

BONENG

X 3000

快速调试手册

QUICK COMMISSIONING
MANUAL



CONTACT US

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中文

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前言

欢迎使用博能控制器！

在安装使用前请务必认真阅读本说明书，以便正确安全地使用控制器。

更多详细资料，请访问博能传动官方网站：
博能传动（www.boneng.com）。



扫码了解产品详情



扫码下载产品使用手册

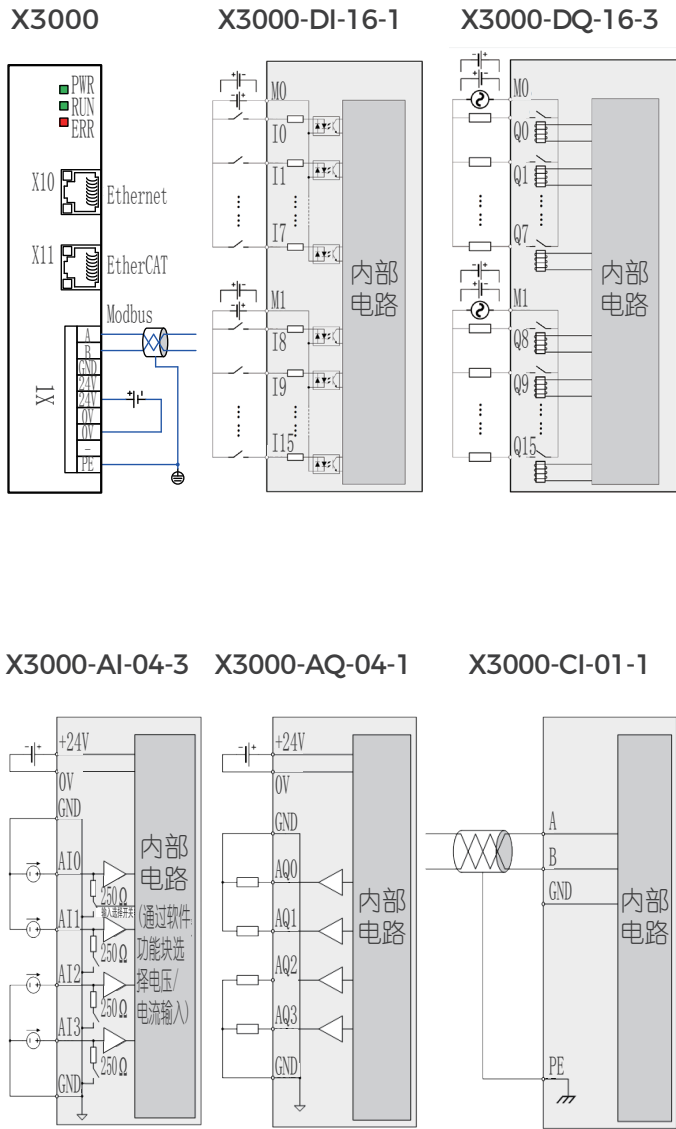
博能传动官方网站

X3000控制器使用手册

1. 技术参数

名称	说明	参数
存储	用户程序容量	1MB
	用户数据空间	8MB
	掉电保存空间	4kB
工作电源	外部端子供电	电压范围：DC 19.2 ... 28.8V
		最大电流：2.6A
通讯接口	EtherCAT	1路EtherCAT主站
	Ethernet	1路modbusTCP主、从站
	RS485	2路modbusRTU主、从站
指示灯	3个单色指示灯	PWR指示灯：绿色
		RUN指示灯：绿色
		ERR指示灯：红色
时钟	断电维持一周	
编程语言	LD	✓
	ST	✓
	IL	✓
	FBD	✓
	SFC	✓
	中文支持	✓
扩展数量	最大15个，最多允许一个通讯接口扩展模块	
运动控制	X3010	单轴定位控制
	X3050	主从同步控制

2. 端子配线



3. Logiclab界面区域说明

3.1 Logiclab软件初始界面

打开Logiclab软件可见如下图。



红框框选的各个区域分别为：

- ① 为打开已创建的工程；
- ② 为扫描本地网络中接入的控制器；
扫描后弹出如存在控制器则如图：

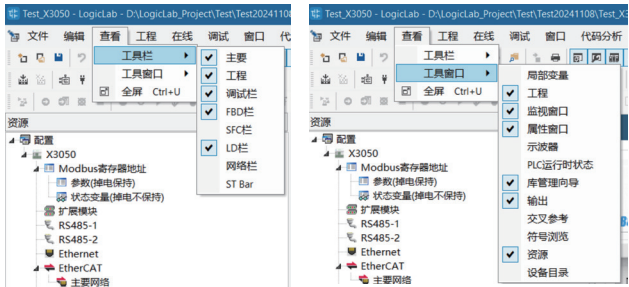
本地网络扫描结果						
通过控制器类型过滤: X3050						
控制器名称	版本	IP地址	新建工程	导入工程	应用名称	应用版本
X3050	1.0	192.168.0.128			tup	0.0

