

# 1280 Enterprise Series™

*Color Touchscreen Indicator*

## Operation Manual



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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<sup>®</sup> 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<sup>®</sup>, 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 are available for viewing and/or downloading from the Rice Lake Weighing Systems website at [www.ricelake.com/manuals](http://www.ricelake.com/manuals)

Warranty information can be found on the website at [www.ricelake.com/warranties](http://www.ricelake.com/warranties)

## 1.1 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

### 1.1.1 Other Features

- Built in Web Server for remote access to screens
- Configurable print formats can be defined for up to 1000 characters. 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 Specifications for more information.

### 1.1.2 Enclosure Types

- Universal
- Panel Mount – numeric keypad
- Panel Mount – touch only (7" and 12" display)
- Wall Mount

### 1.1.3 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.

## 1.2 Safety

### Safety Signal Definitions:



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.



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.



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



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.*



*Failure to heed could 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.*

## 1.3 Weigh Mode

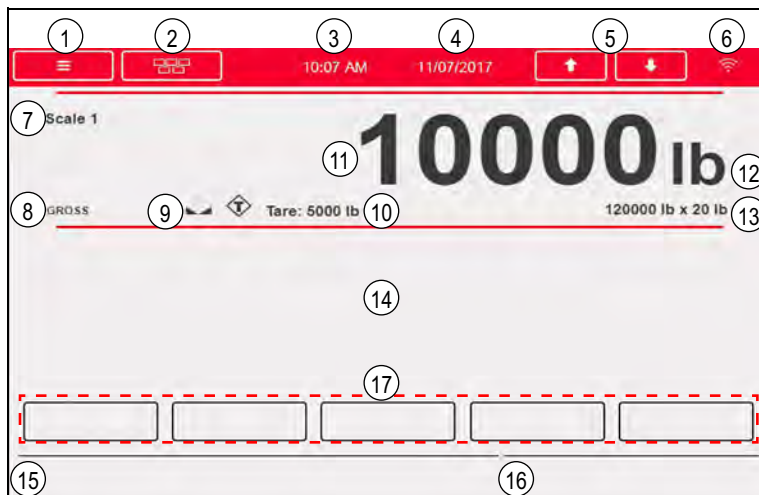


Figure 1-1. Weighing Mode Display Screen



**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 – press to enter; <b>Zero, Tare, Gross/Net, Print</b> and <b>Units</b> 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 display the <b>Network Information Screen</b> which includes information on Wired Ethernet, Wi-Fi, Wi-Fi Direct and Bluetooth®; allows restart all network connections
Weight Display Area	
7	Current scale – number of currently displayed scale
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	Softkeys – five softkeys that can be setup from from the default list, or 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.

## 1.4 Numeric/Alpha Entry

When data entry is required, a keyboard or a numeric keypad displays on the screen. The indicator's front panel is also equipped with a numeric keypad.



Figure 1-2. On-screen Alphanumeric Keyboard

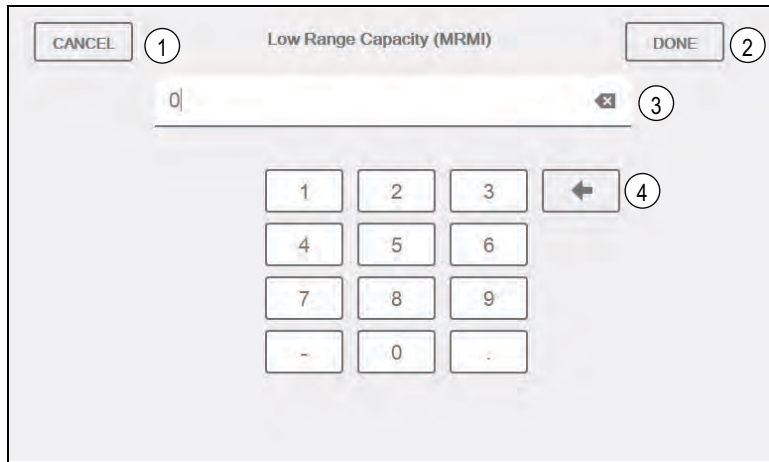


Figure 1-3. On-screen Numeric Keypad

Item No.	Description
1	Cancel – exits keyboard
2	Done – completes keyboard entry
3	Clear – deletes everything in the prompt line
4	Backspace – deletes one character at a time

Table 1-2. Keyboard Descriptions



## 1.5 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.




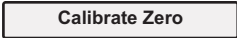

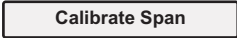

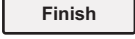



Item No.	Description
1	Configuration – may be inaccessible to the operator by password protection
2	Calibration – allows the operator to perform a calibration
3	Setpoint Values – access to setpoint targets and settings
4	Audit Trail – view number of configuration and calibration edits, plus the last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

Table 1-3. Main Menu User Interface

### 1.5.1 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 .
3. Select the method of calibration. Press .
4. Select if chains, hooks or other items are being used with the weights during calibration.
5. Press .
6. Remove all weight from the scale except for chains and hooks (if used).
7. Press . The current weight and **Zero Calibration Complete** displays.
8. Press .
9. 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.
10. 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.
11. Press . The current span weight displays.
12. Press . Calibration results display.
13. Press . Display returns to Calibration menu.
14. If hooks or chains were used during calibration, remove these and the test weights from the scale. 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.
15. Press .

