



Everbrite

LumiDigit®

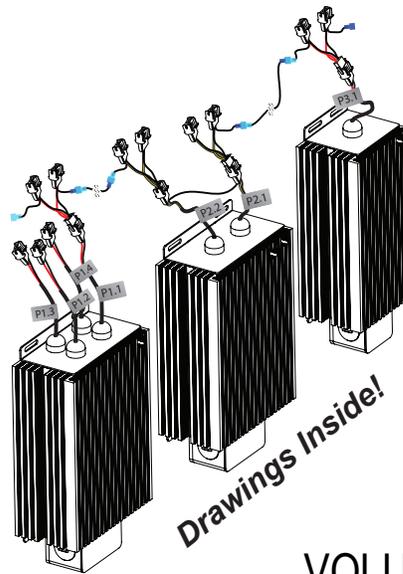


LED Electronic Price Display System

e=mc

everbrite message center

**Sign, Retrofit Installation
and Troubleshooting Guide**



Installation Manual

VOLUME VIII

IN00935P
rev 01/07/2010

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1. MANUAL OVERVIEW

This manual is intended for the installation of Everbrite's lumiDigit II sign using the Model 6002 console. Read this manual carefully before starting the equipment.

This manual contains important information for correct installation and maintenance of the equipment.

It also contains important instructions to prevent accidents, personal injury and/or serious damage prior to or during operation of the equipment.

Familiarize yourself thoroughly with the function and operation of this equipment and strictly observe the directions given.

If you have any questions or need further details on specific aspects related to the lumiDigit II Sign, please do not hesitate to contact us.

In this manual you will find three levels of flagged notes or warnings.



WARNING! THE WARNING MESSAGE IS USED WHEN A LIFE THREATENING SITUATION MAY ARISE OR PERSONAL INJURY CAN RESULT.



CAUTION! The caution message is used when there is a danger of damage to the equipment, materials, or other important information; such as Warranty issues.

NOTE: The Note message is used to give operational information and useful tips.

2. SAFETY

The owner of the lumiDigit II Sign is responsible for safe operation and repair. Therefore, the owner is obliged to familiarize operating personnel with the contents of this manual and make them aware of all possible hazards.

NOTE: When using this equipment, always follow the manufacturer's instructions for safe operation. In case of emergency, please telephone Technical Support or a qualified service technician.

Do not operate the sign until it is completely assembled and installed per the instructions supplied by Everbrite.

Everbrite recommends that your main power be installed by a licensed electrician in accordance with the local building and electrical codes.

All equipment must be grounded in accordance with the local building and electrical codes.

If any part of the lumiDigit II sign equipment is malfunctioning or has been damaged stop all operation and consult with Everbrite Technical Support or qualified service personnel before further use.

Use only Everbrite specified or recommended replacements parts.



WARNING! SHUT OFF POWER TO THE SIGN AT THE SITE CIRCUIT BREAKER BOX. USE A LOCK OUT/TAG OUT DEVICE ON CIRCUIT BREAKERS OR "POWER ON/OFF" SWITCHES WHEN PERFORMING INSTALLATION, REPAIRS, OR MAINTENANCE.

When performing repairs be mindful of the weather and work area conditions. Avoid the unit's exposure to the elements, water and debris, or anything that may be dangerous or cause damage to the equipment.



WARNING! OPERATION OF THE UNIT WITH THE ELECTRICAL CIRCUITRY EXPOSED IS DANGEROUS. BE SURE ALL TOOLS AND ANY OTHER MATERIALS ARE REMOVED FROM THE UNIT. BE SURE ALL ACCESS COVERS ARE REPLACED AND CLOSED BEFORE POWER IS TURNED ON.



CAUTION: Use of solvent, cleaners, or a power washer on your lumiDigit II sign may cause permanent damage.



CAUTION: Existing gasket strips must be removed and frames must be scraped and cleaned before new gasket strip is installed. Failure to do so will compromise the water tight seal of the sign.

3. INSTALLER MANUAL



CAUTION: Everbrite recommends that the sign be installed by a licensed contractor. Must be installed per the detailed instructions sent with the unit and meet all local and national building codes.

A. Unpacking/Pre Installation

Installation hardware and any additional items will vary depending on the sign configuration ordered.

NOTE: Take care uncrating so as not to damage the units.

NOTE: During installation check all connectors on the cable harnesses to ensure good connections.

The shipment should include:

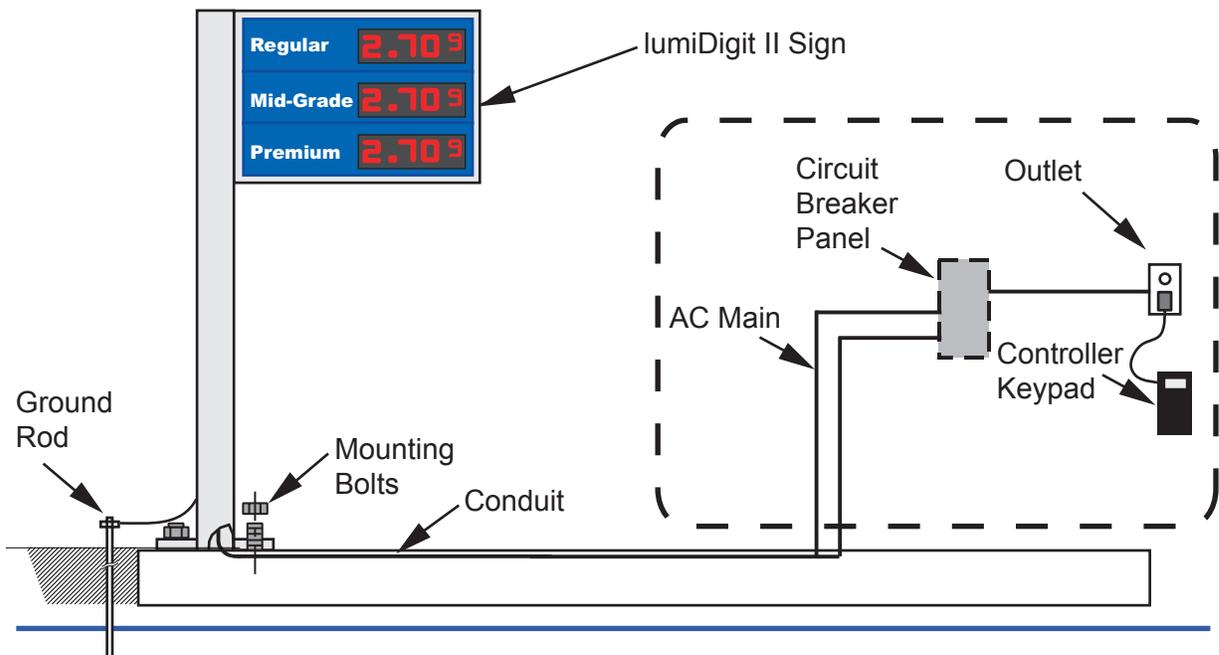
- lumiDigit II Manual (leave with sign)
- lumiDigit II Sign
- Console Keypad with AC Adapter
- Installation Hardware

B. General Site Layout

There will be a set of Installation instructions/drawings included with the shipment.

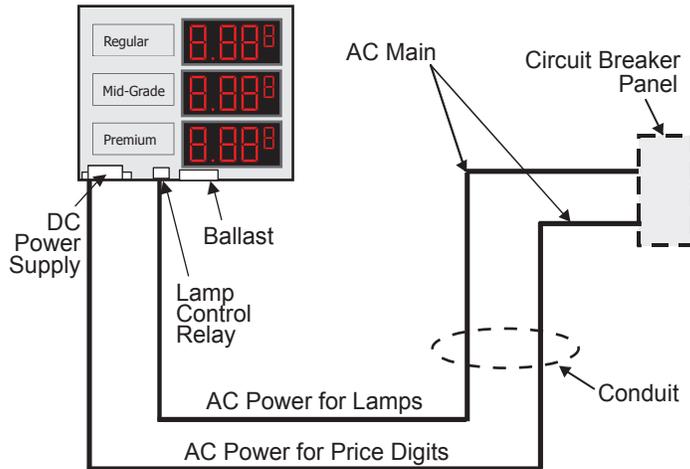
The maximum main circuit breaker size allowed by NEC and UL 48 is 20A.

The AC circuit(s) MUST be properly grounded.



AC Power Wiring Diagrams

Two Circuit Configuration (Recommended)

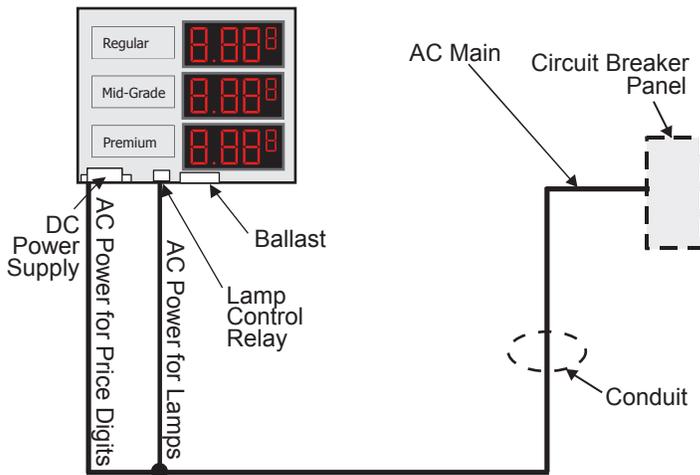


One of the two circuits is used for the sign lighting system and the other circuit is used for the price display modules. Circuits required will vary depending on specific sign.

The maximum main circuit breaker size allowed by NEC and UL 48 is 20A.

Two Circuit Schematic

One Circuit Configuration (Not Recommended)



One circuit is not recommended but can be used if only a single circuit is available. The Sign Interface and the Sign Ballast are wired together. Circuit required will vary depending on specific sign.

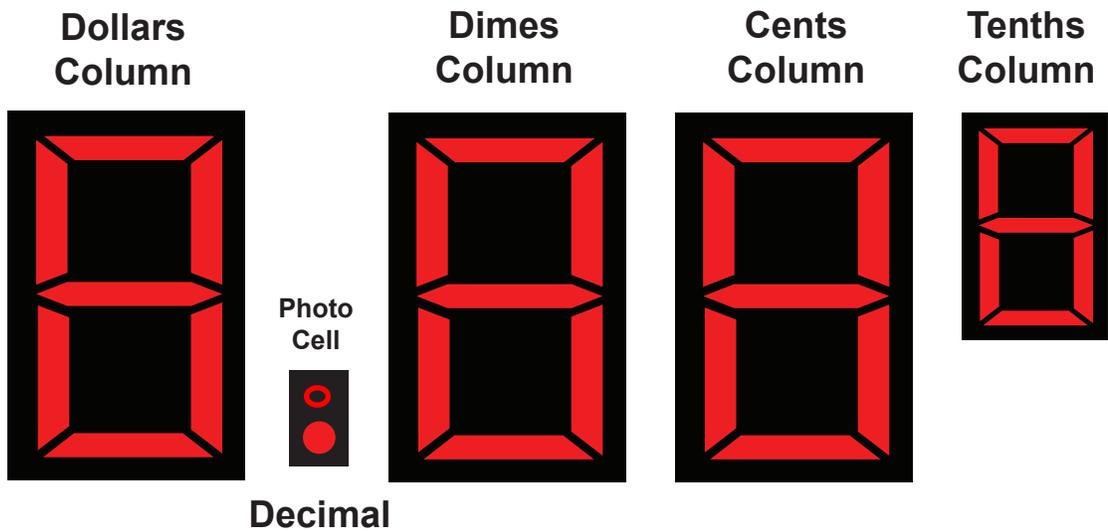
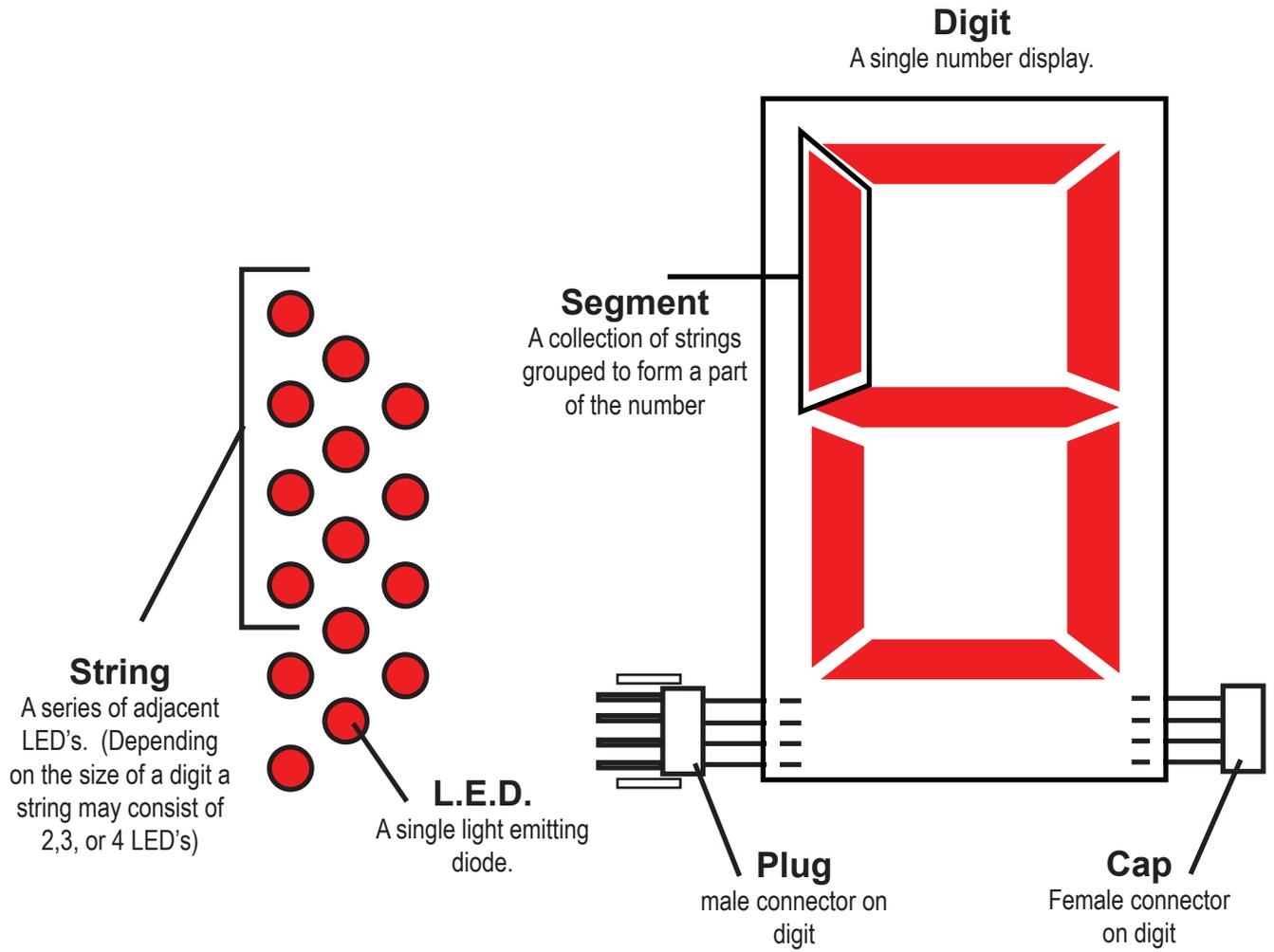
NOTE: A light sensitive switch or timer can be used in a one circuit configuration. This will allow the sign to be changed regardless of the state of the lighting circuit **(Not Recommended)**.

The maximum main circuit breaker size allowed by NEC and UL 48 is 20A.

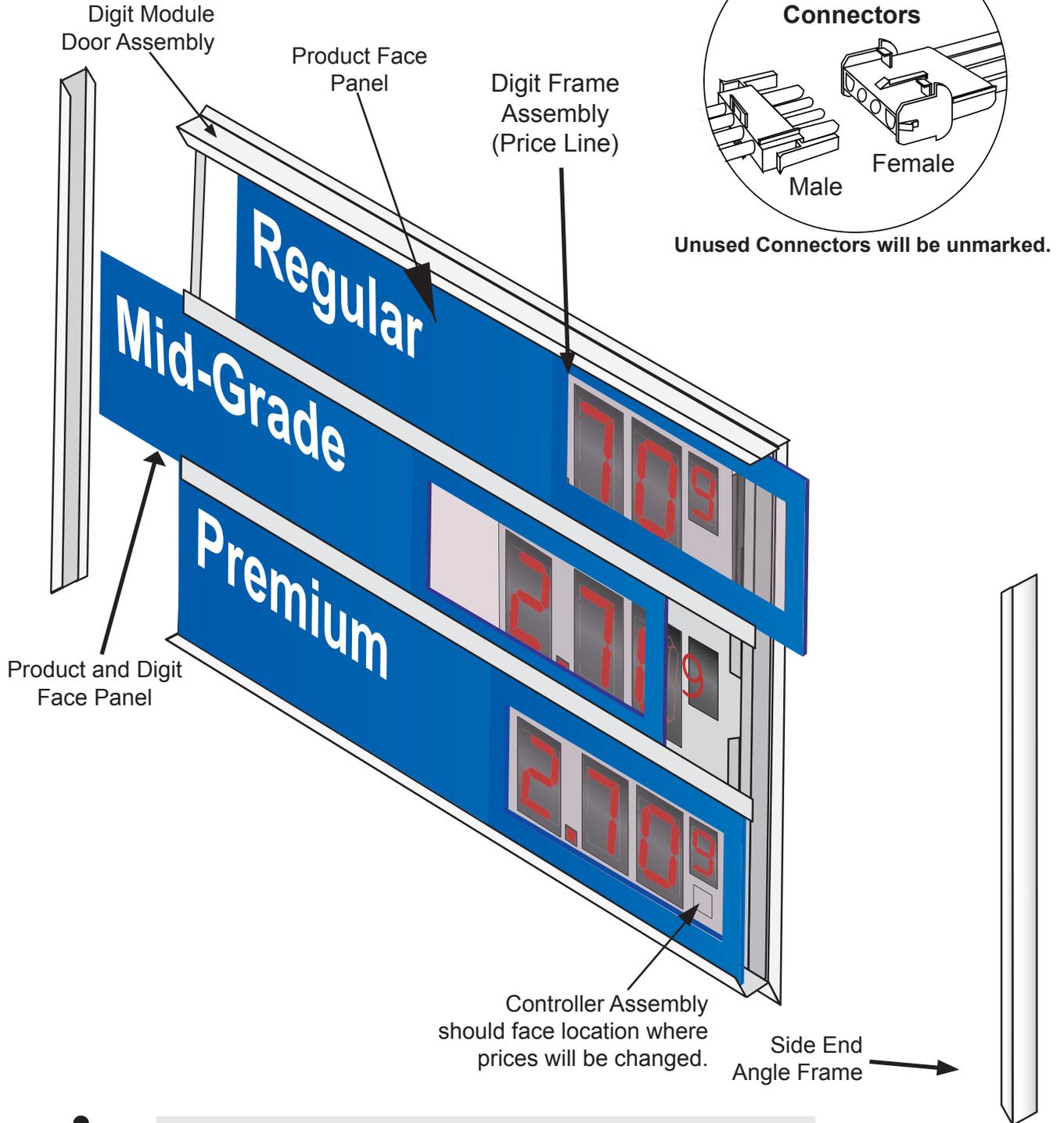
One Circuit Schematic
NOT RECOMMENDED



WARNING! USE A LOCK OUT/TAG OUT ON CIRCUIT BREAKERS OR "POWER ON/OFF" SWITCHES WHEN PERFORMING INSTALLATION, REPAIRS OR MAINTENANCE.



