

Specification for

**Rotating electrical
machines of particular
types or for particular
applications —**

**Part 15: Machines with type of
protection “e” (increased safety)**

UDC 621.313-13:621.313-213.3:614.825

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW



Cooperating organizations

The Power Electrical Engineering Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following Government departments and industrial and scientific organizations:

Associated Offices Technical Committee
 Association of Short Circuit Testing Authorities
 British Electrical and Allied Manufacturers' Association (BEAMA)
 British Railways Board
 British Steel Corporation*
 Department of Energy (Electricity)
 Electrical Contractors' Association
 Electrical Contractors' Association of Scotland
 Electrical Research Association*
 Electricity Supply Industry in England and Wales*
 Engineering Equipment Users' Association*
 Institute of Purchasing and Supply
 Institution of Electrical Engineers
 Ministry of Defence*
 National Coal Board*
 National Economic Development Office

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

Association of Consulting Engineers
 Association of Electrical Machinery Trades
 Association of Manufacturers Allied to the Electrical and Electronic Industry (BEAMA)
 Association of Supervisory and Executive Engineers
 British Gear Manufacturers Association
 British Internal Combustion Engine Manufacturers' Association
 Bureau of Engineer Surveyors
 Engineer Surveyors' Section of the ASTMS
 Lloyd's Register of Shipping
 London Transport Executive
 Machine Tool Industry Research Association
 Power Generation Association (BEAMA)
 Rotating Electrical Machines Association (BEAMA)
 South of Scotland Electricity Board

This British Standard, having been prepared under the direction of the Power Electrical Engineering Standards Committee, was published under the authority of the Executive Board and comes into effect on 30 April 1980

© BSI 03-1999

The following BSI references relate to the work on this standard:
 Committee reference PEL/1
 Draft for comment 74/23040 DC

ISBN 0 580 11343 4

Amendments issued since publication

Amd. No.	Date of issue	Comments

Contents

	Page
Cooperating organizations	Inside front cover
Foreword	ii
<hr/>	
1 Scope	1
2 References	1
3 Requirements for type of protection	1
4 General requirements and performance	1
5 Marking	1
<hr/>	
Publications referred to	2
<hr/>	

Foreword

This British Standard has been prepared under the direction of the Power Electrical Engineering Standards Committee and forms a Part of BS 5000 which together with BS 4999 "*General requirements for rotating electrical machines*", will eventually contain a comprehensive series of British Standards for rotating electrical machines.

The object of this standard is to emphasize that a rotating machine with type of protection "e" has to comply not only with the appropriate protection requirements as laid down in other British Standards, but has also to comply with the performance requirements appropriate to the particular type of machine.

A list of the contents of BS 5000 showing all the Parts envisaged in the foreseeable future is given in the general introduction and index which will be brought up to date as new Parts are published. The contents of BS 4999 are given in a separate index and introduction to that standard.

Certification. Attention is drawn to the Health and Safety at Work etc. Act 1974, the Factories Act 1961, the Mines & Quarries Act 1954, the Regulations made under these Acts, and also any other appropriate statutory requirements or Bye-laws. These place responsibility for complying with specific safety requirements on the manufacturer and the user. The usual way of demonstrating compliance with certain of these requirements relating to the protection of electrical apparatus for use in potentially explosive atmospheres is the production of a certificate issued by a recognized certification authority. Further information is provided in BS 5345 and CP 1003. The addresses of the recognized certification authorities in the United Kingdom are given on the inside back cover of this standard.

NOTE There are no existing arrangements or plans to certify motors with type of protection "e" for use in coal mines.

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 and 2, 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 Scope

This Part of this British Standard specifies requirements for machines for miscellaneous applications with type of protection “e” (increased safety). This is a method of protection by which additional measures are applied to electrical apparatus to give increased security against the possibility of excessive temperatures and of the occurrence of arcs and sparks during the service life of the apparatus. It is applicable only to electrical apparatus, no parts of which produce sparks or arcs or exceed the limiting temperature in normal service.

2 References

The titles of the publications referred to in this standard are listed on the page 2.

3 Requirements for type of protection

Machines shall comply with the requirements for type of protection “e”,

either

as given in BS 5501-1 (EN 50 014) and BS 5501-6 (EN 55 019)

or

as given in BS 4683-4.

NOTE BS 5501-6, the English language version of EN 50 019, was published in 1977. It is expected, however, that a period of about ten years will elapse before this standard can be fully implemented as the only British Standard for type of protection “e”. In the meantime, much equipment is still designed and manufactured to BS 4683-4 and compliance with the requirements of this standard will remain an acceptable alternative to BS 5501-6 for the time being.

4 General requirements and performance

Machines shall comply with the appropriate requirements of BS 5000-99, except that the rating plate shall carry the BS number and Part number of this standard, i.e. BS 5000/15.

5 Marking

Machines shall be marked as required by BS 5501 or BS 4683-4, as appropriate.

Publications referred to

BS 4683, *Electrical apparatus for explosive atmospheres.*

BS 4683-4, *Type of protection “e”.*

BS 4999, *General requirements for rotating electrical machines¹⁾.*

BS 5000, *Rotating electrical machines of particular types or for particular applications.*

BS 5000-99, *Machines for miscellaneous applications.*

BS 5345, *Code of practice for the selection, installation and maintenance of electrical apparatus for use in potentially explosive atmospheres (other than mining applications or explosive processing and manufacture)¹⁾.*

BS 5501, *Electrical apparatus for potentially explosive atmospheres.*

BS 5501-1, *General requirements.*

BS 5501-6, *Increased safety “e”.*

CP 1003, *Electrical apparatus and associated equipment for use in explosive atmospheres of gas or vapour other than mining applications¹⁾.*

¹⁾ Referred to in the foreword only.

Certification

The recognized authorities for the certification and approval of electrical equipment for use in hazardous areas, in the United Kingdom, are as follows:

For group I (coal mining) apparatus:

Health & Safety Executive
Group SP C3
Regina House
259 Old Marylebone Road
London NW1 5RR

For group II (non-mining) apparatus:

Health & Safety Executive
BASEEFA
Harpur Hill
Buxton
Derbyshire SK 17 9JN

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover. Tel: 020 8996 9000. Fax: 020 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: 020 8996 9001. Fax: 020 8996 7001.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre. Tel: 020 8996 7111. Fax: 020 8996 7048.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration. Tel: 020 8996 7002. Fax: 020 8996 7001.

Copyright

Copyright subsists in all BSI publications. BSI also holds the copyright, in the UK, of the publications of the international standardization bodies. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI.

This does not preclude the free use, in the course of implementing the standard, of necessary details such as symbols, and size, type or grade designations. If these details are to be used for any other purpose than implementation then the prior written permission of BSI must be obtained.

If permission is granted, the terms may include royalty payments or a licensing agreement. Details and advice can be obtained from the Copyright Manager. Tel: 020 8996 7070.

BSI
389 Chiswick High Road
London
W4 4AL