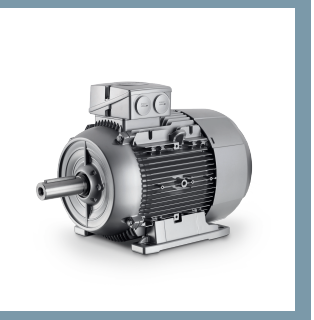
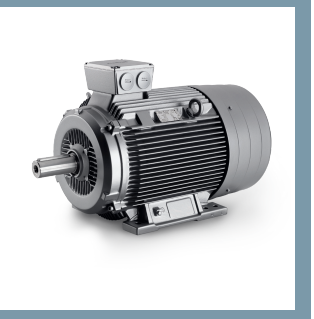
Low-voltage motors – the optimum solution for every demand worldwide

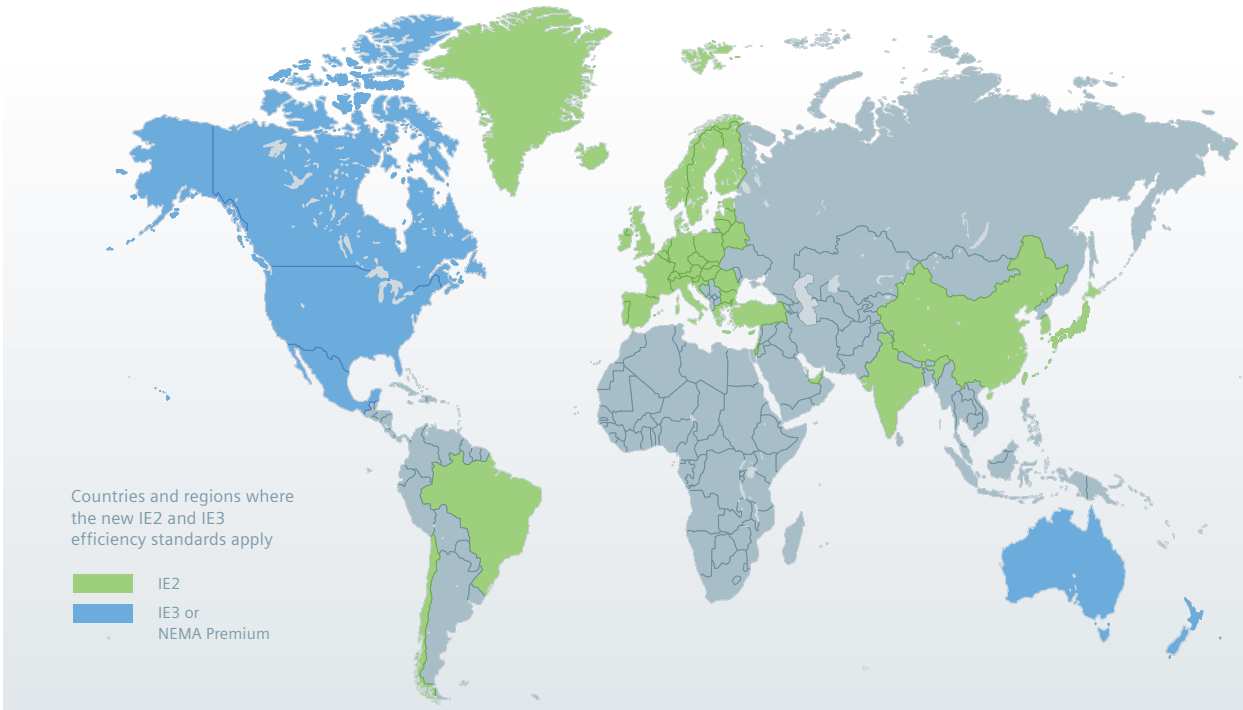




With a power range from 0.09 kW to 1.250 kW, our low-voltage motors fulfill almost every application. Furthermore, we can provide you with the optimum solution for each and every specific requirement: Energy-efficient motors according to the latest standards, explosion-proof motors for the highest safety standards, sector-, country- or customer-specific motors.

Energy-efficient motors are becoming more and more significant. 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 a power range from 0.75 kW to 375 kW. In addition to the European Union and associated countries, China and Brazil are also making the high IE2 efficiency class mandatory.

With the changeover to IE2 motors, you are not only protecting the environment but you are also benefiting from significantly lower operating costs. More than 90% of the life cycle costs of a motor account on the operation and the energy costs make up the largest portion of this.
This is a compelling reason why you should make the change today! We can offer you standard and customized motors in IE2.
They are especially compact thanks to new product and production technologies and, in many cases, the efficiency classes have the same dimensions. As full-line supplier, we already have all of the motor series covered by this new legislation. In IE2, we offer very competitive lead times due to our increased stock profile within EU. Siemens will assist you when migrating from EFF standard to the mandatory IE standard. This is applicable for standard and customized motors.



