

Secondary power distribution

HUM8L

Series Earth Leakage Circuit Breaker



1. Application range

HUM8L series earth leakage circuit breaker (hereinafter referred to as the circuit breaker) power system for AC 50Hz, rated voltage to 400V, rated current up to 630A, for the electricity distribution and power system protection against overload and short-circuit fault harm, also can be used to control the infrequent operation of motors. The leakage current (residual current) protection function of the circuit breaker is to provide indirect contact protection for fatal electrocution, and to prevent electrical fires caused by long-existing grounding fault current which are not detected by over-current protection devices.

The rated value of the residual operation current is adjustable, and the leakage protection operation time can also be adjusted. Therefore, the selective protection of leakage can be realized in the distribution system. When the rated residual operation current is set to 30mA, in the case of the failure of the protective device, the circuit breaker can also be used as a device for direct contact with the protective effect.

According to the classification of DC component: AC type, to ensure the CBR of the release for the residual sinusoidal current, whether suddenly or slowly rising without DC component. A type, with a specified residual pulsating DC residual sinusoidal AC current, ensures the CBR of the release, whether it is suddenly exerted or slowly rising.

It accords with the standard of GB 14048.2, IEC 60947-2, GB/Z 6829 and IEC 755.



2. Model and meaning

[illegible]

Note: (1) The wet heat circuit breaker (TH) can withstand the influence of humid air, salt fog, oil mist and mold.

(2) The air humidity range of new energy products (EN) ranges from -40 to 70 degrees centigrade.

3. Normal working condition

3.1 The maximum ambient temperature should be $-5^{\circ}\text{C} \leq T \leq +40^{\circ}\text{C}$, average temperature should be $\leq 35^{\circ}\text{C}$ at 24h.

3.2 The relative humidity should not exceed 95%

3.3 The altitude of installation place should not exceed 2000m. Higher than 2000m need to drop capacity for usage.

3.4 Pollution grade: 3. There is no explosion in the surrounding air, and there is no corrosion of metals and destruction of insulating gases and conductive dust.

3.5 Installation type: III

3.6 "1, 3, 5, N1" terminals are for power supply, "2, 4, 6, N2" terminals are for load, can no be reserved.

3.7 The installation surface of the breaker shall be perpendicular to the horizontal plane. The basic installation mode of the circuit breaker is vertical installation, the power source is on the top, the load end is below, and it can be installed horizontally.



Secondary power distribution

HUM8L

Series Earth Leakage Circuit Breaker

Table 1

Code	Type	Explanation
A	Atype	N pole does not install over current release, and switch on all the time, not switch on and switch off together with other 3 poles.
B	Btype	N pole does not install over current release, switch on and switch off together with other 3 poles.

Table 2

Code	Type	Explanation
1	Time delay release	Have protection characteristics of over current inverse time delay.
2	Instantaneous release	Namely electromagnetic release has protection characteristic of over current instantaneous operation.
3	Duplex release	Both of the functions mentioned above

Table 3

Frame size rated current Inm(A)	I		II		III		Note
	Code	Explanation	Code	Explanation	Code	Explanation	
100 250	0	None	0~1	Auxiliary contact group quantity	0~1	Alarm contact group quantity	
	1	Shunt release					
400	0	None	0~3		0~2		II + III ≤5
	1	Shunt release	0~1		0~1		II + III ≤2
	2	Undervoltage release	0~1		0~1		II + III ≤2
630	0	None	0~4		0~3		II + III ≤7
	1	Shunt release	0~2		0~2		II + III ≤4
	2	Undervoltage release	0~2		0~2		II + III ≤4

4. Main technical parameter

4.1 The basic specifications and parameters of the circuit breaker are shown in table 4:

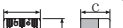
Table 4

Frame size rated current In(mA)			100			250			400			630		
Type	HUM8L-100S	HUM8L-100H	HUM8L-100U	HUM8L-250S	HUM8L-250H	HUM8L-250U	HUM8L-400S	HUM8L-400H	HUM8L-400U	HUM8L-630S	HUM8L-630H	HUM8L-630U		
Rated current In(A)	40、50、63、80、100			100、125、150、160、175、200、225、250			250、300、350、400			400、500、630				
Pole number	3	4	3	3	4	3	3	4	3	3	3	4	3	3
Rated insulation voltage Ui(V)	AC690 50Hz													
Rated working voltage Ue(V)	AC400 50Hz													
Arcing distinguish distance	≤50 (0) *			≤50 (0) *			≤100 (0) *			≤100 (0) *				
Rated impulse withstand voltage: Uimp kV	8													
Rated limiting/operating short circuit breaking capacity Icu/Ics(kA)	50/25	85/85	125/125	50/25	85/85	125/125	70/70	100/100	125/125	70/70	100/100	125/125		
Rated residual operation current I△n(mA)	Non time delay	100、300、500 Adjustable three gears												
	Time delay	(500、800、1000 Adjustable three gears) **												
Rated residual operation current I△n(mA)	1/2 I△n													
Rated residual operation current I△n(mA)	1/4 Icu													
Operating times	Electrify	1500			1000			500			500			
	Non-electrify	8500			7000			4000			2500			

Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

Continued

Frame size rated current Inm(A)		100				250				400				630			
	a	90	120	90		105	140	105		140	185	140		210	280	210	
	b	155		216		165		240		257		297		275		322	
	c	68				68				103		200		103		200	
*: Please give clear indication of arcing distance is zero when you place an order. **: Please note when ordering if these three gears needed(only for 400 and 630A)																	

4.2 Earth leakage protection operation time refers to table 5 and table 6:

Table 5: Non-time delay type residual current protection operation time t

t (s) I Δ	Frame size rated current Inm(A) I Δn (mA)	100~630					
		30	100	300	500	800	1000
I Δn		≤0. 1	≤0. 3				
0. 25A		≤0. 04					
2 I Δn			≤0. 15				
5 I Δn			≤0. 04				
10 I Δn			≤0. 04				

Table 6.Time delay type residual current protection operation time t

"t" in the table means the time delay setting up value.

t (s) I Δ	Frame size rated current Inm(A) I Δn (mA)	100~630		
		0. 4	1	2
I Δn		<0. 6	<1. 2	<2. 2
2 I Δn		>0. 2	>0. 5	>1
5 I Δn		0. 2≤t<0. 44	0. 5≤t<1. 04	1≤t<2. 04

"t" in the table means the time delay setting up value.

4.3 Working reliability of power supply voltage failure

4.3.1 At 0.85Ue, and the three-phase power to disconnect any phase, when the residual current IΔ= IΔn, the circuit breaker is still reliable breaking.

4.3.2 When the three-phase power line voltage to neutral line voltage drop to 50V, the residual current IΔ= IΔn, the circuit breaker is still reliable breaking.

5. Thermal electromagnetic over current release

5.1 Setting up current of long time delay release Ir1

Ir1 namely rated current In of circuit breaker, the specification of In refers to table 4.

The neutral pole (N pole) of the four poles circuit breaker does not install the over current release. The conventional thermal current is not less than In/2, 63A.

5.2 The power loss of circuit breaker is shown in table 7

Table 7

Frame size rated current Inm(A)	Rated current (A)	Each pole resistance (mΩ)	Total power losses of three poles (W)	
			Fixed type	Plug-in type or draw out type
100	100	0. 83	25	30
250	250	0. 32	60	75
400	400	0. 20	87	110
630	630	0. 14	167	195

Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

5.3 Over current protection characteristics of distribution circuit breaker, refers to table 8

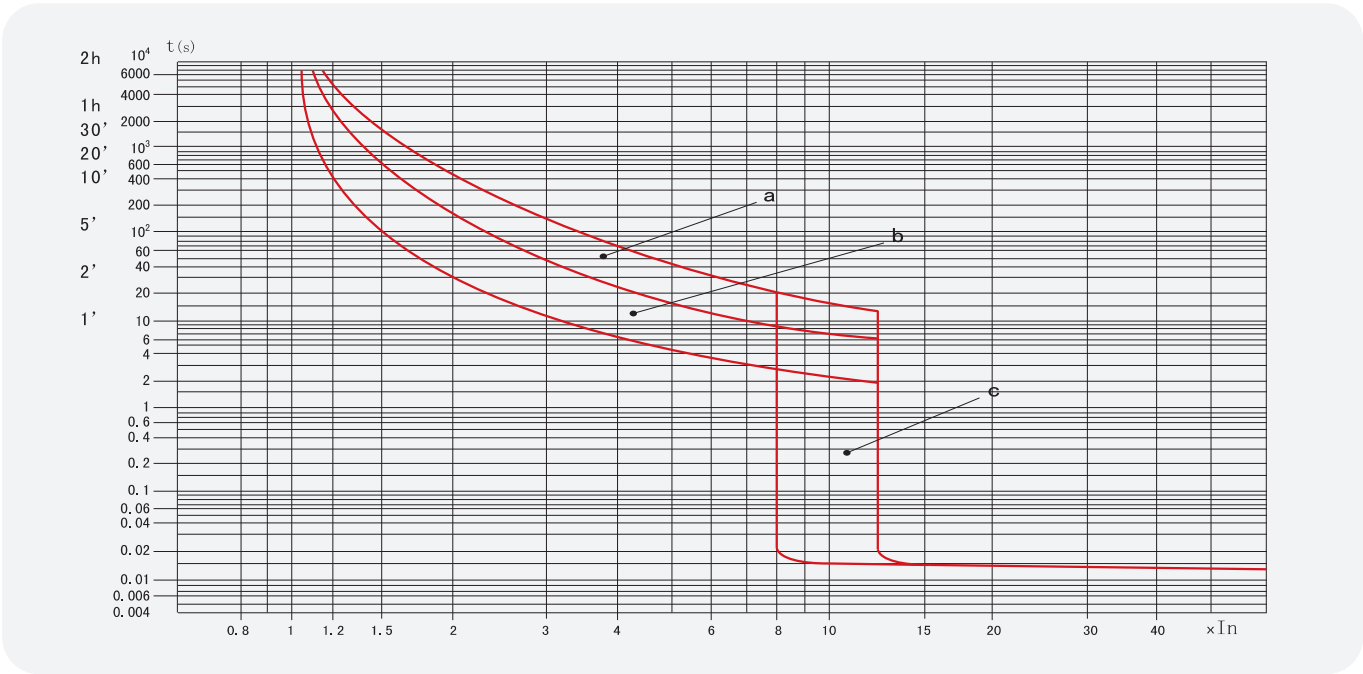
Table 8

Rated current In(A)	Thermal release(ambient temperature is +40℃)		Electromagnetic release operating current (A)
	1. 05 I nNon-action time (h) (Initial status: cold)	1. 30 I nNon-action time (h) (Initial status: cold)	
≤63	>1	≤1	(10±2) I n
>63	>2	≤2	

5.3.1 The over-current protection characteristic curve of HUM8L-100 is shown in picture 1

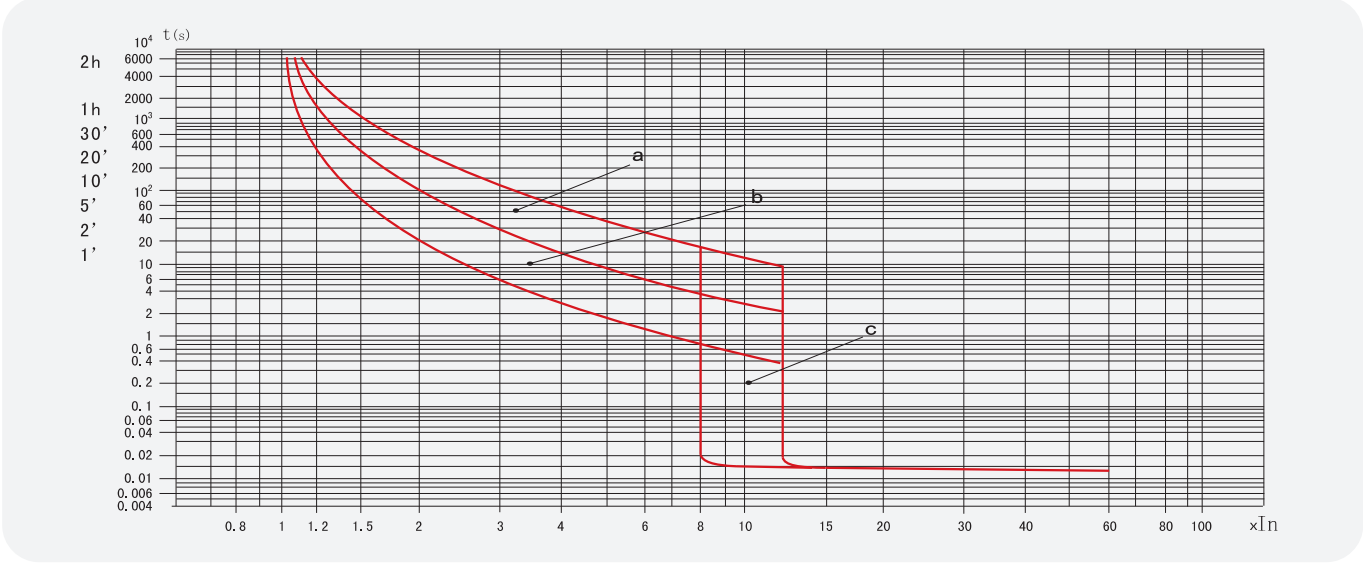
a-Characteristics of cold thermal overload protection

