

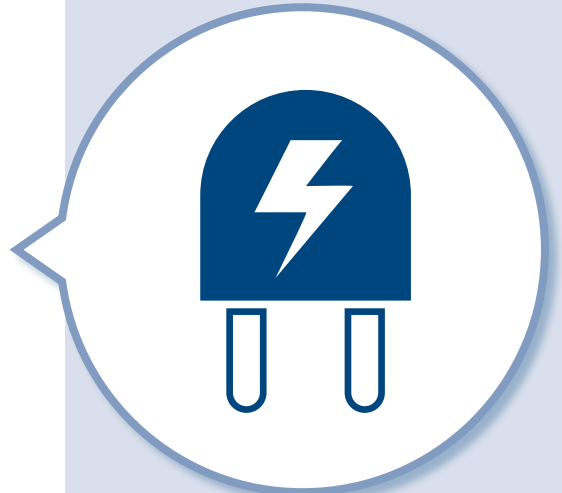
For a *greener* future

EU ECODESIGN REGULATION 2019/1781
NEW EFFICIENCY LIMITS

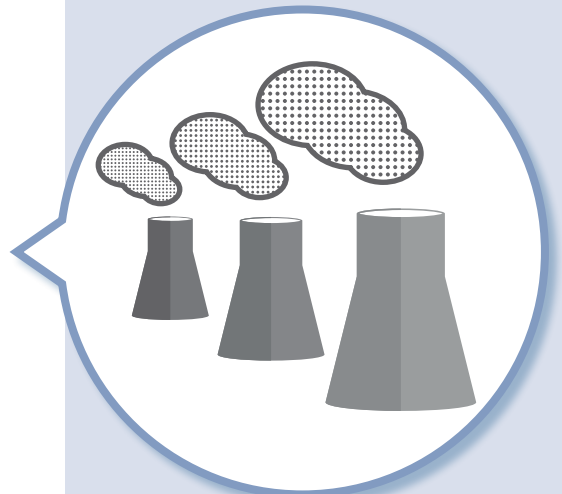


Regulation objectives

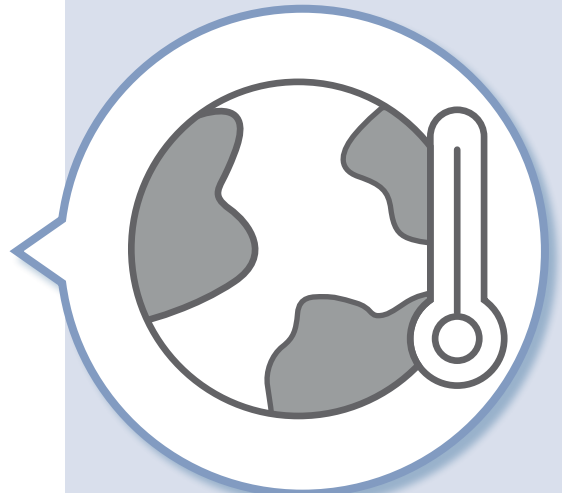
lower
■ **consumption**
of electricity



less
■ **CO₂**
in the atmosphere



minus
■ **100 million**
tonnes of greenhouse
gases by **2030**

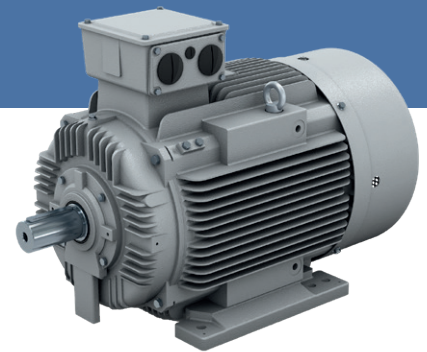


STEP

1

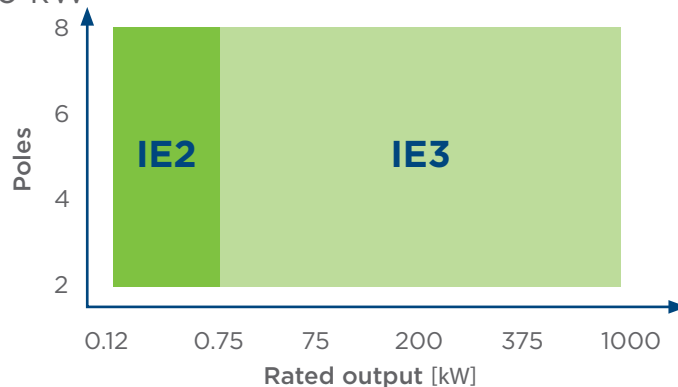
1 July
2021

Electric Motors



- Minimum efficiency equal to IE2 for three-phase asynchronous electric motors from 0.12 to 0.55 kW
- Minimum efficiency equal to IE3 for three-phase asynchronous electric motors from 0.75 to 1000 kW

Three-phase
Motors Efficiency
Requirements



Scope

Asynchronous electric motors, rated for operation on a 50 Hz, 60 Hz or 50/60 Hz sinusoidal voltage, rated voltage above 50 V and up to and including 1000 V and continuous duty operation ($S1, S3 \geq 80\%$, $S6 \geq 80\%$).

