

ELCO

# **ABSOLUTE ROTARY ENCODER**

PROFINET

----编码器使用手册



宜科 (天津) 电子有限公司

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# 前言

#### 1. 本手册适用范围:

适用于 ELCO 公司 Profinet 协议的多圈编码器产品。 通过手册中的信息,您可以在 Profinet 模式下连接控制器运行 Profinet 总线上 的多圈编码器产品。

#### 2. 所需基本知识:

本手册假定您具有电气及自动化工程领域的基础知识。 本手册基于发行时的有效数据描述各组件,新组件及参数调整会在新版手册 中更新。

#### 3. 指南:

本手册介绍了 Profinet 协议下多圈编码器的硬件及使用。涵盖范围包括:

- 安装与接线
- 技术特性
- 使用实例
- 技术参数

#### 4. 技术支持:

本手册尽可能全面的描述多圈编码器的产品特性及使用方法,如有疑问或关于此产品的其它问题,请联系当地 ELCO 公司办事处,或拨打服务热线400-608-4005。

您还可以通过 ELCO 公司网站了解更多自动化产品: <u>http://www.elco-holding.com.cn/</u>

#### 5. 责任免除:

我们已对手册中所述内容与硬件和软件的一致性做过检查。 但不排除存在偏差的可能性,无法保证所述内容与硬件和软件的完全一致。 数据参数按规定已进行了相关检测,必要的修改会在新版本中完善。

#### 6. 版权声明



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## 1. 产品概述

#### 1.1 简介

Profinet 多圈编码器使用高速以太网作为接口通讯总线,高速以太网的应用 使编码器在工作中提供比传统现场总线更高的实时性,并实现了完整的 Profinet 通讯协议,可对 Profinet 主站完全支持。

#### 1.2 产品介绍

Profinet 多圈编码器提供了包括实时位置、实时转速、方向设置、单圈分辨 率设置、总量程设定、预置值设置等功能。

#### 1.3 特性

- LED 及屏幕状态指示,并提供在线诊断和通道保护功能
- 具备旋转方向、单圈分辨率、总量程等可配置参数。

## 2. 技术特性

#### 2.1 接口说明

此图片为 Profinet 多圈编码器的示意图。

端子配置:

功能		M12 接	插件			
	信号:	数据发送+	数据接收+	数据发送-	数据接收-	1 2
总线接口1	缩写:	TxD+	RxD+	TxD-	RxD-	D coded
	针脚:	1	2	3	4	4 3
中組織口	信号:	电源+	-	Voltage -	-	4 3
巴尔按日	缩写:	+ V	-	0 V	-	A coded
	针脚:	1	2	3	4	
	信号:	数据发送+	数据接收+	数据发送-	数据接收-	12
总线接口2	缩写:	TxD+	RxD+	TxD-	RxD-	D coded
	针脚:	1	2	3	4	4 3





Profinet 多圈编码器使用高速以太网作为接口通讯总线,高速以太网的应用 使编码器在工作中提供比传统现场总线更高的实时性,并实现了完整的 Profinet 通讯协议,可对 Profinet 主站完全支持。

#### 2.2 硬件参数

网关

电源输入	+24VDC
输入电压	18VDC~30DCV
工作温度	-4080°℃
存储温度	-4585 °C
抗振动性	10G 102000Hz
抗冲击性	50G/11ms
轴负荷	40N 轴向 80N 径向
防护等级	IP65
轴承寿命	10 <sup>9</sup> 转数



## 2.3 LED 指示功能

指示灯名 称	指示灯状态	指示灯含义	可能原因
	灭	未接入网络	1. 网络线缆故障 2. 网关损坏
L/A	绿亮/红闪	正在建立网络连接	数据连接中
	绿亮/红亮	网络数据交换中	
Daman	灭	无供电	1. 供电线缆故障 2. 网关损坏
Power	红	电源电压低于+18V	电源故障
	绿	正常供电	
ERR	灭	无通讯错误	
	红	未建立通信连接	1. 网络线缆故障 2. 网关损坏

# 3. 安装尺寸

## 3.1 尺寸图





## 4. 使用实例

#### 4.1 安装编码器 GSDML 文件

本节依 TIA Portal V14 软件为例,在软件的"选项"下拉菜单中单击"管理通用站描述文件"打开对话框,在源路径内找到要安装的 GSDML 文件路径,在导入路径的内容选择需要安装的 GSDML 文件,单击"安装"按钮。如下图:

	E ( Project-pr	ofinet + PLC_1 [CI	U 1511-1 PN]					- 🕫 i	X Hard		P 10
Devices					1	Topology view	Network view	Device view	Optio	ins	
9		1 [CPU 1511-1 PN]		⊞ 🗐 🖲 🛓			Device overview				
			628 Min (~**						N Ca	talog	
7 Project-profinet	0	1					Y Module	Rac	k Ca	talog	10000
Add new device		der.				_		0	A Sear	ch>	
Devices & networks					-			0	Filt	er Profile: <al< td=""><td></td></al<>	
• RLC 1 [CPU 1511-1 PN]	COLUMN TWO IS NOT						PROFINET	Tinterface_1 0		PM	
Device configuration	0	1 2 3	4 5	6 7 12 22	-31			0	- D - D - D - D - D - D - D - D - D - D	PS	
Q Online & diagnostics	Rail_0							0		CPU	
Program blocks	=					•		0		DI	
Technology objects				8 16	24	-		0	- •	DQ	
External source files						*		0	- •	DI/DQ	
PLC tant			Manage genera	station description	n files			×		Al	
PLC data types			Installed GSD	GSDs in the	project			0	- •	AQ	
Watch and force tables				- dobb in the j	project			0	- I <b>F</b>	AllAQ	
Online backups			Source path:	E:\GSDML\second get	neratiaon PN			0	- 10	Communications mo	dules
Fraces								0	- I <b>- E</b>	Technology modules	
Device proxy data			Content of imp	ported path				0		Interface modules	
Program info			File		Version	Language St	atus	Info	V		
PLC supervisions & alarms	< 11		GSDML-V2.34	-ELCO-Encoder-201	V2.34	English, Ger Al	ready installed	Standard	>		
PLC alarm text lists											
Local modules	-										
Unarouped devices	Genera	Cross-referen	ic i								
Common data	C3 🚹 🕄	Show all messages	-								
Documentation settings											
Languages & resources	1 Merra	0.8									
	V Pro	viert closed									
Details view	O Pro	pject Project-profinet op	e						✓ Int	formation	
Module									Devic	<u>_</u>	
			<			10		>	Deric		
Name	100		1					100 C			
Device configuration							Delete Install	Cancel			
Online & diagnostics					_		Star	ts the installation pro	edure for the	selected files.	
Program blocks									1		
Technology objects											
External source files	~ <				ш				3		
	1									1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	

#### 4.2 编码器组态

本节通过一个组态连接的实际操作流程,让用户全面了解 Profinet 编码器实际使用。本例采用 ELCO 公司的 Profinet 编码器作为 Profinet IO 从站连接西门子 s7-1500PLC,通过 PC 机上的 TIA Portal V14 软件进行组态和调试,以下我们将通过图片形式详细介绍具体的软件组态和调试流程。

1) 设备连接

Profinet 编码器的 Port1 或者 Port2 网口端通过标准 Profinet 网线连接到 s7-1500PLC 的一个网口端, s7-1500PLC 的另一个网口连接到装有 TIA Portal V14 软件的 PC 机网口。将编码器和 PLC 模块的电源线连接在 DC +24V 的电源输出端。

2) 添加新设备

在 TIA Portal V14 软件的左侧"项目"菜单内双击"添加新设备"选择型号和 版本相一致的 PLC,单击"Add"按钮。如下图:





在 TIA Portal V14 软件的右侧 "硬件目录" 菜单内 "其他现场设备"内找到需要添加的编码器设备名称(单圈绝对值编码器: SignleTurns Absolute Encoder 多 圈绝对值编码器: MultiTurns Absolute Encoder), 拖拽到网络视图内。如下图:

