

Fibre optic connector interfaces —

Part 12: Type FS connector family

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British Standard

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 45 and a back cover.

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Part 12: Type FS connector family
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fibres optiques
Partie 12: Famille de connecteurs
du type FS
(CEI 61754-12:1999)

Steckgesichter von
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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 86B/1218/FDIS, future edition 1 of IEC 61754-12, 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 was approved by CENELEC as EN 61754-12 on 1999-10-01.

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Endorsement notice

The text of the International Standard IEC 61754-12:1999 was approved by CENELEC as a European Standard without any modification.

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FIBRE OPTIC CONNECTOR INTERFACES –

Part 12: Type FS connector family

1 Scope

This part of IEC 61754 defines the standard interface dimensions for the type FS connector family.

2 Description

The parent connector for the type FS connector family is a duplex connector set of plug and adaptor configuration. The plug has a pair of cylindrical spring loaded abutting ferrules of 2,5 mm nominal ferrule diameter. The optical alignment mechanism is a rigid bore or resilient sleeve contained within the adaptor. It includes a hand-released latch coupling. The plug has multiple keyway arrangements and the adaptor has multiple key configurations. The keying scheme is exclusionary and is used to limit mating between plug and adaptor to specific key combinations.

3 Interfaces

This document contains the following standard interfaces:

Interface 12-1:	plug connector interface	A
Interface 12-2:	adaptor connector interface	A
Interface 12-3:	plug connector interface	B
Interface 12-4:	adaptor connector interface	B
Interface 12-5:	plug connector interface	M
Interface 12-6:	adaptor connector interface	M
Interface 12-7:	plug connector interface	S
Interface 12-8:	adaptor connector interface	S
Interface 12-9:	plug connector interface	SA
Interface 12-10:	adaptor connector interface	SA
Interface 12-11:	plug connector interface	SB
Interface 12-12:	adaptor connector interface	SB
Interface 12-13:	plug connector interface	SM
Interface 12-14:	adaptor connector interface	SM
Interface 12-15:	plug connector interface	SS
Interface 12-16:	adaptor connector interface	SS

4 Intermateable connectors

The following standards are intermateable; X denotes intermateable connectors.

Table 1a – Multimode key arrangements

Plug	Adaptor					
		Key	A	B	M	S
	Key	Variant	61754-12-2	61754-12-4	61754-12-6	61754-12-8
	A	61754-12-1	X	–	–	–
	B	61754-12-3	–	X	–	–
	M	61754-12-5	–	–	X	–
	S	61754-12-7	X	X	X	X

Table 1b – Single-mode key arrangements

Plug	Adaptor					
		Key	SA	SB	SM	SS
	Key	Variant	61754-12-10	61754-12-12	61754-12-14	61754-12-16
	SA	61754-12-9	X	–	–	–
	SB	61754-12-11	–	X	–	–
	SM	61754-12-13	–	–	X	–
	SS	61754-12-15	X	X	X	X

