

Connectors used in the field of audio, video and audiovisual engineering

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Committees responsible for this British Standard

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- Association of British Theatre Technicians
- Audio Engineering Society
- British Broadcasting Corporation
- British Educational Suppliers' Association
- British Federation of Audio
- British Radio and Electronic Equipment Manufacturers' Association
- British Telecommunications plc
- Federation of the Electronics Industry
- Independent Television Association (ITVA)
- Institute of Sound and Communication Engineers
- Institution of Electrical Engineers
- International Association of Broadcasting Manufacturers
- Professional Lighting and Sound Association
- Royal Institute of British Architects
- Royal National Institute for Deaf People
- Society of Cable Television Engineers

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National foreword

This British Standard has been prepared by Subcommittee EPL/100/3 and is identical with IEC 1602:1996 *Connectors used in the field of audio, video and audiovisual engineering*, published by the International Electrotechnical Committee (IEC).

For ease of reproduction some of the French version of the text has been retained.

Cross-references

Publication referred to	Corresponding British Standard
	BS 3041 <i>Radio frequency connectors</i>
IEC 169-2:1965	Part 2:1977 <i>Specification for coaxial unmatched connector</i> (Identical)
IEC 169-12:1979	Part 12:1981 <i>Specification for r.f. coaxial connectors with screw coupling, unmatched (type UHF)</i> (Identical)
IEC 169-24:1991	BS EN 60169 <i>Radio-frequency connectors</i> BS EN 60169-24:1994 <i>Radio-frequency coaxial connectors with screw coupling, typically for use in 75 ohm cable distribution systems (Type F)</i> (Identical)
IEC 268-11:1987	BS 6840 <i>Sound system equipment</i> Part 11:1987 <i>Specification for application of connectors for the interconnection of sound system components</i> (Identical)
IEC 268-12:1987	BS EN 60268 <i>Sound system equipment</i> BS EN 60268-12:1995 <i>Application of connectors for broadcast and similar use</i> (Identical)
	BS 5817 <i>Specification for audiovisual, video and television equipment and systems</i>
IEC 574-3:1983	Part 3:1989 <i>Specification for connectors for the interconnection of equipment in audiovisual systems</i> (Identical)
IEC 574-18:1987	Part 18:1989 <i>Specification for connectors for automatic slide projectors with built-in triacs for audiovisual application</i> (Identical)
IEC 933-4:1994	BS EN 60933 <i>Audio, video and audiovisual systems. Interconnection and matching values</i> BS EN 60933-4:1994 <i>Connector and cordset for domestic digital bus (D2B)</i> (Identical)

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 26, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 General

1.1 Scope and object

This technical report gives guidance on the identification and application of connectors in the field of audio, video and audiovisual engineering. It is intended to be used in conjunction with application standards, such as IEC 268-11, and definitive electrical and mechanical performance standards, such as IEC 130, where these exist.

Standards for the electrical and mechanical characteristics of connectors used in the field of audio, video and audiovisual engineering are published on a regular basis. For historical reasons, the applications of some of these connectors are now ahead of the issue of the corresponding definitive standards. This causes difficulties in clearly identifying connectors for reference purposes in application standards such as IEC 268-11.

In order to overcome these difficulties, this technical report is prepared in order to provide the identification needed for applications standards, comprising the following information:

A main index giving information on applications:

The main index serves the dual purpose of providing a quick reference overview of all connectors mentioned in this report, as well as a table of contents of the standard sheets.

A popular name index:

The popular name index provides easy identification through the popular names by which these connectors are commonly identified.

A series of standard sheets:

Each connector or connector family is identified on standard sheets. Each standard sheet provides the following information:

- brief functional description;
- basic dimensions;
- typical electrical specification;
- reference to IEC Standards.

The basic dimensions and typical electrical specifications are provided to allow positive identification only, and the diagrams are not meant to represent the construction of the component

1.2 Reference documents

Full specifications are given in the following IEC standards which are referred to.