用户可以在这一栏目查看对应控制器型号，修改控制器IP，新建工程，导入工程，查看当前控制器内的工程信息。

- ③ 控制器选择及对应工程创建；
- ④ 最近使用的工程列表。

3.2 Logiclab软件工具界面

创建并打开工程后，用户可以在“查看”中调出对应工具栏和工具窗口



◆ 常用工具栏：

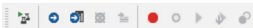
主要：工程的新建/打开/保存等基础操作



工程：工程的连接/编译/下载以及停止和启动操作



调试栏：在线调试模式和断点调试功能



LD栏：增加触点，更改触点类型等



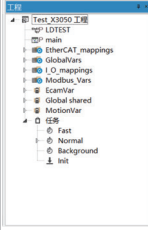
网络栏：LD编程插入网络和打开网络网格



ST Bar：常用ST语法调用

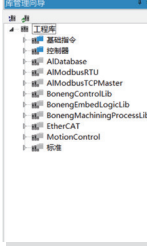


◆ 常用工具窗口：

工具窗口	概览	简介
	工程	用户可在工程栏创建程序/功能块/函数/变量组 在任务栏将程序分配给任务执行，配置任务的循环时间
		GlobalVars 初始工程自带的全局变量组
		I_0_mappings 扩展模块引脚分配的对应变量组
		Global shared 资源栏-参数/状态变量生成的对应变量，控制器做Modbus从站时的通信变量
		Modbus_Vars 控制器做Modbus主站时的通信变量
		EtherCAT_mappings EtherCAT通信变量
		MotionVar Motion轴工艺对象对应实例
		EcarnVar 凸轮表对象实例
		用户编写的PLC程序需要分配到任务方可执行
		Fast Fast默认周期为2ms，与EtherCAT总线周期一致
	任务	Normal Normal默认周期为20ms
		Background Background默认周期为100ms
		Init Init任务内的程序仅在PLC上电后最先执行一次，之后不再执行

工具窗口	概览	简介
	资源	Modbus寄存器地址 参数(掉电保持) Modbus数据, 掉电保持, 地址范围1~1023
		状态变量(掉电不保持) Modbus数据, 掉电不保持, 地址范围8192~12287
		扩展模块 用户可在这里组态扩展模块(DI、DQ、AI、AQ, 不包含CI模块)，管理模块管脚对应变量
		RS485-1 X3000的CPU模块自带一路RS485总线, 用户可在此处配置其Modbus RTU通信： • 设置为PLC从站，则主站可访问PLC“Modbus寄存器地址”内地址的变量； • 设置为PLC主站，则需设置从站地址和对应功能码，寄存器地址等信息；
		RS485-2 X3000的CI模块可扩展一路RS485总线, 用户可在此处配置其Modbus RTU通信： • 设置PLC为从站，则主站可访问PLC“Modbus寄存器地址”内地址的变量 • 设置PLC为主站，则需设置从站地址和对应功能码，寄存器地址等信息；
		Ethernet 用户可在此处配置Modbus TCP通信： • 设置PLC为从站，则主站可访问PLC“Modbus寄存器地址”内地址的变量； • 设置PLC为主站，则需设置从站地址和对应功能码，寄存器地址等信息；
		EtherCAT 用户可在此处配置EtherCAT通信，可通过扫描或手动添加来组态从站
		运动控制工艺对象 用户可在此处配置轴工艺对象，配置完成后生成对应实例
		凸轮工艺对象 用户可在此处配置凸轮表，配置完成后生成对应实例

工具窗口	概览	简介
	资源	RS485-2 X3000的CI模块可扩展一路RS485总线, 用户可在此处配置其Modbus RTU通信： • 设置PLC为从站，则主站可访问PLC“Modbus寄存器地址”内地址的变量 • 设置PLC为主站，则需设置从站地址和对应功能码，寄存器地址等信息；
		Ethernet 用户可在此处配置Modbus TCP通信： • 设置PLC为从站，则主站可访问PLC“Modbus寄存器地址”内地址的变量； • 设置PLC为主站，则需设置从站地址和对应功能码，寄存器地址等信息；
		EtherCAT 用户可在此处配置EtherCAT通信，可通过扫描或手动添加来组态从站
		运动控制工艺对象 用户可在此处配置轴工艺对象，配置完成后生成对应实例
		凸轮工艺对象 用户可在此处配置凸轮表，配置完成后生成对应实例

