

Fibre optic connector interfaces —

Part 6: Type MU connector family

The European Standard EN 61754-6:1997, with the incorporation of amendment A1:2001 and amendment A2:2005, has the status of a British Standard

ICS 33.180.20

National foreword

This British Standard is the English language version of EN 61754-6:1997, including amendment A1:2001 and amendment A2:2005. It is identical with IEC 61754-6:1997, including Corrigendum August 1997, amendment 1:2001 and amendment 2:2004.

The CENELEC common modifications have been implemented at the appropriate places in the text. The start and finish of each common modification is indicated in the text by tags [C] [C]. Where a common modification has been introduced by amendment, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC amendment A11 are indicated by [C11] [C11].

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1]. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by [A1] [A1].

The UK participation in its preparation was entrusted by Technical Committee EPL/86, Fibre optics, to Subcommittee EPL/86/2, 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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This British Standard was published under the authority of the Standards Board and comes into effect on 15 November 1997

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Amendments issued since publication

Amd. No.	Date	Comments
13435	8 March 2002	See national foreword.
16628	29 September 2006	See national foreword.

ISBN 0 580 28526 X

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English version

Fibre optic connector interfaces — Part 6: Type MU connector family

(IEC 61754-6:1997)

Interface de connecteurs pour fibres optiques —
Partie 6: Famille de connecteurs de type MU
(CEI 61754-6:1997)

Lichtwellenleiter-Steckverbinderübergänge —
Teil 6: Typ MU Steckverbinderfamilie
(IEC 61754-6:1997)

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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/881/FDIS, future edition 1 of IEC 61754-6, 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 61754-6 on 1997-07-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-04-01

Endorsement notice

The text of the International Standard IEC 61754-6:1997 was approved by CENELEC as a European Standard without any modification.

Foreword to amendment A1

The text of document 86B/1402/FDIS, future amendment 1 to IEC 61754-6:1997, 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 amendment A1 to EN 61754-6:1997 on 2001-07-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-04-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2004-07-01

Endorsement notice

The text of amendment 1:2001 to the International Standard IEC 61754-6:1997 was approved by CENELEC as an amendment to the European Standard without any modification.

Foreword to amendment A2

The text of document 86B/201/FDIS, future amendment 2 to IEC 61754-6:1997, 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 amendment A2 to EN 61754-6:1997 on 2004-12-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2005-09-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2007-12-01

Endorsement notice

The text of amendment 2:2004 to the International Standard IEC 61754-6:1997 was approved by CENELEC as an amendment to the European Standard without any modification.

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1 Scope

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

2 Description

The parent connector for type MU connector family is a miniature single-position plug which is characterized by a cylindrical, spring-loaded butting ferrule(s) of a 1,25 mm typical diameter, and a push-pull coupling mechanism. The optical alignment mechanism of the connectors is of a rigid hole or a resilient sleeve style.

A1 This part 6 type MU connector family defines the standard interface dimensions of active device receptacles for the type MU connectors. The receptacles are used to retain the connector plugs and mechanically maintain the optical datum target of the plugs at a defined position within the receptacle housings. **A1**

3 Interfaces

This standard contains the following standard interfaces.

Interface 6-1:	Simplex plug connector interface — Push/pull
Interface 6-2:	Duplex plug connector interface — Push/pull
Interface 6-3:	Simplex adaptor connector interface — Push/pull
Interface 6-4:	Duplex adaptor connector interface — Push/pull
Interface 6-5:	8-port adaptor connector interface — Push/pull
Interface 6-6:	Plug connector interface — for printed board housings
Interface 6-7:	Sleeve holder interface — for printed board housings
Interface 6-8:	2-port backplane housing interface — Self-retentive
Interface 6-9:	2-port printed board housing interface — Self-retentive
Interface 6-10:	8-port backplane housing interface — Self-retentive
Interface 6-11:	8-port printed board housing interface — Self-retentive
A1 Interface 6-12:	Simplex active device receptacle interface — for PC connector plug
Interface 6-13:	Duplex active device receptacle interface — for PC connector plug A1
A2 Interface 6-16:	Simplex plug connector interface — push/pull, APC 8 degrees
Interface 6-17:	4,5 mm duplex plug connector interface — push/pull, APC 8 degrees
Interface 6-18:	6,25 mm duplex plug connector interface — push/pull, APC 8 degrees A2

The plugs of interfaces 6-1, 6-2 and 6-6 have a ferrule(s) with a spherically polished ferrule endface, and realize physical contact.

