2200CW

Excel Series XL

OPERATORS MANUAL

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Introduction

Thank you for purchasing a Doran Scales Model 2200CW Digital Scale Indicator. This scale uses state of the art technology to provide you with a low cost solution to the most demanding weighing applications. With ease of use and setup in mind, the scale is simple to set up and ready to use.

Please be sure to read the entire manual to ensure you obtain all the benefits that the Model 2200CW can provide. If any questions arise, please feel free to contact the Doran Scales Technical Support Department at 1-800-262-6844.

The 2200CW offer many features. A few of these features are listed below:

- NTEP certification for Class III installations to 10,000d (CoC #06-101)
- Display Resolution from 250 to 50,000 divisions
- A six digit, 0.56" red LED display for easy reading
- Eight output status LEDs
- Eight on board open collector outputs
- lb, kg, oz, g, lb-oz display units supported
- Two configurable duplex serial ports with RS232 support
- nonvolatile data storage of all calibration and setup information
- Microprocessor monitoring system to prevent scale failure under severe fault conditions
- Support for up to four 350 ohm load cells
- 115 VAC 50/60 Hz operation standard or 230 VAC 50/60 Hz operation (Optional)
- Field selectable digital filtering
- Software configurable remote push-button support
- Password protected, Front Panel Calibration Access Feature
- Battery Operation, internal rechargeable battery provides 50 hours of continuous use with built in charger (Optional)
- 4-20mA analog output (Optional)
- Wired Ethernet (Optional)
- Wireless Ethernet (Optional)
- Modbus/TCP (Optional)
- RS485 (Optional)
- USB (Optional)
- Four Internal Mechanical or Solid State Relay outputs (Optional)
- Eight External Relay outputs for non-battery models (Optional)
- Fiber Optic Communication (Optional)
- For a complete list of options, please contact your local Doran Distributor

Unpacking Your Scale

Before unpacking your Doran scale, please read the instructions in this section. Your new scale is a durable industrial product, but it is also a sensitive weighing instrument. Normal care should be taken when handling and using this product. Improper handling or abuse can damage the scale and result in costly repairs that will not be covered by the warranty. If you notice any shipping damage, notify the shipper immediately. Please observe the following precautions to insure years of trouble free service from your new scale.

- DO NOT drop the scale
- DO NOT immerse the scale
- DO NOT drop objects on the platform
- ONLY pick up the scale base from the bottom of the platform
- CAREFULLY remove the scale from the shipping carton

Electrical Connections

Prior to connecting your scale to power, check the serial number tag on the back of scale for the correct operating voltage. Verify that the power matches the rated voltage.

Be sure the AC power is not excessively noisy - this can occur if large inductive loads, such as solenoids or motors, are on the same power line. The scale has a filtered power supply to reduce the effects of normal line noise, but they cannot limit severe fluctuations. If problems occur, noise producing devices may have to be suppressed to minimize their effect.

Software Part Number and Revision Level

During power up, the scale will display several messages. The first message is a display test with all LED segments on (888888). Next, the scale will show the software part number Sw 131 followed by the software revision level rEv 1.0 or higher. When contacting our service department, please have the software part number and the revision level available.

