SLOVENSKI STANDARD
SIST EN 4652-221:2018

01-februar-2018

Aeronavtika - Konektorji, koaksialni, radiofrekvenčni - 221. del: Tip 2, vmesnik TNC - Izvedba s stisljivimi priključki - Pravokotni vtič - Standard za proizvod

Aerospace series - Connectors, coaxial, radio frequency - Part 221: Type 2, TNC interface - Crimp version - Right angle plug - Product standard

Luft- und Raumfahrt - Koaxiale Hochfrequenz-Steckverbinder - Teil 211: Typ 2, TNC-Schnittstelle - Crimpverbindung - freier Steckverbinder - 90° abgewinkelt - Produktnorm

Série aérospatiale - Connecteurs coaxiaux pour radio fréquences - Partie 221 : Type 2, interface TNC - version à sertir - fiche coudée - Norme de produit

Ta slovenski standard je istoveten z: **EN 4652-221:2017**

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31.220.10	Vtiči in vtičnice, konektorji	Plug-and-socket devices. Connectors
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

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EUROPEAN STANDARD

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EN 4652-221

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ICS 49.060

English Version

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This European Standard was approved by CEN on 14 August 2017.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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Contents

European foreword

This document (EN 4652-221:2017) 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of an identical text or by endorsement, at the latest by May 2018, and conflicting national standards shall be withdrawn at the latest by May 2018.

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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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the characteristics of screwed on coupling (TNC interface) coaxial right angle plugs – 50 ohms. The cable to connector assembly is a crimp technology.

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*, *Aerospace series — Elements of electrical and optical connection — Test methods*

EN 2812, *Aerospace series — Stripping of electric cables*

EN 4652-001, *Aerospace series — Connectors, coaxial, radio frequency — Part 001: Technical specification*

EN 4652-222, *Aerospace series — Connectors, coaxial, radio frequency — Part 222: Type 2, TNC interface — Crimp version — Square flange receptacle — Product standard* 1)

EN 9133, *Aerospace series — Quality Management Systems — Qualification Procedure for Aerospace Standard Products*

TR 6058, *Aerospace series — Cable code identification list* 2)

3 Required characteristics

— The connection technology shall comply to all required tests described in Clause 4.

— All interface shall comply to EN 4652-001.

— Holes for lockwire shall exist in case of no self-locking device on the product.

— Water ingress resistance is required in mated conditions for all cable groups.

— Water ingress resistance is also required in unmated conditions for cable group A.

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* All parts quoted in this European Standard.

1) Published as ASD-STAN Prestandard at the date of publication of this European Standard. (www.asd-stan.org).

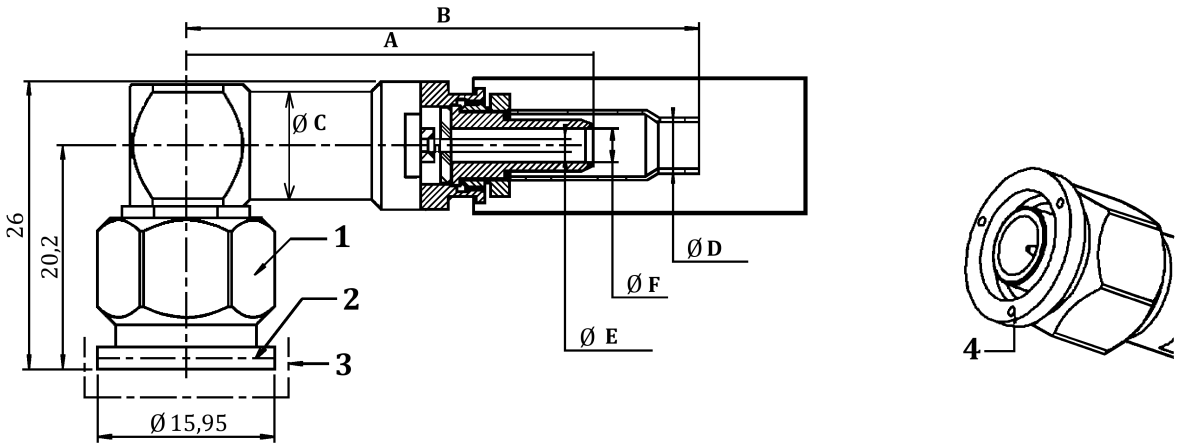
2) Published as ASD-STAN Technical Report at the date of publication of this European Standard. (www.asd-stan.org).

