

Intrinsically safe power supplies for use in coal mines —

Part 1: Specification for d.c. power supplies

UDC 622.33.005:621.3.031:621.311.4.024

Confirmed
January 2011

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents

AVA

Document Sharing Hub

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Mining Requisites Standards Policy Committee (MRE/-) to Technical Committee MRE/25, upon which the following bodies were represented:

- Association of British Mining Equipment Companies
- British Coal Corporation
- Council for Electrical Equipment for Flammable Atmospheres (BEAMA)
- Health and Safety Executive

This British Standard, having been prepared under the direction of the Mining Requisites Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 March 1994

© BSI 08-1999

First published September 1982
Second edition March 1994

The following BSI references relate to the work on this standard:
Committee reference MRE/25
Draft for comment 90/77414 DC

ISBN 0 580 22662 X

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 References	1
3 Definition	1
4 Information and requirements to be agreed and to be documented	1
5 Design and construction	1
6 Marking	5
7 Routine tests	5
Annex A (informative) Guidance on interconnection with other equipment	6
Figure 1 — Circuit arrangement for intrinsically safe d.c. power supply	3
Table 1 — Output characteristics	2
Table 2 — Component specifications	4
Table A.1 — Maximum inductance of cables and load for connection to the output of the power supply	6
List of references	Inside back cover

Foreword

This revision of this Part of BS 6182 has been prepared under the direction of the Mining Requisites Standards Policy Committee and takes account of experience gained since this standard was first published in 1982. It supersedes BS 6182-1:1982, which is withdrawn. In this revision the specification to provide intrinsically safe outputs suitable for use in coal mines has been developed to allow for alternatives to constant voltage transformers and for alternative power sources to mains.

BS 6182 is published in three Parts and specifies a range of d.c. and a.c. power supplies and rechargeable battery units to give a power output ensuring both a minimum acceptable performance with connected apparatus and a maximum power output dictated by the requirements of intrinsic safety.

BS 6182-2:1982 specifies requirements for power supplies providing a.c. outputs. Two output voltages are specified for the following purposes:

- a) a 12 V r.m.s. output to supply intrinsically safe apparatus where maximum power availability is the predominant requirement;
- b) a 15 V r.m.s. output to supply intrinsically safe apparatus where a higher operating voltage is more important than available power.

BS 6182-3:1982 specifies requirements for a range of rechargeable battery units that are to be charged from the power supplies specified in Parts 1 and 2.

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.

Attention is drawn to the Health and Safety at Work etc. Act 1974 [1], the Mines and Quarries Act 1954 [2], 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 address of the recognized certification authorities in the United Kingdom for intrinsic safety aspects are:

Health and Safety Executive,
Mining Equipment Certification Service,
Harpur Hill,
Buxton,
Derbyshire,
SK17 9JN.

SIRA Certification Service
Saighton Lane,
Saighton,
Chester.
CH3 6EG.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 6, 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.