

**BLAIR COMPANIES**



# **LED ELECTRONIC PRICE CHANGE UNIT (EPCU) STORE OPERATOR INSTRUCTIONS**

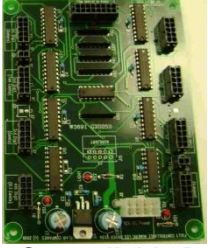





















**Revision 18E  
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INSTRUCTIONS**

# A. Parts List

 <p><b>Fully Controllable Driver</b> 32-01-62</p>	 <p><b>24", 18", 15", 12", 9" Digit Cable</b> 32-03-02</p>	 <p><b>Nc Secondary Cable</b> 32-10-15</p>	 <p><b>Operator Terminal</b> 33-31-00</p>
 <p><b>Standard Radio</b> 33-33-12</p>	 <p><b>Terminal Power Supply</b> 32-02-49</p>	 <p><b>Power Supply</b> 32-01-01</p>	 <p><b>Power Supply</b> 32-01-01</p>
 <p><b>6-32 Nutsert</b> 33-05-01</p>	 <p><b>6-32 Screw</b> 32-05-00</p>	 <p><b>Controller Board</b> 32-06-30</p>	 <p><b>Driver Board</b> 32-01-60</p>
 <p><b>Relay</b> 32-00-50</p>	 <p><b>Long Range Radio Outdoor</b> 33-33-00</p>	 <p><b>Msr-Nc (Cable Only)</b> 32-03-09</p>	 <p><b>Long Range Radio Indoor</b> 33-33-01</p>
 <p><b>Ps Unidrive Cable</b> 1' 32-19-34 2' 32-19-35</p>	 <p><b>Nc Unidrive Cable</b> 32-10-15</p>	 <p><b>Economy Operator Terminal Receiver</b> 33-06-42</p>	 <p><b>Economy Operator Terminal Transmitter</b> 33-06-43</p>
<p><b>Economy Operator Terminal Complete Kit (Includes Transmitter, Receiver, Firmware Updated Control Board)</b> 33-06-44</p>	 <p><b>Power Distribution Board</b> 32-19-21</p>	 <p><b>Modular Driver</b> 32-08-09</p>	<p>Communication Adapters: Radio: Secondary Sign Base: Secondary Control Box: POS:</p>

## **B. Programming the Terminal**

**OPERATION INSTRUCTION DECAL LOCATED ON BACK OF TERMINAL BOX FOR REFERENCE.**

**The terminal box is located inside the store and is used to control the functions of the sign. It can be used to change the price of the LED digits and to turn the fluorescent lights on and off. (Note: Any changes may take up to 30 seconds to complete.)**

If unplugged from 12VDC transformer, the terminal can neither change prices NOR control fluorescents through timers.

### **Changing the price of fuel:**

To change the price of a fuel, use the button marked "Price" on the keypad to scroll through the different grades of fuel until you reach the grade you want. Once you are there, enter the new price on the keypad. Once you have entered the new price, you must press the "Valid" key to send the price to the sign. After the "Valid" key has been pressed, you may continue to the next grade of fuel to be changed. There are six different grades of fuel present in the terminal box (Line1, Line2, etc.). Be sure to change the correct grade; not all signs have all grades.

**POS communication:** The EPCU is capable of using the store POS system to automatically change price on the sign.

Gilbarco: To have the Gilbarco POS system change the price on the sign, install the cable marked POS-NC into the port of the stores computer marked "to sign", and the other end to the port on the terminal marked "POS/RS-232" using the supplied adapter.

Verifone: NOTE: Our system will only work if you have a Sapphire mini-server. If you have a Verifone POS system, install the cable marked POS-NC into the port of the Sapphire mini-server marked "GEM BUS", and the other end into the port on the terminal marked "POS/RS-232" using the supplied adapter.

The terminal should then change the price each time a new price is sent from the computer to the pumps. Note: The POS-NC cable must be specified at the time the sign is ordered, as well as the make and model of the POS system.

