

BS EN 61754-4:2013

Incorporating corrigendum January 2014



BSI Standards Publication

Fibre optic interconnecting devices and passive components — Fibre optic connector interfaces

Part 4: Type SC connector family

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National foreword

This British Standard is the UK implementation of EN 61754-4:2013. It is identical to IEC 61754-4:2013, incorporating corrigendum January 2014. It supersedes BS EN 61754-4:1997 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/2, Fibre optic interconnecting devices and passive components.

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

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English version

**Fibre optic interconnecting devices and passive components -
Fibre optic connector interfaces -
Part 4: Type SC connector family
(IEC 61754-4:2013)**

Dispositifs d'interconnexion et composants
passifs à fibres optiques -
Interfaces de connecteurs à fibres
optiques
(CEI 61754-4:2013)

Lichtwellenleiter -
Verbindungselemente und passive
Bauteile - Steckgesichter von
Lichtwellenleiter-Steckverbindern -
Teil 4: Steckverbinderfamilie der Bauart
SC (IEC 61754-4:2013)

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Foreword

The text of document 86B/3620/FDIS, future edition 2 of IEC 61754-4, prepared by subcommittee 86B "Fibre optic interconnecting devices and passive components" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61754-4:2013.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2014-05-26
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2014-08-26

This document supersedes EN 61754-4:1997 + A1:1999 + A2:2001.

EN 61754-4:2013 includes the following significant technical changes with respect to EN 61754-4:1997 + A1:1999 + A2:2001:

- a) addition of the duplex plug and adaptor connector interface;
- b) reconsideration of the overall content of the standard.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

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The text of the International Standard IEC 61754-4:2013 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61755-3-1	-	Fibre optic interconnecting devices and passive components -Fibre optic connector optical interfaces - Part 3-1:Connectors with 2,5 mm and 1,25 mm diameter cylindrical full zirconia ferrule, non-angled single mode non-dispersion shifted fibres	prEN 61755-3-1 ¹⁾	-
IEC 61755-3-2	-	Fibre optic interconnecting devices and passive components -Fibre optic connector optical interfaces - Part 3-2: Connectors with 2,5 mm and 1,25 mm diameter cylindrical full zirconia ferrule, angled single mode non-dispersion shifted fibres	prEN 61755-3-2 ¹⁾	-

¹⁾ At draft stage

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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – FIBRE OPTIC CONNECTOR INTERFACES –

Part 4: Type SC connector family

1 Scope

This part of IEC 61754 defines the standard interface dimensions for type SC family of connectors.

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.

IEC 61755-3-1, *Fibre optic connector optical interfaces – Part 3-1: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical full zirconia PC ferrule, single mode fibre*

IEC 61755-3-2, *Fibre optic connector optical interfaces – Part 3-2: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical full zirconia ferrules for 8 degrees angled-PC single mode fibres*

3 Description

The parent connector for the type SC connector family is a single position plug connector which is characterized by a 2,5 mm nominal ferrule diameter. It includes a push-pull coupling mechanism which is spring loaded relative to the ferrule in the direction of the optical axis. The plug has a single male key which may be used to orient and limit the relative position between the connector and the component to which it is mated. The optical alignment mechanism of the connector is of a resilient sleeve style.

This part of IEC 61754 defines the standard interface dimensions of active device receptacles for the type SC connectors. The receptacles are used to retain the connector plug and mechanically maintain the optical datum target of the plugs at a defined position within the receptacle housings.

