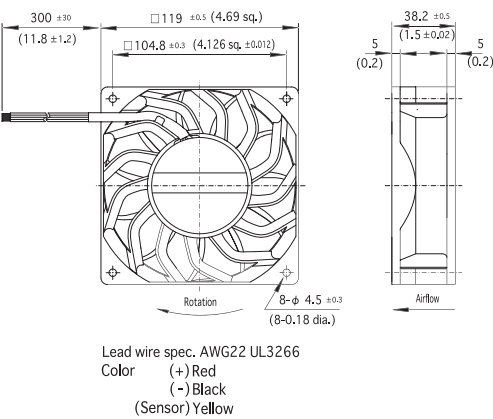
Max. airflow m ³ /min	CFM	Max. static pressure Pa	inH ₂ O	Noise dB	Speed min ⁻¹	Voltage spec. V		Current mA		Model code	Operating temp. range °C
						Rating	Operating Range	Rating	Starting		
7.4	261	520	2.09	67	6300	12	9.6-13.8	4450	6100	G1238B12BBZP-00	-20 ~ +60
						24	16.8-27.6	2200	3100	G1238B24BBZP-00	
						48	36-55.2	1100	1600	G1238B48BBZP-00	
6.3	223	415	1.67	64	5300	24	16.8-27.6	1300	2000	G1238B24BAZP-00	-20 ~ +70
						48	36-55.2	660	970	G1238B48BAZP-00	

Standard airflow and static pressure characteristics (At rated voltage)

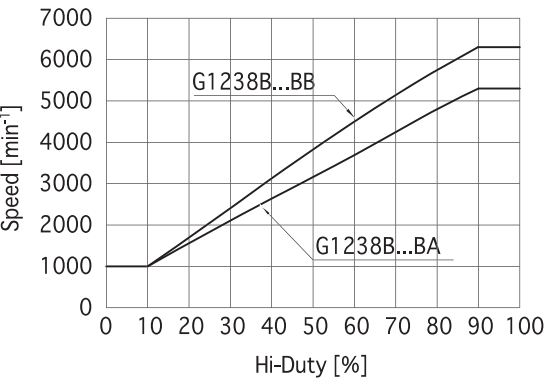


External dimensions in mm (inches)

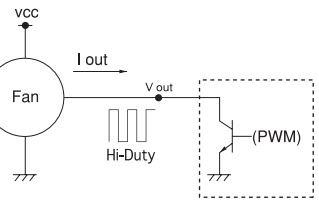
Lead wire type



PWM speed control specification



SPECIFICAION OF PWM PORT



AMB. TEMPERATURE: 25 deg °C
INPUT: RATED VOLT
LOAD: FREEAIR CONDITION
I_{out} 1 mA Max
V_{out} 5 V Max
V_{Lo} sat 0.5 V Max
CONTROL FREQUENCY
500 Hz ~ 5000 Hz

For cooling and/or ventilating in electronic cabinets which have high resistance to air flow (system impedance).
The G1238 is designed using a digital analysis system to maximize cooling efficiency and minimize noise during operation.
Uniquely formed fixed blades designed by digital engineering:
• Controls spread of air stream.
• When two G1238 fans are stacked, the static pressure is almost doubled.
It is suitable for use in highly reliable/redundant designs; the trend of cooling systems.

● To ensure correct installation and smooth operation please obtain a drawing for approval or reference drawing from Japan Servo Co.

Super Silent Blowers

E0525H/K



48×25 (1.9"×1.0")
Max. airflow: 0.22 m³/min
Max. static pressure: 220 Pa
Mass: 50 g

Features

- The smaller 48 mm square blower gives as much airflow output as a larger 70 mm square blower while maintaining the same low noise level.
- Both clockwise and counterclockwise discharge (mirror-image) versions are available.

Fan model code

E0525H12B7AP-00
E0525H12B7AS-00
E0525H12B7AZ-00
E0525H24B7AZ-00
E0525K12B7AP-00
E0525K12B7AS-00
E0525K12B7AZ-00
E0525K24B7AZ-00

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
				Rating	Operating Range	Rating	Starting		
0.22	7.8	42.5	6700	12	4.5-13.8	230	530	E0525H12B7AZ-00 E0525K12B7AZ-00 E0525H24B7AZ-00 E0525K24B7AZ-00	-20 ~ +70
				24	9.6-27.6	110	280		

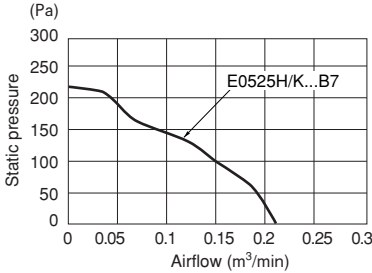
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.

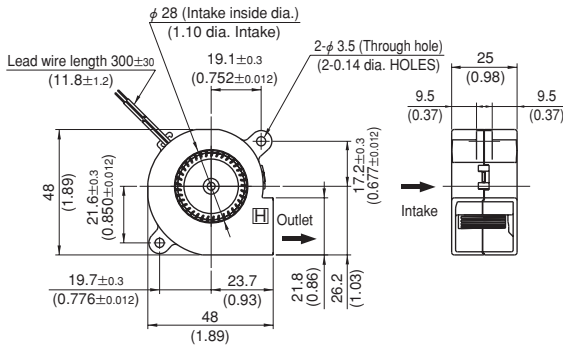
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



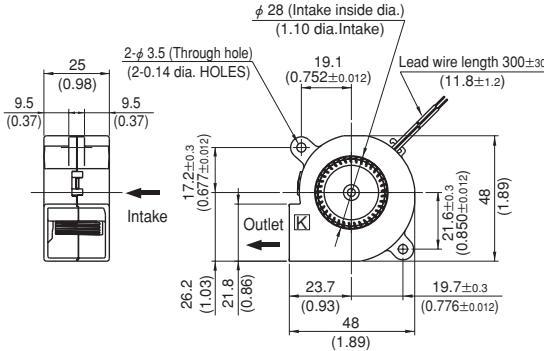
External dimensions in mm (inches)

Lead wire type (E0525H)



Lead wire spec. UL3265 AWG26
Color (+) Red
(-) Black

Lead wire type (E0525K)



Super silent blower with sensor

Rated Vol.	Model Code
12 V	E0525H12B7AS-00
	E0525K12B7AS-00
	E0525H12B7AP-00
	E0525K12B7AP-00

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, TUV: R50004410

DC Centrifugal
Blowers

E0515H



51×15 (2.0"×0.6")
Max. airflow: 0.125 m³/min
Max. static pressure: 210 Pa
Mass: 30 g

Fan model code

E0515H12B3AZ-00
E0515H12B5AZ-00
E0515H12B7APA01
E0515H12B7ASA01
E0515H12B7AZA01
E0515H12B8APA01
E0515H12B8ASA01
E0515H12B8AZA01
E0515H24B5AZ-00
E0515H24B7APA01
E0515H24B7ASA01
E0515H24B7AZA01
E0515H24B8APA01
E0515H24B8ASA01
E0515H24B8AZA01

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
					Rating	Operating Range	Rating	Starting		
0.125	4.4	210	6100	2.3	12	6-13.8	190	320	E0515H12B8AZA01	-20 ~ +60
					24	12-27.6	100	160	E0515H24B8AZA01	
0.11	3.9	165	5500	1.7	12	6-13.8	140	225	E0515H12B7AZA01	-20 ~ +80
				1.9	24	12-27.6	80	130	E0515H24B7AZA01	
0.1	3.5	135	5000	1.4	12	9.6-13.8	120	190	E0515H12B5AZ-00	-20 ~ +60
				1.4	24	16.8-27.6	60	110	E0515H24B5AZ-00	
0.09	3.2	110	4500	1.1	12	9.6-13.8	90	150	E0515H12B3AZ-00	

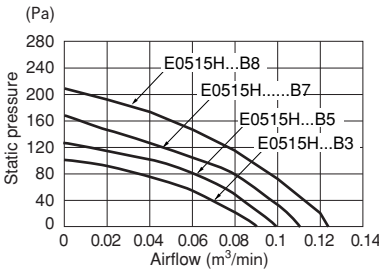
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.
- Life expectancy of the E0515H series in continuous operation at rated voltage is 15,000 hours at an operating temperature of 60 °C

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.

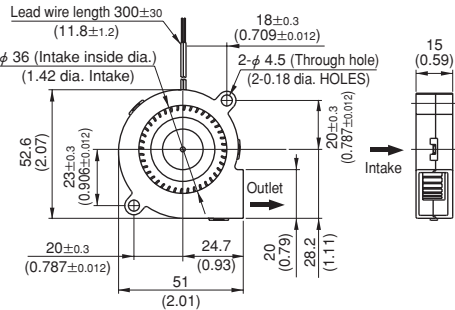
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



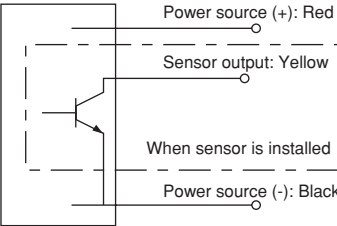
External dimensions in mm (inches)

Lead wire type



Lead wire spec. AWG26 or UL3265 AWG26
Color (+) Red
(-) Black (CNDCE04: Blue)

Wiring connection diagram



DC centrifugal blower with sensor

Rated Vol.	Model Code	
12 V	E0515H12B7ASA01	E0515H12B8ASA01
	E0515H12B7APA01	E0515H12B8APA01
24 V	E0515H24B7ASA01	E0515H24B8ASA01
	E0515H24B7APA01	E0515H24B8APA01

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
- An electronic version of the Japan Servo catalog can be forwarded upon request. 3D data is also available at our web2-CAD site (www.web2cad.co.jp).

Super Silent Blowers

E0720H



70×20 (2.8"×0.8")
Max. airflow: 0.29 m³/min
Max. static pressure: 300 Pa
Mass: 50 g

Fan model code
E0720H12B5AP-00
E0720H12B5AS-00
E0720H12B5AZ-00
E0720H12B7AP-00
E0720H12B7AS-00
E0720H12B7AZ-00
E0720H12B7CZ-00
E0720H12B8AP-00
E0720H12B8AS-00
E0720H12B8AZ-00
E0720H24B5AZ-00
E0720H24B7AZ-00
E0720H24B8AP-00
E0720H24B8AS-00
E0720H24B8AZ-00

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
				Rating	Operating Range	Rating	Starting		
0.29	10.2	300	4750	12	5-13.8	300	580	E0720H12B8AZ-00	-20 ~ +70
				24	10-27.6	140	270	E0720H24B8AZ-00	
0.27	9.5	250	4400	12	5-13.8	240	480	E0720H12B7AZ-00	
				24	10-27.6	120	240	E0720H24B7AZ-00	
0.25	8.8	210	4050	12	5.5-13.8	200	390	E0720H12B5AZ-00	
				24	10-27.6	100	200	E0720H24B5AZ-00	

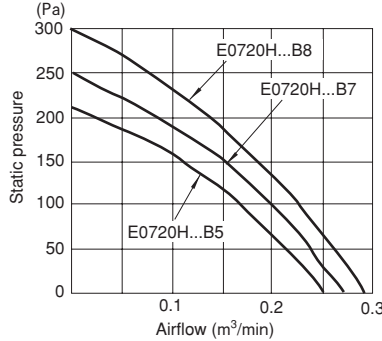
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.
- Life expectancy of the E0720H-8 series in continuous operation at rated voltage is 20,000 hours at an operating temperature of 60°C. (25,000 hours for other products)

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	150 to a carton of (450 x 380 x 295) mm, mass 8 kg

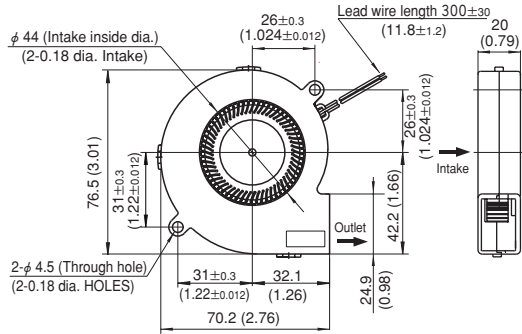
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



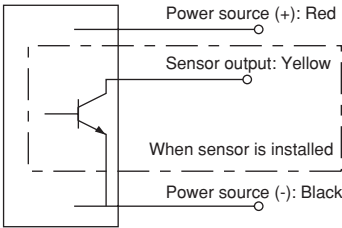
External dimensions in mm (inches)

- Lead wire type



Lead wire spec. AWG26 UL3265
Color (+) Red
(-) Black (CNDC□D4: Blue)

Wiring connection diagram



Super silent blower with sensor

Rated Vol.	Model Code		
12 V	E0720H12B5AS-00	E0720H12B7AS-00	E0720H12B8AS-00
			E0720H12B8AP-00
24 V	E0720H12B5AP-00	E0720H12B7AP-00	E0720H24B8AS-00
			E0720H24B8AP-00

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
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Super Silent Blowers

E0720L



72×20 (2.8"×0.8")
Max. airflow: 0.31 m³/min
Max. static pressure: 265 Pa
Mass: 50 g

Features

- Dimensions almost equivalent to those of E0720H, yet features higher airflow and lower noise.
- Suitable for equipment that prioritizes high airflow over high static pressure.

