

Specification for

**Fuses (cut-outs),
ancillary terminal
blocks and
interconnecting units
up to 100 A rating, for
power supplies to
buildings**

Committees responsible for this British Standard

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- ASTA Certification Services
- Association of Control Manufacturers — TACMA (BEAMA Ltd.)
- Association of Manufacturers Allied to the Electrical and Electronic Industry (BEAMA Ltd.)
- British Industrial Truck Association
- ERA Technology Ltd.
- Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
- Electricity Association
- Electronic Components Industry Federation
- Engineering Equipment and Materials Users' Association
- GAMBICA (BEAMA Ltd.)
- Health and Safety Executive
- Institution of Electrical Engineers

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Foreword

This British Standard has been prepared under the direction of the Power Electrical Engineering Standards Policy Committee. It is based on the Electricity Association Technical Specification 12-10, and has been updated to reflect current practice and standards. This standard was originally submitted to CENELEC under the Vilamoura Procedure, but in the absence of interest by other national committees it was derogated to the UK for publication as a national standard.

This standard is to be read in conjunction with BS EN 60947-1:1992 and therefore for ease of cross-reference it has clause numbering following the style of BS EN 60947-1.

Subclauses, tables, or figures which are additional to those in BS EN 60947-1 are numbered starting from 101; additional annexes are lettered AA, BB, etc.

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 to iv, pages 1 to 16, 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 standard specifies the requirements for fuses (cut-outs), ancillary terminal blocks and interconnecting units up to 100 A rating, for the protection of power supplies to buildings. They are suitable for use on single phase, or one phase of a three phase low-voltage public electricity supply system with a maximum voltage up to 440 V a.c. and at a frequency of 50 Hz, the neutral being effectively earthed.

The provisions of the general rules dealt with in BS EN 60947-1 are applicable to this standard when specifically called for.

NOTE Clauses and subclauses, tables, figures and appendices of the general rules thus applicable are identified by reference to BS EN 60947-1, for example 1.2.3 of BS EN 60947-1, Table IV of BS EN 60947-1, or Appendix A of BS EN 60947-1.

1.2 Vacant

1.3 References

1.3.1 Normative references

This British Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at appropriate places in the text and the publications are listed on the inside back cover. For a dated reference, only the edition cited applies; any subsequent amendments to or revisions of the publication apply to this British Standard only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the publication applies together with any amendments.

1.3.2 Informative references

This British Standard refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

2 Definitions

For the purposes of this British Standard, the definitions given in BS EN 60947-1:1992 apply, together with the following which have been reproduced from BS 88-1:1988, BS 89-1:1990, BS 3456-201:1990 and BS 4727-2:Group 06:1985.

2.1

fuse-carrier (206 8013 of BS 4727-2.06)

the moveable part of a fuse designed to carry a fuse-link

2.2

fuse-base (fuse-mount) (2.1.2 of BS 88-1)

the fixed part of a fuse provided with terminals for connection to the system. The fuse-base comprises all the parts necessary for insulation

2.3

fuse-holder (2.1.6 of BS 88-1)

the combination of a fuse-base with its fuse-carrier

2.4

fuse-unit

a fuse-holder incorporating neutral and earth terminals within an integral enclosure. It may also include a protective cover for the termination of multi-core cables

2.5

fuse-link (206 8009 of BS 4727-2.06)

the part of a fuse (including the fuse-elements) intended to be replaced after the fuse has operated

2.6

fuse (cut-out) (206 8001 of BS 4727-2.06)

a device that, by fusion of one or more of its specifically designed and proportioned components, opens the circuit in which it is inserted by breaking the current when this exceeds a given value for a sufficient time. The fuse comprises all the parts that form the complete device

2.7

fuse-carrier contact (2.1.5 of BS 88-1)

a conducting part of a fuse-carrier connected to a fuse-link contact and designed to engage with a fuse-base contact

2.8

fuse-link contact (2.1.8 of BS 88-1)

a conducting part of a fuse-link designed to engage with a fuse-base contact or with a fuse-carrier contact

2.9

fuse-base contact (fuse-mount contact) (2.1.3 of BS 88-1)

a conducting part of a fuse-base connected to a terminal designed to engage with a fuse-carrier contact or with a fuse-link contact

2.10

interconnecting unit

a unit providing additional insulation protection and security for the conductors connecting a fuse-unit to a tariff meter (see 2.4 and BS 89-1)

2.11

basic insulation (2.2.12 of BS 3456-201)

the insulation applied to live parts to provide basic protection against electric shock

2.12

supplementary insulation (2.2.13 of BS 3456-201)

an independent insulation applied in addition to the basic insulation in order to ensure protection against electric shock in the event of a failure of the basic insulation

2.13

double insulation (2.2.14 of BS 3456-201)

insulation comprising both basic insulation and supplementary insulation

2.14

reinforced insulation (2.2.15 of BS 3456-201)

a single insulation system applied to live parts, which provides a degree of protection against electric shock equivalent to double insulation under the conditions specified in this standard

NOTE The term "insulation system" does not imply that the insulation must be one homogeneous piece. It may comprise several layers which cannot be tested singly as supplementary or basic insulation

2.15

PME

protective multiple earthing

3 Classification

The fuse type shall be classified as follows.

3.101 Type A1 fuse-unit

A single phase fuse-unit incorporating separate neutral and earth terminals with PME link. A separate cable termination cover may be provided, if required.

3.102 Type A2 fuse-unit

A single phase fuse-unit incorporating combined neutral/earth terminals. A separate cable termination cover may be provided, if required.

3.103 Type A1 fuse

A single phase fuse-unit fitted with an appropriate fuse-link and incorporating separate neutral and earth terminals with connecting link. A separate cable termination cover may be provided, if required.

3.104 Type A2 fuse

A single phase fuse-unit fitted with an appropriate fuse-link and incorporating combined neutral/earth terminals. A separate cable termination cover may be provided, if required.

3.105 Type B fuse

A single-pole fuse-holder fitted with an appropriate fuse-link.

3.106 Type C1 terminal block

A terminal block containing a single-pole terminal assembly.

3.107 Type C2 terminal block

A terminal block containing two mutually insulated single-pole terminal assemblies.

3.108 Type D interconnecting unit

A unit providing additional insulation protection and security for the conductors connecting a fuse-unit to a tariff meter.

4 Characteristics

Clause 4 of BS EN 60947-1 applies only in relation to the following characteristics, and with deletions and additions to the subclauses as indicated:

Rated operational voltage	(U_e);
Rated insulation voltage	(U_i);
Rated impulse withstand voltage	(U_{imp});
Rated uninterrupted current	(I_w);
Rated frequency;	
Rated conditional short-circuit current	(I_{cw}).

4.1 General

Subclause 4.1 of BS EN 60947-1 applies.

4.2 Type of equipment

Subclause 4.2 of BS EN 60947-1 applies.

4.3 Rated and limiting values for the main circuits

Subclause 4.3 of BS EN 60947-1 applies modified as follows:

Deletions:

4.3.2.1 Conventional free air thermal current (I_{th})

4.3.2.2 Conventional enclosed thermal current (I_{the})

4.3.4 Rated duties

4.3.5 Normal load and overload characteristics

4.3.6 Short-circuit characteristics

Additions:

4.3.2.4.101 Fuses

A fuse shall be capable of carrying current up to its rated uninterrupted current and the currents associated with the operation under fault conditions of any fuse-link conforming to BS 1361, which the fuse is designed to accommodate. In addition, the incoming phase and neutral terminals of type A fuses shall have a rated uninterrupted current of 130 A.