FAIRBANKS SCALES

Operator's Manual

NexWeigh

Weight Instrument

51216

Revision 6 – 04/14

Amendment Record

NEXWEIGH INSTRUMENT
Document 51216

Manufactured by Fairbanks Scales Inc.
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Created		06/09	Created Document
Revision	1	06/09	Released Manual
Revision	2	07/09	Corrected Accumulate data string
Revision	3	03/10	Clarified security level and conversion factor.
Revision	4	03/11	Added serial data strings and serial commands and definitions
Revision	5	10/11	Added newest model information, with Ethernet Servers.
Revision	6	04/14	Added LED table and images and Data Output appendix.

Disclaimer

Every effort has been made to provide complete and accurate information in this manual. However, although this manual may include a specifically identified warranty notice for the product, Fairbanks Scales makes no representations or warranties with respect to the contents of this manual, and reserves the right to make changes to this manual without notice when and as improvements are made.

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Table of Contents

Section 1: General Information

1.1. INTRODUCTION

The **NexWeigh Series Instrument** is designed for light capacity, general purpose use.

- ***Designed for wash down environments.***
- The Instrument has a capacity setting of up to six digits.
- Six (6) digit amber LED display.
- 120/240 VAC selectable.
- Checkweigh Mode capable of storing four (4) different Checkweigh recipes.
- Annunciators include **Net Weight**, **Units**, **Under**, **Accept**, **Over**, and **Accumulation.**
- RS232 or RS485 Bidirectional Serial Communications Port.
- Optional 4-20 mA Analog Interface available.

1.2. SPECIFICATIONS

FEATURE	DESCRIPTION
Display	• 1.25” Segmented LED. — 12 amber segments for under-weighments. — 12 green segments for correct weighments. — 12 red segments for over-weighments.
Display Update Rate	• .1 – 1.0 second, selectable
Capacity	• Up to 999990 programmable
Resolution	• 10,000 divisions, commercial. • 100,000 divisions, non-commercial. • 8,000,000 divisions, internal.
Division Sizes	• .0001 – 50, selectable.
Load Cell	• Up to four (4) 350 ohm cells.
	— 29937 — 30718 (IP69K) — 31530 (without stand) — 31531 (IP69K without stand)
Electrical	• 120 VAC or 240 VAC, selectable.
Excitation Voltage	• 5 VDC (sense leads required)
Dimensions	• 9.8” x 7.6” x 3.3”
Environment	• NEMA 4X wash-down • IP69K heavy wash-down
Interfaces	• RS232 or RS485 for bi-directional communication • 4-20mA Analog Output
Units	• lbs, oz, kg, g and lbs/oz, or custom
Instrument Approvals	• CC: 09-024 • MC: AM-5725 • ETL: ETL Listed — Conforms to ANSI/UL STD 60950-1 • Certified to CAN/CSA C22.2 STD NO. 60950-1-03

1.3. ETHERNET SPECIFICICATIONS

FEATURE	DESCRIPTION	
Models with Ethernet	▪ 29937 ▪ 31530 ▪ 30718 (IP69K) ▪ 31531 (IP69K)	
Interface	10Base-T/100BaseTX Ethernet port	
Software selectable Ethernet speed 10/100/Auto		
Software selectable Half/Full/Auto duplex		
Connector	RJ45	
Standards	ARP, UDP, TCP, ICMP, Telnet, TFT, AutoIP, DHCP, HTTP, SNMP TCP, UDP, and Telnet, TFTP	
Indicators (LED) **Power**	▪ 10/100 Link/Activity – **Green**	▪ 100/100 Link/Activity – **Green**
	▪ Diagnostics – **Red**	▪ Status – **Green**
CPU Processor	Lantronix DSTNI-EX 48 MHz clock	
Memory	256 KB zero wait state SRAM, 2 MB Flash	
Management	Lantronix Device Installer GUI, Serial login, SNMP, Telnet login, HTTP	
Operating Temperature	-40° to 70° C (-40° 158° F)	
Storage Temperature	-40° to 78° C (-40° 185° F)	
Serial Port	15 KV ESD protection on RS232 and RS422/485 transceivers	
Power Input	Up to non-repeated 600 W 10/100 µsec pulse protection against transient over voltages.	
Ethernet Port	1500 VAC isolation shield with shield connected to chassis ground for signal integrity and ESD protection.	

Section 2: Service Policy Information

2.1. GENERAL SERVICE POLICY

Prior to installation, ***always*** verify that the equipment satisfies 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.

It is the customer/operator's responsibility to ensure the equipment provided by Fairbanks is operated within the parameters of the equipment's specifications and protected from accidental or malicious damage.

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.

2.2. CONFERRING WITH OUR CLIENT

- The technician must be prepared to recommend the arrangement of components which provide the most efficient layout, utilizing the equipment to the best possible advantage.
- Explain and review the warranty policy with the customer.

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

- All electrical assemblies must be returned intact for replacement credit using the standard procedures.
- At the time of installation, all electronic and mechanical adjustments are considered to be part of the installation, and are included in the installation charge(s).
- The AC receptacle/outlet shall be located near the Instrument and easily accessible.
- Electrical connections other than those specified may not be performed.

2.2.1. Service Technician's Responsibilities

- All electronic and mechanical calibrations and/or adjustments required for making this equipment perform to accuracy and operational specifications are considered to be part of the installation.
  - They are included in the installation charge.
  - Only those charges which are incurred as a result of the equipment's inability to be adjusted or calibrated to performance specifications may be charged to warranty.

- The equipment consists of printed circuit assemblies which must be handled using ESD handling procedures, and must be replaced as units.
  - Replacement of individual components is not allowed.
  - The assemblies must be properly packaged in ESD protective material and returned intact for replacement credit per normal procedures.

2.2.2. Users' Responsibility

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

Section 3: Installation

3.1. PRIOR TO INSTALLATION

1. **Review the pre-Installation checklist.**
2. **Speak with the customer, outlining all the installation details.**
3. **Unpack and check all component contents.**
4. **Find best location for each component, referring to the site instructions.**

3.1.1. Pre-Installation Checklist

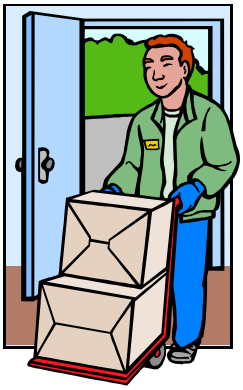
The following points should be checked and discussed with the **Area Sales Manager and/or customer**, if necessary, before the technician goes to the site and installs the equipment.

- ✓ Check the customer's application to make certain it is within the capabilities and design parameters of the equipment.
- ✓ If the installation process might disrupt normal business operations, tell the customer and ask that they make ample arrangements.
- ✓ Be sure that the equipment operator(s) are available for training.
- ✓ The service technician reviews the recommended setup with the Area Sales Manager or Area Service Manager, and together they identify all necessary variations to satisfy the customer's particular application.

3.1.2. Unpacking

Follow these guidelines when unpacking all equipment:

- Check in all components and accessories according to the customer's order.
- Remove all components from their packing material, checking against the invoice that they are accounted for and not damaged.
  - Advise the shipper immediately, if damage has occurred.
  - Order any parts necessary to replace those which have been damaged.
  - Keep the shipping container and packing material for future use.



✓ ***Check the packing list.***

- Collect all necessary installation manuals for the equipment and accessories.
- Open the equipment and perform an inspection, making certain that all hardware, electrical connections and printed circuit assemblies are secure.
- Do not reinstall the cover if the final installation is to be performed after the pre-installation checkout.

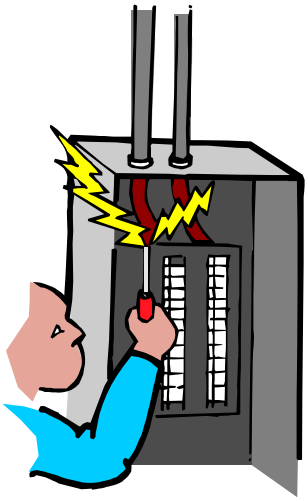
3.1.3. Finding the Best Location

Position the equipment with these points in mind:

- Intense direct sunlight can harm the display.
- Do not locate near magnetic material or equipment/Instruments which use magnets in their design.
- Avoid areas which have extreme variations in room temperatures. Temperatures outside the Instrument's specifications will affect the weighing accuracy of this product.
- Do not open the Instrument if there is any evidence of damage to it or any other scale component or supporting structure.
- When selecting the right location for the Instrument and the scale, keep the components completely away from all high water, such as low-lying areas that may flood, and away from any drain pipes.

★ ★ IMPORTANT INSTALLATION NOTICE ★ ★

- All load cells, load cell cables and interconnecting cables used to connect all scale components shall be located **a minimum of thirty-six (36”) inches distance away** from all single and multiple phase high energy circuits and electric current carrying conductors.



- This includes digital weight instruments, junction boxes, sectional controllers, and power supplies.
- This includes any peripheral devices, such as printers, remote displays, relay boxes, remote terminals, card readers, and auxiliary data entry devices.
- Also included is the scale components themselves, such as 120 volt AC, 240 volt AC, 480 volt AC and electric supply of higher voltage wiring runs and stations, AC power transformers, overhead or buried cables, electric distribution panels, electric motors, florescent and high intensity lighting which utilize ballast assemblies, electric heating equipment, traffic light wiring and power, and relay boxes.
- All scale components, including digital weight instruments and peripheral devices are not designed to operate on internal combustion engine driven electric generators and other similar equipment.

✓ ***Electric arc welding*** **can severely damage scale components such as digital weight instruments, junction boxes, sectional controllers, power supplies, and load cells.**

NOTE: *For additional information, please contact your* **Fairbanks Scales Service Representative.**

3.2. MOUNTING AND WIRING THE INSTRUMENT

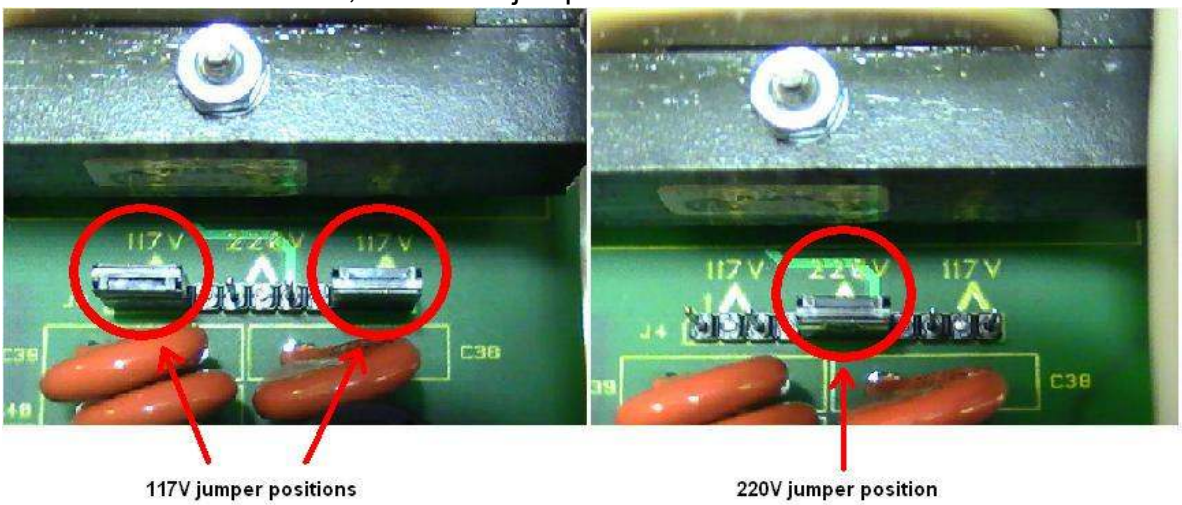
3.2.1. Basic Installation Steps

The NexWeigh Instruments arrive fully assembled.

C A U T I O N

The Factory Default Setting for the NexWeigh is 110 to 120 VAC operation.
For 220 to 240 VAC operations, change the setting as shown below before powering up the unit.

1. Ensure the AC power cord is disconnected from any power sources.
2. Remove the cover and place the unit face down on a bench.
3. On the main PC board, locate the jumpers at J4



117V jumper positions

220V jumper position

4. Remove the jumpers from the 117V positions and replace one of them on the 220V position as shown.

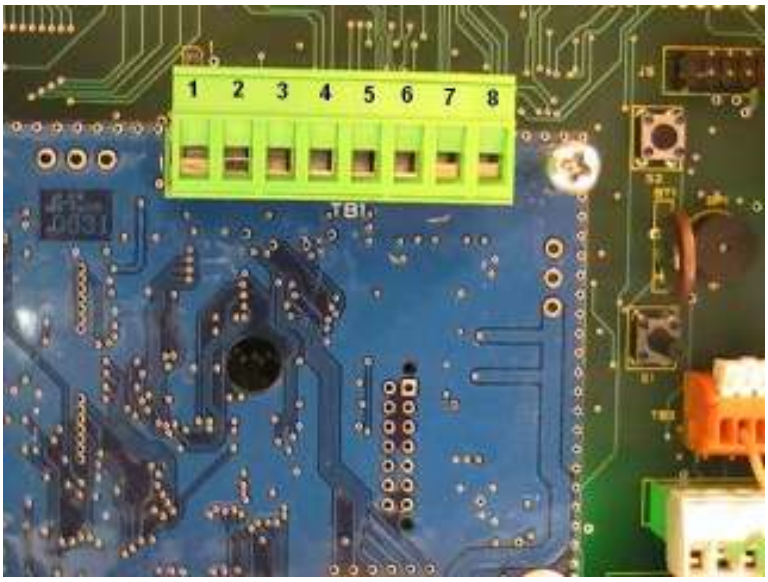
5. Remove the 120 VAC plug from the end of the power cord and attach a proper 220-240 VAC plug. Connect the green wire and the shield to the ground lug. **Please note, original wiring connects brown to AC hot and blue to neutral.**

6. Reattach all cables and replace the front cover assembly.

Caution: Improper connections at J4 can cause catastrophic damage to the instrument

3.2.2. Connecting to the Load Cells

Connect the platform interface cable wires to the terminal strip TB1 on the **Small Block PCB** as follows:



TB1 Pin no.	FUNCTION
1	(–) Excitation
2	(+) Excitation
3	(+) Sense
4	(-) Sense
6	Shield
7	(+) Signal
8	(–) Signal

Note: *Pin numbers added for clarity.*

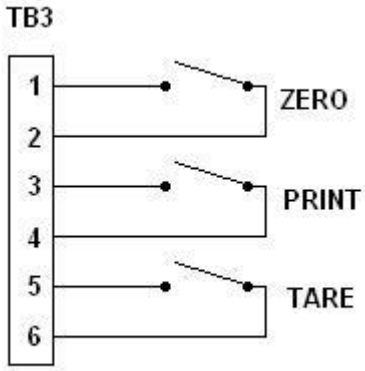
Note: There are no internal sense jumpers provided. Jumpers must be installed from +Excitation to +Sense and from –Excitation to –Sense if no sense leads are used.

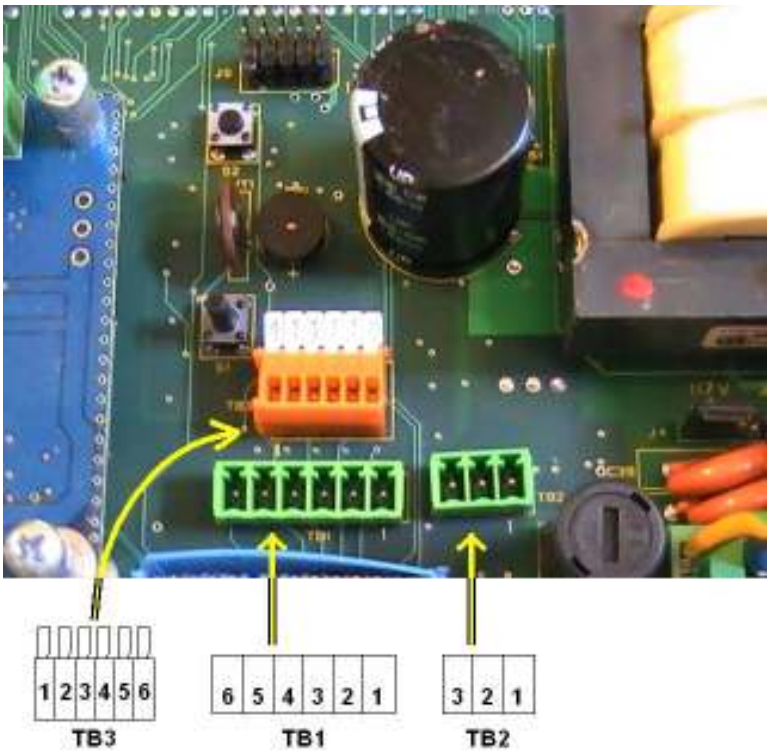
Reassemble housing and proceed with installation.

NOTE: *Refer to the appropriate **Platform Service Manual** for the proper interface wiring color code.*

3.2.3. Remote switches

The NexWeigh has three available remote switch inputs. A dry contact normally open switch can be mounted and operated remotely using the connections on **TB3**.





3.2.4. Powering Up the Instrument

The Instrument performs a warm-up cycle.

- The Instrument initiates a test, displaying numbers 1 to 8, and lights up all LED's.
- The **Program number** and **Revision Information** displays.
- The Instrument then displays the current weight on the scale

Section 4: Programming Configuration

4.1. OVERALL STEPS

Follow these steps to program the **NexWeigh Instrument**.

A. Configure the **NexWeigh Instrument** operating parameters.

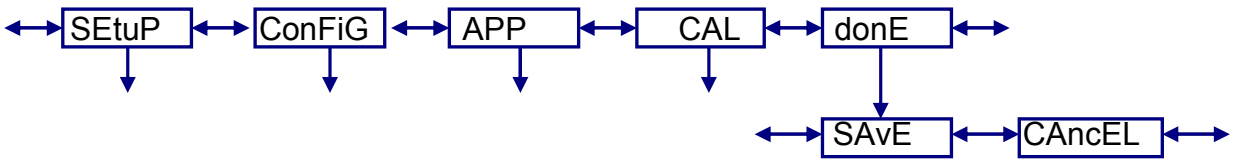
B. Calibrate the **NexWeigh Instrument.**

C. Set up the **NexWeigh Instrument** options.

4.2. INTRODUCTION

- The program group is shown and accessed in steps.
- Each program group may be entered and modified, or skipped to the next group.
- At each step, a word or abbreviation displays, indicating the parameter to be set.
- Each step then may be viewed or modified.
- At the end of programming a **SAvE** prompt will be displayed.
- Press **PROGRAM/ENTER** to **SAvE** and exit or scroll to **CAncEL** to disregard changes made.

The following is a rendering of the four programming groups. Pressing **OVER/UNDER/NEXT** or **TARE** will scroll through the choices listed. **PROGRAM/ENTER** will enter the program steps in a particular group. See chart in Sec 4.3 for full details of front panel pushbuttons for programming mode.



4.3. KEYPAD FUNCTIONS, PROGRAMMING MODE.

This chart shows what action will be taken when a front panel key is pressed in the programming mode.

KEY	ACTION
1	No function in programming mode. • Exception, decrements selected digit when entering numeric data.
2	No function in programming mode. • Exception exits to done prompt when entering numeric data.
3	No function in programming mode. • Exception, moves flashing digit to far left position when entering numeric data.
4	No function in programming mode.
TARE	Scrolls backwards through the choices for each program step. • Exception, moves flashing digit left when entering numeric data.
ZERO	Accepts the displayed value and advances to the next program step like **ENTER**. • Exception, resets all digits to zeroes when entering numeric data.
PROGRAM ENTER	Accepts the displayed value and advances to the next program step.
OVER/UNDER NEXT	Scrolls forward through the choices for each program step. • Exception, moves flashing digit right when entering numeric data.
UNITS	Scrolls forward through the choices for each program step • Exception, increments digit when entering numeric data.
B/G NET	Scrolls backward through programming steps. • Returns to the Weigh Mode after multiple pressings.
PRINT	No function in programming mode. Scrolls decimal point to the right in CAL mode.

4.4. MENU ACCESS

This chart shows which menus can be accessed from the front panel based on the security level setting and the internal jumper (JP1) position.

MENU	SL0	SL0	SL1	SL1	SL2	SL2	SL3	SL3	SL4	SL4	SL5	SL5
	JP1	JP1	JP1	JP1	JP1	JP1	JP1	JP1	JP1	JP1	JP1	JP1
	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In
SEtUP	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N
ConFiG	Y	N	Y	N	Y	N	N	N	N	N	N	N
APP	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N
CAL	Y	N	Y	N	N	N	N	N	N	N	N	N
ChEc / HoLd	Y	N	Y	N	Y	N	N	N	N	N	N	N

4.5. PROGRAMMING STEPS

4.5.1. Setup Menu

1. Press and hold the **PROGRAM/ENTER** key or press **S1** on the main PCB to display **SEtuP**.
2. Press the **PROGRAM/ENTER** key to enter setup mode.
3. Press **ZERO** to set the desired Programming Menu.

The following section defines the program settings for the NexWeigh Instrument. The default selections are underlined.

Programming Time Format: This will determine whether the clock is displayed and printed in 24 hour (military) or 12 hour (AM/PM) format. The display will indicate either **12hour** or **24hour**. Press **OVER/UNDER/NEXT** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

SEt-ti: Programming the Time: Time is set as **HH.MM.SS** and must be entered in military format. The display will indicate **SEt-ti** followed by the current time with the 10s digit of the hour flashing. Press **UNITS** to increase the digit or the **1** button to decrease the digit. Press **OVER/UNDER/NEXT** to move the flashing digit right or press **TARE** to move the flashing digit left. When the time is correct, press **PROGRAM/ENTER** to accept the time and go to the next step.

SEt-dA: Programming the date: Date is set as MM.DD.YY format. The display will indicate **SEt-dA** followed by the current date with the 10s digit of the month flashing. Press **UNITS** to increase the digit or the **1** button to decrease the digit. Press **OVER/UNDER/NEXT** to move the flashing digit right or press **TARE** to move the flashing digit left. When the date is correct, press **PROGRAM/ENTER** to accept the date and go to the next step.

Id: Scale ID: This step sets the scale ID from **1-32**. The display will indicate **Id XX** where **XX** is the current ID setting. Press **OVER/UNDER/NEXT** or **UNITS** to increase the setting, or press **TARE** to decrease the setting. When the correct ID is displayed, press **PROGRAM/ENTER** to enter the value. The default Id is **01**.

4.5.1. Setup Menu, Continued

Port 1: Programming Port 1: The display will indicate **Port 1,** then **OutPut**, then the current setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to scroll through the available choices. Press **PROGRAM/ENTER** to enter the correct selection. Available selections are listed below.

OFF	*Function is not active.*
PoLL	*Computer demand mode.*
PoLLid	*Computer demand mode with ID*
Contin	*Continuous output.*
button	*Transmit when* **PRINT** *is pressed.*
Auto	*Transmit occurs when* **Autoprint** *threshold is met or exceeded.*
diS	*Continuous output using remote display format.*

* *Underline identifies the program default*

bAud: Programming Port 1 baud rate: The display will indicate **bAud** then the current setting. Press **OVER/UNDER/NEXT** or **UNITS** to scroll up, or **TARE** to scroll down through the available choices. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

300 600 1200 2400 4800

9600 19200 38400 57600 115200

dbit: Programming Port 1 data bits: The display will indicate **dbit X** where **X** is either **7** or **8**. Press **OVER/UNDER/NEXT** , **UNITS** , or **TARE** to select proper value. Press **PROGRAM/ENTER** to enter proper selection.

P: Programming Port 1 Parity setting: The display will indicate **P** along with the current setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

P nonE P odd P EvEn

buSY: Programming Port 1 handshaking: The display will indicate **XXbuSY**, where **XX** is either **no, Lo**, or **Hi**. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

4.5.1. Setup Menu, Continued

oPti: Include time data with transmitted data: This determines whether or not to include the time in the data string for Port 1. Display will indicate **oPti** followed by the current selection of **Y** for yes to include, or **n** for no to exclude. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

oPdA: Include date data with transmitted data: This determines whether or not to include the date in the data string for Port 1. Display will indicate **oPdA** followed by the current selection of **Y** for yes to include, or **n** for no to exclude. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

oPId: Include ID data with transmitted data: This determines whether or not to include the ID in the data string for Port 1. Display will indicate **oPId** followed by the current selection of **Y** for yes to include, or **N** for no to exclude. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

Port 2: Programming Port 2: The display will indicate **Port 2**, then **OutPut,** then the current setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to scroll through the available choices. Press **PROGRAM/ENTER** to enter the correct selection. Available selections are listed below.

OFF	*Function is not active.*
PoLL	*Computer demand mode.*
PoLLid	*Computer demand mode with ID*

* *Underline identifies the program default*

NOTE: *If* **B/G / NET** *is pressed after* **Port 2***, the instrument will revert back to* **ID**.

4.5.1. Setup Menu, Continued

bAud: Programming Port 2 baud rate: The display will indicate **bAud** then the current setting. Press **OVER/UNDER/NEXT** or **UNITS** to scroll up, or **TARE** to scroll down through the available choices. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

300	**600**	**1200**	**2400**	**4800**
9600	**19200**	**38400**	**57600**	**115200**

dbit: Programming Port 2 data bits: The display will indicate **dbit X** where **X** is either **7** or **8**. Press **OVER/UNDER/NEXT**, **UNITS**, or **TARE** to select proper value. Press **PROGRAM/ENTER** to enter proper selection.

P: Programming Port 2 Parity setting: The display will indicate **P** along with the current setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

P nonE **P odd** **P EvEn**

oPti: Include time data with transmitted data: This determines whether or not to include the time in the data string for Port 2. Display will indicate **oPti** followed by the current selection of **Y** for yes to include, or **n** for no to exclude. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

oPdA: Include date data with transmitted data: This determines whether or not to include the date in the data string for Port 2. Display will indicate **oPdA** followed by the current selection of **Y** for yes to include, or **n** for no to exclude. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

oPId: Include ID data with transmitted data: This determines whether or not to include the ID in the data string for Port 2. Display will indicate **oPId** followed by the current selection of **Y** for yes to include, or **n** for no to exclude. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

4.5.1. Setup Menu, Continued

Int: Display brightness setting: This changes the intensity of the display brightness. The display will indicate **Int** followed by the intensity setting from **1**-**7**, with **7** being the brightest. Press **OVER/UNDER/NEXT** or **UNITS** to scroll up, or **TARE** to scroll down through the available choices. Press **PROGRAM/ENTER** to enter the selection. The default setting is **4**.

The NexWeigh instrument will return to the **SEtuP** *prompt. Navigate to the desired menu heading to continue programming, or select* **Done** *to finish.*

4.5.2. Configuration Menu

4. Press and hold the **PROGRAM/ENTER** key or press **S1** on the main PCB to display **SEtUP**.
5. Press UNITS or OVER/UNDER/NEXT to display ConFiG.
6. Press the **PROGRAM/ENTER** key to enter setup menu.

CAP: Programming the scale capacity: The display will indicate **CAP** followed by the current setting with the most significant digit blinking. Press **UNITS** to scroll up, or the **1** to scroll down to the desired numeric value. The **OVER/UNDER/NEXT** key will move the flashing digit to the right, and the **TARE** key will move it left. Press **PROGRAM/ENTER** when the display shows the correct capacity setting.

NOTE: *Capacity can be up to* **six (6) displayed digits**.

