SLOVENSKI STANDARD
SIST EN 2997-002:2009

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Nadomeġļa:
SIST EN 2997-2:2001

Aeronavtika - Konektorji, elektriļni, okrogli, priključeni z navojnim obroļkom, odporni ali neodporni proti ognju, s stalno delovno temperaturo med ï 65 ÁC in 175 ÁC, stalno 200 ÁC, najviġjo 260 ÁC - 002. del: Specifikacija lastnosti in razporeditev kontaktov

Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures - 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak - Part 002: Specification of performance and contact arrangements

Luft- und Raumfahrt - Elektrische Rundsteckverbinder mit Schraubkupplung, feuerbeständig oder nicht feuerbeständig, Betriebstemperaturen - 65 °C bis 175 °C konstant, 200 °C konstant, 260 °C Spitze - Teil 002: Leistungsdaten und Kontaktanordnungen

Série aérospatiale - Connecteurs électriques circulaires à accouplement par bague filetée, résistant au feu ou non, températures d'utilisation - 65 °C à 175 °C continu, 200 °C continu, 260 °C en pointe - Partie 002 : Spécification de performances et d'arrangements des contacts

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EUROPEAN STANDARD

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This European Standard was approved by CEN on 24 June 2006.

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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.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 2997-002:2006) 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of an identical text or by endorsement, at the latest by April 2007, and conflicting national standards shall be withdrawn at the latest by April 2007.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.

This document supersedes EN 2997-2:1997.

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.

Introduction

This family of connectors is derived from MIL-DTL-83723F series III, type T with which it is intermateable.

1 Scope

This standard defines the performance and contact arrangements of circular electrical connectors, coupled by threaded ring. It also lists the product standards and models available for selection in this series.

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 2591-202, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 202: Contact resistance at rated current.*

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

EN 2997-001, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 001: Technical specification.*

EN 2997-003, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 003: Square flange receptacle — Product standard.*

EN 2997-004, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 004: Jam-nut mounted receptacle — Product standard.*

EN 2997-005, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 005: Hermetic square flange receptacle — Product standard.*

EN 2997-006, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 006: Hermetic jam-nut mounted receptacle — Product standard.*

EN 2997-007, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 007: Hermetic receptacle with round flange attached by welding or brazing — Product standard.*

EN 2997-008, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 008: Plug — Product standard.*

EN 2997-009, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 009: Protective cover for receptacle — Product standard.*

EN 2997-010, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 010: Protective cover for plug — Product standard.*

EN 2997-011, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 011: Dummy receptacle — Product standard.*

EN 2997-012, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 012: Nut — Product standard.* [1)]

EN 2997-013, *Aerospace series — Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures – 65 °C to 175 °C continuous, 200 °C continuous, 260 °C peak — Part 013: O-ring seal — Product standard.* [1)]

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

EN 3155-004, *Aerospace series — Electrical contacts used in elements of connection — Part 004: Contacts, electrical, male, type A, crimp, class T — Product standard.*

EN 3155-005, *Aerospace series — Electrical contacts used in elements of connection — Part 005: Contacts, electrical, female, type A, crimp, class T — Product standard.*

EN 3155-018, *Aerospace series — Electrical contacts used in elements of connection — Part 018: Contacts, electrical, male, type A, crimp, class S — Product standard.*

EN 3155-019, *Aerospace series — Electrical contacts used in elements of connection — Part 019: Contacts, electrical, female, type A, crimp, class S — Product standard.*

EN 3197, *Aerospace series — Installation of aircraft electrical and optical interconnection systems.* [2)]

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 product standards.*

MIL-DTL-83723F, *Connectors, electrical, (circular, environment resisting), receptacles and plugs, general specification for.* [3)]

3 Model description and codification of models

See Table 1.

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1) In preparation at the date of publication of this standard.

2) Published as AECMA Pre-standard at the date of publication of this standard.