4 Interfaces

This standard contains the following standard interfaces:

Interface IEC 61754-4-1: simplex plug connector interface – push/pull, PC

Interface IEC 61754-4-2: simplex adaptor connector interface – push/pull

Interface IEC 61754-4-3: duplex plug connector interface – push/pull, PC

Interface IEC 61754-4-4: duplex adaptor connector interface – push/pull

Interface IEC 61754-4-5: simplex plug connector interface – push/pull, APC 8°

Interface IEC 61754-4-6: duplex plug connector interface – push/pull, APC 8°

Interface IEC 61754-4-X1: simplex active device receptacle interface – for APC 8° connector plug

Interface IEC 61754-4-X2: simplex active device receptacle interface – for PC connector plug

Interface IEC 61754-4-X3: duplex active device receptacle interface – for APC 8° connector plug

Interface IEC 61754-4-X4: duplex active device receptacle interface – for PC connector plug

The plug of interface IEC 61754-4-1 and interface IEC 61754-4-3 has a ferrule with a spherically polished endface (PC). The plug of interface IEC 61754-4-5 and interface IEC 61754-4-6 has a ferrule with a spherically polished angled endface which may take any of the angled PC (APC) forms and realizes a physical contact.

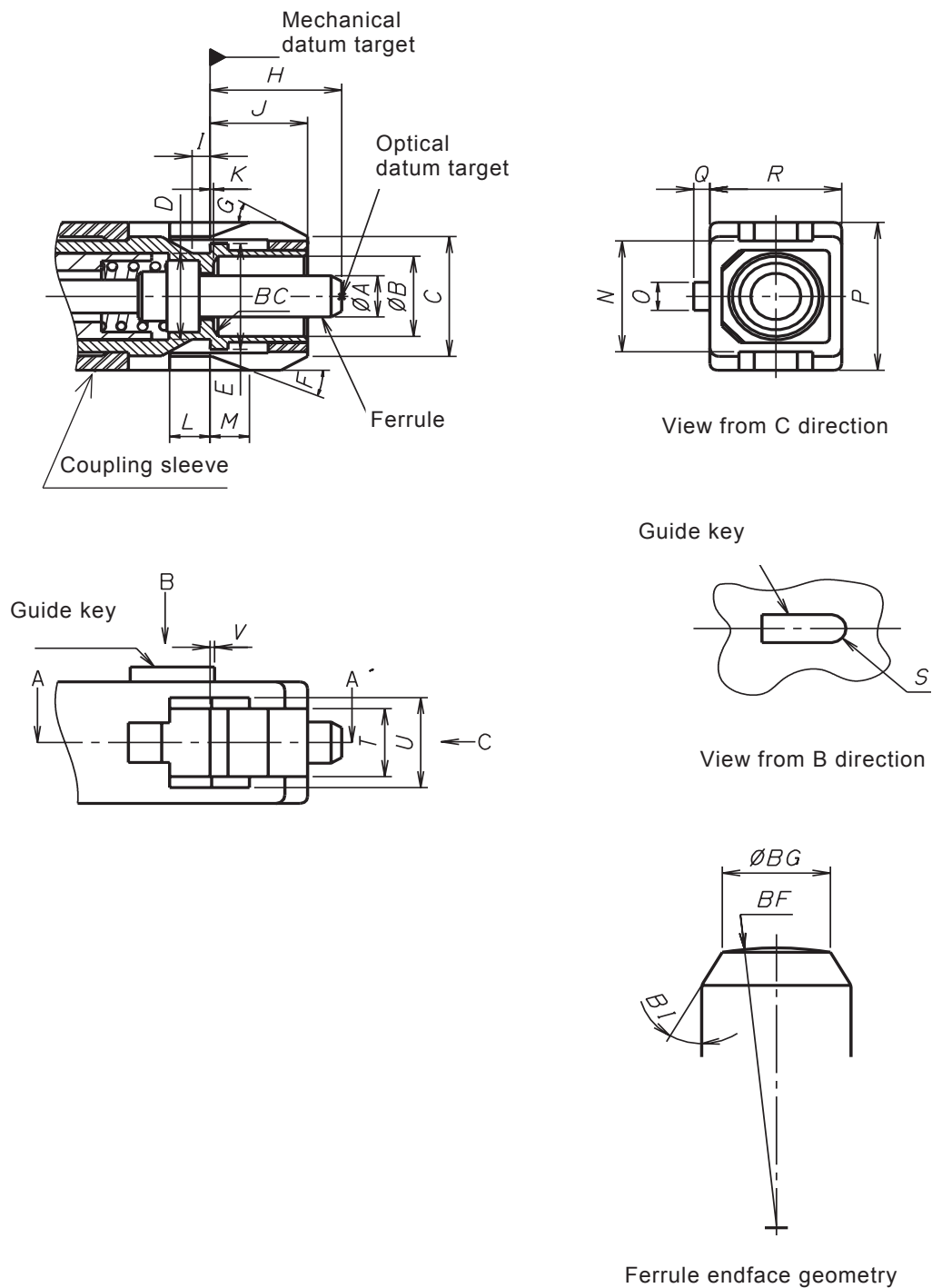
Table 1 shows the intermateability of interface.

