

norm

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Elektromagnetische locatiebepalers voor
 ondergrondse buizen en kabels -
 Prestatie-eisen en veiligheid

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Electromagnetic locators for buried pipes and cables - Performance and safety

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Voorbeeld
Preview

ICS

English version

Electromagnetic locators for buried pipes and cables - Performance and safety**Localisateurs électromagnétiques pour câbles et canalisations enterrées - Performances et sécurité****Elektromagnetische Ortungsgeräte für unter Erde verlegte Rohre und Kabel - Leistungsmerkmale und Sicherheit**

This draft European Standard is submitted to CENELEC members for CENELEC enquiry.

It has been drawn up by CENELEC BTWG 72-2.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Standard was prepared by BTWG 72-2, *Metallic pipe and cable locators*. It is submitted to the CENELEC enquiry.

Annexes designated "normative" are part of the body of the standard. Annexes designated "informative" are given for information only. In this standard, annexes A, C and F are normative and annexes B, D and E are informative.

Of all pipe and cable locators, those employing electromagnetic principles are the most commonly used for locating buried metallic plant.

Pipe and cable locators are used for the following purposes:

- to determine the position of a buried target line at a particular location;
- to trace the route of a buried target line;
- to determine the position of lines buried adjacent to target lines.

Such locators make a major contribution towards minimizing the risk of damaging buried plant, and injury to operatives, during subsequent excavation.

This European Standard specifies the minimum performance requirements to which all pipe and cable locators should conform, in order to ensure that locators have an acceptable performance consistent with the user's needs.

Notes for National Committees

- 1 The previous version of prEN 50249 was circulated to National Committees as document CENELEC/BTWG72(2)/CONV102. A number of useful comments were received, some of which have resulted in changes to the draft.
- 2 The structure of the document was revised extensively during drafting. National Committees are asked to comment on the current structure.
- 3 One comment suggested that some of the requirements in the standard are too specific i.e. the requirements would limit manufacturers to only one solution and would stop competitive development. The particular parameters cited were transmitter weight (6.2), types of indicator (7.2.1 and 7.2.2) and receiver weight (clause 6). National Committees are asked to suggest how such requirements should be relaxed.
- 4 The temperature range is specified in 5.5 as «...at least the temperature range of -10°C to $+50^{\circ}\text{C}$.» National Committees are asked to consider whether this range should be extended down to -20°C , for operation in Northern Europe.
- 5 In view of the possible requirement to transmit signals within the frequency range 0 – 148,5 kHz over power lines, EN 50065-1 has been added as a normative reference. There is no trace in the document of any reference to this standard. National Committees are asked to submit any further such recommendations.
- 6 Anomalies in A.1.3.4 and A.3.1.2 need to be resolved.

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1 Scope

This European Standard specifies the performance and safety requirements for outdoor portable electromagnetic locators for the location of buried conductive pipes, cables and wires (including allied components) by means of detecting the electromagnetic field caused by a flow of a.c. current.

This European Standard excludes the following locators and locating systems:

- a) radar systems;
- b) fix point marker systems;
- c) vibrating probes;
- d) apparatus which detect such items as internal wiring, structural supports, and conduit in buildings;
- e) apparatus and built-in facility designed for the detection of metallic objects;
- f) sondes and accessories for use for pipe location and guidance of drilling systems;
- g) non-portable locators.

This standard is only applicable to locators, any accessible part of which is at less than hazardous live, as defined in EN 61010-1.

2 Normative references

EN 50249 incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to EN 50249 only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 50065-1	Signalling on low voltage electrical installations in the frequency range 3 kHz to 148 kHz - Part 1 : General requirements, frequency bands and electromagnetic disturbances
EN 50081-1	Electromagnetic compatibility - Generic emission standard - Part 1 : Residential, commercial and light industry
EN 50082-2	Electromagnetic compatibility - Generic immunity standard - Part 2 : Industrial environment
EN 60068-2-5	Environmental testing - Part 2 : Tests - Test Sa: Simulated solar radiation at ground level (IEC 60068-2-5)
EN 60068-2-6	Environmental testing - Part 2 : Tests - Test Fc: Vibration (sinusoidal) (IEC 60068-2-6 + corrigendum)
EN 60068-2-29	Basic environmental testing procedures - Part 2: Tests - Test Eb and guidance: Bump (IEC 60068-2-29 + corrigendum)
EN 60068-2-32	Basic environmental testing procedures - Part 2: Tests - Test Ed: Free fall (IEC 60068-2-32 + A2)
EN 60068-2-62	Environmental testing - Part 2: Tests - Test Ef: Impact, pendulum hammer (IEC 60068-2-62 + A1)
EN 60086-2	Primary batteries - Part 2: Specification sheets (IEC 60086-2)

- EN 60315-3 Methods of measurement on radio receivers for various classes of emission - Part 3: Receivers for amplitude-modulated sound-broadcasting emissions (IEC 60315-3 + corrigendum)
- EN 60318 series Electroacoustics – Simulators of human head and ear (IEC 60318 series)
- EN 60529 Degrees of protection provided by enclosures (IP code) (IEC 60529)
- EN 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements (IEC 61010-1 + A1, mod.)
- EN 61010-2-031 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-031: Particular requirements for hand-held probe assemblies for electrical measurement and test (IEC 61010-2-031)
- EN 61010-2-032 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-032: Particular requirements for hand-held current clamps for electrical measurement and test (IEC 61010-2-032)
- HD 560.1 Methods of measurement on radio receivers for various classes of emission - Part 1: General considerations and methods of measurement, including audio-frequency measurements (IEC 60315-1)
- IEC 60068-2-36 * Environmental testing - Part 2: Tests — Test Fdb: Random vibration wide band — Reproducibility Medium

3 Definitions

For the purposes of this standard the following definitions apply.

3.1 line

any metallic (conductive) pipe, wire or cable

3.2 locator

any device or system for determining the position of buried lines

3.3 target line

a particular line that the user is trying to locate

3.4 signal

an alternating magnetic field resulting from the flow of alternating electric current

3.5 passive signal

a signal originating from a source other than a transmitter which emanates from lines, e.g. 50 Hz power energy, re-radiated VLF energy and emission from lines carrying data

3.6 receiver

the part of a locator which detects a signal and responds to changes in the signal

* CS note: Replaced by IEC 60068-2-64

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