1. Datasheet

NXZ
Series Automatic Transfer Switching Equipment

1. General Description

1.1 Scope of Application

1.1.1 NXZ series Automatic Transfer Switching Equipment is applicable to the three-phase four-wire duplicate supply power grid of AC 50Hz, rated voltage 400V/415V and below, and rated current up to 630A . It can automatically connect one or several load circuits from one power source to the other to ensure the normal power supply for the load circuit.

1.1.2 This product is applicable to industrial and commercial power use places, high-rise buildings, and residential houses.

1.2 Applicable standards

1.2.1 Product standard

IEC 60947-1.

IEC 60947-6-1.

1.2.2 Standards for use in extreme environment

IEC 60068-2-1. (Low Temperature)

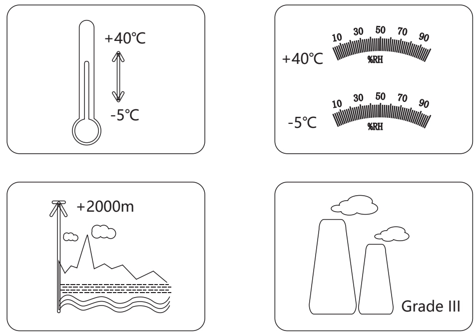
IEC 60068-2-2. (High Temperature)

IEC 60068-2-30. (Cyclic Damp Heat)

IEC 60068-2-11. (Salt mist)

1.2.3 Certification：CB、CE、KEMA

1.3 Normal working conditions



1.3.1 Ambient temperature

5° C~+40° C; Users can custom-tailor relevant product to be used in the environment of -25° C~+70° C, and use the product according to the temperature compensation table.

1.3.2 Sea level elevation

Equal to 2000m or below; if it needs to work above 2000m altitude, it shall be used according to the table of capacity reduction of different altitudes.

1.3.3 Atmospheric conditions

The relative humidity shall not exceed 50% when the surrounding air temperature is +40° C; the relative humidity can be higher when the temperature is lower; the average monthly maximum relative humidity in the wettest month is 90%, and the average monthly minimum temperature shall be +20 ° C. Special measures may be necessary in cases of occasional condensation due to variations in temperature.

1.3.4 Pollution degree: class 3

1.3.5 Installation category

Installation category of the switching equipment of main circuit is category IV.

Installation category of auxiliary circuit is category III.

Installation category of conversion controller is category II.

1.3.6 Utilization category: AC-33B

Electromagnetic compatibility (EMC)

Electrostatic discharge (IEC 61000-4-2) Level 2

Radio-frequency electromagnetic field-radiated electromagnetic field immunity (IEC 61000-4-3) Level 3,

Fast transient bursts (IEC 61000-4-4) Level 3,

Surges (IEC 61000-4-5) Level 3,

Radio-frequency electromagnetic field-conducted immunity (IEC 61000-4-6) Level 3,

Radiation grade (CISPR11) grade B,

2. Model definition and description

NXZ – 125 / 4 A 100A

Rated current code:
80A、100A、125A、
160A、200A、250A、
315A、320A、400A、
500A、630A

Controller code:
A: standard type
B: intelligent type

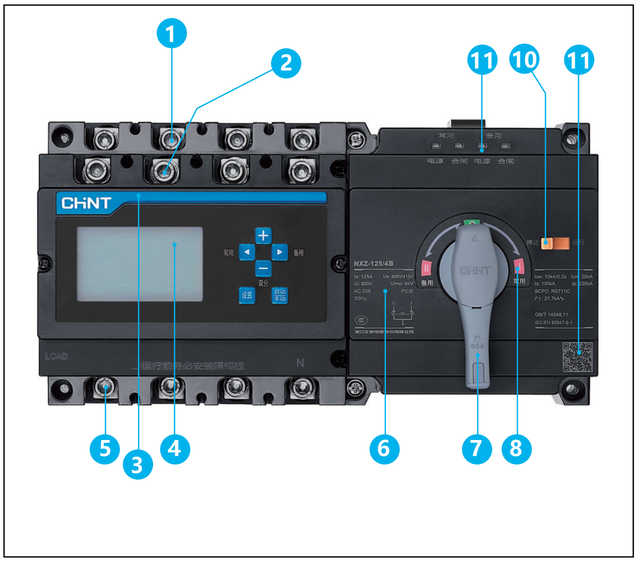
Pole code:
3: 3 pole
4: 4 pole

Frame current code:
125A
250A
630A

Product code:
NXZ: series
automatic transfer
switching equipment
(PC grade)

Type selection example:
NXZ-125/4A 125A: To order an Automatic Transfer Switching Equipment of which the frame current is 125A, number of poles is 4P, rated current is 125A, with a standard controller
Note: when the controller is installed in split type, the split wire needs to be ordered separately.

Structural Features of the Automatic Transfer Switching Equipment



1	Terminal on the normal supply side
2	Terminal on the alternative supply side
3	Trade mark
4	Display and operation module of the controller
5	Terminal on the load side
6	Nameplate
7	Handle
8	Switching-off/switching-on indicator
9	QR Code
10	Manual/electric dial switch
11	Controller processing module

Comparison Table of Frame Current and Rated Current

Rated current (A)		80	100	125	160	200	250	315	320	400	500	630
	125	■	■	■								
Frame current (A)					■	■	■					
	630							■	■	■	■	■

3. Functions and characteristics

Technical data of NXZ (Class PC)

Model	NXZ-125	NXZ-250	NXZ-630
Electrical characteristics			
Frame current (A)	125	250	630
Rated current (A)	80,100,125	160,200,250	315,320,400,500,630
Rated operational voltage Ue (V)	400/415 50Hz		
Rated insulation voltage Ui (V)	AC800		
Rated impulse withstand voltage Uimp (kV)	8		
Utilization category	AC-33B		
Number of poles	3P/4P		
Rated conditional short-circuit current Iq (kA)	100		
Rated short-circuit making capacity Icm (kA)	20	30	50
Rated short time withstand current Icw/0.2s (kA)	10	10	25
Contact transfer time (S)	0.6× (1±50%)	1× (1±10%)	1.5× (1±10%)
Operating transfer time (S)	1.2× (1±10%)	2.1× (1±10%)	3.3× (1±10%)
Mechanical endurance (times)	8500	7000	3000
Electrical endurance (times)	1500	1000	1000
Overall dimension			
Width x height x depth (mm)	245×130×126	295×175×175	430×272×230
Controller characteristics			
Controller model	A type (standard), B type (intelligent)		
Installation mode	Integrated, split		
Rated control power supply voltage Us (V)	230/240 50/60Hz		
Control voltage range	85%~110%Ue		

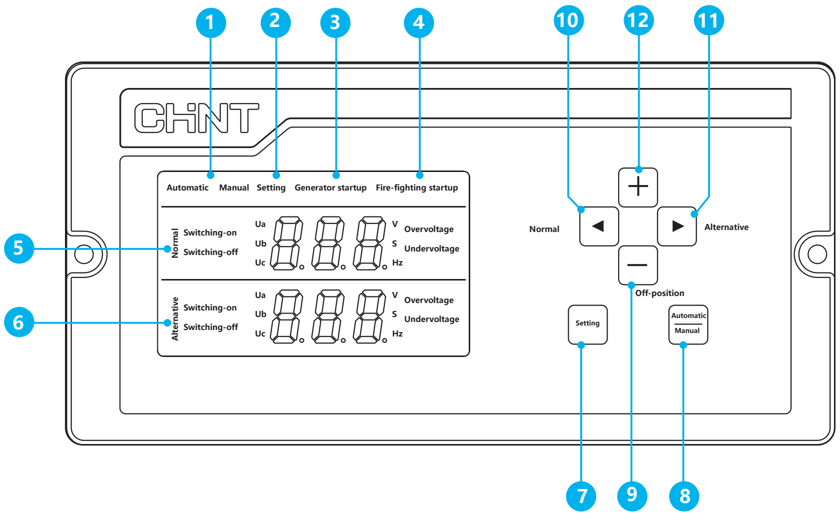
Parameters of controller

Function \ Model	A type (standard)	B type (intelligent)
Manual/automatic transfer	■	■
Main contact positions		
Normal position	■	■
Alternative position	■	■
Off-position	■	■
Automatic control		
Normal supply of monitoring	■ Phase failure/loss of voltage, undervoltage, overvoltage fault	■ Phase failure/loss of voltage, undervoltage, overvoltage fault
Alternative supply of monitoring	■ Phase failure/loss of voltage, undervoltage, overvoltage fault	■ Phase failure/loss of voltage, undervoltage, overvoltage fault
Automatically transfer and restore operation	■	■
Automatically transfer and nonautomatically restore operation	■	■
Grid-grid	■	■
Grid-generator	■	■
Phase failure/loss of voltage transfer	■	■
Under voltage transfer	■	■
Over voltage transfer	■	■
Delay adjustable	■	■
Transfer delay	0s~300s adjustable	0s~300s adjustable
Return delay	0s~300s adjustable	0s~300s adjustable
Generator control	■	■
Fire control linkage	■	■
Indication		
Switching-on/switching-off/Off-position indication	■	■
Normal/alternative supply indication	■	■
Parameter setting indication	■	■
Others		
Communication function	-	■
Display module	■ LED	■ LED

