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Edition 1.0 2016-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces –
Part 34: Type URM connector family**

**Dispositifs d'interconnexion et composants passifs fibroniques – Interfaces de connecteurs fibroniques –
Partie 34: Famille de connecteurs de type URM**

IEC 61754-34:2016-09(en-fr)

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

Part 34: Type URM connector family

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

CDV	Report on voting
86B/3966/CDV	86B/3999A/RVC

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

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INTRODUCTION

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

Part 34: Type URM connector family

1 Scope

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

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60794-2-50, *Optical fibre cables – Part 2-50: Indoor cables – Family specification for simplex and duplex cables for use in terminated cable assemblies*

IEC 61754-1, *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 1: General and guidance*

IEC 61755-3 (all parts), *Fibre optic interconnecting devices and passive components – Connector optical interfaces*

3 Terms and definitions

No terms and definitions are listed in this document.

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– ISO Online browsing platform: available at http://www.iso.org/obp

4 Description

The parent connector for the type URM connector family is a duplex connector set of plug/adaptor/plug configuration which is characterized by a 1,25 mm nominal diameter ferrule. The plug connector includes two spring loaded ferrules in the direction of the optical axis. The plug also has a single male key, which may be used to orientate and limit the relative position between the connector and the adaptor to which it is mated. The optical alignment mechanism of the connectors is a resilient sleeve. Drawings and dimensions provided consist of those minimum features that are functionally critical during the mating and unmating sequences of the plug with its adaptor counterpart component.

5 Interfaces

General requirements defined in IEC 61754-1 shall be used for this document.

The subsequent clauses define the standard interfaces for the type URM connector series. This document contains the following standard interfaces:

Interface 34-1: two-way plug connector interface – PC

Interface 34-2: two-way adaptor connector interface

Interface 34-3: two-way plug connector interface – APC 8°

Interface 34-4: eight-way plug connector interface – PC

Interface 34-5: eight-way adaptor connector interface

Interface 34-6: eight-way plug connector interface – APC 8°

The intermateability between plugs and adaptors is given in Table 1.

The interface dimensions for adaptors and appropriate fibre management systems are given for information in Annex A.

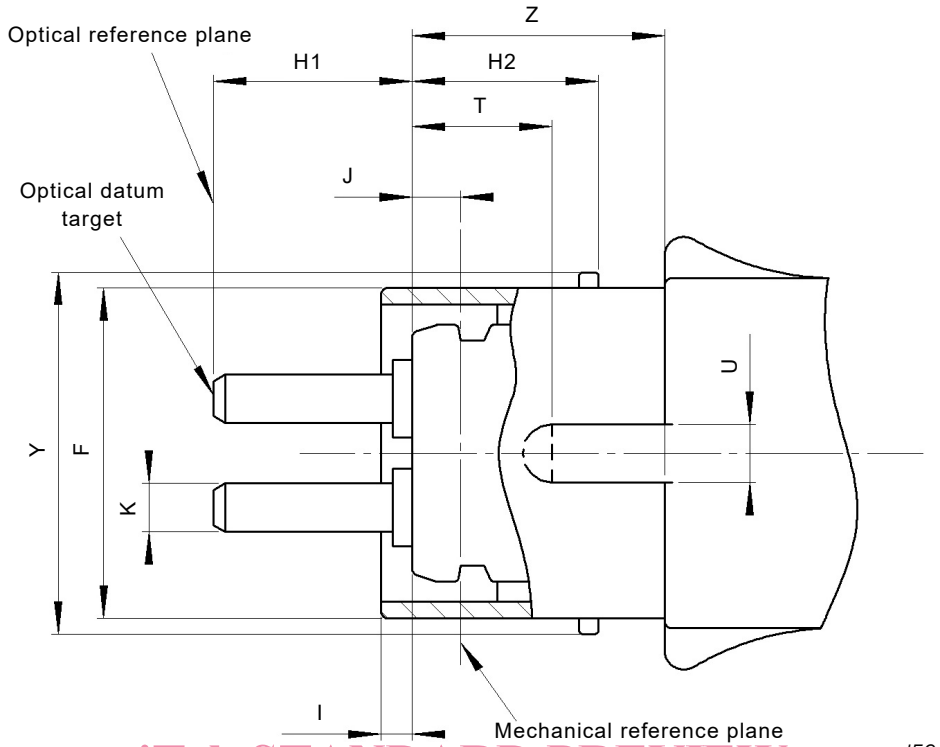
The following standardized interfaces are intermateable.

