BS EN 61754-29:2012

BSI Standards Publication

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

Part 29: Type BLINK connector series

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National foreword

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

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Amendments issued since publication

Date	Text affected

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English version

Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces - Part 29: Type BLINK connector series

(IEC 61754-29:2012)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Interfaces de connecteurs pour fibres optiques - Partie 29: Série de connecteurs de type BLINK
(CEI 61754-29:2012)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Steckgesichter von Lichtwellenleiter-Steckverbindern - Teil 29: Steckverbinderfamilie der Bauart BLINK
(IEC 61754-29:2012)

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European Committee for Electrotechnical Standardization
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Foreword

The text of document 86B/3369/FDIS, future edition 1 of IEC 61754-29, prepared by SC 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 61754-29:2012.

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)	2013-02-24
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-05-24

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The text of the International Standard IEC 61754-29:2012 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.

Publication	Year	Title	EN/HD	Year
IEC 60794-2-50	-	Optical fibre cables - Part 2-50: Indoor cables - Family specification for simplex and duplex cables for use in terminated cable assemblies	EN 60794-2-50	-
IEC 61754-1	-	Fibre optic connector interfaces - Part 1: General and guidance	EN 61754-1	-
IEC 61755-3	Series	Fibre optic interconnecting devices and passive components - Fibre optic connector optical interfaces	EN 61755-3	Series

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 29: Type BLINK connector series

FOREWORD

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International Standard IEC 61754-29 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

The text of this standard is based on the following documents:

FDIS	Report on voting
86B/3369/FDIS	86B/3416/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning IEC 61754-29.

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

Part 29: Type BLINK connector series

1 Scope

This part of IEC 61754 defines the standard interface dimensions for the type BLINK series 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 60794-2-50, *Optical fibre cables – Part 2-50: Indoor cables – Family specification for simplex and duplex cables for use in terminated cable assemblies*

IEC 61754-1, *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 1: General and guidance*

IEC 61755-3 (all parts), *Fibre optic interconnecting devices and passive components – Fibre optic connector optical interfaces*

3 Description

The parent connector for the type BLINK connector family is a single position plug connector set of plug/adaptor/plug configuration which is characterized by a 1,25 mm nominal diameter ferrule. The connector includes a ferrule spring loaded in the direction of the optical axis. The optical alignment mechanism of the connection is of a resilient sleeve style.

4 Interfaces

The general requirements defined in IEC 61754-1 are valid for this standard.

Clauses 4 to 8 define the standard interfaces for the type BLINK connector series. The standard interfaces contained in this document are listed in the following:

INTERFACE 29-1: Simplex Plug Connector Interface – PC
INTERFACE 29-2: Simplex Adaptor Interface
INTERFACE 29-3: Duplex Plug Connector Interface – PC
INTERFACE 29-4: Duplex Adaptor Interface
INTERFACE 29-5: Simplex Plug Connector Interface – APC 8°
INTERFACE 29-6: Duplex Plug Connector Interface – APC 8°

The following plugs and adaptors shown in Table 1 and Table 2 are intermateable.

Table 1 – Intermateability between plugs and adaptors within the IEC 61754-29 series

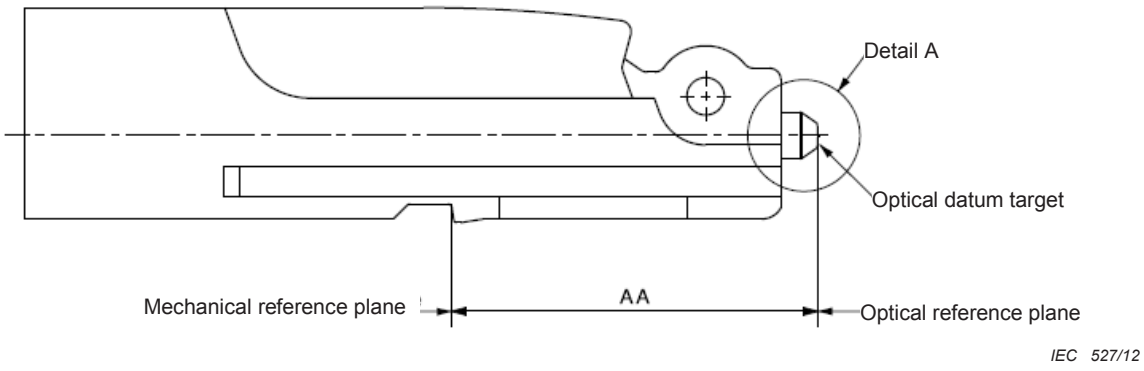
Plugs (polishing condition)	Adaptor Interfaces	
	61754-29-2	61754-29-4
Interface 61754-29-1	mate	mate
Interface 61754-29-3	Not mate	mate
Interface 61754-29-5	mate	mate
Interface 61754-29-6	Not mate	mate

Table 2 – Intermateability between plugs within the IEC 61754-29 series

Plugs (polishing condition)	Plugs (polishing condition)			
	61754-29-1	61754-29-3	61754-29-5	61754-29-6
61754-29-1	mate	mate	Not mate	Not mate
61754-29-3	mate	mate	Not mate	Not mate
61754-29-5	Not mate	Not mate	mate	mate
61754-29-6	Not mate	Not mate	mate	mate

5 Plug optical interface

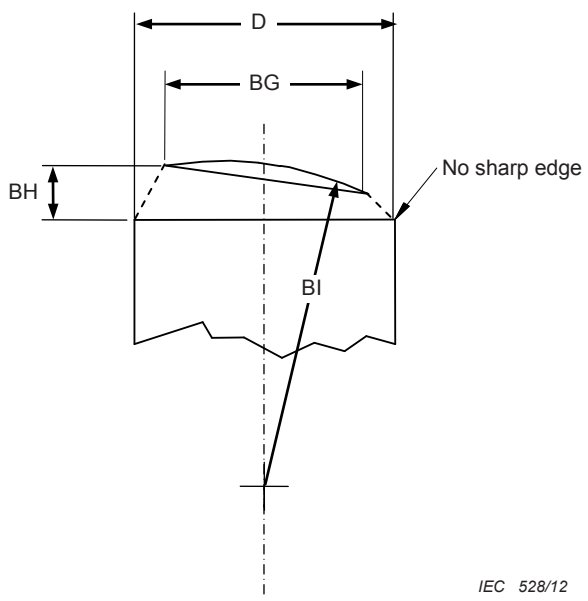
Plug optical interfaces are sown in Figure 1, Figure 2 and Figure 3.



