

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

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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 22 November 2021.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 3645-001:2022) 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 document 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 document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

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 :2019.

The main changes with respect to the previous edition are listed in the following table.

Table X — Main changes introduced

prEN/EN Number	Edition	Publication Date	Modification
prEN 3645-001	P5	2021-12-01	Introduction of Hexavalent Chromium free (in both manufacturing process and final product) plating classes and related compatibility testing with legacy Cadmium plated items
			Addition of optional marking for insulators according to MIL standard

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this document: 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, Türkiye 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 2346 (all parts), *Aerospace series — Cable, electrical, fire resistant — Operating temperatures between -65 °C and 260 °C*

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

EN 3155-001:2016, *Aerospace series — Electrical contacts used in elements of connection — Part 001: Technical specification*

EN 3197, *Aerospace series — Design and installation of aircraft electrical and optical interconnection systems* ¹⁾

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*

ISO 68-1, *ISO general purpose screw threads — Basic profile — Part 1: Metric screw threads* ²⁾

ISO 261, *ISO general purpose metric screw threads — General plan* ²⁾

ISO 262, *ISO general purpose metric screw threads — Selected sizes for screws, bolts and nuts* ²⁾

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

ISO 27874, *Metallic and other inorganic coatings — Electrodeposited gold and gold alloy coatings for electrical, electronic and engineering purposes — Specification and test methods* ²⁾

* All parts quoted in this document.

¹⁾ Published as ASD-STAN Standard at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), <https://www.asd-stan.org/>.

²⁾ Published by: ISO International Organization for Standardization <http://www.iso.ch/>.

MIL-DTL-38999, *Connectors, electrical, circular, miniature, high density, quick disconnect (bayonet, threaded, and breech coupling), environment resistant, removable crimp and hermetic solder contacts, general specification for* ³⁾

MIL-DTL-38999/62, *Sealing boot, size 8, pin or socket, shielded crimp contacts, electrical connector, circular, metric* ³⁾

MIL-HDBK-454, *General guidelines for electronic equipment* ³⁾

MIL-STD-1373, *Screw-thread, modified, 60°, stub, double* ³⁾

MIL-STD-1560, *Defence logistics agency: Insert Arrangements for MIL-DTL-38999, MIL-DTL-27599, and SAE-AS29600 Series A Electrical Circular Connectors* ³⁾

TR 4865, *Aerospace series — Suitable cable outlet to be mated on EN 3645 connector (layout type: 21R48) for the qualification of electrical contact product standards EN 3155-065 and EN 3155-083* ⁴⁾

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:

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

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;

³⁾ Published by: DEFENSE LOGISTICS AGENCY DLA Land and Maritime (US)
<https://landandmaritimeapps.dla.mil/Programs/MilSpec/DocSearch.aspx>.

⁴⁾ Published as ASD-STAN Technical Report at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), <http://www.asd-stan.org/>.