

## FEATURES

- Presettable/Six Full Decades
- Built-in Comparator
- Multiplexed BCD
- Tristate Parallel Buffered BCD Latched
- Leading Zero Blanking
- Zero Detection — Display Hold
- External Decimal Point
- Synchronous Up/Down Operation
- Cascade Carry out
- Automatic Stop
- Time Up or Down From 10 $\mu$ s to 10 $^6$ S
- 59:59.99 & 99:59:59 Formats

## With Preset, Limit & Auto Stop



## SELECTABLE FREQUENCIES (Timers Only)

| Sw.# | Resolution            | Full Scale                    |
|------|-----------------------|-------------------------------|
| 1    | 100KHz ... 10 $\mu$ s | 10 Seconds                    |
| 2    | 10KHz ... 100 $\mu$ s | 100 Seconds                   |
| 3    | 1 KHz ... 1ms         | 1000 Seconds                  |
| 4    | 100Hz ... 10ms        | 10,000 Seconds                |
| 5    | 10Hz ... 100ms        | 100,000 Seconds               |
| 6    | 1 Hz ... 1 Sec.       | 1,000,000 Seconds             |
| 7    | 0.1Hz ... 0.1 Sec.    | 10,000,000 Seconds (116 days) |

*10 $\mu$ s*

## DESCRIPTION

Since the 402 uses the same main frame as the 400, it offers all the capabilities of it (see Model 400 on pages 18 & 19). In addition, this model contains an internal XTL Oscillator with base frequency of 100KHz (others available), 6 decade dividers divide this frequency down to 0.1Hz and a seven position DIP Switch selects the desired frequency.

XTL Frequency can be selected from any of these seven (only one at a time). Clock Models are factory wired for desired resolution. Since the frequency is internally generated, no external connection to count input (13A) is allowed. Other than this, all other connections are identical to Model 400. (See Terminal Description Section on page 18).

Of course, when the Auto Stop & or Relay are used, they operate identical, as in the Model 400.

## SPECIFICATIONS AT 25°C

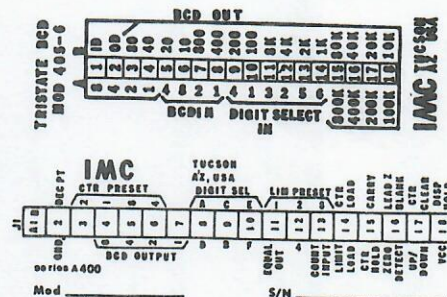
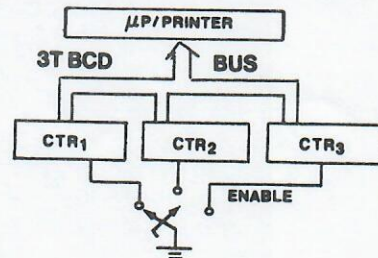
|                       |                       |
|-----------------------|-----------------------|
| Count Pulse Width     | 3 $\mu$ s Minimum     |
| Up/Down Set-up Time   | 1 $\mu$ s Minimum     |
| Reset Pulse Width     | 3 $\mu$ s Minimum     |
| Zero Pulse Width      | 5 $\mu$ s Min. Note 1 |
| Carry Pulse Width     | 5 $\mu$ s Min. Note 1 |
| Equal Pulse Width     | 5 $\mu$ s Min. Note 1 |
| Preset Pulse Width    | 500 $\mu$ s Min.      |
| Power Supply          | 12 $\pm$ 10% Vdc      |
| Power Consumption     | 2 Watts Maximum       |
| Operating Temperature | 0 to +60°C            |
| Storage Temperature   | -20 to +85°C          |
| Time Base             | 100KHz Crystal        |
| Accuracy              | $\pm$ 0.01%           |
| Stability             | $\pm$ 0.001%          |
| Aging Rate            | 5 PPM/Month           |

Note 1: Maximum Input Frequency: 200KHz

## TRISTATE BCD OPTION

When this option is ordered, it is internally mounted; however, due to pin-out limitations its inputs must be externally connected from the lower connector. Simply connect BCD Output (4-7A) of lower connector to BCD Input (5-8A) of upper connector and digit select D1-D6 (8, 9 & 10 A & B) of lower connector to D1-D6 (9-14A) of upper connector. Since its output is of the "3T" Type with memory, when Pin 2B (Output Disable) of upper connector is grounded (Logic Zero), the outputs will follow the logic state of the input, when this pin is connected to Vcc (not open), the outputs will be forced to Hi Output Impedance (Tristate), *Input Disable* Pin 1B (Memory) when grounded will allow input (BCD) information to be transferred to the outputs. When connected to Vcc (not open) the outputs will retain the last information. To assure complete data transfer Pin 1B can be "AND" gated with D1 (Pin 10A) which is the last in the scanning cycle.

## LATCH See MODEL 400 for Description.



## ORDERING INFORMATION

MODEL 402 X X X

### SWITCHES/RELAY

- 0 ... None
- 1 ... 1 Set Front
- 2 ... 2 Sets Front
- 3 ... 1 Set Rear
- 4 ... 2 Sets Rear
- 5 ... Relay Only
- 6 Relay & 1 Set Front
- 7 Relay & 2 Sets Front
- 8 Relay & 1 Set Rear
- 9 Relay & 2 Sets Rear

### POWER SUPPLY/BCD

- 0 ... None (12 Vdc Operation)
- 1 ... 115/230 VAC (see page 29)
- 2 ... 3T BCD (12Vdc Operation)
- 3 ... 3TBCD With External Power  
Pack see page 29

### FUNCTION/DISPLAY

- 0 ... Timer/.33"
- 1 ... Timer/.50" 5 Digits Only
- 2 ... 99:59:59/.33"
- 3 ... 59:59.99/33"

See page 29 for Thumbwheel Switches.

## REED RELAY OUTPUT

When this is specified a reed relay is added, allowing the 402 to interface with other solid relays or electromechanical for Process Control purposes.

## SPECIFICATIONS

|                |                   |
|----------------|-------------------|
| Form           | SPST (N.O.)       |
| Contact Rating | 5 Watts Resistive |
| Energize Time  | 1.5ms             |
| Release Time   | 1.0ms             |