Avery Weigh-Tronix

SCALES FOR AGRIBUSINESS

*RD712 & RD712XL
Remote Displays*

Model 615 / 615XL Indicator
User's Manual

EUROPEAN COUNTRIES

WARNING

CAUTION

**Weigh-Tronix reserves the right to change
specifications at any time.**

Table of Contents

Pages are numbered consecutively beginning with the cover page.

Specifications and Features

Indicator enclosure:	Water/dust resistant, polycarbonate enclosure. Dimensions: 8.75" H x 10.5" W x 6.5" D. A standard Weigh-Tronix mounting bracket is affixed to the back of the Model 615/XL.
Digital Display:	LCD, 5½ digits plus minus sign. 1.0"-high digits (M 615), 2.0"-high digits (M615/XL). Fiber optic backlight.
Display-Update Rate:	Two times per second.
Accuracy:	±0.1% of applied load ±1 grad
Linearity:	±0.01% of capacity
Repeatability:	±0.01% of capacity or ±1 grad, whichever is greater
Power:	10 to 18 volts DC negative ground only, at .09 ampere for 4-pin Weigh Bars, and at .17 ampere for 5-pin Weigh Bars
Circuit Protection:	One 5-ampere fuse
Environment:	-20° to +140° F, or -29° to +60° C, to 95% non-condensing humidity
Weigh-Bar Drive Capacity	10-350 Ohm Weigh-Bars
Calibration:	Front-panel calibration and spanning for all types of Weigh-Bars and load cell application capacities up to 200,000 pounds
Zero-balance Range:	±1 mV/V, via front-panel **ZERO** key
Analog Span Range:	0.20 mV/V to 1.0 mV/V
Capacity and Increment:	20,000 X 20, 10, 5, 2, 1 lb or kg 200,000 X 200, 100, 50, 20, 10 lb or kg 2,000 X 2, 1, .5, .2, .1 lb or kg 200 X .2, .1, .05, .02, .01 lb or kg

Options

Remote Display or Printer Output	
Radio Remote:	Transmitter/receiver enables remote capabilities on the **ZERO** button

Accessories

DC Convertors:	117 VAC to 13.6 VDC
RD712/XL Remote Display	
Printers	
Junction Boxes:	For 7-pin connector unit.

Model 615/XL Front Panel
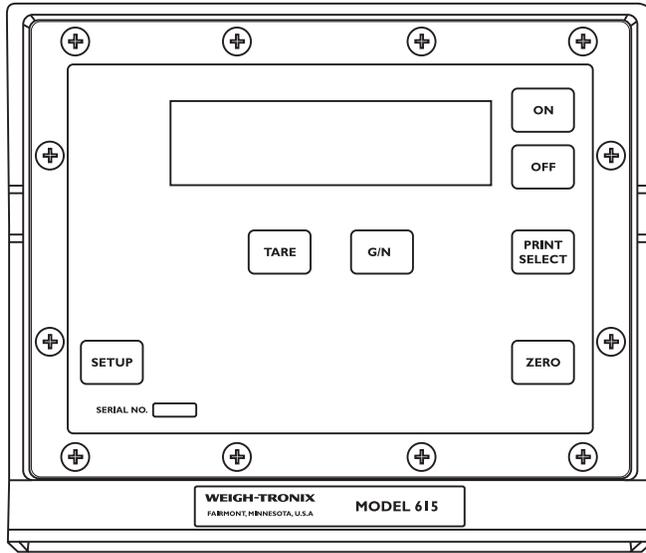
Figure 1a:
Front Panel of Model 615 Indicator
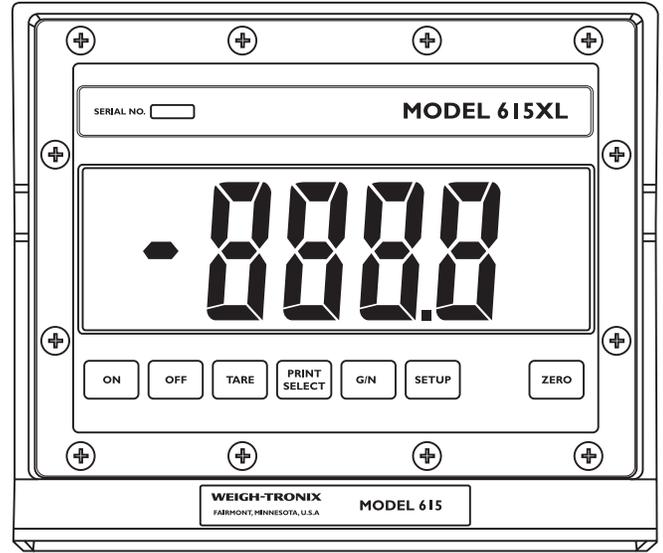
Figure 1b:
Front Panel of Model 615XL Indicator

