



BB-1107

Digital Weighing Indicator

Software Revision C

Setup / Operation Manual

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Contents subject to change without notice.

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FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

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Chapter 1: Introduction to the BB-1107 Digital Indicator

1.1 About the BB1107C

The BB-1107 Digital Indicator is a general purpose, industrial grade weight indicator. One model is currently available, distinguishable by display type, enclosure type and power supply. Table 1-1 shows the BB-1107 product matrix.

This model can readout up to 50,000 display divisions and can supply enough current for up to 4-350 Ω load cells. All setup parameters may be entered via the front panel keys, including calibration.

The indicator ships standard with an AC adapter, but it can also be powered with six “C” cell alkaline batteries (not included). A rechargeable battery option is also available. The battery charger shipped with these units may also be used as the main power supply.

If your Model BB-1107 Digital Indicator is part of a complete floor scale or has been installed for you, you may skip to Chapter 7 for operating instructions. Prior to using the indicator, please read this chapter carefully and completely. Store the manual in a safe and convenient place so it will be available if you have questions concerning the operation of the scale.

If you are an installer, the indicator's installation and wiring instructions are found in Chapter 2. The indicator contains two main setup menus: The Setup (“F”) menu, which configures the indicator to your weigh platform and the User (“A”) menu, which configures the serial communication port and enables some user options. Chapter 3 gives an overview and explains how to use the five front panel keys to maneuver and save settings in both menus. Chapters 4 and 5 explain the Setup and User Menu options, respectively. Chapter 6 covers system calibration. Prior to installing the indicator, please read this manual carefully and completely. Store the manual in a safe and convenient place so it will be available if you have questions concerning the setup and operation of the scale.

Table 1-1: BB-1107 Product Matrix

Model	Display Type	Enclosure Type	Power Source
BB-1107	LCD	ABS	6 x “C” (UM-2) batteries or rechargeable 6V battery ^a

a. Rechargeable battery is optional for this model.

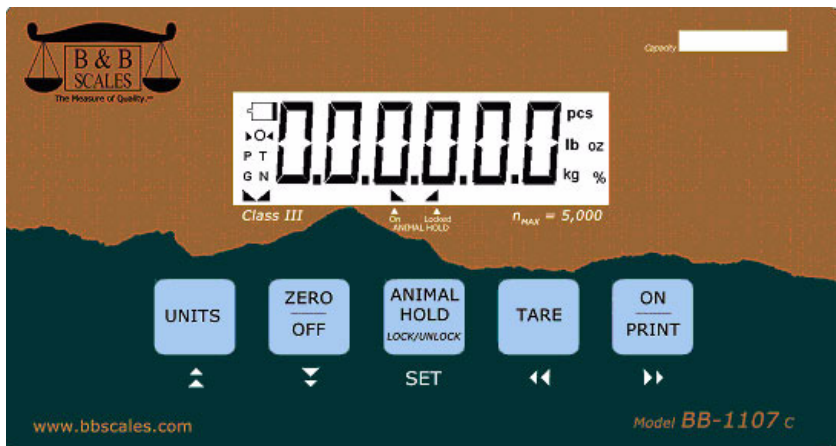


Figure 1-1BB-1107 Front Panel

Chapter 2: Installation

2.1 ABS Enclosure

For indicators contained in the standard ABS enclosure, the rear panel contains all connectors necessary to make the appropriate connections to the weigh platform, printer, remote display and power supply.

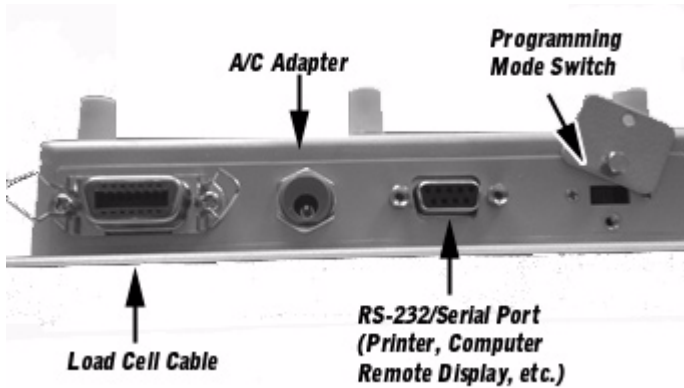


Figure 2-2 ABS Enclosure Rear Panel

2.1.1 Connecting the Weigh Platform

Indicators that are mounted in an ABS enclosure ship with a 15 ft shielded load cell cable for connection to the weigh platform's load cell(s) or junction box.

1. Plug the cable's 14-pin Centronics-type connector into the load cell port on the rear panel of the indicator.
2. Wire the bare wires and shield to the weigh platform's load cell(s) or junction box using the color codes shown in Table 2-3 on page 3.

Color	Wire Name
RED	+Excitation
BLK	- Excitation
GRN	+Signal
WHT	- Signal

Figure 2-3 Color Codes for Shielded Load Cell Cable

If you do not wish to use the shielded load cell cable, you may use your own, following the pin assignments shown in Table 2-3 on page 3. (A 14-pin Male Centronics-type connector is required).

