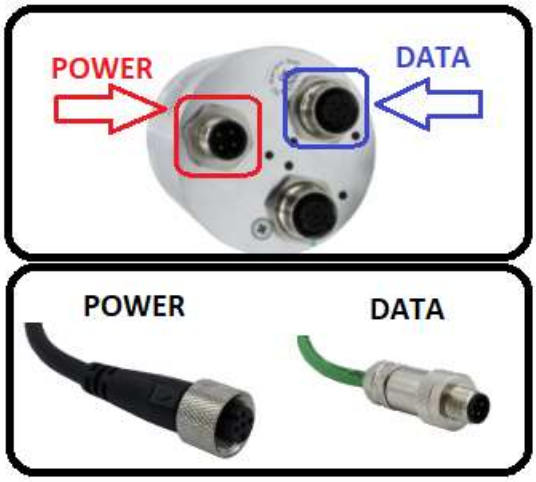
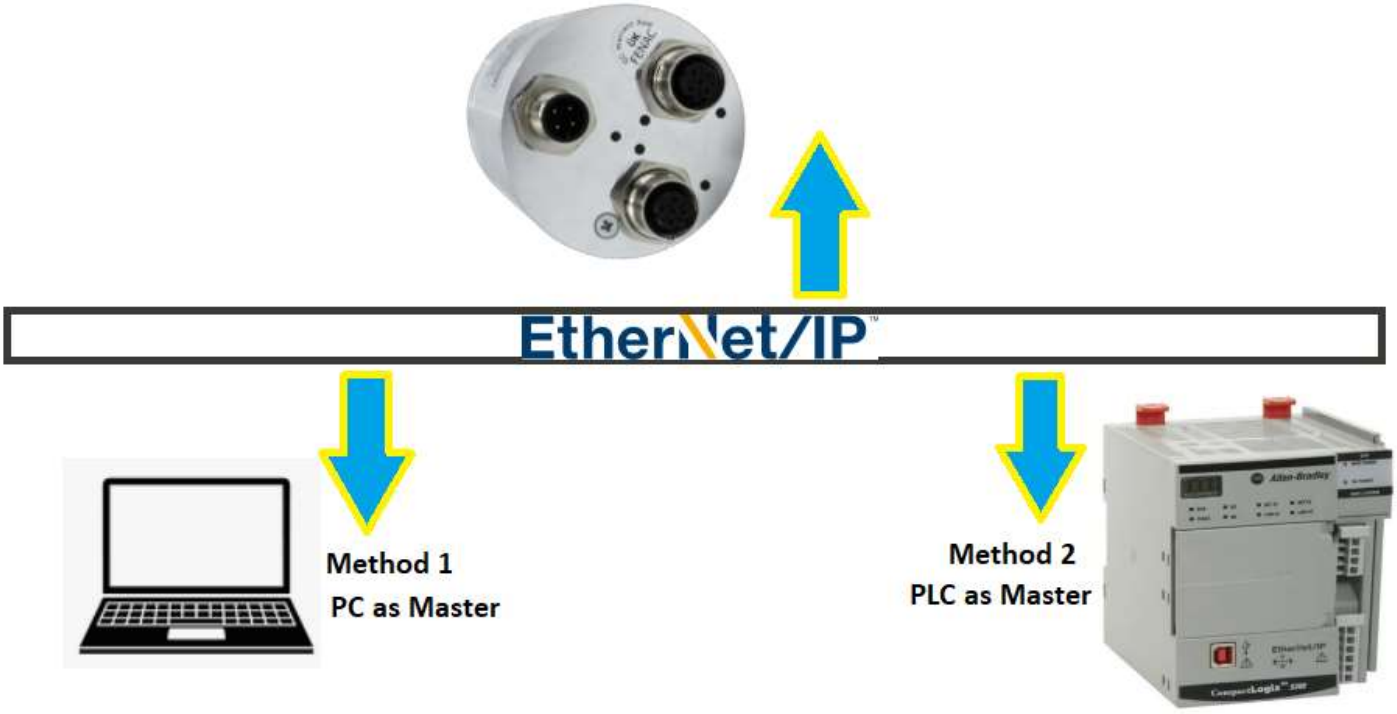
Establishing a Connection with the Fenac Ethernet IP Encoder Device



Power cable and data cable are correctly connected to the device. Details about the connection pinout structure are explained in the section "4.Connector & Pin Assignment". Power cable and data cable are indicated in the figure on the side. It is also specified to which input ports the power cable and data cable will be connected to the Fenac Ethernet IP encoder. The device can be supplied with DC voltage in the range of 10V to 30V. The other end of the data cable must be connected to an Ethernet IP master. Here we will talk about two methods. Defining a personal computer as an ethernet IP master device and connect the data cable to the ethernet port of a PC is an easy method, as no external hardware is required. You can do your various tests in this way. The other method is to use a PLC device with Ethernet IP Master as traditionally.