工具窗口	概览	简介
	库管理向导	库管理向导可以管理（增删及刷新）工程载入的库文件 注意：X3010 PLC不能使用MotionControl库，而使用BonengControlLib下的功能块以控制EtherCAT轴。
		基础指令 这一栏目包含PLC编程的基本操作指令，如算术，逻辑，类型转换指令等
		BonengControlLib 博能控制库包含EtherCAT轴和RS485轴的控制块和工业设备控制中常用的基础功能块
		BonengEmbedLogicLib 博能嵌入式库包含X3000扩展模块的相关功能块和数据处理的模块
		BonengMachining-ProcessLib 博能工艺库包含卷曲工艺库
		EtherCAT EtherCAT库包含获取主站从站信息的功能块和SDO读写功能块
		MotionControl MotionControl库包含基于PLCopen标准设计的MC块
		标准 标准库包含计时器，计数器，边缘功能块等常用功能块

3.3 BN_EtherCAT库功能块的EtherCAT从站PDO配置

功能块名称	功能	AN/AX产品 PDO配置	驱动器上位机 配置
BN_EtherCAT_INV_Speed	变频模式，速度控制	Output: 1704 Input: 1B04	A04.14选择：变频模式
BN_EtherCAT_INV_Torque	变频模式，转矩控制	(若选择AD产品，则为1702和1B02)	C06.04选择：变频模式功能块
伺服功能块	伺服模式下多种功能： 1：相对位置 2：绝对位置 3：速度模式 4：主动回零 5：设置当前位置为零点 6：**暂无 7：速度点动 8：位置点动	Output: 1703 Input: 1B03	A04.14选择：伺服模式 C06.04选择：无
	BN_EtherCAT_PP_PV		
	BN_EtherCAT_PV_Speed	Output: 1702	
	BN_EtherCAT_PT_Torque	Input: 1B03	

4. 常用功能

常用功能	操作说明	备注
局域网扫描PLC	菜单→工具→执行网络扫描	扫描后选择可自动修改工程的PLC IP地址与选择的PLC一致
连接PLC	菜单→在线→设置通信→GDB	出厂IP地址192.168.0.123，端口5000 连接PLC后，软件右下角状态栏显示已连接 可在此处手动修改工程的PLC IP地址
下载程序	编译通过后，点击下载程序	下载程序后，控制器内运行程序与工程一致，软件右下角状态栏显示工程源代码匹配

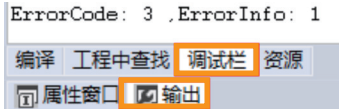
常用功能	操作说明	备注
在线调试	打开在线调试模式后在对应程序页面查看实时值	用户可根据调试的需要使用不同的监控方式，打开在线调试模式后右下角状态栏显示调试模式  工程源代码匹配 已连接 若在线调试模式报错需要复位控制器，则重启控制器  后继续调试即可
	点击变量栏目的查看变量实时值	这种监控方式无需添加变量到监视窗口，较为便捷
	菜单→查看→工具窗口→监视窗口→调出监视窗口后，可将变量添加其中进行在线监控	将变量添加到监视窗口有几种方式： • 在变量栏目中选择变量拖动到监视窗口 • 在程序界面中右键变量，选择添加到监视或选择添加到监视窗口→监视窗口 • 在程序界面中点击选中变量，拖动到监视窗口
	菜单→查看→工具窗口→示波器，调出示波器后，可将变量添加其中监控实时波形	注意，示波器内添加监控变量需要处于在线调试模式 将变量添加到示波器有几种方式： • 在变量栏目中选择变量拖动到示波器 • 在程序界面中右键变量，选择添加到监视窗口→示波器 • 在程序界面中点击选中变量，拖动到监视窗口
变量检索	菜单→编辑→工程中查找	输入变量搜索后，会在输出栏显示，双击可跳转至对应位置
	菜单→查看→工具窗口→交叉参考	在交叉参考界面输入对应变量可查看使用位置，双击跳转
软件中英文切换	菜单→文件→语言→选择语言→选择→确定	切换语言后需要重启Logiclab软件生效
自动声明变量	菜单→文件→通用→ST-LD：自动声明变量→确定	勾选后，当在程序中使用未声明的变量时会弹出变量声明提示框
属性窗口	菜单→查看→工具窗口→属性窗口	属性窗口可实时显示点选内容的属性 库管理向导内的功能块/函数/指令，可点选查看属性功能和引脚使用说明等

常用功能	操作说明	备注
上传工程	初始界面，扫描到局域网内PLC，点击导入工程  /	
	菜单 → 文件 → 从设备中导入工程 → 选择保存文件夹	
PLC停止与启动	菜单 → 在线 → 停止/冷启动/ 暖启动/热启动 /重启控制器 或使用工具栏的 停止启动重启 	冷启动：掉电保持区域（如果有）将被重置 数据区域将被重置 将重新启动PLC应用程序 暖启动：数据区将被复位 PLC应用程序将被重新启动 热启动：数据区不复位，程序继续执行
导入XML文件	菜单 → 工具 → 导入EtherCAT ESI文件	注意：XML文件若存在版本号，例如，同一产品，先导入的XML版本为1.0，后导入的XML版本依旧是1.0，则会替换先导入的XML文件，若后导入的XML版本为1.2或其它，则这一产品两个版本的XML会共存。 在EtherCAT手动添加从站时，请留意使用XML的版本号。
控制器固件升级	菜单 → 工具 → 控制器固件升级 → 勾选局域网内PLC → 选择文件 → 升级按钮 → 等待进度条100% → 重启控制器	控制器固件升级时，进度条100%前，运行灯Run停止闪烁，此时请勿断电控制器，否则会升级失败，导致控制器无法使用，需返厂维修；

