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Interested committees:

Title: Draft BS EN 3645-002 Aerospace series — Connectors, electrical, circular, scoop-proof, triple start threaded coupling, operating temperature 175 °C or 200 °C continuous — Part 002: Specification of performance and contact arrangements

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Introduction

This draft standard is based on European discussions in which the UK has taken an active part. Your comments on this draft are welcome and will assist in the preparation of the consequent British Standard. Comment is particularly welcome on national, legislative or similar deviations that may be necessary.

Even if this draft standard is not approved by the UK, if it receives the necessary support in Europe, the UK will be obliged to publish the official English Language text unchanged as a British Standard and to withdraw any conflicting standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with reasons) or positive vote on this draft.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	(7)
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/ Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

ASD/TC

Date: 2015-03

EN 3645-002:2015

ASD/TC

Secretariat:

Aerospace series — Connectors, electrical, circular, scoop-proof, triple start threaded coupling, operating temperature 175 °C or 200 °C continuous — Part 002: Specification of performance and contact arrangements

Luft- und Raumfahrt — Elektrische Rundsteckverbinder, kontaktgeschützt, Drei-gangige Gewinde-Schnelkupplung, Betriebstemperatur 175 °C oder 200 °C konstant — Teil 002: Leistungsdaten und Kontaktanordnungen

Série aérospatiale — Connecteurs électriques circulaires, à contacts protégés, à accouplement par filetage, à pas rapide à trois filets, température d'utilisation 175 °C ou 200 °C continu — Partie 002: Spécification de performances et arrangements des contacts

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Foreword

This document (EN 3645-002:2015) 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 December 2015, and conflicting national standards shall be withdrawn at the latest by December 2015.

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 3645-002:2007.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This family of connectors is derived from MIL-DTL-38999/30C series III, with which it is interchangeable and interchangeable.

1 Scope

This European Standard defines the performances and contact arrangements for threaded ring coupling circular connectors, fire-resistant or non fire-resistant, intended for use in a temperature range from – 65 °C to 175 °C or 200 °C continuous.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 3155-008, *Aerospace series — Electrical contacts used in elements of connection — Part 008: Contacts, electrical, male, type A, crimp, class S — Product standard*

EN 3155-009, *Aerospace series — Electrical contacts used in elements of connection — Part 009: Contacts, electrical, female, type A, crimp, class S — Product standard*

EN 3155-010, *Aerospace series — Electrical contacts used in elements of connection — Part 010: Contacts, electrical, triaxial, size 8, male, type D, crimp, class R — Product standard*¹⁾

EN 3155-011, *Aerospace series — Electrical contacts used in elements of connection — Part 011: Contacts, electrical, triaxial, size 8, female, type D, crimp, class R — Product standard*¹⁾

EN 3155-012, *Aerospace series — Electrical contacts used in elements of connection — Part 012: Contacts, electrical, triaxial, size 8, male, type D, solder, class R — Product standard*

EN 3155-013, *Aerospace series — Electrical contacts used in elements of connection — Part 013: Contacts, electrical, triaxial, size 8, female, type D, solder, class R — Product standard*

EN 3155-024, *Aerospace series — Electrical contacts used in elements of connection — Part 024: Contacts, electrical, triaxial, size 8, male, type D, crimp, class S — Product standard*

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

EN 3155-025, Aerospace series — *Electrical contacts used in elements of connection — Part 025: Contacts, electrical, triaxial, size 8, female, type D, crimp, class S — Product standard*

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

EN 3645 (all parts), Aerospace series — *Connectors, electrical, circular, scoop-proof, triple start threaded coupling, operating temperature 175 °C or 200 °C continuous*

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-38999/30C, Connectors, electrical, circular, threaded, plug, lanyard release, fail-safe, removable crimp contacts, sockets, series III, metric²⁾~~

AS39029/106B, *Contacts, electrical connector, socket, crimp-removable (for MIL-DTL-38999 series I, III and IV and MIL-DTL-55302 and AS29600 series A connectors)³⁾*

AS39029/107B, *Contacts, electrical connector, pin, crimp-removable (for MIL-DTL-38999 series I, III and IV, MIL-DTL-55302 and AS29600 series A connectors)³⁾*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 3645-001 apply.

4 Description and codification of class

See Table 1.

