IEC 61754-7-1

Edition 1.0 2014-09

INTERNATIONAL STANDARD

Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces –
Part 7-1: Type MPO connector family – One fibre row

IEC 61754-7-1:2014-09(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONTENTS

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

Part 7-1: Type MPO connector family – One fibre row

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International Standard IEC 61754-7-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This first edition of IEC 61754-7-1, along with the first edition of IEC 61754-7-2, cancels and replaces the third edition of IEC 61754-7, published in 2008.

This first edition of IEC 61754-7-1 includes the one fibre row MPO variants, including the addition of active device receptacles and up-angled plugs.

The first edition of IEC 61754-7-2 will include the two fibre row MPO variants and related active device receptacles and up-angled plugs.

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Following the publication of both IEC 61754-7-1 and IEC 61754-7-2, IEC 61754-7 will be withdrawn.

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

FDIS	Report on voting
86B/3794A/FDIS	86B/3826/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 61754 series, under the general title *Fibre optic interconnecting devices and passive components – fibre optic connector interfaces,* can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

Part 7-1: Type MPO connector family – One fibre row

1 Scope

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

2 Description

The parent connector for type MPO connector family is a multiway plug characterized by a rectangular ferrule normally 6,4 mm × 2,5 mm which utilizes two pins of 0,7 mm diameter as its alignment. The variant in this standard provides a joint of 2 to 12 fibres by arraying them between two pin-positioning holes in the ferrule in a one-layer, (one-row) arrangement. 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.

There are two angled-interface plugs, one called down-angled and the other up-angled. They are defined for both male and female plugs. The up and down descriptors refer to the tilt direction of the ferrule's angled end-face relative to the fibre axis when looking toward the end-face with the plug's key feature on the top. For down-angled plugs, the angled surface faces slightly downward. For up-angled plugs, the angled surface faces slightly upward. These different angles affect intermateability for the two adaptor types. An opposed keyway adaptor mates two plugs with the keys in opposite orientations, for example one side keyway-up and the other keyway-down. In contrast, an aligned keyway adaptor mates two plugs with the keys at the same orientation. When using an opposed keyway adaptor with angled interfaces, two down-angled plugs or two up-angled plugs are connected. For aligned keyway adaptors with angled interfaces, one down-angled plug and one up-angled plug are connected.

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.

Additionally, the female plug interface is intermateable with the active device receptacle.

3 Interfaces

This standard contains the following standard interfaces:

Interface IEC 61754-7-1-1: MPO female plug, down-angled interface for 2 to 12 fibres

Interface IEC 61754-7-1-2: MPO male plug, down-angled interface for 2 to 12 fibres

Interface IEC 61754-7-1-3: MPO adaptor interface – Opposed keyway configuration

Interface IEC 61754-7-1-4: MPO female plug, flat interface for 2 to 12 fibres

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Interface IEC 61754-7-1-5: MPO male plug, flat interface for 2 to 12 fibres
Interface IEC 61754-7-1-6: MPO backplane housing interface
Interface IEC 61754-7-1-7: MPO printed board housing interface
Interface IEC 61754-7-1-8: MPO adaptor interface – Aligned keyway configuration
Interface IEC 61754-7-1-9: MPO active device receptacle, angled interface
Interface IEC 61754-7-1-10: MPO active device receptacle, flat interface
Interface IEC 61754-7-1-11: MPO female plug, up-angled interface for 2 to 12 fibres
Interface IEC 61754-7-1-12: MPO male plug, up-angled interface for 2 to 12 fibres

The following interfaces are intermateable:

Female plugs	Adaptors/housings/ receptacles	Male plugs
61754-7-1-1	61754-7-1-3	61754-7-1-2
61754-7-1-11	61754-7-1-3	61754-7-1-12
61754-7-1-1	61754-7-1-8	61754-7-1-12
61754-7-1-11	61754-7-1-8	61754-7-1-2
61754-7-1-4	61754-7-1-3 and 61754-7-1-8	61754-7-1-5
61754-7-1-1 or 61754-7-1-11	61754-7-1-6 and 61754-7-1-7	61754-7-1-2 or 61754-7-1-12
61754-7-1-4	61754-7-1-6 and 7-1-7	61754-7-1-5
61754-7-1-1	61754-7-1-9	N/A
61754-7-1-4	61754-7-1-10	N/A

NOTE Connector interfaces with 2 to 12 fibres will intermate and will correctly align the lower defined numbers of optical datum targets (see Figure 4)

Figure 1 shows MPO connector configurations.

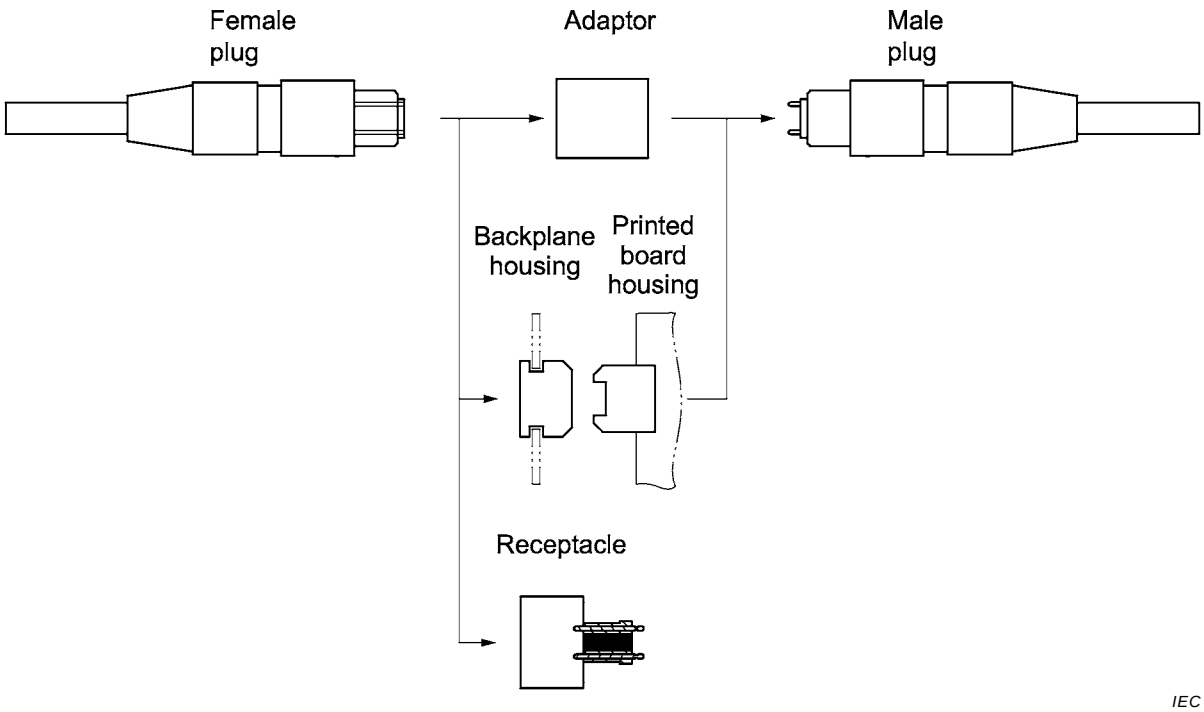

Figure 1 – MPO connector configurations

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Figures 2 and 3 show down-angled and up-angled interface of the MPO female plug. Table 1 gives the dimensions of the MPO female plug, down- or up-angled interfaces.

