

Reed contact units —

Part 2: Heavy-duty reed switches

ICS 29.120.70

National foreword

This British Standard is the UK implementation of EN 62246-2:2008. It is identical with IEC 62246-2:2007. It supersedes BS IEC 62246-2:2007 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/94, General purpose relays and reed contact units.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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30 April 2009	This corrigendum renumbers BS IEC 62246-2:2007 as BS EN IEC 62246-2:2008. Addition of Annex ZA

**Reed contact units -
Part 2: Heavy-duty reed switches
(IEC 62246-2:2007)**

Contacts à lames souples
en enceinte scellée -
Partie 2: Relais à lames souples
à usage intensif
(CEI 62246-2:2007)

Reedkontakt-Einheiten -
Teil 2: Hochleistungs-Reedschalter
(IEC 62246-2:2007)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 94/243/CDV, future edition 1 of IEC 62246-2, prepared by IEC TC 94, All-or-nothing electrical relays, was submitted to the IEC-CENELEC Parallel Unique Acceptance Procedure and was approved by CENELEC as EN 62246-2 on 2007-12-01.

This European Standard is to be read in conjunction with EN 62246-1:2002.

The following dates were fixed:

- | | | |
|--|-------|------------|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2008-09-01 |
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Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62246-2:2007 was approved by CENELEC as a European Standard without any modification.

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REED CONTACT UNITS –

Part 2: Heavy-duty reed switches

1 General

1.1 Scope

This part of IEC 62246 applies to the switching performance of heavy-duty reed switches for use in industrial applications based upon Part 1.

This part of IEC 62246 specifies reliability tests, rated making and breaking capacities, rated impulse voltages, rated conditional short-circuit currents, temperature rise and construction testing in addition to the requirements of Part 1.

Heavy-duty reed switches are glass sealed contact units and include high pressure sealed types. This part of IEC 62246 does not apply to mercury-wetted reed contact units.

NOTE 1 Heavy-duty reed switches are mainly used within electromagnetic switching devices, valves, solenoids, power relays, etc., as the electromagnetic load switching elements. The load conditions should be selected from the standard inductive loads and the load specifications specified in IEC 61810-1 and IEC 60947-5-1.

NOTE 2 For elementary relays using heavy-duty reed switches as contact elements, this standard should be used together with IEC 61810-1 and IEC 61811-1 as applicable.

NOTE 3 For electromechanical control circuit devices using heavy-duty reed switches as contact elements, this standard should be used together with IEC 60947-5-1 as applicable.

1.2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62246-1:2002, *Reed contact units – Part 1: Generic specification*

IECEE 01:2006, *IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE) – Basic rules*

IECEE 03:2006, *Rules of Procedure of the Scheme of the IECEE for Mutual Recognition of Conformity Assessment Certificates for Electrotechnical Equipment and Components (CB-FCS)*

IECQ 01:2003, *IEC Quality Assessment System for Electronic Components (IECQ) – Basic Rules*

IECQ QC 001002-1:1998, *IEC Quality Assessment System for Electronic Components (IECQ) – Rules of Procedure – Part 1: Administration*

1.3 Terms, definitions, abbreviations and symbols

For the purposes of this document, 1.3 of Part 1 applies with the following amendments.

Replace 1.3.1 as follows:

1.3.1**heavy-duty reed switch**

assembly containing contact blades, some or all of magnetic material, in which greater switching capacity is achieved by either blades having additional contact tips or a contact tip and spring which separate the magnetic path and electric path, hermetically sealed in an envelope and controlled by means of externally generated magnetic field (e.g. an energizing quantity applied to a coil, or magnet actuator)

Add:

1.3.56**rated conditional short-circuit current**

value of prospective current, stated by the manufacturer, which the switch, protected by a short-circuit protective device specified by the manufacturer, can withstand satisfactorily for the operating time of this device under the test conditions specified in the relevant product standard

1.4 Preferred values**1.4.1 Frequency of operation**

Subclause 1.4.1 of Part 1 applies.

1.4.2 Duty cycle

Subclause 1.4.2 of Part 1 applies.

1.4.3 Open-circuit voltage across contacts

Subclause 1.4.3 of Part 1 applies.

1.4.4 Current ratings

Subclause 1.4.4 of Part 1 applies.

1.4.5 Load ratings

Subclause 1.4.5 of Part 1 applies with the following additions:

750; 1 000; 1 800; 3 600; 7 200 VA.

