

## Introduction

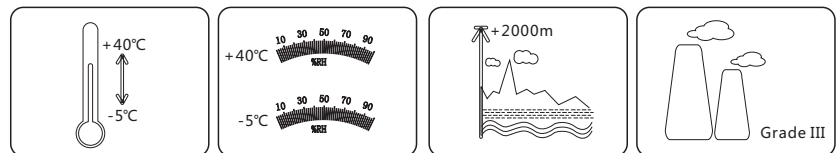
### Scope of application

- NXZ(H)M Series Automatic Transfer Switching Equipment is applicable to three-phase four-wire duplicate supply grid of AC 50/60Hz, rated voltage 400V/415V and below, rated current 800A, and can switch one or several load circuits from one power source to the other to ensure the normal power supply of the load circuit.
- This product is applicable to industrial and commercial power use places, high-rise buildings, and residential houses.

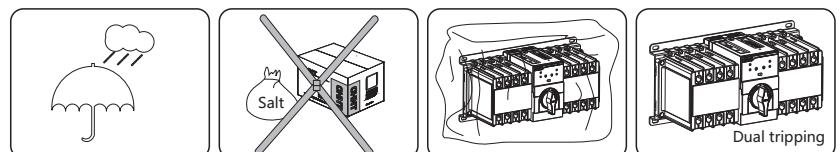
### Applicable standards

- Product standard  
IEC 60947-1.  
IEC 60947-6-1.
- 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)

### Normal working conditions



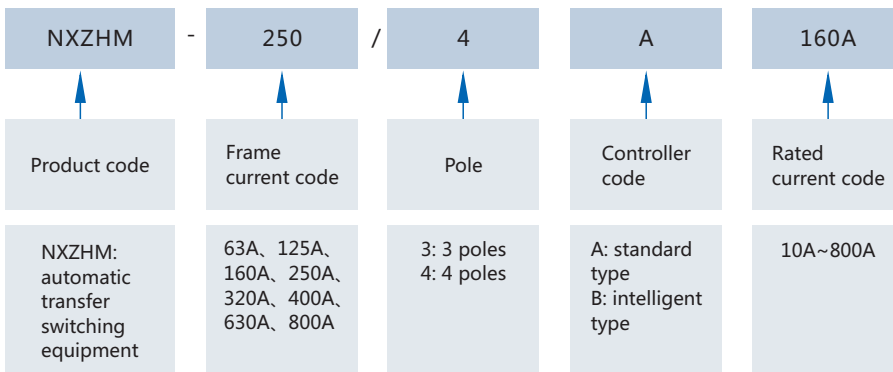
- Ambient temperature  
-5°C~+40°C; Users can custom-tailor relevant product to be used in the environment of -25°C~+70°C, and use the product according to the temperature compensation table.
- Sea level elevation  
Equal to 2000m or below; if it needs to work above 2000m altitude, it shall be used according to the table of capacity reduction of different altitudes.
- 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.
- Pollution degree: class 3



- 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.
- Utilization category:  
NXZ (H) M: 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,



## NXZHM (Class PC)



Type selection example:

NXZHM-250/4A 250A: To order a PC grade automatic transfer switching equipment, the frame current is 250A, number of poles is 4P, rated current is 250A, with a standard controller (A type)

## Comparison Table of Frame Current and Rated Current

Rated current (A)	10	16	25	32	40	50	63	80	100	125	160	180	200	225	250	315	320	350	400	500	630	700	800	
63	■	■	■	■	■	■	■																	
125							■	■	■	■														
160										■	■													
250											■	■	■	■	■									
320															■		■							
400															■	■		■	■					
630																			■	■	■			
800																					■	■	■	

