Static Controls Corporation

Series 803

LED Product Price Display

Static Controls Corporation

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1. Safety

The operator of the SCC Series 803 is responsible for the safe operation and repair of the Display. It is the responsibility of the owner of this sign to make all employees aware of this operation manual.

Do not power on until all components of the 803 display have been installed.

Static Controls Corporation suggests that 120VAC power be installed by a licensed electrician in accordance with all local building and electrical codes.

If any part of the 803 display malfunctions, please turn off the circuit breaker supplying 120VAC to the control box, and call SCC. Our Technical Support number is (248)926-4400 Ext 234.

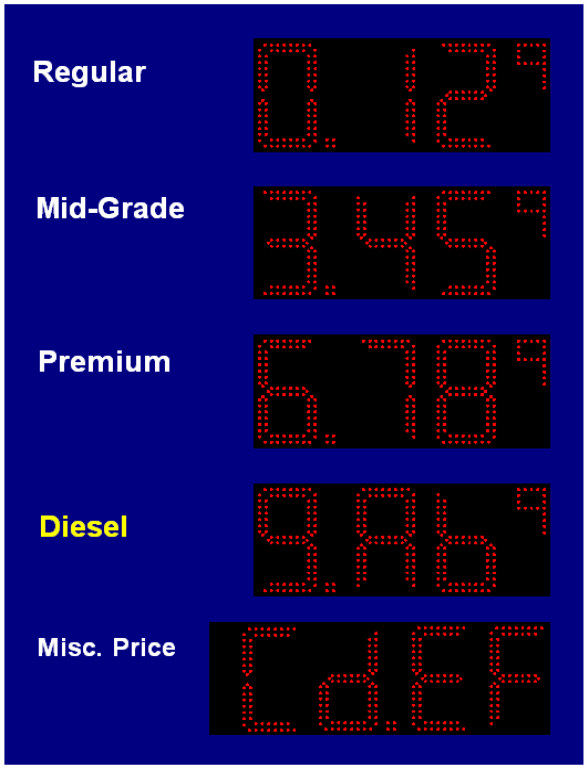
WARNING! USE A LOCK OUT/TAG OUT ON CIRCUIT BREAKERS OR SWITCHES WHEN PERFORMING INSTALLATION OR SERVICE ON DISPLAYS.

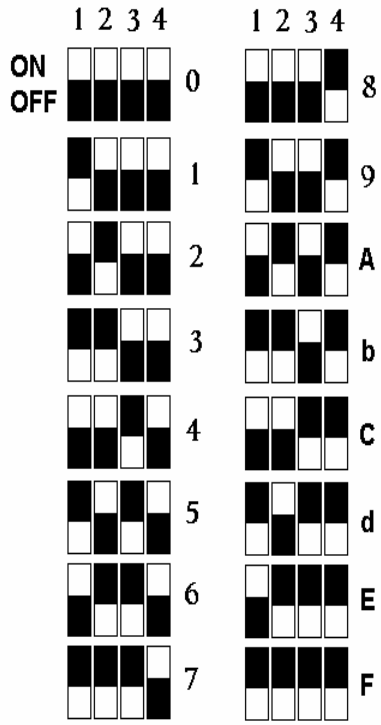
THE CONTROL BOX IS DESIGNED TO KEEP THE WEATHER AND ELEMENTS OUT, IF YOUR CONTROL BOX IS OPEN SEVERE DAMAGE COULD OCCUR.

2.0 Series 803 Sign Features.

2.1 Sign Descriptions.

The Series 803 is available in four colors and four sizes. The available colors are Red, Green, Yellow and Blue. The sizes are 9 inch, 11 inch, 15 inch and 20 inch. Our boards can be configured for many price display variables. Our design will currently support 5 products, double sided. We offer two options for communication, RF and direct wired. The 803 displays can be controlled via personal computer or hand held device. When referring to displays we will use the terms digit to refer to the led seven segment numeric display. When referring to digits we will use the place of the digit in the price, and product number to describe its location, dollar, 10 cent, 1 cent, 9/10th, product one, product two and so on.





Dip switch address settings on back of LED circuit boards.

The power on sequence will show the address of the boards, product one will show 0.12, product two will show 3.45, product three will show 6.78, product four will show 9.Ab, product five will show Cd.EF. The front and back will display the same addresses. These addresses are set via dip switch, they are pre-set and the product location is labeled at Static Controls Facility.

2.2 Control Box Description

The Control Box must be located within 20 feet of the price displays. The control box houses the 120VAC input terminals, the DC power supplies, and the 803 controller. It is imperative that the control box be mounted securely, a solid ground is present, and the control box door is fastened tight and locked.

