BRITISH STANDARD

BS EN
61169-37:2007

Radio-frequency connectors —

Part 37: Sectional specification for STWX8 R.F connectors

The European Standard EN 61169-37:2007 has the status of a British Standard

ICS 33.120.30

BSI
British Standards

National foreword

This British Standard was published by BSI. It is the UK implementation of EN 61169-37:2007. It is identical with IEC 61169-37:2007.

The UK participation in its preparation was entrusted by Technical Committee EPL/46, Cables, wires and waveguides, radio frequency connectors and accessories for communication and signalling, to Subcommittee EPL/46/2, Radio frequency connectors and waveguides.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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(IEC 61169-37:2007)

Connecteurs pour fréquences radioélectriques - Partie 37: Spécification intermédiaire relative aux connecteurs pour fréquences radioélectriques de type STWX8 (CEI 61169-37:2007)

Hochfrequenz-Steckverbinder - Teil 37: Rahmenspezifikationen - STWX8-Hochfrequenzsteckverbinder (IEC 61169-37:2007)

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 61169-37:2007 E

Foreword

The text of document 46F/44/CDV, future edition 1 of IEC 61169-37, prepared by SC 46F, R.F. and microwave passive components, of IEC TC 46, Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories, was submitted to the IEC-CENELEC parallel Unique Acceptance Procedure and was approved by CENELEC as EN 61169-37 on 2007-03-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2007-12-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-03-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61169-37:2007 was approved by CENELEC as a European Standard without any modification.

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CONTENTS

RADIO-FREQUENCY CONNECTORS –

Part 37: Sectional specification – STWX8 R.F. 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 type STWX8 R.F. coaxial connectors with push-pull self-lock coupling.

The connectors are normally used with flexible and semi-rigid R.F. cables for middle power applications in conjunction with 50 Ω cables in an operating frequency range up to 4 GHz.

It describes the interface dimensions for general purpose grade 2 connectors, dimensional details for standard test connectors, grade 0, together with gauging information and the mandatory tests selected from QC 220000 (IEC 61169-1), applicable to all DS relating to type STWX8 connectors.

This specification indicates the recommended performance characteristics to be considered when writing a DS and covers test schedules and inspection requirements.

2 Normative references

The following referenced documents are indispensable for the application 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 60096 (all parts), *Radio-frequency cables*
IEC 61169-1:1992, *Radio-frequency connectors – Part 1: Generic specification – General requirements and measuring methods*
Amendment 1 (1996)
Amendment 2 (1997)

3 Mating face and gauge information

3.1 Dimensions - General connectors – Grade 2 (Figure 1)

All dimensions are in mm. All un-dimensioned pictorial configurations are for reference purpose only.