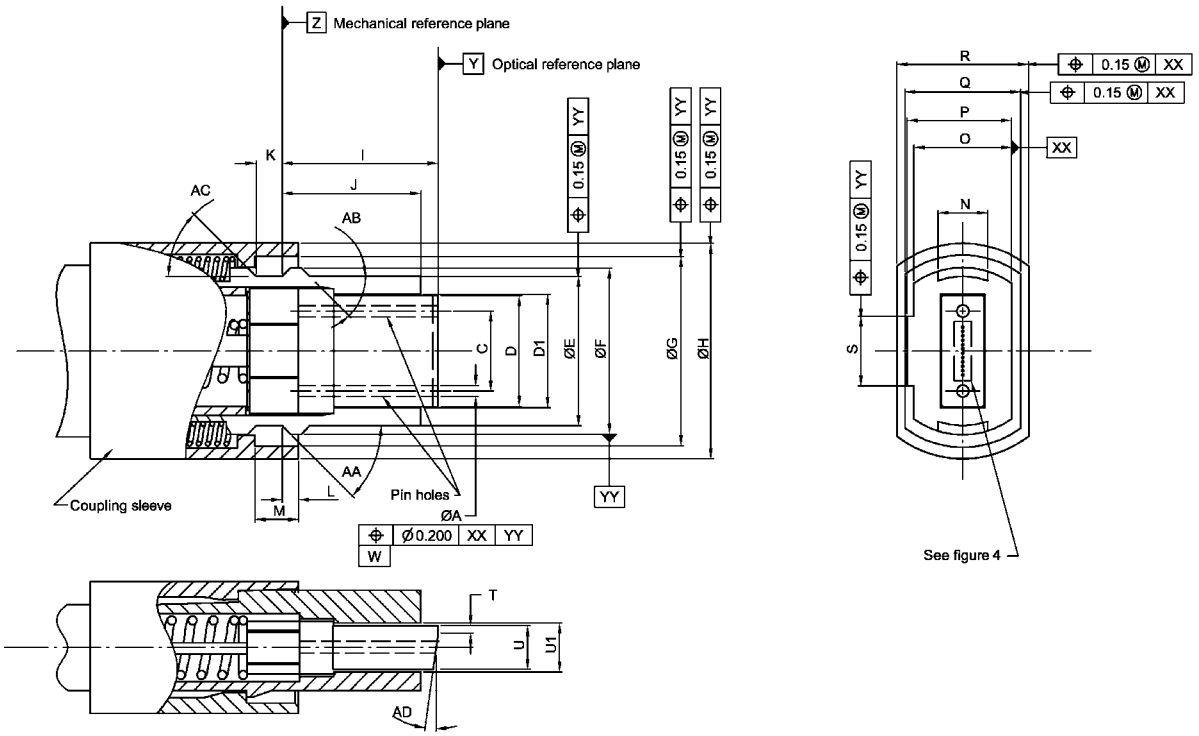

Figure 2 – MPO female plug, down-angled interface

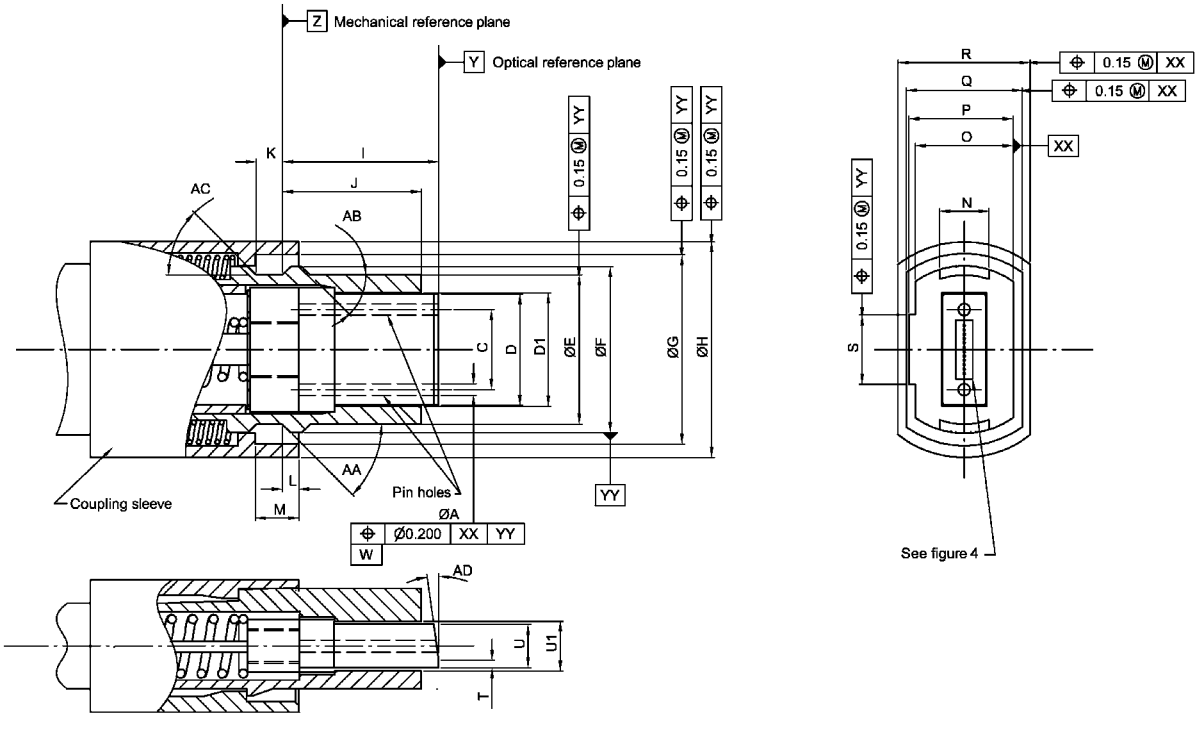

Figure 3 – MPO female plug, up-angled interface

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Table 1 – Dimensions of the MPO female plug, down- or up-angled interfaces

Reference	Dimensions	
	Minimum	Maximum
A[a]	0,699 mm	0,701 mm
C[b]	4,597 mm	4,603 mm
D	6,3 mm	6,5 mm
D1[h]	6,7 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[c,f]	8,8 mm	9,2 mm
J	7,9 mm	8,1 mm
K	1,4 mm	–
L[d,e]	0,2 mm	0,8 mm
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
U1[h]	2,7 mm	–
AA	42°	45°
AB	–	45°
AC	–	45°
AD[i,j]	7,5°	8,5°

[a] Each pin-hole shall accept a gauge pin as shown in Figure 5 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 5 to a depth of 5,5 mm with a maximum force of 3,4 N.

[b] Dimension C is defined as the distance between two pin-hole centres.

[c] 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 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.

[d] The 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 the position of the coupling sleeve endface from datum Z is in the range of 0 mm to 0,1 mm to the right or to the left of datum Z.

[e] 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, the position of the coupling sleeve endface shall be larger than 2,0 mm in the left direction from the datum Z.

[f] Dimension I is defined at the centre line between the two pin-hole centres.

[g] The mating/unmating force between an MPO plug and adaptor shall not exceed 30,0 N.

[h] Dimensions D1 and U1 are defined only at the end of the plug as shown.

[i] The down-angled and up-angled plugs shall be clearly marked to distinguish them from each other and flat interfaces through the use of colour, labelling or other appropriate identification method. This identification method shall be visible when the plug is in the mated or unmated condition.

[j] Since angled MPO plugs require a Y-offset of the fibre holes in relation to the guide pin holes, and the Y-offset is referenced from the epoxy window of the ferrule, the angle shall be polished as a down-angle from the epoxy window. The orientation of the ferrule epoxy window may be reversed in the MPO plug to produce the up-angle variant.

Figure 4 shows optical datum target location diagrams. Figure 5 shows the gauge pin and Table 2 shows its dimensions.

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Dimensions in millimetres

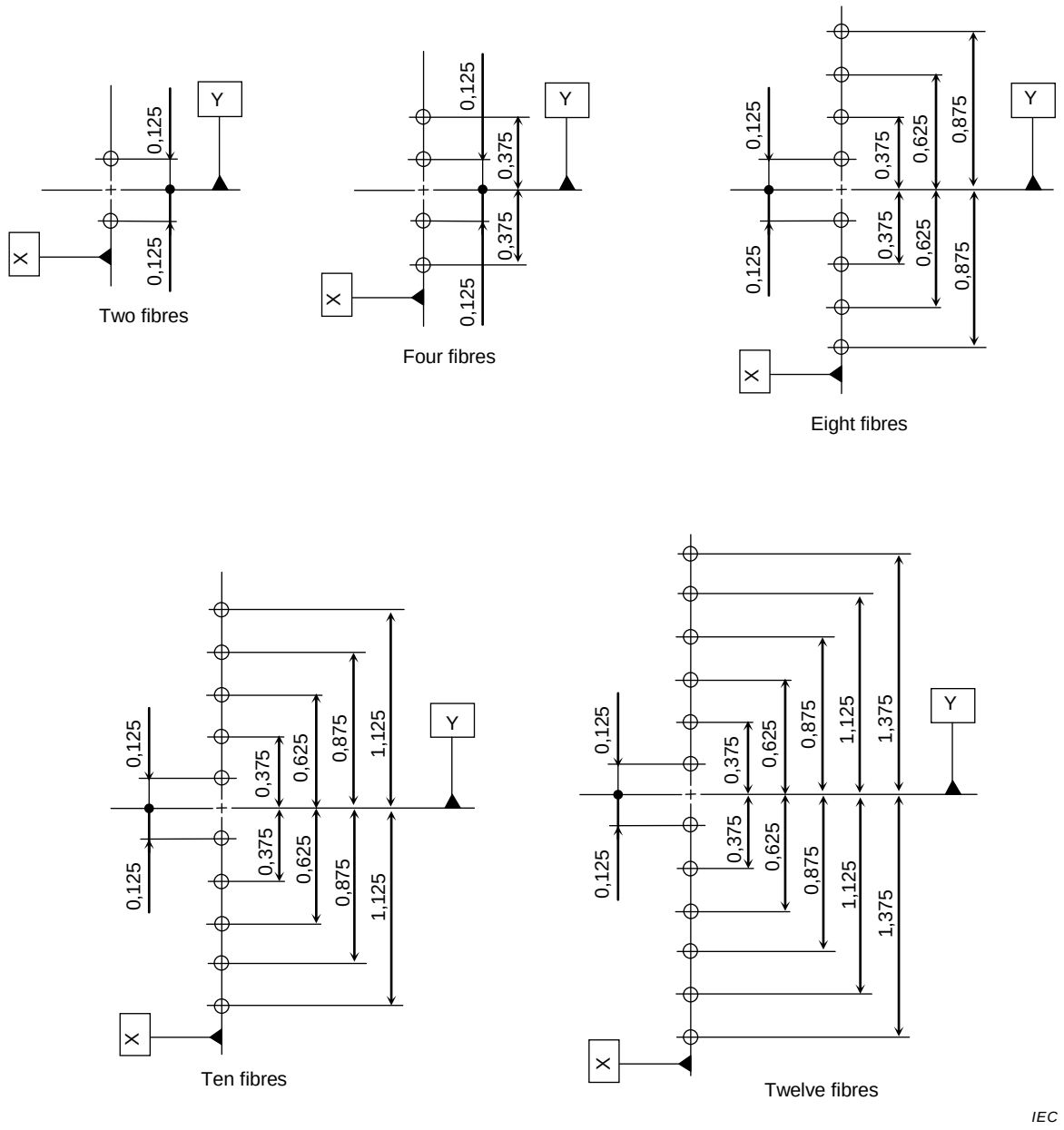

Figure 4 – Optical datum target location diagrams

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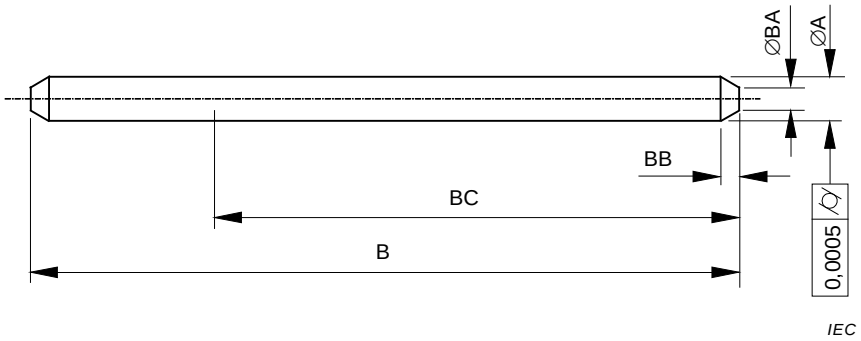

Figure 5 – Gauge pin

Table 2 – Dimensions of the gauge pin

Reference	Dimensions mm		Notes
	Minimum	Maximum	
A	0,698 5	0,699 0	1
B	10,8	11,2	2
BA	0,2	0,4	
BB	0,2	0,5	
BC	6,0	–	
NOTE 1 Surface roughness R_z = 0,1 μm for the length of dimension BC.			
NOTE 2 Typical dimensions.			

