

PRODUCT USE INSTRUCTIONS



[Technical support]

Ordering code: 007BA1

Part number: FNI MPL-502-105-S

1/34

FNI MPL-502-105-S

4xIO-Link,4 DI PNP

IP 67 IO Link Master module user manual



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Security

Expected use

This manual describes as decentralized input and output modules for connecting to an industrial network.

Installation and start-up

Precautions!

Installation and start-up may only be performed by trained personnel. A qualified individual is one who is familiar with the installation and operation of the product and has the necessary qualifications to perform such operations. Any damage caused by unauthorized operation or illegal and improper use is not covered by the manufacturer's warranty. The equipment operator is responsible for ensuring that appropriate safety and accident prevention regulations are observed.

Corrosion resistance

Precautions!

FNI modules generally have good chemical and oil resistance. When used in corrosive media (e.g. high concentrations of chemicals, oils, lubricants, coolants and other material media (i.e. very low water content), these media must be checked before the corresponding application material compatibility. If a module fails or is damaged due to this corrosive medium, a defect claim cannot be made.

Dangerous voltage

Precautions! Disconnect all power before using the device!

General security

Debugging and inspection	Fault	Owner/operator obligations	Expected use
Before debugging, read the user manual carefully.	If the defect or equipment failure cannot be corrected, the operation of the equipment must be stopped to avoid damage that may be caused by unauthorized use.	This equipment is an EMC Class A compliant product. This device produces RF noise.	The warranty and limited liability statement provided by the manufacture does not cover damage caused by:
This system cannot be used in an environment where the safety of personnel depends on the functionality of the equipment.	Only after the housing is fully installed can the intended use be assured.	The owner/operator must take appropriate precautions to use this equipment. This device can only use the power supply that matches this device, and can only connect cables approved for application.	 Improper use operation The instructions provided in the user manual explain the use, installation and handling of discrepancies

1.Getting Started Guide

1.1 Module overview



- 1 Power input port
- 2 Module indicator
- 3 Port 0
- 4 port 1
- 5 Port 2
- 6 Port 3
- 7 Network input status indicator light
- 8 Network input port
- 9 Ground connection
- 10 Power output port
- 11 Port identification board
- 12 Network output status indicator light
- 13 Network output port

1.2 Mechanical connection

The modules are connected using 2 M4 bolts and 2 washers. Isolation pads are available as accessories.

1.3 Electrical connection

1.3. 1 Power interface (L-code)



Pin	Function	Description
1	Us+	+24V(Brown)
2	Ua+*	+24V(White)
3	Us-	0V(Blue)
4	Ua-*	OV(Black)

Note:

- If possible, provide sensor/module power supply and actuator power supply separately.
 Total current <4A. Total current of all modules <4A, even when actuator power supplies are daisy chained.
- 2. The FE connection from the housing to the machine must be low impedance and kept as short as possible.

1.3.2 Network interface (M8)



Pin	Function	
1	Tx+	Send data+
2	Rx+	Receive data+
3	Tx-	send data-
4	Rx-	Receive data-

Note:

Unused I/O port sockets must be covered with end caps to meet IP67 protection, etc.

1.3.3 I/O-port (B-code)



Pin	Function	
1 (Brown)	24V Us	Maximum current 1A
2 (White)	24V Ua	
3 (Blue)	0V Us	
4 (Black)	IO-Link	
5 (Gray)	0V Ua	

PNP input



3-wire system 2-wire system

Note:

1. Regarding digital sensor input, please follow the input guidance of EN61131-2, Type 2.

2. The maximum single output current of pins 2 and 4 is 0.5A. The total module current is <4A.

3. Unused I/O port sockets must be covered with end caps to meet IP67 protection level.

1.3.4 Main station module wiring method



In independent power supply mode, the maximum current of each master station can reach 4A.



In the serial power supply wiring mode, if the rear module needs to be connected to the front module, the cumulative current must not exceed 4A.

