SVENSK STANDARD

SS-EN IEC 60974-1+A11, utg 6:2023

2023-10-18

REDLINE VERSION

Bågsvetsutrustning –
Del 1: Säkerhet hos svetsströmkällor för industriellt och liknande bruk

Arc welding equipment –
Part 1: Welding power sources

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IEC 60974-1

Edition 6.0 2021-06
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Arc welding equipment –
Part 1: Welding power sources

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 25.160.30

ISBN 978-2-8322-9962-3

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ARC WELDING EQUIPMENT –

Part 1: Welding power sources

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60974-1:2017+AMD1:2019 CSV. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60974-1 has been prepared by IEC technical committee 26: Electric welding. It is an International Standard.

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This edition includes the following significant technical changes with respect to the previous edition:

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i) redraft of efficiency and IDLE STATE power measurement in Annex M based on IEC 62301:2011;
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– terms used throughout this document which have been defined in Clause 3: ~~in **bold** type~~ SMALL ROMAN CAPITALS.

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ARC WELDING EQUIPMENT –

Part 1: Welding power sources

1 Scope

This part of IEC 60974 is applicable to power sources for arc welding and allied processes designed for INDUSTRIAL AND PROFESSIONAL USE, and supplied by a voltage not exceeding 1 000 V, BATTERY supplied or driven by mechanical means.

This document specifies safety and performance requirements of WELDING POWER SOURCES and PLASMA CUTTING SYSTEMS.

This document is not applicable to limited duty arc welding and cutting power sources which are designed mainly for use by laymen and designed in accordance with IEC 60974-6.

This document includes requirements for battery-powered WELDING POWER SOURCES and BATTERY packs, which are given in Annex O.

This document is not applicable to testing of power sources during periodic maintenance or after repair.

NOTE 1 Typical allied processes are electric arc cutting and arc spraying.

NOTE 2 AC systems having a nominal voltage between 100 V and 1 000 V are given in Table 1 of IEC 60038:2009.

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IEC 60974-10, *Arc welding equipment – Part 10: Electromagnetic compatibility (EMC) requirements*

IEC 61140, *Protection against electric shock – Common aspects for installation and equipment*

IEC 61558-2-4, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers*

IEC 61558-2-6, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers*

IEC 62133-1:~~—[1]~~2017, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 1: Nickel systems*

IEC 62133-2:~~—[2]~~2017, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary lithium cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems*

IEC 62301:2011, *Household electrical appliances – Measurement of standby power*

ISO 7010:~~2011~~2019, *Graphical symbols – Safety colours and safety signs – Registered safety signs*

~~[1] Under preparation. Stage at the time of publication: IEC CDV 62133-1:2015.~~

~~[2] Under preparation. Stage at the time of publication: IEC CDV 62133-2:2015.~~

SVENSK STANDARD

SS-EN IEC 60974-1+A11, utg 6:2023

Fastställd	Sida	Ansvarig kommitté
2023-10-18	1 (167)	SEK TK 26

Bågsvetsutrustning – Del 1: Säkerhet hos svetsströmkällor för industriellt och liknande bruk

Arc welding equipment – Part 1: Welding power sources

Som svensk standard gäller europastandarden EN IEC 60974-1:2022. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60974-1:2022.

Nationellt förord

Europastandarden EN IEC 60974-1:2022

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 60974-1, Sixth edition, 2021 - Arc welding equipment – Part 1: Welding power sources**

utarbetad inom International Electrotechnical Commission, IEC.

EN IEC 60974-1:2022/A11:2022 ingår i standarden.

Tidigare fastställd svensk standard SS-EN IEC 60974-1, utg 5:2018 med ändring SS-EN IEC 60974-1, utg 5:2018/A1:2019, gäller ej fr o m 2025-10-25.

ICS 25.160.30

Denna standard är fastställd av SEK Svensk Elstandard,
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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN IEC 60974-1

December 2022

ICS 25.160.30

Supersedes EN IEC 60974-1:2018

English Version

Arc welding equipment - Part 1: Welding power sources (IEC 60974-1:2021)

Matériel de soudage à l'arc - Partie 1: Sources de courant de soudage (IEC 60974-1:2021)

Lichtbogenschweißeinrichtungen - Teil 1: Schweißstromquellen (IEC 60974-1:2021)

This European Standard was approved by CENELEC on 2022-10-25. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Comité Européen de Normalisation Electrotechnique
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Ref. No. EN IEC 60974-1:2022 E

SEK Svensk Elstandard

SS-EN IEC 60974-1+A11, utg 6:2023

European foreword

The text of document 26/724/FDIS, future edition 6 of IEC 60974-1, prepared by IEC/TC 26 "Electric welding" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60974-1:2022.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2023-10-25
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2025-10-25

This document supersedes EN IEC 60974-1:2018 and all of its amendments and corrigenda (if any).

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This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For the relationship with EU Directive(s) / Regulation(s), see informative Annexes ZZA and ZZB, which are an integral part of EN IEC 60974-1:2022/A11:2022.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 60974-1:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60038:2009	NOTE	Harmonized as EN 60038:2011
IEC 60085	NOTE	Harmonized as EN 60085
IEC 60204-1	NOTE	Harmonized as EN 60204-1
IEC 60309-1	NOTE	Harmonized as EN IEC 60309-1
IEC 60335-2-29	NOTE	Harmonized as EN 60335-2-29
IEC 60384-14	NOTE	Harmonized as EN 60384-14
IEC 60947-3	NOTE	Harmonized as EN IEC 60947-3

IEC 60974-3	NOTE	Harmonized as EN IEC 60974-3
IEC 60974-4	NOTE	Harmonized as EN 60974-4
IEC 60974-6	NOTE	Harmonized as EN 60974-6
IEC 60974-9	NOTE	Harmonized as EN IEC 60974-9
IEC 60974-12	NOTE	Harmonized as EN 60974-12
IEC 60990:2016	NOTE	Harmonized as EN 60990:2016 (not modified)
IEC 61000-3-2	NOTE	Harmonized as EN IEC 61000-3-2
IEC 61032:1997	NOTE	Harmonized as EN 61032:1998 (not modified)
IEC 61558-1	NOTE	Harmonized as EN IEC 61558-1
IEC 62281	NOTE	Harmonized as EN IEC 62281
IEC 62841-1	NOTE	Harmonized as EN 62841-1
ISO 13732-1	NOTE	Harmonized as EN ISO 13732-1

IEC 60974-1

Edition 6.0 2021-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Arc welding equipment – Part 1: Welding power sources

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONTENTS

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