

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

**For:**

Load Cell  
Single Point  
Model: MTB Series\*  
 $n_{\max}$ : 3000 Single Cell, Class III  
 $n_{\max}$ : 5000 Multiple Cell, Class III  
Capacity: 5 kg to 500 kg

Accuracy Class: III

**Submitted by:**

Mettler-Toledo, Inc.  
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**Standard Features and Options**

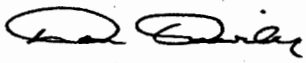
\* The specific capacities,  $v_{\min}$  values, and minimum dead loads of load cells covered by this certificate are listed in the table on Page 2.

The series is identified by the model designation followed by a suffix, which represents the load cell capacity.

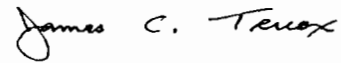
Material: Stainless steel  
Cable: 6-wire design  
Nominal Input Impedance: 387 Ohms  
Nominal output: 2 mV/V  
Excitation voltage: 5.0 Volt to 15 Volt (maximum) AC/DC  
Sealing: Metal Bellows

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.



Don Onwiler  
Chairman, NCWM, Inc.



James C. Truex  
Chairman, National Type Evaluation Program Committee  
Issued Date: April 12, 2006

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.

**Mettler-Toledo, Inc.**  
**Load Cell, Single Point**  
**Model: MTB Series**

**Application:** The load cells may be used in Class III scales for both single and 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 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.

**Load Cell Parameters:**

Model	Capacity (kg)	$v_{\min}$ (kg) Single	$v_{\min}$ (kg) Multiple	$n_{\max}$ single	$n_{\max}$ multiple	Min Dead Load kg
MTB-5	5	0.0004	0.0004	3000	5000	0
MTB-10	10	0.0008	0.0008	3000	5000	0
MTB-20*	20	0.0016	0.0016	3000	5000	0
MTB-50	50	0.0041	0.0041	3000	5000	0
MTB-75	75	0.0062	0.0062	3000	5000	0
MTB-100*	100	0.0083	0.0083	3000	5000	0
MTB-200	200	0.0166	0.0166	3000	5000	0
MTB-300	300	0.025	0.025	3000	5000	0
MTB-500	500	0.0418	0.0418	3000	5000	0

\*Load Cells submitted for testing

**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:** Test data was analyzed for the 20 kg and 100 kg load cells submitted. Two 20 kg and two 100 kg load cells were tested using dead weights as the reference standard. The data was 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 at each temperature. The temperature effect on zero balance condition 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.

**Type Evaluation Criteria Used:** NIST Handbook 44, 2006 Edition, NCWM Publication 14, 2005 Edition

**Tested By:** Gary Castro (CA), Sam Boyd (CA), John Latham (CA)

**Conclusion:** The results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements.

**Information Reviewed By:** S. Patoray (NCWM), L. Bernetich (NCWM)