

# INTERNATIONAL STANDARD

Reed contact units –  
Part 2: Heavy-duty reed switches

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IEC 62246-2:2007

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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

PRICE CODE



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## REED CONTACT UNITS –

## Part 2: Heavy-duty reed switches

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International Standard IEC 62246-2 has been prepared by IEC technical committee 94: All-or-nothing electrical relays.

This part of IEC 62246 is to be read in conjunction with IEC 62246-1.

The text of this standard is based on the following documents:

CDV	Report on voting
94/243/CDV	94/257A/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 62246 series, published under the general title *Reed contact units*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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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.