1280 Enterprise Series™

Color Touchscreen Indicator
Version 1.07

Technical Manual

RICE LAKE®
WEIGHING SYSTEMS

PN 167659 Rev G

An ISO 9001 registered company

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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.

For applications using the 1280 indicator as a host device, Version 1.03 or later of the 1280 indicator software must be installed.

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, Wi-Fi and Wi-Fi Direct
- Bluetooth

Other Features

- Built in Web Server for remote access to screens
- Configurable print formats can be defined for up to 1000 characters each. 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, OIML and Measurement Canada certified. See Section 16.0 on page 166 for more information.

Three Enclosure Types

- Universal
- Panel Mount with numeric keypad or touch only (7 inch and 12 inch display)
- 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.
- Single- and 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 channel serial port card (with RS-232, RS-422 and RS-485)
- Dual channel analog input card for 0–100 mV, 0-10 VDC, 0–20 mA or 4-20 mA
- 4-channel relay card
- CompactCom card that supports EtherNet/IP™, DeviceNet™, ProfiNet, Profibus® DP Modbus TCP, EtherCAT and PowerLink networks.

1.1 Safety

Safety Signal Definitions:

DANGER *Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.*

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

CAUTION *Indicates a potentially hazardous situation that, if not avoided, could 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 this manual has been read and all instructions are understood. 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.

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 Weigh Mode

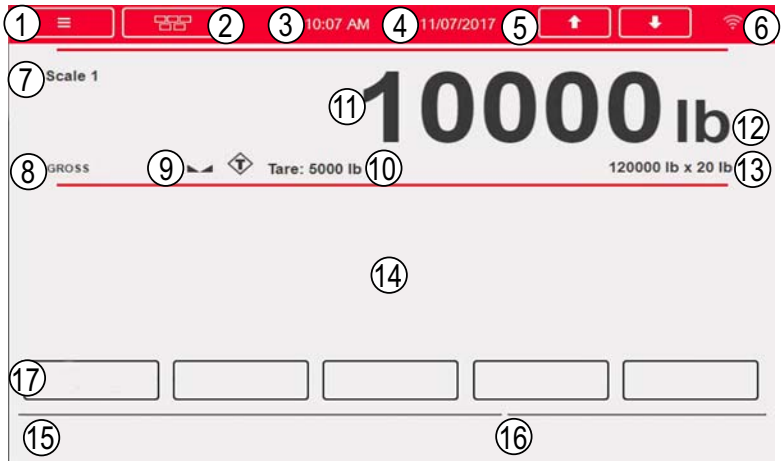


Figure 1-1. Weighing Mode Display Screen

Note *The display illustrations in this manual are for reference only, they can be different from default illustrations depending on the colors, graphics or programs that have been loaded.*

Item No.	Description
Status Bar	
1	Menu key – Press to enter setup menus and audit trail information.
2	Virtual keypad button - Press to enter. Zero, Tare, Gross/Net, Print and Units keys are identical to the physical keys located on the front panel
3	Current time – Press to set the time.
4	Current date – Press to set the date.
5	Scale arrows – Use to scroll through the attached scales in the current scale area (up to eight scales).
6	Wi-Fi Symbol - Indicates Wi-Fi signal strength. When faded, Wi-Fi is not connected or out of range. Press on the symbol to bring up the *Network Information Screen* which includes information on Wired Ethernet, Wi-Fi, Wi-Fi Direct and Bluetooth® and the ability to restart all network connections from the network information screen.
Weight Display Area	
7	Current scale – Scale number currently displayed
8	Gross/Net – Current weighing mode
9	Standstill icon – Indicates scale is stable
10	Tare – Weight of tare in system
11	Weight reading for current scale
12	Unit of measure
13	Capacity and division size (values shown are for illustration only)
14	Application area – Contains configuration of widgets (text boxes, bar graphs, icons, etc)
15	Display line for text (messages from an iRite program)
16	System messages or status (batch running, print queued, etc)
Softkeys	
17	Five softkeys can be selected from the default list, or can be user defined custom text and iRite programming functionality. These can be removed for more screen customization.

Table 1-1. Weigh Mode Display

Note *When a system reset is performed (Version 1.05 and later) the Weigh Mode display is populated with a scale widget and a softkey widget. This gives end users access to softkey setup without having to use EDP commands or revolution.*

1.3 Numeric/Alpha Entry

When data entry is required, a keyboard or a numeric keypad will display on the screen. Additionally, the indicator's front panel is equipped with a numeric keypad.

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

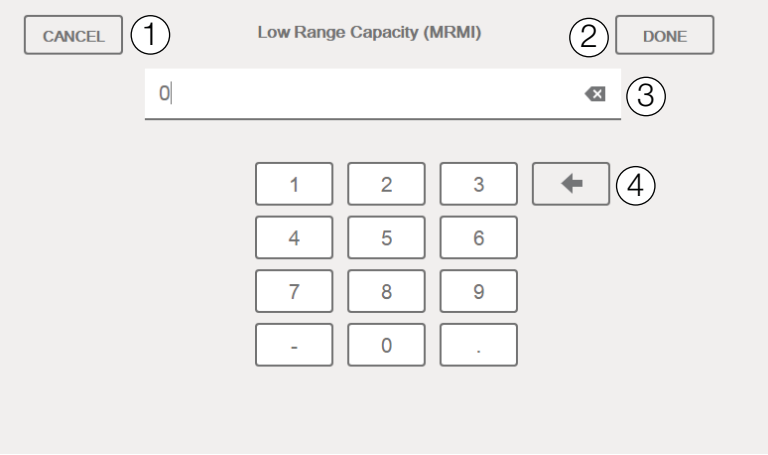


Figure 1-3. 1280 On-screen Numeric Keypad for Numeric Entry

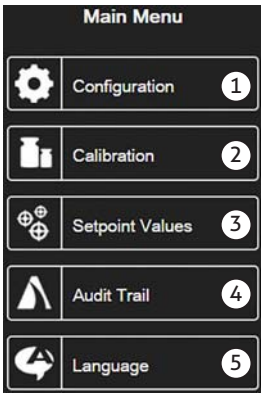
Item No.	Description
1	Cancel – Press to exit keyboard
2	Done – Press to complete keyboard entry
3	Clear – Delete everything in the prompt line
4	Backspace – Delete one character at a time

Table 1-2. On-screen Keyboard Descriptions

1.4 Main Menu User Interface

The *Main Menu* allows the operator access to *Configuration*, *Calibration*, *Setpoint Values*, *Audit Trail* and *Language*.

From the weigh mode press ≡ to enter the main menu.



Item No.	Description
1	Configuration – may be unaccessible to the operator by password protection
2	Calibration – allows the operator to perform a calibration
3	Setpoint Values – access to setpoint targets and settings
4	Audit Trail – view number of configuration and calibration edits, plus the last calibration date
5	Language – allows scale language to be changed

Table 1-3. Main Menu User Interface

1.4.1 Calibration

Use the following steps to perform a standard calibration on a scale.

1. Select the scale to be calibrated and enter the calibration menu.
2. Press Calibrate Scale.
3. Select the method of calibration. Press Next >.
4. Select whether or not chains, hooks or other items used for applying weights will be used during calibration. Press Next >.
5. Remove all weight from the scale except for chains and hooks (if used).
6. Press Calibrate Zero. The current weight and *Zero Calibration Complete* displays.
7. Press Next >.
8. Enter Span weight for the value of the calibration test weights that will be used to calibrate the scale. This is required prior to running the span calibration.
9. With the test weight on the scale platform and the test weight value entered into the calibration weight window, the corresponding scale span value is ready to be calibrated.
10. Press Calibrate Span. The current span weight displays.
11. Press Next >. Calibration results are displayed.
12. Press Finish. Display returns to the Calibration menu.
13. The re-zero function is used to remove a calibration offset when hooks or chains are used to hang the test weights during both zero and span calibration. If hooks or chains were used during calibration, remove these and the test weights from the scale.
14. With all weight removed, press Re-Zero.

1.4.2 Setpoints

Targets are a set of values that when met, cause the setpoint to trip.

Parameter	Default	Description
Value	0	Setpoint Value: Weight-based – specifies the target weight value, 0–9999999 Time-based – specifies time in 0.1 second intervals, range 0–65535 Counter – specifies the number of consecutive batches to run, range 0–65535
Source	Scale 1	Select Scale 1-8.
Trip	Higher	Specifies if the setpoint is satisfied when the weight is higher or lower than the setpoint value, within a band established around the value, or outside of that band. In a batch sequence with: *Trip = Higher* – the associated digital output is active until the setpoint value is exceeded. *Trip = Lower* – the output is active until the weight goes below the setpoint value. *Trip = Inband* – the setpoint is satisfied when the weight is within a band established around the value. *Trip = Outband* – the setpoint is satisfied when the weight is outside a band established around the value, excluding the value.

Table 1-4. Target Parameters

Settings allow the operator to select the mode of the setpoint (batch or free-running). If enabled, it can be accessed by softkey, for defining a name and optional prompt.

Parameter	Default	Description
Batch	Off	Specifies whether the setpoint is used as a batch (On) or continuous (Off) setpoint
Access	On	Specifies the access allowed to setpoint parameters shown by pressing the **Setpoint** softkey in weigh mode. If set to **Off**, values can be displayed but not changed. If set to **Hide**, values do not show.
Enable	On	Turns the setpoint on or off
Alias	—	Enter a name for the setpoint
Prompt	—	Alphanumeric message or prompt that can be displayed in a label widget

Table 1-5. Setpoint Parameters

1.4.3 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.

1. Press **Print** to send the audit trail data out the configured communications port (default is port 1).
2. Select **Done** to return to the weigh mode.

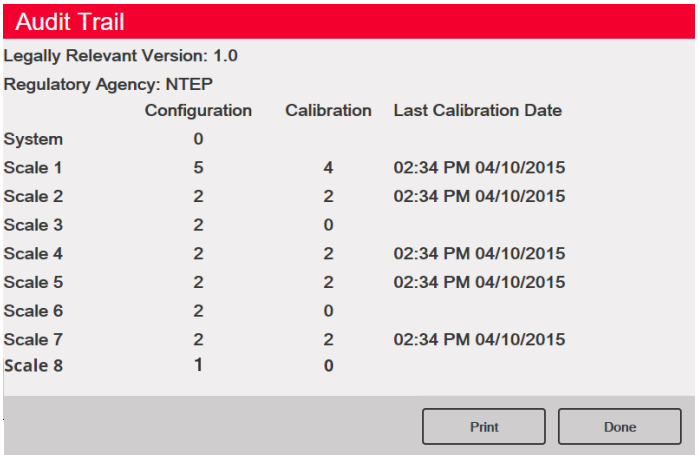


Figure 1-4. Audit Trail Screen

1.4.4 Language

The *1280* has 16 language choices, setting the language is only available in weigh mode. Configuration mode remains in English.

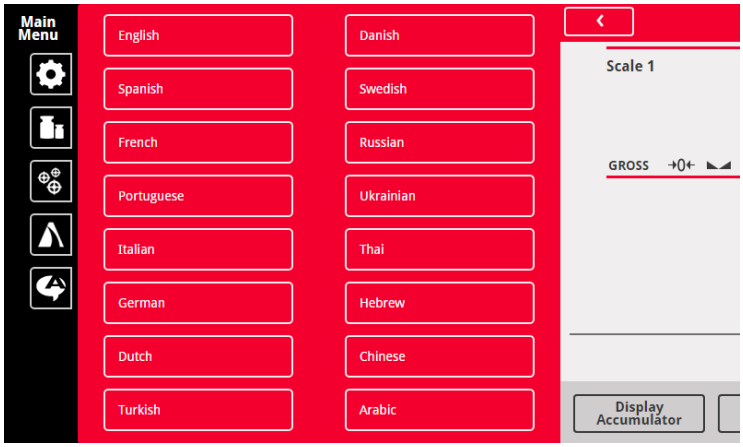


Figure 1-5. Language Selections

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.

1.4.5 Return to Weigh Mode

When settings are complete for Configuration, Calibration or Setpoint Values, press .

The *Busy Wheel* will display for a few seconds, then the display will go back to the weigh mode.

Figure 1-6. Busy Wheel

1.5 Indicator Virtual Keypad Operation

The 1280 comes equipped with a virtual keypad. .The functionality of the Zero, Tare, Gross/Net, Print and Units keys is identical to the physical keys located on the front panel of the keyed 1280.

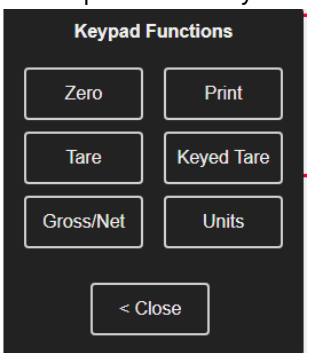


Figure 1-7. Virtual Keypad Functions

The Keyed Tare key is equivalent to the keyed tare softkey that already exists. By pressing Keyed Tare, an onscreen numeric keypad is displayed so that the user can key in a tared value.

Toggle Gross/Net Mode

Pressing Gross/Net 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

1.5.1 Toggle Units

Pressing Units toggles between primary, secondary and tertiary units.

1.5.2 Zero Scale

Use the following steps 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. When →0← displays, the scale is zeroed.

1.5.3 Tare

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

Acquire Tare

Used to store the weight currently on the scale as a tare weight and switch to net mode.

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

Remove Stored Tare Value

Used 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

Used to add a keyed tare.

1. Press the keyed tare virtual key Keyed Tare.
2. Enter the value from the on screen numeric keypad and press *Done*.

1.5.4 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), press the softkey, Aux Print which is not part of the virtual keypad.

1. Wait for ◣◢ to display.
2. Press Aux Print.
3. Enter an auxiliary format number (1-20) and press done to sent the date to the serial port.

1.5.5 Accumulator Functions

Acquiring Weight

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

- Pressing Print
- Activating a digital input print
- Receiving a KPRINT serial command
- iRite calling the PRINT () function
- Activating the accumulator with a 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 (ClearAccum0 iRite API, can be cleared with a setpoint)
- A serial command can be sent

Print the Accumulated Value

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

1.5.6 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.

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 to see the real live weight (as opposed to the peak hold weight).
4. Press Print or Zero to clear the peak hold (unless set to automatic mode, in which case it clears automatically).

Indicator Softkey Setup

The standard 7 inch panel mount has front panel keys, navigation softkeys and a virtual keypad. The 7 inch and 12 inch keyless panel mounts only support a virtual keypad (Figure 1-7).

1. To enter navigation softkey designations for the 7 inch panel mount, navigate from the 1280 main menu to **Configuration - Features - Softkeys**.
2. Add the navigation softkey designation by clicking . Scroll through the list to select the softkey designation, pressing **Done** when complete.
3. The softkeys appear on the main menu screen.

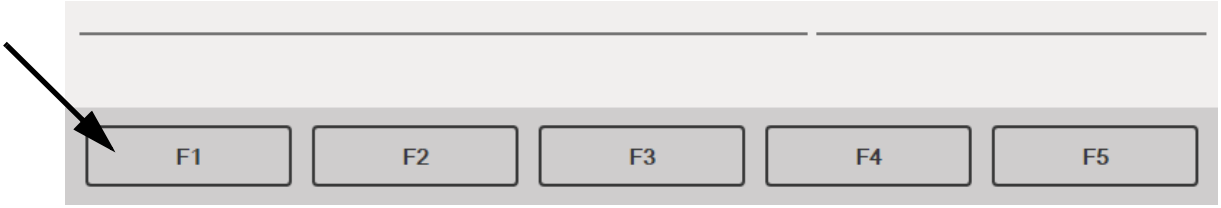


Figure 1-8. Seven Inch Navigation Softkeys

1.6 Indicator Keypad Operations

Figure 1-9. 1280 Front Panel

1.6.1 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.

1.6.2 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.

1.6.3 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.

1.6.4 Toggle Units

Pressing UNITS toggles between primary, secondary and tertiary units.

1.6.5 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. When →0← displays, the scale is zeroed.

1.6.6 Tare

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

Acquire Tare

Used 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

Used 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

Used 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.

1.6.7 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.

1.6.8 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.

1.7 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. Press the Alibi softkey.
2. Use the arrows to scroll to the record required.
3. Press Reprint to print the record.
4. Repeat steps 1-3 until all records required have been printed.
5. When all records required have been printed, press Done.

1.8 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.

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).

1.9 Rate Of Change

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

Example: lb/sec

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.

1.10 Setpoint Entry

Setpoints can be configured to perform actions or functions based on specified parameter conditions. For more information on setpoints.

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.

1.11 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.

Softkey	Description
Blank	No softkey available.
User Defined 1-10	Up to 10 softkeys can be created using one of the user defined options (22 characters or less available).
Time/Date	Displays current time and date; allows time and date change.
Display Tare	Displays tare value in the entry prompt.
Display Accumulator	Displays accumulator value, if enabled, for the current scale.
Display Rate of Change	Displays rate-of-change value, if enabled, for the current scale.
Setpoint	Displays a menu of configured setpoints; allows display and change of some setpoint parameters.
Batch Start	Starts a batch from the current step if a Batch Run digital input is either active or not defined. If a Batch Run digital input is defined and inactive, Batch Start resets the batch to the first step.
Batch Stop	Stops an active batch and turns off all associated digital outputs. Requires a Batch Start to resume processing.
Batch Pause	Pauses an active batch and turns off all digital outputs except those associated with Concurrent and Timer setpoints. Processing is suspended until the indicator receives a Batch Start signal. Pressing the BATSTRT digital input, BATSTART serial command, Batch Start softkey or the StartBatch function (in iRite) resumes the batch and re-energizes all digital outputs turned off by the Batch Pause.
Batch Reset	Stops an active batch and resets the current step to the first batch step. All digital outputs associated with batch setpoints are deactivated. If a batch is stopped or paused, Batch Reset will reset the current step to the first step.
Select Scale	Enter the scale number (using the numeric keypad) to be displayed for multi-scale applications, followed by the select scale softkey.
Diagnostics	Opens the iQube2 diagnostics screen
Alibi	Allows previous print transactions to be recalled and reprinted.
Contrast	Adjusts the screen backlight intensity.
Test	Not available in version 1.00.
Stop	Sends AuxFmt13 out its configured port to display a red light on a LaserLight.
Go	Sends AuxFmt12 out its configured port to display a green light on a LaserLight.
Off	Sends AuxFmt14 out its configured port to turn a LaserLight red/green light off.
Display Unit ID	Displays the Unit ID in the lower left corner of the screen.
Zero	Zeros the indicator.
Gross/Net	Toggles between gross and net modes.
Tare	Tare the scale by using the onscreen numeric keypad
Keyed Tare	Tare the scale by using the onscreen numeric keypad
Units	Toggles between primary, secondary and tertiary units.
Print	Prints the configured print format.
Aux Print	Auxilliary printing by entering the Auxilary Format number (1-20) using onscreen numeric keypad
Screen	Display a different screen by entering a value (1-99) and pressing the Screen softkey.
Database	Accesses the import and export database feature from the weigh mode.

Table 1-6. Configurable Softkeys

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.

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 1-7. Status Output

Note *A database softkey can be used to Import/Export the database from weigh mode.*

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 1-10. 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.

Table 1-8. Checkweigher Application Setup and Configuration

Parameter	Default	Softkey	Description
Digital I/O Testing	-	More-> I/O Test Screen	Allows an operator to turn on or off digital outputs.

Table 1-8. Checkweigher Application Setup and Configuration (Continued)

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 1-11. 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 1-9. Counting Application Setup and Configuration

1.11.3 Recipe Batching Application

The *1280* recipe 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.

Note *The Emergency Stop Switch is sold separately.*

- 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.

WARNING *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.*

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 1-12. 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	Icon	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 operator to turn on/off digital outputs.

Table 1-10. 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. See the 1280 Truck In/Out Addendum (PN 187311) for complete information on setup and functions.

The Truck In/Out program can control a LaserLight2 Stop/Go program and when the remote display signals green, the truck can pull onto the scale for a transaction. The remote display turns red when the threshold weight is exceeded.

If the scale is equipped with a traffic light, and the traffic light turns green, the truck can pull onto the scale for a transaction.

The touch widget Weigh In, Weigh Out, Inbound Trucks, Toggle Light and Setup Menu display on the indicator.

Weigh In

1. Press Weigh In. *Enter Truck ID* displays.
2. Enter the Truck ID.
3. Press Enter.

   If the ID is found:

   - Indicator displays *Truck Already Weighed In*
   - Returns to step 2

   If the ID is not found, the scale:

   - Captures a gross weight from the Scale
   - Adds the inbound transaction to the truck register
   - Prints a weigh-in ticket, reprint is available until the driver exits the scale
   - If a truck exit is required, thetraffic light turns green and displays *Weigh In Complete - Exit Scale*
   - When the weight drops below the *Threshold Weight*, the system returns to Step 1

   If the truck Exit is disabled:

   - Indicator displays *Weigh In Complete*
   - Returns back to Step 1

Weigh Out

1. Press Weigh Out. *Enter Truck ID* displays.

2. Enter the truck ID and press Enter. System queries the Inbound database table:

   If the ID is not found and there is not a keyed tare, the indicator

   - Momentarily displays *Truck Not Found*
   - Returns to *Enter Truck ID*

   If the ID is found, the system:

   - *Enter Product ID* displays if there are products stored in the database. Enter a stored *Product ID* and press Enter, or press Enter to skip. If only one product exists, system goes to customer prompt
   - *Enter Customer ID* displays if there are customers stored in the database. Enter a stored *Customer ID* and press Enter, or press Enter to skip. If only one customer exists system uses that customer and goes to capturing net weight
   - Captures a stable *GROSS* weight from the Total Scale.
   - Does *Value Swapping* if enabled in the Setup Menu (not with *Keyed* Tare)
   - Prints a Weigh Out Ticket, reprint is available until the driver exits the scale
   - Stores Transaction Record

     Deletes inbound weight if *Stored Tares* is disabled in the Setup Menu (not with *Keyed* Tare).

     Deletes inbound weight if Stored Tares is enabled and Truck ID has a decimal in it.

3. Exit the scale when the light turns green.

   If the Truck Exit is required:

   - Indicator displays *Weigh Out Complete - Exit Scale*
   - When the weight drops below the *Threshold Weight* system returns to Step 1

   If the Truck Exit is disabled:

   - Indicator displays *Weigh Out Complete and goes back to Step 1*

Inbound Trucks

1. Press the Inbound Trucks touch widget. The system prompts 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 touch widget will switch to Page Up, Page Down, Delete, Delete ALL and Exit. The top weighment is selected.
3. Press the Up or Down Arrows to change the selection, or use the Page Up or Page Down touch widget to scroll through stored inbound weighments (eight at a time).
4. Press the Delete touch widget to delete the selected inbound weighment. The system will prompt *Are You Sure*. To delete, press the Yes touch widget; to cancel, press the No softkey.
5. Press the Delete All touch widget to delete all inbound weighments. The system will prompt *Are You Sure*. To delete, press the Yes touch widget; to cancel, press the No touch widget.

Parameter	Default	Button	Description
System Password	“ ”	Setup Password	Change the password that is required for entry into the Setup Menu. Setting the password to nothing will cause the system to not prompt for a password when the Setup Menu touch widget is pressed
Inbound Trucks Password	“ ”	Trucks Password	Change the password that is required for entry into the Inbound Trucks display. Setting the password to nothing will cause the system to not prompt for a password when the Inbound Trucks touch widget is pressed
Stored Tares	ON	Stored Tares	When ON, the inbound weight is stored even after weighing out. When OFF, the inbound record is deleted after weighing out.
Value Swapping	ON	Value Swapping	When 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. When OFF, gross is always the outbound weight.

Table 1-11. Truck In/Out Application Setup and Configuration

Parameter	Default	Button	Description
Threshold Weight	5000 lb	Threshold Weight	Weight that triggers the optional traffic light and is the weight that the scale must go above or below before weighments are allowed.
Import/Export Data		Import/Export	1280 standard function. Allows the operator to import Products into the Product database table from a USB flash drive using .DB file type; also allows the user to save transactions to the USB flash drive. Reference the 1280 Technical Manual import/Export section for more details.
Add/Edit Products	-	Add//Edit Product	Add/Edit products in the Product database table.
Delete Products	-	Delete Product	Delete products in the Product database table.
Add/Edit Customers	-	Add//Edit Customer	Add/Edit customers to the Customer database table.
Delete Customers	-	Delete Customer	Delete customers in the Customer database table.
Print Report	-	Customer by Product Customer by Truck	Print two totals reports (totals only).
Truck Exit	Required/ Disabled	Truck Exit	Allows operator to decide if truck needs to go below the threshold in between weighments.

Table 1-11. Truck In/Out Application Setup and Configuration (Continued)

2.0 Installation

This section describes procedures for connecting power, load cells, digital I/O and data communications cables to the *1280* indicator. Instructions for replacement of the circuit boards are also included, along with assembly drawings and replacement parts lists for the service technician.

WARNING

- *Use a wrist strap to ground yourself and protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
- *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
- *In the 1280 wall and universal mounts, the supply cord serves as the power disconnect. The power receptacle to the indicator must be easily accessible for these models.*

2.1 Unpacking

Immediately after unpacking, visually inspect the *1280* to ensure all components are included and undamaged. The shipping carton should contain the controller, display, CD, parts kit, any options ordered with the unit and the appropriate manuals. If any parts were damaged in shipment, notify Rice Lake Weighing Systems and the shipper immediately.

2.2 Mounting/Assembly

There are three *1280* enclosure styles: a universal mount, wall mount and panel mount.

2.2.1 Universal Mount Enclosure with Tilt Stand

The universal mount is shipped with a tilt stand and can be mounted on a wall, tabletop or any flat surface.

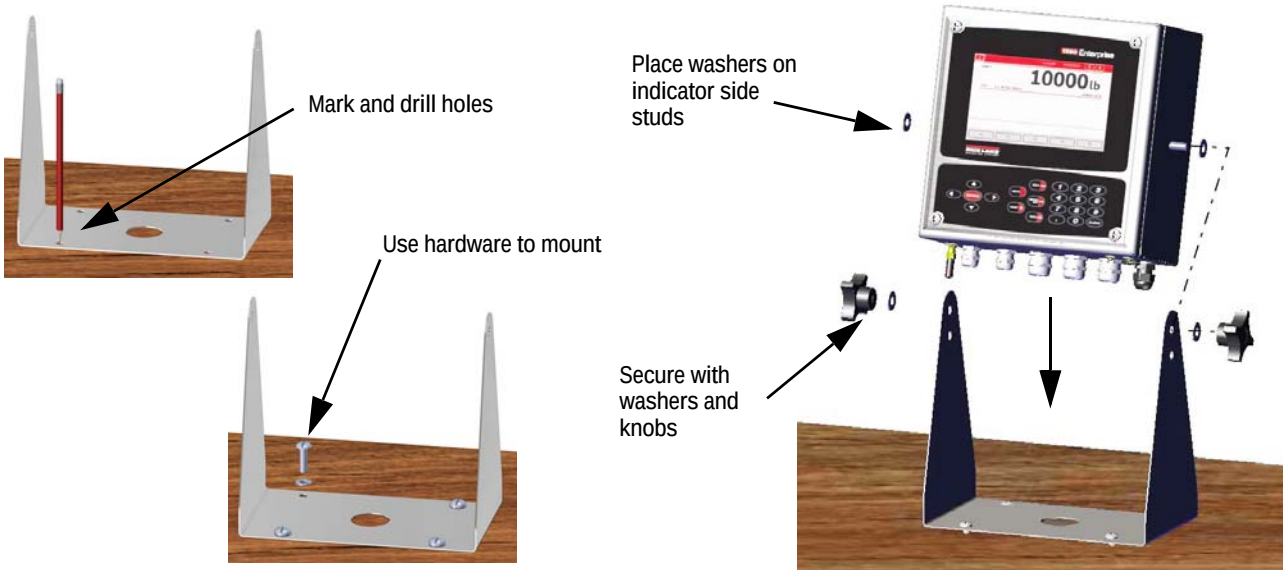


Figure 2-1. Mounting the 1280 – Universal Enclosure

1. Using the tilt stand as a template, mark the screw locations. See Figure 2-5 on page 22 for dimensions.

Note *The 1280 universal enclosure can mount to the same location where a 920i universal enclosure was mounted; the screw locations for the tilt stand are the same.*

2. Drill holes for the screws.
3. Mount the tilt stand using the appropriate hardware (not included).
4. Place one washer on each side stud of the indicator enclosure.

5. Place the indicator side studs into the holes on the arms of the tilt stand.
6. Secure with remaining washers and hand knobs from the hardware kit.
7. Wire the indicator according to Section 2.4 on page 33.

Remove Shipping Bracket

The universal mount is shipped with a shipping bracket inside the enclosure to stabilize it during shipping.

1. Loosen the four screws securing the front door.
2. Pull the door and fully extend the hinge to swing the door open. See Figure 2-2.
3. The bracket will be loose, remove it from the enclosure.

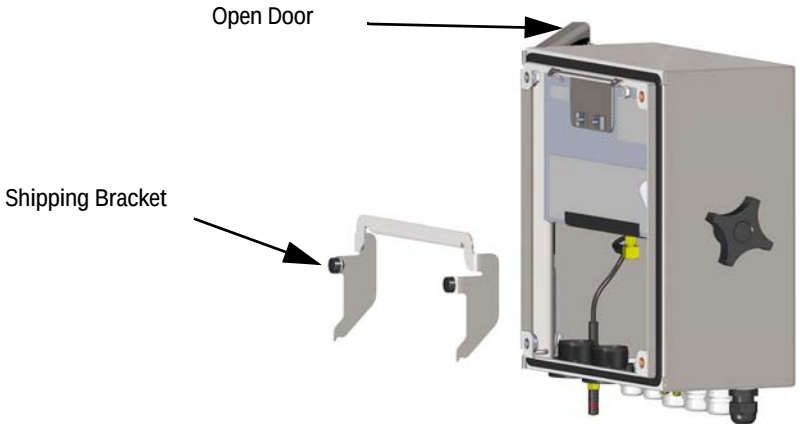


Figure 2-2. Remove Shipping Bracket

Note *Retain shipping bracket for future shipping needs.*

Controller Disassembly

Note *The controller can be tilted up with the locking tab or it can be completely removed from the enclosure by removing the retaining wire clip.*

1. Remove the large fillister screw in the back of the indicator to tilt or remove the controller. The seal must be broken for this purpose.
2. Loosen the four screws securing the front door.
3. Pull the door and fully extend the hinge to swing the door open.
4. Pull the locking tab to the left to release the controller assembly.
5. Remove the wires connected to the controller assembly.
6. Remove the retaining wire clip connected to the controller assembly. This only needs to be removed if the controller is being removed from the enclosure.
7. Lift controller assembly from the enclosure.

Figure 2-3. Open Cover – Universal

Reverse this procedure for reassembly. Upon reassembly, ensure display and keyboard wires are properly connected.

Note *To close the door to the universal enclosure, push the bail in and down so that it does not get caught on the controller assembly.*

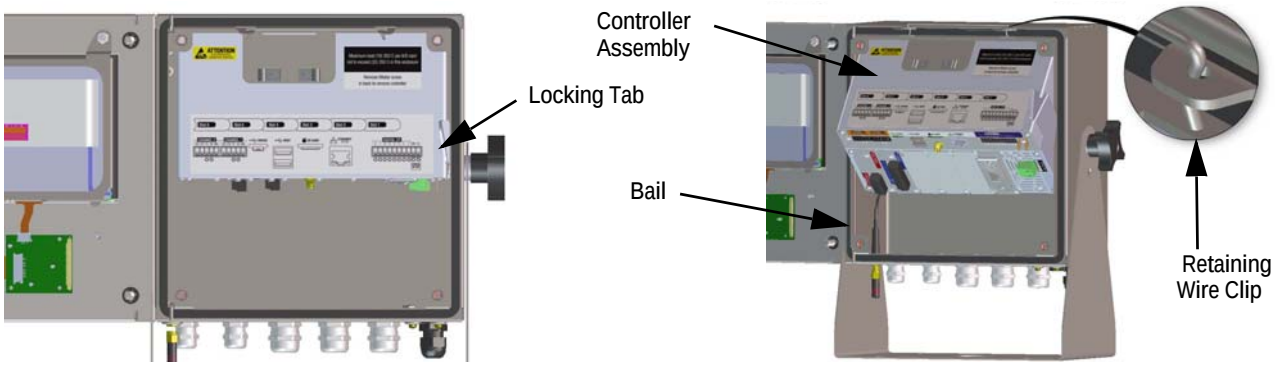


Figure 2-4. Remove CPU Assembly– Universal

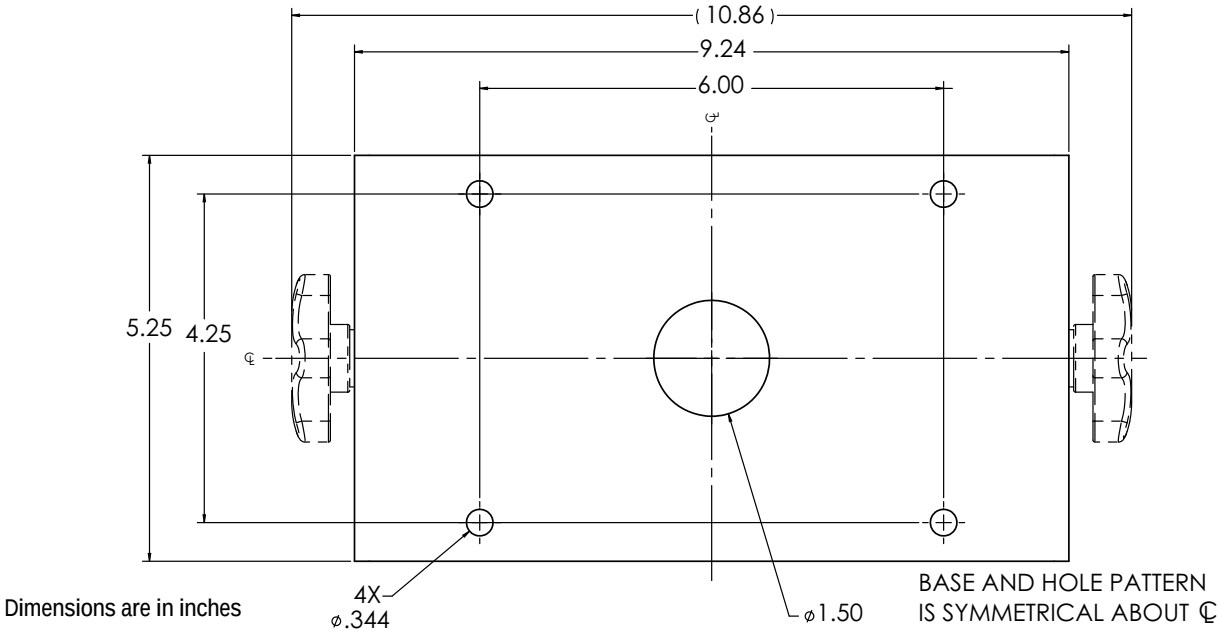


Figure 2-5. Universal Surface Mount Stand Dimensions

IMPORTANT *This illustration is not to scale. It is for illustration purposes only. Use the dimensions to mark the holes for the universal mount, or use the bottom of the tilt stand as a template. Do not use Figure 2-5 as a template.*

Sealing the Setup Switch

In certain Legal for Trade applications, it may be necessary to seal the indicator to restrict access from the setup switch. Use the following instructions to seal the universal enclosure.

IMPORTANT *The audit trail jumper (JP1) needs to be disabled, in the off (right) position, in order to seal the setup switch with a lead seal wire. Access is not prevented simply by sealing the setup switch.*

1. Turn off (right position) the audit trail jumper (JP1). See Section 2.7 on page 39 for instructions on how to remove the CPU board (which is necessary to disable the audit trail jumper). This will restrict access from the configuration menu through the front panel.
2. If not previously installed, install the large fillister screw in the back of the indicator.
3. Wrap the lead wire seal through the large fillister screw and the two smaller fillister screws in order to seal the indicator. This will restrict access to the setup switch.

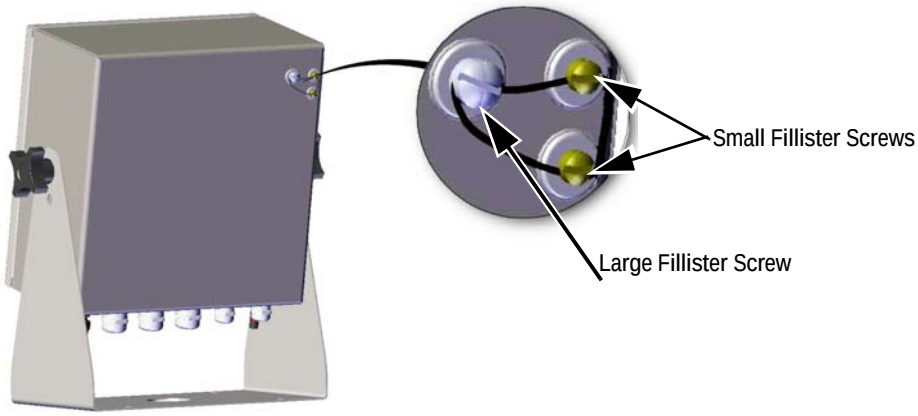


Figure 2-6. Seal the Setup Switch (Universal Mount)

Sealing the Front Door

In certain Legal for Trade applications, it may be necessary to seal the indicator to restrict access from the internal hardware of the indicator. To seal the universal enclosure front door, wrap the lead wire seal through the large bottom right screw securing the front door and the two small fillister screws on the bottom of the enclosure. Alternatively, the A/D scale card includes fillister screws and a bracket that prevent the load cell cable from being disconnected.

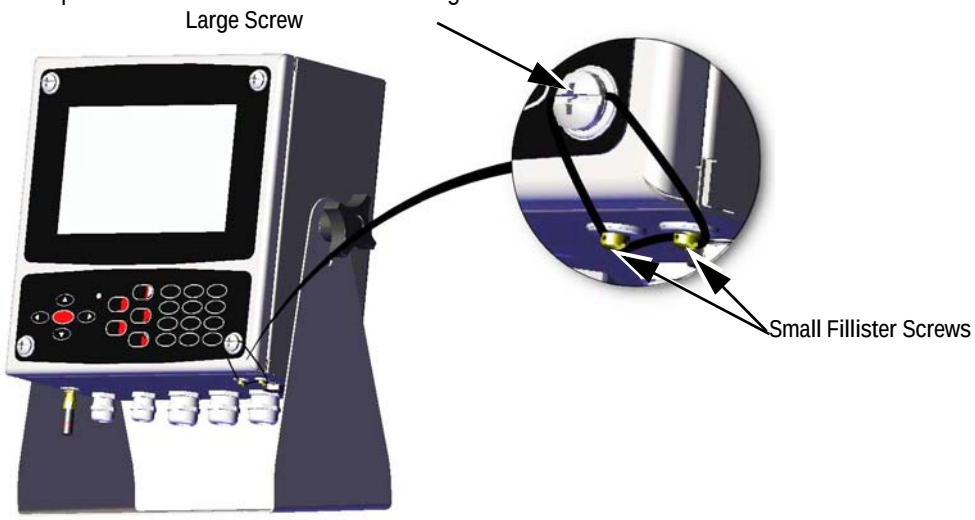


Figure 2-7. Seal the Front Door (Universal Mount)

2.2.2 Wall Mount Enclosure

1. Using the wall mount as a template, mark the screw locations. See Figure 2-14 on page 26 for dimensions.

Note The *1280* wall enclosure can mount to the same location where a 920i was mounted; the screw locations are the same.

2.Drill the holes for the screws.

3. Mount the wall mount using the appropriate hardware (not included).

Figure 2-8. 1280 Wall Mount

Remove Shipping Bracket

1. Loosen the four screws on the front door. See Figure 2-10.
2. Swing the door open.
3. Remove the four screws securing the bracket in place.
4. Remove bracket from the enclosure.

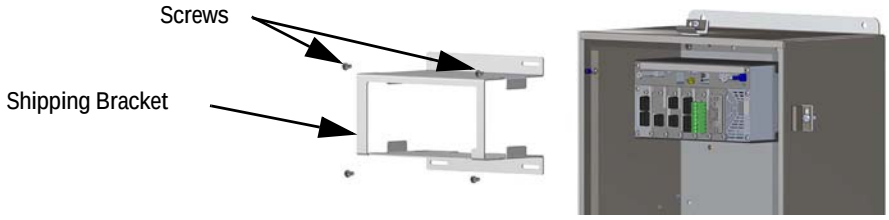


Figure 2-9. Remove Shipping Bracket – Wall Mount

Controller Disassembly

1. Loosen the four screws on the front door.
2. Swing the door open.
3. Remove the wires connected to the controller assembly.
4. While supporting the controller assembly, use a screwdriver to slide the mounting plate down. See Figure 2-11.
5. Lift the controller assembly up to remove it from the DIN rail and pull it out of the enclosure.

Reverse this procedure for controller assembly installation.

Note *When closing the door, tighten screws to 15 in-lb to ensure the enclosure is securely sealed.*

Figure 2-10. Open Door – Wall Mount

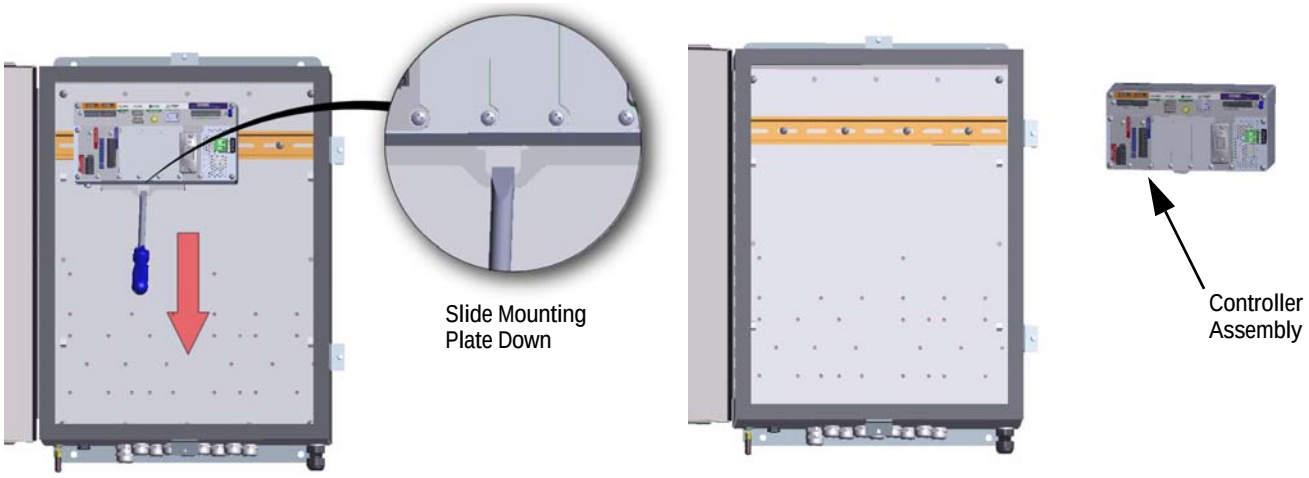


Figure 2-11. Remove Controller Assembly - Wall Mount

Sealing the Setup Switch

In certain Legal for Trade applications, it may be necessary to seal the indicator to restrict access from the setup switch. Use the following instructions to seal the wall mount enclosure.

IMPORTANT *The audit trail jumper (JP1) needs to be disabled, in the off (right) position, in order to seal the setup switch with a lead seal wire. Access is not prevented simply by sealing the setup switch.*

1. Turn off (right position) the audit trail jumper (JP1). See Section 2.7 on page 39 for instructions on how to remove the CPU board (which is necessary to disable the audit trail jumper). This will restrict access from the configuration menu through the front panel.
2. Wrap the lead wire seal through the large fillister screw and the bottom tab of the DIN rail clip to restrict access to the setup switch.

Enclosure hidden for illustration purposes only. Controller Assembly does not need to be removed from the enclosure to seal the setup switch.

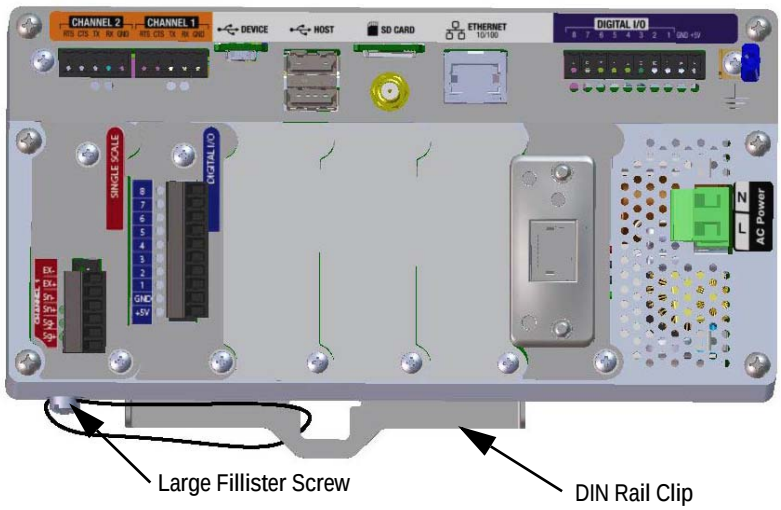


Figure 2-12. Seal the Setup Switch (Wall Mount)

Sealing the Front Door

In certain Legal for Trade applications, it may be necessary to seal the indicator to restrict access from the internal hardware of the indicator. To seal the wall mount enclosure front door, wrap the lead wire seal through the large screw securing the front door and the hole in the edge of the door enclosure. Alternatively, the A/D scale card includes fillister screws and a bracket that prevent the load cell cable from being disconnected.

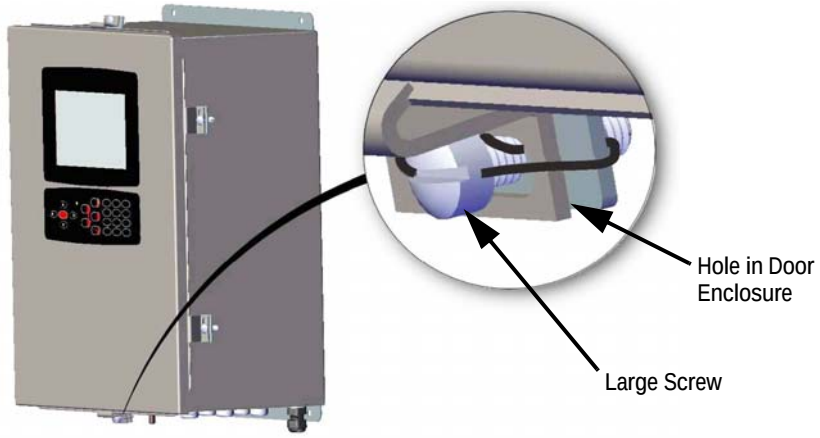


Figure 2-13. Seal the Front Door (Wall Mount)

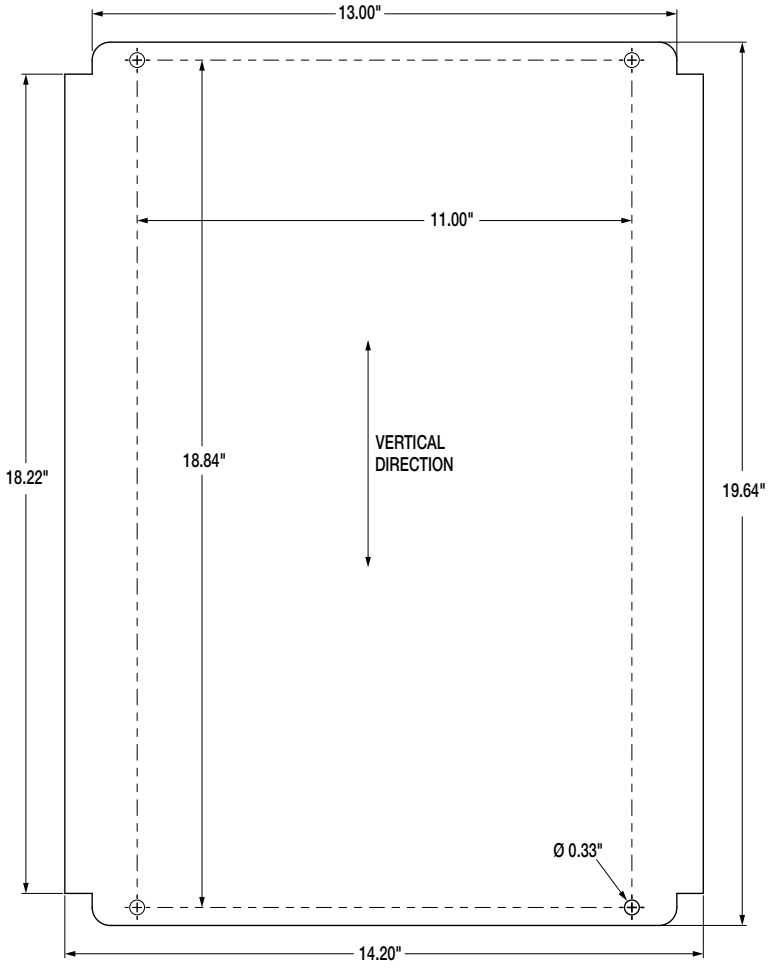


Figure 2-14. Wall Mount Dimensions

IMPORTANT *This illustration is not to scale. It is for illustration purposes only. Use the dimensions to mark the holes for the wall mount. Do not use Figure 2-14 as a template.*

2.2.3 Panel Mount Enclosure

The *1280* panel mount will ship partially assembled. The display assembly must be removed from the backing plate to allow installation on the existing panel.

1. Tape the panel mount template to the outside of the panel. See Figure 2-15 and Figure 2-17.
2. Mark and drill holes according to the template.
3. Place the display assembly and the DIN rail bracket on either side of the panel. Ensure that the DIN rail bracket is horizontal, as shown in Figure 2-16.
4. Use studs, nuts and washers to secure the display assembly to the DIN rail bracket.