4.5.2. Configuration Menu, Continued

UnitS: Programming the scale units: The display will indicate **UnitS**, and the current setting by displaying a lit LED symbol next to the printed unit legend beside the display. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to scroll through all the possible choices. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

lb/oz/kg/g	**lb/oz/kg**	**lb/oz/g**	**lb/oz**
lb/kg/g	**lb/kg**	**lb/g**	**lb**
oz/kg/g	**oz/kg**	**oz/g**	**oz**
kg/g	**kg**	**g**	

NOTES:

- *The* **lb-oz** *and* **custom unit settings** *cannot be used as the* **Primary Unit** *in the NEXWEIGH.*

- *The* **lb-oz** *and* **custom unit settings** *are* ***not legal for trade****.*

P-Unit: Programming the primary unit: (the unit that the instrument will default to upon power up) The display will indicate **P-Unit** and indicate the current setting by displaying the lit LED next to the printed unit legend beside the display. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** while observing the LED which will change to indicate the selection. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

lb **g** **kg** **oz**

NOTE: *Selection availability is dependent upon the programmed* **UnitS** *selection.*

LboZ: pounds-ounces mode: The display will indicate **LboZ** and the current selection, either **Y** for enable or **N** for disable. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

4.5.2. Configuration Menu, Continued

CuSt: Custom units. The display will indicate **CuSt** and the current selection, either **Y** for enable or **N** for disable. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

NOTE: *When custom units are active, units LED instruments are off in the weigh mode.*

AZt: Programming the Automatic Zero Tracking band: (this feature will maintain zero when small amounts of material are placed on the scale, such as rain, snow, debris, etc.) The display will indicate **AZt X** where **X** is the current setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

OFF	*Function is not active.*
0.5	*Half (½) of a division / increment / graduation.*
1	*One (1) division / increment / graduation.*
3	*Three (3) divisions / increments / graduations.*

* *Underline identifies the program default.*

bAL: Programming the motion band (the range in divisions/increments/graduations that weight must be stable before a print, zero, or tare function will be allowed). The display will indicate **bAL X** where **X** is the current setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

OFF	*Function is not active.*
0.5	*Half (½) of a division / increment / graduation.*
1	*One (1) division / increment / graduation.*
3	*Three (3) divisions / increments / graduations.*

* *Underline identifies the program default.*

4.5.2. Configuration Menu, Continued

O.r: Programming the zero range: (the percentage of scale capacity that may be removed by pressing the Zero Key). The display will indicate **O.r X** where **X** is the current setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

100	*100 percent zero range*
2	*2 percent zero range*

d: Programming the division size: The display will indicate **d** followed by the current division size setting. Press **OVER/UNDER/NEXT** or **UNITS** to scroll up, or **TARE** to scroll down through the available choices. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

50	**20**	**10**	**5**	**2**	**1**
0.5	**0.2**	**0.1**	**0.05**	**0.02**	**0.01**
0.005	**0.002**	**0.001**	**0.0005**	**0.0002**	**0.0001**

FiLtEr: Programming the filter setting: (intended to minimize the effects of motion, vibration, and wind currents) The display will indicate **FiLtEr** followed by the current filter setting. Press **OVER/UNDER/NEXT** or **UNITS** to scroll up, or **TARE** to scroll down through the available choices. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

1 3 5 11 15 20 30 50

FLF: Flush filter factor: Allows instrument to switch to fast filter rate if weight change exceeds the number of divisions in setting. The display will indicate **FLF** followed by the current setting. Press **OVER/UNDER/NEXT** or **UNITS** to scroll up, or **TARE** to scroll down through the available choices. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

oFF 1 2 5 10 20 50 100

4.5.2. Configuration Menu, Continued

tArE: Programming the tare setting: (the means by which a container's weight may be removed, to set the instrument to display the net weight only) The display will indicate **tArE** followed by the current tare setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

OFF	*Tare is **disabled**.*
ON	*Tare is **active**.*
On-CLr	*Tare automatically clears when Gross weight returns to **Zero**.*

* *Underline identifies the program default*

HL: Overload limit: The actual value at which the display goes to **OL** (represented as a percentage of capacity). The display will indicate **HL** followed by the current setting. Press **OVER/UNDER/NEXT** or **UNITS** to scroll up, or **TARE** to scroll down through the available choices. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

102.5 **103** **105** **110** **300**

UL: **U**nderload **L**imit: The actual value at which the display goes to **UL** (represented as a percentage of capacity behind zero). The display will indicate **UL** followed by the current setting. Press **OVER/UNDER/NEXT** or **UNITS** to scroll up, or **TARE** to scroll down through the available choices. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

5.5 **10** **25** **50** **100**

4.5.2. Configuration Menu, Continued

d rAtE: Programming the display update rate: The times between display updates in seconds. The display will indicate **d rAtE** and then the current setting. Press **OVER/UNDER/NEXT** or **UNITS** to scroll up, or **TARE** to scroll down through the available choices. Press **PROGRAM/ENTER** to enter the selection. Available selections are:

0.1 0.2 <u>0.3</u> 0.4 0.5 0.6 0.7 0.8
0.9 1.0

P1: Output format of Port1, GTN or net only: This determines whether the output from Port1 will be transmitted as a net weight only or a gross/tare/net weighment. The display will indicate **P1** followed by the current setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection. Available choices are:

Gtn <u>nEt</u>

P2: Output format of **Port2**, **GTN** or **net only**: This determines whether the output from Port2 will be transmitted as a net weight only or a gross/tare/net weighment. The display will indicate **P1** followed by the current setting. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection. Available choices are:

Gtn <u>nEt</u>

The NexWeigh instrument will now return to the **ConFiG** prompt. Navigate to the desired menu heading to continue programming, or to **DONE** to finish.

4.5.3. APP Menu

7. Press and hold the **PROGRAM/ENTER** key or press **S1** on the main PCB to display **SEtUP**.
8. Press **UNITS** or **OVER/UNDER/NEXT** twice to display **APP.**
9. Press the **PROGRAM/ENTER** key to enter **APP** menu.

X.XXuPd: Display microvolts per division: This is a reference to display the current microvolts per division. The display will indicate **X.XXuPd** where **X.XX** is a numeric value of the microvolts per division. Press any front panel pushbutton other than **B/G / NET** to continue.

4-20: 4-20mA analog output setting: Enables or disables the output. The display will indicate **4-20** followed by the current setting of **Y** for enable and **N** for disable. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

ACC: Accumulate feature enabled: Enables or disables the accumulate feature. The display will indicate **ACC** followed by the current setting of **Y** for enable and **N** for disable. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

A thLd: Autoprint and accumulate threshold: This is the number of divisions the instrument must meet or exceed for an autoprint or an auto-accumulation to occur. The display will indicate **A thld**, followed by the current setting in divisions with the left digit flashing. Press **UNITS** to increase the digit, press the **1** key to decrease the flashing digit. Press **OVER/UNDER/NEXT** to move the flashing digit to the right or press the **TARE** to move it to the left. Press **PROGRAM/ENTER** when the display shows the correct threshold setting. The acceptable range is 1 to 1000 and default value is **10** divisions.

4.5.3. APP Menu, Continued

AOut: Autoprint and autoaccumulate output: This setting will determine whether the instrument will autoprint during an automatic accumulation. This setting is only active if port 1 is set to **Auto** and accumulation is enabled. The display will indicate **AOut** followed by a **Y** for enable or an **n** for disable. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

bEEP: Audible tone when key is pressed: This will enable or disable the audible tone to acknowledge pressing a front panel key. The display will indicate **bEEP** followed by a **Y** for enable or an **n** for disable. Press **OVER/UNDER/NEXT**, **UNITS** or **TARE** to change the selection. Press **PROGRAM/ENTER** to enter the selection.

C-FACt: Conversion factor for custom units: The primary units divided by this value will determine the custom units if it is enabled. The display will indicate **C-FACt** followed by a value with the left digit flashing. Press **UNITS** to increase the digit, press the **1** key to decrease the flashing digit. Press **OVER/UNDER/NEXT** to move the flashing digit to the right or press the **TARE** to move it to the left. Press **PRINT** to move the decimal point to the right. Press **PROGRAM/ENTER** when the display shows the correct conversion factor.

The default conversion factor is **8.3333** for gallons of water conversion.

Note: An example of custom units might be to display the weight in tons. In this case the conversion factor is **2000.0** if the primary unit is lb.

The NexWeigh instrument will now return to the **APP** prompt. Navigate to the desired menu heading to continue programming, or to **Done** if finished.

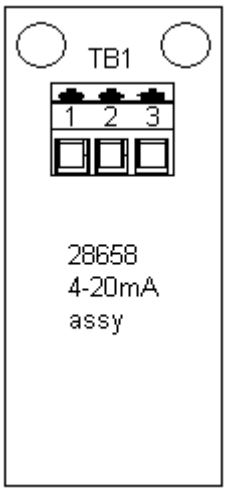
4.5.4. 4-20mA output setup

Introduction

The 4-20mA analog output is passive, so therefore it requires the receiving element to supply the loop with a dedicated, isolated power source from 7-40V DC. The output is linear throughout the range from 4mA to 20mA, and can be programmed to increase (upweigh) or decrease (downweigh) as weight is increased.

Connections are as follows:

Pin 1	+ 4-20mA
Pin 2	– 4-20mA



Press and hold the **UNITS** key until the instrument displays **4-20** followed by either **GroSS** or **nEt**. This determines whether the output will follow the gross or net weight. Press **OVER/UNDER/NEXT** to toggle between the two choices and select the desired mode. Press **PROGRAM/ENTER** to enter the selected choice.

Instrument will now display **4-20.Lo** followed by a weight value with the left digit flashing, and the primary units LED lit for programming reference. This is the weight at which the output will be 4mA. Please note that at this time the output will be forced to 4mA to allow the user to verify that the receiving device is set properly.

Press **UNITS** to increase the digit, press the **1** key to decrease the flashing digit. Press **OVER/UNDER/NEXT** to move the flashing digit to the right or press the **TARE** to move it to the left. Press **PRINT** to move the decimal point to the right. Press **PROGRAM/ENTER** when the display shows the desired weight value.

Instrument will now display **4-20.Hi** followed by a weight value with the left digit flashing, and the primary units LED lit for programming reference. This is the weight at which the output will be **20mA**. Please note that at this time the output will be forced to 20mA to allow the user to verify that the receiving device is set properly.

Press **UNITS** to increase the digit, press the **1** key to decrease the flashing digit. Press **OVER/UNDER/NEXT** to move the flashing digit to the right or press the **TARE** to move it to the left. Press **PRINT** to move the decimal point to the right. Press **PROGRAM/ENTER** when the display shows the desired weight value to return to normal weighing.

Section 5: Serial I/O

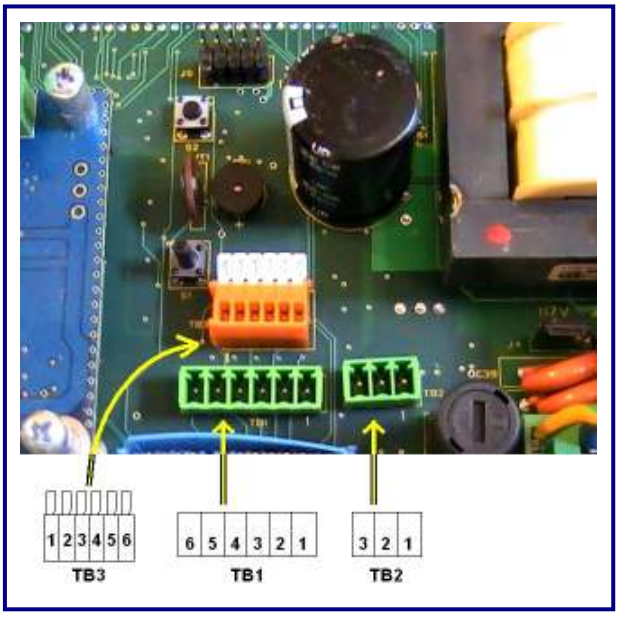
5.1. INTRODUCTION

The NexWeigh Instrument is equipped with two (2) serial output ports. Port 1 is a bidirectional RS232 port, and Port 2 is a bidirectional RS485 port. Port 1 can be configured to operate with a variety of printers, computer applications, and remote displays.

