INTERNATIONAL STANDARD

ISO 18132-2

First edition
2008-03-15

Refrigerated light hydrocarbon fluids — General requirements for automatic level gauges —

Part 2: Gauges in refrigerated-type shore tanks

Hydrocarbures légers réfrigérés — Exigences générales pour jauges de niveau automatiques —

Partie 2: Jauges pour réservoirs côtiers de type réfrigéré

Reference number
ISO 18132-2:2008(E)

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Published in Switzerland

Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 18132-5 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*, Subcommittee SC 5, *Measurement of refrigerated hydrocarbon and non-petroleum based liquefied gaseous fuels*.

This part of ISO 18132 together with ISO 18132-1 cancels and replaces ISO 8309:1991, ISO 10574:1993 and ISO 13689:2001, which have been technically revised.

ISO 18132 consists of the following parts, under the general title *Refrigerated light hydrocarbon fluids — General requirements for automatic level gauges*:

— *Part 1: Gauges onboard ships carrying liquefied gases*

— *Part 2: Gauges in refrigerated-type shore tanks*

Introduction

Large quantities of light hydrocarbon liquids consisting of compounds having primarily one to four carbon atoms are stored and transported in bulk as refrigerated liquids at near-atmospheric pressure. These liquids can be divided into two main groups: liquefied natural gas (LNG) and liquefied petroleum gas (LPG).

In general, the quantity of these light hydrocarbons transferred is determined and recorded on the basis of volume and/or mass, with the energy content calculated in calorific units. If the static-measurement method is used, the liquid level in the tank is one of the variables which most significantly influences the determination.

In addition to the level measurement, the following parameters are needed to determine the quantity and energy content of the light hydrocarbons in a bulk storage tank:

a) tank calibration table;

b) composition of and/or physical data for the liquefied gases and vapour;

c) vapour pressure, vapour and liquid temperature;

d) volume of liquid in the pipelines;

e) status of the flush valves for connecting lines.

The various error factors that influence the quantification based on measurements of liquid level are considered in Annex A.

It is necessary to gauge shore tanks for one or more of the following reasons:

a) tank farm operations and process control;

b) tank inventory control;

c) where parties involved require custody transfer on shore tanks.

ISO 18132-2 removes technical dependency and ensures that the market is open to all newcomers in this industrial sector.

Refrigerated light hydrocarbon fluids — General requirements for automatic level gauges —

Part 2:
Gauges in refrigerated-type shore tanks

1 Scope

This part of ISO 18132 establishes the general requirements for the specification, installation and calibration/verification testing of automatic level gauges (ALG) used for refrigerated light hydrocarbon fluids, i.e., LNG and LPG, stored in bulk storage tanks on shore at pressures close to atmosphere.

This part of ISO 18132 is not applicable to pressurized shore tanks.

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.

OIML R 85, *Automatic level gauges for measuring the level of liquid in fixed storage tanks*

3 Terms and definitions

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

3.1
automatic level gauge
ALG
level gauge that automatically measures the liquid level in a tank, either by innage or outage (ullage)

NOTE An ALG is also commonly referred to as an automatic tank gauge (ATG).

3.2
datum level
tank lowest level that corresponds to zero level and zero volume in tank table

3.3
hazardous area
area in which an explosive gas atmosphere is present, or can be expected to be present, in quantities such as to require special precautions for the construction, installation and use of apparatus

[IEC 60079-10]