1280 Enterprise Series™

Color Touchscreen Indicator

Operation Manual

RICE LAKE®
WEIGHING SYSTEMS

PN 166046

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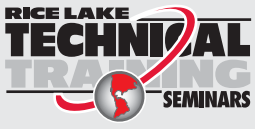

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1.0 Introduction

The *1280 Enterprise Series* is a color touchscreen, programmable, multi-channel digital weight indicator/controller. Manufactured with industrial-grade components, the *1280* is built to achieve top performance, even in harsh environments. The *1280* features a Freescale i.MX6 microprocessor, Linux-based operating system and 1 GB onboard memory (expandable with micro SD card). Configuration can be performed using the front panel, serial commands or Revolution® scale software.

Custom programs can be written with iRite®, a domain-based programming language based off of Basic, Pascal and Ada—empowering programmers to customize display widgets, store and retrieve data with the onboard database, and utilize the 150+ built-in-functions. From tailored basic weighing to complex process automation, the *1280* delivers uncompromising speed for today's most demanding applications as well as vast expandability for future needs.

Manuals can be viewed or downloaded from the Rice Lake Weighing Systems website at **www.ricelake.com/manuals**

Warranty information can be found on the website at **www.ricelake.com/warranties**

Onboard Features

Features of the *1280* include:

- Support for up to eight scales (combination of analog load cell, total, serial scales or program scales)
- Eight programmable Digital I/O bits available on the CPU board (connector J1) including onboard pulse input pins, with 24 additional per option card
- Two communication ports that support RS-232, RS-485 and RS-422
- Two USB host ports
- One USB device port
- AC or DC power options
- Ethernet – wired and wireless

Other Features

- Configurable print formats can be defined for up to 1000 characters each. These formats are used to print gross or net weights, setpoint weights, accumulator weights and header information. Additional print formats can be created with *iRite*.
- Truck in/out, recipe batching, counting and checkweighing *iRite* programs and source code included.
- 100 configurable setpoints.
- The *1280* is NTEP-certified for Classes III and III L at 10,000 divisions.

Three Enclosure Types

- Universal
- Panel Mount
- Wall Mount

Option Cards

The CPU board provides six slots for installing scale or other option cards. Available option cards include:

- Single- and dual-channel scale cards to drive up to sixteen 350 ohm load cells per card. Scale cards support both 4- and 6-wire load cell connections.
- Dual-channel analog output card for 0–10 VDC, 0–20 mA or 4-20 mA tracking of gross or net weight values.
- 24-channel digital I/O expansion card
- Dual serial port card (with RS-232, RS-422 and RS-485)
- Single analog and dual analog output cards
- Dual analog input/thermocouple card
- 4-channel relay card
- CompactCom card that supports EtherNet/IP™[1], DeviceNet™[2], ProfiNet, Profibus® DP[3] and Modbus networks.

Consult factory for more information.

1. EtherNet/IP™ is a trademark of ControlNet International, Ltd., under license by the Open DeviceNet Vendor Association.
2. DeviceNet™ is a trademark of the Open DeviceNet Vendor Association.
3. Profibus® is a registered trademark of Profibus International.

1.1 Safety

Safety Symbol Definitions

WARNING *Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death, and includes hazards that are exposed when guards are removed.*

CAUTION *Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.*

Important *Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.*

General Safety

Do not operate or work on this equipment unless you have read and understood the instructions and warnings in this manual. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals. Proper care is your responsibility.

WARNING

Failure to heed may result in serious injury or death.

Some procedures described in this manual require work inside the indicator enclosure. These procedures are to be performed by qualified service personnel only.

Do not allow minors (children) or inexperienced persons to operate this unit.

Do not operate without enclosure completely assembled.

Do not place fingers into slots or possible pinch points.

Do not use this product if any of the components are cracked.

Do not make alterations or modifications to the unit.

Do not remove or obscure warning labels.

Do not submerge.

Before opening the unit, ensure the power cord is disconnected from the power source.

