

Connectors for electronic equipment —

**Part 7-7: Detail specification for 8-way,
shielded, free and fixed connectors, for
data transmission with frequencies up
to 600 MHz (category 7, shielded)**

The European Standard EN 60603-7-7:2002 has the status of a
British Standard

ICS 31.220.10

National foreword

This British Standard is the official English language version of EN 60603-7-7:2002. It is identical with IEC 60603-7-7:2002.

The UK participation in its preparation was entrusted by Technical Committee EPL/48, Electromechanical components and mechanical structures for electronic equipment, to Subcommittee EPL/48/2, Connectors for electronic equipment, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

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

Compliance with a British Standard does not of itself confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 9 August 2002

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 80, an inside back cover and a back cover.

The BSI copyright date displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

© BSI 9 August 2002

ISBN 0 580 40219 3

Connectors for electronic equipment
Part 7-7: Detail specification for 8-way, shielded,
free and fixed connectors, for data transmission
with frequencies up to 600 MHz
(category 7, shielded)
(IEC 60603-7-7:2002)

Connecteurs pour équipement
électronique
Partie 7-7: Spécification particulière pour
connecteur écran, libre ou fixé, à huit
voies pour transmission de données
à des fréquences inférieures à 600 MHz
(catégorie 7, écran)
(CEI 60603-7-7:2002)

Steckverbinder für elektronische
Einrichtungen
Teil 7-7: Bauartspezifikation für
geschirmte freie und feste Steckverbinder,
8polig, für Datenübertragungen bis
600 MHz (Kategorie 7, geschirmt)
(IEC 60603-7-7:2002)

This European Standard was approved by CENELEC on 2002-07-01. 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 Central Secretariat or to any CENELEC member.

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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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

Foreword

The text of document 48B/1166 + 1166A/FDIS, future edition 1 of IEC 60603-7-7, prepared by SC 48B, Connectors, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60603-7-7 on 2002-07-01.

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) 2003-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2005-07-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A, B, C, D, E, F, G, H, I, J, K, L, M, N and ZA are normative.
Annex ZA has been added by CENELEC.

The International Electrotechnical Commission (IEC) and CENELEC draw attention to the fact that it is claimed that compliance with this International Standard/European Standard may involve the use of patent(s).

The IEC and CENELEC take no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the IEC that he is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with the IEC. Information may be obtained from:

Nexans
16, rue de Monceau
75008 Paris
France

Attention is drawn to the possibility that some of the elements of this International Standard/European Standard may be the subject of patent rights other than those identified above. IEC and CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60603-7-7:2002 was approved by CENELEC as a European Standard without any modification.

CONTENTS

1	General	6
1.1	Scope	6
1.2	Normative references	6
2	IEC type designation	8
2.1	Terminology.....	9
2.2	Marking	9
2.3	Main functions	9
2.4	Interchangeability	9
3	Common features and isometric view	11
3.1	Isometric view	11
3.2	Mating information	12
4	Dimensions.....	19
4.1	General	19
4.2	Type C free connectors – switch actuator dimensions	19
4.3	Terminations – fixed and free connectors.....	20
5	Gauges.....	20
5.1	Fixed connectors	20
5.2	Free connectors	24
5.3	Switch actuator gauges.....	26
6	Characteristics.....	26
6.1	General	26
6.2	Classification into climatic categories.....	26
6.3	Creepage and clearance distance	27
6.4	Electrical characteristics	27
6.5	Transmission characteristics, category 7.....	29
6.6	Mechanical characteristics	30
7	Tests and test schedule	31
7.1	General	31
7.2	Test procedures and measuring methods.....	31
7.3	Preconditioning.....	31
7.4	Wiring and mounting of specimens	31
7.5	Test schedules	33
	Annex A (normative) Gauging requirements.....	40
A.1	Fixed connectors.....	40
A.2	Free connectors.....	40
	Annex B (normative) Locking device mechanical operation – Test procedure and requirements.....	41
B.1	Object.....	41
B.2	Preparation of the specimens.....	41
B.3	Test method.....	41
B.4	Final measurements.....	41

Annex C (normative) High frequency (category 7) transmission interoperability testing	42
C.1 Object.....	42
C.2 Test equipment	42
C.3 Free connector precision test fixture construction	42
C.4 Fixed connector precision test fixture construction.....	43
C.5 Alternate fixed or free connector test fixture	43
C.6 Test fixture requirements	43
C.7 Test procedure.....	43
Annex D (normative) General requirements for the measurement set-up.....	44
D.1 Test instrumentation	44
D.2 Coaxial cables and test leads for network analysers	44
D.3 Measurement precautions	44
D.4 Balun requirements	45
D.5 Reference components for calibration	46
D.6 Termination loads for termination of conductor pairs.....	46
D.7 Termination of screens.....	47
D.8 Test specimen and reference planes	47
Annex E (normative) Insertion loss	49
E.1 Object.....	49
E.2 Test method.....	49
E.3 Test set up.....	49
E.4 Procedure	49
E.5 Test report.....	50
E.6 Accuracy.....	50
Annex F (normative) Return loss	51
F.1 Object.....	51
F.2 Test method.....	51
F.3 Test set-up	51
F.4 Procedure	51
F.5 Test report.....	51
F.6 Accuracy.....	51
Annex G (normative) Near end cross talk	53
G.1 Object.....	53
G.2 Test method.....	53
G.3 Test set-up	53
G.4 Procedure	54
G.5 Test report.....	55
G.6 Accuracy.....	55
Annex H (normative) Far end cross talk.....	56
H.1 Object.....	56
H.2 Test method.....	56

H.3	Test set-up	56
H.4	Procedure	57
H.5	Test report	58
H.6	Accuracy	58
Annex I (normative) Longitudinal conversion loss		59
I.1	Object	59
I.2	Test method	59
I.3	Test set-up	59
I.4	Procedure	60
I.5	Test report	60
I.6	Accuracy	60
Annex J (normative) Transfer impedance		61
J.1	Object	61
J.2	Test method	61
J.3	Definitions	61
J.4	Test set-up	62
J.5	Procedure	65
J.6	Test report	66
J.7	Accuracy	66
Annex K (normative) Coupling attenuation		67
K.1	Object	67
K.2	Test method	67
K.3	Test equipment and set-up	67
K.4	Procedure	68
K.5	Test report	68
Annex L (normative) Termination of balun		70
L.1	Termination of balun with low return loss for common mode	70
Annex M (normative) Gauge dimensions supplement for switch actuator for use with standard IEC 60603-7 series connectors		71
M.1	Fixed connectors	71
M.2	Free connectors	74
Annex N (normative) Switch function		76
N.1	Basic switch function	76
N.2	Alternate switch function	77
Annex ZA (normative) Normative references to international publications with their corresponding European publications		78

CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 600 MHz (category 7, shielded)

1 General

1.1 Scope

This part of IEC 60603 covers 8 way connectors, up to 4 pairs, to be used up to 600 MHz, when used with an appropriate cable. These cables are specified in the IEC 61156 series and used in cabling systems specified in ISO/IEC 11801¹.