## Technical parameters of NXZHM (class PC)

Model	NXZHM-63	NXZHM-125	NXZHM-160	NXZHM-250	NXZHM-320	NXZHM-400	NXZHM-630	NXZHM-800
<b>Electrical characteristics</b>								
Execution body	NXHM-63	NXHM-125	NXHM-160	NXHM-250	NXHM-320	NXHM-400	NXHM-630	NXHM-800
Frame current (A)	63	125	160	250	320	400	630	800
Rated current (A)	10, 16, 25, 32, 40, 50, 63	63, 80, 100, 125	125, 160	160, 180, 200, 225, 250	160, 180, 200, 225, 250, 320	250, 315, 350, 400	400, 500, 630	630, 700, 800
Rated operational voltage Ue (V)	400/415 50Hz							
Rated insulation voltage Ui (V)	AC800	AC800	AC800	AC1000	AC1000	AC1000	AC1000	AC1000
Rated impulse voltage Uimp (kV)	8					12		
Utilization category	AC-33B							
Number of poles	3P, 4P	3P, 4P	3P, 4P	3P, 4P	3P, 4P	3P, 4P	3P, 4P	3P, 4P
Rated conditional short-circuit current Iq (kA)	100	100	100	100	100	100	100	100
Mechanical endurance (times)	10000	10000	8000	6000	6000	4000	4000	4000
Electrical endurance (times)	2000	2000	2000	2000	2000	1500	1500	1000
<b>Controller characteristics</b>								
Controller model	A type (standard), B type (intelligent)							
Operating transfer (s)	2.8 × (1±10%)	2.8 × (1±10%)	3.3 × (1±10%)	3.3 × (1±10%)	3.3 × (1±10%)	3.5 × (1±10%)	3.5 × (1±10%)	4 × (1±10%)
Installation mode	Integrated, split							
Rated control power source voltage Us(V)	230/240 50Hz							
Control voltage range	85%~110%Ue							

# NXZ(H)M Series ATS

## Functions and characteristics

**Table of main functional parameters of NXZ (H) M controller**

Function	Model	A type (standard)	B type (intelligent)
Manual/automatic transfer		■	■
<b>Main contact positions</b>			
Normal position		■	■
Alternative position		■	■
Off-position		■	■
<b>Automatic control</b>			
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		■	■
Undervoltage transfer		■	■
Overvoltage transfer		■	■
Delay adjustable		■	■
Transfer delay		0s~180s adjustable	0s~180s adjustable
Return delay		0s~180s adjustable	0s~180s adjustable
Generator control		-	■
Fire control linkage		■	■
Fire control feedback		■	■
<b>Indication</b>			
Switching-on/switching-off/off-position		■	■
Normal/alternative supply indication		■	■
Parameter setting indication		■	■
Fault tripping indication		■	■
<b>Others</b>			
Communication function		Optional	Optional
Display module		■ LED	■ LED

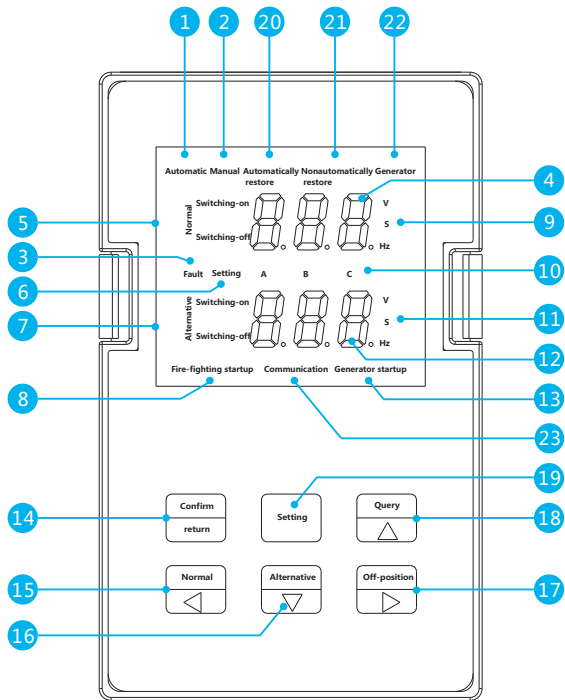
# NXZ(H)M Series ATS

## Functions and characteristics

### Functional description of NXZ (H) M

### Operation interface of the display module of controller

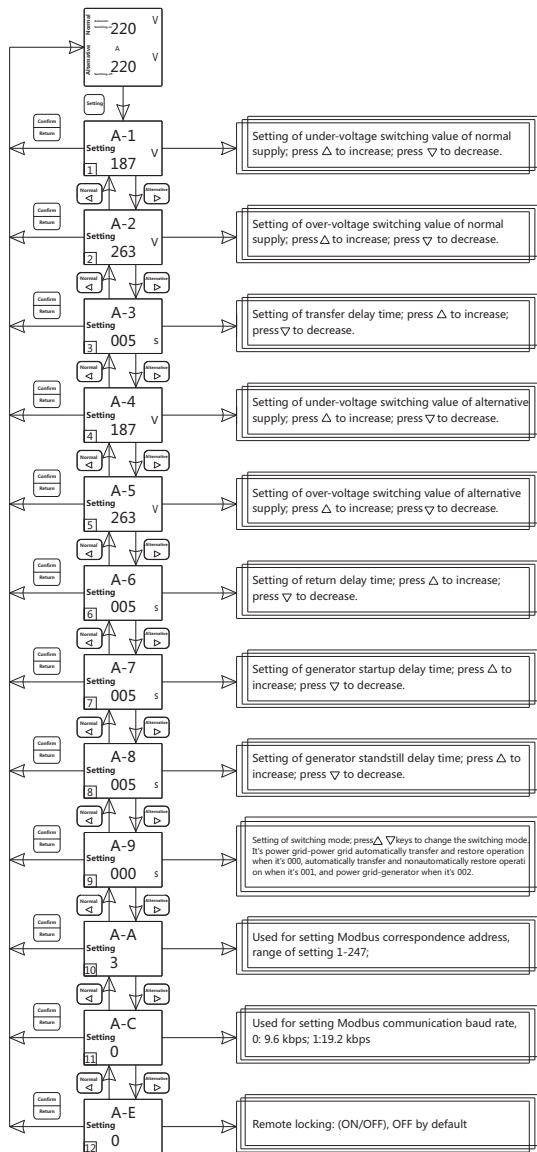
Figure 3



- 1 Indication of automatic operation mode;
- 2 Indication of manual operation mode;
- 3 Fault indication: This light will be on when switch fault or breaker tripping caused by load short circuit (class PC controller doesn't have such function);
- 4 The display area of voltage parameters of normal supply shows the voltage parameters of normal supply and the transfer delay time during working, and shows the symbol in setting mode;
- 5 Indication of switching-on, switching-off for the normal supply; when normal supply is failure, indicator light of "normal" flash;
- 6 Setting status indication;
- 7 Indication of switching-on, switching-off for the alternative supply; when alternative is failure, indicator light of "alternative" flash;
- 8 Indication of startup of fire control linkage;
- 9 Voltage, time, and frequency unit for the normal supply ;
- 10 A, B, C phase;
- 11 Voltage, time, and frequency unit for the alternative supply;
- 12 The display area of voltage parameters of alternative supply shows the voltage parameters of alternative supply and the transfer delay time during working, and shows the symbol in setting mode;
- 13 Indication of generator startup;
- 14 Confirm/return button: It means saving and exit in setting mode; It means returning to the normal working state in fire control linkage mode;
- 15 Normal supply switching button: On the manual control mode, if the normal supply is normal, press this button to compulsorily switch to normal supply; On setting mode, this button is used for paging up;
- 16 Alternative supply switching button: On the manual control mode, if the alternative supply is normal, press this button to compulsorily switch to alternative supply; On setting mode, this button is used for paging down;
- 17 Trip button: On the manual control mode, if any one of the two power sources is normal, press this button to switch to the switching-off position; On setting mode, this button is used to decrease value in parameter setting;
- 18 Fault query button: when there is fault indication on the display screen, press this button to query the fault code ; On setting state, this button is used to increase value in parameter setting;
- 19 Setting button: press this button to enter the parameter setting menu of the controller;
- 20 Indication of automatically transfer and restore operation mode;
- 21 Indication of automatically transfer and nonautomatically restore operation mode;
- 22 Indication of generator (automatically transfer and restore operation);
- 23 Indication of communication state.