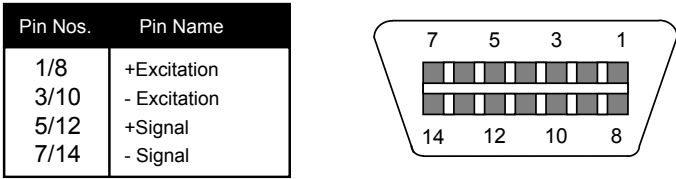


Figure 2-4 Pin assignments for Load Cell Ports

2.1.2 Connecting to a printer or other device

The BB-1107 Series indicator comes standard with one full duplex RS-232 serial port, designed for connection to either a PC or a serial printer. The same port may be also used as a simplex, RS-232 port designed for connection to a remote display.

Table 2-4 on page 4 shows the serial port pinout. Refer to Appendix B for some suggested cable diagrams. (A 9-pin Male D-type connector is required).

Plug the serial printer, remote display or computer communication cable (not included) directly into the D-SUB9 (RS-232) serial port connector.

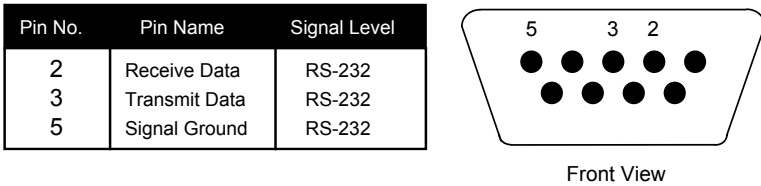


Figure 2-5 Pin assignments for the D-SUB9 serial port connector

2.1.3 Connecting the Power Supply

The standard BB-1107 indicator ships with an AC adapter and a battery holder.

1. Obtain six (6) alkaline “C” (UM-2) batteries and install them into the battery compartment located at the rear of the unit. Thumbscrews are provided for quick access. *Be sure to observe the polarity indicated inside the battery holder.*
2. If you do not wish to use batteries, you may use the supplied AC adapter. Simply plug the AC adapter into the indicator’s DC Power Jack first, and then plug into a standard wall outlet. *Make sure that the AC voltage appearing at the wall outlet matches the input voltage marked on the AC adapter.*

If ordered with the rechargeable battery option, the indicator ships with the battery pre-installed. The supplied battery charger supplied can be used to power the indicator even if the battery is being charged. For more information on the rechargeable battery, please see Appendix C.

Simply plug the battery charger into the indicator's DC Power Jack first, and then plug into a standard wall outlet. ***Make sure that the AC voltage appearing at the wall outlet matches the input voltage marked on the AC adapter.***

Chapter 3: Configuration

3.2 Configuration Overview

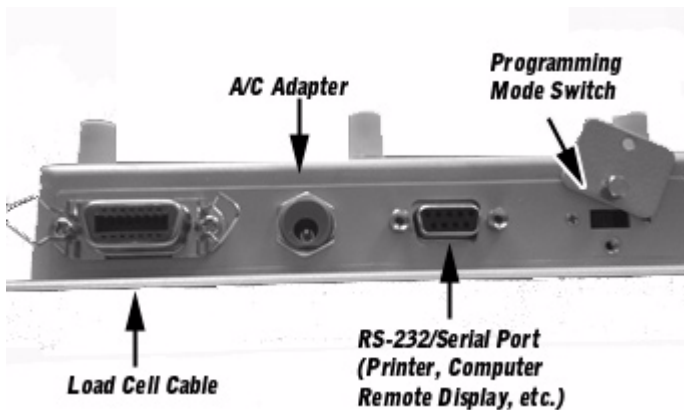
The indicator contains two main setup menus: The Setup (“F”) menu, which configures the indicator to your weigh platform and the User (“A”) menu, which configures the serial communication port and enables some user options. The Setup and User menus consist of several menu selections, each with its own sub-menu of choices.

To set up the indicator, you must first enter the appropriate menu mode. Once there, four of the front panel keys become directional navigators to move around in the menus, and one key is used to save or SET the selections.

3.3 Setup (“F”) Menu

3.3.1 Entering the Setup Menu

1. Power off the indicator by pressing and holding the ZERO/OFF key for about six seconds.
2. On the rear panel move the Programming Mode Switch to the opposite position. See Chapter 2 for location of the Programming Mode Switch.



To enter programming mode, move the Programming Mode Switch to the opposite position. Note that the switch is protected by two tamper-rof screws so that the indicator can be certified for trade.

3. Power on the indicator. The indicator shows ” F 1” to indicate that you are in Setup Menu mode.

Note: Access to the Programming Mode Switch is blocked if the indicator has been sealed for commercial use. For more information, please refer to Chapter 8.

3.3.2 Navigating the Setup Menu

Use the directional keys shown in Figure 3-1 to move around in the Setup Menu Chart shown in Figure 3-2 on the following page.

1. To move to a new “F” heading, use the TARE (left) or ON/PRINT (right) key to move right or left in the Setup Menu Chart.
2. To move to the selection level, press the ZERO/OFF (down) key once. The current saved selection is shown.
3. To view the available selections for the current “F” heading, use the TARE (left) or ON/PRINT (right) key to move through the selection field.
4. To save a new selection, press the Animal Hold (Set) key .To exit without saving, press the UNITS (up) key to return to the current “F” heading.
5. Repeat Steps 1 through 4 until the Setup Menu is programmed.

