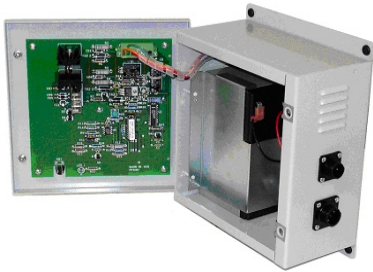




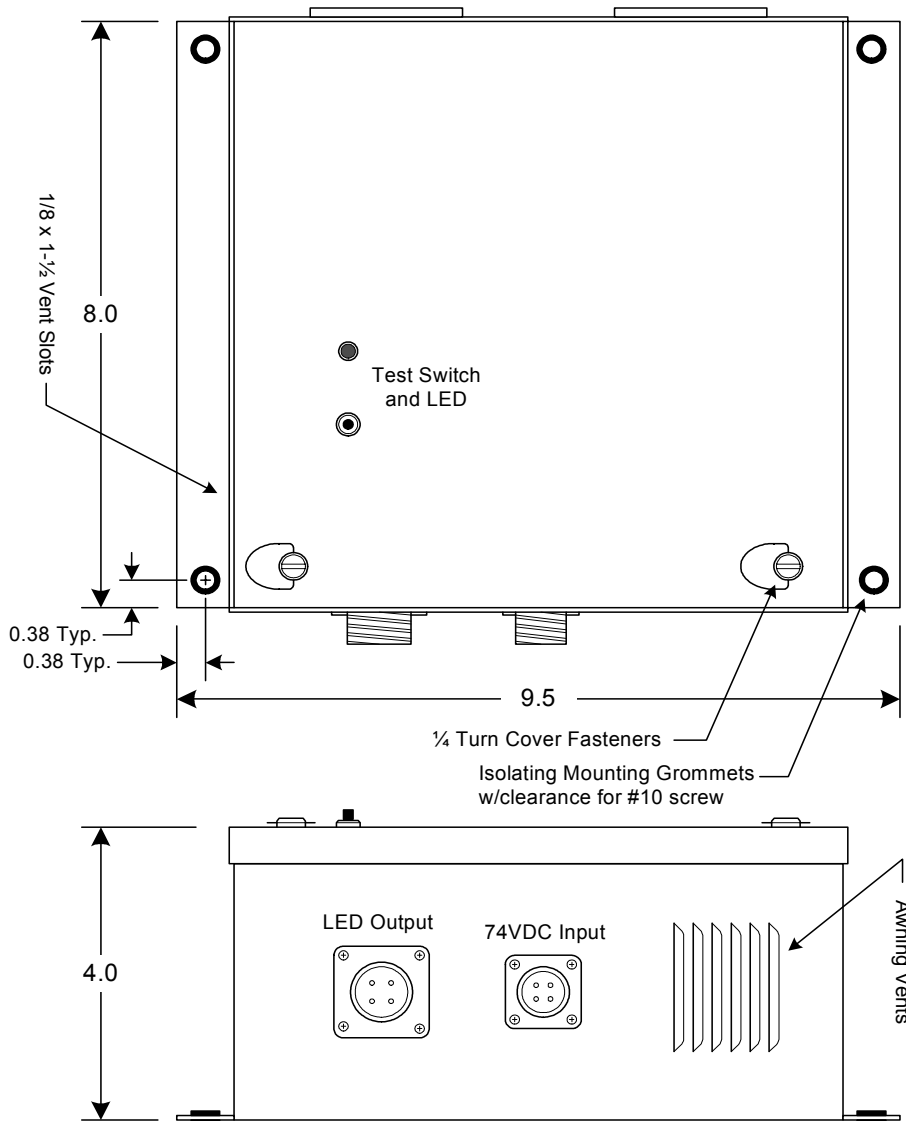
Solid State Timers and Controllers

EPC-13858 Emergency LED Lighting Controller For Rail Systems



The EPC-13858 is a microcontroller based emergency LED lighting controller intended for use in 74V DC rail systems. Monitoring the 74V DC voltage, the EPC-13858 will energize external LEDs using an internal 12V sealed lead acid battery when the 74V supply fails. Should the remote LEDs be energized, the 74V DC operating power must be re-established in order to turn off the LED's. The EPC-13858 provides trickle charging for the internal battery and reports the battery status using the box-mounted Test Switch and status LED, the battery can be fully recharged unless discharged below the 10V minimum voltage.

Mechanical



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Operation

The EPC-13858 monitors the 74V supply, internal battery voltage, and internal battery charging current on a continual basis. Two conditions must be met for the battery to be switched to the LED output:

1. The 74V supply must drop at a rate of at least 20V per second.
2. After the first condition is met, the voltage must stay below 60V for 1/2 second.

When these conditions have been met, the internal battery is switched to the LED output *regardless of the voltage of the battery*. Either of the following conditions must be met for the battery to be disconnected from the LED output:

1. The 74V supply is restored above 60V.
2. The 74V supply stays above 60V for 30 seconds.
- or -
3. The battery is connected to the output for three hours.

The controller trickle charges the internal lead acid battery when the 74V is available. If the unloaded (no LED's connected) battery voltage is below 10VDC, this indicates that the battery has been discharged past its specified capacity and the controller will not attempt to recharge the battery. In this condition the cover mounted LED (battery status LED) will be illuminated 1 second every 20 seconds indicating that the battery *must* be replaced. If the battery voltage is below 5VDC the LED is on continuously indicating that the battery *must* be replaced. If the battery is switched to the LED output due to a 74V supply failure, the battery voltage *must* be at least 8V after the three hour timing period for the controller to be able to disconnect the battery from the LED output.

Pressing the Battery Test Switch performs the following:

1. The LED output is energized for a maximum of 5 seconds.
2. If the battery voltage is below the 10V threshold the battery status LED will flash once per second indicating that the battery *must* be replaced.
- or -
3. If the battery voltage is above the 10V threshold the battery status LED is illuminated continuously.

Releasing the Battery Test Switch returns the battery status LED to either its normal dark state, or it will flash once every 20 seconds indicating that the battery *must* be replaced.

Specifications

Operating Voltage: 60V - 80V DC

Battery Supply: Rechargeable sealed lead acid type 12V DC, Power Sonic PS-1270 or equivalent.

Battery Charging: Trickle charging voltage is 13.5 - 13.8 V, 75mA nominal. Battery can be recharged with higher charging currents unless discharged below 10V.

Operating Temperature: 0°C to +60°C

Construction: Painted and labeled metal enclosure with isolating mounting grommets, ventilation slots\vents, and 1/4 turn fasteners for cover.

Revision Date and ©: June 16, 2006

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