

Specification for

Flat, quick-connect terminations

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Electronic Components Standards Policy Committee (ECL/-) to Technical Committee ECL/21, upon which the following bodies were represented:

- British Telecommunications plc
- Electronic Components Industry Federation
- EEA (The Association of Electronics Telecommunications and Business Equipment Industries)
- Ministry of Defence
- National Supervising Inspectorate
- Society of British Aerospace Companies Ltd.

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Association of Manufacturers Allied to the Electrical and Electronic Industry (BEAMA Ltd.)

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National foreword

This British Standard has been prepared under the direction of the Electronic Components Standards Policy Committee. It is identical with IEC 760:1989 *Flat, quick-connect terminations* including Amendment 1:1993 published by the International Electrotechnical Commission (IEC). It supersedes BS 5057:1988, which was identical with IEC 760:1983 and which is withdrawn.

IEC 760:1989 was prepared by IEC Sub-Committee 48B: Connectors, of IEC Technical Committee No. 48: Electromechanical components for electronic equipment. The United Kingdom participation in the drafting was provided by Sub-Committee ECL/21/2 “LF Connectors” of Technical Committee ECL/21 “Electromechanical components for electronic equipment.”

Any reference to IEC page numbers in the text should be ignored. Refer to the contents on pages i and ii for the page numbers of the tables and figures.

Cross-references

International standard	Corresponding British Standard
	BS 2011 <i>Environmental testing</i>
IEC 68-1:1988	Part 1.1:1989 <i>General and guidance</i> (Identical)
IEC 68-2-20:1979	Part 2.IT:1981 <i>Test T. Soldering</i> (Identical)
	BS 5772 <i>Basic testing procedures and measuring methods for electromechanical components for electronic equipment</i>
IEC 512-3:1976	Part 3:1979 <i>Current-carrying capacity tests</i> (Identical)
IEC 512-5:—	Part 5:1979 <i>Impact tests (free components), static load tests (fixed components), endurance tests and overload tests</i> (Identical)
IEC 512-8:1984	Part 8:1985 <i>Connector tests (mechanical) and mechanical tests on contacts and terminations</i> (Identical)

The Technical Committee has reviewed the provisions of IEC 512-2:1985 and IEC 512-7:1988, to which normative reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 28, 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 Scope

This International Standard is applicable to flat quick-connect terminations consisting of male tabs with hole or dimple detents and the mating female connectors. For reasons of safety, it is recommended that quick-connect terminations beyond the scope of this standard shall not be interchangeable with those listed in Clause 4. This standard establishes uniform requirements for the dimensions, performance characteristics and test program.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 68-1(1988), *Environmental testing, Part 1: General and guidance*.

IEC 68-2-20(1979), *Basic environmental testing procedures, Part 2: Tests—Test T: Soldering*.

IEC 512-2(1985), *Electromechanical components for electronic equipment; basic testing procedures and measuring methods, Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests*.

IEC 512-3(1976), *Part 3: Current-carrying capacity tests*.

IEC 512-5(—), *Part 5: Impact tests (free components), static load tests (fixed components), endurance tests and overload tests*.

IEC 512-7(1988), *Part 7: Mechanical operating tests and sealing tests*.

IEC 512-8(1984), *Part 8: Connector tests (mechanical) and mechanical tests on contacts and terminations*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1

quick-connect terminations

an electrical connection consisting of a male tab and female connector which can be readily inserted and withdrawn without the use of tools

3.2

test tab

a male tab manufactured to close tolerances for the specific purpose of conducting mechanical tests with production female connectors. The use of test tabs has been found to produce more consistent test results

3.3

male tab

that portion of a quick-connect termination which receives the female connector

3.4

female connector

that portion of a quick-connect termination which is pushed onto the male tab

3.5

detent

a dimple (depression) or hole in the male tab which acts to engage a raised portion on the female connector, thus providing a latch for the mating parts

3.6

reference point

a specially marked point, used when making electrical test measurements

4 Classification into groups

Flat quick-connect terminations are classified into groups according to the nominal width of the male tabs. This standard covers the following groups:

- 2.8 mm (0.110 in) series.
- 4.8 mm (0.187 in) series.
- 5.2 mm (0.205 in) series (not recommended for new designs).
- 6.3 mm (0.250 in) series.
- 9.5 mm (0.375 in) series.

