

KONČAR

MOTORS AND ELECTRICAL
SYSTEMS



EFFICIENCY REGULATIONS FOR ELECTRIC MOTORS

EU policy for improving the energy efficiency and other aspects of the environmental performance of products placed on the market

START

WAYS TO REDUCE EMISSIONS

On July 1st, 2023, the second step of the EU Ecodesign Regulation (EU) 2019/1781 comes into force, setting additional requirements for specified electric motors. The regulation's first step, which was implemented in 2019 (2009), intends to make electric motors and drives more efficient. More efficient in the way of making motors - a little greener. A more efficient motor can generate savings depending on its power and use pattern as well as CO2 emissions.

Rules on Ecodesign for electric motors are mandatory for all manufacturers and suppliers in the EU.

As your knowledgeable partner, we closely follow the latest developments in drive and control technology. That is why we want to draw attention to the new Ecodesign Regulation for electric motors and variable speed drives, which will be in force on July 1st, 2023.

Stay ahead with the new EU regulation and increase the value of your business by contacting our team. We will be more than welcome to discuss electric motors for your applications.

Are you looking for support or purchase information?

[Click here for more information on Ecodesign for motors](#)

[Link to our website](#)



***8 billion electric motors in use in the EU**

***Consuming nearly 50% of the electricity EU produce**

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ECODESIGN REGULATION TIMELINE

The amendments officially enter into force on 1 January 2021 and consist of three phases implemented between 1 July 2021 and 1 July 2023.

2021.

2022.

2023.

2021

From 1 July 2021:

*The energy efficiency of three-phase motors with a rated output equal to or above 0,75 kW and equal to or below 1 000 kW, with 2, 4, 6 or 8 poles, which are not Ex eb increased safety motors, shall correspond to at least the IE3 efficiency level.

*The energy efficiency of three-phase motors with a rated output equal to or above 0,12 kW and below 0,75 kW, with 2, 4, 6 or 8 poles, which are not Ex eb increased safety motors, shall correspond to at least the IE2 efficiency level.

2022

From 1 July 2022:

Motor suppliers will be required to test all-electric motors based on different speeds, unlike the current situation, in which testing is performed only in full speed and with different loads.

This is because more and more VFD-controlled applications are entering the market, running at widely different speeds and loads.

2023

From 1 July 2023:

*The energy efficiency of Ex eb increased safety motors with a rated output equal to or above 0,12 kW and equal to or below 1 000kW, with 2, 4, 6 or 8 poles, and single-phase motors with a rated output equal to or above 0,12kW shall correspond to at least the IE2 efficiency level

*The energy efficiency of three-phase motors which are not brake motors, Ex eb increased safety motors, or other explosion-protected motors, with a rated output equal to or above 75kW and equal to or below 200kW, with 2, 4, or 6 poles, shall correspond to at least the IE4 efficiency level.

REQUIREMENT FOR ELECTRIC MOTORS FROM JULY 1, 2023

The Regulation on electric motors and variable speed drives (EU) 2019/1781 enters into the application as of 1 July 2021, replacing the Regulation on Ecodesign for electric motors (EC) No 640/2009.

The new regulation has a broader scope and covers single-speed, 50Hz, 60 Hz, or 50/60Hz, induction motors:

- ✓ With 2 to 8 poles
- ✓ With single-phase or three-phase
- ✓ Rated output between 0.12kW and 1000kW
- ✓ Rated voltage from 50V to 1000V
- ✓ Rated based on continuous duty operation and direct on-line operation

IE4 efficiency class mandatory for motors:

- 3-phase 2, 4, and 6 poles, single-speed motors with rated output from 75kW up to 200kW. Excluded brake motors, Ex eb increased safety motors, or other explosion-protected motors (Ex ec, Ex d, Ex de, Ex t).

