NO:2021.04

CHINT ELECTRICS

NXZM、NXZ(H)M
Automatic Transfer Switch

User Instructions

Standard: IEC/EN 60947-6-1

⚠ 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 insulatin 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 Applicatin Information

a) The normal application temperature of the product is -5℃~+40℃;

Note: If you need to use the product under -25℃~+70℃, please consult the manufacturer.

b) If you need to use the product above 2000m altitude, please consult the manufacturer;

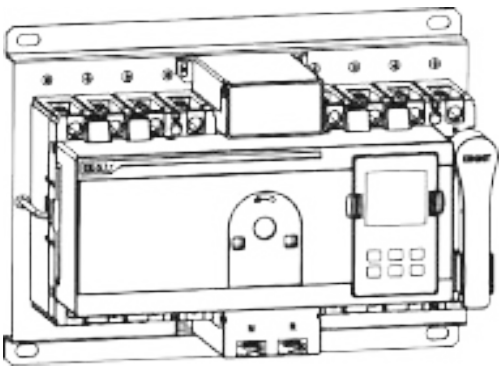
c) Pollution class: class 3;

d) Installation category of main circuit: Ⅲ;

e) Enclosure protection class: IP20.

2 Inspection and Test

Inspection



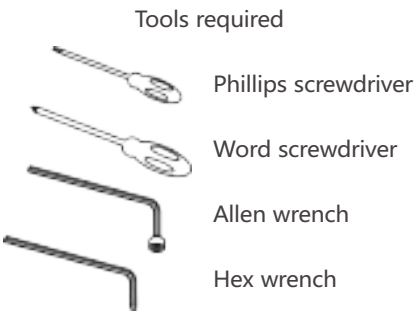


Fig 1 Inspection

⚠

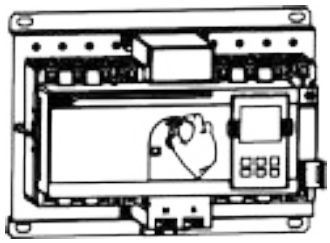
1.Determine product technical parameters.

2.Type AT and BT controllers have the function of communication.

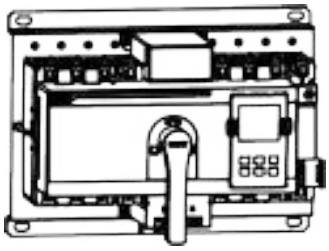
Tabla 1 Standard accessories

Product model		NXZM-63、125 NXZHM-63、125	NXZM-160 NXZHM-160	NXZM-250 NXZHM-250	NXZM-400、630 NXZHM-400、630	NXZM-800 NXZHM-800	Total (Pcs)	
Wiring screw		M6 X 12	M8 X 16	M8 X 16	M10 X 30	M12 X 35	3P	2X6
							4P	2X8
Flash barrier							3P	2X4
							4P	2X6
wiring terminal of external signal (controller)	Type A	×1		×2		×2	5	
	Type AT Type B	×1		×3		×2	6	
	Type BT	×1		×4		×2	7	
split wire		2m (optional)					1	

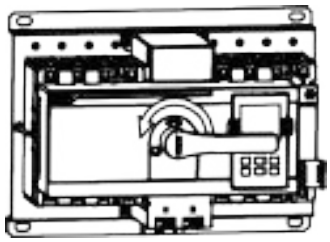
Manual test



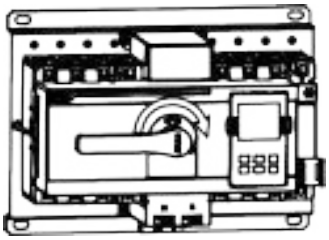
Turn the toggle switch to the Manual position



