

CoriolisMaster custody transfer

Measurement performance with bullseye accuracy



The new CoriolisMaster custody transfer option provides OIML and MID certified flow measurement accuracy at the highest level.

Measurement made easy

CoriolisMaster

Introduction

Liquids other than water are often the highest value products for companies in the chemical, oil and gas and/or food and beverage industry, representing a big share of the revenue stream of companies in these sectors. Therefore, trading with these liquids often requires a custody transfer approved flowmeter.

Even if users decide not run an official, state approved skid or system, they require at least the flowmeter to be custody transfer approved and custody transfer ready.

The global standard for custody transfer (CT) measurement of liquids other than water is the OIML R117 standard with MID, its European legal framework. CoriolisMaster has now been approved for both.

Challenge

Highly accurate flow measurement represents a two-fold challenge. First, the accuracy must remain high even under challenging conditions. Second, if flowmeters are used for billing, these flowmeters are often required to be custody transfer approved

in order to ensure utmost trust of all partners involved in the billing process. Clearly defined process and environment conditions are critical. In some cases, this might even be a legal requirement.

ABB Solution

ABB's CoriolisMaster now offers a new custody transfer option providing these options, approved under OIML R117 and Wellmec standards and certified for MID measurement.

In detail, CoriolisMaster FCx450, FCx150 and FCT450 now offers custody transfer service for the following:

- Maximum product Viscosity: 9.0 mPa's
- Maximum operating pressure: 10 bar(g)
- Temperature range liquid: -10°C/ +70°C for mass flow, volume flow and density
- Temperature range ambient: -10°C / +70°C
- Data communication: The measurement device is capable of indicating several quantities. Use for Weights and Measures related purposes is allowed for the following quantities:
 - Mass
 - Volume
 - Density

01 Certificate

02 OIML approved flow ranges of CoriolisMaster

Evaluation Certificate
Number TCB761 revision 2
Project number 2515858
Page 1 of 1

Issued by: NMI Certin B.V.
In accordance with: - WELMEC 8.8, 2017: Guide on the General and Administrative Aspects of the Voluntary System of Modular Evaluation of Measuring Instruments
- OIML R117-1, 2007: Dynamic measuring systems for liquids other than water

Producer: ABB AG
Schillerstrasse 72
32425 Minden
Germany

Part: A measurement device (Coriolis sensor) intended to be used as a part of a dynamic measuring system for liquids other than water.
Producer's mark or name: ABB
Type designation: FCx450 + FCT450 (See § 1.2.1 of the description for the meaning of X)
Accuracy class: 0.3 and 0.5
Destined for the measurement of: Liquid petroleum and related products, liquids food and chemical products in liquid state with density between 700 and 1100 kg/m³.

Further properties and test results are described in the annexes:
- Description TCB761 revision 2;
- Documentation folder TCB761-3.

Remarks: - This revision replaces the previous revisions;
- The documentation folder replaces the previous documentation folder.

Issuing Authority: NMI Certin B.V., Notified Body number 0122
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INSPECTION
RVA 112

01

- Passive current output (A-20 mA)
- Active current output (4-20 mA)
- Display
- Modbus
- Profibus DP

Additionally, in 2021 ABB launched the Enhanced Coriolis Control (ECC) feature that provides:

- Significantly better control of the resonance frequency of tubes enhancing massflow and density measurement
- ECC used predictive, state of the art control algorithms as well as optimized software architecture to increase the measurement speed significantly below 70ms

ECC itself is not part of the custody transfer option but enables reliable flow and density measurement in challenging applications such as liquids with significant gas contents, applications with quickly changing densities, and fast filling or batching processes.

Conclusion

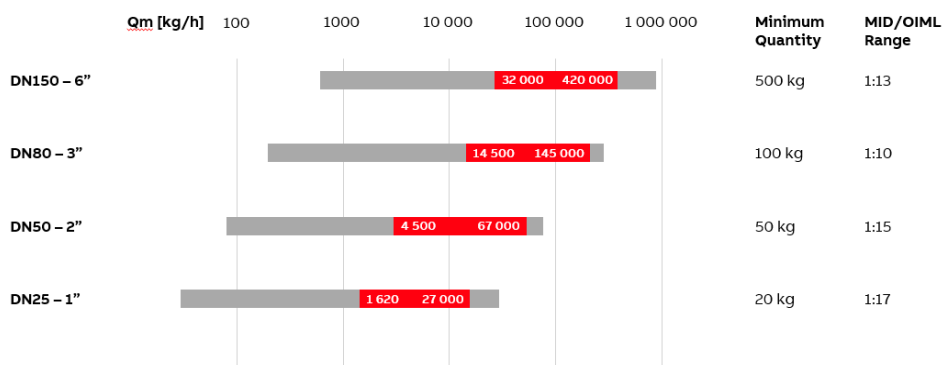
CoriolisMaster has never been faster and more accurate. Its ECC feature provides world-class measurement performance under difficult conditions. Additionally, its accuracy has now been certified by OIMLR117 and MID standard and is well positioned for custody transfer

The following output(s) can be used for legally relevant data:

- Passive pulse output (2 channel 90° phase shift)
- Active pulse output (2 channel, 90° phase shift)

CoriolisMaster – High accuracy flow measurement

MID/OIML approved measurement range for FCB150/450



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