# PD310EC1 PROMPOWER

**User Guide** 





# Preface

Thank you for purchasing the PD310EC1 card. This manual describes how to use the product properly to get good benefits. Please be sure to read this manual carefully before using the product (installation, wiring, operation, maintenance, inspection, etc.).

The PD310EC1 card is an EtherCAT fieldbus adapter that complies with the internationally recognized EtherCAT Ethernet standard.

This manual is mainly introduced by EC\_PD310\_V1.0.xml, XML and its related files can be downloaded through the official website, in the process of use, if you have any problems or special requirements, please feel free to contact with our office or distributor, or directly with our customer service center, we will be happy to serve you.

Our company is committed to the continuous improvement of our products, therefore, the information related to this series is subject to change without prior notice. We apologize for any inconvenience this may cause.



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The staff who install and operate this expansion card must have passed the professional electrical training and safety knowledge training and examination, and have been familiar with the procedures and requirements for installation, commissioning, putting into operation and maintenance of this equipment, and can avoid various emergencies.

Before installing, removing and operating the expansion card, please read this manual and the safety precautions section of the AC drive manual carefully to ensure that the operation is done in a safe manner.

We will not be responsible for any injury or equipment damage caused by the user's failure to observe the safety precautions in this manual and the AC drive manual.

- Installation or removal of this expansion card requires disassembly of the AC drive enclosure, so it is important to completely disconnect all power inputs to the AC drive and ensure that the internal voltage of the unit has been secured, as described in the AC drive manual. Failure to comply with this requirement may result in serious personal injury or even death.
- Must be stored in a place that is dustproof, moisture-proof, free from electric shock and free from mechanical stress.
- The expansion card is sensitive to static electricity and must be properly protected against static electricity during relevant operations to avoid damage to components.
- When installing this expansion card, be sure to align the interface to ensure no loosening and proper grounding.



# **1** Product Information

# **1.1 Product Characteristics of EtherCAT Cards**

### 1.1.1 Supported services

Supports EtherCAT COE protocol with automatic network address configuration. Supports both wire and star network topologies.

### **1.1.2 Supported functions**

- 1) Support PDO service
- 2) Support SDO services
- 3) Support for manufacturer-defined object dictionaries
- 4) Support SDO read/write AC drive function code

### **1.1.3 EtherCAT Slave Information**

The EtherCAT slave information file (XML file) is read by the master and is used to build the master-slave configuration. The file "EC\_PD310\_V1.0.xml" contains the information necessary for EtherCAT communication settings.Topology diagram.

### 1.1.4 Topological diagrams

- 1) EtherCAT communication card adopts standard RJ45 interface, and it can adopt line network topology and star network topology, and its electrical wiring diagram is shown in Fig. 1-4 and Fig. 1-5 respectively.
- 2) Please use CAT5, CAT5e, CAT6 cable for electrical connection, especially when the communication distance is more than 50 meters, please use high quality cable that meets the national standard.



Figure 1-1 Line network topology electrical connection diagram





Figure 1-2 Star network topology electrical connection diagram

# **1.2 Physical and Wiring**

## 1.2.1 Physical drawing of the expansion card



Figure 1-3 Physical drawing



# 1.2.2 Expansion Card Interface Layout Diagram and Interface Description



Figure 1-4 Interface layout



Figure 1-5 PD310EC1 Interface Schematics



#### Table 1-1 PD310EC1 Interface Labeling Description

Marking	Function	Description
1	Expansion card and control board interface	/
2	RJ45 adapter	/
3	RJ45-IN	EtherCAT Input network port
4	RJ45-OUT	EtherCAT Output network port

EtherCAT uses the standard RJ45 interface, this communication card has 2 RJ45 interfaces, the difference between the two directions, where RJ45-IN is the input network interface, RJ45-OUT is the output interface. The interface schematic is shown in Figure 1-6 below, and the interface function table is shown in Table 1-2.



Figure 1-6 RJ45 interface

Table 1-2 RJ45 Interf	ace Menu
-----------------------	----------

Pin	Name	Description
1	TX+	Transmit Data+ (Send signal+)
2	TX-	Transmit Data- (Send signal-)
3	RX+	Receive Data+ (Receive signal+)
4	NC	Not connected (NC)
5	NC	Not connected (NC)
6	RX-	Receive Data- (Receive signal-)
7	NC	Not connected (NC)
8	NC	Not connected (NC)



### 1.2.3 Status indicators

An EtherCAT communication card is configured with three LED lights to indicate different status of the communication card (see Figure 1-4 Interface layout of the expansion card). For details, see Table 1-3.

