

BS EN 3155-066:2013



BSI Standards Publication

# Aerospace series — Electrical contacts used in elements of connection

Part 066: Contacts, electrical, female, type A, crimp, class S, size 8 — Product standard

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**National foreword**

This British Standard is the UK implementation of EN 3155-066:2013. It supersedes BS EN 3155-066:2006 which is withdrawn.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

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English Version

**Aerospace series - Electrical contacts used in elements of connection - Part 066: Contacts, electrical, female, type A, crimp, class S, size 8 - Product standard**

Série aérospatiale - Contacts électriques utilisés dans les organes de connexion - Partie 066 : Contacts électriques, femelles, type A, à sertir, classe S, taille 8 - Norme de produit

Luft- und Raumfahrt - Elektrische Kontakte zur Verwendung in Verbindungselementen - Teil 066: Elektrische Buchsenkontakte, Typ A, crimpbar, Klasse S, Größe 8 - Produktnorm

This European Standard was approved by CEN on 28 September 2013.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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## Foreword

This document (EN 3155-066:2013) 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of an identical text or by endorsement, at the latest by June 2014, and conflicting national standards shall be withdrawn at the latest by June 2014.

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## **Introduction**

This standard specifies the characteristics of female crimp contacts.

## 1 Scope

This European Standard specifies the required characteristics, tests and tooling applicable to female electrical contacts, type A, crimp, class S, size 8, used in elements of connection according to EN 3155-002.

It shall be used together with EN 3155-001.

The associated male contacts are defined in EN 3155-065.

## 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 2083, *Aerospace series — Copper or copper alloy conductors for electrical cables — Product standard*

EN 2591 (all parts), *Aerospace series — Element of electrical and optical connection — Test methods*

EN 3155-001, *Aerospace series — Electrical contacts used in elements of connection — Part 001: Technical specification*

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

EN 3155-065, *Aerospace series — Electrical contacts used in elements of connection — Part 065: Contacts, electrical, male, type A, crimp, class S, size 8 — Product standard*

EN 4530-004, *Aerospace series — Electrical contacts used in elements of connection — Part 004: Sealing sleeve — Product standard*<sup>1)</sup>

ISO 8843, *Aircraft — Crimp-removable contacts for electrical connectors — Identification system*

MIL-C-22520/23, *Crimping tools, terminal, hand or power actuated, wire termination: Pneumatic tool for wire barrel sizes 0000 through 8*<sup>2)</sup>

MIL-DTL-22520G, *Crimping tools, wire termination, general specification for*<sup>2)</sup>

MIL-I-81969B, *Installing and removal tools, connector electrical contacts, type II, class 2, composition C*<sup>2)</sup>

MIL-I-81969/14C, *Installing and removal tools, connector electrical contact, type III, class 2, composition B*<sup>2)</sup>

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 3155-001 apply.

