SLOVENSKI STANDARD
SIST EN 3218-001:2009

01-julij-2009

Aeronavtika - Konektorji, pravokotni, s kovinskim ohišjem in vijaļ nim zaklepanjem - 001. del: Tehniļ na specifikacija

Aerospace series - Connectors, rectangular, with metallic shells and screw-locking - Part 001: Technical specification

Luft- und Raumfahrt - Rechtecksteckverbinder mit metallischem Gehäuse und Schraubverriegelung - Teil 001: Technische Lieferbedingungen

Série aérospatiale - Connecteurs rectangulaires à boîtiers métalliques et à verrouillage par vis - Partie 001 : Spécification technique

Ta slovenski standard je istoveten z: **EN 3218-001:2006**

ICS:

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

SIST EN 3218-001:2009 **en,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 3218-001

April 2006

ICS 49.060

English Version

Aerospace series - Connectors, rectangular, with metallic shells and screw-locking - Part 001: Technical specification

Série aérospatiale - Connecteurs rectangulaires à boîtiers métalliques et à verrouillage par vis - Partie 001 : Spécification technique

Luft- und Raumfahrt - Rechtecksteckverbinder mit metallischem Gehäuse und Schraubverriegelung - Teil 001: Technische Lieferbedingungen

This European Standard was approved by CEN on 27 February 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, 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 United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 3218-001:2006: E

Contents

Page

Foreword

This European Standard (EN 3218-001:2006) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 AECMA, 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 October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

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, 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 of rectangular connectors with metallic shells and screw-locking, for use in a temperature range from – 65 °C to 150 °C on board aircraft.

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 2242, *Aerospace series – Control of tools used for crimping of electrical cables with conductors defined by EN 2083 and EN 2346.* 1)

EN 2265-002, *Aerospace series – Cables, electrical, for general purpose – Operating temperatures between – 55 °C and 150 °C – Part 002: General.* 1)

EN 2266-002, *Aerospace series – Cables, electrical, for general purpose – Operating temperatures between – 55 °C and 200 °C – Part 002: General.*

EN 2282, *Aerospace series – Characteristics of aircraft electrical supplies.*

EN 2591-100*, *Aerospace series – Elements of electrical and optical connection – Test methods – Part 100: General.*

EN 3155-001, *Aerospace series – Electrical contacts used in elements of connection – Part 001: Technical specification.* 1)

EN 3155-023, *Aerospace series – Electrical contacts used in elements of connection – Part 023: Contact, electrical, female 023, type A, crimp, class R – Product standard.*

EN 3218-002, *Aerospace series – Connectors, rectangular, with metallic shells and screw-locking – Part 002: Specification of performance and contact arrangements.*

EN 3218-005, *Aerospace series – Connectors, rectangular, with metallic shells and screw-locking – Part 005: Plug with non-removable size 22 solder contacts – Product standard.*

EN 3218-006, *Aerospace series – Connectors, rectangular, with metallic shells and screw-locking – Part 006: Receptacle with non-removable size 22 solder contacts – Product standard.*

EN 3218-007, *Aerospace series – Connectors, rectangular, with metallic shells and screw-locking – Part 007: Plug with rear-removable size 20 crimp contacts – Product standard.*

EN 3218-008, *Aerospace series – Connectors, rectangular, with metallic shells and screw-locking – Part 008: Receptacle with rear-removable size 20 crimp contacts – Product standard.*

EN 9133, *Aerospace series – Quality management systems – Qualification Procedure for aerospace standard parts.*

---

* Including all its parts quoted.

1) Published as AECMA Prestandard at the date of publication of this standard.