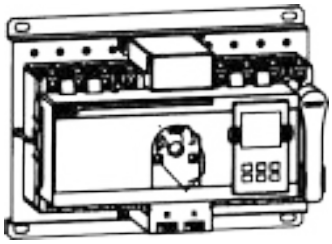
Off position



Normal On position



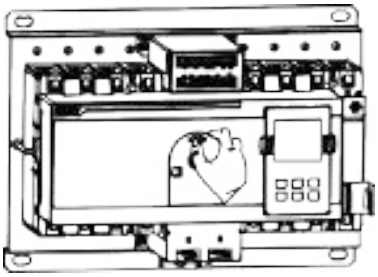
Alternative On position



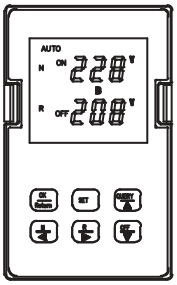
Off position Reset the handle

Fig 2 Manual test

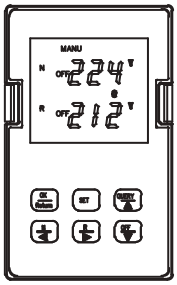
Power-on test



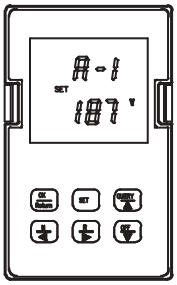
Turn the toggle switch to the Automatic position



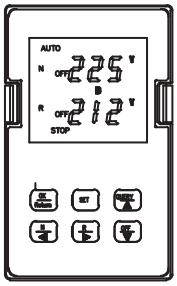
Automatic mode



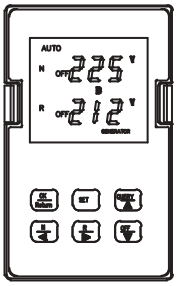
Manual mode



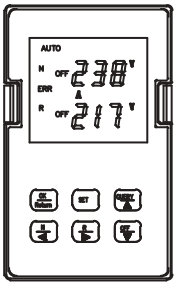
Setting mode



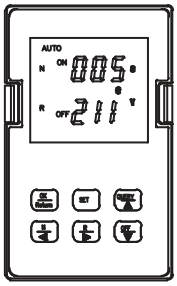
Stop mode



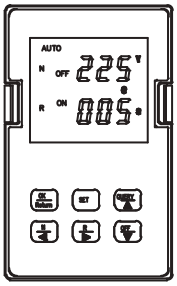
Generator activation



Failure alarm (absent for PC class)