5.2. CONNECTIONS

TB1 Pin	Port 1 designation
1	Chassis ground
2	Receive data (RX)
3	Transmit data (TX)
4	Clear to send (CTS)
5	Signal ground (GND)
6	Request to send (RTS)

TB2 Pin	Port 2 designation
1	RS485+
2	RS485-
3	Signal ground



5.3. PRINT DATA STRINGS

Serial Data String – Demand Mode:

Gross <WWWWWWWW> <SP> <lb><SP><GR><CR><LF>
Then, (if applicable)
Tare <WWWWWWWW> <SP> <lb><SP><TA><CR><LF>
Then, (if applicable)
Net <WWWWWWWW> <SP> <lb><SP><NT><CR><LF>
Then, (if applicable)
Time <HH><:><MM><:><SS><SP><AM><CR><LF>
Then, (if applicable)
Date <MM></><DD></><YY><CR><LF>
Then, (if applicable)
ID <Scale><SP><Id><SP><##><CR><LF>
<CR><LF>

Serial Data String – Continuous Mode:

Gross (Stable) <WWWWWWWW> <SP> <lb><SP><GR><CR><LF><EOT>

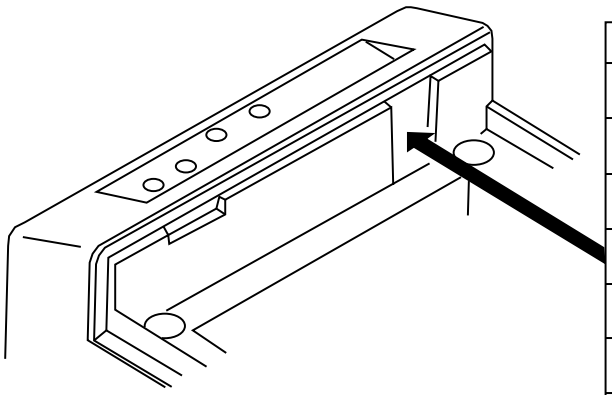
<WWWWWWWW>	Up to 6 places with no decimal, up to 7 places with a decimal point
<SP>	Space
<lb>	Unit of measure could be: lb, kg, gr, oz
<GR> or <gr>	Upper case indicates stable weight, lower case unstable weight
<TA>	Tare weight
<NT> or <nt>	Net weight (upper case = stable, lower case = unstable)
<CR>	Carriage return
<LF>	Line feed
<EOT>	End of text

Time	HH = Hour, MM = Minute, SS = Seconds, and AM or PM
Date	MM = Month, DD = Day, YY = last 2 digits of the year (20YY)
ID	“Scale Id” and ## = 2 digits for the actual scale ID

5.4. PRINTERS

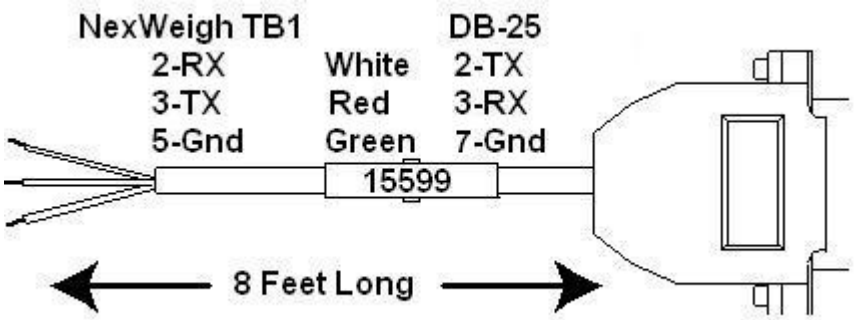
5.4.1. 3550 Tape Printer

The NexWeigh should be programmed for Port 1 Output button, 9600 baud, 8 data bits, no stop bits, and Hibusy.



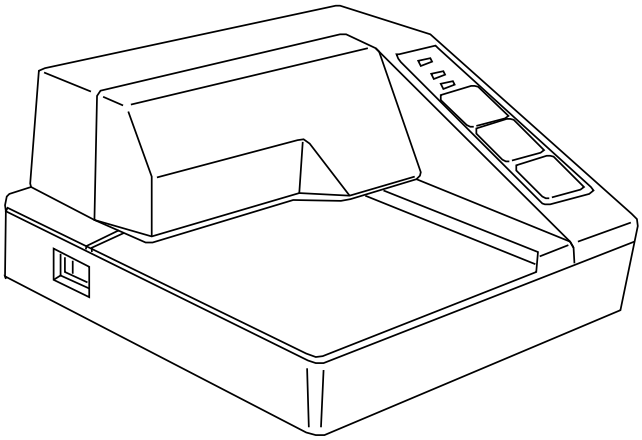
DS2	ON	OFF
1	X	
2	X	
3	X	
4		X
5	X	
6	X	
7		X
8		X

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



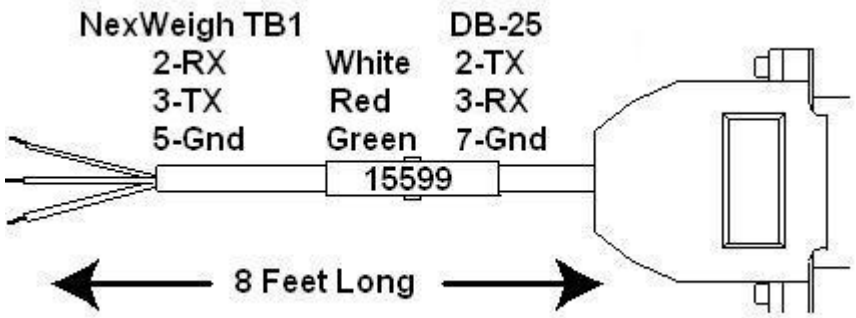
5.4.2. TM-U295 Ticket Printer

The NexWeigh should be programmed for Port 1 Output button, 9600 baud, 8 data bits, no stop bits, and Hibusy.



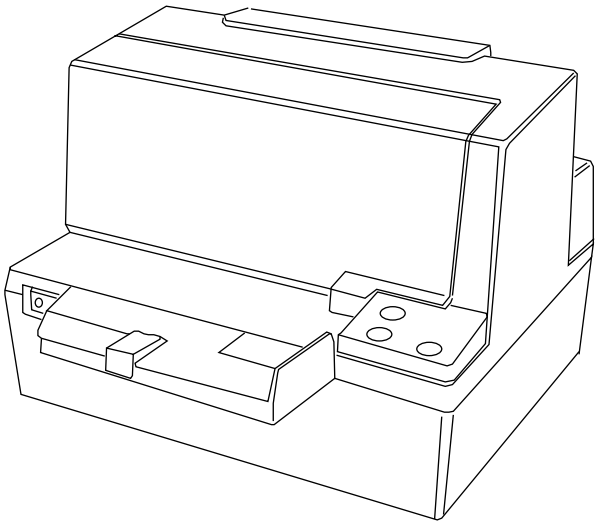
Set the printer's dip switches per the following:

1 and 3 on, the rest off.



5.4.3. TM-U590 Ticket Printer

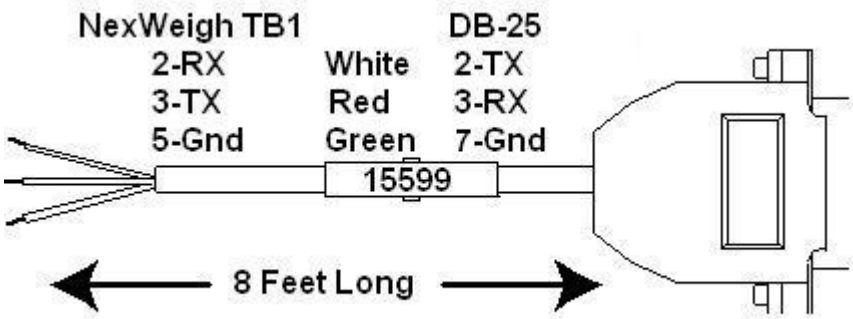
The NexWeigh should be programmed for Port 1 Output button, 9600 baud, 8 data bits, no stop bits, and Hibusy.



Set the printer's dip switches per the following:

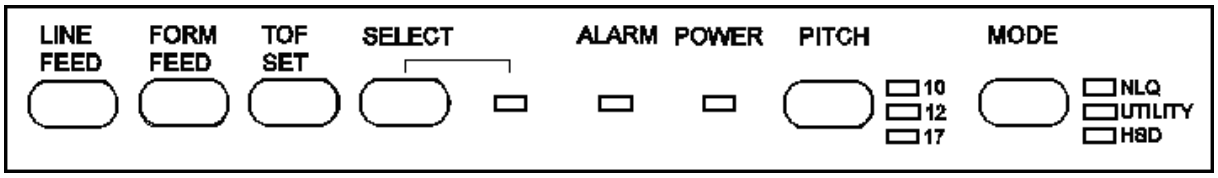
DSW 1: 1, 3, and 7 on only.

DSW 2: All off.



5.4.4. Okidata 186T Form Printer

The NexWeigh should be programmed for Port 1 Output button, 9600 baud, 8 data bits, no stop bits, and Hibusy.



Follow these steps to change Menu Settings.

1. To enter **MENU MODE**, press and hold **SELECT** while turning on the printer. The **12** and **UTILITY** LEDs will blink.

2. With the printer in the **MENU MODE**, press **SELECT** to print the complete menu. The current default settings print out. It is recommended to use tractor fed paper.

NOTE: *The printed menu selections are different for each emulation mode.*

3. Press **LINE FEED** to select the relevant group that needs to be changed (the group is the left-hand column on the Menu printout).

4. Press **FORM FEED** to select the relevant item within the selected group (the Item is the center column on the Menu printout).

5. Press **TOF SET** to cycle through the settings available for the item you want to change (the settings are the right-hand column on the Menu printout).

6. To continue making changes: press **LINE FEED** for the next group or press **FORM FEED** for the next item. Repeat as needed until you are finished changing settings.

7. Press **PITCH** and **MODE** together to save the changes and exit the **MENU MODE**.

NOTES: *Exiting the* **Menu Mode** *by turning off the printer will cancel any changed settings.*

5.4.4. Okidata 186T Form Printer, Continued

Printed menu's changes per Printer Emulation Mode. ***If printer emulation mode is NOT set to*** ML, ***set this first, then reprint the menu. Then set menu as follows:***

(**GROUP**) **(press LINE FEED to change)**	**(ITEM) (press FORM FEED to change)**	**(SET) (press TOF SET to change)**
Printer Control	Emulation Mode	ML
Font	Print Mode	Utility
Font	DRAFT Mode	SSD
Font	Pitch	10 CPI
Font	Proportional Spacing	No
Font	Style	Normal
Font	Size	Single
Symbol Sets	Character Set	Standard
Symbol Sets	Language Set	American
Symbol Sets	Zero Character	Slashed
Symbol Sets	Code Page	USA
Vertical Control	Line Spacing	6 LPI
Vertical Control	Skip Over Perforation	No
Vertical Control	Page Length	11"
Set-Up	Graphics	Bi-directional
Set-Up	7 or 8 Bits Graphics	7
Set-Up	Receive Buffer Size	128K
Set-Up	Paper Out Override	No
Set-Up	Paper Registration	0
Set-Up	7 or 8 Bits Data Word	8
Set-Up	Operator Panel Function	Full Operation
Set-Up	Reset Inhibit	No
Set-Up	Print Suppress Effective	Yes
Set-Up	Auto LF	No
Set-Up	Print DEL Code	Yes
Set-Up	Time Out Print	Invalid
Set-Up	Auto Select	No
Set-Up	Impact Mode	Normal
Parallel I/F	I-Prime	Buffer Print
Parallel I/F	Pin 18	+5v
Parallel I/F	Bi-Direction	Enable

5.4.4. Okidata 186T Form Printer, Continued

Serial PCB Assy Switch Settings: (SW1) (** indicates typical Fairbanks setting)

Parity Type	Switch 1 (SW1)
** Odd parity	**ON**
Even parity	OFF

Parity	Switch 2 (SW1)
** No parity	**ON**
With parity	OFF

Data Bits	Switch 3 (SW1)
** 8 Bits	**ON**
7 Bits	OFF

Protocol	Switch 4 (SW1)
Ready/Busy	ON
** X-ON, X-OFF	**OFF**

Test Select	Switch 5 (SW1)
** Circuit	**ON**
Monitor	OFF

Mode Select	Switch 6 (SW1)
** Print mode	**ON**
Test mode	OFF

Busy Line Selection	Switch 7, 8 (SW1)
SSD- Pin 11	OFF, ON
SSD+ Pin 11	OFF, OFF
** DTR- Pin 20	**ON, ON**
RTS- Pin 4	ON, OFF

5.4.4. Okidata 186T Form Printer, Continued

(SW2) (** indicates typical Fairbanks setting)

Transmission Speed	Switches 1, 2, 3 (SW2)
19,200 bps	ON, ON, ON
** 9,600 bps	**OFF, ON, ON**
4,800 bps	ON, OFF, ON
2,400 bps	OFF, OFF, ON
1,200 bps	ON, ON, OFF
600 bps	OFF, ON, OFF
300 bps	ON, OFF, OFF
110 bps	OFF, OFF, OFF

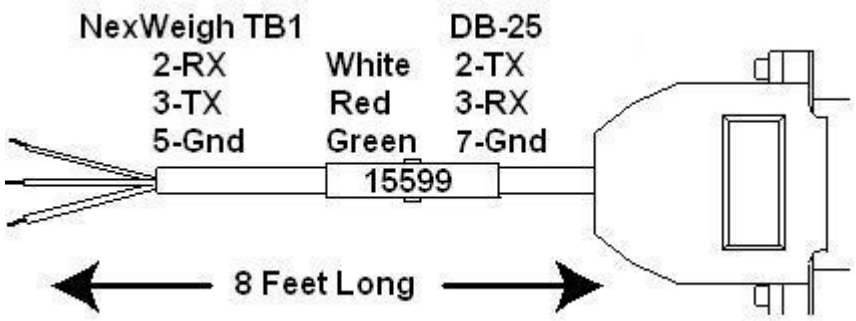
DSR Input Signal	Switch 4 (SW2)
Active	ON
** Inactive	**OFF**

Buffer Threshold	Switch 5 (SW2)
32 bytes	ON
** 256 bytes	**OFF**

Busy Signal Timing	Switch 6 (SW2)
** 200 ms minimum	**ON**
1 second minimum	OFF

DTR Signal	Switch 7 (SW2)
** Space after power on	**ON**
Space when printer is selected	OFF

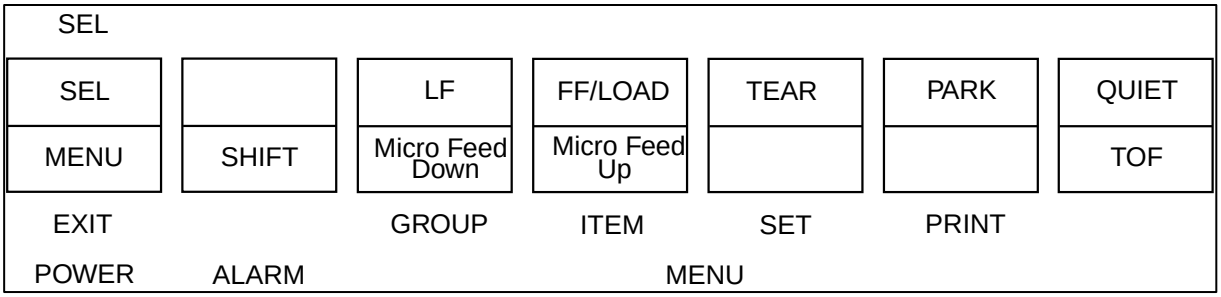
Not Used	Switch 8 (SW2)
**	**OFF**



5.4.5. Okidata 420 Form Printer

The NexWeigh should be programmed for Port 1 Output button, 9600 baud, 8 data bits, no stop bits, and Hibusy.