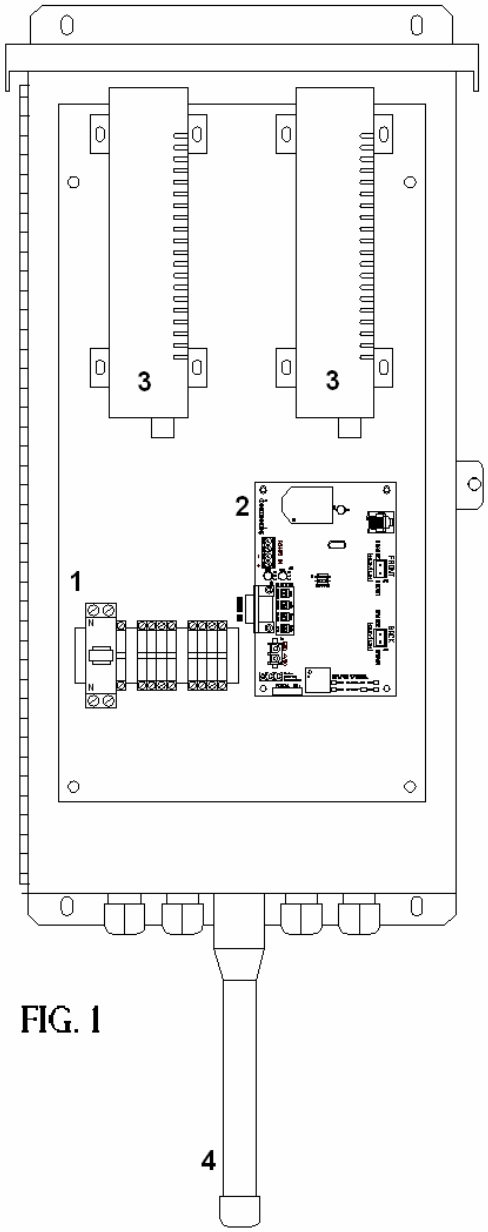


FIG. 1

Control Box Component Locations

1. 120VAC input, Display Output Terminals
2. 803 Control Board
3. VDC Power Supplies
4. RF Antenna

2.2.1 Power Inputs

Pictured below is the set of terminal blocks located in the control box for 120VAC inputs and display outputs. An internal breaker is located in the control box, Line (120vac, hot) and Neutral wires are terminated directly to this breaker. The terminal labeled N is the Neutral termination point, directly to the right is the Line termination point. Terminal blocks labeled +VDC (24v green & blue LEDs or 15v red & Yellow LEDs) are the termination points for the display +VDC wires, terminal blocks labeled DCCOM are the DC Common termination points. Terminal blocks labeled FLIN are the termination points for the Front Side Lin Bus Wires, and BLIN the termination points for Back Side Lin Bus. The F3.3 is the termination point for Front Side +3.3vdc, B3.3 the Back Side +3.3vdc. All wire harnesses are made with 14awg wire.

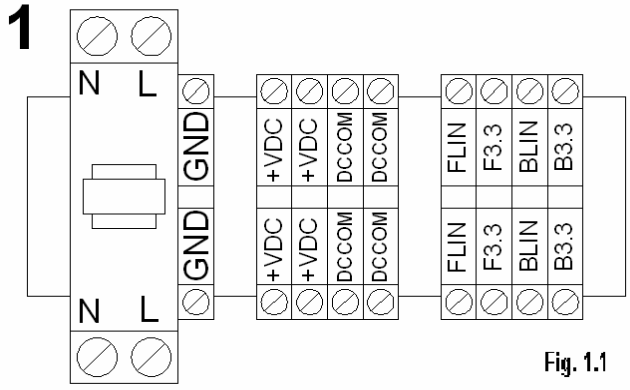


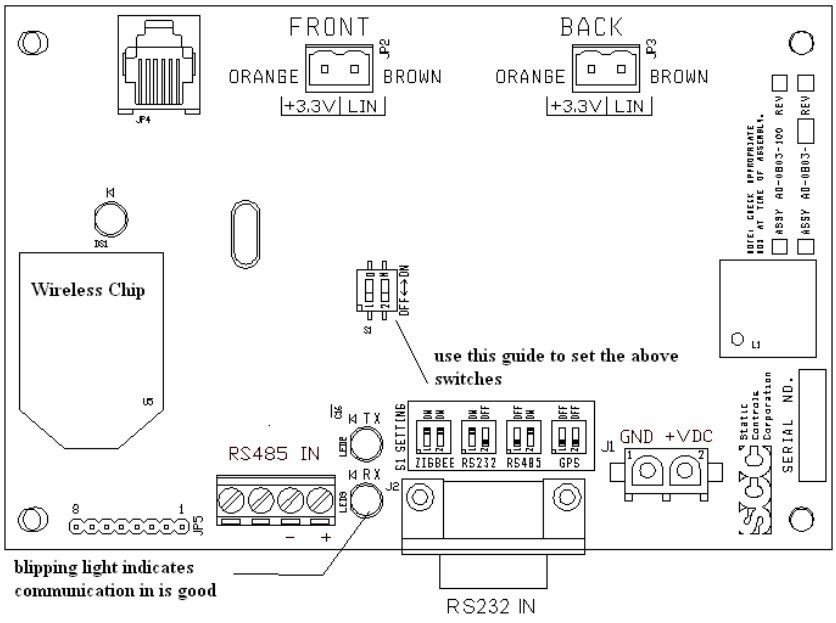
Fig. 1.1

2.2.2 Power Supply Information

Power Supplies are pre-wired when the 803 control is built. The power supply (Fig. 1 #3) converts the supplied 120vac to a +vdc and dc Common. The power supply included in the control box will vary in output voltage depending on display color (24vdc for green & blue, 15vdc for yellow & red). If calling SCC for replacement parts please verify the part number of your price display sign. If you need the part number for your display it can be found inside the control box along with the serial number (both will be needed when contacting technical support).

