



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
7400EXP; 7500EXP & 7600EXP
 n_{max} : 10 000
Accuracy Class: III/III L

***Submitted By: Contact Info. Updated December 2019**

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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/EXP) and push button (platter) tare (7400E/EXP, 7600M and 7500EXP)
- 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
- Power Saving (Sleep Mode, Auto Shutoff)
- See page two for specific device descriptions and features
- External AC/DC USB cabled power supply

Enclosure Material:

Mild steel, Stainless Steel, Aluminum, and Cast Aluminum

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

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of "NIST 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.

Kristin Macey
Chairman, NCWM, Inc.

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Pennsylvania Scale Company

Indicating Element / 7400+ REM DIS; 7500 M; 7600 M, 7400 E; 7600 E
7400 EXP, 7500 EXP & 7600 EXP

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 and 7x00EXP series are identical.

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

Sealing:

7400 EXP, 7500EXP, 7600EXP - The indicator is sealed by threading a lead and wire seal thru the screw heads on the back of the housing preventing disassemble of the indicator and 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. The counters will reset to zero after 999 changes, individually.

Test Conditions: This Certificate supersedes Certificate of Conformance 97-009A3 and is issued to add a die cast aluminum housing and external AC/DC USB cabled power supply to the series. The emphasis of this evaluation was on operation and influence factor requirements. A Pennsylvania Scale model, 7600EXP indicating element was submitted for evaluation. The indicator was interfaced with a load cell simulator to evaluate the operation of the device at larger capacities. Additionally, tests were conducted over a temperature range of -10 °C to 40 °C (14 °F to 104 °F) and voltage of 4.7 VDC to 5.5 VDC. The results of the evaluation along with information from previous evaluations indicate that the device complies with the applicable requirements of NIST Handbook 44. Previous test conditions are listed below for reference.

Certificate of Conformance Number 97-009A3: 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.



Pennsylvania Scale Company

Indicating Element / 7400+ REM DIS; 7500 M; 7600 M, 7400 E; 7600 E
7400 EXP, 7500 EXP & 7600 EXP

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.

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; J. Gibson (OH) 97-009A4

Type Evaluation Criteria Used: *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2017 Edition. *NCWM Publication 14 Weighing Devices*, 2016 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, 97-009A4



Pennsylvania Scale Company

Indicating Element / 7400+ REM DIS; 7500 M; 7600 M, 7400 E; 7600 E
7400 EXP, 7500 EXP & 7600 EXP

Examples of Device:

Models 7500 & 7600

Model: REM DIS



Model:
7600E

Model: 7400E





Pennsylvania Scale Company

Indicating Element / 7400+ REM DIS; 7500 M; 7600 M, 7400 E; 7600 E
7400 EXP, 7500 EXP & 7600 EXP

