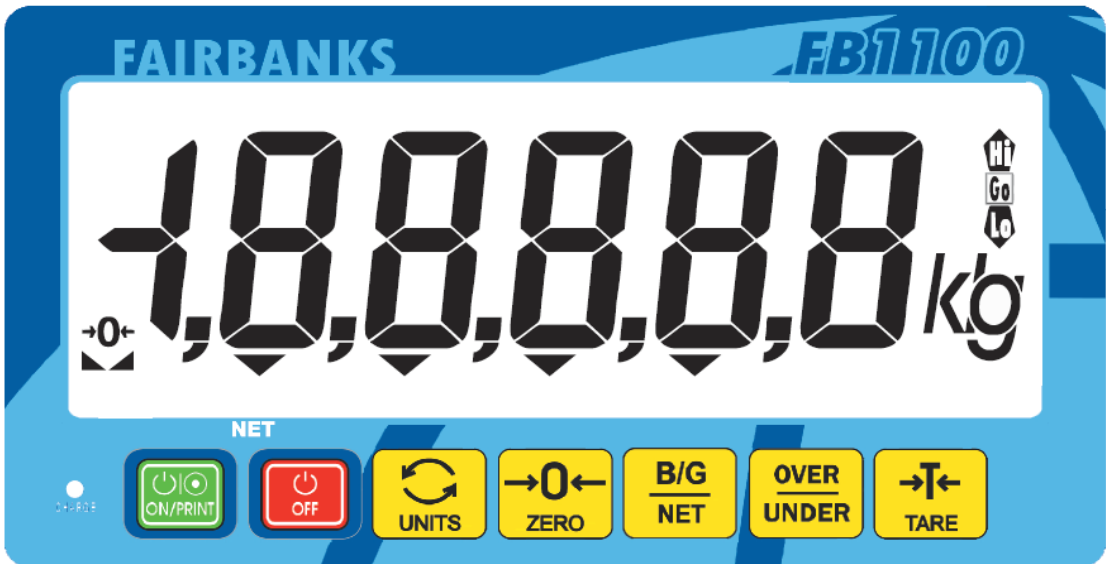
Owner's Manual

FB1100 Series

Digital Instrument

Products: 30047
30048



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Amendment Record

FB1100 Series Digital Instrument
Document 51219

Manufactured by Fairbanks Scales Inc.

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Created	04/2009	
Revision 1	10/2009	Released Manual
Revision 2	02/2010	Added MC approval, image and terminal clarification for the stainless steel model RS232 connections, and rechargeable battery kits to appendix.
Revision 3	02/2010	Amended Configuration and Calibration access for version 1.6 and higher software. Added a note to three smallest division sizes Removed enclosure specification.
Revision 4	03/2011	Remote display, filtering, and time/date. Software Rev. 1.8 (starting with serial number S10301001616)
Revision 5	07/2012	Updated parts, corrected load cell connection table, and corrected Factory default procedure. Added Appendix VI.

Disclaimer

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Table of Contents

Section 1: General Information

1.1 Introduction

The FB1100 is a general purpose weighing instrument which can be used with a wide variety of platforms and load receivers.

Major features of the instrument include push-button programming and calibration.

Program data is stored in battery supported RAM.

The FB1100 series instrument features a two inch high LCD weight display which can be tilted up or down to accommodate different lighting conditions. Microprocessor controlled design allows the instrument to be rapidly programmed at installation to meet the specific requirements of the application.

The obtainable accuracy meets Handbook 44 requirements, and the instrument is approved for commercial application up to 10,000 divisions. A maximum of 20,000 displayed divisions can be programmed for non-commercial applications.

The instrument provides one (1) RS232 serial communication port to provide data communication to various types of peripheral devices, including a remote display feature when used with FB1100, FB2250, 2500, or FB2550 Series instruments.

1.2 Specifications

Model	FB1100
Product No.	ABS: 30047 Stainless Steel: 30048
Max. Capacity	lb / kg 199999 / 90720
Division Sizes	0.00001~100 (Selections available based on programming)
Accuracy	10,000 divisions Commercial 20,000 divisions Non-Commercial
Sensitivity	1µV/d (microvolt per division)
Digital Display	5-1/2 Characters
Interface	RS-232C
Dimensions	LCD, height (2.0 in / 50mm)
Net Weight	3.3 lb / 1.5 kg
Backlight	Green, Programmable

Environmental	
Operating Temperature	14 °F to 104 °F / -10 °C to +40 °C
Relative Humidity	Less than 85%
Power	ABS Model - 9V / 500mA, AC adapter; Stainless Steel Model – 120/230* VAC +/-10%
Approvals	
Certificates	NTEP CC: 09-071 MC: AM-5745

* Note: Refer to Appendix V for a complete description of how to wire the FB1100 for 230V applications. This is a field-only modification.

