



UL 180

STANDARD FOR SAFETY

Liquid-Level Gauges for Oil Burner Fuels and
Other Combustible Liquids

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UL Standard for Safety for Liquid-Level Gauges for Oil Burner Fuels and Other Combustible Liquids, UL 180

Eighth Edition, Dated October 5, 2012

Summary of Topics:

This new edition of ANSI/UL 180 includes an update to coverage of gauge types currently available, and to address outdated requirements for construction, function, and compatibility that are reflective of the expected uses.

The new requirements are substantially in accordance with Proposal(s) on this subject dated March 9, 2012 and August 17, 2012.

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The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the note following the affected item. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a "SUPERSEDED REQUIREMENTS" notice.

The following table lists the future effective dates with the corresponding reference.

Future Effective Date	Reference
October 5, 2015	Entire Standard



OCTOBER 5, 2012

1

UL 180



ANSI/UL 180-2012

**Standard for Liquid-Level Gauges for Oil Burner Fuels and Other
Combustible Liquids**

The First and Second editions were titled Liquid-Level Gauges and Indicators for Flammable Liquids. The Third edition was titled Liquid-Level Gauges and Indicators for Petroleum Products. The Fourth edition and initially the Fifth edition were titled Liquid-Level Indicating Gauges and Tank-Filling Signals for Petroleum Products.

First Edition – November, 1958
Second Edition – September, 1972
Third Edition – January, 1975
Fourth Edition – July, 1980
Fifth Edition – August, 1991
Sixth Edition – May, 1996
Seventh Edition – April, 2003

Eighth Edition

October 5, 2012

This ANSI/UL Standard for Safety consists of the Eighth Edition.

The most recent designation of ANSI/UL 180 as an American National Standard (ANSI) occurred on October 3, 2012. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, or effective date information.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover the construction and performance requirements of mechanical and electrical liquid-level gauges for use on vented atmospheric tanks intended primarily for the storage and supply of heating fuel for oil burning equipment, or alternately for the storage of diesel fuels for compression ignition engines and motor oils (new or used) for automotive service stations, in aboveground applications not exceeding 2,000 gal (7,570 L).

1.1 effective October 5, 2015

1.2 These requirements cover liquid-level gauges of the following basic operating principal types intended for installation in storage tank top openings in accordance with the manufacturer's instructions:

- a) Mechanical float type gauges;
- b) Magnetic float type gauges;
- c) Reflective wave (sound or light) type gauges;
- d) Pressure actuated (static and dynamic) type gauges; and
- e) Electrical probe (variable resistance) type gauges

Each gauge type has either a mechanical or electrical level indicator, and may additionally have sound or light signal features, or remote communication features. The indicator and/or signal may be directly attached to, or remote from, the tank liquid level measuring part of the gauge.

1.2 effective October 5, 2015

1.3 These requirements do not cover any monitoring, measuring, metering or other control applications with flammable liquids, or in hazardous (classified) locations such as:

- a) Electric liquid level gauges and associated equipment intended to monitor or control flow between storage tanks; or in or out of a storage tank;
- b) Electric liquid-level gauges for use in industrial applications such as petroleum, chemical or petrochemical processing plants; bulk loading plants; utility power plants; or marine terminals;
- c) Electronic remote reading or transmission gauges such as hydrostatic-balance and hydraulic-pressure types; and
- d) Portable electric liquid level gauges, measuring sticks or measuring tape.

1.3 effective October 5, 2015

1.4 These tanks are intended for installation and use in accordance with the Standard for the Installation of Oil-Burning Equipment, ANSI/NFPA 31, the Flammable and Combustible Liquids Code, ANSI/NFPA 30, the Code for Motor Fuel Dispensing Facilities and Repair Garages, ANSI/NFPA 30A, and the International Fire Code published by the International Code Council.

1.4 effective October 5, 2015

1.5 These requirements do not cover special evaluations for resistance to, or use after hurricanes, tornadoes, earthquakes, floods, fires or other natural disasters; or resistance to vehicle impact.

1.5 effective October 5, 2015

1.6 These requirements do not cover evaluation of either resistance to or emission of electromagnetic interference, or compliance with FCC regulations for gauges with local or remote signal features.

1.6 effective October 5, 2015

1.7 These requirements do not cover evaluation of the effectiveness of optional wired or wireless signal communications to remote service providers or central station monitors.

1.7 effective October 5, 2015

1.8 These requirements do not cover use with waste oils or other combustible liquids with different physical or material compatibility properties with respect to the intended liquids in 1.1, but do cover 100 percent bio diesel and bio diesel blends up to 20 percent. These requirements do not cover use with flammable liquids.

1.8 effective October 5, 2015

2 Components

2.1 Except as indicated in 2.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components used in the products covered by this standard.

2.1 effective October 5, 2015

2.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.2 effective October 5, 2015

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.3 effective October 5, 2015

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.4 effective October 5, 2015

3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

3.1 effective October 5, 2015

4 Undated References

4.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

4.1 effective October 5, 2015

5 Glossary

5.1 For the purpose of this standard the following definitions apply.

5.1 effective October 5, 2015

5.2 BIO DIESEL – General description of various Class II to IIIB range of long chain fatty acid ester fuels complying with the Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, ASTM D6751, processed from vegetable oils or animal fats in pure form (B100). Bio diesel may also be blended with heating fuels or diesel fuels (B1-B99) denoting the percent volume of bio diesel in the mix.

5.2 effective October 5, 2015

5.3 DIESEL FUEL – General description of various Class II petroleum distillate grades complying with the Standard Specification for Diesel Fuel Oils, ASTM D975, including No. 1 and No. 2 Diesel Fuel (also known as on-road diesel, including low sulfur diesel, ultra low sulfur diesel and bio diesel blends) typically intended for powering compression ignition engines.

5.3 effective October 5, 2015

5.4 HEATING FUEL – General description of various Class II petroleum distillate grades complying with Standard Specification for Fuel Oils, ASTM D396, or Standard Specification for Kerosene, ASTM D3699, including No. 1 and No. 2 Fuel Oils or K1 Kerosene (also known as oil burner fuel, including low sulfur distillates and bio diesel blends), typically intended for use in oil burning equipment.

5.4 effective October 5, 2015

5.5 HIGH (LINE) VOLTAGE – Any plug outlet or field wired source of electricity from the power grid, nominally 115 volts and 60 hz.

5.5 effective October 5, 2015

5.6 LIQUID LEVEL GAUGE – A device that provides automatic and continuous or on-demand measurement and indication of the liquid level inside a storage tank. These devices are intended to be installed in tank top openings and may utilize mechanical, pneumatic, electrical or other methods of measurement and indication, and may additionally have sound or light signal features, or remote communication features. The indicator and/or signal may be directly attached to, or remote from, the tank liquid level measuring part of the gauge.

5.6 effective October 5, 2015

5.7 LOW (CLASS 2) VOLTAGE – An electrical potential of not more than 30 Vac (rms) or 42.4 V (dc or peak ac) supplied by:

- a) An energy-limiting direct plug-in, cord connected or field wired Class 2 transformer;

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