



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Indicating Element
Digital Electronic
Model: FB4000-XXX* (see below)
 n_{max} : 10 000
Accuracy Class: III / IIIL

Submitted By:

Fairbanks Scales
2176 Portland Street, Suite 1
St. Johnsbury, VT 05819
Tel: 802-473-5215
Fax: 802-473-5213
Contact: Keith P. Charron
Email: kcharron@fairbanks.com
Web site: www.fairbanks.com

Standard Features and Options

*Model ID: The "XXX" in the model number is for manufacturer's use and has no metrological significance, for example:

- FB4000 is the Desktop Housing
- FB4000-SS is the Desktop (or Wall Mount) Wash down Housing
- FB4000-DAT is the Driver Assist Terminal Housing

"PN xxxxx" will be stated to the right of the "Model FB4000-XXX." This PN xxxxx is a part number for manufacturing identification of variations of the certified "standard features" and "options" listed below.

Standard Features:

- Semi-automatic (push-button) Zero Setting Mechanism
- Automatic Zero Tracking (AZT)
- Alphanumeric (graphical) Touch Screen LCD Display
- Keyboard Tare
- Semi-automatic (push-button) Tare
- Programmable Tare
- Multiple Tare Memories
- Gross/Tare/Net Display

- Multiple Load Receiving Elements
- Weigh-In/Weigh-Out Capability
- Pound/kg/Ton/Tonne Units Available
- Multi-Interval Capability
- Category II Audit Trail Capability (see page 2)
- Stainless Steel and Powder Coated Mild Steel Housings
- AC Power 115 volts / 230 volts
- Remote Calibration and Configuration

Options:

- Serial, Parallel, Current Loop and USB Ports
- Remote Display and Printer Outputs
- VGA, Ethernet Interface, PC Output
- External and/or Internal Analog to Digital Converters
- Model ACC-2000-XX External A/D Converter or equivalent with ACC-2001-XX Power Supply Box or equivalent (CC 14-103).
- Wireless Interface (CC 14-103)
- Industrial Control Output (Modbus, Anybus, PLC, etc.)
- Video Display
- External Keyboard/Mouse

Temperature Range: -10 °C to 40 °C (14 °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.

Kristin Maëy
Chairman, NCWM, Inc.

Jerry Buendel
Chairman, National Type Evaluation Program Committee
Issued: November 21, 2016

1135 M Street, Suite 110 / Lincoln, Nebraska 68508

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Indicating Element / FB4000-XXX*

Application: A general purpose indicating element to be interfaced with a compatible certified analog-to digital (A/D) converter and a certified and compatible weighing element.

Identification: The required information is on a self-adhesive foil identification badge located on the side of the FB4000 desktop indicator housing, and on the top of the FB4000-SS washdown indicator housing. This badge repeats the word "VOID" when removed.

Sealing: In addition to the Category II Audit Trail, the FB4000 indicator utilizes wire security seals threaded through the holes in the side of the enclosure cover and through the holes in the heads of two drilled head screws in the side of the enclosure cover. This prevents access to the internal parts of the indicator. The FB4000-SS utilizes an internal sealing plate. This allows technicians to remove the back cover and add a printer to the installation without breaking the seal. Wire security seals threaded through the holes in the heads of two drilled head screws on the right side of the enclosure as well as two drilled head screws on the inside of the enclosure securing the internal sealing plate. This prevents access to the internal scale functions of the indicator. The FB4000-DAT utilizes a wire seal threaded through a hole in the enclosure cover and through a hole drilled in the flange for the closure clamp. This prevents access to the internal scale functions of the indicator. External A/D utilizes wire security seals threaded through holes in the maintenance latches and holes in the enclosure.

The Category II Audit Trail utilizes two event counters. To view the event counters:

1. From normal weighing mode, select "MENU."
2. Select "Audit Trail." Select "Enter."
3. Observe "CALIBRATION AUDIT TRAIL" and "CONFIGURATION AUDIT TRAIL."
4. Select "Menu."
5. Select "Menu" or "Return to weighing."

Note: Some weights and measures regulatory agencies require that a scale be sealed not only by means of a Category II audit trail but also by means of a physical seal. In these cases, a jumper may be used in addition to the Category II audit trail. When a jumper is OFF the two COM4 pins (7 and 8) on the SBC Board, and not shorting them together, all front panel and remote Calibration functions are prevented. This creates a physical internal seal on the instrument, further secured by means of the external wire seal. When a jumper is ON the two COM 4 pins (7 and 8) on the SBC Board shorting them together, Calibration functions are allowed on the front panel following the successful entry of a password (security code). The instrument is always protected by the Category II Audit Trail, regardless of the position of the internal jumper.

Operation: A security code must be entered at service menu to gain access to indicator calibration. The indicator is capable of individually monitoring the output from a number of load cells within one or multiple scale systems. The indicator is connected to internal and/or external A/D converters.

Test Conditions: This certificate supersedes Certificate of Conformance Number 15-064A1 and is issued to clarify the information provided in the sealing section of the certificate. No additional testing was deemed necessary. Previous test conditions are listed below for reference.

Certificate of Conformance Number 15-064A1: This certificate supersedes Certificate of Conformance Number 15-064 and is issued to add a "Driver Assist Terminal" housing option. One FB4000-DAT was submitted for evaluation. The emphasis of the evaluation was on the marking and sealing requirements. No other testing was deemed necessary at this time.

Certificate of Conformance Number 15-064: A quantity of 4 (four) Fairbanks, Model FB4000-xxx indicating elements were submitted for evaluation. Two of the four were the desktop housing version and two of the four were the washdown housing version. Two of the four indicators were connected to a separate Fairbanks, Model ACC-2000-1 external A/D converter with ACC-2001-1 power supply. Two of the four indicators utilized internal A/D converters. The emphasis of the evaluation was on the device design, operation, performance, marking, sealing, and compliance with influence factor requirements. Several performance tests were conducted with the indicator interfaced with a weighing element, load cell simulators, a remote display, and a printer. The remote calibration/configuration feature, category II audit trail, multiple interval feature, multiple load receiving element operation and weigh-in/weigh-out operations were verified. The indicator and internal and external A/D's were tested over a temperature range of



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-10 °C to 40 °C (14 °F to 104 °F). Additionally, tests were conducted for unit conversion and using power supplies of 115 VAC and 230 VAC.

Evaluated By: M. Kelley (OH) 15-064, 15-064A1

Type Evaluation Criteria Used: *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2016 Edition. *NCWM Publication 14 Weighing Devices*, 2016 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) 15-064, 15-064A1, 15-064A2

Examples of Devices:

FB4000 Standard Desktop Option



FB4000 Sealing



FB4000-SS Desktop (or Wall Mount)
wash down Housing



Outside seal holds internal sealing plate
in place



Inside seal on internal sealing plate





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Indicating Element / FB4000-XXX*



FB4000-DAT



FB4000-DAT Sealing

