# GLOBAL MEPS GUIDE FOR LOW VOLTAGE MOTORS

# Understanding MEPS

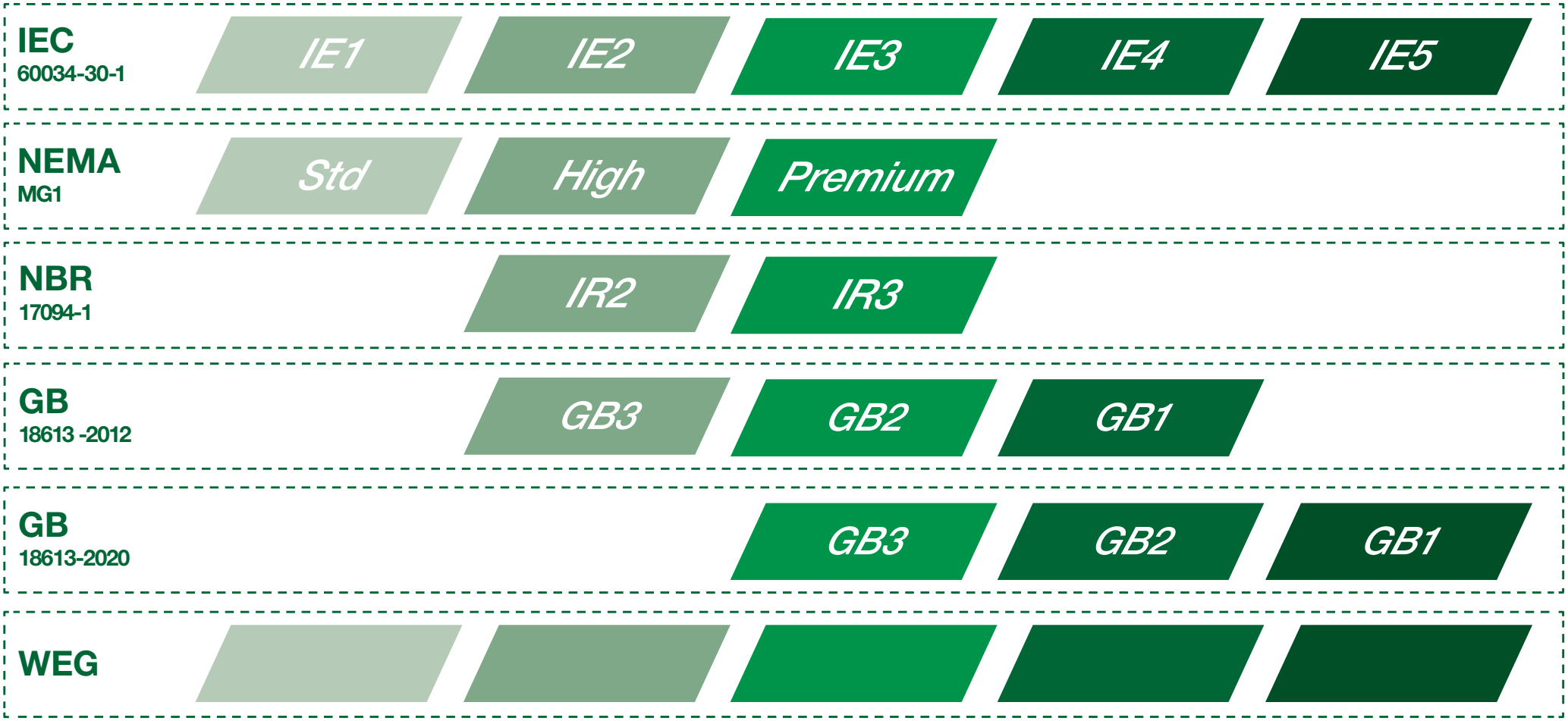
The increasing demand for electrical energy to sustain global development requires consistent heavy investment in power supply generation. However, in addition to complex medium and long term planning, these investments rely on natural resources, which are becoming depleted due to constant pressures upon the environment. The best strategy, therefore, to maintain energy supply in the short term is to avoid wastage and increase energy efficiency. Electric motors play a major role in this strategy; since around **40% of global energy demand is estimated to be related to electric motor applications**.

As a consequence of this need to reduce energy consumption and carbon dioxide emissions, many Governments worldwide have imposed local Regulations, also known as **MEPS (Minimum Energy Performance Standards)** to numerous types of equipment, including electric motors.

