

Fibre optic connector interfaces —

Part 7: Type MPO connector family

The European Standard EN 61754-7:2001 has the status of a
British Standard

ICS 33.180.20

National foreword

This British Standard is the official English language version of EN 61754-7:2001, including amendments A1:2001 and A2:2001. It was derived by CENELEC from IEC 61754-7:1996, Edition 1.2:2000, which comprises Edition 1.0:1996 consolidated by the incorporation of amendments 1:1999 and 2:2000.

The text of EN 61754-7:2001 modifies the text of IEC 61754-7:1996 with the following corrigendum:

- Figure 2c For $\varnothing A$, add the tolerance 0,000 5.
- Table 1b Delete note 2 and the references thereto in the column “Notes”.
- Table 1c Delete note 2 and the references thereto in the column “Notes”.
- Table 2b Delete the note and the reference thereto in the column “Notes”.

Sidelining in this document indicates the changes made by amendments A1:2001 and A2:2001.

The UK participation in its preparation was entrusted by Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/2, Fibre optic interconnecting devices, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 25 and a back cover.

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Amendments issued since publication

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English version

Fibre optic connector interfaces Part 7: Type MPO connector family

(Includes amendments A1:2001 and A2:2001)

(IEC 61754-7:1996, modified + A1:1999 + A2:2000)

Interfaces de connecteurs pour
fibres optiques
Partie 7: Famille de connecteurs
de type MPO
(inclut les amendements A1:2001 et
A2:2001)
(CEI 61754-7:1996, modifiée + A1:1999
+ A2:2000)

Steckgesichter von Lichtwellenleiter-
Steckverbindern
Teil 2: Bauart MPO Steckverbinderfamilie
(enthält Änderungen A1:2001 und
A2:2001)
(IEC 61754-7:1996, modifiziert + A1:1999
+ A2:2000)

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

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Foreword

The text of document 86B/836/FDIS, future edition 1 of IEC 61754-7, 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 61754-7 on 1997-03-11 with a corrigendum to the text of the International Standard.

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) 2002-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-07-01

Foreword to amendment A1

The text of document 86B/1213/FDIS, future amendment 1 to IEC 61754-7:1996, 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 61754-7 on 1999-10-01.

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Foreword to amendment A2

The text of document 86B/1324/FDIS, future amendment 2 to IEC 61754-7:1996, 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 61754-7 on 2000-11-01.

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- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-07-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2003-11-01

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FIBRE OPTIC CONNECTOR INTERFACES – Part 7: Type MPO connector family

1 Scope

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

2 Description

The parent connector for type MPO connector family is a multiway plug connector characterized by a rectangular ferrule normally 6,4 mm × 2,5 mm which utilizes two pins of 0,7 mm diameter as its alignment. It is applicable to a joint of multiple fibres up to 12 fibres by arraying them between two pin-positioning holes in the ferrule. The connector includes a push-pull coupling mechanism and a ferrule spring loaded in the direction of the optical axis. The connector 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.

Connector interfaces are configured using a female plug without pins, a male plug with pins fixed and an adaptor as shown in figure 1. The female plug is intermateable with the male plug.

Moreover, connector interfaces between the female plug and the male plug are configured by applying a backplane housing and a printed board housing instead of the adaptor.

Connector interfaces with different numbers of optical datum targets will intermate and will correctly align the lower defined numbers of optical datum targets.

3 Interfaces

This standard contains the following standard interfaces.

