Country Fact Sheet Motors
European Union

Regional Characteristics	
Voltage	3 ~ 400V ± 10% 1 ~ 230V ± 10%
Frequency	50 Hz
Approval Mark	**CE Conformity**
Standard	EN IEC 60034
Regulation	– Low Voltage Directive 2014/35/EU – ErP Directive 2009/125/EG – RoHS Directive 2011/65/EU
Scope	All machines and electronic devices which are affected by any EU Directive.
Marking	CE
Energy Efficiency	**Ecodesign Directive**
Regional Standard	IEC 60034-30-1
Regulation	Commission Regulation (EU) No. 2019/1781
Mandatory Efficiency Class	– IE2: 0.12 – 0.74 kW (2-, 4-, 6- and 8-pole) – IE3: 0.75 – 74 kW (2-, 4-, 6- and 8-pole) – IE3: 75 – 200 kW (8-pole) – IE3: 201 – 1000 kW (2-, 4-, 6- and 8-pole) – IE4: 75 – 200 kW (2-, 4-, 6 pole)
Scope	– Rated output power from 0.12 up to 1000 kW – Rated voltage from 50 up to 1000 V – Rated frequency 50 and 60 Hz – 2-, 4-, 6- and 8-pole – For continuous duty operation
Exemptions	– Motors with intermittent duty like S3 (duty factor < 80%) or S6 (duty factor < 80%) – Exclusively suitable for inverter operation – Motors with integrated variable speed drive as integral part of the motor – Motors for heavy environmental conditions like ambient temperature above +60°C or below -30°C, installation altitude above 4000m – Pole-changeable motors – Motors placed on the market before 1st July 2029 as substitutes for identical motors integrated in products placed on the market before 1st July 2022, and specifically marketed as such – Motors that share common components with the driven unit and cannot operate as a motor if separated from it – Motors specifically designed and specified to operate wholly immersed in a liquid
Marking	– IE-Class – Nominal efficiency (η) at 50%, 75% and 100 % load

Solutions from Lenze		
Three-phase AC motors	0.12 ... 0.55 kW	m550-H IE2-high efficiency motors
	0.75 ... 22 kW	m550-P IE3-premium efficiency motors
	30.0 ... 55 kW	m540-P IE3-premium efficiency motors
	0.37 ... 11 kW	m550-U IE5-ultra premium efficiency motors
	0.25 ... 7.5 kW	m550-V IE6-ultra premium efficiency motors
	0.75 ... 22 kW	m650-U IE5-ultra premium efficiency motors
	0.55 ... 22 kW	MF inverter-optimized AC motors
	0.47 ... 1.36 kW	m300 Lenze Smart Motors
Asynchronous servo motors	0.075 ... 0.6 kW	SDSGA asynchronous servo motors
	0.80 ... 53.8 kW	MCA asynchronous servo motors
	10.6 ... 60.2 kW	MQA asynchronous servo motors
Synchronous servo motor	0.11 ... 9.20 kW	m850 synchronous servo motors
	0.25 ... 15.8 kW	MCS synchronous servo motors

Individual Information per region/countries

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This overview represents a non-binding overview of the known valid regulations at the date of creation. No legal claim or compensation can be derived from this in the event of different legislation or application.