SIEMENS

## Low-voltage motors

The optimum solution for every demand worldwide

With a power range from 0.09 kW up to 1250 kW, our low-voltage motors drive almost every application. Furthermore, we can provide you with the optimum solution for each and every specific requirement: energy-efficient motors according to the latest standards, explosion-protected motors for the highest safety standards, sector, country or customer-specific motors. Energy-efficient motors are becoming more and more important. New energy efficiency laws are being drawn up in many countries to protect our environment. For instance, Standard IEC 60034-30 defines standard efficiency classes worldwide for 50 Hz and 60 Hz motors in the power range from 0.75 kW up to 375 kW.

With the changeover to IE2 motors, you protect the environment and benefit from significantly lower operating costs, as operation represents more than 90% of a motor's lifecycle costs, and the energy costs make up the largest portion of this. This is why you should make the change today! We can offer you standard and catalog motors in IE2, IE3 as well as NEMA Energy Efficient and NEMA Premium Efficiency. They are especially compact thanks to new product and production technologies and, in many cases, the efficiency classes have the same dimensions. As a full-line supplier, we offer all of our motor series in IE2 and IE3 covered by legislation – and guarantee short delivery times. We are more than willing to support you with the changeover to the new standard, for both standard and customized motors.
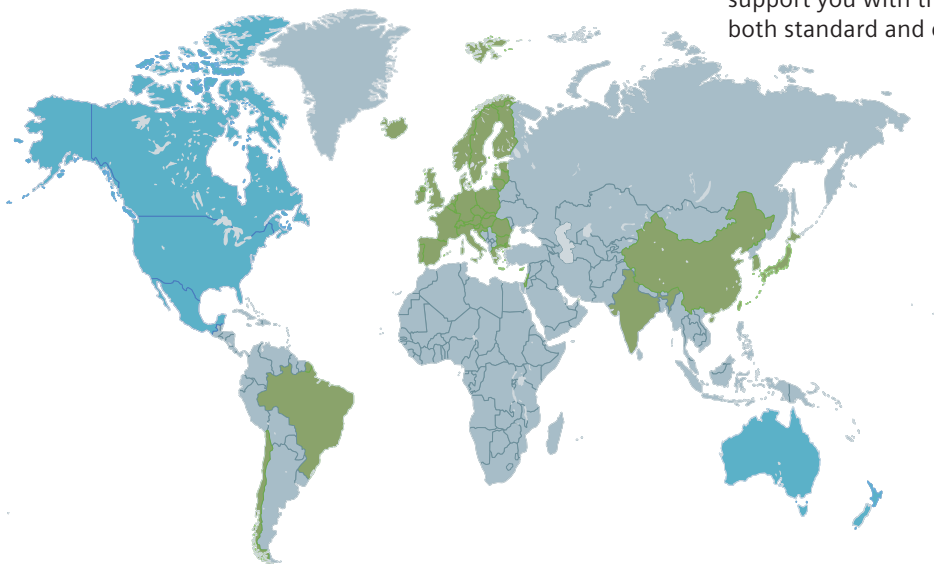
Countries and regions where efficiency standards apply

- ■ IE2 or NEMA Energy Efficient (NEE)
- ■ IE3 or NEMA Premium® Efficient (NPE)

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Globally applicable standards and legal requirements