Key Functions

ON	Pressed to power-on the indicator.
OFF	Pressed to remove power.
G/N	Gross /Net key toggles between gross weight and net weight
TARE	Tare key performs a tare, and then shows net weight.
ZERO	Pressed to zero-balance the scale.
SETUP	Pressed to scroll through three filtering options: lowest, medium, and highest filtering capabilities.
PRINT/SELECT	1. Pressed in conjunction with the **SETUP** key to select the appropriate filtering option. 2. Pressed to capture and lock in on a weight reading and transmit the reading to a printer or other data-receiving device.

Operational Overview

The Model 615/XL Farm Indicator shown in Figure 1 is designed to work in all types of farm weighing applications: animal scales, platform scales, mixer-wagon scales, grain-cart scales, and grinder / mixer scales.

•**Motion Filtering** The Model 615/XL is adaptable in several different farm weighing applications because it offers three user-selectable options for motion filtering. In applications where displayed weight readings are unstable, you can obtain a more stable display by changing the degree of filtering capability (See *Selecting Motion Filtering).*

•**Operational Modes** The Model 615/XL has three modes—gross weighing mode, capture mode and net mode. **TARE** and **G/N** keys are used for accessing Gross and Net modes.

> In **gross weighing mode**, the displayed weight represents total live scale weight. The indicator always powers up in gross weighing mode.

> **Capture mode** is especially useful in an animal scale application, where animal motion can cause unstable display readings. Capture mode grabs the correct weight reading and locks it onto the display so the user can easily view the animal's weight.

> **Net mode** uses the **TARE** and **G/N** keys.

•**Depressing Keys** When you depress a key correctly, the display blinks. The single blink always means that your depression of a key has made proper internal contact for activating your intended function.

Because extreme cold slows the reaction of liquid crystal, you can expect that in very cold weather, the display will take longer than usual to respond to keyed requests.

•**Cable Connections** Make sure all cables are connected as shown in Figure 2 (see page 8). Note: RS232/Remote display output is available as an option.

•**Power Requirements** Voltage to the Model 615/XL must be 10-18 volts DC, negative ground only. If voltage drops below ten volts, the Model 615/XL will automatically shut itself off, protecting the battery from being completely drained. Consult the Model 615/XL Service Manual for instructions on disabling the automatic shut-off.

Zeroing and Weighing

1. Press **ON** . . . The display says *HELLO*, then a weight value is displayed in gross weighing mode.

2. Press **ZERO** to zero the scale before weighing . . . Zero value is displayed, and the scale is ready to weigh.

3. Place weight on the scale . . . The gross value of scale weight is displayed.

Depending on your application, an unstable gross weight display at this time may mean you'll want to change the motion filtering selection (See "Selecting Motion Filtering").

Perform a Tare Function

Press the **TARE** key (Display flashes) and net weight is shown.

Press and hold the **TARE** key to show the gross weight. If you press for more than 3 seconds the display returns to the gross mode. If you do this, the tare is cleared from memory. If power is removed from the indicator, this also clears the tare. If you release the **TARE** key in less than three seconds, it returns to showing the net weight. (Operates just like having the XM710 transmitter option)

Pressing the **ZERO** key always establishes a true zero balance even if a tare is being displayed. Or in other words clears the tare and sets the true zero point.

Accessing the Gross/Net Weight

Press the **G/N** key to toggle between the gross and net display. If there is no tare, the display will simply flash and show the gross weight.

