

Demo Project for Timer

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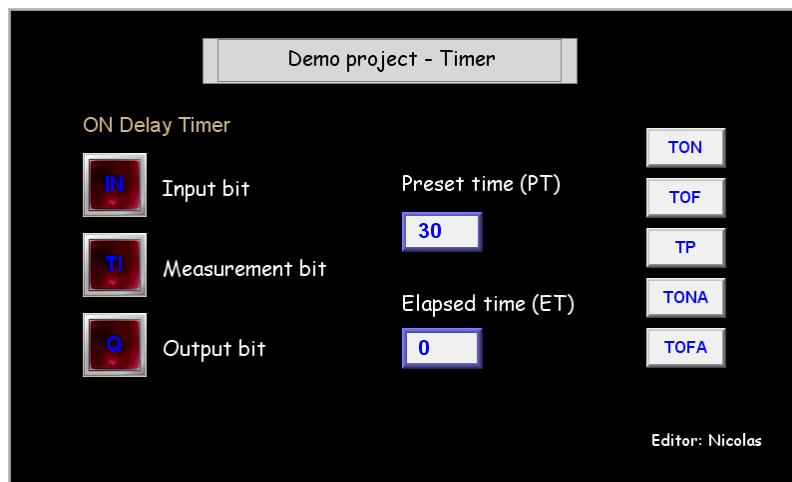
1. Overview and Operation

Overview

This demo project introduces that how to use Timer object to trigger a designated bit. Related settings on Timer object is shown below.

Setting	Description
Input bit (IN)	The master switch of timer.
Measurement bit (TI)	Turn ON when the timer begins counting.
Output bit (Q)	Turn ON when the timer finishes counting.
Preset time (PT)	Set the timer value.
Elapsed time (ET)	The current value of the timer.
Reset bit (R)	Reset the current timer (ET) to 0.

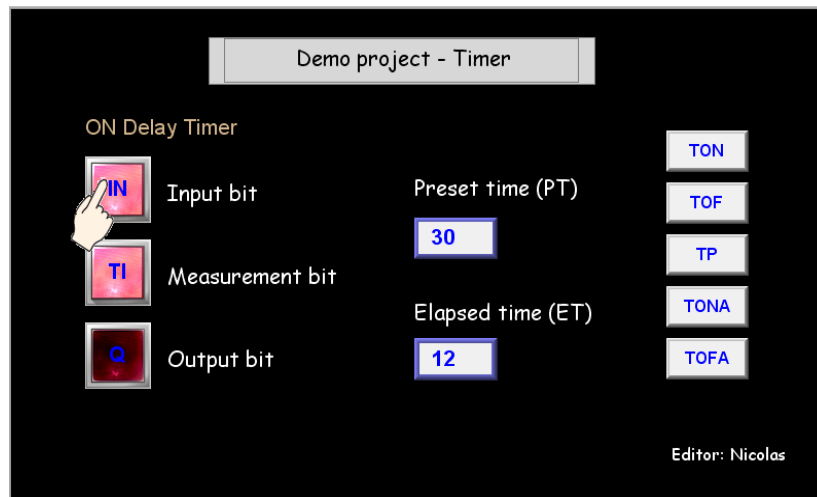
The Timer object includes five modes: [ON delay], [OFF delay], [Pulse], [Accumulated ON delay] and [Accumulated OFF delay]. Each mode will be introduced as following.



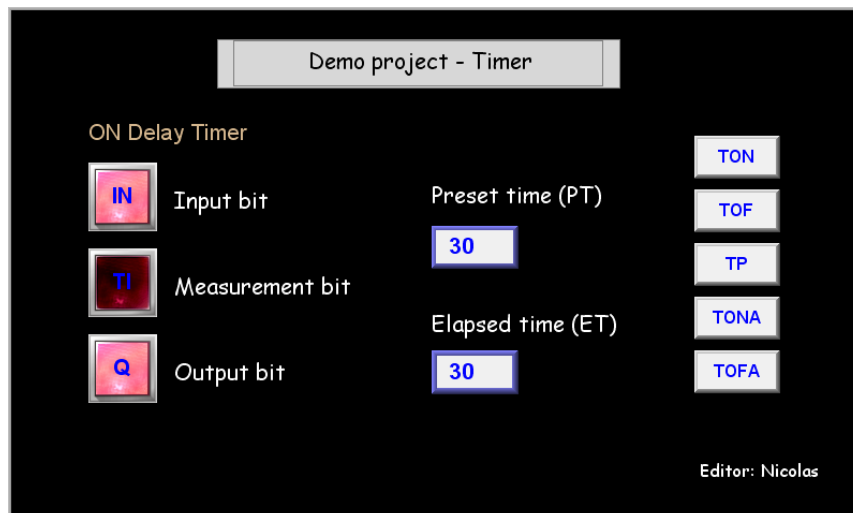
Operation

[ON delay mode]

