EL233

4" and 6" Flip Digit Displays

Installation Manual

RICE LAKE WEIGHING SYSTEMS
Industrial Solutions on a Global Scale®

ISO 9001 REGISTERED

26690

Contents

1. Introduction

Rice Lake Weighing Systems' EL233 Flip Digit Remote Display is a six-digit, high-visibility display for use in a wide variety of applications. This manual applies to the Flip Digit Remote Display with 4 and 6-inch digit heights. The display enclosure is watertight and dustproof to meet NEMA 4 specifications. Its fluorescent yellow numerals are visible under a broad range of lighting conditions. Display numbers are available in two height sizes (see Table 1-1). Numeral height does not affect operation, but does affect readability. Before installation, verify that your display will be readable when installed in its working location.

Digit Height	Readability Distance (ft.)
4	160
6	240

Table 1-1. Height Sizes and Readability

The Flip Digit Display works with a wide range of digital weight indicators. A separate insert page in this manual provides configuration instructions for many common makes of weight indicators. Before shipping, the correct EPROM chip for your indicator was installed in the Flip Digit Display. Do not attempt to use the unit with a different indicator other than the one specified when the unit is ordered.

The Flip Digit Display can be ordered with an optional temperature sensor and clock to provide switch-selectable time and temperature. Time can be displayed in either 12-hour or 24-hour format. Temperature is shown in Fahrenheit degrees. When time and temperature are selected, they alternate with the weight readout. Each indication is displayed for approximately five seconds.

2. Site Preparation

2.1 Power Wiring Installation

The Flip Digit Display uses standard 110 VAC power with 220 VAC available as an option. The power wiring to the display location must follow local electrical codes. A 5-foot power cord comes with the display. There is no on/off power switch on the display. To reset the display, unplug the unit for 15 seconds, then plug the unit back in. You may wish to put a switch on the power line for easier on/off control.

2.2 Communication Cable Installation

Do not turn on power or plug in the display until all installation and configuration setups have been done. A communication cable connects the Flip Digit Display to the digital indicator. This cable must be routed from the digital indicator location to the Flip Digit Display location. The cable must have at least one pair of twisted wires, 22 gauge or larger, surrounded by a woven shield. Use care to protect the cable from accidental damage.

3. Pre-installation Shop Configuration and Operation Check

Before attempting on-site installation, verify that the Flip Digit Display will work with your indicator. You can do all configuration tasks in your shop with the weight indicator connected to the Flip Digit Display by a short communications cable. It is much easier and more efficient to configure the unit and verify operation in the shop than after the unit has been installed.

3.1 Communication Cable Connection

To connect the communication cable to the digital weight indicator, you may have to refer to the indicator manual for connection details, open the indicator to see what options are selected, and refer to the connection diagrams later in this section. First, determine whether the indicator will use RS-232 or 20 mA Current Loop connections. If 20 mA Current Loop, further determine whether it is “Active” or “Passive”. Then, connect the communication cable to the Flip Digit Display as shown on the following pages.

1. Loosen all Flip Digit Display cover clamps and open case.
2. Loosen communication cable watertight cable fitting (See Figure 3-1).

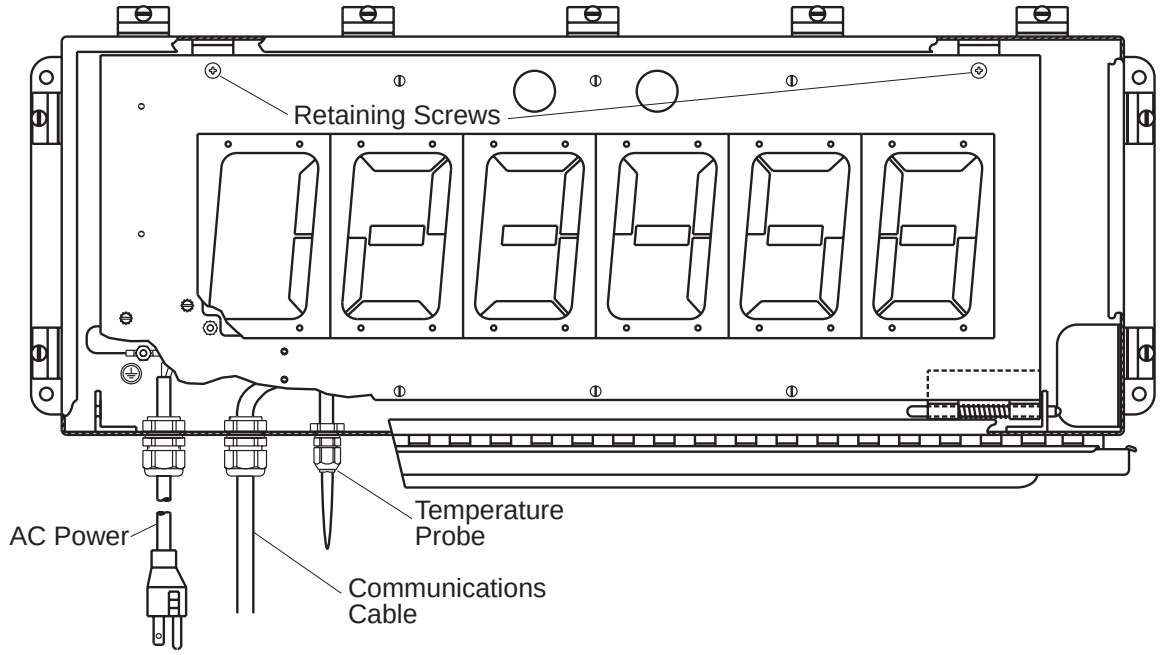

Figure 3-1. Watertight Cable Fittings (Cover Removed for Illustration Purposes)

3. Push cable through watertight cable fitting so that 16 inches of cable extend into case. Turn two retaining screws holding panel 1/4 turn and tilt panel out so cable end is accessible.
4. Strip three inches of outer insulation from cable end. Unravel shield and twist it into a firm wire.
5. Separate wires and strip 1/4-inch of insulation from end of each wire. For best results, tin exposed wire ends with solder.