5. 故障码说明

当CPU模块ERR指示灯红灯亮起时表示出现错误，引起错误的原因有两种：扩展模块组态错误（多组态模块、模块顺序错误）或者扩展模块本身错误。

输出窗口调试栏能够查看出错误的类型：



- ErrorCode：1表示扩展模块（故障）自身错误；
ErrorCode：3表示扩展组态错误；
- ErrorInfo含义请参见下表：

ErrorInfo	含义
1	扩展模块类型错误（特殊配置过程中收到应答，但CRC校验失败，或返回的槽号不符）
2	扩展模块类型错误（特殊配置时无应答）
3	扩展模块类型错误（重配置过程中收到应答，CRC校验失败，或返回的槽号不符）
4	扩展模块类型错误（重配置时无应答）
5	扩展模块类型错误（通信过程发送信息时，扩展模块类型出错）
6	扩展模块类型错误（通信过程接收信息时，扩展模块类型出错）
7	无扩展模块
8	扩展模块回复CRC校验错误
9	扩展模块接收错误
10	扩展模块回复超时
11	扩展模块类型错误（工厂测试模式，接收信息时，扩展模块类型出错）
12	工厂测试模式，扩展模块回复CRC校验错误
13	工厂测试模式，扩展模块接收错误
14	工厂测试模式，扩展模块回复超时

错误排除后，重新下载程序并重新上电，控制器错误复位。

售后服务

售后服务请按以下步骤提交售后流程。

- 登录 “www. boneng. com”
- 点击 “服务” 和 “售后服务”



→ 登录系统

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马达/齿轮马达/齿轮箱 : 0512-66189918

博能传动（沈阳）有限公司
控制器/驱动器 : 024-31271571
马达/齿轮马达/齿轮箱 : 024-31292571

博能传动（天津）有限公司
控制器/驱动器 : 022-86928559
马达/齿轮马达/齿轮箱 : 022-26929558

博能传动（开封）有限公司
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马达/齿轮马达/齿轮箱 : 0371-23277771

博能传动（潍坊）有限公司
控制器/驱动器 : 0536-4699687
马达/齿轮马达/齿轮箱 : 0536-4699667

博能传动（长沙）有限公司
控制器/驱动器 : 0731-88386958
马达/齿轮马达/齿轮箱 : 0731-88380725

博能传动设备（成都）有限公司
控制器/驱动器 : 028-87740066
马达/齿轮马达/齿轮箱 : 028-87740066

博能传动（肇庆）有限公司
控制器/驱动器 : 0757-86719757
马达/齿轮马达/齿轮箱 : 0758-2699830

博能传动（苏州）有限公司
控制器/驱动器 苏南区: 0512-66182005
马达/齿轮马达/齿轮箱 苏南区: 0512-66189918
控制器/驱动器 浙沪区: 0512-66182005
马达/齿轮马达/齿轮箱 浙沪区: 0512-66189918
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Nashik, 422123, Maharashtra, India.
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Tel: +91-11-4507 6293/+91-22-2781 3385

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Introduction

Welcome to Boneng Controller!

Please read this manual carefully before installation and use so that the controller can be used correctly and safely.

For more details, please visit Boneng Transmission official website:
[BONENG \(www.boneng.com\)](http://www.boneng.com).