Section 2: Installation

2.1. General Service Policy

1. Prior to installation, it must be verified that the equipment will satisfy the customer's requirements as supplied, and as described in this manual. If the equipment cannot satisfy the application and the application cannot be modified to meet the design parameters of the equipment**, the installation should not be attempted.**

2. Installation procedures for printers and other peripherals are given in manuals specifically provided for those units. The instructions include a pre-installation checkout which must be performed either at the service center before the technician goes to the site, or at the site before he places the equipment in service.

3. 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 no physical alterations (mounting holes, etc.) are allowed and will immediately void warranty.

W A R N I N G !

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

Repairs are performed by Fairbanks Scales Service Technicians and Authorized Distributor Personnel ONLY!

Failure to comply with this policy voids all implied and/or written warranties.

2.1 General Service Policy, continued

4. The installing technician is responsible to make certain that personnel are fully trained and familiar with the equipment's capabilities and limitations before the installation is considered complete.

5. The complete installation consists of:

    - Verifying the application
    - Unpacking
    - Instrument checkout

6. Customer and site readiness:

    - Is the location ready?
    - Is the load receiver ready?
    - Is the customer aware there may be work disruptions?
    - Are the operators available for training?
    - Platform connections, both electrical and mechanical
    - Calibration and Adjustment
    - Customer training

2.2. Pre-Installation Checklist

The following items should be checked before the equipment is installed.

1. Has the application been checked to make certain that it is within the capabilities and design parameters of the equipment?

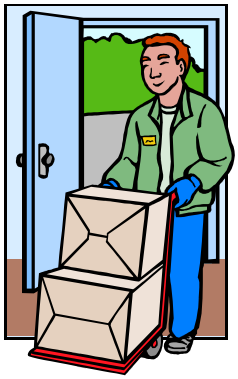
2. If the installation will disrupt normal operations, have arrangements been made?

3. Is properly-grounded power available at the installation location?

4. Will the equipment operator(s) be available for training?

5. Has the technician thoroughly reviewed the installation procedures?

2.3. Unpacking



1. Check that all components and accessories are on hand, and agree with the order.

2. Remove all components from their packing material.

3. Check to make certain that all parts are accounted for and no parts are damaged.

4. Advise the shipper immediately if damage has occurred.

5. Order any parts necessary to replace parts that have been damaged.

6. Keep the shipping container and packing material for future use.

7. Check the packing list.

8. Collect all necessary installation manuals for the instrument and accessories.

9. Open the Instrument and perform an inspection, making certain that all hardware, electrical connections, and PC Assemblies are secure. Do not reinstall cover if final installation is to be performed after the pre-installation checkout.

2.4. Equipment Location

The instrument should be positioned away from direct sunlight.

2.5. Safety

As is the case with any material handling equipment, certain safety precautions should be observed during operation:

1. Never load the platform beyond its rated capacity. Refer to the rating on the serial number plate if in doubt.

2.5 Safety, continued

2. Ensure that any structure which supports the platform is capable of withstanding the weight of the platform plus its rated capacity load.

3. Do not load the platform if there is any evidence of damage to the platform or supporting structure.

4. Use safety chains or other suitable restraining devices if there is any possibility of the load shifting, falling, or rolling from its position on the load receiver.

2.6. Power Requirements

In order to achieve the operational dependability and accuracy for which the equipment was designed, certain criteria **must be** met:

1. **Power:**

   It is recommended to install a dedicated AC line in metal conduit from the circuit panel to the outlet utilized by the FB1100.

   120 VAC +/- 10%

   There must not be more than 0.2 VAC between AC neutral and ground.

2. **Grounding:**

   For proper performance, the ground should have no more than 3.0 ohms resistance to true earth ground.

2.7. Load Cell Connection

Description	CN6
EXCITATION (+)	E+
SENSE (+)	SEN+ *
SENSE (-)	SEN- *
EXCITATION (-)	E-
SIGNAL (+)	S+
SIGNAL (-)	S-
SHIELD	Chassis

* Sense jumpers are installed on the board from the factory. If sense leads are utilized, remove the jumpers by installing the jumper on one pin only for each jumper.

2.8. Load factory defaults

To load the factory defaults in the instrument, perform the following:

1. With the power removed from the instrument, remove the jumper, JP3, inside the instrument. This will permit access to the save menu.
2. Press and hold any ***one*** of the following keys UNITS, →0← ZERO, B/G NET, or OVER UNDER while turning the scale ON. The display will indicate WAIT, continue to hold keys until SETUP is shown on the LCD display.
3. Press B/G NET key to scroll until the SAVE menu is reached.
4. Press UNITS key to select the setting.
5. In the SAVE menu, press B/G NET key to scroll and select LOAD.F.
6. Press →0← ZERO key to choose the setting.
7. LOAD.F will reset the scale and load the factory default settings.
8. The unit is ready to be configured and calibrated. Refer to the appropriate sections to program and calibrate the instrument.

