

On the safe side worldwide

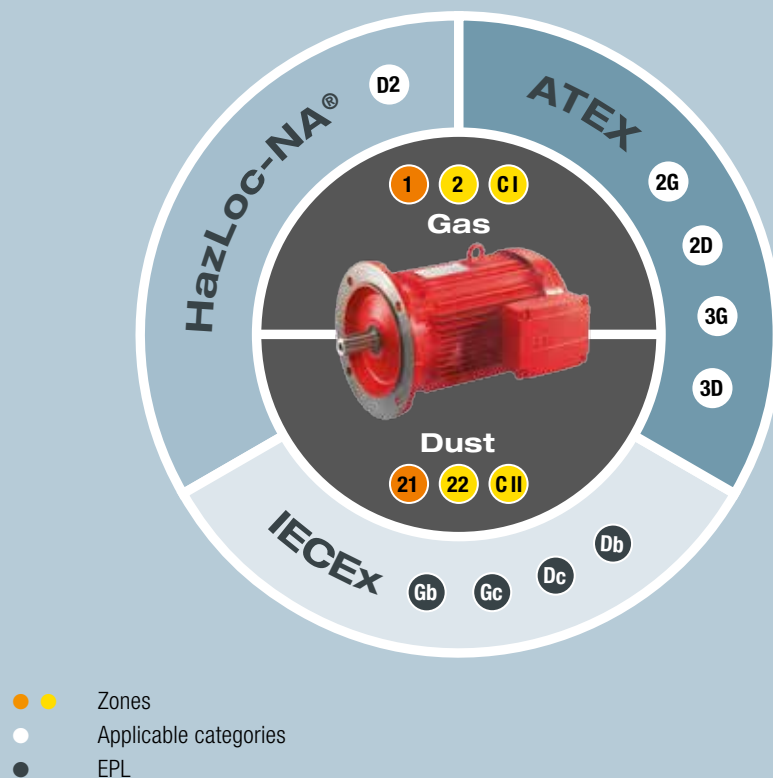
Drive technology for potentially explosive atmospheres according to international standards



Explosion protection worldwide – overview of standards

The internationally applicable requirements for using gearmotors, motors or drive electronics in potentially explosive atmospheres are very complex. These requirements are defined in the directives and standards that are most important for the global market: 2014/34/EU (ATEX), IEC (IECEx), NEC500, NEC505 and C22.1/C22.2 (HazLoc-NA®). The following pages are intended to provide an initial overview.

Zones and assignment of equipment categories or Equipment Protection Level (EPL)

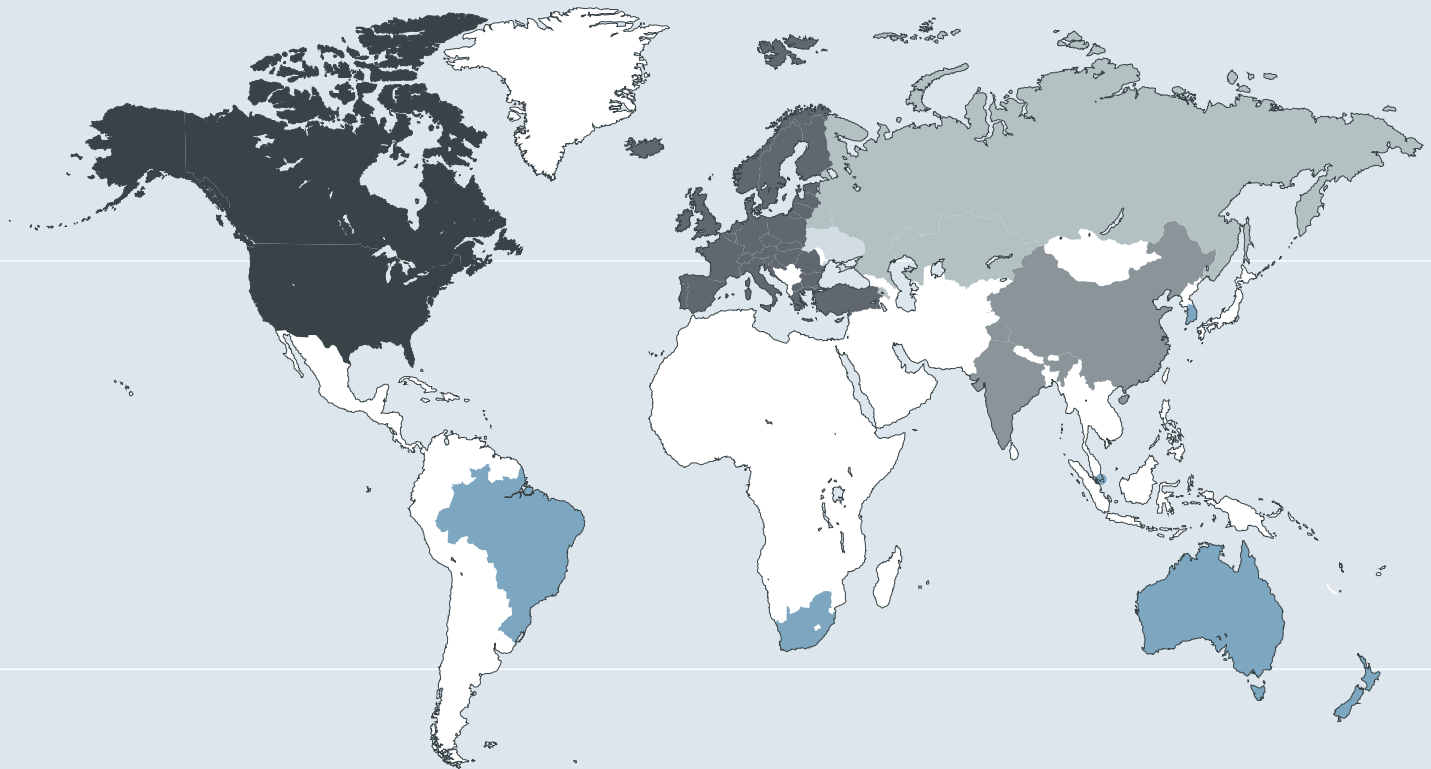
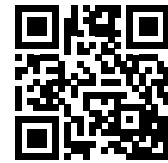


