

More than just a two-horse race

The change in the European motor efficiency regulations which comes into effect next January, is causing confusion and is potentially open to misuse. Gambica* deputy director, Steve Brambley, seeks to bring some clarity to the subject.

In January 2015, the next stage of Regulation 640/2009, the Ecodesign Directive Implementing Measure for Motors, will come into effect. Where currently the minimum efficiency standard for many electric motors is IE2, from next year it will increase to IE3 – with some exceptions, however. The change in the regulation is a source of confusion. It is often being misinterpreted and is potentially open to misuse.



First, let's establish an important principle in this subject. The upcoming change to the Ecodesign Directive relating to electric motors only establishes a minimum standard, not best practice. It also offers a choice of minimum standard, but it is important to note that the choices are not equivalent – they are simply options open to the user.

If we take a look at the wording of the Implementing Measure, we can see that it sets out a minimum standard and a special case:

From 1 January 2015, motors with a rated output of 7.5-375kW shall not be less efficient than the IE3 efficiency level, as defined in Annex I, point 1, or meet the IE2 efficiency level, as defined in Annex I, point 1, and be equipped with a variable speed drive.

Many are interpreting the wording as a straight choice between two options – IE3 or IE2+VSD – but that isn't quite the whole story.

The reality is that there is a range of options available today, only one of which will be removed from January 2015, and that is an IE2 motor (7.5–375kW) not equipped with a VSD.

Best practice

If the regulation simply raises the bar on the minimum standard, then it

is up to the user to choose the most efficient solution available to them. Each application needs to be assessed on the basis of its load type, use profile, motor size, running hours and environment.

Many applications will benefit from variable speed control, particularly pumps and fans, where reducing the speed can save a significant amount on energy. However, instead of opting for the minimum IE2+VSD,

Your motor options from next January		
Motor size	Minimum standard (January 2015)	Range of options
Smaller than 0.75kW or bigger than 375kW	None	Any
Between 0.75kW and 7.5kW	IE2	IE2 IE2+VSD IE3 IE3+VSD IE4 IE4+VSD
Between 7.5kW and 375kW	IE3 or IE2+VSD	IE2+VSD IE3 IE3+VSD IE4 IE4+VSD

choosing an IE3+VSD may be justified to save even more energy.

There are also many applications where a VSD would not save energy at all – for example, a fixed-speed application with the motor at full load – so here an IE3 motor would be the minimum standard, but a more efficient motor could also be the most cost-effective choice.

Now we can see why the minimum standard options of IE3 or IE2+VSD are not interchangeable, not of equivalent efficiency, and not the only options on the table. The regulation only seeks to remove the least efficient options. The choice is still open to the user to select the most efficient option for their application. ■



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