2.2.3 Control Wiring

Shown in the picture below is the 803 Display Controller (Fig.1 #2). The controller is pre-wired and configured at SCC. Should the occasion arise that communication re-configuration is needed in the field you will need to change the dipswitches on the control board (Fig. 2) (for instance: trouble shooting Zigbee wireless communication with an RS232 line out of your laptop PC or hand held programmer would require changing the dipswitches from Zigbee to RS232 per diagram below).



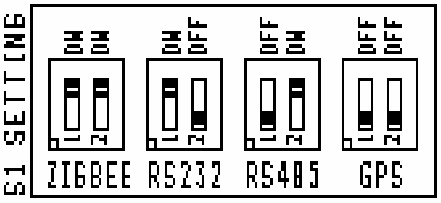


Fig. 2

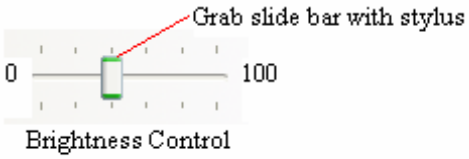
3.0 Software Description

3.1 Computer Control

When using a computer to set prices you will use the SCC Software called Gas Price Set-up. First click the icon on your computer screen. Next you will need to configure the software to match your sign by adding products(1 product, 2 product, 3 product, and so on), then choose your computers communication port. You can choose from ports 1 through 6. If using RS232 to wireless choose comm. port 1. If you are using a USB port out of your computer you can plug in sending unit, choose a comm. port and push send price. If the data out light on the RF unit flashes on, you have selected the right port. If it does not go on choose a different comm. port from the list and hit send, repeat until the data out light flashes. After you have configured your software you are able to choose your product prices. Product 1 in the software controls Product 1 in the sign, the Product 1 display should be the product at the top of your sign, or to the far left (depending on your sign lay-out), Product 2 will be the next one down (or to the right. The Sign Installer should install from top to bottom or from left to right. The other option in the software is for setting the LED brightness. This can be used to set the signs LED intensity based on the outside ambient lighting.

3.2 Hand Held Control

The hand held controller has been pre-configured at SCC. **DO NOT LET THE BATTERY COMPLETELY DISCHARGE. THE PROGRAM TO CONTROL THE 803 PRODUCT PRICES WILL BE LOST, AND THE HAND HELD CONTROLLER WILL HAVE TO BE SENT BACK TO SCC FOR RE-PROGRAMMING.** The hand held controller has to be seated in the cradle for proper operation. From the home menu click on the SCC803 icon. You will have 5 products to choose from. Product 1 will control the product at the top of your sign (or to the far left depending on your sign lay-out). Product 2 will be the next one down (or to the right). The Sign Installer should install from top to bottom or from left to right. The other option in the hand held controller software is the brightness control. The brightness control is a touch screen slide bar. You have to touch the slide bar to move the brightness control, if you try to touch the slide without using the bar the brightness control will not change (see picture below for details).

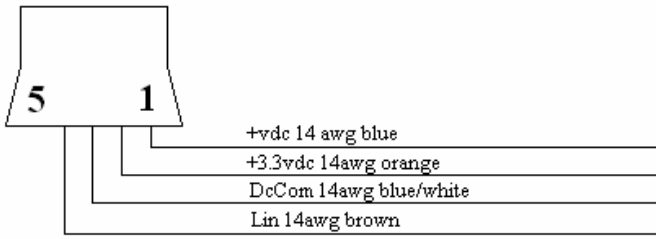


4.0 Wiring

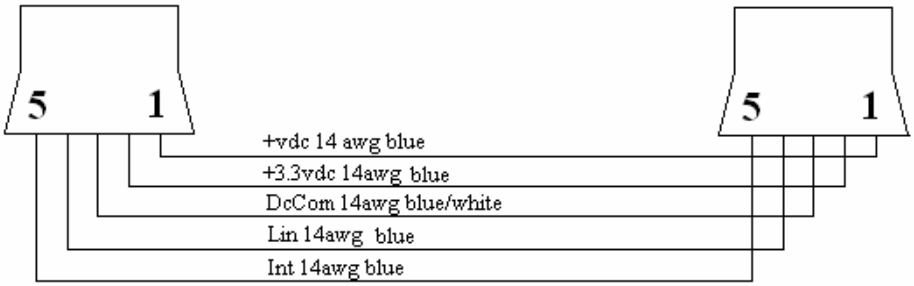
4.1 Wire harnesses

All SCC wire harnesses are built and tested at SCC. There are two types of wire harnesses in the 803 product. One is a 30' control box homerun harness and the other is a display board jumper. Each display size option has different length jumpers, all home run cables are made at 30'. All jumper harnesses are made with 5 wires. The Homerun harnesses are 4 wire and made with 4 different colors and labeled for easy termination. Shown below is a picture of the wire harnesses.