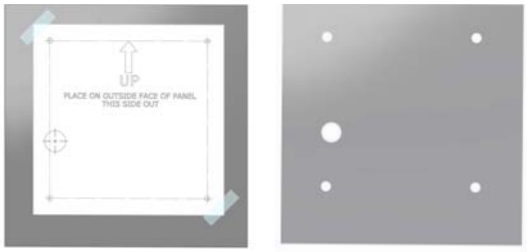


Figure 2-15. Mark and Drill Holes for Panel

Figure 2-16. Mounting the 1280 – Panel Enclosure

Panel Mount Dimensions

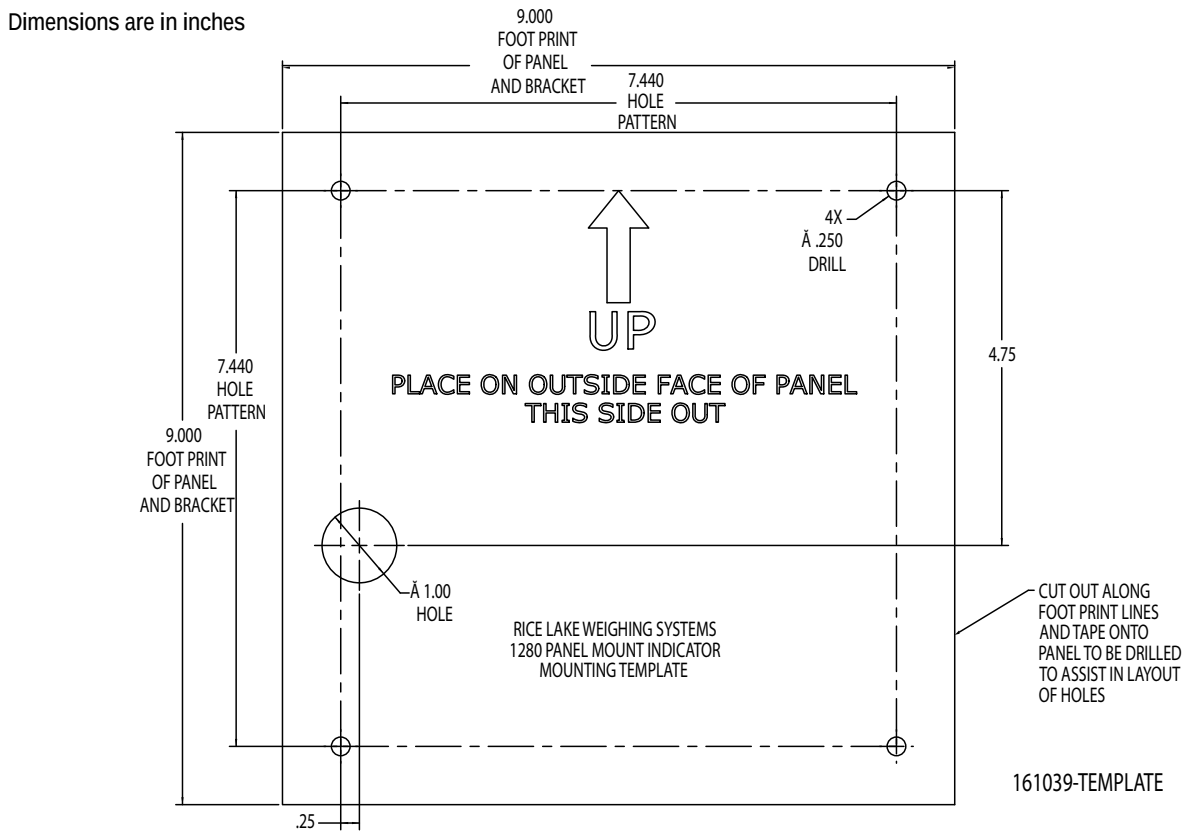


Figure 2-17. Panel Mount with Keypad Dimensions

Touch Only 7 Inch Panel Mount Dimensions

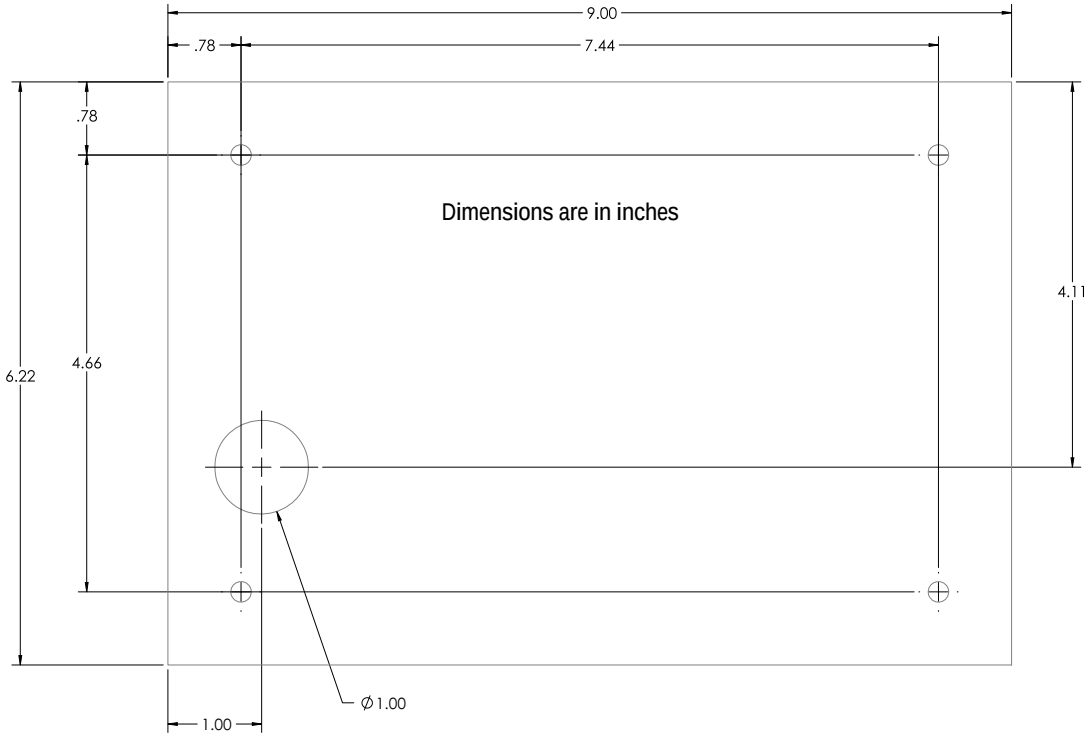


Figure 2-18. 7 Inch Touch Only Panel Mount Dimensions

Touch Only 12 Inch Panel Mount Dimensions

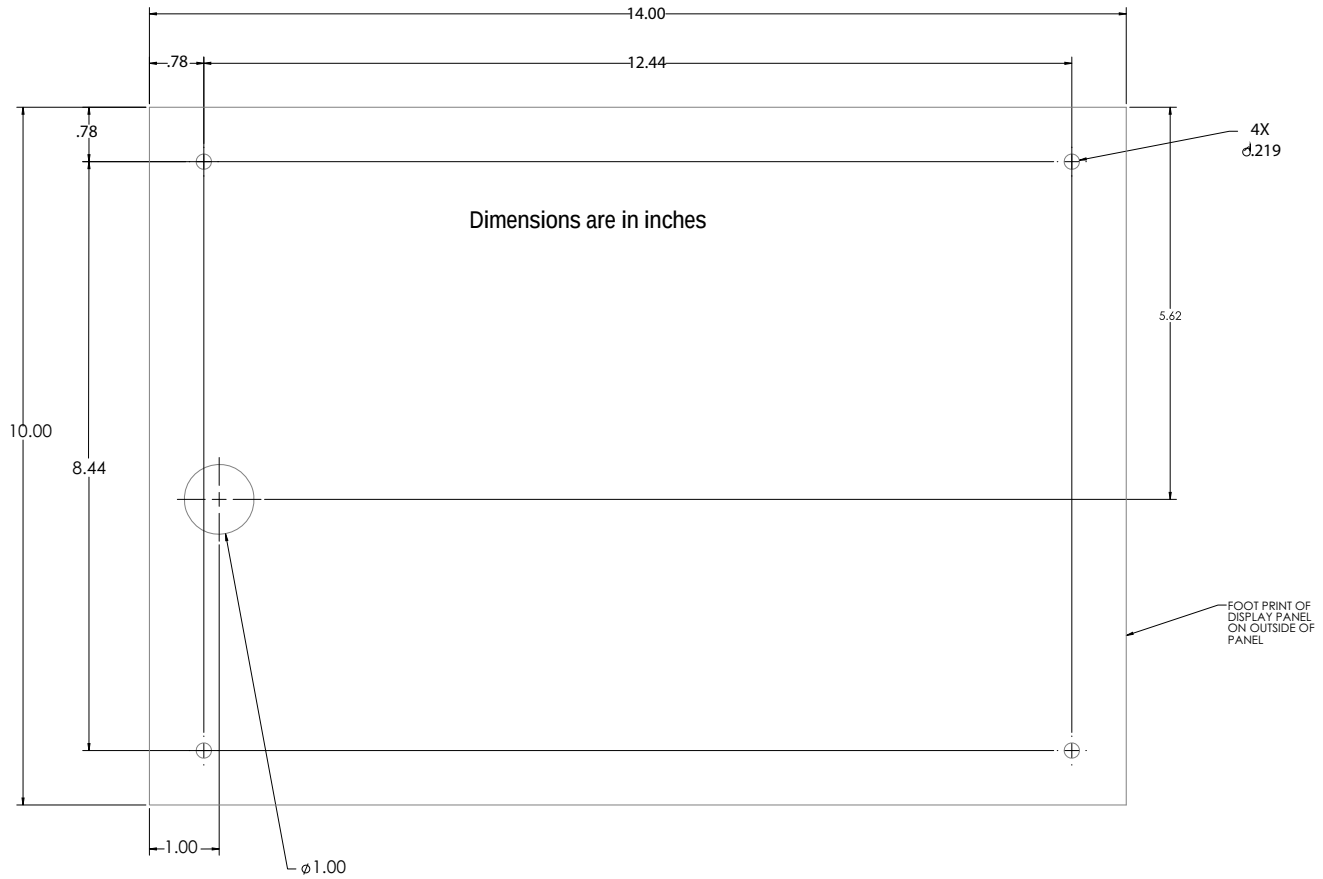


Figure 2-19. 12 Inch Touch Only Panel Mount Dimensions

IMPORTANT *These illustrations are not to scale. It is for illustration purposes only. Use the dimensions to mark the holes for the panel mount, or use the template provided with the indicator. Do NOT use Figure 2-17, Figure 2-18 and Figure 2-19 as a template.*

Installing Grounding Bus Bar

The grounding bus bar is installed on the controller assembly for grounding purposes on the *1280* panel mount enclosure.

1. Remove the four corner screws from the controller assembly.
2. Secure grounding bus bar onto controller assembly using screws from step 1.

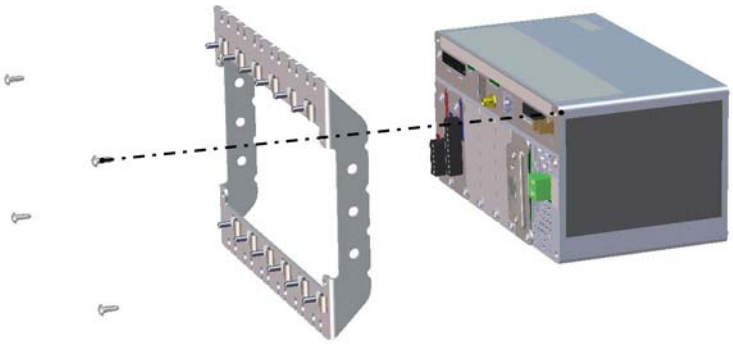


Figure 2-20. Grounding Bus Bar Installation

Installing the Controller Assembly

The controller assembly can be mounted to a standard DIN rail.

1. Hook the bracket on the back of the controller assembly onto the DIN rail.

Note *The controller assembly can be installed up to 30 inches from the display of the panel mount enclosure.*

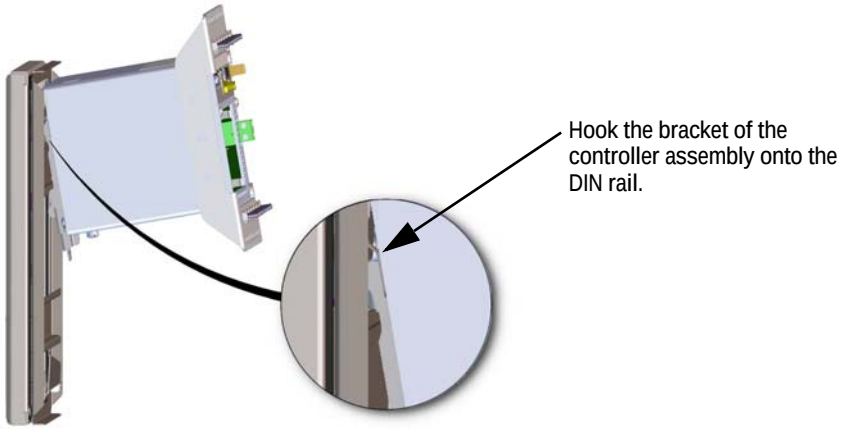


Figure 2-21. Hook Bracket on DIN Rail

2. Push controller assembly against the DIN rail in order to engage the spring clip. The controller assembly will lock onto the DIN rail bracket.
3. Connect wiring. See Section 2.4 on page 33.

Removing Controller Assembly

1. Disconnect wiring.
2. While supporting the controller assembly, use a screwdriver to slide the mounting plate down.
3. Unhook the controller assembly from the DIN rail bracket.
4. Carefully remove the controller assembly from the DIN rail bracket and release the mounting plate.

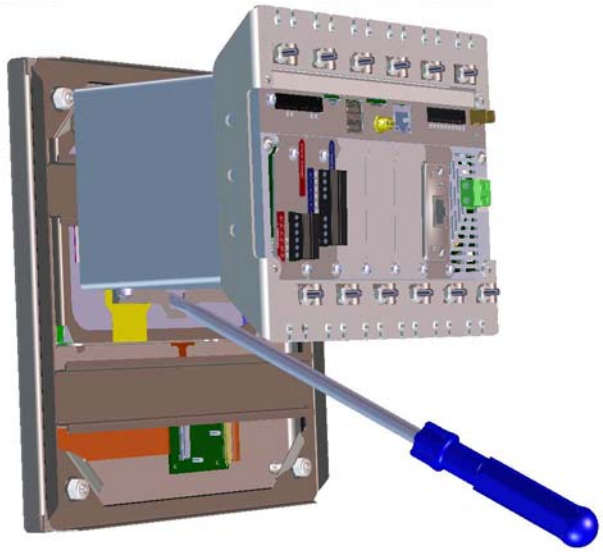


Figure 2-22. Remove Controller Assembly from DIN rail

Sealing the Setup Switch

In certain Legal for Trade applications, it may be necessary to seal the indicator to restrict access from the setup switch. Use the following instructions to seal the panel mount enclosure.

IMPORTANT *The audit trail jumper (JP1) needs to be disabled, in the off (right) position, in order to seal the setup switch with a lead seal wire. Access is not prevented simply by sealing the setup switch.*

Wrap the lead wire seal through the large fillister screw and through the bottom tab of the DIN rail clip to restrict access to the setup switch. Alternatively, the A/D scale card includes fillister screws and a bracket that prevent the load cell cable from being disconnected.

Enclosure and grounding bus bar hidden for illustration purposes only. Controller Assembly does not need to be removed from the enclosure to seal the setup switch. Similarly, the grounding bus bar may remain attached if previously installed.

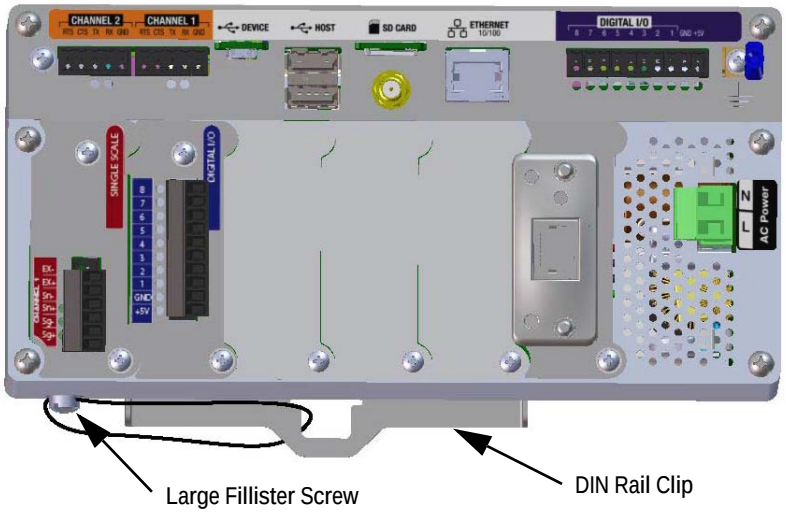
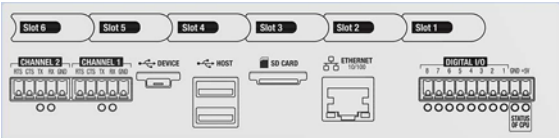


Figure 2-23. Seal the Setup Switch (Panel Mount Enclosure)

2.3 Option Card Installation

Use the following instructions to install option cards in the *1280*. There are two SPI communication buses for the six option card slots: one for slots 1, 2 and 3 and a second for slots 4, 5 and 6. Communication is faster with less traffic on an SPI bus. For optimal performance, populate slots 1 and 4 first in order to keep cards on their own SPI bus.



See Figure 2-25 on page 32 for label location.

Figure 2-24. Label on the Top of the Controller Assembly

WARNING

- *Option cards are not hot-swappable. Disconnect power to the 1280 before installing option cards.*
- *Use a wrist strap to ground yourself and protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
- *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
- *In the 1280 wall and universal enclosures, the supply cord serves as the power disconnect. The power receptacle to the indicator must be easily accessible for these models.*

Note

It may be easier to install option cards in the universal enclosure if the controller assembly is removed from the enclosure. See Section 2.2.1 on page 20.

1.Remove the hardware securing the slot cover plate.

2. Remove the slot cover plate.
3. Slide the option card into place.
4. Secure the card using the hardware that secured the slot cover plate.
5. Attach cables. See Section 2.4 on page 33.

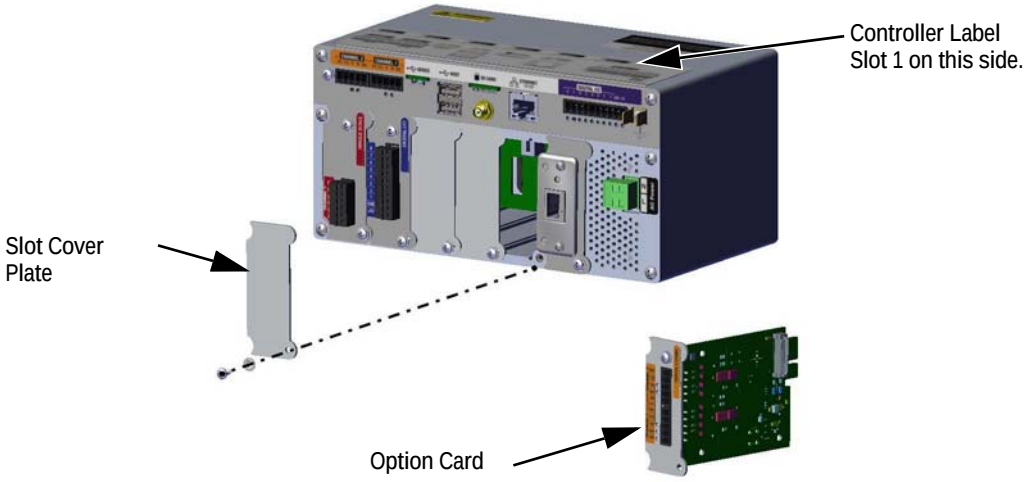


Figure 2-25. Option Card Installation

Figure 2-26. Installed Option Card

Seal the Scale Card

Once an option card has been put into place and cable connections have been made, a seal can be placed over the card and connections to restrict access and keep them from being removed.

1. Align the sealing bracket over the connectors on the option card.
2. Secure with two large fillister screws.
3. Insert the lead wire seal through the holes in the sealing bracket and the large fillister screws as shown in Figure 2-27.

Figure 2-27. Option Card Seal

2.4 Cable Connections

The *1280* universal and wall enclosures provide cord grips for cabling into the indicator; one is for the power cord and the rest are to accommodate interface cables. Install plugs in all unused cord grips to prevent moisture from entering the enclosure. Secure wires after cabling is complete to avoid low voltage circuits contacting high voltage circuits.

2.4.1 Grounding Through Cord Grips

To ground cables to the universal or wall enclosures, route the cable through one of the metal cord grips. Ensure the exposed shielding makes contact with the tabs of the grounding washer inside the cord grip. See Figure 2-28.

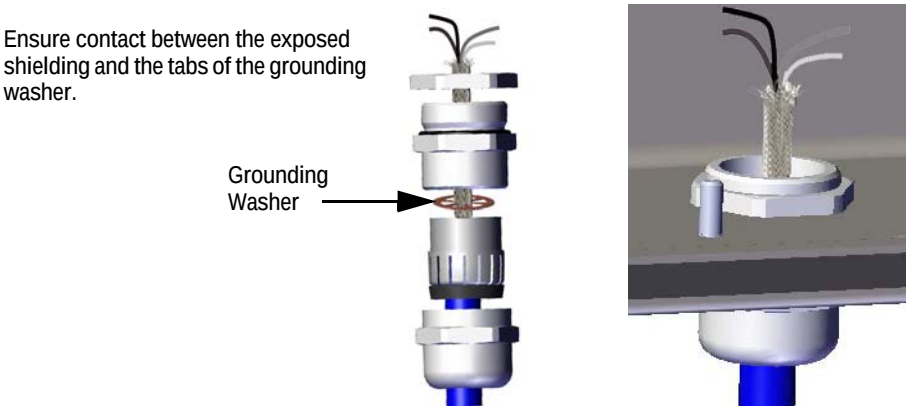


Figure 2-28. Universal and Wall Enclosure Grounding

2.4.2 Panel Enclosure Grounding

To ground cables to the panel enclosure, place the shield wire on the grounding clip on the controller assembly.

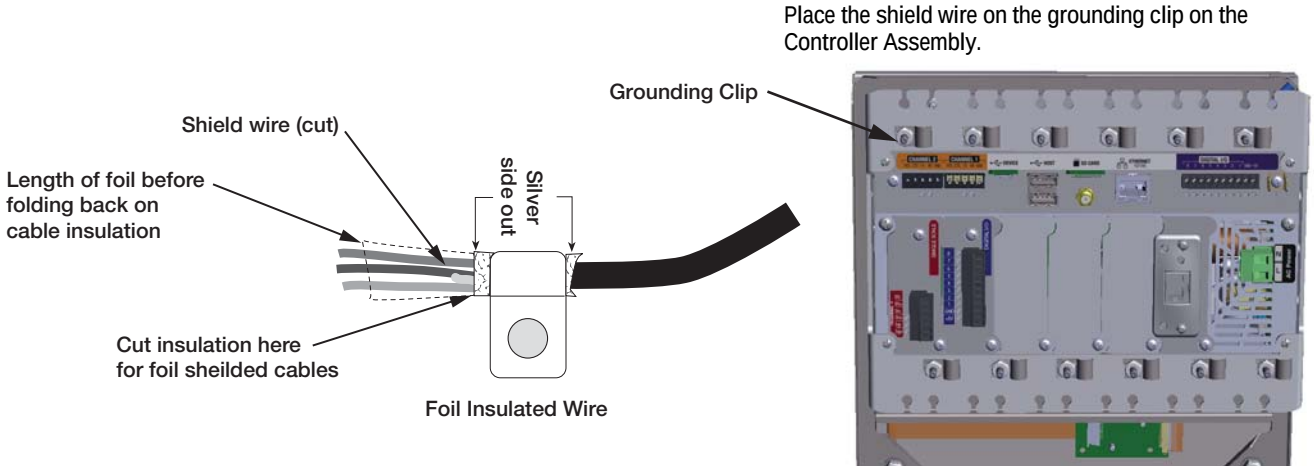


Figure 2-29. 1280 Panel Enclosure Grounding

Note *The controller assembly must be grounded to the stud and nut that hold the panel enclosure to the backing plate per national electrical code (NEC).*

2.4.3 Load Cells

Use the following instructions to attach the cable from a load cell or junction box to an installed A/D scale card channel.

1. Route the cables.
2. Remove connector J1 from the parts kit and wire the load cell cables to it.
3. Plug the connector into the appropriate channel of the A/D scale card (see Figure 2-30).
4. Wire the load cell cable from the load cell or junction box to connector J1 and/or J2 if using a dual A/D scale card as shown in Table 2-1 on page 35.

Light pipes and mounting plate removed for clarity.

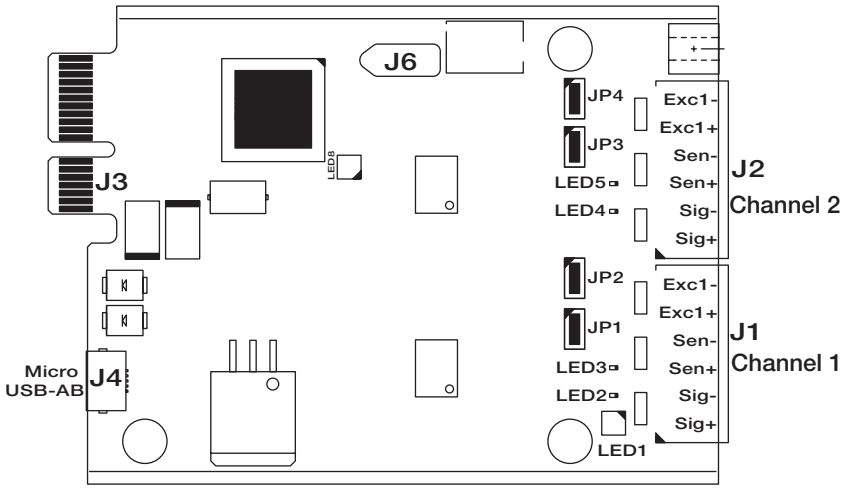


Figure 2-30. Single and Dual A/D Scale Cards

- *If using a 6-wire load cell cable (with sense wires), remove jumpers JP1 and JP2 before reinstalling connector J1. On dual-channel A/D scale cards, remove jumpers JP3 and JP4 for connections to J2.*
- *For 4-wire installation, leave jumpers JP1 and JP2 on (or JP3 and JP4 depending on the channel).*

Scale Card Connector Pin	Function
1	+SIG
2	–SIG
3	+SENSE
4	–SENSE
5	+EXC
6	–EXC

Table 2-1. Scale Card Pin Assignments

IMPORTANT *The A/D scale card must be removed from the controller prior to configuring the sense line jumpers.*

Note *The hardware of J2 will not be populated on a single A/D scale card.*

2.4.4 Serial Communications

The two communication ports on the *1280* CPU board support full duplex RS-232, RS-422 or RS-485 communications at up to 115200 bps.

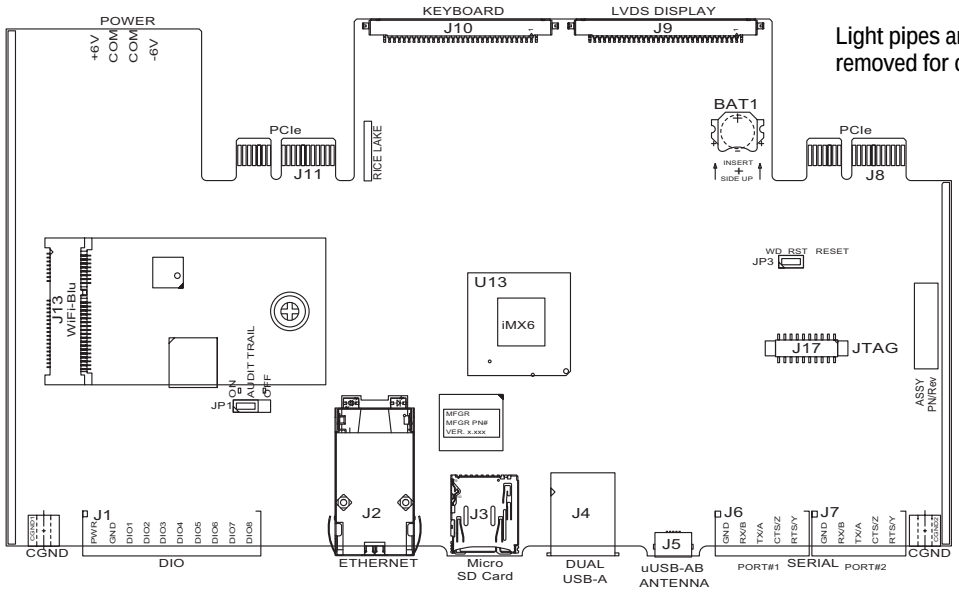


Figure 2-31. CPU Board (Top View)

Use the following instructions to attach serial communication cables.

1. Route the cable through the cord grip and ground the shield wire. See Section 2.4 on page 33.
2. Remove the screw holding the face plate.
3. Use clip to ground the front plate.
4. Wire the cables to the connector (included in the parts kit).
5. Plug the connector into J6 and J7 on the board.

Table 2-2 shows the pin assignments for communication ports.

Connector	Pin	Signal	Port
J6	1	GND	1
	2	RS-232 RX/RS-485 B	
	3	RS-232 TX/RS-485 A	
	4	RS-232 CTS/RS-485 Z	
	5	RS-232 RTS/RS-485 Y	
J7	1	GND	2
	2	RS-232 RX/RS-485 B	
	3	RS-232 TX/RS-485 A	
	4	RS-232 CTS/RS-485 Z	
	5	RS-232 RTS/RS-485 Y	

Table 2-2. Serial Port Pin Assignments

Serial ports are configured using the *Serial* menu. See Section 5.1 on page 71 for configuration information.

An optional dual-channel serial communications card, Kit PN 164685, is also available. Each serial option card provides two additional serial ports. Both ports on the option card can support RS-232, RS-422 or RS-485.

Note *All wiring must conform to the NEC or local ordinances.*

2.4.5 CPU Digital I/O Wiring

Digital I/O pins are configured using the Digital I/O menu. See Section 8.0 on page 97 for configuration information.

An optional 24 I/O bit card (PN 164684) is also available. Each Digital I/O option card provides an additional 24 configurable I/O bits. Alternatively, a 4 channel Relay card (PN 164689) is also available.

Use the following instructions to wire to the CPU board DIO connector.

1. Route the cables through the cord grip and ground the shield wire. See Section 2.4 on page 33. For a wall mount enclosure, route wires to a Relay Rack if so equipped (skip steps 2 and 3).
2. Remove the screw holding the face plate.
3. Use clip to ground the front plate.
4. Wire the cables to the connector (included in the parts kit).
5. Plug the connector into J1 on the board.

Table 2-3 shows the pin assignments for the Digital I/O connector

Connector	Pin	Signal
J1	1	+5 VDC
	2	GND
	3	DIO 1
	4	DIO 2
	5	DIO 3
	6	DIO 4
	7	DIO 5
	8	DIO 6
	9	DIO 7
	10	DIO 8

Table 2-3. CPU Digital I/O Pin Assignments

2.5 Wiring Schematics

1280 Keyed Version

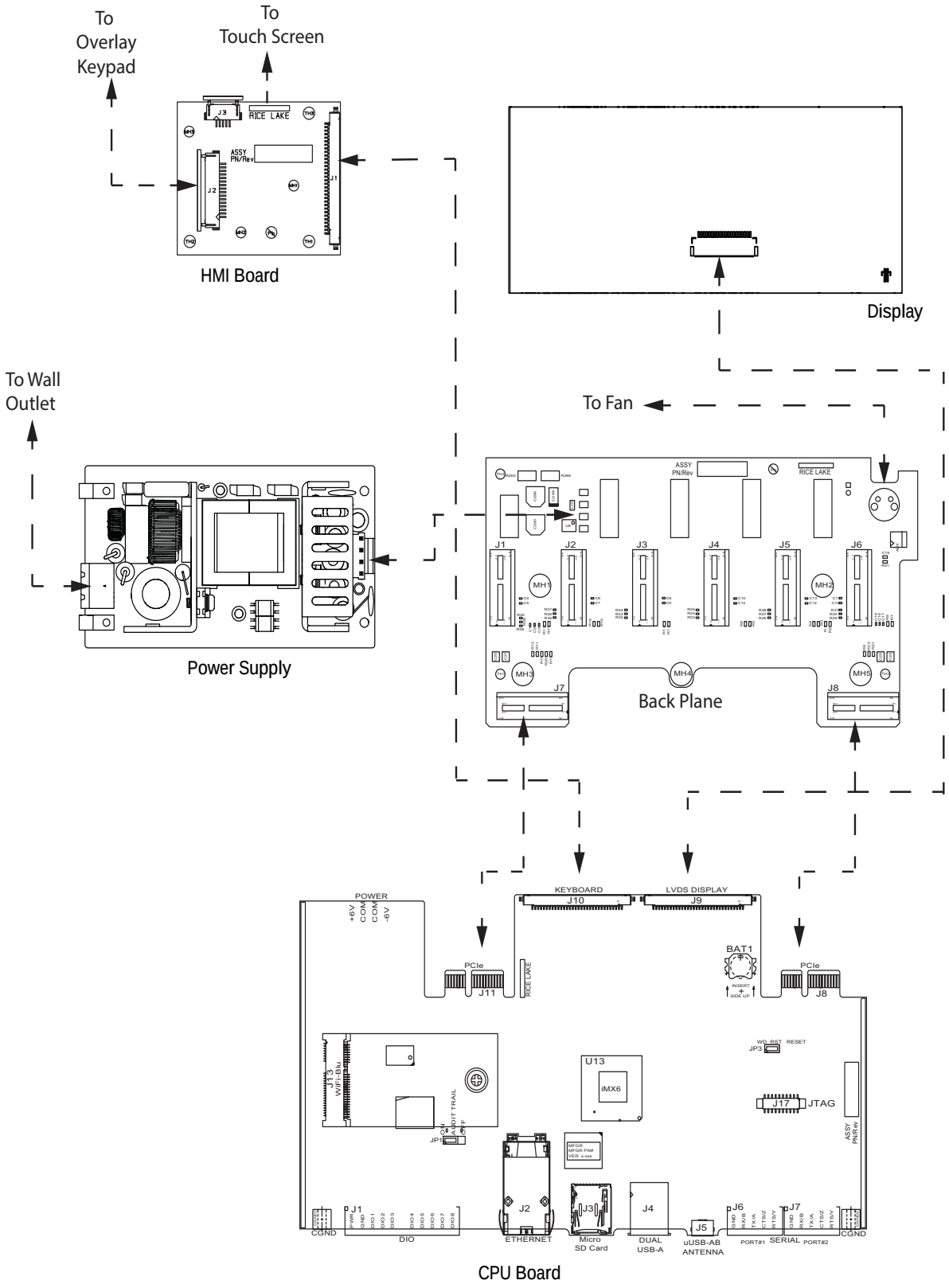


Figure 2-32. Wiring Diagram

1280 Touch Only Version (Virtual Keypad)

Refer to Figure 2-32 for remaining wiring schematic

HMI touch cable (PN 180002) plugs from J2 on the overlay card to J19 (not shown) on backside of CPU board.

Connect CPU to display cable (PN 164995 or 164970) from J9 to 7 inch Display.

Connect CPU to display cable (PN 180001) from J9 and J18 (not shown) - back of CPU board to 12 inch Display.

Note: Additional cable lengths are available.

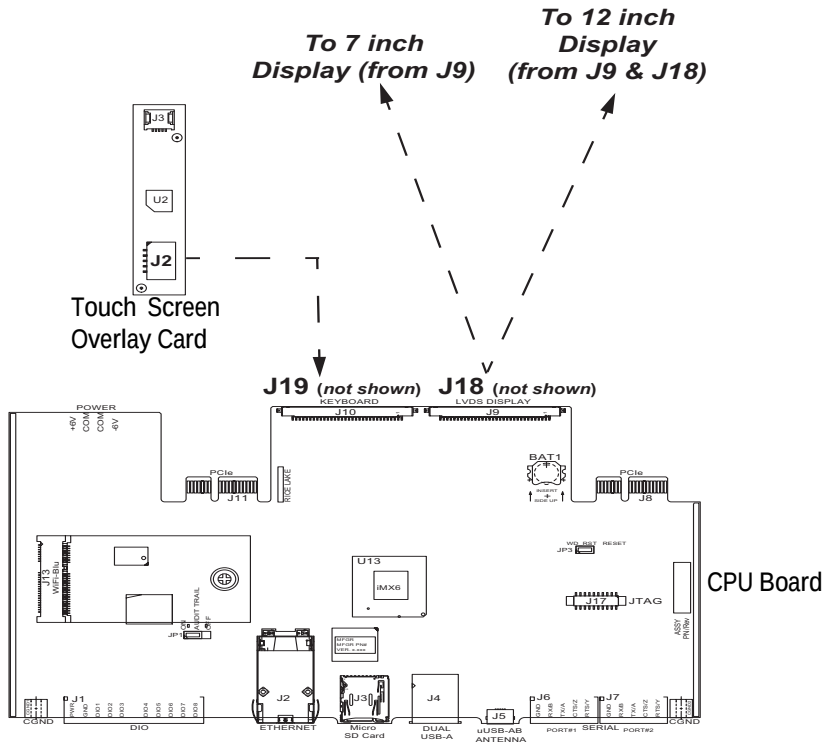


Figure 2-33. 7 and 12 Inch Panel Mounts - Touch Only

2.6 Configuration Methods

The *1280* indicator can be configured using:

- Front panel keys to navigate through a series of configuration menus (see Section 3.0 on page 53)
- Revolution® configuration utility (see Section 13.0 on page 119)
- EDP command configuration (see Section 15.0 on page 147)

Note *Some configuration parameters, such as those used to configure the 1280 display and widgets, cannot be accessed through the configuration menus. MSI-8000HD provides the most complete and efficient configuration interface for the 1280. See Section 14.0 on page 135.*

2.7 CPU Board Replacement

WARNING

- *Use a wrist strap for grounding to protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
- *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
- *In the 1280 wall and universal enclosures, the supply cord serves as the power disconnect. The power receptacle to the indicator must be easily accessible for these models.*

1. Disconnect all cables from the controller assembly.
2. Remove the two screws securing the face plate to the controller assembly.
3. Remove the face plate from the controller assembly. The CPU board will remain attached to the face plate.

IMPORTANT *Handle with care. The boards are fragile.*

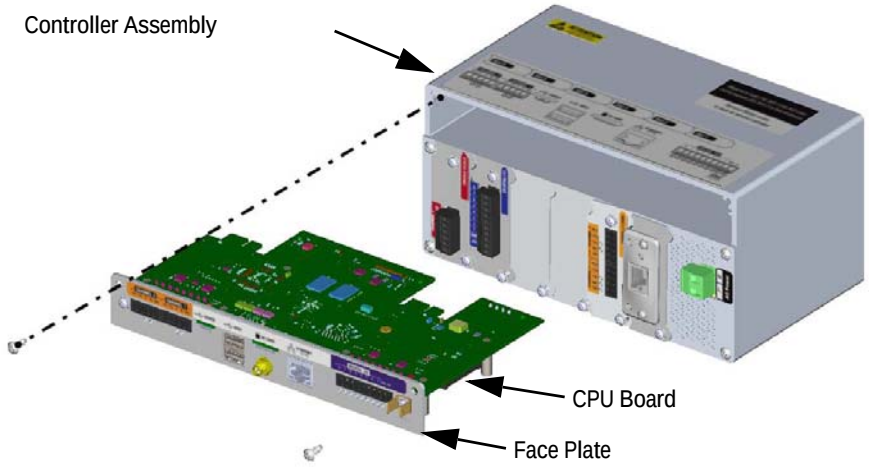


Figure 2-34. Remove CPU Board

IMPORTANT *Only remove the CPU board from the face plate if it is being replaced.*

4. Remove the nut for the antenna and the two screws securing the CPU board to the face plate.
5. Remove the CPU board.

Reverse procedure for reassembly.

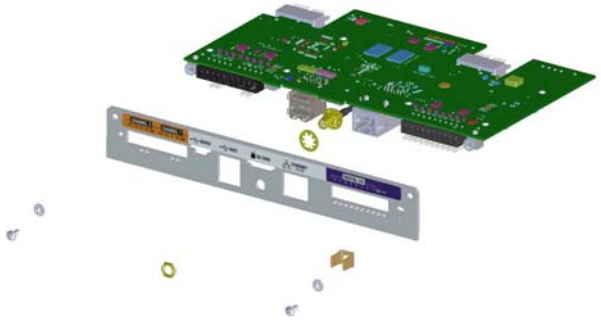


Figure 2-35. Remove CPU Board from the Face Plate

2.8 Power Supply Replacement

WARNING

- *Use a wrist strap for grounding to protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
- *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
- *In the 1280 wall and universal enclosures, the supply cord serves as the power disconnect. The power receptacle to the indicator must be easily accessible for these models.*

Use the following instructions to replace the power supply.

1. Disconnect all cables from the controller assembly.
2. Remove the four screws from the fan plate.
3. Carefully remove the fan plate/back plane assembly from the enclosure. Be sure to support the power supply as it is removed from the enclosure; it is only connected to the fan plate/back plane assembly by a connector.

IMPORTANT *Handle with care. The boards are fragile.*

Note *The mounting bracket has been removed for illustration purposes only. It does not need to be removed for disassembly.*

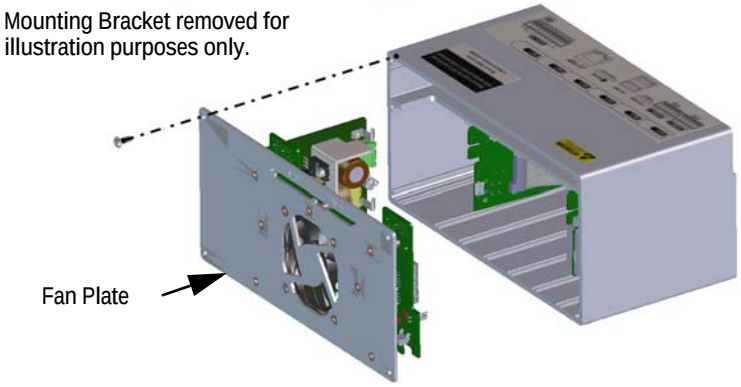


Figure 2-36. Remove the Fan Plane

4. Disconnect the power supply from the connector.

Reverse procedure for reassembly.

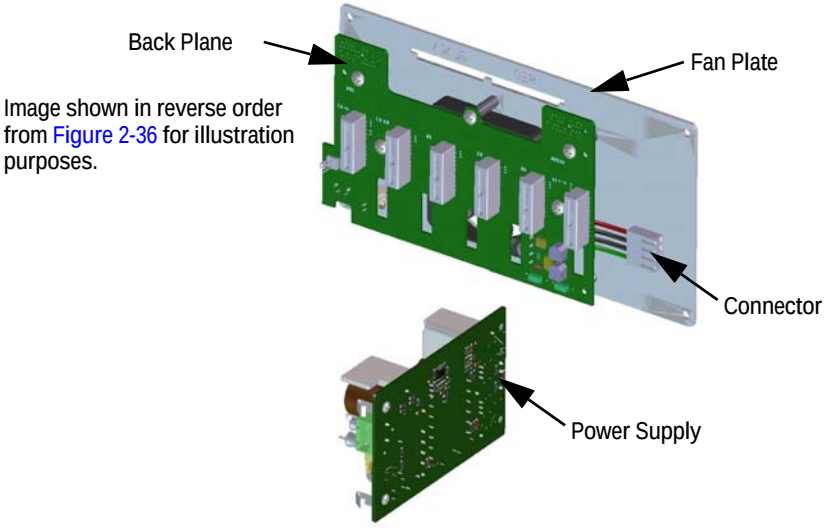


Figure 2-37. Disconnect the Power Supply

2.9 Replace Fan Plate and Back Plane

WARNING

- *Use a wrist strap for grounding to protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
- *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
- *In the 1280 wall and universal enclosures, the supply cord serves as the power disconnect. The power receptacle to the indicator must be easily accessible for these models.*

IMPORTANT *If replacing CPU boards in the 1280, a new fan plate is also required.*

Use the following instructions to replace the fan plate and back plane.

1. Disconnect the power supply. See Section 2.8 on page 40.
2. Remove the five screws securing the back plane to the fan plate.
3. Remove the back plane.

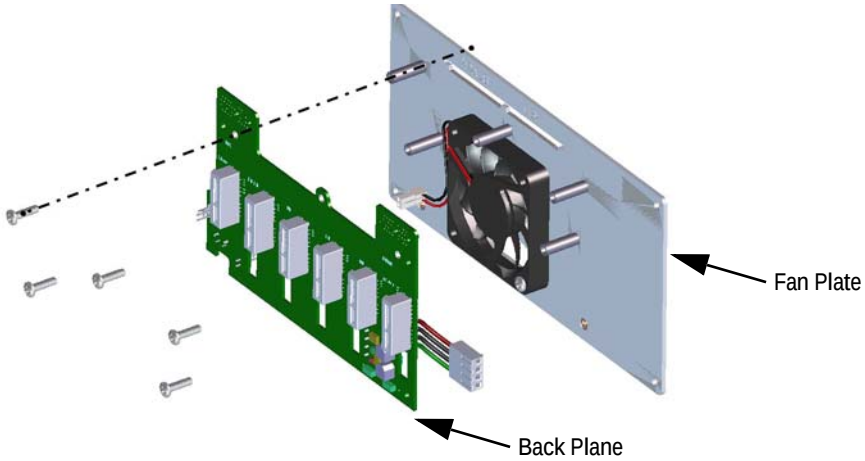


Figure 2-38. Remove Backplate from Controller Assembly

Note *Ensure to note the orientation of the fan prior to removal. It is important that the fan is reinstalled in the correct orientation.*

4. Remove the four screws securing the fan to the fan plate.

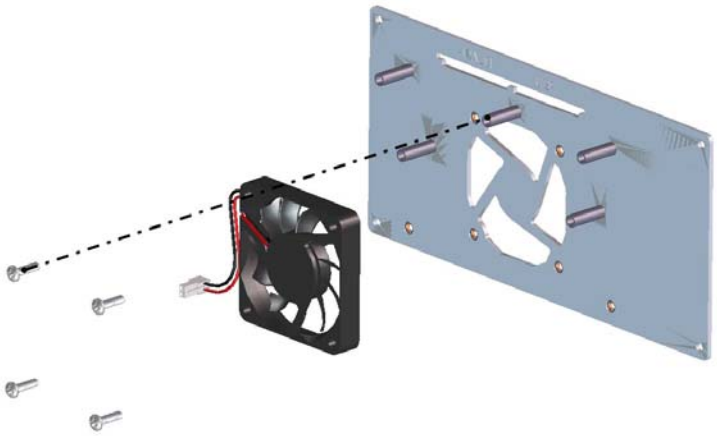


Figure 2-39. Remove Four Screws and Fan from Fan Plate

5. Remove the fan.

Reverse this procedure for reassembly.

2.10 Replacement Parts

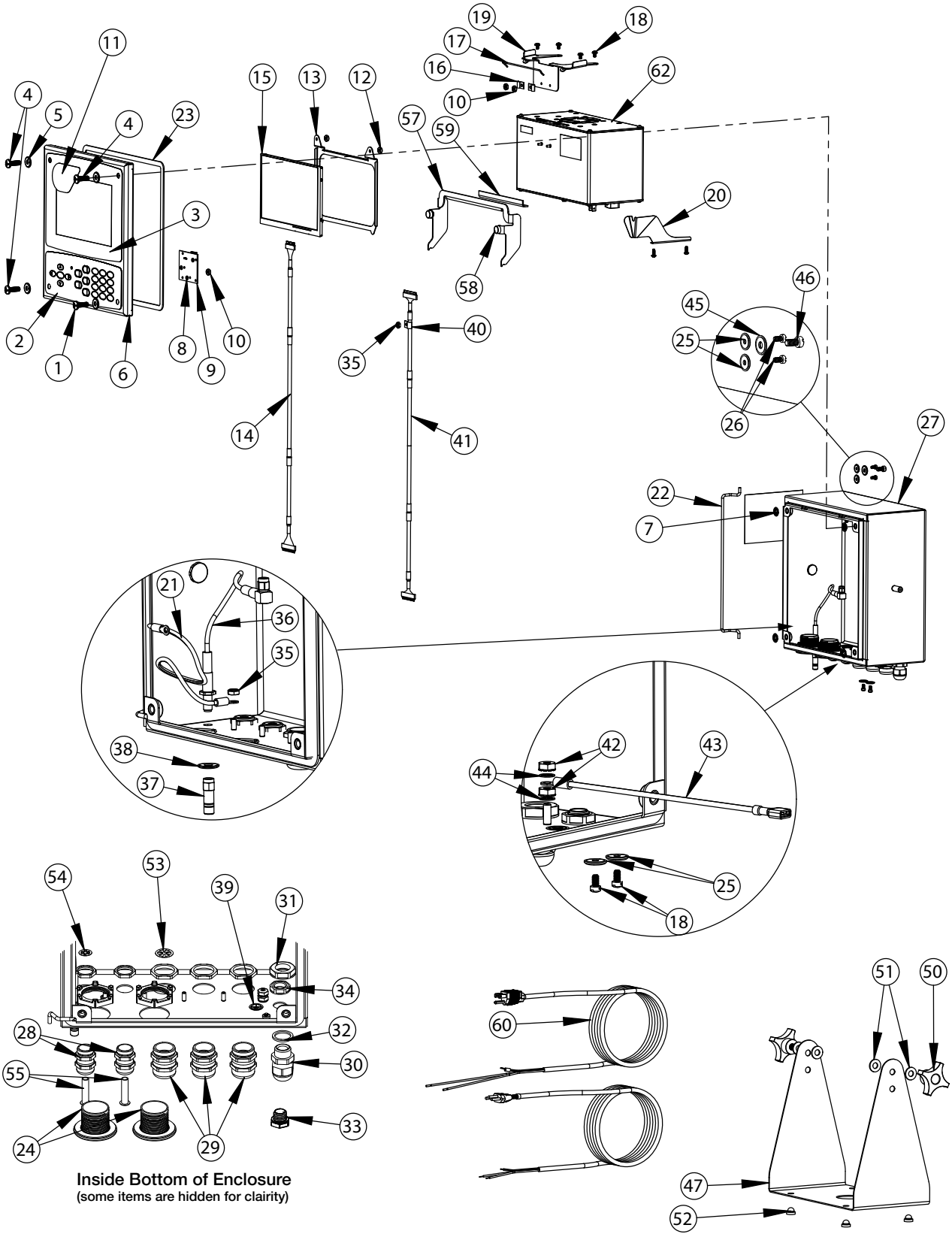


Figure 2-40. Replacement Parts Drawing - Universal Enclosure

Item No.	Part No.	Description
	169926	Door Assembly, Universal (inc. 1-11)
1	165970	Screw, 1/4-20NC x 3/4"
2	161731	Overlay, Keypad *1280*
3	161730	Overlay, Touchscreen *1280*
4	166631	Screw, 1/4-20NC x 3/4"
5	182281	Washer, Washer Cup 1/4"
	182246	Washer Gasket, 1/4"
6	169450	Front Door, *1280* Universal
7	166653	Retainer, Pushnut Bolt 1/4"
8	69898	Washer, Nylon #4 ID = 0.112
9	160759	Board Assembly, *1280* HMI_Int
10	159280	Nut, Lock Nylon Insert
11	172840	Decal, *1280* Start Screen
	160383	Universal Display, 500 NITS (inc. 12-15)
	160385	Universal Display, 1000 NITS (inc. 12-15)
12	58248	Nut, Lock 6-32 NC HEX Nylon
13	162272	Mounting Bracket Display (500 Nit)
	162271	Mounting Bracket Display (1000 Nit)
14	163467	Cable, CPU to Display (500 Nit)
	163444	Cable, CPU to Display (1000 Nit)
15	163400	Display, (500 NITS) 7" LCD
	163399	Display, (1000 NITS) 7" LCD
	169461	Universal Controller Bracket (inc. 16-20)
16	53075	Clamp, Ground Cable Shield
17	168545	Bail, *1280* Controller Retainer Wire
18	14839	Screw, Machine 6-32NC x 1/4"
19	169462	Bracket Assembly, *1280* Controller
20	168937	Snap Tap, *1280* Controller Support
	169927	Universal Cabinet Assembly (inc. 21-39)
21	40672	Wire Assembly, Ground 9"
22	169410	Hinge Link
23	160379	Gasket, Front Panel
24	124698	Panel Plug, Round Solid
25	167537	Washer, Sealing BarTite #6
26	183663	Tall Flanged Drilled Hex Head Screw
27	169452	Enclosure Shell Assembly, Universal
28	169875	Cord Grip, PG 9 With Nut
29	169876	Cord Grip, PG 13.5 With Nut

Item No.	Part No.	Description
30	15626	Cord Grip, Black PG 9
31	15627	Locknut, Black PCN9
32	30375	Seal Ring, Nylon PG9
33	164598	Vent, Breather Sealed
34	88734	Nut, Breather Vent
35	58248	Nut, Lock 6-32 NC Hex Nylon
36	166240	Cable, Antenna Extension
37	168098	Antenna, RP-SMA
38	182281	Washer, Washer Cup 1/4"
	182246	Washer Gasket, 1/4"
39	16892	Label, Ground
		Other Items (inc. 40-49)
40	67550	Clamp, Ground Cable Shield
41	166693	Cable, CPU to HMI *1280*
42	14626	Nut, Kep 8-32 NC Hex
43	167700	Wire, Ground 9 Inch
44	15134	Washer, Lock NO 8 Type A
45	182282	Washer Cup #10
	182247	Washer Gasket #10
46	183662	Tall Flanged Drilled Hex Head Screw
47	161620	Stand, Tilt Surface Mount
	163785	Universal Parts Kit (inc. 50-56)
50	164064	Hand Knob, 4-Arm 5/16-18
51	79024	Washer, Plain 5/16" Nylon
52	42149	Bumper, Rubber Grommet
53	169879	Grounding Clip, Cord Grip PG 13.5 Cable
54	169878	Grounding Clip, Cord Grip PG 9 Cable
55	19538	Post Plug, Slotted Black
	172859	Bracket Assembly (inc. 57-59)
57	172856	Bracket, *1280* Controller
58	15149	Foot, Rubber Bumper
59	172872	Pad, Foam
60	165108	Cord, US Power
	165109	Cord, European Power
62	169676	Controller Assembly (see Figure 2-43 on page 48)

Table 2-4. Universal Parts List

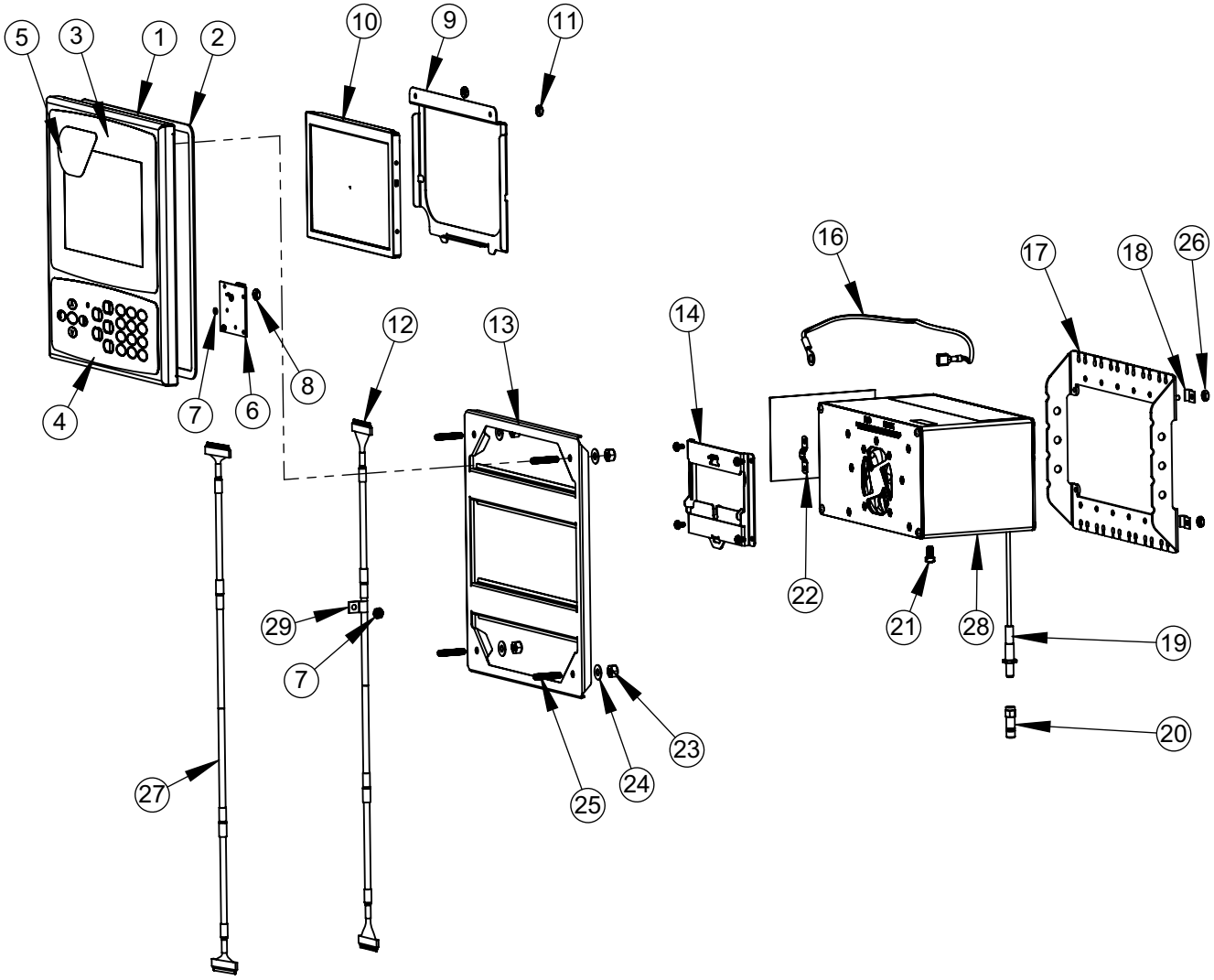


Figure 2-41. Replacement Parts Drawing - Panel Enclosure

Item No.	Part No.	Description
	169930	*1280* Panel Enclosure Face Plate Assembly (Inc 1-7)
1	169929	Face Panel *1280*
2	160379	Gasket, Front Panel
3	164120	Overlay, Touchscreen
4	164121	Overlay, Keypad
5	172840	Decal, *1280* Start Screen
6	160759	Board Assembly, HMI-Int
7	69898	Washer, Nylon #4 ID = 0.112
8	159280	Nut, Lock Nylon Insert
	166725	500 NIT Display (Inc 9-12)
	166726	1000 NIT Display (Inc 9-12)
9	162272	Mounting Bracket Display (500 Nit)
	162271	Mounting Bracket Display (1000 Nit)
10	163400	Display, (500 Nit) 7" LCD
	163399	Display, (1000 Nit) 7" LCD
11	58248	Nut, Lock 6-32NC Hex Nylon
12	164995	Cable, CPU to Display (500 Nit)
	164970	Cable, CPU to Display (1000 Nit)
13	162309	Backer Bracket
14	166838	Bracket Assembly, DIN Rail
	163786	Parts Kit, Panel (Inc. 16-25 and all NS)
16	168872	Wire, 9" Ground, 1/4" Eye
17	169023	Ground Bus Bar
18	53075	Clamp, Ground Cable Shield
19	166241	Cable, Antenna Extension
20	168098	Antenna, RP-SMA
21	14877	Screw, Fillister 10-32NF x 3/8"
22	168629	Ground Strap, *1280* CPU
23	14630	Nut, Lock 10-32NF Hex
24	22062	Washer, Plain No 10 Type A
25	168877	Screw, Set #10-32 x 1"
26	14621	Nut, Kep 6-32NX Hex
NS	15130	Washer, Lock No 6 Type A
NS	158207	Screw, Mach 6-32 x 1/4" Fillister
27	166694	Cable, CPU to HMI *1280*
28	169676	Controller Assembly
29	67550	Clamp, Ground Cable Shield
NS	14839	Screw, Mach 6-32NC x 1/4"