The connectors are backward compatible with the already defined IEC 60603-7-X connectors.²

The connectors are interoperable with the already defined IEC 60603-7-X connectors.³

1.2 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 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-14, *Basic environmental testing procedures – Part 2: Tests – Test N: Change of temperature*

IEC 60068-2-38, *Basic environmental testing procedures – Part 2: Tests – Test Z/AD: Composite temperature/humidity cyclic test*

IEC 60169-16, *Radio-frequency connectors – Part 16: R.F. coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling – Characteristic impedance 50 ohms (75 ohms) (Type N)*

IEC 60352-2:1990, *Solderless connections – Part 2: Solderless crimped connections – General requirements, test methods and practical guidance*

IEC 60352-3:1993, *Solderless connections – Part 3: Solderless accessible insulation displacement connections – General requirements, test methods and practical guidance*

IEC 60352-4:1994, *Solderless connections – Part 4: Solderless non-accessible insulation displacement connections – General requirements, test methods and practical guidance*

IEC 60352-5:2001, *Solderless connections – Part 5: Press-in connections – General requirements, test methods and practical guidance*

¹ ISO/IEC 11801 contains various 'category' designations corresponding to various frequency ranges.

² Backward compatibility definition and requirements are given in 2.4.2.

³ Interoperability definition and requirements are given in 2.4.3.

IEC 60352-6:1994, *Solderless connections – Part 6: Insulation piercing connections – General requirements, test methods and practical guidance*

IEC 60512 (all parts), *Connectors for electronic equipment – Tests and measurements*

IEC 60512-1-100, *Connectors for electronic equipment – Tests and measurements – Part 1-100: General – Applicable publications*

IEC 60603-7, *Connectors for frequencies below 3 MHz for use with printed boards – Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features, with assessed quality*

IEC 60603-7-1, *Connectors for electronic equipment – Part 7-1: Detail specification for 8-way, shielded free and fixed connectors with common mating features, with assessed quality*

IEC 60807-1, *Rectangular connectors for frequencies below 3 MHz – Part 1: Generic specification – General requirements and guide for the preparation of detail specifications for connectors with assessed quality*

IEC 61076-1:1995, *Connectors with assessed quality, for use in d.c., low frequency analogue and in digital high speed data applications – Part 1: Generic specification*

IEC/PAS 61076-3-110:2002, *Connectors for electronic equipment – Part 3-110: Detail specification for 8 way connectors for frequencies up to 600 MHz*

IEC 61156 (all parts), *Multicore and symmetrical pair/quad cables for digital communications*

IEC 61196 (all parts), *Radio-frequency cables*

ISO/IEC 11801, *Information technology – Generic cabling for customer premises*

ISO 1302, *Technical drawings – Method of indicating surface texture*

ITU-T G.117, *Transmission aspects of unbalance about earth*

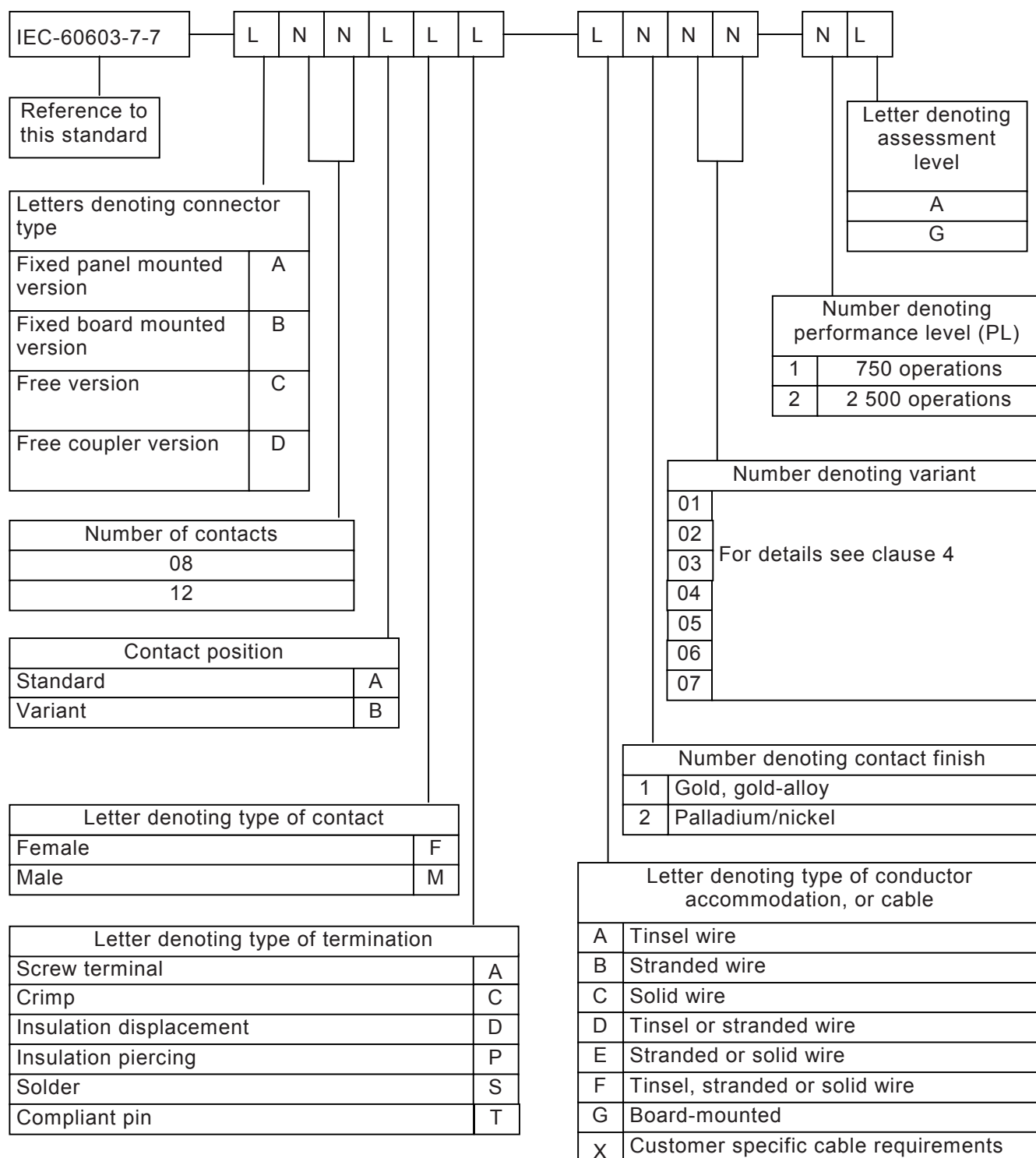
ITU-T K.20, *Resistibility of telecommunication equipment installed in a telecommunications centre to overvoltages and overcurrents*