4. Functions and characteristics

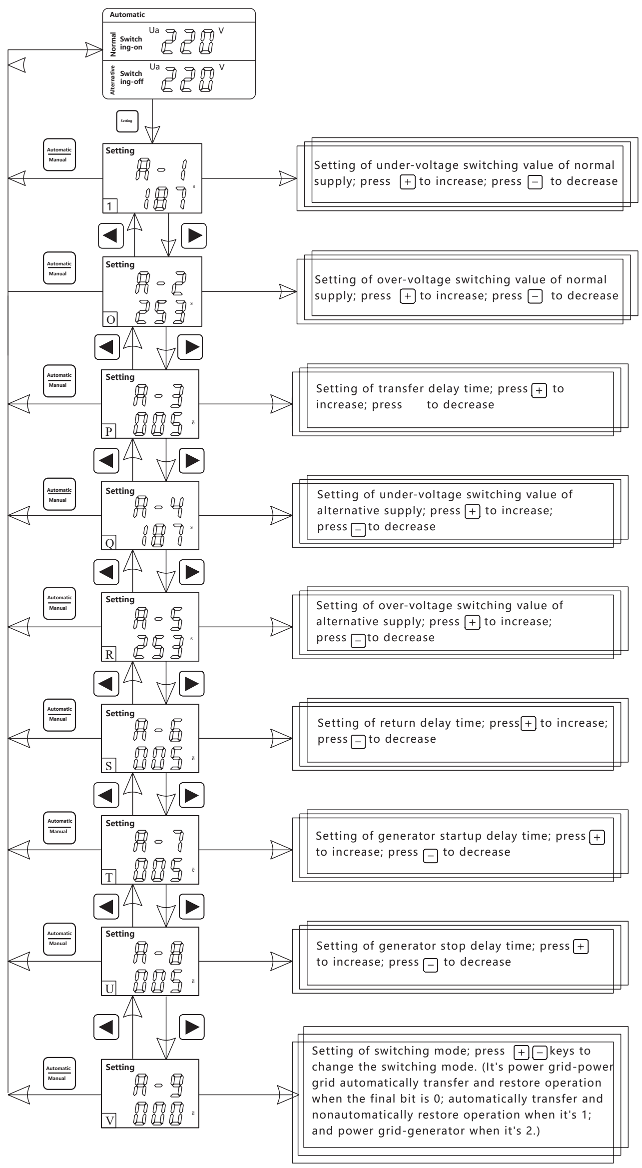
Operation interface of the display module of controller

Figure 1



1. Indication of automatic/manual operation mode
2. Setting status indication
3. Indication of the startup signal of generator
4. Indication of start of the fire control linkage function
5. Display area of the status parameters of normal supply: Display the voltage parameters and Transfer delay time of normal supply in working state; display the setting item parameters in setting state;
6. Display area of the status parameters of alternative supply: Display the voltage parameters and return delay time of alternative supply in working state; display the setting item parameters in setting state;
7. Setting button (press this button to enter the parameter setting menu of the controller);
8. Automatic/manual transfer mode selector button: used for selection of automatic/manual transfer mode in normal working state; used for save and exit in setting state;
9. Off-position button: under the manual control mode, any one of the two power supply is normal, press this button to make automatic transfer switching equipment on off-position; Under setting mode, this button is used to decrease value in parameter setting;
10. Normal supply transfer button: under the manual control mode, the switch is on alternative position, press this button to switch on normal supply; under setting mode, this button is used for pageup in parameter setting;
11. Alternative supply transfer button: under the manual control mode, the switch is on normal position, press this button to switch on alternative supply; under setting mode, this button is used for pagedown in parameter setting;
12. + button:Under setting mode, this button is used for increase value in parameter setting.

Parameter setting of the display module of controller



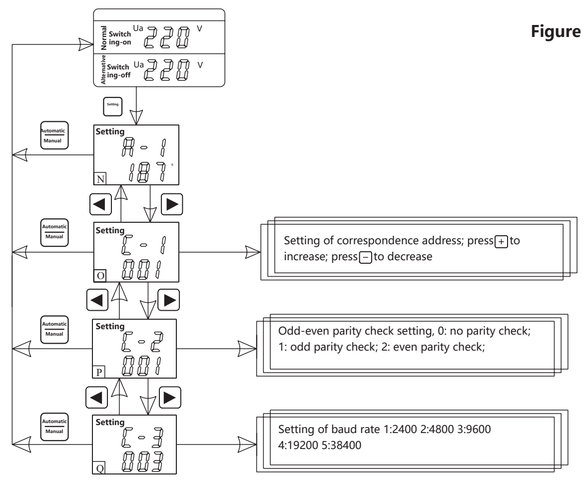


Figure 2

Note:The functional parameters of the display module and communication module are set as follows:

Setting of under-voltage switching value: Default to 187V, user-settable 160V~200V;
Setting of over-voltage switching value: Default to 263V, user-settable 240V~290V;
Transfer delay setting:Default to 5s, user-settable 0s~300s;
Return delay setting: Default to 5s, user-settable 0s~300s;
Generator startup delay setting:Default to 5s, user-settable 0s~300s;
Generator stop delay setting: Default to 5s, user-settable 0s~300s;
Switching and power source mode:Default setting: automatically transfer and restore operation (grid - grid), and user can set automatically transfer and nonautomatically restore operation (grid - grid), automatically transfer and restore operation (grid - power generation)..
Default parameter setting for communication function: address: 1; Baud rate: 9600bps; parity check bit: odd parity; data bit: 8; stop bit: 1

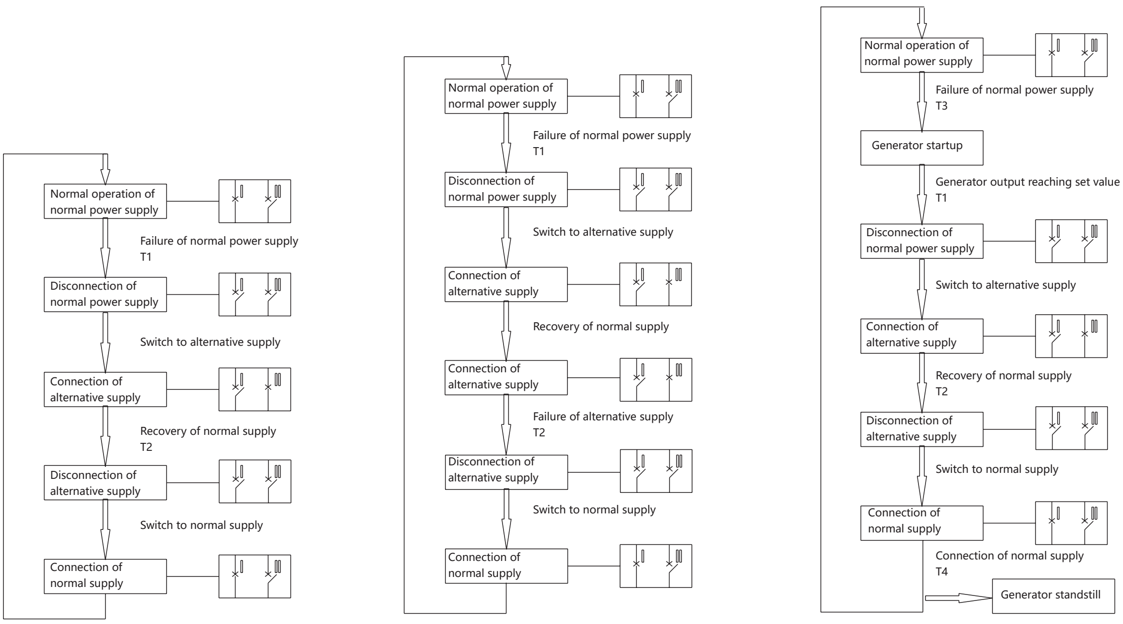
■ Buttons:

Press setup key to enter the setting interface when the controller is working. Press " ◀ " " ▶ " to page up or down the setting menu. Press manual/automatic key to exit from the setting menu. Press " + " " − " to revise the parameters.
Parameter setting of communication function (note: please ask for the communication agreement from our after-service staff)

5. Functions and characteristics

Controller action flow

Figure 3



Automatically transfer and restore operation (power grid-power grid) work flow diagram of controller

Automatically transfer and nonautomatically restore operation (power grid-power grid) work flow diagram of controller

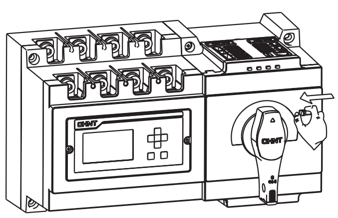
Automatically transfer and restore operation (power grid-generator) work flow diagram of controller

I: Normal supply II: Alternative supply
T1: Transfer delay time, normal supply fault, time before disconnection of I;
T2: Return delay time, normal supply recovered, time before disconnection of II;
T3: Generator startup delay time: 0s~300s, adjustable
T4: Generator standstill delay time: 0s~300s, adjustable

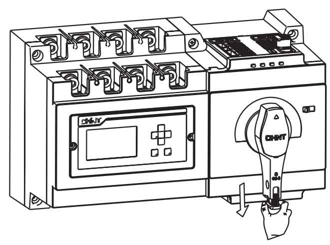
Padlocking function

Padlock apertureΦ5~Φ8 (mm)

Figure 4



① The product is on off-position. Put the yellow toggle switch on the manual position.



② Pull out the limiting member and lock it.

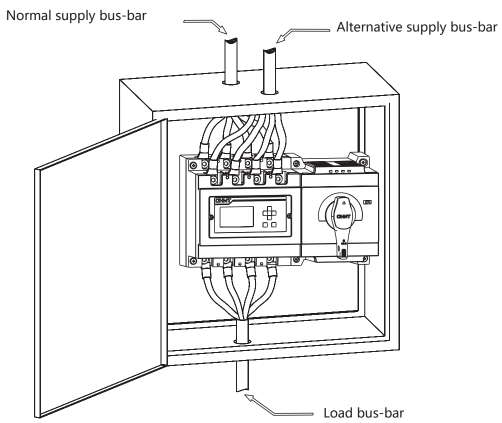
Communication function

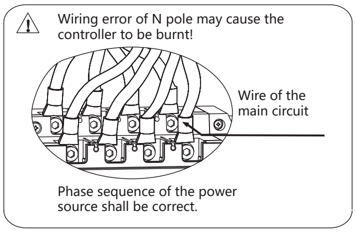
Modbus protocol; RS485 interface.