Home-run harness



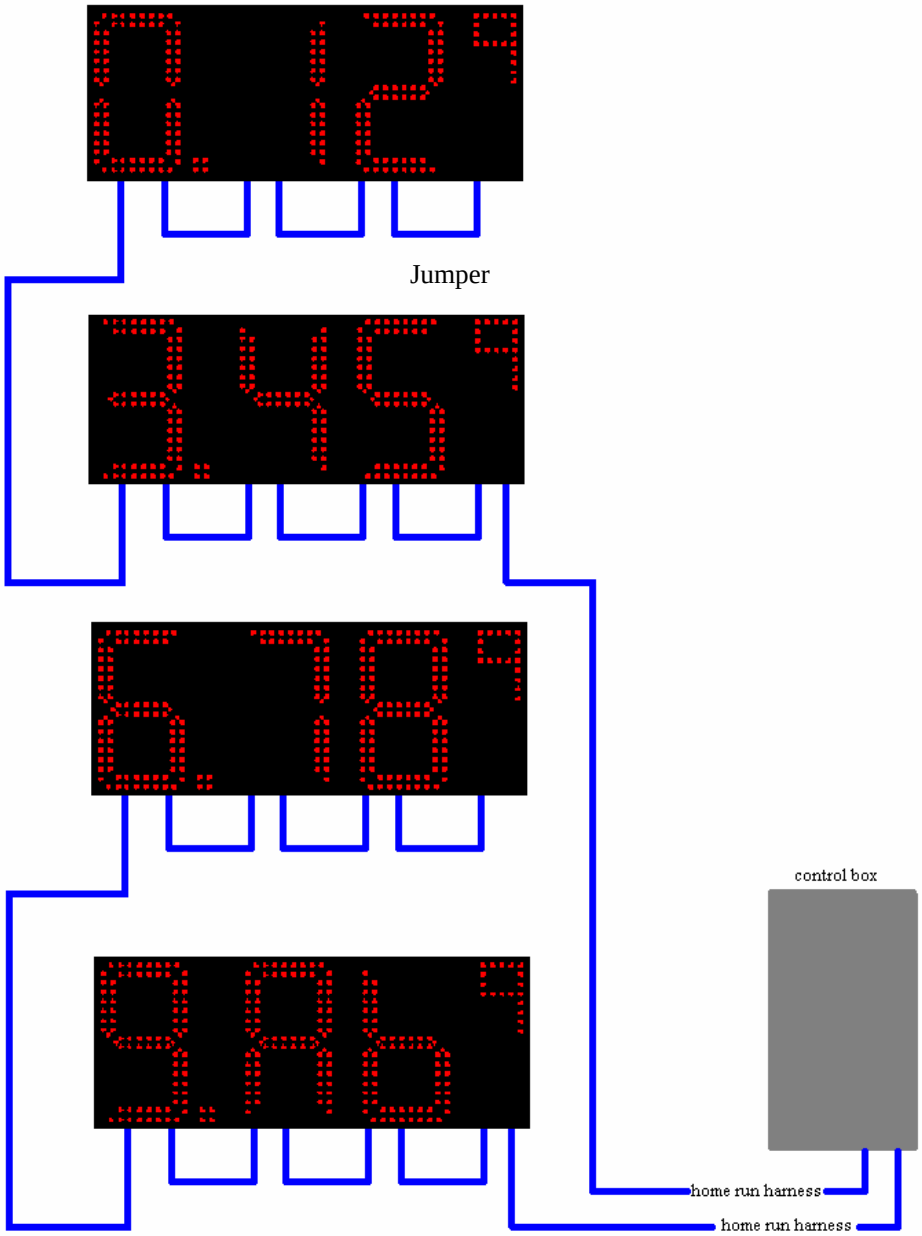
Jumper

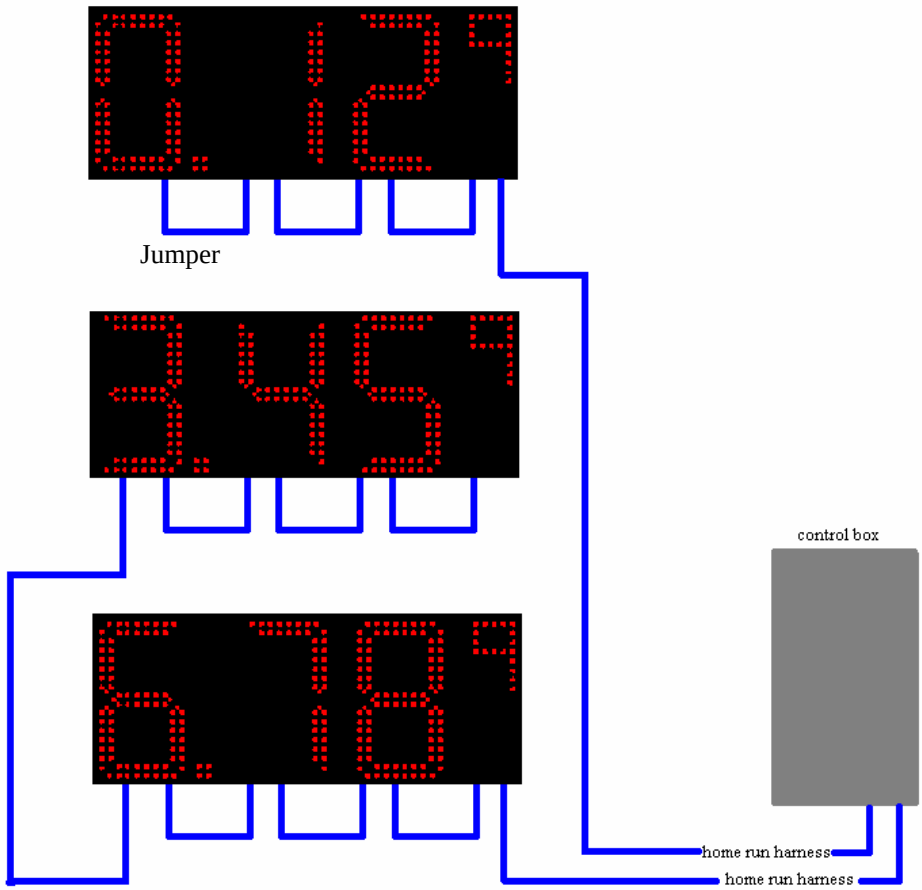


4.2 Product Wiring

All LED products will be labeled on the back of their thermal formed pan, product 1, product 2, product 3, product 4, with a notation for front or back. Product 1 should always be installed at the top location (or left depending on sign lay-out), and then in order from top to bottom or left to right. All jumpers are made and installed on the products before leaving SCC. The home-run