1.2 Weighing Mode

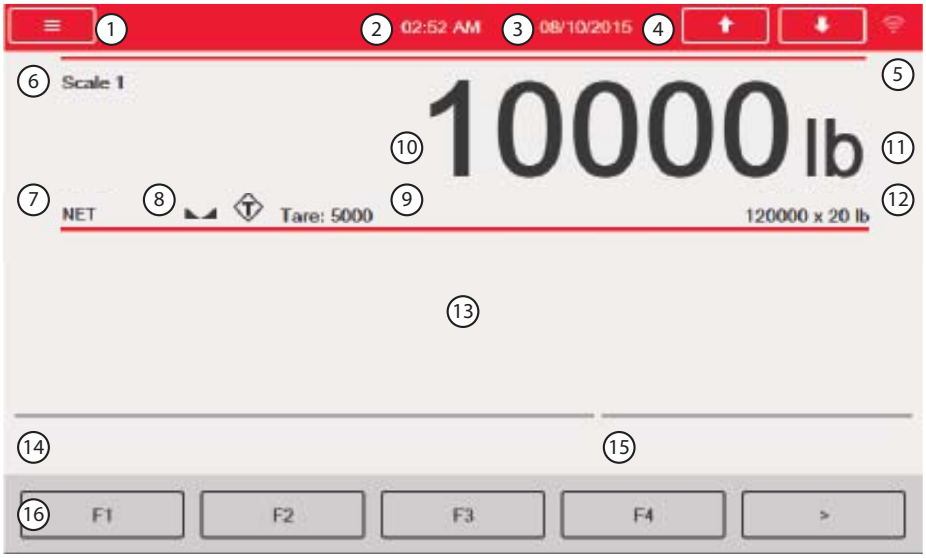

Figure 1-1. Weighing Mode Display Screen

Item No.	Description
Status Bar	
1	Menu key – Press to enter setup menus and audit trail information.
2	Current time – Press to set the time.
3	Current date – Press to set the date.
4	Scale arrows – Use to scroll through the attached scales in the current scale area (up to eight scales).
Weight Display Area	
5	Wi-Fi Symbol - Faded symbol means there is not a Wi-Fi connection, bright symbol means there is a Wi-Fi connection. Press on the symbol to bring up the ***Network Information Screen*** which includes information on Wired Ethernet, Wi-Fi and Bluetooth®.
6	Current scale – Scale number currently displayed
7	Gross/Net – Current weighing mode
8	Standstill icon – Indicates scale is stable
9	Tare – Weight of tare in system
10	Weight reading for current scale
11	Unit of measure
12	Capacity and division size (values shown are for illustration only)
13	Application area – Contains configuration of widgets (text boxes, bar graphs, icons, etc). See the 1280 Technical Manual.
14	Display line for text (messages from an iRite program)
15	System messages or status (batch running, print queued, etc)
Softkeys	
16	Five touchscreen keys that can be selected (such as **Batch Start** or **Batch Stop**) or can be user defined keys with custom text and iRite programming functionality. See the 1280 Technical Manual.

Table 1-1. Weigh Mode Display Screen Descriptions

1.3 Numeric/Alpha Entry

When data entry is required, a keyboard or a numeric keypad will display on the screen as shown in Figure 1-2 and 1-3. Additionally, the indicator's front panel is equipped with a numeric keypad as shown in Figure 1-4 on page 5.

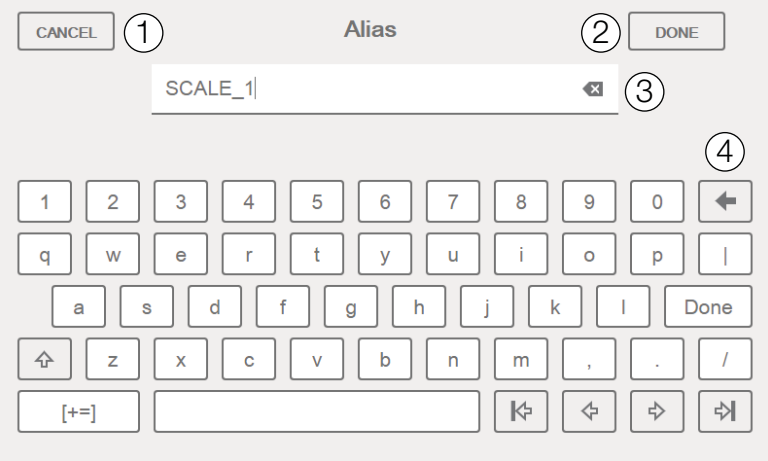

Figure 1-2. 1280 On-screen Full Keyboard for Alphanumeric Entry

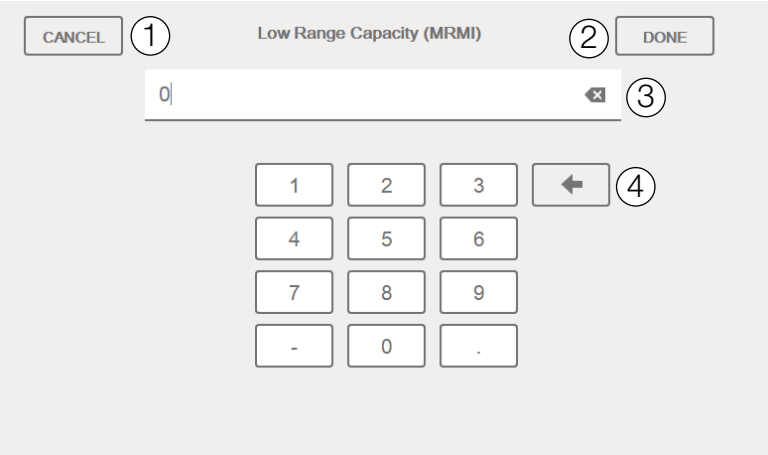

Figure 1-3. 1280 On-screen Numeric Keypad for Numeric Entry

Item No.	Description
1	Cancel - Press to exit keyboard.
2	Done - Press to complete keyboard entry.
3	Clear - Delete everything in the prompt line.
4	Backspace - Delete one character at a time.

Table 1-2. On-screen Keyboard Descriptions

1.4 Indicator Operations

Figure 1-4. 1280 Front Panel

1.4.1 Navigation Keys

Navigation keys are primarily linked to iRite handlers. If no iRite handlers exist, the navigation keys toggle through a selection of displayed scales.

1.4.2 Numeric Keypad

Use the numeric keypad for entering numbers or keyed tares.

Press CLEAR to backspace when entering numbers/letters.

Press ENTER to save entries from the numeric keypad.

1.4.3 Toggle Gross/Net Mode

Pressing GROSS NET B/N toggles the display mode between gross and net.

- If a tared value is in the system, ***Net*** is displayed (net equals gross minus tare).
- If there is no tare in the system, ***Gross*** is displayed.

1.4.4 Toggle Units

Pressing UNITS toggles between primary, secondary and tertiary units.