6. Mode of connection of the main part and controller

Product incoming mode: upper incoming

Figure 5

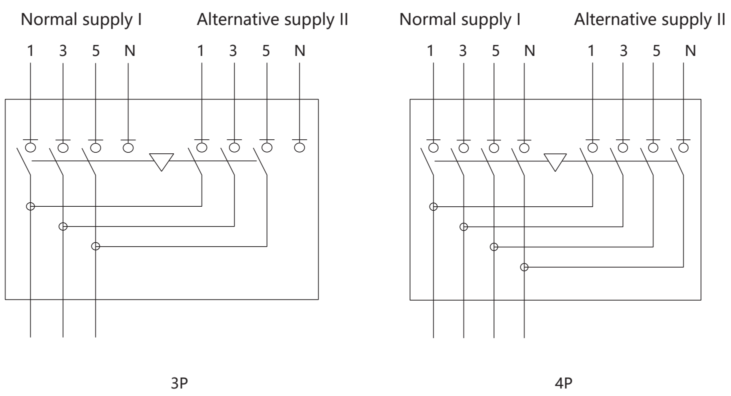




Installation mode: vertical or horizontal

Product wiring

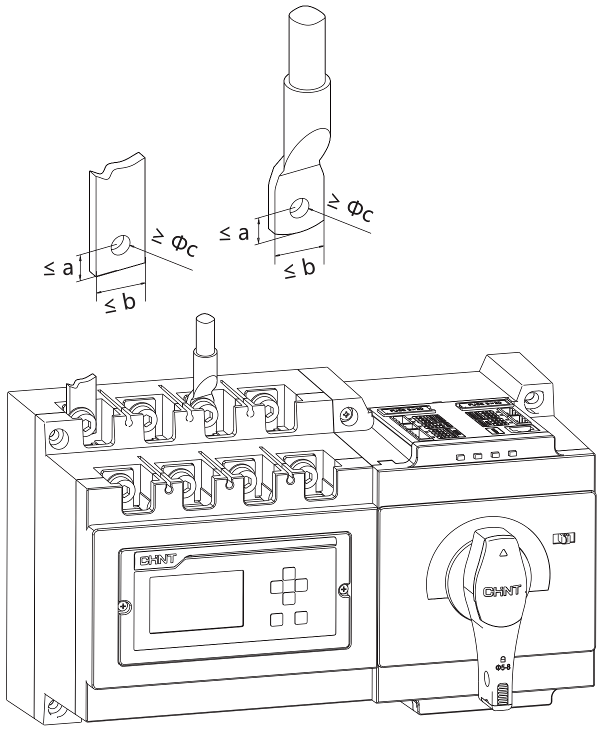
Figure 6



7. Mode of connection of the main part and controller

Wire connection

Figure 7

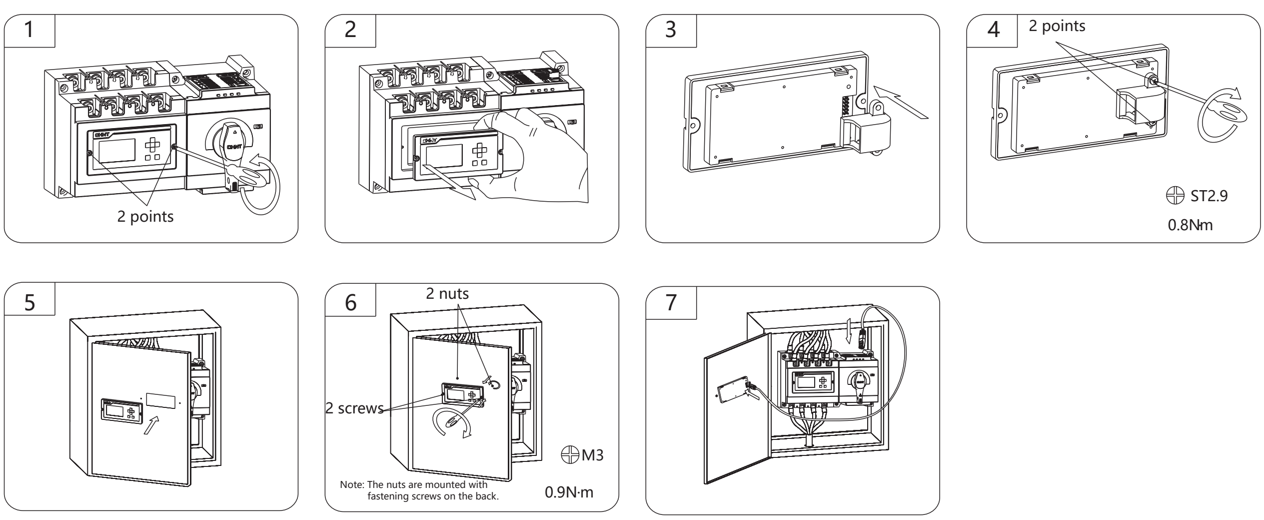


Unit: mm

	a	b	c
NXZ-125	8	21.5	6
NXZ-250	10	27.5	8
NXZ-630	15	43	12

Split type installation of the display module (cabinet)

