

XB6S- PC80

Pulse Counter Module

User Manual



Nanjing Solidot Electronic Technology Co., Ltd. 2024

Copyright © Nanjing Solidot Electronic Technology Co., Ltd. 2024. All rights reserved .

Without the written permission of our company, no unit or individual may excerpt or copy part or all of the contents of this document, or disseminate it in any form.

Trademark Statement

and other Solidot trademarks are trademarks of Nanjing Solidot Electronic Technology Co., Ltd.

All other trademarks or registered trademarks mentioned in this document are the property of their respective owners.

Notice

The products, services or features you purchase shall be subject to the commercial contracts and terms of Real Point Company. All or part of the products, services or features described in this document may not be within the scope of your purchase or use. Unless otherwise agreed in the contract, Solidot Company does not make any express or implied representations or warranties regarding the contents of this document.

Due to product version upgrades or other reasons, the content of this document will be updated from time to time. Unless otherwise agreed, this document is only a guide for use, and all Statements, information and suggestions in this document do not constitute any express or implied warranty.

Nanjing Solidot Electronic Technology Co., Ltd. 11th Floor, Angying Building, No. 91 Shengli Road, Jiangning District, Nanjing City, Jiangsu Province Postcode: 21 1106 Phone: 4007788929 Website: <u>http://www.solidotech.com</u>

CONTENTS

1 Product Introduction	1
1.1 Product Overview	1
1.2 Product Characteristics	1
2 Product Parameters	2
2.1 General parameter	2
3 Panel	3
3.1 Panel Structure	
3.2 Indicator light function	4
4 Installation and uninstall	5
4.1 External Dimensions	5
4.2 Installation Guide	6
4.3 Installation and uninstall steps	9
4.4 Installation and uninstall diagram	10
5 Wiring	17
5.1 Wiring diagram	17
5.2 Terminal Block Definition	18
6 Operation	19
6.1 Configuration Parameter Definitions	19
6.1.1 Filter Level Configuration	20
6.2 Process data	20
6.2.1 Upstream data	
6.2.2 Downstream Data	21
6.3 Module Configuration Description	
6.3.1 Application in TwinCAT3 software environment	22

1 Product Introduction

1.1 Product Overview

XB6S-PC80 is a plug-in pulse counting module, which adopts X-bus backplane and is suitable for XB6S series coupler module of our company. The module has 8 pulse counting channels, which can sample and analyze pulse signals with frequency below 100KHz, and derive the frequency and pulse count value of each channel, and support zero counting of a single channel.

1.2 Product Characteristics

- Eight-channel pulse counting
 Eight channels can monitor pulse frequency and pulse count values completely independently.
- Supports pulse count clearing
 The data of the eight pulse counting channels can be cleared independently.
- Pulse counting frequency Supports pulse frequency up to 100KHz.
- Input filter
 Supports 0~15 levels of input filter.
- Small volume
 Compact and small footprint.
- Easy diagnosis
 Innovative channel indicator design, close to the channel, easy to detect and maintain.
- Easy configuration
 Simple configuration.
- Easy installation
 DIN 35 mm standard rail installation
 Adopts shrapnel terminals for easy and quick wiring.

2 Product Parameters

2.1 General parameter

Interface Parameter	
Product Model	XB6S-PC80
Bus Protocol	X-bus
Bus Input Power Supply	5VDC (4.5V~5.5V)
Rated Voltage	
Rated Current Consumption	80mA
Power Wastage	0.4W
Process Data Volume:	64 Bytes
Upstream	
Process Data Volume:	2 Bytes
Downstream	
Channel Type	Pulse input channels: 8 channels, PNP/NPN compatible
Refresh Rate	1 ms
Technical Parameters	
System Input Power	5VDC
Input Channel Rated Voltage	24VDC (15V~30V)
(Range)	
Pulse Input Frequency	0~100KHz
Range	
Pulse Input Count Value	0~2^32-1
Range	
External Dimensions	106.4 x 25.7 x 72.3mm
Weight	85g
Wiring Method	Screwless Quick Plugs
Operating Temperature	-20°C~+60°C
Storage Temperature	-40°C~+80°C
Relative Humidity	95%, non-condensing
Protection class	IP20

3 Panel

3.1 Panel Structure

Name of each part of the product



3.2 Indicator light function

Name	Markings	Color	Status	Description		
Power indicator			ON	Power supply is normal		
	PWR	GREEN	OFF	The product is not powered up or the		
				power supply is abnormal		
			ON	The system is functioning normally		
		GREEN		No business data interaction, waiting for		
Communication			Flashing 1Hz	business data interaction to be		
Indicator	SYS			established		
			Flashing	Eirmware Ungrade		
			10Hz			
			OFF	System not working		
Pulse input	07	CDEEN	ON	Channels have signal inputs		
channel indicator	0~1	GREEN	OFF	No signal input for channel		

4 Installation and uninstall

4.1 External Dimensions



4.2 Installation Guide

Precautions for installation\uninstall

- The module protection class is IP20 and the module needs to be installed in the cabinet for indoor use.
- Ensure that the cabinet is well ventilated (e.g., the cabinet is fitted with an exhaust fan).
- Do not install this equipment next to or above equipment that may cause overheating.
- Be sure to install the module vertically on the fixed rails and maintain air circulation around it (at least 50 mm air circulation space above and below the module).
- Once the module is installed, be sure to secure the module by installing rail mounts on both ends.
- Be sure to disconnect the power supply when installing/uninstalling.
- Once the module is installed, it is recommended that wiring and cabling be done in accordance with the top and bottom alignments.

