SVENSK STANDARD
SS-EN ISO 13102:2012

Fastställd/Approved: 2012-08-29
Publicerad/Published: 2012-09-05
Utgåva/Edition: 1
Språk/Language: engelska/English
ICS: 17.040.30

Geometriska produktspecifikationer (GPS) – Mätutrustning för dimensionsmätning med digital display – Konstruktion och metrologiska egenskaper (ISO 13102:2012)

Geometrical product specifications (GPS) – Dimensional measuring equipment: Electronic digital-indicator gauge – Design and metrological characteristics (ISO 13102:2012)

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Denna standard är framtagen av kommittén för Mätteknik GPS och Ytstruktur, SIS/TK 507/AG 6.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 13102

August 2012

ICS 17.040.30

English Version

Geometrical product specifications (GPS) - Dimensional measuring equipment: Electronic digital-indicator gauge - Design and metrological characteristics (ISO 13102:2012)

Spécification géométrique des produits (GPS) - Instruments de mesurage dimensionnel: Comparateurs à tige rentrante à affichage numérique - Caractéristiques de conception et caractéristiques métrologiques (ISO 13102:2012)

Geometrische Produktspezifikation und -prüfung (GPS) - Längenmessgeräte - Konstruktionsmerkmale und messtechnische Merkmale für elektronische digitale Messuhren (ISO/FDIS 13102:2012)

This European Standard was approved by CEN on 20 July 2012.

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Ref. No. EN ISO 13102:2012: E

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Foreword

This document (EN ISO 13102:2012) has been prepared by Technical Committee ISO/TC 213 "Dimensional and geometrical product specifications and verification" in collaboration with Technical Committee CEN/TC 290 “Dimensional and geometrical product specification and verification”, 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of an identical text or by endorsement, at the latest by February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

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.

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Endorsement notice

The text of ISO 13102:2012 has been approved by CEN as a EN ISO 13102:2012 without any modification.

Introduction

This International Standard is a Geometrical Product Specification (GPS) standard and is to be regarded as a general GPS standard (see ISO/TR 14638). It influences chain link 5 of the chain of standards on size and distance in the general GPS matrix.

The ISO/GPS Masterplan given in ISO/TR 14638 gives an overview of the ISO/GPS system of which this standard is a part. The fundamental rules of ISO/GPS given in ISO 8015 apply to this standard, and the default decision rules given in ISO 14253-1 apply to specifications made in accordance with this standard, unless otherwise indicated.

For more detailed information of the relation of the standard to other standards and the GPS matrix model, see Annex D.

Geometrical product specifications (GPS) — Dimensional measuring equipment: Electronic digital-indicator gauge — Design and metrological characteristics

1 Scope

This International Standard specifies the most important design and metrological characteristics of electronic digital-indicator gauges.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 14253-1, *Geometrical Product Specifications (GPS) — Inspection by measurement of workpieces and measuring equipment — Part 1: Decision rules for proving conformance or non-conformance with specifications*

ISO 14253-2, *Geometrical product specifications (GPS) — Inspection by measurement of workpieces and measuring equipment — Part 2: Guide to the estimation of uncertainty in GPS measurement, in calibration of measuring equipment and in product verification*

ISO 14978:2006, *Geometrical product specification (GPS) — General concepts and requirement for GPS measuring equipment*

ISO/IEC Guide 98-3, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 14978, and the following apply.