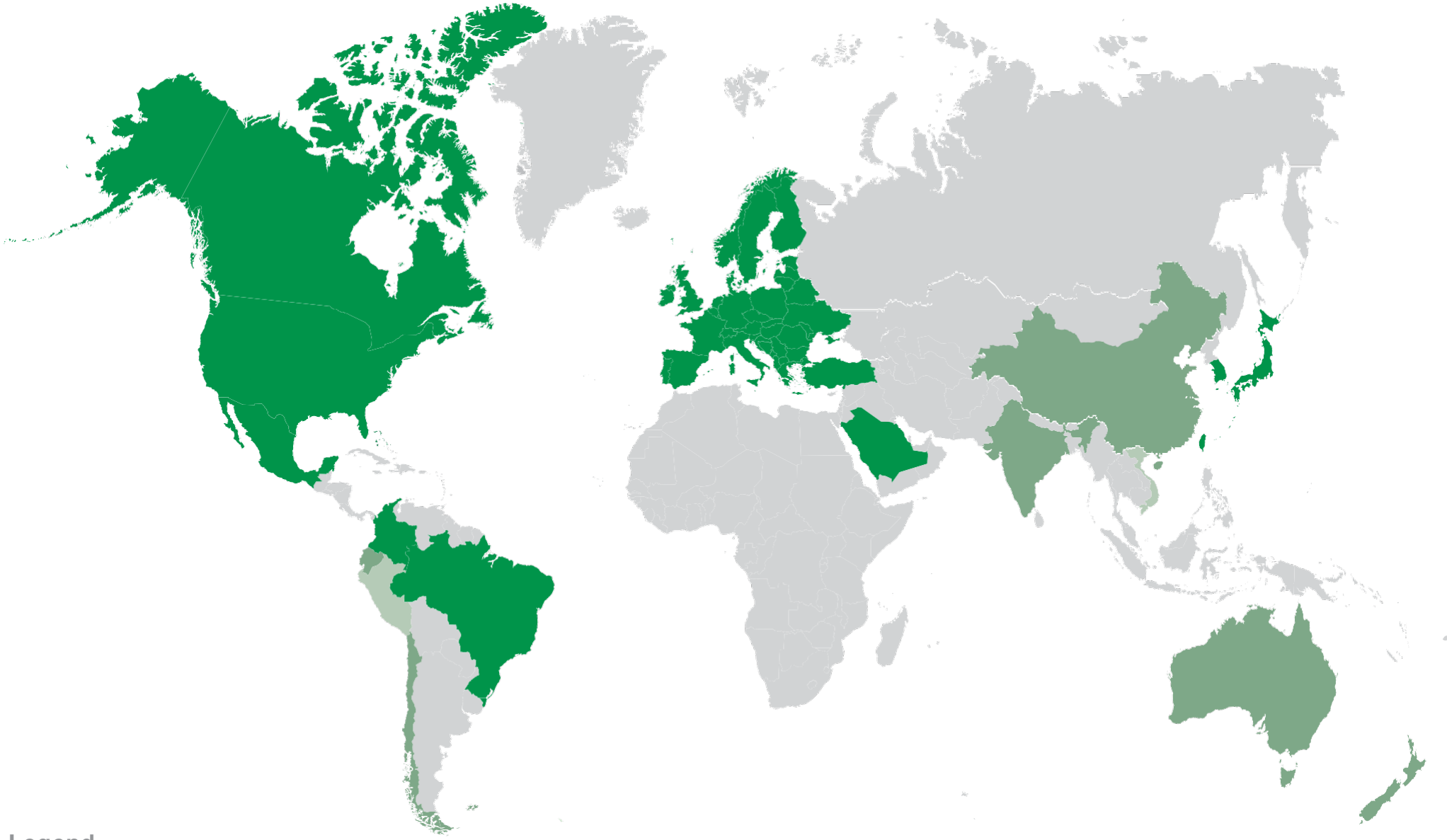
Whilst the specific requirements of these MEPS differ slightly between countries, the implementation of regional standards such as ABNT, IEC, MG-1, which define the efficiency levels and test methods to determine these efficiencies, allow a standardization of the definition, measurement and publication format for efficiency data amongst motor manufacturers, simplifying the correct motors' selection.

WEG fully understands the requirements of these Global regulations, and today offers one of the most comprehensive ranges of electric motors complying with these minimum efficiency levels. Furthermore, as a forward thinking Company whose philosophy is to provide its Customers with products which offer optimum performance, energy savings, fast return on investment and sustainability, **WEG continues to focus its efforts in the research and development of electric motors with efficiency levels exceeding those defined in currently published International standards.**

# Efficiency Grades



# Guide to Mandatory Efficiency Regulations Worldwide Overwiew



**Legend**

*The efficiency levels are according to the data square of page 3.*
*Countries in gray color do not have established local Regulations for Minimum Energy Performance Standards.*

# Predicted Changes

| Country | Current Efficiency Level | New Efficiency Level | When will it change | What will it change | Certifying Body/ Requirement |
|---|---|---|---|---|---|
| **Europe** | IE3 or IE2 with VFD (2 to 6 poles) | IE3 | 07/2021 | ■ Includes 8-pole motors.<br>■ Extends the range of three-phase safe area motors (0.75 to 1000 kW).<br>■ Includes three-phase safe area motors able to operate with VFD.<br>■ Includes three-phase motors Ex ec, Ex tb, Ex tc, Ex dc, Ex db, Ex db eb. | CE |
| | | IE4 | 07/2023 | ■ Three-phase safe area motors (75 to 200 kW of 2 to 6 poles). | |
| | - | IE2 | 07/2021 | ■ Three-phase motors of 2 to 8 poles for safe area and Ex ec, Ex tb, Ex tc, Ex dc, Ex db, Ex db eb hazardous area (0,12 to <0,75 kW). | |
| | | | 07/2023 | ■ Three-phase motors of 2 to 8 poles Ex eb (0,12 to 1000 kW).<br>■ Single-phase motors of 2 to 8 poles (>0,12 kW). | |
| **Colombia** | IE2 | IE3 | 09/2021 | ■ Three-phase motors of 0,75 to 375 kW (without VFD). | RETIQ |
| **Ukraine** | - | IE3 | 09/2021 | ■ It takes effect the Decreee N° 157, a Resolução N° 804 and the Resolution N° 1184. | CE |
| **China** | GB3 (IE2) | GB3 (IE3) | 06/2021 | ■ Includes 8-pole motors.<br>■ Extends the range of three-phase motors (0.75 to 1000 kW).<br>■ Includes single-phase motors. | CEL |

# SOUTH AMERICA

Argentina

Brazil

Chile

Colombia

Ecuador

Peru

# ARGENTINA

| | | |
|---|---|---|
| Regulation | Disposición 230/2015 | |
| Standard | IRAM 62409:2014 | IRAM 62405:2012 |
| Power supply system | Single-phase | Three-phase |
| Minimum energy performance | IE00 | IE0 |
| Minimum energy performance when is able to operate with inverter frequency | Not applicable | IE0 |
| Output (kW) | 0,12 up to 7,5 kW | 0,75 up to 30 kW |
| Number of poles | 2, 4 and 6 | |
| Voltage (V) | up to 200 V | up to 380 V |
| Frequency (Hz) | 50 Hz or 50/60 Hz | |
| Service Duty | S1 | |
| Cooling method | TEFC, ODP | |
| Degree of protection | IP 2X up to IP 66 | |
| Area classification | Safety area | |
| Altitude | All | |
| Ambient temperature | All | |
| Required documentation | Certificate | |

** Multi-voltage motors that have 220 V (single-phase) or 380 V (three-phase) as one of the operating voltages are covered by scope.*

## Requirements

- Energy efficiency level label.


Minimum efficiency level:
regulation does not set a minimum efficiency level for motors.

# BRAZIL

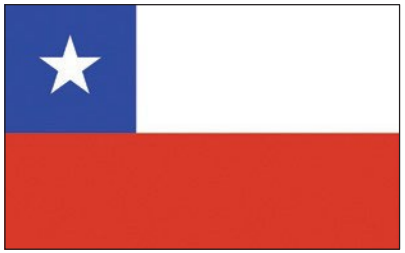
| | |
|---|---|
| Regulation | Portaria nº 01/2017 |
| Standard | ABNT NBR 17094-1 |
| Power supply system | Three-phase |
| Minimum energy performance | IR3 |
| Minimum energy performance when is able to operate with inverter frequency | IR3 |
| Output (kW) | 0.12 up to 370 kW (0,16 up to 500 cv) |
| Number of poles | 2, 4, 6 and 8 |
| Voltage (V) | up to 1000 V |
| Frequency (Hz) | 60 Hz or 60/50 Hz |
| Service Duty | S1 or S3 ≥ 80% |
| Cooling method | TEFC, ODP, TEAO |
| Degree of protection | IP 00 up to IP 66 |
| Area classification | Safety and hazardous area (only Ex ec) |
| Altitude | All |
| Ambient temperature | All |
| Required documentation | Register by model |

## Requirements

- Mandatory label (can be on the motor nameplate).


IR3

# CHILE



| | |
|---|---|
| Regulation | NCh 3086 of 2008 |
| Standard | IEC 60034-30-1 |
| Power supply system | Three-phase |
| Minimum energy performance | IE2 |
| Minimum energy performance when is able to operate with inverter frequency | IE2 |
| Output (kW) | 0,75 up to 7,5 kW |
| Number of poles | 2, 4 and 6 |
| Voltage (V) | up to 690 V |
| Frequency (Hz) | 50 Hz or 50/60 Hz |
| Service Duty | S1 |
| Cooling method | All |
| Degree of protection | All |
| Area classification | Safety area |
| Altitude | All |
| Ambient temperature | All |
| Required documentation | Certificate |

## Requirements

- Motors held in stock by distributors must be certified for the Energy label according PE nº 7/01/2 and eficinecy and safety labels.



IE2

# COLOMBIA

NEW 09/2021

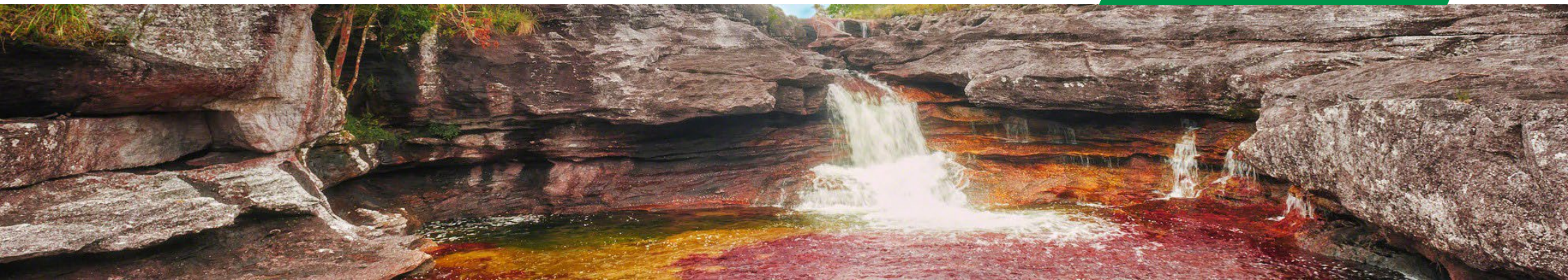
| | | | | |
|---|---|---|---|---|
| Regulation | RETIQ 2015 | | | |
| Standard | Resolution nº 4 1012:2015 | | | |
| Power supply system | Single-phase | Three-phase | Three-phase | Three-phase |
| Minimum energy performance | IE1 | IE2 | IE3 | IE3 |
| Minimum energy performance when is able to operate with inverter frequency | Not applicable | IE2 | IE2 | IE2 |
| Output (kW) | 0,18 up to 1,5 kW | 0,18 up to ≤7,5 kW | ≥ 7,5 kW ** | ≥ 0,75 kW |
| Number of poles | 2, 4 and 6 | 2, 4, 6 and 8 | 2, 4, 6 and 8 | 2, 4, 6 and 8 |
| Voltage (V) | up to 240 V | up to 600 V | up to 600 V | up to 600 V |
| Frequency (Hz) | 60 Hz or 50/60 Hz | | | |
| Service Duty | S1 | | | |
| Cooling method | TEFC, ODP | | | |
| Degree of protection | IP 00 up to IP 66 | | | |
| Area classification | Safety area | | | |
| Altitude | All | | | |
| Ambient temperature | All | | | |
| Required documentation | Self declaration | | | |

*Note:*
**For outputs ≥ 7,5 kW*
*** The commercialization of IE2 motors was postponed until December 2020.*

## Requirements

- Energy efficiency level label.