For the first time the regulation will include:

- All three-phase single speed motors up to 8 poles
- Brake motors
- Ex motors for explosive atmospheres
- TEAO motors (Totally Enclosed Air Over - IC418)

Please note that the IE2+VSD option will no longer be permitted.

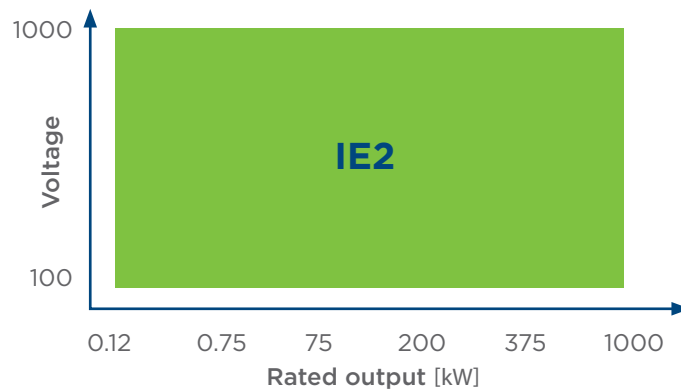
STEP

1

1 July
2021

Variable Speed Drives (VSDs)

D
SERIES



Scope

VSDs with 3-phase input from 0.12 kW to 1000 kW, rated voltage above 100 V and up to 1000 V

MAIN EXCEPTIONS

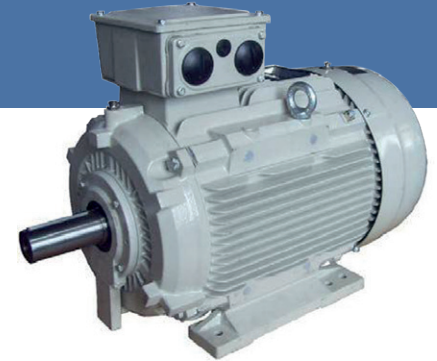
- Regenerative drives
- VSDs with a Total Harmonic Content below 10% (THD < 10%)

STEP

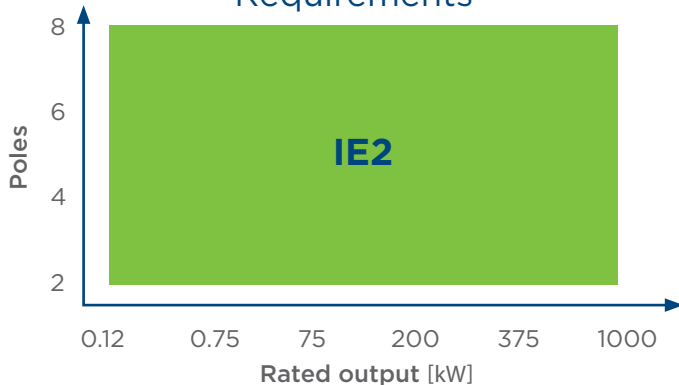
2

1 July
2023

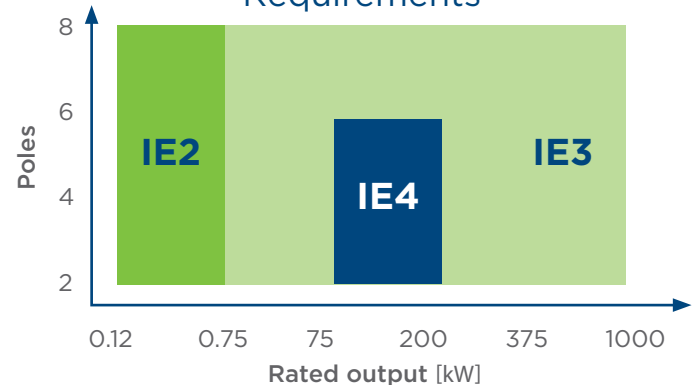
Electric Motors



Single-phase Motors Efficiency Requirements



Three-phase Motors Efficiency Requirements



Scope

Asynchronous electric motors, rated for operation on a 50 Hz, 60 Hz or 50/60 Hz sinusoidal voltage, rated voltage above 50 V and up to and including 1000 V and continuous duty operation ($S1, S3 \geq 80\%$, $S6 \geq 80\%$).

For the first time the regulation will include:

- Single-phase electric motors
- Ex eb increased safety motors

There will be a further increase in efficiency for three-phase motors, which will see the introduction of the IE4 class:

- Motors with a rated output from 75 to 200 kW with 2, 4, 6 poles, with the exclusion of brake motors and motors with Ex eb, Ex ec, Ex d, Ex de and Ex t protection

Main exclusions from the scope

- Totally Enclosed Non-Ventilated motors (TENV)
- Motors completely integrated into a product
- Motors specifically designed and specified to operate exclusively:
 - 1) at altitudes exceeding 4000 metres above sea level
 - 2) where ambient air temperatures exceed 60°C
 - 3) in a maximum operating temperature above 400°C
 - 4) where ambient air temperatures are less than -30°C
 - 5) where the water coolant temperature at the inlet to a product is below 0°C or above 32°C
- Motors placed on the market before 1 July 2029 as substitutes for identical motors integrated in products placed on the market before 1 July 2022, and specifically marketed as such
- Multi-speed motors, i.e. motors with multiple windings or with a switchable winding, providing a different number of poles and speeds



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