Figure 6 shows the gauge for the plug and Table 3 shows its dimensions..

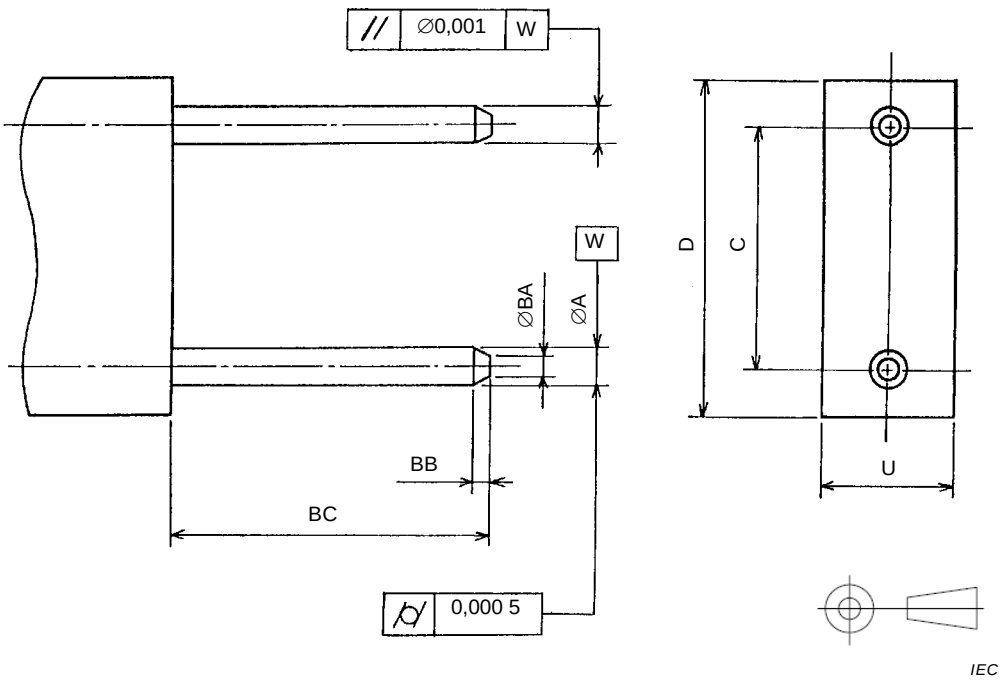

Figure 6 – Gauge for plug

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Table 3 – Dimensions of the gauge for plug

Reference	Dimensions mm		Notes
	Minimum	Maximum	
A	0,698 5	0,699 0	For two pins, 1
C	4,599 5	4,600 5	
D	6,3	6,5	2
U	2,4	2,5	2
BA	0,2	0,4	
BB	0,2	0,5	
BC	6,0	6,5	
NOTE 1 Surface roughness R_z = 0,1 μm.			
NOTE 2 Typical dimensions.			

Figures 7 and 8 show down-angled and up-angled interface of MPO male plug. Table 4 gives the dimensions of the MPO male plug, down- or up-angled interfaces.

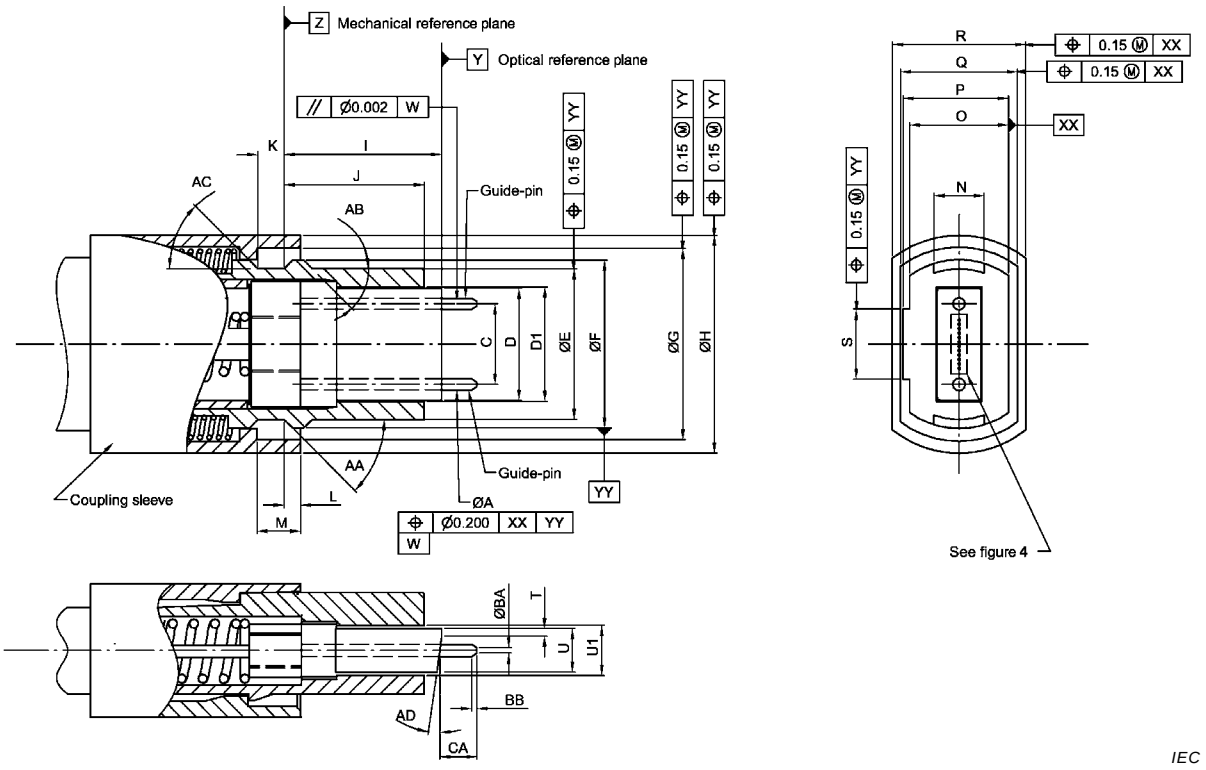

Figure 7 – MPO male plug, down-angled interface

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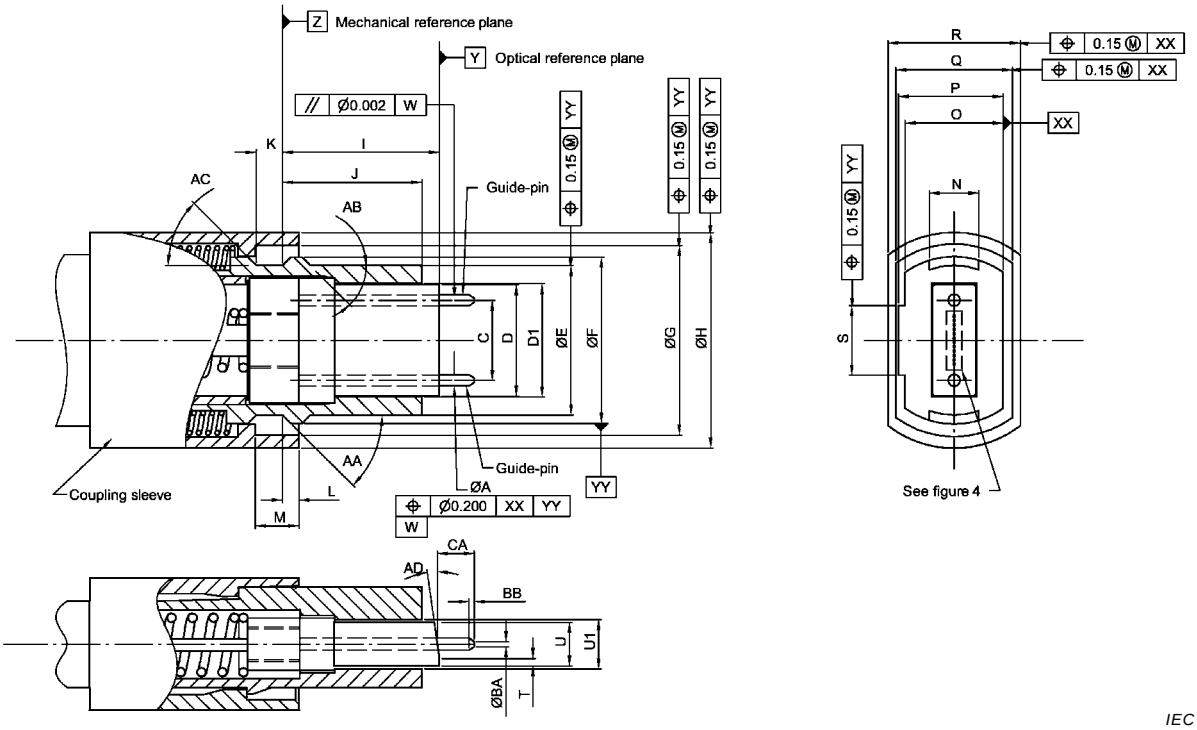

Figure 8 – MPO male plug, up-angled interface

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Table 4 – Dimensions of the MPO male plug, down- or up-angled interfaces

Reference	Dimensions	
	Minimum	Maximum
A[a]	0,697 mm	0,699 mm
C[b]	4,597 mm	4,603 mm
D	6,3 mm	6,5 mm
D1[i]	6,7 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[c,g]	8,8 mm	9,2 mm
J	7,9 mm	8,1 mm
K	1,4 mm	–
L[d,e]	0,2 mm	0,8 mm
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
U1[i]	2,7 mm	–
AA	42°	45°
AB	–	45°
AC	–	45°
AD[j,k]	7,5°	8,5°
BA[f]	0,2 mm	0,4 mm
BB	0,2 mm	0,5 mm
CA	1,6 mm	3,3 mm

[a] Each guide pin shall be retained with a minimum force of 19,6 N. Surface roughness R_z shall be below 0,5 μm.

