

May 20, 2013

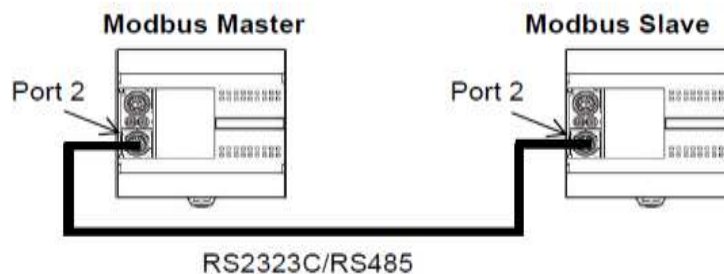
MODBUS COMMUNICATION WITH IDEC PLC

Idec has a range of communication modules dealing with RS232 and RS485 modbus communication. All of these modules should be configured as port 2 and should be placed on the left of CPU.

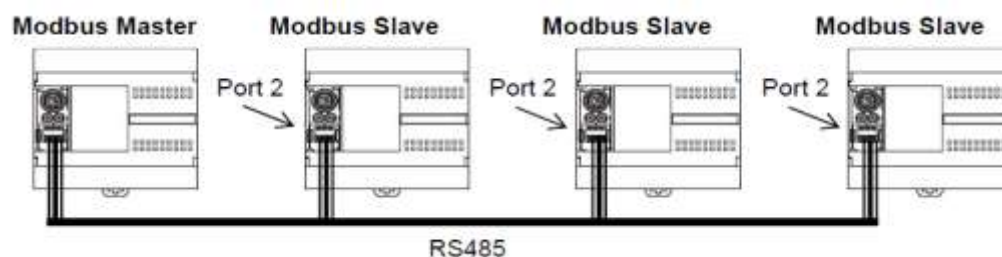
Idec PLC supports two types of serial communication:

- 1:1 – has one master and one slave and can be done using both RS232 and RS485 ports.
- 1: N – has one master and up to 31 slaves, only RS485 supports this configuration.

1:1 Architecture:



1: N Architecture:

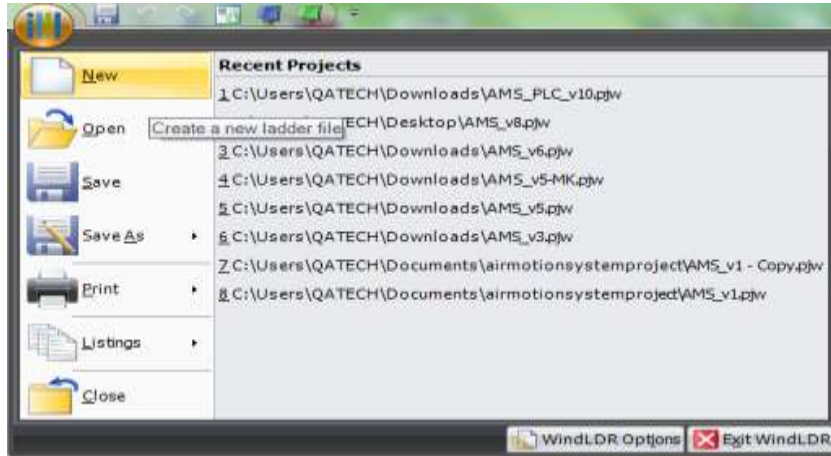


➤ System Setup for Modbus communication in Idec PLC:

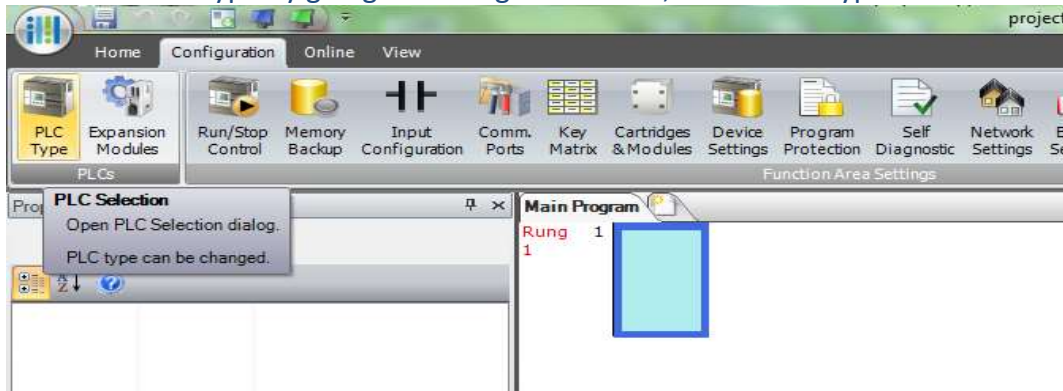
Connect Idec PLC Master to all the slaves using the RS485 port of the PLC's.

