



# 控制器 AWC500 快速入门

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福氏新能源技术(上海)有限公司 www.practek.cn

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# 1 版本

版本	作者	发布日期	描述
1.0.0.0	GY	2023-04-28	首次发布;

### 2 前言

### 2.1 关于 AWC500

AWC500 是为适应严苛应用环境而设计开发的高级控制器,模块化设计的控制器和 I/O 模块具有高度的可靠性、稳健性和灵活性。AWC500 产品系列模块之间采用机架背板 总线通信,机架之间采用扩展模块进行分布式连接。

#### 2.2 安全提示

本文件所涵盖的所有操作活动中,操作人员应始终遵照相应国家、地区及厂商包括但不 仅限于:高低压电器操作规范、安全规程、个人防护、环境保护等与安全和环境相关的法律 法规进行规范操作。福氏新能源技术(上海)有限公司谢绝承担由于个人忽视相关法规条例 引发人身安全和财产损失的责任。

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### 3 AWC500 连接设置

### 3.1 软件工具

#### 3.1.1 软件下载

控制器 AWC500 使用的 CODESYS IDE、CODESYS TSP、C/C++ SDK 开发包、固件、软件工具、驱动程序等可以从福氏技术官方网站服务器下载。

#### 3.1.2 开发电脑系统要求

开发电脑系统要求如下:

- Microsoft Windows 7 64 位系统。
- ▶ Microsoft Windows 8 64 位系统。
- > Microsoft Windows 10 64 位系统(推荐)。

#### 3.1.3 连接工具

控制器 AWC500 支持 SSH (Secure Shell) 和 SFTP (Secure File Transfer Protocol) 通信协议。

PuTTY – SSH 客户端:对于 Linux 命令 SSH 访问推荐使用免费软件工具 PuTTY,可以从福氏技术官方网站服务器下载。

WinSCP – SFTP 客户端:对于安全文件传输 SCP 或 SFTP 推荐使用免费软件工具WinSCP,可以从福氏技术官方网站服务器下载。

#### 3.2 建立连接

AWC500 通过控制器模块 PCM5.2 的以太网端口进行配置和编程,既可用于开发直接访问,也可用于现场远程访问。AWC500 主要通过浏览器控制界面进行配置,也可以通过SSH或 SFTP 方式进行系统配置,服务目的或特殊情况下通过 USB 串行通信 SSH 连接PCM5.2 服务端口进行访问。

#### 3.2.1 Ethernet 端口连接

AWC500 控制器模块 PCM5.2 通过以太网线缆连接到开发电脑, PCM5.2 模块网口 Eth1 默认网络配置静态 IP 地址:

IP: 192.168.20.13

Mask: 255.255.255.0

Gateway: 192.168.20.1

PCM5.2 模块 Ethernet 端口 Eth2 默认 DHCP 配置。

请确保开发电脑网络设置与 PCM5.2 模块处于相同子网范围,例如将开发电脑 IP 设置

为 192.168.20.20,使用开发电脑 CMD 向 PCM5.2 发送 ping IP (默认 192.168.20.13)

指令测试以太网连接情况。

Internet Protocol Version 4 (TCP/IPv4) Properties							
General							
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.							
O Obtain an IP address automatical	à						
Use the following IP address:							
IP address:	192 . 168 . 20 . 20						
Subnet mask:	255 . 255 . 255 . 0						
Default gateway:							
Obtain DNS server address autom	natically						
• Use the following DNS server add	resses:						
Preferred DNS server:							
Alternate DNS server:							
Validate settings upon exit Ad <u>v</u> anced							
	OK Cancel						



#### 3.2.2 PuTTY 连接

PuTTY 连接需要设置 IP address、连接类型 SSH、Port 22。



对话框窗口输入用户名和密码进行登录。



#### 3.2.3 WinSCP 连接

WinSCP 连接需要设置 IP、协议 SFTP、Port 22、用户名、密码。

🌯 Login - WinSCP	-
New Site	Session File protocol: SFTP Host name: 192.168.20.13 User name: ****** Save Advanced
<u>T</u> ools ▼ <u>M</u> anage ▼	Login Close Help

🌯 Public - root@192.168.20.13 -	WinSCP		_	×
Local Mark Files Commands	<u>Session Options Remote H</u> elp			
🕀 🔁 📚 Synchronize 🗖 🐺 🕻	🛐 🛞 🔢 🗊 Queue 🔹 Transfer	Settings Default 🔹 🥵 -		
📮 root@192.168.20.13 📑 New	Session			
📫 🕻 : ( - 🚝 🔽 🔶 - " 🔁 "	/ <root> • 😤 🔽</root>	🔶 🗸 🔿 🗸 📾 📾 🏠 🎜 🛤 Find Fi	les 👇	
Bulpload B C Edit » F	Download 🖓 🕅 Edit ¥ -	4 B- Properties		
C:\Users\Public		^		C;
	Name			SI.
<b>≜</b>	· · ·			
Documents	app			
Sogouinput	bin .			
	boot			
Pictures	data			
Music	dev			
Downloads	etc			
	home			
		<b>登录成功</b>		
	nvram			
	proc			
	root			
	i run			
	sbin			
	tmp			
	unp urb			
	var			
	vai			
< >	<			>

文件传输时请确认 WinSCP 软件工具设置"transfer to temporary filenames"处于 "disabled"状态。设置方法如下:

```
选择 "Tools" / " Preferences" / " Endurance" / "Disable" 。
```

🌯 Login - WinSCP	- 🗆 X
New Site	Session   File protocol:   SFTP   Host name:   192.168.20.13   User name:   Password:   *******   ●●●●●●●   Save   ✓     Advanced
Tools  Manage	Login ▼ Close Help
Import Sites	
Import/Restore Configuration	
Export/Backup Configuration	
Clean Up	
Run Pageant	
Run PuTTYgen	
Check for Updates	
Preferences	
About	🕤 Login 🔽 📿 Cle

Preferences		?	$\times$
Environment Interface Window Commander Explorer Languages Panels Remote Local	Enable transfer resume/transfer to temporary filename for All files Files abo <u>v</u> e: 100 KB Disable		
Editors Transfer Drag & Drop Background Endurance Network Security Logging Integration Applications Commands Storage Updates	Automatic reconnect         ✓ Automatically reconnect session, if it breaks during transfer         Reconnect after:       5 ● seconds         ✓ Automatically reconnect session, if it breaks while idle         Reconnect after:       9 ● seconds         ✓ Automatically reconnect session, if it stalls         Reconnect after:       60 ● seconds         Keep reconnecting for:       Unlimited ● seconds		
	OK Cancel	Help	

#### 3.2.4 服务端口 USB 连接

开发电脑可以通过标准 USB-B 数据线连接到 PCM5.2 模块的服务端口(USB device) 进行控制器配置。当使用 USB 数据线连接开发电脑与控制器 PCM5.2 时,USB 驱动从 Windows Update 自动下载安装到开发电脑,也可以从福氏技术官方网站服务器下载 USB 驱动程序手动安装。

打开"我的电脑"/"设备管理"查看 COM Ports, USB 端口占用的 COM 端口号需要在 PuTTY 登录时使用。



PuTTY 连接需要设置 COM 端口号(本示例为 COM3)、连接类型 Serial、Speed

115200。

Real PuTTY Configuration	×
Category:	
<ul> <li>Session</li> <li>Logging</li> <li>Terminal</li> <li>Keyboard</li> <li>Bell</li> <li>Features</li> <li>Window</li> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Colours</li> <li>Connection</li> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Rlogin</li> </ul>	Basic options for your PuTTY session         Specify the destination you want to connect to         Serial line       Speed         COM3       115200         Connection type:       Raw         Raw       Telnet       Rlogin         Load, save or delete a stored session       Saved Sessions         Default Settings       Load         Save       Default Settings
<u>A</u> bout	Close window on e <u>x</u> it: Always Never Only on clean exit <u>Open</u> <u>Cancel</u>

弹出对话框命令输入窗口界面后敲击键盘"回车"按键,此时如果通信连接正常则会出现用户名和密码输入窗口,如果敲击"回车"按键以后没有任何变化则可能通信连接错误。



# 3.3 浏览器控制界面

推荐使用 AWC500 浏览器控制界面进行控制器常规配置操作,其他如 PuTTY、

WinSCP 或者 USB 服务端口都属于特定功能情况下使用,非必要不使用。

控制器 AWC500 快速入门

浏览器 (推荐火狐浏览器) 地址栏输入 PCM5.2 模块 IP (默认 192.168.20.13) 进入

AWC500 浏览器控制界面。如果出现安全风险提示选择"高级"、"接受风险并继续"。

•	⊌ 火狐主页	× +		$\sim$	- 🗆	×
$\leftarrow \rightarrow$ C	्र 192.168.20.13				•	≡
(	🗋 火狐官方站点 🔞 新手上跟	<b>各</b>	>>	🗋 其他书签	18动设备上	的书签
🝅 火狐:	主页 🔍 火狐浏览器		背景● 设	置 🎙 访问论	禄 举	
						~
<						>
× +						
A 不安全 https://1	92.168.20.13/sys/					
三十路	and the second se	and the second se				



#### 警告: 面临潜在的安全风险

Firefox 检测到潜在的安全威胁,因此没有继续访问 192.168.20.13。若您访问此网站,攻击者可能会尝试窃取您的密码、电子邮件、信用卡等信息。

详细了解...