1.4.5 Zero Scale

Use the following instructions to zero the scale (if it is within the acceptable zero range).

1. In gross mode, remove all weight from the scale and wait for ◣◢ to display.
2. Press ZERO →0←. When →0← displays, the scale is zeroed.

1.4.6 Tare

Use the following instructions to acquire a tare, remove a stored tare and enter a tare using the keyboard.

Acquire Tare

Use the following instructions to store the weight currently on scale as tare weight and switch to net mode.

1. Place container on scale and wait for ◣◢ to display.
2. Press TARE. ***Net*** displays indicating the weight has been tared.

Remove Stored Tare Value

Use the following instructions to remove a stored tare value.

1. Remove all weight from the scale to show gross zero.
2. When ◣◢ displays, press TARE (in OIML mode, press ZERO). ***Gross*** displays.

Alternatively, remove a stored tare value using a keyed tare of zero. See "Keyed Tare" below.

Keyed Tare

Use the following instructions to add a keyed tare.

1. Enter a value from the numeric keypad or an attached keyboard.
2. Press TARE. ***Net*** displays indicating the keyed tare weight is in the system.

1.4.7 Print Ticket

Pressing PRINT sends the gross or net ticket format to the configured serial, USB or Ethernet port associated with its ticket format. When displaying the accumulator, it prints the accumulator format.

To print tickets using auxiliary formats (1-20), enter the format number with the numeric keypad.

1. Wait for ◣◢ to display.
2. Enter an auxiliary format (1-20).
3. Press PRINT to send data to the serial port.

1.4.8 Accumulator Functions

Printing While in Accumulate

If the accumulator is enabled, weight is accumulated whenever a print operation is performed by:

- Pressing the **Print** key
- Activating a digital input print
- Receiving a KPRINT serial command
- iRite calling the **PRINT ( )** function
- Activating the accumulator setpoint

The scale must return to zero before the next accumulation.

Display or Clear the Accumulator

- A softkey can be programmed for each function
- A ***Display*** or ***Clear Accumulator Digital Input*** can be activated
- A serial command can be sent

Print the Accumulated Value

To print the accumulated value, press PRINT while displaying the accumulator.

1.5 Setup Menu

Press ≡ on the Weigh mode screen. The ***Main Menu*** will display.

Press ‹ to return to the Weigh mode.

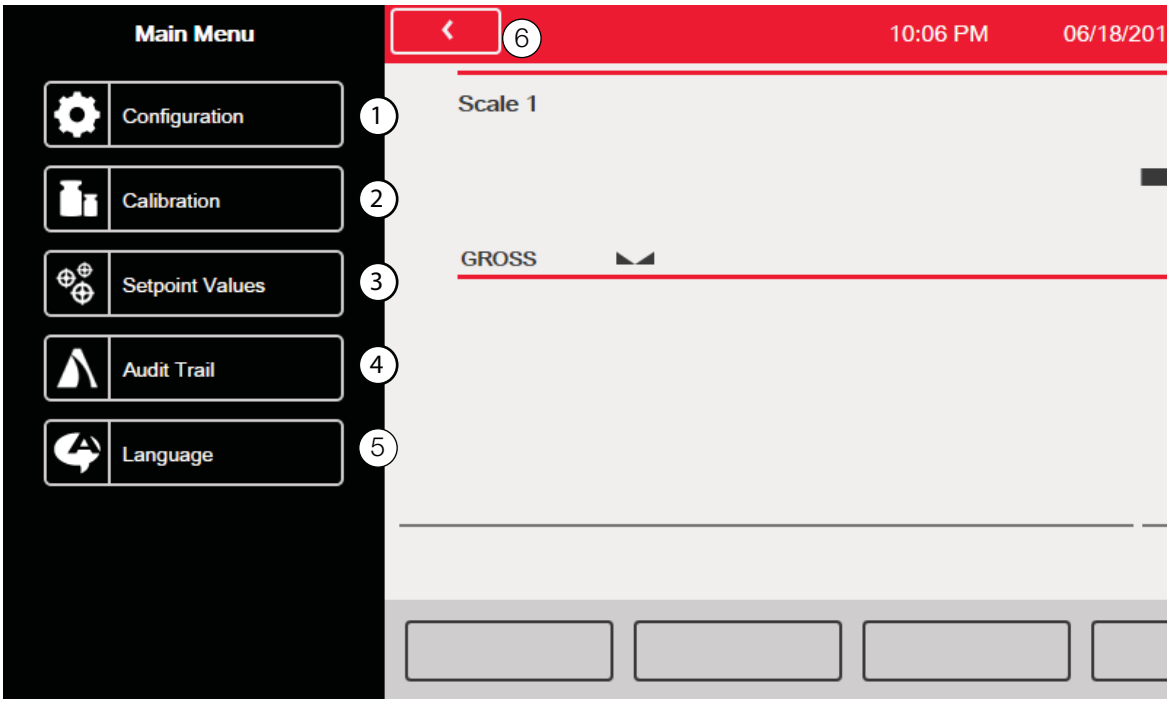

Figure 1-5. Main Menu Screen

Item No.	Description
1	Configuration – Allows setup of indicator parameters. See the 1280 Technical Manual.
2	Calibration – Allows calibration of the scale. See the 1280 Technical Manual.
3	Setpoint Values – Allows setup of setpoint values. See the 1280 Technical Manual.
4	Audit Trail – Provides tracking information for configuration and calibration events. See Section 1.5.1.
5	Language – Allows one of 16 languages to be selected for the indicator display. See Section 1.5.2.
6	Return Arrow – Press to return to Weigh mode from the Main menu screen.

