宏发股份
HONGFA GROUP

HONGFA GROUP

AIR CIRCUIT BREAKERS

UEW6 series

INTRODUCTION

Hongfa, (Shanghai Stock Exchange: 600885), founded in 1984, has been adhering to the enterprise spirit of “persevere for progress, strive for excellence”, and has built a complete industry system with complete categories and supporting facilities. At present, Hongfa has more than 30 subsidiaries and has established three districts of R & D and production bases. Its products cover various categories, such as medium and low voltage products, relays, high and low voltage switchgear, capacitors, precision parts and automation equipment.

Xiamen Hongfa Electrical Safety & Controls Co., Ltd. is a wholly-owned subsidiary of Hongfa, which specializes in R & D, design and manufacture medium and low voltage products. Its distribution apparatus, terminal apparatus, control apparatus and other products are widely used in real estate, electric power, new energy, industry, HVAC, transportation, information and other fields.

In the United States, Europe, Southeast Asia and other regions, Hongfa has established localized marketing and service networks with global market operation and technical service. Relying on professional and rigorous technical support, fast response and all-round service, safe and reliable product quality and high cost performance, Hongfa has reached business cooperation relationship with many global top 500 enterprises and other well-known enterprises, such as Enel, GE, Honeywell, Carrier, Trane, Johnson Controls, Danfoss, State Grid, China Southern Power Grid, CRRC, China Mobile, China Unicom, etc.

Sunban Industrial Park

Donglin Industrial Park

Haicang Industrial Park

Zhongjiang Industrial Park

Zhangzhou Industrial Park

Zhoushan Industrial Park

Xi'an Factory

In terms of technology R & D and manufacturing, taking the national enterprise technology center as the platform, Hongfa has set up postdoctoral research workstation, academician and expert workstation. Now it has developed into a leading scientific research and production base in the industry. From product development, mold manufacturing, parts manufacturing, automated product assembly and online testing, Hongfa has successfully built an integrated whole industry chain of medium and low voltage products. In terms of product testing, Hongfa testing center has passed the certification of VDE, UL, CNAS and other international organizations, and has complete testing and analysis equipment for low-voltage products, such as 50kA ultimate short circuit test, 8kA electrical life test, 80kA characteristic test, mechanical simulation and testing system, electro-magnetic simulation and testing system.

Hongfa always adheres to the policy of "focused on the market, winning through quality", and has a completed quality assurance system. Its products have passed UL / CUL, VDE, CQC, CCC and other international safety certification. In the process of quality management, Hongfa actively implements the advanced quality concept, constantly improves the quality management system, continuously promotes the product process quality control and testing, strengthens the supply chain management, and is committed to providing each customer with high-quality products and creating greater value.

Advanced technology and strict quality control have created Hongfa's brand strength. Hongfa is willing to work hand in hand with global customers to share the convenience and well-being brought by science and technology.

CONTENT

Content List

UEW6 Series
AIR CIRCUIT BREAKERS

NOTE:
The contents and data in this catalogue are not binding. We reserve the right to modify the contents of this document on the basis of technical development of the products, without prior notice. The real order requirements and technical agreements shall prevail.

Production overview

Scope of Application

UEW6 series Air Circuit Breakers are applicable in the power distribution network of AC50/60Hz, rated operational voltage of 400V or 690V or 800V, rated current 200～4000A, and take the role of distributing power and protecting circuits and equipment from being damaged by overload, under voltage, short circuit and single-phase grounding, etc. The breakers with rated current below 1000A can also be used for the infrequent motor starting. The circuit breaker, with stable performance, precise protection capacity, can improve the reliability and power safety and avoid power failure.

Our low temperature type is specially designed for the power generation system and power distribution network with the requirements of low temperature environment and high reliability, such as wind power generation system.

Product Features

-Rated AC current: 200A～4000A

-Short circuit breaking capacity: 50kA～100kA

-Maximum rated operational voltage AC800V

-3 poles and 4 poles are available.

-Draw out and fixed type.

