

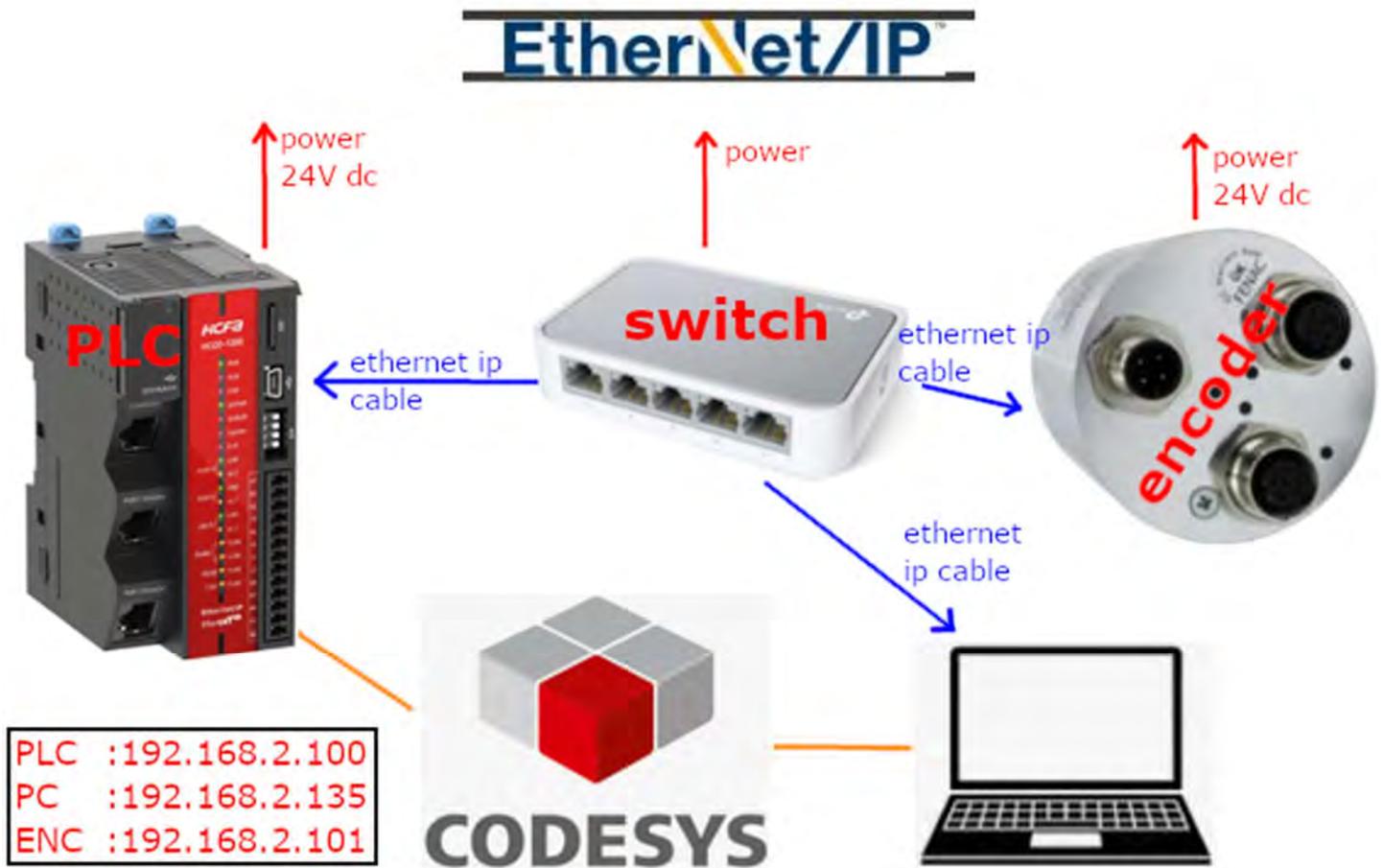
# CONNECTING FENAC ETHERNET/IP ENCODER TO CODESYS ENVIRONMENT

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.



# HARDWARE INSTALLATION

In order to connect the Fenac Ethernet IP encoder and make its adjustments, a connection must be made as shown in the figure.



# PING TEST

Before going into any stage first we should make sure our encoder hardware device connected successfully and we are in the same ip node. You should ping the encoder device if every connection made successfully.