To change Menu Settings:



1. To enter MENU MODE, press and hold the SHIFT key while pressing the SELECT key. The “MENU” legend will be illuminated while in the menu mode.

2. With the printer in the Menu Mode, press PRINT to print the complete menu. The current default settings print out. It is recommended to use tractor fed paper.
NOTE: The printed menu selections are different for each emulation mode.

3. Press GROUP to select the relevant group that needs to be changed (the group is the left-hand column on the Menu printout).

4. Press ITEM to select the relevant item within the selected group (the Item is the center column on the Menu printout).

5. Press SET to cycle through the settings available for the item you want to change (the settings are the right-hand column on the Menu printout).

6. Press and hold the SHIFT key while pressing the SELECT key exit the Menu Mode.

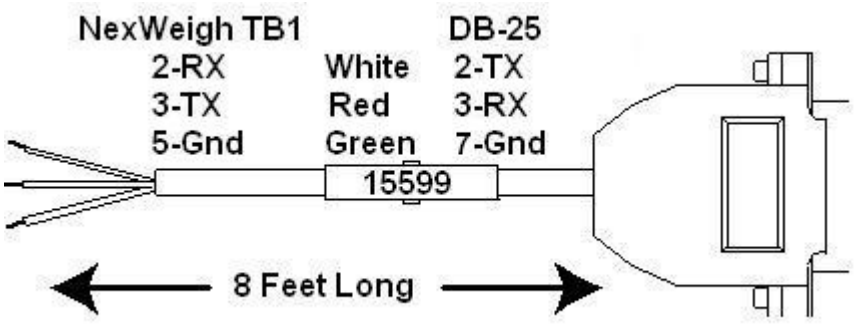
Note: *If you turn off the printer before exiting the menu mode,* **any changes will be lost.**

5.4.5. Okidata 420 Form Printer, Continued

(GROUP) (press LINE FEED to change)	(ITEM) (press FORM FEED to change)	(SET) (press TOF SET to change)
Printer Control	Emulation Mode	IBM PPR
Font	Print Mode	Utility
Font	DRAFT Mode	HSD
Font	Pitch	10 CPI
Font	Proportional Spacing	No
Font	Style	Normal
Font	Size	Single
Symbol Sets	Character Set	Set 1
Symbol Sets	Language Set	American
Symbol Sets	Zero Character	Slashed
Symbol Sets	Code Page	USA
Rear Feed	Line Spacing	6 LPI
Rear Feed	Form Tear-off	Off
Rear Feed	Skip Over Perforation	No
Rear Feed	Page Length	11”
Bottom Feed	Line Spacing	6 LPI
Bottom Feed	Form Tear-off	Off
Bottom Feed	Skip Over Perforation	No
Bottom Feed	Page Length	11”
Top Feed	Line Spacing	6 LPI
Top Feed	Form Tear-off	Off
Top Feed	Skip Over Perforation	No
Top Feed	Page Length	11”

5.4.5. Okidata 420 Form Printer, Continued

Set-Up	Graphics	Uni-directional
Set-Up	Receive Buffer Size	64K
Set-Up	Paper Out Override	No
Set-Up	Print Registration	0
Set-Up	Operator Panel Function	Full Operation
Set-Up	Reset Inhibit	No
Set-Up	Print Suppress Effective	Yes
Set-Up	Auto LF	No
Set-Up	Auto Select	No
Set-Up	SI Select Pitch (10CP)	17.1 CPI
Set-Up	SI Select Pitch (12CPI)	12 CPI
Set-Up	Time Out Print	valid
Set-Up	Auto Select	No
Set-Up	Centering Position	DEFAULT
Set-Up	ESC SI Pitch	17.1 CPI
Set-Up	Power Saving	Enable
Set-Up	Power Save Time	5 Min
Parallel I/F	I-Prime	Buffer Print
Parallel I/F	Pin 18	+5v
Parallel I/F	Bi-Direction	Enable
Serial I/F	Parity	None
Serial I/F	Serial Data 7/8 Bits	8 Bits
Serial I/F	Protocol	X-On/X-Off
Serial I/F	Diagnostic Test	No
Serial I/F	Busy Line	SSD-
Serial I/F	Baud Rate	9600 BPS
Serial I/F	DSR Signal	Invalid
Serial I/F	DTR Signal	Ready on Pwr up
Serial I/F	Busy Time	200 ms



5.4.6. Remote display

The NexWeigh can be connected to a 1600 Series remote display using Port 1.

The NexWeigh should be programmed for Port 1 Output dis, 2400 baud, 7 data bits, 1 stop bits, and nobusy.

NexWeigh TB1	1600 Series TB1
3 TX	3 RX
5 Gnd	2 Gnd

Note: *RS232 communications are limited to a length of* **50 cable feet.**

5.4.7. Computer output

The NexWeigh can be connected to a variety of computer systems utilizing the continuous or polled outputs. Connections to computers are done using the wiring chart provided earlier in this section. Ensure that all protocol (baud rate, parity, etc) matches at both devices connected.

Up to 6 data items are available for transmission; Gross, Tare, Net, Time, Date, and ID in that order. Each item is separated by a carriage return (CR) and a line feed (LF). All items enabled in the setup menu will be sent. If the instrument is in Gross mode, only gross weight will be sent. If the instrument is in Net mode, gross, tare and net will be sent if GTN is selected in config menu, or net only if NET is selected.

The table below shows a typical wiring diagram to a computer equipped with a db9 connector.

NexWeigh TB1	Computer
2 RX	3 TX
3 TX	2 RX
5 Gnd	5 Gnd

5.4.8. NexWeigh Serial Commands and Definitions

Commands are received and handled on either the RS232 (COM 1) port or RS485 (COM 2) port.

All commands are in a format terminated by a <CR>, carriage return
i.e. **"stu l \r"**

Commands are allowed or disallowed based on security level settings.
Commands with correct syntax/security level have no response;
Incorrect commands echo the command, with Fail ('F'), and a failure code.

a) Set Units
Definition: Used to change the Active Units. The Active Units are the units that the scale displays weight in. Only currently enabled units are allowed.
Command: 'stu' 'units'
Options: l=lb, k=kg, g=g, o=oz, z=lboz, c=custom

Sample Command: "stu l \r"

b) Change Units
Definition: Used to change to the next enabled unit. Simulates pressing of the units key.
Command: 'U'
Options: none

Sample Command: "U \r"

c) Zero Weight
Definition: Used to zero the gross weight on the display. Simulates the pressing of the zero key and is only performed if motion criteria and zero limits are met.
Command: 'Z'
Options: none

Sample Command: "Z \r"

d) Get Weight
Definition: Used to get weight from scale configured as a "polled" output. GTN, TDI, etc returned as configured.
Command: 'W'
Options: none

Sample Command: "W \r" or just plain "\r".

e) Net mode
Definition: Used to switch scale to net mode
Command: 'N'
Options: none

Sample Command: "N \r"

5.4.8. NexWeigh Serial Commands and Definitions, Continued

f) Gross mode

Definition: Used to switch scale to gross mode

Command: 'G'

Options: none

Sample Command: "G \r"

g) Gross or Net mode

Definition: Used to toggle scale between gross and net mode

Command: 'GN'

Options: none

Sample Command: "GN \r"

h) Set AZT band

Definition: Used to set the Auto zero tracking band. Only valid settings allowed.

Command: 'SAT' 'divisions'

Options: 0.5, 1, 3, 0

Sample Command: "SAT 0.5\r"

Sample Command: "SAT 3\r"

i) Set Scale Id

Definition: Used to set the scale's id field. Only valid ids between MINSCALEID and MAXSCALEID allowed.

Command: 'SSI' 'ID'

Options: 1-32

Sample Command: "SSI 25\r"

j) Set Output Mode

Definition: Used to set the serial output mode on the RS232 port. Polled, Polled w/id, Continuous, Printer, Auto Printer, Remote display.

Command: 'som' 'mode'

Options: POLL, POLLID, CONT, PRTR, APRT, REMD

Sample Command: "som POLL\r"

5.4.8. NexWeigh Serial Commands and Definitions, Continued

k) Recall Settings
Definition: Use recall current settings for Program, IO, and Checkweigh. Recommended to not use if output mode is continous, as data will begin to be overwritten with weight data.
Command: 'rcs' 'category'
Options: I, P, C

Sample Command: "rcs P\r"

l) Change Active recipe
Definition: Used to change to a particular recipe setting. Simulates the pressing of one of the recipe keys, only performed if that recipe is enabled.
Command: 'rcp' 'recipe'
Options: 1,2,3,4,0

Sample Command: "rcp 1\r"

m) Autotare Weight
Definition: Used to Autotare the gross weight. Simulates the pressing of Auto tare key. Only performed if motion criteria and Atare Enable met.
Command: 'A'
Options: none

Sample Command: "A \r"

n) Set Balance Band
Definition: Used to set the balance (motion) band. Only valid settings allowed.
Command: 'SBB' 'divisions'
Options: 0.5, 1, 3, 0

Sample Command: "SBB 0.5\r"
Sample Command: "SBB 3\r"

o) Set Display Rate
Definition: Used to set display update rate time in mSec. Only valid settings allowed.
Command: 'SDR' 'mSec'
Options: 100, 200, 500, 800, 1000 etc.

Sample Command: "SDR 500\r"
Sample Command: "SDR 1000\r"

5.4.8. NexWeigh Serial Commands and Definitions, Continued

p) Set Units of Record for Check weigh

Definition: Used to set the units of record parameter for a particular check weigh recipe. Must be a Mass standard, lb/oz and custom not allowed. Must be set before entering the actual weight limits for the ranges.

Command: 'SUR' 'recipe' 'unit'
Options: 1,2,3,4
Options: l=lb, k=kg, g=g, o=oz

Sample Command: "SUR 1 k \r"

q) Set Start of Under for Check weigh

Definition: Used to set the start of underweight parameter for a particular check weigh recipe. Value is a weight in the units of record set earlier.

Command: 'SSU' 'recipe' 'value'
Options: 1,2,3,4
Options: decimal weight value

Sample Command: "SSU 1 12.57 \r"

r) Set Start of Accept for Check weigh

Definition: Used to set the start of accept weight parameter for a particular check weigh recipe. Value is a weight in the units of record set earlier.

Command: 'SSA' 'recipe' 'value'
Options: 1,2,3,4
Options: decimal weight value

Sample Command: "SSA 1 14.1 \r"

s) Set Start of Over for Check weigh

Definition: Used to set the start of over weight parameter for a particular check weigh recipe. Value is a weight in the units of record set earlier.

Command: 'SSO' 'recipe' 'value'
Options: 1,2,3,4
Options: decimal weight value

Sample Command: "SSO 1 16.45 \r"

t) Set End of Over for Check weigh

Definition: Used to set the end of over weight parameter for a particular check weigh recipe. Value is a weight in the units of record set earlier.

Command: 'SEO' 'recipe' 'value'
Options: 1,2,3,4
Options: decimal weight value

Sample Command: "SEO 1 18.69 \r"

5.4.8. NexWeigh Serial Commands and Definitions, Continued

u) Set Weight Display mode for Check weigh
Definition: Used to set the display weight number yes or no parameter for a particular check weigh recipe.
Command: 'SWD' 'recipe' 'value'
Options: 1,2,3,4
Options: Y,N

Sample Command: "SWD 1 Y\r"
Sample Command: "SWD 2 N\r"

v) Set Recipe Enable for Check weigh
Definition: Used to set the recipe enable/disable parameter for a particular check weigh recipe.
Command: 'SRE' 'recipe' 'mode'
Options: 1,2,3,4
Options: E,D

Sample Command: "SRE 1 E\r"
Sample Command: "SRE 2 D\r"

w) Set Recipe Track gross or net for Check weigh
Definition: Used to set the recipe weight track parameter as gross or net for a particular check weigh recipe.
Command: 'SRT' 'recipe' 'mode'
Options: 1,2,3,4
Options: G,N

Sample Command: "SRT 1 G\r"
Sample Command: "SRT 2 N\r"

x) Set Tare Mode
Definition: Used to set the Auto tare enable parameter for the scale.
Command: 'STM' 'mode'
Options: ON, OFF, ON-CLR

Sample Command: "STM ON\r"

y) Set Filter Level
Definition: Used to set scale's filter size. Number of readings averaged. Only valid settings allowed.
Command: 'SFL' 'readings'
Options: 1, 3, 5, 11, 15, 20, 30, 50

Sample Command: "SFL 11 \r"

5.4.8. NexWeigh Serial Commands and Definitions, Continued

z) Set Flush Filter Band

Definition: Used to set scale's flush filter band in divisions. Only valid settings allowed.

Command: 'SFF' 'divisions'
Options: 1, 2, 5, 10, 20, 50, 100, 5000,

Sample Command: "SFF 5000 \r"

aa) Set Display Intensity

Definition: Used to set scales display intensity parameter. Only valid settings allowed.

Command: 'SDI' 'level'
Options: 1-7

Sample Command: "SDI 4\r"

bb) Set Zero Limit

Definition: Used to set the scales zero limit parameter. 100% for USA or 2% for Canada. Only valid settings allowed.

Command: 'SZL' 'range'
Options: 100, 2

Sample Command: "SZL 100\r"

cc) Set OverLoad Limit

Definition: Used to set the scales Over capacity limit parameter. Range is in %. Only valid settings allowed.

Command: 'SOL' 'range'
Options: 102.5, 105.0, 110.0, 150.0 etc.

Sample Command: "SOL 102.5\r"

dd) Set UnderLoad Limit

Definition: Used to set the scales Under capacity limit parameter. Range is in %. Only valid settings allowed.