	返回上一页 (推荐)	高级
192.168.20.13 使用了无效的安全证书。		
该证书因为其自签名而不被信任。		
错误代码: MOZILLA_PKIX_ERROR_SELF_SIGNED_CERT	,	
查看证书		
透	回上一页 (推荐) 接受	风险并继续



#### 3.3.1 HMI 界面

导航栏 "Home" 页面显示 AWC500 简介和进入 HMI 界面入口,点击 "Web visu" 可以进入 HMI 界面,也可以浏览器地址栏输入 http://IP:8080/webvisu.htm 进入 HMI 界 面 (IP 为 PCM5.2 实际的 IP 地址)。



	۲	Visualization	× ] +		$\sim$	-		$\times$
$\leftarrow$	$\rightarrow$	C	○ 월 192.168.20.13:8080/webvisu.htm	40%	☆	•	பி	≡

AWC500	НМІ	演示	

#### 3.3.2 模块信息

导航栏"Modules"页面显示运行模块的名称、EtherCAT总线位置、固件版本,模块在 EtherCAT 总线的位置不一定等于模块的硬件物理位置。

Advanced Win	d turbine Controlle×	+		
$\leftarrow$ $\rightarrow$ C $\textcircled{a}$	1	🔿 🔒 https://1	92.168.21.13/sys/modules.shtml	
A	i ii	-0-		
Home	Modules Inf	o Tools	Applications	
Module ove	erview	ogn he seen helow	Nete the information is only read during startu	of the PCM
an) <sup>12</sup> and				
<b></b>				
Name			Software version	Pos.
PCM5-2 Power and C	control Module		3.0.2.1	0
IFM5-1 Interface and	Fieldbus Module		1010	1
	d an e dad			
Locate PCI	/i moaui			
Click the below button	to rappidly flash the S	status LED on the PC	M for 30 seconds	
Flash Status LED				

### 3.3.3 系统信息

导航栏"Info"页面显示控制器系统信息、OS版本、CPU负载、内存等。

Advanced Wind turb	ine Controller, /× +			
$\leftarrow \rightarrow $ C	◯ 🔓 https://192	.168.20.13/sys/info.sht	ml	
n Home	Modules Info	Tools	<b>کت</b> Applications	
Firmware				
OS version:			3.0.3.0	
Bootloader version:			3.0.3.0	
Resources	5			
CPU load:	13% (cpu0: 14% cp	ou1: 11% )		
Memory:	883 MB free, 8% us	sed		
Diskspace:	2877 MB available,	6% used		
Uptime:	1 hour 22 minutes	10 seconds		

#### 3.3.4 系统日志下载

- ▶ 点击导航栏 "Tools"、"System logs"进入下载系统日志页面。
- > 选择需要下载的日志内容, 建议默认全部选择。
- > 选择下载日志的时间范围,根据实际需要选择时间,建议下载所有的有效数据。
- ▶ 点击 "Download feedback file"开始下载。
- ▶ 首次登录需要输入用户名和密码。
- > 下载完成后保存在本地电脑浏览器默认下载位置。

۲	Advanced Wind turbine Controlle	y, x +
$\leftarrow$	$\rightarrow$ C	○ 🗛 https://192.168.20.13/sys/logging.shtml
<mark>Syste</mark> Sys	Home Modules mogs Firmware update Fact	i 函 Info Tools Applications ay reset Users Wetwork configuration Date and time 默认选择全部日志下载内容
17 out	of 17 logs selected (remove all)	
ар	o-svscan × boot × devd	apploades finvam kernel ledd lighttpd network ntpd openssh powerfall siscan sisting isttpd watchdog apploadesys
Last	hour	
Last Last Last Last Last Last Last Last	10 minutes 30 minutes 31 hours 43 hours 45 hours 12 hours 42 hours 43 kours 44 kours 5 days 5 days 7 days 5 days 5 days 12 hours 12 hours 12 hours 13 hours 14 hours 1	<ul> <li>codesy: 2023-04-25108 149.472. ComplEC/Msaulzation, Class=1, EnroreD, Info=0, gaz/hoE Vsau, PRG: Creating Client for Extern-ID: 14812 Returned IEC-ID: 1</li> <li>codesy: 2023-04-25108 149.472. ComplEC/Msaulzation, Class=1, EnroreD, Info=0, gaz/hoE Vsau, PRG: Creating Client for Extern-ID: 14812 Returned IEC-ID: 1</li> <li>codesy: 2023-04-25108 149.472. ComplEC/Msaulzation, Class=16, EnroreD, Info=0, gaz/hoE Vsau, PRG: Creating Client for Extern-ID: 14812 Returned IEC-ID: 1</li> <li>codesy: 2023-04-25108 2012; ComplEC/Msaulzation, Class=16, EnroreD, Info=0, gaz/hoE File vsaul/veb/vsia.dg jion requested</li> <li>codesy: 2023-04-25108 2012; ComplEC/Msaulzation, Class=16, EnroreD, Info=0, gaz/hoE File vsaul/veb/vsia.dg jion requested</li> <li>codesy: 2023-04-25108 2012; ComplEC/Msaulzation, Class=1, EnroreD, Info=0, gaz/hoE File vsaul/veb/vsia.dg jion requested</li> <li>codesy: 2023-04-25108 2012; ComplEC/Msaulzation, Class=1, EnroreD, Info=0, gaz/hoE File vsaul/veb/vsia.dg jion requested</li> <li>codesy: 2023-04-25108 2012; ComplEC/Msaulzation, Class=1, EnroreD, Info=0, gaz/hoE File vsaul/veb/vsia.dg jion requested</li> <li>codesy: 2023-04-25108 2012; ComplEC/Msaulzation, Class=1, EnroreD, Info=0, gaz/hoE Vsau, PRG: Creating Client for Extern-ID: 14814 Returned IEC-ID: 2</li> <li>codesy: 2023-04-25108 2012; ComplEC/Vsaulzation, Class=1, EnroreD, Info=0, gaz/hoE Vsau, PRG: Creating Client for Extern-ID: 14814 Returned IEC-ID: 2</li> <li>codesy: 2023-04-25108 2012; ComplEC/Vsaulzation, Class=1, EnroreD, Info=0, gaz/hoE Vsau, PRG: Scoessful/ Removed Client with IEC-ID 2: 1800118224</li> <li>codesy: 2023-04-25108 2012; ComplEC/Vsaulzation, Class=1, EnroreD, Info=0, gaz/hoE Vsau, PRG: Scoessful/ Removed Client with IEC-ID 2</li> <li>codesy: 2023-04-25108 2012; ComplEC/Vsaulzation, Class=1, EnroreD, Info=0, gaz/hoE Vsau, PRG: Creating Client for Extern-ID: 14616</li> <li>codesy: 2023-04-25108 2012; ComplEC/Vsaulzation, Class=1, EnroreD,</li></ul>
Fee	dback log	
The fe	edback log is a compressed file	that contains additional debug information. 下载按钮

### 3.3.5 可执行文件下载更新

AWC500 产品模块的 OS、Firmware、Runtime、CODESYS 应用程序、功能库等都

可以生成可执行文件,通过浏览器控制界面进行下载更新。

▶ 点击导航栏 "Tools" 、 "Firmware update" 、 "浏览"。

		i		-0-	ŝ	
Home	Modules	Info		Tools	Applicatio	ns
System logs Firm	ware update Fa	actory reset l	Jsers	Network	configuration	Date and time
Update						
To update the contr <b>浏览…</b> 未选择文	roller, select an u 作。	pdate file (.du	pdate)	from you	r computer.	

> 本地电脑中选择需要下载更新的可执行文件。

🎃 文件上传					×	(
← → <b>、</b> ↑ 🖡 > 7	This PC	ٽ ~	Q	Search 可执行文化	牛	
Organize   New fol	lder			•=== •		
	Name	Date modified		Туре	Size	
Ar Quick access	application_demo.dupdate	2022/10/18 10:	16	DUPDATE File		77
OneDrive						
🧢 This PC						
3D Objects						
E. Desktop						
Documents						
Downloads						
Music					/	
Dictures	✓ <					>
File <u>n</u>	ame: application_demo.dupdate		✓ 所有	文件 <u>O</u> pen	∨ Cancel	

▶ 点击"Upload"开始下载更新。下载更新过程中需要保持控制器 PCM5.2 与本地电脑的以太网连接正常,否则会更新失败。因此开始下载更新之前需要进行网络连接测试,建议使用 CMD 命令 Ping IP (IP 地址默认 192.168.20.13)。

			i			ŝ	
	Home	Modules	Info		Tools	Applicatio	ns
System	logs Firmw	are update F	actory reset	Users	Network	configuration	Date and time
Upc	late						
To upd	ate the contro	ller, select an	update file (.du	update)	) from you	r computer.	
浏览.	application	_demo.dupda	te Upload 4	-			

- ▶ 首次登录需要输入用户名和密码。
- 当出现绿色字体 "The update was applied successfully" 表示此次文件下载更新 完成。绿色提示字体出现之前,不可中断下载更新,不可进行其他操作,个别大文件 下载更新可能需要几分钟时间,请耐心等待。
- ▶ 点击 "Reboot" 使文件下载更新生效。



#### 3.3.6 系统时间设置

- ▶ 点击导航栏 "Tools" 、 "Date and time" 。
- > "Time"显示当前的系统时间,例如"2023-02-09 16:33:57"。
- > "Timezone"选择时区,出厂默认 UTC,中国地区需手动修改到 GMT+8。
- > 点击小扳手图标可以修改系统时间。

۷	Integ	rated Pit	ch Controller,	PIC-a ×	+						
$\leftarrow$	$\rightarrow$	С		$\bigcirc$	🔓 htt	:ps:// <b>192.</b> *	168.20.13/s	ys/time.s	shtml		
Syster	Ho Ho n logs	me Firmw	Info are update	Factory r	Dols	Applications Netwo	ions ork configura	ation Da	ite and time	]	
Dat	e a	nd t	ime								
Date	and tii	me can	either be set	manually	or synch	ronized us	ing NTP.				
Time	:	20	023-02-09 16	6:33:57 ۶	;						
Time	zone:	ι	JTC (Coordir	ated Univ	ersal Tim	e)			~		
Save	)	L	network tim	e synchro	nızatıon						
弹出	对话	框重	新设置系	统时间	,例如	"2022	-10-01	10:10'	",点击	"Save"	0

