

Cartridge fuses for voltages up to and including 1000 V a.c. and 1500 V d.c. —

**Part 6: Specification of supplementary
requirements for fuses of compact
dimensions for use in 240/415 V a.c.
industrial and commercial electrical
installations**

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The preparation of this British Standard was entrusted by the Power Electrical Engineering Standards Committee (PEL/-) to Technical Committee PEL/78, upon which the following bodies were represented:

- Association of Supervisory and Executive Engineers
- Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
- Electrical Power Engineers' Association
- Electricity Supply Industry in England and Wales
- Engineering Equipment and Materials Users' Association
- ERA Technology Ltd.
- London Regional Transport

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Association of Consulting Engineers
- ASTA Certification Services
- Electrical Contractors' Association
- Institution of Electrical Engineers
- Ministry of Defence

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Foreword

This Part of BS 88 has been prepared under the direction of the Power Electrical Engineering Standards Committee. It gives requirements supplementary to those of BS 88-1 for a range of fuses for use in 240 V and 415 V a.c. industrial and commercial electrical installations. It is based on a proposal by the Electrical Installation Equipment Manufacturers' Association.

Fuses within the scope of this standard are not sensitive to normal electromagnetic disturbances, and therefore no immunity tests are required.

Significant electromagnetic disturbance generated by a fuse is limited to the instant of its operation. Provided that the maximum arc voltages during operation in the type test comply with the requirements of the clause in this standard specifying maximum arc voltage, the requirements for electromagnetic compatibility are deemed to be satisfied.

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 10, 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 BS 88 applies to fuses of compact dimensions primarily intended for use in 240/415 V a.c. industrial and commercial installations. It does not cover fuses incorporating integral indicating devices.

NOTE Such fuses should be the subject of agreement between the manufacturer and the user.

1.2 Object

The object of this standard is to specify standard values for fuse holders and fuse-links.

The characteristics specified for fuse-links are:

- a) time/current zones and conventional currents;
- b) rated voltage;
- c) rated breaking capacity;
- d) maximum power dissipation;
- e) dimensions.

The characteristics specified for fuse holders are:

- f) sizes of cable terminals or cable sockets;
- g) power acceptance;
- h) dimensions.

1.3 Compliance

Compact fuses for industrial and commercial installations shall comply with all the requirements of BS 88-1 unless otherwise specified in this standard, and shall in addition comply with the following supplementary requirements.

2 Definitions

For the purposes of this Part of BS 88, the definitions given in BS 88-1 apply, together with the following.

2.2 General terms

2.2.14

industrial application of fuses

the use of fuses in industrial applications where the fuse-links are accessible to and may be replaced by authorized persons only

2.2.15

commercial application of fuses

the use of fuses in commercial installations where the fuse-links are accessible to and may be replaced by laymen

NOTE 1 For this application protection against accidental contact with live parts is ensured by constructional means.

NOTE 2 The performance of fuses of this type is such that they may also be used in industrial applications.

3 Expected conditions of operation in service

3.9 Discrimination

Subclause 3.9 of Part 1 does not apply for E1 fuse-links or for F1 and F2 fuse-links of 16 A rating. In the case of these fuse-links, correct discrimination is ensured by adherence to the standard zones for time/current characteristics as specified in 5.6.1.1 and as given in Figure 3(a), Figure 3(b), Figure 4(a) and Figure 4(b).

5 Characteristics of fuses

5.2 Rated voltage

This Part of BS 88 does not specify rated voltages.

NOTE The preferred rated voltages are 240 V a.c. and 415 V a.c.

5.3 Rated current

This Part of BS 88 does not specify rated currents.

NOTE 1 The preferred current ratings (in amperes) for fuse holders and fuse bases are 20, 32 and 63.

NOTE 2 The preferred current ratings (in amperes) for fuse-links are 2, 4, 6, 10, 16, 20, 25, 32, 40, 50 and 63.

5.5 Rated power dissipation of a fuse-link and rated power acceptance of a fuse holder

5.5.1 Power dissipation of fuse-links. The maximum values of power dissipation permitted for fuse-links when tested in accordance with 8.3.1 are specified in Figure 1 when measured on the standard rig shown in Figure 8.

5.5.2 Power acceptance of fuse holders. The rated values of power which fuse holders shall accept at rated current when tested in accordance with 8.3.2 are specified in Figure 2.

NOTE The point of measurement of voltage for determination of fuse holder power acceptance is shown in Figure 2.

5.6 Limits of time/current characteristics

5.6.1 Time/current characteristics, time/current zones. This subclause of Part 1 applies with the following addition:

Fuse-links shall be such that values derived from the specified tests do not deviate by more than 10 % in terms of current, from the manufacturer's published curves.

5.6.1.1 Time/current zones. The standard zones for time/current characteristics based on an ambient air temperature of 20 °C and at rated voltage are as given in Figure 3(a), Figure 3(b), Figure 4(a) and Figure 4(b).

5.6.2 Conventional times and currents. The standard conventional non-fusing and fusing currents (I_{NF} and I_F) shall be 1.25 and 1.6 times rated current respectively.