PLC :192.168.2.100

PC :192.168.2.135

ENC :192.168.2.101

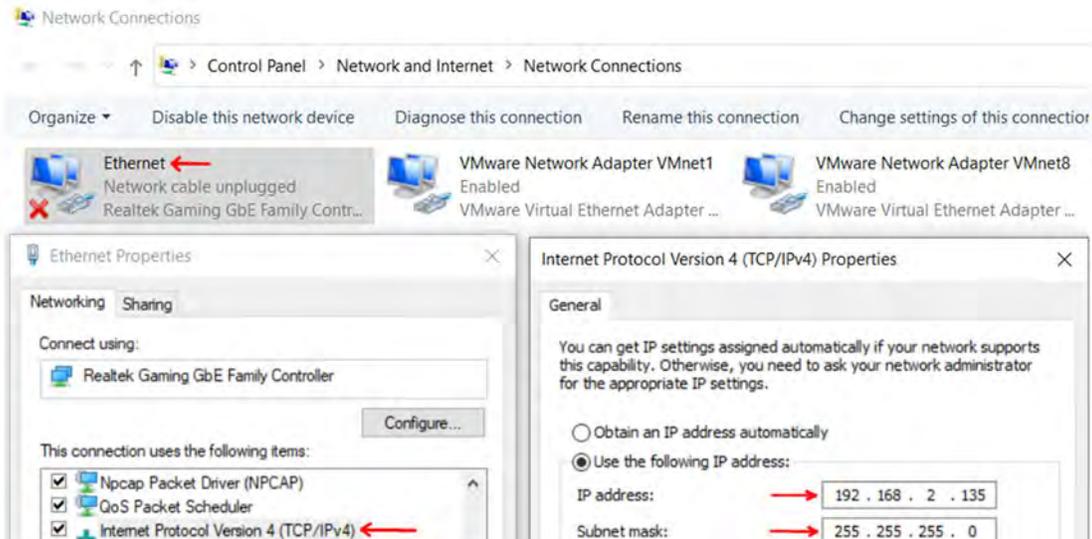
```
C:\Users\  
>ping 192.168.2.101  
  
Pinging 192.168.2.101 with 32 bytes of data:  
Reply from 192.168.2.101: bytes=32 time=2ms TTL=255  
Reply from 192.168.2.101: bytes=32 time=1ms TTL=255  
Reply from 192.168.2.101: bytes=32 time<1ms TTL=255  
Reply from 192.168.2.101: bytes=32 time=1ms TTL=255  
  
Ping statistics for 192.168.2.101:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 0ms, Maximum = 2ms, Average = 1ms
```

If you can see the following output then you are in the same ip subnet and your encoder connected successfully. Else you get “Request timed out” message then you should fix you connection.

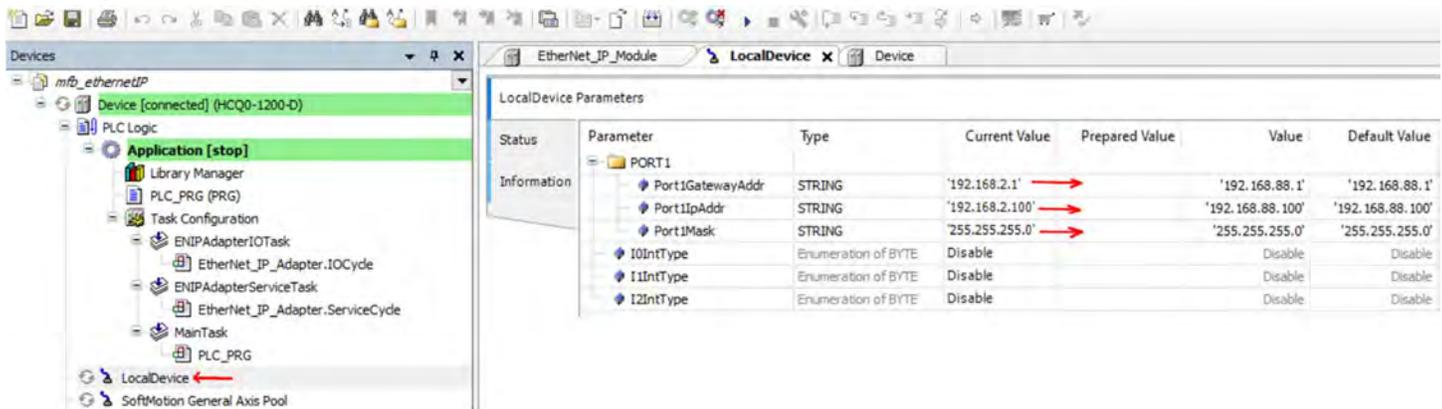
```
C:\Users\  
>ping 192.168.2.101  
  
Pinging 192.168.2.101 with 32 bytes of data:  
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.  
  
Ping statistics for 192.168.2.101:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

# IP SETTINGS

You can set your **PC's IP subnet** in the following picture.



And you can follow the below steps to set your **PLC's IP subnet**.



