SLOVENSKI STANDARD
SIST EN 122150:1999

01-julij-1999

Sectional Specification: Radio frequency coaxial connectors - Series EIA flange

Sectional Specification: Radio frequency coaxial connectors - Series EIA flange

Rahmenspezifikation: Hochfrequenz-Koaxial-Steckverbinder - Serie EIA Flansch

Spécification intermédiaire: Connecteurs coaxiaux pour fréquence radioélectrique - Série bride EIA

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **EN 122150:1993**

SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-d874-4d2e-85c3-d89502f5e108/sist-en-122150-1999

ICS:

33.120.30	Radiofrekvenļ ni konektorji (RF)	R.F. connectors

SIST EN 122150:1999 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

SIST EN 122150:1999

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-d874-4d2e-85c3-d89502f5e108/sist-en-122150-1999

SIST EN 122150:1999

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 122 150

May 1993

UDC

Supersedes CECC 22 150 Issue 1 : 1986

Descriptors: Quality, electronic components, connectors

English version

Sectional Specification: Radio Frequency Coaxial Connectors. Series EIA Flange

Spécification intermédiaire:
Connecteurs coaxiaux pour fréquence radioélectrique.
Série bride EIA

Rahmenspezifikation:
Hochfrequenz-Koaxial-Steckverbinder.
Serie EIA Flansch

iTeh STANDARD PREVIEW
(standards.iteh.ai)

This European Standard was approved by the CENELEC Electronic Components Committee (CECC) on 7 May 1993. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the General Secretariat of the CECC or to any CENELEC member.

SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524d5e-de74-4d28-8503-d89502f5e108/sist-en-122150-1999

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CECC General Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom. The membership of the CECC is identical, with the exception of the national electrotechnical committees of Greece, Iceland and Luxembourg.

CECC

CENELEC Electronic Components Committee
Comité des Composants Electroniques du CENELEC
CENELEC Komitee für Bauelemente der Elektronik

General Secretariat: Gartenstr. 179, W-6000 Frankfurt/Main 70

© 1993 Copyright reserved to CENELEC members

SIST EN 122150:1999

Foreword

The CENELEC Electronic Components Committee (CECC) is composed of those member countries of the European Committee for Electrotechnical Standardization (CENELEC) who wish to take part in a harmonized system for electronic components of assessed quality.

The object of the System is to facilitate international trade by the harmonization of the specifications and quality assessment procedures for electronic components, and by the grant of an internationally recognized Mark, or Certificate, of Conformity. The components produced under the System are thereby acceptable in all member countries without further testing.

This European Standard was prepared by CECC WG 22, RF Connectors.

The text of the draft based on document CECC 22 150 Issue 1 : 1986 (with A1 and Erratum) was submitted to the formal vote for conversion to a European Standard; together with the voting report, circulated as document CECC (Secretariat) 3341 it was approved by CECC as EN 122 150 on 7 May 1993.

The following dates were fixed:

- latest date of announcement of the EN at national level (doa) 1993-09-03
- latest date of publication of an identical national standard* (dop) 1994-03-03
- latest date of withdrawal of conflicting national standards* (dow) 1995-03-03

* National Standard (excluding National implementation of IECQ Specifications)

Contents

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-d874-4d2e-85c3-d89502f5e108/sist-en-122150-1999

SIST EN 122150:1999

PREFACE

This sectional specification (SS) was prepared by CECC Working Group 22: R.F. Connectors.

It is based, wherever possible, on the Publications of the International Electrotechnical Commission and in particular on IEC 339-2: 1972: General purpose rigid coaxial lines and their associated flange connectors.

This SS and its associated blank detail specifications(s) BDS are specific to the six sizes of EIA FLANGE connectors and their related accessories.