2 Technical data

2.1. Size



2.2 Mechanical data

Shell material	Shell material
Housing rating according to IEC 60529	Housing rating according to IEC 60529
Power interface	Power interface
Input port/output port	Input port/output port
Size(W*H*D)	Size(W*H*D)
Installation type	Installation type
Ground bus accessories	Ground bus accessories
Weight	Weight

2.3. Operating conditions

Operating temperature	-5°C ~ 85°C
Storage temperature	-25°C ~ 85°C

2.4. Electrical data

Supply voltage	18~30V DC, Symbol EN61131-2
Voltage fluctuation	<1%
Module operating current when power supply	<130mA
voltage is 24V	

2.5 Network port

Port	2 x 10Base-/100Base-Tx
Port connection	M8
IEEE 802.3 compliant cable types	Shielded twisted pair, minimum STP CAT
	5/STP CAT 5e
Data transfer rate	10/100 M bit/s
Maximum cable length	100m
Flow control	Half working condition/full working
	condition (IEEE 802.3-PAUSE)

2.6 Function indicator



PN communication protocol module status

LED	Show	Function
	Closure	Working fine
11	Red flashing	Function Working fine Bus start System error Working fine HZ No data exchange No configuration; or low speed physical link; or no physic link Input voltage is normal Input voltage low (< 18 V)
	3s1HZ	
	Red always on	System error
	Closure	Working fine
12	Flashing red 2HZ	No data exchange
LZ	Pod always on	No configuration; or low speed physical link; or no physical
	link	link
LIC .	Green	Input voltage is normal
03	Flashing red	Input voltage low (< 18 V)
	Green	Output voltage is normal
UA	Flashing red	Output voltage low (< 18 V)
	Red always on	No output voltage present (< 11 V)

EIP communication protocol module status

LED	show	Function
	Green light is always on	Working status: The equipment is running normally
	Green light flashes 1HZ	Standby: The device is not configured
L1	Flashing green, red and green alternately	Self-test: The device is undergoing a power-on test.
	Flashing red 1HZ	Recoverable faults:
	Red light always on	Unrecoverable failure
	closure	US no input voltage
	Green light is always on	Connected
	Green light flashes 1HZ	Not connected:
L2	Flashing green and red alternately	Self-test: The device is undergoing a power-on test.
	Red light flashes 1HZ	Connection timeout
	Red light always on	Duplicate IP:
	closure	USNo input voltage or no IP address
	green	Input voltage is normal
03	Flashing red	Input voltage low (< 18 V)
	green	Output voltage is normal
UA	Flashing red	Output voltage low (< 18 V)
	Red always on	No output voltage present (< 11 V)

CIE communication protocol module status

LED	Show	Function
	Green light off	Module not connected
11	Green light flashes 2.5HZ	Module has no communication
	Green light flashes 1HZ	Module not configured
	Steady green	Running: The device is running
	Closure	Module works fine
L2	Red light always on	Communication error
	Green	Input voltage is normal
05	Flashing red	Input voltage low (< 18 V)
	Green	Output voltage is normal
UA	Flashing red	Output voltage low (< 18 V)
	Red always on	No output voltage present (< 11 V)

I/O port status



LED	State	Function
1	Closure	The status of Pin4 input is 0
1	Yellow	The status of Pin4 input is 1
1	Red	Pin4 short circuit
1	Flashing red	Pin1 short circuit
2	Closure	The status of Pin2 input is 0
2	Yellow	The status of Pin2 input is 1
2	Dod	The UA power supply is cut off or the network is disconnected or
	Reu	Pin2 is short-circuited.
2	Flashing red	Pin1 short circuit

Network port status



LED	State	Function
IN	Flashing green	Data transfer in progress
OUT	Flashing green	Data transfer in progress

3.1 Data mapping

PROFINET com	PROFINET communication protocol module data										
Madula			Fund	ction des	scription						
wodule	Status description	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0		
Device Status	Module state				US overv oltage	UA overv oltage	overh eat	US Under voltag e	UA Under voltag e		
IO-Link communicati on state	IO communication status					PORT3	PORT2	PORT1	PORTO		
IO-Link PD Valid	PD valid bit					PORT3	PORT2	PORT1	PORTO		
Actuator shutdown pin 2	Pin2 Port short circuit 0=Normal 1=short circuit					PORT3 PIN2	PORT2 PIN2	PORT1 PIN2	PORTO PIN2		
Input pin 4	Enter pin4					PORT3 PIN4	PORT2 PIN4	PORT1 PIN4	PORTO PIN4		
	Data desc	ription	(binary): 0=no	signal	1=signa	I				

