NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:
Bench Scale and Weighing/Load Receiving Element
Digital Electronic
Models: 7000, 7100, 7200S, 7300S, 7500S, and 7600S*
n_{max}: See Below; e_{min}: See Below
Capacity: 10 lb to 100 kg (See Below)
Platform: 12" x 14"

***Submitted By: Contact Info. Updated December 2019**
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Standard Features and Options

*See Page 2 for specific device descriptions and features.

Capacities	10 lb	20 lb	50 lb	100 lb	100 kg
e_{min}	0.002 lb	0.002 lb	0.005 lb	0.01 lb	0.01 kg
n_{max}	5000	10 000	10 000	10 000	10 000

The metrological components (electronics and A/D convertor) of the 7X00 Series indicators, weighing elements and complete scales are identical.

Weighing elements are not marked with a suffix
Complete scales are marked with a "S" suffix
indicators (moved to Certificate of Conformance Number 97-009) are marked with a "M" suffix

Model 7300S may be equipped with an optional external unit key (version 3.01 and higher). The unit key is only applicable to lb/kg conversion. The version number is displayed during the power up of the device.

Devices may be set up in the following units of measure consistent with the parameters for Class III applications:
kg, lb, oz, tons, oz t, t, c, dwt, GN, and lb/oz (for postal scale applications)

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. *Editorial changes, not affecting the type or metrological content, corrected this certificate.

Craig VanBuren
Chairman, NCWM, Inc.

Stephen Benjamin
Committee Chair, NTEP Committee
Issued: August 15, 2000

Pennsylvania Scale Company

Bench Scale and Weighing/Load Receiving Element / 7000, 7100, 7200S, 7300S, 7500S, and 7600S

Application: For use in general purpose weighing unless marked for special use as a postal scale. The weighing elements may be used with other certified and compatible components as indicated for each model to comprise a complete weighing assembly.

Models and Descriptions:

7000 - Weighing element without internal electronics and A/D convertor. This device is to be interfaced with an approved and compatible indicator with an NTEP Certificate of Conformance.

7100 - Weighing element with internal electronics and A/D convertor. This device is to be interfaced with a compatible computer or other weight display without an A/D convertor. When interfaced with a computer as the primary indicator, the computer is subject to NTEP evaluation (interfaced with the Model REM DIS or equivalent display element).

7200S - Scale without function buttons. The zero, tare, calibration, and print functions are controlled from a remote computer terminal via bidirectional RS-232 port or the function keys of a compatible and approved remote display. When interfaced with a computer as the primary indicator, the computer is subject to NTEP evaluation (interfaced with the Model REM DIS or equivalent display element).

7300S - This model is a complete scale. No additional components are required. The standard operation buttons of the 7300S are zero, tare and print. This model may be equipped with an optional external units selection (lb/kg) button that replaces the tare button.

7500S - This model is a complete scale. No additional components are required. The standard operation buttons are zero, units (lb/kg), print and sample set. The sample set is used with the "Not Legal for Trade" count feature.

7600S - This model is a complete scale. No additional components are required. 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 multiple weighing elements that are compatible and NTEP approved. The sample set and piece weight are used with the "Not Legal for Trade" count feature.

Identification: 7000 - The permanent identification plate is riveted to the weighing element that is accessible by removing the platter.

7100, 7200S, and 7300S - The permanent identification plate is riveted on either the back or the side of the device. The required marking information also appears on the front of the device when the identification plate is on the back.

7500S and 7600S - The required marking information is on a metal badge riveted to the left side of the device. A label containing the capacity by division statement is inserted under the display panel.

Sealing: 7000 - No adjustments that affect metrological integrity can be made through the device.

7100, 7200S and 7300S - Calibration is initiated by pressing a button inside the device. Access to that button is secured by a cover under the scale platter. The cover can be sealed by threading a wire security seal through a bolt that extends through it.

7500S and 7600S - The access cover to the calibration switch is on top of the scale between the platter and the indicator. The cover is held in place by a bolt extending from the bottom of the device. A nut affixed under the cover secures the security bolt. A wire security seal can be passed through a hole in the bolt and positioned between slots in the collar protruding from the bottom of the device. This seal secures the bolt to an adjacent fixed bolt on the bottom of the device.

