Global efficiency standards for 3-phase AC motors

IE2 to IE4 motors from the modular system
### Global Efficiency Standards for 3-Phase AC Motors

<table>
<thead>
<tr>
<th>Region</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>EN 60034-30, IE3, IE2, Premium, NEMA Design C (if min. &quot;high&quot;)</td>
</tr>
<tr>
<td>Switzerland</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
</tr>
<tr>
<td>Turkey</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
</tr>
<tr>
<td>USA</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
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<tr>
<td>Brazil</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
</tr>
<tr>
<td>Australia / New Zealand</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
</tr>
<tr>
<td>South Korea</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
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<tr>
<td>China</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
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<tr>
<td>India</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
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<tr>
<td>China</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
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<tr>
<td>Mexico</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
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<tr>
<td>Japan</td>
<td>NEMA Design C and operating modes S2 – S10 (if min. &quot;high&quot;)</td>
</tr>
</tbody>
</table>

### Exceptions

- Operating modes except S1 and S3 (≥ 80%), brake motors, ATEX motors, fans operated on inverters, motors with ambient temperatures < -20°C, motors exclusively operated on inverters, motors with forced cooling fan, etc. motors, other special motors.

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**Note:** SEM-EURODRIVE offers AC motors for all efficiency classes. For further information, refer to the responsible sales and product employee on the website: www.ie-guide.de/en
The variant for use around the world. Efficient, powerful and usable world-wide

Features

- With the 50/60 Hz specifications and the inclusion of the elements that are typically required for a country on the nameplate, the motor type DR.. offers the unique possibility of unifying many different designs in one drive.
- Due to its wide voltage range, the various voltages all over the world can be covered by one motor.
- This world motor of SEW-EURODRIVE complies with the design specifications IEC EN 60034, NEMA MG1, CSA C22.2, ABNT, NCh 3086 and to the energy efficiency regulations in Europe: Directive 2009/125/EC (ErP), USA: EISA 2007, Canada: EER, Brazil: PN° 553, China: GB 18613.
- Significant time savings thanks to optimized motor selection, ordering, and logistics processes.

Excerpt from the technical description

<table>
<thead>
<tr>
<th>DR.. series</th>
<th>Voltage [V]</th>
<th>Frequency [Hz]</th>
<th>Power</th>
</tr>
</thead>
</table>
| type DRS.. (IE1) / DRE.. (IE2) | 220 – 242 / 380 – 420 or 380 – 420 / 660 – 725 | 50 | 2-pole: Motor type DRS..: 0.55 kW (0.75 hp)  
Motor type DRE..: 0.75 kW (1.0 hp) – 7.5 kW (10 hp)  
Motor type DRN..: 0.75 kW (1.0 hp) – 9.2 kW (12.5 hp) in preparation |
| type DRS.. (IE1) / DRE.. (IE2) | 254 – 277 / 440 – 480 or 440 – 480 / -- | 50 | 4-pole: Motor type DRS..: 0.18 kW (0.25 hp) – 0.55 kW (0.75 hp)  
Motor type DRE..: 0.75 kW (1.0 hp) – 90 kW (125 hp)  
Motor type DRN..: 0.75 kW (1.0 hp) – 90 kW (125 hp) |
| type DRN.. (IE3) | 220 – 230 / 380 – 400 or 380 – 400 / 660 – 690 | 60 | 6-pole: Motor type DRE..: 0.25 kW (0.34 hp) – 5.5 kW (7.5 hp)  
Motor type DRN..: 0.75 kW (1.0 hp) – 7.5 kW (10.0 hp) in preparation |
| type DRN.. (IE3) | 460 | 60 | 8-pole: Motor type DRN..: 0.75 kW (1.0 hp) – 22 kW (30.0 hp) in preparation |

Energy efficiency specifications on the nameplate

- IE classification with numerical value of efficiency during line operation for 50 and 60 Hz  
- USA: ee mark (by DoE, Department of Energy, EISA 2007)  
- Canada: CSA (Energy Verified) mark (EER 2010)  
- China: CEL mark (GB 18613)  
- Brazil: ENCE mark

Additional information on the nameplate

- according to US design specification NEMA MG1  
- TEFC, TECB, TENV depending on ventilation type  
- K.Y.A. code, code letter of the short circuit apparent power  
- M.L. (Mounting Location), four-digit code for UL-registered mounting location  
- Design code, code letters for startup and breakdown torque and starting current ratio  
- Temperature range, according to the Canadian design specification CSA C22.2, SEW-EURODRIVE approval up to +40°C, efficiency level to CSA C390  
- Conformity and certification logo for  
- Europe: CE mark  
- USA: UR label by UL  
- Canada: CSA mark  
- China: CCC mark according to GB 12350, if necessary (depends on power rating)