

# 8200-8400

## Features

- Crystal Controlled to .005% Accuracy
- Programmable Resolution - 1/10ths, 1/100ths, 1/1000ths, 1/10,000ths
- 8 Digits .375" High, 6 Digits .430 High or 4 Digits .600" High
- Built-in Battery
- Display Hold Memory Feature
- Optional BCD Outputs
- 110/220 - 50 to 400 Hz Power Supply
- 5 and 12 Volts Available for Peripherals

## Application:

This crystal controlled electronic timer is ideal for monitoring tests or elapsed time of events where accuracy and durability are required.

## Description:

The new 8200-8400 electronic timers feature crystal controlled accuracy together with built-in DIP switches for convenient field programming. Tenths, hundredths, thousandths, and ten thousandths of either minutes or seconds can be switch selected with quality assured accuracy to  $\pm 0.005\%$ . In

addition, the 8200-8400 features a built-in 110/220 - 50 to 400 Hz power supply, brilliant red orange LED digits and a built-in battery to protect the data from power failure. Varied and attractive mounting styles, optional BCD output, pulse on; pulse off circuitry and economic pricing make the 8200-8400 a versatile and useful timing instrument.

**Zero Output:** Open collector zero output turns off whenever the counter passes through or idles at zero. Up to 300 milliamps may be switched through this transistor. Optional: BCD only.

**Memory:** When enabled, the memory function "freezes" the display while the timer continues accumulating time. When unlatched, the display instantly advances to the actual total. +5 VDC will enable. Not available on wire lead versions.

## Specifications

**Timing Ranges:** Programmable seconds and 1/10ths, 1/100ths, 1/1000ths, 1/10,000ths or minutes and 1/100ths also available. Other resolutions available-optional.

**Operating Voltages:** 5, 12, 24 VDC. Built-in 110/220 Volts AC 50/400 Hz. AC supplies generate an additional 80 milliamps of 5 or 12 volts VDC for powering peripherals.

## Elapsed Timer with LED Display



(BCD version 10mA maximum).

**Power Consumption:** All 8 digits lit to number 8, 200 milliamps.

**Battery Standby:** Built-in. During power failure, display blanks to conserve energy. Time is stored by built-in battery for up to 1 week. Timer may be stored for 6 months before 24 hours operation is needed for recharge.

**Initiation Circuitry:** Two modes may be "DIP SWITCH" field selected. Mode "C" causes the timer to start and stop by simply closing and opening a relatively bounce free switch. The "JK" pulse on, pulse off mode causes the timer to start and stop with the leading edges of 3-30 VDC signals. All inputs are adaptable to open collector devices. Impedance is 10 K.

**Reset:** 3-30 VDC positive going pulses, open collectors or simple mechanical switches to reset. Impedance is 10 K. Reset triggers on leading edge, and overrides timing.

**Temperature:** +32°F (0°C) to +130°F (54°C).

**Mounting:** Rugged metal bracket for panel mounting. Wall mount and desk mounts also available.

**Termination:** Printed circuit board edge connector supplied (standard). 8" wire leads or terminal block optional.

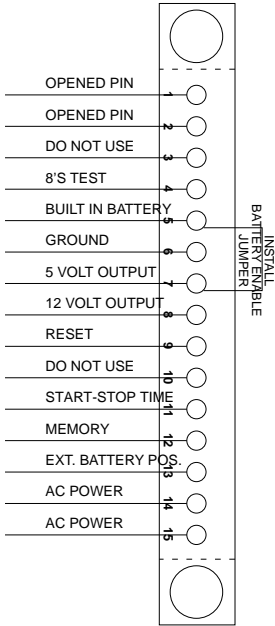
**BCD Output:** Full parallel TTL compatible, tristate outputs capable of driving 2 standard TTL loads. These 5 volt levels are fully bus compatible easing interface with a variety of printers and data collection modules.

**Zero Output:** Open collector zero output turns off whenever the counter reads zero. This transistor is capable of switching 300 milliamps. (optional) BCD version only.

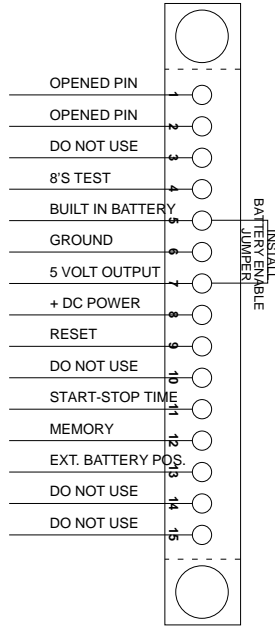
**Memory:** When enabled, the memory function "freezes" the display, while the counter continues accepting pulses. When unlatched, the display instantly advances to the actual total. +5 VDC will enable. Not available on wire lead versions.