3.1 Configuration, dimension and mass

Mass without heatshrink tubing.

See Figure 1 and Table 1.

Dimensions in millimetres



Key

1 14/flats
2 Marking axis
3 Protective cap
4 3 holes Ø 0,95

Figure 1 — TNC right angle plug

Marking: see Clause 7.

Table 1 — TNC right angle plug dimensions and mass

Cable code (see TR 6058)	**Cable group**	*A* max.	*B* max.	*ØC* max.	*ØD*	*ØE*	*ØF*	**Interface style** (according to EN 4652-001)	**Mass** g
WM	C	36,8	46,3	11,45	4,2	1,15	3	B	30,1

3.2 Materials and finish

Center contact (front active part)..... : Copper alloy gold plated over nickel undercoat

Ferrule (if existing)..... : Copper alloy

Insulators..... : PTFE

Seals ..... : Silicone rubber or fluoride

Heat shrink tube ..... : Polyolefin

Body of connector, coupling nut, rear screw materials of these parts shall have mechanical and electrical characteristics consistent with the requirements of this product standard.

3.3 Temperature

Operating temperature range from – 65 °C to 135 °C (polyolefin temperature limited).

3.4 Electrical characteristics

Impedance ..... : 50 Ω

Maximum operating frequency ..... : 6 GHz

VSWR ..... : See Table 2

Table 2 — Electrical characteristics

Frequency MHz	**VSWR** max.
150	1,15
1 200	1,20
6 000	1,35

The VSWR requirement is applicable for connector alone.

Insertion loss ..... : 0,1 $\sqrt{f}$ dB max. f in GHz

Contact resistance (initial central contact) ..... : 1,5 mΩ max.

Insulation resistance ..... : 5 000 MΩ min.

Maximum operating voltage ..... : 1 000 V rms (at see level)

3.5 Mechanical characteristics

Tightening torque of coupling nut ..... : 2,6 Nm ± 0,3 Nm

Force to engage or disengage ..... : 0,23 Nm max.

Tightening torque of back nut. ..... : 3 Nm ≤ T ≤ 3,7 Nm

Service life ..... : 500 cycles

Retention of centre contact ..... : 27 N

Retention of cable ..... : See Table 3

Table 3 — Retention of cable

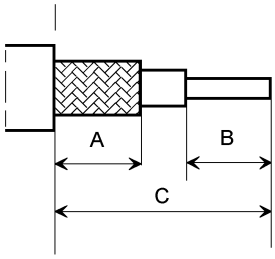
Cable code (see TR 6058)	**Retention of cable**
WM	140 N min.

3.6 Admissible cables, tools and stripping lengths

3.6.1 Admissible cables, tools

The connector shall accept the cables listed in Table 4 with associated tools.

Table 4 — Admissible cables and tools

Cable code (see TR 6058)	Cable group	Stripping length mm	Tools for crimping	
			Center contact	Ferrule
WM	C		Tool M22520/1-01 Locator M22520/1-13 (red) Selection 7	Tool M22520/5-01 Die M22520/5-05 Hex = A

3.6.2 Stripping lengths

The cables shall be stripped according to lengths in Table 5.

Table 5 — Stripping lengths, cable Group C

A		*B*		*C*	
min. mm	max. mm	min. mm	max. mm	min. mm	max. mm
8,8	9,2	8,8	9,2	22,8	23,2

For stripping, see EN 2812.