BS EN 61754-26:2012

BSI Standards Publication

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

Part 26: Type SF connector family

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The UK participation in its preparation was entrusted by 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 committee can be obtained on request to its secretary.

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Published by BSI Standards Limited 2012

ISBN 978 0 580 67006 0

ICS 33.180.20

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2012.

Amendments issued since publication

Amd. No.	Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61754-26

September 2012

ICS 33.180.20

English version

Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces - Part 26: Type SF connector family

(IEC 61754-26:2012)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Interfaces de connecteurs pour fibres optiques - Partie 26: Famille de connecteurs de type SF (CEI 61754-26:2012)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Steckgesichter von Lichtwellenleiter-Steckverbindern - Teil 26: Steckverbinderfamilie der Bauart SF (IEC 61754-26:2012)

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 61754-26:2012 E

Foreword

The text of document 86B/3433/FDIS, future edition 1 of IEC 61754-26, 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 61754-26:2012.

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)	2013-05-28
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-08-28

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INTRODUCTION

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

Part 26: Type SF connector family

1 Scope

This part of IEC 61754 defines the standard interface dimensions for the type SF optical board connector that uses a normal glass fibre and the physical contact technique to connect flexible optical boards and ribbon fibres.

2 Description

The parent connector for the type SF connector family is a multiway connector with a plug/socket connector set configuration, The plug is characterized by multiway cantilevered optical fibres located inside the plug, The plug optical fibres buckled to mate with the socket optical fibre ends, Mating socket optical fibres are positioned and aligned by using multiway micro holes, Socket micro holes capture, guide, and align the plug optical fibres during connector set engagement, The plug fibres and socket fibres are butted together to realize physical contact connection by employing the buckled force of the plug fibres without using a ferrule or a spring,

3 Interfaces

This standard contains the following standard interfaces,

IEC 61754-26-1: SF plug connector flat interface for 2 to 16 fibres

IEC 61754-26-2: SF socket connector flat interface for 2 to 16 fibres

The following connectors are intermateable:

IEC 61754-26-1 mates with IEC 61754-26-2

Figure 1 is an example of a SF plug connector interface. Table 1 gives dimensions of the SF plug connector interface.