A Warnings

• The protection provided by the device may be jeopardized if it is not used in accordance with the product user manual.



Module installation schematic, minimum clearance above and below (≥50mm)

Ensure that the module is installed vertically on the fixed rail



Be sure to install the rail mounts



Schematic diagram of upper and lower wiring of the module



4.3 Installation and uninstall steps

Module Install	Module Installation and uninstall					
	1. Install the coupler module first on the rail that has been fixed.					
	2. Install the required I/O modules or function modules in order to the right of the					
Module	coupler module.					
Installation	3、After installing all the required modules, install the end cap to complete the					
Steps	installation of the module.					
	4. Install the rail fixings at both ends of the coupler module and end cap to fix the					
	module.					
Module	1. Loosen the guide rail fixings at both ends of the module.					
Uninstall	2. Use a slotted screwdriver to pry off the module snap.					
Steps	3. Pull out the uninstalled module.					

4.4 Installation and uninstall diagram

Coupler Module Installation

■ Align the coupler module vertically in the rail slot as shown in Figure ① below.



Press the coupler module in the direction of the guide rail, and when you hear a "click" sound, the module is installed in place, as shown in Figure 2 below.



I/O Module Installation

Install the required I/O modules or function modules one by one according to the above steps of installing coupler modules as shown in Figures ③, ④ and ⑤ below, and push them in, and the modules will be installed in place when you hear the "click" sound.



3





(5)

End cap installation

Install the end cap on the right side of the last module, with the grooved side of the end cap aligned with the guide rail. Refer to the installation method of the I/O module for the installation method, and push the end cap inward into place, as shown in Figure (6) below.



■ After the end cap is installed, check whether the entire front of the module is flat to ensure that all modules and end caps are installed in place and the front is flush, as shown in Figure ⑦ below.



Installation of guide rail fixings

Install and tighten the rail fixings firmly against the left side face of the coupler as shown in Figure (8) below.



Install the rail fixings on the right side of the end cap, first push the rail fixings firmly in the direction of the coupler to ensure that the module is installed tightly, and lock the rail fixings with a screwdriver, as shown in Figure (9) below.



Uninstall



10

Insert a screwdriver into the snap of the module to be uninstalled, and apply pressure (hear the rattle) in the direction of the module sideways, as shown in the following figures (1) and (12). Note: There is one snap on the top and bottom of each module, follow this method.



(11)



Uninstall the module as shown in figure ^(B) below, following the same steps as for installing the module.



1	7	3
(L	з
	٤,	۶
		-

5 Wiring

5.1 Wiring diagram



*P00~P07 NPN/PNP compatible, common terminal is COM

Copyright © Nanjing Solidot Electronic Technology Co., Ltd. 2024

5.2 Terminal Block Definition

	A		В
Terminal markings	Description	Terminal markings	Description
0	Pulse input channel 0	0	Empty terminal
1	Pulse input channel 1	1	Empty terminal
2	Pulse input channel 2	2	Empty terminal
3	Pulse input channel 3	3	Empty terminal
4	Pulse input channel 4	4	Empty terminal
5	Pulse input channel 5	5	Empty terminal
6	Pulse input channel 6	6	Empty terminal
7	Pulse input channel 7	7	Empty terminal
8	empty terminal	8	Empty terminal
9	Input Common	9	Input common

6 Operation

6.1 Configuration Parameter Definitions

There is a total of 1 parameter for module configuration, and the 8 channel configuration parameters are the same and can be set independently. Take channel 0 as an example to introduce the configuration parameters, as shown in the table below.

Functionality	Parameter Name	Range Of Values	Default Value			
		0: Filter_Level_0				
		1: Filter_Level_1				
		2: Filter_Level_2				
		3: Filter_Level_3				
	CH0 Filter Level	4: Filter_Level_4				
		5: Filter_Level_5				
		6: Filter_Level_6				
Filter Level		7: Filter_Level_7	7			
Configuration		8: Filter_Level_8	/			
		9: Filter_Level_9				
		10: Filter_Level_10				
		11: Filter_Level_11				
		12: Filter_Level_12				
		13: Filter_Level_13				
		14: Filter_Level_14				
		15: Filter_Level_15				

6.1.1 Filter Level Configuration

The module supports configuring the filter level of the corresponding channel in case of channel disablement, the filter level ranges from 0 to 15. The larger the filter level is, the longer the filter time is. Note: The default filter level is Filter_Level_7. You must ensure that all channels are off (disabled) when setting the filter level parameter.