The text of this specification was circulated to the CECC for voting in the documents listed below and was ratified by the President of the CECC for printing as a CECC specification:

Document	Voting Date	Report on the Voting
CECC(Secretariat)1710	July 1985	CECC(Secretariat)1852

iTeh STANDARD PREVIEW
(standards.iteh.ai)

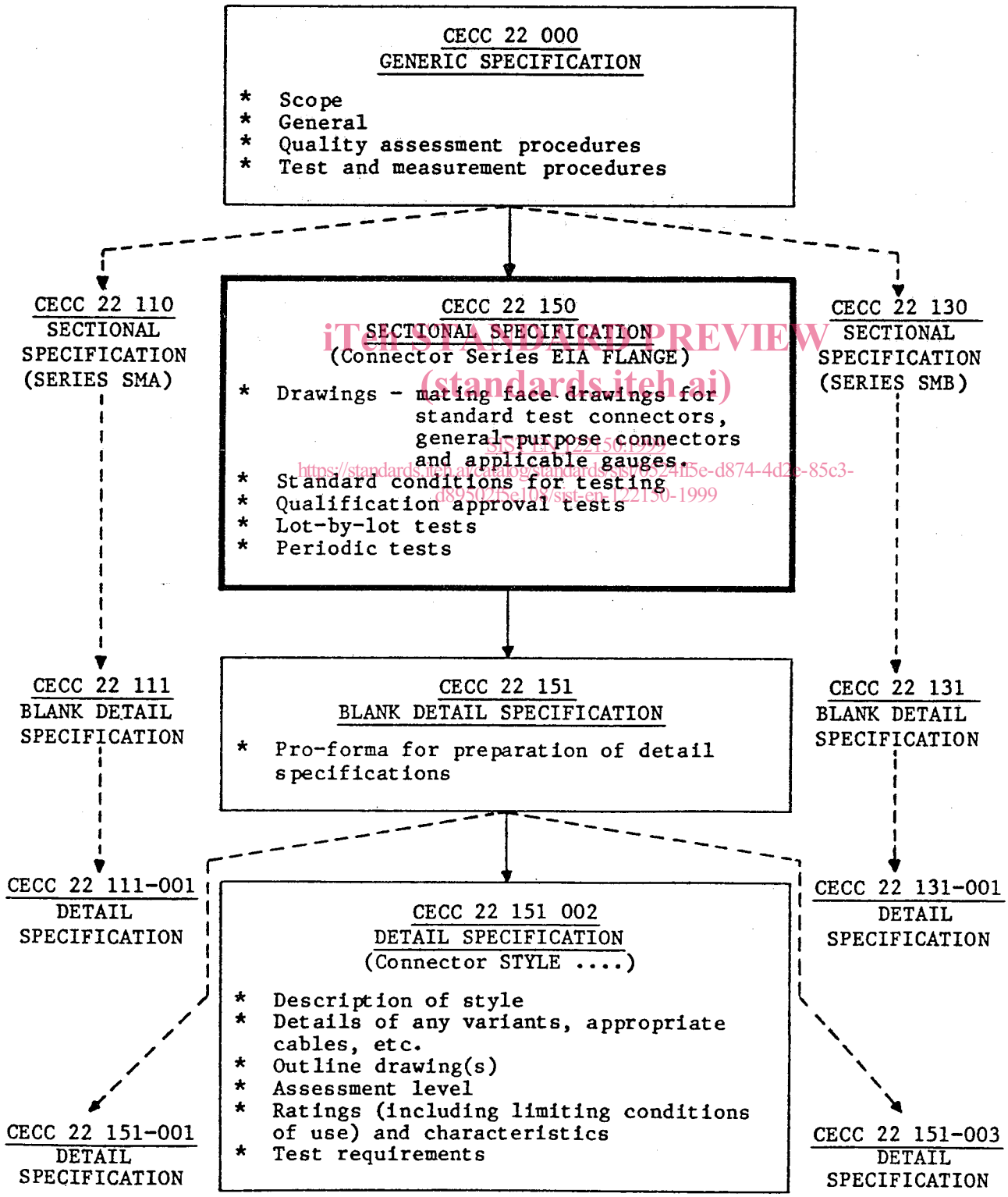
Series EIA FLANGE connectors of the types covered by this SS are available in six sizes, each size having a different mating face but employing structurally similar principles of mechanical construction. The connections described are derived from EIA and IEC standards, and include versions for both 50 Ω and 75 Ω systems.

SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-4874-4d2e-85c3-d8950215e108/sist-en-122150-1999

SIST EN 122150:1999

Document numbering for r.f. connector specifications follows 2.2(1) of CECC 00 400: Part III, in order to permit the issue of more than nine sectional specifications. The approved numbering system applicable to r.f. connector specifications is illustrated in the diagram below.

