

IE4 MOTORS

CONTEXT

An international standard was established in 2008 and updated in 2014 to classify the international energy efficiency (IE) of low voltage three-phase asynchronous motors. This is the IEC/EN 60034-30.1 standard. It reinforces the balance in international efficiency regulations.

The final versions of the DIN and European standards are based on the IEC standard; the minimum values of the EN standard are specified in an EU regulation on the implementation of Directive 2009/125/EC for certain motor types.

THE STANDARD IEC/EN 60034-30.1 - WHAT IS IT?

The IEC/EN standard defines international efficiency classes for single-speed, three-phase, induction, 50 and 60 Hz motors. These motors must comply with IEC 60034 or IEC 60079-0 (explosive atmospheres) and be designed for sinusoidal operation.

The following table summarizes the different efficiency classes:

- **IE1** - Standard efficiency
- **IE2** - High efficiency
- **IE3** - Premium Efficiency
- **IE4** - Super Premium

According to IEC 60034-1, motors in efficiency class IE4 (super premium) have between 10 and 24% lower losses than motors in efficiency class IE3 (premium)

COVERAGE OF THE STANDARD

- Direct mains operation
- Single speed electric motors (single and three phase), 50 and 60 Hz
- 2, 4, 6 and 8 poles
- Power rating between 0.12 kW and 1000 kW
- Voltage rating between 50 V and 1 kV
- Motor capable of continuous operation at rated power with temperature rise within the specified insulation temperature class
- Motors marked with an ambient temperature between -20 °C and +60 °C

EXCEPTIONS

- Operating mode S2, S3 < 80%, S4 to S10
- Inverter-controlled motors that cannot be operated directly from the mains.
- Motors that cannot be measured independently, for example wet rotor pump motors

FOCQUET'S IE4' STOCK

10% of our current stock is meeting the IE4 standards. This stock is growing on a quarterly basis.

IP55	IP23
Aluminium & Cast Iron	Cast Iron
2, 4 P	2, 4 P
400V D	400V D
Frame size: from 80 till 355	Frame size: from 200 till 315
Power: 0,75kW – 355kW	Power: 45kW – 400kW
Mounting: B3 in stock, adaptations possible in B5/B35/V1	Mounting: B3 in stock, adaptations possible in B5/B35/V1
Bearings: If 4P & frame size from 315, NU bearings @DE. Else, ball bearings	Bearings: Ball bearings
Winding PTC 150°C included	Winding PTC 150°C included PI = Isolated endshield



If you're looking for an IE4 motor, feel free to reach out to our team through our [inquiry form](#).