## Parameter setting of the display module of controller

Figure 4



### Operation interface for parameter setting of controller

- 1 Setting of under-voltage switching value: Default to 187V ;user-settable 160V-200V;
- 2 Setting of over-voltage switching value: Default to 263V ; user-settable 240V-290V;
- 3 Transfer delay setting: Default to 5s; user-settable 0s-180s;
- 4 Return delay setting: Default to 5s; user-settable 0s-180s;
- 5 Generator startup delay setting: Default to 5s; user-settable 0s-180s;
- 6 Generator standstill delay setting: Default to 5s; user-settable 0s-180s;

#### ■ Note of buttons:

Pressure setup key when the controller is working, and the screen shows the parameter setting menu. Press " $\triangleleft$ " " $\triangleright$ " in the setting menu to turn up or down. Press "Confirm/return" key to exit from menu setting; press " $\nabla$ " " $\Delta$ " to revise parameter.

# NXZ(H)M Series ATS

## Mode of connection of the main part and controller

### Mode of connection of NXZHB

- Product wiring

The incoming line is connected from the top of product; the outgoing line is connected from the bottom of product; the product can be installed vertically or horizontally.

Wiring as follows. The power phase sequence shall be correct; in particular, N pole shall not be wrongly connected.

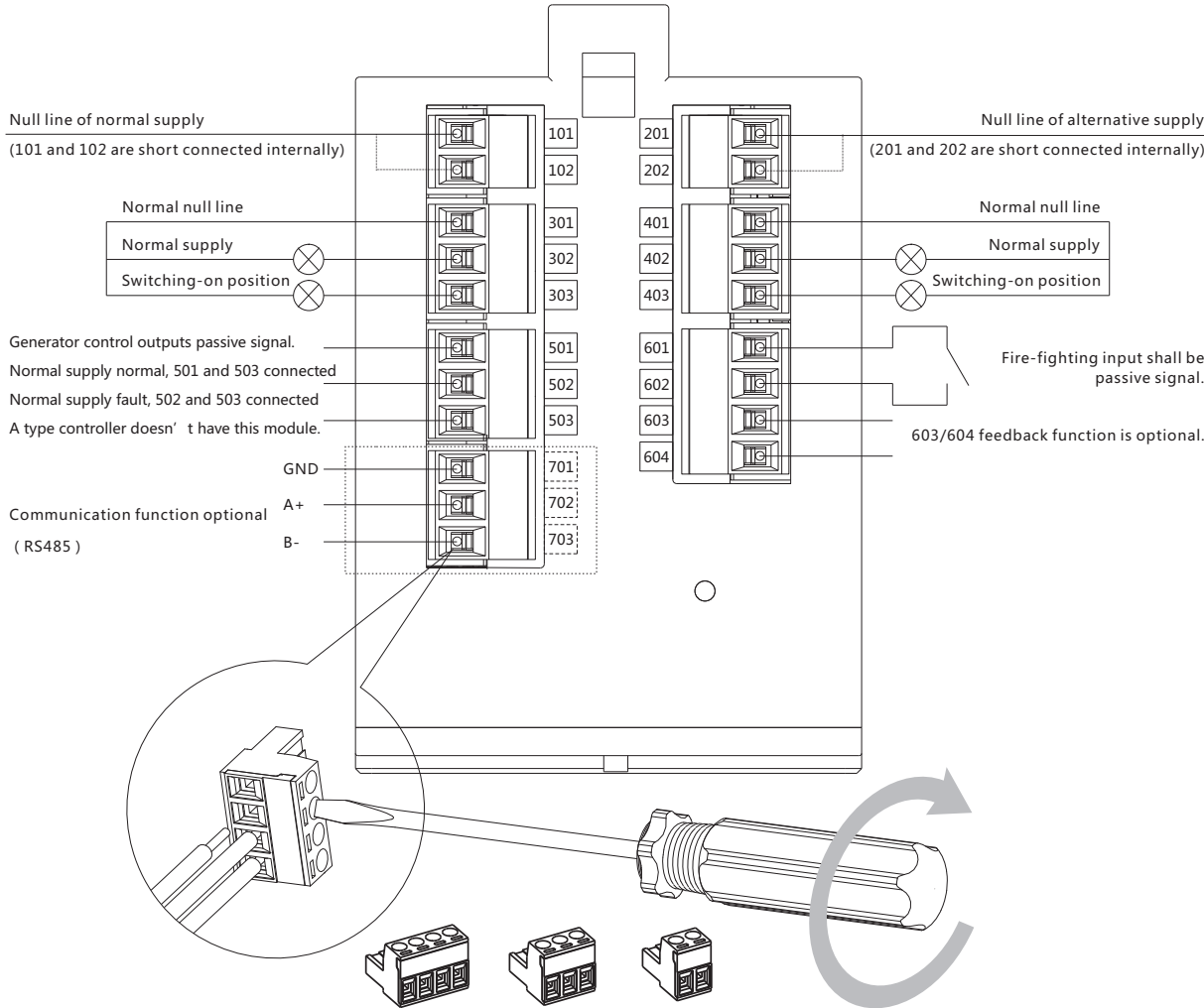
The connecting wire (electric cable) adopts single core Polyvinyl chloride (PVC) insulated conductor or copper bar of the equivalent effect. Advice as follows:

### Cross-sectional area of copper conductor

Safe ampacity (A)	20	25	32	40	50	63
Cross-sectional area of copper conductor (mm <sup>2</sup> )	2.5	4	6	10	10	16

## Signal and control terminal wiring

Figure 7





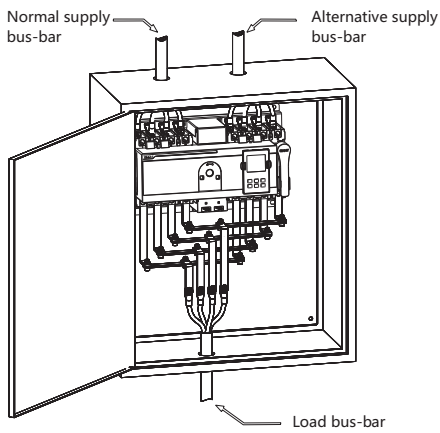
# NXZ(H)M Series ATS

## Mode of connection of the main part and controller

### Mode of connection of NXZHM

- Product incoming line mode: incoming line at the top of product; outgoing line at the bottom of product
- Installation mode: vertically or horizontally

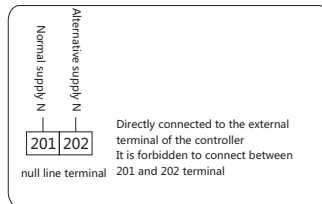
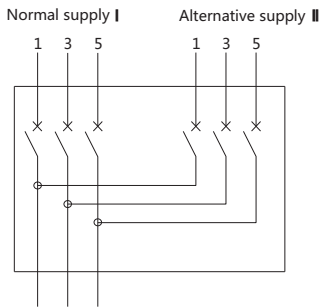
Figure 8



### Product wiring

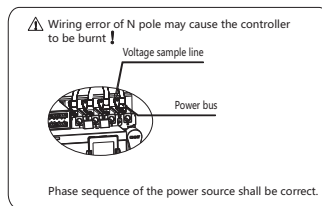
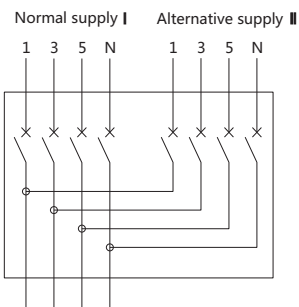
#### 3P