Table 1 – Intermateability of interface

Plugs	Adaptors/active device receptacles interfaces					
	61754-4-2	61754-4-4	61754-4-X1	61754-4-X2	61754-4-X3	61754-4-X4
61754-4-1	Mate	Mate	Not mate	Mate	Not mate	Mate
61754-4-3	Not mate	Mate	Not mate	Not mate	Not mate	Mate
61754-4-5	Mate	Mate	Mate	Not mate	Mate	Not mate
61754-4-8	Not mate	Mate	Not mate	Not mate	Mate	Not mate

Figure 1 is an example of a simplex plug connector interface. Table 2 gives dimensions of the simplex plug connector interface and Table 3 gives the grade of the simplex PC plug connector interface.

A chamfer or radius is allowed to a maximum depth of 1,2 mm from the ferrule endface.



IEC 1646/13

Figure 1 – Simplex PC plug connector interface

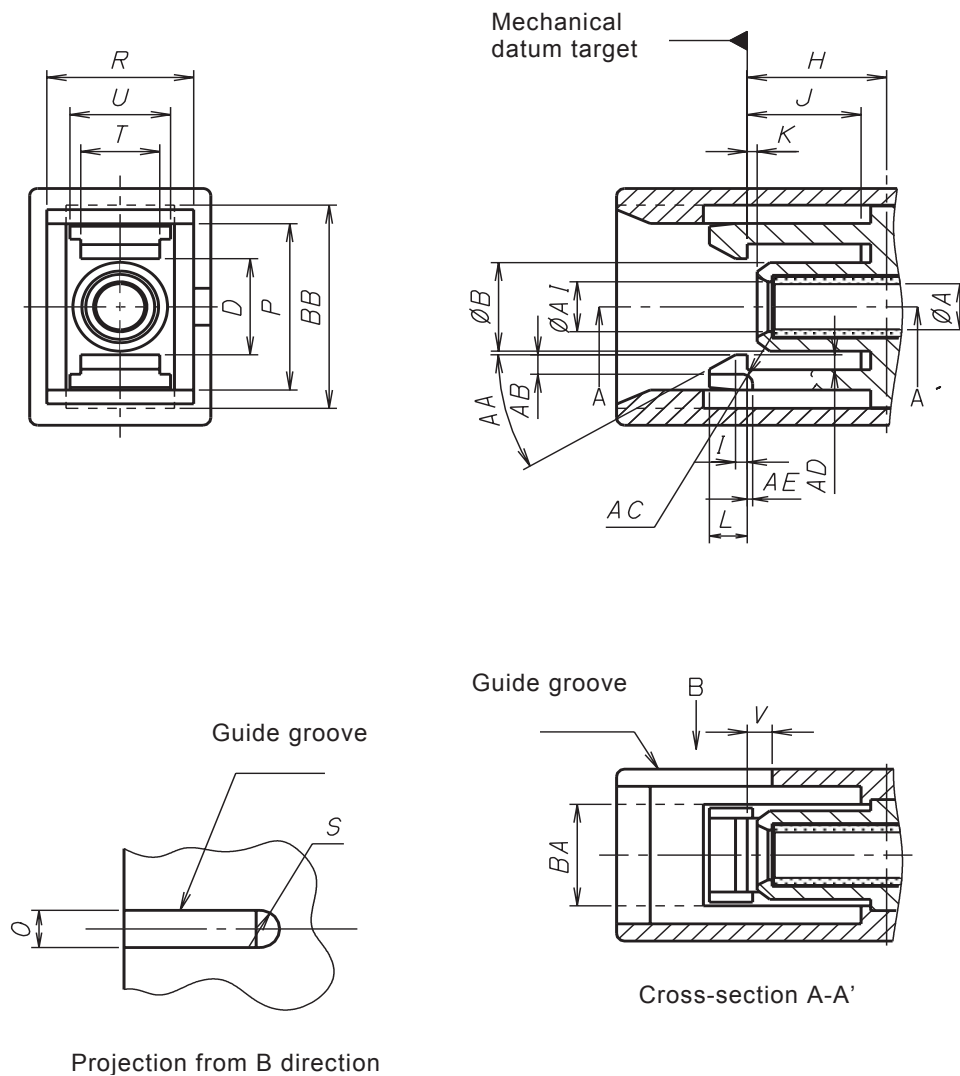
Table 2 – Dimensions of the simplex PC plug connector interface

