

CPU coolers

□ 45×45mm

SAN ACE MC



Directly cools CPU, integral with a heat sink

General specifications

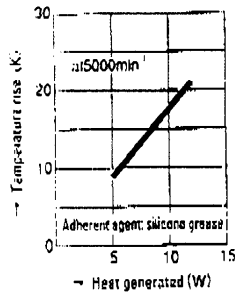
- Life expectancy40,000 hours
(survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Motor protection systemCurrent cut system(with reverse-connection protection)
- Dielectric strength50/60 Hz, 500 VAC, 1 minute
(between input terminal and frame)
- Operating thermally range- 10°C to + 60°C (non-condensing)
- Heat resistanceAs per Sanyo Denki's measurement method

18mm thick

Specifications

Model No.	Rated voltage (V)	Operating voltage range (V)	Rated current (A)	Rated input (W)	Rated rotating speed (min ⁻¹)	Thermal resistance (K/W)	Noise (dB (A))	Mass (g)
109P4405H802B	5	4.5 to 5.5	0.14	0.7	5,000	1.7	27	48
109P4412H802B	12	7 to 13.8	0.07	0.84				

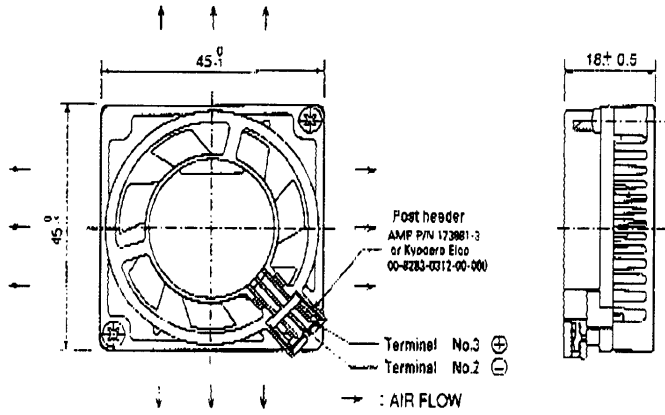
Typical cooling characteristics



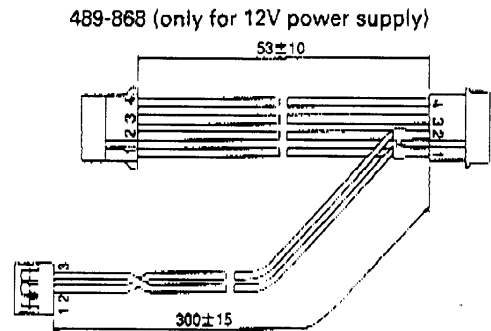
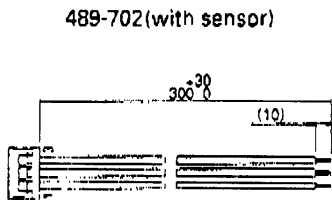
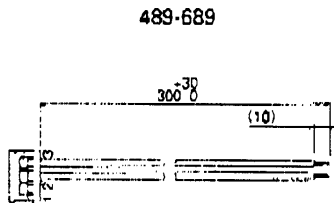
109P4412H802B
109P4405H802B

45×45mm

Dimensions (unit : mm)

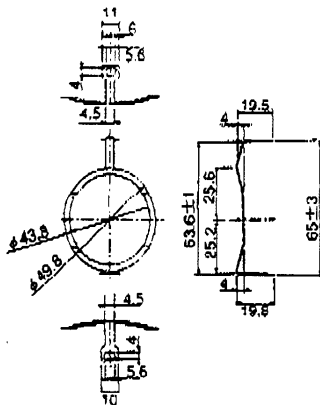


Relay harness



Installation metal fittings (unit : mm)

109-680(for use with socket 7)



45x45 mm

How to read the model number

General fans

109

Represents a fan motor.

R

Additional number: Used to classify the remodeling performed or for other purposes.

P : Mold frame type
R : Mold frame type
 E : Aluminum frame
 L : Long Life Fan
 W : Splash Proof Fan

12

Frame dimensions code

04 : 40 x 40mm
 05 : 52 x 52mm
 06 : 60 x 60mm
 08 : 80 x **80mm**
 09 : 92 x 92mm
12 : 119 x 119mm
 14 : 140 x 140mm
 17 : 172mm dia
 57 : 172mm dia,
 51 mm wide,
 side cut

12

Voltage code
 05 : 5v
12 : 12V
 21 : 21V
 24 : 24V
 48 : 48V

H

Speed code
 S : Super-speed
H : High speed
F : Medium speed between H and M
 M : Middle speed
 L : Low speed
 W : Wide range
 MH : Two speeds, H and M

1

Sensor and specific specification code

01 : With pulse sensor
 02 : Sensor-less
D01 : With lock sensor
H01 : With low-speed sensor

Frame thickness code
1 : **38mm thick** 5 : 51mmthick
 2 : 32mmthick 6 : 20mm thick
 3 : **28mmthick** 7 : 15mmthick
 4 : 25mm thick

1

Ribless 1
 Ribbed

Thermally speed controlled fans

109

Represents a fan motor.