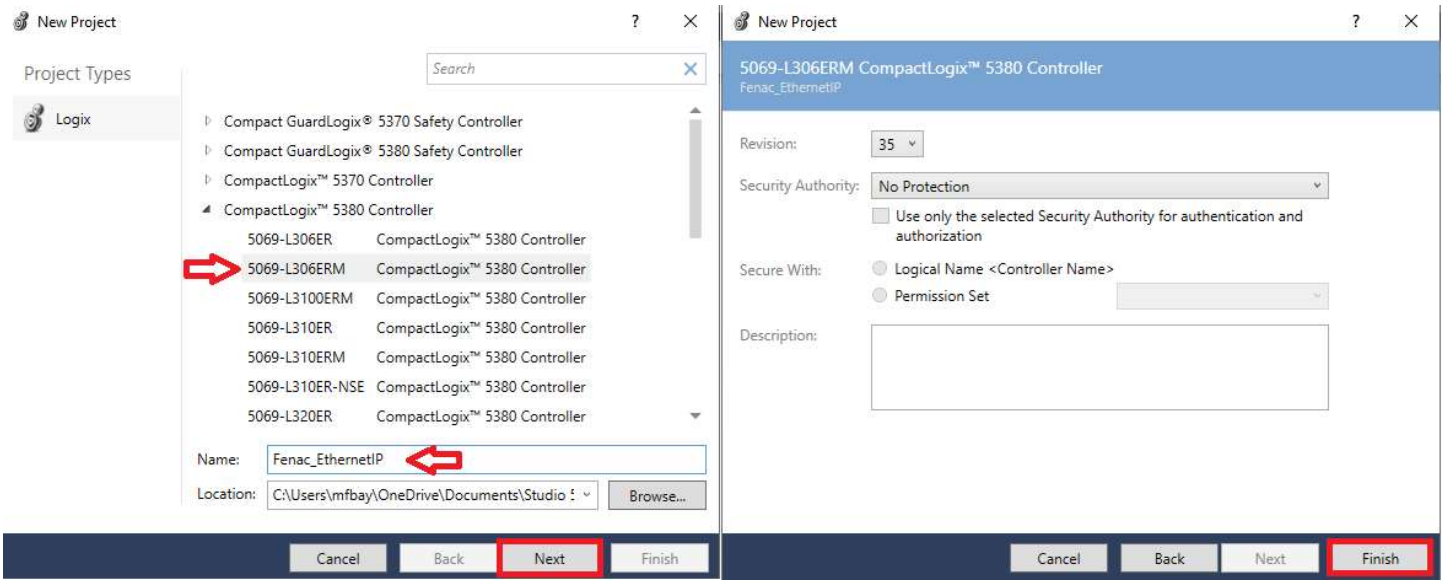
Method 2: PLC as Ethernet IP Master

In our example here, we will use Allen Bradley's PLC as the master device. After supplying the Fenac Ethernet Ip Encoder by a voltage in the range of 10-30V from the power supply, connect the data cable to the Ethernet port of your PC. After this process, the status LEDs on the ethernet port of your PLC will light up, indicating that there is a successful connection.

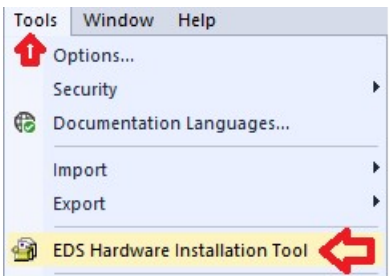
Rockwell's Studio 5000 (in our case version 35.00.00) must be installed in your PC. Open the Studio 5000 interface.

1) Click on File>New> to start a new project. Select your PLC device, in our case it is 5069-L306ERM. Give the project to a name then click Next.

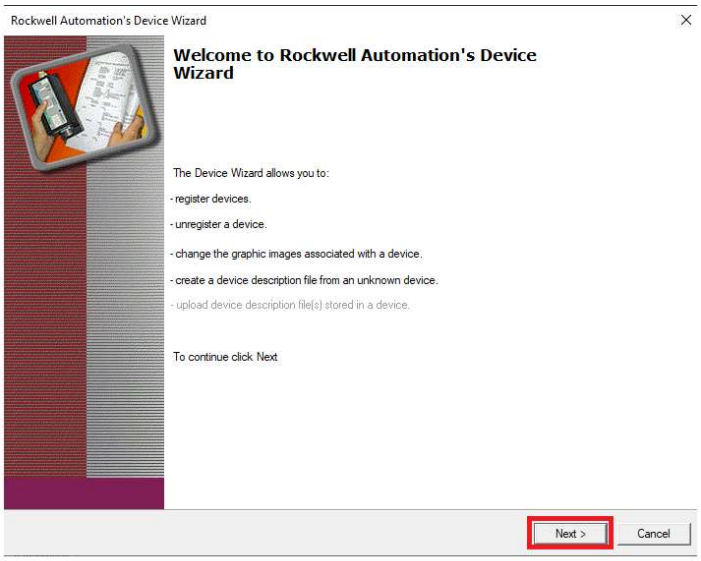
2) Next click Finish button to create project.

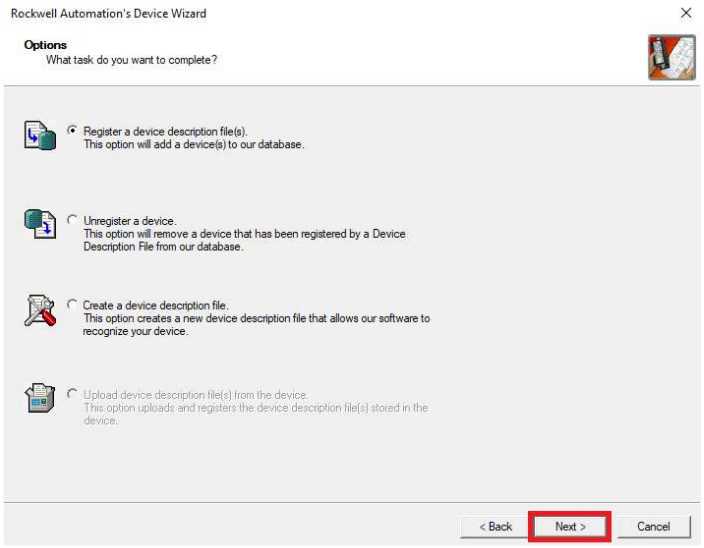


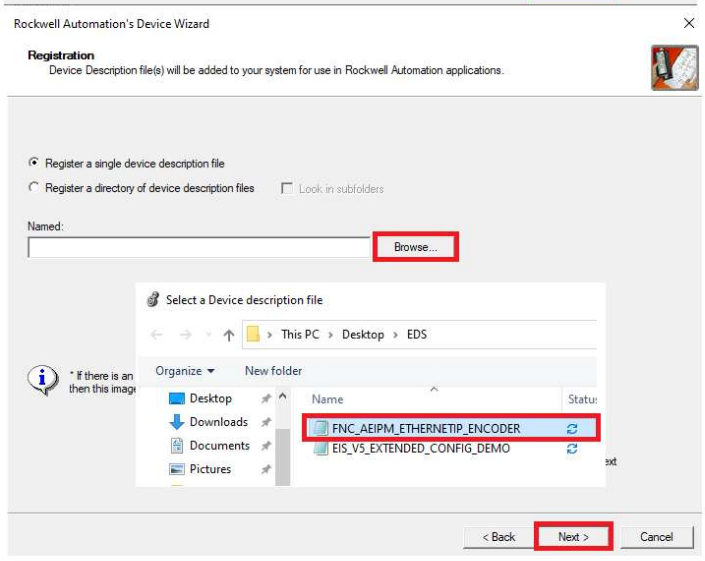
3) Click on Tool menu and Click EDS Hardware Installation Tool.

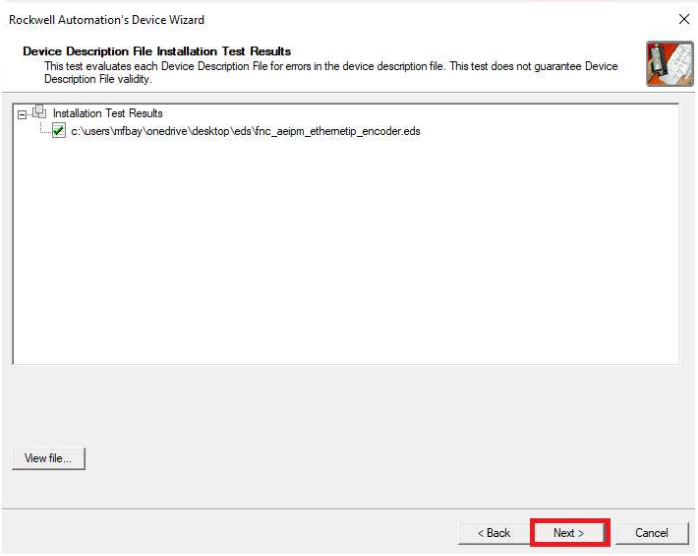


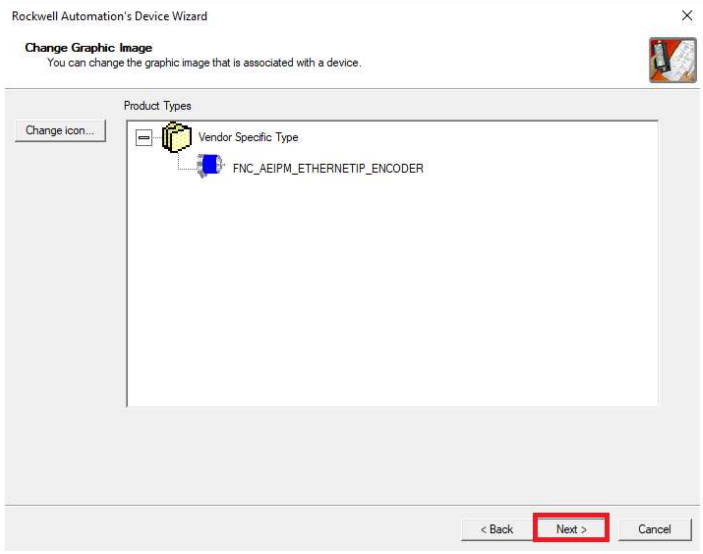
4) Click next. Make sure Register a device description files selected then click Next. Browse the eds file(you can downloaded from fenac.com.tr) and click Next till the finish button.

