



BSI Standards Publication

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

Part 004: Receptacle, jam-nut mounting —
Product standard

National foreword

This British Standard is the UK implementation of EN 3646-004:2015. It supersedes BS EN 3646-004:2013 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ACE/6, Aerospace avionic electrical and fibre optic technology.

A list of organizations represented on this committee can be obtained on request to its secretary.

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EUROPEAN STANDARD

EN 3646-004

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Supersedes EN 3646-004:2013

English Version

**Aerospace series - Connectors, electrical, circular, bayonet
coupling, operating temperature 175 °C or 200 °C
continuous - Part 004: Receptacle, jam-nut mounting -
Product standard**

Série aérospatiale - Connecteurs électriques circulaires
à accouplement par baïonnettes, température
d'utilisation 175 °C ou 200 °C continu - Partie 004:
Embase à fixation par écrou - Norme de produit

Luft- und Raumfahrt - Elektrische Rundsteckverbinder
mit Bajonettkupplung, Betriebstemperatur 175 °C oder
200 °C konstant - Teil 004: Fester Steckverbinder mit
Mutterbefestigung - Produktnorm

This European Standard was approved by CEN on 8 June 2015.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 3646-004:2015) 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of an identical text or by endorsement, at the latest by May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

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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1 Scope

This Standard defines the characteristics of the jam-nut mounted receptacles of the family of bayonet coupling circular connectors, intended for use in an operating temperature range of $-65\text{ }^{\circ}\text{C}$ to $175\text{ }^{\circ}\text{C}$ or $200\text{ }^{\circ}\text{C}$ continuous.

It applies to models defined in Table 4.

For contact, filler plugs and rear accessories associated with this receptacle see EN 3646-002. For plugs and protective covers see EN 3646-008 and EN 3646-009 respectively.

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

EN 3646-001, *Aerospace series — Connectors, electrical, circular, bayonet coupling, operating temperature $175\text{ }^{\circ}\text{C}$ or $200\text{ }^{\circ}\text{C}$ continuous — Part 001: Technical specification*

EN 3646-002, *Aerospace series — Connectors, electrical, circular, bayonet coupling, operating temperature $175\text{ }^{\circ}\text{C}$ or $200\text{ }^{\circ}\text{C}$ continuous — Part 002: Specification of performance and contact arrangements*

EN 3646-008, *Aerospace series — Connectors, electrical, circular, bayonet coupling, operating temperature $175\text{ }^{\circ}\text{C}$ or $200\text{ }^{\circ}\text{C}$ continuous — Part 008: Plug — Product standard*

EN 3646-009, *Aerospace series — Connectors, electrical, circular, bayonet coupling, operating temperature $175\text{ }^{\circ}\text{C}$ or $200\text{ }^{\circ}\text{C}$ continuous — Part 009: Protective cover for receptacle — Product standard*

ISO 3161, *Aerospace — UNJ threads — General requirements and limit dimensions*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in EN 3646-001 apply.

