

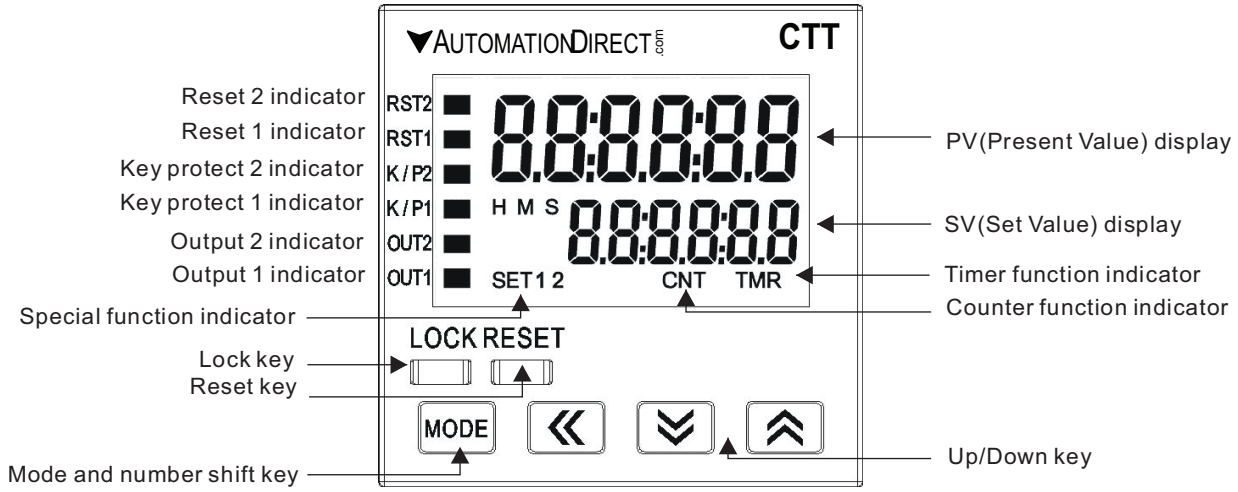
TIMER + COUNTER MIXED MODE FUNCTIONS



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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 parameter settings		
	Left move 1 digit of the selected digit. The indicator of the selected digit will flash.		
	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 and at the same time to disable key-protected mode. (Lock 1) disables the functions of all keys. (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 to save the setting. If SV or parameters are not changed, press once to switch between SET1 and SET2.		
Configuration	Press in operation mode for more than 3 seconds to enter configuration mode. Press once to switch among parameters. To return to operation mode, press 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 (EOUT1) or will be maintained ON (EOUT1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (EOUT2) or will be maintained ON depending on the output mode selected.

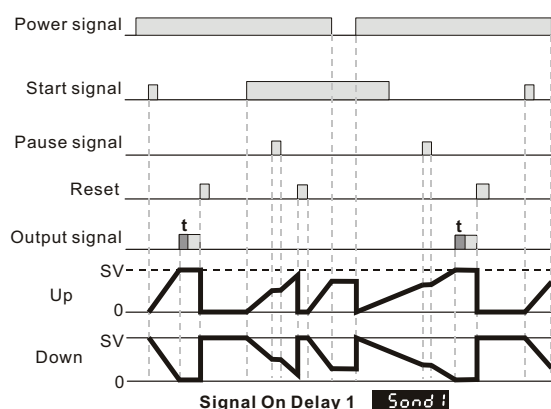
Timer Mode - Signal on Delay 1 (Sond 1)

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 (E mode). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (EOUT1) or will be maintained ON if the output pulse width parameter (EOUT1) 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 (RESW).

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.



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.

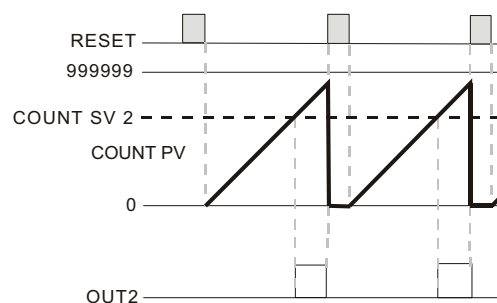
Counter Output Modes:

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 (RESW).



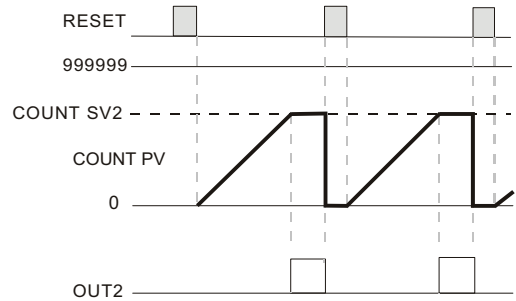
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

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 (**RESW**).



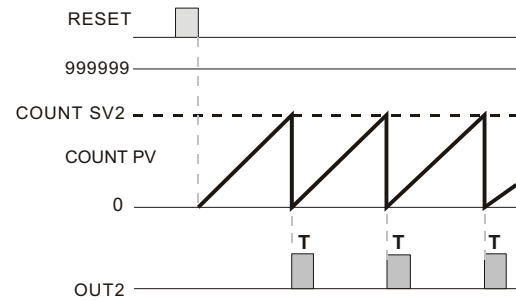
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

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 (**OUTW**) 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 (**RESW**).



TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

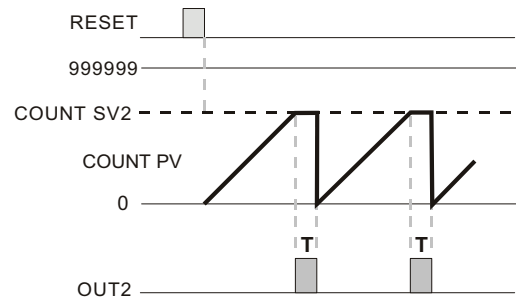
Mode R (R)

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 (**OUTW**).

The count PV is prohibited from incrementing until the end of the output pulse time (**OUTW**) 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 (**RESW**).



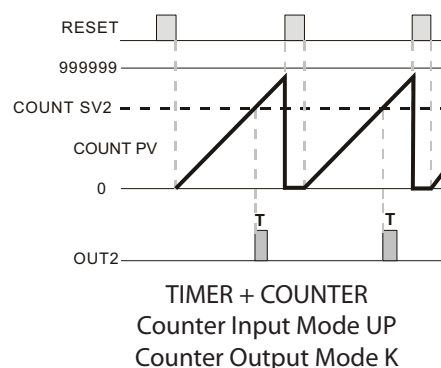
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

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 (**OUT2**). 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 (**RESr**).

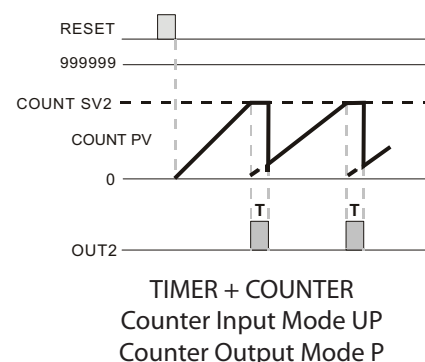


Mode P (P)

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 (**OUT2**). 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 (**RESr**).

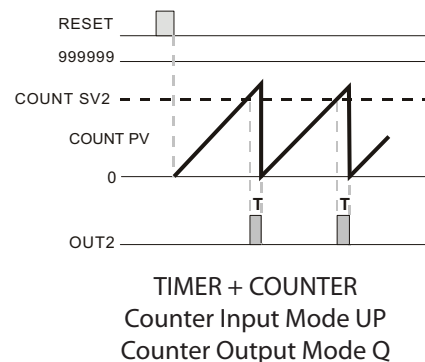


Mode Q (Q)

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 (**OUT2**). 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 (**RESr**).

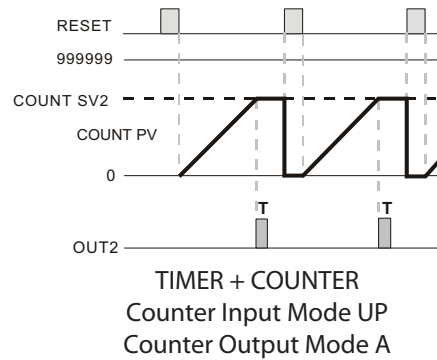


Mode A

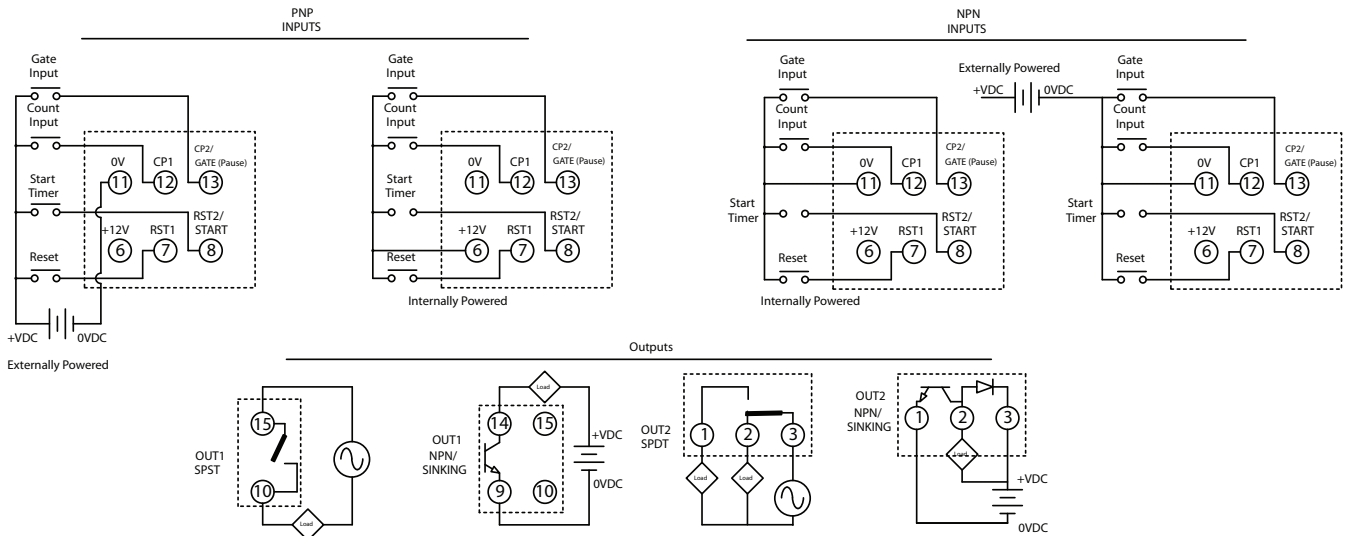
When the count present value PV counts up to the count setting value SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (**OUTP2**). The count PV will remain at the count SV2 regardless of additional input signals.

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 (**RESW**).



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.

Func or **ctme** or **Cont** or **tACH** or **rcy**

MODE ↓
Select timer mode: times up and times down,

t mode or **UP** or **down**

MODE ↓
Select output modes: There are 8 output modes.

t outd or **Sond1** or **Sond2** or **Soffd** or **Son** or **Pond** or **PondH**
rcy or **rcyH**

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

t Unit or **S.001** or **S.01** or **S.1** or **MS.001** or **MS.01** or **M.01**
n.1 or **hrs.1** or **hr.1** or **H.1**

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

C InPt or **UP** or **down**

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

C outd or **F** or **n** or **r** or **r** or **H** or **P**

MODE ↓
r or **r**

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

C SPed or **5K** or **1K** or **200** or **30** or **1**

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.

t out1 or **002** or **000**

MODE ↓
Pulse width of output 2: This parameter 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.

t out2 or **002** or **000**

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).

PoCnt or **0** or **1** or **2** or **3**

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

PSCALE or **1000**

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.

PuErS or **CLEAR** or **SAVE**

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

rtSr or **20** or **1**

MODE ↓
Select input signal types: NPN and PNP

InPtLC or **nPN** or **pNP**

MODE ↓

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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Signal On Delay 1 (Signal 1)

Counter Input Mode - Down (Down)

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 (EOUT1) or will be maintained ON (EOUT1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (EOUT2) or will be maintained ON depending on the output mode selected.

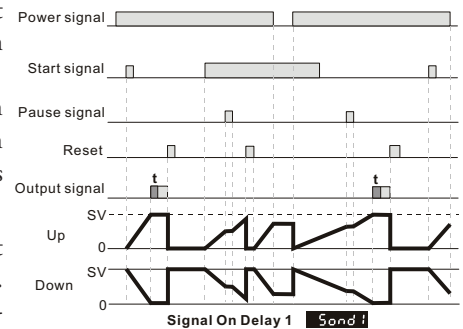
Timer Mode - Signal On Delay 1 (Signal 1)

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 (E mode). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (EOUT1) or will be maintained ON if the output pulse width parameter (EOUT1) 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 (RESR).

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 (Down)

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

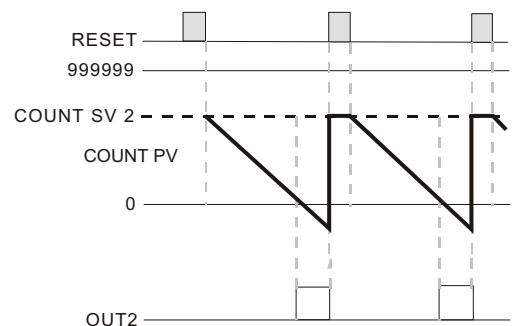
Counter Output Modes:

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 (RESR).



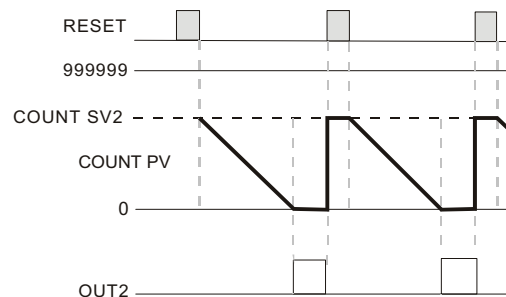
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

Mode 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 (**PLSR**).



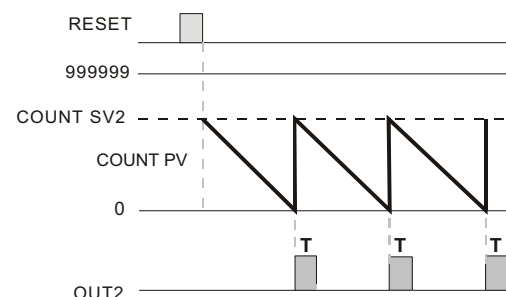
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

Mode 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 (**OUTP2**) 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 (**PLSR**).



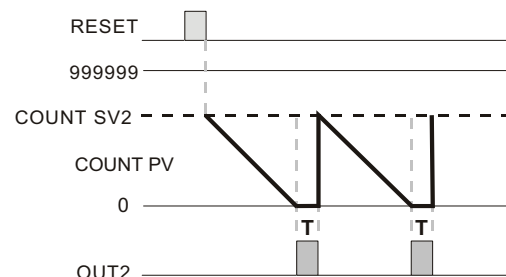
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

Mode 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 (**OUTP2**). The count PV is prohibited from decrementing until the end of the output pulse time (**OUTP2**) 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 (**PLSR**).



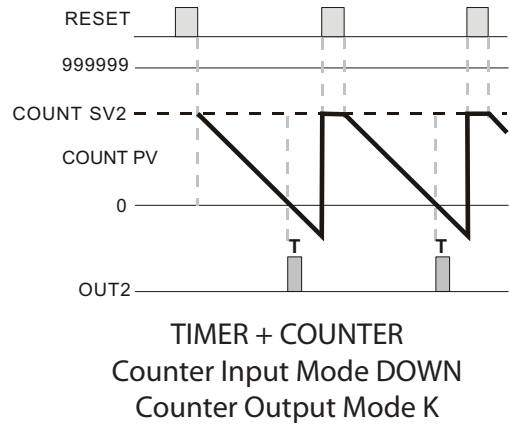
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

Mode 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 (**OUT2**). 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 (**RST**).

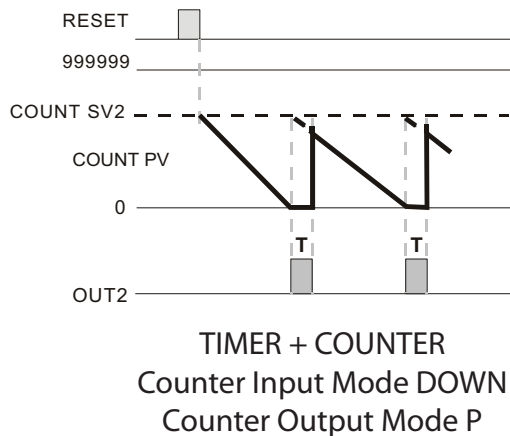


Mode P

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 (**OUT2**). 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 (**RST**).

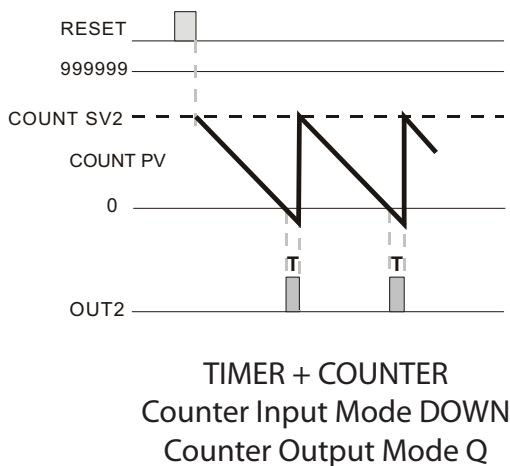


Mode Q

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 (**OUT2**). 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 (**RST**).

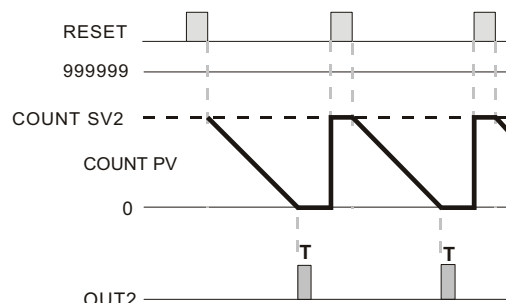


Mode A (A)

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 (**PULSE**). The count PV will remain at 0 regardless of additional input signals.

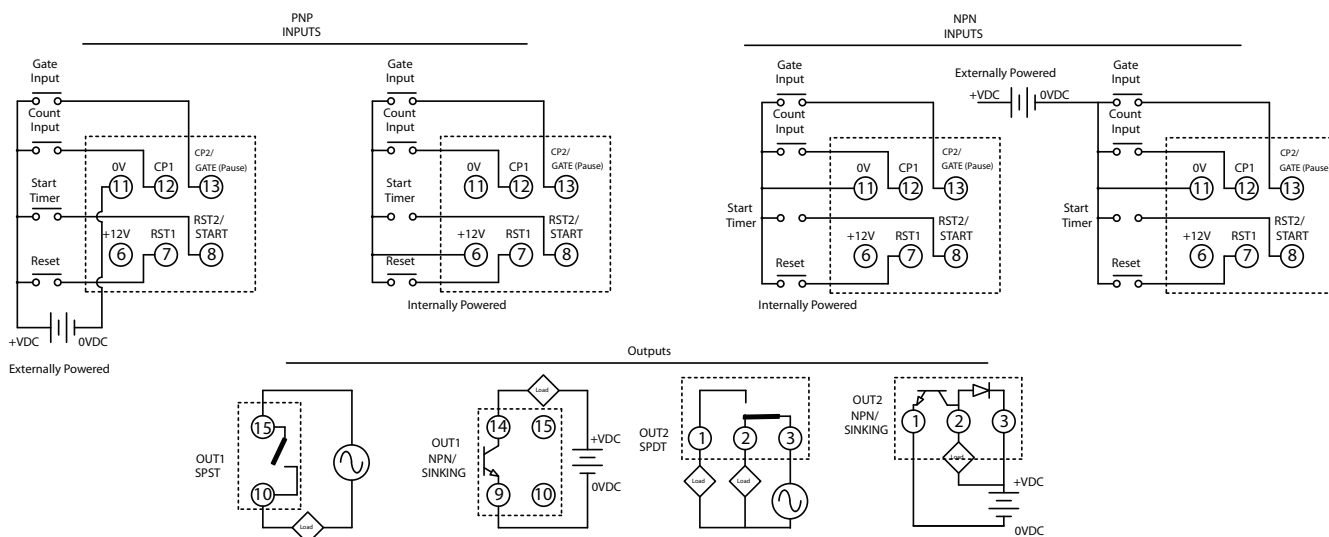
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The “reset” signal minimum pulse width is set by reset pulse width parameter (**RST**).



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.

FUnC [▼/▲] **CTnE** [▼/▲] **Cont** [▼/▲] **TACh** [▼/▲] **TCY**

MODE ↓
Select timer mode: times up and times down,

t mode [▼/▲] **UP** [▼/▲] **down**

MODE ↓
Select output modes: There are 8 output modes.

t outd [▼/▲] **Sond1** [▼/▲] **Sond2** [▼/▲] **Soffd** [▼/▲] **Son** [▼/▲] **Pand** [▼/▲] **PandH**
[▼/▲] **rcy** [▼/▲] **rcyh**

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

t unit [▼/▲] **S.001** [▼/▲] **S.01** [▼/▲] **S.1** [▼/▲] **MS.001** [▼/▲] **MS.01** [▼/▲] **M.01**
[▼/▲] **m.1** [▼/▲] **HRs.1** [▼/▲] **HR.1** [▼/▲] **H.1**

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

t inpt [▼/▲] **UP** [▼/▲] **down**

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

t outd [▼/▲] **F** [▼/▲] **N** [▼/▲] **C** [▼/▲] **R** [▼/▲] **T** [▼/▲] **D** [▼/▲] **P**
[▼/▲] **A** [▼/▲] **B**

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

t speed [▼/▲] **5K** [▼/▲] **1K** [▼/▲] **200** [▼/▲] **30** [▼/▲] **1**

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.

t out1 [▼/▲] **0.02** [▼/▲] **0.00**

MODE ↓
Pulse width of output 2: This parameter 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.

t out2 [▼/▲] **0.02** [▼/▲] **0.00**

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).