IEC 130-9, 1989: *Connectors for frequencies below 3 MHz — Part 9: Circular connectors for radio and associated sound equipment.*

IEC 169-2, 1965: *Radiofrequency connectors — Part 2: Coaxial unmatched-connector.*

IEC 169-8, 1978: *Radio-frequency connectors — Part 8: R.F. coaxial connectors with inner diameter of outer conductor 6,5 mm (0,256 in) with bayonet lock — Characteristic impedance 50 ohms (Type BNC).*

IEC 169-12, 1979: *Radio-frequency connectors — Part 12: R.F. coaxial connectors with screw coupling, unmatched (Type UHF).*

IEC 169-24, 1991: *Radio-frequency connectors — Part 24: Radio-frequency coaxial connectors with screw coupling, typically for use in 75 ohm cable distribution systems (Type F).*

IEC 268-11, 1987: *Sound system equipment — Part 11: Application of connectors for the interconnection of sound system components.*

IEC 268-12, 1987: *Sound system equipment — Part 12: Application of connectors for broadcast and similar use.*

IEC 574-3, 1983: *Audiovisual, video and television equipment and systems — Part 3: Connectors for the interconnection of equipment in audiovisual systems.*

IEC 574-18, 1987: *Audiovisual, video and television equipment and systems — Part 18: Connectors for automatic slide projectors with built-in triacs for audiovisual application.*

IEC 603-11, 1992: *Connectors for frequencies below 3 MHz for use with printed boards — Part 11: Detail specification for concentric connectors (dimensions for free connectors and fixed connectors).*

IEC 807-9, 1993: *Rectangular connectors for frequencies below 3 MHz — Part 9: Detail specification for a range of peritelevision connectors.*

IEC 933-1, 1988: *Audio, video and audiovisual systems — Interconnections and matching values — Part 1: 21-pin connector for video systems — Application No 1.*

IEC 933-2, 1991: *Audio, video and audiovisual systems — Interconnections and matching values — Part 2: 21-pin connector for video systems — Application No 2.*

IEC 933-4, 1994: *Audio, video and audiovisual systems — Interconnections and matching values — Part 4: Connector and cordset for domestic digital bus (D2B).*

IEC 1076-4-105, 1995: *Connectors with assessed quality for use in d.c., low-frequency analogue and in digital high-speed data applications — Part 4: Printed board connectors — Section 105: Detail specification for 9 mm circular connector with 3 to 8 contacts for use in a wide range of applications including the telecommunication and audio industry.*

2 Main Index

Description of connector	Applications		Electrical and mechanical standard	Application standard	Manufacturers	Notes	Catalogue standard sheet no.
	General	Specific					
Coaxial, unmatched	General	General	IEC 169-2	IEC 574-3	Worldwide		01
Coaxial, 75 Ω (F connector)	RF		IEC 169-24	None	Worldwide		02
Coaxial, 50 Ω (BNC connector)	RF		IEC 169-8	None	Worldwide		03
Coaxial type UHF)	RF/UHF		IEC 169-12	None	Worldwide		04
Circular, 3-8 contacts	Audio	General	IEC 130-9	IEC 268-11 IEC 574-3	Worldwide	"DIN"	05
Concentric, 3,2 mm	A/V/RF	General	None	IEC 268-11 IEC 574-3	Worldwide	"Phono"	06
Concentric 2,5, 3,5, 6,3 mm	Audio	Various	IEC 603-11	IEC 268-11 IEC 574-3	Worldwide	Household type jacks	07-11
Concentric, 6,4 mm B-gauge	Audio	General	None	IEC 268-12	UK, USA	Broadcasting type jacks	12
Concentric, 4,4 mm Bantam	Audio	General	None	IEC 268-12	UK, USA	Broadcasting type jacks	13
Circular broadcasting and similar	Audio	General	None	IEC 268-12	Worldwide	"AXR", "XLR" 3 and 5 contact	14
Circular, high voltage and current	Audio	Amplifiers, loudspeakers	None	None	Switzerland		15 16
Circular, 10 contacts	Video	Camera, VCR	None	None	Japan	Worldwide use	17
Rectangular, 21 contacts	AV	General	IEC 807-9	IEC 933-1 IEC 933-2	Europe, Japan	Peritelevision	18
Rectangular, 3 contacts	D2B	General	None	IEC 933-4	Worldwide		19
Circular, 3-8 contacts	Video	Y-C	IEC 1076-4-105	IEC 933-5	Worldwide	9 mm diameter shell "mini-DIN"	20
Circular, 8 contacts 262 degrees	AV	Remote control	None	IEC 574-18	Germany, Japan	DIN-type but special	21
Circular, 2 contacts	AV	Amplifiers, loudspeakers	None	IEC 268-11 IEC 574-3	Worldwide	1 pin, 1 flat blade	22

