CSA GROUP™

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# Electric motors and generators for use in hazardous (classified) locations

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# *Revision History*

**C22.2 No. 145-11, *Electric motors and generators for use in hazardous (classified) locations*** — originally published May 2011

**Note:** *For information about the **Standards Update Service** or if you are missing any updates go to **store.csagroup.org** or **techsupport@csagroup.org**.*

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**Update No. 1** — May 2017; and **Update No. 2** — November 2018

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| Cover, Copyright page, Preface, and Annexes A and B<br><br>**Note:** *Only the revised pages have been provided.* | \| |

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## 1 Scope

1.1 This standard applies to electric motors and generators or submersible and nonsubmersible sewage pumps and systems suitable for use in Class I, Division 1, Groups B, C and D, and Class II, Division 1, Groups E, F and G, hazardous (classified) locations as defined by the *Canadian Electrical Code*, C22.1 Part I (CEC), and the *National Electrical Code*, ANSI/NFPA 70 (NEC).

1.2 This standard covers the same type of electrical equipment indicated in 1.1 for installation and use in Class I, Zone 1, Groups IIA and IIB, IIB+$H_2$, and Zone 20 and 21 hazardous locations.

1.3 This standard also covers other rotating machinery such as, but not limited to, electric brakes, tachometers, encoders, and slip rings.

1.4 This standard does not address types of protection other than explosion-proof or dust-ignition-proof.

1.5 For Canada Only - This standard does not include Canadian energy efficiency or product performance requirements. For such requirements, see Annex A, item 19. It is possible that item 19 is referenced in whole or in part in federal, provincial, territorial, or local laws or regulations relating to energy efficiency or product performance. The appropriate governmental authorities should be consulted to confirm whether item 19 has been referenced in laws or regulations.

**Note: This standard also does not include U.S. energy efficiency requirements for electric motors used in hazardous (classified) locations.**

## 2 Conditions for Use

2.1 This standard covers motors and generators intended for use under the conditions specified in 2.2 – 2.6.

2.2 Normal ambient duty conditions are defined by the following:

a) An oxygen concentration not to exceed 21% by volume.

b) A nominal barometric pressure of 101.4 kPa (14.7 psia) (1 atmosphere).

c) Temperature range of minus 25°C to +40°C.

d) Altitude not exceeding 1000 m (3281 ft).

In Canada, the normal ambient temperature is minus 50°C to +40°C.

2.3 Low ambient duty conditions are considered to be not less than minus 70°C.

2.4 Products intended and marked for an ambient of lower than minus 25°C shall be tested (e.g.: explosion pressure test) at 5°C below the marked lower temperature.

In Canada, products intended and marked for an ambient of lower than minus 50°C shall be tested (e.g.: explosion pressure test) at 5°C below the marked lower temperature.