NOTE Shown without shutter to make features more visible (see Figure 4c) for shutter details).

Figure 1 – Plug connector interface reference planes

The plug of IEC 61754-29-1 and IEC 61754-29-3 has a ferrule with a spherically polished endface, and realizes physical contact (PC). The plug of IEC 61754-29-5 and IEC 61754-29-6 has a ferrule with a spherically angled polished endface, and realizes angled physical contact (APC).



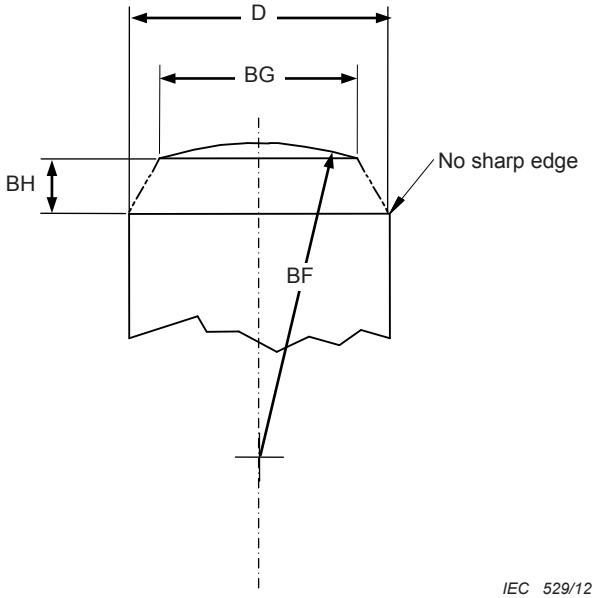


Figure 2 – Detail A of figure 1 APC/PC endface geometry, expanded view drawings not-to-scale

Refer to IEC 61755-3 series documents for information on the end-face geometry requirements of PC and APC interfaces, respectively.

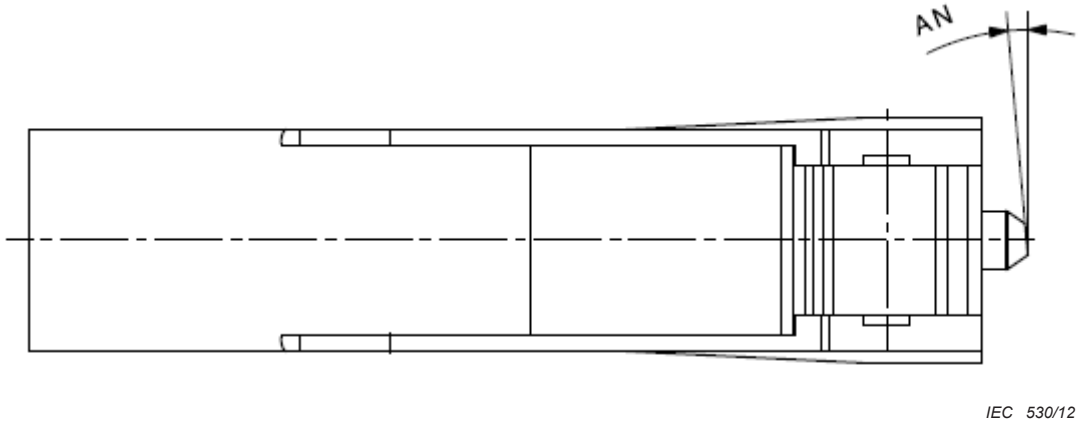
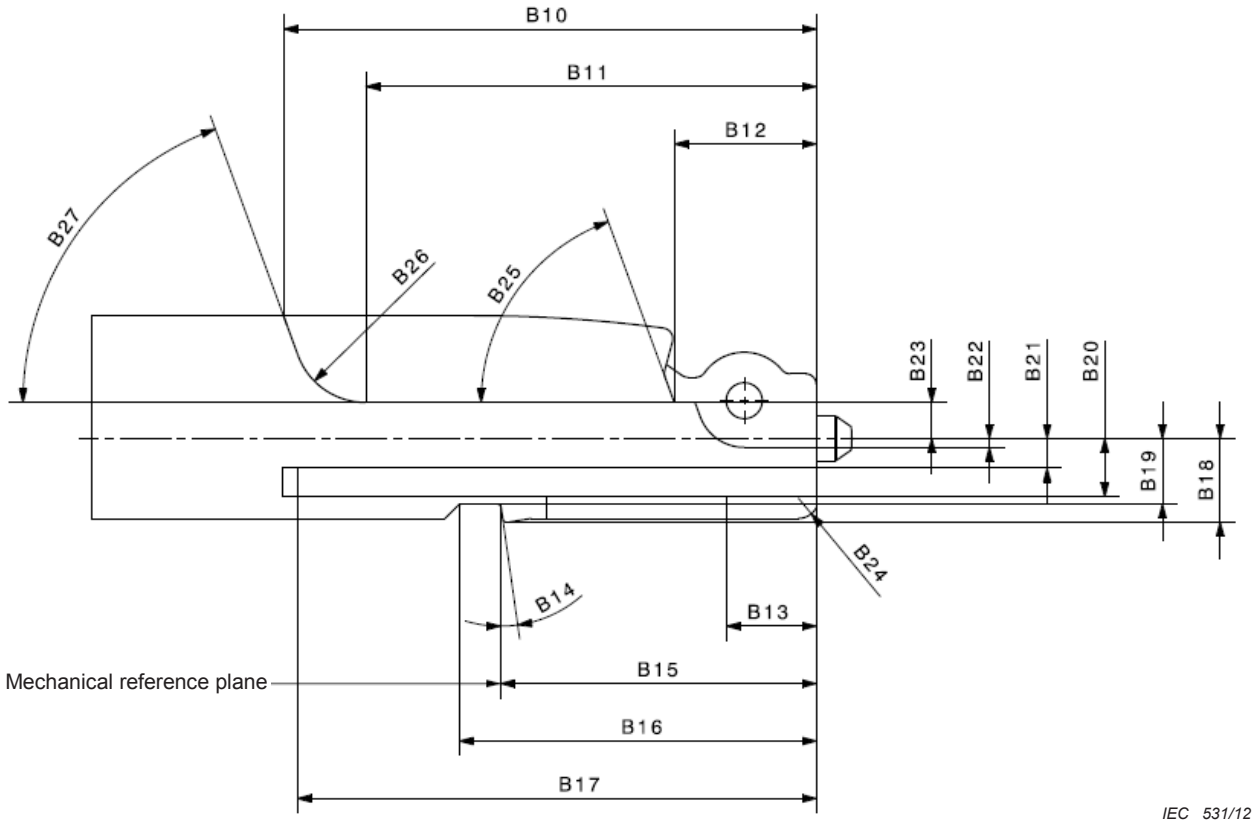


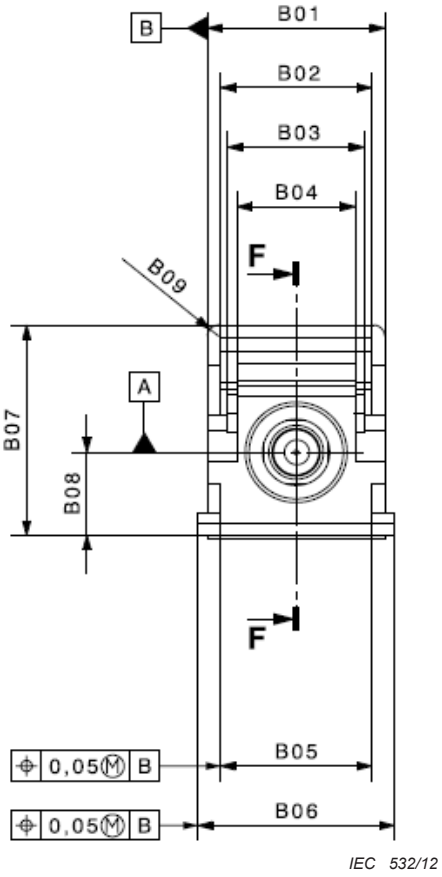
Figure 3 – Top view (APC)

6 Plug

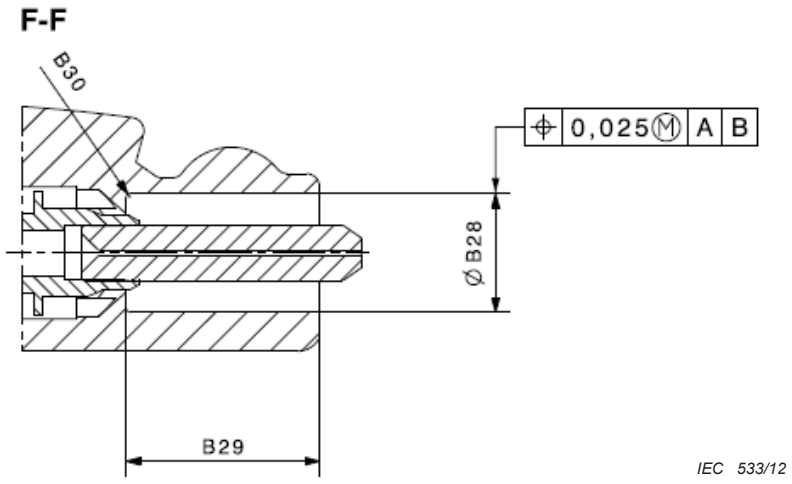
Plug connector interfaces are shown in Figures 4 to 6 and Tables 3 and 4.



