

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

For:  
 Load Cell  
 Single-Ended Shear Beam  
 Model: SSB Series  
 $n_{max}$ : Single Cell: 3000  
 $n_{max}$ : Single Cells: 10 000  
 Capacity: 500 kg to 5000 kg, (1000 lb to 10 000 lb)  
  
 Accuracy Class: III/III L

Submitted by:  
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**Standard Features and Options**

The Model SSB Series is identified by the designation SSB-X<sub>1</sub> X<sub>2</sub>-Y<sub>1</sub> Y<sub>2</sub>-Z<sub>1</sub> Z<sub>2</sub> Z<sub>3</sub> Z<sub>4</sub>, where

SSB	X <sub>1</sub>	X <sub>2</sub>	Y <sub>1</sub> Y <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	Z <sub>3</sub>	Z <sub>4</sub>
	A = Class III B = Class III L	$n_{max}$ in thousands	Y <sub>1</sub> = capacity in thousands of pounds Y <sub>2</sub> = units, where K = pounds and t = metric tons	electrical cable length or connector		P = analog D = digital	wiring and private label variations

The specific load cell capacities,  $v_{mins}$ , and minimum dead loads are listed on Page 2 of this certificate.

NOTE: A unique alphanumeric Z<sub>3</sub>Z<sub>4</sub> suffix combination (for example S499, etc.) is used to define analog or digital-option equipped load cells which have non-standard features that have no metrological effect (for example, special color).

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.

Effective Date: April 9, 1999

*Louis E. Straub*

Louis E. Straub  
 Chairman, NCWM, Inc.

*G. Weston Diggs*

G. Weston Diggs  
 Chairman, National Type Evaluation Program Committee

Issue date: July 12, 1999

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.

**Revere Transducers, Inc.**  
**Single-Ended Shear Beam Load Cell**  
**Model: SSB Series**

**Application:** The load cells may be used in Class III and III L scales for both single and multiple cell applications consistent with the model designations and parameters specified in this certificate. Load cells of a given accuracy class may be used in applications with lower accuracy class requirements provided the number of scale divisions, the  $v_{\min}$  values, and temperature range are suitable for the application. The Manufacturer may market load cells with fewer scale divisions ( $n_{\max}$ ) and with larger  $v_{\min}$  values than those listed on the certificate. However, the load cells must be marked with the appropriate  $n_{\max}$  and  $v_{\min}$  for which the load cell may be used.

**Identification:** A pressure sensitive identification badge containing the manufacturer, model designation, and serial number is located on the load cell. All other required information must be on an accompanying document including the serial number of the load cell.

**Load Cell Parameters:**

Model	Capacity	Class III $v_{\min}$	Class III L $v_{\min}$	Minimum Dead Load
SSB-C3-.5t	500 kg	0.05 kg		0
SSB-C3-1t	1000 kg	0.10 kg		0
SSB-C3-2t	2000 kg	0.20 kg		0
SSB-C3-2.5t	2500 kg	0.25 kg		0
SSB-C3-5t	5000 kg	0.50 kg		0
SSB-A3-1K	1000 lb	0.10 lb		0
SSB-A3-2K	2000 lb	0.20 lb		0
SSB-A3-5K	5000 lb	0.50 lb		0
SSB-A3-10K	10 000 lb	1.00 lb		0
SSB-B10-1K	1000 lb		0.03 lb	0
SSB-B10-2K	2000 lb		0.06 lb	0
SSB-B10-5K	5000 lb		0.16 lb	0
SSB-B10-10K	10 000 lb		0.33 lb	0

**Test Conditions:** This Certificate supersedes Certificate of Conformance Number 86-041A2 and is issued to include a digital output option. A representative sample of a load cell equipped with a digital output option was tested at NIST using dead weights as the reference standard. The data were analyzed for single cell load cell applications. The load cell was tested over a temperature range of  $-10^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ . Three tests were run at each temperature. The temperature effect on zero was measured and a time dependence test (creep) was performed. The barometric pressure test was waived due to the insensitivity of the load cell to barometric pressure. Previous test conditions are listed below for reference.

**Certificate of Conformance Number 86-041A2:** This Certificate superseded Certificate of Conformance Numbers 86-041 and 86-041A1 and was issued to add Class III L load cells.

Data submitted in 1987 for a 2000-lb capacity load cell was originally analyzed for the classification of III, S, and 3000d. The original data was again analyzed for Class III L applications and found to comply with NTEP requirements.

**Revere Transducers, Inc.**  
**Single-Ended Shear Beam Load Cell**  
**Model: SSB Series**

**Test Conditions (Continued):**

**Certificate of Conformance Number 86-041A1:** This Certificate was in addition to Certificate of Conformance Number 86-041 dated April 7, 1988. This Certificate was issued to reflect new values for  $v_{\min}$  based upon the change to Handbook 44 performance requirements for the temperature effect on zero, effective January 1, 1991. Certificate Number 86-041 remains in effect for those load cells manufactured under that Certificate.

All testing was performed in accordance with IR60 and PTB-Me-30, par. 3.1.1., using dead weight machines. Cells of each capacity were tested using dead weights as the reference standard. The data were analyzed for single load cell applications. The cells were tested over a temperature range of  $-10^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ . Three tests were run on each cell at each temperature. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure. The manufacturer's laboratory was used to collect the test data.

Representatives from the National Institute of Standards and Technology evaluated the manufacturer's test facility, witnessed repeat tests on the load cells, and analyzed the data.

**Certificate of Conformance Number 86-041 Amended:** This Certificate superseded Certificate of Conformance Number 86-041P and was issued to upgrade the status of the Certificate from provisional to full. This Certificate also superseded Certificate of Conformance Number 86-041 issued on April 4, 1988.

A 2000-kg load cell was tested using a dead weight force machine. The data were analyzed for single load cell applications. The cell was tested over a temperature range of  $-10^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ . Three tests were run on the cell at each temperature. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure. The manufacturer's laboratory was used to collect the test data.

Representatives from the National Institute of Standards and Technology evaluated the manufacturer's test facility, witnessed repeat tests on the load cells, and analyzed the data.

**Certificate of Conformance Number 86-041P:** All testing was performed in accordance with IR60 and PTB-Me-30, par. 3.1.1., using dead weight machines. Cells of each capacity were tested using dead weights as the reference standard. The cells were tested over a temperature range of  $-10^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ . Three tests were run on each cell at each temperature. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure. The manufacturer's laboratory was used to collect the test data.

Representatives from the National Institute of Standards and Technology evaluated the manufacturer's test facility, witnessed repeat tests on the load cells, and analyzed the data.

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

**Type Evaluation Criteria Used:** NIST Handbook 44, 1999 Edition

**Tested By:** NIST Force Group, NIST Office of Weights and Measures

**Information Reviewed By:** R. Whipple (NIST) 86-041A2; L. T. Sebring (NIST) 86-041A3