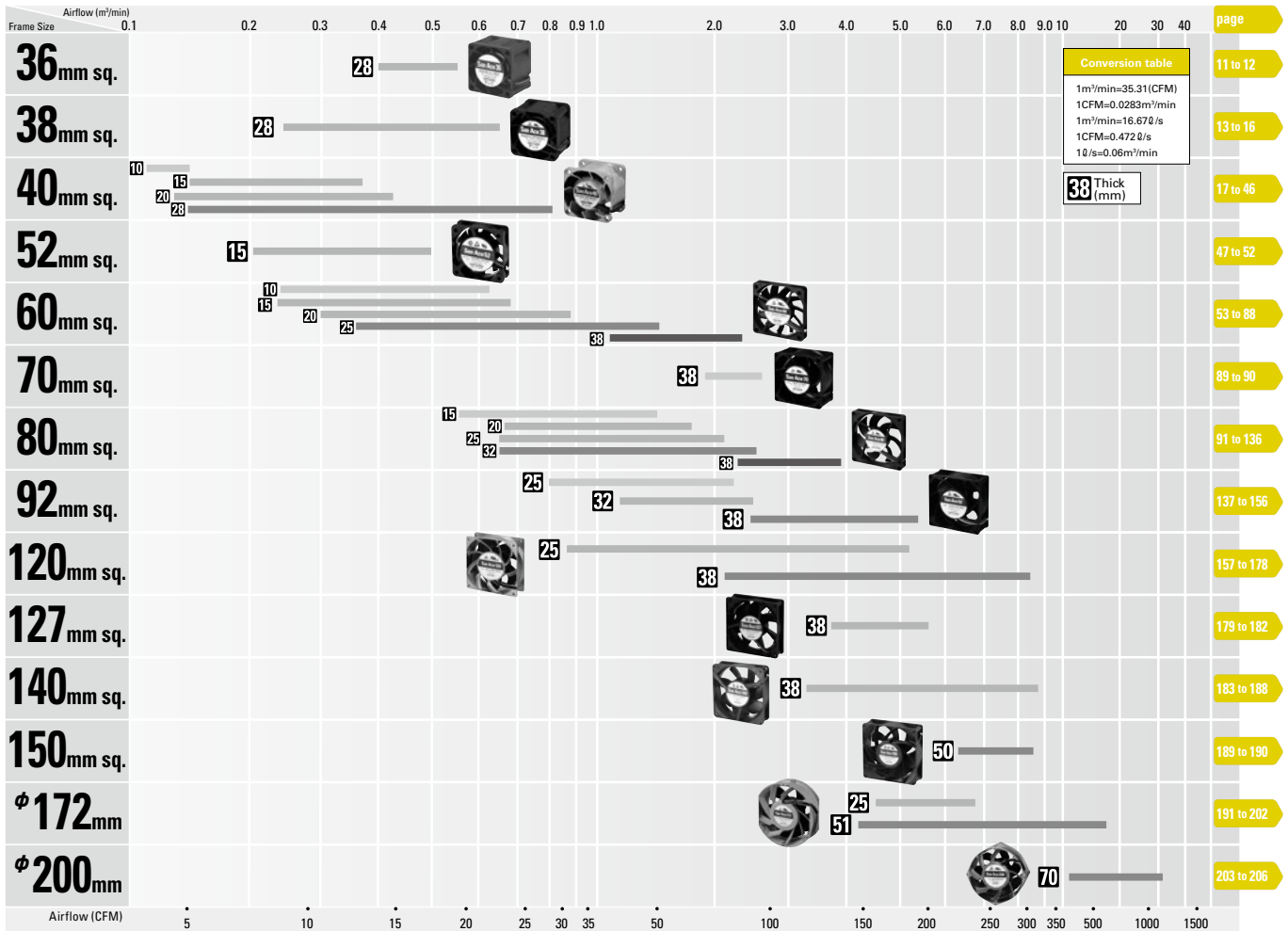


# DC Fan

Wide lineup including low power consumption fans (9GA type), silent fans (9S type), and high airflow and high static pressure fans.