Table 2-5. Replacement Parts – Panel Enclosure

Note *If controller is not connected to the panel, ground per NEC.*

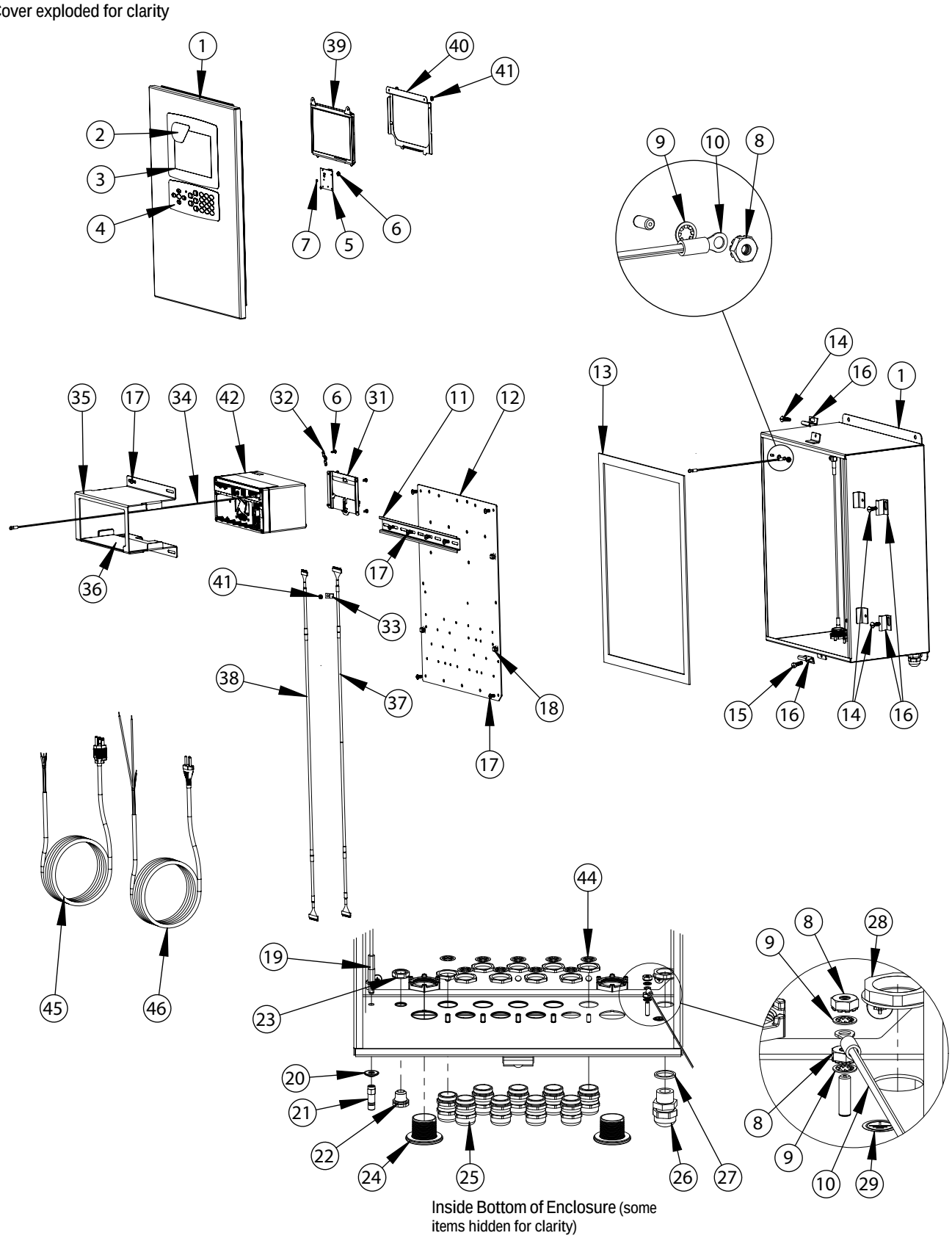


Figure 2-42. Replacement Parts Drawing - Wall Enclosure

Item No.	Part No.	Description
	164680	*1280* Indicator Sub-Assembly (includes 1-29)
1	161416	Enclosure Assembly
2	172840	Decal, *1280* Start Screen
3	164120	Overlay, Touchscreen
4	164121	Overlay, Keypad
5	160759	Board Assembly, *1280* HMI Interface
6	159280	Nut, Lock Nylon Insert
7	69898	Washer, Nylon #4 ID 0.112"
8	14626	Nut, Kep 8-32NC Hex
9	15134	Washer, Lock No 8 Type A
10	40672	Wire Assembly, Ground 9"
11	43383	Rail, DIN 12.75" Length
12	164900	Back Plane Panel, *1280*
13	68724	Gasket, Cover
14	71447	Screw, Mach 1/4 - 28NF x 3/4"
15	71455	Screw, Mach 1/4 - 28NF x 3/4"
16	71739	Clip, Clinching Enclosure
17	14875	Screw, MACH 10-32NF x 3/8"
18	80590	Mount, Cable tie Arrowhead
19	166241	Cable, Antenna Extension
20	166634	Washer, Sealing Bartite
21	168098	Antenna, RP-SMA
22	88733	Vent, Breather Sealed
23	88734	Nut, Breather Vent
24	124695	Panel Plug, Round Solid
25	169876	Cord Grip, PG13.5 With Nut
26	68600	Cord Grip, PG11
27	68599	Seal Ring, Nylon PG 11
28	68601	Nut, PG 11, Power Cord Cable
29	16892	Label, Ground Protective
31	166838	Bracket Assembly, DIN Rail
32	168629	Ground Strap
33	67550	Clamp, Ground Cable Shield
34	167701	Wire, Ground 24 #8 Eye
	173052	Bracket Assembly, *1280* (Includes 35-36)
35	172860	Bracket, *1280* Wallmount
36	173053	Gasket, *1280* Wallmount
37	166694	Cable, CPU to HMI
	166725	Universal Display, 500 NITS (Includes 38-41)
	166726	Universal Display, 1000 NITS (Includes 38-41)
38	164995	Cable, CPU to Display (500 Nit)
	164970	Cable, CPU to Display (1000 Nit)
39	163400	Display, (500 Nit) 7" LCD
	163399	Display, (1000 Nit) 7" LCD
40	162272	Mounting Bracket (500 Nit)
	162271	Mounting Bracket (1000 Nit)
41	58248	Nut, Lock 6-32NC Hex Nylon
42	169676	Controller Assembly (see Figure 2-43 on page 48)
	163787	Parts Kit *1280* Wall Mount (Includes items below)
44	169879	Ground Clip, Cord Grip PG13.5
	172220	Plug, 3/8 Barb for Tubing
45	165111	Cord, US Power
46	165112	Cord, European Power

Table 2-6. Replacement Parts - Wall Enclosure

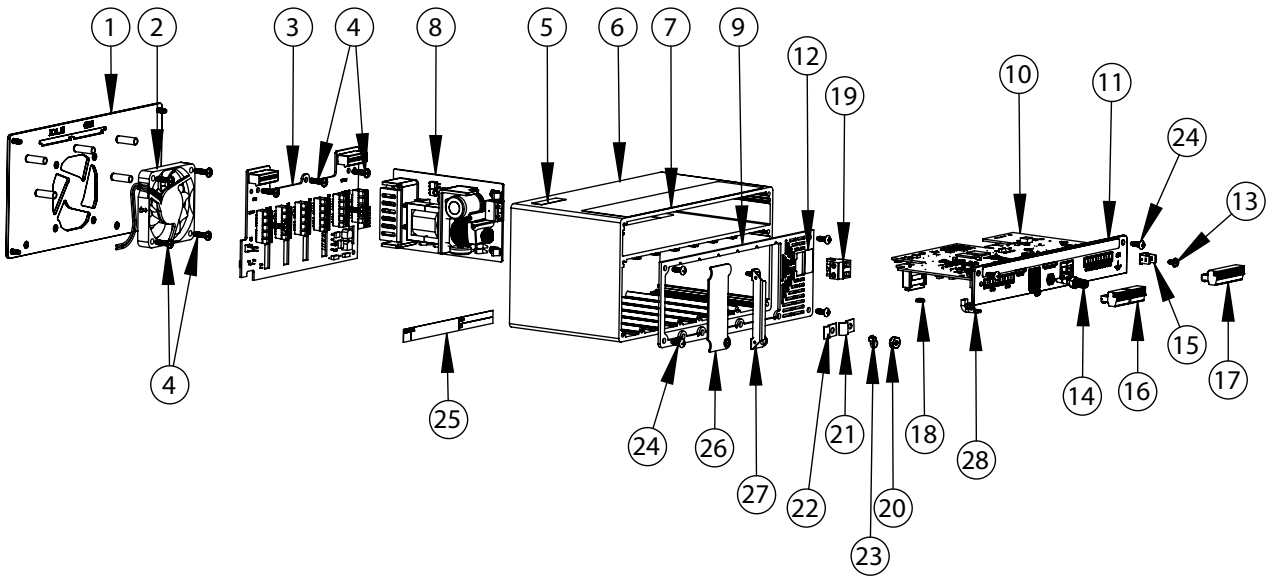


Figure 2-43. Replacement Parts Drawing - Controller Assembly

Item No.	Part No.	Description
1	169350	Fan Mount Plate Assembly *Note: CPU, Rev A, Requires Rev A Fan Plate* *CPU, Rev B, Requires Rev A Fan Plate* *CPU, Rev C, Requires Rev B Fan Plate* *CPU, Rev D, Requires Rev C Fan Plate* *Note: When upgrading CPU board revisions, the fan plate must also be updated.*
2	166745	Fan Assembly, 60 mm x 10 mm DC
3	160758	Board Assembly, Backplate
4	44341	Screw, MACH 6-32 NC x 1/2" lg
5	168591	Label, ESD Warning
6	169159	Extrusion Assembly
7	167190	Label, *1280* Controller
8	162693	AC Power Supply
	162694	DC/DC Power Supply
9	169354	Face Plate Assembly
10	160757	Board Assembly, CPU
11	169357	Face Plate, CPU PCB
12	167476	Label, AC Power
	167477	Label, DC Power
13	14822	Screw, Mach 4-40NC x 1/4"
14	163336	Cable, Antenna Bulkhead
15	168830	Terminal, Tab 1/4" Push
16	153882	Conn, 5 Pos Screw Terminal
17	164918	Conn, 10 Pos Screw Terminal
18	170492	Battery, Rechargeable
19	162677	Connector for AC, 2 Pos Screw Terminal
	15888	Connector for DC, 3 Pos Screw Terminal

Table 2-7. Replacement Parts - Controller Assembly

Item No.	Part No.	Description
20	14621	Nut, Kep 6-32 NC Hex
21	67550	Clamp, Ground Shield, Radius .125 inch
22	53075	Clamp, Ground Shield, Radius .078 inch
24	163327	Screw, Mach 6-32NC x 3/8"
25	94422	Label, Capacity
26	163408	Blank Plate, Option Card Slot Cover
27	165927	Clip, Locking Load Cell (Kit PN 166957)

Table 2-7. Replacement Parts - Controller Assembly (Continued)

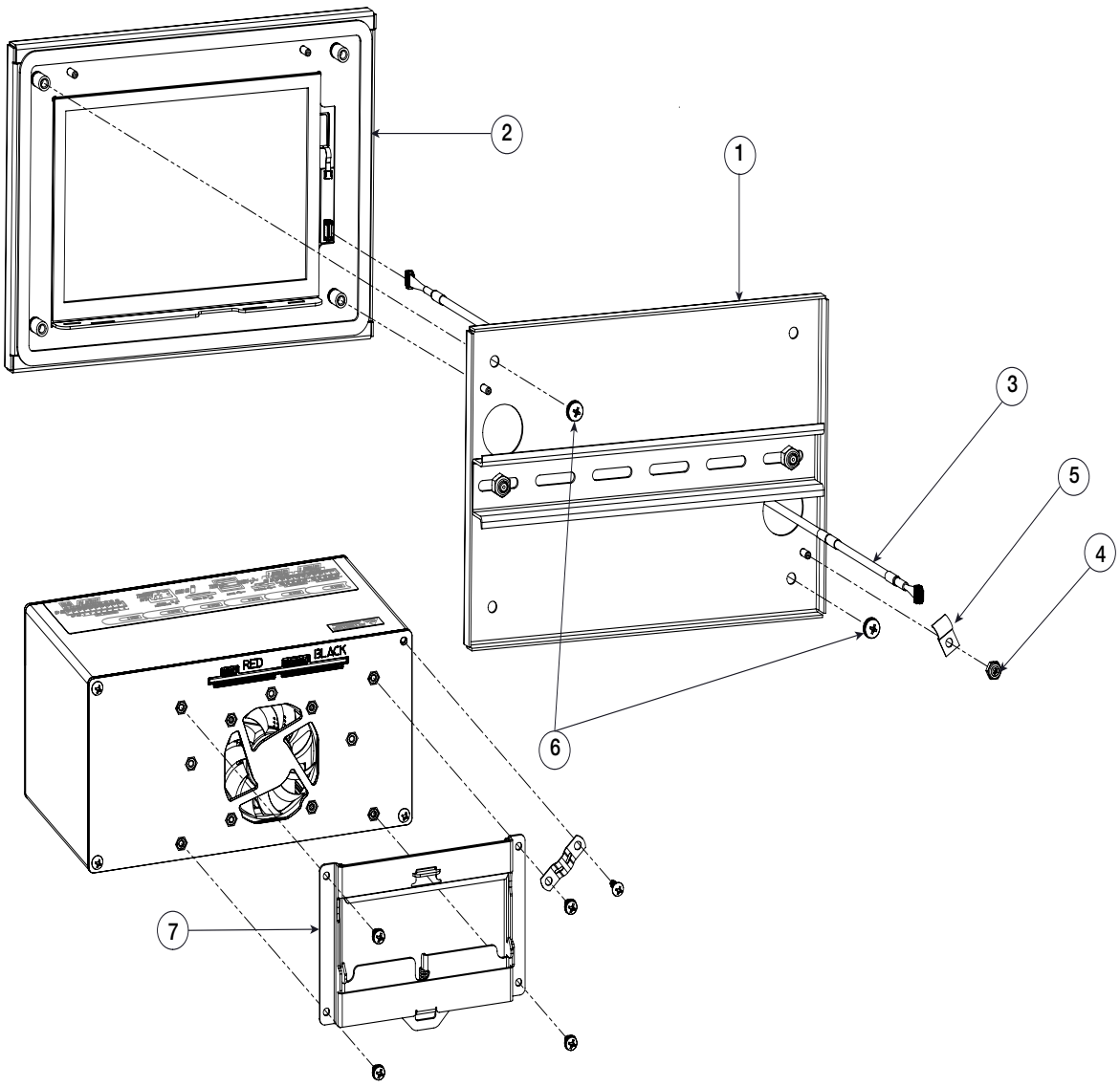


Figure 2-44. Replacement Parts Drawing - 7 Inch Touch Only Panel Enclosure

Item No.	Part No.	Description
1	182145	Mounting Plate Assembly, 7-inch Panel Mount
2	176168	Display, Assembly, 7-inch Panel Mount
	166725	Display Board (500 Nit)
	166726	Display Board (1000 Nit)
3	180002	Cable, CPU to Touchscreen
4	58248	Locknut, 6-32NC Nylon Insert
5	67550	Clamp, Ground Cable Shield
6	55718	Screw, Machine 10-32NF x 1/4 Internal Tooth Washer
7	166838	DIN Rail Mount, 1280 CPU
	164995	Cable, CPU to Display (500 Nit)
	164970	Cable, CPU to Display (1000 Nit)

Table 2-8. Replacement Parts – 7 Inch Touch Only Enclosure

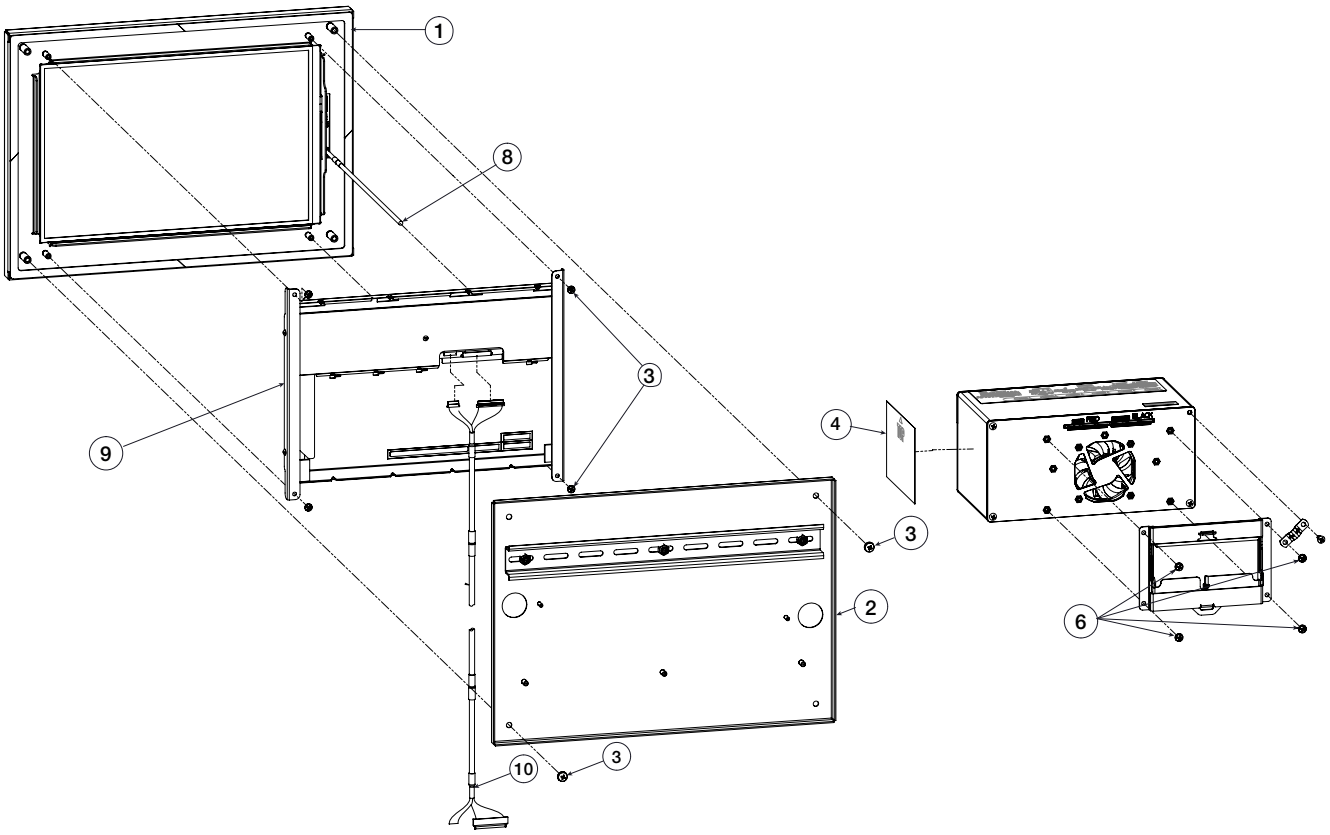


Figure 2-45. Replacement Parts – 12 Inch Touch Only Panel Enclosure

Item No.	Part No.	Description
1	176167	Panel Mount, Touch Only, 12-inch
2	179554	Mounting Bracket, 1280
3	55718	Screw, Machine 10-32NF x 1/4 pph internal tooth washer
4	165902	Label, 1280 Serial Tag
6	166838	Din Rail Mount
8	180002	Cable, CPU to Touchscreen
9	182992	Display, 12-inch
10	180001	Cable, CPU to Display

Table 2-9. Replacement Parts – 12 Inch Touch Only Panel Enclosure

2.11 Label Legend

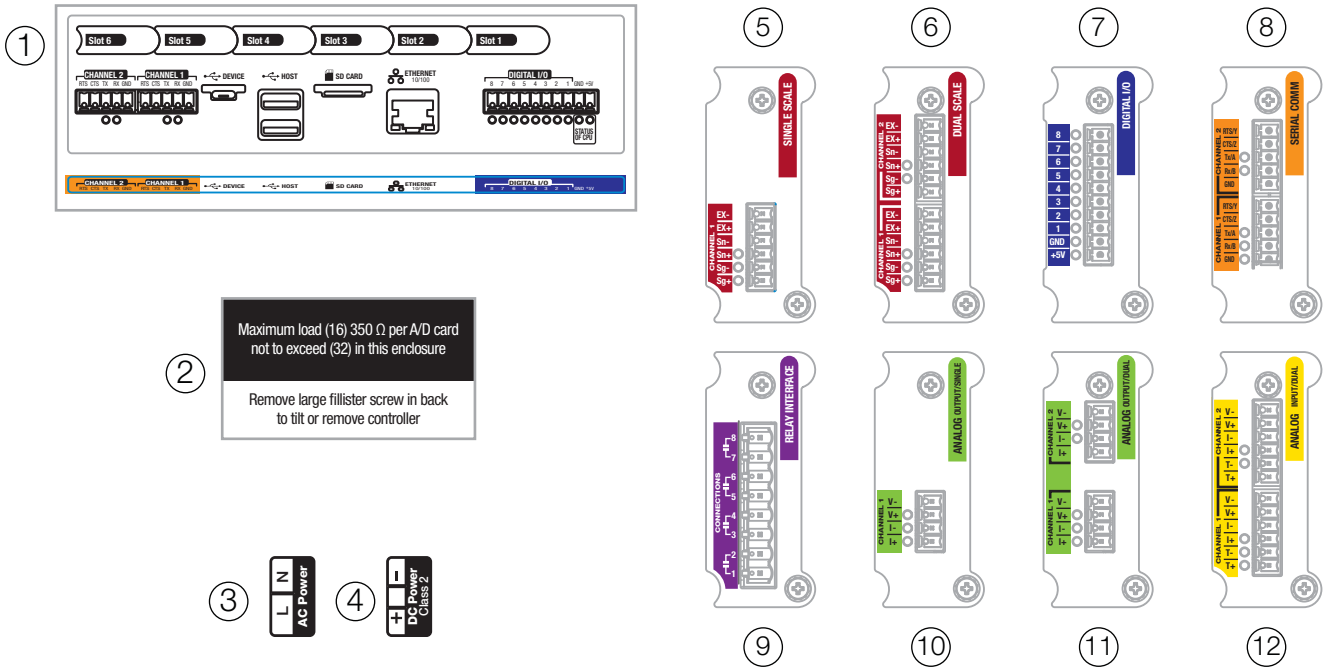


Figure 2-46. Replacement Parts - Labels

Note Numbers 5-12 show position of labels on the option plate.

Item No.	Part No.	Description
1	167190	Label, *1280* Controller
2	168592	Label, Max Load (Universal Only)
3	167476	Label, AC Power *1280*
4	167477	Label, DC Power *1280*
5	167191	Label, Single Scale Option
6	167192	Label, Dual Scale Option
7	167193	Label, Digital IO Option
8	167194	Label, Serial Option
9	167195	Label, Relay Option
10	167196	Label, Analog Output (Single) Option
11	167197	Label, Analog Output (Dual) Option
12	167198	Label, Analog Input/Thermocouple (Dual) Option

Table 2-10. Replacement Parts - Labels

3.0 Configuration Menu

Configuration has a series of menus that allow the parameters of the indicator to be set up. Detailed descriptions of the Scale Configuration, Communications, Features, Formats, Digital I/O, Analog Output, Setpoints and Diagnostics menus are provided in Section 4.0 through Section 11.0.

IMPORTANT *The audit trail jumper (JP1) needs to be disabled, in the off (right) position, in order to seal the setup switch with a lead wire seal. Access is not prevented simply by sealing the setup switch.*

3.1 Access Setup Parameters

1. Press ≡ on the weigh mode screen. The *Main Menu* will display.
2. Press Configuration for access to the Configuration menu. If the Configuration menu does not appear, see the following note.

Note *In order to access Configuration through the front panel (by pressing the button on the touchscreen, jumper JP1 needs to be in the on (left) position. In order to restrict access to Configuration using the front panel, JP1 needs to be in the off (right) position, requiring the setup switch to access Configuration. See Figure 3-3 on page 54.*

3. Access to the configuration menu may be restricted with a password. If prompted, enter the password, then press DONE. The Configuration menu will display. See Section 3.3 on page 55.

See Section 6.4 on page 85 for more information on passwords.

3.2 Access Configuration Menu – Sealed Indicator

If the indicator has been sealed, there is a jumper in place (JP1) that will not allow access to the configuration menu on the touchscreen. Use the following instructions to enter configuration on a sealed indicator.

1. Break the wire seal.
2. Remove the large fillister screw.
3. Use a non-conductive tool to press the setup switch inside the indicator.

Figure 3-1. Setup Switch Location (Universal Enclosure)

Figure 3-2. Setup Switch Locations (Panel/Wall Mount Enclosures)

4. Access to the configuration menu may be restricted with a password. If prompted, enter the password, then press DONE. The configuration menu will display, see Section 3.3 on page 55.

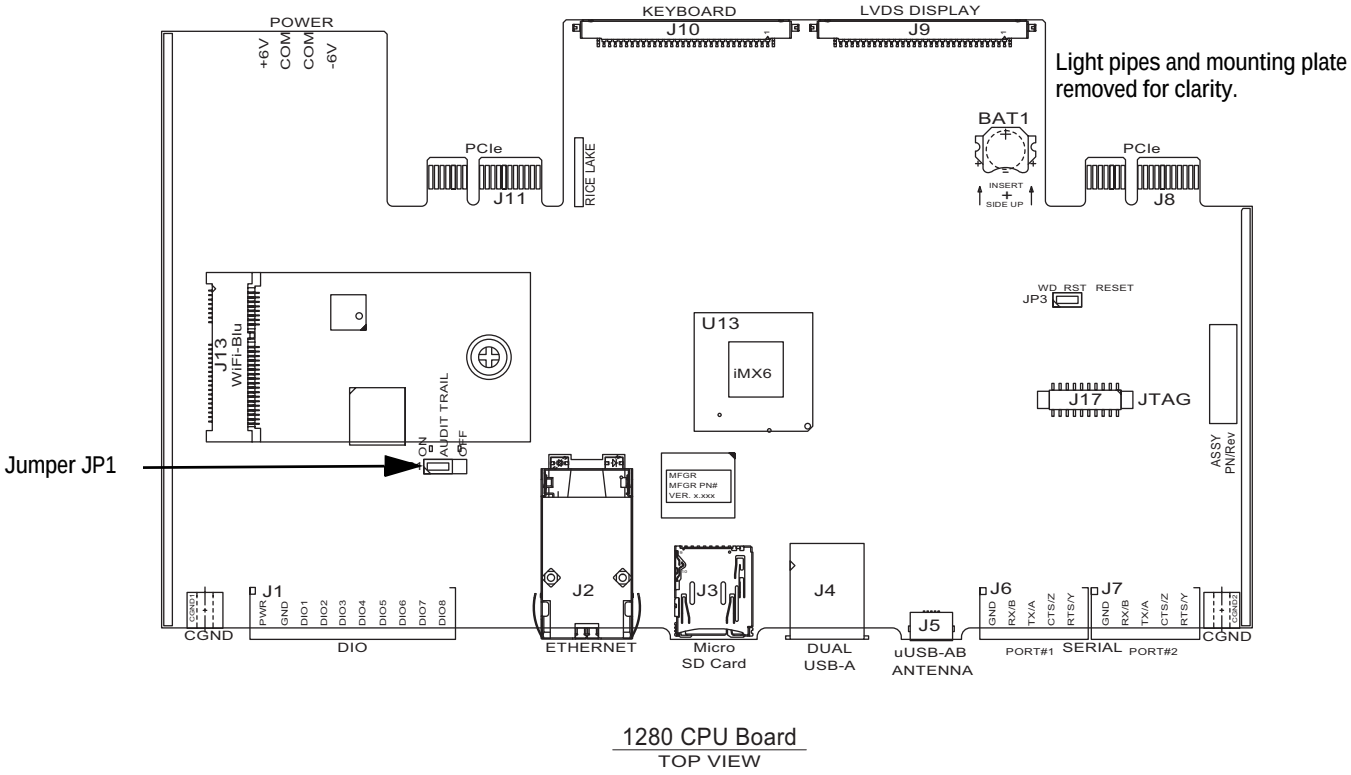


Figure 3-3. Jumper Locations

Note *The front door to the indicator may also be sealed to prevent access to the hardware. This may be required in some Legal for Trade applications.*

3.3 Configuration Menu

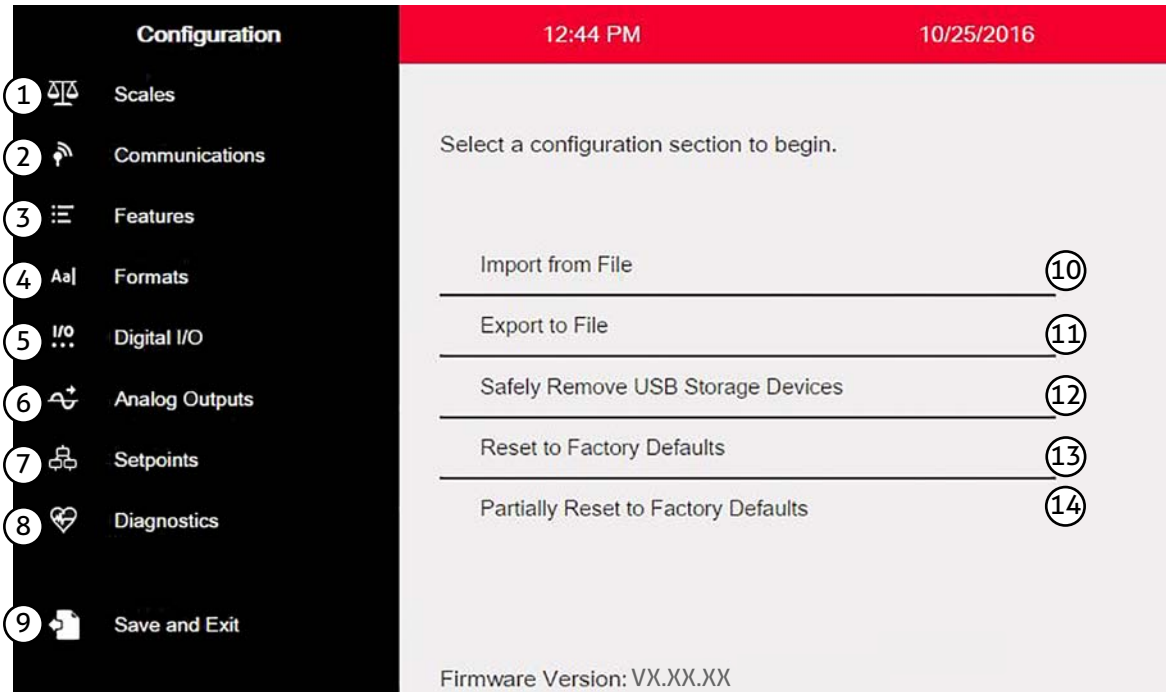


Figure 3-4. Configuration Menu

Item No.	Selection	Description
1	Scales Menu	Set the scale parameter, see Section 4.0 on page 57.
2	Communications Menu	Set the communication parameters, see Section 5.0 on page 70.
3	Features Menu	Set features parameters, see Section 6.0 on page 78.
4	Formats Menu	Set the print and stream format parameters, see Section 7.0 on page 89.
5	Digital I/O Menu	Assign functions to digital inputs and outputs, see Section 8.0 on page 97.
6	Analog Outputs Menu	Used to configure the analog output, see Section 9.0 on page 99.
7	Setpoints Menu	Used to configure setpoints, see Section 10.0 on page 101.
8	Diagnostics Menu	Recalibrate touchscreen and set the backlight, see Section 11.0 on page 115.
9	Save and Exit Button	Press to save settings and return to weigh mode.
10	Import From File	Press to import an existing file, see Section 13.0 on page 119.
11	Export to File	Press to export files, see Section 13.0 on page 119.
12	Safely Remove USB Storage Devices	Press to release the USB connection before removing the flash drive or USB cable to ensure the drive continues to work properly and does not become corrupt.
13	Reset to Factory Defaults	Press to restore all settings to factory defaults.
14	Partially Reset to Factory Defaults	Press to partially restore settings to factory defaults, this preserves Ethernet and scale settings.

Table 3-1. Configuration Main Menus

3.3.1 Configuration Menu Map

Figure 3-5 illustrates the menu structure in the configuration menu selections.

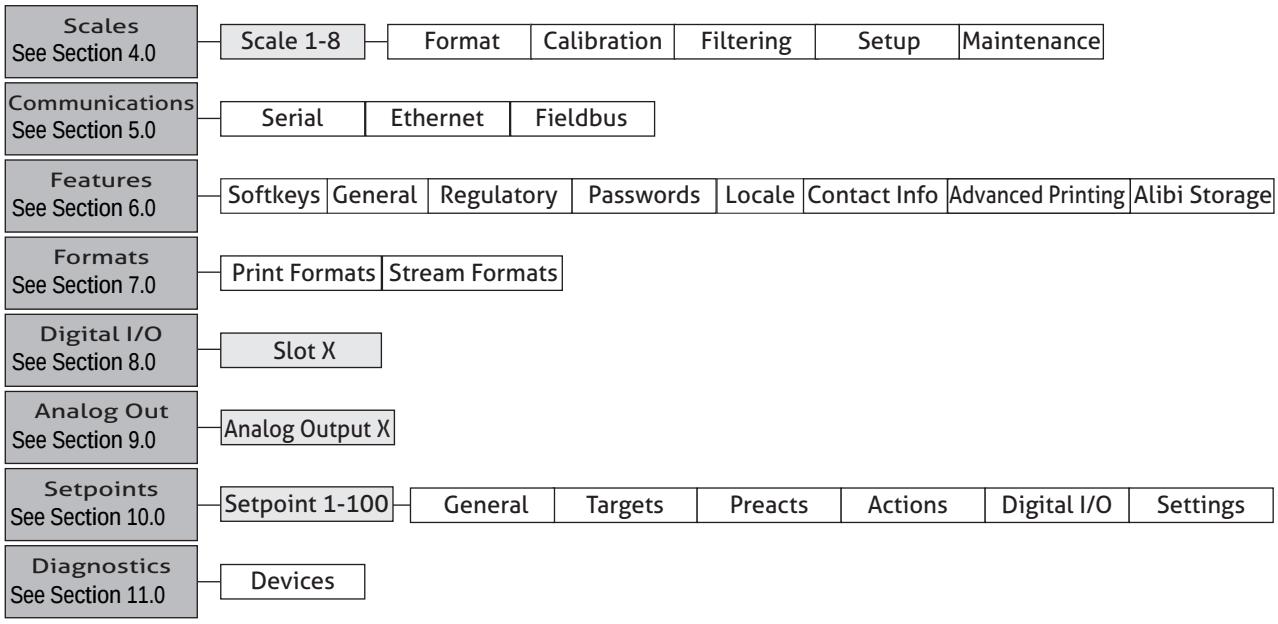


Figure 3-5. Configuration Menu Map

4.0 Scale Configuration

The Scales menu allows the setup of parameters for the type of scale to be set up.

From the *Configuration* menu, select the Scales icon  (circled in Figure 4.1) to enter the *Scales* menu. Once all parameters have been set, press  to return to weigh mode.

4.1 Scale Kind

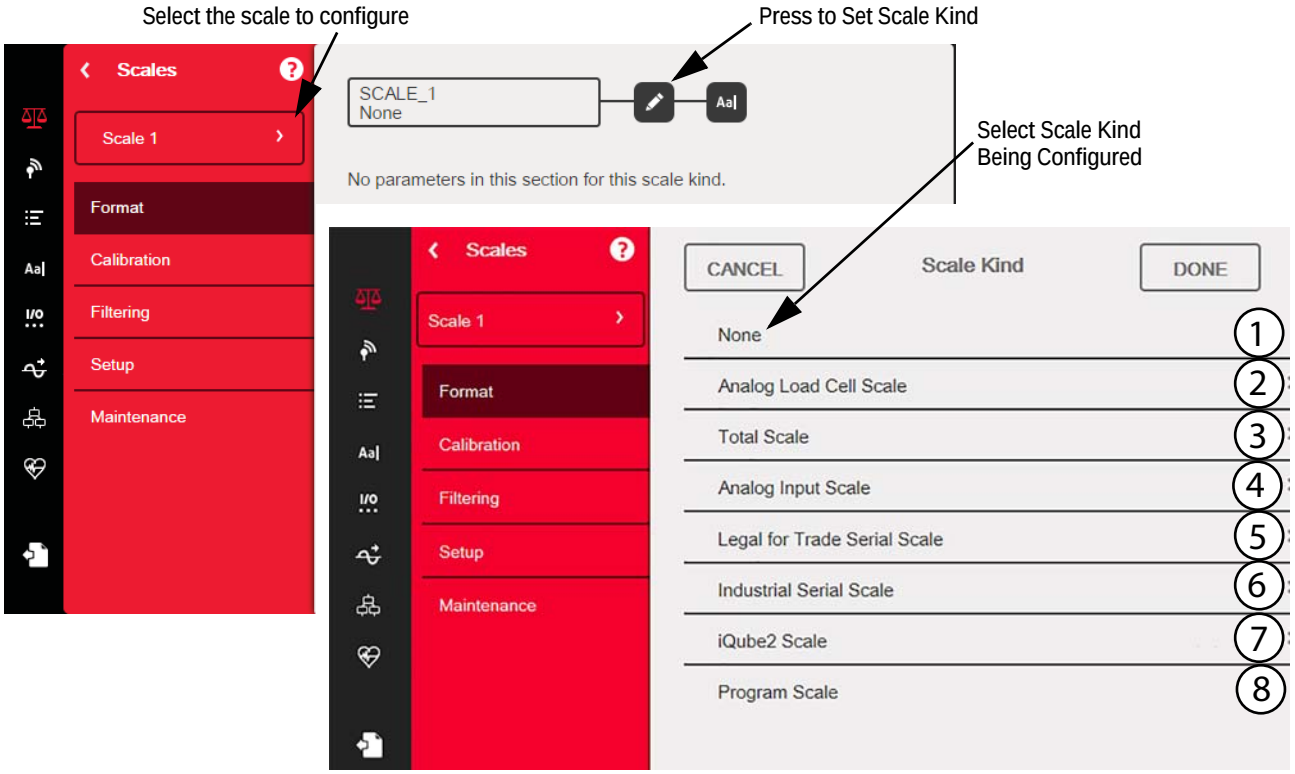


Figure 4-1. Select Scale Kind (Type)

Item No.	Parameter	Description
1	None	A scale kind will not be assigned to the scale number.
2	Analog Load Cell Scale	An A/D scale card channel will be used for this scale (single or dual channel).
3	Total Scale	The output of two or more scales can be configured to function as a Total Scale. *NOTES: The scale kind of a source scale cannot be changed once it is associated with a total scale.*
4	Analog Input Scale	Version 1.07 – an analog input card 0-10 V, 0-100 mV, 0-20 mA, 4-20 mA will be used for this scale.
5	Legal for Trade Serial Scale	A scale receiving a stream of legal for trade weight data over a serial or Ethernet connection.
6	Industrial Serial Scale	A scale receiving a stream of weight data over a serial or Ethernet connection. Parameter values are configurable. Scale functions zero and tare can be used.
7	iQube2 Scale	Scale is connected to 1280 via an iQube2 Junction Box, see Section 5.4 on page 77
8	Program Scale	iRite program provides the scale data.

Table 4-1. Scale Kinds

Setup a Scale

1. Select the scale (1-8) to be configured from the drop-down menu in Figure 4-1.
2. Press to select the scale kind.
3. If applicable, a screen will open showing available hardware to associate with the selected scale kind (for example, an analog load cell scale will have hardware identified as slot and channel). Select the scale hardware to associate with the scale.
4. Press DONE. The *Scale Kind* menu displays and the associated hardware is listed to the right of the scale kind selected.

Figure 4-2. Scale Kind and Associated Hardware

5. Press DONE.
6. Enter an alias name (optional). See Section 4.1.1.

4.1.1 Scale Alias

An alias (name) can be entered for use in an *iRite* program or to identify the scale.

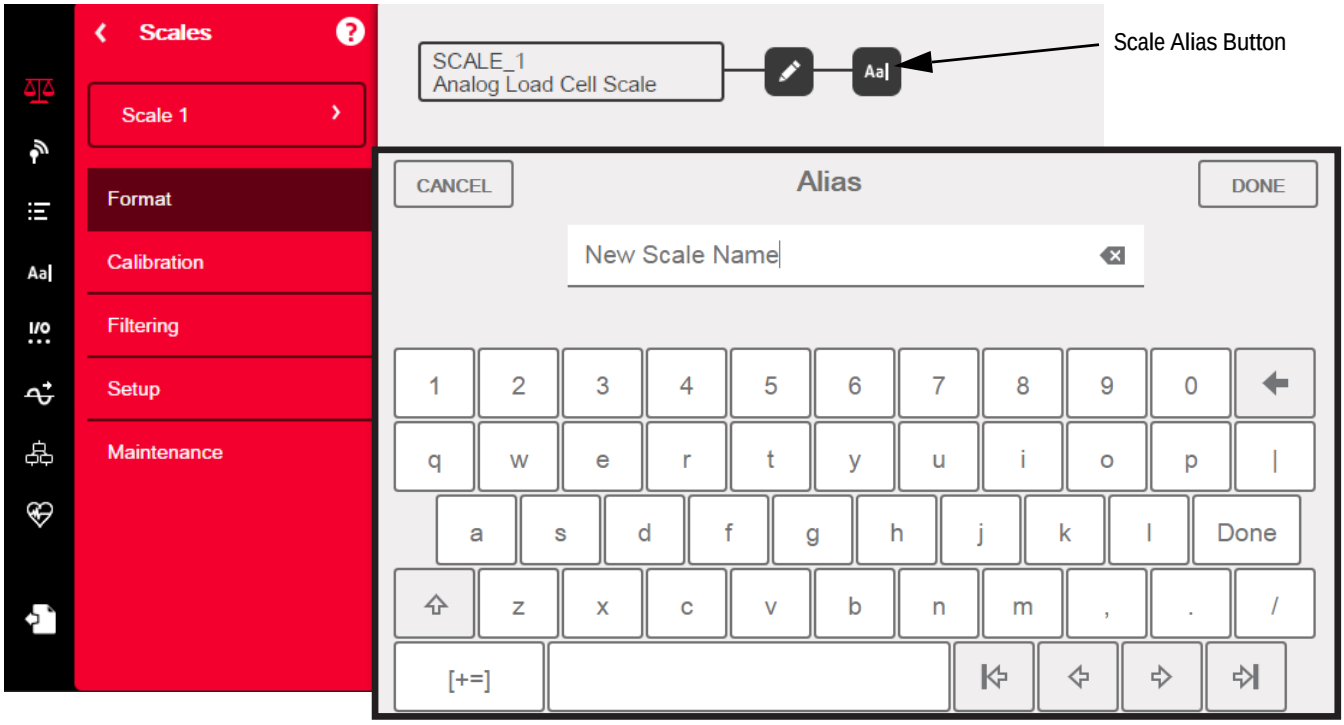


Figure 4-3. Scales Alias Setup Screen

1. Press Aa|. The keyboard will display on the screen.
2. Use the keyboard to enter the desired alias (up to 16 characters).
3. Press DONE when scale alias is correct.

4.1.2 Scale Format

The *Scale Format* menu will vary depending on which scale kind is being used. Only settings available for the selected scale kind will display on the screen. Options specific to the scale feature chosen will show in blue font on the screen.

Parameter	Default	Description
Analog Input Type	0-10 VDC	(Only Available in Analog Input Scale) Choose electrical signal type.
Full Scale Capacity	10,000	Capacity of the scale in primary units.
Primary Units Enabled	On	The *1280* is calibrated in Primary Units. When set to **Off**, primary units will not be displayed, but are still being evaluated in the background for all conversion functions.
Primary Units	Pounds (lb)	Sets the units displayed or printed along with the scale weight.
Primary Decimal Position	8888888	Number of decimal places or fixed zeros to show for primary units. The default is 8888888 (no decimal places).
Primary Display Divisions	1	The division the scale counts by as the load changes. This setting is associated with the Primary Decimal Position. *Example: If the Decimal Position is set to 88888.8 and the Display Divisions are set to 5, it will count by 0.5 units.*
Secondary Units Enabled	Off	When set to **Off**, the **Units** key will not select this unit of measure to perform a weight conversion.
Secondary Units	Kilograms (kg)	Sets the units displayed or printed along with the scale weight.
Secondary Decimal Position	888888.8	Number of decimal places or fixed zeros to show for secondary units.
Secondary Display Divisions	5	The division the scale counts by as the load changes. This setting is associated with the secondary decimal position. *Example: If the Decimal Position is set to 88888.8 and the Display Divisions are set to 5, it will count by 0.5 units.*
Secondary Multiplier (Custom Units Only)	1	Use with custom units. It is the conversion factor applied to the primary units to convert weight for custom units. Example: If primary units were lb and secondary custom units were gallons, there would be a secondary multiplier of 8 entered to show the relationship between lb and gallons.
Tertiary Units Enabled	Off	When set to **Off**, the **Units** key will not select this unit of measure to perform a weight conversion.
Tertiary Units	Kilograms (kg)	Sets the units displayed or printed along with the scale weight.
Tertiary Decimal Position	888888.8	Number of decimal places or fixed zeros to show for tertiary units.
Tertiary Display Divisions	5	The division the scale counts by as the load changes. This setting is associated with the tertiary Decimal Position. *Example: If the Decimal Position is set to 88888.8 and the Display Divisions are set to 5, it will count by 0.5 units.*
Tertiary Multiplier (Custom Units Only)	1	Use with custom units. It is the conversion factor applied to the primary units to convert weight for custom units.
Custom Units One	—	Available to enter a name for custom units. Maximum length is 8.
Custom Units Two	—	
Custom Units Three	—	
Split Mode	Off	Multi-Range, Multi-Interval Settings; see Section 4.1.3 for more information.

Table 4-2. Scale Format

Note *Defaults are shown for NTEP mode.*

4.1.3 Split Mode

The *1280* supports multi-range and multi-interval scales of either two or three ranges or intervals. To set up Multi-Range or Multi-Interval, select Split Mode from the *Scales Format* menu. Select Off, Multi-Range or Multi-Interval from the *Split Mode* menu. Press Done.

Parameter	Description
Multi-Range	Provides two or three ranges, each extending to the maximum capacity specified for each range. The scale display division changes as the applied weight increases, but does not reset to lower display divisions until the scale returns to center of zero.
Multi-Interval	Divides the scale capacity into two or three partial weighing intervals, each with different display divisions. The intervals extend to the maximum capacity specified for each interval. The display divisions change with both increasing and decreasing loads.

Table 4-3. Split Mode Parameters

Low Range Capacity (MRMI) will display once *Split Mode* is set to either Multi-Range or Multi-Interval.

Parameter	Default	Description
Low Range Capacity (MRMI)	0	Low range capacity of the scale in primary units. This parameter must be set before the indicator will display Low Range Decimal Position, Low Range Display Division or Mid Range Capacity (MRMI).
Low Range Decimal Position	8888888	Number of decimal places or fixed zeros to show for low range.
Low Range Display Division	1	The division the scale counts by as the load changes. This setting is associated with the Low Range Decimal Position. Example: If the decimal position is set to 88888.8 and the display divisions are set to 5, it will count by 0.5 units.
Mid Range Capacity (MRMI)	0	Mid range capacity of the scale in primary units. This parameter must be set before the indicator will display Mid Range Decimal Position or Mid Range Display Division.
Mid Range Decimal Position	8888888	Number of decimal places or fixed zeros to show for mid range.
Mid Range Display Division	1	The division the scale counts by as the load changes. This setting is associated with the Mid Range Decimal Position. Example: If the decimal position is set to 88888.8 and the display divisions are set to 5, it will count by 0.5 units.

Table 4-4. Split Mode Sub-menus

If two ranges are used, then:

- Low Range Capacity is set for range 1 capacity
- Full Scale capacity is set for range 2 capacity

If three ranges are used, then:

- Low Range Capacity is set for range 1 capacity
- Mid Range Capacity is set for range 2 capacity
- Full Scale Capacity is set for range 3 capacity

Configure a Multi-Range or Multi-Interval Scale

1. Select Multi-Range or Multi-Interval.
2. Press DONE. The *Low Range Capacity (MRMI)* parameter will appear in blue text under Split Mode.
3. Press *Low Range Capacity (MRMI)* to set a low range capacity. Setting a low range capacity is the only way to access the *Low Range Decimal Position*, *Low Range Display Division* and *Mid Range Capacity (MRMI)* parameters. These parameters will appear in blue text under *Low Range Capacity (MRMI)* after a low range capacity has been set.

A Low Range Capacity must be set in order for further parameters to display. The Full Scale Capacity is either the second or third range.

4.Set the *Low Range Decimal Position* and *Low Range Display Divisions* as desired.

5. (Optional) If desired, the *Mid Range Capacity (MRMI)* can be set at this point. A mid range capacity must be set to

access the *Mid Range Decimal Position* and *Mid Range Display Division* parameters. These parameters will appear in blue text under *Mid Range Capacity (MRMI)* after a mid range capacity has been set.

6. Calibrate scale. See Section 4.2 on page 61.

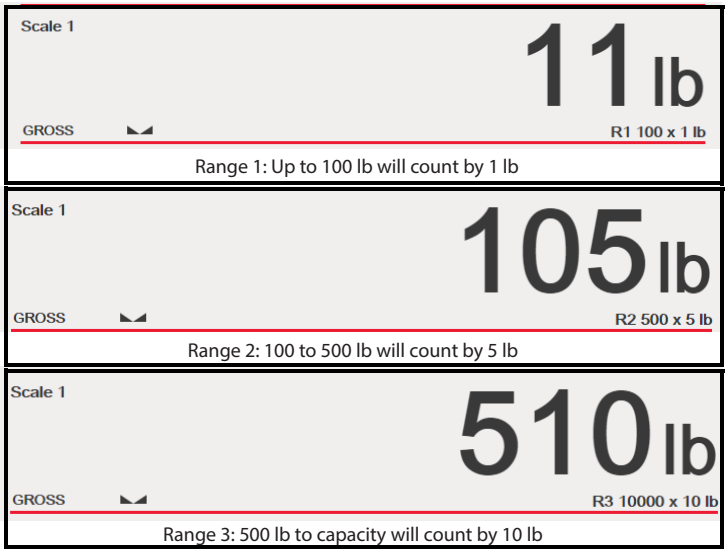


Figure 4-4. Multi-Range Example

Note *When using Multi-Range, the last count-by reached is held until returning to zero, even when descending through other ranges. When using Multi-Interval, count-by change both when ascending and descending through other intervals.*

4.2 Scale Calibration

To enter Scale Calibration, press the Scales icon . From the *Scales* menu, select *Calibration*. The following parameters are available.

Parameters	Defaults	Description
Zero Calibration Counts	8386509	Calculated during calibration, it is the number of A/D counts after the zero calibration.
Span Calibration Weight	10,000	Display and edit the test weight value. Press **Calibrate** to calibrate the **Span Calibration Point**. See Section 4.2.1 on page 62 for more information on Span Calibration.
Span Calibration Counts	2186044	Calculated during calibration, this is the A/D count captured at the span/WVAL weight.
Capacity Calibration Counts	2186044	Calculated during calibration, this is the A/D count at full scale capacity. *Note: If the scale is calibrated at full capacity, then Span Calibration Counts = Capacity Calibration Counts.*
Linear Point Weight 1-4	0	The test weight value for the linear calibration point. Press **Calibrate** to calibrate the **Linear Calibration Point**, or **Remove** to remove it.
Linear Point Counts 1-4	0	The A/D count captured at the linear point weight.

Table 4-5. Calibration Menu

Note *Linear calibration points provide increased scale accuracy by calibrating the indicator at up to four additional points between the zero and span calibrations.*

The Calibrate Scale button begins a step-by step procedure for calibration. See Section 4.2.1.

4.2.1 Standard Calibration

Use the following steps to perform a standard calibration on a scale.

1. Select the scale to be calibrated and enter the calibration menu.
2. Press Calibrate Scale.
3. Select the method of calibration. Press Next >.

   For other methods calibration see:

   - *Section 4.2.2 for multi-point calibration,*
   - *Section 4.2.3 for last zero calibration and*
   - *Section 4.2.4 for temporary zero calibration.*
   - *Section 4.2.5 for Theoretical Calibration*
4. Select whether or not chains, hooks or other items used for applying weights will be used during calibration. Press Next >.
5. Remove all weight from the scale except for chains and hooks (if used).
6. Press Calibrate Zero. The current weight and *Zero Calibration Complete* displays.
7. Press Next >.
8. Enter Span weight for the value of the calibration test weights that will be used to calibrate the scale. This is required prior to running the span calibration.

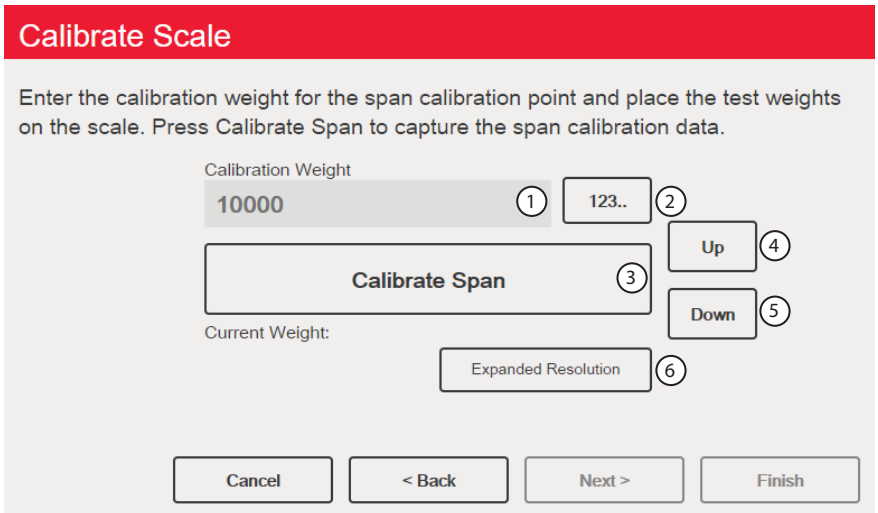


Figure 4-5. Calibrate Span

Item No.	Description
1	Calibration Weight Window – Displays calibration weight value.
2	123... – Press to enter or edit the calibration weight value. Increments based on scale division size or the expanded resolution.
3	Calibrate Span – Press to calibrate span.
4	Up – Calibration can be adjusted by changing the calibrated weight. Press Up to adjust the calibrated weight value up by one display division. Use the Expanded Resolution to adjust the calibrated weight value by a 10th of a display division
5	Down – Calibration can be adjusted by changing the calibrated weight. Press Down to adjust the calibrated weight value down by one display division. Use the Expanded Resolution to adjust the calibrated weight value by a 10th of a display division
6	Expanded Resolution – Increases the resolution by a factor of 10.