Fan model code

E0720L12B5AZ-00
E0720L12B7AZ-00
E0720L12B8AP-00
E0720L12B8AS-00
E0720L12B8AZ-00

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
				Rating	Operating Range	Rating	Starting		
0.31	10.9	265	41	4200		4.5-12.8	300	620	E0720L12B8AZ-00
0.30	10.6	245	0.98	4050	12	4.5-13.8	260	520	E0720L12B7AZ-00
0.27	9.5	190	0.76	3700		4.5-13.8	190	390	E0720L12B5AZ-00

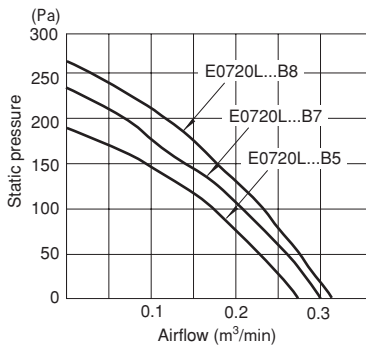
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V), and normal temperature and humidity.
- The life expectancy of E0720L-8 speed products at rated voltage and in continuous operation is 18,000 hours at 60°C. (25,000 hours for other products)

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	150 to a carton of (450 x 380 x 295) mm, mass 8 kg

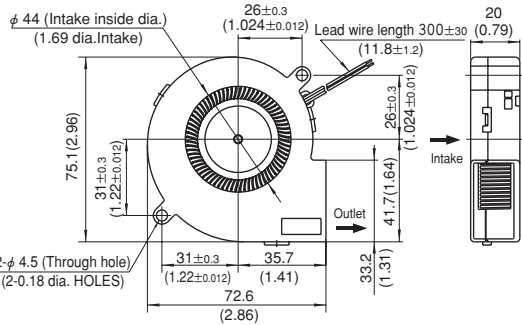
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



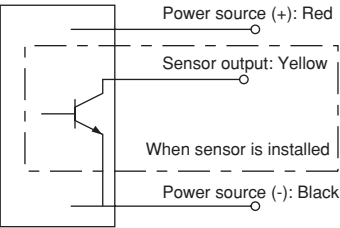
External dimensions in mm (inches)

- Lead wire type



Lead wire spec. AWG26 UL3265
Color (+) Red
(-) Black

Wiring connection diagram



Super silent blower with sensor

Rated Vol.	Model Code
12 V	E0720L12B8AS-00
	E0720L12B8AP-00

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Brushless
DC Fans & Blowers

DC Centrifugal
Blowers

SMB BLOWER



76×25 (3.0"×1.0")
Max. airflow: 0.33 m³/min
Max. static pressure: 180 Pa
Mass: 95 g

Fan model code

SMBD12B4
SMBD12B4P
SMBD12B4S
SMBD12H4
SMBD12H4C
SMBD12H4P
SMBD12H4S
SMBD12Z4
SMBD12Z4P
SMBD12Z4S
SMBD24B4
SMBD24B4S
SMBD24H4
SMBD24H4P
SMBD24H4S
SMBD24Z4
SMBD24Z4S

SMBD series 76 × 25 mm

Standard specification

Max. Airflow m³/min	CFM	Max. Static Pressure		Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
		Pa	inH ₂ O				Rating	Operating Range	Rating	Starting		
0.33	11.6	180	0.72	48	4500	4.0	12	7.2-13.8	330	820	SMBD12H4	-20 ~ +60
						4.4	24	12-27.6	190	440	SMBD24H4	
0.27	9.5	118	0.47	43	3800	2.7	12	7.2-13.8	230	550	SMBD12Z4	
						24	24	12-27.6	120	350	SMBD24Z4	
0.24	8.5	88	0.35	41	3400	2.2	12	7.2-13.8	180	450	SMBD12B4	
						24	24	12-27.6	90	250	SMBD24B4	

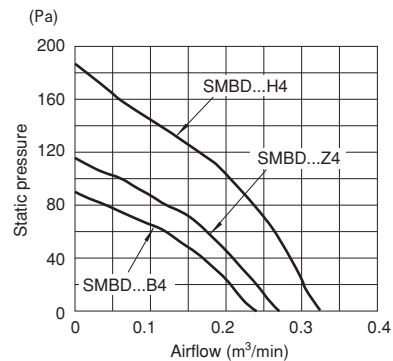
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

General specification

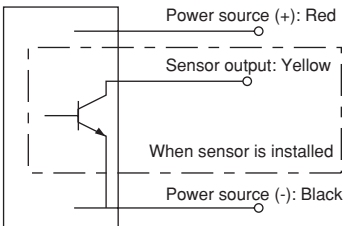
Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	120 to a carton of (450 x 380 x 300) mm, mass 9 kg

Standard airflow and static pressure
characteristics (At rated voltage)

[By double chamber method]



Wiring connection diagram



DC centrifugal blower with sensor

Rated Vol.	Model Code		
12 V	SMBD12B4S	SMBD12Z4S	SMBD12H4S
	SMBD12B4P	SMBD12Z4P	SMBD12H4P
24 V	SMBD24B4S	SMBD24Z4S	SMBD24H4S
			SMBD24H4P

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Brushless
DC Fans & Blowers

DC Centrifugal
Blowers

MB BLOWER



76×30 (3.0"×1.2")
Max. airflow: 0.33 m³/min
Max. static pressure: 172 Pa
Mass: 105 g

Fan model code

MBDC12B4
MBDC12B4S
MBDC12H4
MBDC12H4S
MBDC12Z4
MBDC12Z4P
MBDC12Z4S
MBDC24B4
MBDC24B4S
MBDC24Z4
MBDC24Z4S

MBDC series 76 × 30 mm

Standard specification

Max. Airflow m³/min	CFM	Max. Static Pressure		Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
		Pa	inH ₂ O				Rating	Operating Range	Rating	Starting		
0.33	11.6	172	0.69	47	4200	4.6	12	7.2-13.8	380	820	MBDC12H4	-20 ~ +60
							24	12-27.6	140	350	MBDC24Z4	
0.29	10.2	117	0.47	41	3400	3.1	12	7.2-13.8	250	550	MBDC12Z4	
							24	12-27.6	140	350	MBDC24Z4	
0.25	8.8	83	0.33	38	3000	2.5	12	7.2-13.8	200	450	MBDC12B4	
							24	12-27.6	110	250	MBDC24B4	

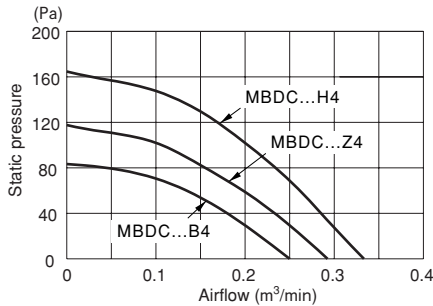
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

General specification

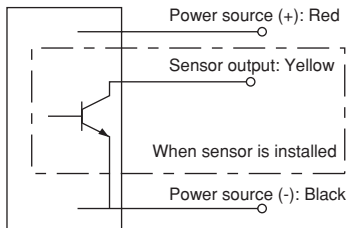
Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	120 to a carton of (450 x 380 x 300) mm, mass 13 kg

Standard airflow and static pressure
characteristics (At rated voltage)

[By double chamber method]



Wiring connection diagram



DC centrifugal blower with sensor

Rated Vol.	Model Code		
12 V	MBDC12B4S	MBDC12Z4S	MBDC12H4S
		MBDC12Z4P	
24 V	MBDC24B4S	MBDC24Z4S	

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- Customizing to the sleeve bearing specification also accepted depending on the intended purchase quantity. Contact Japan Servo for further information.
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Super Silent Blowers

E0818K



□87×18 (□3.4"×0.7")
Max. airflow: 0.26 m³/min
Max. static pressure: 240 Pa
Mass: 60 g

Fan model code
E0818K12B5AZ-00

Standard specification

Max. Airflow		Max. Static Pressure		Noise dB	Speed min ⁻¹	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
						Rating	Operating Range	Rating	Starting		
0.26	9.2	240	0.96	38	3100	12	4.5-13.2	210	410	E0818K12B5AZ-00	-20 ~ +70

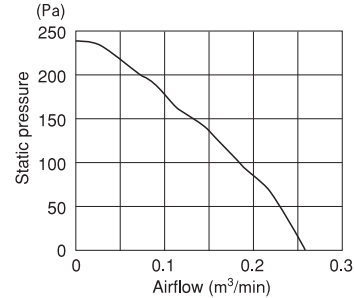
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.

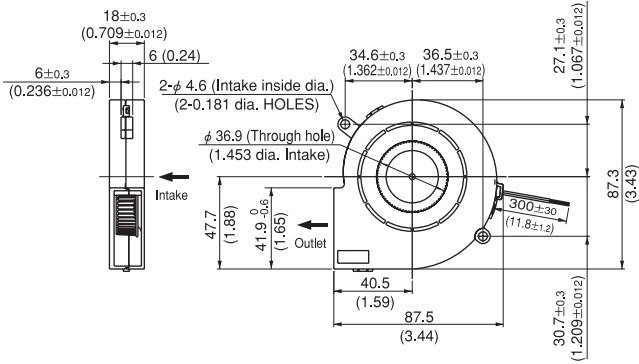
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



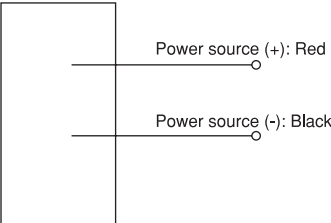
External dimensions in mm (inches)

Lead wire type



Lead wire spec. AWG26 UL3265
Color (+) Red
(-) Black

Wiring connection diagram



DC Centrifugal
Blowers

SFB BLOWER



□94×30 (□3.7"×1.2")
Max. airflow: 0.65 m³/min
Max. static pressure: 280 Pa
Mass: 135 g

Fan model code
SFBD12B4
SFBD12B4P
SFBD12B4S
SFBD12H7
SFBD12H7P
SFBD12H7S
SFBD12Z7
SFBD12Z7P
SFBD12Z7S
SFBD24B4
SFBD24B4S
SFBD24H7
SFBD24H7C
SFBD24H7P
SFBD24H7S
SFBD24Z7
SFBD24Z7P
SFBD24Z7S

Standard specification

Max. Airflow		Max. Static Pressure		Noise dB	Speed min ⁻¹	Input W	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
							Rating	Operating Range	Rating	Starting		
0.65	23	280	1.13	53	3900	7.8	12	7.2-13.8	650	1600	SFBD12H7	-20 ~ +60
						7.9	24	12-27.6	330	810	SFBD24H7	
0.56	20	200	0.80	49	3300	5.0	12	7.2-13.8	440	1120	SFBD12Z7	
						5.5	24	12-27.6	300	600	SFBD24Z7	
0.44	16	120	0.48	45	2700	3.5	12	7.2-13.8	290	630	SFBD12B4	
							24	12-27.6	150	330	SFBD24B4	

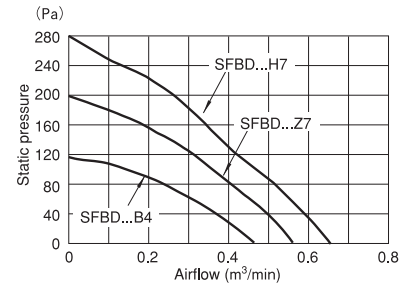
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.
- The life expectancy of SFBD-H speed products at rated voltage and in continuous operation is 30,000 hours at 60 °C. (40,000 hours for other products)

General specification

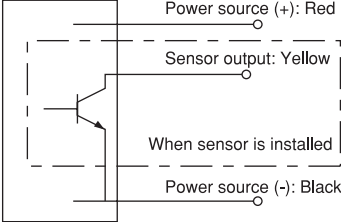
Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	60 to a carton of (450 x 380 x 220) mm, mass 9 kg

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



Wiring connection diagram



DC centrifugal blower with sensor

Rated Vol.	Model Code		
12 V	SFBD12B4S	SFBD12Z7S	SFBD12H7S
	SFBD12B4P	SFBD12Z7P	SFBD12H7P
24 V	SFBD24B4S	SFBD24Z7S	SFBD24H7S
	SFBD24B4P	SFBD24Z7P	SFBD24H7P

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- Customizing to the sleeve bearing specification also accepted depending on the intended purchase quantity. Contact Japan Servo for further information.
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Brushless
DC Fans & Blowers

Super Silent Fan

E1027H



□97×25 (□3.8"×1.0")
Max. airflow: 0.78 m³/min
Max. static pressure: 520 Pa
Mass: 125 g (~8), 150 g (~A)

Fan model code

E1027H12B7AP-00

E1027H12B7AS-00

E1027H12B7AZ-00

E1027H12B8AZ-00

E1027H12BAAZ-00

E1027H series 97 × 95 × 25 mm

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH ₂ O	Noise dB	Speed min ⁻¹	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
				Rating	Operating Range	Rating	Starting		
0.78	28	520	5000	12	8.4-13.8	1000	2200	E1027H12BAAZ-00	-20 ~ +60
0.64	23	390	4000		5.0-13.2	780	2400	E1027H12B8AZ-00	
0.57	20	315	3600			550	1670	E1027H12B7AZ-00	

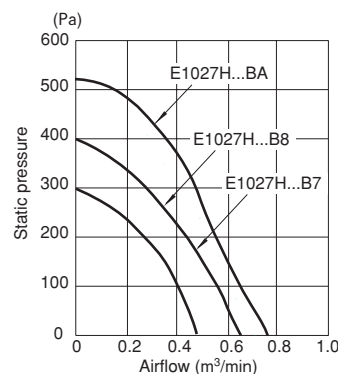
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.

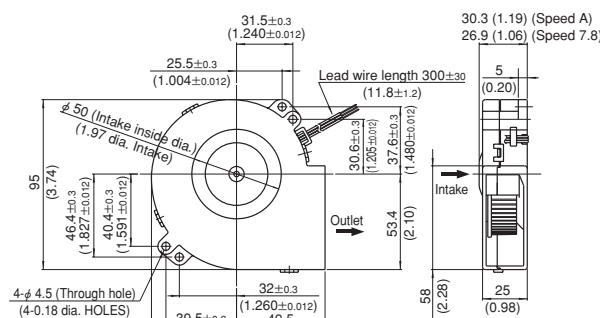
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



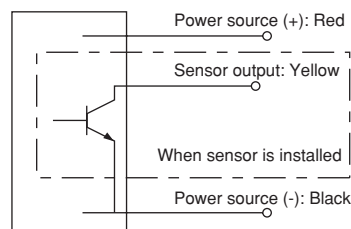
External dimensions in mm (inches)

● Lead wire type



Lead wire spec. AWG24 UL3266
Color (+) Red
(-) Black

Wiring connection diagram



Super silent fan with sensor

Rated Vol.	Model Code
12 V	E1027H12B7AS-00 E1027H12B7AP-00

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586

Brushless
DC Fans & Blowers

Super Silent Fan

E1033H/Y



□97×33 (□3.8"×1.3")
Max. airflow: 1.30 m³/min
Max. static pressure: 800 Pa
Mass: 140 g (~8), 160 g (~A),
170 g (~C)

Fan model code

E1033H12B5AM-04

E1033H12B6AM-04

E1033H12B7AZ-00

E1033H12B8AZ-00

E1033H12BAAZ-00

E1033H24B5AM-04

E1033H24B6AZ-00

E1033H24B7AZ-00

E1033H24B8AZ-00

E1033H24BAAZ-00

E1033Y12BBAP-00

E1033Y12BBAS-00

E1033Y12BBAZ-00

E1033Y12BCAP-00

E1033Y12BCAS-00

E1033Y12BCAZ-00

E1033Y24BBAP-00

E1033Y24BBAS-00

E1033Y24BBAZ-00

E1033Y24BCAP-00

E1033Y24BCAS-00

E1033Y24BCAZ-00

E1033H/Y series 97 × 95 × 33 mm

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH ₂ O	Noise dB	Speed min ⁻¹	Voltage spec. V		Current mA		Model Code	Operating Temp. Range °C
				Rating	Operating Range	Rating	Starting		
1.30	46	800	5800	12	8.4-13.2	1850	3430	E1033Y12BCAZ-00	-20 ~ +60
				24	12-26.4	900	2830	E1033Y24BCAZ-00	
1.19	42	630	5300	12	8.4-13.2	1450	3100	E1033Y12BBAZ-00	
				24	12-26.4	710	2700	E1033Y24BBAZ-00	
1.14	40	500	4850	12	8.4-13.2	1250	2100	E1033H12BAAZ-00	-20 ~ +70
				24	16-26.4	630	1850	E1033H24BAAZ-00	
0.85	30	320	3500	12	4.5-13.2	770	1950	E1033H12B8AZ-00	
				24	9-226.4	390	940	E1033H24B8AZ-00	
0.76	27	260	3100	12	5-13.2	590	1260	E1033H12B7AZ-00	
				24	10-26.4	300	710	E1033H24B7AZ-00	
0.64	23	185	2600	12	5-13.2	400	820	E1033H12B6AM-04	
				24	10-26.4	220	400	E1033H24B6AZ-00	
0.53	19	120	2200	12	5-13.8	250	500	E1033H12B5AM-04	
				24	10-26.4	120	260	E1033H24B5AM-04	