SEW-EURODRIVE does not offer products for zones 0 and 20.

Explosion-proof drive technology “made by SEW-EURODRIVE” meets these requirements

Our modular solutions make it easy for you to choose the right component. The voltage or frequency will change depending on the country where the product is used but the power rating, size and length of the gearmotors and motors remain the same. Once you have finished project planning, you can simply re-order the components. They are certified according to ATEX, IECEx or HazLoc-NA® depending on the standard applicable in the respective country.

SEW-EURODRIVE supports you in selecting the properties and categories of required equipment. For this purpose, a checklist and request form are available to download here:



China and India accept the Directive 2014/34/EU (ATEX)



Directive 2014/34/EU (ATEX) at a glance



Area of application

Directive 2014/34/EU specifies explosion protection regulations for all types of devices for the European market. This directive applies to both gearmotors and motors and has been in effect since April 20, 2016. Other European countries, such as Switzerland, have also adopted this regulation.

SEW-EURODRIVE was one of the first manufacturers to offer appropriate gear units and motors when this directive was introduced. The latest example is the new EDNR.. motor series in IE3.

Revision of standards

A revised version of standard EN 60079-7 came into effect on August 1, 2016. The changes from EN 60079-7:2007-08 include the following:

- a. Introduction of equipment protection levels "eb" and "ec"
- b. Integration of "na" requirements from IEC 60079-15

New products such as EDNR.. motors are developed in line with the new standard and are labeled Ex "eb" or Ex "ec" but EDRS.. and EDRE.. motors can still be verified in line with the standard based on which they were developed. Accordingly, Ex "e" and Ex "nA" are still used to define the protection type.

EN 60079-7:2015 thus applies to EDNR.. series motors for gas atmospheres, while EN 60079-15 is binding for EDRS.. and EDRE.. motors.

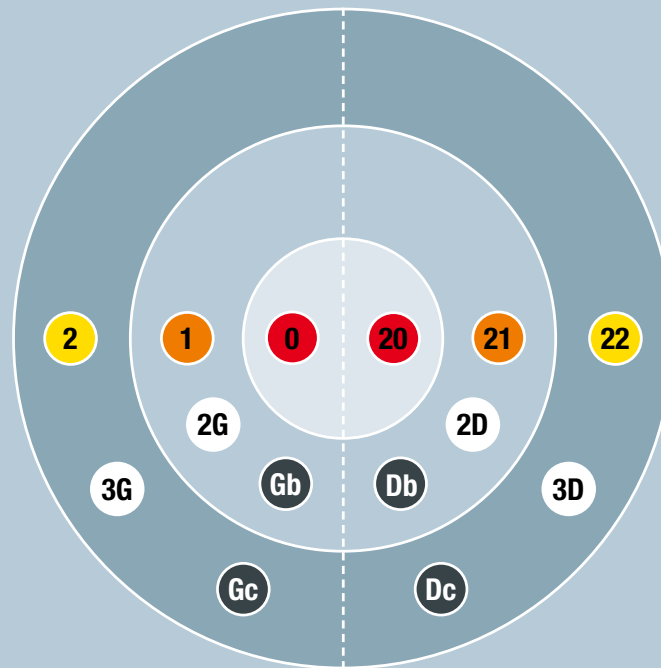


Zones and assignment of equipment categories or Equipment Protection Level (EPL)