cables will terminate in the control box at the terminal blocks. Blue wire terminates to +VDC terminal, Orange wire terminates to +3.3vdc, the Blue w/ white stripe wire will terminate to the DC Common terminal block, and Brown will terminate to Lin. Make sure to keep the front and back wires separated so they can be terminated to the correct location. On the following pages are wiring diagrams.

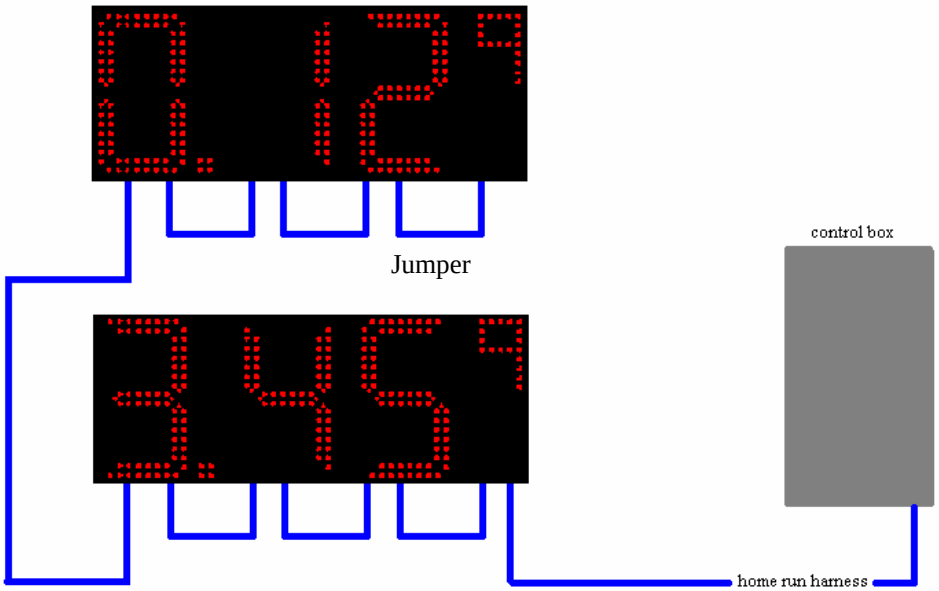
Pictured below 4 product wiring for 9” and 11” (2 home run harnesses per sign face)