Test Conditions: This Certificate supersedes Certificate of Conformance Number 91-149A6 and is issued to decrease the number of divisions from 10 000 to 5000 for the 10-lb capacity scale. Previous test conditions are listed below for reference.

Certificate of Conformance Number 91-149A6: This Certificate superseded Certificate of Conformance Number 91-149A5 and was issued to add 100 kg x 0.01 kg capacity to the 7X00 Series, and to increase the number of divisions from 5000 to 10 000 for all models. The emphasis of the evaluation was on the device design and operation. A 100 kg x 0.01 kg weighing element was submitted for the purpose of this evaluation. Several increasing/decreasing load and shift tests were performed. The device was tested over a temperature range of -10 ˚C to 40 ˚C (14 ˚F to 104 ˚F).

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Tests were also conducted using power supplies of 100 VAC and 130 VAC. A test load of approximately one-half capacity was applied over 100 000 times to the scale. The scale was tested periodically during this time.

Certificate of Conformance Number 91-145A5: This Certificate superseded Certificate of Conformance Number 91-149A4 and was issued to add capabilities of multiple weighing devices to the 7600S model. A 50 lb Model 7600S scale was interfaced with a 100 lb Model 7000 weighing element. Several increasing/decreasing load and compliance with tare functions tests were conducted on these devices.

Certificate of Conformance Number 91-145A4: This Certificate superseded Certificate of Conformance Number 91-149A3 and was issued to add Models 7500S and 7600S. The emphasis of the evaluation was on the device design, marking, and operation. The metrological components of the 7X00 Series indicators, weighing elements and complete scales are identical. A 10 lb Model 7600S scale, a 100 lb Model 7000 weighing element interfaced with a Model 7600M indicator, and a Model 7500M indicator were evaluated. Increasing/decreasing load and shift tests were conducted on these devices. Additionally, zero, zone of uncertainty, and unit conversions were tested. The devices were attached to a printer to verify printing and motion detection requirements.

Certificate of Conformance Number 91-149A3: This Certificate was issued to add suffixes to the model designation of the complete scales, to move the indicators and Model 7400 electronics boxes to Certificate of Conformance Number 97-009, and to add an optional external unit selection key. The emphasis of the evaluation was on the device design, marking, and operation. The operation of all standard features and the unit conversion feature were tested. The Model 7300 (50 lb x 0.01 lb) was attached to a printer to verify printing and motion detection requirements.

Certificate of Conformance Number 91-149A2 (dated July 13, 1992): This Certificate was issued to include additional units of measure in the device parameters and to clarify that the components on the certificate may be interfaced with other approved and compatible components to comprise complete weighing systems. This Certificate was issued without additional testing based on information provided by the manufacturer.

Certificate of Conformance Number 91-149A1 (dated February 7, 1992): This Certificate was issued to combine the test conditions for two evaluations. The original Certificate (Certificate of Conformance Number 91-149) was never published. Certificate of Conformance Number 91-149A1 (dated February 7, 1992) was issued without the amendment suffix.

Two scales were submitted for evaluation. The Model 7300 scale (10 lb capacity) had an integral display and function buttons. The Model 7000 weighing element (100 lb capacity) was interfaced with the Model 7400 electronics box (contains electronic and A/D convertor) and the Model REM DIS indicating element with function buttons and were tested together as a unit. Additionally, the Model 7000 weighing element and the REM DIS display with the Model 7400 electronics box were tested separately.

The emphasis of the evaluation was on the device design and operation. The devices were tested over a temperature range of -10 ˚C to 40 ˚C (14 ˚F to 104 ˚F) and with power supplies of 100 VAC and 130 VAC. A test load of approximately one-half capacity was applied more than 100 000 times to the Model 7300 scale and Model 7000 weighing element interfaced with the REM DIS display and Model 7400 electronics box. The scales were tested periodically during this time.

The results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements of NIST Handbook 44.

Type Evaluation Criteria Used: NIST Handbook 44, 2000 Edition

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