R

Additional number: Used to classify the remodeling performed or for other purposes.

P : Mold frame type
R : Mold frame type

12

Frame dimensions code

05 : 52 x 52mm
 06 : 60 x 60mm
 08 : 80 x **80mm**
 09 : 92 x 92mm
 12 : **119 x 119mm**

12

Voltage code
12 : 12V

T

Represents a thermally speed controlled fan.

1

Frame thickness code
1 : **38mm thick**
 4 : 25mm thick
 6 : 20mm thick
 7 : 15mm thick

H

Speed code
H : High speed

11

Sensor and specific specification code
 10 : With lock sensor
 11 : **With pulse sensor**
 12 : Sensor-less

2

External view code
 Nil: **Ribbed** frame product with an external thermistor
1: **Ribless** frame product with an external thermistor
 2 : Ribbed frame product with a built-in thermistor
 3 : **Ribless** frame product with a built-in thermistor

CPU cooler

109

Represents a fan motor.

P

Additional number: Used to classify the remodeling performed or for other purposes.
 P : Mold frame type

44

Heat sink dimensions code

44 : 45 x 45mm or 44.5 x **44.5mm**
 54 : 54 x 54mm or 50.8 x **50.8mm**
 66 : 66 x 62mm

05

Voltage code
05 : 5V
 12 : 12V

H

Speed code,
 H : High speed
 M : Middle speed

8

Frame thickness code
 2 : 30mm thick
 8 : **18mm thick**
 9 : 10mm thick

D01

Sensor and specific specification code
 01 : With pulse sensor
 02 : Sensor-less
D01 : With lock sensor

6

External view code
 6 : Terminal type

Sirocco fan

109

Represents a fan motor.

B

Additional number: Used to classify the remodeling performed or for other purposes.
B : Represents a sirocco fan.

F

Frame dimensions code
F : 120 x 120mm

12

Voltage code
12 : 12V
 24 : 24V

H

Speed code
H : High speed
 M : Middle speed

A

Sensor specification code
 A : Sensor-less
 C : With a pulse sensor
 D : With a lock sensor

2

Frame thickness code
 2 : 32mm thick

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SANYO DENKI CO LTD
 MR N KODAMA
 812-3 SHIMONOGOU
 UEDA-SHI
 NAGANO-KEN 386-1211 JAPAN

RE: Project Number(s) - 99SC40484

Your most recent listing is shown below. Please review this information and report any inaccuracies to the UL Engineering staff member who handled your project.

For information on placing an order for UL Listing Cards in a 3 x 5 inch format, please refer to the enclosed ordering information.