## Domain Diagram



## Model Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

<b>9GV</b>	<b>12</b>	<b>12</b>	<b>J</b>	<b>1</b>	<b>01</b>	<b>1</b>
<b>Type name / frame material</b> 109P / Plastics 109R / Plastics 9GA / Plastics 9S / Plastics 9GV / Plastics Aluminum 9GE / Aluminum 9G / Plastics 9A / Plastics 9SG / Aluminum 109E / Aluminum 9EC / Aluminum 9GX / Plastics 9GAX / Plastics 9HV / Plastics Aluminum 9HVA / Plastics	<b>Frame size</b> 36: 36×36mm 03: 38×38mm 04: 40×40mm 05: 52×52mm 06: 60×60mm 08: 80×80mm 09: 92×92mm 12: 120×120mm 13: 127×127mm 14: 140×140mm 15: 150×150mm 17: φ172mm 47: φ172mm×147mm (sidecut) 57: φ172mm×150mm (sidecut) 20: φ200mm	<b>Voltage</b> 05: 5V 12: 12V 24: 24V 48: 48V etc	<b>Speed code</b> A,B,C,D,E,F,G,H,J,K, L,M,S,W etc	<b>Frame thickness</b> 0: 70mm thick 1: 38mm thick 2: 32mm thick 3: 28mm thick 4: 25mm thick 5: 50mm thick 51mm thick 6: 20mm thick 7: 15mm thick 9: 10mm thick	<b>Sensor specifications</b> 01 or 001: With a pulse sensor 02 or 002: Without a sensor D01 or D001: With a lock sensor	<b>Frame form</b> Nil: Plastics frame: Ribbed frame Aluminum frame: Ribless frame 1: Plastics frame: Ribless frame 3: 40×40×28mm for 1U applications Plastics frame: Ribbed frame

### Fans with PWM control function

Example :

<b>9GV</b>	<b>12</b>	<b>12</b>	<b>P</b>	<b>4</b>	<b>G</b>	<b>01</b>	
<b>Type name / frame material</b> 9GV / Plastics Aluminum	<b>Frame size</b> 12: 120×120mm	<b>Voltage</b> 12: 12V	<b>PWM control function</b>	<b>Frame thickness</b>	<b>Speed code</b>	<b>Individual customer's spec</b> 2 to 4 digits	<b>Frame form</b> Nil: Plastics frame: Ribbed frame Aluminum frame: Ribless frame

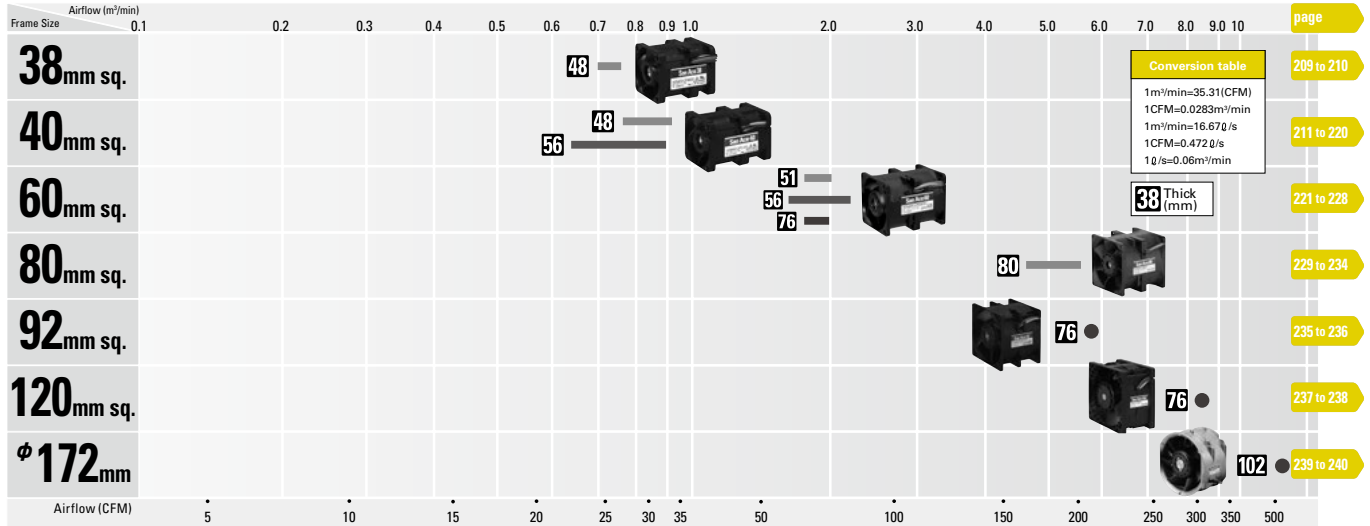
# Counter Rotating Fan

Counter rotating fans feature high airflow and high static pressure.

