SanAce Application Case

Propulsion Inverter for Railway Systems SANYO DENKI

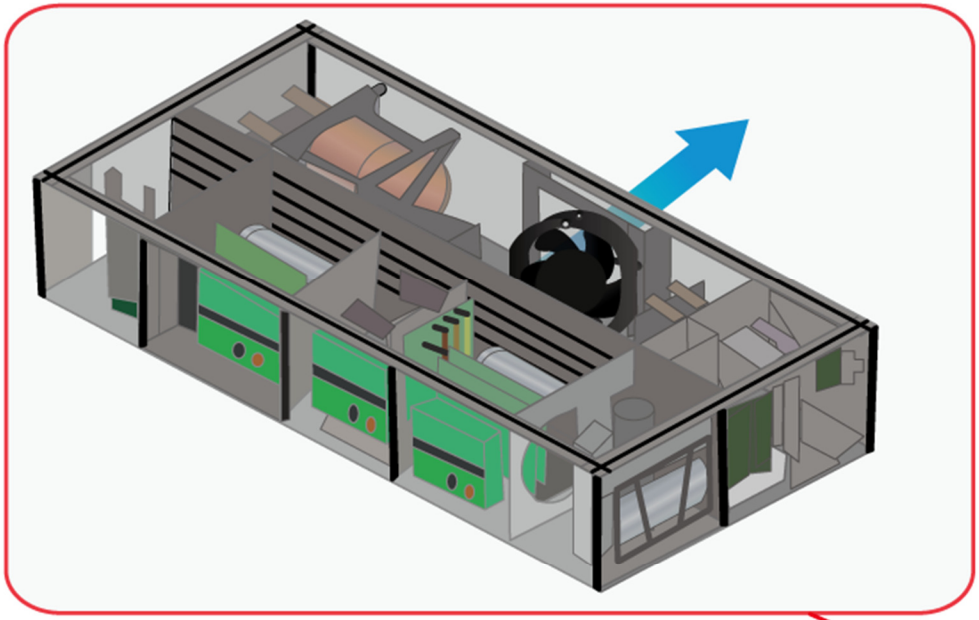
Description

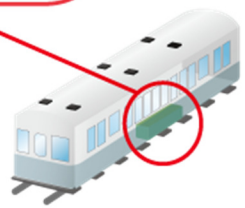
Propulsion inverters, otherwise known as propulsion systems or traction inverters, are control devises installed on trains to control the drive circuit of an electric motor. Their primary functions include starting, accelerating, decelerating via electric brake, and changing direction.

In the past, the train operators directly manipulated the camshaft and motor to drive the train. However, this method was not suitable for remote control or controlling multiple trains. Plus, close exposure to high-voltage and large currents posed various safety concerns. For this reason, indirect controllers were developed.

By installing only the control power supply in the operator's cab, and controlling remotely through the main controller, it is possible to indirectly operate multiple vehicles with just one control device, thereby ensuring the safety of the operator.

Since propulsion inverters are used for transportation vehicles operating outdoors, cooling fans need to have exceptional water and dust resistant and be highly reliable.





Splash Proof Fan
San Ace 172W
9WG type

SANYO DENKI Proposal

■ 9WG5748P5H001 / Splash Proof Fan / ø172 × 150 × 51 mm / 48 VDC / PWM control function / 40,000 h @ 60ºC / 1 unit
Purpose: Removing heat within the propulsion inverter.
Note: When using the product in a vehicle, use it at your own discretion only after deploying sufficient safety-related evaluations and preparations.

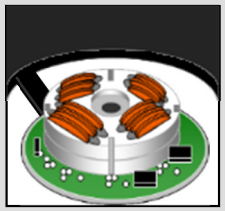
Features

■ IP68-rated protection

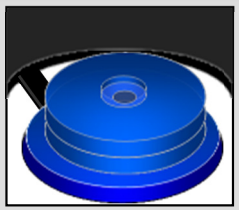
Industry-leading water and dust resistance

Electrical components are completely protected with resin against water and dust ingress.