6. Locate communication terminal strip (J10) on circuit board. See Figure 3-2.

   If you are using RS-232 to communicate with the indicator, go to Step 6a.

   If you are using 20 mA Current Loop, go to Step 6b.

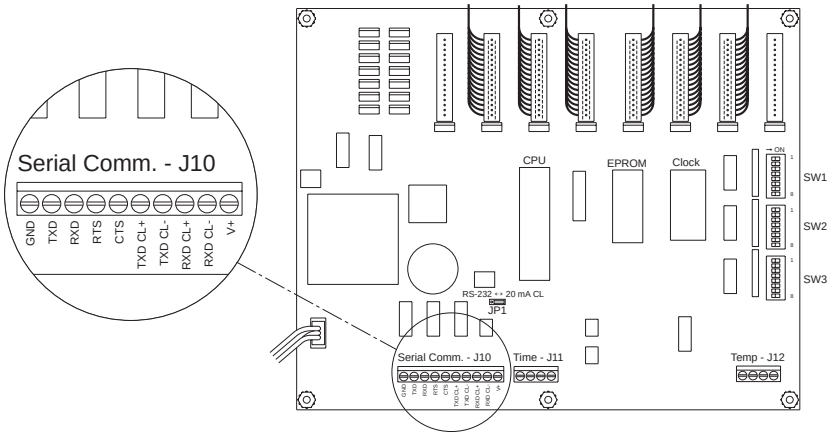

Figure 3-2. Communication Terminal Strip

6a. **RS-232:** Connect the RS-232C communication cable wires as shown at right in Figure 3-3. Connect twisted shield "wire" to CHASSIS GROUND terminal of weight indicator. Do not connect the shield to any Flip Digit Display terminals.

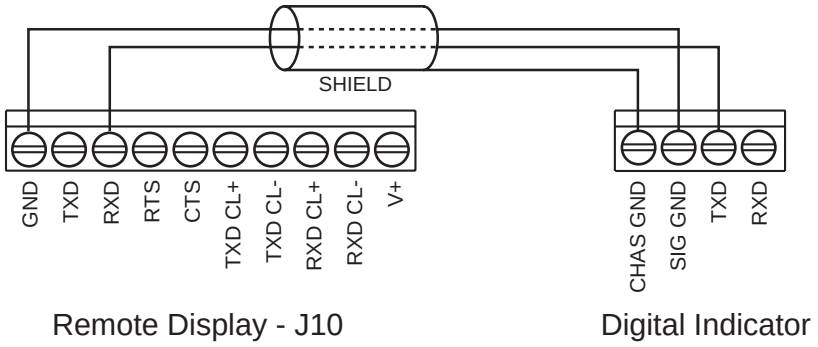

Figure 3-3. RS-232 Connections

6b. **20 mA CL:** 20 mA Current Loop can be connected in two Active Modes and one Passive Mode. Figure 3-4 shows one type of Active Mode connection. When using 20 mA Current Loop Active Mode, connect a jumper wire as shown in Figure 3-4. A short piece of communication cable inner wire makes a good jumper.

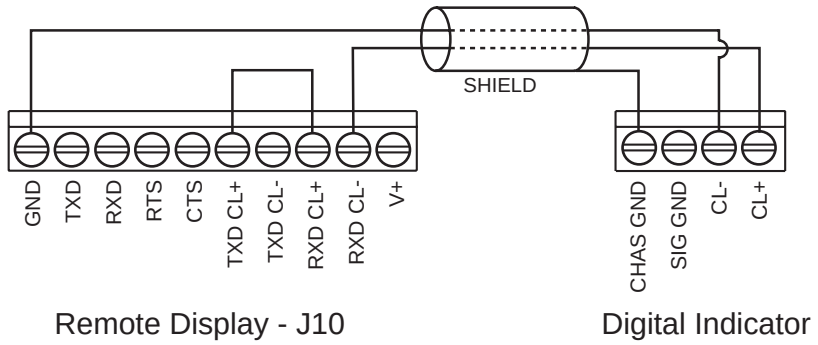

Figure 3-4. 20 mA Current Loop Active Mode

Figure 3-5 at right shows an alternate type of 20 mA Current Loop Active Mode connection. Connect a jumper wire as shown.

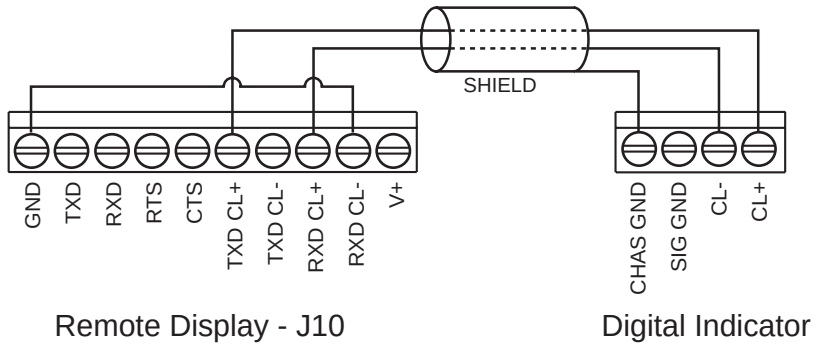

Figure 3-5. 20 mA Current Loop Active Mode-Alternate

Figure 3-6 at right shows a 20 mA Current Loop Passive Mode connection.

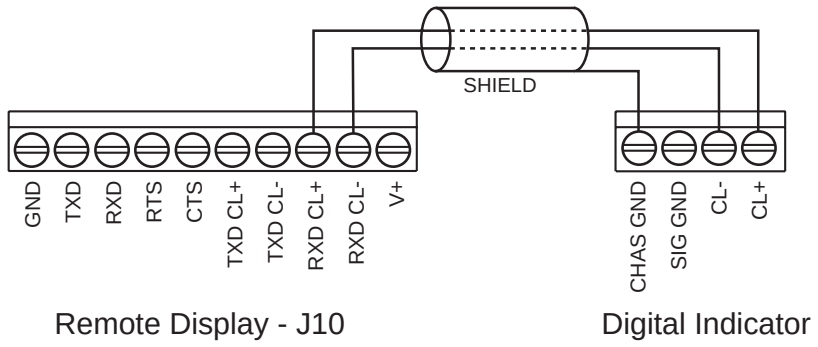

Figure 3-6. 20 mA Current Loop Passive Mode

7. When terminal strip connections are complete, tighten the watertight cable fitting on enclosure snugly.

3.2 Communication Jumper Position

A jumper labelled JP1 on the circuit board enables either RS-232 or 20 mA CL serial communication. See Figure 3-7. The jumper should be in the RS-232 position (to left) when shipped. If 20 mA CL is to be used, move the jumper to the right-hand position.