Picture 1



5.3.2 The over-current protection characteristic curve of HUM8L-250 is shown in picture 2

Picture 2

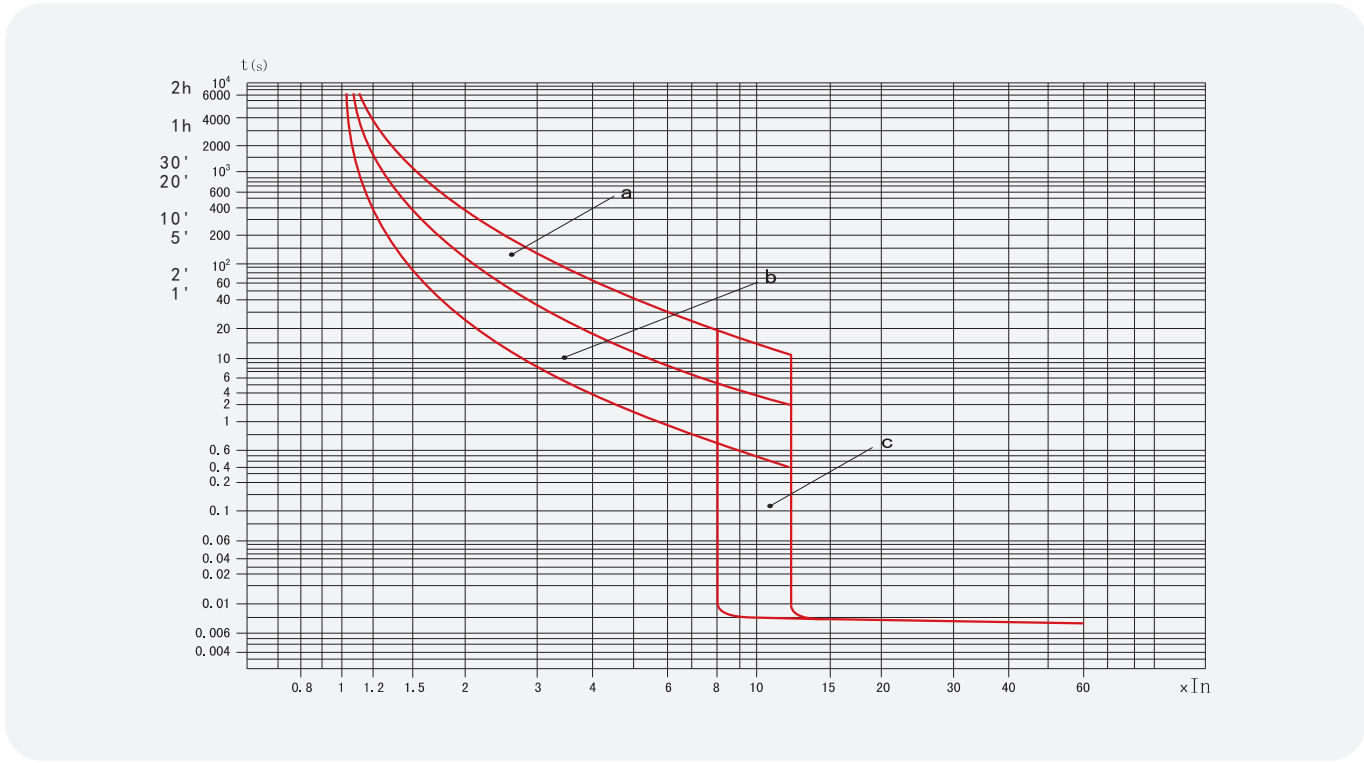


Secondary power distribution

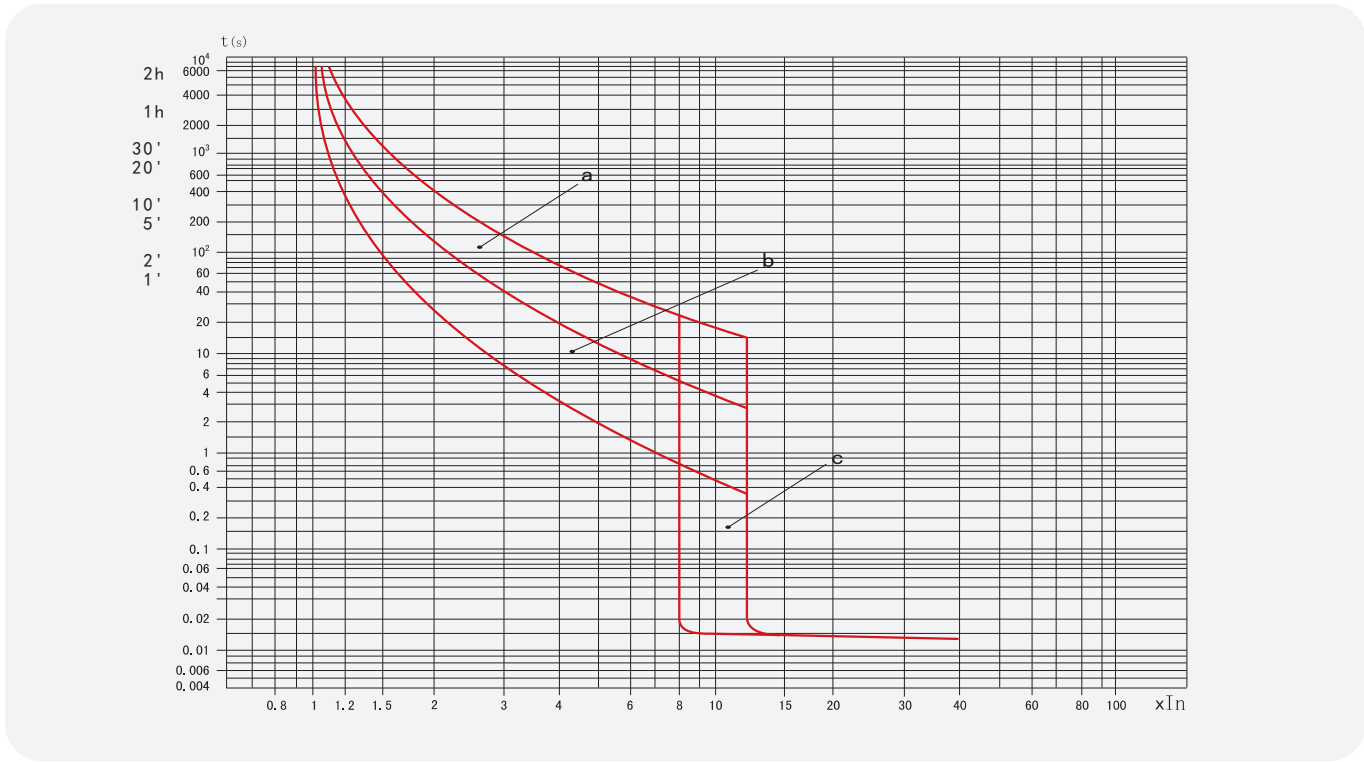
HUM8L

Series Earth Leakage Circuit Breaker

5.3.3 The over-current protection characteristic curve of HUM8L-400 is shown in picture 3
Picture 3



5.3.4 The over-current protection characteristic curve of HUM8L-630 is shown in picture 4
Picture 4



Secondary power distribution

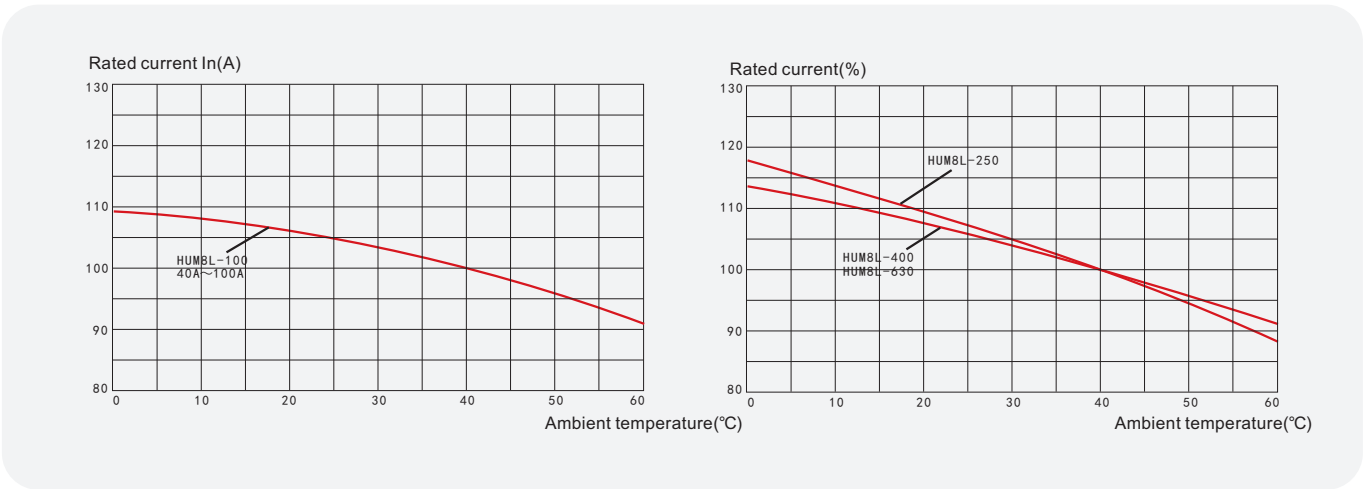
HUM8L

Series Earth Leakage Circuit Breaker

5.4 The protection characteristics of over current for motor circuit breakers are shown in table 9
Table 9

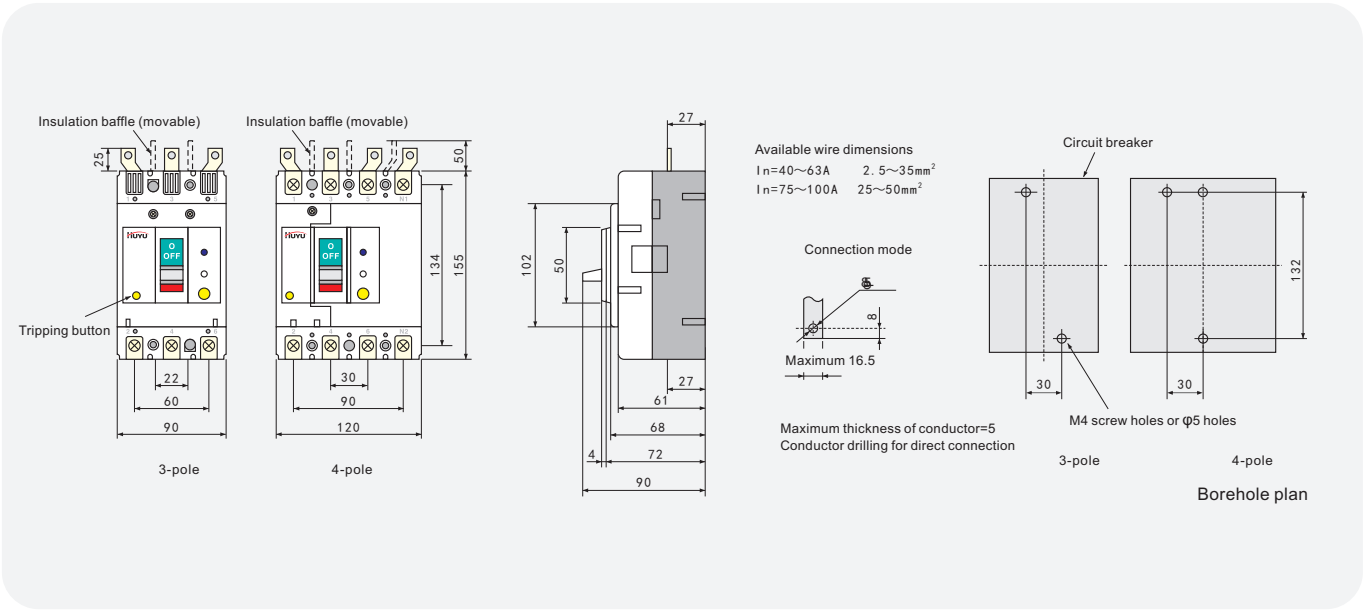
Rated current In(A)	Thermal release(ambient temperature is +40℃)				Electromagnetic release operating current(A)
	1.0In non operating time(h) (cold state)	1.2In operating time(h) (thermal state)	1.5In operating time(min) (thermal state)	7.2In operating time Tp(s) (cold state)	
In≤63	>2	≤2	≤2	2<Tp≤10	(12±2.4) In
63<In≤250			≤4	4<Tp≤10	
250<In≤800			≤8	6<Tp≤20	

5.5 The temperature correction curve of the thermal release is shown in picture 5
Picture 5



6. Overall and mounting dimension

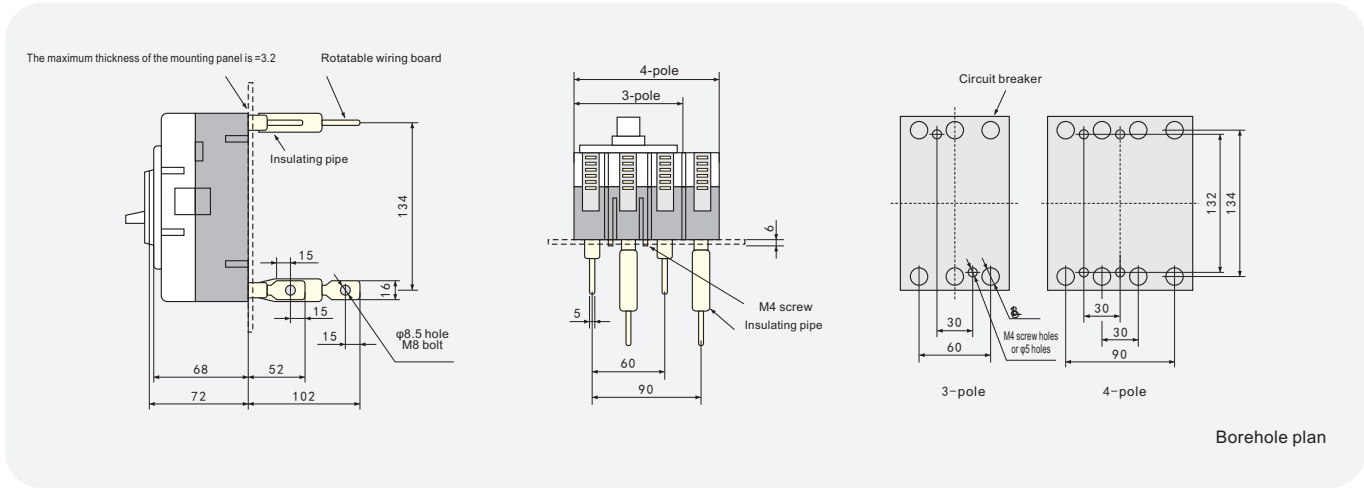
6.1 HUM8L-100S overall and mounting dimension
Front panel connection



