



IECEX OPERATIONAL DOCUMENT

IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEX System)

Guidance on the preparation of IECEx Equipment Certificates and Reports covering more than one identifiable item of equipment





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INTERNATIONAL ELECTROTECHNICAL COMMISSION

IECEX Operational Document OD 034 –**Guidance on the preparation of IECEX Equipment Certificates and Reports covering more than one identifiable item of equipment**

FOREWORD

This Operational Document IECEX OD 034 provides the guidance for preparing IECEX Certificates covering more than one identifiable item of equipment.

Document History

Date	Summary
2009-03	Edition 1.0
2015-07	Edition 2.0 This edition was published to reflect a proposal based on ExTAG/322/CD as agreed at the 2014 ExTAG meeting via discussion on ExTAG/346/R. This edition also includes edits suggested from the review of ExMC/995/CD.
2020-10	Edition 3.0 Revised issue. This edition also includes references to IECEX OD 210. This was circulated to ExTAG and ExMC as ExTAG/614/CD and approved for publication via ExMC Decision 2020/15.

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INTRODUCTION

Divergent practices between IECEX Certification Bodies in respect of the number of different products that can be covered on a single certificate have potential implications for the easy management of certificates. These include the frequency of raising the issue level of a certificate, the listing of ExTR documents on the certificate for each new technical issue and a direct influence on the cost recovery of the IECEX System.

There is also the facility for certificates to refer to further documents (for example, manufacturer provided reports or drawings) which are not directly controlled within the IECEX System, or publicly available, for basic details of equipment within a range covered by a certificate.

It is always important that any stakeholder can match the list of models covered by a certificate with the specific model reference as listed or displayed on each product produced. This is particularly important during the design, selection, installation, inspection, maintenance and repair of equipment used in hazardous areas.

Guidance on the preparation of IECEx Equipment Certificates and Reports covering more than one identifiable item of equipment

1 Scope

This document provides a standardized approach for the preparation of IECEx Certificates and Reports covering more than one identifiable item of equipment.

This Operational Document IECEx OD 034 is a supplementary document to IECEx OD 009.

2 Normative references

IECEX OD 009, *Procedures for the issuing of IECEx Certificates of Conformity, IECEx Test Reports and IECEx Quality Assessment Reports*

IECEX OD 011-2, *Guidance on use of the IECEx internet-based “On-Line” certificate of conformity system - Second generation - Part 2: Creating IECEx Equipment Certificates of Conformity (CoCs) and supporting Reports (ExTR Summary and QAR Summary)*

IECEX OD 210, *Guidance on the preparation of IECEx Equipment Certificates and Reports of a modular combination*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60079-0, as well as the following apply.

NOTE Additional definitions applicable to explosive atmospheres can be found in IEC 60050-426.

3.1 range of equipment

types of products that belong to the same product family. The conformity assessment for a range of equipment is typically made with one or more representative test samples of that product family covering the complete product range

4 Challenges with the range of Ex equipment

For a precise description of the Ex equipment in a certificate the ideal situation is a one-to-one correspondence between each discrete design of equipment and its certificate, that is, one certificate covering one product type. However, it is acknowledged that certification can be an expensive and time-consuming process and that costs and time can be saved by covering more than one discrete design (in other terms, a range of equipment) on a single certificate. This range can be differentiated according to the size of the product variance and the variance of the technical properties. Hence there is often a need to compromise whereby the range of Ex equipment is adequately described and covered in a single certificate. Therefore, a challenge is to have a logical relation between the certificate and the Ex equipment.

However, this extended range leads to the challenge of certificate maintenance. All certificates for Ex equipment having an extended production life go through a certain process of change as the product line, often based on Ex products, matures. This may be by reason of changed availability of manufacturing parts (particularly electronic components) or by improvements in design or adaptations to suit customer (spare parts stock) requirements. Then normally each change requires a new edition of the certificate together with the associated ExTR (either full or abbreviated) depending on the extent of modifications.

Additionally, the quantity of changes because of developing standards, would make the quantity of new issues after a few years uncontrollable, because any Ex equipment will have Ex products based on different issues of certificates. The number of “new issues” to a certificate needs to be controlled in a sensible and practical manner sufficient to enable easy traceability and identification of products that are covered by certification. Where doubt or confusion may arise, then the issuing of a new certificate should be considered.

To facilitate the issuing and maintenance of a certificate with an extended range, a different structure of the certificate may be useful, depending on the respective Ex equipment. Here a distinction can be made between products where the major part remains constant and products with a modular range. In this context, the number of components used also varies greatly.

5 Content of IECEX Certificates

5.1 General

IECEX OD 011-2 gives guidance for the creation of an IECEX Certificate in the online certificate of conformity system of IECEX.

In general, sufficient information must be given such that it is clear whether a given physical object is likely to be the subject of the certificate or not. The complete constructional details are only given in the manufacturer’s confidential documents (such as schedule drawings) included in the ExTR, but the written description in the certificate should not leave room for doubt with regard to the coverage of the certificate.

Stating a clear functional name of the product allows the manufacturer, having a QAR, to substitute similar devices and/or omit some internal items, so that the product may fulfil a similar, but non-identical function, whilst still clearly providing the necessary traceability between certificate and product.

5.2 Range of Ex equipment

Certified Ex products, assembled in or being parts of a certified Ex equipment, shall be defined in the descriptive documents to the certificate. These documents are part of the ExTR and can either include:

- a) a listing of fixed Ex products which are part of the Ex equipment, indicating the specification of manufacturer, type, ratings, Ex code and certificate reference; required for serial production, where any produced Ex equipment is 100% identical to the others (for example, motors or luminaires), or
- b) a listing of possible Ex products, a subset of which may be incorporated in the Ex equipment, required for unique engineering-to-order equipment, where each produced Ex equipment has approximately the same functional intent, however not 100% identical to the others, but still under one single, same Ex equipment certificate (for example, control panels or remote I/O (fieldbus) systems), or
- c) a combination of separate certified Ex products with all internal electrical and mechanical connections and structural components. The modular combination itself has one comprising Ex equipment certificate (refer to IECEX OD 210).

The manufacturer of Ex equipment needs a bilateral agreement with the ExCB to assess the mutual influence of all Ex products. This assessment shall be defined in the descriptive documents. It shall be clear that the descriptive documents belonging to the ExTR shall leave no room for misuse.

6 Certification of ranges of equipment

The decisive point in the safety assessment of a product family is how the range of equipment can be defined. The decisive factor here is which products are used and which design variants should be permissible. A distinction can be made between the assessment of similar products, where a major part of the descriptive material remains constant with respect to the explosion protection method, and equipment which is modularly composed of a variety of different devices.

6.1 Product where the major part remains constant

The certificate of an Ex equipment can be properly applied to similar Ex products where the principal part of the descriptive material relating to the explosion protection method remains constant. Thus, a family of twin and single tube fluorescent luminaires in the same basic form of enclosure is logical. Also, a single design of housing containing appropriate controlgear for different types of high-power discharge lamps, together with different reflectors to match the optical needs of the different lamp forms would be an appropriate range of equipment.

The requirement that principal part of the descriptive material remaining constant does not necessarily mean that common components need to be used throughout. For example, a certificate for a junction box can consist of a logical range of Ex "e" enclosures with different sizes, but also with common features for lid fastening, gasket retention and for mounting through the base. Alternative materials (for example, high temperature gaskets) would be available throughout the range.

6.2 Modular ranges

For complex modular Ex equipment such as a switchgear combination, a different approach is needed. A flexible modular range enables a manufacturer to fulfil individual customer wishes. However, such a modular range is often a complex Ex equipment which can consist of different certified Ex products. To cover such a modular range with one single certificate it is therefore necessary to carefully define the limits of the certificate. The ExCB is responsible for the certificate and it must be ensured that the ExCB controls all products that are produced within the scope of this one certificate. It is obvious that the header of the certificate shall match the functional intention of the Ex equipment. A mutual agreement between ExCB and manufacturer must exist which carefully and clearly specifies which Ex products are to be incorporated into an Ex equipment covered by the certificate. In addition, the procedure according to which the manufacturer carries out the final safety assessment of the Ex equipment must be specified. The ExTR includes therefore either:

- a) a list of Ex products and a description of the safety assessment, or
- b) a concept document of the modular combination according to IECEx OD 210.

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