



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Indicating Element
Digital Electronic
Models: ZM223 / ZM220
 $n_{\max}$: 10 000
Accuracy Class: III / III L

Submitted By:

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Standard Features and Options

- Semi-automatic (push-button) Zero
- Initial Zero Setting Mechanism (IZSM)
- 2 Event Counters (Configuration, Calibration)
- Automatic Zero Tracking (AZT)
- Semi-automatic (push-button) Tare
- Keyboard Tare
- Preprogrammed Tare
- Center of Zero Annunciator
- Gross/Net/Tare Display
- Alphanumeric Display
- LCD Display (ZM223 only)
- Unit Selection Key lb, kg, g, oz, (custom see Operation section)
- Multiple Load receiving Elements
- Linearity Calibration Points
- Category 3 Audit Trail
- Multiple range/Multi-interval
- Physical Seal
- Variable Print Format
- RS232 Communication
- Ethernet
- USB
- DC Power (12-24VDC)
- AC Power (100 to 240VAC)
- Stainless Steel Enclosure
- Panel Mount Enclosure (ZM223 only)

Options:

- Relay Control
- Shut down timer
- Additional Scale Input
- Wireless Communication Equipment
- Weigh In / Weigh Out
- Weight Accumulation

Software Version:

- 1.0.0.0 or higher (ZM223)
- 1.0.0.0 or higher (ZM220)

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.

Kevin Schnepf
Chair, NCWM, Inc.

Marc Paquette
Chair, NTEP Committee
Issued: February 6, 2026

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Avery Weigh-Tronix, LLC
Indicating Element ZM223/ZM220

Application: A general-purpose indicator to be interfaced with an NTEP certified and compatible weighing element.

Identification: The required marking information is on the back of the device. Labels for capacity, division, CLC (concentrated load capacity; if required), and section capacity (if required) will be identified on an adhesive label. The label will self-destruct when removed.

Access to the User Menu (ZM Series):

1. To access the User menu, press and hold the "F1" key until the word "PASS" is displayed.
2. The display will change to show a password prompt.
3. Using numeric keypad enter the number "111".
4. The "ENTER" key is used as the Enter key to accept the password. Upon successful completion of the password, the display will show "USER".

Software Version (ZM Series):

From the "USER" Prompt, Accessing the Software Version:

1. Press the "UNITS" key to display the word "About"
2. Press the "SELECT" key to display the word "Boot"
3. Press the "UNITS" key to display the word "Firm"
4. Press the "SELECT" key to display the word "PartNo"
5. Press the "UNITS" key to display the word "Version"
6. Press the "SELECT" key to display the Version Number
7. Press the "ENTER" key to exit the viewing screen to display "Version"
8. Press the "TARE" key 3 times to get to the "Save Settings" display screen
9. Press the "ENTER" key to exit the menu with "Save No" highlighted

Sealing (ZM Series):

Category 2 Audit Counters:

From the "USER" Prompt, Accessing the Configuration Audit Counter:

1. Press the "PRINT" key to display the word "AUDIT".
2. Press the "SELECT" key to display the word "COUNTER".
3. Press the "SELECT" key to display the word "CONFIG".
4. Press the "SELECT" key again to display the actual configuration counter.
5. Press the "ENTER" key to exit the Configuration Counter display.
6. Press the "TARE" key 3 times to get to the "Save Settings" display screen
7. Press the "ENTER" key to exit the menus without saving.

From the "USER" Prompt, Accessing the Calibration Audit Counter:

1. Press the "PRINT" key to display the word "AUDIT".
2. Press the "SELECT" key to display the word "COUNTER".
3. Press the "SELECT" key to display the word "CONFIG".
4. Press the "PRINT" key to display the word "CALIB".
5. Press the "SELECT" key again to display the actual calibration counter.
6. Press the "ENTER" key to exit the Configuration Counter display.
7. Press the "TARE" key 3 times to get to the "Save Settings" display screen.
8. Press the "ENTER" key to exit the menus without saving.

