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

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

For:
Meter indicating volume
Wholesale Meter
4" Positive Displacement
Model: PRIME 4 – Q – W – X – Y – Z
Flow Rate: 45 GPM to 900 GPM

Submitted by:
FMC Technologies
Smith Meter, Inc.
P.O. Box 10428
Erie, PA 16514-0428
Tel: (814) 898-5000
Fax: (814) 899-3414
Contact: Rich Miller

Standard Features and Options

* Suffix Positions and Descriptions				
Position – Q – **End Connections and Working Pressure**	Position – W – **Elastomers**	Position – X – **Sensor Type**	Position – Y – **Installation**	Position – Z – **Approval**
Non-metrological	Non-metrological	0 = Single output signal 1 = Dual output signal	0 = Horizontal (standard/ reverse flow) 1 = Vertical nozzles right (reverse flow) 2 = Vertical nozzles left (standard flow)	Non-metrological

Sensor type (electronic pulser)
- Single pulse output

Option:
- Dual pulse output; i.e., (Quadrature) for system monitoring

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.

Don Onwiler
Chairman, NCWM, Inc.

James C. Truex
Chairman, National Type Evaluation Program Committee

Issued Date: December 6, 2005

FMC Measurement Solutions
Meter Indicating Volume
Model: PRIME 4 – Q – W – X – Y – Z

Application: For use in stationary wholesale applications to measure products such as gasoline, diesel, and other refined products with viscosities from 0.3 centipoise to 10.0 centipoise. These meters are also approved for measuring ethanol. These meters may be interfaced with approved and compatible equipment.

Identification: The metal identification plate is riveted to the meter cover.

Sealing: Access to the pulse sensor is prevented by threading wire security seals through holes in the mounting screws on the junction box cover and sensor well.

Operation: The PRIME 4 is a four-inch rotary positive displacement type meter that measures the flow of product passing through a measuring chamber formed by the revolving movement of the product through two evenly spaced blades. The movement of the meter rotor is converted to electronic pulses detected by a sensor on the side of the meter. Pulses are transmitted to a separate indicating element. The meter has three possible installation positions; however, the pulse sensor is always positioned on the left side of the meter. Each installation position requires specific wire connections for proper pulse output registration. The PRIME 4 meters shall be installed in systems with an effective means to prevent vapor and air from entering the meter.

Test Conditions: This certificate supersedes Certificate of Conformance Number 96-099A1 and is issued to add refined products with viscosities up to 10 centipoise and lower the minimum flow rate to 45 GPM. Testing of the PRIME 4 meter was conducted at the manufacturer's facility using a test stand. The initial and permanence testing was conducted on a meter installed in the horizontal position. Four tests each at five flow rates were conducted using 10 centipoise oil. Permanence testing was performed after a throughput of 1 829 789 gallons of oil. Previous test conditions are listed below for reference.

Certificate of Conformance Number 96-099A1: This certificate superseded Certificate of Conformance Number 96-099 and was issued to add ethanol to the certificate. Testing of the PRIME 4 meter was conducted at the manufacturer's facility using a test stand and witnessed by an NTEP representative. The initial and permanence testing was conducted on a meter installed in the horizontal position at four different flow rates using ethanol. The permanence testing was performed after a throughput of 1 827 885 gallons of ethanol.

Certificate of Conformance Number 96-099: Testing of the PRIME 4 meter was conducted at the manufacturer's facility using a test stand and witnessed by an NTEP representative. The initial and permanence testing was conducted on two meters installed in the horizontal position in operation at four different flow rates using gasoline and diesel products. The permanence testing was performed after a throughput of 2 501 154 gallons of gasoline and 2 117 734 gallons of diesel.

Type Evaluation Criteria Used: NIST Handbook 44, 2005 Edition, NCWM Publication 14, 2005 Edition

Tested By: J. Williams (NIST) 96-099; D. Reiswig (CA) 96-099A1; D. Reiswig (CA) 96-099A2

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

Information Reviewed By: S. Patoray (NCWM) 96-099A1, 96-099A2

FMC Measurement Solutions
4" Positive Displacement, Wholesale Meter
Model: PRIME 4 – Q – W – X – Y – Z