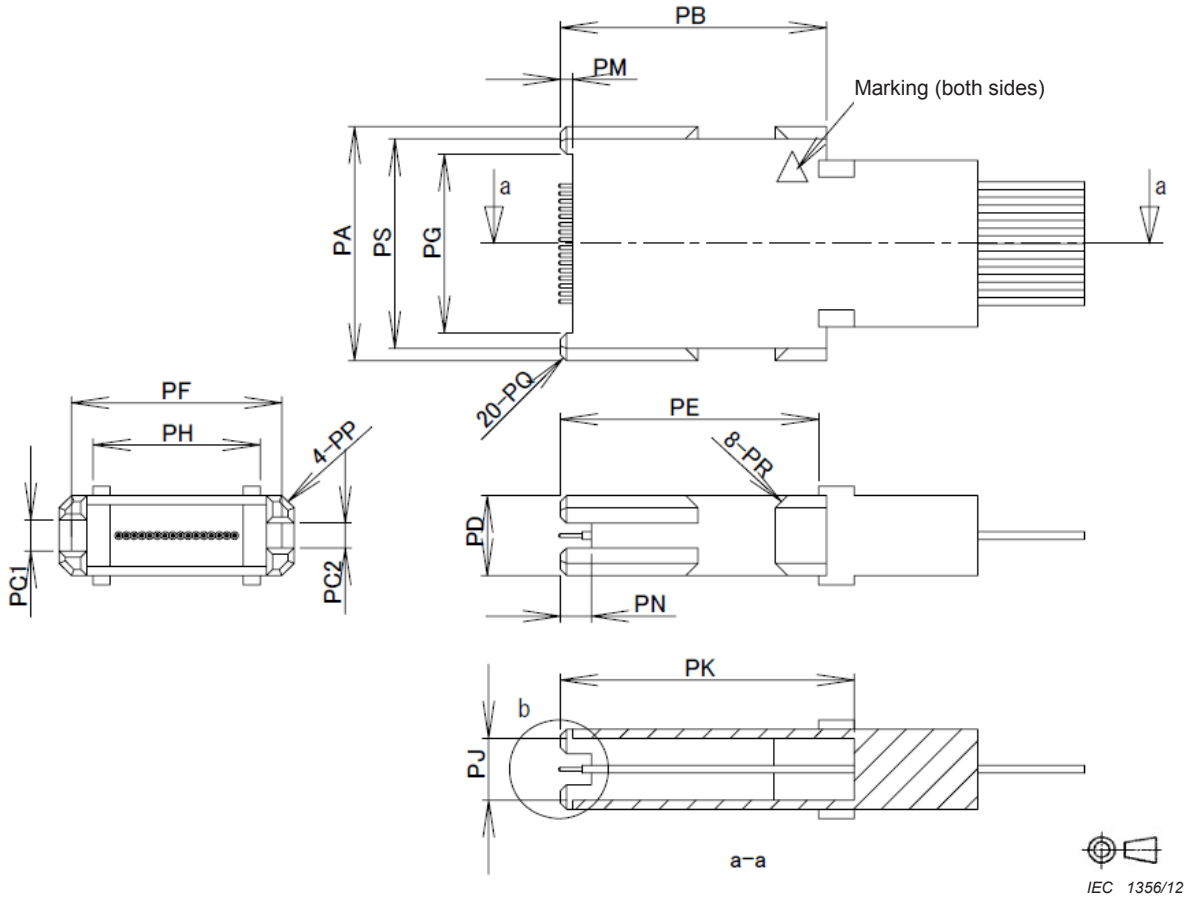


Figure 1 – SF plug connector interface

Table 1 – Dimensions of the SF plug connector interface

Item	Dimensions mm		Remarks
	Minimum	Maximum	
PA	–	7,6	
PB	8,6	8,7	
PC1	0,995	1,02	
PC2	0,795	0,82	
PD	–	2,6	
PE	8,5	8,7	
PF	6,75	6,8	
PG	5,8	5,85	
PH	–	5,6	
PJ	2	2,05	
PK	9,4	9,6	
PL	0,04	0,06	See Figure 2
PM	0,4	0,5	
PN	1	1,1	
PP	–	0,4	
PQ	–	0,2	
PR	–	0,4	
PS	–	6,8	
NOTE Put markings on upper and lower faces of PC1 side. Those shapes and sizes are optional.			

Figure 2 is an expanded view of b for SF plug endface. Table 2 gives dimensions of the SF plug endface.

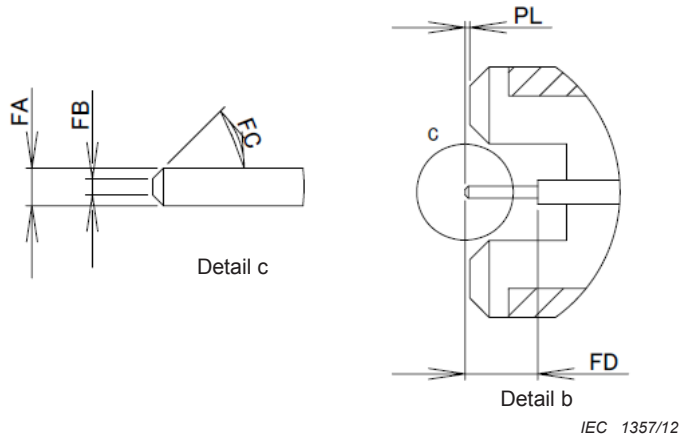


Figure 2 – Expanded view of b (plug endface geometry)

