

INTERNATIONAL STANDARD

NORME INTERNATIONALE

ITeH STANDARD

**Radio-frequency connectors –
Part 68: Sectional specification for series TRK bayonet coupling triaxial
connectors**

(standards.iteh.ai)

**Connecteurs pour fréquences radioélectriques –
Partie 68: Spécification intermédiaire relative aux connecteurs triaxiaux à
accouplement à baïonnette de série TRK**

<https://standards.iteh.ai/standards/sist/18079765-ab04-40f4-bcf3-45614b2a2ca1/iec-61169-68-2022>



THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2022 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 300 terminological entries in English and French, with equivalent terms in 19 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

<https://standards.helipr.cat/standards/sist/18079765-ab04-40f4-bc13-45614b2a2ca1/iec-61169-68-2022>

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Products & Services Portal - products.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 300 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 19 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

iTeh STANDARD

Radio-frequency connectors –
Part 68: Sectional specification for series TRK bayonet coupling triaxial
connectors

PREVIEW
(standards.iteh.ai)

Connecteurs pour fréquences radioélectriques –
Partie 68: Spécification intermédiaire relative aux connecteurs triaxiaux à
accouplement à baïonnette de série TRK

<https://standards.iteh.ai/en/standards/sist/18079765-ab04-40f4-bcf3-45614b2a2ca1/iec-61169-68-2022>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.120.30

ISBN 978-2-8322-1079-9

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	6
4 Mating face and gauge information.....	7
4.1 Mating face dimensions	7
4.1.1 Plug connector	7
4.1.2 Receptacle connector	11
4.1.3 Coaxial pin contact	14
4.1.4 Coaxial socket contact.....	14
4.2 Gauges for resilient contact	15
4.2.1 Gauge for socket centre contact	15
4.2.2 Gauge for socket intermediate contact.....	16
5 Quality assessment procedure.....	17
5.1 General.....	17
5.2 Rating and characteristics.....	17
5.3 Test schedule and inspection requirements.....	19
5.3.1 Acceptance tests	19
5.3.2 Periodic tests.....	20
5.3.3 Procedures for qualification approval	21
6 Instructions for preparation of detail specifications (DS)	22
6.1 General.....	22
6.2 Identification of the component	22
6.3 Performance	22
6.4 Marking, ordering information and related matters	22
6.5 Selection of tests, test conditions and severities	22
6.6 Blank detail specification pro-forma for series TRK bayonet coupling triaxial connectors	23
Figure 1 – Plug connector.....	7
Figure 2 – Locating grooves polarization of plug connector.....	8
Figure 3 – A polarization mating face of plug connector with three bayonets.....	8
Figure 4 – D polarization mating face of plug connector with four bayonets.....	9
Figure 5 – Unfolded drawing of A polarization bayonet groove of plug connector	10
Figure 6 – Unfolded drawing of D polarization bayonet groove of plug connector	10
Figure 7 – Receptacle connector.....	11
Figure 8 – Locating keys polarization of receptacle connector.....	12
Figure 9 – A polarization mating face of receptacle connector with three bayonets	13
Figure 10 – D polarization mating face of receptacle connector with four bayonets	13
Figure 11 – Coaxial pin contact.....	14
Figure 12 – Coaxial socket contact	15
Figure 13 – Gauge for socket centre contact.....	15
Figure 14 – Gauge for socket intermediate contact	16