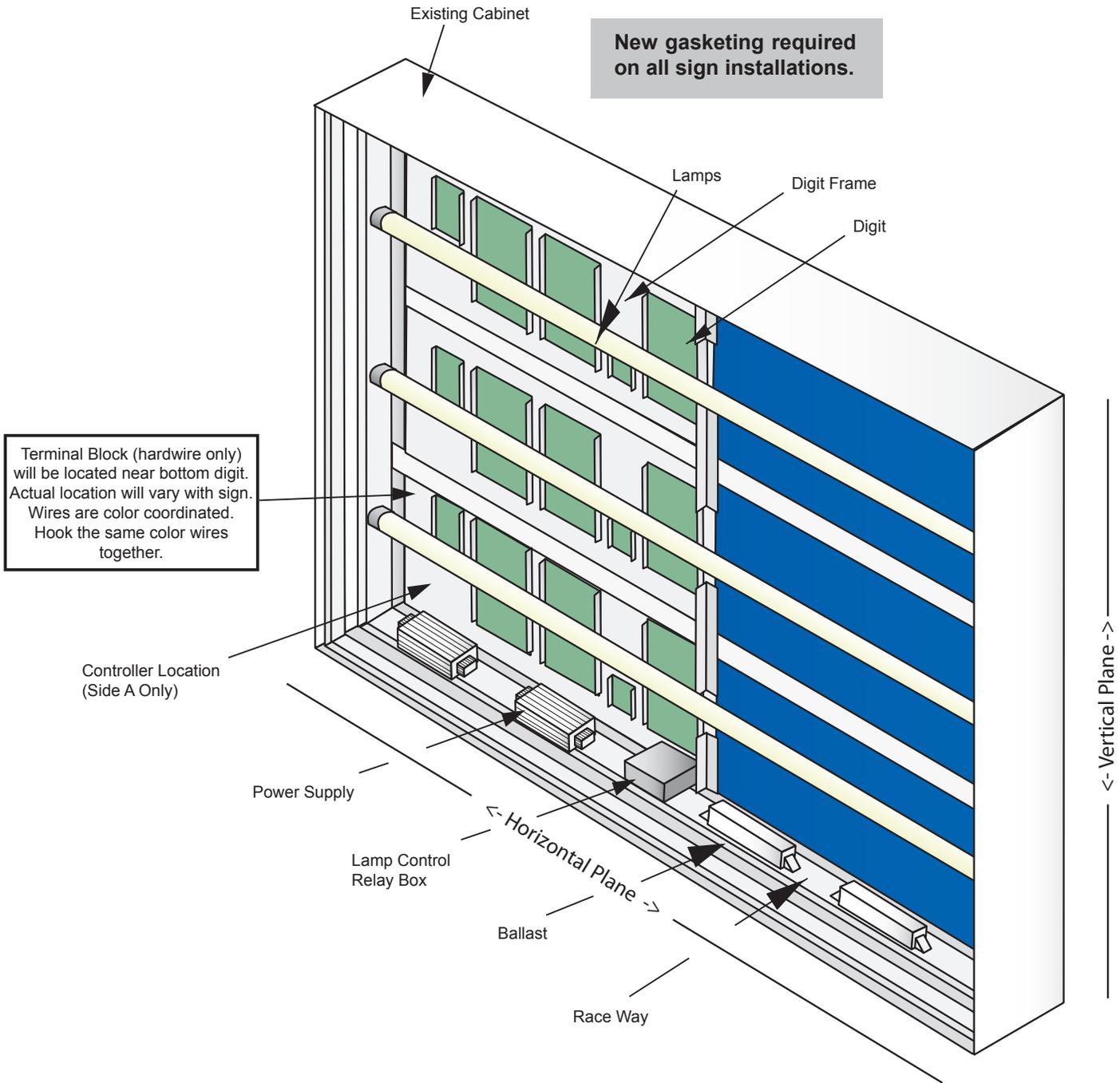
C. Frame Assembly Retrofit



CAUTION: When removing and replacing panels, slide panel carefully to avoid hitting LEDs.

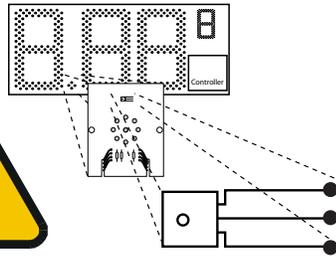
D. Typical Sign Configuration

The power supply can be mounted both vertically and horizontally. **Power supplies require at least 2" of space between other heat producing components.**



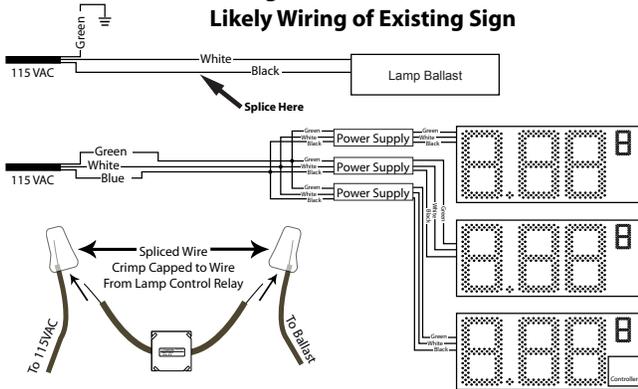
E. Lamp Control Relay

THIS SIGN COMES EQUIPPED WITH A PHOTO CELL FOR AUTOMATIC LAMP ON/OFF CAPABILITIES

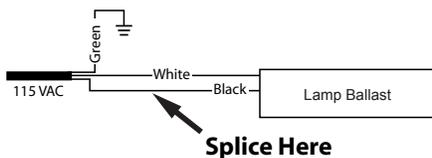


IF EXISTING LOCATION ALREADY HAS AN AUTOMATIC LAMP FEATURE, THE LAMP CONTROL RELAY BOX MAY BE BYPASSED. FOR PROPER FUNCTIONALITY AND TO ENSURE THAT ALL LIGHTS TURN ON AT THE SAME TIME, ONLY ONE PHOTO CELL (LIGHT SENSOR) SHOULD BE INSTALLED IN EACH SIGN.

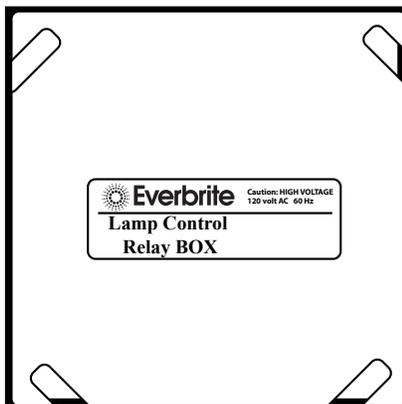
lumiDigit II Retrofit Instructions Likely Wiring of Existing Sign



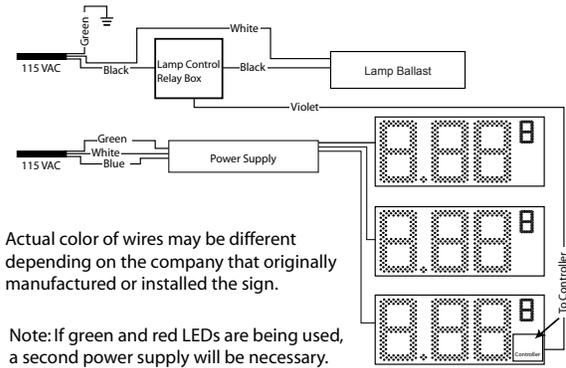
1. Splice black wire between Power Source and Lamp Ballast.



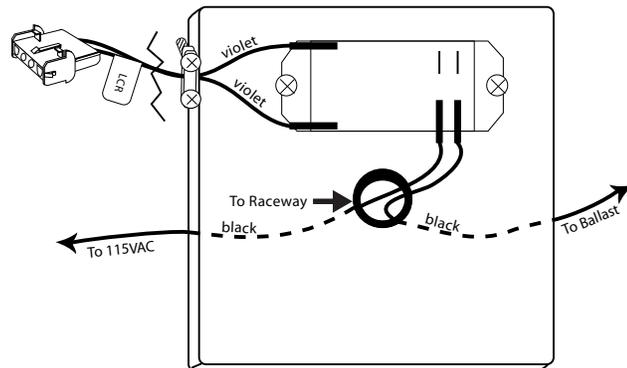
2. Remove cover of Lamp Control Relay (LCR) Box.



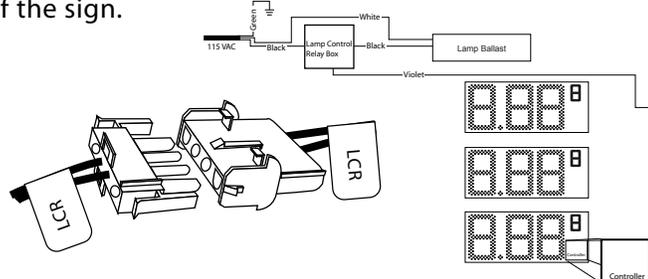
lumiDigit II Wiring Diagram



3. Connect one of the black wires in LCR Box to the spliced wire connected to the power, and the other black wire to the spliced wire connected to the lamp ballast (either wire will work). Replace cover.



4. Connect the Plug and Cap connectors from the LCR Box to the Controller (located below the 1/10th digit on Side A of the sign).



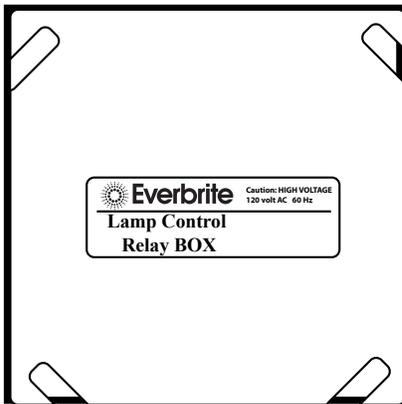
Bypassing the Lamp Control Relay

A photo cell is located below the decimal on the lowest price line on each side of sign. This photo cell helps determine the brightness of the LEDs and also can tell the sign when to turn on the lamps. If existing location already has an automatic lamp system, an energy management system, or a manual switch for the lamps, the lamp control relay box may be bypassed. To keep the LEDs working properly, the photo cells should never be removed or disconnected. The lamp control relay may be bypassed inside the lamp control relay box. To achieve the same result for retrofit signs, the lamp control box can be left uninstalled.

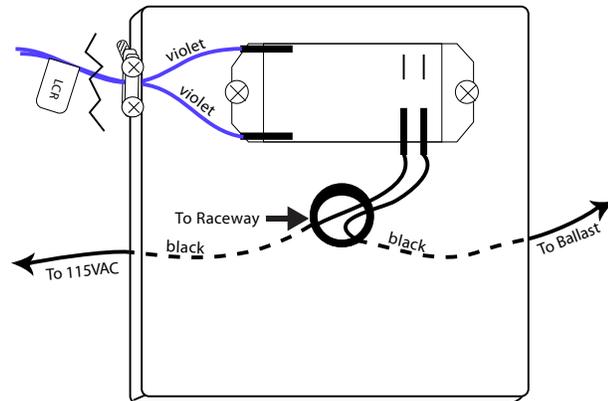
For single circuit installation (**not recommended**) the circuit must be split before the management system to ensure that the prices will stay on when the lamps are turned off.



WARNING! Shut off power to the sign at the site circuit breaker box. USE A LOCK OUT/TAG OUT DEVICE ON CIRCUIT BREAKERS OR "POWER ON/OFF" SWITCHES WHEN PERFORMING INSTALLATION, REPAIRS, OR MAINTENANCE.



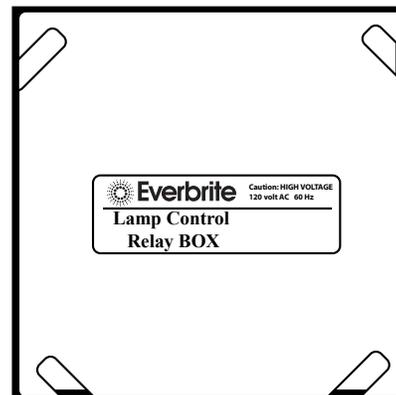
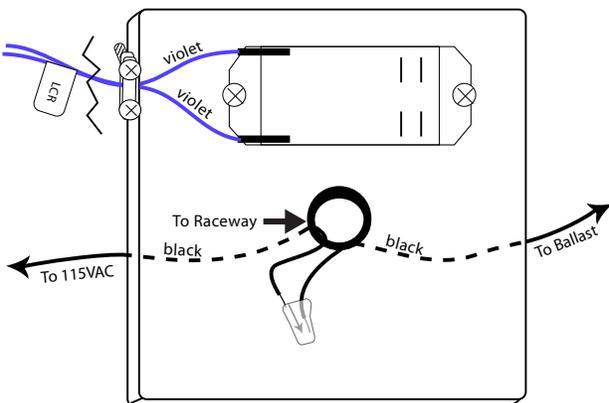
1. Locate the lamp control relay box.



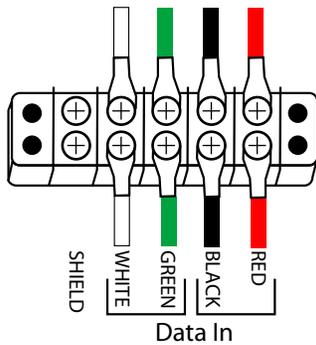
2. Remove cover.

3. Remove black wires from relay and remove the connection. Strip black wires and crimp together.

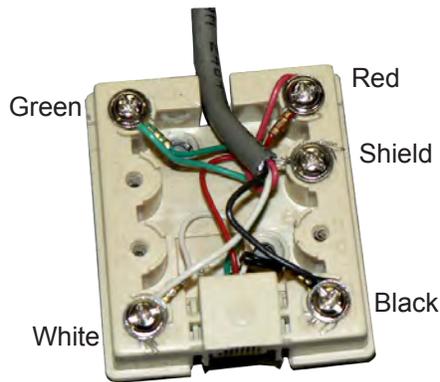
4. Replace cover to lamp control relay.
Note: The relay will still be connected to the controller via the purple wires. Wires may be disconnected in the controller. See pages 22 and 23 for controller wiring.



F. Hard-wire Installations (*not for Radio Installations*)



Terminal block located on the back of the Power supply raceway for hard-wire hook-up (High Perfection), or on the frame of the bottom digit on door Side A. The colors of the wires are coordinated with where they are connected. The color of one wire gets connected across from a wire of the same color. Red across from red, black across from black, and so on.



The recommended wire connecting the sign to the connection box is outdoor MP-40 Direct Burial Cable.

From the terminal black, the MP-40 Cable runs underground and is connected to the controllers phone jack connection box. The wires are connected by similar colors. Red to red, black to black, green to green, white to white, and so on.



Once the wires are connected the controller can be plugged into the phone/computer jack as shown.

G. Frame Assembly Retrofit Installation



CAUTION: Information and diagrams included and are required for this installation please see Frame Assembly Retrofit page 6.

NOTE: Everbrite recommends using a scaffolding or boom truck bucket for installation. New gasketing required on all sign installations.

Qty	Description
2	Digit Door Assemblies
1*	Power Supplies
1	Lamp Control Relay Box
1	Dedicated Receptical
1	Keypad Console with AC Adapter
1	Operating Manual

***NOTE:** Number of power supplies will depend on sign specifications.

STEP 1: IMPORTANT! SHUT OFF POWER TO THE SIGN AT THE SITE CIRCUIT BREAKER BOX.

STEP 2: Shut off power to the display. Lock and tag it out.

STEP 3: Measure doors. Using a tape measure, compare the new and old doors to determine proper fit.

STEP 4: Remove old doors. Remove existing face molding assemblies, any hinge fasteners and damaged gaskets.

STEP 5: Replace hinge screws. After removing doors and checking for extrusions to mount, replace hinge fasteners or similar hardware into chassis to prevent water entry.

STEP 6: Remove Lamps. Remove the lamps from the sign and gently set aside.

STEP 7: Determine the mounting location of the power supplies. Refer to Sections D and E for spacing and horizontal/vertical mounting information.

NOTE: For MagTek (High Perfection) power supply installation (pre-installed on back of digits), skip to diagram and instructions, Section K.

STEP 8: Mount the power supplies. Mark the determined mounting location and remove the raceway cover. Draw punch a 7/8" hole at the marked location. Mount the power supplies to the raceway with the holes lined up.

STEP 9: Determine the mounting location of the lamp control relay assembly. It must be located between where power enters the sign and the lamp ballast on the bottom of the sign.

STEP 10: Mount the lamp control relay. Mark the determined mounting location and remove the raceway cover. Draw punch a 7/8" hole at the marked location. Mount the lamp control relay assembly to the raceway with the holes lined up. Mark area and use a drill in raceway to account for screws on the bottom of the relay box so the box will lay flat on the raceway.

STEP 11: Splice wire at relay. Cut the power wire going to the ballasts and splice to the black wires of the lamp control relay assembly.

STEP 12: Mount Dedicated Receptical. Predrill holes to mount the dedicated receptical in a location reachable to the power supply.

STEP 13: Run AC mains to Dedicated Receptical. Run the wire through the raceway cover. Connect receptical to the dedicated power line adhering to NEC and local wiring codes. Replace the raceway cover.

STEP 14: Determine side A of the lumiDigit II doors. Side A is indicated by the controller access cover below the tenths digit on the bottom line.

