**INTERNATIONAL STANDARD** 

ISO/FDIS 4266--

:2024-03(en)

ISO/TC 28/SC

Secretariat: BSI

Date: 2024-07-01

Petroleum and liquid petroleum products — Measurement of level and temperature in storage tanks by automatic methods —

Part 3:

Measurement of level in pressurized storage tanks (non-refrigerated)

Pétrole et produits pétroliers liquides — Mesurage du niveau et de la température dans les réservoirs de stockage par méthodes automatiques —

Partie 3: Mesurage du niveau dans les réservoirs de stockage sous pression (non réfrigérés

(https://standards.iteh Document Preview

ISO/FDIS 42.66-3

https://standards.iteh.ai/catalog/standards/iso/3e6d942b-99eb-4a9b-bbc1-b8b21dd4ae01/iso-fdis-4266-3

**Style Definition:** Heading 1: Indent: Left: 0 pt, First line: 0 pt, Tab stops: Not at 21.6 pt

**Style Definition:** Heading 2: Font: Bold, Tab stops: Not at 18 pt

Style Definition: Heading 3: Font: Bold

Style Definition: Heading 4: Font: Bold

Style Definition: Heading 5: Font: Bold

Style Definition: Heading 6: Font: Bold

Style Definition: ANNEX

Style Definition: AMEND Terms Heading: Font: Bold

**Style Definition:** AMEND Heading 1 Unnumbered:

Font: Bold

**Style Definition:** zzCover: Font: 12 pt, Bold, Right, Indent: Left: 0 pt, Line spacing: Multiple 0.99 li

**Style Definition:** zzSTDTitle: Font: 16 pt, Font color: Blue, Justified, None, No bullets or numbering, Don't keep with next, Hyphenate, Tab stops: Not at 27 pt + 35 pt

Style Definition: IneraTableMultiPar: Font: 12 pt

Formatted: Font: Not Bold, French (Switzerland)

Formatted: Font: Not Bold, French (Switzerland)

Formatted: French (Switzerland)

**Formatted:** Don't adjust space between Latin and Asian text, Don't adjust space between Asian text and numbers

Formatted: Font: Not Bold

Formatted: Font: Not Bold, Italic

Formatted: Font: Not Bold

ISO/DIS 4266-3:2024(E) Formatted: Centered

## iTeh Standards (https://standards.iteh.ai) Document Preview

ISO/FDIS 4266-3

https://standards.iteh.ai/catalog/standards/iso/3e6d942b-99eb-4a9b-bbc1-b8b21dd4ae01/iso-fdis-4266-3

Edited DIS-1903T BE USED FOR FINAL DRAFT

Formatted: Centered

### ISO/DIS 4266-3:2024(E)

© ISO 2024

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO Copyright Office

CP 401 • CH-1214 Vernier, Geneva

Phone: + 41 22 749 01 11

Email: copyright@iso.org

Website: www.iso.org

Published in Switzerland.

# iTeh Standards (https://standards.iteh.ai) Document Preview

ISO/FDIS 4266-3

https://standards.iteh.ai/catalog/standards/iso/3e6d942h-99eh-4a9h-bbc1-b8b21dd4ae01/iso-fdis-4266-3

© ISO 2024 – All rights reserved

Edited DIS - MUST BE USED FOR FINAL DRAFT

Formatted: Centered

Formatted: Centered

#### BS ISO 4266-3:2002 1507DIS 4266-3:2024(E)

© ISO 2024 - All rights reserved

_					
1.	กา	٦t	0	ni	tc

For	eword	ix
	Petro	leum and liquid petroleum products — Measurement of level and temperature in storage tanks by automatic methods — Part 3: Measurement of level in pressurized storage tanks (non-refrigerated) — — — — — — — — — — — — — — — — — — —
2	Scop	e1
3	-Norn	native reference1
4	<del>Tern</del>	ns and definitions1
5—	—Prec	autions 2
	5.1	Safety precautions 2
		Equipment precautions 3
		—General precautions3
6—	—Accu	racy4
		—Intrinsic error of ALGs
	6.2	—Calibration prior to installation4
	6.3	Error caused by installation and operating conditions
	6.4	Overall accuracy4
<del>6.4.1</del>		General Document Preview
6.4.2		Use of ALGs for fiscal/custody transfer applications4
7	—Insta	llation of ALGs5
	7.1	General 5
	7.2	—Mounting location5
	7.3	—Manufacturer's requirements
	7.4.	Installation
7.4.1		
		Installation of intrusive ullage ALGs (e.g. float operated and serve operated type) n still wells5
<del>7.4.2</del>	•	Installation of intrusive ullage ALGs (e.g. float and serve operated types) using guide
<del>wire</del> 743	_	—7  —Installation of non-intrusive ullage ALGs (e.g. microwave or radar) mounted on still-
<del>v.4.3</del>	•	— installation of hon-intrusive unage Alos (e.g. microwave or radar) modified on sun- —9
7.4.4		Location of ALG11
7.4.5		Installation of ALGs other than those described in ISO 4266-311
	7.5	Still-well design11
88	—Initia	al setting and initial verification of ALGs in the field
	8.1	Preparation12