Table 1 – Dimensions of plug connector	7
Table 2 – A polarization mating face dimensions of plug connector with three bayonets.....	9
Table 3 – D polarization mating face dimensions of plug connector with four bayonets	9
Table 4 – Unfolded drawing dimensions of A polarization bayonet groove of plug connector.....	10
Table 5 – Unfolded drawing dimensions of D polarization bayonet groove of plug connector.....	11
Table 6 – Dimensions of receptacle connector	12
Table 7 – A polarization mating face dimensions of receptacle connector with three bayonets.....	13
Table 8 – D polarization mating face dimensions of receptacle connector with four bayonets.....	14
Table 9 – Dimensions of coaxial pin contact	14
Table 10 – Dimensions of coaxial socket contact	15
Table 11 – Dimensions of gauge for socket centre contact.....	15
Table 12 – Dimensions of gauge for socket intermediate contact	16
Table 13 – Ratings and characteristics	17
Table 14 – Acceptance tests.....	20
Table 15 – Periodic tests	20

iTeh STANDARD
PREVIEW
(standards.iteh.ai)

[IEC 61169-68:2022](https://standards.iteh.ai/catalog/standards/sist/18079765-ab04-40f4-bcf3-45614b2a2ca1/iec-61169-68-2022)

<https://standards.iteh.ai/catalog/standards/sist/18079765-ab04-40f4-bcf3-45614b2a2ca1/iec-61169-68-2022>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIO-FREQUENCY CONNECTORS –

Part 68: Sectional specification for series TRK bayonet coupling triaxial connectors

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 61169-68 has been prepared by subcommittee 46F: RF and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
46F/596/FDIS	46F/610/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts of the IEC 61169 series, under the general title: *Radio-frequency connectors*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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

iTeh STANDARD PREVIEW (standards.iteh.ai)

[IEC 61169-68:2022](https://standards.iteh.ai/catalog/standards/sist/18079765-ab04-40f4-bcf3-45614b2a2ca1/iec-61169-68-2022)

<https://standards.iteh.ai/catalog/standards/sist/18079765-ab04-40f4-bcf3-45614b2a2ca1/iec-61169-68-2022>

RADIO-FREQUENCY CONNECTORS –

Part 68: Sectional specification for series TRK bayonet coupling triaxial connectors

1 Scope

This part of IEC 61169, which is a sectional specification (SS), provides information and rules for the preparation of detail specifications (DS) for series TRK bayonet coupling triaxial connectors. The series TRK bayonet coupling triaxial connectors having the advantages of quick connection and separation, high reliability, small size, good salt characteristics, four polarizations to prevent error-mate etc., can be connected to symmetrically twisted pair cables or triaxial cables. They have been widely used in 1553B data bus systems or other communication systems for digital signal transmission.

It specifies mating face dimensions for series TRK bayonet coupling triaxial connectors, gauging information and tests selected from IEC 61169-1, applicable to all detail specifications relating to series TRK triaxial connectors.

This document indicates recommended performance characteristics to be considered when writing a detail specification and it covers test schedules and inspection requirements for assessment levels M and H.

NOTE Metric dimension are original dimensions. All undimensioned pictorial configurations are for reference purpose only.

2 Normative references

[IEC 61169-68:2022](#)

<https://standards.iteh.ai/catalog/standards/sist/18079765->

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 61169-1:2013, *Radio frequency connectors – Part 1: Generic specification – General requirements and measuring methods*

IEC 61169-1-5, *Radio frequency connectors – Part 1-5: Electrical test methods – Rise time degradation*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61169-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1**coaxial pin contact**

