



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Weighing/Load Receiving Element
Platform Scale, Livestock Scale, Low Profile-Load Cell
Electronic
Models: HP and SLV Series
 n_{max} : (see page 2)
 e_{min} : (see page 2)
Capacity: (see page 2)
Platform: (see page 2)
Accuracy Class: III

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Standard Features and Options

The weighing elements covered by this certificate are identified by XxXHP-YYK or XxXSLV-YYK, where XxX is the platform dimensions in feet and YY is the capacity in thousand pounds.

Construction:

- HP Series Designates Carbon Steel Deck Construction
- HPSS Series Designates Stainless Steel Deck Construction
- HPHE Series Designates Stainless Steel Deck Construction with Hermetically Sealed Load Cells
- SLV Series Designates Carbon Steel Deck Construction Livestock Scale

The Following Models May Be Constructed of Mild or Stainless Steel:

- HPQC Series designates scales with deck lifting mechanism
- HPFT Series designates scales with forklift channels
- HPSD Series designates scales with removable polyethylene deck
- HPLD Series designates light duty scale

Load Cells Used:

- Rice Lake RL30000A1 Series (Certificate of Conformance No. 90-159A1)
- Rice Lake RL30000C Series (Certificate of Conformance No. 98-042)
- Rice Lake RL35023 (Certificate of Conformance No. 91-045)
- Flintec Model SLB Series (Certificate of Conformance No. 97-061A1)
- Celtron Model SQB Series (Certificate of Conformance No. 91-043A4)
- Sensortronics Model 65023 Series (Certificate of Conformance No. 86-044A2)
- or Metrologically Equivalent NTEP Approved Load cells

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.

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Chairman, NCWM, Inc.

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Issued: January 31, 2013

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Rice Lake Weighing Systems

Weighing/Load Receiving Element / HP and SLV Series

Application: For use as general-purpose floor scale or for weighing single heads of livestock (Model SLV) when interfaced with a compatible and NTEP Certified Indicating Element.

Identification: The required information is located on an approved label on the side of the scale base.

HP Series Weighing Element Sizes and Parameters:

Range of Platform Sizes		Range of Capacities (lb)		Range of e_{min} Values (lb)	
From	To	From	To	From	To
2' x 2'	8' x 10'	500 x 0.1	30 000 x 10	0.1	10

n_{max} not to exceed 5000 d

Length or width can be increased by 125% not to exceed maximum platform area: 80 sq. ft.

HPLD Weighing Element Sizes and Parameters:

Range of Platform Sizes		Range of Capacities (lb)		Range of e_{min} Values (lb)	
From	To	From	To	From	To
3' x 3'	-	2000 x 0.5	-	0.5	-
4' x 4'	-	2000 x 0.5	10 000 x 2	0.5	2
4' x 5'	5' x 5'	5000 x 1	10 000 x 2	1	2

n_{max} not to exceed 5000 d

Length or width can be increased by 125% not to exceed maximum platform area: 25 sq. ft.

SLV Livestock Scale:

Sizes	Range of Capacities (lb)	Section Capacity (lb)	Range of e_{min} Values (lb)
Up to 4' x 8'	4 000	4 000	1

n_{max} not to exceed 4000

Length or width can be increased by 125% not to exceed maximum platform area: 32 sq. ft.

Sealing: The load cell junction box is on the side of the weighing element or remotely mounted. Undetected access to the load cell junction box can be prevented by threading a wire security seal through holes in two screws in the cover to the junction box, through tabs on the junction box or with pressure sensitive seals over the joint of the junction box.

Test Conditions: This Certificate supersedes Certificate of Conformance No. 92-001A9 and is issued to recognize use of the SLV model as a multiple animal livestock scale because of the size of the weighing element. Although designated as a Class III device, NIST Handbook 44 allows the use of a higher Class device for lower Class weighing. The device was already tested for use with animals so no additional testing was deemed necessary. Previous test conditions are listed below for reference.

Certificate of Conformance Number 92-001A9: This Certificate supersedes Certificate of Conformance No. 92-001A8 and is issued to include the SLV Series and to clarify the maximum platform area allowed in the tables above. The emphasis of the evaluation of the SLV Series was on the device design and operation. For the purpose of this evaluation, the Model 4x8SLV-4k (4000 lb x 1 lb capacity) weighing element was interfaced with a Rice Lake Model IQ+355-2A indicating element (Certificate of Conformance No. 97-130A2). The load cells used were Sensortronics model 65023A2.5k (Certificate of Conformance No. 86-044A2). The initial evaluation included discrimination tests, increasing/decreasing distributed load tests using 4000 lb of test weights, corner tests at 1000 lb, and shift tests at 1000 lb. The device was sealed to meet the minimum use requirements of 30 days and 300 weighments of livestock. Permanence testing consisted of discrimination tests, increasing/decreasing distributed load test using 4000 lb of test weights, and shift tests over corners using 1,000 lb of test weights.

Certificate of Conformance Number 92-001A8: This Certificate supersedes Certificate of Conformance Number 92-001A7 and is issued without additional testing to correct platform size in the table on page two.