The type MU connector family comprises two types of connector set: MU-A connector set (see Annex A) and MU-B connector set (see Annex B). The MU-A connector set is a plug/adaptor configuration with a push-pull coupling mechanism. The MU-B connector set is a plug-in type back-plane connector configuration which is plug/backplane and printed board housings/plug for printed board housing/sleeve holder configuration and is equipped with a self-retentive mechanism.

The type MU-A connector set consists of simplex and duplex plugs, and simplex, duplex and 8-port adaptors. The plugs are common to the backplane connector housings of the type MU-B connector set.

The type MU-B connector set consists of 2-port and 8-port backplane and printed board connector housings, simplex and duplex plugs, plug for printed board connector housings, and sleeve holder. The plug for printed board connector housing is used as a jack together with the sleeve holder. The jack is attached into the printed board connector housing.

The following standard interfaces are intermateable.

Plugs	Adaptors		
	Interface 6-3	Interface 6-4	Interface 6-5
Interface 6-1	Mate	Mate	Mate
⌚ Interface 6-2	Not mate	Mate	Mate ⌚

Plugs	Connector housings			
	Backplane connector housing		Printed board connector housing	
	Interface 6-8	Interface 6-10	Interface 6-9	Interface 6-11
Interface 6-1	Mate	Mate	Not mate	Not mate
Interface 6-2	Mate	Mate	Not mate	Not mate
Interface 6-6 with Interface 6-7	Not Mate	Not Mate	Mate	Mate

⌚

Receptacles	Plug connectors	
	Interface 6-1 (simplex plug connector)	Interface 6-2 (duplex plug connector)
Interface 6-12 (simplex receptacle)	Mate	Not mate
Interface 6-13 (duplex receptacle)	Mate	Mate