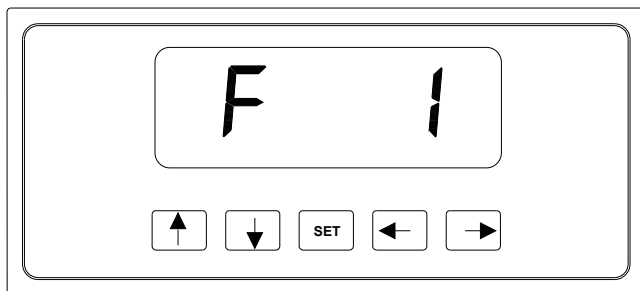


Figure 3-6 Setup Menu Navigation

F1 Grdations	Press ZERO To Begin	Sets the number of Full Scale Graduations. Pressing the ZERO key begins the programming sequence.
F3 Zero Band	0d, .5d, 1d, 3d, 5d	Sets the range within which the scale will automatically zero. Specified in scale divisions.
F4 Zero Range	100%, 1.9%	Sets the range within which it is possible to zero the scale by pressing the “zero” button.
F5 Motion Band	1d, 3d, 5d, 10d... 50d	Compares the current weight with the previous weight. A value in excess of the specified divisions is “in motion.”
F6 Digital Filter	0 - 8	Averages weight readings to produce higher stability. The higher the setting, the greater the stability.
F7 Overload Lmt	0d, 2%, 1d, 9d	Selects the desired formula that determines when the indicator shows, “overload.” Based on units in F8.
F8 Calib. Unit	1 or 2	Selects the primary calibration unit of measurement. Select “1” for POUNDS or “2” for KILOGRAMS.
F9 Disp Dvsions	1, 2 or 5	Determines desired weight increments.
F10 Decimal Pt.	0, 0.0, 0.00, 0.000, 0.0000, 00	Determines the location of the decimal point.
F11 Auto Zero	0 = OFF 100 = ON	Determines if the indicator automatically zeroes when first turned on. For grain and feed operations, this is typically set to OFF. For Animal applicaitons, it should be ON.
F12 Hold Tolrnce	0 to 100. Default is 65 for Anmls	Specifies the percentage change in displayed weight before the indicator releases and requires a new weight.
F16 Zero Cal.	Press ZERO to Begin	Calibrates the ZERO point on the scale.
F17 Span Cal.	Press ZERO to Begin	Calibrates the scale at specific count intervals.
F18 Cal. View	Press ZERO to Begin	Allows you to view the current calibration settings.
F19 Key-in Zero	Press ZERO to Begin	Allows for manual calibration of Zero point without test weights. Use with caution or in emergencies only.
F20 Key-in Span	Press ZERO to Begin	Allows for manual calibration of Span calibration without test weights. Use with caution or in emergencies only.
F21 Fac. Reset	Call us before you do this.	This will reset the indicator to factory settings. Factory settings are <i>different</i> than B & B Scales’ Default settings. Call us first.

Figure 3-7 Setup Menu Chart

3.3.3 Notes on the Setup Menu

1. The F21 sub-menu is for factory use only. Changing these settings may damage the indicator.
2. Detailed descriptions of the setup menu parameters can be found in Chapter 4 of this manual.
3. The User (“A”) menu sub-menus appear when scrolling left or right from the “F” menu.

3.4 Exiting the Setup Menu

1. Power off the indicator.
2. On the rear panel, move the Setup/Calibration Switch back to its original position.
3. Power on the indicator. The display will go through a digit check, then settle into Normal Operating mode. All front panel keys will now return to their normal mode of operation.

3.5 User (“A”) Menu

3.5.1 Entering the User Menu

1. Enter the Setup (“F”) menu by following the directions in Section 3.2.1 or 3.2.2.
2. Use the right or left directional keys shown in Figure 3-3 to move right or left in the Setup (“F”) menu until the indicator shows ” A 1”.

3.5.2 Navigating the User Menu

Use the directional keys shown in Table 3-6 on page 7 to navigate the User Menus. The User Menu options are shown in **Table 3-9 on page 10**

1. To move to a new “A” heading, use the TARE (left) or ON/PRINT (right) key to move right or left in the User Menu Chart.
2. To move to the selection level, press the ZERO/OFF (down) key once. The current saved selection is shown.
3. To view the available selections for the current “A” heading, use the TARE (left) or ON/PRINT (right) key to move through the selection field.
4. To save a new selection, press the ANIMAL HOLD (Set) key .To exit without saving, press the UNITS (up) key to return to the current “A” heading.
5. Repeat Steps 2 through 5 until the User Menu is programmed.