Section 3: Programming

3.1. Settings

1. Press and hold any ***one*** of the following keys UNITS, →0← ZERO, B/G NET, or OVER UNDER while turning the scale ON. SEt.UP is shown on the LCD display.
2. Press B/G NET key to scroll among the SEt.UP, SEt.Pr, r5.232, and SAVE menus.
3. Select SEt.UP, press the UNITS key to enter General Settings menu.
   Press the B/G NET key to scroll among the settings. Press the →0← ZERO key to confirm selection.
4. Select SEt.Pr, press the UNITS key to enter the Print Settings menu.
   Press the B/G NET key to scroll among the settings. Press the →0← ZERO key to confirm selection.
5. Select r5.232, press the UNITS key to enter RS-232 Settings menu.
   Press the B/G NET key to scroll among the settings. Press the →0← ZERO key to confirm selection.
7. Select SAVE, press the UNITS key to enter the Save Settings menu.
   Press the B/G NET key to scroll among the settings. Press the →0← ZERO key to confirm selection.

Note:
To access Con-F or CAL, the JP3 jumper must be removed from the PCB first. Place the JP3 jumper back when configuration and calibration is complete. All other programming may be accomplished in this secured programming area also.

3.2. SEt.UP - General Settings

In the General Settings menu, press the 

key to enter the menu and press the 

key to toggle among the options, and the 

key to confirm.

1. SLEEP – Sleep Mode Setting

Display	Descriptions
oFF	Disable auto shutdown function.
5	If there is no operation, the scale will enter sleep mode in 5 minutes.
10	If there is no operation, the scale will enter sleep mode in 10 minutes.
20	If there is no operation, the scale will enter sleep mode in 20 minutes.
30	If there is no operation, the scale will enter sleep mode in 30 minutes.
60	If there is no operation, the scale will enter sleep mode in 60 minutes.

3.2 Set-up – General Settings, continued

2. bL - Backlight Setting

Display	Descriptions
oFF	Disable the backlight function.
on	Enable the backlight function.
AUto	Automatic backlight when there is load on the weighing pan.

3. AtArE - Auto Tare Setting

Display	Descriptions
oFF	Disable Auto Tare operation
on	Tare when the scale is stable.

4. diSP – Display Rate Setting

Display	Descriptions
0.05	The display refreshes at 0.05 sec.
0.1	The display refreshes at 0.1 sec.
0.2	The display refreshes at 0.2 sec.
0.5	The display refreshes at 0.5 sec.
1	The display refreshes at 1 sec.

3.2 Set-up – General Settings, continued

5. Hi. bP – Check Weigh Hi Beep Setting

Display	Explanation
oFF	Disable Hi alarm sound.
SHort	Set Hi alarm sound as continual short beeps.
Long	Set Hi alarm sound as continual long beeps.

6. Lo. bP – Check Weigh Lo Beep Setting

Display	Descriptions
oFF	Disable Lo alarm sound.
SHort	Set Lo alarm sound as continual short beeps.
Long	Set Lo alarm sound as continual long beeps.

7. bEEP – Normal Operation Beep Setting

Display	Descriptions
oFF	Disable alarm sound.
on	Enable alarm sound.

8. YEAr – Year Setting

Display	Descriptions
20xx	The flashing digit can be changed by pressing the B/G/NET key to change the value. Pressing the Units key moves the flashing digit. Pressing the Zero key accepts the value.

9. dAtE – Date Setting

Display	Descriptions
12.13	The first set of numbers is the month, and the next set of numbers is the day. Using the same method as above, change the date as needed.

3.2 Set-up – General Settings, continued

7. tIME – Time Setting

Display	Descriptions
15.42.13	Even though there are only 5 digits displayed, there are 3 sets (6 digits) to be entered for the date. HH.MM.SS and the time are entered using the 24-hour format, however it will print in the AM/PM format. 3:49 PM would be entered 15.49.00. The first set of numbers is the hour, the second set of numbers is the minutes, and the final set of numbers is the seconds. Pressing the Units key will scroll the display to the 6th digit. Use the standard method for changing the digits to the appropriate numbers.

3.3. SEt.Pr – Print Settings

In the Print Settings menu, press the B/G NET key to toggle among the options, and press the UNITS key to enter the menu. Press the →0← ZERO key to confirm your setting and go to the next option.

1. Pr.F- Print Function

Display	Descriptions
oFF	Print function is disabled.
PrESS	Press the Print key to print weight data.
AUtO	Print the weight data automatically when the scale is stable.
rEM.dS	Send weight data to remote display continuously. This output is fixed at 19200, 8, None, and 1.
Po 11	Sends weight data upon the instrument receiving a <CR>.
r2500	Remote display when connected to an FB2500
r2250	Remote display when connected to an FB2250
r 1100	Remote display when connected to an FB1100

Note:
New selections for Remote Display were added to software Rev 1.8. Please see ***Appendix IV*** *for complete list of prompts and features.*
The Remote Display feature of the FB1100 only works with pounds or kilograms.

