



PLC

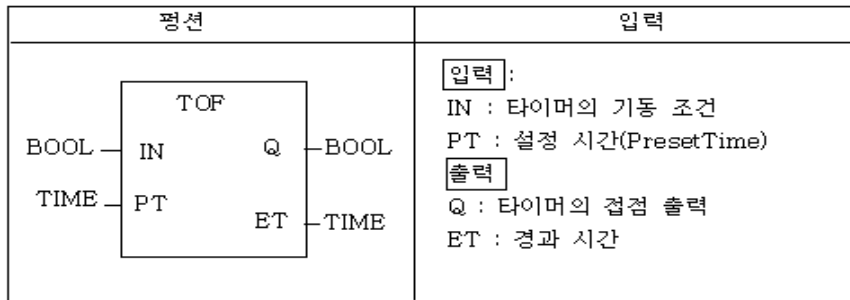
18 TP, TMR, TRTG

1. TP()
 - 1) TP
 - 2) TP_RST
 - 3) TP
2. TMR
 - 1) TMR
 - 2) TMR
 - 3) TMR_FLX
 - 4) TMR_FLX
3. TRTG
 - 1) TRTG
 - 2) TRTG

Timer)

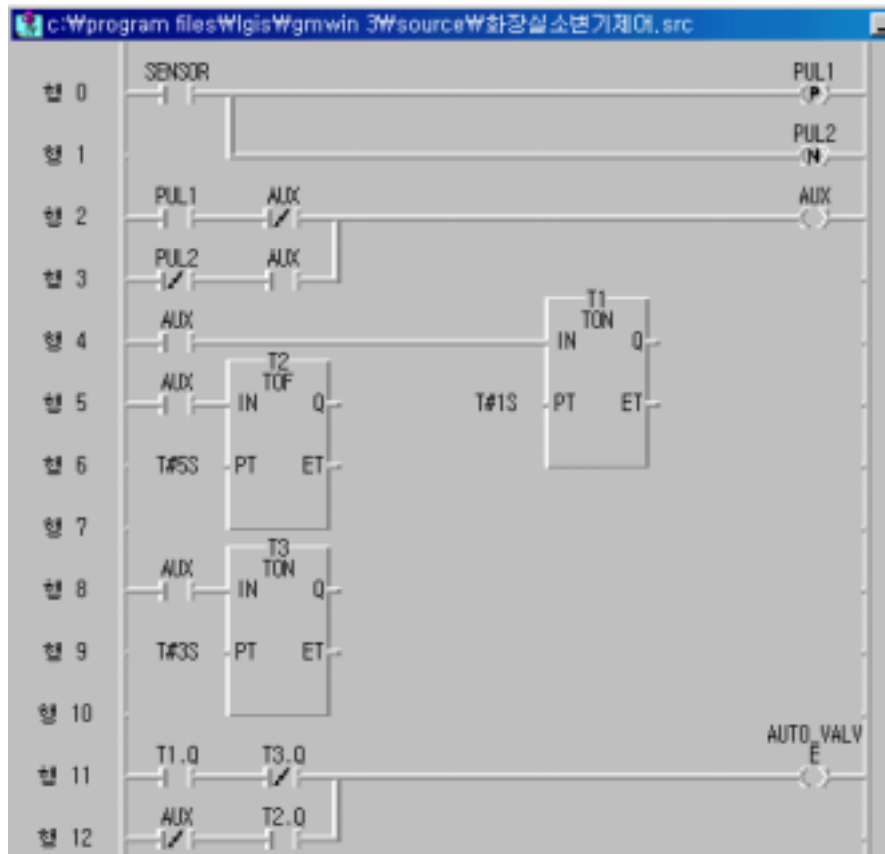
?