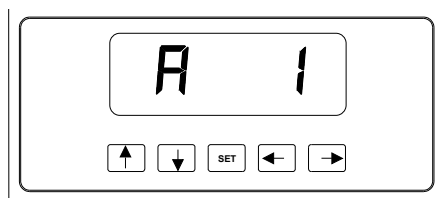


Figure 3-8 User Menu Navigation

A1 Baud Rate	1200, 2400, 4800, 9600, 19200	Selects the baud rate for data transmission through the serial port.
A2 Data Bits	8n, 7O, 7E, 7n	Selects the number of data bits and parity of serial transmission. See Table for more information.
A3 Serial Mode	C, D	Selects how data is sent to the Serial Port; C = Continuous (e.g., remote display), D= Demand (e.g. printer).
A4 Disp. Check	Press ZERO to Begin	Illuminates all digit segments on the display for testing purposes.
A5 Units Key	0, 1	Disables the Units Key so that the operator cannot accidentally switch between Kg. and Lbs. "0" = disabled.
A6 Serial Port Mode	0, 1	Selects the RS-232 Mode. "0" is Full Duplex, "1" is Print Ticket Mode.
A7 ID Enable	0, 1	Disables the ID number in Print Ticket Mode. Only works when A6 is set to "1"
A8 ID Entry	Press ZERO to Begin	Allows the user to enter a new ID number. Only functions when A6 is set to "1."
A9 No. of LF	Press ZERO to Begin	Allows entry of the desired number of Line Feeds to be printed in Print Ticket Mode. A6 must be set to "1."
A10 Auto Off	Press ZERO to Begin	Automatically turns the indicator off after the number of inactive minutes specified. "0" = always on.
A11 Animal Hold	0, 1, 2, 3, 4	Selects the Animal Hold Mode. See Chapter 7 for an explanation.
A12 Backlight	0, 1	Permanently disables the backlight. "0" = disabled. "1" = enabled.
A13 Handshake	0, 1	Enables hardware handshaking for Print Ticket mode when A6 is set to "1". "1" is enabled. "0" is disabled.
A14 Print Header	0, 1	Tells the MP-20 Printer to print the header information when A6 = "1."
A15 Time Enable	0, 1	Allows the Time to be disabled in Print Ticket Mode. A6 must = "1."
A16 Time Format	0, 1	Specifies 24 Hour or 12 Hour time display. "0" = 12 Hour (AM/PM), "1" = 24 Hour
A17 Time Entry	Press ZERO to Begin	Allows entry of the current time when in Operation mode.
A18 Date Enable	0, 1	Allows the date to be disabled in Print Ticket mode. A6 must = "1."
A19 Date Format	0, 1	Sets the date format. "0" = mm/dd/yy, "1" = dd/mm/yy.

Figure 3-9 User Menu Chart

3.5.3 Notes on the User Menu

1. Detailed descriptions of the user menu parameters can be found in Chapter 5 of this manual.

3.5.4 Exiting the User Menu

Exit the User (“A”) menu by following the directions in Section 3.2.5 or 3.2.6. The display will go through a digit check, then settle into Normal Operating mode. All front panel keys will now return to their normal mode of operation.

A20 Data Entry	Press ZERO to Begin	Allows the operator to enter the current date.
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Name / Code	Description	Code / Value
F11 Autozero on power up	Determines if the indicator automatically zeros when first turned on or if the indicator displays the actual weight. "0" = Off "100" = On	100✓
F12 Hold Tolerance	Specifies the percentage change in the displayed weight before the indicator releases the hold and acquires a new weight. "0 - 100"	65 for animals 0 for other applications
F16 Zero Calibration	Places indicator into the zero calibration routine. Scrolling down with the ZERO key one level begins the procedure.	Press ZERO key to begin sequence
F17 Span Calibration	Places indicator into the span calibration routine. Scrolling down with the ZERO key one level begins the procedure.	Press ZERO key to begin sequence
F18 View Calibration	Actuates the function that allows you to view both the zero and span calibration value. The values displayed in this function are valid only after Calibration (F16 & F17) has been successfully completed. Scrolling down with the ZERO key one level begins the procedure.	Press ZERO key to begin sequence
F19 Key-in Zero	Allows you to key-in known zero calibration value in case of memory loss in the field. Scrolling down with the ZERO key one level begins the procedure.	Press ZERO key to begin sequence
F20 Key-in Span	Allows you to key-in a known span calibration value in case of memory loss in the field. Scrolling down with the ZERO key one level begins the procedure.	Press ZERO key to begin sequence
F21 Factory Reset	This sub-menu will reset all parameters in the "F" and "A" menu to the default settings. USE WITH CAUTION!	Press the ZERO key twice to execute.

4.7 Setup Menu Procedures

This section provides instructions for all of the Setup Menu procedures except for the calibration related menus, which are documented in Chapter 6.

4.7.1 Graduation Entry (F1)

1. While in the Setup Menu mode, scroll to "F 1", then scroll down once using the ZERO/OFF key to enter the Graduation menu.
2. The display will display a value with one flashing digit. This value will be the current graduation value.
3. Use the four directional keys (shown in Figure 4-1 below) to adjust the displayed value to the actual graduation value. Increase the flashing digit by pressing the UNITS key. Decrease the flashing digit by pressing the ZERO/OFF key. Pressing the ON/PRINT key or the TARE key will change the position of the flashing digit.

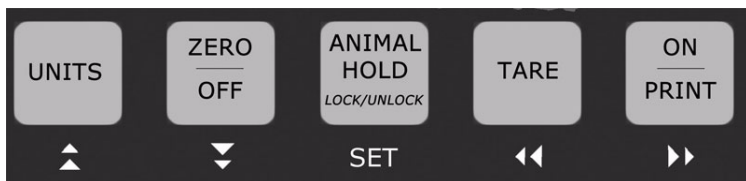


Figure 4-10 Setup Menu Key Assignments

After setting the exact value, press the ANIMAL HOLD key to save the graduation value. The display will show "SET" momentarily, then revert back up to F1.

NOTE: The indicator will accept values only in the range from 100 to 50000.

Chapter 5: User Menu Descriptions & Procedures

5.1 User Menu Descriptions

This section provides more detailed descriptions of the selections found in the User Menu Chart. Factory-set defaults are shown in bold with a checkmark (√).