## Related product

Long Life Counter Rotating Fan ⇒ pp. 327, 333

## Domain Diagram



## Model Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

<b>9CRA</b>	<b>04</b>	<b>12</b>	<b>K</b>	<b>4</b>	<b>01</b>
<b>Type name / frame material</b> 9CR / Plastics Aluminum 9CRA / Plastics 9CRB / Plastics 9CRE / Aluminum 9CRD / Plastics 9CRF / Plastics	<b>Frame size</b> 03 : 38×38mm 04 : 40×40mm 06 : 60×60mm 08 : 80×80mm 12 : 120×120mm 57 : φ172mm×150mm (sidecut)	<b>Voltage</b> 12 : 12V 48 : 48V	<b>Speed code</b> J,G,S,H,K etc	<b>Frame thickness</b> 0 : 76mm thick 4 : 48mm thick 5 : 56mm thick, 51mm thick 6 : 56mm thick 8 : 80mm thick 9 : 102mm thick	<b>Sensor specifications</b> 01 : With a pulse sensor 02 : Without a sensor D01 : With a lock sensor

## Fans with PWM control function

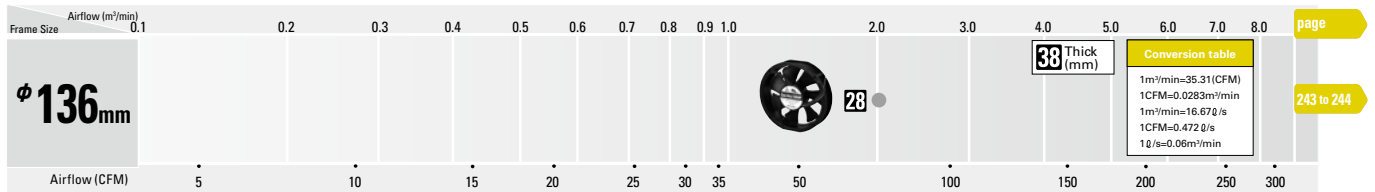
Example :

<b>9CRA</b>	<b>03</b>	<b>12</b>	<b>P</b>	<b>4</b>	<b>K</b>	<b>03</b>
<b>Type name / frame material</b> 9CRA / Plastics	<b>Frame size</b> 03 : 38×38mm	<b>Voltage</b> 12 : 12V	<b>PWM control function</b>	<b>Frame thickness</b>	<b>Speed code</b>	<b>Individual customer's spec</b> 2 or 3 digits

# Reversible Flow Fan

The wind directions can be switched with these fans. Equivalent cooling performance can be obtained in both directions.

## Domain Diagram



## Model Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

<b>9RF</b>	<b>13</b>	<b>12</b>	<b>P</b>	<b>3</b>	<b>H</b>	<b>001</b>
Type name / frame material 9RF / Plastics	Frame size 13: $\phi$ 136mm	Voltage 12: 12V 24: 24V	PWM control function	Frame thickness 3: 28mm thick	Speed code	Individual customer's spec

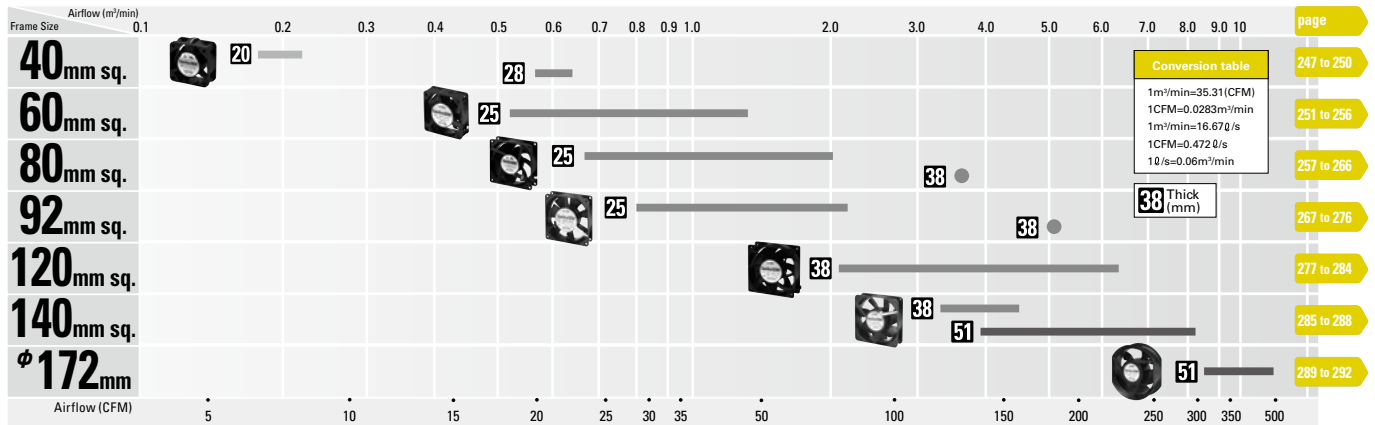
# Splash Proof Fan

Cooling fan of IP54, IP55 and IP68 waterproof capability.

