
Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175°C continuous, 200°C continuous, 260°C peak - Part 2: Specification of performance and contact arrangements

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Luft- und Raumfahrt - Elektrische Rundsteckverbinder mit Schraubkupplung, feuerbeständig oder nicht feuerbeständig, Betriebstemperaturen 175°C konstant, 200°C konstant, 260°C Spitze - Teil 2: Leistungsdaten und Kontaktanordnungen

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Série aérospatiale - Connecteurs électriques circulaires a accouplement par bague fileté, résistant au feu ou non, températures d'utilisation 175°C continu, 200°C continu, 260°C en pointe - Partie 2: Spécification de performances et d'arrangements des contacts

Ta slovenski standard je istoveten z: EN 2997-2:1997

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EUROPEAN STANDARD

EN 2997-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 1997

ICS 49.060

Descriptors: aircraft industry, connecting equipment, electric connectors, characteristics, specifications

English version

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Part 2: Specification of performance and contact
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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.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries 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of an identical text or by endorsement, at the latest by December 1997, and conflicting national standards shall be withdrawn at the latest by December 1997.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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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.....TECHNICAL COMMITTEE
EUROPEAN ASSOCIATION OF AEROSPACE MANUFACTURERS

0 Introduction

This family of connectors is derived from MIL-C-83723 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.

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- 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 175 °C continuous, 200 °C continuous, 260 °C peak - Part 001 : Technical specification ¹⁾
- EN 2997-003 Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175 °C continuous, 200 °C continuous, 260 °C peak - Part 003 : Square flange receptacle - Product standard ¹⁾
<https://standards.iteh.ai/catalog/standards/sist/cb36b7b-6b1e-454c-a13b-5d4c-7f1c-7f1c-7f1c-7f1c>
- EN 2997-004 Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175 °C continuous, 200 °C continuous, 260 °C peak - Part 004 : Jam-nut mounted receptacle - Product standard ¹⁾
- EN 2997-005 Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175 °C continuous, 200 °C continuous, 260 °C peak - Part 005 : Hermetic square flange receptacle - Product standard ¹⁾
- EN 2997-006 Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175 °C continuous, 200 °C continuous, 260 °C peak - Part 006 : Hermetic jam-nut mounted receptacle - Product standard ¹⁾

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

EN 2997-007	Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175 °C continuous, 200 °C continuous, 260 °C peak - Part 007 : Hermetic receptacle with round flange attached by soldering or brazing - Product standard ¹⁾
EN 2997-008	Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175 °C continuous, 200 °C continuous, 260 °C peak - Part 008 : Plug - Product standard ¹⁾
EN 2997-009	Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175 °C continuous, 200 °C continuous, 260 °C peak - Part 009 : Protective cover for receptacle - Product standard ¹⁾
EN 2997-010	Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175 °C continuous, 200 °C continuous, 260 °C peak - Part 010 : Protective cover for plug - Product standard ¹⁾
EN 2997-011	Aerospace series - Connectors, electrical, circular, coupled by threaded ring, fire-resistant or non fire-resistant, operating temperatures 175 °C continuous, 200 °C continuous, 260 °C peak - Part 011 : Dummy receptacle - Product standard ¹⁾
EN 3155-002	Aerospace series - Electrical contacts used in elements of connection - Part 002 : List and utilization of contacts ¹⁾
EN 3155-004	Aerospace series - Electrical contacts used in elements of connection - Part 004 : Contacts, electrical, male 004, type A, crimp, class T - Product standard ¹⁾
EN 3155-005	Aerospace series - Electrical contacts used in elements of connection - Part 005 : Contacts, electrical, female 005, type A, crimp, class T - Product standard ¹⁾
EN 3155-018	Aerospace series - Electrical contacts used in elements of connection - Part 018 : Contacts, electrical, male 018, type A, crimp, class S - Product standard ¹⁾
EN 3155-019	Aerospace series - Electrical contacts used in elements of connection - Part 019 : Contacts, electrical, female 019, type A, crimp, class S - Product standard ¹⁾
EN 3197	Aerospace series - Installation of aircraft electrical and optical interconnection systems ¹⁾
EN 3660-002	Aerospace series - Cable outlet accessories for circular and rectangular electrical and optical connectors - Part 002 : Index of product standards ¹⁾
EN 4008-003	Aerospace series - Elements of electrical and optical connection - General accessories and tooling - Part 003 : Filler plugs for contacts used in elements of electrical connection ²⁾
MIL-C-83723D	Connectors, electrical, (circular, environment resisting), receptacles and plugs, general specification for ³⁾

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

2) In preparation at the date of publication of this standard

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

3 Description and codification of models

See table 1.

Table 1

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

4 Terminology

See EN 2997-001.

5 Operating conditions

5.1 Combinations of plugs and receptacles

Table 2 shows the combinations marked by * which achieve the characteristics specified for each model.

For other combinations, the characteristics of the pair of connectors are those of the component with the lowest performance.

Table 2

Receptacle model	Plug model							
	W	WS	K	R	RS	S	KE	SE
WS	*	*						
RS				*	*			
S						*		
Y	*	*	*	*	*	*		
SE							*	*
YE							*	*

5.2 Combinations of protective covers and connectors

See table 3.

Table 3

Protective cover model	Plug model								Receptacle model					
	W	WS	K	R	RS	S	KE	SE	WS	RS	S	Y	SE	YE
R				*	*					*				
W	*	*							*					
K			*			*								
KE							*	*			*	*	*	*

5.3 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.

Dimensions are in millimeters.

Table 4

Size		Size of conductors				Outer diameter of cables	
		Standard cables		Fire-resistant cables			
Contact	Barrel	AECMA code	AWG 1)	AECMA code	AWG 1)	min.	max.
20	20	006	20	---	--	0,85	2,1
		004	22	004	22		
		002	24	---	--		
20	18	010	18	---	--	0,85	2,1
		006	20	---	--		
		004	22	004	22		
		002	24	---	--		
16	16	012	16	---	--	1,2	2,7
		010	18	010	18		
		006	20	006	20		
16	14	020	14	---	--	1,2	2,7
		012	16	---	--		
		010	18	010	18		
16	18	010	18	---	--	1,2	2,7
		006	20	006	20		
		004	22	004	22		
12	12	030	12	---	--	1,9	4
		020	14	020	14		

1) AWG = Closest American Wire Gage

NOTE : 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.

5.4 Operating characteristics

5.4.1 Electrical conditions

- Heating : see EN 2591-209
- Rated current : according to standards for contacts
- Insulation resistance at ambient temperature : 5 000 M Ω
- Withstand voltage at sea level : 1 500 V r.m.s.
- Withstand voltage from 15 000 m to 33 000 m : 1 000 V r.m.s.