ject tree	🛛 🌾 Project-pro	linet + Devices & r	ietworks					_ 🖬 🖬 🗙	Hardware catalog	1.1
Vevices					a Topolog	jy view	h Network view	vice view	Options	
	🔟 🚔 📢 Network	Connections HM	connection 💌	2 1 1	)@_± 🛛		letwork overview			
						^	V Device	Type	✓ Catalog	
] Project-profinet	^				_	-	<ul> <li>\$71500/ET200MP station_1</li> </ul>	S71500/ET	<search></search>	841
Add new device	DIC 1	100	ELCO ENCODER		-		PLC_1	CPU 1511		
Devices & networks	CPU 1511-	PN	PNMM58-2M M			10	<ul> <li>GSD device_1</li> </ul>	GSD device	Priver Prome: SALS	1001
PLC_1 [CPU 1511-1 PN]			Not assigned	UP-HORM			ELCO-ENCODER	PNMM58	Controllers	
Y Device configuration	and the second			_						
S Online & diagnostics	=								PC systems	
Program blocks	PN/IE_1								Drives & starters	
Technology objects									Detection & Manifestion	
External source files						~			Distributed I/O	
PLC tags	< =		> 100%			•	<	>	Rower supply and distribution	
Le PLC data types	GSD device				Proc	oerties	Linfo Diagnostics		Find field devices	
<ul> <li>gg watch and force tables</li> </ul>	L Course		L C. I.	L T			1		Other field devices	
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Marine States	General		General							
Provide proxy data									Drives	
R Course ising & alarma									• Encoders	
D RIC alarm text lists				Name: GSI	0 device_1				P FLCO	
I local modules				Author: zan	bin.gao				- EICO	
				Comment:	- 1993				ABSOLUTE ENCODE	R
The Unarsigned devices								223	MultiTurns Absol	ut
Common data									Single Turns Abso	Ju.
Documentation settings	~							~	- Standard	
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									SIEMENS AG	
									Gateway	
									Ident Systems	
lame									Sensors	
										1
									N. Information	
									• momation	
									Device:	

3) 组态设置

单击编码器设备块上"未分配"按钮,在弹出的对话框内单击"PLC\_1 PROFINET 接口\_1", PLC 与编码器进行自动连接。如下图:



		Project-profinet + Devices	& networks			_ # = X	Hardware catalog
levices				Topology view	Network view	Device view	Options
	(m) <del>13</del>	Network	HM connection		Network overview		
			a lOsystem: PLC 1	PROFINET IO-System (100)			M Catalon
] Project-profinet	^		- 10 Januar	=	Device	Type	- Catalog
Add new device					- 571500/E 1200/WP	Station_1 571500/21	Gearch
A Devices & networks		PLC_1	ELCO-ENCODER		FILL_1	CPU ISTI-	Filter Profile: All>
PLC_1 [CPU 1511-1 PN]		CPU 1511-1 PN	PNMM58-2M M 0	P-NORM	GSD device_1	GSD device	Controllers
Device configuration			PLC_1		, ELCO-ENCODE	K PTWWWDO'	• 🛅 HM
Q Online & diagnostics		<u> </u>					PC systems
Program blocks	-		1 DROFINIET IO Funda				Drives & starters
Technology objects		- PLC	1.PROFINETIO-Syste				Image: Setwork components
External source files							Detecting & Monitoring
PLC tags		Z	N 1005		2		Distributed I/O
PLC data types		NE	2 100 8	- · · · · · · ·	1 m		Rower supply and distribution
Watch and force tables		PROFINET interface_1 [X1]		S Properties	Linfo Diag	nostics	🕨 🕨 Field devices
Online backups		General IO tags	System constants Texts				Other field devices
Firaces		Canand				1	Additional Ethernet devices
Device proxy data		General Ethorast addresses	Ethernet addresses				PROFINET IO
Program info		Time supplication	Interdence and under doubt				<ul> <li>Drives</li> </ul>
PLC supervisions & alarms		lime synchronization	Interface networked with	1			<ul> <li>Encoders</li> </ul>
PLC alarm text lists		Operating mode		and a second a			ELCO
Local modules		Advanced options	Sub	net: PN/IE_1		t	- EICO
Distributed NO		web server access		Add new subnet			ABSOLUTE ENCODER
		Hardware identifier					MultiTurns Absolut
Common data			IP protocol				SingleTurns Absolu.
Documentation settings	~						- 🖬 Standard
Dataile view		1		Set IP address in the project			PNMM58-2M Mul.
Jetails view			*	IP address: 197 1	68 20 1		SIEMENS AG
					00.20.1		Gateway
				Subnet mask: 255.2	55.255.0		Ident Systems
lame				Use router			Sensors
				Router address: 0 . 0			
				O IP address is set directly at th	e device		< II
				0			✓ Information
			PROFINET				Device:
			PROFINEI				-

双击编码器设备,进入"设备视图 (Device view)"界面,如下图所示,单击软件右侧硬件目录内的模块下拉箭头,然后选择需要的模块,并拖拽到设备概览 区,默认编码器报文为 Standard Telegram 82 报文,如果想更改为其它报文,请删除当前报文,在硬件目录的子模块下拉菜单内选择需要的子模块,并拖拽到设 备概览区内。

注: 宜科 Profinet 编码器产品目前支持标准 82 和非标准 100 报文;

PNMM58 系列支持标准 82 和非标准 100 报文;

PNM50 系列仅支持非标准 100 报文;

以 PNMM58 系列为例,更改成默认编码器报文为 Standard Telegram 82,如下图:



Profinet ENCODER



双击 PLC、编码器设备块,在常规对话框内设置 IP 地址和子网掩码,编码器的 IP 地址默认为 192.168.20.2,确保 PLC、编码器、 PC 机在同一个局域网内。

PLC的IP地址设置,如下图:

Name Siemens - C:\Users\zanbin.gao\Desktop\Project\Pro	roject											_ •
Project Edit View Insert Online Options Too	ols \	Nindow Help									Totally Integrated Au	tomation
📑 🎦 🔒 Save project 🚢 🐰 🗐 🛈 🗙 🍤 ± (	(al ±	🗄 🛄 🛄 🖳 📮 🂋 Go d	nline	🖉 Go offline  🛔	× E	1 🛛 🖂		roject> 🖣	in .		rotany integrated Ad	PORTAL
Project tree	14	Project + PLC_1 [CPU 15	116-1	PN]						_ # = ×	Hardware catalog	- I I
Devices							📲 Top	ology view	v 🛔 Network view 🕅 De	vice view	Options	
13 III III III III III III III III III I	1	# PLC_1 [CPU 1511C-1 PN]		. 🗉 🗹 🖌 🖽	🔲 🔍 ±				Device overview			
							-	^	tradula	Deels	✓ Catalog	
▼ 📑 Project	^								II Module	NOLK A	Courth	[
🗧 🍯 Add new device		0 1	2	3 4 5	6 7		3 31		<b>PIC 1</b>	0	Gentin	
Devices & networks		il_0 livel_livel_livel							• FLC_1	0	Filter Profile: <all></all>	- ei
PLC_1 [CPU 1511C-1 PN]						-			DI 16/DO 16 1	0	► I PM	
Device configuration						8 16	24		HSC 1	0	▶ 🛄 PS	
V. Online & diagnostics									HSC 2	0	CPU	
2 Parameters	=							-	HSC 3	0	• 🛅 DI	
Program blocks						15 23	31		HSC 4	0	▶ 🛄 DQ	
Technology objects								-	HSC 5	0	▶ 🛄 DI/DQ	
External source files									HSC 6	0	Al I	
PLC tags									PROFINET interface	1 0	▶ 🛄 AQ	
PLC data types									, montermenee		▶ <b>a</b> l/AQ	
Watch and force tables										0	Communications modules	
Online backups	- 11									0	Technology modules	
🕨 🛃 Traces								~		0	Interface modules	
Device proxy data		< 11		> 100%					< II	>		
Program info	- 11	PLC 1 [CPU 1511C-1 PN]						reportion	1 Info (1) Disquestics		1	L L
PLC supervisions & alarms	- 11		_					Toperues	Diagnostics		4	
PLC alarm text lists		General IO tags	Syst	tem constants	Texts							
Local modules	- 11	General	~	Ethernet addresse	is						c	
Ungrouped devices		PROFINET interface [X1]		Interface action	a she of the late							
Common data		AI 5/AQ 2 [X10]		interface netwo	nked with					-	1	
Documentation settings		DI 16/DQ 16 [X11]			Cubach	DAUDE 1					1	
Languages & resources		High speed counters (HSC)			subnet:	FINE_1						
Image: Second	~	Startup					dd new su	ibnet			1	
✓ Details view	_	Cycle	= 1									
Module		Communication load	Ē	IP protocol								
		System and clock memory				0.000						_
		<ul> <li>System diagnostics</li> </ul>	-			Set in	address	n the project	t			
Name		Web server					IP addre	ss: <u>192</u> .	168.20 .1		✓ Information	
Device configuration	^	Display				S	ubnet ma	sk: 255 .	255.255.0		Device	^
S Online & diagnostics	=	User interface languages					outer				Device:	
1 Parameters		Time of day										
Program blocks		Protection & Security				Rou	iter addre				4	
Technology objects	~	System power supply	~			() IP add	dress is se	t directly at t	the device		4	×
<ul> <li>Portal view</li> <li>Overview</li> </ul>	PLC_1										Project Project created.	

编码器的 IP 地址设置,如下图:

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	<sup>3</sup> <sup>3</sup> <sup>3</sup> <sup>3</sup> <sup>3</sup> <sup>3</sup> <sup>3</sup> <sup>3</sup>	🚡 🗓 🗓 📓 🦉 🚱 online 🖉 Go offline 🛔 🖪 🕼 🧩 😓 🛄 <search in="" project=""></search>	PORTA	L
	Project tree 🔲 🖣	Project 🕨 Ungrouped devices 🔸 ELCO-ENCODER [PNMM58-2M MultiTurns Absolute Encoder 25 Bit] 🗕 🖬 🗮 🛪	Hardware catalog 📰 🗊 🗊	
	Devices	🚰 Topology view 🛛 🛔 Network view 🛛 😭 Device view	Options	
	(13) (13)	+ ELCO-ENCODER [PNM/658-2M + P C + Device overview	-	물
			w Catalog	-dv
	Project	Module Rack	• catalog	- 8
	Add new device	elco-Encoder 0	dearch>	18
	A Devices & networks	Finterrace 0	Filter Profile: <all></all>	) E
	▼ 📑 PLC_1 [CPU 1511C-1 PN]	and the second se	Im Head module	ğ
	Device configuration		Module	
	V. Online & diagnostics			2
	Parameters =			0
	Program blocks			lii
	Technology objects	DP-NORM		et
	External source files			0
	PLC tags			~
	PLC data types			
	Watch and force tables			4
	Online backups	0		ast
	🕨 🔄 Traces			ŝ
	Device proxy data			
	Program info	ELCO-ENCODER [PNMM58-2M MultiTurns Absolute Encoder 25 Bit] 🛛 😨 Properties 🚺 Info 🚯 🏹 Diagnostics 📰 🖬 🚽		4
	PLC supervisions & alarms		1	ibr
	PLC alarm text lists	General 10 tags System constants 1 Lexts	-	ari
	Local modules	General     Ethernet addresses		S S
	Distributed I/O	PROFINET interface [X1]     Interface networked with		
	Generation of the second	Identification & Maintenance		
	Common data	Hardware identifier Subnet: PN/IE_1		
	Documentation settings	Shared Device		
	Languages & resources	Table inclusion of the state of		
	Details view	IP protocol		
	Module			
		IP address: 192, 168, 20, 2		
	Name	Subnet mask: 255 255 0		-
	Device configuration		<ul> <li>Information</li> </ul>	-
	V Online & diagnostics	Use router	Device:	2
	Parameters	Router address: 0 . 0 . 0 . 0		-
	Program blocks			
6	Technology objects	PROFINET		~
	Portal view     Portal view     Coverview     Coverview     Coverview	NCOD	The project Project was saved successf	



mens - C:\Users\zanbin.gao\Desktop\shu\sh	u						
t Edit View Insert Online Options	Iools Window Help 2 (24 ± 🚮 🔃 🗓 🚆 阱 💋 Go on	line 🖉 Go offline 🛔 🖪 🖪 🗙	Search in proje	ct>		Totally Integra	ted Automation POR
oject tree 🛛	I shu  → Ungrouped devices  → E	ELCO-ENCODER [PNMM58-2M Mul	tiTurns Absolute Encode	er 25 Bit]	_ # = ×	Hardware catalog	
Devices			🛃 Topology view	📥 Network view 📑 De	vice view	Options	
	ELCO-ENCODER [PNMM58-2M	- 📰 🔏 🗄 🛄 🍳 ±		Device overview			
			^	V Module		✓ Catalog	
Program blocks	^	¢	=			Search	
Technology objects	ALCOD.			Interface	0		
External source files	OE			, menoce	0	Filter Profile: All>	
PLC tags					0 =	Head module	
PLC data types	i interest				0 =	Module	
Watch and force tables					0		
Online backups					0		
🕨 🔄 Traces					0		
Device proxy data		DP-NORM			0		
Program info					0		
PLC supervisions & alarms					0		
PLC alarm text lists	-				0		
Local modules			· · · · · · · · · · · · · · · · · · ·		0		
Distributed I/O			~		0 ~		
H Ungrouped devices	< 11	> 100%	· · · · · · · · · ·	<	>		
Common data	ELCO ENCODER [PNMM58.2M]	MultiTurne Absolute Encoder 25	Dist 100 Descention			1	
Documentation settings		manara massificate Encoder ES		La Diagnostics			
languages & resources	General IO tags Syst	tem constants Texts					
Online access	▼ General	IP address:	192.168.20.2		^	✓ Information	
Dirplaubide interfacer	Catalog information	Subpet mark:	255 255 255 0			Devices	
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b also appender [102.168.20.2]	Ethernet addresses	Router address:					
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Depic_1[192.168.20.1]	Advanced options	PROFINET					
Qualcomm QCASTX4A 802.11ac Wr Ha	Hardware identifier				-		
Microsoft WHI Direct Virtual Adapter Ha	Identification & Maintenance		Generate PROFINET devir	ce name automatically			
PC internal [Local]	Hardware identifier	PROFINET device name:	elco-encoder			Article no.:	
	Shared Device						
TalaCapita (Automatic protocol data		Converted name:	eico-encoder			Version:	
Card Reader/USB memory		Device number:	1			Description:	
Card Readenoso mentory						Madula	
	~					Module	
	-						
Details view							

编码器名称修改,保持和在线访问中的编码器名称一致。

若名称不一致,则无法建立通讯。修改方法如下,通过在线访问找到编码器,在编码器子菜 单中选择 "online & diagnostics",在 Functions 中选择 "分配 IP 地址","分配 PROFINET 设备 名称"。

Project tree       Image: status       Solution access > imat(0) Ethernet Connection (4) 1219.1 M > alcoencoder [192.168.202] > alcoencoder [192.168.	Project Edit View Insert Online Options Tools 🔮 🎦 🔚 Save project 🚆 🐰 🗐 🕋 🗙 崎 🛨 (주 ±	Window	Help	🔐 🖪 🕼 🗶 🖃 🛄 🏼 Search in projects 🛛 🏔		Totally Integrated Automation PORTAL
Devices         Options                • Objects	Project tree		line access 🕨 Intel(R) Ethernet C	Connection (4) I219-LM + elco-encoder [192.168.20.2] + elco-encode	er [192.168.20.2] 🛛 🗕 🖬 🗮 🗙	Online tools 🛛 🗊 🕨 🕨
Control backsopper of a large order     Control backsopper of a large order     Control disposition     Proceeding and the set lists     Proceeding and the set lists     Control disposition     Proceeding and the set lists     Proceeding and the set lis	Devices					Options
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Card ResdenUSB memory     Card ResdenUS	Common State      Common	<b>^</b>	Disgnostic status Channel diagnostics > PROFMET interface > Functions	Module Short designation: PMM652MMultifums Absolute Encoder 25 Bit Arcide number: EAA5541 Arcide number: EAA5541 Firmware expansion: U45.0 Firmware expansion:		V [Operator panel]
• Quality More Configuration         • Concerdity         • Concocerty         • Concerdity	Consugers Aresources     Consects     C	)==	General Cross-references	Compile	V Diagnostics	Cycle time     Not supported
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	> Details view	~	Scanning for devices completed for	for interface Intel(R) Ethernet Connection (4) I219-LM. Foun 12/1:	8/2018 10:09:53 AM	



IP 地址修改,如下图:

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Despective against automatic descess de, by use of invession industrializations, segmentations, segmentati	Devices				Options
Control backups     C	14	•	Diagnostics protected agants unsubhoted access, e.g. by use of trevells and network segmentation. For more information about industrial accurity, please visit http://www.siernens.com/industrial/accurity	^	✓ Operator panel
Program info     Program info     Program info     Procession & a lames     Procession is a lames     Propertiee o lames     Procession is lames     Procestimal Alaptere	<ul> <li>Image: Online backups</li> <li>Image: Traces</li> <li>Image: Device proxy data</li> </ul>	^	Unagrossis satus Channel diagnostics > PROFINET interface Functions		Not supported
Local modules     Local m	Program info		Assign if address Assign PROPINET device Resets the device retings In Address In I		
Compared drakes     Concentration settings     Concentratinget     Concentratinget     Concentration settings     Concentrat	Local modules     Distributed I/O		Praddress: 192.108.20.2 Subnet mask: 255.255.0		
Image: Secure matching settings:       Image: Secure matching setting:       Image: Secure matching setting:       I	E Ungrouped devices     Gramon data		Use router		
Asign # address     Address     Asign # address     Address     Asign # address     Address     Asign # address     A	Coursentation settings     Constant Annual Constant Settings		Router address: 192 . 168 . 20 . 2		
Delay Monie Interfaces     Delay Monie Interface     Delay Monie     Delay Monie Interface     Delay Monie Interface     D	🔚 Online access		Assign IP address	~	✓ Cycle time
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Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100533 2.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100533 2.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100534 2.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100533 2.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100752.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100752.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100752.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100753.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100753.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100753.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100753.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100753.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100753.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100753.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 100753.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M as started. 12182018 1009453.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M Foun 12182018 100953.A.4.4     Scanning for devices on interface Intelligi Ethernet Connection (4) [2194.M Foun 12182018 100953.A.4.4	Card Beader/USB memory		Loading completed (errors: 0): warnings: 0). 12/18/2018 10:05/30 AM		✓ Memory
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PROFINET 设备名称修改,如下图:

ct Edit View Insert Online Options Tools	Window		1 12.				Totally	Integrated Automa
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E PLC alarm text lists		Reset to factory settings						
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V. Online & diagnostics		🕄 🛕 🜖 Show all messages 💌						
plc 1 [192.168.20.1]								
Qualcomm QCA61x4A 802.11ac Wireless Adapter		1 Message	G	o to ?	Date	Time		
Microsoft Wi-Fi Direct Virtual Adapter <3>					12/18/2018	10:05:19 AM	^	
Microsoft Wi-Fi Direct Virtual Adapter <4>		<ul> <li>Hardware configuration</li> </ul>			12/18/2018	10:05:21 AM		
PC internal [Local]	100	<ul> <li>Hardware configuration was loaded successfully.</li> </ul>			12/18/2018	10:05:28 AM		
USB [S7USB]		Routing configuration was loaded successfully.			12/18/2018	10:05:28 AM		
TeleService (Automatic protocol detection)		<ul> <li>'Main' was loaded successfully.</li> </ul>			12/18/2018	10:05:27 AM		
Gard Reader/USB memory		<ul> <li>Loading completed (errors: 0; warnings: 0).</li> </ul>			12/18/2018	10:05:30 AM		✓ Memory
		Scanning for devices on interface Intel(R) Ethernet Connection (4) I219-LM was started			12/18/2018	10:05:32 AM		
		Scanning for devices completed for interface Intel(R) Ethernet Connection (4) I219-LM.	Foun		12/18/2018	10:05:39 AM		Not supported
		Connected to PLC_1, via address IP=192.168.20.1.			12/18/2018	10:05:43 AM		
		Scanning for devices on interface Intel(R) Ethernet Connection (4) I219-LM was started			12/18/2018	10:07:44 AM		
		Scanning for devices completed for interface Intel(R) Ethernet Connection (4) I219-LM.	Foun		12/18/2018	10:07:52 AM		
		<ul> <li>Connection to PLC_1 terminated.</li> </ul>			12/18/2018	10:09:41 AM		
		Scanning for devices on interface Intel(R) Ethernet Connection (4) I219-LM was started			12/18/2018	10:09:46 AM		
	~	Scanning for devices completed for interface Intel(R) Ethernet Connection (4) I219-LM.	Foun		12/18/2018	10:09:53 AM		

## 4.3 编码器设置项的使用



编码器提供包括旋转方向、单圈分辨率、总测量范围、预置值设置、旋转速度等在内的多个可设置项。

1) 旋转方向设置:

在编码器设备概览视图中单击 "Parameter Access Point",在弹出的对话框中 单击 "模块参数",进入参数设置界面。如下图:



在 Code sequence 的下拉菜单中定义编码器的正反转(向), CW: 正转(定义顺时针为正向), CCW: 反转(定义逆时针为正向)。如下图:

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Device configuration			Standard Telegram 82 0		▼ 📺 Standard
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Languages & resources	4 Class 4 functions liter	CW			
Details view	Class 4 functionality.	CCW			
Module	G1_XIST1 Preset control:	disable			
	Scaling function control:	disable	-		2
Name	Alarm channel control:	disable	•		* Information
Device configuration	Compatibility Mode:	enable			
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2) 单圈分辨率设置:

在 Measuring units / Revolution 窗口内设置单圈分辨率,数据设置范围 1-8192 的整数。如下图:



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Device configuration					Standard Tel	eoram 87 0	✓ Im Standard
😵 Online & diagnostics				-		0	PNMM58-2M MultiTurns Absolut
🔡 Parameters	=			•		0	▼ []] Module
Program blocks			50 HOD14			0	Encoder_Multiturn
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Traces		Parameter Access Point [Param	eter Access Point]	S Properties	🚺 Info 🔒 🗓 Dia	gnostics	
Device proxy data	. Г	General IO tags Syste	em constants Texts				
Program info		General	Preset value:	0			~ L
PLC supervisions & alarms		Identification & Maintenance					
PLC alarm text lists		Module parameters	Encoder parameters				
Local modules		Hardware identifier					-
Distributed I/O			Code sequence:	CW			
Ungrouped devices			Class 4 functionality:	enable			
Common data			G1 VISTI Preset control:	dirable			-
Documentation settings			Casting Aventing control.	disable			
Details view	-	1	scaling function control:	disable	-		
• Details view		1	Alarm channel control:	disable	•		
Module	_	-	Compatibility Mode:	enable			
			Measuring units / Revolution:	8192			
Name			Total measuring range:	1 Value range: [18192]. X			✓ Information
Device configuration	^		Maximum tolerated failures of				
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Portal view		I ELCO-ENCOD					The project Project was saved successf

3) 总测量值设置:

在 Total measuring range 的窗口内设置总测量值,数据设置范围为 1-33554432 的整数。如下图:

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🕨 🔀 Traces	Parameter Access Point [Parameter Access P	rointj	S Properties Info 1 S Di	agnostics	1	ks
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PLC alarm text lists	Module parameters	VICTI Procet control. dicable			1	ari
Local modules	Hardware identifier	_AISTI HESELCONDOL. UISADIE			1	es
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Ungrouped devices		darm channel control: disable	•		1	
Common data		Compatibility Mode: enable	•		1	
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✓ Details view	- T	atal measuring range: 33554432				
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5)预置值设置:

在 Preset Value 的窗口内设置预置值,数据范围为 0-33554431 的整数。如下 图: 以预设值设置 10000 为例



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6) 速度单位设置:

在 Velocity measuring unit 的下拉菜单内选择需要的速度单位,如下图:

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tig RC almottet its Module parameters G1_2051 Prest control: disable ■
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Alarm channel control: disable
Compatibility Mode: enable
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7) 编译下载:

单击菜单上"下载至设备"按钮,对当前的组态配置进行编译,将编译完的 程序下载到对应的 PLC 内,如下图:



Project       Image: Construction       <	Siemens - C:\Users\zanbin.gao\Desktor	jectProject	_ # X
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#### 4.4 监控表的使用

在 TIA Portal V14 软件左侧的"监控与强制表"的下拉菜单内双击"添加新监 控表",在弹出的窗口内设置编码器数据输入(默认输入地址位 0)和输出地址。 当组态的报文是 Standard Telegram 82,默认数据输入地址为 0 时,实时位置数据 输入地址为 ID8,实时速度输入地址为 IW12,预设值设置位为 Q2.4;(若组态的 报文是 No Standard Telegram 100,默认数据输入地址为 0 时,实时位置数据输 入地址为 ID0,100 报文无实时速度检测功能,预设值设置位为 Q0.7,置预设值 为 QD0,无需在软件 Preset value 中设置)

注:默认地址更改后,实时位置数据输入地址、实时速度输入地址,预设值设置 位需要相应变动。

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实时位置数据如下图:



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# 通过修改设置位 Q2.4 状态,将预设值数据设置到 ID8。

### 预设值(Preset value)数据 10000

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