



ECRTM 2

The next generation of EC fan motors



Silent



Efficient



Easy to Use



Dual Voltage



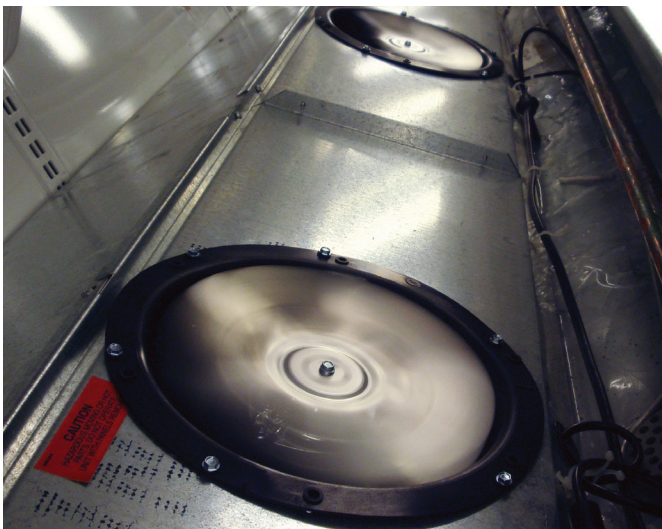
Smart Control

WellingtonTM

www.wdtl.com

The Worlds Most Advanced Refrigeration Fan Motor

Wellington's **ECR 2** motor is a drop-in replacement for shaded pole Q-frame and unit bearing motors used in commercial refrigeration. With efficiency up to 70%, it uses 2/3 less power than shaded pole motors, improving the efficiency of plug-in cases by up to 30%, and remote cases by even more. The **ECR 2** motor's advanced electronics offer unique performance and control benefits



Applications

Wellington have used our thirty years' experience of EC (Electronically commutated) motor design, including over a decade of making commercial refrigeration EC fan motors, to make **ECR 2** the best solution for commercial refrigeration.

ECR 2 motors are designed as a *direct substitute* for the shaded pole motors commonly used to drive evaporator and condenser fans in commercial refrigeration appliances including supermarket displays, bottle coolers, ice cream freezers and food service cabinets.

They offer much lower power consumption and improved reliability compared to shaded pole motors. Advanced control options give opportunities for improved case performance and differentiation, and improve manufacturing flexibility. Mounting, wiring, and speed options are all directly compatible with unit bearing and Q frame type shaded pole motors.

ECR 2 motors have mounting options for a wide range of bracketry, including basket mount, rear mount (3 or 4 hole), and foot mount. The power rating is suitable for driving most 150-250mm (6-10") fans.

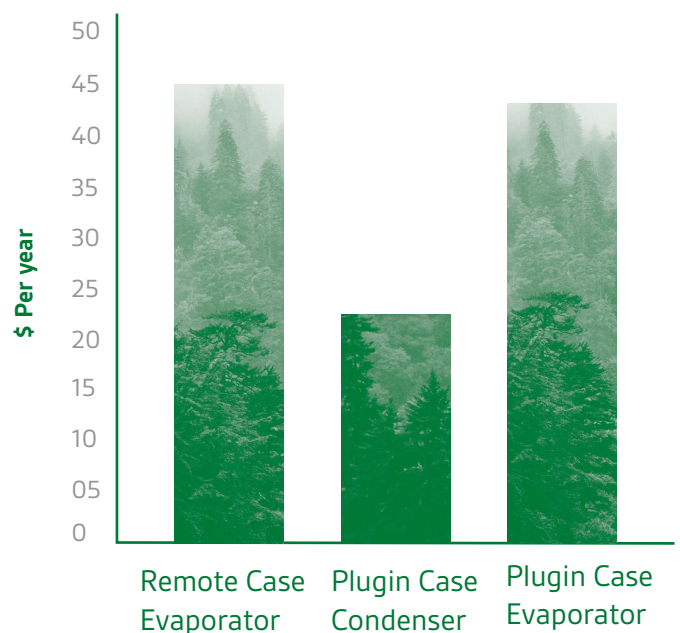
Energy Saving

Fan motors are one of the main power users in a commercial refrigeration system, so efficiency is important. Evaporator fans have an even greater effect, because any wasted power becomes heat, which must be extracted by the compressor.