EIP communic	ation protocol process inp	ut data							
ByteStatus description0Standard IO input112Pin4 short circuit 0=no short circuit 1=There is a short circuit3104IO communication status5PD valid bit6Module state8~910		Fund	ction des	cription					
вуге	Status description	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
0	Standard 10 input					PORT	PORT	PORT	PORT
0	Stanuaru 10 input					3	2	1	0
1				Reserv	e				
	Pin4 short circuit								
2	0=no short circuit					PORT	PORT	PORT	PORT
2	1=There is a short					3	2	1	0
	circuit								
3				Reserv	e				
Λ	IO communication					PORT	PORT	PORT	PORT
4	status					3	2	1	0
5	PD valid hit					PORT	PORT	PORT	PORT
5						3	2	1	0
					US	UA		US	UA
6	Module				overv	overv	overh	Unde	Unde
	state				oltag	oltag	eat	rvolta	rvolta
					е	е		ge	ge
8~9				Reserv	e				
10~41			Port 0	process i	nput dat	а			
42 ~ 73			Port 1	process i	nput dat	а			
74 ~ 105			Port 2	process i	nput dat	а			
106 ~ 137			Port 3	process i	nput dat	а			
	Data d	escriptio	n (binary	/): 0=no s	signal 1=	signal			

EIP communication protocol process output data										
Duto	Function description									
Буге	Status description	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	BitO	
0~5	Reserve									
6~37	Port 0 process output data									
38 ~ 69			Port 1 p	rocess o	utput da	ta				
70 ~ 101			Port 2 p	orocess o	utput da	ta				
102 ~ 133		Port 3 process output data								
	Data de	escriptio	n (binary): 0=no s	ignal 1=s	signal				

CIEBS communication prote	CIEBS communication protocol process data									
		Functio	n descrip	otion						
Regional function description	Y107	Y106	Y105	Y104	Y103	Y102	Y101	Y100		
RY area standard IO					Rout e 4	Rout e 3	Rout e 2	Rout e 1		
0=off, 1=on	The remaining points are reserved									
	Port 0 process output data (32Byte)									
RX area standard IO input	Port 1 process output data (32Byte)									
0=off, 1=on	Port 2 process output data (32Byte)									
	Port 3 process output data (32Byte)									
Regional function description	X107	X106	X105	X104	X103	X102	X101	X100		
					Rout	Rout	Rout	Rout		
RX area standard IO input					e 4	e 3	e 2	e 1		
0=off, 1=on			The rema	aining po	oints are	reserved	ł			
			Port 0 pr	ocess in	put data	(32Byte)			
RWR (maximum 128			Port 1 pr	ocess in	put data	(32Byte)			
bytes)			Port 2 pr	ocess in	put data	(32Byte)			
			Port 3 pr	ocess in	put data	(32Byte)			

Modbus TCP o	Modbus TCP communication protocol process output data										
	Function description										
Byte	Function descripti on	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	BitO		
	Standard	Port7 Pin4	Port6 Pin4	Port5 Pin4	Port4 Pin4	Port3 Pin4	Port2 Pin4	Port1 Pin4	Port0 Pin4		
Word40001	output	Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8		
Word40001 Word40002 Word40003	1=on	Port7 Pin2	Port6 Pin2	Port5 Pin2	Port4 Pin2	Port3 Pin2	Port2 Pin2	Port1 Pin2	Port0 Pin2		
Word40002		Reserve									
Word40004											
Word40004 Word40019			Po	ort 0 prod	cess outp	ut data					
Word40020 - Word40035			Po	ort 1 prod	cess outp	ut data					
Word40036 - Word40051			Рс	ort 2 prod	cess outp	out data					
Word40052 Word40067			Po	ort 3 prod	cess outp	out data					