## 1.5.2 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: <ul style="list-style-type: none"> <li>• <b>Trip = Higher</b> – associated digital output is active until the setpoint value is exceeded.</li> <li>• <b>Trip = Lower</b> – output is active until the weight goes below the setpoint value.</li> <li>• <b>Trip = Inband</b> – setpoint is satisfied when the weight is within a band established around the value.</li> <li>• <b>Trip = Outband</b> – setpoint is satisfied when weight is outside a band established around the value, excluding the value.</li> </ul>

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 <b>Setpoint</b> softkey in weigh mode. If set to <b>Off</b> , values can be displayed but not changed. If set to <b>Hide</b> , 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

## 1.5.3 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  to send the audit trail data out the configured communications port (default is port 1).
2. Select  to return to the weigh mode.

Audit Trail			
Legally Relevant Version: 1.0			
Regulatory Agency: NTEP			
	Configuration	Calibration	Last Calibration Date
System	0		
Scale 1	5	4	02:34 PM 04/10/2015
Scale 2	2	2	02:34 PM 04/10/2015
Scale 3	2	0	
Scale 4	2	2	02:34 PM 04/10/2015
Scale 5	2	2	02:34 PM 04/10/2015
Scale 6	2	0	
Scale 7	2	2	02:34 PM 04/10/2015
Scale 8	0	0	
<input type="button" value="Print"/> <input type="button" value="Done"/>			

Figure 1-4. Audit Trail Screen

## 1.5.4 Language

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

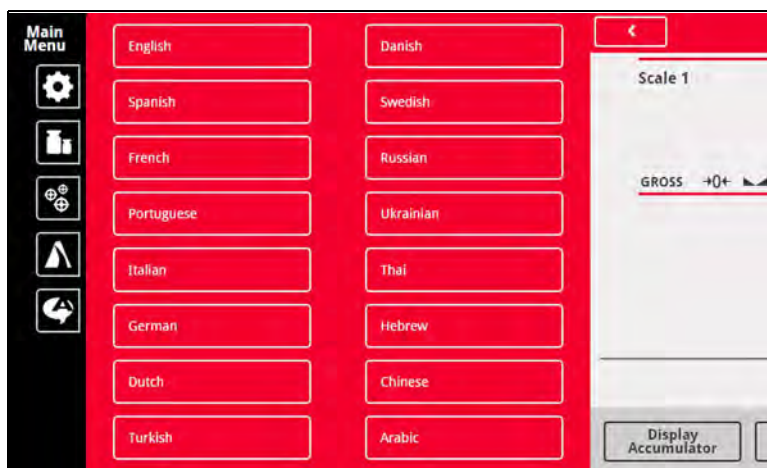
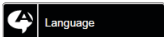




Figure 1-5. Language Selections

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

## 1.5.5 Return to Weigh Mode

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



displays for a few seconds, then display returns to the weigh mode.

## 1.6 Indicator Virtual Keypad Operation

Press  to open the virtual keypad. **Zero**, **Tare**, **Gross/Net**, **Print** and **Units** function the same as the physical keys located on the front panel of the keyed 1280.

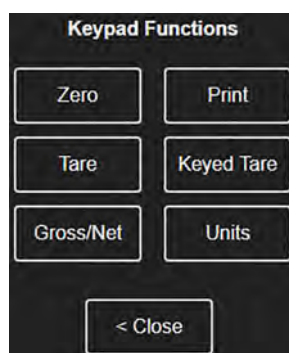


Figure 1-6. Virtual Keypad Functions


**Keyed Tare** is the equivalent to the keyed tare softkey. Press , a numeric keypad displays to enter a tare value.

### 1.6.1 Toggle Gross/Net Mode

Press  to toggle the display mode between gross and net.


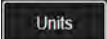
- If a tared value is in the system, **Net** is displayed (net equals gross minus tare)
- If there is no tare in the system, **Gross** is displayed

### 1.6.2 Toggle Units

Press  to toggle between primary, secondary and tertiary units.

### 1.6.3 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 . When  $\rightarrow 0 \leftarrow$  displays, the scale is zeroed.