Interface 7-1: MPO female plug connector angled interface – Push/pull

Interface 7-2: MPO male plug connector angled interface – Push/pull

Interface 7-3: MPO adaptor interface – Push/pull

Interface 7-4: MPO female plug connector flat interface – Push/pull

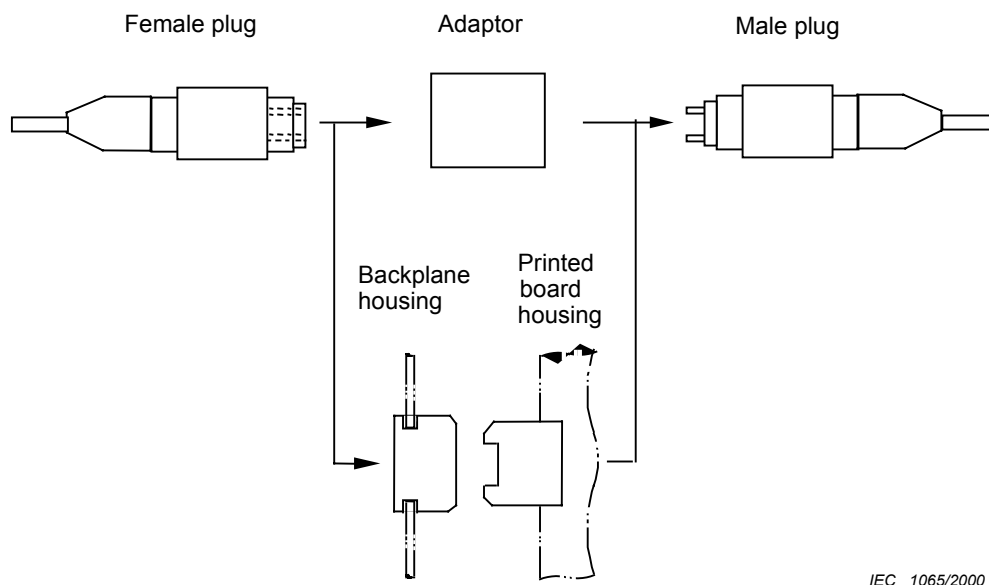
Interface 7-5: MPO male plug connector flat interface – Push/pull

Interface 7-6: MPO backplane housing interface – Self-retaining

Interface 7-7: MPO printed board housing interface – Self-retaining

The following standards are intermateable:

Female plugs	Adaptors/housings	Male plugs
61754-7-1	61754-7-3	61754-7-2
61754-7-4	61754-7-3	61754-7-5
61754-7-1	61754-7-6 and 61754-7-7	61754-7-2
61754-7-4	61754-7-6 and 61754-7-7	61754-7-5