MIL-PRF-7808L, *Lubricating oil, aircraft turbine engine, synthetic base, NATO code number O – 148.* [2)]

MIL-PRF-7870C, *Lubricating oil: general purpose, low temperature, NATO code number O-142.* [2)]

MIL-PRF-23699F, *Lubricating oil, aircraft turbine engine, synthetic base, NATO code number O-156.* [2)]

MIL-PRF-87937D, *Cleaning compound aerospace equipment.* [2)]

QPL-5606-31, *Hydraulic fluid, petroleum base; aircraft; missile and ordnance.* [2)]

FED-STD-H28:1978, *Aerospace series – Screw thread standards for federal services.* [2)]

AS 1241C, *Fire resistant phosphate ester hydraulic fluid for aircraft.* [3)]

AMS 1424F, *Deicing/Anti-Icing fluid, Aircraft, SAE Type I.* [3)]

3 Terms and definitions

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

3.1
dummy insert
insert without a cavity and used instead of an insert fitted with contacts

4 Conditions of use

Operating voltage: see EN 2282

5 Description

5.1 General

A pair of connectors is characterized by its rectangular shell, its screw coupling system located at both ends and by the inserts which can be removed from the shell.

The shells provide polarization of the coupling as well as locating and polarizing of inserts.

The male contacts are rectangular in cross-section and female contacts are of the tuning-fork type; their size is comparable to a size 22 or 20 circular contact, according to the individual case.

These connectors use removable crimp contacts, sizes 20 and 22, or non-removable solder contacts size 22.

Receptacles and plugs can accommodate inserts containing either male or female contacts. When male contacts are fitted in the plug, the connector is "scoop-proof".

The inserts can be removed from the shell.

---

2) Published by: Department of Defense (DOD), The Pentagon, Washington D.C. 20301, USA.

3) Published by Society of Automotive Engineers Inc. (SAE) 400 Commonwealth Drive, Warrendale, PA 15096-001, USA.

Coding, carried out by the user, is provided by two removable keys located at each end of the housings and capable of assuming four positions, thus giving 16 coding options.

Different configurations of housings and contact arrangements are provided in EN 3218-002.

There are two sizes of housing (size 1 and size 2).

5.2 Materials

The materials used shall be corrosion-resistant. When dissimilar metals or alloys are in close contact, adequate protection shall be provided so that the electromotive force of the galvanic couple shall not exceed 0,25 V.

The contacts shall be covered with a gold plating over a nickel undercoat.

The thickness of the gold shall be at least 1,27 µm in the active zone of the contacts.

The housings shall be made of aluminium alloy with, according to the version, the following finishing:

— anodized coating: code A;

— cadmium plating: code C;

— nickel plating: code N.

The threaded items and accessories shall be made of stainless steel.

The materials used shall satisfy the requirements of the mould growth test (EN 2591-306).

6 Design

6.1 Housings

The housings can take one or two inserts, their position are identified by the letters A and B. One or other of these inserts may be replaced by a dummy insert or by an insert not fitted with its contacts.

6.2 Accessories

The receptacle and plug housings shall have a cable-clamp fitting.

6.3 Sealing

Sealing shall be provided at the rear of the contacts by an elastomer seal in the case of crimp contacts or by a heat-shrinkable sleeve in the case of solder contacts.

At the interface, a seal located on the insert holding the male contacts, shall provide sealing at the coupling.

6.4 Polarization of housings

Polarization of the receptacle and plug is achieved by the mating faces of the housings being non-symmetrical.

Polarization of A and B inserts is achieved by non-symmetry of the inserts and the internal face of the housings.

6.5 Mounting of receptacles

The receptacles are panel mounted, either rear mounted or side mounted.

In the case of rear mounting, washers shall be used to compensate for differences in panel thickness. The assembly drawings shall be included in the product standards for the different versions.

6.6 Threads

Threads shall comply with FED-STD-H28.

Screws shall be self-locking.

6.7 Contact characteristics

See EN 3155-001.

Solder contacts are an integral part of the insert.

Crimp contacts shall be removed from the insert from the rear.

6.8 Identification of contacts and inserts

Contacts: the position of contact No. 1 in the row shall be identified on the front face of the insert by marking with a contrasting colour. Identification of contacts or cavities shall be done on a side face or the rear face of the insert.

Rows: the side faces A and B of inserts and housings shall be marked.

7 Definition drawings and masses

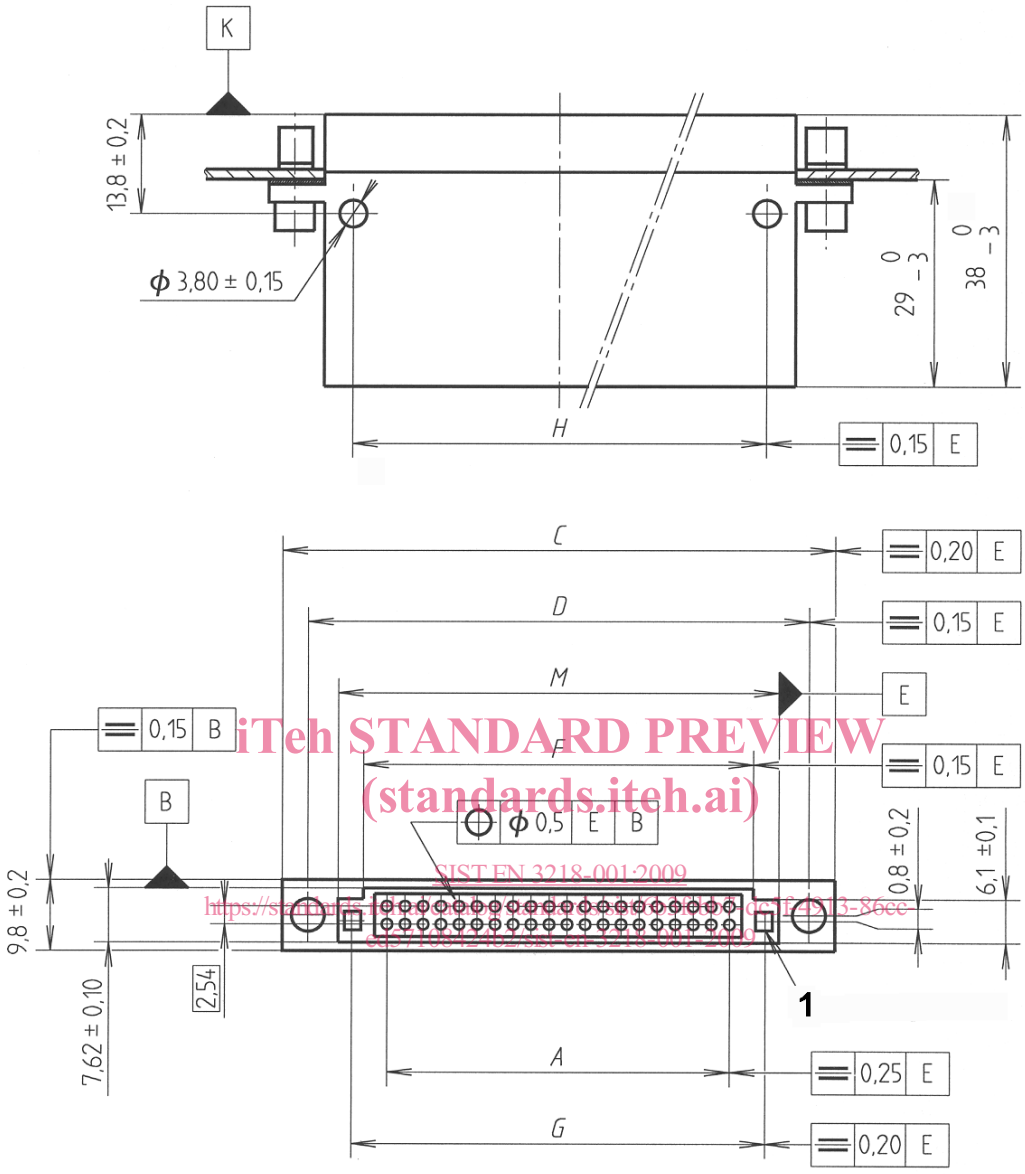
7.1 General

The general dimensions and masses of the plugs and receptacles are given in EN 3218-005, EN 3218-006, EN 3218-007 and EN 3218-008.