Date: October v 01 v 2022 Time: 10 v : 10 v	
Cano	save

- ▶ 首次登录需要输入用户名和密码。
- ▶ 点击下方 "Save",看到绿色提示字体 "Changes successfully saved"闪现,表示系统时间修改完成。
- ▶ 再次查看 "Time" 时间变成 "2022-10-01 10:10:03" 验证时间修改成功。

۲	Integ	grated	Pitch Controller,	PIC-a ×	+				
$\leftarrow$	$\rightarrow$	С		$\bigcirc$	🔓 htt	ps:// <b>192.16</b>	8.20.13/sys/tii	me.shtml	
	Ho	me	<b>I</b> nfo	To	ols /	<b>تت</b> Applicatio	ns		
Syster	m logs	s Fim	nware update	Factory re	set Use	rs Network	configuration	Date and tin	ne
Dat	te a	nd	time						
Date	and ti	me ca	in either be set	manually	or synchr	onized usin	g NTP.		
Time			2022-10-01 10	:10:03 🎤					
Time	zone:		UTC (Coordination	ated Unive	er <mark>sal</mark> Time	e)		~	
			network time	e synchror	nization				
Chang Save	ges su	ccess	sfully saved						

#### 3.3.7 网络设置

- ▶ 点击导航栏 "Tools" 、 "Network configuration"。
- ▶ 默认网口 "eth1 / br0" 修改 "IP address"。
- "IP address" 输入新的 IP 地址。

- ≻ 点击 "Apply"。
- ▶ 首次登录需要输入用户名和密码。
- ▶ 出现绿色提示字体 "Changes saved successfully" 表示控制器 IP 修改成功。
- ▶ CMD 命令行发送 ping 指令验证控制器 IP 是否修改成功。

Integrated Pitch Controller, PIC-a × +
← → C
Image: System logs     Image: System
Interface configuration
eth0
IP address 192.168.20.13
Show advanced settings
Apply     Clear configuration       Changes saved successfully
Command Prompt
Microsoft Windows [Version 10.0.19044.2130] (c) Microsoft Corporation. All rights reserved.
C:\Windows\system32>ping 192.168.20.13
Pinging 192.168.20.13 with 32 bytes of data: Reply from 192.168.20.13: bytes=32 time<1ms TTL=64 Reply from 192.168.20.13: bytes=32 time<1ms TTL=64 Reply from 192.168.20.13: bytes=32 time<1ms TTL=64 Reply from 192.168.20.13: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.20.13: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = Oms, Maximum = Oms, Average = Oms

### 3.3.8 用户管理与恢复出厂设置

恢复出厂设置"Factory reset"和用户管理"Users"两个功能属于研发预留,禁止随意操作,否则会导致控制器运行异常或者数据丢失。

		Modules	Info		Tools		ne
System	ogs <mark>Firmw</mark>	are update	Factory reset	Users	Network	configuration	Date and time
Upd	ate				,		
To updat <b>浏览</b> …	te the contro 〕未选择文件	ller, select a ⊧₀	n update file (.c	lupdate)	) from you	ir computer.	
Reb	oot						
Reboot t	he controller	<sup>r</sup> ( <u>show adva</u>	anced options).				

### 3.3.9 Runtime 信息

导航栏 "Applications"页面显示 PCM5.2 模块的 Runtime 信息。

•	Advanced W	ind turbine Contro	ller, /× +						
$\leftarrow$	ightarrow C		🔿 🔓 ht	tps:// <b>192.16</b> 8	3.20.13/sys/application	s.shtml			
	n Home	Modules	i Info	Tools	Applications				
Арр	licatio	ons							
Applicat (/app/se	tions run on ervice/applic	the controller. Ar cationname/www/	ny applications index.html) tha	located in /ap t file will be a	pp/service/ will be listed ccessible through a link	below.If there is an index.html file in the list below.	located in the ap	oplication folder	
Applica NB! St	ation mode opping appl	is enabled on the ication mode will	controller. cause all appli	cations listed	below to stop.	lication mode			
Applica	ation	Location	n		State	Startup type	-	=	
1.2.2.0	olay uptime	/app/ser	vice/codesys		Up	Automatic 🗸	stop	view log	

# 4 CODESYS 软件开发包

AWC500 使用的 CODESYS package 可以从福氏技术官方网站服务器下载,包括:

- ▶ CODESYS IDE: CODESYS 开发环境安装包。
- CODESYS TSP: AWC500 CODESYS TSP (Target Support Package) 安装在开 发电脑中,包括设备描述文件和功能库均自动安装。

### 4.1 安装 CODESYS IDE

开发电脑安装 CODESYS IDE 采用默认安装,点击运行 CODESYS 安装文件例如

"CODESYS 3.5.15.0.exe"。首次安装可能需要某些辅助软件优先安装,这些辅助软件可

以在线自动下载并完成安装,请保持开发电脑 internet 网络连接正常。

CODES	YS 3.5.15.0 - InstallShield Wizard
ځ	CODESYS 3.5.15.0 Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
Extract	ing: CODESYS 3.5.15.0.msi
	Cancel
Extracti	which will guide you through the program setup process. Please wait. ing: CODESYS 3.5.15.0.msi Cancel

CODESYS 3.5.15.0 - InstallSh	ield Wi	izard		×
	Welco CODE	ome to the Ins SYS 3.5.15.0	tallShield Wi	zard for
Inspiring Automation Solutions	The Ins remove	tallShield(R) Wizard CODESYS 3.5.15.0	will allow you to r . To continue, click	nodify, repair, or : Next.
CODESYS				
		< <u>B</u> ack	<u>N</u> ext >	Cancel
CODESYS 3.5.15.0 - InstallSh	ield Wi	izard		×
License Agreement				
Please read the following license	agreeme	ent carefully.		CODESYS
License Agreement for the usage of a CC Software Package	DES	SYS Softwar	e or CODE	ESYS
General Terr supplied Soft carefully befor installation or the condition	ns of Li ware. F ore usin i the So s of this	icense (End User I Please read this So og the supplied So oftware constitutes s Agreement.	License Agreeme oftware User Agr ftware. Downloa recognition by t	ent) for the reement ding or he customer of
The following	ı condit	tions are agreed b	etween you as tl	ne software 🗸 🗸
• I accept the terms in the license a	greemer	nt		<u>P</u> rint
0 1 <u>do</u> not accept the terms in the li	lense ag	greement	<u>C</u>	pen Source Licenses
InstallShield		< <u>B</u> ack	<u>N</u> ext >	Cancel

选择"I have read the information",然后"Next"。

CODESYS 3.5.15.0 - InstallShield Wiz	zard		×
Very important information			-
Please read the following information care	fully.		CODESYS
COMPATIBILITY_INFORMATION			^
CDS-62029 Active content in library hostile code	documentation	n may be used to	execute
[[GENERAL]]			
For more details see Advisory 2019- website:	05, which is ava	ailable on the CO	DESYS
https://customers.codesys.com/filead 2019-05_CDS-62029.pdf	dmin/data/custo	mers/security/20	19/Advisory
JavaScript included in the librarv doc	umentation is or	nlv executed anvr	nore. if the 💙
I have read the information			Print
$\bigcirc$ I have not read the information yet			2
InstallShield			
	< <u>B</u> ack	<u>N</u> ext >	Cancel

### 选择开发电脑 CODESYS 安装路径,这里采用默认安装路径。

CODESY	S 3.5.15.0 - InstallShield Wi	zard		×
Destination Click Nex	on Folder At to install to this folder, or click	Change to install to	a different folder.	CODESYS
Þ	Install CODESYS 3.5.15.0 to: C:\Program Files (x86)\CODES	YS 3.5.15.0\		<u>C</u> hange
InstallShield -		< <u>B</u> ack	<u>N</u> ext >	Cancel

🔀 CODESYS 3.5.1	15.0 - InstallShield Wizard	×
Setup Type Choose the setu	ip type that best suits your needs.	CODESYS
Please select a s	setup type.	
• Complete	All program features will be installed. (Requires the most disk sp	pace.)
O Custom	Choose which program features you want installed and where th be installed. Recommended for advanced users.	ey will
InstallShield ———	< Back Next >	Cancel

### 选择"Install"开始安装。

🕼 CODESYS 3.5.15.0 - InstallShield Wizard	×
Ready to Install the Program	
The wizard is ready to begin installation.	CODESYS
Click Install to begin the installation.	
If you want to review or change any of your installation settings, click Back. Click Cancel t the wizard.	to exit
InstallShield	
< <u>B</u> ack <u>I</u> nstall (	Cancel

#### 安装过程需要持续一段时间,请耐心等待。

	S 3.5.15.0 - InstallShield Wi	zard		_		×
Installing	CODESYS 3.5.15.0					
The prog	ram features you selected are be	ing installed.			co	DESYS
1 <del>1</del> 1	Please wait while the InstallShi take several minutes.	eld Wizard installs CO	DDESYS 3.5.1	5.0. This	s may	
	Status:					
InstallShield –						
		< <u>B</u> ack	<u>N</u> ext >		Cance	el

#### 点击 "Finish" 完成 CODESYS IDE 安装。

🖟 CODESYS 3.5.15.0 - InstallSh	nield Wizard	$\times$
	InstallShield Wizard Completed	٦
Inspiring Automation Solutions	The InstallShield Wizard has successfully installed CODESYS 3.5.15.0. Click Finish to exit the wizard.	
CODESYS		
	☐ Show the Windows Installer log	1444
	< <u>B</u> ack <u>F</u> inish Cancel	

控制器 AWC500 快速入门

# 4.2 安装 CODESYS TSP

CODESYS IDE 安装完成以后,继续安装 AWC500 CODESYS TSP (Target Support Package)。打开已经完成安装的 CODESYS IDE 软件,菜单栏点击"Tools"/"Package Manager"。



弹出的 Package Manager 窗口中,选择"Install"。

Currently installed packages Refresh				Sort by	Name	~	Install
Name CODESYS SoftMotion	Version 4.5.1.0	Installation date 2023/4/19	Update info	License info	uired		Uninstall Details Updates Search Updates Download CODESYS Store Rating <u>CODESYS Store</u>

开发电脑中选择需要安装的 TSP Package。

<b>御</b> 打开	Х
$\leftarrow$ $\rightarrow$ $\checkmark$ $\uparrow$ $\blacksquare$ « AW $\rightarrow$ CODESYS_De	✓ <sup>ひ</sup> 在 CODESYS_Developmen
组织 ▼ 新建文件夹	III 🕶 🔟 🚱
<ul> <li>■ 此电脑</li> <li>③ 3D 对象</li> <li>● 副片</li> <li>● 文档</li> <li>● 下载</li> <li>● 音乐</li> <li>■ 真面</li> <li>● 本地磁盘 (C:)</li> <li>● 本地磁盘 (C:)</li> </ul>	∧ s-3.5.15.20-tsp-v1.3.0.3-g1b59819 2023/4/11 1
本地磁盘 (E:)	
→ Prartek-SH (\\r 文件名(N):	✓ Package (*.package) ✓ 打开( <u>O</u> ) 取消

Installation - Choose Setup Type	×
PCM5.2 (AWC 500) CODESYS 3.5.15.20 TSP [1.3.0.3] Please select the type of setup you would like to perform.	DEIF
<ul> <li>Complete setup All package components will be installed.</li> <li>Typical setup The most commonly used package components will be installed.</li> <li>Customized setup Full control over which package components are installed. Recommended for advanced users.</li> </ul>	
Cancel < Back Next >	Finish

控制器 AWC500 快速入门

选择"Complete setup",然后"Next"。

Refresh	Sort by Na	ame v Install
Name CODESYS SoftMotion	Installation - Setup Completed PCM5.2 (AWC 500) CODESYS 3.5.15.20 TSP [1.3.0.3]	Vninstall Details Updates
	The package has been successfully installed. Click Finish to exit the with e summary.	zard or Next to see Download CODESYS Store Rating, CODESYS Store
	Cancel < Back Next >	Finish

#### 点击"Finish", TSP Package 安装完毕。

### 4.3 语言设置

CODESYS 可以根据个人需求设置为中文/英语等语言环境,依次点击"Tools"/ "Options"/"International Settings"设置用户界面和帮助文档语言。





### 4.4 帮助文档

帮助文档分为"离线帮助文档"和"在线帮助文档",用户可以在菜单栏点击

"Tools",选择 "Options" 中的 "Help" 来选择帮助文档的打开方式。





#### 离线帮助:

方式一:开发电脑未联网时,单击 "Help/Contents" 弹出离线帮助文档系统。

方式二:开发电脑联网时,取消勾选"Use Online Help if available",单击

"Help/Contents" 弹出离线帮助文档系统。

2 在线帮助	-		<
🔾 返回 🕤 🛃 🎒 🔇 內容 🔥	索引 🔍 搜索 🖙		
目录 CODESYS Development System SoftWotionLight 文技和功场总线 CODESYS Visualization ● 本 库 ● Add-ons	Tabbed Document         产品名称: CODESYS V3         产品类型:         文本类型:         软件手册         在进行工作前请仔细阅读说明书!         OLH_CDS_002_EN         © 2015		× <
	索引结果	<b>▼</b> ₽	×
>       ◆ 目录 ふ 索引	标题		
完成			:

#### 在线帮助:

开发电脑联网时,点击"Help / Index"或者使用网址 https://help.codesys.com 可以进入 CODESYS Help 在线帮助文档系统。





# 4.5 添加设备描述文件

安装 AWC500 CODESYS TSP 安装包时, AWC500 设备描述文件会自动安装到开发电

脑 CODESYS 设备库中,如果需要新增设备描述文件可以使用手动添加方式。

选择工具栏 "Tools" / "Device Repository", 弹出对话框中选择 "Install"。

File Edit View Project Build	Online Debug To	ols Window Help Package Manager	8 08 → <b>= %</b>  (≡ 9⊒ 4⊒ 4⊒ 8
-		Library Repository	
Devices	🗕 🕈 🗸 🗐	Device Repository.	
	- 4) 8) 8) 8)	Visual Element Repository Visualization Style Repository License Repository License Manager	Patch 2 Latest news
	Ð	Scripting Customize Options Import and Export Options Device Reader	•

cation Sys	tem Repository ProgramData\CODES	VS\Devices)		$\checkmark$	Edit Locations
stalled device	descriptions	is pericesy			
tring for a fullt	ext search	Vendo	r: <all vendors=""></all>	~	<u>I</u> nstall
Name	Vende	or Version	Description		Uninstall
*- III Miscella F- III Fieldbu H- III HMI de F- III PLCs F- Ø SoftMo	neous ses vices tion drives				Export

开发电脑本地路径选择需要手动添加的设备描述文件(.XML),例如 IFM5.1 模块设备描述文件"IFM51\_1\_CAN\_V1.0.1.0.XML"。

📦 Install Device Desci	riptior	1				×
← → · ↑ <mark> </mark> ·	< 安装	包 > 65_D0F_795AE506000003F2_1_10_1.0.3	3.0 Revision=16#000003F	2 ~	۹ ن	在 65_D0F_795AE5060000
组织 ▼ 新建文件	夹					::: •
🔜 此电脑	^	名称 ^	修改日期	类型	大小	
🧊 3D 对象		65_D0F_795AE506000003F2_1_10_1.0	2023/4/19 15:10	XML 文档	904 KB	
📑 视频		IFM51_1_CAN_10_v1.0.1.0	2021/6/7 21:14	XML 文档	1,073 KB	
▶ 图片						
🔮 文档						
🖊 下载						
🎝 音乐						
三 桌面						
🏪 本地磁盘 (C:)						
💼 本地磁盘 (D:)						
本地磁盘 (E:)						
Practek-SH (\)	r *					
2	文件名	(N): IFM51_1_CAN_10_v1.0.1.0			∼ All s	supported description file $\vee$
						打开(O) 取消

添加完成后,自动显示设备描述文件成功安装提示信息, "Close"结束添加。

😤 Device R	epository		×
<u>L</u> ocation	System Repository (C:\ProgramData\CODESYS\Devices)	~	Edit Locations
Installed de	vice descriptions		
String for a	fulltext search Vendor: DEIF	$\sim$	<u>I</u> nstall
		Vendor ^	<u>U</u> ninstall
	IFM5·1 Interface and Fieldbus Module	DEIF	Export
i - i - i - i - i - i - i - i - i -	EIF - Input and Output Modules		
	AIM5·1 Analogue IO Module	DEIF	
(	IOM5·1 Input and Output Module	DEIF 🗸	
<		>	
■- <b>1</b> E: (	安装包\65_D0F_795AE506000003F2_1_10_1.0.3.0 Revision=16# • Device "IFM5·1 Interface and Fieldbus Module" installed to device	≠000003F2\IFM5 repository.	Details
			Close

### 4.6 添加库文件

工程中使用的 AWC500 功能库和 CODESYS 标准库,不一定全部自动安装在开发电脑 CODESYS 库管理器中,有时需要根据使用需求手动添加和管理库文件。

选择工具栏 "Tools" / "Library Repository", 弹出对话框选择 "Install"。



前 Library R	epository	×
Location	System V (C:\ProgramData\CODESYS\Managed Libraries)	Edit Locations
Installed lib	raries:	Install
	All companies)	Uninstall E <u>x</u> port
Group	by category	Find Details Trust Certificate Dependencies
Library Pr	ofiles	Close .:

开发电脑本地路径选择需要手动添加的库文件,例如添加用于 Modbus 通信功能的库

文件 "CmpLibModbus.library" 。

👔 Select Library								×
$\leftarrow$ $\rightarrow$ $\checkmark$ $\uparrow$ $\square$ $\Rightarrow$ This PC $\Rightarrow$ De	esktop	> Lib	~	Ō	P	Search Lib		
Organize 👻 New folder							· 🔟	?
💻 This PC	^	Name	Date mod	ified		Туре	5	Size
3D Objects		CmpLibModbus	2015/4/28	13:21		CODESYS librar	у	308
📃 Desktop							_	
Documents								
🕂 Downloads								
👌 Music								
Pictures								
Videos								
🏪 OS (C:)								
🚔 New Volume (D:)								
🚔 New Volume (E:)								
Practek-SH (\\practek.cn\sh) (Z	:) 🗸	<						>
File <u>n</u> ame: Cmp	LibMo	dbus		~	All	files		$\sim$
						<u>O</u> pen	Cance	el

库文件添加完成后, 弹出对话框显示已经完成添加的库文件名称以及版本信息,

#### "Close"结束添加。

前 Library R	epository		×
Location	System (C:\ProgramData\CODESYS\Managed Libraries)	~	Edit Locations
Installed ii Company	(All companies)       (All companies)         IFM51_ComDriver       DEF         LibModbus       DEF         1.1.0.4       1.1.0.2         1.1.0.2       1.1.0.2         Modbus RTU       DEF         OPC UA Server - Open62541       DEF         PCM5.1 Clib       DEF         StreamLogger       DEF         Sys Util       DEF         WT CCWE 2.0 MW Control Algorithm       DEF         by category       DEF		Install Uninstall Export Find Details Trust Certificate Dependencies
Library P	rofiles		Close