IEC 1065/2000

Figure 1 – MPO connector configurations

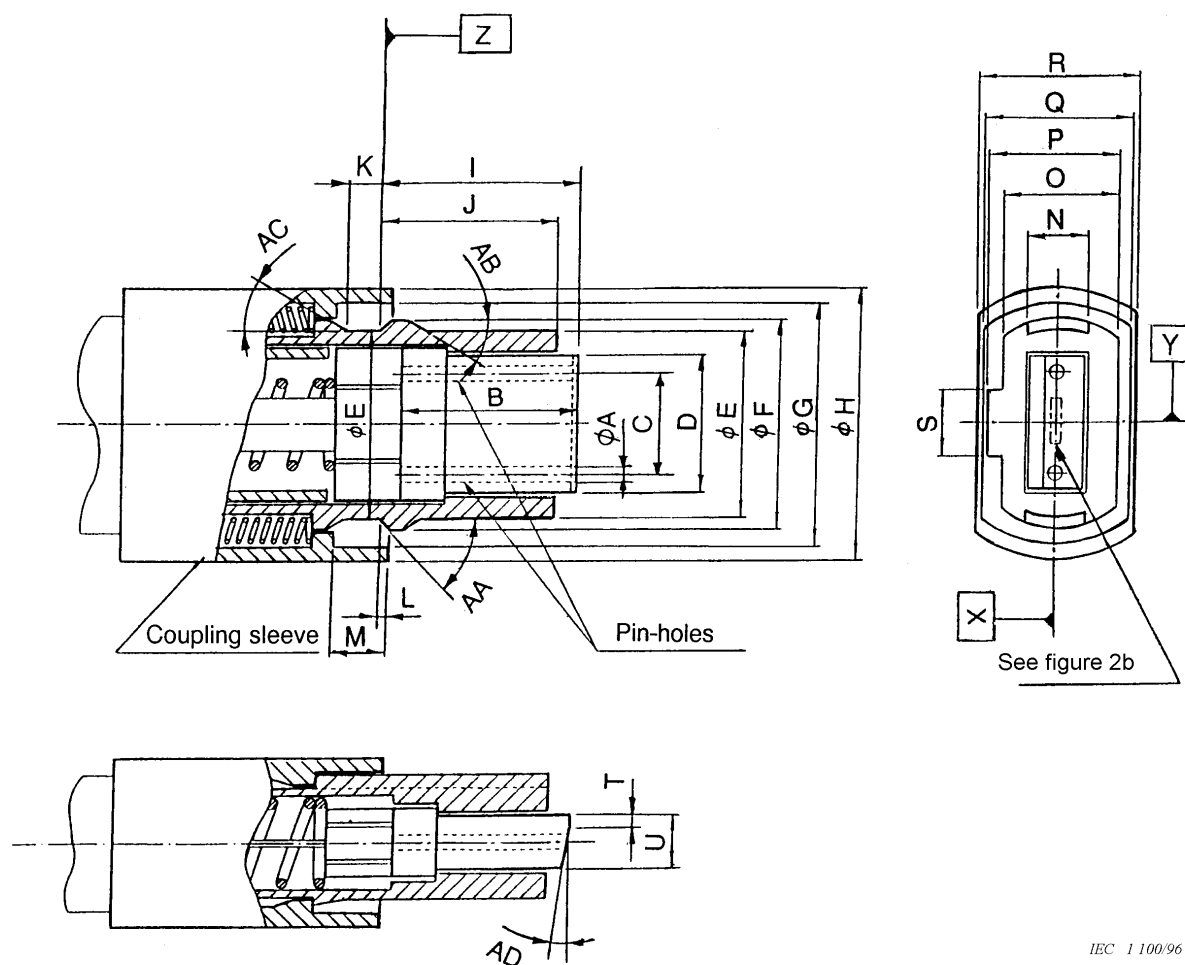


Figure 2a – MPO female plug connector angled interface

IEC 1100/96

Table 1a – Dimensions of the MPO female plug connector angled interface

Reference	Dimensions		Notes
	Minimum	Maximum	
A	0,699 mm	0,701 mm	1
B	7,9 mm	8,1 mm	
C	4,597 mm	4,603 mm	2
D	6,3 mm	6,5 mm	
E	8,34 mm	8,54 mm	
F	9,49 mm	9,59 mm	
G	10,85 mm	11,05 mm	
H	12,19 mm	12,59 mm	
I	8,8 mm	9,2 mm	3
J	7,9 mm	8,1 mm	
K	1,4 mm	–	
L	0,2 mm	0,8 mm	
M	2,4 mm	2,6 mm	4 and 5
N	2,8 mm	3,0 mm	
O	4,89 mm	4,99 mm	
P	5,59 mm	5,69 mm	
Q	5,7 mm	–	
R	–	7,7 mm	
S	2,9 mm	3,1 mm	
T	–	0,8 mm	
U	2,4 mm	2,5 mm	
AA	42°	45°	
AB	–	45°	
AC	–	45°	
AD	7,5°	8,5°	

NOTE 1 Each pin-hole shall accept a gauge pin as shown in figure 2c to a depth of 5,5 mm with a maximum force of 1,7 N. In addition, two pin-holes of a plug shall accept a gauge as shown in figure 2d to a depth of 5,5 mm with a maximum force of 3,4 N.

NOTE 2 Dimension C is defined as the distance between two pin-hole centres.

NOTE 3 Dimension I is given for a fibre endface centre of a plug end when not mated. It is noticed that a ferrule is movable by a certain axial compression force, and therefore the dimension I is variable. Ferrule compression force shall be 7,8 N to 11,8 N when a position of the fibre endface from the datum Z is in the range of 8,2 mm to 8,4 mm.

NOTE 4 Coupling sleeve shall be movable by a certain axial compression force. Dimension L is given for a coupling sleeve end when not mated. Coupling sleeve compression force shall be 2,9 N to 6,9 N when a position of the coupling sleeve endface from datum Z is in the range of 0 to 0,1 mm.

NOTE 5 An adaptor coupling part shall be unlocked by a left-direction movement of a coupling sleeve, when it is separate from an adaptor. When the coupling sleeve is moved for unlocking, a position of the coupling sleeve endface shall be larger than 2,0 mm in the left direction from the datum Z.