Command: 'SUL' 'range'
Options: 25, 50, 100, etc.

Sample Command: "SUL 25\r"

ee) Set Custom Factor

Definition: Used to set the custom units conversion factor. Value is a number representing conversion from primary unit to custom unit, i.e. 8.33 lbs per gallon of water.

Command: 'SCF' 'value'
Options: decimal value

Sample Command: "SCF 8.33 \r"

5.4.8. NexWeigh Serial Commands and Definitions, Continued

ff) Set Primary Gradsize

Definition: Used to set the primary gradsize for the scale. Only valid settings allowed.

Command: 'SPG' 'value'
Options: decimal value, 0.0001 to 500

Sample Command: "SPG 0.01 \r"

gg) Set Primary Units

Definition: Used to set the primary units for the scale. Only valid settings allowed, no lboz or custom.

Command: 'SPU' 'unit'
Options: l=lb, k=kg, g=g, o=oz

Sample Command: "SPU o \r"

hh) Set Enabled Unit

Definition: Used to enable or disable a unit from the enabled units parameter for the scale. Only valid settings allowed.

Command: 'SEU' 'unit' 'mode'
Options: l=lb, k=kg, g=g, o=oz, z=lb/oz, c=custom
Options: E,D

Sample Command: "SEU l E \r"
Sample Command: "SEU k E \r"
Sample Command: "SEU o D \r"
Sample Command: "SEU g D \r"
Sample Command: "SEU z D \r"
Sample Command: "SEU c D \r"

ii) Set Peak Hold Enable

Definition: Used to enable or disable peak hold feature for the scale.

Command: 'SPH' 'mode'
Options: E,D

Sample Command: "SPH D \r"

jj) Set Time

Definition: Used to set the time in the RTC.

Command: STI
Options: Military format 00:00 to 23:59

Sample Command: "STI 12:34\r"

5.4.8. NexWeigh Serial Commands and Definitions, Continued

kk) Set Date

Definition: Used to set the date in the RTC.

Command: SDA
Options: mm/dd/yy

Sample Command: "SDA 05/28/99\r"

ll) Set Security Level

Definition: Used to set the scale's security level. Only valid levels between 0 and MAXSECURITYLEVEL allowed. This can be a dangerous command. One could cause themselves to be locked out from further commands.

Command: 'SSL' 'level'
Options: 0-5

Sample Command: "SSL 1\r"

mm) Set Capacity

Definition: Used to set the scale's capacity in Primary units.

Command: 'STC' 'value'
Options: decimal weight value

Sample Command: "STC 100 \r"

nn) Set Test Weight

Definition: Used to set the scale's test weight value in Primary units.

Command: 'STW' 'value'
Options: decimal weight value

Sample Command: "STW 75.5 \r"

oo) Set Accumulate Enable

Definition: Used to set the Accumulate enable parameter for the scale.

Command: 'SAC' 'mode'
Options: E,D

Sample Command: "SAC E\r"

pp) Set Output ID Enable

Definition: Used to set the Output Scale Id enable parameter for the scales serial output stream.

Command: 'SOI' 'mode'
Options: E,D

Sample Command: "SOI E\r"

5.4.8. NexWeigh Serial Commands and Definitions, Continued

qq) Set Output Time Enable
Definition: Used to set the Output Scale Time enable parameter for the scales serial output stream.
Command: 'SOT' 'mode'
Options: E,D

Sample Command: "SOT E\r"

rr) Set Output Date Enable
Definition: Used to set the Output Scale Date enable parameter for the scales serial output stream.
Command: 'SOD' 'mode'
Options: E,D

Sample Command: "SOD E\r"

ss) Set AutoPrint AutoAccumulate Out Enable
Definition: Used to set the Auto Print Auto Accumulate Out enable parameter for the scale.
Command: 'SAA' 'mode'
Options: E,D

Sample Command: "SAA E\r"

tt) Set Output Format
Definition: Used to set the Output Scale Format parameter for the scales serial output stream. GTN or NET only
Command: 'SOF' 'mode'
Options: GTN, NET

Sample Command: "SOF GTN\r"
Sample Command: "SOF NET\r"

uu) Set AutoPrint Threshold
Definition: Used to set the Auto print threshold limit in divisions.
Command: 'SAP' 'divisions'
Options: Integer value

Sample Command: "SAP 10\r"

5.4.8. NexWeigh Serial Commands and Definitions, Continued

vv) Set 4 to 20 ma

Definition: Used to set the 4-20 ma Analog IO parameters

Command: ‘s42’ ‘param’ ‘value’

Options: ENA = enable front panel setup (y/n)
NET = track net wt. (y/n)
HI = hi weight setting (decimal wt.)
LO = low weight setting (decimal wt.)

Sample Commands: "s42 HI 100.0\r"
"s42 ENA Y\r"
"s42 NET Y\r"
"s42 LO 2.20462\r"

ww) Save Nonvolatile Data

Definition: Used to commit parameters to NV storage,

Command: ‘SND’

Options: None

Sample Command: "SND \r"

5.5. CONFIGURING THE ETHERNET INTERFACE

The NexWeigh Ethernet Interface utilizes serial output, converting it to Ethernet output in order to communicate over an Network.

5.5.1. Obtaining the Fixed IP Address

To use the Ethernet Device Server, it is necessary to input the **Fixed IP Address.** Ask the customer's Network Administrator for this information.

The IP Address must be within a valid range, unique to the Network, and in the same subnet as the operator's PC. List it in the format as prescribed below.

		Examples:
IP Address:	___ ___ ___ ___	192.168.1.2.
Subnet Mask:	___ ___ ___ ___	255.255.255.0
Gateway:	___ ___ ___ ___	192.168.1.1

5.5.2. Connecting the Unit

Connect the Ethernet cable to the RJ45 port Network Connection.

5.5.3. Installing the DeviceInstaller GUI

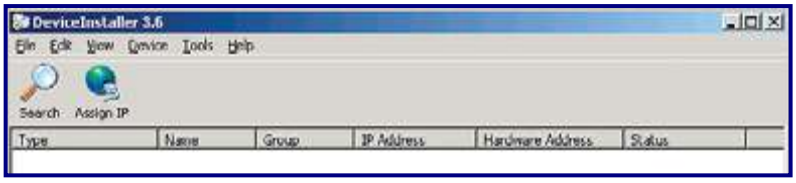
Insert the CD into the customer's CD-ROM drive.

If the CD does not launch automatically, follow these steps.

1. Click the **Start** button on the Task Bar and select **Run**.
2. Enter the **CD drive letter, colon, backslash, Launch.exe.**
   - *Example:* **E:\Launch.exe.**
3. Click the **DeviceInstaller** button.
4. Answer the questions given by the **Installation Wizard**.

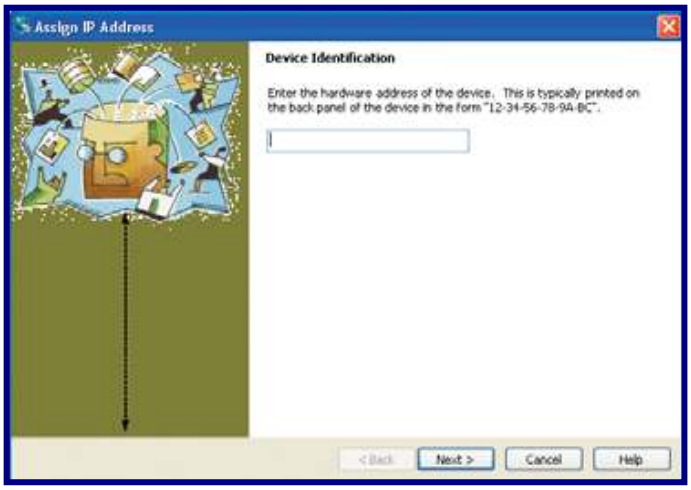
5.5.4. Assigning an IP Address and Network Class

1. Click the **Start** button on the Task Bar and select **[ALL] Programs ➔ Lantronix ➔ DeviceInstaller ➔ DeviceInstaller.**

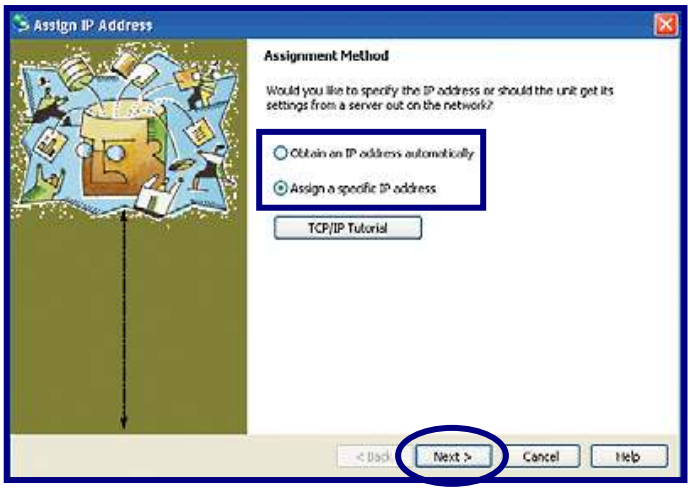


2. Click the **IP Icon** 

.
   - The **Device Identification** window displays.

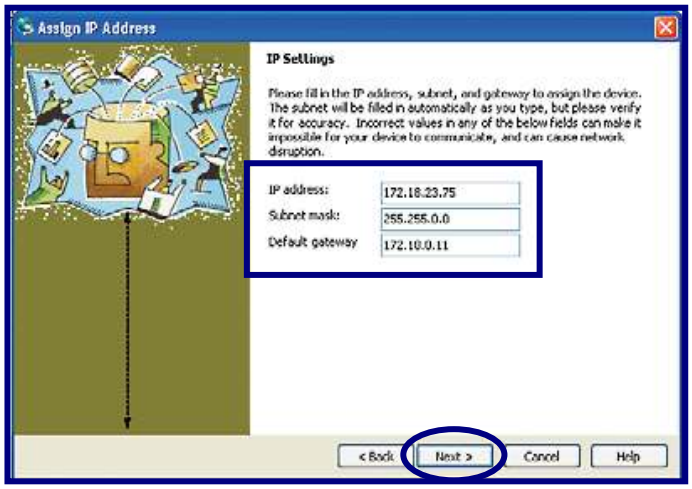


3. Enter the **Hardware Address** of the device.
   - The address is on the label on the underside of the Ethernet accessory module.
4. Select **Assign a specific IP** address to assign a static IP address to the device, or select Click **Next**.

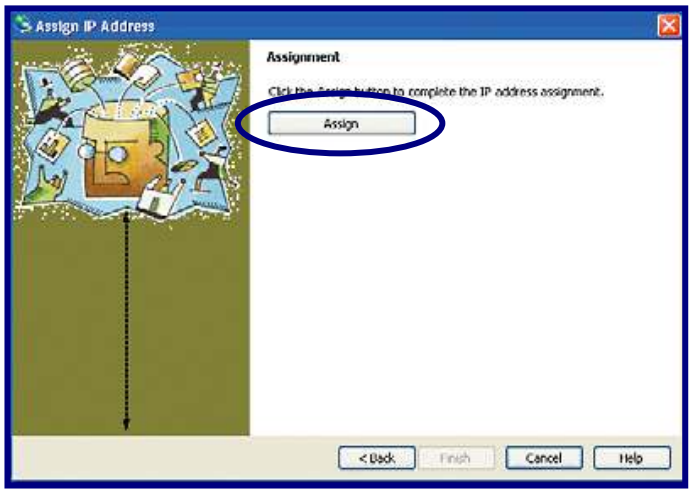


5.5.4. Assigning an IP Address and Network Class, Continued

5. Enter the **IP address**, **Subnet mask**, and **Gateway** being assigned to the device in **XXX.XXX.XXX.XXX** format.
6. Click **Next.**



7. Click the **Assign** button to finalize the IP assignment



5.5.5. Adding the Unit to the Device List

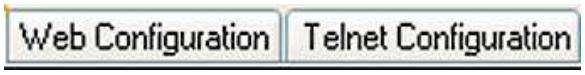
Add the Unit to the list of similar devices on the network so that it can managed and configured.

1. Click the **Search** icon . 

2. The DeviceInstaller Program locates the unit and adds it to the list.

5.5.6. Configuration

1. Double-click the unit in the list.
   - This displays details about the unit.
2. Select either the **Web Configuration** or the **Telnet Configuration** tab:



5.5.7. LEDs / Troubleshooting

The internal Ethernet Interface unit contains the LEDs listed below.