Scale Operation

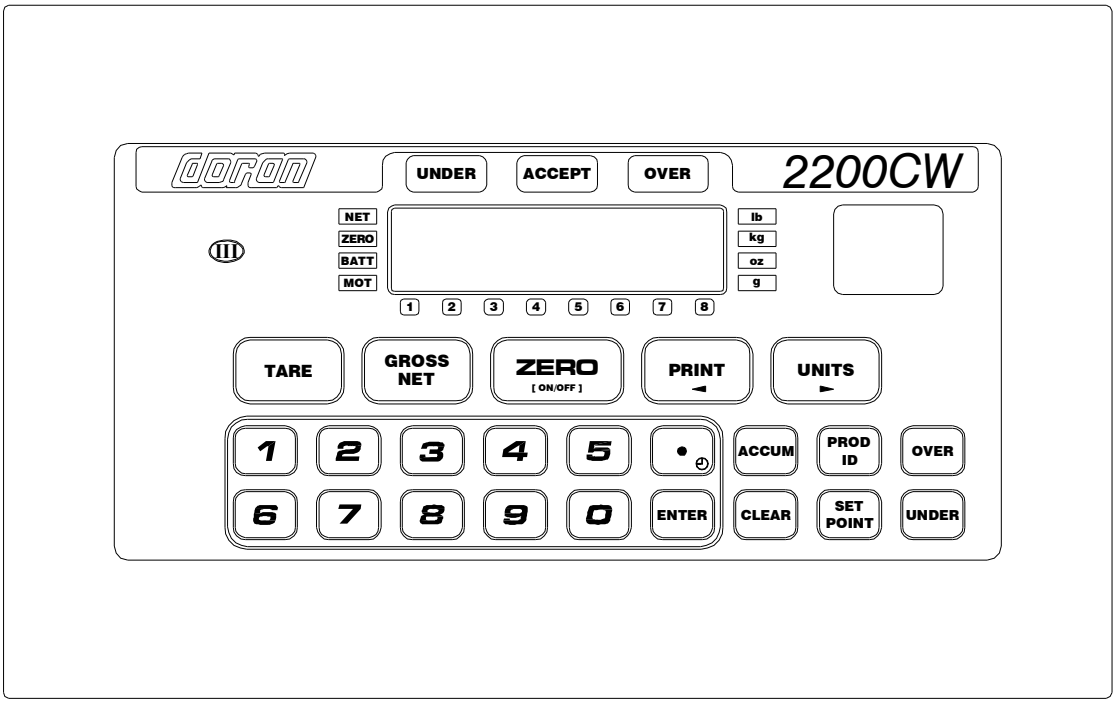
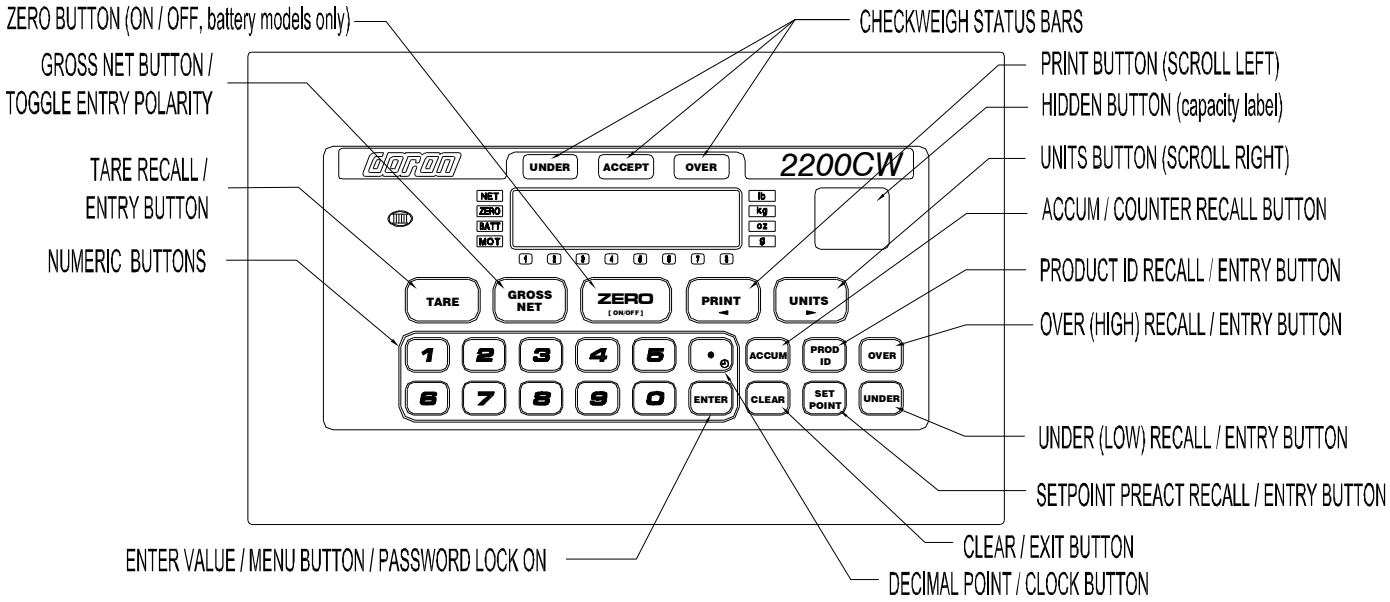


