FB1200 Series Instrumentation

51513

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Amendment Record

FB1200 Series Instrumentation
Document 51513

Manufactured by **Fairbanks Scales Inc.**

Revision #	Date	Update
Revision 1	04/2520	New product documentation release
Revision 2	12/2021	Added: Appendix III: Token Formatting and ASCII Table
Revision 3	11/2022	Updated: Serial Input/Output
Revision 4	03/2023	Added: Appendix IV: Updated: Serial Input / Output section
Revision 5	03/2025	Updated: Setup
Revision 6	04/2025	Updated: All sections

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Section 1: General Information

This manual details the **FB1200 Instruments**.

1.1. Instrument Description

The FB1200 is a precision digital instrument. It uses a sigma-delta analog-to-digital (A/D) converter to ensure extremely fast and accurate weight readings. This advanced technology allows the FB1200 to be configured for up to 50,000 divisions at 60 A/D conversions per second. The units have extended sensitivity adjustment which can handle scales with outputs 0.2-5.0mV/V for full range. The design is optimized to deliver precision performance on scale bases delivering above 0.5mV/V at display resolutions of up to 10000 divisions.

Throughout this document the device will be referred to as the FB1200. The FB1200 digital weight instrument has a white on black, six-digit, 10 segment LCD display with additional indication of weighing status. Each digit is 2" high. The instrument has 2 setpoints with status display on the front panel.

The setup and calibration are digital, with a non-volatile security store for all setup parameters. The built-in clock can be used to date-stamp printouts. There is an NVRAM store to ensure day to day operating settings (zero, tare, date/time, etc.) are retained when power is removed.

Standard Features

- **Two (2) RS232 Ports**

- **One (1) 20mA Port**

- **One (1) RS485 Port**

- **2 Isolated Digital Outputs**

- **Touchscreen Buttons, including the following keys:**

  - (*Front panel*) **lPower, Units, Zero, Gross/Net, Tare, Print, Function**

  - (*Back Panel*) **Rear Setup key**

An optional battery accessory module can be fitted to the instrument.

IMPORTANT NOTE: When you see capitalized words separated by a colon (:) (example, CONFIG**:**TYPE) throughout this manual. The 2nd word is a menu item under the first.

1.2. Technical Specifications

Feature	Description
Model	FB1200 NEMA 4X / IP66 – SS Enclosure FB1200 NEMA 4 / IP65– Resin alloy enclosure (indoor use)
Displayed Characters	2.0"
Load Cell Interface	(8) 350 Ohm Load Cells
Cell Capacity	No Practical Limit
Load Cell Excitation	5 VDC
Units	lb, oz, kg, g, ton, tonne
No. of Scales	One (1)
Resolution	10,000d Commercial 50,000d non-commercial
Scale Capacity	0-999,999
Division Size	0.0001-100
Units	LB, OZ, KG, G, TONS, TONNE
Serial Input/ Output	Two (2) RS232 COM Ports, one (1) RS485 COM port, one (1) dedicated optically-isolated 20mA (passive)
Network Connection	N/A
Auto Zero Tracking	Selectable – Off, 0.5d, 1.0d, 3.0d
Motion Band	Selectable – Off, 0.5d, 1.0d, 3.0d
Zero Range	Selectable – 2%, 100%
Filters	Off, Low, Med (default), High, V High
Clock	Real time clock 24-hour/ 12-hour AM/PM, Date (month/day/year)
ENVIRONMENTAL	
Enclosure	NEMA 4X / IP66 - Stainless Steel Washdown NEMA 4 / IP65 – Resin Alloy Enclosure
Operating Temperature	14°F to 104°F, (–10°C to 40°C).
Operating Humidity	0 to 90% non-condensing
POWER REQUIREMENTS	
Incoming Voltage Requirement	Instrument has an Auto-switching power supply. 100 VAC to 130 VAC, 50Hz\ 60Hz 200 VAC to 260 VAC, 50Hz\ 60Hz It is recommended to install a separate circuit from the circuit panel to the outlet used. There must not be more than 0.2VAC between AC neutral and ground.
Ground Requirements	For proper performance, the ground should have no more than 3.0 Ω resistance to true earth ground.
Power Consumption	< 30 W

ETL Listed	Conforms to UL STD 62368-1 Certified to CSA STD C22.2 #62368-1
Approvals	NTEP CC: 20-097 MC: AM-6162C
Accuracy	Class III/IIIL

All electronic and mechanical calibrations and/or adjustments required for making this equipment perform to accuracy and operational specifications should be performed by trained service personnel.

Absolutely no physical, electrical or program modifications other than selection of standard options and accessories are to be made to this equipment.

Electrical connections other than those specified may not be performed, and physical alterations (holes, etc.) are not allowed.

Please call your local

FAIRBANKS SCALES REPRESENTATIVE

For any question, problems, or comments.

Section 2: User Interface

The front panel of the FB1200 has a six-digit LCD display and a 7-key keypad. A cover on the rear allows access to a hidden key which can be used to enter full digital setup and calibration. The diagram below shows the main elements of the front panel.
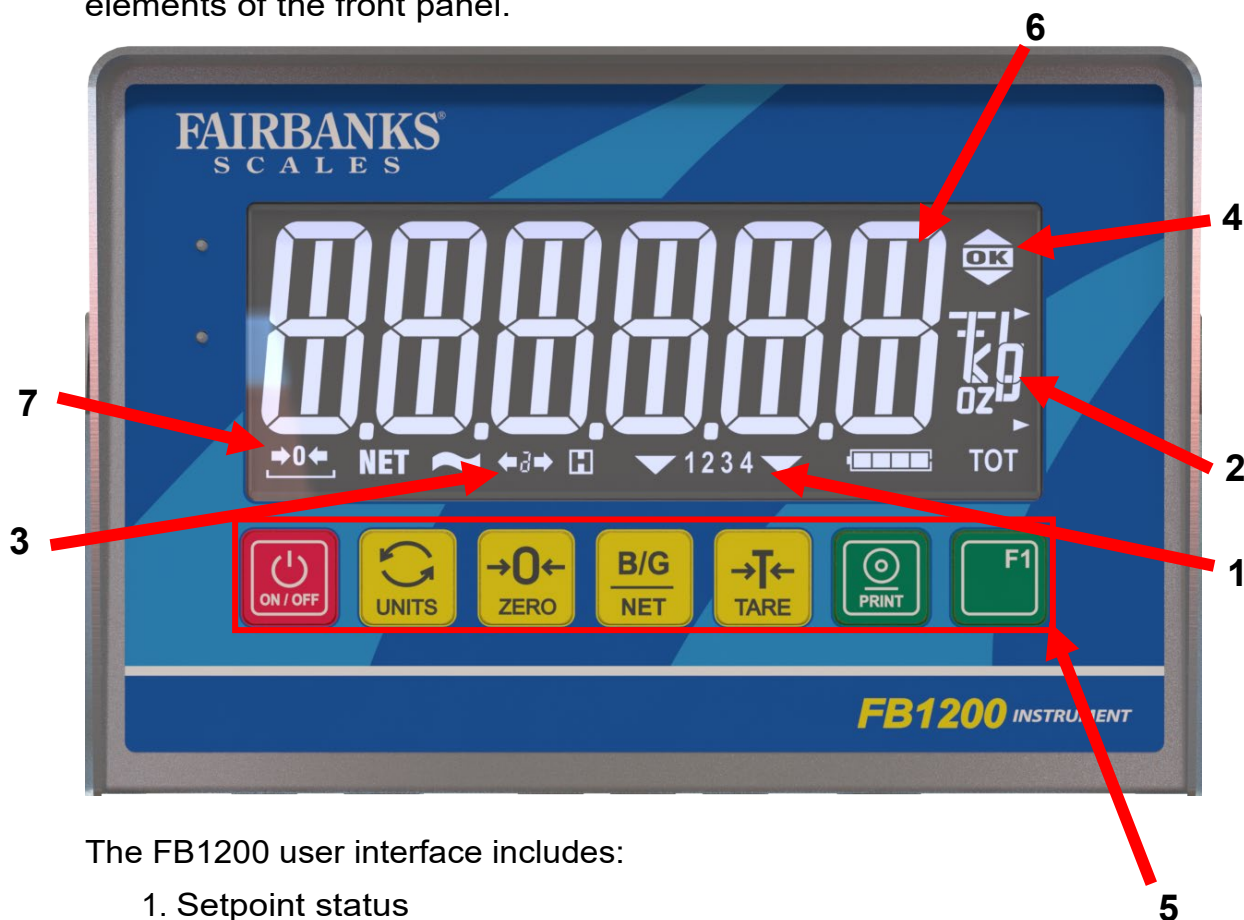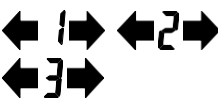
The FB1200 user interface includes:

1. Setpoint status
2. Units indicator
3. Multiple range/interval status
4. Check weigh status
5. 7-key keypad
6. 6-digit 9 segment LCD display
7. Weighing status
8. Full setup key (on the rear of the indicator – Not shown)

- **Display (6)**: weight readings, errors, information, and setup.
- **Units indicator (2)**: units for the weight reading (pounds (lb), kilograms (kg), grams (g), ounces (oz), tonnes (t), and tons (T)).

- **Status indicators (1), (3), (4) and (7)**: The weighing status (7) shows the status of the displayed reading. The multirange status (3) shows the current multirange operation. The setpoint status set (1) shows the status of the 2 switch inputs and 2 digital outputs (IO).

2.1. Display Functions

→0←	Lit when the displayed reading is within ±1 of a division of true zero.
~	Lit when the displayed reading is in motion.
NET	Lit when the displayed reading represents net weight.
⌐_	Lit when the displayed reading is within the zero band.
H	Lit when the display reading has been held.
←1→ ←2→ ←3→	Ranges 1, 2 and 3 (multiple range/interval modes only).
1 2 3 4	Lit to indicate when a setpoint output is active.
OK	Lit to indicate various states during checkweigh.
TOT	Lit to indicate that the displayed weight is a total.
▭▭▭	Lit when operating on battery, to indicate the charge level of the battery.

The FB1200 has 7 front panel keys that controls the operation of the instrument. The 8th key (SETUP) is on the rear of the instrument. The setup key can be sealed to prevent unauthorized tampering of trade critical settings and calibration. Each of the front panel keys has two separate functions:

- A normal function that is available during normal weighing (as printed on the key). These are described below.

- A setup function, which is available during setup and calibration. See Navigation section.

2.2. Keys

Power Key	• Short press	Powers on the instrument
	• Long press	Displays the power off countdown, then powers off the instrument.
Units Key	• Short press	Cycle through displayed units: primary -> secondary -> tertiary (if enabled) -> pieces (if enabled).
	• Long press	Piece weight setup (if counting is enabled)
Zero Key	• Short press	Zero the scale
	• Long press	N/A
Gross/Net Key	• Short press	Toggles between **Gross** and **Net** weight.
	• Long press	N/A
Tare Key	• Short press	Tare the scale
	• Long press	Enter a preset tare value to apply to the scale **NOTE**: *The Tare key can operate over the entire weight range. In trade mode, the Tare key will not operate if the gross weight is negative.*
Print Key	• Short press	Print the weight
	• Long press	Edit operator parameters
Function Key	• Short press	Configured in setup
	• Long press	Varies with configured normal function. See section Configurable Functions

Section 3: Security

3.1. Levels of Security

- There are three **Security Levels**: One thru Three (1 – 3) used to configure the hierarchy of the management functions, and limits privilege accesses from unauthorized employees.

- When making the employee hierarchy, employee duties should determine their security level.

- Each access level includes all of the rights of any access level(s) below it.

- All parameters can be edited using the FB1200 interface. They can also be edited using the PC configuration tool.

FIRST LEVEL: OPERATOR ACCESS

- **No Password** is necessary for this level of instrument access.

SECOND LEVEL: SUPERVISOR ACCESS

- Supervisor Password is required.