Automatic transfer Operating transfer delay time



Automatic transfer Return transfer delay time

Fig 3 Power-on test

3 Outline and Installation Dimensions

Outline & installation dimensions

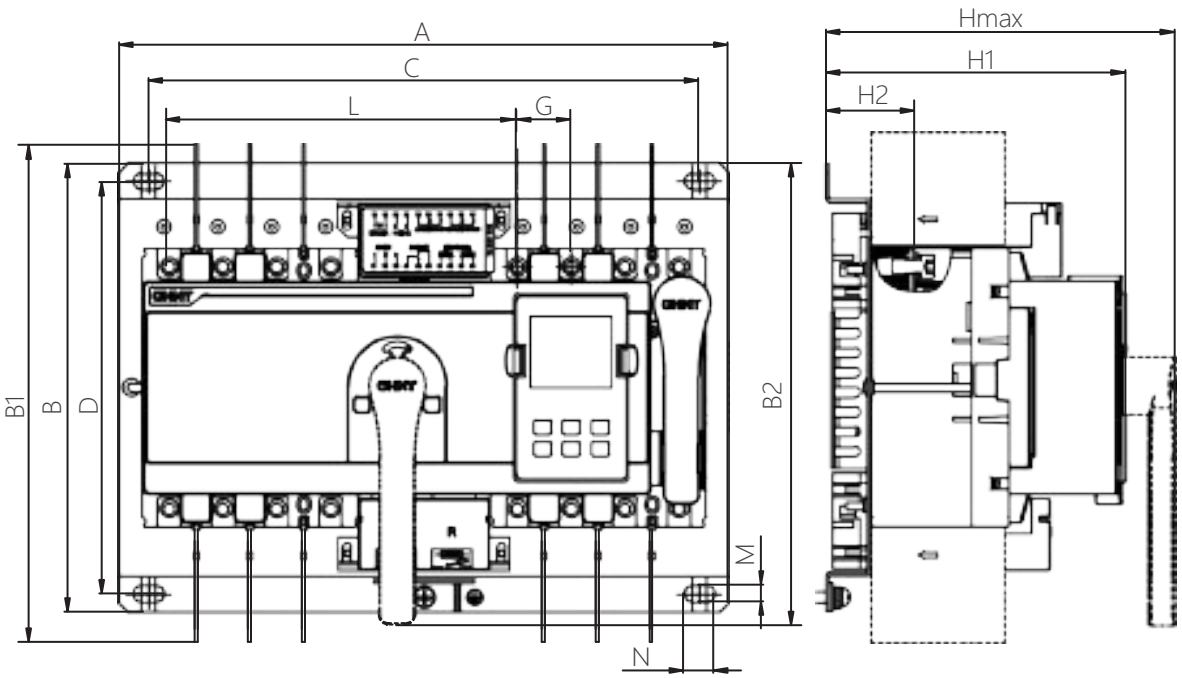


Fig 4 Outline and Installation Dimensions

Tabla 2 Outline and Installation Dimensions

Unit: mm

Product model	A	B	B1	B2	C	D	G	L	H		H1		H2		M	N
									S	H	S	H	S	H		
NXZM-63、125 NXZHM-63、125	300	240	230	223	267	220	25	178	178	190	151	161	47	56	9	17
NXZM-160 NXZHM-160	340	250	245	240	307	230	30	194	167	195	152	180	50		9	17
NXZM-250 NXZHM-250	390	250	367	240	357	230	35	225	181	216	155	190	49	50	9	17
NXZM-400、630 NXZHM-400、630	535	334	464	342	475	304	44	304	234		198		66		11	26
NXZM-800 NXZHM-800	660	344	477	344	600	314	58	385	238		203		68		11	26

Dimensions of split module of controller and cabinet door

Unit: mm

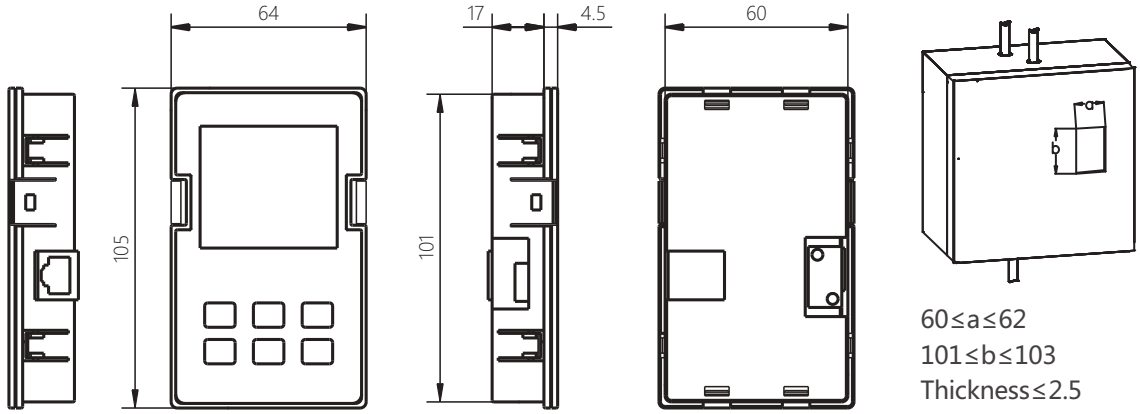


Fig 5 Dimensions of split module of controller and cabinet door

4 Installation and wiring

Wire connection dimension

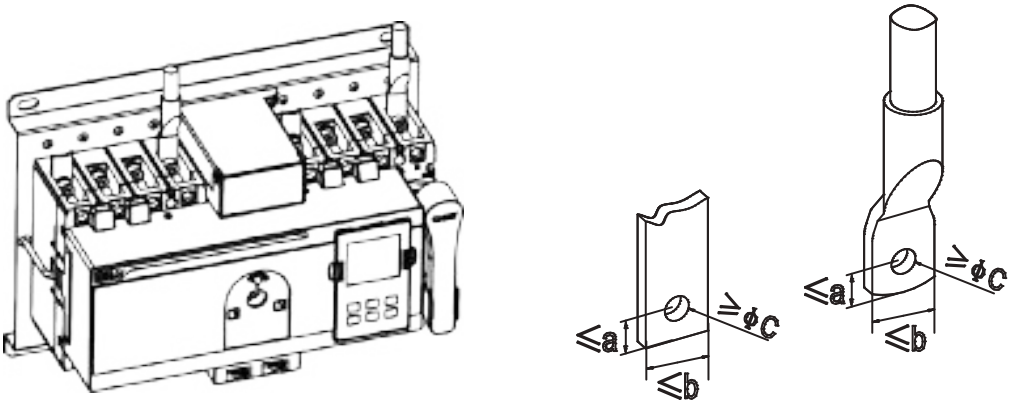


Fig 6 Wire connection dimension

Tabla 3 Wire connection dimension

Unit: mm

Product model	a	b	c	Torque
NXZM/NXZHM-63	8.0	17.5	6.5	4 N·m
NXZM/NXZHM-125				
NXZM/NXZHM-160	7.5	16	8.5	10 N·m
NXZM/NXZHM-250	10	23.5	8.5	12 N·m
NXZM/NXZHM-400	10.5	30.5	11.5	30 N·m
NXZM/NXZHM-630				
NXZM/NXZHM-800	15	43	14	40 N·m