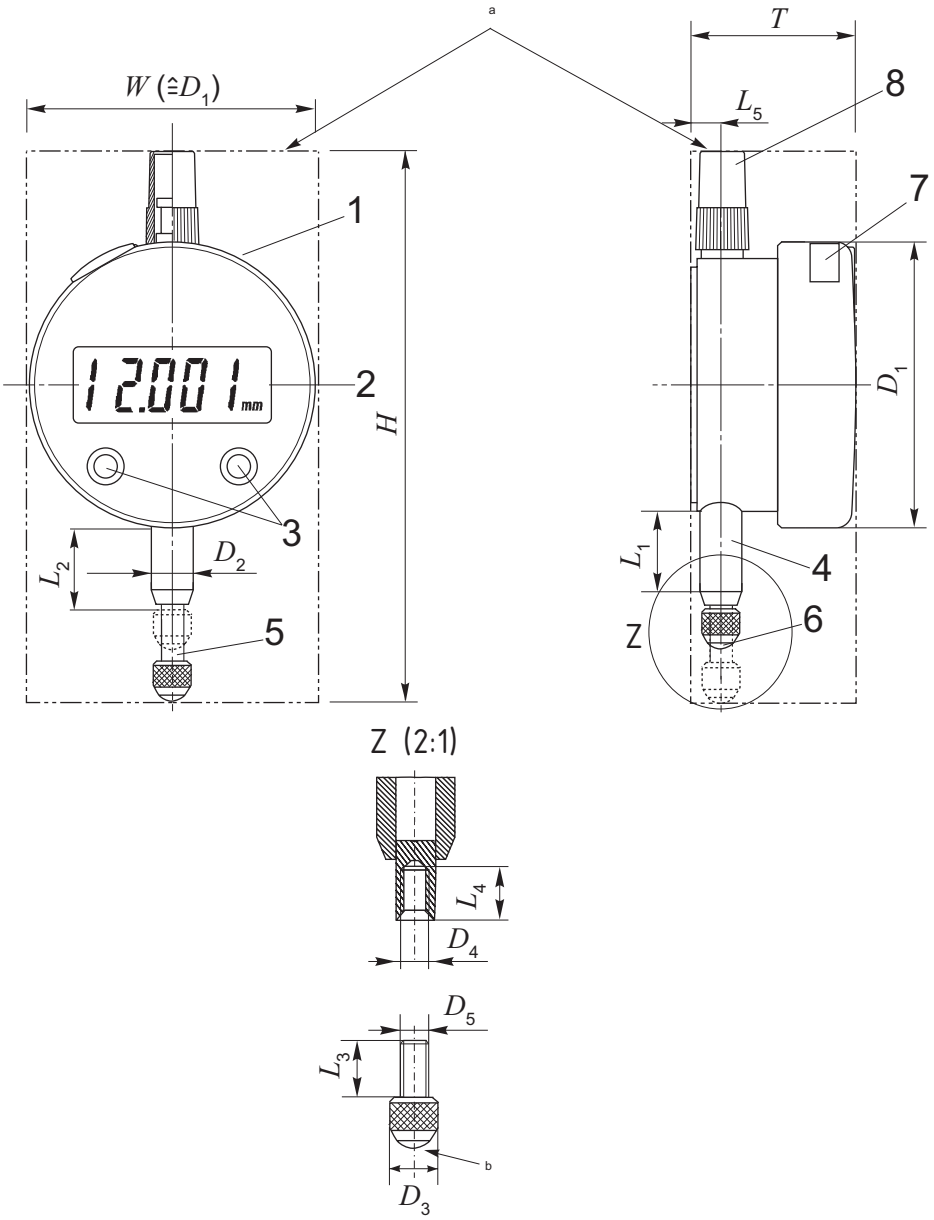
3.1
electronic digital-indicator gauge
measuring instrument in which the axial displacements of a plunger are obtained by a transducer and converted into an electronic signal by suitable electronic means and transmitted to a physically integrated digital display

4 Design characteristics

4.1 General design and nomenclature

The general design and workmanship shall be such that the performance of the electronic digital-indicator gauge complies with the requirements of this International Standard.

The design and rigidity of the electronic digital-indicator gauge shall be such that the freedom of movement of the plunger is not impaired by clamping the stem of the instrument, providing that such clamping is carried out in a proper manner. Where alternative methods of mounting are provided, e.g. attaching the lug on the back plate, the design and rigidity of that mounting shall be such that the performance is not impaired.



Key

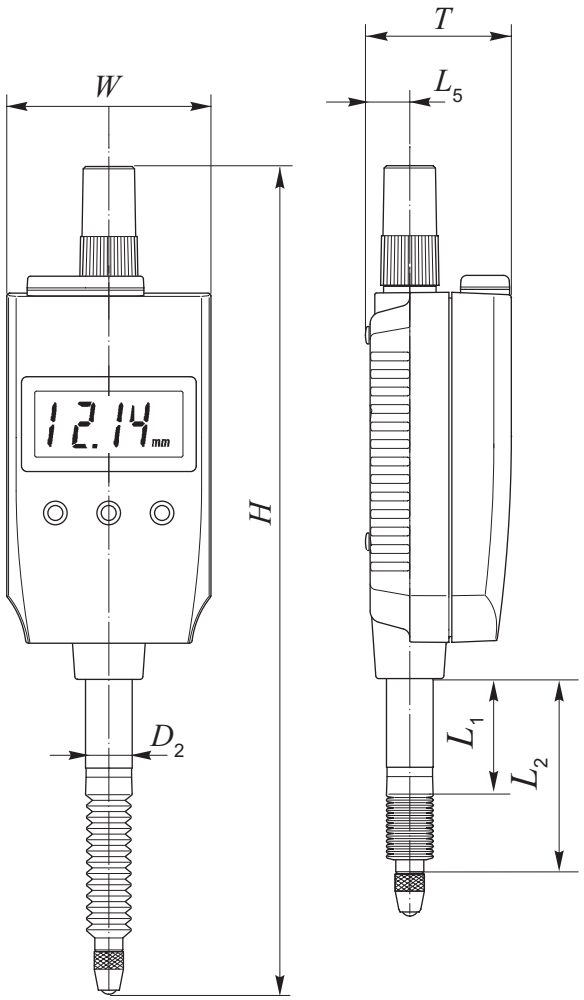
1	bezel	5	plunger	W	width
2	display	6	contact element	H	height
3	operating buttons	7	data output — optional	T	thickness
4	stem	8	protection cap — optional		

a Overall dimension.

b Measuring face.

See Table 1 for the D and L dimensions.

Figure 1 — Nomenclature and general design of an electronic digital-indicator gauge



See Table 1 for the D and L dimensions.

Figure 2 — Nomenclature and general design of electronic digital-indicator gauge (rectangular type)

4.2 Main dimensions

The electronic digital-indicator gauge shall conform to the dimensions specified in Figures 1 and 2 and Table 1 to ensure interchangeability.