Figure 9



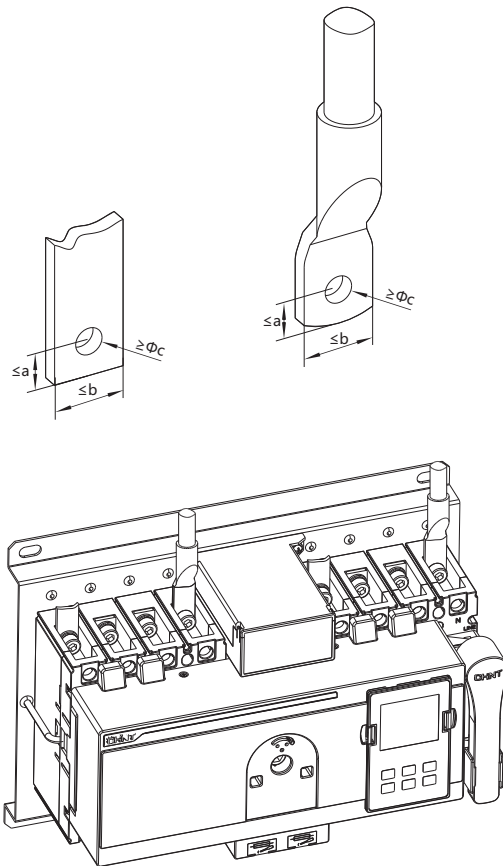
#### 4P

Figure 10



## Wire connection

Figure 11



Unit: mm

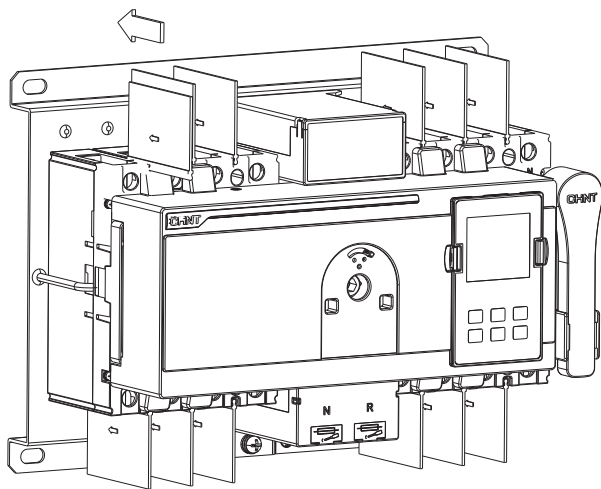
Product code	a	b	c
MXZ(H)M-63, 125	6.5	14	5.5 ( ≤63A )
	7.5	17	6.5 ( >63A )
MXZ(H)M-160	7.5	14.5	8.5
MXZ(H)M-250, 320	10	23	8.5
MXZ(H)M-400, 630	10.5	30.5	10.5
MXZ(H)M-800	15	43	14

# NXZ(H)M Series ATS

## Mode of connection of the main part and controller

### Installation of interphase barrier

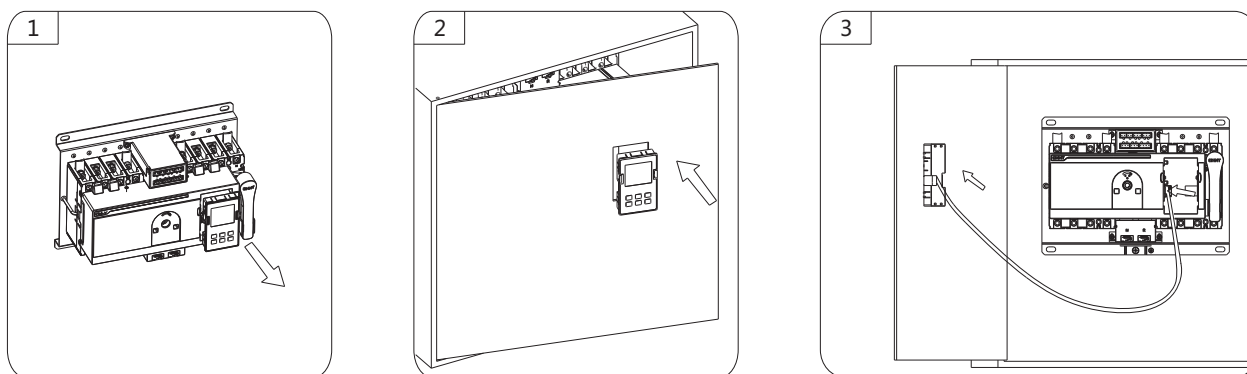
Figure 12



Note: The interphase barrier for NXZ(H)M-160 is preassembled before delivery.

