SLOVENSKI STANDARD
SIST EN 3733-001:2009

01-oktober-2009

Aeronavtika - Konektor, optiļ ni, okrogli, enokanalni, priključ en s samozaklepnim obroļ kom, stalna delovna temperatura do 150 ÁC - 001. del: Tehniļ na specifikacija

Aerospace series - Connector, optical, circular, single channel, coupled by self-locking ring, operating temperature up to 150 °C continuous - Part 001: Technical specification

Luft- und Raumfahrt - Optischer Rundsteckverbinder einpolig, Schraubkupplung, Betriebstemperatur 150 °C konstant - Teil 001: Technische Lieferbedingungen

Série aérospatiale - Connecteur optique circulaire monovoie, à accouplement par bague filetée, température d'utilisation 150 °C continu - Partie 001: Spécification technique

Ta slovenski standard je istoveten z: **EN 3733-001:2009**

ICS:

49.060	Letalska in vesoljska elektriļ na oprema in sistemi	Aerospace electric equipment and systems

SIST EN 3733-001:2009 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 3733-001

August 2009

ICS 49.060

English Version

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This European Standard was approved by CEN on 3 July 2009.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 3733-001:2009) 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.

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of an identical text or by endorsement, at the latest by February 2010, and conflicting national standards shall be withdrawn at the latest by February 2010.

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.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies the general characteristics, the conditions for qualification, acceptance and quality assurance as well as the test programs and groups for self-locking ring coupling, single channel, circular fibre-optic connectors intended for operating temperatures up to 150 °C for aerospace applications.

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 2591-100, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 100: General*[1]

EN 9133, *Aerospace series - Quality management systems - Qualification procedure for Aerospace Standard Parts*

EN 3197, *Aerospace series — Installation of aircraft electrical and optical interconnection systems*[2]

EN 3733-002, *Aerospace series — Connectors, optical, circular, single channel, coupled by self-locking ring, operating temperature 150 °C continuous — Part 002: List of product standards*[2]

ISO 1817, *Rubber, vulcanized — Determination of the effect of liquids*

MIL-STD-810F, *Environmental engineering Considerations and Laboratory Tests*[3]

MIL-PRF-7808L, *Lubricating Oil, Aircraft Turbine Engine, Synthetic Base*[3]

MIL-PRF-23699F, *Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number O-156*[3]

QPL-5606-31, *Hydraulic Fluid, Petroleum Base; Aircraft; Missile and Ordnance*[3]

SAE-AMS 1424, *Fluid, Deicing/Anti-Icing, Aircraft, SAE Type 1*[3]

3 Terminology

For the purposes of this standard, the definitions given in EN 2591-100 apply.

4 Description

4.1 General

All connectors shall be environmentally sealed to the level specified in Table 2.

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1 All parts quoted in Tables 2, 6 and 7.

2 Published as ASD prestandard at the date of publication of this standard.

3 Published by: Department of Defense (DOD), the Pentagon, Washington, DC 20301, USA.

Connectors shall be thread coupled.

Connectors shall incorporate a cable strain relief mechanism, if specified in the product standard.

A range of optical ferrules (optical contacts) and cable restraint assemblies shall be made available to suit different fibres and cables.

Connectors shall be resistant to Class A or Class B fluids as detailed in Tables 4 and 5 dependent upon user requirements.

4.2 Component description

4.2.1 Plug

The coupling ring permanently fitted on the front plug assembly shall enable the connectors to be coupled and uncoupled. The screwing up torque shall be lower than the unscrewing torque. The coupling ring shall be knurled.

The plug connector shall have an anti-vibration mechanism to prevent unintentional un-mating.

All plug connectors shall incorporate a split alignment sleeve.

4.2.2 Receptacle

The receptacle mounting style may be:

a) square flange — four holes fixing;

b) oval flange — two holes fixing;

c) by jam-nut, with sealing by "O" ring at the attachment.

Dummy receptacles are also available in the above mounting styles.

4.2.3 Protective cover

Protective covers shall be made available for flange and jam nut receptacles.

4.2.4 Terminator cover

Terminator covers shall be made available for receptacles if required.

4.2.5 Ferrule (Optical contact)

Ferrules shall be made available as a separate deliverable. The ferrule is withdrawn from the rear of a connector.

4.2.6 Strain relief boot

Strain relief boots shall be made available as a separate deliverable if required.

4.2.7 Plug sub-assembly

Plug sub-assemblies shall be made available as a separate deliverable if required.

4.2.8 Receptacle sub-assembly

Receptacle sub-assemblies shall be made available as a separate deliverable if required.

