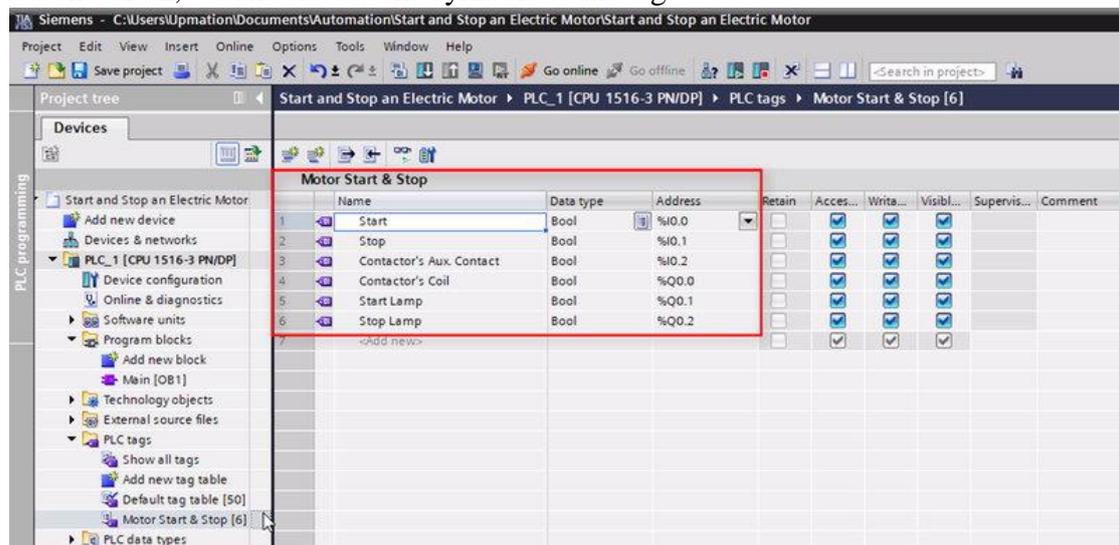


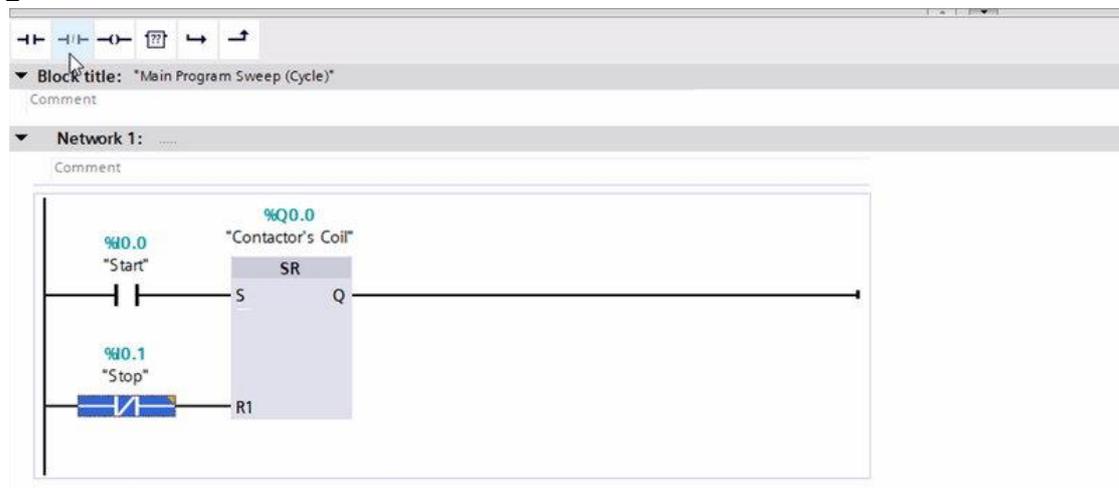
typical plc program for motor control in TIA portal

First of all, we should open up the TIA Portal and configure the required hardware including the CPU and PLC cards.

