

NXZ Series
Automatic Transfer Switch

User Instructions



Safety Warning

- ① Only professional technicians are allowed for installation and maintenance.
- ② Installation in any damp, condensed-phase environment with inflammable and explosive gas is forbidden.
- ③ You are prohibited from touching the conductive part when the product is operating.
- ④ Do not install the product at places where gas medium can cause metal corrosion and insulation damage.
- ⑤ After installing the product, finishing the inspection of load side line and splitting the fire-resistance circuit, the controller must be set to "Manual" position and the product must be set to split position. Switch the controller to "Auto" position after line fault is eliminated.
- ⑥ To avoid dangerous accidents, the products should be installed and secured according to the instructions.
- ⑦ This product is applicable to environment A. The product will generate harmful electromagnetic interference if used in environment B, in which case, user should take proper protective measures.

1 Application Information

- a) The normal operating ambient temperature of the product is $-5\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$;
 Note: if it is used within the range of $-35\text{ }^{\circ}\text{C} \sim +70\text{ }^{\circ}\text{C}$, please consult with the manufacturer.
- b) If the altitude exceeds 2,000m, please consult with the manufacturer;
- c) Class of pollution: Class 3;
- d) Main circuit installation category: III;
- e) Enclosure protection class: IP20.

2 Inspection and Test

Inspection

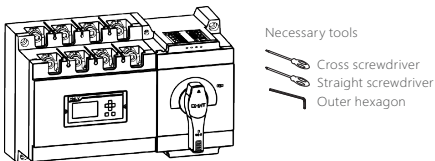


















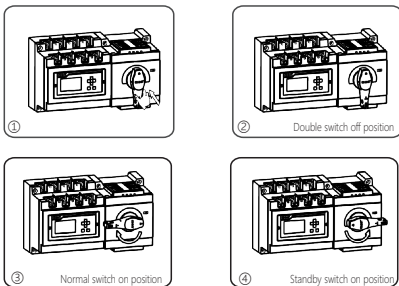


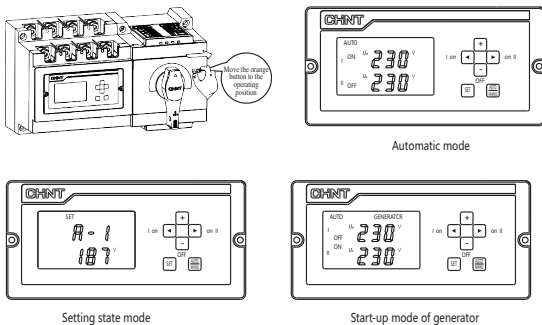
Figure 1 Inspection

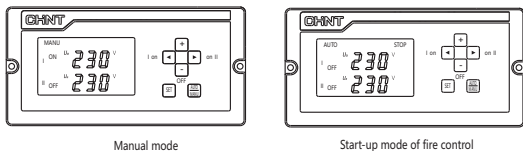
Table 1 Standard accessories

Product model		NXZ-125	NXZ-250	NXZ-630	Note
Specification of mounting screw and nut	4	M4×60,M4 	M5×70,M5 	M8×100,M8 	Standard
Flash barrier	3P 4P 8 9				
External signal terminal	Type A Type B 5 6	 ×1	 ×3	 ×1	
		 ×1	 ×3	 ×1	 ×1
Wire	1		 2m		Optional, for split type installation of display module, indicated when ordering.
Wire holder	1				
Wire holder mounting screw	2				
Mounting screws and nuts	2		M3×12,M3 		
 Determine product technical parameters.					

Manual debugging

Figure 2 Manual debugging


The installation, operation and maintenance of the product are only carried out by qualified professional.