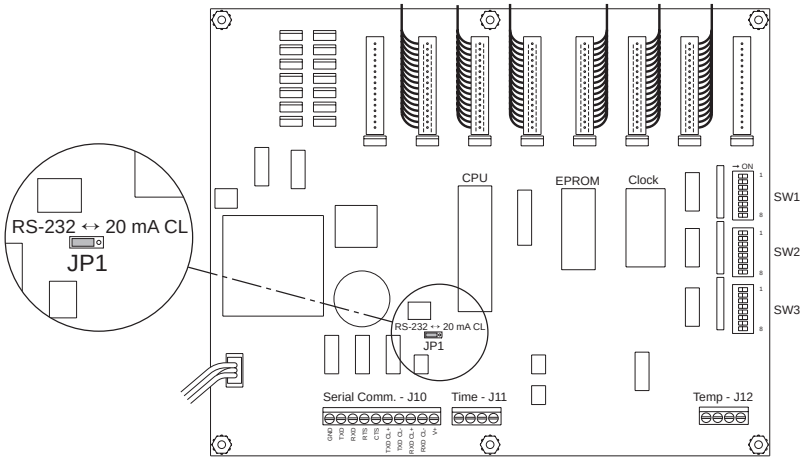

Figure 3-7. RS-232 / 20mA CL Communication Jumper

3.3 Configuration Switch Locations

The remaining configuration selections in this section are set with the three DIP switches located on the right side of the circuit board. See Figure 3-8.

Note:
Configuration switches must be set with the power OFF. The EL233 ignores changes to DIP switch settings made while the unit is powered up.

The choices for each configuration selection follow.

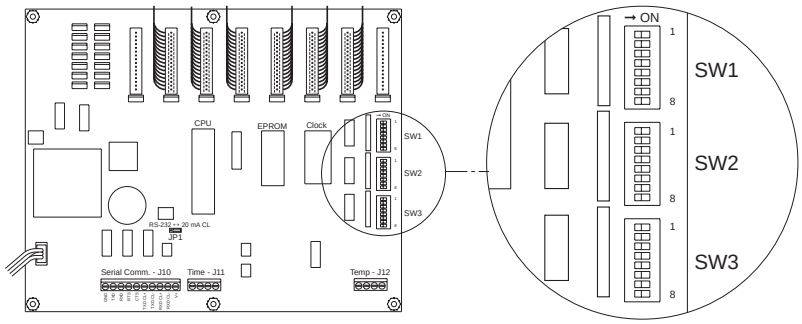

Figure 3-8. DIP switch locations

3.3.1 Data Bits

Seven data bit length, set SW1, #1 OFF.
Eight data bit length, set SW1, #1 ON.

See the digital weight indicator manual to determine if communication is seven or eight bits. If the indicator uses either even or odd parity, set the switch OFF. If the indicator uses no parity bit, set the switch ON.

3.3.2 Parity

Even parity, set SW1, #2 OFF.
Odd parity, set SW1, #2 ON.

With even or odd parity, be sure that SW1, #1 (Data Bits) is set for seven data bits. With a “no parity bit” indicator, be sure that SW1, #1 (Data Bits) is set to eight data bits.

3.3.3 Stop Bits

One stop bit, set SW1, #3 OFF.
Two stop bits, set SW1, #3 ON.

3.3.4 Baud Rate

Baud Rate	#4	#5
1200	OFF	OFF
2400	OFF	ON
4800	ON	OFF
9600	ON	ON

If installed in an area near heavy electric motors or arc welding, the lower baud rates will help prevent interference. Otherwise, any baud rate may be used with no noticeable difference in Flip Digit Display operation.

3.3.5 Digit Size Selection

Digit Size	#6	#7
4", 6"	OFF	ON

These switches are set at the factory, but they should be checked during pre-installation.

3.3.6 12- or 24-Hour Time Format

12-Hour Format, set SW2, #2 ON.
24-Hour Format, set SW2, #2 OFF.

3.3.7 Update While in Motion

Display while in motion, set SW2, #4 ON.
Wait until stable to display, set SW2, #4 OFF.

3.3.8 No Signal Input Display

Display “No Signal” five seconds after signal loss, set SW2, #5 ON.
Display last readout constantly at signal loss, set SW2, #5 OFF.

3.3.9 Time Display (optional feature)

Time on, set SW2, #1 ON.
Time off, set SW2, #1 OFF.

3.3.10 Temperature Display (optional feature)

Temperature on, set SW2, #3 ON.
Temperature off, set SW2, #3 OFF.

3.4 Serial String Type Selection

The settings made with the SW3 switches tell the Flip Digit Display which type of information string to expect from the indicator you are using and how to translate the information into the flip digit readout. Each indicator requires its own special switch combination. See the chart on the next page to determine the SW3 switch settings for your indicator model.

If your indicator model is not listed on the chart, call Rice Lake Weighing Systems for custom programming services.

