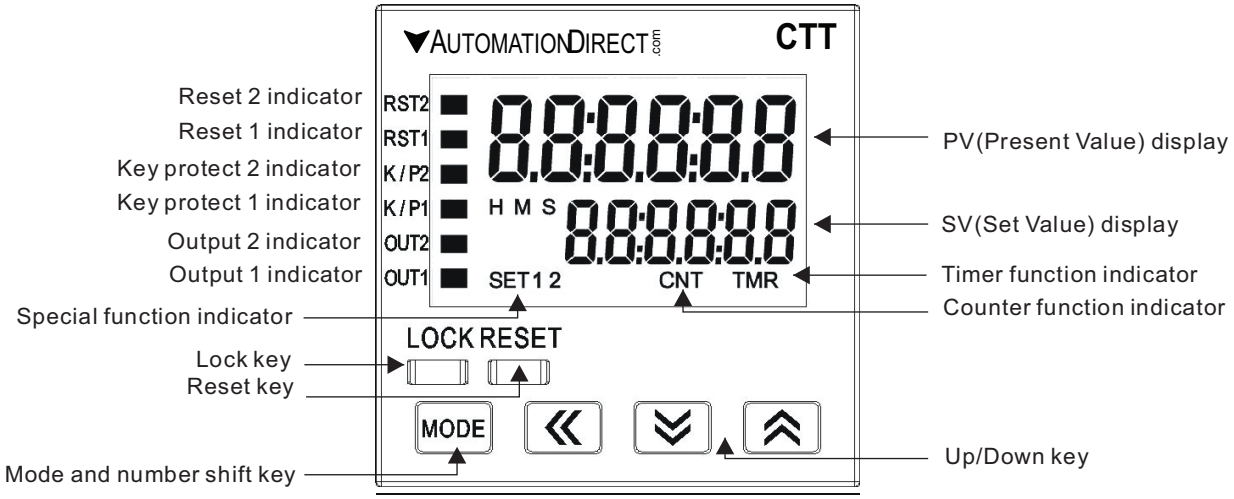
# Timer + Counter Mixed Mode Functions


In This Chapter...

# Display, Indicators and Keys




| LCD Display and Indicators | | | |
|---|---|---|---|
| ***RST 1/2*** | Light on when reset signal is detected | ***SET 1 2*** | SV1, SV2 display |
| ***K/P 1/2*** | Light on when key-protected mode is enabled | ***CNT*** | Light on in Counter function |
| ***OUT 1/2*** | Light on when output is executing | ***TMR*** | Light on in Timer function |
| ***H M S*** | Hour, minute, second, unit of timer, displayed in Timer function | | |
| **Key Operation** | | | |
| ▼ ▲ | Increase and decrease SV or change paramter settings | | |
| ◀ | Left move 1 digit of the selected digit. The indicator of the selected digit will flash. | | |
| MODE | Save the set parameters or switch among functions. | | |
| LOCK | Prevent settings from being changed. Key-protected mode still works after the power is switched off. Press LOCK to enter key-protected mode. In non-key-protected status, press LOCK to enter Lock 1, press LOCK again to enter Lock 2. Press MODE and ◀ at the same time to disable key-protected mode. LoC1 (Lock 1) disables the functions of all keys. LoC2 (Lock 2) allows users to change SV and functions of RESET remain. LOCK only functions in non-key-protected status. | | |
| RESET | Clear and reset PV. | | |
| **Modes: Operation Mode and Configuration Mode** | | | |
| ***Operation*** | When the power is on, the timer/counter/tachometer is in the operation mode. Press ▼ ▲ to change SV, or ◀ to make change on a desired digit. The indicator of the selected digit will flash. After the change is made, press MODE to save the setting. If SV or paramters are not changed, press MODE once to switch between SET1 and SET2. | | |
| ***Configuration*** | Press MODE in operation mode for more than 3 seconds to enter configuration mode. Press MODE once to switch among parameters. To return to operation mode, press MODE for more than 3 seconds. | | |

# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Signal on Delay 1 (Sond 1)

## Counter Input Mode - Up (UP)

## Timer + Counter Mixed Mode

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout 1) or will be maintained ON (tout 1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

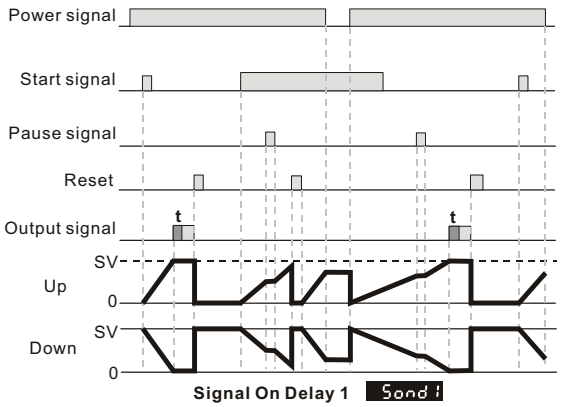
**Timer Mode - Signal On Delay 1 (Sond 1)**

With power applied to the CTT, the leading edge of an input signal at START will begin the timing period setting value SV1 timing up or down based on parameter (t modE). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tout 1) or will be maintained ON if the output pulse width parameter (tout 1) is set to 0.00. The trailing edge of the "start" signal has no effect on the outputs or timing period.

The leading edge of a "reset" input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of a "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the "pause" (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.



Signal On Delay 1 Sond 1

## Counter Input Mode:

**Counter Input Mode - Counting Up (UP)**

Each leading edge of the input signal at CP1 will increment the count present value PV by 1.

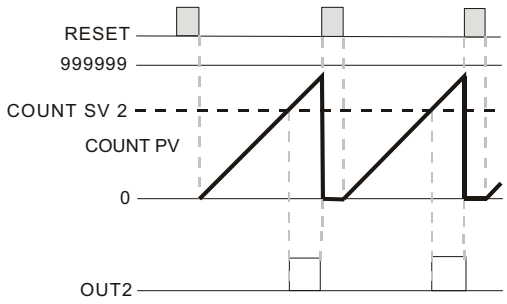
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will continue to increment with each input signal.

The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



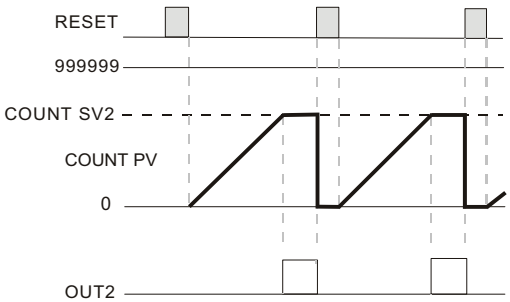
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will remain at the count SV2 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



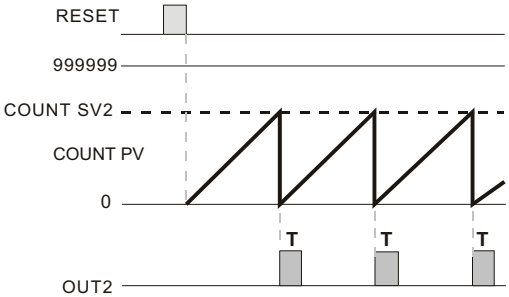

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

**Mode C (C)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

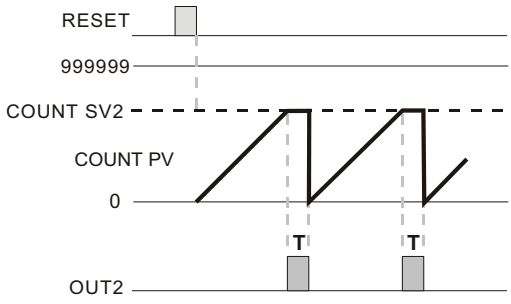
**Mode R (r)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2).

The count PV is prohibited from incrementing until the end of the output pulse time (toUt2) when the Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



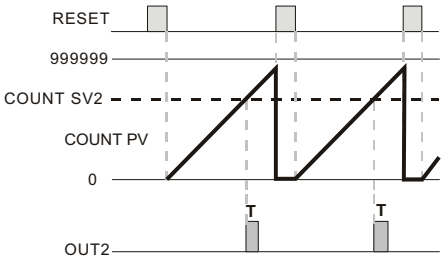

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



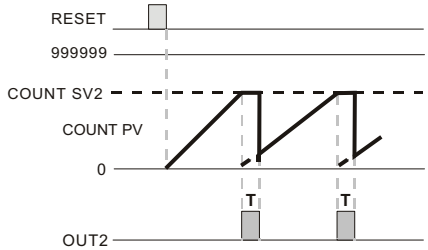

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from incrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



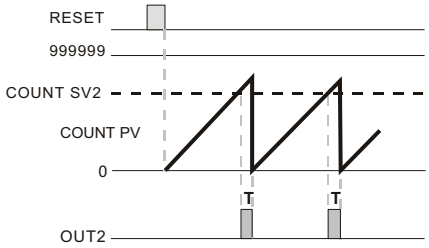

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



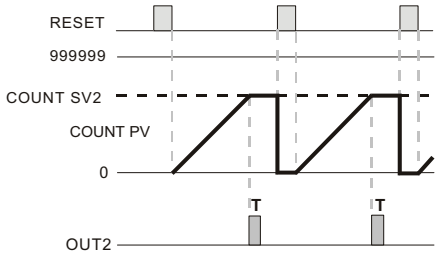

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at the count SV2 regardless of additional input signals.

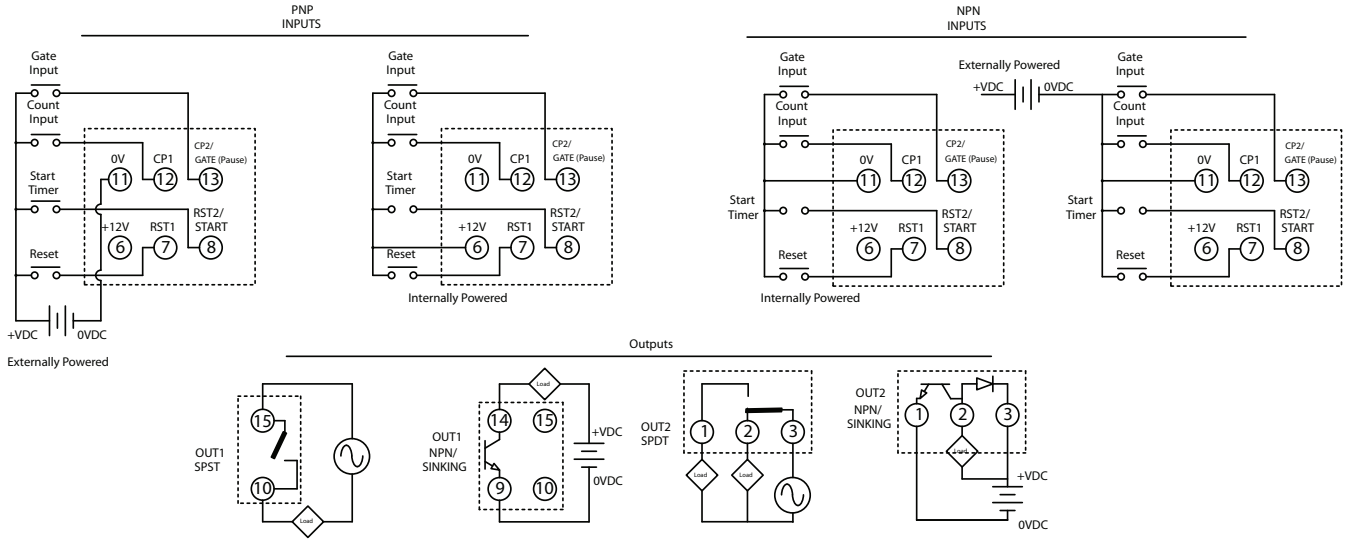
The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.


MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).


MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

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# CTT Timer + Counter Mixed Mode Functions
## Timer Mode - Signal On Delay 1 (Sond 1)
## Counter Input Mode - Down (doun)

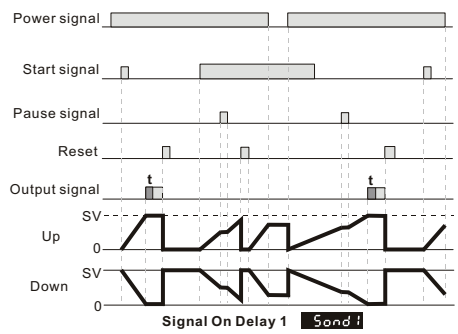
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Signal On Delay 1 (Sond 1)**

With power applied to the CTT, the leading edge of an input signal at START will begin the timing period setting value SV1 timing up or down based on parameter (t mode). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON if the output pulse width parameter (tout1) is set to 0.00. The trailing edge of the "start" signal has no effect on the outputs or timing period.




The leading edge of a "reset" input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of an "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the "pause" (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.

## Counter Input Mode:

**Counter Input Mode - Counting Down (doun)**

Each leading edge of the input signal at CP1 will decrement the count present value PV by 1.

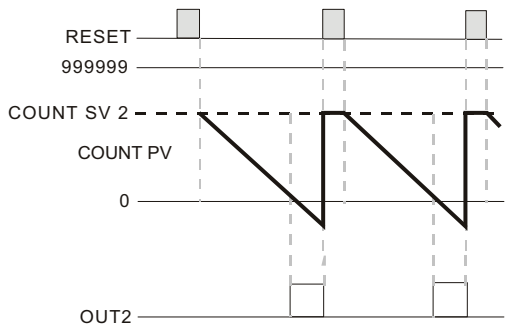
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will continue to decrement with each input signal.

The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



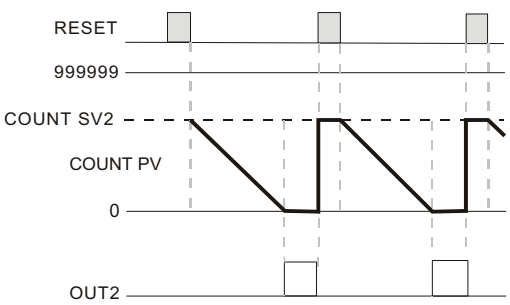

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will remain at 0 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



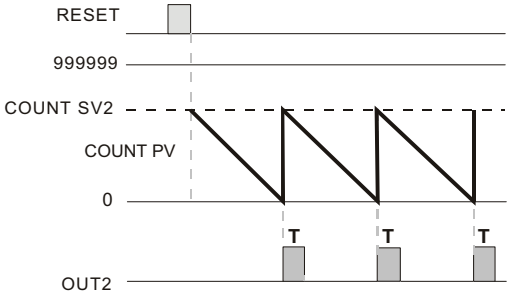

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

**Mode C (c)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



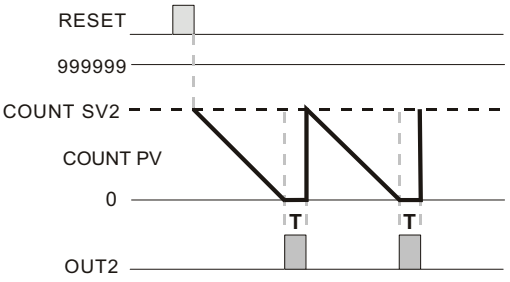

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

**Mode R (r)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV is prohibited from decrementing until the end of the output pulse time (toUt2) when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



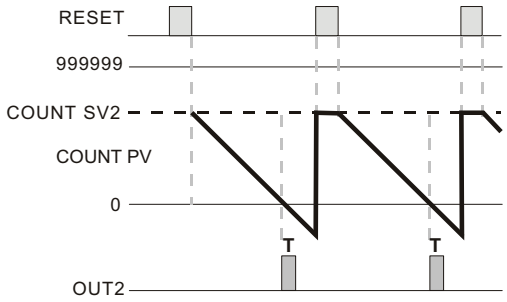

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



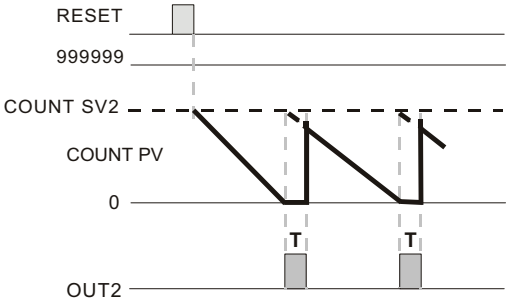

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from decrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



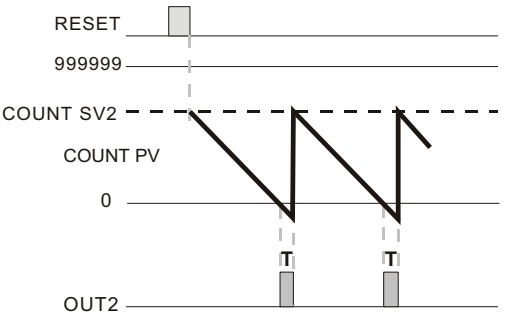

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



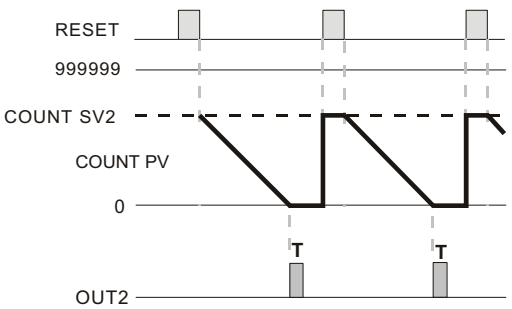

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at 0 regardless of additional input signals.

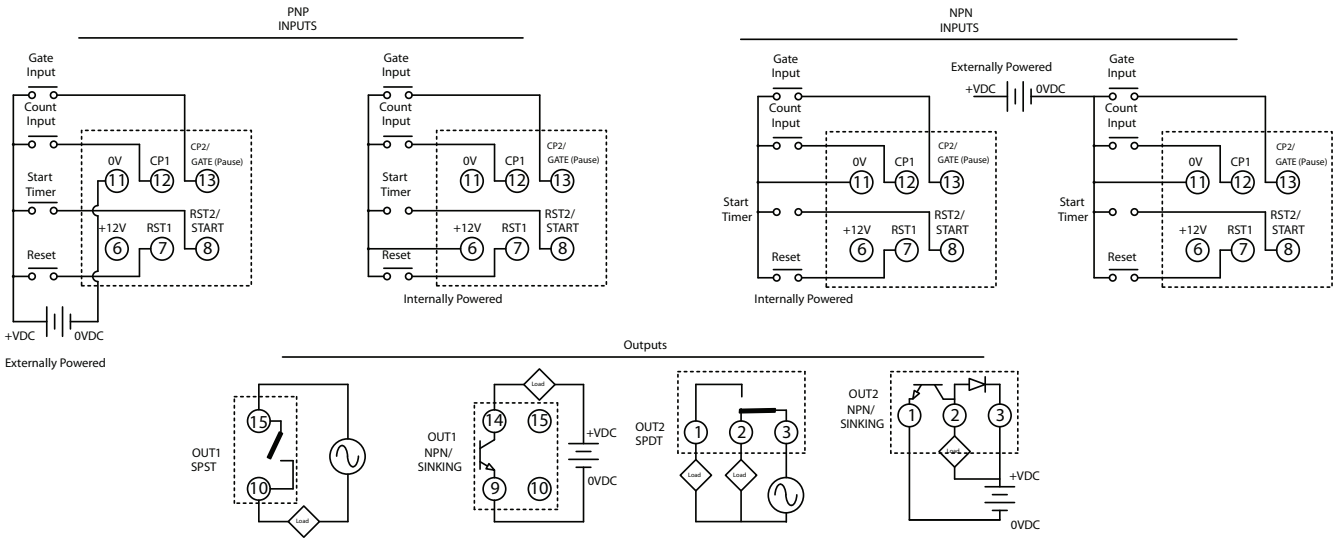
The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rESr ).




TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.


MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

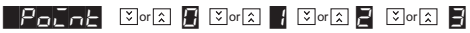
Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).




MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

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# CTT Timer + Counter Mixed Mode Functions
## Timer Mode - Signal On Delay 2 (Sond2)
## Counter Input Mode - Up (UP)

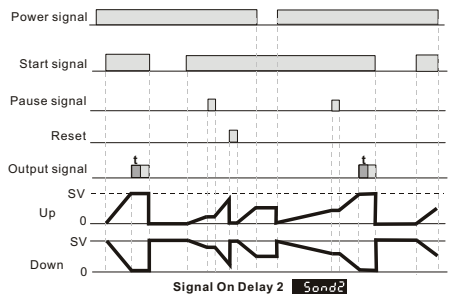
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Signal On Delay 2 (Sond2)**

With power applied to the CTT, the leading edge of an input signal at START will begin the timing period setting value SV1 timing up or down based on parameter (t Mod1). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON if the output pulse width parameter (tout1) is set to 0.00. The trailing edge of the "start" signal will turn OFF Output 1 and reset the timing period.




The leading edge of a "reset" input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ) or DIP Switch 8.

The leading edge of an "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the "pause" (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.

## Counter Input Mode:

**Counter Input Mode - Counting Up (UP)**

Each leading edge of the input signal at CP1 will increment the count present value PV by 1.

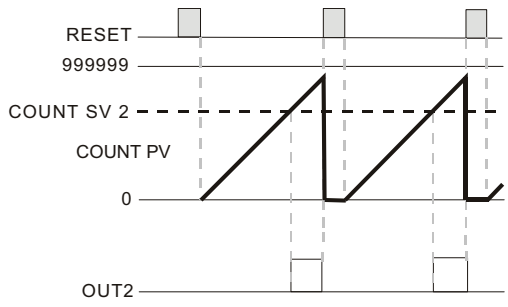
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will continue to increment with each input signal.

The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



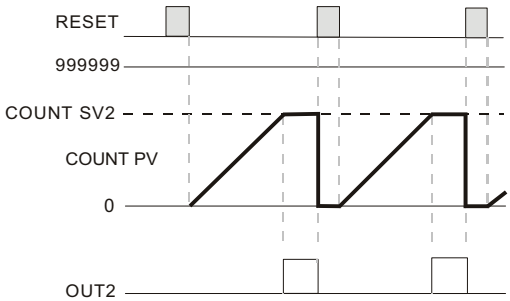

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will remain at the count SV2 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



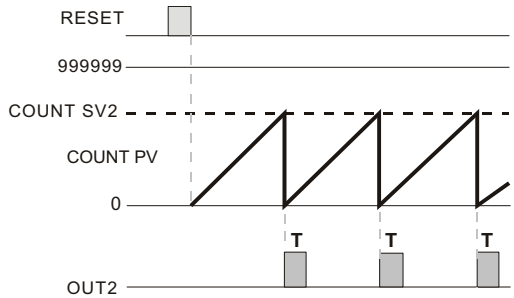

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

**Mode C (C)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

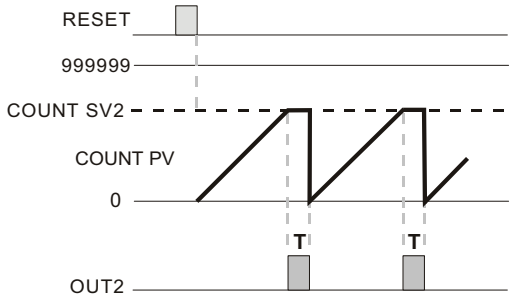
**Mode R (r)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2).

The count PV is prohibited from incrementing until the end of the output pulse time (toUt2) when the Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



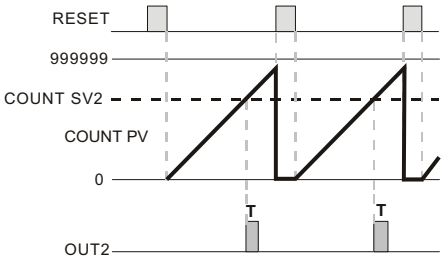

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



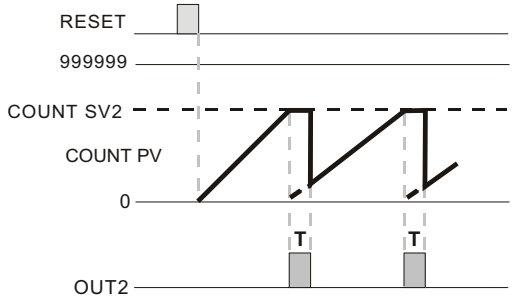

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from incrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



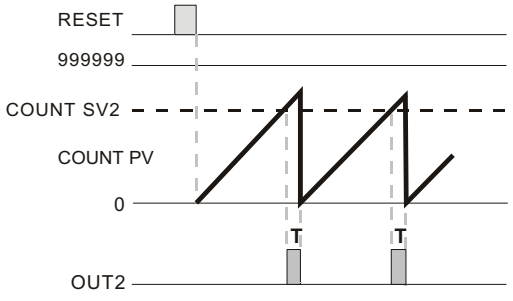

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



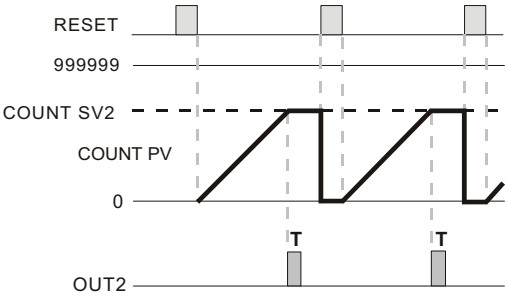

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at the count SV2 regardless of additional input signals.

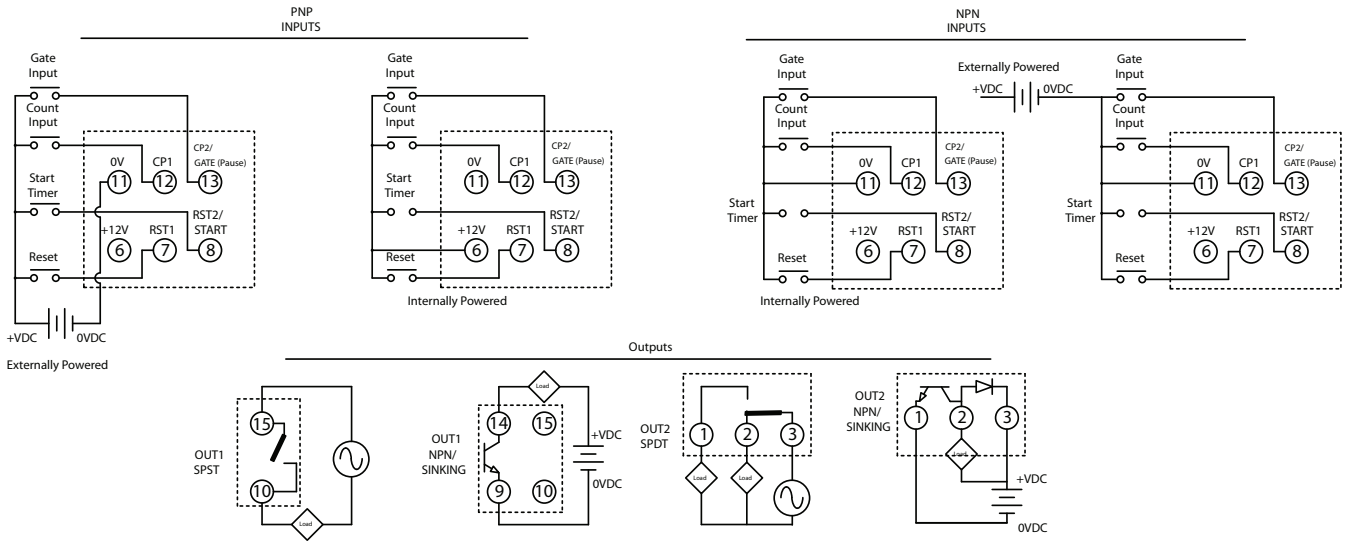
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode A

# Timer + Counter Wiring Examples



## Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

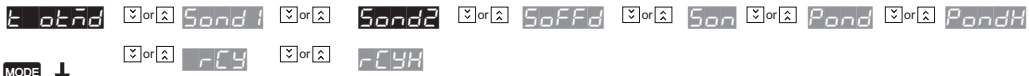
Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

Select timer mode: times up and times down,

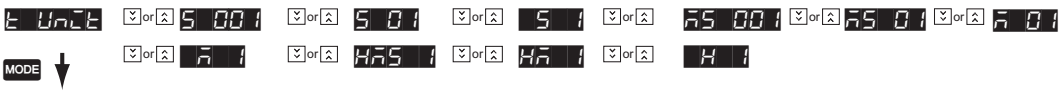

MODE

Select output modes: There are 8 output modes.




MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.




MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

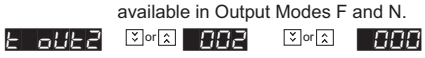
Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.

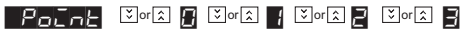

MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.




MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).




MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

**Back to Top**

# CTT Timer + Counter Mixed Mode Functions
## Timer Mode - Signal On Delay 2 (Sond2)
## Counter Input Mode - Down (doun)

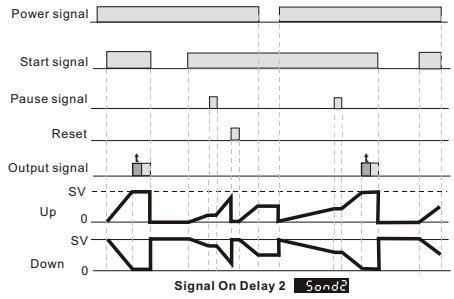
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Signal On Delay 2 (Sond2)**

With power applied to the CTT, the leading edge of an input signal at START will begin the timing period setting value SV1 timing up or down based on parameter (t modE). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON if the output pulse width parameter (tout1) is set to 0.00. The trailing edge of the "start" signal will turn OFF Output 1 and reset the timing period.




The leading edge of a "reset" input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of an "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the "pause" (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.

## Counter Input Mode:

**Counter Input Mode - Counting Down (doun)**

Each leading edge of the input signal at CP1 will decrement the count present value PV by 1.

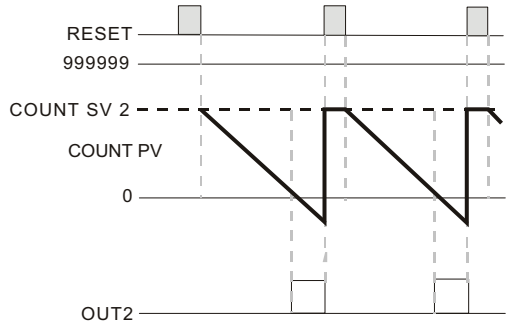
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will continue to decrement with each input signal.

The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



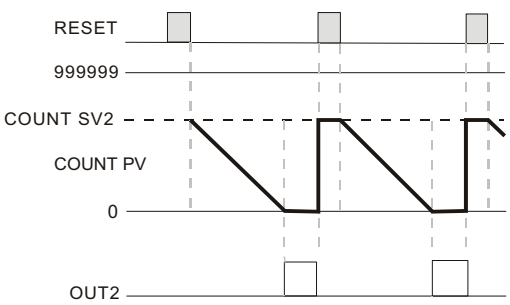

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will remain at 0 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



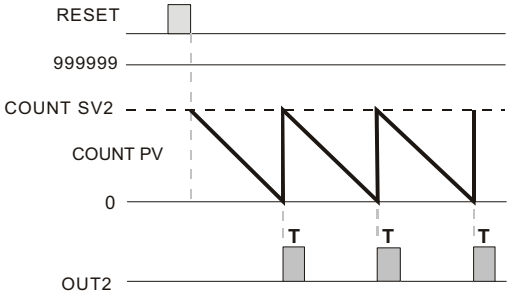

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

**Mode C (c)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



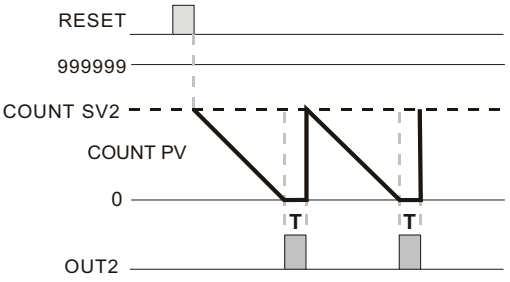

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

**Mode R (r)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV is prohibited from decrementing until the end of the output pulse time (toUt2) when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



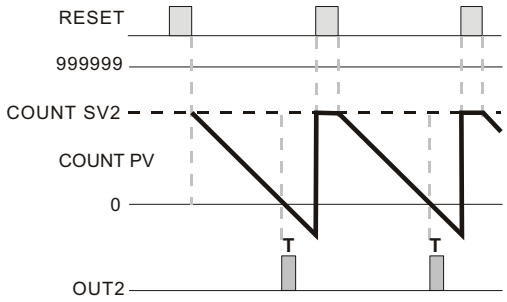

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



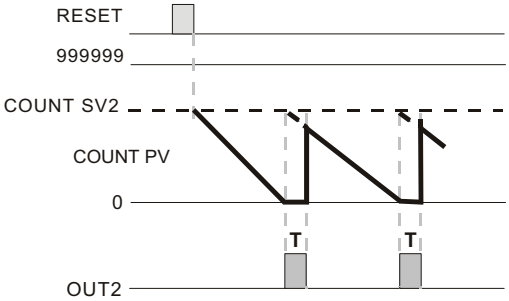

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from decrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



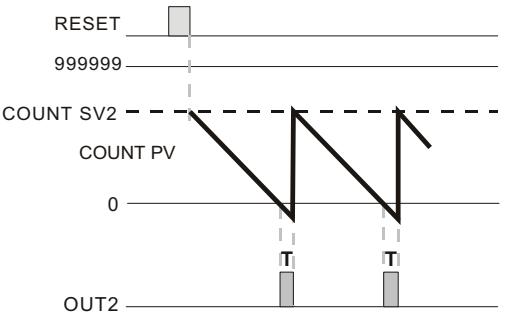

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



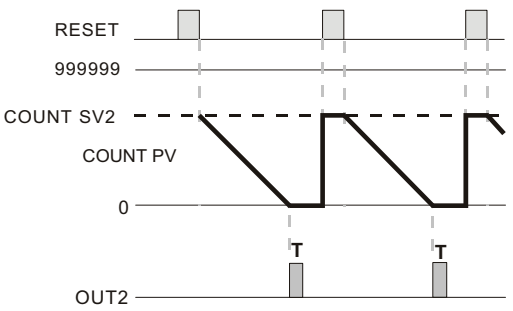

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at 0 regardless of additional input signals.

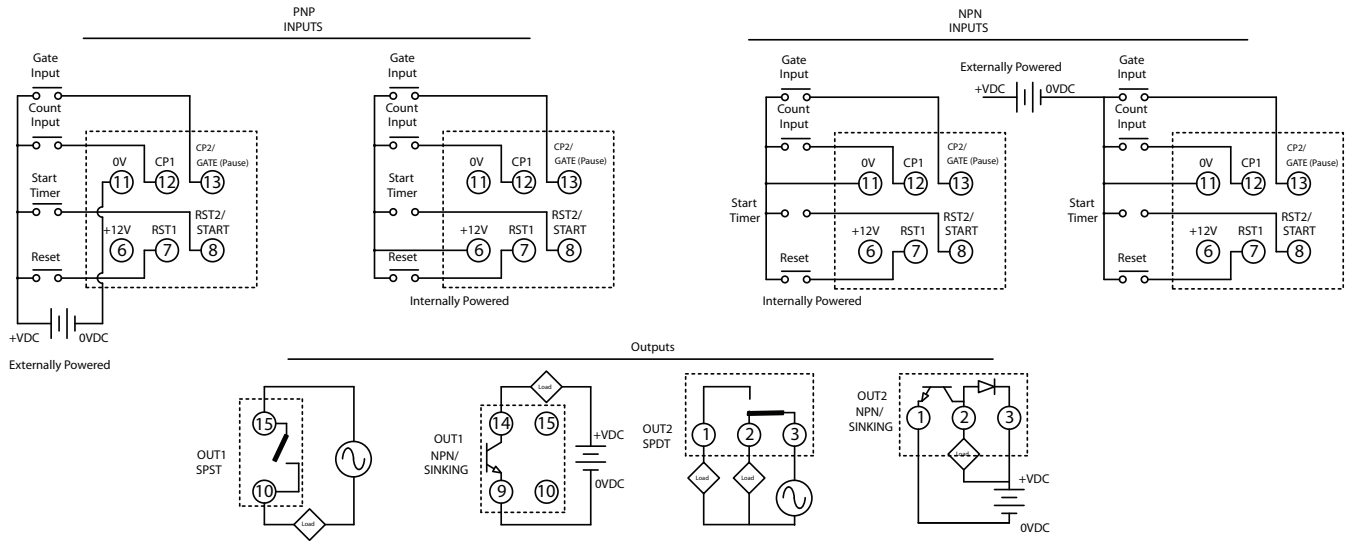
The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

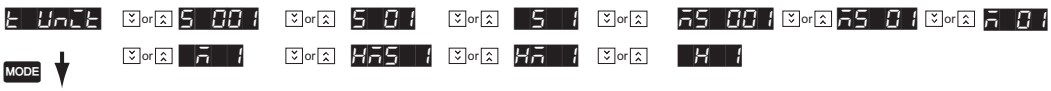
Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.




MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

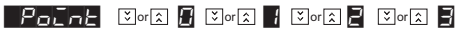
Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).




MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

**Back to Top**

# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Signal Off Delay (SoFFd)

## Counter Input Mode - Up (UP)

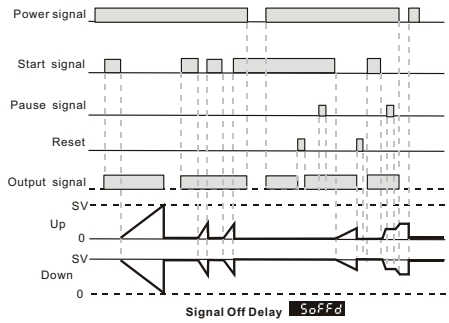
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (toUt 1) or will be maintained ON (toUt 1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (toUt2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Signal Off Delay (SoFFd)**

With power applied to the CTT, the leading edge of an input signal at START will immediately turn ON the Output 1. The trailing edge of the "start" signal will begin the timing period setting value SV1 timing up or down based on parameter (t modE). At the end of the timing period Output 1 will turn OFF. The leading edge of a "start" signal applied during a previously initiated timing period will reset the timing period.




The leading edge of a "reset" input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of an "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the "pause" (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.

## Counter Input Mode:

**Counter Input Mode - Counting Up (UP)**

Each leading edge of the input signal at CP1 will increment the count present value PV by 1.

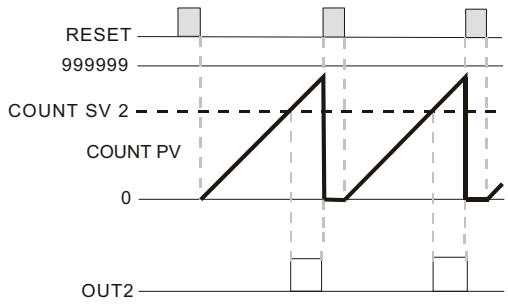
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will continue to increment with each input signal.

The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



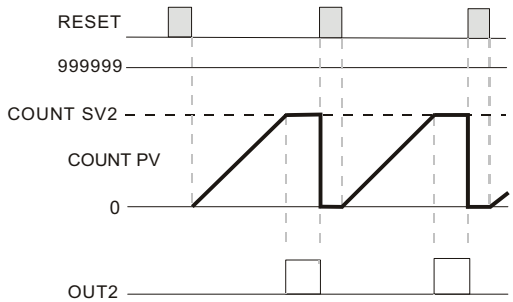

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will remain at the count SV2 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



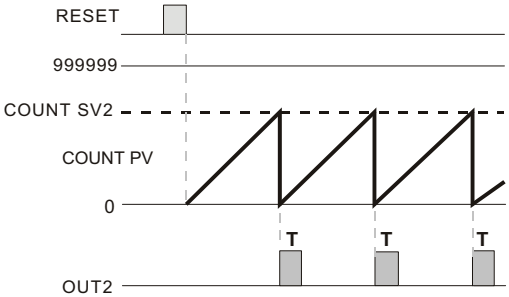

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

**Mode C (c)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

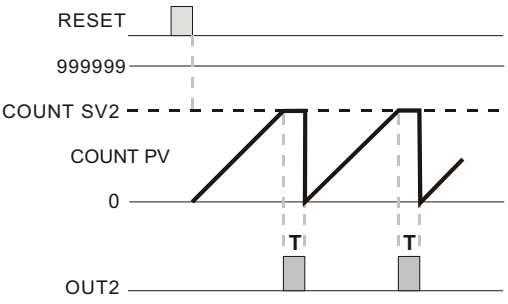
**Mode R (r)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2).

The count PV is prohibited from incrementing until the end of the output pulse time (toUt2) when the Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



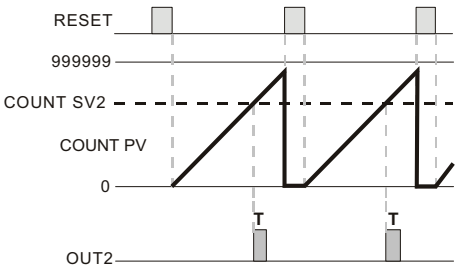

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



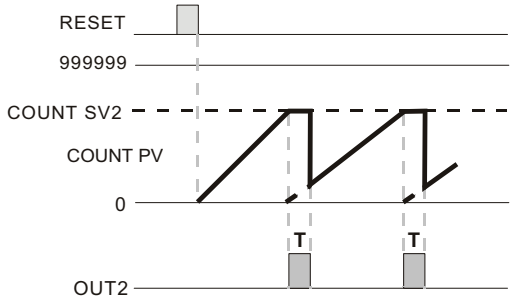

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from incrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



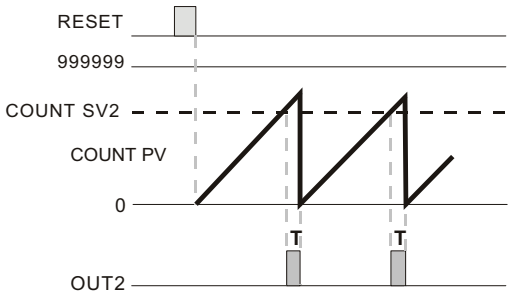

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



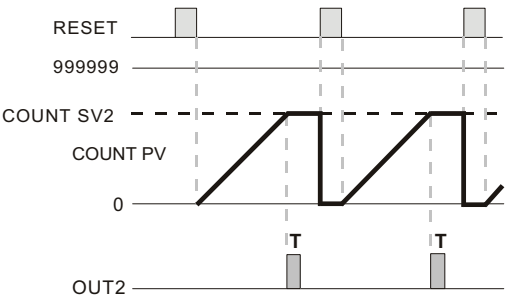

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode Q

**Mode A (H)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at the count SV2 regardless of additional input signals.

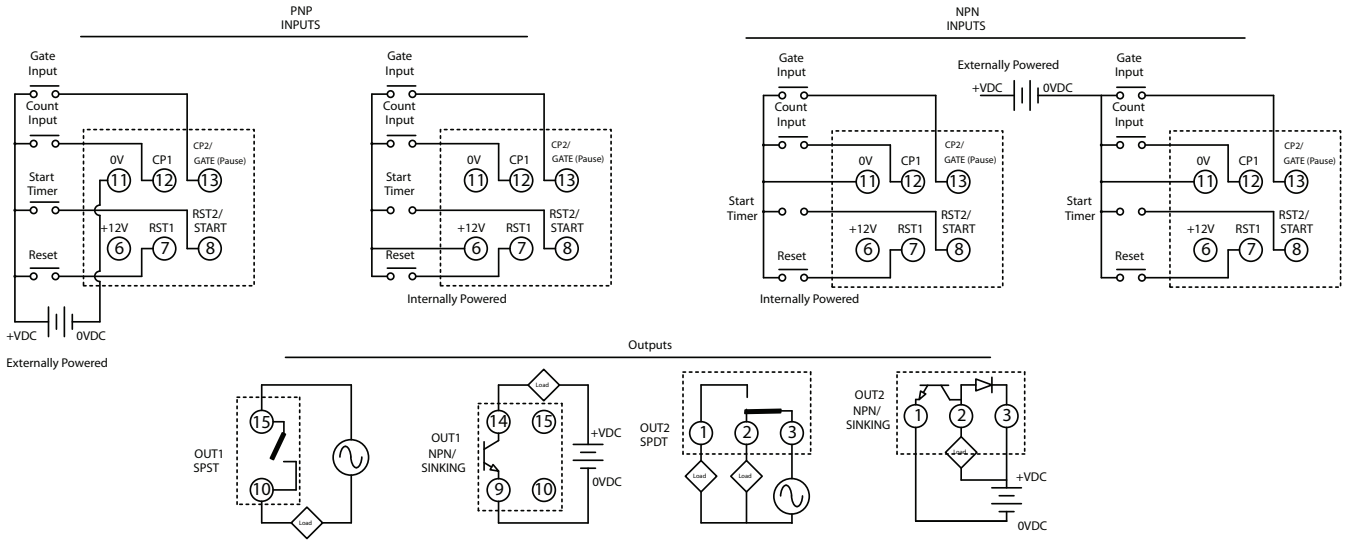
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.



MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.



MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.



MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

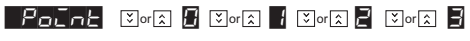
Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).




MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

**Back to Top**

# CTT Timer + Counter Mixed Mode Functions
## Timer Mode - Signal Off Delay (SoFFd)
## Counter Input Mode - Down (doUn)

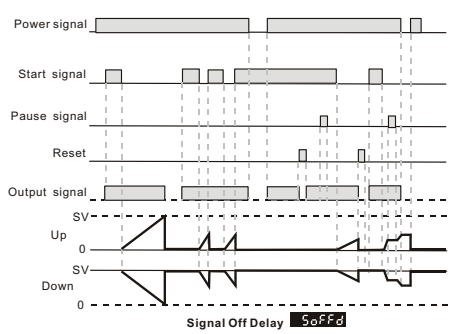
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Signal Off Delay (SoFFd)**

With power applied to the CTT, the leading edge of an input signal at START will immediately turn ON the Output 1. The trailing edge of the "start" signal will begin the timing period setting value SV1 timing up or down based on parameter (t modE). At the end of the timing period Output 1 will turn OFF. The leading edge of a "start" signal applied during a previously initiated timing period will reset the timing period.




The leading edge of a "reset" input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of an "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the "pause" (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.

## Counter Input Mode:

**Counter Input Mode - Counting Down (doUn)**

Each leading edge of the input signal at CP1 will decrement the count present value PV by 1.

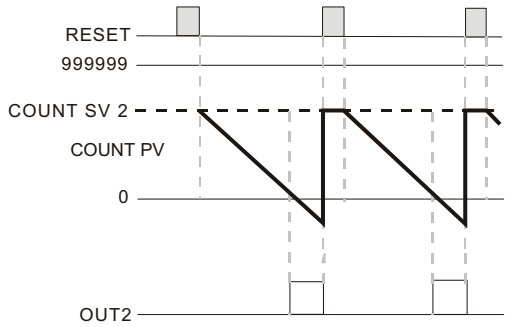
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will continue to decrement with each input signal.

The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



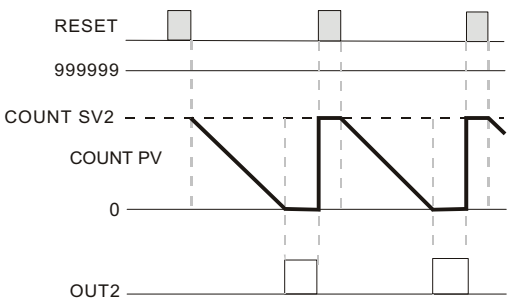

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will remain at 0 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



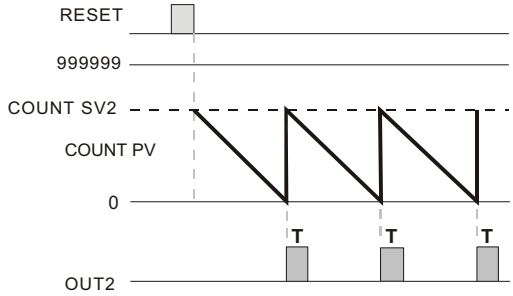

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

**Mode C (C)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



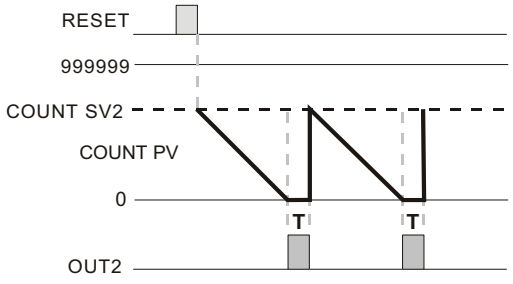

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

**Mode R (r)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV is prohibited from decrementing until the end of the output pulse time (toUt2) when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



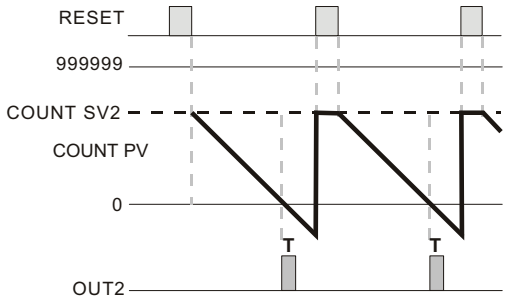

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



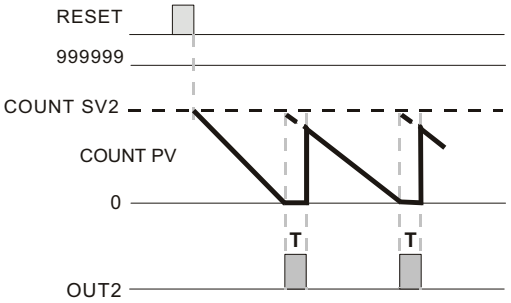

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from decrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



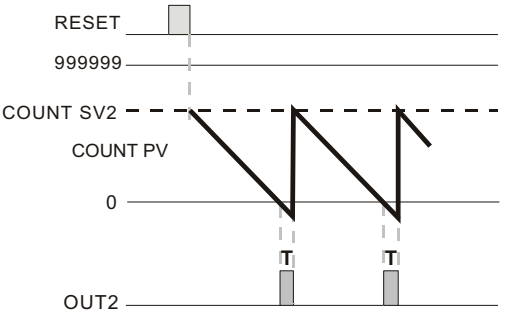

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



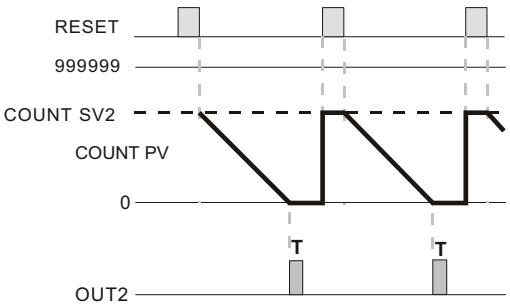

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (tout2). The count PV will remain at 0 regardless of additional input signals.

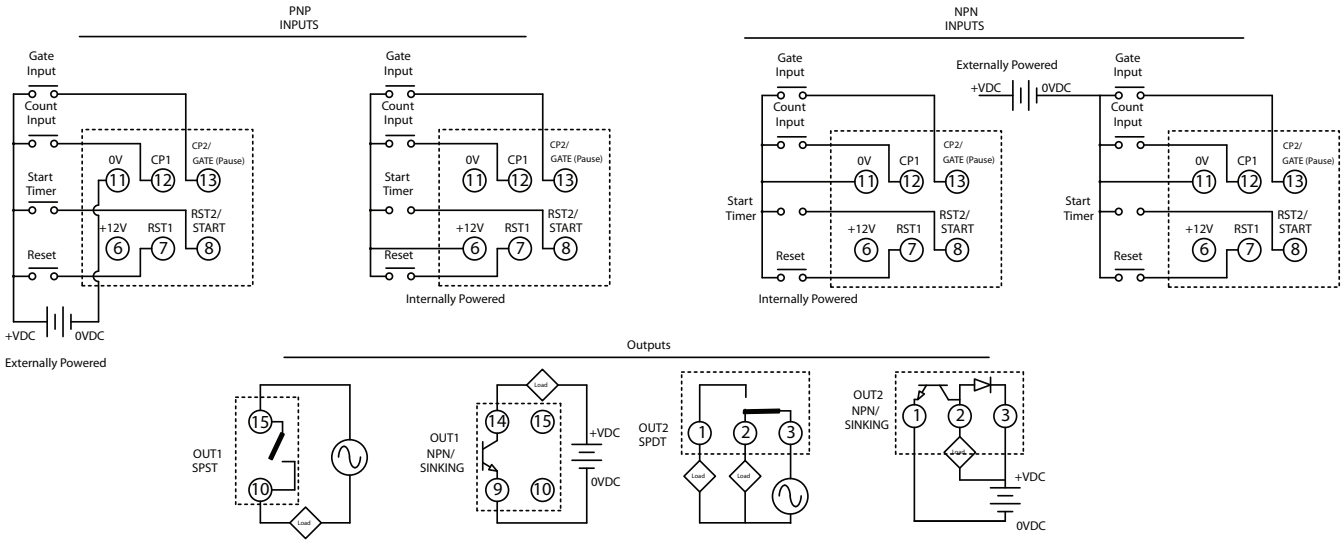
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.


MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

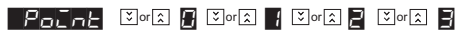
Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).




MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

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# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Signal On (Son)

## Counter Input Mode - Up (UP)

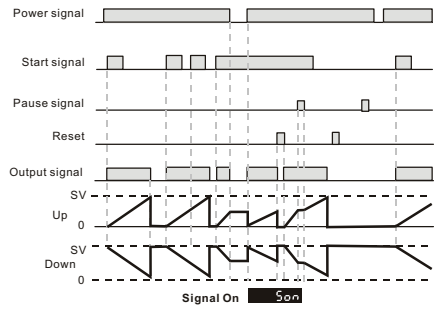
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Signal On (Son)**

With power applied to the CTT, the leading edge of an input signal at START will immediately turn ON Output 1 and begin the timing period setting value SV1 timing up or down based on parameter (t mode). The trailing edge of the "start" signal has no effect on the output or timing period. At the end of the timing period Output 1 will turn OFF and the timing period will reset. The leading edge of a "start" signal applied during a previously initiated timing period will not reset the timing period.




The leading edge of a "reset" input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of an "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the "pause" (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.

## Counter Input Mode:

**Counter Input Mode - Counting Up (UP)**

Each leading edge of the input signal at CP1 will increment the count present value PV by 1.

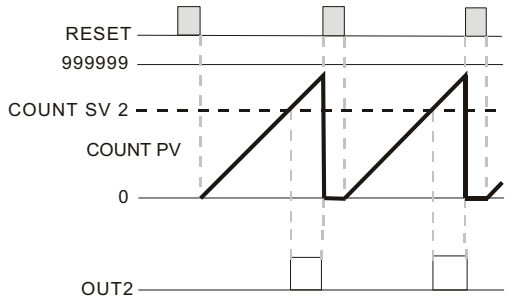
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will continue to increment with each input signal.

The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



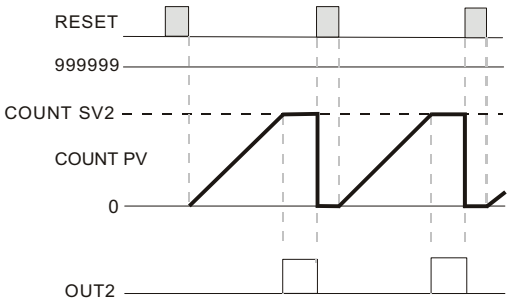

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will remain at the count SV2 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



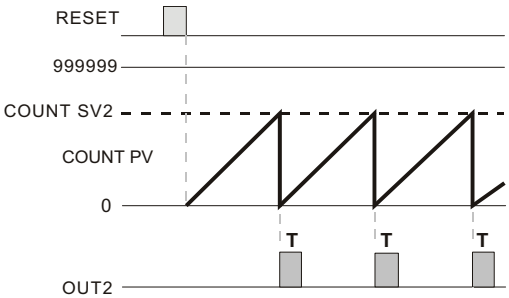

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

**Mode C (c)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

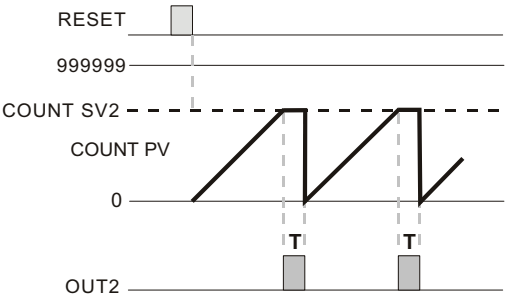
**Mode R (r)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2).

The count PV is prohibited from incrementing until the end of the output pulse time (toUt2) when the Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



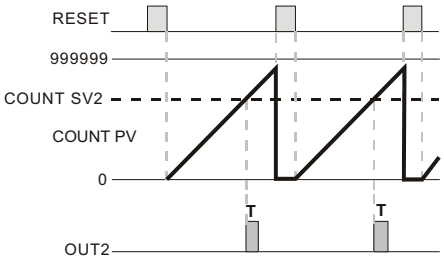

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



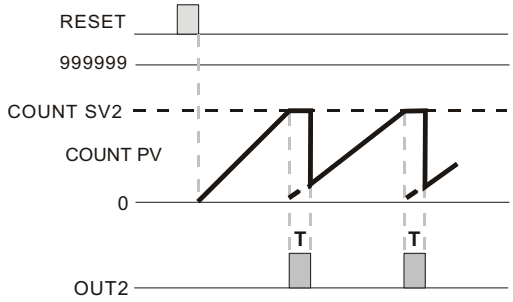

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from incrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



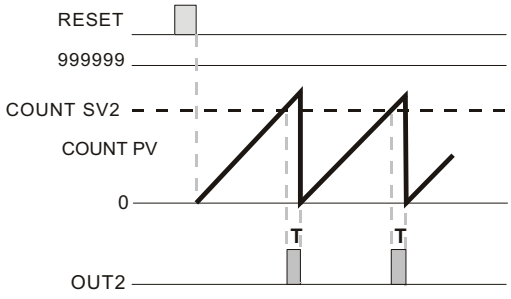

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



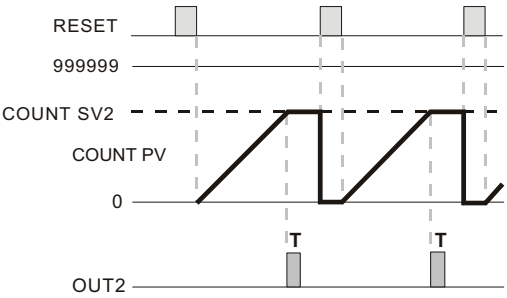

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (tout2). The count PV will remain at the count SV2 regardless of additional input signals.

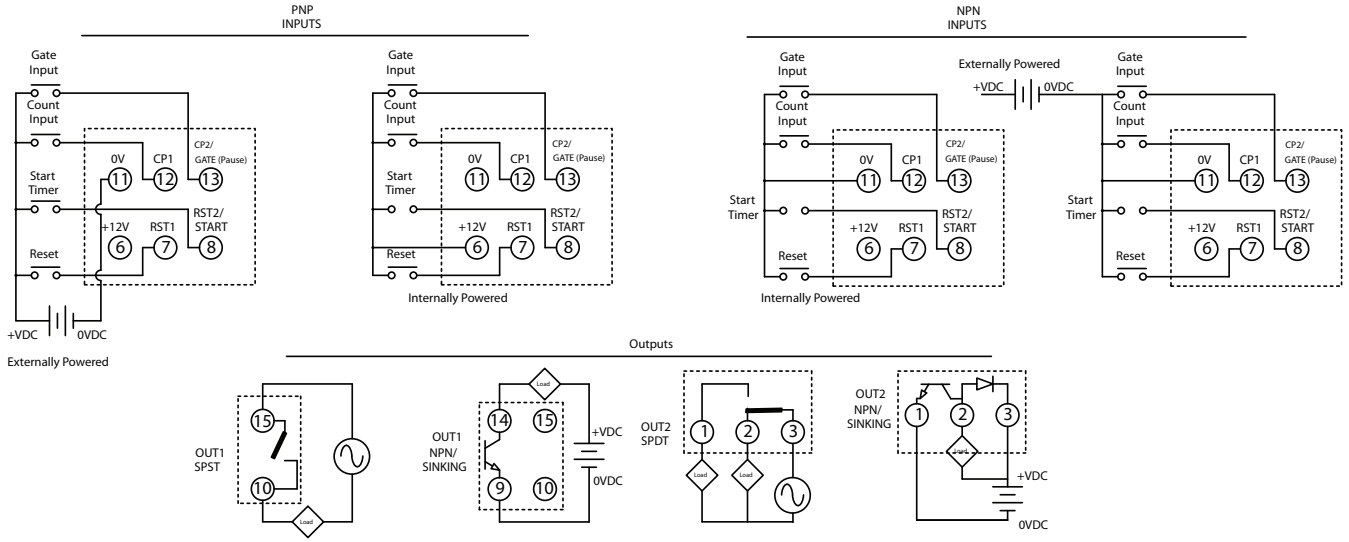
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.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# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Signal On (Son)

## Counter Input Mode - Down (doun)

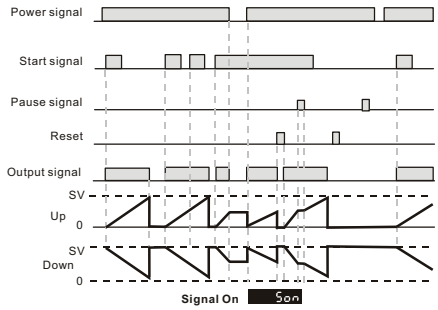
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Signal On (Son)**

With power applied to the CTT, the leading edge of an input signal at START will immediately turn ON Output 1 and begin the timing period setting value SV1 timing up or down based on parameter (t mode). The trailing edge of the "start" signal has no effect on the output or timing period. At the end of the timing period Output 1 will turn OFF and the timing period will reset. The leading edge of a "start" signal applied during a previously initiated timing period will not reset the timing period.




The leading edge of a "reset" input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of an "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the "pause" (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.

## Counter Input Mode:

**Counter Input Mode - Counting Down (doun)**

Each leading edge of the input signal at CP1 will decrement the count present value PV by 1.

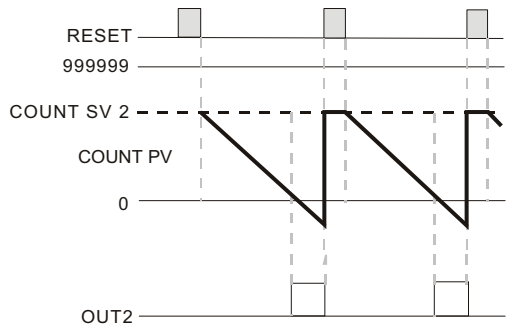
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will continue to decrement with each input signal.

The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



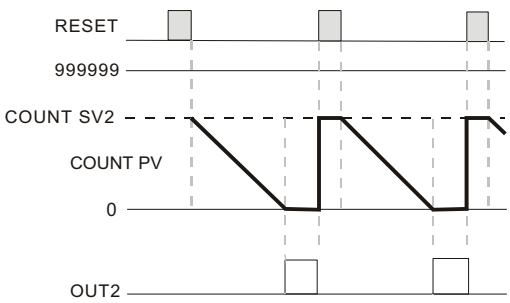

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will remain at 0 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



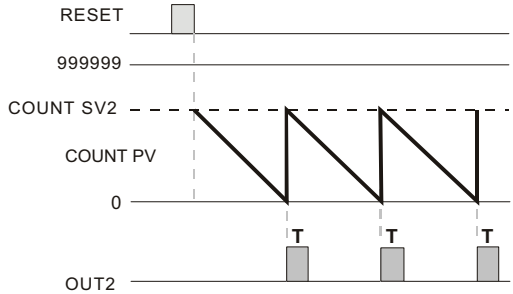

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

**Mode C (c)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



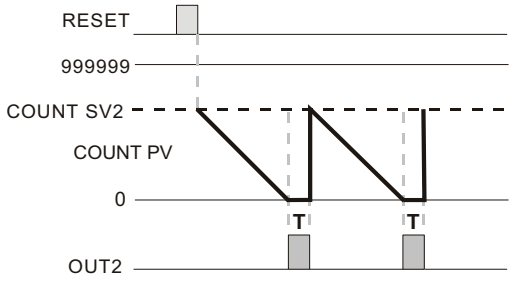

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

**Mode R (r)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV is prohibited from decrementing until the end of the output pulse time (tout2) when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



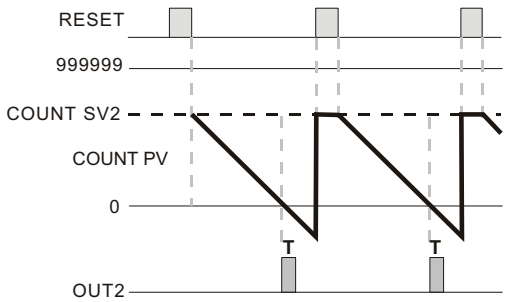

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



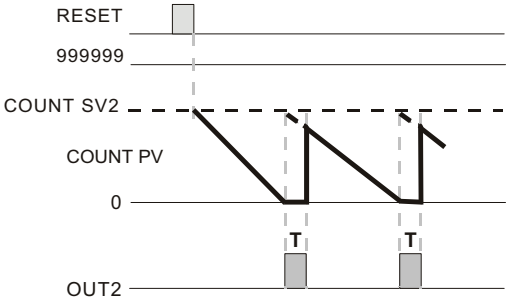

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from decrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



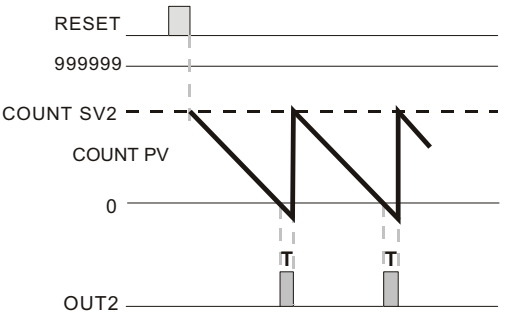

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



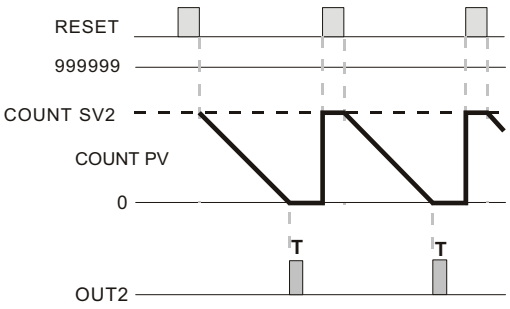

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at 0 regardless of additional input signals.

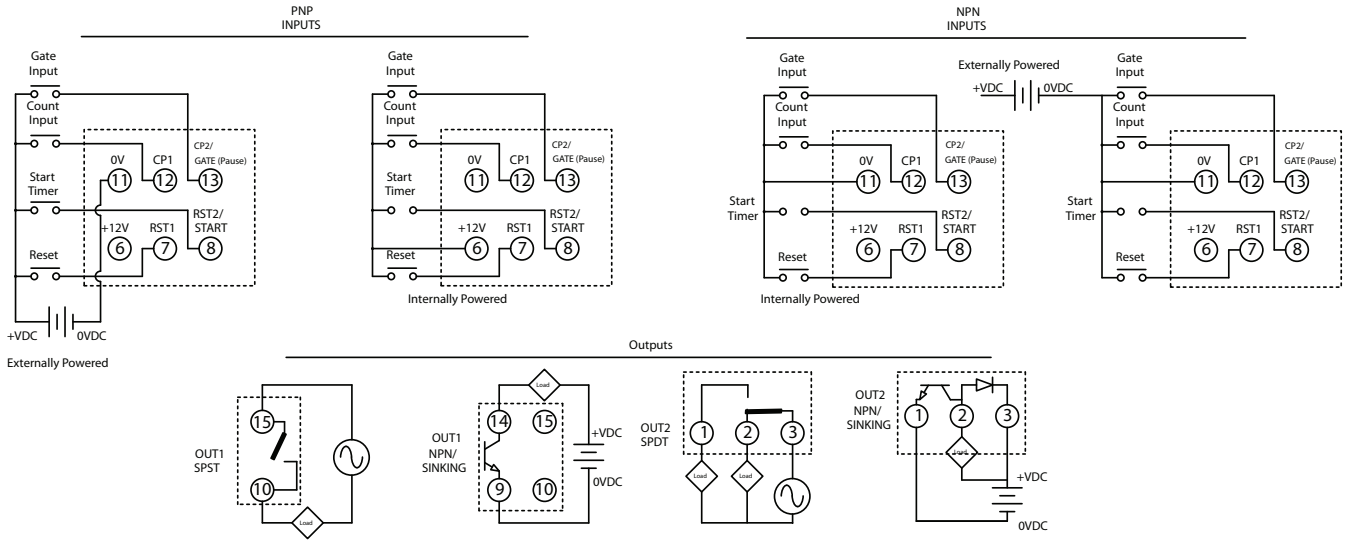
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad setup of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

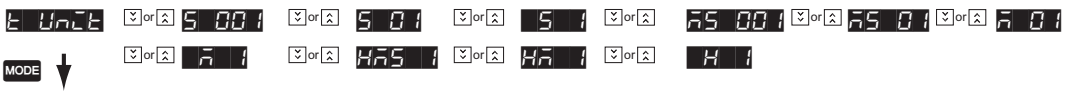
Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.




MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

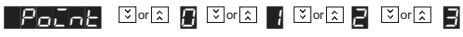
Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).




MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

**Back to Top**

# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Power On Delay (Pond)

## Counter Input Mode - Up (UP)

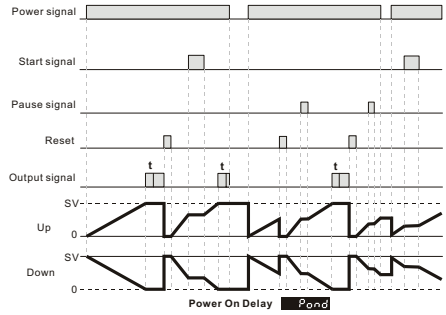
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (toUt1) or will be maintained ON (toUt1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (toUt2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Power On Delay (Pond)**

When power is applied to the CTT, the timing period setting value SV1 will begin timing up or down based on parameter (t modE). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (toUt1) or will be maintained ON if the output pulse width parameter (toUt1) is set to 0.00.




The leading edge of a “reset” input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of an “pause” input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the “pause” (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.

## Counter Input Mode:

**Counter Input Mode - Counting Up (UP)**

Each leading edge of the input signal at CP1 will increment the count present value PV by 1.

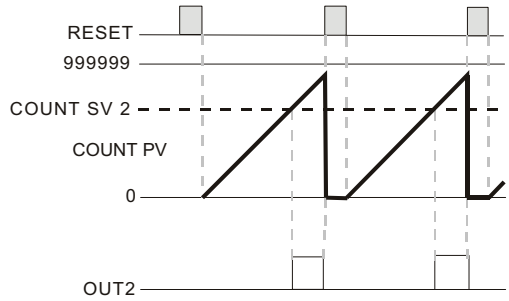
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



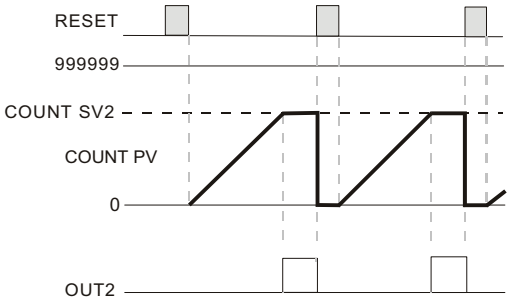

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

**Mode N (▣)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will remain at the count SV2 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



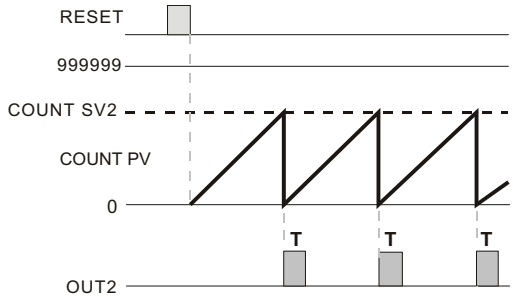

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

**Mode C (▣)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

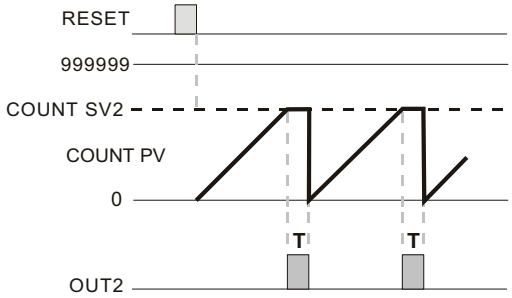
**Mode R (▣)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2).

The count PV is prohibited from incrementing until the end of the output pulse time (toUt2) when the Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



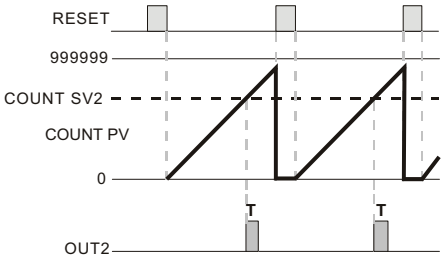

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



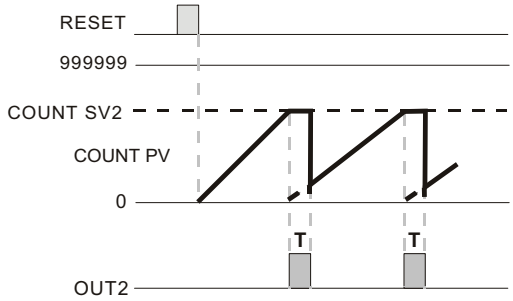

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from incrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



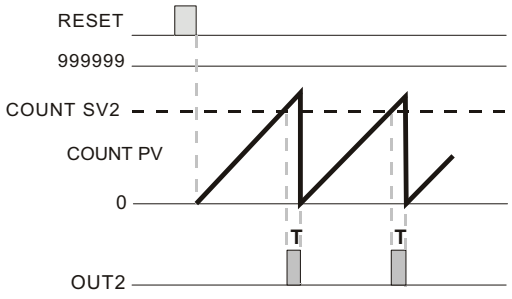

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



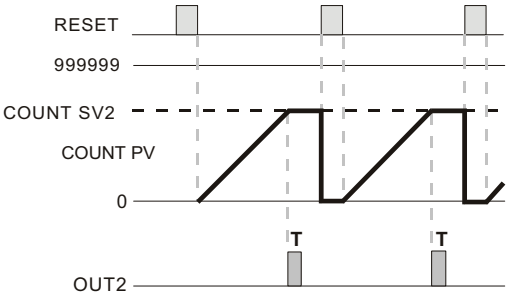

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at the count SV2 regardless of additional input signals.

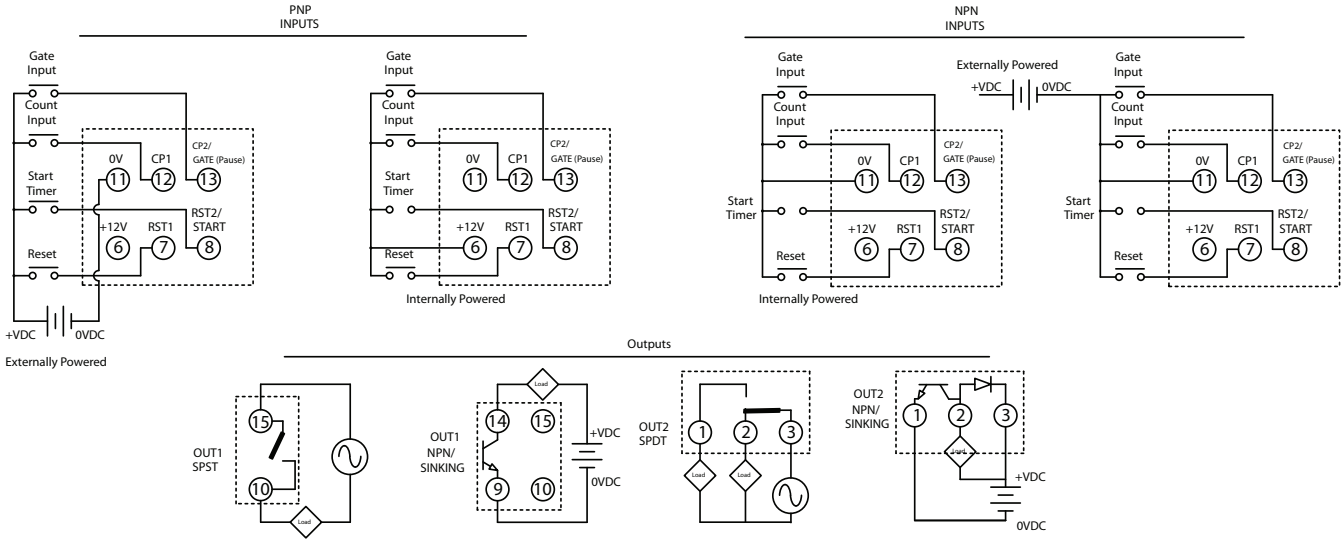
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.


MODE

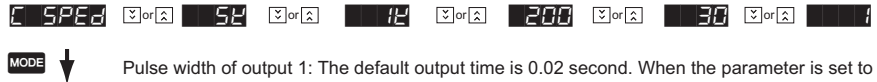
Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.




MODE

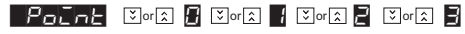
Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).




MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

**Back to Top**

# CTT Timer + Counter Mixed Mode Functions
## Timer Mode - Power On Delay (Pond)
## Counter Input Mode - Down (doun)

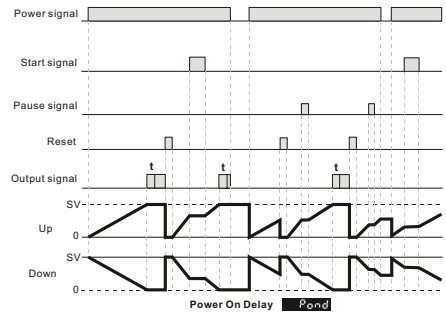
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Power On Delay (Pond)**

When power is applied to the CTT, the timing period setting value SV1 will begin timing up or down based on parameter (t mode). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON if the output pulse width parameter (tout1) is set to 0.00.




The leading edge of a “reset” input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of an “pause” input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the “pause” (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.

## Counter Input Mode:

**Counter Input Mode - Counting Down (doun)**

Each leading edge of the input signal at CP1 will decrement the count present value PV by 1.

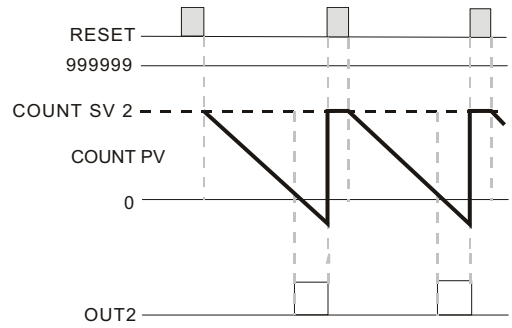
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



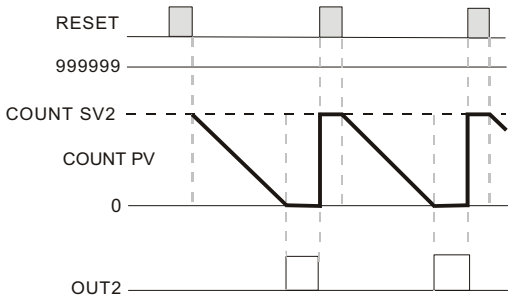

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will remain at 0 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rESr ).



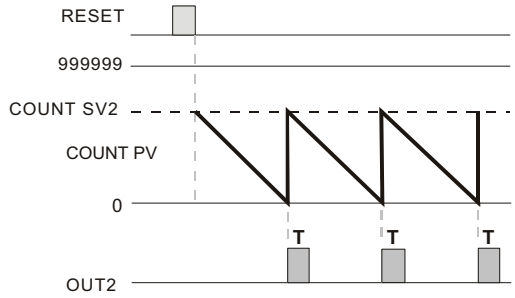

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

**Mode C (c)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rESr ).



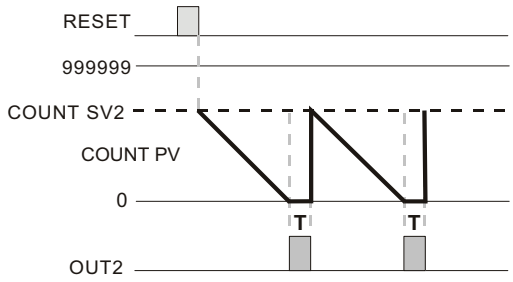

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

**Mode R (r)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV is prohibited from decrementing until the end of the output pulse time (toUt2) when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rESr ).



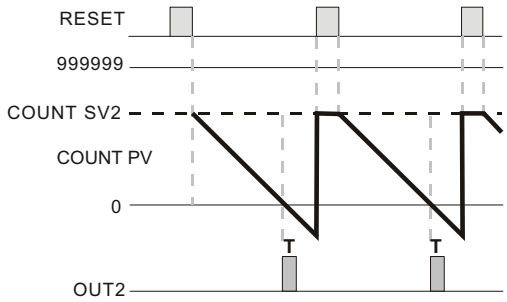

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rESr ).



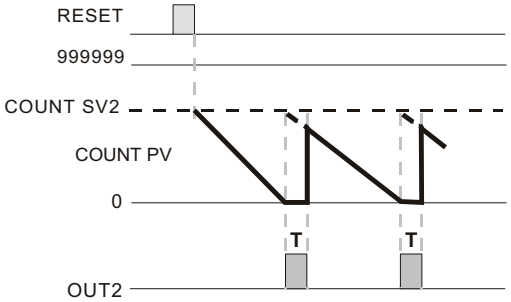

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from decrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rESr ).



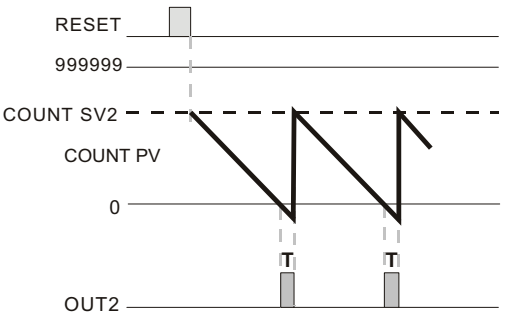

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rESr ).



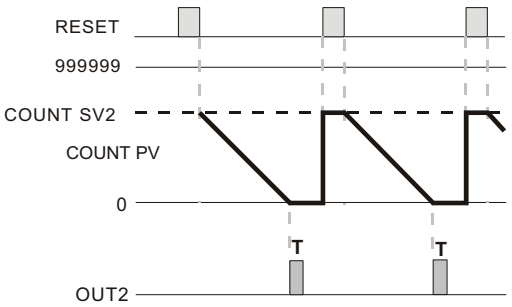

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

**Mode A (F)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at 0 regardless of additional input signals.

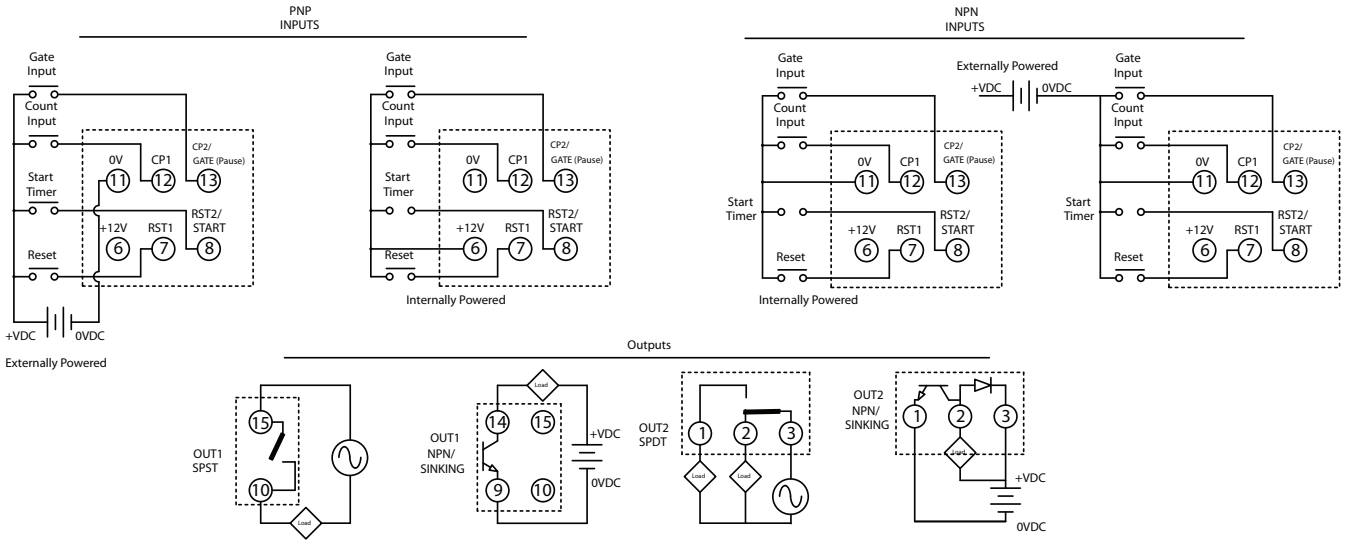
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.


MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

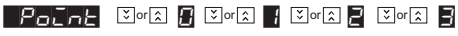
Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).




MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

**Back to Top**

# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Power On Delay HOLD (PonH)

## Counter Input Mode -Up (UP)

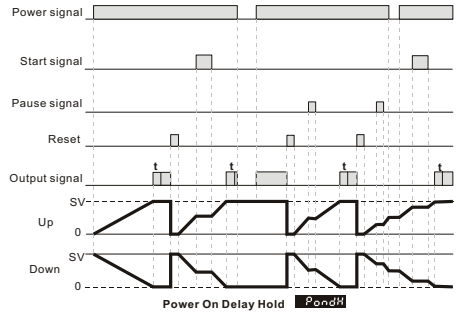
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (toUt1) or will be maintained ON (toUt1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (toUt2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Power On Delay HOLD (PonH)**

When power is applied to the CTT, the timing period setting value SV1 will begin timing up or down based on parameter (t modE). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON if the output pulse width parameter (tout1) is set to 0.00.




The leading edge of a “reset” input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).

The leading edge of an “pause” input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the “pause” (Gate) signal.

When power is removed, Output 1 will turn OFF. The last state of the output and the last value of the current timing period will be “stored” when power is removed. When power is reapplied the output will return to its last state and timing will resume from the last value of the timing period.

## Counter Input Mode:

**Counter Input Mode - Counting Up (UP)**

Each leading edge of the input signal at CP1 will increment the count present value PV by 1.

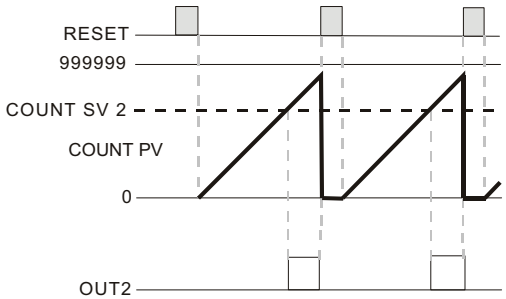
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



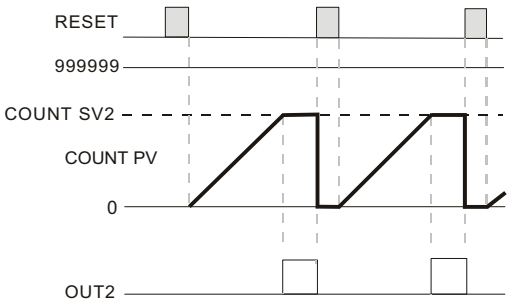

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will remain at the count SV2 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



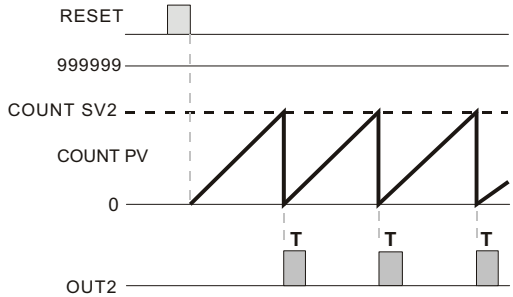

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

**Mode C (C)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

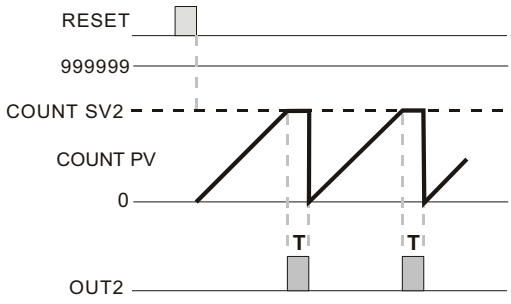
**Mode R (r)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2).

The count PV is prohibited from incrementing until the end of the output pulse time (toUt2) when the Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



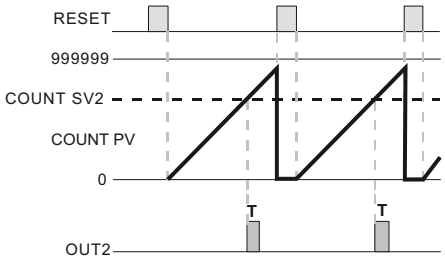

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



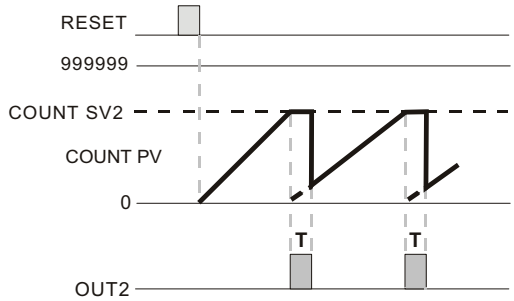

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from incrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



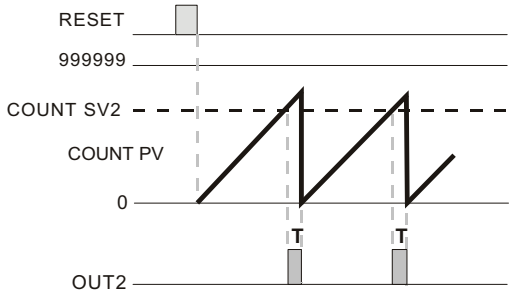

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



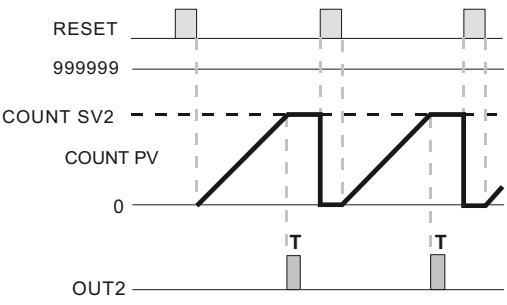

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at the count SV2 regardless of additional input signals.

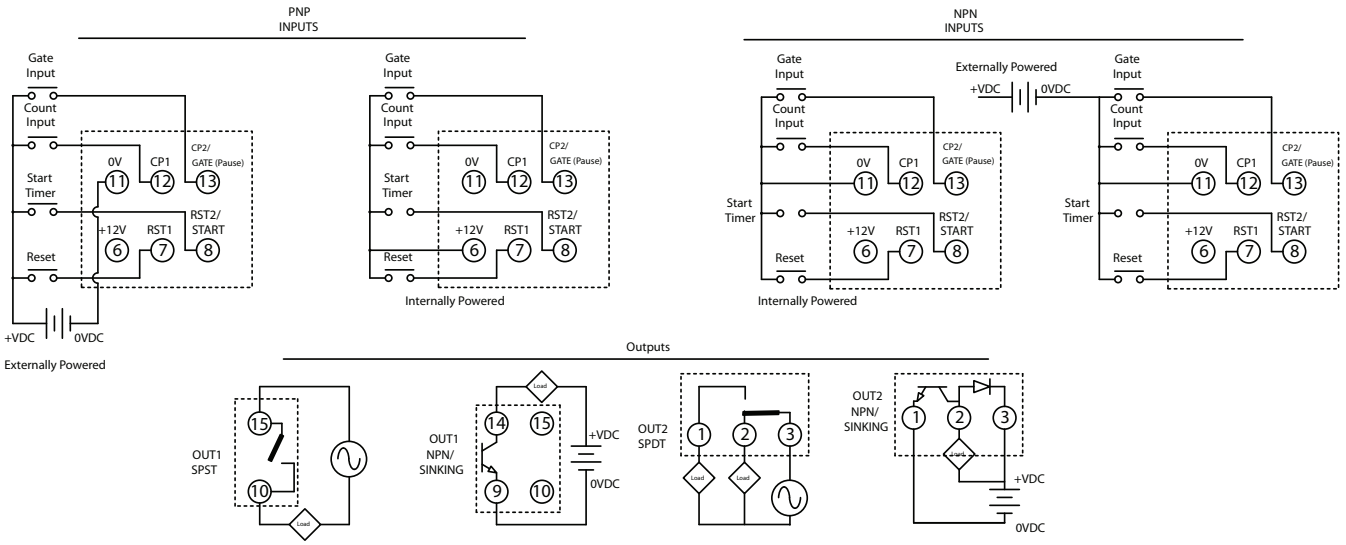
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode A

# Timer + Counter Wiring Examples



## Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.


MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE


Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).


MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

**Back to Top**

# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Power On Delay HOLD (PondH)

## Counter Input Mode -Down (doun)

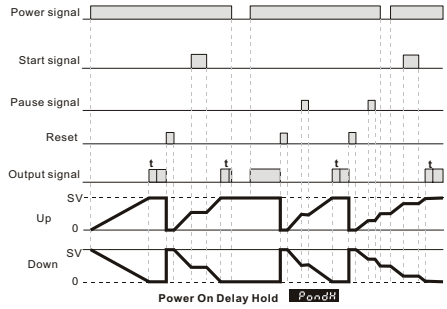
## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Power On Delay HOLD (PondH)**

When power is applied to the CTT, the timing period setting value SV1 will begin timing up or down based on parameter (t.mode). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON if the output pulse width parameter (tout1) is set to 0.00.




The leading edge of a “reset” input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtsr ).

The leading edge of an “pause” input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the “pause” (Gate) signal.

When power is removed, Output 1 will turn OFF. The last state of the output and the last value of the current timing period will be “stored” when power is removed. When power is reapplied the output will return to its last state and timing will resume from the last value of the timing period.

## Counter Input Mode:

**Counter Input Mode - Counting Down (doun)**

Each leading edge of the input signal at CP1 will decrement the count present value PV by 1.

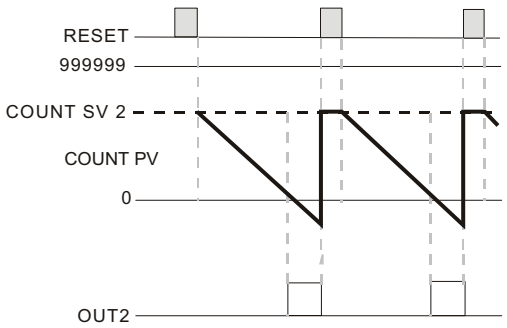
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtsr ).



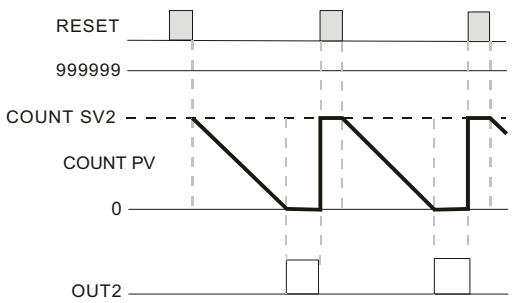

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will remain at 0 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



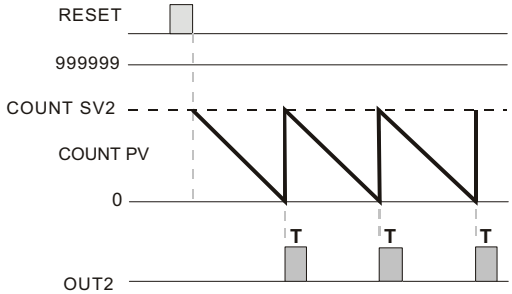

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

**Mode C (c)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



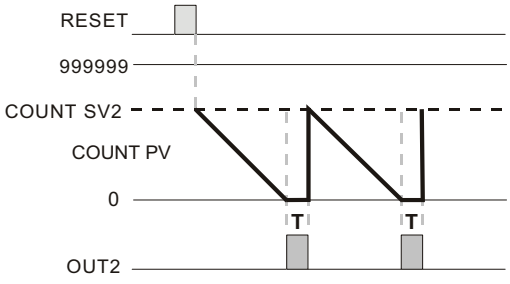

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

**Mode R (r)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV is prohibited from decrementing until the end of the output pulse time (toUt2) when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



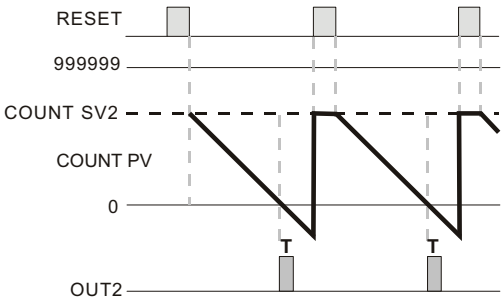

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



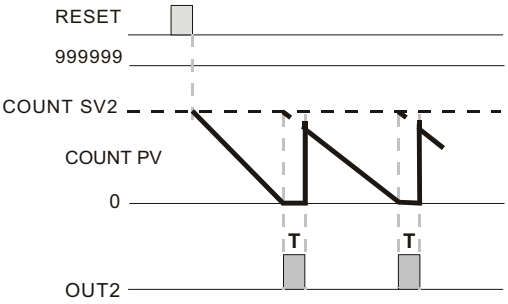

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from decrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



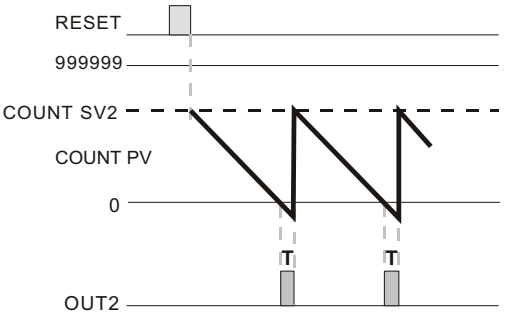

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



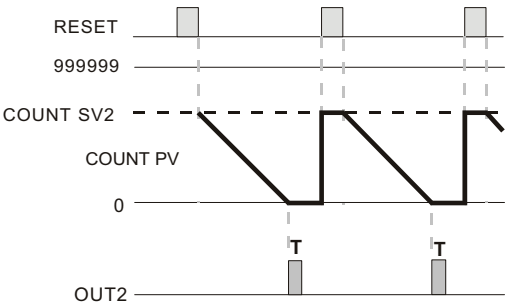

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at 0 regardless of additional input signals.

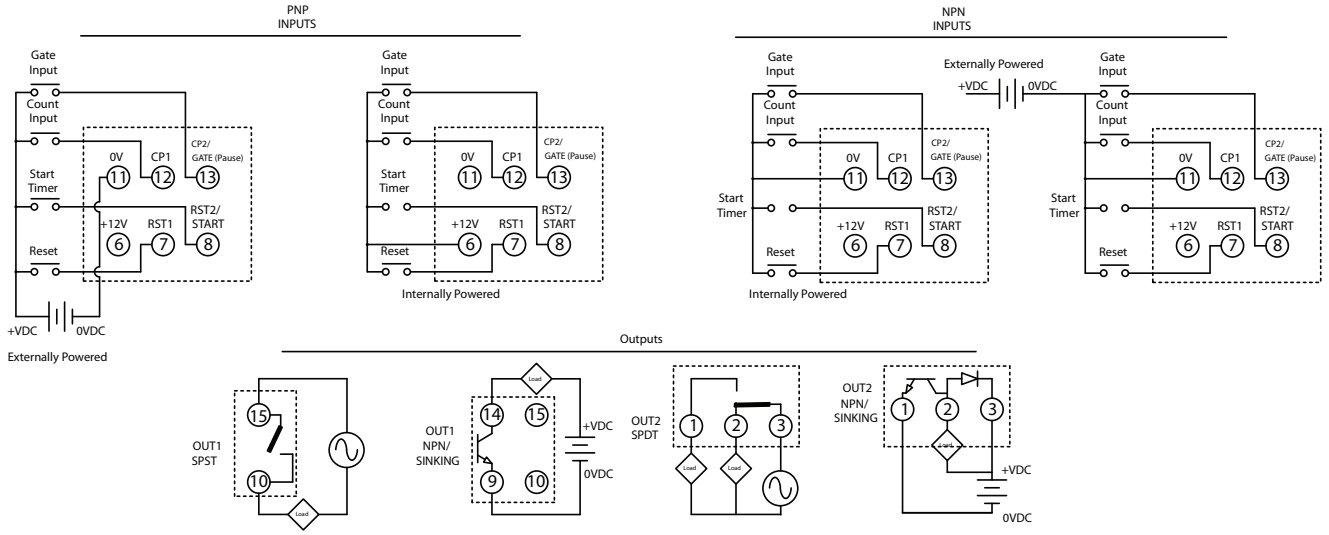
The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.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# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Repeat Cycle (rCY)

## Counter Input Mode -Up (UP)

## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Repeat Cycle (rCY)**

With power applied to the CTT, the leading edge of an input signal at START will begin the timing period setting value SV1 timing up or down based on parameter (t mode). At the end of the timing period, the timing period will reset and repeat automatically.

If the output pulse width parameter (tout1) is set to 0.00 Output 1 will turn ON at the end of the first timing period, turn OFF at the end of the next timing period, turn ON at the end of the next timing period, etc.

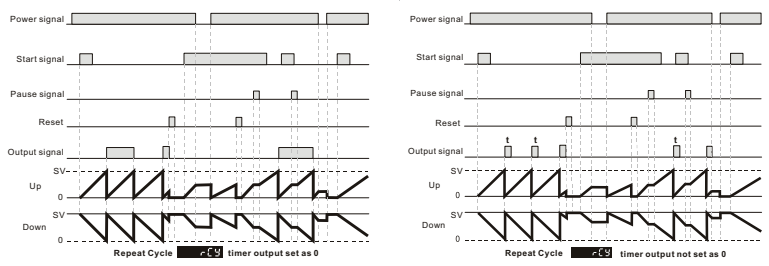
If the output pulse width parameter (tout1) is set to >0.00 Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tout1) at the beginning of the each timing period.

The trailing edge of the “start” signal has no effect on the output or timing period.

The leading edge of a “reset” input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ). The leading edge of a new “start” signal is necessary to restart the cycle.

The leading edge of an “pause” input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the “pause” (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.




## Counter Input Mode:

**Counter Input Mode - Counting Up (UP)**

Each leading edge of the input signal at CP1 will increment the count present value PV by 1.

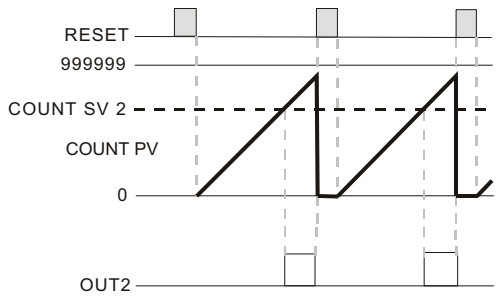
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



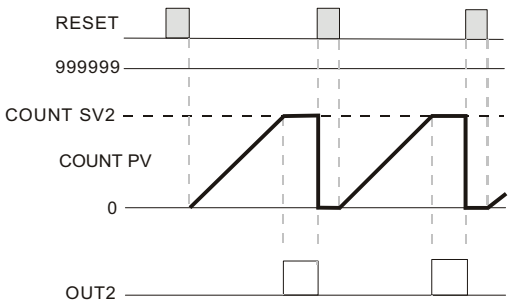

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

**Mode N (N)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will remain at the count SV2 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



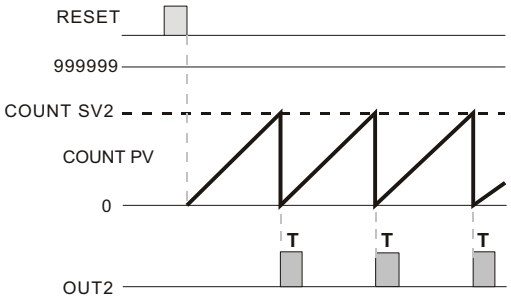

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

**Mode C (C)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

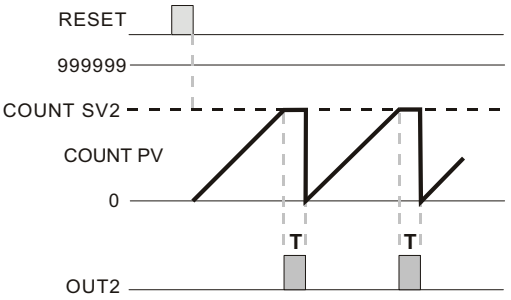
**Mode R (R)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2).

