

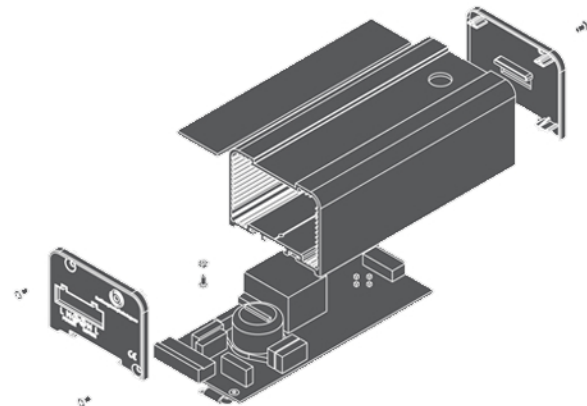


iMEC Single Phase

The world needs more efficient motors... LEDOLAS 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. The 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.



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 LEDOLAS Solution

The 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).

The 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.

Energy Saving

In some single-phase induction motors the current drawn at no load is relatively high because the stator windings still supply all the magnetic field energy. This means that even during low load the motor can draw the majority of its full load operating current. This excess energy is converted into heat and vibration, wasting energy and shortening the life of the motor. The actual power being consumed by the motor is:

Voltage x Current x Power Factor.

iMEC continually adjusts the power to the motor every cycle to ensure the motor always has enough power to suit the driven load.

Fig 1

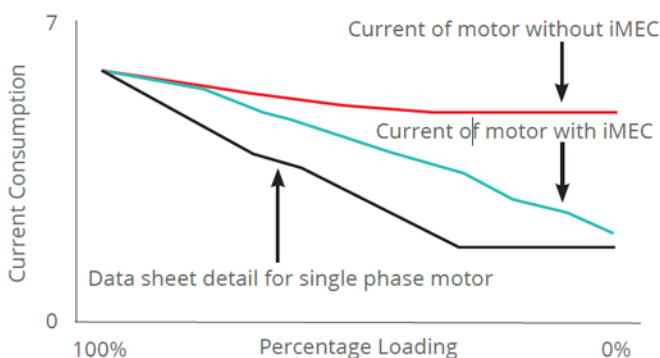
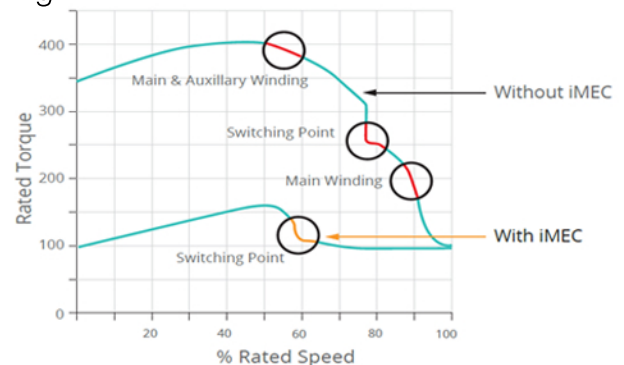


Fig 2



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 50%



The iMEC should be installed vertically on a flat surface.

Remove the cover, electrical connections are situated at the bottom of the unit.



Reduces Wear



Energy Saving



Motor Controllers



Reduced Maintenance



Designed & Made in the UK



Metering / Performance Monitoring