National Conference on Weights and Measures
15245 Shady Grove Road, Suite 130 • Rockville, MD 20850

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

For:
Load Cell
Shear Beam
Model: BSA Series
n_{max}: Multiple Cell: 5000
Capacity: 1000 lb to 10 000 lb

Accuracy Class: III

Submitted by:
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Standard Features and Options

Model	Capacity		v_{min}		Minimum Dead Load
BSA - 1K		1000 lb		0.10 lb	0
BSA-500 L	500 kg		0.05 kg		
BSA - 2K		2000 lb		0.20 lb	0
BSA-01	1000 kg		0.1 kg		
BSA - 2.5K		2500 lb		0.25 lb	0
BSA - 3K		3000 lb		0.30 lb	0
BSA - 4K*		4000 lb		0.40 lb	0
BSA - 02	2000 kg		0.2 kg		
BSA - 03	3000 kg		0.3 kg		
BSA - 5K		5000 lb		0.50 lb	0
BSA - 5KS		5000 lb		0.50 lb	0
BSA - 10K		10 000 lb		1.00 lb	0

* Device tested.

Material: Tool steel (4340)
Nominal output: 3.0 mV/V
Excitation: 10-15 vdc
Number of wires: 4 wires

Temperature Range: -10 to 40 °C (14 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: February 16, 1999

Louis E. Straub
Chairman, NCWM, Inc.

G. Weston Diggs
Chairman, National Type Evaluation Program Committee

Issue date: May 21, 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.

CAS (USA) Corporation
Shear Beam Load Cell
Model: BSA Series

Application: The load cells may be used in Class III scales for multiple cell applications consistent with the model designations, number of scale divisions, 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 the load cell with fewer 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, if not marked on the load cell, must be on an accompanying document including the serial number of the load cell.

Test Conditions: This Certificate supersedes Certificate of Conformance Number 96-072 and is issued without additional testing to add new capacities (Models BSA-500 L, BSA-01, BSA-02, BSA-03) to the BSA Series. Previous test conditions are listed below for reference.

Certificate of Conformance Number 96-072: Two 4000-lb capacity load cells were tested at NIST using dead weights as the reference standard. The data were analyzed for multiple load cell applications. The cells were tested over a temperature range of -10 °C to 40 °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 results of the evaluation indicate that the load cells comply with the 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: D.M. Ripley (NIST) 96-072; T. Ahrens (NIST) and G. Newrock (NIST) 96-072A1