```
C:\Users\ >ping 192.168.2.100

Pinging 192.168.2.100 with 32 bytes of data:
Reply from 192.168.2.100: bytes=32 time=2ms TTL=64

Ping statistics for 192.168.2.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 2ms, Average = 2ms
```

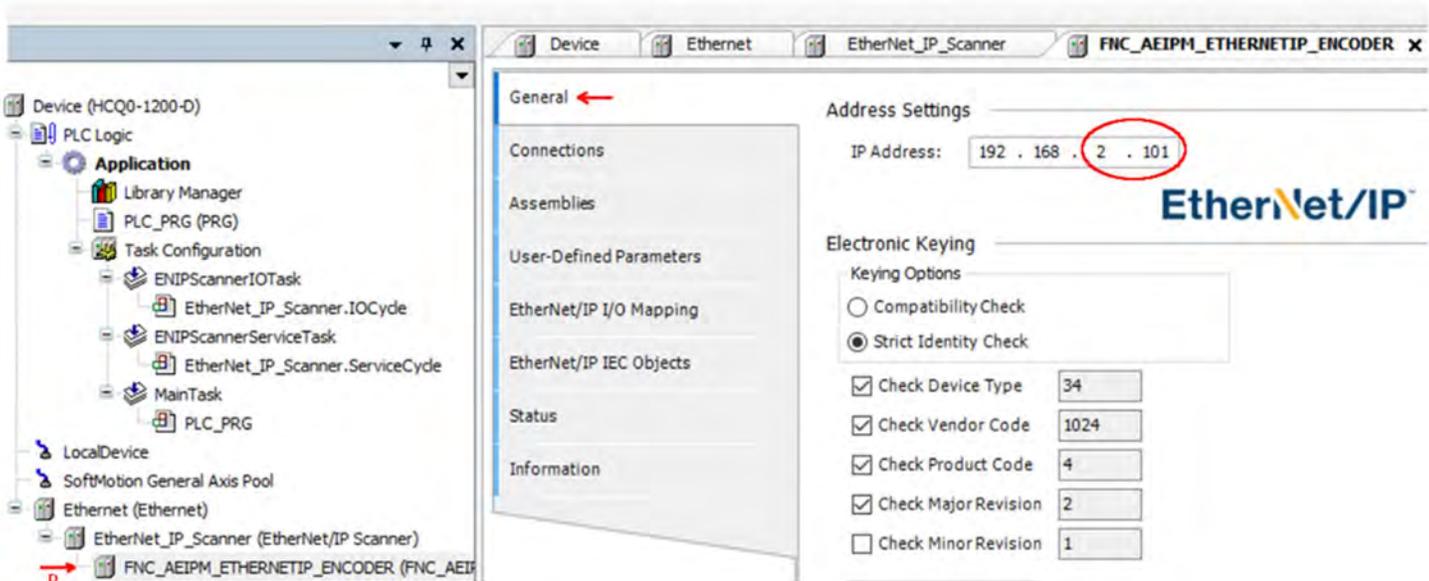
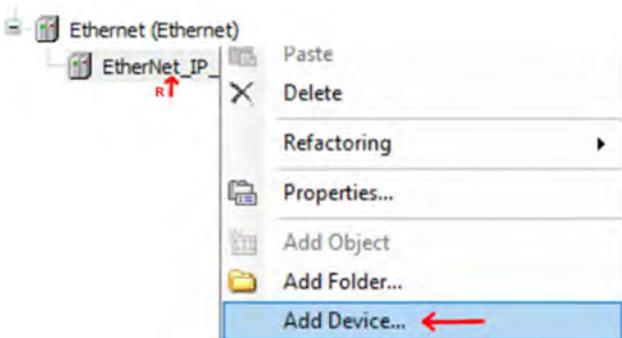
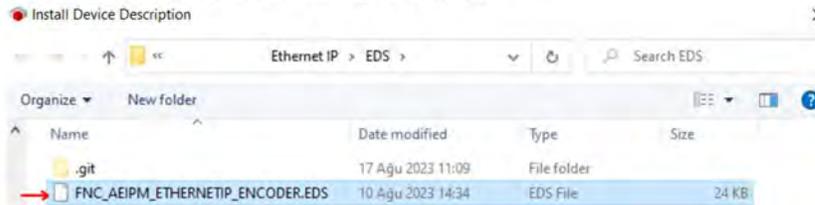
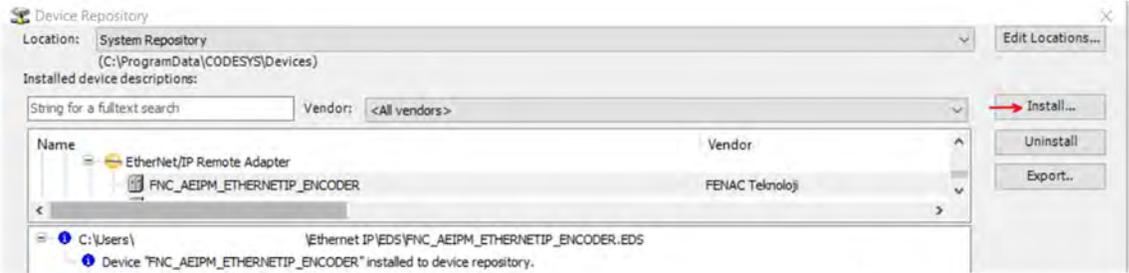
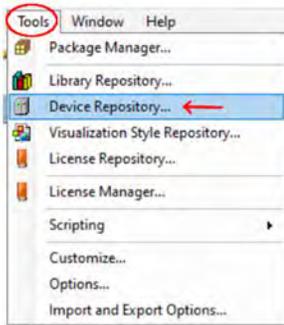
After that as you can see here you should ping the PLC's IP Address(192.168.2.100) too.

