ZNERGY MAGNUS SYSTEMA

Head Office: Level 36 Riparian Plaza, 71 Eagle Street

Brisbane 4000 QLD Australia

E-mail:sales@znergy.com.au

http://www.znergy.com.au

Ph:1300 347 922

Aryam Australia Group

Znergy
Australia

LOAD ISOLATION SWITCH DUAL POWER AUTOMATIC TRANSFER SWITCH (ISOLATION) > > >

ZNERGY MAGNUS SYSTEMA

Aryam Australia Group ARYAM

Company Profile

Znergy Magnus Systema is a global electrical component,electrical cable, solar & renewable energy component manufacturer.It is proudly a part of the Aryam Australia Group.

Invested with cutting edge technology, we manufacture Low Voltage to High Voltage and any specialist cables in Mining, Fire, LSZH, Shipping,Instrumentation, Oil & Petro-chemical, Gas, Sola r,Undersea submersible and industrial cables.

Our Znergy®design for electrical components is driven by our belief in technology for people. It is engineered with innovation to provide quality and benefit for an industry driven economy.We design and manufacture distribution boards, protection and switching devices, signaling & power interface,energy and lighting control components, circuit breakers and high voltage transformer.

In the renewable sector, Aryam Energy (Group Partner) is a professional solar power products manufacturer and a leader in the field of solar power system and solar lighting solutions, which has undertaken over 50,000 successful projects in more than 56 countries all over the world. Since 2006,Aryam Energy has been producing innovative and cost-effective solar power products, which created unsurpassed levels of high-efficiency and reliability on 11 technology patents. Aryam Energy's main products include solar power system and solar street light and related PV products such as PV modules,PV rack system, PV controller and PV inverter. ISO,CE, ROHS, TUV and SGS certify all products.

In partnership with a larger global affiliation,the group provides state of art manufacturing and design. Our ISO Standard approved plants proudly employ more than 1500 permanent staff, and has an annual group turnover of $USD 2.2 Billion in electrical & solar sales.

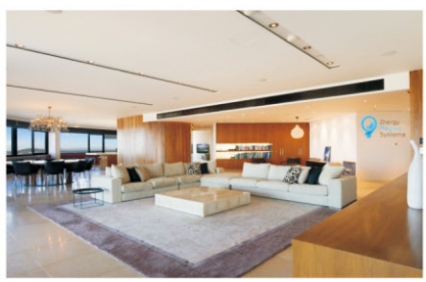
Our client base now extends in supplying to some of the largest multinationals, as well as projects across Australia/New Zealand, EU, North America, Africa and the greater Asia Pacific.

The group strategic partnership of Global 500 enterprise is worth USD $35 Billion in turnover. We also specialize in Petro-chemical and General- purpose Equipment, Metallurgy, Solar & Wind Power.

With global EPC capabilities, the group can facilitate any small to large or turnkey project globally. We work closely with clients to facilitate business and meet necessary KPIs.

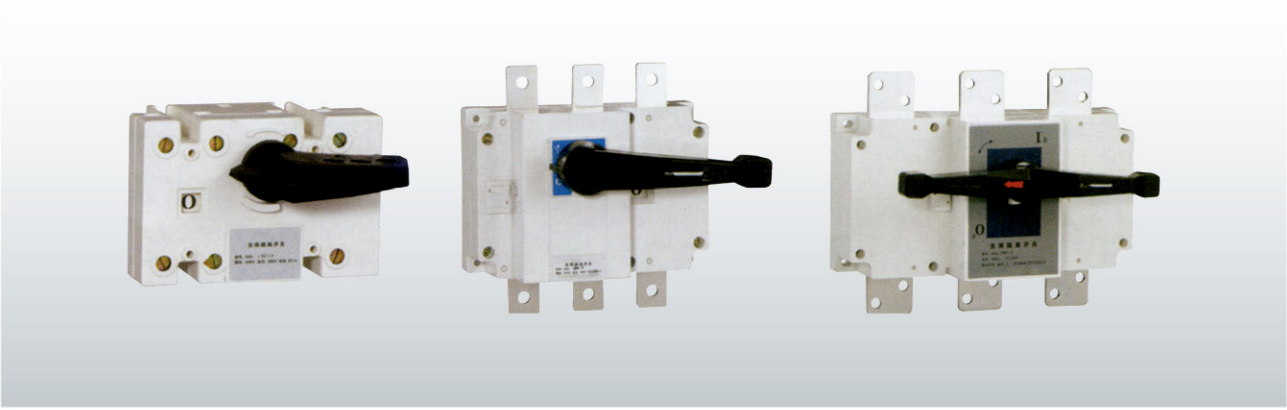
Znergy's vision is to be a dynamic organization that delivers innovative manufacturing solutions for a sustainable future. Our goal is to conduct business in a safe, ethical and environmentally responsible manner.

As part of the Aryam Australia Group, our strength is to provide solutions to rapidly changing global economy.We are focus driven in innovative & technologically superior designs.



Contents

HGL Series



Application scope

HGL series load isolation witch mainly suitable for AC 50Hz, rated voltage 660V, DC rated voltage up to 440V, rated current up to 3,150A. The switch is used in the infrequent making and breaking circuit.

Example of model selection

HGLZ2–160A/422JFU–380V In 125A Change over load isolation switch, inlet, AC rated voltage 380V， conventional thermal current 160A, rated current 125A, 4 poles, operation outside the board, auxiliary contact, NO+NC.

Model & Meaning

H GL □ – □A / □ JK □ B H

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

NO.	Implication
①	Code of company.
②	Code of load isolation switch.
③	Conventicnal thermal current. Z tands for change–over load isolation switch (Z1–outlet, 22–inlet) C tands for side operated load isolation switch.
④	Number of poles: 3 poles, 4 poles (3 poles+on andoff neutral pole)
⑤	Operation outside, no note for front operation.
⑥	The window for direct observing the contact, do not mark without need.
⑦	Functional code of auxiliary contact (as show in the table), do not mark without need.
⑧	The connection behind the board. Connection in front of board is not marked.
⑨	Operation behind the board, do not mark without need.

One No One NC	F11	F1NO+F1NC
Two No Two NC	F12	F2NO+F2NC

HGL Series

Characteristic of products

- The elastic–accumulating accelerating mechanism for instant release realizes the rapid making and breaking (13.8m/s), having no relationship with the speed of the operating handle, and increasing greatly the capability of extinguishing electric arc.
- The shell made of unsaturated polyester resin reinforced by glass fibre possesses excellent performances of fire resis–tance, dielectric property, carbonation resistance and short resistance.
- Parallel double gap contact possesses self cleaning functions.
- All the contact materials are copper alloy plated with silver, and possess two separation contact surfaces.

  Large clearance of insulation.

  Be on "0", the handle can be locked by three locks at the same time to avoid error operation.

Principal technical parameter

Table 1

Conventional thermal current Ith (A)			630A		100A		160A		250A	
Rated current In (A)			40	63	80	100	125	160	200	250
Rated insulation voltage Ui (V) (installation type IV)			690	690	690	690	690	690	690	690
Dielectric strength (V)			5000	5000	5000	5000	5000	5000	5000	5000
Uimp kV Rated surge–resistant voltage Uimp kV (installed category (V)			6	6	6	6	6	6	6	6
Rated working current Ie (A)	380V	AC–21B	40	63	80	80	125	160	200	250
		AC–22B	40	63	80	80	125	160	200	250
		AC–23B	40	50	80	80	125	160	200	250
	660V	AC–21B	40	50	80	80	125	160	200	250
		AC–22B	32	32	50	50	125	160	160	160
		AC–23B	25	25	40	40	80	80	100	125
Motor power P (kW)		380V	18.5	25	40	40	63	80	100	132
		660V	22	22	33	33	75	75	90	110
Rated short–time withstand current Icw (kA Rms) O.1s/Is			2	2	2	2	8	8	12	12
Rated breaking capability Icn (A Rms) AC23 380V			320	504	640	800	1000	1000	1600	1600
Rated making capability Icm (A Rms) AC23 380V			400	630	800	1000	1250	1600	2000	2500
Rated short–current making capability Icm (kA peak value)			2.84	2.84	2.84	2.84	13.6	13.6	17	17
Mechanical life (number of cyclic operation)			1700	1700	1700	1700	1400	1400	1400	1400
Electrical life (number of cyclic operation)			300	300	300	300	200	200	200	200
Operation moment (Nm)			1.2	1.2	1.2	1.2	6.5	6.5	10	10
Weight (kg)		3 poles	0.37	0.37	0.37	0.37	1.3	1.3	2.2	2.2
		4 poles	0.41	0.41	0.41	0.41	1.5	1.5	2.6	2.6

HGL Series

Table 2

Conventional thermal current Ith (A)			630A				1600A			3150A		
Rated current In (A)			315	400	500	630	1000	1250	1600	2000	2500	3150
Rated insulation voltage Ui (V) (installation type IV)			1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Dielectric strength (V)			8000	8000	8000	8000	10000	10000	10000	10000	10000	10000
Rated surge-resistant voltage Uimp kV (installed category IV)			6	6	6	6	6	6	6	6	6	6
Rated working current Ie (A)	380V	AC-21B	315	400	500	630	1000	1250	1600	2000	2500	3150
		AC-22B	315	400	500	630	1000	1250	1600	2000	2500	3150
		AC-23B	315	400	500	630						
	660V	AC-21B	315	400	400	500	1000	1600	1600	2000	2500	2500
		AC-22B	315	315	315	315	800	800	800	1000	1250	1600
		AC-23B										
Motor power P (kW)		380V	160	220	280	315	560	560	560	710	710	710
		660V	185	185	185	185	475	475	475	750	750	750
Rated short-time withstand current Icw (kA Rms) O.1s/Is			25	25	25	25	50	50	50	50	50	50
Rated breaking capability Icn (A Rms) AC23 380V			2520	3200	4000	5040	3000	3750	4800	6000	7500	9450
Rated making capability Icm (A Rms) AC23 380V			3150	4000	5000	6300	3000	3750	4800	6000	7500	9450
Rated short-current making capability Icm (kA peak value)			40	40	40	40	70	70	70	105	105	105
Mechanical life (number of cyclic operation)			800	800	800	800	500	500	500	300	300	300
Electrical life (number of cyclic operation)			200	200	200	200	100	100	100	100	100	100
Operation moment (Nm)			14.5	14.5	14.5	14.5	37	37	60	60	60	60
Weight (kg)		3 poles	4.3	4.3	4.7	4.7	10.5	10.5	16	25.5	25.5	31
		4 poles	5.4	5.4	6	6	13	13	20	37.5	37.5	51.5

Conformed standard

■ International standard

IEC60947-1 (1998) *Low-voltage switchgear and controlgear, part one: General Rules.*

IEC60947-3 (1999) *Low-voltage switchgear and controlgear. switches, disconnectors, switch-disconnectors and fuse-combination units.*

■ National standard

GB/T14048.1-2000 *Low-voltage switchgear and controlgear, part one: general Rules.*

GB/T14048.3-2000 *Low-voltage switchgear and controlgear. switches, disconnectors, switch-disconnectors and fuse-combi nation units.*

HGL Series

Normal work conditions and Installation conditions

- ◆ Ambient temperature: –50℃ –400℃ , relative humidity is not larger than 95%.
- ◆ Altitude: shall not exceed 2000m.
- ◆ No explosive dangerous medium environment.
- ◆ No rain and snow attack environment.

Note: if the load isolation switch is expected to be used in the condition that the ambient temperature is higher than +400℃ or is lower than –50℃ . customers should inform the manufactory

Load isolation switch of HGL-63~3150A

◆ 7 specifications of HGL load isolation switch from 63A to 3150A: Basic model of modularized design, 3 poles, 4 poles (3 poles+on and off neutral pole). It is suitable for the making and breaking operation of electric circuit or electric isolation. Switches over 1000A are only suitable for electric isolation.

◆ Mark window is set in the front side to indicate the on and off state of the contact.

◆ Rear observation window can be provided according to the demand to observe directly the on and off state of the contact, the window pattern please refering, refer to the back operational load isolation switch, HGL–63–1600A/H.

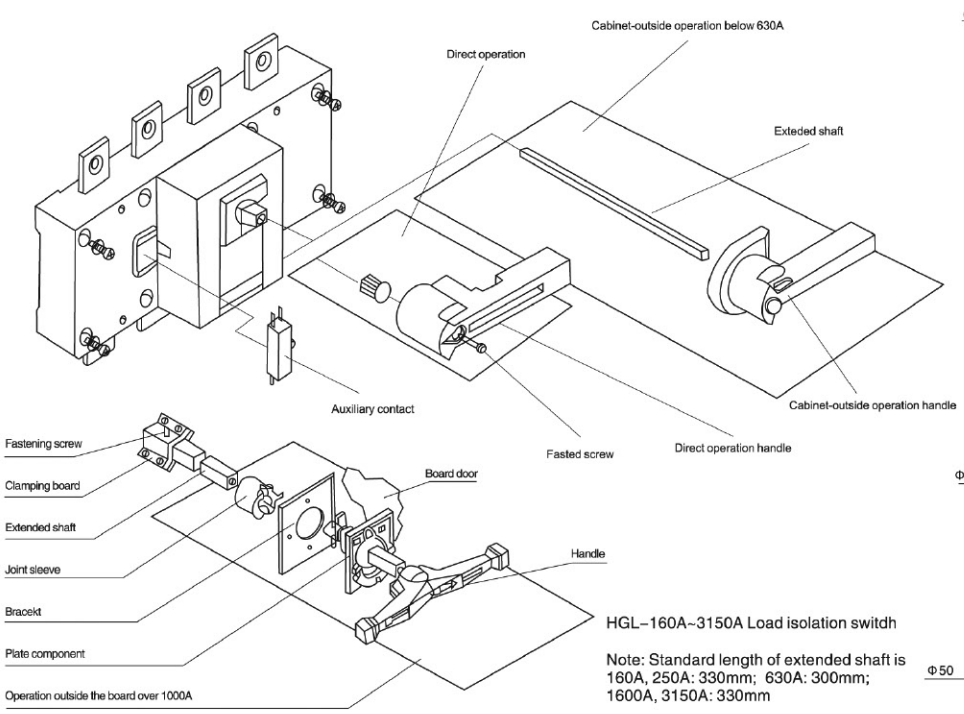
◆ Two groups of auxiliary contacts can be assembled.

◆ The electric cable insulating cover can be assembled.

Operation mode

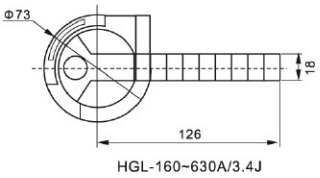
◆ Direct operation: The handle is installed in the middle of the switch.

◆ Operation outside the board: The handle is installed outside the door of distributing board.

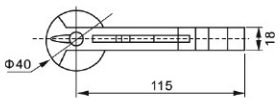


HGL–160A~3150A Load isolation switdh

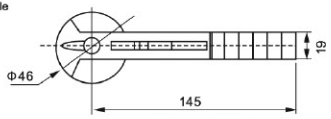
Note: Standard length of extended shaft is 160A, 250A: 330mm; 630A: 300mm; 1600A, 3150A: 330mm



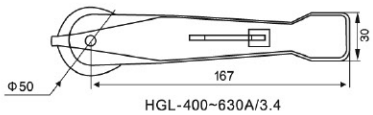
HGL-160~630A/3.4J



HGL-160A/3.4



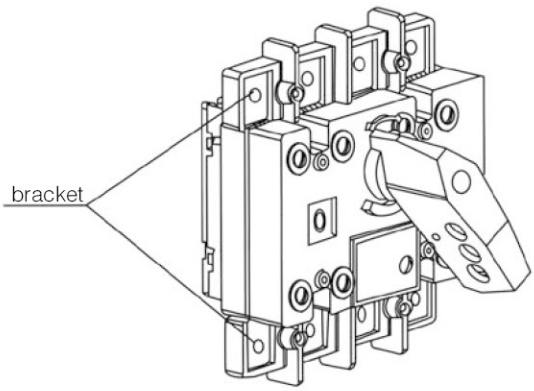
HGL-250A/3.4



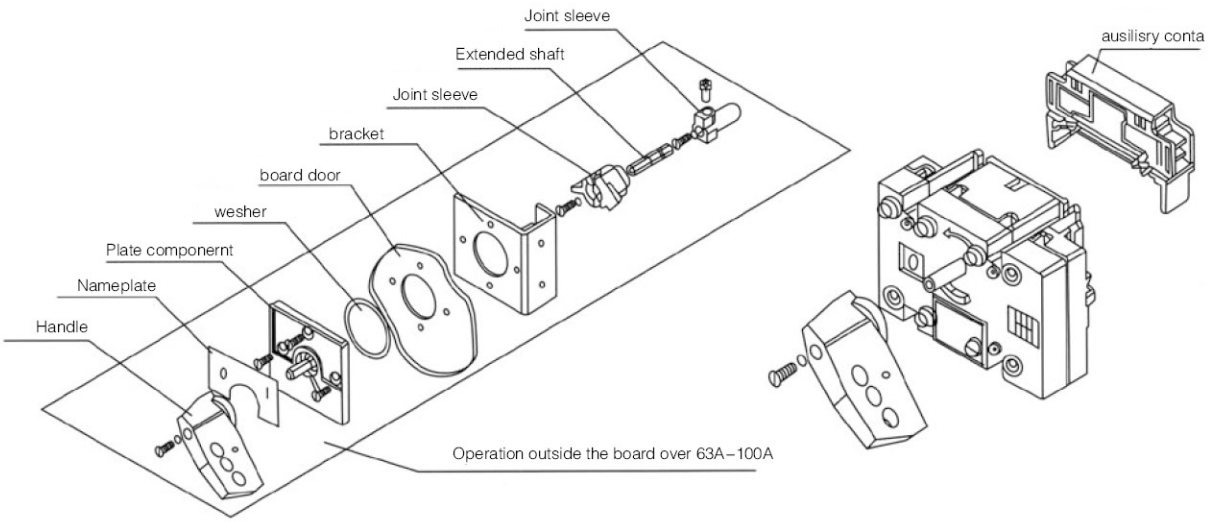
HGL-400~630A/3.4

Load isolation switch of HGL-63A~100A

- 63A~100A is suitable for the making and breaking of electrical isolation circuit or electric insulation.
- 63A~100A possesses 3 poles, and 4 poles (3 poles+on and off neutral pole).
- Two sets of auxiliary contacts can be assembled according to demand.
- Side operation, operation outside of the board can be assemble according to demand.



