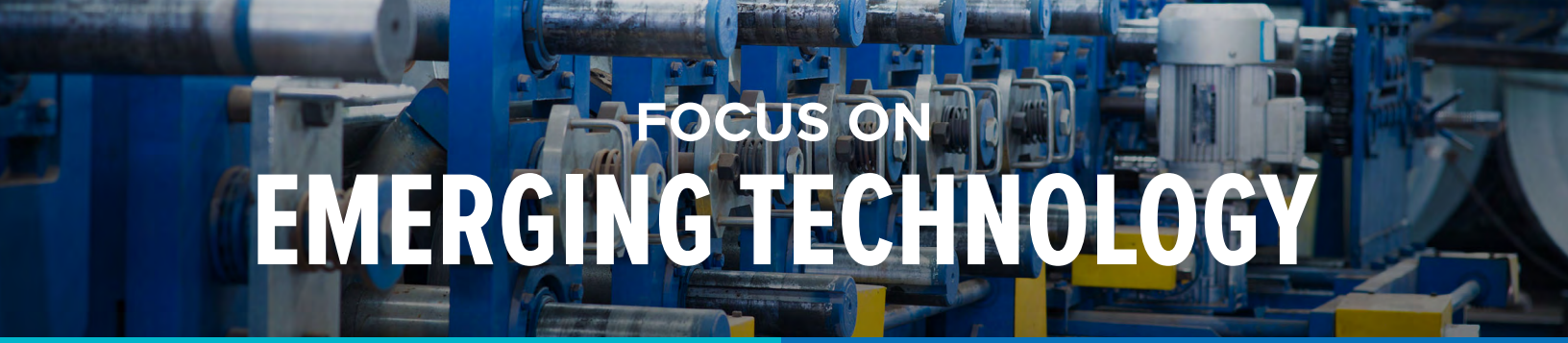

FOCUS ON

EMERGING TECHNOLOGY

Q-SYNC® FRACTIONAL HORSEPOWER ELECTRIC MOTORS

Technology Description

Q-Sync® motors are an energy-efficient type of Permanent Magnet Synchronous Motor (PMSM). The low horsepower rating and compact size of these motors makes them popular in refrigeration applications, such as powering evaporator fans in refrigerated display cases and walk-in freezers. These applications have historically relied on inefficient Shaded Pole (SP) and Permanent Split Capacitor (PSC) motors, and more recently Electronically Commutated (EC) motors.

Like EC motors, Q-Sync motors feature permanent magnets and rely on a built-in controller to start the motor. However, once the motor is brought up to synchronous speed, the control circuit is removed from the electrical path and the motor operates direct-on-line (60 Hz alternating current). This eliminates the energy losses within the control circuit, making the Q-Sync more efficient than EC motors at full speed. Q-Sync motors can only operate at full rated speed, but offer the highest energy efficiency for applications not otherwise benefiting from variable speed operation.

QM Power is currently the only supplier of this motor technology and markets them under the trade name “Q-Sync.” Q-Sync’s novel controller is simpler and therefore lower in cost than previous synchronous motor controllers or EC motor controllers, making it the cost-effective alternative in the commercial refrigeration market. For this application, installation costs are similar to EC motors.

Benefits

1. More efficient than SP, PSC, and EC motors.
2. Fully installed costs and Effective Useful Life (EUL) are comparable to an Electronically Communated (EC) motor.

Customer Type

Restaurants, grocery stores, manufacturing, hotels.

Applications

Refrigerated display case evaporators or walk-in freezers.

Market Sectors

Commercial, Industrial, Schools, Government.

Potential Energy Savings

Energy savings will depend on the size range of the motor. With an average motor size of 9 – 37 watts, energy savings will range 70% – 80% over SP motors and 10% over EC motors.

Potential Payback Range

Three to seven years.

Rebates Available

Prescriptive incentives are available for PMSM installed in refrigeration applications.
Download the Commercial Refrigeration catalog to learn more or Find an Energy Advisor to get started.

REDUCING ENERGY WASTE ACROSS WISCONSIN
Focus on Energy, Wisconsin utilities’ statewide program for energy efficiency and renewable energy, helps eligible residents and businesses save energy and money while protecting the environment. Focus on Energy information, resources, and financial incentives help to implement energy efficiency and renewable energy projects that otherwise would not be completed.
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