Users can input a desired value in PT, and then touch IN to trigger Timer to count. (When TI turns on)

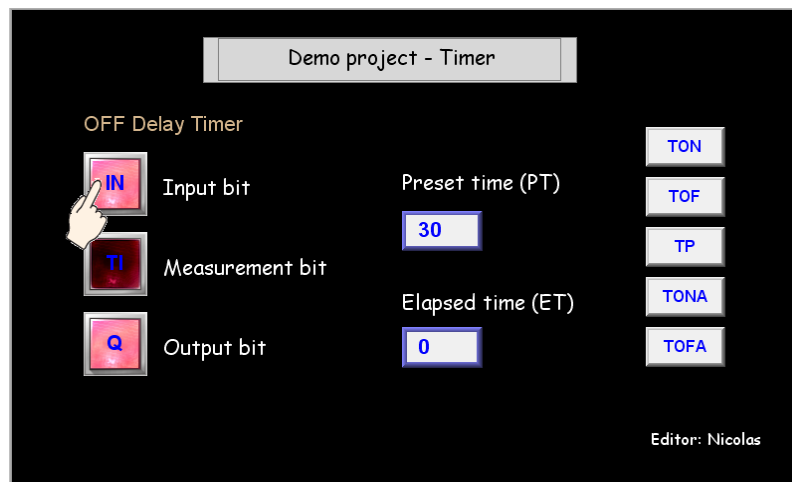


After counting finished, TI turns OFF and Q turns ON automatically.

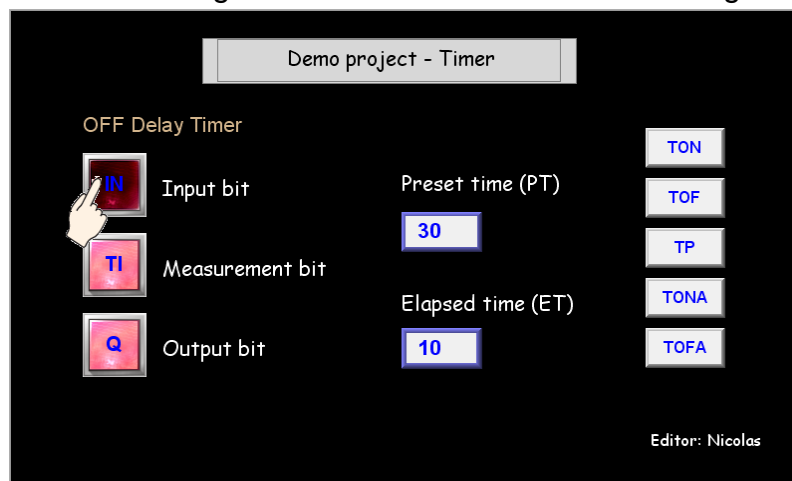


[OFF delay mode]

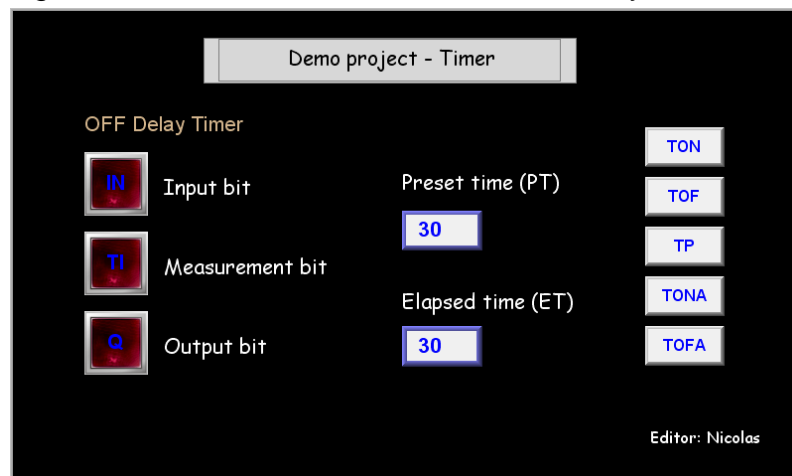
Users can input a desired value in PT, and then touch IN to prepare for Timer counting. (When Q turns on)



And users can touch IN again to make the Timer start counting.

