

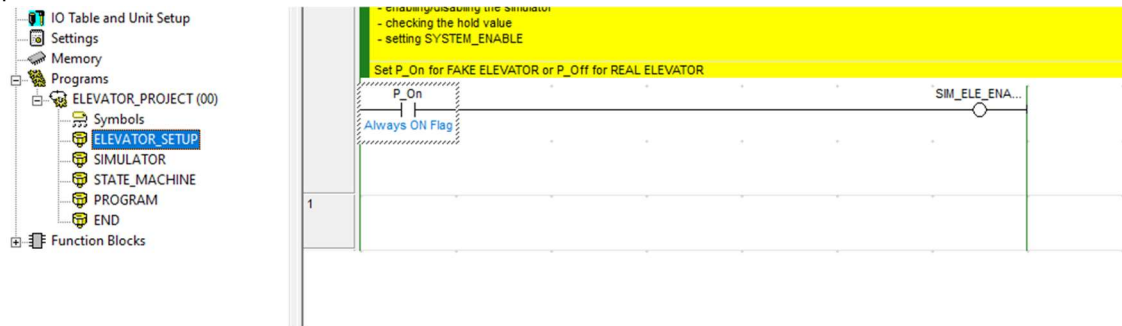
# ELEVATOR TEMPLATE AND SIMULATOR SETUP

## Setting up the Template file

1. Download ELEVATOR.zip from LEARN
2. Extract the files from the zip file to a directory on your home network drive (somewhere on P:/ drive)
3. Rename ELEVATOR\_PROGRAM.cxp to something unique for your group e.g. ElevatorGroup12.cxp
4. Open the .cxp program by double clicking on it

## Setting up the Simulator

1. Open the ELEVATOR\_SETUP section



2. If using the physical elevator models: **SIM\_ELE\_ENABLE** must be set to **OFF** using a **P\_Off** contact
3. While using the elevator simulator: **SIM\_ELE\_ENABLE** must be set to **ON** using a **P\_On** contact
4. **FAILING TO DO THIS WILL CAUSE YOUR CODE TO WORK INCORRECTLY WHEN SWITCHING BETWEEN THE SIMULATOR AND PHYSICAL MODEL**
5. The **SYSTEM\_ENABLE** bit must be set to **ON** using a **P\_On** contact while using the physical elevator models, or the elevators will do **NOTHING**.
6. The **SYSTEM\_ENABLE** bit can be found in the global symbol table:

Name	Data Type	Address / Value	Rack Locati...	Usage	Comment
WINCH_MOTOR	WORD	210		Work	
Vout	LWORD	D905		Work	
TOP_BUTTON_LAMP	BOOL	100.06	Main Rack :...	Out	
TOP_BUTTON	BOOL	1.10	Main Rack :...	In	
SYSTEM_ENABLE	BOOL	100.02	Main Rack :...	Out	
SIM_ELEVATOR	BOOL	W9.08		Work	

7. NOTE – click the Name column heading to sort by symbol name, clicking multiple times switches between ascending and descending order.

## 8. FAILING TO SET **SYSTEM\_ENABLE** WILL PREVENT THE PHYSICAL ELEVATOR MODEL FROM MOVING

## Hold Value and Encoder Value

1. Set the hold value by changing the number set in **\_HOLD\_VALUE**, found in the global symbol table
2. The encoder value is set using **\_COUNTER**, found in the global symbol table as well.

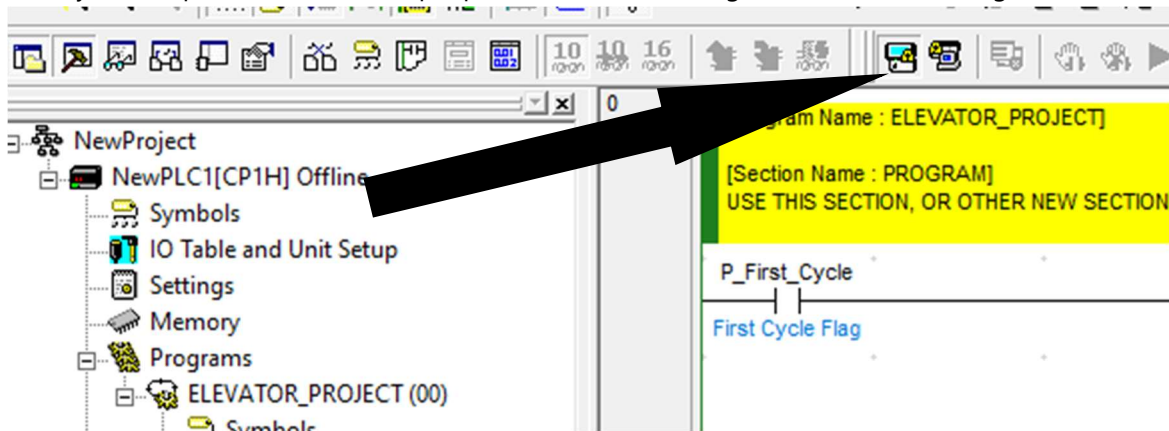
Name	Data Type	Address / Value	Rack Locati...	Usage	Comment
_COUNTER	LWORD	D950		Work	
_HOLD_VALUE	NUMBER	2880			
BOTTOM_BUTTON	BOOL	1.09	Main Rack :...	In	
BOTTOM_BUTTON_LAMP	BOOL	100.05	Main Rack :...	Out	