-Can be connected in reverse direction

-Various trip units available, providing different functions, with comprehensive protection.

-With isolation function

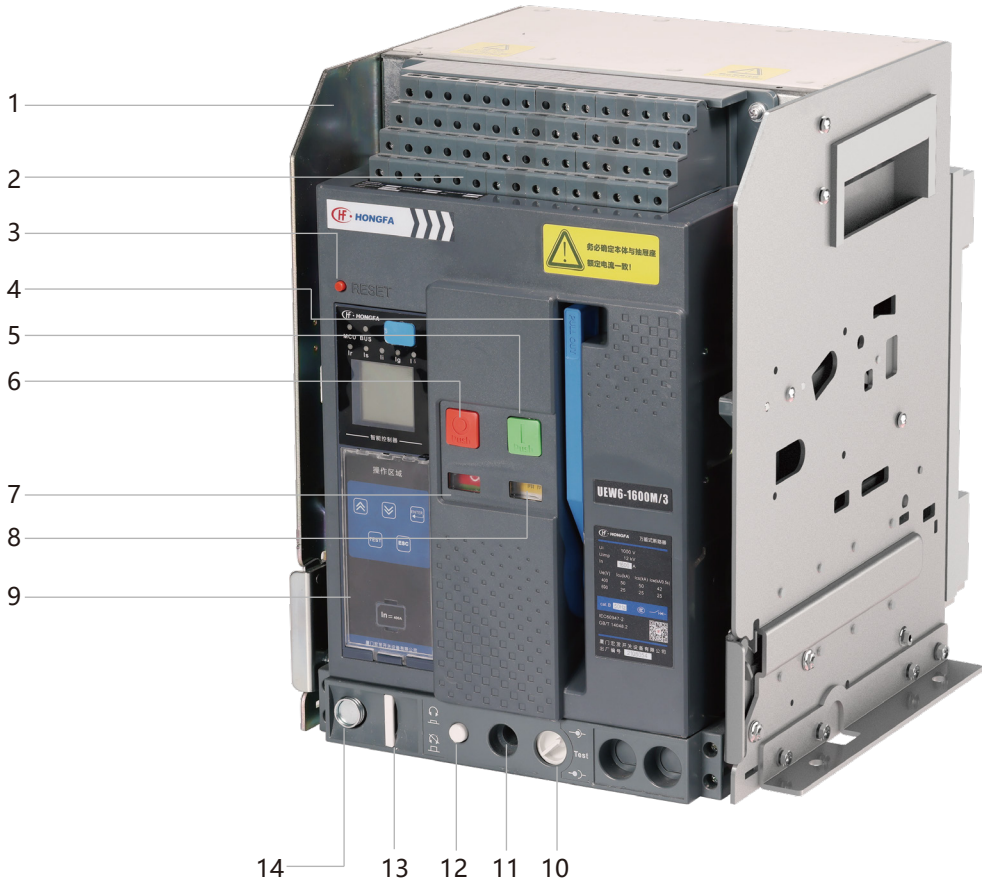
-Extensive environmental adaptability, which can meet the requirements of 5000m altitude and - 40 ℃

Standards

	CCC	GB/T 14048.1, GB/T 14048.2
CB	CB	IEC60947-2
	TUV	EN60947-2 (UEW6-3200、4000 are compliant)
CE	CE	EN60947-2 (UEW6-3200、4000 are compliant)
UK CA	UKCA	BSEN60947-2

