

FEIAC EtherNet/IP

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 succesfully.



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.





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IP SETTINGS

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

Network Connections 🚽 👻 🛧 🔄 > Control Panel > Network and Internet > Network Connections Organize • Disable this network device Diagnose this connection Rename this connection Change settings of this connection Ethernet ← VMware Network Adapter VMnet1 VMware Network Adapter VMnet8 Network cable unplugged Enabled Enabled 🗙 🛷 Realtek Gaming GbE Family Contr... VMware Virtual Ethernet Adapter ... VMware Virtual Ethernet Adapter ... Ethernet Properties X Internet Protocol Version 4 (TCP/IPv4) Properties X Networking Sharing General Connect using: You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings. Realtek Gaming GbE Family Controller Configure... Obtain an IP address automatically This connection uses the following items: • Use the following IP address: Packet Driver (NPCAP) ^ → 192 . 168 . 2 . 135 IP address: QoS Packet Scheduler ✓ __ Internet Protocol Version 4 (TCP/IPv4) Subnet mask:

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

Devices 👻 🕂 🕇	EtherNet_IP_Module & LocalDevice X 🗑 Device									
= _ mfb_ethernetIP										
= 🧐 🔟 Device [connected] (HCQ0-1200-D)	LocalDevice	Farameters								
🖃 🗐 🗍 PLC Logic	Chaburg	Value	Default Value							
🖹 🔘 Application [stop]	Status		.,pe	current funct	Trepared Total					
Ibrary Manager Ibrary Manager IbrPRG (PRG) Ide Confermation	Information	PORTI		here and a star						
	Information	Port1GatewayAddr	STRING	192.168.2.1	~	192.168.88.1°	192.168.88.1			
		···· 🖗 Port1IpAddr	STRING	'192.168.2.100'	>	'192.168.88.100'	'192.168.88.100'			
		Port1Mask	STRING	'255.255.255.0'	>	'255.255.255.0'	'255.255.255.0'			
Etherblat ID. Adapter IOCuda		🖤 < I0IntType	Enumeration of BYTE	Disable		Disable	Disable			
		🖤 🌵 I1IntType	Enumeration of BYTE	Disable		Disable	Disable			
EtherNet ID. Adapter ServiceCurde		🖗 I2IntType	Enumeration of BYTE	Disable		Disable	Disable			
- ⓒ LocalDevice ← - ⓒ SoftMotion General Axis Pool		I								

C:\Users______>ping 192.168.2.100



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



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CODESYS SETTINGS

Devices 👻 🕈 🗶	EtherNet_IP_Mod.	ule 👌 LocalDevice	Device	×			
■ mb_ethernetIP	Communication Sattings	Scan network	Gateway +	Device *			
□ []] Device (HCQ0-1200-D) ←	Communication Settings	· /					
Application	Applications		_				
- Library Manager - I PLC_PRG (PRG)	Backup and Restore						
ENIPAdapterIOTask	Files				Gateway	l	•
ENIPAdapterServiceTask	Log			Gateway-1	~	[0003.385A	A.8064] (active) 🗸
EtherNet_IP_Adapter.ServiceCycle	PLC Settings			IP-Address: localhost		Device Nan HCQ0-1200	ne:)D
	PLC Shell			Port: 1217		Device Add 0003.385A.	iress: .B064
SoftMotion General Axis Pool	Users and Groups		Select Device	e			
	Access Rights		Select the n	stwork path to the	controller:		
	Symbol Rights		B	steway-1	003.385A.8064]		Device Name: A HCQ0-1200D
single left click double left click	Task Deployment			11000 12000 [00			Device Address: 0003.385A.8064
🔫 right	Status						Block driver
E B PLC Logic (HCQ0-1200-D) € Cut		EtherNet/IP	daoter				
Application Paste		Ethern	et 🗲	3S - Smart So	ftware Solutions GmbH	3.5.14.0	Ethernet Link.
PLC_PRG (PR X Delete							
Task Configu							
PLC 🛗 Add Object	•						
- 🚡 LocalDevice 📄 Add Folder							
SoftMotion General A: Add Device 🗲	_						
		•					

💮 Ethernet (Ethernet) 🦰	x	Cut	6	😑 😝 EtherNet/IP Scanner			
		Сору		🕤 EtherNet/IP Scanner 🔶	3S - Smart Software Solutions GmbH	3.5.14.10	EtherNet/IP Scanner
	ß	Paste					
	\times	Delete					
		Refactoring					
	G.	Properties					
	¥4. 2 2 2	Add Object					
		Add Folder					
		Add Device ←					