- Allows access to setup parameters which are not critical for trade operation of the scale.

THIRD LEVEL: SERVICE TECHNICIAN ACCESS

- Allows access to all setup parameters, including calibration.

- With the **Service Password**, the technician can also access *all* menus options, including the highest level programming.

3.2. Setup Security

There are 2 types of security for unauthorized setup access:

Pin Code:

- Access to the setup can be pin code protected to prevent unauthorized tampering.

- Service and supervisor setup have separate pin codes. These are set **in PIN/ SERV** and **PIN/SUPER** respectively.

- The service pin code can be used to access supervisor setup.

- The supervisor pin code cannot be used to access service setup.

- Set these pin codes to 0 to disable passcode protection. This is the default.

There are 2 methods of entering the setup program:

Supervisor and Service setup (front keys):

1. Long press the **POWER** and **GROSS/NET** keys simultaneously.

2. Press the Units key to choose which level of setup is required, and the Zero key to continue.

   NOTE: Service setup will not be available via this method if the rear entry setting has been set in: CONFIG:R.ENTRY

3. If a passcode has been set: Use the **ZERO** key to move the cursor and the Units key to edit passcode. Move the cursor past the last digit to confirm the passcode.

Section 4: Setup

Setup and calibration is completed from the **front panel** using the setup functions on the front keys. There are 2 types of setup:

- **Service setup**: Allows access to all setup parameters, including calibration. (Only available to authorized Fairbanks' technicians).
- **Supervisor setup**: Allows access to setup parameters which are not critical for trade operation of the scale.

The setup menus are a menu tree of parameters.

IMPORTANT NOTE: *After installation of the FB1200, remember to remove the protective film from the front of the unit.*

4.1. Front Panel Navigation

The setup menus are organized in a tree structure. Main menus are called groups. Groups contain sub-groups and items. Items are settings which can be edited. All items in a groups or sub-groups have related functions.

Once entered, groups and subgroups must be traversed in their entirety before returning to the level above.

Power Key	• Setup menu function	None	
	• Setup editor function	None	
Units Key	• Setup menu function	Navigate forwards	Step through current group or sub group's items.
	• Number editor function	Increment	Increment selected digit.
	• List editor function	Increment	Next option.
	• Setup menu function	Select	Select menu group or item.

Zero Key	• Number editor function	Select	Select value for selected digit and advance to next digit. Exit once the value of the rightmost digit has been selected.
	• List editor function	Select	Select current value and exit.
Gross/Net Key	• Setup menu function	Navigate backwards	Step through current group or sub group's items.
	• Number editor function	Decrement	Decrement selected digit.
	• List editor function	Decrement	Previous option.
Tare Key	• Setup menu function	Cancel	Return to previous menu level or exit menu if at top level.
	• Number editor function	Cancel	Move selection to the previous digit. Cancel out of the editor if pressed on the leftmost digit.
	• List editor function	Cancel	Cancel out of the editor.
Print Key	• Setup menu function	None	
	• Setup editor function	None	
Function Key	• Setup menu function	None	
	• Setup editor function	None	

4.2. Editing Using the Front Panel

4.2.1. Editing Option Items

Some settings allow the choice of an option from a predefined list of options. Examples are **SETUP:TI.FMT** or **CONFIG:TYPE.** To show/edit:

1. Press the **ZERO** key to enter the editor.

2. Press the **UNITS** or **GROSS/NET** keys until the correct setting is shown.

3. Press the **ZERO** key to accept the selection and exit the editor.

4.2.2. Editing Weight and Number Items

Some settings require the entry of a weight or other number. Examples are **PIN:SUPER** or **CONFIG:CAP.1**. The correct decimal point and units (if applicable) are shown while editing. To show/edit:

1. Press the **ZERO** key to enter the editor.

2. Press the **UNITS** or **GROSS/NET** keys to increment or decrement the currently selected digit.

3. Press the **ZERO** or **TARE** keys to move the cursor forwards or backwards

4. Move the cursor past the final (right most) digit to accept the selection and exit the editor.

- If the setting is not possible (for example if the value is greater than the allowed maximum), ------ is shown and the editor will not exit.

4.2.3. Editing with Functions

Some settings have a special function to control their use. These are not simple settings but are more complex routines. Examples are **CAL:ZERO** or **TEST:SCALE**. To use:

- Press the **ZERO** key to start the function

- Press the **ZERO** key again to exit the function

4.2.4. Exit Setup

There are several methods of exiting the setup menu.

- Method 1: Save and exit

  o Continue to press the **UNITS KEY** until you have navigated past the final top-level menu item.

- Method 2: Save and exit

- o Continue to press the **TARE KEY** until you have navigated back past the top-level menu.
- Method 3: Save and exit
    - o –Press the **REAR SETUP KEY**
- •Method 4: Exit without saving
    - o –Remove the power from the instrument.

4.3. Setup Menu

4.3.1. SETUP: General Setup Menu

This menu is used to set general setup options for the indicator.

Items		Name	Description
Time format		TI.FMT	Set the time format for the indicator. Options are: • 12 (default) • 24
Date format		DA.FMT	Set the date format for the indicator. Options are: • DD.MM.YY • DD.MM.Y4 • MM.DD.YY (default) • MM.DD.Y4 • YY.MM.DD • Y4.MM.DD
Time set		SET.TI	Set the time as prompted: • Hours: Enter hours (01-12 for SETUP:TI.FMT=12, 00 - 23 for SETUP:TI.FMT=24) • Min: Enter minutes (00 - 59) • Sec: Enter seconds (00 - 59) • AMPM: Enter AM or PM for SETUP:TI.FMT=12, not available for SETUP:TI.FMT=24
Date set		SET.DA	Set the current date as prompted: • Year: Enter year (2000 - 2099) • Month: Enter month (01 - 12) • Day: Enter day (01 - 31)

Auto power off		SLEEP	Turn the indicator off after the configured amount of time in minutes. • OFF: Do not turn off (default) • 5 minutes • 10 minutes • 20 minutes • 30 minutes • 60 minutes
Backlight enable		BL	Configure the backlight operation • OFF: Backlight is always at minimum brightness • ON: Backlight is always at maximum brightness (default) • AUTO: Backlight turns off after the time specified in SETUP:BLT of no motion or user input.
Backlight timeout		BLT	Configure the period of no motion or user input before the back- light turns off. Only available when SETUP:B.L=AUTO. • 15 seconds (default) • 30 seconds • 60 seconds • 300 seconds
Backlight brightness		BL BRT	Configure the percentage backlight brightness applied when the backlight is on. (1 - 100) Default: 60.
Buzzer enable		BEEP	Configure the buzzer • OFF: The buzzer is turned off • ON: The buzzer is turned on (default)

4.3.2. PIN: Security Pin Codes

Items		Name	Description
Service setup passcode	⊕	SERV	This PIN should only be known and utilized by a Fairbanks' authorized technician.
Supervisor setup pin code	⊕	SUPER	Pin code required to enter supervisor setup. The Supervisor PIN code may set by the Fairbanks technician and provided. The PIN may be set to 0 to allow free access. Default is 0.

⊕ = Change only possible in service setup

4.3.3. Port: Serial Communications Menu

Items	Name	Description
Serial Ports	COM1 COM2	Options for serial port 1 Options for serial port 2
Port output hardware	PORT 1	Sets the serial port output hardware. Options are: • RS232 output (default) • C.LOOP current loop output
Function type	OUTPUT	Sets the function of the serial port. Options are: • **OFF**: Disable the port • **BUTTON**: Trigger a printout (see Section 8) • **CONFIG**: Configuration port (communicates with the Viewer) • **AUTO**: Auto printing (see Section 8) • **CONTIN**: Auto transmit at 10Hz as specified by PORTS:COMx:FMT setting (see Section 7) • **POLL**: Perform action on receiving the poll character Availability: • **COM1**: CONFIG not available • **COM2**: BUTTON not available
Baudrate	BAUD 1 BAUD 2	Sets the baudrate for the serial port. Options are: • 1200 • 2400 • 4800 • 9600 (default) • 19200 • 38400 • 57600 • 115200
Number of data bits	D.BITS.1 D.BITS.2	Sets the number of data bits for the serial port. Options are: • 7 data bits • 8 data bits (default)
Parity bits	PAR 1 PAR 2	Sets the number of parity bits for the serial port. Options are: • P.NONE: No parity bit (default) • P.EVEN: Even parity bit • P.ODD: Odd parity bit
Stop bits	STOP 1 STOP 2	Sets the number of stop bits for the serial port. Options are: • 1 stop bit (default) • 2 stop bits
Output format	FMT 1 FMT 2	Sets the output format for the serial port. Options are: • FBANKS • TOLEDO

		• CARD • WTX • CONDEC • CUSTOM See Section 7 for a description of each format.
Poll character	POLL 1 POLL 2	Sets the poll character to request a single weight transmission for a port configured as PORTS:COMx:TYPE=POLL or BUTTON. Selectable from 0 to 255. Default: 5 (ASCII ENQ)
Custom auto transmit format	EV.AUTO	Configures the custom continuous automatic transmit format for a port configured as PORTS:COMx:OUTPUT=CONTIN and PORTS:COMx:FMT x=CUSTOM. Up to 30 characters. Default: " (empty)

4.3.4. Setpoint Configuration

Setpoint settings are found under the SETP heading of the FB1200 menu. The FB1200 has two digital setpoints that can be configured independently.

Wiring:

Pin Desc	Purpose
Out1	Output 1
Out2	Output 2
Com+	12/24 VDC
Com-	0 VDC
Shld	Shield

Settings

- **Type**

  - o **Off** – Setpoint is always inactive

  - o **On** – Setpoint is always active

  - o **Over** – Setpoint is active when weight displayed is over a certain value

  - o **Under** – Setpoint is active when weight displayed is under a certain value

  - o **COZ** – Setpoint is active when scale is at "center of zero"

  - o **Zero** – Setpoint is active when instrument displays zero weight

  - o **Net** – Setpoint is active when instrument displays net weight

  - o **Motion** – Setpoint is active when motion is detected on the scale

  - o **Error** – Setpoint is active when an error condition is detected

- o **C.W.HI** – Setpoint is active when the weight on the scale is above the CW.HIGH setting in the APP menu.

- o **C.W.OK** – Setpoint is active when the weight on the scale is between the CW.LOW and the CW.HIGH settings in the APP menu.

- o **C.W.LO** – Setpoint is active when the weight on the scale is below the CW.LOW setting in the APP menu.

- **Logic** – Determines the state of the output when setpoint conditions are met.

  - o **High** – When the condition of the type is met, the digital output will be driven to the high value. Otherwise it will be at the low value.

  - o **Low** – When the condition of the type is met, the digital output will be at the low value. Otherwise it will be driven to the high value.

- **Timing** – Determines the behavior of a setpoint.

  - o **Level** – The setpoint becomes active when the condition of the type is met. The setpoint can be deactivated by dropping below the hysteresis value or while a reset input is active.

  - o **Edge** – The setpoint becomes active when the condition of the type is met. The setpoint can be deactivated by dropping below the hysteresis value or activating a reset input. Unlike "level" timing, a setpoint with this setting will remain *deactivated* after a reset input is received until the weight drops below hysteresis and the setpoint condition is reached again.

  - o **Latch** – The setpoint will become active when the type condition is met. It will remain active, regardless of scale conditions, until the reset input becomes active.

- **Alarm** – Determines the instrument response to a setpoint condition being met. This setting works independently of the logic value.

  - o **Single** – The FB1200 produces a single beep every two seconds.

  - o **Double** – The FB1200 produces a double beep every two seconds.

  - o **Flash** – The FB1200 flashes the display.

- **Name** – When F.KEY is set to TARGET, this name is used on the display to identify the setpoint to allow entry of a new target value.

- **Target** – Used when the type is OVER or UNDER. Determines the target weight of the setpoint.

- **P.ACT** – Used when the type is OVER or UNDER. Determines the preact of the setpoint. Used to account for material that may still flow after setpoint is active.

- **HYS** – Used when the type is OVER or UNDER. Determines the hysteresis value of the setpoint. The hysteresis value determines the change in weight past the target and preact that is required to deactivate the setpoint.

- Ex. TYPE = OVER, TARGET = 1000 lbs, P.ACT = 100 lbs, HYS = 50 lbs. The setpoint would become active when the scale reached 900 lbs (1000 lbs-100 lbs) and would remain active until the weight returned below 850 lbs (1000 lbs-100 lbs-50 lbs).

- **Source** – Used when the type is OVER or UNDER. Select the source for the setpoint.

  - **Gross** – Use gross weight, regardless of displayed weight

  - **Net** – Use net weight, regardless of displayed weight

  - **GR**.or.**NT** – Uses the displayed weight

  - **Piece** – Uses the piece count

Setting new targets

With the F.KEY set to TARGET in the APP menu, the setpoint targets for OVER and UNDER types can be quickly changed through the front panel.

1. Press and hold **F1** for two seconds.

2. The display will flash the name of **SETP1** and its value.

3. Press the **ZERO** key to open the number editor.

   Use the **UNITS** key to increase the highlighted digit, the **B/G NET** key to decrease the highlighted digit, and the **ZERO** key to accept a value and move to the next digit.

4. After the last digit, press **ZERO** to return to the name of **SETP1** and its new value.

5. Press the **UNITS** key and the display will flash the name of **SETP2** and its value.

6. Press the **ZERO** key to open the number editor.

7. Use the **UNITS** key to increase the highlighted digit, the **B/G NET** key to decrease the highlighted digit, and the **ZERO** key to accept a value and move to the next digit.

8. After the last digit, press **ZERO** to return to the name of **SETP2** and its new value.

9. Press **UNITS** to return to the weigh screen and save these new targets.

   a. If checkweigh is enabled, these values will be presented after targets and modified the same way.

Section 5: Operations

5.1. Weighing Operations

5.1.1. Basic Gross Weighing

1. With the scale unloaded, press **ZERO**.

2. Add weight to the scale.

3. To cycle units, press **UNITS**.

4. Press **PRINT** to push the weight to an attached printer or PC.

5.1.2. Basic Net Weighing

1. With the scale unloaded, press **ZERO**.

2. Add the container to the scale. Press **TARE**.

3. Fill the container with material.

4. To cycle units, press **UNITS**.

5. To cycle between gross and net weight, press **B/G NET**.

6. Press **PRINT** to push the weight to an attached printer or PC.

5.1.3. Preset Tare Entry

The FB1200 allows for the manual entry of tare weights for net weight calculations.

1. With the scale loaded or unloaded, hold the **TARE** key for about 2 seconds.

2. The FB1200 will beep and the number editor will appear with the first digit flashing.
   a. Use **UNITS** to increase flashing digit, **B/G NET** to decrease flashing digit.
   b. Use **ZERO** to advance to next digit and complete entry, use **TARE** to return to previous digit.

3. **PT** will flash on the display to indicate the preset tare was saved.

4. **Net weight** will be displayed, calculated from the entered tare.

5. To clear the preset tare, return the scale to zero gross and press the **TARE** key.

5.1.4. Instrument Weighing Functions

The industry uses three terms to describe the apportionment of an object's weight. These terms are GROSS WEIGHT, TARE WEIGHT, and NET WEIGHT.

Example: A can of house paint is an object to be weighed.
The empty can is the 'TARE' weight,

*the paint is the 'NET' weight, and
together they equal the 'GROSS' weight.*

GROSS = NET + TARE
GROSS – NET = TARE
GROSS – TARE = NET

The FB1200 has two piece counting modes:

1. **Weight** – Weigh a sample and enter the quantity of the sample to store a per-piece weight value.
2. **Resample** – Weigh an initial sample and enter a quantity to determine a per-piece weight, then incrementally increase the sample size to fine-tune the piece weight value.

These piece counting modes can be selected in the P.COUNT item of the APP menu. Set P.COUNT = WEIGHT for simple piece counting or P.COUNT = RESAMP for resampling.

5.2. Piece Counting

5.2.1. Piece Counting in Weight Mode

1. Set P.COUNT = WEIGHT in the APP menu.

2. Ensure the FB1200 is showing live weight (i.e. is not in the menu).

3. (Optional) if the parts will be weighed in a container, add the empty container to the scale and press **TARE**.

4. Add a known sample to the scale.

5. Hold the **UNITS** key until **ENTER QTY** flashes on the screen. The number of parts, based on previously stored values, will appear.

6. Press **ZERO** to bring up the number editor and use the function keys to enter the quantity of the known sample.

   a. Use **UNITS** to increase flashing digit, B/G NET to decrease flashing digit.
   b. Use **ZERO** to advance to next digit and complete entry, use **TARE** to return to previous digit.

7. Additional weight added to scale will be displayed in the units "number of pieces", displayed by the "p" indicator.

8. To cycle between metrological units and piece count, use the **UNITS** key.

5.2.2. Piece Counting in Resample Mode

1. Set P.COUNT = RESAMP in the APP menu.

2. Ensure the FB1200 is showing live weight (i.e. is not in the menu).

3. (Optional) if the parts will be weighed in a container, add the empty container to the scale and press **TARE**.

4. Add a known sample to the scale.

5. Hold the **UNITS** key until **ENTER QTY** flashes on the screen. The number of parts, based on previously stored values, will appear.

6. Press **ZERO** to bring up the number editor and use the function keys to enter the quantity of the known sample.

    a. Use **UNITS** to increase flashing digit, **B/G NET** to decrease flashing digit.

    b. Use **ZERO** to advance to next digit and complete entry, use **TARE** to return to previous digit.

7. **RESAMP QTY** will flash on the screen.

8. Add additional samples. The FB1200 will automatically calculate the closes whole number of pieces. If the difference in per-piece weight between samples is less than 5%, the instrument will beep once and record the new weight.

9. Repeat step 8 until the sample size is sufficient for accurate weighing.

    a. If at any time the difference between per-piece weights is greater than 5%, the instrument will beep twice and the new weight will not be recorded. Remove the weight and start the process over, using larger samples.

10. When finished resampling, press the **ZERO** key to return to the weighing mode.

11. Additional weight added to scale will be displayed in the units "number of pieces", displayed by the "p" indicator.

12. To cycle between metrological units and piece count, use the **UNITS** key.

5.3. Checkweighing

The FB1200 has a three-zone checkweighing function. Checkweigh zones are indicated by the checkweigh annunciator in the top-right corner of the display.

▲	Lit when the weight on the scale is **above CW.HIGH** value.
OK	Lit when the weight is in the acceptable range **between the CW.HIGH and CW.LOW** values.
▼	Lit when the weight on the scale is **below CW.LOW** value.

The FB1200 has two checkweighing modes. The mode can be selected in the APP menu under CW.MODE.

1. **ABS** – Absolute checkweighing. High and low values are set directly and define the different zones.

2. **REL** – Relative checkweighing. A target weight is set and the high and low values are changes from that value. These differences, relative to the target, define the zones.

5.3.1. Absolute Checkweigh Settings

1. **CW.MODE** = ABS enables absolute checkweighing

2. **CW.CTRL** – Determines control of the checkweigh feature

    a. **NONE** – Checkweigh is always running
    b. **ZERO** – Checkweigh is running when scale is outside of zero band
    c. **Motion** – Checkweigh is running when scale shows stable weight

3. **CW.HIGH** – The lower limit of the top checkweigh zone

    a. The up arrow annunciator will be lit when the displayed weight is greater than the entered CW.HIGH value

4. **CW.LOW** – The upper limit of the bottom checkweigh zone

    a. The down arrow annunciator will be lit when the displayed weight is less than the entered CW.LOW value

5.3.2. Relative Checkweigh Settings

1. **CW.MODE** = REL enables relative checkweighing

2. **CW.CTRL** – Determines control of the checkweigh feature

    a. **NONE** – Checkweigh is always running
    b. **ZERO** – Checkweigh is running when scale is outside of zero band
    c. **MOTION** – Checkweigh is running when scale shows stable weight

3. **CW.TARG** – The value that the relative checkweigh zones will be calculated from

4. **CW.TOL.H** – The amount greater than CW.TARG that establishes the lower limit of the top checkweigh zone

    a. The up arrow annunciator will be lit when the displayed weight is greater than CW.TARG + CW.TOL.H

5. **CW.TOL.L** – The amount less than CW.TARG that establishes the upper limit of the bottom checkweigh zone

    a. The down arrow annunciator will be lit when the displayed weight is less than CW.TARG - CW.TOL.L

5.3.3. Setting New Checkweigh Targets via the Front Panel.

With the **F.KEY** set to **TARGET** in the APP menu, the checkweigh zone values can be changed through the front panel.

1. Press and hold **F1** for two seconds.

2. The display will flash the name of the first checkweigh limit and its value.

    a. This will be **CH.HIGH** in **ABS** mode and **CW.TOL.H** in **REL** mode.

3. Press the **ZERO** key to open the number editor.

4. Use the **UNITS** key to increase the highlighted digit, the **B/G NET** key to decrease the highlighted digit, and the **ZERO** key to accept a value and move to the next digit.

5. After the last digit, press **ZERO** to return to the name and the new value.

6. Press the **UNITS** key and the display will flash the second checkweigh limit and its value.

    a. This will be **CH.LOW** in **ABS** mode and **CW.TOL.L** in **REL** mode.

7. Press the **ZERO** key to open the number editor.

8. Use the **UNITS** key to increase the highlighted digit, the **B/G NET** key to decrease the highlighted digit, and the **ZERO** key to accept a value and move to the next digit.

9. After the last digit, press **ZERO** to return to the name and the new value.

10. (REL mode only) Press the **UNITS** key and the display will flash **CW.TARG** and its value.

11. (REL mode only) Press the **ZERO** key to open the number editor.

12. (REL mode only) Use the **UNITS** key to increase the highlighted digit, the **B/G NET** key to decrease the highlighted digit, and the **ZERO** key to accept a value and move to the next digit.

13. (REL mode only) After the last digit, press **ZERO** to return to **CW.TARG** and the new value.

14. Press **UNITS** to return to the weigh screen and save these new targets.

NOTE: If setpoints are enabled of the OVER/UNDER type, they will be listed before the checkweigh values. See section Setpoint Configuration for more information.

5.4. Accumulation

The FB1200 can accumulate weights by gross weight, net weight, or piece count. To enable the accumulation:

- Access the APPS menu through the front panel or FB1200 Viewer.
- Set **F.KEY** to **TOTAL**. **(F1) Total** key will enter and exit totalizing mode.

- The **B /G NET** key can be used to cycle between the gross total, net total and pieces total.

- When a total is displayed, the TOT annunciator will be lit. Pressing the units key whilst in totaling mode will add the current weight to the totals, show the new total, then exit accumulation mode.

- A long press of the **F key** will clear the totals. The instrument will prompt with "CLEAR".

To accumulate pieces, **P.COUNT** must be set to **WEIGHT** or **RESAMP** in the APP menu.

NOTE: When **TRADE** is set to **NTEP**, pieces can only be accumulated as net weight. To accumulate pieces by gross weight, set **TRADE** to **OFF**.

Gross Accumulation

1. **Make sure the scale shows zero gross weight and displays gross.**

2. Add measured weight to the scale.

3. Press the **F1** key "n   X" will display, where X is the number of accumulations currently stored. The total accumulated gross weight will display next. The TOT annunciator in the bottom right corner will be lit.

4. Press **UNITS** to accumulate the weight currently on the scale.

5. "ACCEPT" will display on the front panel.

6. The instrument will return to the live weight. Press **F1** to view the new accumulation values, and press **F1** again to return to live weight.