GPWV2
 Fans, Electric - Component

March 15, 1999

SANYO DENKI CO LTD
 15-1 KITA OHTSUKA 1-CHOME TOSHIMA-KU, TOKYO 170-8451 JAPAN

E46810

San Ace Series, Models 109-075D, -008UL, -075UL, -105UL, -108UL, -070ULD, -071ULD; Models 109H072UL, -074UL, -075UL, -078UL, -472UL, -474UL, -475UL, -478UL; Models 109S005UL, -006UL, -008UL, -010UL, -013UL, -024UL, -025UL, -029UL, -072UL, -073UL, -074UL, -075UL, -078UL, -405UL, -406UL, -408UL, -410UL, -424UL, -425UL, -429UL, -470UL, -472UL, -474UL, -475UL, -477UL, -478UL
 Mini Ace Series, Models 109-033UL, -040UL, -041UL, -043UL, -044UL, -047UL.
 San Ace 25 Series, Models 109-085, 109S014, -015, -016, -017, 109S081 through -089, 109S414, -415, -481, -482, -483, 109S484 through -489.
 Mini Ace 25 Series, Model 109-492; Models 109S091, -092, -093, -094, -095, -096, -192, -193, -194, -490, -491, -492, -493, -494, -495, -496, -497.
 Petit Ace 20 Series, Models 109-210 and 109-213.
 Dyna Ace, Models 109E1712H5XX, 109E1712M5XX, 109E1724M5XX, 109E1724H5XX, 109E5712H5XX, 109E5712H5JXX, 109E5712M5XX, 109E5724H5XX, 109E5724M5XX.
 Mini Ace 25 (E Series), Models 109E0912F4XX, 109E0912H4XX, 109E0912L4XX, 109E0912M4XX, 109E0912W4XX, 109E0924F4XX, 109E0924H4XX, 109E0924L4XX, 109E0924M4XX, 109E0924W4XX, 109E0948H4XX, where XX represents 01 thru 99.
 Mini Ace 25 (P Series), Model 109P09, followed by 12, 24 or 48, followed by H, E, M L or W, followed by 4, may be followed by D, followed by XX, may be followed by 1; Models 109P0912S4XX1, 109P0912T4HXXY, where XX represents 01 thru 99 and Y represents blank, 0, 1 or 2.
 Pico Ace 25 (P Series), Models 109P0612F4XX, 109P0612H4XX, 109P0612L4XX, 109P0612M4XX, 109P0612W4XX, 109P0624F4XX, 109P0624H4XX, 109P0624M4XX, 109P0624W4XX, where XX represents 01 thru 99.
 Dyna Ace BLDC, Models 109L1712H5XX, 109L1712M5XX, 109L1724H5XX, 109L1724M5XX, 109L1748H5XX, 109L1748M5XX, 109L1712H5DXX, 109L1712M5DXX, 109L1724H5DXX, 109L1724M5DXX, 109L1748H5DXX, 109L1748M5DXX, 109L5712H5XX, 109L5712M5XX, 109L5724H5XX, 109L5724M5XX, 109L5748H5XX, 109L5748M5XX, 109L5712H5DXX, 109L5712M5DXX, 109L5724H5DXX, 109L5724M5DXX, 109L5748H5DXX, 109L5748M5DXX.
 Petit Ace Series, Models 109-050, -051, -052, -053, -054, -055, -057.
 Pico Ace 38 Series, Models 109-130, -133.
 Petit Ace 25 Series, Models 109S030, 109S031, 109S032, 109S033, 109S034, 109S037, 109S050, 109S051, 109S053, 109S054.
 Petit Ace 38 Series, Models 109-150, -151, -153, -154.
 Petit Ace 28 Series, Models 109-180, -183.
 Dyna Ace Series, Models 109-311, -312, -313, -314, -353, -361, -362, -371, -372, -373, -374, -383, -S383, 109H301, -H302, -H303, -H304, -H311, -H312, -H313, -H314, 109S301, -S302, -S303, -S304.
 High Ace Series, Models 109-601, -602, -603, -604, -641, -642, -643 and -644.
 Pico Ace 25 (P Series), Models 109P01612H4XX, 109P0612F4XX, 109P0612M4XX, 109P0612L4XX, 109P0612W4XX, 109P0624H4XX, 109P0624F4XX, 109P0624M4XX, 109P0624W4XX.
 San Ace (E Series), Models 109E1212H1A02, 109E1212H1XX, 109E1212M1X, 109E1212A1XX, 109E1224H1XX, 109E1224M1XX, 109E1224A1XX, 109E1248H1XX.
 San Ace (P or P1 Series), Models 109P1212H1XX(1), 109P1212M1XX(1), 109P1224H1XX(1), 109P1242M1XX(1).
 San Ace 25 (P or P1 Series), Models 109E1212H4AAX, 109E1212F4AAX, 109E1212M4AAX, 109E1224H4AAX, 109E1224F4AAX, 109E1224M4AAX, 109E1212H4EXX(1), 109E1212M4EXX(1), 109E1224H4EXX(1), 109E1224M4EXX(1), 109P1212L4EXX(1), 109P1224H4EXX(1), 109P1224F4EXX(1), 109P1224M4EXX(1), where XX represent 01 - 99, XX may be replaced by letter DXX; Model 109P1212T4HXXY, where XXY is represented by digits.

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San Ace 25 (E Series), Models 109E1212H4AXX, 109E1212F4AXX, 109E1212M4AXX, 109E1224H4AXX, 109E1224F4AXX, 109E1224M4AXX, 109E1212H4DX, 109E1212M4DX, 109E1224H4DX, 109E1224M4DX .

