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**Explosive Atmospheres – Part 2:  
Equipment protection by  
pressurized enclosures “p”**

**Approved 27 August 2010**

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Explosive atmospheres - Part 2: Equipment protection by pressurized enclosures "p"

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## FOREWORD

All text of IEC 60079-2:2007 (Edition 5) is included. U.S. National Deviations are shown by ~~strikeout~~ through text deleted and underline under text added. Tables, or portions of tables, that are to be deleted are shown as shaded; figures to be deleted are marked with the overlay "X." There are ten annexes in this standard. Annexes B, C, D, F, H, I and J are informative and are not considered part of this standard. Annexes A, E and G are normative and are considered part of this standard.

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## INTRODUCTION

This ~~part of IEC 60079~~ standard gives requirements for the design, construction, testing and marking of electrical apparatus for use in potentially explosive atmospheres in which

- a) a protective gas maintained at a pressure above that of the external atmosphere is used to guard against the formation of an explosive gas atmosphere within enclosures which do not contain an internal source of release of flammable gas or vapour and, where necessary;
- b) a protective gas is provided in sufficient quantity to ensure that the resultant mixture concentration around the electrical parts is maintained at a value outside the explosive limit appropriate to the particular conditions of use. The protective gas is supplied to an enclosure containing one or more internal sources of release in order to guard against the formation of an explosive gas atmosphere.

This standard includes requirements for the apparatus and its associated equipment including the inlet and exhaust ducts, and also for the auxiliary control apparatus necessary to ensure that pressurization and/or dilution is established and maintained.

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## 1 Scope

This part of IEC 60079 standard contains the specific requirements for the construction and testing of electrical apparatus with pressurized enclosures, of type of protection "p", intended for use in ~~explosive gas atmospheres~~ hazardous (classified) locations defined as Class I, Zone 1 or Zone 2 by the National Electrical Code (NEC®), ANSI/NFPA 70. It specifies requirements for pressurized enclosures containing a limited release of a flammable substance.

This standard supplements and modifies the general requirements of ~~IEC~~ ANSI/ISA-60079-0. Where a requirement of this standard conflicts with a requirement of ~~IEC~~ ANSI/ISA-60079-0, the requirements of this standard takes precedence.

This standard does not contain the requirements for:

- pressurized enclosures where the containment system may release
  - a) air with an oxygen content greater than normal, or
  - b) oxygen in combination with inert gas in a proportion greater than 21 %;
- pressurized rooms or analyser houses; ~~see IEC 60079-13 and IEC 60079-16.~~

NOTE 1 Due to the safety factors incorporated in the type of protection, the uncertainty of measurement inherent in good quality, regularly calibrated measurement equipment is considered to have no significant detrimental effect and need not be taken into account when making the measurements necessary to verify compliance of the equipment with the requirements of this standard.

NOTE 2 When the user acts in the role of the manufacturer, it is typically the user's responsibility to ensure that all relevant parts of this standard are applied to the manufacturing and testing of the equipment.

NOTE 3 Types of protection "px" and "py" provide Equipment Protection Levels (EPL) Mb or Gb. Type of protection "pz" provides Equipment Protection Level (EPL) Gc. For further information, see Annex H.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60034-5, *Rotating electrical machines – Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification*

IEC 60050(151), *International Electrotechnical Vocabulary – Chapter 151: Electrical and magnetic devices*

IEC 60050(426), *International Electrotechnical Vocabulary – Chapter 426: Electrical apparatus for explosive atmospheres*

~~IEC~~ ANSI/ISA-60079-0:2007, *Electrical apparatus for explosive gas atmospheres – Part 0: General requirements*