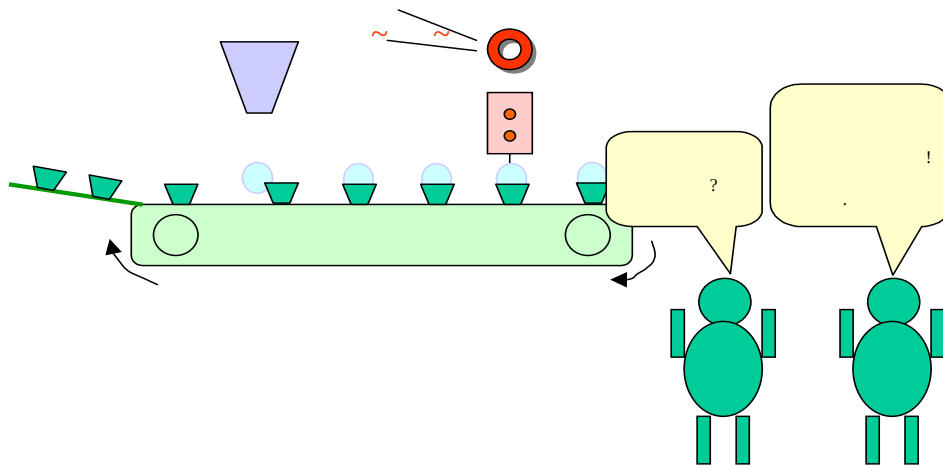
1. TOF



2. Ladder Diagram

LD





TP(: Pulse Timer), TMR(: Accumulative Timer),
TRTG(: Retriggerable Timer) ,

TP()
TMR()
TRTG()



- TP, TMR, TRTG
- PLC-Lab

TP()

TP()

- TP(: Pulse Timer)
- TP_RST(OFF가 가 Pulse Timer)
- TP

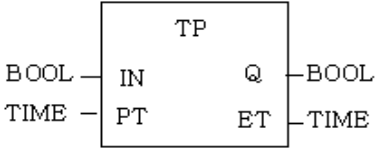


1. TP(: Pulse Timer)

TP, TMR, TRTG

TP()

1) TP

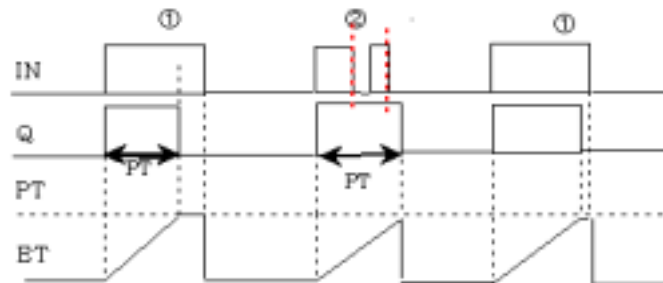
평선	설명
	입력 : IN : 타이머의 기동 조건 PT : 설정 시간(Preset Time) 출력 : Q : 타이머의 접점 출력 ET : 경과 시간(Elapsed Time)

2) TP

TP

IN	ON	PT	Q가 ON
(Mono-Stable Multi-Vibrator)			
ET가 가		PT	(ET=PT) Q OFF
ET가 PT			, IN OFF
0			
			IN OFF/ON
Q			
ET가	PT		, IN OFF ON ET 가
Q			

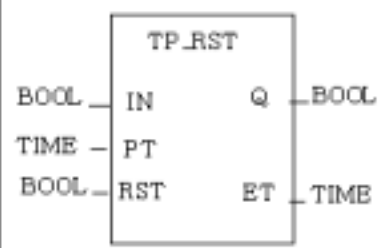
TP



OFF (=)
OFF (<)
OFF ON

2. TP_RST(OFF가 가 Pulse Timer)

1) TP_RST

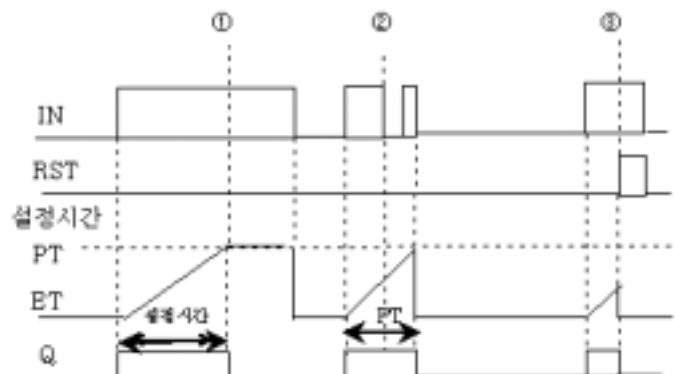
평선	설명
 The diagram shows a TP_RST timer block. It has three inputs: IN (BOOL), PT (TIME), and RST (BOOL). It has two outputs: Q (BOOL) and ET (TIME).	입력 : IN : 타이머의 기동 조건 PT : 설정 시간(Preset Time) RST : 리셋 입력 (Reset) 출력 : Q : 타이머의 접점 출력 ET : 경과 시간(Elapsed Time)

2) TP_RST

TP_RST

TP_RST 가 Timer , IN ON Q가 ON .
ET IN ON 가
(ET=PT) Q OFF .
ET가 PT , IN OFF
ET 0 clear .
Q가 ON IN ON/OFF
RST Q OFF , ET
0 clear .