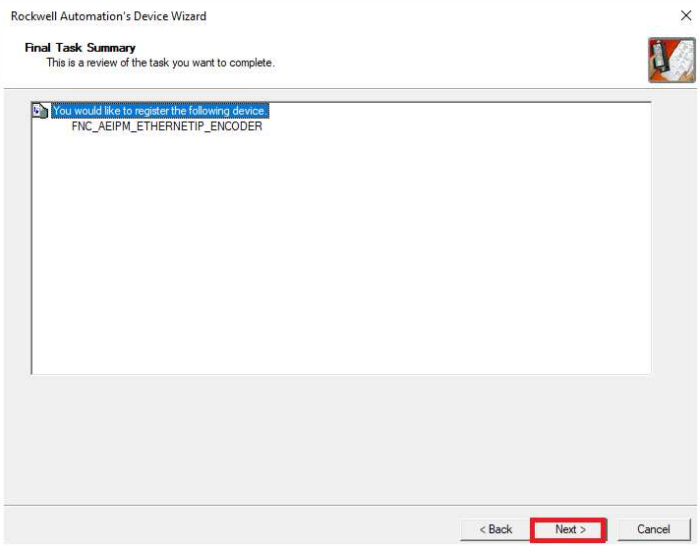




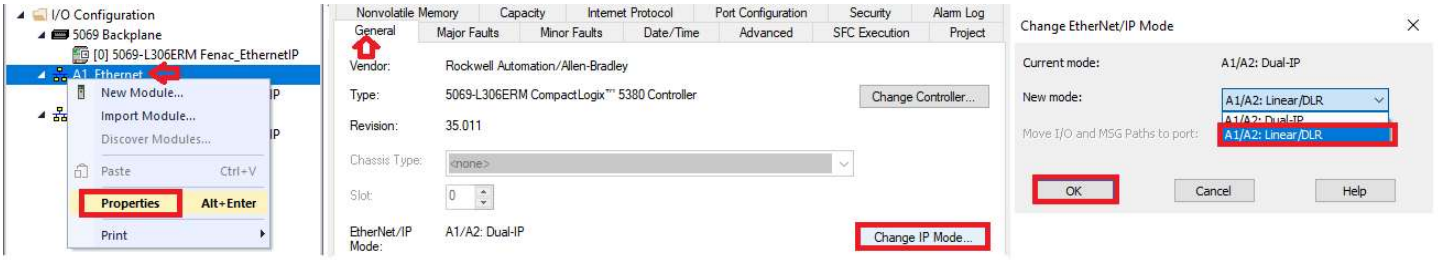




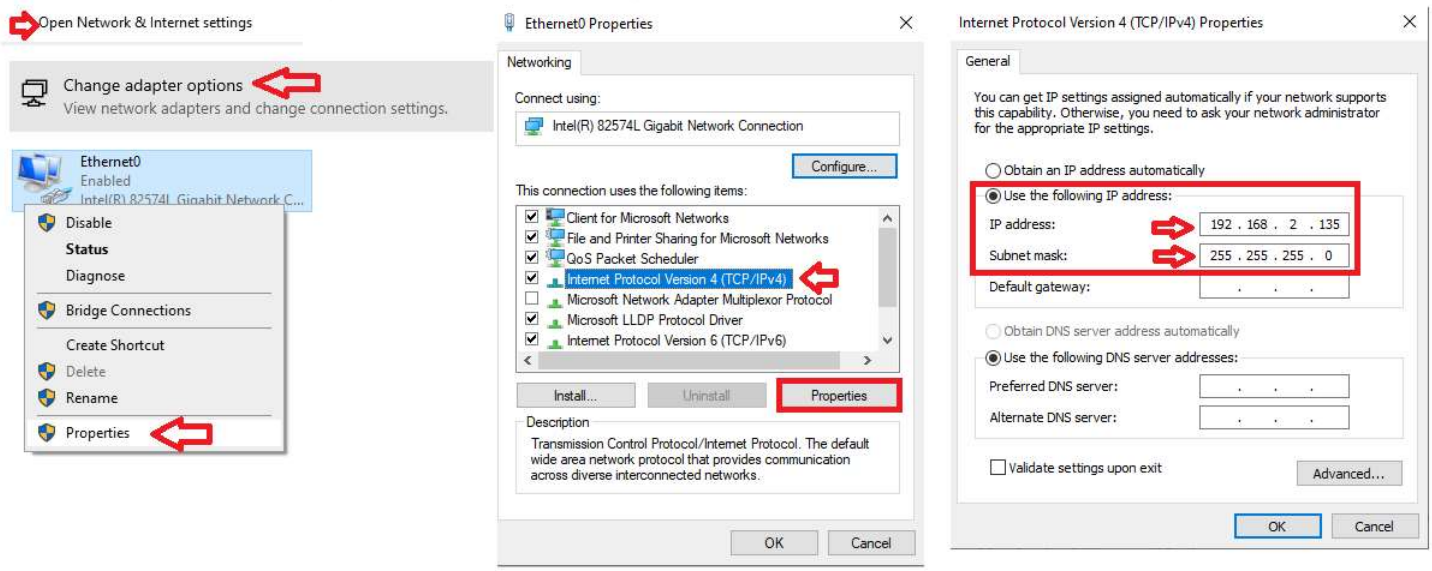




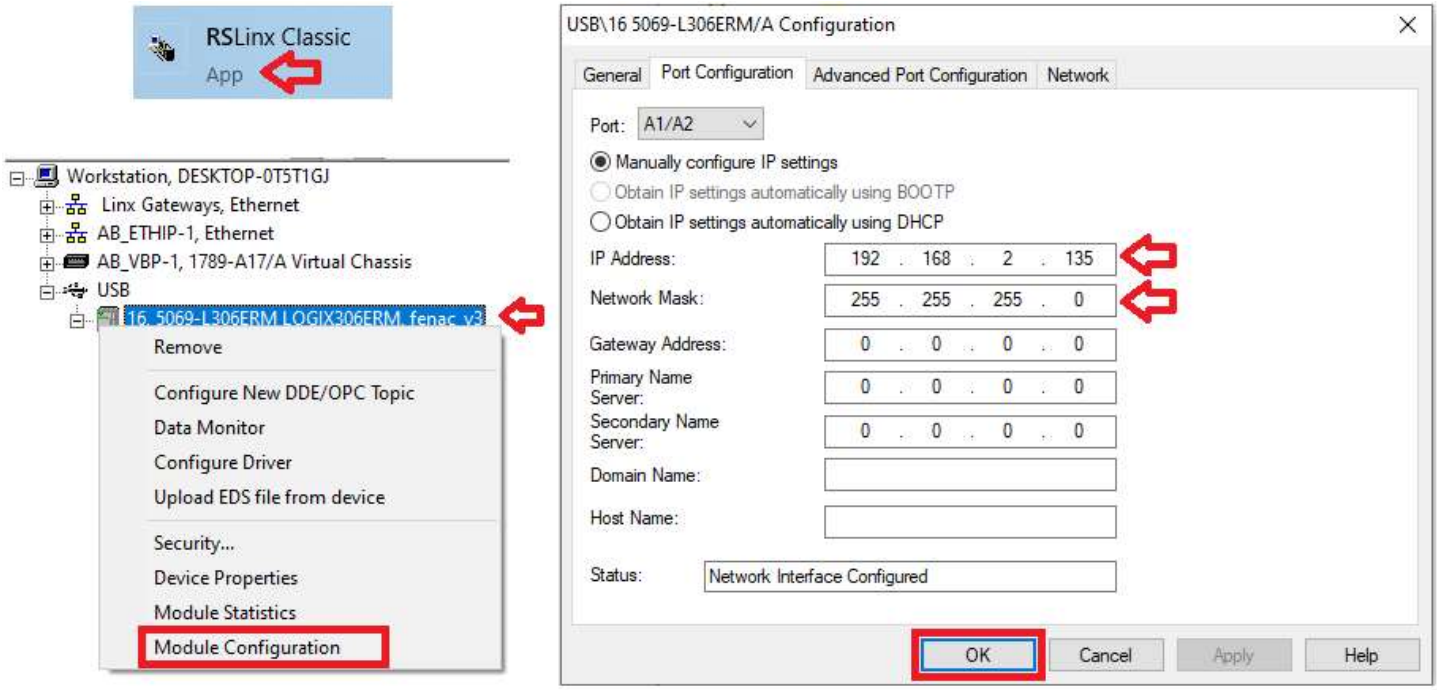
5) Right click on “A1, Ethernet” and chose Properties. On the “General” tab window click on “Change IP Mode” then select A1/A2: Linear/DLR and click OK to save.