Gas



Dust



- ● ● Zones
- Applicable categories
- EPL

SEW-EURODRIVE does not offer products for zones 0 and 20.

Category 2 equipment may also be used in areas that demand category 3.

Note on EAC

Products for the Russia/Belarus/Kazakhstan/Armenia economic and customs union are subject to EAC certification/declaration. The EAC logo indicates successful registration.

Ex EAC

Products complying with TR ZU 012/2011 "Safety of equipment and machines for use in potentially explosive atmospheres" additionally bear the Ex logo. Gearmotors from SEW-EURODRIVE have been certified successfully.



IECEx

The IECEx certification agreement serves as a worldwide platform for the mutual recognition of test results for obtaining certification or approval for explosion-proof electrical equipment.

The agreement is based on the “IECEx 01 IEC Scheme for the Certification to Standards for Electrical Equipment for Explosive Atmospheres (IECEx Scheme) – Basic Rules” and the “IECEx 02 IEC Scheme for the Certification to Standards for Electrical Equipment for Explosive Atmospheres (IECEx Scheme) – Rules of Procedure”.

Both documents as well as other IECEx documents are available free of charge from the IEC web store at www.iecex.com.



Objectives of the IECEx agreement

The agreement serves to promote international trade with explosion-proof electrical equipment by eliminating the need for double tests and certifications.

The basis of the agreement is to verify adherence to IEC standards for electrical equipment in potentially explosive atmospheres in an interna-

tionally recognized form. It must be ensured that these standards are implemented by test laboratories (ExTL, Ex-Testing Laboratories) and certification bodies (ExCB, Ex-Certification Bodies) so that the assessment of a product provides the same result with regard to fulfillment of the standards in any country.

Products from SEW-EURODRIVE are ExCB certified by the PTB and are available in equipment protection levels b and c.



South Korea

Motors for South Korea are based on the IECEx approval. They must additionally be certified by the local Korea Occupational Safety & Health Agency (KOSHA). Gearmotors from SEW-EURODRIVE have been certified successfully and bear the mark:



Brazil

Motors for the Brazilian market are certified by the certification organization Det Norske Veritas (DNV) according to the specifications of the Brazilian authority Instituto Nacional de Metrologia, Qualidade e Tecnologia (Inmetro). Additionally, the production sites are audited.

EDR.. series motors and gearmotors from SEW-EURODRIVE meet these requirements and bear the following logos:

EDRE.. series motors comply with energy efficiency class IE2 and exceed the requirements of the Brazilian energy efficiency regulation.



Motors must also comply with the following energy efficiency regulations:

- Oct. 1, 2016: IE3, applies to motors ≥ 37 kW
- Oct. 1, 2018: IE3, applies to motors ≥ 0.75 kW

HazLoc-NA®

(Hazardous Location – North America)



Unlike ATEX and IECEx where the areas in which a potentially explosive atmosphere may be present are divided into zones (0, 1, 2, 20, 21, 22), NEC500 and C22.2 make a distinction between division 1 and division 2 as well as between class I for gas and class II for dust.

Products from SEW-EURODRIVE for the North American market for use in potentially explosive atmospheres in division 2 are certified by CSA and bear the respective logo.

The CSA C/US mark is important for the North American market. It certifies that a product has been tested and meets applicable standards for safety and/or performance, including the applicable standards written or administered by the

- American National Standards Institute (ANSI)
- Underwriters Laboratories (UL)
- Canadian Standards Association (CSA)
- National Sanitation Foundation International (NSF)
- and others

CSA marks are used and accepted by many manufacturers, retailers, regulators and inspectors in the electrical, gas, building and plumbing fields across the United States and Canada.

Motors have been required to comply with the requirements of the NEMA Premium (IE3) energy efficiency class since June 1, 2016 in the USA and June 28, 2017 in Canada.



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