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Resistance welding - Transformer-rectifier for welding guns with integrated transformers -
Transformer-rectifier units operating at 1000 Hz frequency (ISO 22829:2007)

Widerstandsschweißen - Transformatoren-Gleichrichter für Schweißzangen mit
integrierten Transformatoren - Transformator-/Gleichrichtereinheiten mit einer
Arbeitsfrequenz von 1 000 Hz (ISO 22829:2007)

Soudage par résistance - Transformateur redresseur pour pinces à transformateur
incorporé - Transformateur redresseur alimenté sous une fréquence de 1000 Hz (ISO
22829:2007)

Ta slovenski standard je istoveten z: EN ISO 22829:2008

ICS:

| | | |
|-----------|--------------------------|------------------------|
| 25.160.30 | Varilna oprema | Welding equipment |
| 29.180 | Transformatorji. Dušilke | Transformers. Reactors |

SIST EN ISO 22829:2008**en,fr,de**

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English Version

Resistance welding - Transformer-rectifier for welding guns with
integrated transformers - Transformer-rectifier units operating at
1000 Hz frequency (ISO 22829:2007)

Soudage par résistance - Transformateurs-redresseurs
pour pinces de soudage à transformateur incorporé -
Transformateurs-redresseurs alimentés sous une
fréquence de 1000 Hz (ISO 22829:2007)

Widerstandsschweißen - Transformatoren-Gleichrichter für
Schweißzangen mit integrierten Transformatoren -
Transformator-/Gleichrichtereinheiten mit einer
Arbeitsfrequenz von 1 000 Hz (ISO 22829:2007)

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Foreword

The text of ISO 22829:2007 has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 22829:2008 by Technical Committee CEN/TC 121 "Welding" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.

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First edition
2007-02-15

Corrected version
2007-11-01

**Resistance welding — Transformer-
rectifier for welding guns with integrated
transformers — Transformer-rectifier
units operating at 1 000 Hz frequency**

*Soudage par résistance — Transformateurs-redresseurs pour pistolets
de soudage à transformateur incorporé — Transformateurs-redresseurs
alimentés sous une fréquence de 1 000 Hz*

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Reference number
ISO 22829:2007(E)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22829 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 6, *Resistance welding*.

Requests for official interpretations of any aspect of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 6 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

This corrected version incorporates an updated second paragraph in 11.3.9.

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Resistance welding — Transformer-rectifier for welding guns with integrated transformers — Transformer-rectifier units operating at 1 000 Hz frequency

1 Scope

This International Standard is applicable to transformer-rectifier units as used in electric resistance welding machines operating from a power supply with a frequency of 1 000 Hz, and of a rated value of the input voltage equal to or higher than 500 V. These transformer-rectifier units are primarily used in welding guns with an integrated transformer.

For these transformer units, this International Standard supplements the requirements given in ISO 5826 and ISO 10656, which remain applicable except where amended by this International Standard.

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.

ISO 5826:1999, *Resistance welding equipment — Transformers — General specifications applicable to all transformers*

ISO 17657-3, *Resistance welding — Welding current measurement for resistance welding — Part 3: Current sensing coil*

ISO 17657-4, *Resistance welding — Welding current measurement for resistance welding — Part 4: Calibration system*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

transformer-rectifier unit

transformer incorporating a full-wave rectifier in its secondary circuit

3.2

input voltage

U_1

root-mean-square (RMS) value of the voltage applied to the primary terminals of the transformer-rectifier unit

3.3

rated supply voltage

U_{1N}

RMS value of the supply voltage (applied to the primary terminals) for which the transformer-rectifier unit is constructed

3.4
rectified voltage

U_{2d}
RMS value of the voltage at the output of the transformer-rectifier unit when a load resistance is connected across the output terminals

3.5
input current

I_1
RMS value of the current at the input terminals of the transformer-rectifier unit

3.6
open circuit input current

I_{10}
RMS value of the current at the input terminals of the transformer-rectifier unit with the output terminals open circuit

3.7
permanent input current

I_{1P}
maximum RMS value of the current at the input terminals of the transformer-rectifier unit with 100 % duty factor ($X = 100\%$), without exceeding the specified temperature limits

NOTE For calculation related to this International Standard, $I_{1P} = I_{2P} / (N1/N2)$, where $(N1/N2)$ is the transformer turns ratio.

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3.8
output d.c.

I_{2d}
RMS value of the direct current at the output terminals of the transformer-rectifier unit

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3.9
permanent output current

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I_{2P}
maximum RMS value of the output current delivered by the transformer-rectifier unit at 100 % duty factor ($X = 100\%$), without exceeding the specified temperature limits

3.10
output current on load condition

I_{2R}
RMS value of the output current delivered by the transformer-rectifier unit with a load resistance R

3.11
apparent input power

S_1
power measured at the input terminals of the transformer-rectifier unit, or calculated by $U_1 \times I_1$

3.12
rated permanent input apparent power

S_{1P}
rated permanent apparent power calculated by $U_{1N} \times I_{1P}$