

**FAIRBANKS SCALES ENGINEERING SPECIFICATIONS FOR:
MODEL FB3000 II NEMA 4X DIGITAL INSTRUMENT**

Section _____

SCALE INSTRUMENTATION

PART 1 – GENERAL

- 1-1 **SCOPE**. This section covers the requirements for one digital scale instrument for use in the _____. The scale instrument shall be furnished and installed complete as specified hereinafter, including the services of the manufacturer's service representative.
- 1-1.01. **Acceptable Manufacturer**. The scale instrumentation furnished under this section shall be manufactured by Fairbanks Scales or equal ISO accredited manufacturer.
- 1-2 **GENERAL**. Equipment furnished and installed under this section shall be assembled, calibrated and placed in proper operating condition in full conformity with wiring, specifications, engineering data, instructions and recommendations of the equipment manufacturer unless exceptions are noted by the Engineer.
- 1-2.01. **General Equipment Stipulations**. The General Equipment Stipulations shall apply to all equipment furnished under this section.
- 1-2.02. **Governing Standards**. The scale systems shall have been issued a Certificate of Compliance by the National Type Evaluation Program, (N.T.E.P.) and shall conform to the following federal, state, local, and industrial standards.
- 1-2.03. National Bureau of Standards, NBS Handbook 44, "Specifications, Tolerances, and Technical Requirements for Weighing and Measuring Devices".
- 1-2.04. National Electrical Manufacturers Association and the National Electrical Code.
- 1-2.05. Applicable state regulations for commercial weighing devices.
- 1-2.06. **Power Supply**. Unless otherwise specified, the power supply to the equipment will be a dedicated 120 volts, single phase, 60 Hz.

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Where control voltages lower than the power supply voltage is required, suitable control power transformers shall be furnished.

PART 2 – PRODUCTS

2-1. SCALE INSTRUMENT DESIGN. The scale instrument shall be a Fairbanks model FB3000 II digital scale instrument with fully electronic load cells or equivalent.

2-1.01. The scale instrument shall be N.T.E.P. approved with an Accuracy Class of III / IIIL.

2-1.02. The scale instrument shall feature a Category I Audit Trail.

2-2. SCALE INSTRUMENT HARDWARE SPECIFICATIONS

2-2.01. Processor shall be a 1 GHz processor minimum.

2-2.02. BIOS shall be a 512KB Flash BIOS minimum.

2-2.03. Memory shall be a one 144-pin SO-SDIMM socket. 1GB RAM standard.

2-2.04. Hard Disk shall be a 64 GB solid state drive standard.

2-2.05. Parallel Port shall be optional and shall be a minimum of one bi-directional parallel port with SPP/ECP/EPP support.

2-2.06. Serial Ports shall be a minimum of three (3) externally accessible RS-232 ports and one internal RS-232/422/485.

2-2.07. USB ports shall be USB 2.0 Minimum of one (1) externally accessible and two (2) internally accessible USB ports standard.

2-2.08. Keyboard interface shall support PS2 or USB keyboards.

2-2.09. Mouse interface shall support PS2 or USB mice.

2-2.10. PC/104 Connectors shall be a minimum of one internal PC/104 connector.

2-2.11. Digital I/O shall be a minimum of eight internal digital inputs and outputs.

2-2.12. Operating system shall be Microsoft XP Embedded.

- 2-2.13. Ethernet Interface shall be through an externally accessible IEEE 802.3, 100Base-T compatible, 10/100 Mbps RJ45 connection.
- 2-2.14. Ethernet shall support PC networking using IEEE standards with 802.11 support. Use of serial converters or similar means to obtain ethernet connectivity are prohibited.
- 2-2.15. The scale instrument shall include one 50-pin Compact Flash™ socket. Population of memory socket shall be optional.
- 2-2.16. The scale Instrument Display shall be a minimum of 10.4" SVGA Color LCD-TFT with resolution of 800 x 600 with full graphics support.
- 2-2.17. The scale Instrument shall offer an optional Touch Screen for 10.4" standard display.
- 2-2.18. The scale instrument shall include one externally accessible VGA Interface to provide connectivity to external VGA monitors. This VGA output can work with or in place of the standard 10.4" SVGA Color LCD-TFT.
- 2-2.19. The scale instrument enclosure shall be constructed of 304 stainless steel with a minimum NEMA 4X rating.
- 2-2.20. The scale instrument Operating Temperature shall be 14°F to 104°F (-10°C to 40°C)
- 2-2.21. The scale instrument load cell interfaces shall include support for Fairbanks Scales Intalogix Technology (digital interface for analog load cell communication) or standard analog load cell interfaces. Use of proprietary load cells to obtain a digital interface is prohibited.
- 2-2.22. The scale instrument shall be able to detect water in scale pit if equipped with digital interface for load cell communication.
- 2-2.23. The scale instrument shall be capable of driving up to 40 analog load cells.
- 2-2.24. The scale instrument shall be capable of interfacing to serial or network printers for the purpose of producing tickets or reports.
- 2-2.25. The scale instrument shall support the loading of printer drivers by means of direct download from printer web site or through means of an external USB device.

