SanAce Application Case

Residential Ventilation System

SANYO DENKI

Description

Residential ventilation systems deliver fresh air by circulating and exchanging the air in a house.

In a typical home, no exchange of air occurs while occupants are away and no movement to cause a flow of air with windows and doors closed.

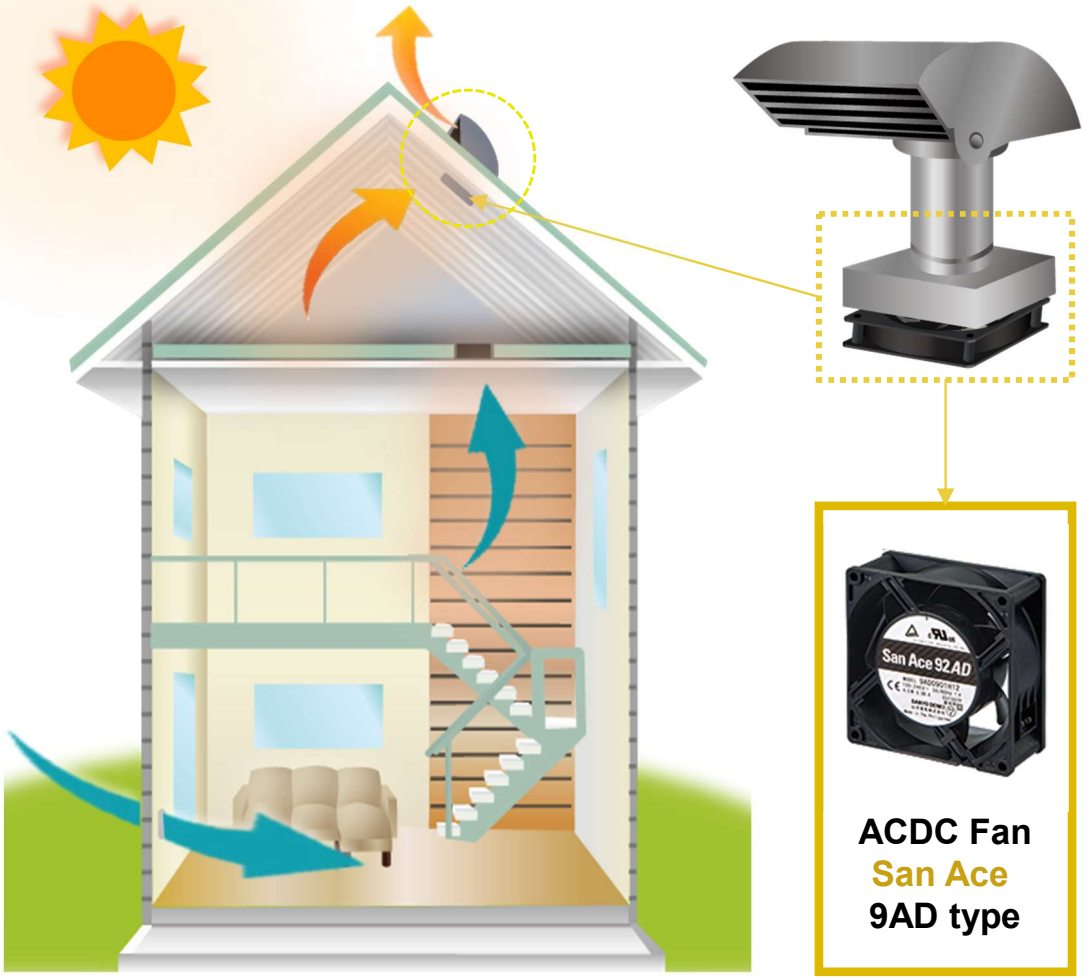
Air ventilation is necessary to create a comfortable living environment and maintain health. Otherwise problems such as mold and even sick building syndrome may result.

Ventilation changes indoor temperatures and therefore boosts the use of air conditioners, resulting in more power consumption.

However, ventilation systems use heat exchangers to transfer the heat of air to reduce heat loss, contributing to energy savings.