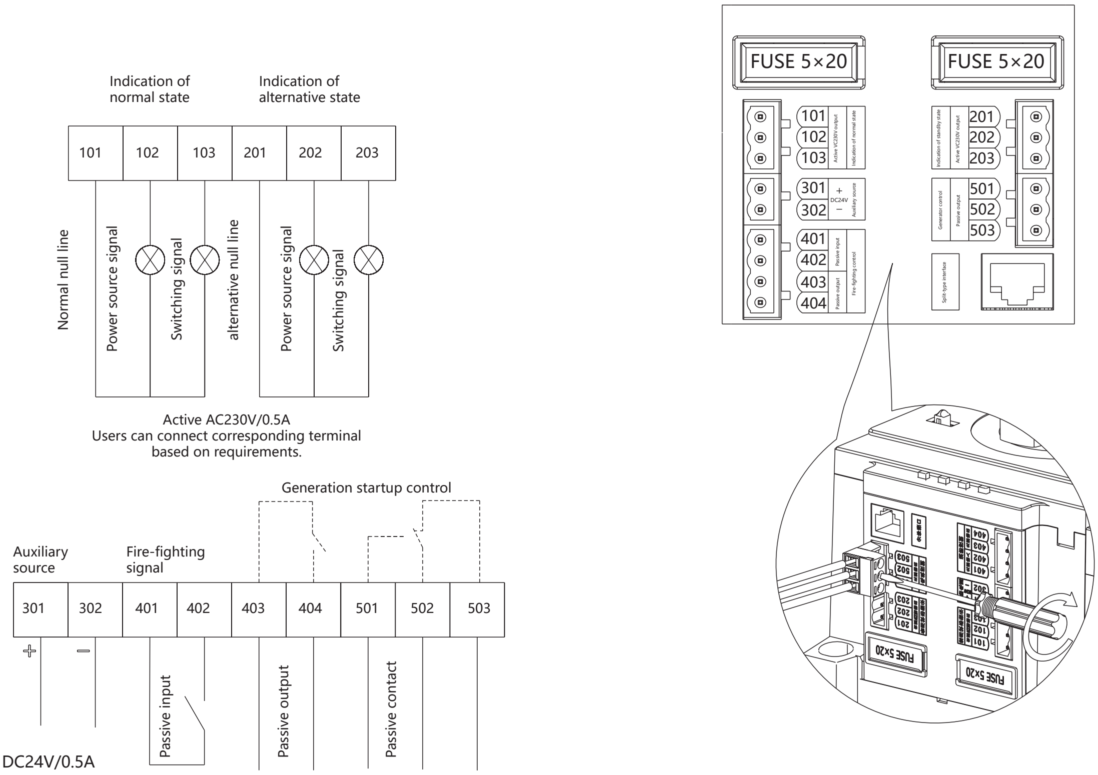
Figure 8



Wiring of signal and control terminal

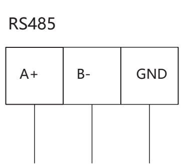
A type controller

Figure 9

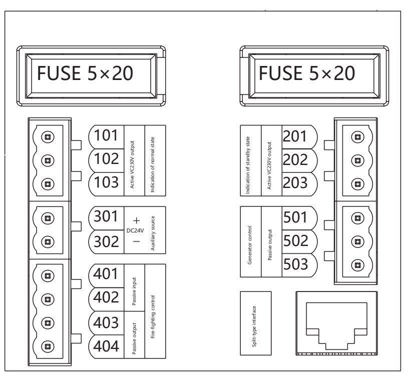


Note: the dotted line is the circuit inside the controller.

Figure 10



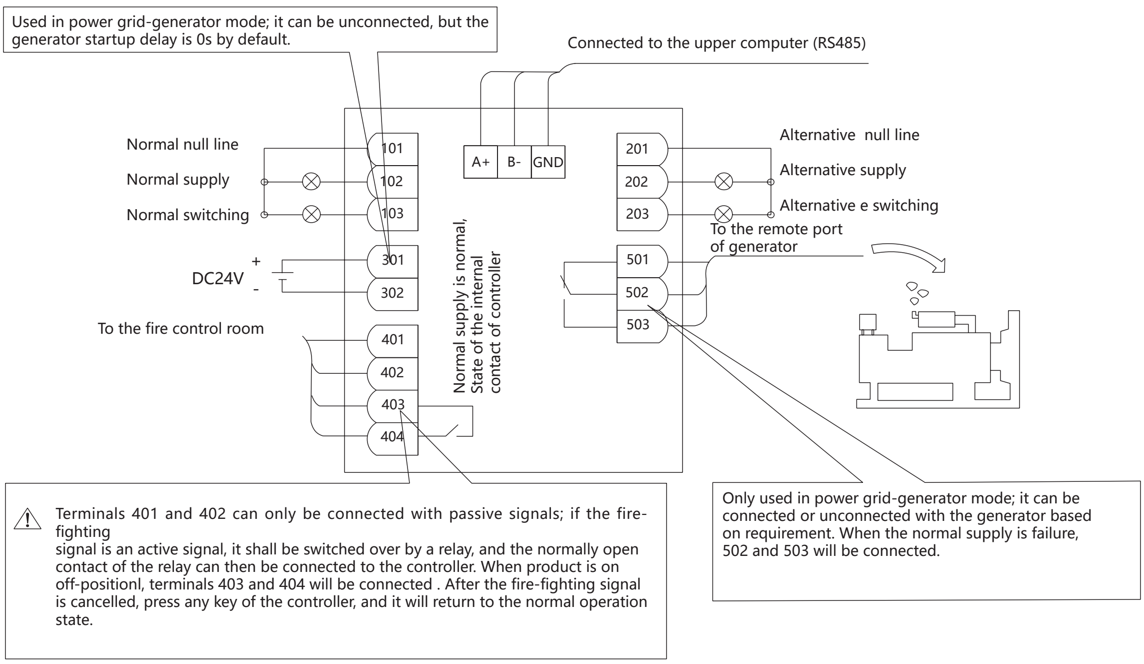
Note: The signal and controller terminal wiring of B type controller is same with A type controller, and B type controller has communication terminal wiring.



