NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:
Indicating Element
Digital Electronic
Model: R400 Series
n_{max}: 10 000
Accuracy Class: III / III L
Software Version:
K425 V1. x.x. and L925-5xx V1.x.x or higher for Static/ In-motion rail weighing

Submitted By:
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Standard Features and Options

- Semi-Automatic (push button) Zero Setting Mechanism (SAZSM)
- Automatic Zero Tracking (AZT)
- Initial Zero Setting Mechanism (IZSM)
- Semi-Automatic (push button) Tare
- Keyboard Tare
- Multiple Tare Memories
- Gross/Net/Tare Display
- Alphanumeric Display
- Operator Prompted Display
- Units Selection (lb, kg, oz, g, t)
- Gross/Net Accumulation
- Multi-Point Linearity Calibration
- Liquid Crystal Display (LCD)
- AC or DC Power
- Lua Module (R400 series) see below *
- Password Protection
- Vehicle Weighing (Inbound / Outbound)
- Configurable Set Points
- Database Memory
- RS-232/485Communications Port
- User Programmable for Non-metrological Functions
- Multiple Programmable Print Formats
- Rinstrum Viewer Configuration Software (PC)
- ABS Plastic Enclosure (R420)
- Category II Audit Trail
- Silicon Rubber Keypad (R420)
- Membrane Keypad (R423, R427 & R457)
- Configurable Function Keys
- Stainless Steel Enclosure (R423, R427 & R457

*** Lua Module:** The Lua module is used for coupled in-motion rail weighing when combined with the R400 series indicating element. The Lua module is only compatible and certified for use with the R400 series indicating element. The LUA module is certified for speeds of 1mph to 6 mph.

- Push/Pull Operation coupled-in-motion
- Bi-Directional Operation
- Empty and Loaded cars
- Formattable print output
- Web-Interface for operator use

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
Committee Chair, NTEP Committee
Issued: March 6, 2020

Rinstrum Inc.

Indicating Element / R400 Series

Application: All R400 series indicating elements are for use with certified and compatible weighing/load receiving elements. When the Lua module and proprietary Rinstrum software is added to the R400 series it is certified for static and in motion rail weighing.

Identification: An adhesive identification badge containing all required information is located on the front of the indicating element. This badge repeats the word "VOID" when removed.

The static rail weighing software is defined with a 4-character software version number that is shown during start up on the main indicating element screen or is accessed by clicking the CC number on the railWEIGHr web display. K425 V1. x.x.

The dynamic rail weighing software is defined by the 7-character version number also displayed during start up on the main indicating element screen or is accessed by clicking the CC number on the railWEIGHr web display. L925-5xx V1.x.x

Sealing: These devices are equipped a category 2 audit trail with a non-resettable counter that increments every time the unit is calibrated or configured. To view the counters:

1. Press and hold the power key for 3 seconds to turn off the indicator.
2. Press the power key to turn the indicator back on.
3. The event counters will be displayed during the power up sequence for approximately two seconds.
    a. The calibration counter will be identified by C.xxxxx (example: C.00005).
    b. The setup configuration counter will be identified by F.xxxxx (example: F.00005).

The device's setup mode may be accessed via front panel keys protected with a 6-digit PIN code, by default. Alternatively, setup mode can be accessed via a button marked "setup" located on the rear of the indicator which can be protected using traditional physical seals in addition to the PIN code. Enable the rear "setup" button as follows:

The setup button is located on the rear of the unit, above the load cell connector on both the R420 and R423.

1. Press and release the setup button to access the setup mode and make changes or calibrate.
2. Press and release the [ZERO] key multiple times until "SCALE" is displayed.
3. Press and release the [TARE] key multiple times until "OPTION" is displayed.
4. Press and release the [SELECT] key multiple times until "R. ENTRY" is displayed.
5. Press and release the [UP ARROW] key one time until "R. ENTRY" is set to "ON".
6. Press and release the [OK] key one time to accept the change.
7. Press and release the [POWER] key one time to save the changes and exit setup mode.
8. The setup mode cannot be accessed again without pressing the rear "setup" button, and is sealed by the following methods:
    a. Standard ABS and Stainless Steel housed units are sealed by a physical seal in the form of a wire security seal placed through 2 of the drilled head screws holding the rear cover onto the main housing, or by placing a destructible label on the unit extending from the main housing onto the properly installed rear cover.
    b. For panel mount applications place the physical seal plastic cover over the load cell connector and setup button and secure into position with the drilled head screws. Thread wire security seal through both drill head screws, or install destructible label from security cover to indicator housing, as required.

Test Conditions: This certificate supersedes Certificate of Conformance 14-051A1 and is issued to add the LUA module to the R400 series indicating elements. The LUA module is used for coupled In-motion rail weighing. The R457 indicating element and LUA module were evaluated with a Fairbanks Weighing/Load Receiving element (Certificate of Conformance Number 01-016). The emphasis of the evaluation was on the system design, operation and software interface. The test was performed at a field location by statically testing the weighing/load receiving element using 100 000 lb of known test weights then using the weighing/load receiving element as a reference scale to statically weigh the railcars. A 11car test train intermixed with 6 loaded and 5 empty cars and no buffer car was used for coupled in-motion testing. Multiple tests were ran pushing and pulling from both directions at speeds from 1 mph to 6 mph. The "railWEIGHr" web interface audit log was checked for correct function and incrementing along with the Zero and tare functions and the "alarm feature" when a train exceeds 6 mph. Previous test conditions are listed below for reference.

Certificate of Conformance Number 14-051A1: This certificate supersedes Certificate of Conformance 14-051. The emphasis of this evaluation was to add two new model numbers, R427 & R457 and update the contact information. Several increasing/decreasing

Rinstrum Inc.
Indicating Element / R400 Series

load tests were performed. The device was tested over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). Previous test conditions are listed below for reference.

Certificate of Conformance Number 14-051: The emphasis of the evaluation was on the device design, operation, marking requirements, performance, and compliance with influence factors. Models R420 and R423 were submitted for evaluation and interfaced with a load cell simulator. Several increasing/decreasing load tests, and warm up tests were performed. The device was tested over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). Tests were also conducted using 90 VAC to 260 VAC, and 12 VDC to 24 VDC. The indicating element was also interfaced with a weighing/load receiving element to verify compliance with zero, zone of uncertainty, motion detection, and printer format requirements.

Evaluated By: T. Buck (OH) 14-051, M. Kelley (OH) 14-051A1, J. Gibson (OH) 14-051A2

Type Evaluation Criteria Used: *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2020 Edition. *NCWM Publication 14 Weighing Devices*, 2019 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) 14-051, D. Flocken (NCWM) 14-051A1, 14-051A2

Examples of Device:

Model: R420

Rinstrum Inc.
Indicating Element / R400 Series

Model: R423, R427 and R457

Model R400/Lua Module " railWEIGHr" web interface display