ITU-T O.9, *Measuring arrangements to assess the degree of unbalance about earth*

CENELEC PREN 50289-1-6, *Communication Cables – Specifications for Test Methods – Part 1-6: Electrical Test Methods – Electromagnetic Performance*

2 IEC type designation

Connectors, connector bodies and connectors with pre-inserted contacts according to this standard shall be designated by the following system (see IEC 60603-7-1).



NOTE "L" stands for letter
 "N" stands for number

Example:

IEC 60603-7-7 C08AFD-C101-2G: Free shielded connector, IDC-contact, having 8 female contacts in standard contact positions, gold plated to be used with solid wires, meeting performance level 2, assessment level G.

2.1 Terminology

The terminology used in and applicable to this specification is stated in 2.1 of IEC 61076-1. Some applicable terms are also covered in IEC 60512-1.

2.2 Marking

Each connector and/or its associated package shall be marked in accordance with the requirements specified in 2.6 of IEC 61076-1.

2.3 Main functions

These connectors are compatible with IEC 60603-7 series connectors insofar as described in 2.4.

The two most widely separated pairs of contacts of the 4 original pairs of contacts, normally used in IEC 60603-7 series connectors at and below 250 MHz, are used herein for applications above 250 MHz.

Two additional pairs of contacts located opposite the 4 original pairs of contacts are included to provide a total of 4 pairs for applications above 250 MHz. The remaining two of the 4 original pairs of contacts are available for use in applications at and below 250 MHz.

A switch is employed within the connectors to engage transmission paths between 4 pairs of terminations and the respective pairs of contacts operating above 250 MHz or below.

The fixed connector switch is actuated by a protrusion added onto the end of a standard shaped IEC 60603-7 series free connector (type C) (plug).

The free connector switch is actuated by two protrusions added onto each side of a standard shaped IEC 60603-7 series free connector (type C) (plug) (see figure 1).

A total of 12 contacts (6 pairs) and 8 terminations (4 pairs) are described herein for the connectors. At any one time, a maximum of 8 contacts (4 pairs) are engaged by the switch for transmission by connecting 8 contacts to the 8 terminations. The remaining 4 contacts (2 pairs) shall be disengaged or connected to a common termination (shield if present).

The wiring convention and the circuit arrangement of the basic switch is detailed in annex N.

2.4 Interchangeability

These connectors are intermateable, interoperable and backward compatible with all IEC 60603-7 series connectors.

In this standard, 'lower level IEC 60603-7 series connector' refers to a connector conforming to an IEC 60603-7 series specification for a lower application transmission frequency range than 600 MHz, such as 100 MHz or 250 MHz.

The original 4 pairs of contacts and the shield contacts specified for lower level IEC 60603-7 series connectors are given for reference and their specifications given in this standard conform to the specifications for IEC 60603-7 series connectors.

In this standard, two pairs of additional contacts and a switch are utilised and described to facilitate compatibility between IEC 60603-7 series applications implemented for frequencies above 250 MHz and applications implemented for frequencies at and below 250 MHz.

2.4.1 Intermateability

Intermateability with other IEC 60603-7 series connectors is ensured herein by applying the same “GO” and “NO-GO”, free and fixed connector gauge requirements as specified for all lower level IEC 60603-7 series connectors.

2.4.2 Backward compatibility

2.4.2.1 Requirement

The backward compatibility requirement ensures that when a backward compatible connector in compliance with this standard is mated with another connector in compliance with any lower level of IEC 60603-7 series connectors, then the mated pair shall comply with the requirements of the respective lower level IEC 60603-7 series connector.

2.4.2.2 Backward compatibility implementation

The switch may be used in the fixed or in the free connectors. One switch is required in either the fixed or the free connector to implement backward compatibility.

According to the IEC/ISO 11801, the telecommunications outlet shall be a “jack”, thus full backward compatibility is ensured by the use of fixed connectors that include a switch.

Fully backward compatible plugs include a switch.

NOTE A free connector with stationary protrusions, which is not backward compatible with IEC 60603-7 series connectors, but is intermateable with IEC 60603-7-7 fixed connectors, is specified in IEC/PAS 61076-3-110.