Table 2 – Dimensions of the SF plug endface

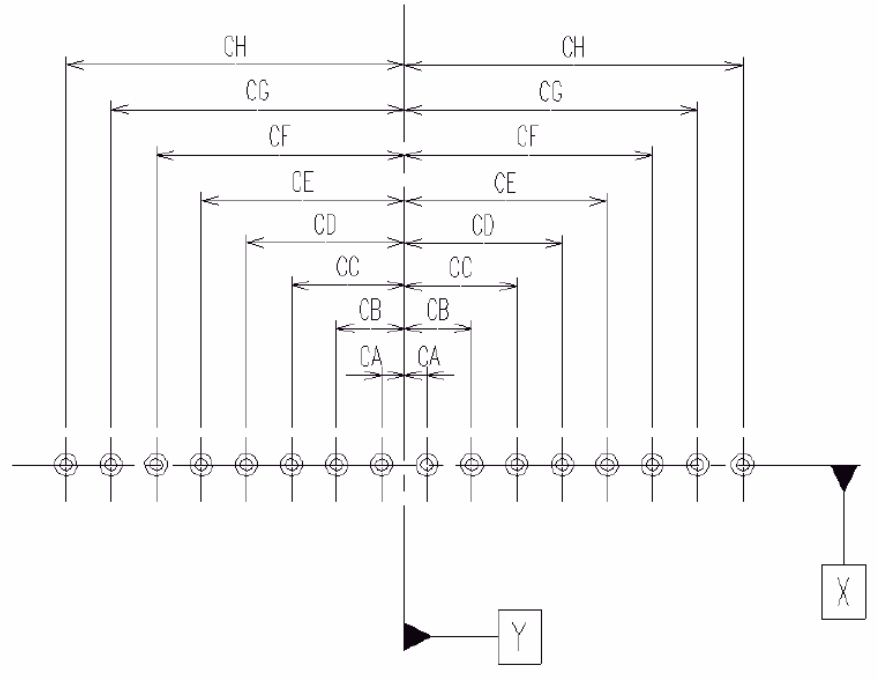
Item	Dimensions		Notes
	Minimum	Maximum	
FA	(ϕ 0,125 mm)		NOTE
FB	–	0,08 mm	[a]
FC	25°	65°	Chamfer angle
FD	0,75 mm	0,9 mm	Coating removal length

NOTE The SF plug is possible to use for A1a multi-mode fibre (IEC 60793-2-10) and B single-mode fibre (IEC 60793-2-50).

[a] The minimum diameter of FB shall be larger than the core of the optical fibre.

Figure 3 is an example of the positions of fibres. Table 3 gives dimensions of the positions of fibres for SF plug.

The symmetry of cables relative to the X axis shall be within 0,02 mm.



NOTE 1 The datum X is the X axis of the dimension PJ at the centre.

NOTE 2 The datum Y is the Y axis of the dimension PF at the centre.

Figure 3 – Positions of fibres

Table 3 – Positions of fibres for SF plug

Item	Dimensions mm		Notes
	Minimum	Maximum	
CA	0,115	0,135	1
CB	0,365	0,385	1
CC	0,615	0,635	1
CD	0,865	0,885	1
CE	1,115	1,135	1
CF	1,365	1,385	1
CG	1,615	1,635	1
CH	1,865	1,885	1
NOTE 1 Each dimension is specified at the end of a fibre.			

Figure 4 is an example of a SF socket connector interface. Table 4 gives dimensions of the SF socket connector interface.

