

Specification for

Dimensions for the mounting of single-hole, bush-mounted spindle operated electronic components

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

- British Electrical and Allied Manufacturers' Association (BEAMA)
- British Telecommunications plc
- Electronic Components Industry Federation
- Electronic Engineering Association
- Institution of Electronic and Radio Engineers
- Ministry of Defence
- National Supervising Inspectorate
- Society of British Aerospace Companies Limited
- Telecommunications Engineering and Manufacturing Association (TEMA)

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National foreword

This revision of BS 6103 has been prepared under the direction of the Electronic Components Standards Committee. It is identical with IEC Publication 620:1984 *“Dimensions for the mounting of single-hole, bush-mounted, spindle-operated electronic components”* published by the International Electrotechnical Commission (IEC). It supersedes BS 6103:1981 which is withdrawn.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards: attention is drawn especially to the following.

Wherever the words “IEC standard” appear, they should be read as “British Standard”.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Additional information. In note 3 to Figure 1, the text says “The shape of the lug is optional within dimension *P*”.

Squared lugs are traditionally dimensioned across flats and in order to avoid a possible misfit it should be noted that the shape of the lug should fit in the envelope of the circle with diameter *P*.

Textual errors. When adopting the text of the International Standard the textual error given below was discovered. It has been marked in the text and has been reported to the International Electrotechnical Commission in a proposal to amend the text of the International Standard.

Figure 2, in the table with dimensions in inches: in the column headed “Dimension *T*” against thread M10 × 0,75, “0,355” should be read as “0,335”.

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 and ii, pages 1 to 20 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.

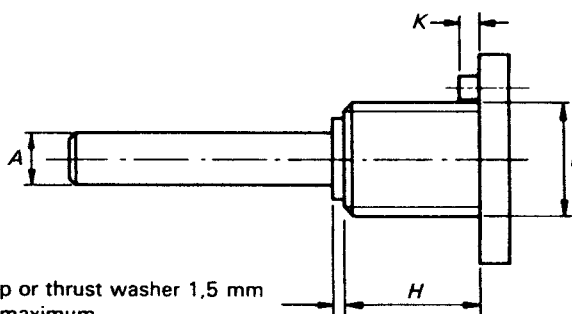
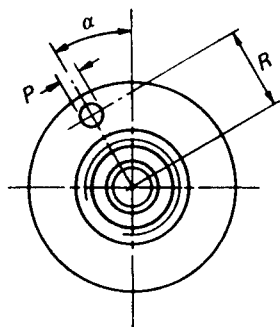
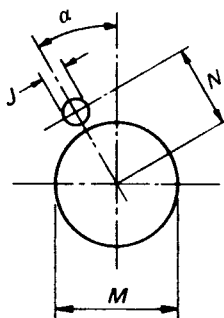
1 Introduction

This standard gives the recommended fixing and spindle dimensions of spindle-operated, single-hole, bush-mounted electronic components and also the dimensions of the relevant panel cut-outs, fixing nuts, and associated washers. Figure 1 to Figure 6, pages 2 to 11, give the relevant metric-based dimensions. Figure 7 to Figure 11, pages 13 to 19, give the relevant inch-based dimensions.

All dimensions include finish requirements.

2 Scope

This standard specifies mounting dimensions for spindle-operated, single-hole, bush-mounted, components including switches, potentiometers and variable capacitors, primarily intended for use in equipment for telecommunications and in electronic devices employing similar techniques.

Component*Panel cut-out*

- NOTE 1 The angular position of the lug (α) shall be specified by the relevant sheet of the IEC standard for the component.
- NOTE 2 Two symmetrical lugs may be used.
- NOTE 3 The shape of the lug is optional within dimension P .
- NOTE 4 The minimum panel thickness shall be specified by the relevant sheet of the IEC standard for the component.
- NOTE 5 If required by the relevant sheet of the IEC standard for the component, the lug may be omitted, in which case the panel cut-out would be simplified.
- NOTE 6 Smaller values for dimensions N may be given in the relevant sheet of the IEC standard for the component.