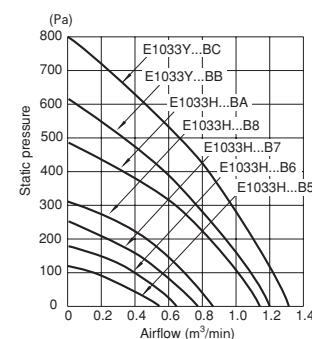
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

General specification

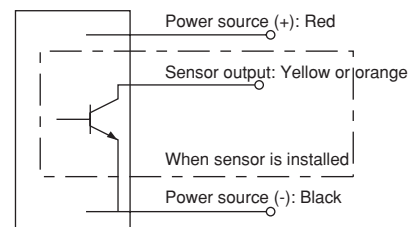
Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	50 to a carton of (450 x 380 x 220) mm, mass 8 kg

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



Wiring connection diagram



Super silent fan with sensor

Rated Vol.	Model Code			
12 V	E1033H12B5AM-04 (note 1)	E1033H12B6AM-04 (note 1)	E1033Y12BBAS-00 E1033Y12BBAP-00	E1033Y12BCAS-00 E1033Y12BCAP-00
24 V	E1033H24B5AM-04 (note 1)		E1033Y24BBAS-00 E1033Y24BBAP-00	E1033Y24BCAS-00 E1033Y24BCAP-00

- AM-04 becomes a lock detection sensor (S) type or pulse sensor (P) type in accordance with the connector connection method.
Note 1: Purchase a sensor output cord (See page G-74) optionally available or the customer shall provide a cord with equivalent specifications if a sensor function is desired.
- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586

Brushless
DC Fans & Blowers

E1232L series 119 × 117 × 32 mm

Super Silent Fan

E1232L



□119×32 (□4.7"×1.3")
Max. airflow: 1.13 m³/min
Max. static pressure: 460 Pa
Mass: 220 g

Fan model code

E1232L12B5AP-00
E1232L12B5AZ-00
E1232L12B6AZ-00
E1232L12B7AZ-00
E1232L12B9AZ-00
E1232L24B5AP-00
E1232L24B5AZ-00
E1232L24B6AZ-00
E1232L24B7AZ-00
E1232L24B9AZ-00

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
				Rating	Operating Range	Rating	Starting		
1.13	40	460	3800	12	8.4-13.2	1100	2100	E1232L12B9AZ-00	-20 ~ +60
				24	21.6-26.4	560	1900	E1232L24B9AZ-00	
0.91	32	320	3100	12	7.2-13.2	820	1800	E1232L12B7AZ-00	
				24	12-26.4	430	900	E1232L24B7AZ-00	
0.83	29	250	2750	12	7.2-13.2	560	1300	E1232L12B6AZ-00	
				24	12-26.4	310	700	E1232L24B6AZ-00	
0.75	26	200	2450	12	7.2-13.2	420	940	E1232L12B5AZ-00	-20 ~ +70
				24	12-26.4	250	490	E1232L24B5AZ-00	

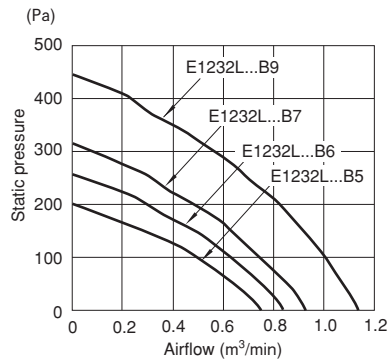
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.
- The life expectancy of E1232L-7, 9 speed products at rated voltage and in continuous operation is 30,000 hours at 60°C. (40,000 hours for other products)

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.

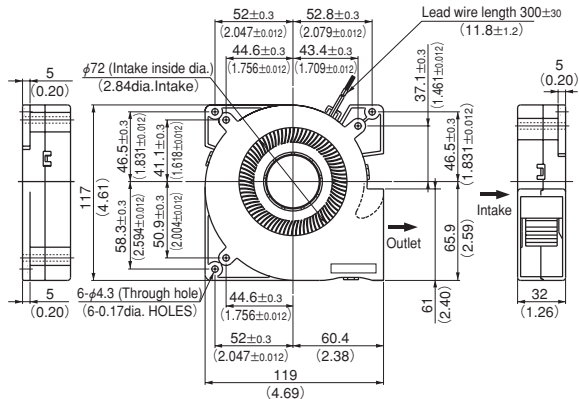
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



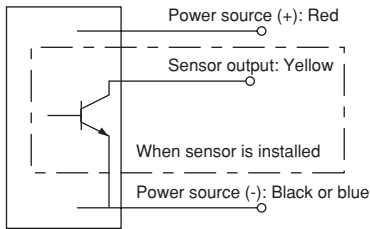
External dimensions in mm (inches)

● Lead wire type



Lead wire spec. AWG24 UL1007 or UL3266
Color (+) Red
(-) Black

Wiring connection diagram



Super silent fan with sensor

Rated Vol.	Model Code
12 V	E1232H12B5AP-00
24 V	E1232H24B5AP-00

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586

Brushless
DC Fans & Blowers

E1331K series 126 × 127 × 31 mm

Super Silent Fan

E1331K



□126×32 (□5.0"×1.3")
Max. airflow: 1.08 m³/min
Max. static pressure: 480 Pa
Mass: 250 g

Fan model code

E1331K12B5AZ-00
E1331K12B6AZ-00
E1331K12B7AZ-00
E1331K12B9AZ-00
E1331K24B5AZ-00
E1331K24B6AZ-00
E1331K24B7AZ-00
E1331K24B9AZ-00

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
				Rating	Operating Range	Rating	Starting		
1.08	38	480	3400	12	8.4-13.2	1100	1960	E1331K12B9AZ-00	-20 ~ +60
				24	21-26.4	530	1980	E1331K24B9AZ-00	
0.87	31	310	2700	12	6-13.2	690	1790	E1331K12B7AZ-00	
				24	12-26.4	380	930	E1331K24B7AZ-00	
0.79	28	250	2500	12	6-13.2	490	1400	E1331K12B6AZ-00	-20 ~ +70
				24	12-26.4	280	710	E1331K24B6AZ-00	
0.72	25	210	2200	12	6-13.2	440	1008	E1331K12B5AZ-00	
				24	12-26.4	240	520	E1331K24B5AZ-00	

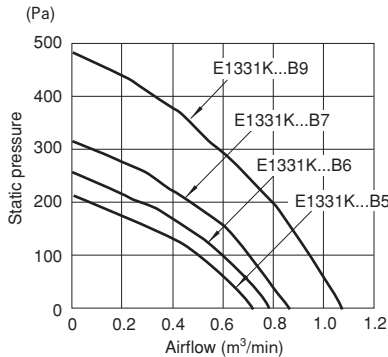
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset
Common Elec. Spec.	See pages G-11, G-12, G-13.

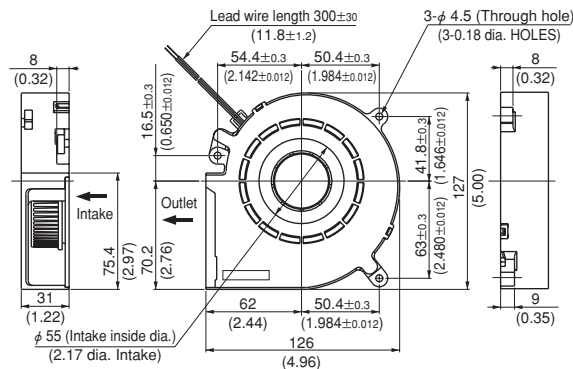
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]



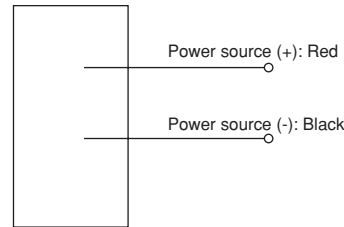
External dimensions in mm (inches)

● Lead wire type



Lead wire spec. AWG24 UL1007 or UL3266
Color (+) Red
(-) Black

Wiring connection diagram



- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586

Brushless
DC Fans & Blowers

E1540H series 150 × 152 × 40 mm

Super Silent Fan

E1540H



□150×40 (□5.9"×1.6")
Max. airflow: 2.0 m³/min
Max. static pressure: 430 Pa
Mass: 380 g

Fan model code

E1540H12B5AP-00

E1540H12B5AZ-00

E1540H12B7AP-00

E1540H12B7AZ-00

E1540H24B5AP-00

E1540H24B5AZ-00

E1540H24B7AP-00

E1540H24B7AS-00

E1540H24B7AZ-00

Standard specification

Max. Airflow		Max. Static Pressure		Noise	Speed	Input	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
m³/min	CFM	Pa	inH₂O				dB	min ⁻¹	W	Rating		
2.0	71	430	1.73	56	2700	19.4	12	8.4-13.8	1600	910	E1540H12B7AZ-00	-20 ~ +70
						17.8	24	16.8-27.6	740	430	E1540H24B7AZ-00	
1.65	58	270	1.09	51	2200	13	12	8.4-13.8	1100	1640	E1540H12B5AZ-00	
						24	12-27.6	540	1450	E1540H24B5AZ-00		

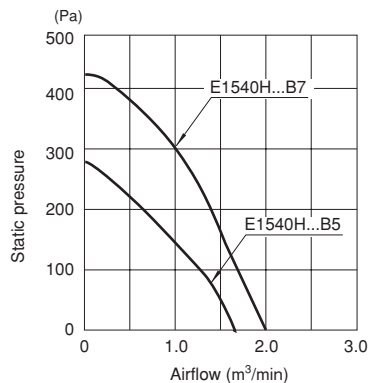
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (12 V or 24 V), and normal temperature and humidity.
- The life expectancy of E1540H-7 speed products at rated voltage and in continuous operation is 30,000 hours at 60°C, (40,000 hours for other products)

General specification

Materials Used	Venturi: ABS and PBT synthetic resins Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Overcurrent detection and automatic resetting by current limiting
Common Elec. Spec.	See pages G-11, G-12, G-13.
Standard Carton	16 to a carton of (450 x 380 x 220) mm, mass 7 kg

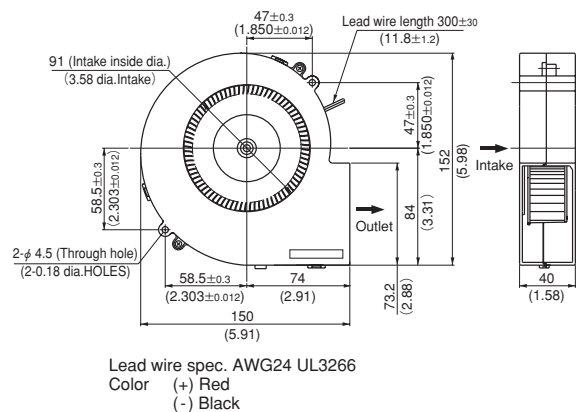
Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]

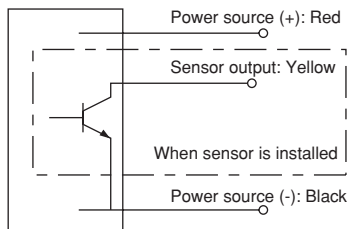


External dimensions in mm (inches)

Lead wire type



Wiring connection diagram



Super silent fan with sensor

Rated Vol.	Model Code	
12 V	E1540H12B5AP-00	E1540H12B7AP-00
24 V	E1540H24B5AP-00	E1540H24B7AS-00 E1540H24B5AP-00

- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586
- An electronic version of the Japan Servo catalog can be forwarded upon request. 3D data is also available at our web2-CAD site (www.web2cad.co.jp).

Brushless
DC Fans & Blowers

E2271Z series φ220 × 71 mm

Super Silent Fan

E2271Z



φ220×71 (φ8.7"×2.8")
Max. airflow: 18.1 m³/min
Max. static pressure: 650 Pa
Mass: 1300 g

Features

- Large airflow, high static pressure backward blowers without housing.
- A low noise effect can be achieved by combining an inlet ring.

Fan model code

E2271Z48B7AP-00

Standard specification

Max. Airflow		Max. Static Pressure		Noise dB	Speed min ⁻¹	Voltage Spec. V		Current mA		Model Code	Operating Temp. Range °C
m³/min	CFM	Pa	inH ₂ O			Rating	Operating Range	Rating	Starting		
18.1	639	650	2.61	71	3200	48	36-57	2100	4500		

E2271Z48B7AP-00

-20 ~ +60

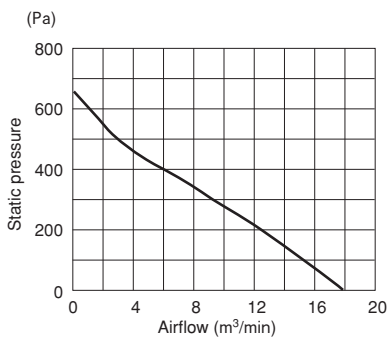
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- The characteristics are the values at rated voltage (48 V), and normal temperature and humidity.

General specification

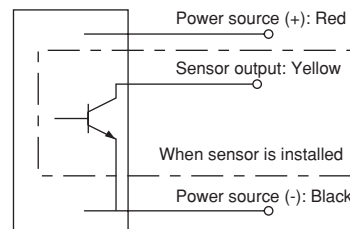
Materials Used	Ventur: Aluminum alloy die castings Impeller: ABS and PBT synthetic resins Bearing: Both side shielded ball bearing
Motor	Brushless DC motor, Protection type: Overcurrent detection and automatic resetting by current limiting
Common Elec. Spec.	See pages G-11, G-12, G-13.

Standard airflow and static pressure characteristics (At rated voltage)

[By double chamber method]
(Performance when an inlet ring is combined)



Wiring connection diagram



Products for variable-speed operation by PWM, voltage or resistance value commands can also be supplied with this model. (See pages G-58 and 59.)
Contact Japan Servo for further information.

Super silent fan with sensor

Rated Vol.	Model Code
48 V	E2271Z48B7AP-00

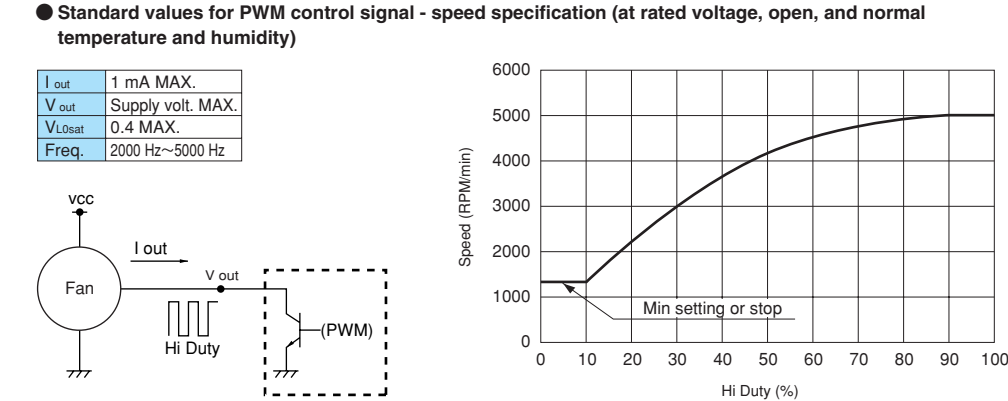
- This product features a large airflow and high static pressure without using a housing. A standard specification is ensured if installed complying with the foregoing bell mouth shape and its position.
- See page G-73 for detailed dimensions of the intake bell mouth.
- A bell mouth fitting accessory (product code E2271 Inlet Ring) is available as an option. (See page G-73.)
- Japan Servo can meet many of your requirements for customization, such as special connectors, other sensors not listed above, variable speed specifications, and other modifications. Please contact Japan Servo during your product planning and development stage.
- The listed products are registered in the following overseas standards files, UL: E48889, CSA: LR49399, TUV: R9451586

Fan model code
D1238B48B7ZP-00
G0938B12BAZP-00
G0938B24BAZP-00
G0938B48BAZP-00
G0938B12B9ZP-00
G0938B24B9ZP-00
G0938B48B9ZP-00
G1238B12BBZP-00
G1238B24BBZP-00
G1238B48BBZP-00
G1238B24BAZP-00
G1238B48BAZP-00
G1751M48B9ZP-00
G1751M48B8ZP-00
G1751M48B7ZP-00
G1751M48B6ZP-00
G1751M48B5ZP-00
E2271Z48B7ZP-00

Lineup of PWM variable-speed semi-standard products

- A PWM signal from the customer equipment is input to the control line (blue) of the fan motor for variable-speed operation of fans and blowers. (Input and noise can be reduced when the internal temperature of the customer equipment is low, such as during idling.)
- Sizes
Axial fans: □60 mm~□172 mm
Blower: □70 mm~φ220 mm

Characteristics for reference
(The characteristics are typical characteristics and their curves will differ, depending on the particular model)



Semi-standard products (Products in regular production)

Size	Model Code	Max. Airflow		Max. Static Pressure		Noise dB	Speed		Voltage Spec. V		Operating Temp. Range °C
		m³/min	CFM	Pa	inH₂O		Max.	Min.	Rating	Operating Range	
□120×38 mm	D1238B48B7ZP-00	4.4	155	170	0.68	54	4000	1250	48	40.8~55.2	-20 ~ +70
	G0938B12BAZP-00	3.9	138	490	1.97	63	7500	2100	12	8.4~13.2	-20 ~ +60
	G0938B24BAZP-00								24	16.8~26.4	
	G0938B48BAZP-00								48	36~52.8	
□92×38 mm	G0938B12B9ZP-00	3.6	127	440	1.77	61	7000	2000	12	8.4~13.8	-20 ~ +60
	G0938B24B9ZP-00								24	16.8~27.6	
	G0938B48B9ZP-00								48	36~55.2	
	G1238B12BBZP-00								12	8.4~13.8	
□120×38 mm	G1238B24BBZP-00	7.4	261	520	2.09	67	6300	1000	24	16.8~27.6	-20 ~ +60
	G1238B48BBZP-00								48	36~55.2	
	G1238B24BAZP-00								24	16.8~27.6	
	G1238B48BAZP-00	6.3	223	415	1.67	64	5300	1000	48	36~55.2	-20 ~ +60
φ172×150×51 mm	G1751M48B9ZP-00	11.2	395	840	3.37	76	6800	3200	48	36~50.4	-20 ~ +50
	G1751M48B8ZP-00	10.0	353	710	2.85	71	6200	2600		36~60	-20 ~ +60
	G1751M48B7ZP-00	9.2	325	580	2.33	69	5600	2000			
	G1751M48B6ZP-00	8.3	293	490	1.97	66.5	5100	1500			
	G1751M48B5ZP-00	7.3	258	360	1.45	63	4500	1500			
φ220×71 mm	E2271Z48B7ZP-00	18.1	639	650	2.61	71	3200	1000	48	36~57	-20 ~ +60

- The lineup of variable-speed fans and blowers will be expanded regularly. Visit the Japan Servo Website for information on the latest lineup.
- Direct your inquiry to Japan Servo for connector termination to lead wires, for sensor specifications other than those contained in the catalog and for variable speed specifications. (Products tailored to voltage command control and resistance value command control are also available)
- To ensure correct installation and smooth operation please obtain a drawing for approval or reference drawing from Japan Servo Co.

Fully customized products

Fully customized products will be manufactured to optimally match your equipment for high volume needs. (more than 10,000 units/month) for home appliances such as refrigerators, air conditioners and washing machines and for industrial machinery and information communication equipment, including open showcases, power sources and computer-related equipment. Please contact Japan Servo for more information.



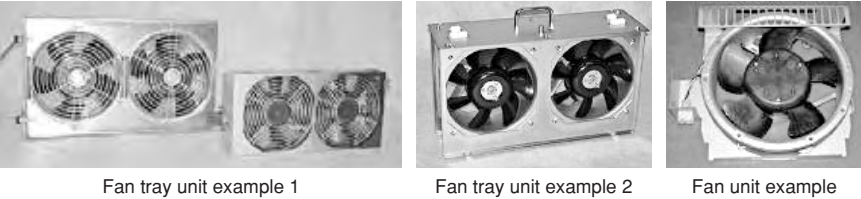
Semi-customized products

Semi-customized products, including the following, will be manufactured by combining a large variety of components available to Japan Servo. Please contact Japan Servo for more information.

- For operation in a high-temperature atmosphere of 80 °C.
- Long life products (60,000 hours or longer at 60 °C, 100,000 hours at 50 °C)
- Energy saving products (30 % to 50 % less input compared with conventional products)
- IP55 products (Outdoor installation and in a high-humidity environment)
- Variable-speed products (PWM, voltage or resistance value command), dual-speed products
- Fans for high static pressure regions (92 mm sq. x 38 mm thick, 120 mm sq. x 38 mm thick, 172 mm dia. x 51 mm thick and others)
- Fans to prevent galvanic corrosion of ball bearings (ceramic ball specification)

Fan tray units

- Tray units fitted with a standard or semi-customized fans.
- Tray shape designed, manufactured and tailored to customer specifications.



AC Axial Fans
& Blowers**SCUA series** □ 120 × ϕ128 × 25 mmAC Silent Fan
AC Silent 25

□120×25 (□4.7"×1.0")
Max. airflow: 1.9 m³/min (50 Hz)
2.2 m³/min (60 Hz)
Max. static pressure:
41 Pa (50 Hz) 45 Pa (60 Hz)
Mass: 330 g

Fan model code

SCUA2B5
SCUA47F5
SCUA48F5
SCUA52B5
SCUA55B5
SCUJ47F5
SCUJ48F5
SCUJ55B5
SCUJ60B5

■ Standard specification

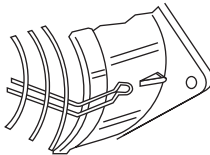
Max. Airflow m³/min	CFM	Max. Static Pressure Pa	Noise dB	Speed min⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code			
										Lead Wire Type	Std*	Lead Wire Type	Std*
1.9/ 2.2	67/ 78	41/ 45	34/ 39	2350/ 2750	100	50/ 60	13/11 13.5/11 14/11 14/11	190/140 90/70 160/130 90/70	190/165 100/85 175/150 90/75	SCUA55B5	(U)	SCUJ55B5	P
1.2/ 1.45	42/ 51	15/ 22	0.06/ 0.09	1500/ 1900	100-120 200-240	50/ 60	15/11.5 15/11.5	170/130 80/60	175/130 90/65	SCUA47F5 SCUA48F5	(U)	SCUJ47F5 SCUJ48F5	P

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- * (U) in the standards column denotes products conforming to UL standard (certification not obtained as yet).
- * Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PS)E mark)

■ General specification

Materials Used	Venturi: Aluminum alloy die casting Propeller: Glass fiber reinforced polycarbonate resin Bearing: Double - sided shielded ball bearing
Motor	Shaded pole induction motor Protection type: Impedance protection
Common Elec. Spec.	See pages G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	-20 °C ~ +60 °C
Standard Carton	30 to a carton of (560 x 300 x 190) mm, mass 10 kg

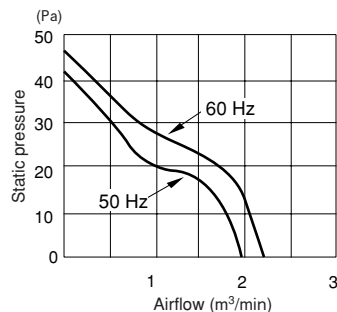
● Guard mounting



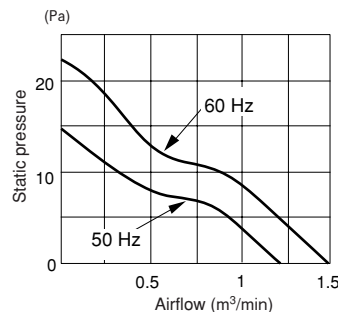
The guard for the intake side (SCU guard) can be mounted with one touch without using a tool.

■ Standard airflow and static pressure characteristics (At rated voltage)

SCU□□B5

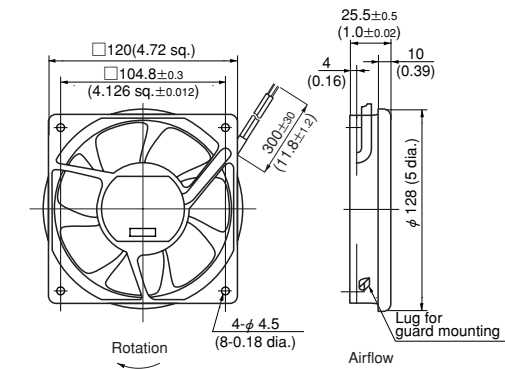


SCU□□F5



■ External dimensions in mm (inches)

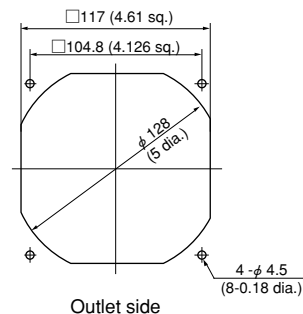
● Lead wire type



Lead wire specification
SCUJ series: Heat resistant PVC 0.75 mm² (30 conductors, 0.18 dia.)
SCUA series: AWG22 UL1015

Options (sold separately)

- Guard: F120UL guard (Outlet side)
- Guard: SCU guard (Intake side)

■ Mounting hole dimensions in mm (inches)
[Recommendation]AC Axial Fans
& Blowers**SCNA series** □ 120 × ϕ128 × 38 mmAC Silent Fan
AC Silent

□120×38 (□4.7"×1.5")
Max. airflow: 2.6 m³/min (50 Hz)
3.1 m³/min (60 Hz)
Max. static pressure:
80 Pa (50 Hz) 80 Pa (60 Hz)
Mass: 550 g

Fan model code

SCNA2B5
SCNA47D5
SCNA48D5
SCNA52B5
SCNA55B5
SCNA60B5
SCNJ47D5
SCNJ48D5
SCNJ55B5
SCNJ60B5

■ Standard specification

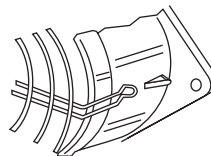
Max. Airflow m³/min	CFM	Max. Static Pressure Pa	Noise dB	Speed min⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code			
										Lead Wire Type	Std*	Lead Wire Type	Std*
2.6/ 3.1	92/ 109	80/ 80	0.32/ 0.32	2800/ 3300	100	50/ 60	14/12 15/13 14/12 15/13 16/13 14/13	200/180 200/180 110/ 90 110/ 90 200/170 110/ 90	300/270 300/270 155/135 155/135 300/260 160/140	SCNA55B5	UC	SCNJ55B5	P
1.7/ 1.9	60/ 67	25/ 26	0.10/ 0.11	1890/ 2030	100-120 100-120 200-240 200-240	50/ 60	9/8.5 8.5/8 9/8.5 8.5/8	110/ 90 110/ 90 60/ 50 60/ 50	110/ 95 110/ 95 60/ 50 60/ 50	SCNA47D5	UC	SCNJ47D5	P

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- * The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889, C: CSA LR49399, LR108118
- * Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PS)E mark)

■ General specification

Materials Used	Venturi: Aluminum alloy die casting Propeller: Glass fiber reinforced polycarbonate resin Bearing: Double - sided shielded ball bearing
Motor	Shaded pole induction motor Protection type: Impedance protection
Common Elec. Spec.	See pages G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	-20 °C ~ +60 °C
Standard Carton	20 to a carton of (565 x 310 x 180) mm, mass 11.5 kg

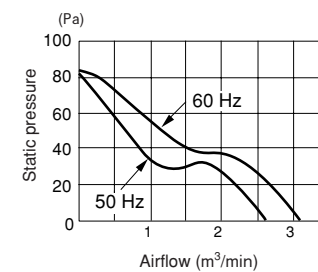
● Guard mounting



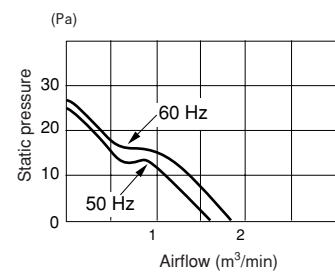
The guard for the intake side (SCN guard) can be mounted with one touch without using a tool.