LED	Color	Status	Description
		ON	RJ45-OUT Connected device detected on network port
D2	Green	Blinking	RJ45-OUT network port is transmitting data
		OFF	RJ45-OUT Connected device not detected on network port
		ON	RJ45-IN Connected device detected on network port
D3	Green	Blinking	RJ45-IN network port is transmitting data
		OFF	RJ45-IN Connected device not detected on network port
		ON	EtherCAT communication connection failure
D4	Green	Blinking	EtherCAT communication being established
		OFF	EtherCAT communication connection successful



# **2** Communication Parameters and Protocols

# 2.1 EtherCAT Communication Parameter Settings

Install the PD310EC1 card correctly in the AC drive and complete the configuration of relevant communication parameters before establishing communication with the AC drive.

Function Code	Name	Content	Set value	Description
F0-00	Running command source selection	0: Operation keypad control (LED "L/R" off); 1: Terminal control (LED "L/R" on); 2: Communication control (LED "L/R" blinking)	2	Running command source selection
F0-02	Main frequency source X selection	0: UP/ DOWN setting (non-recorded after stop) 1: UP/ DOWN setting (retentive after stop) 2: Al1 3: Al2 4: Multi-speed 5: Simple PLC 6: PID 7: Communication setting 8: Pulse setting 9: Up/Down Change fre- quency Shutdown memory, power failure memory not 10: Keyboard potentiometer	7	Primary frequency source select communication
Fd-06	Communica- tion protocol selection	0: MODbus RTU 1: Profibus-DP 2: CANopen 3: PROFINET 4: MODBUS TCP 5: EtherCAT	5	The communication protocol is EtherCAT

Table 2-1	Communication	Card	Configuration	Parameters
	Communication	ouru	Configuration	i arameters



Function Code	Name	Content	Set value	Description
Fd-10~ Fd-19	Receive PZD3~ Receive PZD12 (RPDO2)	0~65535	0	Process data free allocation area (RPDO), the default value is 0, each function individually set an operation address to re- ceive PZD for EtherCAT master to write AC drive. For example, if the PLC master needs to write the AC drive function code F0-20, it is neces- sary to merge and convert F0- 20 to hexadecimal, then to deci- mal, and then input into the function code. Note: F0-20 $\rightarrow$ 0xF014 $\rightarrow$ 61460
Fd-20~ Fd-29	Send PZD3~ Send PPZD12 (TPDO2)	0~65535	0	Process Data Free Distribution Area (TPDO), the default value is 0. Each function sets an oper- ation address individually and sends PZD for EtherCAT master to read AC drive. For example, PLC master needs to read AC drive function code F0-07 (preset frequency), it is necessary to merge and convert F0-07 to hexadecimal, then to decimal, and then input into the function code. Note: F0-07 $\rightarrow$ 0xF007 $\rightarrow$ 61447

# 2.2 EtherCAT Protocol Message Frame Data Structure

The EtherCAT bus communication method permits rapid data exchange between master (PLC) and slave (drive). Reading and writing of the AC drive data always takes place in a master-slave fashion, with the AC drives fixed as slaves and each slave itself having a defined address. This telegram is transmitted using 16 words (16 bits) and is structured as shown in the figure:



Figure 2-1 EtherCAT Message Frame Data Structure



### 2.2.1 SDO mailbox data

EtherCAT mailbox data SDO is used to transfer non-periodic data, such as the configuration of communication parameters, AC drive operation parameters configuration, in reading and writing need to look up the object dictionary.EtherCAT CoE service types include: emergency message, SDO request, SDO response, TxPDO, RxPDO. Users can modify the parameters of the frequency converter through the SDO in the use.