Reference	Dimensions		Remarks
	Minimum	Maximum	
<i>A</i>		2,500 mm	See Table 3
<i>B</i>	4,8 mm	4,9 mm	
<i>C</i>	6,8 mm	7,4 mm	
<i>D</i>	4,9 mm	5,3 mm	
<i>E</i>	6,7 mm	6,8 mm	
<i>F</i>	19°	23°	
<i>G</i>	25°	35°	
<i>H</i>	7,15 mm	7,5 mm	^a
<i>I</i>	0,8 mm	1,2 mm	
<i>J</i>	5,3 mm	5,5 mm	
<i>K</i>	–	0,05 mm	
<i>L</i>	2,11 mm	–	^b
<i>M</i>	2,0 mm	2,8 mm	^b and ^c
<i>N</i>	6,6 mm	6,8 mm	
<i>O</i>	1,6 mm	1,8 mm	
<i>P</i>	8,89 mm	8,99 mm	
<i>Q</i>	0,8 mm	1,0 mm	
<i>R</i>	7,29 mm	7,39 mm	
<i>S</i>	0,8 mm	0,90 mm	Radius
<i>T</i>	4,05 mm	4,15 mm	
<i>U</i>	5,4 mm	5,6 mm	
<i>V</i>	0 mm	0,5 mm	^b
<i>BC</i>	0°	0,5°	45° chamfer
<i>BF</i>	5 mm	30 mm	Radius, ^d
<i>BG</i>	0,8 mm	–	Diameter ^e
<i>BI</i>	25°	35°	Angle
^a Dimension <i>H</i> is given for plug endface when not mated. It is movable by a certain axial compression force, with direct contacting endfaces, and therefore dimension <i>H</i> is variable. Ferrule compression force shall be 7,8 N to 11,8 N when the dimension <i>H</i> is 7 mm ± 0,1 mm. ^b Coupling sleeve shall be movable toward right and left direction. These dimensions are given when the coupling sleeve is moved in its most right-direction position. ^c Dimension <i>M</i> shall be below 0 mm, when a coupling sleeve is moved to its most left-direction position. ^d Dome eccentricity of the spherical polished endface shall be less than 70 µm. ^e See IEC 61755-3-1.			

Table 3 – Grade

Grade	Dimensions mm		Remarks
	A		
	Minimum	Maximum	
A	—	—	a
B	—	—	a
C	—	—	a
D	—	—	a
Am	2,497	2,500	b
Bm	2,497	2,500	b
Cm	2,494	2,500	b
^a See IEC 61755-3-1.			
^b See IEC 61755-6-1.			

Figure 2 is an example of a simplex adaptor connector interface. Table 4 gives dimensions of the simplex adaptor connector interface and Table 5 gives the grade of the simplex adaptor connector interface.



IEC 1647/13

Figure 2 – Simplex adaptor connector interface