STEP 15: Replace existing gasketing. Before installing either side, replace all gasketing and plug any holes that may let water into the sign.

STEP 16: Install side A. Install side A to the sign using #12x1" hex head screws. (Note: Where possible, install the side A door so it is closest to the location where the sign price is changed).

STEP 17: Connect plugs. Raise side B nearly into place, leaving enough space to access the inside of the sign. Connect the LCR, side B data, side B dimmer and side B power. All plugs used will be marked accordingly. Unmarked plugs and caps will not be used and can be left unconnected.

STEP 18: Connect power supplies to dedicated receptical. Plug in power supply to the dedicated receptical. Be sure to run all cords in areas that will not produce shadows when the lamps are turned on.

STEP 19: Re-install lamps. Re-install or replace lamps previously removed. Replace any defective lamps.

STEP 20: Secure side B. Secure side B to the sign using #12x1" hex head screws.

STEP 21: Get access code. Contact Everbrite to obtain console access code to unlock the console function. (Note: Please have the form on the back cover of the operator's manual filled out before calling).

STEP 22: Unlock and power on sign. Set desired prices on sign to determine functionality.



WARNING! OPERATION OF THE UNIT WITH THE ELECTRICAL CIRCUITRY EXPOSED IS DANGEROUS. BE SURE ALL TOOLS, ANY OTHER MATERIALS ARE REMOVED FROM THE UNIT, AND ALL ACCESS COVERS ARE REPLACED AND CLOSED BEFORE POWER IS TURNED ON.

H. T-Mount Frame Assembly Parts List

Qty	Description
2	LED Face Panels Frame Assembly
2	“T” Molding Hinged - Top
2	“T” Molding Bottom
4	“T” Molding Side
2	Hat Channel Molding
As Required	Fasteners, #10-24 match screws
20	Fasteners, “T” Molding #10-24X3/4 HX WHD Drill Screw
9	Fasteners, Logo Frame Hinges #10-24X3/4 HX WHD Drill Screw
16	Fasteners, Logo Frame Assembly #10-24X3/4 HX WHD Drill Screw
20	Fasteners, LED Frame Assembly #10-24X3/4 HX WHD Drill Screw
As Required	Gasketing Material

I. T-Mount Frame Assembly Retrofit Cabinet

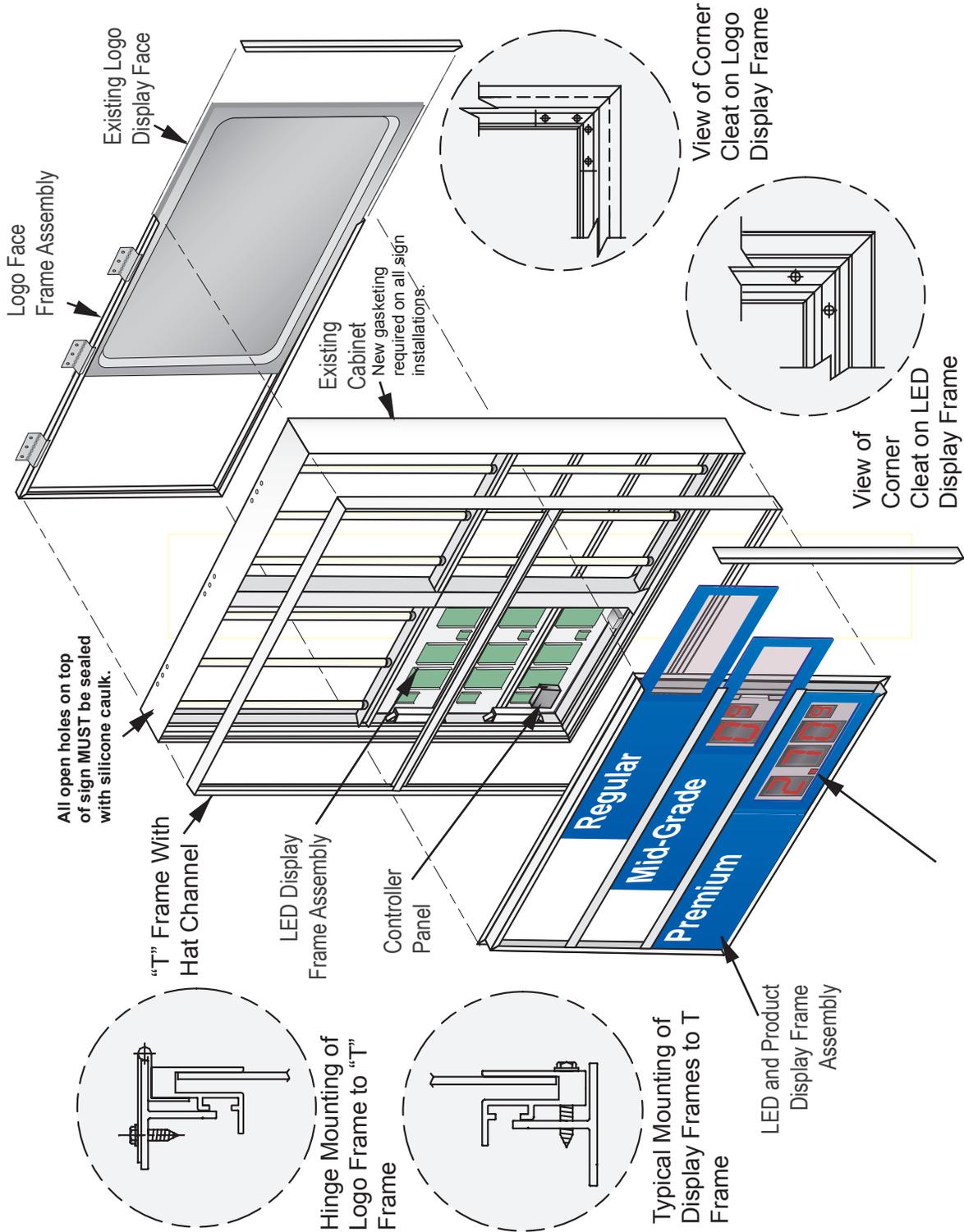


Photo sensor located above the bottom decimal point on both sides of the sign

J. T - Mount Frame Assembly Retrofit Installation



CAUTION: Information and diagrams are included and are required for this installation. See Diagram on page 12 for cabinet assembly and parts.

NOTE: Everbrite recommends using a scaffolding or boom truck bucket for installation.

STEP 1: Check installation parts and fasteners included in shipment (Parts List Page 11). Review this section prior to installation.

STEP 2: IMPORTANT! Shut off power to sign at the circuit breaker box.



WARNING! USE A LOCK OUT/TAG OUT DEVICE ON "POWER ON/OFF" SWITCHES WHEN PERFORMING INSTALLATION.

STEP 3: Remove existing display frame fasteners including hinges and frame support angle both sides. The resulting holes from the old frame removal will require sealing with a paint-able exterior silicon sealant (especially holes on the top of the cabinet). After removing the old display, disassemble the frame as needed to slide the Header Logo Faces out and set aside.

NOTE: New gasketing required on all sign installations. Take care not to damage the Logo Faces as they will be reinstalled. **All holes on the top of sign MUST be sealed with silicone caulk.**

STEP 4: Remove existing lamps and set aside.

STEP 5: Locate Frames. Locate mitered "T" Frames (Top, Bottom, and 2 Sides). Attach "T" frames to existing cabinet using #10 X 3/4 HXWHD drill screws, 5 places each side.

NOTE: "T" Frame may require trimming. If there are gaps at corners, mount frame so that the gaps are at the bottom of the cabinet and seal with a paint-able exterior silicon sealant. Gaps larger than .10 inch are unacceptable, contact Everbrite immediately.

STEP 6: Measure the LED Display Assembly and the new Logo Frame and mark 'T' Frame. Locate Hat Channel and check for fit using measured markings. Install the Pop-rivet Hat Channel to the 'T' Frame using 3/16" rivet.

NOTE: If there appears to be interference, or excessive spaces between the Frame, the Hat Channel, and/or the LED Display, contact Everbrite immediately.

STEP 7: Remove side molding from the Logo Frame, measure the old logo face for fit, and slide into new frame assembly. Reinstall side angles.

NOTE: Logo Faces may require trimming.

STEP 8: Install the Logo Frame's hinge side to the top 'T' Frame using #10 X 3/4 HXWHD drill screws.

CONTINUE AT STEP 7, SECTION G; FRAME ASSEMBLY RETROFIT INSTALLATION.

K. Existing Frame Preparation and Retro-Fit Installation for MID Displays

1. Shut off power to the sign at the circuit breaker box.
2. Remove face panel cabinet retainer angle and slide out faces.
3. Remove all digit modules (if present).
4. Remove all lamps.
5. Remove all digit mounting angles (if present) and horizontal "H" bars. (Fig. 2)
6. Remove remote control box (if present)- leaving only any existing Ballasts and Dedicated Receptacle (if applicable).
7. Install "H" bar assemblies by using (2) #10 x 3/4 HX WH HD. (Fig. 3) Line up outer edge of the "H" Bar with outer edge of sign. Refer to the Engineering Drawing for precise measurements of each "H" Bar spacing and locations.

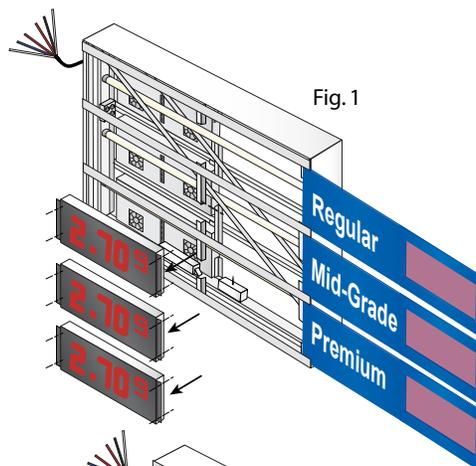


Fig. 1

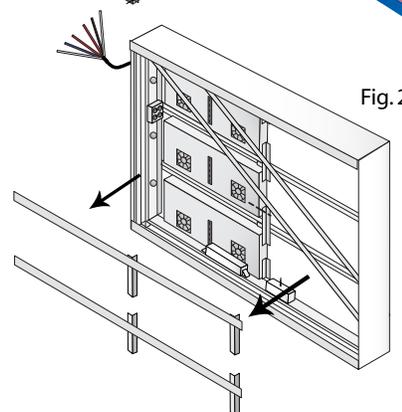
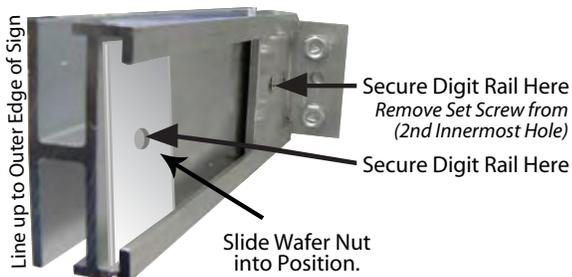


Fig. 2



Cross Section of "H" Bar Assembly

8. Install new Digit Mounting Rails by sliding the Wafer Nut into correct position of the "H" Bar assembly. Secure vertical Digit Mounting Rail (.187 X 1.000 ALUM) with 1/4-20 X .500 HX HD Bolt and washer by tightening the bolt through the Rail and pulling the Wafer Nut against the channel of the "H" Bar (Fig. 4) and securing the other side to the "L" Bracket that is securing the "H" Bar to the frame. To adjust placement of the mounting rails, loosen bolt, slide rail and tighten bolt into position. Follow engineering drawing for proper rail placement.

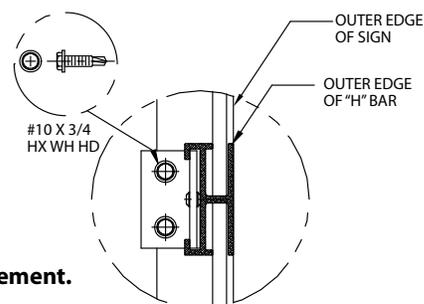


Fig. 3

*For signs with digits in the top or bottom faces only:

Secure bottom AND/OR top of vertical Digit Mounting Rails using the Aluminum Rail Holders. Line up flush against back of frame (see illustration below) and machine screw (2) to better secure digits and digit frame. Use same measurements as used for Wafer Nut locations.



9. Follow instructions on reverse side and installation manual to install Power Supply, Lamp Control Relay and Dedicated Receptacle.

10. Reinstall and/or replace all lamps.

11. Install new digits to Mounting Rails.

12. Run wires and connect all plugs to their respective labeled caps. Wire tie all wires that may produce shadows.

13. Slide in new faces according to drawing specifications.

14. Call Everbrite for activation code. Test both sides of sign.

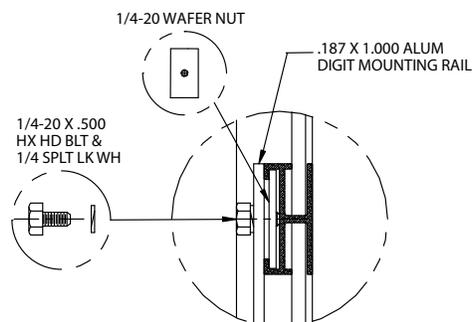
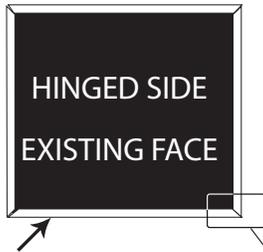


Fig. 4

L. lumiDigit II Digit Assembly Retrofit on a B Wide Body

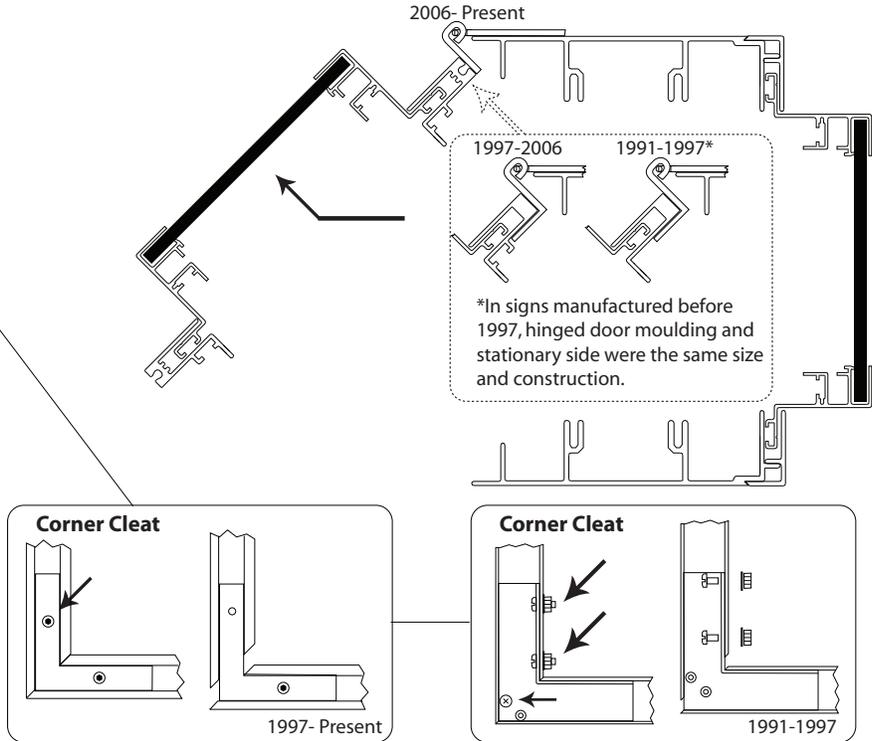
This is a 2 sided companion sheet for the lumiDigit II Retrofit Installation Manual.
COMPLETE ALL CONNECTIONS PER INSTALLATION MANUAL.

Begin installation from the hinged side of sign (hinge located at top of sign).

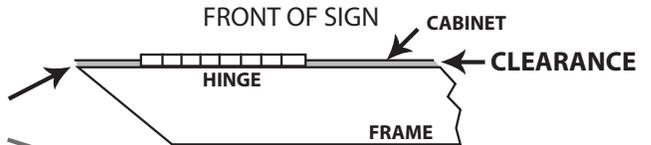


Remove screws from face molding and lift hinged face section.
 Remove corner cleat to release lower extrusion and slide out existing face.

Slide up new digit assembly and reattach lower extrusion.
 Re-fasten to cabinet.



Seal off hinge clearance with a bead of caulking to prevent hinge from being opened.

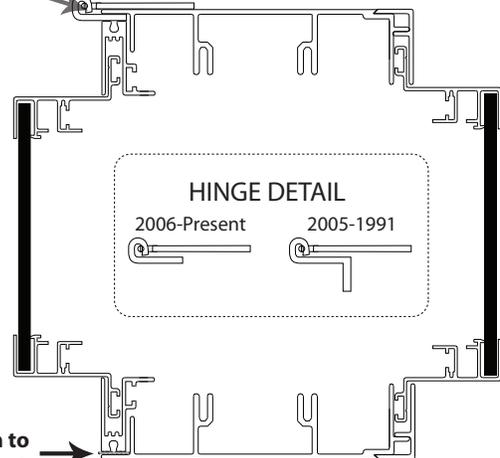


To avoid stress to the the wires and/or to avoid connection failures, clearance along the top hinge **MUST** be caulked shut.

ALL SERVICING AND REMAINING INSTALLATION PROCEDURES CAN AND MUST BE DONE BY SLIDING OUT THE FACE OF THE NEW CONVERSION DOOR MOLDING AND WORKING FROM THE FRONT.

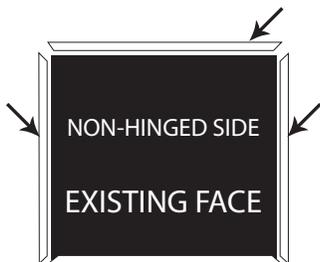
FAILURE TO SEAL HINGED SIDE SHUT MAY VOID THE WARRANTY.

Caulk clearance at the bottom of sign to prevent hinge from being opened.



