SLOVENSKI STANDARD
SIST ISO 8528-12:2002

01-december-2002

Agregati za proizvodnjo izmeničnega toka, gnani z batnim motorjem z notranjim zgorevanjem - 12. del: Zasilna preskrba z električno energijo za varnostne naprave

Reciprocating internal combustion engine driven alternating current generating sets -- Part 12: Emergency power supply to safety services

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Groupes électrogènes à courant alternatif entraînés par moteurs alternatifs à combustion interne -- Partie 12: Alimentation électrique de secours de services de sécurité

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Ta slovenski standard je istoveten z: **ISO 8528-12:1997**

ICS:

27.020	Motorji z notranjim zgorevanjem	Internal combustion engines
29.160.40	Električni agregati	Generating sets

SIST ISO 8528-12:2002 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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INTERNATIONAL STANDARD

ISO 8528-12

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Part 12:
Emergency power supply to safety services

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SIST ISO 8528-12:2002

Contents

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ISO 8528-12:2002
https://standards.iteh.ai/catalog/standards/sist/96ff3388-e476-449a-ab52-30828509edd5/sist-iso-8528-12-2002

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SIST ISO 8528-12:2002
https://standards.iteh.ai/catalog/standards/sist/96ff3388-e476-449a-ab52-30828509edd5/sist-iso-8528-12-2002

SIST ISO 8528-12:2002

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.

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.

International Standard ISO 8528-12 was prepared by Technical Committee ISO/TC 70, *Internal combustion engines*.

International Standard ISO 8528 consists of the following parts, under the general title *Reciprocating internal combustion engine driven alternating current generating sets*:

— *Part 1: Application, ratings and performance*

— *Part 2: Engines*

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(standards.iteh.ai)

— *Part 3: Alternating current generators for generating sets*

— *Part 4: Controlgear and switchgear*

SIST ISO 8528-12:2002
https://standards.iteh.ai/catalog/standards/sist/96ff3388-e476-449a-ab52-30828509edd5/sist-iso-8528-12-2002

— *Part 5: Generating sets*

— *Part 6: Test methods*

— *Part 7: Technical declarations for specification and design*

— *Part 8: Requirements and tests for low-power generating sets*

— *Part 9: Measurement and evaluation of mechanical vibrations*

— *Part 10: Measurement of airborne noise by the enveloping surface method*

— *Part 11: Dynamic uninterruptible power supply systems*

— *Part 12: Emergency power supply to safety services*

Annex A of this part of ISO 8528 is for information only.

SIST ISO 8528-12:2002

Reciprocating internal combustion engine driven alternating current generating sets —

Part 12:
Emergency power supply to safety services

1 Scope

This part of ISO 8528 applies to generating sets driven by reciprocating internal-combustion (RIC) engines for emergency power supply to safety services.

It applies, for example, to safety equipments in hospitals, high-rise buildings, public gathering places etc. This part of ISO 8528 establishes the special requirements for the performance, design and maintenance of power generators used in the applications referred to above and taking into account the provisions of ISO 8528-1 to ISO 8528-6 and ISO 8528-10.

2 Normative references

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The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8528. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8528 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

SIST ISO 8528-12:2002
https://standards.iteh.ai/catalog/standards/sist/90113588-8476-449a-ab52-30828509edd5/sist-iso-8528-12-2002

ISO 8528-1:1993, *Reciprocating internal combustion engine driven alternating current generating sets — Part 1: Application, ratings and performance.*

ISO 8528-2:1993, *Reciprocating internal combustion engine driven alternating current generating sets — Part 2: Engines.*

ISO 8528-3:1993 *Reciprocating internal combustion engine driven alternating current generating sets — Part 3: Alternating current generators for generating sets.*

ISO 8528-4:1993 *Reciprocating internal combustion engine driven alternating current generating sets — Part 4: Controlgear and switchgear.*

ISO 8528-5:1993, *Reciprocating internal combustion engine driven alternating current generating sets — Part 5: Generating sets.*

ISO 8528-6:1993, *Reciprocating internal combustion engine driven alternating current generating sets — Part 6: Test methods.*

IEC 34-1:1996, *Rotating electrical machines — Part 1: Rating and performance.*

IEC 285:1993, *Alkaline secondary cells and batteries — Sealed nickel-cadmium cylindrical rechargeable single cells.*

IEC 364-5-56:1980, *Electrical installations of buildings — Part 5: Selection and erection of electrical equipment — Chapter 56: Safety services.*

SIST ISO 8528-12:2002

IEC 364-7-710:—[1], *Electrical installations of buildings — Part 7: Requirements for special installations or locations — Section 710: Medical locations.*

IEC 601-1:1988, *Medical electrical equipment — Part 1: General requirements for safety.*

IEC 622:1988, *Sealed nickel-cadmium prismatic rechargeable single cells.*

IEC 623:1990, *Vented nickel-cadmium prismatic rechargeable single cells.*

IEC 896-1:1987, *Stationary lead-acid batteries — General requirements and methods of test — Part 1: Vented types.*

IEC 896-2:1995, *Stationary lead-acid batteries — General requirements and methods of test — Part 2: Vale-regulated types.*

3 Definitions

For the purposes of this part of ISO 8528 the following definitions and those in ISO 8528-1 to 6 apply.

3.1 change-over time, t_{co}: Time interval from the appearance of a malfunction of the normal electrical power supply system until the safety services are again connected to the emergency power supply; this connection to the safety services may be applied in several load steps.

3.2 bridging time, t_B: Minimum time for which the generating station must supply the consumers with electrical power under pre-determined operating conditions and which corresponds with the rated operating time as defined in IEC 601-1.

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3.3 safety services: Equipment for the safety of persons which is installed and kept prepared in case of failure of the usual electrical power supply system.

SIST ISO 8528-12:2002
https://standards.iteh.ai/catalog/standards/sist/96ff3388-e476-449a-ab52-30828509edd5/sist-iso-8528-12-2002

3.4 consumer power demand: Total of all intended demands of the connected consumers, taking into consideration the actual load steps.

3.5 power demand for safety services: Required power demand to fulfil the safety service requirements.

4 Symbols

I_2/I_N	Unbalanced load current ratio
k_U	Total voltage harmonic content
t_B	Bridging time
t_{co}	Change-over time
$t_{U,de}$ $t_{U,in}$	Voltage recovery time
β_f	Steady-state frequency band

1) To be published.

SIST ISO 8528-12:2002

δU^{-}_{dyn}
δU^{+}_{dyn} } Transient voltage deviation

δf_{dyn} Transient frequency deviation

δf_{st} Frequency droop

δU_{st} Steady-state voltage deviation

5 Additional regulations and requirements

If special requirements or additional regulations are to be observed, they shall be stated by the customer and agreed upon between manufacturer and customer.

6 Classification designation

6.1 General

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Classification of generating sets for safety services is based on performance class G2 as defined in ISO 8528-1 and the required change-over time, t_{co}, according to IEC 364-5-56 and table 1.

SIST ISO 8528-12:2002
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Table 1 — Classification by change-over time

Generating sets	no break	short break	long break	
Change-over time	0	< 0,5 s	< 15 s	> 15 s
Classification	1	2	3	4

6.2 Typical examples of classification

Typical examples of classification as defined in table 1 are given in table 2.