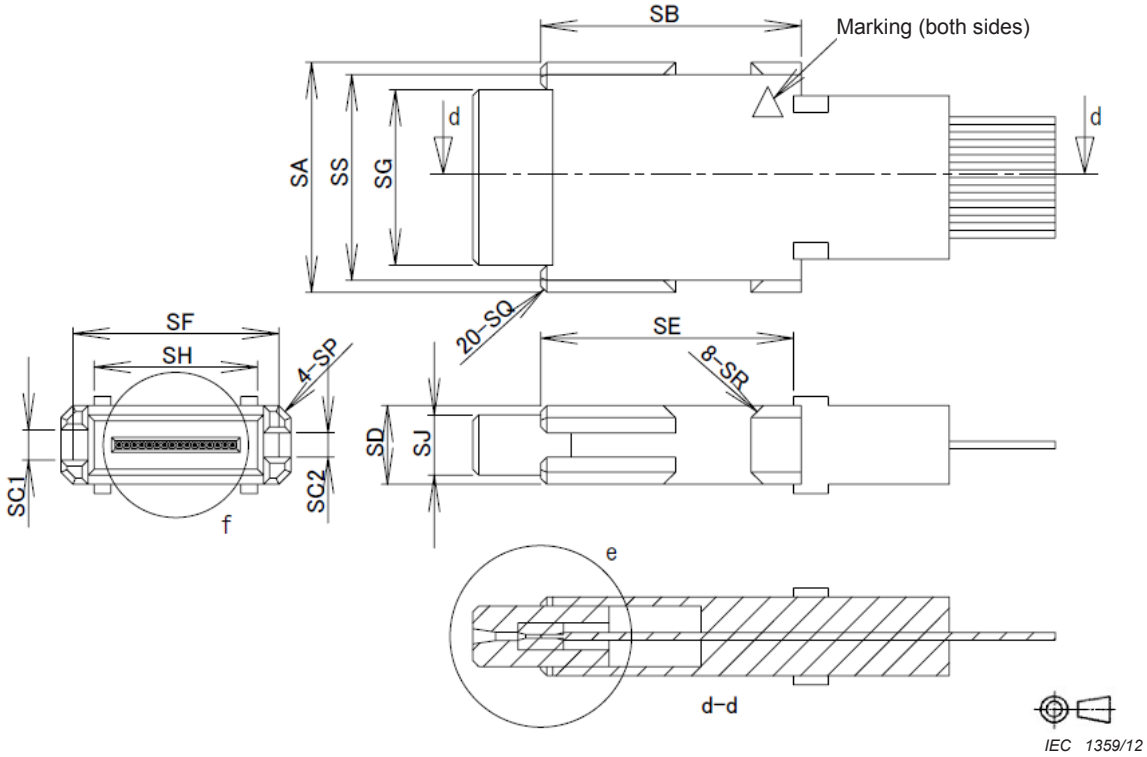


Figure 4 – SF socket connector interface

Table 4 – Dimensions of the SF socket connector interface

Item	Dimensions mm		Notes
	Minimum	Maximum	
SA	–	7,6	
SB	8,6	8,7	
SC1	0,995	1,02	
SC2	0,795	0,82	
SD	–	2,6	
SE	8,5	8,7	
SF	6,75	6,8	
SG	5,75	5,8	
SH	–	5,6	
SJ	1,95	2	
SL	0	0,01	See Figure 5
SP	–	0,4	
SQ	–	0,2	
SR	–	0,4	
SS	–	6,8	
NOTE Put on markings on upper and lower faces of SC1 side. Those shape and size are optional.			

Figure 5 is an example of expanded view of e (micro holes array geometry). Table 5 gives dimensions of the micro holes array.