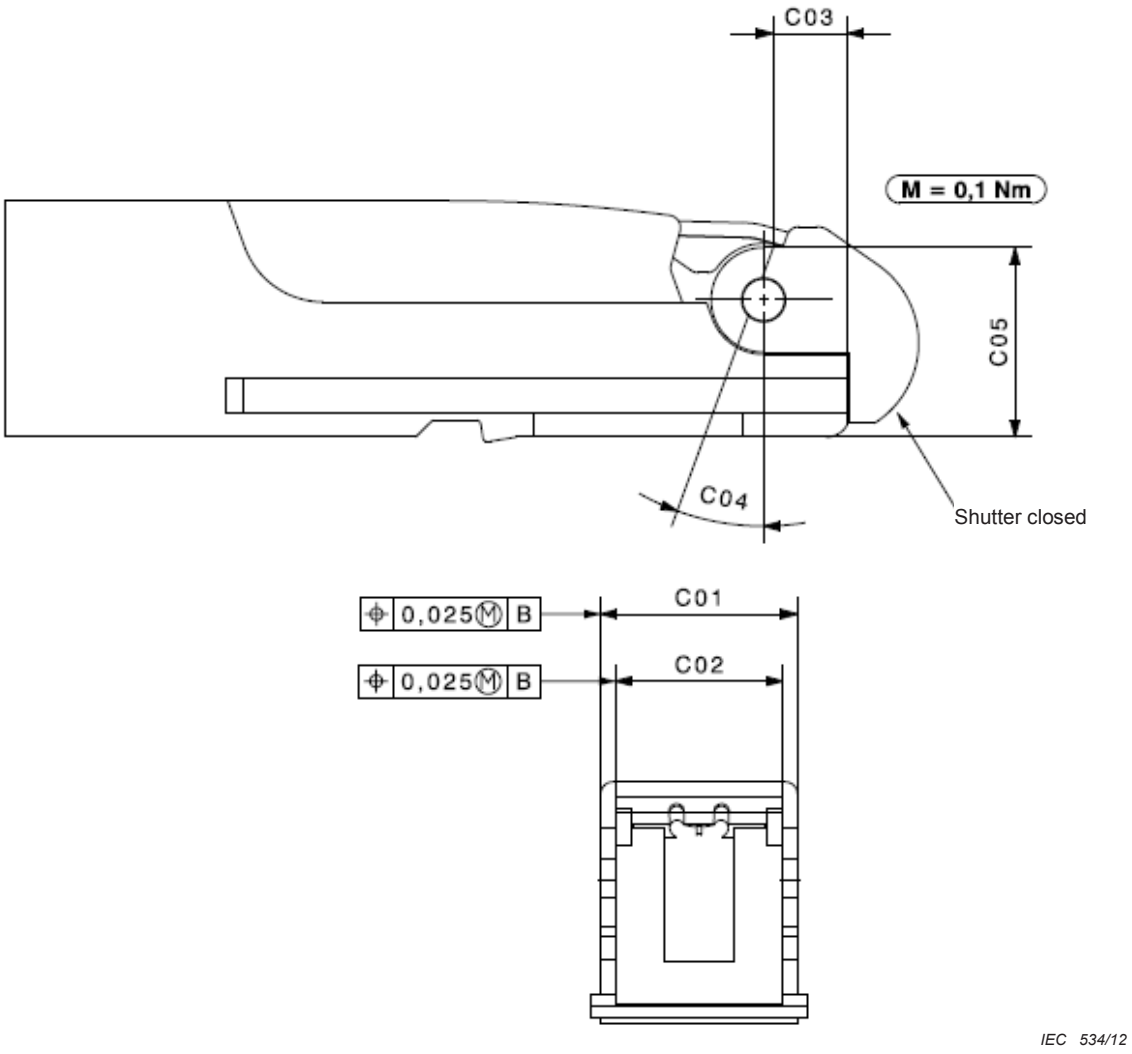
a) Plug connector interface



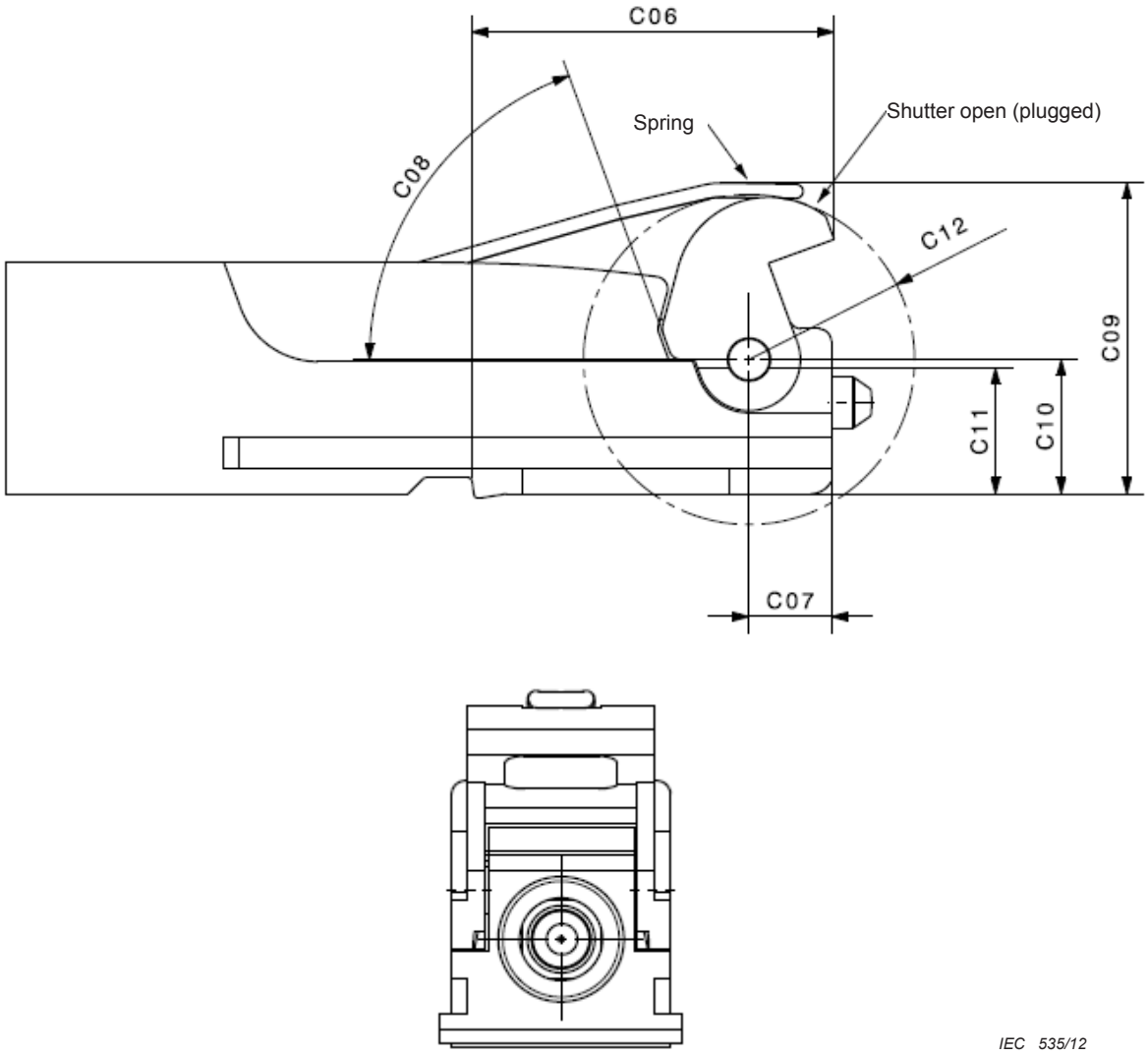
b) Plug connector interface without shutter



c) Plug connector interface without shutter – section F-F



d) Plug connector with shutter (closed)



e) Plug connector interface with shutter (open)