Dimensions and tolerances are in millimetres.

7.2 Dimensions of receptacle

See Figures 1 to 3 and Table 1.



Key

1 Coding, see 7.4.

[a] Accessories included

Figure 1

Table 1

Size	N [a]	*A*	*C* max.	*D* ± 0,15	*F* 0 −0,6	*G* ± 0,2	*H* ± 0,15	*M* ± 0,15
1	9	22,63	51,5	44,45	29	32,3	32,3	36,22
2	19	47,78	77,0	69,85	54,4	57,7	57,7	61,47

[a] N = Pitch

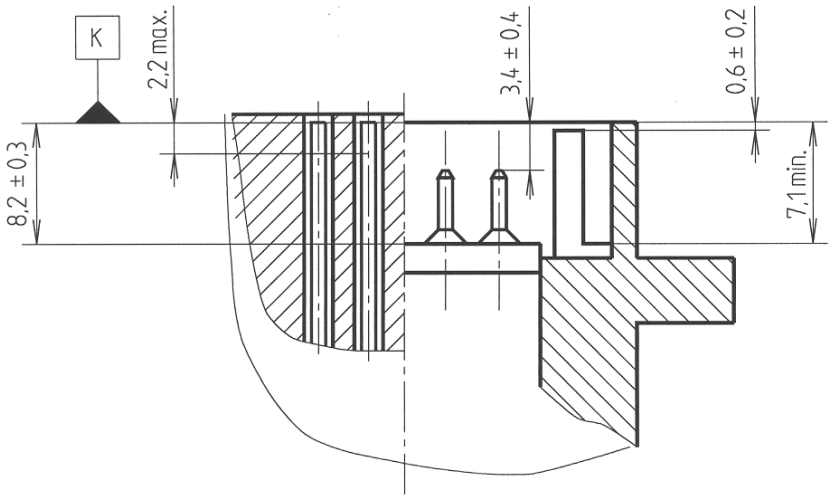
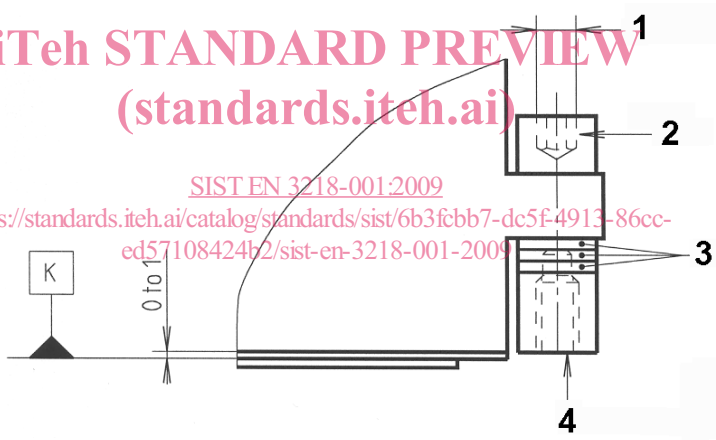