5 Values of current

The currents shown in Figure 8, are for test purposes only. Operating values depend upon the application and can be estimated through an analysis of the curves shown on Figure 14, Figure 15, Figure 16, Figure 17, Figure 18 and Figure 19.

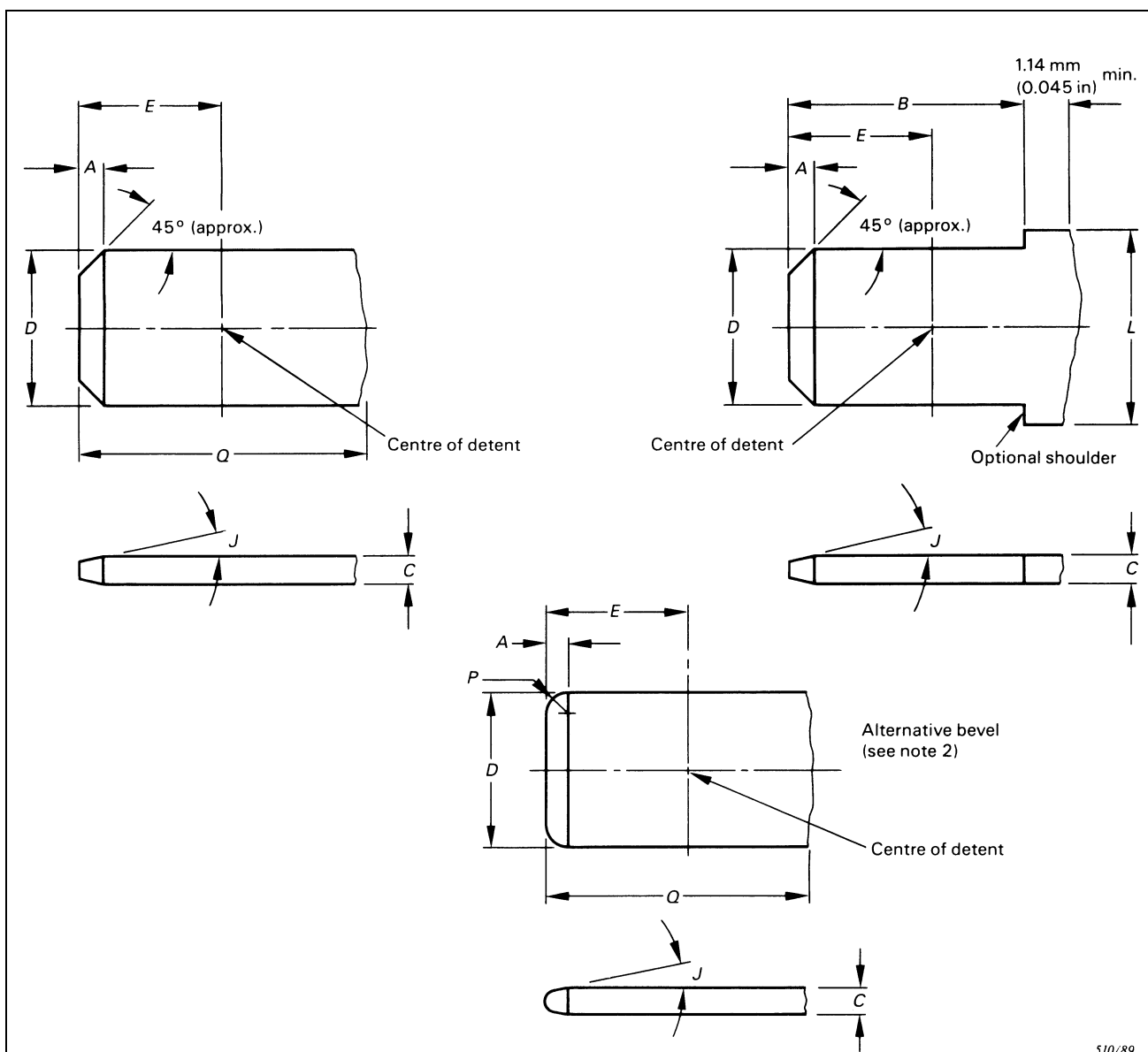
6 Marking

Each male tab or female connector shall have the following information clearly and indelibly marked upon it:

Mark of origin (manufacturer's name or trade mark).

7 Dimensions

The dimensions of the male tabs and female connectors shall comply with those specified herein. Dimensions for male tabs are presented in Figure 1, Figure 2a, Figure 2b and Figure 3. Dimensions for the female connectors are given in Figure 4 and Figure 4a. The shape of the various parts may deviate from those given in the figures, provided that the specified dimensions are not influenced. The dimensions are intended to permit production in either the millimetre or inch system of units.



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NOTE 1 For detent dimensions ϕF , M and N , see Figure 2a, Figure 2b and Figure 3.

NOTE 2 Bevel $A \times 45^\circ$ need not be a straight line if it is within the confines shown, or it may be a segment of a circle having a radius P and a segment altitude A .

NOTE 3 All portions of the tabs shown shall be flat and free of burrs or raised plateaus, except that there may be a raised plateau over the stock thickness of 0.025 mm (0.001 in) per side, in an area defined by a line surrounding the detent and distant from it by 1.3 mm (0.051 in).

NOTE 4 Dimension L is not specified and may vary as required by the application.

NOTE 5 The material shall be half-hard cartridge brass, hardness 62 ± 7 Rockwell 30T, or other material of equivalent hardness.

Figure 1 — Dimensions of male tabs (see also Figure 2a, Figure 2b and Figure 3)

Table Ia — Dimensions of male tabs (millimetres)

Nominal size	A	B (min.)	C	D	E	ØF	J	M	N	P	Q (min.)
2,8 × 0,5 with dimple	0,6 0,3	7,0	0,54 0,47	2,90 2,70	1,8 1,3	1,3 1,1	12° 8°	1,7 1,4	1,4 1,0	1,4 0,3	8,1
2,8 × 0,5 with hole	0,6 0,3	7,0	0,54 0,47	2,90 2,70	1,8 1,3	1,3 1,1	12° 8°	— —	— —	1,4 0,3	8,1
2,8 × 0,8 with dimple	0,6 0,3	7,0	0,84 0,77	2,90 2,70	1,8 1,3	1,3 1,1	12° 8°	1,7 1,4	1,4 1,0	1,4 0,3	8,1
2,8 × 0,8 with hole	0,6 0,3	7,0	0,84 0,77	2,90 2,70	1,8 1,3	1,3 1,1	12° 8°	— —	— —	1,4 0,3	8,1
4,8 × 0,5 with dimple	0,9 0,6	6,2	0,54 0,47	4,80 4,60	2,8 2,3	1,5 1,3	12° 8°	1,7 1,4	1,5 1,2	1,7 0,6	7,3
4,8 × 0,5 with hole	0,9 0,6	6,2	0,54 0,47	4,90 4,67	3,4 3,0	1,5 1,3	12° 8°	— —	— —	1,7 0,6	7,3
4,8 × 0,8 with dimple	1,0 0,7	6,2	0,84 0,77	4,80 4,60	2,8 2,3	1,5 1,3	12° 8°	1,7 1,4	1,5 1,2	1,8 0,7	7,3
4,8 × 0,8 with hole	1,0 0,6	6,2	0,84 0,77	4,90 4,67	3,4 3,0	1,5 1,3	12° 8°	— —	— —	1,8 0,7	7,3
5,2 × 0,5 ^a with dimple	1,0 0,7	6,2	0,54 0,47	5,30 5,10	2,8 2,3	1,9 1,6	12° 8°	2,5 2,2	2,0 1,8	1,7 0,6	7,3
5,2 × 0,5 ^a with hole	1,0 0,7	6,2	0,54 0,47	5,30 5,10	3,4 3,0	1,9 1,6	12° 8°	— —	— —	1,7 0,6	7,3
5,2 × 0,8 ^a with dimple	1,0 0,7	6,2	0,84 0,77	5,30 5,10	2,8 2,3	1,9 1,6	12° 8°	2,5 2,2	2,0 1,8	1,8 0,7	7,3
5,2 × 0,8 ^a with hole	1,0 0,7	6,2	0,84 0,77	5,30 5,10	3,4 3,0	1,9 1,6	12° 8°	— —	— —	1,8 0,7	7,3
6,3 × 0,8 with dimple	1,0 0,7	7,8	0,84 0,77	6,40 6,20	4,1 3,6	2,0 1,6	12° 8°	2,5 2,2	2,0 1,8	1,8 0,7	8,9
6,3 × 0,8 with hole	1,0 0,5	7,8	0,84 0,77	6,40 6,20	4,7 4,3	2,0 1,6	12° 8°	— —	— —	1,8 0,7	8,9
9,5 × 1,2 with hole	1,3 0,7	12,0	1,23 1,17	9,60 9,40	5,5 4,5	2,0 1,7	14° 6°	— —	— —	2,0 1,0	13,1