TP_RST



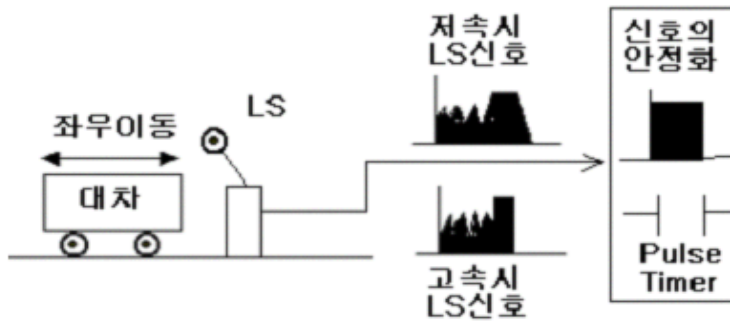
OFF (=) .
OFF (<) .
Off ON , PULSE TIMER .
RST ON Off ET 0 .

3. TP

TP

가

가



PULSE TIMER

"T#3S"

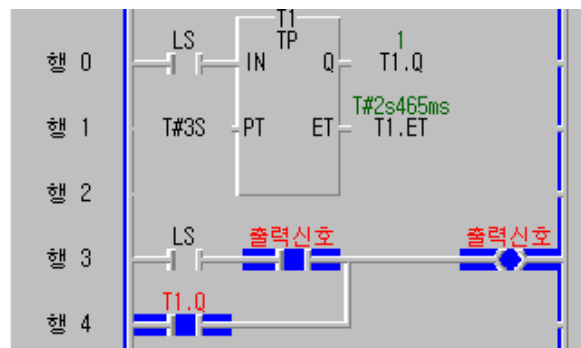
3

3. TP

LD

가

가 PLC



변수 목록

변수명	변수 종류	메모리할당	사용여부	데이터 타입
출력신호	VAR	%Q0.2.1	*	BOOL
LS	VAR	%I0.0.1	*	BOOL
T1	VAR	<자동>	*	FB Instance
T1.Q	VAR	<자동>	*	BOOL
T1.ET	VAR	<자동>	*	TIME



TMR()

TMR() .

- TMR(: Accumulative Timer)
- TMR
- TMR_FLK
- TMR_FLK(: Flicker Timer)