EL233 Flip Digit/Indicator Interfaces

EPROM #	Indicator and Operating Mode	SW3 DIP Switch Settings 1	2	3	4	5	6
3	UMC1000, UMC2000, IQ600, IQ700 — Continuous	on	off	off	off	off	off
3	Thurman EDS4 - EPROM in indicator is Continuous Condec format	on	off	off	off	off	off
3	UMC 1000, 2000 — Demand	on	off	off	off	off	off
3	Toledo 8140, 8142, 8530, 8132[1], 9481 — Continuous	on	on	off	off	off	off
3	Fairbanks 9201RS-232 (Use COM port 1 only)	on	on	off	off	off	off
3	IQ810, IQ310 Continuous (End of line set to CR/LF)	off	off	on	off	off	off
3	StreeterAmet 9000 — Continuous	on	off	on	off	off	off
3	Cardinal 738 — Continuous	off	on	on	off	off	off
3	Western DF1000 — Continuous	on	on	on	off	off	off
3	Pennsylvania 5600 — Continuous	off	off	off	on	off	off
3	Flexweigh DWM IV — Continuous	on	off	off	on	off	off
3	IDS print w/BCD to 20 mA conversion — Continuous	off	on	off	on	off	off
3	AD 4321 — Continuous (Format 1, display will not show negative sign)	on	on	off	on	off	off
3	IQ700 Truck ID for KBB 8-1, Ver. EF EPROM	off	off	on	on	off	off
3	Analogic 5316 — Continuous, HB 44 (EPROM 13.0 shows gross only)	on	off	on	on	off	off
3	IQ310HE — Continuous	on	off	on	on	off	off
3	Electroscale 533 — Continuous	off	on	on	on	off	off
3	IQ700 Demand with Time and Date	on	on	on	on	off	off
3	WI-110, WI-120, WI-130 — Continuous[2]	off	off	off	off	on	off
4	Toledo 8142 to BCD Converter	on	off	off	off	on	off
4	Doran 7000 — Continuous	off	on	off	off	on	off
4	Fairbanks 90-164-1, 90-166-1, 9201 (out Com 2) — Continuous (20 mA passive only)	off	off	on	off	on	off
4	UMC 1000, UMC 2000 & IQ700, IQ600 — Continuous	off	off	on	off	on	off
4	Electroscale 551 — Continuous	on	off	on	off	on	off
4	Analogic 5316, EPROM Revision 13.0.9 — Continuous	off	on	on	off	on	off
4	General Freedom I and II — Continuous	on	on	on	off	on	off
4	ACCU-WEIGH SEP-12K, Format 8 — Continuous	off	off	off	on	on	off
4	Kubota KA-10 — Continuous	on	off	off	on	on	off
4	Flexweigh DWMIV Continuous w/Post & Preamble (02H, 03H)	off	on	off	on	on	off
4	MSI TRANS-WEIGH — Continuous	on	on	off	on	on	off
4	OHAUS 1150 — Continuous	off	off	on	on	on	off
4	Hardy HI 2151 WC — Continuous w/Gnt format	on	off	on	on	on	off
4	Pennsylvania 3100 — Continuous	off	on	on	on	on	off
4	IQplus 810 — Demand (Standard default format)	on	on	on	on	on	off
4	IQplus 310 — Demand (Net Weight Only)	off	off	off	off	off	on
4	IQplus 310 — Demand (Gross Weight Only)	on	off	off	off	off	on
4	Fairbanks 90-163-1 — Continuous	off	on	off	off	off	on
4	IQplus 310, IQplus 810 — Continuous (CR/LF End--of-Line Termination)	on	on	off	off	off	on
4	IQ700, IQplus 310 — Demand (Net or Gross) with Time and Date	off	off	on	off	off	on
5	Tyrel TC-10 / Howe-Richardson HR500k Continuous	on	off	on	off	off	on
5	Tara TR-1 Continuous, 1200 baud, fixed 8 bits, no parity, 2 stop bits	off	on	on	off	off	on
5	IQplus 810 — Demand (Standard Form)	on	on	on	on	on	off
5	IQplus 310 — Demand (Net Weight Only)	off	off	off	off	off	on
5	IQplus 310 — Demand (Gross Weight Only)	on	off	off	off	off	on
5	IQplus 310, IQplus 810 — Continuous CR/LF End-of-Line Termination	on	on	off	off	off	on
5	IQ700, IQplus 310, — Demand (Net or Gross) with Time and Date	off	off	on	off	off	on
5	UMC 1000, UMC 2000 & IQ700, IQ600 — Continuous	off	off	on	off	on	off
5	Allegany Mega 8—Continuous[3]	on	on	on	off	off	on

Notes:

1 Toledo 8132 meter will not work with the EL234 1.5 IN without special programming to operate the EL234 at 4800 baud.

2 The WI130 indicator must be programmed to stream out in the standard Weightronix format to use the WI110/WI120 flip digit driver.

3 The Allegany Mega 8 sends out eight weight display digits. The EL233 Remote Display shows the least significant six digits.

3.5 Setting Time

If your Flip Digit Display was ordered with the time clock option installed, it has battery back-up so it will power up with the correct time after a power failure. If desired, the time can be set before site installation by following these steps:

1. Close the display case cover so the numbers can be seen easily.
2. Turn the clock switch on the end of the display case to the HRS position. The display cycles through hours as long as the switch is held in that position. Turn back to RUN when the correct hour is displayed.
3. Turn the switch to MIN and hold it there until the correct minute is displayed. Turn the switch back to RUN.

3.6 Temperature Probe Placement

Temperature display is an optional feature. If factory installed, the temperature probe is pushed back into the case at its watertight fitting (See Figure 3-1). Loosen the nut which seals the temperature probe cord. Pull the probe out 2-3 inches, then retighten the nut to seal the cord entrance from water.

4. On-Site Installation

With power and data communications cabling prepared on the site and the unit configured and tested in the shop, the Flip Digit Display is ready for installation at the site. On-site installation consists of mounting the case and connecting data communications and power cables.

4.1 Case Mounting

Mounting holes are provided on flanges at each end of the case. Figure 4-1 shows the hole spacings for each size of display. The case is normally attached to a metal or wooden backplate, or to a wall. Mark the locations of each mounting hole and drill the mounting hole pattern in the mounting surface. Mount the Flip Digit Display using appropriate fasteners.

