

RailBoss®

Custom 1280 Program

Operation Manual



irite

An ISO 9001 registered company
© Rice Lake Weighing Systems. All rights reserved.

Rice Lake Weighing Systems® is a registered trademark of
Rice Lake Weighing Systems.

All other brand or product names within this publication are trademarks or
registered trademarks of their respective companies.

All information contained within this publication is, to the best of our knowledge, complete and
accurate at the time of publication. Rice Lake Weighing Systems reserves the right to make
changes to the technology, features, specifications and design of the equipment without notice.

The most current version of this publication, software, firmware and all other product
updates can be found on our website:

www.ricelake.com

Contents

1.0 Introduction	1
1.1 Overview	1
1.2 Safety	2
2.0 Operation	3
2.1 Double-Draft Mode	3
2.1.1 Processing a Rail Car	3
2.1.2 Return to Weigh Screen	5
2.2 Full-Draft Mode	5
2.2.1 Processing a Rail Car	5
2.3 Check Sensor	7
3.0 Serial Communications - Tickets, PC	8
3.1 Weigh Ticket	8
3.2 Modifying the Database Tables	8
3.3 Application Setup and Configuration	8
3.4 Database Table	9
3.5 Hardware Setup	9



Technical training seminars are available through Rice Lake Weighing Systems. Course descriptions and dates can be viewed at www.ricelake.com/training or obtained by calling 715-234-9171 and asking for the training department.



Rice Lake continually offers web-based video training on a growing selection of product-related topics at no cost. Visit www.ricelake.com/webinars

1.0 Introduction

This manual provides information for the interface of the 1280 with one or more RailBoss scales, written with the iRite programming language.

1.1 Overview

The RailBoss scale is available in double-draft and full-draft modes.

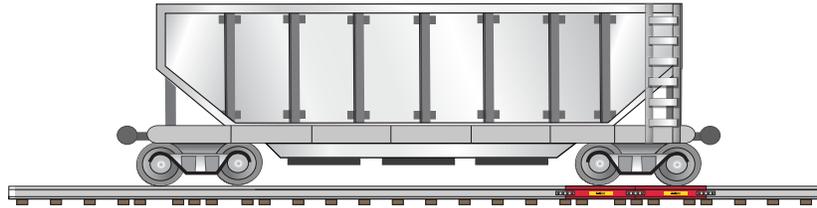


Figure 1-1. Double-Draft Installation

Double-draft mode weighs one rail truck (all four wheels) at a time. This installation allows rail cars of different lengths to be weighed. Each end of the rail car is weighed separately and the weighments are added together.

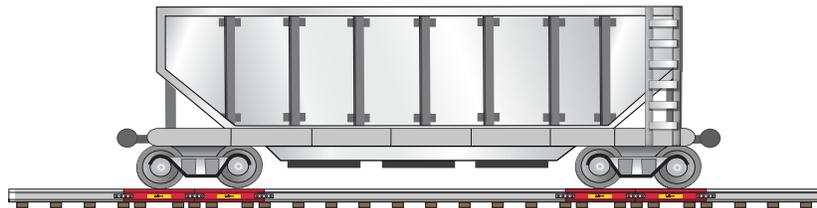


Figure 1-2. Full-Draft Installation

Full-draft weighments require a dual-channel A/D input card installed in a 1280. In this application, the RailBoss rails are located so that both ends of a rail car can be weighed simultaneously.



Note

Actual installation of rail sections, including rail cutting, tie positioning and rail installation, should be performed by an authorized rail contractor.

1.2 FCC Statement

The 1280 complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Radio certificate number:

- US: TFB-TIWI1-01
- Canada: 5969A-TIWI101

1.3 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.

Do not allow minors (children) or inexperienced persons to operate this unit.

Do not operate without all shields and guards in place.

Do not use for purposes other than weight taking.

Do not place fingers into slots or possible pinch points.

Do not use any load bearing component that is worn beyond 5% of the original dimension.

Do not use this product if any of the components are cracked.

Do not exceed the rated load limit of the unit.