CECC SPECIFICATION SYSTEM
FOR R.F. CONNECTORS



iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524f5e-d874-4d2e-85c3-d8950f5e1f08/sist-en-122150-1999

NOTE: A detail specification is a 'completed' blank detail specification.

SIST EN 122150:1999

INTRODUCTION

Although EIA FLANGE connectors were originally intended for use with rigid coaxial air lines only, they are currently available in a number of additional styles and variants, suitable for use with semi-flexible cables having convoluted outer conductors.

The outer conductor mating interface is sexless, each half of a mated pair having an identical coupling flange. Two intermateable versions of the coupling flange are available, fixed and rotatable (swivel type). Connectors with fixed flanges have IEC type designations ending -2. Swivel type flange connectors have IEC designations ending in -3.

With both fixed and swivel type flange connectors, the inner conductor connection is by means of a separate coupling element comprising a double-ended male contact and insulator assembly (Bullet). When the connector is used in conjunction with rigid lines, the Bullet may form the only mechanical support for the centre conductor.

The connector sizes relate to the nominal outside diameter of the rigid coaxial transmission line with which they were intended to be used. The size was originally expressed in fractional inches, but the IEC type designation for rigid coaxial lines includes both the nominal characteristic impedance, and the outside diameter in millimetres rounded to a convenient whole number.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SUMMARY OF DIMENSIONS

SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-d874-4d2e-85c3-d89502f5e108/sist-en-122150-1999

50 Ω Line Size

Rigid Line 339 IEC 50-	Outer Conductor			Inner Conductor	
	Original Inch O/D	Nominal O/D mm	Nominal I/D mm	Nominal O/D mm	Nominal I/D mm
22-1	7/8 (0,875)	22,23	20,00	8,70	7,40
40-1	1.5/8 (1,625)	41,30	38,80	16,90	15,00
80-1	3.1/8 (3,125)	79,40	76,80	33,40	31,30
105-1	4.1/2 (4,173)	106,00	103,00	44,80	42,80
125-1	- (4,850)	123,20	120,00	52,10	50,10
155-1	6.1/8 (6,125)	155,60	151,92	66,00	64,00

75 Ω Line Size

Rigid Line 339 IEC 75-	Outer Conductor			Inner Conductor	
	Original Inch O/D	Nominal O/D mm	Nominal I/D mm	Nominal O/D mm	Nominal I/D mm
22-1	7/8 (0,875)	22,23	20,00	5,80	4,50
40-1	1.5/8 (1,625)	41,30	38,80	11,10	9,60
80-1	3.1/8 (3,125)	79,40	76,80	22,10	20,30

UPPER FREQUENCY LIMITS

The upper frequency limit of operation is determined by the cut-off frequency of higher order 'waveguide' modes of propagation, and the effect which they have on the impedance and transmission characteristics of the normal TEM

SIST EN 122150:1999

transmission line mode. The lowest cut-off frequency occurs with the TE_{11} waveguide mode, and this cut-off frequency in an air dielectric line is the upper frequency limit of a practical coaxial transmission line.

In general it is not advisable to operate coaxial systems at frequencies greater than 95 % of the TE_{11} mode cut-off frequency; this particularly applies in the vicinity of discontinuities such as undercuts and support insulators.

The table below lists the recommended upper frequency limits for both straight and right-angle EIA FLANGE connectors of both 50 Ω and 75 Ω impedance.

50 Ω Line Size

Rigid Line 339 IEC 50-	Theoretical TE_{11} mode f_c (GHz)	Straight Connector f_c x 0,95	Right Angle Connector f_c x 0,665
22-1	6,65	6,32	4,42
40-1	3,43	3,26	2,28
80-1	1,73	1,64	1,15
105-1	1,29	1,23	0,86
125-1	1,11	1,05	0,74
155-1	0,88	0,83	0,58

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-d874-4d2e-85c3-d89502f5e108/sist-en-122150-1999

75 Ω Line Size

Rigid Line 339 IEC 75-	Theoretical TE_{11} mode f_c (GHz)	Straight Connector f_c x 0,95	Right Angle Connector f_c x 0,665
22-1	7,40	7,03	4,92
40-1	3,83	3,64	2,54
80-1	1,93	1,83	1,28

SIST EN 122150:1999

SECTION 1 - SCOPE

This sectional specification (SS) provides information and rules for the preparation of detail specifications (DS) for general purpose connectors Series EIA Flange.