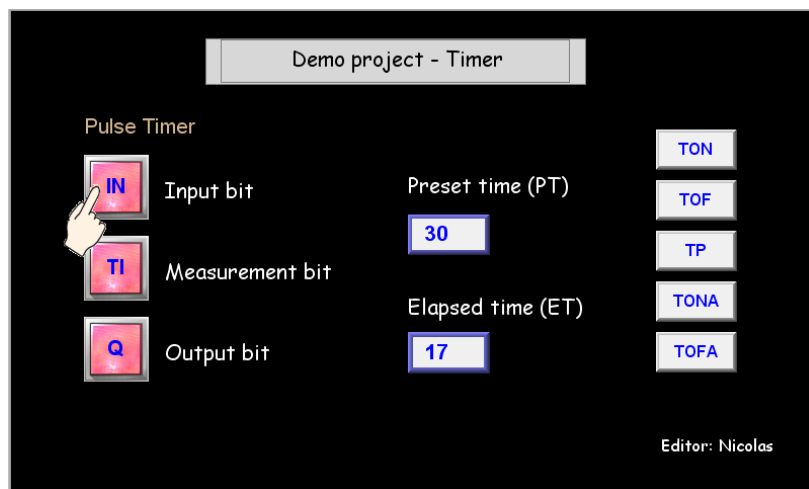


After counting finished, TI and Q turn OFF automatically.

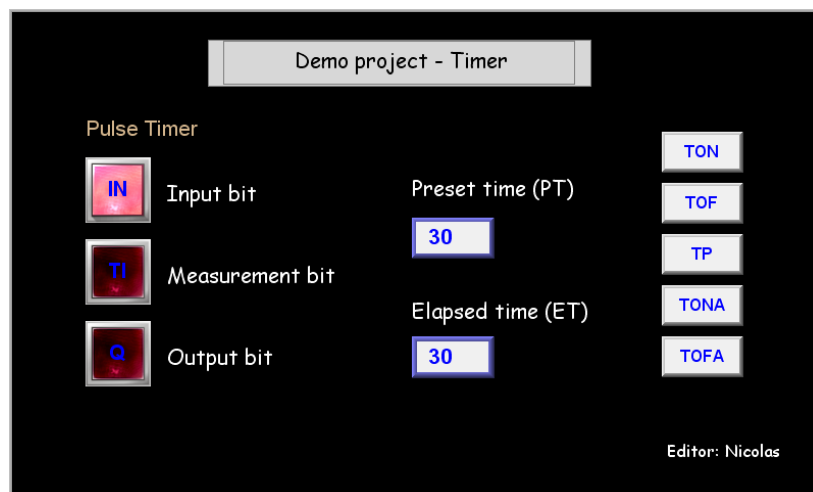


[Pulse mode]

Users can input a desired value in PT, and then touch IN to trigger Timer to count. (When TI and Q turn ON)

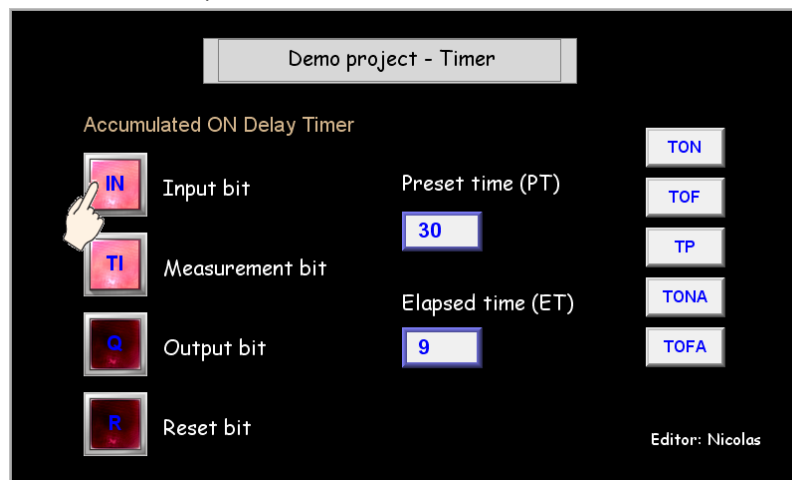


After counting finished, TI and Q turn OFF automatically.

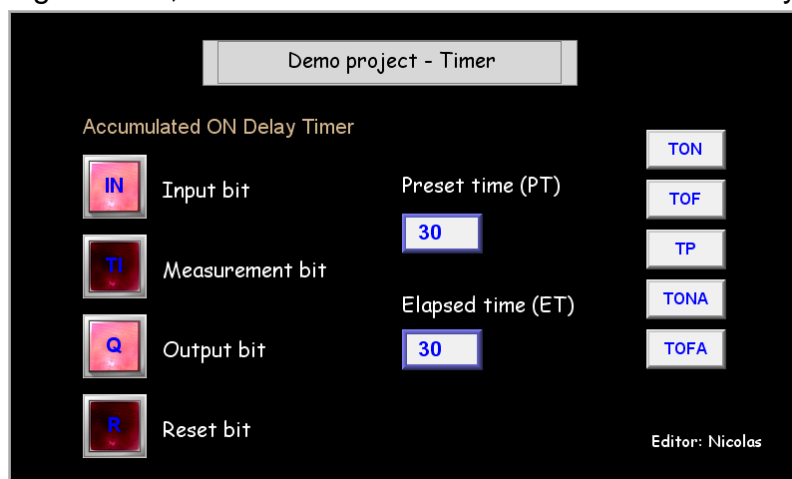


[Accumulated ON delay]