2.4.3 Interoperability

2.4.3.1 General

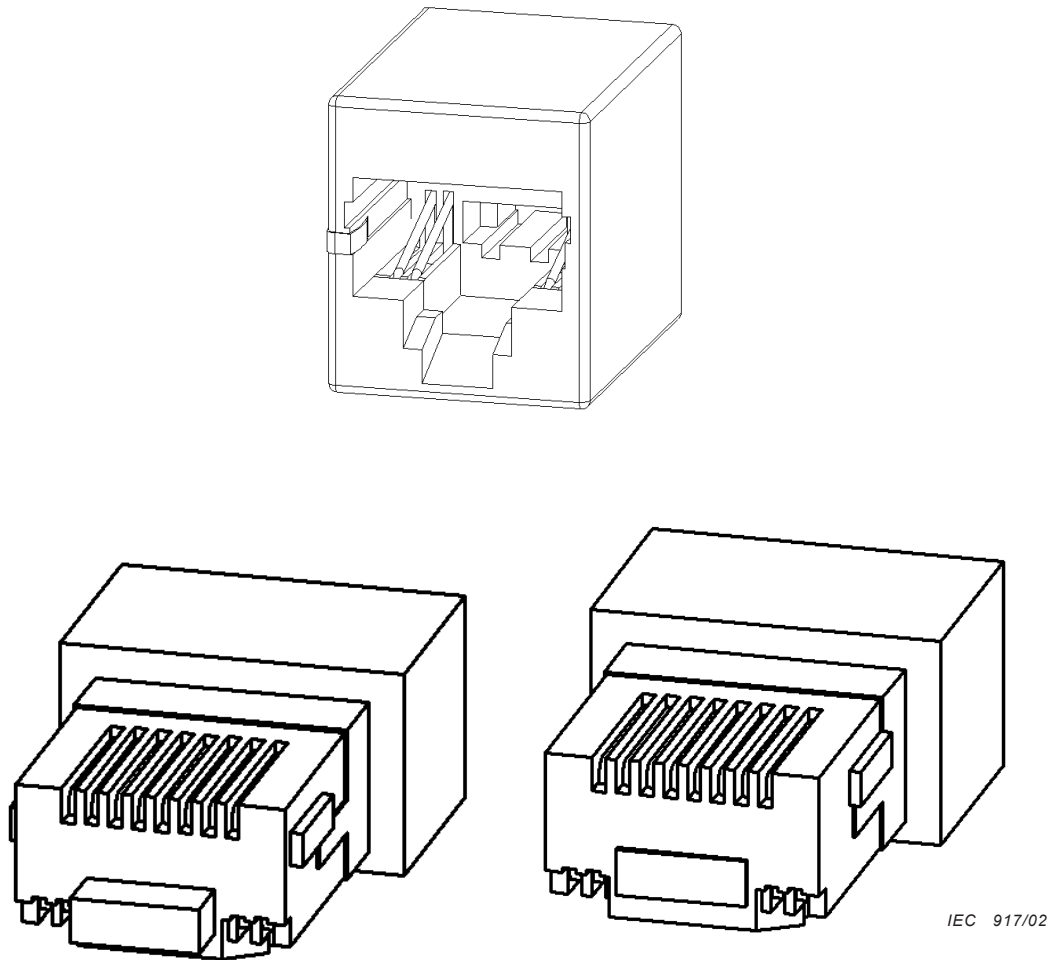
Interoperability ensures that the resulting mated connection of any connector from any source and complying with any specification belonging to the IEC 60603-7 group with another such connector shall comply with the mechanical, electrical and transmission requirements of the respective lower IEC 60603-7 performance category.

2.4.3.2 Requirements

Specific interoperability requirements and test procedures for applications above 250 MHz are given herein.

3 Common features and isometric view

3.1 Isometric view



NOTE The free connector protrusions move to activate the switch within the free connector, see 2.3.

**Figure 1 – Examples fixed and free connectors,
free connector shown with both switch positions**

3.2 Mating information

For the purpose of this specification, dimensional information in excess of that specified in IEC 60603-1 (and IEC 60807-1) is detailed. It is, therefore, necessary to read 3.2.1 to 3.2.4 inclusive in conjunction with each other.

3.2.1 Contacts interface

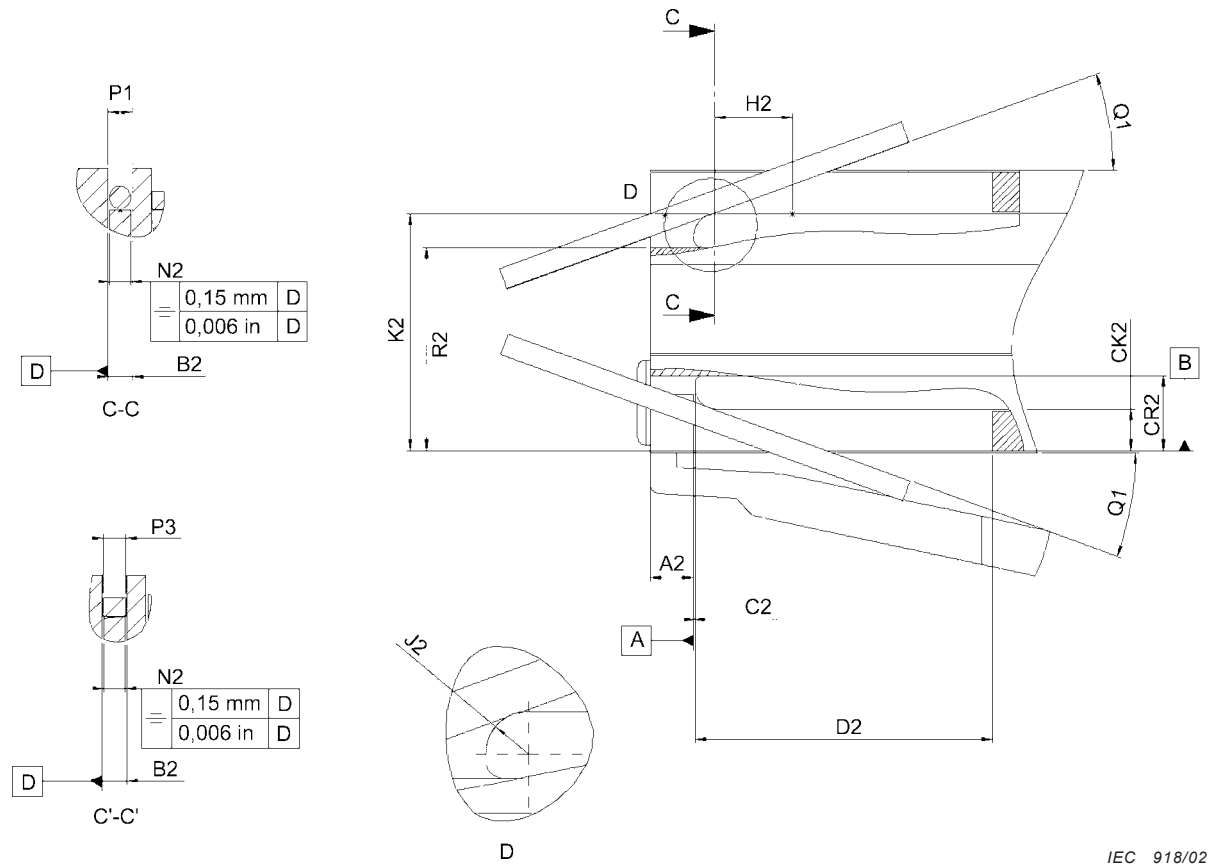
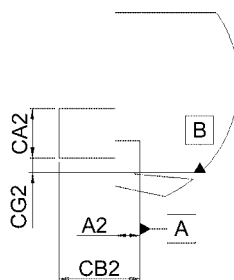
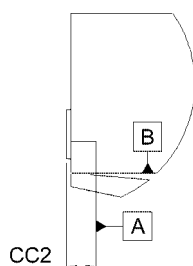


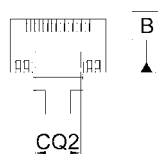
Figure 2 – Physical interface, contacts interface, see table 1



Switch actuator in extended position



Switch actuator in retracted position



Switch actuator, front

IEC 919/02

NOTE Switch actuator extension dimensions are given for the free connector.