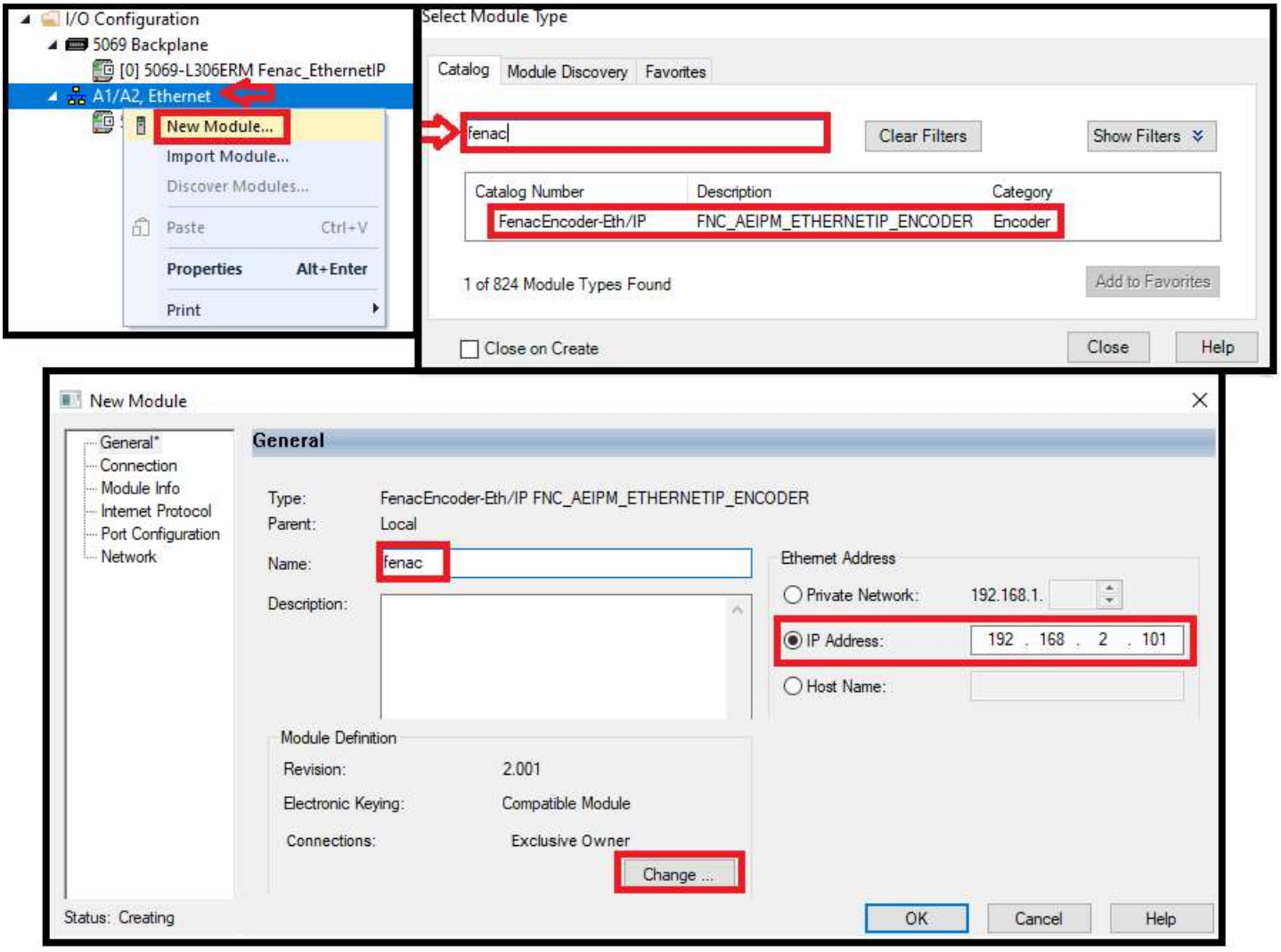
6) Open your PC’s Network & Internet Settings. Change adapter options than click properties. Select Internet Protocol Verison 4(TCP/Ipv4) then click on properties. Enter the IP address and Subnetmask below then click OK.