- 2-3. SCALE INSTRUMENT OPERATION. The scale instrument shall be a self-contained, operating unit providing a digital weight indicator driven by appropriate conditioning and control circuitry. The scale instrument shall provide the capability to directly print a certified weight ticket.
- 2-3.01. The scale instrument shall feature a programmable Display rate with settings from 0.1 to 10 seconds in 0.1 second intervals.
- 2-3.02. The scale instrument shall feature programmable Zero button settings with 2% or 100% Zero capability. Zero button shall also have the capability to be completely disabled. Zero settings must also allow for a programmable Zero band threshold to be established based on weight, to facilitate a single print per weighment.
- 2-3.03. The scale instrument shall have the means to self diagnose and report the following items at a minimum:
- 2-3.03.1. Calibration Change
 - 2-3.03.2. Time and Date change
 - 2-3.03.3. Flash Memory Error
 - 2-3.03.4. Remote Access Enabled
 - 2-3.03.5. Routine Maintenance Required
 - 2-3.03.6. Float Switch Condition = ON
 - 2-3.03.7. Load Cell Ghosted
 - 2-3.03.8. Load Cell Failure
- 2-3.04. The scale instrument shall visually 'flag' identified problem load cell(s) in diagnostic screen until flag is manually cleared to identify intermittent problems.
- 2-3.05. The scale instrument shall feature built in, automatically activated Remote Diagnostic Utility to provide remote diagnostics and configuration from any PC with proper authorization and network access.
- 2-3.06. The scale Instrument shall feature build in email client for reporting error conditions such as:
- 2-3.06.1. Calibration Change
 - 2-3.06.2. Time and Date change
 - 2-3.06.3. Flash Memory Error
 - 2-3.06.4. Remote Access Enabled
 - 2-3.06.5. Routine Maintenance Required
 - 2-3.06.6. Float Switch Condition = ON

- 2-3.06.7. Load Cell Ghosted
- 2-3.06.8. Load Cell Failed

- 2-3.07. Email client shall be capable of reporting errors via email to up to three (3) separate email address per error message.

- 2-3.08. Displaying of error messages on scale instrument display shall be optional and selected by error type.

- 2-3.09. The scale instrument shall feature the ability to backup to optional Flash Memory card or USB pen drive.

- 2-3.10. The scale instrument shall have the ability to electronically 'ghost' a failed load cell if equipped with the digital interface for load cell communication.

- 2-3.11. The scale instrument shall have a built in web browser to facilitate web access to software updates if desired.

PART 3 – EXECUTION

3-1. INSTALLATION. The scale instrument shall be installed by a scale company that has a minimum of five years of experience installing similar scale systems.

The scale company must have an established service center in _____ and have a current license on file with the local Weights & Measures Authority.

3-2. MANUFACTURER'S FIELD SERVICES. Where scheduled in the equipment schedule section, an experienced, competent, and authorized representative of the manufacturer shall provide field services for equipment furnished under this section. Field services shall meet the requirements of Manufacturer's Field Services in the quality control section.

3-3. FIELD TESTING AND ACCEPTANCE. The authorized representative of the manufacturer shall provide the required scale certification for capacity and accuracy to the Engineer as required by the local Weights and Measures Authority any other applicable State or County agency.

3-4. PERSONNEL TRAINING. An experienced, competent, and authorized representative of the manufacturer shall train the Owner's personnel in operating and maintaining the equipment specified in this section. The training provided shall meet the requirements specified in the quality control section. The number of training sessions and duration of each session shall be as scheduled in the equipment schedule section.

End of Section

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