#### 点击 "Library Manager" / "Add Library" 将库文件加载到工程中方便调用。

evices • 1	X Library Manager X		
Untitled6	Add Library Properties Details & Download Missing Libraries	Placeholders 👔 Libra	ry Repository 🕕
E El PICLOSIS	Name	Namespace	Effective vers
Application	🐵 😳 3SLicense = 3SLicense, 3.5.14.0 (3S - Smart Software Solutions GmbH)	_3S_LICENSE	3.5.14.0
	BreakpointLogging = Breakpoint Logging Functions, 3.5.5.0 (3S - Smart Software Solutions GmbH)	BPLog	3.5.5.0
	🗑 🖳 CAA Device Diagnosis = CAA Device Diagnosis, 3.5.15.0 (CAA Technical Workgroup)	DED	3.5.15.0
	IODrvEtherCAT = IODrvEtherCAT, 3.5. 15.20 (3S - Smart Software Solutions GmbH)	IoDrvEthercatLib	3.5.15.20
EtherCAT Tack (IEC-Tacks)	🗑 – 📃 IoStandard = IoStandard, 3.5.15.0 (System)	IoStandard	3.5.15.0
MainTack (IEC-Taska)	Standard = Standard, 3.5.15.0 (System)	Standard	3.5.15.0
	🗑 📙 System_VisuElem3DPath = VisuElem3DPath, 3.5.15.0 (System)	VisuElem3DPath	3.5.15.0
	🗑 📙 System_VisuElemCamDisplayer = VisuElemCamDisplayer, 3.5.15.0 (System)	VisuElemCamDisplayer	3.5.15.0
	B- E System_VisuElemMeter = VisuElemMeter, 3.5.15.0 (System)	VisuElemMeter	3.5.15.0
Visuclens.visu_rig	🐵 📃 System_VisuElems = VisuElems, 3.5, 15, 20 (System)	VisuElems	3.5.15.20
Wabyieu	🐵 🔚 System_VisuElemsAlarm = VisuElemsAlarm, 3.5.15.0 (System)	VisuElemsAlarm	3.5.15.0
A Version	😨 📒 System_VisuElemsDateTime = VisuElemsDateTime , 3.5. 15. 10 (System)	VisuElemsDateTime	3.5.15.10

弹出对话框中进行库文件关键词搜索,输入"LibModbus"从库管理器中自动筛选出 与关键词匹配的库文件,选中需要的库文件后点击"OK"加载到工程中。或者使用 "Advanced"高级功能,根据库文件具体信息进行筛选。

Add Library	×
Library	Company
Advanced	OK Cancel
Add Library	×
LibModbus	
Match	Library
LibModbus          TC_LibModbusRTU          TC_LibModbusRTU	LibModbus LibModbus LibModbus

ОК

٦

Cancel

	실   제 계 계 계 대급   표· ] [ [ [ [ ] ] Application [Device: PLC Logic] · 영영 영양	1 → ■ %   ↓ = 4 = € ]	*3 &   +   = +
- Untitled6	Add Library X Delete Library Properties To Details Ownload Missing	Libraries 📑 Placeholders	Library Repository
Device (AWC 500 PCM5·2)	Name	Namespace _3S_LICENSE	Effective version 3.5.14.0
Application     Library Manager     PLC_PRG (PRG)	Ereakpoint.ogging = Breakpoint Logging Functions, 3.5.5.0 (3S - Smart Software So     CAA Device Diagnosis = CAA Device Diagnosis, 3.5.15.0 (CAA Technical Workgroup)     Domether CAT - Come Reference - State Software Device D	BPLog DED	3.5.5.0 3.5.15.0
Task Configuration     SetterCAT_Task (IEC-Tasks)     MainTask (IEC-Tasks)	Looreander = toureander, 3, 5, 5, 5, 0 (System)     LibModbus, 1, 1, 0, 4 (DEIF)	IoStandard DEIF_LibModbus	3.5.15.20 3.5.15.0 1.1.0.4
● ④ R.C.PRG ● 参 VISU_TASK (IEC-Tasks) ● ● VisuElens. Visu_Prg ◎ ● ● VisuElens. Visu_Prg ◎ ● ● VisuElens. Visu	Standard - Standard, 3.5.15.0 (System)     System, VaceEemsDPath - ViseEemsDPath, 3.5.15.0 (System)     System, VaceEemsDPathyser - VaceEemsCamDisplayer, 3.5.15.0 (System)     System, VaceEemsMPathyser - VaceEemsMPathyser, 3.5.15.0 (System)     System, VaceEemsMPathyser, VaceEems, 3.5.15.20 (System)     System, VaceEemsMPathyser, VaceEemsMPathyser, 3.5.15.0 (System)	Standard VisuElem3DPath VisuElemCamDisplayer VisuElemMeter VisuElems VisuElems	3.5.15.0 3.5.15.0 3.5.15.0 3.5.15.0 3.5.15.0 3.5.15.20 3.5.15.0
Ether (Soulization Ether CAT_Master (Ether CAT Master) Ether CAT_Master (Ether CAT Master)	Concentration     Concentration     Concentration     Concentration     Concentration     Concentration     Concentration     Concentration     Concentration	TOUDCHSPUITT	3(3) 23(9)

### 4.7 文件拷贝功能

CODESYS 应用程序运行过程中需要记录重要的运行数据或者故障记录,数据保存在 PCM5.2 内部存储磁盘中。为了确保数据安全,需要定期使用 WinSCP 工具软件从 PCM5.2 磁盘拷贝出来。WinSCP 登录连接 PCM5.2 有两种拷贝文件方法:

▶ 拷贝文件方法 1:将文件系统中例如"tmp"文件夹内的"test"文件,用鼠标拖拽 到左侧文件夹"A1",文件"test"会复制到开发电脑的文件夹"A1"中。



tmp - root@192.168.20.13 - V	VinSCP			- 🗆 X
Local Mark Files Commands	Session Op	tions <u>R</u> emote <u>H</u>	elp	
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📮 root@192.168.20.13 🚅 New	Session			
🌙 D: New ' 🔹 🚰 🔽 🛛 🖛 🔹 🚽	E 🖬 😭	) <b>2</b> 🐁		📕 tmp 🔹 🧉 😨 🖛 🔹 🖘 🔹 🔁 🏠 🦉 🐕 Find Files 🧏
🕼 Upload 🕼 📝 Edit 🗙 🛃 🖫	Properties		¥	🔛 Download 🔐 📝 Edit 🗙 🛃 🕞 Properties 📑 🗟 主 🖃 🗑
D:\SCUT_June				/tmp
Name  NonA1 A1	Size	Type Parent directory File folder File folder	Changed 2022/6/29 2022/6/29 2022/6/29	Name frwupdates test 拖拽文件拷贝

▶ 拷贝文件方法 2: 鼠标右键点击文件系统例如 "tmp" 文件夹内的 "test" 文件,选

择 "Download" 下载, 点击 "Browser" 选择本地存储路径, "OK"开始下载。

🌯 tmp - root@192.168.20.13 - V	VinSCP						-	
Local Mark Files Commands	Session Op	otions Remote H	elp					
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📮 root@192.168.20.13 🙀 New Session								
🤳 D: New ' 🔹 🚰 🔽 🛭 🗢 📼	🖻 🖬 😭	2 🔁 😘		📜 tmp		- 🚰 🔽 🔶> - 🗈 🔽	<b>î 2</b>	🖀 Find Fi
🕼 Upload 🕼 📝 Edit 🗙 🛃 🕞	Properties	🗎 🕞 🖪 🗉	A	📄 Downlo	oad	🔒 📝 Edit 🗙 🋃 🕞 Propertie	es 🖆	• • •
D:\SCUT_June				/tmp				
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						Edit		
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						Download and Delete F6		
					Ð	Duplicate Shift+F5		
					<b>B</b>	Move To Shift+F6		
					×	Delete F8		
					<u>_</u>	Rename F2		
						Custom Commands	•	
						File Names	•	
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2		📕 tmp 🔹 🚰 😨 🛛 🖛 🔹 🖘 🗧 🔂 🏠 😤 🖬 Find Files 🗣					
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lder	2022/6/29	📕 fwupdates					
lder	2022/6/29	test					
Downloa	d	? ×					
	ownload file 't	est' to local directory:					
	D:\SCUT_June\A1\*.* V Browse						
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# 5 创建 CODESYS 工程

