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

For:

Load Cell
Bending Beam
Model: 713
n_{max}, Single: 3000
n_{max}, Multiple: 5000
Capacity: 500 lb to 10 000 lb (See Page 2)

Accuracy Class: III

Submitted by:

Mettler-Toledo, Inc.
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Contact: Darrell Flocken

Standard Features and Options

The specific load cell capacities, v_{min} values, and minimum dead loads are listed on Page 2.

Number of Wires:	4-wire
Excitation Voltage Range:	5-15V
Minimum Dead Load:	0 lb
Output Rating:	3.0 mV/V
Bridge Impedance:	350 ohms

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: June 10, 1997

Louis E. Straub
Chairman, NCWM, Inc.

G. W. Diggs
Chairman, National Type Evaluation Program Committee

Mettler-Toledo, Inc.
Bending Beam Load Cell
Model: 713

Load Cell Parameters:

Capacity (lb)	v_{min}, Single Cell (lb)	v_{min}, Multiple Cell (lb)
500	0.05	0.05
1000	0.10	0.10
2000	0.20	0.20
2500	0.25	0.25
3000	0.30	0.30
4000	0.40	0.40
5000	0.50	0.50
10 000	1.00	1.00
* Two cells submitted for evaluation		

Application: The load cells may be used in Class III scales for single cell applications with up to 3000 divisions and multiple cell applications with up to 5000 divisions 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 is issued based on the following tests and upon information provided by the manufacturer. Two 1250-lb capacity load cells with 1.5 mV/V output and two 2500-lb capacity load cells with 3.0 mV/V output were tested using a hydraulic test stand using a load cell as the reference standard. The data were analyzed for single and 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.

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.

Type Evaluation Criteria Used: NIST Handbook 44, 1997 Edition

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

Information Reviewed By: T. Ahrens (NIST)