7. With live weight displayed, remove all weight from the scale and return the display to zero.

8. The instrument is now ready to accumulate the next weight.

Net Accumulation

1. Make sure the scale is at zero gross weight.

2. Add the container to the scale.

3. Press **TARE**.

4. The **NET** annunciator will be lit.

5. Add weight to the container.

6. Press the **F1** key "n   X" will display, where X is the number of accumulations currently stored. The total accumulated net weight will display next. The TOT annunciator in the bottom right corner will be lit.

7. Press **UNITS** to accumulate the weight currently on the scale.

8. "**ACCEPT**" will display on the front panel.

9. The instrument will return to the live weight. Press **F1** to view the new accumulation values, and press **F1** again to return to live weight.

10. With live weight displayed, remove all weight, including the container, from the scale and return the display to gross zero. It is not necessary to display zero gross and the instrument can remain in net mode as long as the scale is empty.

11. The instrument is now ready to accumulate the next weight.

Printing Accumulated Totals

1. PORT 1 must be set to **BUTTON**.

2. With the accumulated totals flashing, press **PRINT**.

3. Either the default or custom TOT.PRN ticket will be printed, depending on FMT 1 setting.

5.5. Live Weight

For the Live Weight feature to be enabled, F.KEY must be set to LIVE.W in the APP menu.

1. With livestock on the scale, press the **F1** key.

2. The H indicator on the display will flash while the instrument filters the weight.

3. When the FB1200 is done processing the movement, the H indicator will remain lit and the weight will be held on the display.

4. To clear the weight and return to normal weighing, hold the **F1** key for about 2 seconds.

NOTE: Live weight will not function unless **TRADE** is set to **OFF**.

5.6. Setpoint Operation

Setpoint settings are found under the **SETP** heading of the FB1200 menu. The FB1200 has two digital setpoints that can be configured independently.

Wiring:

Pin Desc	Purpose
Out1	Output 1
Out2	Output 2
Com+	12/24 VDC
Com-	0 VDC
Shld	Shield

5.6.1. Settings

- **Type**
    - o **Off** – Setpoint is always inactive
    - o **On** – Setpoint is always active
    - o **Over** – Setpoint is active when weight displayed is over a certain value
    - o **Under** – Setpoint is active when weight displayed is under a certain value
    - o **COZ** – Setpoint is active when scale is at "center of zero"
    - o **Zero** – Setpoint is active when instrument displays zero weight
    - o **Net** – Setpoint is active when instrument displays net weight
    - o **Motion** – Setpoint is active when motion is detected on the scale
    - o **Error** – Setpoint is active when an error condition is detected
    - o **C.W.HI** – Setpoint is active when the weight on the scale is above the CW.HIGH setting in the APP menu.
    - o **C.W.OK** – Setpoint is active when the weight on the scale is between the CW.LOW and the CW.HIGH settings in the APP menu.
    - o **C.W.LO** – Setpoint is active when the weight on the scale is below the **CW.LOW** setting in the APP menu.

- **Logic** – Determines the state of the output when setpoint conditions are met.
    - o **High** – When the condition of the type is met, the digital output will be driven to the high value. Otherwise it will be at the low value.
    - o **Low** – When the condition of the type is met, the digital output will be at the low value. Otherwise it will be driven to the high value.

- **Timing** – Determines the behavior of a setpoint.
    - o **Level** – The setpoint becomes active when the condition of the type is met. The setpoint can be deactivated by dropping below the hysteresis value or while a reset input is active.
    - o **Edge** – The setpoint becomes active when the condition of the type is met. The setpoint can be deactivated by dropping below the hysteresis value or activating a reset input. Unlike "level" timing, a setpoint with this setting will remain *deactivated* after a reset input is received until the weight drops below hysteresis and the setpoint condition is reached again.
    - o **Latch** – The setpoint will become active when the type condition is met. It will remain active, regardless of scale conditions, until the reset input becomes active.

- **Alarm** – Determines the instrument response to a setpoint condition being met. This setting works independently of the logic value.

  - o **Single** – The FB1200 produces a single beep every two seconds.

  - o **Double** – The FB1200 produces a double beep every two seconds.

  - o **Flash** – The FB1200 flashes the display.

- **Name** – When **F.KEY** is set to **TARGET**, this name is used on the display to identify the setpoint to allow entry of a new target value.

- **Target** – Used when the type is **OVER** or **UNDER**. Determines the target weight of the setpoint.

- **P.ACT** – Used when the type is **OVER** or **UNDER**. Determines the preact of the setpoint. Used to account for material that may still flow after setpoint is active.

- **HYS** – Used when the type is **OVER** or **UNDER**. Determines the hysteresis value of the setpoint. The hysteresis value determines the change in weight past the target and preact that is required to deactivate the setpoint.

  - o Ex. TYPE = OVER, TARGET = 1000 lbs, P.ACT = 100 lbs, HYS = 50 lbs. The setpoint would become active when the scale reached 900 lbs (1000 lbs-100 lbs) and would remain active until the weight returned below 850 lbs (1000 lbs-100 lbs-50 lbs).

- **Source** – Used when the type is OVER or UNDER. Select the source for the setpoint.

  - o Gross – Use gross weight, regardless of displayed weight

  - o Net – Use net weight, regardless of displayed weight

  - o GR.or.NT – Uses the displayed weight

  - o Piece – Uses the piece count

Setting new targets

With the F.KEY set to **TARGET** in the APP menu, the setpoint targets for **OVER** and **UNDER** types can be quickly changed through the front panel.

1. Press and hold **F1** for two seconds.

   The display will flash the name of **SETP1** and its value.

2. Press the **ZERO** key to open the number editor.

3. Use the **UNITS** key to increase the highlighted digit, the **B/G NET** key to decrease the highlighted digit, and the **ZERO** key to accept a value and move to the next digit.

4. After the last digit, press **ZERO** to return to the name of **SETP1** and it's new value.

5. Press the **UNITS** key and the display will flash the name of **SETP2** and its value.

6. Press the **ZERO** key to open the number editor.

7. Use the **UNITS** key to increase the highlighted digit, the **B/G NET** key to decrease the highlighted digit, and the ZERO key to accept a value and move to the next digit.

8. After the last digit, press **ZERO** to return to the name of **SETP2** and its new value.

9. Press **UNITS** to return to the weigh screen and save these new targets.

   — If checkweigh is enabled, these values will be presented after targets and modified the same way.

Section 6: Serial Input / Output

6.1. Connecting the FB1200 to a Remote Display

The FB1200 can connect to the Fairbanks 1600 Series Remote Displays via RS232, RS485, or 20mA communication.

The default settings for the 1600 Series are:

- **BAUD** = 2400
- **D.BITS** = 7
- **PAR** = P ODD
- **STOP** = 1

To output the standard Fairbanks remote display output and allow the LB/KG and GR/NT annunciators to work correctly, make the following settings:

Set PORT 1: **RS232**

    Or

Set PORT 1: **C.LOOP**

Set OUTPUT: **CONTINUOUS**

Set LOAD 1: **REMOTE**

6.1.1. Remote Display Output

    `<STX><A><B><P><WWWWWW><ETX>`

    <STX>Start of transmission character

    <A> Status A

    <B>Status B

    <P>Polarity

    <W>Displayed weight (leading zeroes suppressed)

    <ETX>End of Transmission character

Status A Character Descriptions

Character	Description
a	Setpoint 1 active
A	Setpoint 2 active
4	Both setpoints or no setpoints active

Status B Character Descriptions

Character	Description
0	Lb gross
1	Lb net
2	Lb tare
3	Kg gross
4	Kg net
5	Kg tare

6.1.2. Remote Display Wiring Diagrams

20 mA (Passive Output)

FB1200 Serial 1	Wire	160X TB1
4 Tx+	1	1 P
5 Tx-	2	7 In+
	Jumper	2 G
		8 In-

20 mA Layout
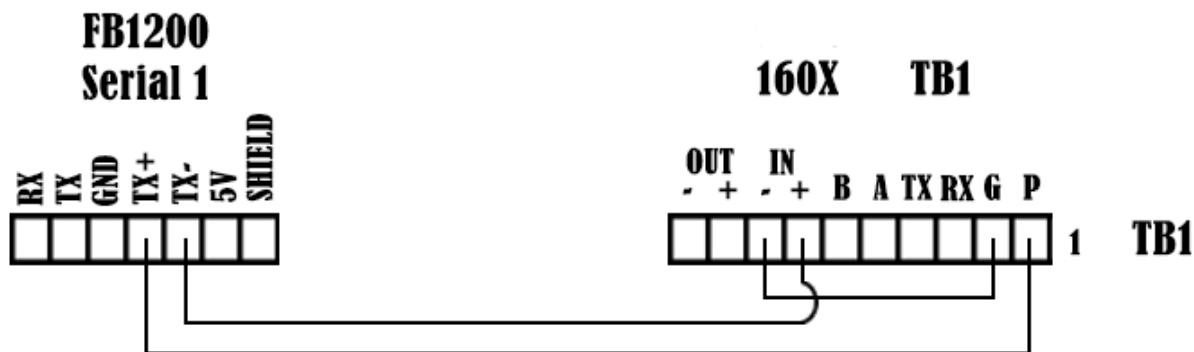
RS232

FB1200 Serial X	Wire	160X TB1
2 Tx+	1	3 Rx
3 GND	2	2 G

RS232 Layout
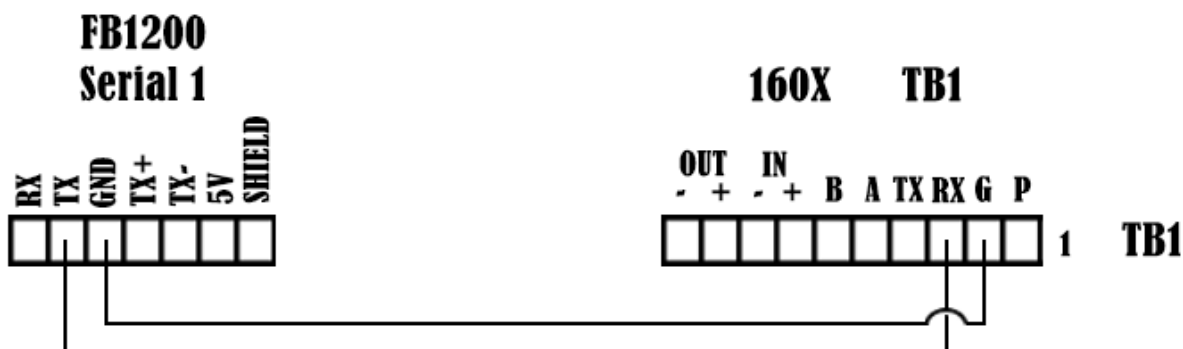
RS485

FB1200 Serial X	Wire	160X TB1
3 GND	1	2 G
4 TxA	2	5 RS485A
5 TxB	3	6 RS485B

RS485 Layout
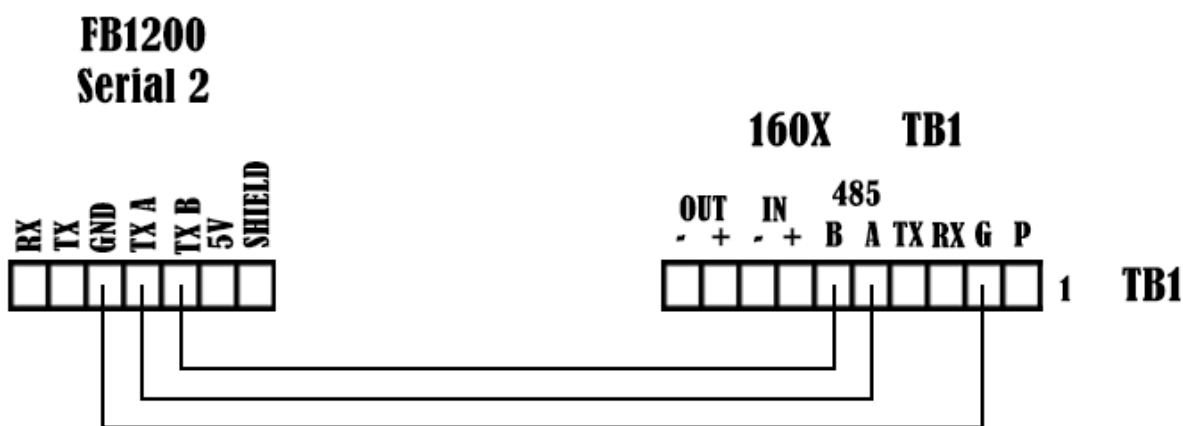
6.2. Printing

The FB1200 supports fixed standard printouts based on the instrument configuration, and a customizable print format.