⌚

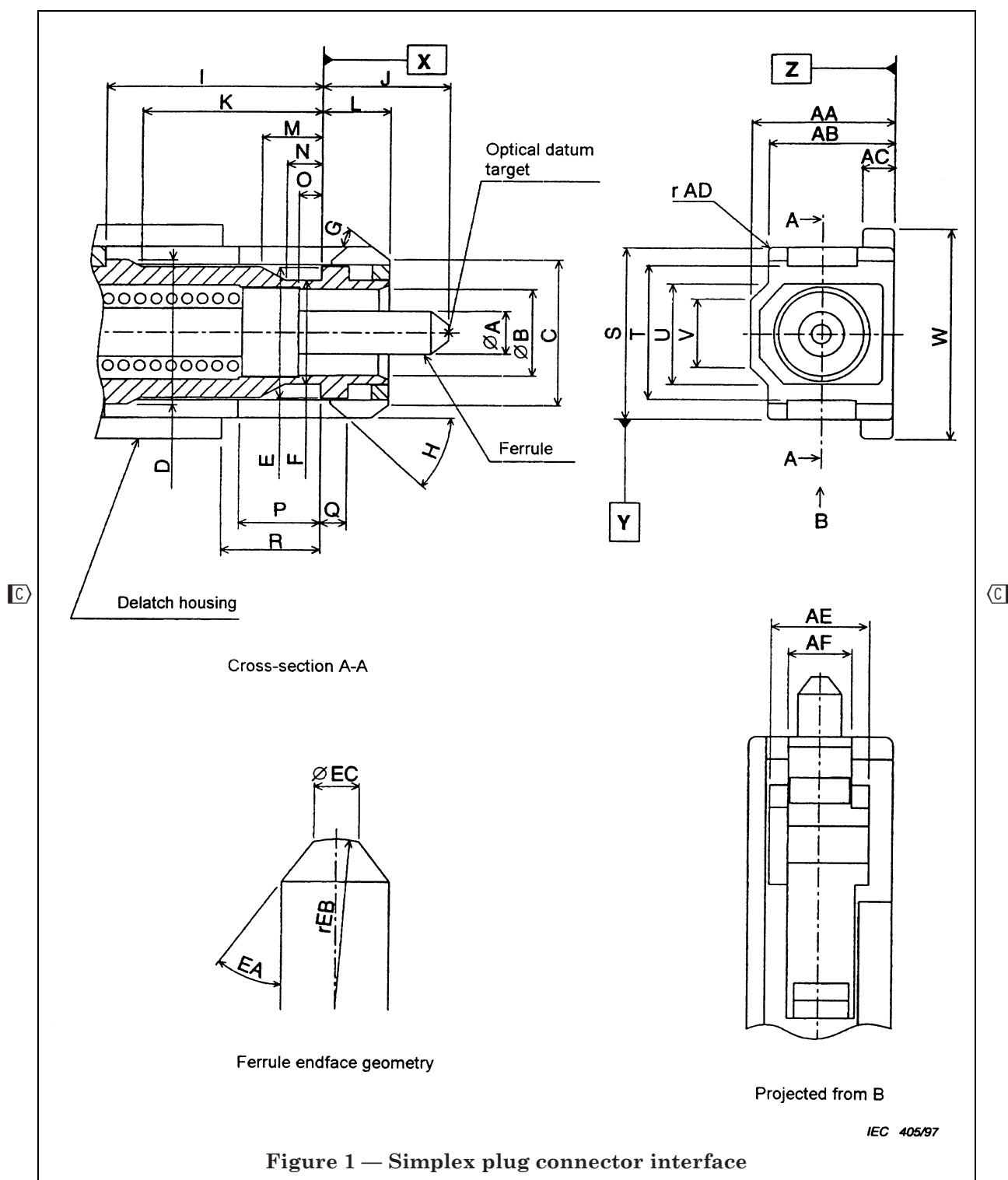


Table 1 — Dimensions of the simplex plug connector interface

Reference	Dimensions		Notes
	Minimum	Maximum	
A	1,2485 mm	1,2495 mm	1
B	2,6 mm	2,7 mm	
C	4,6 mm	4,8 mm	
D	4,65 mm	4,75 mm	
E	4,3 mm	4,4 mm	
F	3,3 mm	3,4 mm	
G	25×	35×	
H	25×	35×	
I	6,55 mm	—	
J	4,2 mm	4,5 mm	
K	5,5 mm	—	
L	2,4 mm	2,5 mm	
M	1,5 mm	—	
N	0,6 mm	—	
O	0,5 mm	—	
P	2,6 mm	—	2
Q	1 mm	1,1 mm	
R	2,65 mm	2,9 mm	
S	5,5 mm	5,6 mm	
T	4,3 mm	4,5 mm	
U	—	3,7 mm	
V	—	2,4 mm	
W	6,5 mm	6,6 mm	
AA	4,3 mm	4,4 mm	
AB	3,85 mm	3,95 mm	
AC	0,7 mm	0,9 mm	Radius
AD	0,2 mm	—	
AE	3 mm	—	
AF	2,2 mm	2,3 mm	
EA	40°	45°	Radius, 5
EB	10 mm	25 mm	
EC	0,45 mm	0,73 mm	

NOTE 1 A chamfer or radius is allowed to a maximum depth of 0,5 mm from the ferrule endface.

NOTE 2 The Delatch housing shall be movable toward the right and the left directions. These dimensions are given when the coupling sleeve is moved in its most right-direction position.

NOTE 3 The dimension J is given for the plug endface when not mated. It is noticed that the ferrule is movable by a certain axial compression force with direct contacting endfaces, and therefore the dimension J is variable. Ferrule compression force shall be 5,5 N to 6,5 N when the position of the optical datum target from the datum X is moved in the range of 3,9 mm to 4,1 mm. In addition, the dimension J shall become less than 3,25 mm with a relatively large axial compression force.

NOTE 4 The right-side position of Q shall become the left-side position to the plane defined by datum X when the coupling sleeve is moved to its most left-direction position.

NOTE 5 Dome eccentricity of the spherically polished ferrule endface shall be less than 50 µm.