Capturing and Printing a Weight Reading

1. With the desired weight on the scale, press **PRINT/SELECT** to access the capture mode. . .

   The display flashes weight readings until the Model 615/XL captures the correct weight and locks the captured reading on the display.

   In applications where a printer or other data-receiving device is connected to the Model 615/XL, a captured weight reading also indicates the reading has been successfully transmitted.

2. Return to the gross weighing mode by either of the methods below:
   A. Press **SETUP**. . . **OR**
   B. Remove or add at least 25% of locked-in scale weight as displayed in capture mode. . . *The display returns to gross weighing mode.*

Selecting Motion Filtering

The motion-filtering function and the display-update rate work together. Experiment with the three filtering options shown below to determine the appropriate filtering capability and display response time for your weighing application.

In applications where displayed weight readings are somewhat unstable, as is typical for animal scales, you can help stabilize the gross weight by selecting a higher filtering option. The filtering function is always factory-preset to the lowest filtering capability.

1. From the gross weighing mode, press **SETUP**. . .

One of these filtering options is displayed:

Lowest filtering capability

Medium filtering capability

Highest filtering capability

2. Scroll through the options by pressing **SETUP**.

Stop when the desired filtering capability is displayed.

3. Select the displayed filtering capability by pressing **PRINT/SELECT**. . .

The display returns to gross weighing mode.

Display Messages

The Model 615/XL is being reinitialized. This message is displayed briefly at the time of power-on.

The Model 615/XL is in a state of overcapacity.

The Model 615/XL is in a state of under-capacity.

The system is not functioning properly. Weight is not being calculated because scale weight is either too high or too low. (Refer to information on *INDICATOR LOCKUP* in *TROUBLESHOOTING* section of manual.)
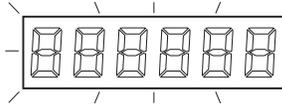

The Model 615/XL is set to its lowest filtering capability.

⊢ - - ⊣	The Model 615/XL is set to its medium filtering capability.

⌐ ¯ ¯ ⌐	The Model 615/XL is set to its highest filtering capability.

888888	In capture mode, when the display flashes between fluctuating gross scale weight and a blank display, the Model 615/XL is trying to capture the correct weight of an unstable load. When the scale has determined the correct scale weight, it locks on a steady display of the weight.

Pr	This message is displayed momentarily to indicate weight data has been transmitted to the printer. This is true only if the capture mode has been disabled so that the **PRINT/SELECT** key can be used only for printing.

Troubleshooting

If you experience problems in the operation of your system, read through these troubleshooting steps and perform those which are appropriate. This information may help you to correct the following operational difficulties without calling your supplier or sending your equipment in for repair:

· Power-on Failure
· Indicator Lockup
· Inaccurate Weight Readings

Instructions for sending an indicator in for repair are provided in the last section under *Service Repair*.

Power-on Failure

If your indicator fails to power-on, check the following possible problem sources in the order given. Attempt to power-on after trying each of these four troubleshooting steps:

1. **Check input voltage.** Required voltage is 10-18 volts DC negative ground. The Indicator will automatically turn off if voltage coming in drops below 10 volts or rises above 18 volts.

2. **Disconnect and check the power cable connector** at the vehicle or AC to DC converter, clean if necessary, and reconnect.

3. **Replace the fuse.** Sometimes, a bad fuse can be recognized by an obvious break in the wire filament. Such a break is not always observable, however, and getting a successful power-on after changing a fuse is often the only way of knowing that fuse was indeed defective.

Make sure the new fuse is the proper size and has a current rating of five amperes. Using a fuse with too high a current rating can cause costly damage to the indicator and will void your warranty. The same is true for substituting wire, or a nail, or any other object in place of a fuse. *Place nothing in the fuse connector except a proper fuse.*

Try to power-on after changing the fuse; if unsuccessful, proceed to the next troubleshooting

To replace a fuse: First locate the fuse cap on the bottom panel of the indicator. Then ....