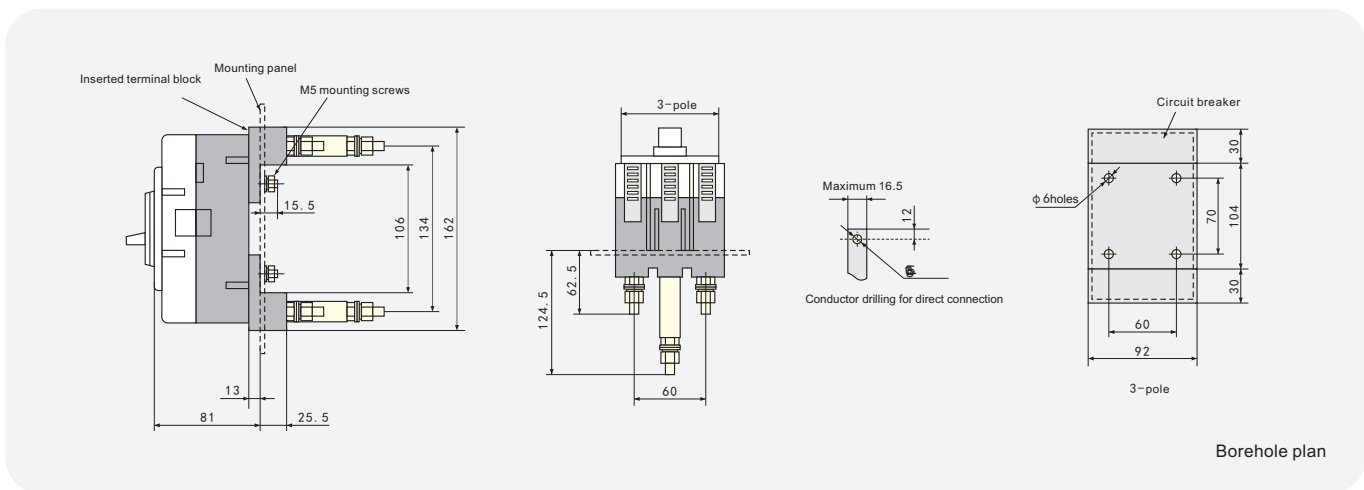
Secondary power distribution

HUM8L Series Earth Leakage Circuit Breaker

Post plate connection

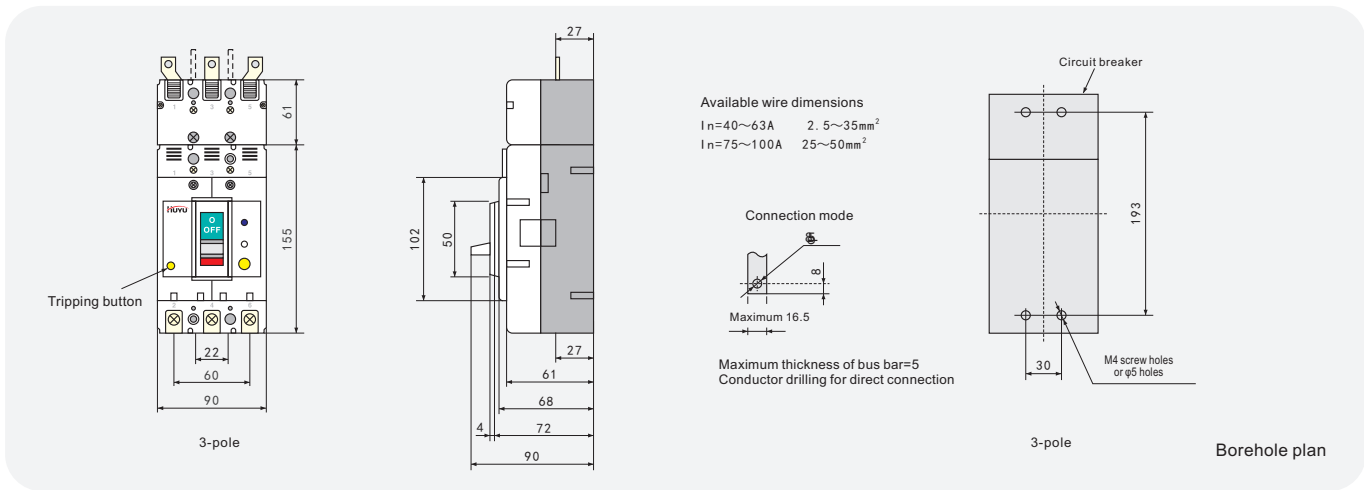


Plug-in connection



6. 2 HUM8L-100H, HUM8L-100U overall and mounting dimension

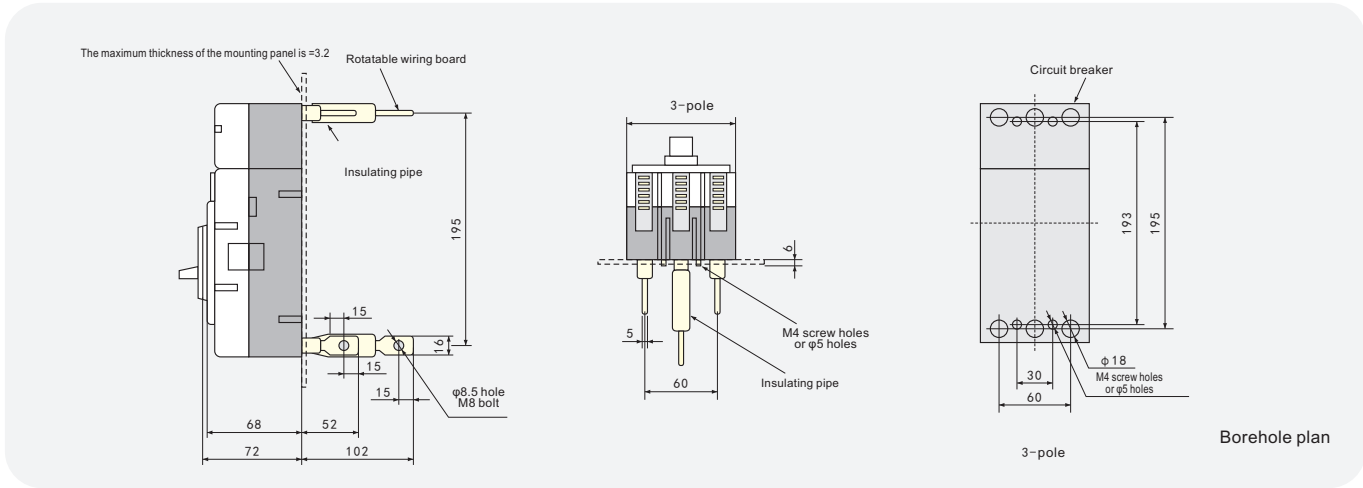
Front panel connection



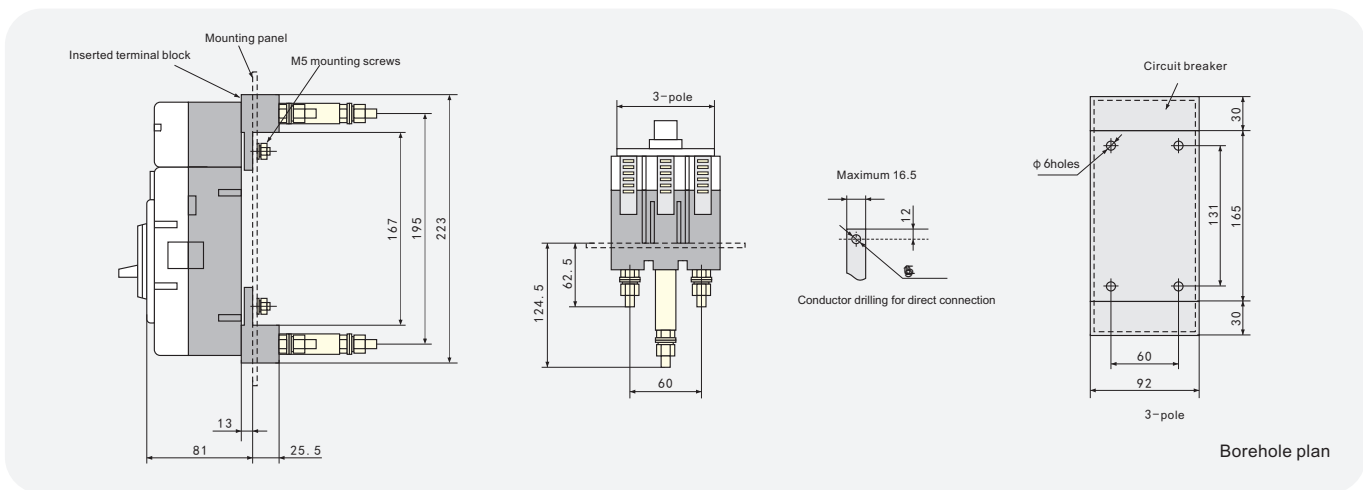
Secondary power distribution

HUM8L Series Earth Leakage Circuit Breaker

Post plate connection

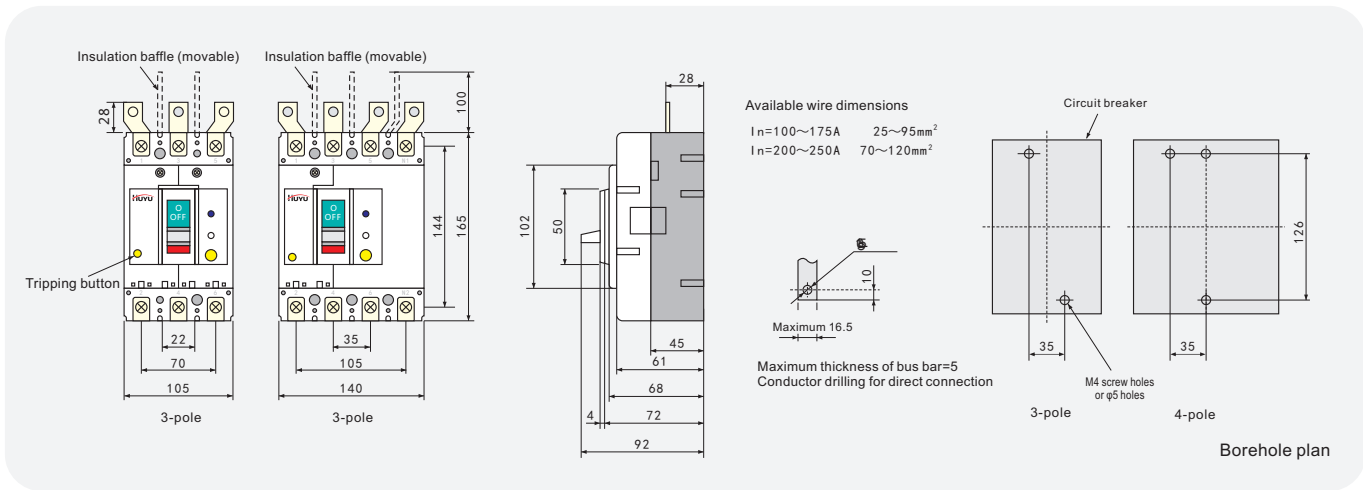


Plug-in connection



6. 3 HUM8L-250S overall and mounting dimension

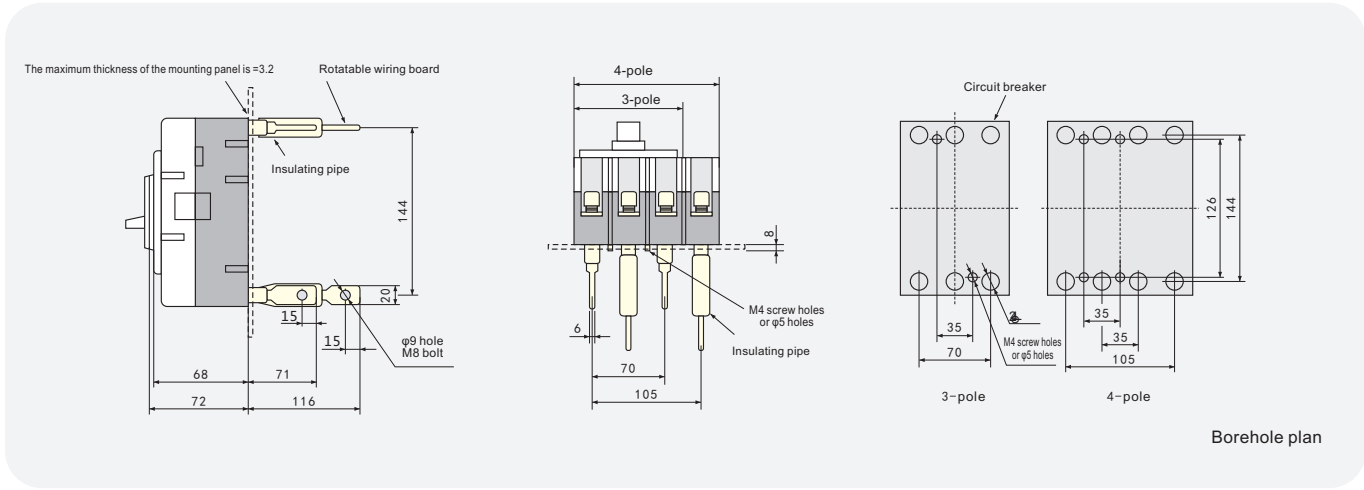
Front panel connection



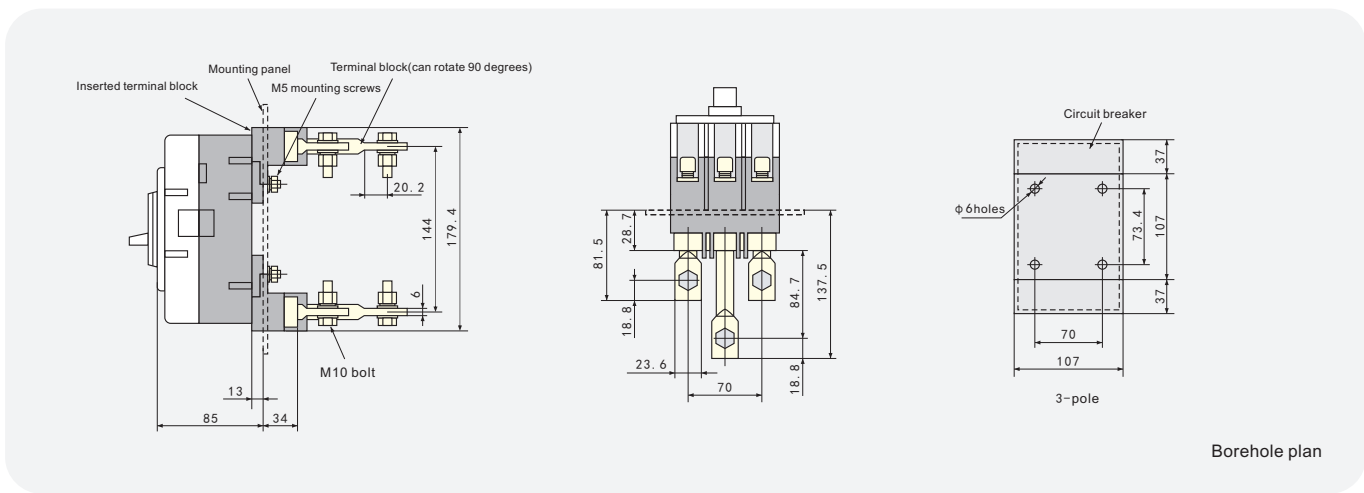
Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

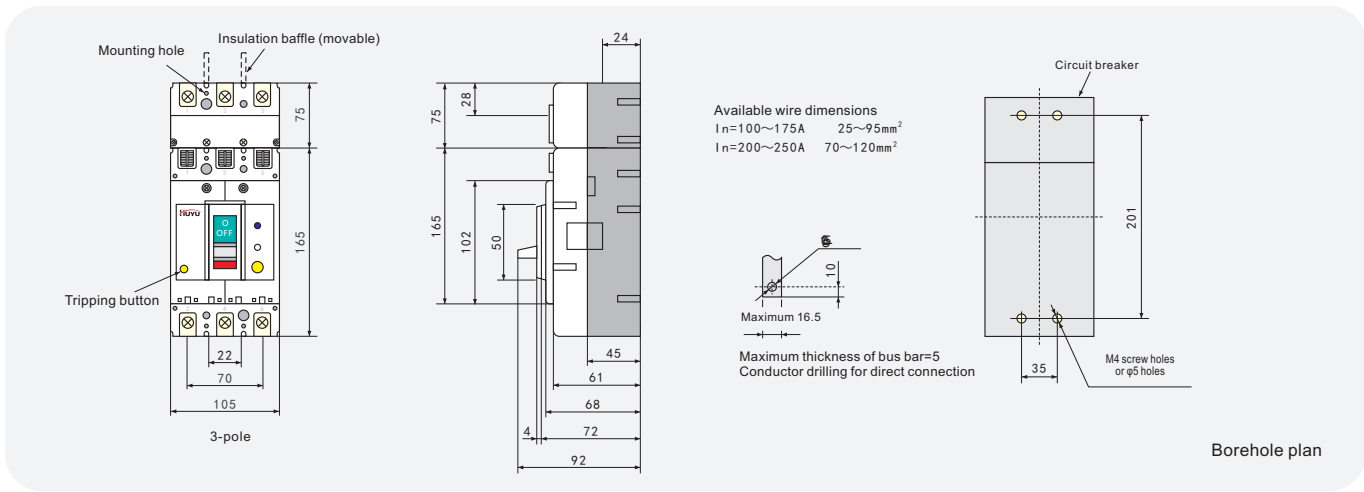
Post plate connection



Plug-in connection



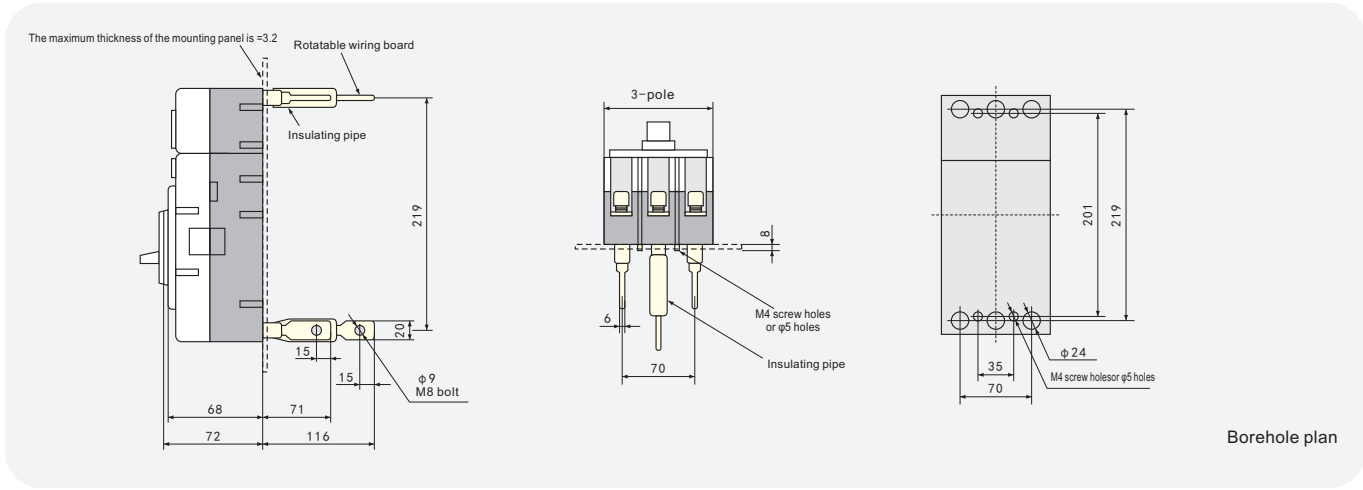
6. 4 HUM8L-250H、HUM8L-250U overall and mounting dimension
Front panel connection



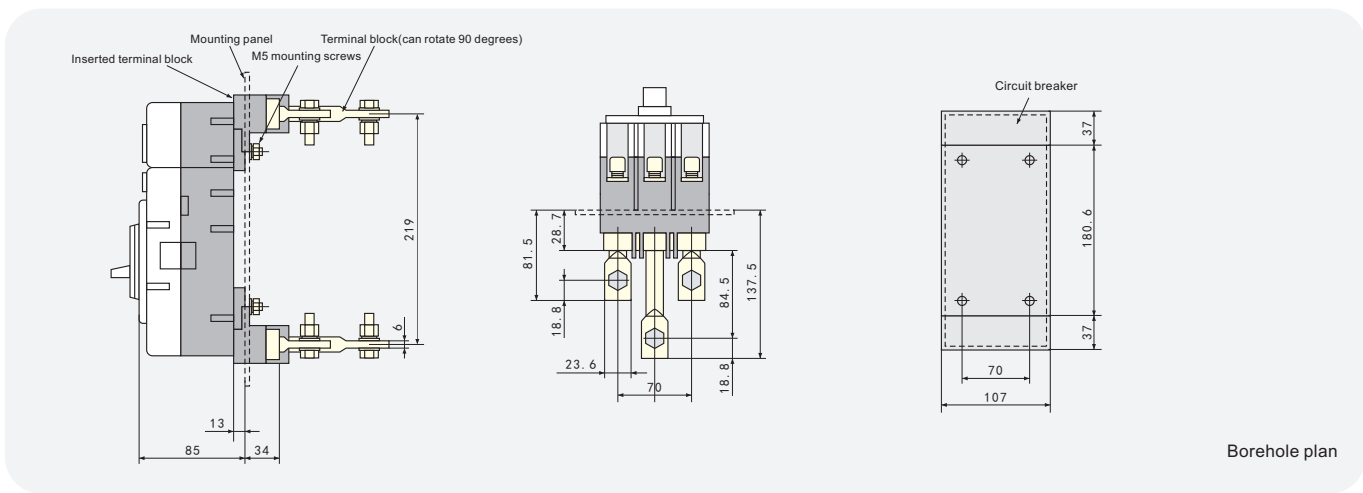
Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