■ Standard airflow and static pressure characteristics (At rated voltage)

SCN□□B5

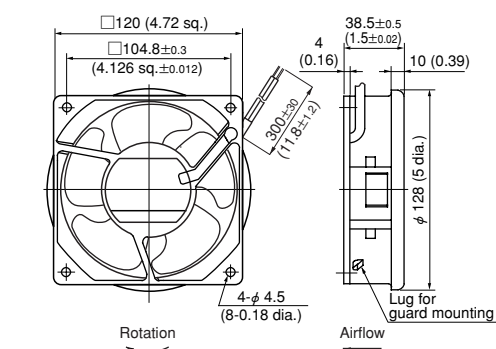


SCN□□D5



■ External dimensions in mm (inches)

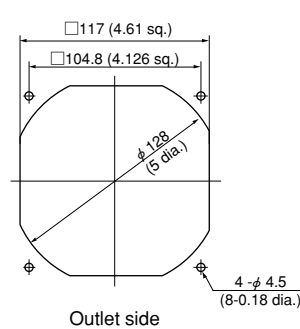
● Lead wire type



Lead wire specification
SCNJ series: Heat resistant PVC 0.75 mm² (30 conductors, 0.18 dia.)
SCNA series: AWG22 UL1015

Options (sold separately)

- Guard: F120UL guard (Outlet side)
- Guard: SCN guard (Intake side)

■ Mounting hole dimensions in mm (inches)
[Recommendation]

AC Axial Fans
& Blowers*VE series* □ 80 × 25 mmAC Axial Fan
VENUS 25

□80×25 (□3.2"×1.0")
Max. airflow: 0.55 m³/min (50 Hz)
0.65 m³/min (60 Hz)
Max. static pressure:
42 Pa (50 Hz) 60 Pa (60 Hz)
Mass: 250 g

Fan model code

VE115B5

VE2B5

VE47F5

VE48F5

VE50B5

VE52B5

VE55B5

VE60B5

VEJ47F5

VEJ48F5

VEJ55B5

VEJ60B5

Standard specification

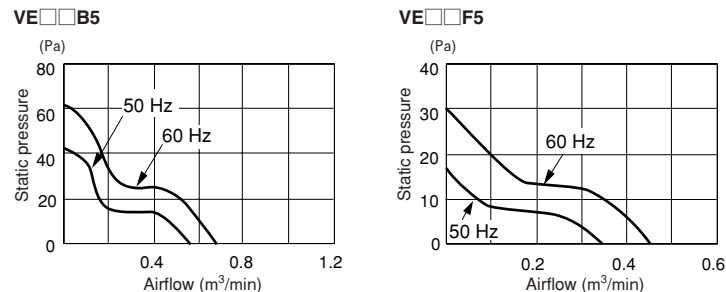
Max. Airflow m ³ /min	CFM	Max. Static Pressure Pa	inH ₂ O	Noise dB	Speed min ⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code			
											Lead Wire Type	Std*	Lead Wire Type	Std*
0.55 /0.65	19 /23	42/ 60	0.17/ 0.24	30/ 35	2750/ 3300		50/ 60	11/9	130/110	130/110	VE55B5	U	VEJ55B5	P
												U	VEJ60B5	P
												U		
												U		
												U		
0.56/ 0.68	20 /24	45/ 66	0.18/ 0.27	30/ 35	2750/ 3300	220/230		9/8	70/ 60	75/ 65	VE50B5	UTV		
												TV	VEJ47F5	P
												TV	VEJ48F5	P
0.37/ 0.48	13 /17	17/ 29	0.07/ 0.12	27/ 31	1.7/ 3.0	100-120 200-240	50/ 60	12/10	130/110	130/110	VE47F5	TV	VEJ47F5	P
												TV	VEJ48F5	P

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889, T: TUV R60229-60302, V: VDE 3019UG
- *Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PS)E mark)

General specification

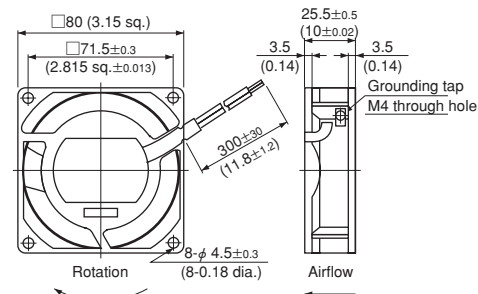
Materials Used	Venturi: Aluminum alloy die casting Propeller: Glass fiber reinforced polycarbonate resin Bearing: Double - sided shielded ball bearing
Motor	Shaded pole induction motor Protection type: Impedance protection
Common Elec. Spec.	See pages G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	-20 °C ~ +60 °C (-20 °C ~ +55 °C in TUV standard -20 °C ~ +40 °C in VDE standard)
Standard Carton	40 to a carton of (450 x 380 x 160) mm, mass 11 kg

Standard airflow and static pressure characteristics (At rated voltage)



External dimensions in mm (inches)

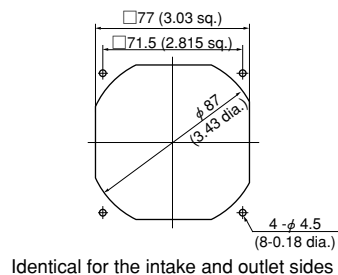
● Lead wire type



Lead wire specification
VEJ series: Heat resistant PVC 0.75 mm² (30 conductors, 0.18 dia.)
VE series: AWG22 UL1015

Options (sold separately)

- Guard: F80UL guard
- Filter: F80 filter

Mounting hole dimensions in mm (inches)
[Recommendation]

Identical for the intake and outlet sides

AC Axial Fans
& Blowers*WE series* □ 92 × 25 mmAC Axial Fan
KOALA 25

□92×25 (□3.6"×1.0")
Max. airflow: 0.85 m³/min (50 Hz)
1.0 m³/min (60 Hz)
Max. static pressure:
49 Pa (50 Hz) 67 Pa (60 Hz)
Mass: 290 g

Fan model code

WE115B5

WE2B3

WE2B5

WE47F3

WE47F5

WE48F3

WE48F5

WE50B5

WE52B3

WE52B5

WE55B3

WE55B5

WE60B3

WE60B5

WEJ47F5

WEJ55B5

WEJ60B5

Standard specification

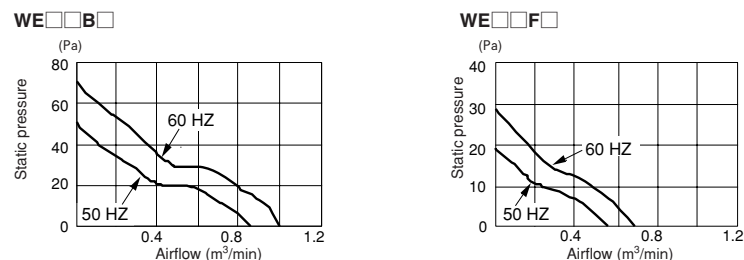
Max. Airflow m ³ /min	CFM	Max. Static Pressure Pa	inH ₂ O	Noise dB	Speed min ⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code			
											Lead Wire Type	Std*	Terminal Type	Std*
0.85/ 1.0	30/ 35	49/ 67	0.20/ 0.27	35/ 40	2700/ 3200	100	50/ 60	11/9	130/110	140/130	WE55B5	UC	WE55B3	UCP
												P		
												UC	WE60B3	UCP
												P		
												UC	WE2B3	UCP
												UC	WE52B3	UCP
0.85/ 1.0	30/ 35	52/ 74	0.21/ 0.30	35/ 40	2700/ 3200	220/230	50/ 60	11/10	80/ 70	90/ 80	WE50B5	UTV		
												UTV	WE47F3	UP
												P		
0.55/ 0.68	19/ 24	19/ 27	0.07/ 0.11	25/ 30	1750/ 1750	100-120 100-120 200-240	50/ 60	12/10	120/110	120/110	WE47F5	UTV	WE47F3	UP
												P		
													WE48F3	UP

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889, T: TUV R60229-60302, V: VDE 3019UG
- *Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PS)E mark)

General specification

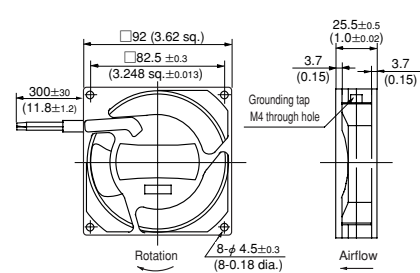
Materials Used	Venturi: Aluminum alloy die casting Propeller: Glass fiber reinforced polycarbonate resin Bearing: Double - sided shielded ball bearing
Motor	Shaded pole induction motor Protection type: Impedance protection
Common Elec. Spec.	See pages G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	-20 °C ~ +60 °C (-20 °C ~ +55 °C in TUV standard -20 °C ~ +40 °C in VDE standard)
Standard Carton	40 to a carton of (480 x 380 x 160) mm, mass 12 kg

Standard airflow and static pressure characteristics (At rated voltage)



External dimensions in mm (inches)

● Lead wire type (WE□□□5)

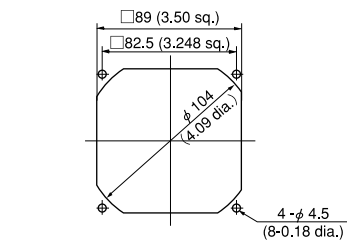
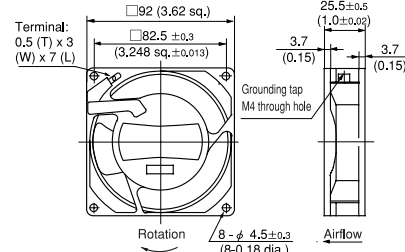


Lead wire specification
WEJ series: Heat resistant PVC 0.75 mm² (30 conductors, 0.18 dia.)
WE series: AWG22 UL1015

Mounting hole dimensions in mm (inches)
[Recommendation]

Options (sold separately)

- Guard: F92UL guard
- Filter: F92 filter
- Power code: T2P1 code, D2P1 code, UL2P1 code

● Terminal type [2 terminals: with grounding tap]
(WE□□□3)

Identical for the intake and outlet sides

AC Axial Fans
& Blowers**KA series** □ 92 × 38 mm

AC Axial Fan

KOALA MARKII

□92×38 (□3.6"×1.5")

Max. airflow: 1.1 m³/min (50 Hz)
1.3 m³/min (60 Hz)Max. static pressure:
62 Pa (50 Hz) 80 Pa (60 Hz)
Mass: 450 g

Fan model code

KA2B3

KA2B4

KA47D3

KA47D5

KA48D3

KA48D5

KA52B3

KA52B5

KA55B3

KA55B4

KA60B3

KA60B5

KAJ55B4

KAJ60B5

■ Standard specification

Max. Airflow		Max. Static Pressure		Noise	Speed	Rated Vol.	Freq.	Input	Current	Lock	Model Code			
m ³ /min	CFM	Pa	inH ₂ O	dB	min ⁻¹	V (±10 %)	Hz	W	mA	Current mA	Lead Wire Type	Std*	Terminal Type	Std*
1.1/ 1.3	39/ 46	62/ 80	0.25/ 0.32	31/ 38	2850/ 3300	100 100 200 200 115 208-230	50/ 60	8.5/8	200/160	200/160	KA55B4	U	KA55B3	UP
								7/6	200/160	200/160	KAJ55B4	P		
								8.5/8	100/ 70	100/ 75	KA60B5	U	KA60B3	UP
								7/6	100/ 70	100/ 75	KAJ60B5	P		
								8.5/8	180/150	180/150	KA2B4	U	KA2B3	UP
								8.5/8	90/ 70	90/ 70	KA52B5	U	KA52B3	UP
0.8/ 0.9	28/ 32	29/ 36	0.12/ 0.15	26/ 28	2250/ 2650	100-120 200-240	50/ 60	8/7	180/150	180/150	KA47D5	U	KA47D3	UP
								8/7	90/170	90/ 70	KA48D5	U	KA48D3	UP

● Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.

● *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889

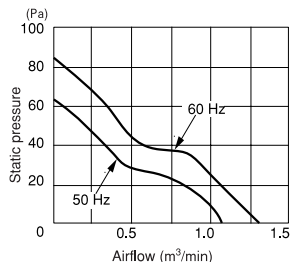
● *Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PS)E mark)

■ General specification

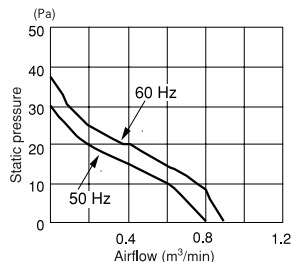
Materials Used	Venturi: Aluminum alloy die casting Propeller: PBT resin Bearing: Double - sided shielded ball bearing
Motor	Shaded pole induction motor Protection type: Impedance protection
Common Elec. Spec.	See page G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	-20 °C ~ +60 °C
Standard Carton	20 to a carton of (450 x 380 x 150) mm, mass 10 kg

■ Standard airflow and static pressure characteristics (At rated voltage)

KA□□B□

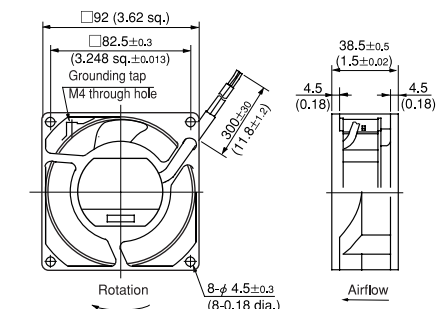


KA□□D□



■ External dimensions in mm (inches)

● Lead wire type (KA□□□4/KA□□□5)

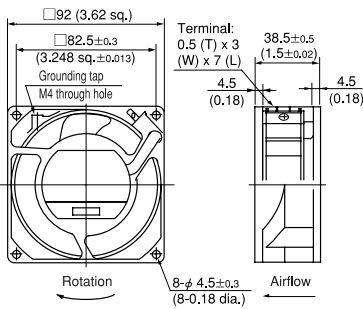


Lead wire specification

KAJ series: Heat resistant PVC 0.75 mm² (30 conductors, 0.18 dia.)

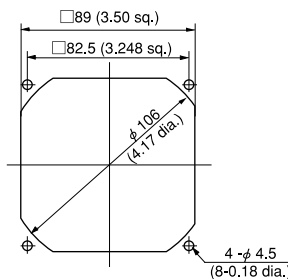
KA series: AWG22 UL1015

● Terminal type (KA□□□3)

■ Mounting hole dimensions in mm (inches)
[Recommendation]

Options (sold separately)

- Guard: F92UL guard
- Filter: F92 filter
- Power code: T2P1 code, D2P1 code, UL2P1 code



Identical for the intake and outlet sides

AC Axial Fans
& Blowers**CU series** □ 120 × 25 mm

AC Axial Fan

CENTAUR 25

□120×25 (□4.7"×1.0")

Max. airflow: 1.9 m³/min (50 Hz)
2.2 m³/min (60 Hz)Max. static pressure:
53 Pa (50 Hz) 56 Pa (60 Hz)
Mass: 360 g

Fan model code

CU115B5

CU2B3

CU2B5

CU47F3

CU47F5

CU48F3

CU48F5

CU50B5

CU52B3

CU52B5

CU55B3

CU55B5

CU60B3

CU60B5

CUJ47F5

CUJ55B5

CUJ60B5

■ Standard specification

Max. Airflow		Max. Static Pressure		Noise	Speed	Rated Vol.	Freq.	Input	Current	Lock	Model Code			
m ³ /min	CFM	Pa	inH ₂ O	dB	min ⁻¹	V (±10 %)	Hz	W	mA	Current mA	Lead Wire Type	Std*	Terminal Type	Std*
1.9/ 2.2	67/ 78	53/ 56	0.21/ 0.23	40/ 45	2550/ 3000	100 100 200 200 200 115 208-230 208-230 115	50/ 60	16/14.5	190/140	200/170	CU55B5	UC	CU55B3	UCP
								12/11	190/140	200/170	CUJ55B5	P		
								14/13	90/70	100/ 90	CU60B5	UC		
								14/12	90/70	100/ 90	CUJ60B5	P		
								13/11	90/70	100/ 90			CU60B3	UCP
								11/10	160/130	180/160	CU2B5	UC	CU2B3	UCP
								14/13	90/70	95/ 80	CU52B5	UC		
								13/11	90/70	95/ 80			CU52B3	UCP
								11/9	140/110	150/120	CU115B5	UTV		
								14/13	90/ 70	100/ 80	CU50B5	UTV		
1.92/ 2.26	68/ 80	58/ 65	0.23/ 0.26	40/ 45	2550/ 3000	220/230		14/11	170/130	170/130	CU47F5	UCT	CU47F3	UCP
								14/10.5	170/130	170/130	CUJ47F5	P		
1.2/ 1.4	42/ 49	19/ 24	0.07/ 0.10	27/ 34	1500/ 1900	100-120 200-240 200-240	50/ 60	14/11	80/ 60	80/ 60	CU48F5	UCT		
								14/10.5	80/ 60	80/ 60			CU48F3	UCP

● Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.