Figure 2 — Position of contacts and mating faces



Key

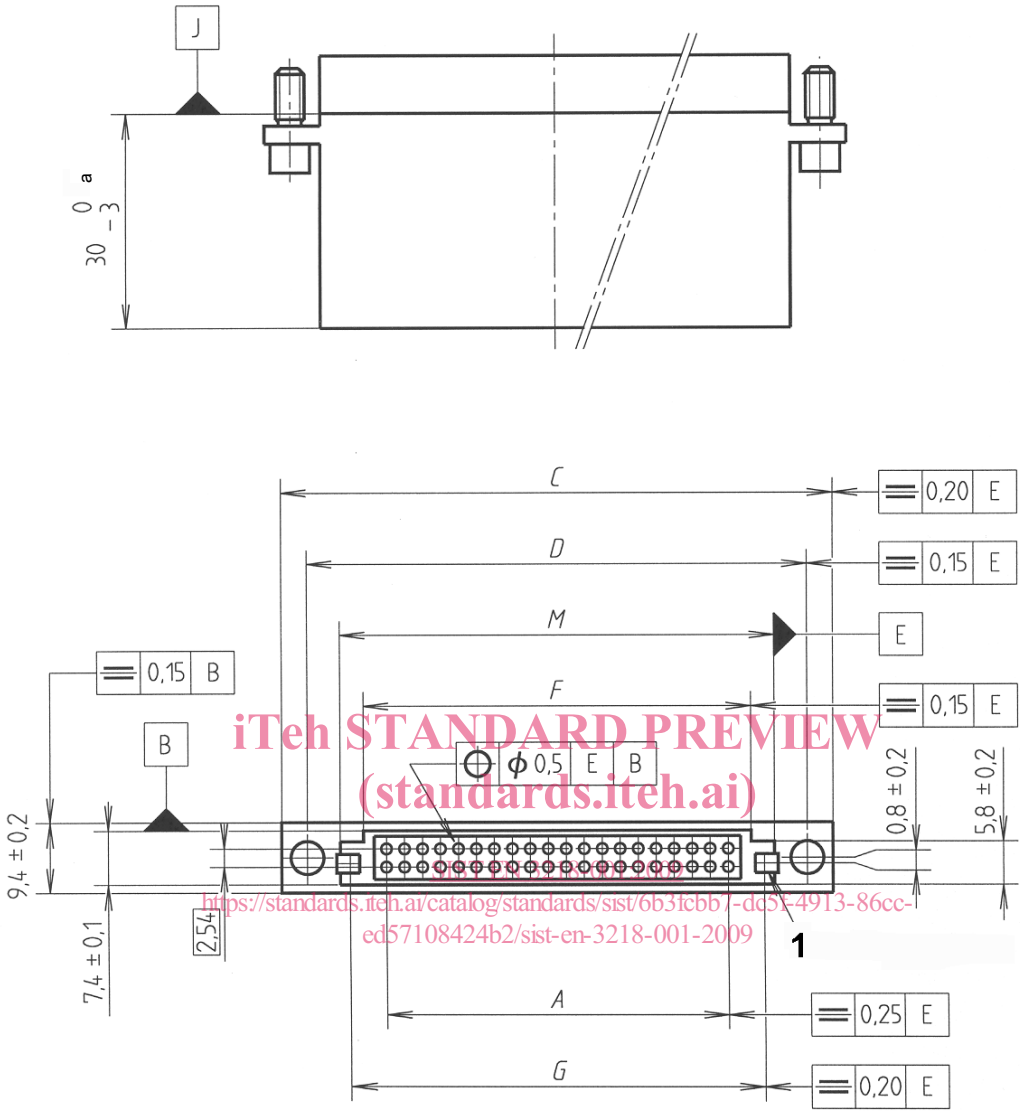
1 For hexagonal wrench 2,78 across flats
2 Screw
3 Three spacers thickness: 0,80 ± 0,05
4 Effective depth 7,5 min. Thread: 6-32 UNC 2B

Figure 3 — Locking and unlocking systems

7.3 Dimensions of plug

See Figures 4 to 6 and Table 2.

Dimensions and tolerances are in millimetres.



Key

1 Coding, see 7.4.

[a] Accessories included

Figure 4

Table 2

Size	N [a]	*A*	*C* max.	*D* ± 0,15	*F* 0 −0,6	*G* ± 0,2	*M* ± 0,15
1	9	22,63	51,5	44,45	28,8	32,3	35,30
2	19	47,78	77,0	69,85	54,2	57,7	60,70

[a] N = Pitch