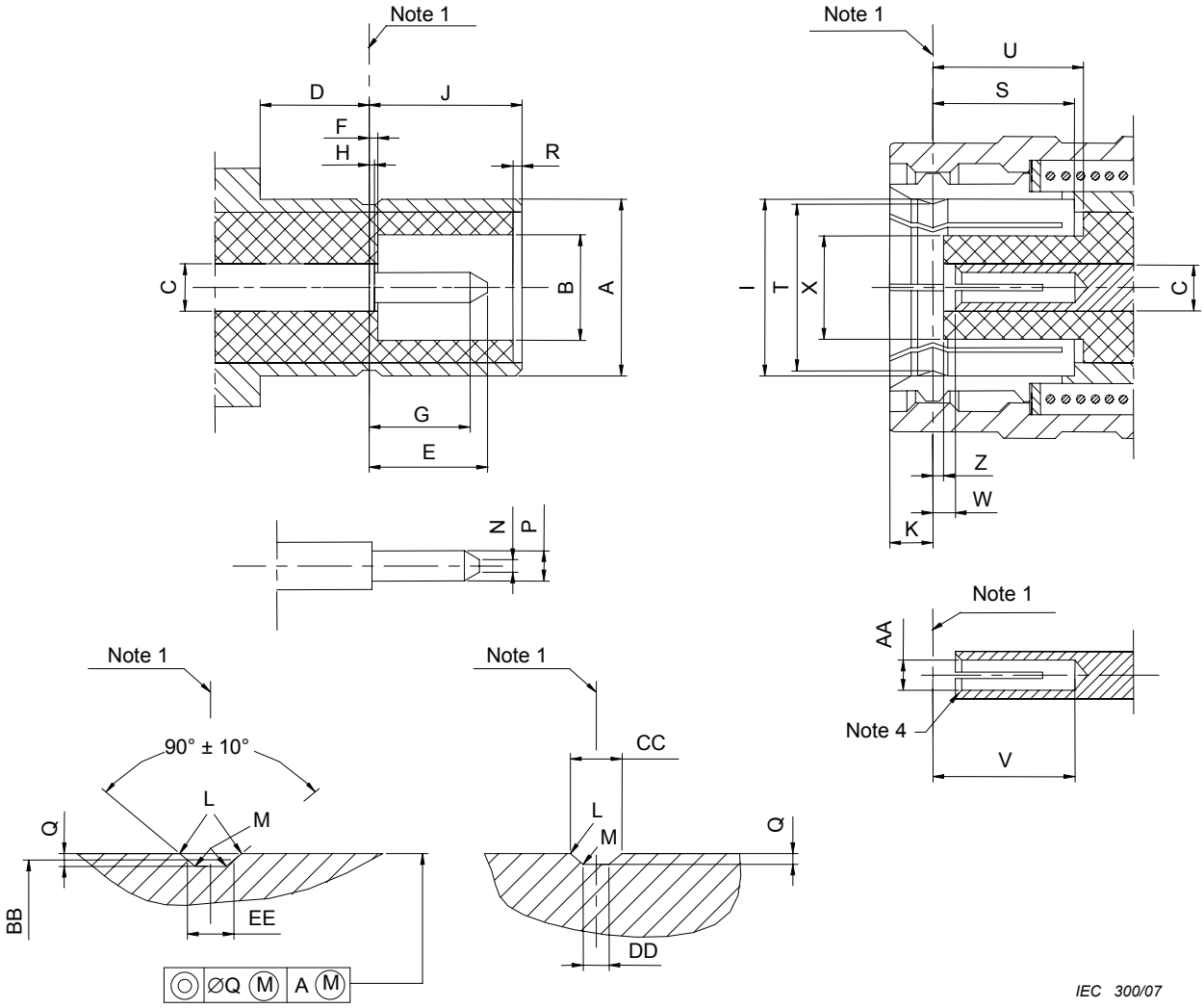


Figure 1 – Mating face of STWX8 connectors
(for dimensions and notes, see Table 1)

Table 1 – Mating face dimensions

Reference	mm		Notes
	min.	max.	
A	8,12	8,20	Diameter
B	4,83,	-----	Diameter
C	2,06	2,21	Diameter
D	4,0	-----	
E	5,33	5,84	
F	------	0,18	
G	4,5	------	
H	-----	0,18	
I	8,22	8,28	Diameter
J	6,90	7,00	
K	------	2,20	
L	0,05	0,15	Radius
M	------	0,13	Radius
N	------	0,64	Diameter
P	1,32	1,37	Diameter
Q	0,19	0,25	
R	0,00	0,30	
S	7,05	------	
T	------	------	Diameter (see Note 2)
U	7,05	------	
V	6,00	------	
W	0,18	------	
X	------	4,72-	Diameter
Z	0,18	------	
AA	-------	------	Diameter (see Note 3)
BB	7,92	8,02	Diameter
CC	1,22	1,42	
DD	0,72	0,92	
EE	1,10		Nominal

NOTE 1 Reference plane: mechanical and electrical.

NOTE 2 To meet electrical and mechanical requirements.

NOTE 3 Bore diameter closed to meet electrical and mechanical requirements when mated with a 1,32/1,37 diameter.

3.2 Gauges for general purpose connectors - Grade 2

All dimensions are in mm. All undimensioned pictorial configurations are for reference purposes only.

3.2.1 Gauges for socket contact

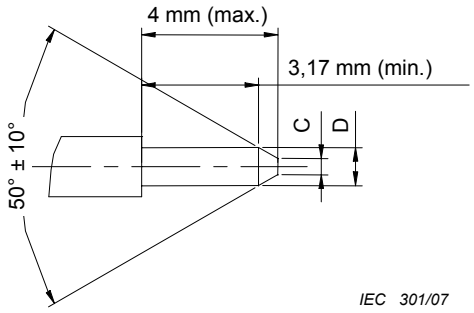


Figure 2 – Gauge pins for contact of socket connectors
(for dimensions, see Table 2)

Table 2 – Gauges Dimensions

Reference	Gauge A- Maximum material for sizing purposes		Gauge B – Minimum material for measurement of gauge retention force Mass of gauge: (80 ± 1) g	
	mm		mm	
	min.	max.	min.	max.
D	1,370	1,375	1,315	1,320
C	0	0,64	-----	------
Material: steel, polished. Surface roughness: Ra=0,4 µm maximum.				

