

Manual of Petroleum Measurement Standards Chapter 3—Tank Gauging

Section 1B—Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Tanks by Automatic Tank Gauging

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Contents

	Page
1	Scope 1
2	Normative References 1
3	Terms and Definitions 2
4	General 2
4.1	Safety Precautions 2
4.2	General Precautions 3
4.3	Accuracy 4
4.4	Use of ATGs for Custody Transfer or Inventory Control. 6
4.5	Installation of ATGs 6
4.6	Remote Readout 13
5	General Procedures for Initial Setting and Initial Verification of ATGs in the Field 13
5.1	Initial Requirements 13
5.2	Reference Manual Level Measurement Procedure 13
5.3	Reference Measurement Tape and Weight Certification. 14
5.4	Effect of Weather. 14
5.5	ATG Technology-Specific Considerations 14
5.6	Application-Specific Considerations. 14
6	Initial Setting of ATGs in the Field. 14
6.1	Ullage-based ATGs 14
6.2	Innage-based ATGs 15
7	Initial Verification 15
7.1	Introduction 15
7.2	Verification Conditions 16
7.3	Initial Verification Procedures 16
8	Recordkeeping 18
9	Subsequent Verification of ATGs for Custody Transfer, Inventory Control, or Crude Oil Lease Tanks. 18
9.1	General. 18
9.2	Frequency of Subsequent Verification 18
9.3	Procedure for Subsequent Verification. 19
9.4	Tolerance for Subsequent Verification 19
10	Data Communication and Receiving. 19
	Annex A (informative) Safety Precautions: Physical Characteristics and Fire Considerations 20
Figures	
1	Example of an ATG (Contact or Non-contact) Mounted on a Still Pipe Supported by Tank Bottom 8
2	Example of an ATG (Contact or Non-contact) Supported by a Bracket Hinged to the Lower Tank Shell Plate. 9
3	Example Installation of a Top Mounted ATG on a Fixed Roof Tank Without Still Pipe 10
4	Example Installation of a Top Mounted Innage-ATG on a Fixed Roof or Floating Roof Tank Without Still Pipe 12
Tables	
1	Accuracy Requirements for ATGs 5

Tank Gauging—Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Tanks by Automatic Tank Gauging

1 Scope

This standard covers level measurement of liquid hydrocarbons in stationary, aboveground, atmospheric storage tanks using automatic tank gauges (ATGs). The standard discusses automatic tank gauging in general, accuracy, installation, commissioning, calibration, and verification of ATGs that measure either innage or ullage. It covers both intrusive and non-intrusive ATGs used for either custody transfer or inventory control. The standard also covers the requirements for data collection, transmission, and receiving.

This standard does not cover the following:

- a) Hydrocarbons having a Reid vapor pressure above 15 pounds per square inch (in.) absolute (100 kPa).
- b) Measurement of weight or mass with ATG equipment. This is covered in Chapter 3.6 and Chapter 16.2 of the *Manual of Petroleum Measurement Standards*.
- c) Measurement of the level in underground tanks or in pressurized tanks storing liquid hydrocarbons.
- d) Conversion of the tank level to liquid volume. This is covered in Chapter 12.1 of the *Manual of Petroleum Measurement Standards*.
- e) Measurement of temperature, sampling, density, and sediment and water (S & W), which are discussed in Chapters 7–10 of the *Manual of Petroleum Measurement Standards*.

Safety and material compatibility precautions should be taken when using ATG equipment. Manufacturers' recommendations on the use and installation of the equipment should be followed. Users should comply with all applicable codes and regulations, API Standards, and NFPA 70 *National Electric Code*.

2 Normative References

API *Manual of Petroleum Measurement Standards (MPMS) Chapter 1, Vocabulary*

API *MPMS Chapter 2, Tank Calibration*

API *MPMS Chapter 3.1A, Standard Practice for the Manual Gauging of Petroleum and Petroleum Products*

API *MPMS Chapter 3.6, Measurement of Liquid Hydrocarbons by Hybrid Tank Measurement Systems*

API *MPMS Chapter 7, Temperature Determination*

API *MPMS Chapter 8.1, Standard Practice for Manual Sampling of Petroleum and Petroleum Products (ASTM D4057)*

API *MPMS Chapter 8.2, Standard Practice for Automatic Sampling of Petroleum and Petroleum Products (ASTM D4177)*

API *MPMS Chapter 9.1, Standard Test Method for Density, Relative Density, or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method (ASTM D1298)*