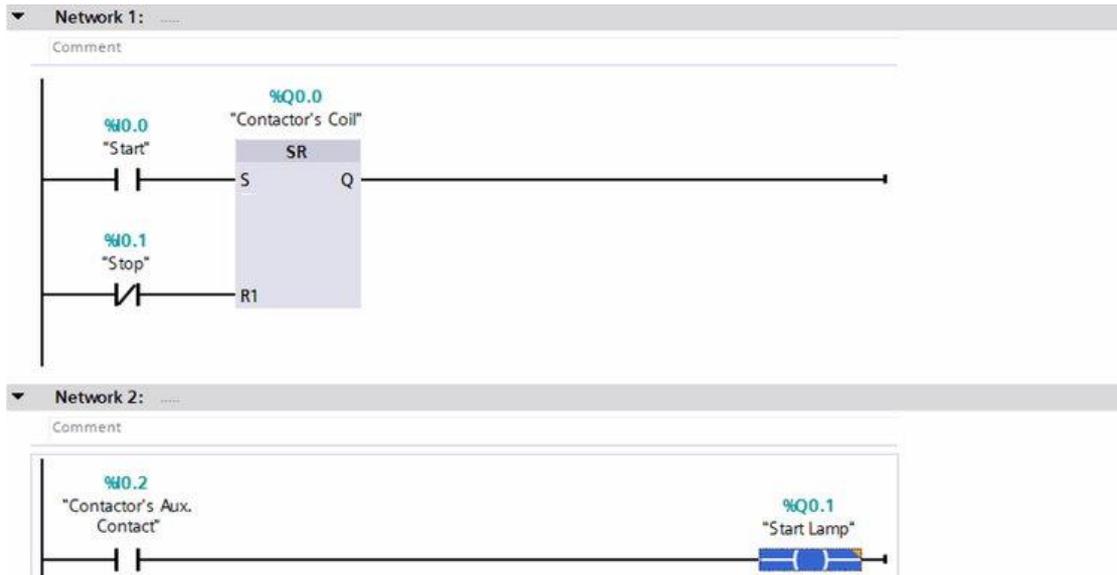
Second of all, we should add the symbols to the tags.