6.2 Process data

6.2.1 Upstream data

Upstream data 64 bytes (8 bytes per channel, channel [n] takes values 0 to 7)								
Name	Meaning	Range Of Values	Data	Lengths				
Nume	Incaning	Kange of Values	Туре					
CH[n] Count Value	Pulse Input	0 to 2^{22} 1 (units)	UDINT	1 bytec				
	Count Value	0 to 2:32-1 (units)		4 bytes				
CH[n] Frequency	Pulse Input	0 100000 (upit: Up)	UDINT	1 by toc				
	Frequency	0~100000 (unit: H2)		4 bytes				

Data Description:

♦ CH[n] Count Value

When the channel is enabled and a pulse is input to the pulse input channel, the pulse count value can be sampled and analyzed. When the clear signal is set to "1", the pulse count data is cleared to zero.

• CH[n] Frequency

When the channel is enabled and the pulse input channel has pulse input, the pulse frequency can be sampled and analyzed; when there is no pulse input, the frequency is 0.

6.2.2 Downstream Data

Downstream data 2 bytes (channel [n] takes values 0~7)						
Name Meaning Range Of Values		Meaning Range Of Values		Lengths		
		0: Disabled				
	Channel Enable	Correspondence Channel	haal	16:+		
		1: Enable the	DOOI	IDIL		
		corresponding channel				
		0: Frequency and count				
CH[n] Clear Data	Dulas Data	values are displayed				
	Clearing	normally	bool	1bit		
	Cleaning	1: Zeroing of frequency				
		and count data				

Data Description:

CH[n] Enable

When the channel enable of a pulse input channel is set to "1", it means that the channel starts to sample and analyze the input pulse to obtain the count value and pulse frequency. When the channel enable of a pulse input channel is set to "0", it means that the channel stops counting and frequency measurement of the input pulse.

CH[n] Clear Data

When the pulse data clear enable of a pulse input channel is set from "0" to "1", the frequency and count value of that channel are cleared to zero.

6.3 Module Configuration Description

6.3.1 Application in TwinCAT3 software environment

1、Preliminary

- Hardware Environment
 - > Module Model XB6S-PC80
 - EtherCAT Bus Coupler Module, End Cap
 This description takes the XB6S-EC2002 coupler module as an example
 - > A computer with pre-installed TwinCAT3 software
 - > Shielded cables for EtherCAT
 - > This description takes the connection of the XB6S-PT04A module as an example.
 - > One switching power supply
 - > Module installation rails and rail mounts
 - Device Configuration Files Configuration file access: <u>https://www.solidotech.com/documents/configfile</u>
- Hardware configuration and wiring Follow "<u>4 Installation and uninstall</u>" and "<u>5 Wiring</u>".

2、Preset Profiles

Place the ESI configuration file (EcatTerminal-XB6S_V1.19_ENUM.xml) in the TwinCAT installation directory under "C:\TwinCAT\3.1\Config\Io\EtherCAT" as shown below.

>	此电脑	>	本地磁盘 (C:)	>	TwinCAT	>	3.1	>	Config	>	lo	>	EtherCAT	>

名称	修改日期	类型	大小
	LUIIIUILU ILILI		0,101100
Beckhoff EL32xx.xml	2017/10/25 15:43	XML 文档	5,997 KB
Beckhoff EL66xx.xml	2017/10/27 8:55	XML 文档	1,820 KB
Beckhoff EKx9xx.xml	2017/11/3 9:53	XML 文档	1,223 KB
Beckhoff EP7xxx.xml	2017/11/8 9:46	XML 文档	9,290 KB
Beckhoff ATH2xxx.xml	2017/11/23 13:22	XML 文档	439 KB
Beckhoff EPP3xxx.xml	2017/12/8 8:48	XML 文档	2,099 KB
Beckhoff EPP1xxx.xml	2017/12/14 11:34	XML 文档	480 KB
Beckhoff EL34xx.xml	2017/12/15 15:35	XML 文档	5,634 KB
Beckhoff EK13xx.xml	2017/12/19 14:30	XML 文档	16 KB
Beckhoff EPP2xxx.xml	2017/12/28 12:22	XML 文档	1,811 KB
Beckhoff EJ1xxx.xml	2018/1/4 10:00	XML 文档	67 KB
Beckhoff EJ3xxx.xml	2018/1/4 10:07	XML 文档	1,169 KB
Beckhoff EJ7xxx.xml	2018/1/4 10:11	XML 文档	2,339 KB
Beckhoff EJ9xxx.xml	2018/1/4 10:23	XML 文档	160 KB
Beckhoff EJ6xxx.xml	2018/1/4 10:31	XML 文档	313 KB
Beckhoff EL30xx.xml	2018/1/11 13:03	XML 文档	11,508 KB
Beckhoff EL37xx.xml	2018/1/23 13:59	XML 文档	11,837 KB
Beckhoff EJ2xxx.xml	2018/1/23 14:21	XML 文档	239 KB
Beckhoff EL5xxx.xml	2018/1/23 15:11	XML 文档	6,307 KB
Beckhoff EJ5xxx.xml	2018/1/23 15:12	XML 文档	218 KB
Beckhoff EL2xxx.xml	2018/1/24 9:40	XML 文档	2,868 KB
Beckhoff EL33xx.xml	2018/1/26 9:34	XML 文档	6,727 KB
Beckhoff ELM3xxx.xml	2018/2/1 10:19	XML 文档	14,238 KB
Beckhoff AX5xxx.xml	2018/2/8 16:15	XML 文档	930 KB
Beckhoff EL1xxx.xml	2018/2/19 17:15	XML文档	3,387 KB
Beckhoff EL25xx.xml	2018/2/21 10:23	XML 文档	6,543 KB
EcatTerminal-XB6S_V1.19_ENUM.xml	2024/3/19 16:49	XML 文档	1,129 KB