Point [▼/▲] **0** [▼/▲] **1** [▼/▲] **2** [▼/▲] **3**

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

PSCALE [▼/▲] **1000**

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.

PJERS [▼/▲] **CLEAR** [▼/▲] **SAVE**

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

rtSr [▼/▲] **20** [▼/▲] **1**

MODE ↓
Select input signal types: NPN and PNP

inptLC [▼/▲] **nPN** [▼/▲] **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 (EOUT1) or will be maintained ON (EOUT1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (EOUT2) or will be maintained ON depending on the output mode selected.

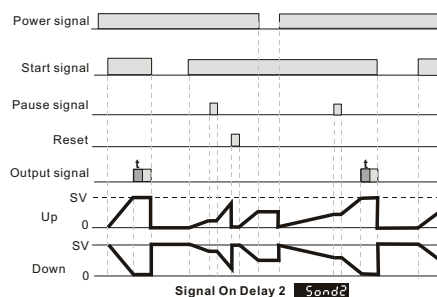
Timer Mode - Signal On Delay 2 (Sond2)

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 (MODE). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (EOUT1) or will be maintained ON if the output pulse width parameter (EOUT1) 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 (RES) 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.

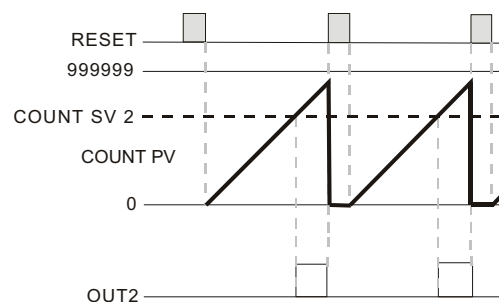
Counter Output Modes:

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 (RES).



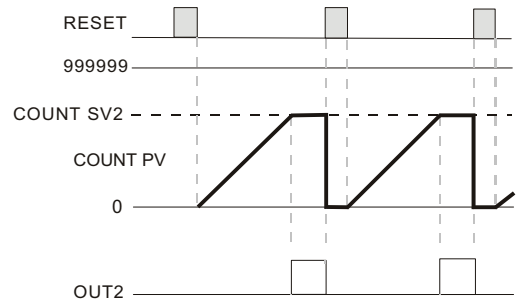
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

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 (**RESET**).



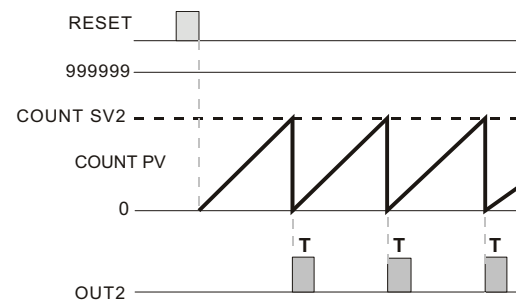
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

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 (**OUTP2**) 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 (**RESET**).



TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

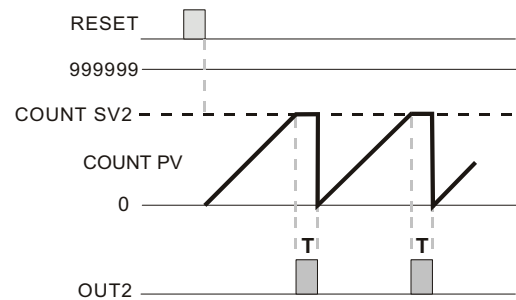
Mode R (R)

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 (**OUTP2**).

The count PV is prohibited from incrementing until the end of the output pulse time (**OUTP2**) 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 (**RESET**).



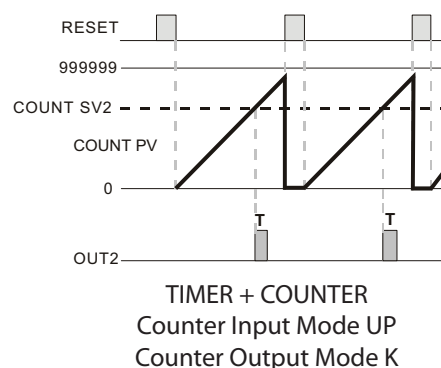
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

Mode 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 (**OUTP2**). 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 (**RESR**).

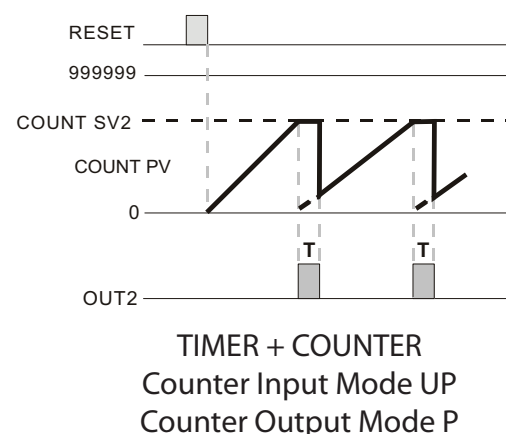


Mode P

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 (**OUTP2**). 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 (**RESR**).

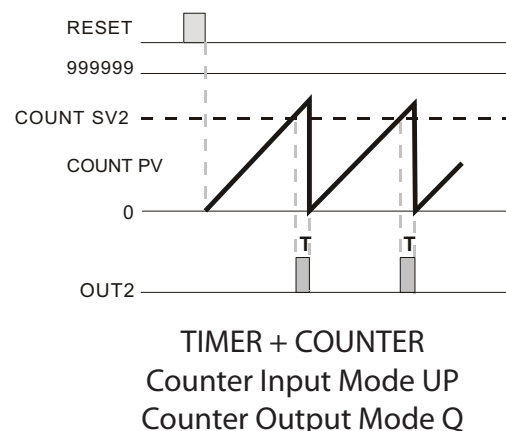


Mode Q

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 (**OUTP2**). 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 (**RESR**).

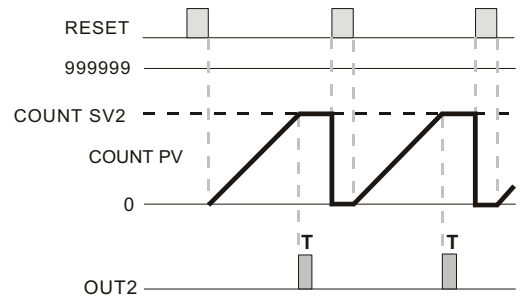


Mode A (A)

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 (**OUT2P**). The count PV will remain at the count SV2 regardless of additional input signals.

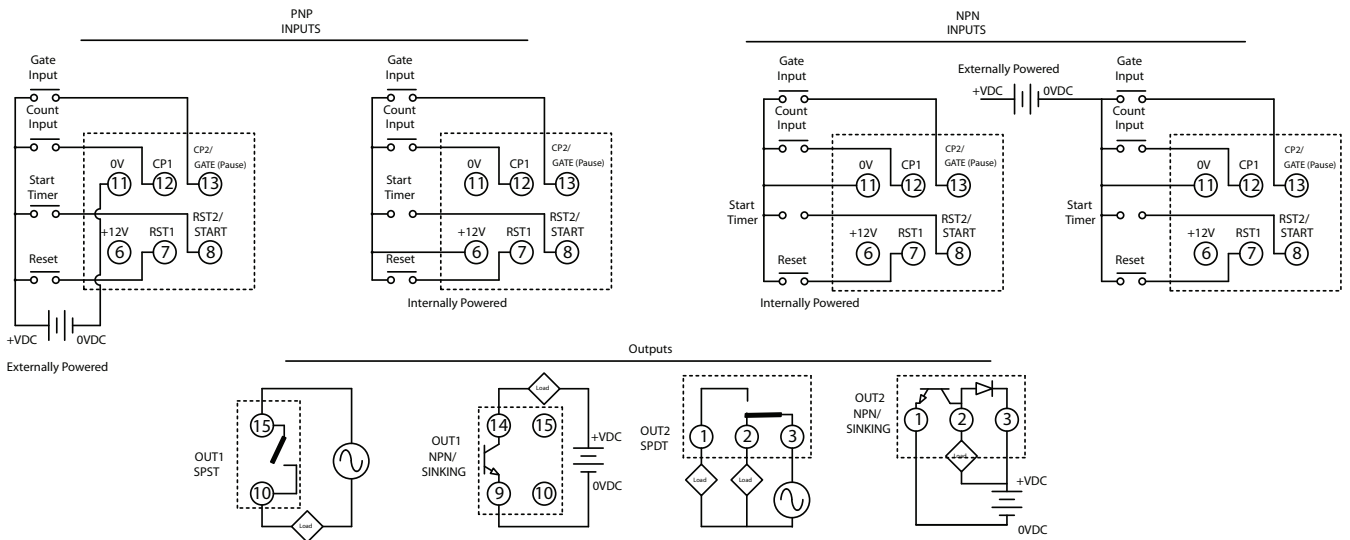
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

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.

Funct [▼] or [▲] **ctare** [▼] or [▲] **Cont** [▼] or [▲] **tach** [▼] or [▲] **cty**

MODE ↓
Select timer mode: times up and times down,

t mode [▼] or [▲] **UP** [▼] or [▲] **down**

MODE ↓
Select output modes: There are 8 output modes.

t outd [▼] or [▲] **Sond1** [▼] or [▲] **Sond2** [▼] or [▲] **Soffd** [▼] or [▲] **Son** [▼] or [▲] **Pond** [▼] or [▲] **PondH**
[▼] or [▲] **rcy** [▼] or [▲] **rcyh**

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

t unit [▼] or [▲] **S.001** [▼] or [▲] **S.01** [▼] or [▲] **S.1** [▼] or [▲] **MS.001** [▼] or [▲] **MS.01** [▼] or [▲] **M.01**
[▼] or [▲] **m** [▼] or [▲] **MS** [▼] or [▲] **HR** [▼] or [▲] **H**

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

t inpt [▼] or [▲] **UP** [▼] or [▲] **down**

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

t outd [▼] or [▲] **F** [▼] or [▲] **n** [▼] or [▲] **C** [▼] or [▲] **n** [▼] or [▲] **L** [▼] or [▲] **P**

MODE ↓
[▼] or [▲] **Q** [▼] or [▲] **R**

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

t speed [▼] or [▲] **5K** [▼] or [▲] **1K** [▼] or [▲] **200** [▼] or [▲] **30** [▼] or [▲] **1**

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.

t out1 [▼] or [▲] **002** [▼] or [▲] **000**

MODE ↓
Pulse width of output 2: This parameter 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.

t out2 [▼] or [▲] **002** [▼] or [▲] **000**

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).

PoInt [▼] or [▲] **0** [▼] or [▲] **1** [▼] or [▲] **2** [▼] or [▲] **3**

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

PSCALE [▼] or [▲] **1000**

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.

PVERS [▼] or [▲] **CLEAR** [▼] or [▲] **SAVE**

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

rtSr [▼] or [▲] **20** [▼] or [▲] **1**

MODE ↓
Select input signal types: NPN and PNP

INPULC [▼] or [▲] **NPN** [▼] or [▲] **PNP**

MODE ↓
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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Signal On Delay 2 (SODD2)

Counter Input Mode - Down (DOWN)

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 (EOUT1) or will be maintained ON (EOUT1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (EOUT2) or will be maintained ON depending on the output mode selected.

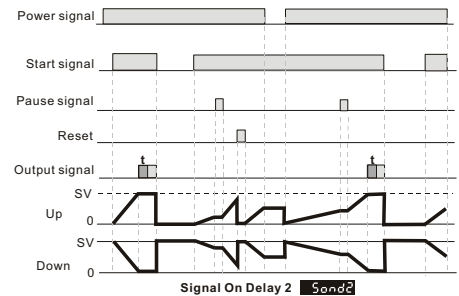
Timer Mode - Signal On Delay 2 (SODD2)

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 (MODE). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (EOUT1) or will be maintained ON if the output pulse width parameter (EOUT1) 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 (RESR).

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 (DOWN)

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

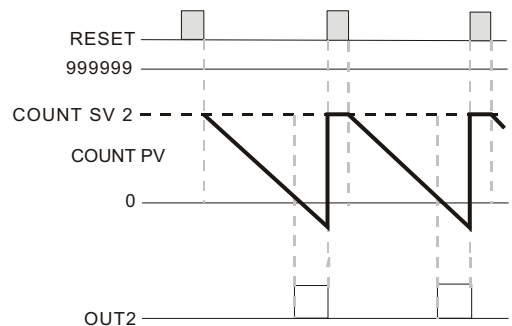
Counter Output Modes:

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 (RESR).



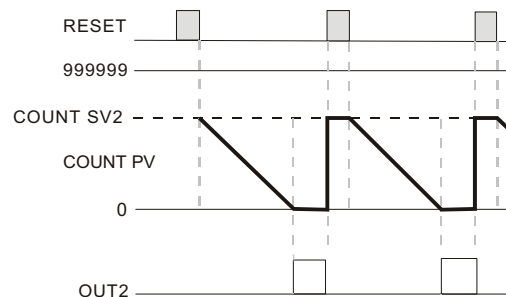
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

Mode 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 (**PLSR**).



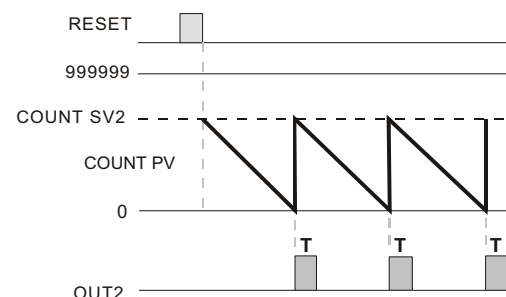
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

Mode 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 (**OUTP2**) 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 (**PLSR**).



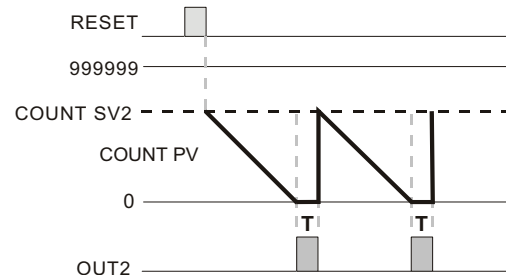
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

Mode 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 (**OUTP2**). The count PV is prohibited from decrementing until the end of the output pulse time (**OUTP2**) 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 (**PLSR**).



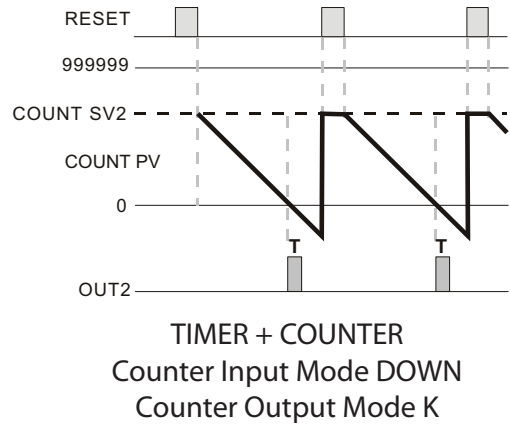
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

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 (**OUTP2**). 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 (**RSTP**).

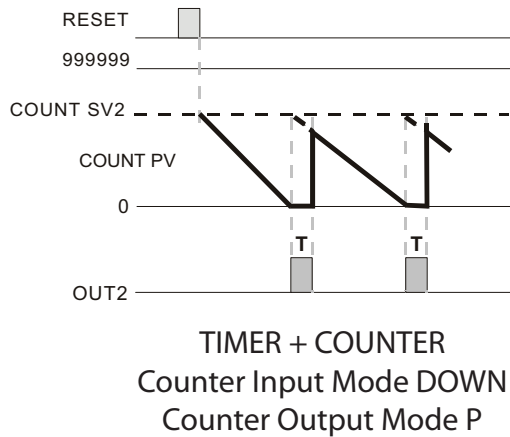


Mode P (P)

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 (**OUTP2**). 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 (**RSTP**).

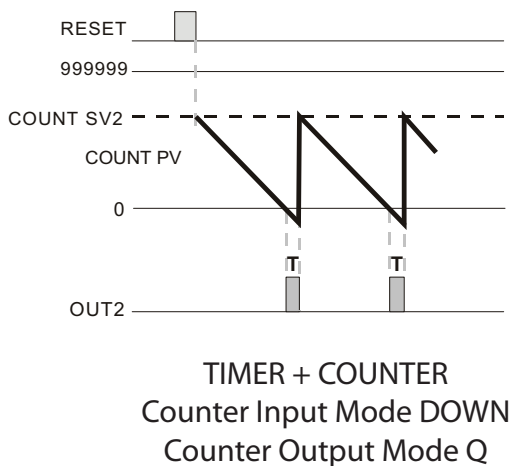


Mode Q (Q)

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 (**OUTP2**). 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 (**RSTP**).

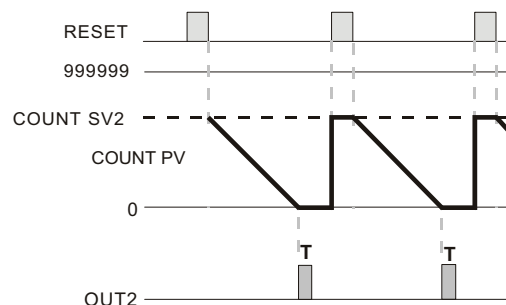


Mode A

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 (**PLT2**). The count PV will remain at 0 regardless of additional input signals.

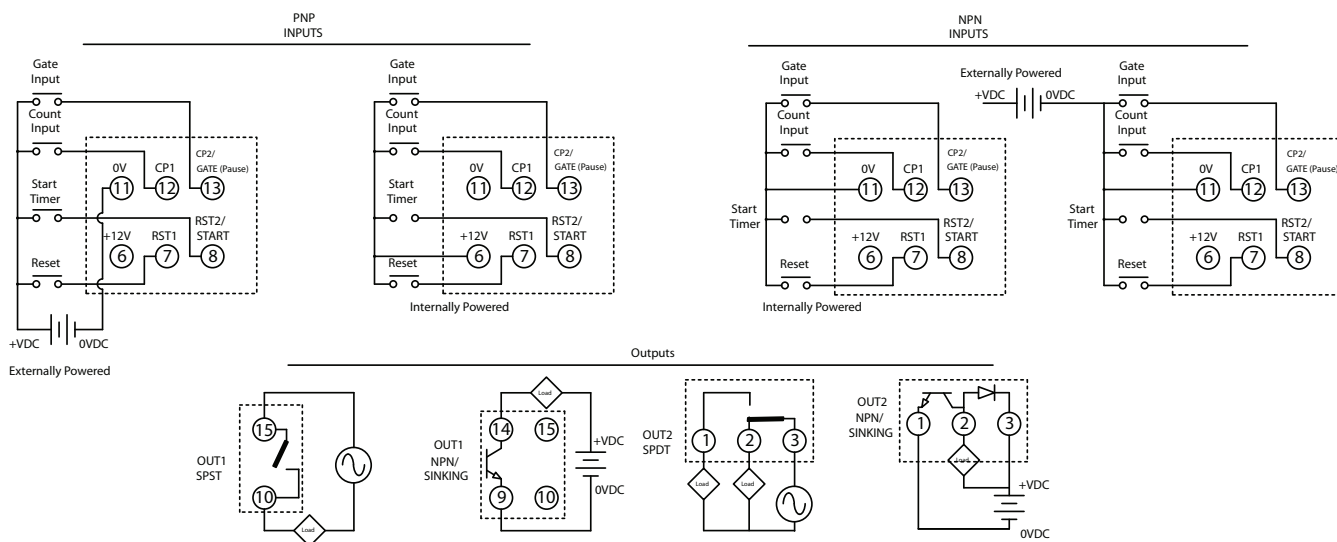
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The “reset” signal minimum pulse width is set by reset pulse width parameter (**RES**).



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.

