

CHINT

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NH40SZ Series
Automatic Transfer Switch
User Instruction

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User Instruction

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Standard: IEC 60947-6-1

Safety Warning

- ① Only professional technicians are allowed for installation and maintenance;
- ② It is strictly prohibited to install in the environment containing inflammable, explosive gas and moist condensation.
- ③ Power must be turned off when installing, maintaining and maintaining the product.
- ④ Do not touch the conductive part of the product during working.

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1 Purpose of Use

NH40SZ series automatic transfer switch (TSE type): PC class. The product enables automatic and manual transfer from common power supply to standby power supply. During transfer, the load power supply must be disconnected. The product is suitable for applications that require high quality dual power supplies.

2 Key Technical Parameters

Table 1 Key Technical Parameters

Ambient conditions						
Ambient temp. (°C)	-35°C ~ +70°C					
Hot and humid atmospheric conditions	+40°C, relative humidity 50%; up to 90% at +20°C ;					
Altitude	No influence below 2,000m					
Pollution class/installation category	Class 3					
Technical parameters						
Rated operating current Ie (A)	16~100	125~160	200~250	315~630	800~1600	2000~3150
Rated operating voltage Ue (V)	400					
Application category	AC-33iB					
Rated insulation voltage Ui(V)	1000					
Rated frequency (Hz)	50					
Rated impulse withstand voltage(kV)	12	8				
Rated short time withstand current Icw and its duration	8kA/1s	10kA/1s	12.6kA/1s	50kA/1s		
Rated short circuit making capacity Icm	13.6kA	17kA	25.2kA	105kA		
Contact transfer time (s)	0.4~0.8	0.5~1	0.4~0.8	0.2~0.7	0.8±20%	1.0±10%
Operating transfer time (s)	1.7±10% (normal type)	2±20% (normal type)	1.3±20% (normal type)	(0.6~0.8)±10% (normal type)	2.1±10% (normal type)	2.6±10% (normal type)
	1.8±10% (protective type)	2.8±20% (protective type)	1.7±20% (protective type)	1.1±20% (protective type)	6.5±10% (protective type)	6.5±10% (protective type)
Return transfer time (s)	2.0±10% (normal type)	2.3±20% (normal type)	1.6±20%	1.2±20%	2.6±10% (normal type)	3.0±10% (normal type)
	1.8±10% (protective type)	2.7±20% (protective type)			6.0±10% (protective type)	3.5±10% (protective type)
Break-time (s)	(0.4~0.8)±20%	240ms±20%	350ms±20%	500ms±20%	800ms±20%	1.0±10%
Power deviation (V)	160±15 (relative to earth)	(80%×230)±10%(relative to earth)				

3 Outline and Installation Dimensions

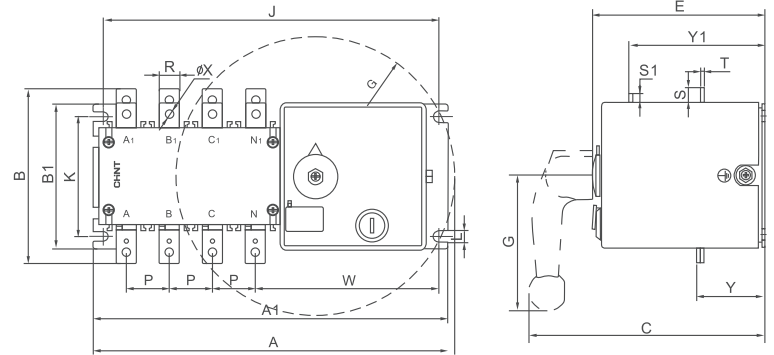
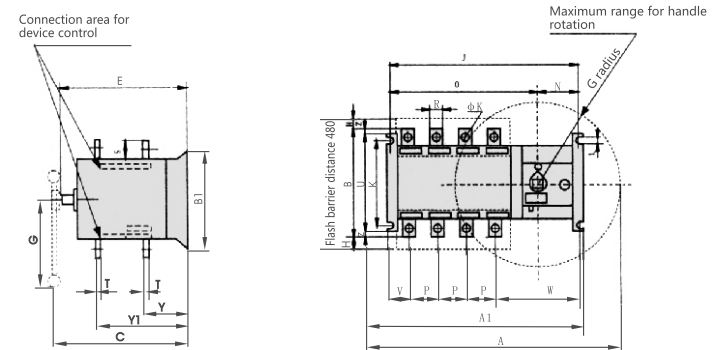


Figure 1 NH40-16~630SZ

Table 2 Size table

Unit: mm

Spec	Dimensions																		
	A	A1	B	B1	C	E	G	J	K	L	P	R	S	S1	T	W	φX	Y	Y1
16~100A	270	252	125	100	170	127	95	240	84	7	30	14	28	18	2.5	130	6	48	95
16~100A I II III	280	260	125	100	180	135	95	240	84	7	30	14	28	18	2.5	135	6	48	95
125~160/4	330	325	156	134	225	157	125	305	78/108	7	36	20	35	25	3	165	8.5	58	119
200~250/4	-	398	180	134	250	185	125	375	78/108	7	50	25	35	30	3	195	10.5	70	145
315~630/4	520	476	278	210	340	250	165	445	180	11	65	40	58	50	5	205	12.5	90	195
125~160/3	300	295	156	134	225	157	125	275	78/108	7	36	20	35	25	3	165	8.5	58	119
200~250/3	-	350	180	134	250	185	125	330	78/108	7	50	25	35	30	3	195	10.5	70	145
315~630/3	465	418	278	210	340	250	165	390	180	11	65	40	58	50	5	205	12.5	90	195