Fig. 1: Model 2200CW Front Panel Layout

LED Annunciators

The Model 2200 (Fig. 1) uses a set of sixteen LED annunciators, in addition to the six digit LED weight display, to provide information about the status of the scale.

- The OVER, ACCEPT, UNDER indicators above main display are use to indicate checkweight information.
- The 8 led indicators below main display are used to indicate: output status during weighing mode or the current setpoint, preact or ID being edited.
- Motion is indicated by the MOT annunciator. Motion is an instability in the platform weight. The motion sensitivity can be changed in the parameter setup mode. Some functions like tare, zero and print can only be executed when this annunciator is lit.
- Net mode is indicated by the NET annunciator. When lit, the scale is displaying a net weight. When not lit, the scale is displaying a gross weight.
- Center of zero is indicated by the ZERO annunciator. The ZERO annunciator is lit when the gross weight is within 0.25 divisions of zero gross weight.
- Low battery condition is indicated by the BATT annunciator. Recharge the battery when this annunciator is lit. The scale can charge while in operation.
- Available weight units are displayed by the lb, oz, kg and g annunciators.



ZERO Displayed Weight

To zero the scale, wait until the scale is stable and press the ZERO button. The scale will not zero if the scale is in motion as indicated by the motion (MOT) annunciator. Center of zero is indicated by the ZERO annunciator, which will be lit when the gross weight is within 0.25 divisions of zero gross weight.

The scale can be zeroed while in the net mode. Press ZERO and the scale will return to the gross mode and will zero out any weight on the scale platform. The stored tare value will remain in memory.

The indicator is equipped with a Zero on Demand parameter, which saves the ZERO push button command and zeros the scale upon the next stable reading. This option may be activated during the scale setup procedure.

Push Button Tare

To use Push Button Tare, simply place the tare item on the scale platform and press TARE. The scale will store the tare weight of the item. The net weight is displayed

The TARE weight will remain in memory, even if the indicator is turned off.

Digital Tare Entry

Enter the tare weight value using the numeric keypad, then press TARE to save the tare weight. After the tare weight is stored, the scale will show the net weight.

The tare must be a positive, non-zero weight. If any errors are made while entering the tare weight, press CLEAR and reenter the weight.

The TARE weight will remain in memory, even if the indicator is turned off.

When configured for 250 products, the Tare weight is stored with the associated Product ID number.

Tare Recall

To recall the tare weight at any time, press and hold TARE push button for 3 seconds. The display will momentarily show tArE, then flash the tare weight in the currently selected units. To exit this mode press CLEAR.

Clear Stored Tare Value

To clear a tare weight press 0 on the keypad then press TARE. This will remove the tare from memory.

If not cleared, the TARE weight will remain in memory, even if the indicator is turned off.

Barcode Entry of Tare Value

Press and hold the TARE push button for 3 seconds to recall the tare weight. The display will momentarily show tArE, then flash the tare weight.

Using Doran's optional barcode scanner, scan the desired barcode. The display will read SAUEd to indicate the scanned tare weight is saved. The display will flash the new tare weight scanned from the barcode. No special serial commands are needed prior to the weight data in barcode value. The barcode value must not exceed the indicator's count by resolution and can not be greater than the capacity. To exit the recall mode, press the TARE button.

Toggle Gross and Net Modes

The GROSS / NET pushbutton is use to switch the display mode between the gross weight and net weight. If a tare value has been entered, then the net value is the gross weight less the tare weight.

The net mode is indicated on the display with the NET annunciator. If a tare is not currently stored, the display remains in gross mode when the GROSS / NET pushbutton is pressed.

Toggle Displayed Weight Units

Press the UNITS button to scroll through all available weight units. The corresponding weight units annunciator will be lit.

The UNITS button can be configured to allow the selection of any combination of units listed above, preventing accidental selection of undesired units. See the Units Conversion Setup Parameter in the Instruction Manual MAN0253 for details.

The UNITS button has two parameter menus located in the Cal mode, that can disable the UNITS button, and select the startup units everytime the scale is turned on. See the Push Button Function Setup and Startup Units Selection menus in the Instruction Manual MAN0253 for details.

Data String Output to Printer or Other Device

Wait for the scale to become stable. Press the PRINT button to send data to a printer or other external devices. To confirm data transmission, the left most display digit will momentarily display an r.

The PRINT button transmits data through the standard RS-232 port, as well as the optional RS-485, USB, Ethernet and Wireless Ethernet communication protocols.

The indicator is equipped with a Print on Demand parameter, which saves the PRINT push button command and transmits data upon the next stable reading. This option may be activated during the scale setup procedure. The indicator also has several automatic print options. See the Data Communication Section in the Instruction Manual MAN0253 for details on Further configuration.

Recall and Edit Data Output Formats

Press and hold the PRINT button for 3 seconds to access the Data Output Formats for both serial ports. Press UNITS button to toggle between the Data Output Formats for serial Port 1 "For." and serial Port 2 "For2.". Use ZERO button to change the output format setting. Press PRINT or ENTER to saved and exit this mode. The display will show SAVEd to indicate changes were made to the Output Format setting.

Password Protected Setpoint, Preact, Tare and Check Limit Values

All values can be reviewed, but cannot be changed unless the password is deactivated. If the password protection is activated, the display will display PASS when the SET POINT, TARE, UNDER or OVER values are changed. Enter the password and press ENTER, display show PASS then OFF. Press SET POINT, UNDER or OVER to change or review weight value or press and hold SET POINT to edit or review preacts.

After entering in the new setpoints or preacts TARE, UNDER or OVER Values. Press hold for 2 seconds the ENTER to activate the password protection.

NOTE: If a Password number has been stored. Upon power up, the password protection will be activated

Checkweigh Operation

Over, Under and Accept Checkweighing Operation

1) Remove all items from the scale platter.
2) Press ZERO to zero the scale. The weight indication should now be zero.
3) Place an item on scale platter and wait for the motion (MOT) to turn off, indicating a stable weight.
4) If the item is heavier than the over limit, the OVER indicator will light, If the item is lighter than the under limit, the UNDER indicator will light. If the weight is between the limits, the ACCEPT indicator will light.

Five Band Checkweighing Operation (optional configuration)

1. Remove all items from the scale platter.
2. Press ZERO to zero the scale. The weight display should now be zero.
3. Place an item on scale platter and wait for the motion (MOT) annunciator to turn off, indicating a stable weight.
4. If the item is heavier than the high limit, the OVER indicator will flash. If the item is heavier than the “over” limit but lighter than the “high” limit, the OVER indicator will turn on. If the item is lighter than the low limit, the UNDER indicator will flash. If the item is heavier than the low limit but lighter than the under limit, the UNDER indicator will turn on. If the weight heavier than the under limit but lighter than the over limit, the ACCEPT indicator will light.

NOTE: The Five band checkweighing operating mode ("5bA", "5b5", "5bt", "5bb") is available in four different optional configurations in the Check Weighing Operation Mode Menu. See Check Weighing Operation parameter "C.o." in the Instruction Manual MAN0253 for more details.

Display Check Limit Values

Press OVER or UNDER to display the current check limit values. (Or for 5 Band Check weighing operation. Press and hold the OVER for the HIGH limit or UNDER for the LOW limit.) Press UNITS and PRINT to scroll between the available check limits. The top light bars and the main display will indicate which check limit is being displayed (H iGh, ouEr, undEr, Louu). Press CLEAR to exit this mode. The display will read Abort to indicate no changes were made to the check limit values.