1. Turn the cap counterclockwise and lift out the fuse-and-cap assembly.

2. Remove the old fuse from the cap and insert a new fuse.

3. Replace the fuse and cap assembly in the fuse connector.

4. **Test the Indicator and the Cables** to isolate the source of the problem.

    1. Disconnect all cables on the bottom panel of the indicator except for the power cable. Do disconnect the Weigh Bar cables, and, if present, the printer/remote display cable.

    2. Now try powering-on. If this is not successful, your problem is in the indicator and you should contact your supplier.

    3. If you are able to power-on with only the power cable connected, your problem is probably not in the indicator; continue troubleshooting.

    4. With the power still on, plug in the cables, one at a time—Weigh Bar cables first, then the printer / remote display cable—until plugging in one of the cables causes the indicator to shut off. That cable is the bad one and needs to be repaired or replaced.

Indicator Lock-up

A locked-up indicator is represented by an *Err* (error) display message.

Test the Weigh Bar Cables to isolate the source of the lockup problem, as follows:

1. Disconnect all Weigh Bars.

2. Try to zero the indicator by pressing **ZERO**. If your indicator will not zero with the Weigh Bars disconnected, then the problem is in the indicator; contact your supplier. If you are able to zero your indicator with the Weigh Bars disconnected, then the problem is probably in the Weigh Bars; continue troubleshooting.

3. Reconnect all Weigh Bars; you will see *Err* displayed again.

4. If your Weigh Bar connectors have the four-pin configuration, disconnect one Weigh Bar and connect an adapter plug in its place.

    If your Weigh Bar connectors have the five-pin configuration, disconnect one Weigh Bar. No adapter plug is necessary with five-pin Weigh Bar connectors.

5. Then try to zero the indicator.

6. Repeat Steps 4 and 6 with each Weigh-Bar cable, making sure each time that all cables are connected except the one you removed (for five-pin connectors) or replaced with an adapter plug (for four-pin connectors).

A defective Weigh Bar may be easily recognized with this method, for *when a defective bar is replaced with an adapter plug* (for four-pin connectors), *or removed* (for five-pin connectors), *the indicator will zero properly.*

Inaccurate Weight Readings

1. **Visually Inspect the Scale System** for apparent problems and improper installation, as follows:

   a. Check each cable, from source to indicator, for stress, cuts, breaks, or abrasions.

   b. Unplug and reconnect each connector at the indicator to verify that it is tight and making good contact.

   c. Check between the supporting structure and the weighing structure for debris that might restrict Weigh Bar movement.

   d. Make sure the supporting structure and the weighing structure do not touch each other at any point except at the Weigh Bars.

**Compare Weight Readings for All Weigh Bars,** as follows:

Position a person or heavy object on the platform above each Weigh Bar, one bar at a time, and compare weight readings for the same person or same object. For each weighing, the weight itself will be off-center, favoring a single Weigh Bar; therefore, none of the readings will be accurate.

However, your readings obtained by weighing the same person or object above each Weigh Bar should be very similar *to each other*. A single Weigh Bar reading that is significantly different from the others is probably defective.
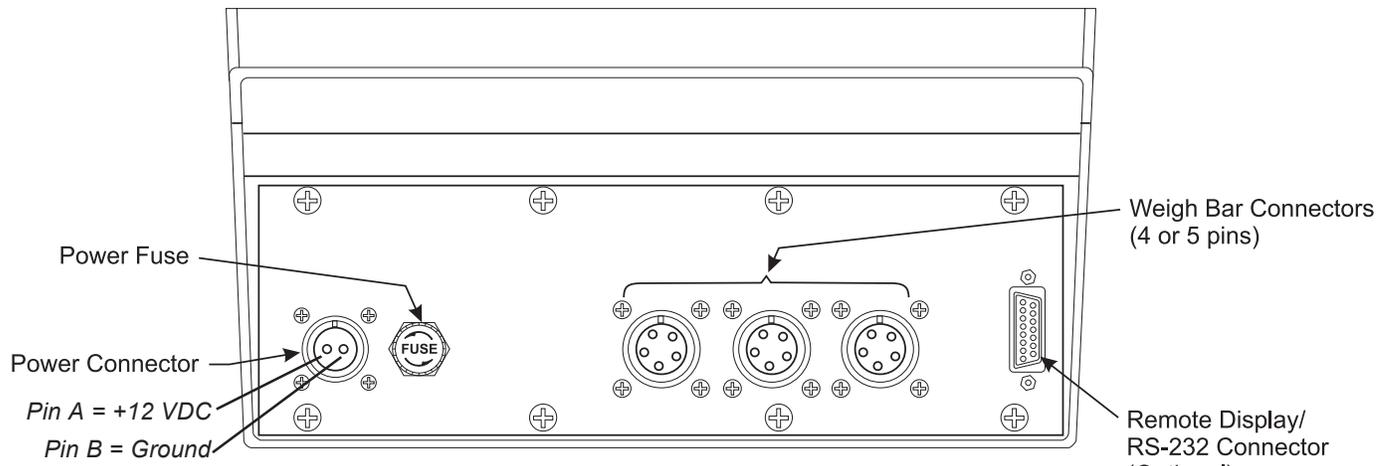
Service Repairs

