



# iMEC Single-Phase



## The world needs more efficient motors... Enigin has the solution

Electric motors and the systems they drive are the single largest consumer of electricity worldwide, accounting for more than 40% of global electricity consumption.

Motors are widely used in both commercial and industrial manufacturing processes, where they can account for up to 54% of total electricity use.

Enigin's Intelligent Motor Controllers (iMEC), are used to reduce the energy consumption of motors in commercial applications across the globe, often improving equipment performance and reliability at the same time.

The iMEC range of products includes controllers for single-phase and three-phase applications. For details of the other products in the Enigin range please contact your Enigin Distributor or visit [www.enigin.com](http://www.enigin.com).



iMEC Saves up to 40% energy use

# The Problem with Motors

The purpose of the AC induction motor is to convert electrical energy into mechanical energy, or 'torque'. This mechanical energy is used to push, pull, turn or drive something as part of an industrial or commercial process.

Single-phase motor design has changed very little in over a century. Inefficiencies inherent in their original design remain relatively unchanged.

The efficiency of a motor is determined by its ability to convert energy into a job of work, the task it is employed to perform. Losses occur as energy is wasted through unwanted noise, heat and vibration.

There are a number of reasons why motors operate inefficiently, including: intentional oversizing of the motor, preparing for worst-case scenarios in power supply, variations in motor loads and issues associated with starting motors direct online.

In each case, the result is higher energy consumption, and in many cases impaired performance, reduced equipment life and increased maintenance costs.

# The Enigin Solution

Enigin's Single-phase Intelligent Motor Energy Controller (iMEC) ensures motor efficiency by reading a form of feedback on the power supply as demand changes at the motor shaft, in effect turning the motor into its own load sensor.

Using this feedback iMEC electronically 'sizes' a motor to both its application and load cycle every fraction of a second, ensuring it draws just the right amount of power required at any instant in time (see fig 1). It also enables the motor to run as a much more resistive load improving power factor quality.

Starting the motor is made smoother through a process of controlled acceleration, minimizing wear and tear and helping prevent maximum demand charges often associated with starting loaded motors (see fig 2).

Enigin iMEC technology utilises dynamic, proprietary software developed following years of ongoing research. It now forms an integral part of the patent protected ACES and CUES Hybrid Solutions. Speak to your Enigin distributor for more details or visit [www.enigin.com](http://www.enigin.com).

# Key Benefits:

Suitable for Most Applications

Reduces heat, noise and vibration

Extends equipment life and reduces maintenance

Improves power factor quality

Reduces energy consumption by up to 40%

|  |                                   |
|--|-----------------------------------|
|    | Reduces Wear                      |
|    | Energy Saving                     |
|    | Motor Controllers                 |
|   | Reduced Maintenance               |
|  | Designed & Made in the UK         |
|  | Metering / Performance Monitoring |