[b] Dimension C is defined as the distance between two guide-pin centres.

[c] 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.

[d] The 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 the position of the coupling sleeve endface from datum Z is in the range of 0 mm to 0,1 mm to the right or to the left of datum Z.

[e] 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, the position of the coupling sleeve endface shall be larger than 2,0 mm in the left direction from the datum Z.

[f] The top shape of the guide-pin may be a round shape that is symmetrical about the guide-pin axis with a minimum radius of 0,15 mm.

[g] Dimension I is defined at the centre line between the two guide-pin centres.

[h] The mating/unmating force between an MPO plug and adaptor shall not exceed 30,0 N.

[i] Dimensions D1 and U1 are defined only at the end of the plug as shown.

[j] The down-angled and up-angled plugs shall be clearly marked to distinguish them from each other and flat interfaces through the use of colour, labelling or other appropriate identification method. This identification method shall be visible when the plug is in the mated or unmated condition.

[k] Since angled MPO plugs require a Y-offset of the fibre holes in relation to the guide pin holes, and the Y-offset is referenced from the epoxy window of the ferrule, the angle shall be polished as a down-angle from the epoxy window. The orientation of the ferrule epoxy window may be reversed in the MPO plug to produce the up-angle variant.

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Figure 9 shows opposed keyway configuration of MPO adaptor interface. Table 5 gives the dimensions of the MPO adaptor interface, opposed keyway configuration.

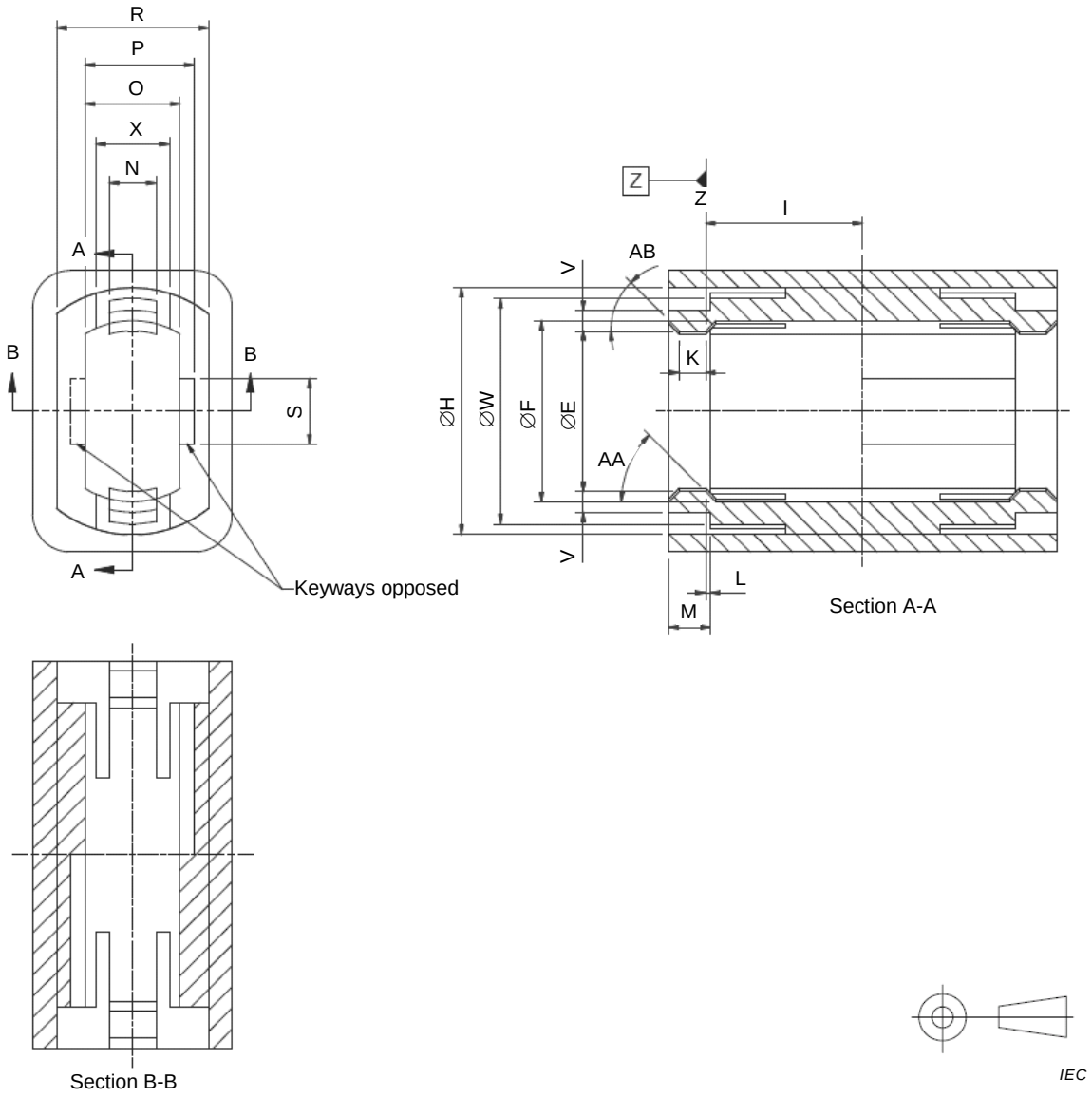

Figure 9 – MPO adaptor interface, opposed keyway configuration

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Table 5 – Dimensions of the MPO adaptor interface, opposed keyway configuration

Reference	Dimensions mm		Notes
	Minimum	Maximum	
E	8,54 mm	8,74 mm	
F	9,6 mm	9,7 mm	
H[a]	12,6 mm	–	
I	8,2 mm	8,4 mm	
K	–	1,39 mm	
L[b]	0	0,1 mm	
M	1,6 mm	2,0 mm	
N	2,4 mm	2,6 mm	
O	5,0 mm	5,1 mm	
P	5,7 mm	5,9 mm	
R	7,8 mm	–	
S	3,4 mm	3,6 mm	
V	0,95 mm	1,15 mm	
W[a]	–	12,2 mm	
X	3,4 mm	–	
AA	45°	48°	
AB	45°	50°	

[a] An adaptor latch shall be allowed the maximum deflection given by the plug and adaptor requirements. To ensure intermateability, the following requirement shall be met:

$$\frac{(\phi H - \phi W)}{2} > 0{,}53 \text{ mm}$$

[b] Dimension L is the distance from datum Z to a latch-ledge end. The latch-ledge end may be located to the right or to the left of datum Z.

[c] The mating/unmating force between an MPO plug and adaptor shall not exceed 30,0 N.

Figure 10 shows the flat interface of the MPO female plug interface. Table 6 gives the dimensions of the MPO female plug, flat interface.

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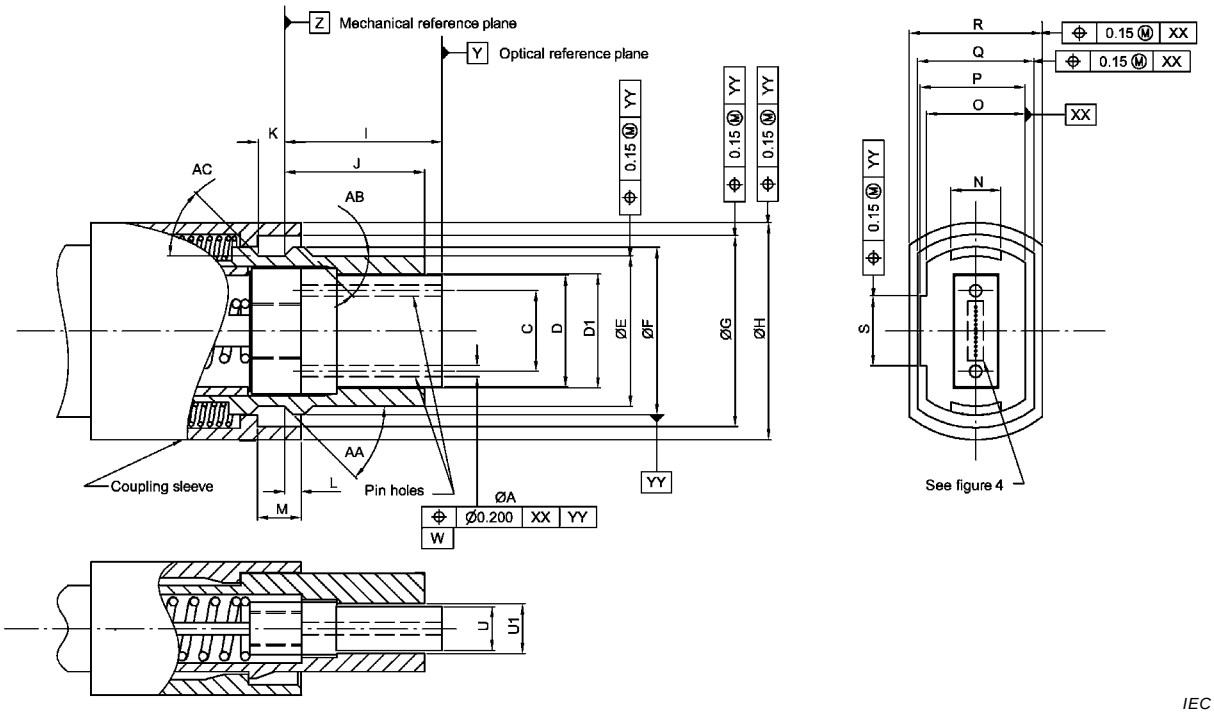

Figure 10 – MPO female plug, flat interface

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Table 6 – Dimensions of the MPO female plug, flat interface

Reference	Dimensions		Notes
	Minimum	Maximum	
A[a]	0,699 mm	0,701 mm	
C[b]	4,597 mm	4,603 mm	
D	6,3 mm	6,5 mm	
D1[h]	6,7 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[c,f]	8,8 mm	9,2 mm	
J	7,9 mm	8,1 mm	
K	1,4 mm	–	
L[d,e]	0,2 mm	0,8 mm	
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	
U	2,4 mm	2,5 mm	
U1[h]	2,7 mm	–	
AA	42°	45°	
AB	–	45°	
AC	–	45°	

[a] Each pin-hole shall accept a gauge pin as shown in Figure 5 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 5 to a depth of 5,5 mm with a maximum force of 3,4 N.