If you find the indicator or one or more of the Weigh Bars to be defective, send your equipment back to the factory for repair, postage prepaid.
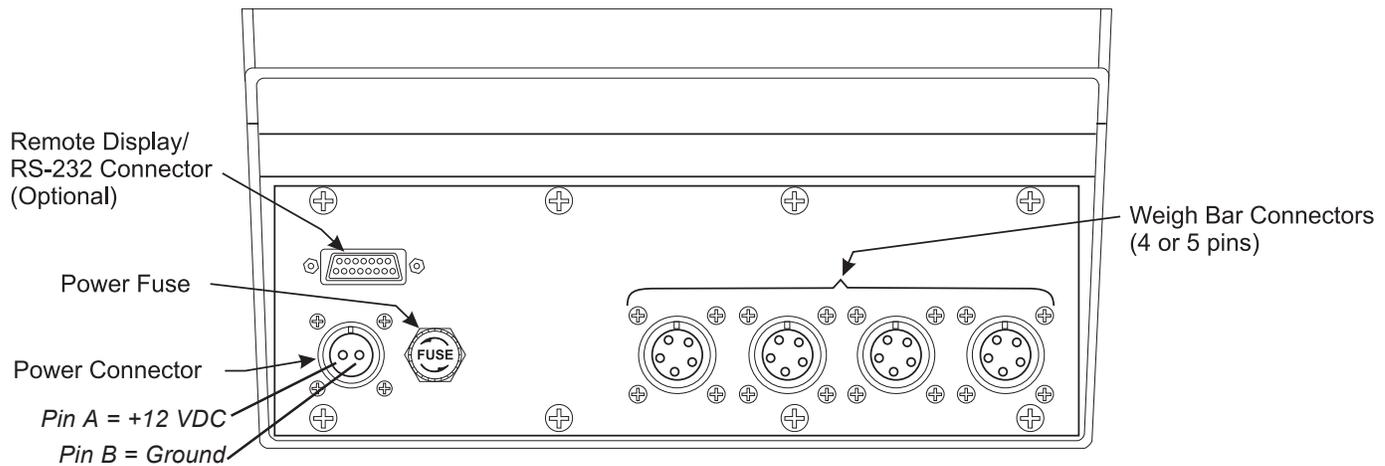
Include this information:
1. Your name and address
2. Supplier name and address
3. Date of purchase
4. **Very important:** An informal note describing symptoms of the problem.
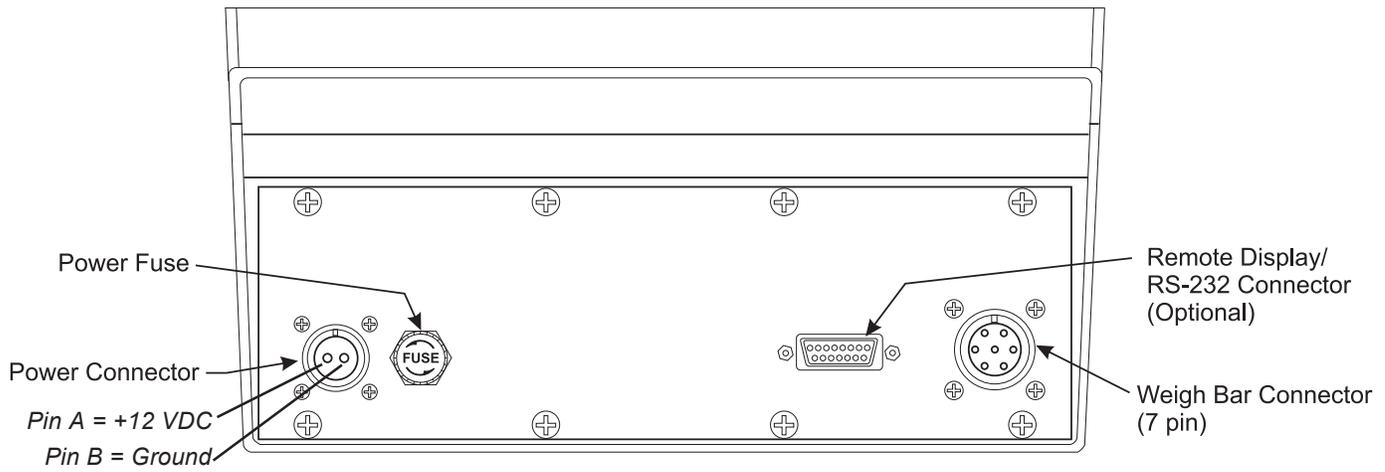
Figure 2

