
Aeronavtika - Konektorji, električni, okrogli, bajonetno sklapljanje, stalna delovna temperatura 175 °C ali 200 °C - 002. del: Specifikacija lastnosti in razporeditev kontaktov

Aerospace series - Connectors, electrical, circular, bayonet coupling, operating temperature 175 °C or 200 °C continuous - Part 002: Specification of performance and contact arrangements

Luft- und Raumfahrt - Elektrische Rundsteckverbinder mit Bajonettkupplung, Betriebstemperatur 175 °C oder 200 °C konstant - Teil 002: Leistungsdaten und Kontaktanordnungen

Série aérospatiale - Connecteurs électriques circulaires à accouplement par baïonnettes, température d'utilisation 175 °C ou 200 °C continu - Partie 002: Spécification de performances et arrangements des contacts

Ta slovenski standard je istoveten z: prEN 3646-002

ICS:

31.220.10	Vtiči in vtičnice, konektorji	Plug-and-socket devices. Connectors
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

oSIST prEN 3646-002:2024

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 3646-002

February 2024

ICS

Will supersede EN 3646-002:2007

English Version

**Aerospace series - Connectors, electrical, circular, bayonet
coupling, operating temperature 175 °C or 200 °C
continuous - Part 002: Specification of performance and
contact arrangements**

Série aérospatiale - Connecteurs électriques circulaires
à accouplement par baïonnettes, température
d'utilisation 175 °C ou 200 °C continu - Partie 002:
Spécification de performances et arrangements des
contacts

Luft- und Raumfahrt - Elektrische Rundsteckverbinder
mit Bajonettkupplung, Betriebstemperatur 175 °C oder
200 °C konstant - Teil 002: Leistungsdaten und
Kontaktanordnungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

CEN members are the national standards bodies of 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 United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

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

Contents	Page
European foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Description and codification of class	6
5 Technical specification	6
6 Operating conditions	6
6.1 Combinations of plugs and receptacles	6
6.2 Combinations of protective covers and connectors	7
6.3 Permissible cables	7
6.4 Operating characteristics	7
6.4.1 Electrical conditions	7
6.4.2 Climatic conditions	9
6.4.3 Mechanical conditions	9
7 Type codes	9
8 Polarization	10
9 Housing sizes and contact arrangements	10
10 Contacts	21
11 Filler plugs	21
12 Rear accessories	21
13 Tooling	21
14 Assembly and wiring instructions	21
Bibliography	22

European foreword

This document (prEN 3646-002:2024) 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-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 3646-002:2007.

This document includes the following significant technical changes with respect to EN 3646-002:2007:

- update of normative references;
- editorial revision of the document.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[oSIST prEN 3646-002:2024](https://standards.iteh.ai/catalog/standards/sist/41ae92f3-a83d-44bb-b3be-2bfbfeef9cc6/osist-pren-3646-002-2024)

<https://standards.iteh.ai/catalog/standards/sist/41ae92f3-a83d-44bb-b3be-2bfbfeef9cc6/osist-pren-3646-002-2024>

prEN 3646-002:2024 (E)

Introduction

This family of connectors is derived from MIL-DTL-26482 series 2, the NAS 1599 with which it is intermateable.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[oSIST prEN 3646-002:2024](https://standards.iteh.ai/catalog/standards/sist/41ae92f3-a83d-44bb-b3be-2bfbfeef9ec6/osist-pren-3646-002-2024)

<https://standards.iteh.ai/catalog/standards/sist/41ae92f3-a83d-44bb-b3be-2bfbfeef9ec6/osist-pren-3646-002-2024>

1 Scope

This document specifies the performances and contact arrangements groups for bayonet coupling circular connectors, intended for use in an operating temperature range of -65 °C to 175 °C or 200 °C continuous.

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 2591-209, *Aerospace series - Elements of electrical and optical connection - Test methods - Part 209: Current temperature derating*

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

EN 3646 (all parts), *Aerospace series — Connectors, electrical, circular, bayonet coupling, operating temperature 175 °C or 200 °C continuous*

EN 4529-002, *Aerospace series - Elements of electrical and optical connection - Sealing plugs - Part 002: Index of product standards*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology 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/>

[oSIST prEN 3646-002:2024](https://standards.iteh.ai/catalog/standards/sist/41ae92f3-a83d-44bb-b3be-2bfbfeef9ec6/osist-pren-3646-002-2024)

<https://standards.iteh.ai/catalog/standards/sist/41ae92f3-a83d-44bb-b3be-2bfbfeef9ec6/osist-pren-3646-002-2024>

prEN 3646-002:2024 (E)**4 Description and codification of class**

Shall be according to Table 1.

