SanAce Application Case

Energy Storage System

SANYO DENKI

Description

An energy storage system (ESS) is an electric storage device that stores excess electricity produced at power plants. It consists of storage batteries and a battery management system (BMS) to supply electricity when in need.

In recent years, as the use of solar, wind, and other forms of renewable energy has expanded, the need for energy storage for peak shifting and load leveling has increased. With this, ESS have attracted attention as an efficient energy management method for future smart societies.

A fan is required to alleviate the high temperatures caused by charging and discharging the battery. Preserving energy of the device while maintaining high reliability during unattended operation requires a low power consuming yet highly reliable fan.

Low Power Consumption Fan

San Ace 40

9GA type

SANYO DENKI Proposal

■ **9GA0424H6D001 / 40 x 40 x 20 cm / 24 V / Locked rotor sensor / 60,000 h @ 60ºC / 1 unit**

Purpose: 1. Cooling the internal battery
2. Cooling the battery management system

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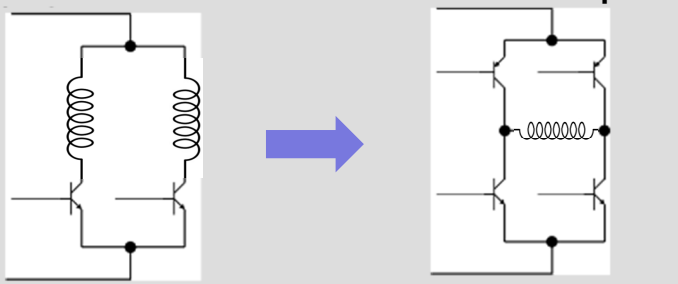
Features

■ Lower power consumption and longer service life

Bipolar windings reduce loss within the driving circuits. This improvement in efficiency reduce power consumption and extend service life.

Conventional fan → **Low Power Consumption Fan**

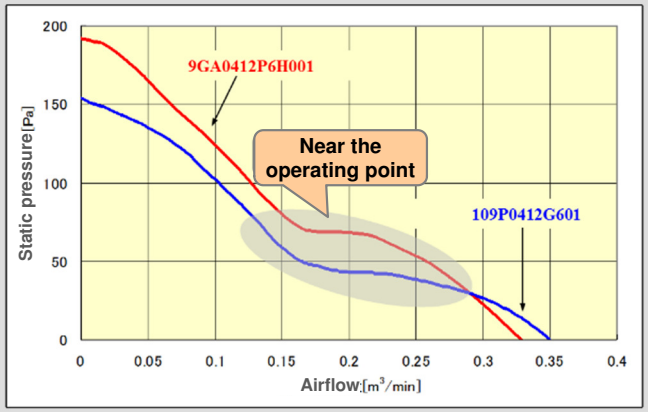


Unipolar driving method → **Bipolar driving method**

■ Lower noise and improved cooling

Blade and frame optimization reduce sound pressure level while improving cooling performance.

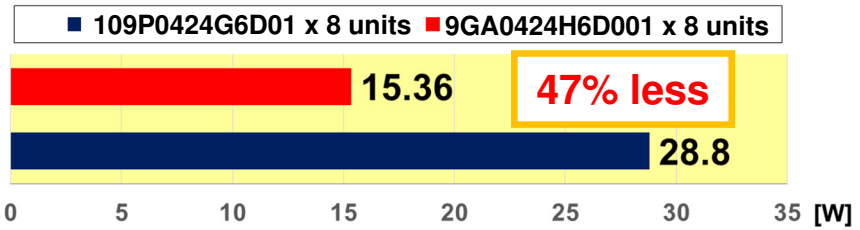
Performance comparison	Rotational speed [min-1]	Maximum airflow [m³/min]	Max. static pressure [Pa]	SPL [dB(A)]	Power consumption [W]	Expected life [h]
Low Power Consumption Fan: 9GA0924H6D001	12,400	0.33	191	40	1.92	60,000/60ºC
Conventional fan: 109P0424G6D01	12,500	0.35	153.8	44	3.6	40,000/60ºC



Merits

■ Improved device energy efficiency

Power consumption comparison

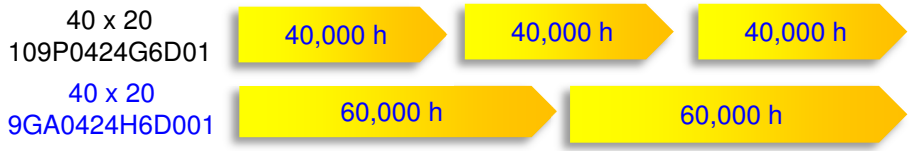


■ Fewer fan replacements

Device lifespan: 100,000 h

109P0424G6D01 = 40,000 h @ 60ºC = **Replace twice**

9GA0424H6D001 = 60,000 h @ 60ºC = **Replace once**

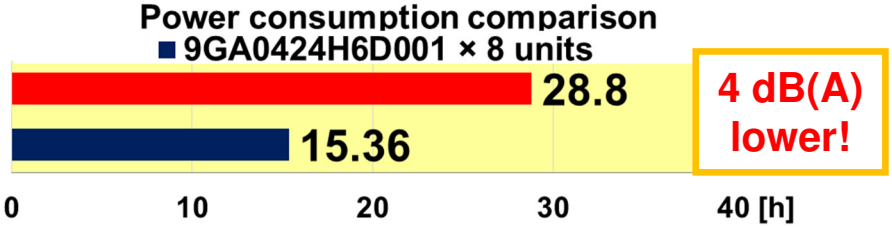


■ Improved device reliability

By improving the cooling performance of the fan, it is possible to ensure a sufficient cooling margin even when the rated rotation speed is lowered due to long-term use.

■ Reduced device noise

Power consumption comparison



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