3 Répertoire populaire/Popular name index

N° de feuille descriptive Catalogue sheet No.	Etats-Unis/USA	Grande-Bretagne/UK	Japon/Japan	France	Allemagne/Germany	République Tchèque Czech Republic
01		"Belling" connector		Coaxial 75 Ω	IEC aerial plug	
02	F connector, or F-59	F connector		Coaxial 75 Ω	F	F connector
03	BNC	BNC connector	BNC connector	Connecteur BNC	BNC	BNC connector
04	UHF	UHF connector			UHF	UHF connector
05	DIN plug	DIN audio connectors	DIN connector	Connecteur DIN	DIN	DIN connector
06	RCA plug and jack	Phono connector	Pin connector (pin plug and jack)	Connecteur Cinch	Cinch	Cinch connector
07	Micro plug and jack	2,5 mm 2 contact jack and plug	Mini-Mini plug and jack	Prise jack mono 2,5	Klinkenstecker 2,5 mono	2,5 mm jack
08	Mini phone	3,5 mm 2 contact jack and plug	Mini plug and jack	Prise jack mono 3,5	Klinkenstecker 3,5 mono	3,5 mm jack
09	Stereo mini phone	3,5 mm 3 contact jack and plug	Stereo mini plug and jack	Prise jack stéréo 3,5	Klinkenstecker 3,5 stereo	3,5 mm stereo jack
10	Phone plug and jack	6,3 mm consumer type 2 contact jack and plug	Q plug and jack	Prise jack mono 6,35	6,3 mm Kopfhörerstecker	6,3 mm jack
11	Stereo phone plug and jack	6,3 mm consumer type 3 contact jack and plug	Stereo Q plug and jack	Prise jack stéréo 6,35	Kopfhörerstecker Stereo	6,3 mm stereo jack
12	1/4" TRS (tip, ring, sleeve) patch bay plug and jack	6,4 mm B-gauge jack and plug		Prise jack stéréo 6,4	Telephon Klinke	
13	Tiny-T TRS patch bay plug and jack	Bantam jack and plug		Prise jack stéréo 4,4		
14	XLR	XLR connector	Cannon connector	XLR	XLR	XLR connector
15	Neutrik	Neutrik NL4 connector				
16		Neutrik NL8 connector				

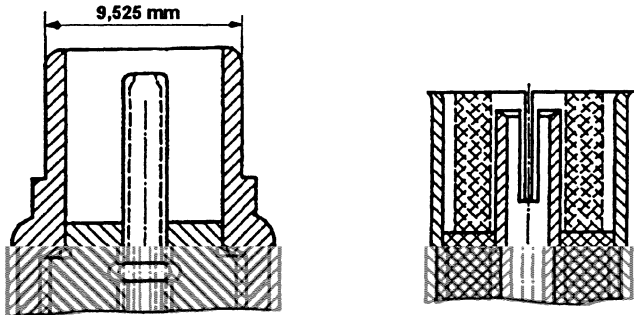
Répertoire populaire/Popular name index

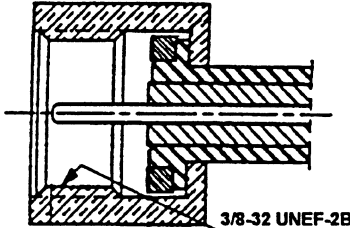
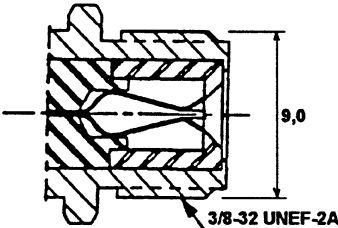
N° de feuille descriptive Catalogue sheet No.	Etats-Unis/USA	Grande-Bretagne/UK	Japon/Japan	France	Allemagne/Germany	République Tchèque/ Czech Republic
17		10 contact video connector	Camera connector	Prise video 10 contacts		10 contact video connector
18		SCART connector	21 pin connector	Prise SCART (see/voir note 1) Péritélévision (see/voir note 2)	SCART/Peri	SCART connector
19		D2B connector	D2B connector			
20	Mini-DIN plug and jack		Mini-DIN plug and jack			
21			Harshmann type 8 pin connector			
22	DIN speaker plug and jack	DIN loudspeaker connector		Connecteur HP DIN	DIN loudspeaker connector	Loudspeaker connector