● *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889, C: CSA LR49399, LR108118, T: TUV R60229-60302, V: VDE 3019UG

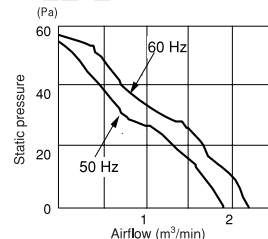
● *Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PS)E mark)

■ General specification

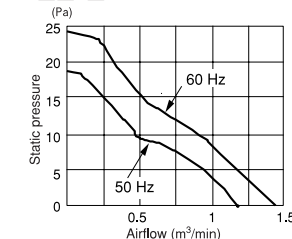
Materials Used	Venturi: Aluminum alloy die casting Propeller: Glass fiber reinforced polycarbonate resin Bearing: Double - sided shielded ball bearing
Motor	Shaded pole induction motor Protection type: Impedance protection
Common Elec. Spec.	See page G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	-20 °C ~ +60 °C (-20 °C ~ +55 °C in TUV standard) (-20 °C ~ +40 °C in VDE standard)
Standard Carton	30 to a carton of (450 x 380 x 160) mm, mass 12 kg

■ Standard airflow and static pressure characteristics (At rated voltage)

CU□□B□

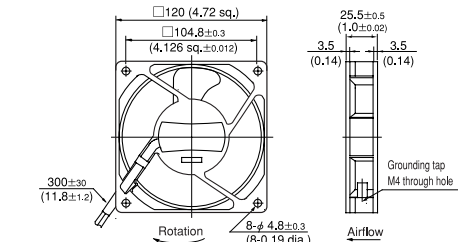


CU□□F□



■ External dimensions in mm (inches)

● Lead wire type (CU□□□5)



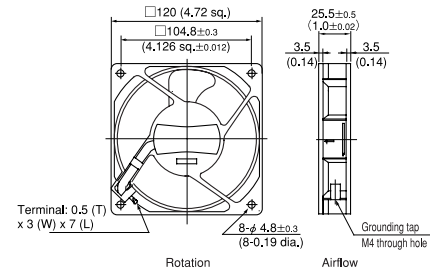
Lead wire specification

CUJ series: Heat resistant PVC 0.75 mm² (30 conductors, 0.18 dia.)

CU series: AWG22 UL1015

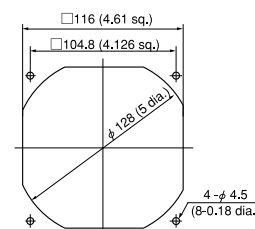
● Terminal type

[2 terminals: with grounding tap](CU□□□3)

■ Mounting hole dimensions in mm (inches)
[Recommendation]

Options (sold separately)

- Guard: F120UL guard
- Filter: F120 filter
- Power code: T2P1 code, D2P1 code, UL2P1 code



Identical for the intake and outlet sides

AC Axial Fans
& Blowers**CN series** □ 120 × 38 mmAC Axial Fan
CENTAUR III

□ 120 × 38 (□ 4.7" × 1.5")
Max. airflow: 2.6 m³/min (50 Hz)
3.0 m³/min (60 Hz)
Max. static pressure:
83 Pa (50 Hz) 88 Pa (60 Hz)
Mass: 500 g

Fan model code

CN115B5

CN2B2

CN2B3

CN2B5

CN47D2

CN47D3

CN47D5

CN48B3

CN48D2

CN48D3

CN48D5

CN50B5

CN52B2

CN52B3

CN52B5

CN55B2

CN55B3

CN55B5

CN60B2

CN60B3

CN60B5

CNJ47D5

CNJ48D5

CNJ55B5

CNJ60B5

Standard specification

Max. Airflow m ³ /min CFM	Max. Static Pressure Pa inH ₂ O	Noise dB	Speed min ⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code			
									Lead Wire Type	Std*	Terminal Type (*)	Std*
2.6/ 3.0	92/ 106	83/ 88	0.33/ 0.35	44/ 48	2800/ 3200	14/12 15/13 200/180 14/12 15/13 200/170 14/13 18/15	200/180 200/180 110/90 155/135 200/170 110/90 120/100	300/270 300/270 155/135 155/135 300/260 160/140 140/120	CN55B5 CNJ55B5 CN60B5 CNJ60B5 CN2B5 CN52B5 CN48B3	UC P P UC UC UC	CN55B3,CN55B2 CN60B3,CN60B2 CN2B3,CN2B2 CN52B3,CN52B2 CN48B3	UCP UCP UCP UCP UCP UCP UP
2.4/ 2.8	85/ 99	74/ 84	0.30/ 0.34	43/ 47	2700/ 3150	11/10 13/13	150/130 100/90	210/180 130/120	CN115B5 CN50B5	UCT UCT		
1.6/ 1.6	56/ 56	23/ 24	0.09/ 0.10	33/ 35	1700/ 1800	9/8.5 9/8.5 9/8.5	110/100 60/50 60/50	110/100 60/50 60/50	CN47D5 CNJ47D5 CN48D5 CNJ48D5	UCT P UCT P	CN47D3,CN47D2 CN48D3,CN48D2	UCP UCP UCP UCP

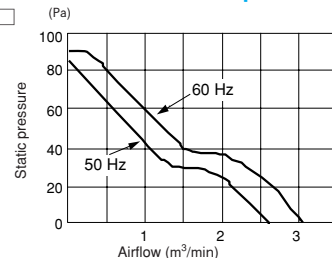
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
 - *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889, C: CSA LR49399, LR108118 T: TUV R60229-60302
 - *Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PS)E mark)
- (Note) Since CN60B2, CN52B2, and CN48D2 do not have a ground terminal, they are not products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan)

General specification

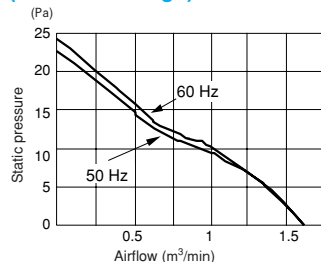
Materials Used	Venturi: Aluminum alloy die casting Propeller: Glass fiber reinforced polycarbonate resin Bearing: Double - sided shielded ball bearing
Motor	Shaded pole induction motor Protection type: Impedance protection
Common Elec. Spec.	See page G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	-20 °C ~ +60 °C (-20 °C ~ +55 °C in TÜV standard)
Standard Carton	20 to a carton of (450 x 380 x 160) mm, mass 11 kg

Standard airflow and static pressure characteristics (At rated voltage)

CN□□B□

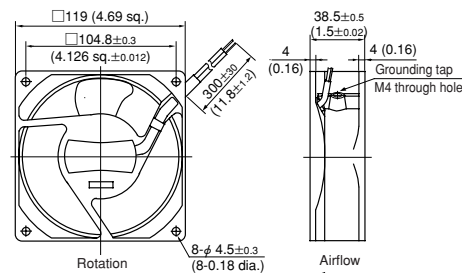


CN□□D□



External dimensions in mm (inches)

- Lead wire type (CN□□□5)

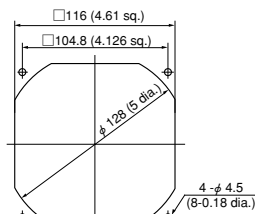


Lead wire specification
CNJ series: Heat resistant PVC 0.75 mm² (30 conductors, 0.18 dia.)
CN series: AWG22 UL1015

Mounting hole dimensions in mm (inches)
[Recommendation]

Options (sold separately)

- Guard: F120UL guard
- Filter: F120 filter
- Power code: T2P1 code, D2P1 code, UL2P1 code (for 2 terminals)
D3P1 code, UL3P1 code (for 3 terminals)



Identical for the intake and outlet sides

SERVO

G-66

Options ▶ G-72, 73, 74

AC Axial Fans
& Blowers**MA series** φ 172 × 150 × 51 mmAC Axial Fan
MAXI II

φ 172 × 150 × 51
(φ 6.8" × 6.0" × 2.0)
Max. airflow: 5.5 m³/min (50 Hz)
6.5 m³/min (60 Hz)
Max. static pressure:
152 Pa (50 Hz) 186 Pa (60 Hz)
Mass: 950 g

Fan model code

MA2B3

MA47B3

MA48B3

MA55B3

MA60B3

MA77B3

Standard specification

Max. Airflow m ³ /min CFM	Max. Static Pressure Pa inH ₂ O	Noise dB	Speed min ⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code	
									Terminal Type	Std*
5.5/ 6.5	194/ 229	152/ 186	0.61/ 0.75	50/ 55	2850/ 3400	32/28 29/28 32/28 33/30 33/32 33/32	400/310 270/250 200/150 150/130 300/270 150/140	620/600 470/460 300/300 250/240 440/430 240/240	MA55B3 MA2B3 MA60B3 MA77B3 MA47B3 MA48B3	UCP UCP UCP UCP UCP UCP

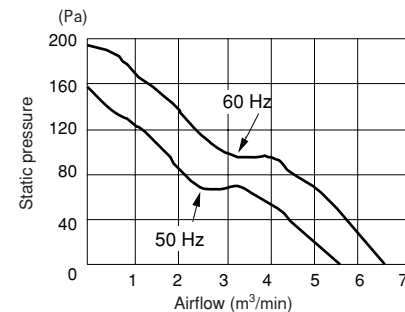
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889, C: CSA LR49399
- *Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PS)E mark)

General specification

Material used	Venturi: Aluminum alloy die casting Propeller: ABS and PBT synthetic resins Capacitor cover: Glass fiber reinforced polycarbonate resin Capacitor: MF capacitor Bearing: Double - sided shielded ball bearing
Motor	Capacitor phase advancing type induction motor Protection type: Thermal protection
Common Elec. Spec.	See page G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	-20 °C ~ +60 °C
Standard Carton	12 to a carton of (380 x 370 x 190) mm, mass 12.0 kg

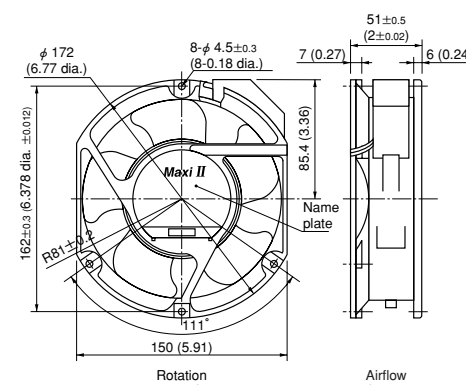
Standard airflow and static pressure characteristics (At rated voltage)

MA□B3



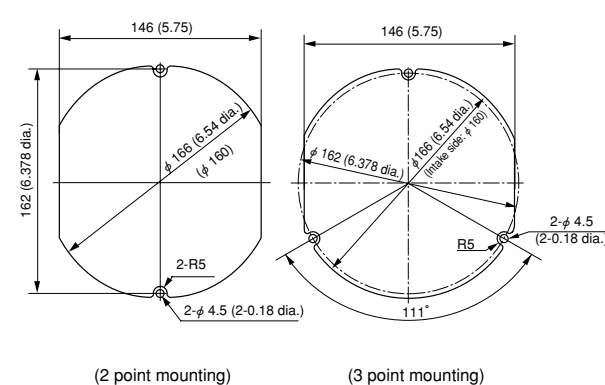
External dimensions in mm (inches)

- Terminal type



Options (sold separately)

- Guard: GUARD 172
- Power code: T2P1 code, D2P1 code, UL2P1 code

Mounting hole dimensions in mm (inches)
[Recommendation]

(2 point mounting)

(3 point mounting)

Options ▶ G-72, 73, 74

G-67

AC Axial Fans
& BlowersPA Series $\phi 172 \times 51$ mmAC Axial Fan
PARKY II

$\phi 172 \times 51$ ($\phi 6.8" \times 2.0"$)
Max. airflow: 5.5 m³/min (50 Hz)
6.5 m³/min (60 Hz)
Max. static pressure:
152 Pa (50 Hz) 186 Pa (60 Hz)
Mass: 950 g

Fan model code

PA2B3

PA47B3

PA48B3

PA55B3

PA55H3

PA60B3

PA77B3

Standard specification

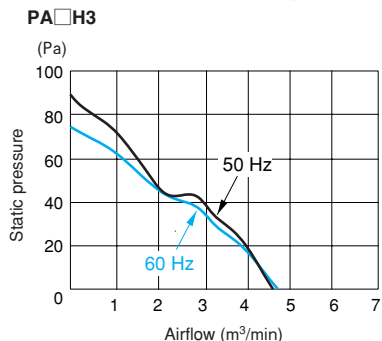
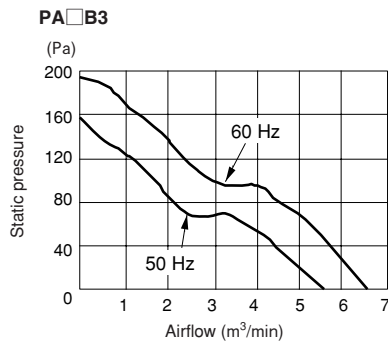
Max. Airflow m ³ /min CFM	Max. Static Pressure Pa inH ₂ O	Noise dB	Speed min ⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code	
									Terminal Type	Standard*
5.5/ 6.5	194/ 229	152/ 186	0.61/ 0.75	46/ 50	2850/ 3400	220-240/ 208-230	100	50/ 60	32/28 400/310 620/600 PA55B3	UCP
									29/28 270/250 470/460 PA2B3	UCP
									32/28 200/150 300/300 PA60B3	UCP
									33/30 150/130 250/240 PA77B3	UCP
									33/32 300/270 440/430 PA47B3	UCP
									33/32 150/140 240/240 PA48B3	UCP
4.7/4.7	166/166	90/75	0.36/0.30	44/44	2500/2500	100	17/19	180/200	PA55H3	UP

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889, C: CSA LR49399
- *Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PSE) mark)