FUNC [▼] or [▲] **TIME** [▼] or [▲] **Cont** [▼] or [▲] **TACH** [▼] or [▲] **TCY**

MODE [▼] Select timer mode: times up and times down,
mode [▼] or [▲] **UP** [▼] or [▲] **down**

MODE [▼] Select output modes: There are 8 output modes.
mode [▼] or [▲] **Sond1** [▼] or [▲] **Sond2** [▼] or [▲] **Soffd** [▼] or [▲] **Son** [▼] or [▲] **Pond** [▼] or [▲] **PondH**
mode [▼] or [▲] **rcy** [▼] or [▲] **rcyh**

MODE [▼] Select display unit: the min. unit 10ms - the max. unit hour are selectable.
mode [▼] or [▲] **5.001** [▼] or [▲] **5.01** [▼] or [▲] **5.1** [▼] or [▲] **75.001** [▼] or [▲] **75.01** [▼] or [▲] **7.01**
mode [▼] or [▲] **7.1** [▼] or [▲] **775.1** [▼] or [▲] **77.1** [▼] or [▲] **7.1**

MODE [▼] Select input modes: Only counting up and counting down are available.
mode [▼] or [▲] **UP** [▼] or [▲] **down**

MODE [▼] Select output modes: Same as the output modes of the counter except for S, T, D.
mode [▼] or [▲] **F** [▼] or [▲] **N** [▼] or [▲] **C** [▼] or [▲] **A** [▼] or [▲] **E** [▼] or [▲] **P**
mode [▼] or [▲] **Q** [▼] or [▲] **R**

MODE [▼] Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.
mode [▼] or [▲] **5K** [▼] or [▲] **1K** [▼] or [▲] **200** [▼] or [▲] **30** [▼] or [▲] **1**

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 [▼] or [▲] **0.02** [▼] or [▲] **0.00**

MODE [▼] Pulse width of output 2: This parameter 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 [▼] or [▲] **0.02** [▼] or [▲] **0.00**

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 [▼] or [▲] **0** [▼] or [▲] **1** [▼] or [▲] **2** [▼] or [▲] **3**

MODE [▼] Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999
mode [▼] or [▲] **1000**

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 [▼] or [▲] **CLEAR** [▼] or [▲] **SAVE**

MODE [▼] Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable
mode [▼] or [▲] **20** [▼] or [▲] **1**

MODE [▼] Select input signal types: NPN and PNP
mode [▼] or [▲] **NPN** [▼] or [▲] **PNP**

MODE [▼]

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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Signal Off Delay (S_{OFFd})

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 (P_{OUT1}) or will be maintained ON (P_{OUT1} set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (P_{OUT2}) or will be maintained ON depending on the output mode selected.

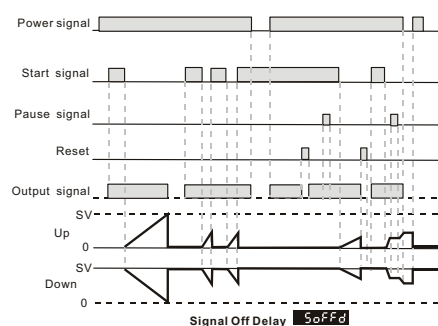
Timer Mode - Signal Off Delay (S_{OFFd})

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 (E_{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 (P_{RST}).

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.

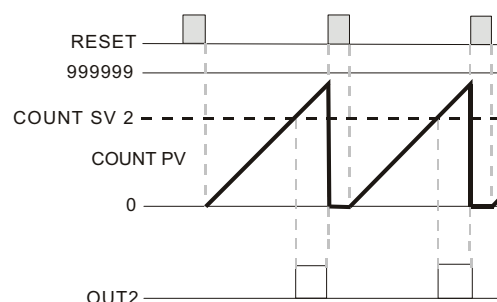
Counter Output Modes:

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 (P_{RST}).



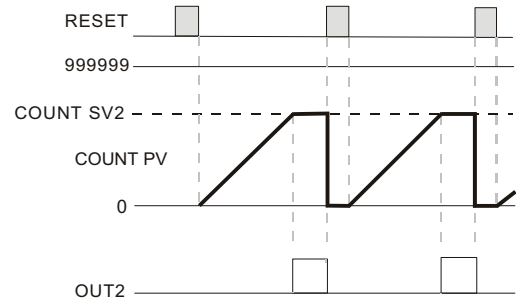
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

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 (**RESR**).



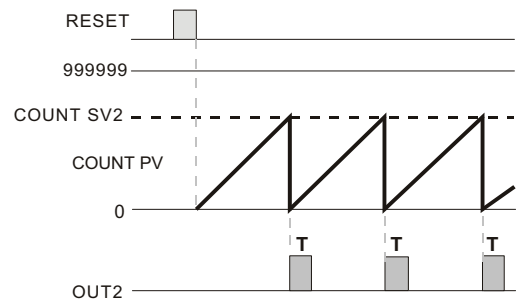
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

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 (**OUTL2**) 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 (**RESR**).



TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

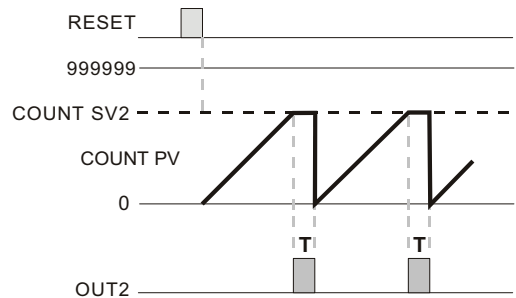
Mode R (R)

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 (**OUTL2**).

The count PV is prohibited from incrementing until the end of the output pulse time (**OUTL2**) 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 (**RESR**).



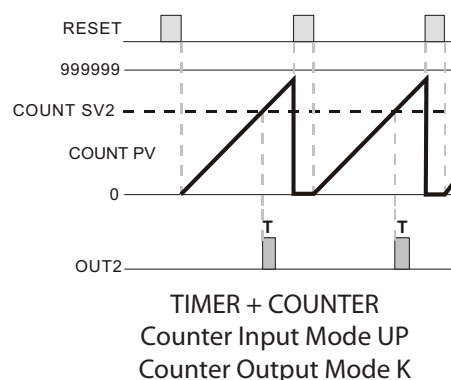
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

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 (**OUTPW**). 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 (**RSTPW**).

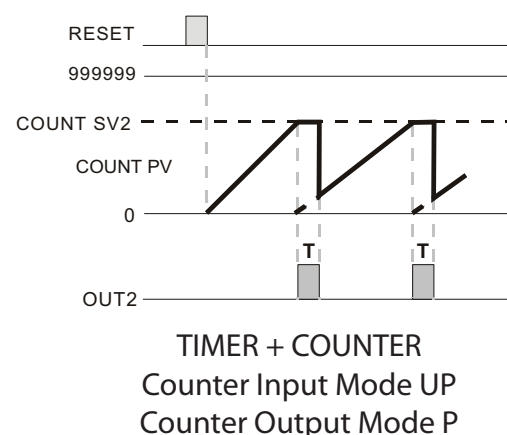


Mode P (P)

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 (**OUTPW**). 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 (**RSTPW**).

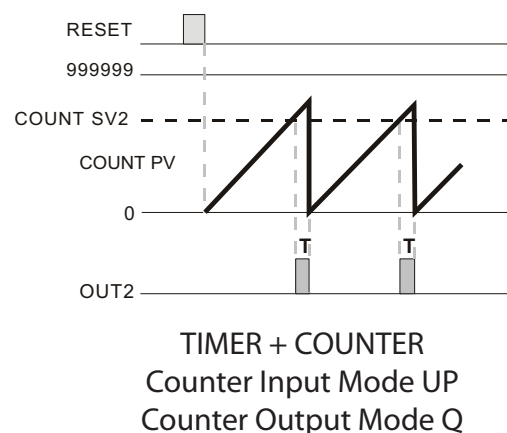


Mode Q (Q)

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 (**OUTPW**). 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 (**RSTPW**).

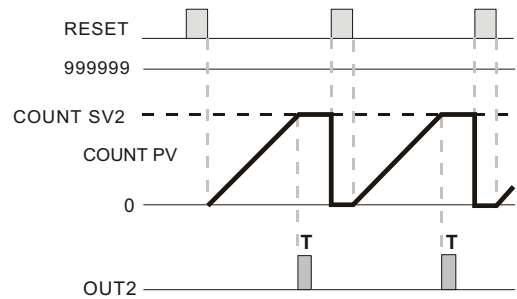


Mode A (A)

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 (**OUT2**). The count PV will remain at the count SV2 regardless of additional input signals.

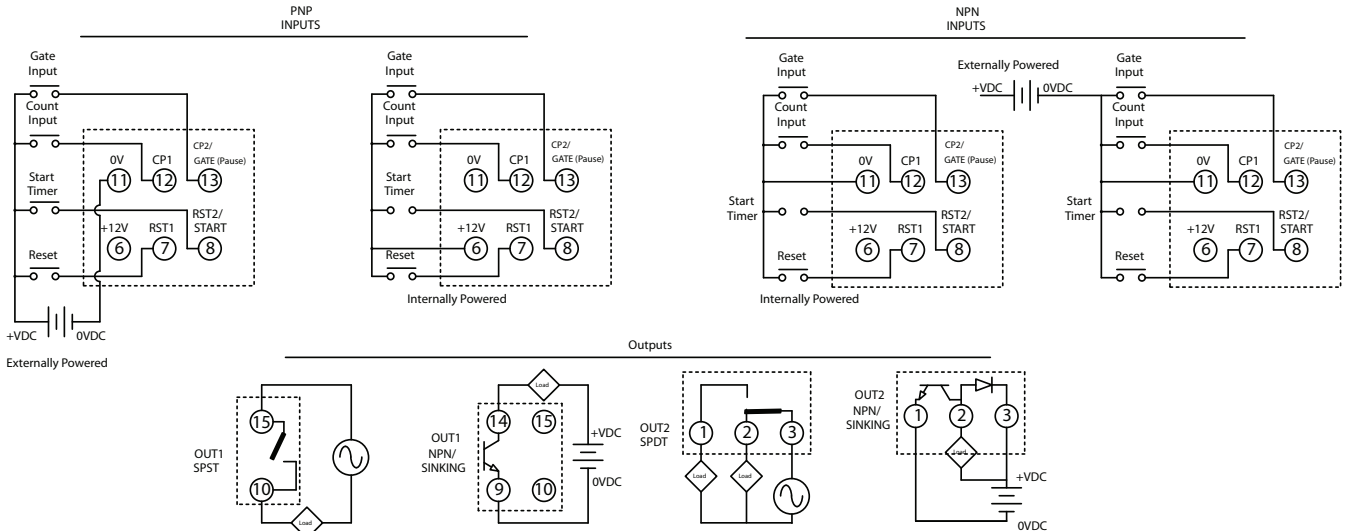
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The “reset” signal minimum pulse width is set by reset pulse width parameter (**RES**).



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.

Func [▼/▲] **ctnr** [▼/▲] **Cont** [▼/▲] **tACH** [▼/▲] **TCY**

MODE ↓
Select timer mode: times up and times down,

t mode [▼/▲] **UP** [▼/▲] **down**

MODE ↓
Select output modes: There are 8 output modes.

t outd [▼/▲] **Sond1** [▼/▲] **Sond2** [▼/▲] **Soffd** [▼/▲] **Son** [▼/▲] **Pond** [▼/▲] **PondH**
[▼/▲] **rCY** [▼/▲] **rCYH**

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

t Unit [▼/▲] **S.001** [▼/▲] **S.01** [▼/▲] **S.1** [▼/▲] **MS.001** [▼/▲] **MS.01** [▼/▲] **M.01**
[▼/▲] **m** [▼/▲] **MS** [▼/▲] **HR** [▼/▲] **H**

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

C InPt [▼/▲] **UP** [▼/▲] **down**

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

C outd [▼/▲] **F** [▼/▲] **N** [▼/▲] **C** [▼/▲] **R** [▼/▲] **L** [▼/▲] **P**

MODE ↓
[▼/▲] **A** [▼/▲] **A**

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

C SPed [▼/▲] **5K** [▼/▲] **1K** [▼/▲] **200** [▼/▲] **30** [▼/▲] **1**

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.

t out1 [▼/▲] **002** [▼/▲] **000**

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.

t out2 [▼/▲] **002** [▼/▲] **000**

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).

PoCnt [▼/▲] **0** [▼/▲] **1** [▼/▲] **2** [▼/▲] **3**

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

PSCALE [▼/▲] **1000**

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.

PVERS [▼/▲] **CLEAR** [▼/▲] **SAVE**

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

rtSr [▼/▲] **20** [▼/▲] **1**

MODE ↓
Select input signal types: NPN and PNP

InPtLC [▼/▲] **nPN** [▼/▲] **pNP**

MODE ↓
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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 (**OUT1**) or will be maintained ON (**OUT1** 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.

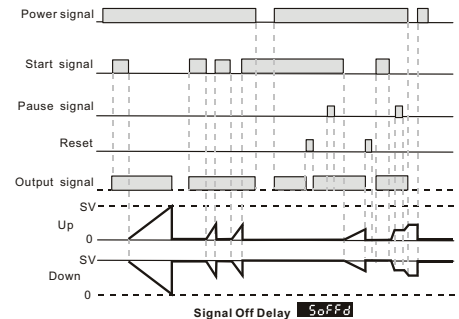
Signal Off Delay (**SoFFd**)

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 (**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 (**RES**).

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.

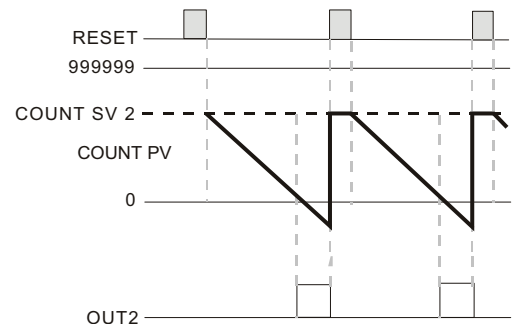
Counter Output Modes:

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 (**RES**).



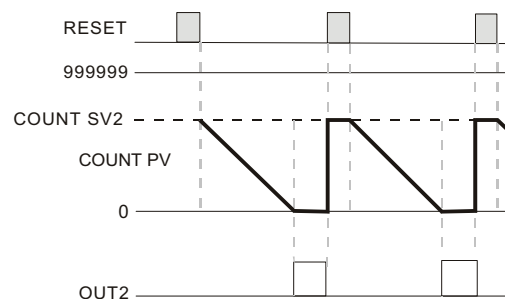
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

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 (**PLSR**).



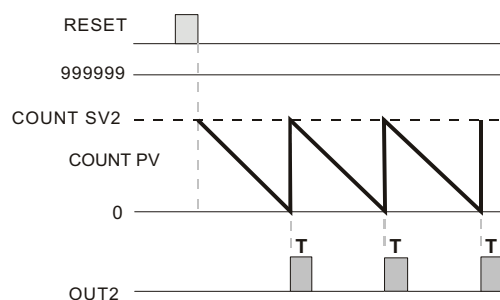
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

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 (**PLWTE**) 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 (**PLSR**).



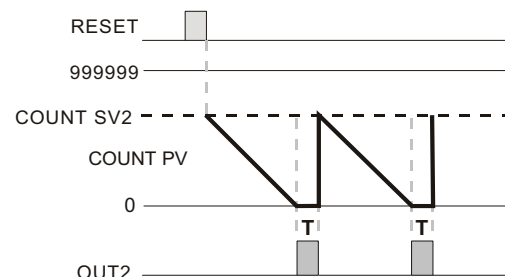
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

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 (**PLWTE**). The count PV is prohibited from decrementing until the end of the output pulse time (**PLWTE**) 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 (**PLSR**).



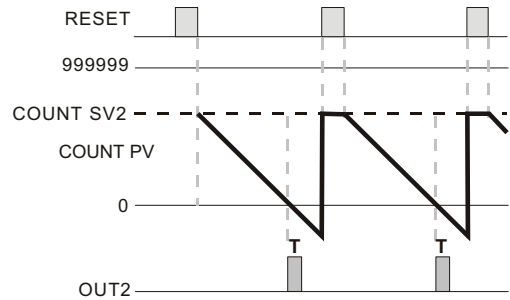
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

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 (**OUT2**). 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 (**RST**).



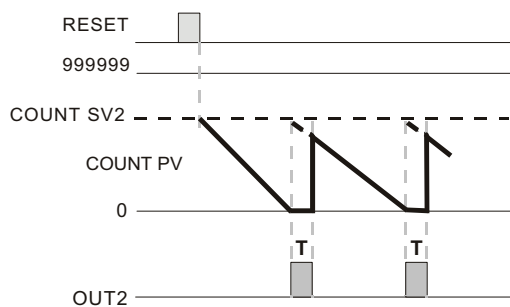
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

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 (**OUT2**). 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 (**RST**).



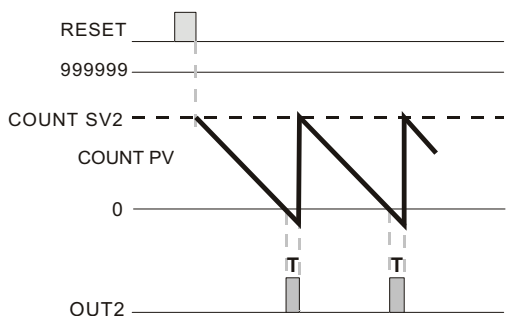
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

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 (**OUT2**). 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 (**RST**).



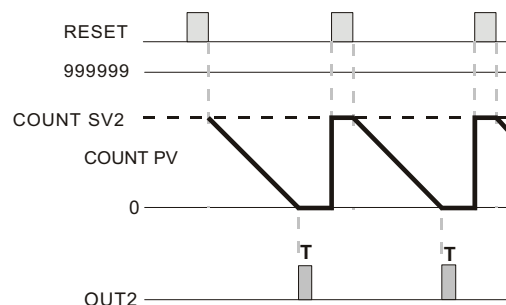
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

Mode 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 (**OUT2**). The count PV will remain at 0 regardless of additional input signals.

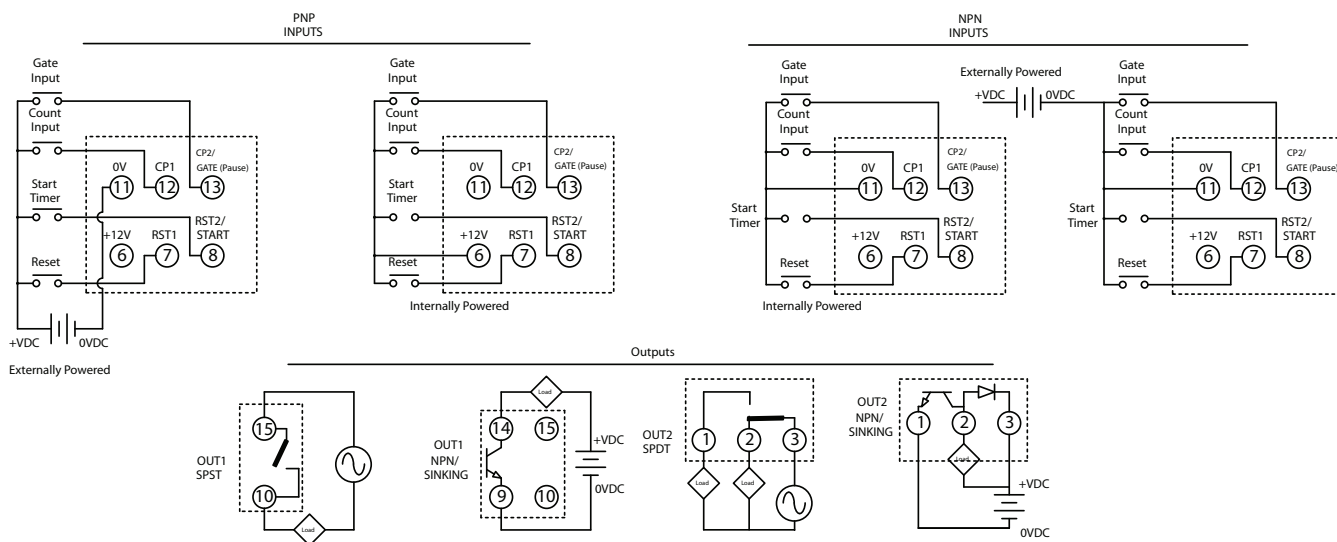
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The “reset” signal minimum pulse width is set by reset pulse width parameter (**RES**).



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.

FUNC [▼] or [▲] **CTIME** [▼] or [▲] **Cont** [▼] or [▲] **TACH** [▼] or [▲] **CTY**

MODE ↓
 Select timer mode: times up and times down,
t mode [▼] or [▲] **UP** [▼] or [▲] **down**

MODE ↓
 Select output modes: There are 8 output modes.
t outd [▼] or [▲] **Sond1** [▼] or [▲] **Sond2** [▼] or [▲] **Soffd** [▼] or [▲] **Son** [▼] or [▲] **Pond** [▼] or [▲] **PondH**
 [▼] or [▲] **CTY** [▼] or [▲] **CTYH**

MODE ↓
 Select display unit: the min. unit 10ms - the max. unit hour are selectable.
t unit [▼] or [▲] **S.001** [▼] or [▲] **S.01** [▼] or [▲] **S.1** [▼] or [▲] **MS.001** [▼] or [▲] **MS.01** [▼] or [▲] **m.01**
 [▼] or [▲] **m.1** [▼] or [▲] **HRS.1** [▼] or [▲] **HR.1** [▼] or [▲] **H.1**

MODE ↓
 Select input modes: Only counting up and counting down are available.
C INPT [▼] or [▲] **UP** [▼] or [▲] **down**

MODE ↓
 Select output modes: Same as the output modes of the counter except for S, T, D.
C outd [▼] or [▲] **F** [▼] or [▲] **N** [▼] or [▲] **C** [▼] or [▲] **P** [▼] or [▲] **D** [▼] or [▲] **P**
 [▼] or [▲] **Q** [▼] or [▲] **R**

MODE ↓
 Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.
C SPEED [▼] or [▲] **5K** [▼] or [▲] **1K** [▼] or [▲] **200** [▼] or [▲] **30** [▼] or [▲] **1**

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.
t out1 [▼] or [▲] **002** [▼] or [▲] **000**

MODE ↓
 Pulse width of output 2: This parameter 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.
t out2 [▼] or [▲] **002** [▼] or [▲] **000**

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).
Point [▼] or [▲] **0** [▼] or [▲] **1** [▼] or [▲] **2** [▼] or [▲] **3**

MODE ↓
 Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999
PSCALE [▼] or [▲] **1000**

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.
POWER [▼] or [▲] **CLEAR** [▼] or [▲] **SAVE**

MODE ↓
 Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable
rtSr [▼] or [▲] **20** [▼] or [▲] **1**

MODE ↓
 Select input signal types: NPN and PNP
C INPTC [▼] or [▲] **NPN** [▼] or [▲] **PNP**

MODE ↓
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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Signal On (S_{On})

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 (E_{OUT1}) or will be maintained ON (E_{OUT1} set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (E_{OUT2}) or will be maintained ON depending on the output mode selected.