Note: Removing the bracket, it will be HGL–100A–630A loading isolation switch.

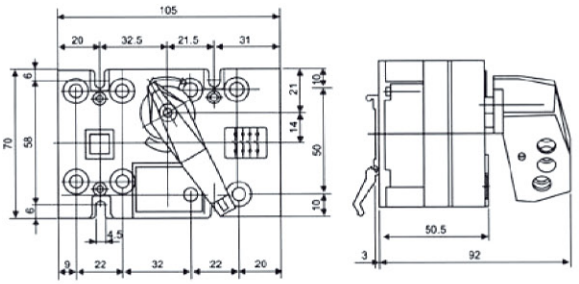


HGL Series

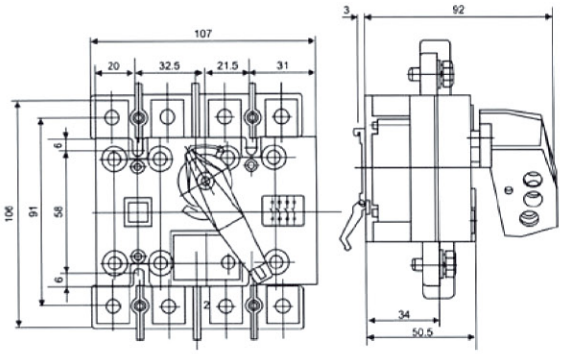
Overall & Installation Dimension

1. Outline dimenstion and installation dimension of HGL–63A~100A load isolation switch

Direct operation of HGL–63A

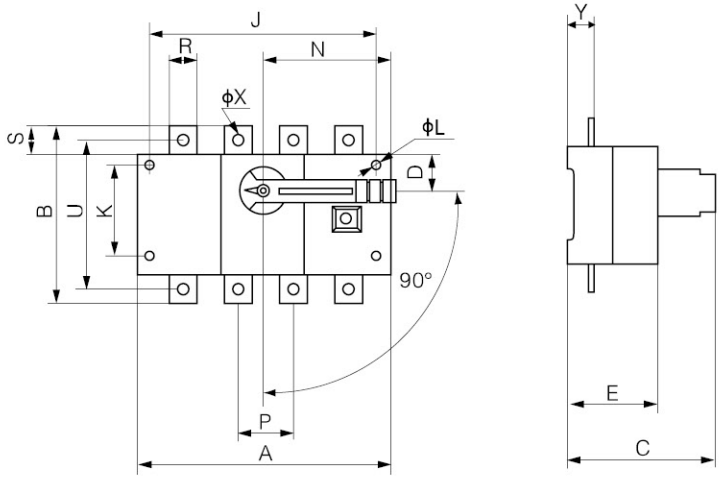


Direct operation of HGL–100A

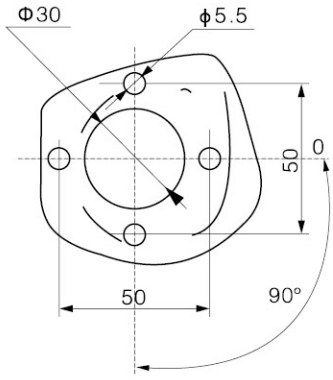


2. External dimension and installation dimension of HGL–160A~630A load isolation switch

Direct operation of HGL–160A~630A

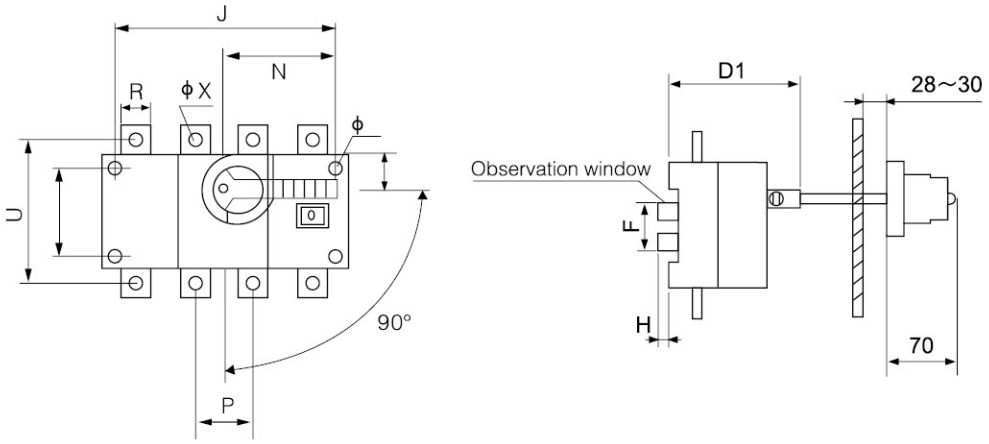


Installation size of handle seat outside board



HGL Series

Operation outside HGL-160A~630A/JK

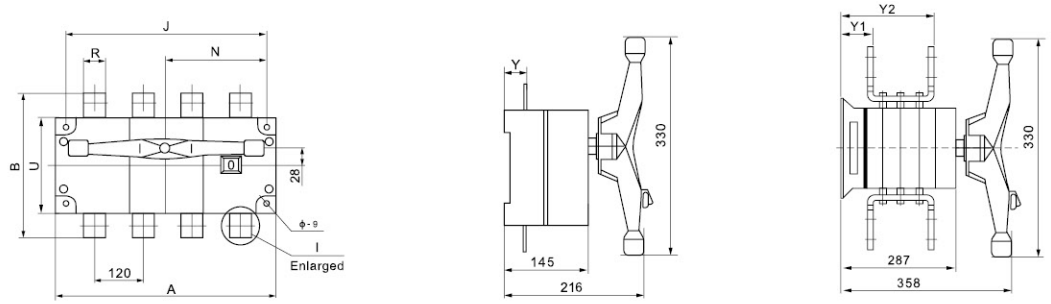


Specification	Size of bottom plate																	
In	A	B	C	D	D1	E	ΦL	J	K	N	P	R	S	U	ΦX	Y	F	H
125A/3	140	135	121	27	93	71	5.5	120	65	75	36	20	25	115	9	24	50	10
125A/4	170	135	121	27	93	71	5.5	150	65	75	36	20	25	115	9	24	50	10
160A/3	140	135	121	27	93	71	5.5	120	65	75	36	20	25	115	9	24	50	10
160A/4	170	135	121	27	93	71	5.5	150	65	75	36	20	25	115	9	24	50	10
200A/3	180	170	144	35	104	84	5.5	160	90	105	50	25	30	140	11	25	79	15
200A/4	230	170	144	35	104	84	5.5	210	90	105	50	25	30	140	11	25	79	15
250A/3	180	170	144	35	104	84	5.5	160	90	105	50	25	30	140	11	25	79	15
250A/4	230	170	144	35	104	84	5.5	210	90	105	50	25	30	140	11	25	79	15
315A/3	230	240	179	50	137	115	7	210	140	135	65	32	40	206	11	37	95	20
315A/4	290	240	179	50	137	115	7	270	140	135	65	32	40	206	11	37	95	20
400A/3	230	240	179	50	137	115	7	210	140	135	65	32	40	206	11	37	95	20
400A/4	290	240	179	50	137	115	7	270	140	135	65	32	40	206	11	37	95	20
500A/3	230	260	179	50	137	115	7	210	140	135	65	40	50	220	13	37.5	95	20
500A/4	290	260	179	50	137	115	7	270	140	135	65	40	50	220	13	37.5	95	20
630A/3	230	260	179	50	137	115	7	210	140	135	65	40	50	220	13	37.5	95	20
630A/4	290	260	179	50	137	115	7	270	140	135	65	40	50	220	13	37.5	95	20

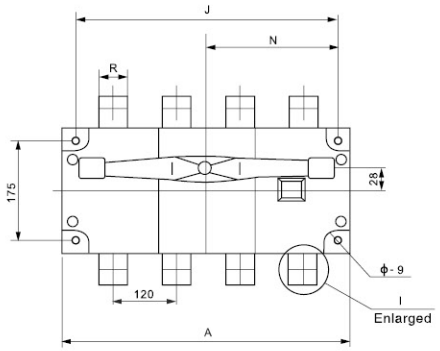
HGL Series

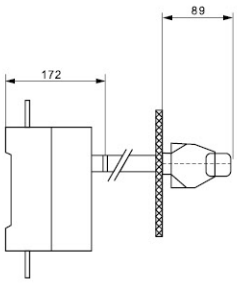
Outline dimenstion and installation dimension of HGL-160A~3150A load isolation switch

Direct operation of HGL-1600A

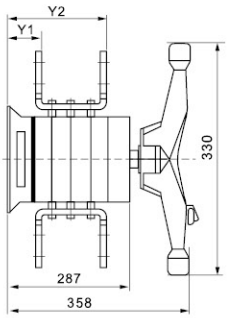


Operation outside of HGL-1600A/JK

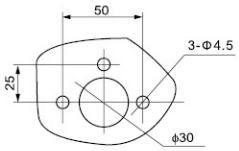




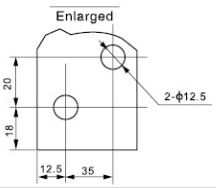
Direct operation of HGL-1600A/JK (operation outside)



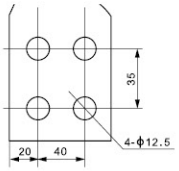
Installation bottom plate for operation outside the box



1000A

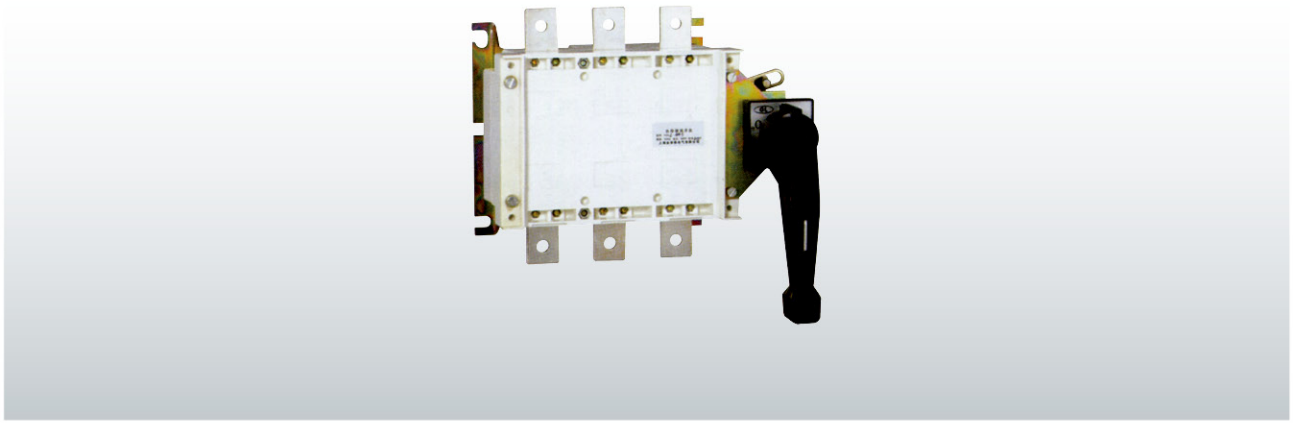


1250A~1600A



Specification	Size of bottom plate									
In	A	A1	B	J	N	R	U	Y	Y1	Y2
1000A/3	378	105	310	353	171	60	200	48		
1000A/4	498	105	310	473	231	60	200	48		
1250A/3	378	105	336	353	171	80	200	48		
1250A/4	498	105	336	473	231	80	200	48		
1600A/3	378	105	336	353	171	80	200	49		
1600A/4	498	105	336	473	231	80	200	49		
2000A/3	378		455	353	171	80	200		78.5	225.5
2000A/4	498		455	473	231	80	200		78.5	225.5
2500A/3	378		455	353	171	80	200		78.5	225.5
2500A/4	498		455	473	231	80	200		78.5	225.5
3150A/3	378		505	353	171	120	200		78.5	227
3150A/4	498		505	473	231	120	200		78.5	227

HGLC series load disconnecting switch



HGLC-160A~1600A side operation load disconnecting switch

1. HGLC–160A~1600A are suitable connecting and breaking of circuit or electric disconnect. The products have three poles, four poles (three poles + on–off neutral pole). The switches over 1000A are only suitable for electric isolation

2.Observation window can be provided to the products below 630V, according to demand, to observe directly the on and off state of the contact

3.Operation method

Direct operation: Handle installed on the right side of switch.

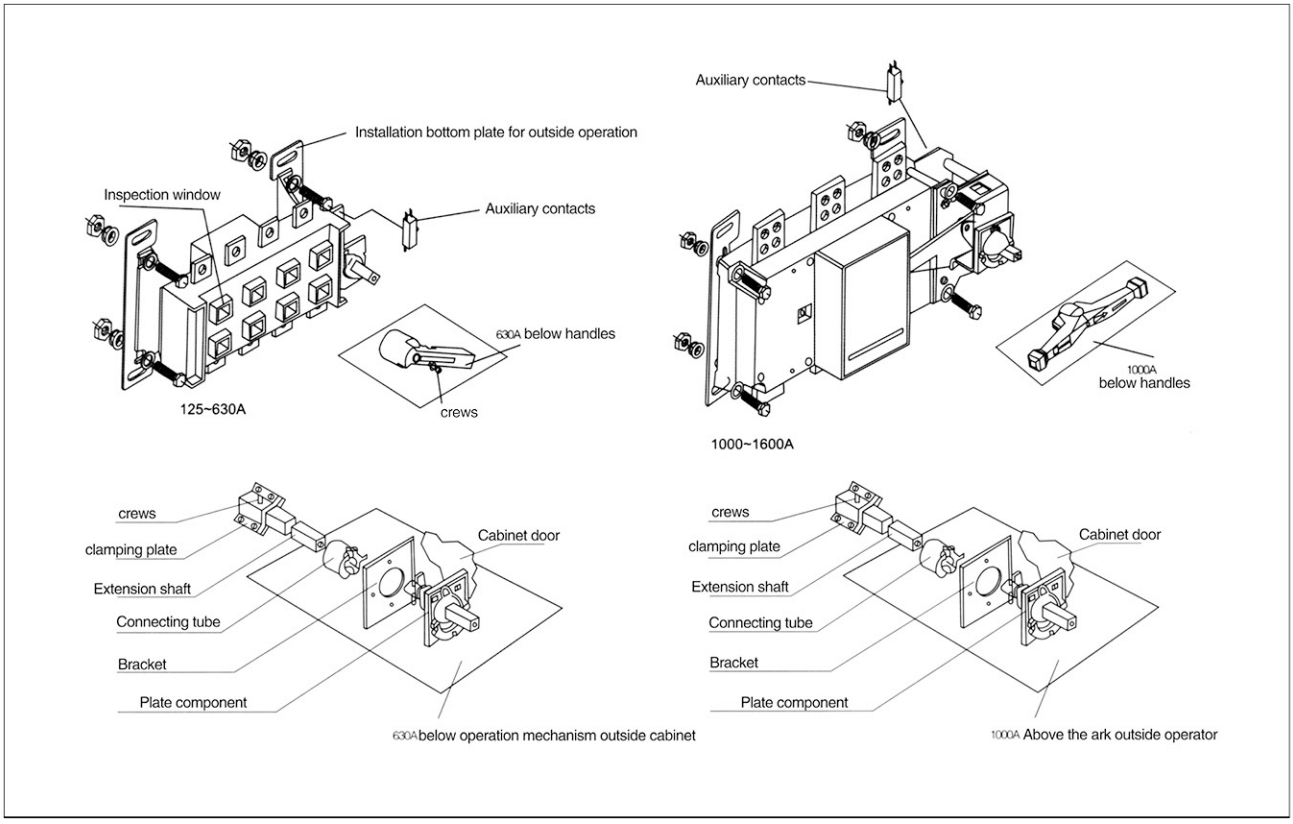
Operation outside cabinet: Handle installed on the outside of cabinet.

4.Two group auxiliary contacts will be assembled according to your requirement

5.Extension shaft used for operation outside cabinet.

6.Electrical characteristic and mechanical characteristic are corresponding with HGLC–160A ~ 1600A

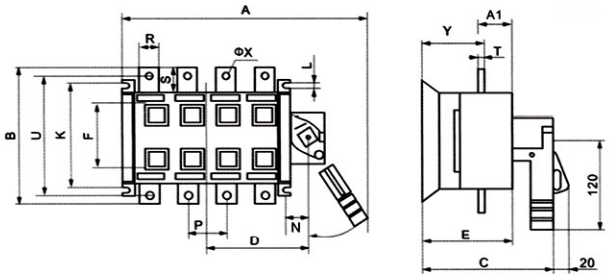
7.cable insulation cover is available for assembling.



