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DISCONTINUED SERIES DISCONTINUED SERIES DISCONTINUED

CTX SERIES DIGITAL READOUT COUNTDOWN TIMER WITH LCD DISPLAY

FEATURES

- C/MOS Microcontroller Circuitry
- Tactile Pushbutton Timing Adjustments
- Time Delays to 9999 Minutes
- 0.5% Repeat Accuracy
- 1/2 Inch, 4 Digit LCD Display with Colon
- Can Be Used In Direct Sunlight
- Conformally Coated to Withstand Humidity
- UL/cUL Pending

SPECIFICATIONS

1. Time Delay.

- 1.1 Type: C/MOS microcontroller circuitry
- 1.2 Adjustment style: Tactile pushbuttons
- 1.3 Range Maximum

<u>CTX 1</u>	<u>CTX 2</u>
99:59 MIN:SEC/99:59 HRS:MIN	9999 SEC/9999 MIN
9999 SEC/9999 MIN	999.9 SEC/999.9 MIN

- 1.4 Repeat accuracy: \pm 0.5% under fixed conditions
- 1.5 Setting accuracy: \pm 1%
- 1.6 Recycle time: 500 milliseconds
- 1.7 Time delay vs. voltage and temperature: \pm 2%

2. Input.

- 2.1 Operating voltage: 24, 120 & 230 VAC, 12, 24 & 36 VDC
- 2.2 Tolerance: \pm 15% of nominal
- 2.3 Frequency: 50 - 60 Hertz

3. Configuration Jumpers.

<u>CTX 1</u>	<u>CTX 2</u>
Time Format	Time Format
MIN:SEC xx:xx	MIN. xxxx
HRS:MIN xx:xx	SEC. xxxx
SEC. xxxx	MIN. xxx.x
MIN. xxxx	SEC. xxx.x

4. Pushbuttons.

- SW1 = Digit Select
- SW2 = Digit Increment
- SW3 = Start / Stop

5. Output.

- 5.1 Type: Solid state
- 5.2 Form: SPST, normally open
- 5.3 Rating: 200 milliamperes @ 36 VDC / 240 VAC
- 5.4 Visual: 4 - Digit liquid crystal display with colon

6. Protection.

- 6.1 Transient: (10/1000 uSec pulse): 11 Joules
- 6.2 Polarity: DC units are reverse polarity protected

7. Mechanical.

- 7.1 Mounting: #6 screw clearance (4 places)
- 7.2 Termination: (1) 4 conductor, .100 pitch pin header connector
- 7.3 Style: Open board / panel mount (see recommended cutout dimensions)

8. Environmental.

- 8.1 Operating temperature: -20°C to +70°C
 - 8.2 Storage temperature: -25°C to +80°C
- Note: OK for use in direct sunlight.

MODE OF OPERATION - COUNTDOWN TIMER

Setting Time Delay

1. Select the digit to be changed by repeatedly pressing the "Digit Select" button.
2. Increment the selected digit by repeatedly pressing the "Digit Increment" button.
3. Pressing the "Start/Stop" button will store the new time and exit the "Time Setting" mode.

Note: When the pushbuttons have been inactive for greater than 30 seconds, the display will revert back to the last saved time.



Control Operation

Initial application of input power to the control restores the last set time setting and the output is de-energized.

Power must be applied to the control at all times, prior to and during timing.

Momentary pressing of the "Start/Stop" button will cause the load to energize and the countdown timer to start timing.

- If no further action is taken, the countdown timer will count down to zero, the load will de-energize and the time delay setting will revert back to the last time set.
- If the "Start/Stop" button is pressed for less than five seconds, while the load is energized, the load will de-energize and the timing will be suspended until the "Start/Stop" button is pressed again. There is no limit to the number of times this action can occur in a given cycle.
- If the "Start/Stop" button is pressed for greater than five seconds, while the load is energized, the load will de-energize and the time delay setting will revert back to the last time set.

Cycle Counter and Hour Meter

Each time a new timing cycle is initiated, the "Cycle Count" and the total time the load is energized (in minutes or hours [see format configuration]) are accumulated in non-volatile memory.

To Display Count

Press and hold the "Digit Select" button for greater than ten seconds while NOT in timing cycle will cause the display to show the current "Cycle Count" and the left most decimal point in the display will flash.