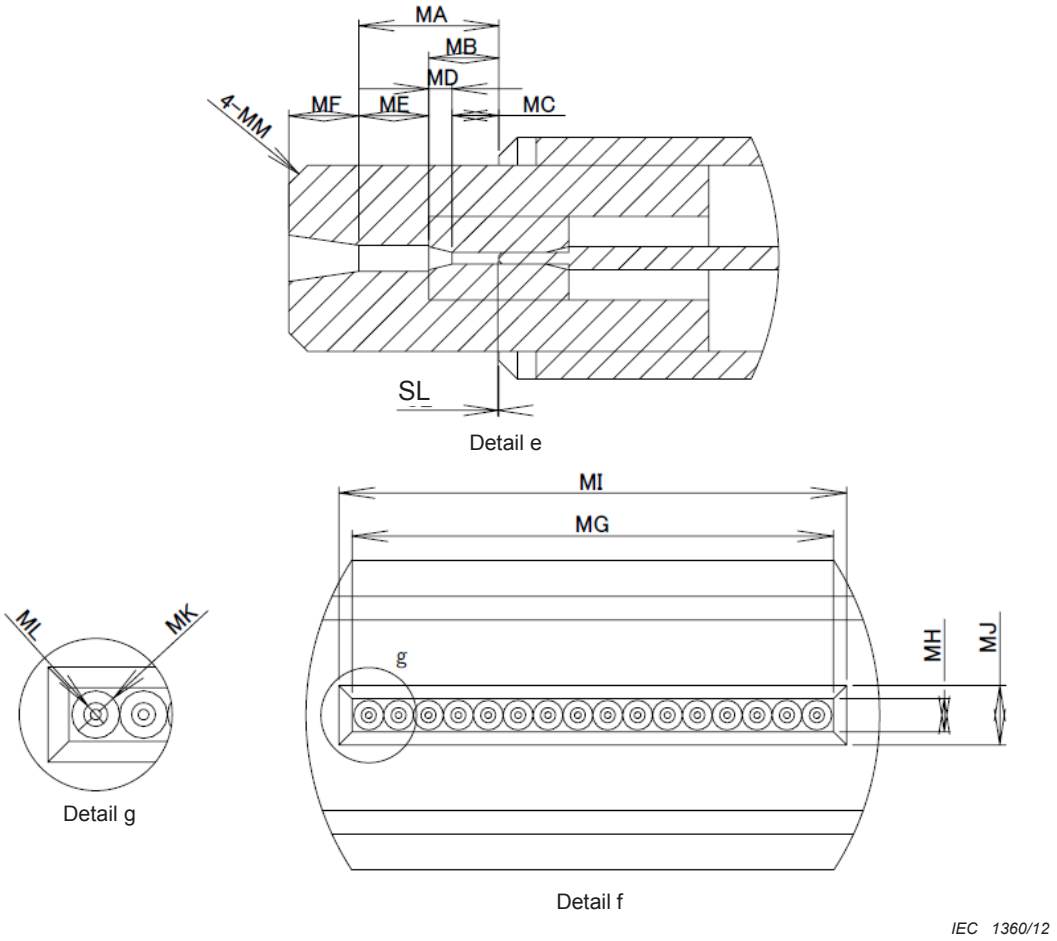


Figure 5 – Expanded view of e (micro holes array geometry)

Table 5 – Dimensions of the micro holes array

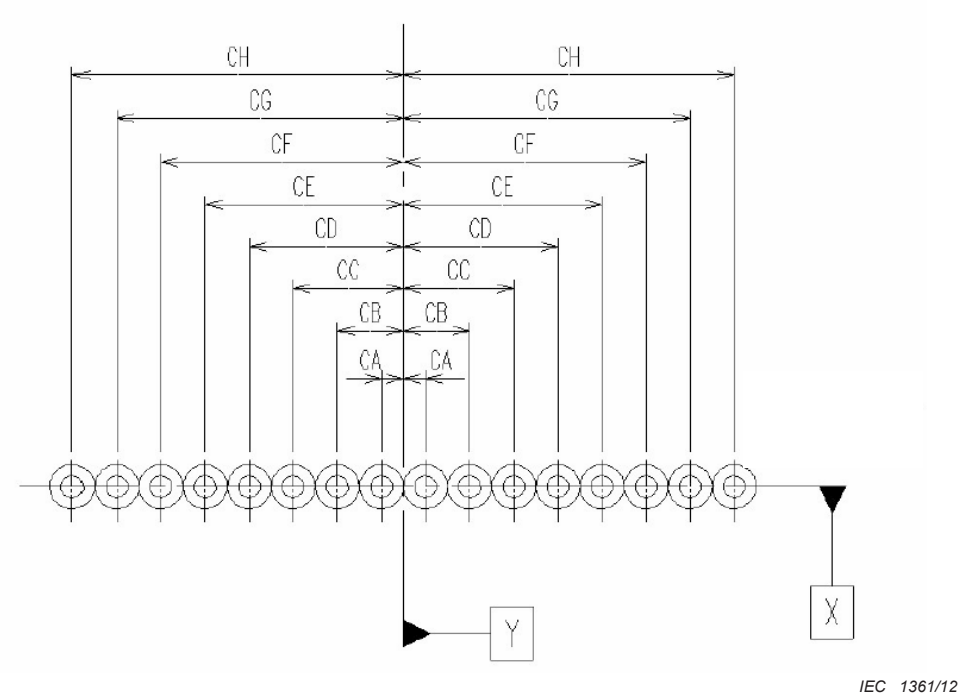
Item	Dimensions mm		Notes
	Minimum	Maximum	
MA	1,5	1,6	
MB	0,7	0,75	
MC	0,45	0,5	
MD	0,2	0,25	
ME	0,75	—	
MF	0,75	—	
MG	4,25	4,4	
MH	0,265	0,28	
MI	4,5	—	
MJ	0,5	—	
MK	0,2	0,25	
ML	0,1255	0,1265	NOTE
MM	—	0,2	

NOTE Triangular cross-section is available for micro holes. Dimension ML is specified as the inner diameter of an inscribed circle of the triangular cross-section.

Figure 6 is an example of the positions of micro holes. Table 6 gives dimensions of the positions of micro holes for SF socket.

The symmetry of cables relative to the X axis shall be within 0,02 mm. The symmetry may be agreed between users and supplier when the symmetry includes the guide area of the fibre.

The guide area of a fibre shall be more than 0,045 mm from the centre of a micro hole.



NOTE 1 The datum X is the X axis of the dimension JJ at the centre.