Users can input a desired value in PT, and then touch IN to trigger Timer to count. (When TI turns on)



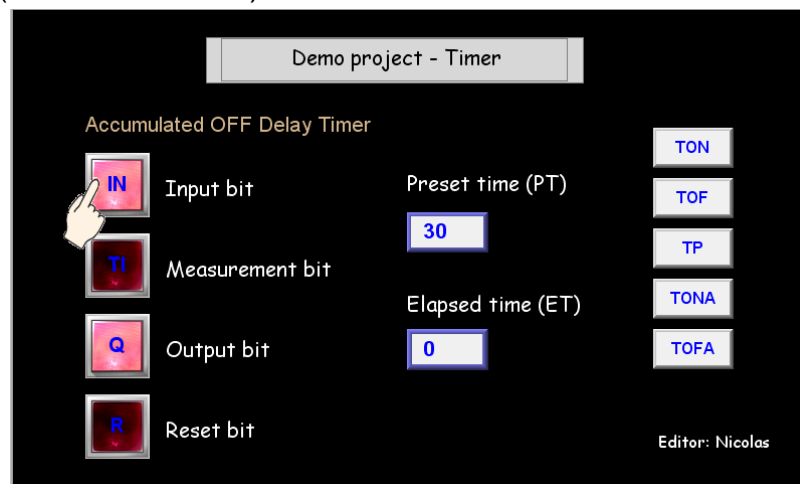
After counting finished, TI turns OFF and Q turns ON automatically.



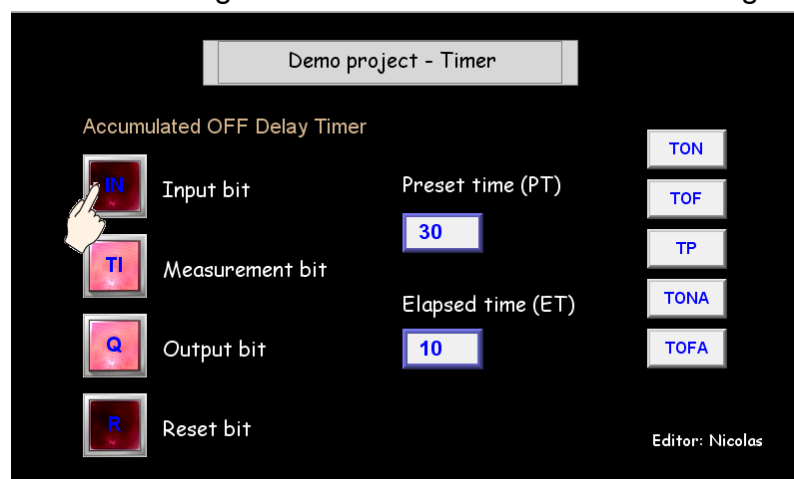
Note: Before operating this mode again, users must reset ET to 0 by triggering R.

[Accumulated OFF delay]

Users can input a desired value in PT, and then touch IN to prepare for Timer counting. (When Q turns on)



And users can touch IN again to make the Timer starts counting.



After counting finished, TI and Q turn OFF automatically.

Demo project - Timer

Accumulated OFF Delay Timer

IN

Input bit

TI

Measurement bit

Q

Output bit

R

Reset bit

Preset time (PT)

30

Elapsed time (ET)