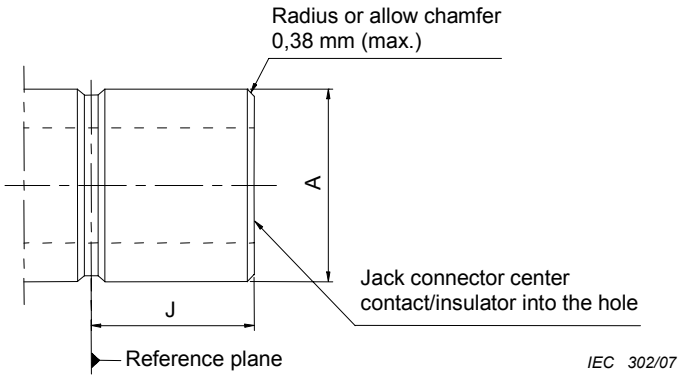
Test procedure

According to 9.3.4 of IEC 61169-1, the gauge A shall be inserted three times into the socket center contact. This is a sizing operation.

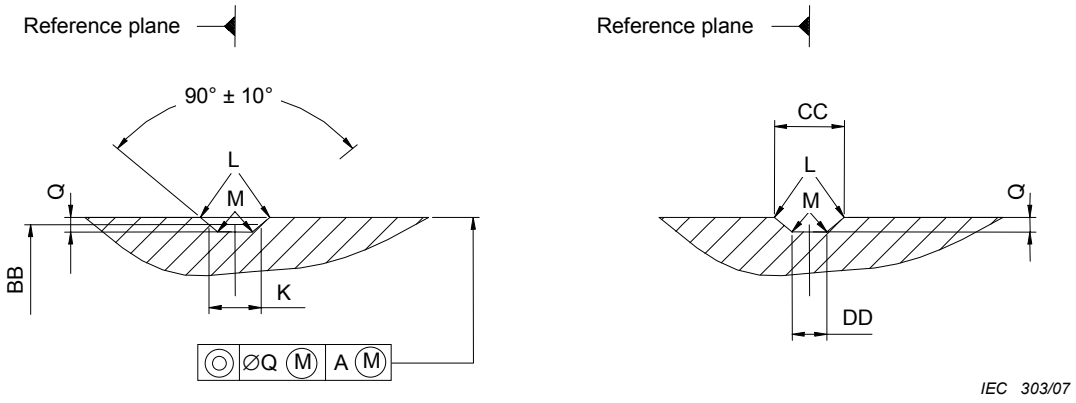
After this, the gauge B shall be inserted into socket centre contact. The contact shall support the mass of the gauge in a vertical downward attitude.

NOTE The minimum diameter of gauge A corresponds to the maximum diameter of a male contact.

3.2.2 Gauges for female outer contact



(A) General dimensions



(B) Alternative coupling grooves

Figure 3 – Gauge for outer of socket connectors
(for dimensions, see Table 3)

Table 3 – Gauge dimensions

Reference	Gauge C-Maximum material for sizing purpose		Gauge D-Minimum material for measurement of gauge retention force	
	mm		mm	
	min.	max.	min.	max.
A	8,185	8,20	8,12	8,135
J	7,05	7,15	7,05	7,15
K	1,1		1,1	
Rad.L	0,05	0,15	0,05	0,15
RadM	----	0,13	-----	0,13
Q	0,2	0,25	0,15	0,20
BB	7,95	7,98	7,95	7,98
CC	1,2	1,4	1,1	1,3
DD	0,6	0,8	0,5	0,7
Material: polished steel. Surface roughness: Ra =0,4 µm max.				

Test procedure

According to 9.3.4 of IEC 61169-1, the gauge C shall be placed three times inside the outer contact. This is a sizing operation.

The gauge D is placed inside the outer contact.The retention force of the gauge shall be 15 N minimum.

3.3 Dimensions – standard test connectors – Grade 0

3.3.1 Socket (female contact)

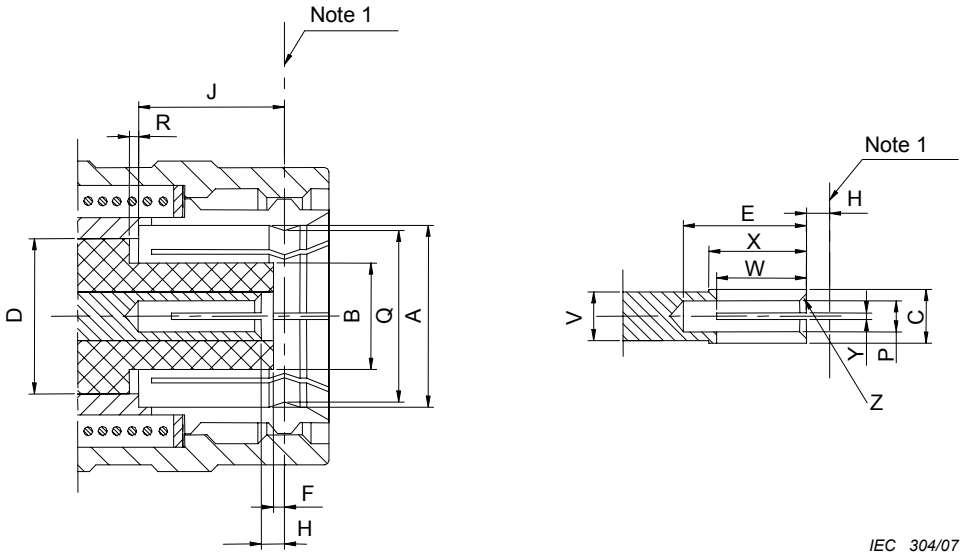


Figure 4 – Female contact
(for dimensions and notes, see Table 4)

Table 4 – Female contact dimensions

Reference	mm		Notes
	min.	max.	
A	8,22	8,25	Diameter
B	4,67	4,72	see Note 3/Diameter
C	2,16	2,18	see Note 4/Diameter
D	—	—	see Note 2/Diameter
E	6	—	
F	0,27	0,52	
H	0,29	0,57	
J	7,05	7,20	
P	1,39	1,41	Diameter
Q	7,78	7,82	
R	0	0,30	
V	2,13	2,18	Diameter
W	4,62	4,88	
X	6,05	6,10	
Y	0,18	0,23	
Z	0,15	0,25	

NOTE 1 Reference plane: mechanical and electrical.

NOTE 2 Diameter of outer conductor and length of uniform section of transmission line to give required characteristic impedance of 50 Ω when checked using time domain reflectometer methods.

NOTE 3 Dimension for use of PTFE dielectric having a dielectric constant of 2,02. Use of PTFE is mandatory.

NOTE 4 Bore diameter closed to meet electrical and mechanical requirements when mated with a 1,35/1,37 diameter.

3. 3. 2 Plug (male contact)

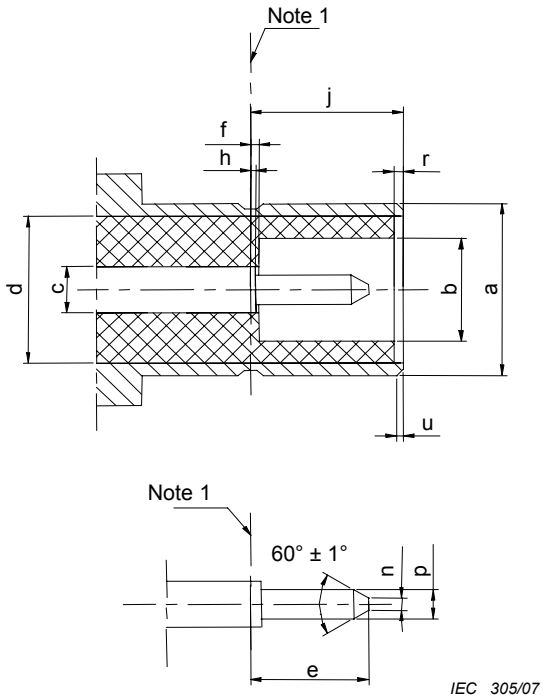


Figure 5 – Male contact
(for dimensions and notes, see Table 5)

Table 5 – Male contact dimensions

Reference	mm		Notes
	min.	max.	
a	8,15	8,20	Diameter
b	4,88	4,93	see Note 3/Diameter
c	2,13	2,18	see Note 2/Diameter
d	—	—	see Note 2/Diameter
e			
f	0,04	0,24	
h	—	0,09	
j	6,95	7,00	
n	—	0,30	
p	1,35	1,37	Diameter
r	0	0,20	Diameter
u	0,10	0,20	

NOTE 1 Reference plane: mechanical and electrical.

NOTE 2 Diameter of outer conductor and length of uniform section of transmission line to give required characteristic impedance of 50Ω when checked using time domain reflectometer methods.

NOTE 3 Dimension for use of PTFE dielectric having a dielectric constant of 2,02. Use of PTFE is mandatory.

4 Quality assessment procedure

4.1 General

The following subclauses provide recommended rating, performance and test conditions to be considered when writing a Detail Specification (DS). They also provide an appropriate schedule of tests with the pro-formal blank detail specification and instructions for the preparation of a detail specification.

4.2 Rating and characteristics (see Clause 6 of IEC 61169-1 (QC 220000))

The values indicated below are recommended for Type STWX8 connectors and are given for the writer of the detail specification (see Table 6). They are applicable to the condition when the connectors are fully mated.