Power -on test

Figure 3-1 Power -on test



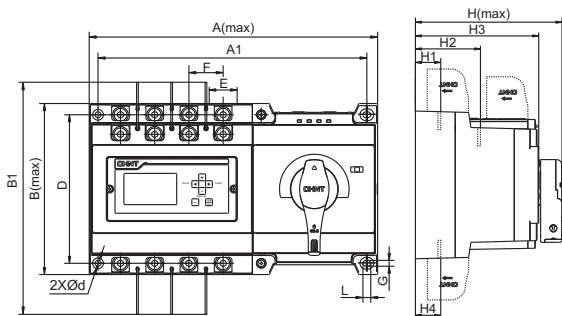
Manual mode

Start-up mode of fire control

Figure 3-2 Power -on test

3 Outline and Installation Size

Outline and Installation Size of NXZ-125~630


Figure 4 Outline and Installation Size of NXZ-125~630
Table 1 Manual debugging

Unit: mm

Product model	Outline size												Installation size		
	A	B	B1	E	F	G	L	H	H1	H2	H3	H4	A1	D	d
NXZ-125	245	130	220	21.5	30	4.5	5.5	126	21	71	107.5	21	229.5	113	4.5
NXZ-250	295	175	304	27.5	35	6	8	175	29	99	146	29	275	152	6
NXZ-630	436	272	461	43	58	9	13	230	41	131	192	41	400	240	9

4 Installation and Wiring

Installation method

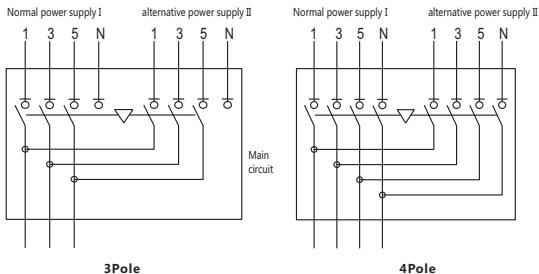
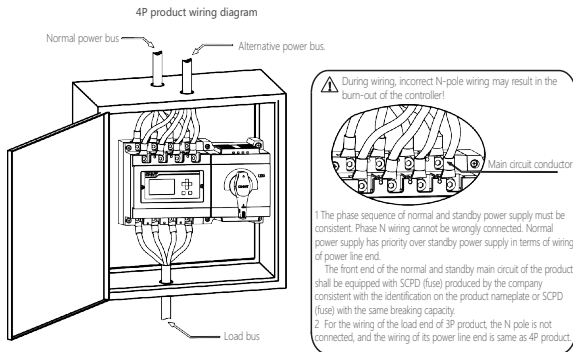
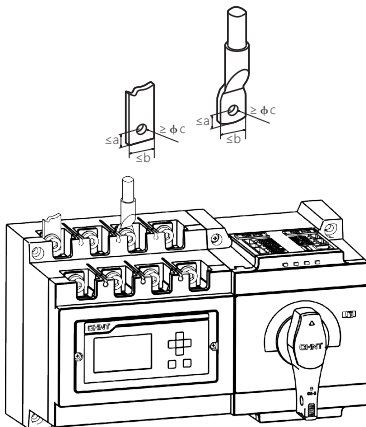


Figure 5 Installation method

Wire connection

Figure 6 Wire connection
Table 3 Sectional area, width and number of copper wire

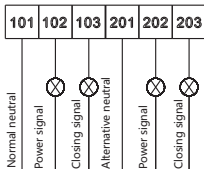
Unit: mm

Product model	a	b	c	Cable specifications	Number of conductors allowed to be clamped into the terminal
NXZ-125	8	21.5	6	25~50mm ²	1
NXZ-250	10	27.5	8	70~120mm ²	1
NXZ-630	15	43	12	185mm ² (≤320A)	1
				240mm ² (400A)	1
				150mm ² (500A)	2
				185mm ² (630A)	2

Product model	NXZ-125	NXZ-250	NXZ-630
Specification of binding screw	M6×16	M8×20	M12×35
Torque	6N·m	12N·m	30N·m
Wrench	5	6	10

