

Aerospace series - Connectors, electrical, circular,
scoop-proof, triple start threaded coupling, operating
temperature 175 °C or 200 °C continuous - Part 001:
Technical specification

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 3645-001:2019 sisaldab Euroopa standardi EN 3645-001:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 3645-001:2019 consists of the English text of the European standard EN 3645-001:2019.
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English Version

Aerospace series - Connectors, electrical, circular, scoop-
proof, triple start threaded coupling, operating
temperature 175 °C or 200 °C continuous - Part 001:
Technical specification

Série aérospatiale - Connecteurs électriques
circulaires, à contacts protégés, à accouplement par
filetage, à pas rapide à trois filets, température
d'utilisation 175 °C ou 200 °C continu - Partie 001 :
Spécification technique

Luft- und Raumfahrt - Elektrische Rundsteckverbinder,
kontaktgeschützt, dreigängige Gewinde-
Schnellkupplung, Betriebstemperatur 175 °C oder 200
°C konstant - Teil 001: Technische Lieferbedingungen

This European Standard was approved by CEN on 29 April 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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European foreword

This document (EN 3645-001:2019) 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 2020, and conflicting national standards shall be withdrawn at the latest by February 2020.

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

This document supersedes EN 3645-001:2015.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This family of connectors is derived from MIL-DTL-38999 series III, with which it is intermateable and interchangeable. It is particularly suitable for use in zones of severe environmental conditions on board aircraft, applying EN 2282.

These connectors are distinguishable from MIL-DTL-38999 by:

- a compatibility with size 8 power and quadrax contacts;
- self-extinguishing materials;
- compatibility with reduced diameter cables;
- additional reinforced fuel resistant insert type;
- additional insert with grounded cavities.

1 Scope

This document specifies the general characteristics, the conditions for qualification, acceptance and quality assurance, as well as the test programs and groups for threaded ring coupling circular connectors, fire-resistant, intended for use in a temperature range from – 65 °C to 175 °C continuous or 200 °C continuous according to the classes.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 2267-002, *Aerospace series — Cables, electrical, for general purpose — Operating temperatures between –55 °C and 260 °C — Part 002: General*

EN 2282, *Aerospace series — Characteristics of aircraft electrical supplies*

EN 2346, *Aerospace series — Fire resistant electrical cables — Dimensions, conductor resistance and mass*

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

EN 3197, *Aerospace series — Design and installation of aircraft electrical and optical interconnection systems*

EN 3645-002, *Aerospace series — Connectors, electrical, circular, scoop-proof, triple start threaded coupling, operating temperature 175 °C or 200 °C continuous — Part 002: Specification of performance and contact arrangements*

EN 3909, *Aerospace series — Test fluids and test methods for electrical and optical components and sub-assemblies*

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard parts*

ISO 68-1, *ISO general purpose screw threads — Basic profile — Part 1: Metric screw threads*

ISO 261, *ISO general-purpose metric screw threads — General plan*

ISO 262, *ISO general-purpose metric screw threads — Selected sizes for screws, bolts and nuts*

ISO 965-2, *ISO general purpose metric screw threads — Tolerances — Part 2: Limit of sizes for general purpose external and internal screw threads — Medium quality*

ISO 4524-1, *Metallic coatings — Test methods for electrodeposited gold and gold alloy coatings — Part 1: Determination of coating thickness*

MIL-DTL-38999K, *Connectors, electrical, circular, miniature, high density, quick disconnect (bayonet, threaded, and breech coupling), environment resistant, removable crimp and hermetic solder contacts, general specification for*¹⁾

1) Published by: DoD National (US) Mil. Department of Defense <http://www.defenselink.mil/>.

MIL-DTL-38999/62, *Sealing boot, size 8, pin or socket, shielded crimp contacts, electrical connector, circular, metric* ¹⁾

MIL-HDBK-454, *General guidelines for electronic equipment* ¹⁾

MIL-STD-1373, *Screw-thread, modified, 60°, stub, double* ¹⁾

MIL-STD-1560B, *Department of Defense interface standard: insert arrangements for* ¹⁾

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 2591-100 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Description

4.1 General

Different variants of materials, housings and contact arrangements are provided according to the classes depending on the service conditions.

The pair of connectors is characterized:

- by shell to shell bottoming;
- by its triple threaded and self-locking coupling system;
- by plugs with shielding ring providing protection against radioelectrical interference;
- by the scoop-proof shells.

These connectors use the following contacts:

- crimped sizes 22, 20, 16, 12, 10 and 8;
 - soldered (model Y) sizes 22, 20, 16 and 12;
 - coaxial crimped or soldered sizes 16, 12 and 8;
 - triaxial crimped or soldered size 8;
 - quadrax crimped size 8.
- } For arrangements comprising the letter G or Q, all contacts are grounded to the receptacle housing

The receptacles and plugs contain either male contacts or female contacts.

The contacts fitted in the class Y receptacles are exclusively of the male solder type.

The connectors are polarized by means of keyways and keys; polarization shall be obtained before the male contacts enter the insert of the female contacts and before the coupling ring is engaged. The position of the keying arrangement is given in Table 5.

The visual check of coupling is obtained by masking of a red colour band on the receptacle.