Name / Code	Description	Code / Value
A1 Baud Rate	Selects the baud rate for data transmission through the serial port.	1200 2400 4800 9600 √ 19200
A2 Data Bits and Parity	Selects the number of data bits and parity of serial transmission. "8n" = 8 data bits with no parity bit and one stop bit "7O" = 7 data bits with odd parity bit and one stop bit "7E" = 7 data bits with even parity bit and one stop bit "7n" = 7 data bits with no parity bit and two stop bits	8n 7O 7E 7n
A3 Mode of Serial Transmission	Selects when data will be sent out of the serial port to a printer or computer: "C" = Continuous mode; send data continuously "d" = Demand mode; send data when a PRINT command is issued from the printer, computer, or indicator.	C d √
A4 Display Check	Actuates the function that illuminates all digit segments, decimal points, and LCD annunciators in a test sequence. Pressing the ZERO key to scroll down one level begins the test sequence.	Press ZERO key to begin sequence
A5 Disable the UNITS Key	Allows the UNITS key to be disabled so that an operator cannot accidentally press the key and change the displayed units. "0" = Disable the Units key "1" = Enable the Units key	0 1 √
A6 Serial Port Mode	Selects the mode of the RS-232 serial port: Refer to Appendix B for more information. "0" = Full Duplex Mode "1" = Print Ticket Mode	0 1 √
A7 ID No. Enable	Allows the ID number to be disabled in the Print Ticket mode. Valid only when A6 is set to "1". "0" = Disable the ID No. "1" = Enable the ID No.	0 √ 1
A8 ID No. Entry	Actuates the function that allows entry of a new ID No. Valid only when A6 is set to "1". Pressing the ZERO key to scroll down one level begins the sequence.	0 - 999999 123456 √
A9 No. of Line Feeds	Actuates the function that allows entry of the desired number of line feeds to be printed in Print Ticket Mode. Valid only when A6 is set to "1". Pressing the ZERO key to scroll down one level begins the sequence.	0 - 99 8 √
A10 Auto Power Off	Actuates the function that allows entry of the desired automatic turn off time in minutes. Pressing the ZERO key to scroll down one level begins the sequence. "0" = Disabled (Always ON)	0 - 30 5 √

Name / Code	Description	Code / Value
A11 Animal Hold	Selects the "Hold" mode to use. See Chapter 7. "0" = Disabled "1" = Automatic Hold, "2" = Manual Hold w/ display freeze "3" = Peak Animal Hold "4" = Manual Animal Hold without display freeze	0 1√ 2 3 4
A12 Backlight Enable	Allows you to permanently disable the backlight feature for outdoor use. Factory default setting is "1" (Enabled). "0" = Disabled "1" = Enabled	0 1√
A13 Handshaking Enable	Enables hardware handshaking for Print Ticket Mode. Valid only when A6 is set to "1". "0" = Disable Handshaking "1" = Enable Handshaking	0√ 1
A14 Print Header	Tells MP-20 printer to print the header information. Valid only when A6 is set to "1". "0" = Do NOT Print Header "1" = Print Header	0 1
A15 Time Enable	Allows the time to be disabled in the Print Ticket mode. Valid only when A6 is set to "1". "0" = Disable the time printout "1" = Enable the time printout	0√ 1
A16 Time Format	Selects the printed format for current time. Valid only when A6 is set to "1". "0" = AM/PM "1" = 24 Hr	0√ 1
A17 Time Entry	Actuates the function that allows entry of the current time. Pressing the ZERO key to scroll down one level begins the test sequence.	Press ZERO key to begin sequence
A18 Date Enable	Allows the date to be disabled in the Print Ticket mode. Valid only when A6 is set to "1". "0" = Disable the date printout "1" = Enable the date printout	0√ 1
A19 Date Format	Selects the printed format for current date. Valid only when A6 is set to "1". "0" = mm/dd/yy "1" = dd/mm/yy	0√ 1
A20 Date Entry	Actuates the function that allows entry of the current date. Pressing the ZERO key to scroll down one level begins the test sequence.	Press ZERO key to begin sequence

5.2 User Menu Procedures

This section provides instructions for all of the User Menu procedures.

5.2.1 ID Number Entry (A8)

1. While in the User Menu mode, scroll to "A 8", then scroll down once using the ZERO key to enter the ID Number menu.
2. The display will momentarily show "ID NO", followed by a value with one flashing digit. This value will be the current ID number value.
3. Use the four directional keys (shown in Figure 5-1 below) to adjust the displayed value to the actual ID Number value. Increase the flashing digit by pressing the

UNITS key. Decrease the flashing digit by pressing the ZERO key. Pressing the PRINT key or the TARE key will change the position of the flashing digit.

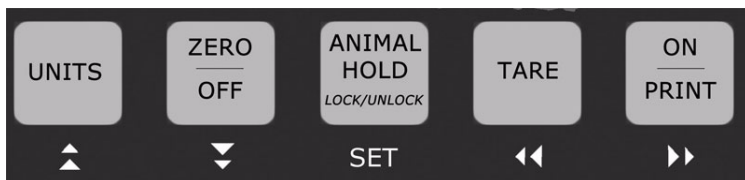


Figure 5-11 User Menu Key Assignments

4. After setting the exact value, press the ANIMAL HOLD key to save the ID Number value. The display will show "SET" momentarily, then revert back up to A8.

5.0.1 LF (Line Feeds) Number Entry (A9)

1. While in the User Menu mode, scroll to "A 9", then scroll down once using the ZERO/OFF key to enter the Line Feeds menu.