Table 1-3. Main Menu Descriptions

1.5.1 Audit Trail

Audit trail support provides tracking information for configuration and calibration events. A separate calibration and configuration counter is provided for each scale; a single system configuration counter tracks all global changes that are applied to multiple scales.

To prevent misuse, unsaved configuration or calibration changes are counted as change events; restoration of the previous saved configuration or calibration is also counted.

Select to view the legally relevant version, the configuration counters and the calibration counters.

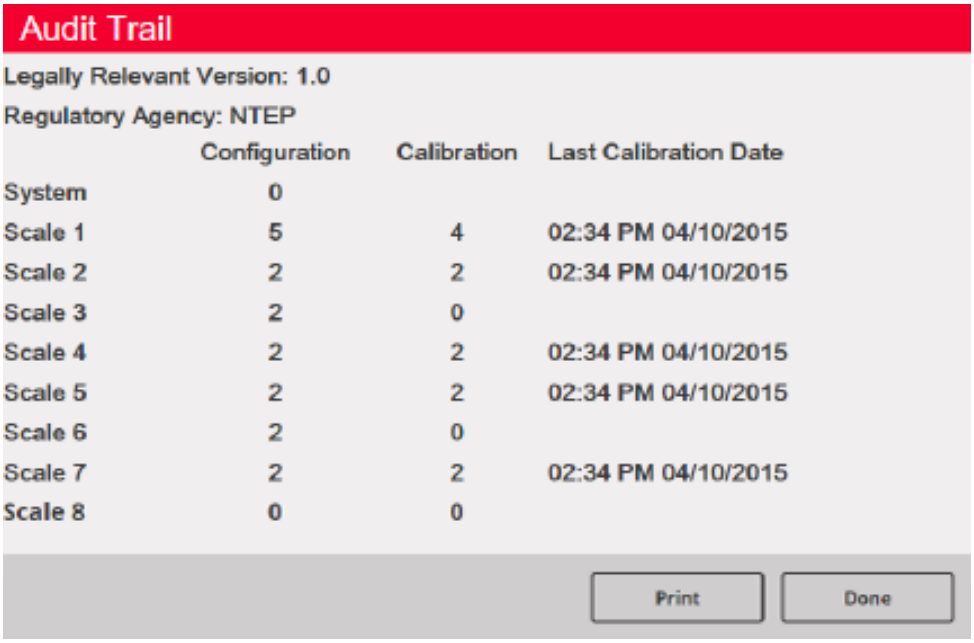

Figure 1-6. Audit Trail Screen

1. Press Print to send the audit trail data out the configured communications port (default is port 1). See the 1280 Technical Manual for port setup, including how to change the destination or baud rate of the audit trail ticket format.
2. Select Done to return to the weigh mode.

1.5.2 Language

From the Main menu, press Language to select one of the 16 language choices. The set language is only available in weigh mode. Configuration mode will remain in English.

1. Press Language to display the list of available languages.
2. Select the desired language.
3. Press ‹ to save the selection and return to the weigh mode.

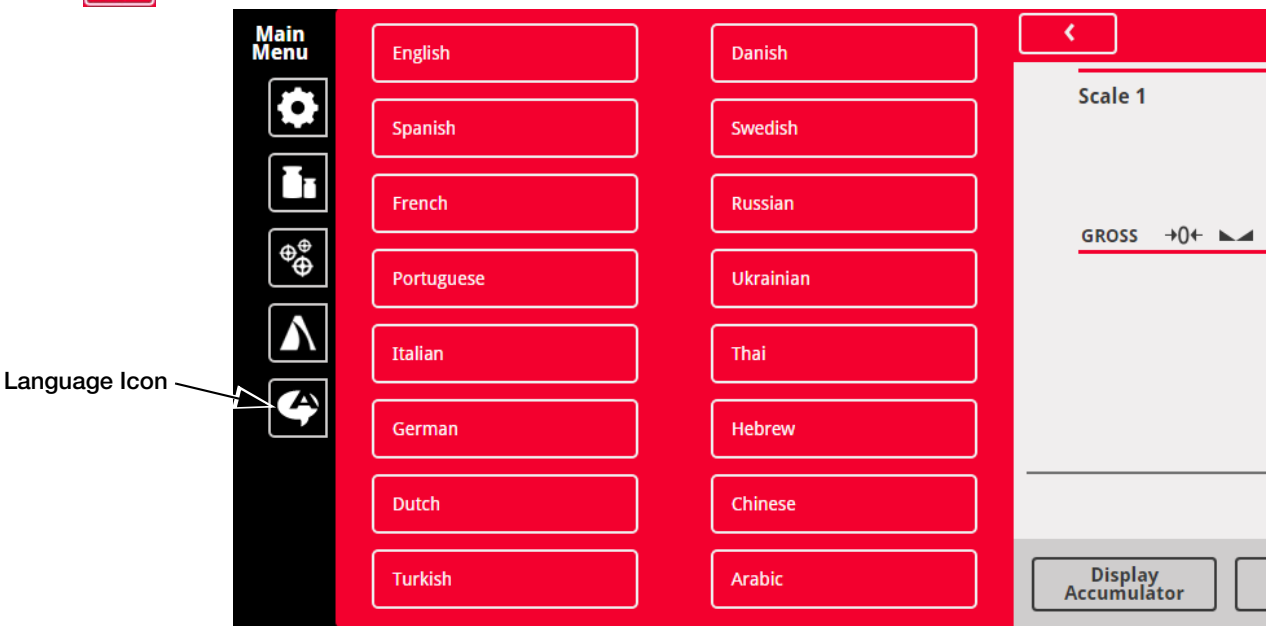

Figure 1-7. Language Selection Screen

1.6 Alibi Storage

Alibi storage is a database of past transactions listed by date. This allows previous print transactions to be recalled and reprinted. Alibi storage is enabled using the ***Features*** menu in configuration mode. Print transactions can be recalled by assigning a softkey to Alibi.