➤ **Setting up Modbus MASTER PLC:-**

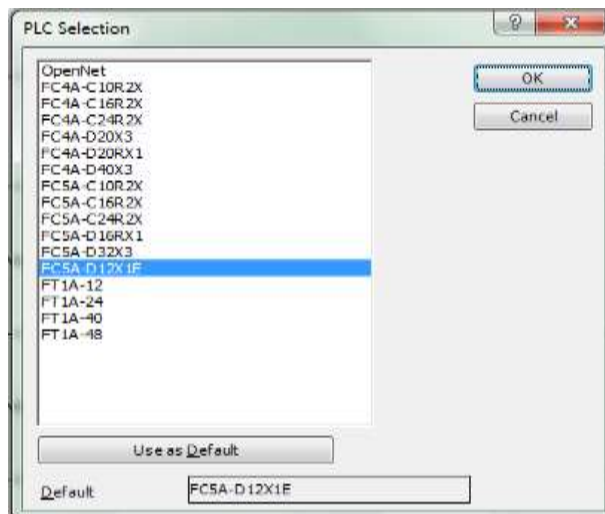
- Start WindLDR Software and create a new program. Click on Startup of WindLDR software and then select 'New'.



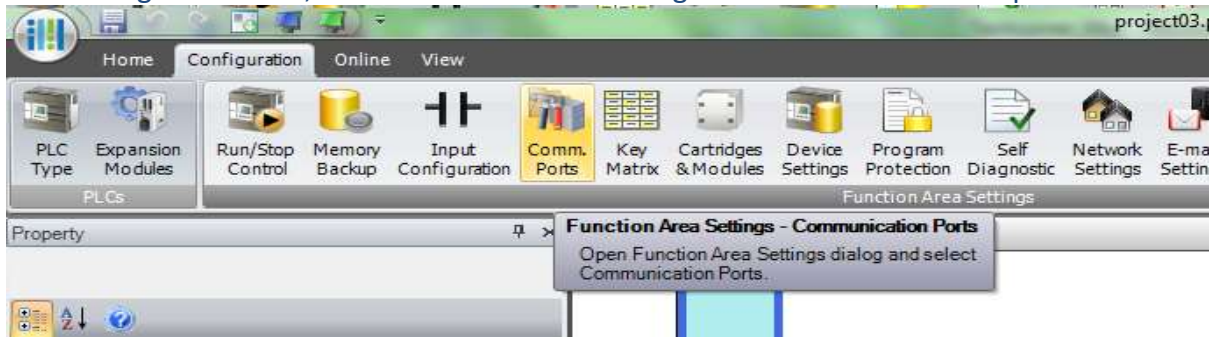
- Select the correct PLC type by going to 'Configuration' tab, select 'PLC Type'.



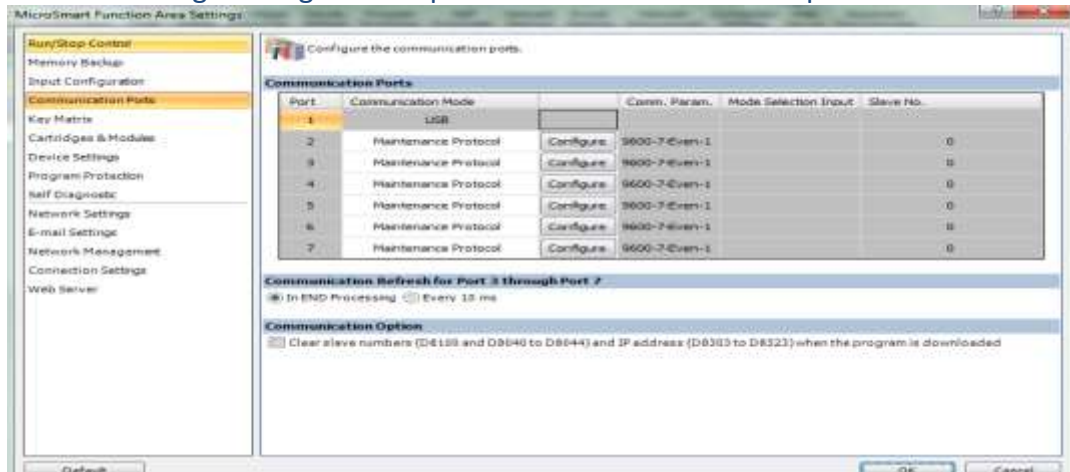
- PLC selection dialog box will open. Select the appropriate PLC you want to set as Master and then click Ok.