### 2.2.2 PDO area data

PDO zone data realizes real-time AC drive data change and reading and periodic data interaction by the master station. The communication address of the data is directly configured by the AC drive and is divided into PDO1 and PDO2, (PDO1 [cured address], PDO2 [user specified]). It mainly contains the following:

- a) AC drive control commands, target frequency real-time given
- b) AC drive current status, operating frequency real-time readout
- c) Real-time interaction of functional and monitoring parameters between AC drive and EtherCAT master station

The PDO process data mainly accomplishes the cyclic data interaction between the master station and the AC drive, and the interaction data are listed in the following table:

	RPDO (Master s	ends data to slaves)
Fixed RP	DO-RPDO1	Variable RPDO-RPDO2
AC drive command	AC drive target fre- quency	AC drive function parameters are changed in real time, corresponding to OUTPUT1 to OUT- PUT10 in the XML file. (User specified Fd-10~Fd-19)
index1	Index2	Index1~Index10
	TPDO (slave se	nds data to master)
Fixed TPD		
		Variable TPDO—TPDO2
AC drive status	AC drive operating frequency	Variable TPDO—TPDO2 AC drive function parameter values are read in real time, corresponding to INPUT1 to INPUT10 in the XML file. (User-specified Fd-20 to Fd-29)

Table 2-2 PDO District Interactive Data



# **3 Communications Configuration**

# 3.1 Configuring slaves in TWINCAT3

- 1) Installation of TWINCAT3 software
- 2) Copy the EtherCAT configuration file (EC\_PD310\_V1.0.xml) of PD310 to the installation directory of TwinCAT2: TwinCAT\3.1\config\IO\EtherCAT
- 3) Open TwinCAT3, create a new project, click "New Project", select "TwinCAT Projects", and then select the path to save and fill in the corresponding project name.



4) Install the TwinCAT NIC driver, you need to configure it when you use Twin-CAT3 for the first time, the configuration is as follows:





Open the above menu "Show Real Time Ethernet Compatible Devices...", the following dialog box will pop up, in the "Incompatble devices" field, select the local site and click "install". In the "Incompatble devices" field, select the local site and click "install". After the installation is completed, the installed NIC will appear in the "Installed and ready to use devices" column as shown below.



5) Search for devices: Right click Devices under the left I/O column, click Scan to scan for devices, as shown in the figure below.





6) Click Confirm and OK in the pop-up window.





7) After scanning the EtherCAT devices, Scan for boxes will pop up, click Yes, then it will pop up whether to activate the free running mode or not, according to the user's own choice whether to go to the running mode or not.





8) When the scanning is completed, as shown in the figure below:

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	* INPUT7	0	UINT	2.0	55.0	Input	0							
	■ INPUT8	0	UINT	2.0	57.0	Input	0							
	* INPUT9	0	UINT	2.0	59.0	Input	0							
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9) Tap on the left side of the PD310 column can see the process data PDO has been configured, PD310 process data is divided into two categories, the first category for the fixed PDO data, the second category for the modifiable PDO data. Note: For the sake of uniformity with other communications, PD310 modifiable PDO data refers to modifying the relevant function code of AC drive (Fd-10~Fd-29) to modify the relevant AC drive function code address, instead of using TwinCat to reconfigure PDO here.

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CUTPUT6	♥ INPUT2	0	UINT	2.0	45.0	Input	0					
CUTPUT7	♥ INPUT3	0	UINT	2.0	47.0	Input	0					
CUTPUT8	♥ INPUT4	0	UINT	2.0	49.0	Input	0					
CUTPUT9	INPUT5	0	UINT	2.0	51.0	Input	0					
COUTPUT10	♥ INPUT6	0	UINT	2.0	53.0	Input	0					
WcState	1NPUT7	0	UINT	2.0	55.0	Input	0					



10) Click on the COE-Online function of the PD310 module to modify and read the object dictionary and the AC drive function code online.

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11) Click the Run button and also click OK in the Run pop-up window, the device goes through the state machine transition and finally enters the OP state.

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- 12) PDO operation is possible in OP state.
- a) The start/stop of the AC drive and the set frequency are controlled through the PDO fixed zone, and the AC drive status and operating frequency can also be read.



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Build 4024.0 (Loaded) 👻 🚎 🔛 🧧 🧧 🌾 🔞 👰 🐾 🔏 Twir	CAT Project1	<local></local>	• 📲			6. C, C H	日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日	0 0 = 1 G G I	a 18 18 =	
Solution Explorer • 4 ×	TwinCAT Project1	* × Error List	Output	Properties						-
Q 4 B - 0 D 0 0	Variable Flags	Online								
Search Solution Explorer (Ctrl+;)										
# Image	Value:	0								
SyncUnits	New Value:	Force	Release		Write					
<ul> <li>P inputs</li> <li>Outputs</li> </ul>	Comment:				*					
InfoData										
Box 1 (PD310)     Exect input						Set Value Dia	alog		×	
* state										
<ul> <li>Running frequency</li> </ul>						Dec	1		эк	
Variable input						Hex	0x0001	Ce	sncel	
♥ INPUT1						Float				
* INPUT2					0					
INPUT3  INPUT4										
* INPUTS						Bool		Hes	Edit.	
INPUT6						Binary:	01 00		2	
♥ INPUT7						Bit Size:	01 08 016	032 064 07		
<ul> <li>INPUT8</li> </ul>						-		_		
* INPUT9										
Fixed output										
Contri Command Address 2000H										
Communication set frequency										
🔺 🐫 Variable output										
CUTPUT1										
CUTPUT2										
E OUTPUTS										
CUTPUT6										
CUTPUT7										
		_				_			_	-