Product Structure

UEW6-1600 Front indication

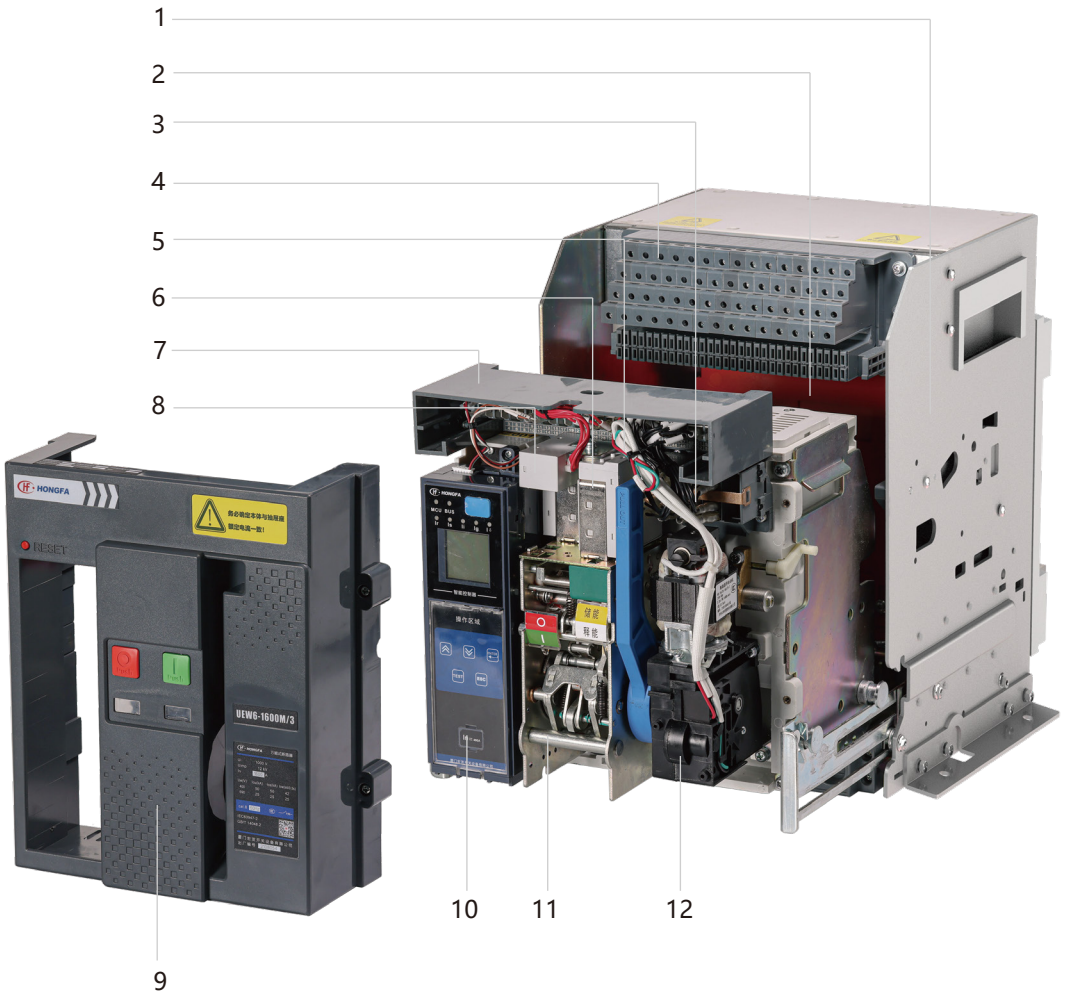


1.Cradle
2.Terminal Block
3.Fault Trip Reset Button
4.Charging handle
5.ON button (I)
6.OFF button(O)
7.Open (I) / Close (O) Indicator
8.Charged / Discharged indicator
9.Trip unit
10.Position Indicator
11.Crank Insertion Opening
12.Stop Release Button
13.Position Locking
14.Crank Storage Space

Production overview

Product Structure

UEW6-1600 Internal structure diagram



1. Cradle
2. Safety shutters
3. Auxiliary contacts
4. Terminal Block (fixed)
5. Shunt Trip
6. Closing coil
7. Terminal Block (movable)
8. Undervoltage Trip Device
9. Front cover
10. Trip unit
11. Operating mechanism
12. Charing motor

