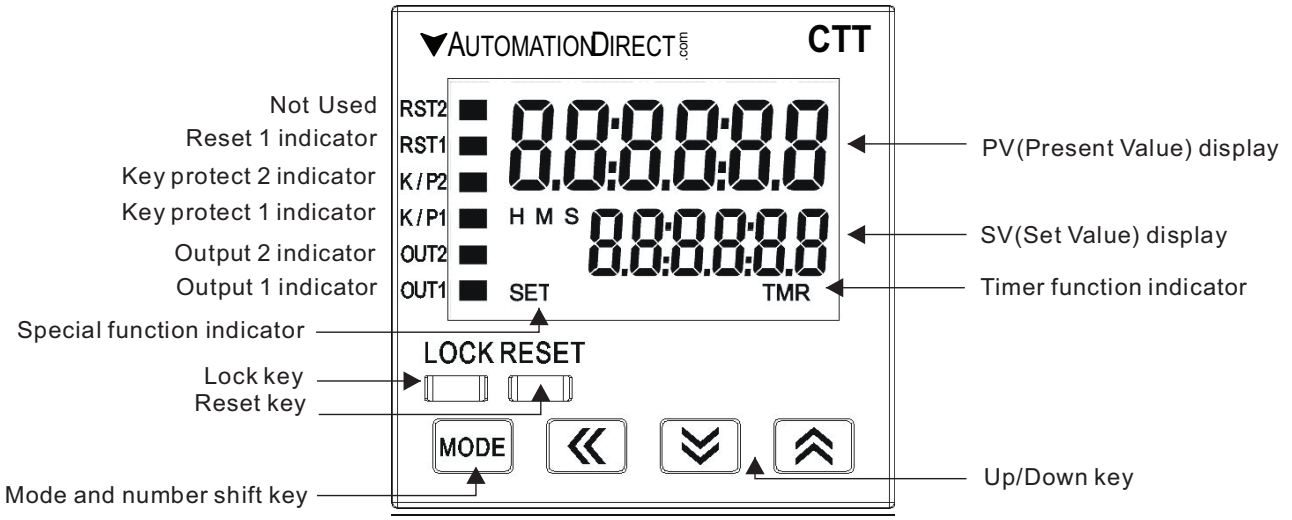
TIMER

In This Chapter...

Display, Indicators and Keys



LCD Display and Indicators			
RST 1/2	Light on when reset signal is detected	***H M S***	Hour, minute, second, unit of timer, displayed in Timer function
K/P 1/2	Light on when key-protected mode is enabled	***SET***	SV
OUT 1/2	Light on when output is executing	***TMR***	Light on in Timer function

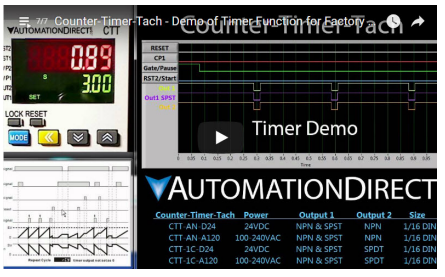
Key Operation	
▼ ▲	Increase and decrease SV or change paramter settings
◀	Left move 1 digit of the selected digit. The indicator of the selected digit will flash.
MODE	Save the set parameters or switch among functions.
LOCK	Prevent settings from being changed. Key-protected mode still works after the power is switched off. Press LOCK to enter key-protected mode. In non-key-protected status, press LOCK to enter Lock 1, press LOCK again to enter Lock 2. Press MODE and ◀ at the same time to disable key-protected mode. LoC 1 (Lock 1) disables the functions of all keys. LoC2 (Lock 2) allows users to change SV and functions of RESET remain. LOCK only functions in non-key-protected status.
RESET	Clear and reset PV.

Modes: Operation Mode and Configuration Mode	
Operation	When the power is on, the timer/counter/tachometer is in the operation mode. Press ▼▲ to change SV, or ◀ to make change on a desired digit. The indicator of the selected digit will flash. After the change is made, press MODE to save the setting. If SV or paramters are not changed, press MODE once to switch between SET1 and SET2.
Configuration	Press MODE in operation mode for more than 3 seconds to enter configuration mode. Press MODE once to switch among parameters. To return to operation mode, press MODE for more than 3 seconds.

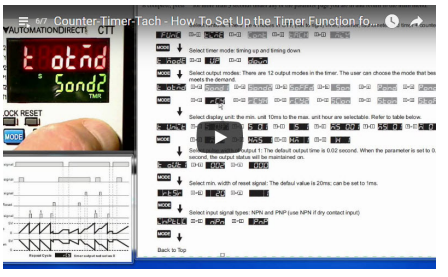
Getting Started with Timers

Below you will find the list of available timer modes with a brief description of operation, for more detailed information about the timing sequences and output operations please see the associated page(s) within this chapter.

Timer Modes	Description	Page Number
Signal On Delay 1	On delay timer with momentary Start Input	3-4
Signal On Delay 2	On delay timer with maintained Start Input	3-6
Signal Off Delay	Off delay timer with momentary Start Input	3-8
Signal On	Off delay timer with latching Start Input	3-10
Power On Delay	On delay timer when power is applied	3-12
Power On Delay Hold	On delay timer when power is applied and actual value storage on power loss	3-14
Repeat Cycle	Repeating On delay timer	3-16
Repeat Cycle Hold	Repeating On delay timer and actual value storage on power loss	3-18
Repeat Cycle 2	Repeating Off delay timer with separate on and off times	3-20
Signal Cumulate	On delay timer with single start and pause input and actual value storage on power loss	3-22
Signal Twin On-Start	Off delay timer with individual setpoints for Off and On times	3-24
Signal Twin Off Start	On delay timer with individual setpoints for On and Off times	3-26



Click on the above thumbnail or go to https://www.automationdirect.com/VID-RL-0008 for a short Timer demo video.



Click on the above thumbnail or go to https://www.automationdirect.com/VID-RL-0007 for a Timer Set-up video.

CTT Timer

Signal On Delay

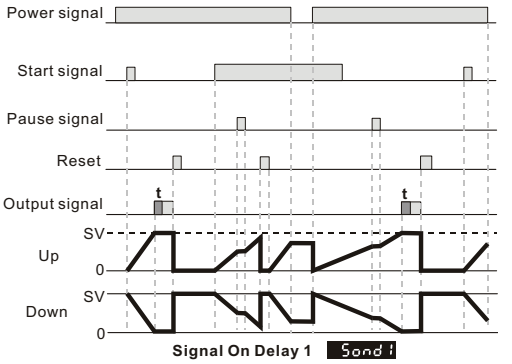
Signal On Delay 1 (Sond 1)

With power applied to the CTT, the leading edge of the input signal at START will begin the timing period setting value SV (timing up or down based on parameter (t- mode) or by DIP switch 2). At the end of the timing period both outputs will turn ON momentarily for the time set in the output pulse width parameter (tout 1) or will be maintained ON if the output pulse width parameter (tout 1) is set to 0.00. The trailing edge of the "start" signal has no effect on the outputs or timing period.