[b] Dimension C is defined as the distance between two pin-hole centres.

[c] 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 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.

[d] The 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 the position of the coupling sleeve endface from datum Z is in the range of 0 mm to 0,1 mm to the right or to the left of datum Z.

[e] 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, the position of the coupling sleeve endface shall be larger than 2,0 mm in the left direction from the datum Z.

[f] Dimension I is defined at the centre line between the two pin-hole centres.

[g] The mating/unmating force between an MPO plug and adaptor shall not exceed 30,0 N.

[h] Dimensions D1 and U1 are defined only at the end of the plug as shown.

Figure 11 shows a flat interface of the MPO male plug interface. Table 7 gives the dimensions of the MPO male plug, flat interface.

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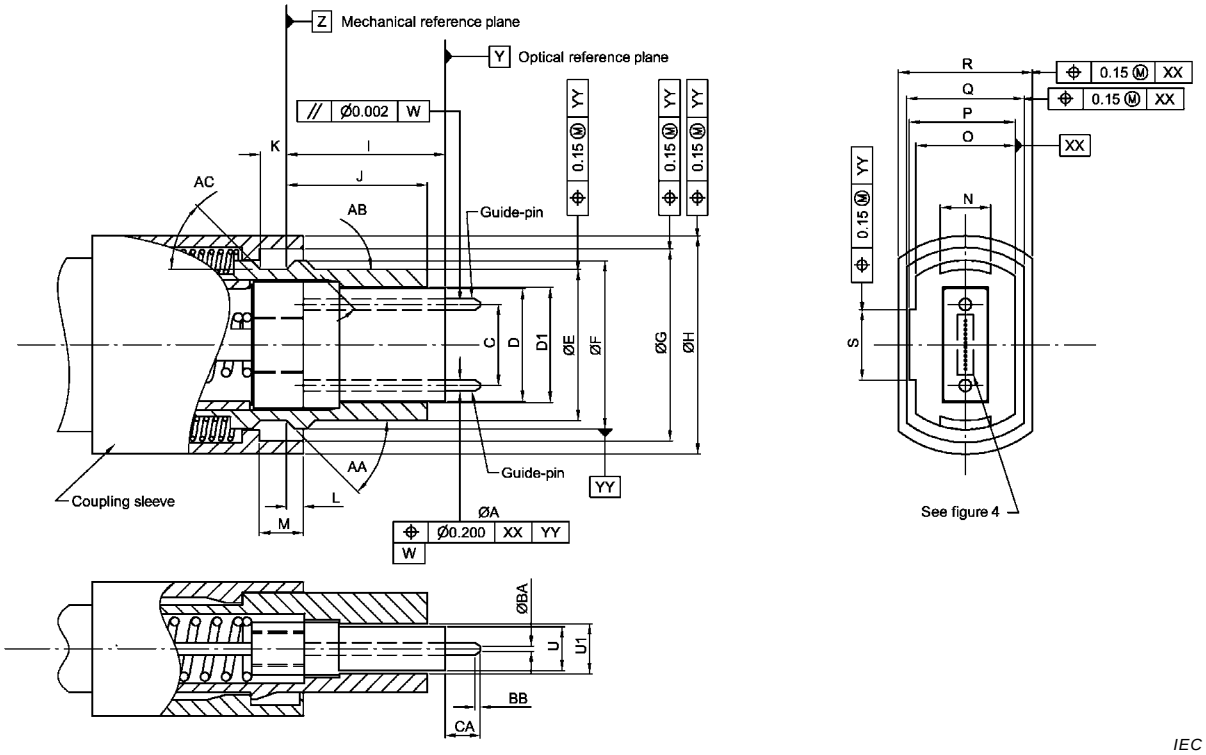

Figure 11 – MPO male plug, flat interface

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Table 7 – Dimensions of the MPO male plug, flat interface

Reference	Dimensions		Notes
	Minimum	Maximum	
A[a]	0,697 mm	0,699 mm	
C[b]	4,597 mm	4,603 mm	
D	6,3 mm	6,5 mm	
D1[i]	6,7 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[c,g]	8,8 mm	9,2 mm	
J	7,9 mm	8,1 mm	
K	1,4 mm	–	
L[d,e]	0,2 mm	0,8 mm	
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	
U	2,4 mm	2,5 mm	
U1[i]	2,7 mm	–	
AA	42°	45°	
AB	–	45°	
AC	–	45°	
BA[f]	0,2 mm	0,4 mm	
BB	0,2 mm	0,5 mm	
CA	1,6 mm	3,3 mm	

[a] Each guide pin shall be retained with a minimum force of 19,6 N. Surface roughness R_z shall be below 0,5 μm.

[b] Dimension C is defined as the distance between two guide-pin centres.

[c] 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.

[d] The 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 the position of the coupling sleeve endface from datum Z is in the range of 0 mm to 0,1 mm to the right or to the left of datum Z.

[e] 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, the position of the coupling sleeve endface shall be larger than 2,0 mm in the left direction from the datum Z.

[f] The top shape of guide-pin may be a round shape that is symmetrical about the guide-pin axis with a minimum radius of 0,15 mm.

[g] Dimension I is defined at the centre line between the two guide-pin centres.

[h] The mating/unmating force between an MPO plug and adaptor shall not exceed 30,0 N.

[i] Dimensions D1 and U1 are defined only at the end of the plug as shown.

Figure 12 shows the MPO backplane housing interface. Table 8 gives the dimensions of the MPO backplane housing interface.

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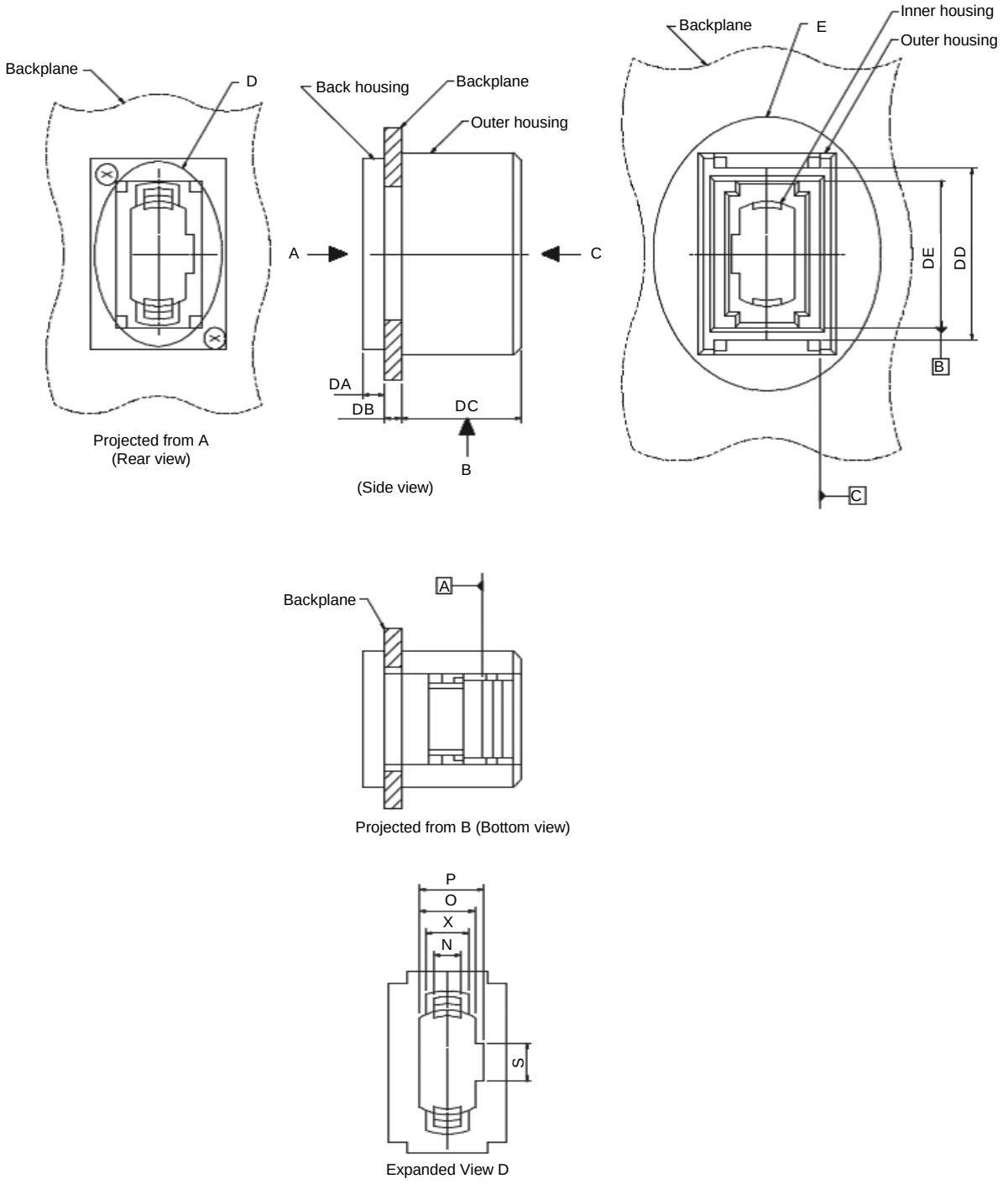

