

Emerson's Advanced Horizontal Scroll Compressor Provides Energy-saving Solutions for China's New-Energy Buses



Overview

As China's new-energy vehicle industry undergoes rapid development, highly efficient, energy-saving, and safe vehicles look set to be the future of the industry. However, the overall energy efficiency of a vehicle is significantly impacted by the energy efficiency of its air-conditioner. Hence, Cool-Air Transport Refrigeration Equipment Co., Ltd. (also known as Cooltek) has incorporated Emerson's ZRH(V) series horizontal scroll compressors into their electric air-conditioners for new-energy buses to ensure that their products are able to meet the cooling and heating requirements of these vehicles, as well as achieve high energy efficiency and reliable operation.

Customer Profile

Shanghai Cool-Air Transport Refrigeration Equipment Co., Ltd. (Cooltek) is a joint venture company specializing in the research and development and manufacturing of various high-end products in air-conditioning and refrigeration industry. New-energy coach electric air-conditioning, one of Cooltek's important product lines, is supplied by the company for use in public and private buses in cities throughout China.

Challenges

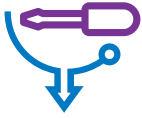
To meet the development needs of the new-energy bus industry, Cooltek constantly introduces new technologies and engages in scientific research and innovation. The company is also committed to providing users with highly efficient, energy-saving, green and environmentally-friendly air-conditioning products for buses, so as to reduce the overall energy consumption of new-energy buses and improve their mileage. In addition, the Shanghai municipal government has set higher requirements for the procurement standards of pure electric vehicles starting from 2018, stipulating that the energy efficiency ratio (EER) of air-conditioning products of electric vehicles should be above 2.4. In recognition of the importance of upholding product quality, and in compliance with state regulations, Cooltek started to carry out improvements and upgrades to its existing product offerings.

Solutions

Cooltek collaborated with a team from Emerson to jointly carry out research and development for product upgrades, and integrated Emerson's ZRH(V) series horizontal scroll compressor into its electric air-conditioning products for new-energy buses. The company also utilized it in 10-meter and 12-meter buses. At present, more than 60 air-conditioners using Emerson's horizontal scroll compressor have been deployed in new-energy buses plying routes in Shanghai, as well as other cities in China. All are operating well.



Benefits



Excellent reliability at reduced maintenance costs: The Copeland Scroll technology, unique oil circulation system, as well as the internal oil separator, ensure the high reliability of the air-conditioning system and reduce the overall maintenance cost.



Highest system efficiency with reduced energy consumption: According to tests conducted by Cooltek, the EER of Emerson ZRH(V) series horizontal scroll compressors can reach up to 2.5, which is 0.1-0.2 higher than that of their original compressor. This saves energy and helps boost the mileage of buses.



Strong cooling and heating performance to meet the requirements for different cities: With low ambient heating down to -30 °C evaporator and high ambient cooling up to 65 °C condenser, the buses can achieve effective heating in low temperatures and cooling in extreme weather conditions, making it suitable for use in both Northern and Southern China.



Large displacement and cooling capacity to maintain comfortable temperature in the vehicle: The large-capacity compressor enables the air-conditioner to quickly cool down and heat up the environment, thereby improving the comfort level in the vehicle.



Low noise level and low vibration for improved passenger experience: With a compact design at a height of less than 200mm, the low noise and vibration levels during operation allow the driver and passengers to enjoy a better ride experience.

From the Customer

“ Emerson’s ZRH(V) series horizontal scroll compressor is a very suitable product for use in air-conditioning solutions for new-energy buses. It has excellent cooling and heating capabilities, and is durable and stable while guaranteeing very high energy efficiency. Since its application, we have received positive feedback from our clients regarding our air-conditioning products. We look forward to continuing our collaborative partnership with Emerson and to continue providing our end-customers with stable, reliable and energy-efficient air-conditioning solutions. ”