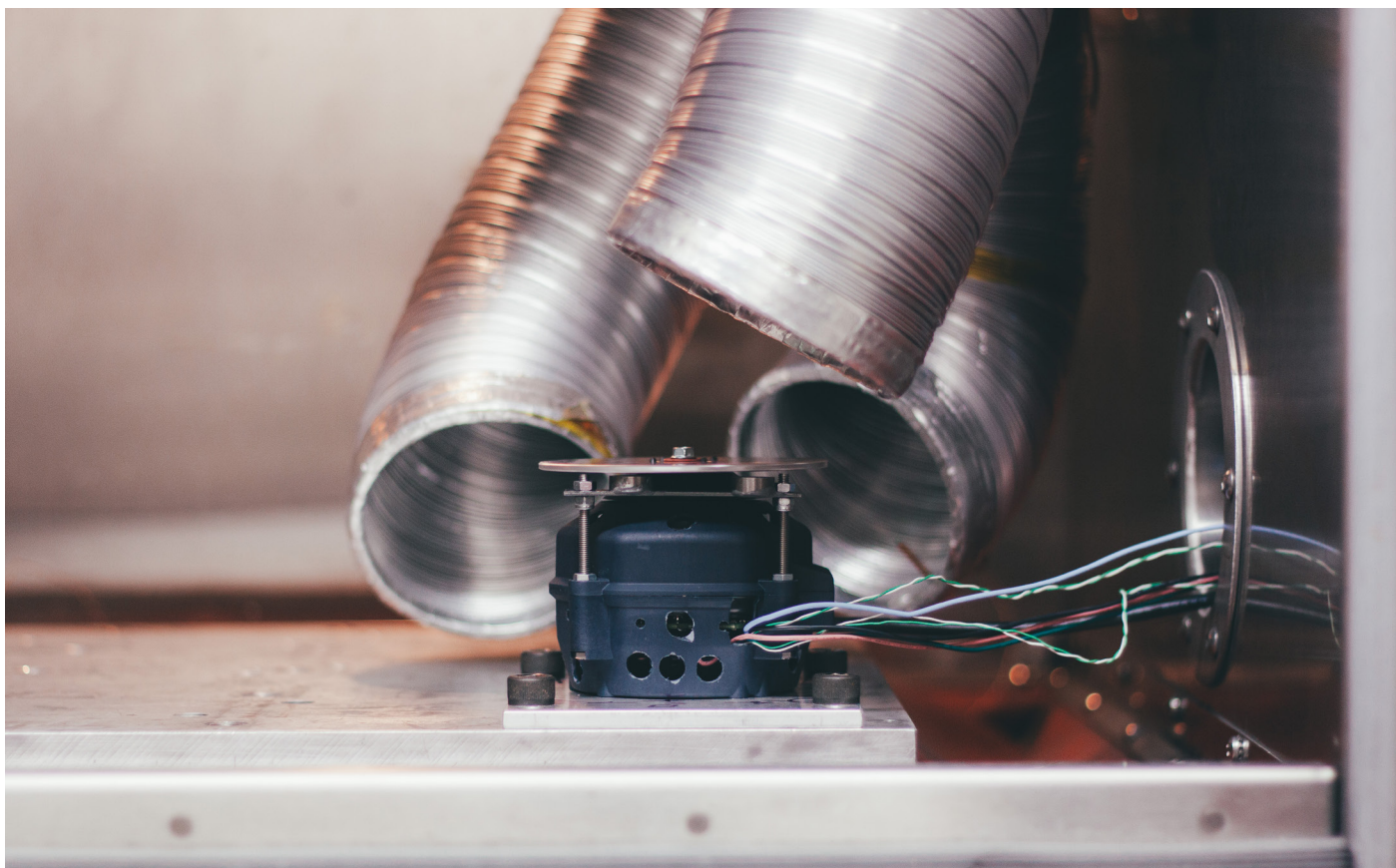
ECR 2 motors have an efficiency of up to 70%, and maintain high efficiency over a very wide range of loads. This compares with typical shaded pole motor efficiency of 18-22%, meaning **ECR 2** motors use *over 70% less power* than a typical shaded pole motor. Combined with the COP and capacity benefits of reduced heat load in the cold space, this can reduce the power consumption of a plug-in system such as a glass door merchandizer *by as much as 30%*

ECR 2's smart control features allow power consumption to be even further reduced by tuning airflow to the exact needs of the system.

Annual Cost Saving per Motor



Based on \$0.11/kWh and 200/28 fan at 1550rpm



Long Life

EC motors have inherently long life compared to shaded pole motors, due to their cool running properties and good starting torque. **ECR 2** is Wellington's third generation of ECR motor, and includes reliability-enhancing features determined by over 5 million ECR fan motors. These include:

- Extreme levels of surge protection (4000V)
- Protection against sustained under and overvoltage
- Multiple redundant water protection on cable and shaft entry
- Corrosion-proof plastic housings
- Intelligent thermal protection, which reduces motor power in an overload case to ensure the refrigeration system continues to get some airflow
- Soft starting to reduce transient loads and noise

ECR 2 motors have a *design life* (L_{10}) of 10 years.

Low Noise

ECR 2 has the most advanced electronic control in its class, featuring silent and ultra high efficiency "three phase field oriented control" technology. This makes it *particularly suited to applications where both noise and efficiency are critical*. ECR 2 maintains its high efficiency and low noise characteristics across the full range of power and speed.



Smart Control

Wellington's unique "third wire" system allows motor programming (in or out of the cooler), variable speed control, and simple programmed behaviours such as reversibility or two-speed operation. All in a single motor version, and without the need for extra connections or opening a programming hatch.

By connecting the third (black) wire to a switched phase output (such as the compressor switch), a second speed, direction change, or programmed behaviour such as delayed start stop can be triggered. Alternatively, by connecting the same third wire to a Wellington refrigeration controller,

field programming box, or speed control transducer, the motor can be controlled or programmed digitally. This capability offers advanced users a vast number of strategies for refrigeration system efficiency improvement and noise reduction. **ECR 2** can also be used as a simple fixed-speed motor.

Flexibility

With **ECR 2**, one motor SKU can cover all of your needs. Wide power range, dual voltage, factory or field programmability, and a pluggable cable mean less part numbers and more productivity.



About Wellington

Wellington specialises in advanced refrigeration controls and energy saving EC fan motors for the commercial refrigeration industry. We are a listed New Zealand company, with offices and distributors globally. Our ECR Series fan motors have been market leaders for over a decade.

Wellington[™]

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