# 1280 Axle Weighing

*Custom 1280 Program*

# Operation Manual


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RICE LAKE WEIGHING SYSTEMS

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**www.ricelake.com**

# Contents

# 1.0 Introduction

This manual provides operation instructions for the 1280 Axle Weighing software loaded on the 1280 Enterprise indicator connected to an axle scale.

Manuals are available for viewing and/or downloading 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

## 1.1 Overview

There are two modes of axle weighing, Automatic or Manual. When using either modes, a driver passes over a scale one axle at a time. Each time an axle enters the scale, it's weighed and added to the total. For the Long Axle mode, one axle is pulled onto the scale at a time until the truck is complete, all axles on the scale.

The 1280 Axle Weighing program can be interfaced to a short or long axle scale and directs each axle across the scale using traffic lights.

Optional features:

- Manual weighing
- Short axle weighing
- Long axle weighing
- Axle in/out weighing

# 2.0 Operation

The following operation procedures apply to both the short and long axle scale weighing.

## 2.1 Automatic Axle Weighing

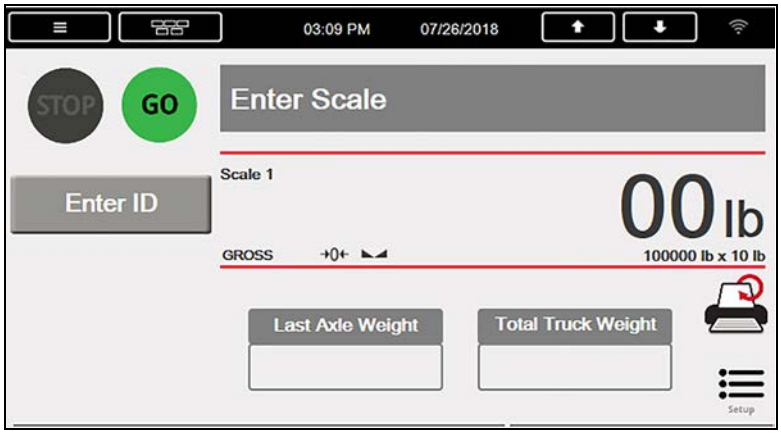


*Figure 2-1. Axle Weighing Menu – Green Light*

A green light displays when the scale is empty and at zero. The Stop & Go remote displays the live weight with a green light. Lights cannot be manually controlled in automatic mode.

1. Press Enter ID and enter the Truck ID (optional unless **Weigh In/Out** is enabled). The ID can be entered any time during this process.

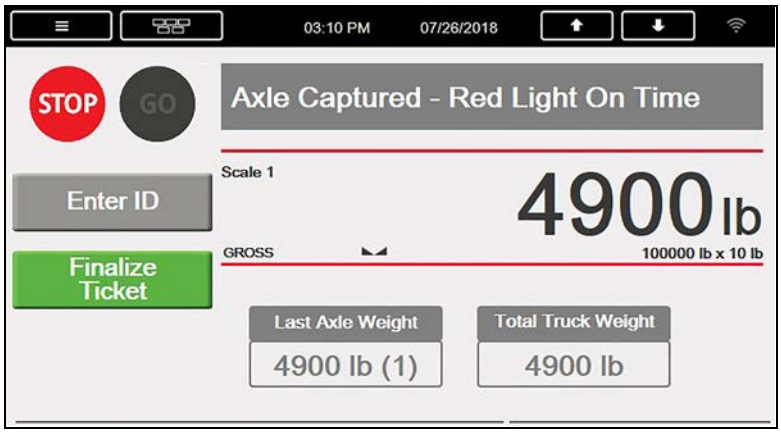


*Figure 2-2. Axle Weighing Menu – Red Light*

2. Pull axle onto the scale to exceed the configured ***Axle Threshold*** (default = 1000 lb).
   A. The system performs the following actions:
      i. Traffic light changes to red.
      ii. A red serial command is sent to the Stop & Go remote display.
      iii. The stable gross axle weight is captured after being stable for 3 seconds.
      iv. Last Axle Timer starts and delays for the Red Light on time. This notifies the driver that the axle has been captured (it can happen quickly an be missed).
      v. The Stop & Go remote display updates with the current axle weight.