It prescribes mating-face dimensions for general purpose connectors, together with gauging information and mandatory tests, selected from CECC 22 000, applicable to all DS relating to Series EIA FLANGE connectors.

This specification indicates the recommended performance characteristics to be considered when writing a DS, and covers test schedules and inspection requirements for Assessment Levels H, M and U.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-d874-4d2e-85c3-d89502f5e108/sist-en-122150-1999

SIST EN 122150:1999

SECTION 2 - MATING INTERFACE AND GAUGE INFORMATION

2.1 Dimensions

Inch dimensions are original dimensions. All undimensioned pictorial configurations are for reference purposes only.

2.2 Drawings

Drawings, Figs. 1 to 6 inclusive, provide mating interface details for the six sizes of EIA FLANGE connector, the relevant dimensions being shown in Tables 1 to 6.

The following NOTES apply to all six drawings:-

NOTE 1: Swivel type flanges shall be free to rotate.

NOTE 2: Diameters D, g, s and t shall be on, or capable of taking up, a common axis relative to datum diameter A Ⓜ.

NOTE 3: Contact diameter C and chamfer shall meet mechanical and electrical performance requirements after slotting and forming. The number, width and depth of slots is optional.

NOTE 4: The fitting of locating pins is optional and to be regarded as inactive for new designs.

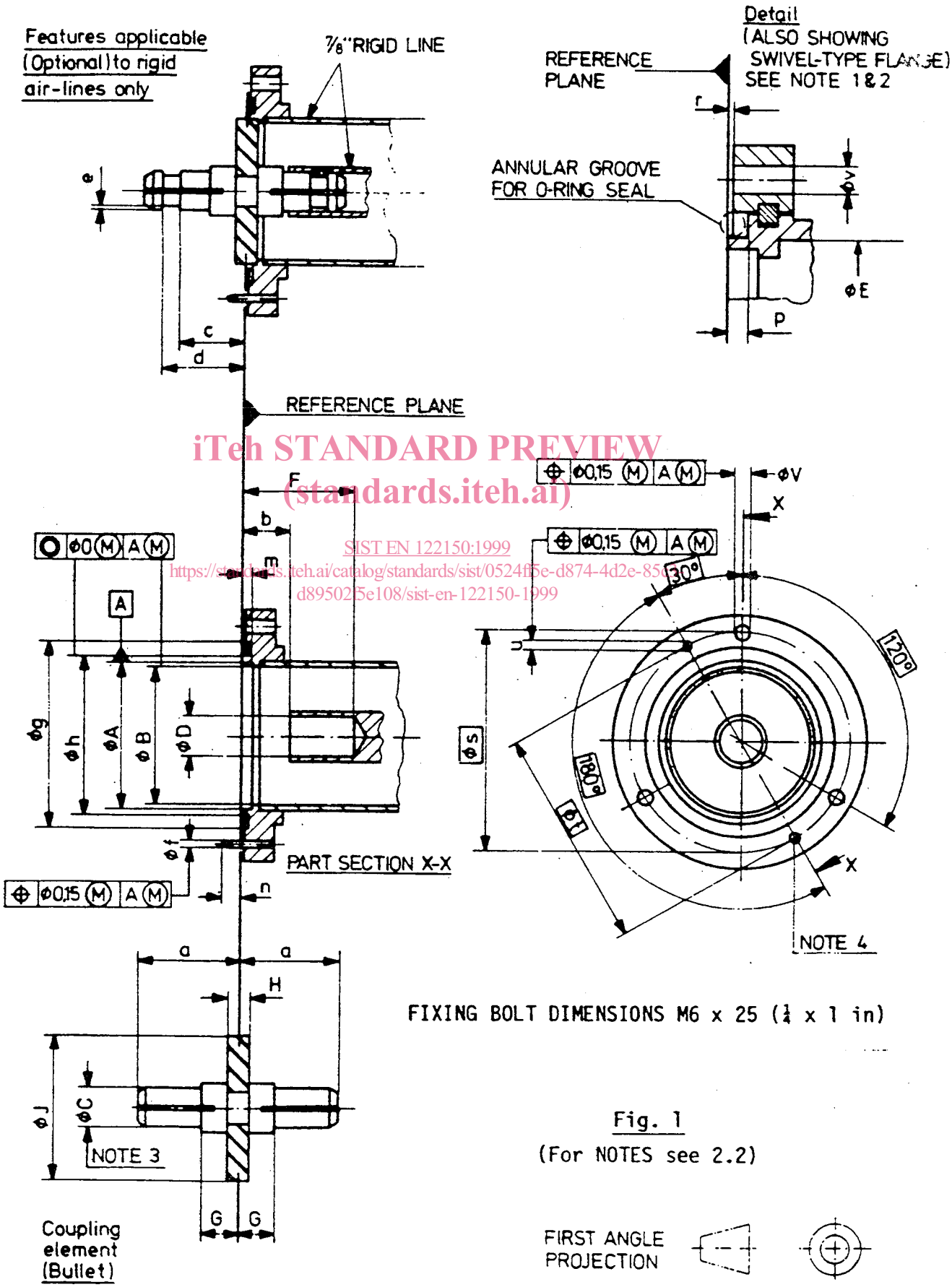
iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-d874-4d2e-85c3-d89502f5e108/sist-en-122150-1999