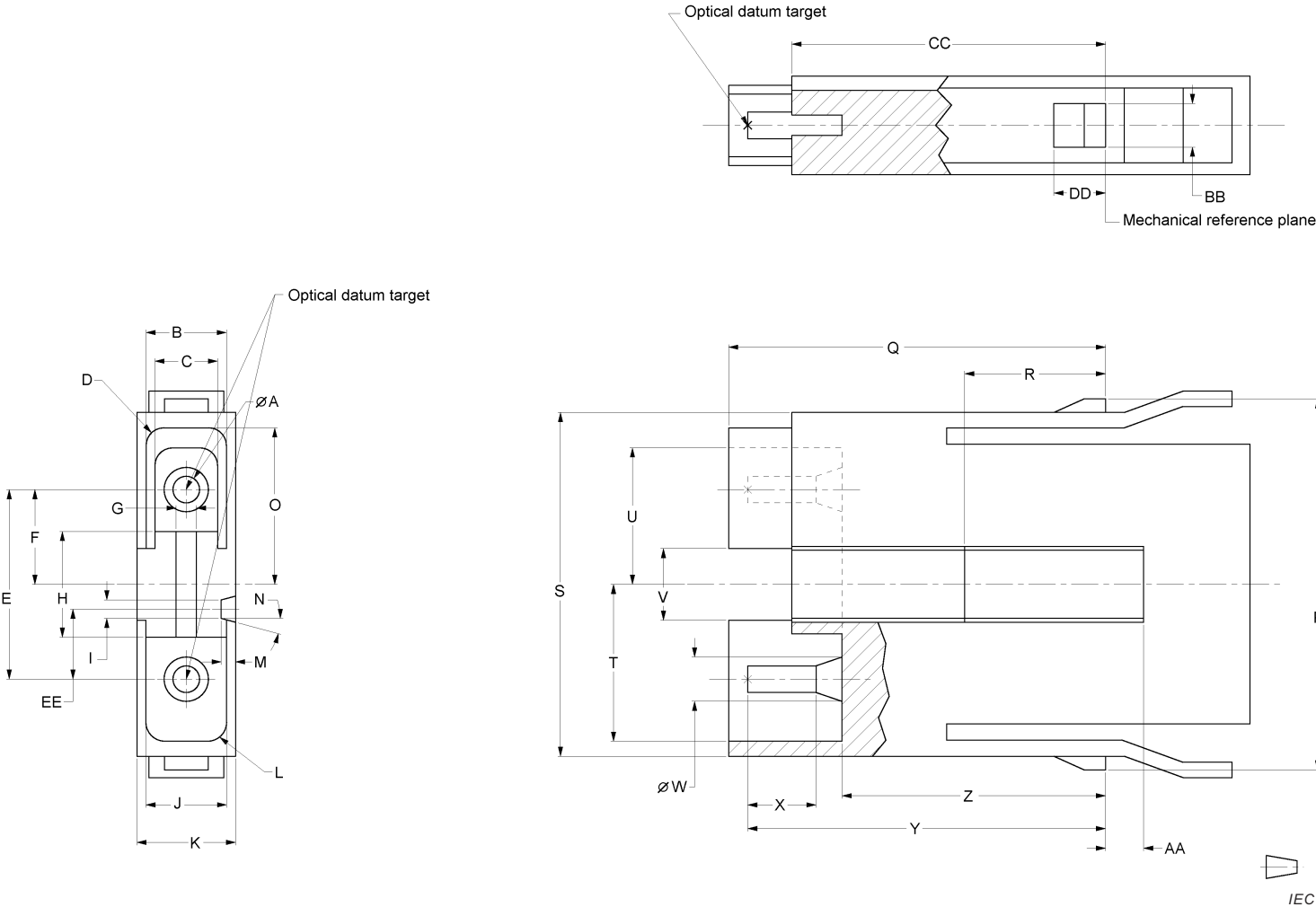


Figure 1 – Plug connector interface – Key type A

Table 2 – Dimensions of plug interface – Key type A

Reference	Minimum	Maximum	Basic	Notes
A	2,498 mm	2,5 mm		
B	7,10 mm	7,52 mm		
C	5,87 mm	6,15 mm		
D	1,65 mm	2,20 mm		Radius
E			17,78 mm	
F			8,89 mm	
G	1,9 mm	3,90 mm		
H	–	9,91 mm		
I	1,80 mm	2,25 mm		A key
J	7,57 mm	7,80 mm		
K	9,00 mm	9,25 mm		
L	–	1,78 mm		Radius
M	1,35 mm	–		A key
N	13°	17°		A key
O	–	14,68 mm		
P	34 mm	34,80 mm		2
Q	33,90 mm	35,31 mm		
R	13,21 mm	24 mm		3
S	32 mm	32,23 mm		
T	14,71 mm	15 mm		
U	12,8 mm	12,93 mm		
V	6,73 mm	7,3 mm		
W	3,25 mm	4,16 mm		
X	6,4 mm	8,7 mm		
Y		33,53 mm		1
Z	23,29 mm	24,69 mm		
AA	3,56 mm	–		
BB	2,5 mm	4,09 mm		
CC	28,62 mm	29,39 mm		
DD	2,5 mm	5,08 mm		
EE			6,61 mm	A key
NOTE 1 – The dimension is given in the free state. The ferrules shall be capable of moving to reduce the dimension to 32,84 mm. The plug ferrule end shall adhere to the optical reference plane with a static force of 6,7 N minimum to 13,3 N maximum per ferrule. NOTE 2 – The dimension is given in the free state. Coupling latches shall be capable of moving to reduce the dimension to 32,52 mm. NOTE 3 – Start of keying feature.				