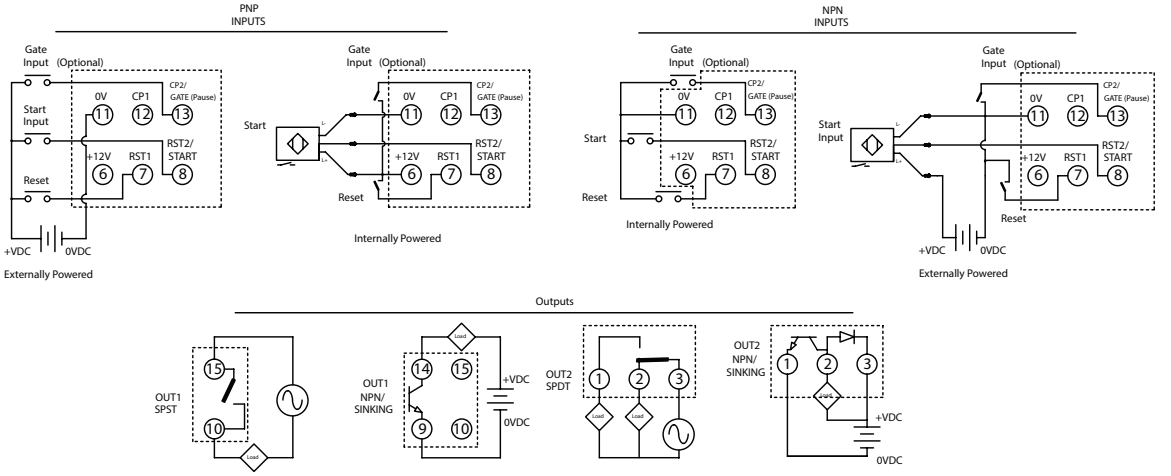
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr) or DIP Switch 8.

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 external switch "pause" (Gate) signal.

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



Timer Wiring Examples



DIP Switch Set Up of the CTT Parameters:

Dip Switch Settings - Table 1			
Switch	Function	Off	On
1	Dip switch	Disabled	Enabled
2	Timer mode	Counting up	Counting down
3	Output mode	See Output Mode Table - Table 2	
4			
5	Displayed unit	See Display Units Table - Table 3	
6			
7			
8	Reset signal pulse width	20 ms	1 ms

Output Mode - Table 2		
Switch 3	Switch 4	Output Mode
OFF	OFF	Sond 1
ON	OFF	Sond2
OFF	ON	SoFFd
ON	ON	Son

Display Units - Table 3			
Switch 5	Switch 6	Switch 7	Display Units
OFF	OFF	OFF	0.01 sec.
ON	OFF	OFF	0.1 sec.
OFF	ON	OFF	1 sec.
ON	ON	OFF	min., 0.01 sec.
OFF	OFF	ON	min., 0.1 sec.
ON	OFF	ON	0.1 min.
OFF	ON	ON	minute
ON	ON	ON	hr., min., sec.

Keypad set up of the parameters for Signal On Delay Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select 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

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

Back to Top

Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
MS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
MS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
M 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
M 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HMS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
HM 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Signal On Delay 2

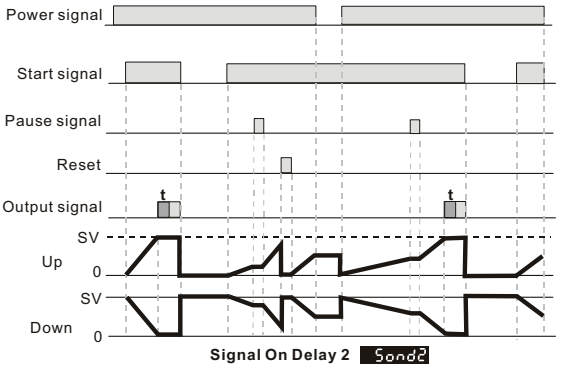
Signal On Delay 2 (Sond2)

With power applied to the CTT, the leading edge of the input signal at START will begin the timing period setting value SV (timing up or down based on parameter (t modE) or by DIP switch 2). At the end of the timing period both outputs will turn ON momentarily for the time set in the output pulse width parameter (toUt1) or will be maintained ON if the output pulse width parameter (toUt1) is set to 0.00. The trailing edge of the "start" signal will turn OFF the outputs and reset the timing period.

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

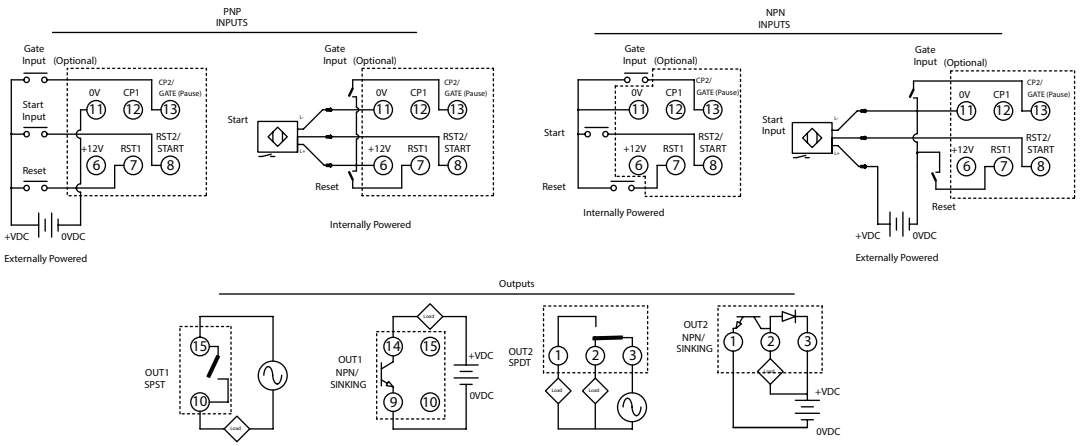
The leading edge of a "pause" input signal at GATE will pause the timing period after it has been started. The timing period will continue after the trailing edge of the external switch "pause" (Gate) signal.

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



Signal On Delay 2 Sond2

Timer Wiring Examples



DIP Switch Set Up of the CTT Parameters:

Dip Switch Settings - Table 1			
Switch	Function	Off	On
1	Dip switch	Disabled	Enabled
2	Timer mode	Counting up	Counting down
3	Output mode	See Output Mode Table - Table 2	
4			
5	Displayed unit	See Display Units Table - Table 3	
6			
7			
8	Reset signal pulse width	20 ms	1 ms

Output Mode - Table 2		
Switch 3	Switch 4	Output Mode
OFF	OFF	Sond1
ON	OFF	Sond2
OFF	ON	SoFFd
ON	ON	Son

Display Units - Table 3			
Switch 5	Switch 6	Switch 7	Display Units
OFF	OFF	OFF	0.01 sec.
ON	OFF	OFF	0.1 sec.
OFF	ON	OFF	1 sec.
ON	ON	OFF	min., 0.01 sec.
OFF	OFF	ON	min., 0.1 sec.
ON	OFF	ON	0.1 min.
OFF	ON	ON	minute
ON	ON	ON	hr., min., sec.