SIST EN 122150:1999

EIA FLANGE CONNECTOR: $\frac{7}{8}$" LINE SIZE

One-piece connector: 339 IEC 50-22-2 & 339 IEC 75-22-2

Swivel-type connector: 339 IEC 50-22-3 & 339 IEC 75-22-3



iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-d874-4d2e-85d-d8950215e108/sist-en-122150-1999

FIXING BOLT DIMENSIONS M6 x 25 ($\frac{1}{4}$ x 1 in)

Fig. 1

(For NOTES see 2.2)

FIRST ANGLE PROJECTION

Dimensions: 339 IEC 50-22-2 339 IEC 75-22-2
(7/8 in Line Size) 339 IEC 50-22-3 339 IEC 75-22-3

Table 1

Dim.	Inch		mm		Remarks
	min.	max.	min.	max.	
a	-	1,344	-	34,15	Previously overall length in IEC 339-2
b	0,469	0,500	11,90	12,70	Centre conductor to reference plane
c *	0,953	0,984	24,20	25,00	Groove for contact latch (optional)
d *	1,047	1,077	26,60	27,35	Groove for contact latch (optional)
e *	0,039	0,051	1,00	1,30	Groove depth (optional)
f	0,121	0,122	3,08	3,10	Guide pin diameter (optional)
g	1,346	1,354	34,20	34,40	OD of 'O'-ring groove
h	1,024	1,031	26,00	26,20	ID of 'O'-ring groove
l	Applicable to 1.5/8 in connector with square flange only				
m	0,093	0,098	2,35	2,50	Depth of recess for dielectric
n	-	0,177	-	4,50	Guide pin length (optional)
p	0,047	0,053	1,20	1,35	Depth of 'O'-ring groove
r	0,008	0,024	0,20	0,60	Flange to reference plane
s	1,750	(true position)	44,45	(true position)	See drawing for positional tolerance
t	1,812	(true position)	46,02	(true position)	See drawing for positional tolerance
u	0,130	0,134	3,30	3,40	Diameter of locating holes
v	0,274	0,285	6,95	7,25	Diameter of fixing bolt holes
A	0,815	0,821	20,70	20,85	Diameter of recess for dielectric
B	0,782	0,788	19,86	20,02	ID of outer conductor of 7/8 in rigid line
C	See Note 3		See Note 3		Male contact diameter
D 50 Ω	0,289	0,293	7,34	7,44	ID of 50 Ω female contact
D 75 Ω	0,174	0,178	4,42	4,52	ID of 75 Ω female contact
E *	0,882	0,894	22,40	22,70	To accept OD of rigid air line
F	1,346	-	34,20	-	Min. depth of female contact bore
G	-	0,469	-	11,90	Max. centre conductor length
H	0,181	0,185	4,60	4,70	Thickness of dielectric support
J	0,808	0,812	20,50	20,60	OD of dielectric support