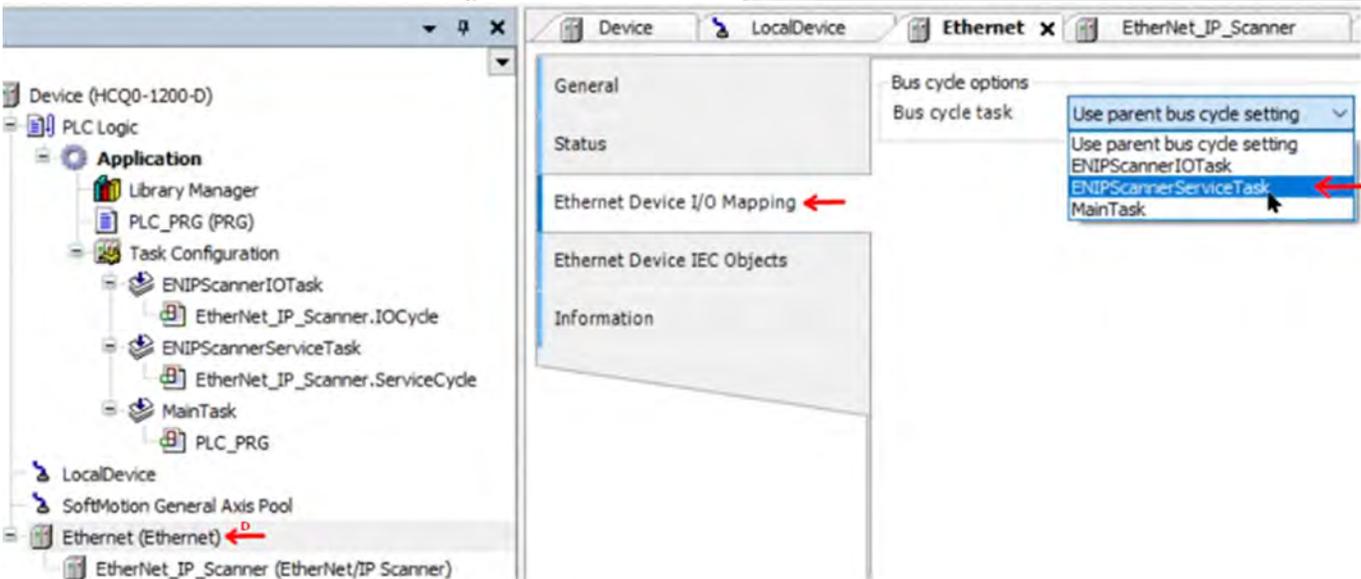
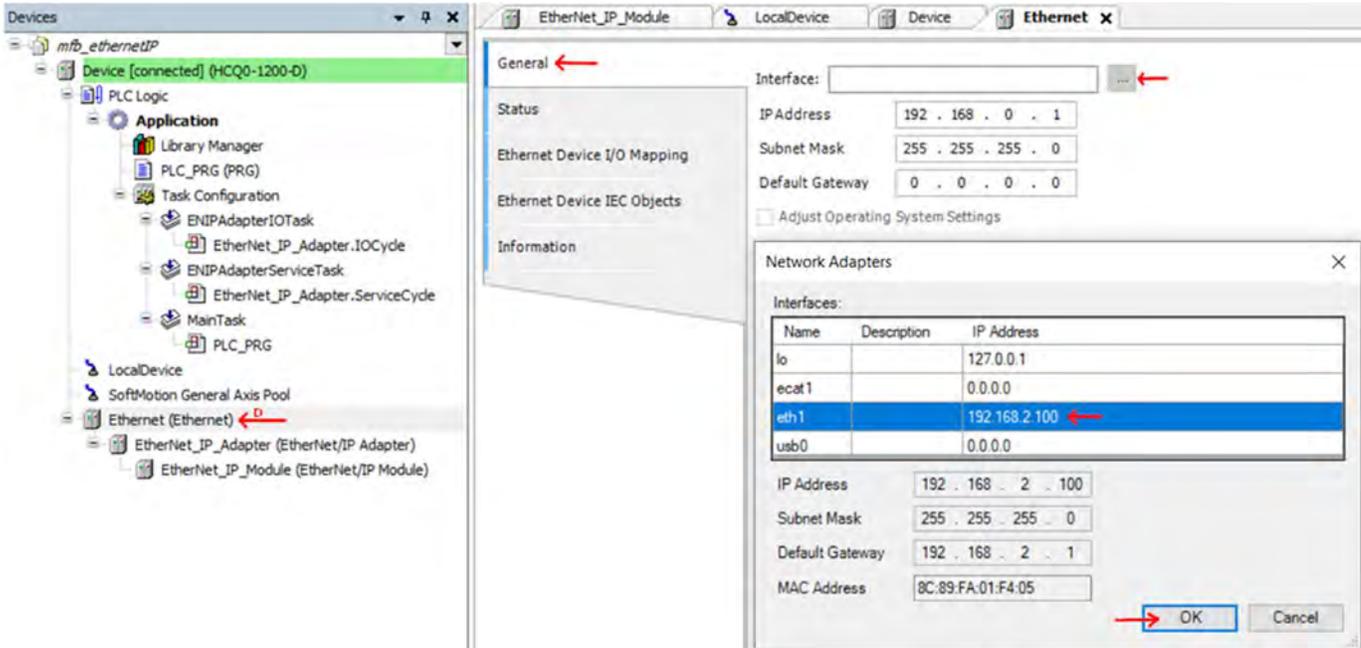
# CODESYS SETTINGS

Legend:

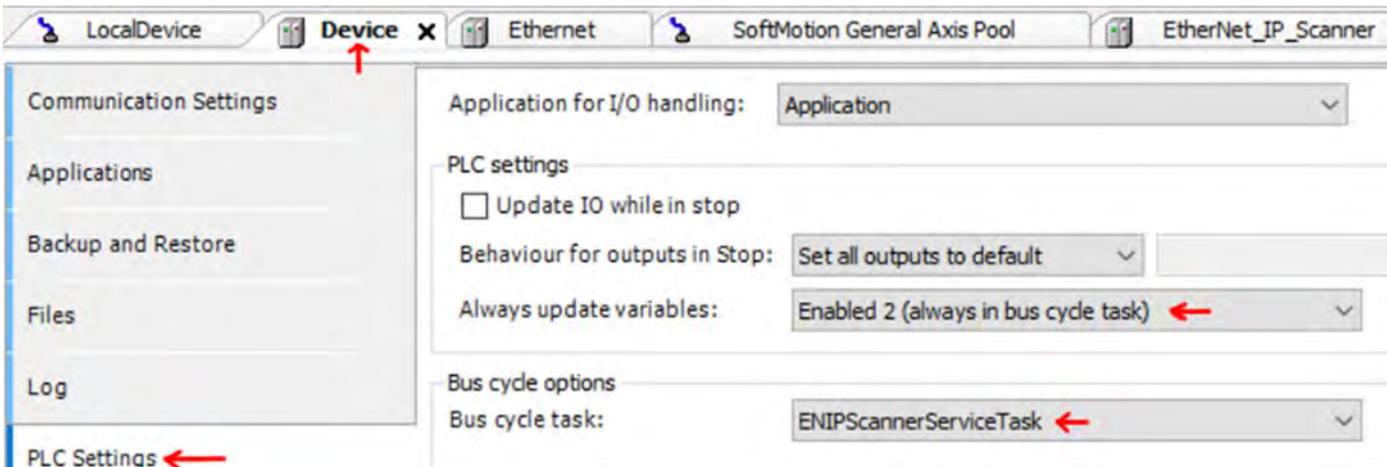
- single left click
- D double left click
- R right

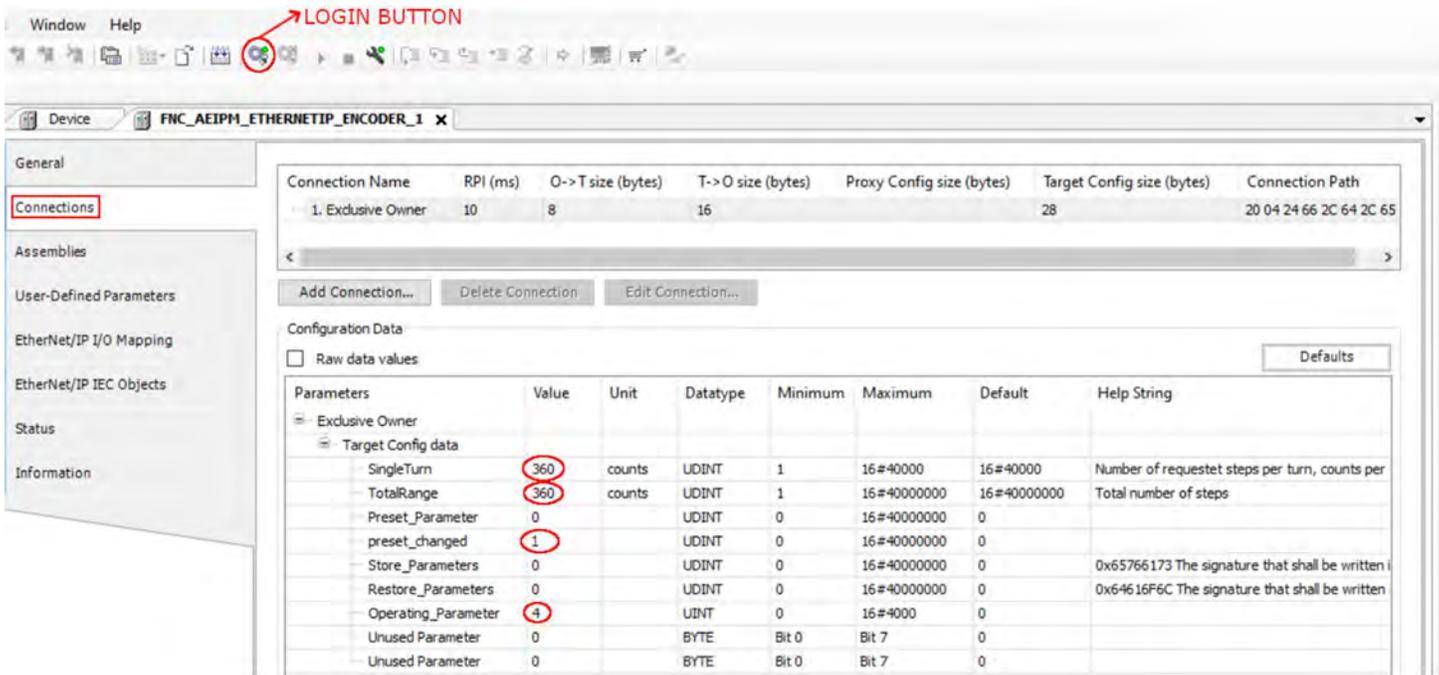
# EDS FILE SETTINGS



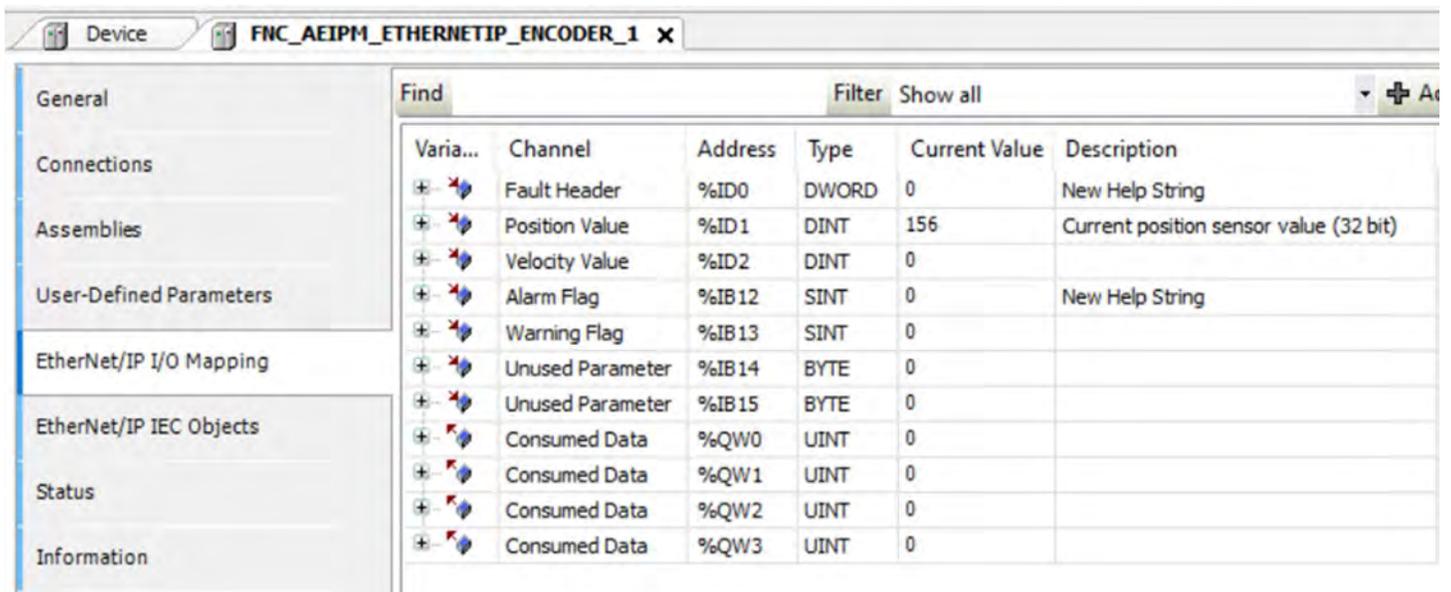


Finally under the Device tab click on PLC Settings and set below settings.





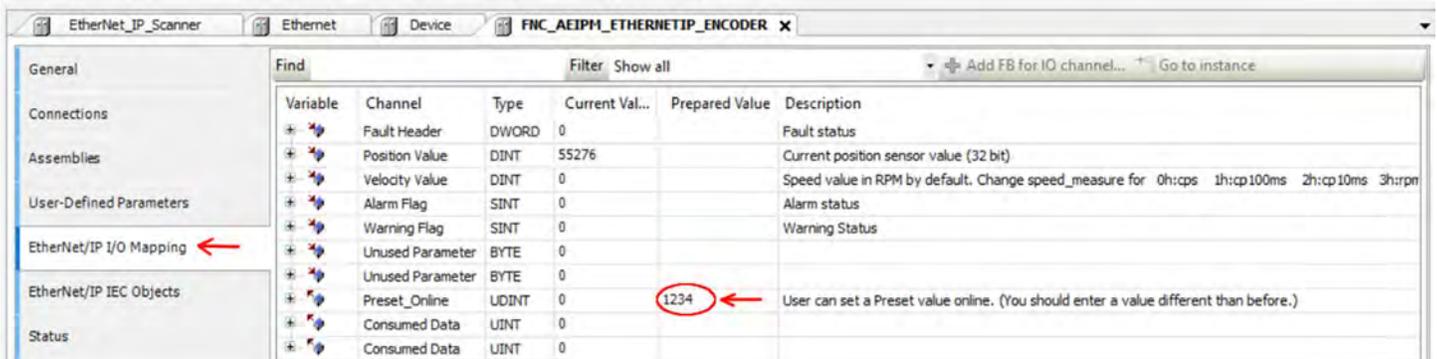