Conforms to the IP68-rated protection class as determined by a third party organization.



Live parts coated with resin



Conventional fan **Splash Proof Fan**

■ Cation electroplating (black coating)

The aluminum frame is treated with a rust-resistant coating.

■ PWM control function

PWM control function controls the rotational speed of the fan by changing the duty cycle.

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Sets an optimal rotational speed in accordance with the temperature.

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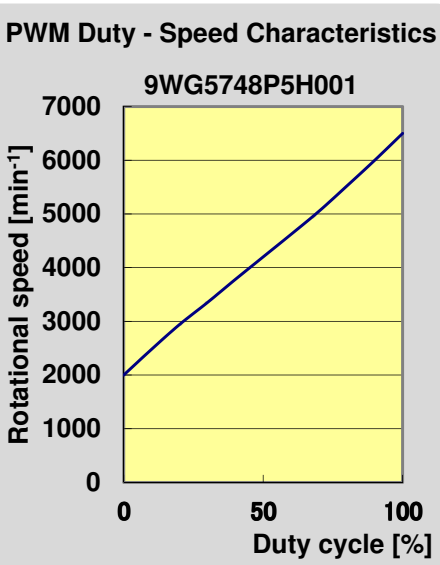
Reduces power consumption by setting a low rotational speed.



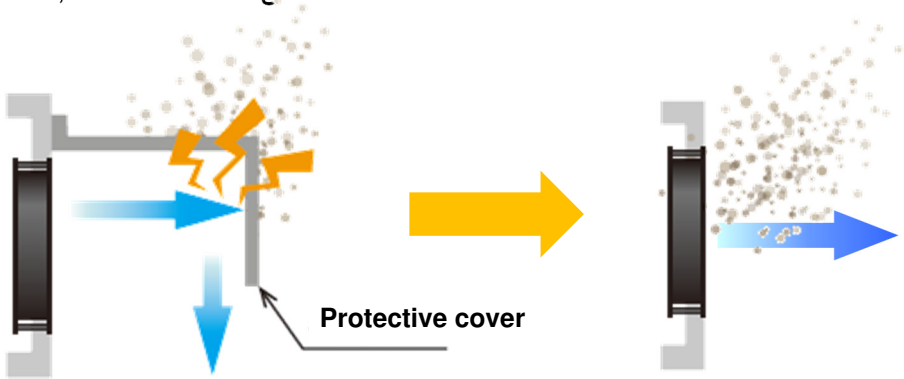
Merits

■ Excellent water and dust resistance

Moisture and dust can cause a fan to rust, resulting in damage or failure. Our IP68-rated fan can prevent device failures by blocking ingress of water and dust.

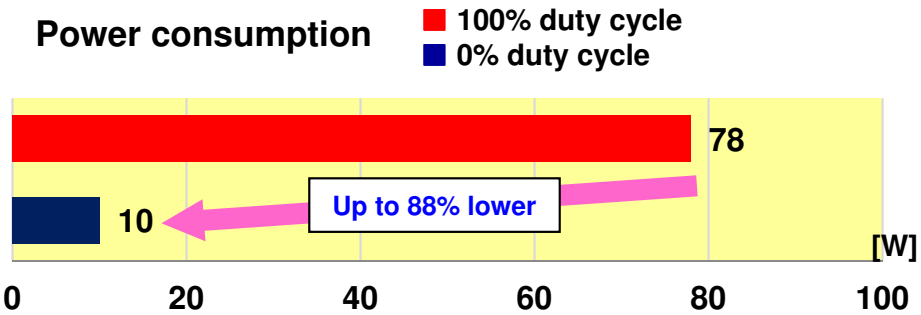
■ Device water and dust proofing measures

As extra water and dust proofing measures are not needed, the Splash Proof Fan contributes to downsizing, reducing costs, and reducing labor.



■ Reduces device power consumption

By using the optimum speed to suit conditions, power consumption can be reduced.



Comparison of power consumption between duty cycles of 100% and 0% (9WG5748P5H001)

SANYO DENKI AMERICA, INC.