3.3 Print Settings, continued

2. PrnEt - Print Data

Display	Descriptions
GroSS	Print Gross weight only.
G.t.nEt	Print Gross weight and net weight.

3. t idt - Print Time and Date

Display	Descriptions
YES or no	Selecting YES will print the time and date along with the weight. Pressing the B/G / NET button toggles between YES and no, and pressing the Zero key will save the selection.

3.4. rS.232 – RS-232 Settings

In the RS-232 Settings menu, press the B/G NET key to toggle among the options, and press the UNITS key to enter the menu. Press the →0← ZERO key to confirm your setting and go to the next option.

1. bAud - Baud Rate Settings

Display	Descriptions
1200	Set the baud rate to 1200.
2400	Set the baud rate to 2400.
4800	Set the baud rate to 4800.
9600	Set the baud rate to 9600.
19200	Set the baud rate to 19200.
38400	Set the baud rate to 38400.
57600	Set the baud rate to 57600.
115200	Set the baud rate to 115200.

3.4. rS.232 – RS-232 Settings, continued

2. PAr it - Parity Settings

Display	Descriptions
7-E-1	Set to 7 data bits, even parity, and 1 stop bit
7-o-1	Set to 7 data bits, odd parity, and 1 stop bit
7-n-2	Set to 7 data bits, no parity, and 2 stop bits
8-n-1	Set to 8 data bits, no parity, and 1 stop bit
8-E-1	Set to 8 data bits, even parity, and 1 stop bit
8-o-1	Set to 8 data bits, odd parity, and 1 stop bit
7-o-2	Set to 7 data bits, odd parity, and 2 stop bit

3.5. Exit Settings Menus

When programming is complete and changes have been saved, exit the program by pressing 

. Press 

to return to weighing.

3.6. Con-F – Scale Settings

With the power removed from the instrument, remove the jumper, JP3, inside the instrument. This will permit access to the configuration menu.

Software Versions 1.6 and higher

Press and hold any ***one*** of the following keys 

, 

, 

, or 

while turning the scale ON. The display will indicate LJA it, continue to hold keys until SEt.UP is shown on the LCD display. Press 

key to scroll to the Con-F menu.

3.6 Scale Settings, continued

1. P.Un it –Weight Unit Settings

Display	Descriptions
lb	Sets the instrument primary of measure to lb.
kg	Sets the instrument primary of measure to kg.

2. d= Division Settings

Display	Descriptions
0.00001	Set the instrument to 0.00001 division size. (Only available when P.Un it is set to kg.) **Available in software revisions 1.6 and lower only.**
0.00002	Set the instrument to 0.00002 division size. **Available in software revisions 1.6 and lower only.**
0.00005	Set the instrument to 0.00005 division size. **Available in software revisions 1.6 and lower only.**
0.0001	Set the instrument to 0.0001 division size.
0.0002	Set the instrument to 0.0002 division size.
0.0005	Set the instrument to 0.0005 division size.
0.001	Set the instrument to 0.001 division size.
0.002	Set the instrument to 0.002 division size.
0.005	Set the instrument to 0.005 division size.
0.01	Set the instrument to 0.01 division size.
0.02	Set the instrument to 0.02 division size.
0.05	Set the instrument to 0.05 division size.

3.6 Scale Settings, continued

2. d= Division Settings, continued

Display	Descriptions
0.1	Set the instrument to 0.1 division size.
0.2	Set the instrument to 0.2 division size.
0.5	Set the instrument to 0.5 division size.
1	Set the instrument to 1 division size.
2	Set the instrument to 2 division size.
5	Set the instrument to 5 division size.
10	Set the instrument to 10 division size.
20	Set the instrument to 20 division size.
50	Set the instrument to 50 division size.
100	Set the instrument to 100 division size. (Only available when P.Un it is set to lb.)

3. CAP – Max. Capacity Settings

Display	Descriptions
00001- 199999	Set the maximum capacity of the instrument (from 000001~199999).

a. Press the UNITS key to select the digit and the B/G NET key to increase the value. The first digit on the left can only be set to 0 (zero) or 1 (one). When the value is 0, it does not show on the LCD display. Press the →0← ZERO key to enter the value.

3.6 Scale Settings, continued

4. trAcE – Zero Tracking Setting

Display	Descriptions
oFF	Disable zero tracking function
0.5d	Set zero tracking to 0.5 division
1d	Set zero tracking to 1 division
2d	Set zero tracking to 2 divisions
3d	Set zero tracking to 3 divisions

5. Mo.dEt – Motion Detection Setting

Display	Descriptions
oFF	Motion detection is disabled.
0.5d	Set motion detection to 0.5 division
1d	Set motion detection to 1 division
2d	Set motion detection to 2 divisions
3d	Set motion detection to 3 divisions

3.6 Scale Settings, continued

6. FiLtE- Filtering Setting

Display	Descriptions
2	Minimal filter setting.
4	
6	
8	
16	
32	
64	
128	Maximum filter setting

Note: With any filtering setting above 32, the Display Rate setting should be set to 0.1 for optimum performance.

