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Fram- och återgående förbränningsmotor som drivs växelströmsgeneratoraggregat – Del 13: Säkerhet (ISO 8528-13:2016)

Reciprocating internal combustion engine driven alternating current generating sets – Part 13: Safety (ISO 8528-13:2016)

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Europastandarden EN ISO 8528-13:2016 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 8528-13:2016.

Denna standard ersätter SS-EN 12601:2010, utgåva 2.

The European Standard EN ISO 8528-13:2016 has the status of a Swedish Standard. This document contains the official English version of EN ISO 8528-13:2016.

This standard supersedes the Swedish Standard SS-EN 12601:2010, edition 2.

Förhållandet till övriga delar under samma huvudtitel - Utdrag ur Förord i ISO 8528-13:2016/
Relations to other parts under the same general title - Extract from the Foreword of ISO 8528-13:2016

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*
- *Part 3: Alternating current generators for generating sets*
- *Part 4: Controlgear and switchgear*
- *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 12: Emergency power supply to safety services*
- *Part 13: Safety*

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 8528-13

June 2016

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Supersedes EN 12601:2010

English Version

Reciprocating internal combustion engine driven alternating current generating sets - Part 13: Safety (ISO 8528-13:2016)

Groupes électrogènes à courant alternatif entraînés par moteurs alternatifs à combustion interne - Partie 13: Sécurité (ISO 8528-13:2016)

Stromerzeugungsaggregate mit Hubkolben-Verbrennungsmotor - Teil 13: Sicherheit (ISO 8528-13:2016)

This European Standard was approved by CEN on 23 January 2016.

CEN 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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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Ref. No. EN ISO 8528-13:2016 E

Contents

Page

European foreword

This document (EN ISO 8528-13:2016) has been prepared by Technical Committee ISO/TC 70 “Internal combustion engines” in collaboration with Technical Committee CEN/TC 270 “Internal combustion engines” 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 December 2016, and conflicting national standards shall be withdrawn at the latest by June 2017.

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

This document supersedes EN 12601:2010.

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

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 8528-13:2016 has been approved by CEN as EN ISO 8528-13:2016 without any modification.

Reciprocating internal combustion engine driven alternating current generating sets —

Part 13: Safety

1 Scope

This part of ISO 8528 specifies the safety requirements for reciprocating internal combustion (RIC) engine driven generating sets up to 1 000 V consisting of an RIC engine, an alternating current (AC) generator including the additional equipment required for operating, e.g. controlgear, switchgear, auxiliary equipment.

It is applicable to generating sets for land and marine use (domestic, recreational and industrial application). It is not applicable to generating sets used on board of seagoing vessels and mobile offshore units as well as on aircraft or to propel road vehicles and locomotives.

NOTE This part of ISO 8528 does not apply to arc welding equipment (IEC 60974 series).

The special requirements needed to cover operation in potentially explosive atmospheres are not covered in this part of ISO 8528.

The hazards relevant to RIC engine driven generating sets are identified in Annex A.

This part of ISO 8528 deals with the special requirements of test and safety design which should be observed in addition to the definitions and requirements in ISO 8528-1, ISO 8528-2, ISO 8528-3, ISO 8528-4, ISO 8528-5 and ISO 8528-6, where applicable. It specifies safety requirements in order to protect the user from danger.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2261, *Reciprocating internal combustion engines — Hand-operated control devices — Standard direction of motion*

ISO 2710-1, *Reciprocating internal combustion engines — Vocabulary — Part 1: Terms for engine design and operation*

ISO 2710-2, *Reciprocating internal combustion engines — Vocabulary — Part 2: Terms for engine maintenance*

ISO 3046-1, *Reciprocating internal combustion engines — Performance — Part 1: Declarations of power, fuel and lubricating oil consumptions, and test methods — Additional requirements for engines for general use*

ISO 3046-6, *Reciprocating internal combustion engines — Performance — Part 6: Overspeed protection*

ISO 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment*

ISO 6826:1997, *Reciprocating internal combustion engines — Fire protection*

ISO 7967-1, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 1: Structure and external covers*

ISO 7967-2, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 2: Main running gear*

ISO 7967-3, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 3: Valves, camshaft drives and actuating mechanisms*

ISO 7967-4, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 4: Pressure charging and air/exhaust gas ducting systems*

ISO 7967-8, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 8: Starting systems*

ISO 7967-9, *Reciprocating internal combustion engines — Vocabulary of components and systems — Part 9: Control and monitoring systems*

ISO 8528-1:2005, *Reciprocating internal combustion engine driven alternating current generating sets — Part 1: Application, ratings and performance*

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

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

ISO 8528-4:2005, *Reciprocating internal combustion engine driven alternating current generating sets — Part 4: Controlgear and switchgear*

ISO 8528-5:2013, *Reciprocating internal combustion engine driven alternating current generating sets — Part 5: Generating sets*

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

ISO 8528-7, *Reciprocating internal combustion engine driven alternating current generating sets — Part 7: Technical declarations for specification and design*

ISO 8528-8:2016, *Reciprocating internal combustion engine driven alternating current generating sets — Part 8: Requirements and tests for low-generating sets*

ISO 8528-9, *Reciprocating internal combustion engine driven alternating current generating sets -- Part 9: Measurement and evaluation of mechanical vibrations*

ISO 8999:2001, *Reciprocating internal combustion engines — Graphical symbols*

ISO 11102-1, *Reciprocating internal combustion engines — Handle starting equipment — Part 1: Safety requirements and tests*

ISO 11102-2, *Reciprocating internal combustion engines — Handle starting equipment — Part 2: Method of testing the angle of disengagement*

ISO 11429, *Ergonomics — System of auditory and visual danger and information signals*

ISO 11684:1995, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Safety signs and hazard pictorials — General principles*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13732-1, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces*

ISO 13850, *Safety of machinery — Emergency stop — Principles for design*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 14122-2:2001, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways*

ISO 14314:2004, *Reciprocal internal combustion engines — Recoil starting equipment — General safety requirements*

ISO 15534-2, *Ergonomic design for the safety of machinery — Part 2: Principles for determining the dimensions required for access openings*

IEC 60034-1:2010, *Rotating electrical machines — Part 1: Rating and performance*

IEC 60034-5:2006, *Rotating electrical machines — Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) — Classification*

IEC 60245-4, *Rubber insulated cables of rated voltages up to and including 450/750 V — Part 4: Cords and flexible cables*

IEC 60204-1:2009, *Safety of machinery — Electrical equipment of machine — Part 1: General requirements*

IEC 60335-1:2013, *Household and similar electrical appliances — Safety — Part 1: General requirements*

IEC 60364-1, *Low-voltage electrical installations — Part 1: Fundamental principles, assessment of general characteristics, definitions*

IEC 60364-4-41, *Low-voltage electrical installations — Part 4-41: Protection for safety — Protection against electric shock*

IEC 60068-2-75, *Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests*

IEC 60073, *Basic and safety principles for man-machine interface, marking and identification — Coding principles for indicators and actuators*

IEC 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals*

IEC 61310-2, *Safety of machinery — Indication, marking and actuation — Part 2: Requirements for marking*