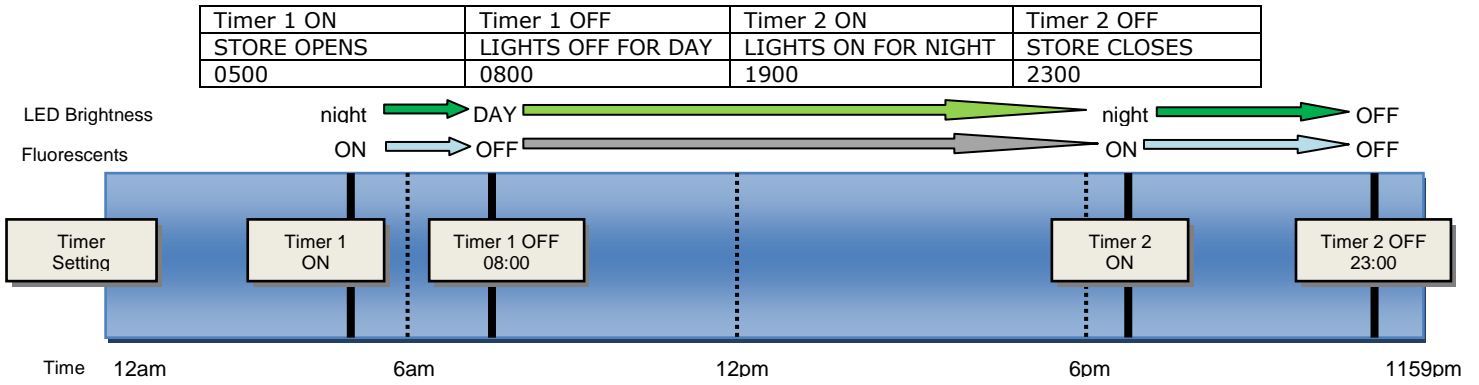
**Dimming:** Dimming of the LEDs is controlled by the terminal box's timers. These timers dim the LED brightness as well as simultaneously turning the fluorescent lights on and off. When the fluorescent lights turn on, the LED brightness changes to the nighttime setting, and when the fluorescent lights turn off, the LED brightness changes to the daytime setting. The times at which this occurs are controlled by the timer settings listed below. The brightness level can be changed by pressing the "Config" button until you see "Day\*Night Light Level: 000-999". Enter the daytime and nighttime light levels, as a percentage of full brightness, where 000 is no light and 999 is full brightness. Then, hit the "Valid" key. The default setting is 999 & 500.

*To manually control fluorescent lamps in the sign, simply press the "Light" key on the terminal box. This switch toggles between off and on. (Note: The word "light" will appear in the upper right corner of the terminal screen when the fluorescents are on.)*

**Timers:** The operator terminal is capable of controlling the fluorescent lighting in the sign as well as the LED gas prices. This eliminates the need for a time clock from the installer. Do not install a time clock on the LED'S. Note: The hot (or line) lead for the ballast is switched by the ballast relay. The ballast relay must be connected as instructed (See Section C) for the fluorescent lights to be controlled by this system.

The terminal box's digital time clock and two internal timers are set to control all on/off timing. Figure 1 shows timer settings to control lighting, with the following example store:

**EXAMPLE:** Store opens 5AM, fluorescents on until 8AM, fluorescents back on 7PM, all off at station close at 11PM.



**Figure 1 – Timer usage diagram for two timers at store open 5AM-11PM.**

Timer 1 ON controls time to dim the LEDs to nighttime setting and fluorescents on (early morning).

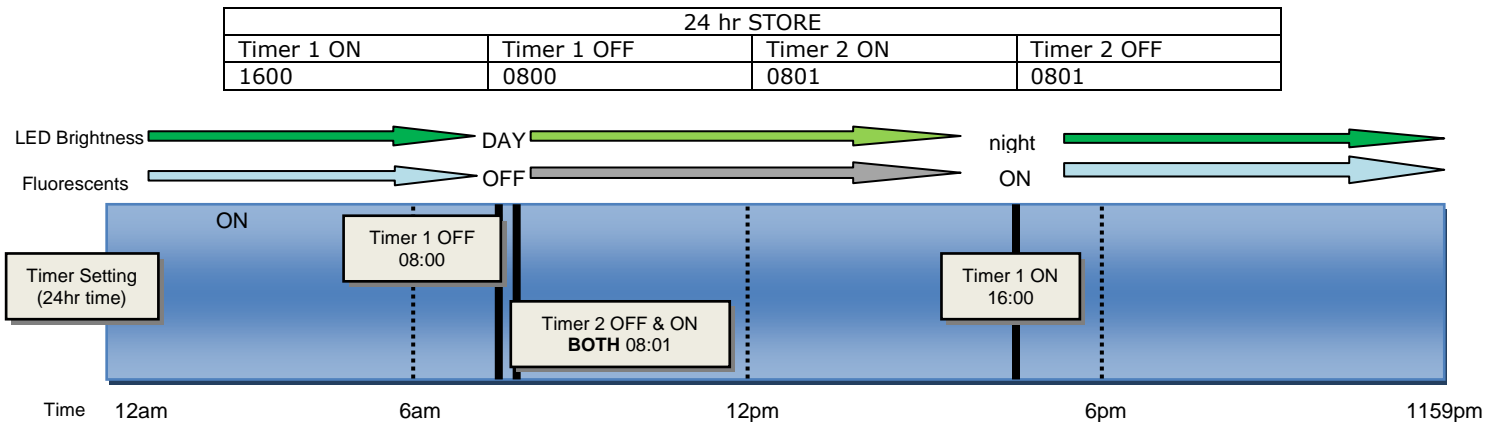
Timer 1 OFF controls time to turn LEDs to daytime setting and fluorescents off (daytime).

Timer 2 ON controls time to turn on LEDs to nighttime setting and fluorescents on (evening).

Timer 2 OFF controls time to turn LEDs and fluorescents off.

When both timers 1 and 2 are set, the LED's will turn off between 2 and 1. This will not function properly unless Timer 1 is set before 12:00 and Timer 2 is set after 12:00.

To deactivate a timer set it's on and off time to the same time. For example, if Timer1 is set to turn on at 18:00 (6 PM) and off at 06:00 (6 AM), you wouldn't need Timer2, so you would set Timer2 On and Off to 08:01. Figure 2 shows operation for a **24hr open store** with lights on at 4PM and off at 8AM:



**Figure 2 – Timer usage diagram for single timer (24hr open store).**

To activate the timers, they must be programmed by following the steps listed below:

**Programming the clock with Operator Terminal:**



To program the real time clock press the "Config" button on the terminal box. The screen that appears will be the "set time" screen used to program the real time clock. Set the current time using a time scale of 24 hours in a day (00:00:00 to 23:59:59). Do not attempt to use AM and PM settings. The terminal will display AM and PM once you have entered the appropriate time from 1 to 24 hours. After the current time has been entered, you must press "Valid" to update your changes.

Figure 3- Clock Programming Screen.

### Programming the Date and Time with Operator Terminal:



Figure 4 - Setting Date Screen.

To program the current date and time press the "Config" button twice to get to the "set date" screen to program the current date. Type in the current date including the year and press "Valid".

### Programming the first timer with Operator Terminal:



Figure 5- First Timer Programming Screen.

To program the first fluorescent on/off timer press the "Config" button three times until you get to the "set timer 1 on" screen. Next enter the hour and minute you want the fluorescent lights to come on, and press "Valid". Next press the "Config" button again to get to the "set timer 1 off" screen. Enter the time you would like the fluorescent lamps to turn off, and press "Valid".

### Programming the second timer with Operator Terminal:



Figure 6- Second Timer Programming Screen.

To program the second fluorescent on/off timer press the "Config" button five times until you get to the "set timer 2 on" screen. Next enter the hour and minute you want the fluorescent lights to come on, and press "Valid". Next press the "Config" button again to get to the "set timer 2 off" screen. Enter the time you would like the fluorescent lamps to turn off, and press "Valid".