Table 4-6. Calibrate Span

9. With the test weight on the scale platform and the test weight value entered into the calibration weight window, the corresponding scale span value is ready to be calibrated.
10. Press Calibrate Span. The current span weight will display.
11. Press Next >. Calibration results are displayed.
12. Press Finish. Display returns to the Calibration menu.
13. The re-zero function is used to remove a calibration offset when hooks or chains are used to hang the test weights during both zero and span calibration. If hooks or chains were used during calibration, remove these and the test weights from the scale.
14. With all weight removed, press Re-Zero.

4.2.2 Multi-Point Calibration

A multi-point calibration is performed by entering up to four additional calibration points.

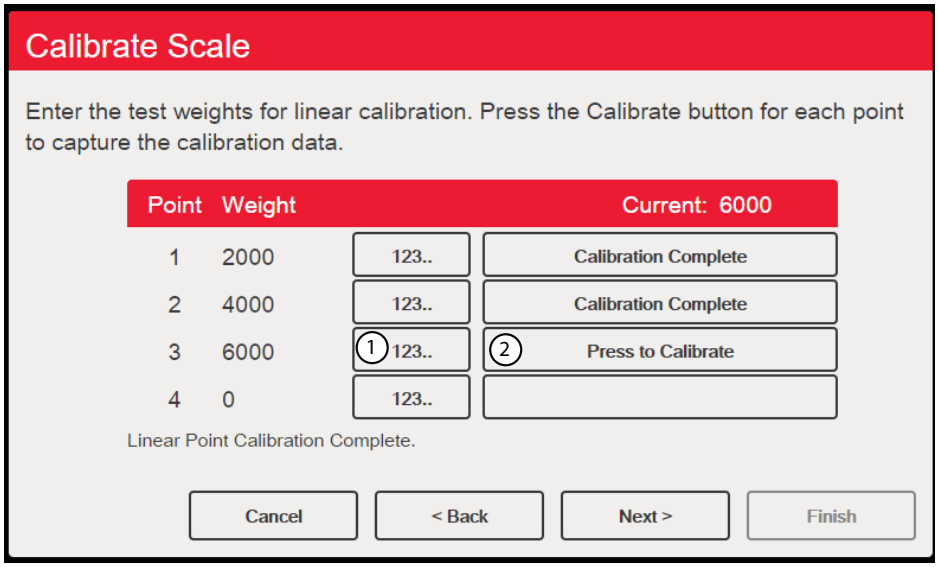


Figure 4-6. Multi-Point Calibration

Item No.	Description
1	123... – Press to enter the test weight value.
2	Press to Calibrate – Captures the calibration value for each point. Only available after a test weight value has been entered. Displays *Calibration Complete* after the calibration is finished.

Table 4-7. Multi-Point Calibration

Multi-Point Calibration

- If multi-point values have previously been entered, values are reset to zero when the initial zero calibration is performed.
- *Zero Calibration* and *Span Calibration* need to be performed before adding linearization points.
- Linear values must not duplicate *Zero Calibration*, *Span Calibration* or previous linear points.

4.2.3 Last Zero Calibration

This takes the last pushbutton zero in the system (from weigh mode) and uses it as the new zero reference point, after which a new span calibration must be performed. This calibration cannot be performed when calibrating a scale for the first time.

A last zero calibration is typically used on truck scales to allow a scale verification to become a calibration without having to remove the test weights.

4.2.4 Temporary Zero Calibration

Temporary zero calibration temporarily zeros the displayed weight of a non-empty scale. After span calibration, the difference between the temporary zero and the previously calibrated zero value is used as an offset.

A temporary zero calibration is typically used on hopper scales to calibrate the span without losing the original zero calibration.

4.2.5 Theoretical Calibration

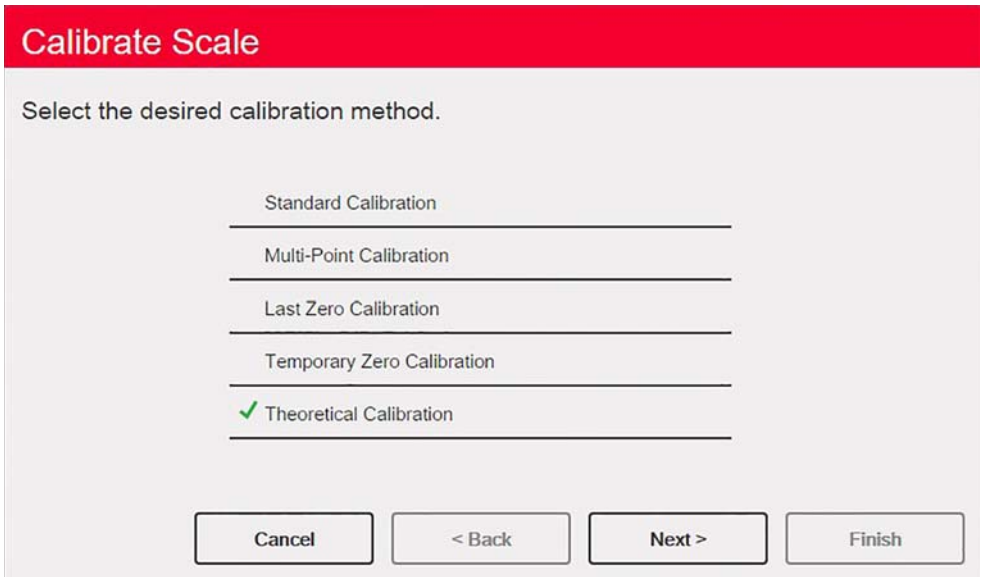


Figure 4-7. Calibration Selection Screen

1. Select *Theoretical Calibration* from the calibration screen. The *Calibrate Zero* screen displays.
2. Remove all test weights from the scale.
3. Press Calibrate Zero. The current weight and *Zero Calibration Complete* displays.
4. Press Next >. The *Total Load Cell Build* screen displays.
5. Enter the total load cell build in primary units.
6. Press Next >. The *Average mV/V* screen displays.
7. Enter the average of the mV/V of all the load cells in the scale.
8. Press Next >. The *Calibration Results* screen will display.
9. Press Finish. The calibration menu displays.

4.3 Scale Filtering

Digital filtering can be used to create a stable scale reading by removing environmental influences. The *1280* has two filtering methods that can be selected; Adaptive Digital and Three Stage Filtering. Three Stage Filtering is selected by default. In addition, the A/D sample rate and damping time constant can be set in this menu.

To enter scale filtering, press the Scales icon  . From the *Scales* menu, select *Filtering*. The following parameters are available.

Parameter	Default	Description
Sample Rate	30 Hz	Selects measurement rate, in samples per second, of the analog-to-digital converter. The sample rate refers to how many times per second the analog signal is converted to digital. It should be set first. Better stability is achieved with a lower sample rate setting, so 7.5 Hz is more stable than 960 Hz.
Digital Filter Type	Three Stage Filter	Sets the filter type to be used. See Section 4.3.1 for more information on the adaptive digital filter. See Section 4.3.2 for more information on the three stage filter.
Damping Time Constant (seconds)	0.01	Used for flow control to get a smooth increase in weight. It takes two-thirds of the difference in weight change in each time period specified.

Table 4-8. Filtering Menu Descriptions

4.3.1 Adaptive Digital Filter

The adaptive digital filter has two parameters to set the response time and observe noise (instability): *Filter Sensitivity* and *Filter Threshold (Display Divisions)*. These parameters display in blue text after the *Digital Filter Type* is set to *Adaptive Digital Filter*.

Parameter	Default	Description
Filter Sensitivity	Light	Controls the stability and response time of the scale. • Heavy – results in an output that is more stable but will settle slowly. Small changes in weight data (a few grads) on the scale base will not be seen quickly. • Medium – has a quicker response time than heavy, but more stability than light. • Light – fastest response to small weight changes, but less stable.
Filter Threshold	10	Digital filter cutout threshold (in display divisions). A weight change exceeding the threshold will reset the filtered values. Must be set above the noise disturbances in the system. If set to zero, the filter is disabled.

Table 4-9. Adaptive Digital Filter Menu Descriptions

Filtering Threshold

Digital filtering threshold should be set for the amount of observed noise in the system. This parameter can be set in the range of 0 to 99999 display divisions. When a new sampled weight value is acquired, the adaptive digital filter compares the new value to the previous (filtered) output value. If the difference between the new value and the previous output value is greater than the *Threshold* parameter (displayed division), the adaptive digital filter output is reset. The newly acquired sample value replaces the filtered output. If the difference between the new value and the previous output value is less than the Threshold parameter, the two values are averaged together using a weighed average. The weighed average is based on the time the system has been stable and the selected sensitivity setting.

The filter can be set to Off by entering 0 in the *Threshold* parameter.

1. To determine the initial setting for the threshold, first set the value to 0.

   Example: If a heavy-capacity scale (10000 x 5 lb) produces vibration-related readings of up to 50 lb, with occasional spikes to 75 lb, record 50 lb as the threshold weight value.

2. In weigh mode, determine the amount of instability that is present. Convert this instability to display divisions.
3. Set the threshold to the number of display divisions of instability.

   threshold_weight_value / display_divisions

   In the example in Step 2, with a threshold weight value of 50 lb and a display divisions value of 5 lb: *50 / 5 = 10. Threshold* should be set to 10D for this example.

4. Further tweak this value, along with the sensitivity, to achieve the desired results. Set sensitivity for the desired response for weight changes; light for less stable but quicker responses, heavy for more stable but slower responses.

4.3.2 Three Stage Filter

The Three Stage Digital filter is a simple rolling average filter with three successive stages. The values assigned to each of the three stages determines the number of A/D readings averaged by that stage. The output value of each stage is passed on to the next stage at each A/D update. The overall filtering effect can be expressed by adding the values assigned to the filter stages and subtracting two.

Example: If the filter stages were set to 16, 4 and 4, the overall filtering effect is 22 ((16+4+4)-2=22). With this configuration, a step change on the input would be fully realized on the display in 22 A/D samples. Setting the filters to 1 ((1+1+1)-2=1) effectively disables the Three Stage Filter.

Parameter	Default	Description
Filter Sensitivity	2 Consecutive Values	Specifies the number of consecutive A/D readings that must fall outside the Filter Threshold before filtering is suspended.
Filter Threshold	None	Sets a threshold value, in display divisions. When a number of consecutive A/D readings (Filter Sensitivity) falls outside of this threshold value (when compared to the output of the filter), filtering is suspended and the A/D value is sent straight through the filter. Filtering will not be suspended if the threshold is set to *None*.
Stage One Filter Value	4	Selects the digital filtering rate used to reduce the effects of environmental influences from the immediate area of the scale. Choices indicate the number of A/D conversions per update that are averages to obtain the displayed reading. A higher number gives a more accurate display by minimizing the effect of a few noisy readings, but slows down the response time of the indicator.
Stage Two Filter Value	4	
Stage Three Filter Value	4	
RattleTrap	Off	Enables RattleTrap filtering.

Table 4-10. Three Stage Digital Filter

Filter Sensitivity and Threshold

The Three Stage Digital filter can be used by itself to eliminate vibration effects, but heavy filtering also increases response time. *Filter Sensitivity* and *Threshold* can be used to temporarily override filter averaging to improve response time.

Setting the Digital Filter Parameters

Use the following procedure to determine vibration effects on the scale and optimize the digital filtering configuration.

1. In setup mode, set the digital filter parameters to 1. Set *Filter Threshold* to None. Return indicator to weigh mode.
2. Remove all weight from the scale. Watch the indicator display to determine the amount of stability of the scale. Record the weight below which all but a few readings fall. This value is used to calculate the *Threshold* parameter value in Step 4.

   Example, if a heavy-capacity scale (10000 x 5 lb) produces vibration-related readings of up to 50 lb, with occasional spikes to 75 lb, record 50 lb as the threshold weight value.
3. Place the indicator in setup mode and set the *Stage Filter Value* parameters to eliminate the vibration effects on the scale. (Leave *Threshold* set to NONE.) Find the lowest effective value for the *Stage Filter Value* parameters.
4. Calculate the *Threshold* parameter value by converting the weight value recorded in Step 2 to display divisions:

   threshold_weight_value / display_divisions

   In the example in Step 2, with a threshold weight value of 50 lb and a display divisions value of 5 lb: *50 / 5 = 10.* *Threshold* should be set to 10D for this example.
5. Set the *Sensitivity* parameter high enough to ignore transient peaks. Longer transients (typically caused by lower vibration frequencies) will cause more consecutive out-of-band readings, so *Sensitivity* should be set higher to counter low frequency transients. Reconfigure as necessary to find the lowest effective value for the *Sensitivity* parameter.

RattleTrap

RattleTrap filtering uses a vibration-dampening algorithm to automatically provide the best features of digital filtering. It is particularly effective for eliminating vibration effects or mechanical interference from nearby machinery. Using RattleTrap filtering can automatically eliminate environmental influences, but will usually increase response time over standard digital filtering. If RattleTrap is set to on, sensitivity and threshold parameter settings are ignored.

4.4 Scales Setup

To enter the Scales Setup menu, press the Scales icon  . From the *Scales* menu, select *Setup*. The following parameters are available.

Parameter	Default	Description
Tare Function	Both	Enables or disables push-button and keyed tares.*
Motion Band (Display Division)	1	Sets the level at which scale motion is detected. If motion is not detected for the standstill time or longer, the standstill icon displays.* • It is shown in display divisions between 1-100. • If set to 0, the standstill icon is on at all times and operations including zero, print, and tare will be performed regardless of scale motion. If set to 0, it will not be Legal for Trade certified.
Overload Range	Full Scale + 2%	Determines the value, in a percentage/display division above capacity, in which the display blanks and the out-of-range error message is displayed.*
Initial Zero Range (% of Capacity)	0	When the indicator is turned on and the weight value is between the ± percent range specified in Calibrated Zero, the indicator will automatically zero off that weight.*
Zero Track Band (Display Divisions)	0	For small weight changes around zero, the zero track band is the value that can automatically be tracked off to return the scale to zero. It is entered in display divisions.*
Zero Range (% of Capacity)	1.9	Zero range specifies the percent of capacity at which the scale can be zeroed.*
Minimum Print Weight	0	The minimum print weight is the weight value that the scale must be above to allow a print. When set to zero, it is disabled.
Standstill Time (Seconds)	1.0	Specifies the time (in seconds) that the scale must be out of motion before it is considered to be at standstill.*
Accumulator	Off	Accumulation can be toggled On/Off. If on, accumulation occurs on print operation; if off, an accumulation does not occur.
Peak Hold	Off	Used to determine, display and print the greatest weight read during a weighing cycle. The weighing cycle ends when a print command is executed (AUTO setting) or when the peak weight is cleared by pressing Zero or Print. Press Gross/Net to display gross weight data when using the peak hold function. • Off - Peak hold function is off. • Normal - Positive peak, manual reset. Greatest net weight is held in memory until the weight is removed from the scale when either the Zero or Print key is pressed. • Bi-directional - Bi-directional peak, manual reset. Same as Normal, but peak value can be either positive or negative, determined by absolute value. • Automatic - Positive peak, auto print, auto reset. Automatic print occurs when the scale load is 0 ± 10 display divisions and at standstill. Following the print command, the peak value is cleared and reset automatically.
Rate of Change Decimal Point	8888888	Set decimal position for rate of change. The default is 8888888 (no decimal point).
Rate of Change Time Unit	Seconds	Time unit to be used in rate of change.
ROC Capture Window (Seconds)	1.0	The time over which the rate of change is calculated.
Powerup Mode	Go	When the indicator is turned on, it performs a display test, then enters a warm up period. • If no motion is detected during the warm up period, the indicator will become operational when the warm up period ends. • If motion is detected, the delay timer is reset and the warm up period is repeated.
Visible	On	Specifies whether scale data is displayed.
* Maximum legal value of these parameters varies depending on local regulations.		

Table 4-11. Scales General Descriptions

4.5 Maintenance

To enter the *Scales Maintenance* menu, press the Scales icon  . From the *Scales* menu, select *Maintenance*. The following parameters are available.

Parameter	Default	Description
Weighment Threshold	100	The amount of weight that, when exceeded, increments the Number of Weighments.
Number of Weighments	0	Displays the total number of weighments (read only).
Maximum Weighment	0	Displays the maximum weighments allowed (read only).
Date of Maximum Weighment	—	Displays the date the maximum weighment occurred (read only).

Table 4-12. Scales Maintenance Menu

4.6 Serial Scale Type

The Serial Scale type allows other scale indicators to send gross or net weight data to the *1280* using a continuous stream of data through a communications port.

4.6.1 Legal for Trade

For a Legal for Trade serial scale, the data must contain the unit of measure, mode of operation and status (in addition to the weight). The configuration of a Legal for Trade serial scale is very limited as it acts similarly to a remote display. For this reason, the scale cannot be tared or zeroed on the *1280* but must be done on the host indicator.

If the data packet for a Legal for Trade serial scale does not contain all the necessary information, or the information is incorrect, the scale will show an error.

4.6.2 Industrial Scales

For industrial scales, the only data needed is the gross weight. The data can (but does not need to) include the unit of measure, mode or status. If the unit of measure is included, it can be used to change the capacity label on the *1280* display. If not, the *1280* will always assume it is primary units.

If the mode is included, the scale will display an error if anything other than the gross mode is indicated. If the mode is not included, the weight is assumed to be gross.

If status is included, it is ignored with the exception of the center of zero indicator. The serial scale cannot determine if the reading is within the center of zero band. The only way to show the center of zero band is to have the host indicator include that information (using the status token) in the data.

Though the *1280* cannot zero an industrial serial scale (zeroing must take place on the host indicator), it is possible to take a tare and display the resulting net weight.

Digital filtering is available with the use of an industrial serial scale. If digital filtering is enabled and the display division size of the incoming weight data is greater than the display division size of the industrial serial scale configuration, the displayed weight will count by the smaller division size, due to the averaging nature of the filters.

4.6.3 Configuration

The *1280* supports serial scale data input on any of the RS-232/RS-485 ports, as well as the Ethernet TCP/IP.

1. In the *Communications* menu, select the desired port.
2. Set the *Input Type* to either *Legal for Trade* or *Industrial Serial Scale*. Set the remaining parameters as necessary to match the parameters of the incoming serial data.
3. In the *Scales menu*, set the scale kind of the scale to either *Legal for Trade Serial Scale* or *Industrial Serial Scale*.
4. Select the communication port to link to the selected scale. Only communications ports that have been configured as serial scales will be displayed.
5. Set the capacity, decimal point, count-by and units to match that of the incoming data. This is done so the capacity label (shown on the display near the weight) is correct. To configure the actual format of the data, go to the *Scales/ General* tab and select a stream format (1-4).
6. Navigate to the *Formats* menu, and select *Stream Formats*.

7. Select the format (1-4) in the left pane. The current stream format will be shown. Either select one of the pre-defined built-in formats, or create a custom format to match the input data format. If necessary, set the token values. See Section 7.2 on page 93 for more information about configuring the stream format.

If using a Legal for Trade serial scale, there are additional settings under the *Scales/General* tab; these include enabling the accumulator and visibility. If using an industrial serial scale, there are additional general settings for the tare function, overload and motion determination, as well as filter settings under the *Scales/Filtering* tab.

The flow of data into the indicator must be continuous – if the flow is interrupted for more than a second, the scale will show an error.

No matter the type, if the data received does not match exactly that which is expected (as defined by the stream format configuration), the data is thrown out and the scale will show an error.

5.0 Communications

The Communications menu is used for the setup of communication parameters for the *1280*.

From the Configuration menu, select the *Communications* icon  (circled in Figure 5-1) to enter the Communications menu. Once all parameters have been set, press  to return to weigh mode.

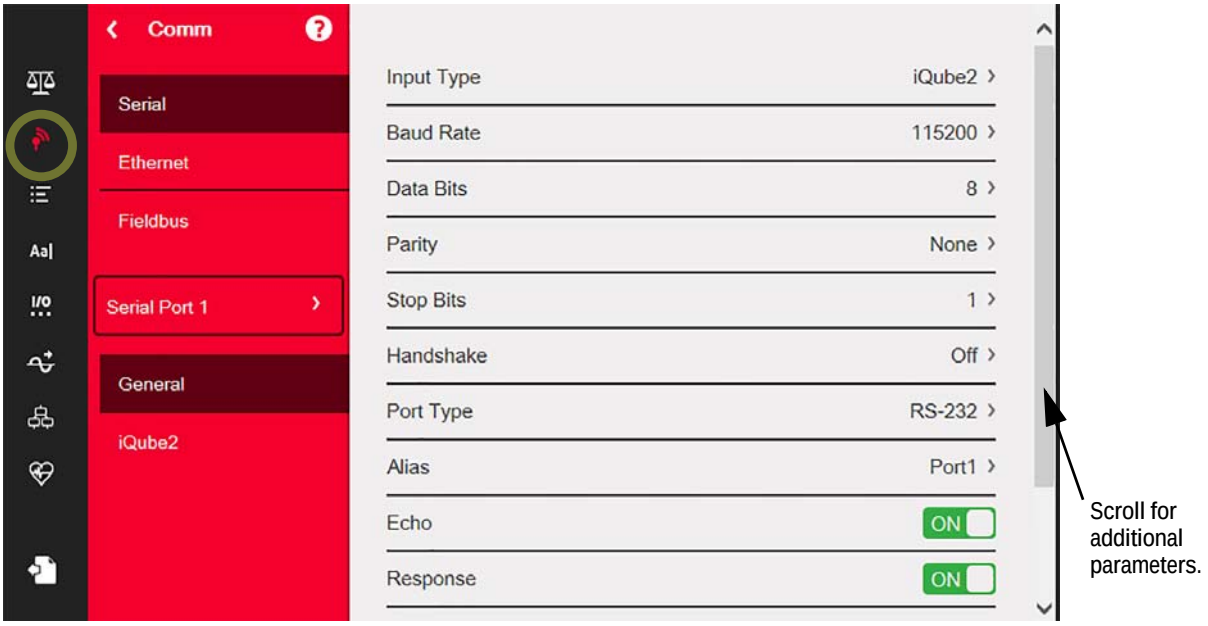


Figure 5-1. Communications Menu

Item No.	Parameter	Description
1	Serial	To set Serial parameters, see Section 5.1 on page 71.
2	Ethernet	To set Ethernet parameters, see Section 5.2 on page 72.
3	Fieldbus	To set Fieldbus parameters, see Section 5.3 on page 76
4	Selection Field	Allows selection of port or server for items 1, 2 or 3.
5	General	General parameters for items 1, 2 or 3.
6	iQube2	Select to enter iQube2 setup, see Section 5.4 on page 77.

Table 5-1. Communication Menu Parameters

5.1 Serial Menu

The Serial menu is used for the setup of communication ports.

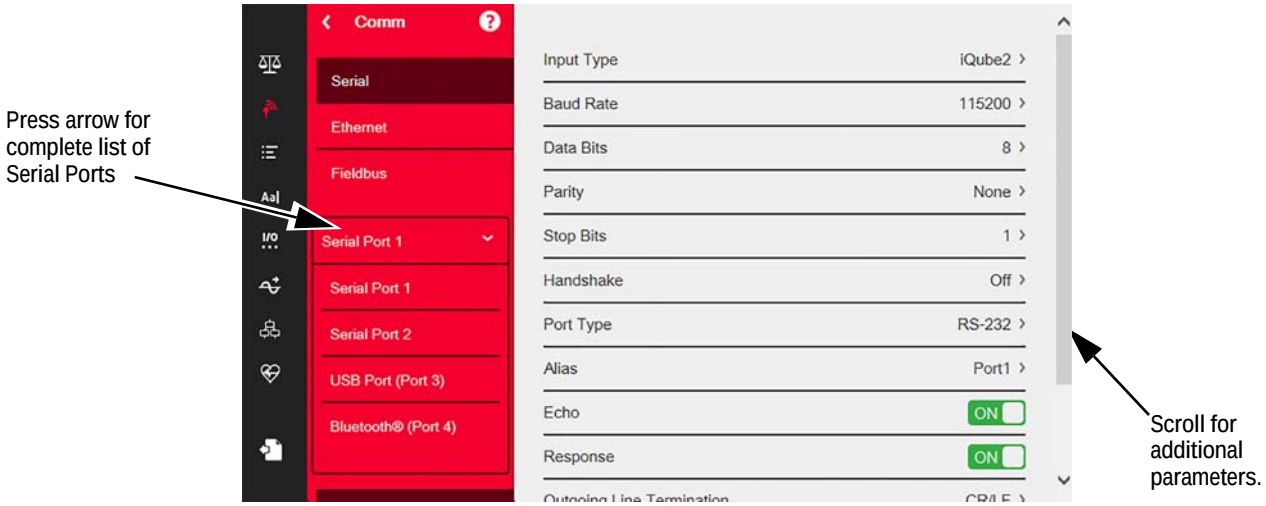


Figure 5-2. Serial Menu Screen

1. Press  from the communications screen.
2. Select *Serial,* to enter the *Serial* menu.
3. Select the port to be used by pressing the selection list arrow next to the serial port. The parameters in Table 5-2 are available.
4. Set the parameters as needed for the selected port. See Table 5-3. Parameters will vary dependent on which port is being used.

Parameter	Description
Serial Port 1	Communications port support RS-232, RS-422 and RS-485 (connector J6).
Serial Port 2	Communications port support RS-232, RS-422 and RS-485 (connector J7).
USB Port (Port 3)	Micro USB device port that can be used as a communications port via a micro USB type B connector.
Bluetooth®Port (Port 4)	Bluetooth® wireless communication port supporting the Serial Port Protocol (SPP) only.
Serial Port 5-16	Dual serial option card ports (if installed). Supports RS-232, RS-422 and RS-485.

Table 5-2. Available Ports

Parameter	Default	Description
Input Type	Command Processor	Sets the input type.
Baud Rate	115200	Selects the transmission speed for the port.
Data Bits	8	Selects number of data bits transmitted or received by the port.
Parity	None	Sets parity bit to odd, even or none.
Stop Bits	1	Selects the number of stop bits transmitted or received by the port.
Handshake	Off	Specifies if XON/XOFF flow control characters are used.
Port Type	RS-232	Designates what Serial Port type is used (RS-232, RS-485, or RS-422). *Note: If RS-485 is selected, prompts are shown to select Duplex (half or full) and RS-485 Network Address.*
Alias	—	Allows the serial port to be renamed.
Echo	On	Specifies whether characters received by the port are echoed back to the sending unit.

Table 5-3. Serial Port Parameters

Parameter	Default	Description
Response	On	Specifies whether the port transmits replies to serial commands.
Outgoing Line Termination	CR/LF	Selects termination character for data sent from the port.
End of Line Delay (seconds)	0.0	Sets delay period from when a formatted line is terminated to the beginning of the next formatted serial output. Range acceptable is 0.0-25.5 seconds.
iQube2 Sample Rate	30 Hz	Sets the rate at which the 1280 polls the iQube2 for weight data. It is only visible when Input Type is set to iQube2.

Table 5-3. Serial Port Parameters (Continued)

5.2 Ethernet Menu

The *Ethernet* menu is used for the setup of wired and Wi-Fi Ethernet connections, including Wi-Fi Direct. These are used to connect the *1280* to local area networks (WLAN and LAN). Network information can be found in weigh mode by pressing the Wi-Fi symbol or in the Ethernet menu in Configuration Mode.

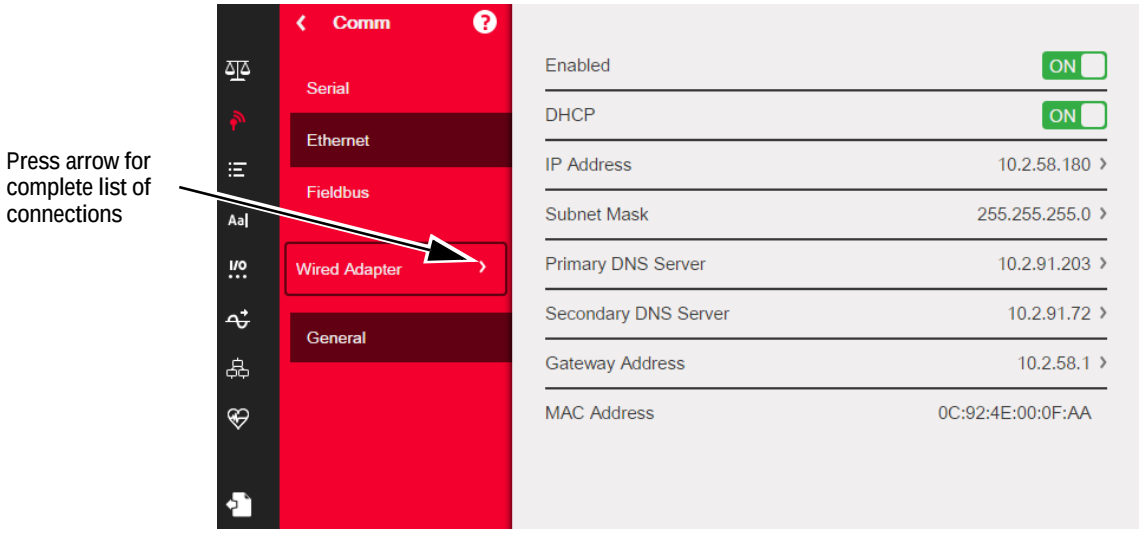


Figure 5-3. Ethernet Screen

1. Press the Communications icon  .
2. Select *Ethernet*.
3. Press the selection field arrow to expand the Ethernet selections.
4. Select the desired Ethernet option (Table 5-4).
5. Set the parameters associated with the Ethernet type selected.

Parameter	Description
Wired Adapter	General wired Ethernet settings
Wi-Fi® Adapter	General Wi-Fi settings, Wi-Fi Direct
TCP Command Server	Specific settings for the TCP Command Server
Stream Server	Specific settings for the Stream Server
TCP Client 1	Specific settings for TCP Client #1
TCP Client 2	Specific settings for TCP Client #2

Table 5-4. Ethernet Selections

Contact the IT department if unsure about the required Ethernet settings for a specific network.

5.2.1 Using an Internet Browser as a Remote Display

A virtual display can be viewed on a computer or mobile device using an Internet browser that supports HTML 5 and JavaScript, such as Internet Explorer v10 and newer, Chrome v30 and newer or Firefox v32 and newer. In addition to viewing, virtual keypad elements can be activated by clicking on them in the browser window.

To use this feature, the *1280* and computer/mobile device must be connected to the same network. In the browser's address bar (URL), type the *1280*'s IP address using TCP port 3000.

Example: If the 1280's IP address is 192.168.0.1, then navigate the browser to http://192.168.0.1:3000.

5.2.2 Resetting the Network Connection

If the Network connection needs to be reset for any reason, press  . The available network information is displayed.

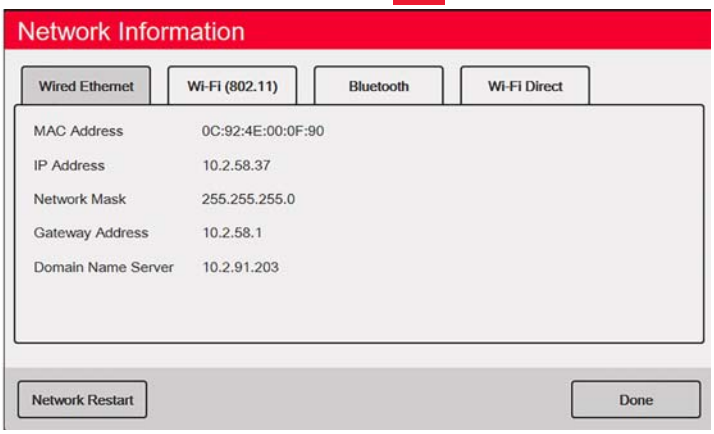


Figure 5-4. Network Information Options Screen

1. Select *Wired Ethernet* or either *Wi-Fi* tab.
2. Press Network Restart.
3. A prompt is displayed, *Do you want to restart all network connections?* Select Yes or No.
4. Selecting Yes connects to a known network connection and will then be restarted.

5.2.3 Wired Adapter

When *Wired Adapter* is selected, the parameters in Table 5-5 will display.

Parameter	Default	Description
Enabled	Off	Enable Wired Ethernet Communications – *Off* speeds up the booting process and configuration mode to weigh mode transitions.
DHCP	On	Dynamic Host Configuration Protocal: On – Dynamic allocation of IP address. Off – Static allocation of IP address.
IP Address	0.0.0.0	Enter a four field value. The range of each field is 0-255.
Subnet Mask	255.255.255.0	Specifies the subnet mask.
Primary DNS Server	0.0.0.0	IP address for the server.
Secondary DNS Server	0.0.0.0	IP address for the server.
Gateway Address	0.0.0.0	Default gateway.
MAC Address	—	View the MAC Address, in hexadecimal base (read only).

Table 5-5. Wired Adapter Parameters

5.2.4 Wi-Fi Adapter

When *Wi-Fi Adapter* is selected, the parameters in Table 5-6 will display.

Parameter	Default	Description
Enable	Off	Enable Wi-Fi Ethernet Communications – *Off* speeds up the booting process and configuration mode to weigh mode transitions.
Service Set ID (SSID)	—	Name of the wireless local area network (WLAN).
Network Type	Infrastructure	Type of wireless network. Choose infrastructure for connections to wireless networks.
Security Type	WPA-Personal	Wireless security protocol.
Encryption Type	TKIP	Wireless encryption protocol.
Security Key	—	Password to access a local area network.
DHCP	On	Dynamic Host Configuration Protocal On – Dynamic allocation of IP address Off – Static allocation of IP address
IP Address	0.0.0.0	Four field value, the range of each field is 0-255.
Subnet Mask	255.255.255.0	Specifies the subnet mask.
Primary DNS Server	0.0.0.0	IP address for the server.
Secondary DNS Server	0.0.0.0	IP address for the server.
Gateway Address	0.0.0.0	Default gateway.
MAC Address	—	View the MAC Address, in hexadecimal base (read only).
Wi-Fi Direct Enabled	Off	Allows wireless connection directly to a PC, phone or tablet without a network or access point.

Table 5-6. Wi-Fi Adapter Parameters

5.2.5 Wi-Fi® Direct

Wi-Fi Direct is a feature of Wi-Fi that allows wireless connection directly to a PC, phone or tablet.

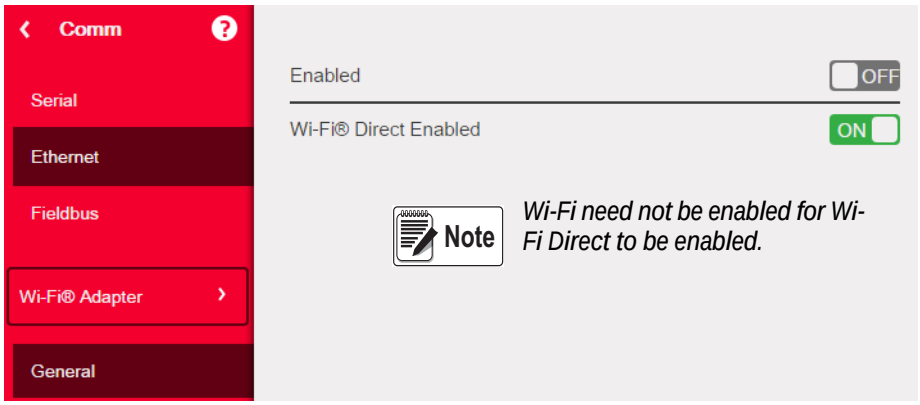


Figure 5-5. Enable Wi-Fi Direct

1. Select *Ethernet*.
2. Press the selection field arrow to expand the Ethernet choices.
3. Select the *Wi-Fi® Adapter* list option.
4. Enable the *Wi-Fi Direct* option.
5. Press . The *Busy Wheel* will display for a few seconds, then the display will go back to the weigh mode.

Figure 5-6. Busy Wheel

6. Press . The available Network Information is displayed.

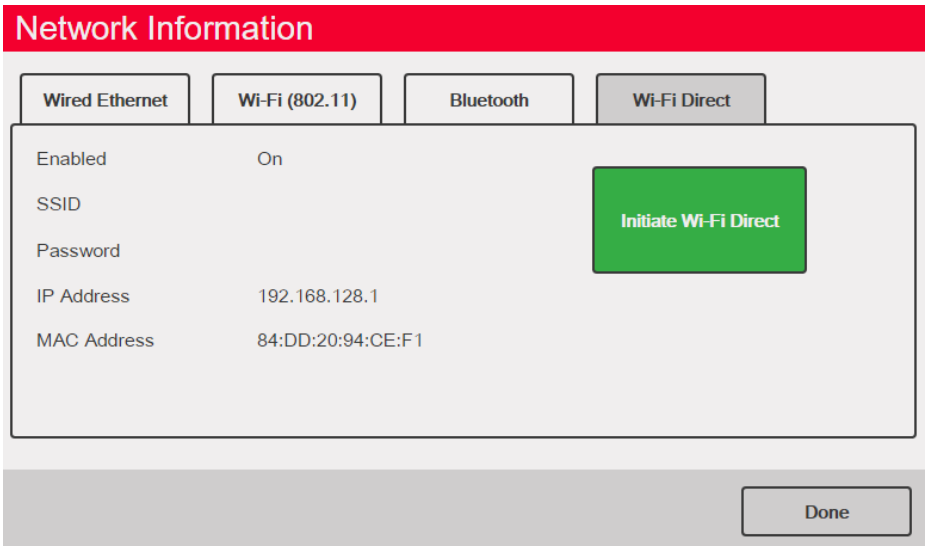


Figure 5-7. Wi-Fi Options Screen

7. Select the *Wi-Fi Direct* tab.
8. Press Initiate Wi-Fi Direct.
9. Wi-Fi Direct will be assigned an SSID and Password. Write these down, they will be required when connecting to another device.

Note *A new SSID and Password will be created each time a Wi-Fi Direct connection is initiated.*

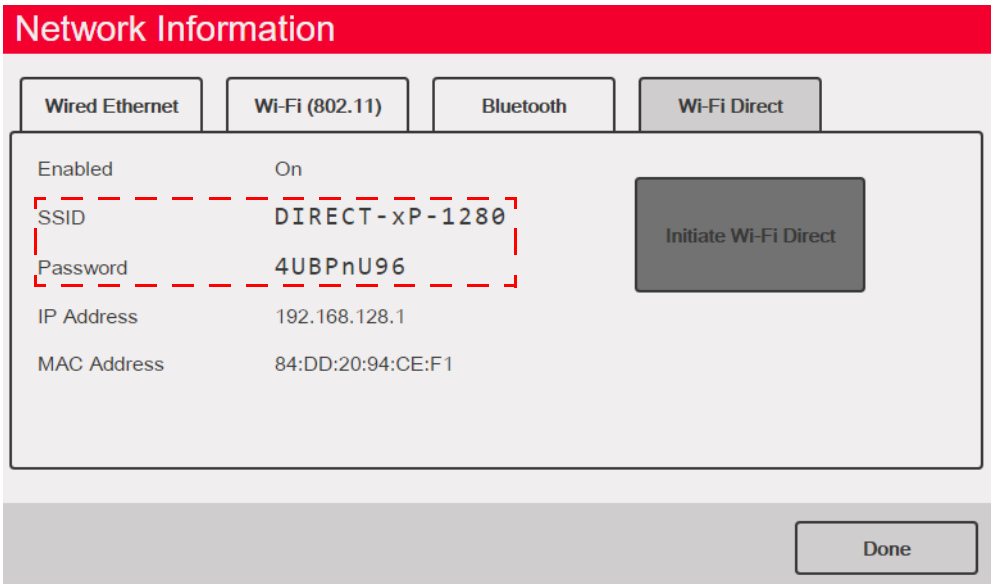


Figure 5-8. SSID and Password for Wi-Fi Direct

10. Press DONE. The weigh screen is displayed.
11. Using the PC, mobile phone or iPad/tablet, enter settings, then Wi-Fi selections. The name of the *1280* SSID should be displayed as an option in the Wi-Fi selections.
12. Select the *1280* SSID from the list, a screen will display asking for the Password.

13. Enter the Password from Step 9.
14. To disable Wi-Fi Direct, go back to the communications/Ethernet menu to disable.

Using Wi-Fi Direct does not interrupt the use of Wi-Fi.

Enabling the Wi-Fi will require Wi-Fi Direct to be re-initiated.

Wi-Fi direct can utilize all Ethernet connection types (TCP command server, Stream Server, TCP Client 1 & 2)

5.2.6 TCP Command Server

Parameter	Default	Description
Input Type	Command Processor	Sets the input type.
Server Port Number	10001	TCP/IP port number.
Alias	—	Allows the server to be renamed.
Echo	Off	Specifies whether characters received by the port are echoed back to the sending unit.
Response	Off	Specifies whether the port transmits replies to serial commands.
Outgoing Line Termination	CR/LF	Selects the termination character for data sent from the port.

Table 5-7. TCP Command Server Parameters

5.2.7 Stream Server

Parameter	Default	Description
Server Port Number	20001	Stream server port number.
Alias	—	Allows the server to be renamed.
Outgoing Line Termination	CR/LF	Selects termination character for data sent from the port.

Table 5-8. Stream Server Parameters

5.2.8 TCP Client 1 & 2

Parameter	Default	Description
Input Type	Command Processor	Sets the input type.
Remote Address	0.0.0.0	IP address of the remote unit that will connect to the *1280*.
Remote Port Number	10001	TCP port number on the remote unit that will connect to the *1280*.
Alias	—	Allows the server to be renamed.
Outgoing Line Termination	CR/LF	Selects termination character for data sent from the port.
End of Line Delay (seconds)	0.0	Sets the delay period, in 0.1 second intervals, from when a formatted line is terminated to the beginning of the next formatted serial output.
Echo	On	Specifies whether characters received by the port are echoed back to the sending unit.
Response	On	Specifies whether the port transmits replies to serial commands.
Disconnect Time (seconds)	0	The amount of time an active connection is held before it is dropped.
iQube2 Sample Rate	30 Hz	Sets the rate at which the 1280 polls the iQube2 for weight data. It is only visible when the Input Type is set to iQube2.

Table 5-9. TCP Client 1 & 2 Parameters

5.3 Fieldbus Menu

The Fieldbus menu allows the selection of the slot (1-6) to be used for one of the CompactComm Options.

1. Press the Communications icon .
2. Select *Fieldbus*.

3. Press the arrow next to the Slot # and select the slot required.

Parameter	Default	Description
Data Swap	None	Specifies Byte, Word, Both or none of the data sent and received by the fieldbus card.
iRite Fieldbus Data Size (Bytes) (0=disabled)	0	Specifies the data size, in bytes,that the iRite Fieldbus command handler transfers. Values must be in multiples of four.
DeviceNet Address	63	Enter DeviceNet option address 1-64.
Profibus Address	126	Enter Profibus option address 1-126.

Table 5-10. Fieldbus Menu Descriptions

5.3.1 Data Swap

If the values returned from the *1280* do not appear to be correct, change the Data Swap parameter to *Byte*, *Word* or *Both*. These parameters change the order of the data so that it is compatible with the way the device handles the data in its memory. It is best to change the data order in the device being used, but if that is not possible, Data Swap is the best alternative.

5.4 iQube2 Scale

This system has a scale connected to the 1280 using an iQube2 junction box. The setup for this system can be found in the iQube2 technical manual (PN 67888).

To enter the setup mode via the 1280:

1. Press  to enter the communications menu.
2. Select iQube2 as the *Input Type* of the connected communications port.
3. Press  to enter the Scales menu.
4. Select the iQube2 as the scale kind for the desired scale number. See Section 4.1 on page 57.
5. Press iQube2 setup to enter the iQube2 setup mode.
6. A popup asking Enter iQube2 setup mode displays.
7. Press 

to enter the iQube2 setup mode.
8. Refer to the iQube2 manual (PN 67888) for setup information.

6.0 Features

The Features menu allows the setup of parameters for the menu items listed inTable 6-1.

From the Configuration menu, select the Features icon (circled in Figure 6-1) to enter the Features menu.

Once all parameters have been set, press to return to weigh mode.

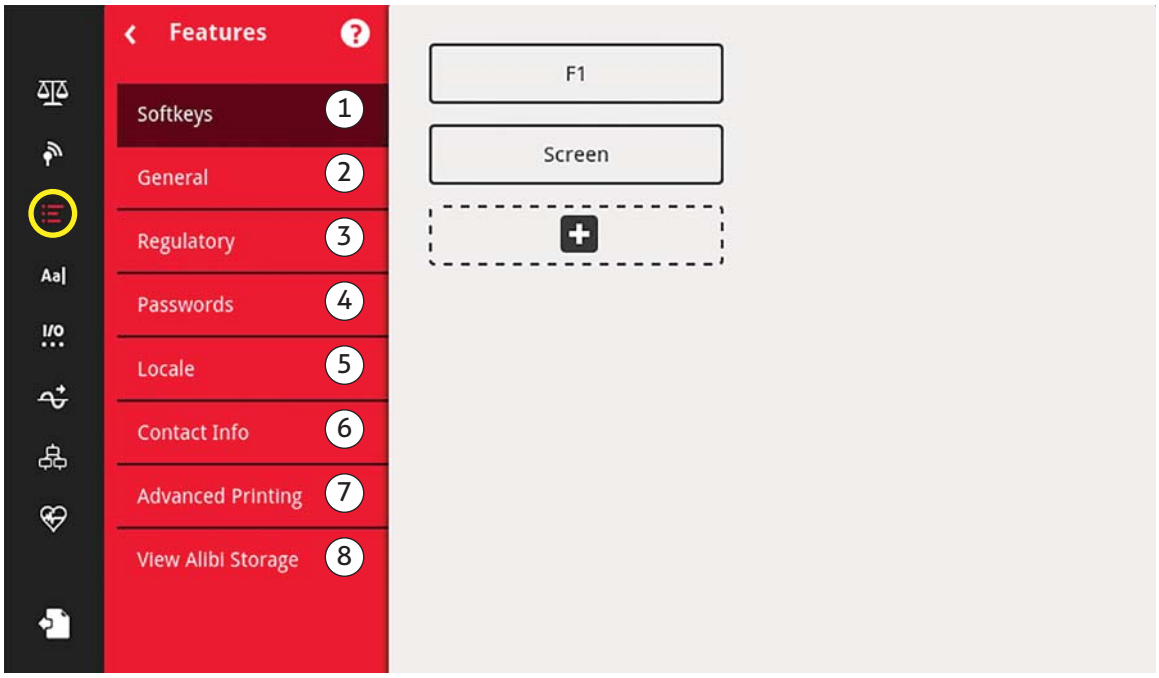


Figure 6-1. Features Menu

Item No.	Parameter	Description
1	Softkeys	Softkeys setup. See Section 6.1 on page 79.
2	General	Setup general indicator settings. See Section 6.2 on page 81.
3	Regulatory	Allows for the selection of the regulatory mode required for the scale. See Section 6.3 on page 82.
4	Passwords	Allows passwords to be set to secure menus. See Section 6.4 on page 85.
5	Locale	Allows the local language, time/date and decimal format to be setup. See Section 6.5 on page 85.
6	Contact Info	Allows the input of company information. See Section 6.6 on page 86.
8	Advanced Printing	Setup printing using optional printers over network/USB. See Section 6.7 on page 87.
7	View Alibi Storage	Shows past transactions and allows them to be reprinted. See Section 6.8 on page 87.

Table 6-1. Features Menu Parameters

6.1 Softkeys

Softkeys are available to provide additional operator functions for specific applications. When enabled they are displayed as digital buttons at the bottom of the display in weigh mode. Press a softkey to use the assigned functions.

To enter the *Softkey* menu, press the Features icon . From the *Features* menu, select *Softkeys*.

When the *Auto-Populate Softkey* is set to on, the default or the last set softkeys display. See Section 6.1.2.

6.1.1 Enable/Disable Softkeys

1. In the Softkey menu, press to bring up the list of predefined softkeys. See Section 6.1.2.
2. Select from the list of predefined softkeys or one of the user defined options.
3. Select DONE to enable the softkey or press cancel to quit.

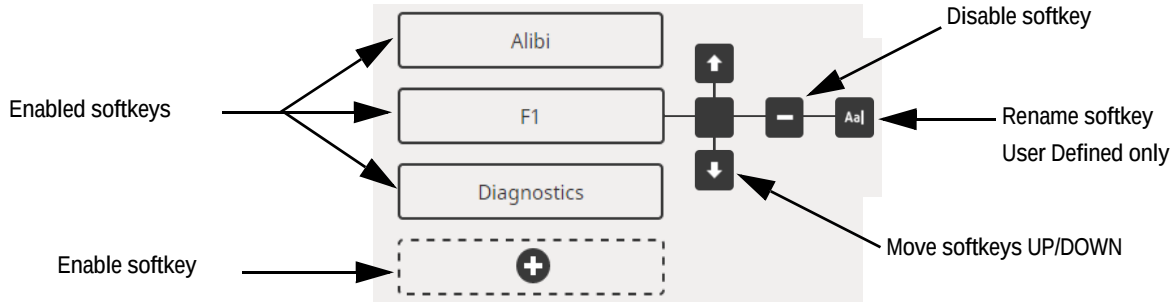


Figure 6-2. Enable/Disable Softkeys

6.1.2 Predefined Softkeys

Example Softkeys

Softkey	Description
Blank	No softkey available.
User Defined 1-10	Up to 10 softkeys can be created using one of the user defined options (22 characters or less available).
Time/Date	Displays current time and date; allows time and date change.
Display Tare	Displays tare value in the entry prompt.
Display Accumulator	Displays accumulator value, if enabled, for the current scale.
Display Rate of Change	Displays rate-of-change value, if enabled, for the current scale.
Setpoint	Displays a menu of configured setpoints; allows display and change of some setpoint parameters.
Batch Start	Starts a batch from the current step if a Batch Run digital input is either active or not defined. If a Batch Run digital input is defined and inactive, Batch Start resets the batch to the first step.
Batch Stop	Stops an active batch and turns off all associated digital outputs. Requires a Batch Start to resume processing.
Batch Pause	Pauses an active batch and turns off all digital outputs except those associated with Concurrent and Timer setpoints. Processing is suspended until the indicator receives a Batch Start signal. Pressing the BATSTRT digital input, BATSTART serial command, Batch Start softkey or the StartBatch function (in iRite) resumes the batch and re-energizes all digital outputs turned off by the Batch Pause.
Batch Reset	Stops an active batch and resets the current step to the first batch step. All digital outputs associated with batch setpoints are deactivated. If a batch is stopped or paused, Batch Reset will reset the current step to the first step.
Select Scale	Enter the scale number (using the numeric keypad) to be displayed for multi-scale applications, followed by the select scale softkey.
Diagnostics	Opens the iQube2 diagnostics screen
Alibi	Allows previous print transactions to be recalled and reprinted.
Contrast	Adjusts the screen backlight intensity.

Table 6-2. Configurable Softkeys

Softkey	Description
Test	Not available in version 1.00.
Stop	Sends AuxFmt13 out its configured port to display a red light on a LaserLight.
Go	Sends AuxFmt12 out its configured port to display a green light on a LaserLight.
Off	Sends AuxFmt14 out its configured port to turn a LaserLight red/green light off.
Display Unit ID	Displays the Unit ID in the lower left corner of the screen.
Zero	Zeros the indicator.
Gross/Net	Toggles between gross and net modes.
Tare	Tare the scale by using the onscreen numeric keypad
Keyed Tare	Tare the scale by using the onscreen numeric keypad
Units	Toggles between primary, secondary and tertiary units.
Print	Prints the configured print format.
Aux Print	Auxilliary printing by entering the Auxilary Format number (1-20) using onscreen numeric keypad
Screen	Display a different screen by entering a value (1-99) and pressing the Screen softkey.
Database	Accesses the import and export database feature from the weigh mode.

Table 6-2. Configurable Softkeys (Continued)

Note *The Zero, Gross/Net, Tare, Units and Print softkeys are functionally equivalent to the keypad function keys. These softkeys are primarily for web browser remote connections, when a physical keypad is not available.*

6.1.3 Database Softkey

User must configure the Database softkey to use the Database Import/Export functionality from weigh mode.

To access the database import or export features from the weigh mode:

1. Press the Database softkey. The database menu will display for several seconds.
2. Select either Import Database or Export Database. The Import/Export screen will display.
   See Section 13.3 on page 122 or Section 13.5 on page 123 to complete the database import/export.

Figure 6-3. Database Screen in Weigh Mode

6.1.4 LaserLight Softkey

User must configure *1280* softkeys to use Stop/Go. See Table 6-3 to view the pre-populated commands in the print formats.

Figure 6-4. LaserLight Softkey Example

Table 6-3 lists commands to display the Stop, Go (circle or arrow) and Off elements on a LaserLight. The command information can be changed. The softkey is coded to send the associated AuxFmt.

Traffic Light State	AuxFmt	Serial Command
Stop	AuxFmt13	|00DO3!
Green Circle	AuxFmt12	|00DO2!
Green Arrow	AuxFmt12	|00DO1!
Off	AuxFmt14	|00DO0!

Table 6-3. LaserLight2 Commands

6.2 General Parameters

To enter the *General* menu, press . From the *Features* menu, select *General*.

1. Press the parameter to be set.
2. If the setting needs data entry, a keypad will appear. Enter data and press DONE.

Parameter	Default	Description
Unit Id	1	Specifies the unit identification number with an alphanumeric value (up to eight characters).
Consecutive Number	0	Value is incremented following each print operation that includes <CN> in the ticket format. When reset, it is set to a value specified in the Consecutive Numbering Start parameter (up to seven characters).
Consecutive Number Start	0	Start value of the next print when it is reset. Range is from 0 to 9999999 (up to seven characters). Example: If set to 0, the next print will be 1. If set to 47, the next print will be 48.
Full Keyboard Lock	Off	Locks entire keyboard if turned on.
Virtual Keypad Lock	Off	When off, the virtual on-screen keypad closes when any of the buttons is activated automatically. When on, the keypad remains in place, but can be closed manually.
Zero Enabled Keyboard Lock	Off	Locks keyboard except zero key if turned on.
Auto-Populate Softkeys	Off	When on, all screens are automatically populated with softkeys at the bottom of the screen. When off, the user can place a softkey widget anywhere on the screen.
Locale/Remote Server Address	127.0.0.1	Specifies the IP address of the remote indicator to show on the display. To display the local indicator, set to the localhost address of 127.0.0.1. If a local/remote application, set this parameter, on the remote indicator only, to the IP address of the local indicator to use its display.

Table 6-4. General Parameters Menu

6.2.1 Local/Remote Operation

Local/remote support provides a function equivalent to that of an indicator via web server with network access. The display on the local indicator is also displayed at the remote unit, and keypad input from the remote unit is treated the same as keypad input on the local indicator.

1. Connect both indicators to the same Ethernet TCP/IP or Wi-Fi network.
2. Look up the local indicator's IP address by pressing the Wi-Fi symbol in Weigh mode (to bring up the Network Information screen), or look it up under the *Communications* menu in Configuration mode.
3. On the remote indicator, use the *Features/General* menu to change the Local/Remote Server Address to the IP address of the local indicator.
4. When in weigh mode, the remote will display a copy of the local indicator's display. Key presses on the remote indicator are passed back to the local to perform their intended function.

Note

•It is recommended to use static IP addresses (set DHCP to Off) when using the local/remote feature, to avoid connection issues.

