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I.S. EN 13352:2012

Specification for the performance of automatic tank contents gauges

I.S. EN 13352:2012

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Supersedes EN 13352:2002

English Version

Specification for the performance of automatic tank contents gauges

Spécification de performance des jauges automatiques de niveau de réservoir

Anforderungen an automatische Tankfüllstandmessgeräte

This European Standard was approved by CEN on 28 January 2012.

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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Foreword

This document (EN 13352:2012) has been prepared by Technical Committee CEN/TC 393 “Equipment for storage tanks and for filling stations”, 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of an identical text or by endorsement, at the latest by September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.

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 13352:2002.

The main changes with respect to the previous edition are listed below:

— test liquid changed;

— requirement concerning the compatibility of the materials in contact with fuels (including ethanol blends and biodiesel) and/or their vapour added;

— test equipment modified;

— test procedures modified to reduce the number of tests without affect the overall performances; some procedures are performed in climatic chamber;

— some notes about the performance of water indication added that may be affected if the fuel to monitor is an ethanol blend;

— information concerning environmental aspects included.

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, 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.

Introduction

The principal function of a tank gauge is to measure the level of liquid contained in a storage tank without the need to access the tank and take manual dip readings. The gauge measures liquid parameters, which can include height, mass, temperature, density and pressure. These can then be used to determine the tank's content. Methods of establishing tank's content, e.g. direct volume measurement, are not addressed in this standard.

The increasing need for continuous inventory control for security, effective site operation and environmental protection has made the use of tank gauges a practical solution for any tank installation. In addition, in the case of volatile products, the advent of vapour emission control makes access to the tank for dipping purposes increasingly difficult.

Automatic tank gauging systems are devices which can interface with other measuring equipment and can be capable of providing one or more of the following functions:

Basic gauging

Where the gauge is used solely to confirm that there is sufficient ullage to accept delivery of a quantity of product into the tank or where the gauge is used solely to measure the liquid contents of the tank.

Inventory control

Where the tank contents information is used for stock accounting purposes. This can be transferred manually or, where the gauge forms part of an integrated system, automatically.

Automatic reconciliation

Where the tank contents information is used together with measured additions to and depletions from the storage tanks contents in a defined time period to identify possible discrepancies.

Automatic Calibration

Where the tank level information in connection with refuel volume is used to calculate tank calibration data.

1 Scope

This European Standard specifies the minimum performance requirements for various classes of automatic tank gauges which are limited to static tanks of shop fabricated manufacture both metallic and non metallic, underground and above ground which do not exceed 5 m in height.

It is applicable to gauges for fuels (products) which are flammable, having a flash point up to but not exceeding 100 °C, stored at premises (e.g. filling stations) at which fuel is dispensed for use in vehicles and other forms of transportation. This European Standard applies to gauges suitable for use at ambient temperatures and subject to normal operational pressure variations.

Gauging of liquefied gases are not covered by this standard.

This European Standard relates to the measurement of product level, measurement of product temperature and detection of the presence of free water. The detection of free water may be compromised for Alcohol blended fuels.

NOTE 1 This standard is not intended to cover safety functionalities (i.e. overfill prevention, leak detection, etc.). Further Standards apply.

NOTE 2 This standard is not intended to cover legal metrology requirements.

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.

EN 228, *Automotive fuels — Unleaded petrol — Requirements and test methods*

EN 590:2009+A1:2010, *Automotive fuels — Diesel — Requirements and test methods*

EN 14214, *Automotive fuels — Fatty acid methyl esters (FAME) for diesel engines — Requirements and test methods*

EN 15376, *Automotive fuels — Ethanol as a blending component for petrol — Requirements and test methods*

EN 60296, *Fluids for electrotechnical applications — Unused mineral insulating oils for transformers and switchgear (IEC 60296)*

EN ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1
automatic tank gauge (ATG)
device capable, as a minimum, of providing a measurement of the level of liquid contained in a storage tank without the need for manual access into the tank

3.2
ullage
product quantity which can safely be delivered into the tank without running the risk of exceeding the maximum safe filling capacity