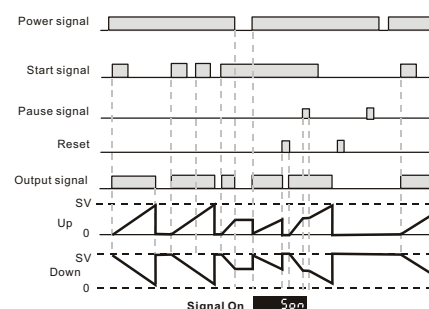
Timer Mode - Signal On (S_{On})

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 (E_{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 (F_{RES}).

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.

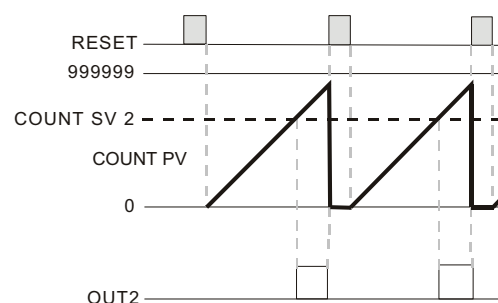
Counter Output Modes:

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 (F_{RES}).



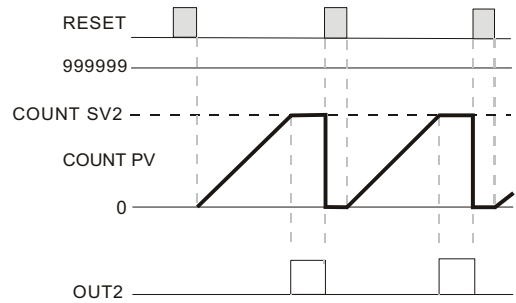
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

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 (**RSTW**).



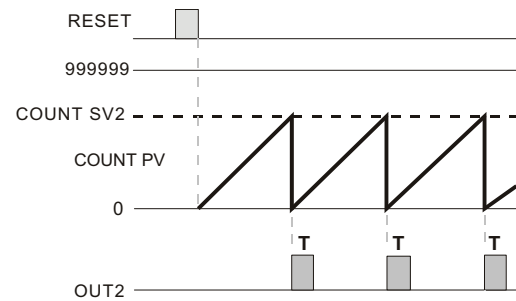
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

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 (**OUTW**) 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 (**RSTW**).



TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

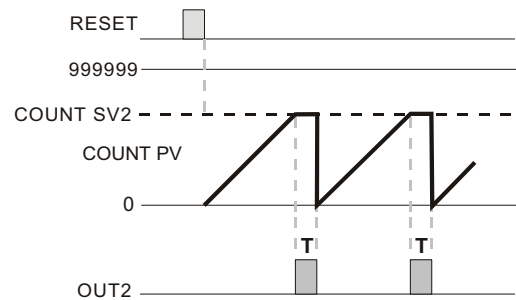
Mode R (R)

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 (**OUTW**).

The count PV is prohibited from incrementing until the end of the output pulse time (**OUTW**) 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 (**RSTW**).



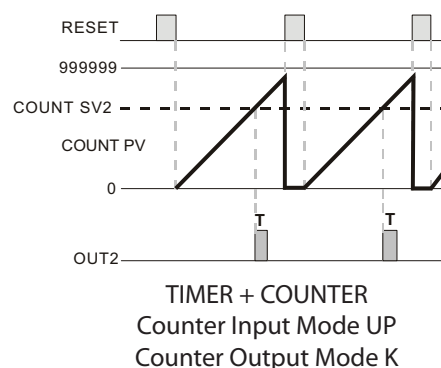
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

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 (PULSE). 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 (RESR).

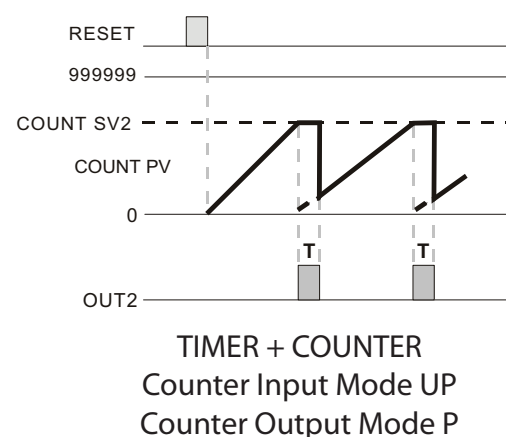


Mode P (P)

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 (PULSE). 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 (RESR).

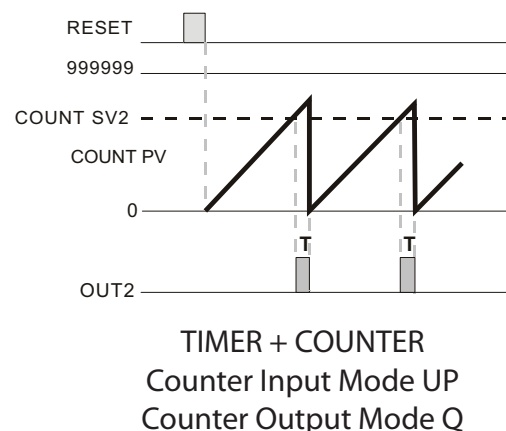


Mode Q (Q)

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 (PULSE). 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 (RESR).

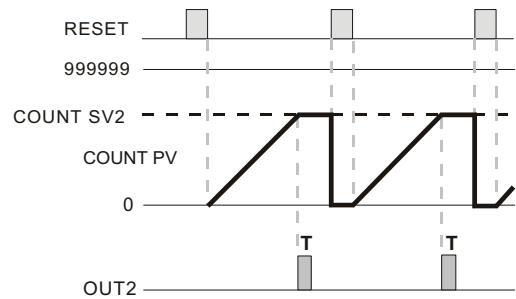


Mode A

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 (**OUT2P**). The count PV will remain at the count SV2 regardless of additional input signals.

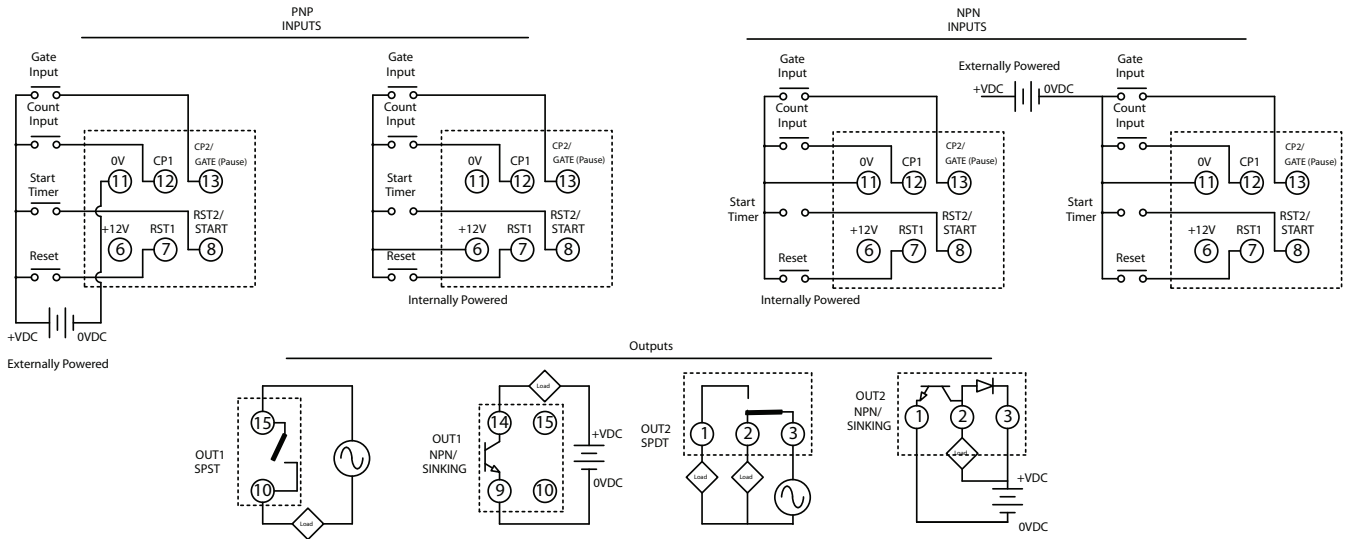
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The “reset” signal minimum pulse width is set by reset pulse width parameter (**RESW**).



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.

Funct [▼/▲] **ctnre** [▼/▲] **Cont** [▼/▲] **tACH** [▼/▲] **rcy**

MODE ↓
Select timer mode: times up and times down,

t mode [▼/▲] **UP** [▼/▲] **down**

MODE ↓
Select output modes: There are 8 output modes.

t outd [▼/▲] **Sond1** [▼/▲] **Sond2** [▼/▲] **Soffd** [▼/▲] **Son** [▼/▲] **Pond** [▼/▲] **PondH**
[▼/▲] **rcy** [▼/▲] **rcyH**

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

t Unit [▼/▲] **S001** [▼/▲] **S01** [▼/▲] **S1** [▼/▲] **RS001** [▼/▲] **RS01** [▼/▲] **R01**
[▼/▲] **n1** [▼/▲] **HR51** [▼/▲] **HR1** [▼/▲] **H1**

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

C InPt [▼/▲] **UP** [▼/▲] **down**

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

C outd [▼/▲] **F** [▼/▲] **n** [▼/▲] **C** [▼/▲] **r** [▼/▲] **L** [▼/▲] **P**
[▼/▲] **Q** [▼/▲] **A**

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

C SPed [▼/▲] **5K** [▼/▲] **1K** [▼/▲] **200** [▼/▲] **30** [▼/▲] **1**

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.

t out1 [▼/▲] **002** [▼/▲] **000**

MODE ↓
Pulse width of output 2: This parameter 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.

t out2 [▼/▲] **002** [▼/▲] **000**

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).

PoLnt [▼/▲] **0** [▼/▲] **1** [▼/▲] **2** [▼/▲] **3**

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

PSCALE [▼/▲] **1000**

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.

PtERS [▼/▲] **CLEAR** [▼/▲] **SAVE**

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

rtSr [▼/▲] **20** [▼/▲] **1**

MODE ↓
Select input signal types: NPN and PNP

InPtLL [▼/▲] **nPN** [▼/▲] **pNP**

MODE ↓

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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Signal On (S_{on})

Counter Input Mode - Down (C_{down})

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 (E_{OUT1}) 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 (E_{OUT2}) or will be maintained ON depending on the output mode selected.

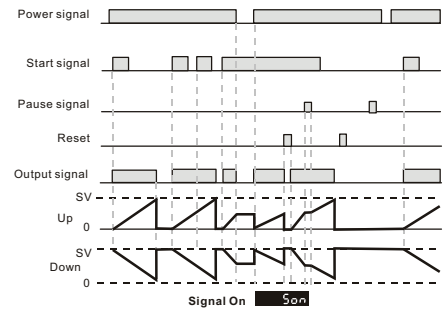
Timer Mode - Signal On (S_{on})

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 (M_{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 (R_{ESR}).

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 (C_{down})

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

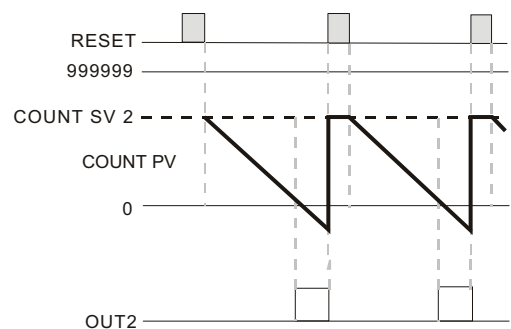
Counter Output Modes:

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 (R_{ESR}).



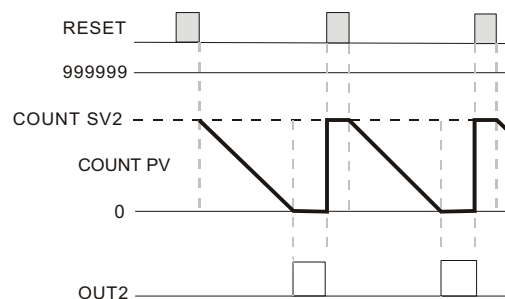
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

Mode 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`).



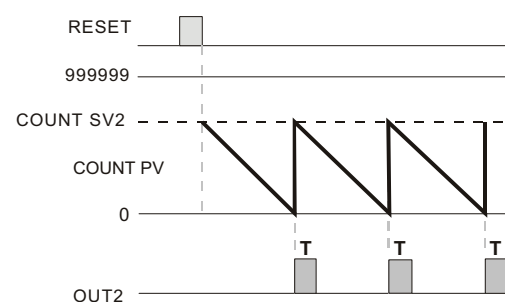
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

Mode C

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 (`OUTE2`) 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`).



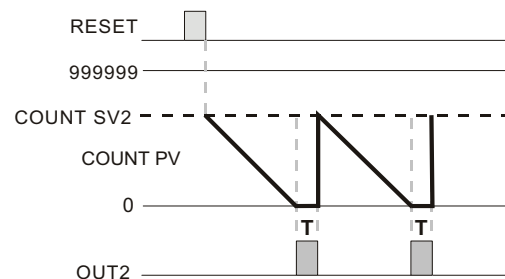
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

Mode R

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 (`OUTE2`). 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`).



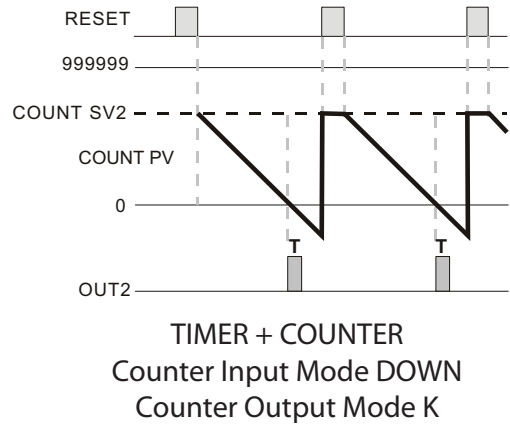
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

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 (EOUTP2). 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).

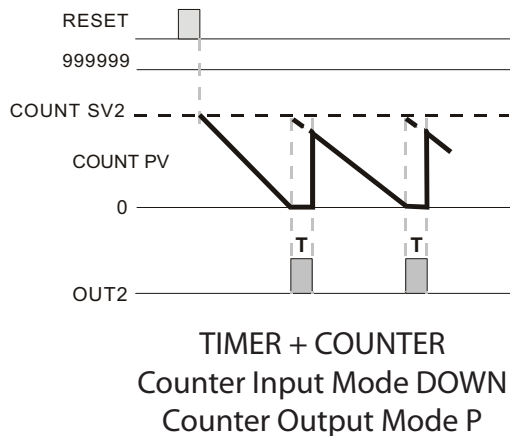


Mode P (P)

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 (EOUTP2). 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).

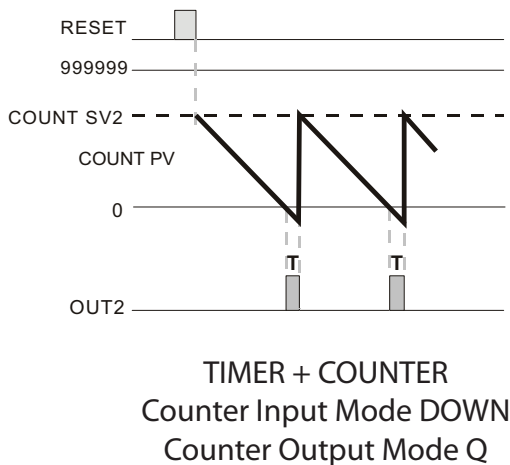


Mode Q (Q)

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 (EOUTP2). 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).

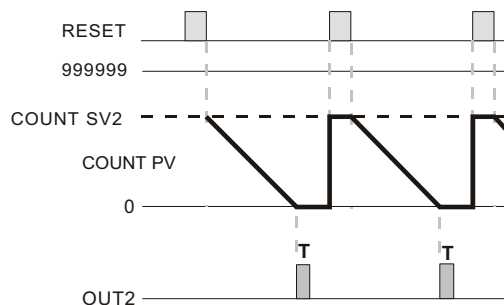


Mode A (A)

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 (**OUT2**). The count PV will remain at 0 regardless of additional input signals.

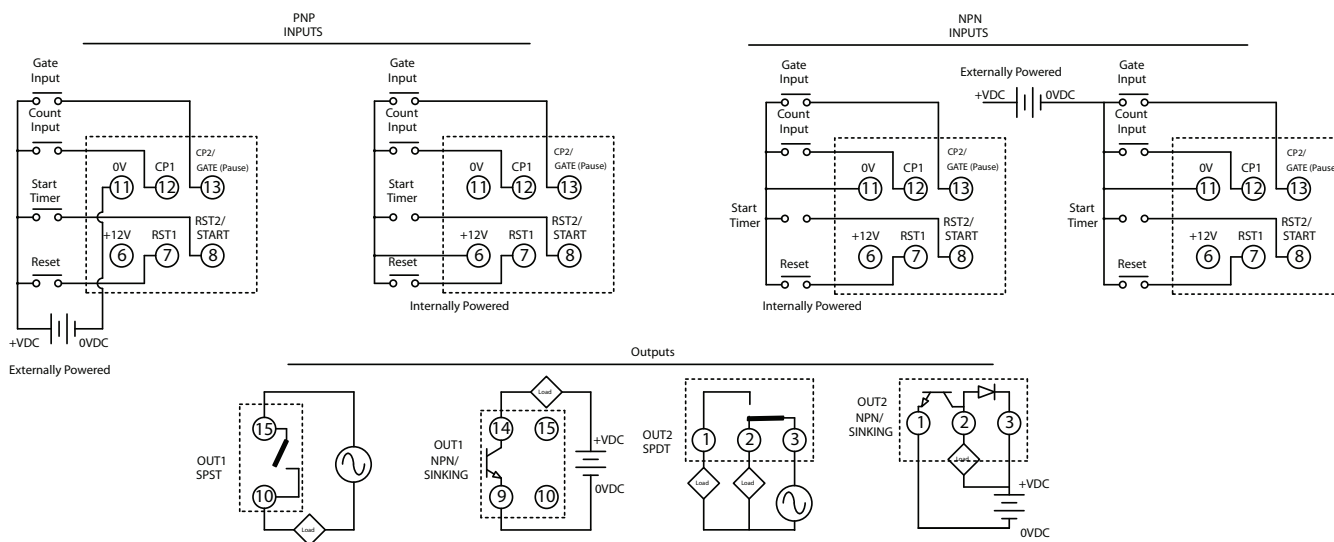
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

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 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.

Funct [▼]or[▲] **CTIME** [▼]or[▲] **Count** [▼]or[▲] **TACH** [▼]or[▲] **TCY**

MODE ↓
Select timer mode: times up and times down,

TimeMode [▼]or[▲] **UP** [▼]or[▲] **down**

MODE ↓
Select output modes: There are 8 output modes.

Output [▼]or[▲] **Sond1** [▼]or[▲] **Sond2** [▼]or[▲] **SOFFd** [▼]or[▲] **Son** [▼]or[▲] **Pond** [▼]or[▲] **PondH**
[▼]or[▲] **rcy** [▼]or[▲] **rcyh**

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

Unit [▼]or[▲] **5.001** [▼]or[▲] **5.01** [▼]or[▲] **5.1** [▼]or[▲] **MS.001** [▼]or[▲] **MS.01** [▼]or[▲] **M.01**
[▼]or[▲] **m** [▼]or[▲] **MS** [▼]or[▲] **ms** [▼]or[▲] **H**

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

Input [▼]or[▲] **UP** [▼]or[▲] **down**

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

Output [▼]or[▲] **F** [▼]or[▲] **n** [▼]or[▲] **C** [▼]or[▲] **r** [▼]or[▲] **E** [▼]or[▲] **P**
[▼]or[▲] **Q** [▼]or[▲] **R**

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

Speed [▼]or[▲] **5K** [▼]or[▲] **1K** [▼]or[▲] **200** [▼]or[▲] **30** [▼]or[▲] **1**

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.

out1 [▼]or[▲] **0.02** [▼]or[▲] **0.00**

MODE ↓
Pulse width of output 2: This parameter 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.

out2 [▼]or[▲] **0.02** [▼]or[▲] **0.00**

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).

Point [▼]or[▲] **0** [▼]or[▲] **1** [▼]or[▲] **2** [▼]or[▲] **3**

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

PSCALE [▼]or[▲] **1000**

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.

POWER [▼]or[▲] **CLEAR** [▼]or[▲] **SAVE**

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

reset [▼]or[▲] **20** [▼]or[▲] **1**

MODE ↓
Select input signal types: NPN and PNP

Input [▼]or[▲] **NPN** [▼]or[▲] **PNP**

MODE ↓
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CTT Timer + Counter Mixed Mode Functions

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

Counter Input Mode - Up (**UF**)

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 (**EOUET1**) or will be maintained ON (**EOUET1** set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (**EOUET2**) or will be maintained ON depending on the output mode selected.

