

Arc welding equipment —

Part 6: Limited duty manual metal arc welding power sources

The European Standard EN 60974-6:2003 has the status of a
British Standard

ICS 25.160.30

National foreword

This British Standard is the official English language version of EN 60974-6:2003, including Corrigendum May 2005. It is identical with IEC 60974-6:2003. It supersedes BS 638-9:1990 (EN 50060:1989) which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee WEE/6, Arc welding equipment, which has the responsibility to:

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- monitor related international and European developments and promulgate them in the UK.

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English version

Arc welding equipment
Part 6: Limited duty manual metal arc welding power sources
(IEC 60974-6:2003)

Matériel de soudage à l'arc
Partie 6: Sources de courant de soudage
manuel à l'arc métallique à service limité
(CEI 60974-6:2003)

Lichtbogenschweißeinrichtungen
Teil 6: Schweißstromquellen
mit begrenzter Einschaltdauer
(IEC 60974-6:2003)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 26/247/FDIS, future edition 1 of IEC 60974-6, prepared by IEC TC 26, Electric welding, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60974-6 on 2003-03-01.

This European Standard supersedes EN 50060:1989 + A1:1994.

This Part 6 of EN 60974 is to be used in conjunction with EN 60974-1:1998.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2003-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-03-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annex ZA is normative and annex A is informative.

Annex ZA has been added by CENELEC.

The contents of the corrigendum of May 2005 have been included in this copy.

Endorsement notice

The text of the International Standard IEC 60974-6:2003 was approved by CENELEC as a European Standard without any modification.

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ARC WELDING EQUIPMENT –

Part 6: Limited duty manual metal arc welding power sources

1 Scope

This part of IEC 60974 is applicable to power sources with a thermal cut-out device for manual metal arc welding with limited duty.

These welding power sources are mainly used by laymen.

This part of IEC 60974 specifies safety requirements for construction and performance requirements of welding power sources, limited to a rated maximum welding current of 160 A.

This part of IEC 60974 is not applicable to:

- rotating welding power sources;
- welding power sources with remote control;
- welding power sources incorporating frequency conversion.

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 60050-151:2001, *International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices*

IEC 60050-851:1991, *International Electrotechnical Vocabulary (IEV) – Chapter 851: Electric welding*

IEC 60204-1:1997, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements*

IEC 60245-6, *Rubber insulated cables – rated voltages up to and including 450/750 V – Part 6: Arc welding electrode cables*

IEC 60664-1:1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60974-1:1998, *Arc welding equipment – Part 1: Welding power sources*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

ISO 857-1, *Welding and allied processes – Vocabulary – Part: 1 Metal welding processes*

ISO 2560, *Covered electrodes for manual arc welding of mild steel and low alloy steel – Code of symbols for identification*

3 Terms and definitions

For the purpose of this part of IEC 60974, the terms and definitions contained in IEC 60050-151, IEC 60050-851, IEC 60204-1, IEC 60664-1 and in IEC 60974-1, as well as the following apply:

3.1

manual metal arc welding

manually operated metal-arc welding using a covered electrode

[ISO 857-1, 4.2.4.4]

3.2

limited duty welding power source

power source whose operating condition is defined by the sets and resets (OFF and ON operation) of its thermal cut-out device

3.3

reference electrode

electrode of the type E 43 R with a diameter and rated welding current in accordance with ISO 2560

3.4

layman

operator who does not weld in the performance of his profession and may have little or no formal instruction in arc welding

3.5

thermal cut-out device

temperature sensitive device which limits the temperature of the components of the welding power source by automatically opening the circuits or by reducing the currents, and being reset automatically

3.6

load time, t_w

time between the reset (ON operation) and the set (OFF operation) of the thermal cut-out device

3.7

reset time, t_r

time between the set (OFF operation) and the reset (ON operation) of the thermal cut-out device

3.8

cycle time

time between two consecutive resets (ON operation) or sets (OFF operation) of the thermal cut-out device