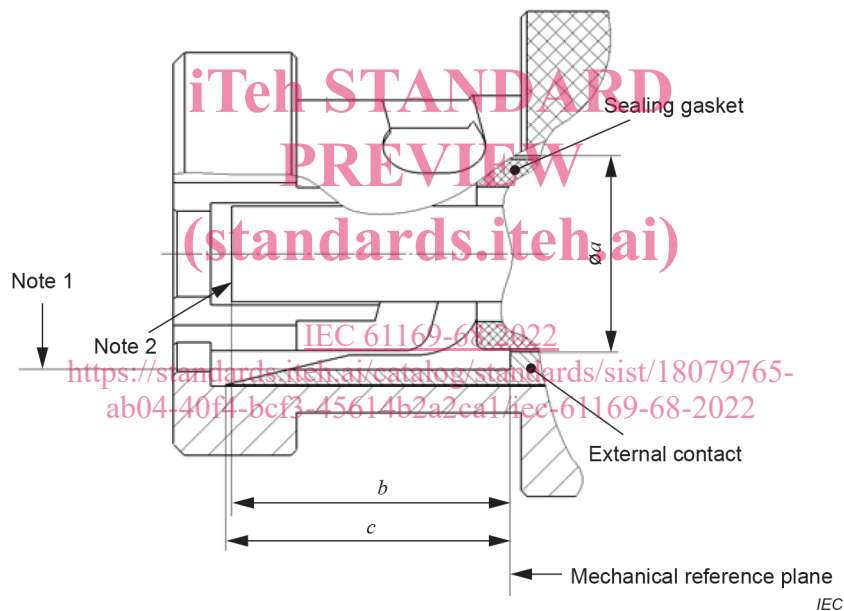
connecting part with a coaxial structure, the outer conductor of which is a pin and the inner conductor is a socket

3.2**coaxial socket contact**

connecting part with a coaxial structure, the outer conductor of which is a socket and the inner conductor is a pin

4 Mating face and gauge information**4.1 Mating face dimensions****4.1.1 Plug connector****4.1.1.1 General**

The mating face of plug connector is shown in Figure 1 and its dimensions are shown in Table 1.



NOTE 1 Slot design of alignment fingers is optional.

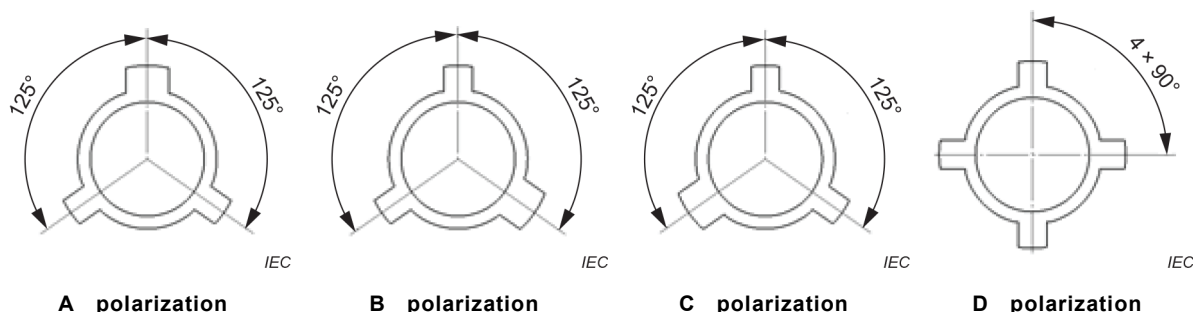
NOTE 2 See Figure 11 and Figure 12 for coaxial contact requirements.

Figure 1 – Plug connector**Table 1 – Dimensions of plug connector**

Ref.	mm	
	Min.	Max.
<i>a</i>	-	5,10
<i>b</i>	6,30	8,10
<i>c</i>	7,14	7,70

4.1.1.2 Locating grooves polarization of plug connector

Seen from the mating face, the locating grooves of the plug connector can be divided into A, B, C and D four polarizations, which are shown in Figure 2.



NOTE Angles for reference.

Figure 2 – Locating grooves polarization of plug connector

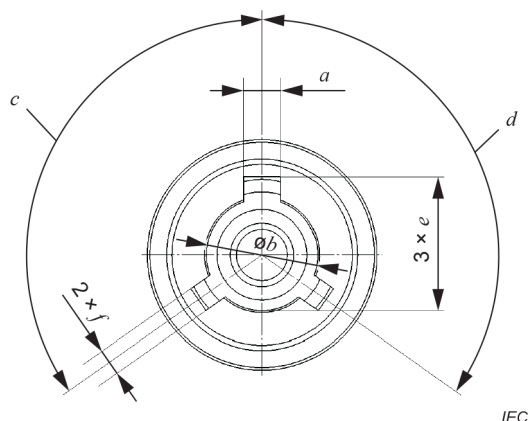
4.1.1.3 Locating groove structure of plug connector

A polarization mating face of plug connector with three bayonets shall be in accordance with Figure 3, and its dimensions are shown in Table 2. The mating face of B polarization and C polarization is similar to that of A polarization, but the position of the locating grooves shall be the same as that of B polarization and C polarization in 4.1.1.2 respectively.

