



SLOVENSKI STANDARD SIST EN 3646-002:2009

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

STANDARD PREVIEW
(2009-05-01)

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

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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: EN 3646-002:2007

ICS:

49.060 Š^cp \ æš Á^• [|b \ æ Aerospace electric
^|\ dã } æ] !^ { æš Á ã c { ã equipment and systems

SIST EN 3646-002:2009

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 3646-002

March 2007

ICS 49.060

English Version

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This European Standard was approved by CEN on 30 September 2005.

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 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 Management Centre has the same status as the official versions.

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Foreword

This document (EN 3646-002:2007) 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 September 2007, and conflicting national standards shall be withdrawn at the latest by September 2007.

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.

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EN 3646-002:2007 (E)**0 Introduction**

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

1 Scope

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

EN 3155-002, *Aerospace series — Electrical contacts used in elements of connection — Part 002: List and utilization of contacts*

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

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

EN 3646-001, *Aerospace series — Connectors, electrical, circular, bayonet coupling, operating temperature 175 °C or 200 °C continuous — Part 001: Technical specification*

EN 3660-002, *Aerospace series — Cable outlet accessories for circular and rectangular electrical and optical connectors — Part 002: Index of product standards*

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

MIL-C-26482G, *Connector, Electrical, (Circular, Miniature, Quick Disconnect, Environment Resisting), Receptacles and Plugs, General Specification for* ²⁾

NAS 1599, *(Inactive) Connectors, General Purpose, Electrical, Miniature Circular, Environment Resisting, 200 °C Maximum Temperature* ³⁾

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

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

3) Published by: Aerospace Industries Association of America, Inc. (AIA), 1250 Eye Street, NW; Suite 1100, Washington, DC 20005, USA.

3 Description and codification of class

See Table 1.

Table 1

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

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4 Definitions

See EN 3646-001.

5 Operating conditions

5.1 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.

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

Table 2

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

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5.2 Combinations of protective covers and connectors

See Table 3.

Others 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

5.3 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

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.

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5.4 Operating characteristics

5.4.1 Electrical conditions

- current temperature derating: see EN 2591-209;
- rated current: according to standards for contacts;
- insulation resistance at ambient temperature: 5 000 MΩ;
- withstand voltage: see Table 5.

Table 5

Pressure	Connectors rating I ^a		Connectors rating II ^a	
	Mated V_{rms}	Unmated V_{rms}	Mated V_{rms}	Unmated 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: see Table 6.

Table 6

Receptacle model	Plug model	Maximum resistance mΩ
RS	RS	5
WS	WS	5
Y	RS	50

Shielding effectiveness: see Table 7.

Table 7

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

5.4.2 Climatic conditions

— Operating temperatures:

- 1) minimum temperature: – 65 °C;
- 2) maximum temperature: see Table 1. Furthermore, the connector operating temperature shall be limited to the maximum operating temperature indicated in the product standards for contacts;

— Corrosion resistance and fluid resistance: see EN 3646-001.

5.4.3 Mechanical conditions

Mechanical endurance:

- 500 mating and unmating operations for models A;
- 250 mating and unmating operations for models RS and WS.

6 Type codes

See Table 8.

Table 8

Product	Type	Model	EN 3646-	Description
Connector	0	A, RS, WS	003	Receptacle, square flange mounting
		Y	005	Receptacle, hermetic, square flange mounting
	1	Y	007	Receptacle, hermetic, round flange, welding or brazing mounting
	6	A	008	Plug
		RS, WS		
	7	A, RS, WS	004	Receptacle, jam-nut mounting
Y		006	Receptacle, hermetic, jam-nut mounting	
Protective cover	3	A, RS, WS	009	Protective cover for receptacle
	4	A, RS, WS	010	Protective cover for plug
Dummy receptacle	5	A, RS, WS	011	Dummy receptacle