3、Create Project

a. Click the TwinCAT icon in the lower right corner of the desktop and select "TwinCAT XAE (VS xxxx)" to open the TwinCAT software as shown below.



b. Click "New TwinCAT Project", in the pop-up window, "Name" and "Solution name" correspond to the project name and solution name respectively, and "Location" corresponds to the project path, and these three items can be selected by default, then click "OK", the project is created successfully, as shown in the following figure.

New TwinCAT Project		Get Started	Beckhoff Ne	ews		
New Measuren	nent Project	I have some and the second		What's New in 1	winCAT 3	
New Project					?	×
▶ Recent		.NET Framework 4.5 + Sort by	/: Default	• II' 🗉	Search Installed	p
 Installed Templates Other Project Types TwinCAT Measurement TwinCAT PLC TwinCAT Projects Samples Online 		TwinCAT XAE Projec Tw	.NET Framework 4.5 Sort by: Default Image: Click base of the second for the			
Name:	TwinCAT Proje	ect1				
Location: D:\workspace\T		\TwinCAT Project	•	Browse		
Solution name:	TwinCAT Proje	ect1		Create directory	OK Cancel	

4、Scanning device

a. After creating the project, right-click on the "Scan" option under "I/O -> Devices" to perform a slave device scanning, as shown in the following figure.



b. Check the "Local Connection" box, as shown in the following figure.



c. Click on the pop-up window "Scan for boxes" and select "Yes"; click on the pop-up window "Activate Free Run" and select "Yes". "Yes", as shown in the figure below.



 d. After scanning to the device, you can see Box1 (XB6S-EC2002) and Module1 (XB6S-PC80) and Module2 (XB6S-PT04A) in the left navigation tree, and at "Online", you can see that TwinCAT is in "OP" status, and you can observe that the RUN light of the slave device is always on, as shown below.

解决方案资源管理器 ▼ ↓ ×	TwinCAT Project	1 + ×		
◎ ◎ ☆ '◎ - ₽ ฮ ►	General Ether	CAT DC Process Data	Slots Startup CoE - On	line Diag History Online
搜索解决方案资源管理器(Ctrl+;) ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・				
解决方案"TwinCAT Project1"(1 个项目)	State Machi	ne		
TwinCAT Project1	Init	Bootstrap		
SYSTEM	Data Ora	Cafe Oa	Current State:	OP
MOTION	Pre-Op	sale-Op	Requested State:	OP
PLC PLC	Ор	Clear Error		
SAFETY				
	DI Statur			
	DEL Status			
▲ ➡ Device 2 (EtherCAT)	Port A:	Carrier / Open		
Image	Port B:	No Carrier / Closed		
📑 Image-Info				
SyncUnits	Port C:	No Carrier / Closed		
Inputs	Port D:	No Carrier / Closed		
Outputs				
InfoData	File Access	aver EtherCAT		
Box 1 (XB6S-EC2002)	File Access	SVer EtherCAT		
P Inputs	Downloa	d Upload		
Module 1 (XB6S-PC80)				
Module 2 (XB6S-PT04A)				
WcState				
InfoData				
📸 Mappings				

5、Validating Basic Functions

a. Click "Box1 -> Startup -> New" in the left navigation tree to enter the configuration parameter editing page, as shown in the following figure.

解决方案资源管理器 ▼ 🕂 ×	起始页 P T	winCAT Proj	ect1 🏾 😕 🗙		*
00 <u>0</u> 10-2 10 4 -	General Ethe	rCAT DC	Process Data	Slots Startup CoE - 0	Online Diag History Online
搜索解决方案资源管理器(Ctrl+;) ・					
解决方案"TwinCAT Project1"(1 个项目)	Transition	Protocol	Index	Data	Comment
TwinCAT Project1	C <ps></ps>	CoE	0xF030:00	0x00 (0)	clear slot cfg 0xF030 entries
SYSTEM	C <ps></ps>	CoE	0xF030:01	0x0000E404 (58372)	download slot cfg 0xF030 entry
MOTION	C <ps></ps>	CoE	0xF030:02	0x0000E405 (58373)	download slot cfg 0xF030 entry
PLC	C <ps></ps>	CoE	0xF030:00	0x02 (2)	download slot cfg 0xF030 entry count
SAFETY					
See C++					
▲ 🔄 I/O					
 Devices 					
 Device 2 (EtherCAT) 					
Image					
Timage-Info					
P Z SyncUnits					
P inputs					
b lafoData					
A Box 1 (XR6S-FC2002)					
Dutputs					
Module 1 (XB6S-PC80)					
Module 2 (XB6S-PT04A)					
WcState					
InfoData	Move Up	Move	Down		New Delete Edit
音 Mappings	-				

b. In the Edit CANopen Startup Entry pop-up window, click the "+" in front of Index 2000:0 to expand the Configuration Parameters menu, and click any parameter to set the related configuration, as shown in the following figure.