3. The encoder value (**\_COUNTER**) is the position of the elevator carriage.
4. It will be set in two places - by the elevator simulation, which is already set up and controlled using **SIM\_ELE\_ENABLE**, but you will also set it using a PRV instruction for High Speed Counter 0.

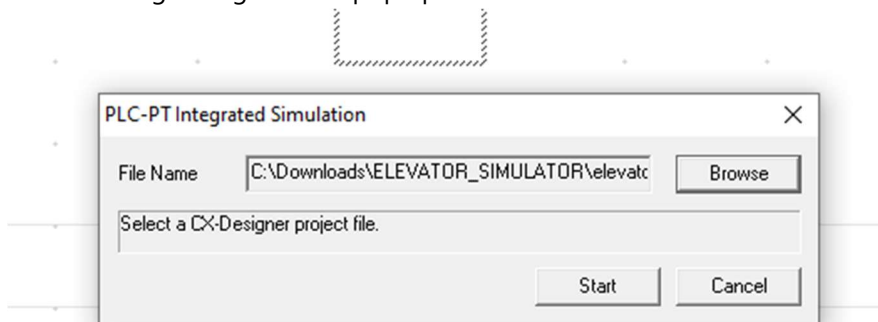
- NOTE – the PRV instruction will NOT do anything while simulating, it is only run while interfacing with the physical elevator models.

### Using the PLC integrated simulator

- Once your template has been set up, open the simulator using the Start PLC-PT Integrated Simulator button