To Display Hour-Count

While in the "Cycle Count" display mode, press the "Digit Increment" button and the display will toggle to the "Hour Count" indicating the total accumulated time the load has been energized since installed ("Hour Meter" mode). The right most decimal point will flash. Pressing of the "Digit Increment" button will cause the display to toggle between "Cycle Count" and "Hour Meter" mode.

To End Cycle / Hour Count Display Mode

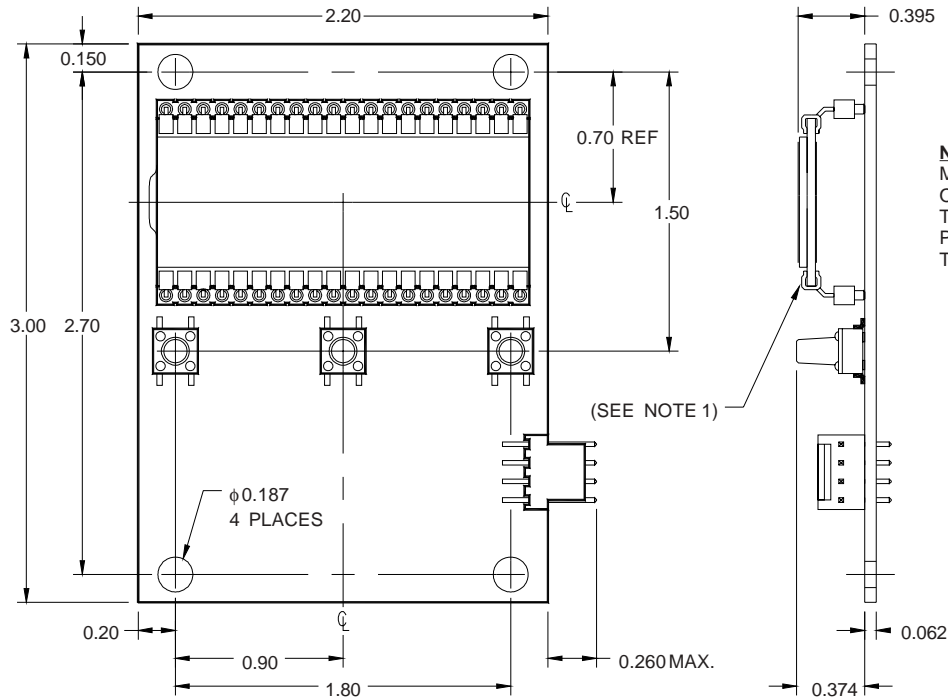
Pressing the "Start/Stop" button at any time will also cause the display to revert back to the last set time and ready the control for a new timing cycle. When the pushbuttons have been inactive for greater than 30 seconds, the display will automatically revert back to the last set time and the control will be ready for a new timing cycle.

Note: Shorting reset pads labeled "R" on the P.C. Board during power-up will reset the "Cycle Count" and "Hour Meter" to "0".

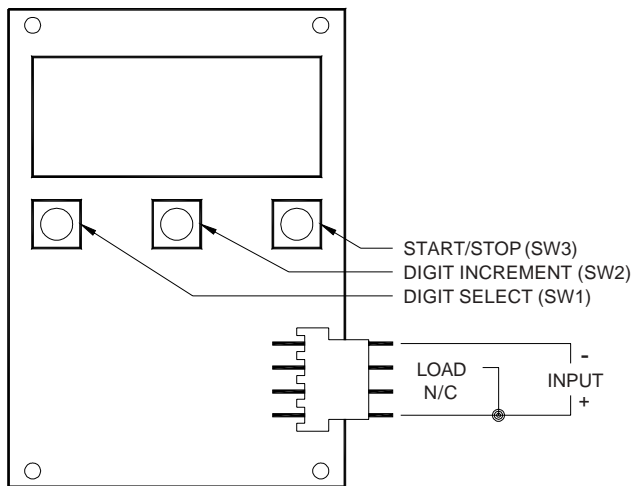
Removal and re-application of input power will reset time control.

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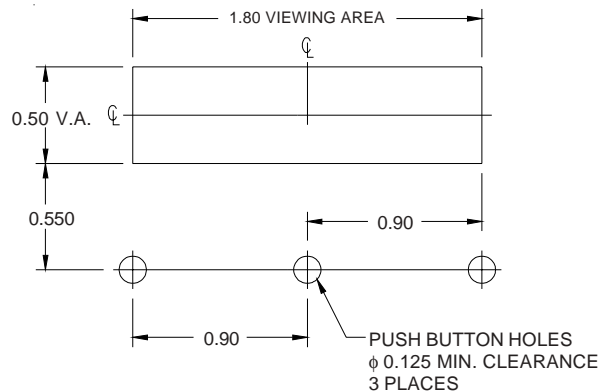
DIMENSIONS



CONNECTION DIAGRAMS



RECOMMENDED PANEL LAYOUT



ORDERING INFORMATION

SERIES	INPUT VOLTAGE	TIME RANGE FORMAT
CTX	1 - 12 VDC 2 - 24 VDC 4 - 24 VAC 5 - 120 VAC 6 - 230 VAC 9 - 36 VDC	1 - 99:59 MIN:SEC / 99:59 HRS:MIN 9999 SEC. / 9999 MIN. 2 - 9999 SEC. / 9999 MIN. 999.9 SEC / 999.9 MIN.



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FEATURES

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- 1/2 Inch, 4 Digit LCD Display with Colon
- Can Be Used In Direct Sunlight
- Conformally Coated to Withstand Humidity
- UL/cUL Pending

SPECIFICATIONS

1. Time Delay.

- 1.1 Type: C/MOS microcontroller circuitry
- 1.2 Adjustment style: Tactile pushbuttons
- 1.3 Range: Maximum
 CTXR_2: 9999 SEC/9999 MIN
 999.9 SEC/999.9 MIN
- 1.4 Repeat accuracy: $\pm 0.5\%$ under fixed conditions
- 1.5 Setting accuracy: $\pm 1\%$
- 1.6 Recycle time: 500 milliseconds
- 1.7 Time delay vs. voltage and temperature: $\pm 2\%$

2. Input.

- 2.1 Operating voltage: 24, 120 & 230 VAC, 12, 24 & 36 VDC
- 2.2 Tolerance: $\pm 15\%$ of nominal
- 2.3 Frequency: 50 - 60 Hertz

3. Configuration Jumpers.

CTXR_2: Time Format	JB1	JB2
MIN. xxxx	0	0
SEC. xxxx	0	1
MIN. xxx.x	1	0
SEC. xxx.x	1	1

4. Pushbuttons.

- SW1 = Digit Select
- SW2 = Digit Increment
- SW3 = Program

5. Output.

- 5.1 Type: Solid state
- 5.2 Form: SPST, normally open
- 5.3 Rating: 200 milliamperes @ 36 VDC / 240 VAC
- 5.4 Visual: 4 - Digit liquid crystal display with colon

6. Protection.

- 6.1 Transient: (10/1000 uSec pulse): 11 Joules
- 6.2 Polarity: DC units are reverse polarity protected

7. Mechanical.

- 7.1 Mounting: #6 screw clearance (4 places)
- 7.2 Termination: (1) 4 conductor, .100 pitch pin header connector
- 7.3 Style: Open board / panel mount (see recommended cutout dimensions)

8. Environmental.

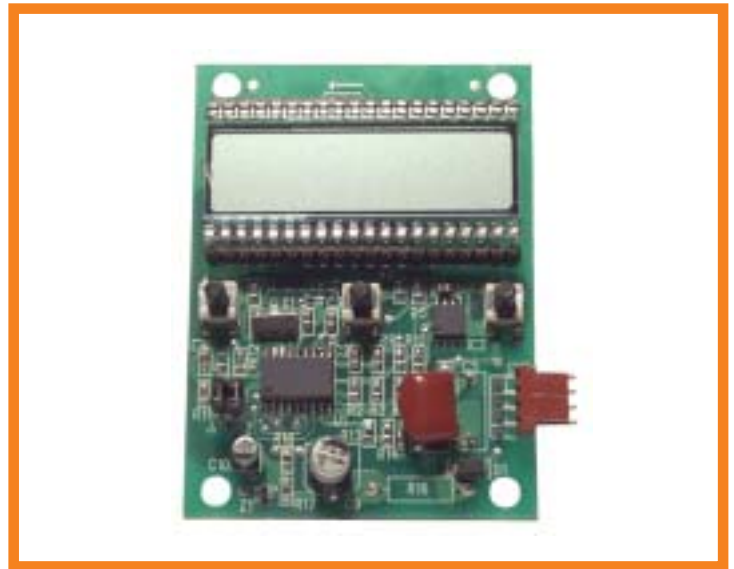
- 8.1 Operating temperature: -20°C to $+70^{\circ}\text{C}$
 - 8.2 Storage temperature: -25°C to $+80^{\circ}\text{C}$
- Note: OK for use in direct sunlight.

MODE OF OPERATION - COUNTDOWN RECYCLE TIMER

Setting Time Delay

1. Press the "PROG" button for >5 seconds to enter the "Time Setting" mode. The "ON" time will be displayed (All decimal points will turn ON) and the output contact will be de-energized.
2. Select the digit to be changed by repeatedly pressing the "Digit Select" button. After the last digit is selected the next button press will toggle to the "OFF" time setting (All decimal points will turn OFF).

CTXR SERIES DIGITAL READOUT COUNTDOWN RECYCLE TIMER WITH LCD DISPLAY



After the last digit is selected the next button press will toggle back to the "ON" time setting. This process will continue as long as the "Digit Select" button is repeatedly pressed.

3. Increment the selected digit by repeatedly pressing the "Digit Increment" button.
4. When changing the "ON" time, all the decimal points are displayed. When changing the "OFF" time, none of the decimal points are displayed.
5. Pressing the "PROG" button will store the new time and exit the "Time Setting" mode.

Note: When the pushbuttons have been inactive for greater than 30 seconds, the display will revert back to the last saved time.

Control Operation

CTXR_12 (ON/OFF Recycle)

Initial application of input power to the control restore the last set time setting. The output energizes and the "ON" time delay begins. If no further action is taken, the countdown timer will count down to zero, the load will de-energize and the "OFF" time delay will begin. At the conclusion of the "OFF" time delay, the output will energize and a new "ON" cycle will begin.

CTXR_22 (OFF/ON Recycle)

Initial application of input power to the control restores the last set time setting. The output is de-energized and the "OFF" time delay begins. If no further action is taken, the countdown timer will count down to zero, the load will energize and the "ON" time delay will begin. At the conclusion of the "ON" time delay, the output will de-energize and a new "OFF" cycle will begin.

If the "PROG" button is pressed for less than five seconds, timing will be suspended until the "PROG" button is pressed again. At this point, timing resumes. There is no limit to the number of times this action can occur in a given cycle.

Cycle Counter and Hour Meter

Each time a new timing cycle is initiated, the "Cycle Count" and the total time the load is energized (in minutes or hours [see format configuration]) are accumulated in non-volatile memory.

To Display Cycle Count

Press and hold the "Digit Select" button for greater than ten seconds while in "Time Setting" mode will cause the display to show the current "Cycle Count" and the left most decimal point in the display will flash.

To Display Hour-Count

While in the "Cycle Count" display mode, press the "Digit Increment" button and the display will toggle to the "Hour Count" indicating the total accumulated time the load has been energized since installed ("Hour Meter" mode). The right most decimal point will flash. Pressing of the "Digit Increment" button will cause the display to toggle between "Cycle Count" and "Hour Meter" mode.