NOTE 2 The datum Y is the Y axis of the dimension JF at the centre.

Figure 6 – Positions of micro holes

Table 6 – Positions of micro holes for SF socket

Item	Dimension mm		Notes
	Minimum	Maximum	
CA	0,115	0,135	NOTE
CB	0,365	0,385	NOTE
CC	0,615	0,635	NOTE
CD	0,865	0,885	NOTE
CE	1,115	1,135	NOTE
CF	1,365	1,385	NOTE
CG	1,615	1,635	NOTE
CH	1,865	1,885	NOTE
NOTE 1 Each dimension is specified at the end of a fibre.			

Figure 7 is an example of SF adaptor interface. Table 7 gives dimensions of the SF adaptor interface.

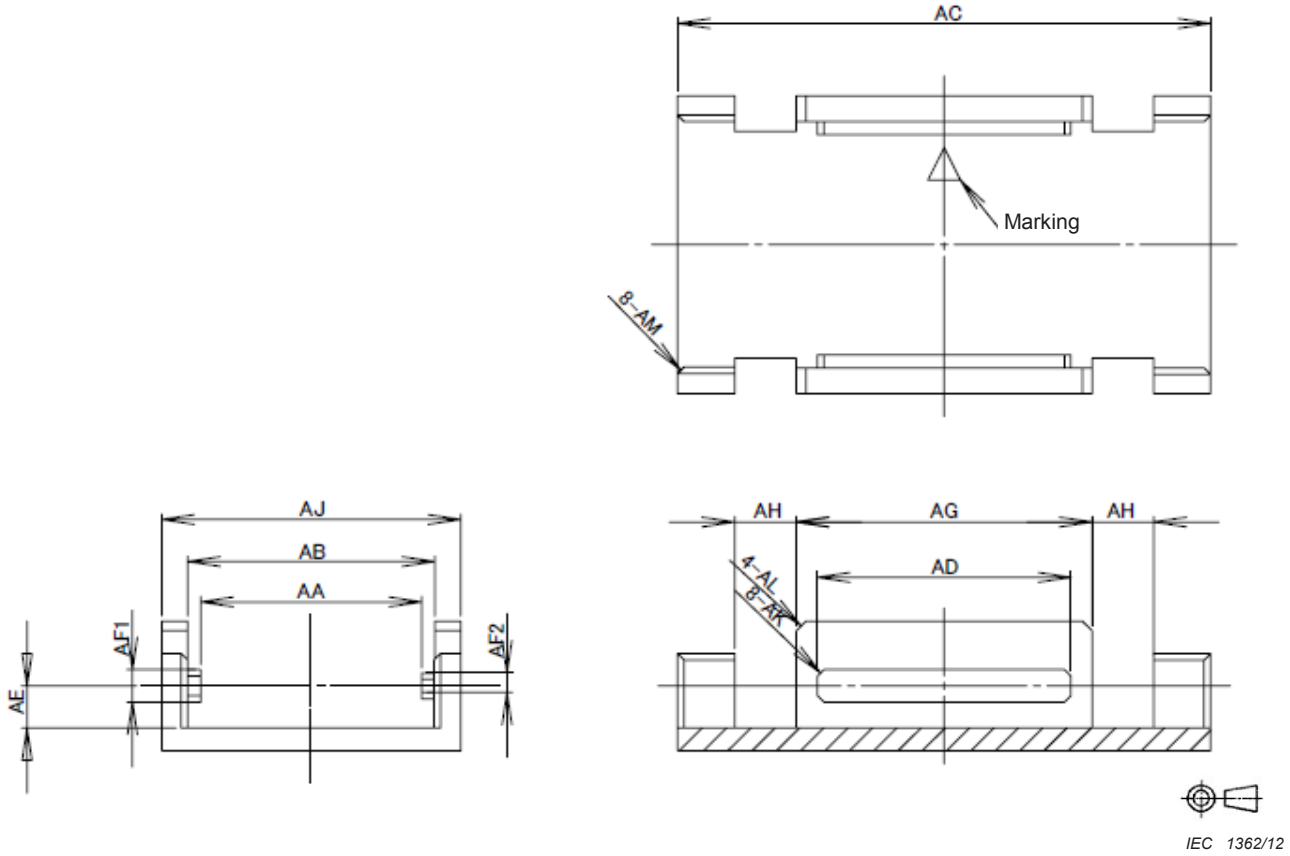


Figure 7 – SF adaptor interface

Table 7 – Dimensions of the SF adaptor interface

Item	Dimensions mm		Notes
	Minimum	Maximum	
AA	6,8	6,82	
AB	7,6	–	
AC	16,3	16,5	
AD	7,8	–	
AE	1,3	–	
AF1	0,97	0,995	
AF2	0,77	0,795	
