

Aerospace series — Cables, electrical, aircraft use — Test methods

Part 809: Resistance unbalance

ICS 49.060

National foreword

This British Standard is the UK implementation of EN 3475-809:2009.

The UK participation in its preparation was entrusted to Technical Committee ACE/6, Aerospace avionic electrical and fibre optic technology.

A list of organizations represented on this committee can be obtained on request to its secretary.

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**Aerospace series - Cables, electrical, aircraft use - Test
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Déséquilibre de résistance

Luft- und Raumfahrt - Elektrische Leitungen für
Luftfahrtverwendung - Prüfverfahren - Teil 809:
Widerstandsunsymmetrie

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Foreword

This document (EN 3475-809:2009) 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 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.

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1 Scope

This standard specifies methods for measuring resistance unbalance for digital data transmission cable.

It shall be used together with EN 3475-100.

2 Normative references

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

EN 3475-100, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 100: General.*

EN 3475-301, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 301: Ohmic resistance per unit length.*

3 Preparation of specimens

The measurements may be performed on production drums and/or on the final delivery package.

4 Apparatus

Wheatstone bridges, automatic or semi-automatic equipment may also be used with an accuracy of $\pm 0,5$ %.

5 Method

The conductor resistance unbalance is usually determined at the same time that conductor resistance measurements are made (EN 3475-301). The resistance measure of each conductor of any pair shall be performed at or corrected to 20 °C temperature. The temperature correction shall be performed as described in test method EN 3475-301.

After measurement, the resistance unbalance calculation is:

$$|DR_1| = \frac{R_a - R_b}{R_a + R_b} \times 100 \qquad |DR_2| = \frac{R_c - R_d}{R_c + R_d} \times 100$$

where

R_a, R_b are the resistance of each conductor of the pair 1; and

R_c, R_d are the resistance of each conductor of the pair 2 (in case of quad cable).

Used expression for DR_1 and DR_2 are percent resistance unbalance.

6 Requirement

The resistance unbalance obtained shall not exceed the values specified in the product standard.

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