Keypad set up of the parameters for Signal On Delay 2 Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select 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

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
MS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
MS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
M 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
M 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HMS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
HM 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Signal Off Delay

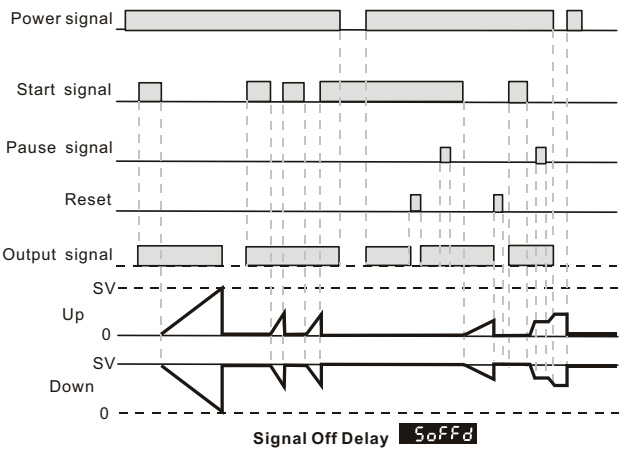
Signal Off Delay (SoFFd)

With power applied to the CTT, the leading edge of the input signal at START will immediately turn ON the outputs. The trailing edge of the "start" signal will begin the timing period setting value SV (timing up or down based on parameter (t Mode) or by DIP switch 2). At the end of the timing period both outputs will turn OFF. The leading edge of a "start" signal applied during a previously initiated timing period will reset the timing period.

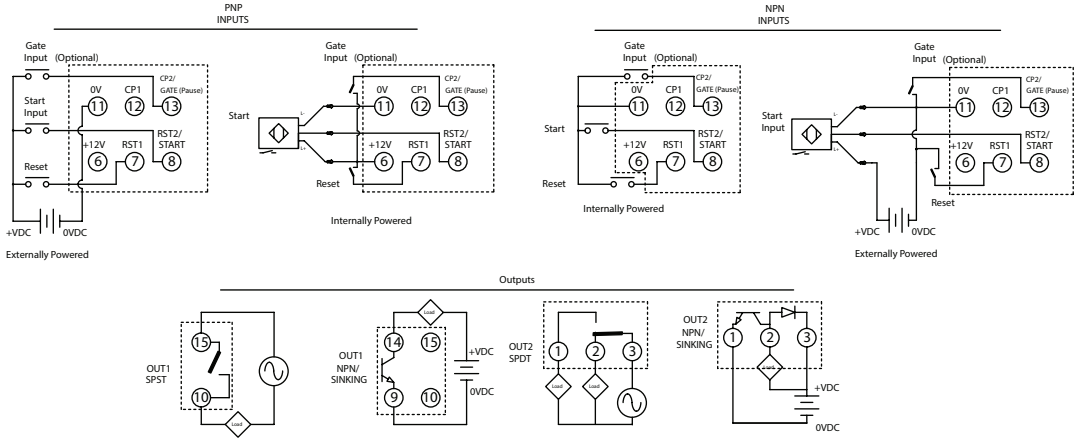
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr) or DIP Switch 8.

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 external switch "pause" (Gate) signal.

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



Timer Wiring Examples



DIP Switch Set Up of the CTT Parameters:

Dip Switch Settings - Table 1			
Switch	Function	Off	On
1	Dip switch	Disabled	Enabled
2	Timer mode	Counting up	Counting down
3	Output mode	See Output Mode Table - Table 2	
4			
5	Displayed unit	See Display Units Table - Table 3	
6			
7			
8	Reset signal pulse width	20 ms	1 ms

Output Mode - Table 2		
Switch 3	Switch 4	Output Mode
OFF	OFF	Sond1
ON	OFF	Sond2
OFF	ON	SoFFd
ON	ON	Son

Display Units - Table 3			
Switch 5	Switch 6	Switch 7	Display Units
OFF	OFF	OFF	0.01 sec.
ON	OFF	OFF	0.1 sec.
OFF	ON	OFF	1 sec.
ON	ON	OFF	min., 0.01 sec.
OFF	OFF	ON	min., 0.1 sec.
ON	OFF	ON	0.1 min.
OFF	ON	ON	minute
ON	ON	ON	hr., min., sec.

Keypad set up of the parameters for Signal Off Delay Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select 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

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t Unit				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
mS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
mS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
n 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
n 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HmS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
Hn 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Signal On

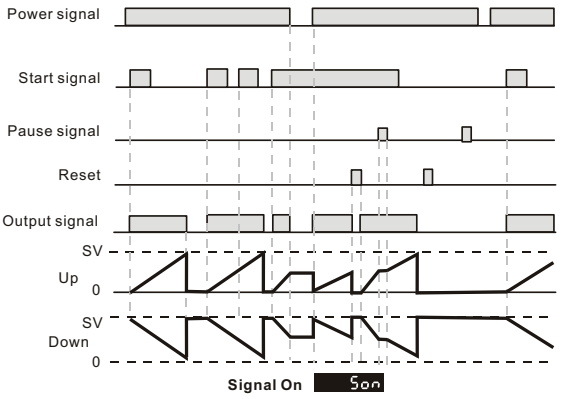
Signal On (Son)

With power applied to the CTT, the leading edge of the input signal at START will immediately turn ON the outputs and begin the timing period setting value SV (timing up or down based on parameter (t modE) or by DIP switch 2). The trailing edge of the "start" signal has no effect on the outputs or timing period. At the end of the timing period both outputs 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.

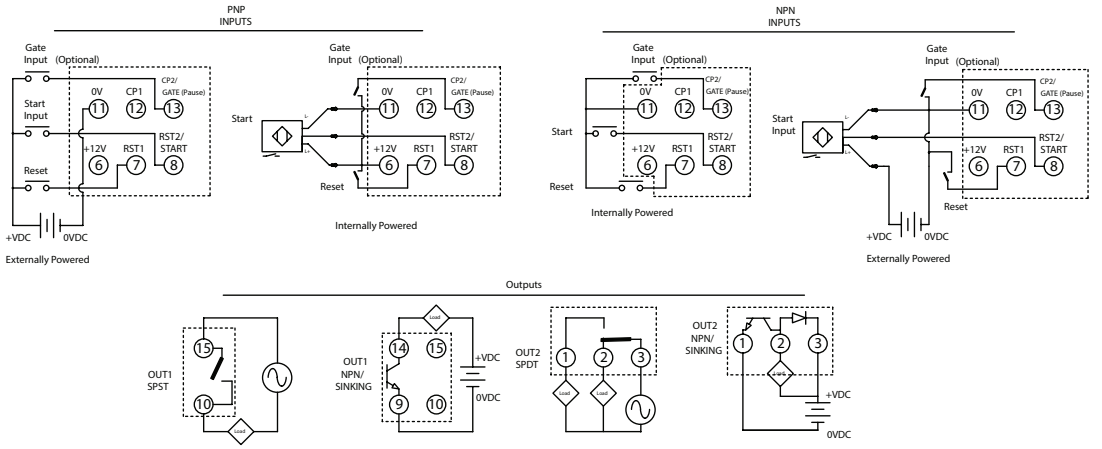
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr) or DIP Switch 8.