NOTE 1 SCART = Syndicat des constructeurs d'appareils Radio et Télévision (now SIMAVELEC).

NOTE 2 Les noms de "prise Péritel" ou de "systèmes Péritel" ne sont pas autorisés car "Péritel" est une marque déposée.
The names "prise Péritel" or "systèmes Péritel" are not allowed because Péritel is a registered trade mark.

4 Standard sheets/Feuilles descriptives

IEC		STANDARD SHEET		01
CEI		FEUILLE DESCRIPTIVE		
BRIEF DESCRIPTION				
Radio-frequency connectors. Coaxial unmatched connector for television aerial (nominally 75 Ω)				
DESCRIPTION SOMMAIRE				
Connecteurs à fréquence radioélectrique.				
Connecteur coaxial non adapté d'antenne de télévision (nominal 75 Ω)				
BASIC DIMENSIONS (see note)				
DIMENSIONS DE BASE (voir note)				
				
TYPICAL ELECTRICAL SPECIFICATION (see note)				
SPÉCIFICATIONS ÉLECTRIQUES TYPIQUES (voir note)				
Maximum d.c. or peak a.c. voltage between contacts:		not standardized		
Tension continue ou alternative crête maximale entre les contacts:		pas standardisée		
Maximum d.c. or peak a.c. voltage between contacts and shell:		not standardized		
Tension continue ou alternative crête maximale entre les contacts et l'enveloppe:		pas standardisée		
Maximum current:		not standardized		
Courant maximal:		pas standardisée		
Typical contact resistance:		inner contact/contact interne:	10 mΩ	
Résistance de contact typique:		outer contact/contact externe:	5 mΩ	
Typical insulation resistance:		1 GΩ		
Résistance d'isolement typique:				
IEC standard giving full electrical and mechanical specifications:		IEC/CEI 169-2		
Norme CEI donnant les spécifications mécaniques et électriques:				
IEC application standards:		IEC/CEI 574-3		
Normes CEI d'application:				
NOTE For identification only. See manufacturers' data for further information.				
Seulement pour identification. Voir données des fabricants pour de plus amples informations.				

IEC CEI		STANDARD SHEET FEUILLE DESCRIPTIVE		02
BRIEF DESCRIPTION R.F. coaxial connector. Characteristic impedance 75 Ω (F connector).				
DESCRIPTION SOMMAIRE Connecteur coaxial à fréquence radioélectrique. Impédance caractéristique 75 Ω (connecteur F).				
BASIC DIMENSIONS (see note) DIMENSIONS DE BASE (voir note)				
				
TYPICAL ELECTRICAL SPECIFICATION (see note) SPÉCIFICATIONS ÉLECTRIQUES TYPIQUES (voir note)				
Maximum d.c. or peak a.c. voltage between contacts: Tension continue ou alternative crête maximale entre les contacts:			V	
Maximum d.c. or peak a.c. voltage between contacts and shell: Tension continue ou alternative crête maximale entre les contacts et l'enveloppe:			V	
Maximum current: Courant maximal:			mA	
Typical contact resistance: Résistance de contact typique:			mΩ	
Typical insulation resistance: Résistance d'isolement typique:			MΩ	
IEC standard giving full electrical and mechanical specifications: Norme CEI donnant les spécifications mécaniques et électriques:			IEC/CEI 169-24	
IEC application standards: Normes CEI d'application:			none/aucune	
NOTE For identification only. See manufacturers' data for further information. Seulement pour identification. Voir données des fabricants pour de plus amples informations.				