Figure 4 – Plug connector interface

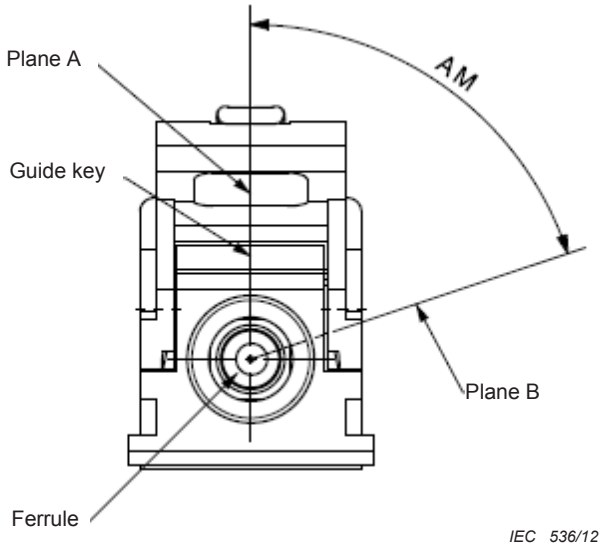


Figure 5 – APC simplex plug connector interface

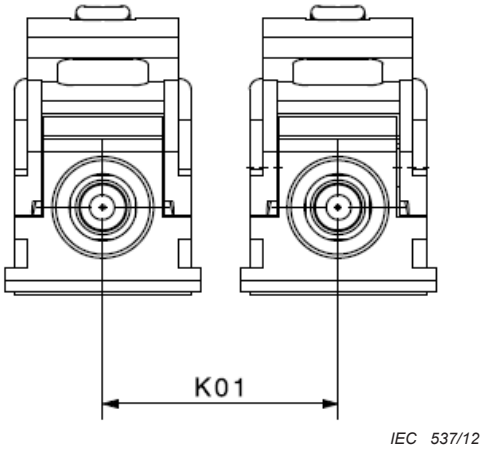


Figure 6 – Duplex plug interface

Table 3 – Dimensions of the plug connector interface

Reference	Dimensions mm			Remarks
	Minimum	Basic	Maximum	
AA	9,64		9,84	see footnote [a]
AM		90		Basic dimension, degrees [d]
AN		8		Basic dimension, degrees [c]
BF	5		30	Radius [c]
BG	0,6		-	
BH	-		1,0	
BI	5		12	Radius [c]
B01	4,675		4,725	
B02	3,975		4,025	
B03	3,595		3,645	
B04	3,115		3,165	
B05	3.985		4.015	
B06	5,18		5,22	
B07	5,725		5,775	
B08	2,21		2,25	
B09	0,25		0,35	Radius
B10	14,75		14,85	
B11	12,45		12,55	
B12	3,89		3,99	
B13	2,0		3,0	
B14	7°		9°	Degrees, typical
B15	8,72		8,78	
B16	9,87		9,93	
B17	14,35		14,45	
B18	2,305		2,355	
B19	1,805		1,855	
B20	1,61		1,65	
B21	0,81		0,85	
B22	0,225		0,275	
B23	0,975		1,025	
B24	0,5		0,6	Radius [b]
B25	69°		71°	Degrees, typical
B26	1,95		2,05	Radius
B27	69°		71°	Degrees, typical
B28	2,67		2,73	
B29	4,36		4,41	
B30	0,05		0,15	
C01	4,675		4,725	
C02	3,975		4,025	
C03	1,775		1,825	

Table 3 *(continued)*

Reference	Dimensions mm			Remarks
	Minimum	Basic	Maximum	
C04	19°		21°	Degrees, typical
C05	4,505		4,555	
C06	8,805		8,855	
C07	1,975		2,025	
C08	69°		71°	Degrees, typical
C09	7,55		7,65	
C10	3,255		3,305	
C11	3,045		3,095	
C12	3,975		4,025	
D	–		–	Diameter, Grade, (table 4)
K01		6,25		Basic dimension

[a] Dimension AA is given for a finished plug endface after all polishing. The maximum is limited by the shutter. The ferrule is movable by a certain axial compressing force, with direct contacting endface, and therefore dimension AA is variable. Ferrule compression force shall be 5,0 N to 6,0 N when the optical datum target, dimension AA is moved to the range 9,0 mm to 9,50 mm. Forces are for buffered fibre only, different cord constructions can result in higher forces, see IEC 60794-2-50.

[b] A chamfer or radius is allowed to a maximum depth of 0,5 mm from the ferrule endface;

[c] These dimensional requirements apply to the finished ferrule, after all polishing procedures have been completed.

[d] Dimension AM is defined as an angle between two planes: One plane, plane A, passes through the axis of the ferrule and the axis of symmetry of the key of the angled endface connector plug. The other plane, plane B, passes through the axis of the ferrule and the plane normal to the angled PC reference plane.

Table 4 – Plug connector interface – Ferrule grade

Grade	A (diameter) mm		Remarks [a]
	Minimum	Maximum	
1	1,2485	1,2495	
2	1,2483	1,2495	
3	1,2467	1,2495	

[a] The ferrule material is zirconia ceramic. Alternative materials may be used for the ferrule, that have directly compatible material properties with zirconia, but the endface performance requirements must be met under all conditions.

7 Simplex adaptor

Simplex adaptor interfaces are shown in Figures 7 to 10.

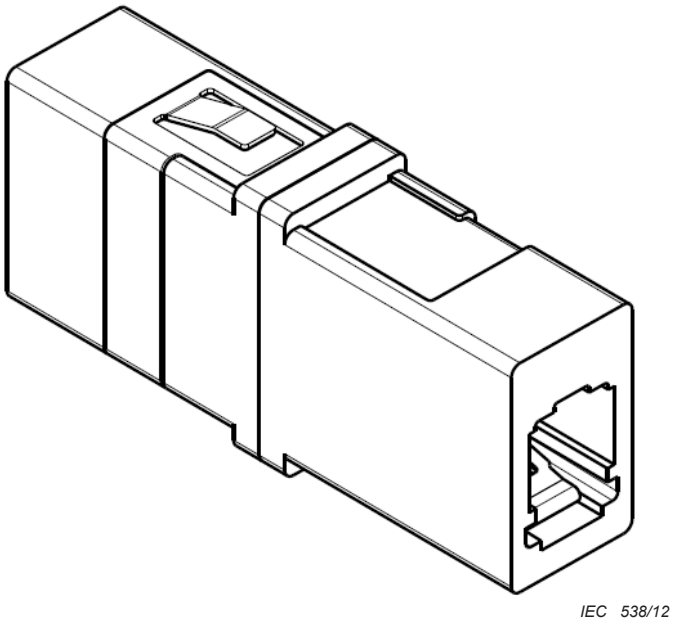


Figure 7 – Simplex adaptor (isometric view)

