

# National Conference on Weights and Measures

1135 M Street, Suite 110 • Lincoln, NE 68508

Certificate Number: 97-009A3

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

**For:**

Indicating Element  
Digital Electronic  
Models: 7400+ REM DIS; 7500 M; 7600 M, 7400 E;  
7600 E  
 $n_{\max}$ : 10,000  
Accuracy Class: III/III L

**Submitted by:**

Pennsylvania Scale Company  
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### Standard Features and Options

Automatic zero setting mechanism  
Semi-automatic (push button) zero  
External kg /lb unit's select key  
Keyboard (7600 M/E) and push button (platter) tare (7400E, 7600M and 7600E)  
AZT, settable to: off, 0.5 d, 1 d and 3 d  
IZSM, max setting 20% of capacity  
RS232 communication for printing  
Weigh-in/Weigh-out  
AC/DC operation  
See page two for specific device descriptions and features

**Options:**

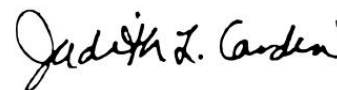
Enclosure types: mild steel, stainless steel, and aluminum

Temperature Range: -10 °C to 40 °C (14 °F to 104 °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.



Jack Kane  
Chairman, NCWM, Inc.



Judith L. Cardin  
Chairman, National Type Evaluation Program Committee

Issued Date: June 11, 2009

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.

**Pennsylvania Scale Company**  
**Indicating Element**  
**Model(s): 7400+ REM DIS; 7500 M; 7600 M, 7400 E; 7600 E**

**Application:** For use in general purpose weighing when interfaced with a compatible NTEP approved weighing element.

**7400** - Electronics box with A/D converter. (For use with approved and compatible indicating and weighing elements without A/D converter.)

**REM DIS** - Indicating element with external unit (lb/kg) key, push button zero and print key. Does not contain A/D converter. This indicating element will be used with the 7400.

**7400E** - Indicating element with external unit (lb/kg) key, push button tare key, zero, print and a gross/net selection key.

**7500M** - Indicating element with external unit (lb/kg) key, push button zero, print, and sample set.

**7600M** - Indicating element with keyboard tare, push button tare, a gross/net selection key, numeric key pad and an external unit (lb/kg) key. The standard operation buttons are zero, units (lb/kg), print, keyboard tare, gross/net, sample set and piece weight. This device may be interfaced with any weighing element that is compatible and NTEP approved.

**7600E** - Indicating element with keyboard tare, push button tare, a gross/net selection key, numeric key pad and an external unit (lb/kg) key. The standard operation buttons are zero, units (lb/kg), print, tare, gross/net, tare recall, start/stop and set. This device may be interfaced with any weighing element that is compatible and NTEP approved.

If sample set and piece weight are available the indicator must be marked with “**Sample Set and Piece Weight - Not Legal for Trade**” or similar statement.

**Note:** The metrological components (electronics and A/D converter) of the 7X00 series are identical.

**Identification:** A permanent metal identification plate is glued to the bottom area of the indicator. Indicators may be easily pivoted to view the information. Labels displaying additional required information such as capacity and division are inserted under the face plate.

**Sealing:** 7400 - The electronics box is sealed by threading a lead and wire seal through holes in the cover and housing. The seal prevents removing the cover, thus preventing access to the internal calibration button.

7400E, 7500M, 7600M and 7600E - A wire seal is threaded through holes on the corner of the cover securing it to the bottom of the indicator housing and preventing access to the internal calibration button.

These indicators may offer an alternative method of Sealing using Category 1 Sealing, Audit Trail with 2 event counters. Configuration and calibration audit counters update each time a configuration or calibration change occurs. These counters will return to zero after 999 changes, individually.

