



- FEATURES**
- >PRESETTABLE/SIX DECADES
  - >BUILT-IN COMPARATOR
  - >MULTIPLEXED BCD
  - >3T PARALLEL BUFFERED BCD
  - >LEADING ZERO BLANKING
  - >ZERO DETECTION-DISPLAY HOLD
  - >SELECTABLE TIME BASE
  - >UP/DOWN TIMER COUNTER
  - >CASCADE CARRY OUT

**DESCRIPTION**

The Model 414 is a multi-purpose Up/Down Counter/Timer, Frequency/Rate Counter. In the Frequency Mode and Timer Mode, the time base is selectable by two internal microswitches. SW B selects one of the eight primary frequencies. SW A divides the selected primary frequency by increments of times 10, from 1 to 10 million. (See table under specifications.)

**DISPLAY:** Standard display is 6 digits 0.33" high. For applications requiring larger displays, a 5 Digit 0.6" high is available. In this case, the MSD is omitted. Colors other than Red are also available on request.

**POWER SUPPLY:** The 414 operates from 12Vdc +/- 10% at 180mA; an optional internal 115/230 VAC 50-60 Hz Module is available. When "3T" BCD is selected, the Power Supply must be 12Vdc or external VAC (see ordering information).

**TRISTATE BCD:** Full parallel with input and output enable logic controls for easy "Bussing" to other systems. This is an option in addition to the standard multiplexed BCD feature.

**LATCH/RELAY:** An internal but uncommitted latch enhances the instrument capabilities to automatically perform functions such as: Stop, Reset, Hold, Display Hold, Reverse Count, and more. The relay driven from the latch interfaces to the real world with its 1Amp contacts. Relay is not available, if Frequency Mode is used.

**UP/DOWN/CLOCK:** The 414 can be ordered as a 100 Hour Clock (Display Option 2) or a 60 minute clock, (Display Option 3). The time base is generated internally and is set for 1 second for the 100 Hour Clock and 0.01 seconds for the 60 minute clock.

**HOUSING:** High impact black cycolac 94 V0 U.L. rating front matte finish.

**SWITCHES:** Switches for the Limit/Counter Preset are of the Positive BCD Type with common anode diodes built-in. A set consists of 6 switches with end plates, front is front mount, rear is rear mount.

**TIME BASE:** Time Base is given by the following formula:

$$\text{Time Base} = \frac{\text{Desired Display}}{\text{Input Frequency}}$$

**NOTE:** Specify time base and function (ie 1 sec., frequency) or select them internally per table.

**SPECIFICATIONS AT 25°C**

Input Frequency-----	1 MHZ Maximum
Count Pulse Width-----	400nS. Minimum
Hold Pulse Width-----	3µS. Minimum
Up/Down Set-Up Time-----	1µS. Minimum
Reset Pulse Width-----	3µS. Minimum
*Zero Pulse Width-----	>5µS
*Carry Pulse Width-----	>5µS
*Equal Pulse Width-----	>5µS
Preset Pulse Width-----	>500µS
Power Supply-----	12 +/- 10% Vdc
Power Consumption-----	180mA
Operating Temperature-----	-0 to +60°C
Storage Temperature-----	-20 to +85°C
*Limited to 200KHz Input Frequency	

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**ORDER INFORMATION**

MODEL 414 X X X

<b>SWITCHES/RELAY</b>	!	!	!	<b>POWER SUPPLY/BCD</b>
--0--None-----	!	!	!	!-0-12Vdc Oper./None-----
--1--1 Set Front-----	!	!	!	!-1-115/230 VAC/None-----
--2--2 Sets Front-----	!	!	!	!-2-12Vdc Oper./3T BCD-----
--3--1 Set Rear-----	!	!	!	!-4-Ext. Pwr. w/3T BCD-----
--4--2 Sets Rear-----	!	!	!	
--5--Relay Only-----	!	!	!	
--6--Relay/1 Set Front--	!	!	!	<b>DISPLAY TYPE</b>
--7--Relay/2 Sets Front!	!	!	!	!----0----0.33" Red-----
--8--Relay/1 Set Rear--	!	!	!	!----1----0.6" 5 Digit Only---
--9--Relay/2 Sets Rear--	!	!	!	!----2----99:59:59/.33"-----
Connectors Included	!	!	!	!----3----59:59.99/.33"-----

**SPECIFICATIONS AND PRICE SUBJECT TO CHANGE WITHOUT NOTICE**