CTF5

Features
• 5 Digit Counter, Timer or Frequency Meter
• Input Scaling (0.001 to 9.999) Multiplier
• Bright LED Display .295” (7.5 mm) High
• Count & Preset Range of -19999 to 99999
• Add or Subtract Count Control
• AC or DC Operation
• 10 Year Data Memory
• 24VDC to Power Peripherals

Applications:
Preset batch counting, length measuring, simple positioning, time control, speed control, rate control.

Description:
The CTF5 is a LED preset counter, timer or frequency meter. The following features are programmable: operating mode (output at 0 or preset, with or without autoreset), decimal point, polarity of input (NPN or PNP), output signal latched or timed, gate time (frequency meter), time resolution (hrs., min., sec; timer)

Inputs:
Input A, Input B: Count inputs. Max. count speed is 30 Hz or 10 kHz separately selectable for both inputs.
Gate: Voltage level gate input;
Counter & Freq. Mode - inhibits counts when activated.
Timer Mode - Starts timing when activated.
Reset: Edge triggered reset input; it is connected in parallel with the front reset key and resets the counter to 0 (add) or preset (sub).
Latch: Voltage level input for display hold; when activated, the display “freezes” the current count value while counting continues in the background. The display updates when this input is de-activated.
Key: Voltage level keyboard lock input; when activated, all front keys are disabled.

Selection of Basic Function:
1. Impulse Counter
2. Frequency Meter
3. Timer

IMPULSE COUNTER
Decimal Point: 0 to 3 (for display only)
Scaling Multiplier: 0.001 to 9.999
Output Signal: Timed signal (0.01 to 99.98 sec) or Latched signal (00.0) selectable. (99.99 setting gives inverted latched output- output activates at power on and deactivates when preset is reached)

Polarity: Negative (NPN) or positive (PNP) polarity of inputs. Polarity selected applies to all inputs.

Input Modes:
E1: One count input (Input A) and one count direction input (Input B). If direction input is open, the counter adds, if it is activated the counter subtracts.
E2: Separate inputs, one up input (Input A) & one down input (Input B).
E3: Quadrature input, accepts two pulse inputs 90° (±15%) out of phase for direction control.
E4: Quadrature (x2) input, counts leading and falling edge of input A.

FREQUENCY METER
Gate: Gate time selectable from (0.01 to 99.99 sec) All pulses counted during this time will be displayed for one gate time (i.e. gate time of 1 will display Hz).
Decimal Point: 0 to 3 (for display only)
Polarity: Negative (NPN) or positive (PNP) polarity of inputs. Polarity selected applies to all inputs.
Input Modes: As described under Impulse Counter.
Scaling Multiplier: 0.001 to 9.999
Output Signal: Output activates for selected time (0.01 to 99.98 sec) when display reaches or exceeds preset value; If output time setting is 00.00, the output will activate when display reaches or exceeds the preset and deactivates when below preset. (99.99 output setting gives run time control latched output-out output activates at power on and deactivates when preset is reached)

TIMER
Time Resolutions: Times in sec., min. or hrs. with resolution in 0.001, 0.01, 0.1 or 1.0 (depending on decimal).
Polarity: Negative (NPN) or positive (PNP) polarity of inputs. Polarity selected applies to all inputs. (Gate controls timing)
Output Signal: Timed signal (0.01 to 99.98 sec) or Latched signal (00.0) selectable. (99.99 output setting gives run time control latched output output activates only while timer is running and deactivates when preset is reached.)
Specifications:
Operating Voltage: (All voltages ± 10%)
A: 115VAC 50/60Hz  
B: 220VAC 50/60Hz  
C: 11 to 30 VDC  
D: 24VAC 50/60Hz
Power Consumption:
DC: 100 mA max.  
AC: 4 VA max.
Display: 7 segment LED 5 digit 0.295" (7.5 mm) high.
Count Speed: 30 Hz or 10 kHz (7.5 kHz for input mode E4 “Quad x2”); 1 kHz for autoreset without count loss (600 Hz for input mode E4 “Quad x2”) separately dip-switch selectable for both inputs.
Min. Pulse width for Control Inputs: 5 msec
Input Impedance: Approx. 10 kOhm
Input Sensitivity:
   Logic “0”: 0 to 1 VDC
   Logic “1”: 4 to 30 VDC
Control Output:
Relay: SPDT 3A relay, 250 VAC / 300 VDC max. Switching current for DC min. 30 mA.
Opto-Isolated Output: Open collector and emitter.
   Max. Voltage: 30 VDC
   Max. Current (ON state): 5 mA @ 0.4 V drop; 15 mA @ 2.0 V drop
Response Time:
   Relay: Approx. 6 msec
   Opto-Isolated: Approx. 1 msec
Output Power (AC powered units): 24 VDC -40% / +15%, 80mA, unregulated
Memory: min. 10 years or 10^6 memory cycles
Operating Temperature: 32°F to +122°F (0°C to +50°C)
Noise Immunity: EN 55011 class B and prEN 50082-2
Storage Temperature: -13°F to +158°F (-25°C to +70°C)
Weight: Approximately 9 oz. (240g) (AC version with relay)
Protection: NEMA 4 /IP65 (front)
Approvals: UL File# E167238, CE Pending

Terminal Designations:

AC Supply Wiring
<table>
<thead>
<tr>
<th>TB-1 Term. #</th>
<th>Description</th>
<th>Term. #</th>
<th>Designation</th>
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<tbody>
<tr>
<td>1</td>
<td>+24 VDC Output</td>
<td>1</td>
<td>INPUT A</td>
</tr>
<tr>
<td>2</td>
<td>0 VDC (Ground)</td>
<td>2</td>
<td>INPUT B</td>
</tr>
<tr>
<td>3</td>
<td>Relay - C (Opto Emitter)</td>
<td>3</td>
<td>GATE INPUT</td>
</tr>
<tr>
<td>4</td>
<td>Relay - NO</td>
<td>4</td>
<td>RESET</td>
</tr>
<tr>
<td>5</td>
<td>Relay - NC (Opto Collector)</td>
<td>5</td>
<td>LATCH</td>
</tr>
<tr>
<td>6</td>
<td>AC Input</td>
<td>6</td>
<td>KEY</td>
</tr>
<tr>
<td>7</td>
<td>AC Input</td>
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DC Supply Wiring
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<th>TB-1 Term. #</th>
<th>Description</th>
<th>Term. #</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Connection</td>
<td>1</td>
<td>INPUT A</td>
</tr>
<tr>
<td>2</td>
<td>No Connection</td>
<td>2</td>
<td>INPUT B</td>
</tr>
<tr>
<td>3</td>
<td>Relay - C (Opto Emitter)</td>
<td>3</td>
<td>GATE INPUT</td>
</tr>
<tr>
<td>4</td>
<td>Relay - NO</td>
<td>4</td>
<td>RESET</td>
</tr>
<tr>
<td>5</td>
<td>Relay - NC (Opto Collector)</td>
<td>5</td>
<td>LATCH</td>
</tr>
<tr>
<td>6</td>
<td>(+) 11-30 VDC Supply</td>
<td>6</td>
<td>KEY</td>
</tr>
<tr>
<td>7</td>
<td>(-) 0VDC Supply (Ground)</td>
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</table>

Dimensions:

Adaptor Bezels 1, 2 & 3 Supplied

How To Order:
EXAMPLE CTF5 A 1
Series
Operating Voltage
A = 115 VAC  
B = 230 VAC  
C = 11 to 30 VDC  
D = 24 VAC
Outputs
0 = Relay  
1 = Opto-Isolated collector and emitter

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