Modbus TCP communication protocol process input data									
			Fun	ction desc	ription				
Byte	Function description	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Word30001	Standard IO input O=no signal 1=There is signal					Port3 Pin4	Port2 Pin4	Port1 Pin4	Port0 Pin4
	Pin4 short circuit	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Word20002	0=no short circuit 1=There is a short circuit					Port3 Pin4	Port2 Pin4	Port1 Pin4	Port0 Pin4
Word30002	Pin2 short circuit	Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8
	0=no short circuit 1=There is a short circuit					Port3 Pin2	Port2 Pin2	Port1 Pin2	Port0 Pin2
	Short circuit	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	BitO
W/	0=no short circuit 1=There is a short circuit					Port3 Pin1	Port2 Pin1	Port1 Pin1	Port0 Pin1
worusooos	IOLink communication	Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8
	0=not connected 1=Connected					Port3	Port2	Port1	Port0
	IOLink PD valid	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	BitO
	0=disabled 1=enable					Port3	Port2	Port1	Port0
Word30004		Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8
	Module status	-	-	-	Us overvo Itage	Ua overvo Itage	overhe at	Us Under voltag e	Ua Under voltag e
Word30005				Reserve	e				
Word3000-			Port 0) process ii	nput data				
Word30021									
Word3002- Word30037			Port 1	. process ii	nput data				
Word3003- Word30053			Port 2	process i	nput data				
Word3005- Word30069			Port 3	process i	nput data				

3.2 PLC Integration Tutorial 3.2.1 Siemens S7-1200 Portal Integration (PN)

1. Install GSD file

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2.In PLC---Device Configuration---Network View---Hardware Catalog, select the module and drag it in, click "Unassigned", and select the PLC to be connected;

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- 3. Double-click the module to enter the configuration.
- (1) Slot function configuration: Select the required data in the hardware catalog--Module and drag it into the slot in the device overview window;



- (2) After the configuration is completed, click Download in the configuration view.
- 4.Assign module PN name: PLC switches to online state, select "Ungrouped Device"---Click the module name----Select Online and Diagnostics---Function-----Assign PROFINET device name----Select the module to be assigned in the list (should be selected according to the physical MAC)---Click "Assign Name" to complete the configuration!

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108			选项
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5.3.2 Omron NX1P2 Sysmac Studio Integration (EIP)

 Install EDS file: Tools---ETHERNET/IP connection settings---double-click PLC in the window---right-click the blank space in the toolbox on the right and select "Show EDS library". Click "Install" in the pop-up window and select EDS file installation

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2.Create a module: Click "+" in the toolbox window, fill in the module IP address, model name, version, and click "Add" below to complete the module creation;



3.Configure the module: right-click the module--select "Edit"---configure the corresponding values in the parameters according to actual needs. Click OK after completion



- 4. Create variable associations:
- (1) Programming--Data--Global variables create two arrays, output 138 bytes, input 134 bytes, The corresponding input and output should be configured in the network disclosure;

EtherNet/IP	设备列表	内置EtherNet	时期口设置连	授量 X						
相筛选器	▼ 没熊)								
	名称		数据类型	初始值	分配到	保持	常量	网络公开	注释	
in		ARRAY[0	.137] OF byte					输入	τ	
out		ARRAY[0	.133] OF byte					输出	Ŧ	

(2) In the built-in ETHERNET/IP port settings window, select the first icon (label) on the left and click "Register All".

EtherNet/IP设	路列表 内面Ether	Net/IPii	日设置 连 × 地 全局交量	🚭 Section0 - Program0					8	
0-	▋- 标签组									
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- La	- 标签组/最大: 0 / 32 - 标签/最大: 0 / 256 全部注册 - 号入									
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		选择要认	Q面的交量。	教授米型	大小		注释			
			▼输入标签							
				ARRAY[0137] OF byte	138					
			▼輸出标签				_			
				ARRAY[0133] OF byte	134					
		3					1	12		
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(3) In the built-in ETHERNET/IP port setting window, select the second icon on the left (connection) and click "+". Select the previously configured module as the target device, select EXCLUSIVE Owner as the IO type, select the corresponding input and output, and the target variable must be filled in 101,100; then select the corresponding starting variable, and then go online. Select "Transfer to controller" and the configuration is complete!