4.2.9 Epoxy resin

Epoxy resin shall be specified as a deliverable if required.

4.3 Materials

4.3.1 General

When materials are not specified or not specifically described, they shall be as light as possible consistent with the required use.

When similar or dissimilar metals are in close contact, adequate protection against corrosion shall be used for the electromotive force of the cell not to exceed 0,25 V (see EN 3197).

4.3.2 Housings

The material of the housings for the connectors and for the fittings shall be of a lightweight, corrosion-resistant material such as passivated stainless steel or nickel-copper alloys as detailed in the applicable product standards.

4.3.3 Ferrules (Optical contacts)

The material for the ferrules shall be ceramic (zirconia or alumina), corrosion-resisting steel, or other material as detailed in the applicable product standards.

4.3.4 Seals and strain relief boots

The material used for seals and strain relief boots shall be consistent with the required use.

5 Design features

The connector shall have five keys on the plug made with five key-ways on the receptacle, for polarisation.

The plug and receptacle shall use face contact or physical contact optical ferrule technology.

The cable strain relief shall be secured to the connector housing, for plug and receptacle.

The optical ferrule in the plug shall be spring loaded.

Optical mating faces shall be accessible for cleaning with minimal disassembly.

6 Definition, dimensions and masses

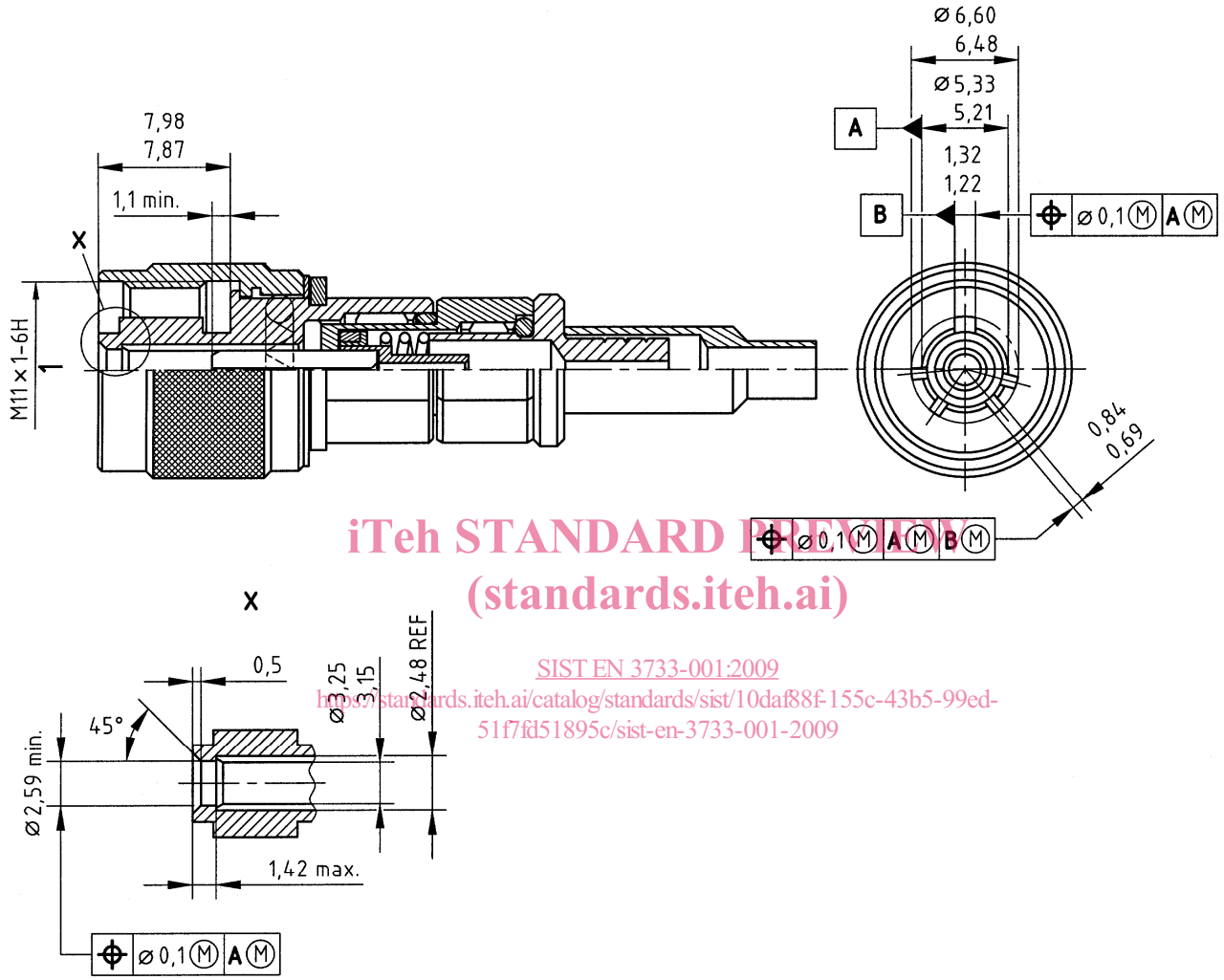
6.1 General

The general dimensions and masses for receptacles, plugs, covers, dummy receptacles and ferrules are given in the product standards. Refer to the list given in EN 3733-002.

6.2 Interface dimensions of the plug

See Figure 1.

Dimensions in millimetres



Key

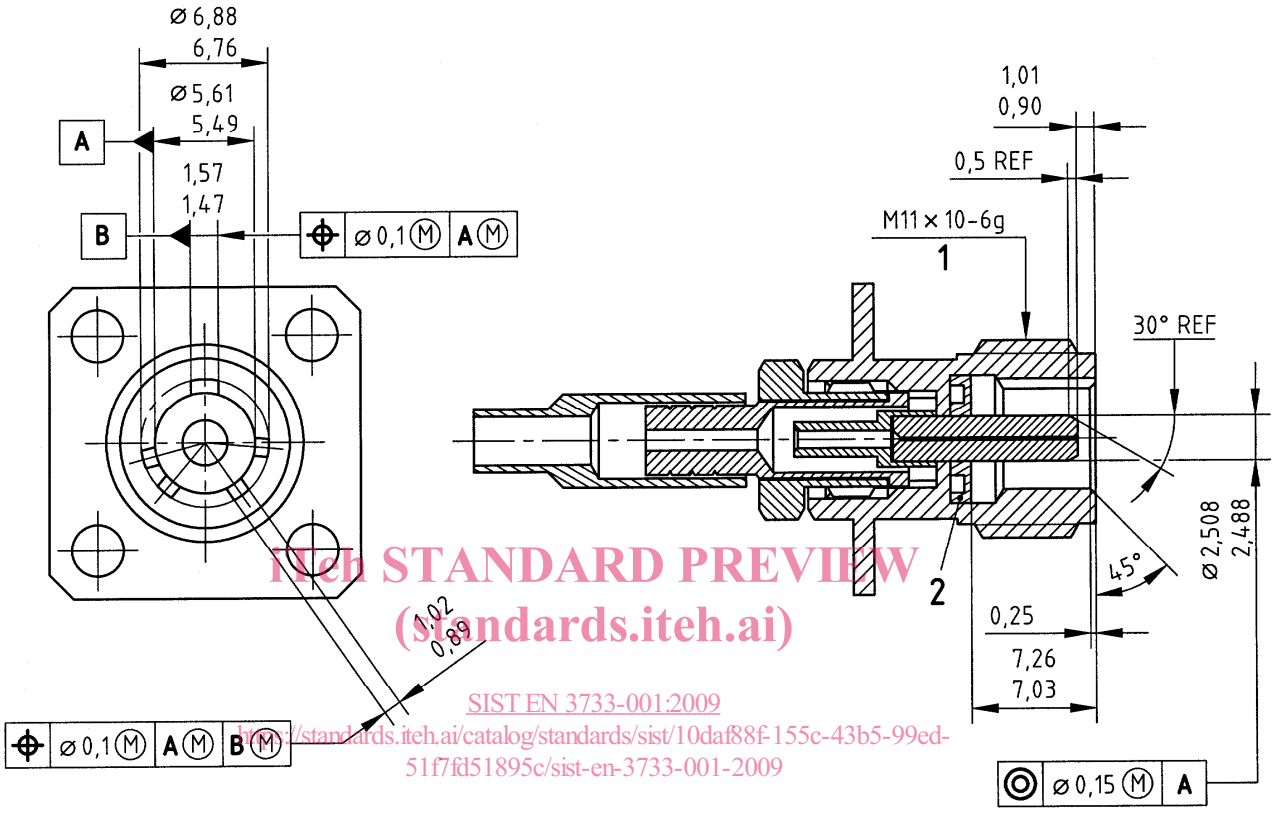
1 Thread

Figure 1 — Plug interface dimensions

6.3 Interface dimensions of the receptacle

See Figure 2.

Dimensions are in millimetres



Key

1 Thread

2 Elastomeric face seal

Figure 2 — Receptacle interface dimensions