创建 CODESYS 工程可以参考帮助文档 "您的第一个 CODESYS 程序"。



### 5.1 新建工程

#### 点击 "File / New Project" 创建一个新工程。



New Project          Categories       Implates         Imply project       Imply project         A project containing one device, one application, and an empty implementation for PLC_PRG         Name       Test Project         Location       D: (Charles         Imply project       Imply project         OK       Cancel         Standard Project							
Categories       Templates         Imply project       Im	🖹 New Pro	ject					>
Libraries       Projects       Image: Standard project       Standard project w         Empty project       HMI project       Standard project w         A project containing one device, one application, and an empty implementation for PLC_PRG         Name       Test Project         Location       D:\Charles         OK       Cancel         Standard Project         Standard Project         One programmable device as specified below         - A reference to the newest version of the Standard library currently installed.	<u>C</u> ategories			<u>T</u> emplates			
A project containing one device, one application, and an empty implementation for PLC_PRG         Name       Test Project         Location       D:\Charles         OK       Cancel         Standard Project         Standard Project         On programmable device as specified below         - A program PLC_PRG in the language specified below         - A reference to the newest version of the Standard library currently installed.	Pro	ojects		Empty project	HMI project	Standard project	Standard project w
Name       Test Project         Location       D:\Charles       Image: Contraction of the standard project of the standard project. This wizard will create the following objects within this project:         Standard Project       You are about to create a new standard project. This wizard will create the following objects within this project:         One programmable device as specified below       One programmable device as specified below         A program PLC_PRG in the language specified below       A cyclic task which calls PLC_PRG         A reference to the newest version of the Standard library currently installed.	A project co	ontaining one o	levice, one ap	pplication, and an	empty implemen	ntation for PLC_	PRG
Location D:\Charles OK Cancel OK Cancel Standard Project You are about to create a new standard project. This wizard will create the following objects within this project: One programmable device as specified below - One programmable device as specified below - A program PLC_PRG in the language specified below - A reference to the newest version of the Standard library currently installed.	<u>N</u> ame	Test Project					
OK       Cancel         Standard Project       Image: Conductor of the standard project. This wizard will create the following objects within this project:         • One programmable device as specified below       • One programmable device as specified below         • A program PLC_PRG in the language specified below       • A cyclic task which calls PLC_PRG         • A reference to the newest version of the Standard library currently installed.	<u>L</u> ocation	D: (Charles					×
You are about to create a new standard project. This wizard will create the following objects within this project: - One programmable device as specified below - A program PLC_PRG in the language specified below - A cyclic task which calls PLC_PRG - A reference to the newest version of the Standard library currently installed.	Standard P	roject				OK	Cancel
		You are abou objects within - One program - A program F - A cyclic task - A reference	t to create a n this project mable device CC_PRG in the which calls in to the newes	new standard pro t: te as specified be he language speci PLC_PRG t version of the S	oject. This wiza low fied below tandard library	rd will create t y currently inst	the following
Device AWC 500 PCM5+2 (DEIF)	1	Device	AWC 500 PC	CM5·2 (DEIF)			~
PLC_PRG in Structured Text (ST)		PLC_PRG in	Structured 1	Text (ST)			~

Categories/Libraries: 创建库文件。

Categories/Projects: 创建工程。

Templates/Empty project: 创建空程序, 需要手动添加程序单元。

Templates/Standard project: 创建标准程序, Device、Library、PLC\_PRG、Task

#### 已经存在。

Name: 自定义程序名称。

Location: 自定义程序存放路径。

Device: 选择硬件设备。

PLC\_PRG in: 选择编程语言。

创建新工程命名为 Test Project。



### 5.2 添加总线

鼠标右键点击"Device",选择"Add Device",弹出对话框中选择"EtherCAT Master"进行 EtherCAT 总线添加。

Test Project.project\* - CODESYS

File Edit View Project Build Or	nline	Debug Tools Window Help	
19 🚔 🔚   🚑   🗠 🗠 👗 🗈 🛍 🗙	<b>#</b>	46 🐴 🌿 i 🗏 🦘 🦄 i 🖷 i 🗄	🗉 📲 🖹 Application [Device: PLC Logic] 🔹 🧐 🕟 🔳 🔏 🗍 🗐
Devices 👻	ф Х	Device X PLC_PRG	Library Manager
	گ ا	Cut Copy	Scan Network   Gateway •   Device •
Ibrary Manager     DEC_PRG (PRG)     Solution     Solution     Solution     Solution     Solution	×	Paste Delete Refactoring	
PLC_PRG	ħ	Properties	Gateway
	1 1	Add Object  Add Folder	IP-Address: localhost
		Add Device	Dorth
	ſ	Update Device Edit Object Edit Object with	1217
	¥	Edit IO mapping Import mappings from CSV Export mappings to CSV Online Config Mode Reset Origin Device [Device] Simulation Information	

Add Device				×			
Name EtherCAT_Master Action  Append device Insert device Plug de	evice OL	Ipdate device					
String for a fulltext search	Vendor	<all vendors=""></all>		~			
Name Miscellaneous Fieldbuses	Vendor		Version	Description ^			
B - CAN CANbus B - But EtherCAT B - But Master	36 6-	there are and	2.5.15.20	Ether CAT Marker			
EtherCAT Master	35 - Sm 35 - Sm	art Software Solutions GmbH	3.5.15.20	EtherCAT Master Soft			
Group by category Display all versions (for Marker CAT Master	or experts o	nly) 🔲 Display outdated ver	sions	>			
Version: 3.5.15.20 Order Number: Description: EtherCAT Master	ЬН			×.			
Annead selected device as left shill of							
Append selected device as last child of Device (You can select another target node in the r	navigator w	hile this window is open.)					
			Add I	Device Close			

〕 ☞ 및   @   ∽ ~ ∦ ℡ ×   ₩ ધ≱	44 44   U 9 9 9 41 44 44 14	🖙 🖸   🕮   Application [Device: PLC Logic] 🝷 💖 📦 📄 🔌	[≣ e∃ q∃ +∃ \$   t
evices 🗸 🗸 X	Device PLC_PRG	Library Manager EtherCAT_Master X	
	General	☑ Autoconfig Master/Slaves	Ether CAT.
PLC Logic     Application	Sync Unit Assignment	EtherCAT NIC Setting	
Library Manager	Log	Destination address(MAC) FF-FF-FF-FF-FF	ast Enable redundanc
Task Configuration	EtherCAT I/O Mapping	Source address (MAC) 00-00-00-00-00 Browse.	
MainTask (IEC-Tasks)	EtherCAT IEC Objects	Select network by MAC     Select network by name	
EtherCAT_Master (EtherCAT Master)	Status	⊿ Distributed Clock      ○ Options	
	Information	Cycle time 4000 🜩 µs	
		Sync offset 20 🔷 %	
		Sync window monitoring	
		Sync window 1 👘 µs	

# 5.3 添加控制器设备

添加控制器设备 PCM5.2, 添加到程序中设备的种类、数量、顺序必须与实际硬件配

置匹配。右键点击"EtherCAT\_Master"添加 PCM5.2 设备。

ces	- 4 X Device PLC_PR	G 🎁 Library Manager 🎢 Et	herCAT_Master X		
Test Project	General	Autoconfig Master/Slaves			Ether CAT.
PLC Logic	Sync Unit Assignment	EtherCAT NIC Setting			
Library Manager	Log	Destination address (MAC) FF-	FF-FF-FF-FF-FF	Broadcast	Enable redundancy
PLC_PRG (PRG)		Source address (MAC) 00-	-00-00-00-00	Browse	
EtherCAT_Task (IE	C-Tasks)	Network Name			
MainTask (IEC-Tas	EtherCAT IEC Objects	Select network by MAC	◯ Select network	by name	
EtherCAT_Master (EtherCAT Ma	aster) Status	Distributed Clock	Þ	Options	
	Cut				
	Ша Сору	Cycle time 4000	μs		
	Paste	Sync offset 20	%		
	Delete	Sync window monitoring	-		
	Refactoring	Sync window	; µs		
	Properties				
	Add Object				
	Add Folder				
	Add Device				
	Insert Device				
	Scan For Devices				
	Disable Device				
	Update Device				
	ເງິ Edit Object				

I Add Device					×		
Name PCM52							
Action							
<u>Append device</u> <u>Insert device</u> <u>Plug</u>	device OU	pdate device					
String for a fulltext search	Vendor	<all td="" vendors<=""><td>&gt;</td><td></td><td>~</td></all>	>		~		
Name					^		
Eieldhuses							
EtherCAT							
Slave							
DEIF - Power and Control Mo	dules						
PCM5+2 Power and Contr	ol Module						
PCM5·2 Power and Contr	ol Module ┥						
PCM5·2 Power and Control Module							
🖲 🗀 DEIF - Power and Control Modules							
🖲 🛅 DEIF - Power and Distributed communication Modules							
< >>							
Group by category Display all versions (for experts only) Display outdated versions							
Name: PCM5:2 Power and Control Module							
Vendor: DEIF							
Categories: Slave				2			
Version: 1.0.0.0, Revision=16#000003E8							
Order Number: PCM52							
PCM5-2 Power and Control Module	UIII SIAVE AML	. DEI _FCMJ2	Lixini Device.				
Append selected device as last child of EtherCAT_Master							
• (You can select another target node in the	navigator w	hile this wind	ow is open.)				
			Add D	evice	Close		

Version: 1.0.0.0 表示 PCM5.2 的设备描述文件版本号为 1.0.0.0, 如果出现多个版本

通常选择最新版本。

◆ Test Project.project* - CODESYS Eile Edit View Project Build Online Debug 〕 管 ご 日 日 ○ ○ ※ ● ◎ × ○ ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Iools <u>W</u> indow <u>H</u> elp 및 및 및 및 및 및 III (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	- 🖸 🕮   Application [Device: PLC	C Logic] 🔹 😻 🔇	■ ≪   (1 = +1 ≤ )
Devices 👻 👎 🗙	Library Manager	EtherCAT_Master	PLC_PRG 🛉 De	vice PCM52 X
Test Project	General	Address		Additional
Device (AWC 500 PCM5·2)		AutoIncaddress	0	
	Process Data	Automedialess	•	Enable expert settings
Library Manager	EtherCAT I/O Mapping	EtherCAT address	1001	Optional
Start Configuration	EtherCAT IEC Objects			
Generation (IEC-Tasks) Generation (IEC-Tasks) Generation (IEC-Tasks) Generation (IEC-Tasks)	Status			
EtherCAT Master (EtherCAT Master)	Information			
E marging PCM52 (PCM5-2 Power and Control Module) → > Port 1				

### 5.4 添加 IO 设备

添加 I/O 设备例如 IOM5.1 模块,添加到程序中设备的种类、数量、顺序必须与实际 硬件配置匹配。右键点击设备"PCM5.2",选择"Add Device"进行设备 IOM5.1 添加。