Product Structure

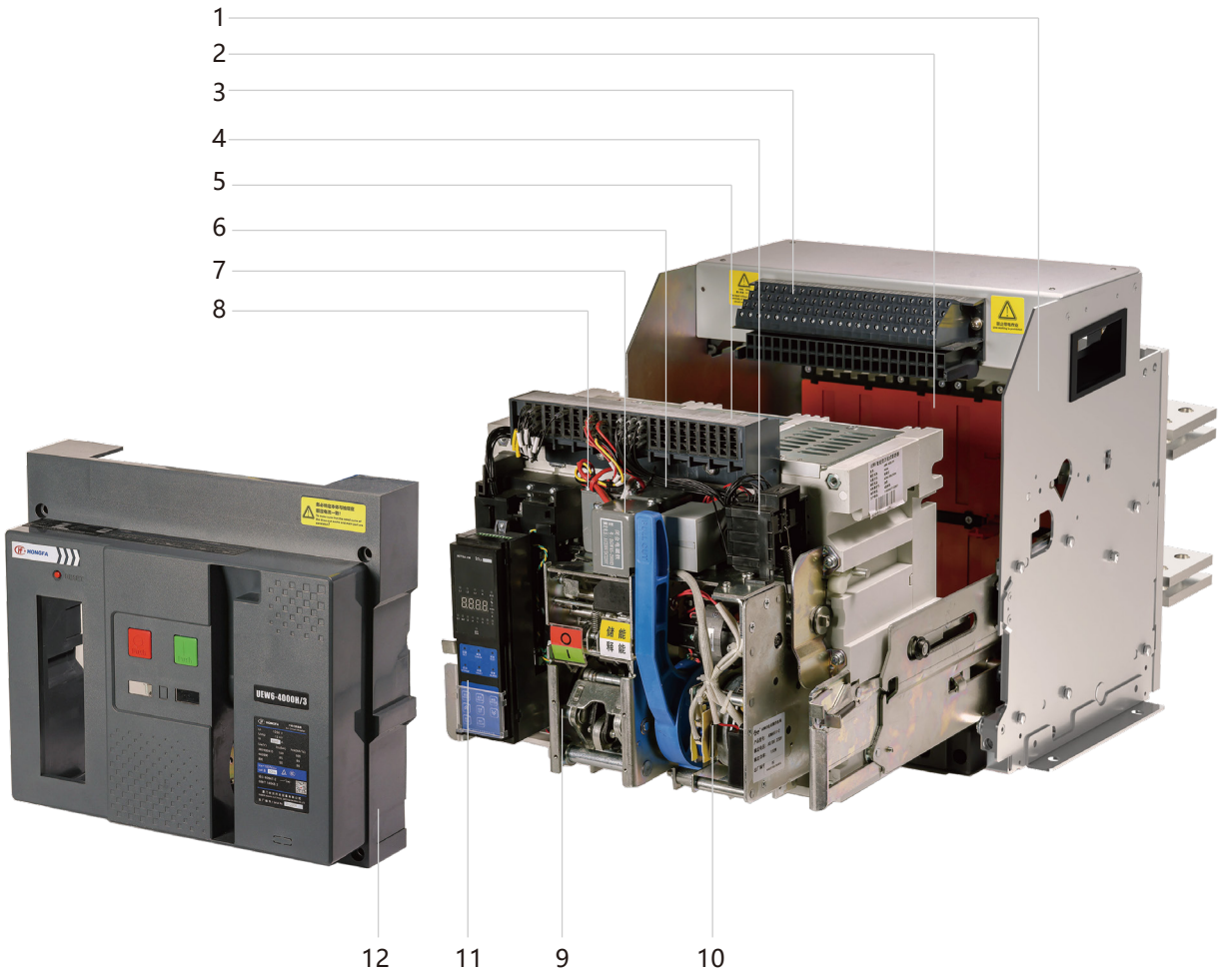
UEW6-2000~4000 Front indication

1.Cradle
2.Terminal Block
3.ON button (I)
4.OFF button(O)
5.Fault Trip Reset Button
6.Charging handle
7.Open(I)/Close(O) Indicator
8.Charged / Discharged indicator
9.Trip unit
10.Crank Storage Space
11.Position Locking
12.Position Indicator
13.Crank Insertion Opening
14.Stop Release Button