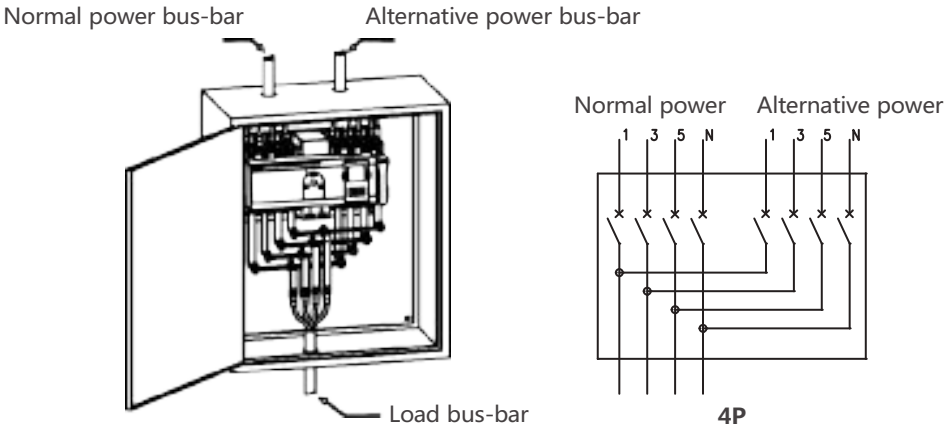
Tabla 4 Sectional area, width and number of copper wire

Unit: mm

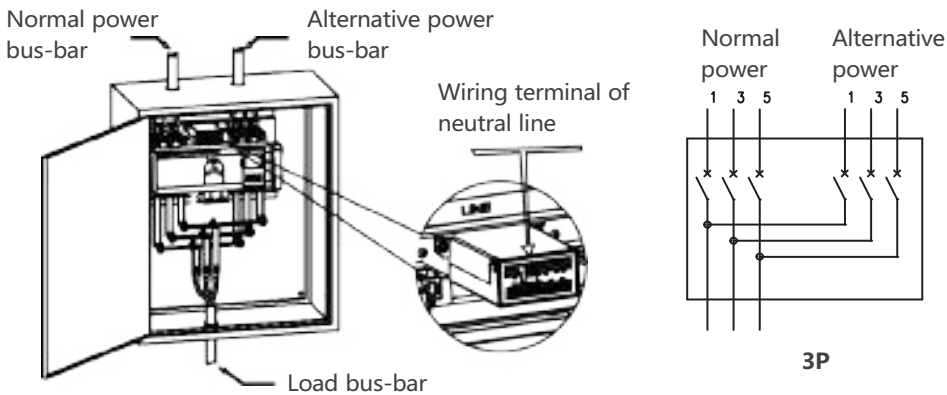
Rated current	10	16	25	32	40	50	63	80	100	125	160	180
Cross-sectional area of copper wire or copper bar	1.5	2.5	4.0	6.0	10	10	16	25	35	50	70	95
The number of copper wire or copper bar	1											
Rated current	**200**	**225**	**250**	**315**	**350**	**400**	**500**	**630**	**700**	**800**		
Cross-sectional area of copper wire or copper bar	95	95	120	185	185	240	150	185	240	240		
The number of copper wire or copper bar	1							2				

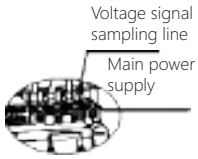
Product wiring diagram

4P Product wiring diagram



3P Product wiring diagram

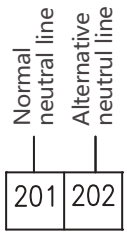




1. Main power supply and voltage signal sampling line phase sequence must be consistent.

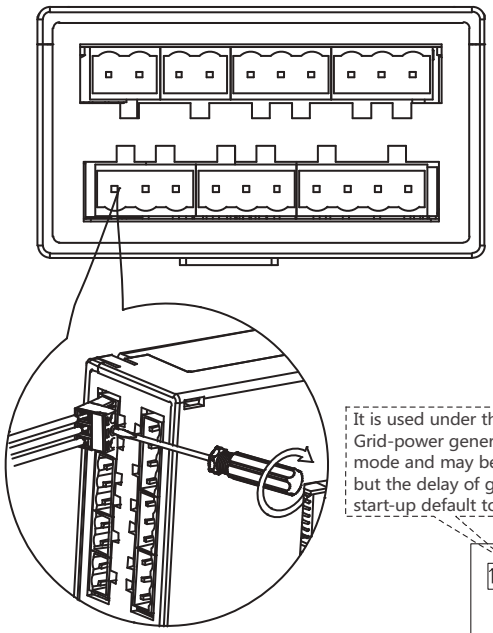
2. During wiring, the voltage signal sampling line in order as shown. Wrong wiring may lead to burn down of the controller.

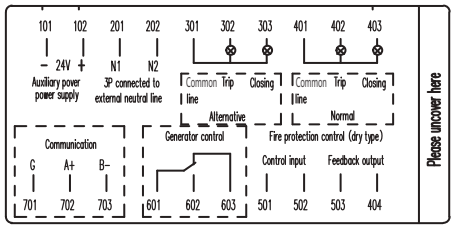
Fig 7 Product wiring diagram



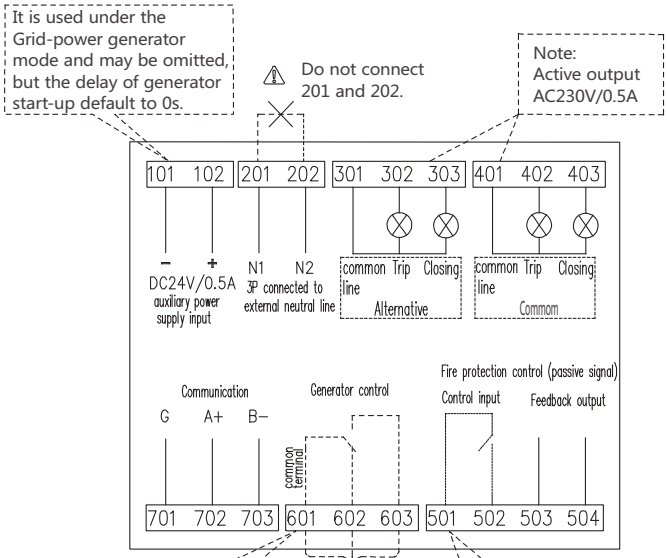
Connect to the external terminal of controller directly.
Any forms of electrical connection of these terminals is strictly forbidden.

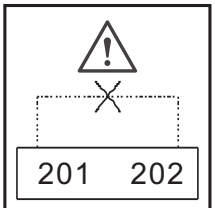
Signal and control terminal wiring diagram





Note: Please tear off the sticker before use and keep it for future use.





1. Any type of electrical connection between terminal 201 and teminal 202 is prohibited, otherwise the controller will be burnt!

2. Terminal 501 and 502 of controller can only be connectd with passive closing signal to achieve fire cintrol linkage. If they are directly connected to any active signal, the controller will be burnt.

3. Strip at least 8mm of the insulation of the wire before inserting it into the terminal.

Note:
1: Dotted line is the internal structure of the controller.
2: Type A controller doesn't have functions of generator control (601 602 603) and feedback output of fire protection control (503, 504).
3: Type AT and BT controllers have the function of communication.

Fig 8 Signal and control terminal wiring diagram

Installation of the display module (on cabinet door)

