

RD40RF Remote Display

Agricultural Remote Display



User Instructions

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1 General Information and Warnings

1.1 About this Manual

This manual is divided into chapters by the chapter number and the large text at the top of a page. Subsections are labeled as shown by the 1 and 1.1 headings shown above. The names of the chapter and the next subsection level appear at the top of alternating pages of the manual to remind you of where you are in the manual. The manual name and page numbers appear at the bottom of the pages.

1.1.1 Text Conventions

Key names are shown in **bold** and reflect the case of the key being described. This applies to hard keys and onscreen or soft keys.

Displayed messages appear in **bold italic** type and reflect the case of the displayed message.

1.1.2 Special Messages

Examples of special messages you will see in this manual are defined below. The signal words have specific meanings to alert you to additional information or the relative level of hazard.



ELECTRICAL WARNING! THIS IS AN ELECTRICAL WARNING SYMBOL. ELECTRICAL WARNINGS MEAN THAT FAILURE TO FOLLOW SPECIFIC PRACTICES OR PROCEDURES MAY RESULT IN ELECTROCUTION, ARC BURNS, EXPLOSIONS OR OTHER HAZARDS THAT MAY CAUSE INJURY OR DEATH.



WARNING! This is a Warning symbol. Warnings mean that failure to follow specific practices and procedures may have major consequences such as injury or death.



NOTE: This is a Note symbol. Notes give additional and important information, hints and tips that help you to use your product.



DANGER: RISK OF ELECTRICAL SHOCK. NO USER SERVICEABLE PARTS. REFER TO QUALIFIED SERVICE PERSONNEL FOR SERVICE.

1.3 Routine Maintenance

Always turn off the machine and isolate from the power supply before starting any routine maintenance to avoid the possibility of electric shock.

Make sure that it is placed securely on a flat and level surface.

1.4 Cleaning the Machine

Table 1.1 Cleaning DOs and DON'Ts

DO	DO NOT
Wipe down the outside of standard products	Attempt to clean the inside of the machine
with a clean cloth, moistened with water and a small amount of mild detergent	Use harsh abrasives, solvents, scouring cleaners or alkaline cleaning solutions
Spray the cloth when using a proprietary cleaning fluid	Spray any liquid directly on to the display windows

1.5 Training

Do not attempt to operate or complete any procedure on a machine unless you have received the appropriate training or read the instruction books.

1.6 Sharp Objects

Do not use sharp objects such as screwdrivers or long fingernails to operate the keys.

1.7 Declaration of Conformity (CE approval)

cc	De	claration of Confo	ormity H	Konformitätserkläru	ing	
CE Verklaring Déc		van overeensten	nming I	Dichiarazione di Co	chiarazione di Conformità	
		claration de Confe	ormité [Declaración de Con	formidad	
Manufacturer Type	Avery Weigh-Tronix 640/640M/640XL RD40/RD40XL/ RD40RF	Fabrikant Type	Avery Weigh-Tronix 640/640M/640XL RD40/RD40XL/ RD40RF	Fabricant Type	Avery Weigh-Tronix 640/640M/640XL RD40/RD40XL/ RD40RF	
corresponds to the re following EC	equirements of the directives:	is in overeenstemming van de volgende	met de voorschriften EG richtlijnen:	correspond aux exigen suiva	correspond aux exigences des directives CE suivantes :	
EMC Directive	89/336/EEC	EMC Richtlijn	89/336/EEG	Directive CEM	89/336/CEE	
Low Voltage Directive	73/23/EEC	Laagspanningsrichtlijn	73/23/EEG	Directive Basse Tensior	73/23/CEE	
The applicable harmor	nised standards are:	Toegepaste geharmoniseerde normen:		Les normes harmonis	Les normes harmonisées applicables sont :	
EN 60950-1:2002 EN 61000-6-3:2001	EN 61000-6~1:2001	EN 60950-1:2002 EN 61000-6-3:2001	EN 60950-1:2002 EN 61000-6-1:2001 EN 61000-6-3:2001		EN 60950-1:2002 EN 61000-6-1:2001 EN 61000-6-3:2001	
Hersteller Typ	Avery Weigh-Tronix 640/640M/640XL BD40/BD40XL/	Produttore Modello	Avery Weigh-Tronix 640/640M/640XL RD40/RD40XL/	Fabricante	Avery Weigh-Tronix 640/640M/640XL RD40/RD40XL/	
RD40RF		RD40RF		conforme a las exigen	RD40RF	
EG-Richtlinien:		seguenti direttive CE:		directiv	directivas CE:	
EMV-Richtlinie	89/336/EWG	Normativa EMC	89/336/CEE	Directiva CME	89/336/CEE	
Niederspannungs- 73/23/EWG Richtlinie		tensione	73/23/CEE	Directiva de baja tensión	73/23/CEE	
Die angewendeten harmonisierten Normen sind:		Le norme standard armonizzate e nazionali applicate sono:		Las normas armoni	Las normas armonizadas en vigor son:	
EN 60950-1:2002 EN 61000-6-1:2001 EN 61000-6-3:2001		EN 60950-1:2002 EN 61000-6-1:2001 EN 61000-6-3:2001		EN 60950-1:2002 EN 61000-6-3:2001	EN 60950-1:2002 EN 61000-6-1:2001 EN 61000-6-3:2001	
Avery Weigh-Tracix, LLC Geschäftssitz: Foundry Lane, West Midlands Eingetragen unter I	Smelhwick, B66 21-P, Englend. V: 595129	Avery Weigh-Tronix, LLC Sece legale: Foundry Lane, Sr West Midlards B Depositati n Gran Brottagna al	nsthwick, 66 21.P. England. numero di registro: 595121	Avery Weigh-Tronix, LLC Oficina de matriculación: Four Weel Registrada en Inglaterra No. 5	dry Lane, Smethwick, Midlands B68 2LP, Englar 95128	
	200					
Signature/Name Handlekening/Naam Signature/Nam	R. Le Com	Authonised signet Namens van Aver Sinnetaire autoris	ory for Avery Weigh-Tronix ry Weigh-Tronix é d'Avery Weigh-Tronix		Date Datum Date	
Unterschrift/Name	R Cann	Unterschriftsbered	chtigter für Avery Weigh-Tr	onix	Datum	