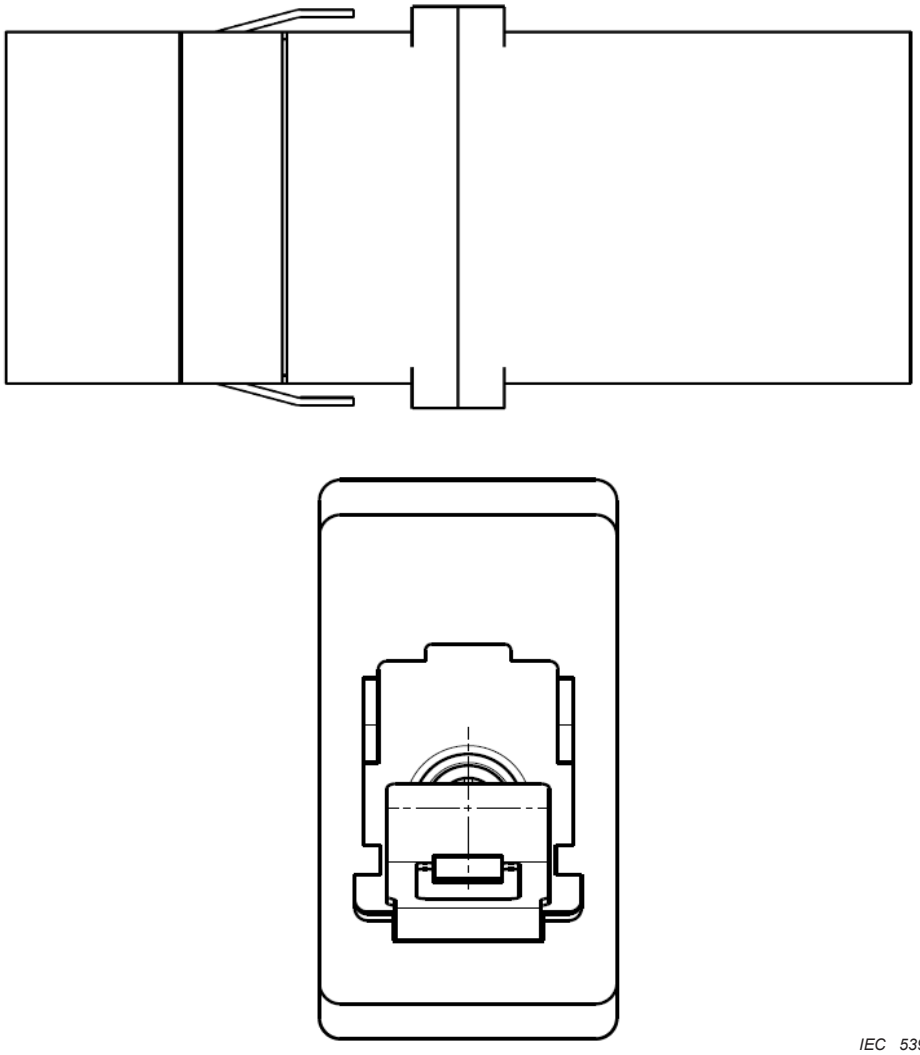
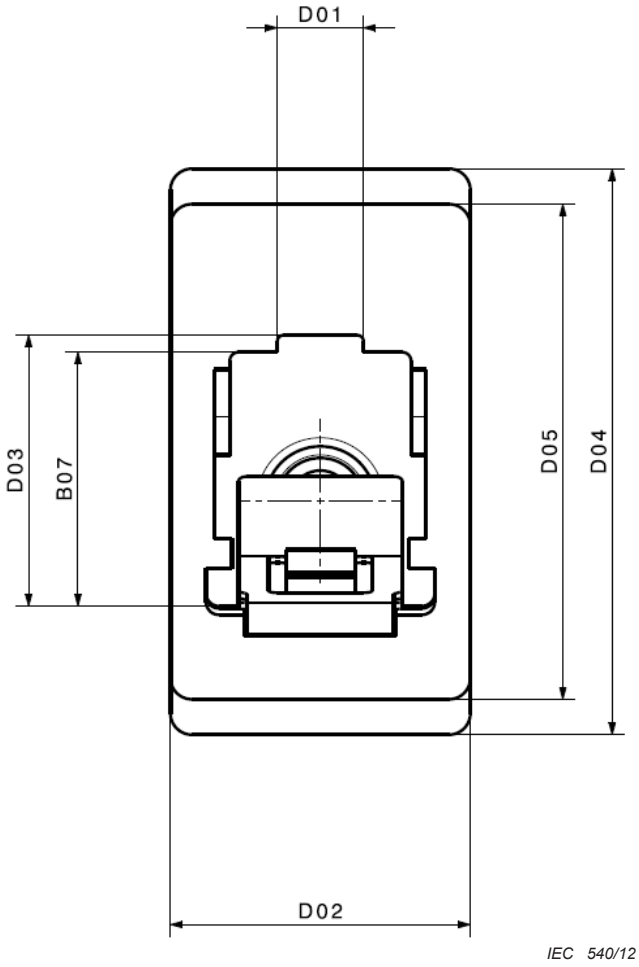
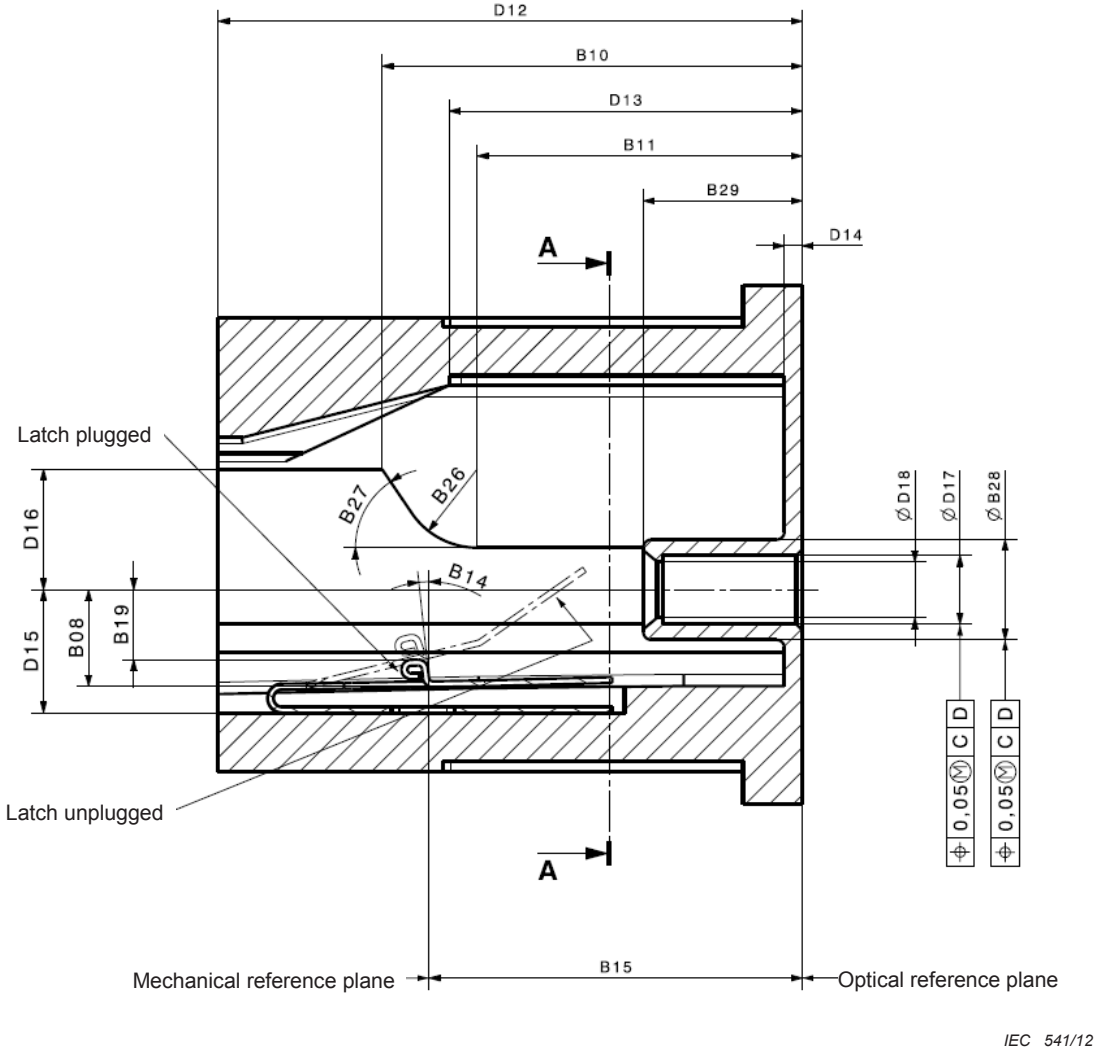


