Model 4300

Digital Scale

Operator's Manual

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SOFTWARE REVISION: 1.0
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INTRODUCTION

Thank you for purchasing a Doran Scales, Inc. Model 4300 Digital Checkweigher. This scale integrates microprocessor technology and software to provide the user with a low cost solution to most weighing applications. With ease of use and setup in mind, the Model 4300 can be quickly set up and ready to use. The Model 4300 has many capabilities with a few of them listed below:

- NTEP certification for Class III installations to 5000d (Applied for)
- A 6 digit, 0.56" red LED display for easy reading
- lb/kg/oz/g/lb-oz display units supported
- Fully configurable duplex printer port with RS232 support.
- Optional RS485 support.
- EEPROM nonvolatile data storage of all calibration and setup information.
- Optional static RAM for a 150 (min.) reading print buffer
- Microprocessor monitoring system to prevent indicator failure under severe Fault conditions
- Support for up to 4 350 ohm load cells
- 115/230 VAC 50/60 Hz selectable operation
- Field selectable digital filtering.
- Software configurable remote push-button support (Optional)
- Non N.T.E.P. parameters are user configurable.

Please be sure to read the entire manual to ensure obtaining all the benefits that the Model 4300 can provide. If any questions arise, please feel free to contact the Doran Scales Technical Service Department at 1-800-262-6844.

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 may 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 indicator or scale platform.
- DO NOT immerse the scale indicator or platform.
- DO NOT drop objects on the platform.
- DO NOT pick up the scale platform by the "spider."

Carefully remove the scale from the shipping carton. Be sure to retain all shipping materials in case the scale must be shipped elsewhere.

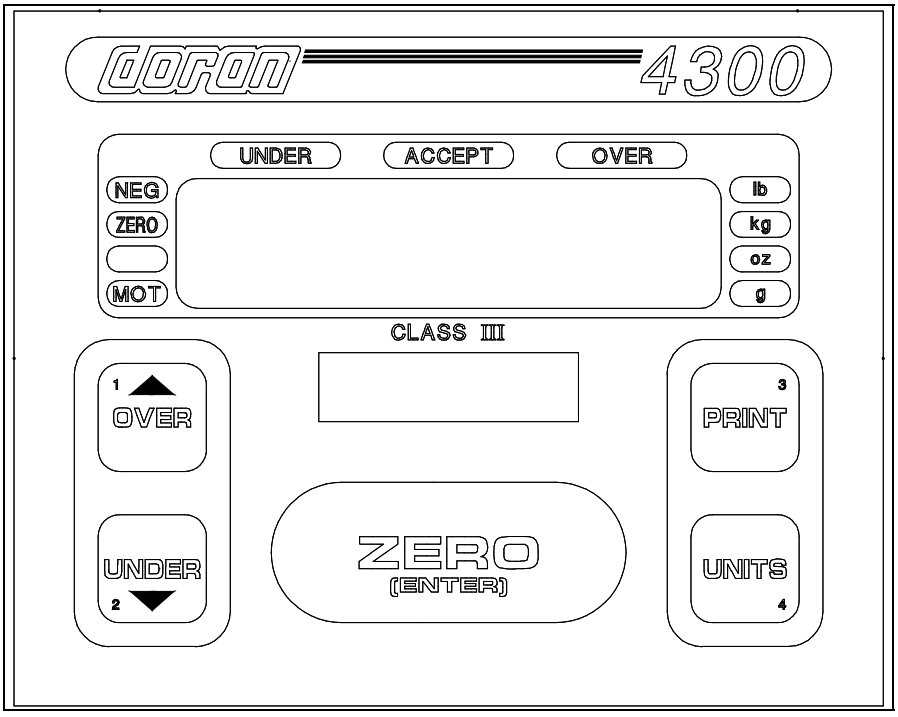
Setup and Installation

INSTALLATION:

Locate the desired position for the scale platform and indicator. The platform location should be flat, level and free of any obstructions which might interfere with the operation of the scale platform.
When installing your scale, make sure that the power connection is close to the scale and easily accessible.
Place the scale on a flat level surface free from any obstructions which might interfere with the operation of the scale platform.

ELECTRICAL CONNECTIONS:

Prior to connecting your scale to power, check the serial number tag on the indicator for the correct operating voltage. Verify that the power you connect the scale to 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 Model 4300 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.



Quick Start User's Guide

Figure 1. 4300 Front Panel Layout

Basic Weighing Operations:

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) indicator to turn off, indicating a stable weight.
4) Read the weight on the scale display.

Model 4300:

The Doran 4300 has a main display and ten indicator lights. These indicators provide the operator with information about the scale and the current weighing operation. The main display is used to provide the operator with the current weight. The units indicators (located on the right of the main display) show the current measurement units. Motion (MOT) and Center of Zero (ZERO) indicators inform the operator when the scale is at Zero and when the scale is in Motion. The NEG (negative) indicator informs the operator whether the item being weighed is below or above Zero. Checkweigh information is provided by the OVER, ACCEPT and OVER lights.

The five pressure sensitive switches, located under the main display, provide the operator with the ability to zero the scale, change the current units, print the weight, or enter the check weigh limits.

ZERO:

The **ZERO** push button is used to zero the scale prior to making a reading. The zero button can function over the full range of the scale or it can be limited to a zero band equal to 4% of scale capacity for Canadian Legal for Trade applications.

To zero the scale, wait until the scale is stable and press the **ZERO** button. The scale will zero immediately. The 4300 will not "zero" if the scale is in motion. The 4300 equipped with an optional "Zero on Demand" feature which holds "zero" requests until motion stops. This option may be activated during the scale setup procedure. Refer to you dealer or service manual for details.

UNITS :

The **UNITS** button permits the operator to change the scale units by pressing a button. The units indicator will immediately display the new units. The next display update will indicate the correct weight in the new units.

The **UNITS** button has several configuration parameters which can disable the **UNITS** button or limit the display units available. Refer to you dealer or service manual for details.

PRINT:

The **PRINT** button permits operator to print the current weight by pressing a button. Like the ZERO button, the user waits until motion stops before pressing the PRINT button. The current weight will then be transmitted to the printer.

The 4300 has a "Print on Demand" feature which stores a **PRINT** requests until the scale is stable. Once stable, the scale transmits the current weight to the printer. The 4300 also has several automatic print options which may be used to simplify printer operation. Refer to you dealer or service manual for details.

OVER / UNDER

The **OVER** and **UNDER** buttons are used to enter the weight values needed for checkweighing applications. In the simplest configuration, these buttons can be set up to enter the “check” weight by pressing either the OVER or UNDER button. When in this mode, the current weight is entered as the checkweighing limit.

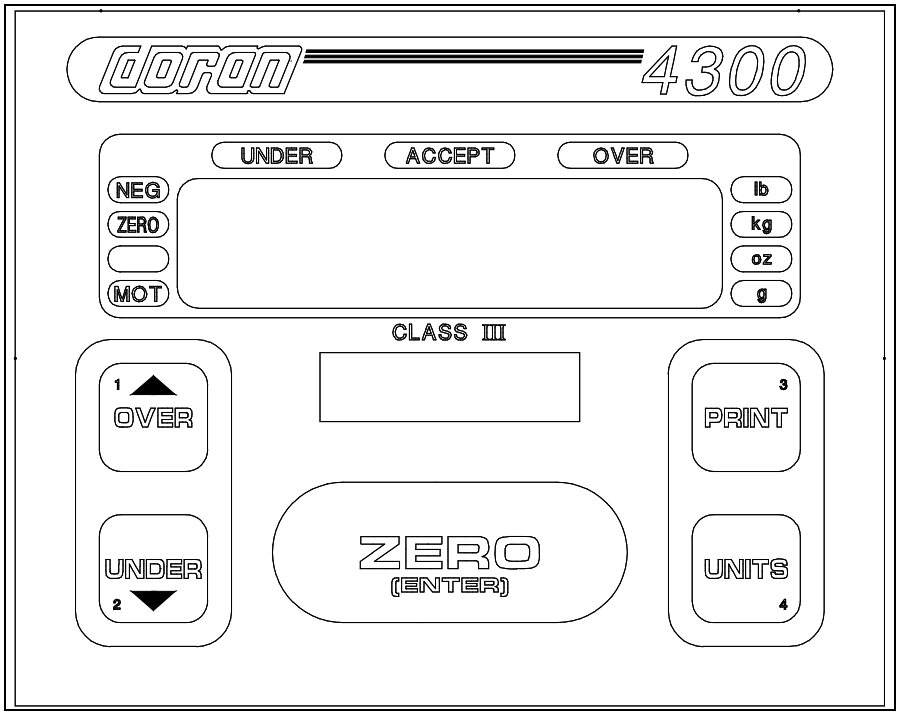
Other entry modes may be set up which allow the **OVER** and **UNDER** buttons to start with the current weight and scroll up or down (arrows on the button indicate the scroll direction) until the desired “check” weight is

reached. Once the desired value is reached, pressing **ZERO (ENTER)** will enter the desired value in the scale.

The 4300 also offers five band check weighing and password protection of the checkweigh limits. Refer to you dealer or service manual for details.

Basic Checkweighing Reference Guide

Figure 1. 4300 Front Panel Layout



Basic Over, Under and Accept Checkweighing Operation :

1) Remove all items from the scale platter. (If checkweighing to zero, place the target weight on the 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) indicator to turn off, indicating a stable weight.
4) If the item is heavier than the over limit, the OVER light will light, If the item is lighter than the under limit, the UNDER light will light. If the weight is between the limits, the ACCEPT light will light.

Digital Entry of OVER and UNDER Limits:(default configuration) [2]

1) Zero the scale.
2) If available, place an item with the desired weight on the scale.
3) Press and release the OVER button. The OVER and ACCEPT lights will light followed by the lights on each side of the display. If "Ent. Cd" appears, enter the password (Refer to the "Password Entry" section.) and press ZERO.
4) The scale is in the scroll mode. Press either the OVER or UNDER button to increase or decrease the limit value. Holding a button longer will cause the count to accelerate. Press UNITS or PRINT to cancel.
5) Once the desired limit is reached, press ZERO to save the limit. The display will read "donE."
6) To enter the "UNDER" limit, press and release the UNDER button. Then follow steps 4 and 5.

Push-button Entry of OVER and UNDER Limits:(optional configuration) [1 2 3]

1) Zero the scale.
2) Place an item with the desired "OVER" weight on the scale.
3) Press and release the OVER button. The OVER and ACCEPT lights will light followed by "donE." The limit has been saved.
4) Remove the "OVER" item and place an item with the desired "UNDER" weight on the scale.
5) Press and release the UNDER button. The UNDER and ACCEPT lights will light followed by "donE." The limit has been saved.

Five Band Checkweighing Operation: (optional configuration) [1]

1) Remove all items from the scale platter. (If checkweighing to zero, place the target weight on the scale.)
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) indicator to turn off, indicating a stable weight.
4) If the item is heavier than the "high" limit, the OVER light will flash. If the item is heavier than the "over" limit but lighter than the "high" limit, the OVER light will turn on. If the item is lighter than the "low" limit, the UNDER light will flash. , If the item is heavier than the "low" limit but lighter than the "under" limit, the UNDER light will turn on. If the weight heavier than the "under" limit but lighter than the "over" limit, the ACCEPT light will light.

Digital Entry of "HIGH" and "LOW" Limits: (optional configuration) [1 2]:

1) Zero the scale.
2) If available, place an item with the desired weight on the scale.
3) Press and hold the OVER button until the lights on each side of the display turn on and the OVER and ACCEPT lights flash. If "Ent. Cd" appears, enter the password (Refer to the "Password Entry" section.) and press ZERO.
4) The scroll mode is now active. Press either the OVER or UNDER button to increase or decrease the limit value. Holding a button longer will cause the count to accelerate. Press UNITS or PRINT to cancel.
5) Once the desired limit is reached, press ZERO to save the limit. The display will read "donE."
6) To enter the "UNDER" limit, press and release the UNDER button. Then follow steps 4 and 5.

Push-button Entry of "HIGH" and "LOW" Limits: (optional configuration) [2 3]

1) Zero the scale.
2) Place an item with the desired "HIGH" weight on the scale.
3) Press and hold the OVER button until the scale displays "donE." The limit has been saved.
4) Remove the "OVER" item and place an item with the desired "UNDER" weight on the scale.
5) Press and hold the UNDER button until the scale displays "donE." The limit has been saved.

Entering Passwords: (optional configuration)

1) The password on the 4300 consists of up to four digits with values from one to four.

Note: The OVER, UNDER, PRINT and UNITS buttons are numbered from 1 to 4. pressing these buttons will enter the associated number.