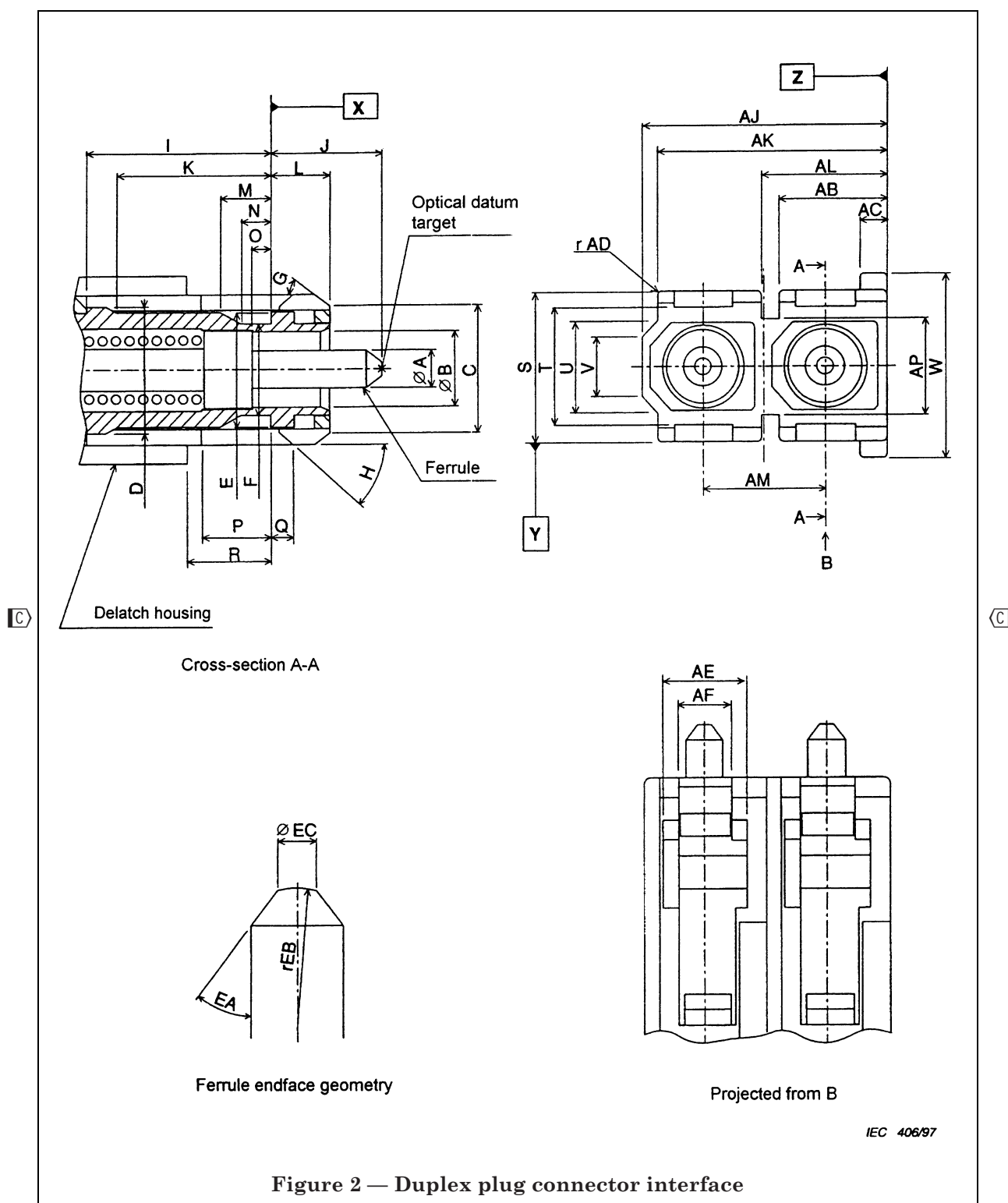


Table 2 — Dimensions of the duplex plug connector interface

Reference	Dimensions		Notes
	Minimum	Maximum	
A	1,2485 mm	1,2495	1
B	2,6 mm	2,7 mm	
C	4,6 mm	4,8 mm	
D	4,65 mm	4,75 mm	
E	4,3 mm	4,4 mm	
F	3,3 mm	3,4 mm	
G	25×	35×	
H	25×	35×	
Ⓒ I	6,55 mm	—	
J	4,2 mm	4,5 mm	
K	5,5 mm	—	2 Ⓒ 3
L	2,4 mm	2,5 mm	
M	1,5 mm	—	
N	0,6 mm	—	
O	0,5 mm	—	
P	2,6 mm	—	
Q	1,0 mm	1,1 mm	
R	2,65 mm	2,9 mm	
S	5,5 mm	5,6 mm	
T	4,3 mm	4,5 mm	
U	—	3,7 mm	2 2 and 4 2
V	—	2,4 mm	
W	6,5 mm	6,6 mm	
AB	3,7 mm	3,85 mm	
AC	0,7 mm	0,9 mm	
AD	0,2 mm	—	
AE	3,0 mm	—	
AF	2,2 mm	2,3 mm	
AJ	8,8 mm	8,9 mm	
AK	8,35 mm	8,45 mm	
AL	4,55 mm	4,7 mm	Radius
AM	4,45 mm	4,55 mm	
AP	—	3,7 mm	
EA	40×	45×	
EB	10 mm	25 mm	
EC	0,45 mm	0,73 mm	