- Power
- Diagnostics
- 10/100 Mb Link
- Status Chanel 1
- 10/100 Activity

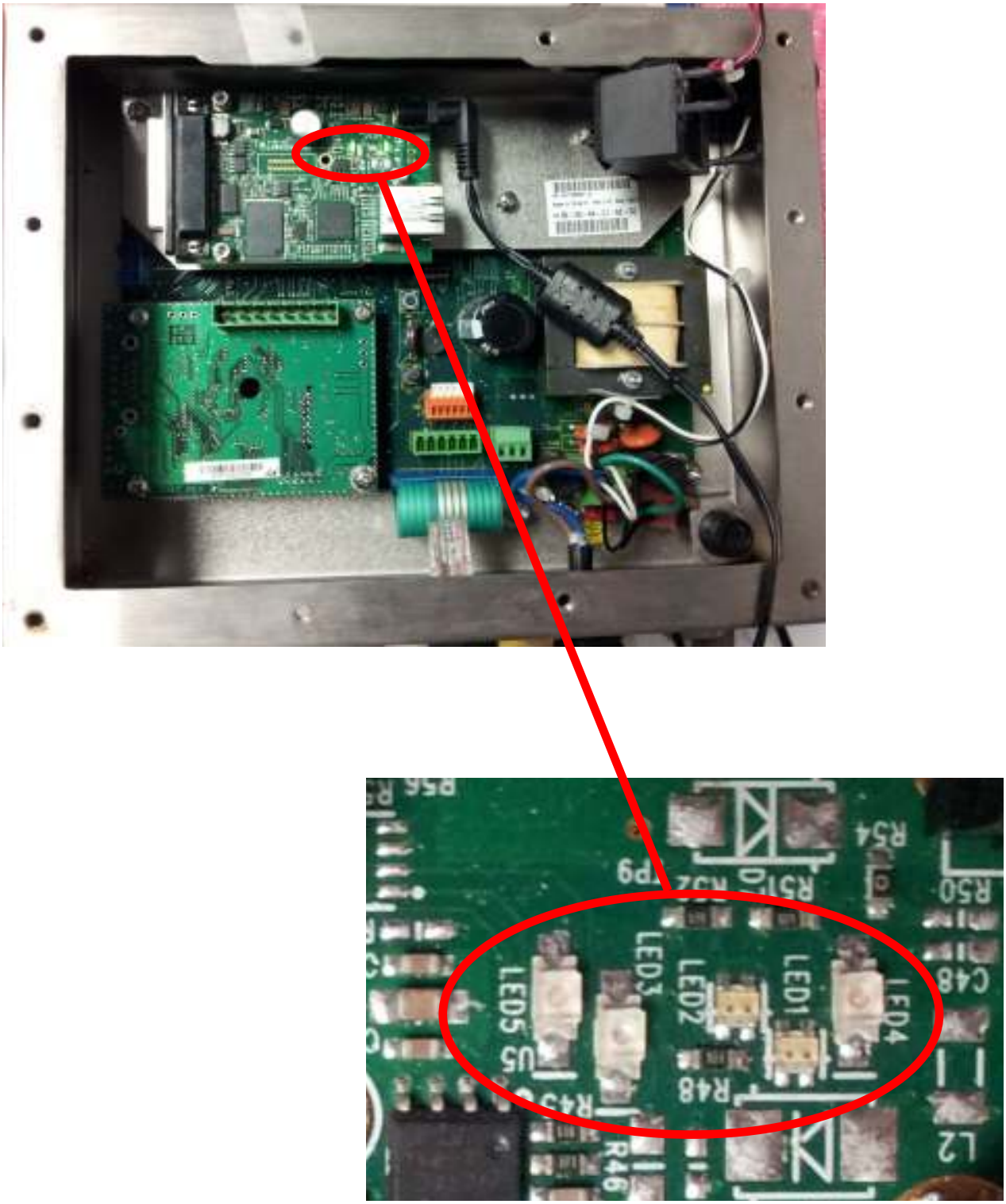
- Simultaneously lit red and green LEDs means something is wrong.
- f the red LED is lit or blinking, count the number of times the green LED blinks between its pauses.

The following table explains the LED functions.

LED No.	Serial LEDs	Meaning
LED 4	Power	On or Off
LED 1	10/100 Mb Link steady green	Valid Network connection
LED 2	10/100 Activity blinking	Network packets transmitting and receiving
LED 3	Diagnostic steady red and status blinking green	3 blinks = Network controller error 4 blinks = EEPROM Checksum Error 5 BLINKS = Duplicate IP address on Network
	Diagnostic blinking red and status blinking green	5 blinks = No DHCP response
LED 5	Status steady green	Serial port not connected to the Network
	Status blinking green	Serial port connected to the Network

See LED location on the next page.

5.5.7. LEDs / Troubleshooting, continued



5.5.8. Device Server COM Port Settings

Listed below are the default COM Port settings for the NexWeigh Scale using the internal Lantronix UDS1100-B Device Server.

Scale ID	1
Port 1 Output	Poll
Baud	9600
dbits	8
Parity	None
No Busy	
OPti	Yes
OPda	Yes
OPid	Yes

Section 6: Operations

6.1. BASIC SCALE OPERATIONS

Upon power up the Instrument performs a warm-up cycle.

- The Instrument initiates a test, displaying numbers **1** to **8**, and lights up all LED's.
- The **Program number** and **Revision Information** displays.
- The Instrument then displays the current weight on the scale

6.2. KEYPAD FUNCTIONS, WEIGH MODE

KEY	ACTION
Recipe 1-4	Enables or disables programmed recipe in Checkweigh mode. • In peak weigh mode, 1 enables peak, 2 disables, and 3 resets peak.
TARE	Automatically tares off the displayed weight. • If held for 3 seconds, enables or disables accumulate function.
ZERO	Resets gross weight to center of zero.
PROGRAM/ENTER	Captures weight and adds to accumulation if enabled.
OVER/UNDER/NEXT	Displays accumulated weight and number of weighments if enabled. • If held for 3 seconds, enters Checkweigh or peak weight setup.
UNITS	Switches between selected weighting units. • If held for 3 seconds, enters 4-20mA parameters if enabled.
B/G – NET	Toggles between **GROSS** and **NET WEIGHTS**. • If held for 10 seconds, displays audit trail functions.
PRINT	Transmits transaction data out COM port 1 if button is selected.

6.3. INSTRUMENT WEIGHING FUNCTIONS

6.3.1. Basic Weighing

Ensure platform is empty, power on the instrument, press the ZERO key and the display indicates “0” and is ready for use.

6.3.2. Gross Weighing

1. Press the **B/G / NET** key, if required, to set the display to GR (gross).
2. Press the **ZERO** key, if required, to set scale to “**0**”.
3. Place container/object on scale platform.
4. Read the gross weight on the display.

6.3.3. Net Weighing

1. Press the **B/G / NET** key, if required, to set display to GR (gross).
2. Press the **ZERO** key, if required, to set scale to “**0**”.
3. Place container/object on scale (Tare weight).
4. Press the **TARE** key.
5. Place material in container or add objects (Net weight).
6. Read the net weight on the display.

6.3.4. Gross/Tare/Net Weighing

1. Press the **B/G / NET** key, if required, to set display to GR (gross).
2. Press the **ZERO** key, if required, to set scale to “**0**”.
3. Place container/object on scale (Tare weight).
4. Press the **TARE** key.
5. Place material in container or add objects (Net weight).
6. Read the net weight on the display.
7. Press the **B/G / NET** key to switch to Gross and view Gross weight.

6.3.5. Weight Accumulation

A. Starting Accumulation mode.

1. If instrument is not in accumulate mode, press and hold **TARE** to enable accumulate mode. Instrument will display **ACC on** briefly.

   Note: If Accumulate function is not enabled in **APP** menu, display will flash and return to displaying current weight without showing **ACC-on**.

2. Press **ZERO**, if required, to set scale to "**0**".
3. If accumulation is using a container, apply container and press **TARE** to place scale in net mode.
4. Apply product to be accumulated to platform.

There are four different possibilities of configuring the accumulation function. Each one will be addressed separately as follows:

B. Port 1 set to Auto and Aout set to yes.

1. After weight is applied, and if the weight is greater than the accumulate threshold, the instrument will flash all the green ACCEPT LEDs for one second showing that the weight has been stored as an accumulation and then transmit the following data string:

   "Weight nn = wwwwww uu GR/NT"

   nn is the number of the current accumulated weight in numerical order.

   wwwwww is the last accumulated weight.

   uu is the unit of weight accumulated.

   GR or NT represent whether accumulated weight is gross or net respectively.

2. Weight on the scale must now be removed to less than .5 grads before the next accumulation can occur.
3. If a reprint of the last accumulated weight is required, press **PRINT** and port 1 will retransmit the string indicated above.
4. Repeat steps 1-3 to continue accumulations (up to 99).

6.3.5. Weight Accumulation, Continued

C. Port 1 set to Auto and Aout set to no.

1. After weight is applied, and if the weight is greater than the accumulate threshold, the instrument will flash all the green ACCEPT LEDs for one second showing that the weight has been stored as an accumulation.
2. If a print is to occur, press **PRINT** and port 1 will transmit the following:

   "Weight nn = wwwwww uu GR/NT"

   nn is the number of the current accumulated weight in numerical order.

   wwwwww is the last accumulated weight.

   uu is the unit of weight accumulated.

   GR or NT represent whether accumulated weight is gross or net respectively.
3. Weight on the scale must now be removed to less than .5 grads before the next accumulation can occur.
4. Repeat steps 1-3 to continue accumulations (up to 99).

D. Port 1 set to button and Aout set to yes.

1. After weight is applied, and if the weight is greater than the accumulate threshold press **PROGRAM/ENTER**. The instrument will check to ensure there is no motion. If scale is in motion, the instrument will wait up to 10 seconds for motion to stop. If the weight is not stable after 10 seconds, the scale will disregard the request for accumulation. If stability occurs, the green ACCEPT LEDs will flash for 1 second showing that the weight has been stored as an accumulation.
2. If a print is to occur, press **PRINT** and port 1 will transmit the following:

   "Weight nn = wwwwww uu GR/NT"

   nn is the number of the current accumulated weight in numerical order.

   wwwwww is the last accumulated weight.

   uu is the unit of weight accumulated.

   GR or NT represent whether accumulated weight is gross or net respectively.
3. Weight on the scale must now be removed to less than .5 grads before the next accumulation can occur.
4. Repeat steps 1-3 to continue accumulations (up to 99).

6.3.5. Weight Accumulation, Continued

E. Port 1 set to button and Aout set to no.

After weight is applied, and if the weight is greater than the accumulate threshold press **PROGRAM/ENTER**. The instrument will check to ensure there is no motion. If scale is in motion, the instrument will wait up to 10 seconds for motion to stop. If the weight is not stable after 10 seconds, the scale will disregard the request for accumulation. If stability occurs, the green ACCEPT LEDs will flash for 1 second showing that the weight has been stored as an accumulation.

1. If a print is to occur, press **PRINT** and port 1 will transmit the following:

   "Weight nn = wwwwww uu GR/NT"

   nn is the number of the current accumulated weight in numerical order.

   wwwwww is the last accumulated weight.

   uu is the unit of weight accumulated.

   GR or NT represent whether accumulated weight is gross or net respectively.
2. Weight on the scale must now be removed to less than .5 grads before the next accumulation can occur.
3. Repeat steps 1-3 to continue accumulations (up to 99).

F. Displaying Accumulated Weight and Count.

1. Press and release **OVER/UNDER/NEXT** The instrument will alternately display the total accumulated weight and the number of accumulations for two seconds each. The count is left justified followed by **ACC**, and the total weight is right justified.
2. The instrument will continue to alternately display the weight and count for 30 seconds or until **OVER/UNDER/NEXT** is pressed again

Note: The instrument must be displaying gross zero to display totals. An error of "not 00" will display if weight is not removed.

6.3.5. Weight Accumulation, Continued

G. Clearing Accumulated Weight and Total.

1. With total/count displayed (see Displaying accumulated weight and count above), Press **ZERO**.
2. The instrument will display **CLr n** prompting the operator to not cleat total count and accumulation. If the totals are to be cleared, toggle to display **CLr Y** by pressing **OVER/UNDER/NEXT**. With the correct choice displayed, press **PROGRAM/ENTER**.
3. The instrument will briefly display **CLEArd** when the accumulator is cleared.

H. Printing Accumulated Weight and Total.

4. With total/count displayed (see Displaying accumulated weight and count above), Press **PRINT**.
5. Instrument will display **ALL Y**, prompting the operator to print all the individual weighments and the total accumulation. If only the totals are desired, toggle to display **ALL n** by pressing **OVER/UNDER/NEXT**. With the correct choice displayed, press **PROGRAM/ENTER**.
6. The instrument will print the accumulated weighments, if selected, followed by the total.
7. After the print has occurred, the instrument will display **CLr n** prompting the operator to not cleat total count and accumulation. If the totals are to be cleared, toggle to display **CLr Y** by pressing **OVER/UNDER/NEXT**. With the correct choice displayed, press **PROGRAM/ENTER**.
8. The instrument will briefly display **CLEArd** when the accumulator is cleared.

I. Deactivating Accumulation

To deactivate the accumulation mode, press and hold **TARE** for 3 seconds. The instrument will display **ACCoFF** briefly to indicate accumulation function has been deactivated.

6.3.5. Weight Accumulation, Continued

J. Accumulation Notes.

1. No units switching is allowed if Accumulation is currently activated, or if an accumulation has been stored and not cleared. The message **NoUntS** will be displayed if **UNITS** is pressed.
2. On power up or return from Program mode or Checkweigh Setup mode, if an accumulation has been stored in units other than Primary Units (PU in config menu), the accumulation units will be automatically selected.
3. If the accumulation units are no longer enabled on power up or return from Program mode or Checkweigh Setup mode, the accumulated values will be cleared and Primary Units will be selected.

6.3.6. Peak Hold Weighing

A. Enabling PEAK HOLD

1. Press and hold **OVER/UNDER/NEXT** until display indicates **ChEc.**
2. Press **OVER/UNDER/NEXT** to display **HoLd**.
3. Press **PROGRAM/ENTER** to display **HoLd X**, where **X** is either **Y** or **n**.
4. Press **OVER/UNDER/NEXT** to display **HoLd Y** if necessary.

NOTE: *The* **Peak Hold** *function must not be used with* **Checkweighing.**

5. Press **PROGRAM/ENTER** to display **CSAvEd,** and returns to weigh mode.

Instrument is now in **Peak Hold mode**.

B. Operating Peak Hold

1. Press the **1 (one)** button to activate **Peak Hold** mode. The first three instruments for **UNDER, ACCEPT** and **OVER** will flash indicating Peak Hold is active. Also the instruments on the **1**, **2**, and **3** buttons will be on.

6.3.5. Weight Accumulation, Continued

2. The display will now freeze on the largest weight applied to the platform. It will remain there even after weight is removed.
3. To deactivate the Peak Hold function while retaining the current peak weight, press the **2** button. Instrument will now return to normal weigh mode. Any weight applied now will **not** affect the stored peak weight.
4. To deactivate Peak Hold and clear the current peak weight, press the **3** button. Instrument now returns to normal weigh mode.
5. To reactivate Peak Hold after pressing either **2** or **3**, press **1**.