	Add Davisa			
es - 4 >	Add Device			
] Test Project	Name IOM51			
	Action			
😑 💮 Application	Append device      Insert device	O Plug device O Upo	date device	
Library Manager		Verder		
E PLC_PRG (PRG)	String for a fulltext search	vendor <	(All vendors>	~
EtherCAT_Task (IEC-Tasks)	Name		Vendor Version	[^]
□ 🐨 MainTask (IEC-Tasks)	Fieldbuses			
PLC_PRG	Brow EtherCAT			
EtherCAT_Master (EtherCAT Master)	🕀 📴 DEIF - Grid Protecti	on Modules		
PCM52 (PCM5*2 Power and Control Module)	E DEIF - Input and O	utput Modules	_	
BFOILT	IOM5·1 Input a	nd Output Module	DEIF 1.0.1.0, Rev	ision=16#000003F2 E
	DEIF - Interface an	d Fieldbus Modules	DETE 1001	-
	DIMS-1 Digital Inpu	t and Output Module	DEIF 1.0.0.1 DEIF 1.0.0.2	E F V
	<			>
	Group by category Display all	versions (for experts only	y) 🗌 Display outdated	versions
	Name: IOME: 1 Jacut and Output	t Modulo		
	Vendor: DEIF	ICMODULE		
	Categories: Slave			<u></u>
	Version: 1.0. 1.0, Revision=16:	≠000003F2		
	Description: EtherCAT Slave in	ported from Slave XML: D	DEIF-AWC-500-IOM51	
	_v1.0.1.0.xml Device: IOM5·1 In	nput and Output Module		
	Append selected device as last chil PCH52	d of		
	Append selected device as last chil PCM52 (You can select another target no	<b>d of</b> de in the navigator whil	e this window is open.)	
	Append selected device as last chil PCM52 (You can select another target no	<b>d of</b> ode in the navigator whil	e this window is open.)	
	Append selected device as last chil PCM52 (You can select another target no	<b>d of</b> ode in the navigator whil	e this window is open.)	i Device
	Append selected device as last chil PCM52 (You can select another target no	<b>d of</b> ode in the navigator whil	e this window is open.)	Device
	Append selected device as last chil PCM52 (You can select another target no	<b>d of</b> ode in the navigator whil	e this window is open.)	Device Close
Previous and a CODESVS	Append selected device as last chil PCM52 (You can select another target no	<b>d of</b> ode in the navigator whil	e this window is open.)	Device Close
Project.project* - CODESYS	Append selected device as last chil PCM52 (You can select another target no	<b>d of</b> ode in the navigator whil	e this window is open.)	Device Close
Project.project* - CODESYS Edit <u>V</u> iew <u>P</u> roject <u>Build Online Debug</u>	Append selected device as last chil PCM52 (You can select another target no Jools Window Help	d of ode in the navigator whil	e this window is open.)	Device Close
Project.project* - CODESYS <u>Edit View Project Build Online Debug</u> ■   ●   ⊷ ⊶ & 酏 酏 ×   碘 % ∰ 🏂	Append selected device as last chil         PCM52         You can select another target no         Iools       Window         Help         Help         M       Help         Iools       Mindow         Help         Help         Iools       Mindow         Help         Help         Help         Iools       Help         Help       Help         Help       Help         Help       Help         Help </th <th><b>d of</b> ode in the navigator whil pplication [Device: PLC</th> <th>e this window is open.) Add</th> <th>Device Close</th>	<b>d of</b> ode in the navigator whil pplication [Device: PLC	e this window is open.) Add	Device Close
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roject.project* - CODESYS Edit Yiew Project Build Online Debug 리 (금) I 이 여 상 팀 (금 X   44 십년 44 십년 *** Project	Append selected device as last chil PCM52 (You can select another target no Jools Window Help Mindow Help	d of ode in the navigator whil pplication [Device: PLC CAT_Master	e this window is open.) Add CLogic] - 🧐 💓 🕨	Device Close
roject.project* - CODESYS Gdit View Project Build Online Debug 리 (금) IP 여 상 태일 배금 X (해 쇼) 4월 1일 ************************************	Append selected device as last chil PCM52 (You can select another target no Jools Window Help Minimum Manager Minimum Anager General A	d of ode in the navigator whil pplication [Device: PLC CAT_Master )	e this window is open.) Add Logic]  CLogic]  CLogic]  CLogic Devi	I Device Close
oject.project* - CODESYS dit View Project Build Online Debug 리 플 I 여 여 상 태 등 X I 4월 상 4월 상 ** <i>Project</i> Device (AWC 500 PCM5:2) 의 PLCLogic	Append selected device as last chil         PCM52         Image: Construction of the select another target not select	d of edde in the navigator while pplication [Device: PLC CAT_Master	e this window is open.) Add CLogic]  Clogic]  Clogic]  Clogic  Clogic	Device Close Cl
oject.project* - CODESYS dit <u>View</u> <u>Project</u> <u>Build</u> <u>Online</u> <u>Debug</u> I I I I I I I I I I I I I I I I I I I	Append selected device as last chil         PCM52         Iools       (You can select another target no         Iools       Window         Help       Image: Image	d of pplication [Device: PLC CAT_Master ] ddress AutoInc address EtherCAT address	e this window is open.) Add CLogic] V 🧐 💜 Devi PLC_PRG M Devi 0 0	Device Close Clos
oject.project* - CODESYS dit <u>V</u> iew <u>P</u> roject <u>B</u> uild <u>O</u> nline <u>D</u> ebug I → → & B B B × A A & A & A & A <i>t Project</i> Device (AWC 500 PCM5-2) PLC Logic Application Device (D PCM5-2) C PCC PCM5-2 C PCC PCC PCM5-2 C PCC PCC PCM5-2 C PCC PCC PCC PCCA C PCC PCCA C PCCA	Append selected device as last chil         PCM52         Image: Construction of the select another target not select	d of pplication [Device: PLC CAT_Master	e this window is open.) Add CLogic] PLC_PRG Devi Devi Do 1001	Device Close Clos
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添加 I/O 设备例如 AIM5.1,右键点击设备"PCM5.2",选择"Add Device"进行设备 AIM5.1 添加。



### 5.5 控制器网关连接

在线扫描硬件设备 PCM5.2 建立控制器网关连接,双击"Device",选择

"Communication Settings"、"Scan Network"。在 Select Device 对话框内将显示

#### 在线扫描出来的所有与开发电脑同网段的硬件设备,根据设备名称和 IP 地址选择将要连接

#### 的 PCM5.2 硬件设备。

Untitled1.project* - CODESYS     File Edit View Project Build Qnline     D	Debug Iools Window Help 상 및 및 및 및 및 관계 (월 ) 월대• 다 (편) Application (Device:	PLC Logid • 여 여 → = 색 [대 약 석] *대 응   수   第   #	- 0 × •
Contract     Device (AWC 500 PCM5'2)     Processor     Processor	Communication Settings Scan Network. Gateway + Applications Select Device 3 Select the network path to the controller: 	Device Hame: Scan Network Ve) Univer: TC/IP IP-Address: locahost Port: 1217	05
C C C C C C C C C C C C C C C C C C C		يري <mark>ancel</mark>	~
Messages - Total 0 error(s), 0 warning(s), 5 message(s)		Lasthuid: 🔿 0 🙃 0 Preconnie 🖌 💷 Droi	ert year: (nobody)

#### 控制器 PCM5.2 连接成功以后, 网关与设备的界面指示会变成绿色, 否则是灰色。

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<u>File Edit View Project Build Online</u>	<u>Debug Tools Window H</u> elp	p					
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Devices 👻 🔻 🗙	PLC_PRG 🛛 Device 🗙	PCM52 10M51	EtherCAT_	Master			
Untitled1	Communication Settings	Scan Network Gateway -	Device -				
Device (AWC 500 PCM5-2)		1			_		
	Applications						
Library Manager	Backup and Restore						
PLC_PRG (PRG)	Film	•					
Task Configuration	Files			Gateway		•	
EtherCAT_Task (IEC-Tasks)	Log			Gateway	[0201 A00D] (ad	(m)	1
Anniask (LEC-Tasks)	PLC Settings		Gateway-1	~	Device Name	(Ve) V	
EtherCAT_Master (EtherCAT Master)			localhost		p cm52-sn000000	10000000005	
PCM52 (PCM5-2 Power and Control Modu	PLC Shell		Ports		Device Address:	控制器设备	
IOM51 (IOM5'1 Input and Output Mc	Users and Groups	PC	1217	网大	0301.A00D		
Port 1	Arrest Diskto				Target ID: 1038 0002	绿色美示	
	Access Rights			绿色表示	Target Type:	<u>冻</u> 运农小	
	Symbol Rights			连接正常	4096	任政正市	
	IEC Objects				Target Vendor: DEIF A/S		
	Task Deployment				Target Version: 3.5.15.0		
	Status						
	Information						
Z Devices II POUs							

选择网络适配器,左键双击"EtherCAT\_Master",选择"Select network by name",点击"Browser"选择"eth0"。

a state for		in concrete prosection	x	
Device (AWC 500 PCMS 2) Device (AWC 500 PCM 2) Device (	General Sync Unit Assignment Log EtherCAT I/O Mapping EtherCAT IEC Objects	Autoconfig Master/Slaves  EtherCAT NIC Setting  Destination address (MAC)  Source address (MAC)  Network Name  Setto Select network by MAC  Select network by M	Ether CAT.	
EtherCAT_Matter     Const (Const / Const	SE         Select Network Adapter           Inf         MAC address         Name           002677039780         +thi         002677039780           002677039780         +tk2         002677039780           002677039780         +tk2         002677039780           002677039780         +tk2         002677039787           002677039787         hr0         002677039787           26157E5CE506         tsg0	e Description		

