

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC 60079-11
Edition 6.0 2011-06

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.

IEC 60079-11:2011/ISH2:2016

<https://standards.iteh.ai/catalog/standards/iec/1e1745c3-d087-4d4e-b8e4-6d64fcb28e3c/iec-60079-11-2011-ish2-2016>

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.