Boneng transmis-
sion official website

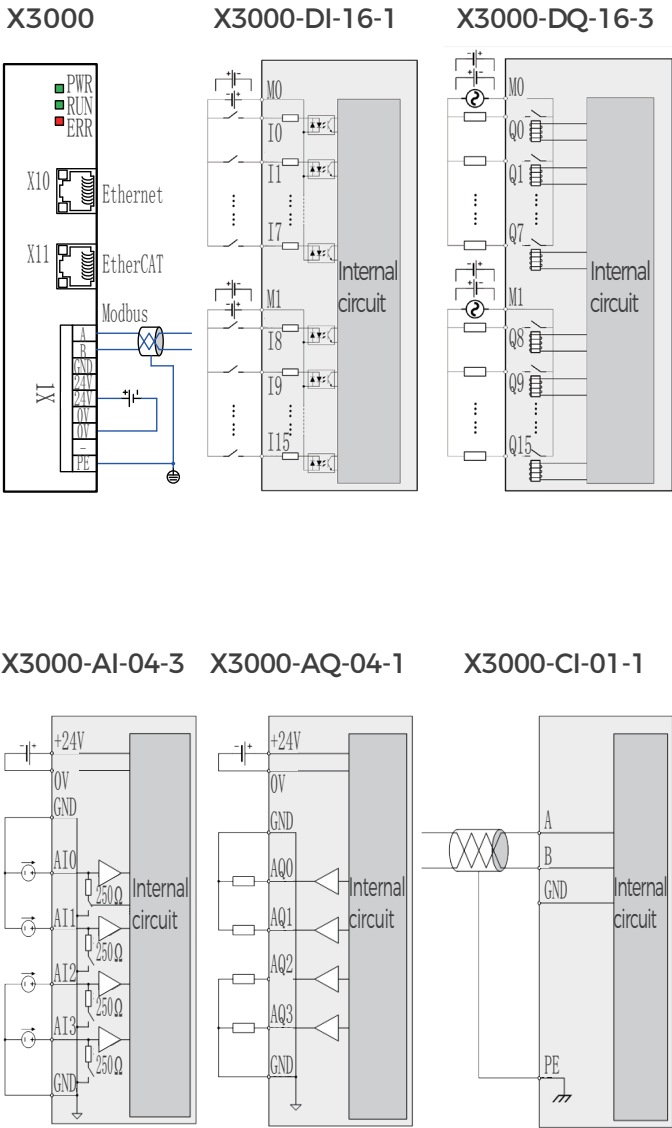


X3000 Controller
product details

1. Technical Parameters

Name	Instruction	Parameter
Storage	User program space	1 MB
	User data space	8 MB
	Power off storage space	4 kB
Power Supply	External terminal power supply	Voltage range: DC 19.2 ... Maximum current: 2.6 A
Communication Interface	EtherCAT	EtherCAT master station
	Ethernet	ModbusTCP master and slave
	Modbus	ModbusRTU master and slave
Indicator Light	3 monochrome indicator lights	PWR indicator light: green
		RUN indicator light: green
		ERR indicator light: red
Daily clock	Last for 1 week after power	
Program-ming Language	LD	✓
	ST	✓
	IL	✓
	FBD	✓
	SFC	✓
	Chinese supporte	✓
Expanded quantity	15 DI/DQ/AI/AQ Module + 1 CI Module	
Motion c-ontrol	X3010	Single-axis positioning control
	X3050	Master-slave synchronization

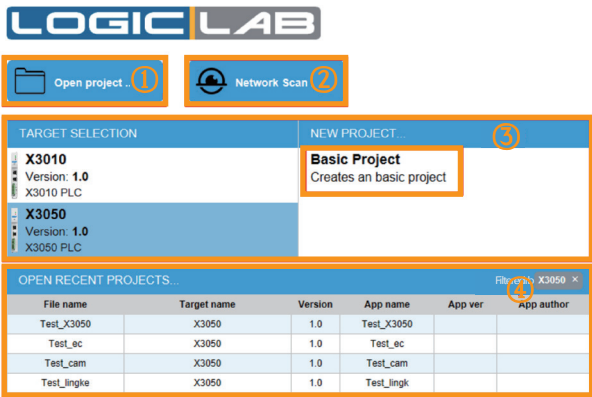
2. Terminal Wiring



3. Description Of The Logiclab Interface Area

3.1 Logiclab Software Initial Interface

Open the Logiclab software and see the following figure.



The areas selected in the red box are:

- ① to open a project that has already been created;
 - ② To scan the controllers connected to the local network;
- After scanning, it pops up, if there is a controller, then it looks like this:

NETWORK SCAN RESULTS						
Filtered by: X3050						
Target name	Version	IP Address	New prj	Import prj	Application name	Application ver
X3050	1.0	192.168.0.126			Test_speed	0.0

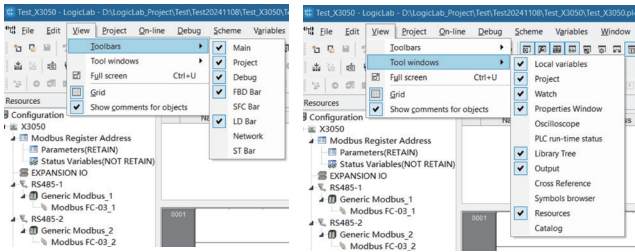
In this column, users can view the corresponding controller model, modify the controller IP, create a new project, import a project, and view the project information in the current controller.

- ③ Controller selection and corresponding project creation;

- ④ A list of recently used projects.