Certificate of Conformance Number 92-001A7: This Certificate supersedes Certificate of Conformance Number 92-001A6 and is issued to include additional models in the HP Series. The emphasis of the evaluation was on the device design and operation. For the purpose of this evaluation, the Model 5' x 5' HPLD (10 000 lb x 2 lb capacity) weighing element was interfaced with a Rice Lake Model IQ+310A indicator (Certificate of Conformance Number 91-123A3). Several increasing/decreasing load tests were conducted



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with 10 000 lb test weights. In addition, a corner tests at 2500 lb and shift tests at 5000 lb were conducted. These tests were repeated approximately 30 days later. The Model 4' x 4' HPLD (2000 lb x 0.5 lb) interfaced with a Rice Lake Model IQ+310 indicator (Certificate of Conformance Number 91-123A3) was also submitted for lab evaluation and tested for accuracy over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). A load of approximately one quarter capacity was applied over 100 000 times. Increasing/decreasing load, shift and corner tests were conducted periodically during this time.

Certificate of Conformance Number 92-001A6: This Certificate supersedes Certificate of Conformance Number 92-001A5 and is issued to change the contact information. No additional testing was required.

Certificate of Conformance Number 92-001A5: This Certificate supersedes Certificate of Conformance Number 92-001A4 and is issued to include additional models in the HP Series. The emphasis of the evaluation was on the device design and operation. For the purpose of this evaluation, an HPQC (4' x 4', 5000 lb x 1lb) and an HPSD (4' x 4', 5000 lb x 1 lb) load-receiving element were submitted and interfaced with a RLWS IQ+310A indicator (Certificate of Conformance Number 91-123A3). Several increasing/decreasing load and shift tests were performed. An HPFT (4' x 4', 5000 lb x 1 lb) load-receiving element was also evaluated for portable applications. The scale was interfaced with a RLWS IQ+310A indicator (Certificate of Conformance Number 91-123A3). Several increasing/decreasing load and shift tests were performed. The scale was moved several times and retested after each move. No further testing was deemed necessary.

Certificate of Conformance Number 92-001A4: This Certificate superseded Certificate of Conformance Number 92-001A3 and was issued to include additional models, capacities, and platform sizes in the HP Series. The emphasis of the evaluation was on the device design and operation. For the purpose of this evaluation, a 3' x 3' (500 lb x 0.1 lb capacity), a 3' x 3' (1000 lb x 0.2 lb capacity), and a 5' x 7' (1000 lb x 0.2 lb capacity) HP Series bases were submitted for evaluation and interfaced with a RLWS IQ+310 indicator (Certificate of Conformance Number 91-132A3). Several increasing/decreasing load and shift tests were performed. A load approximately one-half capacity was applied to the 500 lb (3' x 3'), and the 1000 lb (3' x 3') scale 100 160 times. The scales were tested periodically during this time.

Certificate of Conformance Number 92-001A3: This Certificate superseded Certificate of Conformance Number 92-001A3 and was issued to include additional models and capacities in the HP Series. The emphasis of the evaluation was on the device design, operation and marking requirements. For the purpose of this evaluation, the Model 8x10HP-30KHP base (30 000-lb x 10-lb capacity) was interfaced with a RLWS IQ+310 indicator (Certificate of Conformance Number 91-132A3). Several increasing/decreasing load and shift tests were performed. The scale was used for over 30 days with the minimum use criteria required by NTEP and then tested again.

Certificate of Conformance Number 92-001A2: This Certificate superseded Certificate of Conformance Number 92-001A1 and was issued to correct a typographical error in the model number table.

Certificate of Conformance Number 92-001A1: This Certificate superseded Certificate of Conformance Number 92-001 and was issued to include additional models and capacities in the HP Series.

Certificate of Conformance Number 92-001: The Model 5' x 7' HP-10K (10 000 lb x 1 lb capacity) weighing element was installed with a Rice Lake Model IQ700HB indicator for the evaluation. Two increasing/decreasing load tests were conducted with 10 000 lb test weights. In addition, a corner test at 2500 lb and two shift tests at 5000 lb were conducted. These tests were repeated approximately 30 days later. The Model 3' x 3' HP-2 K (2000 lb x 0.5 lb) was also submitted for lab evaluation and tested for accuracy over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). A load of approximately one quarter capacity was applied over 105 000 times to the Model 3' x 3' HP-2 K weighing element. Increasing/decreasing load, shift and corner tests were conducted periodically during this time.

Evaluated By: Gary Castro (CA) 92-001; W. West (OH) & M. Buccelli (MN) 92-001A3; W. West (OH) 92-001A4; E. Matthews (OH) 92-001A5; A. McCoy (OH), Craig Parker & Tom Maynard (City of Columbus) 92-001A7; D. Onwiler (NE) 92-001A9

Type Evaluation Criteria Used: NIST, Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices, 2013. NCWM, Publication 14: Weighing Devices, 2012.



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Conclusion: The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Information Reviewed By: T. G Butcher (NIST) 91-001A1; L. Sebring (NIST) 91-001A2; S. Patoray (NCWM) 92-001A6, 92-001A7, 92-001A8, 92-001A9; L Bernetich (NCWM) 92-001A7, 92-001A8, 92-001A9; J. Truex (NCWM) 92-001A10

Examples of Device:

HPQC



HP



SLV