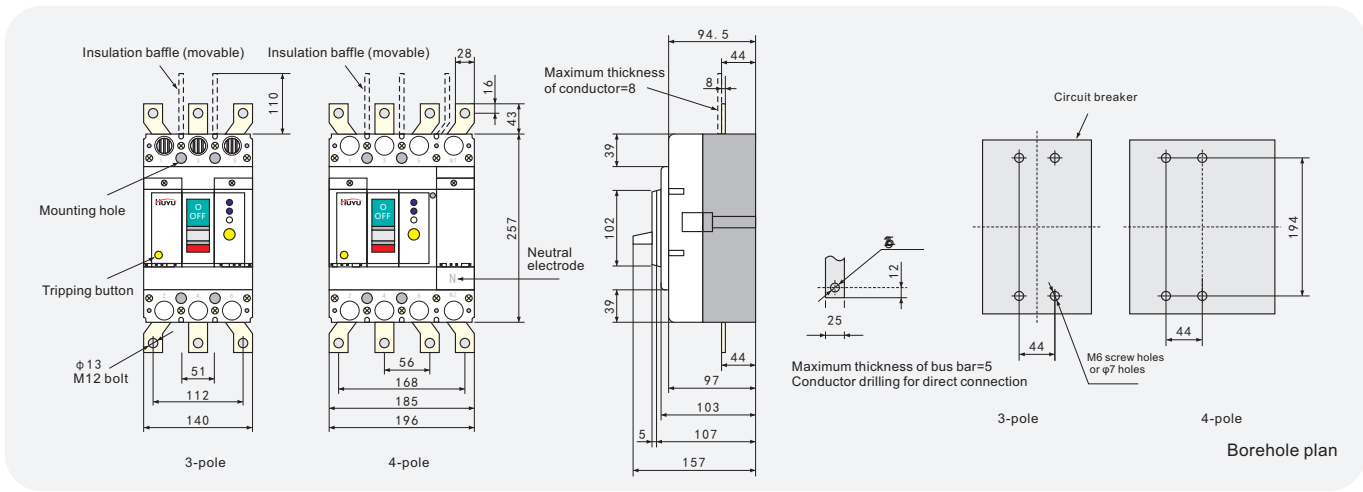
Post plate connection



Plug-in connection



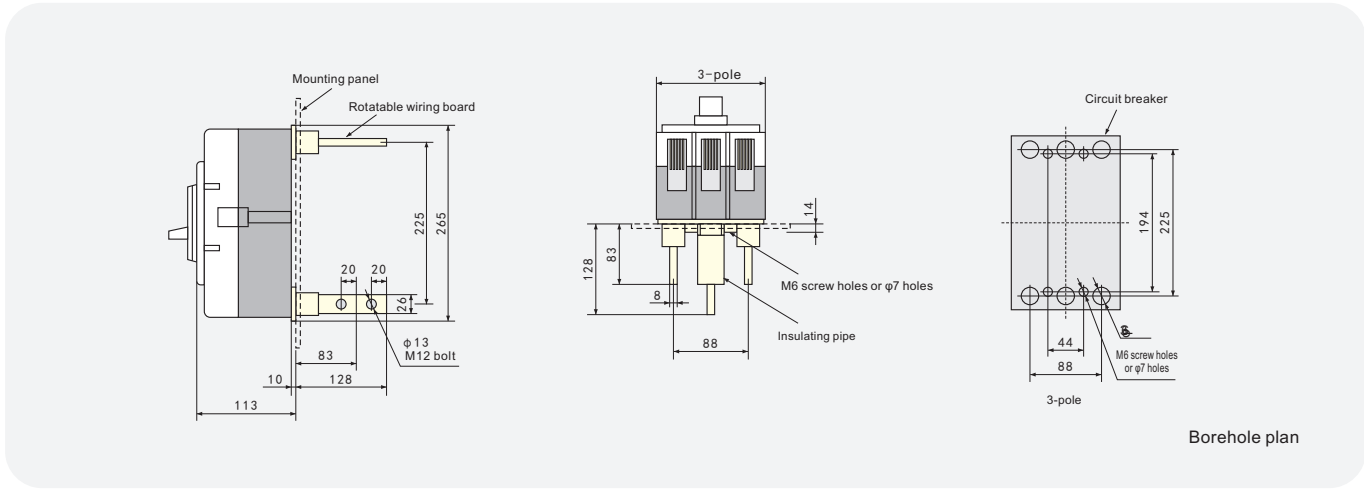
6. 5 HUM8L-400S overall and mounting dimension
Front panel connection



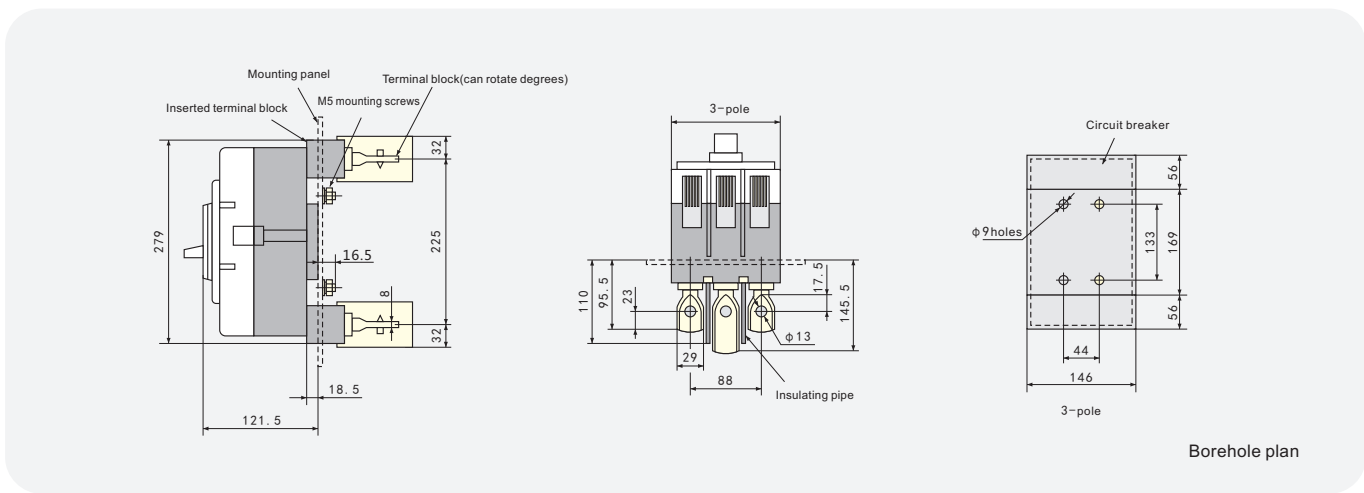
Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

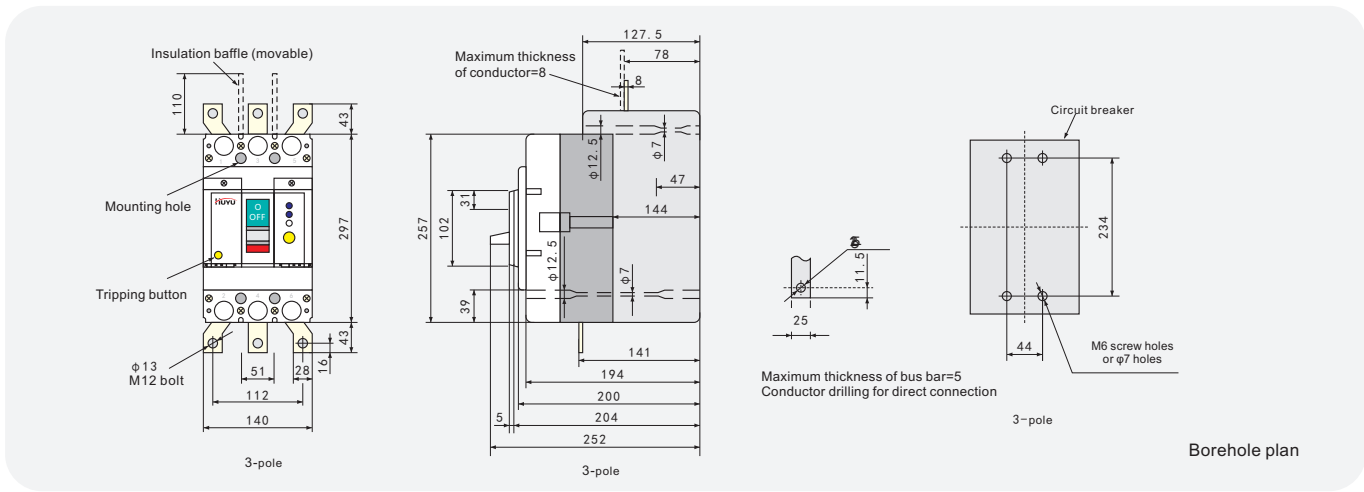
Post plate connection



Plug-in connection



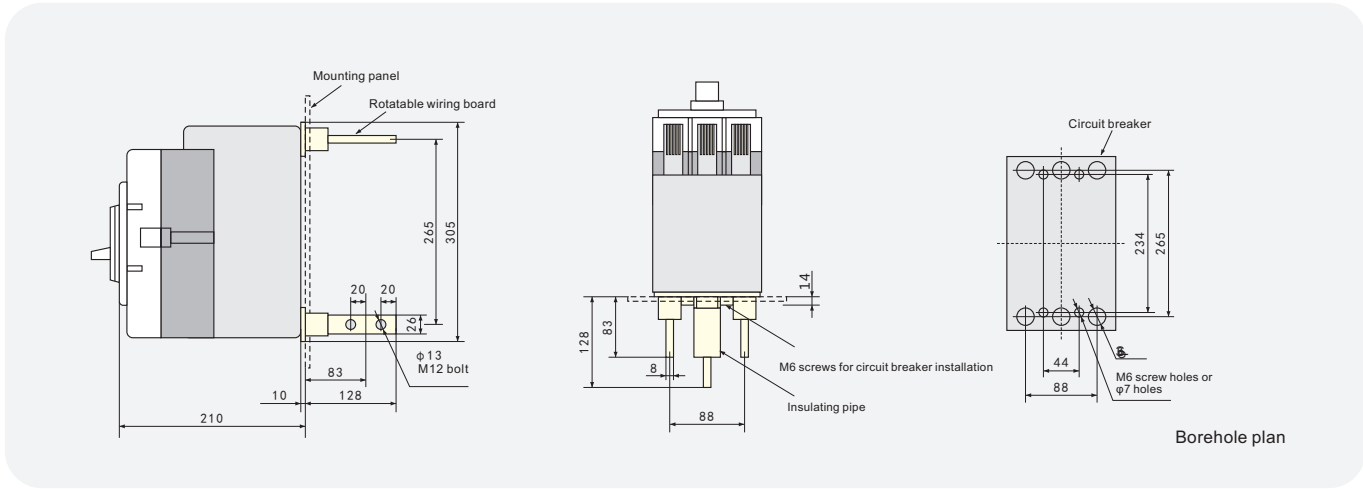
6. 6 HUM8L-400H, HUM8L-400U overall and mounting dimension
Front panel connection



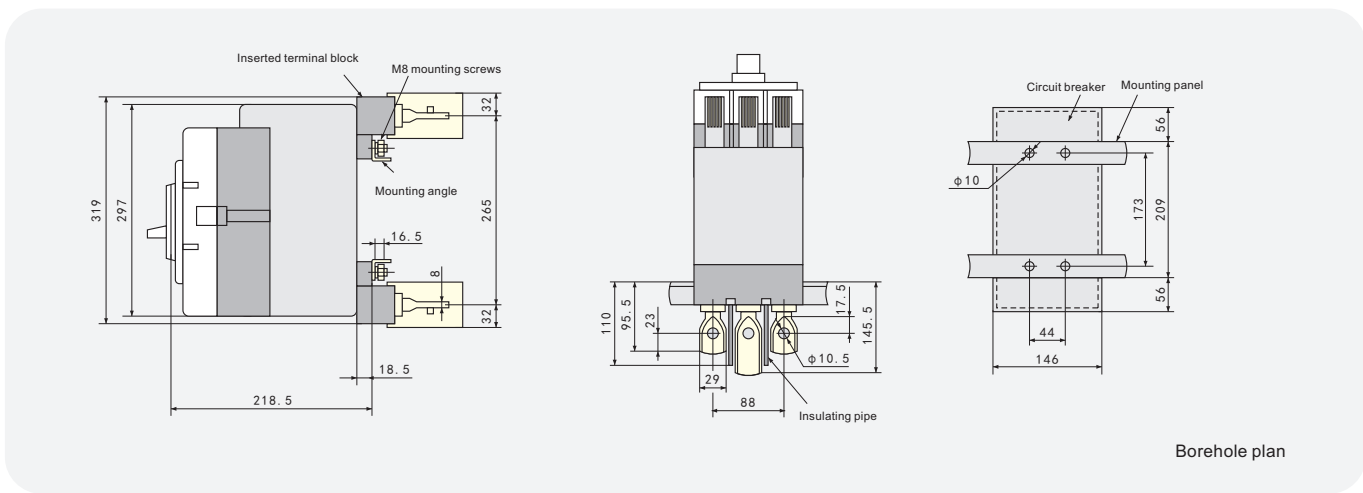
Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

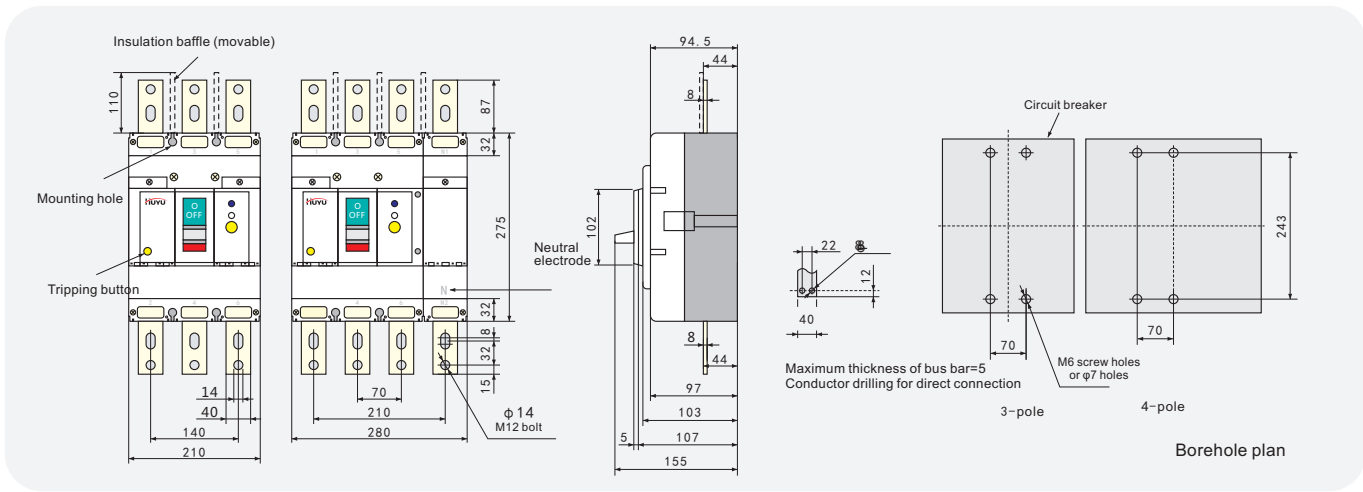
Post plate connection



Plug-in connection



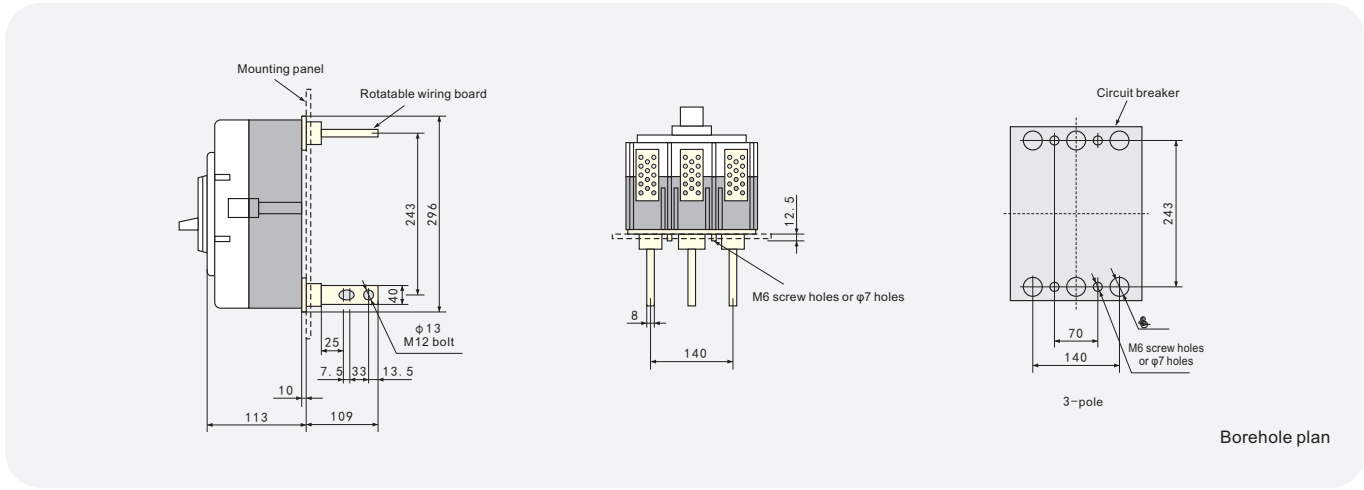
6. 7 HUM8L-630S overall and mounting dimension
Front panel connection



