

CY50A Tap position controller

Operating Instruction

Guizhou Changzheng Electric Co.,Ltd

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Welcome to use On Load Tap Changer of Guizhou Changzheng!

Please read the operating instructions of this product before you put the on load tap changer into service. Please pay special attention to the following items:

1. Check and accept the products according to the packing list when receiving products. Keep the evidence if there are any damages during transportation in order to claim compensation from the responsible party and protect your rights.
2. The product only can be used with the transformer which specified in the order. You need to consult with our company in advance if you want to change the purpose of this product.
3. The installation, put into operation, maintenance and repair of the product should be complied with the operating instructions and relevant provisions of security.

All data in this manual may be different in details from the tap-changer that we delivered. We reserve the right to change without notice.

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1. General

The CY50A tap position controller is suitable for remote control of the tap-changer and monitoring of the tap position.

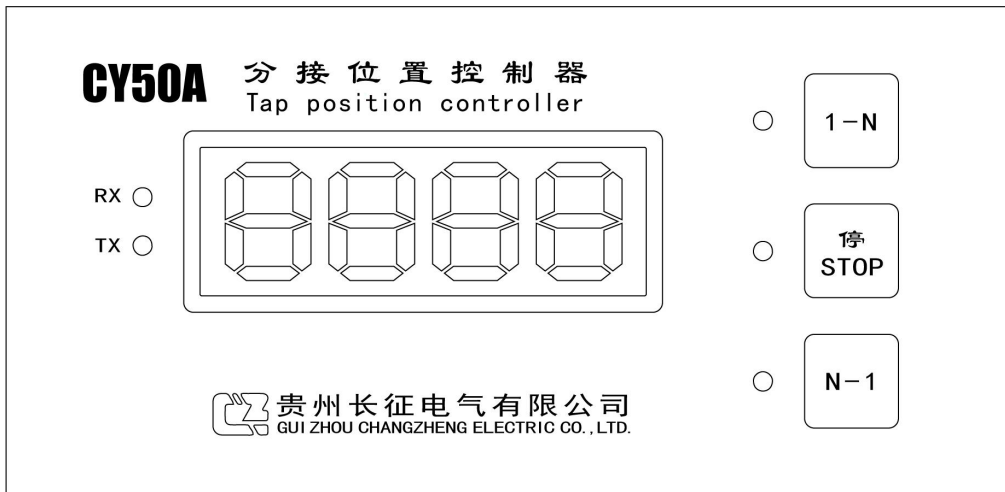
This controller is mainly used in ZD motor-drive unit. Its main function is to realize the communication between the controller and the local ZD motor-drive unit through the communication cable.

2. Main technical parameters

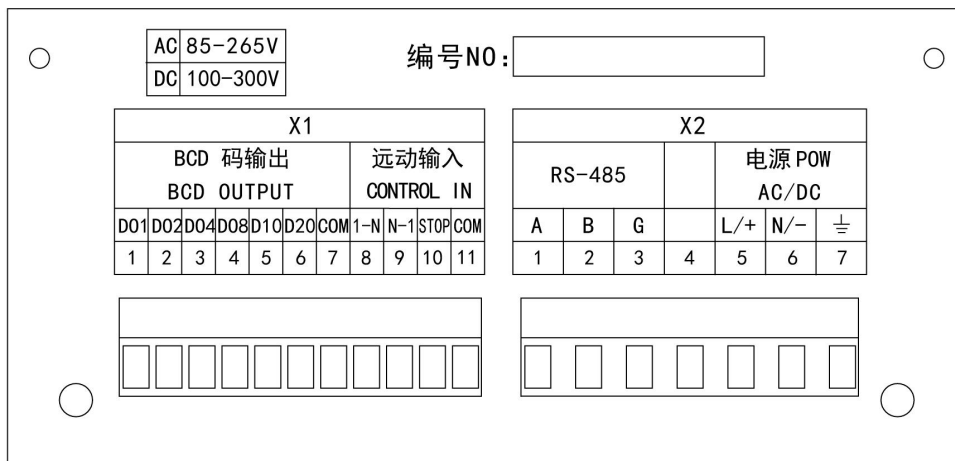
- 2.1 Working power supply: AC220V±20%, 50Hz; DC220V±10%.
- 2.2 Connection with motor-drive mechanism: RS485 communication port.
- 2.3 Display mode: 4-digit high brightness LED display
- 2.4 Remote signal output: BCD passive contact output (contact capacity AC 10A/250V, DC 10A/30V)
- 2.5 Working temperature: -20℃ -40℃
- 2.6 Relative humidity: less than 90% at 20℃