Certain tests will usually not be required. When these tests are required appropriate values shall be entered in the detail specification at the discretion of the specification writer.

Table 6 – Rating and characteristics

Rating and characteristics	Test method IEC 61169-1 (QC 220000) Subclause	Value	Remarks deviations form standard test method
Electrical			
Nominal impedance		50 Ω	
Frequency range			
Grade 2 connectors			
-flexible cable,straight styles		up to 4 GHz	Or upper frequency limit of cable
-semi-rigid cable straight styles		up to 4 GHz	
-right -angle styles		up to 4 GHz	
Reflection factor [1)]	9.2.1		
Grade 2 connectors			
-flexible cable straight styles		≤0,11+0,02f	
-flexible cable right angle styles		≤0,15+0,03f	
-semi-rigid cable straight styles		≤0,11+0,01f	
-semi-rigid cable right angle styles		≤0,15+0,02f	
-component mounting styles		see detail specification	
-solder bucket and PCB mounting styles			
Center contact resistance[2)]	9.2.3		
-initial		≤0,2 mΩ	
-after conditioning		≤3,0 mΩ	
Outer conductor continuity [2)]	9.2.3		
-initial		≤1,0 mΩ	
-after conditioning		≤2,0mΩ increase	
Insulation resistance [2)]	9.2.5		
-initial		≥5GΩ	
-after conditioning		≥500 MΩ	
Proof voltage at sea level [3)4)]	9.2.6		
-cable 96IEC-50-3-1,IEC 50-3-7		1 000 V	
-cable 96IEC50-5-1,IEC50-5-2		1 500 V	
-semi-rigid 3,58 mm diameter		1 000 V	
-semi-rigid 6,35 mm diameter		1 500 V	4,4 kPa approximately equivalent to 20 km
Proof voltage at 4,4 kPa [3)4)]	9.2.6		
-cables 96IE50-3-1, IEC50-3-7		100 V	
-cables 96IEC50-5-1, IEC50-5-2		125 V	
-semi-rigid 3,58 mm diameter		100 V	
-semi-rigid 6,35 mm diameter		125 V	
Environmental test voltage at sea level[3)4)]	9.2.6		
-cables 96IEC50-3-1, IEC50-3-7		350 V	
-cables 96 IEC50-5-1, IEC50-5-2		500 V	
-semi-rigid 3,58 mm diameter		350 V	4,4 kPa approximately equivalent to 20 km
-semi-rigid 6,35 mm diameter		500 V	
Environmental test voltage at 4,4 kPa[3)4)]	9.2.6		
-cables 96IE50-3-1, IEC50-3-7		85 V	
-cables 96IEC50-5-1, IEC50-5-2		100 V	
-semi-rigid 3,58 mm diameter		85 V	Z_t ≤ 31,6 mΩ,
-semi-rigid 6,35 mm diameter		100 V	
Screening effectiveness (cable connector only)[7)]	9.2.8	≥70 dB at 1 GHz See DS	Extinction voltage at 4,4 kPa
Discharge test (corona)			

Table 6 – Rating and characteristics *(continued)*

Rating and characteristics	Test method IEC 61169-1 (QC 220000) Subclause	Value	Remarks deviations form standard test method
Mechanical			
Center contact captivation	9.3.5		
-axial force		24 N	
-torque		na[6)]	
Engagement and separation	9.3.6		
-engagement force		128 N max.	
-separation force		15 N min.	
Gauge retention force(resilient contacts)	9.3.4		
-center contact		0,77 N min.	
-outer contact		15 N min.	
Technical tests on cable fixing			
-cable rotation(nutation)	9.3.7.2		
-cable pulling	9.3.8	See DS	
-cable bending	9.3.9		
-cable torsion	9.3.10		
Tensile strength of coupling mechanism	9.3.11	≥300 N	
Bending moment(and shearing force)	9.3.12	na	
Vibration	9.3.3	98 m/s^2 10 Hz to 2 000 Hz	
Shock	9.3.14	See DS	
Environmental			
Climatic category		55/125/21	
Sealing non-hermetic	9.4.5.1	1 cm^3/h max.	100 to 110 kPa pressure
Hermetic	9.4.5.2	na	
Salt mist	9.4.6	48 h spray	
Sulphur Dioxide test	9.4.8	10 days	
Endurance			
Mechanical endurance	9.5	500 operations	
High temperature endurance [5)]	9.6	1 000 h at 125 °C	

1) These values apply to basic connector. In practice, these may be influenced by the cable used and reference should always be made to the actual values given in the detail specification.

2) Values for a single pair of connectors.

3) Voltages are r.m.s values of a.c. at 40 Hz to 65 Hz unless otherwise stated.

4) Some cables usable with these connectors have ratings lower than the values given here.