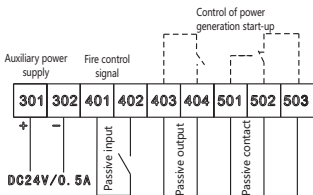
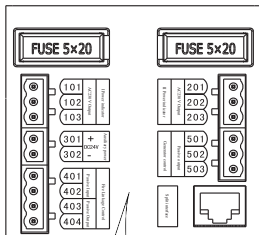
Signal and control terminal wiring

Indication of normal state Indication of alternative state

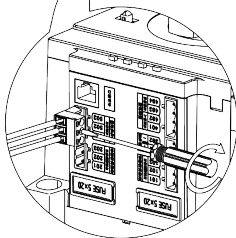
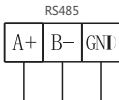


Active AC230V/0.5A

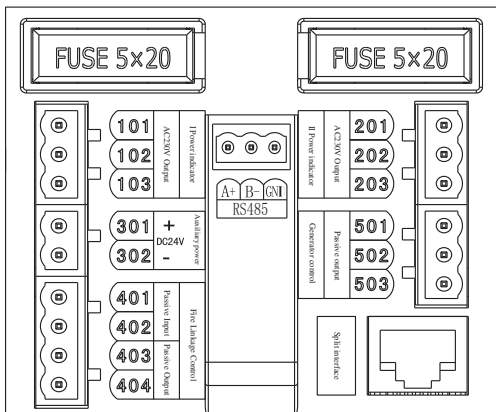
The user should connect corresponding terminal as needed



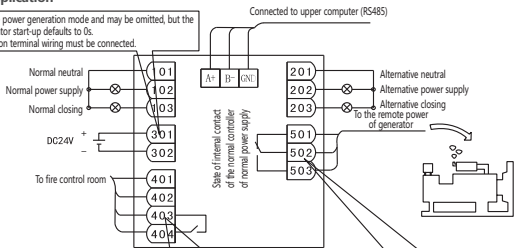
Note: The dash line refers to the internal circuit of controller


Figure 7 Type A controller


Note: Only communication terminal wiring is added to type B controller on the basis of the signal and control terminal wiring of type A controller.


Figure 8 Type B controller
Typical application

- Used in grid - power generation mode and may be omitted, but the delay of generator start-up defaults to 0s.
- Communication terminal wiring must be connected.



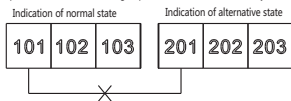
- ⚠ Terminals 401 and 402 can only be connected to passive signal. If the fire control signal is active signal, the normally open contact of relay must be connected to the controller after switching through the relay. Terminals 403 and 404 are connected after the duplexing of fire control. After the fire control signal being removed, the normal operating state can be restored by pressing any key on the controller.

Used in grid - power generation mode only and connected to the generator as needed, or omitted. In case the normal power supply fails, terminals 502 and 503 are connected.

Figure 9 Typical application

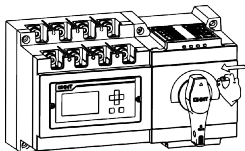


1. Any form of electrical connection is prohibited between the two groups of terminals; otherwise it may result in the burn-out of controller!

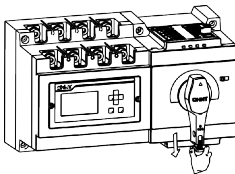


2. Terminals 401 and 402 of type A and type B controllers can be connected with passive closing signal only to achieve fire control linkage. If they are directly connected to any active signal, the controller will be burnt out.

5 Installation of Isolation Padlock



- ① The product is in the state. Move the orange button to the manual position.



- ② Pull out the limiting piece and lock it.