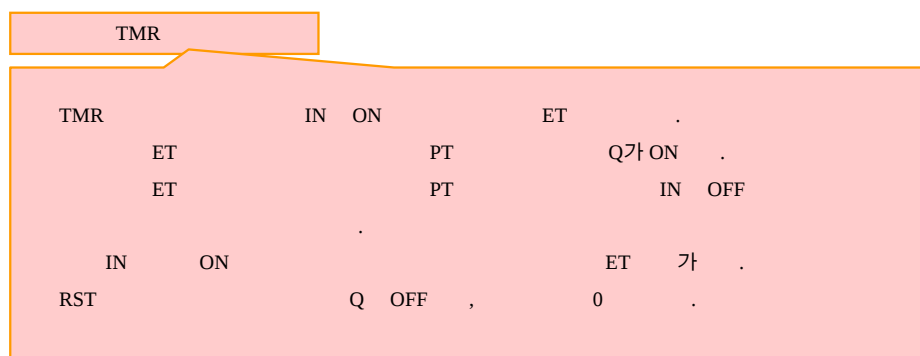


1. TMR(:Accumulative Timer)

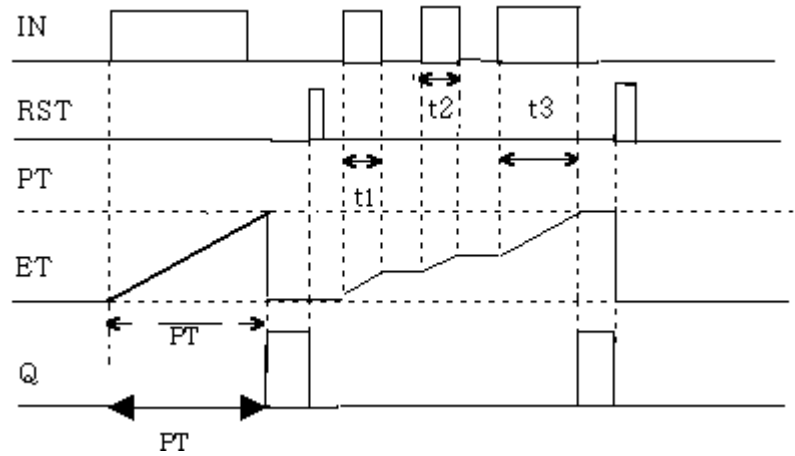
1) TMR

평선	설명
	입력 : IN : 타이머의 기동 조건 PT : 설정 시간(Preset Time) RST : 리셋 입력 (Reset) 출력 Q : 타이머의 접점 출력 ET : 경과 시간(Elapsed Time)

2) TMR



TMR



IN ON PT Q ON .
 $ET(t1+t2+t3)=PT$.

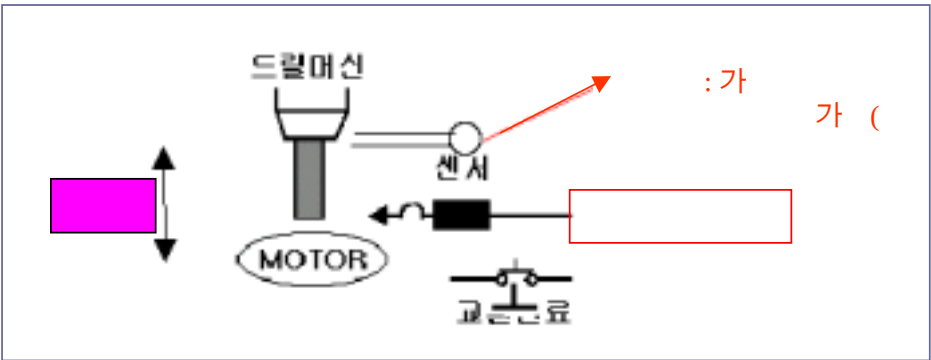
2. TMR

TMR , TMR

:

가

, 가



< 가 >

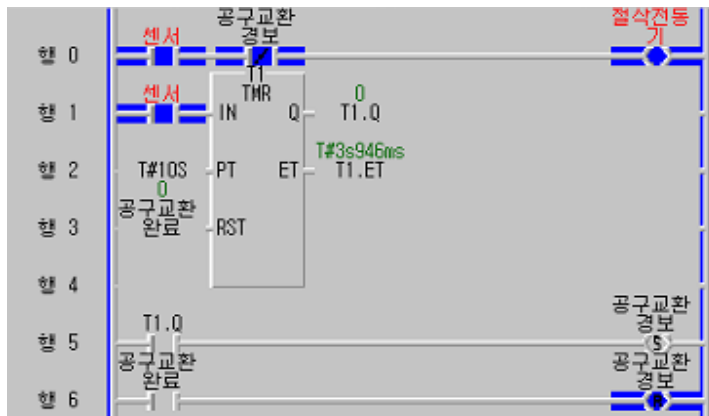


LD

.가

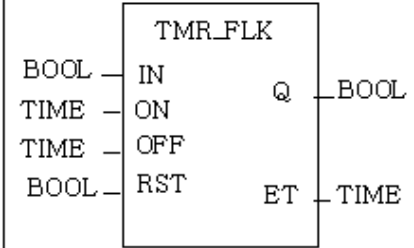
가

10



3. TMR_FLK(: Flicker Timer)

1) TMR_FLK

평면	설명
	입력: IN : 타이머의 기동 조건 ON: ON타이머 설정 시간 OFF : OFF 타이머 설정 시간 RST : 리셋 입력 (Reset) 출력: Q : 타이머 출력 ET : 경과 시간(Elapsed Time)