Formatted: Header, Line spacing: single

Formatted: Font: Bold, English (United States)

Formatted: Font: 1 pt

Formatted: Body Text, Line spacing: Multiple 0.06 li

## ISO/DIS 4266-3:2024(E)

8.1.1	L Check for critical distances	<u>1</u> 2	
8.1.2	2 Check for free movement of level-sensing element of intrusive ALGs	13	
8.1.3	Check for influences of changes in physical and electrical properties of the p	roduct	
<del>(vap</del>	<del>our/liquid)</del>	13	
	8.2 Initial setting	13	
8.2.1		13	
8.2.2	Setting of intrusive ullage ALGs	13	
8.2.3	8	14	
8.2.4	Other ALGs not described in ISO 4266-3	14	
	8.3—Initial field verification	15	
8.3.1		efined.	
8.3.2	2 Verification procedure	15	
8.3.3		15	
	8.4—7.4 Record keeping	15	
9	—8 Subsequent verification of ALGs	16	
	9.1 — General	16	
	9.2 Frequency of subsequent verification	16	
	9.3 Procedure	16	
	9.4 Tolerance for subsequent verification of ALGs in fiscal/custody transfer application		
		7.7	
	9.5 Comparison of the ALG readings from current and previous verifications	16	
	9.6—Adjustment in subsequent verification	17	
<del>10-</del>	—Data communication and receiving	17	
	standards.iteh.ai/catalog/standards/iso/3e6d942b-99eb-4a9b-bl <del>liography</del> 18 <u>Fo</u>		
1	Scope	······································	
2			
<u> </u>	Normative reference	L	
3	Terms and definitions	1	
4	Precautions	2	
	4.1 Safety precautions.	2	
	4.2 Equipment precautions	3	
	4.3 General precautions	3	
c	Accuracy		
<u>3</u>		<del> </del>	
	5.1 Intrinsic error of ALGs	<del>1</del>	
	5.2 Calibration prior to installation	<u></u> 4	

<u>5.3</u>	Error caused by installation and operating conditions
5.4	Overall accuracy
5.4.1	General
5.4.2	Use of ALGs for fiscal/custody transfer applications
6 Inst	tallation of ALGs
6.1	General
6.2	Mounting location
6.3	Manufacturer's requirements
6.4	Installation
6.4.1	Installation of intrusive ullage ALGs mounted on still-wells
	— Example of installation of an intrusive ullage ALG on a pressurized storage tank (with st
6.4.2	
Figure 2	Example of installation of an intrusive ullage ALG on a pressurized storage tank (with
wel	l) using guide wires
6.4.3	Installation of non-intrusive ullage ALGs (e.g. microwave or radar) mounted (
	9 — Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w
Figure 3	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w
Figure 3 - wel	9 — Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w I)
Figure 3 : wel 6.4.4 6.4.5	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w
Figure 3 - wel 6.4.4 6.4.5 6.5	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l)  Location of ALG
Figure 3 - wel 6.4.4 6.4.5 6.5	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l)  Location of ALG
Figure 3 - wel 6.4.4 6.4.5 6.5	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l)  Location of ALG
Figure 3 - wel  6.4.4  6.4.5  6.5  7 Init	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l) Location of ALG
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l) Location of ALG Installation of ALGs other than those described in this document Still-well design ial setting and initial verification of ALGs in the field Preparation
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1.1	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l)
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1.1 7.1.1 7.1.2 7.1.3	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l)
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1.1 7.1.1 7.1.2 7.1.3	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l)Location of ALG
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1 7.1.1 7.1.2 7.1.3 (vapour/l	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l)
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1 7.1.1 7.1.2 7.1.3 (vapour/l 7.2	9Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.ll)
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1 7.1.1 7.1.2 7.1.3 [vapour/l 7.2 7.2.1 7.2.2	— Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l)  Location of ALG  Installation of ALGs other than those described in this document  Still-well design  ial setting and initial verification of ALGs in the field  Preparation  Checking for critical distances  Checking for free movement of level-sensing element of intrusive ALGs  Checking for influences of changes in physical and electrical properties of the pliquid)  Initial setting  General  Setting of intrusive ullage ALGs
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1.1 7.1.1 7.1.2 7.1.3 (vapour/l 7.2 7.2.1 7.2.2 7.2.3	
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1 7.1.1 7.1.2 7.1.3 [vapour/l 7.2 7.2.1 7.2.2	— Example of installation of a non-intrusive ullage ALG on a pressurized storage tank (w.l)  Location of ALG  Installation of ALGs other than those described in this document  Still-well design  ial setting and initial verification of ALGs in the field  Preparation  Checking for critical distances  Checking for free movement of level-sensing element of intrusive ALGs  Checking for influences of changes in physical and electrical properties of the pliquid)  Initial setting  General  Setting of intrusive ullage ALGs
Figure 3 wel 6.4.4 6.4.5 6.5 7 Init 7.1.1 7.1.1 7.1.2 7.1.3 (vapour/l 7.2 7.2.1 7.2.2 7.2.3 7.2.4	
Figure 3: wel 6.4.4 6.4.5 6.5 7 Init 7.1.1 7.1.1 7.1.2 7.1.3 (vapour/l 7.2 7.2.1 7.2.2 7.2.3 7.2.4 7.3	