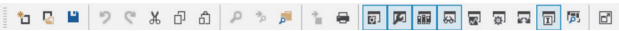
3.2 Logiclab Tool Interface

After creating and opening a project, users can bring up the corresponding toolbars and tool windows in View



◆ Common Toolbars:

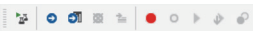
Main: Basic operations such as creating, opening, and saving projects



Project: Connect/compile/download and stop and start operations for a project



Debug: online debugging mode and breakpoint debugging function



LD bar: add contacts, change contact types, etc



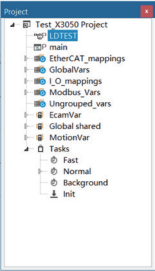
Network: LD programming to plug into the network and open the network grid

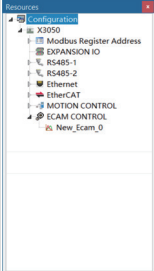


ST Bar: Common ST syntax calls



◆ Common tool window:

Tool Window	Overview	Brief Introduction	
Project 	Common Var Group	Users can create programs/function blocks /functions/variable groups in the project bar Assign the program to task execution in the taskbar and configure the cycle time of the task	
		GlobalVars	The global variable group that comes with the initial project
		I_O_mappings	Corresponding variable group for pin allocation of expansion module
		Global shared	Resource Bar - Corresponding Variables Generated from Parameters/Status Variables
		Modbus_Vars	Communication Variables for Controller as Modbus Master
		EtherCAT_mappings	EtherCAT communication variable
		MotionVar	Motion axis process object corresponding instance
		EcamVar	Cam table object instance
		The PLC program written by the user needs to be assigned tasks before it can be executed	
		Fast	The default cycle of Fast is 2ms, which is consistent with the EtherCAT bus cycle
		Normal	Normal default cycle is 20ms
		Background	Background default cycle is 100ms
		Init	The program within the Init task is only executed once after the PLC is powered on and will not be executed again thereafter

Tool Window	Overview	Brief Introduction	
Resources 	RS485-1	Modbus Register Address	Parameters (RETAIN) TModbus data, power do -wn hold, address range 1 ~1023
		Status Variables (NOT RETAIN)	Modbus data, does not hold during power failure, address range 8192~12287
		Expansion IO	Users can configure extension modules (DI, DQ, AI, AQ, excluding CI module) here, and manage module pin corresponding variables
		RS485-1	The CPU module of X3000 comes with an RS485 bus, and users can configure its Modbus RTU communication here: • If set as a PLC slave, the master station can access variables with addresses within the PLC's Modbus register address; • If set as the PLC master station, it is necessary to set the slave station address and corresponding function code, register address and other information;
		RS485-2	The CI module of X3000 can be extended with one RS485 bus, and users can configure its Modbus RTU communication here: • If set as a PLC slave, the master station can access variables with addresses within the PLC's Modbus register address; • If set as the PLC master station, it is necessary to set the slave station address and corresponding function code, register address and other information;
		Ethernet	Users configure Modbus TCP communication here: • If set as a PLC slave, the master station can access variables with addresses within the PLC's Modbus register address; • If set as the PLC master station, it is necessary to set the slave station address and corresponding function code, register address and other information;
		Ethernet	Users configure Modbus TCP communication here: • If set as a PLC slave, the master station can access variables with addresses within the PLC's Modbus register address; • If set as the PLC master station, it is necessary to set the slave station address and corresponding function code, register address and other information;

Tool Window	Overview	Brief Introduction
Resources		MOTION CONTROL Users configure axis process objects here and generate corresponding instances after configuration is completed
		ECAM CONTROL Users configure the cam table here and generate corresponding instances after configuration is complete

Library Tree	Motion -Control	The MotionControl library includes MC blocks designed based on the PLCopen standard
	Standard	The standard library includes commonly used functional blocks such as timers, counters, edge function blocks, etc

3.3 EtherCAT Slave PDO Configuration of BN_EtherCAT Library Function Block:

Tool Window	Overview	Brief Introduction
Library Tree		The library management wizard can manage (add, delete, and refresh) the library files loaded into the project Note: X3010 PLC cannot use MotionControl library, but use the function blocks under BonengControllib to control EtherCAT axis.
	Operators and blocks	This column contains basic operation instructions for PLC programming, such as arithmetic, logic, type conversion instructions, etc
	BonengControllib	The Boneng control library includes control blocks for EtherCAT and RS485 axes, as well as basic functional blocks commonly used in industrial equipment control
	BonengEmbeddedLog-iclib	The Boneng embedded library includes relevant functional blocks for the X3000 expansion module and functional blocks for data processing
	BonengMachining-ProcessLib	The Boneng process library includes a curling process library
	EtherCAT	The EtherCAT library includes functional blocks for obtaining master and slave information, as well as SDO read-write functional blocks