B. When the ***Red Light On Time*** expires (default = 3 seconds):
   i. Traffic light changes to green.
   ii. A green serial command is sent to the Stop & Go remote display.
   iii. The 1280 display updates with the current axle weight and total axle weight.

C. Axle Setting is determined (**Short** or **Long**):
   i. **Short Axle**: Driver pulls forward positioning the next axle onto the scale.
      • When the weight is ***+/- Delta Weight*** (default = 500 lb) than the previous axle weight, the system starts the ***Axle Delay*** (default = 5 seconds)
      • The Stop & Go remote display goes back to streaming the live gross weight
   ii. **Long Axle**: Driver pulls forward positioning the next axle onto the scale. (*supports one to seven axles*).
      • When the weight is ***+ Delta Weight*** (default = 500 lb) than the previous total axle weight, the system starts the ***Axle Delay*** (default = 5 seconds)
      • The Stop & Go remote display goes back to streaming the live gross weight – current total axle weights

D. Step 2 is repeated until the configured ***Last Axle Timer*** (default = 45 seconds) expires, ***Maximum Axles*** (7) is reached or Finalize Ticket is pressed, at which point the system does the following:
   i. If **Weigh In/Out** is enabled:
      • Prompts ***ID Required to Complete – Enter ID*** (unless already entered, then the system continues). Enter the ID and press ENTER or DONE.
      • The Inbound Database searches for the ID.
         - ***ID Found:*** value swapping is performed if necessary, ***Net*** is calculated based on the Inbound weighment, a record is stored in the transaction database and the Inbound weighment is deleted
         - ***ID Not Found***: a record is stored in the inbound database

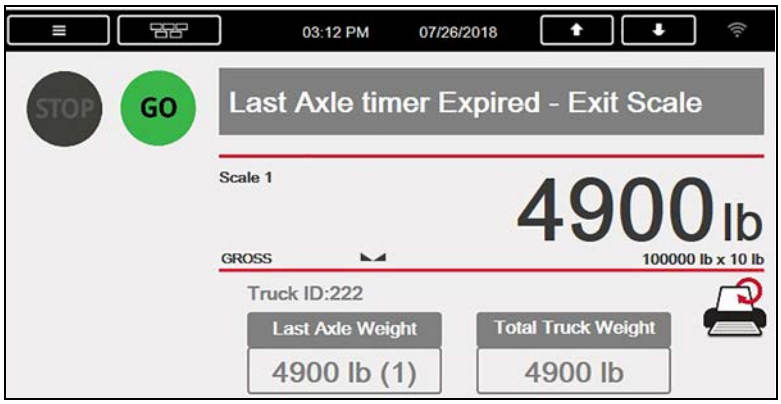


*Figure 2-3. Last Axle Timer*

   ii. If **Weigh In/Out** is disabled
      • A record is stored in the transaction database. The net fields in the database are **0**.
      • Prints **n** (**n** = number of tickets) copies of the Weigh Ticket. The number of tickets to be printed is set in the setup menu. allows the operator to print the previous weigh ticket.
      • The Stop & Go remote displays the axle's total weight for the ***Total Weight Remote Display Time*** before it goes back to streaming the live gross weight.
      • Traffic light changes to green.
      • A green serial command is sent to the Stop & Go remote display.

3. Vehicle exits the scale if still on it.

Note ***Transaction database deletes 25% of oldest records when it reaches maximum capacity.***

## 2.2 Manual Axle Weighing

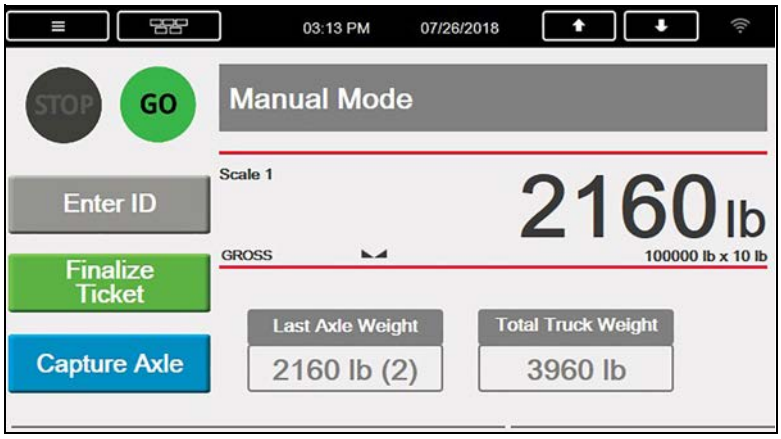


*Figure 2-4. Manual Mode*

1. Switch the setting from **Auto** to **Manual** in the ***Setup*** menu to enable manual weighing.
   A. ***Manual Mode*** displays, removing all message control.
      i. Disables automatic light changing. The lights are controlled by pressing STOP and GO.
      ii. Disables **Weigh In/Out**.
2. Press Capture Axle to store the current weight with the ***Manual Axle Number*** (starting at Axle #1 and increments each time capture is pressed).
3. Press Finalize Ticket after all axles have been manually weighed:
   A. Prints **n** (**n** = number of tickets) copies of the weigh ticket. allows the operator to print the previous weigh ticket.
   B. Stores a record in the transaction database; the net fields in the database are **0**.
   C. All information is reset for the next truck

Note ***Transaction database deletes 25% of oldest records when it reaches maximum capacity.***

# 3.0 Serial Communications - Tickets, PC

## 3.1 Weigh Ticket Examples

### Auxiliary Format #1, #2 and #3

The formats can be modified through the 1280 front panel or using the PC application Revolution. Auxiliary Format #1, #2 and #3 make up the weight ticket.

```
Truck ID 333

Axle # 1     4400 lb
Axle # 2     5160 lb
Axle # 3    10560 lb

Total       20120 lb

10:34PM 08/29/2018
```

*Figure 3-1. Weigh Ticket*

### Auxiliary Format #1, #2 and #4 (if Weigh In/Out enabled)

The formats can be modified through the 1280 front panel or using the PC application Revolution. Auxiliary Format #1, #2 and #4 make up the outbound weight ticket.

```
Truck ID 999

Axle # 1     2770 lb
Axle # 2     4190 lb
Axle # 3     4320 lb

Total       11280 lb

Gross       11280 lb
Tare         6120 lb
Net          5160 lb

10:34PM 08/29/2018
```

*Figure 3-2. Weight Ticket, Weigh Out*

## 3.2 User Strings

User strings can be added to any print format in Revolution to print data on the ticket or transaction string. Add <USn> to any print format where **n** represents the user string number.

| User Strings | |
|---|---|
| User String 1 <US1> | Axle Number |
| User String 2 <US2> | Axle Weight |
| User String 3 <US3> | Scale Units |
| User String 4 <US4> | Truck ID |
| User String 5 <US5> | Total Weight |
| User String 6 <US6> | Time |
| User String 7 <US7> | Date |

*Table 3-1. User Strings*

## 3.3 Rice Lake Stop/Go Lights

**Green Light – Auxiliary Format #19**

The message is transmitted (default to none). The format can be modified through the 1280 front panel or using the PC application Revolution.

**Red Light – Auxiliary Format #20**

The message is transmitted (default to none). The format can be modified through the 1280 front panel or using the PC application Revolution.