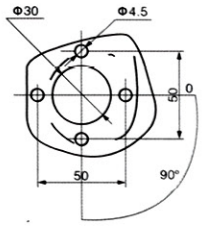
HGLC series load disconnecting switch

Outline and installation sizes

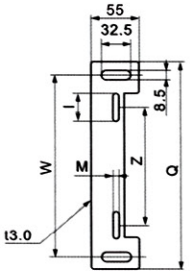
1. Outline and installation sizes of HGLC–160~630A side operation load disconnecting switch



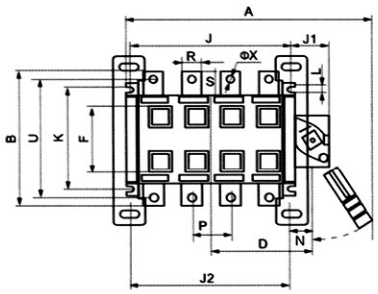
HGLC–1600A Direct operation

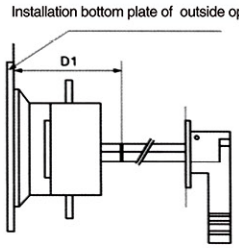


handle seat installation size of outside operation



Installation bottom plate of outside operation





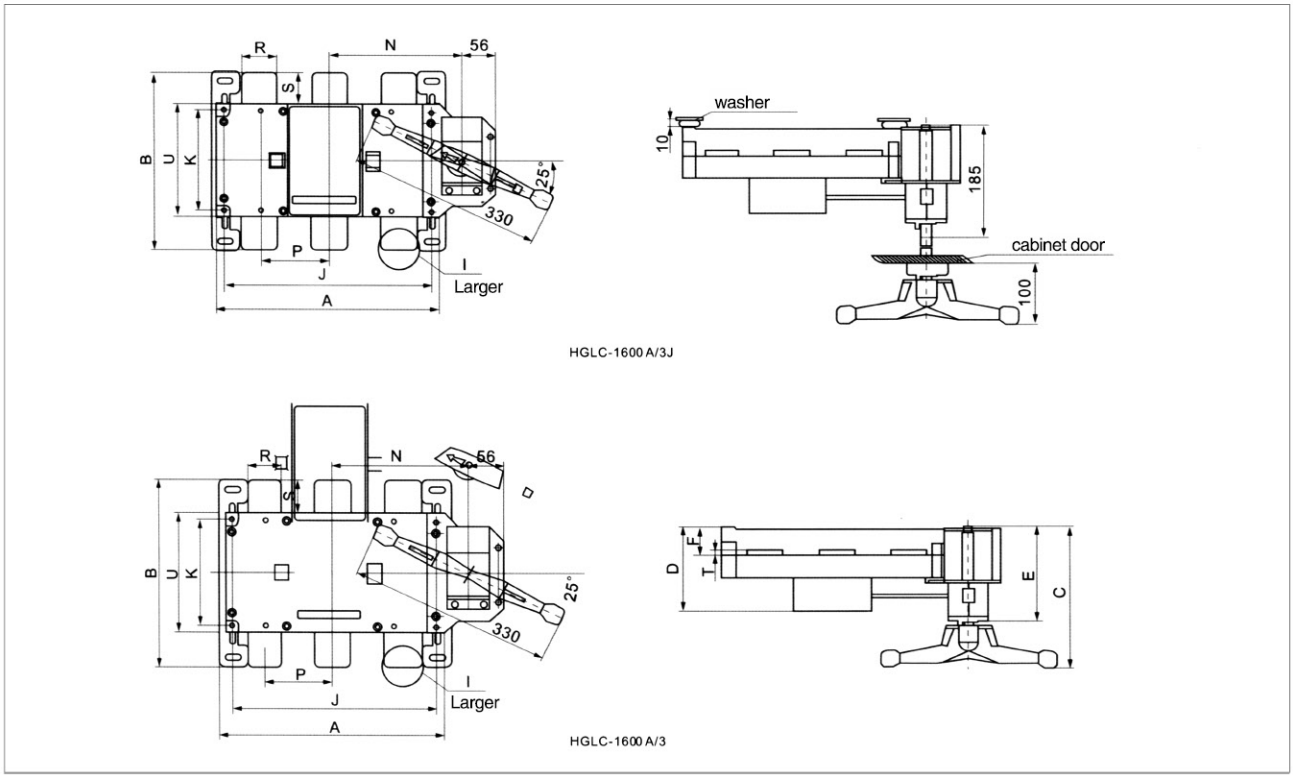
Operation outside of HGLC-160A-630A/K

Specification	Size of bottom plate					
125A–630A	I	M	Z	W	Q	T
125A	60	6.5	115	240	270	3
160A	60	6.5	115	240	270	3
200A	62	8.5	115	240	270	3
250A	62	8.5	115	240	270	3
315A	65	11	115	280	311	4
400A	65	11	170	280	311	4
500A	65	11	170	280	311	4
630A	65	11	170	280	311	4

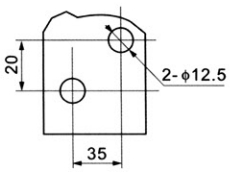
HGLC series load disconnecting switch

Specification	Size of bottom plate																		
In	A	B	C	D	D1	E	J	J1	J2	K	N	P	R	T	U	ΦX	Y	L	F
125A/3	267	135	147	89	125	88	120	65	120	95	29	36	20	3.0	115	9	55	7	50
125A/4	297	135	147	104	125	88	150	65	150	95	29	36	20	3.0	115	9	55	7	50
160A/3	267	135	147	89	125	88	120	65	120	95	29	36	20	3.0	115	9	55	7	50
160A/4	297	135	147	104	125	88	150	65	150	95	29	36	20	3.0	115	9	55	7	50
200A/3	308	170	167	110	134	98	160	65	160	116	30	50	25	3.0	140	11	64	9	79
200A/4	358	170	167	135	134	98	210	65	210	116	30	50	25	3.0	140	11	64	9	79
250A/3	308	170	167	110	134	98	160	65	160	116	30	50	25	3.0	140	11	64	9	79
250A/4	358	170	167	135	134	98	210	65	210	116	30	50	25	3.0	140	11	64	9	79
315A/3	420	240	208	150	166	129	210	77	210	179	30	50	32	4.5	206	11	83	11	95
315A/4	490	240	208	180	166	129	270	77	270	179	45	50	32	4.5	206	11	83	11	95
400A/3	420	240	208	150	166	129	210	77	210	179	45	65	32	4.5	206	11	83	11	95
400A/4	490	240	208	180	166	129	270	77	270	179	45	65	32	4.5	206	11	83	11	95
500A/3	420	260	208	150	166	129	210	77	210	179	45	65	40	5	220	13	83	11	95
500A/4	490	260	208	180	166	129	270	77	270	179	45	65	40	5	220	13	83	11	95
630A/3	420	260	208	150	166	129	210	77	210	179	45	65	40	5	220	13	83	11	95
630A/4	490	260	208	180	166	129	270	77	270	179	45	65	40	5	220	13	83	11	95

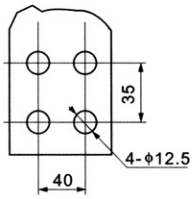
2. Outline and installation sizes of HGLC–1600A side operation load disconnecting switch



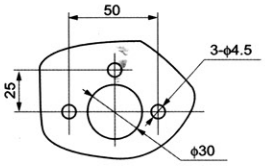
HGLC series load disconnecting switch



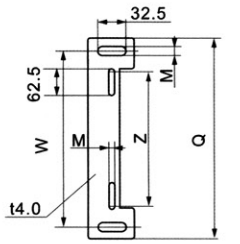
1000A



1250A~1600A



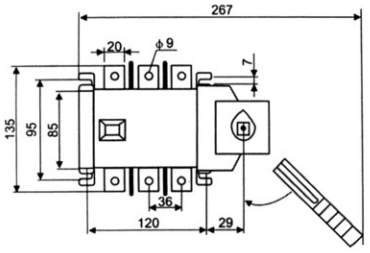
handle seat installation size of outside operation

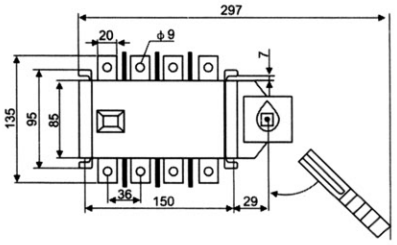


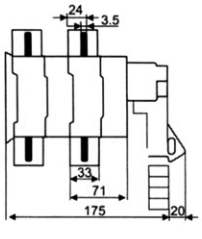
Installation bottom plate of outside o

Specification	Size of bottom plate																
In	A	B	C	D	E	F	J	K	M	N	P	Q	R	U	T	W	Z
1000A/3	378	310	249	140.5	179	48	353	175	8.5	241.5	120	311	60	200	8	280	224
1000A/4	498	310	249	140.5	179	48	473	175	8.5	301.5	120	311	60	200	8	280	224
1250A/3	378	336	249	140.5	179	48	353	175	8.5	241.5	120	311	80	200	8	280	224
1250A/4	498	336	249	140.5	179	48	473	175	8.5	301.5	120	311	80	200	8	280	224
1600A/3	378	336	249	140.5	179	49	353	175	8.5	241.5	120	311	80	200	10	280	224
1600A/4	498	336	249	140.5	179	49	473	175	8.5	301.5	120	311	80	200	10	280	224

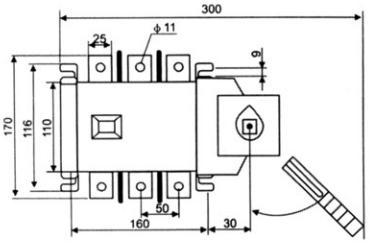
3. Outline and installation sizes of HGLC side operation load disconnecting switch

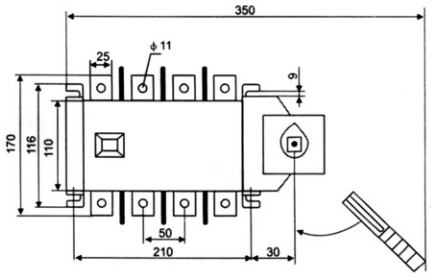


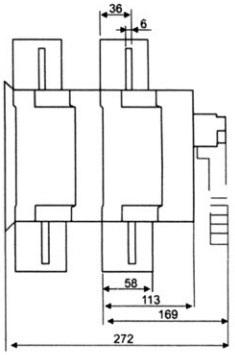




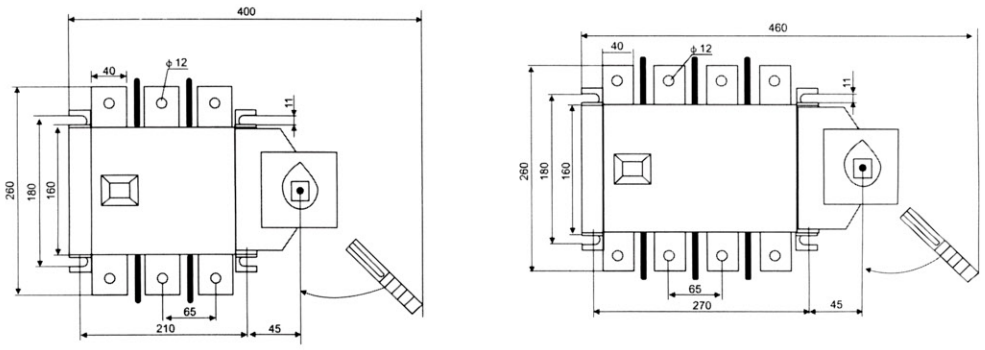
HGLC-160





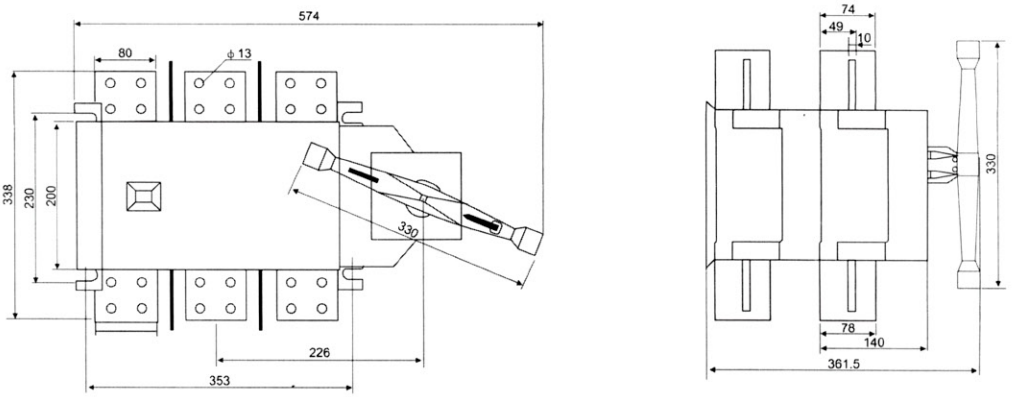


HGLC-250

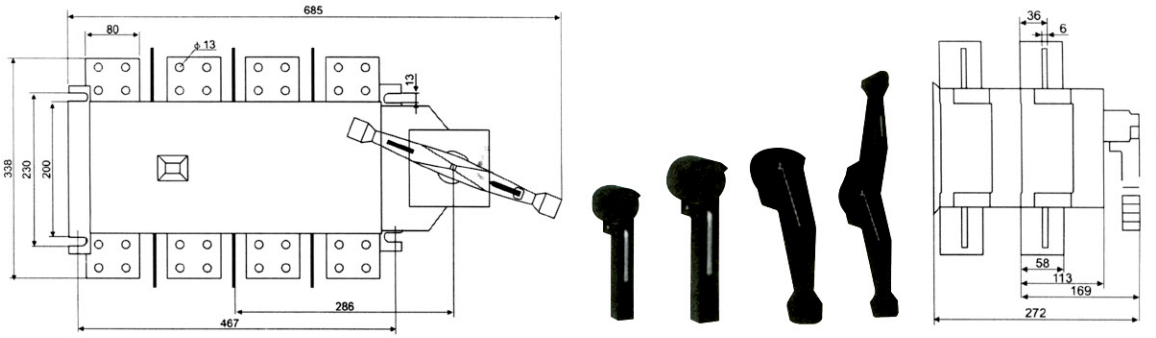


HGLC-630

4. Outline and installation sizes of HGLC–1600A side operation load disconnecting switch



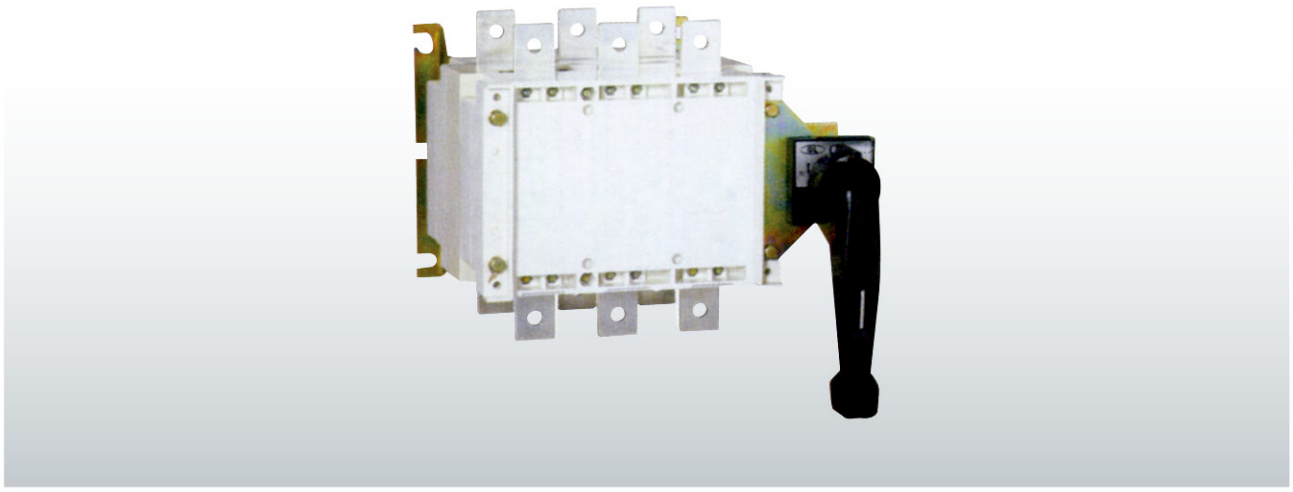
HGLC-1600



HGLC-1600

160A 250A 630A 1600A

HGLC-630



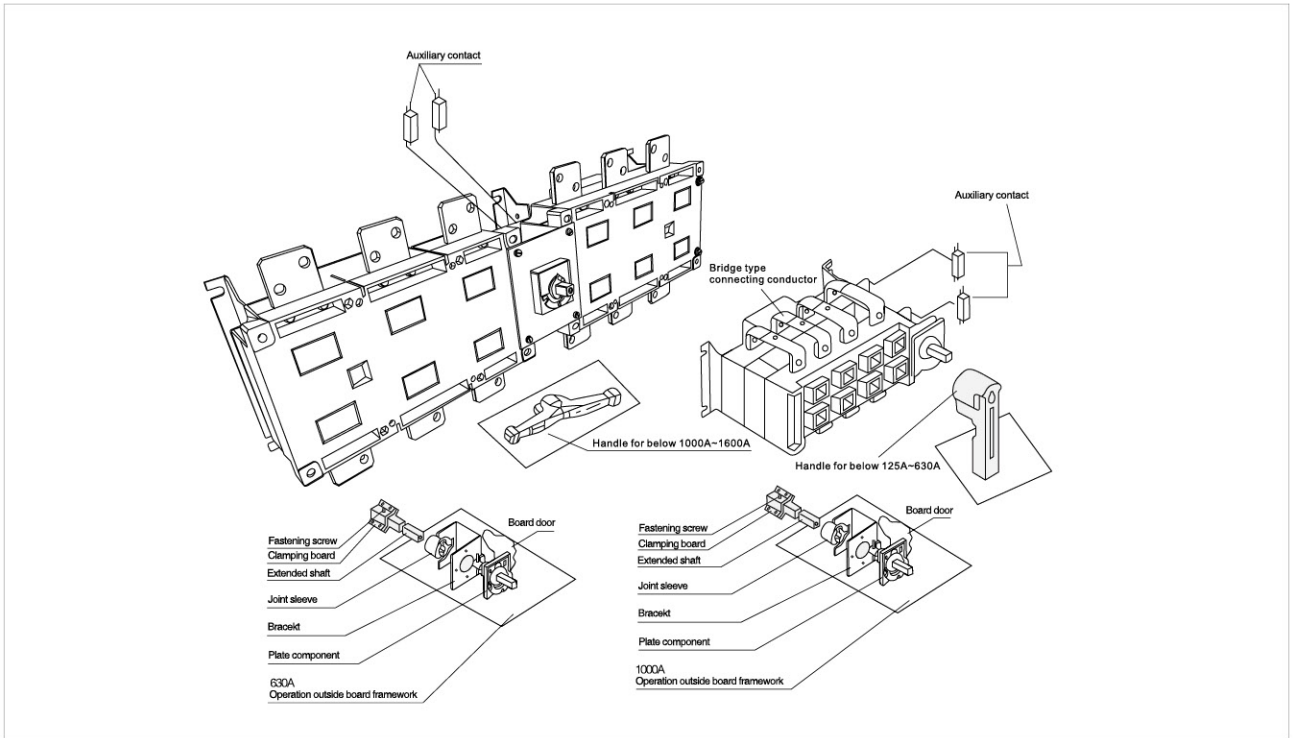
HGLZ-160A~1600A changeover load isolation switch

- HGL2–160A–1600A. The load isolation switch is suitable for the changeover of two sets of low voltage electric circuit or the changeover of 2 sets of load devices or safety isolation.
- Mode of operation:

  Direct operation: handle is installed on the switch.

  Operation outside the board: handle is installed outside the door of power distributing board.
- Products with observation windows can be provided according to the demand to observe directly the on and off state of contact.
- The products have three poles, four poles (three poles+on and off neural pole).
- Extended shaft is used for the operation outside the board.
- Two sets of auxiliary contacts can be assembled according to the demand.
- Mechanical performance and electrical performance correspond to the mechanical property of HGL2–160A~1600A.
- A bridge can be provided to connect the inlet or outlet terminal of the switch.
- The electric cable insulating cover can be assembled.