Cable Connectors on Bottom Panel of Model 615/XL Indicator
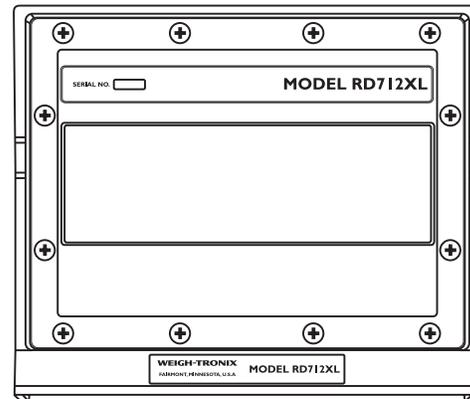
RD 712/XL Remote Display

The RD712/XL is a remote display that is compatible with the Model 615/XL. (An RD712/XL output option is required on the Model 615/XL for interfacing.) The interface cable plugs directly into the bottom of the Model 615/XL (see Figure 2 below). When using the remote display, any data displayed on the Model 615/XL is also displayed on the RD712/XL.

The functions available on the RD712/XL are:

•ZERO RESET   Pressing this key on the RD712/XL performs the same function as pressing **ZERO** on the Model 615/XL.
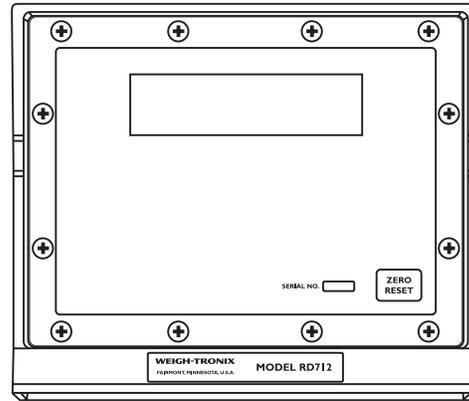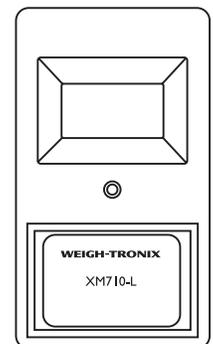

Model RD 712 Remote Display

Model RD 712XL Remote Display

Optional radio remote transmitter (XM710-L) and receiver

An optional radio remote transmitter and receiver can be installed in either the Model 615/XL or the RD 712/XL. When you press this key, the displayed weight is tared and the display will show zero weight. Press and hold the button (for less than three seconds) to view gross weight. When you release the button the displayed weight will be tared again. If you hold the button longer than three seconds the display will return to gross mode.

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