7. rAnGE- Zero Range Setting

Display	Descriptions
2%	Set the zero range to 2% of the capacity.
100%	Set the zero range to 100% the capacity.

3.7. Exit [on-F Menu

When programming is complete and changes have been saved, exit the program by pressing 

. Place the JP3 jumper across the two header pins. Press 

to return to weighing.

! – IMPORTANT -- !

Remember to re-install JP3 to prevent accidental access to the configuration/calibration areas. Legal for Trade applications require this jumper to be in place. . If the JP3 jumper is not in place, it will not print.

Section 4: Calibration

4.1. CAL – Calibration Procedure

With the power removed from the instrument, remove the jumper, JP3, inside the instrument. This will permit access to the calibration menu.

Software Versions 1.6 and higher

Press and hold any ***one*** of the following keys UNITS, →0← ZERO, B/G NET, or OVER UNDER while turning the scale ON. The display will indicate LUA .E, continue to hold keys until SEt.UP is shown on the LCD display. Press B/G NET key to scroll to the CAL menu. Advance to the Calibration procedure below.

> **! – IMPORTANT -- !**
>
> Remember to re-install JP3 to prevent accidental access to the calibration upon completing the calibration procedure. Legal for Trade applications require this jumper to be in place. If the JP3 jumper is not in place, it will not print.

CAL - Calibration Procedure

1. Press UNITS key to enter Calibration procedure.
2. The liveload counts value is displayed on the LCD.
3. Press the B/G NET key to display the liveload span counts value.
4. Press →0← ZERO key to clear the liveload span value.
5. Place the calibration weight on the scale platform.

6. Press the UNITS key to select the digit and the B/G NET key to increase the value. A →0← indicator is displayed on the lower right corner of the screen. The first digit on the left can only be set to 0 or 1. When the value on the display is the same as the weight on the platform, press the →0← ZERO key to store it. The display will indicate End and after two seconds it will advance to the SAVE menu. Save the calibration changes by selecting SAVE.1.

! – IMPORTANT -- !

Remember to re-install JP3 to prevent accidental access to the calibration upon completing the calibration procedure. Legal for Trade applications require this jumper to be in place. If the JP3 jumper is not in place, it will not print.

4.2. SAVE – Save Settings Menu

In the SAVE menu, press B/G NET key to toggle among the SAVE.1 LoAd.1, and LoAd.F menus. Press →0← ZERO key to select the setting.

1. SAVE.1 – Save Instrument Settings

Select SAVE.1 to save or backup your instrument settings or changes.

2. LoAd.1- Load Instrument Settings

Select LoAd.1 to load your previous/ current saved Instrument configuration and calibration settings into the instrument.

3. LoAd.F - Load Instrument Settings

Select LoAd.F to load the factory default Instrument settings into the instrument.

! – IMPORTANT -- !

This will change the instrument's calibration and configuration settings.

4.3. Exit SAVE Menu

When calibration is complete and changes have been saved, exit the program by pressing 

. Place the JP3 jumper across the two header pins. Press 

to return to weighing.

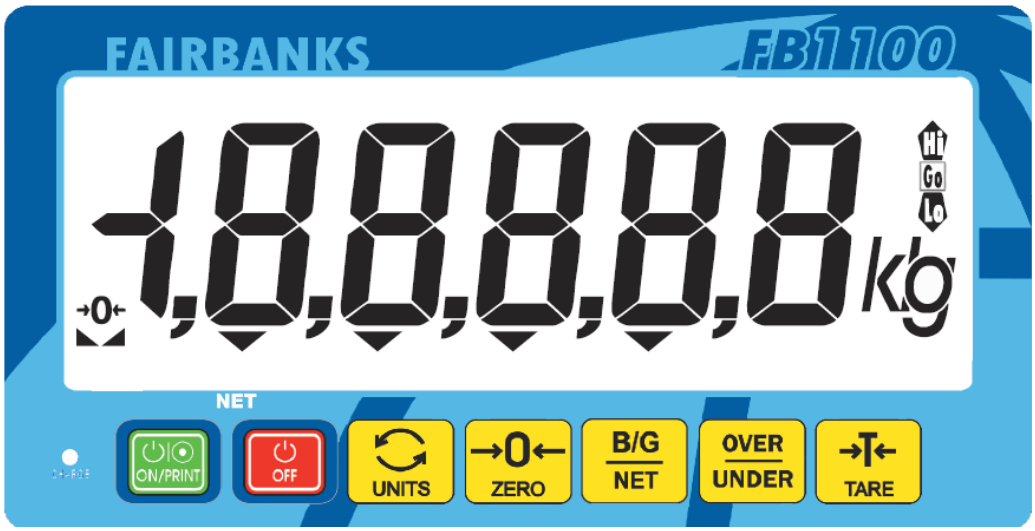
! – IMPORTANT -- !