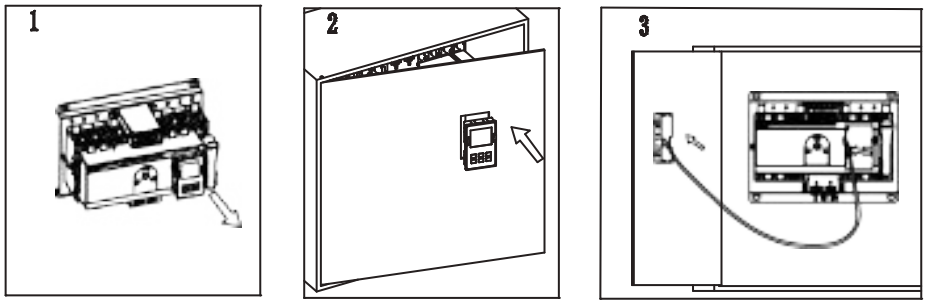


Fig 9 Installation of the display module

Installation of flash barrier

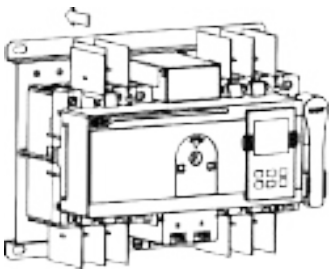
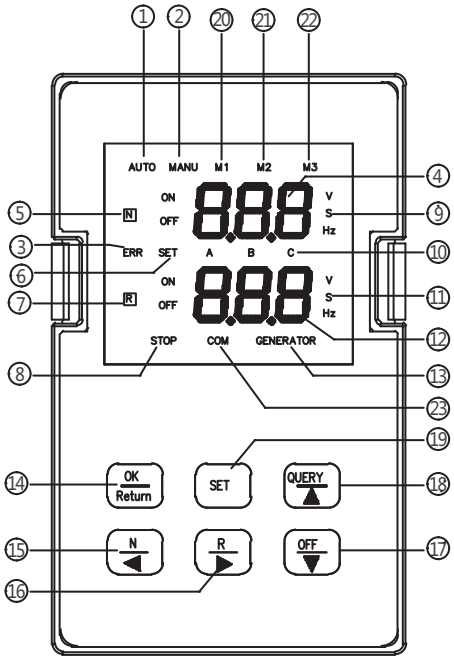


Fig 10 Installation of flash barrier

If a megameter with capacity over 500V is used to measure the insulation resistance of the circuit breaker, please disconnect the secondary circuit of the controller.

5 Controller setup

Instructions of controller operation interface



① Indication of automatic working mode;

② Indication of manual working mode;

③ Failure indication

When the breaker is tripped due to failure or short-circuit of the switch, this lamp will be on; (absent for class PC)

④ Display area of normal power voltage parameters

It displays normal power voltage parameters and transfer delay time under the working condition, and displaying symbols under the setting condition;

⑤ Indication of the on or off of breaker on the normal power side, the light will flash if a failure of the normal power occurs;

⑥ Indication of setting condition;

⑦ Indication of on or off of breaker on the alternative power side, the light will flash if a failure of the alternative power occurs;

Fig 11 Controller setup

⑧ Indication of the start of stop function;

⑨ Unit of voltage time and frequency of the normal power;

⑩ Phase of A, B, C;

⑪ Unit of voltage, time and frequency of the alternative power;

⑫ Display area of alternative power voltage parameters

It displays alternative power voltage parameters and transfer delay time under the working condition, and displaying symbols under setting condition;

⑬ Indication of the start signal of generator;

⑭ Confirm/return button

Press this button to save changes and exit in setting mode;

And restore normal operation status in fire protection linkage mode;

⑮ Button for compulsorily switch to the normal power

Under manual control mode, If the normal power supply is normal, press this button, it can compulsorily switch to normal power;

If it is setting condition, this button is the "scroll up" button of setting programs;

⑯ Button for compulsorily switch to the alternative power

Under manual control mode, if the alternative power supply is normal, press this button, it can compulsorily switch to alternative power;

If it is setting condition, this button is the "scroll down" button of setting programs;

⑰ Off button

Under manual control mode, if either line of both power lines is normal and press this button, it will switch to the off position;

If under the setting mode, this button is the minus button for setting parameters;

⑱ Failure inquiry button

When the switch fails and malfunction lamp on the failure screen is on, press this button, the detail malfunction code can be displayed in the screen;

⑲ Setting button

Press this button to enter into the parameter setting menu of the controller;