b) Modify and read other parameters of AC drive through PDO modifiable area, combined with AC driveFd group parameters.

Example 1: To read AC drive F0-07, first set AC drive parameter Fd-20 = 0007 (RAM address of parameter F0-07), and then click INPUT1 in the changeable area to read the value of AC drive parameter F0-07.





Example 2: Modify F0-07 through PDO modifiable area, first set AC drive parameter Fd-10 = 0007 (RAM address of parameter F0-07), then click OUT-PUT1 of modifiable area, click Online, click Modify, and then click OK after filling in the corresponding value.



You can see the value after successful modification.





# **3.2 Device Configuration in CODESYS**

- 1) Install the corresponding CODESYS software. Since the PLC used in this example is AM403, the corresponding software is installed.
- Connect the PLC and the PD310EC1 card, connect the PLC's network port to the PD310EC1 card, and connect the computer via another network cable to complete the wiring operation.
- 3) Set the corresponding AC drive and expansion card parameters after poweron, mainly communication protocol Fd-06 = 05, etc. For detailed description, refer to Table 2-1 Communication Card Configuration Parameters.
- 4) Open CODESYS software, choose to create a new project.





5) Select the corresponding PLC model, enter the project name and save path (no Chinese path), and click Create.



6) After creating the project, click Device to scan the PLC.

s • 9 ×	Device x					
AR_EV  AR_EV  Pervice Pervice Diagnose  Application  Application  Application  State Configuration  Application  State Configuration  S	Communication Settin Applications Backup and Restore Piles PLC Settings PLC Settings PLC Shell Users and Groups Log System Setting Upgrade Task Deployment	gs Catherbook.c Cateway + Device - Select Device Select the network path to the controller: - Me Gateway-1 (scanning)	Device Name: Gateway-1 Driver: TCP/P IP-Address: locahost Port: 1217	Scan network Wink	V	
	Status		•	Cancel		



vices	ф X	Device x				
Are_Erv     Device Dagnose     Device Dagnose     Device Chagnose     Device Chagnose     Device Configuration     Device Configuration     Device Configuration     Device Configuration     Device Chagnose     Device Configuration     Device	d ID Modi	Communication Settin Applications Backup and Restore Files PLC Shell Users and Groups Log System Setting Upgrade Task Deployment Status Information	select Device Select Device Select the network path to the controller: Select Device Select Devic	Device Name: AM403-CPU1608TN Device Address: 0011.000 Block driver: COM Rumber of Channels: 4 Target ID: 104-0009 Target Name: Inovince-ARM-	an network Wink	



 After connecting the PLC, click Network Configuration and select EtherCAT Master.



8) Install the EC\_PD310\_V1.0.XML file.





 After installing the corresponding device description file, right-click the Ether-CAT master device and click Scan.





10) After scanning the added devices, as shown below.