Figure 8 – Simplex adaptor



a) Simplex adaptor with dimensions



b) Simplex adaptor interface with dimensions (section)

Figure 9 – Simplex adaptor interface

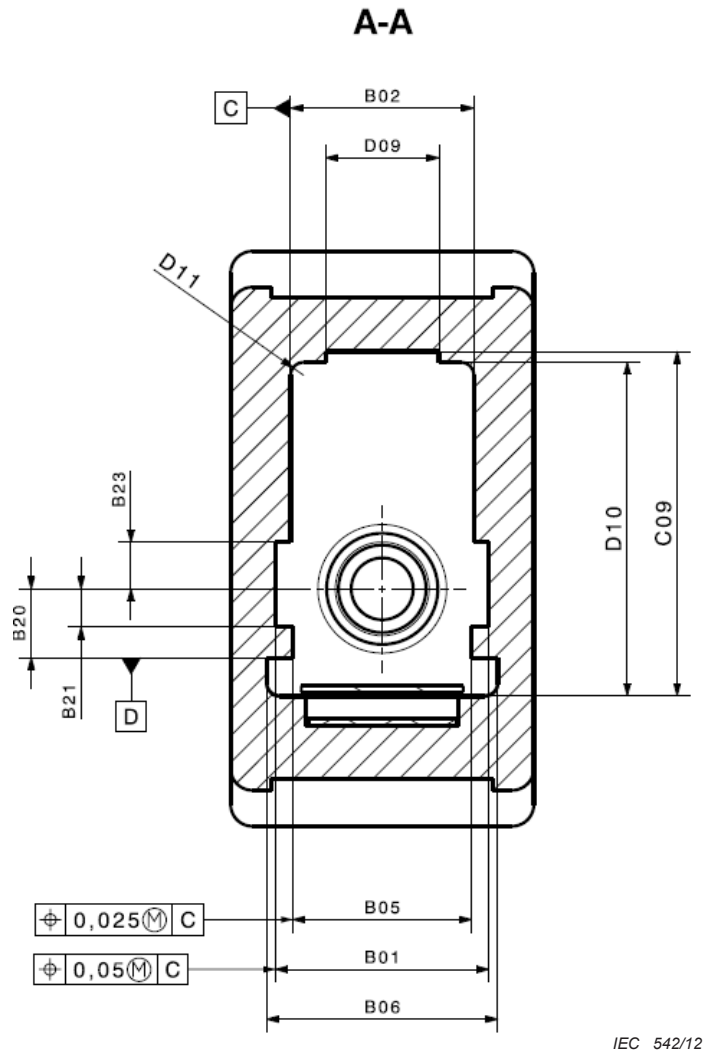


Figure 10 – Simplex adaptor interface – section A – A

8 Duplex adaptor

Duplex adaptor interfaces are shown in Figures 11 to 14. Dimensions of the adaptor are shown in Table 5.

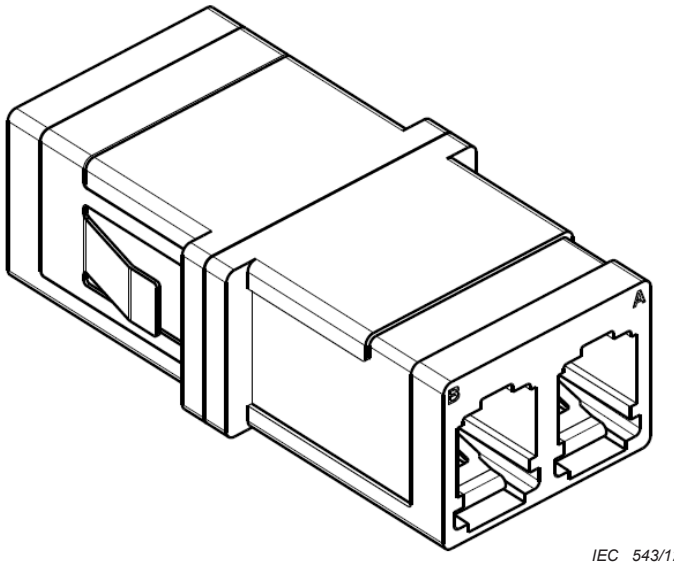


Figure 11 – Duplex adaptor (isometric view)