D polarization mating face of plug connector with four bayonets shall be in accordance with Figure 4, and its dimensions are shown in Table 3.

The unfolded drawing of A polarization bayonet groove of plug connector shall be in accordance with Figure 5, and its dimensions are shown in Table 4. The unfolded design of the positioning grooves for B polarization and C polarization is similar to that of A polarization, but the position of the positioning grooves shall be the same as for B polarization and C polarization in 4.1.1.2 respectively.

The unfolded drawing of D polarization bayonet groove of plug connector shall be in accordance with Figure 6, and its dimensions are shown in Table 5.



NOTE The mating face of B polarization and C polarization is similar to that of A polarization, but the position of the locating grooves are the same as that of B polarization and C polarization in 4.1.1.2 respectively.

Figure 3 – A polarization mating face of plug connector with three bayonets

Table 2 – A polarization mating face dimensions of plug connector with three bayonets

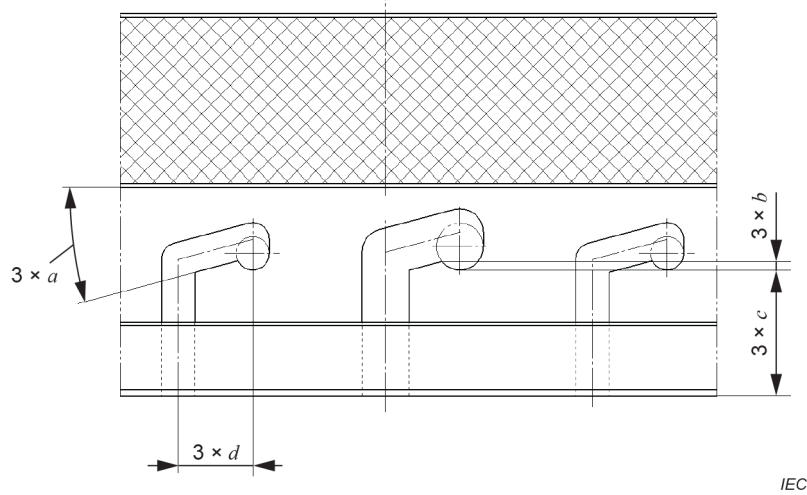
Ref.	mm	
	Min.	Max.
<i>a</i>	1,95	2,10
<i>b</i>	Note	
<i>c</i>	124°	126°
<i>d</i>	124°	126°
<i>e</i>	Note	
<i>f</i>	1,42	1,73

NOTE To mate with jack connector in Figure 9.

**Figure 4 – D polarization mating face of plug connector with four bayonets****Table 3 – D polarization mating face dimensions of plug connector with four bayonets**

Ref.	mm	
	Min.	Max.
<i>a</i>	Note	
<i>b</i>	Note	

NOTE To mate with jack connector in Figure 10.



NOTE The unfolded design of the positioning grooves for B polarization and C polarization is similar to that of A polarization, but the position of the positioning grooves are the same as for B polarization and C polarization in 4.1.1.2 respectively.

Figure 5 – Unfolded drawing of A polarization bayonet groove of plug connector

Table 4 – Unfolded drawing dimensions of A polarization bayonet groove of plug connector

Ref.	mm	
	Min.	Max.
<i>a</i>	15°	
<i>b</i>	0,38	-
<i>c</i>	5,51	-
<i>d</i>	45°	

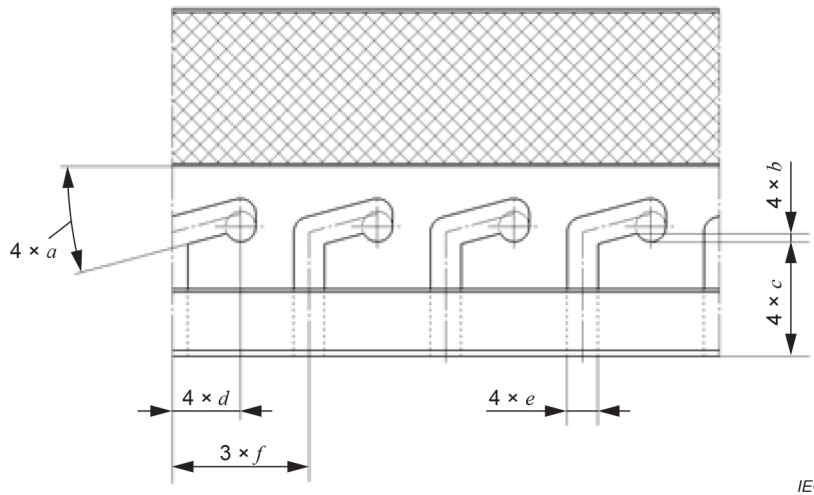


Figure 6 – Unfolded drawing of D polarization bayonet groove of plug connector

Table 5 – Unfolded drawing dimensions of D polarization bayonet groove of plug connector

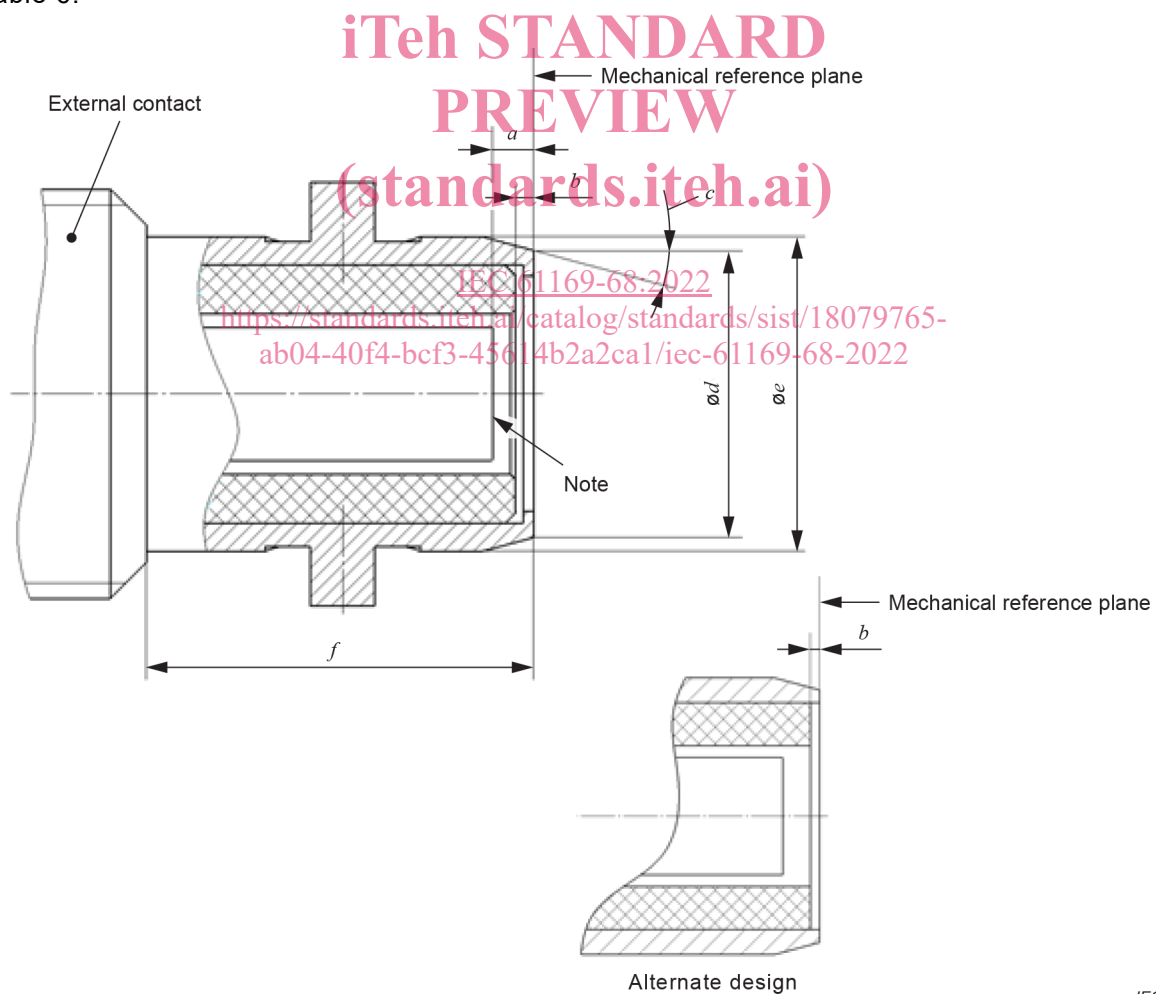
Ref.	mm	
	Min.	Max.
<i>a</i>	15°	
<i>b</i>	0,38	-
<i>c</i>	5,51	-
<i>d</i>	45°	
<i>e</i>	1,42	-
<i>f</i>	Note	