IE3 efficiency class mandatory for motors:

- 3-phase 2, 4, 6 or 8 pole, single speed motors with rated output from 0.75kW up to 1000kW except 2, 4, 6 poles motors with rated output from 75kW up to 200kW
- Explosion protected motors, protection types Ex ec, Ex d, Ex de, Ex t
- Brake motors with external brake
- TEAO (Totally Enclosed Air Over)
- Ambient temperatures between -30°C and +60°C

IE2 efficiency class mandatory for motors:

- 3-phase rated output from 0.12kW and below 0.75kW
- Increased safety motors protection type Ex eb from 0.12 to 1000kW
- Single-phase motors from 0.12 to 1000kW

WHAT DO THE REQUIREMENTS MEAN FOR YOU

- ✓ **High-efficiency motors and drives use less electricity**
- ✓ **Less energy consumption by unit produced**
- ✓ **Better quality, more performance, and efficient equipment that runs cooler, with the results being more reliable and last longer**



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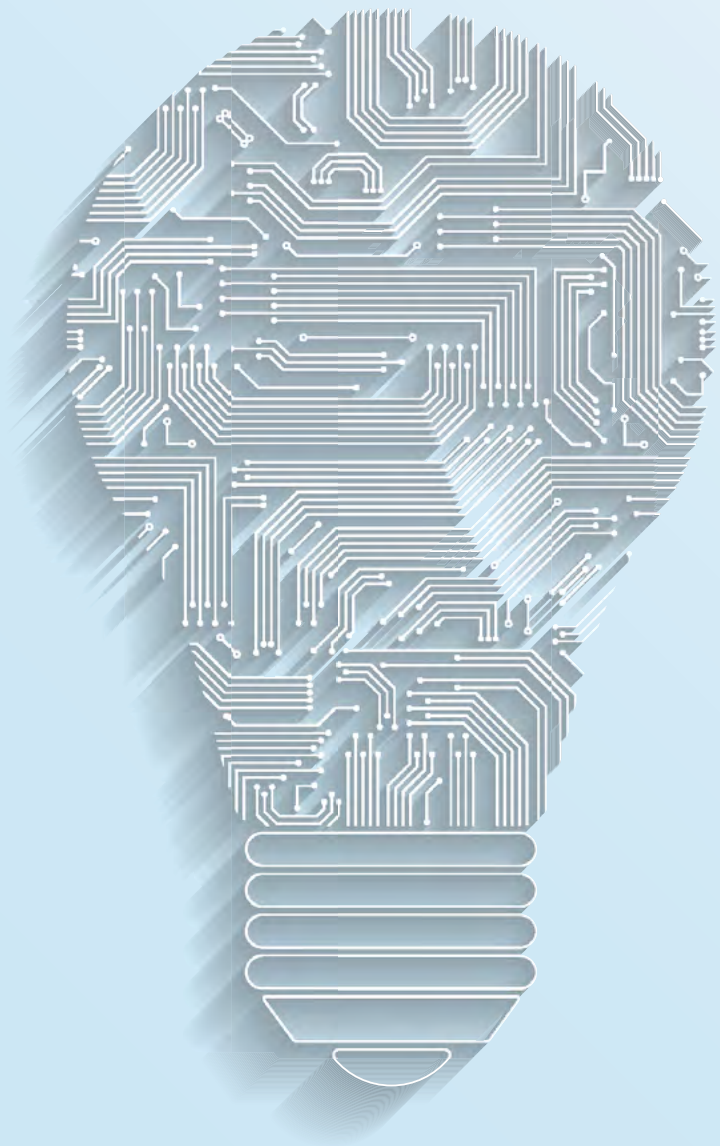
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SUMMARY & MORE INFORMATION

The Ecodesign Regulation covers three-phase single-speed motors rated up to 1000 V, 50 Hz, 60 Hz, and 50/60 Hz for direct-on-line operation with continuous duty defined as S1, S3 \geq 80%, and S6 \geq 80%.

With new Ecodesign requirements and regulation 2019/1781 from EU Directive 2009/125/EC on the way, covering several types of electric motors, **KONČAR-MES offers a new differentiation opportunity for OEMs in a very competitive market in a way to bring benefits for its customers, less energy consumption by unit produced, better quality, more performance, with a return of investment in less than two years.**

KONČAR - MES is ready to help motor and drive users with a range of high-efficiency products that are fully compliant with the new requirements.

[Click here for more information on Ecodesign for motors](#)

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