



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Indicating Element
Digital Electronic
Model: 8000 Repel and 8000SS Repel
 $n_{\max}$: 10 000
Accuracy Class III / III L

Submitted By:

Tufner Weighing Systems
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Standard Features and Options

Automatic Zero Tracking (AZT)
Initial Zero Setting Mechanism (IZSM)
Semi-Automatic Zero (push- button)
Semi-Automatic (push- button) Tare
Power saving Feature (Auto Shut Off)
A/C Power supply
Stainless Steel or Plastic Enclosures
Center of Zero Annunciator
Category I Audit Trail

7 Digit, 7-Segment (numeric) Display
Unit Conversion (lb., kg, g, oz) (lb-oz Not legal for trade)
Gross/Net/Tare Annunciators
Stable Weight Annunciator
Time/Date Printing
Low Battery Annunciator
Multi-Point Calibration (up to 3)
RS-232 Bidirectional Communication
Liquid Crystal Display (LCD)
Multi-Interval

Optional Features:

DC power (Battery)
Reverse LCD Display
Wireless communication (Bluetooth, Wi-Fi, RS485)

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.

Craig VanBuren
Chairman, NCWM, Inc.

Stephen Benjamin
Chair, NTEP Committee
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Tufner Weighing Systems

Indicating Element / 8000 Repel and 8000SS Repel

Application: General purpose indicating element for use with a NTEP certified and compatible weighing/load receiving element.

Identification: The required markings are located on an adhesive label on the top of the indicator. If an attempt is made to remove the label, a checkerboard pattern will be present to indicate the label has been removed.

Sealing: These indicators use a Category I Audit Trail: Configuration and calibration counters update each time a configuration or calibration change occurs. The counters return to zero after 1000 changes, individually. The counters may be viewed by powering up the unit. The screen will display the configuration audit counter ("CF") and the calibration audit counter ("CA"). Seal these devices using one wire security seal through two adjacent screws on the rear cover; this prevents internal access to the calibration jumper.

Test Conditions: This certificate is issued based upon the following tests and upon information provided by the manufacturer. The emphasis of the evaluation was on device design, marking, operation, performance, and compliance with influence factors. One model 8000 Repel and one model 8000SS Repel indicating elements, (plastic case and stainless-steel case) were submitted for evaluation. The 8000 Repel indicator was interfaced to a Doran model: DXL 8100 weighing/load receiving element (Certificate of Conformance 97-097A1) to verify compliance with zero, zone of uncertainty, unit conversion, and motion detection requirements. Additionally, the 8000 Repel was interfaced to a load cell simulator to perform several increasing / decreasing tests, warm-up test and power interrupt test. Wireless communication tests were also performed. Temperature tests were performed on both stainless steel and plastic cases over a range of -10 °C to 40 °C (14 °F to 104 °F).

Evaluated By: J. Gibson (OH)

Type Evaluation Criteria Used: *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2019 Edition. *NCWM Publication 14 Measuring Devices*, 2018 Edition.

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

Information Reviewed By: D. Flocken (NCWM)

Example(s) of Device:



8000 Repel



8000SS Repel