5) For certain connectors, the upper temperature limit is restricted by the cable characteristics. Reference should be made to the relevant cable specification. When semi-rigid cables are used, the upper temperature is limited to 115 °C maximum.

6) na - not applicable.

7) When interfaces are fully mated.

4.3 Test schedule and inspection requirements - Acceptance tests

See Table 7.

Table 7 – Acceptance tests

	Test method IEC 61169-1 Subclause	Assessment level M (higher)				Assessment level H (lower)			
		Test Required	IL	AQL %	Period	Test Required	IL	AQL %	Period
Group A1									
Visual examination	9.1.2	a	II	1,0		a	S3	1,5	
Group B1									
Outline dimensions	9.1.3.1	a	S4	0,4		a	S3	4,0	
Mechanical compatibility	9.1.3.3	a	II	1,0		a	S3	1,5	
Engagement and separation	9.3.6	a	S4	0,40	Lot	a	S3	1,5	Lot
Gauge retention (resilient contact)	9.3.4	ia	II	1,0		ia	S3	1,5	
Sealing, non-hermetic	9.4.5.1	ia	II	0,65	by	ia	S3	1,0	by
Sealing, hermetic	9.4.5.2	ia	II	0,015		ia	S3	0,025	
Voltage proof	9.2.6	a	S4	0,40	lot	a	II	4,0	lot
Solderability piece parts	9.3.2.1.1	ia	S4	0,40		ia	S3	4,0	
Insulation resistance	9.2.5	a	S4	0,40		a	S3	4,0	

Periodic tests

See Table 8. There are no group C tests for levels H and M.

Table 8 – Periodic tests

	Test method IEC 61169-1 (QC 220000) subclause	Assessment level M (higher)				Assessment level H (lower)			
		Test required	Number of specimens	Permitted failures per group[2)]	Period	Test required	Number of specimens	Permitted failures per group[2)]	Period
Group D1 [(d)]			6	1	3 years		3	1	3 years
Solderability	9.3.2.1.1	ia				ia			
-connector assemblies									
Resistance to soldering heat	9.3.2.1.2	ia				ia			
Mechanical tests on cable fixing									
-cable rotation (nutation)	9.3.7.2	ia				ia			
-cable pulling	9.3.8	ia							
-cable bending	9.3.9								
-cable torsion	9.3.10	ia							
Bending moment (and shearing force)	9.3.12	na				na			
Strength of coupling mechanism	9.3.11	a				a			
Group D2 [(d)]			6	1	3 years		3	1	3 years
Contact resistance	9.2.3	a				a			
Outer conductor and screen continuity also center conductor continuity (mated cable connectors)									
Vibration	9.3.3	a							
Shock	9.3.14	a							
Damp heat steady state	9.4.3	a				a			
Salt mist	9.4.6	a				a			

Table 8 – Periodic tests *(continued)*

	Test method IEC 61169-1 (QC 220000) subclause	Assessment level M (higher)				Assessment level H (lower)			
		Test required	Number of specimens	Permitted failures per group[2)]	Period	Test required	Number of specimens	Permitted failures per group[2)]	Period
Group D3			[1)]	1	3 years		[1)]	1	3 years
Dimensions (piece part and materials)	9.1.3	a				a			
Group D4			6	1	3 years		3	1	3 years
Mechanical endurance	9.5	a				a			
High temperature endurance	9.6	a				a			
Sulphur dioxide	9.4.8								
Group D5			6	1	3 years		3	1	3 years
Reflection factor	9.2.1	ia				ia			
Screening effectiveness	9.2.8	ia				ia			
Water Immersion	9.2.7								
Group D6 [(d)]			6	1	3 years		3	1	3 years
Center contact captivation	9.3.5	ia				ia			
Discharge test (corona)	9.2.9	a							
Rapid change of temperature	9.4.4	a				a			
Climatic sequence	9.4.2	a				a			
Group D7									
Resistance to solvents and contamination fluids	9.7		1[3)]	—	3 years		1[3)]	1	3 years

1) One set of piece parts each style and variant unless using common piece parts.

2) For qualification approval a total of two failures only permitted for level H and one failure only for level M from groups D1 to D7.

3) Group D7 - number of pairs for each solvent.

Abbreviations:

a applicable
na not applicable
ia test required (if technically applicable)
(d) destructive test -specimens shall not be returned to shock
IL Inspection level
AQL acceptable quality level

4.4 Procedures

4.4.1 Quality conformance inspection

This shall consist of test group A1 and B1 on a lot-by-lot basis and test groups D1 to D7 on a periodic basis.

4.4.2 Qualification approval and its maintenance

This still consists of three consecutive lots passing test groups A1 and B1 followed by selection of specimens from the lots as appropriate. These specimens shall successfully pass the specified periodic D tests.

5 Instructions for preparation of detail specifications

5.1 General

Detail Specifications (DS) shall use the appropriate Blank Detail Specification (BDS). The following pages comprise the BDS dedicated for use with 50 Ω Type STWX8 connectors. As such, it will have already entered on it information relation to:

a) the basic specification number applicable to all the detail specifications covering connector styles of the series covered by the sectional specification;

b) the connector series designation.

The specification writer should enter the details relating to the connector style to be covered as indicated.The numbers in brackets in the BDS correspond to the following indications which shall be given.

5.2 Identification of the detail specification

(1) The name of the National Authorized Institution (NAI) under whose authority the DS is published and, if applicable, the organization from whom the DS is available.

(2) The number allocated to the DS by the relevant National Authorized Institution immediately preceded by the ISO two letter national identity code or "XX" when the DS is produced by an IEC technical sub-committee.

(3) The number and issue number of the IEC/IECQ generic specification and, when applicable,the sectional specification also the national reference if different.

(4) If different from the IEC/IECQ generic specification number, the national number of DS, date of issue and any further information required by the national system, together with any amendment numbers.

5.3 Identification of the component

(5) Enter the following details:

- Style: the style designation of the connector including type of fixing and sealing if applicable.
- Attachment: by deletion of the inapplicable options of cable/wire given for center and outer conductors.
- Special features and marking: as applicable.
- Series designation: in bold characters/digits approximately 15 mm high.

(6) Enter detail of assessment level and the climatic category.

(7) A reproduction of the outline drawing and details of the panel piercing (if applicable). It shall provide the maximum envelope dimensions, also the position of the reference plane and, In the case of a fixed connector, the position of the mounting planes both relative to the front face of the connector.

Any maximum panel thickness limitation for fixed connectors shall be stated.

(8) Particulars of all variants covered by the DS. As appropriate, the information shall include:

- cable type (or sizes) applicable to each variant;
- alternative plated or protective finishes;
- details of alternative mounting flanges having either tapped or plain mounting holes;
- details of alternative solder spills or solder buckets including, when applicable, those for use with Microwave Integrated Circuit (MIC) components.

5.4 Performance

(9) Performance data listing the most important characteristics of the connector in accordance with the requirements of the relevant sectional specification. Deviations from the minimum requirements shall be clearly indicated. Non-applicable parameters shall be marked “na”.

5.5 Marking, ordering information and related matters

(10) Insert marking and ordering information as appropriate, together with details of related documents and any invoked structural similarity.

5.6 Selection of tests, tests conditions and severities

(11) ”na” shall be used to indicate non-applicable test. All tests marked “a” by the detail specification writer shall be mandatory.

When using the normal procedure with a dedicated BDS, the letter ”a” –for applicable– shall be entered in the “test required” column against each of the tests indicated as being mandatory in the test schedule of the relevant sectional specification. Any additional tests required at the discretion of the specification writer shall also be indicated by an “a”.

The specification writer shall also indicate, when necessary, details of deviations from the standard test methods and test conditions, including any relevant deviations given in the test schedule of the sectional specification.

The qualification approval and conformance inspection shall be such that the NSI shall be satisfied that they are appropriate and in line with those for other connectors within the system providing a reasonably comparable service.

5.7 Blank detail specification pro-forma for type STWX 8 connectors

The following pages contain the complete BDS pro-forma.

(1)	Page 1 of ….. **QC 222XXX**
ELECTRONIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH GENERIC SPECIFICATION QC 220000 SECTIONAL SPECIFICATION QC 222400 NATIONAL REFERENCE	(4) ISSUE ....
(5) Detail specification for Radio frequency coaxial connector of assessed quality	type **STWX8**
Style:.....	Special features and markings
Method of cable/wire+ attachment	centre conductor – solder/crimp+ outer conductor – solder/clamp/crimp + + delete as appropriate
(6) Assessment level.....	Characteristic impedance 50 Ω Climatic category..../.../.../
(7) Outline and maximum dimensions	Panel piercing and mounting details

(8) Variants

Variant No.	Description of variant	60096 IEC			
01.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....

Information about manufacturers who have components qualified to this detail specification is available in the current QC 001005 Qualified Product List.