2) TMR_FLK

TMR_FLK

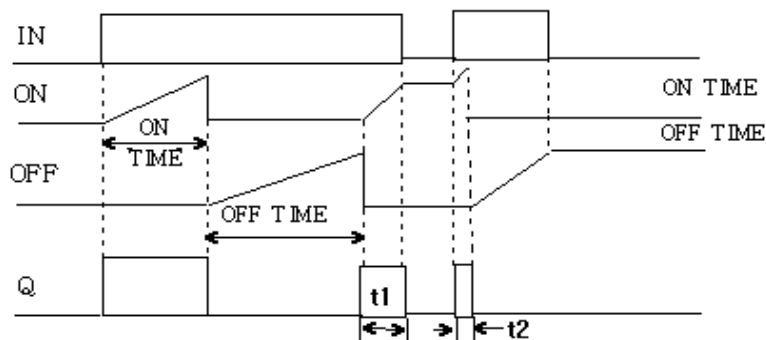
```

      IN  ON          Q  ON  ,  ON TIME          Q
ON
ON
ON          OFF TIME          Q  OFF
      IN  OFF          Q  ON  OFF
IN  OFF          ET          가 IN  ON

IN  OFF          Q  OFF  ,ON          T#0          Q  OFF
RST          ON          0          ,  Q  OFF
RST          (OFF)          ,  Q

Flicker Timer  ON          ON  ,OFF
OFF  Toggle( )
  
```

TMR_FLK



$$t1+t2 = \text{ON TIME}$$



4. TMR_FLK

TMR_FLK

, TMR_FLK

:

가

가



PBS1



PBS2



LAMP1



LAMP2

<

가

>

지역 변수 목록

변수명	변수 종류	메모리할당	사용여부	데이터 타입
DUMMY	VAR	<자동>		BOOL
M1	VAR	<자동>		BOOL
OFF_LAMP	VAR	%Q0.2.2		BOOL
ON_LAMP	VAR	%Q0.2.1		BOOL
PBS1	VAR	%I0.0.1		BOOL
PBS2	VAR	%I0.0.2		BOOL
T2	VAR	<자동>		FB Instance

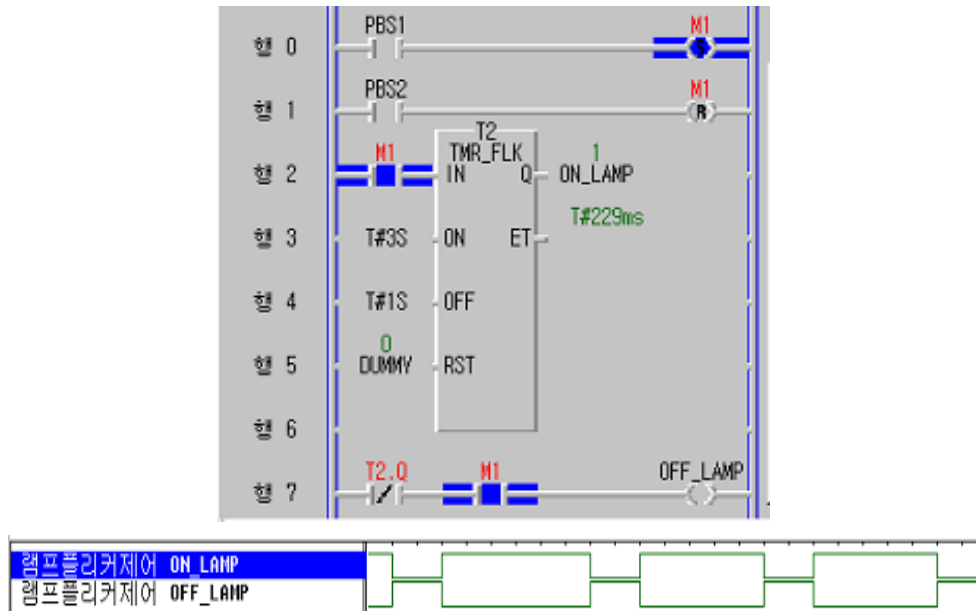
닫기
추가(A)...
삭제(D)
수정(E)...
도움말

글로벌 변수 참조...
입/출력 변수 참조...