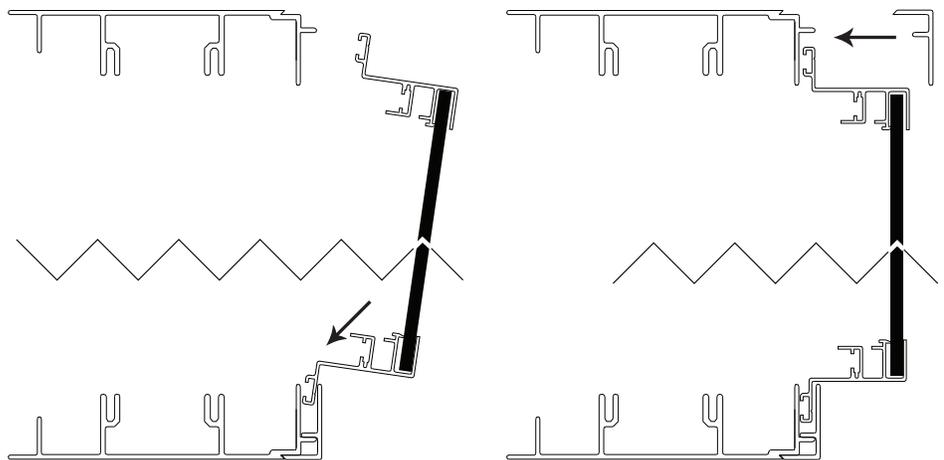
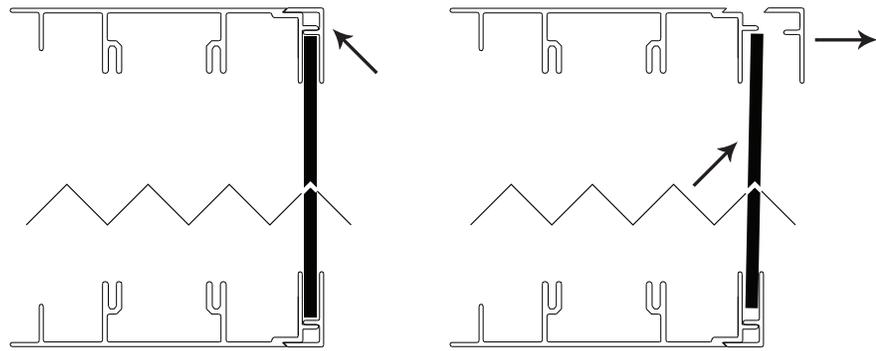
lumiDigit II Digit Assembly Retrofit on a B Wide Body (continued)

IMPORTANT: Complete other side/page of instruction sheet before continuing.



Remove the fasteners from the top and sides from face retainer on non-hinged side.
Lift face up and out.

1997 to present illustrated.



Replace the existing face with the new digit assembly.

Replace fasteners.

ALL SERVICING AND REMAINING INSTALLATION PROCEDURES CAN AND MUST BE DONE BY SLIDING OUT THE FACE OF THE NEW CONVERSION DOOR MOLDING AND WORKING FROM THE FRONT.

Complete installation in accordance to the Retrofit Installation Manual.

Parts List and Sign Scenerio (Retrofit)

A. Dedicated Receptacle

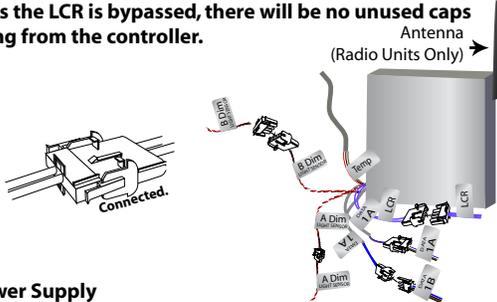
Connect to AC Mains, 115VAC. Everbrite recommends 2 circuits, one to power lamps, one to power LEDs. This receptacle will be used to supply AC power to power supply(s) which will power everything except for the lamps.



B. Controller / Receiver

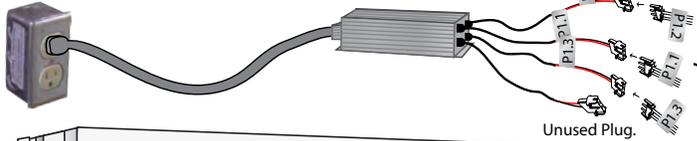
Located on the back of the bottom digit best facing the store front (Side A). Plug in all plugs to their respective caps. Each will be labeled accordingly. For most retrofits, the Power, Lamp Control Relay, B Dim and all data from Side B will need to be connected. If sign also contains an Everbrite Message Center, the data may need to be connected as well.

Unless the LCR is bypassed, there will be no unused caps coming from the controller.



C. Power Supply

Connect all labeled connectors. **If no label is attached, it is an unused plug.** Power supplies can be set for 10.5VDC or 15VDC and may have 1, 2 or 4 equal outputs. Plug power cord into dedicated receptacle. 10.5VDC power jumper cables will be black and red, 15 VDC power jumpers will be yellow and black.

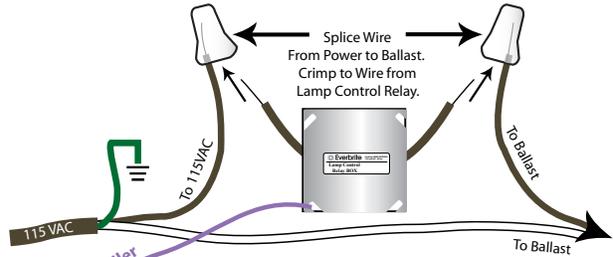


D. Lamp Control Relay

Connect all labeled connectors. **If no label is attached, it is an unused plug.**

Plug power cord into dedicated receptacle. Refer to the installation manual for horizontal and vertical power supply mounting rules.

Plug the purple wire (marked LCR) into the properly labeled cap from the controller.

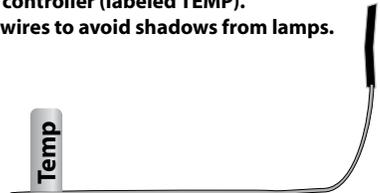


E. Temperature Probe

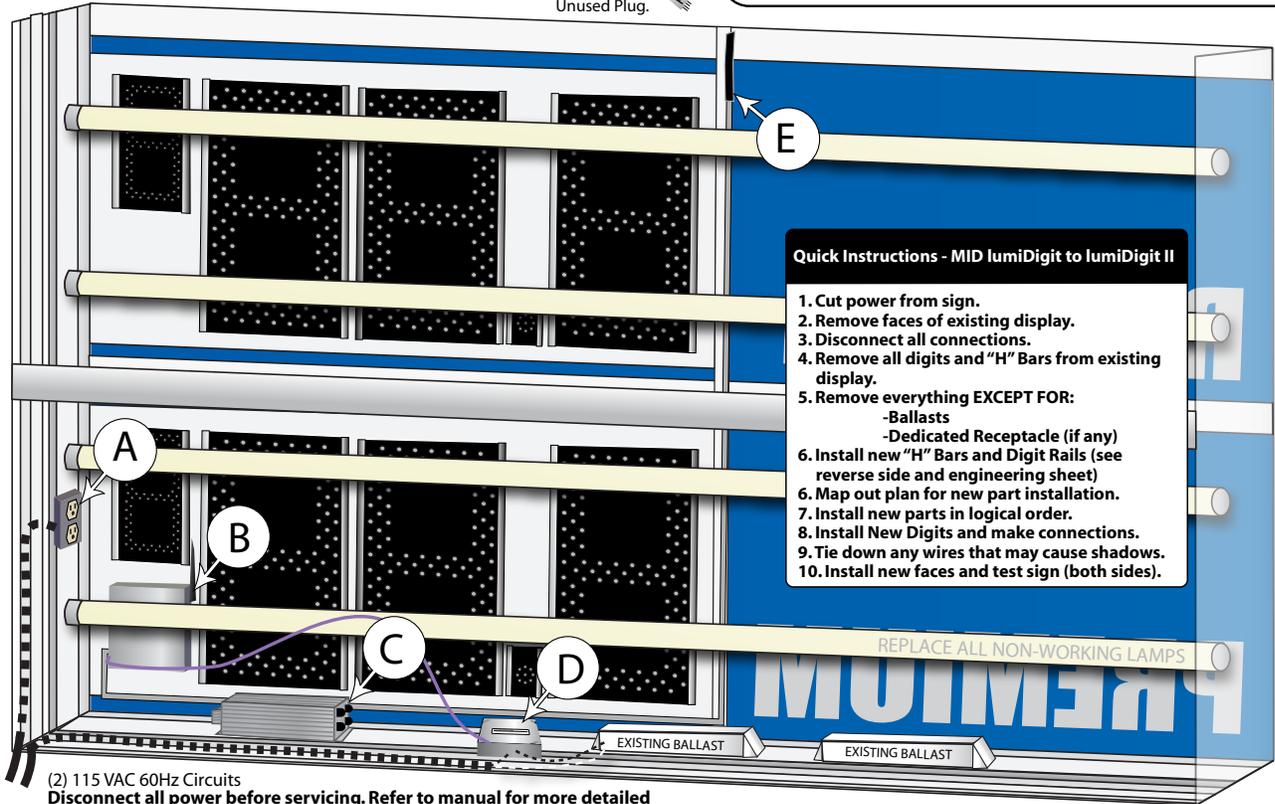
Connect to center of highest section of LED portion of sign, usually near the dollar side of the top line of digits.

Plugged into the controller (labeled TEMP).

Wire tie all loose wires to avoid shadows from lamps.



Note: Power supplies must have a common ground (DC Negative). See the power supply diagrams for proper wiring instructions on each particular power supply. Quad, Dual and Single output power supplies may be used; each requires unique wiring.



- Quick Instructions - MID lumiDigit to lumiDigit II**
1. Cut power from sign.
 2. Remove faces of existing display.
 3. Disconnect all connections.
 4. Remove all digits and "H" Bars from existing display.
 5. Remove everything EXCEPT FOR:
 - Ballasts
 - Dedicated Receptacle (if any)
 6. Install new "H" Bars and Digit Rails (see reverse side and engineering sheet)
 6. Map out plan for new part installation.
 7. Install new parts in logical order.
 8. Install New Digits and make connections.
 9. Tie down any wires that may cause shadows.
 10. Install new faces and test sign (both sides).

(2) 115 VAC 60Hz Circuits
Disconnect all power before servicing. Refer to manual for more detailed instructions and explanations. Every sign is unique and will not necessarily match this illustration.

4. Diagrams

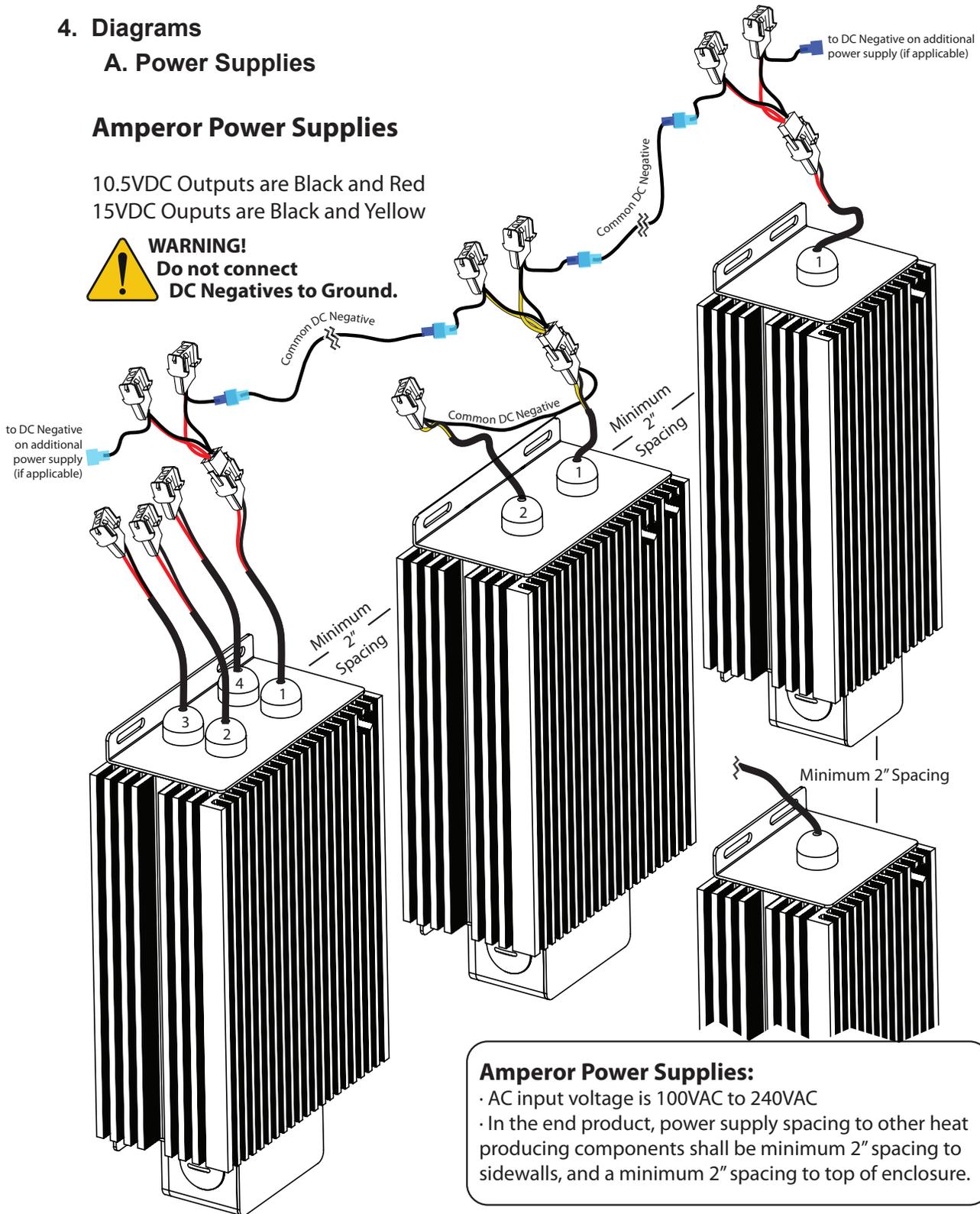
A. Power Supplies

Amperor Power Supplies

10.5VDC Outputs are Black and Red
15VDC Outputs are Black and Yellow



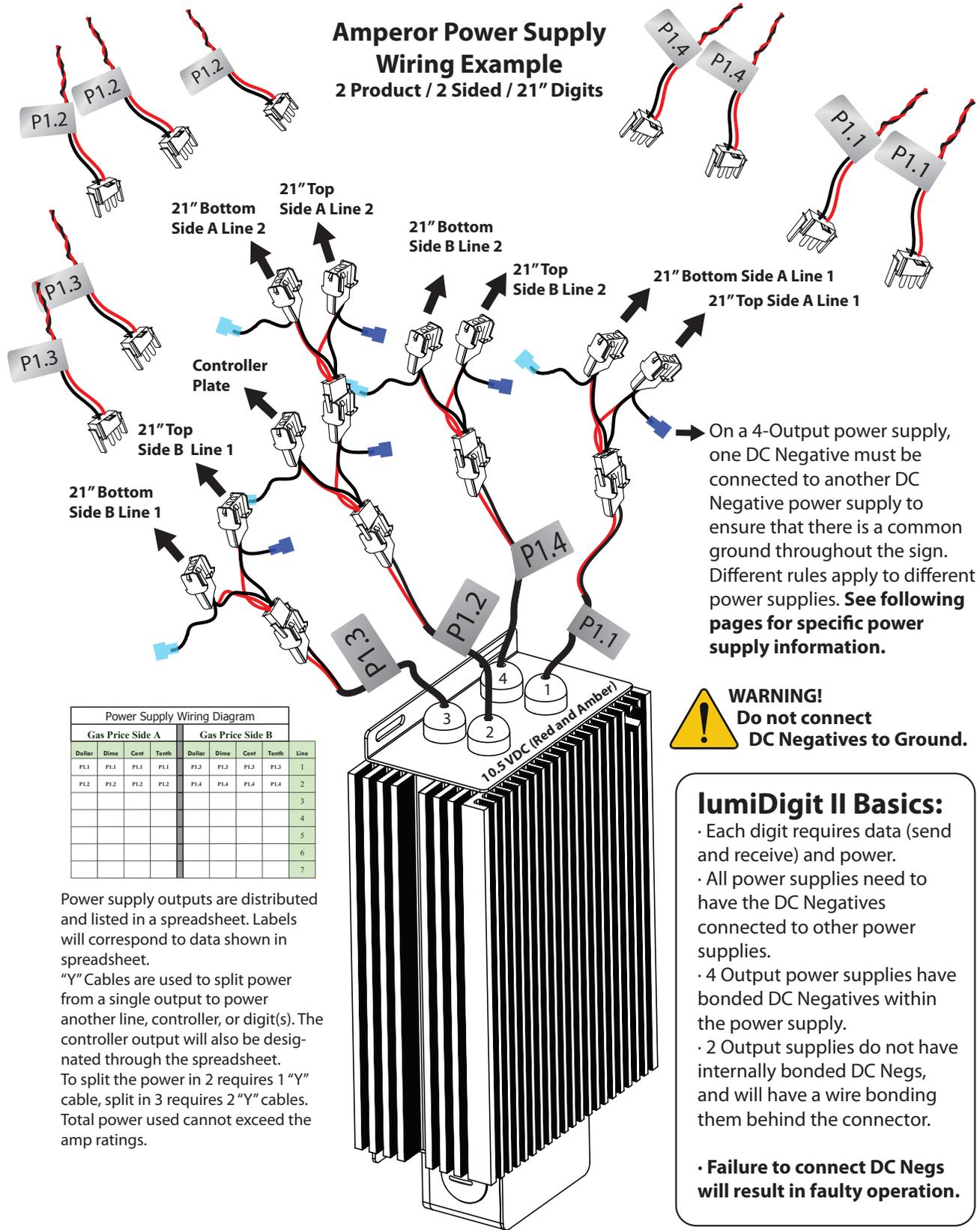
WARNING!
Do not connect
DC Negatives to Ground.



Amperor Power Supplies:

- AC input voltage is 100VAC to 240VAC
- In the end product, power supply spacing to other heat producing components shall be minimum 2" spacing to sidewalls, and a minimum 2" spacing to top of enclosure.

Amperor Power Supply Wiring Example 2 Product / 2 Sided / 21" Digits



Power Supply Wiring Diagram

Gas Price Side A				Gas Price Side B				Line
Dollar	Dime	Cent	Tenth	Dollar	Dime	Cent	Tenth	
P1.1	P1.1	P1.1	P1.1	P1.3	P1.3	P1.3	P1.3	1
P1.2	P1.2	P1.2	P1.2	P1.4	P1.4	P1.4	P1.4	2
								3
								4
								5
								6
								7

Power supply outputs are distributed and listed in a spreadsheet. Labels will correspond to data shown in spreadsheet.

"Y" Cables are used to split power from a single output to power another line, controller, or digit(s). The controller output will also be designated through the spreadsheet. To split the power in 2 requires 1 "Y" cable, split in 3 requires 2 "Y" cables. Total power used cannot exceed the amp ratings.