2) Press the numbered keys in the correct sequence to enter the password (less than four digits are OK). The password will be displayed on the display as it is entered. If an incorrect number is pressed, start the number over and the incorrect numbers will shift off the display. The default password is ZERO (do not press any digits).
3) Press ZERO to accept the password displayed on the scale. If the password is incorrect, the scale cancels the operation and displays "Abort." Normal weighing then resumes. If the password is correct, the scale continues the requested activity.

1. The 4300 is shipped from the factory as an "over-accept-under " Checkweigher. The 4300 may be configured for "low-under-accept-over-high" (5 band) operation. Consult your Doran Authorized Dealer for more details.

2. The 4300 is factory configured for digital limit entry. The 4300 may be configured for push-button limit entry. Consult your Doran Authorized Dealer for more details.

3. Passwords do not work with push-button limit entry.

Troubleshooting

Scale Messages:

Message		Meaning
“donE” Function Complete.		The scale has successfully completed the requested action.
“Abort” Aborted Function		The requested action has been canceled prior to completion.
“Ent Cd” Enter Password Code		The scale is waiting for the password to be entered before proceeding.

Common Problems and Solutions

Problem:		What to Do or Check:
Weight reading will not repeat or scale does not return to zero when weight is removed.		Make sure that there is nothing caught in the platform under or around the load cell or spider interfering with its movement.
Scale overloads early.		Make sure all four overload stops are properly set. Take the platter off the platform, invert it and place it back on the spider. With 1/2 of the scale's capacity in test weights concentrated over a corner of the platform, there should be approximately 1/32" of clearance between the stop and the bottom of the spider. Check all four corners then recalibrate the scale. If the problem persists, it is possible that the scale is being shock-loaded causing the load cell to be shifted.
Scale will not indicate full capacity or go into overload.		Make sure that there is nothing caught in the platform under or around the load cell or spider which would interfere with their movement. If not, check the overload stops using the above procedure.
Scale will not come to zero when the ZERO button is pressed.		Make sure that the scale is stable ("MOT" annunciator is off) when ZERO is pressed. If excessive motion is a problem, then it may be necessary to activate the latching zero feature (ZOd) or lengthen the filter time (Av A1). If the scale is stable, the scale may be set to the Canadian Legal for Trade (4% zero bandwidth). An attempt is being made to zero more than 4% of capacity There may be a problem with the touch-panel or main board,
Weight readings don't seem to be correct.		Check the scale's accuracy with a test weight. Recalibrate if necessary.
Scale drifts off of zero.		Check for air currents and/or vibration around the scale. If that is the cause it may be necessary to set the AZT aperture to a wider setting to compensate
Scale reading is bouncing or "flighty".		Check for air currents and/or vibration around the scale. If that is the cause it may be necessary to set the Digital Averaging to a higher setting to stabilize the reading.

If you are still experiencing a problem with your 4300, or if the problem you are having is not covered in the above list, please contact your Doran Scales authorized dealer.

Error Messages

Error Message		What to Do or Check:
"ovr-Ld" Scale overload		The scale is in overload. The load on the scale platform exceeds the scale capacity by more than 103%. Remove excess weight from scale platform.
"grs-oL" Gross overload		The scale is in gross overload. The load exceeds the scale ratings and might result in damage to the scale. Remove excess weight immediately. Ignore this message for the first five seconds after power up.
"SU 0 E" Startup zero error		The scale was not stable, or a weight in excess of 1.9% of full load was present on the platter when the scale started. <u>This error will only occur in Legal for Trade applications.</u> Remove the weight and wait. The scale will zero once it becomes stable.
"Err EP" EEPROM error		The setup parameters loaded in nonvolatile memory have become corrupted. The scale requires reinitialization by a qualified scale technician.
"Err cAL" Calibration error		The calibration values loaded in nonvolatile memory have become corrupted. The scale requires recalibration by a qualified scale technician.
"Er CL" Check Limit error		The check limit values stored in nonvolatile memory has become corrupted. Reload limit values for checkweighing..
"Err 1" Program ROM error		The program memory in the scale has become corrupted. Have scale serviced by a qualified scale repair technician.
"Err 2" Buffer memory error.		The memory used for the print buffer has failed self check. Have scale serviced by a qualified scale repair technician.
"Ldg 0" Loading zero.		The scale is attempting to load power up zero. This message will remain until scale is stable.