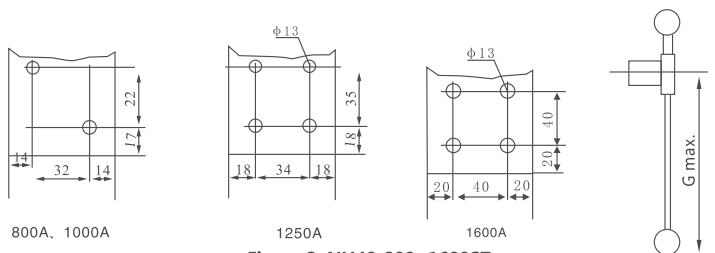


Figure 2 NH40-800~1600SZ

Table 3 Size table Unit: mm

Specifications	Dimensions																							
	A	A1	B	B1	C	E	G	H	J	K	L	N	O	P	R	S	S1	T	U	V	W	Y	Y1	Z
800/3	892	518	380	250	370	321	470	65	500	220	11	85	405	120	60	58	100	8	250	60.5	188.5	107	249	40
1000/3	892	518	380	250	370	321	470	65	500	220	11	85	405	120	60	58	100	8	250	60.5	188.5	107	249	40
1250/3	892	518	380	250	370	321	470	65	500	220	11	85	405	120	70	78	100	8	250	60.5	188.5	107	249	40
1600/3	892	518	380	250	370	321	470	65	500	220	11	85	405	120	80	78	100	8	250	60.5	188.5	107	253	40
800/4	1007	633	380	250	370	321	470	65	609	220	11	85	524	120	60	58	100	8	250	60.5	188.5	107	249	40
1000/4	1007	633	380	250	370	321	470	65	609	220	11	85	524	120	60	58	100	8	250	60.5	188.5	107	249	40
1250/4	1007	633	380	250	370	321	470	65	609	220	11	85	524	120	70	78	100	8	250	60.5	188.5	107	249	40
1600/4	1007	633	380	250	370	321	470	65	609	220	11	85	524	120	80	78	100	8	250	60.5	188.5	107	249	40

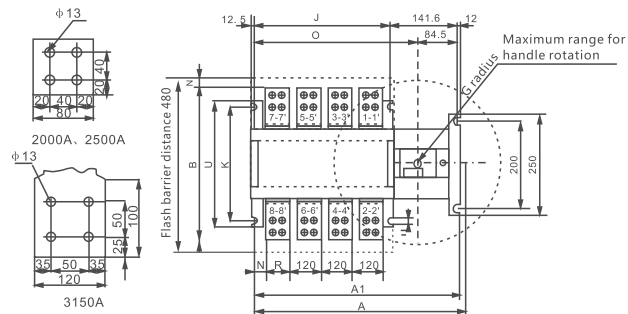
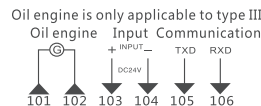


Figure 3 NH40-2000~3150SZ

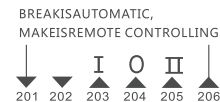
Table 4 Size table Unit: mm

Specifications	Dimensions																						
	A	A1	B	C	E	G	H	J	K	L	N	O	P	R	S	T	U	V	Y1	Y2	Y3		
2000/3	892	518	455	562	495	470	53	359	220	11	84.5	405	120	80	100	10	250	33	137	100	137		
2500/3	892	518	455	562	495	470	53	359	220	11	84.5	405	120	80	100	10	250	33	137	100	137		
3150/3	892	518	505	562	495	470	28	359	220	11	84.5	405	120	120	120	12	250	13	142	90	142		
2000/4	1007	633	455	562	495	470	53	470	220	11	84.5	524	120	80	100	10	250	33	237	\	\		
2500/4	1007	633	455	562	495	470	53	470	220	11	84.5	524	120	80	100	10	250	33	237	\	\		
3150/4	1007	633	505	562	495	470	28	470	220	11	84.5	524	120	120	120	12	250	13	142	90	142		

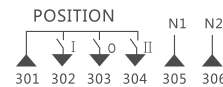
Control circuit wiring diagram



Oil engine is only applicable to type III
Oil engine Input Communication
101, 102 – signal output for starting oil engine (note: only applicable to type III)
103, 104 – firefighting (24V) input, breaking for both circuits if set to “zero” compulsorily
105, 106 – reserved