1. From the ***Features*** menu, select **Alibi**.
2. Use the arrows to scroll to the record needed.
3. To print the currently selected record, press **Reprint**.
4. Repeat steps 1-3 until all records required have been printed.
5. When all records required have been printed, press **Done**.

For more information, see the 1280 Technical Manual.

1.7 Peak Hold

Peak hold is used to determine, display and print the greatest weight reading during a weighing cycle.

There are three types of peak hold: automatic, manual and bi-directional. See the 1280 Technical Manual for information on how to enable peak hold.

Use the following instructions to use the peak hold function.

1. Tare the scale to put it into net mode.
2. Increase the weight. As the weight increases, the indicator will capture and hold the highest weight recorded.
3. Press GROSS NET B/N to see the real live weight (as opposed to the peak hold weight).
4. Press PRINT or ZERO to clear the peak hold (unless it is set to automatic mode in which case it clears automatically).

1.8 Rate Of Change

Rate of change is expressed in weight per time unit (weight/time).

Example: lb/sec

See the 1280 Technical Manual for information on how to enable rate of change.

To view the rate of change:

1. Press the **Display Rate of Change** softkey.
2. To return to the live weight, press **Display Rate of Change** again.

1.9 Setpoint Entry

Setpoints can be configured to perform actions or functions based on specified parameter conditions. For more information on setpoints, see the 1280 Technical Manual.

To change the setpoint value:

1. Press **Setup**.
2. Press the **Setpoint Values** key in the Main menu or from the black drop down list, or press the **Setpoint** softkey.
3. Press **Setpoint 1** to select the setpoint (1-100) for which the target value needs to be changed.
4. Press the red number of the setpoint in the table. It may be necessary to use the arrows at the bottom of the screen scroll through the setpoints.
5. Press **Value** to bring up the numeric entry keypad.
6. Enter the new target value and press **Done**.
7. Press **Settings** to toggle between enabled and disabled.
8. Press **Done** and **Save and Exit**.

1.10 Softkey Operations

Softkeys are configured to provide additional operator functions. Softkeys are displayed as digital buttons at the bottom of the touch screen display area. See Figure 1-1 on page 3.

See the 1280 Technical Manual for softkey configuration.

Softkey	Description
Blank	Inserts a blank key between assigned softkeys.
Time/Date	Allows time and date change.
Display Tare	Displays a tare value for the current scale.
Display Accum	Displays an accumulator value, if enabled, for the current scale.
Display ROC	Displays a rate-of-change value, if enabled, for the current scale.
Setpoint	Displays a list of configured setpoints; allows change to target and enable parameters.
Batch Start	Starts a configured batch.
Batch Stop	Stops a running batch and turns off all associated digital outputs. Requires a batch start to resume processing.
Batch Pause	Pauses a running batch, deactivating current batch digital outputs except those associated with concurrent and timer setpoints. A batch start is required to to resume the batch.
Batch Reset	Stops a batch and resets it to the first batch step.
Unit ID	Displays the name given to the *1280*.
Scale Select	Prompts for the scale number desired for multi-scale applications.
Diagnostics	Future sofkey
Alibi	Previous print transactions can be recalled and reprinted.
Contrast	Adjusts the screen's backlight if set to manual.
Stop	Sends AuxFmt13 out a configured port to prompt a red light on a LaserLight.
Go	Sends AuxFmt12 out a configured port to prompt a green light on a LaserLight.
Off	Sends AuxFmt14 out a configured port to turn a LaserLight red/green light off.
Screen	Allows multiple display screens without a user program.
F1–F10	These are user-programmable keys; defined by application.
< or >	For applications with more than five defined softkeys, the **<** or **>** softkeys are automatically assigned to the fifth softkey position. If there are more keys to the right the **>** softkey will appear, if there are more keys to the left, the **<** softkey will appear. Press **<** or **>** to toggle between groups of softkeys.

Table 1-4. Configurable Softkeys

1.11 Applications

The *1280* can be used in a variety of applications, including checkweighing, counting, recipe batching and truck in/out. For these frequently used applications, the *1280* includes built-in programs that can be used as-is or customized for specific needs. See the 1280 Technical Manual for more information on importing and exporting built-in application programs.

1.11.1 Checkweigher Application

The checkweigher application is included with the *1280* standard firmware. This application is a static checkweigher with a stored low and high weight associated with an ID. A digital output is activated based on the status of the weight. The digital output stores the ID, weight, status (under, accept, or over) and time/date in a database. The print key can be pressed to print the last transaction's ID, weight, status and time/date. Two softkeys are available: **Item** and **Setup Menu**.

Select an Item

1. Press the **Item** softkey.
2. System prompts ***Enter ID to Checkweigh***. Enter a stored ID with associated low and high weights.
3. The ID, low and high weights are displayed and the system waits for the threshold to be triggered.