Figure 3 – Physical interface, switch actuator, see table 1

Table 1 – Physical interface contacts interface and switch actuator dimensions

Letter	Maximum		Minimum	
	mm	in	mm	in
A2	1,45	0,057	0,89	0,035
B2	0,61	0,024	0,51	0,020
C2	0,46	0,018	0,03	0,001
D2			2,79	0,110
H2			0,38	0,015
J2	0,64	0,025	0,38	0,015
K2	6,15	0,242	5,89	0,232
CK2	0,60	0,024	0,50	0,020
N2			0,28	0,011
P1	0,50	0,0195	0,45	0,0177
P3	0,50	0,0195	0,36	0,014
R2	4,83	0,190		
CR2			1,70	0,067
CA2	2,20	0,087	2,00	0,079
CB2	3,95	0,155	3,75	0,148
CC2	0,20	0,008	0,00	0,00
CG2	0,22	0,009	0,12	0,005
CQ2	5,50	0,217	5,70	0,224
Letter	Maximum		Minimum	
Q ₁	24°		11°	

3.2.2 Fixed connector contacts

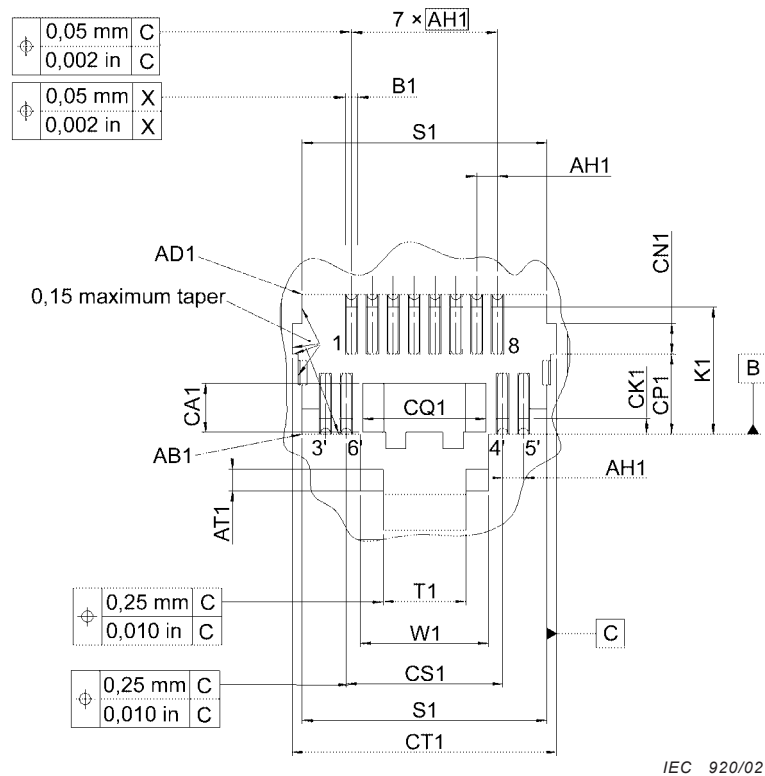
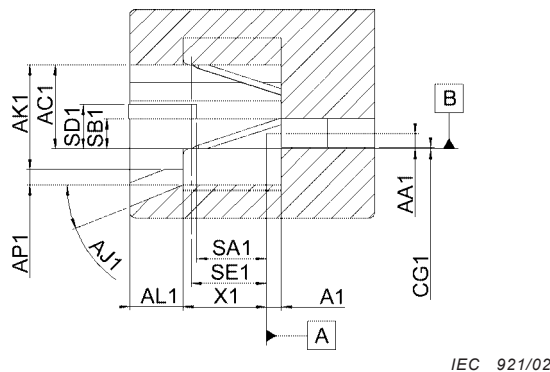


Figure 4 – Physical interface, fixed connector contacts, front view, see table 2



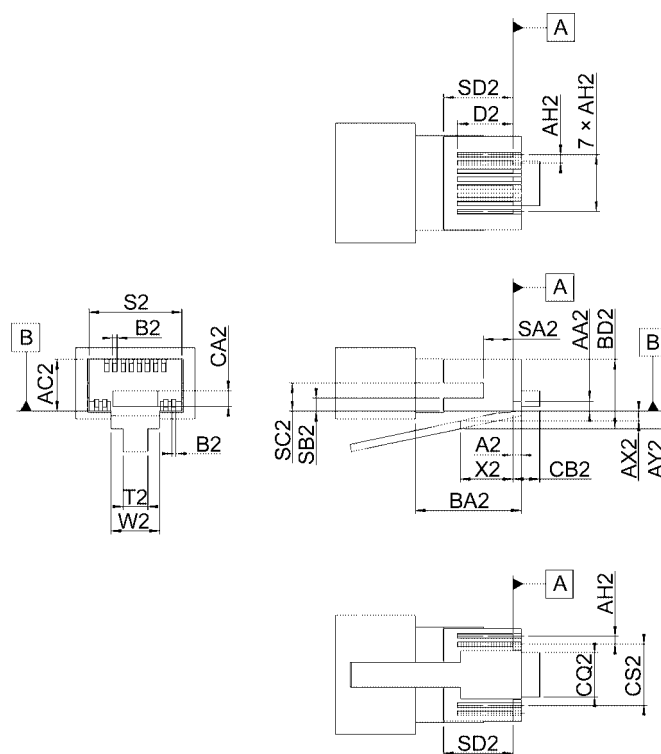
NOTE The fixed connector switch is actuated by the extension of the switch actuator protrusion located on the free connector. The fixed connector switch is located accordingly.