30

TON

TOF

TP

TONA

TOFA

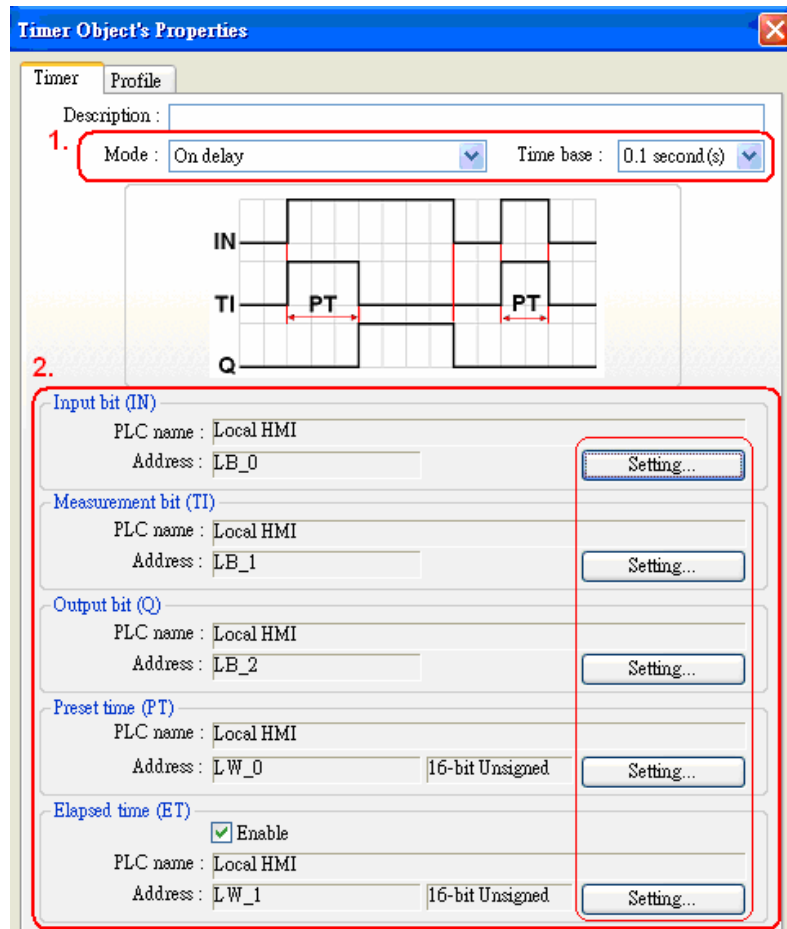
Editor: Nicolas

Note: Before operating this mode again, users must reset ET to 0 by triggering R.

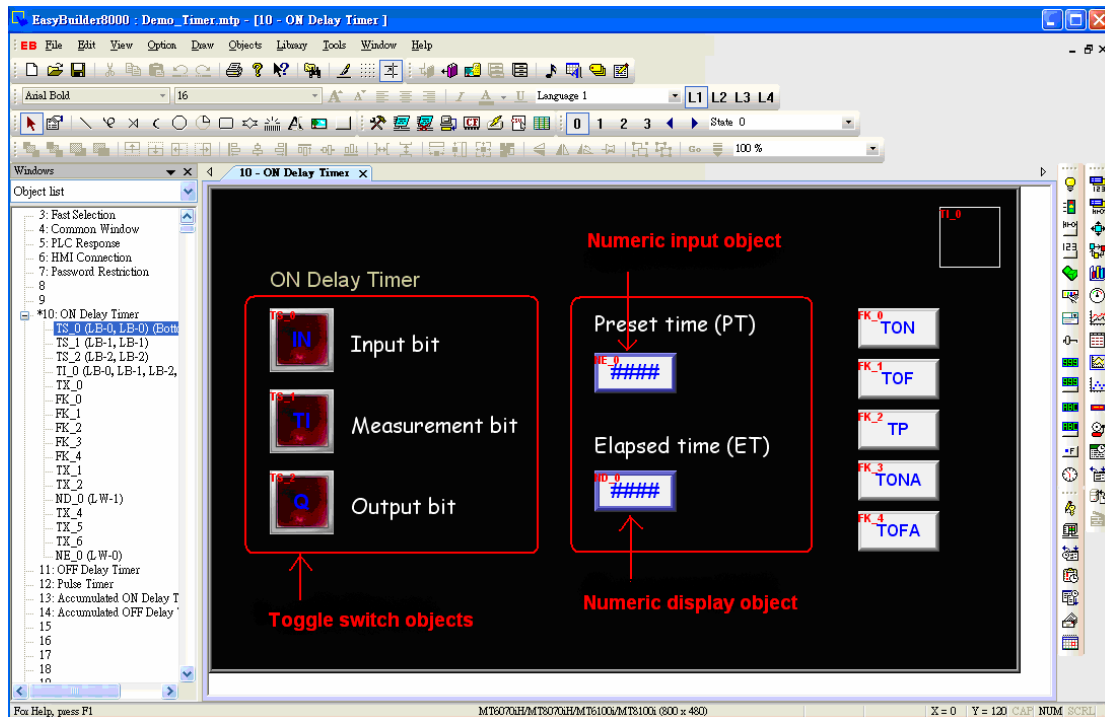
2. Setting Up the Screen

[ON delay]

1. Click Timer object to select ON delay mode and Time base, and set address for each required bit / word. In this demo project, we set *IN* to LB0, *TI* to LB1, *Q* to LB2, *PT* to LW0, and *ET* to LW1.