### Split type installation of the display module (cabinet door)

Figure 13



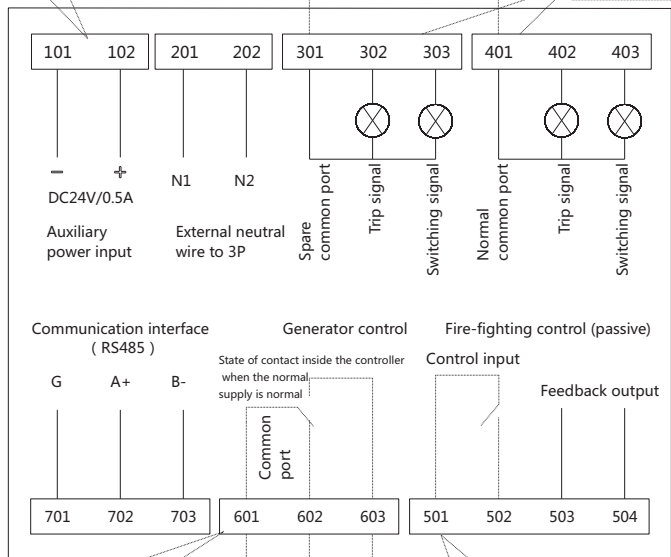
## Signal and control terminal wiring

Figure 14

Only used in power grid-generator mode; If there is no connection, the generator startup delay automatically restores to 0s.

It is prohibited to connect between two pairs of terminals; otherwise, the controller will be burnt.

Note: The output is active AC230V/0.5A.



Only used in power grid-generator mode; connected with the generator based on required; when the normal supply is failure, 601 and 603 will be connected through.

connect to generator  
The remote port

Terminals 501 and 502 can only be connected with passive signals; passive signals can be input after switchover by a relay. After fire-fighting is on off-position, terminals 503 and 504 will be connected.

For the automatic transfer switch under automatic operation state, after the fire-fighting signals are cancelled, the toggle switch shall be switched to "manual"; then press "confirm/return" to return to the normal state;

For the automatic transfer switch under the manual operation state, press "confirm/return" to return to the normal state.

Note: Type A controller has no fire-fighting feedback and generator control function.

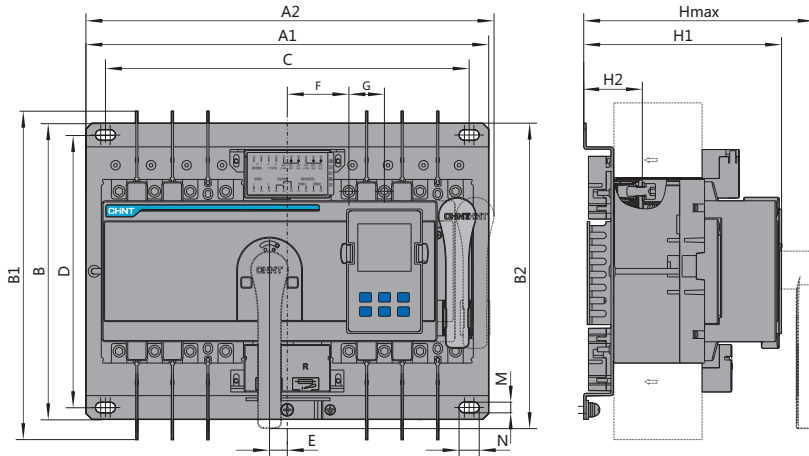
# NXZ(H)M Series ATS

## Overall and installation dimension

### Overall and installation dimension of NXZHM

### Overall and installation dimension

Figure 16



Take 4p product as the example

Unit: mm

Product code	A		B	B1	B2	C	D	E		F		G	H		H1		H2		M	N
	4P	3P						4P	3P	S	H		S	H	S	H				
NXZ(H)M-63, 125	300	312	240	230	223	267	220	12.5	0	51.5	64	25	178	190	151	161	47	56	9	17
NXZ(H)M-160	340	345	250	245	240	307	230	15	0	52	67	30	167	195	152	180	50	50	9	17
NXZ(H)M-250, 320	390	393	250	367	240	357	230	17.5	0	60	77.5	35	181	216	155	190	49	50	9	17
NXZ(H)M-400, 630	535	540	334	464	342	475	304	24	0	84	108	44	234	234	198	198	66	66	11	26
NXZ(H)M-800	660	663	344	477	344	600	314	29	0	106	135	58	228	228	203	203	68	68	11	26

Note: the dimension H is only for reference.

Overall dimension of split type module (unit: mm)

Figure 17

