INTERNATIONAL STANDARD

ISO 461-1

Second edition
2003-06-01

Aircraft — Connectors for ground electrical supplies —

Part 1: Design, performance and test requirements

Aéronefs — Prises de courant d'alimentation au sol —

Partie 1: Exigences concernant la conception, le fonctionnement et les essais

Reference number
ISO 461-1:2003(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 461-1 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 1, *Aerospace electrical requirements*.

This second edition cancels and replaces the first edition (ISO 461-1:1985), which has been technically revised. This edition brings the document up to date in terms of the connectors now being used on aircraft and anticipates future requirements. The testing regime for connectors has been changed to reflect existing industry practices.

ISO 461 consists of the following parts, under the general title *Aircraft — Connectors for ground electrical supplies*:

— *Part 1: Design, performance and test requirements*

— *Part 2: Dimensions*

Introduction

Throughout this part of ISO 461, the minimum essential criteria are identified by the use of the imperative or the key word “shall”. Recommended criteria are identified by the use of the key word “should” and, while not mandatory, are considered to be of primary importance in providing serviceable, economical and practical connectors. Deviation from the recommended criteria should occur only after careful consideration, extensive testing and thorough service evaluation have shown alternative methods to be satisfactory.

Aircraft — Connectors for ground electrical supplies —

Part 1:
Design, performance and test requirements

1 Scope

This part of ISO 461 specifies the design, performance and test requirements for electrical connectors used to supply electrical power from a ground source to an aircraft.

NOTE ISO 461-2 specifies the dimensions of the connectors.

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.

ISO 461-2, *Aircraft — Connectors for ground electrical supplies — Part 2: Dimensions*

ISO 7137, *Aircraft — Environmental conditions and test procedures for airborne equipment* [1)]

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
aircraft fixed connector (receptacle)
connector, installed in an aircraft, which accepts an electrical power supply via the ground supply free connector from an external ground source

3.2
ground supply free connector (plug)
connector, fitted to cables from the external ground source of electrical power, which, when properly fitted to the aircraft fixed connector, permits an electrical supply to be passed to the aircraft

1) Endorsement, in part, of the publication EUROCAE ED-14/RTCA DO-160 (a document published jointly by the European Organization for Civil Aviation Electronics and the Radio Technical Commission for Aeronautics).