6. The display will momentarily show "LF", followed by the current line feeds value.
7. Use the four directional keys (shown in Figure 5-1 above) to adjust the displayed value to the actual line feeds value. Increase the flashing digit by pressing the UNITS key. Decrease the flashing digit by pressing the ZERO/OFF key. Pressing the ON/PRINT key or the TARE key will change the position of the flashing digit.
8. After setting the exact value, press the ANIMAL HOLD key to save the line feeds value. The display will show "SET" momentarily, then revert back up to A9.

5.0.1 Auto Power Off Entry (A10)

1. While in the User Menu mode, scroll to "A 10", then scroll down once using the ZERO/OFF key to enter the Auto Power Off menu.
2. The display will momentarily show the current line feeds value.
3. Use the four directional keys (shown in Figure 5-1 above) to adjust the displayed value to the actual auto power off value. Increase the flashing digit by pressing the UNITS key. Decrease the flashing digit by pressing the ZERO/OFF key. Pressing the ON/PRINT key or the TARE key will change the position of the flashing digit.
4. After setting the exact value, press the ANIMAL HOLD key to save the auto power off value. The display will show "SET" momentarily, then revert back up to A10.

5.0.1 Time Entry (A17)

Your indicator will keep track of the current time for you, which can then be printed on the print ticket. Use this procedure to set the current time, which must be set in military (24-

hr) format. For example, for 9:00 AM, you would enter 900. For 5:00 PM, you would enter 1700.

6. While in the User Menu mode, scroll to "A 17", then scroll down once using the ZERO/OFF key to enter the time entry menu.
7. The display will momentarily show "ENT TI", followed by a value with one flashing digit. This value will be the current time in military (24-hr) format.
8. Use the four directional keys (shown in Figure 5-1 above) to adjust the displayed value to the actual time value. Increase the flashing digit by pressing the UNITS key. Decrease the flashing digit by pressing the ZERO/OFF key. Pressing the ON/PRINT key or the TARE key will change the position of the flashing digit.
9. After setting the exact value, press the ANIMAL HOLD key to save the time value. The display will show "End TI" momentarily, then revert back up to A17.

5.0.1 Date Entry (A20)

Your indicator will keep track of the current date for you, which can then be printed on the print ticket. Use this procedure to set the current date, which must be set in mm/dd/yy format. For example, for January 7, 1998, you would enter 010798. For November 30, 1998 you would enter 113098.

1. While in the User Menu mode, scroll to "A 20", then scroll down once using the ZERO/OFF key to enter the date entry menu.
2. The display will momentarily show "ENT DT", followed by a value with one flashing digit. This value will be the current date in mm/dd/yy format.
3. Use the four directional keys (shown in Figure 5-1 above) to adjust the displayed value to the actual date value. Increase the flashing digit by pressing the UNITS key. Decrease the flashing digit by pressing the ZERO/OFF key. Pressing the ON/PRINT key or the TARE key will change the position of the flashing digit.
4. After setting the exact value, press the ANIMAL HOLD key to save the date value. The display will show "End DT" momentarily, then revert back up to A20.

Chapter 6: Calibration

6.8 Calibration Overview

The BB1107 Digital Indicator can be calibrated at four different points, one of which must be Zero, and of which must be some value that is at least 1% of the maximum scale capacity. The indicator is calibrated by following the procedures embedded in F16 (Zero) and F17 (Span) of the Setup Menu. Each procedure enters a value into the indicator's non-volatile memory. The indicator allows for multi-point calibration in F17. These three calibration points are denoted C1-C3. You may use C1 only if you like. If you elect to use all three calibration points, then they must be in ascending order, e.g. 2,000, 5,000 and 10,000 pounds.

After the two calibration procedures are executed successfully, you should record all calibration values in Table 6-1 using the F18 View procedure.

In the unlikely event that either value is lost while in the field, the setup menu makes provisions for re-entering these values via F19 and F20, thus eliminating the need for re-calibration with test weights.

IMPORTANT: This procedures in this chapter require that the indicator is in Setup ("F") Menu mode. If the indicator is not in Setup Menu mode, refer to Chapter 3 for instructions.

6.9 Zero Calibration (F16)

1. While in the Setup mode, scroll to "F 16", then scroll down once using the ZERO key to enter zero calibration menu. The display will momentarily show "C 0" followed by a value. This value is the internal A/D count and can prove useful when trying to troubleshoot setup problems.
2. Verify that there is no weight on the scale, then press the ZERO key again to zero out the displayed value.
3. Press the ANIMAL HOLD key to save the zero point value. The display will show "EndC0" momentarily, then revert back up to F16. At this time, proceed to the F17 span calibration to complete indicator calibration.

6.10 Span Calibration (F17)

1. While in the Setup mode, scroll to "F 17", then scroll down once using the ZERO key to enter span calibration menu. The display will momentarily show "C 1" for the first span calibration, followed by a value with one flashing digit. This value will be zero with the Decimal Point parameter selected in F10.
2. Place the test weight on the weighing mechanism.

- Use the four directional keys (shown in Figure 6-1 below) to adjust the displayed value to the actual test weight value. Increase the flashing digit by pressing the UNITS key. Decrease the flashing digit by pressing the ZERO/OFF key. Pressing the ON/PRINT key or the TARE key will change the position of the flashing digit.

