

Harmonized system of quality
assessment for electronic components

Electromechanical switches for use in electronic equipment— Sectional specification for rotary switches

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 Control Manufacturers [TACMA (BEAMA Ltd.)]
- Membrane Switch Manufacturers' Association (MSMA)

This British Standard, having been prepared under the direction of the Electronic Components Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 September 1992

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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 1020-2:1991 (QC 960100) *Electromechanical switches for use in electronic equipment — Part 2: Sectional specification for rotary switches*, published by the International Electrotechnical Commission (IEC), and is a harmonized specification in the IECQ system of quality assessment for electronic components. IEC 1020-2 was prepared by IEC Subcommittee 48C, Switches, of IEC Technical Committee No. 48, Electromechanical components for electronic equipment, and the United Kingdom participation in the drafting was provided by Subcommittee ECL/21/3, Switches for electronic equipment, of Technical Committee ECL/21, Electromechanical components for electronic equipment.

Cross-references

International Standard	Corresponding British Standard
IEC 68-1:1988	BS 2011 <i>Environmental testing</i> Part 1.1:1989 <i>General and guidance</i> (Identical)
IEC 68-2-6:1982	Part 2.1Fc:1983 <i>Test Fc. Vibration (sinusoidal)</i> (Identical)
IEC 68-2-13:1983	Part 2.1M:1984 <i>Test M. Low air pressure</i> (Identical)
IEC 68-2-21:1983	Part 2.1U:1984 <i>Test U. Robustness of terminations and integral mounting devices</i> (Identical)
IEC 67-2-27:1987	Part 2.1Ea:1988 <i>Test Ea. Shock</i> (Identical)
IEC 620:1984	BS 6103:1986 <i>Specification for dimensions for the mounting of single-hole, bush-mounted spindle operated electronic components</i> (Identical)
IEC 1020-1:1991	BS QC 960000:1992 <i>Electromechanical switches for use in electronic equipment. Generic specification</i> (Identical)

The British Standard which implements the IECQ Rules of Procedure is BS 9000-3:1991 *General requirements for a system for electronic components of assessed quality — Part 3: Specification for the national implementation of the IECQ System*.

The Technical Committee has reviewed the provisions of IEC 390 and IEC 512-7, 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 and ii, pages 1 to 8, 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

This part of IEC 1020 applies to the sub-family of rotary switches within the family of electromechanical switches of assessed quality. Rotary switches covered by this part of IEC 1020 have a rated voltage not exceeding 300 V and a rated current not exceeding 5 A (d.c. or r.m.s. values).

It does not apply to rotary-actuated in-line switches. The object of this part of IEC 1020 is to:

- a) prescribe preferred ratings and characteristics;
- b) select the appropriate quality assessment procedures and test methods from IEC 1020-1;
- c) prescribe the general performance requirements for rotary switches.

1.2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of IEC 1020. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of IEC 1020 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated 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 68-2-6:1982, *Environmental testing — Part 2: Tests — Test Fc and guidance: Vibration (sinusoidal)*.

IEC 68-2-13:1983, *Environmental testing — Part 2: Tests — Test M: Low air pressure*.

IEC 68-2-21:1983, *Environmental testing — Part 2: Tests. Test U: Robustness of terminations and integral mounting devices*.

IEC 68-2-27:1987, *Environmental testing — Part 2: Tests. Test Ea and guidance: Shock*.

IEC 390:1972, *Dimensions of spindle ends for manually operated electronic components*.

IEC 512-7:1988, *Electromechanical components for electronic equipment: basic testing procedures and measuring methods — Part 7: Mechanical operating tests and sealing tests*.

IEC 620:1984, *Dimensions for the mounting of single-hole, bush-mounted, spindle-operated electronic components*.

IEC 1020-1:1991, *Electromechanical switches for use in electronic equipment — Part 1: Generic specification*.

1.3 Terminology

In addition to the terminology specified in IEC 1020-1, the following definitions shall apply to all rotary switches.

1.3.1

actuator (switch actuator)

the integral part of a rotary switch, usually an operating shaft, to which a mechanical force (torque) is applied to cause the contacts to transfer

1.3.2

angle of throw

the number of degrees of rotation through which the spindle travels in moving from one detent position to the next detent position

1.3.3

cycle (operation)

the movement of the switching mechanism by means of the actuator from one extreme position through all other positions and returning in the reverse sequence to the original extreme position

1.3.4

rotary switch

an electromechanical device which is capable of selecting, making or breaking an electrical circuit (or multiples thereof) and is actuated by a rotational torque applied to its spindle

1.3.5

enclosed rotary switch

a rotary switch which has all parts of the indexing mechanism and of the switching mechanism enclosed, but not sealed, by a housing

1.4 Marking

The marking requirements of IEC 1020-1 apply.

1.5 Detail specification

Detail specifications shall be derived from the relevant blank detail specification.

Detail specifications shall not specify test severities or performance requirements which are less than those specified in this part of IEC 1020.

When more severe test severities or performance requirements are included, they shall be clearly described in the detail specification and shall be indicated in the test schedules by a special notation such as an asterisk.