Figure 10 Installation of isolation padlock

6 Split-type Display Module

Outline size

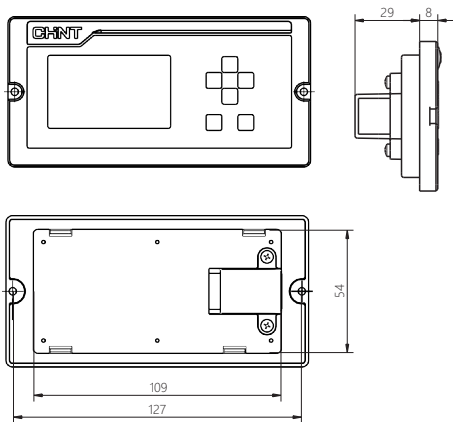


Figure 11 Split-type display module

Installation cabinet opening size (mm)

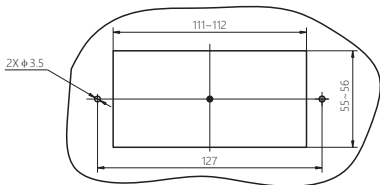


Figure 12 Installation cabinet opening size

Split (cabinet surface) installation of display module

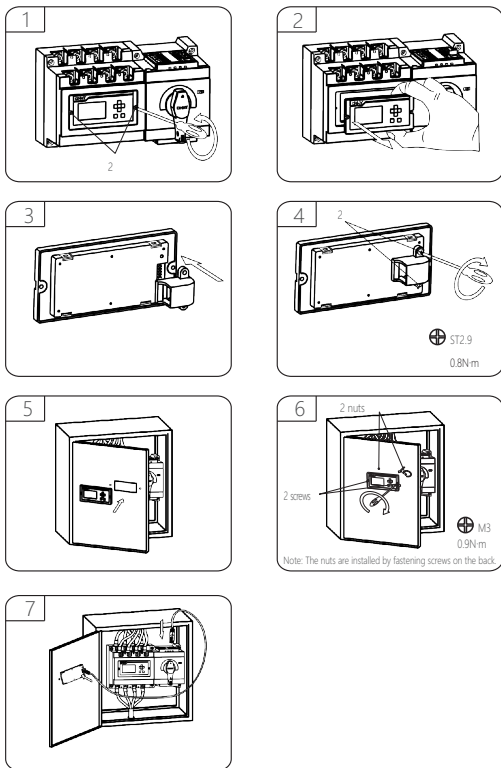


Figure 13 Split installation of display module

7 Display and Operation Interface

Description of the operation interface of controller display module

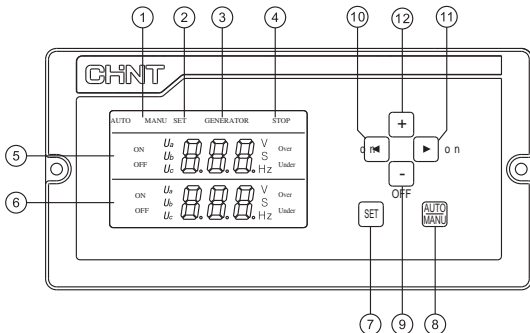
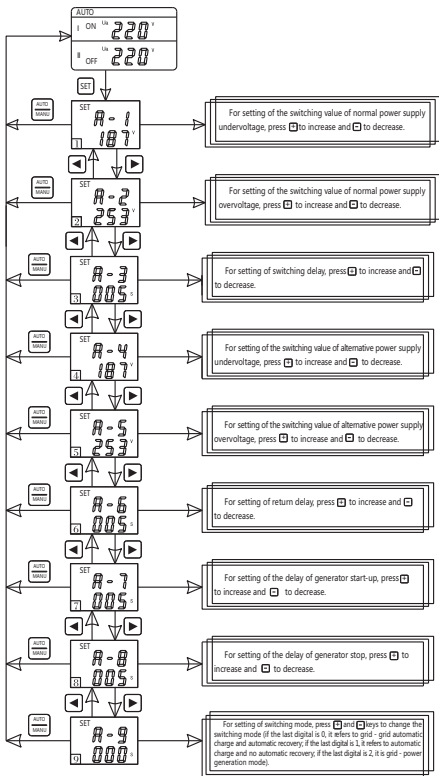