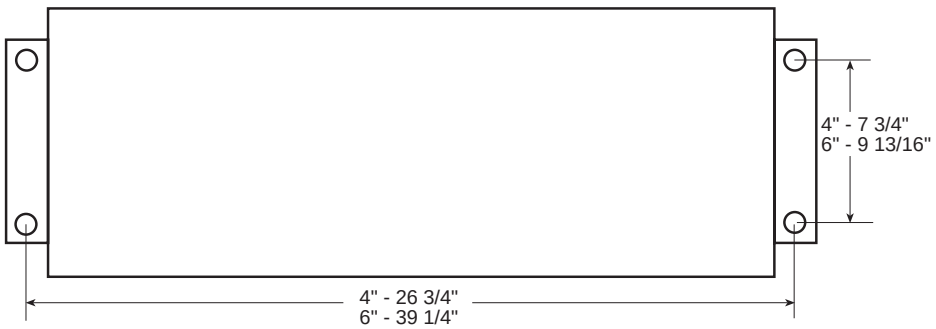

Figure 4-1. Display Case Mounting Hole Dimensions

4.2 Connecting Communications and Power

Connect the site communication cable to the Flip Digit Display. Verify that the display case is closed and the case clamps are tightened. Plug the display cord into the power socket and turn on the power. If the scale has been out of motion and on zero for 30 seconds, the display will go through its self-test program, showing all zeros, all ones, all twos, up through all nines, then the letters A through F. Next it shows the weight readout, and time and temperature if those options have been ordered and enabled.

5. Troubleshooting Guide

Symptom	Cause/Remedy
Display sequence 0-9 and A-F does not appear when power is turned on.	Improper AC power to Flip Digit Display. Test power outlet for 110-125 VAC. Check power panel fuse and circuit breaker. Flip Digit Display fuse defective. Replace fuse. See Section 6, Repair. Poor transformer connection to Flip Digit Display circuit board. Tin wire ends with solder and retighten.
One or more digits sticking.	Metal particles clinging to magnets. Remove metal particles. See Section 6, Repair.
Time and temperature are installed and display correctly, but weight readout does not display.	Error in setting configuration switches. Configuration switches must be set with the power OFF. The EL233 ignores changes to DIP switch settings made while the unit is powered up. Re-check that communication switch settings agree with the indicator set-up. Defective communication cable from indicator to Flip Digit Display. Test by the following procedure: 1. Open case and select SW2, #5—No Signal Input Display. 2. If “NO SIG” is displayed, either cable is defective, or indicator is not working properly. 3. Use a cable known to be good to test unit. If it works properly with new cable, replace defective cable. 4. If unit still does not display weight with good cable, call Rice Lake Weighing Systems for assistance. The Service Department Hotline telephone number is (715) 234-2003.

6. Repair

Many Flip Digit Display parts can be replaced if they fail. Rice Lake Weighing Systems carries a complete stock of replacement parts. This section deals with removal, repair, and replacement of Flip Digit Display parts.

6.1 Fuse Replacement

Figure 6-1 shows the locations of the power fuses and transformer. The following procedure describes how to replace the power fuses. There are two fuses—one for the neutral, and one for the hot wire.

1. Turn off AC power to display and unplug power cord.
2. Loosen clamps holding display cover and open display case.
3. Turn two retaining screws 1/4 turn and tilt panel out to reveal lower surface.
4. Remove fuse cover and gently pull fuse from clips. A small screwdriver may be used to pry fuses out.

To check a fuse, look closely to see if the thin wire inside the fuse is broken or melted. To be sure, use an ohmmeter to see if the fuse is working. If a new fuse is necessary, see Section 7, Replacement Parts.

1. Gently press new fuses into clip and replace fuse cover. Tilt panel back in and lock it into position.
2. Close display case and tighten clamps.
3. Plug in power cord and turn on power source.
4. Check to see that display goes through 0-9, A-F self-test.