On a 4-Output power supply, one DC Negative must be connected to another DC Negative power supply to ensure that there is a common ground throughout the sign. Different rules apply to different power supplies. **See following pages for specific power supply information.**



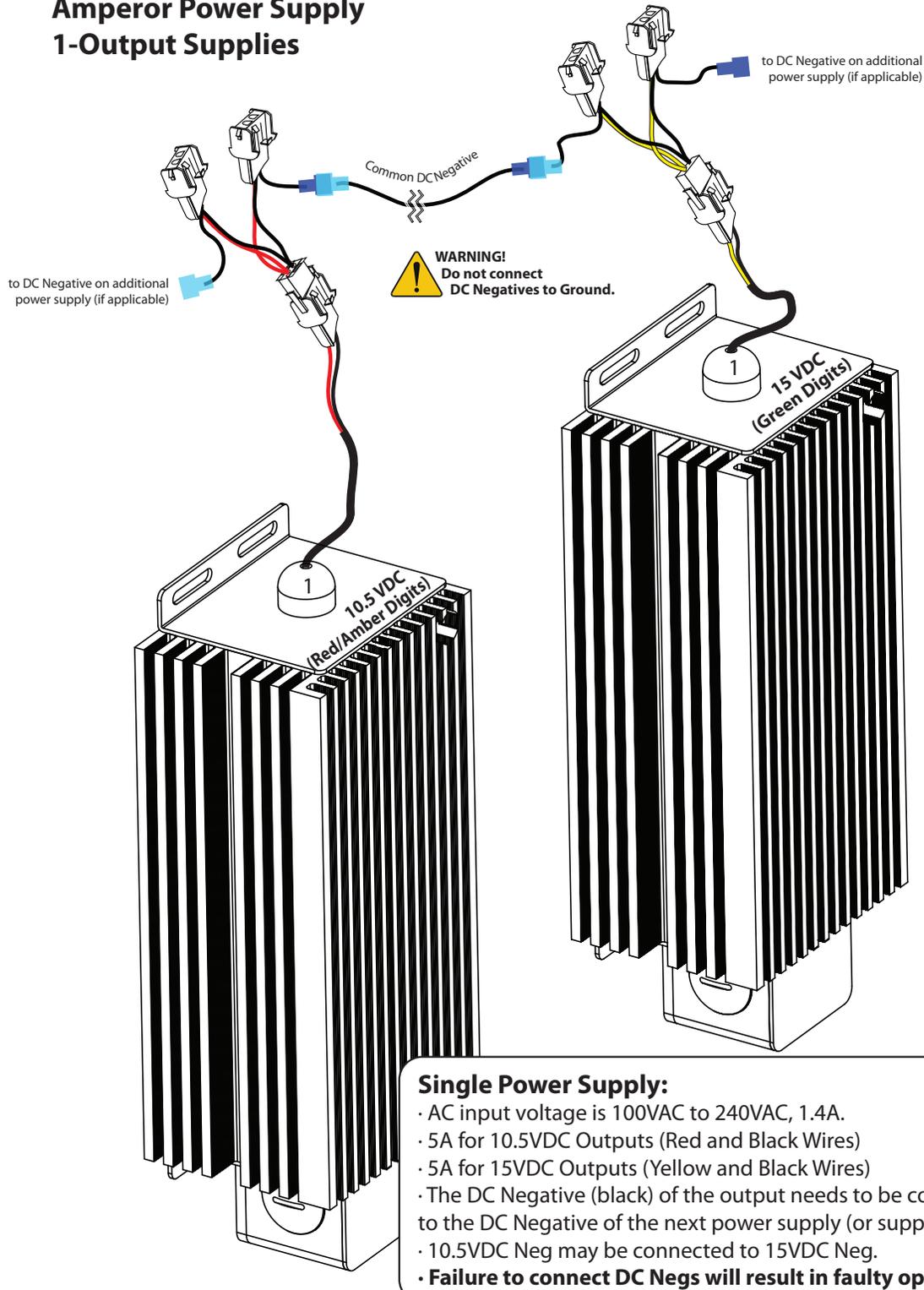
WARNING!
Do not connect
DC Negatives to Ground.

lumiDigit II Basics:

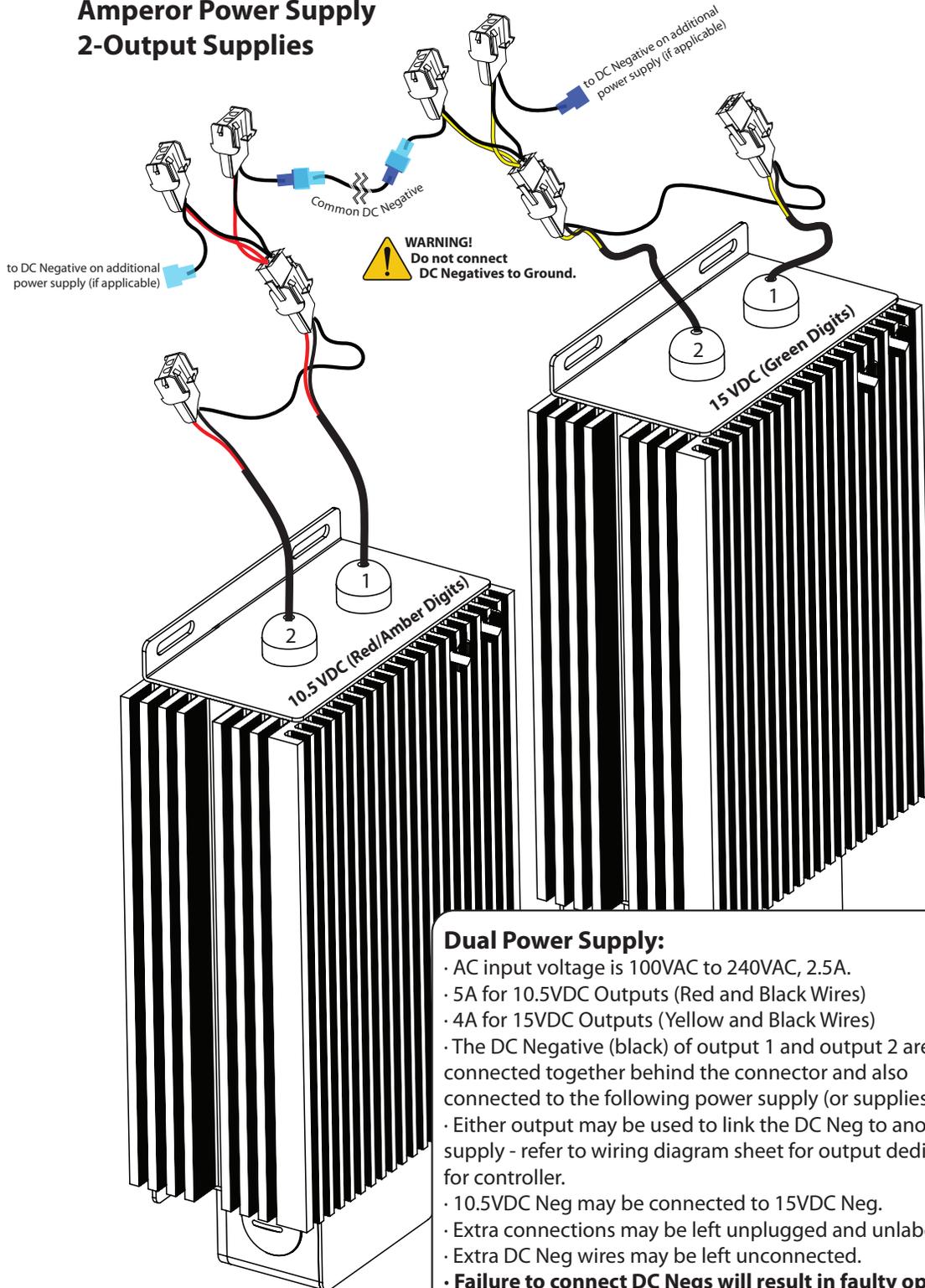
- Each digit requires data (send and receive) and power.
- All power supplies need to have the DC Negatives connected to other power supplies.
- 4 Output power supplies have bonded DC Negatives within the power supply.
- 2 Output supplies do not have internally bonded DC Negs, and will have a wire bonding them behind the connector.

· Failure to connect DC Negs will result in faulty operation.

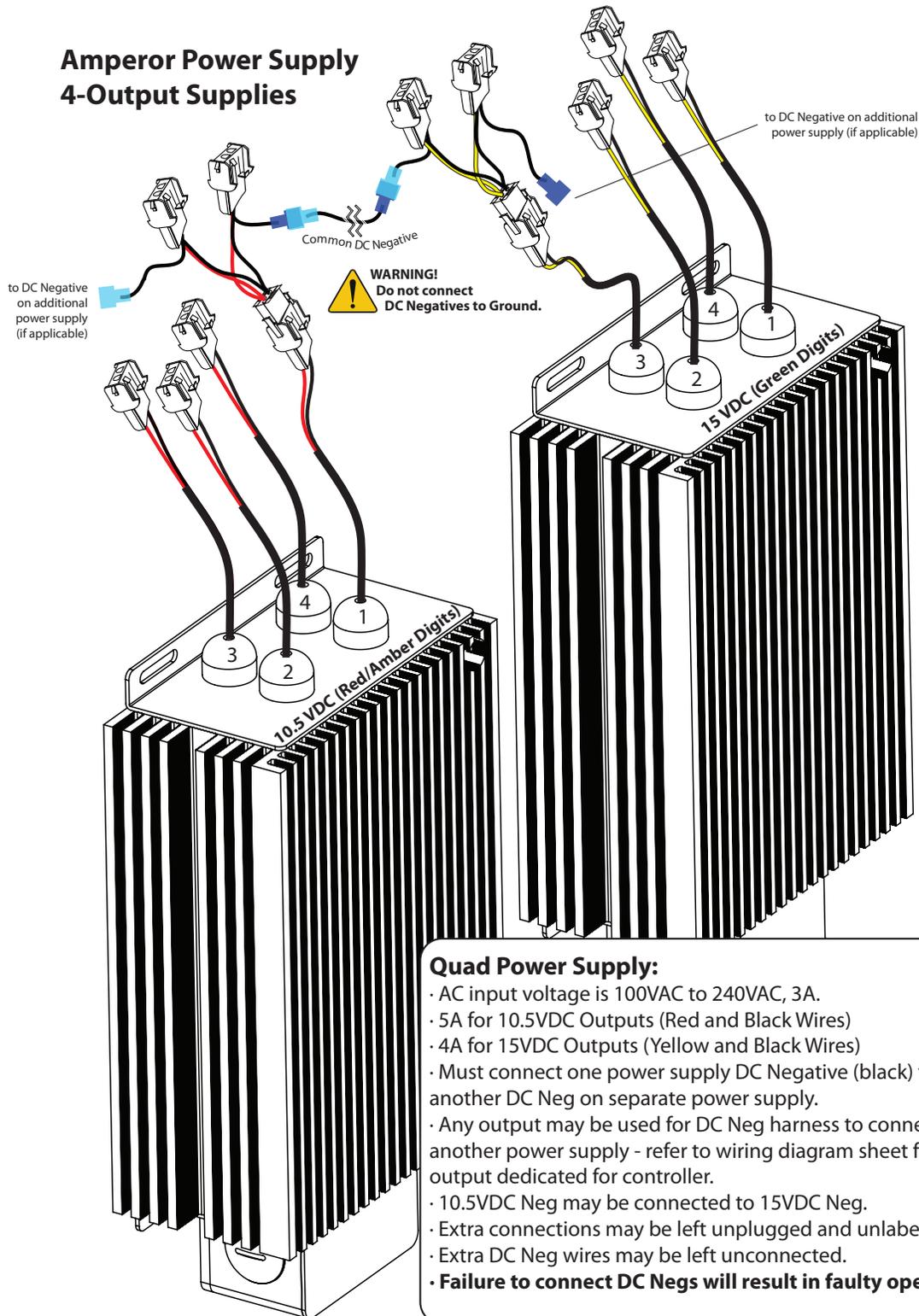
Amperor Power Supply 1-Output Supplies



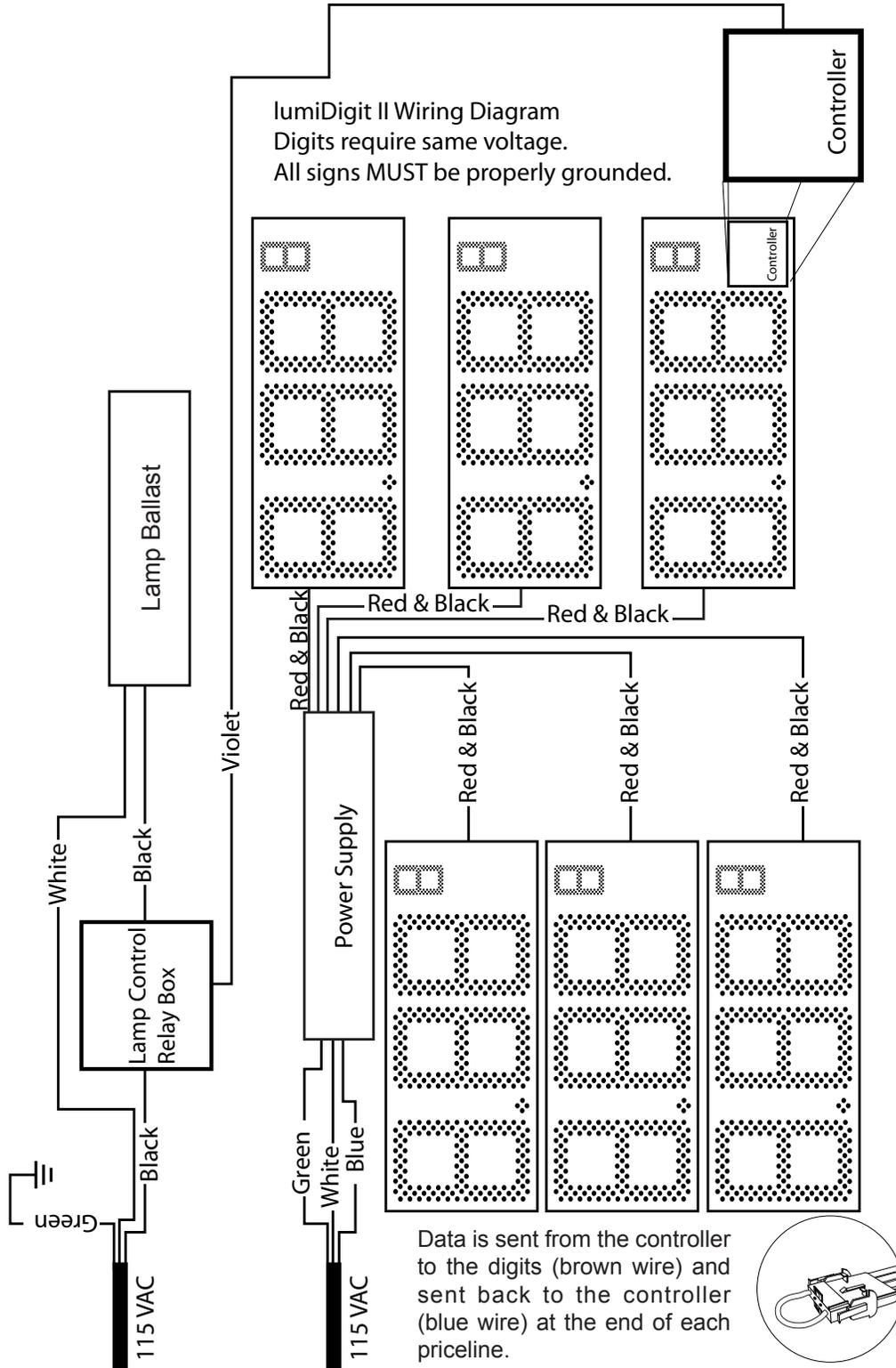
Amperor Power Supply 2-Output Supplies



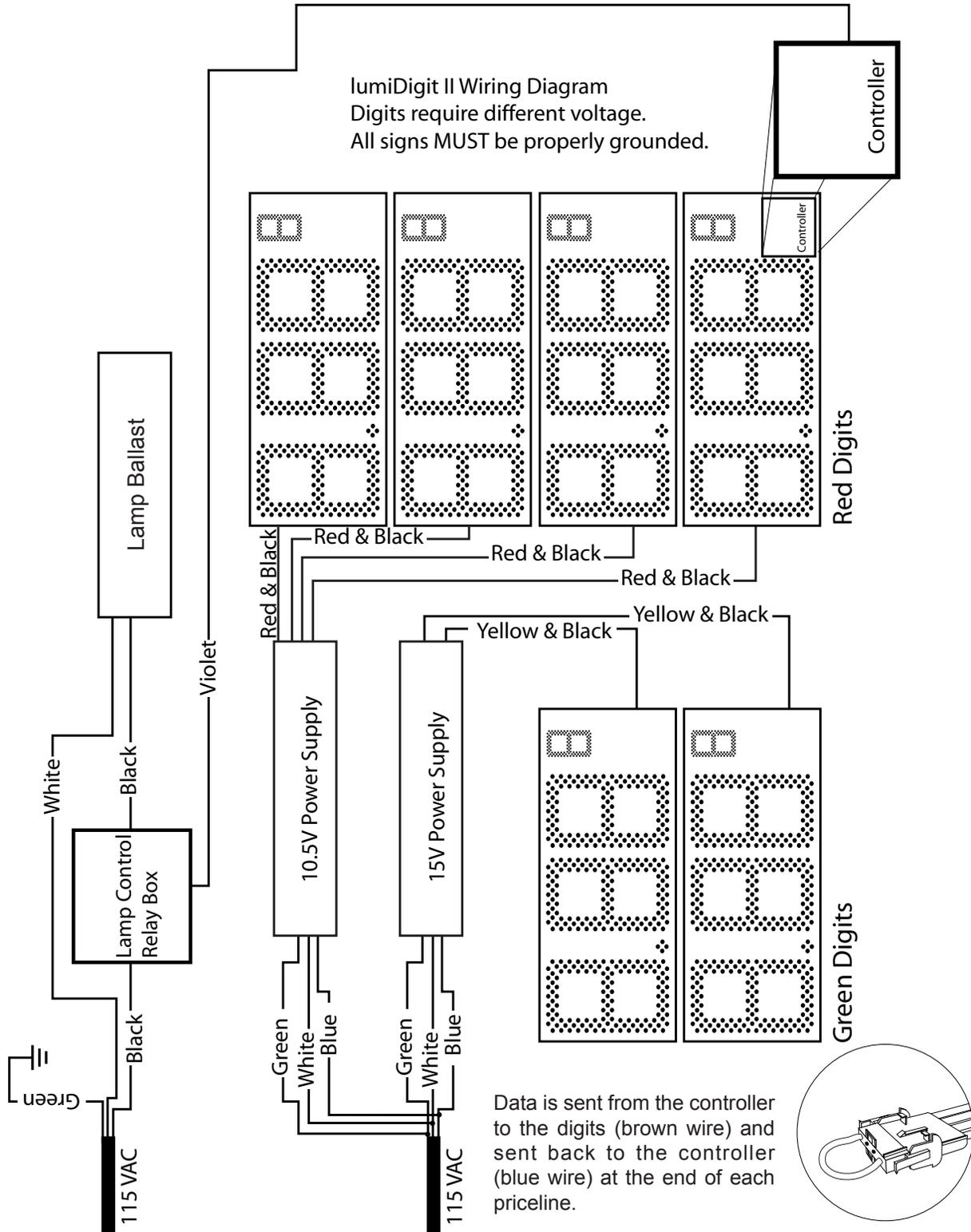
Amperor Power Supply 4-Output Supplies



B. Typical Wiring Diagrams using Amperor Series Power Supplies



Note: Red and amber digits require a 10.5V Power Supply. Green digits require a 15V Power Supply.



