

TECHNOLOGY CERTIFICATE

Certificate no.:
ESNL.C.101469393-1, Rev.1

Initial date:
2021-Oct-1

Valid until:
2026-Oct-1

This is to certify that

CALDON SVM gas METER

as detailed in /1/ has been qualified in accordance with DNV-RP-A203 Technology Qualification /2/. DNV considers the technology fit-for-purpose to meet criteria for DNV class I-AAA fiscal metering systems.

Owner: **Sensia LLC**, 1000 McClaren Woods Drive, Coraopolis, PA 15108, USA

Name: Caldon LEFM/ SVM 389Ci ultrasonic gas meter as further detailed in /1/

Use: Accurate gas meter designed for natural gas custody transfer

Conditions: The conditions for evaluation and testing as described in /2/

Involvement: DNV has been involved in the testing and evaluation process as required according to /3/, has evaluated and provided laboratory testing evidence and has verified the results that forms the basis for this certificate

High level results: The Caldon SVM gas meter has undergone a technology qualification and **on all the aspects tested it qualified for the most stringent requirements as set for fiscal metering class I-AAA.**

The Caldon SVM meter is a robust meter, that is capable of handling field disturbances efficiently. In most cases the meter is able to cope very well with the field disturbances, in the sense that the meter flow output is hardly affected.

The SVM live uncertainty output were consistent with the deviations determined by testing in 95% of the conditions tested, meaning the deviations were equal to or smaller than expected based on the reported uncertainty values. Even in the cases SVM uncertainties are slightly lower than the actual deviation, those deviations are so high (>3%), that they are detected rapidly. Overall, it is concluded, that the overall diagnostic ability of this meter, making use of U-SVM uncertainty evaluation, is very high and it provides a validated and useful tool to determine that the meter has potentially large deviations and action should be taken.

Further details of the evaluation can be found in ref. /4/

Reference documents:

/1/ Caldon LEFM gas flow meter:
<https://www.products.slb.com/-/media/cam/resources/2018/01/23/16/40/lefm-gas-meters-brochure.ashx>

/2/ DNV-RP-A203, Recommended Practice on Technology Qualification, September 2019 and DNV GL, Technology Qualification for gas flow meters:
<https://www.dnvgl.com/services/technology-qualification-of-gas-meter-systems-79390>

/3/ Technology Qualification testing and verification plan for ultrasonic SVM, August 29, 2019, DNV ref. GCS.10149393 - 1

/4/ Technology Qualification- Evaluation Results for Caldon SVM gas meter, November 2021, DNV ref. ESNL.182421



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