

National Conference on Weights and Measures
15245 Shady Grove Road, Suite 130 Rockville, MD 20850

Certificate Number: 95-060A2

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***National Type Evaluation Program
Certificate of Conformance
for Weighing and Measuring Devices***

For:

Meter indicating volume
Vehicle Tank and Wholesale Meters
Model: T Series

Submitted by:

FMC Measurement Solutions
Smith Meter Inc.
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Standard Features and Options

Options:

- Preset Volume
- Ticket Printer
- Mechanical or Electronic Output
- Automatic Temperature Compensation
- Air Eliminator
- Pulse Transmitter

Model (Mechanical Output)	Flow Rates
T-11	20 - 100 gpm
T-15-N	30 - 150 gpm
T-20	40 - 200 gpm
T-40	80 - 400 gpm
Model (Direct Electronic Output)	Flow Rates
T-11-J and T-11-O	10 - 100 gpm
T-15-N-J and T-15-N-O	15 - 150 gpm
T-20-J and T-20-O	20 - 200 gpm
T-40-J and T-40-O	40 - 400 gpm

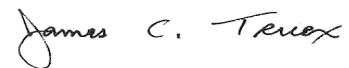
(Any of the above models may contain the suffix NF (Non-Ferrous))

(Note: The direct electronic output models must be used with an NTEP approved electronic register that supports multiple point meter factor linearization.) See Applications for explanations for "J" and "O" under the Direct Electronic Output options.

This device was evaluated under the National Type Evaluation Program (NTEP) and was found to comply with the applicable technical requirements of Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.



G. Weston Diggs
Chairman, NCWM, Inc



James C. Truex
Chairman, National Type Evaluation Program Committee

Issue date: July 5, 2005

Note: The National Conference on Weights and Measures does not "approve", "recommend", or "endorse" any proprietary product or material, either as a single item or as a class or group. Results shall not be used in advertising or sales promotion to indicate explicit or implicit endorsement of the product or material by the NCWM.

**Smith Meter Inc.
Meter Indicating Volume
Model: T Series**

Application: Meters approved for use in stationary and vehicle tank applications to measure gasoline, diesel fuel, heating fuel. The Direct Electronic Output model meters containing an “O” is a type of output that may be interfaced with various other manufactures or FMC electronic registers. The Direct Electronic Output model meters containing a “J” will only interface with FMC electronic registers.

Identification: The identification plate is riveted to the side of the meter housing.

Sealing: There are two methods of calibration employed by these meters, mechanical and electronic. Sealing is accomplished as follows:

- **With Mechanical Registers:** The meter is adjusted by turning an adjustment shaft that is located behind the calibrator access plate. Access to the calibrator is prevented by threading a wire security seal through holes in the screws attaching the calibrator access plate to the meter body. (Note: if a mechanical meter has been fitted with an electronic register the meter should still be sealed because the calibration mechanism may not have been removed.)
- **With Electronic Registers connected to a Mechanical Output Meter:** Calibration is achieved through an approved electronic register. It may also be possible to adjust the meter through the mechanical calibrator as with a mechanical register as above and should be sealed. (The mechanical output meter models are those without an “O” or “J” in the model designation.)
- **With Electronic Registers Connected to a Direct Electronic Output Meter:** Calibration of the meter is achieved through an approved electronic register; no external adjustments are possible when direct electronic output is used. (The direct electronic output meter models are those with an “O” or “J” in the model designation.)

Test Conditions: This Certificate supersedes Certificate of Conformance Number 95-060A1. It is issued to add an electronic output version to the T series meters, an additional meter size (T-15-N), lower the minimum flow rate when used with electronic registers, and to correct the flow rate for the T-40 model from 85 gpm to 80 gpm. A model T-11-J meter was tested with a FMC Mutiflow register model A-3 (Certificate of Conformance Number 05-050) in a Vehicle Tank Meter application. Four tests were conducted at each of the following flow rates, 85 gpm, 61 gpm, 45 gpm, 31 gpm and 11 gpm using fuel oil as the test liquid. Two split compartment tests were also preformed. The vehicle was placed into service and, after 42 days and dispensing more than 222 000 gallons, was retested using the same criteria. The tolerance applied was acceptance tolerance of .15% for normal tests and .45% for special tests as provided in the National Institute of Standards and Technology Handbook 44, Vehicle Tank Meter Code 2005 edition. Previous test conditions are repeated below for reference.

Certificate of Conformance Number 95-060A1: This Certificate supersedes Certificate of Conformance Number 95-060 and is issued without additional testing to correct the range of flow rates listed for the Model T-40 on page 1 of this Certificate. Previous test conditions are listed below for reference.

Certificate of Conformance Number 95-060: This Certificate supersedes Certificate of Conformance No. 95-060PN and is issued without additional testing to upgrade the Certificate from a status of provisional to full. NTEP policy permits a pre-NTEP Certificate of Conformance to be upgraded from provisional to full provided no unfavorable comments are received during the comment period. Since no unfavorable comments were received on this device, this Certificate is issued as a full NTEP Certificate of Conformance. The test conditions for Certificate of Conformance No. 95-060PN are listed below for reference.

Smith Meter Inc.
Meter Indicating Volume
Model: T Series

Certificate of Conformance Number 95-060PN: These devices have received type approval by individual states prior to the establishment of the National Type Evaluation Program (NTEP). These devices have been in commercial use for many years. The NTEP policy and procedures permit NTEP to issue Certificates of Conformance based upon the approvals granted by PRE-NTEP jurisdictions. This Certificate was issued on this basis without formal NTEP testing. California Certificate 1166(a)-72 was issued for the T-1 1 meter and California Certificate 1237-72 was issued for the T-20 and T-40 meters.

Pre-NTEP Type Approval: CA 1166(a)-72; CA 1237-72

Evaluated By: Michael Frailer (MD) 95-060A2

Type Evaluation Criteria Used: NIST Handbook 44 2005 edition (95-060A2); NCWM Publication 14, 2005 (95-060A2)

Conclusion: The results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements.

Information Reviewed By: C. V. Cotsoradis (NIST) 95-060PN; L. Sebring (NIST) 95-060; S. Patoray, L. Bernetich (NCWM) 95-060A2