^a Not recommended for new designs.

Table Ib — Dimensions of male tabs (inches)

Nominal size	A	B (min.)	C	D	E	ØF	J	M	N	P	Q (min.)
0,110 × 0,020 with dimple	0,024 0,012	0,275	0,021 0,019	0,114 0,106	0,071 0,051	0,051 0,043	12° 8°	0,067 0,055	0,055 0,039	0,055 0,012	0,319
0,110 × 0,020 with hole	0,024 0,012	0,275	0,021 0,019	0,114 0,106	0,071 0,051	0,051 0,043	12° 8°	— —	— —	0,055 0,012	0,319
0,110 × 0,032 with dimple	0,024 0,012	0,275	0,033 0,030	0,114 0,106	0,071 0,051	0,051 0,043	12° 8°	0,067 0,055	0,055 0,039	0,055 0,012	0,319
0,110 × 0,032 with hole	0,024 0,012	0,275	0,033 0,030	0,114 0,106	0,071 0,051	0,051 0,043	12° 8°	— —	— —	0,055 0,012	0,319
0,187 × 0,020 with dimple	0,035 0,024	0,244	0,021 0,019	0,190 0,181	0,110 0,091	0,060 0,050	12° 8°	0,067 0,055	0,059 0,047	0,067 0,024	0,287
0,187 × 0,020 with hole	0,035 0,024	0,244	0,021 0,019	0,193 0,184	0,134 0,117	0,060 0,050	12° 8°	— —	— —	0,067 0,024	0,287
0,187 × 0,032 with dimple	0,040 0,027	0,244	0,033 0,030	0,190 0,181	0,110 0,091	0,060 0,050	12° 8°	0,067 0,055	0,059 0,047	0,071 0,027	0,287
0,187 × 0,032 with hole	0,040 0,024	0,244	0,033 0,030	0,193 0,184	0,134 0,117	0,060 0,050	12° 8°	— —	— —	0,071 0,027	0,287
0,205 × 0,020 ^a with dimple	0,040 0,027	0,244	0,021 0,019	0,210 0,201	0,110 0,091	0,075 0,063	12° 8°	0,098 0,086	0,080 0,070	0,067 0,024	0,287
0,205 × 0,020 ^a with hole	0,040 0,027	0,244	0,021 0,019	0,210 0,201	0,134 0,117	0,075 0,063	12° 8°	— —	— —	0,067 0,024	0,287
0,205 × 0,032 ^a with dimple	0,040 0,027	0,244	0,033 0,030	0,210 0,201	0,110 0,091	0,075 0,063	12° 8°	0,098 0,086	0,080 0,070	0,071 0,027	0,287
0,205 × 0,032 ^a with hole	0,040 0,027	0,244	0,033 0,030	0,210 0,201	0,134 0,117	0,075 0,063	12° 8°	— —	— —	0,071 0,027	0,287
0,250 × 0,032 with dimple	0,040 0,027	0,307	0,033 0,030	0,253 0,244	0,161 0,142	0,080 0,063	12° 8°	0,098 0,086	0,080 0,070	0,071 0,027	0,350
0,250 × 0,032 with hole	0,040 0,020	0,307	0,033 0,030	0,253 0,244	0,186 0,169	0,080 0,063	12° 8°	— —	— —	0,071 0,027	0,350
0,375 × 0,047 with hole	0,051 0,027	0,472	0,048 0,046	0,379 0,370	0,217 0,177	0,080 0,067	14° 6°	— —	— —	0,080 0,039	0,516

^a Not recommended for new designs.