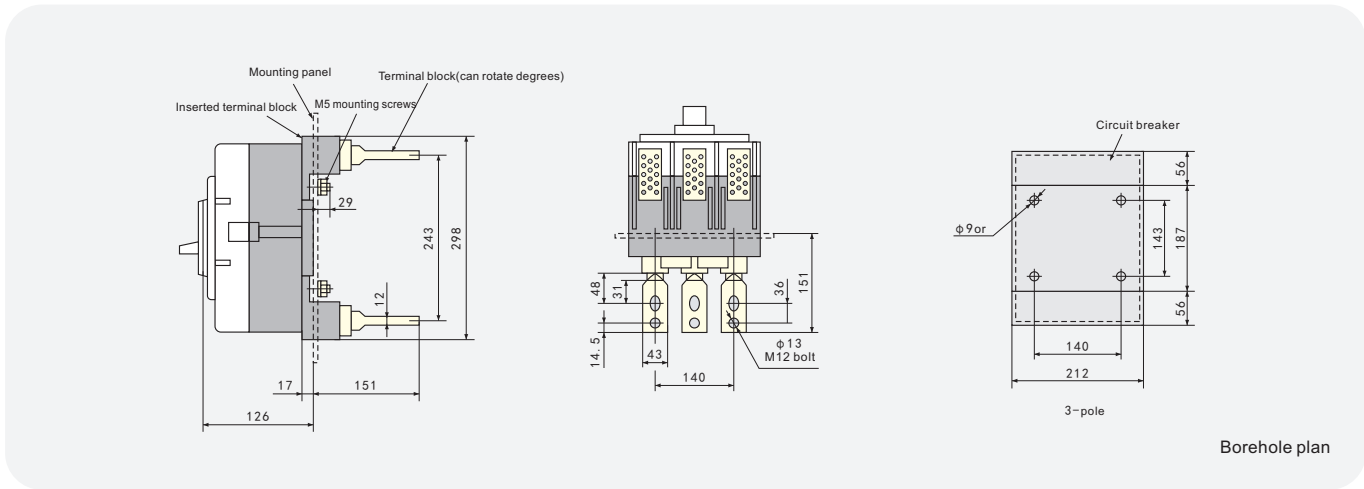
Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

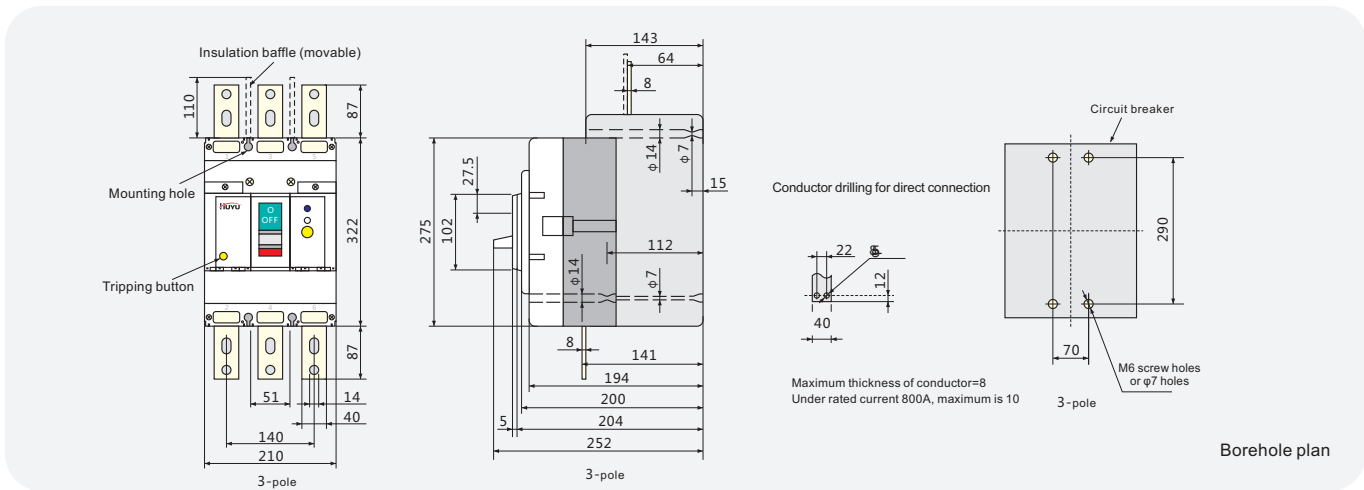
Post plate connection



Plug-in connection



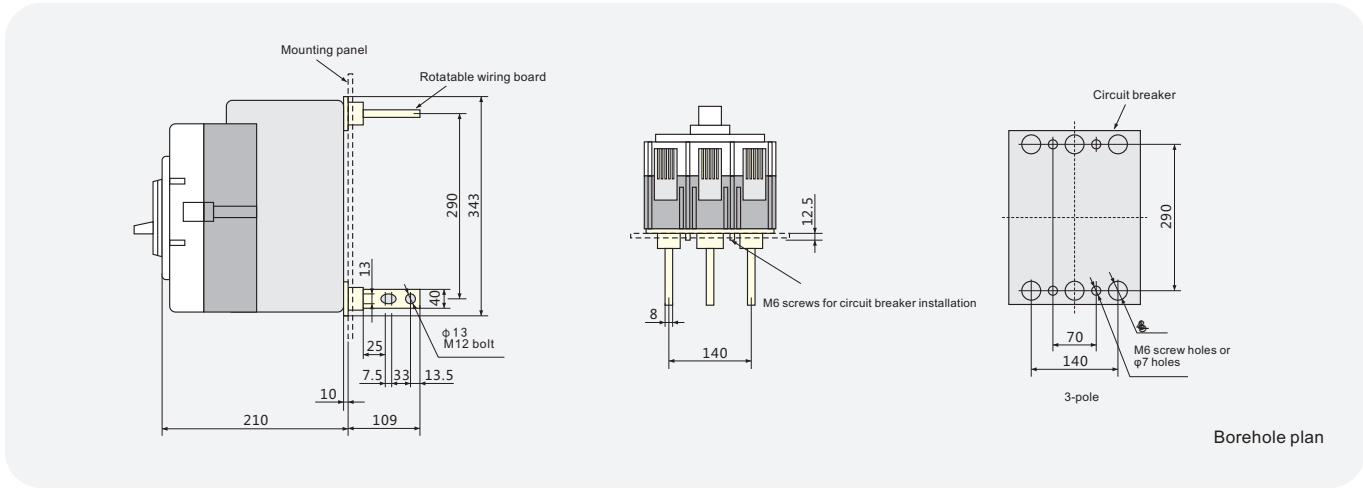
6. 8 HUM8L-630H、HUM8L-630U overall and mounting dimension
Front panel connection



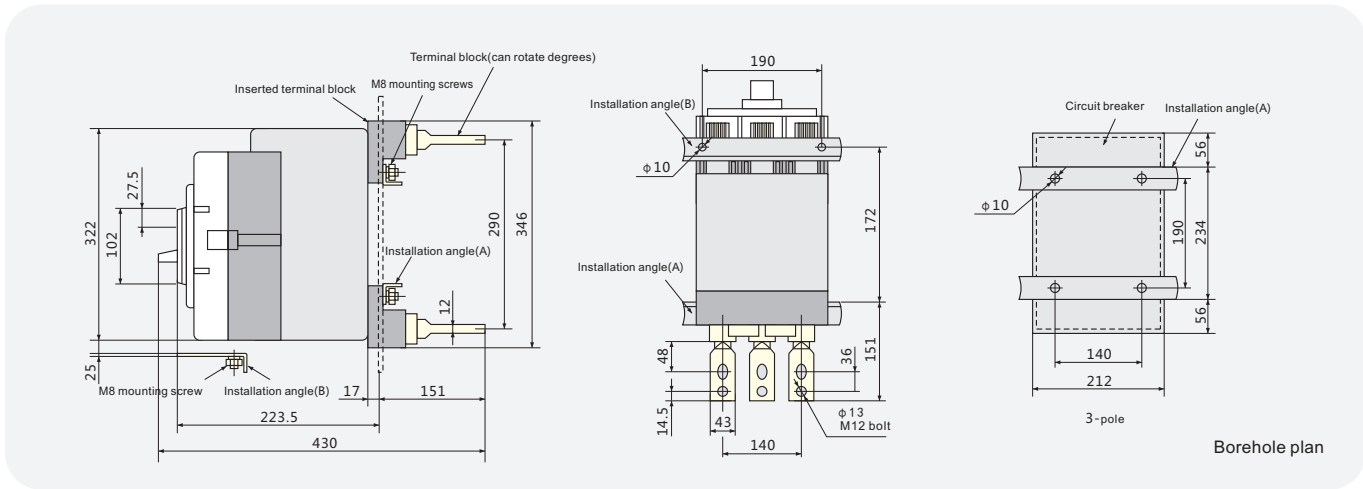
Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

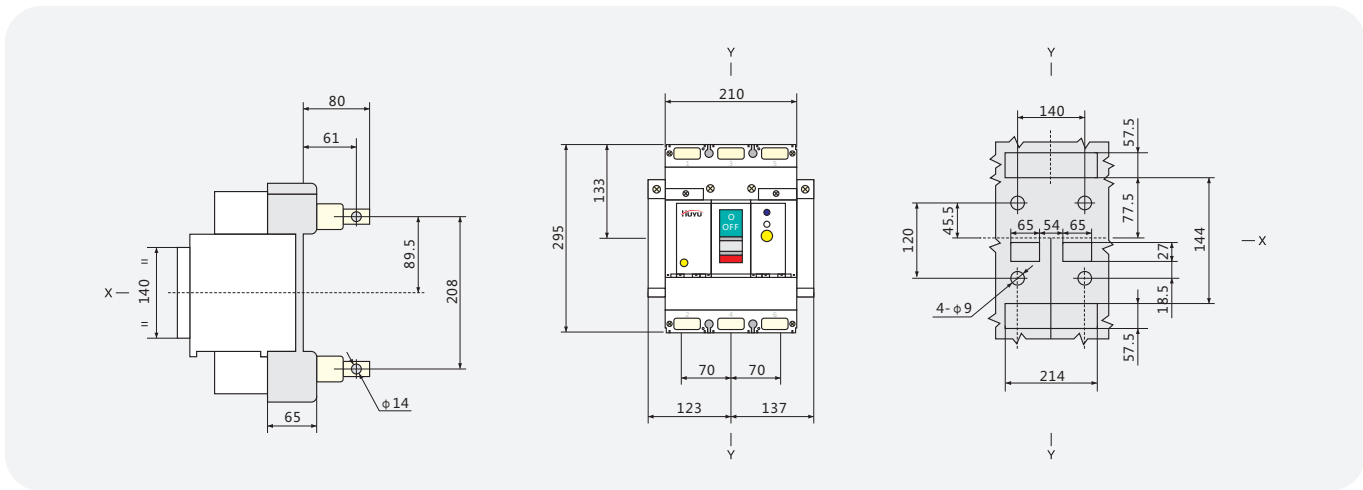
Post plate connection



Plug-in connection



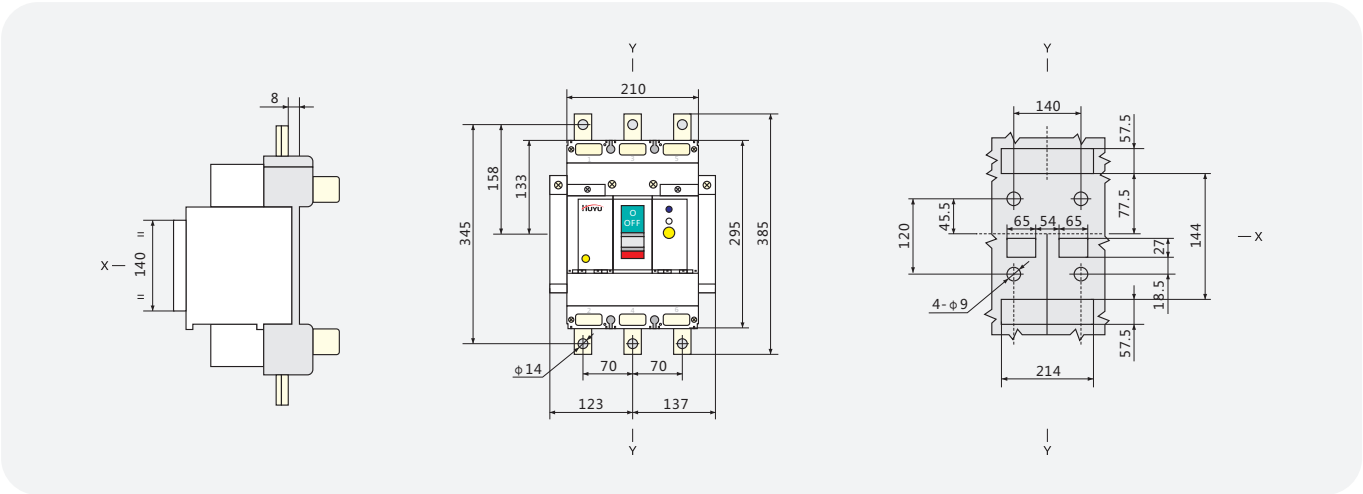
6.9 Shape and installation dimension of CH-1 back wiring extraction device (only three poles)
Applicable products:HUM8L-630S



Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

6.10 Shape and installation dimension of CH-1 plate front wiring extraction device (only three poles)
Applicable products:HUM8L-630S



7. Accessories of the circuit breaker

7.1 Annex model list:

Accessory model	Frame size current	Specification	Note
 Front plate	HUM8L-100		3P、4P
	HUM8L-250		3P、4P
	HUM8L-400		3P、4P
	HUM8L-630		3P、4P
 Post board wiring board	HUM8L-100		3P、4P
	HUM8L-250		3P、4P
	HUM8L-400		3P
	HUM8L-630		3P
 Insert attachment	HUM8L-100	CR2	3P
	HUM8L-250	CR3	3P
	HUM8L-400	CR4	3P
	HUM8L-630	CR5	3P
	HUM8L-800	CR5	3P
 Cs1 rotating handle	HUM8L-100	CS1-100	3P、4P
	HUM8L-250	CS1-250	3P、4P
	HUM8L-400	CS1-400	3P、4P
	HUM8L-630	CS1-630	3P、4P
 Electric operating mechanism	HUM8L-100	MDX1	AC110~230V 50Hz DC110~220V
	HUM8L-250	MDX2	
	HUM8L-400	MDX3	
	HUM8L-630	MDX4	
 Shunt release	HUM8L-100	LFL2	AC: 110V、230V、400V DC: 24V、48V、110V
	HUM8L-250	LF23	
	HUM8L-400	FL4	
	HUM8L-630	FL4	