To use the secondary communication method, take the terminal from inside the store to the base of the sign and plug the power cable into the terminal. Next, pull out the data cable with grey adapter (labeled "NC-Secondary Base") and plug it into the port on the terminal marked "RS-232" (Figure 7). The terminal will then be able to communicate with the controller inside the sign. Now you can use the terminal to control the sign as you normally would from inside the store. If the plug has water damage or corrosion, DO NOT ATTEMPT TO CONNECT TO TERMINAL! Call Blair for a replacement.

If your terminal is configured to be used with a POS system, you will need to override the POS settings on the terminal box. To do this:

1. Connect the terminal to the Secondary Communication at the sign.
2. Press Configure until you read "Alt RS232 COM mode (1=yes)"
3. Press the number 1, then "Valid". "COMX" Will display.
4. Press "Price" and you will be ready to enter your new pricing information.
5. After disconnecting the terminal box from the Secondary Communication port, the terminal will default back to the regular POS system programming. Steps 1-4 will need to be done each time you connect to the Secondary Communication port.



Figure 7 - Terminal Communication Ports.



Figure 8 – Operator Terminal.



Figure 9—Secondary communication

## C. Programming EMC Mini option

Press the 'Config' button until 'This Product Shows on Line:' is displayed on the screen. Use the left and right arrow keys to scroll through the grades and the CASH/CREDIT combinations. For any one to display, press the pricer line to display it on. To remove a grade or CASH/CREDIT combination from the rotation, press '0' for that selection.

NOTE: Only grades and CASH/CREDIT combinations assigned to a line will be able to be selected to set a price. If a desired grade combination cannot be found in the price settings, it should be assigned a line in this mode.

To set the time each price is displayed, press 'Config' button until 'Set Display Time (00:SS)' is shown on the screen. Enter the time (in seconds) to display a price, then press 'Valid'.  
Ex. To display prices for 5 seconds, at 'Set Display Time' press '0005', then 'Valid'.

Once complete press the "Price" button to exit the configuration mode. If at any point you want to exit the configuration mode press the "Price" button.

## D. Economy Operator Terminal option

Timers are used with the same method above in Section A with the Operator Terminal. The Economy Operator Terminal is controlled with the 4-button handheld transmitter:



On/Off switch: Switch ON to set prices or change settings

A button: Enter settings; from any setting mode, ends programming

B button: Select next setting

C button: Plus value; increments setting value up 1

D button: Minus value; increments setting value down 1

Figure 10 – Economy Operator Terminal handheld.

NOTE: The first time programming you will set the number of pricers. This will not have to be repeated.

The following is a list of programming steps and the code displayed on Pricer 1 (except other Pricer values). This list is also located on the handheld label:

<u>Programming step</u>	<u>Code displayed</u>	<u>Value meaning</u>
-------------------------	-----------------------	----------------------

Pricer1 Pricer2 ↓ Pricer6	NNN NNN ↓ NNN	hh = hours 00-23
Fluorescents	Fon OR FoF	mm = minutes 00-59
Clock	Ahh	nn = value 00-99
Timer1ON	bmm	on = fluor on
Timer1OFF	Chh	oF = fluor off
Timer2ON	cmm	NNN = price 000-999
Timer2OFF	Hhh	SS = signs 01-06
Daylight	hmm	
Nightlight	Jhh	
NbPricers	Lmm	
	Uhh	
	umm	
	dnn	
	Enn	
	Pss	

The first digit of the code displayed is an indicator of which step you are on. For example if Pricer1 reads U11, that means the hour setting for Timer2OFF is currently set at 11.

NOTE: If at any point the system sits idle in a step for 20 seconds, it will reset to normal operation without storing that value.

Press the A/enter button to enter programming. Pricer 1 will flash. Increment the price up or down using C/plus or D/minus. To rapidly increment the price, hold the appropriate button down and it will begin to increment faster.