3.3.4 Integration in Mitsubishi FX5U Work2 (CIE)

1. Install CCSP file: First open GX WORKS 3-Tools-Configuration File Management-Login-CSPP File (the project must be closed to import the file)

配置文件登录					×
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	۲				>
	文件名(N):			•	登录(R)
	文件类型(I):	支持的所有的格式		•	取消

2.Click on the left side Project-Parameters-FX5UCPU-Module Parameters-Ethernet Port, Basic Settings-Self Node Settings. Set the self-node IP

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3.Click CC-Link IEF Basic Settings - Select whether to use CC-Link IEF Basic - Click to use

	□ I ODBUS/TCP设置	
	刷新设置	使用
	网络配置设置	不使用
·····································	CC-Link IEP Basie 使用有无	不使用
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		255 . 255 . 255 . U

4.Click CC-Link IEF Basic Settings - Select Network Configuration Settings - Detailed Settings;

	—— 通信数据代码	二进制
— NOOBNIS/TCF设置	⊖ CC-Link IEF Basic设置	
	CC-Link IEP Basie 使用有无	(佣
出"()" 拉用设立	网络配置设置	〈详细设置〉
	制新设置	〈详细设置〉
	⊖ IIODBIG/TCP设置	
	— MODBUS/TCP使用有无	未使用

5.Automatic detection of connected devices - occupies 2 stations, IP address is set using dip switches - reflect settings and close

近日 急速	接设备[接台数	的自动检测 链接扫描	设置									
	1.100			11.00.004	RX/RY设置	RWw/RWr 设置			60.1	ATT SHE		
	台奴	23.42	新雪	新失望	点数	起始	结束	点数	起始	结束	HINO.	係田為
10	0	本站	0	主站								
-	1	FNI MPL-502-105-S	1	从站	64(占用1站)	0000	003F	32	0000	001F	1	无设置
		TAT MPL 302 103 5	1	////201	04(11)(11))	0000	0031	34	0000	0011	1	

6.Select the specified soft element for refresh target - soft element name M - assign soft element address - apply, and the configuration is completed!

-	链接侧	IJ			CPU侧					
软元件名	点数	起始	结束		刷新目标	软元件名		点数	起始	结束
RX	128	00000	0007F	+	指定软方~	X	~	128	100	277
RY	128	00000	0007F	+	指定软方~	Y	~	128	100	277
RWr	64	00000	0003F	+	指定软方~	D	~	64	100	163
RWw	64	00000	0003F	+	指定软元~	D	\sim	64	200	263

3.4 Modbus TCP communication configuration

3.4.1 Integration in Inovance Autoshop

1. Create a new project, fill in the required project name, PLC model and programming method, and then confirm:

○新建工程	○临时工程
工程设定	
工程名:	1
保存路径:	C:\Users\fas\Documents\
编辑器:	梯形图 ~
工程描述:	
设备选型	
系列与型号:	H3U系列 ~ - H3U ~
 CAN总线語 轴CANLink轴排 支持5路剪 出,支持定位 1路以太序 (4>)1路以太序 (4>)1路CAN接 (5>)1路RS485 	副性能小型PLC,64K步用户程序,支持16 空指令/CANOpen轴空指令 成路 (仅-6P机型支持6路)200KHz航冲输 和插补功能,支持6路200KHz高速输入 对接口,支持Modbus TCP协议和自由协议 口,支持CANLink、CANopen协议 、1路ES422,支持VSE

2. Modify the IP so that the PLC and the module are in the same network segment:

LC通讯	设置								-			
	通讯类型:	풍년	^辈 以太网						~		确定	
	修改IP/设备	名									×	þ
	当前IP地	址:	192	. 168	3.	1	•	4]			
	新IP地址											洺
搜索PL(IP地	址:	192	. 168	3.	1	÷	5		影改IP		
序号	子网掩	码:	255	. 25	5.	255	•	0]			
	默认网	关:	<u>192</u>	. 168	3.	1		1]			
	设备名											
	设备名利	ß:			_		_		修改	议设备名	3	-
	-					-						5

3. Add Modbus TCP configuration:

Select the Ethernet option in the left column and right-click to add Ethernet configuration:



After entering the menu, fill in the module's IP address and port number and click OK:

ModbusTcp配置			×
IP地址:	192 . 1	168 . 0 . 2	
端口号 :	502		
超时时间:	500	ms	
🗌 使能控制元件:			
确定		取消	

After clicking OK, a Modbus TCP connection device will be added:

	- M
83	[0]192.168.0.2

Right-click the device and select Open to pop up the Modbus TCP configuration page. Click Add in the page to display the configuration options shown below. Change the function code, quantity, and mapping address to the values you need.