AG	9	9,1	
AH	1,9	2	
AJ	9,1	9,2	
AK	–	0,2	
AL	–	0,3	
AM	–	0,2	
NOTE Put markings on upper face of AF1 side. Those shapes and sizes are optional.			

Figure 8 is an example of SF adaptor clip interface. Table 8 gives dimensions of the SF adaptor clip interface.

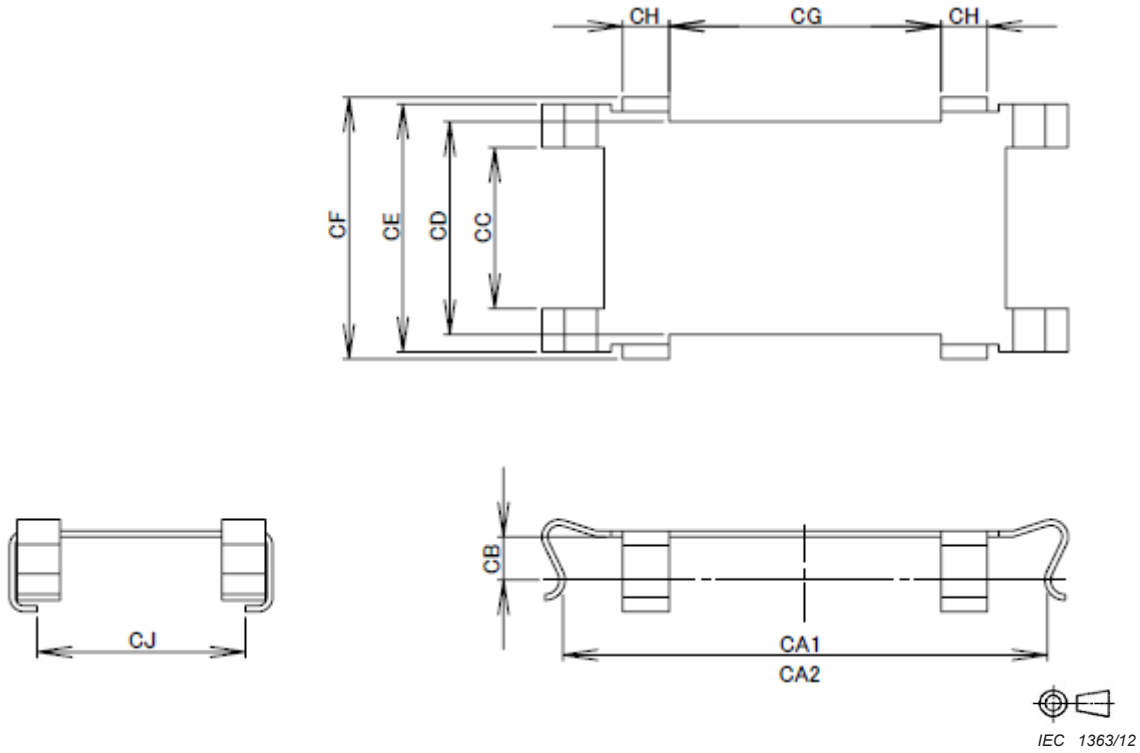


Figure 8 – SF adaptor clip interface

Table 8 – Dimensions of the SF adaptor clip interface

Item	Dimensions mm		Notes
	Minimum	Maximum	
CA1	16,5	16,7	[a]
CA2	17,2	17,4	[b]
CB	1,4	1,6	
CC	5,7	–	
CD	–	7,5	
CE	–	8,6	
CF	–	9,1	
CG	9,4	9,5	
CH	1,6	1,7	
CJ	7,2	–	

[a] Length in free condition.

[b] Compression force for clamping condition shall be 9,6 N to 16 N when dimension CA2 is deformed between 17,2 mm and 17,4 mm.

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