NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:
Indicating Element
Digital Electronic
Model: MSI-8004HD
n_{max}: 10 000
Accuracy Class: III / III L

Submitted By:
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Standard Features and Options

Standard Features:

- Semi-Automatic (push-button) Zero (SAZSM)
- Automatic Zero Tracking (AZT)
- Semi-Automatic (push-button) Tare
- LED Display
- 100 – 240 VAC or 12 VDC nominal (battery) Power
- Dual RS-232 Communication Port
- Wireless Communication
- Linearity Calibration Points (5)
- Selectable Primary and Secondary Units
- Unit Conversion (lb / kg)
- Configurable Keys (F1 – F3)
- Category 1 Physical Seal
- Multi-deck (Multi-channel) Capability (4 Channels plus summing)

Optional Features:

- Remote Display
- Wi-Fi / Ethernet / Bluetooth Modules
- Set Point Relay Output Modules
- 4-20 mA Output Modules
- VDC Power Options (5 VDC Nominal, 8-32 VDC Range, and 9-36 VDC Range)

Temperature Range: -5 °C to 40 °C (23 °F to 104 °F)

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.

James Cassidy
Chairman, NCWM, Inc.

Kristin Macey
Committee Chair, National Type Evaluation Program Committee

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Rice Lake Weighing Systems

Indicating Element / MSI-8004HD

Application: A general-purpose indicating element, with optional remote display, to be interfaced with an NTEP Certified and compatible weighing element(s).

Identification: The Multi-Interval / Multiple Range capacity by division statement and the CLC designation (where applicable), will appear on an adhesive label placed on the front of the indicator. The device will also have a capacity by division statement directly beneath the weight display as well. The other required information appears on an adhesive label on the back the indicator.

Sealing: The device uses a category 2 physical seal. Seal the indicator by threading a wire through a predrilled screw head on the top and through two predrilled screw heads on the back which prevent access to an internal calibration/configuration momentary push button.

Test Conditions: This certificate supersedes Certificate of Conformance 17-036 and was issued to correct two errors on the previous version. The Initial zero setting feature was identified in the "Standard Features and Options box has been deleted as the indicating element does not include that feature. In addition, the previous certificate incorrectly identified a sealing Category 1, which has been changed to correctly state a Category 2 method of sealing. The previous test conditions are listed below for reference.

Certificate of Conformance Number 17-036A1: This certificate supersedes Certificate of Conformance 17-036 and was issued to add 3 DC voltage options (5 VDC nominal, 8-32 VDC, and 9-36 VDC). (3) Rice Lake MSI-8004HD indicators were submitted. The nominal 5 VDC indicator was tested at 4.75 to 5.5 VDC. The 8-32 VDC indicator was tested at 7.3 to 35.2 VDC, and the 9-36 VDC indicator was tested at 8.6 to 39.6 VDC. No other testing was deemed necessary.

Certificate of Conformance Number 17-036: The emphasis of this evaluation was on device design, marking requirements, performance, operation, and compliance with influence factor requirements. A Rice Lake MSI-8004HD interfaced to a load cell simulator was submitted for evaluation. Several increasing/decreasing and discrimination (zone of uncertainty) tests were performed. The indicator was tested over a temperature range of -5 °C to 40 °C (23 °F to 104 °F). Additional tests were conducted with variable voltages of 85 VAC to 264 VAC and 11.5 VDC to 14 VDC. Another Rice Lake MSI-8004HD was submitted and interfaced with 3 load cell simulators and 1 Rice Lake Weighing/Load Receiving Element to evaluate multi-deck (4) and summing capability, printing, unit conversion, wireless and other checklist requirements.

Evaluated By: J. Morrison (OH) 17-036; M. Kelley (OH) 17-036A1

Type Evaluation Criteria Used: *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2017 Edition. *NCWM Publication 14 Weighing Devices*, 2017 Edition.

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

Information Reviewed By: J. Truex (NCWM) 17-036, 17-036A1, 17-036A2

Example of Device: