# EtherCAT 分支器 型号: SG-ECAT-HUB\_4

(产品手册 v1.0)



## 版本信息

日期	版本号	修改内容	备注
2024/6/13	v1.0	建立	

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### 一、功能概述

1.1 设备简介

4个 EtherCAT 网口,一进三出, RJ45;

数据帧处理顺序 IN→OUT4→OUT2→OUT3;

支持多种拓扑结构,包括线型、星型、树型等;

支持 64 位分布时钟,支持 DC 同步;

DC24V 供电;

1.2 硬件参数

硬件参数	参数说明	
电源	18-36V(典型值 24V/70mA),带过压、过流保护	
工作温度	-30~75°C	
工作湿度	5%~95%无冷凝	
EtherCAT 🗆	RJ45, 百兆	

二、硬件说明

### 2.1 电源接口

本模块电源接口如下图所示,支持压线端子接法和圆头电源接法,支持双电 源冗余供电,支持 18-36V 输入:



接口符号	参数说明	
圆头 V1	接圆头电源 18-36V (和端子 V1 不能同时接)	
端子 V1/V2	接直流 18-36V 正	
G	接直流 18-36V 负	
PE	接大地	

### 2.2 指示灯定义

本模块六个指示灯如下图所示:

OP © PWR OUT4 © © IN1 OUT3 © © OUT2	RST IN1 OUT4 OUT2 OUT3
指示灯	指示灯说明
PWR	电源指示灯,常亮说明电源正常
OP	分支器进入 OP 状态常亮,否则熄灭
IN	常亮说明建立网络连接 闪烁说明网络连接且有数据交互 灭说明网络未连接
OUT4	同上
OUT2	同上
OUT3	同上

### 2.3 Reset 按键

本模块 Reset 按键无意义。



### 2.4 EtherCAT 网口

本模块 EtherCAT 网口如下图所示:

OP O PWR OUT4 O N11 OUT3 O O OUT2	RST IN1 OUT4 OUT2 OUT3
EtherCAT 网口	参数说明
IN	接前一个 EtherCAT 设备的 OUT 或 EtherCAT 主站

OUT4	接其它 EtherCAT 设备的 IN
OUT2	接其它 EtherCAT 设备的 IN
OUT3	接其它 EtherCAT 设备的 IN

# 三、使用场景

本模块可以在多个场景下应用:

### 3.1 线型拓扑



### 3.2 星形拓扑



变频器

### 3.3 树型拓扑



### 四、应用实例

### 4.1 例程预操作(必读)

本实例连接方式如下:

EtherCAT 主站连接分支器的 IN,分支器的 OUT4 连接汇川 SV630N 伺服驱动器的 IN,OUT2 和 OUT3 各连接本公司两个 EtherCAT-Modbus 网关。

在后续实例开始之前需要准备好如上3个设备的 XML 文件。

### 4.2 TwinCAT 下实例

①在 TwinCAT 关闭状态下把实例中的 3 个 XML 文件放到 TwinCAT 安装目录下的如下文件夹:

名称 へ	修改日期	类型	大小
📓 SG-ECAT-GATEWAY v1.1.xml	2023/12/29 9:08	XML 文件	187 KB
SV630N_EOE_1Axis_03713.xml	2022/12/25 10:11	XML 文件	337 KB
📓 TJ-SANGE-ECAT-HUB v1.0.xml	2024/6/13 13:58	XML 文件	7 KB

②打开 TwinCAT, 创建新工程

New Project				? ×
⊅ Recent		.NET Framework 4.5 - Sort by: Default	• # 🔳	Search Installed Templates (Ctrl+E)
<ul> <li>Installed</li> <li>Templates         <ul> <li>Other Project</li> <li>TwinCAT Mea TwinCAT PLC TwinCAT Proj Samples</li> </ul> </li> </ul>	t Types asurement iects	TwinCAT XAE Project (XML format)	TwinCAT Projects	Type: TwinCAT Projects TwinCAT XAE System Manager Configuration
		<u>Click here to go online and find t</u>	emplates.	
Name:	test			
Location:	C:\Users\Admir	NDocuments/Visual Studio 2013/Projects	-	Browse
Solution name:	test			Create directory for solution

③创建项目之后,在"I/O->Devices"下右击选择"Scan",进行从站设备扫描,

### 跳出选择网卡选择"OK"

ImirCAT Project2     SYSTEM     MOTION     PLC     SAFETY     C++     MANLVTICS     VO     More Devices     More Devices     Mappings	1 new I/O devices found X Device 2 (EtherCAT) [2] ± [3] (TwinCAT-Intel PCI Ethernet Adapter (Gigab) OK Cancel Select All Uniselect All
弹出"Scan for boxes"选择	圣"是"
<ul> <li>TwinCAT Project2</li> <li>SYSTEM</li> <li>MOTION</li> <li>PLC</li> <li>SAFETY</li> <li>C++</li> <li>ANALYTICS</li> <li>NO</li> <li>Provices</li> <li>Topological Provides</li> <li>Mappings</li> </ul>	TcXaeShell × ② Scan for boxes 重① 重创
弹出"Activate Free Run" 注	先择"是"
<ul> <li>SyncUnits</li> <li>Inputs</li> <li>Outputs</li> <li>InfoData</li> <li>I) Box 1 (SG-ECAT-HUB_4)</li> <li>I) Box 4 (SG-ECAT-GATEWAY)</li> <li>I) Box 5 (SG-ELC-ECAT-ADIO)</li> <li>Mappings</li> <li>NC-Task 1 SAF - Device 2 (EtherCAT) 1</li> <li>NC-Task 1 SAF - Device 2 (EtherCAT) Info</li> </ul>	TcXaeShell × ? Activate Free Run 是①

④扫描完成设备后在设备列表可以看到与实际设备一致,且都进入了 OP 状态



### 4.3 Codesys 下实例

①打开 Codesys 创建工程:

New Project   Image: Open Project from PLC   Image: Open Project from	Devices • 9 X	Basic operations	Latest news	
Image: Spen Project       Image: Spen Project from PLC       Image: Spen Project from PLC         Image: Spen Project from PLC       Image: Spen Project from PLC       Image: Spen Project from PLC         Image: Spen Project from PLC       Image: Spen Project from PLC       Image: Spen Project from PLC         Image: Spen Project from PLC       Image: Spen Project from PLC       Image: Spen Project from PLC         Image: Spen Project from PLC       Image: Spen Project from PLC       Image: Spen Project from PLC         Image: Spen Project from PLC       Image: Spen Project from PLC       Image: Spen Project from PLC         Image: Spen Project from PLC       Image: Spen Project from PLC       Image: Spen Project from PLC         Image: Spen Project from Plc       Image: Spen Project From Plc       Image: Spen Project from PLC         Image: Spen Project From Project From Project Spen Project from Project Spen Project From Project Spen Pro		New Project	🛅 New Project	×
Recent projects       Image: Content of the second of the se		Open Project	Categories	Iemplates
		Recent projects	A project containing one device Name Untitled 1 Location F:lgyrfEthercat-H	Empty project Hell project Standard Standard project w project w project w project w UB(codesys-Project v
Breakpoints OK Cancel		Breakpoints		OK Cancel
Application:		Application:		(d)

<ul> <li>One programmable device as specified below</li> <li>A program PLC_PRG in the language specified below</li> <li>A cyclic task which calls PLC_PRG</li> </ul>	
- A reference to the newest version of the Standard library currently instal	led.
Device CODESYS Control Win V3 x64 (3S - Smart Software Solutions G	GmbH) 🗸 🗸
PLC_PRG in Structured Text (ST)	~

②安装实例下 3 个设备的 XML 文件

Untitled1.project - CODESVS						- 0	×
File Edit View Project Build Online D	Debug Tools Window	Help		2 Da As et 2 La 18		τ	22
	Library Repos	itory	n PLC Logic] • 😋 🖓 🕨 📰 % [],	1 •1 •1 •1 • [9]	i   17   12		
Devices • 9	× Device Reposi	tory				Notifications 👻	₽ X
Unbted1     Unbted1     Device (CODESYS Control Win V3 x64)	Visualization S	tyle Repository				The notification server could no contacted.	ot be
= I PLC Logic	License Kepos     OPC UA Inform	atory nation Model Repository				A newer version of 2022/9	9/23 ^
Application     Application     Ibrary Manager	License Manag	ger				3.5 SP18 (64 bit) is available.	
PLC_PRG (PRG)	Device License	Reader				Currently installed:	
= 🛞 MainTask (IEC-Tasks)	Options					Patch 2	
一圈 PLC_PRG	Import and Ex	port Options				Mark as read Learn more	xe
	Scripting Edge Gateway					A newer version of 2023/9 the addon CODESYS	9/15
	Miscellaneous	,	ļ			Visualization is available. Currently installed:	
						4.1.1.0 Newest available:	
						4.4.0 A newer version of the addon CODESYS	
						Visualization Support is available.	
						Currently installed: 4.1.0.0 Newest available:	
						4.2.0 A newer version of	
						the addon CODESYS Scripting is	
						Currently installed: 4.0.0.0	
	Breakpoints					Newest available:	a x
	Application:					• 1回New × 第 1巻 1 田 1 余日	
	POU Location Inst	ance Path Tasks Condition	Hit Count Condition Current Hit Cou	nt Watched Values Last U	lpdat		
Devices	-					🔁 o ; 🎍 🖬 📽 🛱	12 Ø
Messages - Total 0 error(s), 0 warning(s), 5 message(s)				Last build: O	0 😗 0 Precomple 🖌 😘	Project user: (nobody)	0
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Library Manager							
PLC_PRG (PRG)     Task Configuration	Installed Device Descri	arch Vendor	til vendere s			Install	
🖻 🥩 MainTask (IEC-Tasks)	Name	Vendor Version Des	cription			()rinstall	
□ @] PLC_PRG	* Miscellaneous					Export.	arn mo
	Fieldbuses     HMI devices					5	2023/5
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Location System Repository		∽ Edit Locatio	ons				
(C:\ProgramData\CODESYS\Devices)							
Installed Device Descriptions							
String for a full text search Ver	ndor <all vendors=""></all>	∼ Install.					
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						11开(0)	,

### ③在工程添加主站

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Bed 	Master CXxxxx internal EtherCAT Mas EtherCAT Master EtherCAT Master SoftMotion hernet Adapter	ster 35 35 35	- Smart Software Solutions GmbH - Smart Software Solutions GmbH - Smart Software Solutions GmbH	4.2.0.0 4.2.0.0 4.2.0.0	CX Ett Ett
Name Vendo Categ Versio Order Descr	EtherCAT Master 3S - Smart Software Solutions Gmb ories: Master on: 4.2.0.0 Number: iption: EtherCAT Master	bH	Inity) Display outdated version	\$ \$	

### ④启动 PLC

intitled1					
Device (CODESYS Control Win V3 x64)	Communication Settings	Scan Network Gateway + Device +			
PLC Logic	Applications			-	
Library Manager	Backup and Restore				1
PLC_PRG (PRG)     Task Configuration	Files		and an other	•••	
EtherCAT_Task (IEC-Tasks)	100		Gateway		
😑 🅩 MainTask (IEC-Tasks)	LUG	Select Device			
PLC_PRG	PLC Settings	Select the Network Path to the Controller			
EtherCAT_Master (EtherCAT Master)	PLC Shell	Gateway-1		Device Name:	Scan Netw
	Users and Groups	DESKTOP-KVM6U33 [0000.8296]	3	Device Address:	Wink
	Access Rights			0000.B296	
	Symbol Rights			Block driver: UDP	
	Licensed Software Metrics			Encrypted Communication:	
	IEC Objects			TLS supported	
	Task Deployment			Number of channels: 4	
	Status			Serial number:	
	<			CC8F7E51-4FB8423E-631100C6-	
	Breakpoints			16D2FB35	× 4
	Application:				
	POU Location Instance	Hide non-matching devices, filter by Target ID (c	currently 2 hidden)		OK Car

输入 PLC 账户和密码

Device l	Jser Logon		×
P	You are currently and password of	not authorized to perform this operation an user account which has got the sufficie	on the device. Please enter the name ent rights.
1	Device name		
1	Deviceaddress	0000.B296	
ļ	<u>U</u> ser name	gyf	
1	Password	•••	۲
	Operation: Object:	View "Device"	OK Cancel

Device X					
Communication Settings	Scan Network	Gateway - Device -			
Applications		_	_		
Backup and Restore			·		
Files		•	Inclusion of		••••
Log		Contractor	Gateway		[0000 8204] (
PLC Settings		IP-Addre	55:	~	Device Name:
PLC Shell		Port:			Desk TOP-RVM6000 Device Address:
Users and Groups		1217			0000.B296
Access Rights					0000 0004
Symbol Rights					Target Type: 4096
Licensed Software Metrics					Target Vendor: 3S - Smart Software Solutions GmbH
IEC Objects					Target Version: 3.5.18.0
Task Deployment					
Status					

### ⑤扫描设备

		• 9 ×	Device 🔐 EtherCo	_Master x			Notifications 👻 🔻
Untitled I  Untitled I  Device (CODES)  Device (CODES)	rS Co	ntrol Win V3 x64)	General	Autoconfig master/slaves	EtherCAT		The notification server could not be contacted.
	ation		Sync Unit Assignment	EtherCAT NIC Settings			A newer version of 2022/9/23 the setup CODESYS 3.5 SP18 (64 bit) is
Libr	ary N	lanager	Overview	Destination address (MAC) FF-FF-FF-FF-FF	Select		available. Currently installed:
E 🖉 Tas	k Cor	figuration	Log	Source address (MAC) D8-C4-97-8D-A4-P5	Select		Newest available:
	Ethe Main	rCAT_Task (IEC-Tasks) Task (IEC-Tasks)	EtherCAT I/O Mapping	Select network by MAC     Select network l	by name		Patch 2 Mark as read Learn more
-	0	PLC_PRG	EtherCAT IEC Objects	al Distributed Clock	Options		A newer version of 2023/9/15
		Cut Copy Paste Delete Refactioning Properties	ation	Cycle time 4000 0 ↓ us Sync offset 20 0 1 √ % Sync window mantering Sync window 1 0 µs			Visualization is available. Currently installed: NuL20 voilable: NuL20 voilable: A4.0 A never version of the addien CODESYS Support is available. Currently installed: A 2.0 Nevest available. A 2.0 Corrently installed: A 2.0 Currently installed: Currently installed:
		Update Device				/	Newest available:
Update Device		Edit Object				• 1 07 No.	** **************
		Edit Object With	Location Instance	ath Tasks Condition Hit Count Condition Curren	t Hit Count Watched Values Last Updat		
		Edit IO mapping					

扫描结果如下图所示,可以看到与实际设备一致:

Device name	Device type	Alias Address	
- SG_ECAT_HUB_4	SG-ECAT-HUB_4	1	
- InoSV630N	SV630_1Axis_03713	5	
SG_ECAT_GATEWAY	SG-ECAT-GATEWAY	6	
SG_ECAT_GATEWAY_1	SG-ECAT-GATEWAY	2	
- SG_ECAT_GATEWAY_2	SG-ECAT-GATEWAY	7	
SG_ECAT_GATEWAY_3	SG-ECAT-GATEWAY	3	

拷贝到工程的设备列表,工程下设备如下:

vices 👻 🕂 🕂	C Device 🕤 Ether	TAT_Master X	
	General Sync Unit Assignment Overview Log EtherCAT I/O Mapping EtherCAT I/O Mapping EtherCAT IEC Objects Status Information	All_master X	TherCAT.

⑥登录 PLC 并运行,所有设备进入 OP 状态

05	Logout	Ctrl+F8						
	Create Boot Application		EtherCAT Ha	astar V			· Notifications	
titled3	Download						Total notificat	tions: 22
Device (CODESYS Control Win V3 x64	Online Change			Autoconfig master/slaves		EtherCAT.	A	tion of 20
PLC Logic	source Download to Conne	ected Device	nent	EtherCAT NIC Settings			the setup CO	DESYS
Application	Multiple Download			Destination address (MAC) FF-FF-FF-FF-FF-FF	Broadcast	Redundancy	available.	talled.
PLC_PRG (PRG)	Reset Warm			Source address (MAC) D8-C4-97-8D-A4-F	5 Select		Newest avail	lable:
🗟 🎉 Task Configuration	Reset Origin			Network name ethernet			Patch 2	abie:
EtherCAT_Task (IEC-	Simulation		ping	Select network by MAC     O Select n	network by name		Mark as read	Learn
- (B) PLC PRG	Security	,	ects	A Distributed Clark	Options		A newer vers	sion of 20
EtherCAT_Master (EtherCAT Mas	Operating Mode	•		a Distributed Clock	<i>v</i> opuons		the addon CO Visualization	DDESYS
B M SG_ECAT_HUB_4 (SG-ECAT+	Assign Server Applications	on Download		Cycle time 4000 🗼 µs			available. Currently ins	stalled:
8-2 X2	2742	Information	e.	Sync offset 20 👘 %			4.1.1.0 Newest avail	lable:
■ 2 X3	3713)			Sync window Manicoring			4.4.0 A newer vers	sion of
SG_ECAT_GATEWAY (SG-EC	CAT-GATEWAY)			Sync window			the addon CO Visualization	DDESYS
SG_ECAT_GATEWAY_1 (SG-	ECAT-GATEWAY)						Support is av Currently ins	talled:
M SG_ECAT_GATEWAY_2 (SG-ECAT-GA	ATEWAY)						4.1.0.0 Newest avail	lable:
- W SG_ECAT_GATEWAT_3 (SG-ECAT-GA	AIEWAT)						4.2.0	sion of
							the addon CO	DDESYS
							available.	talled
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		Breakpoints						
		Application:					・1週New × 増工	11日1
eges - Total 0 error(s), 0 warning(s), 6 messe Q Q R R R R R R R R R R R R R R R R R R	sge(s)				Last build: 🔇	● 0 ● 0 Precomple ✓ G ● @ 📓 🔲 🕃 🏞 ٩⊃ //, d	(× ≥ ∰ 5 🖗 16:22 (× ≥ ∰ 5 🖗 2024/	♥ 第 第 局二 6/18 ●
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ges - Total 9 eror(s), 0 wanning(s), 6 mess diaproject* - CODESYS dit yjew Project Build Onlin ↓ @   <>> <>> <>> <>> <>> <>> <>> <>> <>> <	age(s)	ndow Help	Application [Den	vice: PLC Logic) • 05 🚭 🔸 🔳 %   (21 0	Last buikt (	0000 (1000 Precomple シー (名) ・ 2010 (100	S ₹ , \$ 8 m 16:22 1× ≥ ≅ S @ 16:22 2024/	₩ <sup>6</sup> 祭 器 周二 • 6/18 •
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# 4.4 欧姆龙 Sysmac Studio 下实例

①打开 Sysmac Studio 并创建工程:



选择实际使用的 PLC 和版本

11日 工程属性			
工程名称	新建工程		
作者	SGWMH		
注释			
类型	标准工程		-
🏭 选择设	备		
类型	控制器		-
设备	NX1P2	▼ <sup>-</sup> 9024DT	▼
版本	1.47		<b>T</b>
			A.172
			创建( <u>C</u> )

②测试通讯

and the second se

I 新建工程 - new_Controller_0 - Sysmac Stuc	lio (64bit)											
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	变更设备(V)										_	ł
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new_Controller_0 🔻	离线(F)	Ctrl+S	hift+W									l
	同步(Y)	Ctrl+N	Λ									l
▼ 编程	传送中(A)		•									l
V 🖪 POUs	模式(M)		•									l
■ ▼ 濡 程序	监测(N)											l
V 🔤 Program0	停止监测(N)											l
Section0	设置/重置(S)		•									l
しぎ 切能	强制刷新(F)		•									l
► 数据	MC试运行(U)		•									l
▶ 由任务	MC监测表(T)											l
	CNC坐标系监控表(	Z)	•									l
	SD内存卡(D)											l
	控制器时钟(K)											l
	释放访问权限(C)											l
	受制でで0年76日初(1	· )····										l
	女主任(E)		•									l
	消陈所有内存(L)											l
	里自江市時間(N)…	_	_									l
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📓 通信设置		8 <u>-</u>		×
▼ 连接类型				
<ul> <li>请选择一个在线时每次与控制器连接时使用的方法</li> <li>● Ethernet-直接连接</li> <li>● USB-远程连接</li> <li>● Ethernet-Hub连接</li> <li>● 每次在线连接时,请从以下选项中选择。</li> <li>■ Ethernet-直接连接</li> <li>■ USB-远程连接</li> <li>■ USB-远程连接</li> <li>■ Ethernet-Hub连接</li> </ul>	•	<b>_</b>		
▼远程IP地址				
指定远程IP地址。 USB 测试成功	通信测试 Ethernet通信测试			
▼选项			_	
<ul> <li>✓ 在线时确认序列ID。</li> <li>☑ 离线时检查强制刷新。</li> </ul>				
▼响应监测时间				
在与控制器的通信中设置响应监视时间。(1-3600秒 当通过多个网络(如VPN连接)连接到控制器时,请说 2 (秒)	》) 2置足够大的值。 			
	确定    取消			

# ③安装3个实例设备的XML文件

【 ■ 新建工程 - new_Controller_0 - Sysm	mac Studio (64bit)			- 🗆 X
2 文件(F) 编辑(E) 视图(V) 插入(I)	工程(P) 控制器(C) 模拟(S) 工具(T)	窗口(W) 帮助(H)		
X 🖲 🖻 😇 つ 러 🖻	国中人家创造	A 🛛 R 🛕 🔌 🕹 🤌 🖡 1	· Our P I @ @ %	
S+UE12(12)(活動     Controllee①     Controllee①     Controllee①     Controllee①     Controllee     Controlee     Controllee     Controllee     Control		第25(1) 第45(2) 計あ(2) 計あ(2) 副時(1) 重約(3) 重約(3) 全部共行 全部共行 全部共行 全部共行 全部共行 全部共行 全部共行 全部共行 全部共行 の) 特徴人必需必要加加人新从総备(CO) 特徴人必需必要加加人新人総备(CO) 特徴人必需必要加加人新人総备(CO) 特徴人必需必要加加人新人総备(CO) 同時代有後受加人 取引所有後受加人 取引用本作計量想(CO) 国力が認めため、 国力が認めため、 同時代有後受加人 国力が認めため、 国力が認めため、 国力が認めため、 国力が認めため、 国力では、 日本のののののののののののののののののののののののののののののののののののの	田田之称 値 田田之称 道 田田之称 主以後 平治之称 主以後 ア治之称 主以後 ア治之称 主以後 ア治之称 2000 御紀 POO開会周期2 御紀 中の協会周期2 御紀 昭昭已第 参考討時 有 昭昭已第 地図本(14) 個 昭昭日2 参考討時 有 昭昭已第 昭昭日2 御田之(14) 個 昭昭)2 御田之(14) 個 昭昭)2 御田之(14) 個 昭昭)2 御田之(14) 個 昭昭)2 御田之(14) 個 昭昭)2 御田之(14) 個 昭昭)2 御田之(14) 個 昭昭)2 御田之(14) 個 昭昭)2 昭昭)2 御田之(14) 個 昭)2 昭)2 昭昭)2 昭昭)2 昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭昭)2 昭 昭昭)2 昭昭)2 昭昭)2 昭 昭 昭 昭 昭 1000 100	THM     0       ChardWards     0
5 5 11 神政法 22 王	997 2 Junio Augustan I I Barrow Barrow Barrow Barrow Barrow Barrow Barrow	守山総置信息(1) 総計(1552月 守山所有調合器(20分配 1 分配認可感到地。 安全相关的PDO用量設置	. 1 >	

SSI库		×
<ul> <li>所有ESI文件</li> </ul>		
Omron 3G3AX-MX2-ECT		
Omron 3G3AX-RX2-ECT		- 11
Omron 3G3AX-RX-ECT		- 11
Omron CJ1W-ECTxx		- 11
<ul> <li>Omron E3NW-ECT</li> </ul>		- 11
<ul> <li>Omron E3X-ECT</li> </ul>		- 11
Omron EJ1N-HFUC-ECT		- 11
Omron FHV7x-xxxxx		- 11
Omron FH-xxxx-xx		- 11
Omron FQ-MS12x-x-ECT		- 11
Omron FZM1-XXX-ECT		- 11
Omron GRT1-ECT_Ver2_0		- 11
Omron GX-Analog IO		
<ul> <li>Omron GX-Digital IO</li> </ul>		
Omron GX-Digital IO-T		
Omron GX-Encoder		
Omron GX-IO-Link		
Omron GX-JC		
Omron GX-JC06-H		
Omron NX_Coupler		
Omron R88D-1SAN02H-ECT		
Omron R88D-1SAN04H-ECT		
Omron R88D-1SAN08H-ECT		
Omron R88D-1SAN10F-ECT		
Omron R88D-1SAN10H-ECI		
Omron R88D-1SAN15F-EC1		
Omron R88D-1SAN15H-ECT		
Omron R88D-1SAN20F-EC1		
Omron R88D-1SAN20H-ECT		
Omron R88D-1SAN30F-EC1		
安装(文件) 安装(文件夹) 卸载		关闭

17开						×
← → ~ 个 📙 > 此	电脑 > 桌面 > XML				✓ ♂ 在 XML 中搜索	0
组织 ▼ 新建文件夹					III 👻 🛄	?
🗎 Documents 🖈 ^	名称 人	修改日期	英型	大小		
📰 图片 🖌 💉	SG-ECAT-GATEWAY v1.1.xml	2023/12/29 9:08	XML 文件	187 KB		
🔜 此电脑	SV630N_EOE_1Axis_03713.xml	2022/12/25 10:11	XML 文件	337 KB		
	Z TJ-SANGE-ECAT-HUB v1.0.xml	2024/6/13 13:58	XML 文件	7 KB		
Documents						
■ 初频						
上下戦						
▶ 音乐						
🏪 本地磁盘 (C:)						
新加卷 (D:)						
新加卷 (E:)						
新加卷 (F;)						
- · · · ·						
文件名	(N): "SG-ECAT-GATEWAY v1.1.xml" "SV6	30N EOE 1Axis 03713.xml*	TJ-SANGE-ECAT-	HUB v1.0.xml"	<ul> <li>XML files(*.xml)</li> </ul>	~
					TTI(O) PROV	
					1)T(0)	



④PLC 转至在线



⑤右键 PLC 选择"与物理网络配置比较和合并"

⑥弹出如下对话框说明需要分配地址

■ 同 实际P	物理网络配置的比较和合并 网络配置有一个节点地址无效的从设备。	-		×
打开5 0 0	显示写入从设备节点地址对话框并修正节点地址 从设备 1:SG-ECAT-HUB_4 Rev:0x00000000 5:InoSV630N Rev:0x00010000 6:SG-ECAT-GATEWAY Rev:0x00010211 0:SG-ECAT-GATEWAY Rev:0x00010211 7:SG-ECAT-GATEWAY Rev:0x00010211 0:SG-ECAT-GATEWAY Rev:0x00010211	E. 错误信息   节点地址超出范围。  节点地址超出范围。  节点地址超出范围。	1	

点击"显示写入从设备节点地址对话框"

📓 从设	备节点地址写	ì入中	<u></u> 7		×
当前值	设置值  物理	网络配置			ļ
		主设备			
1	1	SG-ECAT-HUB_4 Rev:0x0000000			
		<b>X</b> 2			
5	5	InoSV630N Rev:0x00010000			
		<b>X</b> 3			
6	6	SG-ECAT-GATEWAY Rev:0x00010211			
0	2	SG-ECAT-GATEWAY Rev:0x00010211			
7	7	SG-ECAT-GATEWAY Rev:0x00010211			
0	1	SG-ECAT-GATEWAY Rev:0x00010211			
L					
31111	ᄭᄬᅻᅷᆂᆙᆄᄖ	使用	最新交际	网络配管	更新
万从设备 当除0外的	设直下只地址 的任意值被设置	。 置到能够从硬件设置节点地址的从设备时,该设置有优先级。对于其它情况,设置的地址被应用。	-		
				写入	取消

给当前地址为0的写入地址,不能为0,不能重复,写入完成需要给所 有设备重上电

■ 从设备节点地址写入中	-		×
当前值1设置值1物理网络配置			1
主 主设备			
1 1 🔲 🗖 1000 1000 10000000000000000000000000			
■			
5 5 InoSV630N Rev:0x00010000			
■ — <b>●</b> X3			
6 6 🔚 📜 以设备节点地址写入中 🛛 🗙			
0 2 写入从设备的节点地址完成。 接通从设备由源使设置生效。			
7 7 SG-ECAT-GA			
0 3 SG-ECAT-GATEWAY Rev:0x00010211			
	新实际	网络配置	更新
为从设备设置节点地址。 当除0外的任意值被设置到能够从硬件设置节点地址的从设备时,该设置有优先级。对于其它情况,设置的地址被应用。			
	Ę	入	取消

⑦给所有设备重上电之后再次右键 PLC 选择"与物理网络配置比较和合并"

■ 同物理网络配置的比较和合并					×
节点地址ISysmac Studio上的网络设置	节点地址 物理网络配置	Sysmac Studio	比较结果	物理网络配置	较低配置
主没音 1 E001 SG-ECAT-HUB 4 Rev:0x	1 SG-ECAT-HUB_4 Rev:0x000	土夜曲 1:SG-ECAT-H		土设画 1:SG-ECAT-H	
7 E005 SG-ECAT-GATEWAY Rev	🗖 — 🗨 X2	5 : InoSV630N	匹配	5 : InoSV630N	
3 E006 SG-ECAT-GATEWAY Rev	5 InoSV630N Rev:	6 : SG-ECAT-G	匹配	6 : SG-ECAT-G	
	<b>□ □ x</b> 3	2 : SG-ECAT-G	匹配	2 : SG-ECAT-G	
· · · · · · · · · · · · · · · · · · ·	6 SG-ECAT-GATEV	7 : SG-ECAT-G	<b>LTRC</b>	7 : SG-ECAT-G	
	2 SG-ECAT-GATEV	3 : SG-ECAT-G	匹配	3 : SG-ECAT-G	
	7 = M SG-ECAT-GATEWAY Rev:0)				
	3 SG-ECAT-GATEWAY Rev:0>				
▲应用物理	网络配置(A)				
某些从设备像电源单元不包括在物理网络配置中。					
	大4]				

视图(V) 插入(I) 工程(P) 控制器(C) 模拟(S) 工具(T) 窗口(W) 帮助(H)

直 う ぐ 💈	30	đ	く	*	691	53	63 1011	Ä	9	靫	A	-	69	69	e,	6	0	<b>₽</b> 1 ■	¦₽
anananana 🗸 🏚	Ether	CAT 🗙																	
	节点地址	网络话	遭 H		主设主法	间 2备								Ĺ					
CAT	1			=/)	0	E001 SG-	ECAT	-HUB_	4 Rev:(	)x00000	000								
5点1 : SG-ECAT-HU 5点5 : InoSV630N (					-	X2		F002	,										
〕点6 : SG-ECAT-GA 〕点2 : SG-ECAT-GA	5		-		_	X3	Â	Ino	SV630M	Rev:0>	:000100	000							
5点7 : SG-ECAT-GA 5点3 : SG-ECAT-GA	6					-1	01	E003 SG-	ECAT-(	GATEWA	V Rev:0	x0001	0211						
扩展机架 <sup>由射</sup>	2					-1	Ŋ	E004 SG-	ECAT-(	GATEWA	Y Rev:0	x0001	0211						
器设置	7		1	=1)	0	E005 SG-	ECAT	-GATE	WAY R	ev:0x00	010211								
操作设置 引置EtherNet/IP端[ 引置I/O设置	3		4	1	0	E006 SG-	ECAT	GATE	WAY R	ev:0x00	010211								

可以看到此时网络设备和"4.1 例程预操作"一致

⑧下载程序

ysmac stud	10 (04bit)		
) 工程(P)	控制器(C) 模拟(S) 工具	L(T) 窗口(W)	帮助(H)
30	通信设置(C) 变更设备(V)		🕅 🔺 🖄 68 🍻 🖡 🔿 🖓
HerC.	在线(O) C	trl+W	
节点地址IP	离线(F) C	Ctrl+Shift+W	
	同步(Y) (	Ctrl+M	
1	传送中(A)	•	传送到控制器(T) Ctrl+T
	模式(M)	•	从控制器传送(F) Ctrl+Shift+T
5	监测(N) 停止监测(N)		Rev:0x00010000
	设置/重置(S) 理制刷金(C)		
6	(ד) ואפנסעניס פני		ATEWAY Rev:0x00010211
2	MC试运行(U) MC监测表(T)	•	ATEWAY Rev:0x00010211
7	CNC坐标系监控表(Z)	•	v:0x00010211
3	SD内存卡(D)		v:0x00010211
	控制器时钟(K)		
	释成访问权限(C) 更新CPU单元名称(P)		
	安全性(E)	٠	
	清除所有内存(L)		
	重置控制器(R)		

ysmac Studio (64bit)