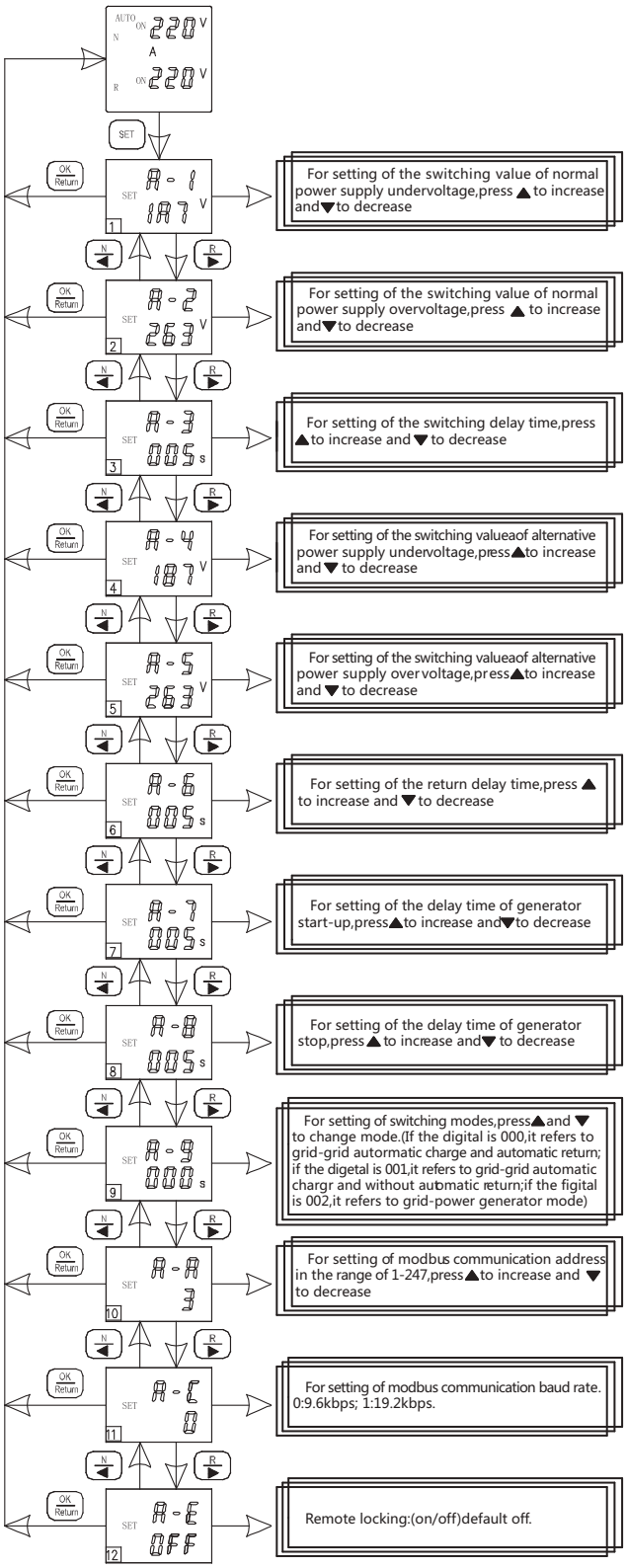
⑳ Indication of automatic charge and automatic recovery mode;

㉑ Indication of automatic charge and without automatic recovery mode;

㉒ Indication of generator (automatic charge and automatic recovery) mode;

㉓ Indication of communication status.

Parameter setting for controller



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

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

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

3 Setting of switching delay: Default to 5s, user-settable 0s~180s.

4 Setting of return delay: Default to 5s, user-settable 0s~180s.

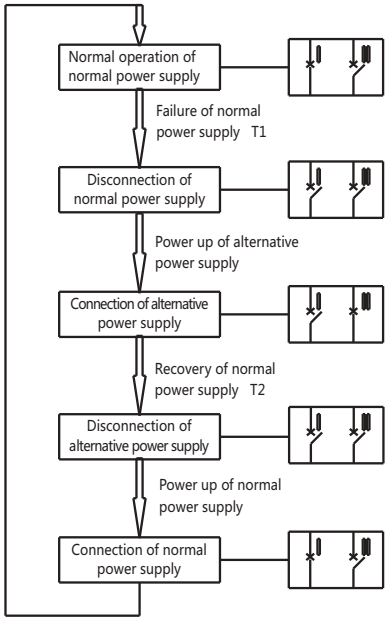
5 Setting of generator start-up delay: Default to 5s, user-settable 0s~180s.

6 Setting of generator shutdown delay: Default to 5s, user-settable 0s~180s.

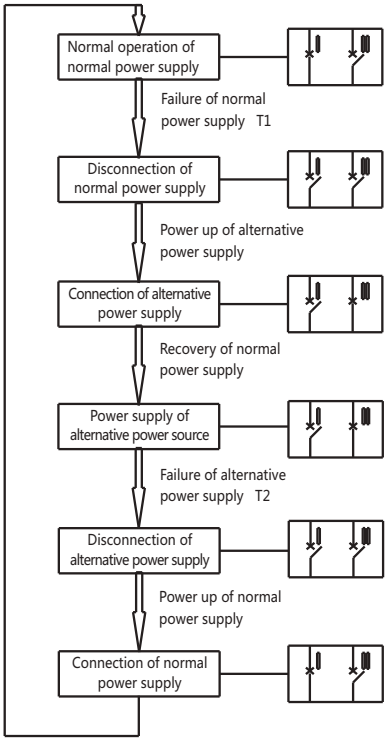
Button instruction:
When the controller is in operation, press the set button to set the interface of parameter setting menu, and press " ◀ " and " ▶ " in the setting menu to page up / down the setting items. Press the comfirm/return button to exit the setting menu; press " ▲ " and " ▼ " to modify parameters.

