INTERNATIONAL STANDARD

IEC 1754-7

First edition
1996-12

Fibre optic connector interfaces –

Part 7:
Type MPO connector family

Interfaces de connecteurs
pour fibres optiques –

Partie 7:
Famille de connecteurs de type MPO

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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International Standard IEC 1754-7 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

The text of this standard is based on the following documents:

FDIS	Report on voting
86B/836/FDIS	86B/926/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

1 Scope

This part of IEC 1754 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.

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

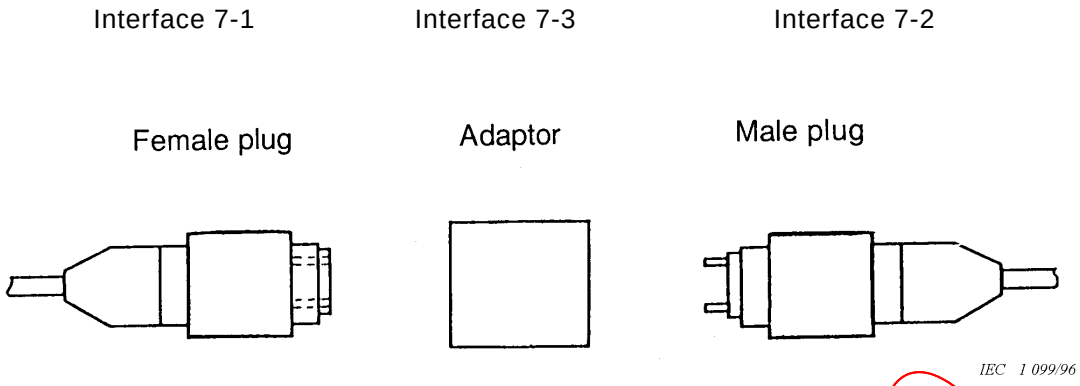

Figure 1 – MPO connector configurations

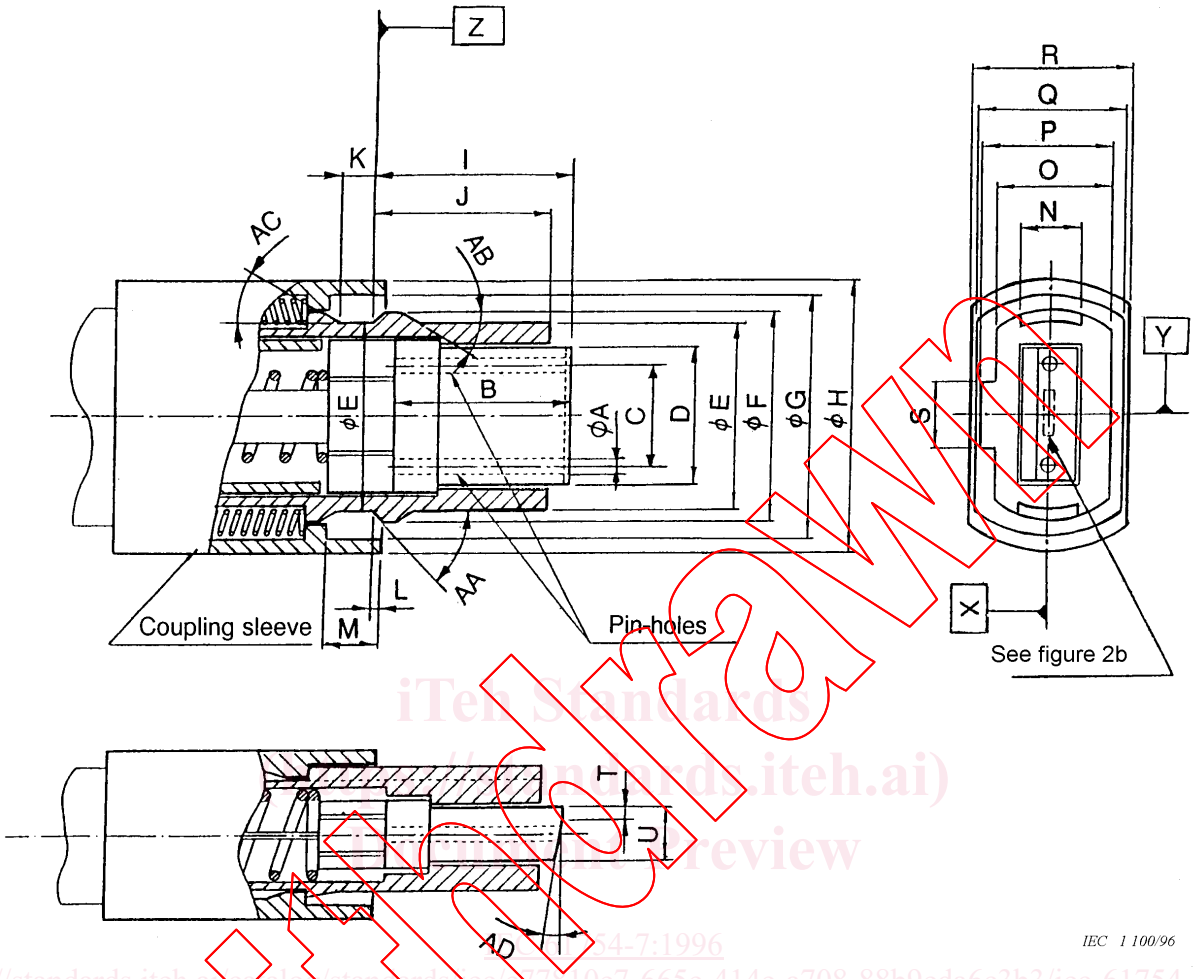

Figure 2a – MPO female plug connector angled interface

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	4 and 5
M	2,4 mm	2,6 mm	
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°	

NOTES

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.

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

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.

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.

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**.

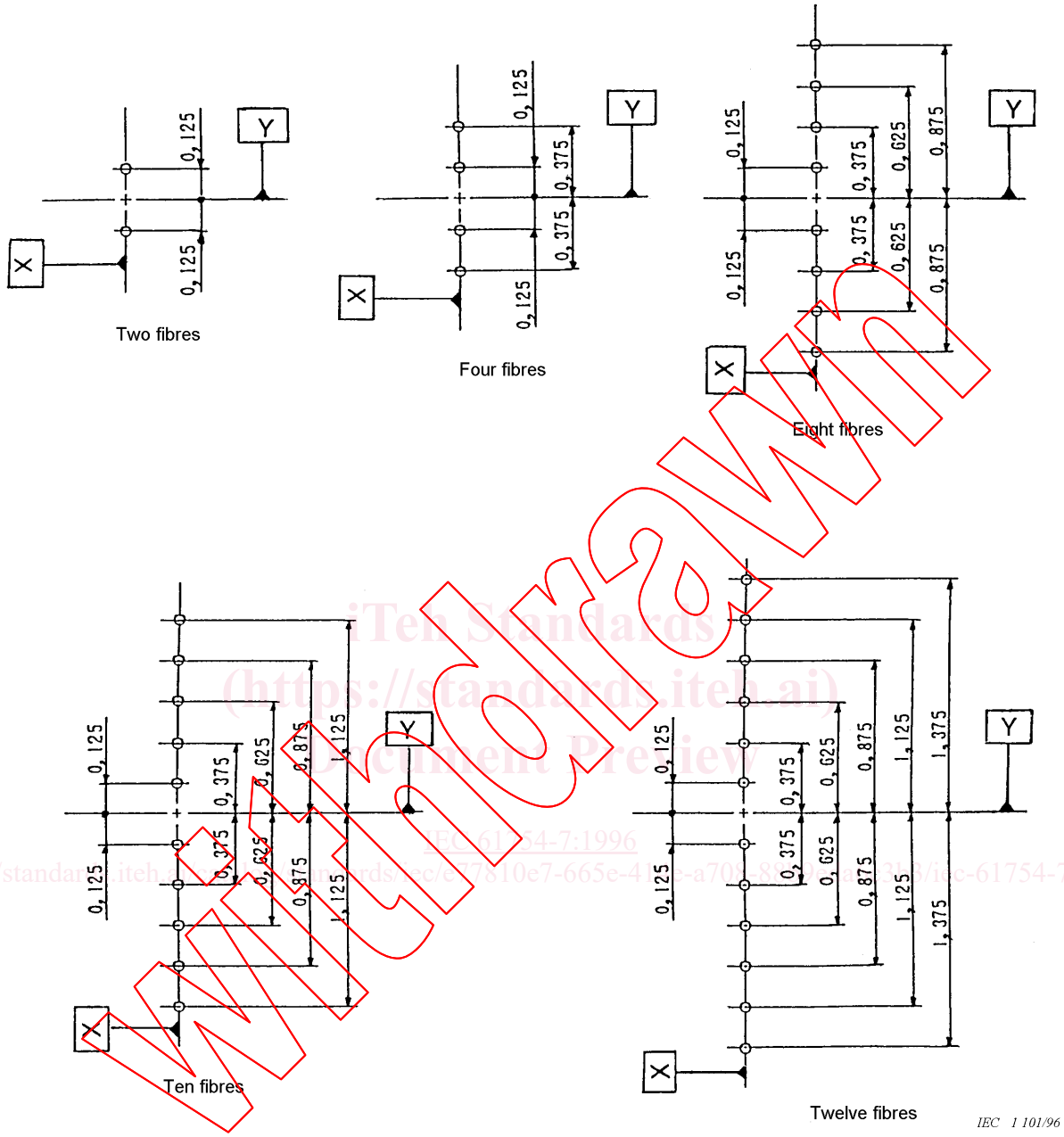

Figure 2b – Optical datum target location diagrams

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.