Press ZERO to momentarily display the current parameter settings and output logic for that individual check limit.

Change Check Limit Values

Press OVER or UNDER to enter the check limit edit mode. (Or for 5 Band Check weighing operation. Press and hold the OVER for the HIGH limit or UNDER for the LOW limit.) The top light bars and the main display will indicate which check limit is being displayed(HIGH, OVER, UNDER, LOW).

To change the check limit value, enter the weight value using the numeric keypad. Press ENTER to accept the change and return to the weigh mode or press UNITS or PRINT to save and edit other check limits. Press CLEAR to exit this mode.

The display will read Abort to indicate no changes were made to the check limit values or the display will read SAVED to indicate the check limit value is saved.

NOTE: If the password protection is active, no new check limits can be entered. The display will indicate this by momentarily showing a PASS message, then entering in a password entry mode.

Barcode Entry of Check Limit Values

Press OVER or UNDER to enter the check limit edit mode. The display will momentarily show OVER or UNDER, then flash the current limit weight. Press UNITS or PRINT to scroll to the desired check limit. The top light bars and the main display will indicate which check limit is being displayed(HIGH, OVER, UNDER, LOW). Using Doran's optional barcode scanner, scan the desired barcode. The display will read SAVED to indicate the scanned weight is saved. The display will flash the new check limit weight scanned from the barcode. No special serial commands are needed prior to the weight data in barcode value. The barcode value must not exceed the indicator's count by resolution and can not be greater than the capacity. The barcode value can be read into each of the available check limits. To exit the edit mode press the ENTER button.

Setpoint Operation

Display Setpoint Values

Press SET POINT to display the current setpoint values. The last viewed or edited setpoint will be displayed. Press UNITS and PRINT to scroll through the eight available setpoints. The annunciators below the main display indicate the current setpoint. Press SET POINT to exit this mode. The display will read Abort to indicate no changes were made to the setpoint values.

Press ZERO to momentarily display the current parameter settings and output logic for that individual setpoint.

Change Setpoint Values

Press SET POINT to enter the setpoint edit mode. The last viewed or edited setpoint will be displayed. Press UNITS and PRINT to scroll through the eight available setpoints. The annunciators below the main display indicate the current setpoint.

To change the setpoint value, enter the setpoint value using the numeric keypad. Press ENTER to accept the change and return to the weigh mode or press UNITS or PRINT to save and edit other setpoints. Press SET POINT to exit this mode.

The display will read Abort to indicate no changes were made to the setpoint values or the display will read SAvEd to indicate the setpoint value is saved.

NOTE: If the password protection is active, no new setpoint values can be entered. The display will indicate this by momentarily showing a PASS message, then entering in a password entry mode.

Barcode Entry of Setpoint Values

Press SET POINT to enter the Setpoint edit mode. The display will momentarily show SEtPt, then flash the current setpoint weight. Press UNITS or PRINT to scroll to the desired setpoint number. The annunciators below the main display indicate which setpoint is currently displayed.

Using Doran's optional barcode scanner, scan the desired barcode. The display will read SAVEd to indicate the scanned setpoint weight is saved. The display will flash the new setpoint weight scanned from the barcode. No special serial commands are needed prior to the weight data in barcode value. The barcode value must not exceed the indicator's count by resolution and can not be greater than the capacity. The barcode value can be read into each of the eight available setpoints. To exit the edit mode press the SET POINT button.

Display Preact Values

Press and hold the SET POINT button for three seconds to display the Preact weight values. The last viewed or edited preact will be displayed. Press UNITS and PRINT to scroll through the eight available setpoints. The annunciators below the main display indicate the current setpoint. Press SET POINT to exit this mode, the display will read Abort to indicate no changes were made to the setpoint values.

Press ZERO to momentarily display the current parameter settings and output logic for that individual preact.

Change Preact Values

Press and hold the SET POINT button for three seconds to enter the preact edit mode. The last viewed or edited preact will be displayed. Press UNITS and PRINT to scroll through the eight available preacts. The annunciators below the main display indicate the current preact.

