

APPLICATION PROFILE

ELECTRONIC EXPANSION VALVE



Electronic expansion valves (EEVs) are crucial in HVAC systems, precisely regulating the flow of refrigerant into the evaporator. Stepper motors, especially can stack steppers, play a key role in this process by accurately controlling the valve's movement to deliver the correct amount of refrigerant. This precise regulation maintains optimal temperature and pressure conditions within the HVAC system, enhancing energy efficiency and reliability.

A leading HVAC system manufacturer recently partnered with Portescap to identify the ideal miniature motion solution for their new electronic expansion valve. After thoroughly analyzing the application's unique requirements, including the need for efficient operation in high-temperature environments, Portescap recommended the 42M100B can stack stepper. This stepper motor's high precision ensured accurate control of the valve's movement and effective performance in temperatures up to 130°C. To maintain performance at this high temperature, customizations were also made to the motor's magnet, bearings, and other materials.

The 42M100B proved to be an excellent choice for the EEV, meeting the HVAC system's demanding temperature and precision requirements. The customer also appreciated Portescap's in-house testing for high-temperature motor validation, which ensured the motor's performance and reliability in the harshest conditions.

- Withstands harsh, high-temperature environments
- Precise positioning ensures accurate control of valve movement
- High-temperature magnet, lubrication, and adhesive options available

Motor Highlights

Application Assistance

Complete list of global sales offices: portescap.com/en/contact-portescap

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