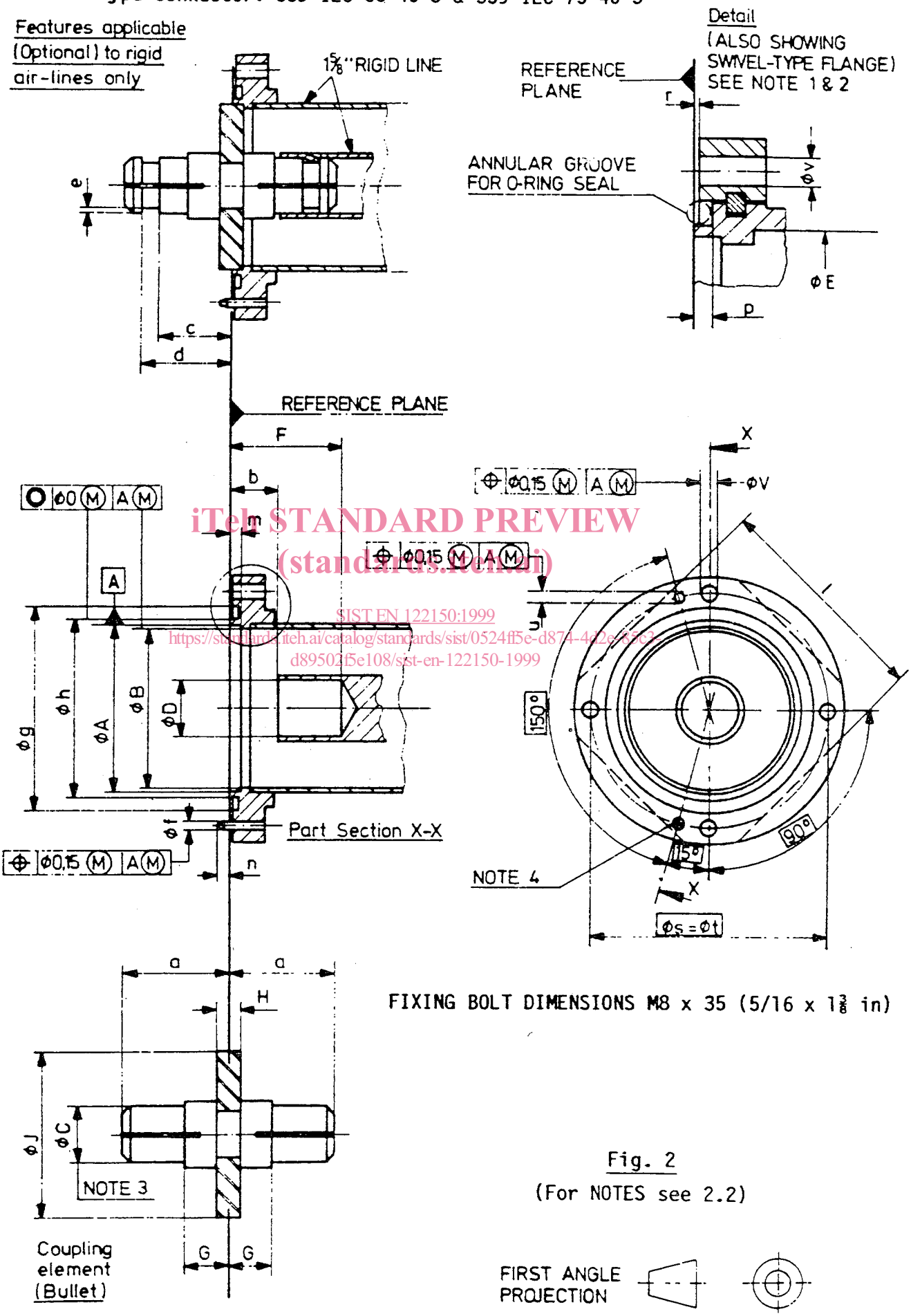
* These features apply only to connectors intended for permanent attachment to rigid coaxial air lines.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 122150:1999
SIST EN 122150:1999

SIST EN 122150:1999

EIA FLANGE CONNECTOR: $1\frac{5}{8}$" LINE SIZE

One-piece connector: 339 IEC 50-40-2 & 339 IEC 75-40-2
Swivel-type connector: 339 IEC 50-40-3 & 339 IEC 75-40-3



FIXING BOLT DIMENSIONS M8 x 35 (5/16 x $1\frac{3}{8}$ in)

Fig. 2
(For NOTES see 2.2)

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 122150:1999
https://standards.iteh.ai/catalog/standards/sist/0524ff5e-d874-4d2e-85c3-d89503f5e108/sist-en-122150-1999