Figure 5 – Physical interface, fixed connector contacts, side view, see table 2

Table 2 – Physical interface, fixed connector contacts dimensions

Letter	Maximum		Minimum		Nominal	
	mm	in	mm	in	mm	in
A1			1,47	0,058		
B1	0,71	0,028				
K1	5,84	0,230				
S1	12,04	0,474	11,84	0,466	11,94	0,470
T1	4,19	0,165	3,94	0,155		
W1	6,38	0,251	6,22	0,245		
X1	6,86	0,270	6,68	0,263		
AA1	1,24	0,049				
AB1	0,38	0,015				
AC1	6,96	0,274	6,76	0,266	6,86	0,270
AD1	0,13	0,005				
AH1					1,02	0,040
AK1	8,66	0,341	8,38	0,330		
AL1			1,40	0,055		
AT1					0,76	0,030
CA1	2,30	0,091	2,20	0,087		
CK1			0,65	0,026		
CN1	1,40	0,055	1,30	0,051		
CP1	5,05	0,199	4,95	0,195		
CQ1	6,00	0,236	5,80	0,228		
CS1					7,66	0,3016
CT1	13,0	0,512	12,9	0,508		
SA1			5,31	0,209		
SB1	2,16	0,085				
SD1			4,90	0,193		
SE1	5,80	0,288				
Letter						
AJ1					15°	

3.2.3 Free connector contacts



IEC 922/02

Figure 6 – Physical interface, free connector contacts, see table 3

Table 3 – Physical interface, free connector contact dimensions

Letter	Maximum		Minimum		Nominal	
	mm	in	mm	in	mm	in
A2	1,45	0,057	0,89	0,035	1,17	0,046
B2	0,61	0,024	0,51	0,020	0,56	0,022
D2			2,79	0,110		
S2	11,79	0,464	11,58	0,456	11,68	0,460
T2	3,38	0,133	3,12	0,123		
W2	6,17	0,243	6,02	0,237		
X2	6,02	0,237	5,77	0,227		
AA2			1,24	0,049		
AC2	6,71	0,264	6,50	0,256	6,60	0,260
AH2					1,02	0,040
AX2	1,32	0,052				
AY2	2,87	0,113	2,67	0,105		
BD2			8,38	0,330		
CA2	2,20	0,087	2,00	0,079		
CB2	3,95	0,155	3,75	0,148		
CQ2	5,70	0,224	5,50	0,216		
BA2			12,32	0,485		
CS2					7,66	0,3016
SA2	4,22	0,166				
SB2	2,11	0,083				
SC2			4,95	0,195		
SD2			6,85	0,270		

3.2.4 Switch actuator interface

The fixed connector switch is actuated by the extension of the switch actuator protrusion located on the free connector. The fixed connector switch is located accordingly.

Switch actuator extension dimensions are given for the free connector (above).

The force required to operate the switch(es) in a fixed connector shall not interfere with the maximum insertion force for IEC 60603-7 series connectors.

The force to return the switch actuator of a free connector should not be less than the maximum insertion force for IEC 60603-7 series connectors.

An inadvertent de-activation of the switch should not occur without a force greater than the maximum insertion force for IEC 60603-7 series connectors.

4 Dimensions

4.1 General

Dimensions are given in millimetres, with inch equivalents. The original dimensions are in inches.

The basic type A, type B, and type C connector dimensions are similar to those given for the same types specified for IEC 60603-7 series connectors. Specific dimensions given herein are limited to the free connector switch actuator dimensions, which should be used to implement this standard.

4.2 Type C free connectors – switch actuator dimensions

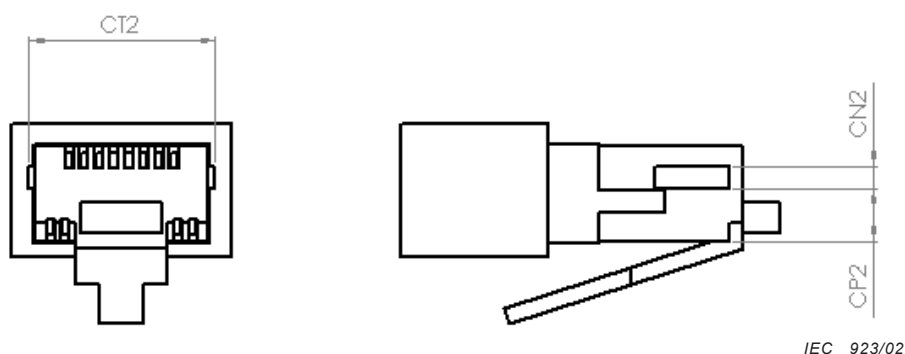


Figure 7 – Free connector, switch actuator dimensions, see table 4

Table 4 – Free connector, switch actuator dimensions

Letter	Maximum		Minimum	
	mm	in	mm	in
CN2	1,3	0,051	1,2	0,047
CP2	5,05	0,199	4,95	0,195
CT2	12,85	0,506	12,75	0,502

4.3 Terminations – fixed and free connectors

4.3.1 General

A connector may include multiple terminations between the cable termination and the separable contact interface. These may include press in connections of jack springs into PCBs, for example. All terminations shall meet the relevant termination requirements.

If a type of solderless termination is used which is not covered by any IEC specification, the supplier shall assure its reliability by performing similar tests, and demonstrating a similar level of performance, to those in IEC 60352.

Free connectors are intended to be terminated to cable to provide connector and cable assemblies. The connector type designation provides basic terminations concerning the type of conductor (tinsel, stranded, solid) to which the conductor may be applied, and the type of connection used (solder, insulation displacement, etc.). Specific details concerning wire gauge size, type and thickness of conductor insulation, size and shape of cordage or cable jacket, etc., are not intended to be part of this specification. Minor variations in a free connector's interior details to accommodate differing wire gauge sizes, outer jackets, etc., do not require the generation of new free connector specifications.

4.3.2 Solderless termination types

4.3.2.1 Insulation displacement terminations

Shall conform to IEC 60352-3 or IEC 60352-4.

4.3.2.2 Crimp terminations

Shall conform to IEC 60352-2.

4.3.2.3 Insulation piercing terminations

Shall conform to IEC 60352-6.