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

Table 1

Class	Model description
Connectors	
W	Sealed plug with housing (shell) in olive-green cadmium-plated aluminium alloy, conductive finish, 500 h resistance to salt mist, crimp contacts, maximum operating temperature 175 °C continuous
WS	Sealed plug and receptacle with housing (shell) in olive-green cadmium-plated aluminium alloy, conductive finish, 500 h resistance to salt mist, crimp contacts, plug with grounding-spring-system, maximum operating temperature 175 °C continuous
K	Sealed plug with housing (shell) in passivated stainless steel, 500 h resistance to salt mist, crimp contacts, fire-resistant, maximum operating temperature 200 °C continuous
R	Sealed plug with housing (shell) in nickel-plated aluminium alloy, 48 h resistance to salt mist, crimp contacts, maximum operating temperature 200 °C continuous
RS	Sealed plug and receptacle with housing (shell) in nickel-plated aluminium alloy, 48 h resistance to salt mist, crimp contacts, plug with grounding-spring-system, maximum operating temperature 200 °C continuous
S	Sealed plug and receptacle with housing (shell) in passivated stainless steel, 500 h resistance to salt mist, crimp contacts, fire-resistant, plug with grounding-spring-system, maximum operating temperature 200 °C continuous
Y	Hermetic receptacle with housing (shell) in passivated stainless steel, 500 h resistance to salt mist, solder contacts, maximum operating temperature 200 °C continuous
KE	Sealed plug with housing (shell) in passivated stainless steel, 500 h resistance to salt mist, crimp contacts, fire-resistant, maximum operating temperature 260 °C peak
SE	Sealed plug and receptacle with housing (shell) in passivated stainless steel, 500 h resistance to salt mist, crimp contacts, fire-resistant, plug with grounding-spring-system, maximum operating temperature 260 °C peak
YE	Hermetic receptacle with housing (shell) in passivated stainless steel, 500 h resistance to salt mist, solder contacts, maximum operating temperature 260 °C peak
Protective covers	
K	Protective cover for plug in passivated corrosion resisting steel, 500 h resistance to salt mist – Maximum operating temperature 200 °C continuous
R	Protective cover for receptacle or plug in nickel-plated aluminium alloy, 48 h resistance to salt mist – Maximum operating temperature 200 °C continuous
W	Protective cover for receptacle or plug in olive-green cadmium-plated aluminium alloy, 500 h resistance to salt mist – Maximum operating temperature 175 °C continuous
KE	Protective cover for receptacle or plug in passivated corrosion resisting steel, 500 h resistance to salt mist – Maximum operating temperature 260 °C peak
Dummy receptacles	
K	Dummy receptacle in passivated stainless steel, 500 h resistance to salt mist - Maximum operating temperature 200 °C continuous
R	Dummy receptacle in nickel-plated aluminium alloy, 48 h resistance to salt mist - Maximum operating temperature 200 °C continuous
W	Dummy receptacle in olive-green cadmium-plated aluminium alloy, 500 h resistance to salt mist - Maximum operating temperature 175 °C continuous
KE	Dummy receptacle in passivated corrosion resisting steel, 500 h resistance to salt mist - Maximum operating temperature 260 °C peak

4 Terminology

See EN 2997-001.

5 Operating conditions

5.1 General

Tables 2 and 3 show:

— Combinations marked by 1 which achieve the characteristics specified for each model.

— Combinations marked by 2, the characteristics of the pair of connectors are those of the component with the lowest performance.

— Combinations marked by 3 shall be used subject approval to the user design authorities.

5.2 Combinations of plugs and receptacles

See Table 2 for combination ratings.

Table 2

Receptacle class	Plug class							
	W	WS	K	R	RS	S	KE	SE
WS	1	1	3	3	3	3	3	3
RS	3	3	3	1	1	3	3	3
S	3	3	1	2	2	1	2	2
Y	3	3	1	2	2	1	2	2
SE	3	3	2	2	2	2	1	1
YE	3	3	2	2	2	2	1	1

5.3 Combinations of protective covers and connectors

See Table 3 for combination ratings. Other combinations may be used, however the user/design authority shall ensure the suitability for use.

Table 3

Protective cover class	Plug class								Receptacle class					
	W	WS	K	R	RS	S	KE	SE	WS	RS	S	Y	SE	YE
R	–	–	–	1	1	–	–	–	–	1	–	–	–	–
W	1	1	–	–	–	–	–	–	1	–	–	–	–	–
K	–	–	1	–	–	1	–	–	–	–	–	–	–	–
KE	–	–	–	–	–	–	1	1	–	–	1	1	1	1

5.4 Permissible cables

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

Dimensions are in millimetres.

Table 4

Contact size	Outer diameter of cables	
	min.	max.
20	0,85	2,1
16	1,2	2,7
12	1,9	4

5.5 Operating characteristics

5.5.1 Electrical conditions

— For operating temperature including self heating from electrical operation see EN 2591-209

— For rated test current refer to the relevant contact standard for removable contacts. For solder contacts refer to EN 2997-001 test requirements listed against test EN 2591-202 requirements.

— Insulation resistance at ambient temperature: 5 000 MΩ

— Withstand voltage at sea level: 1 500 V r.m.s.

— Withstand voltage from 15 000 m to 30 000 m: 1 000 V r.m.s (connector mated).

5.5.2 Climatic conditions

— Operating temperatures:

  — minimum temperature: – 65 °C

  — 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 2997-001

— Salt mist resistance: see Table 1 and EN 2997-001.

5.5.3 Mechanical conditions

Mechanical endurance, see EN 2997-001: 500 mating and unmating operations,

250 mating and unmating operations for class R, RS, W and WS.

6 Connector type codes

See Table 5 for codes. For spare parts not listed in this specification, refer to the relevant product standard.

Table 5

Model	Class	Product standard	Model description
Connectors			
0	WS RS S SE	EN 2997-003	Square flange mounted receptacle
	Y YE	EN 2997-005	Hermetic square flange receptacle
1	Y YE	EN 2997-007	Hermetic receptacle with round flange attached by welding or brazing
6	W K R KE	EN 2997-008	Plug without grounding-spring-system screening ring
	WS RS S SE	EN 2997-008	Plug with grounding-spring-system screening ring
7	WS RS S SE	EN 2997-004	Jam-nut mounted receptacle
	Y YE	EN 2997-006	Hermetic jam-nut mounted receptacle
Protective covers			
3	R W KE	EN 2997-009	Protective cover for receptacle
4	K R W KE	EN 2997-010	Protective cover for plug
Dummy receptacle			
5	K R W KE	EN 2997-011	Dummy receptacle
Spare parts			
8	K W R	EN 2997-012	Nut (For Jam-nut mounted receptacle)
9	–	EN 2997-013	O-ring seal