Do not make alterations or modifications to the unit.

Do not remove or obscure warning labels.

Keep hands, feet and loose clothing away from moving parts.

2.0 Operation

A 1280 with the RailBoss program is interfaced to one or more RailBoss railroad scales and is used to weigh rail cars in double-draft or full-draft mode. Data is stored in a transaction database and can be retrieved with Interchange.

A single RailBoss scale cannot weigh in Full Draft mode.

2.1 Double-Draft Mode

Figure 2-1 displays when unit is powered up or when it exits the configuration or setup menus. The scale icons displayed are dependant on the number of scale being used.

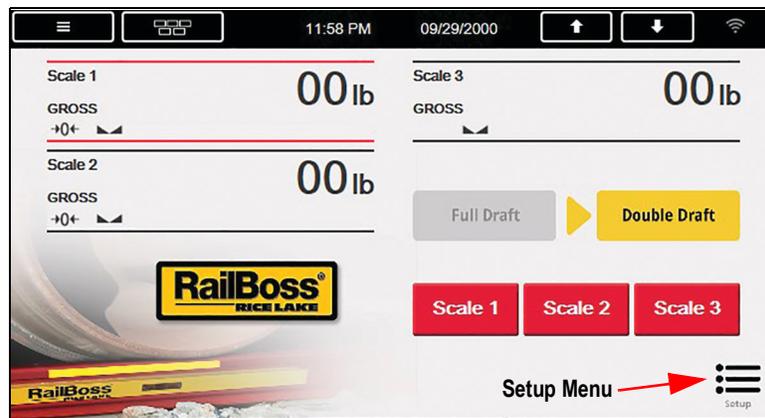


Figure 2-1. Double-Draft Initial Display

2.1.1 Processing a Rail Car

1. Ensure all scales are at zero.

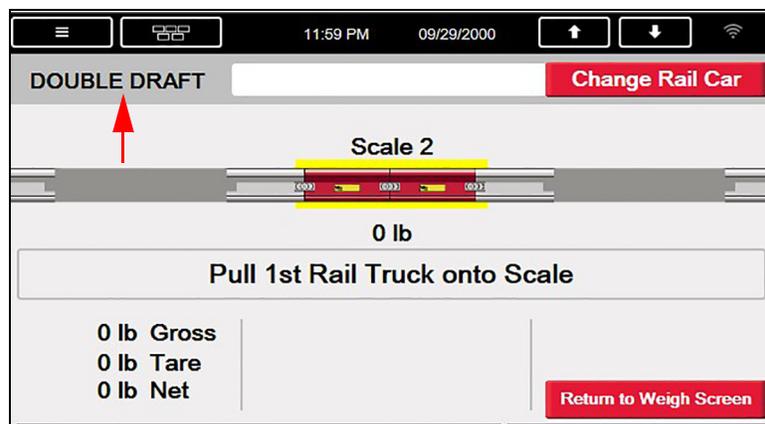


Figure 2-2. Live Weight Display

2. Verify **Double Draft** is displayed.
3. Position the first rail truck to be weighed on the scale.
4. Use the display to select the scale being used (Figure 2-1) to weigh the rail truck. The live weight for the current scale displays. If the weight is above the threshold weight, **Capture** displays. The selected scale is default until **Return to Weigh Screen** is pressed. See Section 2.1.2 on page 5.
5. Press **Change Rail Car** to enter a rail car ID (if not needed, skip to Step 7). **Enter Rail Car ID** displays.
6. Enter the rail car ID and press **DONE**.



Note Rail Car ID can be optional or mandatory based on the ID Required setting in Setup, and can be entered before the second rail truck is processed.

- Enter a known tare weight (optional, proceed to [Step 8](#) if not needed) and press  (or press  to open the virtual keypad and press ). The system tares the scale to the entered value. If a value is not entered and  or  is pressed, the system uses the gross weight as the tare value.



Note *Tare is an optional field and can be entered anytime prior to the second rail truck being processed.*

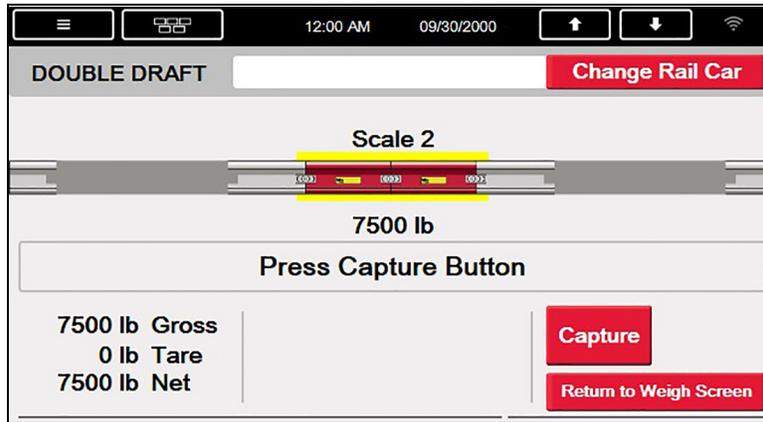


Figure 2-3. Capture Weight

- Press **Capture**. The gross weight and **1st Rail Truck Captured – Pull Next onto Scale** display.
 - The system verifies if the proximity sensor/photo-eye are Enabled/Disabled, see [Section 2.3 on page 7](#) for more information.
 - 1st Rail - system captures the stable gross weight of the rail truck on the scale. **1st Rail Truck Captured – Pull Next onto Scale** displays. If an ID is required and not yet entered, system prompts to enter an ID.
 - 2nd Rail - system captures the stable gross weight of the rail truck on the selected scale. **Ticket Printed – Exit Scale** displays.
- Pull the first rail truck off the scale, dropping it below Threshold Weight.
- Pull the next truck onto the scale. The second truck can be weighed on any other scale by pressing **Return to Weigh Screen**. See [Section 2.1.2 on page 5](#).
- If the same scale is used, repeat [Step 8](#) twice to capture both rail trucks. If a tare was captured for Rail Truck #1, repeat [Step 7](#).
- Press **Capture**. The gross weight and **Ticket Printed – Exit Scale** displays.
- Press **Return to Weigh Screen** ([Section 2.1.2 on page 5](#)) when all truck transactions for current scale are complete or return to [Step 2](#).

After weighing all rail trucks, the system:

- Prints a ticket; press  to reprint the ticket if an error occurred
- Stores the information in the **Trans** database; when the **Trans** database is full, the system automatically deletes the oldest 25%
- Increments the ticket number (resets after exceeding 999,999)
- When the weight drops below the threshold weight, the rail car ID and tare weights are cleared
- Pull 1st Rail Truck onto Scale** displays.

2.1.2 Return to Weigh Screen

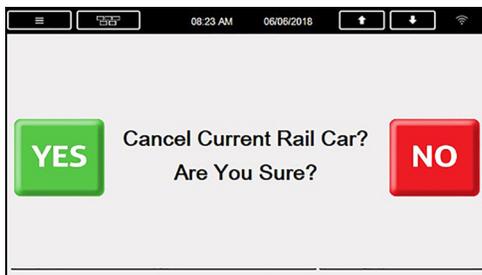


Figure 2-4. Cancel Display

Press **Return to Weigh Screen**, the system clears all entered information for the 1st Rail truck and returns to [Step 1](#). For the 2nd rail truck the system displays **Cancel Current Rail Car?**

- Press **YES** to clear the first rail truck.
- Press **NO** to return to the main menu and select a different scale for the 2nd rail truck.

It only prompts **Yes** or **No** if one rail truck started, but the second rail truck is not finished.

2.2 Full-Draft Mode

[Figure 2-5](#) displays when powered up or when it exits configuration or setup menus. A single scale cannot process a full draft.