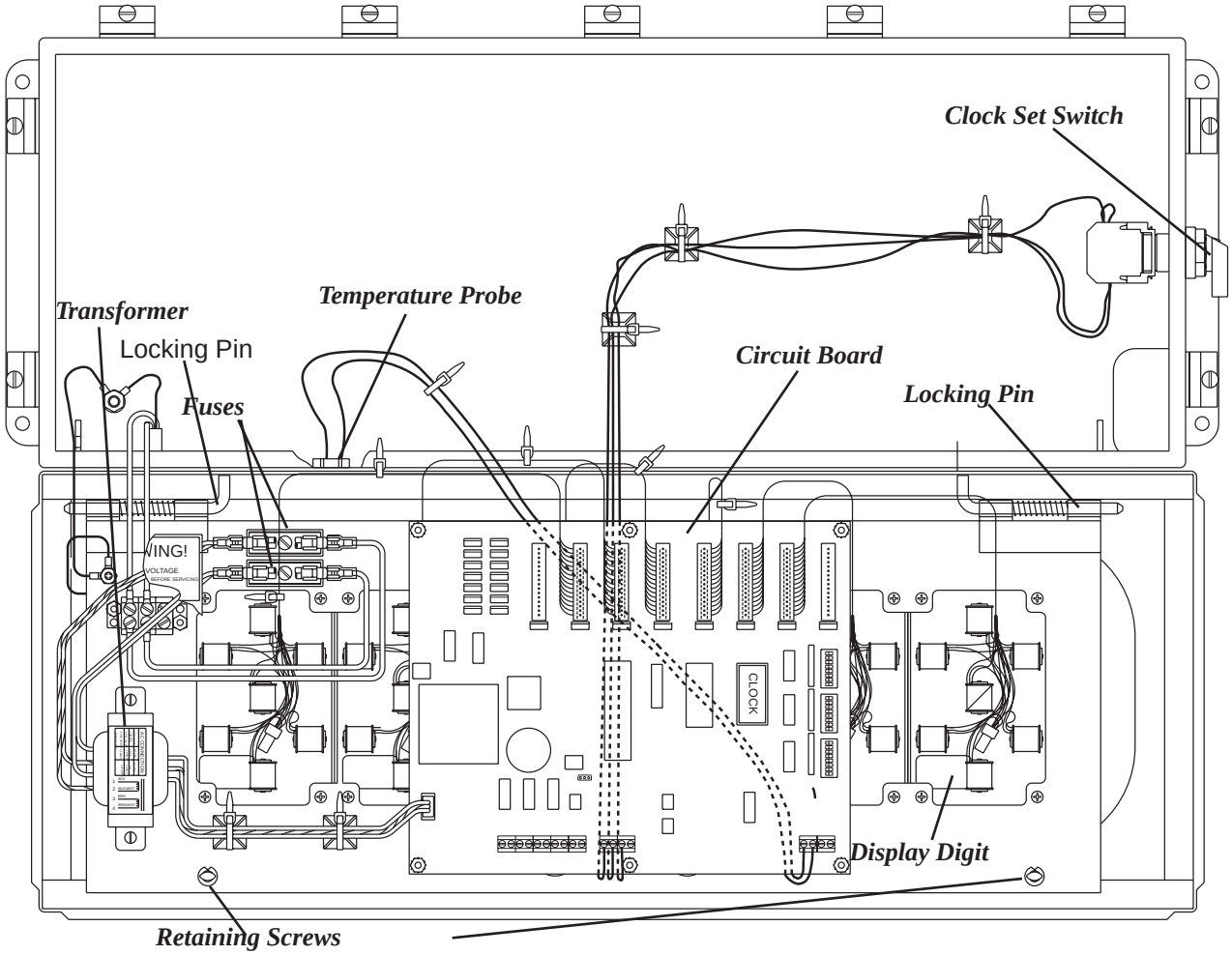

Figure 6-1. 4" Model Shown with Panel and Circuit Board Rotated Down for Illustration Purposes

6.2 Power Transformer Replacement

Figure 6-1 shows the power transformer location. The transformer converts AC power to the direct current needed to operate the circuit board. Note that the unit may have been ordered with optional 220 VAC power supply. In that case, the input wiring will be slightly different from Figure 6-1. To replace the transformer, follow these steps.

1. Turn off AC power to display and unplug power cord.
2. Loosen clamps holding display cover and open display case.
3. Turn two retaining screws 1/4 turn and tilt panel out to reveal lower surface.
4. Find three wires going from transformer to circuit board. They connect to board with a plastic connector. Pull connector straight up and away from circuit board.
5. Find transformer wire going to fuses. Pull transformer wire connectors off fuse holder.
6. Remove two screws that hold transformer to case. The transformer lifts free from display.

To install a new power transformer, reverse the previous steps. Close the display case, plug in the power cord, and turn on the display power.

6.3 Circuit Board Replacement

1. Turn off AC power at circuit breaker and unplug display power cord.
2. Loosen cover clamps and open display case.
3. Turn two retaining screws 1/4 turn and tilt panel out to reveal lower surface.
4. Disconnect communication cable from terminal strip J10 (See Figure 6.2, page 12). Disconnect AC power cord and ground connections from inner panel. If unit has time and temperature options, disconnect those wires from terminals J11 and J12 respectively.
5. The inner panel should now be free from wiring connections. Pull two spring-loaded locking pins and remove inner panel from enclosure.
6. Bring panel indoors to work area.

   ⚠ Caution

   Do not attempt to replace the circuit board outdoors. The board parts can be damaged by static electricity on your body. Always wear a well-grounded wrist strap when touching board or parts on board.
7. The connections to circuit board all have pull-off connectors or screw terminals. Disconnect following items from circuit board:
   - Power transformer 3-wire connector
   - All flip digit number connectors (Mark each connector with the connector base number).
8. Six locknuts hold circuit board to metal standoffs which attach to panel. Remove locknuts.
9. Lift circuit board from panel.
10. Mount new board and tighten six locknuts.
11. Reconnect wires to items disconnected in Step 7 above. Terminals J10, J11, and J12 will be reconnected at mounting site when panel is reinstalled in place.
12. Refer to Section 3 for complete directions on setting up new circuit board. You must set up all option selections. Use a short length of communication cable to connect to weight indicator while getting Flip Digit Display working with indicator again. When everything is working right, mount panel back into enclosure and connect communication cable to terminal J10. Connect Time and Temperature if appropriate. Tilt panel back into position and lock it with two retaining screws. Close cover tightly with clamps provided.

