NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:
Weigh In-Motion Vehicle Scale
Single Draft, Vehicle Scale, Load Cell, Electronic
Model: OTR-IMS
n_{max}: 10 000
e_{min}: 20 lb
Max. Capacity: 200 000 lb
CLC: 100 000
Accuracy Class: III L

Submitted By:
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Standard Features and Options

System Configuration:

- **Indicating Element:** 1280-2A (Certificate of Conformance Number: 15-001)
- **Weighing/Load Receiving Element:** EZ Series (Certificate of Conformance Number: 02-003)
- **Load Cells:** RL75058-LP 75K (Certificate of Conformance Number: 98-143)

Construction and Installation Information:

- **Scale Deck Type:** Concrete or Steel
- **Scale Installation:** OTR version with side rails, above ground or pit.

Weigh-In-Motion Parameters:

- **Speed: Max –** 6 mph
  Min – 1 mph
  Max Change – 3 mph
- **Minimum Data Acquisition Time (DAT):** 1.5 Seconds
- **Direction of Travel:** Single or Bi-Directional
- **Off Platform Detection:** is a physical barrier mounted to the scale platform.

This device was evaluated under the National Type Evaluation Program 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. *Editorial changes, not affecting the type or metrological content, corrected this certificate.

Marc Paquette
Chair, NCWM, Inc.

Gene Robertson
Chair, NTEP Committee
Issued: July 30, 2024

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Rice Lake Weighing Systems
Weigh In-Motion Vehicle Scale / OTR-IMS

Application: For single draft, in-motion weighing of vehicles.

Identification: The required markings are on a self-destructive data label attached to the side of the indication element. The marking requirements and description for the Indicating Element, Weighing/Load Receiving Element, and the Load Cells can be found on the Certificate of Conformance for the individual element.

Software Version: The software version for the Weigh-In-Motion application can be found by selecting the menu located in the lower right-hand corner of the operator's screen, directly below the printer icon. A setup screen will be displayed with the software version number (1.xx) displayed across the top of the screen. See Figure 1.

The software version for the Indicating Element can be found by pressing the Menu access icon ☰ on the upper left-hand corner of the operator's screen. The screen will now have a "Main Menu" displayed on the left-hand side. See Figure 2. Select the "Configuration" option. The screen will now show the configuration page. The software version number (V2.xx.yy) will be displayed at the bottom of the screen. See Figure 3.

Sealing: Metrological functions for the indicating element and the weighing/load receiving element are sealed using the sealing method described in the appropriate Certificate of Conformance.

Operation: The approach of the vehicle is detected by the speed sensor(s) when the steering tires first enter the platform. The speed sensor defines the direction of travel and the speed of the approaching vehicle. When the front wheels first enter the platform, the weighing process begins. The system determines when the last axle of the vehicle is on the platform and begins the process of determining the vehicle's gross weight. The weighing process continues until the Data Acquisition Time is exceeded. The weighing process is stopped and the gross vehicle weight displayed to both the operator and the vehicle driver. Throughout the weighing process, the system monitors the action of the vehicle looking for any operational errors. If an error is detected, an error message is displayed for both the operator and the vehicle driver, and the weighing process is aborted.

Error Messages:

- Vehicle Approach Speed: The vehicle speed is detected by a speed sensor as the vehicle approaches the scale. If the vehicle's speed is greater than the system speed threshold a "Slow Down" message is displayed to both the operator and the vehicle driver. The speed indicator on the system screen turns red. If the vehicle is still above the system speed threshold an "Invalid Weight" message is displayed to both the operator and the vehicle driver.
- Maximum Speed Exceeded: If, during the weighing process, the vehicle speed exceeds the maximum speed value, the weighing process is aborted an "Invalid Weight" message is displayed to both the operator and the vehicle driver.
- Minimum Speed Error: If the vehicle's speed drops below the minimum speed value, the system switched from in-motion operation to a static weighing mode. When this occurs, the operator and the vehicle driver sees the vehicle's static weight and the message "Static" is displayed on the operator screen.
- Vehicle Change Speed: If the vehicle's speed changes more than the change in speed value, the weighing process is aborted, and an "Invalid Weight" message is displayed to both the operator and the vehicle driver.
- Directional Error: On a bi-directional system, if both speed sensors detect multiple vehicles both the operator and the vehicle driver see a "DIR-ERR" or a "DIRECTION ERROR" message.
- Insufficient Data Acquisition Time: In the event that the vehicle is not on the scale for the required Data Acquisition Time, the weighing process is aborted, and an "Invalid Weight" message is displayed to both the operator and the vehicle driver.
- Vehicle stopped on the Scale: If the vehicle comes to a stop of the scale, the weighing process is aborted, and the operator and the vehicle driver sees the vehicle's static weight and the message "Static" is displayed on the operators screen.
- Vehicle is off either side of the platform: This error is not applicable to this system as the platform must have guard rails which prevent the vehicle from going off either side of the platform.

