

Manual of Petroleum Measurement Standards Chapter 5.6

Measurement of Liquid Hydrocarbons by Coriolis Meters

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Contents

	Page
1 Scope	1
1.1 Field of Application	1
2 Normative References	1
3 Terms, Definitions, And Symbols	1
3.1 Terms and Definitions	1
3.2 Acronyms and Symbols	4
4 General	8
5 Application	8
5.1 Sensor Considerations	8
5.2 Transmitter Considerations	10
5.3 System Design Considerations	12
6 Installation and Operation	12
6.1 Mounting	12
6.2 Installation Conditions	12
6.3 Meter Commissioning	13
6.4 Conditions Affecting Meter Performance	13
6.5 Maintenance	16
7 Proving	16
7.1 General	16
7.2 Proving Considerations	16
8 Auditing, Reporting, and Security Requirements For Coriolis Measurement	19
8.1 General	19
8.2 Configuration Log	19
8.3 Quantity Transaction Record (QTR)	20
8.4 Event Log for Coriolis Meters	20
8.5 Alarm and Error Log	20
8.6 Security and Access	20
Annex A (normative) Observe 12 Zero Verification	21
Annex B (informative) System Design, Diagnostics, and Verification Considerations	27
Annex C (informative) Factory Calibration	31
Annex D (normative) Pressure Effect Compensation for Tube Stiffness	33
Annex E (informative) Volume Ticketing (QTR), Proving Reports, and Records for Coriolis Meters	37
Annex F (normative) Mass Calculations for Coriolis Meters—Mass Ticketing and Mass Proving	39
Annex G (informative) Determination of Net Mass	60
Bibliography	62
Figures	
1 Illustrative Impact of Zero Error on Meter Factor	14
2 Illustrative Impact of Zero Stability on Repeatability versus Flow Rate	15
A.1 Meter Factor Curve “as found” Zero	25
A.2 Meter Factor Curve “as left” 0.25 lb/min Zero	25

Contents

	Page
A.3 Estimated Observed Zero Change, Equation (A.2)	26
C.1 Calibration System Schematic	27
Tables	
A.1 Meter Factor Shift with Change in Flow Rate	25
F.1 Discrimination Levels for Density Values used in Mass Calculations	58
F.2 Discrimination Levels for Mass Values used in Mass Calculations	59

Measurement of Liquid Hydrocarbons by Coriolis Meters

1 Scope

This standard is intended to be a guide for the specification, installation, verification, and operation of Coriolis meters used to dynamically measure liquid hydrocarbons. API *MPMS* Ch. 5.6 also includes information that will assist in troubleshooting and improving the performance of the meters.

Use of a Coriolis meter as a stand-alone density meter is not addressed by this standard.

1.1 Field of Application

This standard describes methods to achieve custody transfer measurement of liquid hydrocarbon quantities (mass or volume) using a Coriolis meter. Coriolis meters can provide outputs for mass flow rate, volumetric flow rate, and density. The choice of the quantity output (mass or volume) depends on commercial, contractual, regulatory, and performance requirements.

This document provides guidance for the application, installation, providing mass calculations, auditing, reporting, and security requirements for Coriolis meters.

Some of the guidance provided within also applies to allocation measurement. API *MPMS* Ch. 20^[19] allows for different performance requirements.

Guidance for the measurement of density is found in API *MPMS* Ch. 9^[6].

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.

API *MPMS* Ch. 21 (all sections), *Flow Measurement Using Electronic Metering Systems*

API *MPMS* Ch. 21.2, *Electronic Liquid Volume Measurement Using Positive Displacement and Turbine Meters*

API *MPMS* Ch. 21.2-A, *Addendum 1 to Flow Measurement Using Electronic Metering Systems, Inferred Mass*

3 Terms, Definitions, And Symbols

3.1 Terms and Definitions

For the purpose of this document, the following definitions apply. Terms of more general use may be found in the API *MPMS* Chapter 1, Online Terms and Definitions Database.

3.1.1 calibration (Coriolis)

The process of using a reference standard to determine a coefficient that adjusts the output of the Coriolis transmitter to bring it to a value that is within the specified accuracy tolerance of the meter over a specified flow range. This process is normally conducted by the manufacturer.