Production overview

Product Structure

UEW6-2000~4000 internal structure diagram



1.Cradle
2.Safety shutters
3.Terminal Block (fixed)
4.Auxiliary contacts
5.Terminal Block (movable)
6.Shunt Trip
7.Closing coil
8.Undervoltage Trip Device
9.Operation mechanism
10.Charging motor
11.Trip unit
12.Front cover

Standard Operation and Installation Conditions

-Ambient temperature is -5℃～+70℃, and the average value of 24h does not exceed +35℃. If exceed 40℃ , derating should be applied. The low temperature type can be used for the lowest ambient temperature of -40℃.

-Altitude of the installation place should not exceed 2500m, derating should be applied if the altitude above 2500.

-When the highest temperature is up to +40℃, air relative humidity does not exceed 50%, and under low temperature, higher relative humidity is allowed, eg.90% for 20℃. Special measures should be taken for occasional gel by temperature change.

-Pollution degree: 3

-Protection degree: IP40

-Installation category of main circuit: Ⅳ

-Installation category of other auxiliary circuit and controlling circuit: Ⅲ.

-Vertical inclination of circuit breaker should not exceed 5°.

-Circuit breaker should be installed in the place where there is no explosion, and it is not easy to corrode metals and eliminate the insulation.

-Storage condition： ambient temperature is -40℃～+75℃.

TECHNICAL PARAMETERS

Ordering Information

UE	W	6	-4000	M	/1600	3	G	2M	1	1	1	E	1	1	1	-□□□□

Manufacturer code:
Xiamen Hongfa Electrical Safety & Control Co., Ltd.

Product Code: Air Circuit Breaker

Design Serial Number

Frame Rating :
1600A 2000A 3200A 4000A

Breaking capacity:
M: standard breaking capacity
H: high breaking capacity

Rated Current : 200A 400A 630A, 800A 1000A 1250A 1600A 2000A 2500A 2900A 3200A 3600A 4000A

Number of Poles : **3:** 3P **4:** 4P **3N:** 3P+N

Installation type: **C:** Draw out **G:** Fixed type

Trip Unit type :
2M: 2M **2H:** 2H **3M:** 3M **3H:** 3H（Suitable for 2000~4000 frame rating）
AT2: AT2 **AT4:** AT4 **AT5:** AT5 **BT2:** BT2 **BT5:** BT5（Suitable for 1600 frame rating）

Control voltage (built-in shunt trip, closing coil,charging motor) **1:**AC220/AC230 **2:** AC380/AC400 **3:** DC110 **4:** DC220 **5:** DC24

Auxiliary Contacts:
1: 4 Changeover **2:** 6 Changeover **4:** 4NO+4NC **5:** 5NO+5NC
6: 6NO+6NC **7:** 8 Changeover **8:** 8NO+8NC **9:** 5 Changeover

Wiring method:
1: Horizontal **2:** Vertical (only available for 3200 and 4000 frame)
3: Upper horizontal, lower vertical (only available for 3200 and 4000 frame)
4: Upper vertical, lower horizontal (only available for 3200 and 4000 frame)

Busbar Type:
E: Standard busbar
F: Extended busbar (only available for 2000 frame)

Ambient temperature: **1:** room temperature(-5℃~70℃) **2:** Low temperature type (-40℃~70℃)

Under-voltage trip device
0: under voltage trip device is not selected
1 : AC220/AC230 instantaneous **2 :** AC220/AC230 1s delay **3 :** AC220/AC230 3s delay **3 :** AC220/AC230 3s delay
4 : AC220/AC230 5s delay **5 :** AC380/AC400 instantaneous **6 :** AC380/AC400 1s delay **7 :** AC380/AC400 3s delay
8 : AC380/AC400 5s delay

A : AC220/AC230 No voltage 1s **B :** AC220/AC230 No voltage 3s **C :** AC220/AC230 No voltage 5s
D : AC380/AC400 No voltage 1s **E :** AC380/AC400 No voltage 3s **F :** AC380/AC400 No voltage 5s
G : AC/DC110 instantaneous **H :** DC24 instantaneous