NOTE To mate with jack connector in Figure 10.

4.1.2 Receptacle connector

4.1.2.1 General

The mating face of receptacle connector is shown in Figure 7 and its dimensions are shown in Table 6.



NOTE See Figure 11 and Figure 12 for coaxial contact requirements.

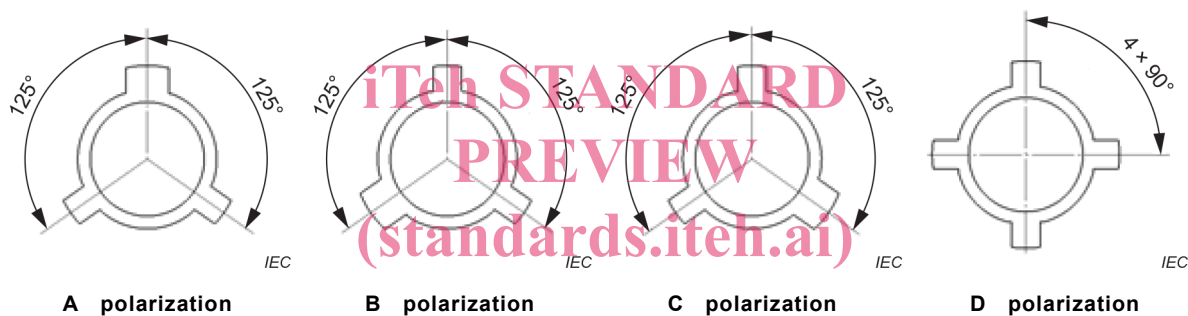
Figure 7 – Receptacle connector

Table 6 – Dimensions of receptacle connector

Ref.	mm	
	Min.	Max.
<i>a</i>	0,25	-
<i>b</i>	-	0,92
<i>b</i> (alternate design)	-	0,45
<i>c</i>	14°	22°
<i>d</i>	5,33	5,56
<i>e</i>	6,04	6,12
<i>f</i>	10,70	-

4.1.2.2 Locating keys polarization of receptacle connector

Seen from the mating face, the locating keys of the receptacle connector can be divided into A, B, C and D four polarizations, which are shown in Figure 8.