Remember to re-install JP3 to prevent accidental access to the calibration upon completing the calibration procedure. Legal for Trade applications require this jumper to be in place. If the JP3 jumper is not in place, it will not print.

Section 5: Operation

5.1. Display Front Panel Key Functions

LCD Display



- NET Indicates the Net weight after tare operation.
- Indicates the weight is stable.
- →0← Indicates the weight is at center of zero.
- Hi Indicates that the upper limit of the weight is reached.
- Go Indicates that the weight is within the upper and the lower limit.

Lo Indicates that the lower limit of the weight is reached.

CHARGE Battery is being recharged.

CHARGE Battery is approximately 50% recharged.

CHARGE Battery is fully recharged.

5.1. Display Front Panel Key Functions, continued

Keys

Key Icons	Key	Descriptions
	ON/ PRINT	Press to turn the scale ON. Press to print weight data in weighing mode.
	OFF	Press to switch the scale OFF.
	UNIT	Press to switch between kg and lb.
	ZERO	Press to absorb trivial weight on the pan and set the scale to zero.
	GROSS WT/ NET WT	Press to display gross weight or net weight.
	OVER/UNDER	Press to set alarm for high and low bounds for checkweigh function.
	TARE	Press to reduce gross weight on pan as tare weight.

5.2. Powering the Instrument

1. Plug in the power cord firmly into the AC receptacle.
2. Press the  switch to apply power to the instrument and the display will show 888888 counting down to 000000. The display will indicate the weight on the scale platform when the power up sequence is completed.

Note:
Allow the instrument to warm up for 30 minutes prior to use.

5.3. HI/LO Check Weigh Functions

1. In weighing mode, press OVER UNDER for three (3) seconds to enter the HI/LO checkweigh setting.
2. Set the upper limit for the check weigh function. Press the UNITS key to choose the digit and the B/G NET key to increase the value.
3. Press OVER UNDER key to save your setting and proceed to lower limit setting.
4. Press the UNITS key to choose the digit and the B/G NET key to increase the value.
5. Press OVER UNDER key to save the lower limit setting and return to weighing mode.
6. Disable the check weigh function by pressing the OVER UNDER. Re-activate the check weigh function by pressing the OVER UNDER. The previously set limit values will be utilized.

Note:

If the weight exceeds the upper limit, the Hi indicator is shown on the display and the scale will beep for warning.

If the weight is below the lower limit and is not zero, the Lo indicator is shown on the display the scale will beep for warning.

If the weight is between the upper and lower limit, the Go indicator is shown on the display.

The beep settings are modified in SETUP menu.

5.4. Tare Function

1. Place sample container on the scale platform and press the 

key. The ▼ is shown above the NET indicator indicating NET weight.
2. Place sample in the container.
3. When the scale is stable, the display shows the weight of the sample.
4. Press and hold the 

key To change the display to Gross Weight.
5. When Gross Weight is displayed, the ▼ above the NET indicator is off.

Section 6: Service and Maintenance

6.1. Battery Life

Battery	Load	Battery Life (Backlight On)	Recharge Time
24921 (NP6V4.5Ah) ABS	4 – 350 Ω load cells	59 hours	8 hours
27391 (NP6V3Ah) SS	4 – 350 Ω load cells	36 hours	8 hours

6.2. Error Codes

Error Code on LCD Display	Description
Error	Error in calibration procedure.
Err	Weighing function disabled. Scale is unstable or error in application.
Err.OL	Overload or Underload condition
L.bAtt	Low battery.
SLEEP	Instrument is in the sleep mode.
"------"	Zero key pressed and instrument is unstable and unable to weigh.

6.3. Voltages

Description	Measurement Location	Reading
Excitation Voltage	CN6 +E to -E	5 Vdc
Battery Voltage	CN2 1(BL) to 3(R)	~ 6.45 Vdc
Transformer P/S (SS)	CN1 1 to 3	~ 9.55 VAC

Section 7: Parts List

Part Number	Description
30146	Main Board with Display - FB1100 Series (both models)
30147	ABS Plastic Enclosure including hardware - FB1100 Series
30148	SS Enclosure including hardware - FB1100 Series
24924	Rechargeable Battery Kit - FB1100 Series ABS
30145	Rechargeable Battery Kit - FB1100 Series SS
24921	Rechargeable Replacement Battery (NP6V4.5Ah) - FB1100 Series ABS
27391	Rechargeable Replacement Battery (NP6V3Ah) - FB1100 Series SS
31349	Overlay with Transparent plastic - FB1100 ABS Series
31350	Overlay with Transparent plastic - FB1100 SS Series
30150	Knob with spacer - FB1100 SS
30151	Power Supply (Transformer assembly) FB1100 SS
24157	Wall Power Supply FB1100 ABS
30152	Gasket for FB1100 SS
30153	Screw kit FB1100 SS
30154	Seal screw kit FB1100 ABS
24920	Wall plate kit - FB1100 ABS
13578	Connector, Cutout Covers
19454	Plug, Double D
P*	Fuse, GFE 250V 0.5A

* Local purchase

Appendix I: Data Output Format

The RS-232 output format for Gross weight and G.T.N (Gross/Tare/Net/) weight are as follows:

GroSS	Prints Gross weight only.