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 external switch "pause" (Gate) signal.

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



Timer Wiring Examples



DIP Switch Set Up of the CTT Parameters:

Dip Switch Settings - Table 1

Switch	Function	Off	On
1	Dip switch	Disabled	Enabled
2	Timer mode	Counting up	Counting down
3	Output mode	See Output Mode Table - Table 2	
4			
5	Displayed unit	See Display Units Table - Table 3	
6			
7			
8	Reset signal pulse width	20 ms	1 ms

Output Mode - Table 2

Switch 3	Switch 4	Output Mode
OFF	OFF	Sond1
ON	OFF	Sond2
OFF	ON	SoFFd
ON	ON	Son

Display Units - Table 3

Switch 5	Switch 6	Switch 7	Display Units
OFF	OFF	OFF	0.01 sec.
ON	OFF	OFF	0.1 sec.
OFF	ON	OFF	1 sec.
ON	ON	OFF	min., 0.01 sec.
OFF	OFF	ON	min., 0.1 sec.
ON	OFF	ON	0.1 min.
OFF	ON	ON	minute
ON	ON	ON	hr., min., sec.

Keypad set up of the parameters for Signal On Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select 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

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
mS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
mS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
n 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
n 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HmS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
Hn 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Power On Delay

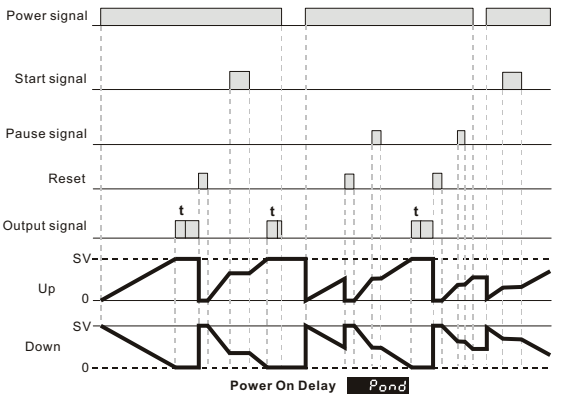
Power On Delay (Pond)

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

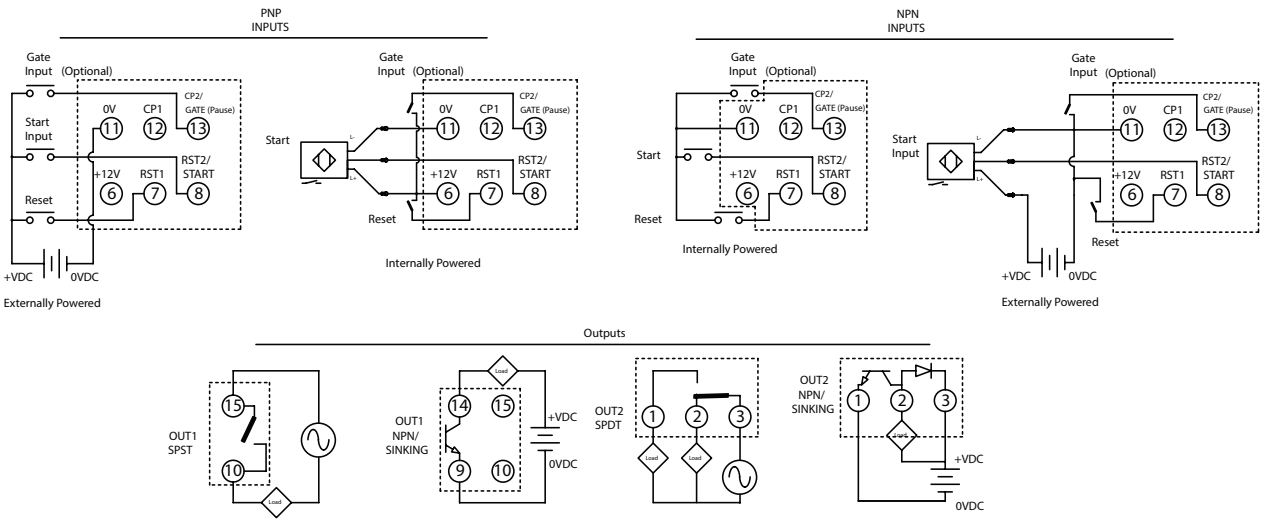
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr).

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

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



Timer Wiring Examples



Keypad set up of the parameters for Power On Delay Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select 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

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
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S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
HS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
HS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
H 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
n 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HMS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
HH 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Power On Delay Hold

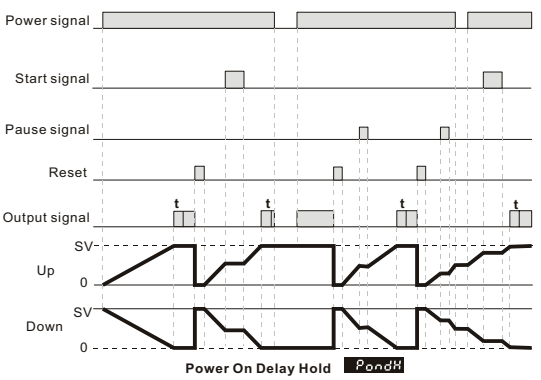
Power On Delay HOLD (PonDH)

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

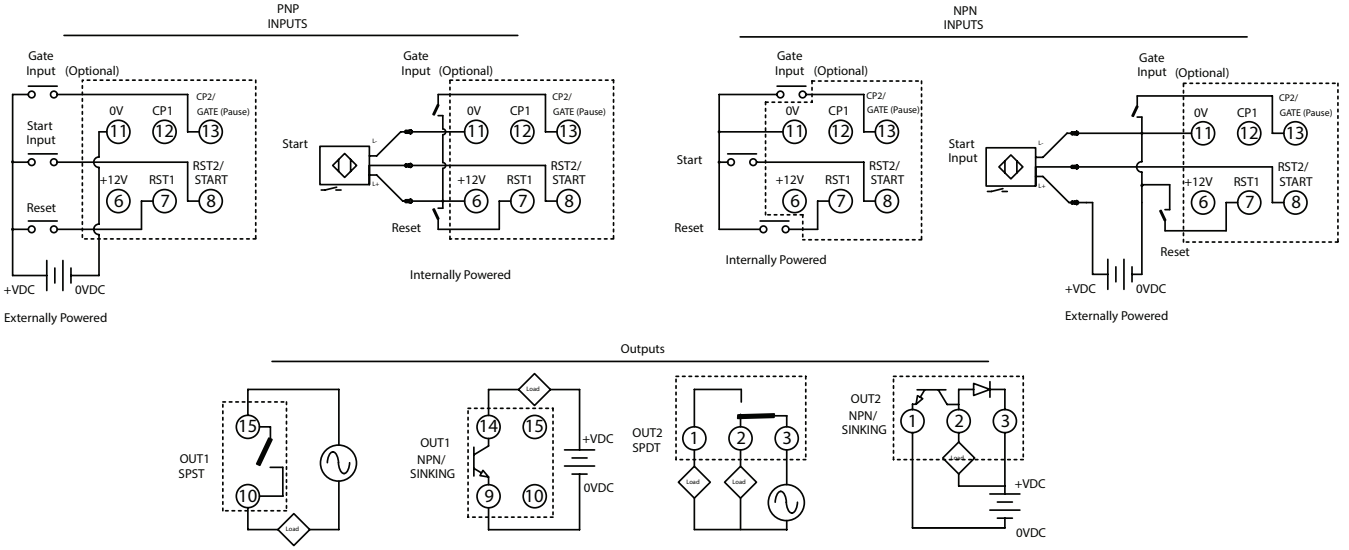
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr).

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

When power is removed, both outputs will turn OFF. The last state of the outputs and the last value of the current timing period will be "stored" in eeprom when power is removed. When power is reapplied the outputs will return to their last state and timing will resume from the last value of the timing period.



Timer Wiring Examples



Keypad set up of the parameters for Power On Delay Hold Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select 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

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
MS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
MS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
M 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
M 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HMS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
HM 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Repeat Cycle

Repeat Cycle (rCY)

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

If the output pulse width parameter (tOUt 1) is set to 0.00 both outputs 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.

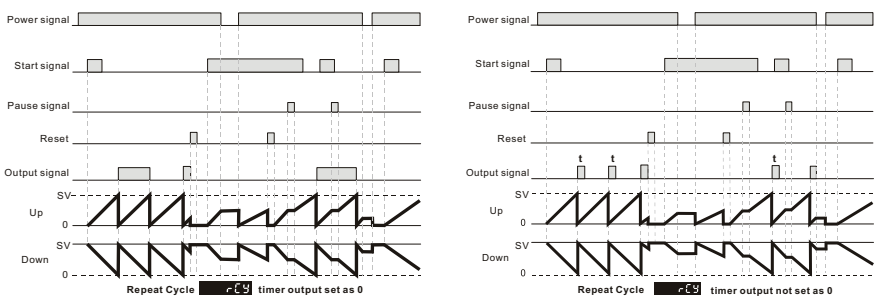
If the output pulse width parameter (tOUt 1) is set to >0.00 both outputs will turn ON momentarily for the time set in the output pulse width parameter (tOUt 1) at the beginning of the each timing period.

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

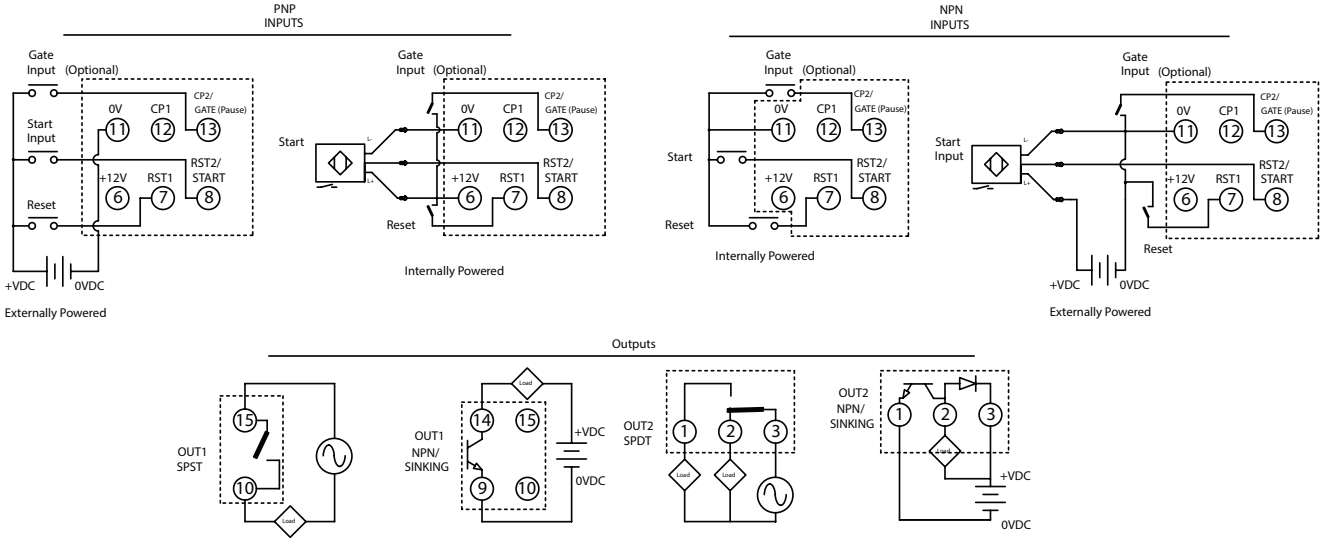
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr). The leading edge of a new "start" signal is necessary to restart the cycle.

The leading edge of 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 external switch "pause" (Gate) signal.

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



Timer Wiring Examples



Keypad set up of the parameters for Repeat Cycle Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select 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

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
nS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
nS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
n 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
n 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HnS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
Hn 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Repeat Cycle Hold

Repeat Cycle HOLD (rCYH)

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

If the output pulse width parameter (tout 1) is set to 0, both outputs 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.

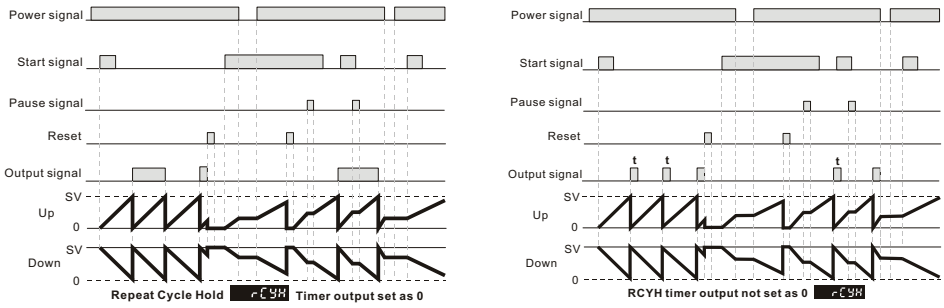
If the output pulse width parameter (tout 1) is set to >0.00, both outputs will turn ON momentarily for the time set in the output pulse width parameter (tout 1) at the beginning of the each timing period.