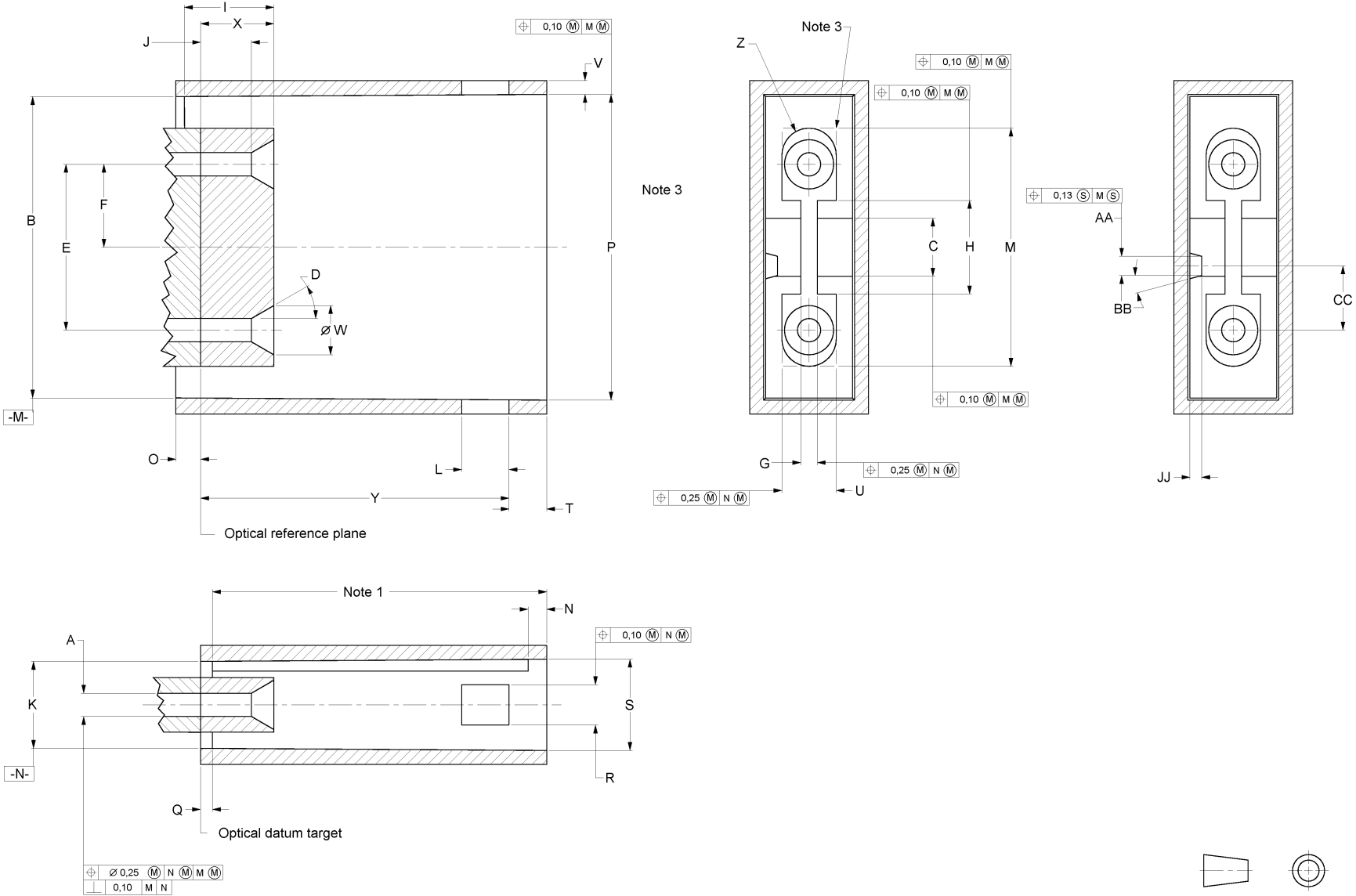


Figure 2 – Adaptor connector interface – Key type A

Table 3a – Dimensions of the adaptor interface – Key type A

Reference	Minimum	Maximum	Basic	Notes
A				See tolerance grade table
B	32,26 mm	32,36 mm		2
C	–	6,22 mm		
D	29°	31°		
E			17,78 mm	
F			8,89 mm	
G	–	1,78 mm		
H	10,03 mm	10,3 mm		
I	9,3 mm	9,9 mm		3
J	4,57 mm	6,35 mm		
K	9,27 mm	9,37 mm		
L	5,1 mm	5,5 mm		
M	–	25,53 mm		
N	1,17 mm	9,37 mm		
O	2,54 mm	2,8 mm		
P	32,52 mm	32,9 mm		
Q	1,14 mm	1,4 mm		
R	4,32 mm	4,8 mm		
S	9,53 mm	9,91 mm		
T	–	4,04 mm		
U	–	5,84 mm		
V	1,52 mm	–		
W	4,1 mm	–		
X	7,65 mm	8 mm		
Y	32,85 mm	33,45 mm		
Z	2,79 mm	–		Radius
AA	1,52 mm	1,78 mm		A key
BB	13°	17°		A key
CC			6,61 mm	A key
JJ	1,14 mm	1,27 mm		
NOTE 1 – Not specified.				