Checkweigh

1. When the weight exceeds the threshold weight, the indicator checks that an ID was selected. If an ID has not be selected, the system does nothing. If an ID has been selected, the system waits for standstill and compares the gross or net weight (whichever mode Scale 1 is currently in) against the low and high weights.
   - If the weight is less than the low weight, the system displays ***Under*** and turns on the Under output.
   - If the weight is more than the high weight, the system displays ***Over*** and turns on the Over output.
   - If the weight is more than the low weight and less than the high weight, the system displays ***Accept*** and turns on the Accept output.
2. A record will be stored to the database with the ID, the weight, the status (under, accept or over) and time/date.

Status	Output
Under	1
Accept	2
Over	3

Table 1-5. Status Output

3. If the auto print feature is enabled (default is disabled), a ticket will print.

```
ID: 555
Gross:  0.25 lb
ACCEPTED

1/1/2015 01:00 PM
```

Figure 1-8. Checkweigher Ticket

4. When the weight goes under the threshold weight, the display status will clear; the ID, low and high values will remain; and all digital outputs will turn off.

Application Setup & Configuration

The **Setup Menu** softkey is password-protected and offers access to the following:

- Display program name and version
- Display a weight widget

Parameter	Default	Softkey	Description
System Password	""	Setup Password	Allows an operator to change the password that is required for entry into the Setup Menu. If the password is set to nothing, the system will not prompt for a password when the **Setup Menu** softkey is pressed.
Add/Edit Items	-	Database Setup-> Add/Edit Items	Allows an operator to add or edit stored IDs with associated low and high weight values.
Delete Items	-	Database Setup-> Delete Items	Allows an operator to delete stored IDs that are no longer used.
Threshold Weight	100 lb	Threshold Weight	When the threshold weight is exceeded, the system checks if an ID has been selected. If an ID has been selected, the system will wait for standstill before reading the weight and categorizing it based on low or high weight. Additionally, if the weight goes below the threshold weight, the system will clear out the last weighment information and turn off the output.
Auto Print Feature	Disabled	Auto Print	Allows an operator to enable/disable the auto print feature.
Digital I/O Testing	-	More-> I/O Test Screen	Allows an operator to turn on or off digital outputs.

Table 1-6. Checkweigher Application Setup and Configuration

1.11.2 Counting Application

The *1280* counting application is included with the *1280* standard firmware. This application has two scales, one for sampling and one for counting. Upon startup, the softkeys **Sample Size, Scale Select, APW, Clear Tare** and **Setup Menu** are available.

Select Sample Size

1. Press the **Sample Size** softkey. The sample size will toggle to five pieces. If pressed again it will toggle to 10 pieces, then 20, then 50, then 100, then 200, then back to five.
2. Press **Sample Size** once to enter ***Sample Size Mode***. Press a numeric key followed by the **Enter** key to enter any number as the sample size (instead of toggling to one of the choices listed above).
3. Once the correct sample size is displayed in the softkey, press **Enter** to calculate the APW based on the current weight, current scale and current sample size. The number of pieces will display. This number is continuously updated as the weight or scale selected changes.

Select Scale

1. Press the **Scale Select** softkey to switch between scales.
2. There are two scales available. Typically one is used for sampling (smaller capacity) and one is used for counting (larger capacity). This application works the same for both scales, or if only one scale is used for both sampling and counting. The piece count is always referencing the current scale that is displayed.

Enter APW

Press the **APW** softkey to enter a new known APW for the current part.

Counting Pieces

The number of pieces will display. This number is continuously updated as the weight, scale selected or mode selected changes. This includes adding pieces or removing pieces, as well as going to a negative net as pieces are removed from a net zero weight. For example, if a full box was placed on the scale, **Tare** was pressed to tare off the weight to net zero, and then the count pieces were removed, the scale would display a negative number.

```
Gross:  10.25 lb
APW:    .0055 lb
Pieces: 1864

 1/1/2015 01:00 PM
```

Figure 1-9. Counting Printed Ticket Example

Application Setup and Configuration

Parameter	Default	Softkey	Description
System Time and Date	Current	Time/Date	Time and Date of that displays on the *1280*.
System Password	“”	Setup Password	Allows an operator to change the password that is required for entry into the Setup Menu. If the password is set to nothing, the system will not prompt for a password when the **Setup Menu** softkey is pressed.
Clear Transactions	-	Clear Trans	Allows an operator to clear the transaction database.

Table 1-7. Counting Application Setup and Configuration

1.11.3 Recipe Batching Application

The *1280* formula batching application is included with the *1280* standard firmware. Upon startup, the softkeys **Recipe** and **Setup Menu** are available.

Recall a Recipe

1. Press the **Recipe** softkey. The system prompts ***Enter Recipe ID***.
2. Enter the recipe ID and press **Enter**.
3. If the ID is not found, the system prompts ***Recipe NOT Found - Retry***. If the ID is found, the system recalls all of the recipe information and updates the display.

Process a Batch

- The system will stop the batch if the **Emergency Stop** switch is turned off while running a batch. The system also turns off all outputs.

The Emergency Stop Switch is sold separately. See the 1280 Technical Manual for batching switch wiring instructions.

- To restart a batch at a paused step, turn the **Emergency Stop** switch on and use the **Abort-Run-Start** switch.
- To abort and exit the batching sequence during a paused batch, turn the **Emergency Stop** switch off and use the **Abort-Run-Start** switch.