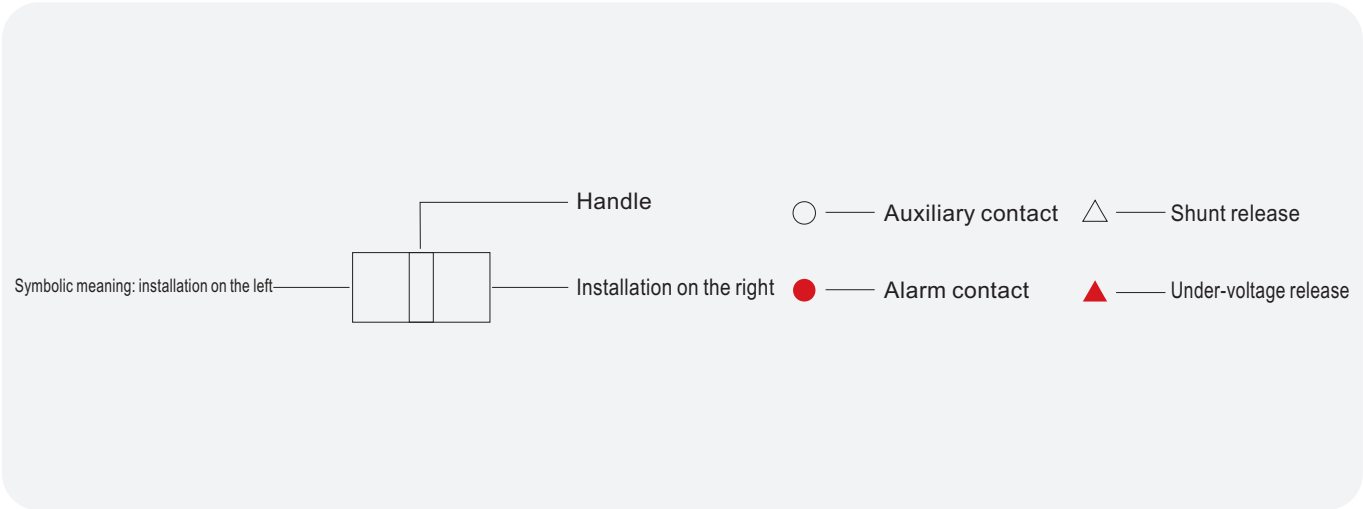
Secondary power distribution

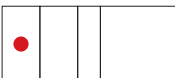
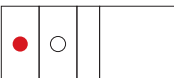
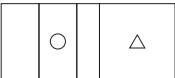
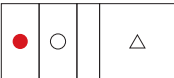
HUM8L
Series Earth Leakage Circuit Breaker

Continuation 1. List of Annex Types

Accessory model	Frame size current	Specification	Note
 Under-voltage release	HUM8L-100	QY2	AC: 110V、230V、400V DC: 24V、48V、110V
	HUM8L-250	QY3	
	HUM8L-400	QY4	
	HUM8L-630	QY4	
 Auxiliary contact	HUM8L-100	F2	
	HUM8L-250	F3	
	HUM8L-400	F4	
	HUM8L-630	F4	
 Alarm contact	HUM8L-100	B2	
	HUM8L-250	B3	
	HUM8L-400	B4	
	HUM8L-630	B4	
 N type mechanical interlock	HUM8L-100	3P (N2-3) 4P (N2-4)	
	HUM8L-250	3P (N3-3) 4P (N3-4)	
	HUM8L-400	3P (N4-3) 4P (N4-4)	
	HUM8L-630	3P (N5-3) 4P (N5-4)	

7.2 Internal annex code and installation position diagram



Frame size grade	100A、250A		
Accessories code	010	001	011
Position diagram			
Accessories code	1 (0~1) 0	10 (0~1)	111
Position diagram			

Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

Frame size current	400A																																
Accessories code	0 (0~3) 0	0 (0~2) 1	012																														
Position diagram	<table><tr><td>○</td><td>○</td><td>○</td><td></td><td></td></tr></table>	○	○	○			<table><tr><td>●</td><td>○</td><td>○</td><td></td><td></td></tr></table>	●	○	○			<table><tr><td>●</td><td>●</td><td>○</td><td></td><td></td></tr></table>	●	●	○																	
○	○	○																															
●	○	○																															
●	●	○																															
Accessories code	100	110	101																														
Position diagram	<table><tr><td></td><td>△</td><td></td><td></td><td></td></tr></table>		△				<table><tr><td>○</td><td>△</td><td></td><td></td><td></td></tr></table>	○	△				<table><tr><td>●</td><td>△</td><td></td><td></td><td></td></tr></table>	●	△																		
	△																																
○	△																																
●	△																																
Accessories code	200	210	201																														
Position diagram	<table><tr><td></td><td>▲</td><td></td><td></td><td></td></tr></table>		▲				<table><tr><td>○</td><td>▲</td><td></td><td></td><td></td></tr></table>	○	▲				<table><tr><td>●</td><td>▲</td><td></td><td></td><td></td></tr></table>	●	▲																		
	▲																																
○	▲																																
●	▲																																
Frame size current	630A																																
Accessories code	0 (0~4) (0~3)																																
Position diagram	<table><tr><td>L1</td><td>L2</td><td>L3</td><td>L4</td><td></td></tr><tr><td>●</td><td>●</td><td>○</td><td>○</td><td></td></tr></table> Note: the addition of the latter two digits□ 7	L1	L2	L3	L4		●	●	○	○																							
L1	L2	L3	L4																														
●	●	○	○																														
Accessories code	1 (0~2) 0	1 (0~1) 1	10 (0~2)																														
Position diagram	<table><tr><td>L1</td><td>L2</td><td>L3</td><td>L4</td><td></td></tr><tr><td>○</td><td>○</td><td>△</td><td></td><td></td></tr></table>	L1	L2	L3	L4		○	○	△			<table><tr><td>L1</td><td>L2</td><td>L3</td><td>L4</td><td></td></tr><tr><td>●</td><td>○</td><td>△</td><td></td><td></td></tr></table>	L1	L2	L3	L4		●	○	△			<table><tr><td>L1</td><td>L2</td><td>L3</td><td>L4</td><td></td></tr><tr><td>●</td><td>●</td><td>△</td><td></td><td></td></tr></table>	L1	L2	L3	L4		●	●	△		
L1	L2	L3	L4																														
○	○	△																															
L1	L2	L3	L4																														
●	○	△																															
L1	L2	L3	L4																														
●	●	△																															
Accessories code	2 (0~2) 0	2 (0~1) 1	20 (0~2)																														
Position diagram	<table><tr><td>L1</td><td>L2</td><td>L3</td><td>L4</td><td></td></tr><tr><td>○</td><td>○</td><td>▲</td><td></td><td></td></tr></table>	L1	L2	L3	L4		○	○	▲			<table><tr><td>L1</td><td>L2</td><td>L3</td><td>L4</td><td></td></tr><tr><td>●</td><td>○</td><td>▲</td><td></td><td></td></tr></table>	L1	L2	L3	L4		●	○	▲			<table><tr><td>L1</td><td>L2</td><td>L3</td><td>L4</td><td></td></tr><tr><td>●</td><td>●</td><td>▲</td><td></td><td></td></tr></table>	L1	L2	L3	L4		●	●	▲		
L1	L2	L3	L4																														
○	○	▲																															
L1	L2	L3	L4																														
●	○	▲																															
L1	L2	L3	L4																														
●	●	▲																															

7.3 Parameters of auxiliary contact and alarm contact
7.3.1 Diagram of auxiliary and alarm contact in different working state of circuit breaker

Working conditions of circuit breaker	Auxiliary contact	Alarm contact
Close		
Open		
Tripping		

7. 3.2 Main technical parameter
- Rated insulation voltage Ui=400V
 - Conventional thermal current Ith=6A
 - Rated working voltage Ue and rated working current Ie accordingly
 - AC400V, 0. 47A; AC230V, 0. 79A;DC220V, 0. 15A.

Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

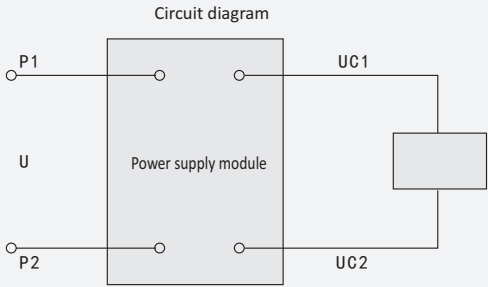
7.3.3 Electrical life and making and breaking capacity

Utilization category		Connection			Breaking			Cycletimes	Operation frequency (times/min)	Electrified time (s)
AC		I / I e	U / Ue	COS ϕ	I / I e	U / Ue	COS ϕ			
AC~15	Electrified time	10	1	0. 3	1	1	0. 3	6050	6	≥0. 05
	Making and breaking capacity	10	1. 1	0. 3	10	1. 1	0. 3	10	6	≥0. 05
DC		I / I e	U / Ue	T0. 95	I / I e	U / Ue	T0. 95			
DC~13	Electrified time	1	1	300ms	1	1	300ms	6050	6	≥0. 3
	Making and breaking capacity	1. 1	1. 1	300ms	1. 1	1. 1	300ms	10	6	≥0. 3

7.4 Parameter of shunt release
Circuit diagram of shuntrelease

	LFL	Ratedvoltage Ue: AC: 230V、400V DC: 24V、48V Input capacity: AC: 40VA DC: 0. 5W
	FL4	Ratedvoltage Ue: AC: 110V、230V、400V DC: 24V、48V、110V Input capacity: AC: 180VA DC: 60W

7.5 Parameter of undervoltage release

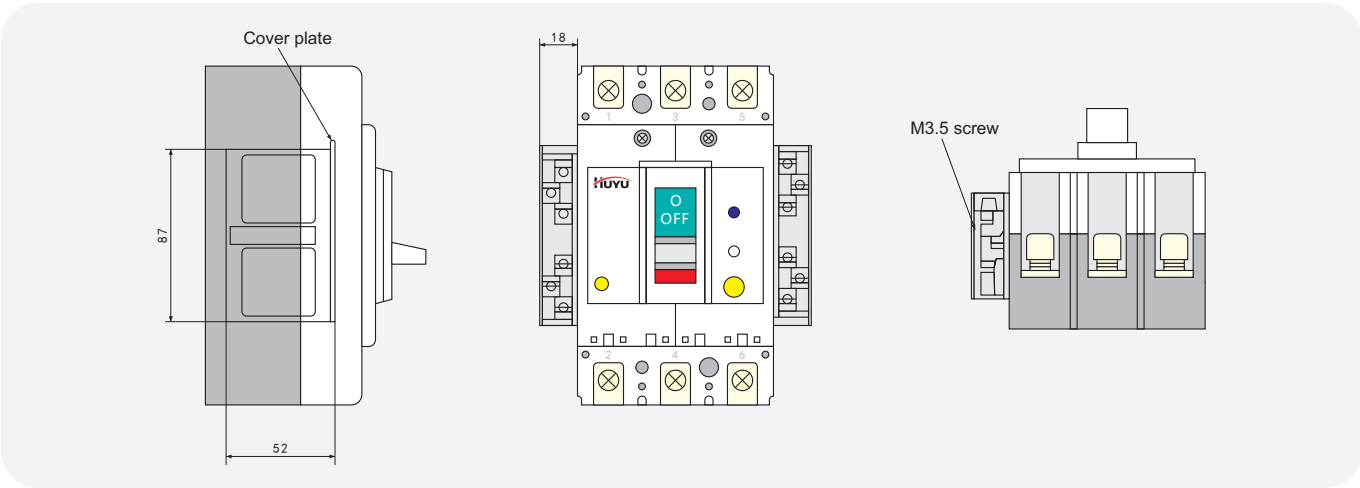


The power module can be inserted in the side of the circuit breaker and can be installed independently.
Rated voltage: Ue: AC: 110V、230V、400V; DC: 24V、48V、110V
Input capacity: AC: 5VA; DC: 2W
Action voltage:U=(70%~35%) Ue; circuit breaker tripping
Operation time:(10~30)ms,U≥85%Ue,the circuit breaker can close;U<35%Ue,the circuit breaker can not close.

Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

7.6 JX type internal attachments terminal block base
The terminal block is plugged in the side of the circuit breaker



7.7 CS1 type rotating operating mechanism
The operating mechanism applies the gearrack mechanism to push the handle of the circuit breaker,with small friction,easy operation and long service life. The A(square) operating handle or theB(round) operating handle can be selected. Apadlock can be used to lock the handle to prevent the breakers from closing or breaking.

Generally, the length of the square axle of the factory is f=150mm. If other lengths are needed,the order should be noted.

The distance between the center 200mm
A type handle installation dimension

	A1	A2
φ 1	φ 42	φ 63
φ 2	φ 4.5	φ 5.5
e	65	88
L	60	140
Frame size grade	63~250	400~800

B type handle installation dimension

	B1	B2
φ 1	φ 33	φ 33
φ 2	φ 4.5	φ 4.5
φ 3	φ 53	φ 53
L	65	125
Frame size grade	63~250	400~800

Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

7.7.1 Shape and hole dimension of Cs1 type rotating operating mechanism

Model	Frame size grade	a	b	c	d	F minimum	F maximum
CS1-100	100	110	80	44	13.5	50	400
CS1-250	250	110	90	46	13.5	50	400
CS1-400	400	185	140	80	20	50	350
CS1-630	630	226	210	80	20	50	350

7.8 Electric operating mechanism
The MDX type electric operating mechanism changes the motor's rotation motion to a straight motion by the motor, gear and cam, which is used to close and break the circuit breaker.

7.8.1 Overall installation dimension of MDX type electric operating mechanism

Electric operating mechanism

Close
Trip
Open

ON
OFF

Electric Manual

Tripping button

HUYU HuanyuGroupCo., Ltd.

7.8.2 Overall installation dimension of MDX type electric operating mechanism

Model of electric operating mechanism	Installation dimension						
	a	b	c	e	f	h	d
MDX0	77	102	74	117	25	12	φ3.5
MDX1	77	116	90	129	30	13	φ4.5
MDX2	77	116	90	126	35	15	φ4.5
MDX3	115	176	130	194	44	36	φ6.5
MDX4	115	176	130	243	70	38	φ6.5

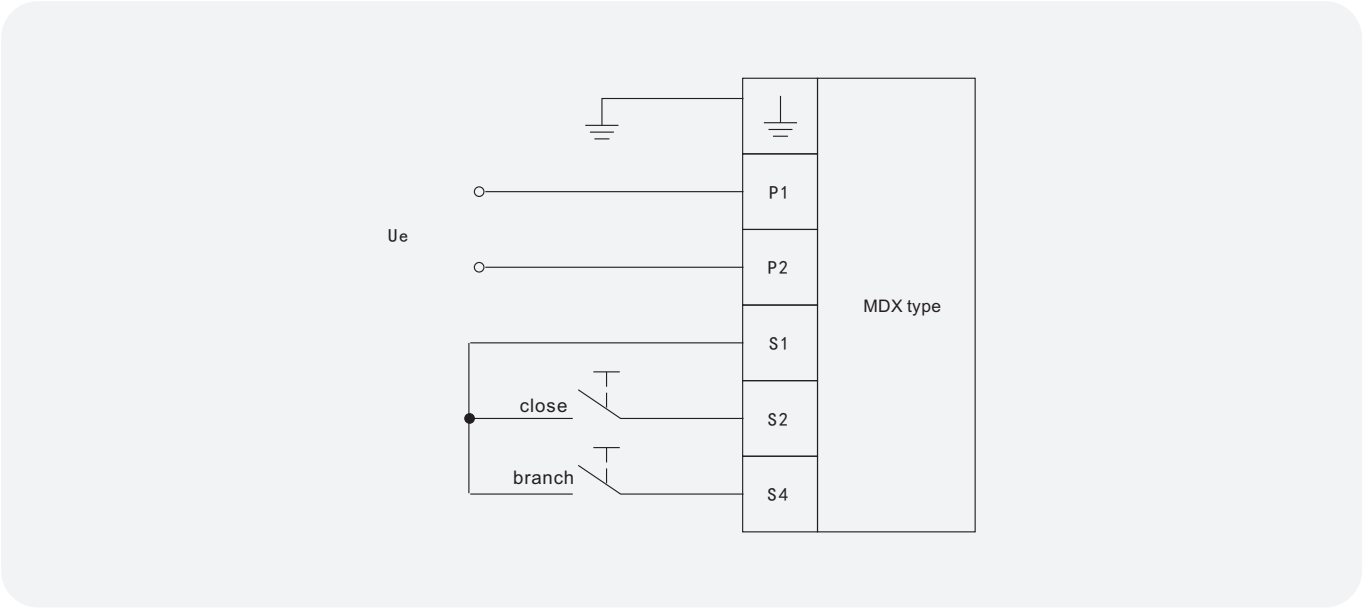
Secondary power distribution

HUM8L
Series Earth Leakage Circuit Breaker

7.8.3 Main technical parameter of MDX type electric operating mechanism

Frame size grade	100	250	400	630
Model of electric operating mechanism	MDX1	MDX2	MDX3	MDX4
Rated working voltage Ue(V)	AC110~230V 50Hz DC110~220V			
Operation current (A)	≤0. 5		≤2	
Operation time (s)	≤0. 8			
Rated operation frequency(times/h)	180		120	
Mechanical lifetime(times)	15000	9000	5000	3000