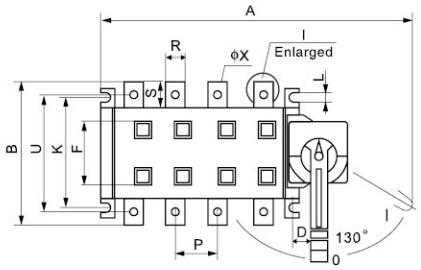
Note: An explanation shall be made when choocing bridge connection used to inlet and outlet terminals.

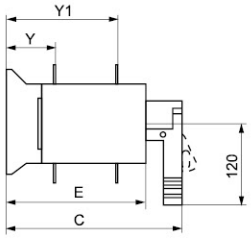


Overall & Installation Dimension

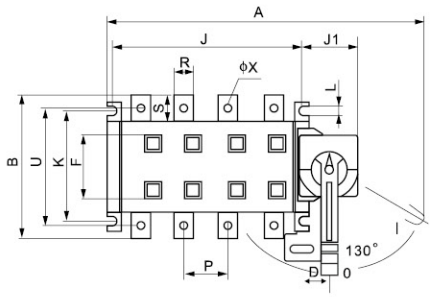
External dimension and installation dimension of HGLZ1–160A~1600A side operation load isolation switch

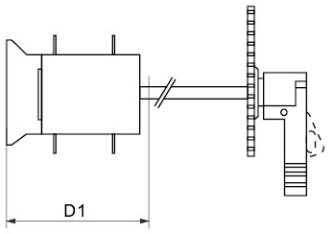
Direct operation of HGLZ1–160A~1600A



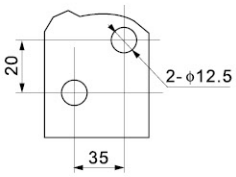


Operation outside of HGLZ1–160A~1600A

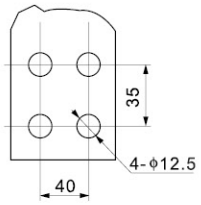




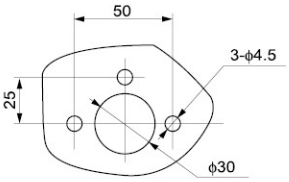
1000A



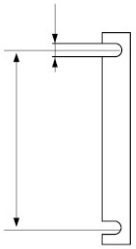
1250A–1500A



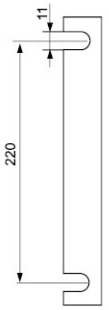
Installation size of handle seat of outside operation



Mounting foot



Mounting foot above 1000A



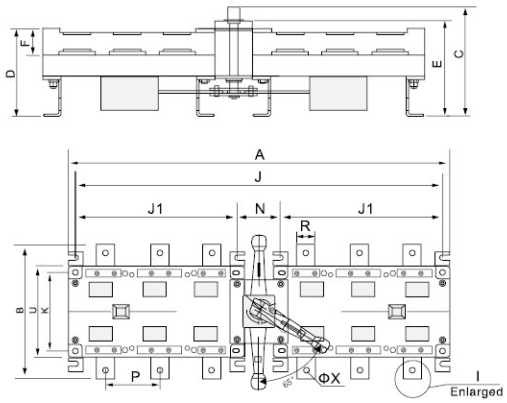
Specification	K1	L1
HGLZ–125–160A	95	7
HGLZ–200–250A	115	9
HGLZ–315–630A	180	11

HGLZ Series

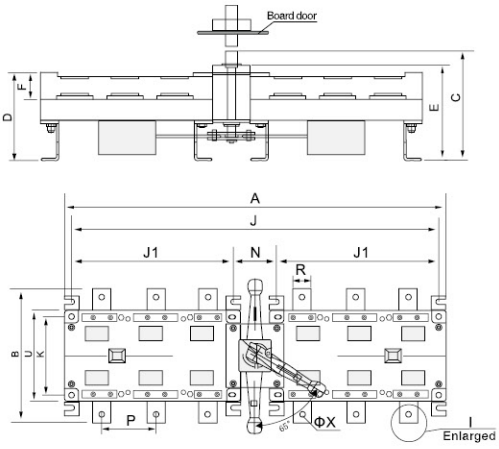
In	A	B	C	D	D1	E	J	J1	K	L	P	R	U	ΦX	Y	Y1
125A~160A/3	267	135	212	29	187	153	120	65	95	7	36	20	115	9	55	121
125A~160A/4	297	135	212	29	187	153	150	65	95	7	36	20	115	9	55	121
200A~250A/3	308	170	251	30	216	182	160	65	116	9	50	25	140	11	64	146
200A~250A/4	358	170	251	30	216	182	210	65	116	9	50	25	140	11	64	146
315A~400A/3	420	240	322	45	277	243	210	77	179	11	65	32	206	11	83	193
315A~400A/4	490	240	322	45	277	243	270	77	179	11	65	32	206	11	83	193
500A~630A/3	420	240	322	45	277	243	210	77	179	11	65	40	220	13	83	193
500A~630A/4	490	240	322	45	277	243	270	77	179	11	65	40	220	13	83	193
1000A/3	583	312	397	52.5	352	309	353	108.5	220	11	120	60	235	13	107	251.5
1000A/4	703	312	397	52.5	352	309	473	108.5	220	11	120	60	235	13	107	251.5
1250A/3	583	338	397	52.5	352	309	353	108.5	220	11	120	80	233	13	107	251.5
1250A/4	703	338	397	52.5	352	309	473	108.5	220	11	120	80	233	13	107	251.5
1600A/3	583	338	397	52.5	352	309	353	108.5	220	11	120	80	233	13	108	251.5
1600A/4	703	338	397	52.5	352	309	473	108.5	220	11	120	80	233	13	108	251.5

External dimension and installation dimension of HGLZ2-160A-1600A side operation load isolation switch

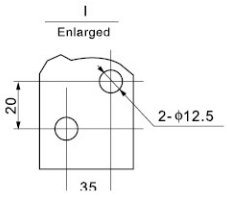
Operation inside of HGLZ2-160A~1600A



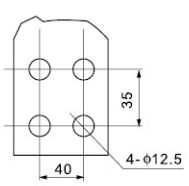
Operation outside of HGLZ2-160A~1600A



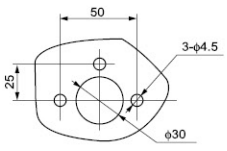
1000A



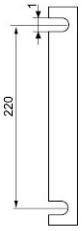
1250A-1600A



Installation size of handle seat of outside operation



Mounting foot

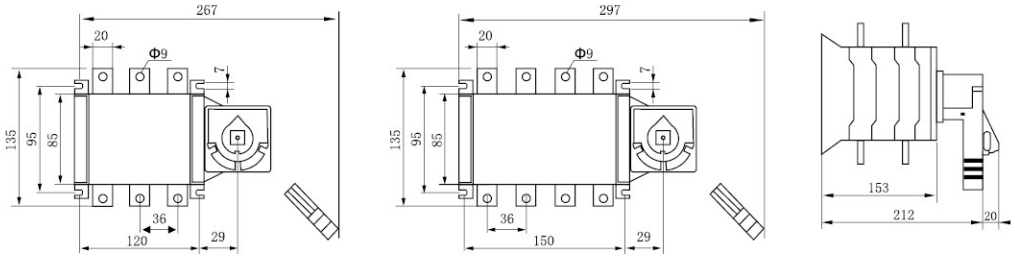


HGLZ Series

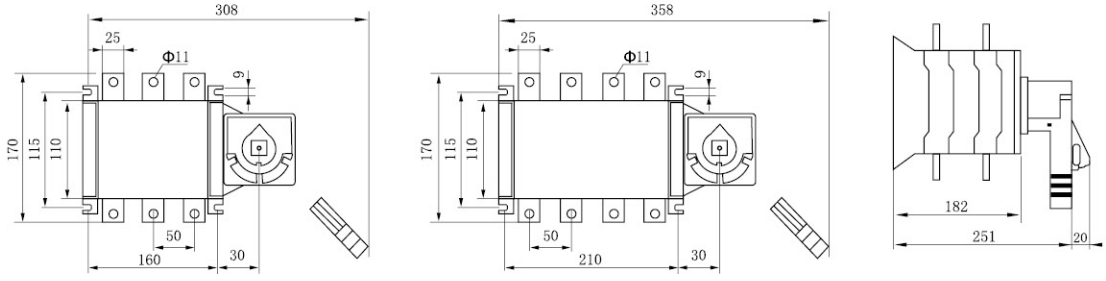
In	A	B	C	D	E	F	J	J1	K	N	P	R	U	ΦX
125A-160A/3	319	135	125	67	89	24	299	120	65	59	36	20	85	9
125A~160A/4	379	135	125	67	89	24	359	150	65	59	36	20	85	9
200A~250A/3	405	170	134	79	104	25	385	160	90	65	50	25	110	11
200A~250A/4	505	170	134	79	104	25	485	160	90	65	50	25	110	11
315A-400A/3	535	240	166	108	131	37	515	210	140	95	65	32	160	11
315A-400A/4	655	240	166	108	131	37	635	270	140	95	65	32	160	11
500A-630A/3	535	260	166	108	131	37.5	515	210	140	95	65	10	160	13
500A~630A/4	655	260	166	108	131	37.5	635	270	140	95	65	10	160	13
1000A/3	836	310	192	150	163	48	811	353	175	105	120	60	200	13
1000A/4	1076	310	192	150	163	48	1051	473	175	105	120	60	200	13
1250A/3	836	336	192	150	163	48	811	353	175	105	120	60	200	13
1250A/4	1076	336	192	150	163	48	1051	473	175	105	120	60	200	13
1600A/3	836	336	192	150	163	49	811	353	175	105	120	60	200	13
1600A/4	1076	336	192	150	163	49	1051	473	175	105	120	60	200	13

External dimension and installation dimension of HGLZ1-160A-630A side operation load isolation switch

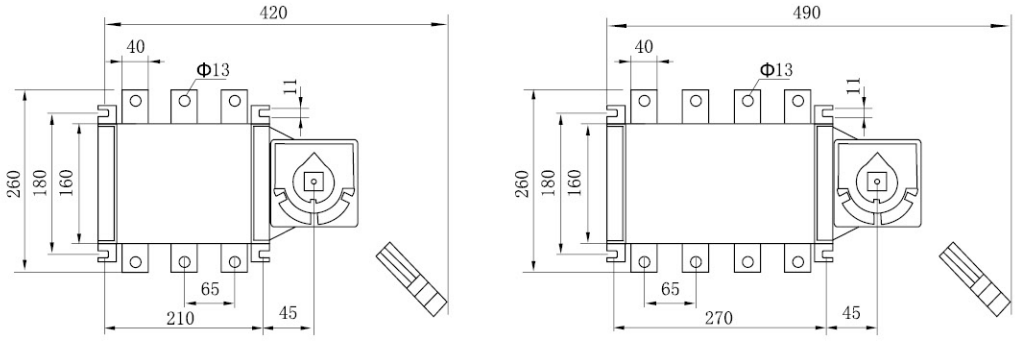
HGLZ1-160



HGLZ1-250

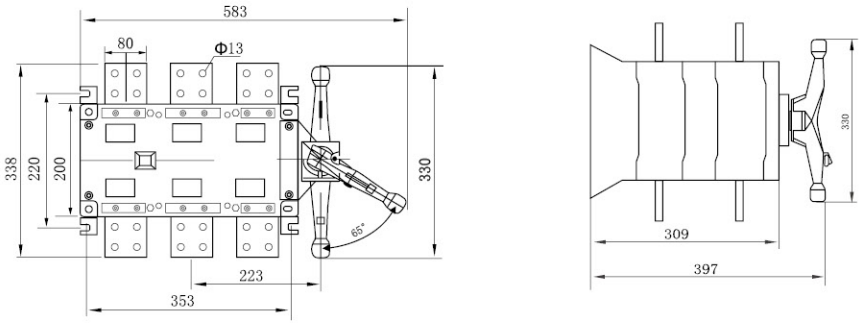


HGLZ1–630



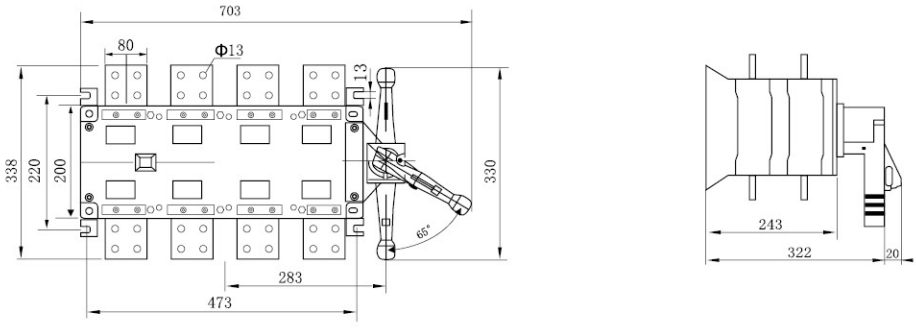
External dimension and installation dimension of HGLZ1–160A–1600A side operation load isolation switch

HGLZ1–1600



HGLZ1–1600

HGLZ1–630



HGLR series

Model & Meaning

H GLR – □A/ □•□ C J □ B □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

NO.	Implication
①	Code of company.
②	Fuse combination switches.
③	Conventional thermal current.
④	Conventional thermal current.
⑤	Number of poles: 3 poles, 4 poles (3 poles+on and off neutral pole)
⑥	Side operation, no note for front operation.
⑦	External operation, standard extended shaft 330mm: Mark after J if special length is required,
⑧	Auxiliary contact.
⑨	The connection behind the board. Connection in front of board is not marked.
⑩	Form: I modular (160A–1400A) II integrated (400A–630A)

Note: Don't note if the function in square is unneeded.
I: S–NO+NC S type auxiliary contacts
II: F–NO+NC S type auxiliary contacts

Introduction

HGLR series fuse combination switches (hereinafter called as switch for short) is a kind of multi–poles hand–operated switch, adopting the shell made of unsaturated polyester resin reinforced with glass–fibres, having very high dielectric performance, protective capability and safe operation.

The operating device is an elastic–accumulating and accelerating instant–release device, which makes instant making and breaking of the double gap contact. It has no relationship with the operation handle and thus greatly increase both the various electrical and mechanical performance. The fuse combination switches can assure the circuit to be connected and broken under load, having reliable breaking protection against over–current or short–circuit ,the off state is apparently visible.

Having strong humidity and heat resistant properties.

The switch has an artistic, novel, succinct, small–sized outline, but has various functions, being the best choice among the con–generic products.

HGLR series

Example of model selection

HGLR–160A/3C

Conventional thermal current 160A, 3 poles, side operation in the board.

Rated current for fuse combination switches(A)	Rated current for fuse–link(A)	Fuse–link dimension
63	2. 4. 6. 10. 16. 20. 25. 32. 40. 50. 63	00C
160	2. 4. 6. 10. 16. 20. 25. 32. 40. 50. 63. 80. 100. 125. 160	00
250	16. 20. 25. 40. 50. 63. 80. 100. 125. 160. 200. 250	1
400	50. 63. 80. 100. 125. 160. 200. 250. 315. 400	2
630	200. 250. 300. 400. 500. 630	3
1250	800. 1000. 1250	4

Characteristies of products

- The elastic–accumulation and instant–release mechani–cal realize the fast on and off (13.8m/s), having no relation ship with the speed of the handle and thus increasing various electrical properties.
- The shell made of unsaturated polyester resin reinforced with glass fibres has the functions of fire resistance, dielectric property, and safe operation.
- The parallel double gap contact has self–cleaning function.
- It can assure the circuit to be connected or broken under load, and has reliable over–current and short–circuit protection function.
- It is easier, safer and more convenient to change the fuse.

Normal work conditions and Installation conditions

- Ambient temperature: –50℃ ~400℃ .
- Altitude: shall not exceed 2000m.
- The atmosphere condition: The relative humidity shall not ex–ceed 50% when the environmental temperature is +400 ℃ in installing place; And the relative humidity may be higher at a lower temperature condition. Such as the humidity is 90% when the temperature is +200 ℃ . It shall take some special measurements to avoid the dew occurs on the product sur–face due to temperature change.
- Pollution grade: III
- The product shall be installed in the place without remarkable shake, shock and quiver, rain and snow, in the medium with–out danger of exploding, and in the places without gas and conductive dust, which can make the metal rusted and affect insulation performances.