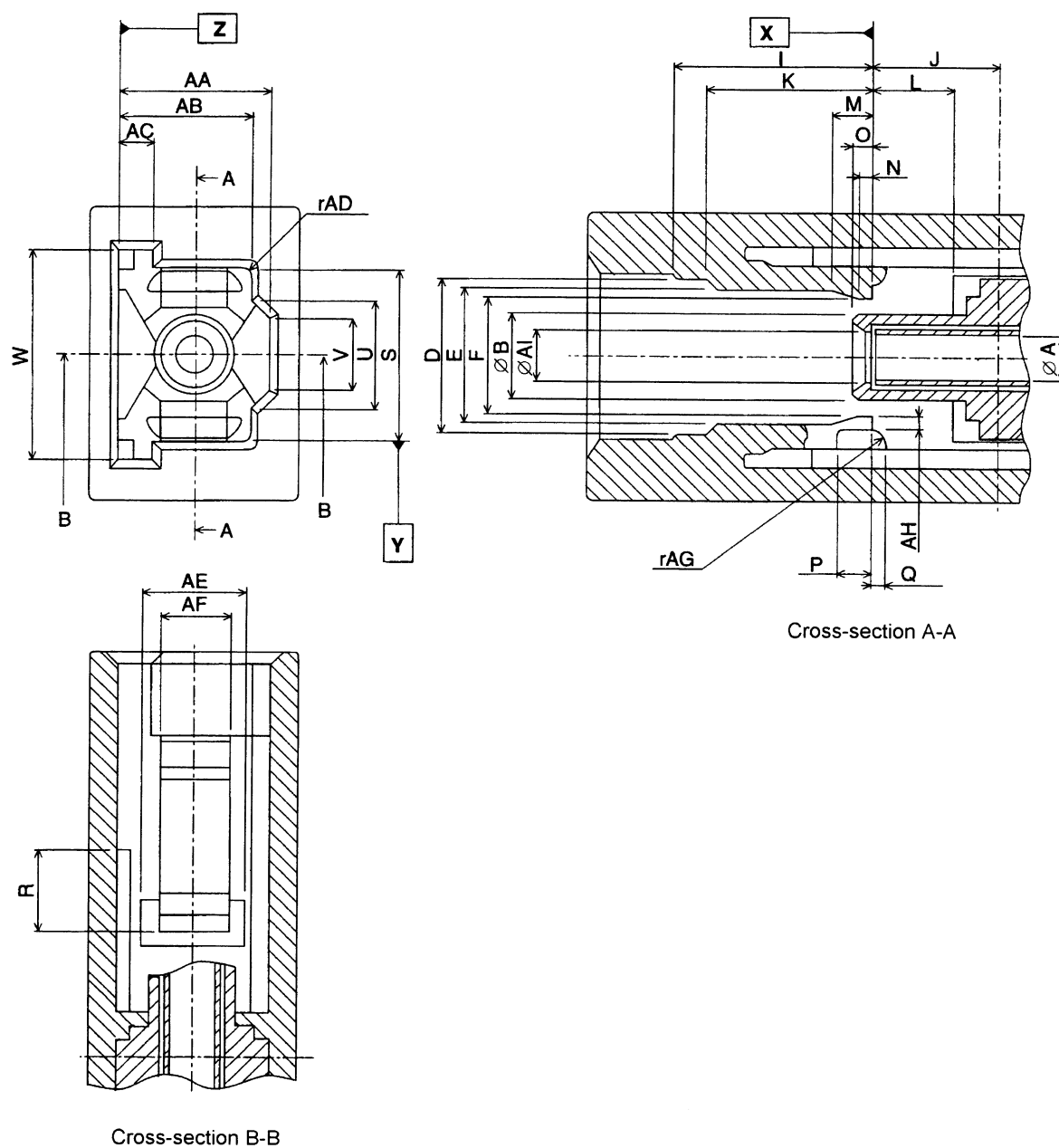
NOTE 1 A chamfer or radius is allowed to a maximum depth of 0,5 mm from the ferrule endface.

