



欣灵电气股份有限公司
XINLING ELECTRIC CO., LTD

地址：浙江省乐清市经济开发区纬十九路328号 Http: //www.c-lin.cn
出版日期：2024年10月



国家高新技术企业 浙江省知名商号



使用手册
Products Instructions

CZA Series

Programmable Logic Controller

Thanks for using CZA series Programmable Logic Controllers, please read the manual before use.

27A003S0

Content

Chapter I . Safety Precautions.....	1
1.1 Safety Precautions.....	1
1.2 Design Precautions.....	1
1.3 Installation Precautions.....	2
1.4 Wiring Precautions.....	2
1.5 Power on and Maintenance.....	4
Chapter II. Manual Overview.....	5
2.1 Composition	5
2.2 Scope of application	5
2.2.1 CZA series.....	5
Chapter III. Product Overview.....	6
3.1 Product Characteristics	6
3.1.1 Model characteristics	6
3.1.2 Basic Functions.....	6
3.2 Model Description	7

Chapter IV. Hardware Specifications.....	8
4.1 Mainframe Dimensions.....	8
4.2 Pane Functions.....	10
4.3 Power Specifications.....	11
4.4 Environmental Requirements.....	11
Chapter V. Input Specifications and Wiring Methods.....	12
5.1 Input Specifications.....	12
5.2 Input and output Wiring method.....	13
5.2.1 NPN Input Wiring Method.....	13
5.2.2 NPN Output Wiring Method.....	14

Chapter I . Safety Precautions

Before conducting safety checks, operations, maintenance, or inspections on the programmable logic controller, please thoroughly read this manual and other related manuals to ensure proper use. Only proceed with use after fully understanding the operating methods, safety information, and all precautions.

1.1 Safety Precautions.

In this manual, safety precautions are categorized as 'DANGER' and 'CAUTION'.

 DANGER	Incorrect operation may result in death or serious injury.
 CAUTION	Incorrect operation may result in moderate injury to persons, minor injuries or damage to items.

1.2 Design Precautions

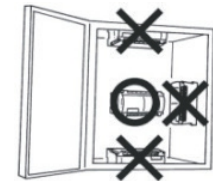
 DANGER
To ensure the safe operation of the entire system in the even of an external power abnormality or the programmable logic controller malfunction, make sure to establish a safety circuit external to the PLC. (1) Be sure to install an emergency brake circuit, a protection circuit, an interlock circuit for opposite operation such as a forward and reverse circuit, and an interlock circuit for positioning the upper and lower limits to prevent damage to the machine in the external circuit of the PLC. (2) When the programmable controller CPU detects an abnormality such as a WDT error through the self-diagnostic function, all outputs are turned off. In addition, when an abnormal condition occurs in the input/output control section that cannot be detected by the programmable controller CPU, the output cannot be controlled. In this case, design external circuits and mechanisms to enable safe operation of the machine. (3) Due to the failure of the relay or transistor of the output unit, it will be impossible to control the output to be ON or OFF. To enable safe operation of the machine, design external circuits and mechanisms for output signals associated with major accidents.

1.3 Installation Precautions

 CAUTION
(1) Please use the product in accordance with the environmental conditions specified in Section 4.4 of the manual. Do not use the product in the following environments: areas with dust, oil smoke, conductive dust, corrosive gases, or flammable gases; areas exposed to high temperatures, condensation, or wind and rain; areas subject to vibration or shock. Electric shock, fire, or improper operation may also cause product damage. (2) When processing screw holes and wiring, ensure that iron filings or wire fragments do not fall into the ventilation openings of the programmable controller, as this may cause fire, malfunction, or improper operation. (3) The programmable controller's ventilation openings are equipped with dust covers. Please remove them after completing the work. Otherwise, it may cause fire, malfunction, and misoperation. (4) Please insert the connecting cable, memory box, and display module accurately into the specified sockets. (5) Poor contact may cause misoperation.

Notes:

- (1) To prevent temperature rise, do not install at the bottom, top, or in a vertical direction. Be sure to install horizontally on the wall as shown in the figure on the right.
- (2) Leave a space of 50mm or more between the main unit and other equipment or structures. Avoid high voltage lines, high voltage equipment, and power equipment as much as possible.



1.4 Wiring Precautions

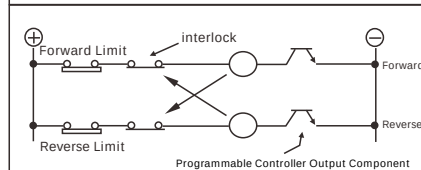
The signal input and output lines of the programmable controller cannot be passed over the same cable.

In addition, signal input and output lines cannot be passed in the same conduit as other power and output lines, nor can they be bundled together. If the above precautions are followed, there is little or no noise problem even if the input/output wiring is 50-100 meters long. However, in general, for safety reasons, the wiring length should be less than 20 meters.

**DANGER**

(1) Installation, wiring and other operations must be carried out when the external power supply is completely disconnected. Otherwise, it may cause electric shock or product damage.