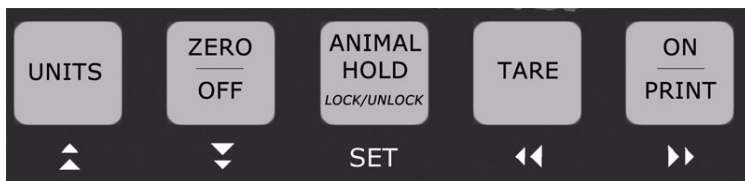


Figure 6-12 Setup Menu Key Assignments

- After setting the exact value, press the ANIMAL HOLD key to save the value. If the calibration was successful, the display will show "EndC1" momentarily, momentarily, followed by "C 2" for the second calibration point.
- Repeat steps 2-4 for C2 and C3. At the conclusion of C3, the indicator reverts back up to F17. **NOTE:** If you wish to use only one calibration point (C1), simply press the ANIMAL HOLD key when prompted for C2 or C3.
- At this time it is suggested that the calibration values be recorded for future use (see Section 6.4).
- If the calibration was *not* successful, one of the error messages below will appear. Take the indicated action to correct the problem, then perform a new calibration.
- "**Err0**" - The calibration test weight or the adjusted keyed-in weight is larger than the full capacity of the scale. Change the calibration test weight or check the input data.

"**Err1**" - The calibration test weight or the adjusted keyed-in weight is smaller than 1% of the full capacity of the scale. Change the calibration test weight or check the input data.

"**Err2**" - The internal resolution of the scale is not high enough to accept the calibration value. Check your load cell connections.

6.11 View Calibration Values (F18)

Note: The values displayed in this procedure are valid only after a successful calibration has been performed using F16 and F17.

- While in the Setup mode, scroll to "F 18", then scroll down once using the ZERO key to enter View calibration menu.
- The display will show the information listed in Table 6-1. The code will display briefly followed by the value. It is recommended that you record each value in the table below. Press any key to continue down the list. At the completion of the list, the indicator reverts back up to F18.

Table 6-2: Calibration Value Table

CODE	NAME	VALUE
C 0	Zero Calibration Value	
T 1	First Test Weight Value	
C 1	First Span Calibration Value	
T 2	Second Test Weight Value	
C 2	Second Span Calibration Value	
T 3	Third Test Weight Value	
C 3	Third Span Calibration Value	

6.12 Key-in Zero Calibration Value (F19)

Note: This procedure is intended for emergency use only in the case of non-volatile memory loss. A valid zero calibration value, obtained from a successful F16 calibration procedure, must be used.

1. While in the Setup mode, scroll to "F 19", then scroll down once using the ZERO key.
2. The display will momentarily show "CAL 0", followed by a flashing zero. Use the four directional keys (shown in Figure 6-1) to adjust the displayed value to the zero calibration value.
3. After setting the exact value, press the ANIMAL HOLD key to save the value.
4. The display will show "E CAL 0" momentarily, then revert back up to F19.

6.13 Key-in Span Calibration Value (F20)

Note: This procedure is intended for emergency use only in the case of non-volatile memory loss. A valid span calibration value, obtained from a successful F17 calibration procedure, must be used.

1. While in the Setup mode, scroll to "F 20", then scroll down once using the ZERO/OFF key. The indicator will prompt you to enter the information in Table 6-2.
2. If the value shown is correct, press the ZERO/OFF key to move to the next parameter. Otherwise, Use the four directional keys (shown in Figure 6-1) to adjust the displayed value to the span calibration value.
3. After setting the exact value, press the ANIMAL HOLD key to save the value.
4. If the entered values are entered successfully, the display will show "
5. E" momentarily before continuing to the next parameter. At the completion of the sequence, the indicator will then revert back up to F20.

Table 6-3: Calibration Value Entry Table

CODE	NAME
ET T 1	First Test Weight Value
ET C 1	First Span Calibration Value
ET T 2	Second Test Weight Value
ET C 2	Second Span Calibration Value
ET T 3	Third Test Weight Value
ET C 3	Third Span Calibration Value

Chapter 7: Operation

7.14 Display

As mentioned in Chapter 1, this model utilizes a 6 digit LCD (Liquid Crystal Display). Typically, LCD's are used for outdoor applications while LED's are used indoors where brightness is needed. Table 7-1 summarizes the display annunciators.



7.14.1 Liquid Crystal Display (LCD)

Figure 7-1 shows the display detail of the LCD indicators.



Figure 7-13 BB-1107 LCD Detail

Table 7-4: BB-1107 Annunciator Definitions

LCD Annunciator	Meaning
→0←	Better known as the "Center of Zero" annunciator, this light is active whenever the displayed weight is within ± 0.25 divisions of true zero.
N	Indicates that the indicator is displaying net weight.
G	Indicates that the indicator is displaying gross weight.
T	Indicates that a tare weight has been established in the system.
lb, kg	Indicates the unit of the displayed weight. PCS stands for "pieces".
	This light is on whenever the scale is stable.
P	Indicates that the indicator is displaying peak weight
	Flashes when the battery voltage is too low for normal operation. For standard units, replace the batteries. For rechargeable units, re-charge the battery.

7.15 Keyboard

The keyboard is composed of five function keys. Refer to Figures 7-2 for the overall layout and key locations.