# 4.0 Application Setup & Configuration

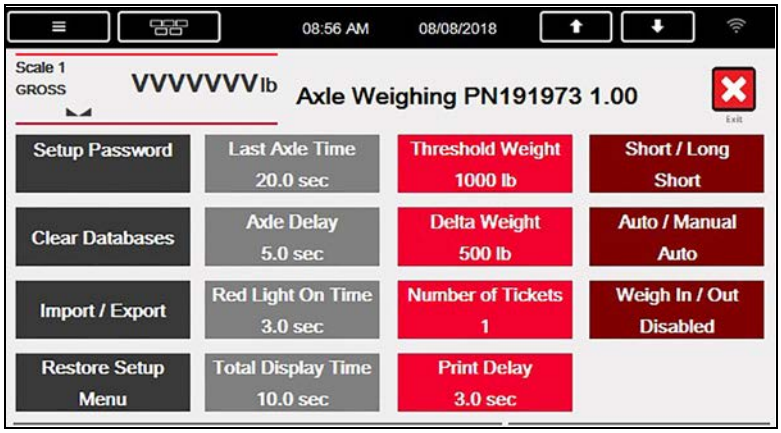


*Figure 4-1. Configuration Menu*

| Parameter | Default | Description |
|---|---|---|
| System Password | " " | Change the password required to enter the Setup menu<br>***NOTE: Setup is password-protected and offers access to Display Program Name & Version and Display a weight widget*** |
| Clear Transactions or Inbound Database | -- | Clear the transaction or inbound database; select YES or NO |
| Import/Export | -- | Import and Export databases |
| Restore Setup Menu | -- | Allows operator to import a database table from a USB flash drive using .DB file type; allows operator to save transactions to a USB flash drive; see Section 4.1 and/or the 1280 technical manual (PN 167659). |
| Last Axle Time | **45.0 Sec** | Maximum amount of time the system waits for another axle; if the timer is satisfied the transaction is complete; |
| Axle Delay | **5.0 Sec** | The delay between axles |
| Red Light On Time | **3.0 Sec** | Verifies the weighment was made and the green light is valid |
| Total Display Time | **10.0 Sec** | Time total axle weight is displayed after the transaction is finalized |
| Threshold Weight | **1000 lb** | Amount of weight that must be exceeded to trigger a weighment |
| Delta Weight | **500 lb** | Minimum weight change to recognize another axle |
| Number of Tickets | **1** | Set number of tickets printed with each transaction |
| Print Delay | **3.0 Sec** | Set number of seconds between tickets printed |
| Short/Long Axle | **Short** | Toggle between short and long axle; current selection is displayed |
| Auto/Manual Weigh Option | **Auto** | Toggle between automatic or manual weighing<br>• Auto – with thresholds and timers<br>• Manual – store axles by pressing icon – no traffic lights or in/out features available |
| Weigh In/Out Option | **Disabled** | Weigh twice per ID for Gross and Net weighments per axle<br>• Auto/Manual overrides this (if in Manual mode this is not possible even if enabled).<br>• Auto Mode and In/Out is enabled – stores inbound transaction the first time that ID is weighed, the second time it calculates the net and adds the transaction to populate the net fields. |

*Table 4-1. Configuration Menu Parameters*

## 4.1 Restore Settings

The setup database can be exported and/or imported using Import / Export; once imported or downloaded press Restore Setup Menu to overwrite all parameters in this menu.

This data is not verified upon restore, it is verified when changed within the setup menu but any alteration to the backed-up database is not verified.

# 5.0 Database Tables

## 5.1 Inbound Database

***System deletes 25% of oldest records when the inbound database reaches maximum capacity.***

| Field | Type | Description |
|---|---|---|
| ID | String | Truck ID-15 alphanumeric |
| Gross1 | Real | Axle 1 weight |
| Gross2 | Real | Axle 2 weight (if applicable) |
| Gross3 | Real | Axle 3 weight (if applicable) |
| Gross4 | Real | Axle 4 weight (if applicable) |
| Gross5 | Real | Axle 5 weight (if applicable) |
| Gross6 | Real | Axle 6 weight (if applicable) |
| Gross7 | Real | Axle 7 weight (if applicable) |
| TotalG | Real | Total gross weight |
| DT | Datetime | Time/date of weightment |