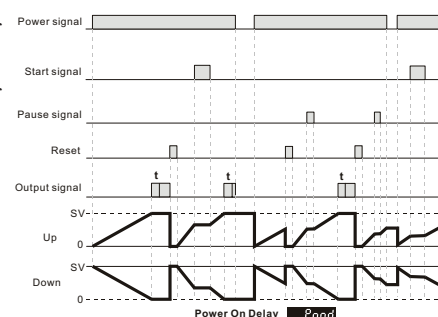
Timer Mode - Power On Delay (**Pond**)

When power is applied to the CTT, the timing period setting value SV1 will begin timing up or down based on parameter (**EOUODE**). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (**EOUET1**) or will be maintained ON if the output pulse width parameter (**EOUET1**) 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 (**RETSR**).

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 (**UF**)

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

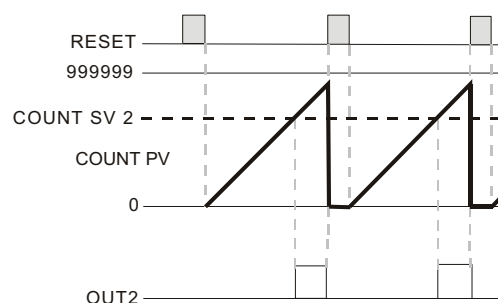
Counter Output Modes:

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 (**RETSR**).



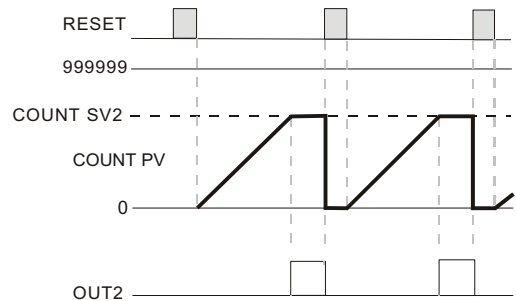
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

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 (`RSTW`).



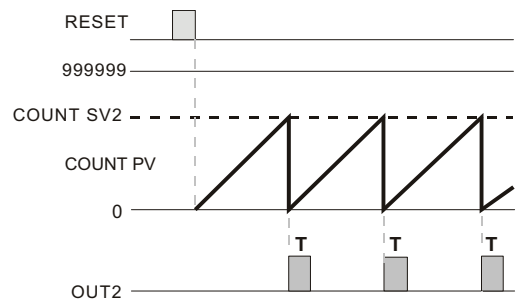
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

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 (`OUTW`) 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 (`RSTW`).



TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

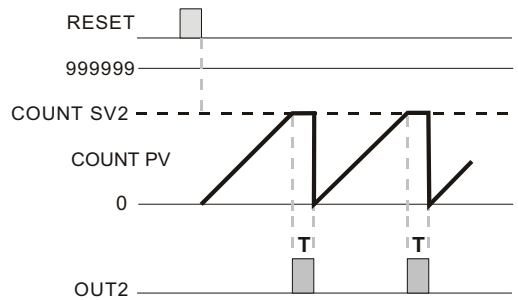
Mode R (R)

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 (`OUTW`).

The count PV is prohibited from incrementing until the end of the output pulse time (`OUTW`) 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 (`RSTW`).



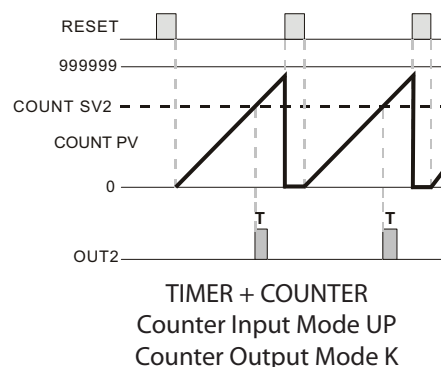
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

Mode 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 (**OUT2**). 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 (**RES**).

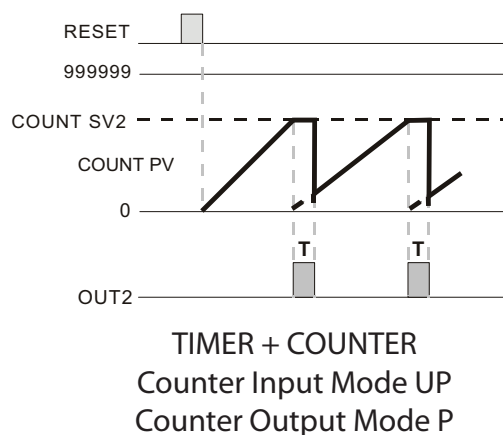


Mode P

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 (**OUT2**). 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 (**RES**).

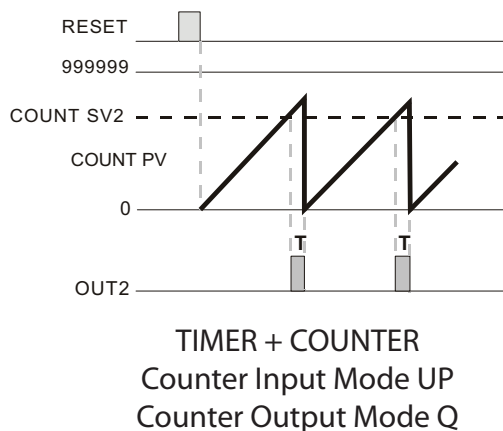


Mode Q

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 (**OUT2**). 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 (**RES**).

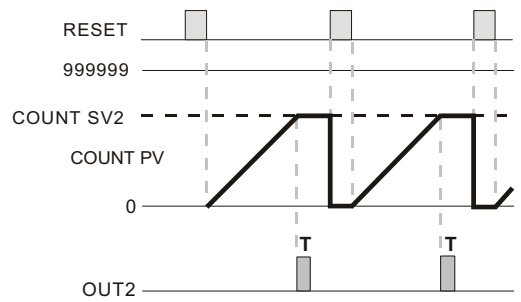


Mode A

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 (**OUT2**). The count PV will remain at the count SV2 regardless of additional input signals.

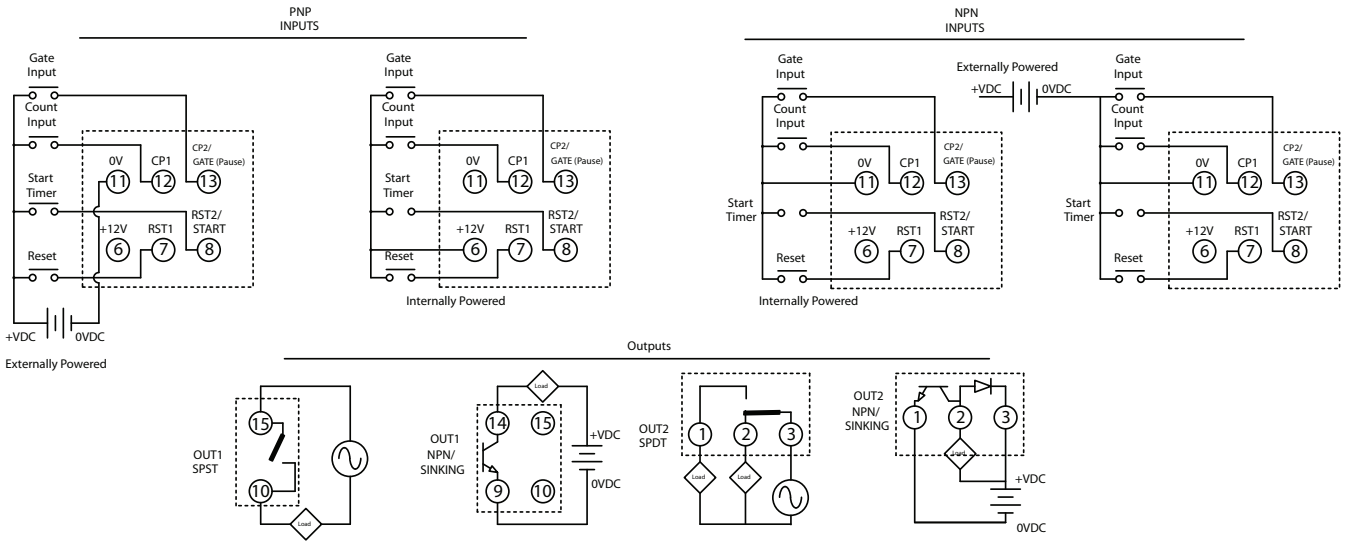
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

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



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.

FUnC [▼] or [▲] **CTIME** [▼] or [▲] **Cont** [▼] or [▲] **TACh** [▼] or [▲] **TCY**

MODE ↓
Select timer mode: times up and times down,
t mode [▼] or [▲] **UP** [▼] or [▲] **down**

MODE ↓
Select output modes: There are 8 output modes.
t out1 [▼] or [▲] **Sond1** [▼] or [▲] **Sond2** [▼] or [▲] **Soffd** [▼] or [▲] **Son** [▼] or [▲] **Pond** [▼] or [▲] **PondH**
[▼] or [▲] **rcy** [▼] or [▲] **rcyH**

MODE ↓
Select display unit: the min. unit 10ms - the max. unit hour are selectable.
t Unit [▼] or [▲] **S.001** [▼] or [▲] **S.01** [▼] or [▲] **S.1** [▼] or [▲] **MS.001** [▼] or [▲] **MS.01** [▼] or [▲] **M.01**
[▼] or [▲] **m** [▼] or [▲] **MS** [▼] or [▲] **HA** [▼] or [▲] **H**

MODE ↓
Select input modes: Only counting up and counting down are available.
INPt [▼] or [▲] **UP** [▼] or [▲] **down**

MODE ↓
Select output modes: Same as the output modes of the counter except for S, T, D.
t out1 [▼] or [▲] **F** [▼] or [▲] **N** [▼] or [▲] **C** [▼] or [▲] **R** [▼] or [▲] **E** [▼] or [▲] **P**
[▼] or [▲] **Q** [▼] or [▲] **A**

MODE ↓
Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.
t SPEED [▼] or [▲] **5K** [▼] or [▲] **1K** [▼] or [▲] **200** [▼] or [▲] **30** [▼] or [▲] **1**

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.
t out1 [▼] or [▲] **002** [▼] or [▲] **000**

MODE ↓
Pulse width of output 2: This parameter 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.
t out2 [▼] or [▲] **002** [▼] or [▲] **000**

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).
Point [▼] or [▲] **0** [▼] or [▲] **1** [▼] or [▲] **2** [▼] or [▲] **3**

MODE ↓
Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999
PSCALE [▼] or [▲] **1000**

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.
POWER [▼] or [▲] **CLEAR** [▼] or [▲] **SAVE**

MODE ↓
Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable
rtSr [▼] or [▲] **20** [▼] or [▲] **1**

MODE ↓
Select input signal types: NPN and PNP
INPtLC [▼] or [▲] **nPn** [▼] or [▲] **PNP**

MODE ↓
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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Power On Delay (P_{ond})

Counter Input Mode - Down (d_{own})

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 (t_{out1}) or will be maintained ON (t_{out1} set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (t_{out2}) or will be maintained ON depending on the output mode selected.

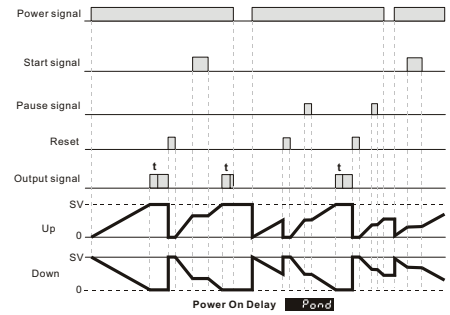
Timer Mode - Power On Delay (P_{ond})

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 (t_{out1}) or will be maintained ON if the output pulse width parameter (t_{out1}) 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 (t_{rst}).

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 (d_{own})

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

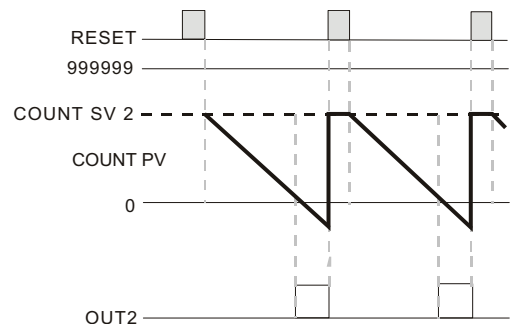
Counter Output Modes:

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 (t_{rst}).



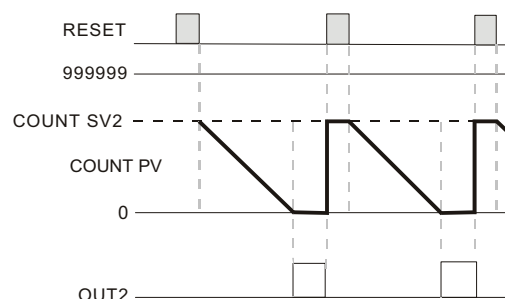
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

Mode 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 (**PLSR**).



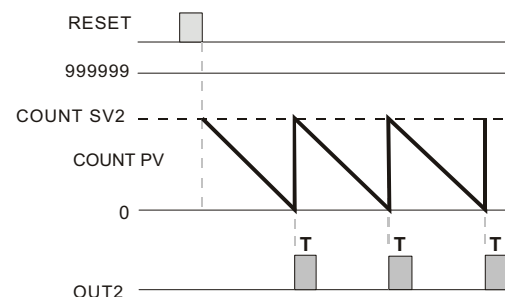
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

Mode 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 (**OUTL2**) 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 (**PLSR**).



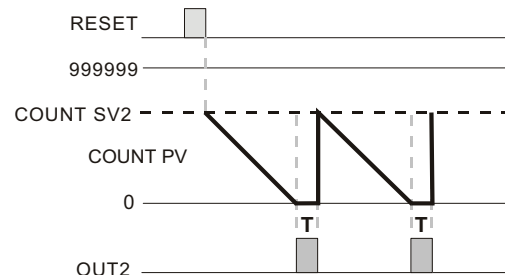
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

Mode 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 (**OUTL2**). The count PV is prohibited from decrementing until the end of the output pulse time (**OUTL2**) 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 (**PLSR**).



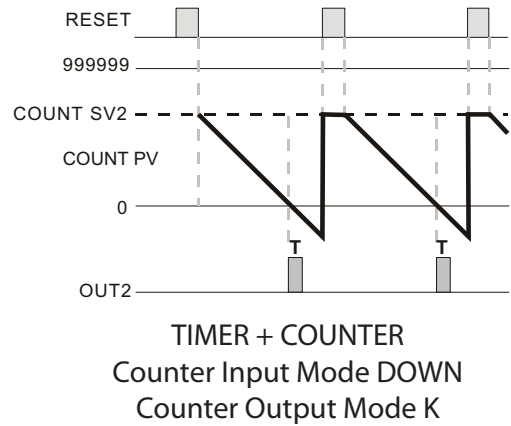
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

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 (**OUTP2**). 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 (**RSTP**).

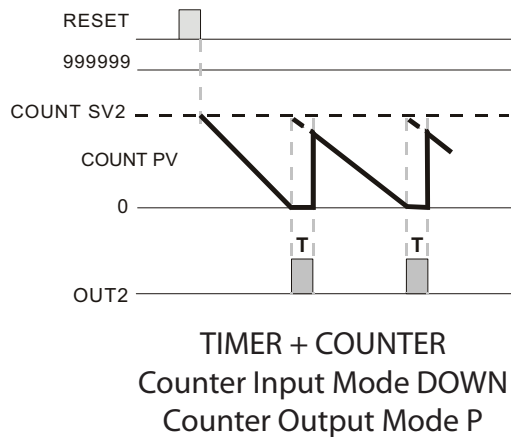


Mode P (P)

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 (**OUTP2**). 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 (**RSTP**).

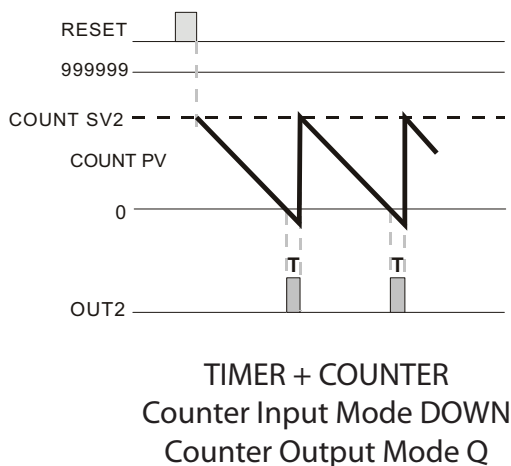


Mode Q (Q)

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 (**OUTP2**). 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 (**RSTP**).

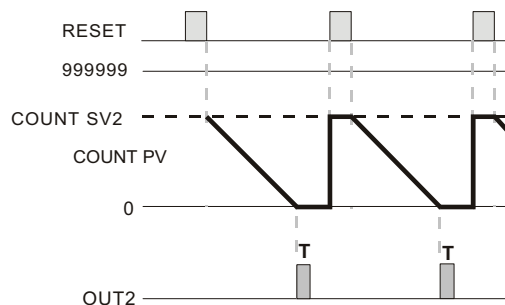


Mode A (A)

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 (**OUT2**). The count PV will remain at 0 regardless of additional input signals.

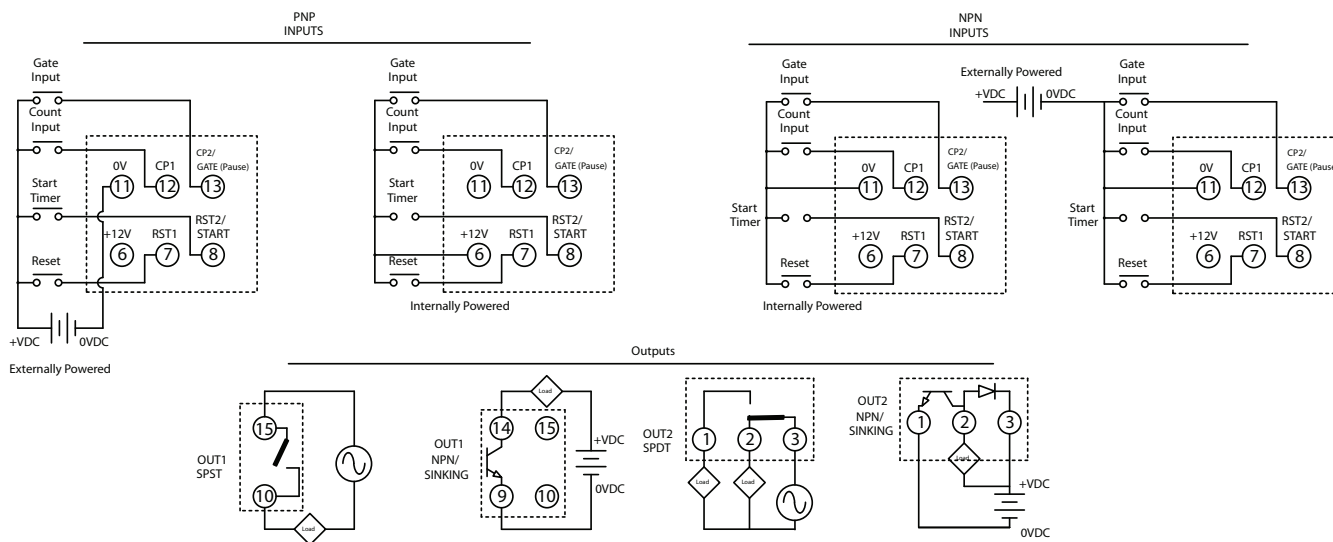
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

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.

Funct [down/up] **ctnr** [down/up] **Cont** [down/up] **TACh** [down/up] **TCY**

MODE ↓
Select timer mode: times up and times down,

t mode [down/up] **UP** [down/up] **down**

MODE ↓
Select output modes: There are 8 output modes.

t outd [down/up] **Sond1** [down/up] **Sond2** [down/up] **SoFFd** [down/up] **son** [down/up] **Pond** [down/up] **PondH**
[down/up] **rcy** [down/up] **rcyH**

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

t unit [down/up] **5.001** [down/up] **5.01** [down/up] **5.1** [down/up] **75.001** [down/up] **75.01** [down/up] **7.01**
[down/up] **7.1** [down/up] **775.1** [down/up] **77.1** [down/up] **7.1**

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

t cnpd [down/up] **UP** [down/up] **down**

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

t outd [down/up] **F** [down/up] **n** [down/up] **C** [down/up] **r** [down/up] **E** [down/up] **P**
[down/up] **q** [down/up] **q**

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

t speed [down/up] **5K** [down/up] **1K** [down/up] **200** [down/up] **30** [down/up] **1**

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.

t out1 [down/up] **0.02** [down/up] **0.00**

MODE ↓
Pulse width of output 2: This parameter 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.

t out2 [down/up] **0.02** [down/up] **0.00**

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).

PoInt [down/up] **0** [down/up] **1** [down/up] **2** [down/up] **3**

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

PSCALE [down/up] **1000**

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.

PVERS [down/up] **CLEAR** [down/up] **SAVE**

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

rtSr [down/up] **20** [down/up] **1**

MODE ↓
Select input signal types: NPN and PNP

tcnpd [down/up] **nPN** [down/up] **pNP**

MODE ↓
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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Power On Delay HOLD (PondH)

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 (EOUT1) or will be maintained ON (EOUT1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (EOUT2) or will be maintained ON depending on the output mode selected.

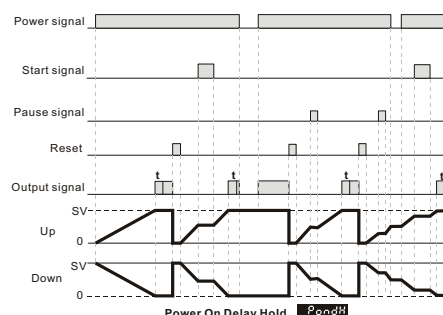
Timer Mode - Power On Delay HOLD (PondH)

When power is applied to the CTT, the timing period setting value SV1 will begin timing up or down based on parameter (E 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 (RESF).

