This is a free page sample. Access the full version online.

National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 13190:2002

ICS 17.200.20

DIAL THERMOMETERS

National Standards
Authority of Ireland
Dublin 9
Ireland

Tel (01) 807 3800
Tel (01) 807 3838

This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on January 12, 2002

NO COPYING WITHOUT NSAI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

© NSAI 2002

Price Code H

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

This is a free page sample. Access the full version online.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13190

November 2001

ICS 17.200.20

English version

Dial thermometers

Thermomètres à cadran

Zeigerthermometer

This European Standard was approved by CEN on 28 September 2001.

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 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 Management Centre has the same status as the official versions.

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

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

© 2001 CEN *All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.*

Ref. No. EN 13190:2001 E

This is a free page sample. Access the full version online.

Contents

page

Foreword 2
1 Scope 2
2 Normative references 3
3 Terms and definitions 3
4 Nominal sizes 4
6 Accuracy classes 5
7 Dimensions 5
8 Requirements 10
9 Testing 16
10 Designation 16
Annex A (informative) **Selection and installation recommendations** 17
Bibliography 19

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 141 "Pressure gauges - Thermometers - Means of measuring and/or recording temperature in the cold chain", the secretariat of which is held by AFNOR.

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 May 2002, and conflicting national standards shall be withdrawn at the latest by May 2002.

This document includes a Bibliography.

Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies requirements and testing for dial indicating thermometers using sensing methods of gas expansion (symbol **GE**), liquid expansion (symbol **LE**) and bimetallic strip (symbol **BM**). Nominal sizes are from 40 to 160, and temperature measurement from -100 °C to +700 °C.

Thermometers specified have circular scales, and are for industrial use only.

Thermometers of square form are also covered by this standard except for case, scale and pointer dimensions.

Annex A includes recommendations for selection and installation.

This standard does not apply to thermometers for medical use nor to thermometers with electrical limit contact devices.

This is a free page sample. Access the full version online.

2 Normative references

This European Standard incorporates by dated or undated references, 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 this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ANSI/ASME B1.20.1, *Pipe threads – General purpose (inch).*

EN 22768-1, *General tolerances – Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1 : 1989).*

ISO 68-1, *ISO general purpose screw threads – Basic profile – Part 1: Metric screw threads.*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads – Part 1: Dimensions, tolerances and designation.*

ISO 10102, *Assembly tools for screws and nuts – Double-headed open-ended engineers' wrenches.*

International vocabulary of basic and general terms in metrology (VIM). BIPM, IEC, IFCC, ISO, IUPAC, IUPAP, OIML, 2nd. Edition 1993.

3 Terms and definitions

For the purpose of this European Standard the terms and definitions given in the International vocabulary of basic and general terms in metrology (VIM) and the following terms and definitions apply.

3.1
dial indicating thermometer
instrument consisting of head and temperature detecting element or stem connected together by a rigid stem or, except for a bimetallic thermometer, by a flexible capillary

3.2
bimetallic thermometer (BM)
dial indicating thermometer operated by differential expansion strip, helix or coil

3.3
gas expansion thermometer (GE)
dial indicating thermometer operating on the principle of change in pressure of a fixed volume of gas in response to temperature change

3.4
liquid expansion thermometer (LE)
dial indicating thermometer operating on the principle of liquid volume expansion in response to temperature change

3.5
temperature detecting element
that part of a thermometer which supports and includes the sensitive portion

3.6
sensitive portion of temperature detecting element
that part of the temperature detecting element which contains the major portion of the temperature sensitive fluid or bimetal strip

This is a free page sample. Access the full version online.

3.7
thermometer insertion length
distance that temperature detecting element is inserted into process medium

3.8
thermometer movement
assembly by means of which the expansion of the fluid used or bimetallic strip are transformed and enlarged into an angular variation

3.9
thermometer connection
part by which the dial indicating thermometer can be coupled to the temperature tapping of the plant, pipework or equipment

3.10
thermometer compensation
apparatus fitted inside head and/or capillary to minimise errors due to ambient temperature variations

3.11
adjustable pointer
pointer with an adjustable device

3.12
nominal size (thermometer)
conventional alpha-numerical designation relating to the size of the thermometer

4 Nominal sizes

Nominal sizes of the thermometers are as follows: 40, 50, 63, 80, 100, 130, 150 and 160.

See Table 1 for dimensions.

5 Nominal ranges

The degree Celsius abbreviated to °C is the preferred unit of temperature measurement. The following nominal ranges are specified:

from	0 °C	to	60 °C	from	-20 °C	to	+40 °C
from	0 °C	to	80 °C	from	-20 °C	to	+60 °C
from	0 °C	to	100 °C	from	-20 °C	to	+120 °C
from	0 °C	to	120 °C	from	-30 °C	to	+30 °C
from	0 °C	to	160 °C	from	-30 °C	to	+50 °C
from	0 °C	to	200 °C	from	-30 °C	to	+70 °C
from	0 °C	to	250 °C	from	-40 °C	to	+40 °C
from	0 °C	to	300 °C	from	-40 °C	to	+60 °C
from	0 °C	to	400 °C	from	-100 °C	to	+60 °C
from	0 °C	to	500 °C				
from	0 °C	to	600 °C				
from	0 °C	to	700 °C				
from	50 °C	to	650 °C				
from	100 °C	to	700 °C				

NOTE Not all types of thermometer are suitable for all ranges (see also Table A.1).

SAI GLOBAL

This is a free preview. Purchase the entire publication at the link below:

Product Page

Looking for additional Standards? Visit Intertek Inform Infostore

Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation