

This document is a preview generated by EVS

Tanks for transport of dangerous goods - Service equipment for tanks - Overfill prevention systems for liquid fuels



EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13922:2020+A1:2022 sisaldab Euroopa standardi EN 13922:2020+A1:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 13922:2020+A1:2022 consists of the English text of the European standard EN 13922:2020+A1:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 07.09.2022.	Date of Availability of the European standard is 07.09.2022.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.300, 23.020.20

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele. Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation: Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Tanks for transport of dangerous goods - Service equipment for tanks - Overfill prevention systems for liquid fuels

Citernes destinées au transport de matières dangereuses - Équipement de service pour citernes - Dispositifs limiteurs de remplissage pour carburants pétroliers liquides

Tanks für die Beförderung gefährlicher Güter - Bedienungsausrüstung von Tanks - Überfüllsicherungssysteme für flüssige Kraft- und Brennstoffe

This European Standard was approved by CEN on 1 December 2019 and includes Amendment 1 approved by CEN on 10 August 2022.

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.

CEN members are the national standards bodies of 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3
Introduction	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions	6
4 Functions.....	8
5 Major components	8
5.1 Tank-vehicle mounted equipment	8
5.2 Equipment fitted at the gantry	8
5.3 Optional equipment	8
6 Characteristics	8
6.1 Overfill prevention system working characteristics.....	8
6.2 Sensors.....	10
6.3 Overfill prevention controller characteristics	11
6.4 Cable, plug and socket interface	12
7 Testing.....	13
7.1 General.....	13
7.2 Type tests	13
7.3 Production tests.....	14
8 Safety integrity level (SIL).....	14
9 Marking.....	15
10 Installation, operation and maintenance instructions.....	15
Annex A (normative) Electrical specifications	16
Bibliography.....	34

European foreword

This document (EN 13922:2020+A1:2022) has been prepared by Technical Committee CEN/TC 296 "Tanks for the transport of dangerous goods", 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 March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

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 A1 EN 13922:2020 A1.

This document includes Amendment 1 approved by CEN on 10 August 2022.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

In comparison with the 2011 edition, the following fundamental changes were made:

- safety integrity level (SIL) added;
- requirements and tests for electromagnetic compatibility (EMC) revised;
- temperature for the sensors extended to +60 °C;
- electrical requirements in 6.3.7 expanded for clarification;
- waveform signal changed to waveform pulse throughout the standard;
- Annex A tables and figures revised to reflect installed base;
- the word "peak" was added in Table A.3 before "sensor current" only for clarification;
- referred standards updated.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

The overfill prevention system prevents the maximum filling level of a compartment of a tank-vehicle from being exceeded by interrupting the filling operation on the loading site.

It is not the function of an overfill prevention system to prevent volume or weight overloading. The function of the overfill prevention system is the final means of containing the loaded product within a compartment and preventing a dangerous condition. It is therefore of critical importance that all components have a high degree of reliability and that all European gantries provide a compatible system with the tank-vehicles.

Not all the components of an overfill prevention system are necessarily supplied by one manufacturer but may include cross-compatible parts supplied by different manufacturers/suppliers. However, cross-compatibility does not mean interchangeability.

1 Scope

This document specifies the following points regarding the minimum requirements for an overfill prevention system:

- functions;
- major components;
- characteristics;
- test methods.

This document is applicable to overfill prevention systems for liquid fuels having a flash point up to but not exceeding 100 °C, excluding liquefied petroleum gas (LPG).

NOTE Vapour path detection is not part of this standard but can be provided as an option.

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 590, *Automotive fuels — Diesel — Requirements and test methods*

EN 60079-0, *Explosive atmospheres — Part 0: Equipment — General requirements (IEC 60079-0)*

EN 60079-11, *Explosive atmospheres — Part 11: Equipment protection by intrinsic safety “i” (IEC 60079-11)*

EN 60079-14, *Explosive atmospheres — Part 14: Electrical installations design, selection and erection (IEC 60079-14)*

EN 61000-4-3, *Electromagnetic compatibility (EMC) — Part 4-3: Testing and measurement techniques — Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3)*

EN 61000-6-4, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments (IEC 61000-6-4)*

EN 61508-1, *Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 1: General requirements (IEC 61508-1)*

Ⓐ₁ deleted text Ⓐ₁