Country	Voltage/ frequency	Power range	No. of poles	Regulation/ directive	Directive for minimum efficiency	Outlook	Siemens ordering option*
Europe	400 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	EC No. 640/2009	IE2 compulsory since June 16, 2011	Extension to IE3 in 2 phases 2015 and 2017	1LE1x01 = IE2 1LE1x03 = IE3
Russia	up to 690 V +/–10 %; 50 Hz	1 kW– 400 kW	all	GOST R 51677-2000	IE1		
Switzer-land	400 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	EnV	IE2 compulsory since July 1, 2011	Directive to be extended in 2015 and 2017: the Schweizer Energiegesetz (Swiss Energy Laws) will be revised in time	1LE1x01 = IE2 1LE1x03 = IE3
Turkey	400 +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	IEC 60034-30	IE1	Changeover to IE2 has still not been decided, will probably follow the recommendations of EU	
USA	480 V +/–10 %; 60 Hz	1 HP– 200 HP	2–6	NOM-016-ENER-2010	NEE/NPE compulsory since Dec. 19, 2010		1LE1x21 = NEE 1LE1x23 = NPE
Canada	480 V/575 V +/–10 %; 60 Hz	1 HP– 200 HP	2–6	CSA C390	NEE/NPE compulsory since Jan. 1, 2011	Efficiency legislation will follow the US model	1LE1x21 = NEE 1LE1x23 = NPE
Mexico	460 V +/–10 %; 60 Hz	1 HP– 200 HP	2–6	NEMA EPAct EISA 2007	NEE/NPE compulsory since Jan. 1, 2011	Efficiency legislation follows the US model, whereby the exception rules will be handled more restrictively	1LE1x21 = NEE 1LE1x23 = NPE
Brazil	220 V/380 V/440 V/ 460 V/480 V +/–10 %; 60 Hz	0.75 kW– 250 kW	2–8	NBR 17094-1 Regulation 553	ABNT (~IE2) compulsory since Dec. 8, 2009		
Chile	380 V/400 V/420 V/ 440 V/460 V/690 V +/–10 %; 50 Hz	0.75 kW– 7.5 kW	2–6	NCH 3086	IE2 compulsory since Jan. 4, 2011		
China	380 V +/–10 %; 50 Hz	0.55 kW– 315 kW	2–6	GB 18613-2006	Grade 2 (~IE2) compulsory since July 1, 2011	GB18613 is scheduled to be revised in 2012 and will redefine the grade classes	D34
Hong Kong	380 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	Mandatory Buildings Energy Efficiency Bill	IE2 in the launch phase since Dec. 2009	Extended to IE3 in 2 phases 2015 and 2017	
India	415 V/690 V +/–10 %; 50 Hz	0.375 kW– 375 kW	2–6	IS:12615	IE2 standard since August 2011	IE3 standard from Jan. 1, 2014	
Israel	400 V +/–10 %; 50 Hz	0.75 kW– 185 kW	2–8	SI 5289	IE2 compulsory since Feb. 1, 2008	Extension to IE3 planned in 2015	
Japan	200/220/400/440 V +/–10 %; 50/60 Hz	0.2 kW– 160 kW	2–6	JIS C 4034-30 JIS C 4034-2-1	IE2 expected	No legislation, efficiency according to the JIS standard. Standard IEC 60034-30 was integrated into JIS C4034-30.	
South Korea	Up to 600 V +/–10 %; 60 Hz	0.75 kW– 200 kW	2–8	KS C 4202 valid up to March 2012	KEMCO 2010 (~IE2)		D33
Singapore	415 V +/–10 %; 50 Hz	1.1 kW– 90 kW	2–4	SS530:2006	IE1	IE2 and IE3 are specified in government or customer projects	
Taiwan	< 600 V +/–10 %; 60 Hz	0.37 kW– 200 kW	2–8	CNS14400	~IE2	Presently there is no plan to apply IEC 60034-30. According to CNS 14400, IE2 motors can be certified as high-efficiency motors	
United Arab Emirates	400 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6		IE1	No regional standard/requirements for a minimum efficiency	
Saudi Arabia	380 V/460 V +/–5 %; 60 Hz	All	All	No regulation	IE1		
South Africa	400 V/525 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	IEC 60034-30	IE1	It is planned that the IEC standard will be implemented by SANS. The schedule is not yet defined. IE2 and IE3 are specified in customer projects.	
Australia/ New Zealand	415 V/690 V +10 %/–6 %; 50 Hz	0.73 kW– 186 kW	2–8	AS/NZS 1359.5-2004	IE2 since April 1, 2006	Extension to IE3 planned in 2014	

* For standard catalog motors, please order specifying the corresponding order numbers and/or specify options, additional special regional versions on request