Fig 12 Parameter setting for controller

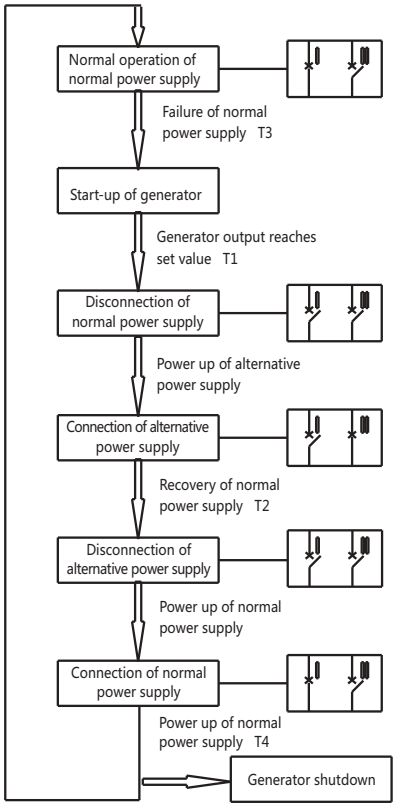
Controller operation process



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~180s adjustable

T4: Generator shutdown delay time: 0s~180s adjustable

Fig 13 Controller operation process

6 Product troubleshooting

Table 5 Non-common fault and solution

Description	Causes and solutions
Controller display failure	Press Inquiry button. An indication of E-1 corresponds to circuit breaker trip on the normal power supply side, and that of E-2 corresponds to circuit breaker trip on the alternative power supply side. the code (E-1/E-2) appears. check if the main power supply has a short-circuit or a overload failure， After elimination of the failure, switch the product to the manual mode. Then press stop button or rotate the handle to stop position then closing. And an indication of E-3 corresponds to motor failure or motor line disconnection. The code (E-3) appears, switch the product to manual mode and press Normal or Alternative button to confirm whether the product can be converted. If not, repair or replace the product.
The product still shows fire control linkage after the fire control linkage signals are removed from 501 and 502 terminals of the controller.	After the signals are removed, switch the product to manual mode and press Confirm/Return button. It is only after this sequence that the controller will retreat from fire protection linkage mode to normal operation.
When a fault occurs to the normal or alternative power supply, the product fails to switch to the faulty power supply automatically or manually.	After the controller detects a failure of the normal or alternative power supply, it will not switch on the faulty power supply in manual or automatic mode, unless a closing is forced with the handle.
The product fails to automatically transfer in automatic mode when the main power supply has recovered from a fault to the under (over)-voltage transfer setting value.	There is a +10V return value between undervoltage transfer value and recovery value, and a -10V return difference between overvoltage transfer value and recovery value. The recovery value for power supply must be bigger than the total of transfer value and return value.

Table 6 Common failure and solution

Description	Cause	Solution
The display interface 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.
	The product is not connected to neutral phase, especially for a 3P product.	Make sure the incoming line terminal is firmly connected and in good contact.
	Controller fuse is blown.	Replace the fuse.
	Phase loss or failure.	Check if the main circuit voltage is normal.
The displayed voltage of phase A, B and C is above 300V	One circuit of power supply of the product is not connected to neutral pole of the product is connected to the live wire by mistake.	Conduct wiring correctly according to the Instructions (main circuit). Wrong connection will burn down the controller.

7 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 according to local regulations.

CHINT

QC PASS

NXZM、NXZ(H)M
Automatic Transfer Switch
IEC/EN 60947-6-1

PD1 Check 15

Test date: Please see the packing

ZHEJIANG CHINT ELECTRICS CO., LTD.

CHINT ELECTRICS

NXZM、NXZ(H)M
Automatic Transfer Switch
User Instruction

Zhejiang Chint Electrics Co., Ltd.

Add: No.1, CHINT Road, CHINT Industrial Zone,North Baixiang,
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