Figure 14 Display and operation interface

- ① Indication of automatic and manual operating modes;
- ② Indication of state setting;
- ③ Indication of generator start-up signal;
- ④ Indication of fire control linkage function start-up;
- ⑤ The display area of normal power state parameters shows normal supply voltage parameters with switching delay time in the state and of operation, and shows setting items parameters in the setting state;
- ⑥ The display area of alternative power state parameters shows standby alternative voltage parameters and return delay time in the operating state and setting parameters in the setting state;
- ⑦ Setting button (press this button to enter the parameter setting menu of controller);
- ⑧ Select button of automatic / manual switching mode
- ⑨ Off button
In the manual control mode, if any of the two circuits of power supply is normal, press this button to switch to the off position, while in the setting state, this button is used to set parameter decrease;
- ⑩ Switching button of normal power supply
In the manual control mode, if the switch is in the alternative position, press this button to switch to the normal power supply, while in the setting state, this button is used as the page-up button of setting items;
- ⑪ Switching button of alternative power supply
In the manual control mode, if the switch is in the normal position, press this button to switch to the alternative power supply, while in the setting state, this button is used as the page-down button of setting items;
- ⑫ +button
This button is used to set parameter increase in the setting state.

Parameter setting of controller display module

Figure 15 Parameter setting of controller display module

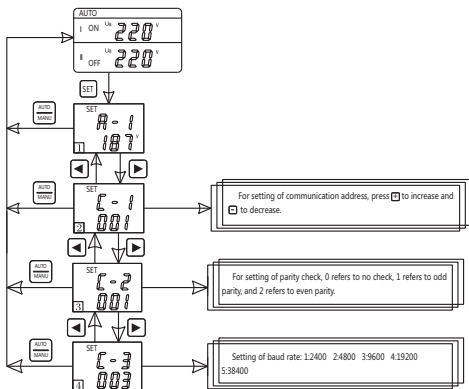


Figure 16 Parameter setting for communication function

(Note: Please ask our after-sales service staff for communication protocol.)

■ Button instruction:

When the controller is in operation, press the setting button to set the interface of parameter setting menu, and press "◀" and "▶" in the setting menu to page up / down the setting items. Press the automatic / manual button to exit the setting menu; press "⊕" and "⊖" to modify parameters.

Note: The parameter settings for display module and communication function default as follows:

Setting of undervoltage switching value: Default to 187V, user-settable 160V~200V;

Setting of overvoltage switching value: Default to 263V, user-settable 240V~290V;

Setting of switching delay: Default to 5s, user-settable 0s~300s;

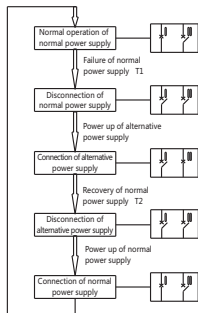
Setting of return delay: Default to 5s, user-settable 0s~300s;

Setting of generator start-up delay: Default to 5s, user-settable 0s~300s;

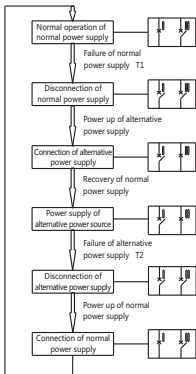
Setting of generator shutdown delay: Default to 5s, user-settable 0s~300s;

Switching and power mode: Default setting: automatic charge and automatic recovery (grid - grid), and user can set automatic charge and no automatic recovery (grid - grid), automatic charge and automatic recovery (grid - power generation);

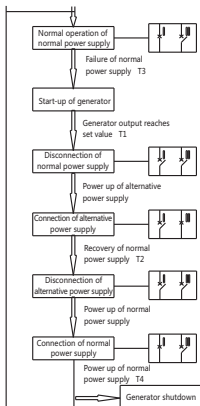
Default parameter setting for communication function: address: 1; baud rate: 9600bps; parity check bit: odd parity; data bits: 8; stop bit: 1.