## Related product

Splash Proof Centrifugal Fan ⇒ p. 293  
Oil Proof Fan ⇒ p. 303

## Domain Diagram



## Model Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

9WS	12	12	H	1	01	
<b>Type name / frame material</b> 109W / Aluminum 9WS / Plastics 9WE / Aluminum 9WG / Aluminum 9WB / Aluminum 9WP / Plastics 9WV / Plastics Aluminum 9WL / Aluminum	<b>Frame size</b> 04 : 40×40mm 06 : 60×60mm 08 : 80×80mm 09 : 92×92mm 12 : 120×120mm 14 : 140×140mm 17 : φ172mm 57 : φ172mm×150mm (sidecut)	<b>Voltage</b> 12 : 12V 24 : 24V 48 : 48V etc	<b>Speed code</b> A, D, E, F, G, H, J, L, M, S etc	<b>Frame thickness</b> 1 : 38mm thick 4 : 25mm thick 5 : 51mm thick 6 : 20mm thick	<b>Sensor specifications</b> 01 : With a pulse sensor 02 : Without a sensor D01 : With a lock sensor	<b>Frame form</b> Nil : Plastics frame: Ribbed frame Aluminum frame: Ribless frame 1 : Plastics frame: Ribless frame

## Fans with PWM control function

Example :

9WV	08	48	P	1	H	001	
<b>Type name / frame material</b> 9WV / Plastics Aluminum	<b>Frame size</b> 08 : 80×80mm	<b>Voltage</b> 48 : 48V	<b>PWM control function</b>	<b>Frame thickness</b>	<b>Speed code</b>	<b>Individual customer's spec</b> 2 or 3 digits	<b>Frame form</b> Nil : Plastics frame: Ribbed frame Aluminum frame: Ribless frame

## Ingress protection ratings (IP code)

IP Codes used by SANYO DENKI express the level of protection that internal electrical components (for fans: electrical components and motor coils) have against solid objects, water, and access to hazardous parts.

San Ace Splash Proof fans feature high protection levels.

## Definition of Ingress Protection (IP Code)

Ingress Protection (IP Code) is defined in IEC (International Electrotechnical Commission) 60529\* DEGREES OF PROTECTION PROVIDED BY ENCLOSURES (IP Code). \*IEC 60529:2001

**I P X X**

Second digit: Protection against water

First digit: Protection against solid objects and access to hazardous parts

\*For details, please refer to p. 483.

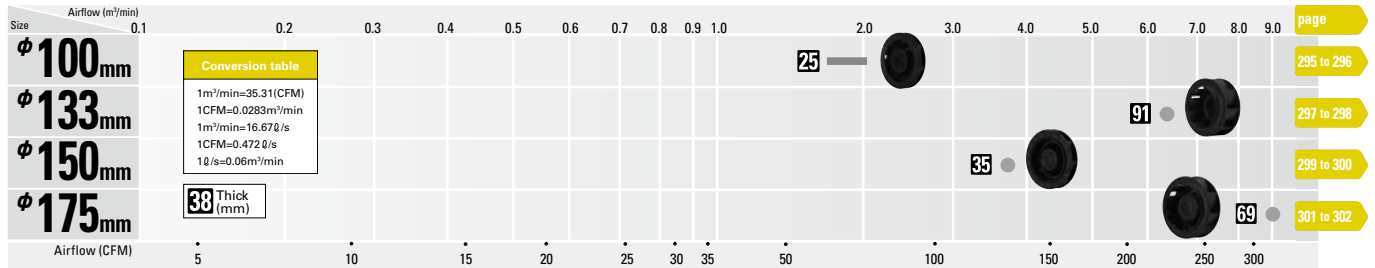
# Splash Proof Centrifugal Fan

Centrifugal fans of IP54 waterproof capability.