2) Published by: DoD National (US) MIL. Department of Defense. <http://www.defenselink.mil/>

3) Published by: SAE National (US) Society of Automotive Engineers. <http://www.sae.org/>

Table 1

Model		Description
Connector	W	Receptacles and plugs, cadmium-plated aluminium alloy, olive drab — 500 h salt spray — Plug with grounding spring — Crimp, removable contacts — Maximum operating temperature 175 °C continuous
	J	Receptacles and plugs, cadmium-plated composite, olive drab — 2 000 h salt spray — Plug with grounding spring — Crimp, removable contacts — 1 500 matings — Maximum operating temperature 175 °C continuous
	V	Receptacles and plugs, zinc-nickel plated composite, non reflective dark — with Zero hexavalent chromium compounds (see table 1 bis list) added by any actor of the Supply Chain or used in the manufacturing process. — The coating shall consist of a zinc nickel alloy that has a minimum of 12 and maximum 20 mass percent nickel, the balance being zinc. — 2 000 h salt spray — Plug with grounding spring — Crimp, removable contacts — 1 500 matings — Maximum operating temperature 175 °C continuous.
	Z	Receptacles and plugs, zinc-nickel plated aluminium alloy, non reflective dark — with Zero hexavalent chromium compounds (see table 1 bis list) added by any actor of the Supply Chain or used in the manufacturing process — The coating shall consist of a zinc nickel alloy that has a minimum of 12 and maximum 20 mass percent nickel, the balance being zinc. — 500 h salt spray — Plug with grounding spring — Crimp, removable contacts — Maximum operating temperature 175 °C continuous
	K	Receptacles and plugs, passivated stainless steel — 500 h salt spray — Plug with grounding spring — Fire-resistant — Crimp, removable contacts — Maximum operating temperature 200 °C continuous
	F	Receptacles and plugs, nickel-plated aluminium alloy — 48 h salt spray — Plug with grounding spring — Crimp, removable contacts — Maximum operating temperature 200 °C continuous
	M	Receptacles and plugs, nickel-plated composite — 2 000 h salt spray — Plug with grounding spring — Crimp, removable contacts — 1 500 matings — Maximum operating temperature 200 °C continuous
	Y	Hermetic receptacle, passivated stainless steel — Solder contacts — Maximum operating temperature 200 °C continuous
	T	Receptacles and plugs, nickel fluorocarbon polymer plated aluminium alloy, non reflective — 500 h salt spray — Plug with grounding spring — Crimp, removable contacts — Maximum operating temperature 175 °C continuous
Protective cover	K	Protective cover for plug in passivated corrosion resisting steel — Maximum operating temperature 200 °C continuous
	F	Protective cover for receptacle or plug in nickel-plated aluminium alloy — Maximum operating temperature 200 °C continuous
	Z	Protective cover for receptacle or plug, zinc-nickel plated aluminium alloy, non-reflective dark — with Zero hexavalent chromium compounds (see table 1 bis list) added by any actor of the Supply Chain or used in the manufacturing process — The coating shall consist of a zinc nickel alloy that has a minimum of 12 and maximum 20 mass percent nickel, the balance being zinc. — Maximum operating temperature 175 °C continuous
	W	Protective cover for receptacle or plug in olive-green cadmium-plated aluminium alloy — Maximum operating temperature 175 °C continuous
	T	Protective cover for receptacle or plug in nickel fluorocarbon polymer plated aluminium alloy, non reflective — Maximum operating temperature 175 °C continuous
Dummy receptacle	K	Dummy receptacle in passivated stainless steel — Maximum operating temperature 200 °C continuous

	F	Dummy receptacle in nickel-plated aluminium alloy — Maximum operating temperature 200 °C continuous
	Z	Dummy receptacle, zinc-nickel plated aluminium alloy, non-reflective dark — with Zero hexavalent chromium compounds (see table 1 bis list) added by any actor of the Supply Chain or used in the manufacturing process — The coating shall consist of a zinc nickel alloy that has a minimum of 12 and maximum 20 mass percent nickel, the balance being zinc. — Maximum operating temperature 175 °C continuous
	W	Dummy receptacle in olive-green cadmium-plated aluminium alloy — Maximum operating temperature 175 °C continuous
	T	Dummy receptacle in nickel fluorocarbon polymer plated aluminium alloy, non reflective — Maximum operating temperature 175 °C continuous

Table 1 bis**Hexavalent chromium compound list**

Substance Name	CAS Number
Acids generated from chromium trioxide and their oligomers. Names of the acids and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid.	7738-94-5 13530-68-2
Chromium trioxide	1333-82-0
Potassium dichromate	7778-50-9
Sodium chromate	7775-11-3
Sodium dichromate	7789-12-0 10588-01-9
Dichromium tris(chromate)	24613-89-6
Pentazinc chromate octahydroxide	49663-84-5
Potassium hydroxyoctaoxodizincatedichromate	11103-86-9
Strontium chromate	7789-06-2

5 Operating conditions

5.1 Combinations of plugs and receptacles

Table 2 shows the combinations marked by (X) 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.

Other combinations may be used subject to the approval of the Design Authority.

Table 2

Receptacle model	Plug model							
	W	F	J	V	M	K	Z	T
W	X	—	X	X	—	—	X	—
F	—	X	—	—	X	—	—	—
J	X	—	X	X	—	—	X	—
V	X	—	X	X	—	—	X	—
M	—	X	—	—	X	—	—	—
Y	—	—	—	—	X	X	—	—
K	—	—	—	—	—	X	—	—
Z	X	—	X	X	—	—	X	—
T	—	—	—	—	—	—	—	X