Printing may be triggered manually by the print key. A serial port must be configured for printing by setting.

Go to: PORTS:COMx:OUTPUT=BUTTON.

Alternatively, a printout can be trigged automatically by setting **PORTS:COMx:OUTPUT=AUTO**. A printout will then be triggered when the weight is outside center of zero, and the scale is stable, and the weight is 50% greater than the previous printout.

6.2.1. Printer Switch Settings

PRINTER	SW 1 ON	SW 2 ON	SW 3 ON	COMMUNICATION SETTINGS
iDP3550 (28810)	2, 3, 4, 8	1, 2, 3, 5, 6	—	**9600** Baud, **No** Parity, **8** Data and **1** Stop Bit.
TM-U590 (24740)	1, 3, 7	All OFF	—	**9600** Baud, **No** Parity, **8** Data and **1** Stop Bit.
TM-U295 (24741)	1, 3	All OFF	—	**9600** Baud, **No** Parity, **8** Data and **1** Stop Bit.
SP298	All OFF	3	1, 5	**9600** Baud, **No** Parity, **8** Data and **1** Stop Bit.
SP700	1 thru 7	1 thru 6	1, 5	**9600** Baud, **No** Parity, **8** Data and **1** Stop Bit.
SP2000	All OFF	3	1, 5	**2400** Baud, **Even** Parity, **7** Data and **2** Stop Bit.
SP2200	2, 3, 8	All OFF	All OFF	**2400** Baud, **No** Parity, **7** Data and **2** Stop Bit.
TM-U230 (30954)	All OFF	2, 5, 8	—	**9600** Baud, **No** Parity, **8** Data and **1** Stop Bit.
TM-U220 (34932)	ALL OFF	2	—	**9600** Baud, **No** Parity, **8** Data and **1** Stop Bit.
GC420D				**9600** Baud, **No** Parity, **8** Data and **1** Stop Bit.
L540 (38083)	—	—	—	**9600** Baud, **No** Parity, **8** Data and **1** Stop Bit.

— *No switch bank present inside the printer.*

NOTE: *The Fairbanks Scales standard default COM Port settings for all the printers is* **9600 Baud, No Parity, 8 Bits**, *and* **1 Stop Bit.**

6.3. Printers

6.3.1. Printer Cabling

The chart below shows the connections for the two cable types used with the printers.

20483 CABLE KIT *

Used with the with the **GC420d and the L540 printers**

WIRE	COM PORT 1 OR 2	COLOR	GC420d DB-9 PRINTER
1	**1-RX**	R	**2-TX**
2	**2-TX**	W	**3-RX**
3	**3-GND**	G	**5-GND**

Remove the female end of the cable in the field.

15599 CABLE KIT

WIRE	COM PORT 1 OR 2	COLOR	DB-25 PRINTER
1	**1-RX**	W	**2-TX**
2	**2-TX**	R	**3-RX**
3	**3-GND**	G	**7-GND**

6.3.2. iDP3550 Tape Printer Settings
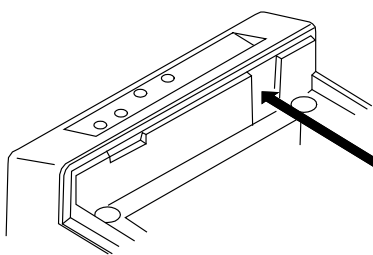
DS2	ON	OFF
1	X	
2	X	
3	X	
4		X
5	X	
6	X	
7		X
8		X

DS1	ON	OFF
1		X
2	X	
3	X	
4	X	
5		X
6		X
7		X
8	X	
9		X
10		X

BAUD	**9600**
PARITY	**No**
DATA BITS	**8**
STOP BIT	**1**

6.3.3. TM-U590 Ticket Printer Settings

- For **FB1200** Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **15599.**

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1

Set the printer **dip switch**es as listed below.

DSW 1: 1, 3, and 7 = **ON** only.

DSW 2: All Switches = **OFF**
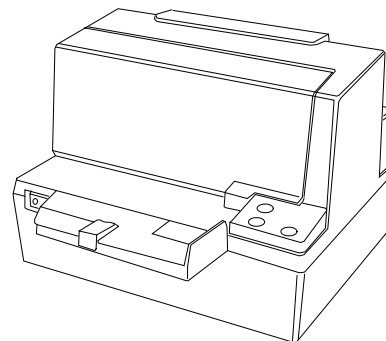
NOTE: *For wiring table, see* **Printer Cabling** **– 15599 Cable Kit**

6.3.4. TM-U220 Tape Printer

- – Uses **SERIAL** communication.

- – Use cable **15599**.

BAUD	**9600**
PARITY	**No**
DATA BITS	**8**
STOP BIT	**1**
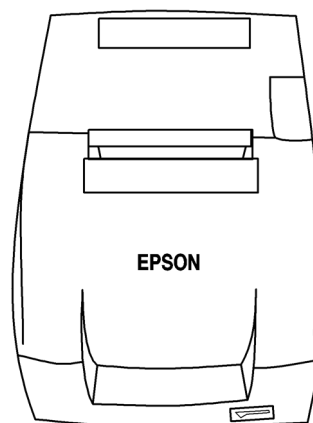
NOTE: *For wiring table, see* **Printer Cabling** **– 15599 Cable Kit**

DIP SWITCH 1 (Serial Interface)

SWITCH	FUNCTION	ON	OFF
1	Data receive error	Ignored	**Prints "?"**
2	Receive buffer capacity	40 byes	**4KB**
3	Handshaking	XON/XOFF	**DTR/DSR**
4	Work length	7 bits	**8 bits**
5	Parity check	Yes	**No**
6	Parity selection	Even	**Odd**
7	Transmission speed	4800 bps	**9600 bps**
8	BUSY condition	Receive buffer full	**Receive buffer full or Offline**

Default settings are in bold.

DIP SWITCH 2 (Serial Interface)

SWITCH	FUNCTION	ON	OFF
1	Print Column	42/35	**40/33**
* 2	For internal use only (auto-cutter) (do not change)	**Enabled**	**Disabled**
3	Pin 6 reset signal	Used	**Not used**
4	Pin 25 reset signal	Used	**Not used**
5	Undefined	--	--
6	Internal use only (flash memory rewriting) (Do not change)	Enabled	**Disabled**

7	Undefined	--	--
8	Serial Interface section	Memory Switch	**Dip Switch**

Default settings are in bold.

* The TM-U220 Tape Printer DAT (dk gray case, w/cutter) will have DSW2 switch #2 set to ON. TM-U220 Tape Printer (white case, no cutter) will have DSW2 switch #2 set to OFF. All other switch settings are identical between printers.

Access the **Dip Switches** by unfastening the screw and removing the cover plate, found on the bottom of the printer.

For standard use, dip switches are factory-set correctly
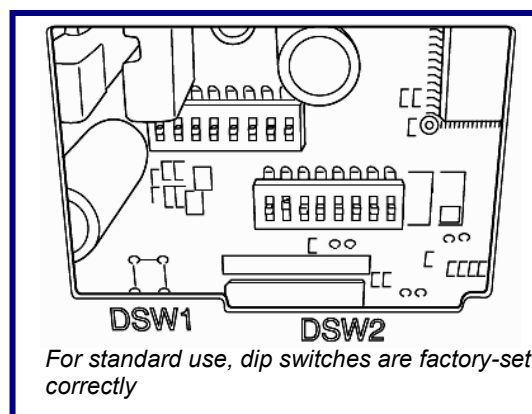
6.3.5. TM-U295 Ticket Printer Settings

- For **FB1200** Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **15599**.

BAUD	**9600**
PARITY	**No**
DATA BITS	**8**
STOP BIT	**1**

.

Set the printer **dip switche**s as listed below.

SW1: 1 and 3 = **ON**

Remainder   = **OFF**
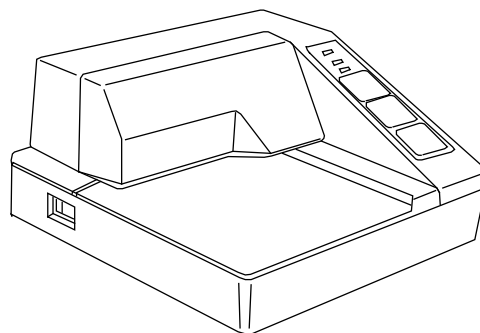
NOTE: *For wiring table, see* **Printer Cabling – 15599 Cable Kit**

6.3.6. SP298 Printer Settings

- For **FB1200** Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **15599**.

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1

NOTE: *For wiring table, see* **Printer Cabling – 15599 Cable Kit**

ACCESSING THE DIP SWITCHES

1. Remove all power from the printer, as well as all Network cables from between the printer and the Instrument.

2. Remove the Printer Cover.

3. Press down with a screwdriver at **Location "A"** marked in the illustration below, and carefully slide the Document Table in the direction indicated by the arrow until it is out of the way.

   – It is not necessary to remove the document table completely. Just move it enough to access the DIP Switches inside.

4. Set the **DIP Switches** into their correct positions.

5. Slide the Document Table back into place while pressing down at **Location "A".**

6. Replace the **Print Cover**.
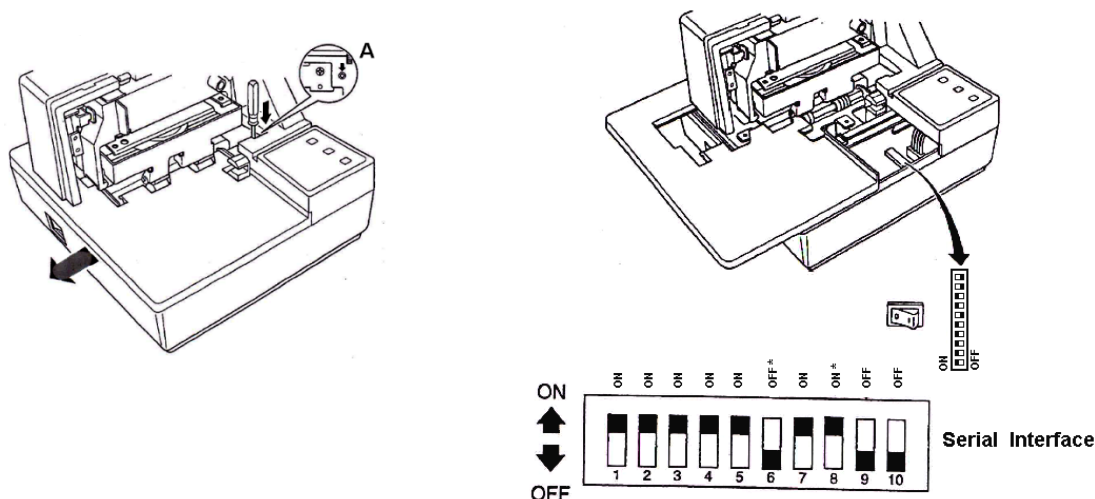
DIP Switch Settings (SERIAL INTERFACE)

SWITCH	FUNCTION	ON	OFF
1	Baud Rate	*See table below.*	
2			
3	Data Length	**8 bits**	7 bits
4	Parity Check	**Disabled**	Enabled
5	Parity	**Odd**	Even
6	Handshake	DTR/DSR	**XON/XOFF**
7	Command Emulation	*See table below*	
8			
9	Pin #6 (DSR) reset signal	Enabled	**Disabled**
10	Pin #25 (INIT) reset signal	Enabled	**Disabled**

Baud Rate Settings Table

BAUD RATE	SWITCH 1	SWITCH 2-2
4800 bps	OFF	ON
9600 bps	**ON**	**ON**
1920 bps	ON	OFF
3840 bps	OFF	OFF

Command Emulation Table

COMMAND EMULATION	SWITCH 7	SWITCH 8
Star Mode	**ON**	**ON**
ESC/POS (TM-295)	ON	OFF
ESC/POS (TM-290)	OFF	OFF
Not used (*)	OFF	ON

* *Never set* **Switch 7** *to* **OFF** *at the same time that* **Switch 8 is** *set to* **ON**.