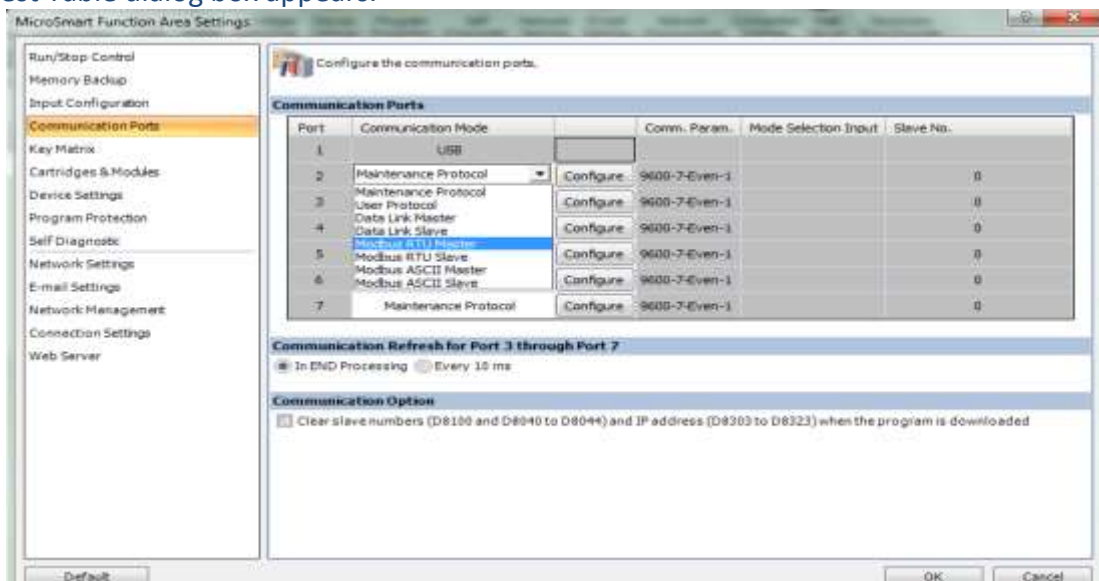
- Go to 'Configuration' tab, and in Function Area Settings select 'Communication ports'.



- 'Function Area Settings' dialog will be opened with 'Communication ports' tab selected.



- Select 'Modbus RTU Master' from the dropdown list for the Port 2, and then Modbus Master Request Table dialog box appears.



- Click on the cell of the 'Function Code of the Request #1' in the dialog box, and then the dropdown list will appear. From the dropdown list, select the appropriate mode of modbus.



- The Address Map of the FC5A Modbus Slave is shown as below:

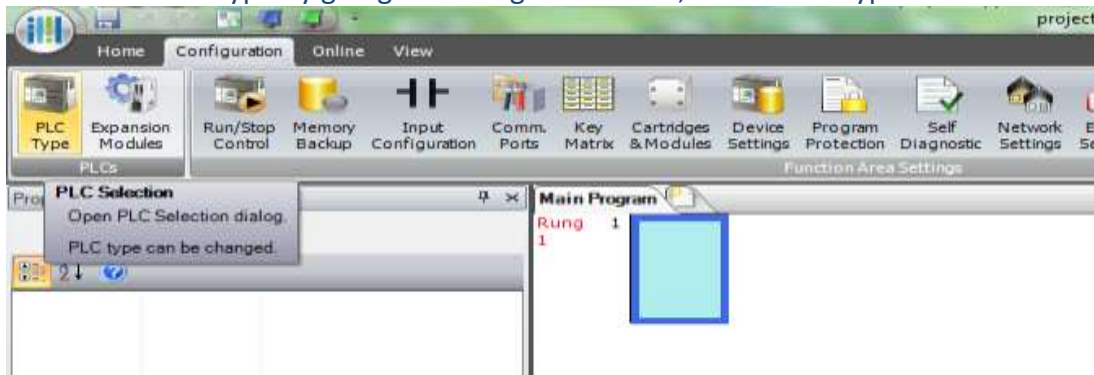
Modbus Device Name	Modbus Address Map (Decimal)	Communication Frame Address	MicroSmart Operand	Applicable Function Code
Coil (000000 and above)	000001 - 000504	0000 - 01F7	Q0 - Q627	1, 5, 15
	000701 - 000956	02BC - 03BB	R0 - R255	
	001001 - 003048	03E8 - 07F7	M0 - M2557	
	009001 - 009256	2328 - 2427	M8000 - M8317	
Input Relay (100000 and above)	100001 - 100504	0000 - 01F7	I0 - I627	2
	101001 - 101256	03E8 - 04E7	T0 - T255 (timer contact)	
	101501 - 101756	05DC - 06DB	C0 - C255 (counter contact)	
Input Register (300000 and above)	300001 - 300256	0000 - 00FF	T0 - T255 (timer current value)	4
	300501 - 300756	01F4 - 02F3	C0 - C255 (counter current value)	
Holding Register (400000 and above)	400001 - 408000	0000 - 1F3F	D0 - D7999	3, 6, 16
	408001 - 408500	1F40 - 2133	D8000 - D8499	
	409001 - 409256	2328 - 2427	T0 - T255 (timer preset value)	3
	409501 - 409756	251C - 261B	C0 - C255 (counter preset value)	
	410001 - 450000	2710 - C34F	D10000 - D49999	

- Click OK to close the 'Modbus RTU Request Table' dialog box, and then click OK to close the 'Function Area Settings' dialog box.
- Save the project and download the settings by clicking on 'Online' tab and then click on 'Download'.

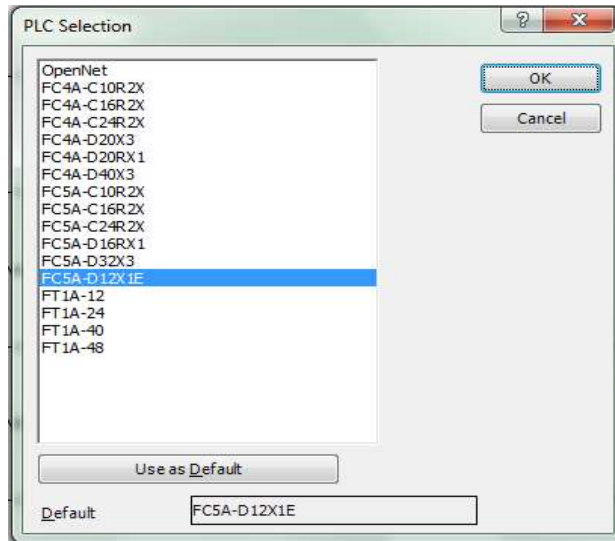


➤ **Setting up MODBUS Slave PLC:**

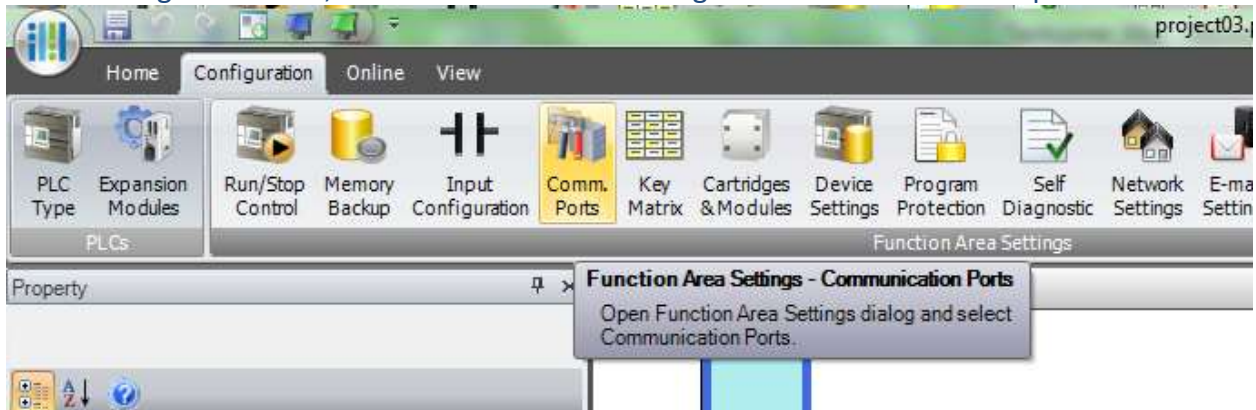
- Select the correct PLC type by going to 'Configuration' tab, select 'PLC Type'.