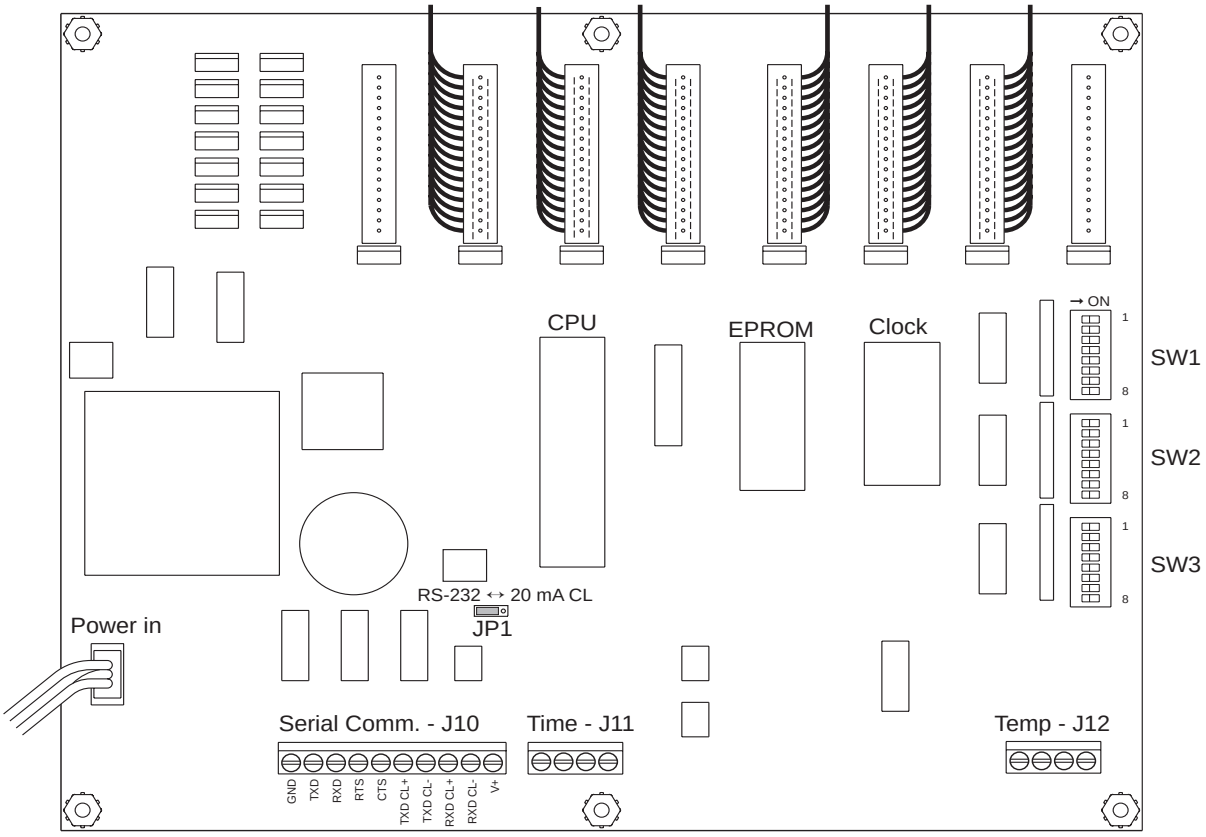

Figure 6.2. Circuit Board

13. Reconnect AC power cord and turn on power.

6.4 EPROM Chip Replacement

When removing and replacing the EPROM chip, observe the same anti-static electricity precautions used when handling the circuit board. Wear a wrist strap grounded to a good electrical ground to discharge static electricity from your body.

1. Turn off AC power to display and unplug power cord.
2. Loosen clamps holding display cover and open display case.
3. Turn two retaining screws 1/4 turn and tilt panel out to reveal lower surface.
4. Refer to Figure 6-2 for location of EPROM chip on circuit board. Note which direction notch in chip is oriented. Use a small screwdriver or an IC extractor to gently pry chip from its socket.
5. If EPROM chip is to be used again, it must be protected from static electricity. Carefully set chip aside and proceed to Step 6.
6. Unwrap new EPROM chip. Remove black foam rubber pad from pins. The black pad is a static protector. Insert old chip from previous step into black pad so all pins are in foam pad.
7. Turn new EPROM chip so that notch at one end lines up with socket end that has an identifying notch. Gently press legs of chip into socket. Work each side and end of chip into socket. The chip body goes down to stop against socket body.

8. Put old chip into packaging used with new chip.
9. Tilt panel back into position and lock it with retaining screws. Close display case and secure clamps. Plug in power cord and turn on power.

6.5 Clock Socket Replacement

The clock socket plugs piggy-back style into an EPROM chip socket and has pin sockets to accept another chip into itself. See Figure 6-2 for the location. Built into the body of the removable socket is the clock for the time display. Replace the clock socket using the EPROM chip replacement procedure above.

6.6 Display Digit Cleaning

Sometimes a segment in a number display unit can stick and not flip freely. Usually this is due to metal slivers stuck to the magnets of the number display. These tiny metal pieces drag on the flip segment, stopping its movement. Blow the metal pieces off the magnets using a can of compressed air. Use care to direct the air blast away from other magnets. Use clean cloths to cover the other number display units and to trap the flying metal dust.

6.7 Display Digit Replacement

When working on the number displays, use the correct tools and work carefully. Any tiny sliver or speck of metal chewed from nuts, screws, or the case can find its way into the number display magnets. Once on a magnet, these tiny metal pieces can stop the number segment from flipping.

1. Turn off display power at circuit breaker and unplug display power cord.
2. Loosen cover clamps and open display case. Turn two retaining screws 1/4 turn and tilt panel out to reveal lower surface.
3. The next several steps detail disconnecting panel so that it can be removed and brought indoors to a protected work area. Disconnect communication cable from terminal strip J10.
4. Disconnect power and ground connections from inner panel.
5. If time and temperature options have been installed, disconnect those wires from panel at terminals J11 and J12 on main board.
6. The panel is held into enclosure by two spring-loaded pins. Retract two pins and lift panel free of enclosure. Remove panel to a safe indoor work area.
7. If defective digit is located beneath circuit board, circuit board should be removed for easier access. Follow directions in section, *Circuit Board Replacement,* page 11.
8. Each number display unit is held in place by four corner screws. Loosen four nuts with a well-fitting box end or socket wrench.

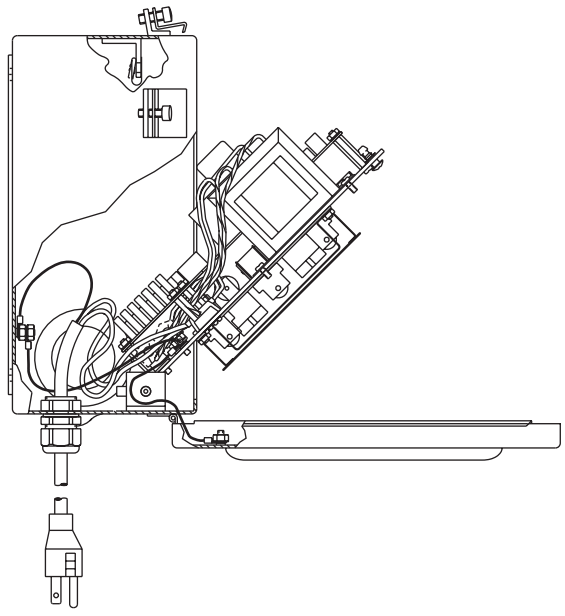

Figure 6.3 Tilting Panel Out

9. Lift panel to get to mounting screw heads underneath. Hold nut with one hand and unscrew mounting screw with other hand.
10. Follow number display unit wires to circuit board to locate connector. A small tab on one side of connector must be gently pried aside to allow connector plug to be removed from connector base. Disconnect plug and remove number display unit from case.
11. To install new number unit, perform Steps 1-10 above in reverse order. Inspect panel and cover for metal fragments. Remove any visible metal slivers and specks.