6.3.7. SP700 Printer Settings

- For **FB1200** Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **15599**.

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1

NOTE: *For wiring table, see* **Printer Cabling** **– 15599 Cable Kit**

There are **two (2) dip switch** locations on the Star SP700 Printer.

- Underneath the printer, behind a protective cover is **DIP Switch 1**.

- **DIP Switch 2** is on the Serial Interface Board.
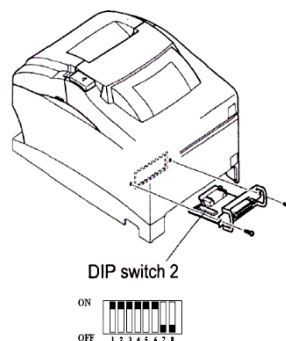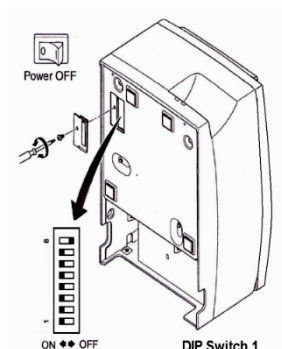
SWITCH	FUNCTION	ON	OFF
1-1	Always ON	**Should be set ON**	
1-2	Auto Cutter *	**Invalid**	Valid
1-3	Always ON	**Should be set ON**	
1-4	Command Emulation	**Star**	ESC/POS
1-5	USB mode **	**Printer Class**	Vendor Class
1-6	2 Colors Printing	**Valid**	Invalid
1-7	Reserved		
1-8	Print head model ***	18-pin wire	**9-pin wire**

*   The factory settings for enabling/disabling the Auto Cutter are as listed below.

- Models without Auto Cutter: Invalid (**Switch 1-2 = ON**).

- Models with Auto Cutter: Valid (**Switch 1-2 = OFF**).

NOTE*: Only program the* **Auto Cutter** *function with models that have the* **Auto Cutter Accessory** *installed.*
- *This is models with a tear bar.*
- *A mechanical error will* occur*.*

**   **USB Interface** model only.

*** Do not change the default setting (**Switch 1-8 = OFF**).

DIP Switch 2

SWITCH	FUNCTION	ON	OFF
2-1	Baud Rate	*See table below*.	
2-2			
2-3	Data Length	**8 bits**	7 bits
2-4	Parity Check	**Disabled**	Enabled
2-5	Parity	**Odd**	Even
2-6	Handshake	DTR/DSR	**XON/XOFF**
2-7	Pin #6 (DSR) reset signal	Valid	**Invalid**
2-8	Pin #25 (INIT) reset signal	Valid	**Invalid**

Baud Rate Settings Table

BAUD RATE	SWITCH 2-1	SWITCH 2-2
4800 bps	OFF	**ON**
9600 bps	**ON**	**ON**
1920 bps	**ON**	OFF
3840 bps	OFF	OFF

6.3.8. SP2000 Printer Settings

The SP2000 is a Dot Matrix ticket printer. The following switch settings and cable requirements will work with the default format.

- For **FB1200** Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **15599**.

BAUD	**2400**
PARITY	**EVEN**
DATA BITS	**7**
STOP BIT	**1**

NOTE: *For wiring table, see* **Printer Cabling** **– 15599 Cable Kit**

Set the printer's **dip switch**es according to the following:

- **DSW 1:** All **OFF.**
- **DSW 2: Three (3) ON** only.
- **DSW 3:** **One (1)** and **five (5) ON** only.
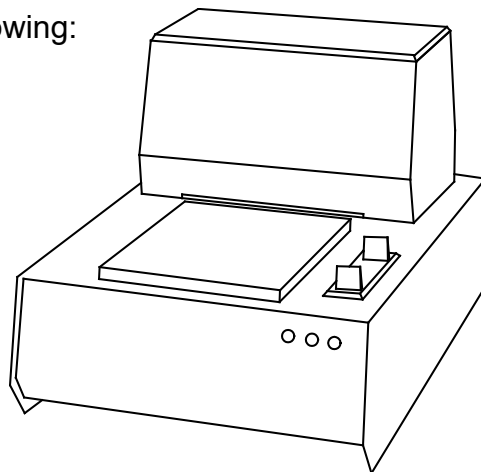
6.3.9. SP2200 Printer Settings

The SP2200 is a Dot Matrix ticket printer. The following switch settings and cable requirements will work with the default format.

- **FB1200 Desktop** and **NEMA 4X** use cable **15599**.

BAUD	2400
PARITY	NO
DATA BITS	7
STOP BIT	2

NOTE: *For wiring table, see* **Printer Cabling** **– 15599 Cable Kit**

Set the printer's **dip switche**s according to the following:

- **DSW 1:Two (2), three (3),** and **eight (8) ON** only.
- **DSW 2** and **3:** All **OFF.**

6.3.10. TM-U230 Printer Settings

- For **FB7100** Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **15599**.

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1
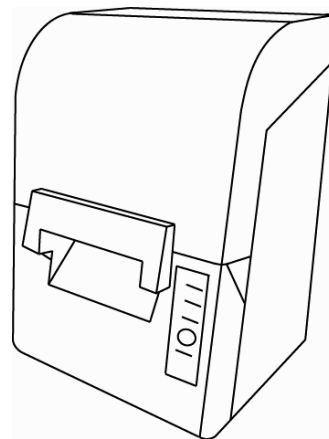
NOTE: *For wiring table, see* **Printer Cabling** **– 15599 Cable Kit**

DIP Switch 1 Settings (SERIAL INTERFACE)

SWITCH	FUNCTION	ON	OFF
1	Data receive error	Ignored	**Prints "?"**
2	Receive buffer capacity	1KB	**16KB**
3	Handshaking	XON/XOFF	**DTR/DSR**
4	Work length	7 bits	**8 bits**
5	Parity check	Yes	**No**
6	Parity selection	Even	**Odd**

7	Transmission speed	4800 bps	**9600 bps**
8	BUSY condition	Receive buffer full	**Receive buffer full or Offline**

DIP Switch 2 Settings (SERIAL INTERFACE)

SWITCH	FUNCTION	ON	OFF
1	Sections number of characters per line (cpl) 7 x 9 font/ 9 x 9 font	42/35	**40/33**
2	For internal use only (Auto-cutter) (do not change)	**Enabled**	Disabled
3	Pin 6 reset signal	Used	Not used
4	Pin 25 reset signal	Used	Not used
5	PAPER OUT LED flashing pattern	**Flashes**	Lights on
6	For internal use only (flash memory rewriting) (Do not change)	Enabled	**Disabled**
7	For internal use only (Internal synchronization) (Do not change)	Asynchronous	**Synchronous with clock**
8	Internal buzzer	**Disabled**	Enabled

6.3.11. L540 Printer Settings

● For **FB1200** instrument Serial communications use cable **20483**.

BAUD	**9600**
PARITY	**No**
DATA BITS	**8**
STOP BIT	**1**
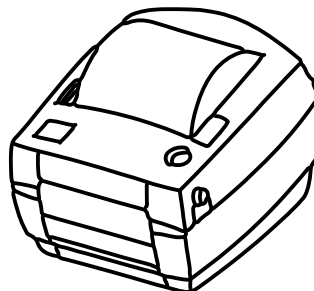
NOTE: *For wiring table, see* **Printer Cabling – 20483 Cable Kit**

6.3.12. GC420d Printer Settings

● For **FB1200** instrument desktop and Nema 4x Serial communications use cable **20483**.

BAUD	**9600**
PARITY	**NO**
DATA BITS	**8**
STOP BITS	**1**

NOTE: *For wiring table, see* **Printer Cabling – 20483 Cable Kit**

The **FB1200** Instrument has numerous ports and outlets allowing different Input/ Output devices to be utilized.

- The back of the Instrument has a 120V cord outlet, but the unit also supports 220V.

- The FB1200 instrument has two (2) standard **Serial Output COM Ports**.

    – These are configured for **RS-232** communications.

    – Serial Outputs can be customized to provide specific configured data string protocols, configuration parameters, using output modes such as**: Config, Auto, Continuous, Poll** and **printers**.

6.3.13. Ticket Formatting

Contact your local Fairbanks Representative if you have ticket formatting needs.

6.3.14. Default Ticket Formats

A. Default GTN Ticket

```
000000133 02/01/21 12:19:56PM
    12.00lb GR
     5.00lb TA
     7.00lb NT
```

B. Default accumulation ticket

```
02/08/21 12:03:48PM

3 Items GR
   13.500lb GR Total

2 Items NT
    9.500lb NT Total
```

C. Default GTN ticket with piece counting

```
000000138 02/01/21 12:27:50PM
   12.00lb GR
    5.50lb TA
    6.50lb NT

    140 p
      0 p Total
```

D. Default GTN ticket with peak hold

```
000000134 02/01/21 12:23:59PM
   12.00lb GR
    5.50lb TA
    6.50lb NT

   12.72lb Peak Weight 02/01/21 12:22:30PM
```

E. Default accumulation ticket with piece counting

```
02/08/21 12:16:33PM

3 Items GR
   16.50lb GR Total

2 Items NT
   13.00lb NT Total
      57 p Total
```

6.4. Continuous Weight Output

Contact your local Fairbanks Representative if you have custom output needs.

6.5. Formats

There are 6 continuous weight output formats, including, and one custom format.

6.5.1. FBANKS: Fairbanks and Toledo Format

Format:

<STX><A><B><C><GGGGGG><TTTTT><CR>

Where:

Element	Description	Values
STX	Start of transmission character	
A	Status A	See status A bit descriptions below
B	Status B	See status B bit descriptions below
C	Status C	See status C bit descriptions below
G	Gross weight (leading zeroes are not suppressed). 6 characters if grad size does not have a decimal point. 5 characters if the grad size does have a decimal point. The decimal point is not sent as part of the character string.	
T	Tare weight (leading zeroes are not suppressed) 6 characters if grad size does not have a decimal point. 5 characters if the grad size does have a decimal point. The decimal point is not sent as part of the character string.	
CR	Carriage return character	

Status A Bit Descriptions

Bits	Description
0-2	Decimal point/zero location 0: x00 1: x0 2: x 3: x.x 4: x.xx 5: x.xxx 6: x.xxxx 7: x.xxxxx
3-4	0: N/A 1: Count by 1 2: Count by 2 3: Count by 5
5	Always 1

| 6 | Always 0 |
| 7 | Parity bit |

Status B Bit Descriptions

Bit	Description
0	0: Gross 1: Net
1	0: Positive 1: Negative
2	0: In range 1: Overload/underload
3	0: Stable 1: Motion
4	0: Pounds (lb) 1: Kilograms (kg)
5	Always 1
6	0: Normal 1: Power Up
7	Parity bit

Status C Bit Descriptions

Bit	Description
0	Always 0
1	Always 0
2	Always 0
3	0: Normal 1: Print key pressed
4	Always 0
5	Always 1
6	0: Normal 1: Keyboard Tare
7	Parity bit

6.5.2. CARD: Cardinal 738 Format

Format:

<CR><P><WWWWWW>Period (.)<m><SP><u><SP><g><SP><SP><ETX>

Where:

Element	Description	Values
CR	Carriage return character	

P	Weight polarity	+: Positive weight −: Negative weight
W	Displayed weight (leading zeroes are not suppressed). Decimal point always sent, even if trailing.	
m	Motion status	m: Motion o: Overload
SP	Space	
U	Weight units	L: Pounds K: Kilograms
SP	Space	
g	Gross or net status	g: Gross n: Net
SP	Space	
SP	Space	
ETX	End of transmission character	

6.5.3. WTX: Weigh-Tronix WI-120 Format

Format:

<SP><G><WWWWWW><SP><U><U><CR><LF>

Where:

Element	Description	Values
SP	Space	
G	Gross or net status	G: Gross N: Net
P	Weight polarity	+: Positive weight −: Negative weight
W	Displayed weight (leading zeroes are not suppressed)	
SP	Space	
U	Weight units	lb: Pounds kg: Kilograms
CR	Carriage return character	
LF	Line feed character	

6.5.4. Condec: Condec Format

Format:

<STX><SP><SP><WWWWWW><U><G><M><CR>

Where:

Element	Description	Values
STX	Start of transmission character	
P	Weight polarity	''(space): Positive weight −: Negative weight
W	Displayed weight (leading zeroes are suppressed)	-
U	Weight units	L: Pounds K: Kilograms
G	Gross or net weight	G: Gross N: Net
M	Motion status	M: Motion I: Error O: Overload or underload ''(space): Stable
CR	Carriage return character	

6.5.5. Remote Input Characters

Character	Action	Notes
Z	Zero	Active in the Polled or Button Modes
A	Tare (Auto Tare)	Active in the Polled or Button Modes
U	Change Units	Active in the Polled or Button Modes
g	Toggle Gross / Net	Active in the Polled or Button Modes
p or P	Print	Active in the Polled or Button Modes. The output will be the same as if the instrument print key is pressed. See Section 8 for printer formats.
CR	Carriage Return	Active in the Polled Mode Output. When CR is received, poll output format is sent. The poll output format is described in Section 7.3.9.
<poll char>	Configurable poll character	Active in the Polled Mode Output. When the character set in PORTS:COMx:POLL is received, poll output format is sent.

6.5.6. Poll Output Format

The poll output format is sent when the poll character is received on a serial port set for POLL mode.

Format:

<SP><P><WWWWWW><SP><U><SP><SP><S><SP><SP><CR><LF><EOT>

Where:

Element	Description	Values
SP	Space	

P	Weight polarity	''(space): Positive weight –: Negative weight
W	Displayed weight (leading zeroes are suppressed)	
SP	Space	
U	Weight units	`lb`: Pounds `kg`: Kilograms
SP	Space	
SP	Space	
GR	Status	`GR`: Gross stable `gr`: Gross motion `NT`: Net stable `nt`: Net motion
SP	Space	
SP	Space	
CR	Carriage return character	
LF	Line feed character	
EOT	End of transmission character	

6.5.7. Remote Display Mode

The FB1200 can act as a remote display to other FB1200s and other select Fairbanks instruments.

Master Instrument	Cable	COM 1 OUTPUT	Master COM setting
FB1200	17216 (limit 50')	RD1200	COM 2: Config
FB2250/55	17216 (limit 50')	RD2255	POLL
FB2560	10' = 26041, 50' = 26042	RD2560	Continuous; Fairbanks Output
FB6001/11	10' = 26041, 50' = 26042	RD7000	Continuous; Fairbanks Output
FB6005/15	17216 (limit 50')	RD7000	Continuous; Fairbanks Output
FB7100	17216 (limit 50')	RD7000	Continuous; Fairbanks Output
FB400	17216 (limit 50')	RD400	rinCMD

FB1200 -to-FB1200

FB1200 Master – SERIAL 2	Cable 17216	FB1200 Remote – SERIAL 1
1 RX	Red	2 TX
2 TX	White	1 RX
3 GND	Green	3 GND

1. Connect the master and remote FB1200s according to the above table.
2. On the master FB1200, set **OUTPUT** to **CONFIG** in **PORTS** > **COM 2**.
3. On the remote FB1200, set **OUTPUT** to **RD1200** in **PORTS** > **COM 1**.
4. Ensure that the baud rate, data bits, stop bits, and parity are the same between FB1200s.

UNITS, ZERO, B/G NET, TARE, PRINT, and F1 keys can be used on the remote FB1200 to operate on the master.

FB2250/55 -to-FB1200

FB2250/55 Master	Cable 17216	FB1200 Remote – SERIAL 1
1 RX	Red	2 TX
2 TX	White	1 RX
4 GND	Green	3 GND

1. Connect the master FB2250/55 and remote FB1200s according to the above table.

2. On the FB2250/55, set the output type to **POLL**.

3. On the remote FB1200, set **OUTPUT** to **RD2255** in **PORTS** > **COM 1**.

4. Ensure that the baud rate, data bits, stop bits, and parity are the same between the FB2250/55 and FB1200.

UNITS, ZERO, B/G NET, TARE, and PRINT keys can be used on the remote FB1200 to operate on the master.

FB2560 -to-FB1200

FB2560 Master – DB9	Cable 26041	FB1200 Remote – SERIAL 1
2 RX	Red	2 TX
3 TX	White	1 RX
5 GND	Green	3 GND

1. Connect the master FB2560 and remote FB1200s according to the above table.

2. On the FB2560, set the output type to **CONTINUOUS**.

3. Set load to be **FAIRBANKS**.

4. On the remote FB1200, set **OUTPUT** to **RD2560** in **PORTS** > **COM 1**.

5. Ensure that the baud rate, data bits, stop bits, and parity are the same between the FB2560 and FB1200.

    UNITS, ZERO, TARE, and PRINT keys can be used on the remote FB1200 to operate on the master. B/G Net can be used to change the displayed weight on the FB1200.

FB6001/11 -to-FB1200

FB6001/11 Master – DB9	Cable 26041	FB1200 Remote – SERIAL 1
2 RX	Red	2 TX
3 TX	White	1 RX
5 GND	Green	3 GND

1. Connect the master FB6001/11 and remote FB1200s according to the above table.

2. On the FB6001/11, set the **OUTPUT** to **CONTINUOUS**.

3. Set load to be **FAIRBANKS**.

4. On the remote FB1200, set **OUTPUT** to **RD7000** in **PORTS** > **COM 1**.

5. Ensure that the baud rate, data bits, stop bits, and parity are the same between the FB6001/11 and FB1200.

   UNITS, ZERO, B/G NET, TARE, and PRINT keys can be used on the remote FB1200 to operate on the master. B/G Net can be used to change the displayed weight on the FB1200.

FB6005/15 -to-FB1200

FB6005/15 Master	Cable 17216	FB1200 Remote – SERIAL 1
1 RX	Red	2 TX
2 TX	White	1 RX
5 GND	Green	3 GND

1. Connect the master FB6005/15 and remote FB1200s according to the above table.

2. On the FB6005/15, set the **OUTPUT** to **CONTINUOUS**.

3. Set load to be **FAIRBANKS**.

4. On the remote FB1200, set **OUTPUT** to RD7000 in **PORTS** > **COM 1**.

5. Ensure that the baud rate, data bits, stop bits, and parity are the same between the FB6005/15 and FB1200.

UNITS, ZERO, TARE, and PRINT keys can be used on the remote FB1200 to operate on the master. B/G Net can be used to change the displayed weight on the FB1200.

FB7100 -to-FB1200

FB7100 Master	Cable 17216	FB1200 Remote – SERIAL 1
1 TX	White	1 RX
2 RX	Red	2 TX
3 GND	Green	3 GND

1. Connect the master FB7100 and remote FB1200s according to the above table.

2. On the FB7100, set the **OUTPUT** to **CONTINUOUS**.

3. Set load to be **FAIRBANKS**.

4. On the remote FB1200, set **OUTPUT** to **RD7000** in **PORTS** > **COM 1**.

5. Ensure that the baud rate, data bits, stop bits, and parity are the same between the FB7100 and FB1200.

   UNITS, ZERO, TARE, and PRINT keys can be used on the remote FB1200 to operate on the master. B/G Net can be used to change the displayed weight on the FB1200.

FB400 -to-FB1200

FB400 Master	Cable 17216	FB1200 Remote – SERIAL 1
1 GND	Green	3 GND
3 RX	Red	2 TX
4 TX	White	1 RX

1. Connect the master FB400 and remote FB1200s according to the above table.

2. On the FB400, set the **OUTPUT** to **rinCMD**.

3. Set load to be **FAIRBANKS**.

4. On the remote FB1200, set **OUTPUT** to **RD400** in **PORTS** > **COM 1**.

5. Ensure that the baud rate, data bits, stop bits, and parity are the same between the FB7100 and FB1200.

   UNITS, ZERO, TARE, B/G Net, and PRINT keys can be used on the remote FB1200 to operate on the master.

Section 7: Configurable Functions

7.1. Introduction

The F key on the front of the FB1200 can be set to a variety of functions depending on the application. There are also 2 external key inputs.

7.2. Functions

Function	F key	Remote	Description
OFF			No function
HOLD	√	√	Hold/unhold the current weight. The held annunciator will be lit while the weight is held. This is available in industrial mode only.
P.HOLD	√	√	Show/hide the peak weight reading. The held annunciator will be lit while the weight is held. A long press will clear the current peak weight. This is available in industrial mode only.
LIVE.W	√	√	Acquire and show livestock weight. The held annunciator will be lit while the weight is held. A long press will cancel livestock operation and show the current weight on the scale.
TOTAL	√	√	Switch into totalizing mode (see Section 9.3). A long press will clear the totals.

7.3. Totaling

Totaling is available when `APP:F.KEY=TOTAL`. Pressing the total key will enter and exit totalizing mode. The gross/net key can be used to cycle between the gross total, net total and pieces total. When a total is displayed, the TOT annunciator will be lit. Pressing the units key whilst in totaling mode will add the current weight to the totals, show the new total, then exit totaling mode.

When `CONFIG:TRADE=NTEP` only net values will be added to the piece count total. When `CONFIG:TRADE=OFF`

or `CONFIG:TRADE=OIML` gross and net piece count values will be added together.

A long press of the total key will clear the totals. The indicator will prompt with "CLEAR". Press the zero key to clear the totals, or the units key to cancel.

Appendix I: Data String Outputs

A. Remote Display Output

DATA FORMAT

<STX><A><0><SP/–><XXXXXX><ETX>

NOTES:
1. Characters denoted by X are characters 0-9.
2. Leading zeroes are suppressed.
3. Polarity indication for a positive value is a space (SP).
   – Negative values are not transmitted.
4. Identifier code <4><0> = Gross weight.
   – Transmission is Gross Only.
5. Transmission for the DEMAND Mode occurs when a carriage return (CR) HEX 0D is received.

B. Configure Output

The Continuous Computer Output is an uninitiated, unrequested output that gets transmitted at a fixed time interval.

FAIRBANKS/TOLEDO DATA FORMAT

<STX><A><B><C><GGGGGG><TTTTTT><CR>

Character String Description:

STX - Start of Text character (02 Hex)
A - Status Word A
B - Status Word B
C - Status Word C
G (gross weight data) - xxxxxx Displayed Weight : x = Weight
- 6 characters if the graduation size does not have a decimal point.
- 5 characters if the graduation size does have a decimal point.

The decimal point is not sent as part of the character string.
T (tare weight data) - xxxxxx Tare Value : x = Tare
- (6 characters if the graduation size does not have a decimal point.)
- (5 characters if the graduation size does have a decimal point.

The decimal point is not sent as part of the character string.
CR - Carriage Return Character: (0D hex)
CS - CheckSum Character: If enabled, this character consists of the last eight bits of the binary sum of all characters transmitted up to this checksum character.