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

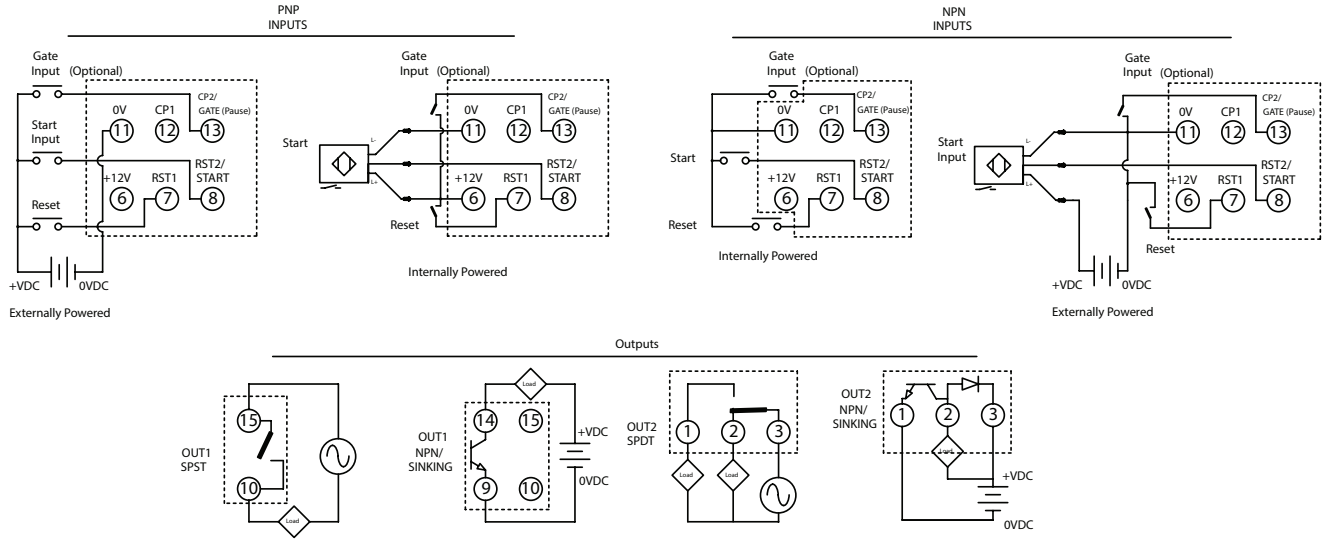
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr). The leading edge of a new "start" signal is necessary to restart the cycle.

The leading edge of 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 external switch "pause" (Gate) signal.

When power is removed, both outputs will turn OFF. The last state of the outputs and the last value of the current timing period will be "stored" in Eeprom when power is removed. When power is reapplied the outputs will return to their last state and timing will resume from the last value of the timing period by the leading edge of a new "start" signal.



Timer Wiring Examples



Keypad set up of the parameters for Repeat Cycle Hold Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select 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

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
MS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
MS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
M 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
M 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HMS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
HM 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Repeat Cycle 2

Repeat Cycle 2 (rCY2)

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

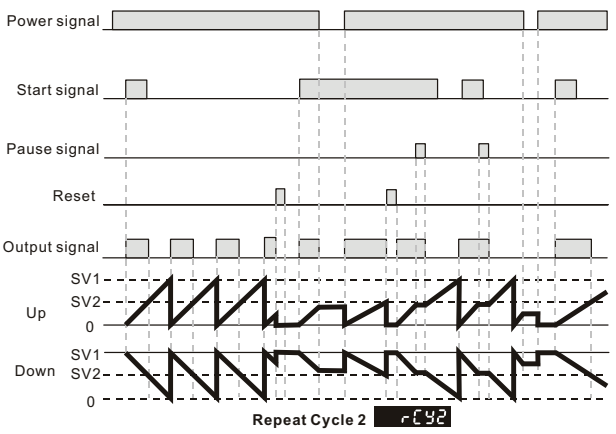
Both outputs will turn ON at the beginning of the first timing period and turn OFF when the timing period reaches time period setting SV2. The outputs will turn ON again when the time period reaches time period setting SV1.

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

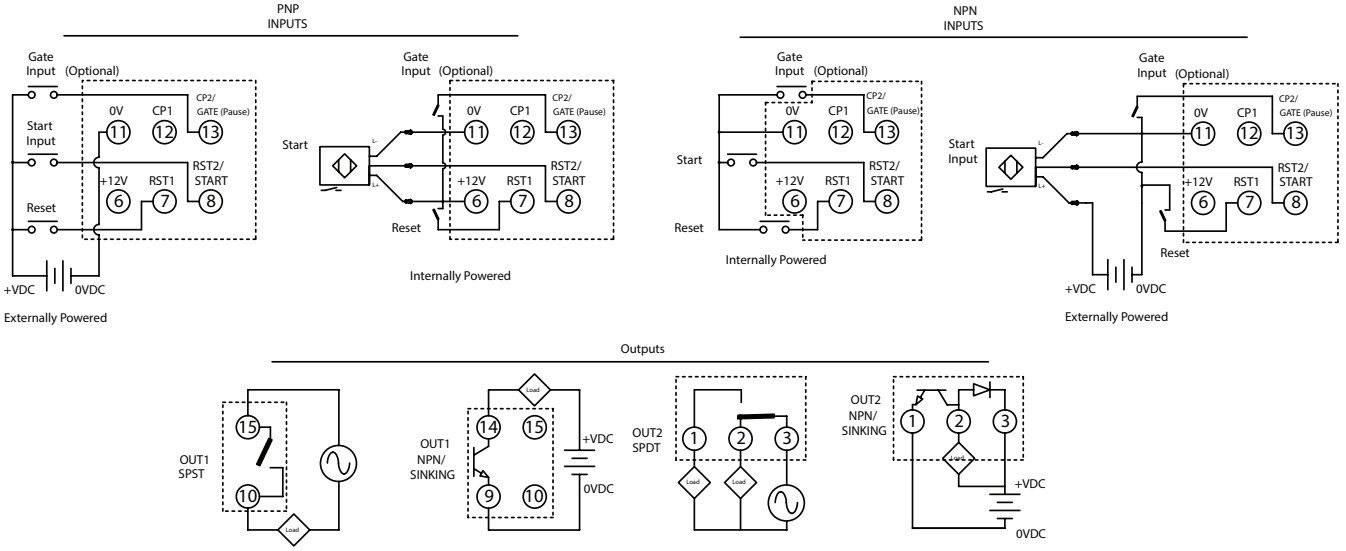
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr). The leading edge of a new "start" signal is necessary to restart the cycle.

The leading edge of 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 external switch "pause" (Gate) signal.