# 5.6 自动扫描设备

CODESYS 支持 AWC500 自动扫描添加设备。

- ▶ 新建工程,选择 "Standard project"。
- ➤ 右键点击 "Device" / " Add Device" ,选择 "EtherCAT/EtherCAT Master"。

vices	- 	📮 🛥 🐂 👘 🖬 🖬 🖷 🖮 🖬	Application [Device: PLC Logic]     Application [Device: PLC Logic]     PLC_PRG     PLC_PRG     PLC_PRG	, <u>E</u> , E, E
Test Project		🔽 🖪 Add Library 🗙 Delete	Library Properties 💿 Details 🔄 Placeholders 🎁 Library Repo	sitory 🕕 Icor
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Ibrary Manager     Ibrary Manager     Ibrary Manager     Ibrary Manager     Ibrary Manager     Iso Configuration	×	Paste Delete Refactoring	= CAA Device Diagonsi, 3.5.15.0 (CA Technical Workgroup) ard, 3.5.15.0 (System) 3.5.16 (System)	DED IoStandard
□ - 🍪 MainTask (IEC-Tasks) □ 🕮 PLC_PRG	ē.	Properties		Standard
		Add Object		
	ß	Update Device Edit Object Edit Object with		
	*	Edit IO mapping Import mappings from CSV Export mappings to CSV Online Config Mode		
		Reset Origin Device [Device] Simulation	-	

ices • 4 ×	Add Device			×	nd
M Device (AWC 500 PCM5·2)     Device (AWC 500 PCM5·2)     Application     Device (Application     Device (Application	Action  Action  Action  Action  Action  String for a fulltext search	ug device O Update device			Effective version 3.5.14.0 3.5.5.0 3.5.15.0
<ul> <li></li></ul>	Name Miscellaneous Fieldbuses Galage CANbus Miscellaneous Fieldbuses Miscellaneous Fieldbuses Miscellaneous Fieldbuses Miscellaneous	Vendor	Version	Descr ^	3.5.15.0 3.5.15.0
	Group by category □ Display all version	35 - Smart Software Solutions Gmbi tion 35 - Smart Software Solutions Gmbi ins (for experts only) Display outdate	H 3.5.15.20 H 3.5.15.20	EtherC EtherC	
	Name: EtherCAT Master           Vendor: 3S - Smart Software Solution           Categories: Master           Version: 3.5.15.20           Order Number:           Description: EtherCAT Master	is GmbH	Ŵ		
	Append selected device as last child of Device				

▶ 双击 "EtherCAT\_Master" 修改配置为 "Select network by name",并将

"Network Name" 修改为 "eth0" 。

Test Project.project* - CODESYS			
<u>File Edit View Project Build Online Debug</u>	<u>T</u> ools <u>W</u> indow <u>H</u> elp		
🎦 😂 🔚   🚑   🗠 🖂 🐇 🗈 🏝 🗙   🗛 🎎 🐴 🔇	🍐 📗 🍕 🦎 🦄 🝓 🛅 🕤	🕮   Application [Device: PLC Logic] 🝷 🞯 🕟 🝵 💘   💭	9월 4월 2월 1 49 1 📈 1 1
Devices 👻 🕈 🗙	Library Manager	_PRG Device EtherCAT_Master X	
Test Project  Test Project  Content of the second	General	☑ Autoconfig Master/Slaves	Ether CAT.
PLC Logic	Sync Unit Assignment	EtherCAT NIC Setting	
Library Manager	Log	Destination address (MAC) FF-FF-FF-FF-FF	st Enable redundancy
Task Configuration	EtherCAT I/O Mapping	Source address (MAC) 00-00-00-00-00 Browse	
MainTask (IEC-Tasks)	EtherCAT IEC Objects	Select network by MAC     Select network by name	
EtherCAT_Master (EtherCAT Master)	Status	Distributed Clock     Options	
	Information	Cycle time 4000 🛓 µs	
		Sync offset 20 🔷 %	
		Sync window monitoring	
		Sync window 1 🖕 µs	

- ▶ 双击"Device",点击"Scan Network"扫描在线控制器,建立 Gateway 连接。
- ▶ 点击"Login",但不要运行程序。
- ▶ 右键点击 "EtherCAT\_Master" 选择 "Scan for Devices"。

文件 编辑 视图 工程 编译 在线	调试	工具 窗口 帮助					
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<b>₽</b> ∰ <b>→</b> ₽	×	Device EtherCAT_M	laster 🗙		28=	<b>-</b>	
- ③ <i>未命名1</i> - ④ ④ ① Device i连接的 (AWC 500 PCM5·2)		通用	☑ 自动配置	主站/从站	豆求	后动	Ether CAT.
■ 副 PLC 逻辑 ■ ② Application [停止]		同步单元分配	EtherCAT NIC	设置 —			
● 库管理器		日志	目的地址(M4	AC)	FF-FF-FF-FF-FF-FF	☑广播	启用冗余
■ FLC_PKG (PKG) ■ 鋼 任务配置 - ② 参 EtherCAT_Task (IEC-Task	s)	EtherCATI/O映射	源地址(MAC) 网络名称	)	00-26-77-03-97-99 eth0	浏览	
MainTask (IEC-Tasks)		EtherCATIEC对象	<ul> <li>按MAC选择</li> </ul>	择网络	○ 按名称选择	爭网络	
EtherCAT_Master (EtherCAT Master)		<u>状态</u> 剪切	分布式时钟			▷ 选项 ——	
	6	复制	冠其月	4000	‡ μs		
	18	粘贴	影步偏移	20	÷ %		
	×	删除	同步窗口出	合视			
		重构	▶ №窗口	1	µs		
	6	属性					
	See.	添加对象					
	0	添加文件夹					
		扫描设备					
	ď	Acknowledge Diagnosis Acknowledge Diagnosis Subtree 编辑对象 编辑对象使用	街信息 1线负载		0 %		
		编辑IO映射 从CSV导入映射… 导出映射到CSV…					

▶ 在线设备自动被扫描出来后,点击 "Copy All Devices to Project" 将自动扫描的设

备导入到工程中。

So	an Devices			_		×
	Scanned Devices					
	Device name	Device type	Alias Address			
	PCM52	PCM5 · 2 Power and Control Module	0			
	IFII5_1	IFM5 - 1 Interface and Fieldbus Module (Revision=16#000003F2)	0			
	Assign Addr			liieren/	Ces to	
2	Scan Device	Copy All 1	Devices to Projec		Close	

请注意,不是所有的硬件设备都可以被正确扫描并添加到工程中,因此建议核对已经扫描添加的设备是否符合配置要求,也可以采用手动方式逐个添加硬件设备。

#### 下图为 AWC500 模块常见的配置方式和模块层级结构分布。



# 5.7 控制器下载程序

点击 "Online / Login" 或者 "Login 按钮", 下载应用程序到控制器 PCM5.2 中。



Devices • • • • × = (2) Linbled1 • = (2) Device [connected] (AWC 500 PCM5:2) = (2) P.CL Logc = (2) Application [stop]	PIC_PRG X Device PCMS2 DIMS1 EtherCAT_Master  PROGRUM PIC_PRG VAR  ELID_VAR	•
CPAC PAG (PAG)  CAC PAG (PAG)  CAC CAG (PAG)  CAC	1       Image: CoDESYS       X         2       Image: An application' is currently on the PLC. As there is no matching comple information, this existing application needs to be replaced.       Click 'Yes' to download the latest code or 'No' to abort.         Image: Complex information (Section 2)       Yes       No       Details	100 %
< >> Devices POUs  Devices POUs  Messages - Total 0 error(s), 0 warning(s), 0 message(s)	< )	100 %

程序下载完成后控制器处于停止状态,没有运行。此时 Device、EtherCAT\_Master、 PCM5.2、IOM5.1 设备图标左侧全部为灰色图标,表示设备没有运行。下方显示栏红色 "STOP"表示程序停止状态,没有运行。

es • ‡ X	MainTask 🕤 Device	PLC_PRG	Ether	AT_Master 🗙 📆	IOM51			
)) Unbload )) Unbload ) )) Unbload (AWC 500 PCM5-2)	General Sync Unit Assignment Log EtherCAT I/O Mapping EtherCAT I/C Objects Status Information	Autoco EtherCAT NI Destination Source add Network N Select r Distributer Cycle time Sync offset Sync win Sync window	nfig Master/Slaves C Setting a address (MAC) [ irress (MAC) ] etwork by MAC d Clock 4000 20 dow monitoring x 1	17 17 17 17 17 17 17 17 10 26770 39.97.91 10 0 10 19 10 19 1	Sroadcast Browse  prk by name      Options	Ether CAT.		
j.	Vatch 1			-				• ņ
		'	application	Туре	Value	Prepared value	Execution point	

点击"Debug / Start"或者"Start 按钮"使控制器中程序开始运行。此时 Device、 EtherCAT\_Master、PCM5.2、IOM5.1 设备图标左侧全部变为绿色常亮循环图标。下方显 示栏绿色"RUN"表示程序正在运行。

控制器 AWC500 快速入门

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ile Edit View Project Build Online	Deb	oug Tools Window	Help				
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res 👻		Single Cycle	Ctrl+F5		St	tart	
A Untitled 10	- 100	New Breakpoint					
- Device [connected] (PCM6.1 Practek)	III.	Edit Breakpoint		work Gateway - D	evice -		
= I PLC Logic		Toggle Breakpoint	F9				
Application [stop]	0	Disable Breakpoint				-	
Library Manager		Enable Breakpoint			1		
PLC_PRG (PRG)				_			
Task Configuration	Ļ≡	Step Over	F10	•			•
An I c ppc	<u>е</u> Ш	Step Into	F8		G	ateway	
PLC_PRG	¢.1	Step Out	Shift+F10		Gateway-1		<ul> <li>[0301.D00D] (active)</li> </ul>
	*Ⅲ	Run to Cursor			P-Address:		Device Name:
	\$	Set next Statement		i	ocalhost		pcm61-sn0100032510010002
	⇔	Show next Statement		5	ort:		Device Address:
		Write Values	Ctul - 57	1	217		0301.D00D
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# 5.8 创建启动应用

控制器程序在线运行状态下,点击"Online / Create Boot Application"创建启动应用,将应用程序固化在控制器中。完成程序固化后控制器断电重启,应用程序不会丢失,可以自动启动运行。

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