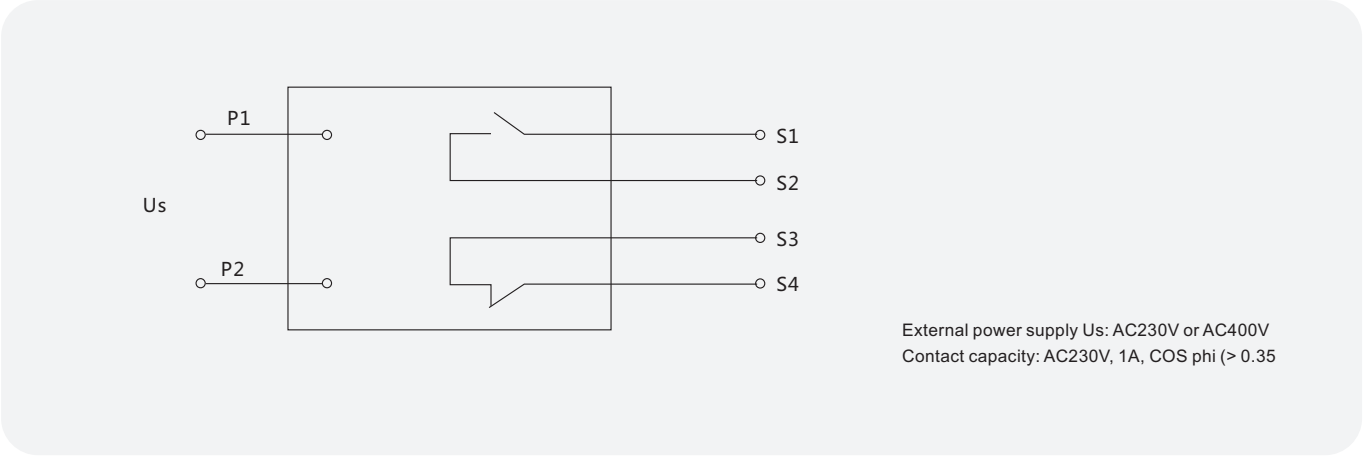
7.8.4 Connection Diagram of MDX Electric Operating Mechanism



7.9 LB type leakage alarm module

The LB type leakage alarm module need to be plugged to the right of the HUM8LB leakage circuit breaker. The module terminals P1-P2 are connected to AC400V or AC230V AC power supply. When the main circuit of the circuit breaker leaks, the circuit breaker does not trip, the relay in the alarm module works, and the terminals S1-S2 ,S3-S4 would be connected to the replay contact to deliver an alarm signal.

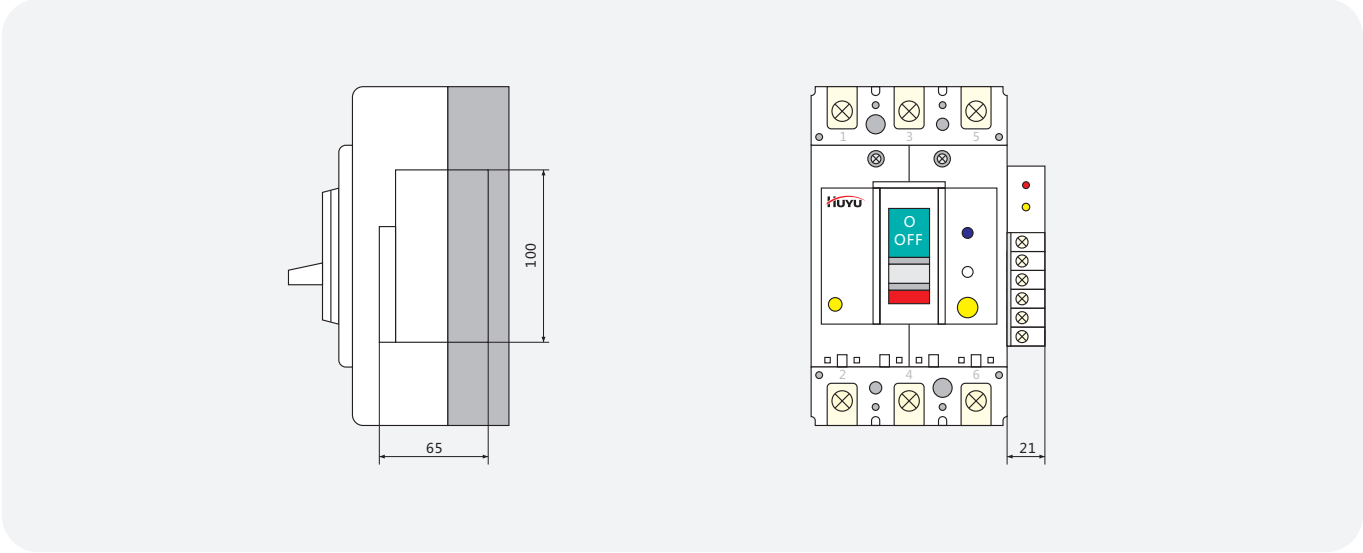
7.9.1 LB type leakage alarm module wiring diagram



Secondary power distribution

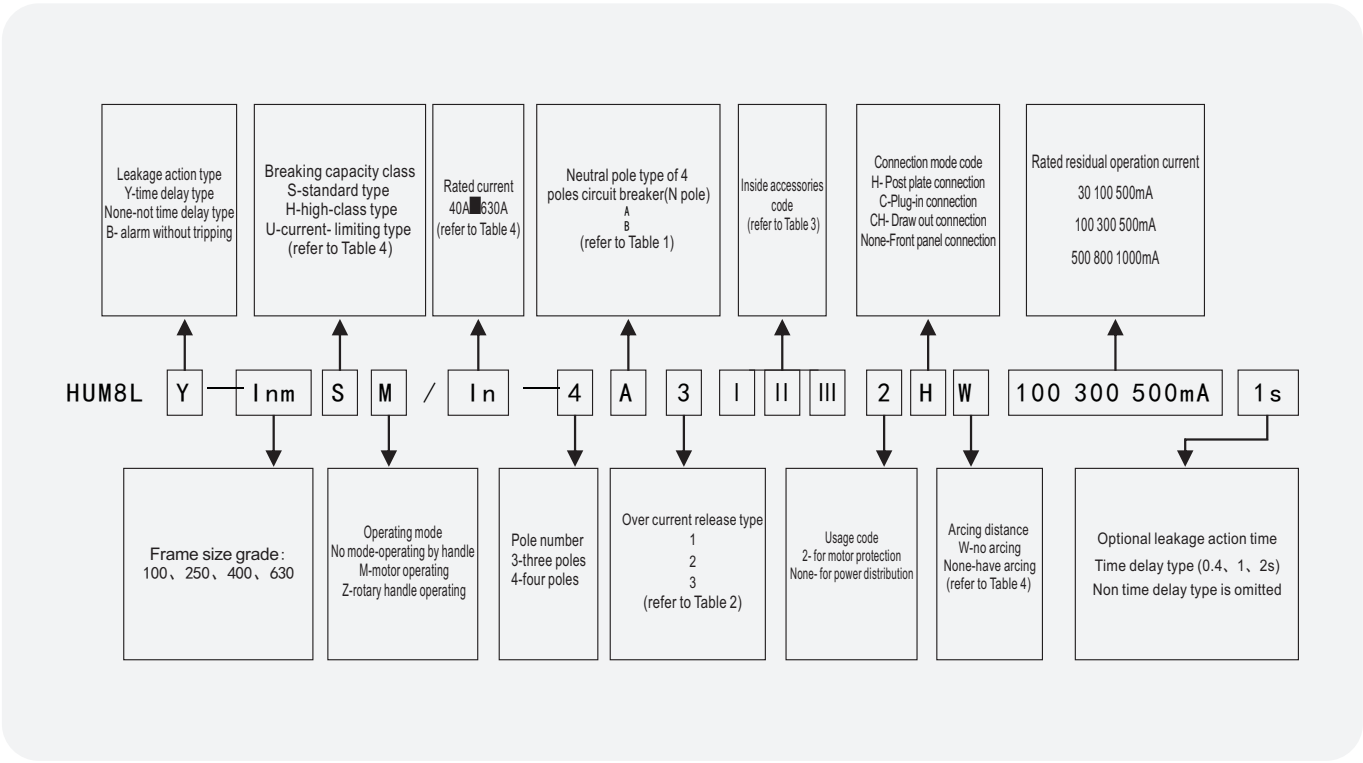
HUM8L
Series Earth Leakage Circuit Breaker

7.9.2 Outline drawing of LB leakage alarm module



8. Ordering information

8.1 Annotation of order selection of HUM8L series moulded case circuit breaker



8.2 Please indicate the following information when ordering

8.2.1 Model and ordering quantity

HUM8L□-□□□/□-□□□□□□□□

8.2.2 Rated voltage of shunt release and undervoltage release.

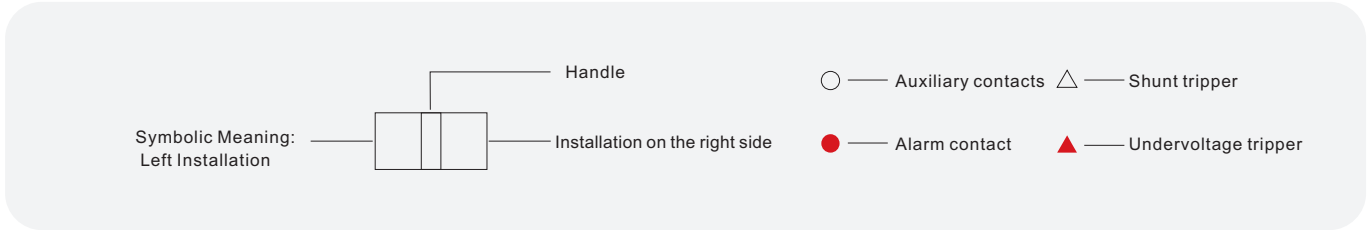
8.2.3 External accessories

Rotary operation handle type (type A or B), square shaft length and rotary operation handle number, electric operation mechanism type and its rated voltage and quantity.

Secondary power distribution

HUM8
Series Moulded Case Circuit Breaker

9.3 Internal annex code and installation position diagram



Frame size grade	63A,100A,250A		
Accessories code	0 (0~2) 0	0 (0~2) 1	0 (0~2) 2
Position diagram			
Accessories code	1 (0~1) 0	1 (0~1) 1	
Position diagram			
Accessories code	2 (0~1) 0	2 (0~1) 1	
Position diagram			
Frame size grade	400A		
Accessories code	0 (0~5) (0~2)		
Position diagram	L1L2L3R1R2 Note: The sum of the last two digits is less than 7		
Accessories code	1 (0~3) 0	1 (0~2) 1	1 (0~1) 2
Position diagram	L1L2L3R1R2	L1L2L3R1R2	L1L2L3R1R2
Accessories code	2 (0~3) 0	2 (0~2) 1	2 (0~1) 2
Position diagram	L1L2L3R1R2	L1L2L3R1R2	L1L2L3R1R2
Accessories code	300	310	301
Position diagram	L1L2L3R1R2	L1L2L3R1R2	L1L2L3R1R2

Secondary power distribution

HUM8
Series Moulded Case Circuit Breaker

Frame size grade	630、800		
Accessories code	0 (0~8) (0~3)		
Position diagram	L1L2L3L4R4R3R2R1 Note: the addition of the latter two digits≤11		
Accessories code	1 (0~5) 0	1 (0~4) 1	1 (0~3) 2
Position diagram	L1L2L3L4R4R3R2R1	L1L2L3L4R4R3R2R1	L1L2L3L4R4R3R2R1
Accessories code	1 (0~2) 3		
Position diagram	L1L2L3L4R4R3R2R1		
Accessories code	2 (0~5) 0	2 (0~4) 1	2 (0~3) 2
Position diagram	L1L2L3L4R4R3R2R1	L1L2L3L4R4R3R2R1	L1L2L3L4R4R3R2R1
Accessories code	2 (0~2) 3		
Position diagram	L1L2L3L4R4R3R2R1		
Accessories code	3 (0~3) 0	3 (0~2) 1	3 (0~1) 2
Position diagram	L1L2L3L4R4R3R2R1	L1L2L3L4R4R3R2R1	L1L2L3L4R4R3R2R1

Secondary power distribution

HUM8
Series Moulded Case Circuit Breaker

9.4 Parameters of auxiliary contact and alarm contact
9.4.1Diagram of auxiliary and alarm contact in different working state of circuit breaker

Table with 3 columns: Working conditions of circuit breaker, Auxiliary contact, Alarm contact. Rows include Close, Open, and Tripping states with corresponding contact diagrams.

9.4.2 Main technical parameter
• Rated insulation voltage Ui=400V,AC • Conventional thermal current Ith=6A
• Rated working voltage Ue and rated working current Ie accordingly • AC400V, 0.47A; AC230V, 0.79A; DC220V, 0.15A

9.4.3 Electrical life and making and breaking capacity

Table with 10 columns: Utilization category, Connection, Breaking, Cycle times, Operation frequency, Electrified time. Rows include AC-15 and DC-13 categories with various electrical life and capacity specifications.

9.5 Parameter of shunt release

Image of shunt release component and its circuit diagram. The diagram shows a shunt release coil connected to a switch. Text specifies rated voltage Us and input capacity for AC and DC.

9.6 Parameter of undervoltage release

Image of undervoltage release component and its circuit diagram. The diagram shows a power supply module connected to the circuit breaker. Text describes the power module's installation and operating parameters.

Secondary power distribution

HUM8
Series Moulded Case Circuit Breaker

9.7 Special tripping device for prepaid meter
The rated working voltage of the dedicated release of the prepaid meter is AC230V/50Hz, which works normally within the range of (65% ~ 110%) Ue.
The wiring diagram is shown below

Image of the tripping device and its wiring diagram. The diagram shows the connection of the tripping device to the circuit breaker's release coil and power supply lines (L1, L3, L5, N, Ctr1).

9.8 JX type internal attachments terminal block base
The terminal block is plugged in the side of the circuit breaker

Image showing the JX type internal attachments terminal block base. It includes a side view with dimensions (87, 52) and a top view showing the terminal block and M3.5 screw.

9.9 CS1 type rotating operating mechanism
The operating mechanism applies the gear rack mechanism to push the handle of the circuit breaker, with small friction, easy operation and long service life.
The A (square) operating handle or the B (round) operating handle can be selected. A padlock can be used to lock the handle to prevent the breakers from closing or breaking.

