

OIML Member State
The Netherlands

Number R 117/2019-A-NL1-23.03 revision 0
Project number 3668598
Page 1 of 4

Issuing authority NMI Certin B.V.
Person responsible: M.Ph.D. Schmidt

Applicant and Manufacturer FMC Technologies Measurement Solutions Inc
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Identification of the certified type A **calculating and indicating device** intended to be used as a part of a dynamic measuring system for liquids other than water.

Type: AccuLoad IV
Model: ALIV-QT-XP, ALIV-ST-XP,
ALIV-QT-UG3, ALIV-ST-UG3,
ALIV N4, ALIV N4-MMI,
ALIV FCM and ALIV FMU

Characteristics See following page(s)

This OIML Certificate is issued under scheme A.

This Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML Type Evaluation Report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

R 117-1: 2019 "Dynamic measuring systems for liquids other than water"

Accuracy class 0,3 (non-interruptible applications)
0,3 and 0,5 (batch applications)

This Certificate relates only to the metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML International Recommendation identified above. This Certificate does not bestow any form of legal international approval.

This certificate and supporting reports comply with the requirements of OIML-CS-PD-07 clause 6.2.

Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate was issued, partial quotation of the Certificate and of the associated OIML Type Evaluation Report(s) is not permitted, although either may be reproduced in full.

Issuing Authority **NMI Certin B.V., OIML Issuing Authority NL1**
18 August 2023

Certification Board

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The conformity was established by the results of tests and examinations provided in the associated report(s):

- No. NMI-14200537-01 dated 22 November 2016 that includes 61 pages;
- No. NMI-14200537-02 dated 22 November 2016 that includes 24 pages.
- No. NMI-3603013-01 dated 7 April 2023 that includes 52 pages.
- No. NMI-3668598-01 dated 18 August 2023 that includes 23 pages.

Characteristics of the measuring instrument

In Table 1 the general characteristics of the measuring instrument are presented.

The construction of the measuring instrument is recorded in the Documentation folder no. TC8664-2.

Table 1 General characteristics

Environmental classes	M1 / E2 / H3
Ambient temperature range	- 40 °C to + 55 °C
Product temperature range	- 50 °C to +150 °C
Product pressure range	0 to 100 bar(g)
Power supply voltage	115 – 230 V AC; 50/60 Hz
Software identification	See Table 2
Approved inputs	<ul style="list-style-type: none"> - Volume / mass A/B impulses; - 4 wire Pt100 RTD; - Time period signal for density; - 4...20 mA signal for temperature, pressure and density; - Ethernet connection; - RS232C; - Up to 14 double, phase-shifted pulse channels (level A).
Approved outputs	<ul style="list-style-type: none"> - RS232C connection for an optional printer (printer output with parity check); - Ethernet connection;

<p>Approved conversions methods</p>	<ul style="list-style-type: none"> - API Manual of Petroleum Measurements Standards, Chapter 11.1 (2004 tables), tables 53A, 53B, 53D, 54A, 54B, 54C, 54D, 59A, 59B, 59D, 60A, 60B, 60C and 60D (also known as ASTM D1250-04) - ASTM D1555M-2016 (Calculation of Volume and Weight of Industrial Aromatic Hydrocarbons and Cyclohexane) - API Manual of Petroleum Measurements Standards, chapter 11.2.1M-1996; (compressibility calculation for hydrocarbons in the range from 638 kg/m³ to 1074 kg/m³) - API Manual of Petroleum Measurements Standards, chapter 11.2.2M-1997; (compressibility calculation for hydrocarbons in the range from 350 kg/m³ to 637 kg/m³) - Tables 53E, 54E, 59E and 60E from GPA Technical Publication TP-27-2007 (also known as API Manual of Petroleum Measurements Standards, Chapter 11.2.4). - TP-15 vapour pressure calculations conform to API 11.2.5-2007; - API Manual of Petroleum Measurements Standards, chapter 11.3.4-2019; (Denatured Ethanol and Gasoline Component Blend Densities and Volume Correction Factors)
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Table 2 Software identification

Software versions	Firmware ID	Remarks
AcculoadIV-0.3-0-	ge2c0cd7d	Initial release.
AcculoadIV-0.4-0-	g8d109968	-
AcculoadIV-0.5-0-	gcfc761d3	-
AcculoadIV-0.6-0-	g48045ff1	-
AcculoadIV-0.7-0-	g576b6b6f	-
AcculoadIV-0.9-0-	gc0fe990e	-
AcculoadIV-0.10-0-	g4ae58234	-
AcculoadIV-0.12-0-	gde8c9bb9	-
AcculoadIV-1.1-0-	g1b8a5c22	-
AcculoadIV-1.2-0-	gddc85933	-
AcculoadIV-1.2-0-	gddc85933	-

Software versions	Firmware ID	Remarks
AcculoadIV-1.3-0-	gf73c7863	-
AcculoadIV-1.4-0-	gc953788c	-
AcculoadIV-1.5-0-	g35e6d77e	-
AcculoadIV-1.6-0-	g76aa24c9	-

Certificate history:

This revision replaces the previous version.

Revision	Date	Description of the modification
0	18 August 2023	Initial release