**Figure 1 — Single-hole bush mounting with panel lug on mounting face
(with metric threads)**

Original dimensions in millimetres

Spindle dimension <i>A</i>	Component				Panel cut-out		
	Thread dimension <i>L</i>	Dimension <i>H</i>	Dimension <i>K</i>	Dimension <i>P</i> et/and <i>R</i>	Dimension <i>M</i>	Dimension <i>J</i>	Dimension <i>N</i>
2	M5 × 0,5	4 ± 0,5 5 ± 0,5 6 ± 0,5 8 ± 0,5 10 ± 0,5 12 ± 0,5	1,0 ± 0,2	Shall be specified by the relevant sheet of the IEC standard for the component such that the angular tolerance does not exceed ± 2½* (± 4* for <i>A</i> = 2) and such that mountability is ensured	5,1 ^{+0,12} ₋₀	2,0 ^{+0,1} ₋₀	6,0 ± 0,1
3	M6 × 0,75 M7 × 0,75		1,0 ± 0,2 1,5 ± 0,2		6,1 ^{+0,15} ₋₀ 7,1 ^{+0,15} ₋₀	3,5 ^{+0,12} ₋₀	9,5 ± 0,1
4	M7 × 0,75 M8 × 0,75		1,0 ± 0,2 1,5 ± 0,2 2,0 ± 0,2		7,1 ^{+0,15} ₋₀ 8,1 ^{+0,15} ₋₀	3,5 ^{+0,12} ₋₀	9,5 ± 0,1
6	M9 × 0,75 M10 × 0,75		1,0 ± 0,2 1,5 ± 0,2 2,0 ± 0,2		9,1 ^{+0,18} ₋₀ 10,1 ^{+0,18} ₋₀	3,5 ^{+0,12} ₋₀ 4,5 ^{+0,12} ₋₀	9,5 ± 0,1 13,5 ± 0,1 15,0 ± 0,1
8	M12 × 0,75		1,0 ± 0,2 1,5 ± 0,2 2,0 ± 0,2		12,1 ^{+0,18} ₋₀	3,5 ^{+0,12} ₋₀ 4,5 ^{+0,12} ₋₀	13,5 ± 0,1 15,0 ± 0,1
10	M15 × 1,0 M16 × 1,0		1,0 ± 0,2 1,5 ± 0,2 2,0 ± 0,2		15,1 ^{+0,18} ₋₀ 16,1 ^{+0,18} ₋₀	3,5 ^{+0,12} ₋₀ 4,5 ^{+0,12} ₋₀	13,5 ± 0,1 15,0 ± 0,1

Dimensions (except *L*) in inches
(derived from original dimensions in millimetres)

Spindle dimension <i>A</i>	Component				Panel cut-out		
	Thread dimension <i>L</i> (mm)	Dimension <i>H</i>	Dimension <i>K</i>	Dimension <i>P</i> et/and <i>R</i>	Dimension <i>M</i>	Dimension <i>J</i>	Dimension <i>N</i>
0,079	M5 × 0,5	0,157 ± 0,020 0,197 ± 0,020 0,236 ± 0,020 0,315 ± 0,020 0,394 ± 0,020 0,472 ± 0,020	0,039 ± 0,008	Shall be specified by the relevant sheet of the IEC standard for the component such that the angular tolerance does not exceed ± 2½* (± 4* for <i>A</i> = 2) and such that mountability is ensured	0,201 ^{+0,005} ₋₀	0,079 ^{+0,004} ₋₀	0,236 ± 0,004
0,118	M6 × 0,75 M7 × 0,75		0,039 ± 0,008 0,059 ± 0,008		0,240 ^{+0,006} ₋₀ 0,280 ^{+0,006} ₋₀	0,138 ^{+0,005} ₋₀	0,374 ± 0,004
0,158	M7 × 0,75 M8 × 0,75		0,039 ± 0,008 0,059 ± 0,008 0,079 ± 0,008		0,280 ^{+0,006} ₋₀ 0,319 ^{+0,006} ₋₀	0,138 ^{+0,005} ₋₀	0,374 ± 0,004
0,236	M9 × 0,75 M10 × 0,75		0,039 ± 0,008 0,059 ± 0,008 0,079 ± 0,008		0,358 ^{+0,007} ₋₀ 0,398 ^{+0,007} ₋₀	0,138 ^{+0,005} ₋₀ 0,177 ^{+0,005} ₋₀	0,374 ± 0,004 0,531 ± 0,004 0,591 ± 0,004
0,315	M12 × 0,75		0,039 ± 0,008 0,059 ± 0,008 0,079 ± 0,008		0,476 ^{+0,007} ₋₀	0,138 ^{+0,005} ₋₀ 0,177 ^{+0,005} ₋₀	0,531 ± 0,004 0,591 ± 0,004
0,394	M15 × 1,0 M16 × 1,0		0,039 ± 0,008 0,059 ± 0,008 0,079 ± 0,008		0,594 ^{+0,007} ₋₀ 0,634 ^{+0,007} ₋₀	0,138 ^{+0,005} ₋₀ 0,177 ^{+0,005} ₋₀	0,531 ± 0,004 0,591 ± 0,004

Figure 1 — Single-hole bush mounting with panel lug on mounting face
(with metric threads) (continued)

