

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

**For:**

Load Cell  
Triple Beam, Single Point  
Model: TBSP Series  
 $n_{\max}$ : Multiple Cells: 3000  
Capacity: 100 lb to 1000 lb

Accuracy Class: III

**Submitted by:**

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**Standard Features and Options**

The specific capacities,  $v_{\min}$  values, and minimum dead loads of the load cell covered by this Certificate are listed below. For capacities not listed, see note below.

Model	Capacity (lb)	Multiple Cell	Minimum Dead Load (lb)
		$v_{\min}$ (lb)	
TBSP-100	100	0.014	0
TBSP-250*	250	0.035	0
TBSP-500	500	0.070	0
TBSP-750	750	0.105	0
TBSP-1000	1000	0.140	0

\*Load cell submitted for type evaluation.

\*\***NOTE:**  $v_{\min}$  for capacities between 100 lb and 1000 lb not listed above may be computed by the formula:

$$v_{\min} \geq \text{capacity} \div 7142$$

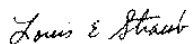
Nominal Output: 3 mV/V

4-wire design

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: November 15, 1999



Louis E. Straub  
Chairman, NCWM, Inc.



G. Weston Diggs  
Chairman, National Type Evaluation Program Committee

Issue date: January 4, 2000

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.

**Group Four Transducers, Inc.**  
**Triple Beam, Single Point Load Cell**  
**Model: TBSP 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:** Two 250 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 indicates 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:** J. Williams (NIST) and G. Newrock (NIST)