(2) After completing installation and wiring, ensure the terminal cover is securely installed before powering on the system to prevent electric shock.

**DANGER**

It is extremely dangerous if the forward and reverse contactors are engaged simultaneously. For such loads, in addition to setting interlocks in the internal program of the programmable controller, interlocks like those shown in the diagram must also be configured externally to the programmable controller.

**CAUTION**

Do not connect empty terminals to external wiring, as this may cause product damage.

**CAUTION**

(1) Please wire the DC power supply to the dedicated terminals as specified in this manual. Connecting the DC power supply to the DC input/output terminals or DC power terminals may damage the programmable controller.

(2) When using a DC-powered PLC, ground the terminal of the basic unit according to the third grounding method. However, do not share the grounding with high-voltage systems.

(3) The programmable controller will continue to operate even if there is an instantaneous power failure of less than 10ms. In the event of a long power failure or low voltage, the programmable controller stops working and the output becomes OFF, but will automatically restart operation once the power supply is restored (when the RUN input is ON).

1.5 Power on and Maintenance.

**DANGER**

- (1) Do not touch the terminals while they are energized, as this may cause electric shock or misoperation.
- (2) Please clean and disassemble the terminals after the power is turned off. Execution while the power is energized may cause electric shock.
- (3) Read the manual thoroughly and make sure that it is safe to operate the machine before changing the program, forcing the output, RUN/STOP, etc. during operation. Incorrect operation may result in damage to the machine and cause accidents.

Notes:

- (1) Please do not disassemble or remodel, as this may cause malfunction, malfunction, or fire.
※ Please contact our marketing department regarding repairs.
- (2) Please carry out loading and unloading of connecting cables such as extension cables after the power has been turned off, otherwise malfunctions and malfunctions may occur.

Chapter II. Manual Overview

2.1 Composition

Contents of this manual: This manual covers wiring considerations for CZA series programmable controllers, CZA series hardware specifications, power supply wiring and specifications, expansion specifications, serial port information specifications, operation and debugging.

2.2 Scope of application

This is the manual for the CZA series programmable controller products, which covers the following product information:

2.2.1 CZA series.

Products	Points	Model	Specification	Impulse	485	Voltage	Extended functionality
CZA	8 in 6 out	CZA1-0806MT-D	transistors	2 pulse	1 pulse	DC 24V	-
		CZA1-0806MR-D	transistors	-			
	12 in 10 out	CZA1-1210MT-D	Relay	2 pulse			
		CZA1-1210MR-D	transistors	-			
		CZA1-1210MT-D-2AD2DA	transistors	2 pulse			
		CZA1-1210MR-D-1AD2DA	Relay	-			

Chapter III. Product Overview

3.1 Product Characteristics

3.1.1 Model characteristics

- I/O points: 14 points, 22 points
- Input type: NPN
- Output type: transistor/relay
- Power supply type: DC24V

Series	Description
CZA (Basic)	Includes 14 and 22 point. Fully functional, supports 2-axis high-speed pulse output and high-speed counting.

3.1.2 Basic Functions

- Multiple communication ports

The basic unit has two communication ports, supporting RS232 and RS485 of standard MODBUS protocol, which can be connected to frequency converter, servo, touch screen, etc.

- Large soft-ware capacity

Up to 1024 points of process S, up to 1536 auxiliary relays M, supports up to 2000 D registers, etc.

- Multi-mode Programming

Support ladder programming, command language programming and C language operation programming.

- Enrichment of instructions

In addition to basic instructions, it also has high-speed counting, interrupt, PID operation, high-speed counting and high-speed pulse output.

- Real-time clock

PLC with real-time clock function for time control.