설명
이름 : T2
변수 종류 : VAR
데이터 타입 : FB_Instance of <TMR_FLK>
메모리 할당 : <자동>
초기값 : <디폴트 치>
설명문 :



1. TMR_FLK LD
2. :PBS1 ON M1 ON OFF 3 1
- . PBS2가 ON M1



TRTG(

TRTG()

- TRTG(: Retriggerable Timer)
- TRTG

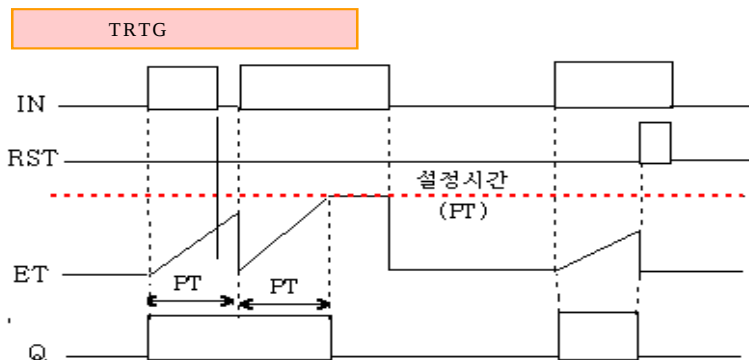
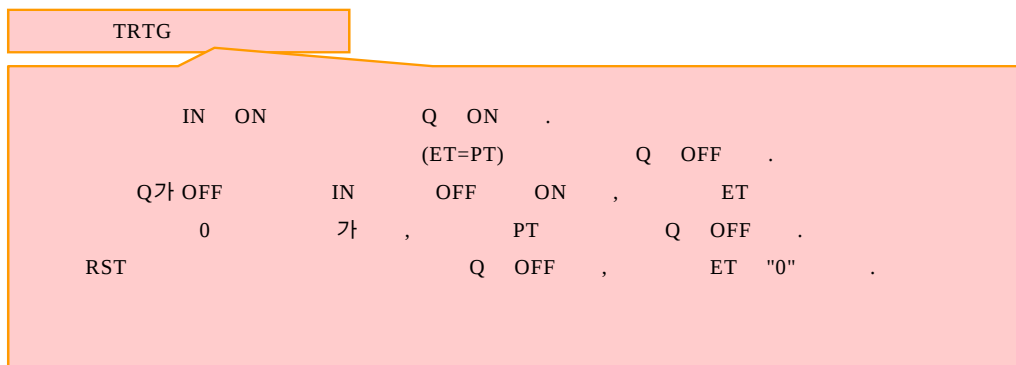


1. TRTG(: Retriggerable Timer)

1) TRTG

평면	설명
TRTG block diagram with inputs: IN (BOOL), PT (TIME), RST (BOOL). Outputs: Q (BOOL), ET (TIME). A dashed line indicates a reset condition.	입력 : IN : 타이머의 기동 조건 PT : 설정 시간(Preset Time) RST : 리셋 입력 (Reset) 출력 Q : 타이머 출력 ET : 경과 시간(Elapsed Time)

2) TRTG



2. TRTG

TRTG

가

가 10

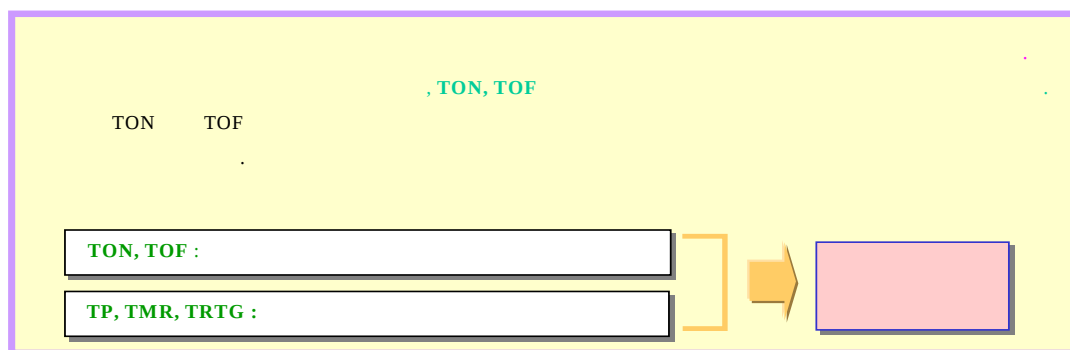




가

PLC

가



TP, TMR, TRTG

1.