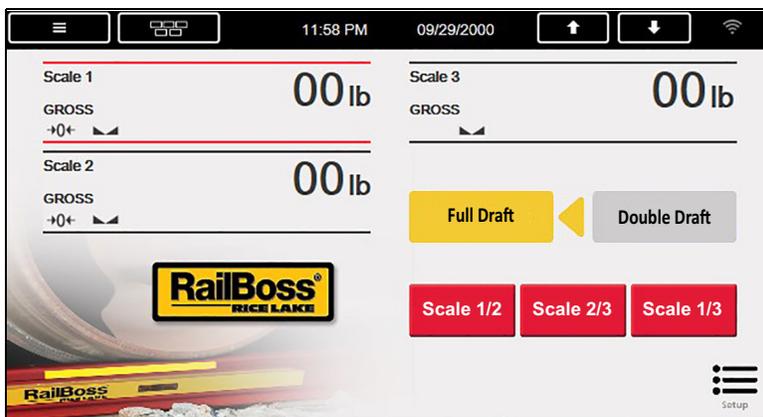


Figure 2-5. Full Draft Initial Display

2.2.1 Processing a Rail Car

1. Ensure active scales are at zero.

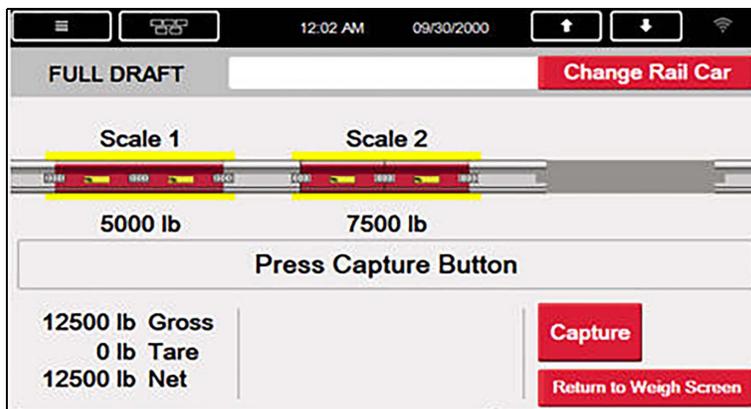


Figure 2-6. Live Weight – Full Draft

2. Verify **Full Draft** is displayed.

3. Position the rail trucks on the scales to be used. Full draft may be performed in the following configurations:
4. Select the scale configuration to be used for weighing the rail trucks. Select the configuration to be used:
 - One truck completely on scale 1, the other truck completely on scale 2 (press Scale 1/2)
 - One truck completely on scale 2, the other truck completely on scale 3 (press Scale 2/3)
 - One truck completely on scale 1, the other truck completely on scale 3 (press Scale 1/3)

The live weight for the current scales, **Change Rail Car**, **Capture** and **Return to Weigh Screen** display (**Capture** is only displayed if the weight is above the threshold weight on selected scales). This configuration is default until **Return to Weigh Screen** is pressed.

5. Press **Change Rail Car** to enter a rail car ID (If not needed skip to [Step 7](#)). **Enter Rail Car ID** displays.
6. Enter the rail car ID and press **DONE**.



Note

Rail Car ID can be optional or mandatory based on the ID Required setting in Setup, and can be entered before the second rail is processed.

7. Enter a known tare weight (optional, proceed to [Step 8](#) if not needed) and press  (or press  to open the virtual keypad and press ). The system tares the scale to the entered value. If a value is not entered and  or  is pressed, the system uses the gross weight as the tare value.



Note

Tare is an optional field and can be entered anytime prior to the second set of rail trucks being processed.

8. Press **Capture**. The gross weight and **Ticket Printed – Exit Scale** displays. If an ID is required and not yet entered, **Enter ID** displays.
 - System verifies if the proximity sensor/photo-eye are Enabled/Disabled, see [Section 2.3 on page 7](#) for more information.
 - **Ticket Printed – Exit Scale** displays; press  to reprint the ticket if it did not print correctly
 - Press **Return to Weigh Screen** ([Section 2.1.2](#)) when all transaction are complete or return to [Step 5](#).