You can configure the parameters like “SingleTurn” ,“TotalRange” , “Preset\_Parameter” , “preset\_changed” and “Operating\_Parameter” here in this Connection page. After that you should click on “Login” button to set this parameters. Then start button to start operations.



Here in this Ethernet/IP I/O Mapping page you can see the process datas like Position Value and Velocity value.

# ONLINE PRESET MODE

User also can set Preset Value when online. Click on EtherNet/IP I/O Mapping tab under FNC\_AEIPM. Enter desired Preset Value to Prepared Value. After Click on Debug menu , Force values or just simply press F7 shortcut key.

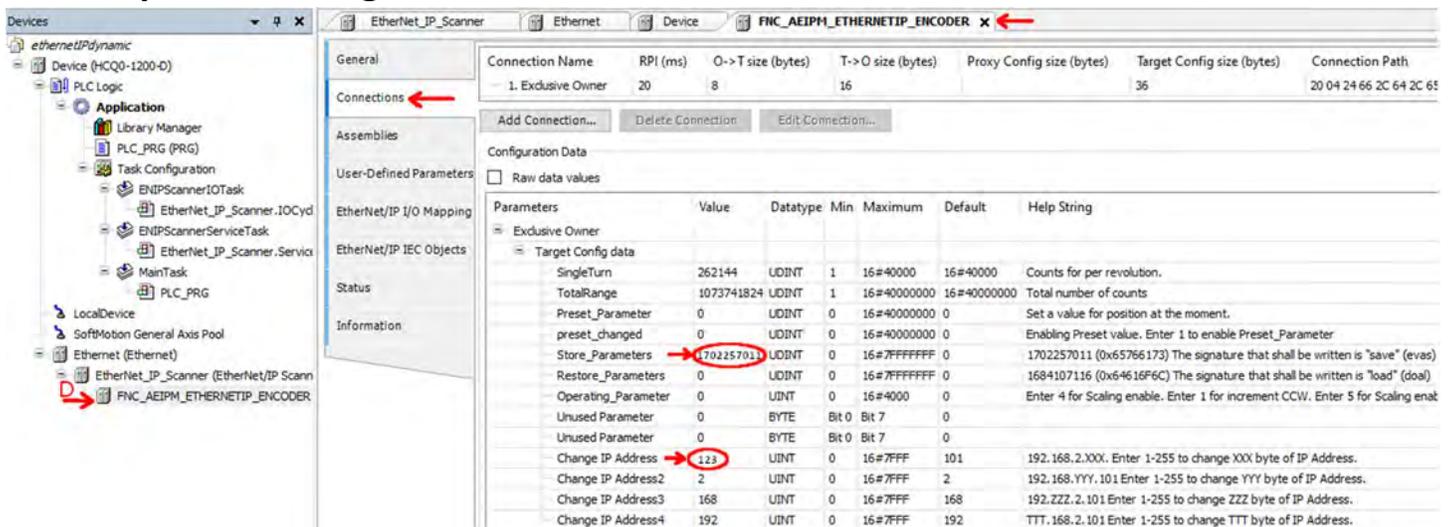


After that you should see the Position Value changes to your desired value.

Variable	Channel	Type	Current Val...	Prepared Value
Fault Header		DWORD	0	
Position Value		DINT	1234	
Velocity Value		DINT	0	
Alarm Flag		SINT	0	
Warning Flag		SINT	0	
Unused Parameter		BYTE	0	
Unused Parameter		BYTE	0	
Preset_Online		UDINT	F 1234	