**Terminal Designations:**

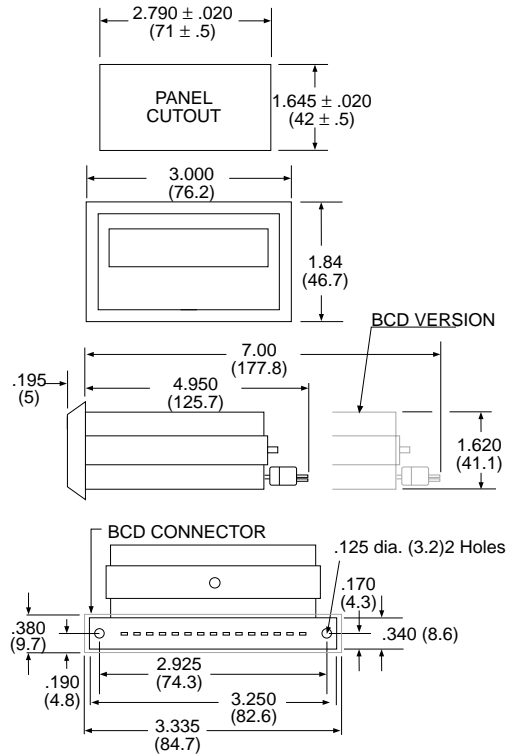
**DC PULSES/AC POWER**



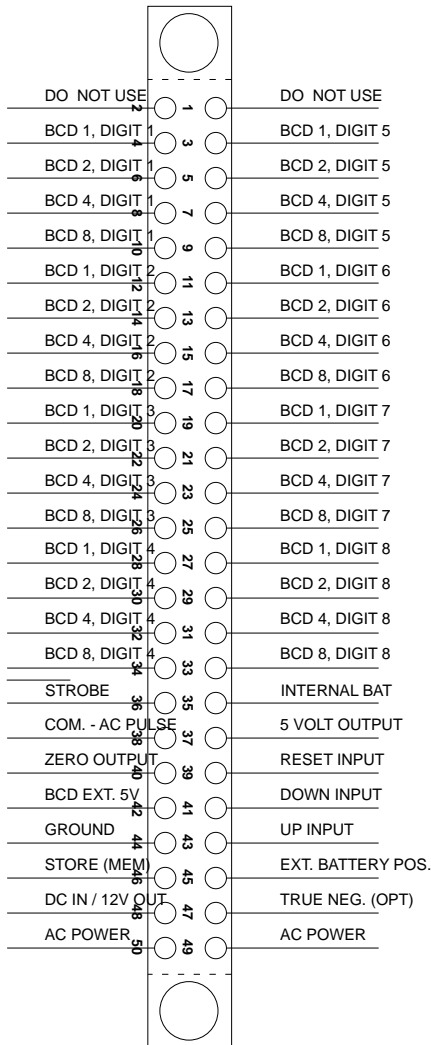
**DC PULSES/DC POWER**



**Mounting:**



**BCD CONNECTIONS**



**How To Order**

**EXAMPLE: 8 2 5 0 JK(5) P E 2 BCD**

**Digits**

2, 4, 6, 8

**Operation**

2 = Programmable (specify) - sec. & 1/10ths, 1/100ths, 1/1000ths, 1/10,000ths or minutes and 1/100ths.  
 3 = Hours, minutes, seconds - 9999, 59, 59 |  
 4 = Minutes, seconds 1/100ths - 59, 59, 99 (six .375" digits)

**Operating Voltage**

7 = 5 VDC (must be regulated ± 5%)  
 1 = 12 VDC  
 2 = 24 VDC  
 5 = 110 VAC - 50 to 400 Hz  
 6 = 220 VAC - 50 to 400 Hz

**Size of Digits**

0 = .375" (eight max.)  
 1 = .430" (six max.)  
 2 = .600" (four max.)

**Initiate Timing**

C ( ) = Switch closure or 3-30 VDC levels (specify voltage)  
 JK ( ) = Pulse on, pulse off (specify voltage - i.e. JK(5) = 5V)

**Mounting**

P = Panel

**Termination**

E = Edge connector (supplied) standard  
 T = Terminal block (not on BCD)

**Reset**

2 = Remote  
 3 = Panel and remote

**Options**

BCD: Parallel TTL compatible - tristate  
 ZO: Zero output (BCD only)