Ecodesign for electric motors and variable speed drives Commission Regulation (EU) 2019/1781

Full title

laying down ecodesign requirements for electric motors and variable speed drives pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Regulation (EC) No 641/2009 with regard to ecodesign requirements for glandless standalone circulators and glandless circulators integrated in products and repealing Commission Regulation (EC) No 640/2009

Pictures


Scope

(Article 2 section 1)

This Regulation applies to the following products:

(a) induction electric motors without brushes, commutators, slip rings or electrical connections to the rotor, rated for operation on a 50 Hz, 60 Hz or 50/60 Hz sinusoidal voltage, that:

(i) have two, four, six or eight poles;

(ii) have a rated voltage UN above 50 V and up to and including 1 000 V;

(iii) have a rated power output PN from 0,12 kW up to and including 1 000 kW;

(iv) are rated on the basis of continuous duty operation; and

(v) are rated for direct on-line operation;

(b) variable speed drives with 3 phases input that:

(i) are rated for operating with one motor refered to in point (a), within the 0,12 kW-1 000 kW motor rated output range;

(ii) have a rated voltage above 100 V and up to and including 1 000 V AC;

(iii) have only one AC voltage output.

Exceptions

(Article 2 section 2&3)

The requirements in section 1, and points (1), (2), (5) to (11), and (13) of section 2 of Annex I shall not apply to the following motors:

(a) motors completely integrated into a product (for example into a gear, pump, fan or compressor) and whose energy performance cannot be tested independently from the product, even with the provision of a temporary end-shield and drive-end bearing; the motor must share common components (apart from connectors such as bolts) with the driven unit (for example, a shaft or housing) and shall not be designed in such a way that the motor can be separated in its entirety from the driven unit and operate independently. The process of separation shall have the consequence of rendering the motor inoperative;

(b) motors with an integrated variable speed drive (compact drives) whose energy performance cannot be tested independently from the variable speed drive;

(c) motors with an integrated brake which forms an integral part of the inner motor construction and can neither be removed nor powered by a separate power source during the testing of the motor efficiency;

(d) motors specifically designed and specified to operate exclusively:

(i) at altitudes exceeding 4 000 metres above sea-level;

(ii) where ambient air temperatures exceed 60 °C;

(iii) in maximum operating temperature above 400 °C; (iv) where ambient air temperatures are less than – 30 °C; or

(v) where the water coolant temperature at the inlet to a product is below 0 °C or above 32 °C;

(e) motors specifically designed and specified to operate wholly immersed in a liquid;

(f) motors specifically qualified for the safety of nuclear installations, as defined in Article 3 of Council Directive 2009/71/Euratom (8);

(g) explosion-protected motors specifically designed and certified for mining, as defined in Annex I, point 1 of Directive 2014/34/EU of the European Parliament and of the Council (9);

(h) motors in cordless or battery-operated equipment;

(i) motors in hand-held equipment whose weight is supported by hand during operation;

(j) motors in hand-guided mobile equipment moved while in operation;

(k) motors with mechanical commutators;

(l) Totally Enclosed Non-Ventilated (TENV) motors;

(m) motors placed on the market before 1 July 2029 as substitutes for identical motors integrated in products placed on the market before 1 July 2022, and specifically marketed as such;

(n) multi-speed motors, i.e. motors with multiple windings or with a switchable winding, providing a different number of poles and speeds;

(o) motors designed specifically for the traction of electric vehicles.

The requirements in section 3, and points (1), (2), and (5) to (10) of section 4 of Annex I shall not apply to the following VSDs:

(a) VSDs integrated into a product and whose energy performance cannot be tested independently from the product, that is to say that an attempt to do so would render the VSD or the product inoperative;

(b) VSDs qualified specifically for the safety of nuclear installations, as defined Article 3 of Directive 2009/71/ Euratom;

(c) regenerative drives;

(d) drives with sinusoidal input current.