



## **HR3 Series Fuse Knife Switch**

# **Installation and Operation Instruction**

**Before installing and using the product,  
please read the instruction carefully  
and well keep it for future reference.**

## **Product Certificate**

This product has passed the inspection and meets the requirements of GB/T14048.3, and therefore is allowed to leave the factory.

Inspector:



Date of inspection: See the product or packaging.

# **HUANYU HIGH-TECH CO., LTD.**

# HR3 Series Fuse Knife Switch

## I. Scope of Application

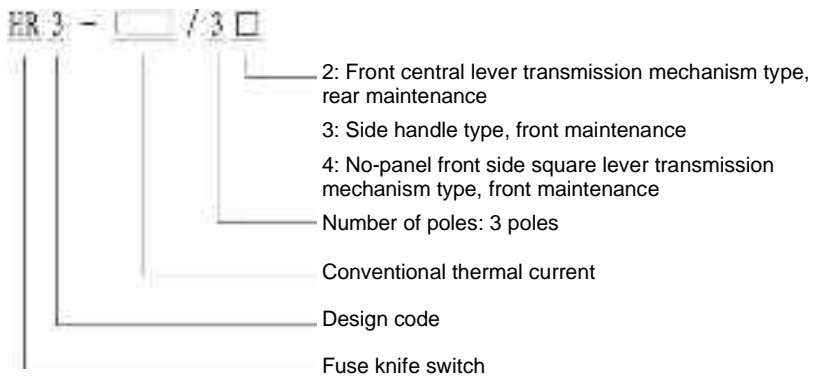
The HR3 Series Fuse Knife Switch (hereinafter referred to as “switch”) is suitable for industrial and commercial power distribution systems with AC 50 Hz, rated voltage of 380 V and conventional thermal current up to 1,000 A, and is used for the overload and short-circuit protection of cables, conductors and electrical equipment. Under normal circumstances, the circuit can be manually switched on and off infrequently. In the case of short circuit, the fuse is blown to cut off the current.

With simple structure and convenient operation, the switch complies with GB/T14048.3 and IEC60947-3, and is the most ideal combined electrical appliance used to replace the knife switch and fuse in various low-voltage distribution devices.

## II. Normal Working Conditions

1. Ambient air temperature: The temperature shall not be higher than +40°C and lower than -5°C, and the average value within 24 hours shall not exceed +35°C.
2. Altitude: The altitude of the installation location shall not exceed 2,000 meters.
3. Relative humidity: The relative atmospheric humidity shall not exceed 50% when the maximum ambient temperature is +40°C, and a higher relative humidity is allowed at a lower temperature (for example: 90% humidity at +20°C), but the occasional condensation on the switch surface due to temperature changes shall be considered.
4. Contamination grade of the surrounding environment: Grade 3.
5. Installation category: III.
6. Installation conditions: The switch shall be installed vertically in a place without significant shaking, impact or vibration and in a medium without explosion risks, or enough gas or dust to corrode metals or destroy the insulation.
7. Please consult with our company for the use occasions under abnormal working conditions.

### III. Model Description



### IV. Structural Features of Switch

The fuse knife switch is a combination of the fuse and the knife switch, which has the basic performance of fuse and knife switch. Under the condition of normal power supply of the circuit, the knife switch is used to turn on and off the circuit. When the line or equipment is overloaded or short-circuited, the fuse is blown to cut off the fault current.

The switch has three operation modes and maintenance directions, which is suitable for the installation and use of various low-voltage switchgears and distribution cabinets.

- 1). Front central lever transmission mechanism type, rear maintenance
- 2). Side handle type, front maintenance
- 3). No-panel front side square lever transmission mechanism type, front maintenance

Among them, the switch for front operation and front maintenance has a door in the center for the maintenance and replacement of fuse, which is mainly used for the installation on the BDL distribution panel. The switch for front operation and rear maintenance is mainly used for the installation on the BSL distribution cabinet. The switch for side operation and front maintenance can be used for the closed power distribution cabinet.

The switch is equipped with a safety baffle and an arc extinguishing chamber, which is riveted by phenol-formaldehyde laminated cardboard and metal arc extinguishing grid, greatly enhancing the arc extinguishing ability of the switch.

