Induction Motor Efficiency Monitoring System (IMEMS)

Introduction

The IMEMS, developed by CSIR CSIO displays the operating efficiency of motor by monitoring the electrical power input (like voltage, current & power) and shaft speed of the motor. The IMEMS determine the operating efficiency of motors without removing the motors from the field and without the need for measuring the output power or torque. The system uses few sets of data coupled with the special algorithm for evaluating the motor parameters instead of using the no-load and blocked rotor test results.

Features

- The IMEMS can be used to operate the motor at its Best Operating Point (BOP) limits
- The system could be suitable for conducting on-site energy audits of existing motors which provides scientific data to replace or refurbish the existing motor
- IMEMS can be used to check the performance of the motor after rewinding
- The system could also be used for Life Cycle Assessment (LCA) of motors being used
- This helps in replacing the existing energy-inefficient motor with new motor
- Motor performance can be analyzed without disconnecting the motor from the load (On site, On line and In situ)

Product Differentials

- Increases equipment efficiency
- Maintenance routine optimization
- Economy with spare parts replacement
- Add value to the product (OEM's)
- Add value to the service (maintenance companies)
- Downtime reduction

Status: TRL 6/7: Technology Transferred & Commercialized

IMPA (IMEMS) – Portable & Fixed Unit

Applications

The IMPA (IMEMS) helps in identifying the motors for,

- Refurbishment
- Replacement with new motor
- Checking the performance and efficiency after rewinding
- Operating the motor around at its best operating point (BOP)
- Conducting on-site energy audits
- Known benchmarks and performance trends can be created for informed preventive maintenance

IMEMS – Live Demonstration& Field Trials @ Different Industries