Motors

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Globally applicable standards and legal requirements

Country		Voltage/ Frequency	Power range	No. of Poles	Law / Regulation	Regulation of Minimum efficiency	Outlook
Europe		400 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	EC No. 640/2009	**IE2 compulsory 16.06.2011**	1.1.2015: IE3 from 7.5 kW to 375 kW or IE2 motor + frequency converter 1.1.2017: IE3 from 0.75 kW up to 375 kW or IE2 motor + frequency converter
Russland		up to 690 V +/–10 %; 50 Hz	1 kW– 400 kW	all	GOST R 51677-2000	**No**	
Switzerland		400 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	EnV	**IE2 compulsory 01.07.2011**	From January 2010: efficiency level IE1 From July 2011: efficiency level IE2 For extension of regulations in 2015 and 2017, Swiss energy act will be revised in time
Turkey		400 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	EC No. 640/2009	**IE1**	No decision yet. Will follow probably the EU timeline state inititative and customer awareness for IE2
USA		480 V +/–10 %; 60 Hz	1 HP– 200 HP	2–6	Nema EPAct EISA 2007	**IE3 compulsory 19.12.2010**	Current standard: NEMA EPAct – IE2 19.12.2010: EISA – IE3
Canada		480 V/575 V +/–10 %; 60 Hz	1 HP– 200 HP	2–6	CSA C390	**IE3 compulsory 01.01.2011**	Current standard: NEMA EPAct – IE2 01.01.2011: EISA – IE3
Mexico		460 V +/–10 %; 60 Hz	1 HP– 200 HP	2–6	Nema EPAct EISA 2007	**IE3 expected**	Not confirmed yet. Expected to follow USA timeline
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	**IE2 compulsory 08.12.2009**	
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 04.01.2011**	
China		380 V +/–10 %; 50 Hz	0.55 kW– 315 kW	2–6	GB 18613-2006	**IE2 compulsory 01.07.2011**	The scope of motor output will be changed to 0.75 kW–375 kW in near future. IE3 will be compulsory 01.07.2016
Hong Kong		380 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	Mandatory Buildings Energy Efficiency Bill	**IE2 Introduction stage since Dec 2009**	Efficiency bill will follow the model of EU. 1.1.2015: IE3 from 7.5 kW to 375 kW or IE2 motor + frequency converter 1.1.2017: IE3 from 0.75 kW up to 375 kW or IE2 motor + frequency converter
India		415 V/690 V +/–10 %; 50 Hz	0.37 kW– 315 kW	2–8	IS:4889 / IS:12615-2004	**IE2 expected 2013**	IE1 / IE2-based regulations assumed 2013
Israel		400 V +/–10 %; 50 Hz	0.75 kW– 185 kW	2–8	SI 5289	**IE2 compulsory 01.02.2008**	Review of IS 5289 at the end of 2010 and changing it in line with European law (Measurement method acc. to IEC 60034-2-1, applying IEC 60034-30, change to IE3 on 01.10.2015)
Japan		200/220/400/440 +/–10 %; 50/60 Hz	0.2 kW– 160 kW	2–6	JIS C 4210 JIS C 4212	**IE2 expected**	No law, efficiency per JIS standard. IEC 60034-30 will be integrated into JIS in 2010
Korea		Up to 600 V +/–10 %; 60 Hz	0.75 kW– 200 kW	2–6	KS C 4202	**IE2 compulsory 01.07.2008**	01.07.2010: IE2 from 0.75 kW – 200kW
Singapore		415 V +/–10 %; 50 Hz	1.1 kW– 90 kW	2–4	SS530:2006	**IE2**	Only government projects compulsory in IE2
Taiwan		< 600 V +/–10 %; 60 Hz	0.37 kW– 200 kW	2–8	CNS14400	**IE2**	No plan to adapt IEC 60034-30 right now. IE2 motors can be certified acc. to CNS 14400 as high-efficiency motors
United Arab Emirates		400 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	EC No. 640/2009	**IE2 from 16.06.2011 as recommendation**	No local standards/demands on this efficiency levels, just following EU 01.01.2015: IE3 from 7.5 kW to 375 kW or IE2 motor + frequency converter 01.01.2017: IE3 from 0.75 kW up to 375 kW or IE2 motor + frequency converter
Saudi Arabia		380 V/460 V +/–5 %; 60 Hz	all	all	no regulation	**No**	
Republic of South Africa		400 V/525 V +/–10 %; 50 Hz	0.75 kW– 375 kW	2–6	IEC 60034-30	**IE1**	Is being recommended Implementation of the IEC standard is probably not foreseen within the next 5 years
Australia/ New Zealand		415 V/690 V +10 %/–6 %; 50 Hz	0.73 kW– 186 kW	2–8	AS/NZS 1359.5-2004	**IE2 01.04.2006 IE3 expected**	IE3 planned for near future

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