dit	t CANope	n Startup Entry				×
	ransition] I -> P] P -> S] S -> O	_S→P _0→S	Index (hex): Sub-Index (dec):	0 0 Complete Access		OK Cancel
Dat	ta (hexbin):					Hex Edit
Val Cor	idate Mask: mment:					Edit Entry
In	dex	Name	Flags	Value	Unit	^
+	10F1:0	Error Settings	RW			
÷	10F3:0	Diagnosis History	RO	>5<		
+	1C32:0	SM output parameter		> 32 <		
(i)	1C33:0	SM input peremotor		> 32 <		
		owninput put unieter		P OL 1		
	2000:0	XB6S-PC80 Config	RW	>8<		
Ē	2000:0	XB6S-PC80 Config CH0 Filter Level	RW RW	> 8 < Filter_Level_7 (7)		
8	2000:0 2000:01 2000:02	CH0 Filter Level CH1 Filter Level	RW RW RW	> 8 < Filter_Level_7 (7) Filter_Level_7 (7)		
	2000:0 2000:01 2000:02 2000:03	XB6S-PC80 Config CH0 Filter Level CH1 Filter Level CH2 Filter Level	RW RW RW RW	> 8 < Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7)		
	2000:0 2000:01 2000:02 2000:03 2000:04	XB6S-PC80 Config CH0 Filter Level CH1 Filter Level CH2 Filter Level CH3 Filter Level	RW RW RW RW RW	<pre>> 8 < Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7)</pre>		
	2000:0 2000:01 2000:02 2000:03 2000:04 2000:05	XB6S-PC80 Config CH0 Filter Level CH1 Filter Level CH2 Filter Level CH3 Filter Level CH4 Filter Level	RW RW RW RW RW	>8 < Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7)		
	2000:0 2000:01 2000:02 2000:03 2000:04 2000:05 2000:06	CH1 Filter Level CH2 Filter Level CH2 Filter Level CH3 Filter Level CH3 Filter Level CH4 Filter Level CH5 Filter Level	RW RW RW RW RW RW RW	>8 < Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7)		
	2000:0 	CH2 Filter Level CH3 Filter Level CH3 Filter Level CH3 Filter Level CH4 Filter Level CH4 Filter Level CH5 Filter Level CH6 Filter Level	RW RW RW RW RW RW RW RW	>8 < Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7)		
	2000:0 - 2000:02 - 2000:02 - 2000:03 - 2000:04 - 2000:05 - 2000:06 - 2000:07 - 2000:08	CH2 Filter Level CH3 Filter Level CH3 Filter Level CH3 Filter Level CH4 Filter Level CH4 Filter Level CH5 Filter Level CH6 Filter Level CH7 Filter Level	RW RW RW RW RW RW RW RW RW	>8 < Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7)		
Ð	2000:0 - 2000:01 - 2000:02 - 2000:03 - 2000:04 - 2000:05 - 2000:06 - 2000:07 - 2000:08 2010:0	CH0 Filter Level CH1 Filter Level CH2 Filter Level CH3 Filter Level CH3 Filter Level CH4 Filter Level CH5 Filter Level CH6 Filter Level CH7 Filter Level XB6S_PT04A Config	RW RW RW RW RW RW RW RW RW RW RO	>8 < Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Filter_Level_7 (7) Solver (7) Filter_Level_7 (7) Filter_Level_7 (7) Solver (7) Solv		

c. For example, to modify the filter level of channel 0, you can double-click "CH0 Filter Level" to modify the parameter value, as shown in the following figure.

Transition				
		Index (hex):	2000	OK
				Cancel
Mb->2	S->P	Sub-Index (dec):	
□S->0	_0->S	Validate	Complete Access	
)ata (hexbin):	07 00 00 00			Hex Edit
alidate Masi	k:	Set Value Dia	og	×
omment:	CH0 Filter Le		. <u>K</u>	ntrv
		Dec:	6	OK
Index	Name	Hex:	0x00000006	Cancel
10F1:0	Error Settings	Farmer	Eilter Level C	
± 10F3:0	Diagnosis History	Enum:	Filter_Level_6	~
± 1C32:0	SM output paramete		Filter_Level_U	
± 1C33:0	SM input parameter		Filter Level 2	
2000:0	XB6S-PC80 Config	Bool:	Filter_Level_3	Edit
2000:0	CH0 Filter Level	Binenz	Filter_Level_4	
2000:02	2 CH1 Filter Level	Diricity.	Filter_Level_5	
2000:03	3 CH2 Filter Level	Bit Size:	Filter Level 7	
2000:04	4 CH3 Filter Level		Filter_Level_8	· · · · · · · · · · · · · · · · · · ·
2000:05	5 CH4 Filter Level	RW	Filter_Level_9	
0000.00	6 CH5 Filter Level	RW	Filter_Level_10	
2000:00	7 CH6 Filter Level	RW	Filter Level 12	
2000:00				
2000:00	8 CH7 Filter Level	RW	Fliter_Level_13	
2000:00 2000:00 2000:00	3 CH7 Filter Level XB6S_PT04A Confi	RW q RO	Filter_Level_13	

d. After the parameter modification is completed, you can see the modified parameter items and parameter values under Startup, as shown in the following figure. After the parameter setting is completed, it is necessary to carry out Reload operation and re-power up the module to realize that the master station automatically sends down the parameter setting.