Character	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	SP/-	X	X	X	X	.	X	X	SP	k/l	g/b	SP	G	R	CR	LF

G.tnEt	Prints Gross, Tare, and Net weight.

Character	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	SP/-	X	X	X	X	.	X	X	SP	k/l	g/b	SP	G	R	CR	LF
	SP/-	X	X	X	X	.	X	X	SP	k/l	g/b	SP	T	A	CR	LF
	SP/-	X	X	X	X	.	X	X	SP	k/l	g/b	SP	N	T	CR	LF

Supplemental Information

1. Leading zeroes are suppressed.
2. Lower case “l” and “b” for avoirdupois weight units or “k” and “g” for metric weight units.
3. The first weight character will be a space, HEX 20, for positive weight or a minus (-), HEX 2D, if the weight is negative.
4. Decimals are transmitted as a character.
5. Characters separated with a “/” denote one of the characters will be transmitted.
6. Gross weight is denoted by GR. Tare is denoted by TA. Net is denoted by NT.

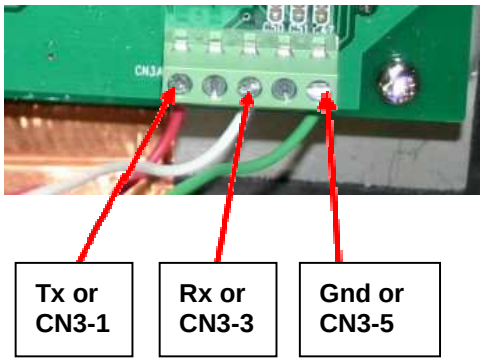
Note :

The GroSS output configuration is compatible with UPS Worldship 7 software when programmed to use the Po II method of operation. Baud =9600; Characters = 7; Parity= Odd; Stop bits = 2. Division size should be programmed to 0.05 lbs.

Appendix II: RS232 Connections

Stainless Steel Product No. 30048

Description	CN3 Terminal
Tx	1
Rx	3
Gnd	5



ABS Product No. 30047

Description	DB9-M
Tx	3
Rx	2
Gnd	5

Appendix III: Battery Kits Installation

Stainless Steel Product No. 30048

Install the 27391 rechargeable battery kit as follows:

1. Remove power from the instrument by unplugging power cord from the AC receptacle.
2. Remove the ten (10) screws and security seal from the front of the instrument.
3. Carefully open the instrument and disconnect the power connector at CN1.
4. Remove the two (2) nuts on the transformer / battery bracket and lift the bracket away carefully.
5. Insert the battery into the recessed area of the transformer / battery bracket. The battery terminals should be towards the right.
6. Reattach the transformer / battery bracket.
7. Connect the battery cable to CN2.
8. Reconnect the power connector to CN1.
9. Close the instrument covers and re-install the ten (10) screws and security seal.

ABS Product No. 30047

Install the 24921 rechargeable battery kit as follows:

1. Remove power from the instrument and disconnect power supply from the AC power receptacle.
2. Remove the two (2) Philips screws and security seal from the back of the instrument.
3. Carefully open the instrument and disconnect the RS232 connector and power connector.
4. Insert the battery into the recessed area of the back cover.
5. Attach the battery strap using the two (2) Philips screws provided in the kit.
6. Connect the battery cable to CN2.
7. Reconnect the RS232 connector to CN3 and the power connector to CN1.
8. Close the instrument covers together and install the two (2) Philips screws and security seal.

Appendix IV: Remote Display set-up

To set-up the FB1100 as a remote display, enter the setup mode and go to the SEt.Pr menu. Several new selections have been added: r2250, r2500 and r1100. The “r” indicates remote display, and the 4 digits are the model number of the instrument the FB1100 is to be connected to.

The remote display feature only works in pounds and kilograms.

When using the FB1100 in the remote display mode, the slave FB1100 keys (other than the On and Off) have no functionality. The backlight setting needs to be set to either oFF or on when using FB1100 as a remote display.

Cables

Instrument (Master)	Remote Display Type (Slave)	
	FB1100 (ABS) DB9	FB1100 (SS) CN3 Inside
FB1100 (ABS)	10’ = 26039, 50’ = 19635	10’ = 26041, 50’ = 26042
FB1100 (SS)	10’ = 26041, 50’ = 26042	Bare wires both ends
FB2250 (ABS and SS)	10’ = 26041, 50’ = 26042	Bare wires both ends
2500A (Desk Mount)	10’ = 26039, 50’ = 19635	10’ = 26042, 50’ = 26042
2500A (NEMA 4x)	Field installed, reference proper manuals for wiring.	
2500Q (All Models)	Field installed, reference proper manuals for wiring.	