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

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

## 4 Required characteristics

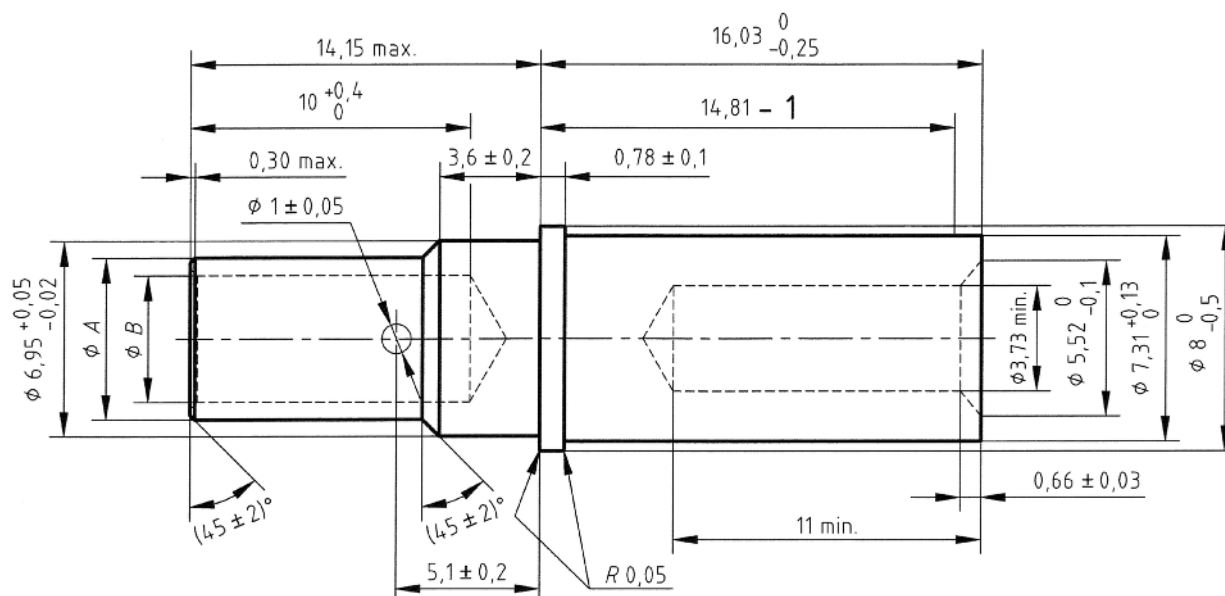
### 4.1 Specific characteristics

Type A contacts are for general application and class S corresponds to an operating temperature range from -65 °C to 200 °C.

### 4.2 Dimensions and mass

See Figure 1 and Table 1.

Dimensions and tolerances are given in millimetres and apply after surface treatment.



### Key

- 1 Point of which a square ended gauge pin of the same diameter as the mating contact first engages the female contact spring member.

Figure 1

Table 1

Size		<i>A</i>	<i>B</i>	Mass g max.
Contact	Barrel			
08	08	5,65 5,75	4,50 4,60	5,2
	10	5,00 5,10	3,45 3,55	

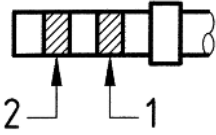


### 4.3 Marking by colour code

See Table 2.

Table 2

Size		Two bands according to ISO 8843	
		Band 1	Band 2
08	08	Red	Red
08	10	Red	White



### 4.4 Material, surface treatment

Body material: copper alloy.

Surface treatment: gold on appropriate undercoat.

### 4.5 Permissible cables

See Table 3.

Table 3

Size		Size of conductors			Rated test current A
Contact	Barrel	ASD code	Section mm <sup>2</sup>	AWG <sup>a</sup>	
08	08	090	8,98	8	46
08	10	051 or 050	5,00	10	33

<sup>a</sup> AWG = Closest American Wire Gauge.

### 4.6 Tooling

#### 4.6.1 Crimping tools

Conform to MIL-DTL 22520, see Table 4.

The qualification selector number used for crimping copper or copper alloy conductors in cables EN 2083 are indicated in Table 4.

It is the responsibility of the user if the parameters in Table 4 are changed for service use.

Table 4

Contact		Cable size		Tools M22520/23-01	
Contact size	Barrel size	ASD code	AWG <sup>a</sup>	Die set	Locator
08	08	090	8	M22520/23-02	b
08	10	051 or 050	10	b	b

<sup>a</sup> AWG = Closest American Wire Gauge.

<sup>b</sup> Manufacturers shall use recognised industry tooling locator as sanctioned by the qualification authority mandated body.

#### 4.6.2 Insertion/Extraction tools

Conform to MIL-I-81969.

See Table 5.

Table 5

Size		Insertion tools	Extraction tools	
Contact	Barrel		Wired contact	Unwired contact
08	08	M81969/14-06	M81969/14-06	Not applicable
08	10	M81969/14-06	M81969/14-06	Not applicable

#### 4.7 Cable stripping

See Table 6.