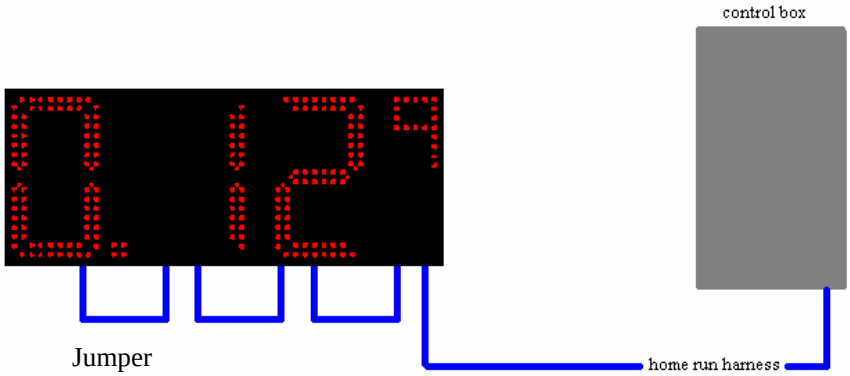




3 product wiring for 9” and 11” (2 home run harnesses per sign face)
Or
2 product 9” and 11” with 1 product 20” (2 home run harnesses per sign face)

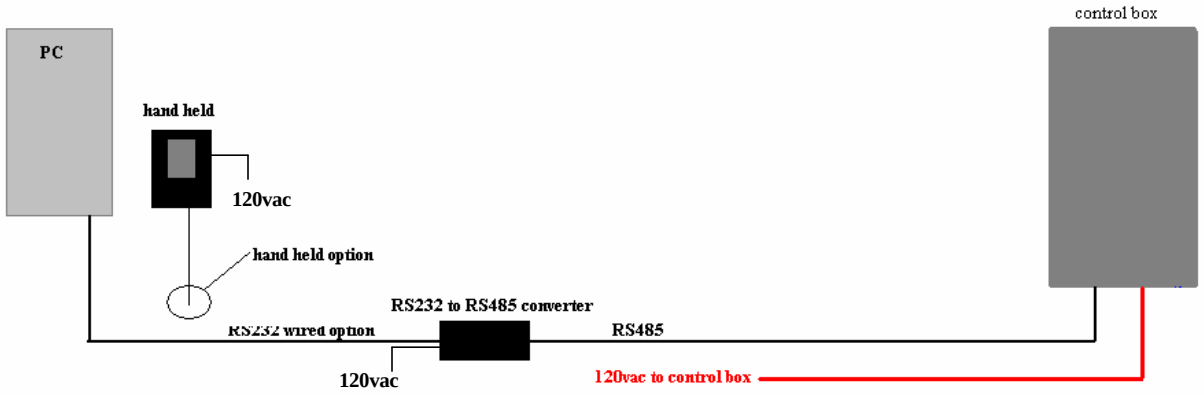
2 product wiring for 9” and 11” (1 home run harness per sign face)



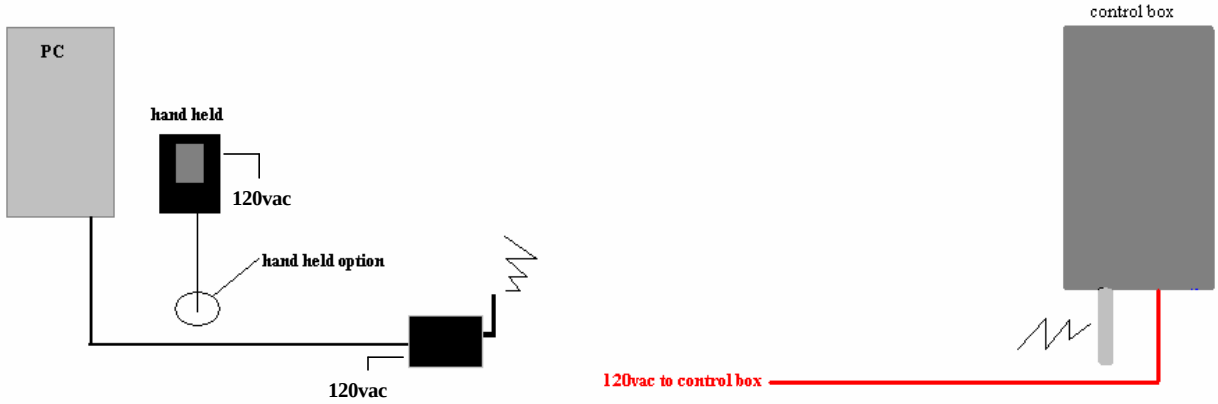


1 product wiring 9” and 11” (this is also typical of 15” and 20” where all products are wired separately). All combinations of signs with 15” and 20” will follow configurations above with this one. Example: a sign that contains a 2 product 11” and 1 product 20” on the same face will require 2 homerun wire runs per sign face.