FB1100 (Master) to FB1100 (Remote Display) –
The instrument must be set to r1100 and the master instrument must be set to continuous (rEn.dS) output. Both instruments must have the following configuration settings: Baud 19200, 8 bits, Parity none and 1 Stop Bit.

FB2250 (Master) to FB1100 (Remote Display) –
The FB1100 must be set to r2250 and the FB2250 Series instrument must be set to continuous (Cont in). All other serials setting must match.

2500/ FB2550 (Master) to FB1100 (Remote Display) –
The FB1100 must be set to r2500.
The 2500/ FB2550 Series instrument must be setup as follows:

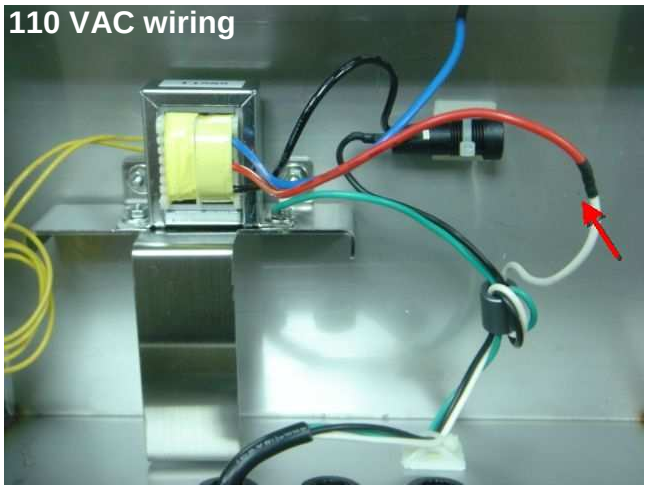
- Select COM port 3
- In the computer output menu, select Computer (PC)
- In the stream formats menu, select the Fairbanks/Toledo output
- In the communications menu, select the default formats, then press enter again to load the format. On the FB2550, change Status Word B8 to be UNCHECKED.
- Return to weigh mode.

Appendix V: 120 / 230 VAC Wiring

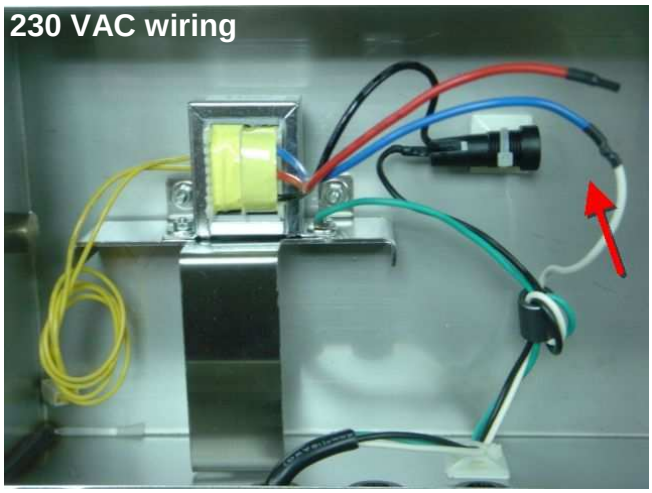
The FB1100 can easily be configured in the field to either 120 VAC (factory default) or 230 VAC wiring. Reference the images below for the wiring of the FB1100 stainless steel unit.

If 230V is needed for the FB1100 ABS, please order P/N 29891 (230 VAC wall adapter).

110 VAC wiring



230 VAC wiring



Appendix VI: Software Revisions

Programming Menu Access

Con-F – Scale Settings

With the power removed from the instrument, remove the jumper, JP3, inside the instrument. This will permit access to the configuration menu.

Software Versions 1.5 and lower

Press the 

key to turn the scale ON. SEt.UP is shown on the LCD display. Press 

key to scroll to the Con-F menu.

Calibration Menu Access

CAL – Calibration

With the power removed from the instrument, remove the jumper, JP3, inside the instrument. This will permit access to the calibration menu.

Software Versions 1.5 and lower

Press the 

key to turn the scale ON. SEt.UP is shown on the LCD display. Press 

key to scroll to the CAL menu.

Load factory defaults

Software Versions 1.5 and lower

To load the factory defaults in the instrument, perform the following:

1. With the power removed from the instrument, remove the jumper, JP3, inside the instrument. This will permit access to the save menu.
2. Press the 

key to turn the scale ON. SEt.UP is shown on the LCD display.

3. Press 

key to scroll until the SAVE menu is reached.
4. Press 

key to select the setting.
5. In the SAVE menu, press 

key to scroll and select LoAd.F.
6. Press 

key to choose the setting.
7. LoAd.F will reset the scale and load the factory default settings.
8. The unit is ready to be configured and calibrated. Refer to the appropriate sections to program and calibrate the instrument.

FB1100 Series

Digital Instrument

Document 51219

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