evices - a X	A Network Configuration	PD310 X								
Device (AM403-C/DU1608TN()     Device Diagnose     Wetwork Configuration     Device Transment     EtherCAT Config	General Process Data(PDO Setting)	🖶 Add 🏢	Edit X Delete Collapse Display	All • Loa	d Pdo	kssign () Pl	DO Config PD	O Len Out() In(B)	Byte): 24.0 (te): 24.0	
EtherCAT Config	Startup parameters(SD0 Setting)	Input/OutP	ut Name	Index	SubIndex	Size	Type	Flag	SM	
🚺 LocalBus Config		⇒ V Outp	ut Fixed output	16#1600	16#00	4.0	117917	FM	2	
E II PLC Logic	Online		Communication set frequency	16#2020	16#01	2.0	INT			
= O Application	CoE Online	- V Oute	ut Variable output	16#1601	16#00	20.0	241	FM	2	
Library Manager			OUTPUT1	16#2100	16#01	2.0	UINT		-	
PLC_PRG (PRG)	EtherCAT 1/0 Mapping	-10	OUTPUT2	16#2100	16#02	2.0	UINT			
E Task Configuration	Oahir	-**	OUTPUT3	16#2100	16#03	2.0	UINT			
ETHERCAT		-14	OUTPUT4	16#2100	16#04	2.0	UINT			
ETHERCAT.EtherCAT_Task	Information	-**	OUTPUTS	16#2100	16#05	2.0	UINT			
= 😂 MainTask		-**	OUTPUT6	16#2100	16#06	2.0	UINT			
-@ PLC_PRG		- 0	OUTPUT7	16#2100	16#07	2.0	UINT			
Resources List		- 0	OUTPUT8	16#2100	16#08	2.0	UINT			
SoftMotion General Axis Pool		-**	OUTPUT9	16#2100	16#09	2.0	UINT			
HIGH_SPEED_IO (High Speed IO Module)		- 0	OUTPUT10	16#2100	16#0A	2.0	UINT			
EIHERCAI (EtherCAI Master SoftMotion)		😑 🗹 Inpu	Fixed input	16#1A00	16#00	4.0		FM	3	
(P0310 (P0310)		*	state	16#2030	16#01	2.0	UINT			
		- *	Running frequency	16#2010	16#03	2.0	UINT			
		😑 🗹 Inpu	Variable input	16#1A01	16#00	20.0		FM	3	
		-*	INPUTI	16#2200	16#01	2.0	UINT			
		*	INPUT2	16#2200	16#02	2.0	UINT			
		- *	INPUT3	16#2200	16#03	2.0	UINT			
		- *	INPUT4	16#2200	16#04	2.0	UINT			
		-*	INPUTS	16#2200	16#05	2.0	UINT			
		- *	INPUT6	16#2200	16#06	2.0	UINT			
		- *	INPUT7	16#2200	16#07	2.0	UINT			



11) Then click compile and then download, then click run, the device is connected successfully as shown in the picture below:





- 12) When the device is successfully connected, it enters the OP state and can perform PDO operation.
- a) The start/stop of the AC drive and the set frequency are controlled through the PDO fixed zone, and the AC drive status and operating frequency can also be read.

evices 👻 🗘 🗙	Network Configuration	PD310 ×								
Ethercat_PD310	General	Find		Filter Show all						
= · · · · · · · · · · · · · · · · · · ·	General	Variable	Manaian	Changel	Addeese	Turne	Default Value	Current Value	Despaced Value 11a	- D
Device Diagnose	Process Data(PDO Setting)	variable	Mapping	Control Command Address 2000H	NOW	imm	Derault value	Current value	1	
the configuration     EtherCAT Config	Startun parameters (SDO Setting)	1.		Contri Command Address 2000H	76QW1	UDVI INT		0	5000	0
Lorality Contra	startup parametera (so o setting)	2.54		OUTDUT1	ROWS	LIDAT		0	3000	0
	Online	4.54		OUTPUT2	BLOWA	LIMT		0		0
= O Application [cun]		8.54		OUTPUT3	NGW5	LIINT		0		0
Ibrary Manager	CoE Online	8.50		оптрит4	%OW6	LIINT		0		0
PLC PRG (PRG)	EtherCAT I/O Mapping	8.4		OUTPUTS	%QW7	UINT		0		0
E Task Configuration				OUTPUT6	%QW8	UINT		0		0
🖶 🥩 ETHERCAT	Status	8.50		OUTPUT7	%QW9	UINT		0		c
ETHERCAT.EtherCAT_Task	Information	8-70		OUTPUT8	%QW10	UINT		0		0
😑 🥩 MainTask		8.5		OUTPUT9	%QW11	UINT		0		C
PLC_PRG		8.54		OUTPUT 10	%QW12	UINT		0		0
- Resources List		**		state	%IW1	UINT		0		st
- 😏 🍐 SoftMotion General Axis Pool		····		Running frequency	%IW2	UINT		0		R
- 5 HIGH_SPEED_IO (High Speed IO Module)		· · · · ·		INPUT1	%IW3	UINT		0		B
Generation (EtherCAT Master SoftMotion)		· · · · ·		INPUT2	%IW4	UINT		0		в
G 🗊 PD310 (PD310)		·* ·*		INPUT3	%IW5	UINT		0		D
		B- 🏘		INPUT4	%IW6	UINT		0		в
		* *		INPUT5	%IW7	UINT		0		I/
		OUTPUT2			Reset map	ping	Always update vari	ables: Enabled 2 (alwar	ys in bus cycle task)	
		IEC Objects								
		Variable	Mapping	Туре						
		@ PD310	***	ETCSlave						
		*a = Create new variable	~ - Ma:	to existing variable						