***Single-phase IE1***
***Three-phase IE3****



# ECUADOR

| | | |
|---|---|---|
| Regulation | RTE INEN 145 | |
| Standard | IEC60034-30-1 | |
| Power supply system | Single-phase | Three-phase |
| Minimum energy performance | IE2 | IE2 |
| Minimum energy performance when is able to operate with inverter frequency | Not applicable | IE2 |
| Output (kW) | 0,18 up to 1,5 kW | 0,746 up to 373 kW |
| Number of poles | 2, 4 and 6 | 2, 4, 6 and 8 |
| Voltage (V) | up to 1000 V | |
| Frequency (Hz) | 60 Hz | |
| Service Duty | S1 | |
| Cooling method | TEFC, ODP, TEAO | |
| Degree of protection | IP 00 up to IP 66 | All |
| Area classification | Safety and hazardous area | |
| Altitude | Up to 4000 m | |
| Ambient temperature | -20 up to 60 °C | |
| Required documentation | Self declaration | |

IE2

# PERU

| | |
|---|---|
| Regulation | Decreto Supremo N° 009-2017-EM |
| Standard | Law 27345-2000 |
| Power supply system | Three-phase |
| Minimum energy performance | IE1 |
| Minimum energy performance when is able to operate with inverter frequency | IE1 |
| Output (kW) | 0.75 up to 375 kW |
| Number of poles | 2, 4 and 6 |
| Voltage (V) | up to 600 V |
| Frequency (Hz) | 60 Hz |
| Service Duty | S1 or S3 ≥ 80% |
| Cooling method | TEFC, ODP, TEAO |
| Degree of protection | ≥ IP21 |
| Area classification | Safety and hazardous area |
| Altitude | All |
| Ambient temperature | All |
| Required documentation | Certificate |

## Requirements

- Energy efficiency level label.


IE1

# NORTH AMERICA

Canada
United States of America
Mexico

# CANADA

| Regulation | Amendment 14 to Energy Efficiency Regulations - Small Electric Motors | Amendment 13 to Energy Efficiency Regulations - Electric Motors |
|---|---|---|
| Standard | IEEE Std 114-2010, IEEE Std 112-2004, CSA C390-10, CSA C747-09 | IEEE Std 112-2004, CSA C390-10 |
| Power supply system | Single-phase or Three-phase | Three-phase |
| Minimum energy performance | Premium | NEMA Premium |
| Minimum energy performance when is able to operate with inverter frequency | Not applicable | NEMA Premium |
| Output (kW) | 0.25 up to 3 HP (0,18 up to 2,2 kW) * | 1 up to 500 HP ( 0,75 up to 375 kW)** |
| Number of poles | 2, 4 and 6 | 2, 4, 6 and 8 |
| Voltage (V) | All | up to 600 V |
| Frequency (Hz) | 60 Hz or 50/60 Hz | |
| Service Duty | S1 | |
| Cooling method | ODP | TEFC, ODP, TENV, TEBC |
| Degree of protection | All | |
| Area classification | Safety area | Safety and hazardous area |
| Altitude | All | |
| Ambient temperature | All | |
| Required documentation | Certificate | |

*Note:*
**Applicable to frame sizes NEMA 42, 48 and 56 (IEC 63 and 71).*
***Applicable to frame sizes from NEMA 143 (IEC 90 and above).*
****NEMA motors up to 5 kV can bear the NEMA Premium Mark, as long as they meet the minimum estimated values, even if they are out of DOE scope without CC029A.*

NEMA Premium®

**Premium**
**NEMA Premium**

# UNITED STATES OF AMERICA

| | | |
|---|---|---|
| Regulation | DOE 10 CFR Part 431 - Subpart X - Small Electric Motors | DOE 10 CFR Part 431 - Subpart B - Electric Motors |
| Standard | IEEE Std 114-2010, IEEE Std 112-2004, CSA C390-10, CSA C747-09 | IEEE Std 112-2004, CSA C390-10 |
| Power supply system | Single-phase or Three-phase | Three-phase |
| Minimum energy performance | Premium | NEMA Premium |
| Minimum energy performance when is able to operate with inverter frequency | Not applicable | NEMA Premium |
| Output (kW) | 0.25 up to 3 HP (0,18 up to 2,2 kW) * | 1 up to 500 HP ( 0,75 up to 375 kW)** |
| Number of poles | 2, 4 and 6 | 2, 4, 6 and 8 |
| Voltage (V) | All | up to 600 V |
| Frequency (Hz) | 60 Hz or 50/60 Hz | |
| Service Duty | S1 | |
| Cooling method | ODP | TEFC, ODP, TENV, TEBC |
| Degree of protection | All | |
| Area classification | Safety area | Safety and hazardous area |
| Altitude | All | |
| Ambient temperature | All | |
| Required documentation | Certificate | |

*Note:*
**Applicable to frame sizes NEMA 42, 48 and 56 (IEC 63 and 71).*
***Applicable to frame sizes from NEMA 143 (IEC 90 and above).*
****NEMA motors up to 5 kV can bear the NEMA Premium Mark, as long as they meet the minimum estimated values, even if they are out of DOE scope without CC029A.*

