WickLED

PN: 31906 (6-pack)

Document Version: 2.0 • 01 JUN 2006

DESCRIPTION

There is no denying the mesmerizing beauty of a flickering candle, and yet candles – left unattended and in the wrong environment – can become a fire hazard. Not so with electronic candles, and the WickLED gives you what you need to turn an ordinary household candle into its electronic counterpart: a candle with no open flame and that will never burn out.

Simply connect to your favorite controller (*we suggest the Prop-1*), a 12-volt power supply, and some dollar-store candles, and you've got what it takes to create a striking centerpiece or even a remote control chandelier.

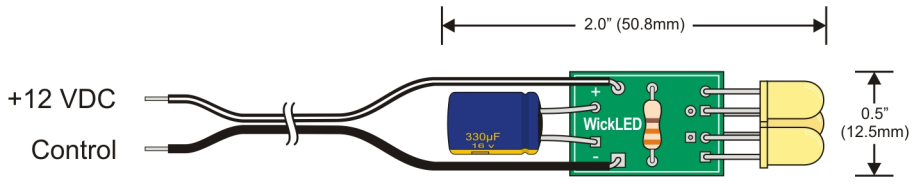
PRODUCT APPLICATIONS

- Props, holiday, theatrical, and museum displays

FEATURES & BENEFITS

- Three yellow LEDs for proper brightness and color
- Integrated capacitor smoothes digital control signal for realistic flickering effect
- Completely assembled and ready to install into your candle
- Pre-wired with a two-conductor control cable – ready to connect to your controller
- Current: 25 mA @ 12 VDC (Do not exceed 12 VDC)
- Small size: 0.5” x 2.0” (12.5mm x 50.8mm)

MECHANICAL

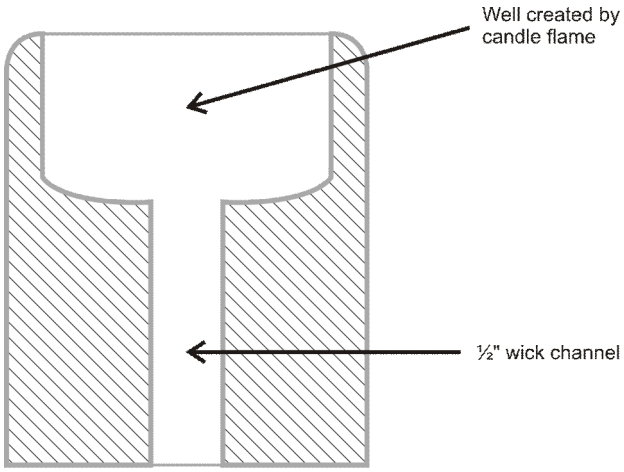


Candle Preparation

For best results the WickLED should be installed into a short, stubby candle. At EFX-TEK we tend to use inexpensive candles from the "dollar store" that are about two to three inches in diameter and four inches tall. Start by placing the candles in an area that will not be disturbed by air movement and light the wicks.

WARNING: *Do not leave burning candles unattended* – to do so could create a fire hazard.

Monitor the candles until the flame has burned a one-inch deep well into the top. Extinguish the candles and allow them to cool. When the candle is cooled completely (wax in well is solid again) use a ½" drill bit to bore a wick channel through the centerline of the candle, removing the normal candle wick. The prepared candle should have a cross-section similar to that in the illustration below.