Entercat\_PD310\_project\*-InoProShop(V1.6.2) SP2
 Elit View Project Ruld Online Debug Ilools Window Help

001102 B B B 10 0 % 10 10	×14441曲111-1111曲曲11	역 📬 🖡 📲 색 🖾 [한 15 년 15 년 15 년 16 년 16 년 16 년 16 년 17 년 17 년 17 년 17
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Contraction of Contract Contraction	General	Find		Filter Show all		-			
Device [connected] (white-choiced and)     Device Diagnose		Variable	Mapping	Channel	Address	Туре	Default Value Current Value	Prepared Value Unit	2 D
1 Network Configuration	Process Data(PDO Setting)	a.".		Contri Command Address 2000H	%OW1	UINT	1		C
EtherCAT Config	Startup parameters(SD0 Setting)	8.70		Communication set frequency	%QW2	INT	5000		C
LocalBus Config		8-50		OUTPUT1	%QW3	UINT	0		0
DI PLC Logic	Online	* **		OUTPUT2	%QW4	UINT	0	1	C
= O Application [run]	CoE Oplice	8.70		OUTPUT3	%QW5	UINT	0		C
Library Manager	COE Onnie	a. *o		OUTPUT4	%QW6	UINT	0		c
PLC_PRG (PRG)	EtherCAT I/O Mapping	8.4		OUTPUTS	%QW7	UINT	0		0
= 🧱 Task Configuration		***		OUTPUT6	%QW8	UINT	0		0
🖶 🥩 ETHERCAT	Status	· · · · •		OUTPUT7	%QW9	UINT	0		
ETHERCAT_EtherCAT_Task	Information	8.4		OUTPUT8	%QW10	UINT	0		
😑 🥩 MainTask		8. 4		OUTPUT9	%QW11	UINT	0		
DIC_PRG		8-10		OUTPUT 10	%QW12	UINT	0		
Resources List				state	%IW1	UINT	1		
😏 🏅 SoftMotion General Axis Pool		8.19		Running frequency	%IW2	UINT	5000		
😏 📕 HIGH_SPEED_IO (High Speed IO Module)		· · · ·		INPUT1	%IW3	UINT	0		
S ETHERCAT (EtherCAT Master SoftMotion)		· · · ·		INPUT2	%IW4	UINT	0		
- G 🗐 PD310 (PD310)		a Ng		INPUT3	%IW5	UINT	0		
		98- <b>%</b>		INPUT4	%IW6	UINT	0		
		4- <b>1</b> 9		INPUTS	%IW7	UINT	0		
		OUTPUT2			Reset map	ping	Always update variables: Enabled 2 (alwa	uys in bus cycle task)	
		IEC Objects							
		Variable Ø PD310	Mapping	Type ETCSlave					
		🍫 = Create new variable	~ <b>∳</b> = Ma	p to existing variable					_

0



b) Modify and read other parameters of AC drive through PDO modifiable area, combined with AC driveFd group parameters.

Example: To read AC drive F0-07, first set AC drive parameter Fd-20 = 0007 (RAM address of parameter F0-07), and then click INPUT1 in the changeable area to read the value of AC drive parameter F0-07.

Modify F0-07 first set AC drive parameter Fd-10 = 0007 (RAM address of parameter F0-07), then click OUTPUT1 in the changeable area, click Online, click Modify, fill in the corresponding value and then click OK.