76501-253

1.8 FCC and EMC Declarations of Compliance

United States

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe A prescrites dans le Règlement sur le brouillage radioélectrique edicté par le ministère des Communications du Canada.

European Countries

WARNING: This is a Class A product. In a domestic environment, this product may cause radio interference in which the user may be required to take adequate measures.

1.9 Technical Support

24/7 Customer Support

Avery Weigh-Tronix is dedicated to customer service. We understand downtime is not an option for AG producers and we're ready to help anytime. The technical support team for all Avery Weigh-Tronix agri-business scales is available 24 hours a day 7 days a week.

Ag Technical Support GroupUSA and Canada:

Toll free Phone: (800) 458 - 7062 Outside USA: (507) 238-8261 Tech Support Phone 7:00 am to 5:00 pm CST (800) 458-7062 Ext. 8261 Tech Support Phone/ after hours answering 5:00 pm to 7:00 am CST (800) 458-7062

Service e-mail:

usservice@awtxglobal.com

2 Introduction

This manual covers the installation and setup of the RD40RF wireless remote display. The RD40RF only interfaces with the following Models:

- 640 Series
- 1040 Series
- 2040 Series
- 3060 Touchscreen

In addition these indicators must be fitted with the factory installed RD40RF option or the field installed RM-200 Transceiver. A RS-232 serial port must be available to connect the RM-200. After installation, if the system was pre-configured from the factory, the system should be operational when they are turned on. If not please reference the *Wireless Configuration* section.

Below is an illustration of the remote display front panel.



Figure 2.1 RD40RF Front Panel

3 Installation

The installation of the RD40RF system amounts to installing the RD40RF into the following situations:

A Remote Location Installation

Such as a feed room, or any place the wireless remote needs to be placed in order to use for the proper application. This installation requires a 115VAC to 12VDC wall mount transformer (AWT P/N 46869-0011) that is plugged into a 115VAC outlet and then the 12VDC output of the wall mount transformer then plugs into the 10-17VDC 2 pin connector on the bottom of the RD40RF.

Front End Loader or Combine

When installing into a front end loader than a 10-17 VDC power cable is included, simply wire the cable into the 12VDC supplied on the front end loader.

White	+12VDC
Black	GND

Your indicator needs to be fitted with the RD40RF wireless option or have an available RS-232 serial port to connect to the RM-200. Please consult your distributor or dealer to make sure the indicator you have has been properly fitted with either of these options.



WARNING! Do not plug into a 24VDC output as this can damage the RD40RF and will void the warranty.

The RD40RF power connector is shown below.

2-Pin power input



Pin Description

A +12V

B GND

Outside view (Female)

The wireless RD40RF uses the same overlay as the Model 640, but has only a 2 pin 10-17 VDC connector and an antenna on the bottom of the indicator. See Figure 3.1.