NOTE 2 – Dimensions at optical reference plane.				
NOTE 3 – The square corner feature is optional.				

Table 3b – Tolerance grade table – Dimensions

Grade	Minimum mm	Maximum mm		Notes
0	–	–		1
1	2,501	2,503		
2	2,501	2,506		
3	2,501	2,510		
4	2,501	2,515		

NOTE 1 – The connector alignment feature is a resilient sleeve. The feature shall retain a gauge pin, as shown, with a force of 2 N to 5,9 N when another gauge pin is inserted midway into the feature from the opposite side to the optical reference plane.

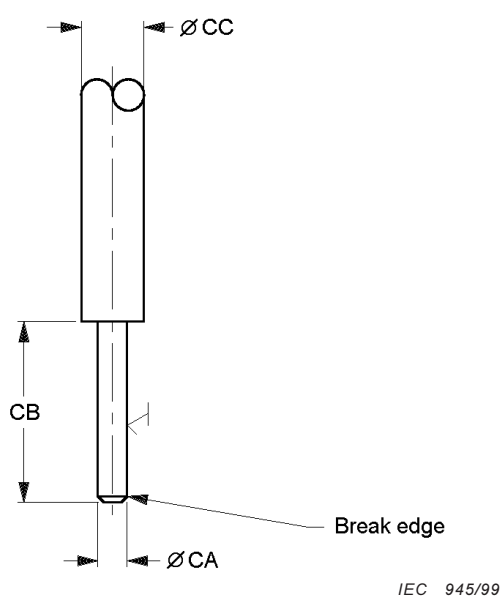


Figure 3 – Gauge pin

Table 4 – Dimensions of the gauge pin

Reference	Minimum mm	Maximum mm	Basic	Notes
CA	2,4985	2,4995		1
CB	7,75	–		
CC	–	5,4		

NOTE 1 – Surface roughness grade N4 (0,2 µm Ra).