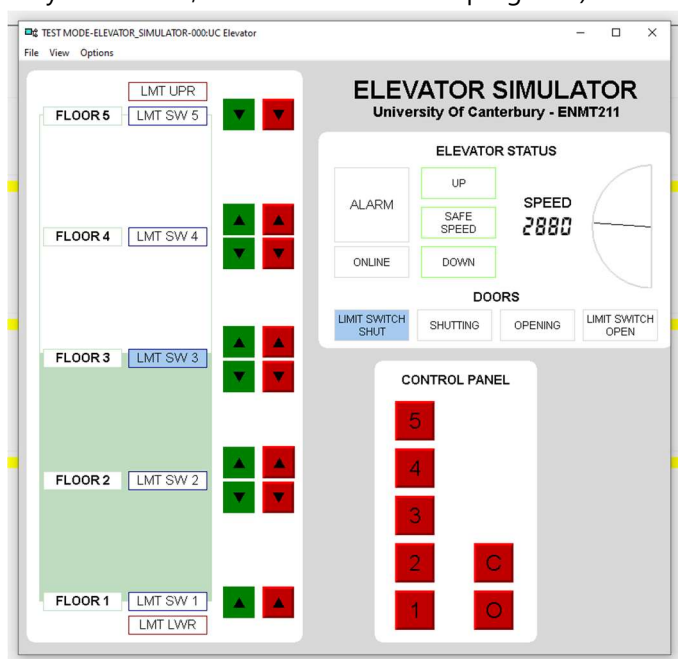


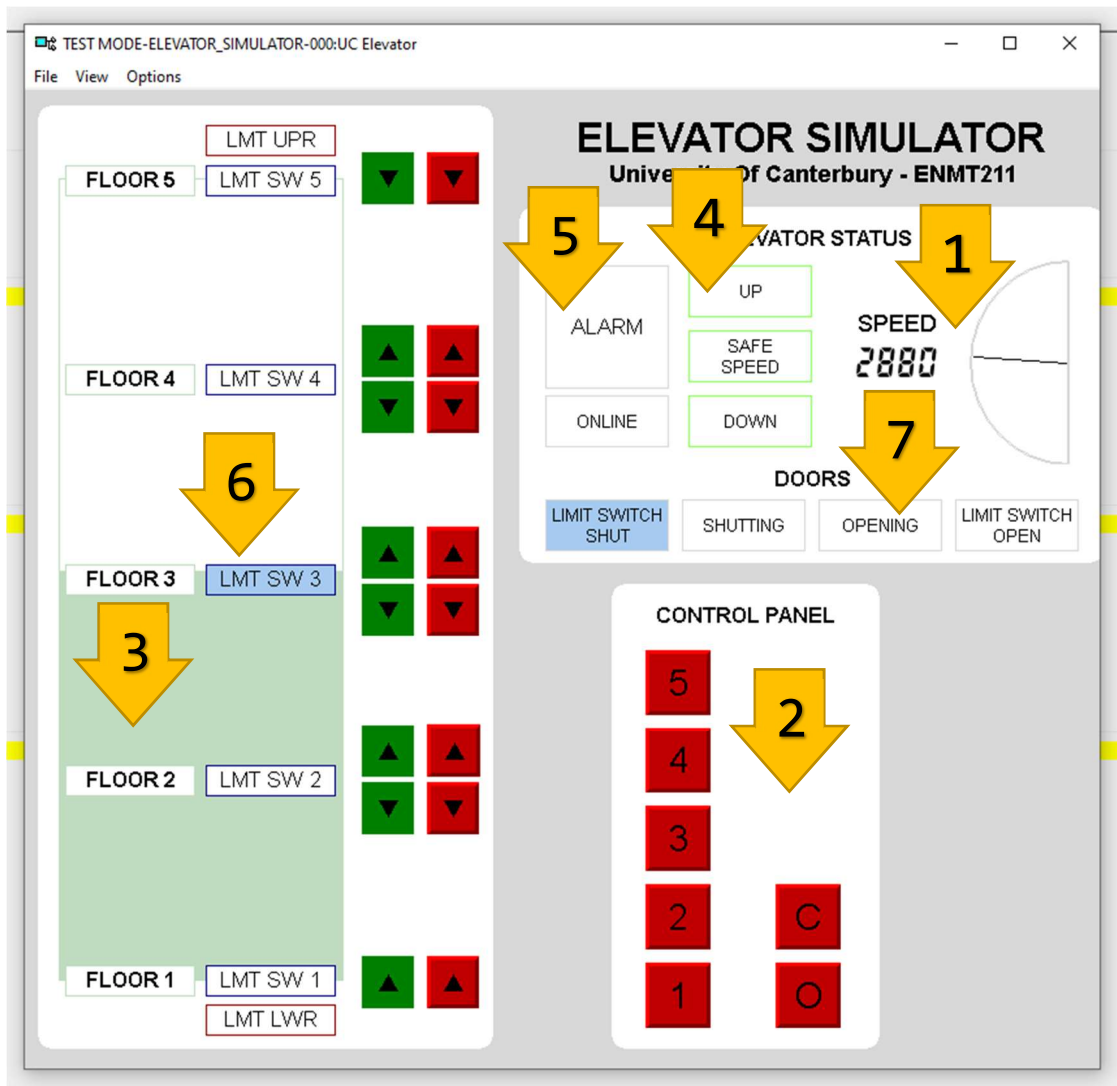
- The following dialog box will pop up:



- Enter the path to ELEVATOR SIMULATOR.IPP then click Start

- The simulator GUI should now appear (if it doesn't pop up above CX-Programmer, look for on your taskbar, it will be one of those programs) - it should look similar to below:





1. Speed Indicator
2. Elevator Control panel (equivalent to the inside buttons on the elevator carriage)
3. Position indicator (the edge between green and white is the current elevator location)
4. Up/Down lamps indicate the elevator direction. Use this to check if the elevator is actually moving very slowly. The Safe Speed/Overspeed light will change if the winch motor speed is outside the range 0 to 6000 (#0 to #1770).
5. ALARM – this will flash for the same reasons as the alarm on the physical model does.
6. Floor limit switches. Use these to determine if the elevator is at a floor.
7. Door logic lights – these indicate whether the doors are open or shut (using LIMIT\_OPEN and LIMIT\_SHUT), and also whether the doors are currently opening or shutting.