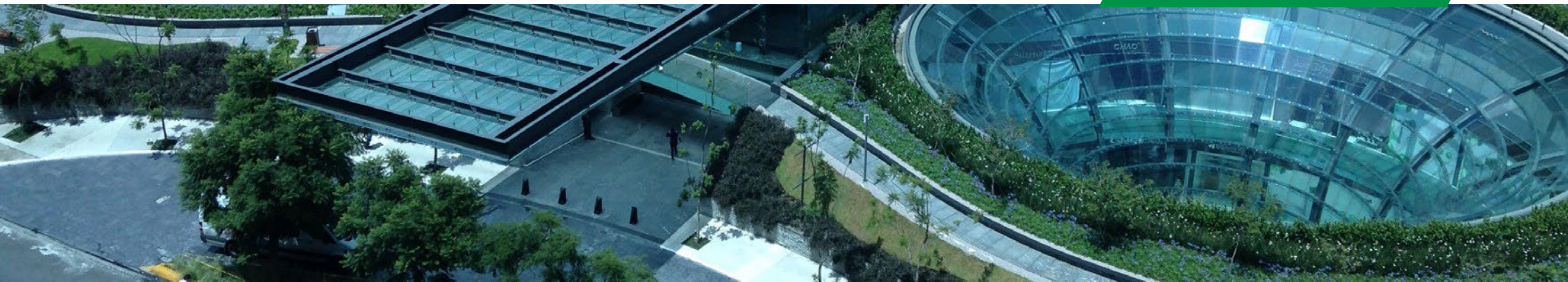
NEMA Premium®

**Premium**
**NEMA Premium**

# MEXICO

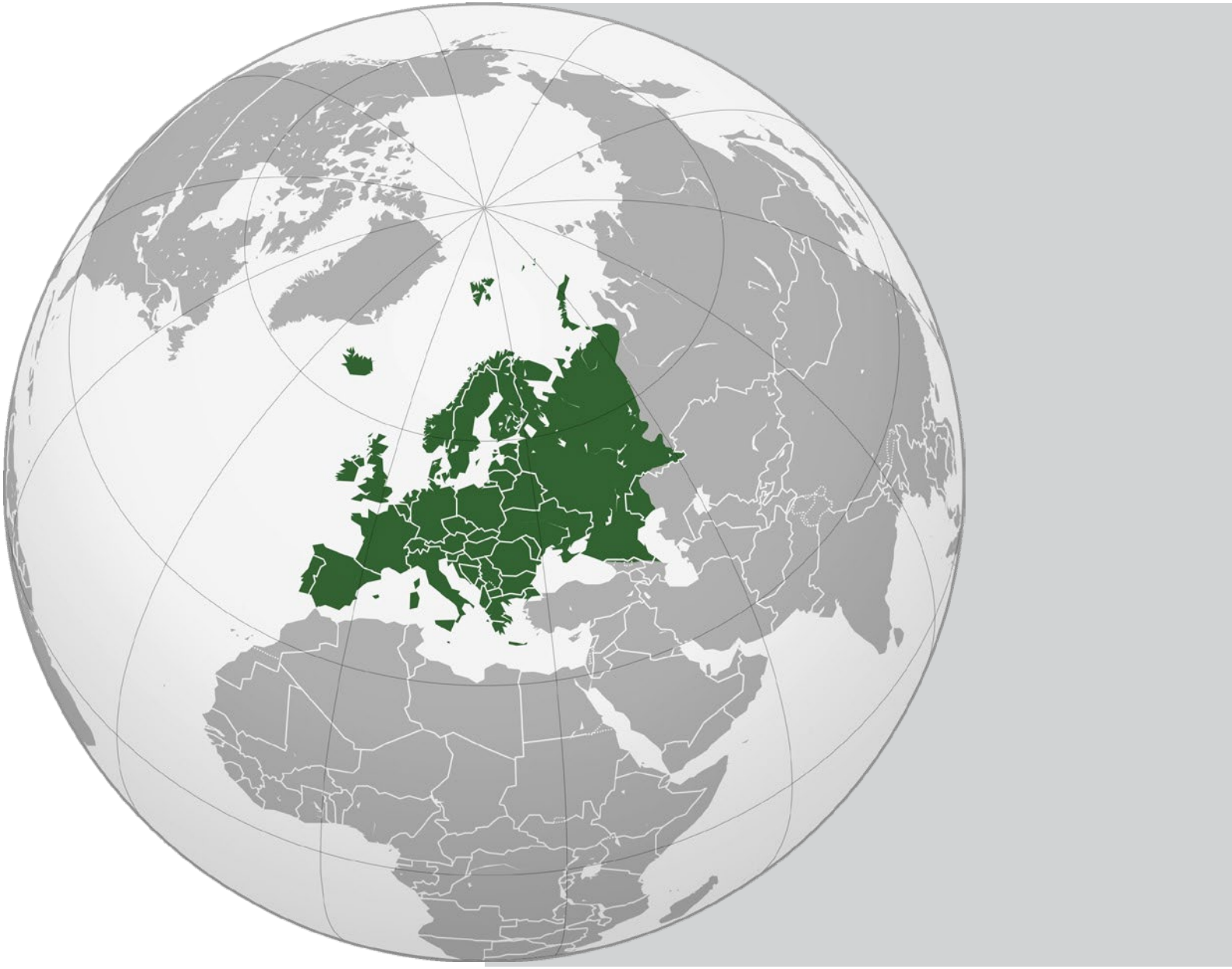
| | | |
|---|---|---|
| Regulation | NOM-014-ENER-2004 | NOM-016-ENER-2016 |
| Standard | NOM-014-ENER-2004 | NOM-016-ENER-2016 |
| Power supply system | Single-phase | Three-phase |
| Minimum energy performance | - | NEMA Premium |
| Minimum energy performance when is able to operate with inverter frequency | - | NEMA Premium |
| Output (kW) | 0.18 up to 1.5 kW | 1 up to 500 HP ( 0,75 up to 375 kW) |
| Number of poles | 2, 4 and 6 | 2, 4, 6 and 8 |
| Voltage (V) | All | up to 600 V |
| Frequency (Hz) | 60 Hz or 50/60 Hz | |
| Service Duty | All | S1 |
| Cooling method | All | |
| Degree of protection | All | |
| Area classification | Safety area | Safety and hazardous area |
| Altitude | All | |
| Ambient temperature | All | |
| Required documentation | Certificate | |