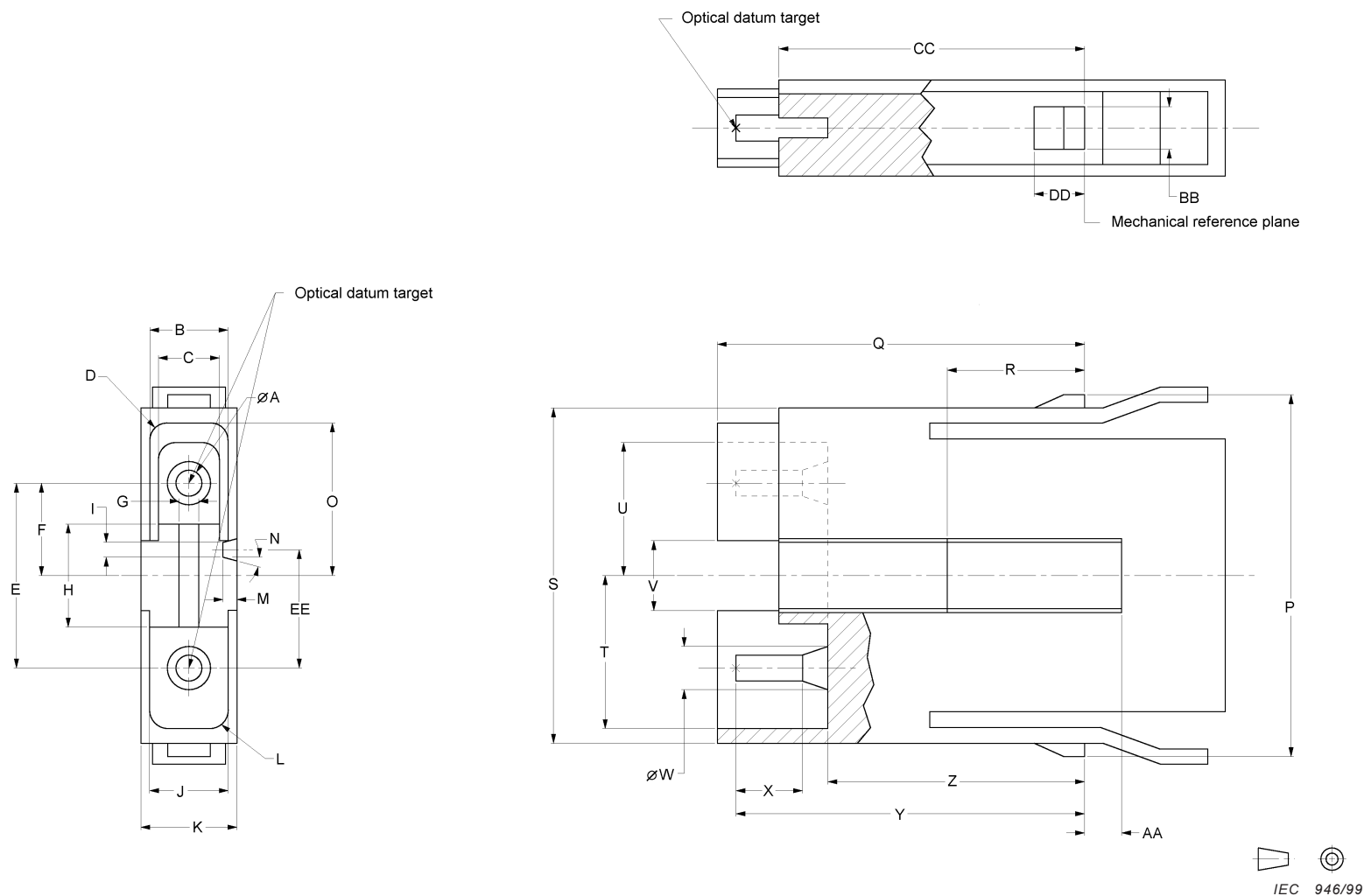


Figure 4 – Plug connector interface – Key type B

Table 5 – Dimensions of the plug interface – Key type B

Reference	Minimum	Maximum	Basic	Notes
A	2,498 mm	2,5 mm		
B	7,10 mm	7,52 mm		
C	5,87 mm	6,15 mm		
D	1,65 mm	2,20 mm		Radius
E			17,78 mm	
F			8,89 mm	
G	1,9 mm	3,90 mm		
H	–	9,91 mm		
I	1,80 mm	2,25 mm		B key
J	7,57 mm	7,80 mm		
K	9,00 mm	9,25 mm		
L	–	1,78 mm		Radius
M	1,35 mm	–		B key
N	13°	17°		B key
O	–	14,68 mm		
P	34 mm	34,80 mm		2
Q	33,90 mm	35,31 mm		
R	13,21 mm	24 mm		3
S	32 mm	32,23 mm		
T	14,71 mm	15 mm		
U	12,8 mm	12,93 mm		
V	6,73 mm	7,3 mm		
W	3,25 mm	4,16 mm		
X	6,4 mm	8,7 mm		
Y		33,53 mm		1
Z	23,29 mm	24,69 mm		
AA	3,56 mm	–		
BB	2,5 mm	4,09 mm		
CC	28,62 mm	29,39 mm		
DD	2,5 mm	5,08 mm		
EE			11,17 mm	B key
NOTE 1 – The dimension is given in the free state. The ferrules shall be capable of moving to reduce the dimension to 32,84 mm. The plug ferrule end shall adhere to the optical reference plane with a static force of 6,7 N minimum to 13,3 N maximum per ferrule. NOTE 2 – The dimension is given in the free state. The coupling latches shall be capable of moving to reduce the dimension to 32,52 mm. NOTE 3 – Start of keying feature.				

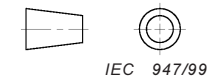


Figure 5 – Adaptor connector interface – Key type B