B. Configure Output, Continued

STATUS CODE (WORD) A

Bit #	X00	X0	X	X.X	X.XX	X.XXX	X.XXXX	X.XXXXX
0	0	1	0	1	0	1	0	1
1	0	0	1	1	0	0	1	1
2	0	0	0	0	1	1	1	1

FAIRBANKS/TOLEDO DATA FORMAT

INCREMENT SIZE

Bit #		Count By 1		Count by 2		Count by 5
3		1		0		1
4		0		1		1
5				Always Logic 1		
6				Always Logic 0		
7				Parity Bit		

STATUS CODE (WORD) B

Bit #		Description		
0		Gross = 0		Net = 1
1		Positive = 0		Negative = 1
2		In Range = 0		Overcapacity = 1
3		No Motion = 0		Motion = 1
4		Lb = 0		Kg = 1
5		Always Logic 1		
6		Normal = 0		Power Up = 1
7		Parity Bit		

B. Configure Output, Continued

STATUS CODE (WORD) C

Bit #	Description		
0	Always Logic = 0		
1	Always Logic = 0		
2	Always Logic = 0		
3	Normal = 0		Print Switch Pushed = 1
4	Always Logic = 0		
5	Always Logic = 0		
6	Normal = 0		Keyboard Tare = 1
7	Parity Bit		

CARDINAL 738 CONTINUOUS SCOREBOARD DATA FORMAT

<CR><P><WWWWWW>Period (.)<m><SP><u><SP><g><SP><SP><ETX>

Character String Description:

CR – Carriage return
P – Polarity (**+** = Positive weight, **-** = Negative weight)
W – Displayed weight
- 6 characters if the graduation size does not have a decimal point.
- 5 characters if the graduation size does have a decimal point.

m – Motion or o = Overload
SP – Space
U - Units (lb = pounds, kg = kilograms)
g – Gross or **n** = Net
ETX - End of text
- Leading zeros are not suppressed
- If division size has no decimal point, set the decimal to "trailing".
- If division size has a decimal point, set the decimal to "floating".

B. Configure Output, Continued

WEIGHTRONIX DATA FORMAT

<SP><G><WWWWWW><SP><U><U><CR><LF>

Character String Description:

SP – Space
g – Gross or **n** = Net
W – Displayed weight
- 6 characters if the graduation size does not have a decimal point.
- 5 characters if the graduation size does have a decimal point.

SP – Space
U – Units (lb = pounds, kg = kilograms)
M – Motion
CR – Carriage return
LF – Line feed
- Leading zeros are not suppressed.
- There is no motion character.

CONDEC CONTINUOUS DATA FORMAT

<STX><SP><SP><WWWWWW><U><G><M><CR>

Character String Description:

STX – Start of Text character (02 Hex)
SP – Space
SP – Space
W – Displayed weight
- 6 characters if the graduation size does not have a decimal point.
- 5 characters if the graduation size does have a decimal point.

U – Units (L = pounds, K = kilograms)
G – Gross; N = Net
M – Motion
CR – Carriage return.
- Leading zeros are suppressed.

Appendix II: Remote Mode Compatible Outputs

A. Ranger A

Format:

STX P WWWWWWWW A ETX

Where:

Element	Description	Values
STX	Start of transmission character	
P	Weight polarity	-: Negative weight
W	Displayed weight (leading zeroes are suppressed)	
A	Status A	G: Gross N: Net U: Underload O: Overload M: Motion E: Error
ETX	End of transmission character	

B. Ranger B

Format:

STX A P WWWWWWWW UUU ETX

Where:

Element	Description	Values
STX	Start of transmission character	
A	Status A	G: Gross N: Net U: Underload O: Overload M: Motion E: Error
P	Weight polarity	-: Negative weight
W	Displayed weight (leading zeroes are suppressed)	
U	Weight units	Three characters unit string right justified
ETX	End of transmission character	

C. Ranger C

Format:

STX P WWWWWWW A M Z R UUU ETX

Where:

Element	Description	Values
STX	Start of transmission character	
P	Weight polarity	-: Negative weight
W	Displayed weight (leading zeroes are suppressed)	
A	Status A	G: Gross N: Net U: Underload O: Overload E: Error
M	Motion status	M: Motion
Z	Zero band status	Z: Zero band
R	Range status	1: Range 1 2: Range 2 3: Range 3 -: Single range
U	Weight units	Three characters unit string right justified
ETX	End of transmission character	

D. Ranger D

Format:

STX P WWWWWWW ETX

Where:

Element	Description	Values
STX	Start of transmission character	
P	Weight polarity	-: Negative weight
W	Displayed weight (leading zeroes are suppressed)	
ETX	End of transmission character	

E. PC Mode E

Format:

STX TTTTTTTT SP AA ETX

Where:

Element	Description	Values
STX	Start of transmission character	
T	Text string	If the first character is L thenthe display timeout is disabled
SP	Space	
A	Address	Must be 00
ETX	End of transmission character	

F. Register Write

Format:

AA CC RRRR : DDDDDDDD CR LF

Where:

Element	Description	Values
A	Address	Must be 00
C	Command	Must be 12
W	Register	Must be 000E
:	Colon	
D	Data	8 character text string
CR	Carriage return character	
LF	Line feed character	

G. Avery String #7

Format:

STX WWWWWWW SP UUUUU SP G SP CCCCCC SP I CR LF ETX

Where:

Element	Description	Values
STX	Start of transmission character	
W	Displayed weight (leading zeroes are suppressed)	Includes polarity -: Negative
SP	Space	
U	Units	
SP	Space	

G	Gross status	G: Gross N: Net
SP	Space	
C	Consecutive numbers	This is not used
SP	Space	
I	Ignore	This is not used
CR	Carriage return character	
LF	Line feed character	
ETX	End of transmission character	

H. Gedge C2

Format:

STX WWWWWWWW G M O SP SP ETX

Where:

Element	Description	Values
STX	Start of transmission character	
W	Displayed weight (leading zeroes are not suppressed)	Includes polarity -: Negative weight
G	Gross status	G: Gross N: Net
M	Motion status	M: Motion S: Stable
O	Overload status	O: Overload U: Underload I: In scale
SP	Space	
SP	Space	
ETX	End of transmission character	

I. Gedge C3

Format:

STX GGGGGGGG TTTTTTTT NNNNNNNN A M O I SP SP ETX

Where:

Element	Description	Values
STX	Start of transmission character	
G	Gross weight (leading zeroes are not suppressed)	Includes polarity -: Negative weight
T	Tare weight (leading zeroes are not suppressed)	Not used

N	Net weight (leading zeroes are not suppressed)	Includes polarity -: Negative weight
A	Gross status	G: Gross N: Net
M	Motion status	M: Motion S: Stable
O	Overload status	O: Overload U: Underload I: In scale
I	Ignore	Not used
SP	Space	
SP	Space	
ETX	End of transmission character	

J. AD Standard

Format:

AA , BB , P WWWWWWW UU CR LF

Where:

Element	Description	Values
A	Status A	ST: Stable UN: Unstable OL: Over/underloaded
,	Comma	
B	Status B	GS: Gross NT: Net TR: Tare PT: Preset tare
,	Comma	
P	Weight polarity	+: positive -: Negative
W	Displayed weight (leading zeroes are not suppressed)	Decimal point always sent, even if trailing
U	Units	right justified
CR	Carriage return character	
LF	Line feed character	

K. AD4531

Format:

AA , P WWWWW CR LF

Where:

Element	Description	Values
A	Status A	WT: Weight in range OL: Over/underloaded
,	Comma	
P	Weight polarity	+: positive -: Negative
W	Displayed weight (leading zeroes are not suppressed)	
CR	Carriage return character	
LF	Line feed character	

L. GSE

Format:

WWWWWWWW SP UUUUU SP MMMMM A Z CR LF

Where:

Element	Description	Values
W	Displayed weight (leading zeroes are suppressed)	Includes polarity -: Negative weight
SP	Space	
U	Units	left justified
SP	Space	
M	Mode	Gross: Gross weight Net : Net weight Tare : Tare weight
SP	Space	
A	Status A	M: Motion S: Stable O: Over/underload E: Error
Z	Centre of zero	Z: Centre of zero This status is optional, the string will be supported whether it is sent or not.
CR	Carriage return character	
LF	Line feed character	

M.Schenk

Format:

STX III P NNNNN TTTTTTTTT SP A B LF CR

Where:

Element	Description	Values
STX	Start of transmission character	
I	Ignore	Not used
P	Weight polarity	+: positive -: Negative
N	Net weight (leading zeroes are suppressed)	5 characters without decimal point or 6 characters with decimal point
T	Tare weight	Not used
SP	Space	
A	Status A	ASCII character 0-F see sta-tus A bit descriptions below
B	Status B	0: Units = kg1: Units = g 3: Units = t 5: Weight longer than string
LF	Line feed character	
CR	Carriage return character	

Status A Bit Descriptions

Bits	Description
0	0: Tare 1: Preset tare
1	0: Motion 1: Stable
2	0: Not COZ 1: COZ
3	0: Gross 1: Net

N. Auto Control 1

Format:

STX A WWWW ETX

Where:

Element	Description	Values
STX	Start of transmission character	
A	Address	Always 1
W	Displayed weight (leading zeroes are suppressed)	Includes polarity -: Negative weight
ETX	End of transmission character	

O. Auto Control 2

Format:

STX A TTTTTTTT ENQ

where:

Element	Description	Values
STX	Start of transmission character	
A	Address	Always 2
T	Text	Can include polarity -: Negative weight
ENQ	Enquiry character	

P. Sartorius

Format:

IIIIII P SP WWWWWWW SP UUU CR LF

Where:

Element	Description	Values
I	Ignore	Not used
P	Weight polarity	+: positive -: Negative
SP	Space	
W	Displayed weight (leading zeroes are suppressed)	Includes polarity -: Negative weight
SP	Space	
U	Units	left justified
CR	Carriage return character	
LF	Line feed character	

Q. Soehnle

Format:

A WWWWW ESC I U CR LF

Where:

Element	Description	Values

A	Status A	N: Net M: Net + COZ 0: COZ
W	Displayed weight (leading zeroes are suppressed)	5 characters without decimal point or 6 characters with decimal point
ESC	Escape character	
I	Ignore	Not used
U	Units	0: Motion 1: g 2: kg
CR	Carriage return character	
LF	Line feed character	

R. Flintab

Format:

A B P WWWWWW CR LF

Where:

Element	Description	Values
A	Status A	B: Gross N: Net
B	Status B	#: Motion
P	Weight polarity	-: Negative
W	Displayed weight (leading zeroes are suppressed)	5 characters without decimal point or 6 characters with decimal point
ESC	Escape character	
I	Ignore	Not used
U	Units	0: Motion 1: g 2: kg
CR	Carriage return character	
LF	Line feed character	

When overloaded or underloaded the following format is sent instead:

O L CR LF

Where:

Element	Description	Values
O	ASCII O character	
L	ASCII L character	

CR	Carriage return character	
LF	Line feed character	

S. Philips

Format:

STX I A I SP SP WWWW ETX

Where:

Element	Description	Values
STX	Start of transmission character	
I	Ignore	Not used
A	Status A	0: Motion 1: COZ 2: Stable
SP	Space	
SP	Space	
W	Displayed weight (leading zeroes are suppressed)	
ETX	End of transmission character	

T. Condec

See

U. Rice Lake SCT

Format:

AA , MM , WWWWWWWW , UU CR LF

Where:

Element	Description	Values
A	Status A	US: Motion ST: Stable 0L: Overload UL: Underload
,	Comma	
M	Mode	GS: Gross NT: Net
,	Comma	
W	Displayed weight (leading zeroes are suppressed)	
,	Comma	
U	Units	Right justified

CR	Carriage return character	
LF	Line feed character	

V. Systec

Format:

AA WWWWWWWWWWW SP UU CR LF

Where:

Element	Description	Values
A	Status A	SD: Motion S : Stable
W	Displayed weight (leading zeroes are suppressed)	
SP	Space	
U	Units	Left justified
CR	Carriage return character	
LF	Line feed character	

W. Fairbanks

FB1200 Series Instrumentation

Operator Manual
Document 51513

Fairbanks Scales Inc.

www.fairbanks.com