13) With the online COE, function code values can be observed or written directly.

rices - 7 X	Network Configuration	P0310 X			
Ethercat_PD310     Source [connected] (AM403-CPU 1608TN)	General	Read this page Auto Update Offline from ESI file	Online from device		
Device Diagnose	Process Data(PDO Setting)	Index:Subindex Name	Flags	Туре	Value
W Network Configuration		- 16#1000:16#00 Device type	RO	UDINT	5001
- EtherCAT Config	Startup parameters(SD0 Setting)	16#1001:16#00 Error register	RO	USINT	0
LocalBus Config	Online	- 16#1008:16#00 Device name	RO	STRING	'FG300'
= III PLC Logic	China	- 15#1009:16#00 Hardware version	RO	STRING	'L.I'
= O Application [run]	CoE Online	- 16#100A:16#00 Software version	RO	STRING	'1.0'
Library Manager			RO	USINT	4
PLC_PRG (PRG)	EtherCAT I/O Mapping	* 16#10F1:16#00 Error Settings	RO	USINT	2
Task Configuration	Status	❀ 16#1600:16#00 Fixed output	RW	USINT	2
= S ETHERCAT		* 16#1601:16#00 Variable output	RW	USINT	10
ETHERCAT_EtherCAT_Task	Information	* 16#1A00:16#00 Fixed input	RW	USINT	2
= S MainTask		* 15#1A01:16#00 Variable input	RW	USINT	10
-@ PLC_PRG		* 16#1C00:16#00 Sync manager type	RO	USINT	4
Resources List		❀ 16#1C12:16#00 SyncManager 2 assignment	RO	USINT	2
SoftMotion General Axis Pool		* 16#1C13:16#00 SyncManager 3 assignment	RO	USINT	2
HIGH_SPEED_IO (High Speed IO Module)		* 16#1C32:16#00 SM output parameter	RO	USINT	32
= U ETHERCAT (EtherCAT Master SoftMotion)		❀ 16#1C33:16#00 SM input parameter	RO	USINT	32
1 PD310 (PD310)		* 16#2010:16#00 Correspondence address	RO	USINT	41
		* 16#2020:16#00 Inverter control address	RO	USINT	4
		* 16#2030:16#00 Current state of inverter	RO	USINT	1
		* 16#2070:16#00 U0 Fault logging parameter	RO	USINT	27
		* 16#2071:16#00 U1 Application Monitoring Parameters	RO	USINT	50
		* 16#2080:16#00 Fault display	RO	USINT	1
		* 16#2090:16#00 set frequency	RO	USINT	1
		* 16#20A0:16#00 Group L0 Motor 2 Parameters Setting	RO	USINT	3
		* 16#20A1:16#00 Group L1 Motor 2 Parameters	RO	USINT	38
		* 16#20A2:16#00 Group L2 Motor 2 Vector Control Parameters	RO	USINT	20
		# 16#20A3:16#00 Group L3 Motor 2 VF Control Parameters	RO	USINT	2

rvices - # X	PD310 x 🛞 Network Cor	figuration					
Ethercat_PD310     Ethercat_PD310     O     Device [connected] (AM403-CPU1608TN)	General	Read this pag	e Auto Update Offline from ESI file Online from device				
Device Diagnose	Process Data(PDO Setting)	Index:Subindex	Name	Flags	Туре	Value	
Wetwork Configuration		* 16#2083:16#00	Group A3 AI AO Correction	RO	USINT	20	
EtherCAT Config	Startup parameters(SD0 Setting)	* 16#2084:16#00	Group A4 system parameters	RO	USINT	9	
LocalBus Config	Online	* 16#2085:16#00	GroupA5 User defined Parameters	RO	USINT	32	
는 페뷔 PLC Logic	-	* 15#2086:16#00	Group A6 AI Curve Setting	RO	USINT	28	
- O Application [run]	CoE Online	* 16#20BA:16#00	Group AA Virtual DI or DO	RO	USINT	27	
Library Manager		= 16#20F0:16#00	Group F0 Freq and control setpoint channel	RO	USINT	41	
PLC_PRG (PRG)	EtherCAT I/O Mapping	:16#01	F0-00 Running command source selection	RO	UINT	2	
Task Configuration	Chabur	:16#02	F0-01 Frequency source selection	RW	UINT	0	
ETHERCAT		:16#03	F0-02 Main frequency source X selection	RW	UINT	7	
ETHERCAT_EtherCAT_Task	Information	:16#04	F0-03 Range of Main frequency X	RW	UINT	1000	
= 😸 MainTask		:16#05	F0-04 Auxiliary frequency source Y selection	RW	UINT	0	
- 他] PLC_PRG		:16#06	F0-05 Range of auxiliary frequency Y selection	RW	UINT	0	
Resources List		:16#07	F0-06 Range of auxiliary frequency Y	RW	UINT	1000	
- 😳 🚡 SoftMotion General Axis Pool		:16#08	F0-07 Digital frequency	RW	UINT	3000	
HIGH_SPEED_IO (High Speed IO Module)		:16#09	F0-08 Frequency source upper limit	RW	UINT	0	
ETHERCAT (EtherCAT Master SoftMotion)		:16#0A	F0-09 Frequency upper limit	RW	UINT	5000	
- G []] PD310 (PD310)		- :16#08	F0-10 Reverse Frequency upper limit	RW	UINT	5000	
		:16#0C	F0-11 Frequency lower limit	RW	UINT	0	
		:16#0D	F0-12 Rotation direction	RW	UINT	0	
		:16#0E	F0-13 Command source binding select	RW	UINT	0	
		- :16#0F	F0-14 Acceleration or Deceleration time unit	RW	UINT	1	
		:16#10	F0-15 Acceleration or Deceleration time base frequency	RW	UINT	0	
		:16#11	F0-16 Acceleration time 1	RW	UINT	100	
		:16#12	F0-17 Deceleration time 1	RW	UINT	100	
		:16#13	F0-18 Acceleration time 2	RW	UINT	100	
		:16#14	F0-19 Deceleration time 2	RW	UINT	100	
		:16#15	F0-20 Acceleration time 3	RW	UDNT	100	