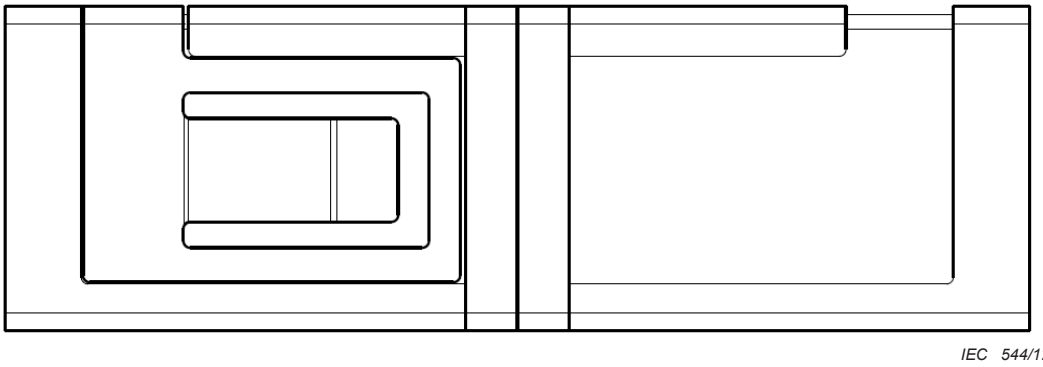


Figure 12 – Duplex adaptor

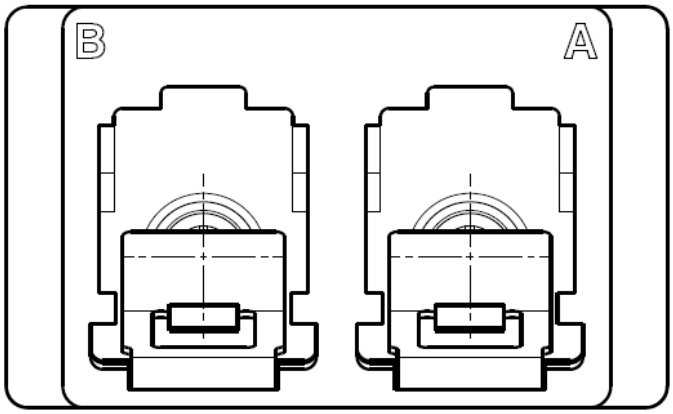


Figure 13 – Duplex adaptor

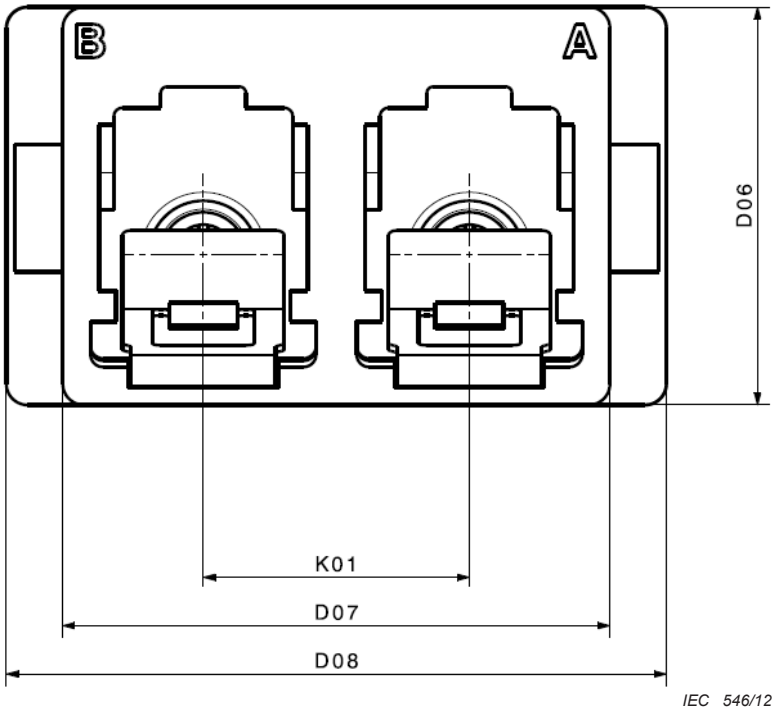


Figure 14 – Duplex adaptor with dimensions

Table 5 – Dimensions of the BLINK – BLINK adaptor interface

Reference	Dimensions mm			Remarks [a]
	Minimum	Basic	Maximum	
B01	4,92		4,98	
B02	4,17		4,23	
B05	4,13		4,17	
B06	5,27		5,33	
B07	5,89		5,95	
B08	2,425		2,475	
B10	10,6		10,7	
B11	8,17		8,27	
B14	5°		7°	Degrees, typical
B15	9,4		9,5	
B19	1,76		1,78	
B20	1,56		1,6	
B21	0,84		0,88	
B23	1,03		1,09	
B26	1,95		2,05	Radius
B27	55°		57°	Degrees, typical
B28	2,49		2,59	Diameter
B29	3,975		4,075	
C09	7,87		7,93	
D01	1,95		2,05	
D02	6,85		7,05	
D03	6,37		6,47	
D04	13,1		13,3	
D05	11,5		11,6	
D06	9,35		9,45	
D07	12,75		12,95	
D08	15,4		15,6	
D09	2,6		2,7	
D10	7,6		7,7	
D11	0,25		0,35	Radius
D12	14,7		14,9	
D13	8,9		9,0	
D14	0,40		0,50	
D15	3,08		3,18	
D16	3,02		3,12	
D17	1,725		1,775	Diameter
D18	1,40		1,44	Diameter
K01	6,25			Basic dimension

[a] The connector alignment feature is a resilient (split) alignment sleeve. The feature must accept a pin gauge to the centre of the adaptor with a force of 1,0 N to 2,5 N under the condition that another pin gauge is inserted into the feature from the other side until both pin gauges butt against each other. The pin gauge shall be 1,2490 mm. The centre of the adaptor is defined by the right side position of dimension B15.

9 Pin gauge for adaptor

Figure 15 shows pin gauge for adaptor. Table 6 shows pin gauge dimensions.

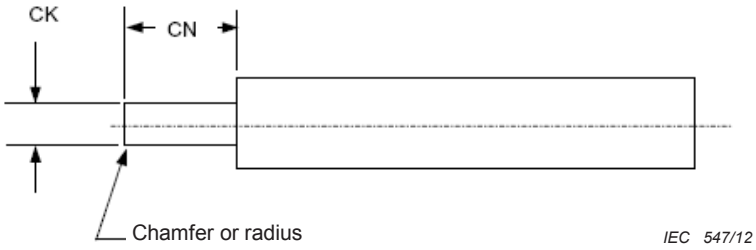


Figure 15 – Pin gauge for adaptor

Table 6 – Pin gauge dimensions

Pin gauge grade	CK diameter mm		CN mm		Notes
	Minimum	Maximum	Minimum	Maximum	
1,249	1,2488	1,2492	4,2	15,0	Resilient sleeve [a].
[a] Surface roughness along CN should be <0,2 μm Ra; cylindricity is less than 0,5 μm.					

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