4.3.2.4 Compliant pin

Shall conform to IEC 60352-5.

5 Gauges

See annex A for additional gauge information.

5.1 Fixed connectors

Gauges shall be made according to the following requirements:

Material: tool steel, hardened.

✓ Surface roughness, according to ISO 1302.

Ra = 0,25 µm maximum (10 µin maximum).

A 0,01 mm (0,0004 in) wear tolerance shall be applied.

Clearance shall be provided for connector contacts.

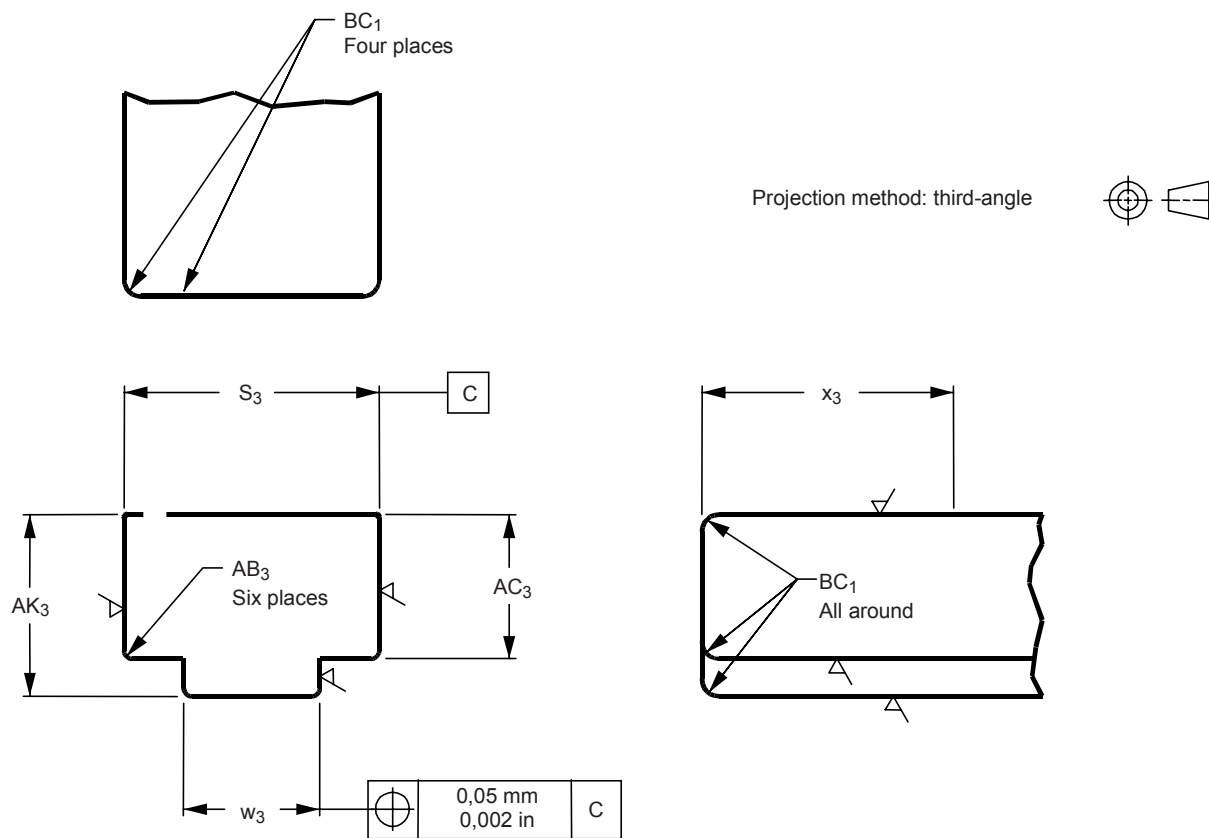


Figure 8 – Fixed connector GO gauge, see table 5

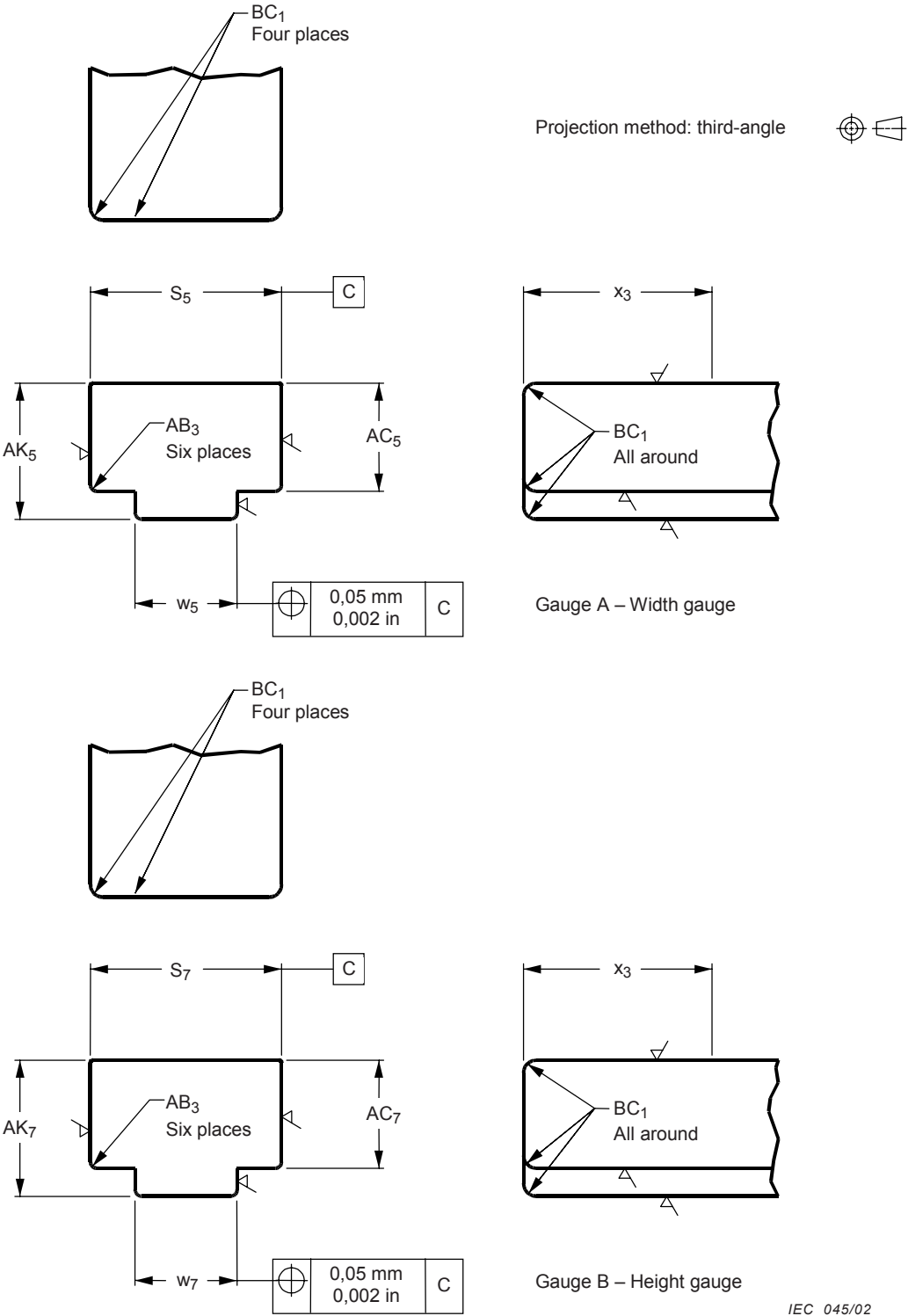


Figure 9 – Fixed connector NO-GO gauges, see table 5

Table 5 – Fixed connector gauge dimensions

Letter	Maximum		Minimum		Nominal (ref)	
	mm	in	mm	in	mm	in
S ₃	11,796	0,4644	11,786	0,4640		
