

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

**For:**

Compressed Natural Gas  
Retail Motor Fuel Dispenser  
Model: TGT-X-XXXX-XX-XXXX  
Capacity: \$9999.99 Maximum Total Price  
999.999 Maximum Total Volume  
\$9.999 Maximum Unit Price

**Submitted by:**

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**Standard Features and Options**

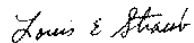
The specific model options covered by this certificate are listed on Page 2.

Micro Motion remote flow transmitter Model RFT 9739 Version 3.6  
Modified Kraus Micon 200 computing register head (Board: Kil 291, Chip: GGE V1.02 and  
Board: Kil 350, Chip: V1.09)  
Liquid crystal display  
Hand-held IR (Infrared) remote control for unit price and totals display  
Safety breakaway coupling  
Standard three-way vent back fill nozzle  
Battery back-up for recall of last sale in case of power loss  
Nonresettable volume totalizer  
Operating pressure: 3600 psi  
Category 2 audit trail

Temperature Range: -55 °C to 70 °C (-67 °F to 158 °F)

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.

Effective Date: October 28, 1997



Louis E. Straub  
Chairman, NCWM, Inc.



G. Weston Diggs  
Chairman, National Type Evaluation Program Committee

Issue date: December 4, 1997

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.

This is a reissuance by the NCWM of a Certificate of Conformance already issued by the National Institute of Standards and Technology.

**Tulsa Gas Technologies, Inc.**  
**Compressed Natural Gas Retail Motor Fuel Dispenser**  
**Model: TGT-X-XXXX-XX-XXXX**

**Application:** The TGT retail motor fuel dispenser is used for measuring compressed natural gas as an automotive fuel. The dispenser can be set up to operate as a stand-alone or interfaced with other approved and compatible equipment.

**Identification:** The identification badge is located on the side of the dispenser cabinet.

**Model Designation:** TGT-X-XXXX-XX-XXXX

| TGT         | X   | XXXX   | XX   | XXXX   |
|-------------|---|--|--|--|
| Basic model | WK2 = Kraus Micon 200 register head with TGT display face | 62 = Low hose stainless body<br>322 = Carbon steel low hose body<br>322A = Carbon steel high hose body | 1 = Single hose<br>1C = Single hose upgradeable to a two hose<br>2 = Two hoses | DH25 = Micro Motion meter (0.25 to 25 lb/min)<br>DH38 = Micro Motion meter (0.50 to 50 lb/min) |

**Sealing:** The TGT dispenser has a Category 2 audit trail. To view the weights and measures mass display, unlock the display panel with a dispenser key and pull the bottom of the display out two to three inches. Behind the price per gallon LED is a spring loaded switch to change the display from GGE to mass. One side of display will show mass and the other will show GGE.

An on-site communication device must be used to view the weights and measures event counters. There are two different devices possible for viewing the audit trail criteria:

- A. A laptop computer with the Micro Motion Pro-Link software program installed.
- B. A hand-held Micro Motion 275 Hart Communicator.

**NOTE: One of these devices must be on-site and available to the inspector for the dispenser to be covered by this certificate.**

The TGT dispenser has two components that require wire security seals. The Micro Motion transmitter, located behind the electronic display panel, can be sealed to prevent undetected access to the calibration and configuration parameters security switch. A Kraus control board, with removable EPROM, is located in an explosion proof enclosure in the lower portion of the dispenser cabinet. The explosion proof enclosure can be sealed by threading a wire security seal through holes in two bolt heads.

**Operation:** The fill hose nozzle is connected to the fill connector of the receiving vehicle. Turn the fill handle clockwise to the fill position. Turn the dispenser on and fill the vehicle. To end fill, turn dispenser handle off and (slowly) turn fill valve handle counterclockwise to the off position. Disconnect the fill hose nozzle and return it to the dispenser.