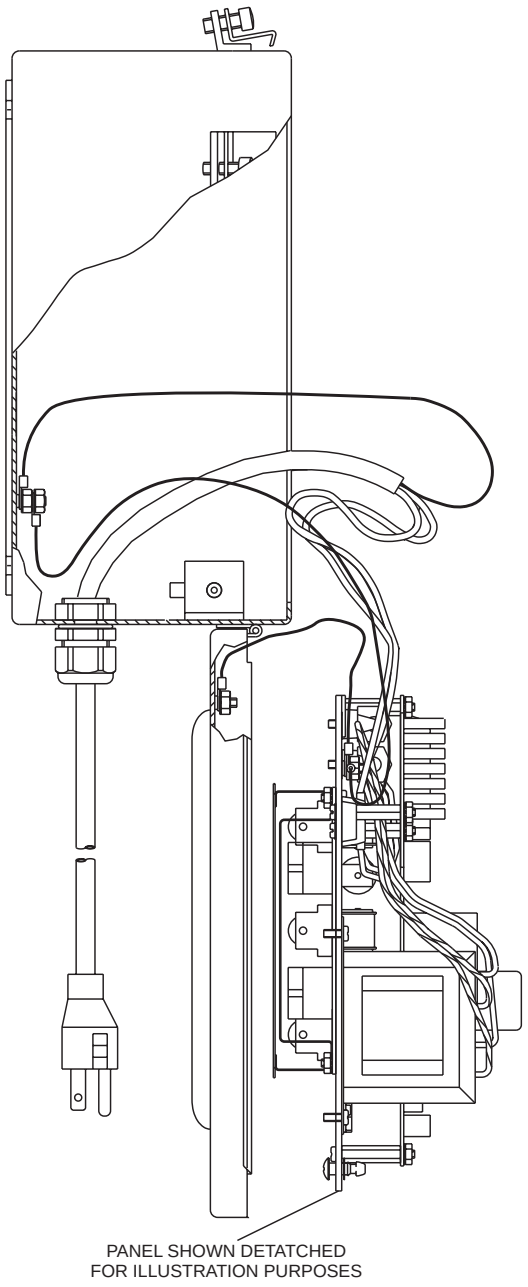

Figure 6.4 Number Display Panel Removed

6.8 Glass Replacement

If the 1/4" acrylic plastic window is cracked or shattered, it can be replaced with Lexan®, acrylic plastic, or standard 1/4" glass by a company specializing in auto windshield replacement. A special windshield installation tool is required for installation of the glass molding strip around the panel.

Unplug the unit, then remove the grounding wire that connects to the lug on the cover. You can then remove the cover completely by pulling out the long pin in the piano hinge that holds the cover to the case. When the cover is delivered to the glass installation shop, leave instructions to apply silicone sealant on each cut end of the gasket prior to final assembly. Without cementing the cut ends of the gasket together in this manner, the case will not maintain NEMA 4 standards for water infiltration.

7. Replacement Parts

This section lists Rice Lake Weighing Systems' part numbers for the field-replaceable parts of the EL233 Flip Digit Display with 4" and 6" digit heights. A more complete selection of component-level replacement parts is listed in Rice Lake Weighing Systems' *Electronic Replacement Parts and Components.*

Part Name	Part Number
Power Cord A7131	15436
Cord Grip Assembly 7mm	15668
Cord Grip Assembly 1/2" NPT	15671
Corrosion Inhibitor	16037
Desiccant (56g pkg.) EL385-56g	16039
Digit, 6" Fixed Zero	21031
Display Digit, 4", yellow	21087
Display Digit, 6", yellow	21088
Contact Block	15929
Driver Board, with Temperature probe	21023
Enclosure Assembly, (EL233-4")	22624
Enclosure Assembly, (EL233-6")	22714
Slo-Blo Fuse, .25 A for 110 VAC installations	16444
Gasket, Low-Compression-Set Urethane Tape	22826
Power Transformer	16740
Smart Socket for Driver Boards	21034
Time and Temperature Kit (option)	22783
Legend Plate for clock switch (use with foam tape below)	15364
Double-Adhesive Foam Tape for Legend Plate	14616
Switch, Momentary Operator Center off (option)	15928
Temperature Probe (option)	21086

8. EL233 LIMITED WARRANTY

Rice Lake Weighing Systems (RLWS) warrants that all RLWS equipment and systems properly installed by a Distributor or Original Equipment Manufacturer (OEM) will operate per written specifications as confirmed by the Distributor/OEM and accepted by RLWS. All systems and components are warranted against defects in materials and workmanship for one year.

RLWS warrants that the equipment sold hereunder will conform to the current written specifications authorized by RLWS. RLWS warrants the equipment against faulty workmanship and defective materials. If any equipment fails to conform to these warranties, RLWS will, at its option, repair or replace such goods returned within the warranty period subject to the following conditions:

- Upon discovery by Buyer of such nonconformity, RLWS will be given prompt written notice with a detailed explanation of the alleged deficiencies.
- Individual electronic components returned to RLWS for warranty purposes must be packaged to prevent electrostatic discharge (ESD) damage in shipment. Packaging requirements are listed in a publication, "Protecting Your Components From Static Damage in Shipment," available from RLWS Equipment Return Department.
- Examination of such equipment by RLWS confirms that the nonconformity actually exists, and was not caused by accident, misuse, neglect, alteration, improper installation, improper repair or improper testing; RLWS shall be the sole judge of all alleged non-conformities.
- Such equipment has not been modified, altered, or changed by any person other than RLWS or its duly authorized repair agents.
- RLWS will have a reasonable time to repair or replace the defective equipment. Buyer is responsible for shipping charges both ways.
- In no event will RLWS be responsible for travel time or on-location repairs, including assembly or disassembly of equipment, nor will RLWS be liable for the cost of any repairs made by others.

THESE WARRANTIES EXCLUDE ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEITHER RLWS NOR DISTRIBUTOR WILL, IN ANY EVENT, BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

RLWS AND BUYER AGREE THAT RLWS'S SOLE AND EXCLUSIVE LIABILITY HEREUNDER IS LIMITED TO REPAIR OR REPLACEMENT OF SUCH GOODS. IN ACCEPTING THIS WARRANTY, THE BUYER WAIVES ANY AND ALL OTHER CLAIMS TO WARRANTY.

SHOULD THE SELLER BE OTHER THAN RLWS, THE BUYER AGREES TO LOOK ONLY TO THE SELLER FOR WARRANTY CLAIMS.

No terms, conditions, understanding, or agreements purporting to modify the terms of this warranty shall have any legal effect unless made in writing and signed by a corporate officer of RLWS and the Buyer.

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