3.2 Model Description

CZA1-1210T-DAdditional
functions

①

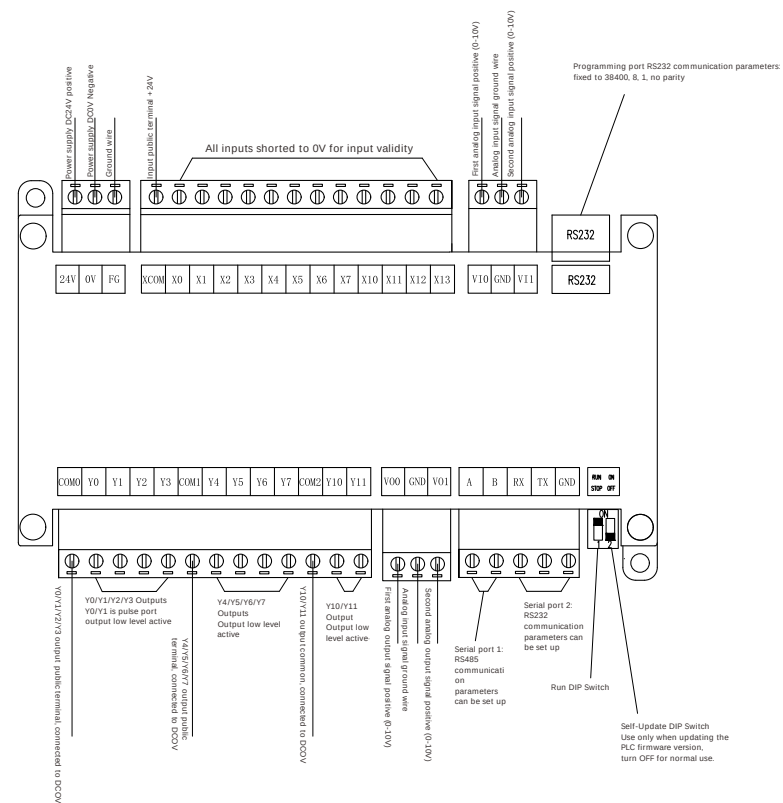
②

③

④

- | | |
|---------------------------|---------------------------------------|
| ① Input and output points | 0806: 8 inputs/6 outputs |
| ② Output type | 1210: 12 inputs/10 outputs |
| ③ Power supply | R: relay output |
| ④ Additional Functions | T: Transistor output, 2 pulse outputs |
| | A: Power supply AC220V |
| | D: Power supply DC24V |
| | Omitted as empty |
| | 2AD2DA: Analog |

Chapter IV. Hardware Specifications



4.3 Power Specifications

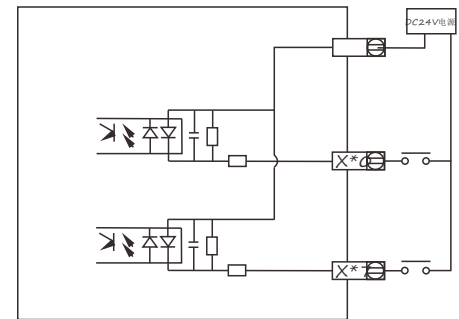
Specification	Mode
	CZA1
Working Voltage	DC24V
Permissible range of supply voltage	DC22-28V
Allowable Instantaneous Outage Time	Continues to operate for transient power outages of 10ms or less
Power Fuse	30V 750mA
Power consumption	30W
DC24V Supply Voltage	External power supply 200mA for 16 points PLC, 400mA for 24 points and above

4.4 Environmental Requirements

Specification	Mode	
Environmental temperature	0~55℃ and -25~75℃ (storing)	
Relative humidity	0~95%RH (no condensation)	
Voltage resistance	AC1.5KV 1m	Between each terminal and ground terminal
	AC500V 1m	
Insulation resistance	DC500V with a megohmmeter to measure more than 5MΩ	
Ground terminal	Class D grounding (grounding resistance: 100Ω or less) <Common grounding with strong electric power is not allowed>	
Operating environment	Non-corrosive, flammable gas, conductive dust (dust) is not serious occasions	

Chapter V. Input Specifications and Wiring Methods

5.1 Input Specifications

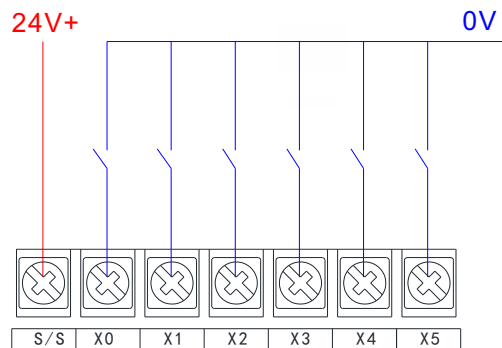
Specification	DC Power Supply, DC Input	
Model	CZA Series Mainframe	
Input form	NPN	
Input Signal Voltage	AC power supply type: 10% of DC24V DC power supply type: 16.8 to 28.8V	
Input Impedance	X	3.3KΩ
ON input sense current	X	above 4.5mA
OFF input sense current	below 1.5mA	
Input Response Time	about 10ms	
Input signal form	No voltage contact input Drain input: NPN open-collector transistor	
Input circuit isolation	Optocoupler Isolation	
Display of input action	LEDs on the panel light up when driven by optocouplers	
Input circuit structure		

5.2 Input and output Wiring Method

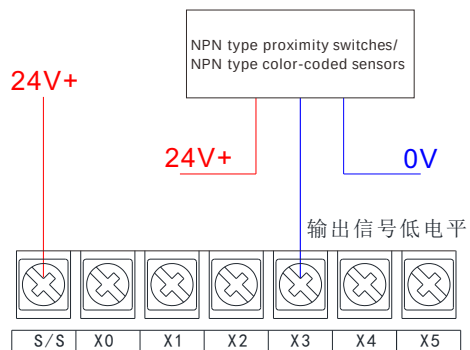
5.2.1 NPNI input Wiring Method

S/S terminal is connected to DC+24V, use 0V signal to short X terminal input.

(1) Switching wiring method



(2) Proximity switch/color-coded sensor



5.2.2 NPN Output Wiring Method

The CZA series PLC supports a maximum of 2 pulse outputs.

The pulse output starts from terminal Y0, e.g. the pulse output of CZA1-1 210MT-D is terminal Y0, Y1.