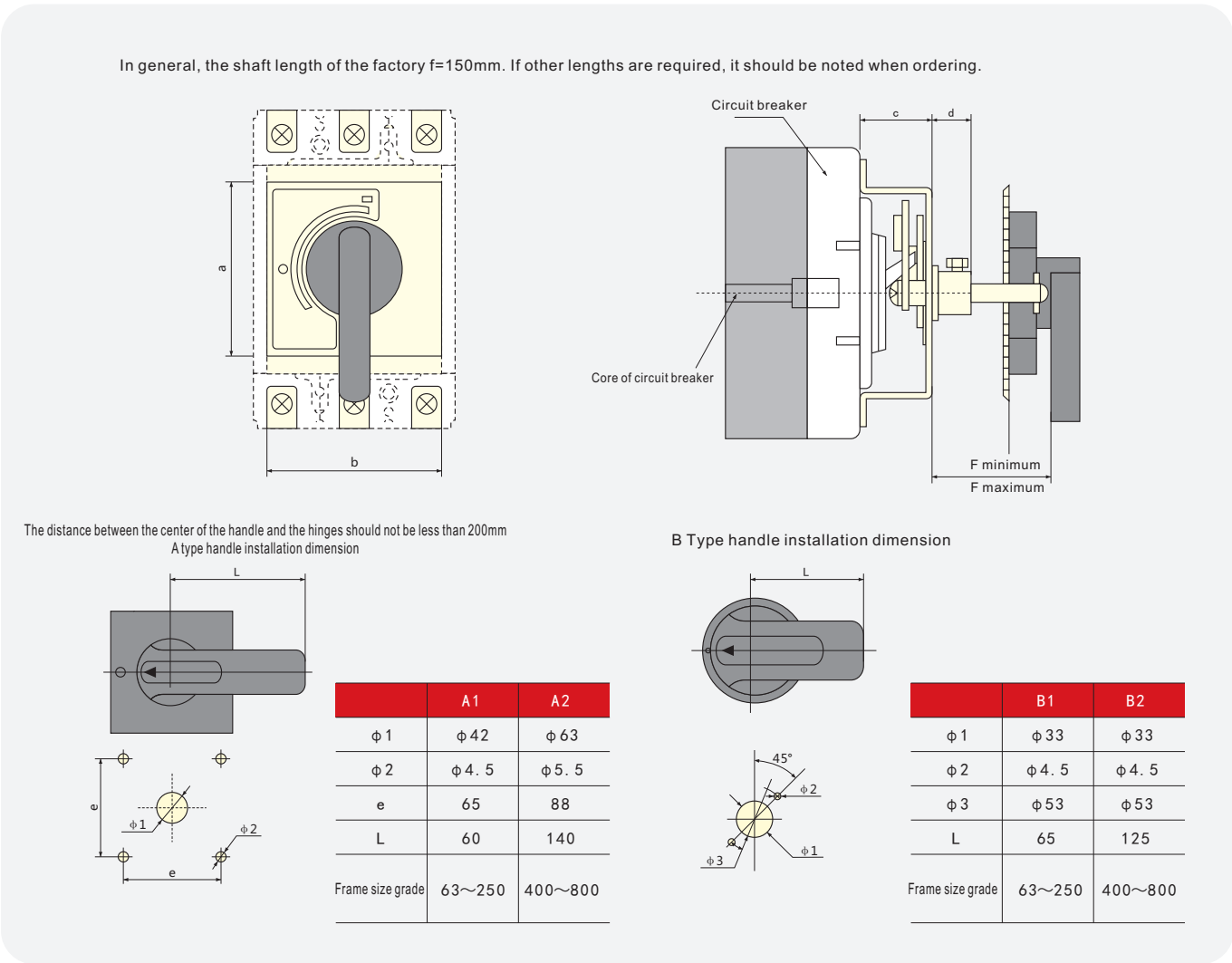
9.9.1 Shape and hole dimension of CS1 type rotating operating mechanism

Table with 8 columns: Model, Frame size grade, a, b, c, d, f Min, f Max. Rows list various CS1 models (CS1-63, CS1-100, CS1-250, CS1-400, CS1-630, 800) and their corresponding dimensions.

Secondary power distribution

HUM8
Series Moulded Case Circuit Breaker

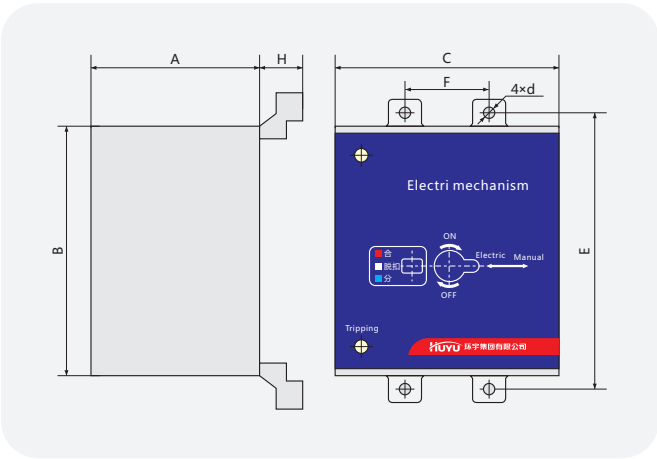
9.9.2 Shape and hole dimension of CS1 type rotating operating mechanism



9.10 Electric operating mechanism

The MDX type electric operating mechanism changes the motor's rotation motion to a straight motion by the motor, gear and cam, which is used to close and break the circuit breaker.

9.10.1 Overall installation dimension of MDX type electric operating mechanism 9.10.2 Overall installation dimension of MDX type electric operating mechanism



Electric operating mechanism model	Installation size						
	A	B	C	E	F	H	d
MDX0	77	102	74	117	25	12	φ3.5
MDX1	77	116	90	129	30	13	φ4.5
MDX2	77	116	90	126	35	15	φ4.5
MDX3	115	176	130	194	44	36	φ6.5
MDX4	115	176	130	243	70	38	φ6.5

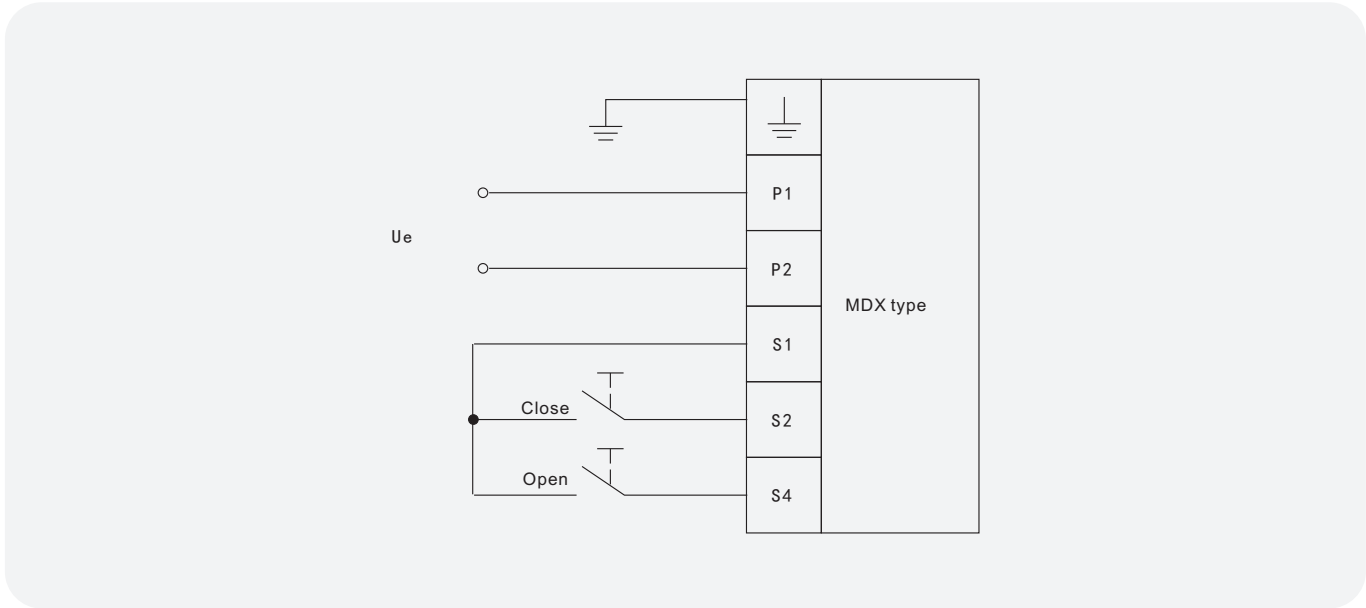
Secondary power distribution

HUM8
Series Moulded Case Circuit Breaker

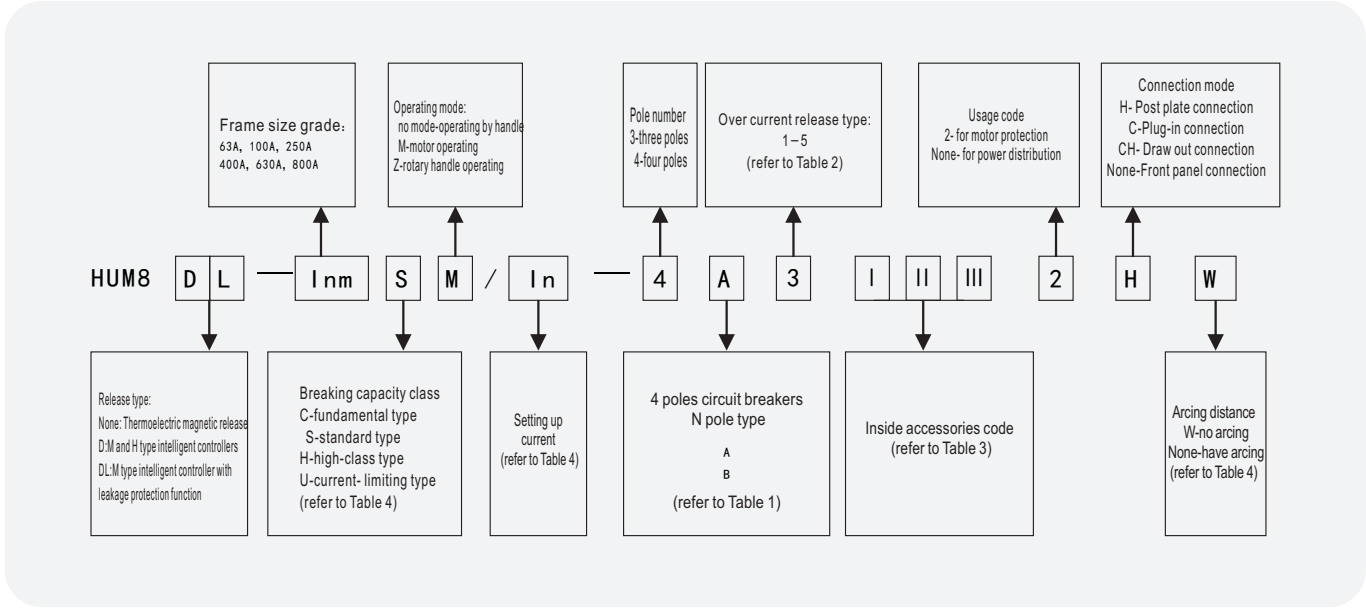
9.10.3 Main technical parameter of MDX type electric operating mechanism

Frame size grade	63	100	250	400	630、800
Model of electric operating mechanism	MDX0	MDX1	MDX2	MDX3	MDX4
Rated working voltage Ue(V)	AC110~230V 50Hz DC110~220V				
Operation current (A)	≤0. 5			≤2	
Operation time (s)	≤0. 8				
Rated operation frequency(times/h)	180			120	
Mechanical lifetime(times)	15000		9000	5000	3000

9.10.4 Wiring diagram of electric operating mechanism



9.11Annotation of order selection of HUM8 series moulded case circuit breaker



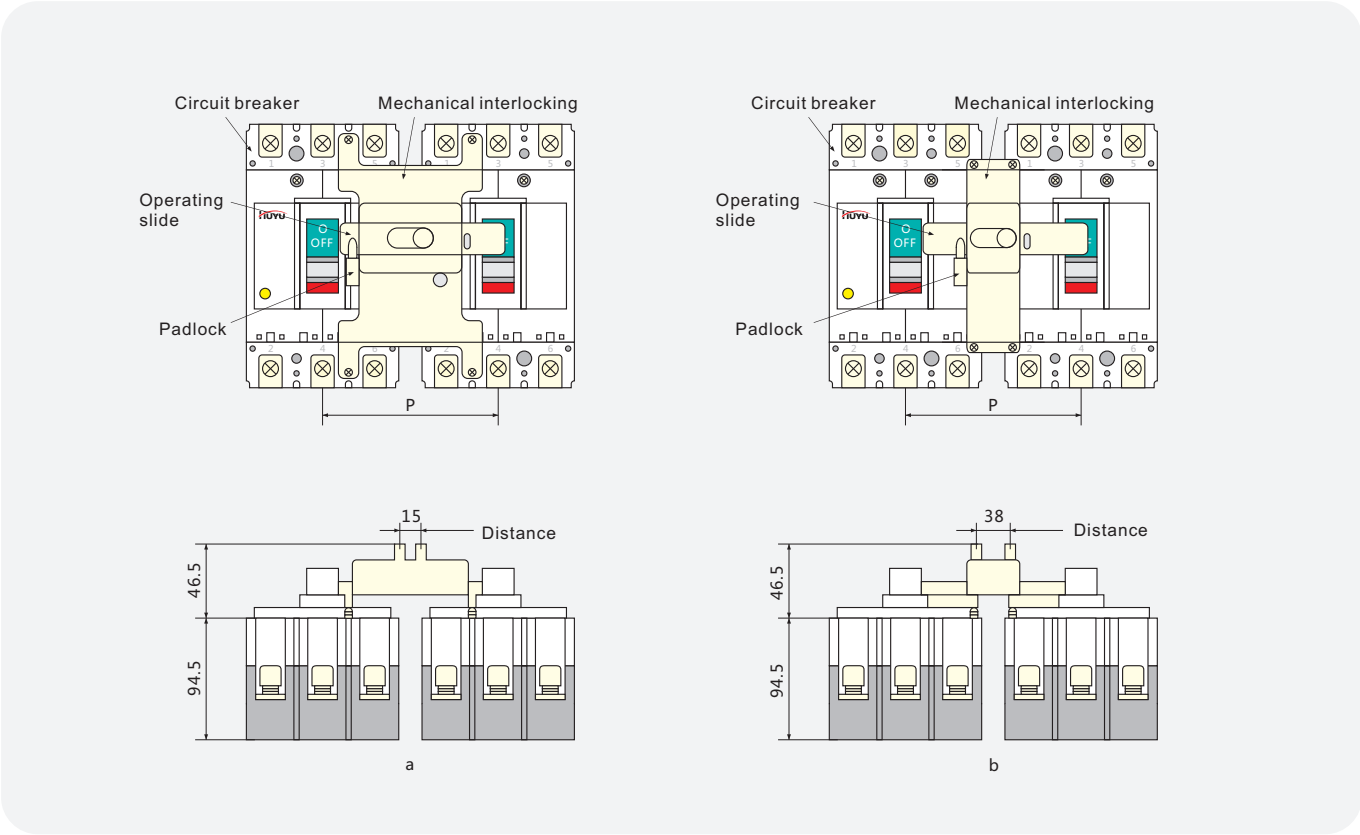
Secondary power distribution

HUM8
Series Moulded Case Circuit Breaker

9.12 N type mechanical interlocking
The N type mechanical interlock is used for two same shell frame grade HUM8 series plastic shell breakers which are installed side by side, to prevent the closing of two circuit breakers at the same time.

9.12.1 Central distance of two circuit breakers

Table with 6 columns: Frame size grade, 3 poles (Model, P (mm)), 4 poles (Model, P (mm)), and Outside drawing. Rows include frame sizes 63, 100, 250, 400, and 630/800.



9.13 Sectional area and adaptable rated current of connecting conductor

Table with 2 rows and 15 columns. Row 1: Rated current(A) vs 10, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 180, 200, 225, 250, 315, 350, 400. Row 2: Conductor sectional(mm2) vs 1.5, 2.5, 4, 6, 10, 16, 25, 35, 50, 70, 95, 120, 185, 240.

Table with 5 columns: Rated current(A), Cable (Sectional area, Quantity), and Copper bar (Size, Quantity). Rows for 500, 630, 700/800, and 1250 A.

Secondary power distribution

HUM8
Series Moulded Case Circuit Breaker

9.14 Circuit breaker (type DL) with intelligent controller with an additional leakage protection function
The HUM8DL type plastic case circuit breaker also has the function of leakage protection. It needs to plug the leakage module on the right side of the circuit breaker, and the main circuit goes through the external zero sequence current transformer.

Visual content for section 9.14 including:
- Photos of the circuit breaker and leakage module.
- Detailed wiring diagram showing the connection of the leakage module and zero sequence transformer (ZCT) to the breaker.
- Dimensions for the leakage module (103, 20 mm) and the ZCT installation hole (ΦA, ΦB, ΦC, D, E, H).
- A table correlating Rated current with ZCT dimensions A through H.

10. Ordering information

- 10.1. Model and ordering quantity
HUM8 □—□□□/□—□□□□□□□□ If the connection mode is CH draw out type, then it should be noted front plate connection or post plate connection.
- 10.2. Rated voltage of shunt release and undervoltage release.
- 10.3. External accessories: rotary operation handle type (type A or B), square shaft length and rotary operation handle number, electric operation mechanism type and its rated voltage and quantity.