

OIML Member State
The Netherlands

Number R 117/2007-B-NL1-19.05
Project number 2353542
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Issuing authority
Person responsible: NMi Certin B.V.
C. Oosterman

Applicant and
Manufacturer: Total Control Systems
2515 Charleston Place,
Fort Wayne, IN 46805,
Unites states of America.

Identification of the
certified type: A **measurement transducer (piston meter)**
Type: TCS-682-15

Characteristics: See page 2

This OIML Certificate is issued under scheme B

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 (2007) "Dynamic measuring systems for liquids other than water"

Accuracy class: 0,3; 0,5

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.

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**
15 April 2019


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The conformity was established by the results of tests and examinations provided in the associated reports:

- No. 2007/224 dated 20 September 2007 that includes 5 pages;
- No. 2007/225 dated 20 September 2007 that includes 5 pages;
- No. NMI-12200329-02 dated 7 February 2014 that includes 7 pages;
- No. NMI-12200507-01 dated 16 July 2013 that includes 9 pages;
- No. NMI-13200200-01 dated 28 February 2014 that includes 12 pages;
- No. NMI-1901787-02 dated 20 August 2018 that includes 15 pages.

Characteristics of the measurement transducer (piston meter)

In Table 1 the general characteristics of the measurement transducer (piston meter) are presented. The construction of the measuring instrument is recorded in the Documentation folder no. TC8195-2.

Table 1 General characteristics

Maximum pressure	10,5 bar(g)
Environmental classes	M3 / E3 (including E2)
Ambient temperature range	-40 – +55 °C; condensing, open location.
Intended for the measurement of	Adblue (Aqueous liquid), Liquid petroleum and related products, liquids food and chemical products in liquid state (except for liquefied gasses) with viscosities between 1 and 740 mPa·s.
Installation requirements	At least 2D straight inlet pipe (same diameter or larger as the measurement sensor) At least 1D straight outlet pipe (same diameter or larger as the measurement sensor)

Table 2 Flow characteristics of the measurement transducer

Accuracy class	Maximum viscosity [mPa·s]	Liquid temperature [°C]	Minimum flow rate [L/min]	Maximum flow rate [L/min]	MMQ [L]
0,3	5	- 5 / + 50	25	190	10
0,5	740	- 40 / + 50	25		
		- 5 / + 50	8		