(9) Performance (including limiting conditions of use)

Ratings and characteristics		IEC 61169-1 (QC 220000) Subclause	Value	Remarks including any deviations from standard test methods
Electrical				
Nominal impedance			....Ω	
Frequency range			....GHz	Measurement frequency range
Reflection factor		9.2.1		
	Variant No. Designation			
	01.....		....	....
Centre contact resistance		9.2.3	≤ .....mΩ ≤.....mΩ	Initial After conditioning
Centre conductor continuity	01.....	9.2.3	.....mΩ .....mΩ .....mΩ .....mΩ	Resistance change due to conditioning
Outer contact continuity		9.2.3	≤ .....mΩ ≤.....mΩ	Initial After conditioning
Insulation resistance		9.2.5	≥.....GΩ ≥.....GΩ	Initial After conditioning
+ Proof voltage at sea level	01.....	9.2.6	.....kV .....kV .....kV .....kV	(86 to 106) kPa
+ Proof voltage at 4,4 kPa	01.....	9.2.6	.....V .....V .....V V	.....kPa (if not 4,4 kPa)
Screening effectiveness	01.....	9.2.8	....dB at....GHz	Z_t ≤..... mΩ
Discharge test (corona) at sea level	01.....	9.2.9	≥..... V ≥..... V ≥..... V ≥..... V	Extinction voltage
ADDITIONAL ELECTRICAL CHARACTERISTICS				
+ Voltage values are r.m.s. values at 50-60 Hz, unless otherwise specified.				

Ratings and characteristics		IEC 61169-1 (QC 220000) Subclause	Value	Remarks including any deviations from standard test methods
Mechanical				
Soldering - bit size		9.3.2.1.1	.....	
Gauge retention resilient contacts - inner contact - outer contact		9.3.4.3	.....N .....N	
Centre contact captivation - axial force - permitted displacement each direction - torque		9.3.5	.....N .....mm .....Nm	
Engagement and separation - axial force		9.3.6		
Strength of coupling mechanism		9.3.11	.....N	
Effectiveness of cable fixing against				
- cable rotation	01.....	9.3.7	Rotations	
- cable pulling	01.....	9.3.8	.....N	
- cable bending	01.....	9.3.9	.....Cycles	Length of cable mass ....
- cable torsion	01.....	9.3.10	.....Nm	
Bending moment		9.3.12	.....Nm	Relative to reference plane
Bumps total		9.3.13	.....m/s^2 .....to..... Hz	(.....g_n acceleration)
Vibration		9.3.3	.....m/s² .....to..... Hz	(.....g_n acceleration)
Shock		9.3.14	.....m/s^2 .....Shape .....ms	(.....g_n acceleration)
ADDITIONAL MECHANICAL CHARACTERISTICS				

Ratings and characteristics	IEC 61169-1 (QC 220000) Subclause	Value	Remarks including any deviations from standard test methods
Environmental			
Climatic category		...../...../.....	
Sealing non-hermetically sealed connectors	9.4.5.1	.....cm^3/h	100 to 110 kPa pressure differential
Sealing hermetically sealed connectors	9.4.5.2	10^{-5} $bar/cm^3/h$	100 to 110 kPa pressure differential
Water immersion	9.2.7		
Salt mist	9.4.6	..... h	Duration of spraying
ADDITIONAL ENVIRONMENTAL CHARACTERISTICS			
ENDURANCE			
Mechanical	9.5	.....operations	
High temperature	9.6	.....h at.....°C	
ADDITIONAL ENDURANCE CHARACTERISTICS			
CHEMICAL CONTAMINATION			
Resistance to solvents and contaminating fluids to be used.	9.7	....	
Applicable fluids.		....	
Sulphur dioxide	9.4.8	..... days	

(10) Supplementary information

– Marking of the component: in accordance with 11.1 of IEC 61169-1 (QC 220000) in the following order of preference:

1) Manufacturer code:	.....
2) Manufacturing date code:	year/week
3) Component identification:	Variant No./ Identification Designation
	.....
	.....
	.....
	.....
	.....
	.....
	.....
	.....

- Marking and contents of package: in accordance with 11.2 of IEC 61169-1

1) Information prescribed in 11.1 of IEC 61169-1 detailed above	
2) Nominal characteristic impedance	.... Ω.....
3) Assessment level code letter	.....
4) Any additional marking required	.....

Ordering information

1) Number of the detail specification	IECQC 222XXX...../Variant code..
2) Assessment level code letter	.....
3) Body finish (if more than one listed)	.....
4) Any additional information or special requirements	.....

- Related documents (if not included in IEC 61169-1 or sectional specification):

.....

.....

- Structural similarity in accordance with 10.2.2 of IEC 61169-1

NOTE Relevant information on a basic style should be entered as variant 01.

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60096	Series	Radio-frequency cables	-	-
IEC 61169-1	1992	Radio-frequency connectors -	EN 61169-1	1994
A1	1996	Part 1: Generic specification - General	A1	1996
A2	1997	requirements and measuring methods	A2	1997

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