1) TP(Pulse Timer)

IN ON PT

Q가 ON

2) TP_RST

TP Reset 가

3) TMR(Accumulative Timer)

ET PT Q가 ON

4) TMR_FLK(Flicker Timer)

ON ON , OFF OFF Toggle()

5) TRTG(Retriggerable Timer)

IN ON Q ON Q OFF

가

가

1.

*

1) IN ON Q ON
Q OFF

:

2) ET PT
Q가 ON

:

3) IN ON PT
Q가 ON

:

4) ON ON , OFF OFF
Toggle()

:

5) TP reset 가

:

: TP TP_RST TMR TMR_FLK TRTG

: 1)

2)

3)

4)

5)

1. TP

IN ON PT Q가 ON

(Mono - Stable Multi - Vibrator)

ET가 가 PT (ET=PT) Q OFF

ET가 PT , IN OFF 0

IN OFF/ON Q

ET가 PT , IN OFF ON ET 가 Q

2. TP_RST

TP_RST 가 Timer , IN ON Q가 ON .

3. TMR

TMR IN ON ET .
 ET PT Q가 ON .
 ET PT IN OFF
 IN ON ET 가 .
 RST Q OFF , 0 .

4. TMR_FLK

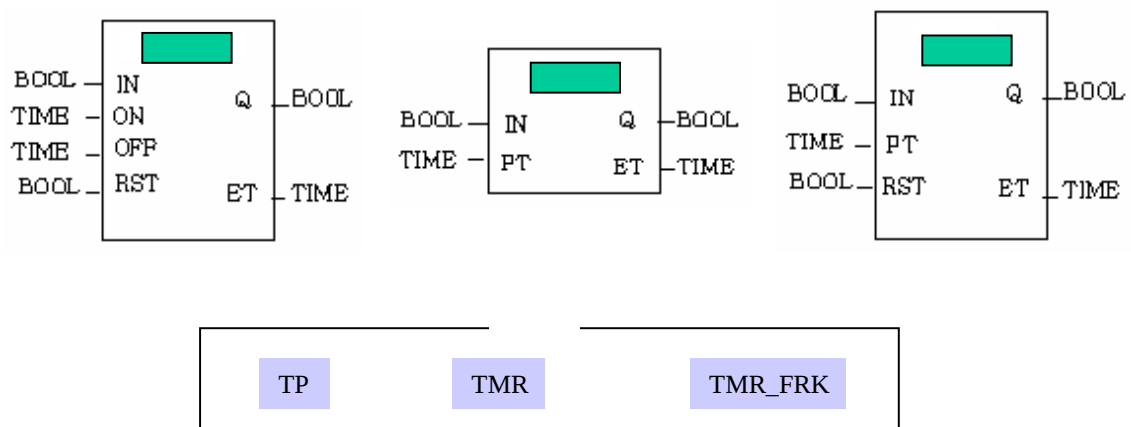
Flicker Timer ON ON , OFF OFF Toggle()

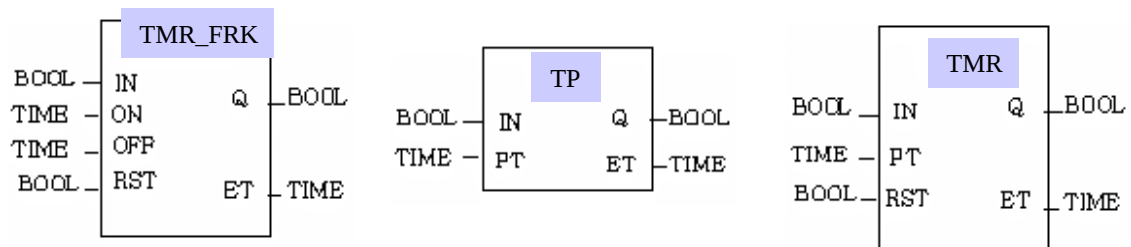
5. TRTG

IN ON Q ON .
 (ET=PT) Q OFF .
 Q가 OFF IN OFF ON , ET "0"
 가 , PT Q OFF .
 RST Q OFF , ET "0" .

2.

*





88 가..
가
가 20hz~2 hz 88 27.5hz,
4186hz 4
가 가 88 20
78 85
1944 가
8 (97)
290() 2C C5 8
2.9m 3
가
가 가