Function Block	Function	AN/AX PDO Configuration	BonengDriveSoft 100 Configuration
Inverter Function Block	BN_EtherCAT_INV_Speed	Inverter Speed Control Mode	Output: 1704 Input: 1B04 (1702 and 1B02 if AD products are selected)
	BN_EtherCAT_INV_Torque	Inverter Torque Control Mode	C06.04 Select: Inverter mode function block
Servo Function Block	BN_EtherCAT_PP_PV	Multiple functions in servo mode: 1: Relative position(PP) 2: Absolute position(PP) 3: Speed mode(PV) 4: Active return to zero(HM) 5: Set the current position to zero(HM) 6: **Not yet 7: Speed jog(PP) 8: Position jog (PP)	Output: 1704 Input: 1B04 (1702 and 1B02 if AD products are selected)
			A04.14 Select: Servo mode
			C06.04 Select: None
	BN_EtherCAT_PV_Speed	Servo mode, Speed control (PV)	Output: 1702
	BN_EtherCAT_PT_Torque	Servo Mode, Torque Control (PT)	Input: 1B03

4. Common Functions

Common Function	Operation Instructions	Remarks
Scan PLC	Menu→Tools Execute network scan	After scanning, select the PLC IP address that can automatically modify the project to match the selected PLC
Connect PLC	Menu → On-line → Set up communication → GDB	Factory IP address 192.168.0.123, port 5000, After connecting the PLC, the status bar in the lower right corner of the software displays 'Connected' CONNECTED The PLC IP address of the project can be manually modified over the GDB setting
Download PLC Code	 After compilation, click  to download PLC code	After downloading the program, the running program in the controller is consistent with the project, and the status bar in the lower right corner of the software shows that the project source code matches SOURCE OK CONNECTED
Live Debug Mode	After opening the online debugging mode, view the real-time values on the corresponding program page	Users can use different monitoring methods according to their debugging needs After opening the online debugging mode, the status bar in the lower right corner displays the debugging mode DEBUG MODE SOURCE OK CONNECTED If the online debugging mode reports an error and requires resetting the controller, then restart the controller      Continue debugging afterwards
	Click on the variable field to view real-time values of variables	This monitoring method does not require adding variables to the monitoring window, making it more convenient

Common Function	Operation Instructions	Remarks
Live Debug Mode	Menu→View→Tool Windows→Watch Windows After calling up the Properties window, variables can be added for online monitoring	There are several ways to add variables to the Properties window: • Select a variable in the variable column and drag it to the Watch window • Right click on the variable in the program interface, select Add to Watch or select Add to Debug window → Watch Window • Click on the selected variable in the program interface and drag it to the Watch window
	Menu→View→Tool Windows→Oscilloscope After calling up the oscilloscope, variables can be added to monitor real-time waveforms	Note that adding monitoring variables to the oscilloscope requires it to be in online debugging mode There are several ways to add variables to an oscilloscope: • Select a variable in the variable column and drag it to the oscilloscope • Right click on the variable in the program interface, select Add to Debug Window → Oscilloscope • Click on the selected variable in the program interface and drag it to the monitoring window
Variables Search	Menu→Edit→Find in project	After entering the variable search, it will be displayed in the output bar, double-click to jump to the corresponding position
	Menu→View→Tool Windows→Cross Reference	Enter the corresponding variable in the cross reference interface to view the usage location, double-click to jump
Software Chinese/English Switch	Menu → File → Options → Choose language → Choose → Confirm	After switching languages, it is necessary to restart the LogiLab software to take effect

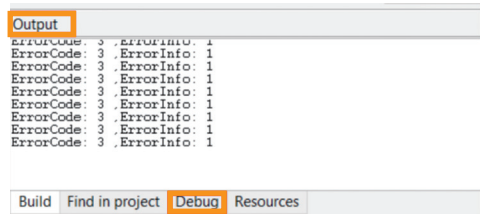
Common Function	Operation Instructions	Remarks
Auto declare variables	Menu → File → General → ST-LD: Auto declaration of Variables → Confirm	After selecting, a variable declaration prompt box will pop up when using undeclared variables in the program
Properties window	Menu → View → Tool Windows → Properties Window	The attribute window can display the attributes of the selected content in real-time Function blocks/functions/instructions within the library management wizard, which can be clicked to view attribute functions and pin usage instructions, etc
Upload the project	Initial interface, scan to PLC in LAN, click import project  Menu → Files → Import Project from Device → Select Save Folder	/
PLC Halt and Restart	Menu → Online → Halt/ Cold restart/ Warm restart/ Hot restart/Reboot Controller Or use the toolbar's Halt / Restart/ Reboot 	Cold restart: The power-off holding area (if any) will be reset
		The data area will be reset
		Restart the PLC application program
		Warm restart: The data area will be reset
		The PLC application program will be restarted
		Hot start: Data area not reset, program continues to execute