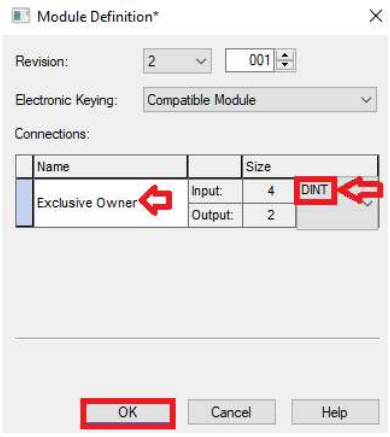
7) Open RSLinc Classic Application. Connect you PLC's usb cable (or ethernet) Under the USB section right click and select "Module Configuration". Under the "Port Configuration" tab, Set Port for A1 or A2 then set "Manually configure IP settings" and enter the valus below in the image.



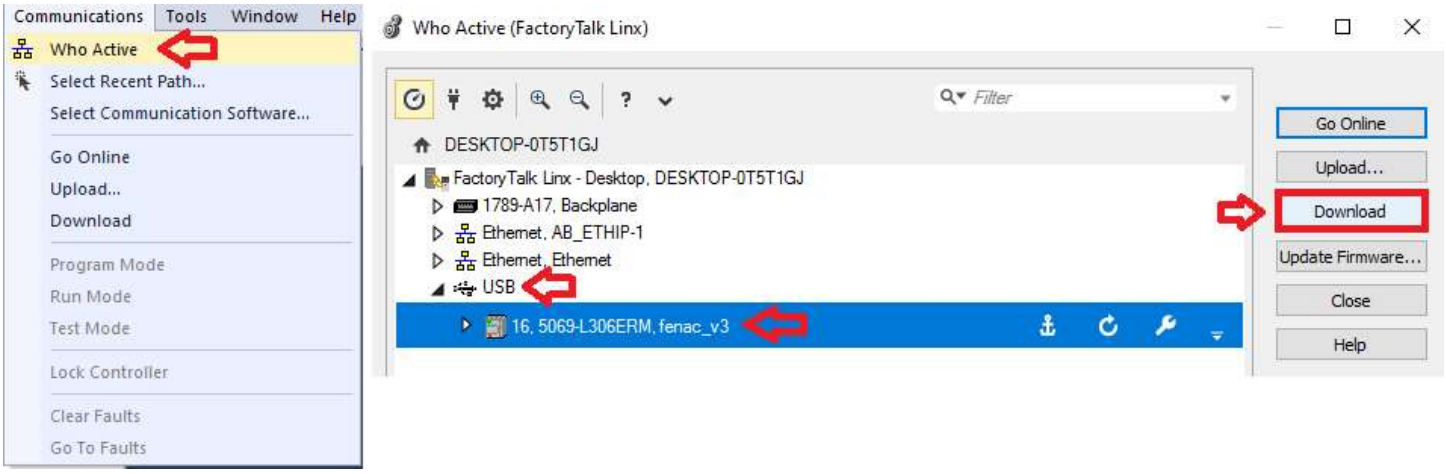
8) Right click on “A1/A2, Ethernet“. Then In the Select Module Type menu search for fenac eds file and double click on it. Then write Name for Encoder in our case we use “fenac” as a name. Click IP Address and enter 192.168.2.101. To chose connection you can click on Change button.