Once the weight drops below the threshold weight:

- The rail car ID and tare weights, if used, are cleared
- Reprint is no longer available
- System stores the information in the **Trans** database; when the **Trans** Database is full, the system automatically deletes the oldest 25%
- Increments the Ticket Number (resets after exceeding 999,999)
- When weight drops below the threshold weight the rail car ID and tare weights are cleared
- **Pull Rail Trucks onto Scales** displays

2.3 Check Sensor

Check sensors are used to ensure there is nothing blocking the sensors.

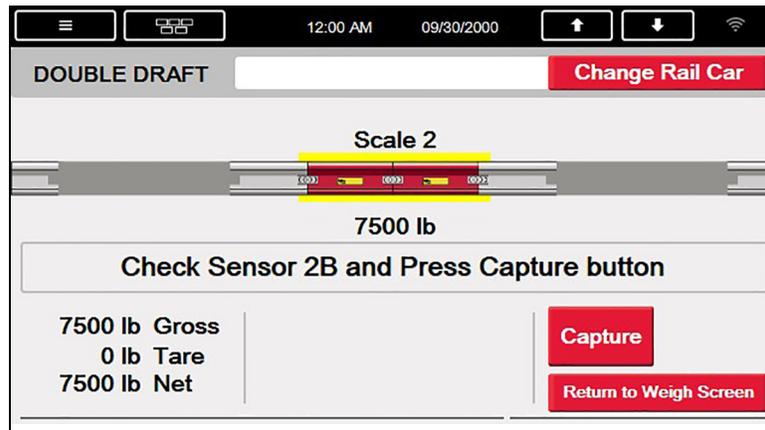


Figure 2-7. Check Sensor - Double-Draft Shown

Press **Capture**.

- System verifies the proximity switch/photo-eye inputs are Enabled/Disabled, set in the Sensor Logic setting in the Setup menu for the selected scales.
- If the sensors are blocked **Check Sensor X and Press Capture Button** displays. (X = the scale/sensor number).
- System remains on this step until blocked sensor is cleared.

3.0 Serial Communications - Tickets, PC

3.1 Weigh Ticket

Auxiliary Print Format #1 is used to enable a technician to modify the print format through the 1280 front panel, or by using Revolution PC Software.

```

Double Draft
Ticket Number: 2
Rail Car ID: 21544

Rail Truck #1: 27000 lb
Rail Truck #2: 24150 lb

Gross: 51150 lb
Tare: 10000 lb
Net: 41150 lb

10:59 AM 07/09/2018
    
```

Figure 3-1. Double-Draft Weigh Ticket Example

3.2 Modifying the Database Tables

Interchange (a PC program) can be used to upload, export and clear database tables. The exported file may be saved as a delimited text file, an Excel spreadsheet, or an XML document. Revolution is another option for database maintenance.

3.3 Application Setup and Configuration

The Setup Menu can be password protected and offers access to the program name, version and weight buttons.

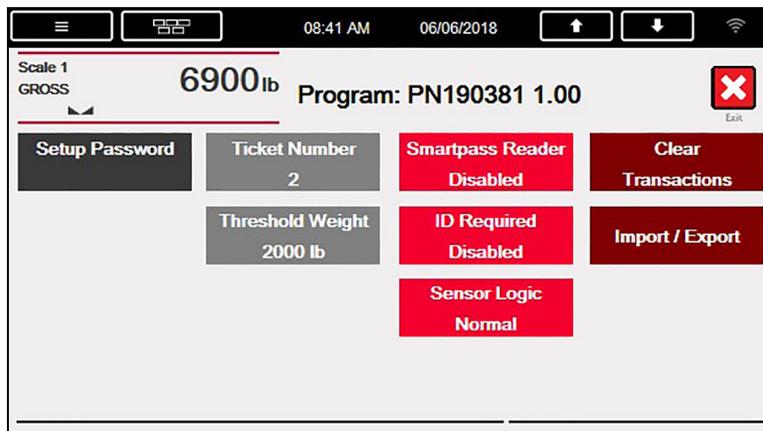


Figure 3-2. Setup Menu

Parameter	Softkey	Description
System Password	Setup Password	Changing the password required for entry into the Setup menu; if a password is not set the system does not prompt for a password when Setup is pressed
Ticket Number	Ticket Number	Modify/reset the incrementing ticket number; Enter Value: 1 is default
Threshold Weight	Threshold Weight	Modify the threshold weight; threshold weight is the minimum amount of weight to recognize if a rail car is on the scale; Enter Value: 2000 lb is default