To prevent personal injury and equipment damage, software-based interrupts must always be supplemented by emergency stop switches and other safety devices necessary for the application.

See the 1280 Technical Manual for more information on batching operations.

1. Ensure the scale is empty and zeroed.
2. If the displayed recipe is incorrect, perform the recall a recipe procedure described above.
3. Pull out the **Emergency Stop** switch and use the **Abort-Run-Start** switch to start.
4. The system will do the following things:
   - Verify the weight is below the empty weight value
   - Tare the scale
   - Activate the output for the first ingredient until its target and preact weight value is met
   - Capture and record the stable weight of the just added ingredient
   - Activate the discharge scale output until the weight drops below the empty weight value. It will maintain the output for the discharge time. If the discharge time is set to zero, the system will not perform a discharge.
   - Print a ticket and return to step 1

```
Recipe ID:   1
Recipe Name: Fall Blend

Ingredient      Target     Actual
--------------------------------
Corn            200 lb     192 lb
Winter Wheat    300 lb     323 lb
Chicory         222 lb     318 lb

Total           722 lb     833 lb

Printed @ 09:36AM 09/15/2014
```

Figure 1-10. Recipe Batching Printed Ticket Example

Application Setup and Configuration

The **Setup Menu** softkey is password-protected and offers access to the following:

- Display program name and version
- Display a weight widget

Parameter	Default	Softkey	Description
System Password	""	Setup Password	Allows an operator to change the password that is required for entry into the Setup Menu. If the password is set to nothing, the system will not prompt for a password when the **Setup Menu** softkey is pressed.
Add/Edit Ingredients	-	Database Setup -> Add/Edit Ingredients	Allows an operator to add/edit ingredients from the ingredient database table.
Delete Ingredient	-	Database Setup -> Delete Ingredients	Allows an operator to delete ingredients from the ingredient database table.
Add/Edit Recipes	-	Database Setup -> Add/Edit Recipes	Allows an operator to add/edit recipes from the recipe database table.
Delete Recipe	-	Database Setup -> Delete Recipes	Allows an operator to delete recipes from the recipe database table.
Empty Weight	5.0 lb	Empty Weight	Minimum amount of weight to recognize the scale is empty.
Discharge Time	3.0 Sec	Discharge Time	Length of time the discharge output remains on after reaching the empty weight.
Digital I/O Testing	-	More-> IO Test Screen	Allows an operator to turn on/off digital outputs.

Table 1-8. Recipe Batching Application Setup and Configuration

1.11.4 Truck In/Out Application

The *1280* truck in/out software application is included with the *1280* standard firmware.

When the traffic light turns green, the truck can pull onto the scale for a transaction. The traffic light will turn red when the threshold weight is exceeded. The softkeys **Weigh In, Weigh Out, Truck Register** and **Toggle Light** (requires Stop and Go Laserlight, sold separately) display on the indicator.

Slot 0	Output
Bit 1	Green
Bit 2	Red

Table 1-9. LaserLight Output

Weigh In

1. Press the **Weigh In** softkey. ***Enter Truck ID*** displays.
2. Enter the Truck ID.
3. Press **Enter**.
   - If the ID is found, the indicator displays ***Truck Already Weighed In***. Return to step 1.
   - If the ID is not found, the scale captures a gross weight, adds the inbound transaction to the truck register, prints a weigh ticket and displays ***Weigh In Complete - Exit Scale***. Exit the scale when the light turns green.

```
ID:      555

GROSS: 6000 lb INBOUND

1/1/2015 01:00 PM
```

Figure 1-11. Printed Ticket Sample

Weigh Out

1. Press the **Weigh Out** softkey. ***Enter Truck ID*** displays.
2. Enter the truck ID and press **Enter**.
3. Proceed as follows depending on if an ID is found and whether or not there is a keyed tare in the system.
   - If the ID is not found and there is not a keyed tare, the indicator displays ***Truck Not Weighed In***. Return to step 1.
   - If the ID is not found and there is a keyed tare, the system captures a stable net weight, prints a weigh ticket and displays ***Weigh Out Complete-Exit Scale***. Exit the scale when the light turns green.
   - If the ID is found, the system captures a gross weight and prints a weigh out ticket. The system will also delete inbound weight if the stored tares parameter is disabled in the Setup menu, and will do value swapping if value swapping is enabled in the Setup menu. Exit the scale when the light turns green.

```
ID:    555

GROSS: 100000 lb
TARE:    6000 lb RECALLED
NET:    94000 lb

1/1/2015 01:05 PM
```

Figure 1-12. Printed Ticket Sample

Inbound Trucks

1. Press the **Inbound Trucks** softkey. The system will prompt for a password if one has previously been set for Inbound Trucks. Enter the password.
2. Up to eight inbound weighments will display with ID, weight and time/date. The softkeys will switch to **Page Up**, **Page Down**, **Delete**, **Delete ALL** and **Exit**. The top weighment is selected.
3. Press the **Up** or **Down Navigation Arrows** to change the selection. Alternatively, use the **Page Up** or **Page Down** softkeys to scroll through stored inbound weighments (8 at a time).
4. Press the **Delete** softkey to delete the selected inbound weighment. The system will prompt ***Are You Sure***. To delete, press the **Yes** softkey; to cancel, press the **No** softkey.
5. Press the **Delete All** softkey to delete all inbound weighments. The system will prompt ***Are You Sure***. To delete, press the **Yes** softkey; to cancel, press the **No** softkey.