Category 3 Audit Trail:

Printing the Audit Trail from the "USER" Prompt:

1. Press the "PRINT" key to display the word "AUDIT".
2. Press the "SELECT" key to display the word "COUNTER".
3. Press the "PRINT" Key so the display shows "PRINT".
4. Press the "SELECT" key to display the word "AUDIT".
5. Press the "ENTER" key and the choice of com port is displayed.



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6. Using the "Print" and "Units" keys, one can select from "Com1", "Com2", and "USB". Press the "ENTER" key to accept the choice that is displayed. "USB" will print to a USB drive. "Com1" and "Com2" will show a choice of "COLUMN" or "TICKET".
7. Using the "PRINT" and "UNITS" keys, one can select from "COLUMN" or "TICKET" printers. Press the "ENTER" key to accept the choice that is displayed.
8. Press the "TARE" key 3 times to get to the "Save Settings" display screen.
9. Press the "ENTER" key to exit the menus without saving.

ZM223 and ZM220 also have the option of utilizing fasteners with holes drilled in them to allow the use of a lead-wire seal. These fasteners are used in two of the fastener locations that attach the indicator back plate.

Operation: The custom unit is always ratioed from one of the legal for trade calibration units of measure. First you create a custom unit by entering the ratio and the name/string of it. The ratio is the number you divide into the calibration unit of measure to create the custom unit. The name/string is the string used when printing. Then you set one of the units to use that custom unit. As an example, for "ton" you would enter 2000 and ton under the lb unit. So custom unit would be a ratio of every 2000 lb would equal 1 "ton" under custom unit. Custom units must be verified by a weights and measures official before the unit can be used legal for trade.

Test Conditions: This certificate supersedes Certificate of Conformance Number 24-075A1 and was issued without additional testing to add a panel mount version of model ZM223. The panel mount version has the same overlay, display, PCB, software, and features. The only difference is the enclosure, and the panel mount version is VDC only. Previous test conditions are listed below for reference.

Certificate of Conformance Number 24-075A1: This certificate supersedes Certificate of Conformance Number 24-075 and was issued to add voltage testing using 94 VAC and 264 VAC, and 9.5 VDC and 26.4 VDC on the ZM223 and ZM220 Series indicators, which were conducted during the initial evaluation but inadvertently omitted from the Test Conditions section. Previous test conditions are listed below for reference.

Certificate of Conformance Number 24-075: The emphasis of the evaluation was on device design, marking, sealing, operation, performance, and compliance with influence factors. Two models, a ZM223 and ZM220 Series indicating element were submitted for evaluation. The ZM223 and ZM220 Series indicators were interfaced with an Avery Weigh-Tronix model: BSG-1214-100 series analog weighing/load receiving element (Certificate of Conformance 03-067) to verify compliance with zero, zone of uncertainty, unit conversion, and motion detection requirements. Additionally, the ZM223 and ZM220 Series were interfaced to a load cell simulator and Avery Weigh-Tronix Model: BSQ-1214-080 (Certificate of Conformance 15-028) digital weighing/load receiving element to perform several increasing / decreasing tests, warm-up test and power interruption test. Wireless communication tests were also performed for wireless printing functions. Temperature tests were performed on both ZM223 and ZM220 indicators over a range of -10 °C to 40 °C (14 °F to 104 °F). Tests were also conducted using 94 VAC and 264 VAC, and 9.5 VDC and 26.4 VDC.

Evaluated By: J. Coffey (OH) 24-075 (CN 11027); G. Gholston (NCWM) 24-075A1 (CN 11646), 24-075A2 (CN 11670)

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) 24-075; J. Gibson (NCWM) 24-075A1, 24-075A2



Avery Weigh-Tronix, LLC
Indicating Element ZM223/ZM220

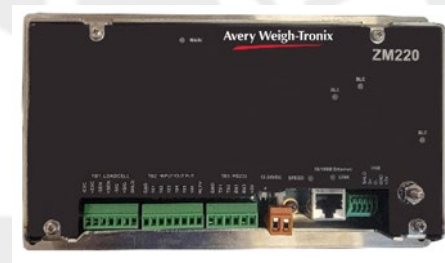
Example(s) of Device:



Model ZM223



Model ZM223 (Panel Mount)



Model ZM220