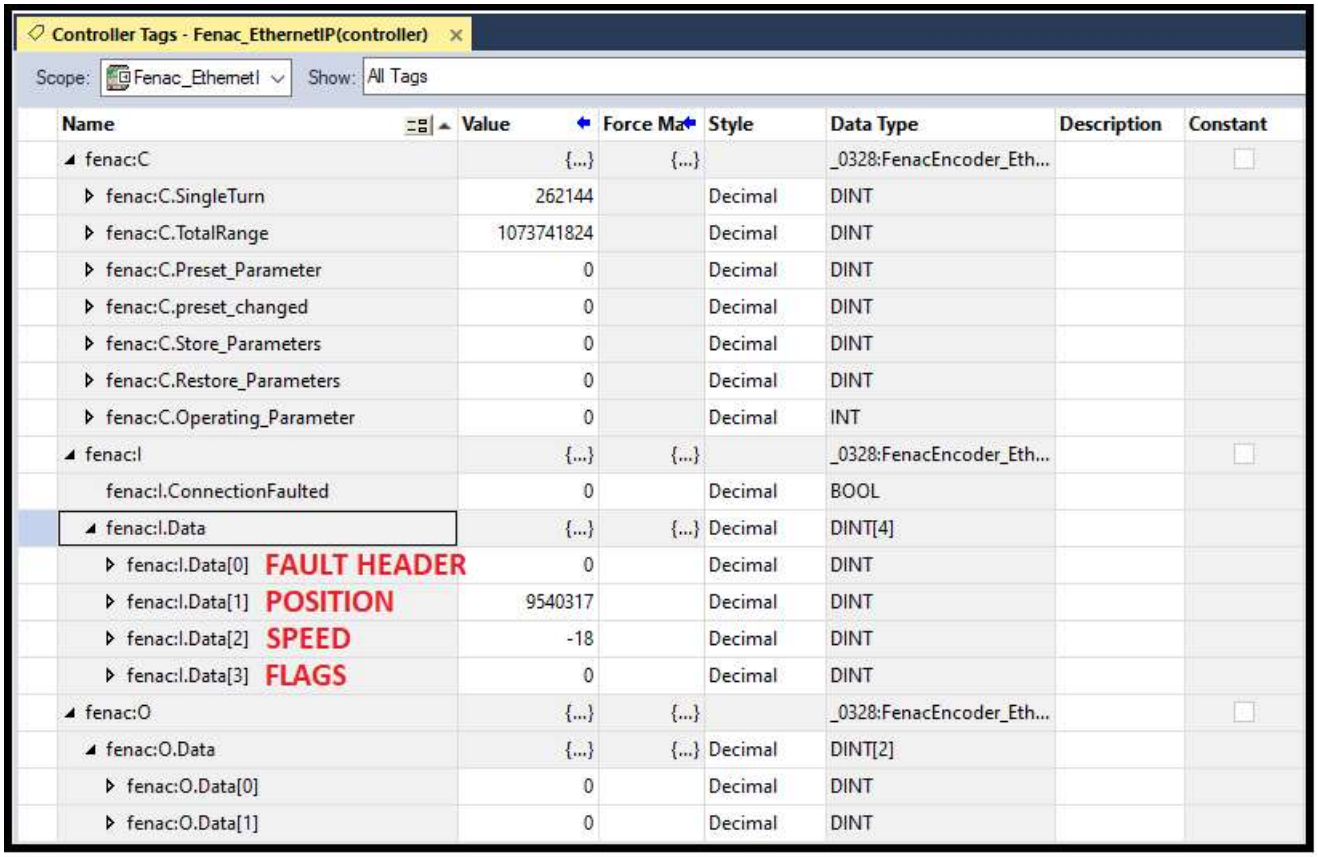
9) Click on SINT to change it to DINT for proper parameter showing. Select connection, we chose Exclusive Owner and click OK. Click yes to any warning in this stage.



10) Click on Communications tab on Studio 5000 then select Who Active. Find you PLC under USB tab and click Download button. Click Download to warning again.

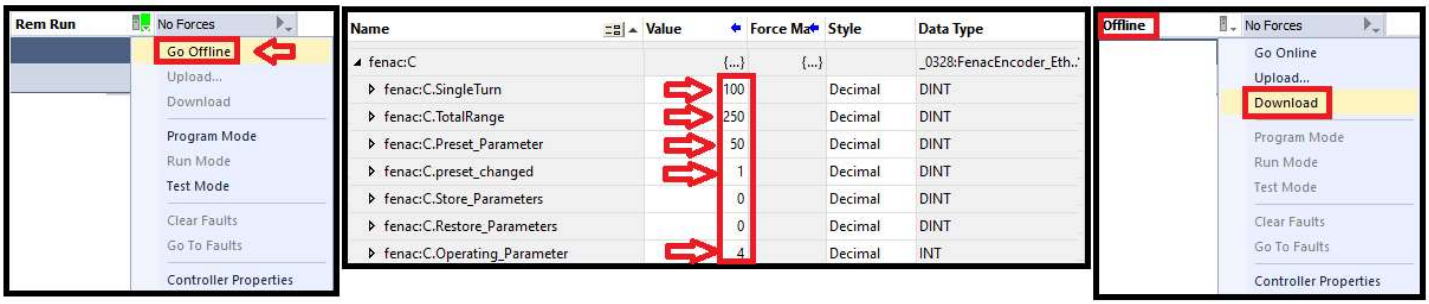


11) Double Click on Controllers Tags to see parameters.