Figure 12 – MPO backplane housing interface *(1 of 2)*

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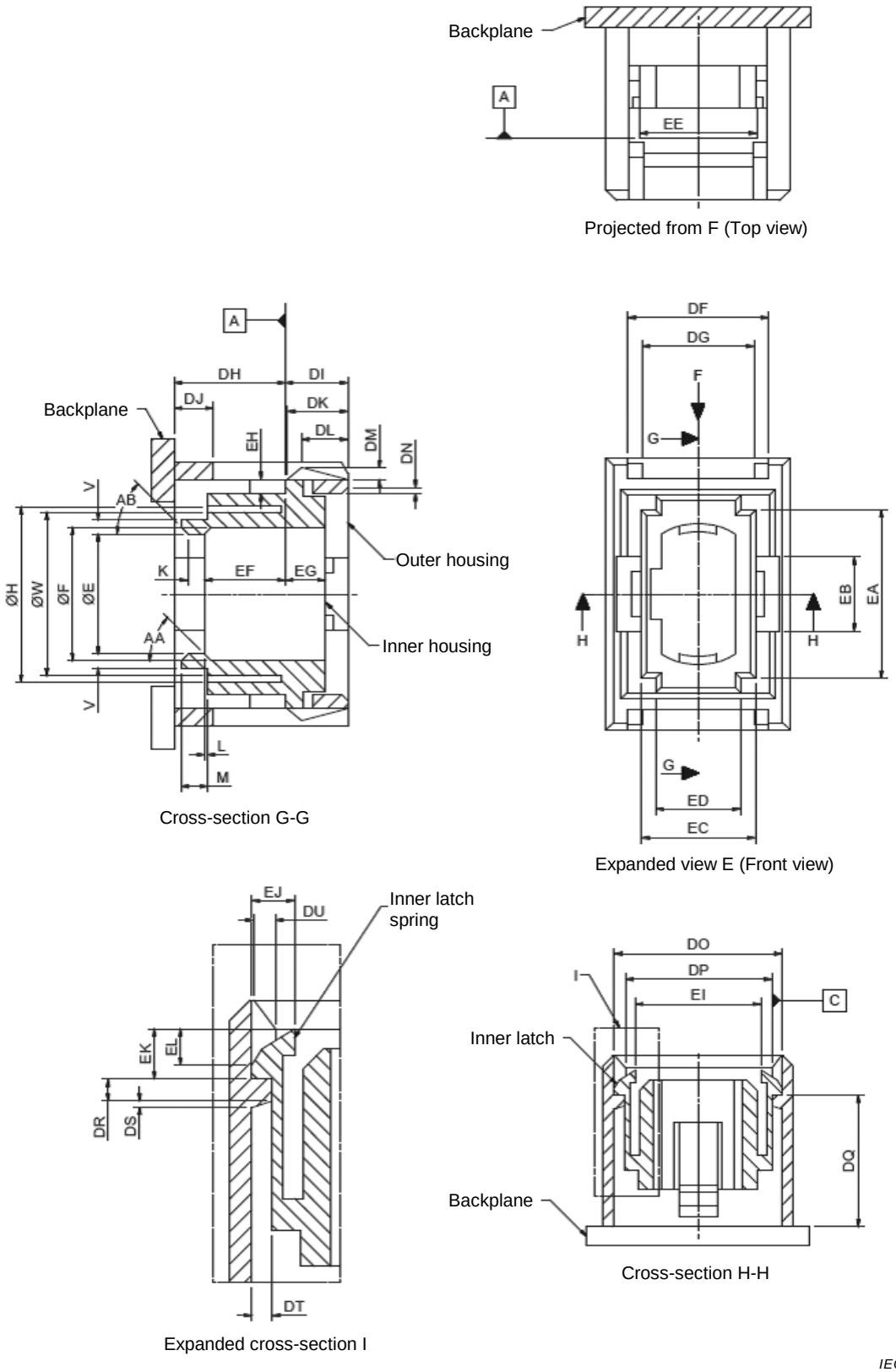

[a] In the figure of cross-section G-G, the inner housing shall be movable to the right at least 0,9 mm under the condition that the inner latch is completed. In addition, the inner housing shall be movable at least 2 mm to the left when the inner latch is released.

[b] In the figure of expanded cross-section I, the inner latch spring shall be moved by more than 0,65 mm to the right when the inner latch is released or latched.

Figure 12 *(2 of 2)*

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Table 8 – Dimensions of the MPO backplane housing

Reference	Dimensions		Notes
	Minimum	Maximum	
E	8,54 mm	8,74 mm	A part of diameter
F	9,6 mm	9,7 mm	A part of diameter
H	12,6 mm	–	A part of diameter
K	1,19 mm	1,39 mm	
L	0	0,1 mm	
M	1,6 mm	2,0 mm	
N	2,4 mm	2,6 mm	
O	5,0 mm	5,1 mm	
P	5,7 mm	5,9 mm	
S	3,4 mm	3,6 mm	
V	0,95 mm	1,15 mm	
W	11,8 mm	12,2 mm	A part of diameter
X	3,4 mm	–	
AA	45°	48°	
AB	45°	50°	
DA			See Table 9
DB			See Table 9
DC	12,25 mm	12,35 mm	
DD	16,5 mm	16,6 mm	
DE	14,3 mm	14,4 mm	
DF	9,91 mm	10,01 mm	
DG	8,2 mm	8,4 mm	
DH	7,9 mm	8,1 mm	See note
DI	4,15 mm	4,45 mm	See note
DJ	2,65 mm	2,75 mm	
DK	4,1 mm	4,3 mm	
DL	3,35 mm	3,45 mm	
DM	0,9 mm	1,0 mm	
DN	0,55 mm	0,65 mm	
DO	11,55 mm	11,65 mm	
DP	9,91 mm	10,01 mm	
DQ	9,15 mm	9,25 mm	
DR	0,35 mm	0,45 mm	
DS	0,25 mm	0,35 mm	
DT	0,55 mm	0,65 mm	
DU	0,55 mm	0,70 mm	
EA	12,14 mm	12,2 mm	
EB	4,95 mm	5,05 mm	
EC	7,94 mm	8,00 mm	
ED	5,6 mm	5,8 mm	
EE	8,15 mm	8,25 mm	
EF	5,55 mm	5,65 mm	
EG	2,55 mm	2,65 mm	
EH	0,85 mm	0,95 mm	
EI	8,6 mm	8,7 mm	
EJ	1,45 mm	1,55 mm	
EK	1,9 mm	2,0 mm	
EL	0,35 mm	0,45 mm	

NOTE These dimensions are given when the inner housing is moved in its most left-side position on condition that the inner latch is engaged.

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Table 9 gives the grade.

Table 9 – Grade

Grade	Reference	Dimensions mm		Notes
		Minimum	Maximum	
1	DA DB	2,0 2,65	2,1 2,75	Backplane thickness 2,4 mm (see note)
2	DA DB	2,0 3,45	2,1 3,55	Backplane thickness 3,2 mm (see note)
NOTE Add grade number to the interface reference number.				

Figure 13 shows MPO printed board housing interface. Table 10 gives the dimensions of the MPO printed board housing interface.