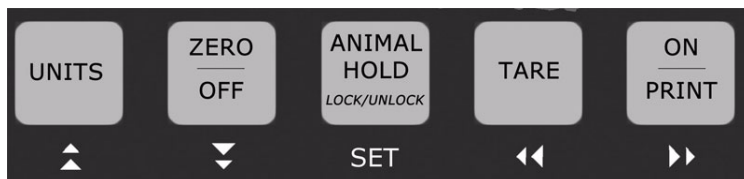


Figure 7-14 Function Keys Layout

7.16 Function Keys

Units – This key toggles the indicator between lb and kg if enabled in the User (“A”) menu. See Chapter 5 for more information. Also used to take indicator in and out of peak hold mode if enabled in A11.

Zero/OFF - When held for six seconds shuts the indicator off. Otherwise, this key sets the indicator to display zero provided the following conditions are met:

1. The indicator is displaying Gross weight.
2. The displayed weight is within the zero reset range that is programmed in F4 of the Setup (“F”) Menu.
3. The scale is not in motion.
4. The scale is not in overload (see Appendix D for error codes).

Animal Hold - This key toggles the Animal Hold function on and off. The indicator must be configured with Animal Hold in Manual Mode for this to function. This key has no function if the Animal Hold is configured to work automatically or if Animal Hold is turned off.

Tare - This key is used to establish a Tare provided the following conditions are met:

1. The indicator is not at or below Gross zero.
2. The scale is not in motion.
3. The scale is not in overload (see Appendix D for error codes).

ON/Print – When off, turns the indicator on. When on, this key is used to send weight information out to the serial port provided the following conditions are met:

1. The scale is not in motion.
2. The scale is not in overload (see Appendix D for error codes).

7.17 General Scale Operation

7.17.1 Weighing an Item

1. Select the desired weighing unit by pressing the UNITS key until that unit is indicated on the display.
2. If necessary, press the ZERO/OFF key to obtain a weight reading of zero.
3. Place the object to be weighed on the scale’s platter and allow the weight indication to stabilize. If the item weight exceeds the scale’s weight capacity, it displays „000000.„
4. Read the weight shown on the display.

7.17.2 Taring an Item

To weigh an item in a container, the weight of that container must first be subtracted from the overall weight to obtain an accurate weight reading. This is known as taring.

1. Select the desired weighing unit by pressing the UNITS key until that unit is indicated on the display.
2. If necessary, press the ZERO/OFF key to obtain a weight reading of zero.
3. Place the empty container on the scale’s platter and allow the weight indication to stabilize.
4. Press the TARE key. The display shows zero weight and turns the NET annunciator on.

5. Place the material to be weighed in the container and allow the weight indication to stabilize.
6. Read the weight shown on the display.
7. You may toggle between the gross weight and the net weight by pressing the ANIMAL HOLD key.

7.17.3 Animal Hold

This mode is used to automatically hold the weight of a non-static object, such as an animal, on the platform. It is enabled by selecting “1” for A11. The indicator both automatically locks and unlocks the weight of the object.

Automatic locking takes place when a number of consecutive readings are taken that are within the current setting for motion band (F5). Automatic unlocking takes place when the object is removed or when the weight of the locked object decreases by 50%, whichever occurs first. To best optimize this feature, it is recommended to set F5 to 5 and F6 to 8. While the weight is locked, the following keys will work:

- Zero (unlocks weight)
- Tare (unlocks weight)
- Units
- Print

1. Select the desired weighing unit by pressing the UNITS key until that unit is indicated on the display.
2. If necessary, press the ZERO/OFF key to obtain a weight reading of zero.
3. Place the object to be weighed on the scale’s platter and allow the weight indication to stabilize. If the item weight exceeds the scale’s weight capacity, it displays “000000”.
4. Read the weight shown on the display.

7.17.4 Peak Hold

This mode is used to determine the peak force applied to the indicator. It is enabled by selecting “2” for A11. The indicator automatically locks the peak value, but requires a manual unlock. The indicator does not care about stable readings in this mode. To best optimize this feature, it is recommended to set F6 to a setting less than four.

The UNITS key is used to take the indicator into and out of peak hold mode.

While the weight is locked, the following keys will work:

- Zero (resets peak value)
- Units
- Print

1. Select peak hold mode by pressing the UNITS key. The “P” annunciator is lit to indicate that the indicator is in peak hold mode.
2. If necessary, press the ZERO/OFF key to obtain a weight reading of zero.
3. Place the object to be weighed on the scale’s platter. If the item weight exceeds the scale’s weight capacity, it displays “000000”.
4. Read the weight shown on the display.
5. Remove the object from the platform and press the ZERO/OFF key to clear the peak value and start again.

Chapter 8: "Legal for Trade" Sealing

8.18 ABS Enclosure

Indicators in the ABS enclosure can be sealed for commercial (Legal for Trade) applications as follows.

1. Power off the indicator.
2. On the back of the indicator, locate the setup/calibration switch cover (see illustrations below).
3. Thread a wire security seal through both drilled head screws securing the calibration switch cover as well as the single drilled head screw holding on the rear panel.

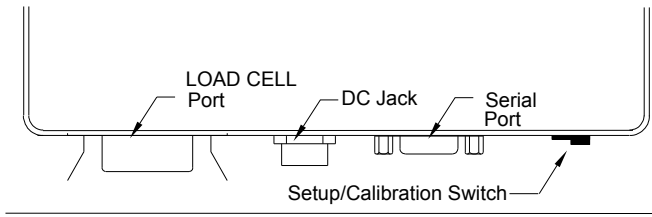


Figure 8-15 BB-1107 Rear Panel