The count PV is prohibited from incrementing until the end of the output pulse time (toUt2) when the Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



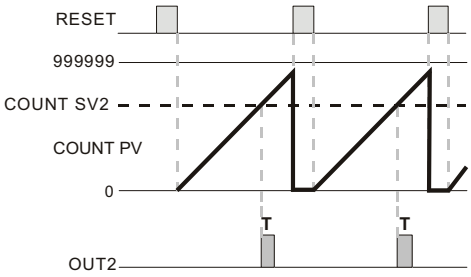

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



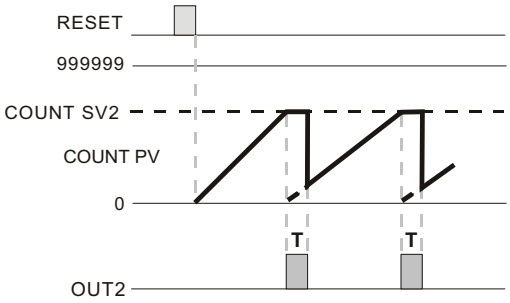

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from incrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



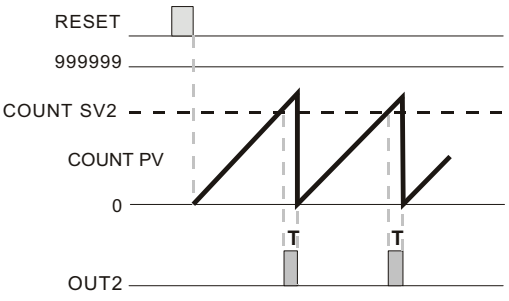

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



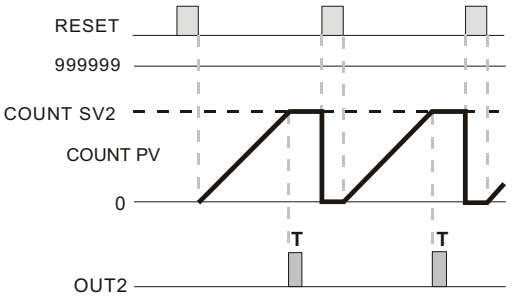

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at the count SV2 regardless of additional input signals.

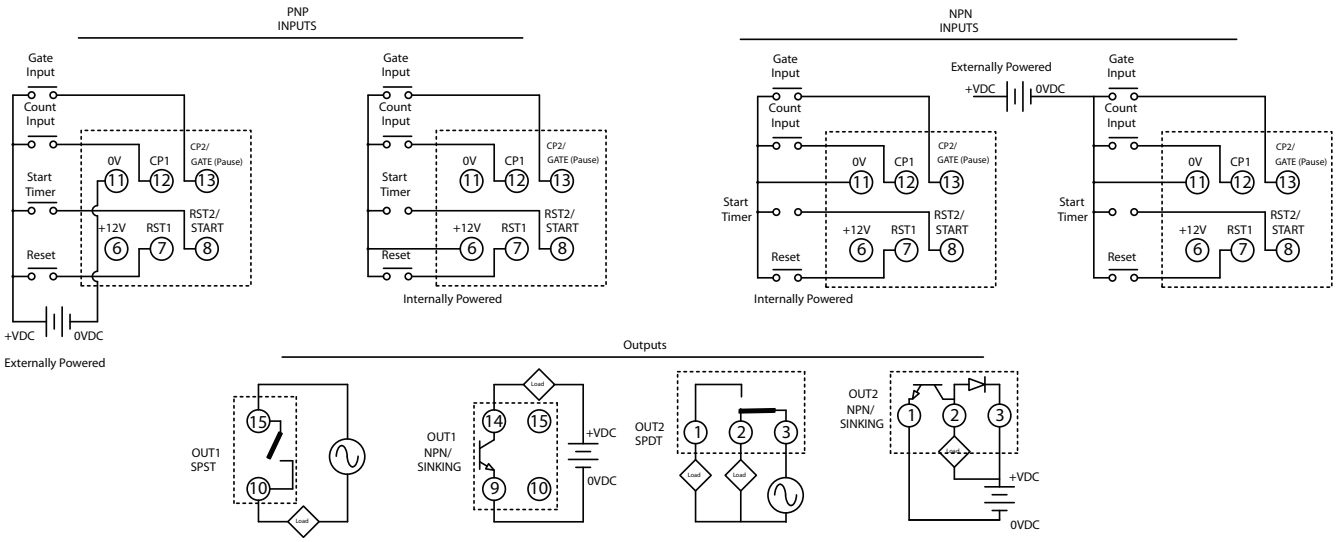
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rESr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

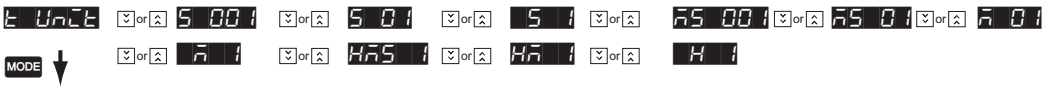
Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.




MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

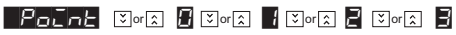
Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).




MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

**Back to Top**

# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Repeat Cycle (rCY)

## Counter Input Mode -Down (doun)

## Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tOUt1) or will be maintained ON (tOUt1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tOUt2) or will be maintained ON depending on the output mode selected.

**Timer Mode - Repeat Cycle (rCY)**

With power applied to the CTT, the leading edge of an input signal at START will begin the timing period setting value SV1 timing up or down based on parameter (t mode). At the end of the timing period, the timing period will reset and repeat automatically.

If the output pulse width parameter (tOUt1) is set to 0.00 Output 1 will turn ON at the end of the first timing period, turn OFF at the end of the next timing period, turn ON at the end of the next timing period, etc.

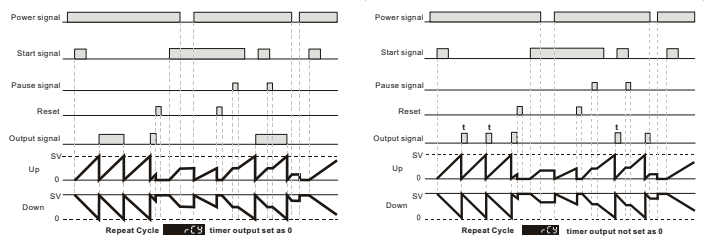
If the output pulse width parameter (tOUt1) is set to >0.00 Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tOUt1) at the beginning of the each timing period.

The trailing edge of the “start” signal has no effect on the output or timing period.

The leading edge of a “reset” input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ). The leading edge of a new “start” signal is necessary to restart the cycle.

The leading edge of an “pause” input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the “pause” (Gate) signal.

When power is removed, both outputs will turn OFF and the timing period will be reset.




## Counter Input Mode:

**Counter Input Mode - Counting Down (doun)**

Each leading edge of the input signal at CP1 will decrement the count present value PV by 1.

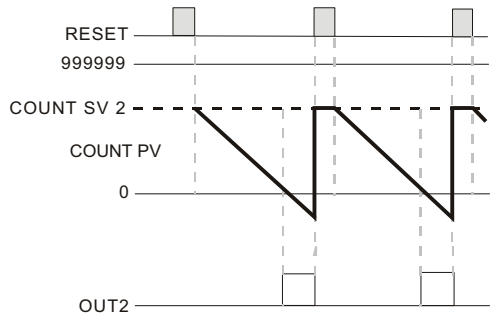
## Counter Output Modes:

**Mode F (F)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



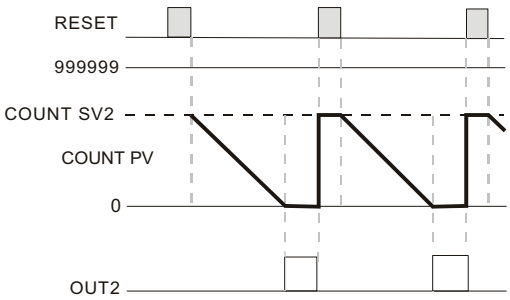

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will remain at 0 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



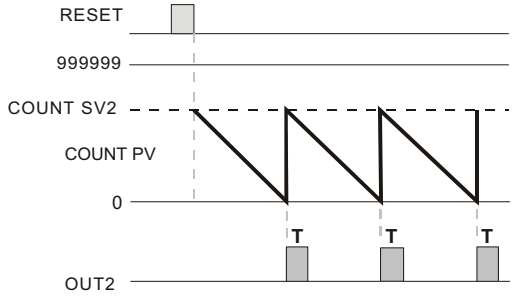

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

**Mode C (c)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



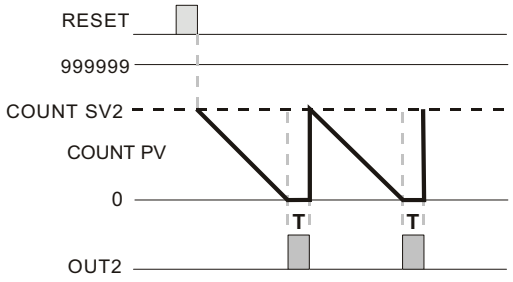

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

**Mode R (r)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV is prohibited from decrementing until the end of the output pulse time (toUt2) when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



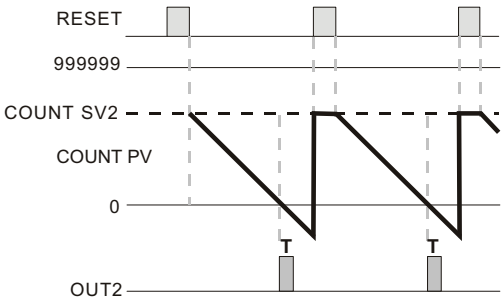

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



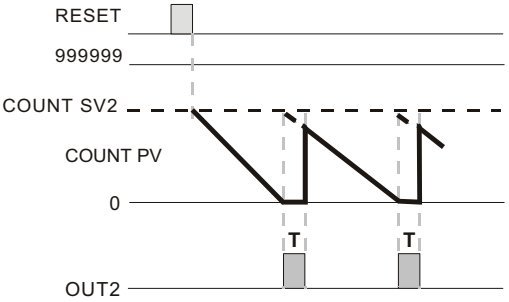

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from decrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



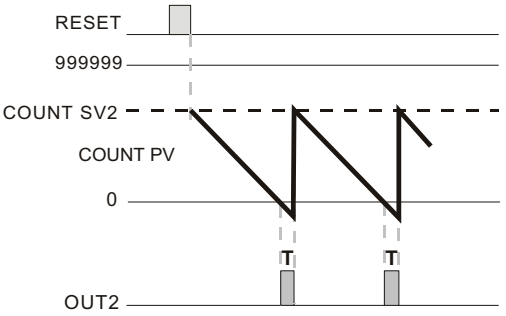

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



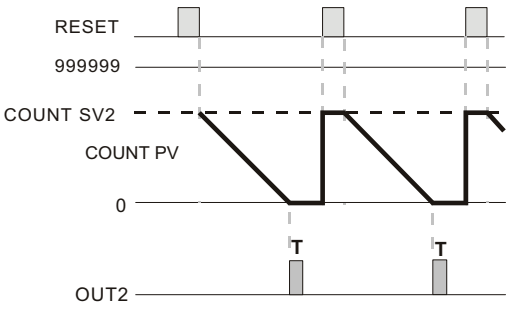

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at 0 regardless of additional input signals.

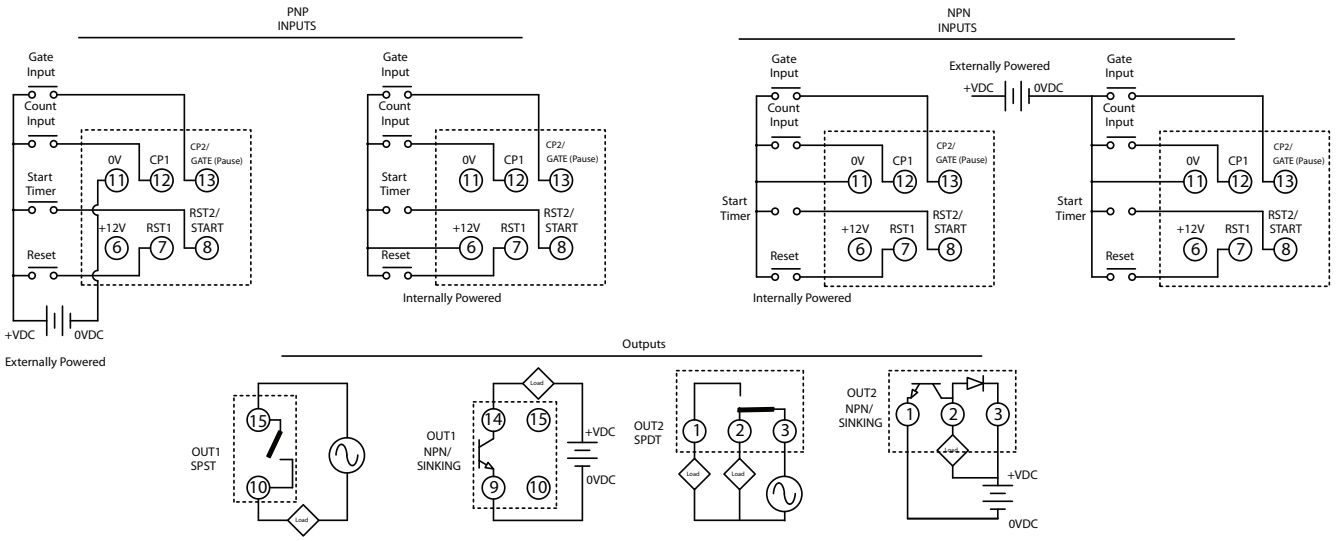
The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.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# CTT Timer + Counter Mixed Mode Functions

## Timer Mode - Repeat Cycle HOLD (rCYH)

## Counter Input Mode -UP (UP)

# Timer+Counter Mixed Mode

**Timer + Counter Mixed Mode**

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (tout1) or will be maintained ON (tout1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (tout2) or will be maintained ON depending on the output mode selected.

**Repeat Cycle HOLD (rCYH)**

With power applied to the CTT, the leading edge of an input signal at START will begin the timing period setting value SV1 timing up or down based on parameter (t mod). At the end of the timing period, the timing period will reset and repeat automatically.

If the output pulse width parameter (tout1) is set to 0.00, Output 1 will turn ON at the end of the first timing period, turn OFF at the end of the next timing period, turn ON at the end of the next timing period, etc.

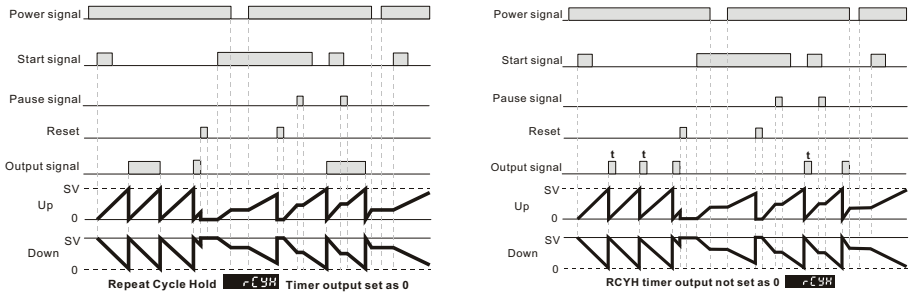
If the output pulse width parameter (tout1) is set to >0.00, Output 1 will turn ON momentarily for the time set in the output pulse width parameter (tout1) at the beginning of the each timing period.

The trailing edge of the “start” signal has no effect on the output or timing period.

The leading edge of a “reset” input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ). The leading edge of a new “start” signal is necessary to restart the cycle.

The leading edge of an “pause” input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the “pause” (Gate) signal.

When power is removed, Output 1 will turn OFF. The last state of the output and the last value of the current timing period will be “stored” when power is removed. When power is reapplied the output will return to its last state and timing will resume from the last value of the timing period by the leading edge of a new “start” signal.




# Counter Input Mode:

**Counter Input Mode - Counting Up (UP)**

Each leading edge of the input signal at CP1 will increment the count present value PV by 1.

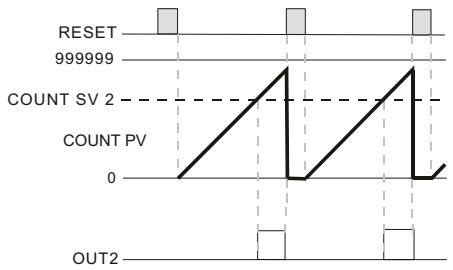
# Counter Output Modes:

**Mode F (F)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



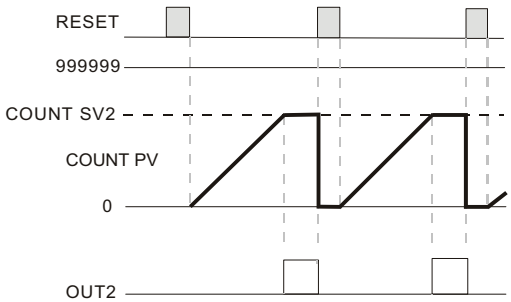

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

**Mode N (N)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON. The count PV will remain at the count SV2 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0, and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



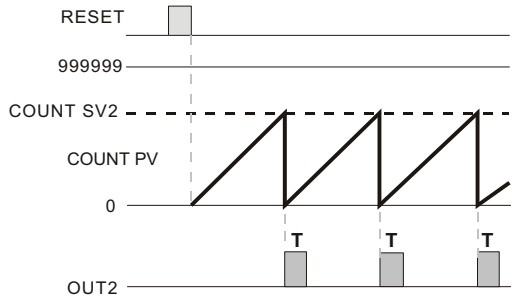

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

**Mode C (C)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

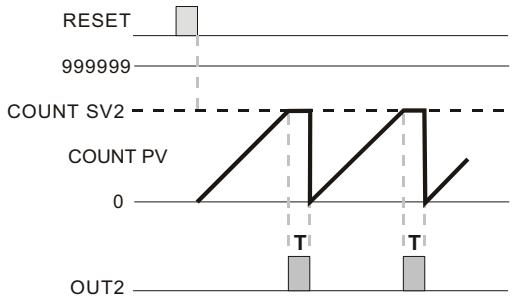
**Mode R (R)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (tout2).