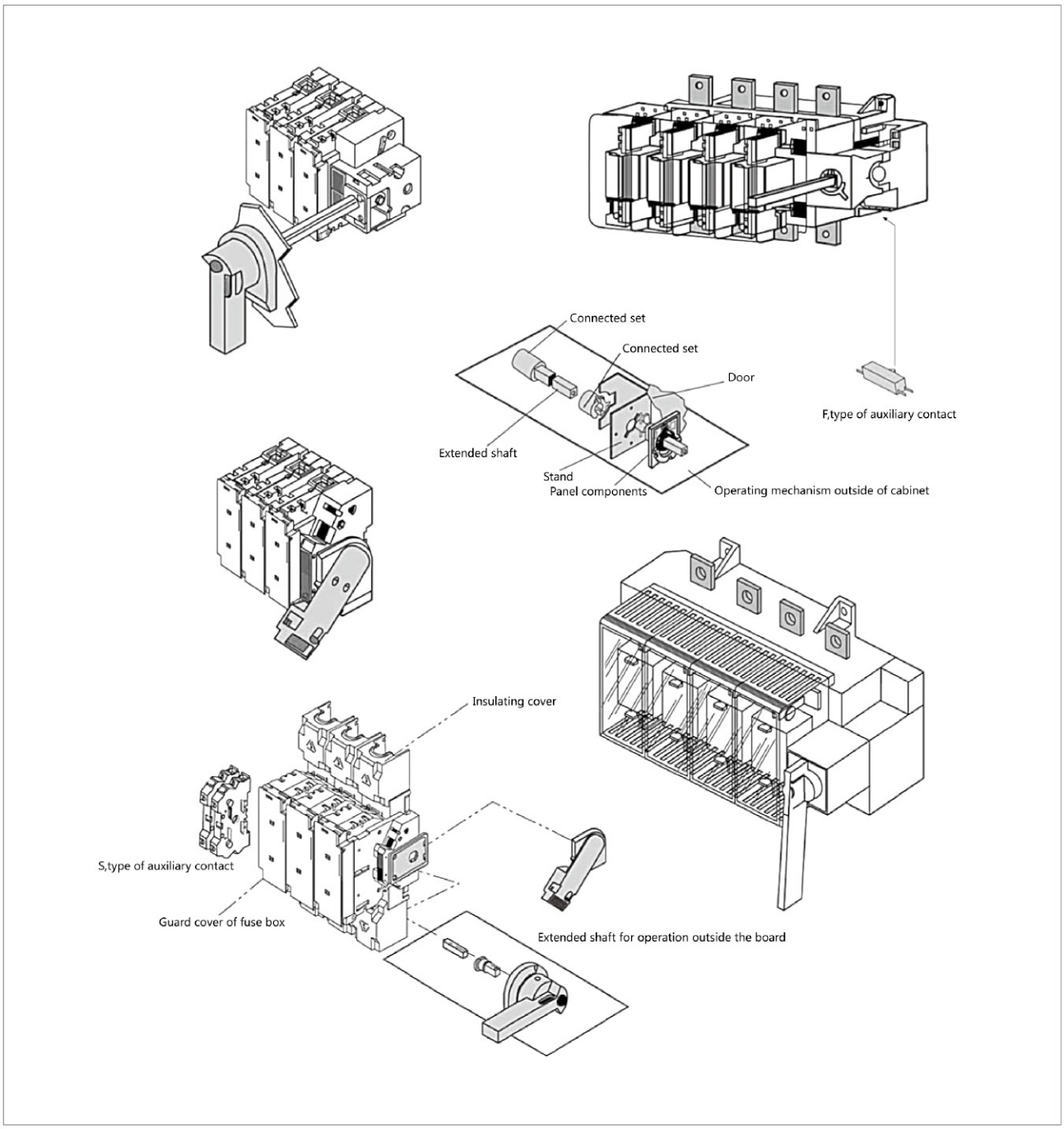
HGLR-63~1250 Type of fuse combination switches

HGLR-63~400 is of modular design structure.
HGLR-63~1250 is overall design structure.
Ensure making and break under load, reliable over-current and short-circuit off-protection.
Structures and operation forms:

- ◆ Direct front operation: the handle is installed in front of the switch.
- ◆ Direct side operation: the handle is installed at the right side of the switch.
- ◆ Front operation outside the board: the handle is installed at the front of the distributing board.
- ◆ Side operation outside the board: the handle is installed at the right side of the board.Special statement shall be made if installed at the left side.

F、S type of auxiliary contact can be provided

HGLR-63~1250 Diagram of fuse combination switches



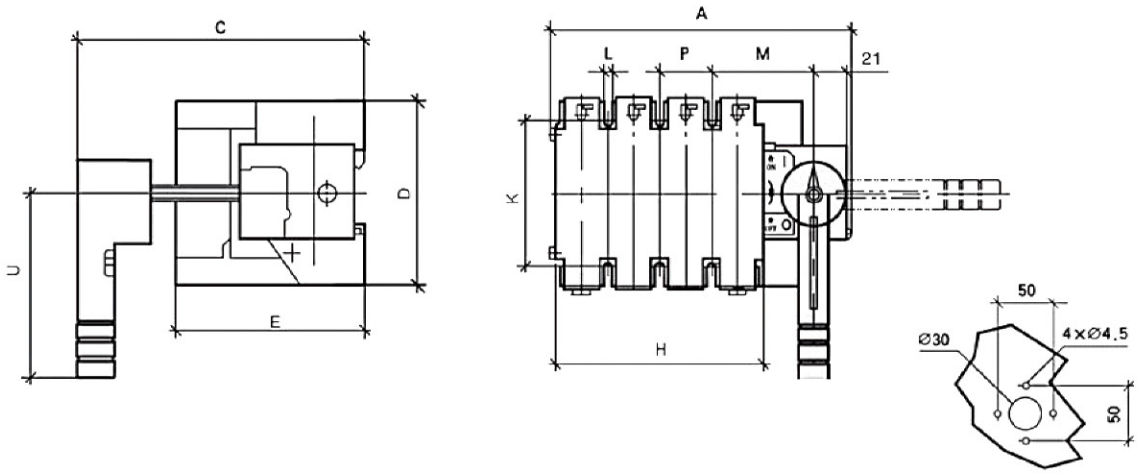
Znergy Magnus Systema

Electrical and mechanical properties of HGLR-63~1250 type of fuse combination switch

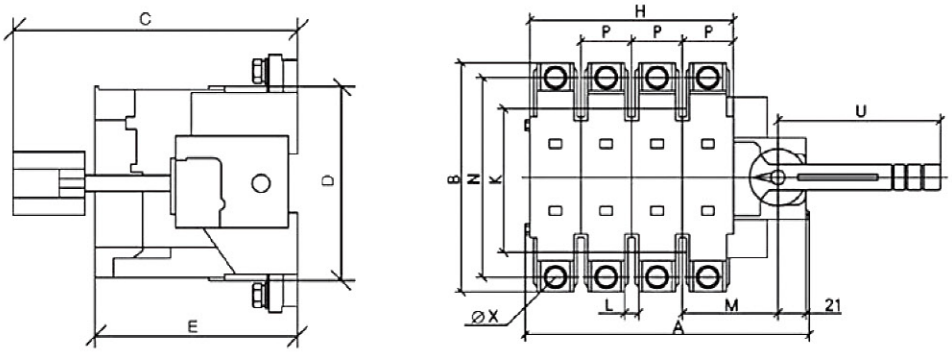
Conventional thermal current Ith (A)		63	160	250	400	630	1250
RT16 fuse-link dimension NT		00C	00C	1	2	3	4
Rated insulation voltage Ui (V)		750	750	750	750	750	750
Dielectric strength (V)							
Rated surge-resistant voltage (Uimp kV)		6	6	6	6	6	6
Rated working current Ie (A)							
380V	AC-23B	63	160	250	400	630	1250
660V	AC-21B		160	250	400	630	1250
short-circuit limiting current (Iq) (kA)		50	50	50	50	50	50
Making and breaking capacity (A Rms)							
Rated making capability		630	1600	2500	4000	6300	10000
Rated breaking capability		504	1280	2000	3200	5040	10000
Operating performance							
Mechanical durability 380V		1700	1400	1400	800	800	500
Electrical curability 380V		300	200	200	200	200	100
Mechanical durability 660V		1700	1400	1400	800	800	500
Weight (kg)							
3 poles		1	1.8	3.2	4.8	16	28
4 poles		1.3	2.3	4.5	6.1	19	33

HGLR-63~400 Overall & Installation Dimension

Front operation 63



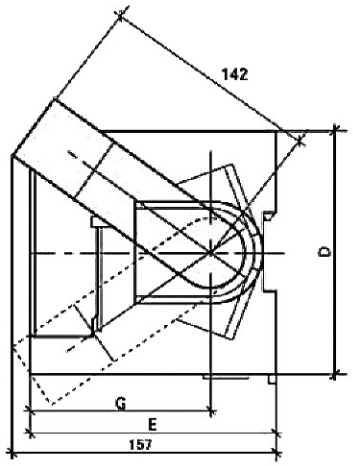
Front operation 160~400

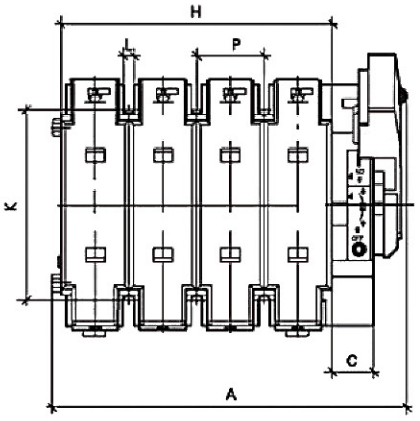


In	A	B	C	D	E	H	M	K	N	P	U	L	ΦX
HGLR-63A/3	154		191	121	117	96	63	90		32	115	5	
HGLR-63A/4	186		191	121	117	128	63	90		32	115	5	
HGLR-160A/3	167	162	192	121	127	108	67	90	141	36	115	5	9
HGLR-160A/4	203	162	192	121	127	144	67	90	141	36	115	5	9
HGLR-250A/3	239	195	200	165	146	180	93	137	165	60	145	6	11
HGLR-250A/4	323	195	200	165	146	240	117	137	165	60	145	6	11
HGLR-400A/3	281	205	200	170	149	198	122	137	175	66	145	6	11
HGLR-400A/4	347	205	200	170	149	264	122	137	175	66	145	6	11

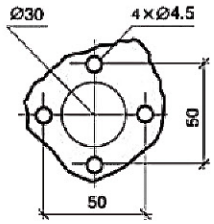
HGLR-63~1250 Diagram of fuse combination switches

Side operation of 63

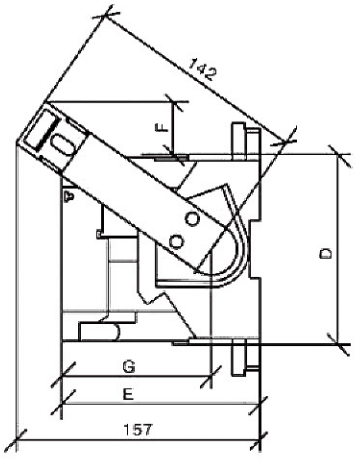


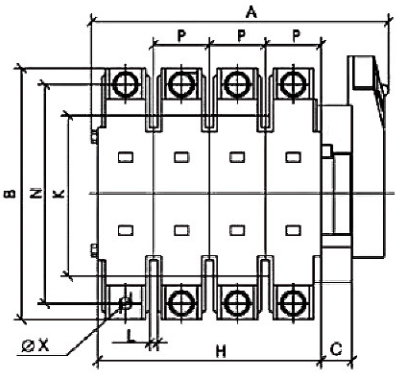


Front operation 160~400



Door hole

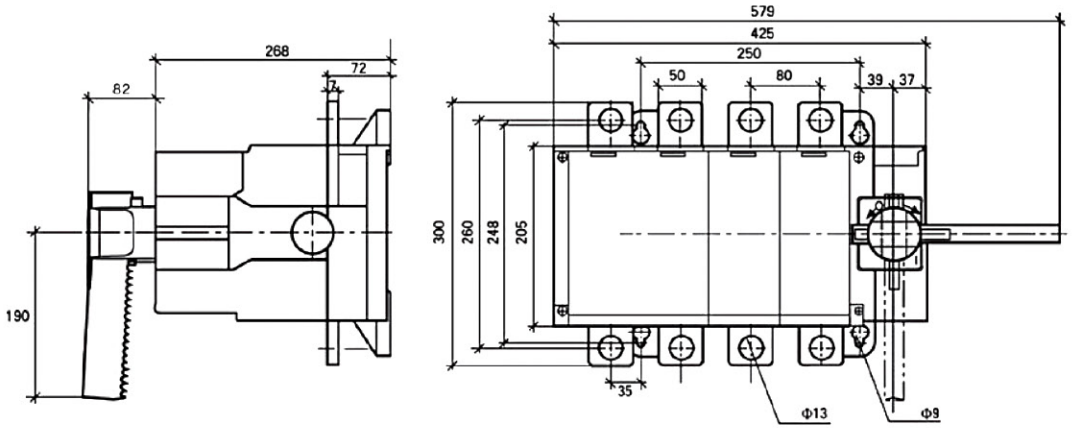




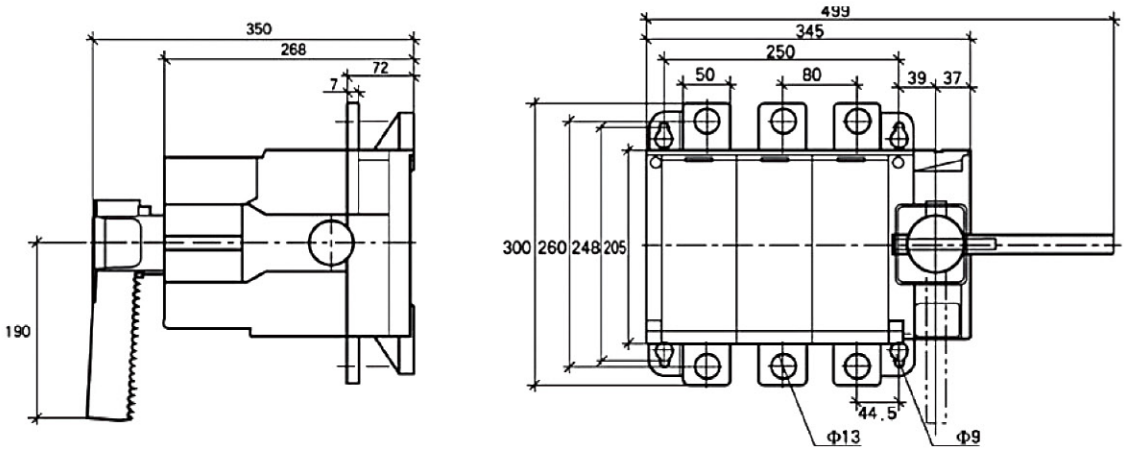
Specifi cation	A	B	C	D	E	F	H	K	N	P	L	G	ΦX
HGLR-63A/3C	140		20	121	117	40	96	90		32	5	94	
HGLR-63A/4C	172		20	121	117	40	128	90		32	5	94	
HGLR-160A/3C	152	162	20	121	127	40	108	90	141	36	5	104	9
HGLR-160A/4C	188	162	200	121	127	40	144	90	141	36	5	104	9
HGLR-250A/3C	224	195	20	165	146	18	180	137	165	60	6	123	11
HGLR-250A/4C	314	195	50	165	146	18	240	137	165	60	6	123	11
HGLR-400A/3C	272	205	50	170	149	15	198	147	175	66	6	126	11
HGLR-400A/4C	338	205	50	170	149	15	264	147	175	66	6	126	11

HGLR-630 Overall & Installation Dimension

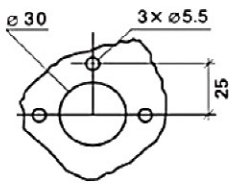
Front operation 630/4



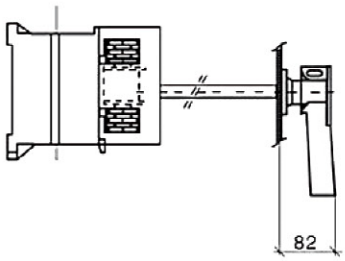
Front operation 630/3



Door hole

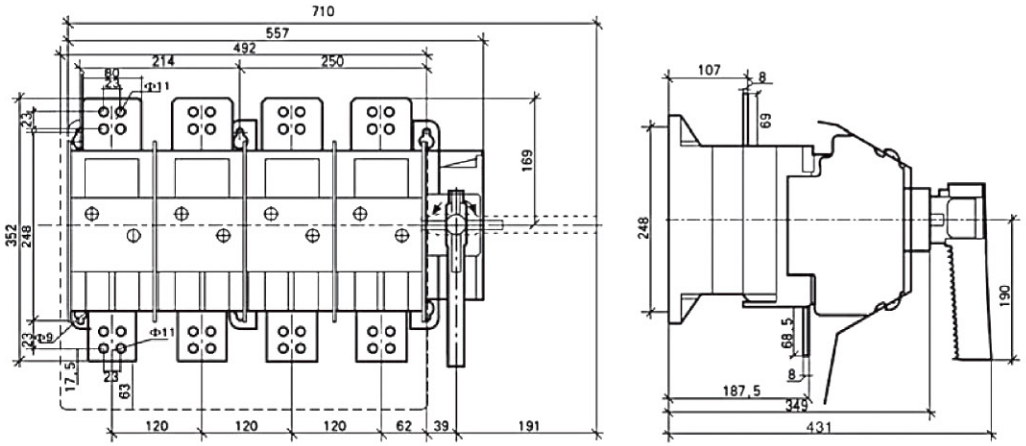


Front operation outside the borad 630

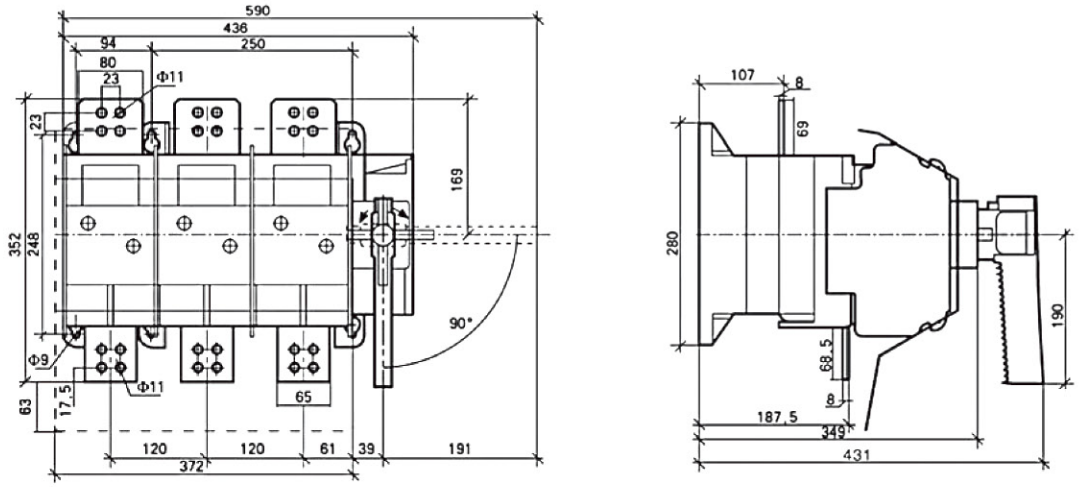


HGLR-1250 Overall & Installation Dimension

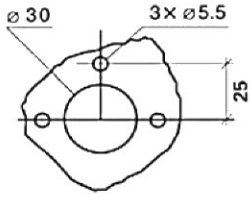
Front operation 1250/4



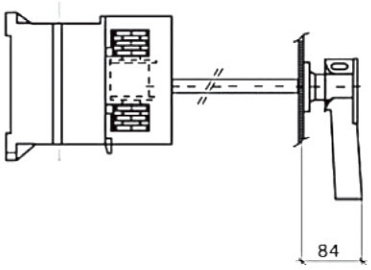
Front operation 1250/3



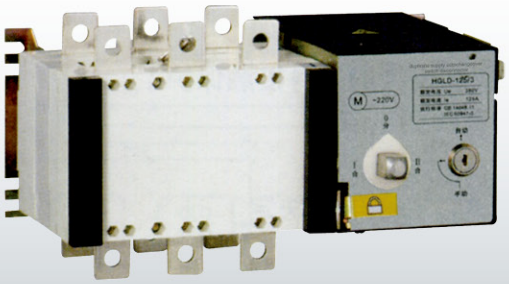
Door hole



Front operation outside the borad 1250



HGLD series



Model & Meaning

HGLD □ – □ / □ • □

① ② ③ ④ ⑤

NO.	Implication
①	Code of company.
②	Design number.
③	Appointed calorific electric current.
④	Pole no. : (3、4)
⑤	Control mode: Not marked: Basic type Ⅰ. Ⅱ. Ⅲ

Product Outline

HGLD automatic change–over switch integrates switch and logic control. Thus it is not necessary to provide external controller.

