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Temperaturregistreringsudstyr i tilknytning til transport, opbevaring og distribution af temperaturfølsomme varer – Prøvning, ydeevne og egnethed

Temperature recorders for the transport, storage and distribution
of temperature sensitive goods – Tests, performance, suitability

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EUROPÄISCHE NORM

August 2018

ICS 17.200.20; 67.260

Supersedes EN 12830:1999

English Version

Temperature recorders for the transport, storage and distribution of temperature sensitive goods - Tests, performance, suitability

Enregistreurs de température pour le transport, le stockage et la distribution des marchandises thermosensibles - Essais, performance, aptitude à l'emploi

Temperaturregistriergeräte für den Transport, die Lagerung und die Verteilung von temperaturempfindlichen Produkten - Prüfungen, Leistung, Gebrauchstauglichkeit

This European Standard was approved by CEN on 2 March 2018.

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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Contents

Page

European foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Concepts	9
4.1 General	9
4.2 Temperature recorder elements	10
4.3 Temperature recorder architecture (or configuration)	10
4.3.1 General	10
4.3.2 Monolithic instrument	11
4.3.3 Monolithic instrument with external relevant data	11
4.3.4 Temperature recorder with digital probes	12
4.3.5 Temperature recorder on the cloud	13
5 Requirements	14
5.1 General	14
5.2 Measuring range	15
5.3 Protection of the data from manipulation	15
5.3.1 General	15
5.3.2 Audit trail	15
5.3.3 Clearly readable data copies	15
5.3.4 Safekeeping of accessibility of the data	15
5.3.5 Safekeeping of readability of the data	15
5.3.6 Safekeeping of correctness of the data	15
5.3.7 Access restrictions	16
5.3.8 Detailed documentation of the software	16
5.4 Locking of settings	16
5.5 Recording	16
5.5.1 General	16
5.5.2 Traceability	16
5.5.3 Chart only for mechanical recorder	16
5.6 Autonomous power supply	17
5.7 Degree of protection provided by the enclosure	17
5.8 Electrical safety (if applicable)	17
5.9 Operating characteristics linked to external electrical influences	17
5.9.1 External supply voltage (if applicable)	17
5.9.2 Autonomous supply (if applicable)	18
5.9.3 Frequency (AC) (if applicable)	18
5.9.4 Power cut-offs	18
5.9.5 Electrical power disturbances and susceptibility to radiated electromagnetic field	18
5.10 Metrological characteristics and usage profiles	18
5.10.1 General	18
5.10.2 Metrological characteristics	18
5.10.3 Usage profiles	19
5.11 Data security	19
5.12 Software verification levels	20
6 Test methods	20
6.1 Test list	20
6.2 General conditions for tests	22
6.2.1 Pre-tests adjustments	22
6.2.2 Normal atmospheric conditions	22
6.2.3 Reference conditions	22

This is a preview of "DS/EN 12830:2018". [Click here to purchase the full version from the ANSI store.](#)

6.3	Determination of temperature measurement error.....	22
6.3.1	Test method.....	22
6.3.2	Reading the recording.....	23
6.3.3	Expression of results.....	23
6.4	Determination of response time.....	23
6.5	Determination of time recording error.....	23
6.6	Action of influence quantities.....	24
6.6.1	General.....	24
6.6.2	Variation in voltage supply (if applicable).....	24
6.6.3	Influence of ambient temperature.....	24
6.6.4	Temperature testing under storage and transport conditions for the recorder.....	25
6.6.5	Shock resistance test (if applicable).....	25
6.6.6	Mechanical vibrations (if applicable).....	26
6.6.7	Degrees of protection provided by enclosures (IP Code).....	26
6.6.8	Electrical safety (if applicable).....	26
6.6.9	Dielectric strength (if applicable).....	26
6.7	Software test.....	26
6.7.1	Test objective.....	26
6.7.2	Test procedure.....	27
7	Conditions of acceptance.....	31
7.1	Requirements.....	31
7.2	Operating error limits.....	31
8	Marking.....	31
9	Initial and periodic verification.....	31
Annex A (normative) Software testing.....		32
Annex B (informative) Manufacturer software test form.....		63
Annex C (informative) Example of data form describing suitability for use of equipment of a specific series (to be filled in by the manufacturer).....		82
Annex D (informative) Expected operation time and storage capacity.....		83
Annex E (informative) Required access to recorded data or functions is given in Table E.1.....		84

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European foreword

This document ([EN 12830:2018](#)) has been prepared by Technical Committee CEN/TC 423 "Means of measuring and/or recording temperature in the cold chain", 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 February 2019 and conflicting national standards shall be withdrawn at the latest by February 2019.

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

This document supersedes [EN 12830:1999](#).

The standard has been completely revised and updated to the state of the art as follows:

- Scope was enlarged, i.e. location of sensors of the recorder with respect to types of usage are included now;
- Update of Clause 2 "Normative references";
- Update of Clause 3 "Terms and definitions";
- Clause 4 "Concepts" was added;
- Clause 5 "Requirements" was enlarged, i.e. subclause 5.3 "Protection of the data from manipulation" and 5.12 "Software verification levels" were added and furthermore Clause 5 has been updated, e.g. values for maximum relative timing error and response time ;
- New subclause 6.7 "Software test" and the related Annex A "Software testing" and Annex B "Manufacturer software test form" were added;
- New Annex D "Expected operation time and storage capacity" and Annex E "Required access to recorded data or functions" were added.

This European Standard is a document meeting the objectives of Directives:

- 92/1/EEC of January 13, 1992 of the Commission on the monitoring of temperatures in the means of transport, warehousing and storage of quick-frozen foodstuffs intended for human consumption;
- 93/43/EEC of June 14, 1993 of the Council of the hygiene of foodstuffs and in particular on "temperature control criteria".

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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1 Scope

This document specifies the technical and functional characteristics of temperature recorders for the transport, storage and distribution of temperature sensitive goods between $-80\text{ }^{\circ}\text{C}$ and $+85\text{ }^{\circ}\text{C}$.

It specifies the test methods which allow the determination of the equipment's conformity, suitability and performance requirements.

It applies to the whole temperature recording system. The temperature sensor(s) may be integrated into the recorder or be remote from it [external sensor(s)].

It gives some requirements with regards to the location of sensors of the recorder with respect to types of usage such as transport, storage and distribution.

NOTE — Examples for the transport, storage and distribution of temperature sensitive goods between $-80\text{ }^{\circ}\text{C}$ and $+85\text{ }^{\circ}\text{C}$ are chilled, frozen and deep frozen, quick frozen food, ice cream, fresh and hot food, pharmaceuticals, blood, organs, chemicals, biologicals, electronic and mechanical devices, flowers, plants, bulbs, raw materials and liquids, animals, art and furnishing.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

[EN 13486](#), *Temperature recorders and thermometers for the transport, storage and distribution of chilled, frozen, deep-frozen/quick-frozen food and ice cream - Periodic verification*

[EN 60529](#), *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

[EN 61000-6-2](#), *Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments (IEC 61000-6-2)*

[EN 61000-6-3](#), *Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3)*

[EN 61010-1](#), *Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements (IEC 61010-1)*

[ISO/IEC 17025](#), *General requirements for the competence of testing and calibration laboratories*

[ISO/IEC 27001](#), *Information technology - Security techniques - Information security management systems - Requirements*