Wired option

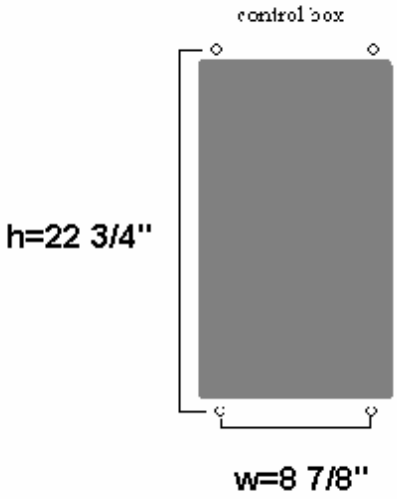


Wireless option



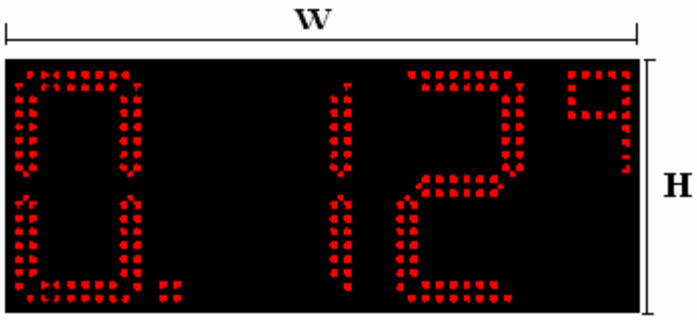
5.0 Installation Mechanical Drawings

5.1 Control Box Mechanical Drawings

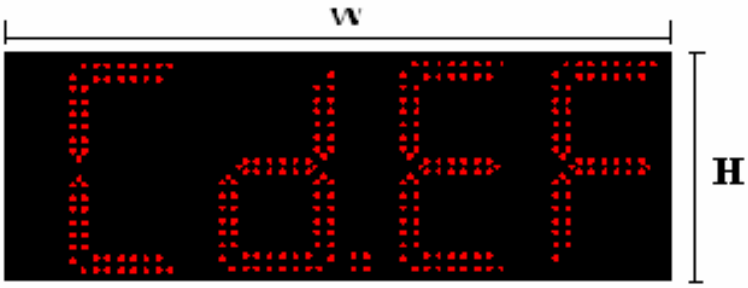


5.2 Visual Opening Description

The Visual Opening is needed to display the digits. Two types of measurements will be given; a typical 3 digit gas display product and a 4 digit misc. product. The picture below is given to describe the terms Width (W) and Height (H). The measurements needed for each size and type display are given below the picture.



Typical Gas Price Display



Misc. 4 digit without 9/10 board

Suggested clearance from florescent lights or other items behind product pans should be 2” or greater.

Minimum Visual Opening Dim.

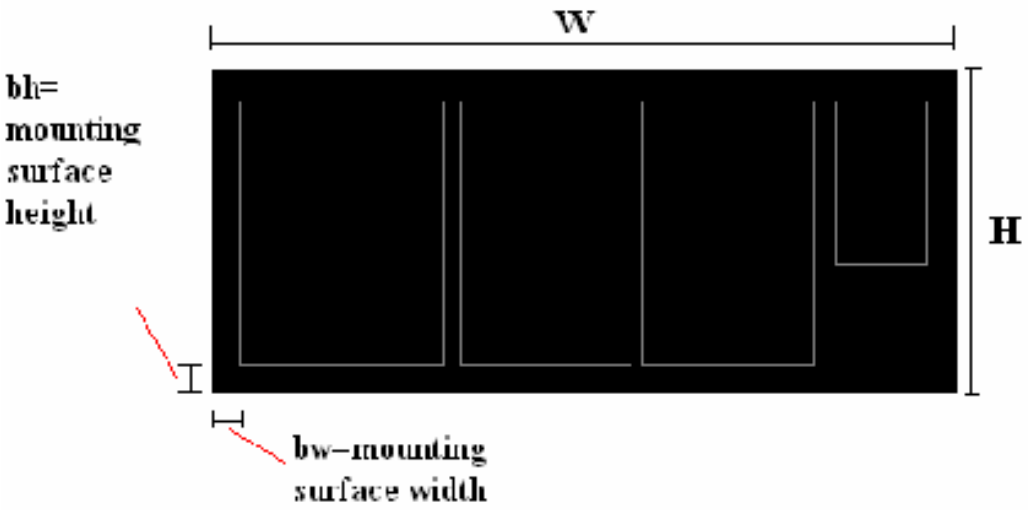
	typical gas price	
	width	**height**
9"	26.25”	10”
11"	31.5”	12”
15"	44”	17.25”
20"	56.5”	22.5”

	Misc 4 digit	
	width	**height**
9"	28.25”	10”
11"	34.5”	12”
15"	47”	17.25”
20"	60.5”	22.5”

5.4 Pan Dimensions

SCC Series 803 uses a plastic pan to keep water away from the electronic components in the display. The pan has a separate pocket for each digit in the display. The pan allows for it to be bent to a radius for curved faces, or mounted flat. Given below in the table are the Width (W), Height (H), Border Height (bh), and Border Width (bw). The Border Height and Border Width are included in the overall Height and Width.