To change the preact value, enter the preact value using the numeric keypad. Press ENTER to accept the change and return to the weigh mode or press UNITS or PRINT to save and edit other preacts. Press SET POINT to exit this mode.

The display will read Abort to indicate no changes were made to the preact values or the display will read SAvEd to indicate the preact value is saved.

NOTE: If the password protection is active, no new preact values can be entered. The display will indicate this by momentarily showing a PASS message, then entering in a password entry mode.

Barcode Entry of Preact Values

Press and hold the SET POINT button for three seconds to enter the preact edit mode. The display will momentarily show PrEACt, then flash the current preact weight. Press UNITS and PRINT to scroll through the eight available preacts. The annunciators below the main display indicate the current preact.

Using Doran's optional barcode scanner, scan the desired barcode. The display will read SAVEd to indicate the scanned preact weight is saved. The display will flash the new preact weight scanned from the barcode. No special serial commands are needed prior to the weight data in barcode value. The barcode value must not exceed the indicator's count by resolution and can not be greater than the capacity. The barcode value can be read into each of the eight available preacts. To exit the preact edit mode, press the SET POINT button.

Accumulator and Counter

Accumulator and Counter Operation

When a manual or automatic print function is executed, the accumulator has the currently displayed weight added to its' current value and the counter is incremented. To confirm an accumulation and counter operation, the left most display digit will momentarily display an 0.

To automatically accumulate, select an auto print function in the parameter setup menu.

To accumulate manually, allow the scale to become stable and press PRINT.

The maximum value that can be shown for the accumulator and counter is 999,999. When the maximum value is reached, the accumulator or counter will rollover to a zero value. The accumulator and counter feature can only be used in a non Legal For Trade application.

For 2200CW model configure for 250 product memory, the Accumulator and Counter values is stored with the associated Product ID number.

Display Accumulator and Counter Values

Press the ACCUM button to enter the accumulator and counter recall mode. The display will show Accum followed by the accumulated weight in the units currently selected in the weigh mode. Then Countr will be displayed followed by the counter value.

Press ACCUM to exit the accumulator and counter recall mode without changing their values.

Clear Accumulator and Counter

Press the ACCUM button to enter the accumulator and counter recall mode. The display will show Accum followed by the accumulated weight in the units currently selected in the weigh mode. Then Countr will be displayed followed by the counter value.

Press CLEAR to clear the accumulator and counter values. The display will show Clr Ac and exit from the recall mode.

Changing the current display units will clear both the accumulator and counter values.

Accumulator and Counter Data String Output to Printer or Other Device

Press ACCUM to enter the accumulator recall mode. Press PRINT to transmit the LB4 custom data string that contains the accumulator and counter values by default. Both the accumulator and counter values are cleared after transmission.

See Output Formats in the parameter section and Custom Data String default settings in the Instruction Manual MAN0253 for more details.

Single Product Operation

Product Size Menu

The 2200CW can be configured for 1 or 250 product operation. When configured for one product, only one memory location is used to store the Tare, Check Limits, Accumulator and Counter values. There are 8 ID values available for use in this mode.

Product ID number

When the parameter Product Size Menu Prod is configured for one product. There is only one active product field that is used in memory. The Product ID number becomes a ID value, The eight ID values in this mode are used for data collection of product, operator IDs and other information.

Display ID Values

Press PROD ID to enter the ID recall mode. The last viewed or edited ID will be displayed. The display will show Id, followed by the current ID's value. Press UNITS and PRINT to scroll through the eight available IDs. The annunciators below the main display indicate the current ID location. Press ID to exit this mode, the display will read Abort to indicate no changes were made to the values.

The current ID is the last edited or displayed ID.

Keypad Entry of ID Values

Press ID to enter the ID edit mode. The last viewed or edited ID will be displayed. The display will show Id, followed by the current ID's value. Press UNITS or PRINT to scroll to the desired ID. The annunciators below the main display indicate which ID is currently displayed.