*Premium*



# EUROPE

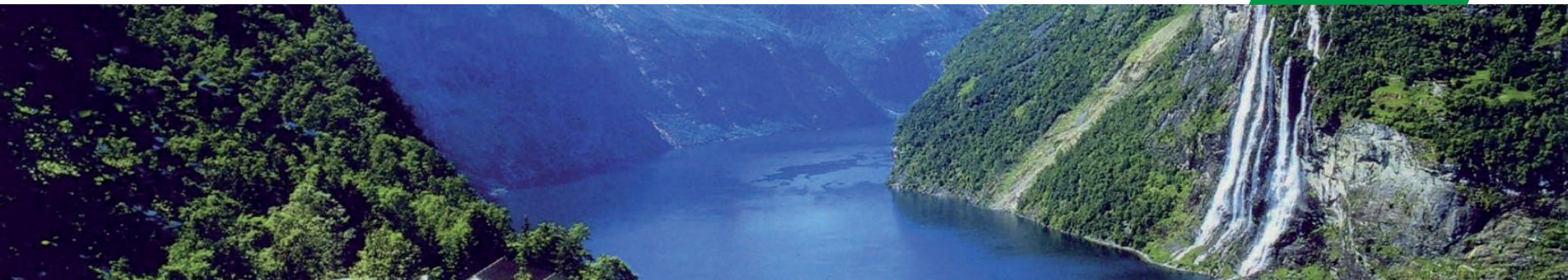
European Union
Ukraine
Great Britain



# EUROPEAN UNION

| | | NEW 07/2021 | | NEW 07/2023 | | |
|---|---|---|---|---|---|---|
| Regulation | Directive 2009-125-EC Regulation 640-2009 | Regulation EU 1781/2019 | | | | |
| Standard | IEC 60034-30-1 | | | | | |
| Power supply system | Three-phase | | | | | Single-phase |
| Minimum energy performance | IE3 | IE3 | IE2 | IE4 | IE2 | IE2 |
| Minimum energy performance when is able to operate with inverter frequency | IE2 | IE3 | IE2 | IE4 | IE2 | Not applicable |
| Output (kW) | 0,75 up to 375 kW | 0,75 up to 1000 kW | 0,12 up to <0,75 kW | 75 up to 200 kW | 0,12 up to 1000 kW | |
| Number of poles | 2, 4 and 6 | 2, 4, 6 and 8 | | 2, 4 and 6 | 2, 4, 6 and 8 | |
| Voltage (V) | up to 1000 V | | | | | |
| Frequency (Hz) | 50 Hz or 50/60 Hz | 50 Hz or 60 Hz | | | | |
| Service Duty | S1, S3 ≥ 80% or S6 ≥ 80% | | | | | |
| Cooling method | TEFC, TEBC, ODP | TEFC, TEBC, ODP, TEAO | | | | |
| Degree of protection | IP 00 up to IP 66 | | | | | |
| Area classification | Safety area | Safety and hazardous area (Ex ec, Ex tc, Ex tb, Ex db, Ex dc, Ex db eb) | | Safety area | Hazardous area (Ex eb) | Safety area |
| Altitude | Up to 4000 m | | | | | |
| Ambient temperature | -30 up to 60 ºC | | | | | |
| Required documentation | Self declaration | | | | | |

IE3



# UKRAINE

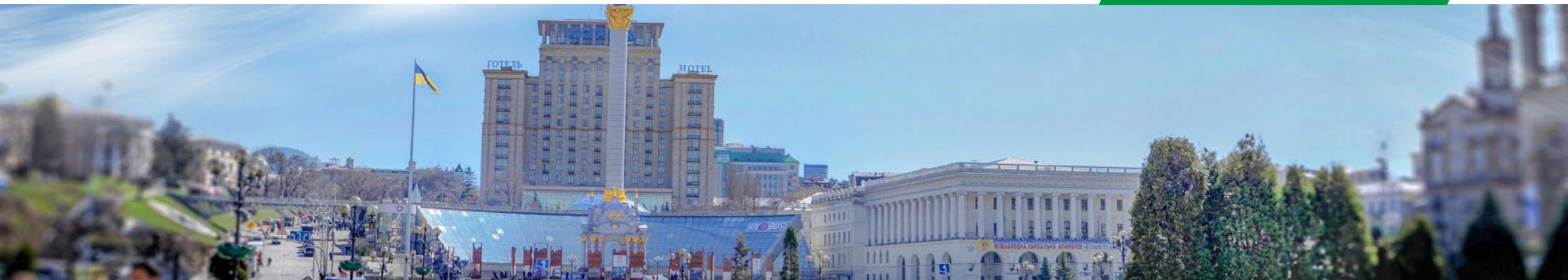
| | NEW 09/2021 |
|---|---|
| Regulation | Decree N° 157, Resolution N° 804 and Resolution N° 1184 |
| Standard | IEC 60034-2-1 |
| Power supply system | Three-phase |
| Minimum energy performance | IE3 |
| Minimum energy performance when is able to operate with inverter frequency | IE2 |
| Output (kW) | 0.75 up to 375 kW |
| Number of poles | 2, 4 and 6 |
| Voltage (V) | up to 1000 V |
| Frequency (Hz) | 50 Hz |
| Service Duty | S1 or S3 ≥ 80% |
| Cooling method | All |
| Degree of protection | All |
| Area classification | Safety area |
| Altitude | Up to 4000 m |
| Ambient temperature | Up to 60 °C |
| Required documentation | Self declaration |

## Requirements

- The motor must be identified with the logo.

UA.TR.000

IE3



# GREAT BRITAIN

| | | NEW 07/2021 | | | NEW 07/2023 | |
|---|---|---|---|---|---|---|
| Regulation | The Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit) Regulations 2019 | The Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit) Regulations 2020 | | | | |
| Standard | IEC 60034-30-1 | | | | | |
| Power supply system | Three-phase | | | | | Single-phase |
| Minimum energy performance | IE3 | IE3 | IE2 | IE4 | IE2 | IE2 |
| Minimum energy performance when is able to operate with inverter frequency | IE2 | IE3 | IE2 | IE4 | IE2 | Not applicable |
| Output (kW) | 0,75 up to 375 kW | 0,75 up to 1000 kW | 0,12 up to <0,75 kW | 75 up to 200 kW | 0,12 up to 1000 kW | |
| Number of poles | 2, 4 and 6 | 2, 4, 6 and 8 | | 2, 4 and 6 | 2, 4, 6 and 8 | |
| Voltage (V) | up to 1000 V | | | | | |
| Frequency (Hz) | 50 Hz or 50/60 Hz | 50 Hz or 60 Hz | | | | |
| Service Duty | S1, S3 ≥ 80% or S6 ≥ 80% | | | | | |
| Cooling method | TEFC, TEBC, ODP | TEFC, TEBC, ODP, TEAO | | | | |
| Degree of protection | IP 00 up to IP 66 | | | | | |
| Area classification | Safety area | Safety and hazardous area (Ex ec, Ex tc, Ex tb, Ex db, Ex dc, Ex db eb) | | Safety area | Hazardous area (Ex eb) | Safety area |
| Altitude | Up to 4000 m | | | | | |
| Ambient temperature | -30 up to 60 ºC | | | | | |
| Required documentation | Self declaration | | | | | |