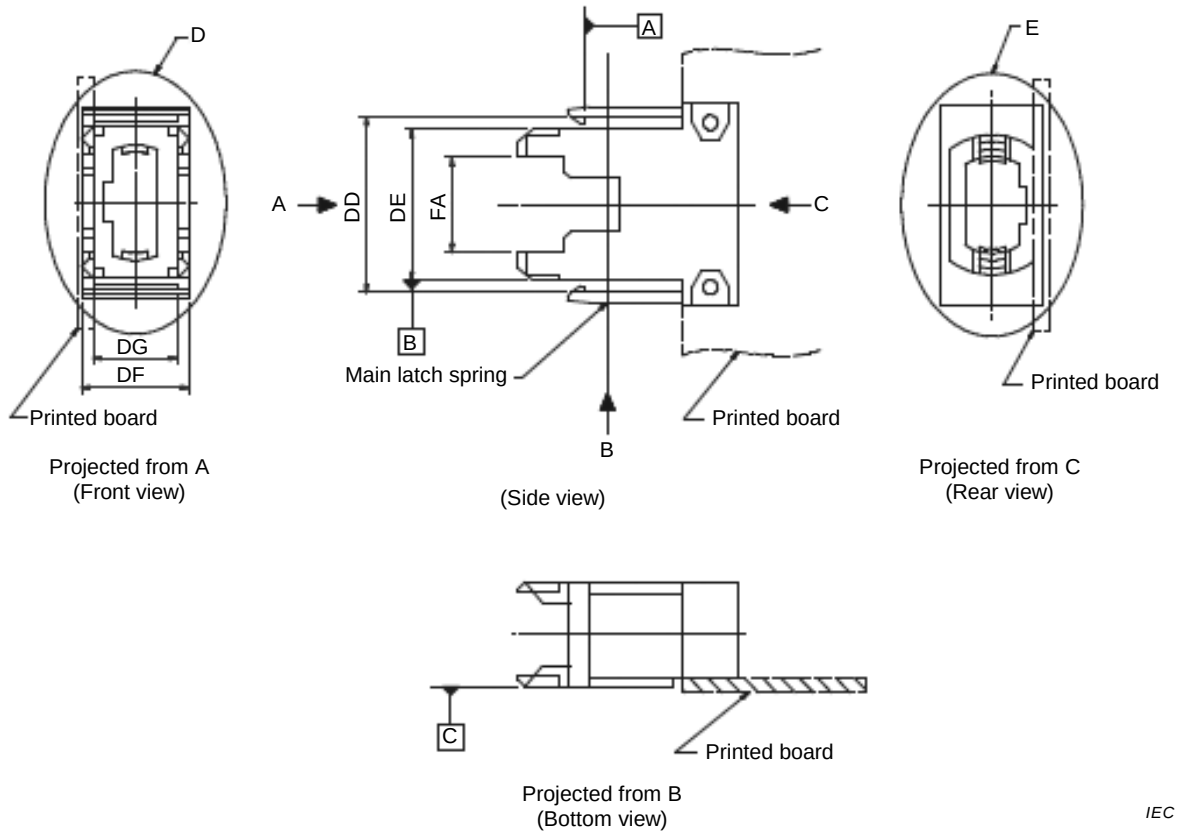

Figure 13 – MPO printed board housing interface *(1 of 2)*

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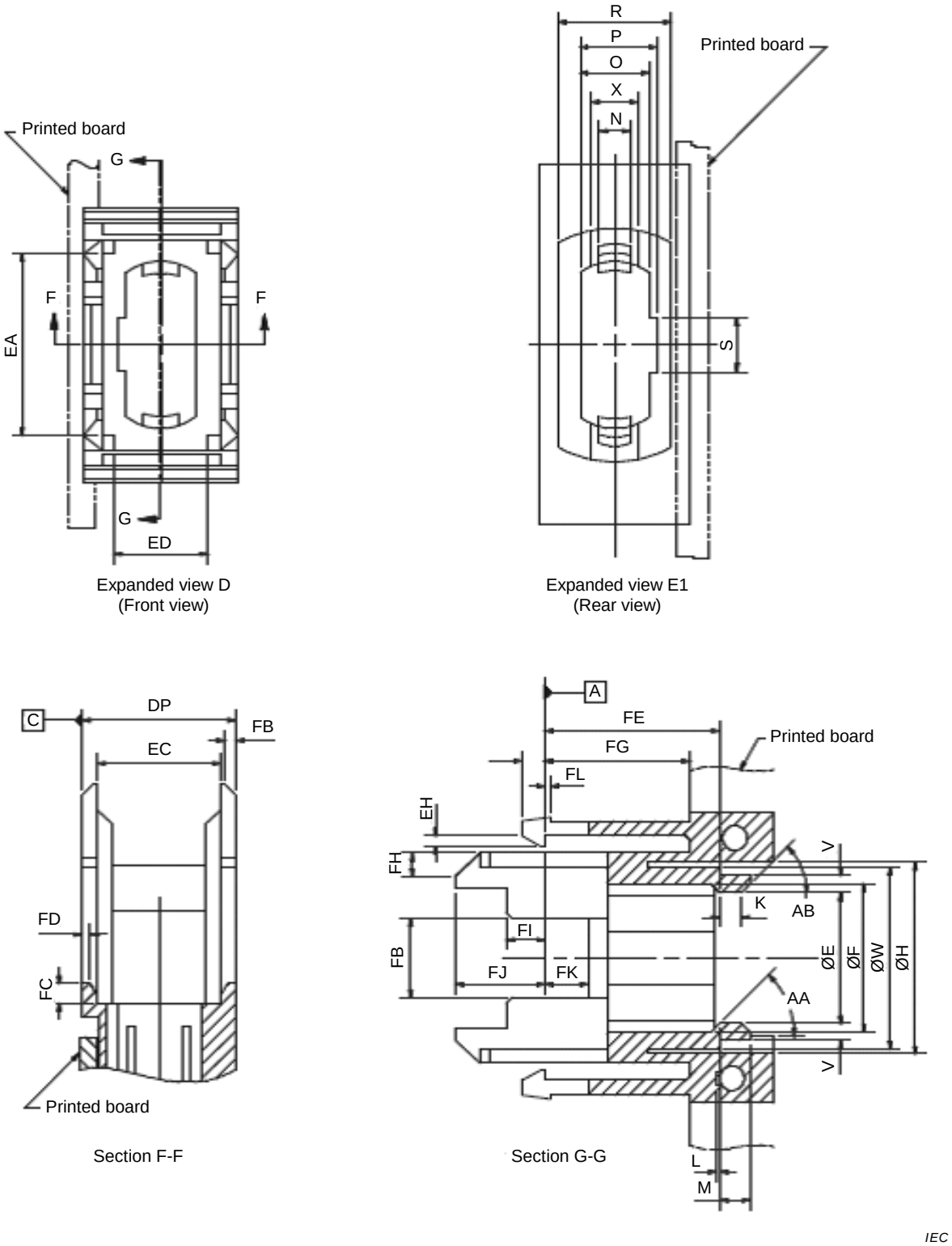

Figure 13 *(2 of 2)*

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Table 10 – Dimensions of the MPO printed board housing interface

Reference	Dimensions		Notes
	Minimum	Maximum	
E	8,54 mm	8,74 mm	A part of diameter
F	9,6 mm	9,7 mm	A part of diameter
H	12,6 mm	–	A part of diameter
K	1,19 mm	1,39 mm	
L	0	0,1 mm	
M	1,6 mm	2,0 mm	
N	2,4 mm	2,6 mm	
O	5,0 mm	5,1 mm	
P	5,7 mm	5,9 mm	
R	7,8 mm	–	
S	3,4 mm	3,6 mm	
V	0,95 mm	1,15 mm	
W	11,8 mm	12,2 mm	A part of diameter
X	3,4 mm	–	
AA	45°	48°	
AB	45°	50°	
DD[a]	16,5 mm	16,6 mm	
DE	14, 05 mm	14,15 mm	
DF	9,8 mm	9,9 mm	
DG	7,9 mm	8,1 mm	
DP	9,8 mm	9,9 mm	
EA	12,21 mm	12,27 mm	
EB	5,1 mm	5,2 mm	
EC	8,01 mm	8,07 mm	
ED	5,9 mm	6,1 mm	
EH	0,75 mm	0,85 mm	
FA	9,1 mm	9,3 mm	
FB	0,6 mm	0,8 mm	
FC	1,35 mm	1,65 mm	
FD	0,25 mm	0,35 mm	
FE	11,05 mm	11,15 mm	
FF	1,55 mm	1,65 mm	
FG	8,9 mm	9,0 mm	
FH	1,4 mm	1,6 mm	
FI	1,9 mm	2,2 mm	
FJ	6,35 mm	6,55 mm	
FK	2,9 mm	3,0 mm	
FL	0,35 mm	0,45 mm	

[a] The dimension DD is defined at the top of the main latch spring. The dimension DD shall become greater than 18,6 mm when the printed board housing is coupled to, or removed from a backplane housing.

Figure 14 shows an aligned keyway configuration of the MPO adaptor interface. Table 11 gives dimensions of the MPO adaptor interface, aligned keyway configuration.

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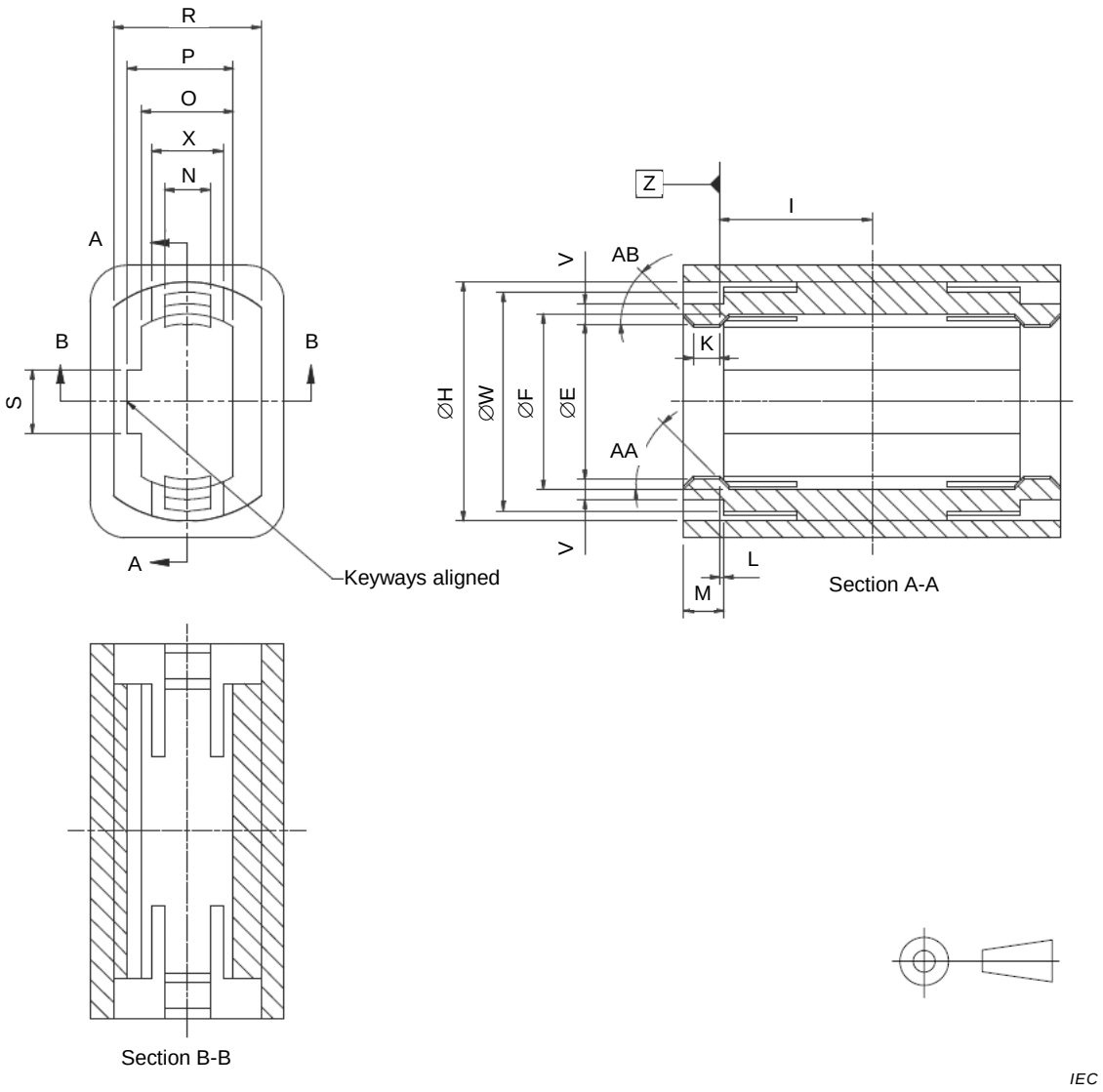

Figure 14 – MPO adaptor interface, aligned keyway configuration

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Table 11 – Dimensions of the MPO adaptor interface, aligned keyway configuration

Reference	Dimensions		Notes
	Minimum	Maximum	
E	8,54 mm	8,74 mm	
F	9,6 mm	9,7 mm	
H[a]	12,6 mm	–	
I[c]	8,2 mm	8,4 mm	
K	–	1,39 mm	
L[b]	0	0,1 mm	
M	1,6 mm	2,0 mm	
N	2,4 mm	2,6 mm	
O	5,0 mm	5,1 mm	
P	5,7 mm	5,9 mm	
R	7,8 mm	–	
S	3,4 mm	3,6 mm	
V	0,95 mm	1,15 mm	
W[a]	–	12,2 mm	
X	3,4 mm	–	
AA	45°	48°	
AB	45°	50°	

[a] An adaptor latch shall be allowed the maximum deflection given by the plug and adaptor requirements. To ensure intermateability, the following requirement shall be met:

$$\frac{(\phi H - \phi W)}{2} > 0{,}53 \text{ mm}$$

[b] Dimension L is the distance from datum Z to a latch-ledge end. The latch-ledge end may be located to the right or to the left of datum Z.