## Related product

Splash Proof Fan ⇒ p. 245 Centrifugal Fan ⇒ p. 371  
Oil Proof Fan ⇒ p. 303

## Domain Diagram



## Model Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

<b>9W1T</b>	<b>M</b>	<b>48</b>	<b>P</b>	<b>4</b>	<b>H</b>	<b>01</b>
<b>Type name</b> 9W1T: Splash Proof Centrifugal Fan	<b>Impeller size</b> M : $\phi$ 100mm J : $\phi$ 133mm N : $\phi$ 150mm G : $\phi$ 175mm	<b>Voltage</b> 24 : 24V 48 : 48V	<b>PWM control function</b> P	<b>Frame thickness</b> 0 : 69mm thick MIN 1 : 35mm thick 4 : 25mm thick	<b>Speed code</b> H,G etc	<b>Individual customer's spec</b> 2 or 3 digits

## Ingress protection ratings (IP code)

IP Codes used by SANYO DENKI express the level of protection that internal electrical components (for fans: electrical components and motor coils) have against solid objects, water, and access to hazardous parts. San Ace Splash Proof Centrifugal fans feature high protection levels.

### Definition of Ingress Protection (IP Code)

Ingress Protection (IP Code) is defined in IEC (International Electrotechnical Commission) 60529\*  
DEGREES OF PROTECTION PROVIDED BY ENCLOSURES (IP Code). \*IEC 60529:2001

**I P X X**

Second digit: Protection against water

First digit: Protection against solid objects and access to hazardous parts

First digit	Definition
0	No protection
1	Protection against solid objects > 50 mm
2	Protection against solid objects > 12.5 mm
3	Protection against solid objects > 2.5 mm
4	Protection against solid objects > 1 mm
5	Protection against a level of dust that could hinder operation or impair safety
6	Complete protection against dust

Second digit	Definition
0	No protection
1	Protection against dripping water
2	Protection against water spray up to 15°
3	Protection against spraying water
4	Protection against splashing water
5	Protection against low pressure water jets
6	Protection against high pressure water jets
7	Protection against temporary immersion in water
8	Protection against submersion in water

# Oil Proof Fan

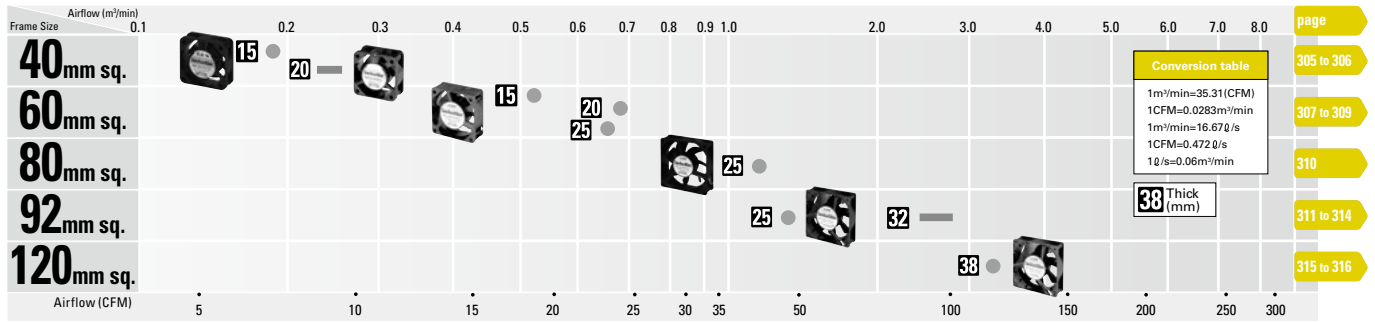
Cooling fan capable of operating in an oil-mist environment.

## Related product

Splash Proof Fan ⇒ p. 245

Splash Proof Centrifugal Fan ⇒ p. 293

## Domain Diagram



## Model Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

<b>9WF</b>	<b>12</b>	<b>24</b>	<b>H</b>	<b>1</b>	<b>01</b>	
<b>Type name / frame material</b> 9WF / Plastics	<b>Frame size</b> 04 : 40×40mm 06 : 60×60mm 08 : 80×80mm 09 : 92×92mm 12 : 120×120mm	<b>Voltage</b> 24 : 24V	<b>Speed code</b> H	<b>Frame thickness</b> 1 : 38mm thick 2 : 32mm thick 4 : 25mm thick 6 : 20mm thick 7 : 15mm thick	<b>Sensor specifications</b> 01 : With a pulse sensor 02 : Without a sensor D01 : With a lock sensor	<b>Frame form</b> Nil : Ribbed frame

