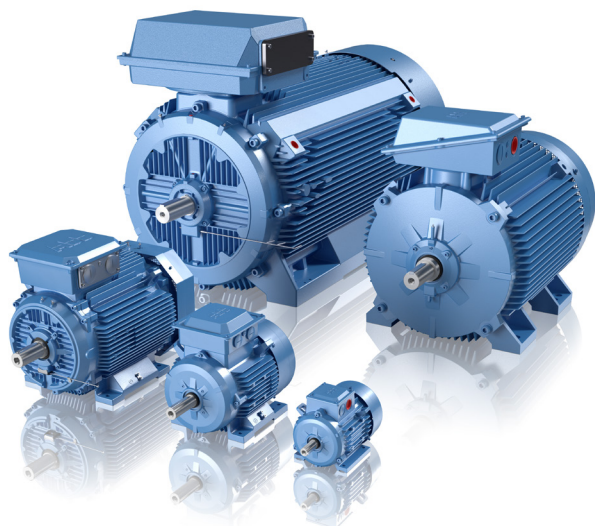


PRODUCT NOTE

Efficiency requirements for low voltage motors shipped to Saudi Arabia



Efficiency requirements for low voltage motors of Saudi Arabia (KSA) are overseen by SASO, the Saudi Standards, Metrology and Quality. The regulation SASO IEC 600034-30:2013 states that IE3 is the minimum efficiency level for the electric motors included in the scope since January 1, 2017.

Motors shipped on a stand-alone basis to the KSA must undergo a registration process to determine whether they are covered by the SASO efficiency requirements. Regardless of whether or not they are covered, they also need a Certificate of Conformity (CoC) to clear customs in the KSA. Motors that are completely integrated into a machine (such as a pump, fan or compressor) are exempted from the efficiency requirements and do not need to be registered by the manufacturer, but may be subject to other SASO requirements as described below.

Efficiency registration and conformity certification

Motors have to be registered following registration process by the Saudi Label and Standard (SL&S). The test data supplied for registration purposes must originate from a laboratory which is approved by the SASO Technical Committee. The laboratory must also be certified by a third-party laboratory accredited by ILAC (International Laboratory Accreditation Cooperation) or a similar organization. ABB has secured this approval and certification for the testing laboratory at its manufacturing plant in Vaasa, Finland.

The test data for a given motor type must be a maximum of two years old, and registration is valid for one year only. Therefore registration must be done on an annual basis.

If the rating or electrical design of a motor type is changed after the motor has been registered, the motor rating, type and design must then be re-registered as a new model. In addition, the first motor of a given specification must be tested for efficiency.

The CoCs needed to clear customs must be issued by a third-party service provider authorized by SASO, such as SGS, Intertek, or Bureau Veritas.

Motors shipped as stand-alone but which are excluded from the scope of the SASO efficiency requirement must be tested and registered similarly as the motors included in the scope. A Excluded Application letter will be issued and the CoC shall be applied. There is no expiry date for the Excluded Application letter.

Origin of motors

All ABB motors for shipping to the KSA will be manufactured at ABB's plant in Vaasa, Finland - country of origin is indicated on the motor.. Motors from stock or originating from other ABB plants cannot be shipped to the KSA.

SASO requirements

Motors shipped stand-alone either shipped direct from ABB to the KSA, or from ABB to a customer who then ships the motor as a spare part to the KSA		Motors integrated into equipment i.e. completely integrated into a machine, such as a pump, fan or compressor
Covered by SASO efficiency requirements From January 1, 2017 the following motors must meet IE3 efficiency requirements as minimum. The rated efficiency and IE code must be marked on the rating plate. <ul style="list-style-type: none"> - Single-speed motors - 3-phase motors - Cage induction motors - Rated voltage up 1000 V - Rated output power between 0.75 and 375 kW - 2, 4 or 6-pole - Duty type S1 (continuous duty) or S3 (intermittent periodic duty) with cyclic duration factor \geq 80% - Capable of operating direct-on-line - Altitude less than 1000 m - Ambient temperature from -15°C to +40°C 	Excluded from SASO efficiency requirements, requiring anyhow registration Motors designed solely for converter operation (not to be operated direct-on-line) <ul style="list-style-type: none"> - Brake motors - Gear motors - Wound rotor motors - Torque motors (e.g. gate motors and crane motors) - Motors designed specifically to operate: <ul style="list-style-type: none"> - With operating temperature above +400°C - In potentially explosive atmospheres - Wholly immersed in liquid - With cooling from external equipment (e.g. air over or liquid-cooled motors) - In an an enclosed container and as part of an integral system (e.g. canned motor) 	Exempted from SASO efficiency requirements These motors are exempted from the efficiency requirements and do not require a CoC nor testing or registration. <ul style="list-style-type: none"> - Motor not a single-speed eg. two-speed - Motor is not a three-phase motor, eg. single-phase - Motor is not a cage induction motor - Rated voltage above 1000 V - Rated power less than 0.75 kW or above 375 kW - Pole number higher than 6, e.g. 8 - Rated for duty types other than S1 or S3 and less than 80% - Motor that is not capable operating direct-on-line - Motor is integrated into a machine
ABB responsibilities		
<ul style="list-style-type: none"> - Ensure the motor is compliant with all applicable SASO marking, documentation and testing requirements - Arrange for SL & L registration, type test, third-party inspection - Following SASO approval, supply registration number to customer for CoC 	<ul style="list-style-type: none"> - Ensure the motor is compliant with all applicable SASO marking, documentation and testing requirements - Arrange for SL & S registration (and supply registration number to customer for CoC), type test, third-party inspection 	<ul style="list-style-type: none"> - Ensure the motor is compliant with all applicable SASO marking, documentation requirements (the organization handling certification of the end product will terminate the extent of compliance required, and ABB will request this information from the customer)
Customer responsibilities		
<ul style="list-style-type: none"> - Obtain CoC (which must show the efficiency registration number) number to customer for CoC 	<ul style="list-style-type: none"> - Obtain CoC which must show the excluded application document from the third party (e.g. SGS, Intertek) and state the reason why the motor is excluded from the efficiency requirements. 	<ul style="list-style-type: none"> - Inform ABB of the extent of compliance required, as noted above - Handle customs clearance and prepare an exemption letter stating the reason for exemption

CoC = Certificate of Conformity

the KSA = The Kingdom of Saudi Arabia

SL&S = Saudi Lable and Standard