- *For an indicator to show its own display, the Local/Remote Server Address must be set to 127.0.0.1. The display is treated as a remote if any other IP address is entered.*
- *If the configuration switch is pressed on the remote indicator, the remotes configuration menu is shown on the remote only. If the configuration switch is pressed on the local indicator, the locals configuration menu is shown on both indicators.*
- *If the local indicator goes off-line, the remote indicator's display is blank, or has dashes for the weight.*
- *The remote indicator can only display the local's display and return key/virtual keypad presses. Weight data is not available at the remote indicator for functions such as printing, serial data streaming or setpoints.*

Using an Internet Browser as a Remote Display

A virtual display can be viewed on a computer or mobile device using an Internet browser that supports HTML 5 and Javascript, such as Internet Explorer v10 and newer, Chrome v30 and newer or Firefox v32 and newer. In addition to viewing, virtual keypad elements can be activated by clicking on them in the browser window.

To use this feature, the *1280* and computer/mobile device must be connected to the same network. In the browser's address bar (URL), type the *1280*'s IP address, using TCP port 3000.

Example: If the *1280*'s IP address is 192.168.0.1, then navigate the browser to http://192.168.0.1:3000.

6.3 Regulatory

Specifies the regulatory agency having jurisdiction over the scale site. Regulatory agencies regulate legal metrology procedures for each country's scale performance.

The selection made for this parameter affects the function of the front panel Tare and Zero keys. Tare and Zero key functions are also configurable when the *Regulatory* mode is set to Industrial to accommodate operations that may not be covered specifically by the general regulatory selections.

1. Press the Features icon  , then press *Regulatory*.
2. Press *Regulatory Mode*. The options menu displays.
3. Select the required mode.
4. Press DONE.

Parameter	Description
National Type Evaluation Program (NTEP)	NTEP is a regulatory agency that serves most of the United States.
International Organization of Legal Metrology (OIML)	OIML is a global intergovernmental organization that publishes legal metrology recommendations for the regulatory agencies of its members.
Measurement Canada	Measurement Canada is a regulatory agency that serves Canada.
Industrial Mode	Industrial Mode is used for non-Legal for Trade applications. See Table 6-8.
None	A regulatory mode has not been chosen.

Table 6-5. Regulatory Mode Options Menu

6.3.1 Parameters Available in all Regulatory Modes

Parameters	Default	Description
Alibi Storage	Off	Allows previous print transactions to be recalled and reprinted if enabled.
Gravity Compensation	Off	Scales must be re-calibrated after changing from Off to On. Specifying the latitude and elevation of the calibration and scale sites provides compensation for gravitational effects. To calibrate with gravity compensation, Origin Latitude and Elevation and Destination Latitude and Elevation must be set.
Origin Latitude	45	Origin latitude of the scale site in degrees, range 0-90 (only available with Gravity Compensation set to on).
Origin Elevation (meters)	345	Origin Elevation of the scale site in meters, range -9999 to 9999 (only available with Gravity Compensation set to on).
Destination Latitude	45	Destination latitude of the scale site in degrees, range 0-90 (only available with Gravity Compensation set to on).
Destination Elevation (meters)	345	Destination Elevation of the scale site in meters, range -9999 to 9999 (only available with Gravity Compensation set to on).
Monorail Mode	Off	Allows preset (keyed) tare values to be of higher precision then the display division size in Monorail applications. Available in future release.
Enable Screen Saver	Off	Enables screen saver functionality. Screen saver can be triggered by the Screen Saver Weight Threshold or the Screen Saver Activation Time. When the screen saver is triggered, the backlight dims to 10%.
Screen Saver Weight Threshold	0	The screen saver activates when the weight dips below the Screen Saver Weight Threshold (only available when Enable Screen Saver is set to on).
Screen Saver Activation Time	30	Time at standstil at which the screensaver activates (only available when Enable Screen Saver is set to on).

Table 6-6. Regulatory Mode Parameters – All Modes

Table 6-7 describes the function of TARE and ZERO for the NTEP, CANADA, OIML, and NONE regulatory modes.

Regulatory Parameter Value	Weight on Scale	Tare in System	Front Panel Key Function	
			Tare	Zero
NTEP	zero or negative	no	*no action*	Zero
		yes	Clear Tare	
	positive	no	Tare	
		yes	Tare	
OIML	zero or negative	no	*no action*	Zero
		yes	Clear Tare	Zero *and* Clear Tare
	positive	no	Tare	Zero
		yes	Tare	Zero *and* Clear Tare if weight is within ZRANGE. *No action* if weight is outside of ZRANGE
Measurement Canada	zero or negative	no	*no action*	Zero
		yes	Clear Tare	
	positive	no	Tare	
		yes	*no action*	
Industrial Mode	See Table 6-8			

Table 6-7. Tare/Zero Key Functions for Regulatory Parameter Settings

Regulatory Parameter Value	Weight on Scale	Tare in System	Front Panel Key Function	
			Tare	Zero
NONE	zero or negative	no	Tare	Zero
		yes	Clear Tare	
	positive	no	Tare	
		yes	Clear Tare	

Table 6-7. Tare/Zero Key Functions for Regulatory Parameter Settings (Continued)

Industrial Mode Parameters

Industrial mode provides a set of sub-parameters to allow customization of tare, clear and print functions in non-Legal for Trade scale installations.

Parameter	Default	Description
Audit Agency	NTEP	Defines how the Audit Trail data is displayed/printed, depending on the requirements for the various regulatory agencies.
Weight Source for Print	Synchronized to Display	Synchronized to the displayed value or the scale internal value.
Allow Tare in Display Hold	Off	A semiautomatic (push-button) tare that can be taken while the scale display is being held.
Allow Print in Display Hold	Off	A demand print may be performed while the scale display is being held.
Remove Tare on Zero	Off	A tare will be removed if a semiautomatic (push-button) zero is performed on the scale.
Always Allow Keyed Tare	On	Preset (keyed) tares will be allowed at any weight, not just at zero gross.
Multiple Tare Action	Replace	Defines the resulting action if a semiautomatic (push-button) tare is attempted while there is already a tare for the scale. • *Replace* - replaces the current tare with the new one. • *Remove* - clears the current tare. • *No Action* - rejects the new tare attempt (the current tare must be cleared before a new tare can be acquired).
Allow Negative Tare	Off	Allows a semiautomatic (push-button) tare to be taken at a negative gross weight, resulting in a negative tare weight.
Allow CLR key to clear tare/accumulator	On	Allows the Clear key to clear the tare or accumulator while the tare or accumulator is being displayed.
Clear Source Scales Individually	Off	Allows the clearing of tare values from source scales individually when a total scale is involved.
Allow Total Scale to Display Negative	Off	Allows the total scale to display a negative value, otherwise the total scale will display an error whenever any source scale is displaying a negative value.
Allow Print in Motion	Off	Allows a demand print to be performed while the scale is in motion.
Allow PT to Keyed Tare Print	Off	The letters *PT* will appear on printed output if the tare value is a preset or keyed tare.
Zero Base for Overload	Calibrated Zero	Used to determine the point at which the scale will display overload, either (calibrated zero + capacity + overload setting), or (current captured zero + capacity + overload setting).
Use Fine Push-Button Tare	Off	When a semiautomatic (push-button) tare is taken, use internal counts instead of the rounded display value.
Use Fine Keyed Tare	Off	When a preset, or keyed tare is entered, use the exact value entered instead of rounding the value to the current display division.
Tare in Motion	Off	Allow a semiautomatic (push-button) tare to be taken while the scale is in motion.

Table 6-8. Industrial Mode Parameters

Parameter	Default	Description
Zero in Motion	Off	Allow a semiautomatic (push-button) zero to be performed while the scale is in motion.
Underload Limit (Display Divisions)	9999999	Defines the number of display divisions below gross zero that will be displayed before the scale shows an underload condition.
Allow Manual Clear Tare	On	Allows the clearing of the tare value manually at any gross weight.
Auto-Zero Tracking on Net Zero	Off	Allows the scale zero to be automatically adjusted, within the specified zero range, to track a net zero display.
Total Scale Requires Identical Source Count-By	Off	Allows source scales, when a total scale is involved, to have different display division sizes.

Table 6-8. Industrial Mode Parameters (Continued)

6.4 Passwords

Passwords can be set to secure the Configuration, Setpoints and Calibration menus.

1. Ensure the audit jumper (JP1) is in the *On* position in order to turn on the passwords. See Figure 3-3 on page 54.
2. Press the Features icon  , the press *Passwords*.
3. Select the *Configuration*, *Setpoints* or *Calibration*. The keyboard displays.
4. Enter the password, then press DONE.

Parameters	Parameter
Configuration Password	Allows the configuration parameters to be accessed without the need to press the configuration button.
Setpoints Password	Allows the Enable and Value setpoint parameters to be accessed without the need to press the configuration button.
Calibration Password	Allows the calibration parameters to be accessed without the need to press the configuration button.

Table 6-9. Menu Passwords

6.5 Locale

Select this parameter to set the desired language, date and time formats, and decimal format.

1. Press  , then press *Locale.*
2. Press the parameter to set.
3. Select the setting desired.
4. Press DONE.

Parameter	Default	Description
Default Weigh Mode Language	English	Select from 16 languages available for the indicator weigh mode. See Section 6.5.1. Indicator must be rebooted for change to take affect.
Date Format	MMDDYYYY	Select one of the four formats available: MMDDYYYY, DDMMYYYY, YYYYMMDD, YYYYDDMM.
Date Separator	Slash (/)	Select one of three date separators available, Slash (/), Dash (-), Semi-colon (;).
Time Format	12 Hour	Select 12 hour or 24 hour time format.
Time Separator	Colon (:)	Select Colon (:) or Comma (,) as the time separator.
Decimal Format	Dot (.)	Select Dot (.) or Comma (,) as the format for the decimal.

Table 6-10. Locale Parameters Menu

Parameter	Default	Description
Time/Date Change Restriction	Off	Returns current status, only works in setup mode ON/OFF

Table 6-10. Locale Parameters Menu (Continued)

6.5.1 Default Weigh Mode Languages

There are 16 languages available for the indicator weigh mode.

- English
- Spanish
- French
- Portuguese
- Italian
- German
- Dutch
- Danish
- Swedish
- Russian
- Ukrainian
- Hebrew
- Arabic
- Thai
- Chinese
- Turkish

6.6 Contact Info

Enter the Contact Info menu to setup company information.

Press  , select *Contact Info.*

1. Press the parameter to be set. A keyboard will display.
2. Enter the information and press DONE.
3. Repeat steps 1 and 2 until all desired entries have been made.

Parameter	Description
Company Name	Enter the company name (up to 30 characters).
Address Line 1-3	Enter the address, three lines available (up to 30 characters per line).
Contact Name 1-3	Enter up to three contact names (up to 20 characters per contact).
Contact Phone 1-3	Enter up to three contact phone Numbers (up to 20 characters per phone number).
Email Address	Enter an email address (up to 30 characters).
Next Calibration Date	Specify the next calibration date.
Last Calibration Date	Specify the last calibration date.

Table 6-11. Contact Info Parameters

6.7 Advanced Printing

Allows printing from network/USB sources or by using iRite.

Note *Enabling USB and advanced printing simultaneously is now supported. This is useful if both local and network printers are used.*

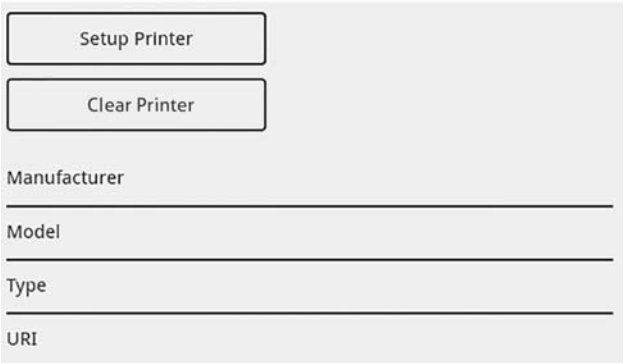


Figure 6-5. Advanced Printer Setup Menu

1. Press Setup Printer to enter the printer setup wizard.
2. Select the manufacturer of the printer from the list. Use the scroll bar to view all selections. With the manufacturer selected, press Next >.
3. Using the same process as step 2, select the Model of the printer.
4. Select the connection type to be used to connect to the printer, network or USB.
5. If using a network connection, enter the *Network URI*.

Note *The 1280 supports Direct Print and Internet Printing Protocol for printing directly to a printer. URI examples include:*

socket://<ip-address-of printer>:9100
ipp://<ip-address-of-printer>:631

6. Press Next > to complete the setup. *Printer successful installed* displays.

6.8 View Alibi Storage

Allows previous print transactions to be recalled and reprinted. Approximately 500,000 alibi messages can be stored.

Set the *Alibi Storage* to *On* by entering the regulatory menu under features. See Section 6.3.1 on page 83.

1. Press , select *View Alibi Storage*.
2. Use the arrows to scroll to the record needed. Alternatively, enter the date range to search for the record.
3. Select the desired record.
4. To print the currently selected record, press Reprint.
5. Repeat steps 1-4 until all records required have been printed.
6. When all records required have been printed, press DONE.

A demand print string is stored in Alibi memory and is assigned an ID number. The token <AN> for the Alibi ID number should be added to the print strings for reference. The print string is stored with a Checksum to ensure data integrity.

Some data is dependent upon the ticket format, see Section 7.0 on page 89 to format a ticket to contain the tokens for weight, date and time, scale number, alibi ID.

Checksum

The checksum is calculated when the weighment is stored in alibi storage. When the data is retrieved, the checksum is re-calibrated and compared to the initial value. If the values match, the data is transmitted. If they do not match, the *1280* will send an *Invalid Record* response.

The checksum is for internal use only and not retrievable, since all data is stored internally. External Alibi storage is not supported.

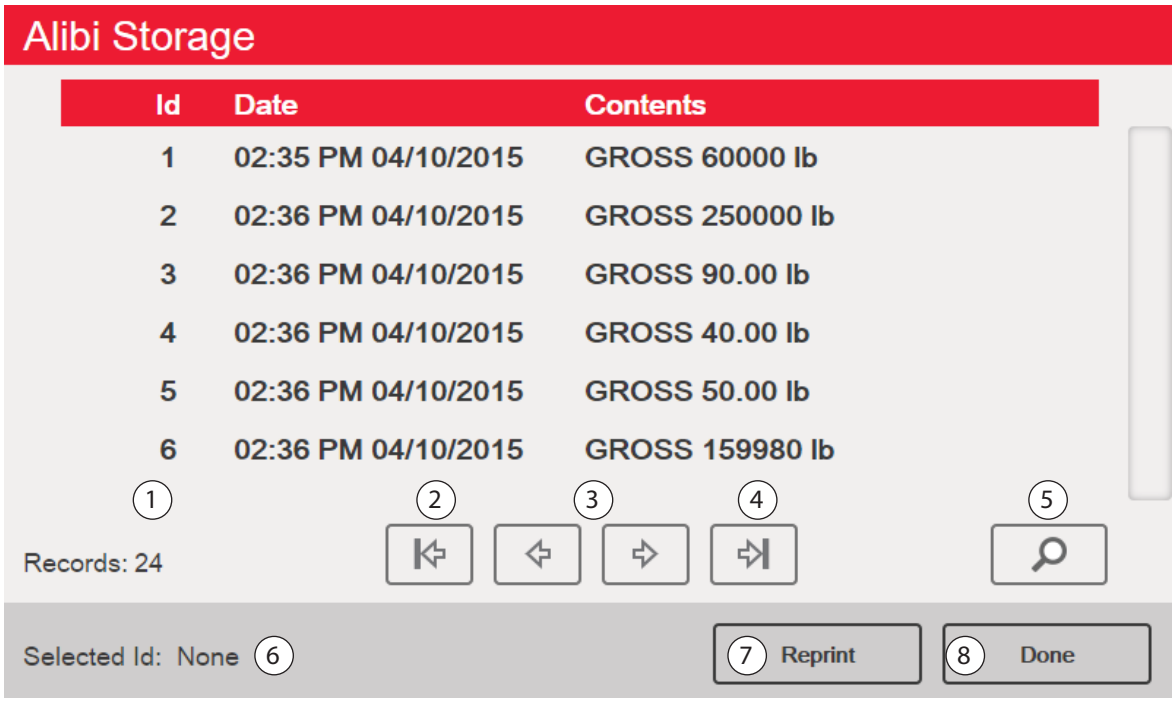


Figure 6-6. Alibi Storage Screen

Item No	Parameter
1	Records – number of records.
2	Page to beginning.
3	Page left or right.
4	Page to the end.
5	Search by date.
6	Selected Id for current record.
7	Reprint current record.
8	Done – press to return to previous menu.

Table 6-12. Alibi Storage

7.0 Formats

The Format menu allows the setup of print and stream formats.

From the Configuration menu, select the Formats icon  (circled in Figure 7-1) to enter the Formats menu. Once all parameters have been set, press  to return to weigh mode.

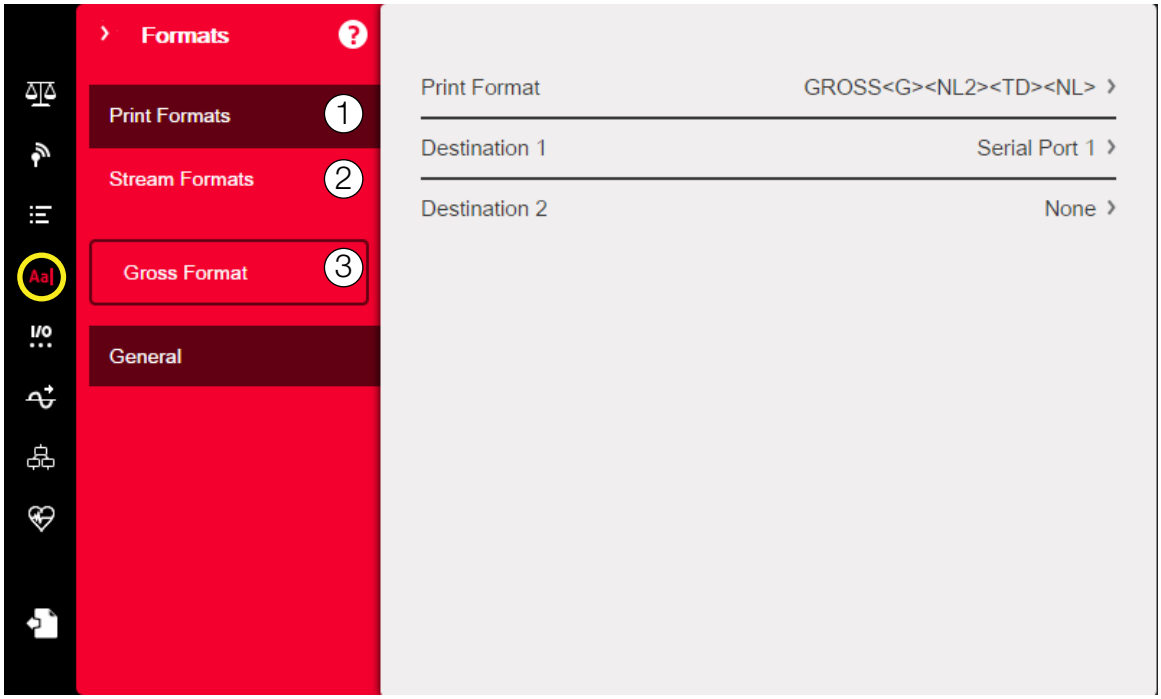


Figure 7-1. Format Menu

Item No.	Parameter	Description
1	Print Formats	Used to set the printed output when the Print key is pressed, a KPRINT command is received or when the setpoint push-print or truck weigh-in/weigh-out operations are performed. See Section 7.1
2	Stream Formats	The 1280 supports four configurable data streaming formats that can be set to outside data frames in one of nine pre-configured formats (see Table 7-2), or the data frame can be customized.
3	Selection Field	Allows selection of print or stream formats.

Table 7-1. Format Menu Parameters

7.1 Print Format

The print format used for a given print operation depends on the indicator configuration and the operation performed. Each print format can be customized to include up to 1000 characters of information, such as company name and address, on printed tickets.

Use the Revolution configuration utility, serial commands or the indicator front panel to customize the print formats.

Figure 7-2. Select Format

1. Press Aa|, then select Print Format.
2. Press the selection field arrow (circled in Figure 7-2) to select the print format to be configured. The current settings for that format will appear to the right.
3. Press the format to be edited. The format editor displays. Table 7-4 lists print tokens, which are always enclosed in < >. Characters not enclosed in < > will be printed as displayed.
4. When finished editing the print format, press DONE.
5. Set the communications port destination parameters as needed. See Section 7.1.2.

7.1.1 Default Print Formats

Table 7-2 lists all of the default print formats. These are the formats used when the indicator's configuration is reset.

Print Format	Default Format
Gross Format	GROSS<G><NL2><TD><NL>
Net Format	GROSS<G><NL>TARE<SP><T><NL>NET<SP2><N><NL2><TD><NL>
Setpoint Format	<SCV><SP><SPM><NL>
Header 1	COMPANY NAME<NL>STREET ADDRESS<NL>CITY, ST ZIP<NL2>
Header 2	COMPANY NAME<NL>STREET ADDRESS<NL>CITY, ST ZIP<NL2>
Accumulator Format	ACCUM <A><NL><DA> <TI><NL>
Alert Format	<COMP><NL><COAR1><NL><COAR2><NL><COAR3><NL><CONM1><COPH1><NL><CONM2> <COPH2><NL> <CONM3> <COPH3><NL><COML><NL><ERR><NL>
Audit Trail Format	Not Available
Auxiliary Format 1-20	GROSS<G><NL2><TD><NL> *Note: AuxFmt12, AuxFmt13 and AuxFmt14 are specified for the LaserLight only.*

Table 7-2. Default Print Formats

7.1.2 Set Destination 1 and 2 Print Format

Up to two communication ports can be defined to allow the same format to be sent out simultaneously.

1. Press *Destination 1* and select the serial port to be used.
2. Repeat for *Destination 2* (optional).

Parameter	Description
None	A destination has not been set for the print format
Basic USB Printer	Supports only a single printer that uses only ASCII characters
Advanced Printer	Supports wide range of commercial printers and languages
Serial Port 1	Communications port support RS-232, RS-422 and RS-485 (J6)
Serial Port 2	Communications port support RS-232, RS-422 and RS-485 (J7)
USB Port (Port 3)	Micro USB device port that can be used as a communications port (J5)
Bluetooth® (Port 4)	A wireless communications port using the Bluetooth® standard
TCP Client 1	Specific settings for TCP Client 1
TCP Client 2	Specific settings for TCP Client 2

Table 7-3. Destination Options

Note Base destination list will grow with serial ports 5-16 depending on installed option cards.

7.1.3 Print Format Tokens

Token	Description	Supported Ticket Formats
General Weight Data Tokens		
<G>	Gross weight, current scale	GFMT, NFMT, TRWIN. TRWOUT, ACCFMT, AUXFMT*xx*, ALERT
<G#*n*>	Gross weight, scale *n*	
<N>	Net weight, current scale	
<N#*n*>	Net weight, scale *n*	
<T>	Tare weight, current scale	
<T#*n*>	Tare weight, scale *n*	
<S>	Current scale number	
Notes: *Gross, net, tare, accumulator, truck and setpoint weights can be printed in any configured weight unit by adding the following modifiers to the gross, net, and tare weight tokens: /P (primary units), /D (displayed units), /S (secondary units) or /T (tertiary units). If not specified, the currently displayed unit (/D) is assumed. Example: To format a ticket to show net weight for Scale 3 in secondary units, use the following token: <N#3/S>* *Formatted weight strings contain a 10-digit weight field (including sign and decimal point, with leading zeros suppressed), followed by a space and a two-digit unit identifier. Total field length with units identifier is 13 characters.*		
Accumulator Tokens		
<A>	Accumulated weight, current scale	GFMT, NFMT, ACCFMT, AUXFMT*xx*
<A#*n*>	Accumulated weight, scale *n*	
<AA>	Average accumulation, current scale	
<AA#*n*>	Average accumulation, scale *n*	
<AC>	Number of accumulations, current scale	
<AC#*n*>	Number of accumulations, scale *n*	
<AT>	Time of last accumulation, current scale	
<AT#*n*>	Time of last accumulation, scale *n*	
<AD>	Date of last accumulation, current scale	
<AD#n>	Date of last accumulation, scale *n*	
Setpoint Tokens		
<SCV>	Setpoint captured value	SPFMT
<SN>	Setpoint number	
<SNA>	Setpoint name	
<SPM>	Setpoint mode (gross or net label)	
<SPV>	Setpoint preact value	
<STV>	Setpoint target value	
Auditing Tokens		
<CD>	Last calibration date	All
<NOC>	Number of calibrations	
<NOW>	Number of weighments since last calibration	
Note: Last calibration date (<CD>) and number of calibrations (<NOC>) are updated anytime a calibration is performed on any of the scales. Number of weighments (<NOW> token) is incremented whenever the scale weight exceeds 10% of scale capacity. Scale must return to gross or net zero before the value can be incremented again.		

Table 7-4. Print Format Tokens

Token	Description	Supported Ticket Formats
Formatting and General-Purpose Tokens		
<*nnn*>	ASCII character (*nnn* = decimal value of ASCII character). Used for inserting control characters (STX, for example) in the print stream.	All
<TI>	Time	
<DA>	Date	
<TD>	Time and date	
<UID>	Unit ID number (up to 8 alphanumeric characters)	
<CN>	Consecutive number (up to 7 digits)	
<H1>	Insert header format 1 (HDRFMT1); see Table 7-2 on page 90	
<H2>	Insert header format 2 (HDRFMT2); see Table 7-2 on page 90	
<CR>	Carriage return character	
<LF>	Line feed character	
<NL*nn*>	New line (*nn* = number of termination (<CR/LF> or <CR>) characters)*	
<SP*nn*>	Space (*nn* = number of spaces)*	
<SU>	Toggle weight data format (formatted/unformatted)	
Note: If nn is not specified, 1 is assumed. Value must be in the range 1–99.		
User Program-dependent Tokens		
<US*nn*>	Insert user print text string (from user program, SetPrintText API)	All
<EV*x*>	Invoke user program print handler *x* (PrintFmt*x*)	AUXFMT*x*
<AN>	Enables the addition of an Allibi ticket number.	All
Alert Format Tokens		
<COMP>	Company name (up to 30 characters)	All
<COAR1> <COAR2> <COAR3>	Contact company address, lines 1–3 (up to 30 characters)	
<CONM1> <CONM2> <CONM3>	Contact names (up to 20 characters)	
<COPH1> <COPH2> <COPH3>	Contact phone numbers (up to 20 characters)	
<COML>	Contact e-mail address (up to 30 characters)	
<ERR>	Alert error message (system-generated)	ALERT

Table 7-4. Print Format Tokens (Continued)

7.2 Stream Format Menu

The four stream formats can each be sent out of one or more of the indicator's communications ports.

Parameters	Default	Description
Output Stream Type	Off	Select Legal for Trade (stream data updates at the display update rate), Industrial (stream data updates at up to the scale sample rate) or Off (disables the stream format). If Legal for Trade or Industrial is selected, the parameters Stream Source and Stream Destinations display.
Stream Source	None	The scale the weight data will be taken from.
Stream Destinations	None	Defines the communication ports the stream data will be sent to (more than one can be selected).
Stream Format	RLWS/Condec	Specifies the format of the stream frame. Select one of the four available default formats, or select custom and use the Custom Format parameter to build a stream frame. If Custom is selected, the following parameters (in blue) display.
Custom Format	<2><P><W7.><U><M><S>	Used to define a custom stream frame format, if the stream format parameter is set to custom.
Gross Token	G	Defines what will be sent in the data frame for the Mode Token when in Gross mode (up to eight characters).
Tare Token	T	Defines what will be sent in the data frame for the Mode Token when in Tare mode (up to eight characters).
Net Token	N	Defines what will be sent in the data frame for the Mode Token when in Net mode (up to eight characters).
Positive Token	Space	From a list, select the character that will be sent in the data frame for the Polarity Token when displaying a positive weight. The default is a blank space.
Negative Token	Minus	Defines the character that will be sent in the data frame for the Polarity Token when displaying a negative weight.
Primary Token	L	Defines what will be sent in the data frame for the Units Token when displaying Primary units (up to eight characters).
Secondary Token	K	Defines what will be sent in the data frame for the Units Token when displaying Secondary units (up to eight characters).
Tertiary Token	K	Defines what will be sent in the data frame for the Units Token when displaying Tertiary units (up to eight characters).
Zero Token	Z	Defines what will be sent in the data frame for the Status Token when weight is at Center of Zero (up to two characters).
Motion Token	M	Defines what will be sent in the data frame for the Status Token when weight is in Motion (up to two characters).
Range Token	O	Defines what will be sent in the data frame for the Status Token when weight is Out of Range (up to two characters).
OK Token	[blank entry]	Defines what will be sent in the data frame for the Status Token when weight is OK (or not in one of the other states) (up to two characters). The default is a blank space.
Invalid Token	I	Defines what will be sent in the data frame for the Status Token when weight is Invalid (up to two characters).

Table 7-5. Stream Format Parameters

Stream Format

To set up the stream formats using the indicator front panel:

1. Press Aa|, then select Stream Format. See Figure 7-1.
2. Press Stream Format 3 › to select the format to be configured.

3. Press *Output Stream Type* to set Industrial or Legal for Trade.
4. Press DONE.
5. Press *Stream Source* to set one of the eight scales for the format.
6. Press *Stream Format* to choose the format to be used and press DONE.
7. If *Custom Format* was selected in step 6, press select *Custom Format*. The *Custom Format* keypad will display. Stream tokens are listed in Table 7-6. Press DONE.
8. Press *Stream Destinations* to indicate where to stream.
9. Press DONE.
10. Set the values for the Stream Tokens (See Table 7-5) as needed.

7.2.1 Stream Format Tokens

Format Identifier	Defined By	Description
<P[G | N | T]>	STRM.POS#*n* STRM.NEG#*n*	Polarity. Specifies positive or negative polarity for the current or specified (Gross/Net/Tare) weight on the source scale. Possible values are SPACE, NONE, + (for STR.POS#*n*) or – (for STR.NEG#*n)*
<U[P | S | T]>	STRM.PRI#*n* STRM.SEC#*n* STRM.TER#*n*	Units. Specifies primary, secondary or tertiary units for the current or specified weight on the source scale.
<M[G | N | T]>	STRM.GROSS#*n* STRM.NET#*n* STRM.TARE#*n*	Mode. Specifies gross, net or tare weight for the current or specified weight on the source scale.
<S>	STRM.MOTION#*n* STRM.RANGE#*n* STRM.OK#*n* STRM.INVALID#*n* STRM.ZERO#*n*	Status for the source scale. Default values and meanings for each status: STR.MOTION#*n*MIn motion STR.RANGE#*n*OOut of range STR.OK#*n*<*space*>OK STR.INVALID#*n*IInvalid STR.ZERO#*n*ZCOZ
<B [–]n,…>	*See descriptions below*	Bit fields. Comma-separated sequence of bit field specifiers. Must be exactly 8 bits. Minus sign ([–]) inverts the bit.
B0	—	Always 0
B1	—	Always 1
B2	Configuration	=1 if even parity
B3	Dynamic	=1 if MODE=NET
B4	Dynamic	=1 if COZ
B5	Dynamic	=1 if standstill
B6	Dynamic	=1 if gross negative
B7	Dynamic	=1 if out of range
B8	Dynamic	=1 if secondary/tertiary
B9	Dynamic	=1 if tare in system
B10	Dynamic	=1 if tare is keyed
B11	Dynamic	=00 if MODE=GROSS =01 if MODE=NET =10 if MODE=TARE =11 (*not used*)
B12	Dynamic	=00 if UNITS=PRIMARY =01 if UNITS=SECONDARY =10 if UNITS=TERTIARY =11 (*not used*)
B13	Configuration	=00 (*not used*) =01 if current DSPDIV=1 =10 if current DSPDIV=2 =11 if current DSPDIV=5
B14	Configuration	=00 (*not used*) =01 if primary DSPDIV=1 =10 if primary DSPDIV=2 =11 if primary DSPDIV=5
B15	Configuration	=00 (*not used*) =01 if secondary DSPDIV=1 =10 if secondary DSPDIV=2 =11 if secondary DSPDIV=5

Table 7-6. Stream Format Tokens

Format Identifier	Defined By	Description
B16	Configuration	=00 (*not used*) =01 if tertiary DSPDIV=1 =10 if tertiary DSPDIV=2 =11 if tertiary DSPDIV=5
B17	Configuration	=000 if current DECPNT=8888800 =001 if current DECPNT=8888880 =010 if current DECPNT=8888888 =011 if current DECPNT=888888.8 =100 if current DECPNT=88888.88 =101 if current DECPNT=8888.888 =110 if current DECPNT=888.8888 =111 if current DECPNT=88.88888
B18	Configuration	=000 if primary DECPNT=8888800 =001 if primary DECPNT=8888880 =010 if primary DECPNT=8888888 =011 if primary DECPNT=888888.8 =100 if primary DECPNT=88888.88 =101 if primary DECPNT=8888.888 =110 if primary DECPNT=888.8888 =111 if primary DECPNT=88.88888
B19	Configuration	=000 if secondary DECPNT=8888800 =001 if secondary DECPNT=8888880 =010 if secondary DECPNT=8888888 =011 if secondary DECPNT=888888.8 =100 if secondary DECPNT=88888.88 =101 if secondary DECPNT=8888.888 =110 if secondary DECPNT=888.8888 =111 if secondary DECPNT=88.88888
B20	Configuration	=000 if tertiary DECPNT=8888800 =001 if tertiary DECPNT=8888880 =010 if tertiary DECPNT=8888888 =011 if tertiary DECPNT=888888.8 =100 if tertiary DECPNT=88888.88 =101 if tertiary DECPNT=8888.888 =110 if tertiary DECPNT=888.8888 =111 if tertiary DECPNT=88.88888
<*wspec* [–] [0] *digit*[[.]*digit*]>	Scale weight	Weight for the source scale. *wspec* is defined as follows: *wspec* indicates whether the weight is the current displayed weight (W, w), gross (G, g), net (N, n) or tare (T, t) weight. Upper-case letters specify right-justified weights, lower-case are left-justified. Optional /P, /S or /T suffixes can be added before the ending delimiter (>) to specify weight display in primary (/P), secondary (/S) or tertiary (/T) units. [–]Enter a minus sign (–) to include sign for negative values. [0]Enter a zero (0) to display leading zeroes. *digit*[[.][.]*digit*] The first digit indicates the field width in characters. The decimal point only indicates a floating decimal. A decimal point with a following digit indicates fixed decimal with *n* digits to the right of the decimal. Two consecutive decimals send the decimal point even if it falls at the end of the transmitted weight field.
<CR>	—	Carriage return
<LF>	—	Line feed

Table 7-6. Stream Format Tokens (Continued)

8.0 Digital I/O

Digital inputs can be set to provide indicator functions, including all keypad functions. Digital inputs are active low (0 VDC) and inactive high (5 VDC).

Digital outputs are typically used to control relays that drive other equipment. Outputs are designed to sink, rather than source, switching current. Each output is normally an open collector circuit, capable of sinking 20 mA when active. Digital outputs are used to change a relay state when the digital output is active (low, 0 VDC) with reference to a 5 VDC supply.

From the Configuration menu, select the Digital I/O icon  (circled in Figure 8-1) to enter the *Digital I/O* menu.

Once all parameters have been set, press  to return to weigh mode.

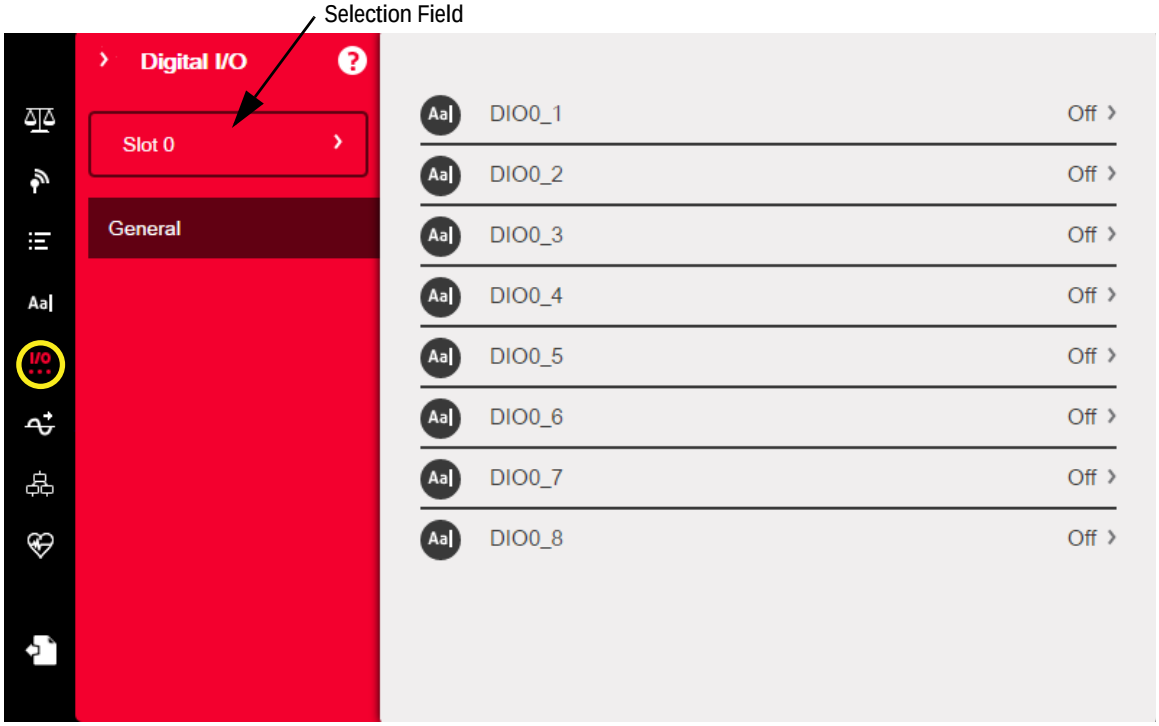


Figure 8-1. Digital I/O Menu

The Digital I/O menu is used to assign functions to digital inputs and outputs.

Slot 0 – eight I/O bits available on the CPU board (connector J1).

Slot 1-6 – up to 24 I/O bits are available per Digital I/O expansion card, if installed.

1. If using an optional Digital I/O card, press Slot 0 in order to select the slot containing the card.

Slot 0 is always available.

2. Select the desired Digital I/O from the list displayed. The following functions display.

Function	Description
Off	Indicates the bit is not configured.
Output	Assigns the bit as a digital output for setpoint or iRite program use.
Input	Assigns the bit as a digital input used for Digital Input setpoints.

Table 8-1. Digital I/O Types

Function	Description
Programmability	Assigns the bit as a digital input used to generate a iRite program event.
Zero	Provides the same function as the front panel Zero key.
Gross/Net	Provides the same function as the front panel Gross/Net key.
Tare	Provides the same function as the front panel Tare key.
Units	Provides the same function as the front panel Units key.
Print	Provides the same function as the front panel Print key.
Accumulate	Adds the current scale weight to the accumulator, if enabled.
Clear Accumulator	Clears the accumulated value for the current scale, if enabled.
Setpoint	Provides the same function as the Setpoint softkey.
Time/Date	Provides the same function as the Time/Date softkey.
Display Tare	Displays the current scale tare, same function as the the Display Tare softkey.
Clear Key	Provides the same function as the front panel Clear key.
Cancel Key	Provides the same function as the Cancel softkey.
Numeric Keys 0-9	Provides the same functions as the front panel numeric keys.
Decimal Point Key	Provides the same function as the front panel Decimal Point key.
Enter Key	Provides the same function as the front panel Enter key.
Navigate Up	Provides the same function as the front panel Up Arrow key.
Navigate Down	Provides the same function as the front panel Down Arrow key.
Navigate Left	Provides the same function as the front panel Left Arrow key.
Navigate Right	Provides the same function as the front panel Right Arrow key.
Keyboard Lock	Locks the front panel keyboard while the input is active.
Hold	Holds the current scale weight display while this input is active.
Batch Run	Batch Run must be held active for a batch to start or run. If made inactive while a batch is running, the batch will stop and remain at the current step. If it is not defined, a batch will start anytime the Batch Start softkey is pressed, the Batch Start digital input is activated or a Batch Start serial command is received.
Batch Start	Starts a batch from the current step if a Batch Run digital input is either active or not defined. If a Batch Run digital input is defined and inactive, Batch Start resets the batch to the first step.
Batch Pause	Pauses a batch while the input is held active and turns off all digital outputs except those associated with Concurrent and Timer setpoints. Processing is suspended until the BatchPause input is made inactive.
Batch Reset	Stops an active batch and resets the current step to the first batch step. All digital outputs associated with batch setpoints are deactivated. If a batch is stopped or paused, Batch Reset will reset the current step to the first step.
Batch Stop	Stops an active batch and turns off all associated digital outputs. Requires a Batch Start to resume processing.
Clear Consecutive Number	Resets the consecutive numbering to the value specified in Consecutive Number Start.
Gross	Set current scale to display gross weight.
Net	Set current scale to display net weight.
Primary Units	Set current scale to display in primary Units.
Secondary Units	Set current scale to display in secondary Units.
Tertiary Units	Set current scale to display in tertiary Units.
Clear Tare	Clears the tare value of the current scale.
Pulse Input	Allows ability to count pulses using a custom iRite application (for example, to measure water being metered into a tank). The maximum pulse input frequency is 5 kHz.

Table 8-1. Digital I/O Types (Continued)

9.0 Analog Output

The Analog Output menu is shown only if the analog output option is installed. If the analog output option is installed, configure all other indicator functions and calibrate the indicator before configuring the analog output.

From the Configuration menu, press  (circled in Figure 9-1) to enter the Analog Output menu.

Once all settings are correct, press  to return to weigh mode.

Whether using Single Analog Output cards or Dual Analog Output cards, the actual analog outputs are identified by a number. Two output ID numbers can be applied per slot, i.e. the output in slot 1 channel 2 is number 2. Select the analog output number that needs to be configured.

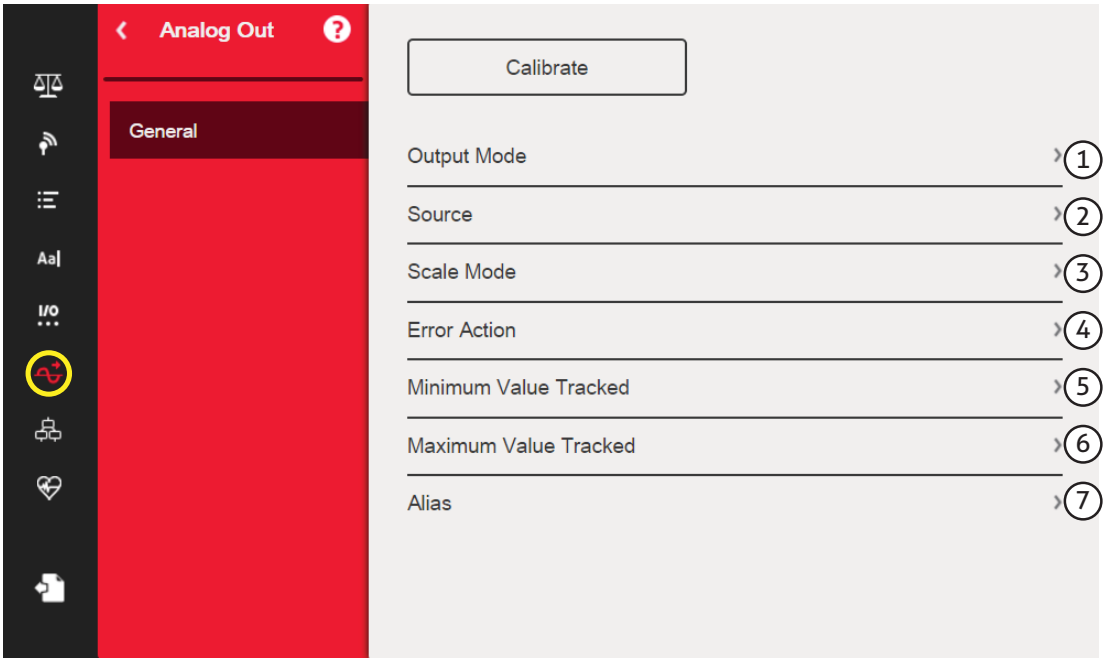


Figure 9-1. Analog Output Menu Screen

Item No.	Parameter	Default	Description
1	Output Mode	0-10 V	Specifies the voltage or current that will be tracked by the analog output. Choices are 0-10V, 4-20 mA or 0-20 mA.
2	Source	1	Scale 1-8 specifies the scale tracked by the analog output. Programmability indicates that the analog output is under iRite program control.
3	Scale Mode	Gross	Specifies the weight data, gross or net, tracked by the analog output when source is assigned to a scale.
4	Error Action	Full Scale	Specifies how the analog output responds to system error conditions • Full Scale – set to full scale (10 V or 20 mA) • Hold – holds current value • Zero Scale – set to zero value (0 V, 0 mA or 4 mA)
5	Minimum Value Tracked	0	Specifies the minimum weight value tracked by the analog output, range of -9999999 to 9999999.
6	Maximum Value Tracked	10,000	Specifies the maximum weight value tracked by the analog output, range of -9999999 to 9999999.
7	Alias	—	Enter an alias name for the analog output.

Table 9-1. Analog Output Parameters

9.1 Analog Output Calibration

The following calibration procedure requires a multimeter to measure voltage or current output from the analog output module.

Note *The analog output must be calibrated after the indicator itself has been configured and calibrated.*

1. Select the analog output number.
2. Connect the multimeter to connector J1 to calibrate channel 1 on the analog output card. Connect to J2 for channel 2 for the dual analog output card.

- For voltage output, connect the voltmeter leads to pins 3 (+) and 4 (-)
- For current output, connect the ammeter leads to pins 1 (+) and 2 (-)

3. Select Calibrate.
4. Select the desired output mode.
5. Select Next.
6. Select 123... and enter the observed milliamp or voltage reading. The minimum calibration occurs at 0.5 V for a 0-10 V output and at 1 mA for a 0-20 mA output.
7. Press DONE.
8. Press Calibrate Minimum.
9. Press Next.
10. Press Set to Maximum.
11. Select 123... and enter the observed milliamp or voltage reading.
12. Press DONE.
13. Press Calibrate Maximum.
14. Press Next.
15. Press Set to Minimum and Set to Maximum to check calibration results.
16. Repeat steps 6-15 until calibration results are satisfactory.
17. Press Finish. The display returns to the *Analog Output* menu.
18. Press Save and Exit to save the calibration parameters.

10.0 Setpoints

The *1280* indicator provides 100 configurable setpoints for control of the indicator and external equipment functions. Setpoints can be configured to perform actions or functions based on specified parameter conditions.

Parameters associated with various setpoint kinds can be configured to:

- Perform functions such as print, tare, or accumulate
- Change the state of a digital output
- Make conditional decisions

From the Configuration menu, select  (circled in Figure) to enter the *Setpoints* menu.

Once all settings are correct, press  to return to weigh mode.

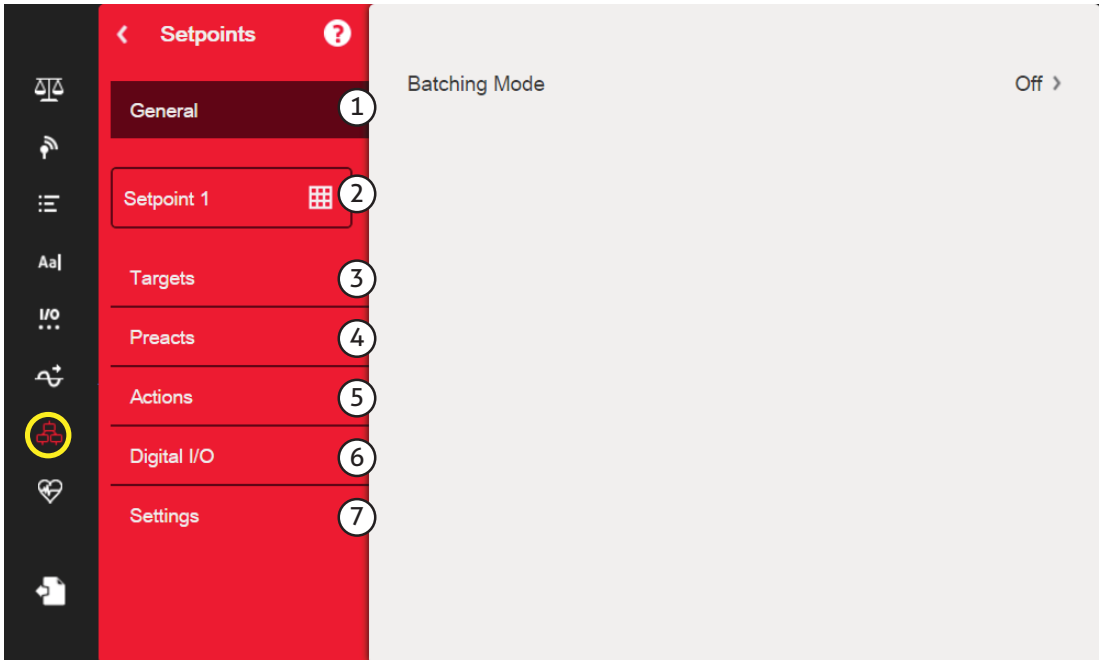


Figure 10-1. Setpoints Menu

Item No.	Description
1	General – select Automatic Restart or Manual Restart to allow a batch sequence to run. *Manual* requires a Batch Start signal (a Batch Start digital input, BATSTART serial command, Batch Start softkey, or the Start-Batch function in an iRite program) before the batch sequence can run. *Automatic* allows the batch sequence to restart automatically once it has been started.
2	Setpoint # – select Setpoint Kind. See Section 10.1 on page 102 to configure parameters available for setpoint kind selected.
3	Targets – sets the value at which the setpoint will trip. See Table 10-3 on page 111.
4	Preacts – select parameters that allow a setpoint to become satisfied before its target value is reached. This allows for material in suspension. See Table 10-4 on page 111.
5	Actions – selects functions that are performed when the setpoint is satisfied. See Table 10-5 on page 112.
6	Digital I/O – selects a digital output that is controlled by the setpoint. See Section 10-6 on page 112.
7	Settings – selects the mode of the setpoint (batch or freerunning). If enabled, it can be accessed by softkey, for defining a name and optional prompt. See Table 10-7 on page 112.

Table 10-1. Setpoint Menu Parameters

10.1 Select Setpoint for Configuration

1. Press Setpoint 1 to select the setpoint (1-100) for which the target value needs to be changed.
2. Press the red number of the setpoint in the table (use the arrows to scroll through the setpoints).

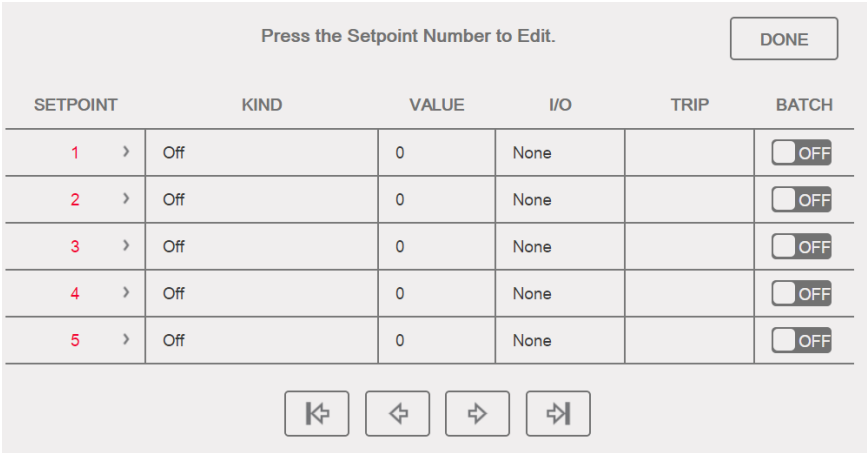


Figure 10-2. Setpoint Select Display

3. Press DONE. 

displays.
4. Press  to select the *Setpoint Kind*. See Table 10-2.
5. Press  to rename the setpoint. A keyboard displays.
6. Enter the desired name and press DONE.
7. Press Value to bring up the numeric entry keyboard, if needed.
8. Enter the new target value and press DONE.
9. Configure the setpoint using the menus in Section 10.2 on page 105.

Note *Setpoint values can be configured in Weigh Mode. See Section 1.10 on page 12.*

Parameter	Description	Batch	Continuous
Off	Setpoint turned off/ignored.		
Gross	Performs functions based on the gross weight. The target weight entered is considered a positive gross weight.	X	X
Net	Performs functions based on the net weight. The target weight entered is considered a positive net weight value.	X	X
Negative Gross	Negative gross weight. Performs functions based on the gross weight. The target weight entered is considered a negative gross weight.	X	X
Negative Net	Negative net weight. Performs functions based on the net weight. The target weight entered is considered a negative net weight value.	X	X
Accumulate	Compares the value of the setpoint to the source scale accumulator. The accumulator setpoint is satisfied when the value of the source scale accumulator meets the value and conditions of the accumulator setpoint.	X	X
Positive Relative	Performs functions based on a specified value above a referenced setpoint, using the same weight mode as the referenced setpoint.	X	X

Table 10-2. Setpoint Kinds

Parameter	Description	Batch	Continuous
Negative Relative	Performs functions based on a specified value below a referenced setpoint, using the same weight mode as the referenced setpoint.	X	X
Percent Relative	Performs functions based on a specified percentage of the target value of a referenced setpoint, using the same weight mode as the referenced setpoint. The actual target value of the Percent Relative setpoint is calculated as a percentage of the target value of the referenced setpoint.	X	X
Pause	Pauses the batch sequence indefinitely. A Batch Start signal must be initiated to continue the batch process.	X	
Delay	Delays the batch sequence for a specified time. The length of the delay (in tenths of a second) is specified on the Value parameter.	X	
Wait Standstill	Suspends the batch sequence until the scale is at standstill.	X	
Counter	Specifies the number of consecutive batch sequences to perform. Counter setpoints should be placed at the beginning of a batch routine.	X	
Auto-Jog	Automatically checks the previous weight-based setpoint to verify that the setpoint weight value is satisfied in a standstill condition. • If the previous setpoint is not satisfied when at standstill, the *AUTOJOG* setpoint activates the digital output of the previous weight-based setpoint for a period of time, specified on the Value parameter (in tenths of a second). • The AUTOJOG process repeats until the previous weight-based setpoint is satisfied when the scale is at standstill. *Notes:* *The AUTOJOG digital output is typically used to signify that an AUTOJOG operation is being performed.* *AUTOJOG uses the digital output of the previous weight-based setpoint, and should not be assigned to the same digital output as the related weight-based setpoint.*	X	
Center of Zero	Monitors for a gross center of zero condition. • The digital output associated with this setpoint kind is activated when the referenced scale is at center of zero. • No value is required for this setpoint.		X
In-Moton	Monitors for an in-motion condition. • The digital output associated with this setpoint is activated when the scale is not at standstill. • No value is required for this setpoint.		X
In-Range	Monitors for an in-range condition. • The digital output associated with this setpoint is activated when the scale is within capacity range. • No value is required for this setpoint.		X
Batch in Process	Batch processing signal. • The digital output associated with this setpoint is activated whenever a batch sequence is in progress. • No value is required for this setpoint.		X
Timer	Tracks the progress of a batch sequence based on a timer. • The timer value, in tenths of a second, determines the length of time allowed between start and end setpoints. • Start and End parameters are used to specify the start and end setpoints. • If the End setpoint is not reached before the timer expires, the digital output associated with this setpoint is activated.		X

Table 10-2. Setpoint Kinds (Continued)

Parameter	Description	Batch	Continuous
Concurrent	Allows a digital output to remain active over a specified portion of the batch sequence. • *Type 1 (VALUE=0):* The digital output associated with this setpoint becomes active when the Start setpoint becomes the current batch step and remains active until the End setpoint becomes the current batch step. • *Type 2 (VALUE > 0):* If a non-zero value is specified for the Value parameter, that value represents the timer, in tenths of a second, for this setpoint. The digital output associated with this setpoint becomes active when the Start setpoint becomes the current batch step and remains active until the timer expires.		X
Digital Input	Requires a specific group of digital inputs to be in a low (0 VDC) state to satisfy the setpoint. The digital output associated with this setpoint is held in a low (0 VDC) state until the inputs selected for the digital input mask are all in a low state.	X	X
Time of Day	Performs functions when the internal clock time of the indicator matches the specified setpoint time.	X	X
Always	This setpoint is always satisfied. • It is typically used to provide an endpoint for true/false branching batch routines.	X	
Never	This setpoint is never satisfied. • It is used to branch to a designated setpoint in true/false branching batch routines in which the batch will not continue through the normal sequence of batch setpoints.	X	
Digital Input Count	Counts pulses received at the specified digital input.	X	X

Table 10-2. Setpoint Kinds (Continued)

10.2 Setpoint Configuration

Setpoint kinds have different parameters that can be configured. The following charts illustrate the parameters available based on the setpoint kind selected.