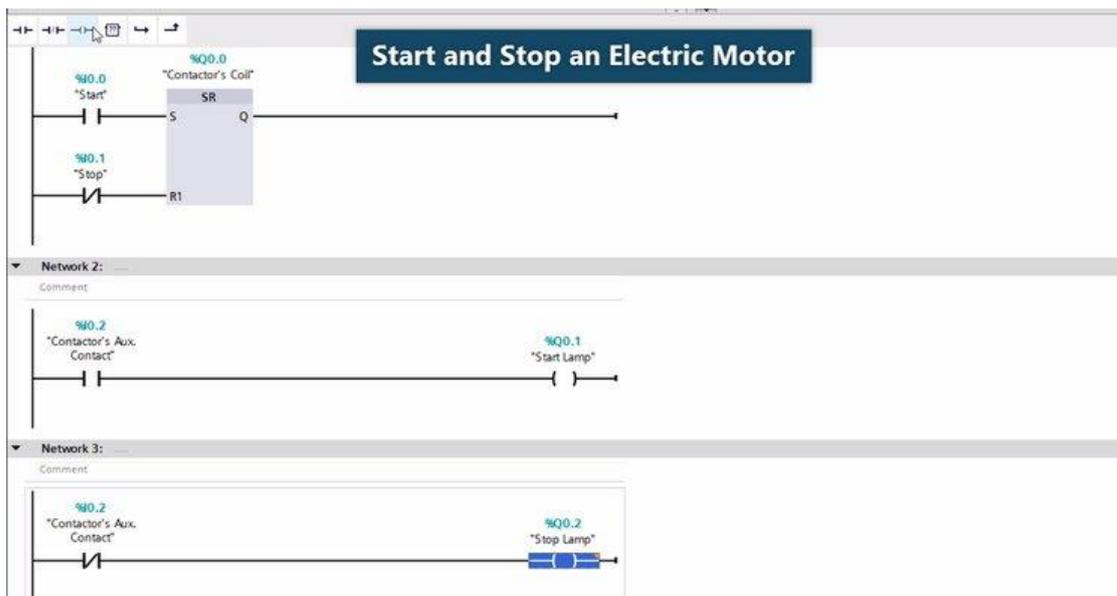
2nd



3rd



4th



7th

Name	Address	Diplk.	Monitor.	Bits	Comment
"Start" P	DI0.0	Bool	TRUE		
"Stop" P	DI0.1	Bool	TRUE		
"Contactor's Aux. Contact" P	DI0.2	Bool	FALSE		
"Contactor's Coil" Q	DO0.0	Bool	TRUE		
"Start Lamp" Q	DO0.1	Bool	FALSE		
"Stop Lamp" Q	DO0.2	Bool	TRUE		

8th

Name	Address	Diplk.	Monitor.	Bits	Comment
"Start" P	DI0.0	Bool	TRUE		
"Stop" P	DI0.1	Bool	TRUE		
"Contactor's Aux. Contact" P	DI0.2	Bool	FALSE		
"Contactor's Coil" Q	DO0.0	Bool	TRUE		
"Start Lamp" Q	DO0.1	Bool	TRUE		
"Stop Lamp" Q	DO0.2	Bool	FALSE		

9th

Name	Address	Diplk.	Monitor.	Bits	Comment
"Start" P	DI0.0	Bool	TRUE		
"Stop" P	DI0.1	Bool	FALSE		
"Contactor's Aux. Contact" P	DI0.2	Bool	FALSE		
"Contactor's Coil" Q	DO0.0	Bool	TRUE		
"Start Lamp" Q	DO0.1	Bool	TRUE		
"Stop Lamp" Q	DO0.2	Bool	FALSE		

10th

The image displays two windows from the Siemens TIA Portal software. The left window shows a ladder logic diagram for a motor control system. It features a main network with a normally open contact labeled 'Start' (address %I0.0) and a normally closed contact labeled 'Stop' (address %I0.1) in series with a coil labeled 'Contactor's Coil' (address %Q0.0). Below this are three auxiliary networks: Network 2 shows a normally open contact 'Contactor's Aux. Contact' (address %I0.2) connected to a coil 'Start Lamp' (address %Q0.1); Network 3 shows a normally open contact 'Contactor's Aux. Contact' (address %I0.2) connected to a coil 'Stop Lamp' (address %Q0.2); Network 4 is empty.

The right window shows a table titled 'Aux. Contact Input' with the following data:

Name	Address	Digit	Monitor	Info	Config	Comment
"Start" P	%I0.0	Bool	TRUE		<input type="checkbox"/>	
"Stop" P	%I0.1	Bool	FALSE		<input type="checkbox"/>	
"Contactor's Aux. Contact"	%I0.2	Bool	FALSE		<input type="checkbox"/>	
"Contactor's Coil"	%Q0.0	Bool	FALSE		<input type="checkbox"/>	
"Start Lamp"	%Q0.1	Bool	FALSE		<input type="checkbox"/>	
"Stop Lamp"	%Q0.2	Bool	TRUE		<input type="checkbox"/>	

Below the software windows is a physical wiring diagram. It shows a power supply with 0V and 24V lines. A 'Start' button is connected to the 24V line. A 'Stop' button is connected to the 24V line and a 'Stop Lamp' (ON). A '380 V AC' supply with phases L1, L2, and L3 is connected to a contactor. An 'Auxiliary Contact' (NO) is connected to the 24V line and a 'COIL'. A red arrow points to the 'Stop' button, and another red arrow points to the 'Auxiliary Contact'.