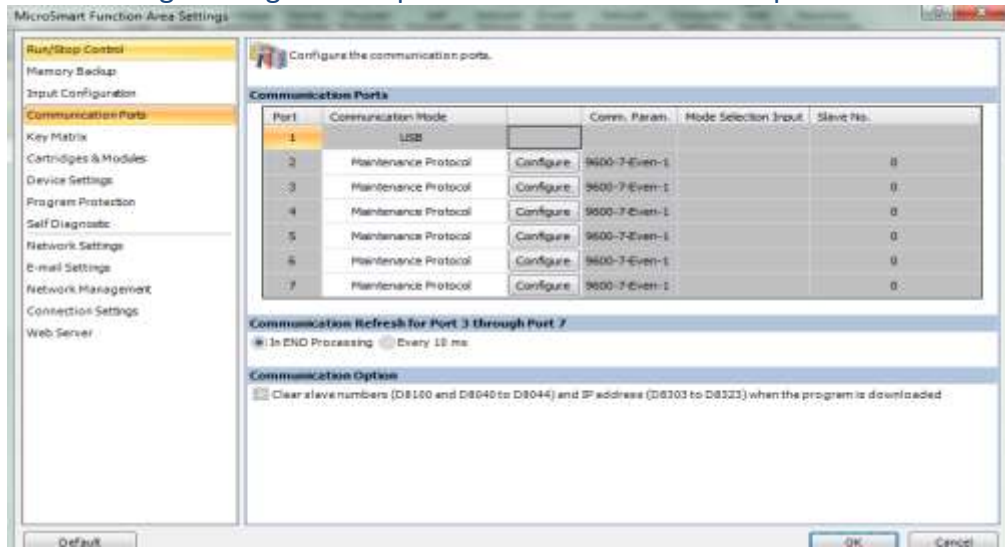
- PLC selection dialog box will open. Select the appropriate PLC you want to set as Slave and then click Ok.



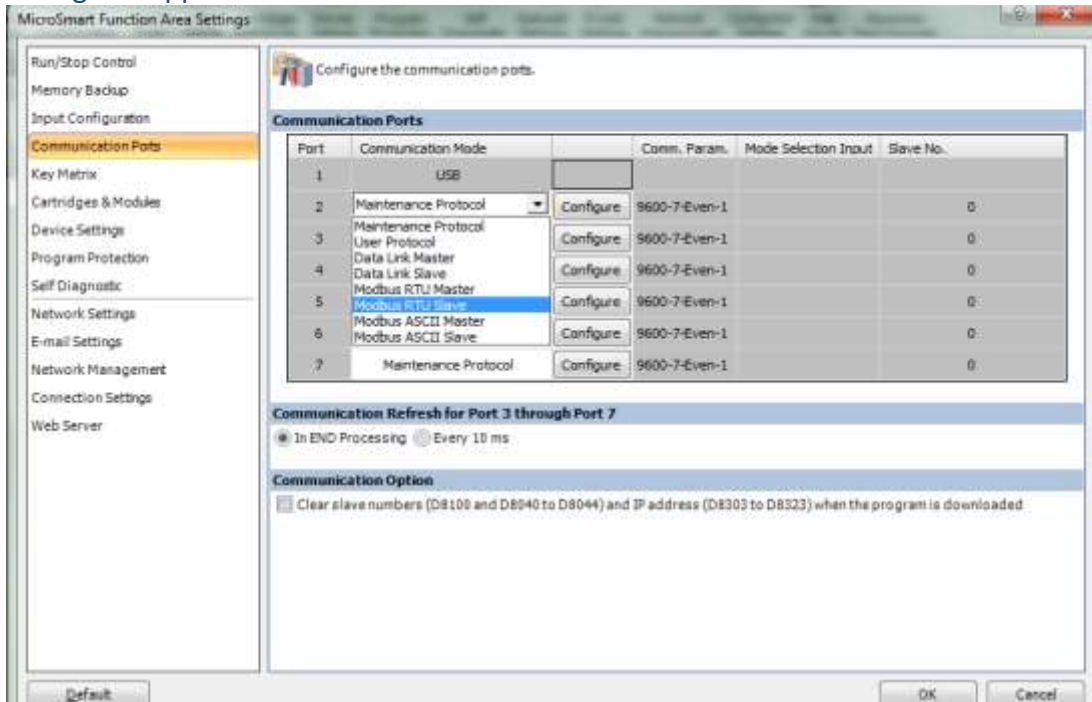
- Go to 'Configuration' tab, and in Function Area Settings select 'Communication ports'.