Gross/Net/Negative Gross/Negative Net

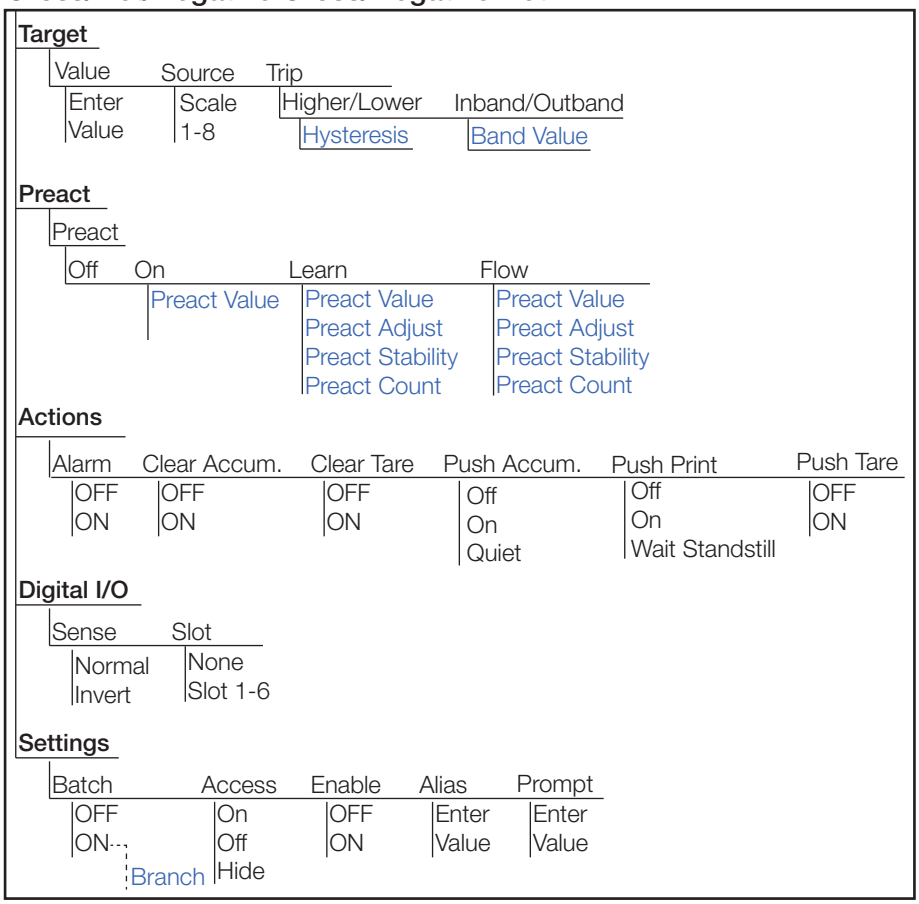


Figure 10-3. Gross/Net/Negative Gross/Negative Net Setpoint Parameters

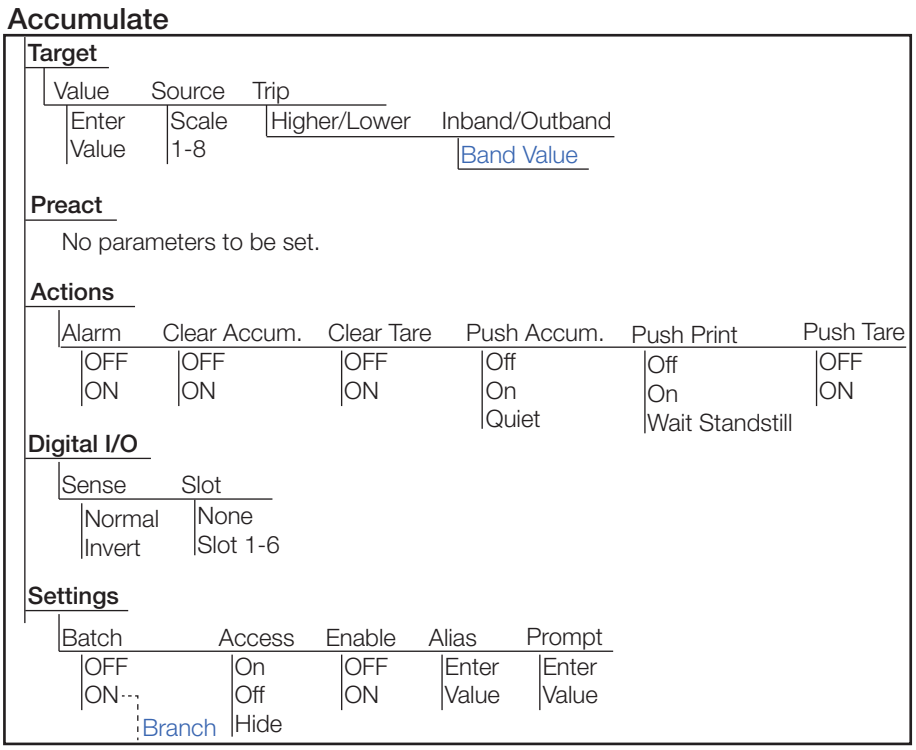


Figure 10-4. Accumulate Setpoint Parameters

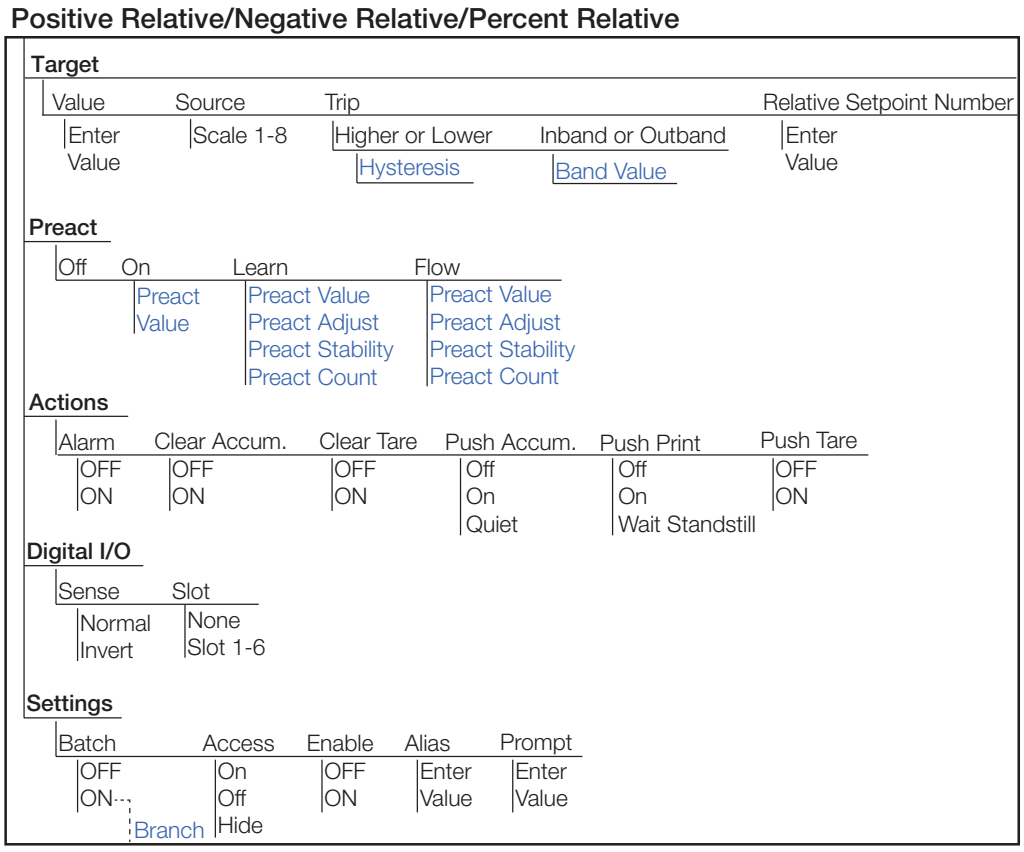


Figure 10-5. Positive Relative/Negative Relative/Percent Relative Setpoint Parameters

Pause

Target

No parameters to be set.

Preact

No parameters to be set.

Actions

No parameters to be set.

Digital I/O

Sense	Slot
Normal	None
Invert	Slot 1-6

Settings

Access	Alias	Prompt
On	Enter Value	Enter Value
Off		
Hide		

Delay

Target

Value	Source
Enter Value	Scale 1-8

Preact

No parameters to be set.

Actions

Clear Accum.	Clear Tare	Push Accum.	Push Print	Push Tare
OFF	OFF	Off	Off	OFF
ON	ON	On	On	ON
		Quiet	Wait Standstill	

Digital I/O

Sense	Slot
Normal	None
Invert	Slot 1-6

Settings

Access	Alias	Prompt
On	Enter Value	Enter Value
Off		
Hide		

Figure 10-6. Pause and Delay Setpoint Parameters

Wait Standstill

Target

Source
Scale 1-8

Preact

No parameters to be set.

Actions

Alarm	Clear Accum.	Clear Tare	Push Accum.	Push Print	Push Tare
OFF	OFF	OFF	Off	Off	OFF
ON	ON	ON	On	On	ON
			Quiet	Wait Standstill	

Digital I/O

Sense	Slot
Normal	None
Invert	Slot 1-6

Settings

Access	Alias	Prompt
On	Enter Value	Enter Value
Off		
Hide		

Counter

Target

Value
Enter Value

Preact

No parameters to be set.

Actions

No parameters to be set.

Digital I/O

Sense	Slot
Normal	None
Invert	Slot 1-6

Settings

Branch	Access	Alias	Prompt
Enter Value	On	Enter Value	Enter Value
	Off		
	Hide		

Figure 10-7. Wait Standstill and Counter Setpoint Parameters

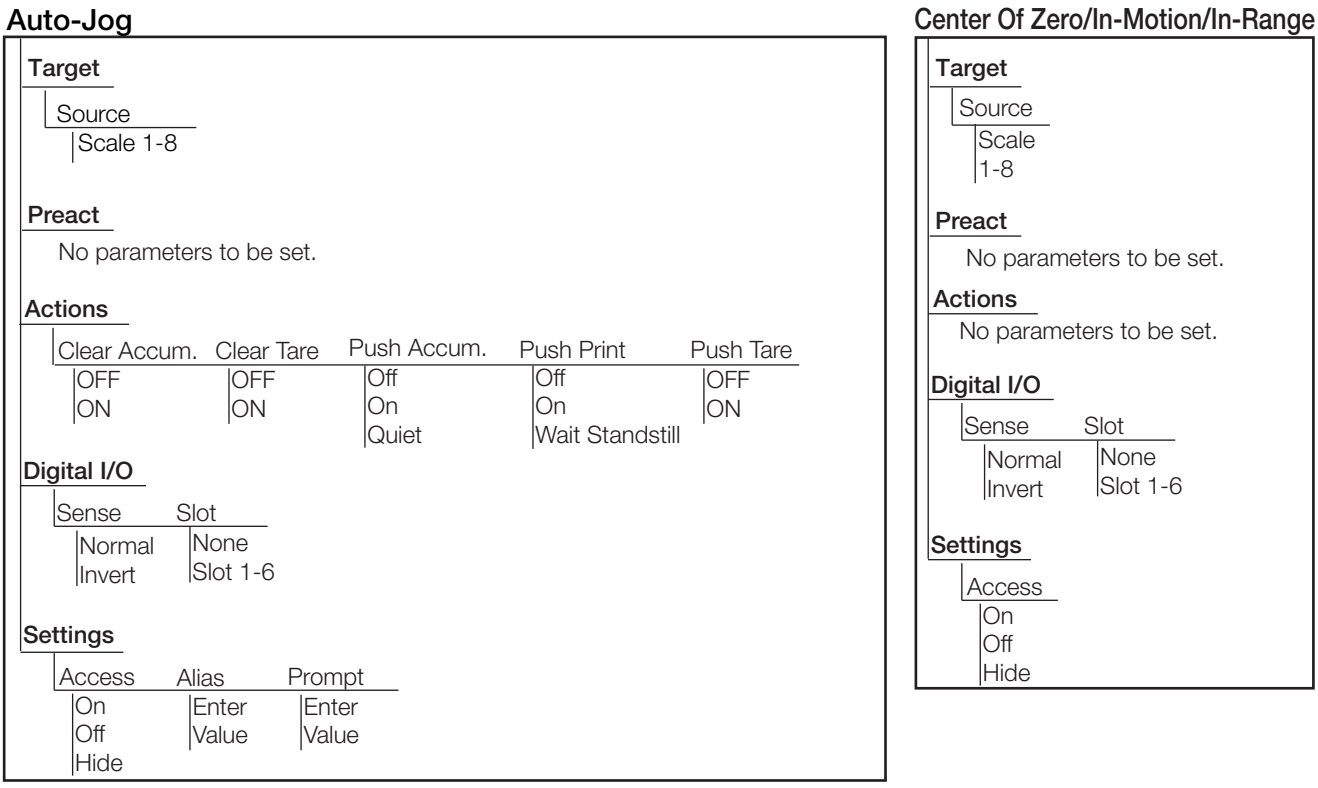


Figure 10-8. Auto-Jog and Center of Zero/In-Motion/In-Range Setpoint Parameters

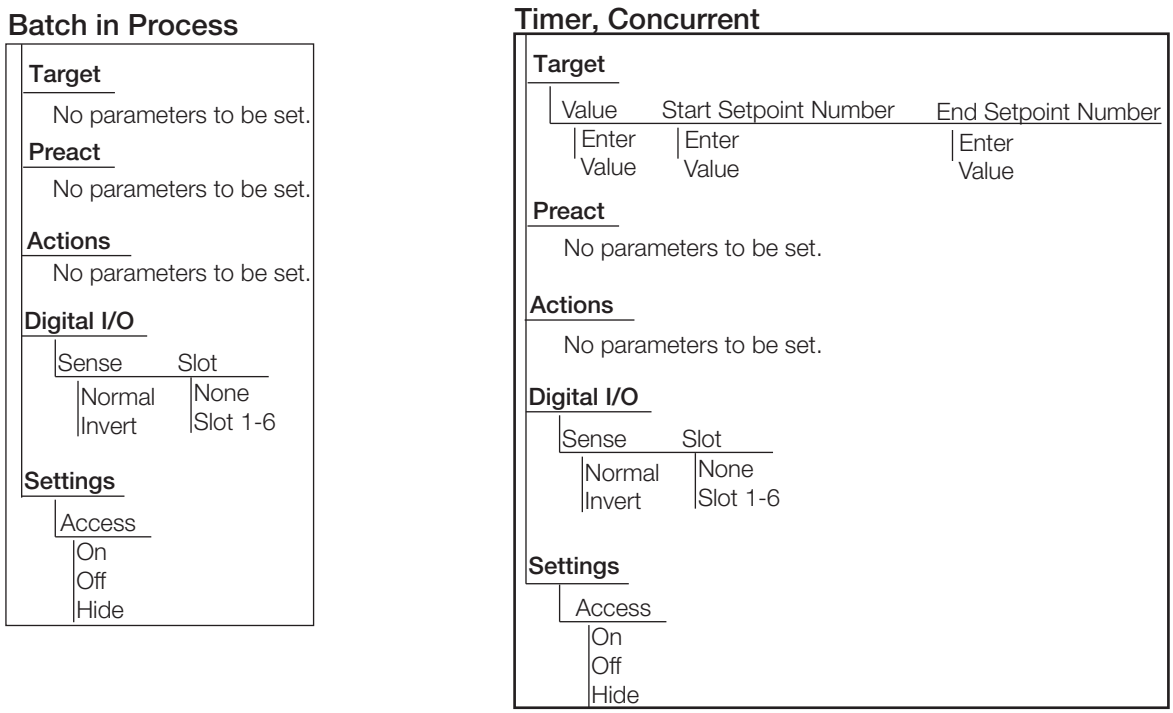


Figure 10-9. Batch in Process and Timer/Concurrent Setpoint Parameters

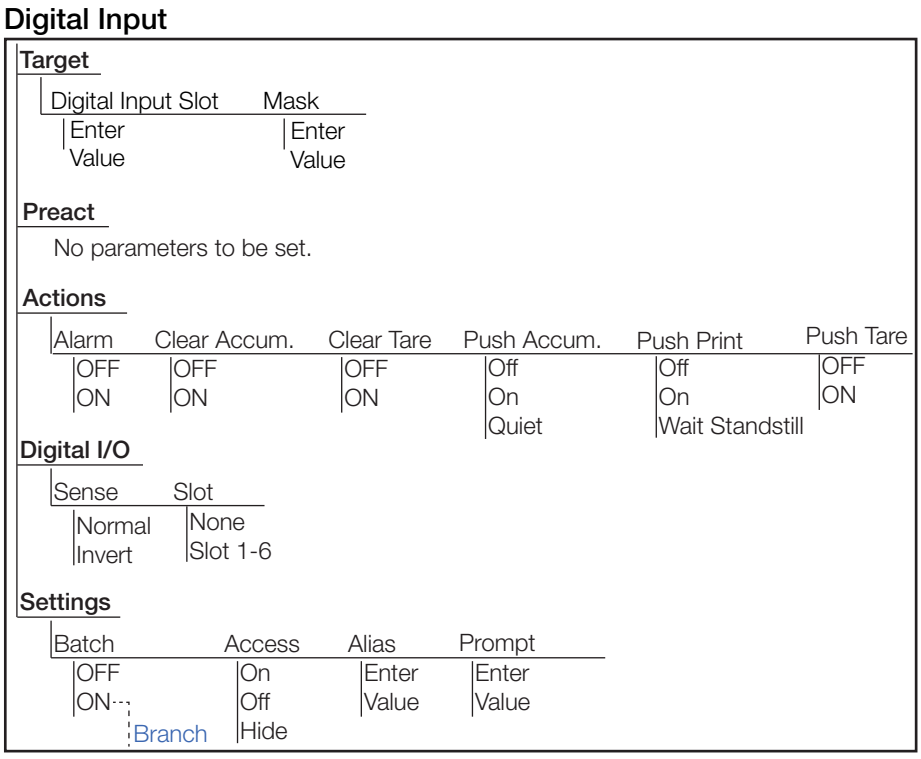


Figure 10-10. Digital Input Setpoint Parameters

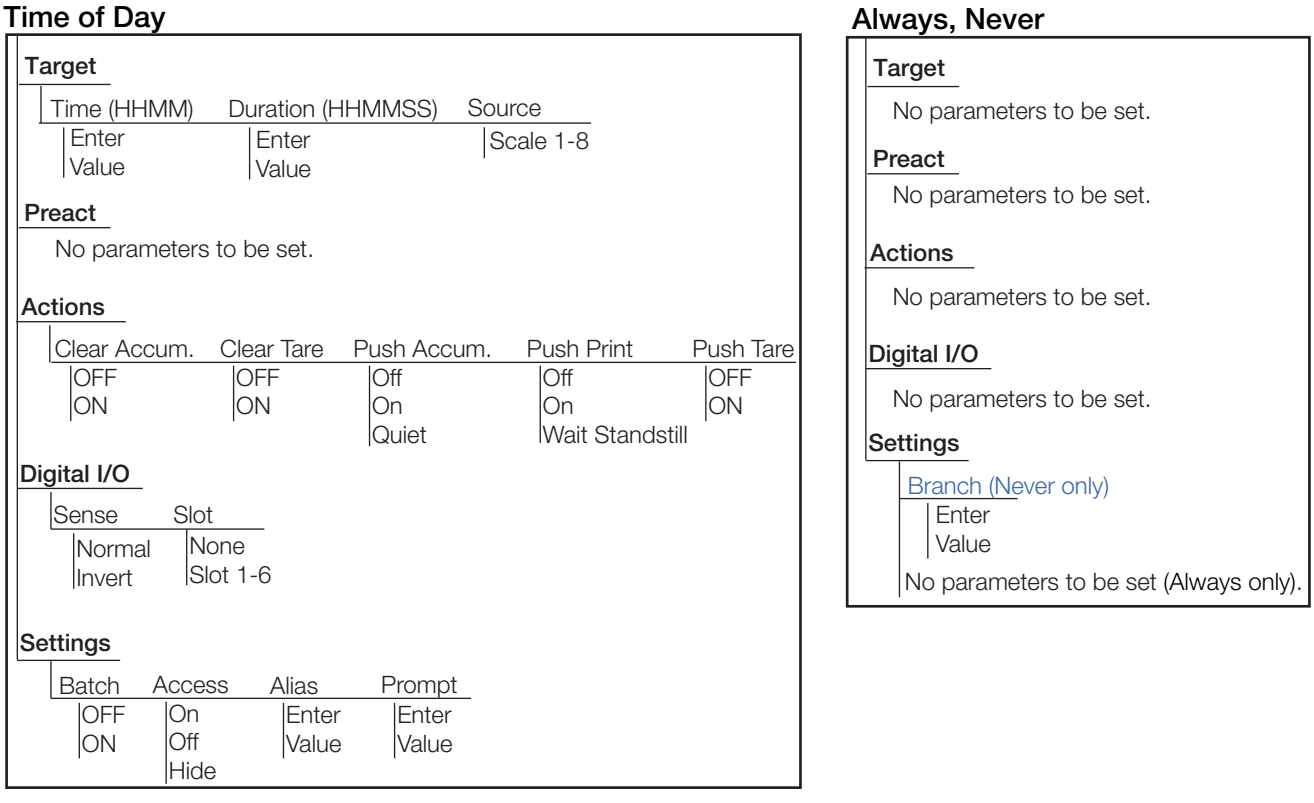


Figure 10-11. Time of Day and Always/Never Setpoint Parameters

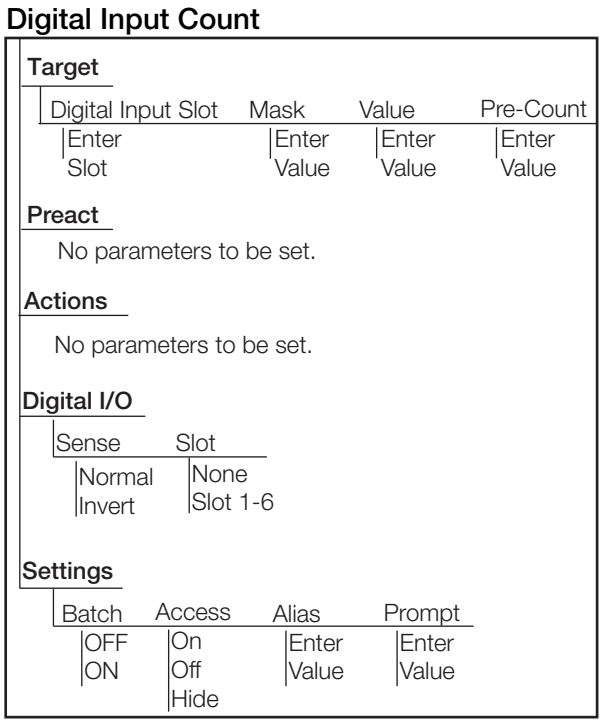


Figure 10-12. Digital Input Count Setpoint Parameters

10.2.1 Targets

Parameter	Default	Description
Value	0	Setpoint Value: • Weight-based – specifies the target weight value, 0–9999999 • Time-based – specifies time in 0.1 second intervals, range 0–65535 • Counter – specifies the number of consecutive batches to run, range 0–65535
Source	Scale 1	Select Scale 1-8.
Trip	Higher	Specifies if the setpoint is satisfied when the weight is higher or lower than the setpoint value, within a band established around the value, or outside of that band. In a batch sequence with: • *Trip* = *Higher* – the associated digital output is active until the setpoint value is exceeded. • *Trip* = *Lower* – the output is active until the weight goes below the setpoint value. • *Trip* = *Inband* – the setpoint is satisfied when the weight is within a band established around the value. • *Trip* = *Outband* – the setpoint is satisfied when the weight is outside a band established around the value, excluding the value.
Hysteresis	0	When *Trip* is set to *Higher/Lower,* specifies a band around the setpoint value that must be exceeded before a setpoint that is off can trip on again.
Band Value	0	When *Trip* is set to *Inband/Outband*, this specifies a weight equal to half the band width. The band established around the setpoint value is *Value* ± *Band Value*.
Relative Setpoint Number	1	For relative setpoints, specifies the number of the relative setpoint. The target weight for this setpoint is determined as follows: • Positive Relative setpoints – value of the relative setpoint plus the value of the Positive Relative setpoint • Negative Relative setpoints – value of the relative setpoint minus the value of the Negative Relative setpoint • Percent Relative setpoints – percentage (specified on the Value parameter of the Percent Relative setpoint) of the target value of the relative setpoint
Digital Input Slot	Slot 0	Lists all available digital I/O slots. Specifies the slot number of the digital I/O card referenced by the Digital Input Slot parameter.
Mask	0	The digital input bits that are associated with a digital input or digital input count setpoint. All defined digital inputs have to go active for the setpoint to be satisfied.
Pre-Count	0	Value at which the digital input counter setpoint starts to increment.
Start Setpoint Number	1	Specifies the starting setpoint number (when timer or concurrent setpoints turn on). Do not specify the start number of the timer or concurrent setpoint, they begin when the starting set-point begins.
End Setpoint Number	1	Specifies the ending setpoint number (when the timer or concurrent setpoints turn off). Do not specify the end number of the timer or concurrent setpoint, they stop when the ending setpoint begins.
Time	0000	Specifies the time of day the setpoint becomes active. Sets hours and minutes – HHMM
Duration	000000	Specifies the length of time that the digital output associated with this setpoint changes state. All other operations associated with this setpoint (print, tare or accumulate) are performed at the end of the specified duration. Set duration format – HHMMSS

Table 10-3. Target Parameters

10.2.2 Preacts

Parameter	Default	Description
Preact	Off	Preact helps compensate for material in a freefall state to ensure targets are met.
Preact Value	0	Specifies the preact value for setpoints with Preact Type set to On, Learn, or Flow. Depending on the Trip setting specified for the setpoint, it is adjusted up or down by the Preact Adjust value. The range is +/- 0-999999.
Preact Adjust (%)	0	For setpoints with Preact Type set to Learn, Preact Adjust specifies a decimal number of the percentage of error correction applied (0.5 = 50%, 1.0 = 100%), each time an adjustment is made. The range is 0-100.

Table 10-4. Preact Parameters

Parameter	Default	Description
Preact Stability (seconds)	0.0	For setpoints with Preact Type set to Learn, Preact Stability specifies the time (0.1 second), to wait for standstill before adjusting the Preact Value. Setting this parameter to a value greater than zero disables the learn process if standstill is not achieved in the specified interval. The range is 0-65535.
Preact Count	1	For setpoints with Preact Type set to Learn, Preact Count specifies the number of batches before the Preact Value is recalculated. The default value (1) recalculates the Preact Value after every batch cycle. The range is 0-65535.

Table 10-4. Preact Parameters (Continued)

10.2.3 Actions

Parameter	Default	Description
Alarm	Off	Displays the word *Alarm* on the primary display while the setpoint is active (batch setpoints) or while the setpoint is not tripped (continuous setpoints).
Clear Accumulator	Off	Clears the accumulator when the setpoint is satisfied.
Clear Tare	Off	Clears the tare when the setpoint is satisfied.
Push Accumulate	Off	On updates the accumulator and performs a print operation when the setpoint is satisfied. Quiet updates the accumulator without printing.
Push Print	Off	On performs a print operation when the setpoint is satisfied. Wait for Standstill waits until no motion is detected, after the setpoint is satisfied, before printing.
Push Tare	Off	Performs an acquire tare operation when the setpoint is satisfied. Note *Push Tare acquires the tare regardless of the value specified for the Regulatory parameter on the Feature menu (see Section 6.3 on page 82).*

Table 10-5. Actions Parameters

10.2.4 Digital I/O

Parameter	Default	Description
Sense	Normal	Specifies whether the digital output is active low (Normal) or active high (Invert).
Slot	None	Slot number (1-8) from which digital inputs will be read.
Digital Output	0	The Digital I/O bit associated with the setpoint, after a slot is selected.

Table 10-6. Digital I/O Parameters

10.2.5 Settings

Parameter	Default	Description
Batch	Off	Specifies whether the setpoint is used as a batch (On) or continuous (Off) setpoint.
Branch	0	If Batch is set to on, specifies the setpoint number to which the batch sequence is to branch if the current setpoint is not satisfied upon initial evaluation. The special value zero indicates that no branch is taken.
Access	On	Specifies the access allowed to setpoint parameters shown by pressing the Setpoint softkey in weigh mode. If set to Off, values can be displayed but not changed. If set to Hide, values do not show.
Enable	On	Turns the setpoint on or off.
Alias	—	Enter a name for the setpoint.
Prompt	—	Alphanumeric message or prompt that can be displayed in a label widget.

Table 10-7. Settings Parameters

10.3 Batch Operations

Softkeys can be configured to allow operator control of batch operations from the *1280* front panel, or they can be configured using *MSI-8000HD*, serial commands or the *Features* menu (see Section 6.1 on page 79).

SetpointDisplay or change assigned setpoints.

Batch Start Starts a batch from the current step if a Batch Run digital input is either active or not defined. If a Batch Run digital input is defined and inactive, Batch Start resets the batch to the first step.

Batch Pause Pauses an active batch and turns off all digital outputs except those associated with concurrent and timer setpoints. Processing is suspended until the indicator receives a batch start signal. Pressing the **Batch Start** digital input, *BATSTART* serial command, **Batch Start** softkey or the *StartBatch* function (in iRite) resumes the batch and re-energizes all digital outputs turned off by the **Batch Pause**.

Batch Reset Stops an active batch and resets the current step to the first batch step. All digital outputs associated with batch setpoints are deactivated. If a batch is stopped or paused, Batch Reset will reset the current step to the first step.

Batch Stop Stops an active batch and turns off all associated digital outputs. Requires a Batch Start to resume processing.

WARNING

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

10.3.1 Batching Switch

The batching switch option, PN 19369, comes as a complete unit in an FRP enclosure, with legend plate, emergency stop switch and a run/start/abort 3-way switch.

Both switches are wired into the indicator's digital I/O terminal strip as shown in Figure 10-14.

Once cables and switches have been connected to the indicator, use the setup switch to place the indicator in setup mode. Use the *DIG I/O* menu (see Section 8.0 on page 97) to configure digital input and output functions.

When configuration is complete, exit setup mode. Initialize the batch by turning the 3-way switch to *Abort*, then unlock the **Stop** button (the **Stop** button must be in the **Out** position to allow the batch process to run). The batching switch is now ready to use.

WARNING

If no digital input is assigned to Batch Run, batching proceeds as if Batch Run were always on: the batch will start when the 3-way switch is turned to Run, but the Stop button will not function.

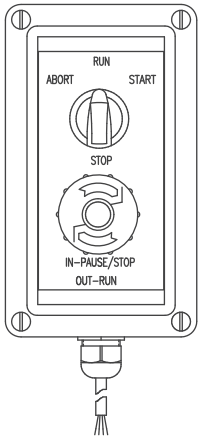


Figure 10-13. Batching Switch

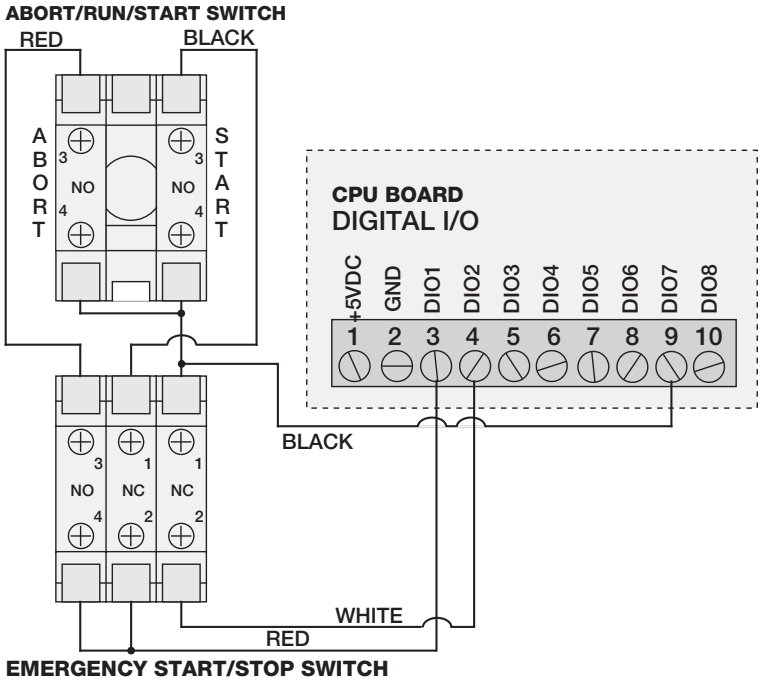


Figure 10-14. Batching Switch Wiring Diagram Example

To begin a batch process, turn the 3-way switch to *Start* momentarily. If the **Stop** button is pushed during the batch process, the process halts and the button locks in the **In** position.

The *Start* switch is ignored while the **Stop** button is locked in the **In** position. The **Stop** button must be turned counterclockwise to unlock it, then released into the **Out** position to enable the 3-way switch.

To restart an interrupted batch from the step where it left off, do the following:

1. Unlock the **Stop** button (**Out** position).
2. Turn the 3-way switch to *Start.*

To restart an interrupted batch from the first batch step, do the following:

1. Turn the 3-way switch to *Abort.*
2. Unlock the **Stop** button (**Out** position).
3. Turn the 3-way switch to *Start.*

Use this procedure (or the BATRESET serial command) to initialize the new batch routine following any change to the setpoint configuration.

11.0 Diagnostics

From the Configuration menu, select the Diagnostics icon  (circled in Figure 11-1) to enter the Diagnostics menu.

Once all settings are correct, press  to return to weigh mode.

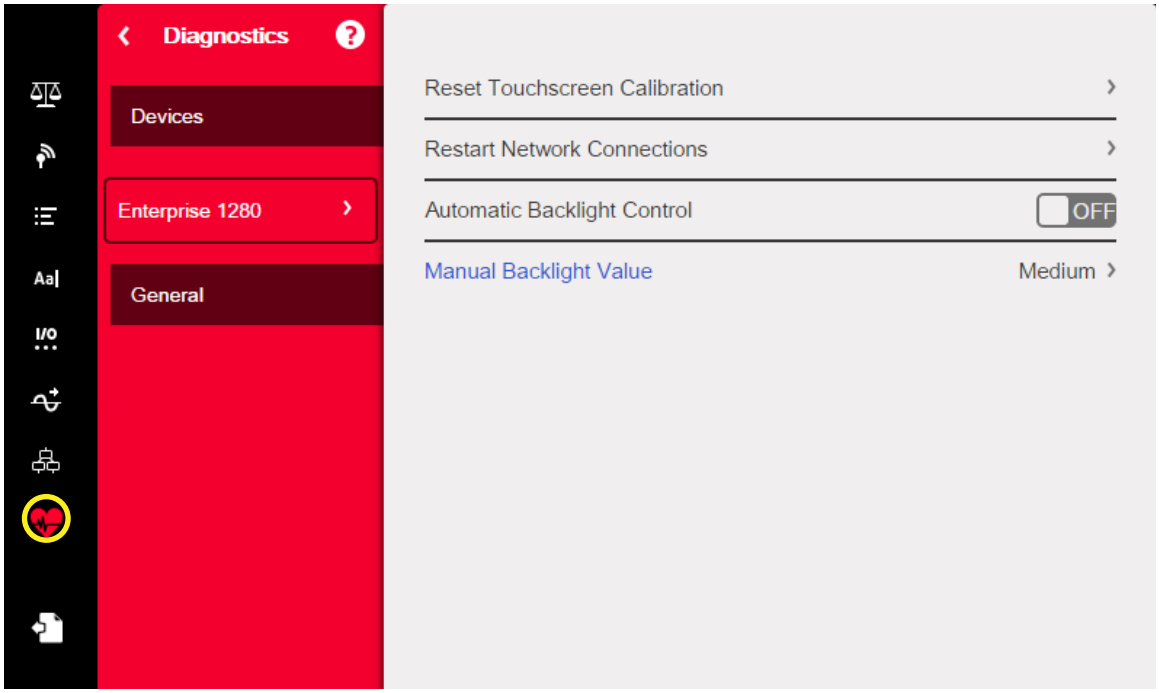


Figure 11-1. Diagnostics Menu

11.1 Devices

The Devices menu allows the recalibration of the touch screen. Additionally, the backlight can be set to come on automatically, or it can be set manually.

1. Enter the *Diagnostics* menu.
2. To recalibrate the touchscreen, press the arrow next to the parameter. See Section 11.1.1.
3. Set the *Automatic Backlight Control* to On or Off. When set to Off, the *Manual Backlight Value* is displayed in blue font.
4. Select Off, Low, Medium or High.
5. Press DONE.

Parameter	Description
Reset Touchscreen Calibration	Select Yes to enable Reset Touchscreen Calibration on the next indicator restart. See Section 11.1.1.
Restart Network Connections	Select Yes to restart all network connections upon exiting configuration.
Automatic Backlight Control	Select On to enable the Automatic Backlight Control. If set to Off, a Manual Backlight Value parameter displays, allowing a light value to be manually set to Low, Medium or High.

Table 11-1. Devices Menu

11.1.1 Touchscreen Calibration

Touchscreen Calibration is required after a firmware update, or follow the directions below if the viewing angle requires a new calibration.

1.Press *Reset Touchscreen Calibration*.

2. Press Yes to calibrate the touchscreen on the next indicator restart.

Figure 11-2. Reset Touchscreen Calibration Prompt

3. Press *Yes* to restart the indicator. The indicator test will run. At 50% complete, the calibration utility displays.

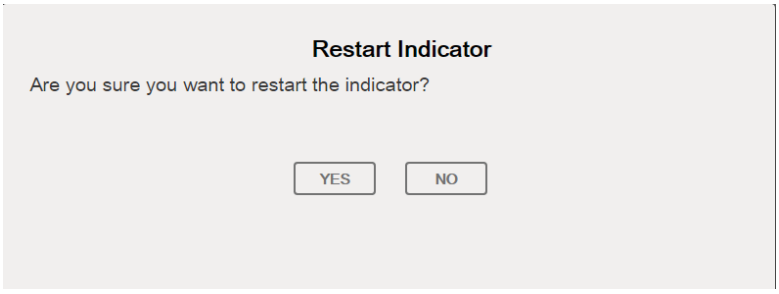


Figure 11-3. Restart Indicator Prompt

Figure 11-4. Calibration Utility Display

4. Touch each cross hair (five total) with a stylus or similar object when prompted. When the center cross hair has been touched, allow the indicator test to continue until the main menu displays.

IMPORTANT *Be very precise while calibrating the touchscreen. It is recommended to use a stylus or similar object to touch each cross hair, as this will provide the greatest accuracy. Do not use a finger to calibrate the virtual keypad.*

Note *If the screen becomes inoperable or there is no access to the Devices menu, press the configuration button. Type the code 9171 on the numeric keypad and press* Clear. *Cycle power the indicator and follow steps 5 above. There will be no response from the screen until the power has been cycled.*

Alternatively, the user can send a REMOVE.TSCAL serial command to the 1280 to prompt for a touch screen recalibration after the next power cycle.

12.0 Option Cards

The *1280* can host up to six option cards. The option cards can be installed in any of the six available option slots. The cards cannot be installed or removed when power is applied to the indicator (cards cannot be hot swapped).

WARNING

- *Use a wrist strap to ground yourself and protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*
- *Procedures requiring work inside the indicator must be performed by qualified service personnel only.*
- *In the 1280 wall and universal enclosures, the supply cord serves as the power disconnect. The power receptacle to the indicator must be easily accessible for these models.*

Detailed information about each option card is not included in this manual, but instead in an addendum included with each card. The available *1280* option card kit part numbers and their corresponding addendum part numbers, are as follows:

Option Cards	Kit Part Number	Addendum Part Number
Single Channel Scale Card	164085	164652
Dual Channel Scale Card	164683	164653
24-Channel Digital I/O Card	164684	164654
Dual Channel Serial Communications Card	164685	164655
Single Channel Analog Output Card	165366	164656
Dual Channel Analog Output Card	164686	
Dual Channel Analog Input Card	164687	164657
Four Channel Relay Card	164689	164659
EtherNet/IP™ Interface	165792	156861
DeviceNet® Interface	165793	156783
ProfiNet® Interface	165794	156781
Profibus® Interface	165795	156784
Modbus TCP® Interface	165796	156782

Table 12-1. Available Option Cards

Note

The 1280 Fieldbus Card Firmware has been updated to add support for the iRite fieldbus handler.

For Modbus protocol only, it allows changing the commands to be continuous and byte swapping.

12.1 Hardware Serial Command

The *HARDWARE* serial command can be used to verify that all installed option cards are recognized by the system.

The *HARDWARE* command returns a string of card type codes representing the cards the system recognizes as being installed in slots 1 - 6. The format of the returned string is xx, xx, xx, xx, xx, xx where xx is one of the following codes:

FF = No card installed
10 = Single Channel Scale card
11 = Dual Channel Scale card
20 = Digital I/O card
55 = Relay card
61 = Serial Communications card

99 = Single Channel Analog Output card
90 = Dual Channel Analog Output card
B1 = Dual Channel Analog Input card
AA = Fieldbus card (with any module)

12.2 Option Card Firmware

The OPTVERSION#s serial command, where s is the slot number, can be used to return the version of the firmware installed on the option cards. If the command returns NO CARD, then either there is not a card installed or the installed card in the slot specified is not recognized by the system. Alternatively, a DUMPVERSIONS command will return the versions of all installed option cards.

13.0 Importing/Exporting

The *1280* utility provides a suite of functions used to support configuration, calibration, customization and backup of the *1280* software. Hardware and software configuration, stream and ticket formatting, and database management are all supported by *1280*.

Hardware and Software Requirements

- Minimum system requirements: 166 MHz, *x*86-compatible, with 32MB RAM (64MB for NT4/2000/XP), 40MB disk space
- Recommended system: 233 MHz, *x*86-compatible or greater, with 64MB RAM, 300 MB disk space

1280 runs on most Windows® operating systems, including Windows Vista SP2, Windows 7 SP1, Windows 8.1 and Windows 10 (both 32 bit and 64 bit architectures are supported).

System requirements to run Revolution are as follows:

- 1 GHz CPU (x86-32 bit or x86-64 bit)
- 512 MB RAM
- 850 MB disk space (32 bit) or 2 GB disk space (64 bit)

Files that can be imported and exported to/from the *1280* indicator include:

- Configuration – .rev file extension, which are scale configuration, communication, setpoint, print format, database schemas or displayed widgets settings created in the Revolution configuration software.
- iRite Programs – .cod extension which is a compiled version of a source code file (.src extension). iRite is import only.
- Database – .db extension which are the actual data records that would populate a database schema.

Definitions

Export – pulling information from the *1280* to a file system to save as one of the two types of files.

Import – sending information to the *1280* from a previously saved file system.

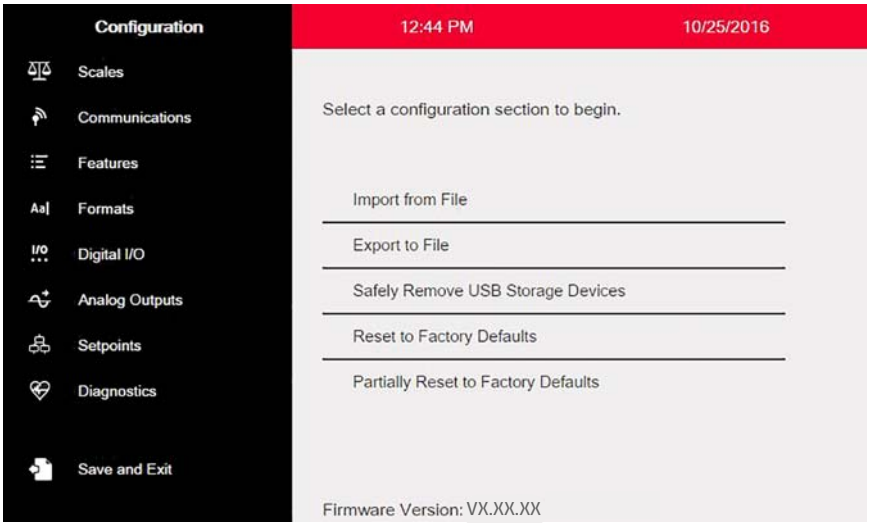


Figure 13-1. Configuration Main Menu

13.1 Importing Configuration

IMPORTANT *Importing a configuration will overwrite the existing configuration.*

Red highlighting indicates the source device.

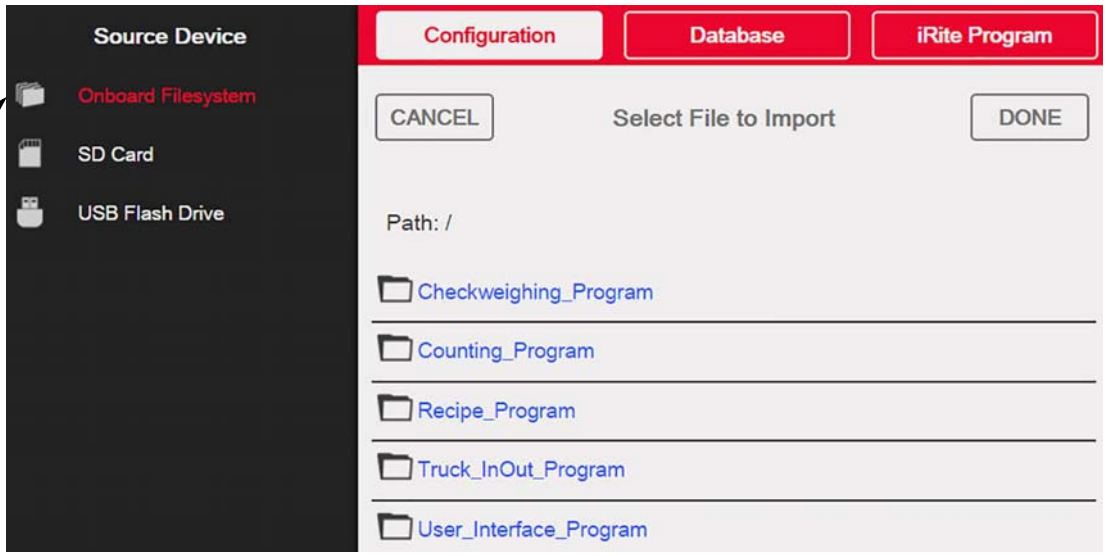


Figure 13-2. Import Configuration

Note *The Import Configuration screen looks the same whether importing from an onboard filesystem, a micro SD card or a flash drive. The only difference is that the source device will be highlighted in red on the left side of the screen. For an example, in Figure 13-2, a file is being imported from an onboard filesystem.*

There are several ways to upload a *1280* file to the *1280*:

- From the onboard file system (included applications)
- Save the .rev file to a flash drive and import it into the *1280* from the USB port
- Save the .rev file to a micro SD card and importing it into the *1280* from the micro SD card Slot
- Connect to the *1280* from a PC that has *1280* open and is connected to any COM port (USB, Ethernet or Serial). See Section 13.7 on page 124

13.1.1 Importing Built-in iRite Configuration

1. Enter *Configuration*.
2. Press *Import from File*. See Figure 13-1. The Import Screen (Figure 13-2) will display. Load both the .rev and .cod files to use the built-in application programs.
3. Select *Onboard Filesystem*.
4. Select configuration file.
5. Select one of the programs.
6. Press DONE to import.
7. Press .

13.1.2 Importing Revolution Files from a Flash Drive or Micro SD Card

1. Save the *1280* file to the flash drive or micro SD card.
2. Insert the flash drive into either USB port on the indicator, or the micro SD card into the *1280*'s designated micro SD card slot.
3. Enter *Configuration* on the indicator.
4. Select *Import from File* (see Figure 13-1). The Import Screen (Figure 13-2) will display.

IMPORTANT *Importing a configuration will overwrite the existing configuration.*

5. Select *Flash Drive* or *SD Card* (depending on which one is being used). This will read the file system and display available folders.
6. Select *Configuration* to filter out the .rev files that are stored on the flash drive.
7. Navigate to the folder, then the .rev file. Press DONE.
8. The *1280* file settings are now downloaded to the *1280*. Press .

13.2 Importing iRite™ Programs

There are several ways to load an *iRite* user program into the *1280*.

However, there is no way to upload/export an *iRite* user program to prevent fraud.

- Import one of the four built-in *iRite* applications (truck in/out, checkweighing, recipe batching, or counting) stored in the *1280*'s memory.
- Import the *iRite* program (.cod file) stored on a flash drive.
- Import the *iRite* program stored on a micro SD card.
- Connect to the *1280* from a PC that has Revolution open and is connected to any COM port (USB, Ethernet or Serial). See Section 13.7 on page 124.

13.2.1 Importing Built-in iRite Programs

1. Enter *Configuration*.
2. Press *Import from File*, see Figure 13-1. The Import Screen (Figure 13-2) will display.
3. Select *Onboard Filesystem*.
4. Select *iRite Program*.
5. Select one of the programs.
6. Press DONE to import.
7. Press .

13.2.2 Importing iRite from a Flash Drive or Micro SD Card

1. Save the iRite file to the flash drive or a micro SD card.
2. Press *Import from File* from above diagram, see Figure 13-1. The Import Screen (Figure 13-2) will display.
3. Enter *Configuration*.
4. Select *Flash Drive* or *SD Card* on the left of the display.
5. Select *iRite Program* on the top of the display.
6. Navigate to the folder where the desired .cod file is stored and select the file.
7. Press DONE to import.
8. Press .

13.2.3 Downloading from Revolution

Note *If RS-485 Network or TCT/IP Network are selected as the default communication mode, a prompt to select an address will appear before it will try to connect to the 1280. See Section 13.7 on page 124 for Revolution connection instructions.*

1. Press the Connect icon in the tool bar. See Section 13.7 on page 124. If communications need to be adjusted, select Options from the Tools menu.
2. Enter *Configuration* on the indicator.
3. In *1280*, from the *Communications menu,* select *Download Configuration*. A menu box will appear, see Figure 13-3.
4. Mark the check boxes corresponding to sections to be downloaded.
5. If the *iRite* Program is to be downloaded, press the Browse button to bring up the PC file system. If not, skip to step 7.
6. Navigate to the saved .cod file. The selected path should be displayed in the white text box.
7. Press Begin and wait for the download to complete.
8. The settings from the Revolution file are now populated in the *1280*. Press  .

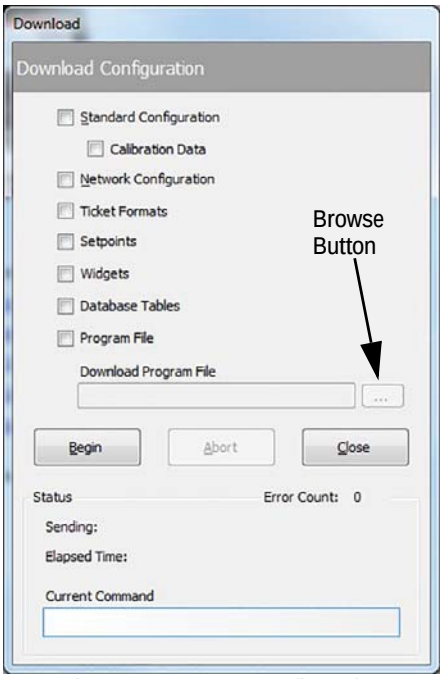


Figure 13-3. Import Configuration

13.3 Importing Database Data

To load many records of data quickly (transaction data, product or customer data) all rows can be loaded into the *1280* database schema at once. The database schema is part of the Configuration (see Section 13.1) and must be downloaded before actual data is sent. There are three ways to import data.

- Download a previously saved or exported .db file stored on a flash drive.
- Download a previously saved or exported .db stored on a micro SD card.
- Connect to the *1280* from a PC that has Revolution open and is connected to any COM port (USB, Ethernet or Serial).

13.3.1 Importing Databases from a Flash Drive or Micro SD Card

1. Insert a flash drive or a micro SD Card into the *1280* with a saved .db file (a text file with a special extension, that was previously exported pipe-delimited file of records).
2. Enter *Configuration*.
3. Press *Import from File*.
4. Select *Flash Drive* or *SD Card*.
5. Select *Database* on the top of the display.
6. Navigate to the folder where the desired .db file is stored and select the file.
7. Press DONE to import.
8. Press  .

13.3.2 Downloading Databases to the *1280*

1. Open the Revolution file with the desired (previously downloaded) database schemas.
2. Press the Connect icon in the tool bar. If communications need to be adjusted, select *Options* from the *Tools* menu.
3. Navigate to the *Database Editor* in Revolution and click on the database name (in the middle) that is about to be populated.
4. A grid as many columns wide as there are fields, and as many rows down as there are records will appear. Options to populate this grid are:

- Import a previously saved .db file stored on the PC to the Database Editor by pressing on the Import icon.
- Type all the data in the Database Editor.

5. Click on the Download icon.

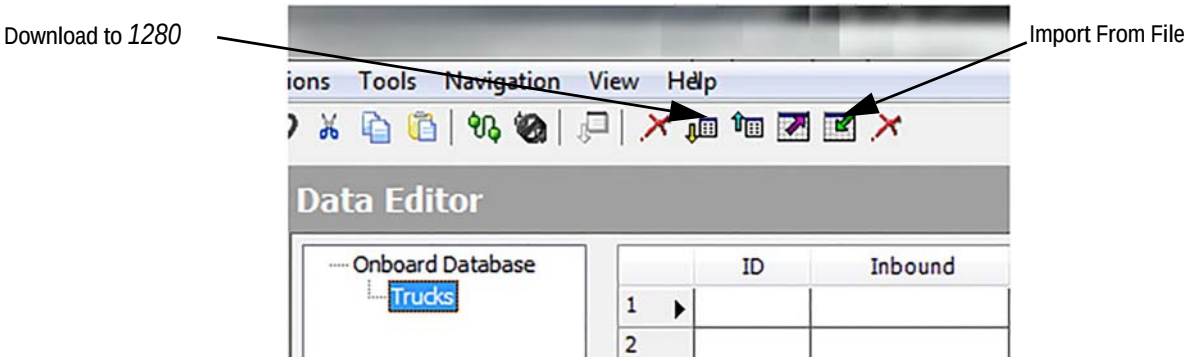


Figure 13-4. Database Commands in Revolution

The data shown in the Data Editor will be sent one at a time to the *1280*. This data is appended to any existing data in the *1280*.