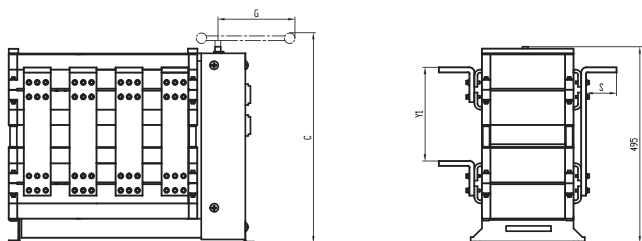
BREAKISAUTOMATIC, MAKEISREMOTE CONTROLLING
201, 203 – remote-controlled make switch for line I
202, 204 – remote-controlled make switch for line O
202, 205 – remote-controlled make switch for line II
201, 206 – automatic breaking; the short circuit is remote controlled



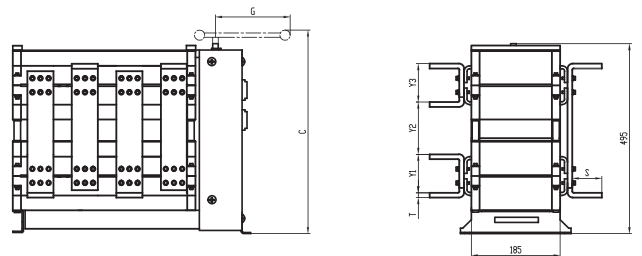
POSITION
301, 302 – signal indication for line I
301, 303 - signal indication for line I
301, 304 - signal indication for line II
305 - connection end of the null line of “N1” line I (note: only applicable to Class 3)
306 - connection end of the null line of “N2” line II (note: only applicable to Class 3)



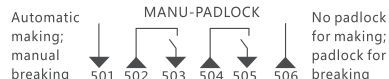
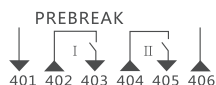
POSITION
302, 303 –signal indication for line I
302, 304 - signal indication for line I
302, 305 - signal indication for line II



NH40-2000~2500/SZ



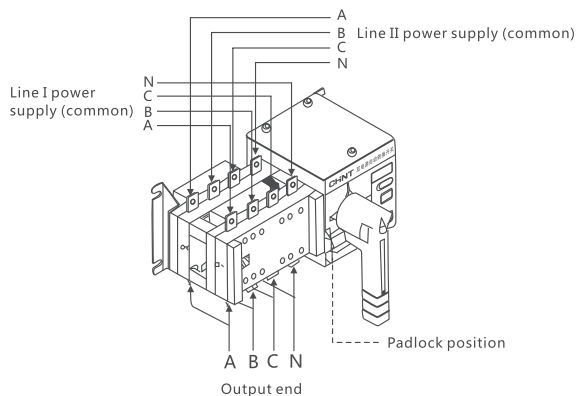
NH40-3150/SZ



402, 403 – operating status indication switch reserved for line I
 404, 405 - operating status indication switch reserved for line II
 401, 406 – reserved temporarily

502, 503 – electrical padlock indicates auto/manual operation method
 504, 505 - padlock indication, available for any position (I, 0, II)
 501, 506 – reserved temporarily

4 Installation, Commissioning and Operation



1. Connect the common power supply (I) and standby power supply (II) to the corresponding busbars of the product; conduct fully automatic commissioning:

A: Both lines are live and line I of the switch is connected; B: Common power is off, standby power is on, and line II of the switch is connected; C: Common power is on, and line I of the switch is connected. (See the indicating arrow on switch panel.); when line I or line II of the switch is connected, the indicator on the panel will indicate correspondingly.

2. Before conducting inspection and repair, rotate the electrical key from auto position to manual position. Use the operation handle to turn the switch to “0” position, then pull up the padlock mechanism to lock the switch (mechanical padlock prevents the switch from being operated both electrically and manually).

3. After the commissioning is finished, disconnect the power first, then use the handle to turn the switch to “0” position.

5 Maintenance

Table 5 Analysis and Troubleshooting of Common Faults

Symptoms	Cause analysis	Troubleshooting method
The switch does not transfer automatically	The key is at manual position.	Turn the key to auto position
	Phase failure, phase missing or low voltage in input power.	Use multimeter to check the tightness of the lines of phase A, B, C and N
Circuit board fault	Circuit board is loosened.	Check the tightness of circuit board screws
	Circuit board is burnt.	Replace circuit board
The switch sends out noise	Relay cannot fully close due to low voltage.	Use multimeter to check the voltage of each phase
Handle does not move	Motor is stuck.	Replace with motor of same specifications
The indicating arrow does not fully reach the position	The microswitch breaks the motor supply circuit prematurely.	Check the input power line
		Adjust the contact of the microswitch
The indicator is not on.	The indicator or its resistance is burnt due to instable voltage.	Replace the indicator or its resistance.

Please remove the dust on the surface of the enclosure on a regular basis (preferably every three months) to ensure good insulation. Also, remember to conduct transfer tests to make sure the product can function normally.

6 Environmental Protection

In order to protect the environment, when the product or its parts are scrapped, please properly dispose of them as industrial wastes; or be sent to the recycling station for assortment, dismantling and recycling.

CHNT

QC PASS

NH40SZ Series
Automatic Transfer Switch
IEC 60947-6-1

Check 08

Test date: Please see the packing

ZHEJIANG CHINT ELECTRICS CO., LTD.