Ⓒ NOTE 2 The Delatch housing shall be movable toward the right and the left directions. These dimensions are given when the coupling sleeve is moved in its most right-direction position. Ⓒ

NOTE 3 The dimension J is given for the plug endface when not mated. It is noticed that the ferrule is movable by a certain axial compression force with direct contacting endfaces, and therefore the dimension J is variable. Ferrule compression force shall be 5,5 N to 6,5 N when the position of the optical datum target from the datum X is moved in the range of 3,9 mm to 4,1 mm. In addition, the dimension J shall become less than 3,25 mm with a relatively large axial compression force.

NOTE 4 The right-side position of Q shall become left-side position to the plane defined by datum X when the coupling sleeve is moved to its most left-direction position.

NOTE 5 Dome eccentricity of the spherically polished ferrule endface shall be less than 50 µm.



Cross-section A-A

Cross-section B-B

IEC 407/97

Figure 3a — Simplex adaptor connector interface

Table 3a — Dimensions of the simplex adaptor connector interface

Reference	Dimensions mm		Notes
	Minimum	Maximum	
A			See Table 3b
B	2,39	2,59	
D	4,8	5	See note
E	4,55	—	
F	2,9	3,5	
I	—	6,5	
J	3,9	4,1	
K	—	5,4	
L	2,55	2,7	
M	—	1,4	
N	—	0,55	
O	—	0,6	
P	—	1,2	
Q	—	0,4	
R	—	2,55	
S	5,65	5,75	
U	3,8	4	
V	3,3	—	
W	6,7	—	
AA	4,45	4,55	Radius
AB	4,01	4,11	
AC	0,95	1,15	
AD	—	0,2	Radius
AE	2,8	2,95	
AF	1,9	2,1	
AG	0,3	—	
AH	0,4	0,55	
AI	1,34	1,44	

NOTE The dimension F shall become greater than 4,5 mm when a plug is coupled to or removed from the adaptor.

Table 3b — Grade

Grade	Dimensions mm		Notes
	Minimum	Maximum	
1			Resilient sleeve, 1 and 2
NOTE 1 The connector alignment feature is a resilient alignment sleeve. The feature must accept a gauge pin to the centre of the adaptor with a force of 1 N to 2,5 N under the condition that another gauge pin is inserted into the feature from the other side. The centre of the adaptor is defined by the right-side position of the dimension J.			
NOTE 2 Add grade number to the interface reference number.			

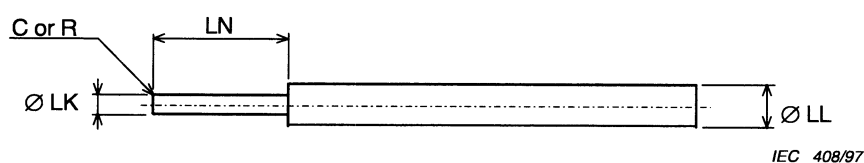


Figure 3b — Gauge pin for resilient alignment sleeve

Table 3c — Gauge pin dimensions

Reference	Dimensions mm		Notes
	Minimum	Maximum	
LK	1,2485	1,2495	Surface roughness grade N4 (0,2 4 m radius)
LL	2,6	2,8	
LN	4,7	9,5	