13.4 Exporting Configuration

It is important to save a copy of the file to create a backup version of the Configuration. There are three ways this can be done.

- Upload the configuration to be saved as a .rev file on a flash drive.
- Upload the configuration to be saved as a .rev file on a micro SD card.
- Connect to the *1280* from a PC that has *1280* open and is connected to any COM port (USB, Ethernet or Serial).

Note *Changes to configuration parameters (made in the same configuration session) must be saved prior to exporting the configuration.*

13.4.1 Exporting to Flash Drive or Micro SD Card

1. Insert the flash drive or the micro SD card into the indicator.
2. Enter *Configuration*.
3. Press *Export to File*. See Figure 13-1. The Export Screen will display.
4. Select *Flash Drive* or *SD Card*, which will read the file system and display folders.
5. Select *Configuration* to indicate the configuration should be saved as a .rev file.
6. Navigate to the folder where the file is to be stored. Press DONE.

13.4.2 Uploading to Revolution

1. Open *1280* software on the PC.
2. Press the Connect icon in the tool bar. See Section 13.7 on page 124.
3. Enter *Configuration* on the indicator.
4. In *1280*, select *Communications,* then *Upload Configuration*.
5. A menu box will display. Navigate to the folder on the PC where the configuration file is to be stored.

13.5 Exporting Database Data

To keep a backup version of the databases (transaction data, product or customer data) it is important to save a copy of the database file. There are three ways this can be done.

- Upload the database to be saved as a .db file on a flash drive.
- Upload the database to be saved as a .db file on a micro SD card.
- Connect to the *1280* from a PC that has Revolution open and is connected to any COM port (USB, Ethernet or Serial).

13.5.1 Exporting Database to Flash Drive or Micro SD Card

1. Once the data has been saved on the *1280* (through iRite during run mode, or after a previous download of data), insert a flash drive or micro SD card into the indicator.
2. Enter *Configuration*.
3. Press *Export to File*.
4. Select *Flash Drive* or *SD Card*, which reads the file system and displays available folders.
5. Select *Database* to indicate the database data is to be stored as a pipe-delimited .db file.
6. Navigate to the folder location where the .db file is to be stored.
7. Press DONE to select and export.

13.5.2 Saving Databases from the *1280* to a PC

1. Open *1280* on the PC.
2. Open the specific .rev file with the specified database schema's used in the *1280*.
3. Press the Connect icon in the tool bar. See Section 13.7 on page 124.
4. Navigate to the *Database Editor* in *1280* and click on the database name (in the middle) that is about to be populated.
5. A grid will display that is as many columns wide as there are fields, and as many rows down as there are records.
6. Click on the *Upload* icon.
7. The data displayed in the Data Editor is not saved. To save the database to the PC, click on the *Export* icon.
8. The file system box will pop up asking where to save it to the PC and what to name the file.

13.6 Exporting Diagnostic Log

An iQube2 error log report is generated and can be sent to the selected host device. Use the following steps to export this error log.

1. Once the data has been saved on the *1280* (through iRite during run mode, or after a previous download of data), insert a flash drive or micro SD card into the indicator.
2. Enter *Configuration*.
3. Press *Export to File*.
4. Select *Flash Drive* or *SD Card*, which reads the file system and displays available folders.
5. Select *Database* to indicate the database data is to be stored as a .txt log file.
6. Navigate to the folder location where the .db file is to be stored.
7. Press DONE to select and export.

13.7 Connecting to the Indicator from Revolution

1. Connect the PC to any of the *1280* COM ports (USB, Ethernet or Serial).
2. Open Revolution on the PC.
3. Enter Configuration.

4. Click on the *Connect* icon in the tool bar. Revolution attempts to establish communications to the indicator.

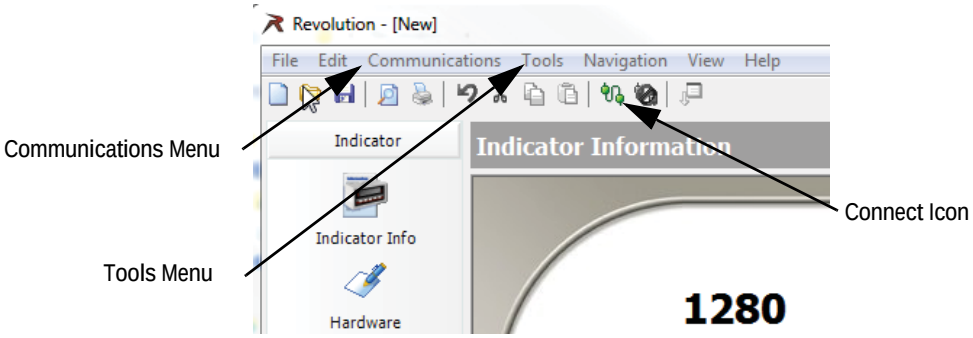


Figure 13-5. Connect to Computer

5. If communications settings need to be adjusted, select Options... from the Tools menu.

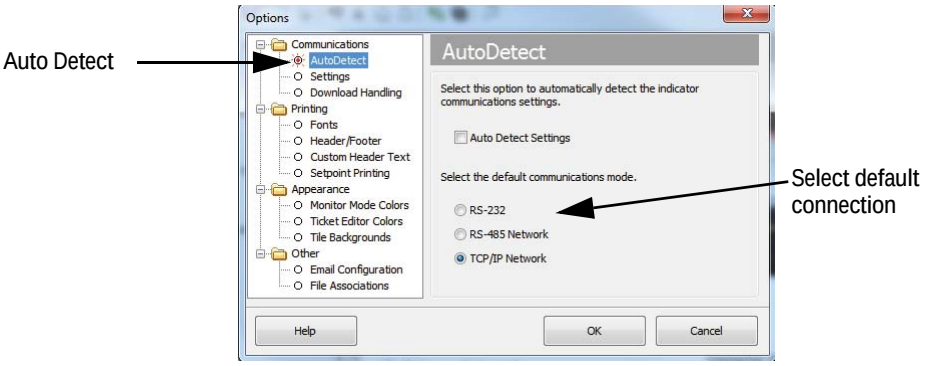


Figure 13-6. Set Connection Type

6. From AutoDetect, select the type of connection to be made.

Note *A comport must be selected from the settings screen if using RS-232; however, baud, parity and data bits are only selectable if the Auto Detect Settings check box remains unchecked on the AutoDetect screen.*

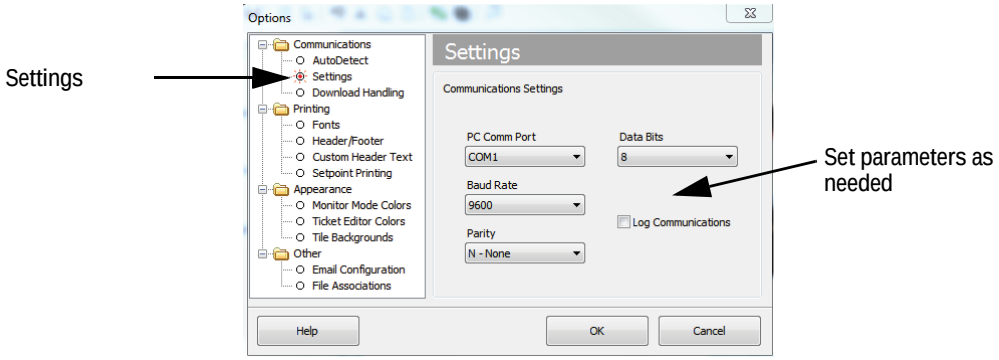
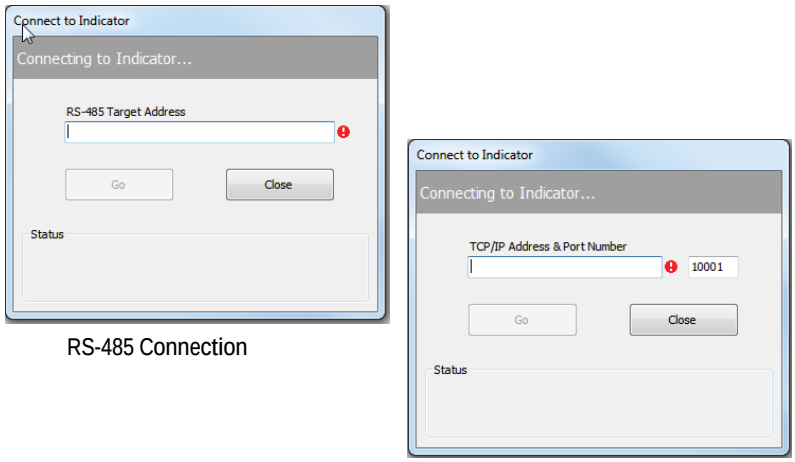


Figure 13-7. Set Communications Parameters

7. From Settings, set the communication parameters as needed.



RS-485 Connection

TCP/IP Connection

Figure 13-8. Connection Screens

8. An address is required for connection to RS-485 or TCP/IP .

13.8 Loading New Firmware

For the latest version of the *1280* firmware go to www.ricelake.com.

IMPORTANT *Prior to loading new firmware, save existing configuration and/or databases by using the instructions earlier in this section. The firmware update resets the configuration to factory defaults.*

- *Make sure the unit has stable power during the firmware image update process.*
- *Do not remove power during the update process. The unit may become damaged and rendered non-functional.*
- *Do not tamper, modify or remove any of the firmware image files in the update directory. Doing so may render the unit non-functional.*
- *Do not jiggle or disturb the flash drive once the update process has started, as this may cause unforeseen issues.*
- *The update process will usually take a couple of minutes to complete. Be patient. If there are no obvious results or errors after 4 to 5 minutes of the update process running, try again or contact technical support.*

13.8.1 Check Current Firmware

Enter the configuration mode, the current firmware version loaded on the *1280* will be displayed at the bottom of the screen..

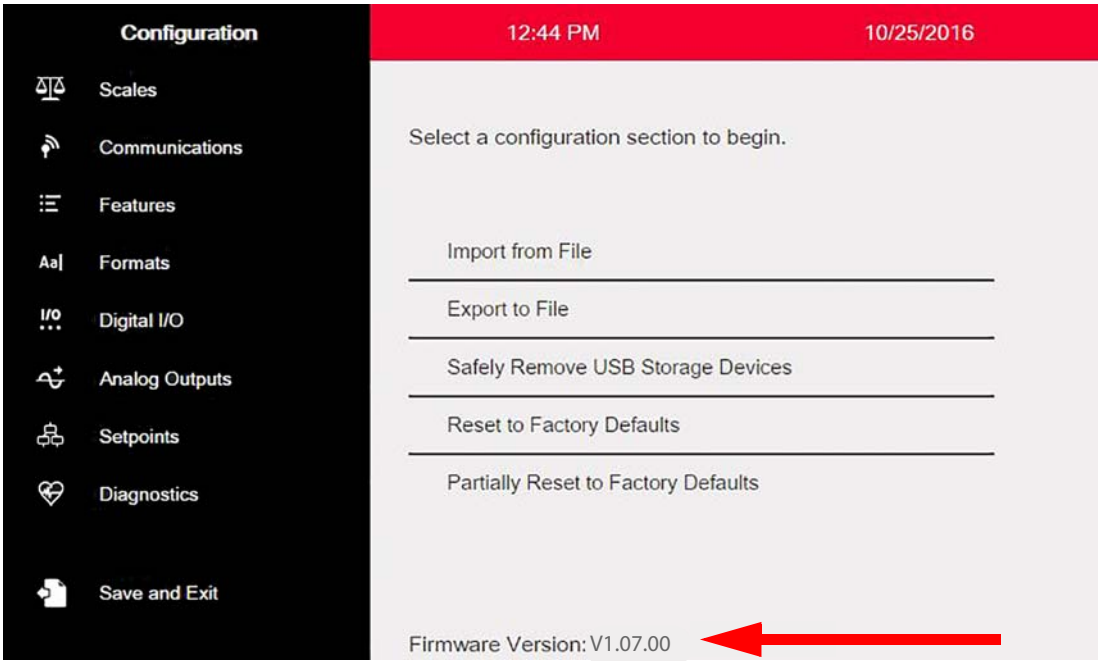


Figure 13-9. Check the Firmware Version

Compare it to the latest version available Online at www.ricelake.com

13.8.2 Download Firmware

1. For the latest version of the *1280* firmware, select this link www.ricelake.com or go the Rice Lake website and search for *1280*.
   - Select *1280* Enterprise
   - Select Resources/Downloads
   - Select Firmware and Download

Figure 13-10. Select Firmware from the Website

2. Download the firmware zip file to a PC and unzip the folder.
3. Place a USB Storage Device (flash drive) into an available slot in the PC.
4. Copy the *update* folder to the root level of the flash drive.

Note *If the update folder is not at the root level, it will not be found.*
Delete any pre-existing update file from the flash drive.

13.8.3 Upload Firmware to *1280*

1. Power down the *1280* to be updated.
2. Place the flash drive, containing the firmware update, into the *USB A Port* on the *1280*.
3. Hold the setup switch while powering on the *1280* for 5-10 seconds or until *Initializing* is displayed. The *1280* is

checking for the flash drive (this may take up to 12 seconds).

Figure 13-11. Initializing – Firmware Update

4. Once the device is found the message *'update' directory found on USB storage device* displays. Press the USB button. *Verifying Files:* displays, when verifying is complete, *Update in progress* will display. This process will take a couple of minutes to complete.

The progress bar indicates the percentage of time completed. Once at 100% the program will continue with the next step.

Figure 13-12. Verifying Files

5. When the update process is complete, the system will automatically reboot and return to weigh mode. Remove the flash drive at this time.

The updated firmware version number will be displayed at the bottom of the initial setup screen. See Figure 13-9 on page 127

Each time the indicator is updated with new firmware, an *update.log* file is created in the update directory on the flash drive, if they are present.

Example Update Log

(update_full_good.log)

```
Checking partitions...
*** Files ***
total 461712
-rwxr-xr-x    5792392 Jul 28 12:07 backup_uImage
-rwxr-xr-x        256 Jul 28 12:07 backup_uImage.sgn
-rwxr-xr-x      39035 Jul 28 12:07 imx6q-RLWS.dtb
-rwxr-xr-x        256 Jul 28 12:07 imx6q-RLWS.dtb.sgn
-rwxr-xr-x       1906 Jul 28 12:07 post_script.sh
-rwxr-xr-x        256 Jul 28 12:07 post_script.sh.sgn
-rwxr-xr-x   29846192 Jul 28 12:07 rootfs.cpio.uboot
-rwxr-xr-x        256 Jul 28 12:07 rootfs.cpio.uboot.sgn
-rwxr-xr-x  431011840 Jul 28 12:08 rootfs.tar
-rwxr-xr-x        256 Jul 28 12:08 rootfs.tar.sgn
-rwxr-xr-x          5 Jul 28 12:08 rootfs_drop
-rwxr-xr-x     257024 Jul 28 12:08 u-boot-01.imx
-rwxr-xr-x        256 Jul 28 12:08 u-boot-01.imx.sgn
-rwxr-xr-x    5792392 Jul 28 12:08 uImage
-rwxr-xr-x        256 Jul 28 12:08 uImage.sgn
-rwxr-xr-x         37 Jul 28 12:08 update.log
*** Files ***

*********************************************************
** Digital Signature Verification Of All Update Files **
*********************************************************
U-Boot...
Checking signature ...OK
Device tree binary...
Checking signature ...OK
Linux Kernel...
Checking signature ...OK
Backup Linux Kernel...
Checking signature ...OK
Post Install Script...
Checking signature ...OK
Recovery FS...
Checking signature ...OK
Root FS...
Checking signature ...OK
*********************************************************
```

13.8.4 Errors

If the flash drive is not found, the initialization will fail.

USB Storage Device Not Found

Unable to detect the flash drive after the full wait time, will show the following screen.

Figure 13-13. USB Storage Device Not Found

Solution

- Verify that the flash drive is properly plugged into one of the two USB ports. Only one device can be plugged into these ports during the update process.
- Make sure the flash drive is formatted as a FAT32 file system. NTFS is not recognized.
- Try another flash drive, the first one may be faulty.
- If the issue continues, it may be a faulty USB port, please contact technical support for further assistance.

Update Directory Missing

The *update* directory does not exist on the flash drive.

Figure 13-14. Update Directory Not Found

Solution

- Verify that the *update* directory containing the firmware image update files exists at the root level of the flash drive.
- Verify that the path to the *update* file is correct.

  Example of a correct USB PC type path: F:/update/firmware_files

  Example of an incorrect USB PC type path: F:/xdirectory/update/firmware_files

Digital Signature

Digital signature verification of firmware image file/files failed.