Consumed Data		UINT	0	
Consumed Data		UINT	0	

# CHANGE IP ADDRESS

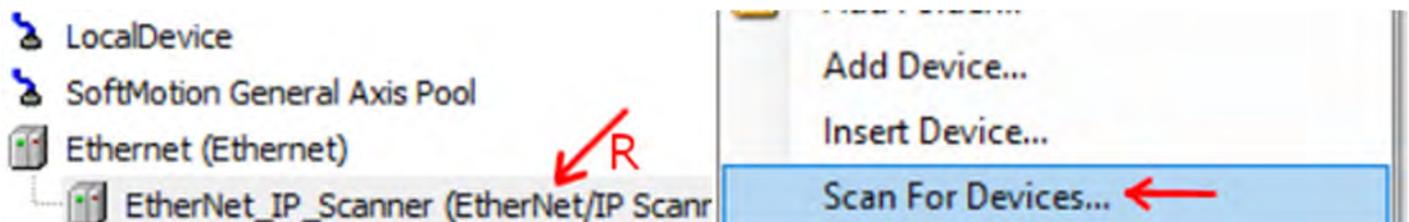
User can change default IP Address (192.168.2.101). On our device tab click on Connections and enter desired IP Address byte inside of “Change IP Address” parameter then enter value between 1 to 255 to set up the last byte of the IP Address. (192.168.2.XXX) You can change other bytes of IP address like this. After user need to store parameters by entering 1702257011 to “Store\_Parameters”. Click Login button to send this changes to our Ethernet IP encoder throug PLC. Last step is restarting encoder device.



After we need to change IP Address Settings of Codesys.

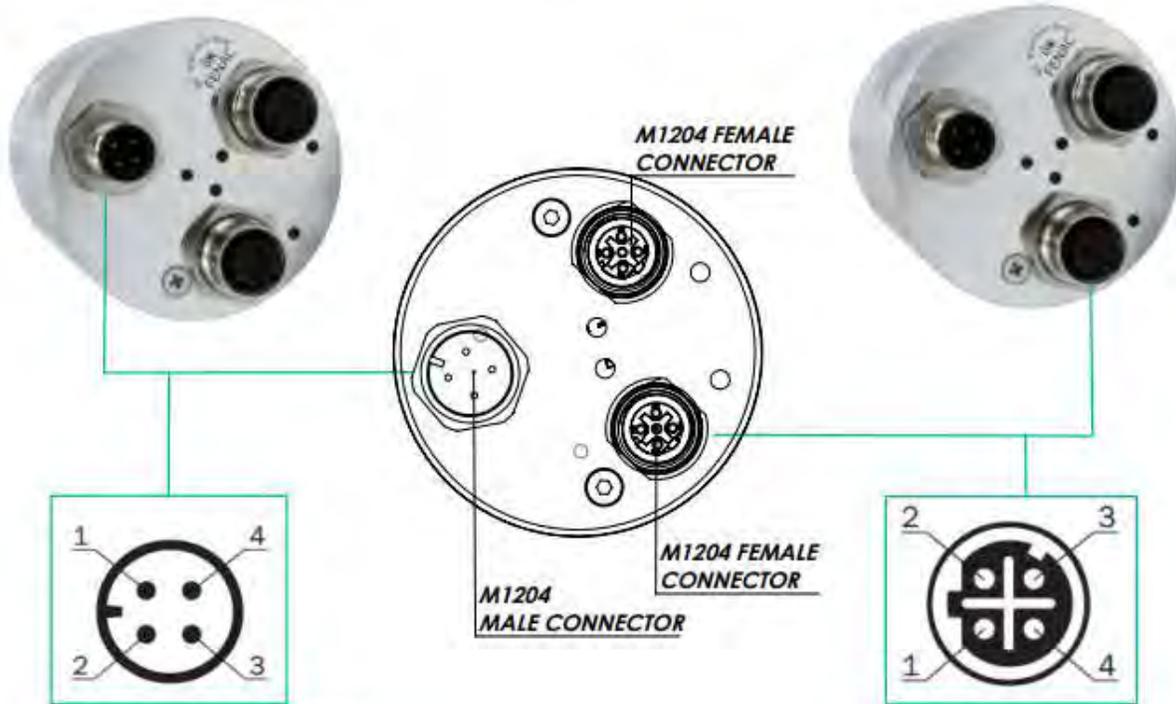


Or delete the device and “Scan for Device” again, this will automatically finds the scanned encoder’s IP Address.



## 4. Connector & Pin Assignment

### Pin Assignment



PIN	Signal
1	U <sub>s</sub> 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