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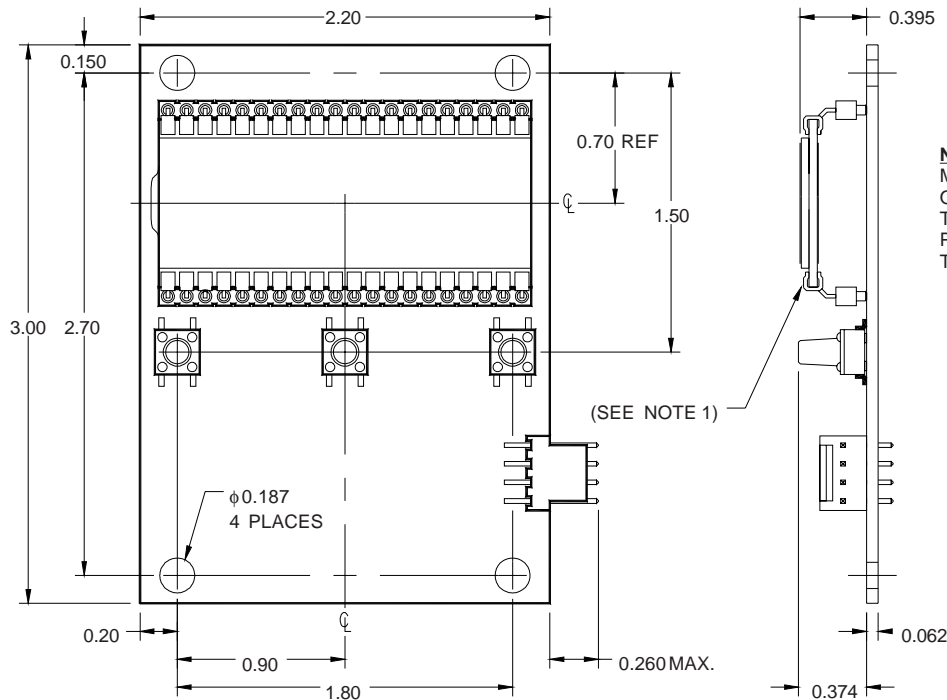
To End Cycle / Hour Count Display Mode

Pressing the "PROG" button at any time will also cause the display to revert back to the last set time and ready the control for a new timing cycle. When the pushbuttons have been inactive for greater than 30 seconds, the display will automatically revert back to the last set time and the control will be ready for a new timing cycle.

Note: Shorting reset pads labeled "R" on the P.C. Board during power-up will reset the "Cycle Count" and "Hour Meter" to "0". Removal and re-application of input power will reset the control.

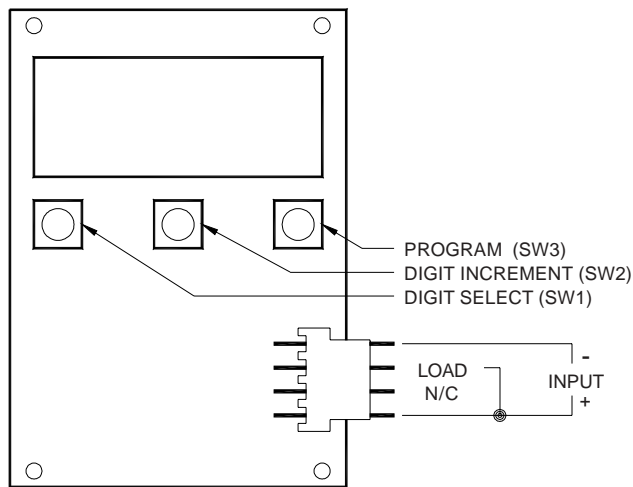
DISCONTINUED

DIMENSIONS

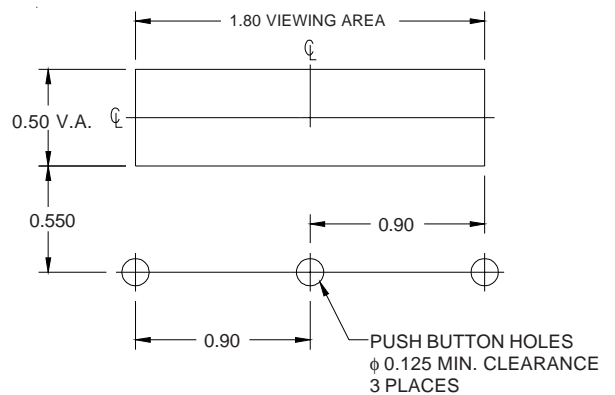


NOTE 1: IF THIS CONTROL IS MOUNTED TO A METAL PANEL (OR OTHER ELECTRICALLY CONDUCTIVE MATERIAL) THE DISPLAY PINS MUST BE INSULATED FROM THE PANEL.

CONNECTION DIAGRAMS



RECOMMENDED PANEL LAYOUT



ORDERING INFORMATION

SERIES	INPUT VOLTAGE	CYCLE	TIME RANGE FORMAT
CTXR	1 - 12 VDC 2 - 24 VDC 4 - 24 VAC 5 - 120 VAC 6 - 230 VAC 9 - 36 VDC	1 - On Time First 2 - Off Time First	2 - 9999 SEC. / 9999 MIN. 999.9 SEC / 999.9 MIN.