The fuse of the switch is fixed on the insulating beam with spring and lock plate, which ensures that the fuse does not trip during the normal operation, and when the fuse link is blown due to fault, the fuse can be easily replaced by pressing the lock plate.

## V. Main Technical Parameters

### 1. Main technical parameters of the switch:

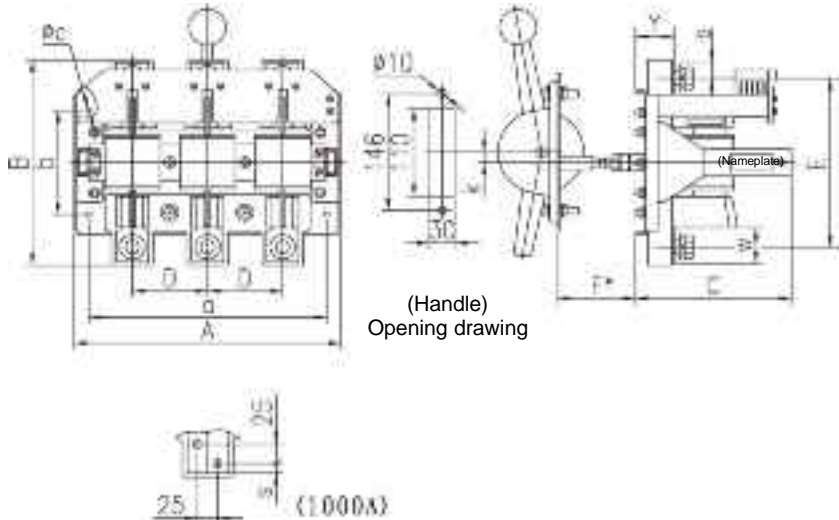
<b>HR3</b>	-100	-200	-400	-600	-1000
Rated impulse withstand voltage Uimp	8kV				
Rated insulation voltage Ui	690V				
Rated working voltage Ue	AC380V				
Rated frequency	50Hz				
Use category	AC-22B				
Conventional thermal current Ith	100A	200A	400A	600A	1000A
Rated working current Ie	30-100A	100-200A	200-400A	400-600A	600-1000A
Rated limited short-circuit current (r.m.s)	50kA	50kA	50kA	50kA	50kA
Mechanical life (number of operation cycles)	3500	3500	2000	2000	1250
Electrical life (number of making/breaking cycles)	500	500	500	500	250
Operating force F	≤294N	≤294N	≤294N	≤294N	≤400N

### 2. Matching between the switch and the fuse link:

Conventional thermal current Ith	Specification of fuse link matched	Rated current of fuse link (A)
100A	RT0-100	30. 40. 50. 60. 80. 100
200A	RT0-200	100. 120. 150. 200
400A	RT0-400	200. 250. 300. 350. 400
600A	RT0-600	400. 450. 500. 550. 600
1000A	RT0-1000	600. 800.1000

# VI. Outline and Installation Dimensions of Switch

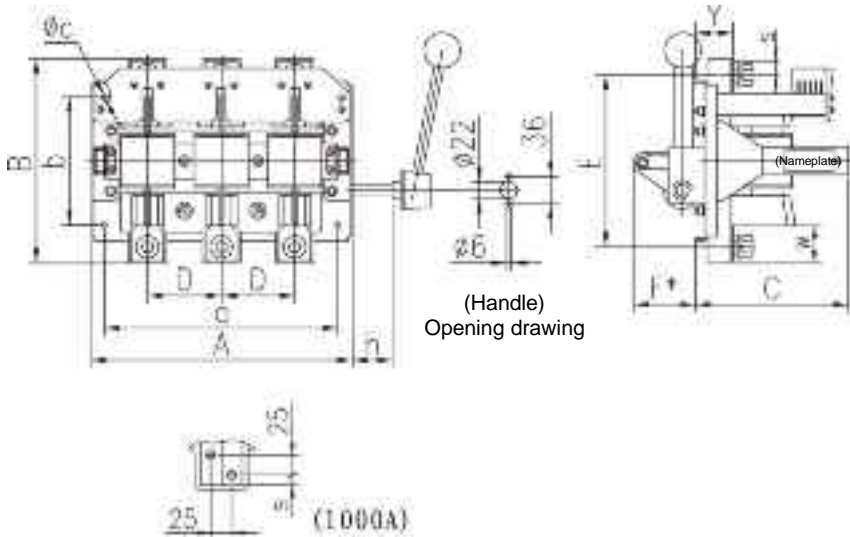
## 1. Outline and installation dimensions of HR3-100~1000/32



