

Abstract stage II

CO: The basic purpose for which the aim on the current stage has been iterated in the general plan is to identify and present the requirements for protection to explosion applicable to the protection interfaces so that the final protection to explosion meets the requirements stipulated by ATEX Directive 94/9/EC.

The introduction covers a brief presentation of the project and the criteria that have to be taken into consideration during the design and production of the protection interfaces so that it finally meets the safety requirements.

The first chapter stipulates certain laws that regulate safety to explosion in industries and the conditions on the evaluation, testing, certification and marking of products intended for use in the areas with hazard of explosive atmospheres.

Chapter two addresses the basic issues of the objective settled for the current stage. Thus, the first part covers the starting considerations and the terms. The following subchapters make a brief presentation of the protection interfaces and of the applicable safety requirements complying with the regulations in force.

Annexes 1 to 5 comprise a detailed analysis related to the applicability of several clauses that are part of the regulations in force.

P1: The basic purpose for which the aim of the current stage has been iterated in the general plan is to identify and present the requirements for protection to explosion applicable to the protection interfaces so that the final protection to explosion meets the requirements stipulated by ATEX Directive 94/9/EC. The introduction covers a brief presentation of the project and the criteria that have to be taken into consideration during the design and production of the protection interfaces so that it finally meets the safety requirements.

The first chapter makes a general presentation of the protection interfaces. It also comprises a classification of the protection interfaces for low current installations located in the areas with explosion atmosphere hazard.

Chapter two addresses the basic issues of the objective settled for the current stage – technical requirements related to the need to use the series, parallel limiting devices and the devices for their protection.

The last chapter covers a theoretical approach on the correlation among the values displayed by different parameters that describe the protection interfaces of low currents installations located in the areas with explosive atmosphere hazard.

The following aspects have been concluded at the end of this study:

During the design of the protection interface, the observance of the requirements for protection to explosion for Group II, shall provide compliance of the requirements valid for atmospheres with combustible dusts (the future Group III).

The safety constructive requirements for the protection interfaces are the same both for groups and sub-groups.

The considered protection level shall influence the necessary redundant level of the limiting component parts in the protection interfaces.

Implementing different technical solutions for accomplishing the limitation leads to non-linear voltage-current characteristics.

It is also possible to get non-linear protection interfaces with no controlled electronic devices.

The simplest structure can be obtained by using a voltage limiting devices together with a current limiting device protected upstream with a suitable dimensioned fusible.