1.4.6 Number of operations

Subclause 1.4.6 of Part 1 applies.

1.4.7 Climatic category

Subclause 1.4.7 of Part 1 applies.

1.4.8 Preferred environmental severities

Subclause 1.4.8 of Part 1 applies.

1.4.9 Rated operational voltage; U_e

The following values are preferred.

AC 12, 24, 50, 100, 110, 120, 200, 220, 240, 380, 480, 500, 550, 600, 800, 1 000 V (r.m.s.)

DC 1, 6, 12, 24, 48, 100, 110, 120, 125, 200, 220, 250, 400, 500, 600, 800, 1 200, 1 500 V.

1.4.10 Rated switching current; I_e

The following values are preferred.

1; 10; 15; 30; 50; 100 mA; 0,3; 0,5; 1; 2; 3; 5 A.

1.4.11 Rated insulation voltage

The following values of rated insulation voltage are preferred.

a) AC 250, 380, 500, 600 V (r.m.s.)

b) DC 250, 440, 500, 600 V.

1.4.12 Rated impulse voltage

The following values of rated impulse voltage and waveform are preferred.

a) 800, 1 500, 2 500, 3 000, 4 000 V

b) $1,2 \times 50 \mu\text{s}$.

1.4.13 Utilization categories

The utilization categories as given in Table 1 are preferred. Any other types of application shall be based on agreement between manufacturer and user, but information given in the manufacturer's catalogue or tender may constitute such an agreement.

Table 1 – Utilization categories

Kind of current	Category	Typical application
AC	AC-12	Control of resistive loads and solid state loads with isolation by opto-couplers
	AC-13	Control of solid state loads with transformer isolation
	AC-14	Control of small electromagnetic loads $\leq 72 \text{ VA}$
	AC-15	Control of electromagnetic loads $\geq 72 \text{ VA}$
DC	DC-12	Control of resistive loads and solid state loads with isolation by opto-couplers
	DC-13	Control of electromagnets
	DC-14	Control of small electromagnetic loads having economy resistors in circuit
NOTE These utilization categories correspond to those indicated in IEC 60947-5-1.		

1.4.14 Contact reliability

The following values of contact reliability are preferred.

5; 50; 500 failures per 10^9 cycles.

1.4.15 Limiting continuous current; I_{th}

The following values of limiting continuous current (I_{th}) are preferred.

2,5; 3; 5; 8, 10 A.

1.5 Marking

Subclause 1.5 of Part 1 applies. Information given in the manufacturer's catalogue or tender may substitute for marking of contact ratings (examples of contact ratings are shown in Annex C).

1.6 Order of precedence

Subclause 1.6 of Part 1 applies.

1.7 Precautions regarding mercury (for mercury wetted contact units)

Heavy-duty reed switches shall not contain mercury-wetted contacts.

2 Quality assessment procedures

2.1 General

For the application of this standard, it is not mandatory to use quality assessment procedures. However, if quality assessment is required, the following provisions apply.

The appropriate quality assessment procedure shall be selected by the manufacturer. There are three fundamental conformity assessment processes which may be used:

- a) self-certification in which the manufacturer declares conformity,
- b) two-party certification in which the customer verifies conformity,
- c) third-party certification in which an independent third party verifies conformity.

NOTE Whichever process is selected, the recommendations of ISO/IEC Guide 60 should be applied insofar as they reasonably apply.

2.2 Self-certification

When self-certification is selected, the manufacturer shall, as a minimum, use a quality management system such as ISO 9000 or similar.

NOTE 1 This does not mandate that the quality management system be certified by an accredited body (see ISO 9001).

NOTE 2 It is recommended that the manufacturer's declaration of conformity be in accordance with ISO/IEC 17050-1.

2.3 Two-party certification

When two-party certification is selected, both the manufacturer and the customer shall, as a minimum, use a quality management system such as ISO 9000 or similar.

NOTE 1 This does not mandate that the quality management system be certified by an accredited body (see ISO 9001).

NOTE 2 It is recommended that the manufacturer's declaration of conformity be in accordance with ISO/IEC 17050-1.

2.4 Third-party certification

When third-party certification is selected, a recognized third-party approval system shall be used to confirm the compliance of the product with the product specification. The international IECQ or IECEE system shall be used, unless incompatible with existing market conditions.

- IECQ System: