

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC 60079-11
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EXPLOSIVE ATMOSPHERES –

Part 11: Equipment protection by intrinsic safety "i"

INTERPRETATION SHEET 2

This interpretation sheet has been prepared by subcommittee 31G: Intrinsically-safe apparatus, of IEC technical committee 31: Equipment for explosive atmospheres.

The text of this interpretation sheet is based on the following documents:

ISH	Report on voting
31G/252/ISH	31G/254/RVD

Full information on the voting for the approval of this interpretation sheet can be found in the report on voting indicated in the above table.

Interpretation of 6.2.5 – Requirements for connections and accessories for IS apparatus when located in the non-hazardous area

Question:

Does the first NOTE of 6.2.5 imply that equipment which may be connected to non-intrinsically safe connection facilities of intrinsically safe apparatus restricted to use in non-hazardous area need to be assessed applying IEC 60079-11, if the value of U_m is less than 250 V a.c.? Does this furthermore apply to equipment to be connected to non-intrinsically safe connection facilities of associated apparatus, if the value of U_m is less than 250 V a.c.?

Background:

The first NOTE of 6.2.5 requires in cases where U_m is specified less than 250 V a.c. that this should not be derived from unassessed equipment. This is sometimes read as if the requirements of IEC 60079-11 should be applied for voltage limitation to guarantee U_m .

Terminological entry 3.13.13 defines that U_m is the maximum voltage that can be applied to the non intrinsically safe connection facilities of associated apparatus without invalidating the

type of protection. NOTE 1 of 3.13.13, as an example, explains that this may apply to connection facilities used for charging batteries.

In IEC 60079-11 there are no measures required for limiting the voltage of non I.S. circuits to the specified U_m value, except for the use of a single Zener diode protected by a fuse as an integral measure of an associated apparatus limiting the voltage which can appear at a transformer (8.3) or a coupler (8.9.2).

IEC 60079-14: 2013, 16.2.1 states:

Where U_m marked on the associated apparatus is less than 250 V it shall be installed in accordance with one of the following:

- a) where U_m does not exceed 50 V a.c. or 120 V d.c., in an SELV or PELV system, or
- b) via a safety isolating transformer complying with the requirements of IEC 61558-2-6, or technically equivalent standard, or
- c) directly connected to apparatus complying with the IEC 60950 series, IEC 61010-1, or a technically equivalent standard, or
- d) fed directly from cells or batteries.

Answer

No

IEC 60079-11 does not require measures to limit U_m where it is specified as 250 V a.c. which is guaranteed by the public power supply using standards other than IEC 60079-11. Similarly, IEC 60079-14 allows measures not compliant with IEC 60079-11 for limiting U_m to below 250 V a.c.

Therefore no assessment of the voltage supply according to IEC 60079-11 is necessary where U_m is specified less than 250 V a.c. provided that one of the measures allowed by IEC 60079-14:2013, 16.2.1 are applied.

NOTE This does not alter the requirement of the 3rd paragraph of 6.2.5 to assess, in accordance with IEC 60079-11, any protective circuitry located in the non-hazardous area accessory.

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ATMOSPHÈRES EXPLOSIVES –

Partie 11: Protection de l'équipement par sécurité intrinsèque "i"

FEUILLE D'INTERPRÉTATION 2

Cette feuille d'interprétation a été établie par le sous-comité 31G: Matériels à sécurité intrinsèque, du comité d'études 31 de l'IEC: Equipements pour atmosphères explosives.

Le texte de cette feuille d'interprétation est issu des documents suivants:

ISH	Rapport de vote
31G/252/ISH	31G/254/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette feuille d'interprétation.

Interprétation de 6.2.5 – Exigences pour les connexions et les accessoires des matériels à sécurité intrinsèque lorsqu'ils sont placés dans la zone non dangereuse

Question:

La première NOTE de 6.2.5 signifie-t-elle que les équipements qui peuvent être connectés aux dispositifs de raccordement de sécurité non intrinsèque des matériels à sécurité intrinsèque (dont l'utilisation est restreinte dans une zone non dangereuse) nécessitent d'être évalués conformément à l'IEC 60079-11, si la valeur de U_m est inférieure à 250 V en courant alternatif? De plus, cette disposition s'applique-t-elle aux équipements à connecter aux dispositifs de raccordement de sécurité non intrinsèque des matériels associés, si la valeur de U_m est inférieure à 250 V en courant alternatif?

Contexte:

La première NOTE de 6.2.5 exige que si la valeur U_m est inférieure à 250 V en courant alternatif, il convient de ne pas la dériver d'un matériel non évalué. Cette disposition est parfois considérée comme une situation dans laquelle il convient d'appliquer les exigences de l'IEC 60079-11 afin de limiter la tension pour garantir la valeur U_m .