

Purchase of a high efficiency motor with VSD control is a no-brainer

by Stephen Doyle, ABB Ireland Drives and Motors Manager

As of 1st January 2015, the new European Minimum Energy Performance Standard (EU MEPS) came into force. All single speed, 3-phase motors between 7.5 - 375 kW and up to 1000V must either meet IE3 efficiency levels or meet IE2 if fitted with a Variable-Speed Drive (VSD).

IE2 motors do not have to be decommissioned and replaced, as there is no requirement under the changes to EU MEPS that prevents the continued use of installed IE2 motors.

Whilst existing stock of IE2 motors can still be used after the 1st January 2015, any new manufacturer stock brought into the Irish market after this date must be fitted with a VSD to comply with the new efficiency standard.

“As a market leader, ABB has long promoted the benefits of efficient motors and welcomes the new MEPS efficiency regulations,” explains Stephen Doyle, ABB Ireland Drives and Motors Manager.

“It is worth reinforcing that if an IE2 motor is already placed in the Irish market before 1st January then it can be installed and used without a Variable-Speed Drive. It is only when new manufacturer stocks of IE2 motors are brought into the Irish market that they

must be fitted with a VSD. Information about the obligation to use a VSD must be displayed on the motor and in its technical documentation,”

“Regardless of the new MEPS standards, it makes far more economic sense to move to IE3. And even though it is not compulsory, if you add a VSD to an IE3 motor the energy savings can be massive.”

Saving a few Euros up front by buying a less efficient motor could end up costing a lot more in the longer term. The purchase price of the motor and VSD is just 1% - 3% of what the owner will spend on energy to run the motor over its lifetime.

“In fact, a motor, irrespective of power rating will consume its own capital cost in energy in just 30 days of continuous operation. If the application has long running hours, the purchase of a high efficiency motor with VSD control is a no-brainer,” adds Doyle.

The lower operating temperatures of high efficiency motors also offer additional benefits such as extended lubrication intervals and increasing a motor’s useful life.

While the energy saving benefits of VSDs are well documented, there are countless productivity improvements that can be achieved by many other features.

These improvements can include:

- Reduced stress on mechanical system components due to smoother starting & stopping of motors
- Optimised motor control to improve your processes
- Increased motor protection
- Pump cleaning

And many more depending on the type of load or industry involved.

All of these features, now common place in VSDs, help ensure safe and reliable motor control and gives ultimate process control on almost any application and duty cycle.

As well as ensuring that you have the best efficiency, you must also be sure you have the right sized motors for the job since many motors are oversized.

An application might have changed over the years, and now requires lower capacity. Alternatively, people may have added a “service factor” when designing the system. If the application runs at less than full duty for some of the time, consider the installation of a VSD - a pump or a fan need only have its speed reduced by a couple of percent to give significant energy savings.

ABB have launched Optimizer, an easy-to-use online tool to help select the optimal motor for your application. Optimizer also includes a calculator to compute the cost of ownership of different motors and provides fast access to drawings, test reports and data sheets in the ABB library. Optimizer can be used in the web browser of regular PCs or downloaded as an iPad app.

To use the Optimizer tool and for more information on EU MEPS go to www.abb.ie/motors&generators

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