Figure 3.1 Front Panel and Mounting Options

Figure 3.2 shows the bottom connections on the remote display.



Figure 3.2 Bottom Connections

3.2 Setting the Backlight Operation

The Model RD40RF has a backlight you can configure. Follow these steps to configure backlight operation.

1. From the G/N mode, press and hold the **HOLD/MENU** key for two beeps (2 sec), then release...

A-LIST is displayed.

2. Press the HOLD/MENU key repeatedly until....

BKLGHT is displayed.

3. Press the **PRINT/SELECT** key...

Current setting is displayed. (ON or OFF)

4. Press the **HOLD/MENU** key to toggle between the two settings. Press **PRINT/ SELECT** when your choice is displayed. If you choose **ON**...

LEVEL is displayed. Use this to set the illumination level of the backlight (10% to 100%).

5. Press the **PRINT/SELECT** key to access the level...

Current setting is displayed. (100% is default value)

6. Scroll through the choices by repeatedly pressing the **HOLD/MENU** key. Press **PRINT/SELECT** when your choice is displayed.

LEVEL is displayed.

7. Press the HOLD/MENU...

TIMER is displayed. Use this to set the amount of time which must pass with no scale or indicator activity before the unit shuts down the backlight for power saving.

8. Press the **PRINT/SELECT** key to access the timer function...

Current setting is displayed.

9. Use the numeric entry procedure to enter a choice in seconds (0-99). Press **PRINT/SELECT** to accept your choice.

TIMER is displayed.

10. Press **G/N** key twice...

BKLGHT is displayed.

11. Press the **G/N** key...

Indicator returns to the G/N mode.

3.3 Entering / Viewing the Audible Keypad Setting

The Model RD40RF keys have audible feedback that can be configured for off, low, medium, or high. (Default is high)

1. From the G/N mode, press and hold the **HOLD/MENU** key for two beeps (2 sec), then release...

A-LIST is displayed.

2. Press the HOLD/MENU key repeatedly until...

VOLUME is displayed

3. Press the **PRINT/SELECT** key...

Current setting is shown.

4. Press **HOLD/MENU** repeatedly until appropriate setting is shown, then press **PRINT/SELECT**...

VOLUME is displayed.

5. Press the **G/N** key...

Returns to the G/N weighing mode.

3.4 Interface with a 640 Series Indicator

The RD40RF remote display is compatible with the Model 640 indicators. An RD40 output option is required on the Model 640 for interfacing. The interface cable plugs directly into the bottom of the Model 640. Any data displayed on the Model 640 is also displayed on the RD40.

The RD40RF is a wireless remote display which allows full control of the Model 640 from the seven keys on the RD40RF.

3.4.1 RD40RF Operation

Once the system has been properly programmed, check the operation observing the following:

- The wireless RD40RF should display the same weight as on the Model 640
- All of the function keys should function in the weighing mode on the RD40RF just like they would on the 640 Series indicator.
- If the display shows ----- then this means the RF is not communicating back and forth between the RD40RF and the RF indicator unit. Reference *RD40RF Setup of the Wireless Option on page 17* and configure the RD40RF and indicator properly.

3.5 Using with the 1040/2040 Series Indicators

The RD40RF is a wireless remote display that is compatible with many of the Avery Weigh-Tronix indicators. This document describes using it our 1040/2040 batching indicators. We will describe the setup and usage of the RD40RF. There may be references to the standard RD40RF manual that is supplied in the shipping box it came in. If there are any questions about this system, please contact your dealer or Avery Weigh-Tronix for support.

3.5.1 RD40RF with One 1040/2040 Indicator

When using the RD40RF with the 2040, the remote comes from the factory configured with the correct settings needed. The 1040/2040 indicator requires a RM200 AG radio assembly to communicate with the RD40RF. If there is another RD40RF remote used in the area and is interfering, then the setting must be changed. To find out what settings are recommended, please contact the factory.

3.5.2 RD40RF with Multiple 1040/2040 Indicators

The RD40RF has the capability to communicate with multiple indicators. This means that if multiple mixers are used, only one remote is needed to view that data from each mixer.

To setup the RD40RF, please reference section 3.3. SPT-PT section of the RD40RF Users manual. When using the RD40RF with multiple indicators and the user want to change between listening to a different indicator.

- 1. Press the **PRINT/SELECT** key and the current indicator is shown.
- 2. Press the **MENU** key to scroll to the desired indicator.
- 3. Press **PRINT/SELECT** to accept.