Table 1 — Description and codification of class

Model		Description
Connectors	A	Sealed plug and receptacle with housing (shell) in black anodized aluminium alloy, crimp contacts, with three teeth at the rear of connector, maximum operating temperature 200 °C continuous
	WS	Sealed plug and receptacle with housing (shell) in olive-green cadmium alloy, conducting finish, 500 h resistance to salt mist, crimp contacts, plug with grounding-spring-system screening ring with teeth over the entire periphery at the rear of the connectors, maximum operating temperature 175 °C continuous
	RS	Sealed plug and receptacle with housing (shell) in nickel-plated aluminium alloy, crimp contacts, plug with grounding-spring-system screening ring, three teeth at the rear of the connector, maximum operating temperature 200 °C continuous
	Y	Hermetic receptacle, with housing (shell) in passivated stainless steel, solder contacts, maximum operating temperature 200 °C continuous
Protective covers	RS	Protective cover for plug in nickel-plated aluminium alloy — Maximum operating temperature 200 °C continuous
	A	Protective cover for receptacle or plug in black anodized aluminium alloy — Maximum operating temperature 200 °C continuous
	WS	Protective cover for receptacle or plug in olive-green cadmium-plated aluminium alloy — Maximum operating temperature 175 °C continuous
Dummy receptacles	RS	Dummy receptacle in nickel-plated aluminium alloy — Maximum operating temperature 200 °C continuous
	A	Dummy receptacle in black anodized aluminium alloy — Maximum operating temperature 200 °C continuous
	WS	Dummy receptacle in olive-green cadmium-plated aluminium alloy - Maximum operating temperature 175 °C continuous

5 Technical specification

Shall be according to EN 3646-001.

6 Operating conditions**6.1 Combinations of plugs and receptacles**

Table 2 shows the recommended combinations of plugs and receptacles.

For these combinations, the characteristics of the pair of connectors shall be those of the component with the lowest performance.

Other combinations may be used subject to the approval of the design authorities.

Table 2 — Combinations of plugs and receptacles

Receptacle model	Plug model		
	A	RS	WS
A	X	—	—
RS	X	X	—
WS	X	—	X
Y	X	X	—

6.2 Combinations of protective covers and connectors

Shall be according to Table 3.

Other combinations may be subject to the approval of the design authorities.

Table 3 — Combinations of protective covers and connectors

Protective cover model	Plug model			Receptacle model			
	A	RS	WS	A	RS	WS	Y
A	X	X	X	X	X	X	X
RS	X	X	—	X	X	—	X
WS	X	—	X	X	—	X	X

6.3 Permissible cables

The performance of these connectors is achieved with the cables of dimensions given in Table 4 and using the accessories and wiring tools specified.

Table 4 — Outer diameter of cables

Contact size	Outer diameters of cables mm	
	min.	max.
20	0,85	2,11
16	1,22	2,77
12	1,90	3,61

The use of cables exceeding the maximum diameter indicated is prohibited. Cables smaller than the minimum diameter may be used, subject to a concession, provided that the requirements of EN 3197 are observed.

6.4 Operating characteristics

6.4.1 Electrical conditions

- current temperature derating: shall be according to EN 2591-209;
- rated current: according to standards for contacts;
- insulation resistance at ambient temperature: 5 000 MΩ;

prEN 3646-002:2024 (E)

— withstand voltage: according to Table 5.

Table 5 — Withstand voltage

Pressure	Connectors rating Ia		Connectors rating IIa	
	Mated	Unmated	Mated	Unmated
	V_{rms}	V_{rms}	V_{rms}	V_{rms}
Sea level	1 500	1 500	2 300	2 300
12,1 kPa (15 000 m)	1 000	500	1 300	750
4,7 kPa (21 000 m)	1 000	375	1 300	500
1,1 kPa (30 000 m)	1 000	200	1 300	200
^a See Table 9.				

Electrical continuity of the shell: According to Table 6.

Table 6 — Electrical continuity of the shell

Receptacle model	Plug model	Maximum resistance $m\Omega$
RS	RS	5
WS	WS	5
Y	RS	50

Shielding effectiveness: according to Table 7.

Table 7 — Shielding effectiveness

Frequency MHz	Minimum attenuation with RS and WS models Db
100	65
200	60
300	55
400	55
600	50
800	45
1 000	45