

Guideline	640/2009	upcoming changes on 640/2009 *		
Subject	to date	from 2021, July 1 st	from 2023, July 1 st	Notes
Types				
Type: Polyphase Squirrel Cage ≥ 0,75 kW				
Power	0,75 - 375 kW	0,75 - 1000 kW	0,75 - 1000 kW	
Number of poles	2, 4, 6	2, 4, 6, 8	2, 4, 6, 8	
Minimum Efficiency Class - DOL	IE3	IE3	IE3 *	*/ IE4 for: 75 - 200 kW @ 2p, 4p, 6p (with brake IE3)
Minimum Efficiency Class - VSD	IE2	IE3	IE3 *	
Type: Polyphase Squirrel Cage < 0,75 kW				
Power	0,12 - 0,74 kW	0,12 - 0,74 kW	0,12 - 0,74 kW	
Number of poles	2, 4, 6	2, 4, 6, 8	2, 4, 6, 8	
Minimum Efficiency Class - DOL	NO	IE2	IE2	
Minimum Efficiency Class - VSD	NO	IE2	IE2	
Type: Singlephase Squirrel Cage ≥ 0,12 kW				
Power	> 0,12 kW	> 0,12 kW	> 0,12 kW	
Number of poles	2, 4, 6	2, 4, 6, 8	2, 4, 6, 8	
Minimum Efficiency Class - DOL	NO	NO	IE2	
General				
Voltage for DOL-operation	< 1000 V	50 V - 1000 V	50 V - 1000 V	
Voltage for VSD-operation	< 1000 V	100 V - 1000 V	100 V - 1000 V	
Frequency	50 Hz, 50/60 Hz	50 Hz, 50/60 Hz, 60 Hz	50 Hz, 50/60 Hz, 60 Hz	
Service	S1 - Continuous Duty	S1 - Continuous Duty	S1 - Continuous Duty	Designed for, as well as capable for, S1 or S3≥80% or S6≥80%
Mountings (B14, B5, B34, B35,...)	All	All	All	
Protection (IP...)	All	All	All	
8 pole	NO	YES	YES	
IC 410 TENV	YES	NO	NO	
IC 416	YES	YES	YES	
IC 418 TEAO	NO	YES	YES	

* 640/2009 ends by 2021, July 1st ! New regulation will show different number

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Products	Min. Efficiency Class			
Motors with brushes, commutators, slip-rings, electrical connections to rotor	NO	NO	NO	
Submersible motor	NO	NO	NO	Wholly immersed
Integrated motors	NO	NO	NO	Motors completely integrated in a drive (gear, pump, fan, compressor, ...) where efficiency cannot be measured independent of this. Does not cover gearbox motors that can be disassembled of the gear and can be measured.
Component sets of an electric motor	NO	NO	NO	Final endproduct has to be considered relating to efficiency regulations
Motors designed for altitudes > 4000m	NO	NO	NO	
Motors designed for ambient > 60°C	NO	NO	NO	
Motors designed for ambient <-30°C	NO	NO	NO	
Motors designed for watercoolant >0°C to <32°C	YES	YES	YES	
Motors designed for watercoolant <0°C or >32°C	NO	NO	NO	
Max operating temperature >400°C	NO	NO	NO	
Hazardous locations	NO	YES	YES	Ex ec, Ex tb, Ex tc, Ex db, Ex dc
Increased safety 0,12 - 1000 kW	NO	NO	IE2	Ex eb - acc. 60079-7:2015
Brake motors	NO	YES	YES	Brake operating directly on the motorshaft without couplings.
Brake motors	NO	NO	NO	Brake being an integral part of the inner motor construction (can neither removed nor supplied by a separate power source)
Inverter-only electric motors	YES	YES	YES	
Single phase	NO	NO	IE2	
Intermittent duty	NO	NO	NO	S2 ... S10, but only when specially designed for this duty and not capable continuously (S1)
Multi - speed - motor	NO	NO	NO	Only by means of winding-design/connection. Not to be understood as: Motor for DOL only used with a converter !!
Traction motors	NO	NO	NO	

Characteristics	Min. Efficiency Class			
cordless, hand-held or battery-operated		NO	NO	
Intermediate power	YES	YES	YES	
Special voltages	YES	YES	YES	
Roller bearings	YES	YES	YES	Test with standard bearings
Thermally protected	YES	YES	YES	
Special base / feet	YES	YES	YES	
Special insulation	YES	YES	YES	
Space Heater	YES	YES	YES	
Wye-Delta Start	YES	YES	YES	
Special Balance	YES	YES	YES	
Special t/box, Auxiliary t/box	YES	YES	YES	
Drip cover, Drain holes	YES	YES	YES	
Special contact and non-contact seals	YES	YES	YES	Test with seal removed from outside
Non-Standard shafts and flanges	YES	YES	YES	
Shafts with Non Standard Material	YES	YES	YES	

Questions	Notes		
Motors manufactured outside Europe	Includes also motors made outside Europe for import.		
Motors for export	Does not apply for motors exported outside EU-Europe - Observe possible MEPS of country to export !!		
Motors replacement	Does not contain any requirement to replace electric motors in use. Replacement motors for IE1/IE2 motors that failed have to meet the regulation till 2021, July 1st ! From 2021, July 1st to 2029, June 30th IE1/IE2 replacement motors for IE1/IE2 motors that failed are legal as long as an existing product is replaced.		
Motors inventory	Covers the first placing on the market of the motors (by import or sale to a dealer or OEM). After the effective date motors not meeting the MEPS must not be marketed.		
Motors used	Applies only on new motors marketed after the effective date. Motors rebuilt, repaired or rewound are not covered. If on repair case the whole motor has to be changed the new efficiency guidelines have to be observed.		