6.3.7. Check Weighing

The NexWeigh instrument uses a three color bargraph to indicate an item's weight within three bands, Under, Accept, and Over. It is capable of storing four "recipes" or different Checkweigh configurations for four different products. Default selections are underlined.

Follow these steps to configure the **Check Weigh Mode.**

1. Press and hold **OVER/UNDER/NEXT** until display indicates **ChEc.**
2. Press **PROGRAM/ENTER** to display **rEC 1**. This indicates that the instrument is ready to accept configuration of recipe 1.
3. If another recipe is to be configured, press **OVER/UNDER/NEXT** to scroll through to **rEC 2**, **rEC 3**, or **rEC 4**.
4. With the desired recipe displayed, press **PROGRAM/ENTER** to display **EnA Y**, or **EnA n**.

NOTE: *If* **EnA n** *is selected in this step, the instrument will advance to the next enabled format, or return to the* **ChEc** *prompt if none are enabled.*

5. To toggle between choices press **OVER/UNDER/NEXT**. Selecting **Y** will enable the current recipe, and selecting **n** will disable it.
6. Press **PROGRAM/ENTER** to advance to **nEt n**, or **nEt Y**.

6.3.7. Check Weighing, Continued

7. Press **OVER/UNDER/NEXT** to toggle between nEt n, (Checkweigh in gross mode) or **nEt Y**, (Checkweigh in net mode).
8. Press **PROGRAM/ENTER** to display **diS Y**, or **diS n**. This will determine whether the numeric display is active or not while Checkweighing is active.
9. Press **OVER/UNDER/NEXT** to toggle between **diS Y**, and **diS n**.

Note: *If weighing in net mode and numeric display is active, the instrument can accidentally be placed in the* **GROSS mode** *and the display then might not match the Checkweigh indication.*

10. With the desired selection displayed, press **PROGRAM/ENTER** to display **UnitS** With **UnitS** displayed, one of the units legends will be lit. This is the weigh units the Checkweigh limits will be defined by in the following steps.
11. Press **OVER/UNDER/NEXT** to scroll through the choices, including custom units.
12. With the desired units legend lit, press **PROGRAM/ENTER** to display **hAnd Y**, or **hAnd n**. This determines the method for defining the acceptance band. Using **hAnd Y** provides the user the ability to enter all ranges manually, whereby **hAnd n** provides the user the ability to use a sample weight for the accept target range.
13. Press **OVER/UNDER/NEXT** to toggle between the two choices.
14. With the desired selection displayed, press **PROGRAM/ENTER**.

If **hAnd Y** is selected, go to step 21.

15. If **hAnd n** is selected, the instrument will display live weight along with scrolling under, accept, and over instruments. The instrument is waiting for an acceptance range weight to be applied. Apply a sample weight of an acceptable value and press **PROGRAM/ENTER**. This weight will be used to assist defining the start of accept and end of accept values.

6.3.7. Check Weighing, Continued

16. The entire **UNDER** bar graph and the first segment of the **ACCEPT** bargraph will be illuminated. The captured weight value is displayed with the leftmost digit flashing. This is the start of **ACCEPT** point. If the weight displayed needs to be altered, press **UNITS** to increase the digit, or press **1** to decrease it. Press **OVER/UNDER/NEXT** to move flashing digit to the right, or press **TARE** to move it to the left. Press **PRINT** to move the decimal point to the right. Press **ZERO** to display all zeroes on the display. When the correct start of accept value is displayed, press **PROGRAM/ENTER**.
17. The first segment of the **UNDER** will be illuminated along with a number with the leftmost digit flashing. This is the start of **UNDER** point. Using the same procedure as identified in step 16 above, enter the correct value for the beginning of the under range, this could be 0. When the correct start of under value is displayed, press **PROGRAM/ENTER**.
18. The entire **UNDER** bargraph, the entire **ACCEPT,** and the first segment of the **OVER** bargraph will be illuminated. The captured weight value is displayed with the leftmost digit flashing. This is the end of **ACCEPT** point. If required using the same procedure as identified in step 16 above, enter the correct value for the end of the accept range. When the correct end of accept value is displayed, press **PROGRAM/ENTER**.
19. The entire **UNDER** bar graph, the entire **ACCEPT,** and the entire **OVER** bar graph will be illuminated. The last weight value is displayed with the leftmost digit flashing. This is the end of **OVER** point. Using the same procedure as identified in step 16 above, enter the correct value for the end of the accept range. When the correct end of over value is displayed, press **PROGRAM/ENTER**.
20. The instrument will briefly display **CSAvEd**, then return to the weigh mode with the most recently configured recipe active.
21. If **hAnd Y** is selected, the first segment of the **UNDER** bargraph will be illuminated. A previously programmed weight value is displayed with the leftmost digit flashing. This is the start of **UNDER** point. If the weight displayed needs to be altered, press **UNITS** to increase the digit, or press **1** to decrease it. Press **OVER/UNDER/NEXT** to move flashing digit to the right, or press **TARE** to move it to the left. Press **PRINT** to move the decimal point to the right. Press **ZERO** to display all zeroes on the display. When the correct start of under value is displayed, press **PROGRAM/ENTER**.

6.3.7. Check Weighing, Continued

22. The entire **UNDER** bar graph and the first segment of the **ACCEPT** bargraph will be illuminated. A previously programmed weight value is displayed with the leftmost digit flashing. This is the start of **ACCEPT** point. If required using the same procedure as identified in step 21 above, enter the correct value for the start of the accept range. When the correct start of accept value is displayed, press **PROGRAM/ENTER**.
23. The entire **UNDER** bargraph, the entire **ACCEPT,** and the first segment of the **OVER** bargraph will be illuminated. A previously programmed weight value is displayed with the leftmost digit flashing. This is the end of **ACCEPT** point. If required using the same procedure as identified in step 21 above, enter the correct value for the end of the accept range. When the correct end of accept value is displayed, press **PROGRAM/ENTER**.
24. The entire **UNDER** bar graph, the entire **ACCEPT,** and the entire **OVER** bargraph will be illuminated. A previously programmed weight value is displayed with the leftmost digit flashing. This is the end of **OVER** point. Using the same procedure as identified in step 21 above, enter the correct value for the end of the accept range. When the correct end of over value is displayed, press **PROGRAM/ENTER**.
25. The instrument will briefly display **CSAvEd**, then return to the weigh mode with the most recently configured recipe active.

6.3.8. Check Weigh Mode Operation

Follow these steps to configure the **Check weigh Mode Operation.**

1. With the scale empty, press **ZERO** to zero the display if required.
2. Press the appropriate recipe button to enable the Checkweigh mode and that recipe. If recipe is enabled, the instrument above that button will illuminate.
3. Place object to be weighed on platform. The appropriate LED's in the bargraph will illuminate to show the weight of the object relative to its target acceptance range. If no green LED's are lit up, the object is under the target weight. If some of the green LED's are lit, the object is within the acceptance range. If one or more red LED's light up, the object is above the acceptance range.
4. When finished Checkweighing, simply press the recipe button that was enabled to exit Checkweigh mode, or press a different recipe button to use a different programmed recipe.

Section 7: Scale Maintenance

7.1. EXPANDED DISPLAY MODE.

The NexWeigh can be placed in expanded resolution mode to assist in troubleshooting and maintenance. Simply press S2 on the main PCB and the display instrument will immediately display the weight in 10X resolution. For example if the division size is programmed at 1lb, pressing S2 will display the weight in 0.1lb divisions.

7.2. SCALE MAINTENANCE

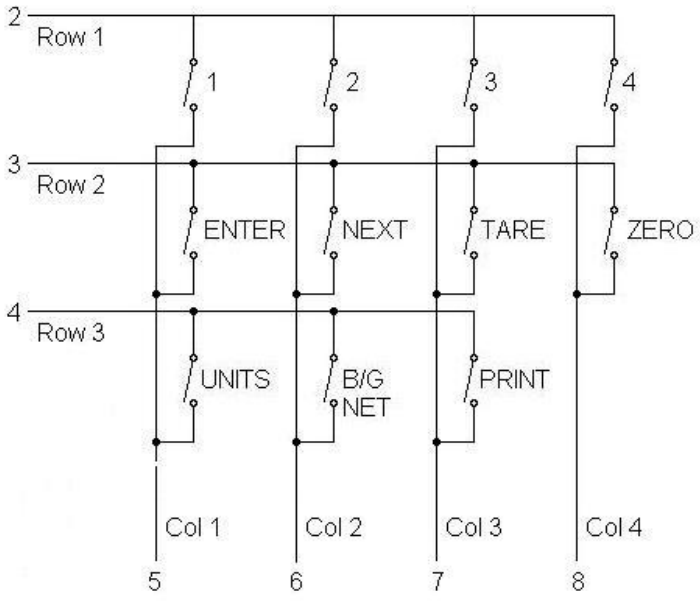
7.2.1. Cleaning the Scale and Instrument

Use a moist cotton cloth to clean the scale.

- If spray cleaner is needed for shoe sole marks, squirt it into the cloth, and not directly onto the scale.
- Use only tap water in the cloth to wipe off the instrument's clear plastic display.

Appendix I: Keypad reference

TB3 connections to keypad shown below.



Appendix II: ECOLAB Instrument Sanitation

A. SAFETY PRECAUTIONS

- ✓ **When using potentially harmful cleaners and chemicals, always wear goggles or a face shield, boots, gloves, and a chemical apron.**
- ✓ **Use Lock-out/Tag-Out policies, as required by plant procedures.**
- ✓ **Do not use steam or high-pressure water at any time in the cleaning procedures.**
- ✓ **Always walk "flat-footed", using caution on the wet floors.**

Chemical step temperature	Product	Amount	Concentration	Time	Temp.
Manual Brush	**HC-10**, or similar product	3 to 5 oz. per gallon water	N/A	Hand Brush	110°
Sanitize	**Quorum Clear**, or similar product	1 oz. to 4 gallons water	200 PPM	30 seconds mim. contact	Ambient

B. SANITATION PROCEDURES

Following these steps to fully clean and sanitize the scale and work area.

3. Sweep and pick up all trash, placing it in proper containers for disposal.
4. Cover all electrical outlets and other non-waterproof items with plastic tarps.
5. Cover the Scale Enclosure Weldment with waterproof material.
6. Protect all exposed product and/or packaging materials with plastic tarps and package wraps.
   - Remove these from the area to be cleaned, whenever possible and appropriate.
7. Hand-wipe any visible soil on the Scale Enclosure Weldment.
   - Use a paper towel containing an industrial strength detergent, like **200 ppm Quorum Clear**.

B. SANITATION PROCEDURES, CONTINUED

8. Rinse all surfaces and scale platform.
   - Move the hose stream from side-to-side, starting at the top and working to the bottom.
9. Remove the Platform Lift and set it aside.
10. Unscrew all the Rubber Stops.
11. Hand-scrub the Scale Pillar, Bottom, Platform Lift, and Stops with **HC-10 Solution**, and then rinse the parts completely.
12. Carefully tip the scale back or lay it on its side.
    - Always ask for help in doing this, if needed.

13. Pre-rinse, and then hand brush the scale with **HC-10 Detergent Solution.**
14. Hand Brush the bottom of the unit, cleaning it with **HC-10 Detergent Solution,** rinsing thoroughly.
15. Inspect all the scale parts completely, correcting any discrepancies found.
    - List any damaged replacement parts to be ordered, as needed.
16. Re-assemble all the cleaned and rinsed scale parts, replacing the scale back into its proper position.
17. Prepare the entire area for production use, then inspect it as an “outside observer” for cleanliness and correct placement of all the operation elements.
18. Notify the supervisor for an inspection of the completed work.
    - Report to him or her of any needed replacement parts.

Appendix III: Data Output Strings

A. POLL MODE:

Gross	<WWWWWWWW> <SP> <lb><SP><GR><CR><LF>
***Tare**	<WWWWWWWW> <SP> <lb><SP><TA><CR><LF>
***Net**	<WWWWWWWW> <SP> <lb><SP><NT><CR><LF>
***Time**	<HH><:><MM><:><SS><SP><AM><CR><LF>
***Date**	<MM></><DD></><YY><CR><LF>
***ID**	<Scale><SP><Id><SP><##><CR><LF> <CR><LF>

Notes:

<WWWWWWWW>	Weight with up to 6 places with no decimal, up to 7 places with a decimal point
<SP>	Space
<lb>	Unit of measure could be: lb, kg, gr, oz
<GR>	Indicates stable weight
<gr>	Indicates unstable weight or motion
***<TA>**	*Tare weight *Only sent if a tare weight is entered.*
***<NT>**	*Indicates stable weight*
***<nt>**	*Indicates unstable weight or motion *if tare weight is entered.*
<CR>	Carriage return
<LF>	Line feed
<EOT>	End of Transmission
***HH**	*Hour*
***MM**	*Minute*
***SS**	*Seconds*
***AM/PM**	
***MM**	*Month*
***DD**	*Day*
***YY**	*last 2 digits of the year (20YY) *If enabled.*
***ID**	*"Scale Id" and ## = 2 digits for the actual scale ID*

*Italics indicate only available when configured in programming. Tare and Net will be included in the string upon an entry of a tare weight.

B. CONTINUOUS MODE:

Gross (Stable) <WWWWWWWW> <SP> <lb><SP><GR><CR><LF><EOT>

or

Net (Stable) <WWWWWWWW> <SP> <lb><SP><NT><CR><LF><EOT>

Notes:

<WWWWWWWW>	Weight with up to 6 places with no decimal, up to 7 places with a decimal point
<SP>	Space
<lb>	Unit of measure could be: lb, kg, gr, oz
<GR>	Indicates stable weight
<gr>	Indicates unstable weight or motion
<NT>	Indicates stable weight
<nt>	Indicates unstable weight or motion
<CR>	Carriage return
<LF>	Line feed
<EOT>	End of Transmission

NexWeigh Instrument

OPERATORS MANUAL
DOCUMENT 51216

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