Installation Note: It is extremely important to seal the top of the pans with a silicon based sealant to protect the electronic circuit boards form water. Also check the integrity of the signs enclosure to ensure that no water will dip onto the electronics.



Pan Dimensions

Typical Gas Price Product

	width	height	bw	bh
9"	28.75”	12”	1.125”	1”
11"	35.75”	14”	2.25”	1”
15"	45.5”	18.5”	1”	1”
20"	58.5”	24.”	1”	1”

Misc 4 digit without 9/10

	width	height	bw	bh
9"	30.75”	12”	1.125”	1”
11"	38.75”	14”	2.25”	1”
15"	48.5”	18.5”	1”	1”
20"	62.5”	24”	1”	1”

6.0 Trouble-Shooting

Problem	Possible Cause	Solution
All LED's on display boards do not light	Main circuit breaker inside store is OFF	Turn breaker ON and check to see if 120 VAC is present.
	Control box circuit breaker is OFF	Turn breaker ON and check to see if 120 VAC is present.
	Main power supply failed	Check DC output voltage on power supply. Should be 24VDC for green & blue LEDs, and 15VDC for red & yellow LEDs. Also possible short in DC circuit will shut down power supply automatically. Replace power supply if 120 is present and 0 DC output.
LED displays do not change value	Communication problem at transmitter, or receiver.	Verify all cable connections are terminated and plugged in.
	Hand held programmer, or store computer problem.	Reboot computer and verify programs communication port is set correct. Verify all cables are connected and power cables are plugged into a 120 VAC outlet.
	Diagnostic LEDs do not blip on transmitter inside store or receiver in control box when send button is hit.	Verify all cable connections and antenna wires are connected properly, and that the Maxstream transmitter is plugged into a 120VAC outlet.
LEDs on display board do not light, or segment does not turn on or off displaying the wrong value.	LED display board problem, or cable harness issue.	Reboot sign power and reset prices. Check product cable harnesses. If this does not fix problem replace display board.

6.0 Trouble-Shooting Continued

Products do not display in the same order on both front and back of sign.	Product pans were installed out of order, or dip switches are set wrong.	Cycle power on sign and verify circuit board address are the same on front and back of sign. If not reset dip switches on LED display boards or swap product pans.
LEDs display boards are to bright, or to dim.	Programmer brightness control needs to be adjusted.	Check handheld programmer, or computer program brightness control setting. Verify wiring inside of sign was performed per wiring diagram (homerun drops).
One or some of the LED products do not display.	Product cable harness inside sign is unplugged.	Check product cable harnesses and reattach if necessary.

7.1 Warranty Description

Static Controls Corporation (SCC) warrants for a period of One Year from the date of purchase that products of our manufacturing are free from defects in material and workmanship. SCC will replace or repair defective components at the Wixom, Michigan factory.

Warranty covers parts and factory labor only when defective parts are returned prepaid to SCC. No charges for time and materials used by others in making repairs or connections will be paid for by SCC. Warranty shall be void if any alteration or service is performed without the manufacture's authorization; or if the equipment has been connected to incorrect power, is damaged by electrical fluctuations, lightning strikes, water damage form control box door being left open, or is improperly grounded or installed.

Equipment which is subject to accident, neglect, abuse, misuse, shipping damage, installation damage or other natural disasters, included but not limited to: fire, wind, lightning, and flood is not covered by this warranty.

SCC will not be responsible for loss of time, late delivery, inconvenience, and loss of use of your LED products, property damage caused by your LED product or its failure to work or any other incidental or consequential damages.
Warranty Claims - Please Contact SCC for RMA #, and have warranty information available for SCC phone support.

7.2 Service Contacts

Technician Phone Number: Kevin Moir @ 248-926-4400 ext 234 or (586)495-4871
Fax Number: (248)926-4412
Email: KevinM@SCCControls.com

Static Controls Corporation

Static Controls Corporation Warranty Registration Card

Thank you for choosing SCC Series 803. To ensure Warranty Coverage we ask that you fill out this Warranty Registration Card, we will not offer coverage without this information.

Store Information

Store Name_____
Store Number _____
Store Contact _____ Phone Number ( ) - ext

Installer Information

Company Name_____
Company Contact_____ Phone Number ( ) - ext
Installation Date _____
Installer Feedback_____
_____
_____

Sign Information (found on SCC tag inside control box)

Serial Number_____
Sign Model Number_____

Approximate Sign Dimensions

Overall Sign Height _____
Overall Sign Width_____
Dimension from ground to bottom of sign_____
Dimension from ground to top of sign_____

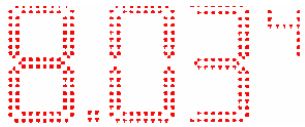
Note to Store Owner!!!!

It is the responsibility of the Store Owner to document the Installer information. If the Installer Information is incomplete **WARRANTY IS VOID.**

Fax or mail card to SCC
Fax # (248)926-4412

Mail to:
Attn: Warranties Dept.
30460 Wixom Rd
Wixom, MI 48366

8. Notes


8,03