The count PV is prohibited from incrementing until the end of the output pulse time (toUt2) when the Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



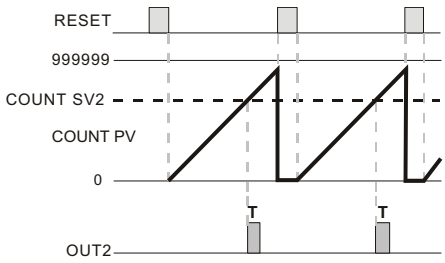

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



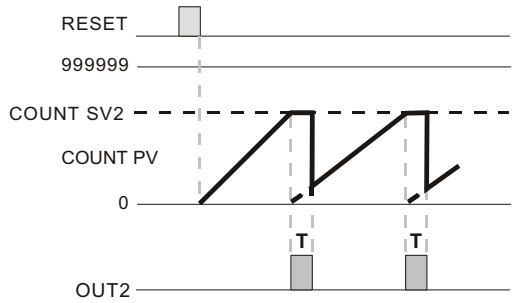

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from incrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV.

The trailing edge of the “reset” signal at RST1 enables counting to begin. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



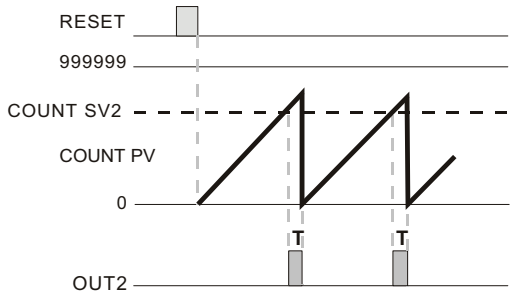

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts up to the count setting value SV2 Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to increment with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to 0.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



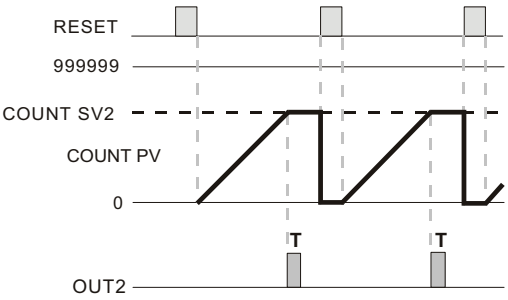

TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at the count SV2 regardless of additional input signals.

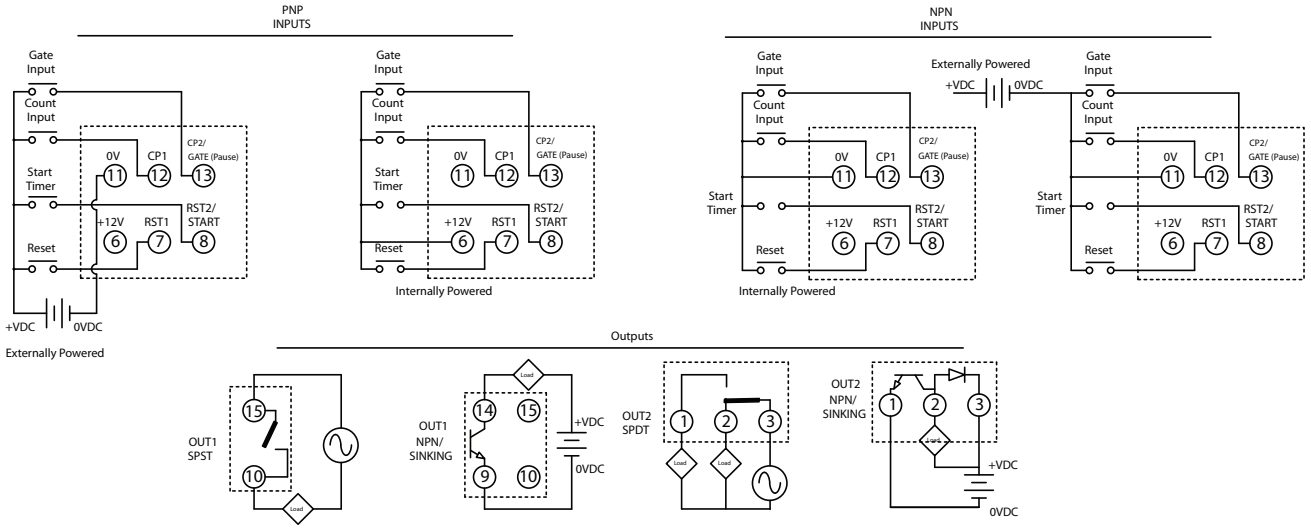
The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

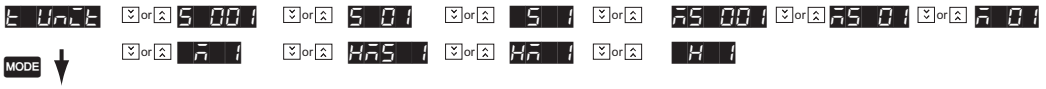
Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.




MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).


MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

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# CTT Timer + Counter Mixed Mode Functions
## Timer Mode - Repeat Cycle Hold (rCYH)
## Counter Input Mode -Down (doun)

## Timer+Counter Mixed Mode

### Timer + Counter Mixed Mode

In Timer + Counter Mixed Mode, timer period setting value SV1 controls Output 1 and counter setting value SV2 controls Output 2. Output 1(Timer) will turn ON momentarily for the time set in the output pulse width parameter (toUt1) or will be maintained ON (toUt1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (toUt2) or will be maintained ON depending on the output mode selected.

### Repeat Cycle HOLD (rCYH)

With power applied to the CTT, the leading edge of an input signal at START will begin the timing period setting value SV1 timing up or down based on parameter (t modE). At the end of the timing period, the timing period will reset and repeat automatically.

If the output pulse width parameter (toUt1) is set to 0.00, Output 1 will turn ON at the end of the first timing period, turn OFF at the end of the next timing period, turn ON at the end of the next timing period, etc.

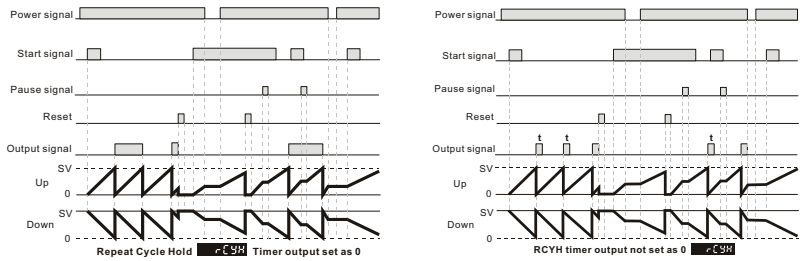
If the output pulse width parameter (toUt1) is set to >0.00, Output 1 will turn ON momentarily for the time set in the output pulse width parameter (toUt1) at the beginning of the each timing period.

The trailing edge of the "start" signal has no effect on the output or timing period.

The leading edge of a "reset" input signal at RST1 will turn OFF Output 1, reset the timing period and prohibit the start of a new timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ). The leading edge of a new "start" signal is necessary to restart the cycle.

The leading edge of an "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the "pause" (Gate) signal.

When power is removed, Output 1 will turn OFF. The last state of the output and the last value of the current timing period will be "stored" when power is removed. When power is reapplied the output will return to its last state and timing will resume from the last value of the timing period by the leading edge of a new "start" signal.




## Counter Input Mode:

### Counter Input Mode - Counting Down (doun)

Each leading edge of the input signal at CP1 will decrement the count present value PV by 1.

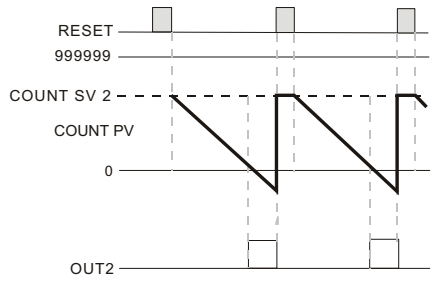
## Counter Output Modes:

### Mode F (F)

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will continue to decrement with each input signal.

The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



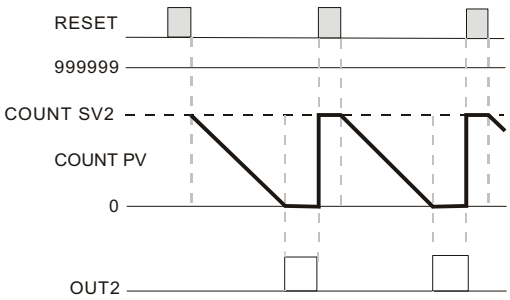

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

**Mode N (n)**

When the count present value PV counts down to 0, Output 2 will turn ON. The count PV will remain at 0 regardless of additional input signals.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



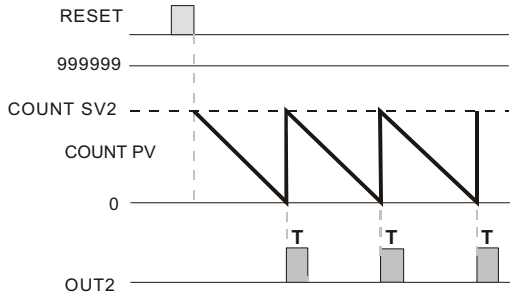

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

**Mode C (c)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2) and the count PV will reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



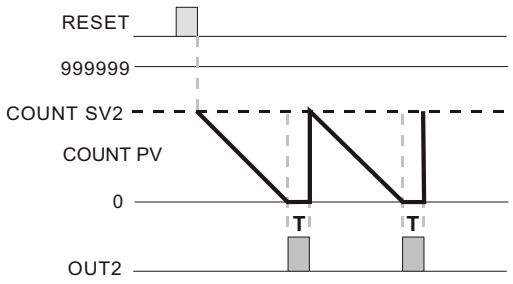

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

**Mode R (r)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV is prohibited from decrementing until the end of the output pulse time (toUt2) when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



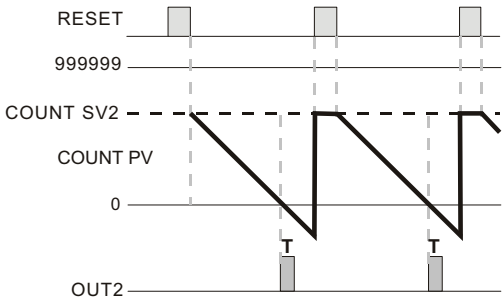

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

**Mode K (K)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



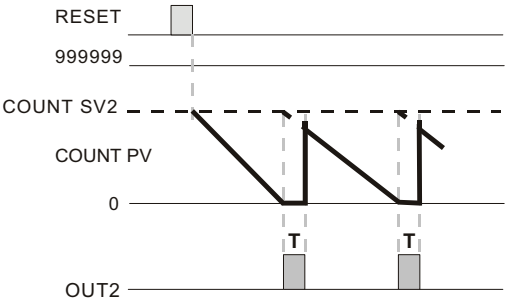

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

**Mode P (P)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV display is prohibited from decrementing until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2 and any input signals that occurred during the output pulse time.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



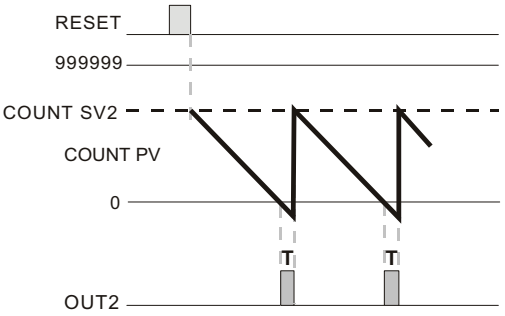

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

**Mode Q (Q)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will continue to decrement with each input signal until the end of the output pulse time when Output 2 turns OFF and the count PV is reset automatically to the count setting value SV2.

The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).



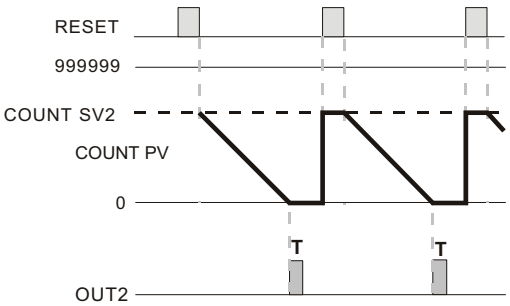

TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

**Mode A (A)**

When the count present value PV counts down to 0, Output 2 will turn ON momentarily for the time set in the output pulse width parameter (toUt2). The count PV will remain at 0 regardless of additional input signals.

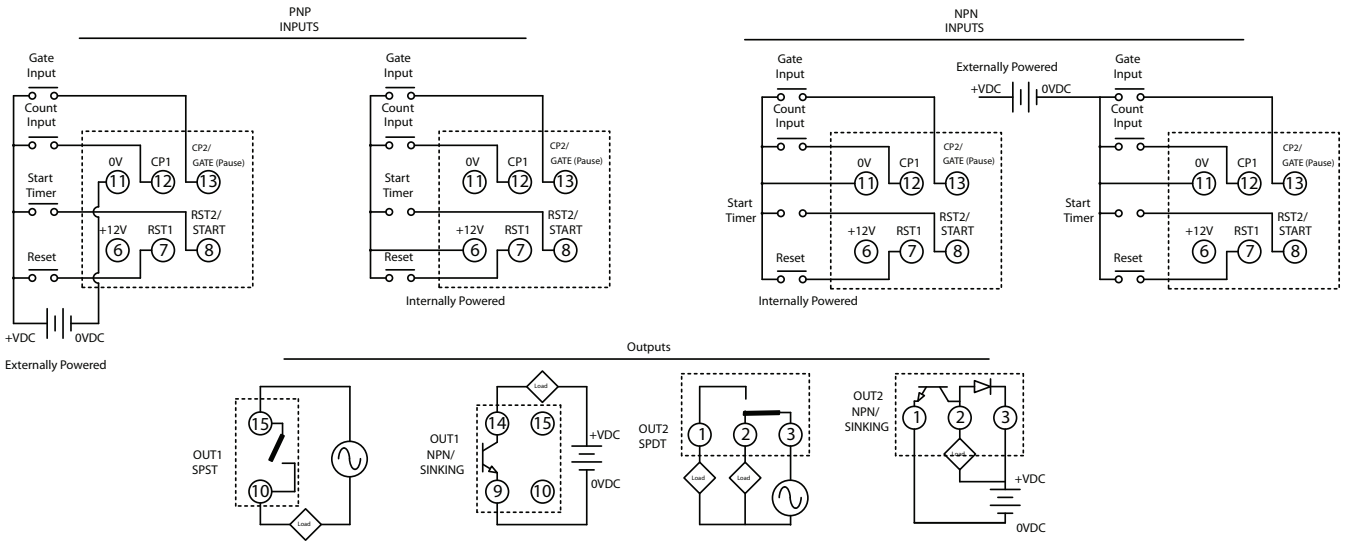
The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

The "reset" signal minimum pulse width is set by reset pulse width parameter ( rtSr ).




TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode A

# Timer + Counter Wiring Examples



# Keypad set up of the parameters for Timer + Counter mode:

To enter the page for parameter setting of the counter, press MODE for the main menu for more than 3 seconds. After the setup is completed, press MODE for more than 3 seconds under any of the parameter page you are in and return to the main menu.

Select functions: There are 4 modes in CTT, (left to right) timer, counter, tachometer and timer + counter.


MODE

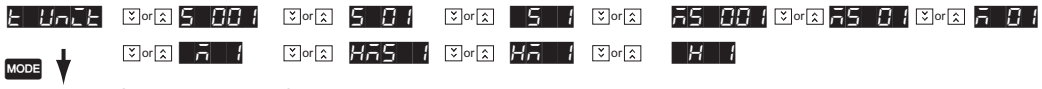
Select timer mode: times up and times down,


MODE

Select output modes: There are 8 output modes.


MODE

Select display unit: the min. unit 10ms - the max. unit hour are selectable.

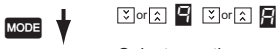



MODE

Select input modes: Only counting up and counting down are available.


MODE

Select output modes: Same as the output modes of the counter except for S, T, D.


MODE

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.


MODE

Pulse width of output 1: The default output time is 0.02 second. When the parameter is set to 0.00 second, the output status will be maintained ON.


MODE

Pulse width of output 2: This paramter is adjustable according to different output modes selected. If the output mode is C, the default output time will be 0.02 second, When the parameter is set to 0.00 second, the output status will be maintained ON. Not available in Output Modes F and N.


MODE

Set up the position of decimal point: 0 (no decimal point), 1 (one digit after decimal point), 2 (two digits after decimal point), 3 (three digits after decimal point).


MODE

Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999


MODE

Save the data while switching off the power: When SAVE is selected, the PV will be saved; when CLEAR is selected, the PV will not be saved.


MODE

Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable


MODE

Select input signal types: NPN and PNP


MODE

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