Table 3-1. Configuration

Parameter	Softkey	Description
Smart Pass Reader	Smart Pass Reader	Enable or disable the Smart Pass reader option on Port 1; Settings: Short Range, Long Range, Disabled (default)
ID Required	ID Required	Enable or disable the requirement on the ID; if enabled system requires an ID; Settings: Disabled (default), Enabled
Sensor Logic	Sensor Logic	Sets the logic of the proximity switches/photo-eyes; the system does not monitor the sensors during the weighing process if this is Disabled; Settings: Normal, Inverted, Disabled (default)
Clear Transactions	Clear Transactions	Clear all transactions with a Yes/No option
Import/Export Data	Import/Export	1280 standard function; reference the 1280 Installation manual for more details Allows a product database to be imported/exported using a USB flash drive

Table 3-1. Configuration (Continued)

3.4 Database Table

Field	Type	Description
Ticket	Integer	Sequential Ticket Number
ID	String	Unique Alphanumeric Rail Car ID
Rail1Wgt	Real	First Rail Truck Weight
Rail2Wgt	Real	Second Rail Truck Weight
GrossWgt	Real	Weight of Rail Car and Product
TareWgt	Real	Empty Weight Of Rail Car
NetWgt	Real	Weight of Product Only
RMode	String	DD – Double Draft & FD – Full Draft
DT	DateTime	Time and Date of Transaction

Table 3-2. Transactions (Trans) Database Table - 2000 Records

3.5 Hardware Setup

One Scale Configuration		Two Scale Configuration		Three Scale Configuration	
Slot	Type	Slot	Type	Slot	Type
1	Single Channel A/D Card	1	Dual Channel A/D Card	1	Dual Channel A/D Card
2	Currently Not Used	2	Currently Not Used	2	Single Channel A/D Card
3	Currently Not Used	3	Currently Not Used	3	Currently Not Used

Table 3-3. Option Card Location

Slot	Bit	Type	Function
0	1	Programmability	Scale 1 Proximity Switch/Photo-Eye A
0	2	Programmability	Scale 1 Proximity Switch/Photo-Eye B
0	3	Programmability	Scale 2 Proximity Switch/Photo-Eye A
0	4	Programmability	Scale 2 Proximity Switch/Photo-Eye B
0	5	Programmability	Scale 3 Proximity Switch/Photo-Eye A
0	6	Programmability	Scale 3 Proximity Switch/Photo-Eye B
0	7	Off	Currently Not Used
0	8	Off	Currently Not Used

Table 3-4. Digital I/O

Port	Type	Description	Setup
1	PROGIN	Optional Smart Pass RFID Reader	9600,8,N,1
2	CMD	TM-U220 Tape Printer	9600,8,N,1

Table 3-5. Serial Port

Port	Type	Description	Setup
3	CMD	Currently Not Used	-

Table 3-6. USB Device Port

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

Table 3-7. USB Type-A Port

Port	Type	Description	Setup
10001	CMD	Revolution	TCP Server
10001	CMD	Currently Not Used	TCP Client 1
10002	CMD	Currently Not Used	TCP Client 2
3000	CMD	Web Server	Web Server

Table 3-8. Ethernet TCP/IP

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

Table 3-9. SD Card Slot

Port	Type	Description	Setup
4	CMD	Currently Not Used	-

Table 3-10. Bluetooth Port



© Rice Lake Weighing Systems Specifications subject to change without notice.
Rice Lake Weighing Systems is an ISO 9001 registered company.

230 W. Coleman St. • Rice Lake, WI 54868 • USA
U.S. 800-472-6703 • Canada/Mexico 800-321-6703 • International 715-234-9171 • Europe +31 (0)26 472 1319