Table 6

Size		Stripped length of cable	
Contact	Barrel	mm	
		min.	max.
08	08	9,7	10,7
08	10	9,7	10,7

#### 4.8 Tests

See Table 7.

Table 7

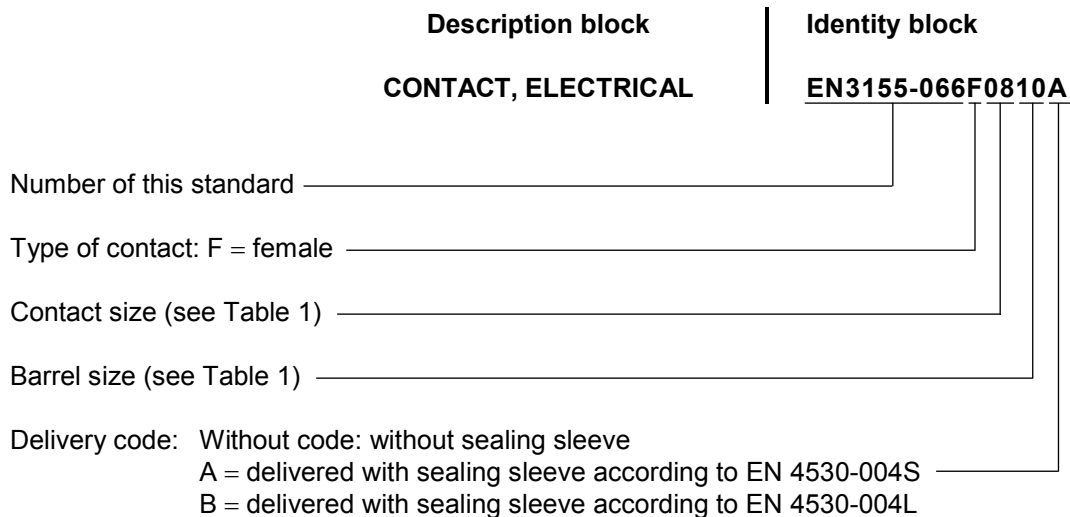
EN 2591-	Designation of the test	Not applicable	Applicable	
			As per EN 3155-001	Remarks
101	Visual examination		X	—
102	Examination of dimensions and mass		X	—
201	Contact resistance - low level	X		—
202	Contact resistance at rated current		X	—
204	Discontinuity of contacts in the microsecond range		X	—
210	Electrical overload		X	—
220	Contact/conductor joint ageing by current and temperature cycling	X		—
301	Endurance at temperature		X	$T = (200 \pm 2) ^\circ\text{C}$ Duration: 1 000 h
305	Rapid change of temperature		X	$T_A = (200 \pm 2) ^\circ\text{C}$ $T_B = (- 65 \pm 2) ^\circ\text{C}$
307	Salt mist		X	—
315	Fluid resistance	X		—
319	Gastightness of solderless wrapped connections	X		—
402	Shock		X	—
403	Sinusoidal and random vibration		X	$T = (200 \pm 2) ^\circ\text{C}$
406	Mechanical endurance		X	—
415	Test probe damage (female contacts)		X	—
416	Contact bending strength	X		—
417	Tensile strength (crimped connection)		X	For size 0810: 700 N For size 0808: 1 080 N
418	Gauge insertion/extraction forces (female contacts)		X	—
424	Stripping force, solderless wrapped connections	X		—
425	Unwrapping, solderless wrapped connections	X		—
501	Soft solderability	X		—
502	Restricted entry	X		—
503	Contact deformation after crimping		X	—
507	Plating porosity		X	—
508	Measurement of thickness of coating on contacts		X	The measured thickness shall be recorded.
509	Adhesion of coating on contacts		X	—
513	Magnetic permeability		X	$\leq 2$
514	Solderability of contacts with self-contained solder and flux	X		—

#### 4.9 Gauges

See EN 3155-001.

### 5 Designation

EXAMPLE



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

### 6 Marking

See EN 3155-001.

### 7 Technical specification

See EN 3155-001.



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