HR3	Outline dimensions (mm)				Installation dimensions (mm)				Copper busbar dimensions (mm)						
	A	B	C	F*	a	b	Øc	k	D	E	Y	S	W	Copper cross-section	M
-100/32	250	192	185	250	215	130	7	12	60	170	47	10	30	2*20	M8
-200/32	270	192	185	250	235	130	7	12	70	156	45.5	12.5	28	2*30	M10
-400/32	290	215	185	250	255	130	7	12	80	184	45.5	14	35	2.5*35	M10
-600/32	320	229	185	250	285	130	9	12	90	191	49.5	17.5	40	3.5*40	M12
-1000/32	410	335	270	350	350	250	9	12	115	300	69	12.5	55	8*50	2-M10

Note: The F\* dimensions are those when the connecting rod is in the maximum position after the switch is turned on.

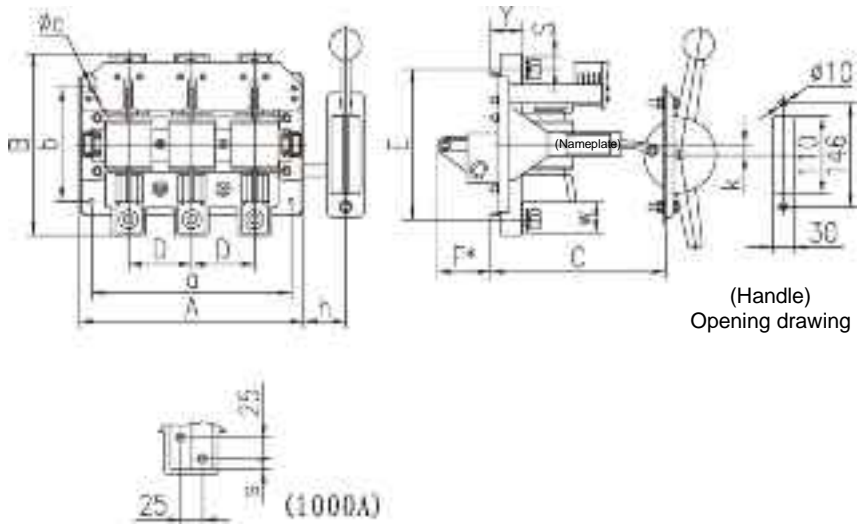
## 2. Outline and installation dimensions of HR3-100~1000/33



HR3	Outline dimensions (mm)				Installation dimensions (mm)				Copper busbar dimensions (mm)						
	A	B	C	F*	a	b	Øc	h	D	E	Y	S	W	Copper cross-section	M
-100/33	250	200	185	75	215	160	7	78	60	170	47	10	30	2*20	M8
-200/33	270	202	185	75	235	160	7	78	70	156	45.5	12.5	28	2*30	M10
-400/33	290	215	185	75	255	160	7	78	80	184	45.5	15	35	2.5*35	M10
-600/33	320	229	185	75	285	160	9	78	90	191	49.5	17.5	40	3.5*40	M12
-1000/33	410	335	270	75	350	250	9	102	115	300	69	12.5	55	8*50	2-M10

Note: The F\* dimensions are those when the connecting rod is in the maximum position after the switch is turned on.