### 1.6.4 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 . Net displays, indicating the weight has been tared.

#### Remove Stored Tare Value

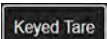
Used to remove a stored tare value.

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


Alternatively, remove a stored tare value using a keyed tare of zero.


#### Keyed Tare



Used to add a keyed tare.

1. Press . A numeric keypad displays
2. Enter a value and press **Done**.

### 1.6.5 Print Ticket

Press  to send 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.

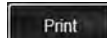
To print tickets using auxiliary formats (1-20), press the  softkey (not part of virtual keypad).

1. Wait for  to display.
2. Press .
3. Enter an auxiliary format number (1-20) and press **Done** to send the data to the serial port.

### 1.6.6 Accumulator Functions

#### Acquiring Weight

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

- pressing 
- 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



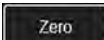
To print the accumulated value, press  while displaying the accumulator.

### 1.6.7 Peak Hold

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


There are three types of peak hold: automatic, manual and bi-directional.

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  to see the real live weight (as opposed to the peak hold weight).
4. Press  or  to clear the peak hold (it clears automatically when set to **Automatic Mode**).

### 1.6.8 Softkey Setup

The standard 7" panel mount has front panel keys, navigation softkeys and a virtual keypad. The 7" and 12" key-less panel mounts only support a virtual keypad.

1. To enter navigation softkey designations for the 7" panel mount, navigate to the main menu and select **Configuration/Features/Softkeys**.
2. Press .
3. Scroll to the desired softkey and press **Done**.

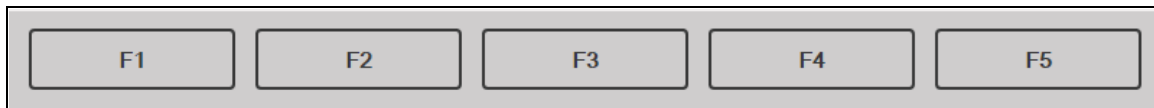


Figure 1-7. Softkeys

## 1.7 Keypad Operations




Figure 1-8. 1280 Front Panel

### 1.7.1 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.

### 1.7.2 Numeric Keypad

Use the numeric keypad for entering numbers or keyed tares.

Press  to backspace when entering numbers/letters.


Press  to save entries from the numeric keypad.

### 1.7.3 Toggle Gross/Net Mode

Pressing  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.

### 1.7.4 Toggle Units

Pressing  toggles between primary, secondary and tertiary units.

### 1.7.5 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 . When  displays, the scale is zeroed.

### 1.7.6 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 . **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  (in OIML mode, press ). **Gross** displays.


Alternatively, remove a stored tare value using a **Keyed Tare** of zero.

#### Keyed Tare



Used to add a keyed tare.

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

### 1.7.7 Print Ticket

Pressing  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  to send data to the serial port.

## 1.7.8 Accumulator Functions

### Printing While in Accumulate

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

- Pressing 
- 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  while displaying the accumulator.

## 1.8 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. Press **Done**.

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

## 1.10 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.



## 1.11 Setpoint Entry

Setpoints can be configured to perform actions or functions based on specified parameter conditions.

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**.

## 1.12 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 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 (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 resets the current step to the first step
Select Scale	Enter the scale number (use 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 on screen numeric keypad
Keyed Tare	Tare the scale by using the on screen numeric keypad
Units	Toggles between primary, secondary and tertiary units
Print	Prints the configured print format
Aux Print	Auxiliary printing by entering the Auxiliary Format number (1-20)
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



## 2.0 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	-60 mV to +60 mV
Input Range	
Analog Signal	1.0 μV/graduation minimum Sensitivity 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	±800 mV referenced to earth ground
Differential	
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 Temp.	Legal 14 to 104°F (-10 to +40°C) Industrial -4 to 131°F (-20 to +55°C) *Depending on enclosure and load
Storage Temp.	-4 to 158°F (-20 to +70°C)
Humidity	0-95% relative humidity

### Enclosure

7" with Keypad	Universal Mount, Panel Mount, Wall Mount
7" Touch Only	Panel Mount
12" Touch Only	Panel Mount

### Certifications and Approvals



NTEP  
CoC Number 15-001  
Accuracy Class III/IIIL  $n_{max}$ : 10,000d

### Measurement Canada

Approval AM-5980C

Accuracy Class III/IIHD  $n_{max}$ : 10,000d



File Number: R76/20006 - NL1 - 16.04

European: TC8596,

Accuracy Class III/IIIL  $n_{max}$ : 10,000d



UL<sup>us</sup> 4d Panel Mount and Universal  
LISTED



UL<sup>us</sup> 4a Panel Mount

Approvals for 7" and 12" touch-only panel mounts - pending





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