Irish Standard
I.S. EN 2591-227:2015

Aerospace series - Elements of electrical and optical connection - Test methods - Part 227: Partial discharges test

I.S. EN 2591-227:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This European Standard was approved by CEN on 5 March 2015.

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European foreword

This document (EN 2591-227:2015) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this European Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2016, and conflicting national standards shall be withdrawn at the latest by February 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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Introduction

For a connector, the presence of partial discharge effects at operating voltage may result in a significant reduction of service life.

Evidence of partial discharges during operation signifies for example:

— distance between contact cavities is insufficient for the applied voltage,

— the quality of the insulation is inadequate possibly due to excessive size of the cavities or voids inside the insulation,

— a leakage way is present, resulting in a local reduction of the connector insulation properties.

The most significant parameters which may influence PDIV, are, when both low pressure and high temperature could be combined (engine area for example).

The aim of this European Standard is to define the test method and procedure which will determine if an electrical connector will be subjected to partial discharges; in particularly, when it is exposed to a specified temperature and pressure based on an Aircraft environment.

1 Scope

This test European Standard defines methods to measure the partial discharge inception/extinction voltages (PDIV, PDEV) and partial discharge levels under specific temperatures and pressures on an electrical connector for aircraft use.

It shall be used together with EN 2591-100.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2267-012, *Aerospace series — Cables, electrical, for general purpose — Operating temperatures between − 55 °C and 260 °C — Part 012: DZ family, single UV laser printable for use in low pressure atmosphere — Product standard* [1)]

EN 2591-100, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 100: General*

EN 3155 (all parts), *Aerospace series — Electrical contacts used in elements of connection*

EN 60270, *High-voltage test techniques — Partial discharge measurements (IEC 60270)*

ASTM D 1868-07, *Standard Test Method for Detection and Measurement of Partial Discharge (Corona) Pulses in Evaluation of Insulation System* [2)]

1) Published as ASD-STAN Prestandard at the date of publication of this standard (http://www.asd-stan.org/).

2) Published by: ASTM National (US) American Society for Testing and Materials (http://www.astm.org/).