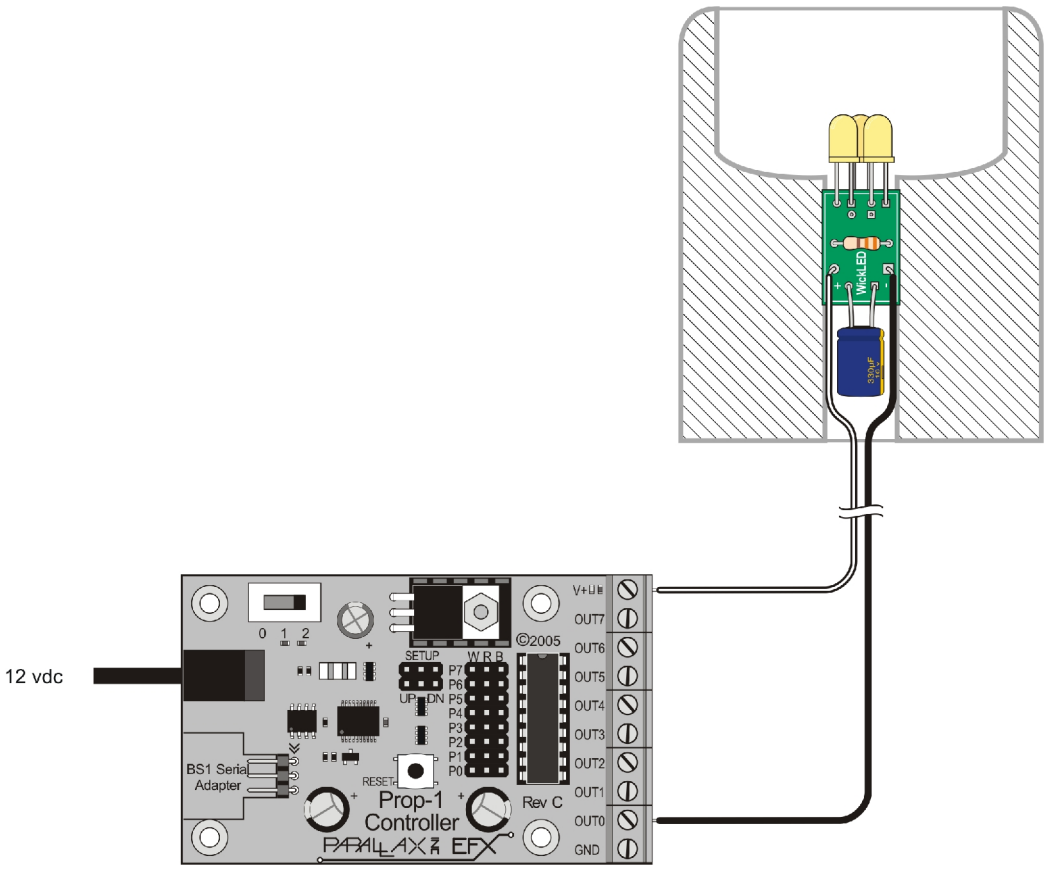
Installing the WickLED

Place the prepared candle upside-down on a table. Insert the WickLED into the bottom candle, LEDs first. Note that the WickLED PCB will cut into the wax of the wick channel; this is the desired effect as it will hold the WickLED firmly in place. Push the WickLED into the candle until the LEDs just emerge from the bottom of the well.

Connections

Connect the striped wire to the positive side of the 12-volt supply, and the solid wire to the switched control output. When using the EFX-TEK Prop-1 controller, the connections are shown in the illustration on the page that follows.

NOTE: Double check all connections before applying power to the WickLED. The circuitry uses an electrolytic capacitor which, if reverse biased, will fail and will adversely affect the operation of the WickLED. Always ensure that the striped wire is connected to the positive side of the power supply (V+ terminal on Prop-1 controller).



Note that the Prop-1 power switch must be set to position 2 for the WickLED(s) to operate. When more than three WickLEDs are connected to the Prop-1, you may want to connect a single common wire (#16, stranded) to the V+ terminal and use a wire-nut to connect the WickLED common (striped) wires to it.

Example Program

The following program creates the necessary random control outputs to create a realistic candle effect with up to six WickLED-equipped candles.

```
' ================================================================================
'
' File....... Candles.BS1
' Purpose.... Light faux candles (with LED wicks)
' Author..... EFX-TEK
' E-mail..... teamefx@efx-tek.com
' Started....
' Updated.... 01 JUN 2006
'
' {$STAMP BS1}
' {$PBASIC 1.0}
'
' ================================================================================

' -----[ Program Description ]---------------------------------------------
'
' This program controls up to six faux candles.
```

```
' -----[ I/O Definitions ]-------------------------------------------------

SYMBOL  Candles         = PINS                  ' candle outputs, P0 - P5

' -----[ Constants ]-------------------------------------------------------

SYMBOL  FlickBase       = 20                    ' flicker base timing

' -----[ Variables ]-------------------------------------------------------

SYMBOL  flicker         = W1                    ' random flicker value
SYMBOL  idx             = B4                    ' loop control
SYMBOL  wicks           = B5                    ' to test for dark
SYMBOL  rate            = B6                    ' flicker rate

' -----[ Initialization ]--------------------------------------------------

Reset:
  DIRS = %00111111                              ' make P0 - P5 outputs
  flicker = 1225                                ' seed random generator

' -----[ Program Code ]----------------------------------------------------

Main:
  FOR idx = 1 TO 3                              ' tumble random generator
    RANDOM flicker
  NEXT

Check_Dark:
  wicks = flicker & %00111111                   ' test value
  IF wicks = %000000 THEN Main                  ' if all off, try again

Flame_On:
  Candles = wicks                               ' update outputs
  rate = flicker & $0F + FlickBase              ' randomize timing
  PAUSE rate                                    ' hold flames
  GOTO Main                                     ' start again
```

Accessories

31101	Prop-1 Controller; *perfect for creating props and displays with WickLEDs*
750-00007	12 VDC, 1 Amp power supply; *provides ample power for the Prop-1 and six WickLEDs*

Additional Applications

For additional ideas and application notes for the WickLED, be sure to visit our web site at the following link:

www.efx-tek.com