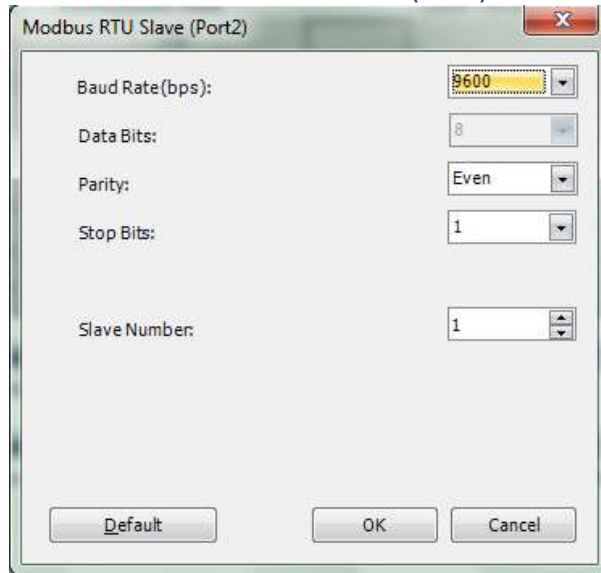
- 'Function Area Settings' dialog will be opened with 'Communication ports' tab selected.



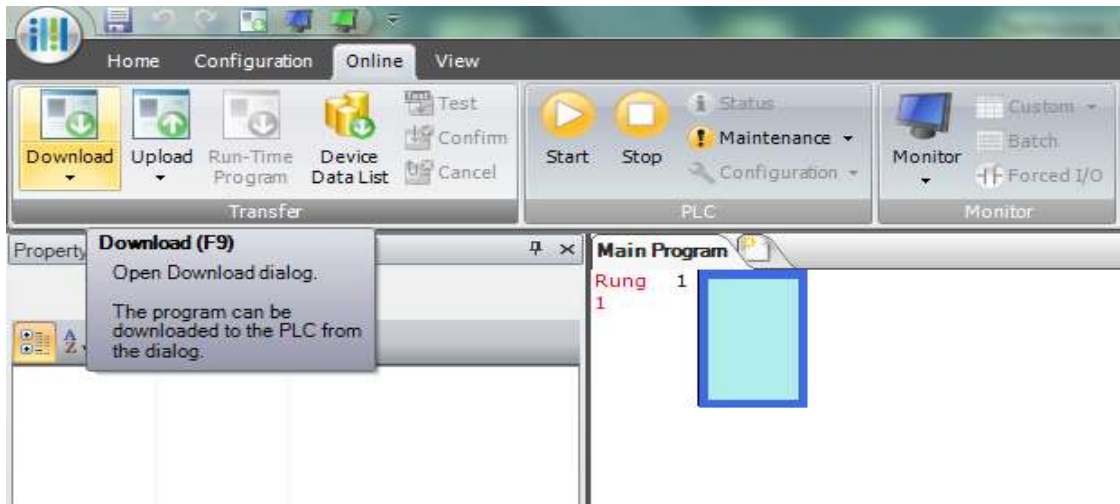
- Select 'Modbus RTU Slave' from the dropdown list for the Port 2, and then Modbus RTU Slave Table dialog box appears.



- Set the serial parameters and select the 'Slave number' (1-31). Click 'Ok'.



- Save the project and download the settings by clicking on 'Online' tab and then click on 'Download'.



- Program the PLC's for your application, download the program.

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