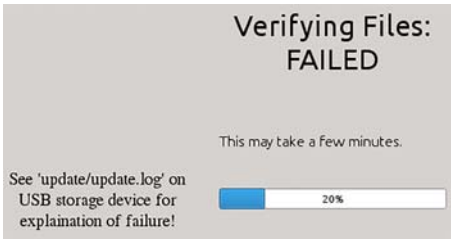


Figure 13-15. Digital Signature Failure

Sample log file with a digital signature verification file errors:

```
Bad signature and missing signature file.
(update_nosig_1bad.log)
Checking partitions...
*** Files ***
total 11636
-rwxr-xr-x      39035 Jul 29 14:41 imx6q-RLWS.dtb
-rwxr-xr-x      256 Jul 29 14:41 imx6q-RLWS.dtb.sgn
-rwxr-xr-x      1906 Jul 29 14:41 post_script.sh
-rwxr-xr-x      256 Jul 29 14:41 post_script.sh.sgn
-rwxr-xr-x      5792392 Jul 29 14:41 rootfs.tar
-rwxr-xr-x      256 Jul 29 14:41 rootfs.tar.sgn
-rwxr-xr-x      257024 Jul 29 14:41 u-boot-01.imx
-rwxr-xr-x      256 Jul 29 14:41 u-boot-01.imx.sgn
-rwxr-xr-x      5792392 Jul 29 14:41 uImage
-rwxr-xr-x      37 Jul 29 14:41 update.log
*** Files ***

*********************************************************
** Digital Signature Verification Of All Update Files **
*********************************************************
U-Boot...
Checking signature ...OK
Device tree binary...
Checking signature ...OK
uImage.sgn not found ...FAIL
backup_uImage not found.
SKIPPING..
Post Install Script...
Checking signature ...OK
rootfs.cpio.uboot not found.
SKIPPING..
Root FS...
Checking signature ...FAIL
*********************************************************
** Digital Signature Verification Of All Update Files **
**                Finished                 **
*********************************************************

******* FILE VERIFICATION STATUS *******
u-boot-01.imx           Verified
imx6q-RLWS.dtb          Verified
uImage                  Missing Sgn
post_script.sh          Verified
rootfs.tar              Verify Failed
******* FILE VERIFICATION STATUS *******


----------------------------------------
!!     File Verification Failure     !!
!! NO files were flashed to the device !!
----------------------------------------

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

Figure 13-16. Digital Signature Failure Example

Error	Troubleshooting Steps
Corrupted zip file	Download and extract the zip file again.
Corrupted copy/writing of *update* directory to flash drive	Ensure the flash drive has been synced and is safely detached before disconnecting it from the PC.
Bad flash drive	Try another flash drive.
Missing required file or signature file	Download and extract the zip file again.
Files are corrupt or have been tampered with	Download and extract the zip file again.

Table 13-1. Digital Signature Failure Errors

IMPORTANT *Do not tamper, modify or remove any of the firmware image files in the update directory. Doing so may render the unit non-functional.*

13.9 Scale Card Version Update

For new version of the scale card firmware, go to www.ricelake.com

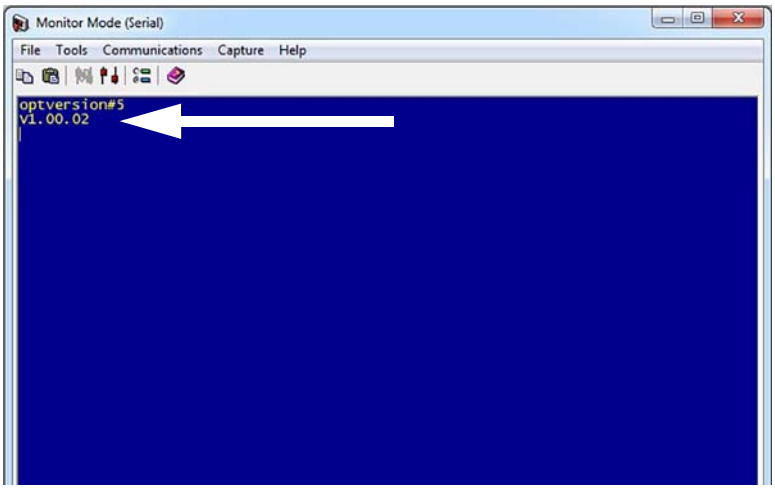


Figure 13-17. Monitor Mode

1. Connect *1280* to Revolution.
2. Open Monitor Mode.
3. Type optversion#s (s=Scale Card Slot Number) and hit Enter. The current version number will display. If a newer version is available, update the card. See Section 13.9.1 on page 132.

13.9.1 Updating Scale Card

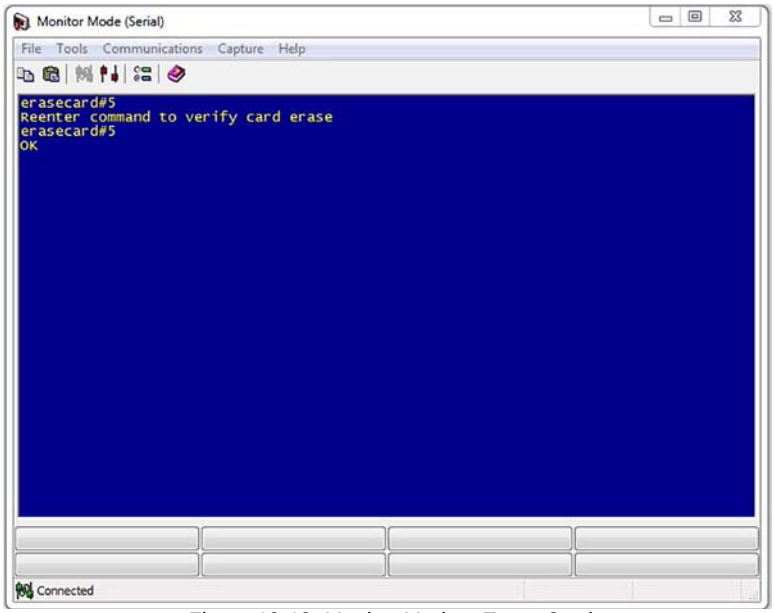


Figure 13-18. Monitor Mode – Erase Card

1. Connect *1280* to Revolution.
2. Place the *1280* into the *Configuration* mode
3. Open *Monitor Mode*.
4. Type erasecard#s (s=Scale Card Slot Number) and hit Enter. *Reenter command to verify card erase* displays.
5. Type erasecard#s and hit Enter. *OK* displays.
6. Power down *1280* and remove the scale card.

7. For new version of the scale card firmware, select this link www.ricelake.com or go the rice lake website and search for *1280*.
   - Select *1280* Enterprise
   - Select Resources/Downloads
   - Select Firmware and Download

Firmware

TITLE	VERSION	SIZE	RELEASE NOTES	DOWNLOAD	RELEASE DATE	EMAIL
1280 Firmware	1.02	122.09 MB		Download	May 3, 2016	Email
1280 Scale Card Firmware	1.00	108.81 KB		Download	Jan 19, 2016	Email

Figure 13-19. Select Firmware from the Website

8. Unzip file and drag the .bin file to a known location.
9. Connect a Micro USB type B connector to the card and PC.

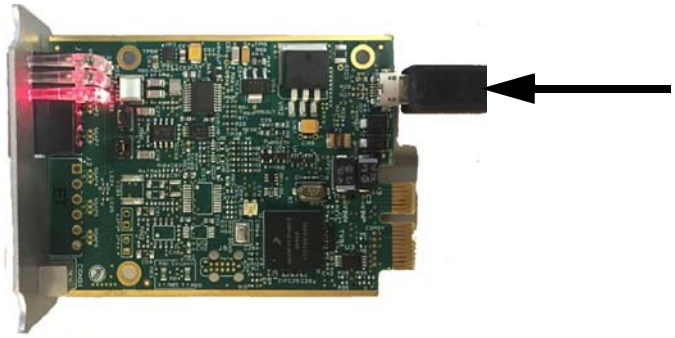


Figure 13-20. Scale Card

10. The PC will recognize it as a Mass Storage Device.

Figure 13-21. Open Folder

11. Open the folder.
12. Drag and drop the *.bin* file into the folder. The folder closes and the scale card pipe lights will blink green.

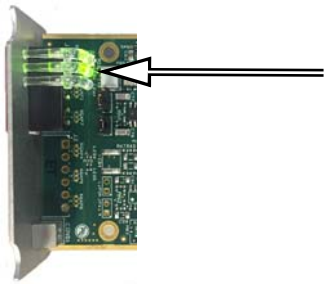


Figure 13-22. Green Lights

13. Disconnect USB from scale card and reinstall card in the *1280*.
14. Power on the *1280* and reconfigure card.

13.10 Visual Studio Code – iRite

This supports the iRite Language for Visual Studio Code.

- Syntax Colorization
- Snippets
- Preprocessing
- Compiling
- Deployment to Indicator

Installation

1. Press  and enter *iRite*.
2. Press install and allow *VScode* to restart. The syntax highlighting and snippets are now available.

13.10.1 Compilation and Deployment

Ensure Revolution is installed, if not, install it before continuing.

Press iRite: Build, an *irite.settings.json* file generates in the directory.

Defaults are established on build, but must be modified for the indicator being used.

Variable	Value
Method	TCP, RS232
Indicator	1280, 920, 880, 820
Ipaddress	If using TCP connection
Tcpport	
Comport	If using RS232
Baudrate	
Databits	
Parity	
Stopbits	

Table 13-2. Connection Parameters

Deployment

Ensure the *irite.settings.json* file has been modified to the system specs and press iRite: Deploy.

14.0 Display Editor

The Display Editor allows the user to configure the splash screen and add widgets.

14.1 Configurable Splash Screen

The *1280* Enterprise supports a configurable splash screen during the boot up process (or sequence).

- Only PNG image files are supported.
- The image to be used must be named *oem.png* and it has to be placed in the root folder of the SD card.
- The graphic should be no larger than 800 x 480 pixels (7 inch) and 1280 x 800 (12 inch).

14.2 Widgets

The Display Editor, in Revolution, is the only way to add widgets. Widgets can be added on up to 99 different screens.

The type and location of elements shown on the *1280* display are easily specified using the drag and drop features of the *1280* utility. However, display widgets can also be programmed using serial commands while the *1280* is in setup mode, or through *iRite* programming. Up to 99 different screens can be configured.

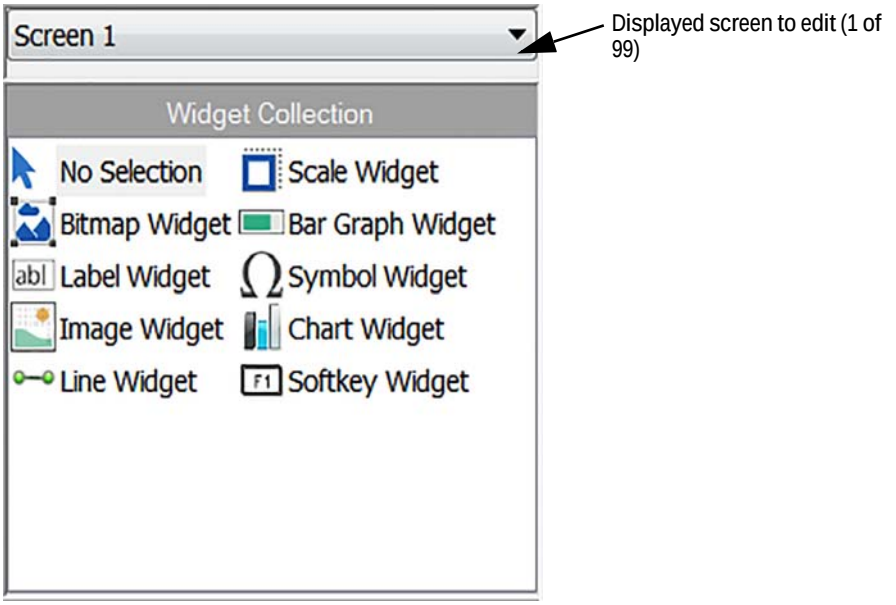


Figure 14-1. Widget Screen

- Scale Widgets are Legal for Trade representations of the configured scales in the system and include Center-of-Zero, Standstill, Tare and Units annunciators.
- Bitmap Widgets are images of tanks or hoppers to add aesthetic value.
- Bar graph Widgets are a representation of a percentage of whatever they are linked to.
- Label Widgets are text boxes populated with whatever they are linked to/captioned.
- Symbol Widgets are pictures with various states to show change, depending on what they are linked to.
- Image Widgets display images that are stored locally on a micro SD card or remotely at a specific URL address.
- Chart Widgets are used to visually graph data on the display.
- Line Widgets are used as a separator for other widgets.
- Softkey Widgets allow softkeys to be created and needed.

Some widget types require that the location or size of the widget be specified, in pixels. Figure 14-2 shows the pixel counts (133.33 pixels per inch) used to specify the pixel location on the display.

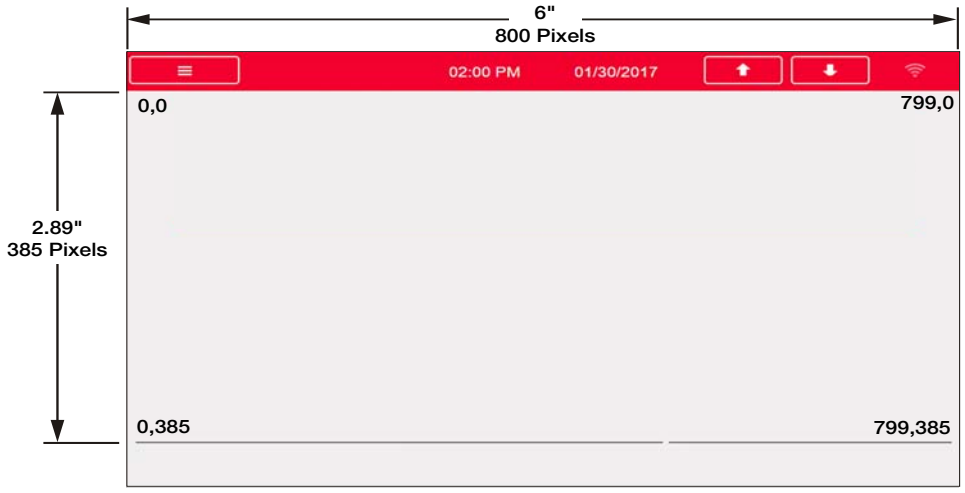


Figure 14-2. Screen Location Pixel Values - 7 Inch Display

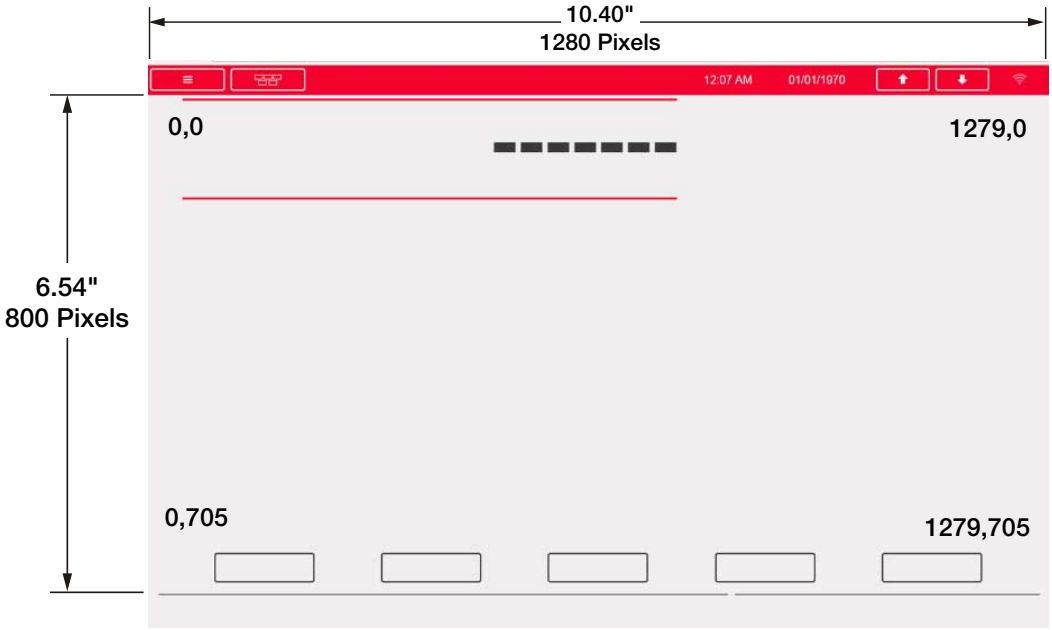


Figure 14-3. Screen Location Pixel Values - 12 Inch Display

14.2.1 Scale Widgets

Scale widgets are used to present basic scale data from one or more configured scales. To add a scale widget to the display, verify which screen is currently displayed, click on the Scale Widget icon on the left of the Display Editor and drag it to anywhere on the display.

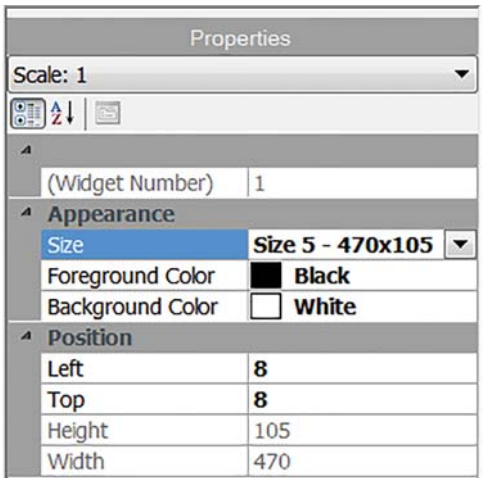


Figure 14-4. Scale Widgets

The following scale properties can be changed.

Size – Seven size selections from small to large are available.

Foreground Color – This is the default text color. Foreground color can also be changed from *iRite*.

Background Color – This is the default background color. Background color can also be changed from *iRite*.

Left/Top – The number of pixels away from the left or top edge. Either drag and drop for approximate alignment, or enter a number for precise alignment.

14.2.2 Bitmap Widgets

Bitmap widgets provide a representation of vertical or horizontal tanks or a hopper. To add a bitmap widget to the display, verify which screen is currently displayed, click on the Bitmap Widget icon on the left of the Display Editor and drag it to anywhere on the display.

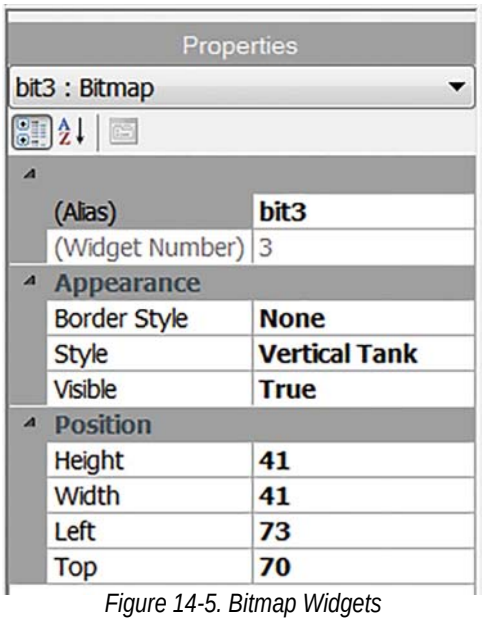


Figure 14-5. Bitmap Widgets

Bitmap properties that can be changed:

Alias – optional variable name to reference this widget from *iRite*.

Border Style – default is *None*, when enabled creates a thin black border around the bitmap.

Style – there are three choices (Figure 14-6), the vertical tank is default. Typically they are used with bar graphs placed overlaying them.

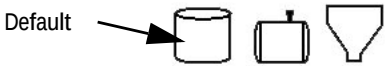


Figure 14-6. Bitmap Widget Style Options

Visible – defaults to True, if false the widget disappears. This can be changed from *iRite*.

Height/Width – height and width of the bitmap in pixels. This can be dragged/dropped (to resize the bitmap) or enter a number for either value.

Left/Top– position away from the left/top edge in pixels. This can be dragged/dropped (to reposition the bitmap) or enter a number for either value.

14.2.3 Bar Graph Widgets

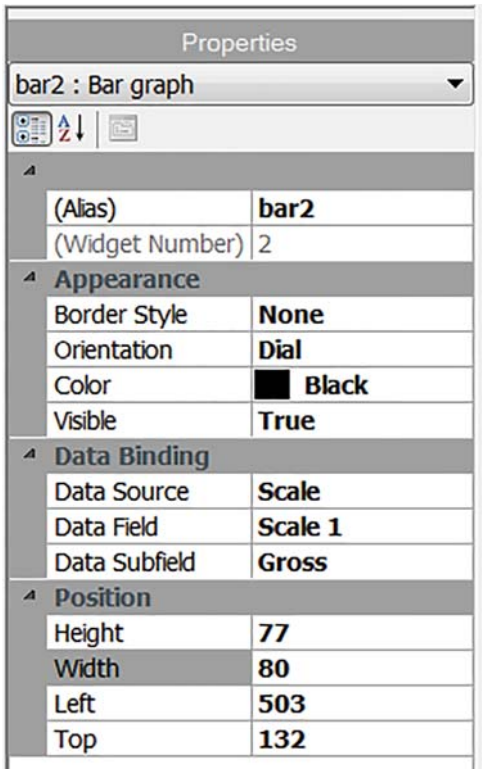


Figure 14-7. Bar Graph Widgets

Bar graph widgets allow display of vertical or horizontal graphs, either a normal bar graph style or a needle gauge, with or without graduations. The graph can be used to represent scale weight or progress toward a setpoint target value. To add a bar graph widget to the display, verify which screen is currently displayed, click on the *Bar graph Widget* icon on the left of the Display Editor and drag it to anywhere on the display.

Bar graph properties that can be changed:

Alias – optional variable name to reference this widget from *iRite*.

Border Style – when enabled, creates a thin black border around the bar graph, default is *None*.

Orientation – there are four choices (Figure 14-8), default is *Horizontal*.

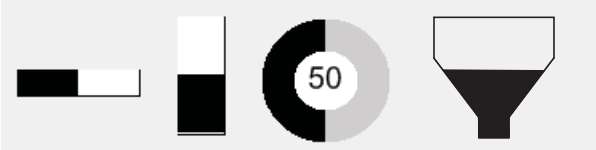


Figure 14-8. Bar Graph Widget Options

Color – color that fills the bar graph, this can be changed from *iRite*.

Visible – default is *True*, if set to false the widget disappears. This parameter can be changed from *iRite*.

Data Source – source of information that the bar graph is representing. Choices Include:

- Scale, meaning the bar graph is full at capacity (default).
- Programmability (percentage set from iRite)
- Setpoint (percentage based on how close to the setpoint tripping).

Data Field – works with the data source.

- If Data Source= Scale, then the Data Field specifies the configured scale number.
- If Data Source= Setpoint, then the Data Field specifies the configured setpoint.

Data Subfield – applies to a Data Source of Scale, the choices are Gross, Net or Displayed.

Height/Width – size of the bar graph in pixels (height and width). It can be dragged/dropped (to resize the bitmap) or a number can be entered for either of these values.

Left/Top – set distance from left/top edges in pixels. It can be dragged/dropped (to reposition the bar graph) or a number can be entered for either of these values.

14.2.4 Label Widgets

Label widgets are used to insert a text label in the display. To add a label widget to the display, verify which screen is currently displayed, click on the Label Widget icon on the left of the Display Editor and drag it to anywhere on the display.

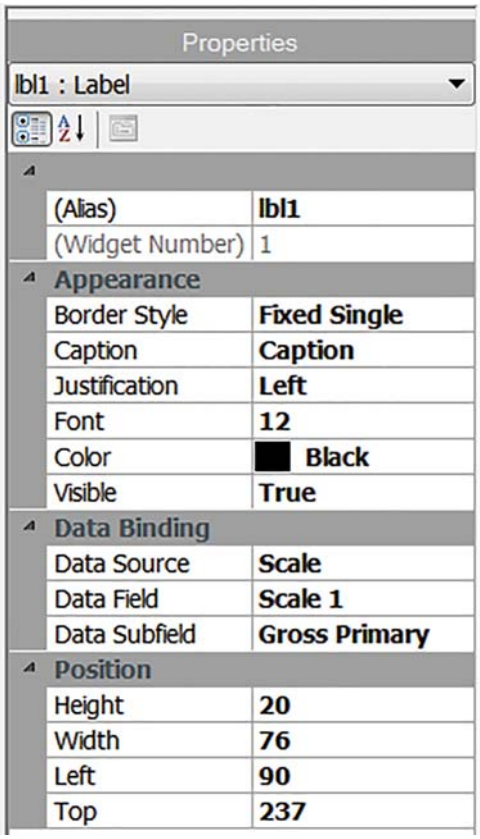


Figure 14-9. Label Widgets

The following properties can be changed:

Alias – optional variable name to reference this widget from *iRite*.

Border Style – when enabled, creates a thin black border around the bar graph, default is *Fixed Single*.

Caption – this relates to the Data Source. If set to Self, the caption is the static text in the text box. Otherwise it is overwritten by whatever the Data Source is set to.

Justification – position of text in the text box, left, center or right.

Font – text size, default is 12.

Color – color of the text and border, it can be changed from *iRite*. The background cannot be changed.

Visible – default is *True*, if set to false the widget disappears. This parameter can be changed from *iRite*.

Data Source – the source of the information displayed in the widget. Choices include:

- Scale (weight is displayed)
- Programmability (text from iRite)
- Self (always displays the text from the Caption parameter)
- Setpoint (displays the setpoint prompt).

Data Field – available settings are dependent upon the Data Source. Only a Data Source of Scale or Setpoint requires a Data Field to be specified.

- If Data Source= Scale, then the Data Field specifies the configured scale number.
- If Data Source= Setpoint, then the Data Field specifies the configured setpoint.

Data Subfield – available settings are dependent upon the Data Source. Only a Data Source of Scale or Setpoint requires a Data Subfield to be specified.

- If Data Source= Scale, then the Data Subfield specifies the weight data that is to be displayed.
- If Data Source= Setpoint, then the Data Subfield can be set to Setpoint Name, Setpoint Value, Preact Value or Tolerance Band Value.

Height/Width – The height and width of the label widget in pixels. This can be dragged/dropped (to enlarge or shrink the widget) or for more precise sizes a number can be entered for any of these values.

Left/Top – Set the distance from the left/top edges in pixels. This can be dragged/dropped (to position the label widget) or for more precise alignment a number can be entered for any of these values.

14.2.5 Symbol Widgets

Symbol widgets provide icons to indicate a variety of alarms, conditions or device states. To add a symbol widget to the display, verify which screen is currently displayed, click on the **Symbol Widget** icon on the left of the Display Editor and drag it to anywhere on the display. The following properties can be changed:

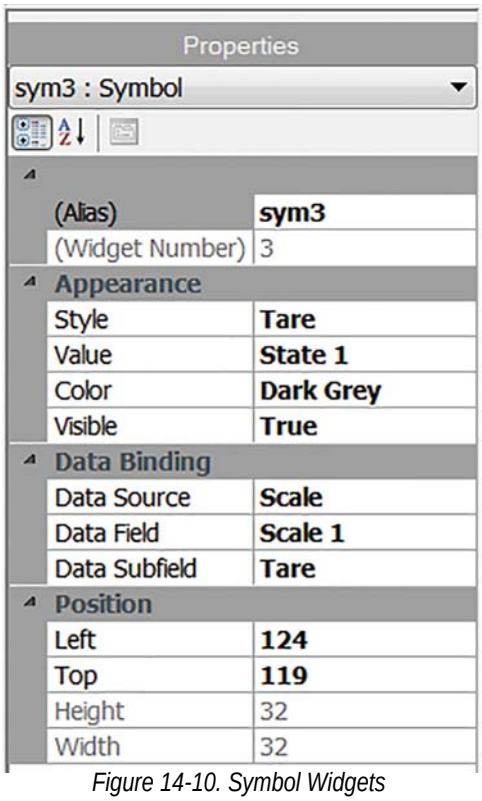


Figure 14-10. Symbol Widgets

Alias – optional variable name to reference this widget from *iRite*.

Style – defaulted to Tare. See Table 14-2.

Value – this relates the states, which varies in number depending on the style selected.

Example: Tare has three states: Tare, Blank/invisible, or Pushbutton Tare.

Color – color of the symbol; can be changed from *iRite*.

Visible – default is *True*, if false the widget disappears. This parameter can be changed from *iRite*.

Data Source – source of the data that causes symbol widgets to change states.

- Choices are Scale, Programmability (symbol state set by iRite), Setpoint or Digital I/O.

Data Field – available settings are dependent upon the Data Source.

- If Data Source= Scale, then the Data Field specifies the configured scale number.
- If Data Source= Digital I/O, then the Data Field specifies the slot number of the Digital I/O interface.
- If Data Source= Setpoint, then the Data Field specifies the configured setpoint.

Data Subfield – available settings are dependent upon the Data Source. Only a Data Source of Scale or Digital I/O require a Data Subfield to be specified.

- If Data Source= Scale, then the Data Subfield specifies the scale condition that is to change the widget's state.
- If Data Source= Digital I/O, then the Data Field specifies the bit number of the digital I/O interface.

Left/Top – Set the distance from the left/top edges in pixels. Can be dragged/dropped (to reposition the label widget) or a number can be entered for any of these values.

14.2.6 Image Widgets

Image Widgets are used to insert images in the display. Images can be stored locally on a micro SD card, or externally at a specific URL address. Supported image formats are .jpeg/.jpg, .gif, .png, and .svg. (note that animated .gif files are not supported).

To add an image widget to the display, verify which screen is currently displayed, click on the **Symbol Widget** icon on the left of the Display Editor and drag it to anywhere on the display.

Image properties that can be changed:

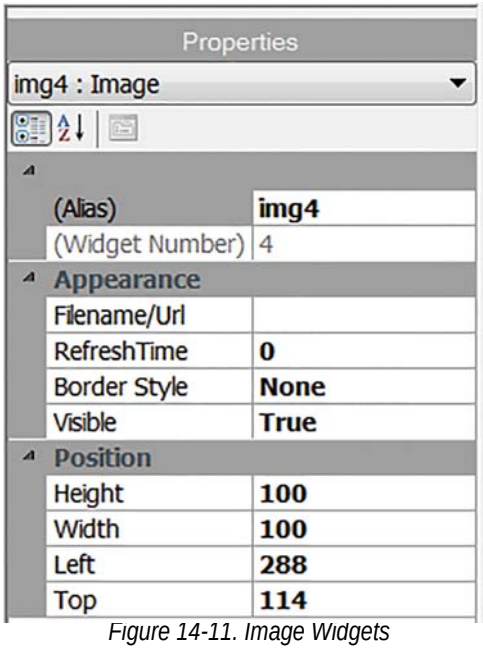


Figure 14-11. Image Widgets

Alias – optional variable name to reference this widget from *iRite*.

Filename/URL – Specifies the file path or URL address of the image. If using a micro SD card, create a folder in the root folder of the micro SD card called *SDimages.* Place the image into that folder and enter the image file name (including extension) into the Path/URL field. Multiple images with different file names can be used in the same *SDimages* folder. If using an image located at a URL Address, simply enter that address here. The *1280* has to be connected to a network that can access the specified URL Address.

Refresh Time – The interval (in seconds) that the image is refreshed from the location specified above.

Border Style – when enabled, creates a thin black border around the bar graph, default is *None*.

Visible – defaults to True, if false the widget disappears. This can be changed from *iRite*.

Height/Width – height and width of the bitmap in pixels. This can be dragged/dropped (to resize the image) or enter a number for either value.

Left/Top– position away from the left/top edge in pixels. This can be dragged/dropped (to reposition the image) or enter a number for either value.

Internal Stock Images

To access internal stock images, utilize *local://* to specify a local file. Examples of internal stock images are shown in Table 14-1.

Image	Description	Filename	Image	Description	Filename
	Auxillary Print	1.png		Go Button Night View	22.png
	Gross Net	2.png		Go Button Day View	23.png
	Keyed Tare	3.png		Stop Button Night View	24.png
	Print	4.png		Stop Button Day View	25.png
	Screen Selection	5.png		Stop	26.png
	Tare	6.png		Print	27.png
	Units	7.png		Paper	28.png
	Exit Box	9.png		Red Bar	29.png
	More	10.png		Dark Green Bar	30.png
	Setup	11.png		Grey Bar	31.png
	Exit	12.png		Green Bar	32.png
	Delete All	13.png		Dark Red Bar	33.png
	Delete Entry	14.png		Light Grey Bar	34.png
	Truck Database Search	15.png		Yellow Bar	35.png
	Off	16.png		No	36.png
	On	17.png		Yes	37.png

Image	Description	Filename	Image	Description	Filename
	Page Down	18.png			
	Page Up	19.png			
	Reports	20.png			
	Start	21.png			

Table 14-1. Stock Widget Icons

14.2.7 Chart Widgets

Chart widgets are used to visually graph data on the *1280* display. Available chart types include line graphs, vertical bar charts, and horizontal bar charts. These features can only be used in conjunction with an iRite program to populate these charts. See the *iRite* manual (PN 67888)

To add a chart widget to the display, verify which screen is currently displayed, click in the **Chart Widget** icon on the left of the Display Editor and drag it to anywhere on the display.

Chart properties that can be changed from Revolution:

Alias – optional variable name to reference this widget from *iRite*.

Visible – default is *True*, if false the widget disappears. This parameter can be changed from *iRite*.

Style – select the chart style (*Line Chart* or *Bar Chart*).

Height/Width – height and width of the chart area in pixels. This can be dragged/dropped (to resize the chart widget) or enter a number for either value.

Left/Top – position away from the left/top edge in pixels. This can be dragged/dropped (to reposition the chart widget) or enter a number for either value.

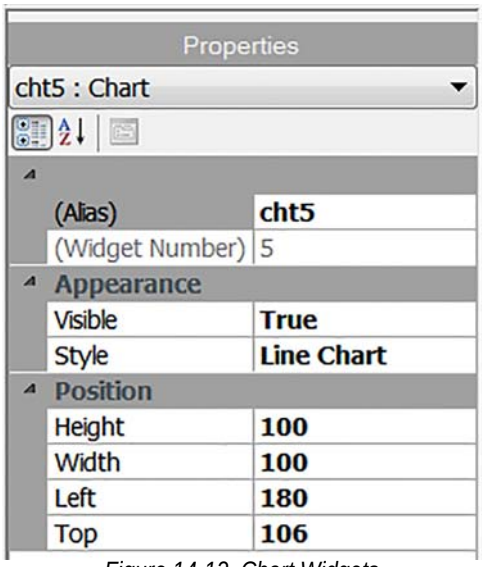


Figure 14-12. Chart Widgets

14.2.8 Line Widgets

Lines can be used as separators for the other widgets on the screen.

Alias – optional variable name to reference this widget from *iRite*.

Orientation – select horizontal or vertical lines.

Color – color of the line; can be changed from *iRite*.

Visible – default is *True*, if false the widget disappears. This parameter can be changed from *iRite*.

Height/Width – height and width of the chart area in pixels. This can be dragged/dropped (to resize the chart widget) or enter a number for either value.

Left/Top – position away from the left/top edge in pixels. This can be dragged/dropped (to reposition the chart widget) or enter a number for either value.

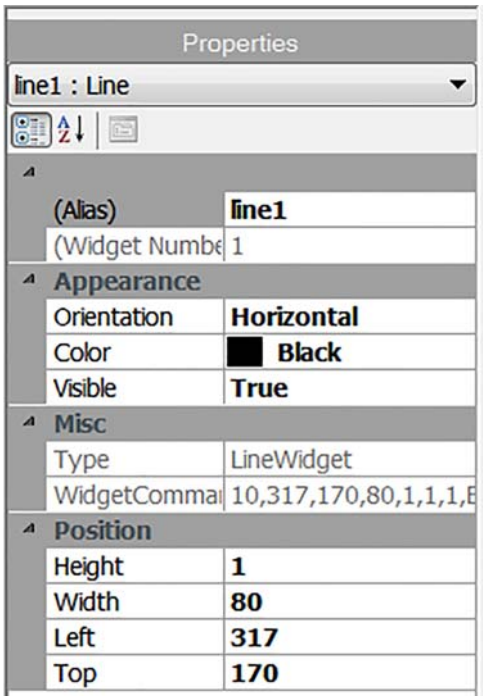


Figure 14-13. Line Widget Properties

14.2.9 Softkey Widgets

Softkey widgets provide buttons that can be set with softkey commands. See Section 6.1 on page 79. To add a softkey widget to the display, verify which screen is currently displayed, click on the Symbol Widget icon on the left of the Display Editor and drag it to anywhere on the display.

Alias – optional variable name to reference this widget from *iRite*.

Orientation – select horizontal or vertical.

Visible – default is *True*, if false the widget disappears. This parameter can be changed from <Prodfont>iRite.

Color – color of the softkey text and border can be changed but only if the actual softkey widget is used.

Background Color – Background color of the softkey can also be changed but only if the actual softkey widget is used.

Height/Width – read only

Left/Top – position away from the left/top edge in pixels. This can be dragged/dropped (to reposition the chart widget) or enter a number for either value.

Default Softkeys can be reincorporated automatically by entering the *Features* menu, under *General* and select Softkey Auto-Population.

This will conflict with softkey widgets added in Revolution.

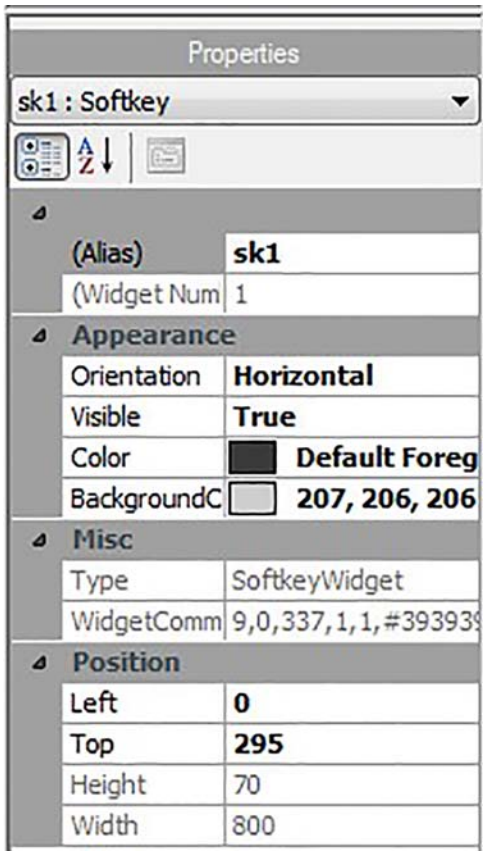


Figure 14-14. Softkey Widget Properties

14.3 Widget Colors

The *1280* display is capable of displaying 256 thousand colors. When defining the display widgets, the color of some of their elements can be specified. This ability varies by widget type.

Scale Widgets – the color of both the foreground and background can be specified.

Bar Graph – only a foreground color can be specified.

Label Widgets – only a foreground color can be specified.

Symbol Widgets – one of 16 fixed colors can be selected.

Bitmap Widgets – cannot be colored, they are only a black outline with a clear background.

Chart Widgets – color changes can only be done with the iRite programming.

Line Widgets – color changes can only be done with the iRite programming

Softkey Widgets – only text and border can be changed with the iRite programming

There are three custom colors that are available. These are used for the indicator display.

Figure 14-15. Widget Colors

	Description	Widget State 1	Widget State 2	Widget State 3	Widget State 4
1	Tare				
2	Standstill				
3	Center of Zero				
4	Round Indicator				
5	Square Indicator				
6	Bell				
7	Exclamation Symbol				
8	Light Bulb				
9	Divert Product				
10	Over / Under/In Range				
11	Stoplight				
12	Left Arrow				
13	Right Arrow				
14	Up Arrow				
15	Down Arrow				

Table 14-2. Widget Table

	Description	Widget State 1	Widget State 2	Widget State 3	Widget State 4
16	Speaker				
17	Serial Status				
18	Truck On Scale 1				
19	Truck On Scale 2				
20	Weight On Scale				
21	Overload				
22	Underload				
23	Stop Sign				
24	Yield Sign				
25	Skull & Crossbones				
26	Unbalanced				
27	Runner				
28	Walker				
29	Printer				
30	Hourglass				
31	Gas Pump				
32	Conveyor				
33	Batch Auto/Manual				
34	Valve				
35	Motor				
36	Checkmark				
37	Faucet				
38	Padlock				
39	Key				
40	Pipe				
41	Not				
42	Conveyor Full				
43	Info				

Table 14-2. Widget Table (Continued)

	Description	Widget State 1	Widget State 2	Widget State 3	Widget State 4
44	Power				
45	Folder				
46	Recipe				
47	Report				
48	Manual Mode	M			

Table 14-2. Widget Table (Continued)

15.0 EDP Commands

The *1280* indicator can be controlled by a personal computer connected to one of the indicator communication ports. Control is provided by a set of commands that can simulate front panel key press functions, return and change setup parameters, and perform reporting functions. The commands provide the capability to print configuration data or to save that data to an attached personal computer. This section describes the EDP command set and procedures for saving and transferring data using the communication ports.

The EDP command set is divided into several groups as shown in this section.

When the indicator processes a command, it either responds with a value (for reporting commands, or when querying parameter settings), or with the message *OK*. The *OK* response verifies that the command was received and has been executed. If the command is unrecognized or cannot be executed, the indicator responds with *??*.

15.1 Key Press Commands

Key press serial commands simulate pressing the keys on the front panel of the indicator. These commands can be used in both setup and weigh mode. Several of the commands serve as pseudo keys, providing functions that are not represented by a key on the front panel.

For example, to enter a 15-pound tare weight using serial commands:

1. Type *K1* and press Enter (or Return).
2. Type *K5* and press Enter.
3. Type *KTARE* and press Enter.

Command	Function
KSCALESELECT	Selects scale number. For example, to select scale number 2, type K2 and press Enter. Then, type KSCALESELECT and press Enter.
KZERO	In weighing mode, this command acts like pressing the Zero key.
KGROSSNET	In weighing mode, this command acts like pressing the Gross/Net key.
KGROSS	Sets currently selected scale to display Gross mode.
KNET	Sets currently selected scale to display Net mode.
KTARE	In weighing mode, this command acts like pressing the Tare key.
KUNITS	In weighing mode, this command acts like pressing the Units key.
KPRIM	Sets currently selected scale to display primary units.
KSEC	Sets currently selected scale to display secondary units.
KTER	Sets currently selected scale to display tertiary units.
KPRINT	In weighing mode, this command acts like pressing the Print key.
KDISPACCUM	Displays the accumulator value of the currently selected scale.
KDISPTARE	Displays the tare value of the currently selected scale.
KCLR	In weighing mode, this command acts like pressing the Clear key. This clears the last character entered, or can be used to clear the accumulator or tare value of the currently selected scale while either is displayed.
KCLRCN	Resets consecutive number.
KCLRTAR	Clears the tare from the currently selected scale.
KLEFT	This command acts like pressing the Left Arrow key.
KRIGHT	This command acts like pressing the Right Arrow key.
KUP	This command acts like pressing the Up Arrow key.
KDOWN	This command acts like pressing the Down Arrow key.
KSAVEEXIT	This command acts like pressing the Save and Exit key. This saves the current configuration and returns to weigh mode.

Table 15-1. Key Press Commands

Command	Function
Kn	This command acts like pressing numbers 0 (zero) through 9.
KDOT	This command acts like pressing the decimal point (.).
KENTER	This command acts like pressing the Enter key.
KSOFT*x*	This command acts like pressing the softkey number *x*.
KLOCK	Lock specified front panel key. For example, to lock the Zero key, enter KLOCK=KZERO.
KUNLOCK	Unlock specified front panel key. For example, to unlock the Print key, enter KUNLOCK=KPRINT.
KCOMMIT	After changes are made to configuration parameters using EDP commands, use this command to commit the changes to memory before leaving configuration mode.
KSETPOINT	Display setpoint configuration
KDATE	Display date
KTIME	Display time
KTIMEDATE	Display time and date

Table 15-1. Key Press Commands (Continued)

15.2 Reporting Commands

Reporting commands send specific information to the communications port. The commands listed in Table 15-2 can be used in either setup mode or weigh mode.

Command	Function
DUMPALL	Returns a list of all parameter values.
SPDUMP	Returns a list of only the setpoint parameter values.
VERSION	Returns the core firmware version number.
HARDWARE	Returns a list of option cards installed in slots 1–6. See Section 12.1 on page 117 for more information about using the HARDWARE command.
HWSUPPORT	Returns the CPU board part number.
OPTVERSION#s	Returns the Firmware version of the option card installed in slot s.
OPTHWVERSION#s	Returns the Hardware version of the option card installed in slot s.
DUMPAUDIT	Returns the Audit Trail information.
DUMPVERSIONS	Returns the versions of all files, software and installed option cards.

Table 15-2. Reporting Commands

15.3 Clear and Reset Commands

The following commands can be used to clear and reset the *1280*:

Command	Function
PCLR	Program Clear – erases the loaded user program (setup mode only).
RS	Reset System – reboots the indicator without resetting the configuration.
RESETCONFIGURATION	Reset Configuration – restores all configuration parameters to default values (setup mode only).
PARTIALRESET CONFIGURATION	Reset all settings except for Scales and Network settings (setup mode only).
REMOVE.TSCAL	Clears the touchscreen calibration on the next power cycle.

Table 15-3. Clear/Reset Commands

Note *All scale calibration, iRite and database settings are lost when the RESETCONFIGURATION command is run.*

15.4 Parameter Setting Commands

Parameter setting commands allows the current value for a configuration parameter to be displayed or changed (Tables 15-4 through 15-16).

Current configuration parameter settings can be displayed in configuration mode or weigh mode using the following syntax: *command*<ENTER>

Most parameter values can be changed in setup mode only; setpoint parameters listed in Table 15-10 on page 158 can be changed when in normal weighing mode.

Note *The user must stop the current batch for new values to take effect.*

Use the following command syntax when changing parameter values: *command=value*<ENTER>, where *value* is either a number or a parameter value. Use no spaces before or after the equal (=) sign. If an incorrect command is typed or an invalid value is specified, the indicator will return *??*.

For example, to set the motion band parameter on Scale #1 to 5 divisions, type the following:

SC.MOTBAND#1=5<ENTER>

To return a list of the available values for parameters with specific values, enter the command and equal sign, followed by a questions mark (*command=?*<ENTER>). The indicator must be in setup mode to use this function.

After changes are made to configuration parameters using EDP commands, use the *KCOMMIT* command to commit the changes to memory prior to using the *KSAVEEXIT* command or pressing .

Command	Description	Values
SC.CAPACITY#n	Scale capacity	0.000001 to 9999999
SC.SPLIT#n	Multi-range or multi-interval scale type	OFF, MULTIRANGE, MULTIINTERVAL
SC.ZTRKBND#n	Zero track band	0.0-100 (in display divisions)
SC.ZRANGE#*n*	Zero range	0-10000 (in 0.01 % intervals - 100=1%)
SC.MOTBAND#*n*	Motion band	0-100 (in display divisions)
SC.SSTIME#*n*	Standstill time	1–600 (in 0.1 second intervals)
SC.OVERLOAD#*n*	Overload	FS+2%, FS+1D, FS+9D, FS
SC.WMTTHRH#*n*	Weighment threshold	0.0-9999999
SC.DIGFLTR1#*n* SC.DIGFLTR2#*n* SC.DIGFLTR3#*n*	Number of A/D samples averaged for the individual stages (1-3) of the three stage digital filter.	1, 2, 4, 8, 16, 32, 64, 128, 256
SC.DFSENS#*n*	The number of consecutive A/D readings outside the threshold setting before the three stage digital filter cuts out.	2OUT, 4OUT, 8OUT, 16OUT, 32OUT, 64OUT, 128OUT
SC.DFTHRH#*n*	Three stage digital filter cutout threshold in display divisions.	NONE, 2D, 5D, 10D, 20D, 50D, 100D, 200D, 250D
SC.RATLTRAP#*n*	Enable the special Rattletrap filtering mode for the three stage digital filter.	OFF, ON
SC.SMPRAT#*n*	Scale A/D sample rate.	6.25HZ, 7.5HZ, 12.5HZ, 15HZ, 25HZ, 30HZ, 50HZ, 60HZ, 100HZ, 120HZ, 200HZ, 240HZ, 400HZ, 480HZ, 800HZ, 960HZ
SC.PWRUPMD#*n*	Power up mode	GO, DELAY
SC.TAREFN#*n*	Tare function	BOTH, NOTARE, PBTARE, KEYED

Table 15-4. Scales Commands

Command	Description	Values
SC.PRI.FMT#*n*	Primary units format (decimal point and display divisions)	8888100, 8888200, 8888500, 8888810, 8888820, 8888850, 8888881, 8888882, 8888885, 888888.1, 888888.2, 888888.5, 88888.81, 88888.82, 88888.85, 8888.881, 8888.882, 8888.885, 888.8881, 888.8882, 888.8885, 88.88881, 88.88882, 88.88885, 8.888881, 8.888882, 8.888885
SC.PRI.UNITS#*n*	Primary units	LB, KG, G, OZ, TN, T, GR, TROYOZ, TROYLB, LT, CUSTOM1, CUSTOM2, CUSTOM3
SC.SEC.FMT#*n*	Secondary units format (decimal point and display divisions)	8888100, 8888200, 8888500, 8888810, 8888820, 8888850, 8888881, 8888882, 8888885, 888888.1, 888888.2, 888888.5, 88888.81, 88888.82, 88888.85, 8888.881, 8888.882, 8888.885, 888.8881, 888.8882, 888.8885, 88.88881, 88.88882, 88.88885, 8.888881, 8.888882, 8.888885
SC.SEC.UNITS#*n*	Secondary units	LB, KG, G, OZ, TN, T, GR, TROYOZ, TROYLB, LT, CUSTOM1, CUSTOM2, CUSTOM3
SC.SEC.MULT#*n*	Secondary units multiplier	0.000001-9999999.9
SC.TER.UNITS#*n*	Tertiary units	LB, KG, G, OZ, TN, T, GR, TROYOZ, TROYLB, LT, CUSTOM1, CUSTOM2, CUSTOM3
SC.TER.FMT#*n*	Tertiary units format (decimal point and display divisions)	8888100, 8888200, 8888500, 8888810, 8888820, 8888850, 8888881, 8888882, 8888885, 888888.1, 888888.2, 888888.5, 88888.81, 88888.82, 88888.85, 8888.881, 8888.882, 8888.885, 888.8881, 888.8882, 888.8885, 88.88881, 88.88882, 88.88885, 8.888881, 8.888882, 8.888885
SC.TER.MULT#*n*	Tertiary units multiplier	0.000001-9999999.9
SC.ROC.FMT#*n*	Rate-of-Change format (decimal point and display divisions)	8888100, 8888200, 8888500, 8888810, 8888820, 8888850, 8888881, 8888882, 8888885, 888888.1, 888888.2, 888888.5, 88888.81, 88888.82, 88888.85, 8888.881, 8888.882, 8888.885, 888.8881, 888.8882, 888.8885, 88.88881, 88.88882, 88.88885, 8.888881, 8.888882, 8.888885
SC.ROC.MULT#*n*	Rate-of-change units multiplier	0.000001-10000000
SC.ROC.UNITS#*n*	Rate-of-change units	SEC, HOUR, MIN, DAY
SC.ROC.INTERVL#*n*	Rate-of-change interval	0.0-180000 (in 0.1 second intervals)
SC.RANGE1#*n*	Weight maximum for first range or interval	0.0-9999999
SC.RANGE2#*n*	Weight maximum for second range or interval	0-9999999
SC.ACCUM#*n*	Accumulator enable	OFF, ON
SC.VISIBLE#*n*	Scale visibility	OFF, ON
SC.PEAKHOLD#*n*	Peak hold	OFF, NORMAL, BI-DIR, AUTO
SC.WZERO#*n*	Perform zero (deadload) calibration	—
SC.WVAL#*n*	Test weight value	0.000001-10000000
SC.WSPAN#*n*	Perform span calibration	—
SC.WLIN.F1#*n*–SC.WLIN.F4#*n*	Actual raw count value for linearization points 1–4	0–16777215
SC.WLIN.V1#*n*–SC.WLIN.V4#*n*	Test weight value for linearization points 1–4	0.0 - 9999999 (A setting of 0 indicates the linearization point is not used).
SC.WLIN.C1#*n*–SC.WLIN.C4#*n*	Perform linearization calibration on points 1–4	—

Table 15-4. Scales Commands (Continued)

Command	Description	Values
SC.LC.CD#*n*	Zero (deadload) raw count value	0-16777215
SC.LC.CW#*n*	Span raw count value	0-16777215
SC.LC.CZ#*n*	Temporary zero raw count value	0-16777215
SC.REZERO#*n*	Perform the Rezero calibration function	—
SC.SLOT#n	The physical slot the scale card is installed in	1-6
SC.CHANNEL#n	The channel on the scale card assigned to the scale	1-2
SC.SOURCESCALES#n	Defines the scales assigned to the total scale n	comma-delimited string of scale numbers
SC.CUNITS1#n	Defines the name for custom units 1	up to 8 alpha-numeric characters
SC.CUNITS2#n	Defines the name for custom units 2	up to 8 alpha-numeric characters
SC.CUNITS3#n	Defines the name for custom units 3	up to 8 alpha-numeric characters
SC.INITIALZERO#n	The Initial Zero range in % of full scale	0-100
SC.KIND#n	Defines the type of scale	NONE, ANALOG, TOTAL, ANALOG-INPUT, LFT-SERIAL, IND-SERIAL, PROGRAM
SC.ALGINTYPE#n	Defines the type of input for an analog input option card	10V, 100MV, AMBIENT CURRENT, J, K, T, E, N
SC.ALIAS#n	Defines a name for the scale	Up to 8 alpha-numeric characters.
SC.COMM#n	For Serial Input Scale Types, this tells the indicator which communications port the serial input data will be received on.	Up to 8 alpha-numeric characters. The value must be a valid name of one of the communications ports.
SC.INFORMAT#n	For Serial Input Scale types, this tells the indicator which of the four Stream Formats defines the format of the Serial Input Data.	1-4
SC.CALSTART.t#n	Used to start a serial command calibration sequence	t = Type: 1=Normal, 2=Last Zero, 3=Temp Zero
SC.CALEND#n	Used to finish a serial command calibration sequence	—
SC.FILTERCHAIN#n	Defines what filter to use	RAW, ADAPTIVEONLY, AVERAGEONLY
SC.DAMPINGVALUE#n	Sets the damping time constant	0-2560 (in 0.1 second intervals)
SC.ABTHRESHHOLD#n	Adaptive Filter weight threshold value	0-2000 (in display divisions)
SC.ABSENSITIVITY#n	Adaptive Filter sensitivity	LIGHT, MEDIUM, HEAVY
SC.MIN.WEIGHT#n	Minimum weighment setting	0.0 - 9999.9
SC.SMPRAT.10V#n	Sample rate of an Analog Input option card	10HZ, 50HZ, 60HZ, 250HZ
SC.PRI.ENABLED#n	Enable the Primary Units	OFF, ON
SC.SEC.ENABLED#n	Enable the Secondary Units	OFF, ON
SC.TER.ENABLED#n	Enable the Tertiary Units	OFF, ON
SC.RANGE1.FMT#n	Multi-Interval/Range range 1 format – decimal point and display divisions	8888100, 8888200, 8888500, 8888810, 8888820, 8888850, 8888881, 8888882, 8888885, 888888.1, 888888.2, 888888.5, 88888.81, 88888.82, 88888.85, 8888.881, 8888.882, 8888.885, 888.8881, 888.8882, 888.8885, 88.88881, 88.88882, 88.88885, 8.888881, 8.888882, 8.888885
SC.RANGE2.FMT#n	Multi-Interval/Range range 2 format – decimal point and display divisions	8888100, 8888200, 8888500, 8888810, 8888820, 8888850, 8888881, 8888882, 8888885, 888888.1, 888888.2, 888888.5, 88888.81, 88888.82, 88888.85, 8888.881, 8888.882, 8888.885, 888.8881, 888.8882, 888.8885, 88.88881, 88.88882, 88.88885, 8.888881, 8.888882, 8.888885

Table 15-4. Scales Commands (Continued)

Command	Description	Values
SC.MAX_DATE#n	Returns date and time of the maximum weighment.	--
SC.MAX_WEIGHT#n	Returns the value of the maximum weighment.	--
SC.NUMWEIGH#1	Returns the number of weighments that exceeded the minimum weighment value.	--
For commands ending with "#*n*", *n* is the scale number (1-8).		

Table 15-4. Scales Commands (Continued)

15.5 *1280* Calibration using Serial Commands

Use the following instructions to calibrate the *1280* using serial commands. For information on how to calibrate the *1280* using the front panel, see Section 4.2 on page 61.

Note *The indicator must respond with OK after each step. If it does not, the calibration procedure will not work and may have to be done again.*

1. Enter configuration mode (see Section 3.0 on page 53).
2. To start the calibration process, send the command *SC.CALSTART.n#s*. Replace s with the scale number, and n with 1 for a standard calibration, 2 to use the last calibrated zero or 3 to use the scale's temporary zero.
3. For a standard calibration, remove all weight from the scale (except hooks or chains that will be needed to attach weights). For last or temporary zero, skip to step 5.
4. Send the command *SC.WZERO#s* to calibrate the zero point. Wait 10 seconds before proceeding.
5. Apply the span calibration weight to the scale.
6. Send the command *SC.WVAL#s=xxxxx*, where *xxxxx* is the exact value of the span calibration weight applied to the scale.
7. Send the command *SC.WSPAN#s* to calibrate the span point. Wait 10 seconds before proceeding. Continue on to step 8 to calibrate additional linearization points, or proceed to step 12.
8. Apply weight equal to the first linearization point to the scale.
9. Send the command *SC.WLINVn#s=xxxxx*, where *n* is the linearization point number (1-4) and *xxxxx* is the exact value of the weight applied.
10. Send the command *SC.WLIN.Cn#s* to calibrate the linearization point. Wait 10 seconds before proceeding.
11. Repeat steps 9 through 11 for up to four total linearization points.
12. If hooks or chains were used to attach the weights, remove all weight, including the hooks and chains, and send the command *SC.REZERO#s* to remove the zero offset.
13. Send the command *SC.CALEND#s* to complete the calibration process. Save the calibration values. Wait 10 seconds before proceeding.
14. Send the command *KCOMMIT* to commit the new values to memory.
15. Send the command *KSAVEEXIT* to return to weigh mode (or press the Save and Exit icon on the display).

Command	Description	Values
EDP.INPUT#*p*	Port serial input function	PROGIN, CMD, SCALE, IND SC, UNKNOWN
EDP.BAUD#*p*	Port baud rate	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
EDP.BITS#*p*	Port data bits/parity	8NONE, 7EVEN, 7ODD, 8ODD, 8EVEN
EDP.TERMIN#*p*	Port line termination character	CR/LF, CR, ETX, EOT, FF

Table 15-5. Serial Port Commands

Command	Description	Values
EDP.STOPBITS#*p*	Port stop bits	1, 2
EDP.ECHO#*p*	Port echo	OFF, ON
EDP.RESPONSE#*p*	Port response	OFF, ON
EDP.EOLDLY#*p*	Port end-of-line delay	*0–255* (0.1-second intervals)
EDP.HANDSHK#*p*	Port handshaking	OFF, XONXOFF, HRDWAR
EDP.TYPE#*p*	Port type	232, 485, 422
EDP.DUPLEX#*p*	Port RS-485/RS-422 duplex	HALF, FULL
EDP.ADDRESS#*p*	Port RS-485 address	*0-255*
EDP.ALIAS#*p*	Defines a name for the port	Up to 8 Alpha-numeric characters
For commands including "#*p*", *p* is the port number (1-16).		

Table 15-5. Serial Port Commands (Continued)

CPU Ports

- Ports 1 and 2 are the two CPU board RS232/485/422 ports.
- Port 3 is the USB Device Port.
- Port 4 is the Bluetooth® SPP port on the Wi-Fi/Bluetooth® board.
- Ports 5 through 16 are assigned to dual serial option cards installed in slots 1-6.

Example – a serial option card in slot 1 will have ports 5 and 6; if installed in slot 6, it will have ports 15 and 16.

For ports 3 (USB) and 4 (Bluetooth®), the only parameters that matter are INPUT, TERMIN, ECHO, RESPONSE, EOLDLY, and ALIAS. All other parameters are ignored.

Command	Description	Values
WIRED.MACID	Ethernet hardware MAC ID (Read only)	xx:xx:xx:xx:xx:xx
WIRED.DHCP	Enable Ethernet DHCP	ON, OFF
WIRED.ENABLED	Enable Wired Ethernet Adapter	ON, OFF
WIRED.IPADDR	Ethernet IP address	Valid IP xxx.xxx.xxx.xxx*
WIRED.SUBNET	Ethernet subnet mask	Valid IP xxx.xxx.xxx.xxx*
WIRED.GATEWAY	Ethernet gateway	Valid IP xxx.xxx.xxx.xxx*
WIRED.PRIDNS	Ethernet primary DNS	Valid IP xxx.xxx.xxx.xxx*
WIRED.SECDNS	Ethernet secondary DNS	Valid IP xxx.xxx.xxx.xxx*
WIFI.MACID	Wi-Fi hardware MAC ID (Read only)	xx:xx:xx:xx:xx:xx
WIFI.DHCP	Enable Wi-Fi DHCP	OFF, ON
WIFI.ENABLED	Enable Wi-Fi Ethernet Adapter	ON, OFF
WIFI.IPADDR	Wi-Fi IP address	Valid IP xxx.xxx.xxx.xxx*
WIFI.SUBNET	Wi-Fi subnet mask	Valid IP xxx.xxx.xxx.xxx*
WIFI.GATEWAY	Wi-Fi gateway	Valid IP xxx.xxx.xxx.xxx*
WIFI.PRIDNS	Wi-Fi primary DNS	Valid IP xxx.xxx.xxx.xxx*
WIFI.SECDNS	Wi-Fi secondary DNS	Valid IP xxx.xxx.xxx.xxx*
WIFI.NETWORK	Wi-Fi network type	INFRASTRUCTURE
WIFI.SSID	Wi-Fi SSID	Up to 32 Alpha-numeric characters
WIFI.SECURITY	Wi-Fi security type	OPEN, SHARED, WPA, WPA2
WIFI.ENCRYPTION	Wi-Fi encryption type	TKIP, AES
WIFI.CRYPTO_KEY	Wi-Fi encryption key	Up to 15 Alpha-numeric characters
DIRECT.ENABLED	Enable Wi-Fi Direct	ON, OFF
TCPC1.ECHO	TCP Client 1 Echo	OFF, ON

Table 15-6. Ethernet TCP/IP and Wi-Fi Commands

Command	Description	Values
TCPC1.EOLDLY	TCP Client 1 End-of-line delay	0-255 (in 0.1 sec intervals)
TCPC1.IPADDR	TCP Client 1 remote server IP	Valid IP xxx.xxx.xxx.xxx*
TCPC1.LINETERM	TCP Client 1 line termination	CR/LF, CR, ETX, EOT, FF
TCPC1.NAME	TCP Client 1 name	Up to 16 Alpha-numeric characters
TCPC1.PORT	TCP Client 1 remote server port	1025-65535
TCPC1.RESPONSE	TCP Client 1 Response	OFF, ON
TCPC2.ECHO	TCP Client 2 Echo	OFF, ON
TCPC2.EOLDLY	TCP Client 2 End-of-line delay	0-255 (in 0.1 sec intervals)
TCPC2.IPADDR	TCP Client 2 remote server IP	Valid IP xxx.xxx.xxx.xxx*
TCPC2.LINETERM	TCP Client 2 line termination	CR/LF, CR, ETX, EOT, FF
TCPC2.NAME	TCP Client 2 name	Up to 16 Alpha-numeric characters
TCPC2.PORT	TCP Client 2 remote server port	1025-65535
TCPC2.RESPONSE	TCP Client 2 Response	OFF, ON
TCPS.ECHO	TCP Server echo	OFF, ON
TCPS.INPUT	TCP Server input type	CMD
TCPS.LINETERM	TCP Server line termination	CR/LF, CR, ETX, EOT, FF
TCPS.NAME	TCP Server name	Up to 16 Alpha-numeric characters
TCPS.PORT	TCP Server port number	1025-65535
TCPS.RESPONSE	TCP Server response	OFF, ON
UDPS.LINETERM	UDP Server line termination	CR/LF, CR, ETX, EOT, FF
UDPS.NAME	UDP Server name	Up to 16 Alpha-numeric characters
UDPS.PORT	UDP Server port number	1025-65535
BT.MACID	Bluetooth® Mac ID	xx.xx.xx.xx.xx.xx
TCPC1.DISCTIME	TCP Client 1 Disconnect Time (in seconds)	0-60 (0= do not disconnect)
TCPC2.DISCTIME	TCP Client 2 Disconnect Time (in seconds)	0-60 (0= do not disconnect)
TCPC1.INPUT	TCP Client 1 Input Function	CMD, PROGIN, SCALE, IND SC
TCPC2.INPUT	TCP Client 2 Input Function	CMD, PROGIN, SCALE, IND SC
* A valid IP consists of four numbers, in the range of 0 to 255, separated by a decimal point. Example – "127.0.0.1" and "192.165.0.230" are valid IP addresses.		

Table 15-6. Ethernet TCP/IP and Wi-Fi Commands (Continued)

Command	Description	Values
STRM.FORMAT#n	Stream format	RLWS, CARDINAL, WEIGHTRONIX, TOLEDO, CUSTOM
STRM.CUSTOM#n	Custom stream definition	Up to 200 alpha-numeric characters
STRM.DESTINATION#n	Stream destination port	A comma delimited list of communications ports. Values: NONE, PORT1 - PORT16, TCPC1, TCPC2, and UDPS. Example - to stream format 1 to ports 1, 3, and TCPC2: "STRM.DESTINATION#1=PORT1,PORT3,TCPC2"
STRM.SOURCE#n	Source scale	0-8 (0 is a source of none)
STRM.STREAM#n	Stream frame update rate	OFF, LFT, INDUST
STRM.GROSS#n	Mode token when streaming the Gross weight	Up to 8 alpha-numeric characters
STRM.NET#n	Mode token when streaming the Net weight	Up to 8 alpha-numeric characters
STRM.PRI#n	Units token when streaming Primary units	Up to 8 alpha-numeric characters
STRM.SEC#n	Units token when streaming Secondary units	Up to 8 alpha-numeric characters
STRM.TER#n	Units token when streaming Tertiary units	Up to 8 alpha-numeric characters
STRM.INVALID#n	Status token when streaming an Invalid weight	Up to 2 alpha-numeric characters
STRM.MOTION#n	Status token when the weight is in motion	Up to 2 alpha-numeric characters
STRM.POS#n	Polarity token when the weight is positive	SPACE, NONE, +
STRM.NEG#n	Polarity token when the weight is negative	SPACE, NONE, -
STRM.OK#n	Status token when the weight is OK (not invalid, out of range, at zero, or in motion)	Up to 2 alpha-numeric characters
STRM.TARE#n	Mode token when streaming the tare weight	Up to 8 alpha-numeric characters
STRM.ZERO#n	Status token when the weight is at Center of Zero	Up to 2 alpha-numeric characters
STRM.RANGE#n	Status token when the weight is Out of Range	Up to 2 alpha-numeric characters
For commands with "#n", n is the Stream format (1-4).		

Table 15-7. Stream Formatting Commands

Command	Description	Values
DATEFMT	Date format	MMDDYYYY, DDMMYYYY, YYYYMMDD, YYYYDDMM
DATESEP	Date separator	SLASH, DASH, SEMI
TIMEFMT	Time format	12HOUR, 24HOUR
TIMESEP	Time separator	COLON, COMMA
DECFMT	Decimal format	DOT, COMMA
TIMEDATELOCK	Returns current status, only work in setup mode	OFF, ON
CONSNUM	Consecutive numbering	*0–9999999*
CONSTUP	Consecutive number start-up value	*0–9999999*
UID	ID of the indicator	Up to 8 alphanumeric characters
ALIBI	Alibi data storage	OFF, ON
CONTRAST	Adjusts the contrast level	0*–255*
CFGPWD	Configuration password	*Up to 12 alphanumeric characters. Set as nothing (no characters) in order to not have a password. 999999 is the rescue password, it will reset all parameters to faculty defaults. Do not use it as a password.*

Table 15-8. Feature Commands

Command	Description	Values
SPPWD	Setpoint password	*Up to 12 alphanumeric characters. Set as nothing (no characters) in order to not have a password.*
CALPWD	Calibration password	*Up to 12 alphanumeric characters. Set as nothing (no characters) in order to not have a password.*
SK.OP#1 – SK.OP#32	Softkey assignment	NONE, TIMEDATE, DATABASE, DSPTAR, DSPACC, DSPROC, SETPT, BATSTRT, BATSTOP, BATPAUSE, BATRST, UID, SCLSEL, SKUD1-SKUD10, BLANK, DIAG, ALIBI, CONTRAST, TEST, STOP, GO, OFF
SKT.TEXT#1 - SKT.TEXT#10	User-defined (SKUD1-SKUD10) softkey text	Up to 20 alpha-numeric characters
OSKYPD	Enables the on-screen fly out keypad	OFF, ON
OSKYPDLK	Locks the on-screen fly out keypad in place, instead of closing it automatically when a button is pressed	OFF, ON
KYBDLK	Keyboard lock (disable keypad)	OFF, ON
ZERONLY	Disable all keys except ZERO	OFF, ON
DISPLAY.SOFTKEYS	Auto populate softkeys permanently (not using the softkey widget)	OFF, ON
CONTACT.COMPANY	Contact company name	Up to 30 alphanumeric characters
CONTACT.ADDR1 CONTACT.ADDR2 CONTACT.ADDR3	Contact company address	Up to 30 alphanumeric characters (for each line)
CONTACT.NAME1 CONTACT.NAME2 CONTACT.NAME3	Contact names	Up to 20 alphanumeric characters (for each line)
CONTACT.PHONE1 CONTACT.PHONE2 CONTACT.PHONE3	Contact phone numbers	Up to 20 alphanumeric characters (for each line)
CONTACT.EMAIL	Contact e-mail address	Up to 30 alphanumeric characters.
CONTACT.NEXTCAL	Next calibration date	Date MMDDYYYY as an 8-digit number.
CONTACT.LASTCAL	Last calibration date	Date MMDDYYYY as an 8-digit number.
LOCALE	Enable gravity compensation	OFF, ON
LAT.LOC	Origin Latitude (to nearest degree) for gravity compensation.	0–90
ELEV.LOC	Origin Elevation (in meters) for gravity compensation.	±0–9999
DEST.LAT.LOC	Destination Latitude (in degrees) for gravity compensation	0-90
DEST.ELEV.LOC	Destination Elevation (in meters) for gravity compensation	+/- 9999
AUTOBKLGHT	Auto Backlight Control	OFF, ON
BKLGHT	The brightness of the backlight	OFF, LOW, MED, HIGH
LOCALREMOTE-SERVERADDRESS	IP Address of the Local in a Local/Remote Application *If not a Local/Remote application, the IP Address must be set to 127.0.0.1.*	Valid IP xxx.xxx.xxx.xxx*

Table 15-8. Feature Commands (Continued)

Command	Description	Values
LANGUAGE	Sets the default display language	EN (English), ES (Spanish), FR (French), PT (Portuguese), IT (Italian), DE (German), NL (Dutch), DA (Danish), SV (Swedish), RU (Russian), UK (Ukranian), HE (Hebrew), TH (Thai), ZH (Chinese), AR (Arabic), TR (Turkish)
ADVPRN. MANUFACTURER	Advanced Printer manufacturer	alphanumeric string
ADVPRN.MODEL	Advanced Printer Model name	alphanumeric string
ADVPRN.DEVICE.URI	Advanced Printer Device URI	alphanumeric string

Table 15-8. Feature Commands (Continued)

Command	Description	Values
REGULAT	Regulatory mode	NONE, NTEP, CANADA, OIML, INDUST, INMETRO, NMI
AUDAGNCY	Audit Agency (Industrial Mode)	NONE, OIML, NTEP, CANADA, INDUST, INMETRO, NMI
REG.SNPSHOT	Display or Scale weight source	DISPLAY, SCALE
REG.HTARE	Allow tare in display hold	NO, YES
REG.ZTARE	Remove tare on ZERO	NO, YES
REG.KTARE	Always allow keyed tare	NO, YES
REG.MTARE	Multiple tare action	REPLACE, REMOVE, NOTHING
REG.NTARE	Allow negative tare	NO, YES
REG.CTARE	Allow Clear key to clear tare/accumulator.	NO, YES
REG.SOURCEZT	Clear Tare scales individually	NO, YES
REG.NEGTOTAL	Allow total scale to display negative value	NO, YES
REG.PRTMOT	Allow print while in motion	NO, YES
REG.PRINTPT	Add PT to keyed tare print	NO, YES
REG.PRTHLD	Print during display hold	NO, YES
REG.HLDWGH	Allow weighment during display hold	NO, YES
REG.MOTWGH	Allow weighment in motion	NO, YES
REG.OVRBASE	Zero base for overload calculation	CALIB_ZERO, SCALE_ZERO
REGWORD	Regulatory word	GROSS, BRUTTO
REG.RTARE	Round the Pushbutton Tare	STANDARDSUMMING, HIGHRESOLUTION
REG.RKTARE	Round the Keyed Tare	STANDARDSUMMING, HIGHRESOLUTION
REG.TOTAL.DP.MATCH.SOURCE	Does the total scale decimal have to match the source scales	NO, YES
REG.AZTNET	Perform AZT on Net value	NO, YES
REG.MANUALCLEARTARE	Allow the manual clearing of the tare value	NO, YES
REG.MONORAIL	Monorail mode	NO, YES
REG.TAREINMOTION	Allow Tare in Motion	NO, YES
REG.UNDERLOAD	The Underload weight value in display divisions	1-9999999

Table 15-9. Regulatory Commands

Command	Description	Values
REG.ZEROINMOTION	Allow scale to be zeroed while in motion	NO, YES
SCRN.SAVE	Enable screen saver	ON, OFF
SCRN.THRESH	Screen saver weight threshold	0-1000
SCRN.TIME	Screen saver activation time (in seconds)	10-120

Table 15-9. Regulatory Commands (Continued)

Command	Description	Values
BATCHNG	Batching mode	OFF, AUTO, MANUAL
SP.KIND#*n*	Setpoint kind	OFF, GROSS, NET, -GROSS, -NET, ACCUM, +REL, -REL, %REL, PAUSE, DELAY, WAITSS, COUNTER, AUTOJOG, COZ, INMOTON, INRANGE, BATCHPR, TIMER, CONCUR, DIGIN, TOD, ALWAYS, NEVER, DINCNT, DELTA
SP.VALUE#*n*	Setpoint value	0.0-9999999
SP.SOURCE#*n*	Source scale	SCALEn (n=1-8)
SP.TRIP#*n*	Trip	HIGHER, LOWER, INBAND, OUTBAND
SP.BANDVAL#*n*	Band value	0.0-9999999
SP.HYSTER#*n*	Hysteresis	0.0-9999999
SP.PREACT#*n*	Preact type	OFF, ON, LEARN, FLOW
SP.PREVAL#*n*	Preact value	0-9999999
SP.PREADJ#*n*	Preact adjustment percentage	0-100
SP.PRESTAB#*n*	Preact learn stability	0-65535 (in tenths of a second, 15=1.5 seconds)
SP.PCOUNT#*n*	Preact learn interval	1-65535
SP.TOLBAND#*n*	Target tolerance	0.0-9999999
SP.TOLCNT#*n*	Tolerance count	0-65535
SP.BATCH#*n*	Batch step enable	OFF, ON
SP.CLRACCM#*n*	Clear accumulator enable	OFF, ON
SP.CLRTARE#*n*	Clear tare enable	OFF, ON
SP.PSHACCM#*n*	Push accumulate	OFF, ON, ONQUIET
SP.PSHPRINT#*n*	Push print	OFF, ON, WAITSS
SP.PSHTARE#*n*	Push tare	OFF, ON
SP.ALARM#*n*	Alarm enable	OFF, ON
SP.ALIAS#n	Setpoint name	Up to 8 Alpha-numeric characters
SP.ACCESS#*n*	Setpoint access	OFF, ON, HIDE
SP.DSLOT#*n*	Digital output slot	NONE, 0, 1, 2, 3, 4, 5, 6
SP.DIGOUT#*n*	Digital output	1 - 24
SP.SENSE#*n*	Digital output sense	NORMAL, INVERT
SP.BRANCH#*n*	Branch destination	0-100 (0 = do not branch)
SP.RELNUM#*n*	Relative setpoint number	*1–100*
SP.START#*n*	Starting setpoint	*1–100*
SP.END#*n*	Ending setpoint	*1–100*
SP.DISLOT#*n*	Digital input slot	NONE, 1, 2, 3, 4, 5, 6
SP.MASK#*n*	Digital input mask	0-16777216
SP.TIME#*n*	Trip time	hhmm

Table 15-10. Setpoints Commands

Command	Description	Values
SP.DURATION#*n*	Trip duration	*hhmmss*
SP.ENABLE#*n*	Setpoint enable	OFF, ON
For setpoint commands ending with "#*n*", *n* is the setpoint number (1-100).		

Table 15-10. Setpoints Commands

Command	Description	Values
GFMT GFMT.PORT GFMT.PORT2	Gross demand print format string	Each format can be sent out one or two ports. For the .PORT and .PORT2 commands, specify the port name as one of the following: PORTn (n=1-16), TCPC1 or TCPC2. Example: To send the Gross format out both RS-232 Port 2 and the TCPC1 Port at the same time, send: GFMT.PORT=PORT2 GFMT.PORT2=TCPC1 For AUXFMT.FMT and .PORT commands, specify the auxiliary format number (1—20) as .FMT#n or .PORT#n. Example: AUXFMT.FMT#8=GROSS<G><NL2>... See Section 7.0 on page 89 for information about demand print format strings.
NFMT NFMT.PORT NFMT.PORT2	Net demand print format string	
ACC.FMT ACC.PORT ACC.PORT2	Accumulator print format string	
SPFMT.FMT SPFMT.PORT SPFMT.PORT2	Setpoint print format string	
ALERT.FMT ALERT.PORT ALERT.PORT2	Alert format string	
HDRFMT1 HDRFMT2	Ticket header format strings	
AUXFMT.FMT#nn AUXFMT.PORT#nn AUXFMT.PORT2#nn	Auxiliary ticket format	
AUD.PORT AUD.PORT2	Audit trail port	

Table 15-11. Print Format Commands

Command	Description	Values
WDGT#*n*	Defines a display widget (n=1-256)	Example Scale Widget Command: WDGT#A=1,B,C,D,E,F,G,H<CR> where – A: widget number; B: left; C: top; D: size 1-7;; E: displayed 1-4; F: which screen 1-99; G: foreground color; H: background color. Example Bitmap Widget Command: WDGT#A=2,B,C,D,E,F,G,H,I,J<CR> where – A: widget number; B: left; C: top; D: width; E: height; F: border (1 or 2); Bitmap (1-3); G: alias; H: visible (1 or 2); I: which screen 1-99 Example Bar Graph Widget Command: WDGT#A=3,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P<CR> where – A: widget number; B: left; C: top; D: width; E: height; F: border; G: style(1-3); H: graduation (1 or 2); I: orientation (1-3); J: Color; K: alias; L: source (1-3); M: field (1-3); N: subfield; O: visible (1 or 2); P: which screen 1-99 Example Label Widget Command: WDGT#A=4,B,C,D,E,F,G,H,I,J,K,L,,M,N,O,P<CR> where – A: widget number; B: left; C: top; D: width; E: height; F: text caption; G: border (1 or 2); H: justification (1-3); I: font; J: color; K: alias; L: source; M: field; N: subfield; O: visible; P: which screen 1-99 Example Symbol Widget Command: WDGT#A=6,B,C,D,E,F,G,H,I,J,K,L,,M,N,O where – A: widget number; B: left; C: top; D: style (1-48); E: State (1-4) F: Color (1-16) G: alias; H: source; I: field; J: subfield; K: visible (1 or 2); L: which screen 1-99 Example Chart Widget Command: WDGT#A=8,B,C,D,E,F,G,H where – A: widget number; B: left; C: top; D: width; E: height, F: Visible; G: Style ; H: which screen (1-99) See Section 14.0 on page 135 for widget programming information.
WDGT.CLR	Clear widgets	Clears all display widgets.

Table 15-12. Display Widget Commands

Command	Description	Values
DON.*b#s*	Set digital output on (active) at bit *b*, slot *s*.	—
DOFF.*b#s*	Set digital output off (inactive) at bit *b*, slot *s*.	—
DIO.*b#s*	Digital input function	OFF, INPUT, OUTPUT, PROGIN, ZERO, NT/GRS, TARE, UNITS, PRINT, ACCUM, SETPNT, TIMDATE, CLEAR, DSPTAR, KEY1, KEY2, KEY3, KEY4, KEY5, KEY6, KEY7, KEY8, KEY9, KEYDP, KEY0, ENTER, NAVUP, NAVDN, NAVLFT, NAVRGT, KBDLOC, HOLD, BATRUN, BATSTRT, BATPAUS, BATRESET, CLRCN, GROSS, NET, PRIM, SEC, TER, CLRTAR, CLRACC, BATSTOP, PULSEIN
DIO.ALIAS.b#s	Name for the DIO bit	Up to 16 Alpha-numeric characters
Valid bit values are 1-24. Valid slot values are 0 (onboard) to 6.		

Table 15-13. Digital I/O Commands

Command	Description	Values
ALG.ALIAS#*s*	Analog output alias	Up to 8 Alpha-numeric characters
ALG.SOURCE#*s*	Analog output source	PROG, SCALEn (n=1-8)
ALG.MODE#*s*	Mode	GROSS, NET
ALG.OUTPUT#s	Type of output	0-10V, 0-20MA, 4-20MA
ALG.ERRACT#*s*	Error action	FULLSC, HOLD, ZEROSC
ALG.MIN#*s*	Minimum value tracked	±*9999999*
ALG.MAX#*s*	Maximum value tracked	±*9999999*
For commands ending with "#*s*", *s* is the analog output number. Analog outputs are numbered based on the slot in which they are installed. For an example, Slot 1 has output 1 (and 2 if dual), Slot 2 has output 3 (and 4 if dual).		

Table 15-14. Analog Output Commands

Command	Description	Values
FB.BYTESWAP#*s*	Swap data bytes	NONE, BYTE, WORD, BOTH
FB.SIZE#*s*	Number of bytes to transfer	*0–128 (0=disabled)*
FB.DVCNET#s	DeviceNet Address	1-64
FB.PRFBUS#s	Profibus Address	1-126
For commands ending with "#*s*", *s* is the slot number (1-6).		

Table 15-15. Fieldbus Commands

15.6 Weigh Mode Commands

These commands will function in the weighing mode. Non weight related commands will also work in configuration modes.

Command	Description	Values
CONSNUM	Set consecutive number	0-9999999
UID	Set unit ID	Up to 8 Alpha-numeric characters
SD	Set or return the current system date	*MMDDYY*, *DDMMYY*, *YYMMDD*, or *YYDDMM*. Enter six-digit date using the year-month-day order specified for the DATEFMT parameter, using only the last two digits of the year. The current system date is returned by only sending *SD*.
ST	Set or return the current system time	*hhmm* (enter using 24-hour format) The current system time is returned by only sending *ST*.
SX#*n*	Start serial data stream n (n=1-4)	OK *or* ?? An EX command sent while in setup mode does not take effect until the indicator is returned to weigh mode.
EX#*n*	Stop serial data stream n (n=1-4)	
RS	Reset system	Soft reset. Used to reset the indicator without resetting the configuration to the factory defaults.
SF#*n*	Returns a single stream frame from scale n (n=1-8) using the standard Rice Lake format.	--
XA#*n*	Returns the accumulator value in displayed units	*nnnnnnnnn UU*
XAP#*n*	Returns the accumulator value in primary units	
XAS#*n*	Returns the accumulator value in secondary units	
XAT#*n*	Returns the accumulator value in tertiary units	
XG#*n*	Returns the gross weight in displayed units	*nnnnnnnnn UU*
XGP#*n*	Returns the gross weight in primary units	
XGS#*n*	Returns the gross weight in secondary units	
XGT#*n*	Returns the gross weight in tertiary units	
XN#*n*	Returns the net weight in displayed units	*nnnnnnnnn UU*
XNP#*n*	Returns the net weight in primary units	
XNS#*n*	Returns the net weight in secondary units	
XNT#*n*	Returns the net weight in tertiary units	
XT#*n*	Returns the tare weight in displayed units	*nnnnnnnnn UU*
XTP#*n*	Returns the tare weight in primary units	
XTS#*n*	Returns the tare weight in secondary units	
XTT#*n*	Returns the tare weight in tertiary units	
XP#*n*	Return probe temperature	*nnnnnnnnn UU*
XPP#*n*	Return probe primary temperature	
XPS#*n*	Return probe secondary temperature	
XPT#*n*	Return probe tertiary temperature	

Table 15-16. Weigh Mode Commands

Command	Description	Values
Unless otherwise specified, n= Scale Number, 1 through 8. If the scale number is omitted, the value returned is for the currently selected scale.		

Table 15-16. Weigh Mode Commands (Continued)

15.7 Batching Control Commands

The commands listed in Table 15-17 provide batching control through a communications port.

Command	Description	Values
BATSTART	Batch Start	If the BATRUN digital input is active or not assigned, the BATSTART command can be used to start the batch program.
BATSTOP	Batch Stop	Stops an active batch and turns off all associated digital outputs. Requires a Batch Start to resume processing.
BATPAUSE	Batch Pause	Pauses an active batch and turns off all digital outputs except those associated with Concurrent and Timer setpoints. Processing is suspended until the indicator receives a Batch Start signal. Pressing the BATSTRT digital input, BATSTART serial command, Batch Start softkey or the StartBatch function (in iRite) resumes the batch and re-energizes all digital outputs turned off by the Batch Pause.
BATRESET	Batch Reset	Stops the program and resets the batch program to the first batch step. Use the BATRESET command after making changes to the batch configuration.
BATSTATUS	Batch Status	Returns *XYYY* where *X* is *S* (if the batch is stopped), *P* (if the batch is paused), *R* (if the batch is running); and *YYY* is the setpoint number the batch is currently on (1-100).
Unless otherwise specified, n= Scale Number, 1 through 8. If the scale number is omitted, the value returned is for the currently selected scale.		

Table 15-17. Batching Control Commands

15.8 Database Commands

The commands listed in Table 15-18 can be used to create and maintain databases in the *1280*. Except for the DB.DELALL command, all of the database commands require an extension to identify the number of the database within the memory.

Command	Description
DB.ALIAS#*n*	Get or set database name
DB.CLEAR#*n*	Clear database contents
DB.DATA#*n*	Get or set database contents
DB.SCHEMA#*n*	Get or set database structure
DB.DELALL	Delete all databases and database contents
n represents the database number (n = 1-128). Each command must be terminated with a carriage return character (<CR>, ASCII 13).	

Table 15-18. Database Commands

db.alias

The *DB.ALIAS* command is used to get or set the alias used by *iRite* programs to reference the specified database. Each database alias must be unique among all databases and adhere to the following rules: 8 character maximum; must begin with an alpha character or an underscore; can only contain A–Z, a–z, 0–9, or an underscore (_).

Example. The following command assigns an alias of TRUCKS_2 to the first database:

DB.ALIAS#1=TRUCKS_2<CR>

Sending the *DB.ALIAS* command alone, without assigned data, returns the current database alias.

db.clear

To clear the contents of a database, send the following command:

DB.CLEAR#*n*

Where:

n is the database number

The *1280* responds with *OK* if the command is successful, *??* if unsuccessful.

db.data

The *DB.DATA* command can be used to send data to or retrieve data from the *1280*.

Data can be sent to the indicator using the following command:

DB.DATA#*n* = *data*{ | }<CR>

Where:

n is the database number

data represents a single cell of a row of data

{ | } is a pipe character (ASCII 124), used to delimit cell data. If the data being sent is not the last cell of the row, append the pipe character to the data to indicate that more data is coming for that particular row. If the data being sent is the last cell of the row, do not append the pipe character.

If the command is accepted, the *1280* responds with *OK*; if not, it responds with *??*.

Example. The following commands place the data shown in Table 15-19 into the first database:

DB.DATA#1=this|<CR>
DB.DATA#1=is|<CR>
DB.DATA#1=a|<CR>
DB.DATA#1=test<CR>
DB.DATA#1=aaa|<CR>
DB.DATA#1=bbb|<CR>
DB.DATA#1=ccc|<CR>
DB.DATA#1=ddd<CR>

Record	Cell			
	1	2	3	4
first	this	is	a	test
second	aaa	bbb	ccc	ddd

Table 15-19. Database Commands Example

Sending the *DB.DATA* command alone, without assigned data, returns the database contents:

DB.DATA#*n*<CR>

The *1280* responds with the entire contents of the database. Returned data is cell-delimited with the pipe character (ASCII 124) and row-delimited with carriage returns (ASCII 13).

For example, the following command could be used to return the contents of database 1:

DB.DATA#1<CR>

If the database contents are the records shown in Table 15-19, the indicator responds with the following data, using pipe characters and carriage returns to delimit the database cells and rows, respectively:

this|is|a|test<CR>aaa|bbb|ccc|ddd<CR>

Note *There is no* end of database *notification at the end of the DB.DATA command transmission. Use a receive time-out to determine command completion. The time-out value will vary based on baud rate.*

Determine the number of records currently in the database both prior to and after sending the *db.data* command to verify that the correct number of records are received. The number of records can be determined with the *DB.SCHEMA* command.

db.schema

The *DB.SCHEMA* command is used to get or set the structure of a database.

DB.SCHEMA#*n*<CR>

The *1280* responds to the command above by returning the following:

<Max Records>,<Current Record Count>,
<Column Name>,<Data Type>,<Data Size>,...<CR>

The *<Column Name>*, *<Data Type>*, and *<Data Size>* elements repeat for each column in the database.

The *<Column Name>* follows the rules for alias names: 8 character maximum; must begin with an alpha character or an underscore; can only contain A–Z, a–z, 0–9, or an underscore (_).

The *<Data Type>* is represented by a numeric field:

Value	Type
1	Byte
2	Short (16-bit integer)
3	Long (32-bit integer)
4	Single (32-bit floating point)
5	Double (64-bit floating point)
6	Fixed string
7	Variable string
8	Date and time

Table 15-20. Database Data Types

The *<Data Size>* value must match the data type. A range of data size values is allowed only for the string data types:

Size	Value
Byte	1
Short	2
Long	4
Single	4
Double	8
Fixed string	1–255
Variable string	1–255
Date and time	8

Table 15-21. Database Data Sizes

The *DB.SCHEMA* command can also be used to modify the schema, but only when the indicator is in setup mode and only if the database does not contain any data.

15.9 iQube2 Configuration Commands

The 1280 contains the configuration of any connected iQube2. This configuration is stored using the already existent iQube2 EDP command, but in a specialized format. For a complete list of iQube2 commands, reference the iQube2 Manual (PN 67888).

This is only valid for iQube2 configuration commands stored in the 1280 and is not direct a real-time pass through connection to the iQube2. Weigh mode commands and some system commands are not supported.

Format: SJ.<iQube2-EDP-Command>#<Connection Port>

Example 1:

Set Unit ID of iQube2 Scale 1 to 123

iQube2 EDP Command: SC1.UID=123

1280 Port that the iQube2 is connected to: Port 2

EDP Command for the 1280 then becomes: SJ.SC1.UID#PORT2=123

Example 2: Set iQube2 capacity of loadcell number 6 to 25,000

iQube2 EDP Command: LC6.CAPACITY=25000

1280 Port that the iQube2 is connected to: TCP Client1

EDP Command for the 1280 then becomes: SJ.LC6.CAPACITY#TCPC1=25000

16.0 Specifications

Power AC

Line Voltages	100-240 VAC (Range 85-265 VCA)
Frequency	50 or 60 Hz
Power Consumption	60 Watts

Power DC

Line Voltages	11-30 VDC (Range 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	–60 mV to +60 mV
Analog Signal Sensitivity	1.0 µV/graduation minimum at 7.5 Hz -120 Hz 4.0 µV/graduation typical @ 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,

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, maximum pulse input frequency is 5 kHz
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)
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/TKIP/AES

Operator Interface

Display	TFT WVGA Color
7 inch	800 x 480 Resolution White LED Backlight 500 NIT – Standard 1000 NIT – Viewable Outdoors
12 inch	1280 x 800 Resolution White LED Backlight 1500 NIT – Standard
Keyboard	22-key membrane panel, tactile feel
Touchscreen	5-wire resistive

Memory

Onboard	8GB eMMC (system use),1GB DDR3 460 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

7 Inch with Keypad
Universal Mount, Panel Mount, Wall Mount
7 Inch Touch Only
Panel Mount
12 Inch Touch Only
Panel Mount

Certifications and Approvals

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

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

File Number: R76/20006 - NL1 - 16.04
European: TC8596,
Accuracy Class III/IIII n_{max} : 10,000d

4d Panel Mount and Universal

4a Panel Mount

Approvals for 7 inch and 12 inch touch-only panel mounts - pending

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