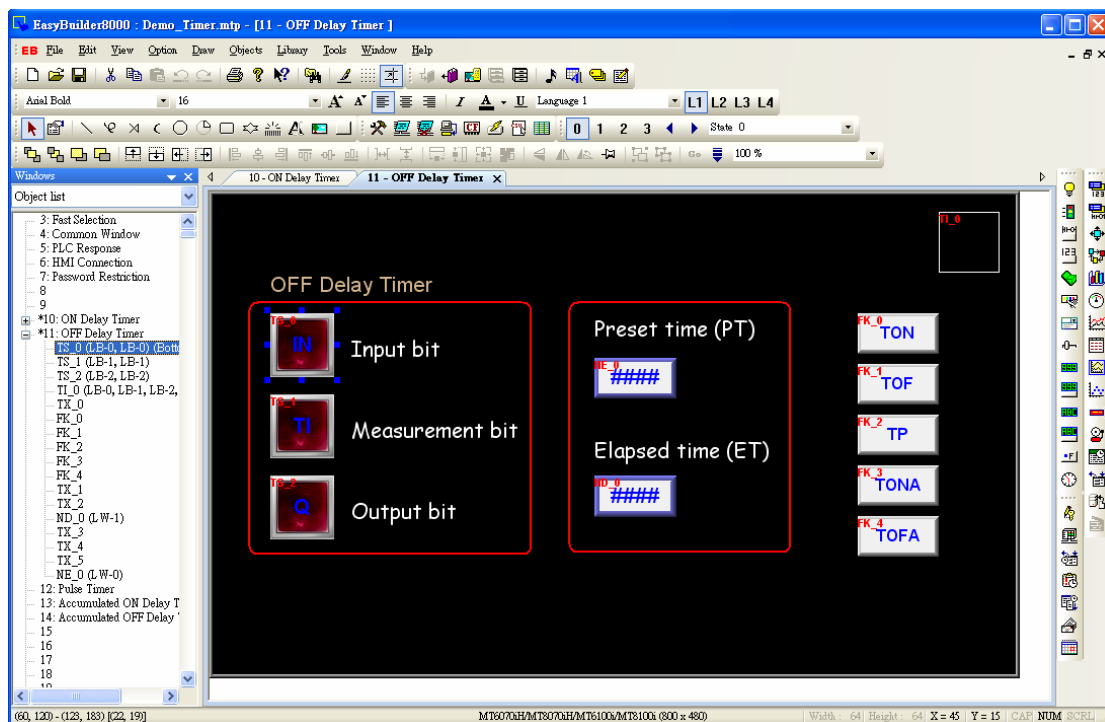


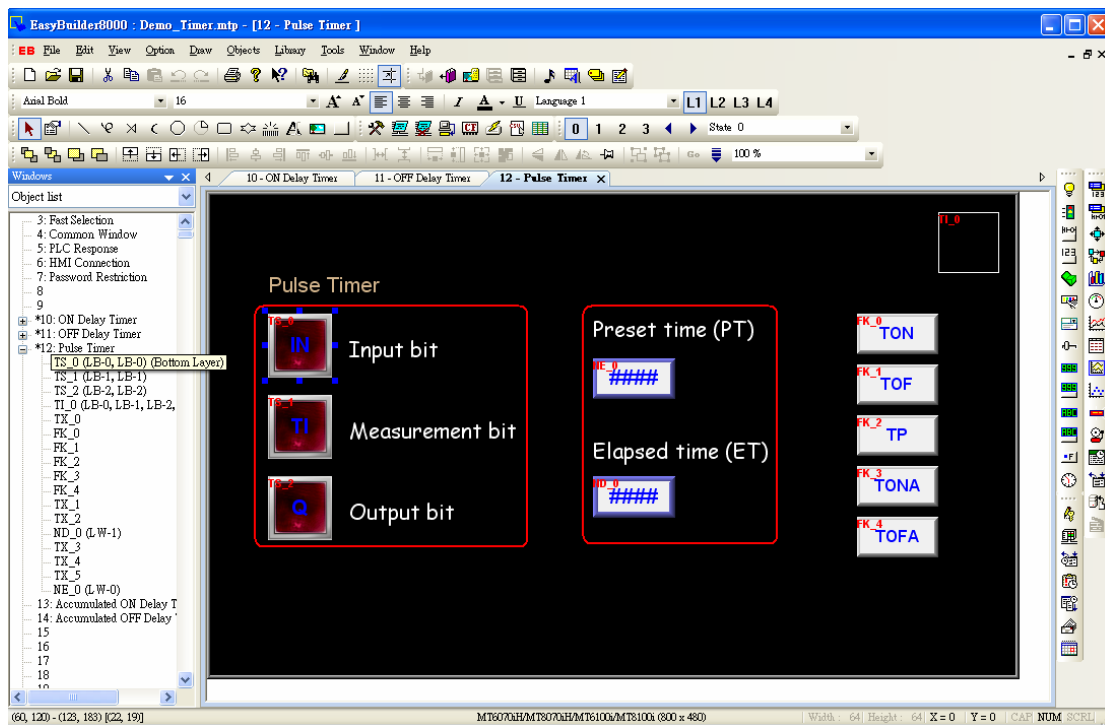
2. Create three Toggle switch objects for IN, TI and Q. And then create Numeric input object for PT, and Numeric display object for ET.