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.

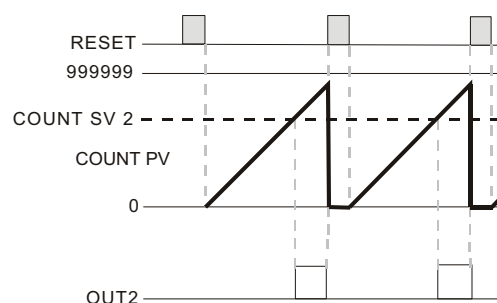
Counter Output Modes:

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 (RESF).



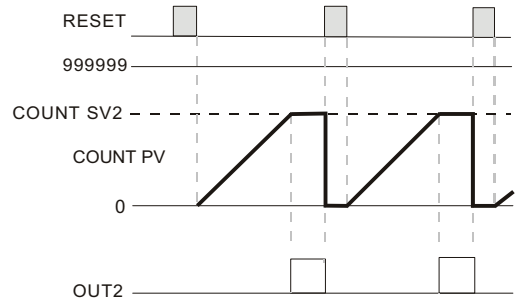
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

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 (**RESW**).



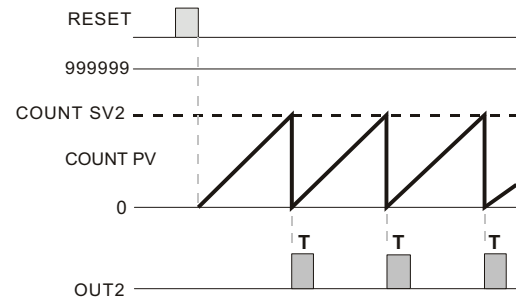
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

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 (**OUTW**) 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 (**RESW**).



TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

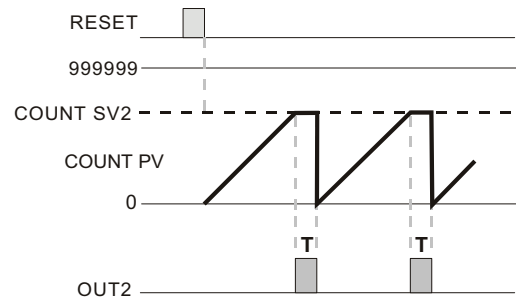
Mode R (R)

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 (**OUTW**).

The count PV is prohibited from incrementing until the end of the output pulse time (**OUTW**) 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 (**RESW**).



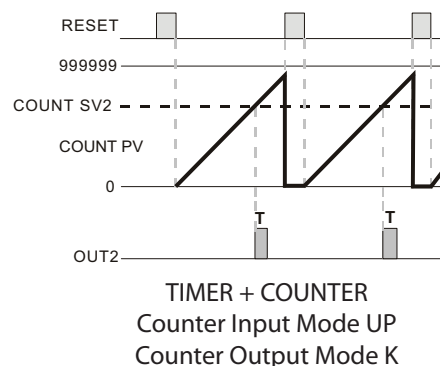
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

Mode 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 (**OUT2**). 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 (**RES**).

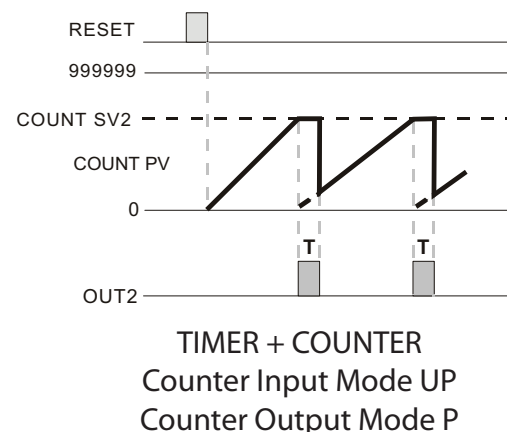


Mode P

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 (**OUT2**). 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 (**RES**).

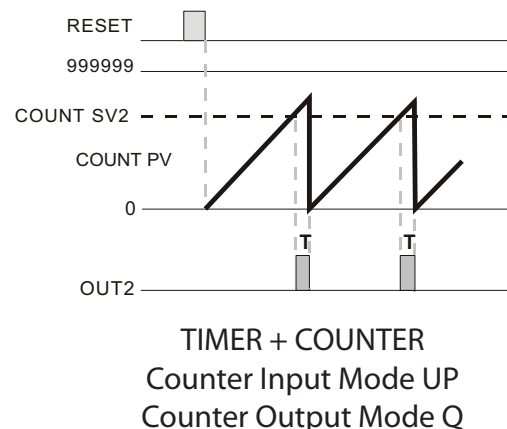


Mode Q

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 (**OUT2**). 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 (**RES**).

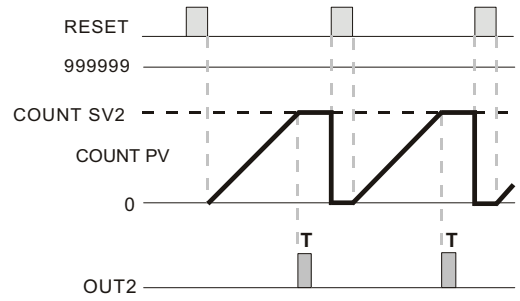


Mode A

When the count present value PV counts up to the count setting SV2 both Output 2 will turn ON momentarily for the time set in the output pulse width parameter (**OUT2**). The count PV will remain at the count SV2 regardless of additional input signals.

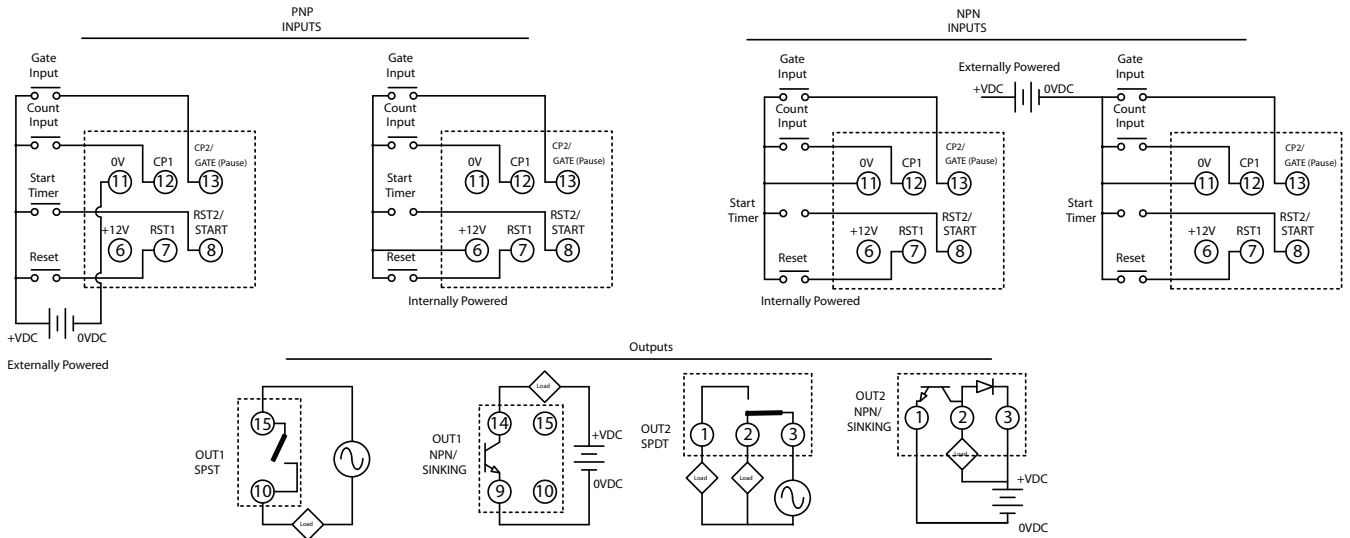
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

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



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.

Funct [▼/▲] **ctnre** [▼/▲] **Cont** [▼/▲] **tACH** [▼/▲] **rcy**

MODE ↓
Select timer mode: times up and times down,

t mode [▼/▲] **UP** [▼/▲] **down**

MODE ↓
Select output modes: There are 8 output modes.

t outnd [▼/▲] **Sond1** [▼/▲] **Sond2** [▼/▲] **SoFFd** [▼/▲] **son** [▼/▲] **Pond** [▼/▲] **PondH**
[▼/▲] **rcy** [▼/▲] **rcyH**

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

t unit [▼/▲] **5.001** [▼/▲] **5.01** [▼/▲] **5.1** [▼/▲] **75.001** [▼/▲] **75.01** [▼/▲] **7.01**
[▼/▲] **7.1** [▼/▲] **775.1** [▼/▲] **77.1** [▼/▲] **H.1**

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

t inpt [▼/▲] **UP** [▼/▲] **down**

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

t outnd [▼/▲] **F** [▼/▲] **n** [▼/▲] **C** [▼/▲] **r** [▼/▲] **L** [▼/▲] **P**
[▼/▲] **Q** [▼/▲] **R**

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

t speed [▼/▲] **5K** [▼/▲] **1K** [▼/▲] **200** [▼/▲] **30** [▼/▲] **1**

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.

t out1 [▼/▲] **0.02** [▼/▲] **0.00**

MODE ↓
Pulse width of output 2: This parameter 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.

t out2 [▼/▲] **0.02** [▼/▲] **0.00**

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).

PoCnt [▼/▲] **0** [▼/▲] **1** [▼/▲] **2** [▼/▲] **3**

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

PSCALE [▼/▲] **1.000**

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.

PVERS [▼/▲] **CLEAR** [▼/▲] **SAVE**

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

rtst [▼/▲] **20** [▼/▲] **1**

MODE ↓
Select input signal types: NPN and PNP

INPTLC [▼/▲] **NPN** [▼/▲] **PNP**

MODE ↓

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CTT Timer + Counter Mixed Mode Functions

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

Counter Input Mode -Down (*Down*)

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 (*OUT1*) or will be maintained ON (*OUT1* set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (*OUT2*) or will be maintained ON depending on the output mode selected.

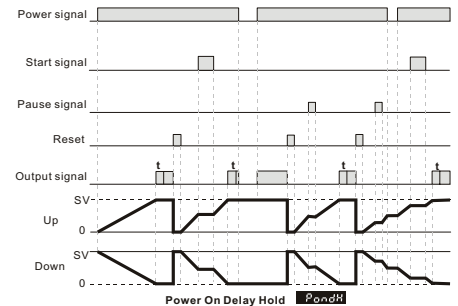
Timer Mode - Power On Delay HOLD (*PowerOnHold*)

When power is applied to the CTT, the timing period setting value SV1 will begin timing up or down based on parameter (*PowerOnHold*). At the end of the timing period Output 1 will turn ON momentarily for the time set in the output pulse width parameter (*OUT1*) or will be maintained ON if the output pulse width parameter (*OUT1*) 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 (*RES*).

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 (*Down*)

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

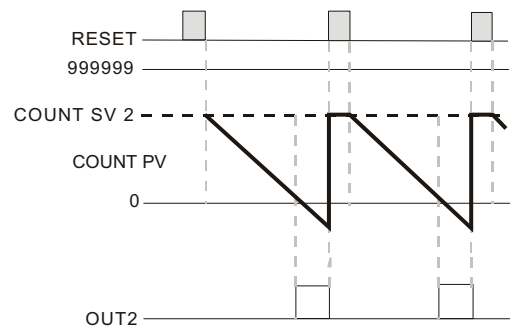
Counter Output Modes:

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 (*RES*).



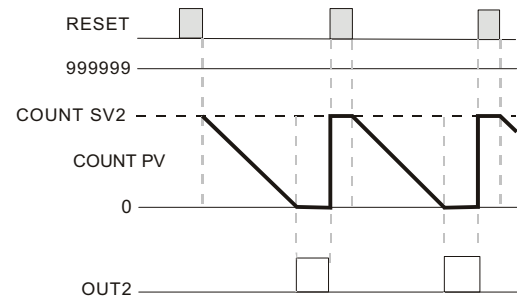
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

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 (`RSTW`).



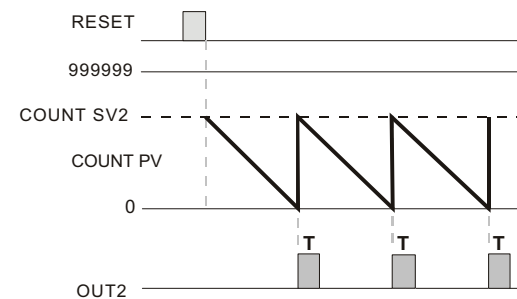
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

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 (`OUTPW`) 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 (`RSTW`).



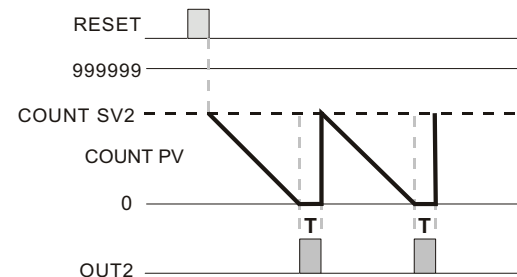
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

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 (`OUTPW`). The count PV is prohibited from decrementing until the end of the output pulse time (`OUTPW`) 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 (`RSTW`).



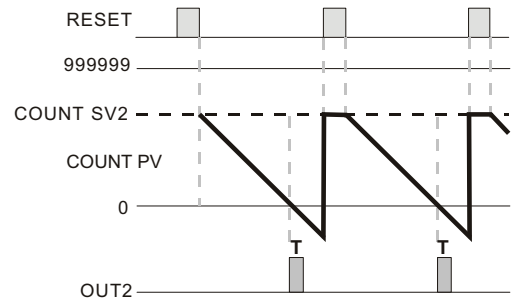
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

Mode 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 (**OUTP2**). 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 (**RSTP**).



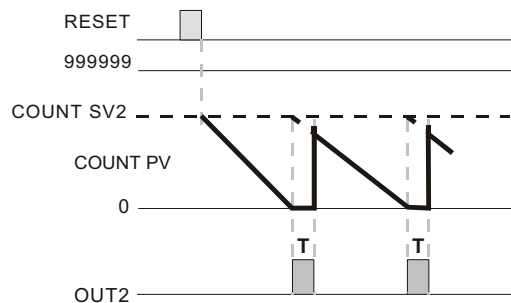
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode K

Mode 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 (**OUTP2**). 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 (**RSTP**).



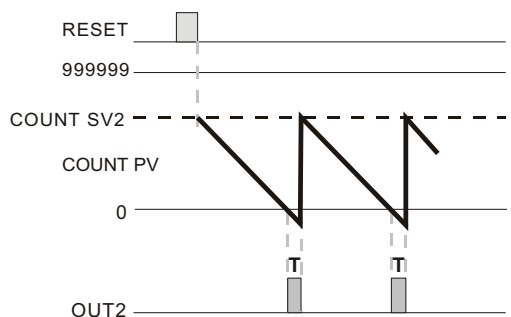
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode P

Mode 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 (**OUTP2**). 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 (**RSTP**).



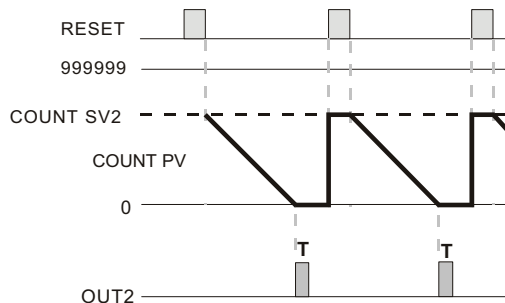
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode Q

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 (**PULSE**). The count PV will remain at 0 regardless of additional input signals.

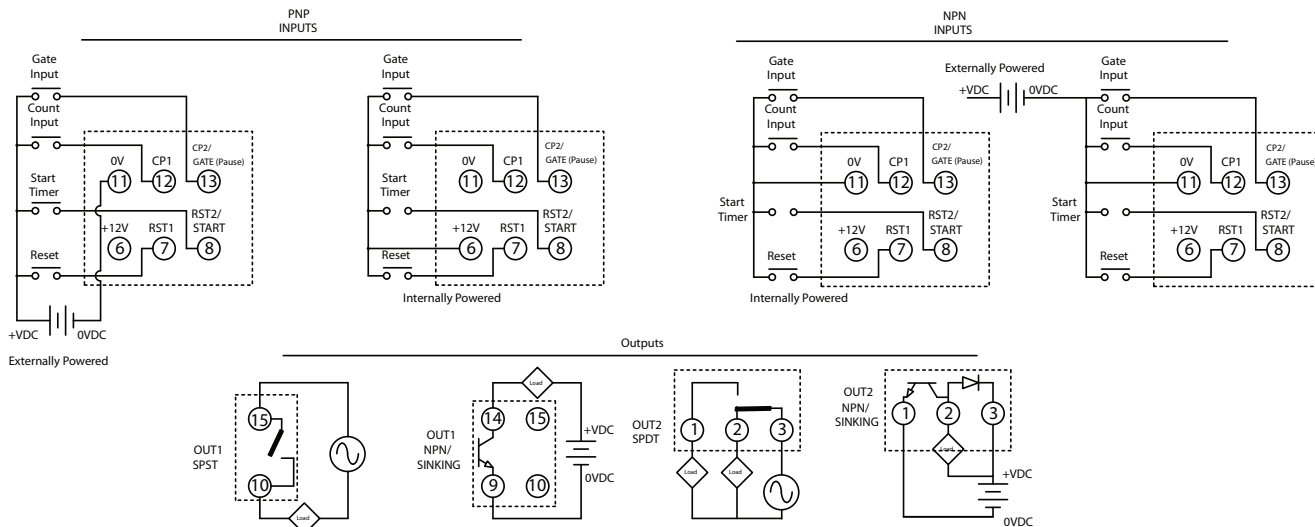
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

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.

Funct [▼] or [▲] **cture** [▼] or [▲] **Cont** [▼] or [▲] **tach** [▼] or [▲] **TCY**

MODE ↓
ctmode [▼] or [▲] **UP** [▼] or [▲] **down**

MODE ↓
 Select output modes: There are 8 output modes.
ctoutd [▼] or [▲] **Sond1** [▼] or [▲] **Sond2** [▼] or [▲] **Soffd** [▼] or [▲] **Son** [▼] or [▲] **Pond** [▼] or [▲] **PondH**
 [▼] or [▲] **rcy** [▼] or [▲] **rcyh**

MODE ↓
 Select display unit: the min. unit 10ms - the max. unit hour are selectable.
ctunit [▼] or [▲] **S.001** [▼] or [▲] **S.01** [▼] or [▲] **S.1** [▼] or [▲] **MS.001** [▼] or [▲] **MS.01** [▼] or [▲] **M.01**
 [▼] or [▲] **m.1** [▼] or [▲] **hrs.1** [▼] or [▲] **hr.1** [▼] or [▲] **H.1**

MODE ↓
 Select input modes: Only counting up and counting down are available.
ctinp [▼] or [▲] **UP** [▼] or [▲] **down**

MODE ↓
 Select output modes: Same as the output modes of the counter except for S, T, D.
ctoutd [▼] or [▲] **F** [▼] or [▲] **N** [▼] or [▲] **T** [▼] or [▲] **D** [▼] or [▲] **S** [▼] or [▲] **P**
 [▼] or [▲] **Q** [▼] or [▲] **R**

MODE ↓
 Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.
ctsped [▼] or [▲] **5K** [▼] or [▲] **1K** [▼] or [▲] **200** [▼] or [▲] **30** [▼] or [▲] **1**

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.
ctout1 [▼] or [▲] **002** [▼] or [▲] **000**

MODE ↓
 Pulse width of output 2: This parameter 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.
ctout2 [▼] or [▲] **002** [▼] or [▲] **000**

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).
ctpoint [▼] or [▲] **0** [▼] or [▲] **1** [▼] or [▲] **2** [▼] or [▲] **3**

MODE ↓
 Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999
ctscale [▼] or [▲] **1000**

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.
ctpers [▼] or [▲] **CLEAR** [▼] or [▲] **SAVE**

MODE ↓
 Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable
ctrsr [▼] or [▲] **20** [▼] or [▲] **1**

MODE ↓
 Select input signal types: NPN and PNP
ctinpLL [▼] or [▲] **nPN** [▼] or [▲] **pNP**

MODE ↓
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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Repeat Cycle (FCY)

Counter Input Mode -Up (UF)

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 (EOUT1) or will be maintained ON (EOUT1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (EOUT2) or will be maintained ON depending on the output mode selected.

Timer Mode - Repeat Cycle (FCY)

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 (E MODE). At the end of the timing period, the timing period will reset and repeat automatically.

If the output pulse width parameter (EOUT1) 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.

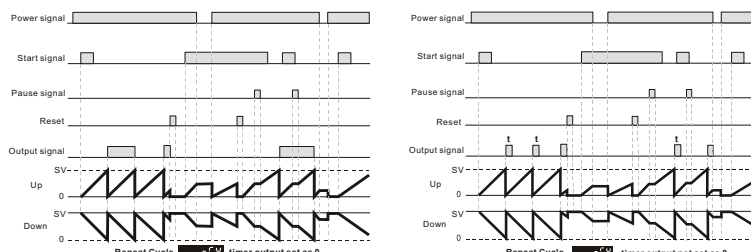
If the output pulse width parameter (EOUT1) is set to >0.00 Output 1 will turn ON momentarily for the time set in the output pulse width parameter (EOUT1) at the beginning of the each timing period.