之后可以看到软件右下角"控制器状态"变为绿色



此时所有设备都已进入 OP 状态

### 4.5 汇川 AutoShop 下 H5U-A8 实例

①打开 AutoShop, 创建工程, 注意 PLC 型号

🔛 AutoShop V4.10.0.0		
文件(F) 查看(V) PLC(P) 工具(T) 帮	要助(H)	
EDBB XEE 9		
		-[A][
	新建工程	X
		1990
	● 新建工程 ○ 临时工程	
	工程设定	
	工程名: test	
	保存路径: C:\Users\Admin\Documents\test\	
	编辑器: 梯形图 ~	
	系列与型号 H5U系列 ~ - H5U-A8 ~	
	<ul> <li>(1) EtherCAT总线高性能小型PLC</li> <li>(2) 支持自定义变量和FB/FC</li> <li>(3) 最大支持8轴运动控制(含EtherCAT和本地脉冲),支持定位、插补和电子凸轮</li> <li>(4) 支持4轴200KHz脉冲输出,4路200KHz高速输入</li> <li>(5) 1路以太网支持EtherNet/IP、Modbus TCP和</li> <li>Socket、1路CAN支持CANLink和CANopen,1路485支</li> <li>持Modbus和自由协议</li> </ul>	
	确定取消	

②安装 XML 文件



在 XML 存放目录选择 XML 文件



安装完成之后需要重启 AutoShop 并重新建立工程 ③在工程管理下右键 EtherCAT,选择"自动扫描"



	序号	扫描从站列表	别名	信息
	1	SG-ECAT-HUB_4	1	
	2	SV630_1Axis_03713	5	
	3	SG-ECAT-GATEWAY	6	
	4	SG-ECAT-GATEWAY	0	
	5	SG-ECAT-GATEWAY	7	
	6	SG-ECAT-GATEWAY	0	
37月 新扫描数据 成功!				

自动扫描列表会出现"4.1例程预操作"中的设备,之后点击"更新组态"

Autosnop V4.10.0.0 C:\Users\Admin\Documents\test - [MAIN]		
」文件(F) 编辑(E) 查看(V) 梯形图(L) PLC(P) 调试(D) 工具(T) 窗	口(W) 帮助(H)	1
<u>] E C C C X C C I C X C C C C C C C C C C C</u>		
]┉ॼङ÷↓५ ┾┾╬╬ →↑¬⊥ ]	-++++ -+++++++++++++++++++++++++++++	-    s  {c]
工程管理 <b>平 ×</b>	网络9	网络注释
□ 중 系统变量表	M4210	网络公子承属
	MARIO	內增注样
	网络11	网络注释
	pog略12	网络汪粹
🔄 SBR_001	网络13	网络注释
····· 📑 功能块(FB)	2	
	网络14	网络注释
	网络15	网络注释
	1 324	1.35857744
EtherCAT		
SG-ECAT-HUB_4		
InoSV630N		
SG-ECAT-GATEWAY		
SG-ECAT-GATEWAY_1		
SG-ECAT-GATEWAY_2		

🔜 AutoShop V4.10.0.0 C:\Users\Admin\Documents\test - [MAIN]

④编译并下载程序



裁设置 	
☑下载工程源码(不勾选则不能上载工程)	
□ 保持型变量属性	
● 下载时,保持型变量保持现有值	
○ 下载时,保持型变量重新初始化	
□ 每次下载提示 确定 取消	

### ⑤运行 PLC

AutoShop V4.10.0.0 C:\Users\Adm	n\Documents\test - [MAIN]	
文件(F) 编辑(E) 查看(V) 梯形图(L)	PLC(P) 调试(D) 工具(T) 窗口(	W) 帮助(H)
EDBB XEE 9	▶ 运行( <u>R</u> ) ► F5	
]┉ऽऽ┾╆┾	• 停止(S) F6	++ ++ ++
工程管理	▶ 在线修改模式(L)	网络1
	▲ 编译(C) Ctrl+F7	
	♀ 全部编译(A) F7	网络2
→	清理编译信息(E)	
「「「」 软元件表	整理梯形图(F)	网络3
● 变量表		
	▶▲ 下载(D) F8	网络4

之后可以看到所有设备都进入了 OP 状态。

# 五、产品尺寸

本模块尺寸如下图所示,采用导轨方式安装。