Table 1 – Intermateability between plugs and adaptors interfaces defined in this document

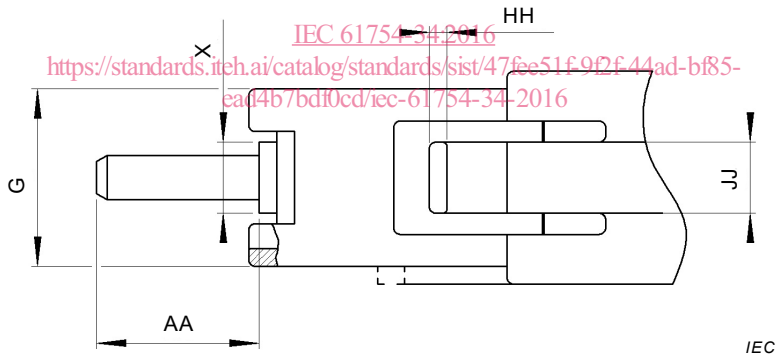
Plug interfaces	Adaptor interfaces	
	34-2	34-5
34-1	mate	mate
34-3	mate	mate
34-4	not mate	mate
34-6	not mate	mate

6 Two-way plug optical interface

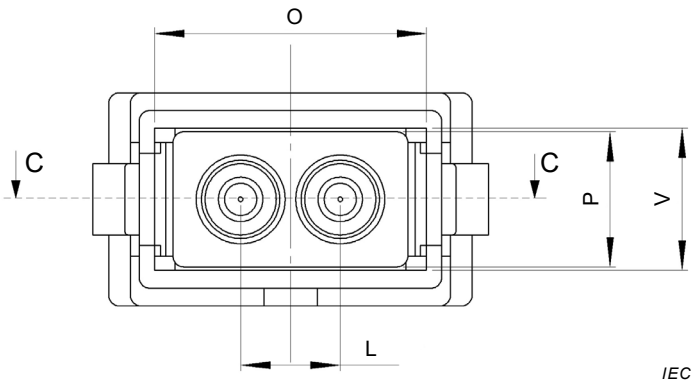
Two-way plug optical interface dimensions are shown in Figure 1, Figure 2, Figure 3 and Figure 4 as well as in Table 2.



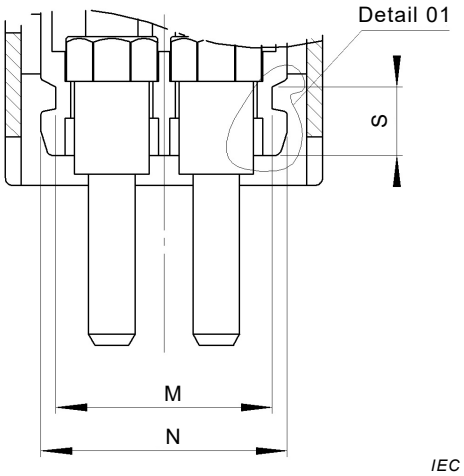
a) Top view



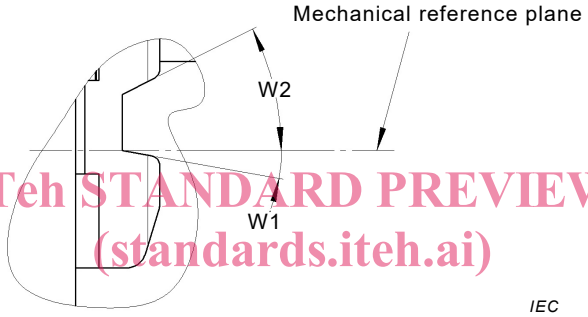
b) Side view



c) Front view



d) Section C-C

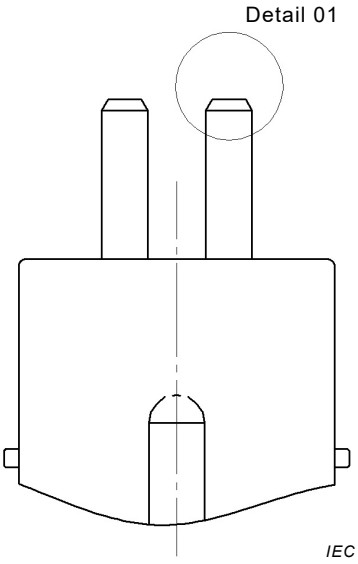


e) Detail 01

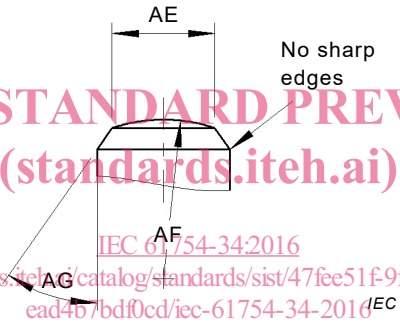
Key to dimensions given in Table 2.

Figure 1 – Two-way plug connector interface

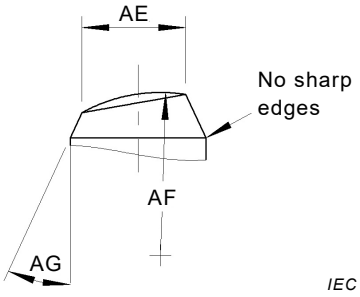
The plug of interface 34-1 has a ferrule with a spherically polished endface (PC) shown in Detail 01 of Figure 2a) and Figure 2b). The plug of interface 34-3 has a ferrule with a spherically polished angled endface shown in Detail 01 of Figure 2a) and Figure 2c).



a) Top view



b) Detail 01 for PC ferrule endface geometry



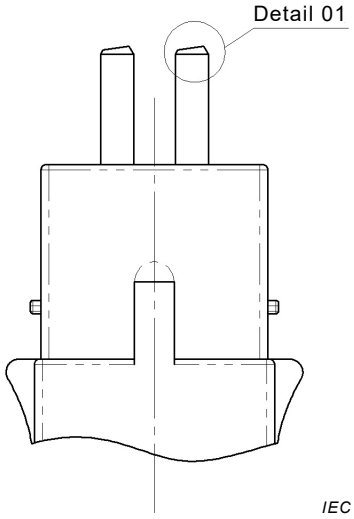
c) Detail 01 for APC polish conical ferrule

Key to dimensions given in Table 2.

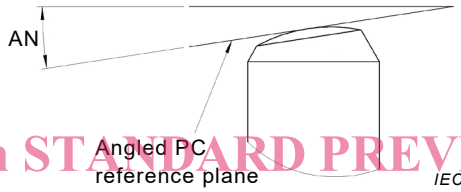
Figure 2 – Two-way plug connector ferrules

Refer to IEC 61755-3 series for information on the endface geometry requirements of PC and APC interfaces, respectively.

Figure 3 shows details of the APC ferrule endface geometry and Figure 4 shows alignment characteristics of the connector.



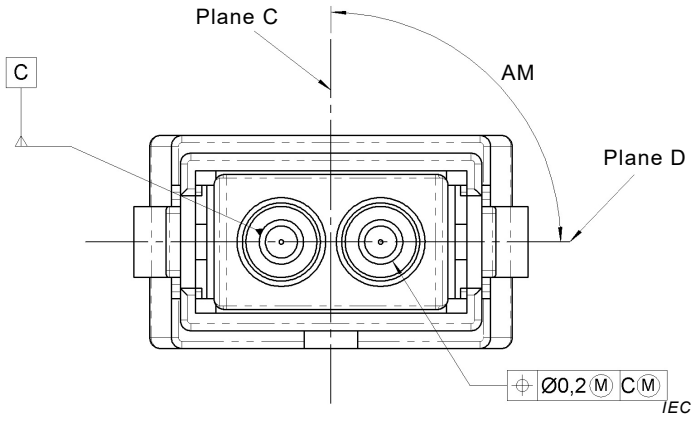
a) Top view



b) Detail 01

Key to dimensions given in Table 2.

Figure 3 – Two-way plug connector APC angle



Key to dimensions given in Table 2.

Figure 4 – Two-way plug connector interface alignment

Table 2 – Dimensions of the two-way plug connector interface

Reference	Dimensions		Remarks
	Minimum	Maximum	
F	8,30 mm	8,55 mm	
G	4,80 mm	5,00 mm	
H1[a, b]	5,20 mm	5,30 mm	
H2[c]	4,80 mm	4,90 mm	
I[c, d]	0,40 mm	0,90 mm	
J	1,25 mm		
K			ferrule diameter, Table 4
L	2,80 mm		nominal dimension
M	5,70 mm	5,80 mm	
N	6,40 mm	6,60 mm	
O	7,60 mm	7,85 mm	
P	3,60 mm	3,80 mm	
S	1,80 mm	2,10 mm	
T[c]	3,20 mm	3,80 mm	
U	1,40 mm	1,60 mm	
V	3,80 mm	4,10 mm	
W1	5°	30°	
W2	0°	45°	
X	1,90 mm	2,10 mm	diameter
Y	8,90 mm	9,40 mm	
Z[c]	5,90 mm	6,70 mm	
AA[b]	4,60 mm	4,90 mm	
AE	0,60 mm	0,85 mm	
AF	5,00 mm	30,00 mm	
AG	30°	45°	
AH	0,60 mm	0,85 mm	
AI	5,00 mm	12,00 mm	
AM[e]	90°		nominal dimension
AN[b]	8°		nominal dimension
HH	0,40 mm	0,60 mm	
JJ	1,90 mm	2,70 mm	