neral Ether	rCAT DC	Process Data	Slots Startup Co	E - Online Diag History Online	
Transition	Protocol	Index	Data	Comment	
C <ps></ps>	CoE	0xF030:00	0x00 (0)	clear slot cfg 0xF030 entries	
C <ps></ps>	CoE	0xF030:01	0x0000E404 (58372) download slot cfg 0xF030 entry	
C <ps></ps>	CoE	0xF030:02	0x0000E405 (58373) download slot cfg 0xF030 entry	
C <ps></ps>	CoE	0xF030:00	0x02 (2)	download slot cfg 0xF030 entry count	
C PS	CoE	0x2000:01	Filter_Level_6 (6)	CH0 Filter Level	

e. The left navigation tree "Module 1 -> Inputs" displays the module's upstream data, which is used to monitor the module's pulse count value and pulse frequency, as shown in the following figure.

解决方案资源管理器 ▼ 4 ×	TwinCAT Project1 👎 🗙	起始页						
000 10 - 2 1 4 -	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
	🕫 🕫 CH0 Count Value	0	UDINT	4.0	41.0	Input	0	
及系解决刀条页综合理商(CUI+,) ►	CH0 Frequency	0	UDINT	4.0	45.0	Input	0	
解决方案"TwinCAT Project1"(1 个项目)	🕫 CH1 Count Value	0	UDINT	4.0	49.0	Input	0	
TwinCAT Project1	CH1 Frequency	0	UDINT	4.0	53.0	Input	0	
	🕫 CH2 Count Value	0	UDINT	4.0	57.0	Input	0	
MOTION	CH2 Frequency	0	UDINT	4.0	61.0	Input	0	
	🕫 CH3 Count Value	0	UDINT	4.0	65.0	Input	0	
SAFELY	CH3 Frequency	0	UDINT	4.0	69.0	Input	0	
	CH4 Count Value	0	UDINT	4.0	73.0	Input	0	
	🕫 CH4 Frequency	0	UDINT	4.0	77.0	Input	0	
Devices	🕫 CH5 Count Value	0	UDINT	4.0	81.0	Input	0	
Image	CH5 Frequency	0	UDINT	4.0	85.0	Input	0	
Image-Info	🔊 CH6 Count Value	0	UDINT	4.0	89.0	Input	0	
SyncUnits	CH6 Frequency	0	UDINT	4.0	93.0	Input	0	
Inputs	🕫 CH7 Count Value	0	UDINT	4.0	97.0	Input	0	
Outputs	CH7 Frequency	0	UDINT	4.0	101.0	Input	0	
InfoData								
 Box 1 (XB6S-EC2002) 								
👂 🔜 Inputs								
Outputs								
Module 1 (XB6S-PC80)								
Inputs								
Outputs								
P Module 2 (XB6S-PT04A)								
WcState								
P 🛄 InfoData								
Mappings								

f. The left navigation tree "Module 1 -> Outputs" displays the downstream data of the module, which is used to control the pulse data clearing of the module and the channel enable as shown in the figure below.

解決方案资源管理器 ▼ 早 ×	TwinCAT Project1	+ ×						
004 0·20 4	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
	CH0 Enable	0	BIT	0.1	41.0	Output	0	
12条件次门来见你自注留(CUIT,)	CH1 Enable	0	BIT	0.1	41.1	Output	0	
解决方案"TwinCAT Project1"(1 个项目)	CH2 Enable	0	BIT	0.1	41.2	Output	0	
TwinCAT Project1	CH3 Enable	0	BIT	0.1	41.3	Output	0	
▷ a SYSTEM	CH4 Enable	0	BIT	0.1	41.4	Output	0	
MOTION	CH5 Enable	0	BIT	0.1	41.5	Output	0	
	CH6 Enable	0	BIT	0.1	41.6	Output	0	
SAFELY	CH7 Enable	0	BIT	0.1	41.7	Output	0	
	CH0 Clear Data	0	BIT	0.1	42.0	Output	0	
	CH1 Clear Data	0	BIT	0.1	42.1	Output	0	
 Devices Device 1 (Ether(AT)) 	CH2 Clear Data	0	BIT	0.1	42.2	Output	0	
	CH3 Clear Data	0	BIT	0.1	42.3	Output	0	
Image-Info	CH4 Clear Data	0	BIT	0.1	42.4	Output	0	
SvncUnits	CH5 Clear Data	0	BIT	0.1	42.5	Output	0	
Inputs	CH6 Clear Data	0	BIT	0.1	42.6	Output	0	
Outputs	CH7 Clear Data	0	BIT	0.1	42.7	Output	0	
InfoData								
Box 1 (XB6S-EC2002)								
Inputs								
Outputs								
Pi Module 1 (XB6S-PC80)								
👂 🛄 Inputs								
👂 🔚 Outputs								
Po Module 2 (XB6S-PT04A)								
WcState								
👂 🔚 InfoData								
📸 Mappings								