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**Procedures for accessing the event counters through the remote communication devices are as follows.**

- A. Connecting a laptop computer with the Micro Motion Pro-Link software program to the dispenser and viewing the event counters.
1. Face the dispenser on the side with the infrared holes next to the price per gallon display.
  2. With a dispenser key, open the box located on the right side of the dispenser labeled **Audit Trail**, and connect the cable from the laptop to the communication's port connection inside the box.
  3. Turn on the computer, type win, and press the enter key to start Windows.
  4. Maximize the mmi group by double clicking on mmi.
  5. Move the cursor to the **Pro-Link 2.3** icon and double click.
  6. Move the cursor to the up or down arrow located in the drop down box, in the upper left hand corner of the screen, and click on the desired meter number. Press the Enter key on the keyboard.
  7. When the word configure darkens on the screen, press the Alt key and press the letter C. When the drop down menu appears, press the letter I (information).
  8. When finished viewing the event counters for a meter, press and hold down the Alt key, and press the letter O.
  9. Press the Alt key, then press the letter F, and then press the letter D.
  10. To view another meter event counter, press the Alt key and press the letter F, then press the letter C, and repeat steps seven and eight.

**NOTE:** When finished viewing the audit trail and after procedure #8, press the Alt key and press the letter F. Now press the letter X and the Exit Pro-Link window should be displayed. Press the letter N for no. Next press the Alt key and press the F key. The Program Manager window should be displayed. Press the Alt key and press the F key. Now press the X key and then press the Enter key. When the "c:\>" prompt is displayed, the computer can be turned off and disconnected.

- B. Connecting a 275 Hart Communicator and viewing the event counters.
1. Face the dispenser on the side with the infrared holes next to the price per gallon display.
  2. With a dispenser key, open the box located on the right side of the dispenser labeled **Audit Trail**, and connect the cable from the 275 Hart Communicator to the communication's port connection inside the box.
  3. Push the black and white button labeled I/O. The 275 Hart Communicator will go through a self test and then look for a device. After the 275 Hart Communicator has polled all of the devices, it will list the devices from one to fifteen.
  4. Push the number corresponding to the meter to view the event counter information.
  5. The display will show a message "analog output 1 and its digital representation are in a fixed mode and not responsive to input changes;" then push next.
  6. The display will show "analog output 1 fixed;" then push next again. The 275 Hart Communicator will display "ignore the next 50 occurrences of status;" then push yes.
  7. Next push button number 2 for diag/service, then button number 6 for "security event register."
  8. The display will show "9739 mass security event reg."
    - (a) Config. Reg. ###
    - (b) Calib. Reg. ###
  9. To view the next meter, push the left arrow button on the 275 Hart Communicator and push button number 2; and then go back to step number four.
  10. To end viewing, push the black and white button labeled I/O.

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**Test Conditions:** This Certificate supersedes Certificate of Conformance Number 96-155 and is issued to correct a typographical error in the effective date of the original certificate. The effective date should have been November 14, 1996, rather than November 14, 1997. Previous test conditions are listed below for reference.

**Certificate of Conformance Number 96-155:** The Tulsa Gas Technologies Model TGT-K2 Series dispenser was submitted for evaluation. The emphasis of the evaluation was on design, software application, and interaction of the assembled components. The TGT dispenser was also tested with an AutoGas Card Reader, Model AF2006M(xx), for compatibility. The dispenser was initially tested for accuracy and repeatability at several flow rates and pressures. Similar tests were repeated approximately 30 days later. The throughput permanence test was waived due to previous permanence testing on the Micro Motion meter (Certificate of Conformance Number 87-040A2).

The results of these evaluations indicate the device complies with the applicable requirements.

**Type Evaluation Criteria Used:** NIST Handbook 44, 1997 Edition

**Tested By:** Dan Reiswig (CA) 96-155

**Information Reviewed By:** L. T. Sebring (NIST) 96-155A1