Press the B/select button to step to the next pricer. Repeat as above for this and all pricers. Press the B/select button to step to clock hours setting. Increment the time up or down using C/plus or D/minus.

Continue setting values for each setting by pressing the B/select button to step to each subsequent setting as mentioned above. Parameters are used the same way as described in Section I.

Set the number of pricer grades on the sign by scrolling to code Pss. Set the number of pricers 01-06, and press the A/enter button. This is important as it will disable the step for pricers (up to 6) that are not used, so there will not be extra button pushes or a blacked out board. If pressing B/select goes to a blank display, check that Pss is set to the appropriate value.

Turn off the handheld unit when not in use to save battery power. The handheld uses a standard 9V battery for power.

## **E. Contacts**

### **For warranty or service issues, call:**

Blair Companies  
(800) 581-0709  
[service@blaircompanies.com](mailto:service@blaircompanies.com)

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**Blair Companies 24 hr Emergency Service:  
800-563-9598**

## **WARRANTY INFORMATION**

- De-lamination will not occur for a period of two years from the date of delivery.
- Color changes of the product and its surface area will not exceed:
  - ✓ +/- 10% of the products original Albedo Ratio for a period of two years from delivery.
  - ✓ 10% translucency loss shall not exceed 10% of the products original translucency rating over a period of one year from the date of delivery.
  - ✓ 15% gloss reduction shall not exceed 15% of the products original gloss rating over a period of two years from the delivery date.
- All electrical components (excluding lamps) will be free from failure for two years from date of confirmed installation as recorded on Warranty Registration card. If a warranty card does not exist on file the warranty will be honored from date of shipment.
- Ballasts and Lamps are covered under a three month warranty from date of confirmed installation as recorded on Warranty Registration card. If a warranty card does not exist on file, the warranty will be honored from date of shipment.
- Vinyl film adhesion will be fully maintained for five years from the delivery date.
- For the period of two years beginning on the date of delivery, Blair Companies will replace or repair any of the products or part of the product found by the customer to be defective. This does not include any LED system Components (EPCU or EMC). LED system and components are covered separately under the Exclusive LED Warranty.
- All warranties are under the condition that the final installed product is not defective due to any act or omission on the part of the customer, or any customer nominated sub-suppliers.
- Mechanical properties of metals and composites warranted for three years under normal use and environmental conditions.

# EXCLUSIVE LED WARRANTY

Blair maintains a 2-year warranty on its LED products for materials. We will ship replacement parts under warranty when the failed parts are returned. Labor is covered as follows:

- **Blair Managed Install** – If Blair manages the installation then product and labor will be covered for 2 years.
- **Customer Managed Install with Blair Certified Installer** - If the Customer manages the installation using a Blair Certified Installer then the product is covered for 2 years and the labor warranty is to be negotiated and covered according to the guidelines set by the installer (product would still be covered for 2 years). \*\*Please note: If the failure is found to be solely a product failure then the warranty call will be covered 100% including labor to repair. If the failure is found to be related to an error or negligence by the installer then the costs for product and labor will **not** be covered under Blair warranty.
- **Customer Managed Install with NON Blair Certified Installer** - If the Customer manages the installation using a **Non** Blair Certified Installer then the product and labor will **not** be covered under warranty and all warranty responsibility is between the customer and the installer. All warranty is void.

Warranty does not cover Acts of God.

Blair must be informed of any circumstance on which a claim might be based or the provisions of this Warranty are null and void. No allowance will be made for any expense incurred repairing any defective material or supplying any missing parts except with the express written consent of Blair. Blair reserves the right to repair or replace, in whole or in part. Blair shall not be liable for damages or losses other than replacement of such defective work or materials.

Blair's warranty is expressly made in lieu of any and all other warranties, express or implied. Blair is not obligated to perform Warranty work if Buyer is in default of agreed-upon terms.

**CONTACT BLAIR FOR ALL WARRANTY CLAIMS AT**

**800-581-0709**

[service@blairsign.com](mailto:service@blairsign.com)