[OFF delay], [Pulse]

1. Create window11 for **OFF delay mode** and window12 for **Pulse mode**.

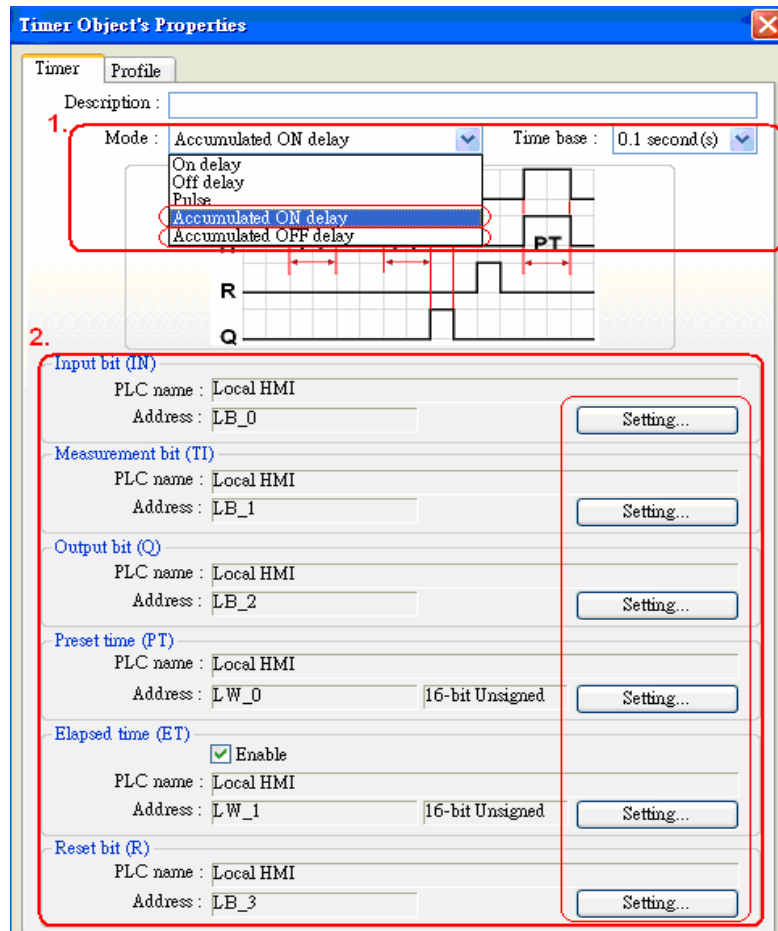




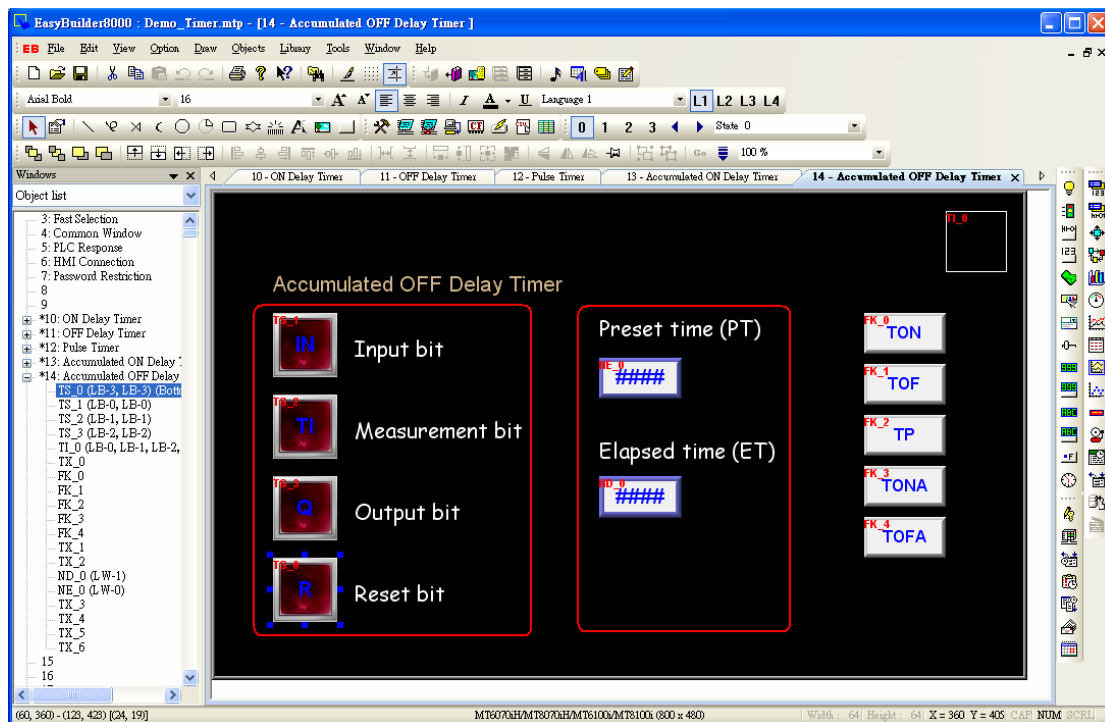
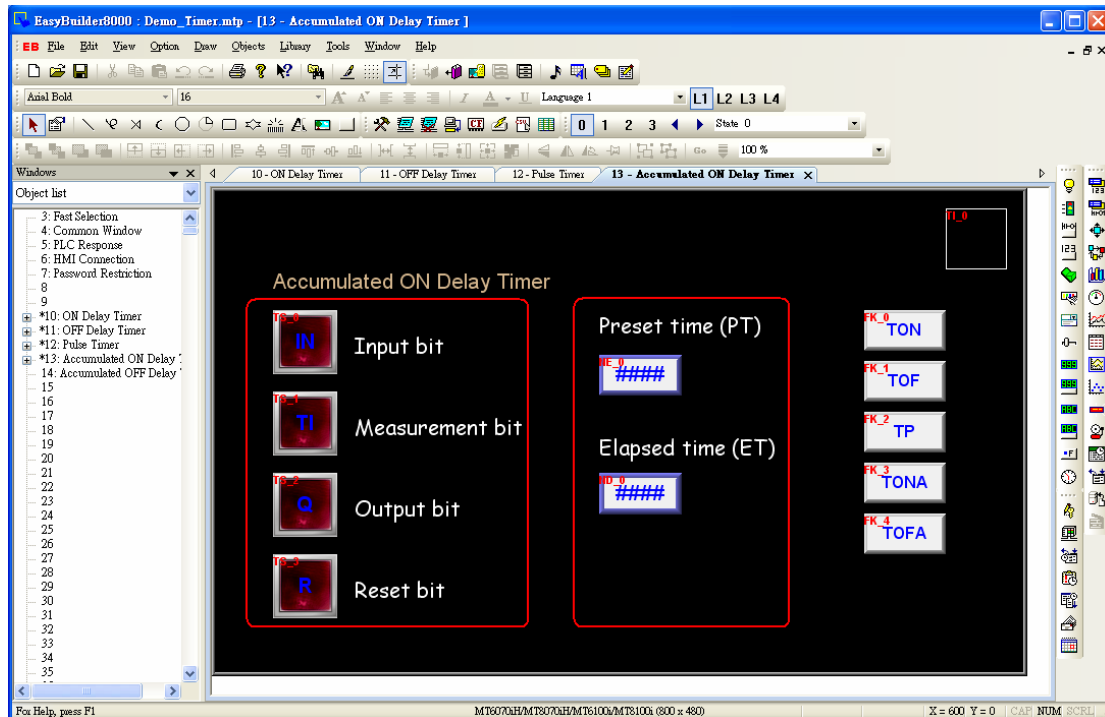
2. All the required objects and settings are in **ON delay mode**; please refer to illustration above for more details.

[Accumulated ON delay], [Accumulated OFF delay]

1. Click Timer object to select Accumulated ON delay / Accumulated OFF delay mode and Time base, and set address for each required bit / word. In this mode, we set *IN* to LB0, *TI* to LB1, *Q* to LB2, *PT* to LW0, *ET* to LW1, and *R* to LB3.



2. Create four Toggle switch objects for IN, TI, Q and R. And then create Numeric input object for PT, and Numeric display object for ET.



3. Addresses

The addresses used in this demo project are listed below. Please change these addresses according to your system.

Object	Address	Object ID	Detail
Window10/11/12			
Toggle switch	LB0	TS_0	Input bit
	LB1	TS_1	Measurement bit
	LB2	TS_2	Output bit
Timer		TI_0	
Numeric input	LW_0	NE_0	Preset time
Numeric display	LW_1	ND_0	Elapsed time
Window14/15			
Toggle switch	LB0	TS_0	Input bit
	LB1	TS_1	Measurement bit
	LB2	TS_2	Output bit
	LB3	TS_3	Reset bit
Timer		TI_0	
Numeric input	LW_0	NE_0	Preset time
Numeric display	LW_1	ND_0	Elapsed time