3. Panel drawings

3.1 The front panel drawing (Fig. 1)



3.2 The rear panel drawing (Fig. 2)



4. Outline and installation dimensions

4.1 Outline dimensions as Figure 3

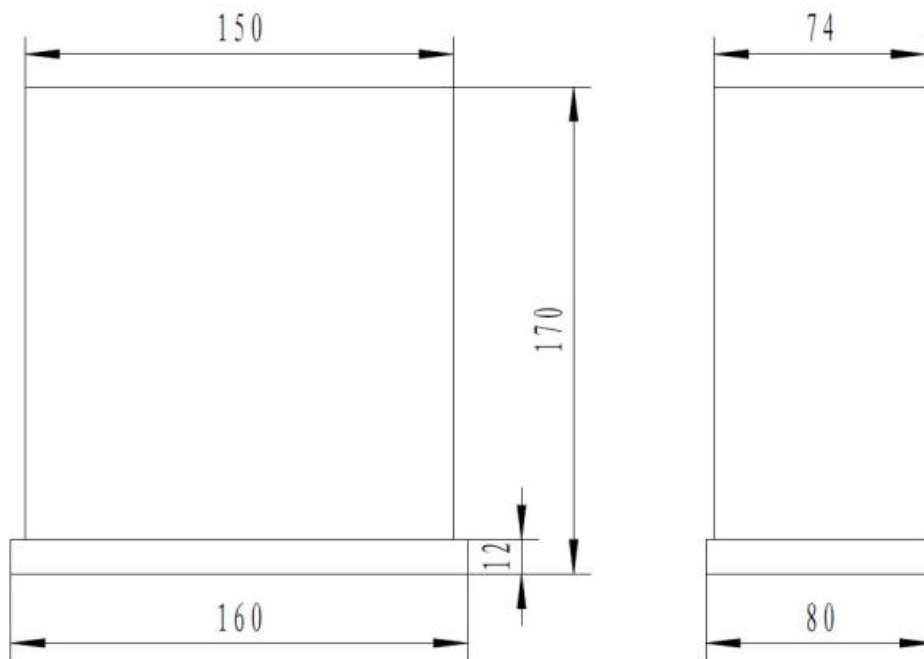


Figure 3 Outline dimensions

4.2 Installation dimensions as Figure 4

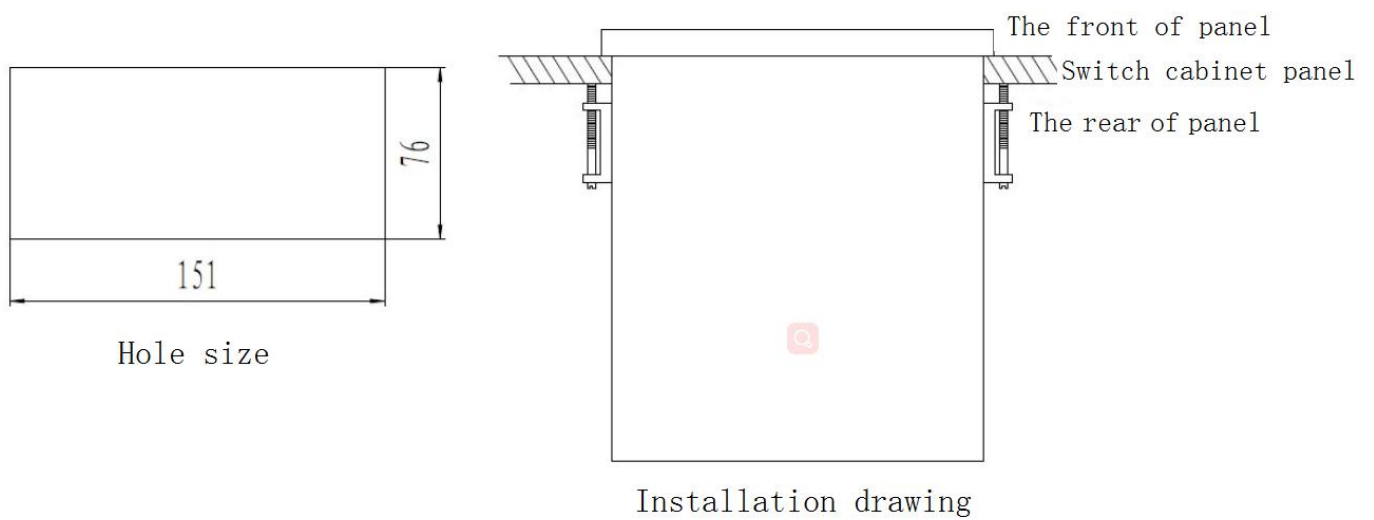


Figure 4 Installation dimension

5. Controller wiring

5.1 X1 input and output terminals are shown in Table 1.

Table 1

Terminal No.	Terminal mark	Terminal meaning	Signal type	Note
X1-1	D01	Tap position bit BCD code 2 ⁰	BCD code output	Passive N/C contact (Contact load capacity: 1A/240V AC, 0.5A/24V DC, 0.3A/220V DC)
X1-2	D02	Tap position bit BCD code 2 ¹		
X1-3	D04	Tap position bit BCD code 2 ²		
X1-4	D08	Tap position bit BCD code 2 ³		
X1-5	D10	Tap position tens BCD code 2 ⁰		
X1-6	D20	Tap position tens BCD code 2 ¹		
X1-7	DCOM	Tap position BCD code COM		
X1-8	1→N	Remote command input(1→N)	Remote input	Passive N/O contact (input by external device)
X1-9	N→1	Remote command input(N→1)		
X1-10	STOP	Remote command input(STOP)		
X1-11	COM	Remote command input COM		

5.2 X2 terminal block is shown in Table 2

Table 2

Terminal No.	Terminal mark	Terminal meaning	Signal type	Note
X2-1	A	Communication Interface	RS485	Connect ZD Follow MODBUS Protocol baud rate 4800 G is the shield connection
X2-2	B			
X2-3	G			
X2-4		-		
X2-5	L/+	Working power		AC220V, 50Hz DC220V
X2-6	N/-			
X2-7	≡	Ground		Ground



When operating with CY50A, the local ZD motor-drive unit internal switch must be placed in the "remote control state"

6. Structure and working principle

6.1 Structure

With a plastic case, PVC film panel and light touch buttons, you can use the touch buttons on the panel to make command selection and manual operation.

6.2 Working principle (see circuit diagram fig. 5)

The tap changer tap position signal and control command communicate through the RS485 communication port on the CY50 rear panel to realize data transmission between the local ZD motor mechanism and the remote CY50 controller. The transmission protocol uses the

MODBUS protocol.

The background monitoring and control device can also input 1→N, N→1 and stop commands through the remote control input port of the controller to make the tap switch operate to achieve the purpose of voltage regulation.

The CY50 controller outputs the BCD code tap position passive contact for the background to collect the tap changer tap position signal.

Contact load capacity:

10A/250V AC

10A/30V DC

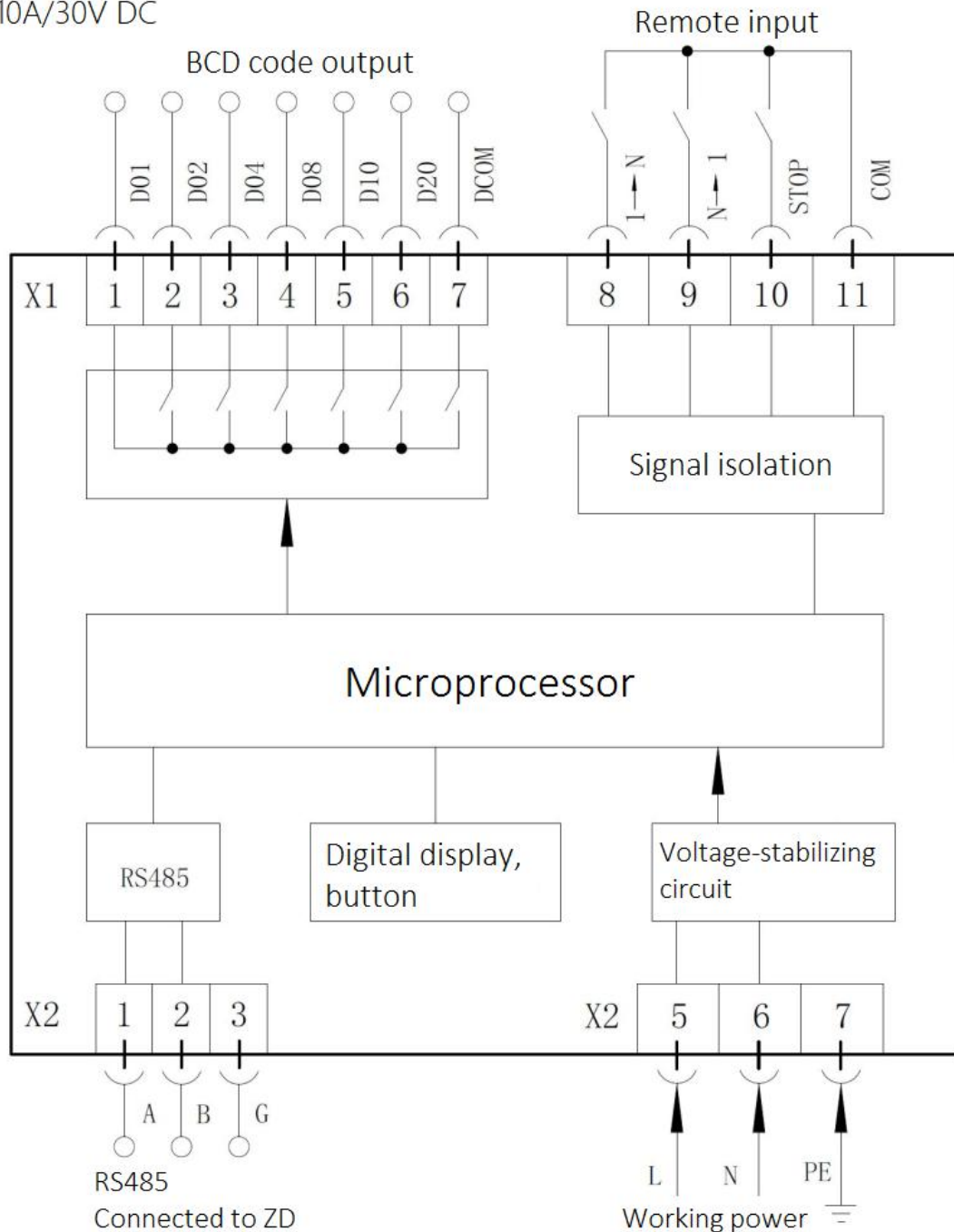


Figure 5 Circuit diagram

7. Display content

The last 3 digits of CY50A digital display are the steps, and the first digit indicates the status and alarm information. The first display content and meaning are as follows:

C—— Communication fail. The communication link between CY50A and ZD motor driver unit is unavailable. The possible cause is a problem with the connection cable or a malfunction of the controller in the ZD;

P—— Power failure. The 3-phase power supply is out of phase or the 3-phase power supply is out of phase. Solve any two-phase power supply wiring of three-phase exchange;

d—— The transfer switch of the ZD motor driver unit is in the "local position" and does not support the remote control operation of CY50A. Switch the transfer switch of the ZD control box to "distance", d disappears;

b—— The ZD motor driver unit is blocked. Any local and remote operations are prohibited.

8. Use & maintenance

8.1 The controller can be put into use after the user has made the correct installation wiring and corresponding parameter settings.

8.2 The controller should be kept clean during use, and there should be no conductive dust covering the body and terminal.

9. Documents and spare parts

Product certificate: one

Instruction manual: one

Mounting bracket: two

10. User notice

10.1 When ordering, the type of the tap-changer, the number of voltage-regulating stages, the intermediate position, and the required input/output function interface must be provided.

10.2 Manufactured under the custody and use rules, the product shall be damaged or not working properly due to manufacturing quality for 12 months from the date of installation and use, and shipped from the manufacturer to the user for a period of not more than 18 months. The factory can replace or repair the user for free.