Test Conditions: The emphasis of the evaluation was on the marking, and performance of the single draft, weigh-in-motion system. The system consisted of a 80' x 11', 120 000 lb x 20 lb, (4 section) Model EZ 8011-100 (CC: 02-003) combination concrete and steel deck weighing/load receiving element, using a Rice Lake Weighing System Model RL75058-LP-75K (CC: 98-143) load cells, and a Rice Lake Weighing Systems Model 1280-2A (CC: 15-001) indicating element. The Model EZ 8011-100 weighing/load receiving

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element's performance was verified for use as the reference scale for determining the weight of the reference vehicles. Performance was verified to be less than 1/3 the value of the increment (e) value. Four different reference vehicle types, as defined in Pub 14, were used during the evaluation. Three of the vehicle types were loaded to three different loading conditions and run across the scale a minimum of five times in each direction varying from near minimum to near maximum speeds. In addition, a half-loaded Class 6 tanker was run across the scale five times in each direction with varying speeds. All weighments were within applicable tolerances.

The system's speed detection was verified using the timing method with a certified.

Throughout the testing, various error conditions were created to verify correct performance. All error conditions were detected and displayed to both the system operator and the vehicle driver.

Evaluated By: D. Flocken (NCWM) 24-071 (CN 11083)

Type Evaluation Criteria Used: *Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2024 Edition. *NCWM Publication 14: Weighing Devices*, 2024 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) 24-071

Example(s) of Device:

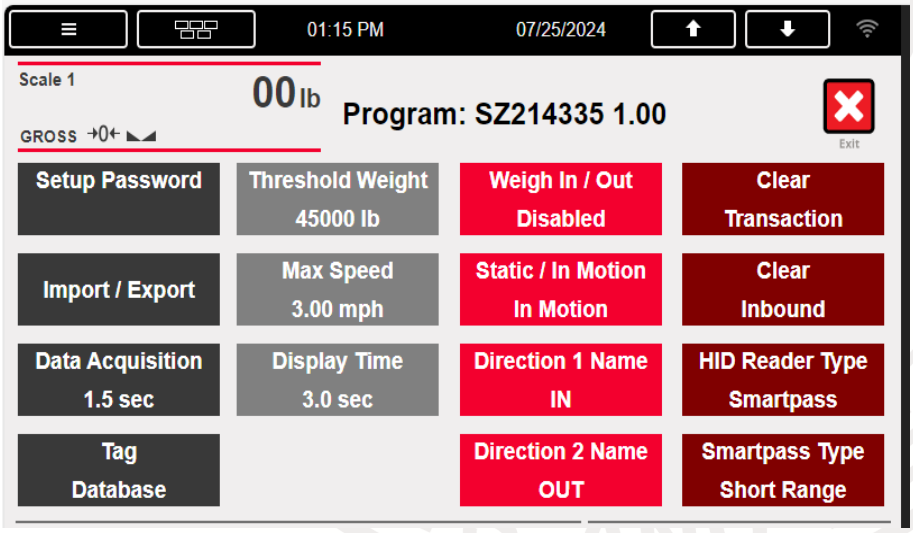

Figure 1 (WIM Application Software Version Number)

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Figure 2 (Main Menu)

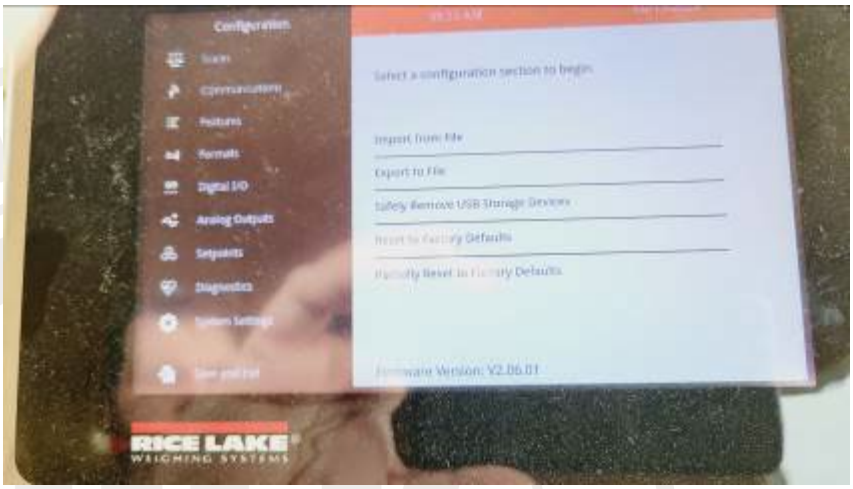

Figure 3 (Indicating Element Software Version Number)

Indicator with WIM Application Operator's Screen

Speed Sensor and Driver Display

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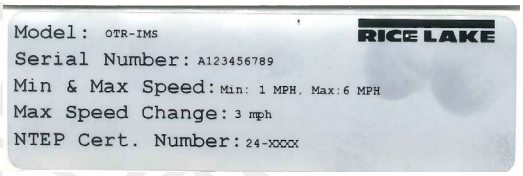
Weighing/Load Receiving Element showing Side Rails



Data Label for WIM operation