C. Retrofit Wiring Example

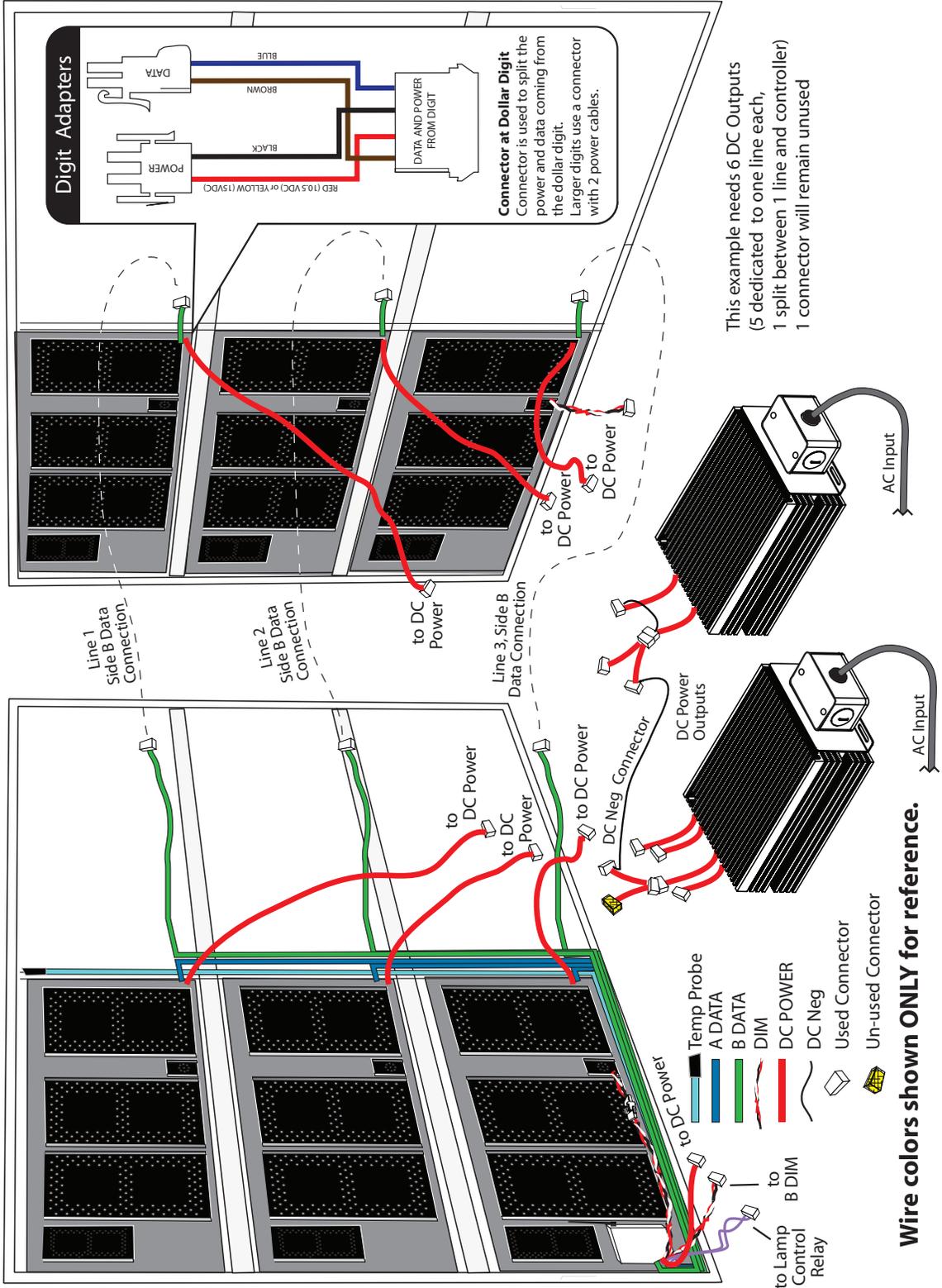
Sign and Retrofit Wire Routing Example

For Signs With Bottom Line Over 12"

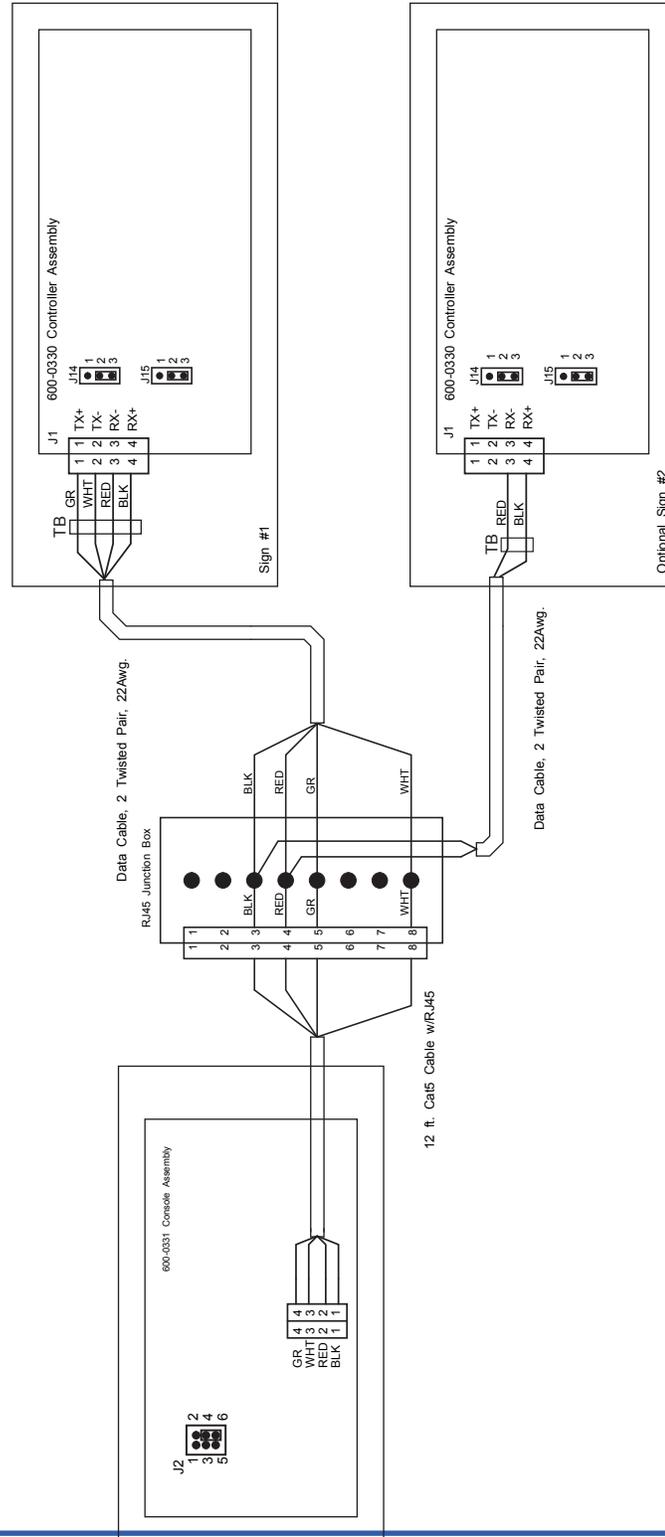
Signs with bottom line 12" or under will have a controller box mounted elsewhere.

SIDE A

SIDE B



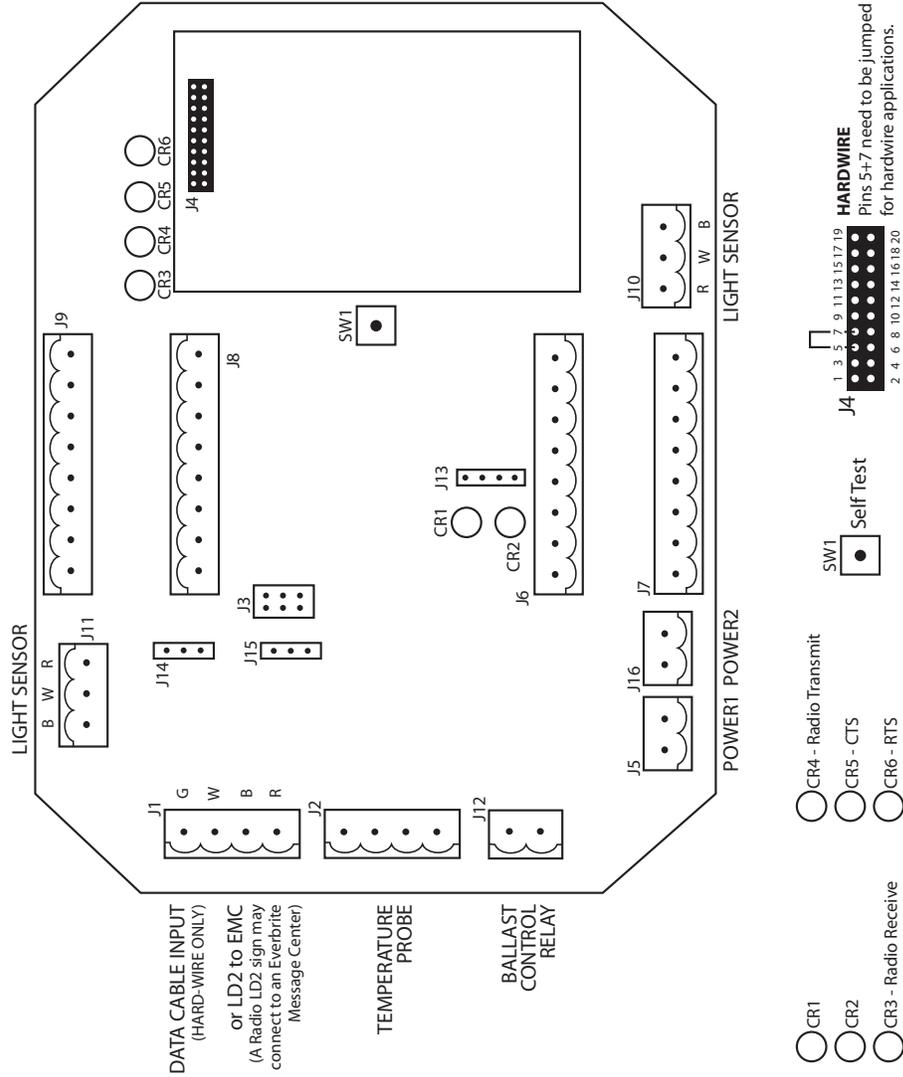
D. Dual Sign Interconnect



E. Controller Jumper Settings

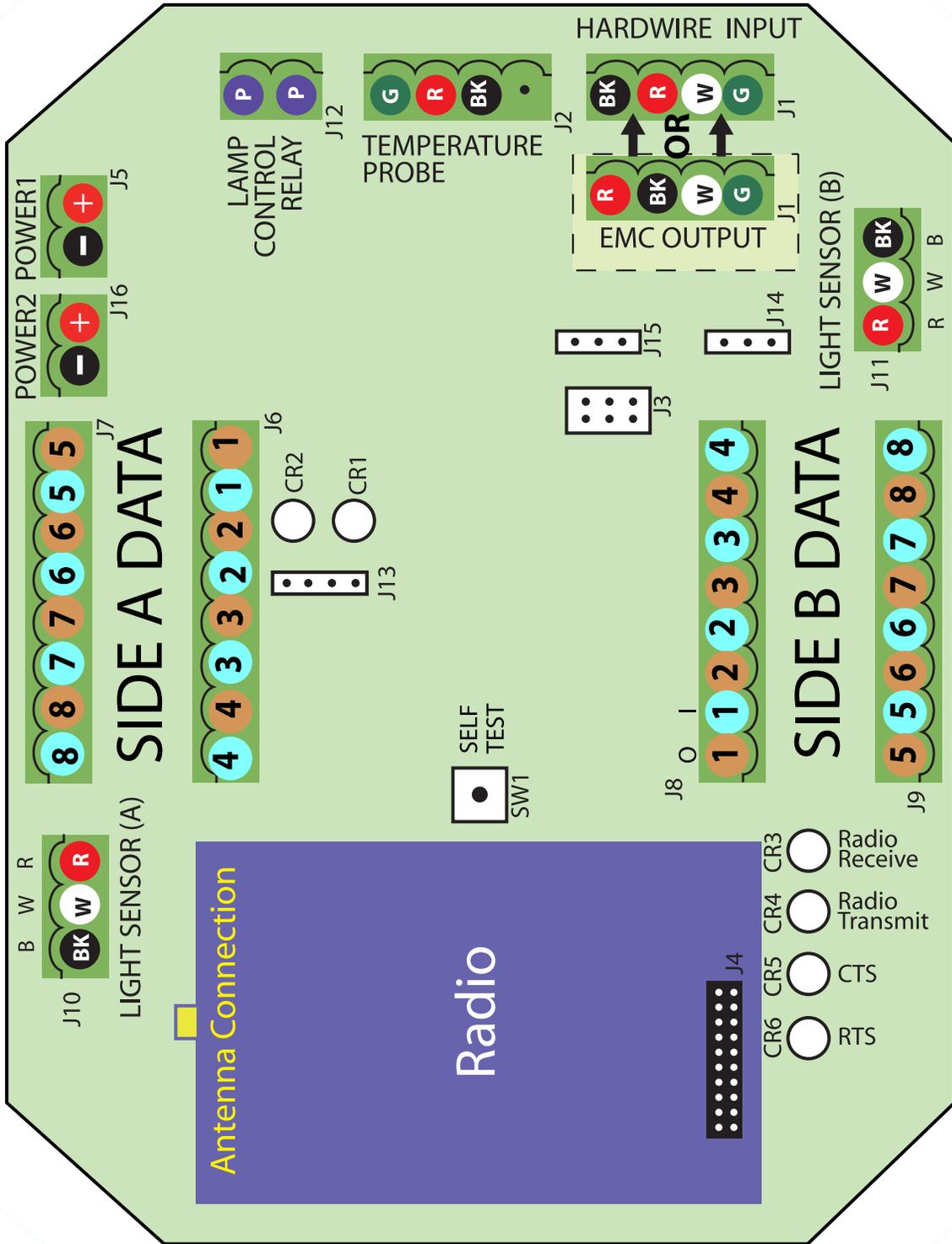
Jumper Settings	
Radio Frequency (RF) Jump 1+2	 
Hardware Jump 2+3	 
LD2 to a Hardwired Everbrite EMC Jump 2+3	 
Single Sign Configuration	
2 Sign Configuration Jump 1+2	
3 Sign Configuration Jump 3+4	
Single-Sided Sign Jump 4+6	

lumiDigit II[®] Controller



NOTE: Board may be installed upside-down to drawing configuration.

Gas Price Sign Controller Connection Diagram



5. Maintenance and Comprehensive Troubleshooting



WARNING! USE A LOCK OUT/TAG OUT DEVICE ON CIRCUIT BREAKERS OR "POWER ON/OFF" SWITCHES WHEN PERFORMING INSTALLATION, REPAIRS OR MAINTENANCE.

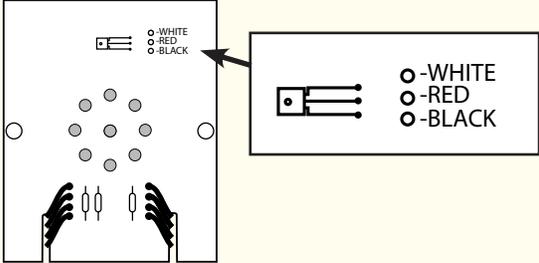


CAUTION: When reinstalling a digit; it is extremely important to get the connectors on properly. The connectors should click when they are fully engaged, so they can't be pulled apart.

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
1. One or both sides of the sign are blank. Decimals are not lit.	A. No power to sign	Turn on power to the sign. Check fuses/ wiring.
	B. No power to the dedicated receptacle	Dedicated receptacle improperly wired. Wire blue, white, and green wires to dedicated receptacle.
	C. Failed to plug in "Power Supply Raceways" to the installed "Dedicated Receptacle." (Retrofit Only)	Plug in the power supply raceways (also applies to Retrofit Power Supplies).
2. Only Decimal Points are Lit on one or both sides of the sign.	A. Sign is set to zeros.	Enter a valid price into the console.
3. Single price line and decimal are blank on one side.	A. Line harness is disconnected.	Reconnect the harness.
	B. Red or black wire has a pin out of a harness or digit connector	Reseat the pin.
	C. Power supply (P.S.) has no output.	Check the AC connections and voltage to the P.S. Check the DC output connections and voltage. Replace as necessary.
4. Single Price Line is Blank on Both Sides, Decimals are Lit.	A. Zeros entered on console.	Enter gas prices into console.
5. Sign Prices Will Not Change on One Side	A. Green 8 pin connector in the "Controller Assembly" is loose or disconnected.	Reconnect the harness.
	B. DC negatives are not connected properly on power supplies.	Refer to Section 4.A and properly connect DC negatives at the power supply.