Motion flow of controller


Flow Chart of Automatic Charge and Automatic Recovery (Grid - Grid) of Controller



Flow Chart of Automatic Charge and No Automatic Recovery (Grid - Grid) of Controller



Flow Chart of Automatic Charge and Automatic Recovery (Grid - Power Generation) of Controller

I: Normal power supply

II: Alternative power supply

T1: Switching delay time

Failure of normal power supply, time before disconnection of I

T2: Return delay time

Recovery of normal power supply, time before disconnection of II

T3: Generator start-up delay time: 0s~300s adjustable

T4: Generator shutdown delay time: 0s~300s adjustable

Figure 17 Motion flow of controller

8 Installation of Flash Barrier

Inter-phase flash barrier

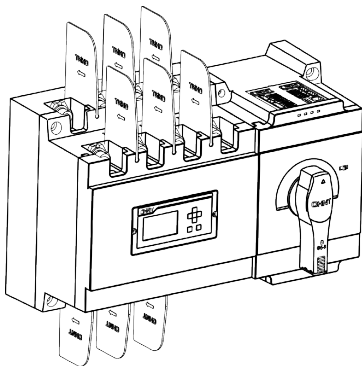


Figure 18 Inter-phase flash barrier



- ① Be sure to install flash barriers before product operation.
- ② Do not operate the product with wet hands.
- ③ Check if the wiring is correct.
- ④ After installation, the insulation resistance to the ground shall not be less than $10\text{m}\Omega$. Before insulation test, please pull out the product controller first.

9 Common Faults and Solutions

Table 4 Non-common Faults and Solutions

Description	Causes and solutions
The state of fire control linkage remains after the fire control linkage signal of terminals 401 and 402 of the controller is removed.	After the signal is removed, the user needs to press any key to exit the fire control linkage state and resume the normal state of operation.
When the normal power supply or alternative power supply fails, the product cannot be manually or automatically switched to the failed circuit of power supply.	The controller will not switch on and connect to the failed power supply either manually or automatically when it identifies the failure of normal power supply or alternative power supply, unless it is switched on with the handle.
In automatic state, when the normal power supply recovers from the fault to the set undervoltage switching value, the product does not switch automatically.	The undervoltage switching value and recovery value of the controller have $+10\text{V}$ return difference, and the overvoltage switching value and recovery value have -10V return difference, so the power supply recovery value must exceed the switching value plus the return difference.

Table 5 Common Faults and Solutions

Description	Causes	Solutions
The indicator lamp of controller is not on after powering up.	Poor contact at incoming line terminal.	Make sure the incoming line terminal is firmly connected and in good contact.
	Failure of the fuse on the controller.	Install a new fuse.
Phase loss of controller.	Poor contract of corresponding phase wiring.	Eliminate the wiring failure.
	Corresponding phase voltage is lower than the set undervoltage.	Power failure, switch to the normal power supply.
The controller displays the failure of normal switch in switching.	The controller is in manual state.	Move the orange button to the electric position.
The controller displays the voltage of phases A, B and C above 300V.	One circuit of power supply of the product is not connected to the zero line or the N pole of the product is connected to the live wire by mistake.	Conduct wiring correctly as per the instructions (main circuit). Incorrect connection to the live wire may burn out the controller.

10 Warranty

Under the normal storage and transportation conditions and on the premise that the product packaging or product itself is in good condition, the warranty period of the product is 36 months from the date of production, and the following situations are not covered by the warranty:

- 1) Damage caused by user's improper use, storage and maintenance.
- 2) Damage caused by the organization or personnel not designated by the company or by the user's own dismounting and repair.
- 3) The product exceeds the warranty period.
- 4) Damage caused by force majeure.

11 Environmental Protection

In order to protect the environment, the product or product parts should be disposed of according to the industrial waste treatment process, or be sent to the recycling station for assortment, dismantling and recycling.

CHNT

QC PASS

NXZ

Automatic Transfer Switch

IEC/EN 60947-6-1

PD1 Check 15

Test date: Please see the packing

ZHEJIANG CHINT ELECTRICS CO., LTD.

CHNT

CHINT ELECTRICS

NXZ Series
Automatic Transfer Switch
User Instructions

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