*IE3*

# OCEANIA

Australia

New Zealand

# AUSTRALIA

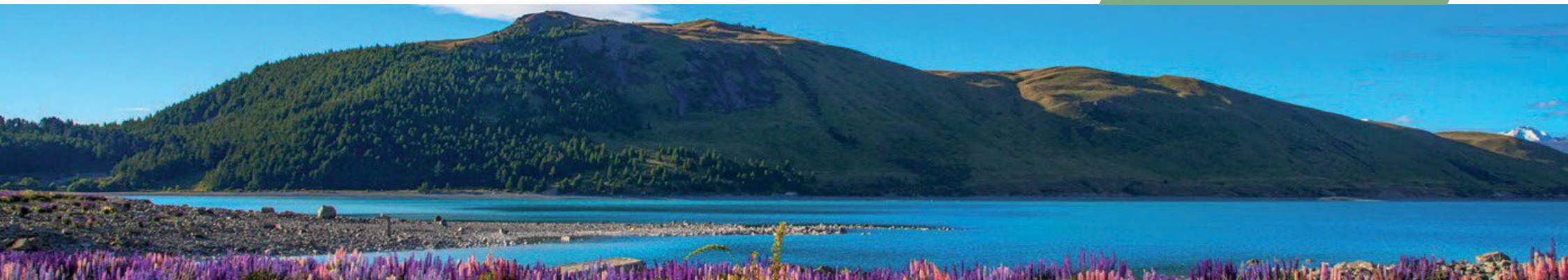
| | |
|---|---|
| Regulation | GEMS Act of 2019 |
| Standard | IEC 60034-30-1 |
| Power supply system | Three-phase |
| Minimum energy performance | IE2 |
| Minimum energy performance when is able to operate with inverter frequency | IE2 |
| Output (kW) | 0.73 up to <185 kW |
| Number of poles | 2, 4, 6 and 8 |
| Voltage (V) | up to 1100 V |
| Frequency (Hz) | 50 Hz or 60 Hz |
| Service Duty | All except S2 |
| Cooling method | TEFC, ODP, TEAO |
| Degree of protection | IP 00 up to IP 66 |
| Area classification | Safety and hazardous area |
| Altitude | All |
| Ambient temperature | All |
| Required documentation | Register by model |

IE2

# NEW ZEALAND

| | |
|---|---|
| Regulation | GEMS Act of 2019 |
| Standard | IEC 60034-30-1 |
| Power supply system | Three-phase |
| Minimum energy performance | IE2 |
| Minimum energy performance when is able to operate with inverter frequency | IE2 |
| Output (kW) | 0.73 up to <185 kW |
| Number of poles | 2, 4, 6 and 8 |
| Voltage (V) | up to 1100 V |
| Frequency (Hz) | 50 Hz or 60 Hz |
| Service Duty | All except S2 |
| Cooling method | TEFC, ODP, TEAO |
| Degree of protection | IP 00 up to IP 66 |
| Area classification | Safety and hazardous area |
| Altitude | All |
| Ambient temperature | All |
| Required documentation | Register by model |

*IE2*



# ASIA

Saudi Arabia
India
Japan
South Korea
Singapore
China
Taiwan

# SAUDI ARABIA

| | | |
|---|---|---|
| Regulation | BOD (Board of Directors) MEETING N° 163 | |
| Standard | SASO 2893:2018 | |
| Power supply system | Three-phase | |
| Minimum energy performance | IE3 | IE1 |
| Minimum energy performance when is able to operate with inverter frequency | IE3 | IE1 |
| Output (kW) | 0.75 up to 375 kW | |
| Number of poles | 2, 4, 6 and 8 | |
| Voltage (V) | 50 up to 1000 V | |
| Frequency (Hz) | 60 Hz or 60/50 Hz | |
| Service Duty | S1 | |
| Cooling method | TEBC, TEFC, ODP, TENV | TEAO, ODPAO |
| Degree of protection | All | |
| Area classification | Safety area | Hazardous area |
| Altitude | Up to 4000 m | |
| Ambient temperature | -20 up to 60 °C | |
| Required documentation | Energy Efficiency Certificate by model | Exclusive application certificate by model |

## Requirements

- Smart Code on the nameplate, used on the motor register.

IE3

# INDIA

| | |
|---|---|
| Regulation | The Gazette of India S.O.178 |
| Standard | IS 12615:2018 |
| Power supply system | Three-phase |
| Minimum energy performance | IE2 |
| Minimum energy performance when is able to operate with inverter frequency | IE2 |
| Output (kW) | 0.12 up to 1000 kW |
| Number of poles | 2, 4, 6 and 8 |
| Voltage (V) | up to 1000 V |
| Frequency (Hz) | 50 Hz or 50/60 Hz |
| Service Duty | S1 |
| Cooling method | IC411 (TEFC), IC416, IC417, IC418 (TEAO) |
| Degree of protection | IP 23 up to IP 66 |
| Area classification | Safety area |
| Altitude | Up to 4000 m |
| Ambient temperature | -20 up to 60 °C |
| Required documentation | Certificate |

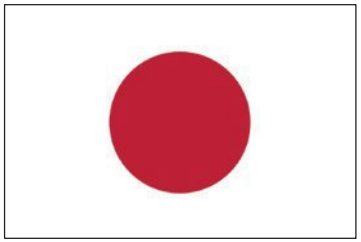
## Requirements

- The motor must be identified with the logo.