PROBLEM	POSSIBLE CAUSE	SOLUTION
7. Sign Prices Will Not Change on Both Sides	A. Console and controller radio do not match.	If you suspect the radios, open the controller in the sign and read the information on the radio. Check for matching information on the console. If they do not match, call service.
	B. Console and sign are too close for radio operation.	Radios are intended for long range use. Console must be at line of sight and at least 15 feet from the antenna on sign.
	B. Console is not powered.	Check that the Power Adapter is connected to the console.
		Check that the Power Adapter is connected to the AC outlet.
		Check for 9 volts DC out of the Power Adapter. (positive from the center pin.) If power is present at the console call for service.
	C. Data line is not connected (Hard-wire only).	Connect the data line.
D. Bad Temperature Sensor.	Unplug the Temperature Sensor, power down and restart the sign. If everything operates properly, the sensor is defective. Call for service.	
E. Controller is bad.	Check to see that the controller has DC power. LED's should be lit on the controller printed circuit board (PcBd). If DC power is present call for service.	
F. DC negatives are not connected properly on power supplies.	Refer to Section 4.A and properly connect DC negatives at the power supply.	
8. Single Price Line Will Not Change	A. Bad digit in the dollars.	Check input connector
	B. Dataline disconnected.	Trace the brown wire all the way back to the controller (will be labeled appropriately), checking all the connections.
	C. Brown wire for that line is not connected in the green 8 pin connector at the controller.	Open the controller and check the DATA (brown wire) for that line.
9. One or More Digits Will Not Change	A. Digit program locked up.	Recycle power to sign.
	B. 1st Non-working digit is bad.	Swap the non-working digit with a working digit. If problem is solved, call for replacement digit.
	C. Output of digit before the 1st non-working digit is bad.	Swap the last working digit with a working digit. If problem is solved, call for a replacement digit.
	D. Brown wire on harness prior to the 1st non-working digit is not seated.	Disconnect and push the wire into the connector until it locks. If it will not lock, pull the pin out and ensure that the locking tabs are out from the pin body, then try again to re-seat.

PROBLEM	POSSIBLE CAUSE	SOLUTION
10. Digit/Price Line is Flashing	A. DC Negatives are not properly connected.	Refer to Section 4.A and properly connect DC negatives at the power supply.
	B. Insufficient voltage.	Measure the voltage across the red and black wires. 10.5 VDC for red LED's. 15 VDC for Green LED's.
	C. Bad controller output.	Call for Service.
	D. Connector is submerged, or soaked with water.	Remove connector from water, dry and retest. Locate source of the water and plug the hole or leak.
	E. Damaged Digit.	Swap with a working digit.
	F. Pinched Wire.	Remove the wire from the situation and replace or insulate. Attempt to keep from pinching again.
	G. Shorted wire.	Replace wires, or separate and insulate from cause.
11. Digit Price Line Is Dim	A. Wrong Vinyl. Example: Green digits with red vinyl, etc.	Call for Service.
	B. Wrong power supply installed.	Call for Service.
	C. Voltage too low.	Call for Service.
12. One or Both Sides of the Sign are Dim	A. Setup of console is incorrect.	Perform console setup from the operators manual.
	B. Voltage is low.	Check voltage across red and black.
	C. Light sensor is dysfunctional.	Call for Service.
13. One or Both Sides Are Too Bright	A. Setup of console is incorrect.	Refer to operator's manual for setting dim and bright levels. If not available call for service.
	B. Wrong P.S. (15 volt in place of 10.5 volt).	Replace with proper power supply.
	C. Light sensor(s) is/are dysfunctional	Call for Service.
14. Console Keypad Display is Blank	A. Power adapter is not pugged into AC Power.	Plug in the power adapter to AC power.

PROBLEM	POSSIBLE CAUSE	SOLUTION
	B. Power adapter is not plugged into the console.	Plug in the power adapter into the console.
	C. Power adapter is bad.	Replace power adapter.
	D. Power adapter has incorrect voltage, or current capability.	Replace with proper power adapter. +9 Vdc on center contact @ 500 ma.
	E. Console is bad.	Call for service for replacement.
15. ???? is displayed in the console LCD for the price line(s)	A. Data return interrupted.	Check blue wires for unseated pins, pinching, or opens. Check connectors are plugged in; loop back, digit to digit, wiring harness, and controller connectors. Controller is malfunctioning.
16. One or More LED's Will Not Turn On	A. Digit is defective.	Call for Service for replacement.
17. One or More LED's Are Always On	A. Digit is defective.	Call for Service for replacement.
18. Prices Can't Be Entered At The Console.	Console issue.	Call for Service.
19. Lamps Won't Turn On/Off	Wired incorrectly	Ensure lamp control relay is properly wired.
	Console setup	Change lamp on/off level in console setup.
	Controller problem, LCR defect	Call for Service.
21. Prices Won't Change From The POS.	POS Setup wrong, console issue, controller issue	Ensure POS is correctly setup per instructions.
	Console issue, controller issue	Call for Service.
22. One side of the sign is dim.	Light sensor is connected incorrectly.	<p>Check wires on both controller (Section E.) and light sensor and correct if necessary.</p> 

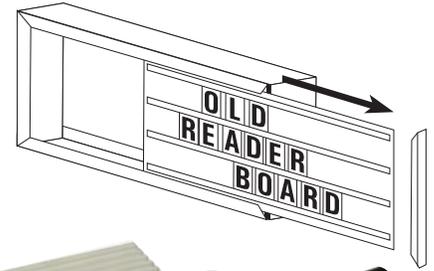
EMC Retrofit Installation Guide

Installing an Everbrite Message Center Retrofit System is similar to installing a lumiDigit II gas price sign retrofit system. For detailed instructions on different cabinet types and installation options, refer to the lumiDigit II Retrofit Installation Manual. **For Radio LD2 to EMC Data Connection, see wiring diagrams and illustrations in the following pages.**

1. DISCONNECT SIGN FROM POWER USING LOCK OUT/TAG OUT.

2. Remove old reader board or display face.

Replace any existing gasketing and plug holes that could allow water into the sign.



3. Install supplied power supplies.

The supplied Amperor Power Supplies are available with 1, 2 or 4 DC outputs. Red and Amber LED signs require 10.5VDC and are set at the factory. Each output can supply power to a maximum of 6 EMC panels. Connect power supply outputs to the labeled power inputs on the panels and controller plate. Depending on your specific sign, location of power supplies may vary.

Everbrite recommends a separate circuit for the EMC .

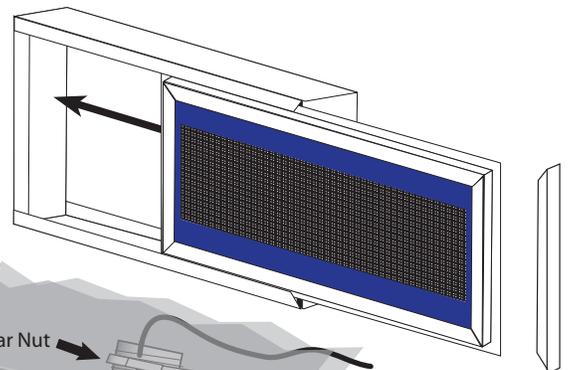


4 DC Output Amperor Power Supply

4. Slide in Side A.

Find the EMC with the Controller Plate Attached and install on the part of the sign that is facing the area where messages will be entered (usually the windows near checkout). **Ensure that arrows on the back of each panel are pointed up.**

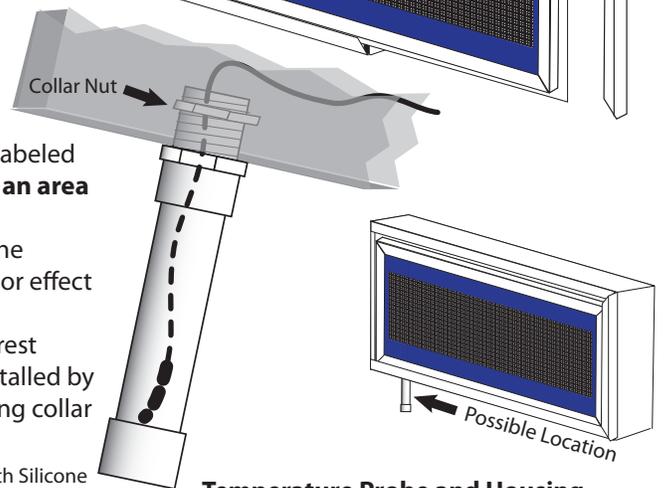
Make all connections. Install line 1 (brown wire) from Panels (labeled) to output 1 of Decoder Board. Install lines 2 and 3 if applicable. Refer to Controller Plate Diagram for help. Connect all power leads from power supplies to panels and controller plate. Remaining power supply leads will be required for side B (if applicable).



5. Install Temperature Probe Housing.

Locate the Temperature Probe (jacketed wires coming from J5 and labeled "TEMP"). **Temp probe should be installed and exiting the sign in an area that will not trap the heat of the sign which will result in a false temperature reading.** Probe should also not be installed close to the ground where snow and lawn mowers (etc.) will damage the probe or effect the reading.

The probe cable will be positioned in the tube housing and should rest about 1" from the rim and submerged in silicone. The housing is installed by **drilling a 7/8" hole**, pulling cable through the drilled hole and sliding collar nut down the cable and tightening to the cabinet.



Probe housing will be filled with Silicone to protect probe from inaccurate readings.

Temperature Probe and Housing

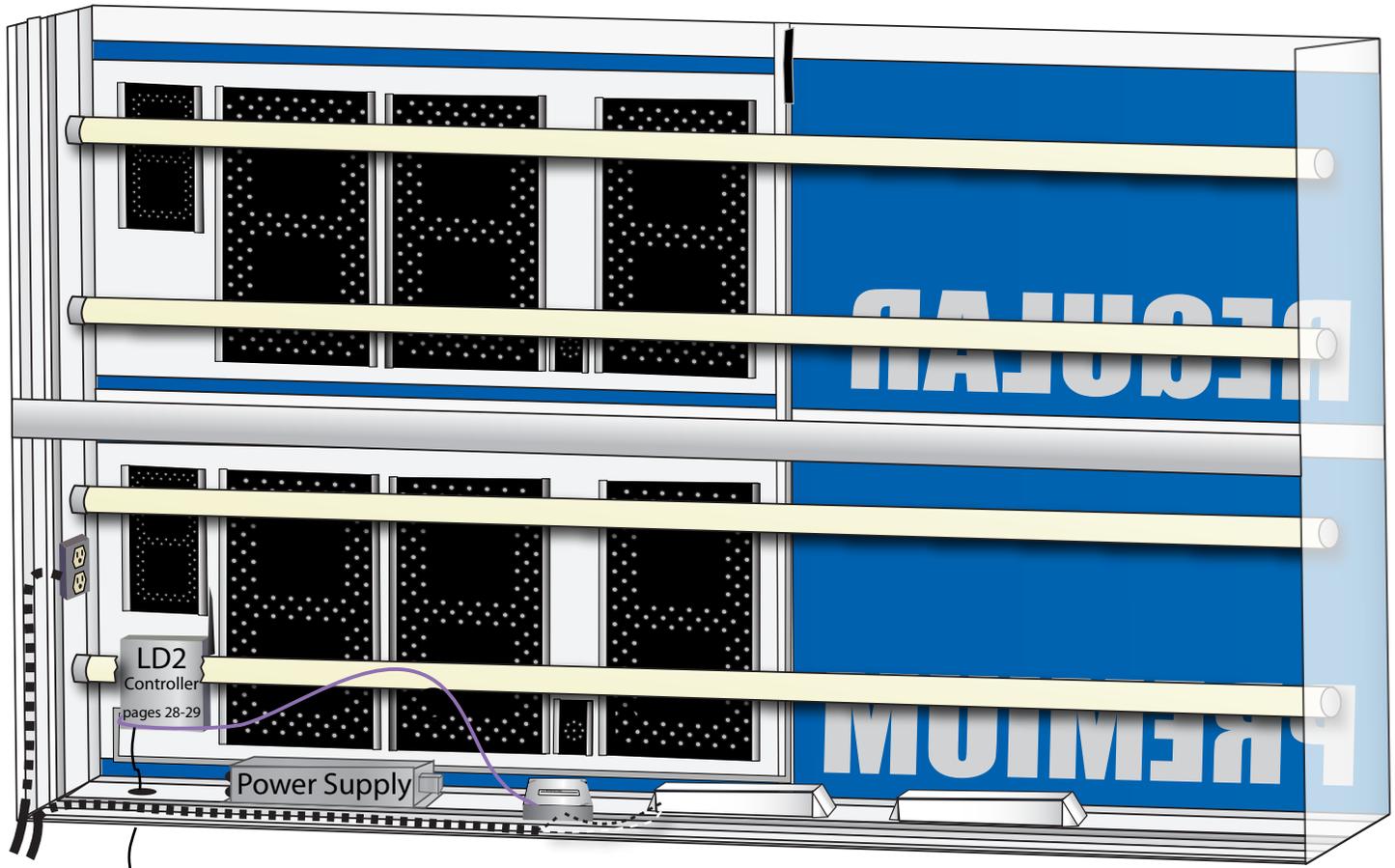
6. Install Side B.

If installing a 2 sided sign, install side B in the same fashion as side A. Data and Power connections may either be made before side B is installed or during the installation of side B. If connections are not made before sliding EMC in, simply slide in panels 3/4 of the way and make all connections from the panels to the decoder board (line 1 to output 5, 2 to output 5, and 3 to output 7 and all necessary power connections to side B. Slide in face completely and fasten sign.

7. Test Sign.

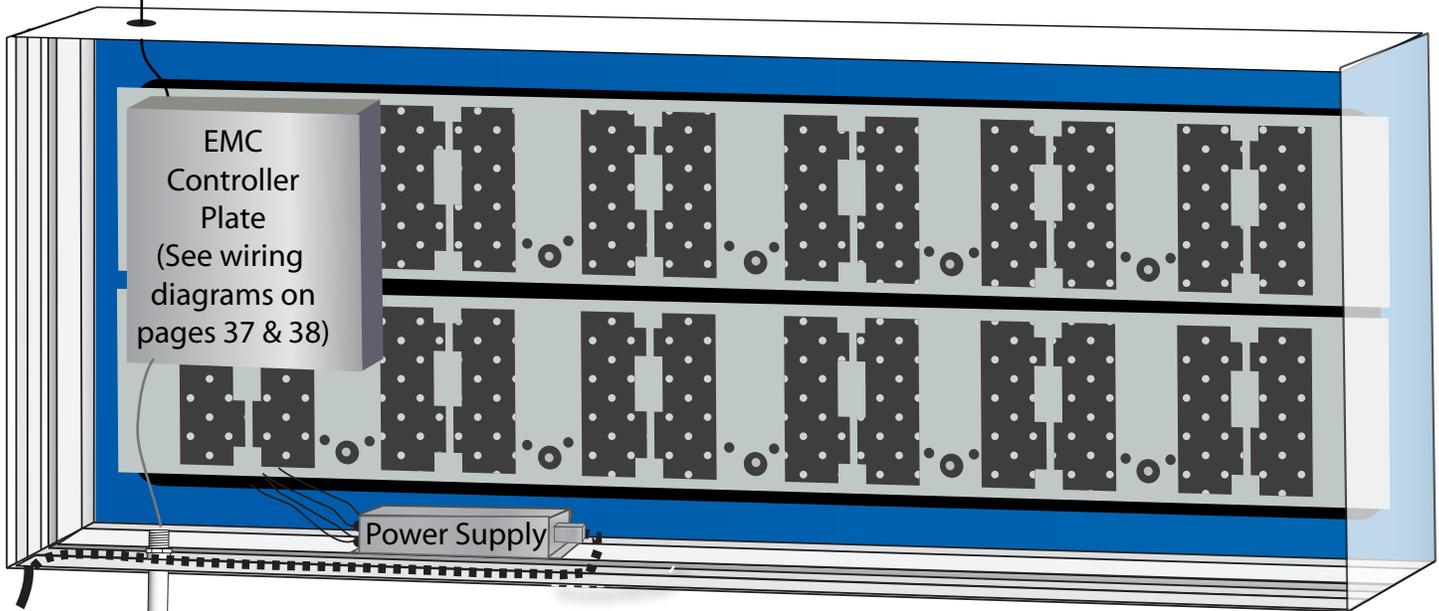
When finished with all installations, power up sign and test all functions. If a message does not appear on the EMC when sign is powered up, it is possible that a message was not entered before shipping. Enter a message as described in the EMC Operational Manual and send to sign.

Connecting EMC data from Radio lumiDigitII



AC Input

← Data Connection from Radio LD2 to Everbrite Message Center (EMC)
All drilled holes must be sealed with silicone.



AC Input

← Temperature Probe Housing*
*Temperature probe must be connected to display time or temperature.

Illustration shows typical connection from LD2 to Everbrite Message Center. This connection allows for one console to be used to control gas prices and EMC (see owners manual). Same result can be obtained without data wire connection by installing a radio programmed to the same channel in both units.

LD2 Sign must have updated controller (receiver) board program to be compatible with the EMC.

Basic EMC Panel Wiring Information

The EMC is made from 8.8" x 8.8" tiles (panels) that contain 8 rows and 8 columns of pixels (4 LEDs per pixel, 256 LEDs per panel). When looking at the sign from the front, data travels in the same direction that the sign is read (from left to right). When looking at the sign from the back (or inside), data travels from right to left.

Width

The width of the sign can be extended to 14 panels wide (maximum). The width of a sign can be extended by simply adding another panel to the end of the data string and configuring the sign setup in the lumiDigit II console.