The addresses of the mapped input and output correspond to the addresses of the read and write registers in the module. After configuration, click OK:

.168.0.	2:502 Mod	lbusTcp配置								:
编号	名称	从站站号	触发方式	触发条件	功能码	从站寄存器地址	数里	映射地址	重发	- 从站寄存器地址格式
1	slave	255	循环(ms)	1000	读寄存器(03)	. 0	10 .	. D200	1	
2	slave	255	循环(ms)	1000	5寄存器(16)	0	10 .	. D300	1	〇十六进制
										●+进制 新增
										插入
										冊柳余
										上移
										下移
										清除
导入		导出							确定	

4. Download the program and test:

Click this button to download the program to the PLC and then switch the PLC to online monitoring mode

During online monitoring, right-click in the information output window, select batch add and click:

1	撤销(U)	Ctrl+Z
3	恢复(R)	Ctrl+Y
4	剪切(T)	Ctrl+X
6	复制(C)	Ctrl+C
7	粘贴(P)	Ctrl+V
9	全选(A)	Ctrl+A
10	删除(D)	Delete
12	插入行(I)	Shift+Insert
13	删除行(L)	Shift+Delete
15	添加行(N)	
16	批量添加(B)	
17	写入(F)	F4
19	JU208	1NT

After clicking Enter, select D as the software element type and fill in the start address and end address as the mapping address added previously on the Modbus TCP configuration page and click OK:

软元件类型:	D	~	数据类型 :	16位整数	~	
显示类型:	十进制	~				
起始地址:	300	•	终止地址:	309	•	确定
长度:	1	0				取消

After adding the address, you can now test it. The following example uses the read register and write register to test. At this time, D300 and D200 in the figure correspond to the 0th bit of the module:

	元件	‡名称	数据类型	显示格式	当前值	
1		D300	INT	十进制	0	
2		D200	INT	十进制	0	

At this time, D300 is the write register and D200 is the read register. The write register is written to 1. At this time, the read register value is also fed back to a coil of valve island 1 to connect. At this time, the Modbus TCP configuration is completed:

	元件名称	数据类型	显示格式	当前值	
1	D300	INT	十进制	1	
2	D200	INT	十进制	1	

3.4.2 Integration in Siemens Portal

1. Create a new project

Create a new project-Enter the project name-Create

	创建新项目	
🌒 打开现有项目	项目名称:	[125]
◎ 创建新项目	路径: 版本:	C:\Users\FAS-03\Documents\Auto
● 移植项目	作者:	FAS-03
● 关闭项目	注转:	
● 欢迎光临		

Devices and Networks - Add New Devices - Select the appropriate PLC and CPU models - Add



2. Create MUDBUS program

1. Call MB_CLIENT

Call the MB_CLIENT instruction block in the program segment in "Program Block > OB1". The background DB will be automatically generated when calling. Click OK:

	%DB1 *MB_CLIENT	_DB*	
	MB_CLIENT		
	EN	ENO	
?.? -	REQ	DONE	
?.? -	DISCONNECT	BUSY	
?? -	MB_MODE	ERROR	
? -	MB_DATA_ADDR	STATUS	
?? -	MB_DATA_LEN		
?? -	MB_DATA_PTR		
?? -	CONNECT		

The first step is to create a new global data block DB2:

添加新块			_
名称: 数据块_1			
	类型:	冒 全局 DB	•
OB	语言:	DB	-
组织块	编号:	2	\$
		○ 手动	
		💿 自动	
FB	描述:		
函数块	数据块 (DB) 1	呆存程序数据。	

In the second step, double-click to open DB2, define the variable name as "aa", the data type as "TCON_IP_v4" (you can copy TCON_IP_v4 to this dialog box), and then click the "Enter" button. The data type structure is created:

数	据坊	Ł	1		
	名和	傢		数据类型	启动值
-	•	 Static 			
-	-	•	aa	TCON_IP_v4	
	-		InterfaceId	HW_ANY	16#0
			ID	CONN_OUC	16#0
			ConnectionType	Byte	16#0B
			ActiveEstablished	Bool	false
-			 RemoteAddress 	IP_V4	
-			ADDR	Array[14] of Byte	
			RemotePort	UInt	0
-			LocalPort	UInt	0

Definition of each parameter:

Parameter	Description
InterfaceId	Network port hardware identifier, for the main network port is 64, that is, 16#40.
ID	Connection ID, value range 1~4095
Connection Type	Connection type. TCP connection default is: 16#0B
ActiveEstablished	Establish connection. Active is 1 (client), passive is 0 (server).
ADDR	Server side IP address
RemotePort	Remote port number
LocalPort	Local port number

The IP address of the remote server in this article is 192.168.0.4, and the remote port number is set to 502. Therefore, the values of the data structure on the client side are as shown in the figure:

数	据均	₽ _	1				
	名	称				数据类型	启动值
	•	St	atic				
-		•	aa			TCON_IP_v4	
-				Int	terfaceId	HW_ANY	16#40
-				ID		CONN_OUC	16#1
-				Co	nnectionType	Byte	16#0B
				Ac	tiveEstablished	Bool	1
-			•	Re	moteAddress	IP_V4	
-				•	ADDR	Array[14] of Byte	
					ADDR[1]	Byte	16#c0
-					ADDR[2]	Byte	16#A8
-					ADDR[3]	Byte	16#0
-					ADDR[4]	Byte	16#04
-				Re	motePort	UInt	502
				Lo	calPort	UInt] 0

The CONNECT pin needs to be filled in with symbolic addressing.

TCON_IP_v4 is a system data type, not created in the PLC data type.

LocalPort generally uses the default value 0, which means that a random port is used locally.

3. Create MB_DATA_PTR data buffer

The first step is to create a global data block DB3, which is located in the CPU program block together with DB2 created in the previous step, as shown in the figure:



The second step is to create a Word array data type to store data during communication, as shown in the figure.

煭 ′//↓							
	名称				数据类型	启动值	
1		•	Sta	tic			
2			•	ff	Array[010] of Wor	d	
3			•	ff[0]	Word	16#0	
4	-			ff[1]	Word	16#0	
5			•	ff[2]	Word	16#0	
6				ff[3]	Word	16#0	
7				ff[4]	Word	16#0	
8				ff[5]	Word	16#0	
9	-		•	ff[6]	Word	16#0	
10	-			ff[7]	Word	16#0	
11	-			ff[8]	Word	16#0	
12				ff[9]	Word	16#0	
13				ff[10]	Word	16#0	

The data buffer specified by MB_DATA_PTR can be in the DB block or M storage area address. The DB block can be an optimized data block or a standard data block structure.

If it is an optimized data block structure, it must be an array of basic data types, such as Int, Real, Bool arrays, and the pin needs to be filled in by symbolic addressing during programming;

If it is a standard data block structure (you can right-click the DB block and uncheck "Optimized Block Access" in "Properties", as shown in Figure 9), you can fill in the pin in the form of a pointer.

The data buffer specified by MB_DATA_PTR must be large enough, at least MB_DATA_LEN bits (when accessing input bits, output bits) or words (when accessing holding registers, input words).

常规	
常规	官 州
信息	
时间戳	
编译	🗌 仅存储在装载内存中
保护	□ 在设备由写保护新报快
属性	
下载但不重新初	□ 优化的块访问

This article takes the standard data block (default) as an example for programming.

4.The client side completes the instruction block programming and calls the MB_CLIENT instruction block. It uses function code 03 to read the values of two holding registers from the server. Refer to Table 4, so MB_MODE = 0, MB_DATA_ADDR = 40001, MB_DATA_LEN = 2, as shown in the figure:



5. Download the entire project to S7-1200

When the server is ready, trigger a rising edge on the REQ pin of the instruction block and put the read data into the DB block variable specified by the MB_DATA_PTR pin.

4 Appendix

4.1 Ordering Information

Product Order Code	Ordering code
FNI MPL-502-105-S	007BA1

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[Technical support]



[Official website]



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