Also, in the case of eco-houses, the roof under the solar panel tend to have high humidity and acceleration of deterioration is a concern. But ventilation systems can prevent that and contribute to the prolonged life of the roof.

Considering the growing trend toward energy efficiency and that more and more ventilation systems that can be installed to condominiums have been developed, fans are required to have a long life and low power consumption.



SANYO DENKI Proposal

■ **9AD0901H12 / ACDC Fan / 92 x 38 mm / AC 100-240 V / 60,000 h @ 60ºC / 2-12 units**
Application: For bringing fresh air to rooms and exhausting stale air to the outside.

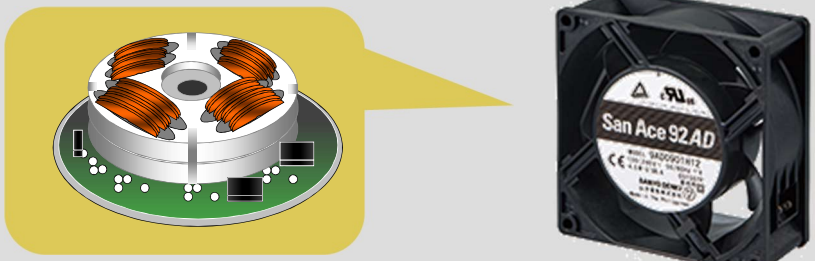
Features

1. Reduced power consumption

The compact design of the motor and PCB made it possible to incorporate an AC/DC converter inside the rotor.

Moreover, by optimizing the blade and frame design, power consumption was reduced while achieving superior cooling performance over AC fans.

AC/DC converter integrated

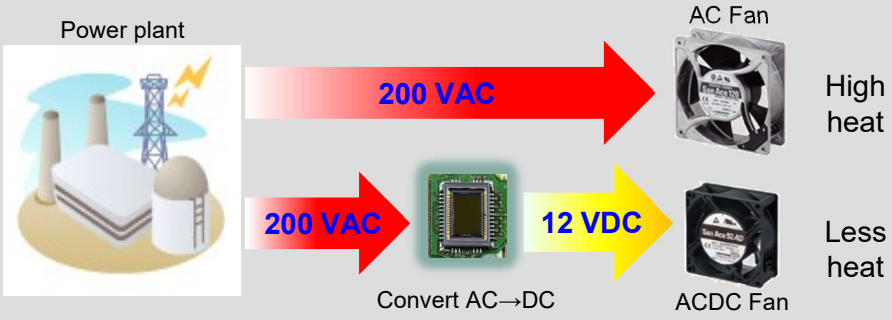


2. Wide input range

Operating voltage range: 90 to 264 V. Regardless of the input voltage and frequency, the fan speed can be kept constant.

3. Expected life

The built-in converter converts high output AC power into DC power. Improved energy efficiency reduces heat generated from the motor, slowing the deterioration of bearing grease and ultimately improving the fan's service life.



Merits

■ Reduced power costs

The AD Fan operates by internally converting existing AC power into DC power, which can greatly contribute to long-term reductions in electricity charges.

■ Comparison of power consumption, electricity charge

Model no.	Power consumption [W]	Annual electricity charge for 4 fans [USD] *	Annual electricity charge for 12 fans [USD] *
9AD0901H12	4.5	33	99
109S072UL	18	132	396
Difference	13.5	99	297

* Calculated from a power company A's electricity charge rate of 21 cents/kWh.

■ Can be used anywhere in the world

With its wide operating voltage range, this fan can be used anywhere in the world.

Region	Operating voltage range
Asia	110-240 V
USA	110-220 V
EU	220-230 V
AD Fan	**90-264 V**

→ Space saving

Can be effectively used in devices with limited space.
(AC 120 x 38 mm → ACDC 92 x 38 mm)

■ Reduced maintenance costs

The AD Fan helps reduce labor hours and fan replacement frequency. For a device with a service life of 7 years, a conventional AC fan needs to be replaced twice, whereas this ACDC fan requires zero replacements.