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 (FESR). 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 (UF)

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

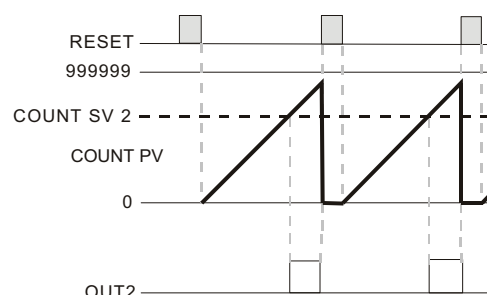
Counter Output Modes:

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 (FESR).



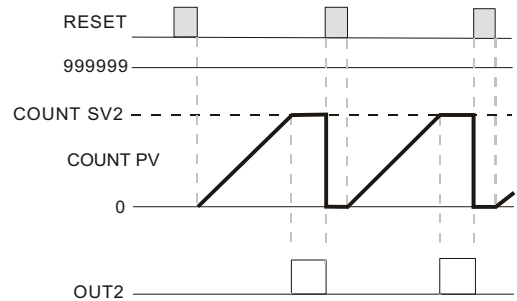
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

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 (**R15P**).



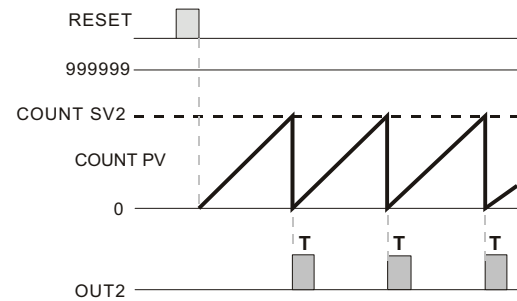
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

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 (**EOUPE2**) 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 (**R15P**).



TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

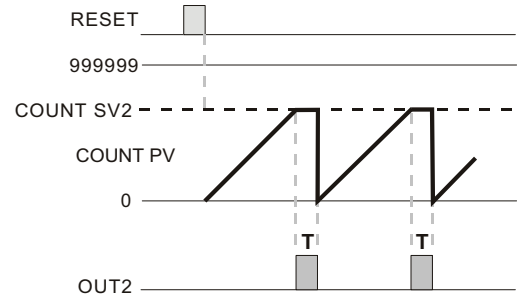
Mode R (R)

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 (**EOUPE2**).

The count PV is prohibited from incrementing until the end of the output pulse time (**EOUPE2**) 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 (**R15P**).



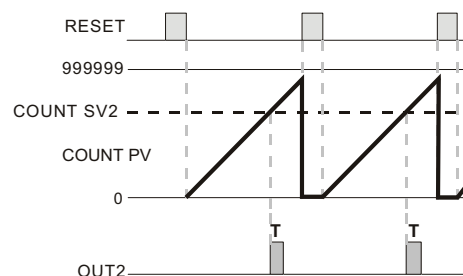
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

Mode 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 (**OUTPW**). 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 (**RESW**).



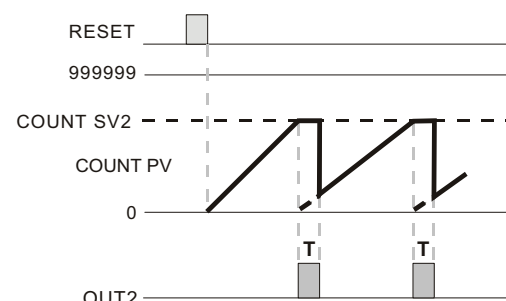
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode K

Mode 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 (**OUTPW**). 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 (**RESW**).



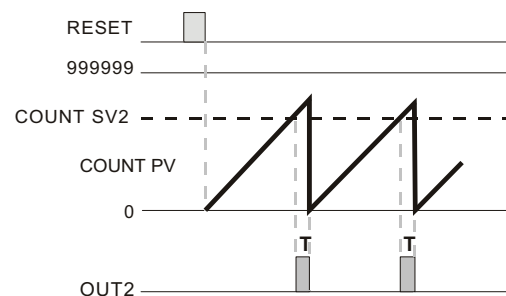
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode P

Mode 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 (**OUTPW**). 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 (**RESW**).



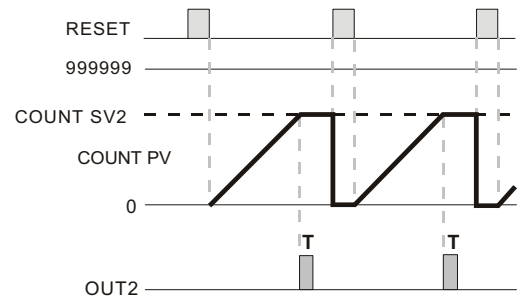
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode Q

Mode 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 (**OUT2**). The count PV will remain at the count SV2 regardless of additional input signals.

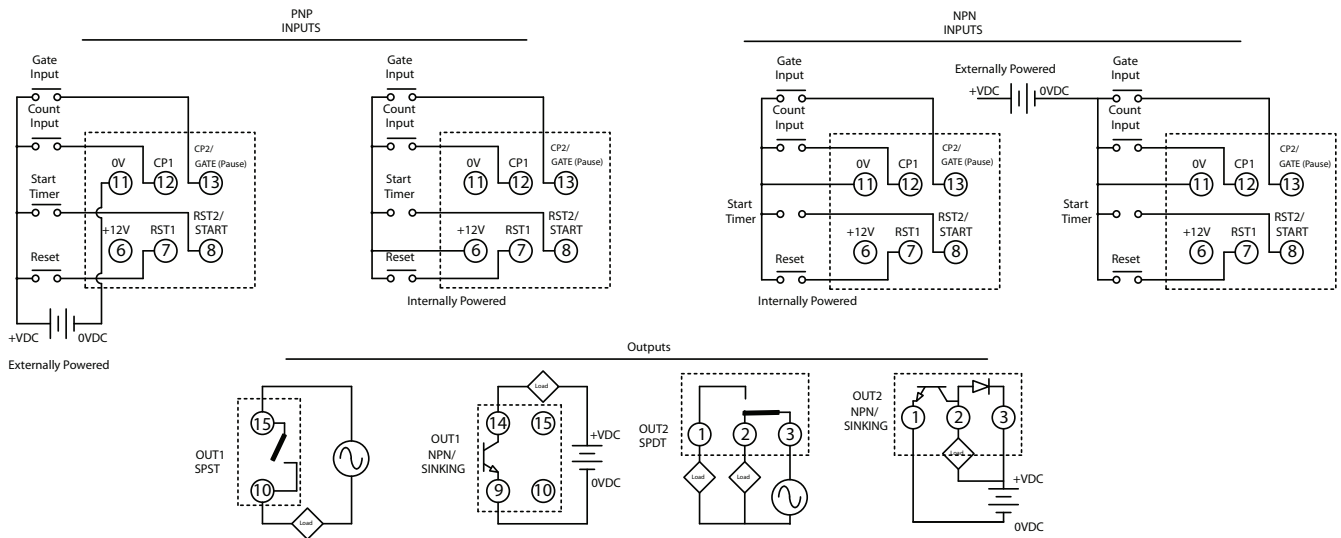
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The “reset” signal minimum pulse width is set by reset pulse width parameter (**RES**).



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.

FUNC ▼ or ▲ **CTT** ▼ or ▲ **Cont** ▼ or ▲ **TACH** ▼ or ▲ **TCY**

MODE ▼ Select timer mode: times up and times down,
mode ▼ or ▲ **UP** ▼ or ▲ **down**

MODE ▼ Select output modes: There are 8 output modes.
output ▼ or ▲ **Sond1** ▼ or ▲ **Sond2** ▼ or ▲ **Soffd** ▼ or ▲ **Son** ▼ or ▲ **Pond** ▼ or ▲ **PondH**
 ▼ or ▲ **rcy** ▼ or ▲ **rcyh**

MODE ▼ Select display unit: the min. unit 10ms - the max. unit hour are selectable.
Unit ▼ or ▲ **S.001** ▼ or ▲ **S.01** ▼ or ▲ **S.1** ▼ or ▲ **MS.001** ▼ or ▲ **MS.01** ▼ or ▲ **M.01**
 ▼ or ▲ **m** ▼ or ▲ **MS** ▼ or ▲ **M**

MODE ▼ Select input modes: Only counting up and counting down are available.
input ▼ or ▲ **UP** ▼ or ▲ **down**

MODE ▼ Select output modes: Same as the output modes of the counter except for S, T, D.
output ▼ or ▲ **F** ▼ or ▲ **n** ▼ or ▲ **C** ▼ or ▲ **r** ▼ or ▲ **E** ▼ or ▲ **P**
 ▼ or ▲ **Q** ▼ or ▲ **A**

MODE ▼ Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.
SPEED ▼ or ▲ **5K** ▼ or ▲ **1K** ▼ or ▲ **200** ▼ or ▲ **30** ▼ or ▲ **1**

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.
out1 ▼ or ▲ **0.02** ▼ or ▲ **0.00**

MODE ▼ Pulse width of output 2: This parameter 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.
out2 ▼ or ▲ **0.02** ▼ or ▲ **0.00**

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).
Point ▼ or ▲ **0** ▼ or ▲ **1** ▼ or ▲ **2** ▼ or ▲ **3**

MODE ▼ Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999
PSCALE ▼ or ▲ **1000**

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.
POWER ▼ or ▲ **CLEAR** ▼ or ▲ **SAVE**

MODE ▼ Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable
rst ▼ or ▲ **20** ▼ or ▲ **1**

MODE ▼ Select input signal types: NPN and PNP
input ▼ or ▲ **NPN** ▼ or ▲ **PNP**

MODE ▼

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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Repeat Cycle (RCY)

Counter Input Mode -Down (DOWN)

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 (EOUT1) or will be maintained ON (EOUT1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (EOUT2) 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 (MODE). At the end of the timing period, the timing period will reset and repeat automatically.

If the output pulse width parameter (EOUT1) 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.

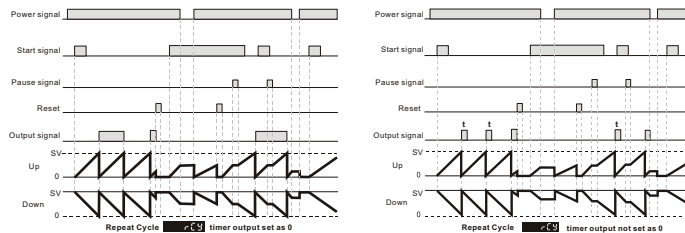
If the output pulse width parameter (EOUT1) is set to >0.00 Output 1 will turn ON momentarily for the time set in the output pulse width parameter (EOUT1) at the beginning of the each timing period.

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 (RESR). 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 (DOWN)

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

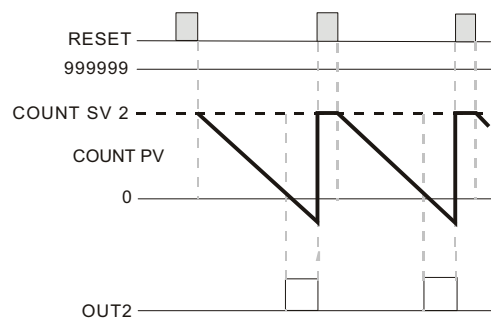
Counter Output Modes:

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 (RESR).



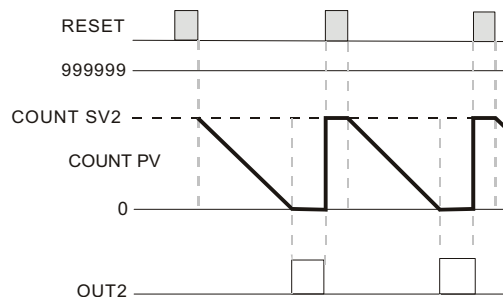
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

Mode 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 (**RSTW**).



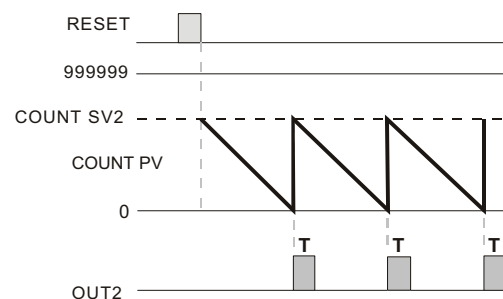
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

Mode 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 (**OUTPW**) 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 (**RSTW**).



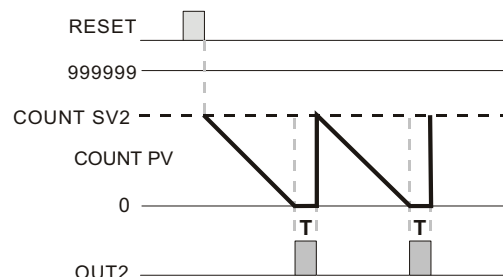
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

Mode 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 (**OUTPW**). The count PV is prohibited from decrementing until the end of the output pulse time (**OUTET**) 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 (**RSTW**).



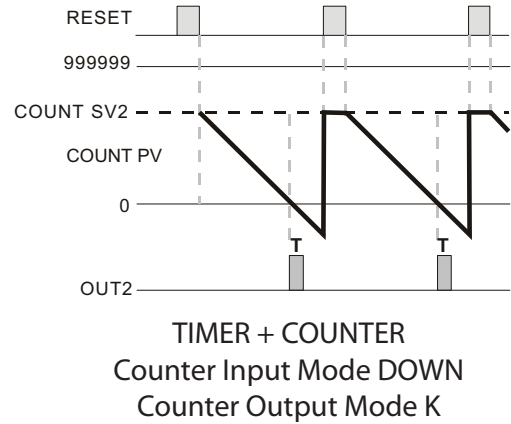
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

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 (**OUTP2**). 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 (**RSTP**).

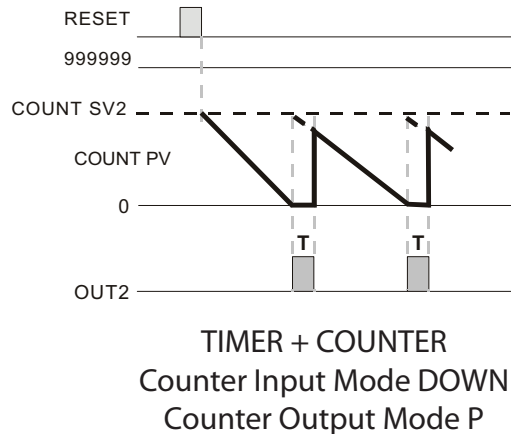


Mode P (P)

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 (**OUTP2**). 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 (**RSTP**).

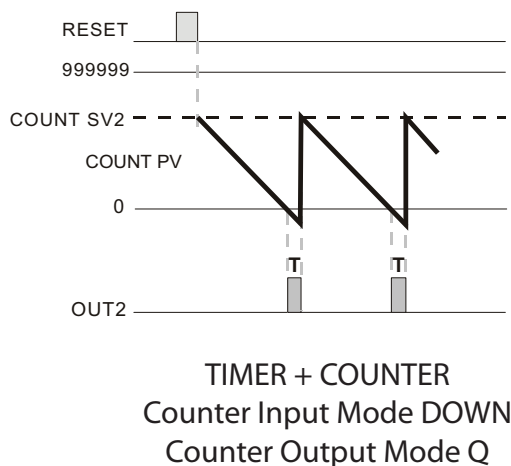


Mode Q (Q)

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 (**OUTP2**). 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 (**RSTP**).

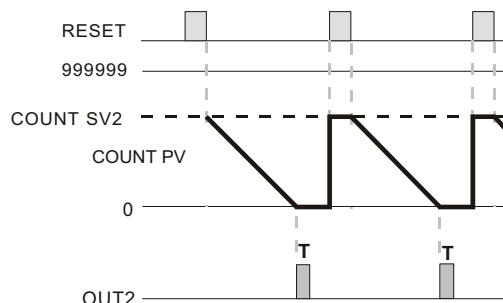


Mode A (A)

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 (**OUT2P**). The count PV will remain at 0 regardless of additional input signals.

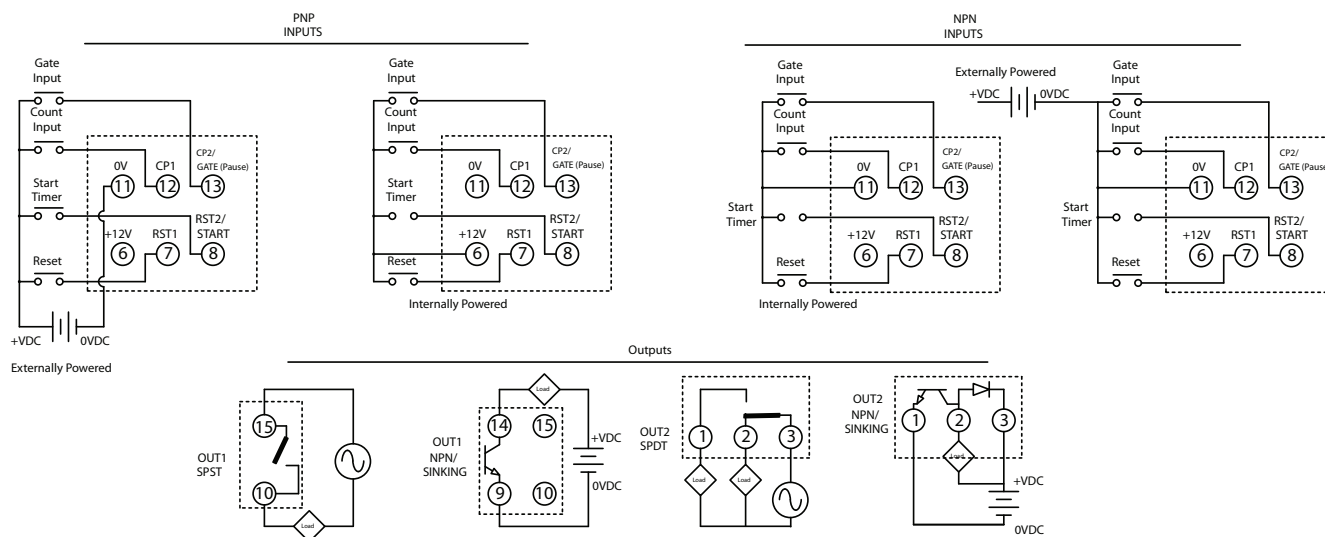
The leading edge of a "reset" input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the "reset" signal at RST1 enables counting to begin.

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



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.

Func [] or [] **TIME** [] or [] **Count** [] or [] **TACH** [] or [] **TCY**

MODE ↓
Select timer mode: times up and times down,

Time [] or [] **UP** [] or [] **DOWN**

MODE ↓
Select output modes: There are 8 output modes.

Output [] or [] **Sond1** [] or [] **Sond2** [] or [] **SoffFd** [] or [] **Son** [] or [] **Pond** [] or [] **PondH**
[] or [] **TCY** [] or [] **TCYH**

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

Unit [] or [] **S.001** [] or [] **S.01** [] or [] **S.1** [] or [] **MS.001** [] or [] **MS.01** [] or [] **M.01**
[] or [] **M.1** [] or [] **HRS.1** [] or [] **HR.1** [] or [] **H.1**

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

Input [] or [] **UP** [] or [] **DOWN**

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

Output [] or [] **F** [] or [] **N** [] or [] **C** [] or [] **T** [] or [] **D** [] or [] **P**
[] or [] **R** [] or [] **R**

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

SPEED [] or [] **5K** [] or [] **1K** [] or [] **200** [] or [] **30** [] or [] **1**

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.

OUT1 [] or [] **0.02** [] or [] **0.00**

MODE ↓
Pulse width of output 2: This parameter 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.

OUT2 [] or [] **0.02** [] or [] **0.00**

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).

Point [] or [] **0** [] or [] **1** [] or [] **2** [] or [] **3**

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

PSCALE [] or [] **1000**

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.

PER5 [] or [] **CLEAR** [] or [] **SAVE**

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

RESR [] or [] **20** [] or [] **1**

MODE ↓
Select input signal types: NPN and PNP

Input [] or [] **NPN** [] or [] **PNP**

MODE ↓
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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 (POUW1) or will be maintained ON (POUW1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (POUW2) 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 (MODE). At the end of the timing period, the timing period will reset and repeat automatically.

If the output pulse width parameter (POUW1) 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.

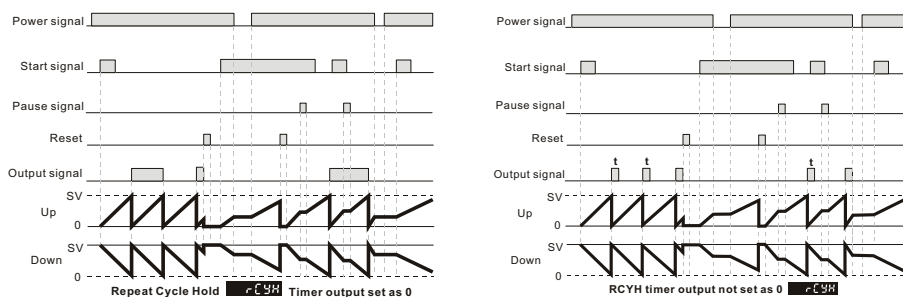
If the output pulse width parameter (POUW1) is set to >0.00, Output 1 will turn ON momentarily for the time set in the output pulse width parameter (POUW1) at the beginning of the each timing period.

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 (RPSW). 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.

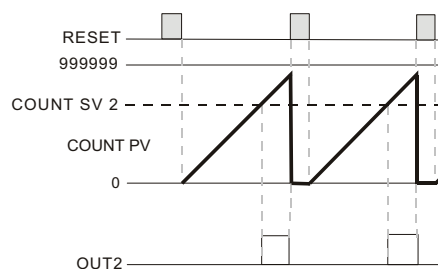
Counter Output Modes:

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 (RPSW).