Petit Ace 25 Series, Models 109E0812H4XX, 109E0812F4XX, 109E0812M4XX, 109E0812L4XX, 109E0812W4XX, 109E0824H4XX, 109E0824F4XX, 109E0824M4XX, 109E0824L4XX, 109E0824W4XX, 109P0812H4XX, -1, 109P0812F4XX, -1, 109P0812M4XX, -1, 109P0812L4XX, -1, 109P0812W4XX, -1, 109P0824H4XX, -1, 109P0824F4XX, -1, 109P0824M4XX, -1, 109P0824L4XX, -1, 109P0824W4XX, -1, 109P0848H4XX, -1, 109P0812M4XX, where XX represents 01 to 99.

Petit Ace 25R Series and Petit Ace 25R1 Series, Models 109R0805F4XX1, 109R0805M4XX1, 109R0812S4XX1, 109R0812H4E0X1, 109R0812H4XX1, 109R0812F4XX1, 109R0812M4XX1, 109R0812L4XX1, 109R0812W4XX1, 109R0824H4XX1, 109R0824F4XX1, 109R0824M4XX1, 109R0824L4XX1, 109R0805F4XX, 109R0805M4XX, 109R0812S4XX, 109R0812H4E0X, 109R0824S4XX1, 109R0812H4XX, 109R0812F4XX, 109R0812M4XX, 109R0812L4XX, 109R0812W4XX, 109R0824S4XX, 109R0824H4XX, 109R0824F4XX, 109R0824M4XX, 109R0824L4XX, where XX represents 01 through 99 and Y represents blank or 1 through 3. Suffix "XX" may be replaced by "DXX" .

PICO Ace 25R Series, PICO Ace 25R1 Series, PICO Ace 15 Series, Models 109R0605M4XX, 109R0612H4XX, 109R0612F4XX, 109R0612M4XX, 109R0612S4XX, 109R0612D4XX, 109R0612W4XX, 109R0612T4HXX, 109R0612T4HXXY, 109R0612D4XX, 109R0612D4XX1, 109R0612D4XX1, 109R0624H4XX, 109R0624F4XX, 109R0624M4XX, 109R0605M4XX1, 109R0612H4XX1, 109R0612F4XX1, 109R0612M4XX1, 109R0612S4XX1, 109R0612D4XX1, 109R0612W4XX1, 109R0612T4HXX1, 109R0624H4XX1, 109R0624F4XX1, 109R0624D4XX, 109R0624D4XX1, 109R0624M4XX1, 109R0624S4XX, 109R0624S4XX1, 109R0624S4DX1, 109R0624S4DXX1, 109P0605H7XX, 109P0605M7XX, 109P0612F7XX, 109P0612F7DXX, 109P0612H7XX, 109P0612M7XX, 109P0612W7DXX, 109P0612T7HXX, 109P0624F7XX, 109P0624F7DXX, 109P0624H7XX, 109P0624M7XX, where XX represents 01 thru 99 and Y represents blank, or 1 through 3. 'XX' may be preceded by letter D.

Fine Ace 20 Series, Models 109P0412H6XX, 109P0412F6XX, 109P0412M6XX, 109P0412W6XX, 109P0424H6XX, 109P0424F6XX, 109P0412L6XX, 109P0405H6XX, 109P0405F6XX, suffix "XX" may be preceded by letter "D".

Fine Ace 15 Series, Models 109P0412H7XX, 109P0412M7XX, 109P0424H7XX, 109P0412S7XX, 109P0405H7XX, 109P0405M7XX, suffix "XX" may be preceded by letter "D".

Fine Ace 28 Series, Models 109P0412H3XX, 109P0412F3XX, 109P0412M3XX, 109P0424H3XX, 109P0424F3XX, 109P0405H3XX, 109P0405F3XX, 109P0405M3XX, suffix "XX" may be preceded by letter "D".

Dyna Ace Series, Models 109E1748H5XX, 109E1748M5XX, 109E5748H5XX, 109E5748M5XX, 109E1748H5GXX, 109E1748M5GXX, 109E1748H5DX, 109E1748M5DX, 109E5748H5GXX, 109E5748M5GXX, 109E5748H5DX, 109E5748M5DX, where XX represents 01 through 99.

Micro Ace 15 Series, Models 109P0512H7XX, 109P0524H7XX, 109P0512M7XX, 109P0524M7XX, 109P0512W7DXX, 109P0524W7DXX, 109P0512M7DX, 109P0524M7DX, 109P0512T7XX, where XX represents 01 through 99, Y represents blank or 2.

BLDC San Ace R and R1 Series, Model 109R12, followed by 12 or 24, followed by F1, M1, MH1 or H1, may be followed by D, followed by XXY; Model 109R1212T1HDX, where XX represents 01 thru 99 and Y represents blank, 0, 1 or 2; suffix "1" may be used to indicate no rib on the frame mounting hole.