<https://standards.iteh.ai/catalog/standards/sist/18079765-b04-40f4-bcf3-45614b2a2ca1/iec-61169-68-2022>

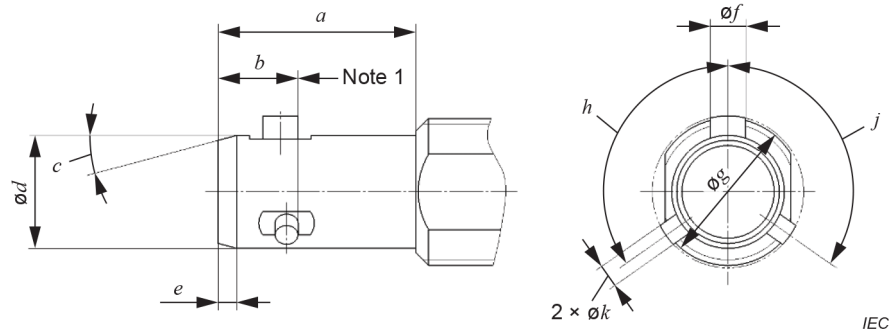
NOTE Angles for reference

Figure 8 – Locating keys polarization of receptacle connector

4.1.2.3 Locating key structure of receptacle connector

A polarization mating face of receptacle connector with three bayonets shall be in accordance with Figure 9, and its dimensions are shown in Table 7. The mating face of B polarization and C polarization is similar to that of A polarization, but the position of the locating keys shall be the same as that of B polarization and C polarization in 4.1.2.2 respectively.

D polarization mating face of receptacle connector with four bayonets shall be in accordance with Figure 10, and its dimensions are shown in Table 8.



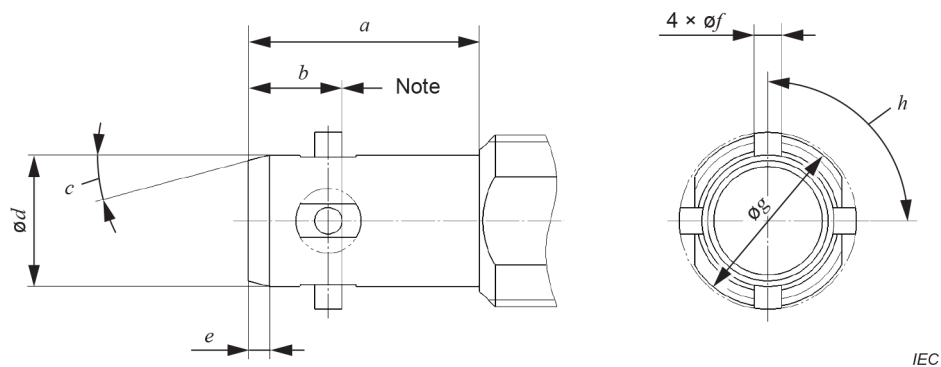
NOTE 1 0,127 max flat to meet reference *b*.

NOTE 2 The mating face of B polarization and C polarization is similar to that of A polarization, but the position of the locating keys are the same as that of B polarization and C polarization in 4.1.2.2 respectively.

Figure 9 – A polarization mating face of receptacle connector with three bayonets

Table 7 – A polarization mating face dimensions of receptacle connector with three bayonets

Ref.	mm	
	Min.	Max.
<i>a</i>	10,70	10,80
<i>b</i>	4,18	4,36
<i>c</i>	14°	22°
<i>d</i>	6,04	6,12
<i>e</i>	-	-
<i>f</i>	1,83	1,93
<i>g</i>	8,10	8,20
<i>h</i>	124°	126°
<i>j</i>	124°	126°
<i>k</i>	1,22	1,32



NOTE 0,127 max flat to meet reference *b*.

Figure 10 – D polarization mating face of receptacle connector with four bayonets