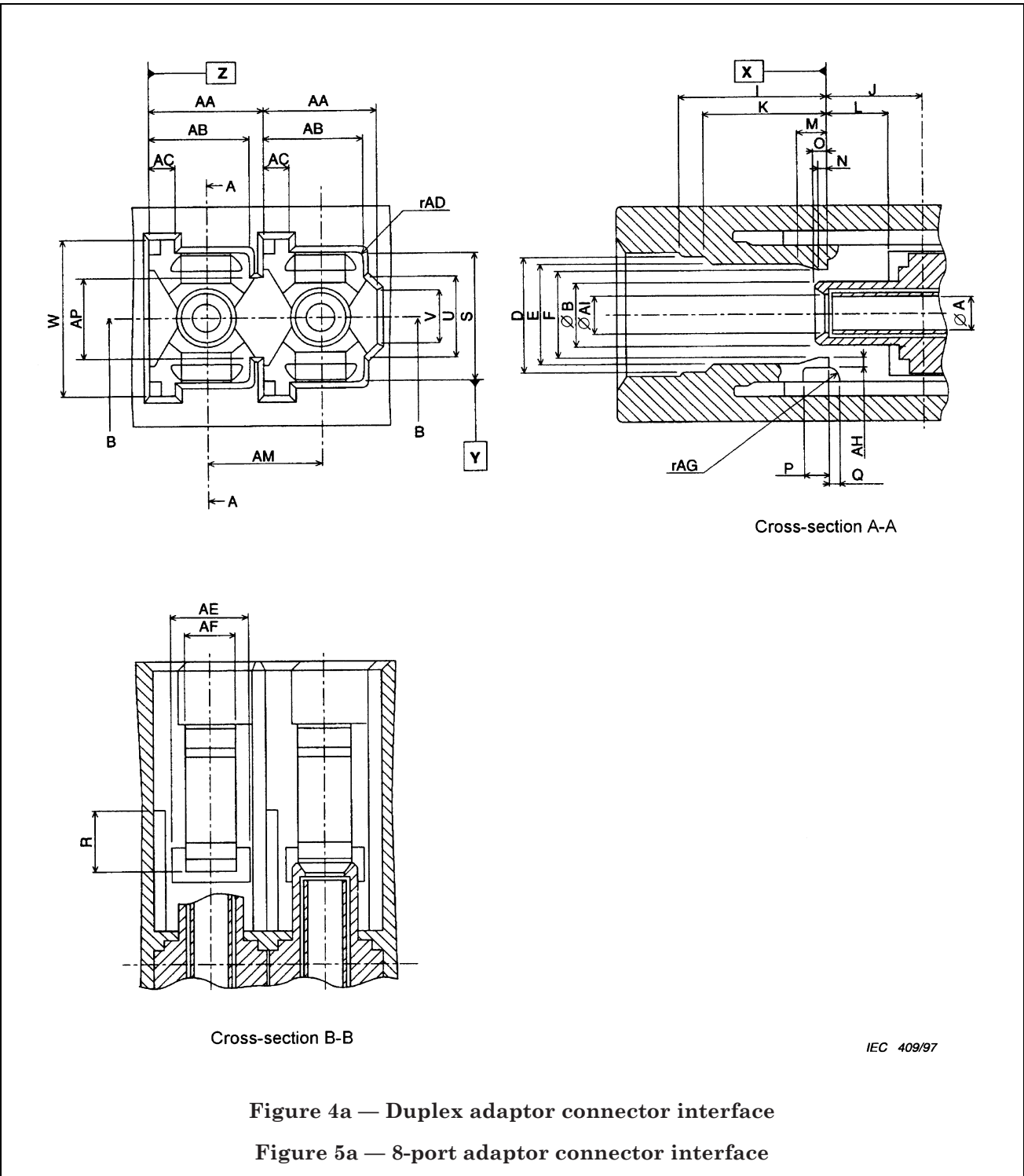


Table 4a — Dimensions of the duplex adaptor connector interface

Table 5a — Dimensions of the 8-port adaptor connector interface

Reference	Dimensions mm		Notes
	Minimum	Maximum	
A			See Table 4b or Table 5b
B	2,39	2,59	
D	4,8	5	See note
E	4,55	—	
F	2,9	3,5	
I	—	6,5	
J	3,9	4,1	
K	—	5,4	
L	2,55	2,7	
M	—	1,4	
N	—	0,55	
O	—	0,6	
P	—	1,2	
Q	—	0,4	
R	—	2,55	
S	5,65	5,75	
U	3,8	4	
V	3,3	—	
W	6,7	—	
AA	4,45	4,55	Radius
AB	4,01	4,11	
AC	0,95	1,15	
AD	—	0,2	
AE	2,8	2,95	Radius
AF	1,9	2,1	
AG	0,3	—	
AH	0,4	0,55	
AI	1,34	1,44	
AM	4,45	4,55	
AP	3,8	4	

NOTE The dimension F shall become greater than 4,5 mm when a plug is coupled to or removed from the adaptor.