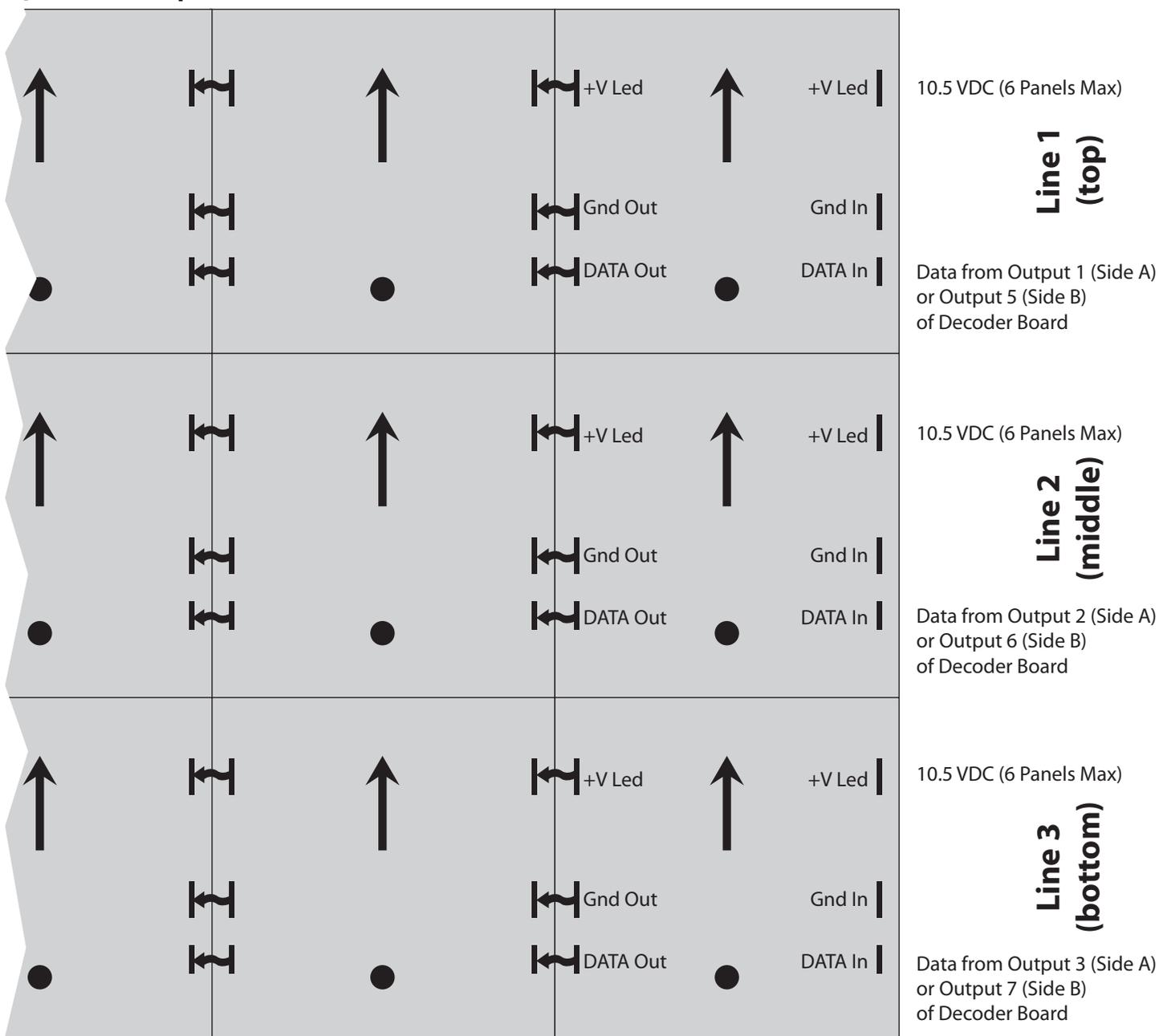
Height

Adding another line of text requires another data line from the Decoder Board. EMC can allow a maximum of 3 lines.

Power

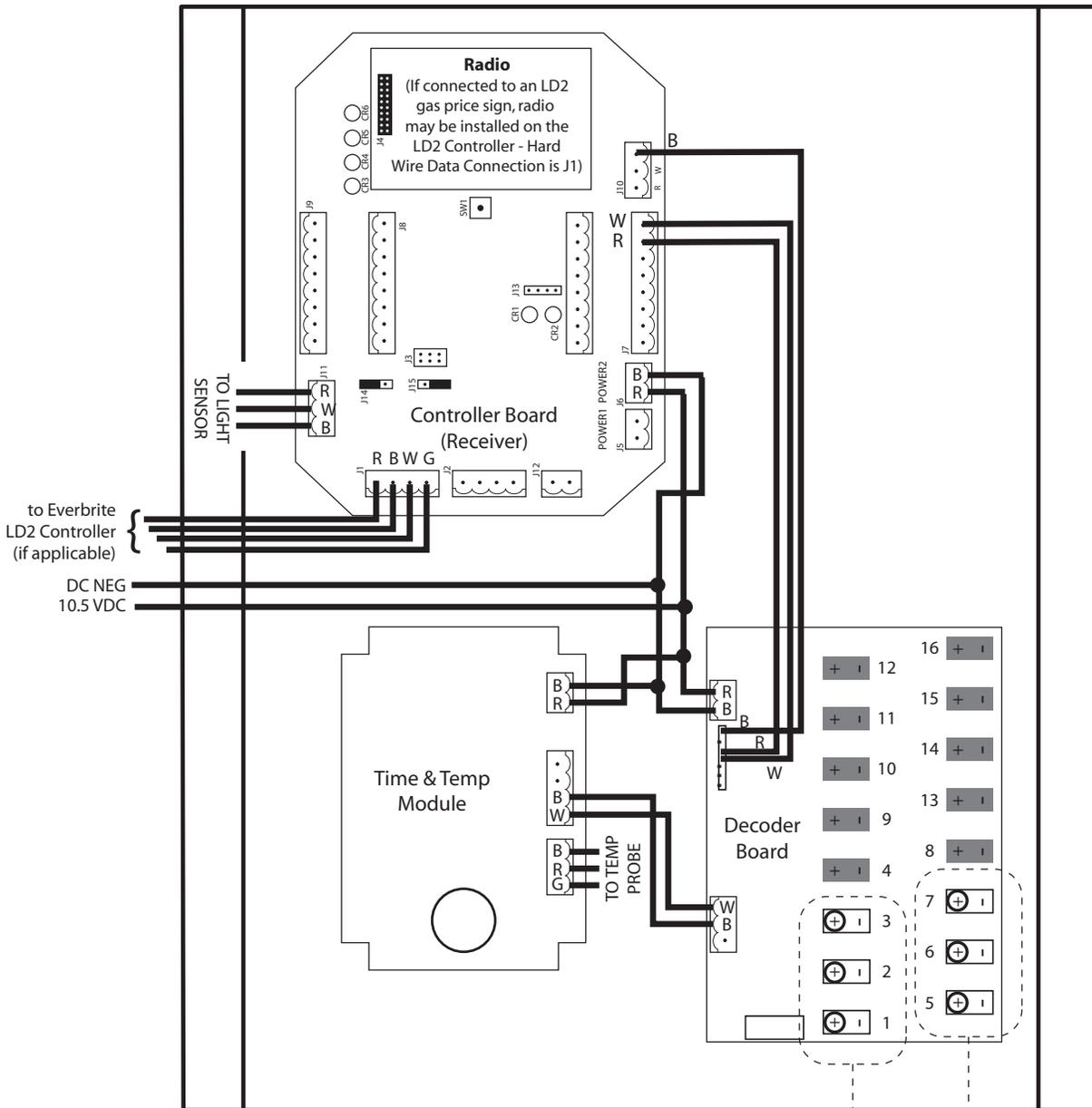
Each output from the supplied power supply can power a maximum of 6 panels. Each panel requires 10.5

↑ = This Side Up



Back of EMC Tiles. (min of 1 line x 5 Panels Wide / max 3 lines x 14 panels wide)

Basic EMC Controller Plate Wiring Information

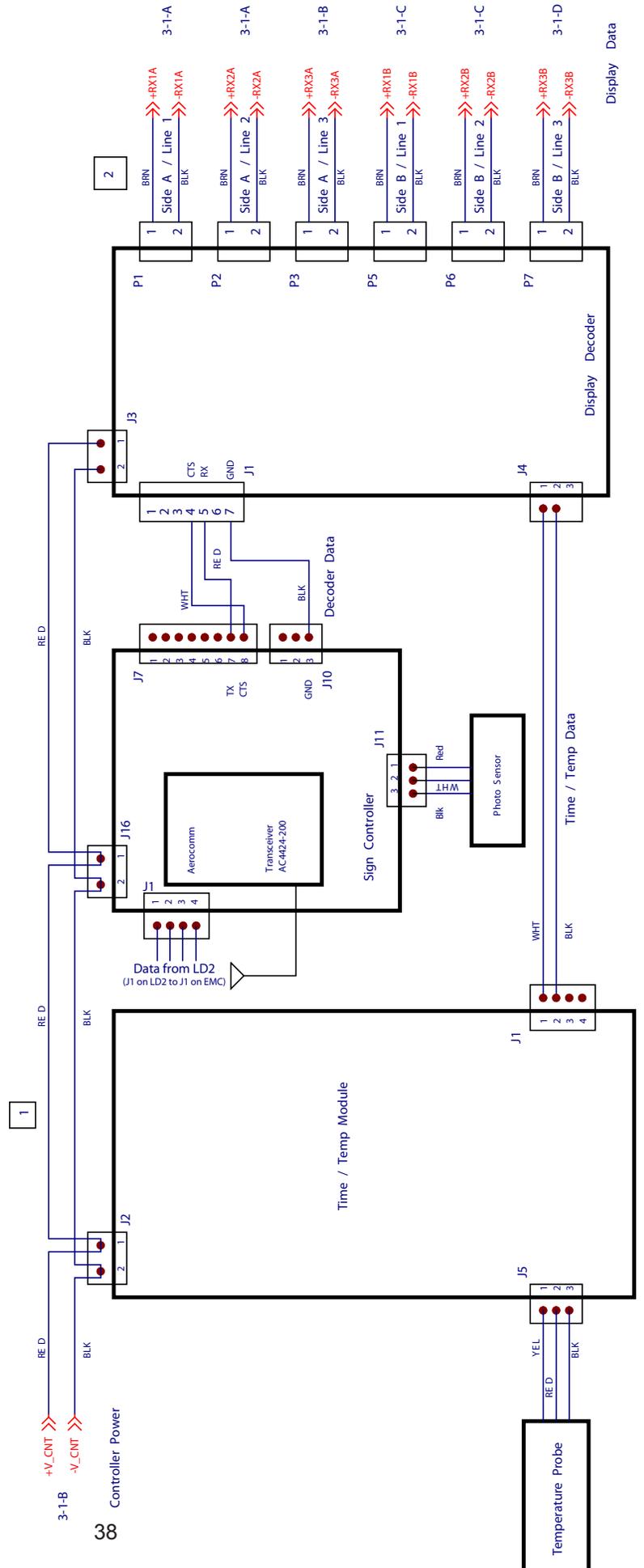


<p>Side A</p> <p>Output 1 (+) = Line 1 Data</p> <p>Output 2 (+) = Line 2 Data</p> <p>Output 3 (+) = Line 3 Data</p>	<p>Side B</p> <p>Output 5 (+) = Line 1 Data</p> <p>Output 6 (+) = Line 2 Data</p> <p>Output 7 (+) = Line 3 Data</p>
---	---

Side A Data = Side B Data

EMC Wiring Diagram

Double sided, 3 line message center shown.



EMC Maintenance and Comprehensive Troubleshooting



WARNING! USE A LOCK OUT/TAG OUT ON CIRCUIT BREAKERS OR “POWER ON/OFF” SWITCHES WHEN PERFORMING INSTALLATION, REPAIRS OR MAINTENANCE.

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
1. LCD does not display information	A. Console is not plugged in.	Plug in console with supplied 9VDC power supply.
2. Both sides of the sign are blank.	A. No message was sent to sign	Send message to sign following directions in operations manual.
	A. No power to sign	Turn on power to the sign. Check fuses/ wiring.
3. Only one side of sign displays message	A. Connections are not connected correctly.	Check all connections to sign.
4. Messages shows lines out of sequence and 2 or 3 size fonts are not displayed correctly.	A. Line outputs are connected incorrectly.	Side A: Connect line 1 (top) to output 1. Connect line 2 (middle) to output 2. Connect line 3 (bottom) to output 3. Side B: Connect line 1 (top) to output 5. Connect line 2 (middle) to output 6. Connect line 3 (top) to output 7.
5. When showing time, date or temperature, sign shown boxes or nothing.	A. Time and Date was not set in console and sent to sign.	Set time and date in console and send to sign.
	B. Time and Temperature Probe is not connected.	Connect time and temp probe to J5 in the time and temp module.
6. Message does not change.	A. Message was changed, in console but never sent to sign.	After entering message, go to the first screen and arrow down to “Send Message to Sign.”
	B. Signal did not get to sign - received “Error - Send Again” message.	Make sure that the console is in direct line of sight with sign and send again. If behind a window, try from another location or from outside. The window in the store may have a uv coating or other elements that may interfere with the radio signal. If this is the case, call Everbrite for alternate antenna solutions.

PROBLEM	POSSIBLE CAUSE	SOLUTION
7. Console is not displaying message screens.	A. "Price/Message" button was not pressed.	Press Price/Message button on console. All further activity will now be controlled by the supplied keyboard. READ THE OPERATIONS MANUAL.
8. Line entry will only allow some of the message to be entered.	A. Message entered is longer than the line allows.	A. Shorten message. B. Select "TRAVEL" for the mode before text is entered. C. Select a lower font number (1 is smallest, 3 is largest) - the smaller the font, the more characters can fit on a line.
9. All 3 font sizes are not available.	A. Single line signs can only display 1 line of text. 2 line signs can only display 1 line or 2 lines of text.	None. A larger message center may be purchased from Everbrite. For more information, refer to manual.
	B. When operating a sign, the size used in line one will effect the sizes available in lines 2 and 3. The font sizes available will be adjusted by the prior lines input or by sign setup.	Read the owners manual to better understand how to enter a message properly.
10. Messages entered in console run off the edge of the sign.	A. Sign may be incorrectly setup.	Measure the message area (area in between the vinyl) to get an accurate size. Columns: Divide the length of inches by 9. Round this number down to the nearest inch and multiply by 8. This will give you the amount of columns in your sign. Select the closest number in Sign Setup - do not select a higher number of columns than your calculation. Lines: The EMC is available in 1, 2 or 3 line configurations. The window height of a 1 line is approx 10", 2 line window height is approximately 20", 3 line window height is approximately 30". Message will need to be re-entered and sent to sign to ensure that correct setup was selected. If the sign is too high or far away to measure, simply change sign setup until message is displayed correctly. For example, if the message almost fits, select the next lower number for columns. If the message repeats itself, select the next higher option for columns.
	A. If DAY and DATE run off the edge, select either Day on one line and DATE on another line.	If DAY and DATE run off the edge, select either Day on one line and DATE on another line.

6. WARRANTY & CONTACT INFORMATION

Two Year Limited Warranty

Everbrite offers a two (2) year limited warranty on the LumiDigit II LED product, from the date of manufacture. During the first two years, if any LED section fails to light, replacements for the LED panel, power supply and/or driver boards will be furnished at no cost (does not include radio control components). If the sign was installed by Everbrite, this will include the service call labor for the first year of the warranty.

During the first year customers must notify Everbrite Technical Support at 800-796-7427 of any defective condition, and allow Everbrite to dispatch their authorized service company to the site for the repair. Unauthorized repairs will not be reimbursed.

During the second year, defective components must be returned to Everbrite in order to be replaced, and will be analyzed to ensure the defective condition is an Everbrite responsibility. Customers must receive a Return Goods Authorization (RGA) number from your designated Account Management representative, prior to the return of any products or components.

If an operating problem is found to be the fault of the end user, the customer will be responsible for any service and parts costs incurred. Any replaced unit or part will be warranted only for the remainder of the original product warranty period. The end user must contact Everbrite at 800-796-7427 to report all defective conditions prior to any repair.

This two (2) year warranty only pertains to the LED electronics of the sign product. The remainder of the sign, including the radio control components, are covered under Everbrite's general limited warranty of one (1) year.

Important Note: The customer or installer must contact Everbrite to register the sign and obtain the unique access code to activate the new sign electronics. Failure to register the sign will void this warranty! See Instruction Manual for details.

PROVISIONS OF WARRANTY

Warranties do not cover the following conditions: damage or defects caused by the failure to provide a suitable and responsible installation environment for the product; damage caused by impact from other objects, vandalism, damage or defects resulting from acts of nature, misuse, abuse, mishandling, misapplication or faulty wiring; damage or defects caused by disturbances or surges in the electrical service; unauthorized attachments, alterations or modifications; or improper maintenance. Everbrite will not accept any responsibility for a unit that is moved from one location and re-installed at another, unless Everbrite is contracted to handle the move.

Under no circumstances shall Everbrite or our installers be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, but are not limited to, loss of profits, loss of revenue, loss of use of the Everbrite product or any associated or connected product or equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, or the claims of third parties.

DISCLAIMER OF WARRANTIES

The warranties stated above are the only warranties applicable to this product. All other warranties, express or implied (including all implied warranties of merchantability or fitness for a particular purpose), are hereby disclaimed. No oral or written information, or advice given by Everbrite, its agents or employees, shall create a warranty or in any way increase the scope of this warranty.

NOTE: 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 Owner's Manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. In this case, the user will be required to correct the interference at their expense.

Please contact Everbrite Technical Support for any problems that may occur or cannot be resolved through the troubleshooting steps.

Technical Support & Customer Service: 1-800-796-7427

Monday - Friday 8 A.M. to 4:30 P.M. CST.

Everbrite Pardeeville Office: 1-608-429-2121

Website: www.everbrite.com

Installer Information

NOTE: When installing an EMC, a message will be stored in the sign controller assembly and displayed on the sign. A sign that displays a message does not necessarily indicate the sign is working properly. Installers **MUST** send new message to sign to ensure proper communication.

Power

The lumiDigit II gas price sign has 2 circuits.

One grounded circuit for the lighting 120V AC 60Hz (See amp rating for specific sign)

One grounded circuit for the LED gas price display 120V AC.

Activation

Operation of the sign requires an access code. The code is available from Everbrite Activation Center 1-800-796-7427. Office hours are Monday - Friday 8 A.M. to 9:00 P.M. CST.



Access Code:

Only appears the very first time the console is turned on. This has an eight digit code that needs to be entered to gain access to the program. The Current Prices screen will be the normal screen shown on subsequent power ups. Please have the information on the form on page 13 of the owners manual filled out before you contact Technical Support to receive your access code. **PLEASE LEAVE THE OWNERS MANUAL WITH THE OWNER/OPERATOR OF THE SIGN.**

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YOU MUST CONVEY ALL OF THE INFORMATION FROM THE ACCESS CODE PAGE OF THE OWNER/OPERATOR MANUAL, OR THE LEAFLET INCLUDED.

In lumiDigit II®, lamp control is done by a relay that is turned on by the controller.

1. To adjust lamps to turn on at the earliest time of day (more ambient light present), set lamps on/off level to 9.
2. To adjust lamps to turn on at the latest time of day (less ambient light present), set lamps on/off level to 1.
3. To test lamps, go to SETUP / SYSTEM TESTS / 5 MINUTE LAMP TEST.
NOTE: NO OTHER FUNCTIONS WORK DURING THE 5 MINUTE LAMP TEST.