8. Mode of connection of the main part and controller

Typical application

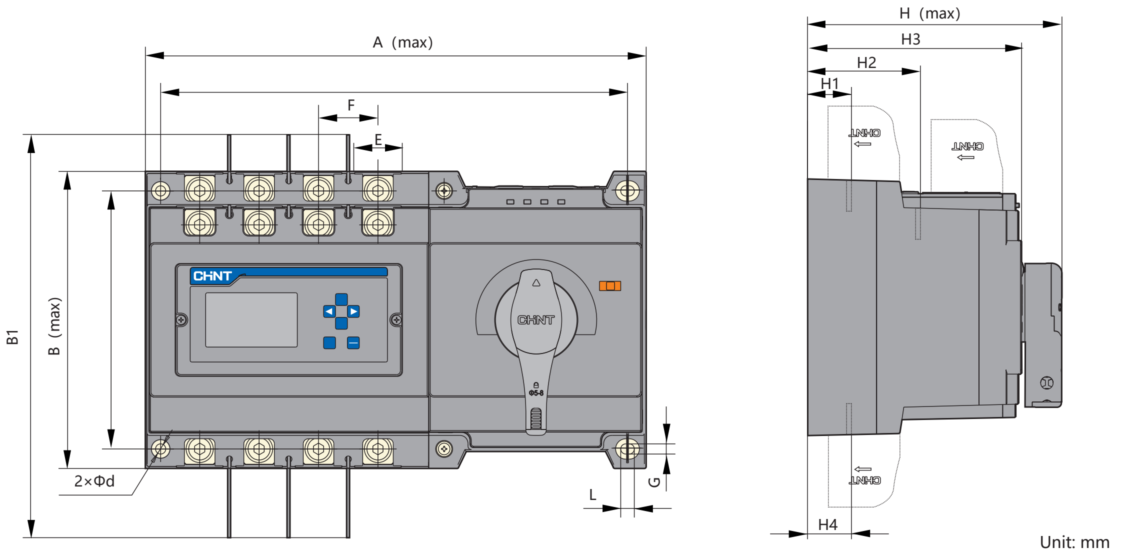
Figure 11



9. Overall and installation dimension

Product overall and installation dimension

Figure 12

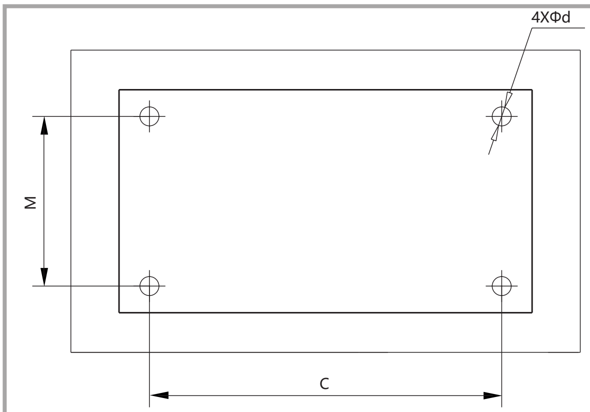


Unit: mm

Product code	A	A1	B	B1	D	E	F	G	L	H	H1	H2	H3	H4	d
NXZ-125	245	229.5	130	220	113	21.5	30	4.5	5.5	126	21	71	107.5	21	4.5
NXZ-250	295	275	175	304	152	27.5	35	6	8	175	29	99	146	29	6
NXZ-630	430	400	272	461	240	43	58	9	13	230	41	131	192	41	9