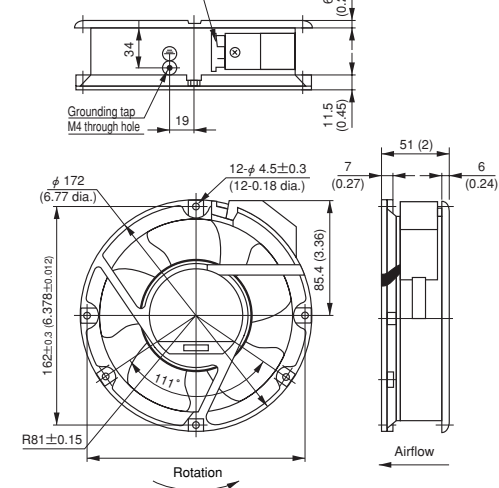
General specification

Material Used	Venturi: Aluminum alloy die casting
	Propeller: ABS and PBT synthetic resins
Motor	Capacitor cover: Glass fiber reinforced polycarbonate resin
	Capacitor: MF capacitor
	Bearing: Double - sided shielded ball bearing
Common Elec. Spec.	Capacitor phase advancing type induction motor
	Protection type: Thermal protection
Usage Range	See page G-12.
Operating Temp. Range	Rated voltage ±10 %
Standard Carton	- 20 °C ~ + 60 °C
	12 to a carton of (420 x 410 x 220) mm, mass 12.5 kg

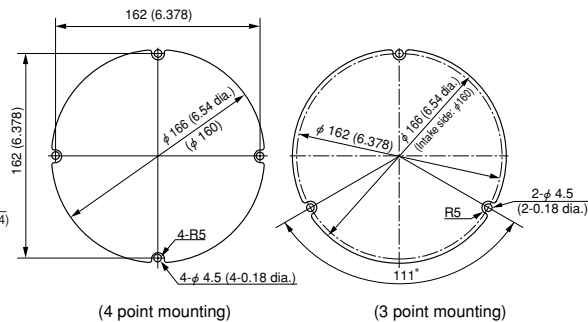
Standard airflow and static pressure characteristics (At rated voltage)

External dimensions in
mm (inches)

Terminal type



- Options (sold separately)
- Guard: GUARD 172
 - Power code: T2P1 code, D2P1 code, UL2P1 code

Mounting hole dimensions in mm (inches)
[Recommendation]AC Axial Fans
& BlowersAC Axial Fan
ASTEROID

$\square 160 \times 62$ ($\square 6.3" \times 2.4"$)
Max. airflow: 6.8 m³/min (50 Hz)
7.4 m³/min (60 Hz)
Max. static pressure:
134 Pa (50 Hz) 139 Pa (60 Hz)
Mass: 1300 g

Fan model code

AS2B61

AS2B61S

AS52B61

AS52B61S

AS55B61

AS55B61S

AS60B61

AS60B61S

AS Series $\square 160 \times 62$ mm

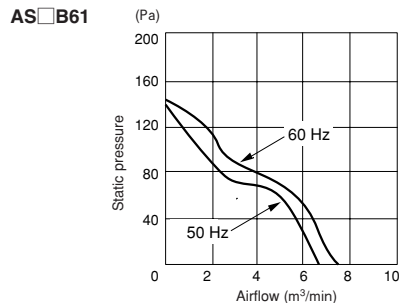
Standard specification

Max. Airflow m ³ /min CFM	Max. Static Pressure Pa inH ₂ O	Noise dB	Speed min ⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code	
									Lead wire type	Standard*
6.8/ 7.4	240/ 261	134/ 139	0.54/ 0.56	61/ 64	2650/ 2900	50/ 60	38/48	380/470 260/270 380/470 230/260	570/620 330/320 550/555 320/320	AS55B61 AS60B61 AS2B61 AS52B61

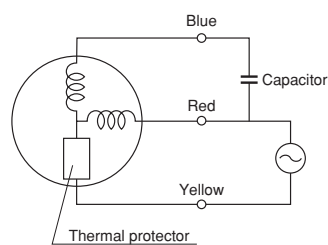
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889

General specification

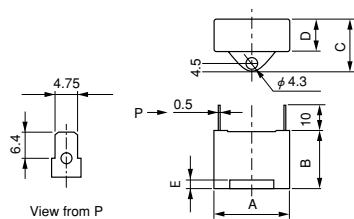
Material Used	Venturi: Aluminum alloy die casting, Black baking paint Propeller: Glass fiber reinforced polycarbonate resin Capacitor: MF capacitor Bearing: Double - sided shielded ball bearing
Motor	Capacitor phase advancing type induction motor Protection type: Thermal protection
Common Elec. Spec.	See page G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	- 20 °C ~ + 60 °C
Standard Carton	10 to a carton of (470 x 405 x 250) mm, mass 14.5 kg

Standard airflow and static pressure
characteristics (At rated voltage)

Wiring connection diagram



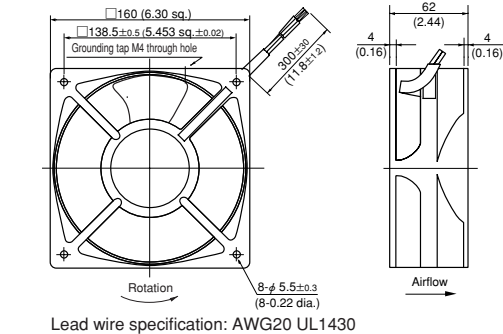
Capacitor (Normally included)



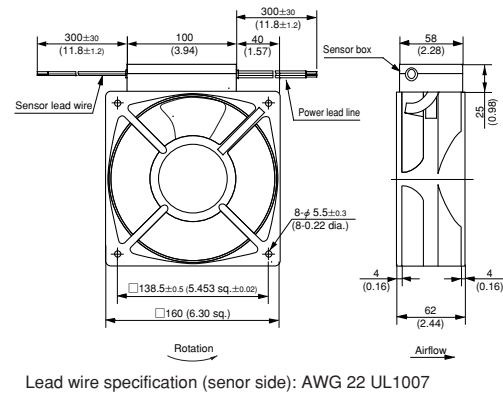
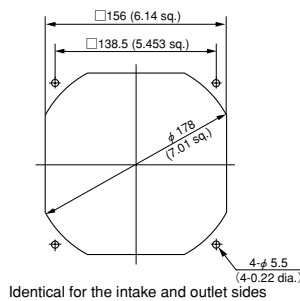
Mating Model Code	Capacity μF	External Dimensions in mm				
		A	B	C	D	E
AS55B61, AS2B61	3.0	31	23.5	24.5	14.5	4
AS60B61, AS52B61	0.75	37	28	23.5	13.5	3.5

External dimensions in mm (inches)

Lead wire type



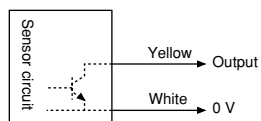
AC axial fan with sensor

Mounting hole dimensions in mm (inches)
[Recommendation]

Mating model code

Rated Voltage V (±10 %)	Model Code	Standard*
100	AS55B61S	U
200	AS60B61S	U
115	AS2B61S	U
208-230	AS52B61S	U

Sensor connection diagram



AC Axial Fan
PLANET

□180×90 (□7.1"×3.5")
Max. airflow: 10.8 m³/min (50 Hz)
12.2 m³/min (60 Hz)
Max. static pressure:
176 Pa (50 Hz) 216 Pa (60 Hz)
Mass: 2200 g

Fan model code

PL2B31
PL2B31-EX
PL2B31S
PL52B31
PL52B31-EX
PL52B31S
PL55B31
PL55B31-EX
PL55B31S
PL60B31
PL60B31-EX
PL60B31S
PL74B31
PL74B31S

PL Series □180×90 mm

Standard specification

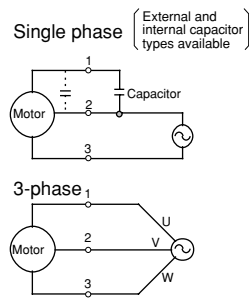
Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code		
									Terminal Type	Standard*	Internal Capacitor Type
10.8/ 12.2	381/ 431	176/ 216	0.71/ 0.87	59/ 61	2750/ 3050	50/ 60	60/75	650/780 1160/1160	PL55B31		PL55B31-EX
						3 φ 50/ 60	60/75	210/220 560/540	PL74B31	UC	

- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889, C: CSA LR49399

General specification

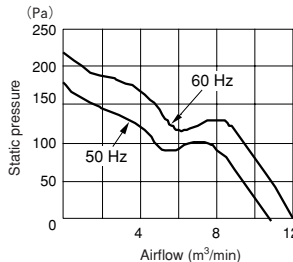
Material Used	Venturi: Aluminum alloy die casting, Black baking paint Propeller: Polycarbonate resin Bearing: Ball bearing Connector box: Polycarbonate
Motor	Capacitor phase advancing type induction motor and 3-phase induction motor Protection type: Thermal protection
Common Elec. Spec.	See page G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	- 20 °C ~ + 60 °C
Standard Carton	5 to a carton of (470 x 435 x 215) mm, mass 12 kg

Wiring connection diagram

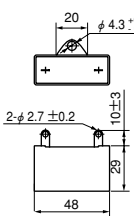


Standard airflow and static pressure characteristics (At rated voltage)

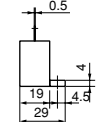
PL □□B31



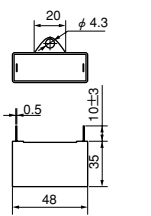
PL55B31, PL2B31



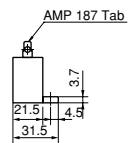
Capacity 8 μF



PL60B31, PL52B31

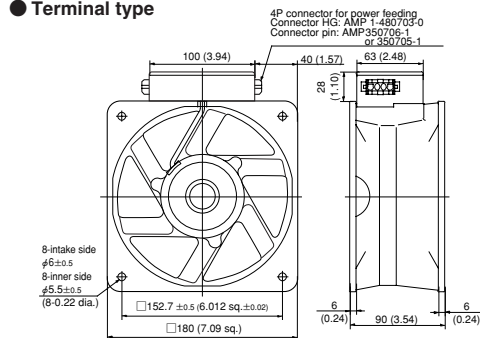


Capacity 2 μF

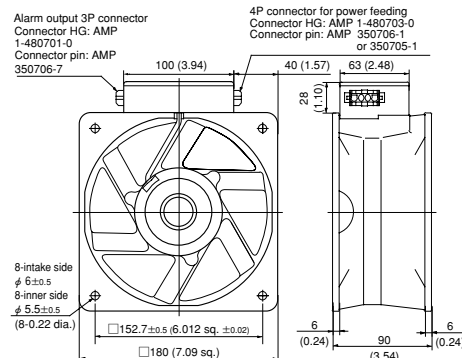


External dimensions in mm (inches)

Terminal type

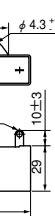


AC axial fan with sensor

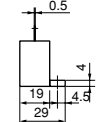


Capacitor (Normally included)

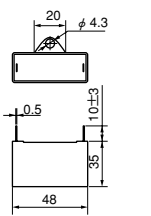
PL55B31, PL2B31



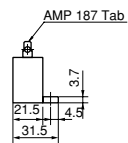
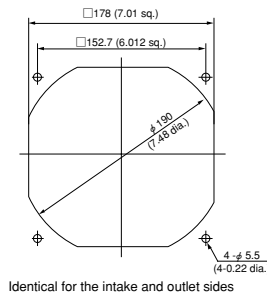
Capacity 8 μF



PL60B31, PL52B31



Capacity 2 μF

Mounting hole dimensions in mm (inches)
[Recommendation]AC Centrifugal Blower
CB BLOWER

□125×41

(□4.9"×1.6")

Max. airflow: 0.65 m³/min (50 Hz)
0.7 m³/min (60 Hz)Max. static pressure:
88 Pa (50 Hz) 127 Pa (60 Hz)
Mass: 570 g

Fan model code

CB2B3
CB2B4
CB52B3
CB52B4
CB55B3-Y
CB55B4-Y
CB60B3
CB60B4

CB Series 125×126×41 mm

Standard specification

Max. Airflow m³/min CFM	Max. Static Pressure Pa inH₂O	Noise dB	Speed min⁻¹	Rated Vol. V (±10 %)	Freq. Hz	Input W	Current mA	Lock Current mA	Model Code			
									Lead Wire Type	Standard*	Terminal Type	Standard*
0.65/ 0.70	23/ 25	88/ 127	0.35/ 0.51	53/ 55	2600/ 2850	18.5/17 15/15	220/210 150/140	300/260 200/170	CB55B4-Y	UC	CB55B3-Y	UCP
						17/16 17.5/16.5	280/245 180/145	380/330 230/200	CB60B4	UC	CB2B3	UCP

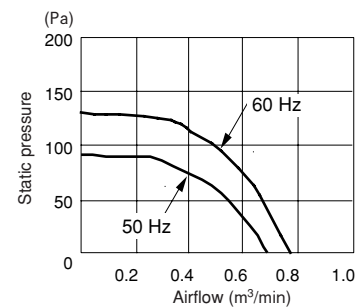
- Figures in the table are average measured values. Please request the product delivery specification when preparing a purchase specification.
- *The symbols in the standards column denote that they are registered in the following standards files, U: UL E48889, C: CSA LR49399, LR: LR108118
- *Products conforming to the specifications of the Electrical Appliance and Material Safety Law (Japan) can be used in case the products are assembled in electric appliances used in Japan. (Products marked with the (PS)E mark)

General specification

Material Used	Housing: Aluminum alloy die casting Impeller: Polycarbonate resin Bearing: Double - sided shielded ball bearing Inlet cover: Aluminum board or Galvanized steel sheet Terminal: Brass, tin plating
Motor	Shaded pole induction motor Protection type: Impedance protection
Common Elec. Spec.	See page G-12.
Usage Range	Rated voltage ±10 %
Operating Temp. Range	- 20 °C ~ + 60 °C

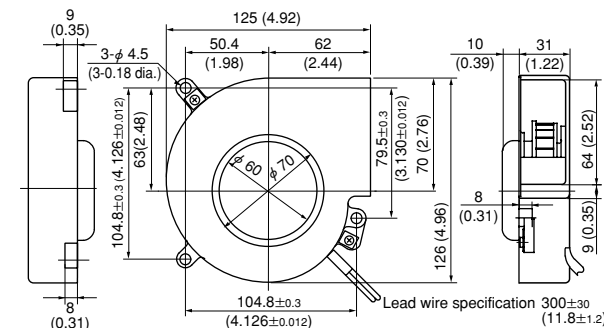
Standard airflow and static pressure characteristics (At rated voltage)

CB □□B □



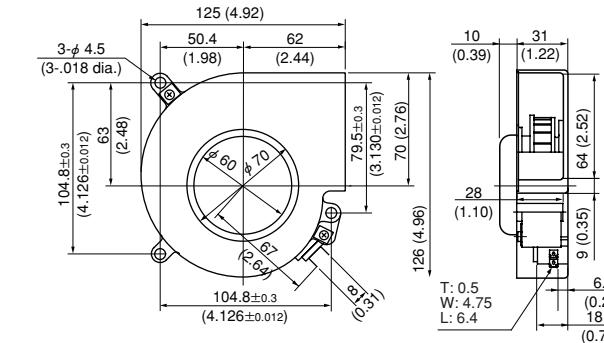
External dimensions in mm (inches)