Examples of Module Functions

- Pulse Input channel 0 data monitoring and clearing
 - a. Configure the configuration parameters as shown below.

dit CAN	open Startup Entry				×
Transition □I->P ☑P->S □S->C	6 □S→P 0 □0→S	Index (hex): Sub-Index (dec):	0 0 Complete Acces	35	OK Cancel
Data (hexb	in):				Hex Edit
/alidate M Comment:	ask:				Edit Entry
Index	Name	Flags	Value	Unit	^
€ 10F1:0	Error Settings	RW			
∃ 10F3:0	Diagnosis History	RO	>5<		
∃ 1C32:0	SM output parameter		> 32 <		
	SM input parameter		> 32 <		
⊡-2000:0	XB6S-PC80 Config	RW	>8<		
2000	0:01 CH0 Filter Level	RW	Filter_Level_7 (7)		
2000	0:02 CH1 Filter Level	RW	Filter_Level_7 (7)		
2000	0:03 CH2 Filter Level	RW	Filter_Level_7 (7)		
2000	U:U4 CH3 Filter Level	RW	Filter_Level_7 (7)		
2000	U:U5 CH4 Filter Level	RW	Filter_Level_7 (7)		
2000	U:06 CH5 Filter Level	RW	Filter_Level_7 (7)		
2000	U:U7 CH6 Filter Level	RW	Filter_Level_7 (7)		
2000	U:08 CH7 Filter Level	RW	Filter_Level_7 (7)		
± 2010:0	XB65_PT04A Config	RU	> 30 <		
TODO O	Due Destation				

b. Set the module channel 0 enabled when channel 0 input pulses 50000 with a frequency of 400Hz as shown below.

解决方案资源管理器 ▼ 🖡 🗙	TwinCAT Project1	₽X						
○ ○ ☆ io - ≥ 司 ≯	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
	CH0 Enable	1	BIT	0.1	41.0	Output	0	
	CH1 Enable	0	BIT	0.1	41.1	Output	0	
Ⅰ 解决方案"TwinCAT Project1"(1 个项目)	CH2 Enable	0	BIT	0.1	41.2	Output	0	
TwinCAT Project1	CH3 Enable	0	BIT	0.1	41.3	Output	0	
P SYSTEM	CH4 Enable	0	BIT	0.1	41.4	Output	0	
MOTION	CH5 Enable	0	BIT	0.1	41.5	Output	0	
	CH6 Enable	0	BIT	0.1	41.6	Output	0	
SAFELY	CH7 Enable	0	BIT	0.1	41.7	Output	0	
	CH0 Clear Data	0	BIT	0.1	42.0	Output	0	
	CH1 Clear Data	0	BIT	0.1	42.1	Output	0	
Device 1 (EtherCAT)	CH2 Clear Data	0	BIT	0.1	42.2	Output	0	
image	🗳 CH3 Clear Data	0	BIT	0.1	42.3	Output	0	
Image-Info	SCH4 Clear Data	0	BIT	0.1	42.4	Output	0	
SyncUnits	CH5 Clear Data	0	BIT	0.1	42.5	Output	0	
Inputs	CH6 Clear Data	0	BIT	0.1	42.6	Output	0	
Outputs	CH7 Clear Data	0	BIT	0.1	42.7	Output	0	
🕨 🛄 InfoData								
Box 1 (XB6S-EC2002)								
👂 🛁 Inputs								
Outputs								
Pi Module 1 (XB6S-PC80)								
Inputs								
👂 🛄 Outputs								
P Module 2 (XB6S-PT04A)								
VCState								
P 🔚 InfoData								
Mappings								

c. The upstream data pulse count value and pulse frequency of the module are shown below. When the pulse starts to send, the pulse count value accumulates continuously and the pulse frequency is monitored in real time. After the transmission is completed, the pulse count value accumulates to 50000; when there is no pulse input, the frequency is 0.

解决方案资源管理器 ▼ 및 ×	TwinCAT Project1 😐 🗙 🏚	动页						
000 10-20 1-	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
搜索解浊方妄资源管理哭(/trl) 0 ▼	🕫 CH0 Count Value	50000	UDINT	4.0	41.0	Input	0	
	🕫 CH0 Frequency	400	UDINT	4.0	45.0	Input	0	
解决方案"TwinCAT Project1"(1 个项目)	🔁 CH1 Count Value	0	UDINT	4.0	49.0	Input	0	
TwinCAT Project1	🕫 CH1 Frequency	0	UDINT	4.0	53.0	Input	0	
	🕫 CH2 Count Value	0	UDINT	4.0	57.0	Input	0	
MOTION	🕫 CH2 Frequency	0	UDINT	4.0	61.0	Input	0	
	🕫 CH3 Count Value	0	UDINT	4.0	65.0	Input	0	
SAFELY	🕶 CH3 Frequency	0	UDINT	4.0	69.0	Input	0	
	🕫 CH4 Count Value	0	UDINT	4.0	73.0	Input	0	
A The Devices	🕫 CH4 Frequency	0	UDINT	4.0	77.0	Input	0	
Device 2 (Ether(AT))	🕫 CH5 Count Value	0	UDINT	4.0	81.0	Input	0	
	🕫 CH5 Frequency	0	UDINT	4.0	85.0	Input	0	
Image-Info	🕫 CH6 Count Value	0	UDINT	4.0	89.0	Input	0	
SyncUnits	🕫 CH6 Frequency	0	UDINT	4.0	93.0	Input	0	
Inputs	🕫 CH7 Count Value	0	UDINT	4.0	97.0	Input	0	
Outputs	🕫 CH7 Frequency	0	UDINT	4.0	101.0	Input	0	
👂 🛄 InfoData								
Box 1 (XB6S-EC2002)								
Inputs								
Outputs								
 P Module 1 (XB6S-PC80) 								
👂 🛄 Inputs								
👂 🔚 Outputs								
PI Module 2 (XB6S-PT04A)								
WcState								
👂 🛄 InfoData								
Mappings								