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



Timer Wiring Examples



Keypad set up of the parameters for Repeat Cycle 2 Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
MS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
MS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
M 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
M 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HMS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
HM 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Signal Cumulate

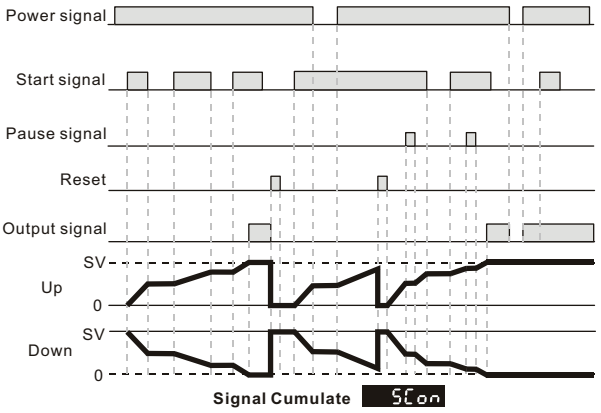
Signal Cumulate (SCon)

With power applied to the CTT, the leading edge of the input signal at START will begin the timing period setting value SV timing up or down based on parameter (t Mode). The trailing edge of the "start" signal will pause the timing period. The leading edge of a subsequent "start" signal will resume timing from the last value of the timing period. At the end of the timing period both outputs will turn ON.

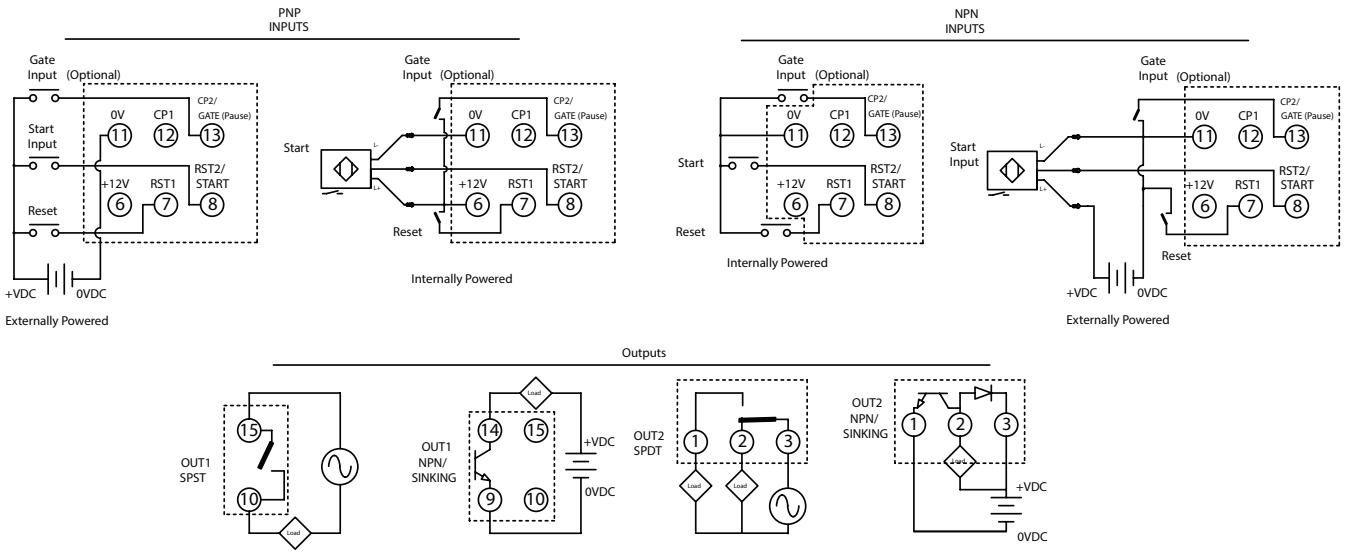
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr).

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

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



Timer Wiring Examples



Keypad set up of the parameters for Signal Cumulate Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

MODE

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

MODE

Select 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 continue.

MODE

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
MS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
MS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
M 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
M 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HMS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
HM 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Signal Twin ON Start

Signal Twin ON-Start (Ston)

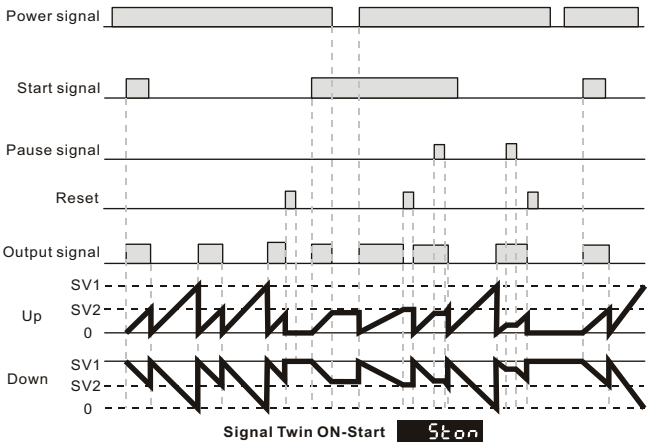
With power applied to the CTT, the leading edge of the input signal at START will turn ON the outputs and begin the timing period timing up or down based on parameter (t mode). When the timing period reaches time setting SV2 the outputs will turn OFF and the time period will reset and restart automatically. When the time period now reaches time setting SV1 the outputs will turn ON again and the time period will reset and repeat automatically.

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

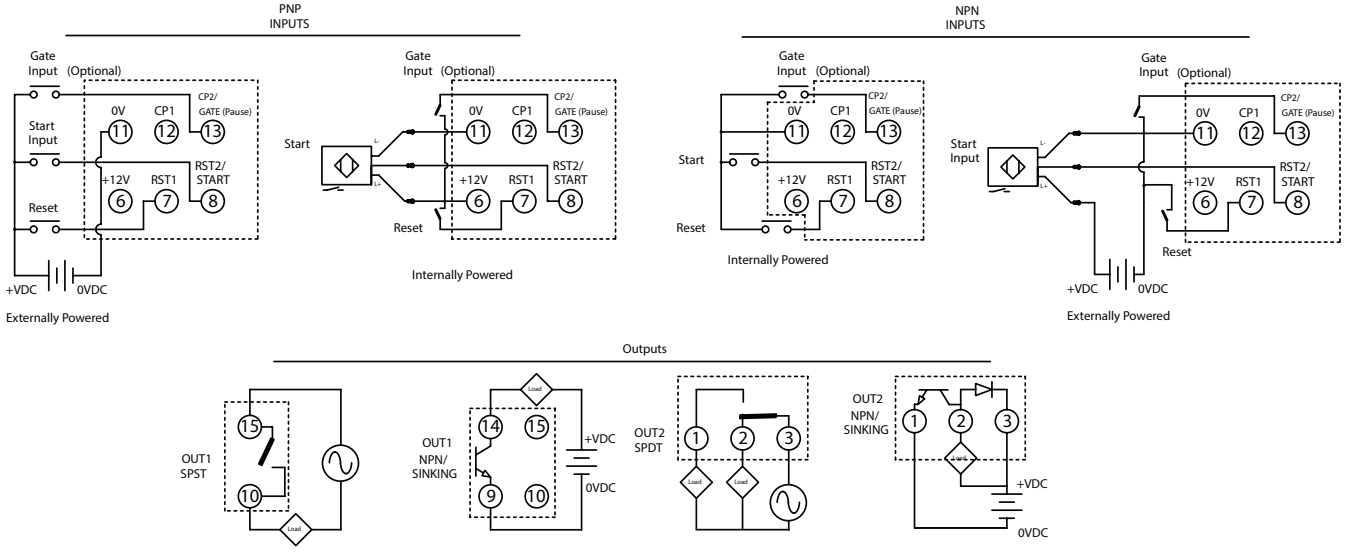
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr). The leading edge of a new "start" signal is necessary to restart the cycle.