EtherNet/IP







Devices 👻	д Х	EtherNet_IP_Module	LocalDevice i Device Ethernet X
= mb_ethernetIP	-	Gaparal 4	
Devices	₽ × vde) le)	EtherNet_IP_Module	LocalDevice Device Ethernet × Interface:
	→ 中 :	X Device 2	MAC Address BC:89:FA:01:F4:05 OK Cancel LocalDevice Ethernet X EtherNet_IP_Scanner
Device (HCQ0-1200-D)		General	Bus cycle options
= III PLC Logic			Bus cycle task Use parent bus cycle setting V
G Application		Status	Use parent bus cycle setting ENIPScannerIOTask
Library Manager PLC_PRG (PRG) FILS Configuration FNIPScannerIOTask FNIPScannerServiceTask	rde iceCyde nner)	Ethernet Device I/O M Ethernet Device IEC O Information	Mapping
	× 🔟	Eulernet 3 S	Softwotion General Axis Pool
Communication Settings	Appl	ication for I/O handling:	: Application ~
Applications	PLC s	ettings Update IO while in stop	
Backup and Restore	Beh	aviour for outputs in Sto	op: Set all outputs to default \sim
Files	Alwa	ays update variables:	Enabled 2 (always in bus cycle task) 🔶 🗸 🗸
Log	Bus o	cycle options	ENIPScannerServiceTask 👉
PLC Settings		-,	

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

				Auto	E (P ,	AC	E	Ethe	r <mark>\\et/l</mark>
Window Help	↗LOGIN BUTTO	N								
1 11 11 日 11- 11 日	())))) ())))) ()))) ()))) ()))) ()))) ()))) ()))) ()))) ()))) ()))) ()))) ()))) ()))) ()))) ())))()))) ())))())()))())()))()(č <u>≡</u> →≣	\$ ¢	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
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Device FNC_AEIP	1_ETHERNETIP_ENCODER_1 ×									-
eneral										
	Connection Name	RPI (ms) O->T	size (bytes)	T->O size	e (bytes)	Proxy Config size	e (bytes) Targ	et Config size (bytes)	Connection Path
onnections	1. Exclusive Owner	10	8		16			28		20 04 24 66 2C 64 2C 65
ssemblies	<									>
ser-Defined Parameters	Add Connection	Delete C	onnection	Edit C	onnection					
herNet/IP I/O Mapping	Configuration Data									Defaults
herNet/IP IEC Objects	Parameters		Value	Unit	Datatype	Minimum	Maximum	Default	Help String	
atus	Exclusive Owner									
1105	🚊 - Target Config da	ta	_							
ormation	SingleTurn		360	counts	UDINT	1	16#40000	16#40000	Number of requestet	steps per turn, counts per
	TotalRange		360	counts	UDINT	1	16#40000000	16#40000000	Total number of steps	s
	Preset_Parar	neter	0		UDINT	0	16#40000000	0		
	preset_chan	jed	\odot		UDINT	0	16#40000000	0		
	Store_Param	eters	0		UDINT	0	16#40000000	0	0x65766173 The sign	ature that shall be written i
	Restore_Para	ameters	0		UDINT	0	16#40000000	0	0x64616F6C The sign	nature that shall be written
	Operating_P	arameter	(4)		UINT	0	16#4000	0		
	Unused Para	neter	0		BYTE	Bit 0	Bit 7	0		
	Unused Para	neter	0		BYTE	Bit 0	Bit 7	0		

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.

Device FNC_AEI	PM_ETHERNETI	P_ENCODER_1 X				
General	Find			Filter	Show all	- 🕂 A
Connections	Varia	Channel Fault Header	Address	Туре	Current Value	Description
Assemblies		Position Value	%ID1	DINT	156	Current position sensor value (32 bit)
User-Defined Parameters	1 - 1	Velocity Value Alarm Flag	%ID2 %IB12	DINT	0	New Help String
EtherNet/IP I/O Mapping		Warning Flag Unused Parameter	%IB13 %IB14	SINT BYTE	0	
EtherNet/IP IEC Objects		Unused Parameter	%IB15	BYTE	0	
Status	÷ •	Consumed Data	%QW1	UINT	0	
Information	₽~` > ±~~ ` >	Consumed Data Consumed Data	%QW2 %QW3	UINT	0	

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



Ether



4. Connector & Pin Assignment

Pin Assignment



- 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



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