NOTE: Each of the 2040 indicators need to have special setting and radio to accomplish this. Please call factory if there are questions.

3.5.3 RD40RF Interface with 1040/2040 Indicators

This section describes the operation of the RD40RF when communicating to the 1040/2040 AWT indicators. If there are any questions on the operation of the 1040/2040, please reference the corresponding user manual.

The RD40RF has the same display as the 1040/2040 indicator. This means that if you see it on one of the displays, the same is shown on the other. We must remember that the RD40RF is used with many other indicators that have different functionality. So, the key names may not always match the operation of the key. Below is a list of the keys on the RD40RF and the functions that will be performed on the 2040 indicator.

ON/OFF Turn on and off the RD40RF remote only. RM This key is used to advance to the next ingredient when in batching mode or next pen during unloading mode. Press once to advance. M+ This key is not used with the 2040. TARE Use this key to start a manual loading routine. Press TARE once and a 0 Load/Unload routine is started. The display shows 0. Load the weight of the first ingredient. When the target is met, press TARE again if there are more ingredients to load. To view the gross weight during the loading process, press the **G/N** key and the gross weight is shown. Press the G/N key again to return to the loading routine. When done with loading, press RM to exit to the gross mode. The TARE key is not used during automatic loading with the 1040/2040. G/N The Gross/Net key is used to see the gross weight during the load/ unload routine. Press the G/N key once and the gross weight is shown until you press the G/N key again to return to loading. When the gross weight is active on the display, the GROSS annunciator will be on. HOLD/MENU Pressing the HOLD key will go into hold mode. The hold mode is used when moving the mixer and you do not want the weight to shift because of the change in terrain. Press the HOLD key again to return to the weight. PRINT/SELECT This key is used to switch between multiple indicators when SPT-PT is in use. **ZERO/CLEAR** Pressing the ZERO/CLEAR will zero the weight off the indicator when in gross mode. In automatic loading mode or making a 1040/2040 recipe, the ZERO/CLEAR will not function.

When using the Feed Foreman program the RM-200 that communicates to the RD40RF must be connected to Comm 2 serial port. For all other software applications it can be connected to Comm 3 or Comm2 serial port. These serial ports need to be turned on. Please refer to the 3060 Service manual on how to turn on/off serial ports.

3060 default Comm port settings for the RD40RF

- Baud: 9600
- Data Bits: 8
- Parity: None
- Stop Bits: 1
- Handshake: None
- Power: ON

Pressing the **HOLD** key will go into hold mode. The hold mode is used when moving the mixer and you do not want the weight to shift because of the change in terrain. Press the **HOLD** key again to return to the weight.



NOTE: When using with Feed Foreman pressing the **HOLD** key will advance you to the next step. i.e. advance to the next ingredient or advance you through the mix timer.

4 Wireless Configuration

4.1 Configuration Menu

Figure 4.1 shows the configuration menu for the RD40RF.



Figure 4.1 Configuration Menu

4.2 Access the RD40RF Configuration Menu

To access the configuration menu, follow these steps:

1. From the G/N mode, press and hold the **HOLD/MENU** key for three beeps (3 seconds), then release...

SET.PAS is displayed.

2. Use the numeric entry procedure, shown at left, and enter the password 640, then press the **PRINT/SELECT** key to accept it ...

RD40RF is displayed.

3. Press the **PRINT/SELECT** key...

RS232, the first menu item, is displayed.

Use the menu navigation legend below to move through the menu and set your choices for the parameters shown in the menu in Figure 4.1

Menu Navigation



Numeric Entry



Press this key to enter a value on the screen and increment the value being entered

Press this key to decrement the numeric value being entered

Press this key to move the numeric entry cursor one position to the right

The RS232 section of the menu is only used for special applications. You need to choose what form of communication your situation requires and set up your system accordingly. Each type is explained in section 4.3 and refers to the menu in Figure 4.1 under the CONF.RF (configure RF) menu item.

4.3 RD40RF Setup of the Wireless Option

The RD40RF can be setup for four different wireless scenarios. See the *Configuration Menu on page 15*

1. PT-PT

This is the standard RF setup, used when one RD40RF is communicating to one Model 640 indicator.

For proper PT-PT operation the RD40RF and the Model 640 indicator need to be configured as follows:

- **RD40RF** Set the RD40RF for PT-PT and network scale ID 1...10
- M640 Setup the Model 640 in the Setup menu. Access the Setup menu and follow this path in the menu to get to the parameters you need to set: 640 > 640RF v CONF.RF v PT-PT. Set up as network scale ID 1...10.