San Ace R Series, Models 109R1248M1XX(1), 109R1248M1DX(1), 109R1248MH1XX(1), 109R1248H1XX, 109R1248H1DX(1), 109R1248M1DX(1).

San Ace E Series, Model 109E1248H1XX .

San Ace R1 Series, Model 109R1248H1M0X1 .

BLDC San Ace 120L Series, Models 109L1212H1XX, 109L1212M1XX, 109L1221H1XX, 109L1224H1XX, 109L1224M1XX, 109L1248H1XX, 109L1248M1XX, 109L1212H18X, 109L1212M18X, 109L1221H18X, 109L1224M18X, 109L1248H18X, 109L1248M18X, 109L1248S18X, 109L1248S1XX, suffix "X" represents numbers 1 through 9, suffix "XX" represents numbers 01 through 99, may be preceded by letter D.

Pico Ace 20 Series, Models 109P0612H6XX, 109P0624H6XX, 109P0612M6XX, 109P0624M6XX, 109P0612W6XX, 109P0624W6XX, 109P0612H6DX, 109P0624H6DX, 109P0612M6DX, 109P0624M6DX, 109P0612W6DX, 109P0624W6DX, suffix "XX" represents "01" through "99" and suffix Y represents no number or 1 through 3.

Petit Ace 20 Series, Models 109P0812H6XX, 109P0824H6XX, 109P0812M6XX, 109P0824M6XX, 109P0812H6DX, 109P0824H6DX, 109P0812M6DX, 109P0824M6DX, suffix "XX" represents "01" through "99" and suffix Y represents no number or 1 through 3.

Petit Ace 32 Series, Models 109P0812H2XX, 109P0812M2XX, 109P0824H2XX, 109P0824M2XX, suffix "XX" represents "01" through "99". May be followed by suffix "1" . Suffix "XX" may be replaced with "DXX".

Mini Ace 32 Series, Models 109P0912H2XX, 109P0912M2XX, 109P0912M2XX1, 109P0924H2XX, 109P0924M2XX1, 109P0924M2XX, 109P0924M2XX1, 109P0848H2XX1, suffix "XX" represents "01" through "99". Suffix "XX" may be replaced with "DXX".

DC Fan, Model 109X4405H6JXX .

San Ace MC Series, Models 109P4405H8XXXX, 109P4412H8XXXX, 109P5405H8XXXX, 109P5412H8XXXX, 109P5405H2XXXX, 109P5412H2XXXX, 109X4405H6XXXX, 109X4405H6XXXX, 109X4412H6XXXX, 109X4412H6XXXX, 109X1512H2XXXX, 109X1512H2XXXX, 109X1512S3XXXX, 109X6512H2XXXX, suffix XXXX represents D, E, J or blank, followed by 01-99, followed by 1-9 or blank.

San Ace MC Series, Models 109P6605H2, 109P6612H2, followed by 4 alphanumeric suffix. Represents D, E, J or blank, by 01-99, followed by 1-9 or blank.

San Ace 140L Series, Models 109L1412H1XX, 109L1412M1XX, 109L1424H1XX, 109L1424M1XX, 109L1448H1XX, 109L1448M1XX, 109L1412H5XX, 109L1412M5XX, 109L1424H5XX, 109L1424M5XX, 109L1424M5HDX, 109L148F5HDX, 109L1448H5XX, 109L1448M5XX, suffix "XX" may be any two digits from 01 to 99.

BLDC San 80E series, Models 109L0812H4XXX, 109L0824H4XXX, 109L0812F4XXX, 109L0824F4XXX, 109L0812M4XXX, 109L0824M4XXX, 109L0812L4XXX, 109L0824L4XXX, 109L0848H4XXX, suffix XXX represents D, followed by 01-99. Suffix XX represents 01-99 .

BLDC San Ace 92L series, Models 109L0912H4XXX, 109L0924H4XXX, 109L0912F4XXX, 109L0924F4XXX, 109L0912M4XXX, 109L0924M4XXX, 109L0912L4XXX, 109L0924L4XXX, 109L0948H4XXX . Suffix XXX represents D, followed by 01-99. Suffix XX represents 01-99 .

Sciocoo Ace series, Models 109BF, followed by the number 12 or 24, followed by the letters HA, HC, HD, MA, MC, MD, followed by a number from 0 to 9.

SAN Ace Mc note series, Models 109P4405H9, 109P4412H9, may be followed by additional suffixes.

Marking: Company name or trademark "SANYO DENKI" and model designation.



See General Information Preceding These Recognitions
For use only in equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.