

Edition 1:1996 consolidated with amendments 1:1999 and 2:2000

Fibre optic connector interfaces –

**Part 7:
Type MPO connector family**

*Interfaces de connecteurs
pour fibres optiques –*

*Partie 7:
Famille de connecteurs de type MPO*

[IEC 61754-7:1996](#)

<https://standards.iteh.ai/en/standards/iec/e37810e7-665e-414e-a708-88b9eda6c3b3/iec-61754-7-1996>



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INTERNATIONAL STANDARD

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC CONNECTOR INTERFACES –

Part 7: Type MPO connector family

FOREWORD

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International Standard IEC 61754-7 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This consolidated version of IEC 61754-7 is based on the first edition (1996) [documents 86B/836/FDIS and 86B/926/RVD], its amendment 1 (1999) [documents 86B/1213/FDIS and 86B/1250/RVD] and amendment 2 (2000) [documents 86B/1324/FDIS and 86B/1372/RVD].

It bears the edition number 1.2.

A vertical line in the margin shows where the base publication has been modified by amendments 1 and 2.

A bilingual version of this publication may be issued at a later date.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2004. At this date, the publication will be

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- withdrawn;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

Withdrawing

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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

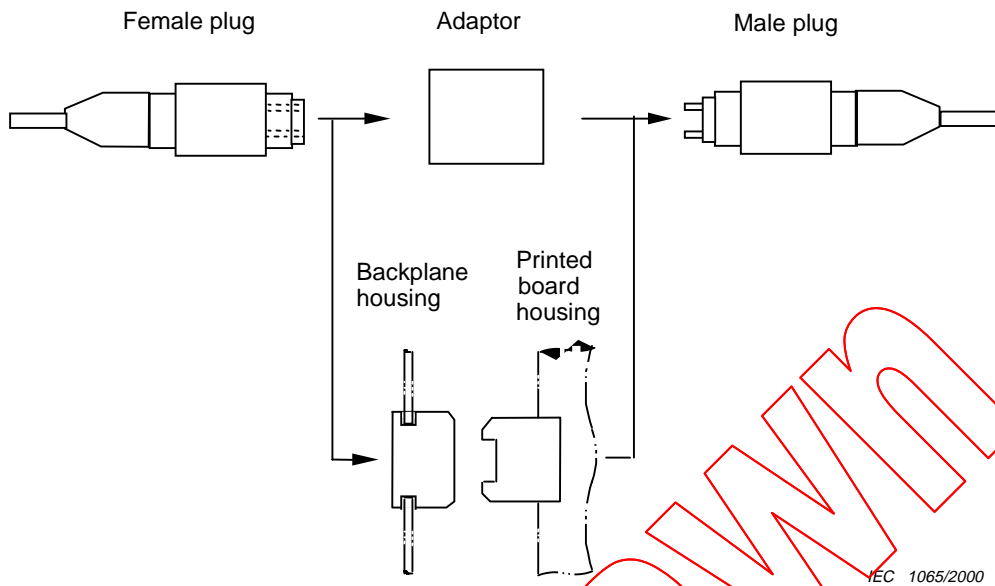


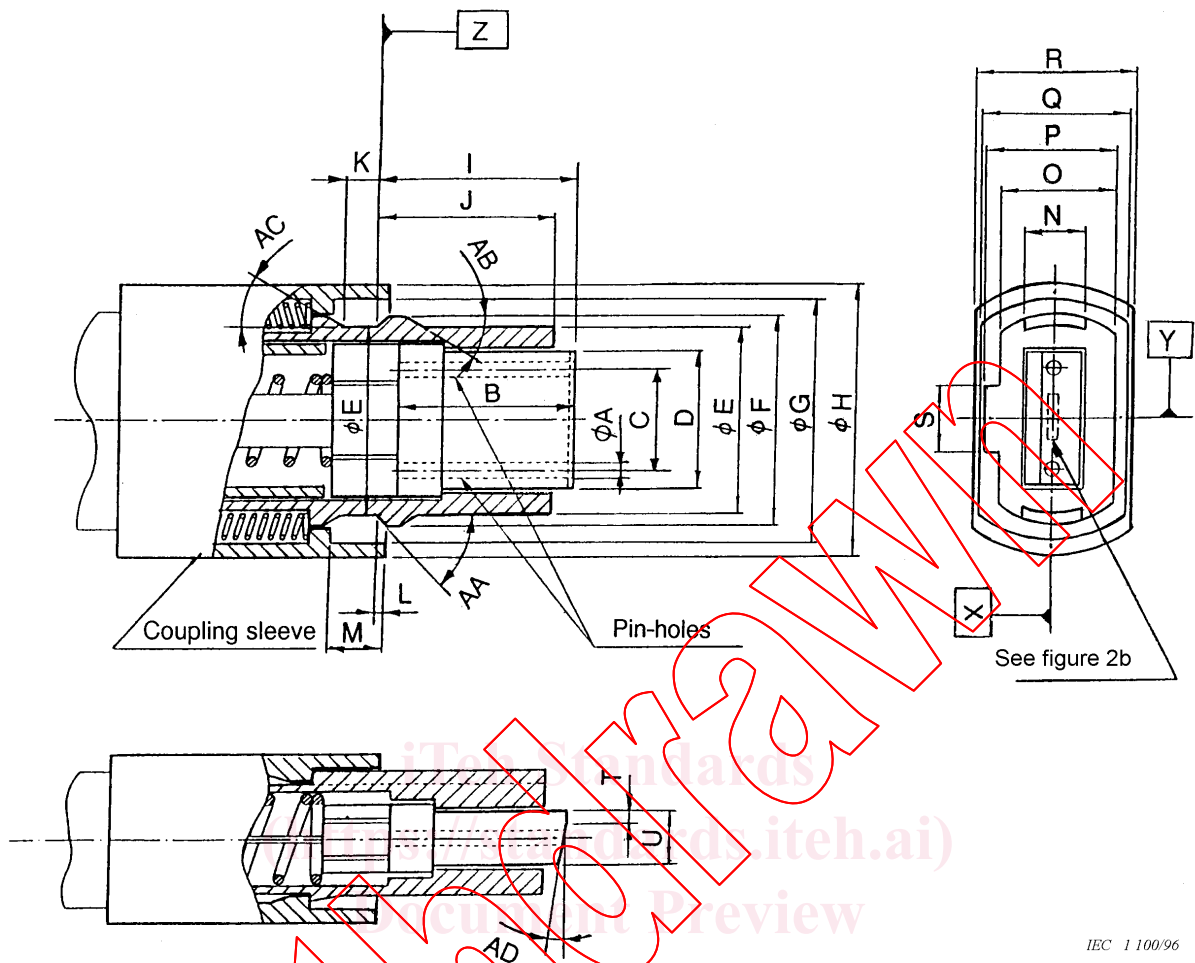
Figure 1 – MPO connector configurations

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Withstand



IEC 1100/96

IEC 61754-7:1996
<https://standards.iteh.ai/> Figure 2a - MPO female plug connector angled interface <https://standards.iteh.ai/>

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	3
F	9,49 mm	9,59 mm	
G	10,85 mm	11,05 mm	4 and 5
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	–	4 and 5
L	0,2 mm	0,8 mm	
M	2,4 mm	2,6 mm	3
N	2,8 mm	3,0 mm	
O	4,89 mm	4,99 mm	4 and 5
P	5,59 mm	5,69 mm	
Q	5,7 mm	–	3
R	–	7,7 mm	
S	2,9 mm	3,1 mm	4 and 5
T	–	0,8 mm	
U	2,4 mm	2,5 mm	3
AA	42°	45°	
AB	–	45°	3
AC	–	45°	
AD	7,5°	8,5°	3

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.