[c] The keyways for each MPO plug are aligned on the same side of the adaptor. Dimension I is the distance from datum Z to the adaptor centreline.

[d] The mating/unmating force between an MPO plug and adaptor shall not exceed 30,0 N.

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Figure 15 shows an angled interface of the MPO active device receptacle and Table 12 gives dimensions of the MPO active device receptacle, angled interface.

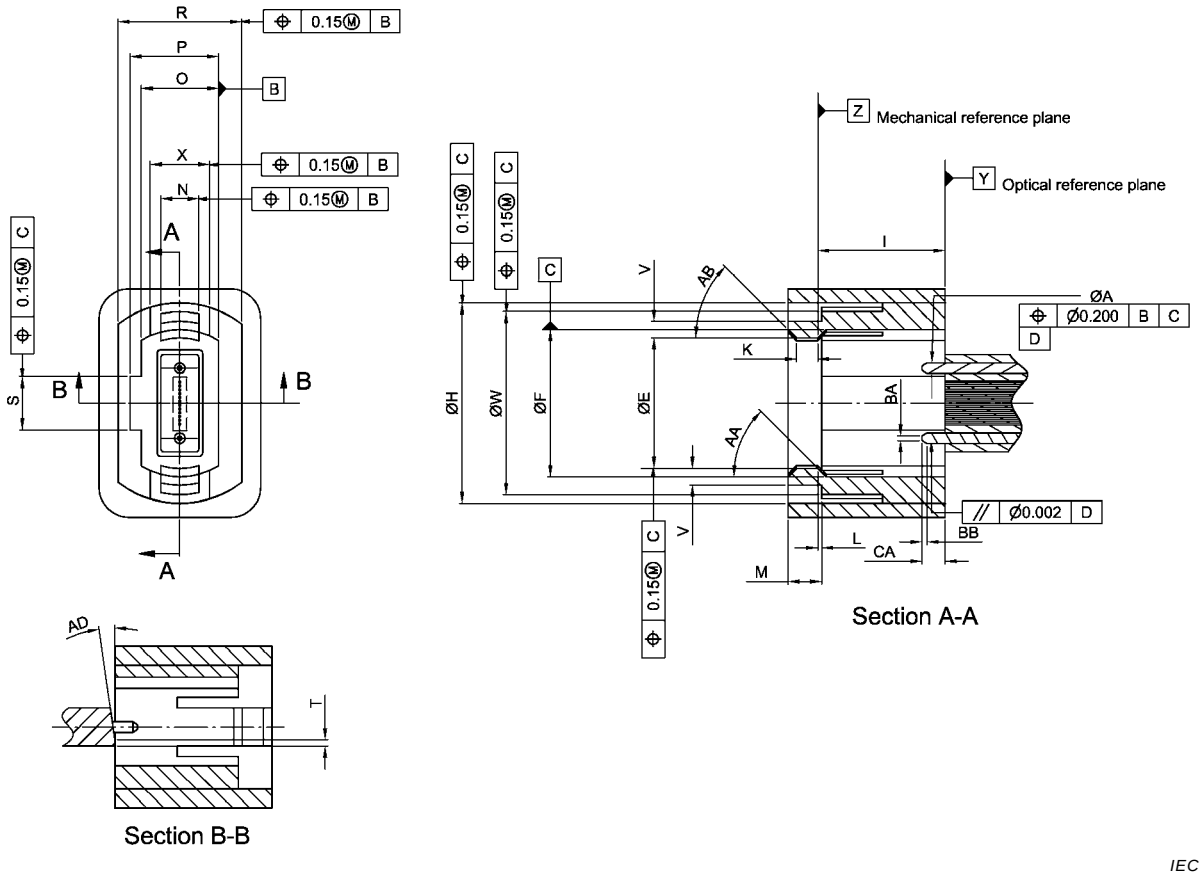

Figure 15 – MPO active device receptacle, angled interface

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Table 12 – Dimensions of the MPO active device receptacle, angled interface

Reference	Dimensions		Notes
	Minimum	Maximum	
E	8,54 mm	8,74 mm	
F	9,6 mm	9,7 mm	
H[a]	12,6 mm	–	
I[c]	8,2 mm	8,4 mm	
K	–	1,39 mm	
L[b]	0	0,1 mm	
M	1,6 mm	2,0 mm	
N	2,4 mm	2,6 mm	
O	5,0 mm	5,1 mm	
P	5,7 mm	5,9 mm	
R	7,8 mm	–	
S	3,4 mm	3,6 mm	
T	-	0,8 mm	
V	0,95 mm	1,15 mm	
W[a]	–	12,2 mm	
X	3,4 mm	–	
AA	45°	48°	
AB	45°	50°	
AD	7,5°	8,5°	
BA	0,2 mm	0,4 mm	
BB	0,2 mm	0,5 mm	
CA	1,6 mm	3,3 mm	

[a] An adaptor latch shall be allowed the maximum deflection given by the plug and adaptor requirements. To ensure intermateability, the following requirement shall be met:

$$\frac{(\phi H - \phi W)}{2} > 0{,}53\,\text{mm}$$

[b] Dimension L is the distance from datum Z to a latch-ledge end. The latch-ledge end may be located to the right or to the left of datum Z.

[c] Dimension I is defined at the centre line between the two guide-pin centres.

[d] The mating/unmating force between an MPO plug and adaptor shall not exceed 30,0 N.

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Figure 16 shows flat the interface of an MPO active device receptacle and Table 13 gives dimensions of the MPO active device receptacle, flat interface.

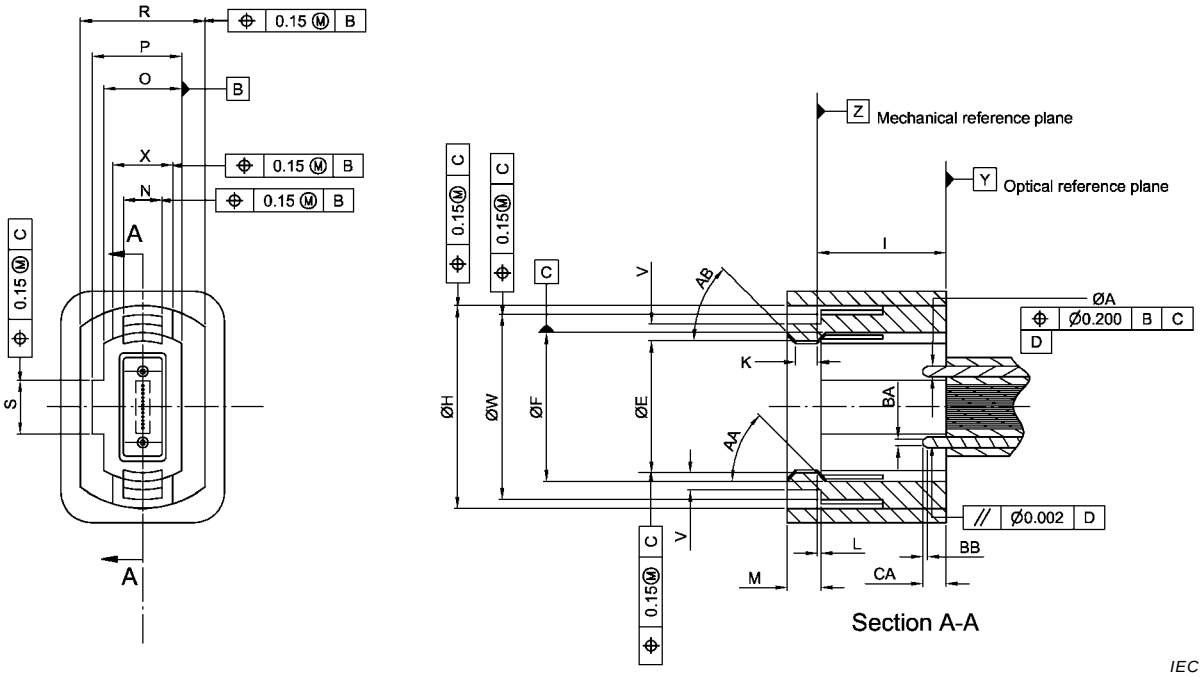

Figure 16 – MPO active device receptacle, flat interface

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Table 13 – Dimensions of the MPO active device receptacle, flat interface

Reference	Dimensions		Notes
	Minimum	Maximum	
E	8,54 mm	8,74 mm	
F	9,6 mm	9,7 mm	
H[a]	12,6 mm	–	
I[c]	8,2 mm	8,4 mm	
K	–	1,39 mm	
L[b]	0	0,1 mm	
M	1,6 mm	2,0 mm	
N	2,4 mm	2,6 mm	
O	5,0 mm	5,1 mm	
P	5,7 mm	5,9 mm	
R	7,8 mm	–	
S	3,4 mm	3,6 mm	
V	0,95 mm	1,15 mm	
W[a]	-	12,2 mm	
X	3,4 mm	–	
AA	45°	48°	
AB	45°	50°	
BA	0,2 mm	0,4 mm	
BB	0,2 mm	0,5 mm	
CA	1,6 mm	3,3 mm	

[a] An adaptor latch shall be allowed the maximum deflection given by the plug and adaptor requirements. To ensure intermateability, the following requirement shall be met:

$$\frac{(\phi H - \phi W)}{2} > 0{,}53 \text{ mm}$$

[b] Dimension L is the distance from datum Z to a latch-ledge end. The latch-ledge end may be located to the right or to the left of datum Z.

[c] Dimension I is defined at the centre line between the two guide-pin centres.

[d] The mating/unmating force between an MPO plug and adaptor shall not exceed 30,0 N.

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