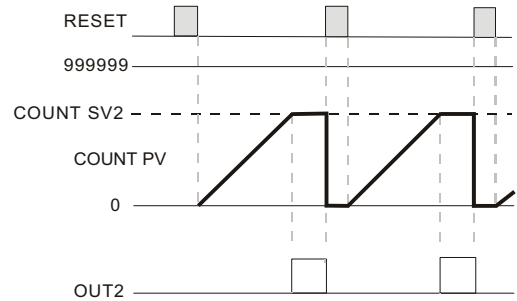
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode F

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 (**RESW**).



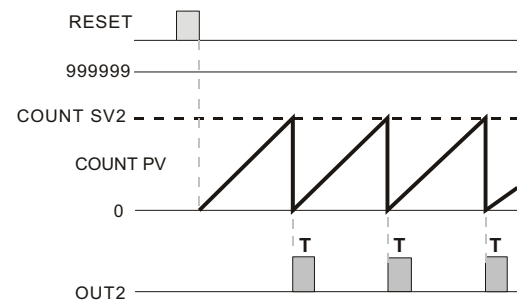
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode N

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 (**OUTW2**) 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 (**RESW**).



TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode C

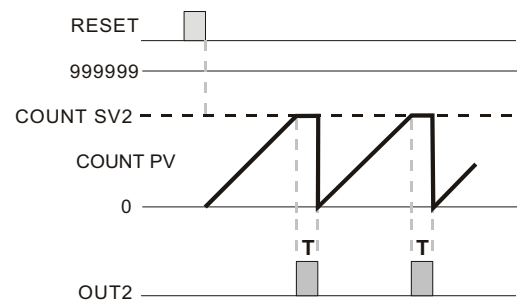
Mode R

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 (**OUTW2**) 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 (**RESW**).



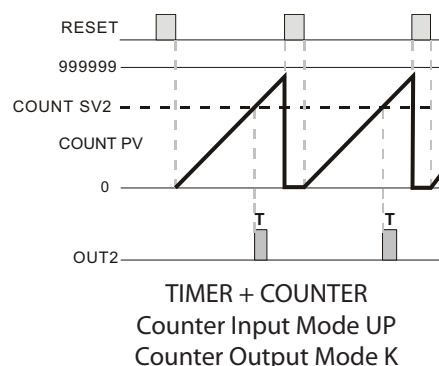
TIMER + COUNTER
Counter Input Mode UP
Counter Output Mode R

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 (**OUT2**). 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 (**RES**).

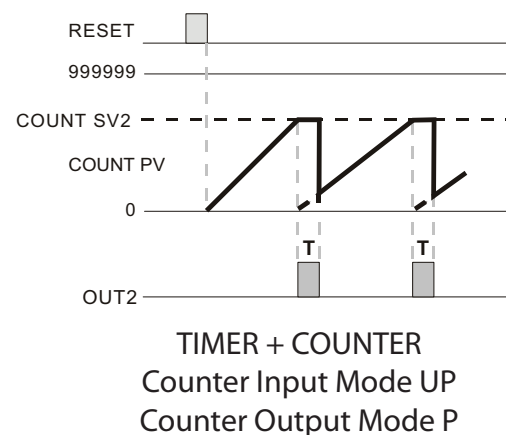


Mode P (P)

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 (**OUT2**). 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 (**RES**).

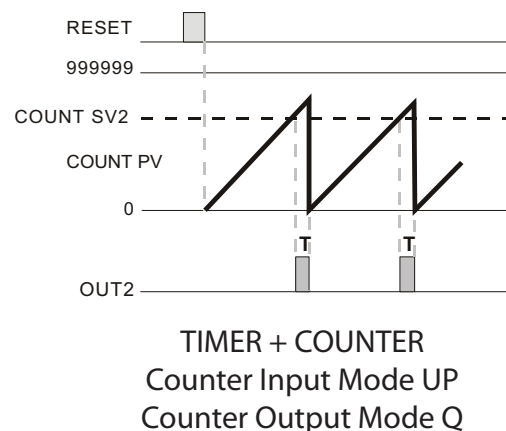


Mode Q (Q)

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 (**OUT2**). 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 (**RES**).

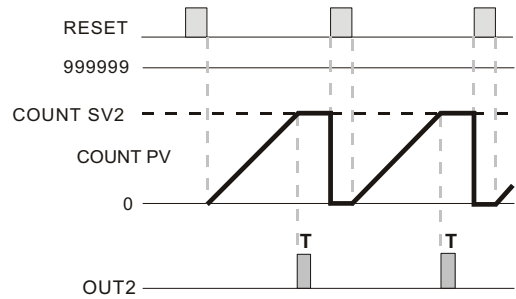


Mode A

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 (**OUT2**). The count PV will remain at the count SV2 regardless of additional input signals.

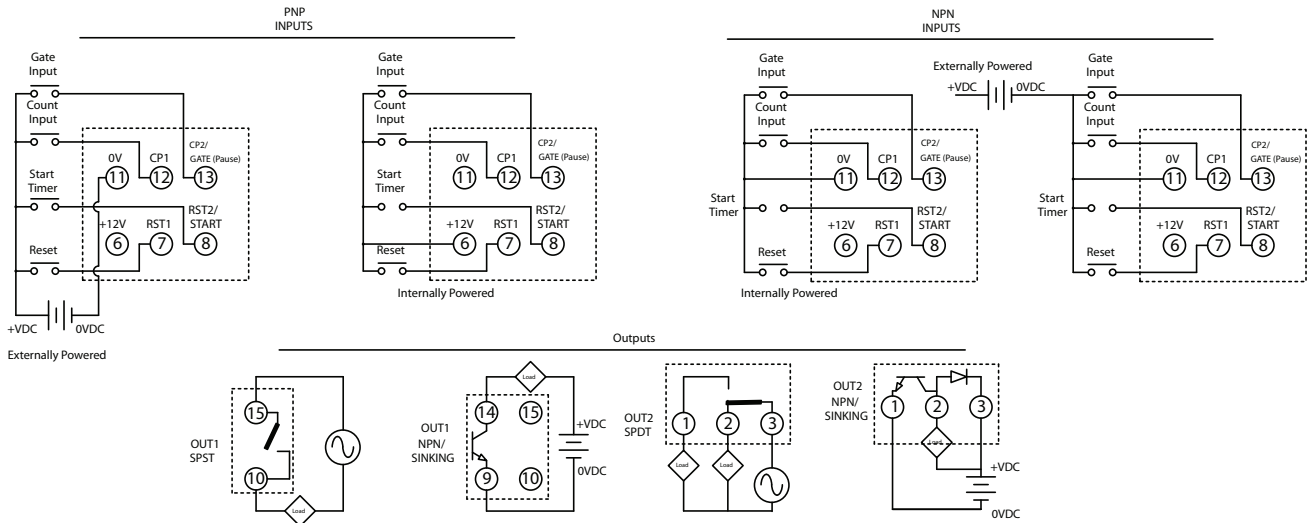
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to 0 and prohibit an input signal from incrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The “reset” signal minimum pulse width is set by reset pulse width parameter (**RES**).



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.

FUNC [▼] or [▲] **CTT** [▼] or [▲] **Cont** [▼] or [▲] **TACH** [▼] or [▲] **TCY**

MODE ↓
mode [▼] or [▲] **UP** [▼] or [▲] **down**

MODE ↓
 Select output modes: There are 8 output modes.
mode [▼] or [▲] **Sond1** [▼] or [▲] **Sond2** [▼] or [▲] **SoFFd** [▼] or [▲] **son** [▼] or [▲] **Pond** [▼] or [▲] **PondH**
mode [▼] or [▲] **rcy** [▼] or [▲] **rcyh**

MODE ↓
 Select display unit: the min. unit 10ms - the max. unit hour are selectable.
mode [▼] or [▲] **S.001** [▼] or [▲] **S.01** [▼] or [▲] **S.1** [▼] or [▲] **MS.001** [▼] or [▲] **MS.01** [▼] or [▲] **M.01**
mode [▼] or [▲] **m** [▼] or [▲] **HR5** [▼] or [▲] **HR** [▼] or [▲] **H**

Select input modes: Only counting up and counting down are available.
mode [▼] or [▲] **UP** [▼] or [▲] **down**

MODE ↓
 Select output modes: Same as the output modes of the counter except for S, T, D.
mode [▼] or [▲] **F** [▼] or [▲] **N** [▼] or [▲] **C** [▼] or [▲] **R** [▼] or [▲] **T** [▼] or [▲] **D**
mode [▼] or [▲] **Q** [▼] or [▲] **A**

Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.
mode [▼] or [▲] **5K** [▼] or [▲] **1K** [▼] or [▲] **200** [▼] or [▲] **30** [▼] or [▲] **1**

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 [▼] or [▲] **002** [▼] or [▲] **000**

MODE ↓
 Pulse width of output 2: This parameter 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 [▼] or [▲] **002** [▼] or [▲] **000**

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 [▼] or [▲] **0** [▼] or [▲] **1** [▼] or [▲] **2** [▼] or [▲] **3**

MODE ↓
 Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999
mode [▼] or [▲] **1000**

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 [▼] or [▲] **CLEAR** [▼] or [▲] **SAVE**

MODE ↓
 Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable
mode [▼] or [▲] **20** [▼] or [▲] **1**

MODE ↓
 Select input signal types: NPN and PNP
mode [▼] or [▲] **NPN** [▼] or [▲] **PNP**

MODE ↓
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CTT Timer + Counter Mixed Mode Functions

Timer Mode - Repeat Cycle Hold (RCH)

Counter Input Mode - Down (Down)

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 (EOUT1) or will be maintained ON (EOUT1 set to 0.00). Output 2 (Counter) will turn ON momentarily for the time set in the output pulse width parameter (EOUT2) or will be maintained ON depending on the output mode selected.

Repeat Cycle HOLD (RCH)

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 (MODE). At the end of the timing period, the timing period will reset and repeat automatically.

If the output pulse width parameter (EOUT1) 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.

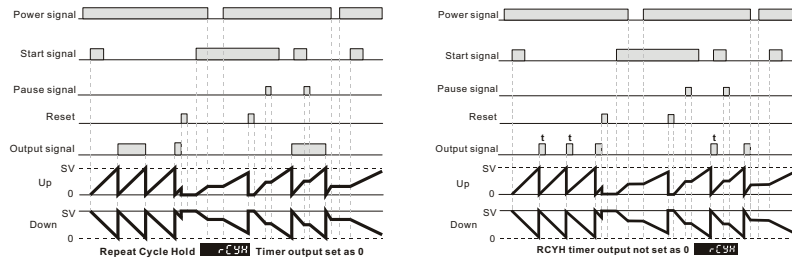
If the output pulse width parameter (EOUT1) is set to >0.00, Output 1 will turn ON momentarily for the time set in the output pulse width parameter (EOUT1) at the beginning of the each timing period.

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 (RES). 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 (Down)

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

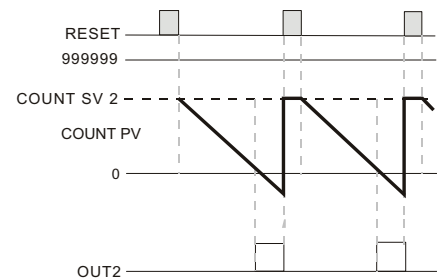
Counter Output Modes:

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 (RES).



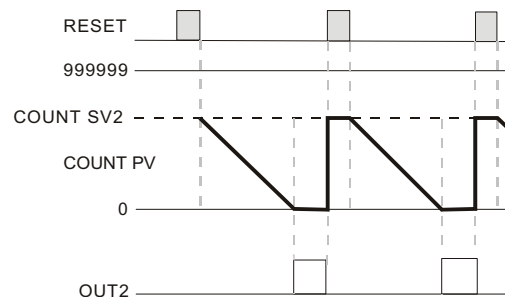
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode F

Mode 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 (**RESET**).



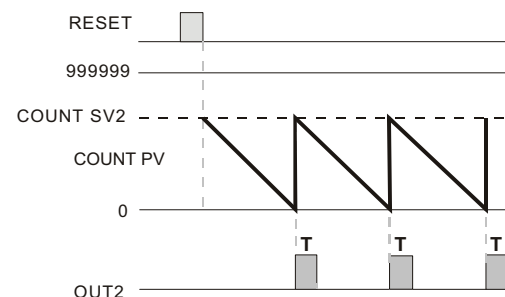
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode N

Mode 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 (**OUTP2**) 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 (**RESET**).



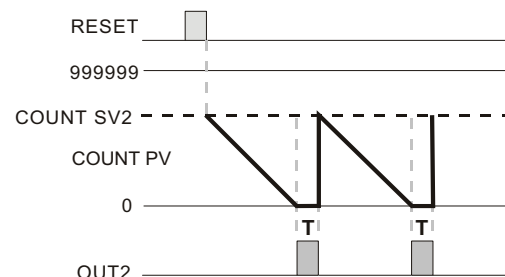
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode C

Mode 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 (**OUTP2**). The count PV is prohibited from decrementing until the end of the output pulse time (**OUTP2**) 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 (**RESET**).



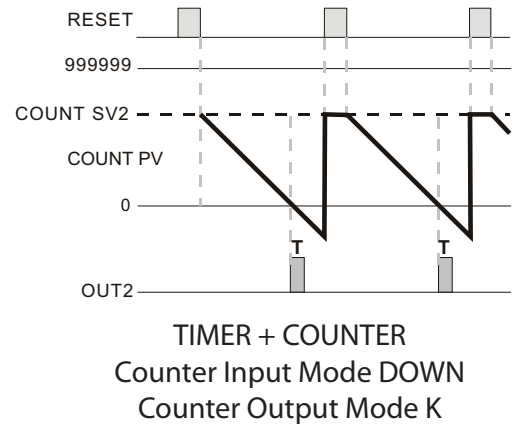
TIMER + COUNTER
Counter Input Mode DOWN
Counter Output Mode R

Mode 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 (EOUTP2). 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).

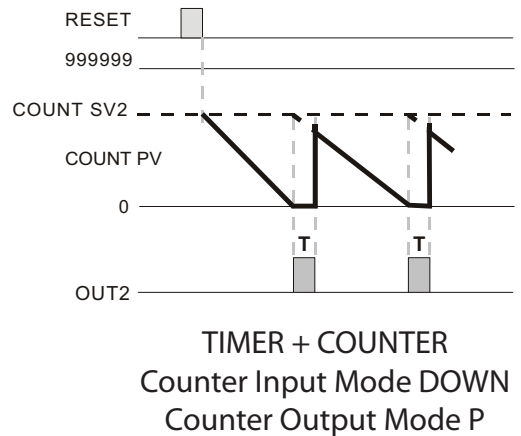


Mode P

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 (EOUTP2). 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).

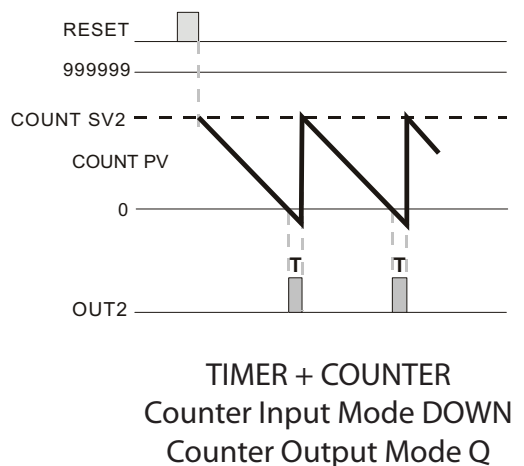


Mode Q

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 (EOUTP2). 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).

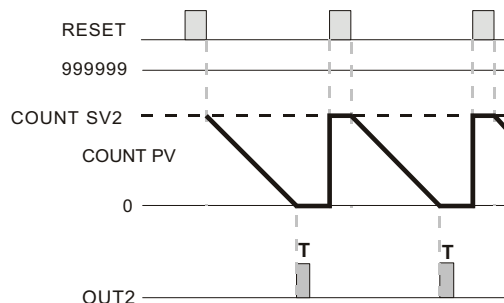


Mode A (A)

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 (**PLW**). The count PV will remain at 0 regardless of additional input signals.

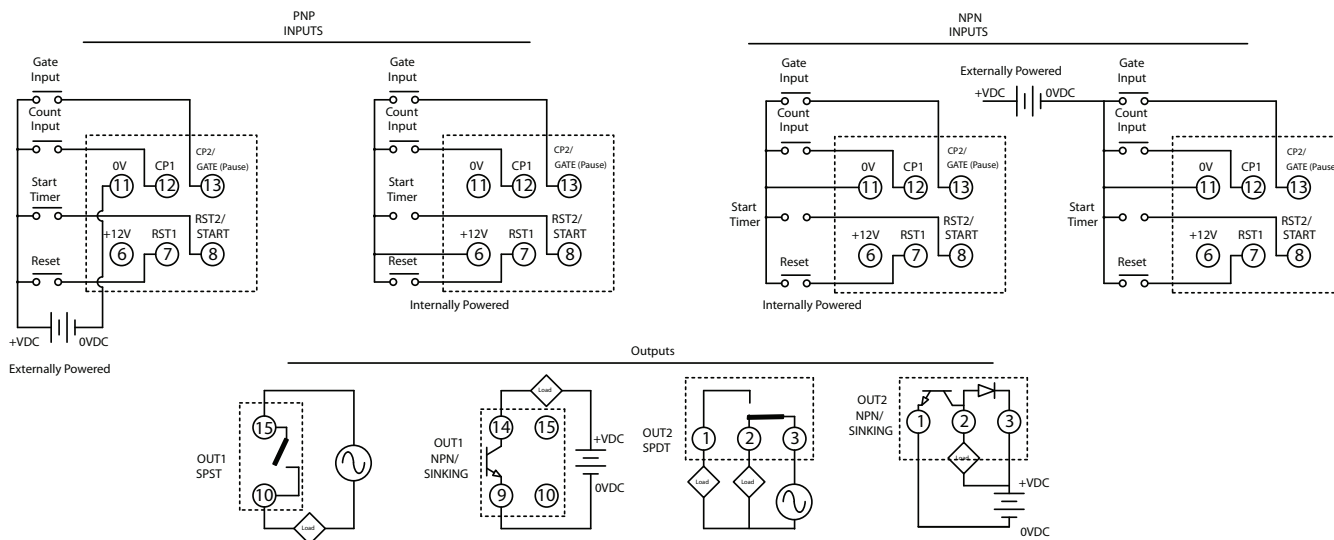
The leading edge of a “reset” input signal at RST1 will turn Output 2 OFF, reset the count PV to the count setting value SV2, and prohibit an input signal from decrementing the count PV. The trailing edge of the “reset” signal at RST1 enables counting to begin.

The “reset” signal minimum pulse width is set by reset pulse width parameter (**PLSR**).



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.

FUnC [▼]or[▲] **CTIME** [▼]or[▲] **Cont** [▼]or[▲] **TACH** [▼]or[▲] **TCY**

MODE ↓
Select timer mode: times up and times down,
t mode [▼]or[▲] **UP** [▼]or[▲] **down**

MODE ↓
Select output modes: There are 8 output modes.
t out1 [▼]or[▲] **Sond1** [▼]or[▲] **Sond2** [▼]or[▲] **SoFFd** [▼]or[▲] **son** [▼]or[▲] **Pond** [▼]or[▲] **PondH**
[▼]or[▲] **rcy** [▼]or[▲] **rcyh**

MODE ↓
Select display unit: the min. unit 10ms - the max. unit hour are selectable.
t Unit [▼]or[▲] **S.001** [▼]or[▲] **S.01** [▼]or[▲] **S.1** [▼]or[▲] **MS.001** [▼]or[▲] **MS.01** [▼]or[▲] **m.01**
[▼]or[▲] **m.1** [▼]or[▲] **hrs.1** [▼]or[▲] **hr.1** [▼]or[▲] **h.1**

MODE ↓
Select input modes: Only counting up and counting down are available.
C InPt [▼]or[▲] **UP** [▼]or[▲] **down**

MODE ↓
Select output modes: Same as the output modes of the counter except for S, T, D.
C out1 [▼]or[▲] **F** [▼]or[▲] **n** [▼]or[▲] **C** [▼]or[▲] **r** [▼]or[▲] **E** [▼]or[▲] **P**
[▼]or[▲] **q** [▼]or[▲] **a**

MODE ↓
Select counting speed: Maximum 5Kcps; others 1K, 200, 30 and 1cps.
C SPEED [▼]or[▲] **5K** [▼]or[▲] **1K** [▼]or[▲] **200** [▼]or[▲] **30** [▼]or[▲] **1**

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.
t out1 [▼]or[▲] **002** [▼]or[▲] **000**

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.
t out2 [▼]or[▲] **002** [▼]or[▲] **000**

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).
Point [▼]or[▲] **0** [▼]or[▲] **1** [▼]or[▲] **2** [▼]or[▲] **3**

MODE ↓
Set up pre-scale value: 1.000 (default 1:1) Range: 0.001 to 99.999
PSCALE [▼]or[▲] **1000**

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.
PVERS [▼]or[▲] **CLEAR** [▼]or[▲] **SAVE**

MODE ↓
Set up minimum width of reset signal: Default = 20ms; 1ms is also selectable
rtsr [▼]or[▲] **20** [▼]or[▲] **1**

MODE ↓
Select input signal types: NPN and PNP
InPtLC [▼]or[▲] **nPN** [▼]or[▲] **pNP**

MODE ↓
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