

Specification for

**Harmonized system of
quality assessment for
electronic
components —
Potentiometers for use
in electronic
equipment —
Blank detail
specification —**

**Single-turn rotary low-power
potentiometers —
Assessment level E**

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
National foreword	ii
Introduction	1
Section 1. General data	
1.1 Recommended method(s) of mounting (to be inserted)	3
1.2 Dimensions	3
1.3 Ratings and characteristics	3
1.4 Related documents	3
1.5 Marking	3
1.6 Ordering information	4
1.7 Certified records of released lots	4
1.8 Additional information (not for inspection purposes)	4
1.9 Additional or increased severities or requirements to those specified in the generic and/or sectional specification	4
Section 2. Inspection requirement	
2.1 Procedure	5
Appendix A	16
Figure 1 — Component under test	16
Table I	2
Table II	5

National foreword

This British Standard has been prepared under the direction of the Electronic Components Standards Policy Committee (ECL/-). It is identical with IEC 393-5-1:1992 (QC 410301) “*Potentiometers for use in electronic equipment. Part 5 Blank detail specification: Single-turn rotary low-power potentiometers. Assessment level E*”, published by the International Electrotechnical Commission (IEC) and is a harmonized specification within the IECQ system of quality assessment for electronic components.

IEC 393-5-1 was prepared by IEC Technical Committee No. 40, Capacitors and resistors for electronic equipment, and the United Kingdom participation in the drafting was provided by Technical Committee ECL/4, Capacitors and resistors for electronic equipment.

Scope. This standard lists the ratings, characteristics and inspection requirements which shall be included as mandatory requirements in accordance with BS QC 410300 in any detail specifications for these components.

Cross references

International Standard	Corresponding British Standard
IEC 393-1:1989	BS QC 410000:1992 <i>Harmonized system of quality assessment for electronic components: potentiometers for use in electronic equipment. Generic specification</i> (Identical)
IEC 393-5:1992	BS QC 410300:1992 <i>Harmonized system of quality assessment for electronic components. Potentiometers for use in electronic equipment. Sectional specification for single-turn rotary low-power wirewound and non-wirewound potentiometers</i> (Identical)

The British Standard which implements the IECQ Rules of Procedure is BS 9000 “*General requirements for a system for electronic components of assessed quality*” Part 3:1991 “*Specification for the national implementation of the IECQ System*”. The Technical Committee has reviewed the provisions of IEC 63 and IEC 410 to which reference is made in the text and has decided that they are acceptable for use in conjunction with this standard.

Detail specifications. Detail specifications shall comply with the requirements of this Blank Detail Specification and BS QC 001002:1991 “*Rules of Procedure for the IEC Quality Assessment System for Electronic Components (IECQ)*”.

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 16 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.

Introduction

Blank detail specification

A blank detail specification is a supplementary document to the Sectional Specification and contains requirements for style and layout and minimum content of detail specifications. Detail Specifications not complying with these requirements shall not be considered as being in accordance with IEC specifications nor shall they so be described.

In the preparation of detail specifications the content of Sub-clause 1.4 of the Sectional Specification shall be taken into account.

The numbers between brackets on the first page correspond to the following information which shall be inserted in the position indicated.

Identification of the detail specification

- (1) The “International Electrotechnical Commission” or the National Standards Organisation under whose authority the detail specification is drafted.
- (2) The IEC or National Standards number of the detail specification, date of issue and any further information required by the national system.
- (3) The number and issue number of the IEC or national Generic Specification.
- (4) The IEC number of the blank detail specification.

Identification of the potentiometer

- (5) A short description of the type of potentiometer.
- (6) Information on typical construction (if applicable) for example: non-wirewound, single-turn rotary.
NOTE When the potentiometer is not designed for use in printed board applications, this shall be clearly stated in the detail specification in this position.
- (7) Outline drawing with main dimensions which are of importance for interchangeability and/or reference to the national or international documents for outlines. Alternatively, this drawing may be given in an appendix to the detail specification.
- (8) Application or group of applications covered and/or assessment level.
NOTE The assessment level(s) to be used in a detail specification shall be selected from the sectional specification, Sub-clause 3.3.3. This implies that one blank detail specification may be used in combination with several assessment levels, provided the grouping of the tests does not change.
- (9) Reference data on the most important properties, to allow comparison between the various potentiometer types.

(1)	IEC 393-5-1-XXX QC 410301-XXX	(2)
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH:	IEC 393-5-1 QC 410301	(4)
(3)	SINGLE-TURN ROTARY LOW-POWER POTENTIOMETERS	(5)
Outline drawing and dimensions: (. . . angle projection)		
(7)		
(When necessary the dimensions may be given in an Appendix to the detail specification)	Typical construction:	(6)
Terminal connections:	Assessment level(s): E	(8)

Information on the availability of components qualified to this detail specification is given in the Qualified Products List.

(9)

Table I

Style	Rated dissipation at 70 °C (W)		Limiting element voltage (V d.c. or a.c. r.m.s.)	Isolation voltage (V d.c. or a.c. peak)	
	Resistance law A	Resistance laws B and C		Normal air pressure	Low air pressure

Section 1. General data

1.1 Recommended method(s) of mounting (to be inserted)

(See Sub-clause 1.4.2 of IEC Publication 393-5).

1.2 Dimensions

(When necessary the dimensions may be given in an Appendix to the detail specification).

All dimensions are in millimetres or inches and millimetres.

1.3 Ratings and characteristics

Resistance range ^a	The range of values in each law and in each style is given in the Qualified Products List.
Tolerances on rated resistance	$\pm \dots \%$
Resistance law	$\dots$
Temperature characteristic of resistance (20 °C to 70 °C) ($\Delta R/R$)	$\leq \pm \dots \%$
Temperature coefficient	$\leq \dots \times 10^{-6}/^{\circ}\text{C}$
Climatic category	- / - / -
Low air pressure	8,5 kPa (85 mbar)
Limits of resistance change (<u>a</u> to <u>c</u>) (after 1 000 h electrical endurance test)	$\pm(\dots \%R + \dots \Omega)$
Starting torque	$\dots \text{ mN.m to } \dots \text{ mN.m}$
Total mechanical travel	$\geq \dots ^{\circ}$
Effective electrical travel	$\geq \dots ^{\circ}$
Ineffective travel (clockwise)	$\leq \dots ^{\circ}$
Ineffective travel (anticlockwise)	$\leq \dots ^{\circ}$
Switch torque (if applicable)	$\dots \text{ mN.m to } \dots \text{ mN.m}$
Switch rating (if applicable)	$\dots \text{ A; } \dots \text{ V}$
Limiting moving contact current	$\dots \text{ mA}$
Terminal resistance	$\dots \Omega$
Residual resistance (if applicable)	$\dots \Omega$
Minimum effective resistance	$\dots \Omega$

^a The preferred values are those of the E-series of IEC Publication 63.

1.3.1 Derating

Potentiometers covered by this specification are derated according to the curve:

(a suitable curve to be included in the detail specification)

NOTE See also Sub-clause 2.2.3 of the sectional specification.

1.4 Related documents

Generic Specification: IEC Publication 393-1 (1989): *Potentiometers for use in electronic equipment.*
Part 1: *Generic Specification.*

Sectional Specification: IEC Publication 393-5 (1991): *Potentiometers.*
Sectional Specification: Single-turn rotary low-power potentiometers.

1.5 Marking

The marking of the component and packaging shall be in accordance with the requirements of IEC Publication 393-5, Sub-clause 1.5.

NOTE The details of the marking of the component and packaging shall be given in full in the detail specification.