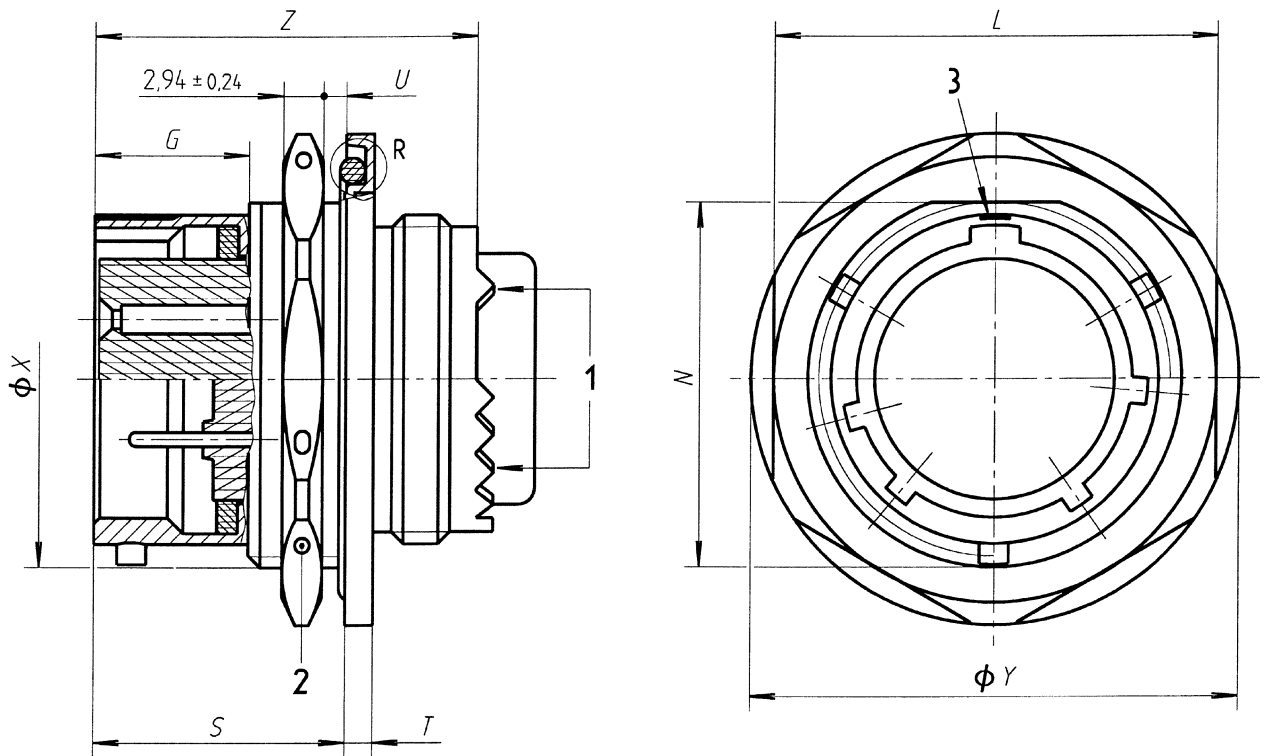
4 Required characteristics

4.1 Dimensions and mass

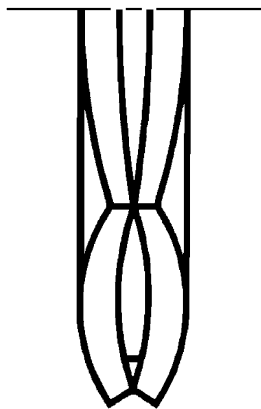
See Figure 1 and Table 1.

Dimensions and tolerances are in millimetres, they apply after surface treatment.

Interface mating and rear dimensions, see EN 3646-001.

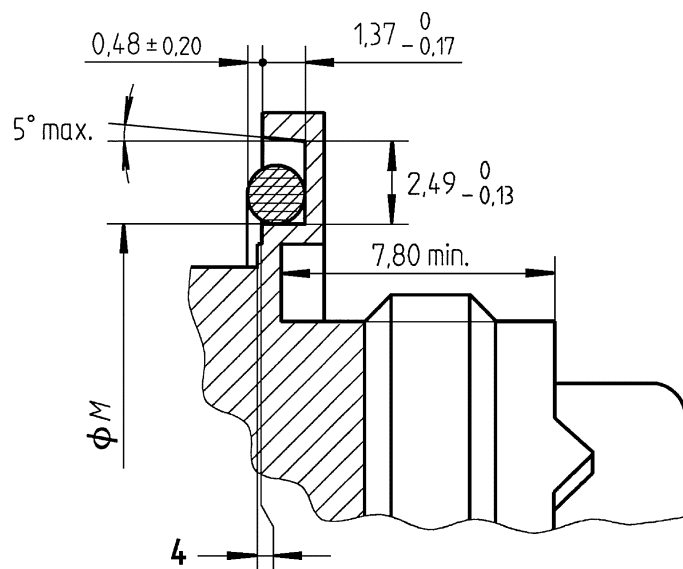


P
Optional design



Slot with close edges
for the nut

Detail R



Key

- | | | | |
|---|--|---|----------------------------------|
| 1 | According to variant | 3 | Polarizing strip optional colour |
| 2 | Three equally spaced holes diameter 1 min.
for locking wire (see option detail P) | 4 | 0,13 max. to end of the flat |

Figure 1 — Jam-nut mounted receptacle

Table 1

Housing size	<i>G</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>S</i>	<i>T</i>	<i>U</i>	<i>X</i>	<i>Y</i>	<i>Z</i>	Mass ^b
	min.	max.	min.	0 -0,25	max.			Thread ^a UNJEF-2A	max.	max.	g max.
08	9,00	19,48	15,34	13,45	17,95	2,87 1,90	4,75 1,57	0,5625-24	23,30	25,90	6
10		22,66	18,52	16,64				0,6875-24	26,60		8
12		27,41	23,25	20,78				0,8750-20	31,35		11
14		30,61	26,45	23,93				1,0000-20	34,65		16
16		33,76	29,62	27,08				1,1250-18	37,70		21
18		36,96	32,80	30,25				1,2500-18	40,90		23
20	9,50	40,11	37,55	33,43	19,61	3,76 1,90	6,35	1,3750-18	45,65	27,50	29
22		43,31	40,75	36,60			1,57	1,5000-18	48,85		38
24		46,46	43,92	39,78			20,40	5,56 1,57	1,6250-18		52,00

^a See ISO 3161.
^b Mass without accessory and without contacts.

4.2 Tightening torque of attachment nut

See Table 2.

Table 2

Housing size	Torque N.m ± 10 %
08	3,35
10	4,10
12	8,90
14	9,55
16	10,15
18	10,95
20	11,65
22	12,30
24	13

4.3 Panel cut-out

Recommended panel cut-out dimensions: see Figure 2 and Table 3.

Dimensions and tolerances are in millimetres.