**Test Conditions:** This Certificate supersedes Certificate of Conformance 97-009A2 and is issued to add additional models and features to the series. The emphasis of this evaluation was on device design, marking, operation, influence factor requirements and to update the models previously evaluated. A Pennsylvania Scale model, 7400E and 7600E indicating models were submitted for evaluation. Each was interfaced with load cell simulator to evaluate the operation of the devices at larger capacities. The indicators were connected to a 100 lb Pennsylvania Scale model 7000 weighing element (Certificate of Conformance Number 91-149A3) and a printer. Additionally, tests were conducted over a temperature range of -10 °C to 40 °C (14 °F to 104 °F) and from 102 to 130 volts AC. The results of the evaluation along with information from previous evaluations indicate that the devices comply with the applicable requirements of NIST Handbook 44. Previous test conditions are listed below for reference.

**Certificate of Conformance Number 97-009A2:** This Certificate superseded Certificate of Conformance Number 97-009A1 and is issued to increase the nmax of the indicators covered under this certificate from 5 000 d to 10 000 d (see the test conditions for Certificate of Conformance 91-149A6 noted on page 3). A second method of sealing using a category 1 audit trail is also available in the indicators covered under this certificate. A sample indicator (model 7400) was evaluated for compliance with category 1 audit trail sealing requirements.

**Certificate of Conformance Number 97-009A1:** This Certificate supersedes Certificate of Conformance Number 97-009 and is issued to add the capabilities of additional weighing devices to model 7600M. The indicator was attached to two 100-lb Pennsylvania Model 7000 weighing elements (Certificate of Conformance Number 91-149A4). Several increasing/decreasing load tests and compliance with tare functions tests were performed.

**Pennsylvania Scale Company**  
**Indicating Element**  
**Model(s): 7400+ REM DIS; 7500 M; 7600 M, 7400 E; 7600 E**

**Certificate of Conformance Number 97-009:** This Certificate is issued to move the 7400M, 7400 and REM DIS models from Certificate of Conformance Number 91-149A2 to Certificate of Conformance Number 97-009, and to add the 7500M and the 7600M models. This Certificate separates model 7400M, 7500M, and 7600M indicators from complete scale models.

The emphasis of this evaluation was on device design and operation. The 7500M and 7600M models were interfaced with load cell simulators to evaluate the operation of the devices at larger capacities. Additionally, the indicators were attached to a 100 lb Pennsylvania model 7000 weighing element (Certificate of Conformance Number 91-149A3) and a printer to verify compliance with the width of zero, zone of uncertainty, motion detection requirements, and to test the unit button feature.

**Notes:**

The metrological components (electronics and A/D converter) of the 7X00 Series (indicators and weighing element) and the complete scales are identical. Complete scales are marked with a “S” suffix (Certificate of Conformance No. 91-149A3). Indicators are marked with an “M” suffix. Weighing elements (Certificate of Conformance No. 91-149A3) and A/D converter boxes are not marked with a suffix.

The Certificates of Conformance Numbers 91-149 to 91-149A7 cover a series of Pennsylvania Scale Company’s scales that were evaluated using 0.7 d of acceptance tolerance. This allowed the manufacturer to request a Certificate of Conformance for the indicating element only. Refer to test conditions for Certificate of Conformance Numbers 91-149 to 91-149A7 for additional information.

**Evaluated By:** A. P. Buie, J. T. Price (MD) 97-009; A. McCoy (OH) 97-009A1; W. Fishman (NY) 97-009A2; T. Lucas (OH), 97-009A3

**Type Evaluation Criteria Used:** NIST Handbook 44, 2009 Edition; NCWM Publication 14, 2009 Edition

**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), L. Bernetich (NCWM), 97-009A2; J. Truex (NCWM), 97-009A3

**Example of Device(s):**

Models 7500 & 7600



Model: REM DIS



**Pennsylvania Scale Company**  
**Indicating Element**  
**Model(s): 7400+ REM DIS; 7500 M; 7600 M, 7400 E; 7600 E**

Model: 7600E



Model: 7400E