Common Function	Operation Instructions	Remarks
Import XML File	Menu → Tools → Import EtherCAT ESI	Note: If there is a version number in the XML file, for example, for the same product, if the first imported XML version is 1.0 and the second imported XML version is still 1.0, it will replace the first imported XML file. If the second imported XML version is 1.2 or other, the two versions of XML for this product will coexist. In EtherCAT When manually adding a slave, please pay attention to using the XML version number.
PLC Firmware Upgrade	Menu → Tools → Controller Firmware Upgrade → Check PLC in LAN → select file → upgrade button → wait for progress bar to reach 100% → restart controller	When upgrading the controller firmware, before the progress bar reaches 100%, the run light 'Run' stops flashing. Do not turn off the controller at this time, otherwise the upgrade will fail and the controller will be unusable. It needs to be returned to the factory for repair;

5. Description Of The Error Code

When the red ERR indicator light of the CPU module lights up, it indicates an error. There are two reasons for the error: configuration error of the expansion module (multiple configuration modules, module sequence error) or error of the expansion module itself.

The output window can identify the type of error:



- ErrorCode: 1 represents an error in the expansion module (fault) itself;
ErrorCode: 3 indicates an expansion configuration error;
- Please refer to the table below for the meaning of ErrorInfo

ErrorInfo	Description
1	Extend module type error (Received response during special configuration process, but CRC check failed, or returned slot number does not match)
2	Extend module type error (No response during special configuration process)
3	Extend module type error (Received response during reconfiguration process, but CRC check failed, or returned slot number does not match)

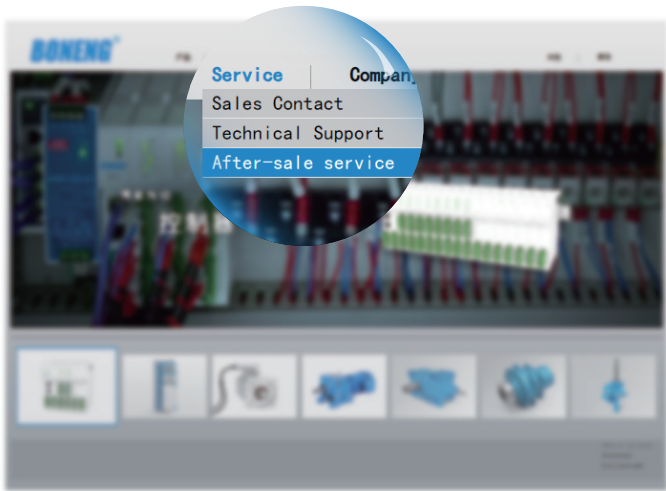
ErrorInfo	Description
4	Extend module type error (No response during reconfiguration process)
5	Extend module type error (Error in extension module type when sending information during communication process)
6	Extend module type error (Error in extension module type when receiving information during communication process)
7	No extend io modules
8	Extend module response crc error
9	Extend module receive error
10	Extend module response timeout
11	Extend module type error (Factory testing mode, during receiving information, expansion module type error)
12	Factory testing mode, extend module response crc error
13	Factory testing mode, extend module receive error
14	Factory testing mode, extend module response timeout

After troubleshooting, download the program again and power it on again to reset the controller error.

After-Sale Service

After-sales Service Please follow the steps below to submit the after-sales process.

- Login “www.boneng.com”
- Click“Service”and“After-sale Service”



→ Login system

Email sign

New user registration

Please enter email address

Please enter your password

Please enter the verification code



Sign in

Other District

Controller/Drive : 0512-66182005
Motor/Gear motor/Gearbox : 0512-66189918

BONENG TRANSMISSION(SHEN YANG)CO.,LTD

Controller/Drive : 024-31271571
Motor/Gear motor/Gearbox : 024-31292571

BONENG TRANSMISSION(TIAN JIN)CO.,LTD

Controller/Drive : 022-86928559
Motor/Gear motor/Gearbox : 022-26929558

BONENG TRANSMISSION(KAIFENG)CO.,LTD

Controller/Drive : 0371-23335230
Motor/Gear motor/Gearbox : 0371-23277771

BONENG TRANSMISSION(WEIFANG)CO.,LTD

Controller/Drive : 0536-4699687
Motor/Gear motor/Gearbox : 0536-4699667

BONENG TRANSMISSION(CHANGSHA)CO.,LTD

Controller/Drive : 0731-88386958
Motor/Gear motor/Gearbox : 0731-88380725

BONENG TRANSMISSION EQUIPMENT (CHENGDU)CO.,LTD

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Motor/Gear motor/Gearbox : 028-87740066

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Motor/Gear motor/Gearbox : 0758-2699830

BONENG TRANSMISSION(SUZHOU)CO.,LTD

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0512-66182005
Motor/Gear motor/Gearbox Southern Jiangsu :
0512-66189918
Controller/Drive Zhejiang-Shanghai :
0512-66182005
Motor/Gear motor/Gearbox Zhejiang-Shanghai :
0512-66189918
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Motor/Gear motor/Gearbox Jiangsu-Anhui : 025-52171612

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