Truck Register

Press the **Truck Register** softkey to display all the stored inbound tare weights, IDs and time/dates.

Page up/down, delete an individual inbound tare weight, delete all inbound tare weights, or exit back to the starting keys.

Application Setup & Configuration

The **Setup Menu** softkey is password-protected and offers access to the following:

- Display program name and version
- Display a weight widget

Parameter	Default	Softkey	Description
System Password	“”	Setup Password	Allows an operator to change the password that is required for entry into the Setup menu. If the password is set to nothing, the system will not prompt for a password when the **Setup Menu** softkey is pressed.
Stored Tares	On	Stored Tares	When **Stored Tares** is on, the inbound weight is stored even after weighing out. When **Stored Tares** is off, the inbound record is deleted after weighing out.
Inbound Trucks Password	“”	Trucks Password	Allows an operator to change the password that is required for entry into the inbound truck display. If the password is set to nothing, the system will not prompt for a password when the **Inbound Trucks** softkey is pressed.
Value Swapping	On	Value Swapping	When **Value Swapping** is on, the gross weight is always the larger of the gross and tare values, whether the outbound weight was larger or smaller than the inbound weight.
Threshold Weight	5000	Threshold Weight	Enter the weight that triggers the optional traffic light. The weight must go above/below the threshold weight between weighments.

Table 1-10. Truck In/Out Application Setup and Configuration

2.0 Specifications

Power AC

Line Voltages	85-265 VAC
Frequency	50 or 60 Hz
Power Consumption	60 Watts

Power DC

Line Voltages	9-36 VDC
Power Consumption	60 Watts

Scale Card Specifications

Excitation Voltage	10 ± 0.5 VDC bi-polar 16 x 350Ω or 32 x 700Ω load cells per scale card
Analog Signal Input Range	–10 mV to +40 mV
Analog Signal Sensitivity	1.0 µV/graduation minimum at 7.5 Hz -120 Hz 4.0 µV/graduation typical at 960 Hz
A/D Sample Rate	7.5–960 Hz, software selectable
Input Impedance	>35 MΩ typical
Internal Resolution	8 000 000 counts
Wt Display Resolution	9,999,999
Input Sensitivity	10 mV per internal count
System Linearity	±0.01% of full scale
Input Voltage Differential	±800 mV referenced to earth ground
Input Overload	Load cell signal lines ±10 V continuous, ESD protected
RFI/EMI Protection	Short circuit protection, 600W transient voltage suppression Protection for ESD, EFT (electrical fast transients), tertiary lightning, and system-generated transients per IEC 60001-4-2, 60001-4-4, and 60001-4-5; European Standards EN50082 and EN61000-4
Digital Filter	Software selectable: Three Stage, Adaptive or Damping

Option Cards

Six slots supporting following options and loads:

Fieldbus	EtherNet I/P, ProfiNet, Modbus/TCP, DeviceNet, Profibus DP
Single Analog Output	16 bit, voltage output 0-10 VDC, current output 0-20mA, 4-20mA
Dual Analog Output	16 bit, voltage output 0-10 VDC, current output 0-20mA, 4-20mA
Analog Input	2 channel, 16 bit, voltage input ±10 VDC, 0-100 mVDC, current input 0-20mA, Thermocouple E,N,J,K,T
Serial	2 channel, full duplex RS-232 with CTS/RTS, RS-485 or RS-422, 1200-115,200 baud
Digital I/O	24 channels, configurable as inputs or outputs Inputs- 5 VDC max, active low Outputs- 20 mA max per channel, active low 5 VDC source available - 500 mA max
Relay	4 channel, dry contact, max current 3A @ 30 VDC, 3A @250VAC

Digital I/O

8 channels	Configurable as inputs or outputs
Inputs	5 VDC max, active low
Outputs	20 mA max per channel, active low 5 VDC source available - 500 mA max

Communications

Port 1 & 2	Full duplex RS-232 with CTS/RTS, RS-422/485 full and half duplex
Baud Rate (Ports 1 & 2)	1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Port 3	USB 2.0 Device (Micro B)
Port 4	Bluetooth® SPP 2.1+EDR Standards 4Mbaud
USB Host	(2) Type A Connectors max 500 mA

Networking

Wired Ethernet	802.3 10/100 Auto – MDI/MDI-X
Wi-Fi	802.11 b/g/n 2.4 GHz
Wi-Fi Network Type	Infrastructure
Security Types	Open/Shared Key/ WPA-Personal/ WPA2-Personal
Encryption Types	None/WEP/TKIP/AES

Operator Interface

Display	TFT WVGA Color 800 x 480 Resolution White LED Backlight 500 NIT – Standard 1000 NIT – Viewable Outdoors
Keyboard	23-key membrane panel
Touchscreen	5-wire resistive, tactile feel

Memory

Onboard	8GB eMMC (system use),1GB DDR3 485 MB onboard database storage
Micro SD Card	Up to 32 GB

Environmental

Operating Temperature	Legal 14 to 104°F (–10 to +40°C) Industrial -4 to 131°F (–20 to +55°C) *Depending on enclosure and load
Storage Temperature	-4 to 158°F (–20 to +70°C)
Humidity	0–95% relative humidity

Enclosure

Universal Mount
Panel Mount
Wall Mount

Certifications and Approvals

NTEP
CoC Number15-001
Accuracy Class III/IIIL n_{max} : 10 000

Measurement Canada
Approval AM-5980 C
Accuracy Class III/IIIHD n_{max} : 10 000

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