This truly electronic mechanical intergrated automatic change–over switch has the follwing functions such as voltage detection, frequency detection, communication interface, electrical and mechanical interlocking etc., So automatic control, electrical re–mote control and emergency manual control can be performed.

The operation is carried out through the logic control board, which gives various commands to control the motor and gear–box. The motor drives the accelerator which can take switch spring power accumlating and instantaneous release,swiftly turns making and breaking the circuit or makes circuit switching. The visible operation status can help you to perform safe separation, increasing extremely the various electrical and mechanical per–formance.

The shell of switch HGLD is made of metal. being small and compact, While the shell of switch HGLD is made of different materials: it is control section made of metal, but the switching section is made of glass fibre unsaturated polyester resin, having stronger dielectric property and protective capa–bility as well as safe operation performance.

This kind of switch is suitable for the automatic change–over of the main power source and the secondary power source of the power supply system or the automatic change–over and safe separation of the 2 sets of load–equipment. This kind of switch has a beautiful, novel and simple structure, a small volume but complete functions, being the best choice among congeneric of products.

HGLD Series had been already passed the detection of EMC.

Operation Enviroment

HGLD automatic changing–over isolation switch can work reliably under the following conditions:

- Height above sea level does not exceed 2,000m;
- Ambient temperature is not higher than 400℃ and not lower than –50℃ .
- Relative humidity is not larger than 95%;
- No explosive dangerous medium environment;
- No rain and snow attack environment;

Note: if the load isolation switch is expected to be used in the condition that the ambient temperature is higher than+400℃ or is lower than –50℃ ~–450℃ , customers should inform the manufactory.

Main Technical Paramaters

HGLD–100~1600A Series automatic change – over switch electical properties

Conventional thermal ourrent Ith (A)			100A HGLD1							
Rated current In (A)			16A	20A	32A	40A	50A	63A	80A	100A
Rated impulse withstand voltage Ui (V)			500	500	500	500	500	500	500	500
Dielevtric strength (V)			3000	3000	3000	3000	3000	3000	3000	3000
Rated surge–resistant voltage Uimp (K/V) (installed category IV)			6	6	6	6	6	6	6	6
Rated working current Ie (A)	400V	AC–31	16	20	32	40	50	63	80	100
		AC–33	16	20	25	32	40	40	63	80
		AC–35	16	20	32	40	50	63	80	100
	220V	DC–31	16	20	32	40	50	63	80	100
		DC–33	16	20	25	32	40	40	63	80
		DC–35	16	20	32	40	50	63	80	100
Motor power P (400V)KW			8	10	15	20	25	30	30	32
Rated short–time withstand current Icw (KA Rms) 0.1S/1S			9/5	9/5	9/5	9/5	9/5	9/5	9/5	9/5
Rated breaking capability (A Rms) AC33 380V			125	160	200	320	400	500	640	800
Rated making capability (A Rms) AC33 380V			160	200	320	400	500	630	800	1000
Rated short–time making capability Icm (KA peak value)			8	8	8	8	8	10	10	10
Mechanical durability (number of cyclic operation)			10000	10000	10000	10000	10000	10000	10000	10000
Electric durability Cos Φ =0.65 AC33			2000	2000	2000	2000	2000	2000	2000	2000
Change–over time		I –0–11 0r 11–0– I (S)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
		I –0 0r II–O (S)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Power consumption of electrical control		24V (DV) (W)	25	25	25	25	25	25	25	25
		220V (AC) (W)	25	25	25	25	25	25	25	25
Moment of operation (Nm)			1	1	1	1	1	1	1	1
Weight (kg)		3 poles	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
		4 poles	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8

HGLD series

100A					160A		250A		630A		1600A			
20A	40A	63A	80A	100A	125A	160A	200A	250A	400A	630A	800A	1000A	1250A	1600A
500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
5000	5000	5000	5000	5000	5000	5000	5000	5000	8000	5000	10000	10000	10000	10000
8	8	8	8	8	8	8	8	8	12	12	12	12	12	12
20	40	63	80	100	125	160	200	250	400	630	800	1000	1250	1600
20	32	40	63	80	125	160	200	250	340	536				
20	40	63	80	100	125	160	200	250	400	630	800	1000	1250	1600
20	40	63	80	100	125	160	200	250	400	630	800	1000	1250	1600
20	32	40	63	80	100	125	160	200	315	500				
20	40	63	80	100	125	160	200	250	400	500	800	1000	1250	1600
10	20	25	30	32	63	80	100	132	220	280				
9/5	9/5	9/5	9/5	9/5	20/10	20/10	25/12	25/12	40/20	50/25	90/50	90/50	90/50	90/50
160	320	500	640	800	1000	1000	1600	1600	3200	3200				
200	400	630	800	1000	1250	1250	2000	2000	4000	4000				
8	8	10	10	10	12	12	17	17	30	30				
10000	10000	10000	10000	10000	10000	10000	10000	10000	5500	5500	4000	4000	4000	4000
1500	1500	1500	1500	1500	1000	1000	1000	1000	500	500	500	500	500	500
0.5	0.5	0.5	0.5	0.5	1.0	1.0	11	11	1.2	1.2	1.2	1.2	1.2	1.2
0.3	0.3	0.3	0.3	0.3	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8
50	50	50	50	50	75	75	75	75	90	90	90	90	90	90
50	50	50	50	50	75	75	75	75	90	90	90	90	90	90
15	15	15	15	15	22	22	30	30	45	45	55	55	55	60
					8.2	8.2	10.4	10.4	17.8	19	28	31	31	34
4.2	4.3	4.4	4.5	4.5	8.7	8.7	11.3	11.3	20.2	22	32	36	36	40

Standard

HGLD Series Automatic Change–Over Switch Complies With The Following Standards:

International standard:

IEC60947–1(1998) *Low-voltage switchgear and controlgear, part one: General Rules*

IEC6094–3(1999) *Low-voltage switchgear and controlgear. switches, disconnectors, switch-disconnectors and fuse-conbination units*

IEC60947–6(1999) *Low-voltage switch equipment and control equipment multi-function-switch automatic change-over switch electrical device*

National Standard:

GB/T14048.1–2002 *Low-voltage switchgear and controlgear, part one: General Rules.*

GB14048.3–2002 *Low-voltage switchgear and controlgear, switches, disconnectors, switch-disconnectors and fuse-conbination units.*

GB014048.11–2002 *Low-voltage switch equipment and control equipment multi-function-switch automatic change-over switch electrical device.*

HGLD series

Performance and characteristic

- It adopted double complex contact, horizontal and vertical type frame work, Micro motor pre–saving and Micro electronic control technical, basically, it have come to 'zero' are (No Arc Chute);
- It adopts reliable machine interlock and electric interlock, the executive union parts adopting independency overload disconnect switch, making more reliable and safety;
- Adopt 'zero' technique, it can force to set 'zero' under emergency situation (break off two way power supply at the same time), meet the requirement of fire protection linkage;
- Operate the overload changeover switch disconnector by single–phase motor driving switch, being smooth, reliable, no noise and little wallops;
- Operate machine driving motor only under the execution of overload changeover switch disconnector with less energy;
- Perform overload disconnect switch with mechanism interlock device, it ensure the common use, standby power working reliable and not interference;
- Distinct On and Off position indecator. padlock function etc., safely realize the disconnect between electric power and overload;
- High securety, high automatization, high reliable, working life more than 8000 times;
- Machine & Electricity perfect design, On–Off change–over nicely. agility. smooth, adopt international advanced logical control technique high anti–interference and no interference outside;
- It includes main power ciose, standby power separate; main power separate; standby power close; main. standby power all break off and steady working(I – 0 – II)
- Easy installation, control loop adopt terminal connection and insert.
- Four kind of operation function: emergency manual operation, electromotion remote control operation, automatic control stage emergency off opeartion, automatic control operation.

Product Usage

HGLD Series automatic change over switch is mainly suitable for distribution or electromotor network, which under AC 50Hz, rated voltage 380V, rated voltage DC220V rated current 16–1600A, main power and standby power or mutual standby power change over system or city power and generator group overload switch–over. At the same time, it can operated under un–frequency On and Off circuit acting as disconnector.

Such products are widely used at the field of important power supply site which transport and distribute power supply system and automatizaion, system for Fire Protection, Ho–spital, Bank,Building,etc., where are not allowed to be powered off.

Control Characteristic

The switch has 3 poles or 4 poles (3 poles+on and off neutral pole)

The rated current can be 16A. 20A. 25A. 32A. 40A. 50A. 63A. 80A. 100A. 125A. 160A. 200A. 225A. 250A. 315A. 350A. 400A. 450A. 500A. 630A. 800A. 1000A. 1250A. 1600A. 2000A. 2500A. 3200A.

Basic Type

Main standby power, self cast, self reset

Type I

Below 100A city power–city power. self–cast,self reset. Two way power three phase short phase testing; Above 125A, City power–City power. main and Standby or mutual power can do selection. self–cast. two way power three phase checking.

Type II

City power–City power. main and standby or mutual power supply can do selection(that is self–casting self reset or self–casting without self reset), two way power three phase and lack phase, overload voltge checking.

Type III

City power–Oil machine,self casting self reset, two way power supply three phase and lack phase, overload voltage, oil machine frequency testing.

C: When main circuit loop recovery and normal, the switch delay(setting range 1– 250s) automatic switch on to the main circuit.

125A above

A: It is suitable for main power system or mutual standby power system of two way city power.

B: When the switch selected as self casting and self reset (that is main & standby type), When main power circuit loop caused any fault (power off. short phase): switch delay (setling range 1~46s) auto switch on standby power supply circuit loop; when the main loop recovery to normal circuit, the switch diddt switch on to route I, only when the route II caused faulty; the On–Off delay (setting range 1~120s) automatic switch on to power supply circuit I .

C: When the switch at the function of self casting and without selt reset, (mutual power standby type), when loop I have power supply tault (bresk off. short phase); the On–Off detay (setting range 1~16s) automatic switch on to the circuit II ; when the circuit I recovery normal On–Off delay(setting range 1~120s) automatic switch on to circuit loop II .

Select the best power supply circuit through terminal connection.

Basic type switch control characteristic

- Suitable for two way main and standby power system, self casting and self reset;
- It can expand function by outer connection.

Type Ⅱ switch control characteristic

It is suitable for two way city power main or mutual standby power supply system.

When the switch select to be self casting and self reset function, the On–Off delay (setting range 1–16s) automatic switch on to standby power supply circuit when the main power supply loop caused power fault. Once the main power, supply circuit come to normal, switch delay (setting range 1~120s) auto change to the main power supply circuit.

Under the condition of switch at self casting and without self reset function when power circuit I cause fault (short phase.overload voltage) On–Off delay (setting range 1~16s) auto–matic switch on route II power supply; when circuit I, recovery normal, the switch doesn't change back to circuit I, but only when the circuit II caused fault, On–Off delay (setting range 1–250S) automatic switch on to loop I.

Select the best power supply circuit through terminal connection (Above 125A).

Type I switch control characteristic

100A below

A: Suitable for two way main and standby power system;

B: It will switch on to the standby power supply circuit after switch delay (setting range 1~16s) when the main power supply circuit short circuit and loop(switch off or short phase).

Type Ⅲ switch control characteristic

It suitable for city power supply system of main power supply. standby power supply of generator group.

When the city power occur fault, On–Off control primary indicate the signal to start oil machine, after the On–Off delay 3s, the switch to postion "0' , delay again (warm–start time setting range 1–250s) automatic switch on to city power supply, when switch delay a gain (warm– start time setting range 1–250s) automatic switch on to oil–machine circuit power supply.

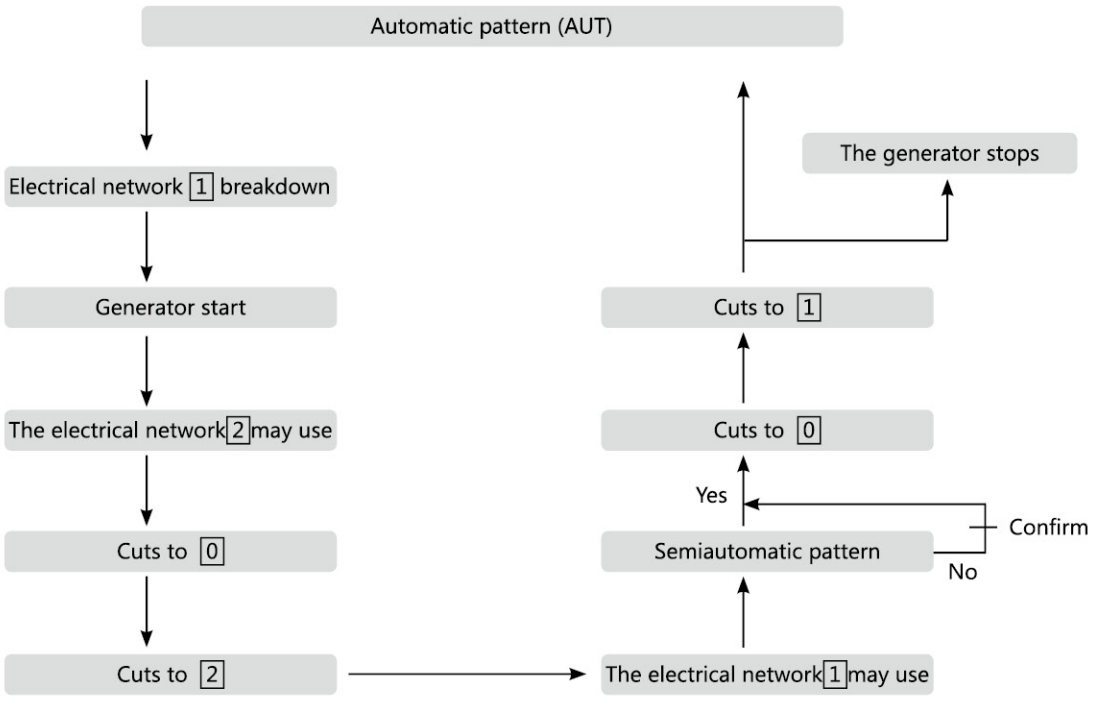
When the city power recovery normal, the On–Off delay (setting range 1–250s) automatlc switch on to city power supply, when switch delay again (setting range 1–250s), the controller send out the signal of indication to off the oil–machine.

City power, oil–machine have the fumction of three phase short phase three phase overload voltage checking,Oil machine frequency checking etc.

The above-mentioned 4 models having

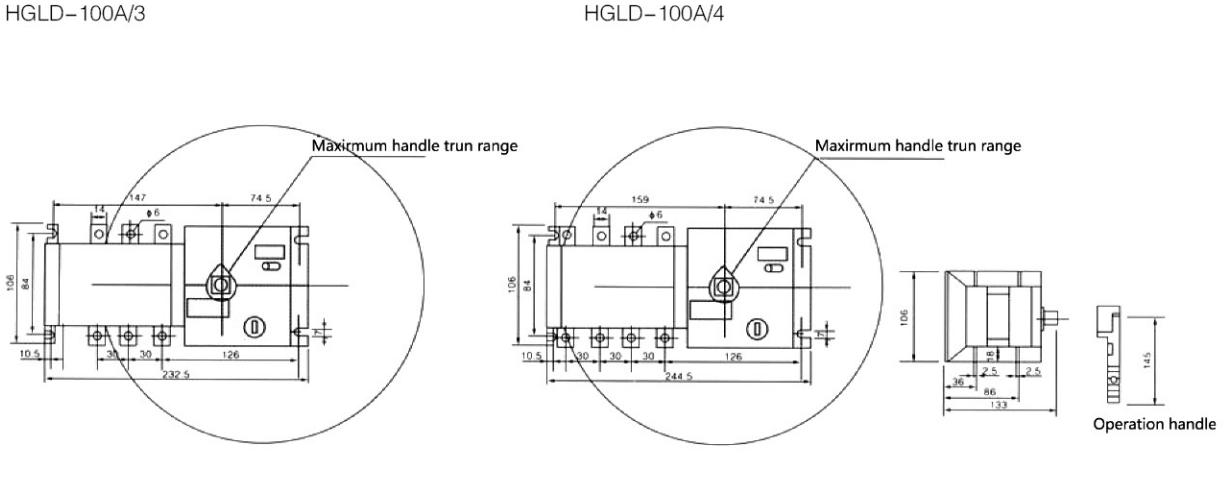
- The functions of automation.
- Delay–time 0.5s, detection signal, to prevent error action.
- Remote comtrol "O" position.
- The key switch to select control modes.

City power-oil machine automatic cut over schematic drawing



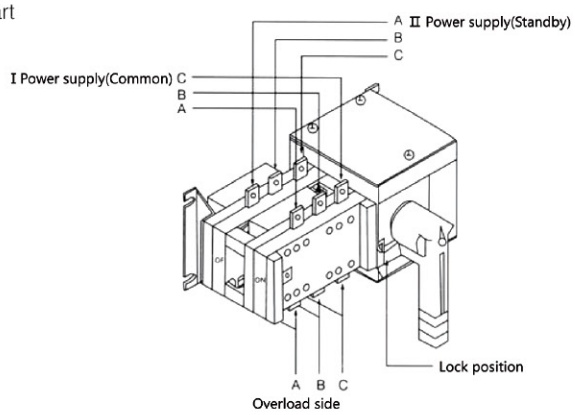
HGLD-100A automatic change-over switch

Exernal dimension and installation dimension (20~100A)

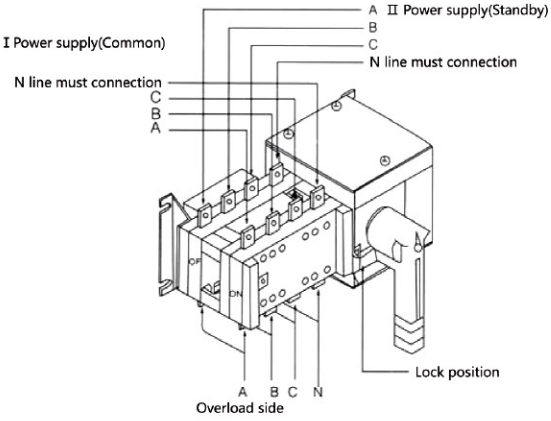


Connection chart

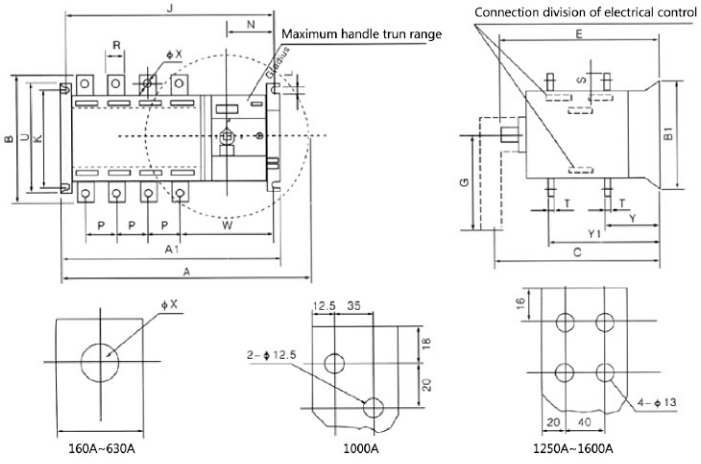
HGLD–100A/3 connection chart



HGLD–100A/4 connection chart



HGLD-160~1600A automatic change-over switch Extenal dimension and installation dimension



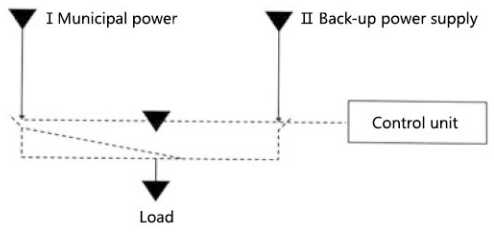
Znergy

HGLD series

Znergy Magnus Systema

Note: the connection bridge opening and output post hole quantity is consistent.

In	A	A1	B	B1	C	E	G	J	K	L	N	P	R	S	T	U	W	X	Y	Y1
125A/3	376	283.5	135	134	261	208	166	262.5	78/108	7	87	36	20	25	3.5	134	155	9	56	141
125A/4	406	316	135	134	261	208	166	295	78/108	7	87	36	20	25	3.5	134	155	9	56	141
160A/3	376	283.5	135	134	261	208	166	262.5	78/108	7	87	36	20	25	3.5	134	155	9	56	141
160A/4	406	316	135	134	261	208	166	295	78/108	7	87	36	20	25	3.5	134	155	9	56	141
200A/3	416	323.5	170	134	261	208	166	302.5	78/108	7	87	50	30	30	3.5	134	164	11	60	145
200A/4	466	373.5	170	134	261	208	166	353	78/108	7	87	50	30	30	3.5	134	164	11	60	145
250A/3	416	323.5	170	134	261	208	166	302.5	78/108	7	87	50	30	30	3.5	134	164	11	60	145
250A/4	466	373.5	170	134	261	208	166	353	78/108	7	87	50	30	30	3.5	134	164	11	60	145
400A/3	455	378.5	240	208	333	270	166	358.5	176	11	103.5	65	40	40	5	208	197	12	83	193
400A/4	515	438.5	240	208	333	270	166	418.5	176	11	103.5	65	40	40	5	208	197	12	83	193
630A/3	455	378.5	260	208	333	270	160	353.5	176	11	103.5	65	50	50	6	208	197	12	83	194
630A/4	515	438.5	260	208	333	270	160	418.5	176	11	103.5	65	50	50	6	208	197	12	84	194
800A/3	871.5	524	340	250	387	319.5	448	499	212	11	88	120	69	69	8	250	198.5	12.5	84	252
800A/4	975.5	637.5	340	250	387	319.5	448	612.5	212	13	88	120	69	69	8	250	207	12.5	107	252
1000A/3	871.5	524	340	250	387	319.5	448	499	212	13	88	120	69	69	8	250	198.5	12.5	107	252
1000A/4	975.5	637.5	340	250	387	319.5	448	612.5	212	13	88	120	69	69	8	250	207	12.5	107	252
1250A/3	871.5	524	369	250	387	319.5	448	499	212	13	88	120	69	69	8	250	198.5	13	107	252
1250A/4	975.5	637.5	369	250	387	319.5	448	612.5	212	13	88	120	69	69	8	250	207	13	107	252
1600A/3	871.5	524	376	250	387	319.5	448	499	212	13	88	120	69	69	10	250	198.5	13	109	253.5
1600A/4	975.5	637.5	376	250	387	319.5	448	612.5	212	13	88	120	69	69	10	250	207	13	109	253.5



Application example: *Normal=Emergency* change-over

HGLD-100~1600A automatic change-over switch control and operation

- The logic control board will send out different logic commands to control the operation of the gear–motor directly assembled in the switch to ensure the position of the switch.
- The gear motor is made of neoprene to insulate wetness and heat, equipped with a safety device, It will trip off when the temperature is over 11000 ℃ and when it is under over–current state, when resumes its work, the reversible reduction gear adopts straight gear.

Operation

◆ When the key is under automatic state, HGLD will automatically change and recover. Once manual handle is used on emergency, HGLD will return back after 60s.

◆ Through terminals 102. 103 to force remote control to '0' postion optimum selection of switches 202. 204.

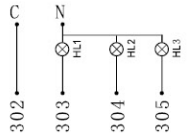
◆ When the key is at manual operation position, use connection terminals 202 ~205 to perform remote electric control.

◆ Emergency manual operation: to use emergency operation handle, to turn 90 at each position.

◆ To use I~3 locks to lock in: To keep position status, To prevent the emergency handle from being held on.

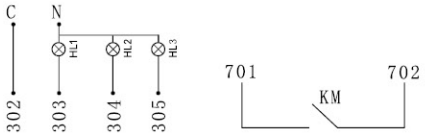
Terminal diagram of HGLD-100~1600A

Basic type Terminal diagram



HL1 : Main power input indicator
HL2 : double indicator
HL3 : standby power input indicator

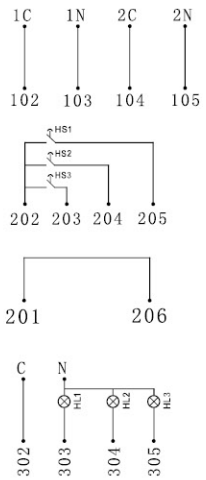
I type Terminal diagram



HL1 : Main power input indicator
HL2 : double indicator
HL3 : standby power input indicator
KM is 24V fire relay

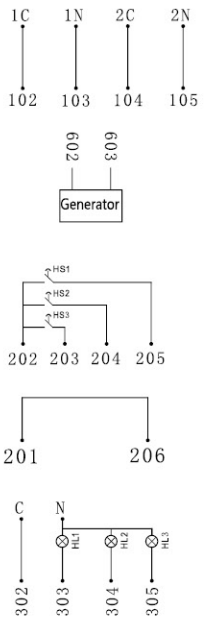
Znergy Magnus Systema

Ⅱ type Terminal diagram



HL1 : Main power input indicator
HL2 : double indicator
HL3 : standby power input indicator
1C 2C 1N 2N is the upper end power taking
CN is the lower end power taking
HS1、HS2、HS3 is auto throw not reset, remote control switch

Ⅲ type Terminal diagram



HL1 : Main power input indicator
HL2 : double indicator
HL3 : standby power input indicator
1C 2C 1N 2N is the upper end power taking
CN is the lower end power taking
HS1、HS2、HS3 is auto throw not reset, remote control switch

Cut off function

Power supply changeover

Main power supply changeover to emergency power.

Changeover reverse

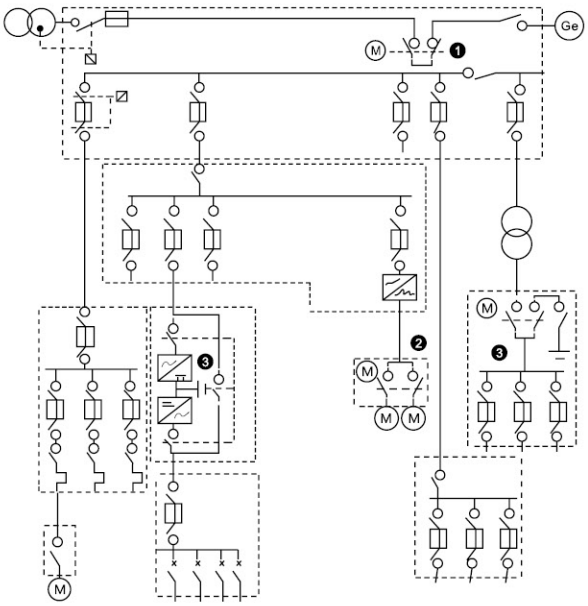
Changeover between two load equipment. (Emergency standby motor) reversion by two phases changeover.

Cut off the grounding

One operation of grounding and short circuit realizes the isolation.

General opening functions.

Conform with the standards of IEC 947 and GB/T14048.



HH15 Series

Model & Meaning

HH 15 – □ / □ □ □ □

① ② ③ ④ ⑤ ⑥ ⑦

NO.	Implication
①	Switch–disconnector–fuse
②	Design code
③	Conventional thermal current
④	Number of poles (2、3、4)
⑤	Qty of auxiliary contact: 0–no auxiliary contact 1–with I pair of auxiliary contact 2–with 2 pairs of auxiliary contact
⑥	"QP" means no fuse body, Contacting sytems are parallel structure; "QA" means no fuse body, Contacting systems are series connection structure; "QSA or No letter' means with fuse body; Contactingsystems are series connection structure.
⑦	Model code: No letter: Single–changeover S: Double–changeover

Application scope

HH15 Series isolating switch–disconnector–fuse, QA and QP series switch–disconnector (hereinafter called switch), it is particularly suitable in the relative high class with drawable low voltage complete equipment.

This product is conforms to standard IEC 60947–3 and GB 14048.3.

Normal work conditions and Installation conditions

- Ambient temperature: –50℃ –400℃ .
- Altitude: shall not exceed 2000m.
- The atmosphere condition: The relative humidity shall not exceed 50% when the environmental temperature is +400 ℃ in installing place; And the relative humidity may be higher at a lower temperature condition. Such as the humidity is 90% when the temperature is +200 ℃ . It shall take some special measurements to avoid the dew occurs on the product surface due to temperature change.
- Pollution grade: III
- The product shall be installed in the place without remarkable shake, strke and quiver, rain and snow, in the medium without danger of exploding, and in the places without gas and conductive dust, that can make the metal go rust and affect insulation performances.

Other

Structure characteristic:

The switch adopts full-enclosed structure to increase the reliability of operation and stability of performance; It has the rolling insert type contact system. There are two pairs of contact systems for each phase, it can meet various demands of different current circuit or various working category in parallel or series connecting the two groups of contact systems. The contact system makes the current flow through several rollers, leading to less electric opposite force that every roller obtains. In moving period, the rolling and sliding friction between the roller and fixed contact can effectively prevent the melting welding. The operating mechanism is provided with storage spring, so the moving speed of the dynamic contact group has no relation with the operation force and speed. Operator is constructed by the handle on the panel, driving coupling joint which is engaged with the handle, outrigger shaft, coupling joint and driving axle. The outrigger shaft and the coupling joint are served only that the driving axle is not long enough. The installation depth for the switch in the complete equipement will be detemined according to the assembling requirements of the electric components, there is a rather big range.

Principal technical parameter

Property of HH15- □ /QA switch-disconnector

Specification NO. of Poles		125	160	200	400	630	1000
		3	3	3	3	3	3
Rated Insulation Voltage Ui (V)		When Ue=380V, Ui=660V; When Ue=660V, Ui=1000V					
Rated operational Voltage Ue (V)		AC 380. 660	AC 380. 660	AC 380. 660 AC 380. 660	AC 380. 660	AC 380. 660	
Conventional themal current (A)		125	160	200	400	630	1000
Rated operational current (A)	380V: AC-23B	125	160	200	400	630	1000
	660V: AC-22B	125	160	160	315	425	800
	660V: AC-21B	125	160	200	400	630	1000
Rated short-circuit making capacity (Peak) (kA)		7.65	7.65	7.65	25.2	25.2	50
Rated short-time withstand current (kA)		5	5	5	12.6	12.6	15
Mechanical durability (times)		1400	1400	1400	800	800	500
Electrical Durability (times)		200	200	200	200	200	100
Operating Moment (Nm)		7.5	7.5	7.5	16	16	30
Conventional thermal current of auxiliary contact Ith 380、AC-15 (A)		4	4	4	4	4	4

Property of HH15- □ /QP switch-disconnector

Specification NO. of Poles		250	400	630	1000	1250	1600	2500	3150
		3	3	3	3	3	3	3	3
Rated Insulation Voltage Ui (V)		When Ue=380V, Ui=660V; When Ue=660V, Ui=1000V							
Rated operational Voltage Ue (V)		AC 380、660	AC 380、660	AC 380、660	AC 380、660	AC 380、660	AC 380、660	AC 380、660	AC 380、660
Conventional themal current (A)		250	400	630	1000	1250	1600	2500	3150
Rated operational current (A)	380V: AC-23B	250	400	630	1000	1250	1600	2500	3150
	660V: AC-22B	250	400	630	630	800	800	--	--
	660V: AC-21B	250	400	630	1000	1250	1470	2500	2500
Rated short-circuit making capacity (Peak) (kA)		7.65	7.65	25.2	60	70	70	105	105
Rated short-time withstand current (kA)		5	5	12.6	32	50	50	80	80
Mechanical durability (times)		1400	1400	800	500	500	500	500	300
Electrical Durability (times)		200	200	200	100	100	100	100	100
Operating Moment (Nm)		7.5	7.5	16	16	30	30	70	70
Conventional thermal current of auxiliary contact Ith 380、AC-15 (A)		4	4	4	4	4	4	4	4

HH15 Series

Principal technical parameters of HH15 series

Specification NO. of Poles		HH15-63	HH15-125	HH125-160	HH15-250	HH15-400	HH15-630	HH15-1250
		3	3	3	3	3	3	4
Rated Insulation Voltage Ui (V)		Ue=380V Ui=660V; Ue=660, Ui=1000V				AC380、660	AC380、660	AC380、660
Rated operational Voltage Ue (V)		AC380、660	AC380、660	AC380、660	AC380、660	AC380、660	AC380、660	AC380、660
Conventional themal current (A)		63	125	160	250	400	630	1250
Rated operational current (A)	380V: AC-23B	63	125	160	250	400	630	1250
	660V: AC-22B	63	100	100	200	315	425	800
Rated conditional short-circuit current 380V: Y/H (kA)		50/100	50/100	50/100	50/100	50/100	50/100	50/100
Rated conditional short-circuit current 660V: (kA)		50	50	50	50	50	50	50
Mechanical durability (times)		1700	400	1400	1400	800	800	500
Electrical Du rability (times)		300	200	200	200	200	200	100
Rated current of fuse 380V/660V(A)		63/63	125/100	160/100	250/00	400/315	630/425	1250/800
Model of fuse Body	380V	RT16-00、NT00	RT16-00、NT00	RT16-00、NT00	RT16-1、NT1	RT16-2、NT2	RT16-3、NT3	RT16-4、NT4
	660V	RT16-00、NT00	RT16-00、NT00	RT16-00、NT00	RT16-1、NT1	RT16-2、NT2	RT16-3、NT3	RT16-4、NT4
Operating Moment (Nm)		7.5	7.5	16	16	16	30	38
Conventional thermal current of auxiliary contact Ith 380. AC-15 (A)		4	4	4	4	30	4	6

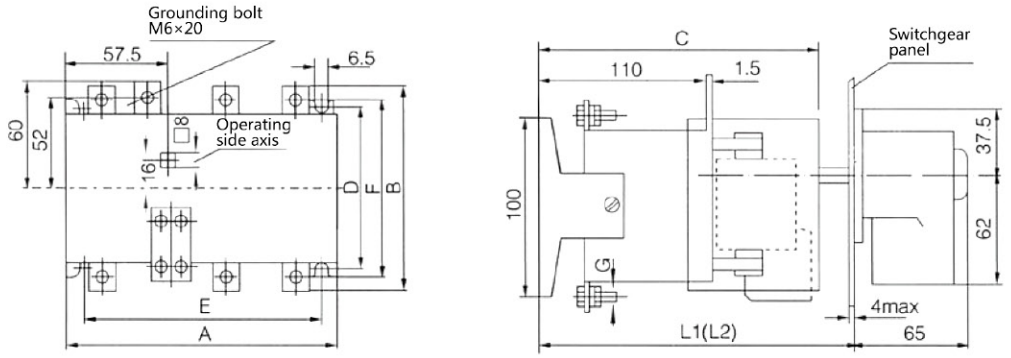
Overall & Installation Dimension

Over & Installation dimension of HH15 (see table 1)

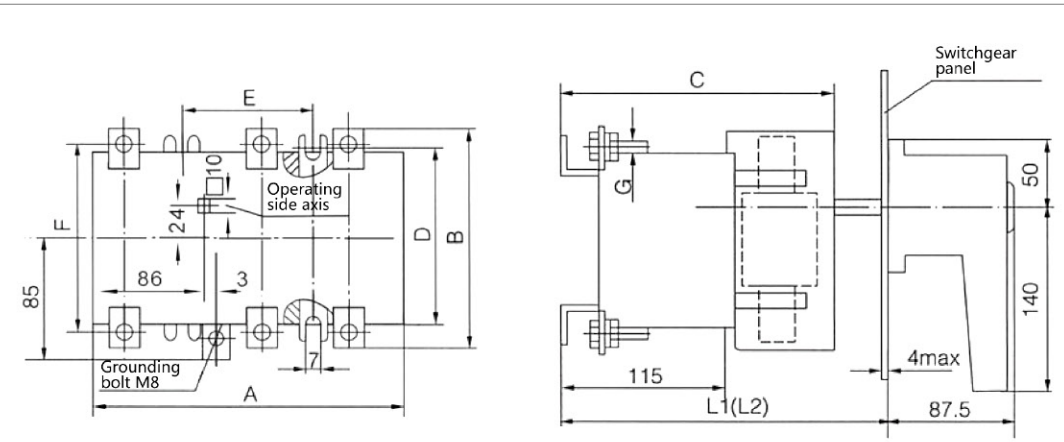
table1

Specification	A	B	C	D	E	F	G	L1	L2
HH15 – 63	155 ± 1.25	100 ± 1.1	170 ± 1.25	90 ± 0.75	135 ± 1.25	88 ± 1.1	M5	165-225	165-385
HH15 – 125	155 ± 1.25	116 ± 1.1	170 ± 1.25	90 ± 0.75	135 ± 1.25	101 ± 1.10	M6	165~225	165~385
HH15 – 160	240 ± 1.45	146 ± 1.25	189 ± 2.0	130 ± 125	100 ± 1.1	126 ± 1.25	M8	220-270	220-390
HH15 – 250	240 ± 1.45	160 ± 1.25	209 ± 2.3	130 ± 1.25	100 ± 1.1	135 ± 2.0	M10	220-270	220-390
HH15 – 400	240 ± 1.45	160 ± 1.25	209 ± 2.3	130 ± 1.25	100 ± 1.1	135 ± 2.0	M10	220-270	220-390
HH15 – 630	345 ± 1.8	270 ± 2.6	250 ± 2.6	208 ± 1.6	315 ± 1.6	230 ± 2.3	M12	250-265	250-529
HH15-800	345 ± 1.8	350 ± 2.6	250 ± 2.6	208 ± 1.6	315 ± 1.6	270 ± 2.3	M12	250-265	250-529
HH15-1000	456 ± 2.0	370 ± 2.6	329 ± 2.6	256 ± 1.6	419 ± 1.6		M10	395-430	395-595
HH15-1250	456 ± 2.0	370 ± 2.6	329 ± 2.6	256 ± 1.6	419 ± 1.6		M10	395~430	395~595

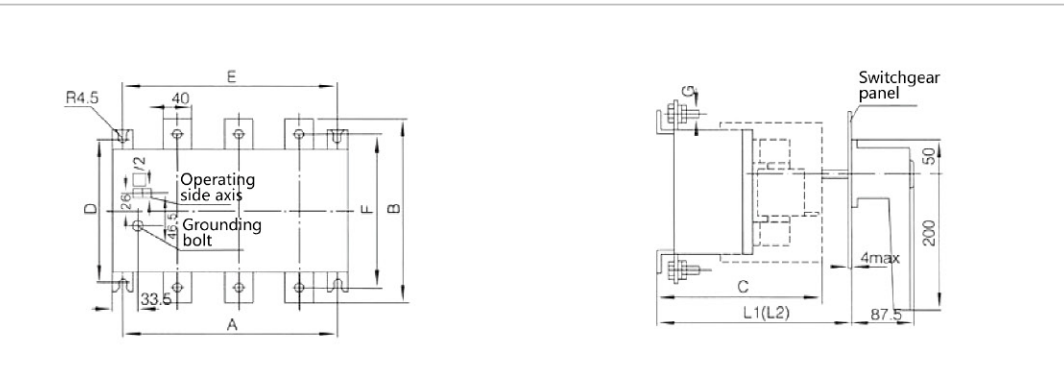
Overall & Installation dimension of HH15–63、125 (see diagram, table 1)



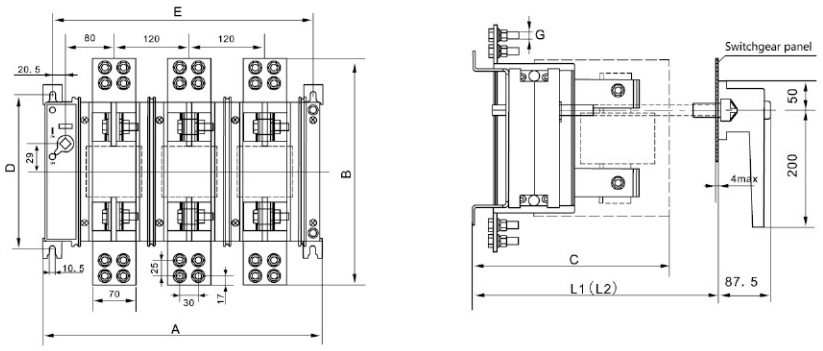
Overall & Installation dimension of HH15–160、125、400 (see diagram, table 1)



Overall & Installation dimension of HH15–630、800 (see diagram, table 1)



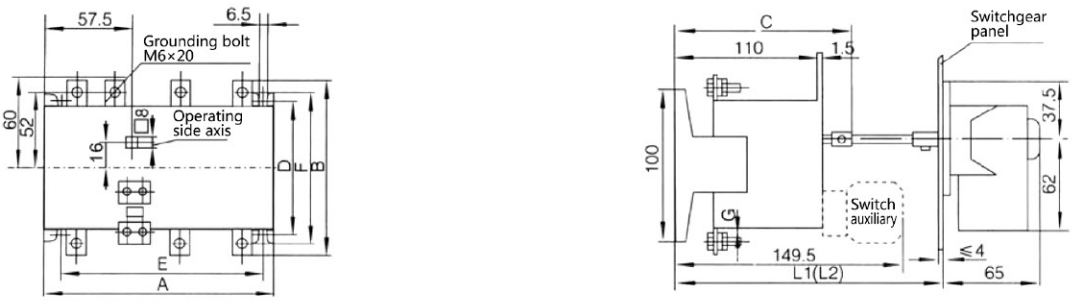
Overall & Installation dimension of HH15–1000、1250 (see diagram, table 1)



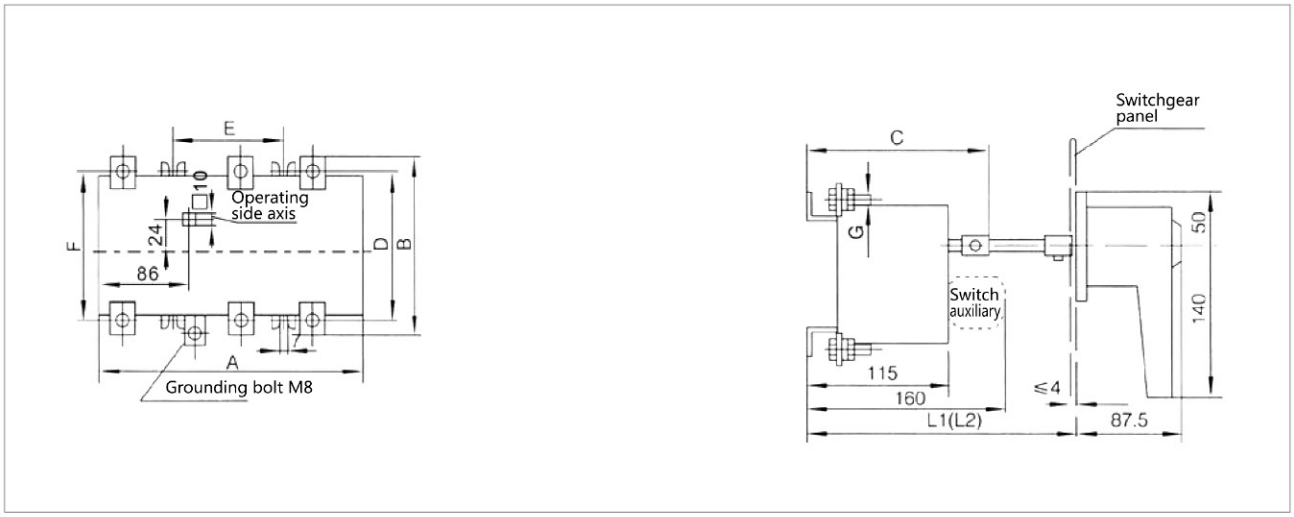
Overall & Installation dimension of HH15– □ /QA (see table 2)

Specification	A	B	C	D	E	F	G	L1	L2
HH15 – 125/QA	155 ± 1.25	115 ± 1.1	133 ± 1.25	90 ± 0.75	135 ± 1.25	101 ± 1.1	M6	165–225	165–385
HH15 – 160/QA	155 ± 1.25	127 ± 1.25	133 ± 1.25	90 ± 0.75	135 ± 1.25	107 ± 1.10	M8	165~225	165~385
HH15 – 200/QA	155 ± 1.25	127 ± 1.25	133 ± 1.25	90 ± 0.75	135 ± 1.25	107 ± 1.10	M8	165~225	165~385
HH15 – 400/QA	240 ± 1.45	160 ± 1.25	152 ± 1.25	130 ± 1.25	100 ± 1.1	135 ± 2.0	M10	165~225	165~385
HH15 – 630/QA	240 ± 1.45	180 ± 1.25	152 ± 1.25	130 ± 1.25	100 ± 1.1	135 ± 2.0	M10	165~225	165~385
HH15 – 1000/QA	345 ± 1.8	270 ± 2.6	182 ± 2.6	208 ± 1.6	315 ± 1.6	230 ± 2.3	M12	250~265	250~529

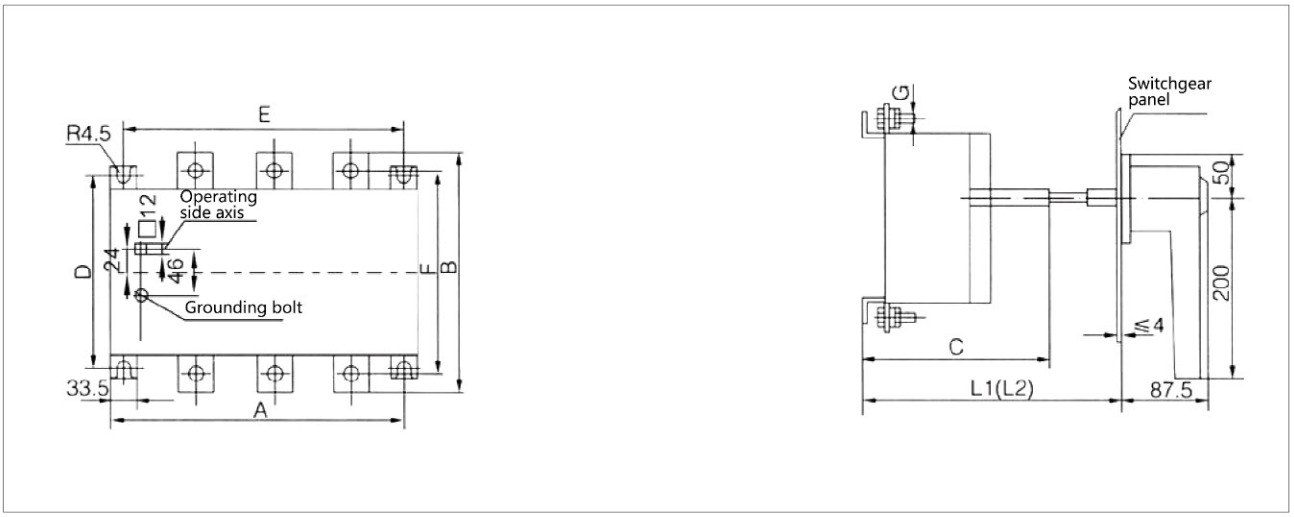
Overall & Installation dimension of HH15–125/QA、160/QA、200/QA (see diagram, table 2)



Overall & Installation dimension of HH15–400/QA (see diagram, table 2)



Overall & Installation dimension of HH15–1000/QA (see diagram, table 2)

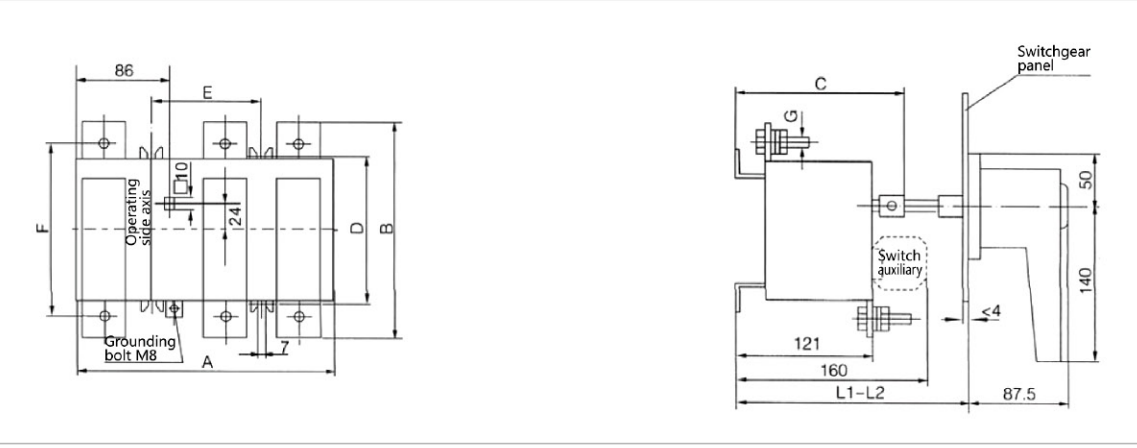


Overall & Installation dimension of HH15– □ /QP (see table 3)

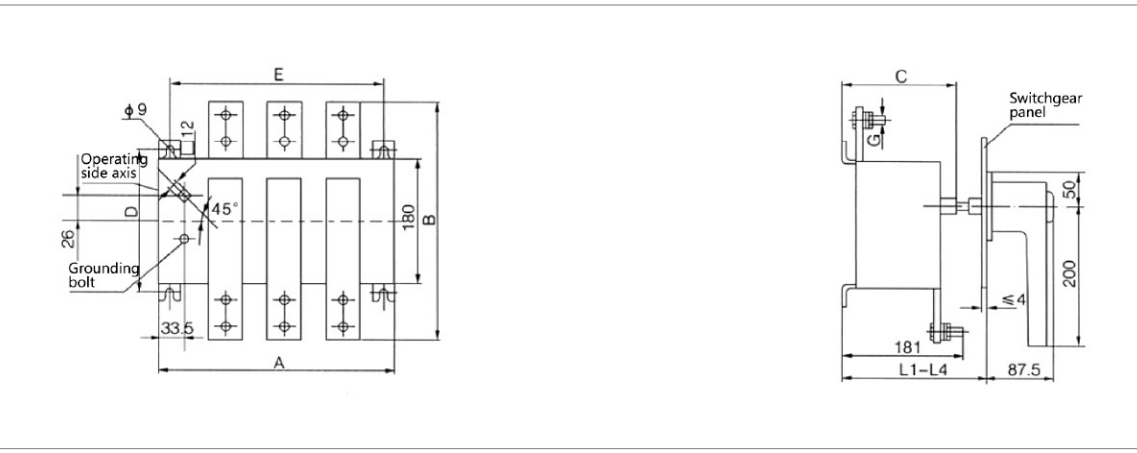
Specification	A	B	C	D	E	F	G	L1	L2	L3	L4
HH15 – 250/QP	155 ± 1.25	143 ± 1.25	133 ± 1.25	90 ± 0.75	135 ± 1.25	118 ± 1.1	M10	165~225	165~385	--	--
HH15 –400/QP	240 ± 1.45	170 ± 1.25	152 ± 1.25	130 ± 1.25	100 ± 1.1	140 ± 1.25	M10	165–225	165–385	--	--
HH15 – 630/QP	240 ± 1.45	170 ± 1.25	152 ± 1.25	130 ± 1.25	100 ± 1.1	140 ± 1.25	M10	165–225	165–385	--	--
HH15 – 1000/QP	240 ± 1.45	218 ± 1.6	152 ± 1.25	130 ± 1.25	100 ± 1.1	178 ± 1.25	M12	165~225	165~385	--	--
HH15 – 1250/QP	345 ± 1.8	235 ± 2.6	182 ± 2.6	208 ± 1.6	315 ± 1.6	--	2 × M12	208~233	233~258	244~269	249~529
HH15 – 1600/QP	345 ± 1.8	235 ± 2.6	182 ± 2.6	208 ± 1.6	315 ± 1.6	--	2 × M12	208~233	233~258	244~269	249~529
HH15 – 2500/QP	395 ± 1.8	405 ± 2.6	342 ± 2.6	152 ± 1.6	372 ± 1.6	--	4 × Φ 14	374~399	399~424	410~435	419~699
HH15 – 3150/QP	395 ± 1.8	432 ± 2.6	342 ± 2.6	152 ± 1.6	372 ± 1.6	--	4 × Φ 14	374~399	399~424	410~435	419~699

Overall & Installation dimension of HH15–250/QP (see diagram, table 3)

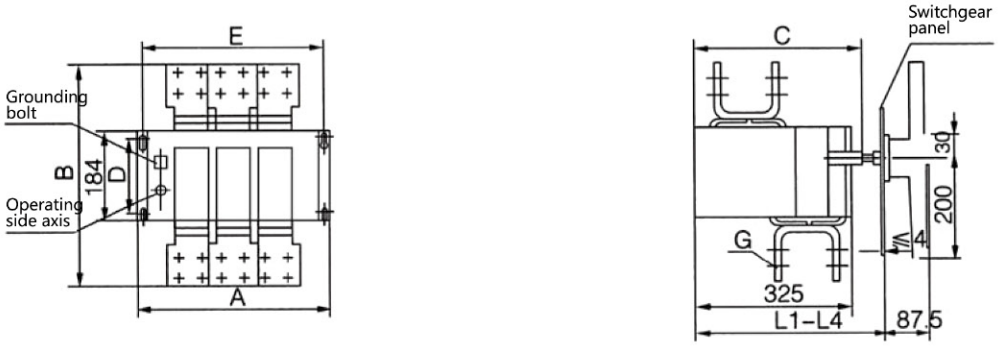
Overall & Installation dimension of HH15–400/QP、630/QP、1000/QP (see diagram, table 3)



Overall & Installation dimension of HH15–1250/QP、1600/QP (see diagram, table 3)

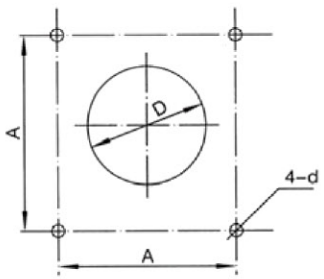


Overall & Installation dimension of HH15–2500/QP、3150/QP (see diagram, table 3)



Holing size of panel

Specification	A	D	d
HH15–63、125 HH15–125/QA、200/QA HH15–250/QP	65 ± 0.2	Φ42 $^{+4}_{0}$	Φ4.5 $^{+0.5}_{0}$
HH15–160、400、630 H H15–400~1000/QA HH15–400~3150/QP	88 ± 0.2	Φ63 $^{+2}_{0}$	Φ5.5 $^{+0.5}_{0}$



Hole in the panel is used to fix the base of the operating handle, its size is determined according to the correspondent switch specification (see diagram).