Lead wire type (CB □□B 4)



Lead wire specification: AWG22 UL1015

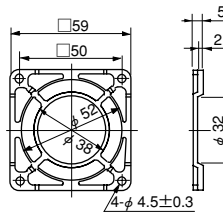
Terminal type (CB □□B 3)



Options (sold separately)

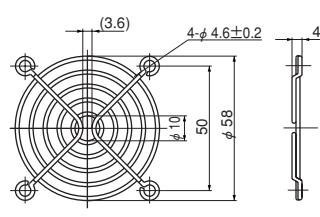
- Power code: T2P1 code, D2P1 code, UL2P1 code

F60P Guard (Mass 4 g)



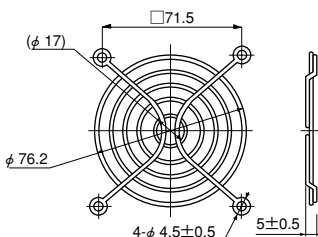
Material: Polycarbonate (black)
UL94V-2

F60UL Guard (Mass 12 g)



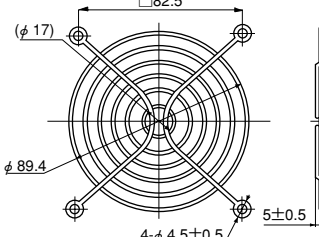
Material: Mild steel wire 1.6 dia.
Surface treatment:
Nickel chromium plating

F80UL Guard (Mass 14 g)



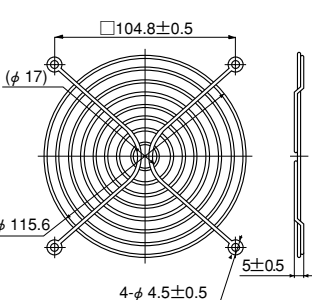
Material: Mild steel wire 1.6 dia.
Surface treatment:
Nickel chromium plating

F92UL Guard (Mass 16 g)



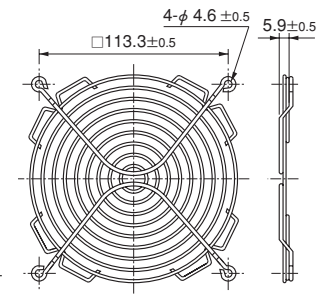
Material: Mild steel wire 1.6 dia.
Surface treatment:
Nickel chromium plating

F120UL Guard (Mass 29 g)



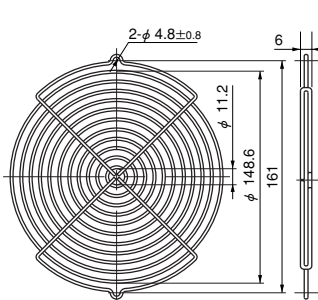
Material: Mild steel wire 1.6 dia.
Surface treatment:
Nickel chromium plating

F127UL Guard



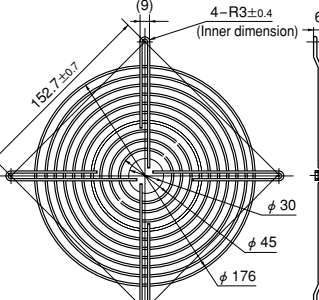
Material: Mild steel wire 1.6 dia.
Surface treatment:
Nickel chromium plating

GUARD 172



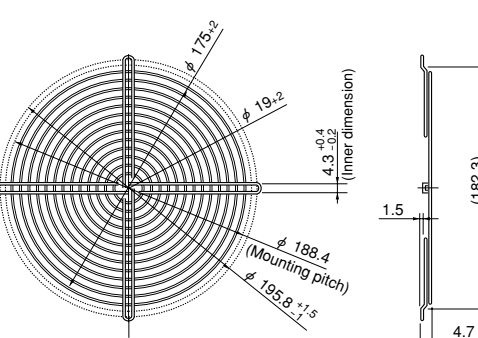
Material: Mild steel wire 2 dia.
Surface treatment:
Nickel chromium plating

F180UL Guard



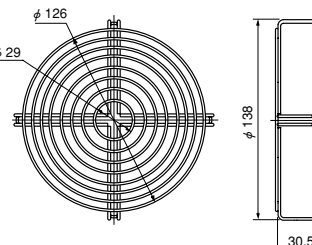
Material: Mild steel wire 1.6 dia.
Surface treatment:
Nickel chromium plating

F200UL Guard (Mass 82 g)



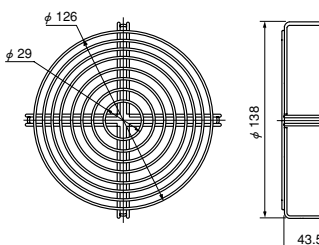
Material: Mild steel wire 1.6 dia.
Surface treatment:
Nickel chromium plating

SCU Guard (Mass 50 g)



Material: Mild steel wire 1.6 dia.
Surface treatment:
Nickel chromium plating

SCN Guard (Mass 55 g)



Material: Mild steel wire 1.6 dia.
Surface treatment:
Nickel chromium plating

• Guard special for intake side of
SCUD (metal venturi) fans.

• Guard special for intake side of
SCND (metal venturi) fans.

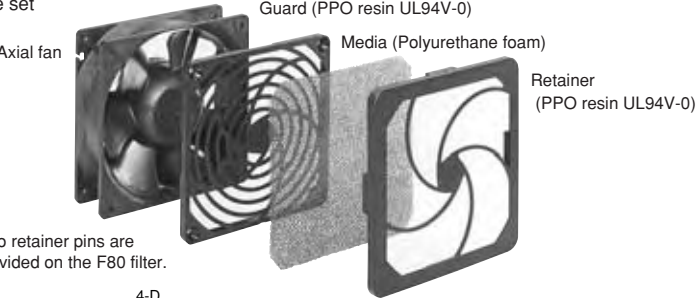
List of mating fan series

Guard	F60P	F60UL	F80UL	F92UL	F120UL	F127UL	GUARD 172	F180UL	F200UL	SCN	SCU
AC Axial Fans											
SCU					○*1						○*2
SCN					○*1					○*2	
VE			○								
WE				○							
KA					○						
CU					○						
CN					○						
MA							○				
PA								○			
PL									○		
DC Axial Fans											
SKUD					○						
SKLD					○						
SCUD					○*1						○*2
SCND					○*1					○*2	
SCUDM					○						
SCNDM					○						
TUDC	○	○									
PUDC			○								
KUDC				○							
KLDC					○						
CUDC					○						
CNDC					○						
D1238					○						
D1338						○					
MADC							○				
PADC							○				
G1751								○			
SADC									○		

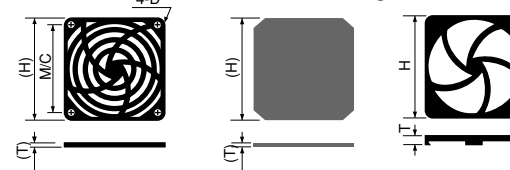
*1: Can be installed only on outlet side. *2: Can be installed only on intake side.
All guards conform to the UL standard when combined with Japan Servo fans.
The installation of a filter, guard and other accessories will constitute a ventilating load,
reducing the airflow. Select a suitable guard, taking into consideration the increase in air
resistance. (See Figs. 12 and 13 on page G-7.)

Filter

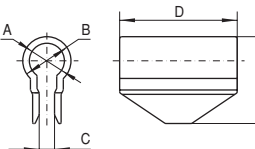
3-piece set



Note: Two retainer pins are
provided on the F80 filter.

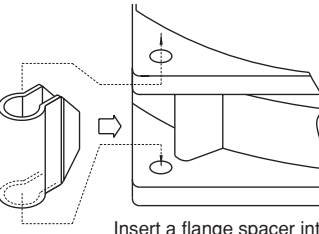


Flange spacer



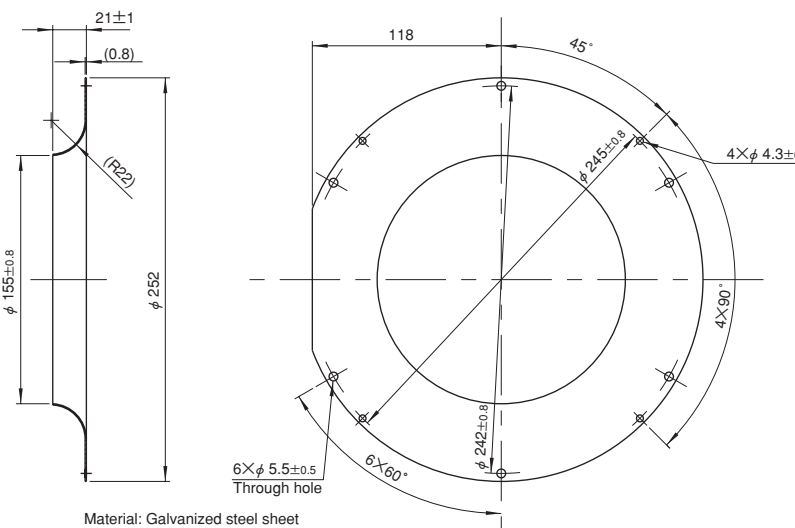
Component (Model Code)	A mm	B mm	C mm	D mm	E mm	Mating Model Code
Flange Spacer PUDC (※)	5	8	2	17	14.5	KUDC,PUDC
Flange Spacer CUDC (※)	8	11	3.5	15	19.8	CUDC
Flange Spacer CNDC	8	11	3.5	28	19.8	CNDC

※Ribbed venturis (PUDC-R, CUDC-R) are available for PUDC and CUDC.



(Installing a flange spacer)

Inlet ring



Material: Galvanized steel sheet

Component (Model Code)	Mating Model Code
E2271 Inlet ring	E2271Z

List of mating fan series

Filter	F80	F92	F120
DC Axial Fans			
SKUD		○	
SKLD		○	
SCUDM			○
SCNDM			○
KUDC		○	
PUDC	○		
KLDC		○	
CUDC			○
CNDH			○
D1238			○

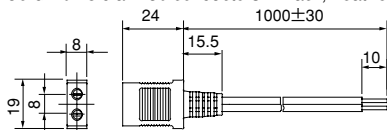
Filter	F80	F92	F120
AC Axial Fans			
VE	○		
WE		○	
KA		○	
CU			○
CN			○

Component (Model Code)	H	T	M/C	D
F80 Filter	83.6	10	71.5	φ 3.8
F92 Filter	96.5	10	82.5	φ 3.8
F120 Filter	123.7	10.7	104.8	φ 4.6

(Common specification: Rated 3 A, voltage 250 V, dielectric strength 1 minute at 1500 V 50 Hz)

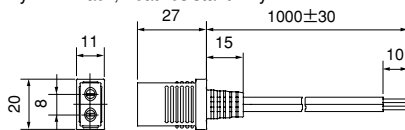
D2P1 cord (Mass 35 g)

Certified under the Electrical Appliance and
Material Safety Law (Japan) (<PS>E mark approved)
Cord 0.18 dia. 30 conductors Black, heat resistant vinyl



UL2P1 cord (Mass 41 g)

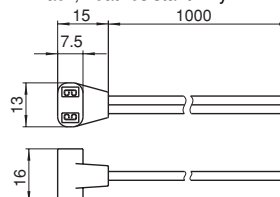
UL standard product (UL file No. E78112)
Cord 0.16 dia. 41 conductors
Black, heat resistant vinyl



* UL2P2 cord with 2m length also available.

T2P1 cord

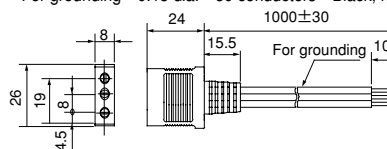
For wiring inside equipment
Cord 0.18 dia. 30 conductors
Black, heat resistant vinyl



D3P1 cord (Mass 59 g)

Certified under the Electrical Appliance and
Material Safety Law (Japan) (<PS>E mark approved)

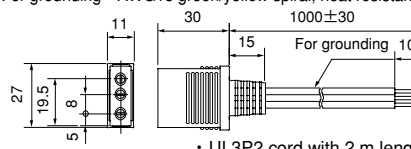
Cord:
For power feeding 0.18 dia. 30 conductors Black, heat resistant vinyl
For grounding 0.18 dia. 50 conductors Black, heat resistant vinyl



UL3P1 cord (Mass 60 g)

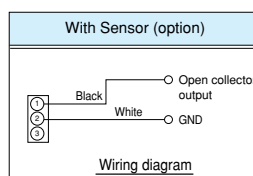
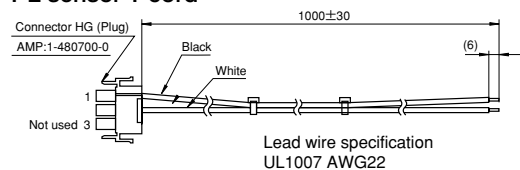
UL standard product
(UL file No. E78112)

Cord:
For power feeding 0.16 dia. 41 conductors Black, heat resistant vinyl
For grounding AWG18 green/yellow spiral, heat resistant vinyl

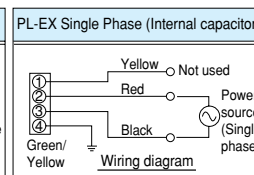
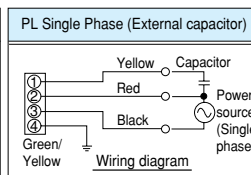
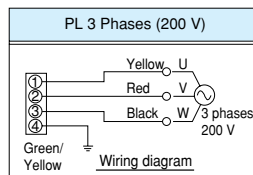
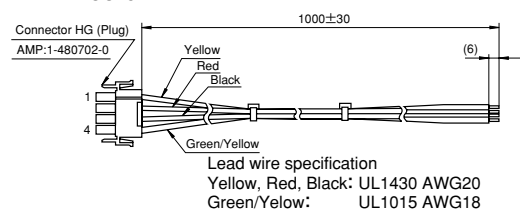


- UL3P2 cord with 2 m length also available.

PL sensor 1 cord



PL4P1 cord



List of mating fan series

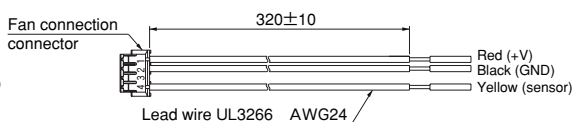
Cord	T2P1	D2P1	D3P1	UL2P1	UL3P1	PL4P1	PL sensor
AC Axial Fans	WE	○	○	○			
	KA	○	○	○			
	CU	○	○	○			
	CN (2 terminals)	○	○	○			
	CN (3 terminals)			○	○		
	MA	○	○	○			
	PA	○	○	○			
	PL					○	○

■ Plug cords for DC fans

DCLD030ST-ZZ01 (S sensor output cord)



DCLD030PT-ZZ01 (P sensor output cord)



- Lead wire ends are sheathed to protect conductors. (Sheath peeling dimension 10 ± 5)

Component (Model Code)	Mating Model Code
DCLD030ST-ZZ01	E1033H□□B□AM-04
DCLD030PT-ZZ01	