d. Pulse input channel 0 count clear enabled as shown below.

解决方案资源管理器 ▼ 및 ×	TwinCAT Project1	₽×						
○ ○ ☆ io - ≥ 司 ≯	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
	CH0 Enable	1	BIT	0.1	41.0	Output	0	
	CH1 Enable	0	BIT	0.1	41.1	Output	0	
解决方案"TwinCAT Project1"(1 个项目)	CH2 Enable	0	BIT	0.1	41.2	Output	0	
TwinCAT Project1	CH3 Enable	0	BIT	0.1	41.3	Output	0	
P SYSTEM	CH4 Enable	0	BIT	0.1	41.4	Output	0	
MOTION	CH5 Enable	0	BIT	0.1	41.5	Output	0	
	CH6 Enable	0	BIT	0.1	41.6	Output	0	
SAFETY	CH7 Enable	0	BIT	0.1	41.7	Output	0	
	CH0 Clear Data	1	BIT	0.1	42.0	Output	0	
	CH1 Clear Data	0	BIT	0.1	42.1	Output	0	
Devices	CH2 Clear Data	0	BIT	0.1	42.2	Output	0	
	CH3 Clear Data	0	BIT	0.1	42.3	Output	0	
Image-Info	CH4 Clear Data	0	BIT	0.1	42.4	Output	0	
SyncUnits	CH5 Clear Data	0	BIT	0.1	42.5	Output	0	
Inputs	CH6 Clear Data	0	BIT	0.1	42.6	Output	0	
Outputs	CH7 Clear Data	0	BIT	0.1	42.7	Output	0	
🕨 🛄 InfoData								
Box 1 (XB6S-EC2002)								
Inputs								
Outputs								
Pi Module 1 (XB6S-PC80)								
Inputs								
👂 🛄 Outputs								
P: Module 2 (XB6S-PT04A)								
WcState								
👂 🛄 InfoData								
Mappings								

e. After the pulse input channel 0 count clear enabled, the pulse count value and pulse frequency of channel 0 are 0, as shown below.

解决方案资源管理器 ▼ 및 ×	TwinCAT Project1 😕 🗙	动页						
○ ○ ☆ ¹ ○ · ≠ 司 ≯	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
埋安解浊方安资源答理哭(Ctrl_+) 0 ▼	🕫 CH0 Count Value	0	UDINT	4.0	41.0	Input	0	
	🕫 CH0 Frequency	0	UDINT	4.0	45.0	Input	0	
ig」解决万案"IwinCAI Project1"(1 个项目)	🕫 CH1 Count Value	0	UDINT	4.0	49.0	Input	0	
IwinCAT Project1	🕫 CH1 Frequency	0	UDINT	4.0	53.0	Input	0	
P SYSTEM	🕫 CH2 Count Value	0	UDINT	4.0	57.0	Input	0	
	🕫 CH2 Frequency	0	UDINT	4.0	61.0	Input	0	
	🕫 CH3 Count Value	0	UDINT	4.0	65.0	Input	0	
SAFETY	🕶 CH3 Frequency	0	UDINT	4.0	69.0	Input	0	
	🕫 CH4 Count Value	0	UDINT	4.0	73.0	Input	0	
A Devices	🕶 CH4 Frequency	0	UDINT	4.0	77.0	Input	0	
Device 2 (EtherCAT)	🕫 CH5 Count Value	0	UDINT	4.0	81.0	Input	0	
	🕫 CH5 Frequency	0	UDINT	4.0	85.0	Input	0	
Image-Info	🕫 CH6 Count Value	0	UDINT	4.0	89.0	Input	0	
SyncUnits	🕫 CH6 Frequency	0	UDINT	4.0	93.0	Input	0	
Inputs	🕫 CH7 Count Value	0	UDINT	4.0	97.0	Input	0	
Outputs	🕫 CH7 Frequency	0	UDINT	4.0	101.0	Input	0	
👂 🛄 InfoData								
Box 1 (XB6S-EC2002)								
Inputs								
Outputs								
 Pi Module 1 (XB6S-PC80) 								
Inputs								
Outputs								
PI Module 2 (XB6S-PT04A)								
WcState								
👂 🛄 InfoData								
Mappings								