ices 👻 🕈 🗙	1 P0310 x 🛞 Network Configuration										
B Ethercat_PD310	Gameral										
O      Device [connected] (AM403-CPU1608TN)	General	-	These ons pag	e	Auto Update	O Offline from ESI file	Online from device				
Device Diagnose	Process Data(PDO Setting)	Inde	ex:Subindex	Name			1	Flags	Туре	Value	
Wetwork Configuration      Setwork Configuration      Localbus Config	Startup parameters(SD0 Setting)	* 16#2083:16#00		Group A3 AI AO Correction							
		8-1	16#2084:16#00	400 Group A4 system parameters							
	Online	· * :	16#2085:16#00	085:16#00 GroupA5 User defined Parameters							
= 11 PLC Logic		· *- :	16#2086:16#00	Group A	6 AI Curve Setting						
= O Application [run]	CoE Online	8-1	16#20BA:16#00	Group A	A Virtual DI or DO						
Extrary Wanager     Extrary Wanager     Extrary Wanager     With Configuration     Set Configuration     OF ETHERCAT EtherCAT_Task     OF NanTask     OF AnatTask     OF AnatTask	EtherCAT I/O Mapping	8-1	16#20F0:16#00	Group F0 Freq and control setpoint channel							
			:16#01	F0-00 Running command source selection				RO	UINT	2	
	Status		:16#02	F0-01 Frequency source selection				RW	UINT	0	
	Information		:16#03	F0-02 Main frequency source X selection				RW	UINT	7	
			:16#04	F0-03 Range of Main frequency X				RW	UINT	1000	
			:16#05	F0-04 Auxiliary frequency source Y selection				RW	UINT	0	
			:16#06	F0-05 R	F0-05 Range of auxiliary frequency Y selection			RW	UINT	0	
Resources List			:16#07	F0-06 R	ange of auxiliary fr	equency Y		RW	UINT	1000	
SoftMotion General Axis Pool			:16#08	F0-07 D	igital frequency			RW	UINT	3000	
HIGH_SPEED_IO (High Speed IO Module)			:16#09	F0-08 F	requency source up	per limit		RW	UINT	0	
= U ETHERCAT (EtherCAT Master SoftMotion)			:16#0A	F0-09 F	requency upper lim	t		RW	UINT	5000	
C (0) 100 (0010)			:16#08	F0-10 R	everse Frequency	upper limit		RW	UINT	5000	
			:16#0C	F0-11 F	requency lower limit			RW	UINT	0	
			:16#0D	F0-12 R	otation direction			RW	UINT	0	
			:16#0E	F0-13 C	command source bin	ding select		RW	UINT	0	
			:16#0F	F0-14 A	cceleration or Dece	eration time unit		RW	UINT	1	
			:16#10	F0-15 A	cceleration or Dece	eration time base frequency		RW	UINT	0	
			:16#11	F0-16 A	cceleration time 1			RW	UINT	100	
			:16#12	F0-17 D	eceleration time 1			RW	UINT	100	
			:16#13	F0-18 A	cceleration time 2			RW	UINT	100	
			:16#14	F0-19 D	eceleration time 2			RW	UINT	100	
			:16#15	F0-20 A	cceleration time 3			RW	UINT	100	



#### v.1