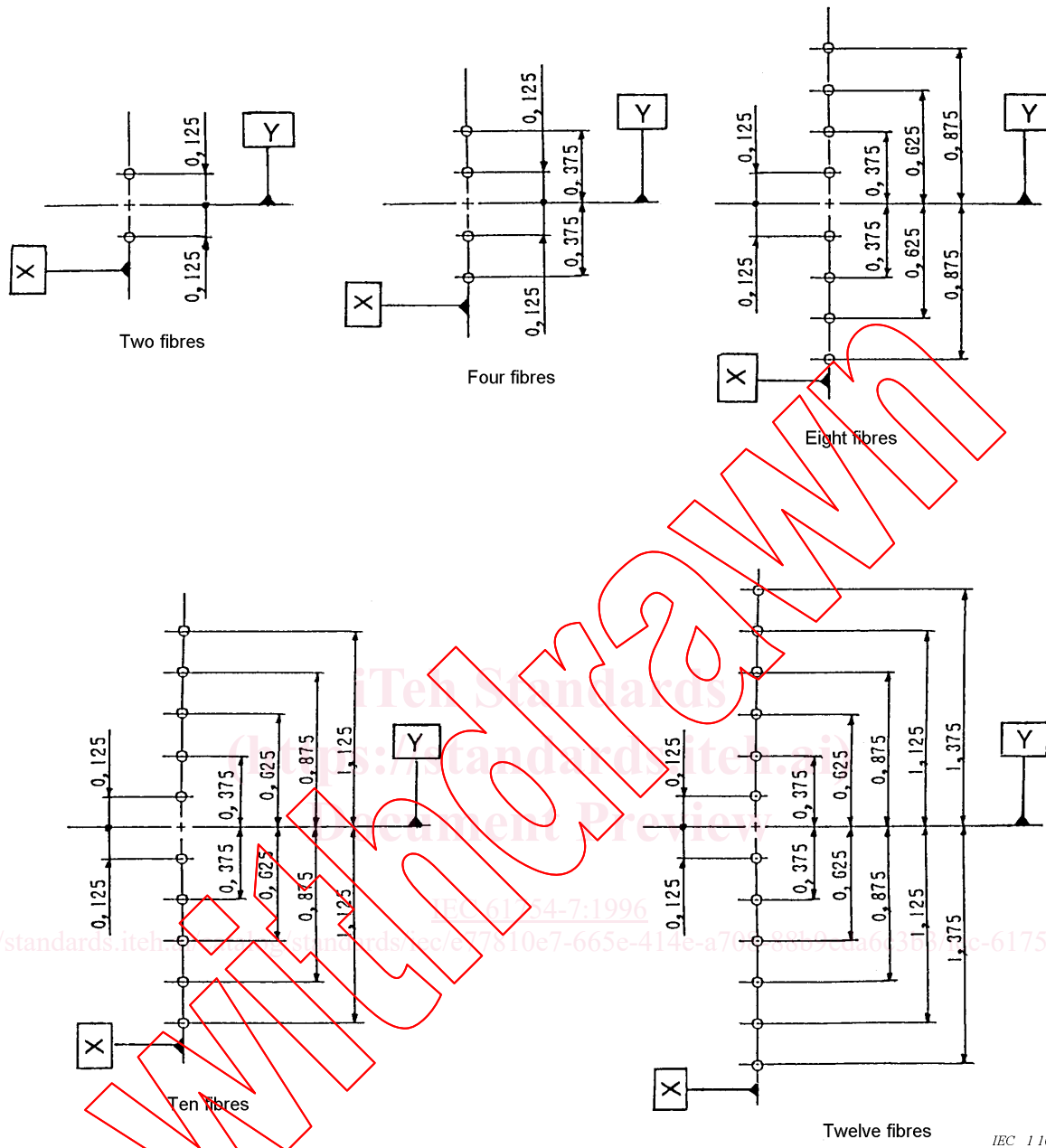


Figure 2b – Optical datum target location diagrams

NOTE The optical datum target location diagram is shown in the figure. Here, datum X is defined as the line passing through two pin-hole centres, and datum Y is defined as the line perpendicular to datum X and passing through the midpoint of two pin-hole centres.