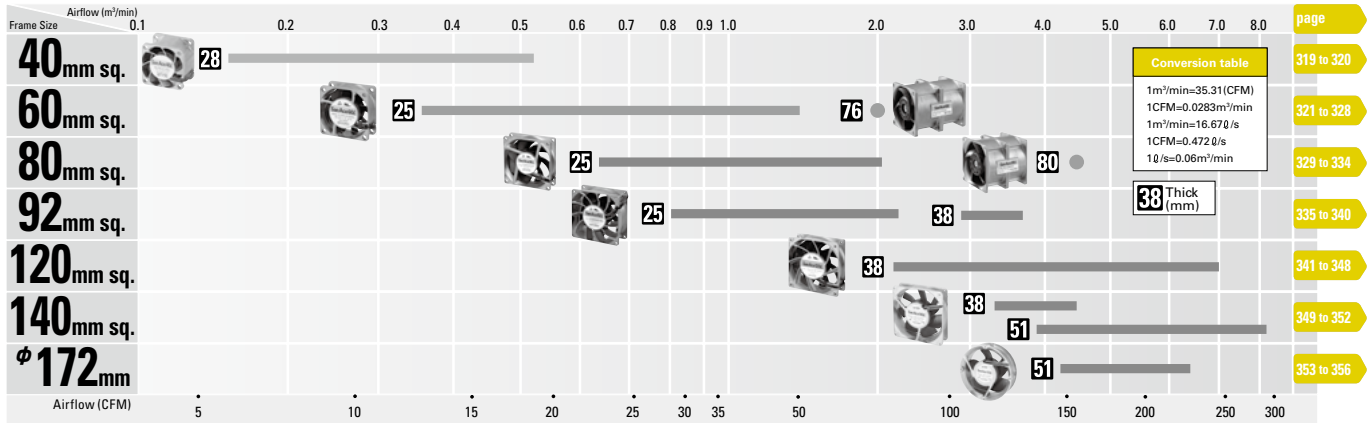
# Long Life Fan

Cooling fan with Max. 200,000 hours of expected life.

## Related product

Splash Proof, Long Life Fan ⇒ pp. 248, 251, 257, 267

## Domain Diagram



## Model Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

<b>109L</b>	<b>12</b>	<b>12</b>	<b>H</b>	<b>1</b>	<b>01</b>
<b>Type name / frame material</b> 109L / Aluminum 9LB / Aluminum 9GL / Aluminum 9L / Aluminum 9LG / Aluminum 9CRL / Aluminum	<b>Frame size</b> 04: 40×40mm 06: 60×60mm 08: 80×80mm 09: 92×92mm 12: 120×120mm 14: 140×140mm 17: φ172mm 57: φ172mm×150mm (sidecut)	<b>Voltage</b> 12: 12V 24: 24V 48: 48V etc	<b>Speed code</b> E, F, G, H, J, L, M, S etc	<b>Frame thickness</b> 0: 76mm thick 1: 38mm thick 3: 28mm thick 4: 25mm thick 5: 51mm thick 8: 80mm thick	<b>Sensor specifications</b> 01: With a pulse sensor 02: Without a sensor D01: With a lock sensor

## Fans with PWM control function

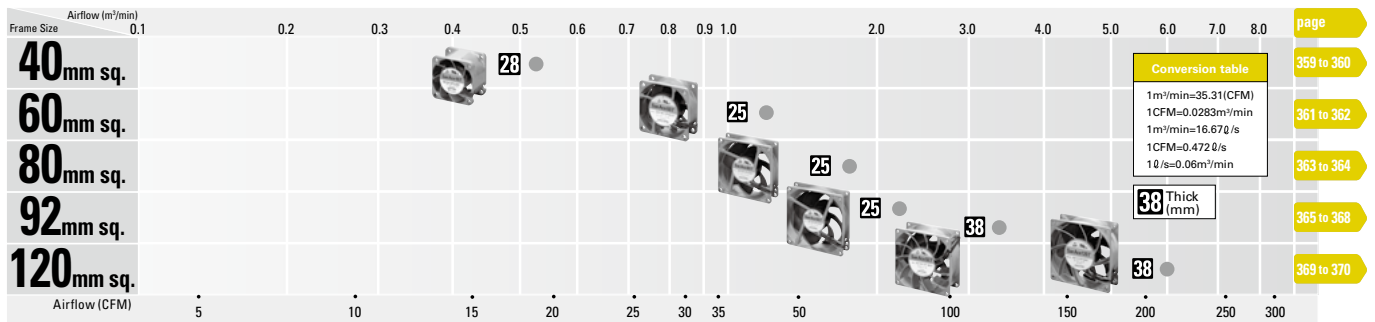
Example :

<b>9LG</b>	<b>06</b>	<b>12</b>	<b>P</b>	<b>4</b>	<b>S</b>	<b>001</b>
<b>Type name / frame material</b> 9LG / Aluminum	<b>Frame size</b> 06: 60×60mm	<b>Voltage</b> 12: 12V	<b>PWM control function</b>	<b>Frame thickness</b> 4: 25mm thick	<b>Speed code</b>	<b>Individual customer's spec</b> 2 or 3 digits

# Wide Temperature Range Fan

These fans can be used in a wide temperature range from - 40°C to + 85°C .

## Domain Diagram



## Model Numbering System Not every combination of the following codes or characters is available. Contact us for an available combination.

**9GT**

Type name /  
frame material  
9GT / Plastics

**04**

Frame size  
 04 : 40×40mm  
 06 : 60×60mm  
 08 : 80×80mm  
 09 : 92×92mm  
 12 : 120×120mm

**12**

Voltage  
 12 : 12V  
 24 : 24V

**P**

PWM control  
function

**3**

Frame thickness  
 1 : 38mm thick  
 3 : 28mm thick  
 4 : 25mm thick

**J**

Speed code

**001**

Individual customer's spec



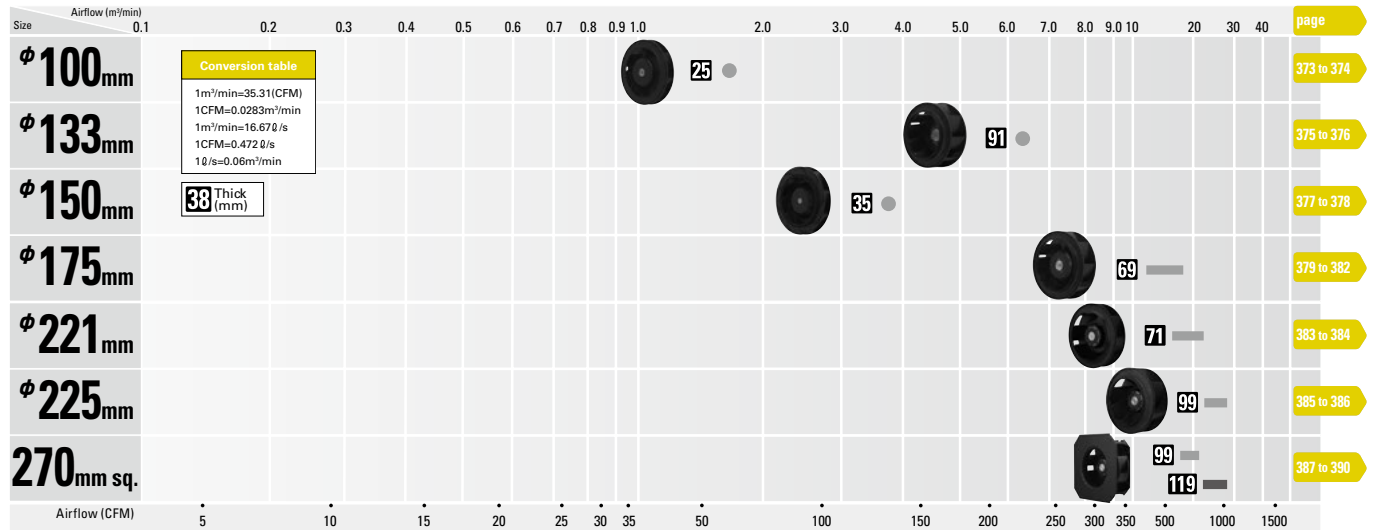
# Centrifugal Fan

Cooling fan blows air in a centrifugal course. It features high static pressure.

## Related product

Splash Proof Centrifugal Fan ⇒ p. 293

## Domain Diagram



## Model Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

<b>9T</b>	<b>M</b>	<b>48</b>	<b>P</b>	<b>4</b>	<b>H</b>	<b>01</b>
<b>Type name</b> 9T: Centrifugal Fan	<b>Impeller size</b> M: φ100mm J: φ133mm N: φ150mm G: φ175mm P: φ221mm S: φ225mm GA: φ175mm	<b>Voltage</b> 24: 24V 48: 48V	<b>PWM control function</b> P	<b>Frame thickness</b> 0: 69mm thick MIN 1: 35mm thick 4: 25mm thick	<b>Speed code</b> H, G etc	<b>Individual customer's spec</b> 2 or 3 digits