The leading edge of 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 external switch "pause" (Gate) signal.

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



Timer Wiring Examples



Keypad set up of the parameters for Signal Twin On Start Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t Unit				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
MS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
MS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
M 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
M 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HMS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
HM 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.

CTT Timer

Signal Twin OFF Start

Signal Twin OFF-Start (StoFF)

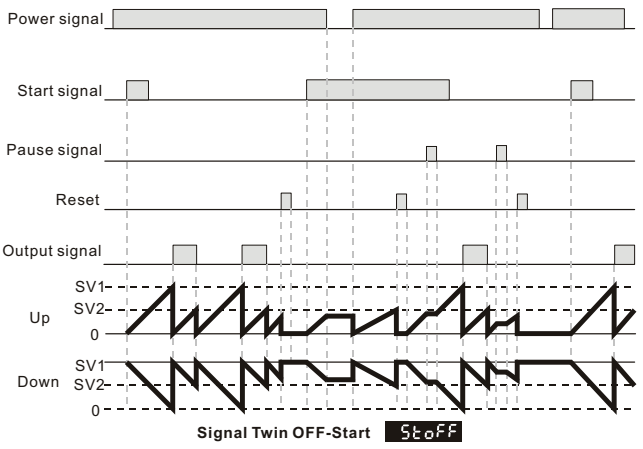
With power applied to the CTT, the leading edge of an input signal at START will begin the timing period timing up or down based on parameter (t modE). When the timing period reaches time setting SV1 the outputs will turn ON and the time period will reset and restart automatically. When the time period now reaches time setting SV2 the outputs will turn OFF again and the time period will reset and repeat automatically.

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

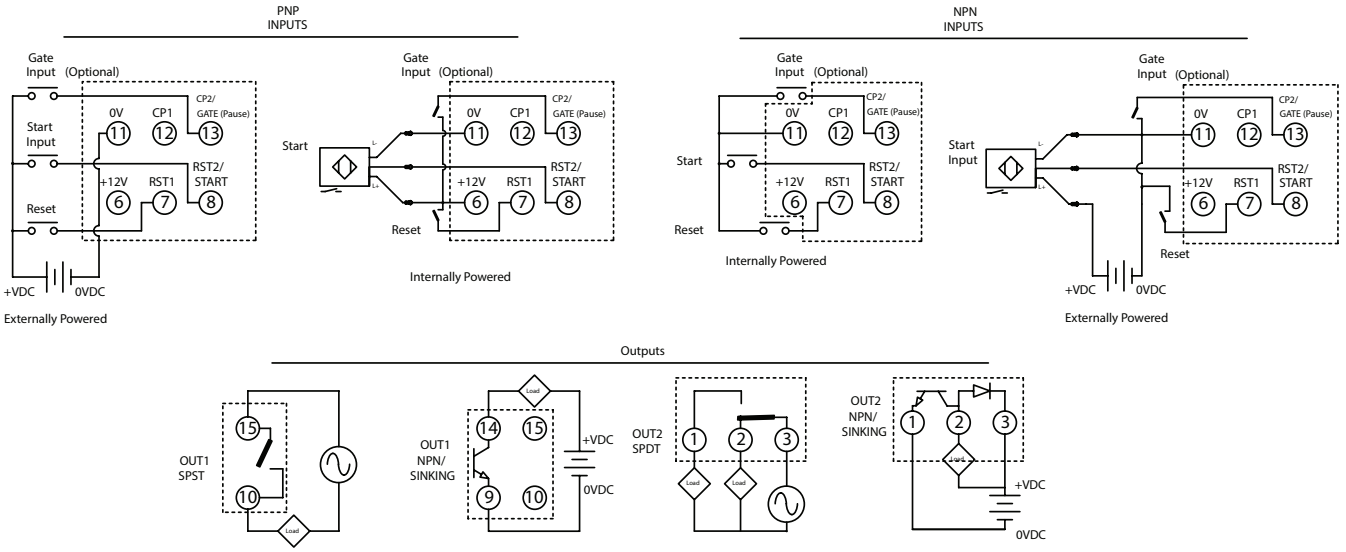
The leading edge of a "reset" input signal at RST1 will turn OFF the outputs and reset the timing period. The "reset" signal minimum pulse width is set by reset pulse width parameter (rtSr). The leading edge of a new "start" signal is necessary to restart the cycle.

The leading edge of 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 external switch "pause" (Gate) signal.

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



Timer Wiring Examples



Keypad set up of the parameters for Signal Twin Off Start Timing:

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

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

MODE

Select timer mode: timing up and timing down

MODE

Select output modes: There are 12 output modes in the timer. The user can choose the mode that best meets the demand.

Select display unit: the min. unit 10ms to the max. unit hour are selectable. Refer to table below.

Select min. width of reset signal: The defaul value is 20ms; can be set to 1ms.

MODE

Select input signal types: NPN and PNP (use NPN if dry contact input)

MODE

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Setting Time Units				
t UnIt				
S 001	sec.	0.01 to 9,999.99	A unit = 10ms	Max. counting = 9,999.99 secs.
S 01	sec.	0.1 to 99,999.9	A unit = 0.1 sec.	Max. counting = 99,999.9 secs.
S 1	sec.	1 to 999,999	A unit = 1 sec.	Max. counting = 999,999 secs.
MS 001	min., sec.	0.01 to 9,959.99	A unit = 0.01 sec.	Max. counting = 5,999.99 secs.
MS 01	min., sec.	0.1 to 99,959.9	A unit = 0.1 sec.	Max. counting = 59,999.9 secs.
M 01	min.	0.1 to 99,999.9	A unit = 0.1 min.	Max. counting = 99,999.9 mins.
M 1	min.	1 to 999,999	A unit = 1 min.	Max. counting = 999,999 mins.
HMS 1	hr., min., sec.	1 to 995,959	A unit = 1 sec.	Max. counting = 359,999 secs. (100 hrs.)
HM 1	hr., min.	1 to 999,959	A unit = 1 min.	Max. counting = 35,999,999 secs. (10,000 hrs.)
H 1	hr.	1 to 699,999	A unit = 1 hr.	Max. counting = 699,999 hrs.