

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC 60079-11 Edition 7.0 2023-01

EXPLOSIVE ATMOSPHERES –

Part 11: Equipment protection by intrinsic safety "I"

CORRIGENDUM 1

FOREWORD

In the table showing the significance of changes between IEC 60079-11, Edition 7 and IEC 60079-11, Edition 6 (2011 + Corrigendum 1:2012), replace rows 8, 9, 10, 19, 63, 87, 96, 127, 169 and 171 with the following new text:

Explanation of the significance of changes	Clause	Type		
		Minor and editorial changes	Extension	Major technical changes
Definitions removed as they are no longer considered necessary. (References are from Ed.6) 3.7.2 fault 3.10.3 Infallible separation	3	X		
Diode safety barriers no longer refers to devices that provide galvanic isolation.	3.1.7 7.7.5		X	
Intrinsic safety parameters and U_m can have brief transients above the stated values, and these do not need to be taken into account.	3.1.12 7.7.3	X		
Statements that Level of Protection "ia" and "ib" requirements are always sufficient for Level of Protection "ic".	5.2.2		X	
Routine tests when using Table 8 – Reduced separations no longer have to be performed at the most onerous ambient condition.	6.5.3.2		X	
Components for Level of Protection "ic" are considered to fail if they are not within their manufacturer's rating following the application of faults.	7.2			C19
Clarification of the failure modes for inductors and transformers.	7.6.1 7.8.1	X		
Clarification that short circuit of a single cell is considered a non-countable fault.	7.12.2			C1
Reduced testing requirements for transformers that are galvanically isolated from the mains.	9.17.3		X	
Transformers for Level of Protection "ic" shall be routine tested where there is no applicable industrial standard, or the applicable industrial standard does not specify a routine test.	10.3.2			C31

5.3.1 General

Replace the existing fifth paragraph of 5.3.1 with the following new text:

Spark ignition assessment may use representative circuits that are at least as onerous for spark ignition in place of the actual circuit under assessment.

Replace the existing first sentence of the sixth paragraph of 5.3.1 with the following new text:

Spark ignition testing conducted according to 9.1 at normal ambient temperatures, and the ignition data in Annex A and Annex G, may be used, where the service temperature is between –60 °C and 100 °C.

6.2.5.1 Protection by enclosure

Replace the existing first paragraph of 6.2.5.1 with the following new text:

Separations may be protected to satisfy 6.2.3 a) or 6.2.4 a) by the use of an enclosure providing the specified IP rating, after the requirements according to IEC 60079-0 as identified in Table 1 have been applied.

6.2.5.2 Protection by other means

Replace the existing text of the first paragraph of 6.2.5.2 with the following new text:

Separations may be protected to satisfy 6.2.3 b) or 6.2.4 b) by the use of an enclosure providing a degree of protection of at least IP2X according to IEC 60529, provided that separations are:

7.8.4.1 Mains transformers

Replace the existing text of the third paragraph of 7.8.4.1 with the following new text:

If the input and output windings are separated by an earthed metal screen (type 2b construction), each non-earthed input line shall be protected by a fuse or circuit-breaker.

8.1.1 General

Replace the existing third sentence of the first paragraph of 8.1.1 with the following new text:

These assemblies are intended for use as interfaces between intrinsically safe circuits and non-intrinsically safe circuits and shall be subject to the routine tests of 10.2.

9.1.3.2 Explosive test mixtures and calibration currents for safety factor 1,5

Replace the existing first sentence of 9.1.3.2 with the following new text:

When conducting the test of 9.1.2, the preferred test mixtures are those specified in 9.1.3.1 with a safety factor applied by an increase of voltage or current as applicable according to 5.3.4.2 d)1).

9.17.2.3 Acceptance criteria

Replace the existing first sentence of the first paragraph of 9.17.2.3 with the following new text:

For type 1 and type 2a transformers, the transformer winding temperature shall not exceed the permissible value for the class of insulation given in IEC 60085 or the COT of the insulating materials.

Replace the existing first sentence of the second paragraph of 9.17.2.3 with the following new text:

For type 2b transformers where insulation from earth of the windings used in the intrinsically safe circuit is required, then the requirement shall be as above.

9.17.4 Transformers for Level of Protection "ic"

Replace the existing first sentence of 9.17.4 with the following new text:

Except where insulation from earth is not required for intrinsic safety for type 2b transformers, transformers shall be subject to the conditions specified in 5.2.4 and the transformer winding temperature shall not exceed the permissible value for the class of insulation given in IEC 60085 or the COT of the insulating materials.

Figure F.1 – Safety factor vs ignition probability

Replace existing Figure F.1 with the following new figure:

