NATIONAL TYPE EVALUATION PROGRAM

# Certificate of Conformance

## for Weighing and Measuring Devices

**For:**
Load Cell
Double-Ended Shear Beam
Model: ML400 Series
$n_{max}$ Multiple Cell: 10 000
Capacity: 25 000 lb to 125 000 lb
Accuracy Class: III L

***Submitted By: Contact Info. Updated Nov. 2013**
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**Standard Features and Options**

- Nominal Output: 3.0 mV/V
- 4-wire Design

| Model | Maximum Capacity | Minimum Load Cell Interval ($v_{min}$) Multiple Cells | Minimum Dead Load |
|---|---|---|---|
| ML400 | 25 000 lb | 1.0 lb | 500 lb |
| ML400 | 40 000 lb | 1.6 lb | 2500 lb |
| ML400 | 50 000 lb* | 2.0 lb | 2500 lb |
| ML400 | 60 000 lb | 2.4 lb | 2500 lb |
| ML400 | 75 000 lb | 3.0 lb | 2500 lb |
| ML400 | 100 000 lb | 4.0 lb | 2500 lb |
| ML400 | 125 000 lb | 5.0 lb | 2500 lb |

*Load cell capacity submitted for type evaluation.

Temperature Range: -10 ºC to 40 ºC (14 ºF to 104 ºF)

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.

Kurt Floren
Chairman, NCWM, Inc.

Jim Tyson
Chairman, National Type Evaluation Program Committee

Issued: April 23, 2012

**1135 M Street, Suite 110 / Lincoln, Nebraska 68508**

## Massload Technologies, Inc.

Load Cell / ML400 Series

**Application:** The load cells may be used in Class III L 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 99-035 and was issued without additional testing to reactivate Certificate of Conformance number 99-035. Changes were also made to update the contact information. Previous test conditions are listed below for reference.

**Certificate of Conformance Number 99-035:** Two 50 000 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.

**Evaluated By:** NIST Force Group, 99-035

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

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

**Information Reviewed By:** G. Newrock (NIST) and J. Williams (NIST) 99-035; J. Truex (NCWM) 09-035A1

**Example of Device:**