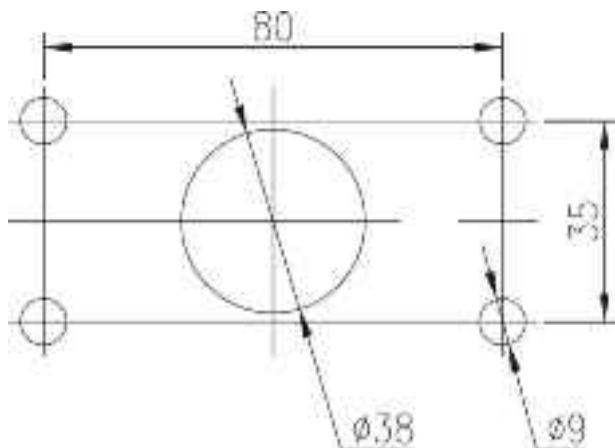
### 3. Outline and installation dimensions of HR3-100~1000/34



HR3	Outline dimensions (mm)				Installation dimensions (mm)					Copper busbar dimensions (mm)						
	A	B	C	F*	a	b	Øc	h	k	D	E	Y	S	W	Copper cross-section	M
-100/34	250	200	250	75	215	160	7	48	12	60	170	47	10	30	2*20	M8
-200/34	270	202	250	75	235	160	7	48	12	70	156	45.5	12.5	28	2*30	M10
-400/34	290	215	250	75	255	160	7	48	12	80	184	45.5	14	35	2.5*35	M10
-600/34	320	229	250	75	285	160	9	48	12	90	191	49.5	17.5	40	3.5*40	M12
- 1000/34	410	335	350	75	350	250	9	70	12	115	300	69	12.5	55	8*50	2-M10

Note: The F\* dimensions are those when the connecting rod is in the maximum position after the switch is turned on.

#### 4. Installation and opening dimensions of the HR3/BX Handle



Dimensions between the handle and the switch center

	Right deviated	Downward deviated
HR3/BX	30	40



## **VII. Use and Maintenance**

1. The switch shall be installed vertically, and the rated current of the switch and the fuse shall be selected according to the capacity of the electrical equipment.
2. The switch shall be equipped with RT0 filler cartridge fuse, and meet the requirements of GB/T 13539.1 and GB/T 13539.2.
3. During the normal operation, the fuse indicator shall be checked frequently to prevent the single-phase operation of the motor caused by one-phase fuse. When there is a fault in multi-circuit power distribution equipment, the fuse indicator shall be checked first, and the faulty circuit shall be found out in time, and then the fuse shall be replaced to quickly restore power supply.
4. When replacing the fuse, you shall disconnect the load circuit and wear working gloves to avoid scalding your hands by the fuse pipe due to the heat. After pressing the lock plate, the fuse can be easily replaced.
5. The contacts of the switch shall be checked regularly, and the dust, oil and other impurities shall be cleaned up in time. The groove guide rail of the switch must be kept clean to prevent ineffective operation due to fouling.
6. No.3 sodium-based lubricant shall be coated on the contact surface of the contact knife and socket when the fuse is self-equipped or replaced.

## **VIII. Ordering Information**

When ordering, please specify the model and specification of the switch, rated current of the fuse link and order quantity. If the rated current of the fuse link is not specified, it shall be configured according to the conventional thermal current of the switch. If the fuse link is self-equipped, a remark shall be provided.

Examples of ordering: HR3-100/32, with 80 A fuse link, 10 sets

HR3-200/34, with self-equipped fuse link, 20 sets

## Company Commitment

On the premise that users abide by the use and storage conditions and that the product seals are intact, if the product is damaged or cannot be used normally due to manufacturing quality problems within 18 months from the production date of the product, our company will be responsible for the repairing or replacement free of charge. If the warranty period expires, users shall pay for the repair. However, if the damage is caused by the following circumstances, the fees for repair still shall be charged even within the warranty period:

- (1) Misuse, self-modification, improper maintenance, etc.
- (2) Use beyond the standard specification requirements.
- (3) Falling, damage during transportation, etc. after purchase.
- (4) Earthquake, fire, lightning strike, abnormal voltage, other natural disasters and secondary disasters, etc.

In case of any questions, please contact the dealer or our customer service department.

## Dear customers

To protect our environment, please recycle the product or its components when the product is scrapped. For materials that cannot be recycled, please handle them properly. Thank you very much for your cooperation and support.

**Address: Wenzhou Bridge Industrial  
Zone, Yueqing City, Zhejiang Province**

**Tel.: 0577-62889999**

**Fax: 0577-62885588**

**Service hotline: 400-887-5757**

 <http://www.huyu.com.cn>