Enter up to six digits through the numeric keypad. Press ENTER to accept the change and return to the weigh mode or press UNITS or PRINT to save and edit other IDs. To exit the ID edit mode press ID.

The display will read Abort to indicate no changes were made to the ID values or the display will read SAVEd to indicate the ID value is saved.

Barcode Entry of ID Values

There are two different methods in scanning ID values into a scale. When using a barcode scanner, up to 20 alphanumeric characters can be read and stored into each of the eight available ID locations.

1. Press ID to enter the ID edit mode. The last viewed or edited (current) ID will be displayed. The display will show Id, followed by the ID's value. Press UNITS or PRINT to scroll to the desired ID. The annunciators below the main display indicate which ID is currently displayed.

   Using Doran's optional barcode scanner, scan the desired barcode. The display will read ------ to represent the barcode value. To exit the ID edit mode press ID.

2. When the scale is in the normal weighing operation. Use the Doran's optional barcode scanner to scan in a barcode value that begins with a numeric character. The bar code value does not require a prefaced command to be saved as a value for ID 1.

Multiple Product Operation

Product Size Menu

The 2200CW can be configured for 1 or 250 product operation. When configured for 250 product, a maximum of 250 memory locations can be used to store the Tare, Check Limits, Accumulator, Counter and values for each Product ID.

Product ID number

When parameter Prod is set for 250. Up to a maximum of 250 individual Product ID numbers with their associated fields can be stored in memory.

Product ID Fields

Product ID Number (6 digits)
Product Description String (20 ascii characters)
Low Limit (6 digits plus decimal point)
Under Limit (6 digits plus decimal point)
Over Limit (6 digits plus decimal point)
High Limit (6 digits plus decimal point)
Tare (6 digits plus decimal point)
Counter (6 digits)
Accumulator (6 digits plus decimal point;
when printed, 8 digits plus decimal point)

CheckWay Software

The optional Check Way computer software can be use for management of new and existing product ID's. Please contact Doran Scales sales department for additional information on this option.

Entering New Product ID number

Enter a 1 to 6 digit value, then press PROD ID. The display will momentarily show nEW then id and then return to the weigh mode. All fields (Check Limits, Tare, Accumulator, and Counter) associated with the new Product ID number will be blank.

To enter and save values for all fields associated with the current Product ID, simply enter the values for each field as descripted in the Checkweigh Operation, Accumulator and Counter sections.

NOTE: If the password protection is active, no new Product IDs can be entered. The display will indicate this by momentarily showing a PASS message, then waits for a password to be entered.

Recall Existing Product ID

Press PROD ID to enter the Product ID recall mode. The display will show id, followed by the currently active Product ID number. To select another stored ID number, enter the preexisting ID number, then press ENTER. The display will read SAVEd to indicate the Check Limits, Tare weight, Product Description String, Accumulator and Counter fields associated with that Product ID number are active.

Another method to select a different Product ID is to press PROD ID, then use the UNITS or PRINT buttons to scroll through the available Product ID numbers. Press ENTER to select the displayed Product ID. The display will read SAVEd to indicate the Check Limits, Tare weight, Product Description String, Accumulator and Counter fields associated with that Product ID number are active.

Delete Product ID

You may wish to remove Product ID's from your 2200CW to prevent accidental use. Deleting a unused Product ID will make scrolling through the available Product ID's, using UNITS and PRINT a faster process.

Type in the Product ID number to be deleted. Momentarily press PROD ID to recall the Product ID number. The display will show id, followed by the Product ID number. Press and hold the CLEAR button for more the 2 seconds. The display will show CLr id and then donE. All fields associated with that Product ID number will be cleared. The previously used Product ID number will become active.

NOTE: If the password protection is active, Product IDs cannot be deleted. The display will indicate this by momentarily showing a PASS message, then entering in a password entry mode.

Product ID Field Password Protection

With password protection enabled, the user will be able to recall Product ID's, but not alter any of the associated Product ID fields. The user will also be prohibited from creating or deleting any Product IDs.