[a] Dimension H1 is given for a plug endface when not mated. The ferrule is movable by a certain axial compression force, with direct contacting endface, and therefore dimension H1 is variable. Ferrule compression force shall be 5,0 N to 6,0 N when the position of the optical datum target, dimension H1, is moved to the range from 4,8 mm to 5,1 mm. Forces are for buffered fibre only; different cord constructions can result in higher forces (see IEC 60794-2-50).

[b] These dimensional requirements apply to the finished ferrule after all polishing procedures have been completed.

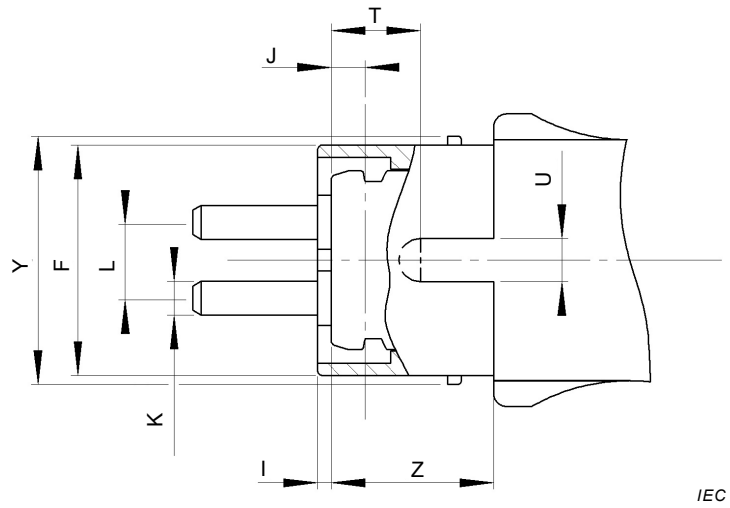
[c] The outer housing is movable to the left and to the right. These dimensions are given when the release case has been moved to the leftmost position.

[d] When the outer housing has been moved in the rightmost position, the inner housing shall protrude from the outer housing.

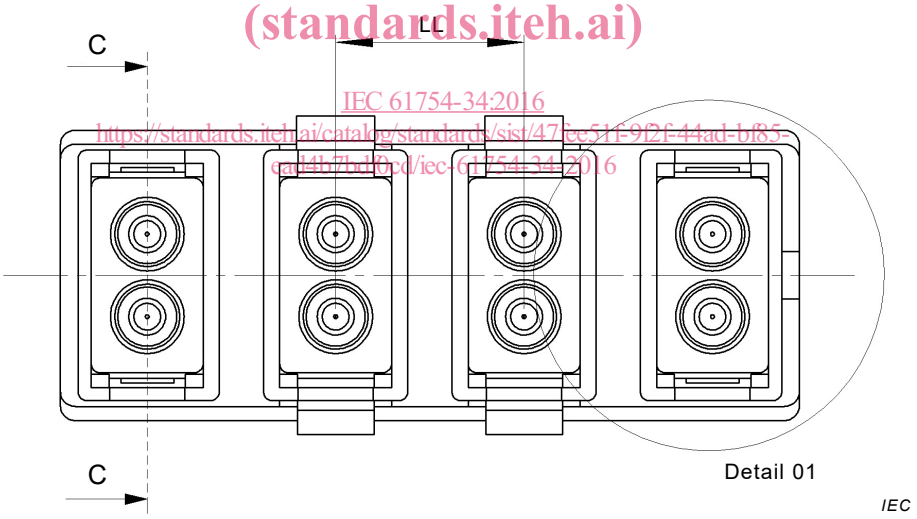
[e] Dimension AM is defined as an angle between two planes. One plane, plane C, passes through the axis parallel to the axes of the ferrules and the axis of symmetry of the key of the angled endface plug connector. The other plane, plane D, passes through the axes of the ferrules and the plane normal to the angled PC reference plane.

7 Eight-way plug optical interface

Eight-way plug optical interface dimensions are shown in Figure 5, Figure 6, Figure 7 and Figure 8 as well as in Table 3.



a) Top view



b) Front view