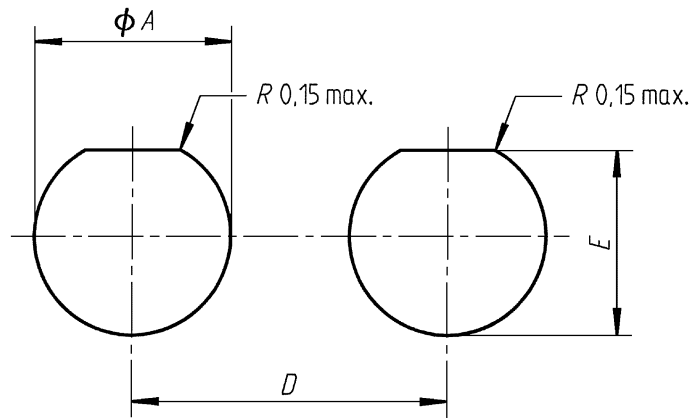


Figure 2

Table 3

Housing size	A $+0,25$ 0	D min.	E $+0,25$ 0
08	14,40	32	13,48
10	17,58	35	16,66
12	22,60	38	20,80
14	25,52	41	23,95
16	28,70	45	27,10
18	31,87	47	30,27
20	35,05	51	33,45
22	38,22	53	36,62
24	41,40	57	39,80

4.4 Material and surface treatment

See Table 4.

4.5 Main general characteristics

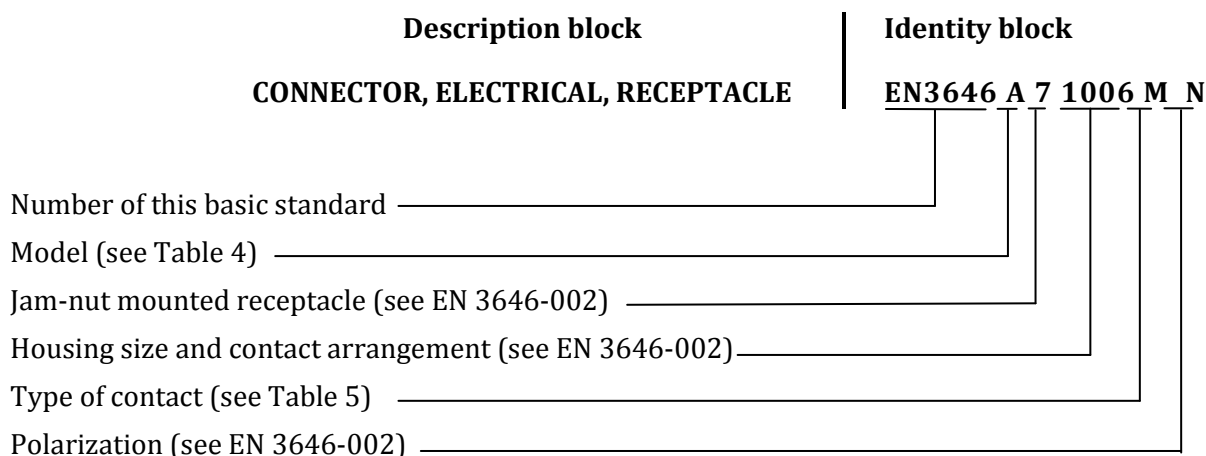
See EN 3646-002.

4.6 Possible combinations of plugs and receptacles

See EN 3646-002.

5 Designation

EXAMPLE



NOTE If necessary, the code I9005 shall be placed between the description block and the identity block.

Table 4 — Connectors models

Model	Description
A	Sealed receptacles with housing (shell) in black anodized aluminium alloy with contacts - With three teeth at the rear of the connector - Maximum operating temperature 200 °C continuous
RS	Sealed receptacle with housing (shell) in nickel-plated aluminium alloy - Crimped contacts - With three teeth at the rear of the connector - Maximum operating temperature 200 °C continuous
WS	Sealed receptacles with housing (shell) in olive green cadmium plated aluminium alloy - Resistance to salt spray 500 h - Crimped contacts - With teeth over the entire periphery at the rear of the connector - Maximum operating temperature 175 °C continuous

Table 5 — Types of contacts and delivery

Contacts	Delivered without contacts	Delivered with contact standard barrels ^a EN3155-xxx2020 EN3155-xxx1616 EN3155-xxx1212	Delivered with specific contact size 20 with special barrel ^a EN3155-xxx2018 ^b
Male	A	M	C
Female	B	F	D
^a See EN 3155-002. ^b Only affects size 20 contact arrangements.			

6 Marking

6.1 General

Unless there are other specific contractual requirements, the marking shall include.

6.2 Marking on the product

- the manufacturer's part number corresponding to the identity block as defined in Clause 5, except for the 13th or 14th character which shall correspond to Table 6;
- the date of manufacture (year, week);
- the manufacturer's name or trade mark.

Table 6

13th or 14th character of the identity block	
for A, M, C ^a	M
for B, F, D ^a	F
^a See Table 5.	

6.3 Marking on the individual packaging

- the EN reference corresponding to the purchasing order;
- the manufacturer's part number corresponding to the above EN reference;
- the date of manufacture (year, week);
- the manufacturer's name of trade mark.

7 Technical specification

See EN 3646-001.

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