To disable password protection, enter the password and press ENTER. The display will show PASS then OFF to indicate password protection is off.

NOTE: If a password number has been stored. Upon power up, the password protection will be activated.

To enable password protection, press hold ENTER for 2 seconds to activate the password protection.

Barcode Entry to recall Product ID Field

Two ways to recall Product ID Field from the scale's memory. Up to 6 numeric characters can be read into the 2200CW barcode serial port to request an existing Product ID.

1. Press PROD ID to enter the Product ID recall mode. The display will show Id, followed by the current Product ID number. Use Doran's optional barcode scanner, scan the desired barcode. The display will confirm by showing the barcode value. To exit the ID edit mode press ID.

2. When the scale is in the normal weighing operation. Use the Doran's optional barcode scanner to scan in a barcode value that begins with a numeric character. The barcode value does not require a serial command to recall a saved Product ID field.

Setting Time and Date

Press and hold the decimal point button on the keypad until dAtE is displayed. The current date flashes on the display. To toggle between the current time and date, press the decimal point button. When time is displayed t imE is shown on the display.

To change the date, display the date and enter the month, followed by the day and year. Press UNITS and PRINT to change the current selection. The field that is being edited flashes on the display. Enter a leading zero when entering a single digit year, month or day. Press UNITS until the display reads SAvEd to confirm the date changes are saved.

To change the time, display the current time and enter the time in 24 hour format. Press UNITS and PRINT to change the current selection. The field that is being edited flashes on the display. Enter a leading zero when entering a single digit hour, minute or second. Press UNITS until the display reads SAvEd to confirm the date changes are saved.

Battery Operation

Indicators with the battery option installed are equipped with an internal rechargeable sealed lead-acid battery and charging circuit. The scale is designed to run continuously for 50 hours (with one 350 ohm load cell) on a fully charged battery. To significantly extend this battery life, be sure the Unit On Timer parameter is enabled, which will power down the scale automatically after a period of non-use. The default setting shuts off the indicator after 30 seconds of non use. When plugged in, the indicator will remain on continuously.

Power Up and Power Down

Connect the indicator to a compatible power source and the indicator will turn on.

- To turn on the scale, press and release the ZERO button.
- To turn off manually, press and hold the ZERO push button until the display shows "rEL Pb." Then release the ZERO button and the scale will turn off.

The scale will turn off automatically when the scale is stable for a period of time defined by the Unit On Timer parameter. The default setting is 30 seconds.

Use of multiple load cells, Fiber Optic, Ethernet, 4-20mA, Wireless Communication, Remote Display, USB or Relay options will reduce battery life. For multiple load cell applications, battery life is significantly reduced. For example, with a four, 350 Ω load cell configuration, the low battery indication will begin at about 39 hours of continuous use. Load cells with higher input impedance values such as 1000 Ω will display low battery indication after 47 hours.

The charging circuit will fully charge the battery in approximately four to eight hours whether the scale is on or off. To charge the battery, simply plug the line cord into a standard 115V (230V optional) wall outlet. The scale can be used while recharging the battery, in fact, the scale can be used with the AC charger cord plugged in on a continuous basis. **Note:** Indicators installed with multiple load cells, Fiber Optic, Ethernet, 4-20mA, Wireless Communication, Remote Display or Relay options will increase charge time.

If an AC power failure occurs with the charger plugged in, the scale's battery immediately takes over to provide uninterrupted scale operation.

The BATT annunciator indicates that the battery is in need of recharging. The scale will continue to operate accurately for approximately one hour (with one 350 ohm load cell) after the BATT annunciator is lit. When the battery is too low to operate the scale, the scale simply turns off and will not turn on again until the battery is recharged. At this point, when the ZERO (ON/OFF) is pressed, the BATT annunciator will be lit as the scale performs its display test and then the scale will shut down immediately.

The battery should be able to support at least 300 recharges before the end of the battery life is reached. This is an estimate as many factors can affect battery life like, severe temperature changes and charging before the scale displays Low Battery.