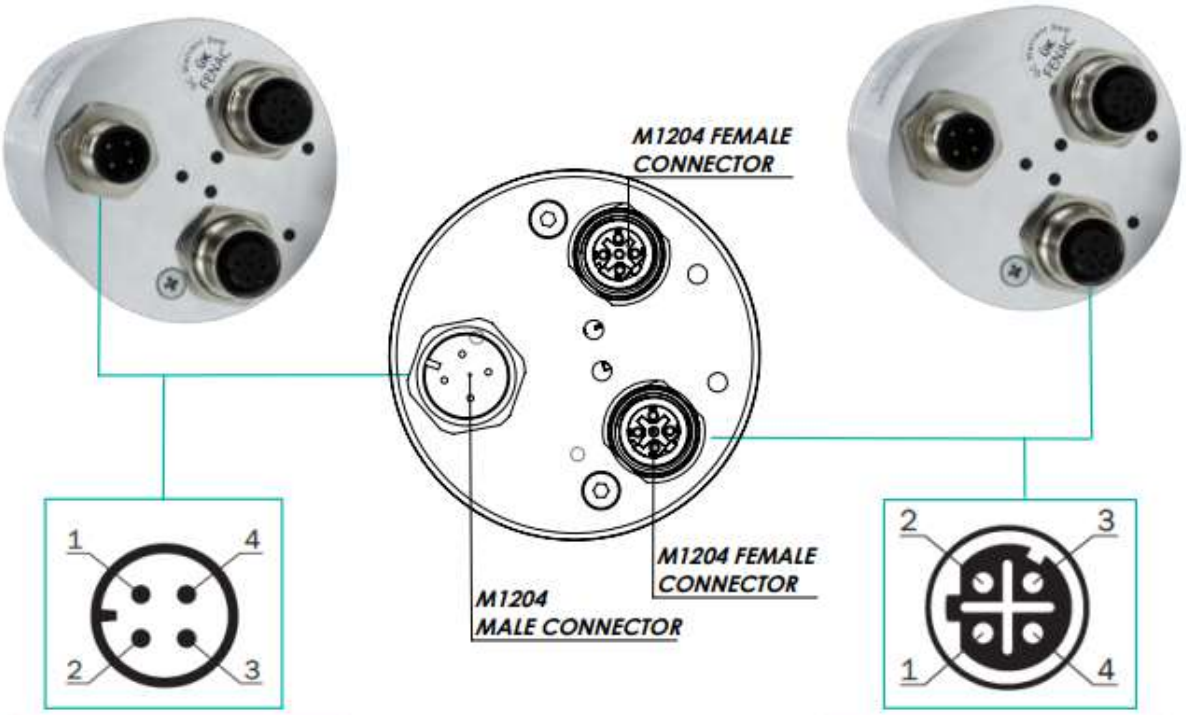
Name	Value	Force Ma	Style	Data Type	Description	Constant
fenac:C	{...}	{...}		_0328:FenacEncoder_Eth...		
fenac:C.SingleTurn	262144		Decimal	DINT		
fenac:C.TotalRange	1073741824		Decimal	DINT		
fenac:C.Preset_Parameter	0		Decimal	DINT		
fenac:C.preset_changed	0		Decimal	DINT		
fenac:C.Store_Parameters	0		Decimal	DINT		
fenac:C.Restore_Parameters	0		Decimal	DINT		
fenac:C.Operating_Parameter	0		Decimal	INT		
fenac:I	{...}	{...}		_0328:FenacEncoder_Eth...		
fenac:I.ConnectionFaulted	0		Decimal	BOOL		
fenac:I.Data	{...}	{...}	Decimal	DINT[4]		
fenac:I.Data[0]	0		Decimal	DINT		
fenac:I.Data[1]	9540317		Decimal	DINT		
fenac:I.Data[2]	-18		Decimal	DINT		
fenac:I.Data[3]	0		Decimal	DINT		
fenac:O	{...}	{...}		_0328:FenacEncoder_Eth...		
fenac:O.Data	{...}	{...}	Decimal	DINT[2]		
fenac:O.Data[0]	0		Decimal	DINT		
fenac:O.Data[1]	0		Decimal	DINT		

12) We need to change the status and Go Offline to be able to configure the encoder device. Most of the time, single turn value and total turn value are changing in encoders. Lets change the SingleTurn and TotalRange parameters (to do this we also need to enable scaling option with setting Operating_Parameter to 4) We also try to preset device from 50 (to do this we need to enable preset_changed to 1). After that we need to Download this new configuration to out encoder device.



4. Connector & Pin Assignment

Pin Assignment



PIN	Signal
1	U_s 10 V...30V
2	Not assigned
3	GND
4	Not assigned

PIN	Signal
1	T x D+
2	R x D+
3	T x D-
4	R x D-

Counter Connector Part Number
FCSF M1204 : M1204 Female Connector
FCSF M1204 R200 : M1204 Female Connector with 2 meter cable

Counter Connector Part Number
FCSM DTM1204 : D Type M1204 Female Connector
FCSM DTM1204 R200 : D Type M1204 Female Connector with 2 meter cable