Hole size of the product installation plate

Figure 13



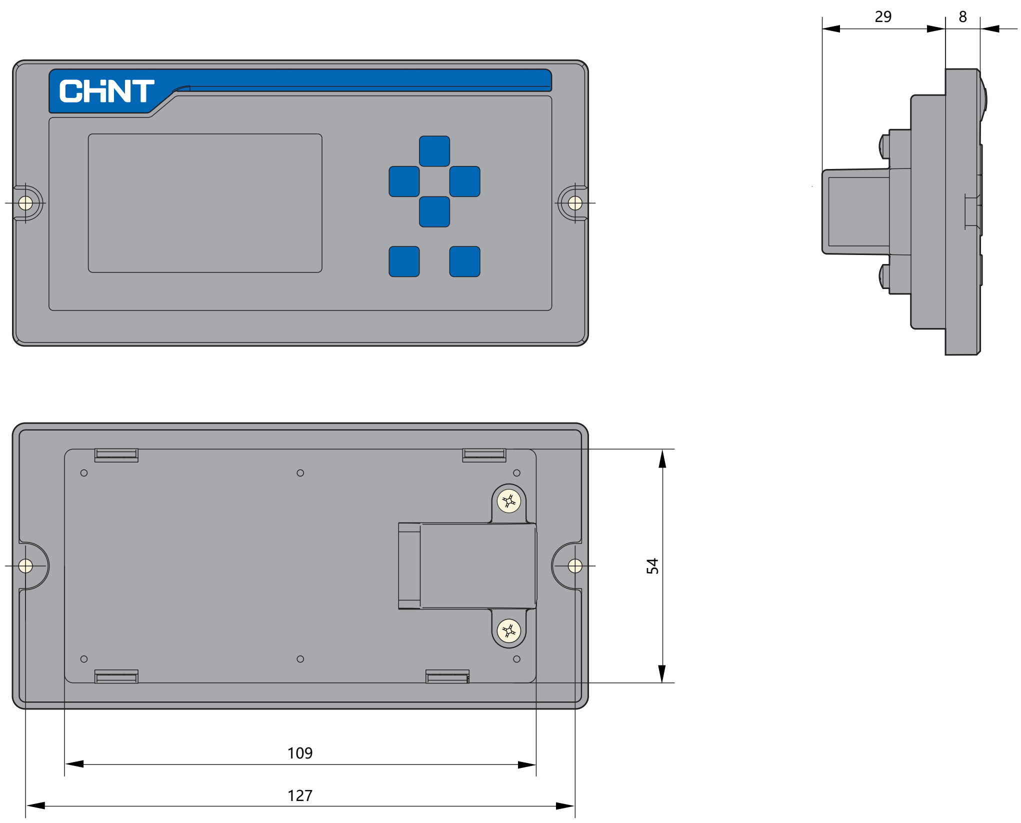
Unit: mm

Product code	C	M	D
NXZ-125	229.5	113	4.5
NXZ-250	275	152	6
NXZ-630	400	240	9

10. Overall and installation dimension

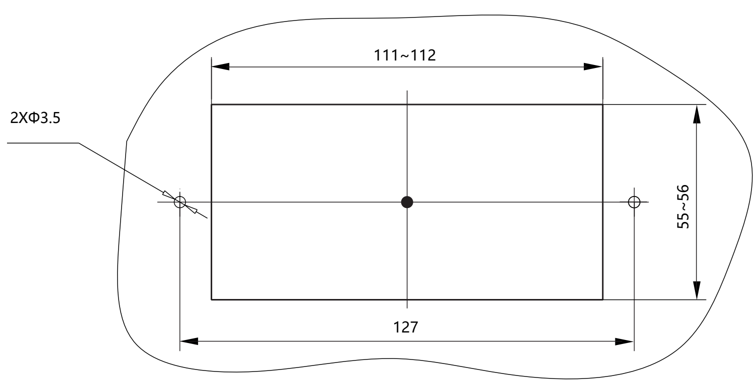
Overall dimension of split type module (unit: mm)

Figure 14



Size of the installation cabinet of split type module (unit: mm)

Figure 15



NXZ	250	3	A	200
Product Series	Frame Current	Number of poles	Controller	Rated Current
NXZ	125 250 630	3:3P 4:4P	A:Standard type B:Intelligent type	80A 100A 125A 160A 200A 250A 315A 320A 400A 500A 630A

NXZ Series

Mounting Method	Rated Current	Description	Code
125A	80A	NXZ-125/4A 80A	169992
	100A	NXZ-125/4A 100A	169990
	125A	NXZ-125/4A 125A	169991
	80A	NXZ-125/4B 80A	171611
	100A	NXZ-125/4B 100A	169993
	125A	NXZ-125/4B 125A	171610
250A	160A	NXZ-250/4A 160A	171612
	200A	NXZ-250/4A 200A	171613
	250A	NXZ-250/4A 250A	171614
	160A	NXZ-250/4B 160A	171615
	200A	NXZ-250/4B 200A	171616
	250A	NXZ-250/4B 250A	171617
630A	315A	NXZ-630/4A 315A	171618
	320A	NXZ-630/4A 320A	171619
	400A	NXZ-630/4A 400A	171620
	500A	NXZ-630/4A 500A	171621
	630A	NXZ-630/4A 630A	171622
	315A	NXZ-630/4B 315A	171623
	320A	NXZ-630/4B 320A	171624
	400A	NXZ-630/4B 400A	171625
	500A	NXZ-630/4B 500A	171626
	630A	NXZ-630/4B 630A	171627