Networks must match on both the indicator and the RD40RF. So, if configured for network 1, then both products must be configured for network scale ID 1.

2. SPT-PT

This mode is recommended when there are multiple RD40RF's that can select which Model 640 they want to communicate with: (Example: Two front end loaders with four different trucks with model 640's). User can access on the RD40RF which RF scale channel, (which scale) the RD40RF will communicate with when selected. (RF-01 through RF-10)

For proper SPT-PT operation the RD40RF's and the Model 640 indicators need to be configured as follows:

- **RD40RF** Setup the RD40RF's for SPT-PT, and setup for network ID 1...10
- M640 Setup the Model 640 in the Setup menu. Access the Setup menu and follow this path in the menu to get to the parameters you need to set: 640 > 640RF v CONF.RF v SPT-PT. Set up as network scale ID 1...10.

3. PT-MPT

Ideal for applications like one front end loader wanting to be able to communicate with any of 16 different trucks, by selecting RF scale ID RF-01 through RF16. The RF scale addresses would correspond to each truck (truck 1 = RF-01, truck 2 = RF-02, etc.)

For proper PT-MPT operation the RD40RF and the Model 640 indicators need to be configured as follows:

- **RD40RF** Setup the RD40RF for PT-MPT, and setup for network ID 1...10
- M640 Setup the Model 640 in the Setup menu. Access the Setup menu and follow this path in the menu to get to the parameters you need to set: 640 > 640RF v CONF.RF v PT-MPT. Set up as network scale ID 1, and then each Model 640 scale address for 1.1 (truck 1) 1.2 (truck 2) etc.

4. bRD.MPT

Setup when having multiple remotes (ex: RD40RF in both the feedroom and in the front end loader , communicating back to the indicator on the mixer). All the RD40RF's have full access of the functional features of the Model 640.

For proper PT-PT operation the RD40RF and the Model 640 indicator need to be configured as follows:

- **RD40RF** Setup the RD40RF for PT-PT and network scale ID 1...10
- M640 Setup the Model 640 in the Setup menu. Access the Setup menu and follow this path in the menu to get to the parameters you need to set: 640 > 640RF v CONF.RF v bRD.MPT. Set up as network scale ID 1...10.

Networks must match on both the indicator and the RD40RF. So if configured for network 1, then both products must be configured for network scale ID 1.

4.4 Viewing or Changing the Active RF Channel

The user can select the proper RF channel (scale specific) that the RD40RF will communicate with, so if there are multiple scales and only one RD40RF the RF channel is selected and then the weight information from that particular scale is shown on the RD40RF. This is only applicable in the following modes:

- Selectable point to point (SPT-PT)
- Point to Multi-Point (PT-MPT)

4.4.1 View the Active RF

1. Press the **PRINT/SELECT** key...

Active RF channel is shown (*RF-XX*)

2. Either press **G/N** to return to weighing mode or after 5-6 seconds will automatically return to the weighing mode.

4.4.2 Changing the Active RF Channel

1. Press the **PRINT/SELECT** key...

Active RF channel is shown (RF-XX)

2. Press the **MENU** key several times or press the **RM** key repeatedly until proper *RF* channel is shown...

New channel is shown.

3. Press PRINT/SELECT key...

BUSY is shown for 5-10 seconds, then returns to weighing mode.

If the system does not function properly and the - - - - - is displayed check the following:

- Access the SETUP menus (Access the RD40RF Configuration Menu on page 16) on both 640 and RD40RF. The Model 640 should be setup for 640RF Menu. The Model RD40RF should be setup for RD40RF Menu. Verify the settings have been configured properly.
- If the RF system still does not operate, contact the Avery Weigh-Tronix Service Department at: Phone:1-800-458-7062

1-507-238-4461

If the product needs to be returned for service either contact the dealer/distributor or send prepaid to approved warranty center or return both the RD40RF and the Model 640 to:

Service Department Avery Weigh-Tronix 1000 Armstrong Drive Fairmont, MN 56031

Please include: Name and Address Supplier name and address Date of Purchase An informal note explaining the problem.

Avery Weigh-Tronix

Avery Weigh-Tronix USA

1000 Armstrong Dr. Fairmont MN 56031 USA Tel: 507-238-4461 Fax: 507-238-4195 Email: usinfo@awtxglobal.com www.agscales.com

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Foundry Lane, Smethwick, West Midlands, England B66 2LP Tel: +44 (0) 8453 66 77 88 Fax: +44 (0)121 224 8183 Email: info@awtxglobal.com www.averyweigh-tronix.com



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