S ₅	12,050	0,4744	12,040	0,4740		
S ₇	11,68	0,460	11,58	0,456		
X ₃			10,16	0,400		
AB ₃	0,51	0,020	0,389	0,0153	0,450	0,0177
AC ₃	6,716	0,2644	6,706	0,2640		
AC ₅	6,45	0,254	6,35	0,250		
AC ₇	6,970	0,2744	6,96	0,274		
BC ₁	0,89	0,035	0,64	0,025	0,76	0,030
W ₃	6,12	0,241	6,109	0,2405		
W ₅	6,38	0,251	6,365	0,2506		
W ₇	5,97	0,235	5,89	0,232		
AK ₃	8,357	0,3290	8,346	0,3286		
AK ₅	8,13	0,320	8,05	0,317		
AK ₇	8,672	0,3414	8,66	0,341		

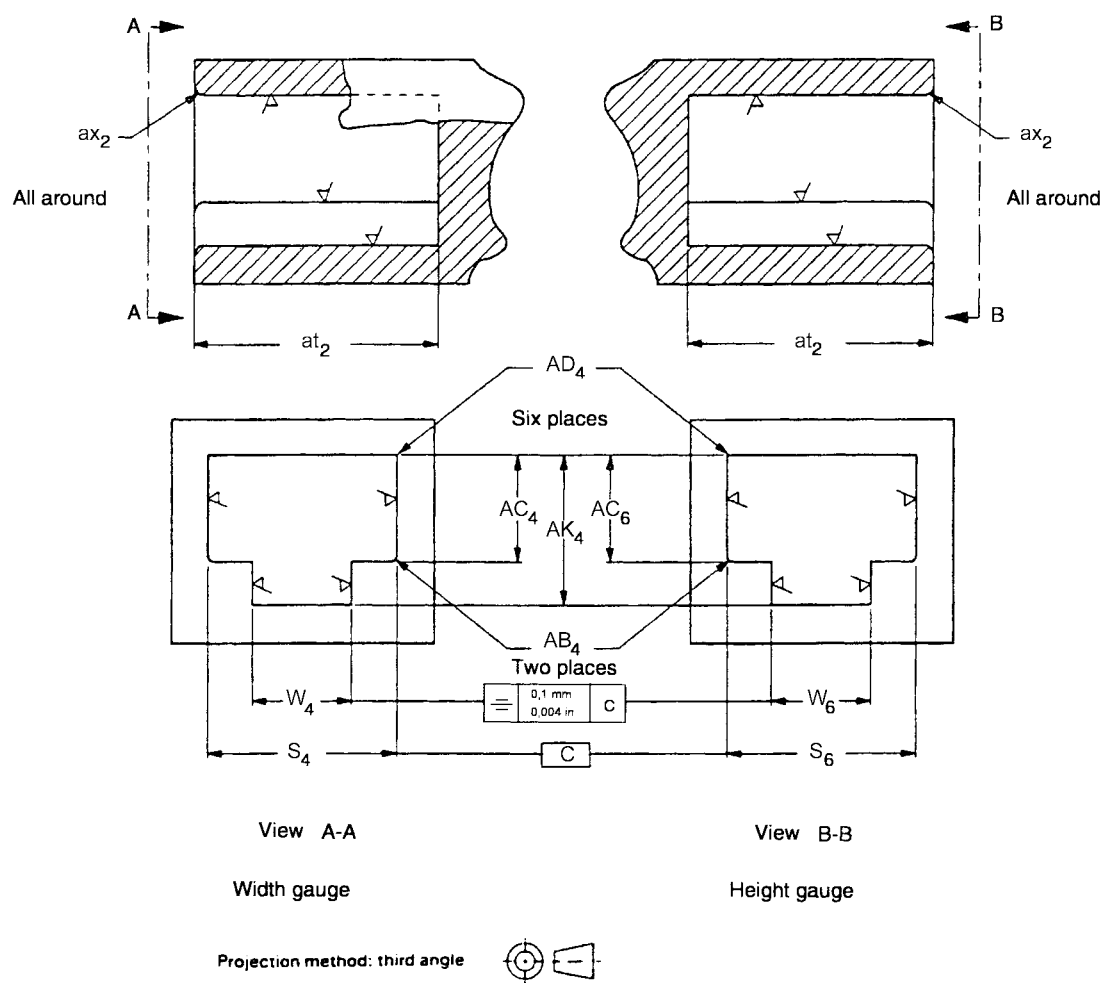
5.2 Free connectors

Material: tool steel, hardened.

√ = Surface roughness, according to ISO 1302.

Ra = 0,25 µm maximum (10 µin maximum).

A 0,01 mm (0,0004 in) wear tolerance shall be applied.



IEC 046/02

Figure 10 – Free connector NO-GO gauges, see table 6