IS 12615

IE2

# JAPAN



| | |
|---|---|
| Regulation | Energy Saving Act / Top Runner Program |
| Standard | JIS C 4034-30 |
| Power supply system | Three-phase |
| Minimum energy performance | IE3 |
| Minimum energy performance when is able to operate with inverter frequency | - |
| Output (kW) | 0.75 up to 375 kW |
| Number of poles | 2, 4 and 6 |
| Voltage (V) | up to 1000 V |
| Frequency (Hz) | 50 Hz, 60 Hz or 50/60 Hz |
| Service Duty | S1, S3 ≥ 80% |
| Cooling method | All |
| Degree of protection | All |
| Area classification | Safety area |
| Altitude | All |
| Ambient temperature | From -20 °C and above |
| Required documentation | Self declaration |

## Requirements

- Importer must provide a self declaration for Efficiency level.

IE3

# SOUTH KOREA

| | |
|---|---|
| Regulation | MKE-2017-206 |
| Standard | KS C IEC 60034 |
| Power supply system | Three-phase |
| Minimum energy performance | IE3 |
| Minimum energy performance when is able to operate with inverter frequency | - |
| Output (kW) | 0.75 up to 375 kW |
| Number of poles | 2, 4, 6 and 8 |
| Voltage (V) | up to 600 V |
| Frequency (Hz) | 60 Hz |
| Service Duty | All except S2 |
| Cooling method | TEFC, ODP |
| Degree of protection | All |
| Area classification | Safety and hazardous area |
| Altitude | All |
| Ambient temperature | -15 up to 40 °C |
| Required documentation | Register by model |

## Requirements

- Energy efficiency level label.


IE3

# SINGAPORE

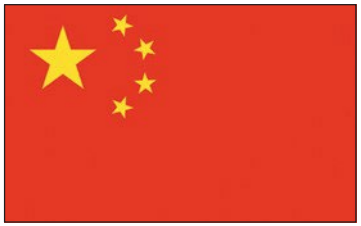
| | |
|---|---|
| Regulation | Energy Conservation Act (Cap. 92C) |
| Standard | IEC 60034-2-1 |
| Power supply system | Three-phase |
| Minimum energy performance | IE3 |
| Minimum energy performance when is able to operate with inverter frequency | IE3 |
| Output (kW) | 0.75 up to 375 kW |
| Number of poles | 2, 4 and 6 |
| Voltage (V) | up to 1000 V |
| Frequency (Hz) | 50 Hz or 50/60 Hz |
| Service Duty | S1, S3 ≥ 80%, S6 or S9 |
| Cooling method | TEFC, ODP, TEAO |
| Degree of protection | All |
| Area classification | Safety area |
| Altitude | up to 1000 m |
| Ambient temperature | -30 up to 60 °C |
| Required documentation | Certificate |

## Requirements

- Importer‘s register.

IE3

# CHINA



| | | NEW 06/2021 | |
|---|---|---|---|
| Regulation | Decree nº 35 (CEL 007:2006) | Draft CEL 007:202 | CEL 038:2020 Three-phase Permanent Magnet |
| Standard | GB 18613-2012 | GB 18613-2020 | GB 30253-2013 |
| Power supply system | Three-phase | Single-phase and Three-phase | Three-phase |
| Minimum energy performance | GB3 (IE2) | GB3 (IE3) | GB3 |
| Minimum energy performance when is able to operate with inverter frequency | GB3 (IE2) | GB3 (IE3) | GB3 |
| Output (kW) | 0,75 up to 375 kW | 0,12 up to 1000 kW | 0,55 up to 90 kW |
| Number of poles | 2, 4 and 6 | 2, 4, 6 and 8 | 6 and 8 |
| Voltage (V) | up to 1000 V | | |
| Frequency (Hz) | 50 Hz or 50/60 Hz | | |
| Service Duty | S1 or S3 ≥ 80% | | |
| Cooling method | TEFC (IC 411) | | TEFC (IC 411) or TEBC (IC 416) |
| Degree of protection | IP 44 up to IP 66 | | |
| Area classification | Safe and hazardous area | | |
| Altitude | up to 1000 m | | |
| Ambient temperature | -20 up to 40 °C | | All |
| Required documentation | Register by model | | |

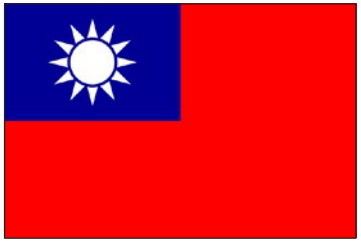
## Requirements*

- Energy efficiency level label. Nameplate shall record:
- Name of manufacturer in Chinese
- Marking GB 18613-2012 and its efficiency value
- Term “Three-phase induction motor“

**Only for three-phase motors from 0,75 up to 375 kW.*


**GB3 (IE2)**

# TAIWAN



| | |
|---|---|
| Regulation | Efficiency Standard and Benchmarks and BSMI Regulatory Inspection |
| Standard | CNS 14400 |
| Power supply system | Three-phase |
| Minimum energy performance | IE3 |
| Minimum energy performance when is able to operate with inverter frequency | IE3 |
| Output (kW) | 0.75 up to 200 kW |
| Number of poles | 2, 4 and 6 |
| Voltage (V) | up to 600 V |
| Frequency (Hz) | 60 Hz or 50/60 Hz |
| Service Duty | S1 |
| Cooling method | All |
| Degree of protection | All |
| Area classification | Safety area |
| Altitude | All |
| Ambient temperature | up to 40 °C |
| Required documentation | - |

IE3

For WEG's worldwide
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