Formatted: Header, Line spacing: single

Formatted: Font: Bold, English (United States)

Formatted: Font: 1 pt

Formatted: Body Text, Line spacing: Multiple 0.06 li

## ISO/DIS 4266-3:2024(E)

8	Subse	equent verification of ALGs	<u>.</u> 1
	8.1	General	_1
	8.2	Frequency of subsequent verification	<u>.</u> 1
	8.3	Procedure	<u>.</u> 1
	8.4	Tolerance for subsequent verification of ALGs in fiscal/custody transfer application	<u>.</u> 1
	8.5	Comparison of the ALG readings from current and previous verifications	<u>.</u> 1
	8.6	Adjustment in subsequent verification	<u>.</u> 1
9	Data	communication and receiving	<u>.</u> 1
<u>Bib</u>	liograpl	hy	<u></u> 1

## iTeh Standards (https://standards.iteh.ai) Document Preview

ISO/FDIS 4266-3

https://standards.iteh.ai/catalog/standards/iso/3e6d942h-99eh-4a9h-bbc1-b8b21dd4ae01/iso-fdis-4266-3

© ISO 2024 – All rights reserved

Formatted: Centered

Formatted: Section start: New page, Header distance from edge: 39.7 pt

# iTeh Standards (https://standards.iteh.ai) Document Preview

ISO/FDIS 4266-3

https://standards.iteh.ai/catalog/standards/iso/3e6d942b-99eb-4a9b-bbcl-b8b2ldd4ae01/iso-fdis-4266-3

Edited DIS-1903T BE USED FOR FINAL DRAFT

Formatted: Centered

#### ISO/FDIS 4266-3:2024(en)

#### Formatted: Centered

### **Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see <a href="https://www.iso.org/directives/">www.iso.org/directives/</a>.

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <a href="www.iso.org/patents.www.iso.org/patents.">www.iso.org/patents.www.iso.org/patents.</a>. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>.

This document was prepared by Technical Committee ISO/TC 28, Petroleum and related products, fuels and lubricants from natural or synthetic sources, Subcommittee SC 2, Measurement of petroleum and related products.

This second edition cancels and replaces the first edition (ISO 4266–3:2002), which has been technically revised.

The main changes are as follows:

- \_\_\_terms and definitions in Clause-3 have been updated;
- In \_\_\_\_\_ in 4.3.2, the level that is measured and recorded simultaneously with the temperatures has been clarified;
- In in 5.2 Calibration the information on calibration prior to installation has been updated:
- In\_ in Clause\_6, the design requirements for still-wells have been clarified and the limitation of non-perforated still-wells removed.

A list of all parts in the ISO 4266 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at <a href="https://www.iso.org/members.html">www.iso.org/members.html</a> www.iso.org/members.html</a>

Formatted: Font color: Auto

**Formatted:** Don't adjust space between Latin and Asian text, Don't adjust space between Asian text and numbers

**Formatted:** List Continue 1, No bullets or numbering, Don't adjust space between Latin and Asian text, Don't adjust space between Asian text and numbers, Tab stops: 19.85 pt, Left + 39.7 pt, Left + 59.55 pt, Left + 79.4 pt, Left + 99.25 pt, Left + 119.05 pt, Left + 138.9 pt, Left + 158.75 pt, Left + 178.6 pt, Left + 198.45 pt, Left

Formatted: Default Paragraph Font

Formatted: Default Paragraph Font

Formatted: Default Paragraph Font

Formatted: Default Paragraph Font

Formatted: cite sec

Formatted: Default Paragraph Font

Formatted: English (United Kingdom)

**Formatted:** Normal, Centered, Space After: 24 pt, Tab stops: 487.6 pt, Right

Formatted: Font: 11 pt

Formatted: Header, Line spacing: single

Formatted: Normal, Tab stops: 19.85 pt, Left + 39.7 pt, Left + 59.55 pt, Left + 79.4 pt, Left + 99.25 pt, Left + 119.05 pt, Left + 138.9 pt, Left + 158.75 pt, Left + 178.6 pt, Left + 198.45 pt, Left

**Formatted:** Font: Times New Roman, 12 pt, English (United States)

# iTeh Standards (https://standards.iteh.ai) Document Preview

ISO/FDIS 4266-3

https://standards.iteh.ai/catalog/standards/iso/3e6d942b-99eb-4a9b-bbcl-b8b2ldd4ae0l/iso-tdis-4266-3

Formatted: Font: 11 pt

**Formatted:** Footer, Line spacing: single