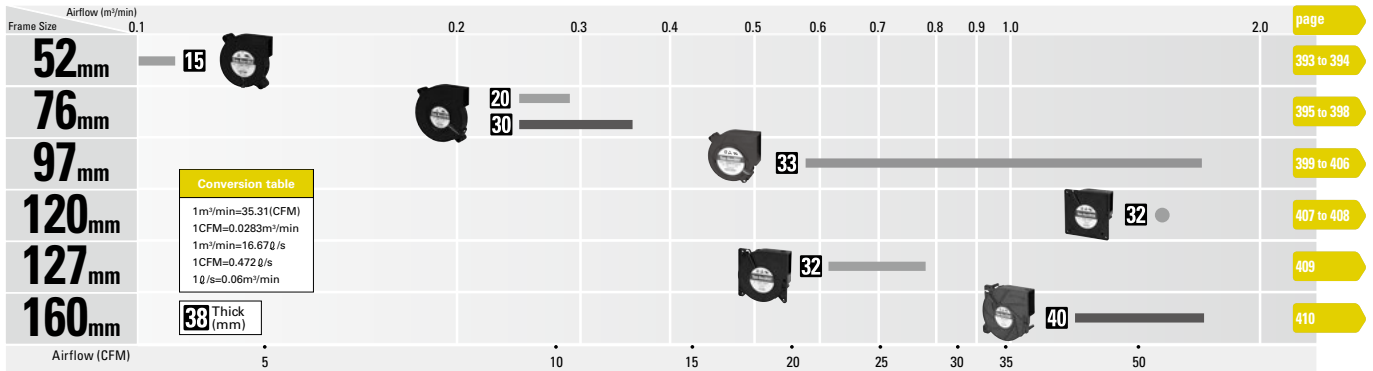
## Bracket-mounted Centrifugal Fan

<b>9B1T</b>	<b>P</b>	<b>48</b>	<b>P</b>	<b>0</b>	<b>H</b>	<b>001</b>
<b>Type name</b> 9B1T: Bracket-mounted Centrifugal Fan	<b>Impeller size</b> P: φ221mm S: φ225mm	<b>Voltage</b> 24: 24V 48: 48V	<b>PWM control function</b> P	<b>Frame thickness</b> 0: 99mm thick / 119mm thick	<b>Speed code</b> H, G etc	<b>Individual customer's spec</b> 3 digits

# Blower

Cooling fan specialized for high static pressure

## Domain Diagram



## Model Numbering System

Not every combination of the following codes or characters is available. Contact us for an available combination.

<b>109B</b>	<b>C</b>	<b>12</b>	<b>H</b>	<b>C</b>	<b>2</b>	<b>-1</b>
<b>Type name / frame material</b> 109B / Plastics 9B / Plastics	<b>Frame size</b> C : 52mm F : 120mm D : 76mm J : 127mm M : 97mm G : 160mm	<b>Voltage</b> 12 : 12V 24 : 24V etc	<b>Speed code</b> F,G,H,K,M,S etc	<b>Sensor specifications</b> A : Without a sensor C : With a pulse sensor D : With a lock sensor	<b>Frame thickness</b> 1 : 40mm thick 2 : 30mm thick, 32mm thick, 33mm thick 7 : 15mm thick 6 : 20mm thick	<b>Individual customer's spec</b>

<b>9B</b>	<b>MB</b>	<b>12</b>	<b>G</b>	<b>2</b>	<b>01</b>	<b>-1</b>
<b>Type name / frame material</b> 9B / Plastics	<b>Frame size</b> MB : 97mm FB : 120mm	<b>Voltage</b> 12 : 12V 24 : 24V	<b>Speed code</b> G / S / H etc	<b>Frame thickness</b> 2 : 32mm thick / 33mm thick	<b>Sensor specifications</b> 01 : With a pulse sensor 02 : Without a sensor	<b>Individual customer's spec</b>

### Fans with PWM control function

Example :

<b>9B</b>	<b>MB</b>	<b>12</b>	<b>P</b>	<b>2</b>	<b>G</b>	<b>01</b>
<b>Type name / frame material</b> 9B / Plastics	<b>Frame size</b> MB : 97mm FB : 120mm	<b>Voltage</b> 12 : 12V	<b>PWM control function</b>	<b>Frame thickness</b> 2 : 32mm thick / 33mm thick	<b>Speed code</b>	<b>Individual customer's spec</b> 2 or 3 digits