*Table 5-1. Inbound Database (1,000 Records)*

## 5.2 Transaction Database

***System deletes 25% of oldest records when the transaction database reaches maximum capacity.***

| Field | Type | Description |
|---|---|---|
| ID | String | Truck ID-15 alphanumeric |
| Gross1 | Real | Axle 1 weight |
| Gross2 | Real | Axle 2 weight (if applicable) |
| Gross3 | Real | Axle 3 weight (if applicable) |
| Gross4 | Real | Axle 4 weight (if applicable) |
| Gross5 | Real | Axle 5 weight (if applicable) |
| Gross6 | Real | Axle 6 weight (if applicable) |
| Gross7 | Real | Axle 7 weight (if applicable) |
| TotalG | Real | Total gross weight |
| Net1 | Real | Net weight of Axle 1 (not populated until second time Truck ID is weighed) Weigh In/Out Enabled Difference between first and second weighment |
| Net2 | Real | Net weight of Axle 2 (if applicable) |
| Net3 | Real | Net weight of Axle 3 (if applicable) |
| Net4 | Real | Net weight of Axle 4 (if applicable) |
| Net5 | Real | Net weight of Axle 5 (if applicable) |
| Net6 | Real | Net weight of Axle 6 (if applicable) |
| Net7 | Real | Net weight of Axle 7 (if applicable) |
| TotalN | Real | Total of all axles net weight (not populated until second time Truck ID is weighed) |
| DT | Datetime | Time/date of weighment |

*Table 5-2. Transaction Database (10,000 Records)*

# 6.0 Hardware Setup

## 6.1 Option Card Location

| Slot | Type |
|---|---|
| 1 | Single Channel A/D Card |
| 2-6 | Currently Not Used |

*Table 6-1. Option Card Locations*

## 6.2 1280 Screen Size/Luminance

| NIT | 1280 Screen Size |
|---|---|
| 500/1000 | 7.5" |
| 1500 | 12" |

*Table 6-2. 1280 Screen Size/Type*

## 6.3 Digital I/O

| Slot | Bit | Type | Function |
|---|---|---|---|
| 0 | 1 | Output | Green Light |
| 0 | 2 | Output | Red Light |
| 0 | 4-8 | Off | Currently Not Used |

*Table 6-3. Digital I/O*

## 6.4 Serial Ports

| Port | Type | Description | Setup |
|---|---|---|---|
| 1 | CMD | Printer | 9600, 8, N, 1 |
| 2 | CMD | Stop N Go Laser Light | 9600, 8, N, 1 |

*Table 6-4. Serial Port*

## 6.5 Ethernet TCP/IP Port

| Port | Type | Description | Setup |
|---|---|---|---|
| 10001 | CMD | Waits for connection from software/device i.e. Revolution or Interchange | TCP Server |
| 10001 | CMD | Currently Not Used | TCP Client1 |
| 10002 | CMD | Currently Not Used | TCP Client 2 |
| 3000 | CMD | Web Server | Web Server |

*Table 6-5. Ethernet TCP/IP Port*

## 6.6 USB Port

| Port | Type | Description | Setup |
|---|---|---|---|
| 3 | CMD | 8 GB Micro SD Card | Images |

*Table 6-6. USB Device Port*

## 6.7 USB Type-A Port

| Port | Type | Description | Setup |
|---|---|---|---|
| - | CMD | Currently Not Used | - |
| - | CMD | Currently Not Used | - |

*Table 6-7. USB Type-A Port*

## 6.8 SD Card Slot

Note ***The SD Card is required.***

| Port | Type | Description | Setup |
|---|---|---|---|
| - | CMD | 8GB Micro SD Card | Images |

*Table 6-8. SD Card Slot*

## 6.9 Bluetooth Port

| Port | Type | Description | Setup |
|---|---|---|---|
| 4 | CMD | Currently Not Used | - |

*Table 6-9. Bluetooth Port*

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