Door frame and interphase barrier
1: Door frame **2:** interphase barrier **3:** Door frame+interphase barrier

Accessory:
A : Door Interlock **B :** Pushbutton locking **C :** Remote Reset Switch **D :** Three position electrical Indicator
E : Extension auxiliary contacts **F :** One lock + one key **G :** Two locks + one key **H :** Three locks + two keys
I : Five locks + three keys **J :** Operation counter **L :** Ready to close switch

TECHNICAL PARAMETERS

Note：

1. The short description limit is 40 digits, and no blank is not allowed

2. Fill 0 if some item is not selected.

3. If some accessory is selected, the‘ - ’is needed. If not selected, the‘ - ’ can be omitted.

4. Use the corresponding letter to indicate the selected accessory. Multiple accessories are allowed to select. For example : B refers to that the button lock is selected, and BD refers to that the pushbutton locking and three position electrical Indicator are selected.

Ordering example:

1、UEW6-3200H/25004C2M221E253-ABD: 3200A frame rating, high breaking capacity, rated current 2500A，four poles，draw out type, 2M trip unit，control voltage AC380/AC400，6 changeover aux contacts，horizontal outgoing terminal, standard busbar，low temperature type，undervoltage AC380/AC400 instantaneous，with door frame +interphase barrier, door Interlock, pushbutton locking and three position electrical Indicator

2、UEW6-4000M/32003C3H111E112: 4000A frame rating, standard breaking capacity, rated current 3200A，three poles, Draw out type，3H trip unit, control voltage AC220/AC230，4 changeover aux contacts, horizontal outgoing terminal, standard busbar, normal temperature type, under-voltage AC220/AC230 instantaneous, interphase barrier）

Note: When the accessory is not selected, '-' and the subsequent fields are blank.

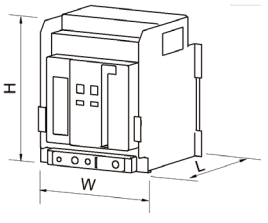
TECHNICAL PARAMETERS

Selection table

Frame size	Technical parameter	UEW6-1600	UEW6-2000	UEW6-3200	UEW6-4000
Breaking capacity	M	√	√	√	√
	H	√	√	√	√
Rated current	200	√	-	-	-
	400	√	-	-	-
	630	√	√	-	-
	800	√	√	-	-
	1000	√	√	√	√
	1250	√	√	√	√
	1600	√	√	√	√
	2000	-	√	√	√
	2500	-	-	√	√
	3200	-	-	√	√
	3600	-	-	-	√
	4000	-	-	-	√
Trip Unit type	2M, 2H	-	√	√	√
	3M, 3H	-	√	√	√
	AT2, AT4, AT5	√	-	-	-
	BT2, BT5	√	-	-	-
Auxiliary contacts	4NO+4NC/4 changeover	√	√	√	√
	5NO+5NC/5 changeover	√	-	-	-
	6NO+6NC/6 changeover	-	√	√	√
	8NO+8NC/8 changeover	-	√	√	√
Wiring method	Horizontal outgoing terminal (standard)	√	√	√	√
	Vertical outgoing terminal	-	-	√	√
	Upper horizontal lower vertical terminal	-	-	√	√
	Upper vertical lower horizontal terminal	-	-	√	√
Busbar	Standard busbar	√	√	√	√
	Extended busbar	-	√	√	√
Installation method	Draw out	√	√	√	√
	Fixed	√	√	√	√

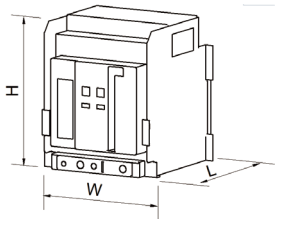
Note: 1. ' - ': without the function; 2. ' √ ' : with the function.

UEW6-1600 main technical parameter

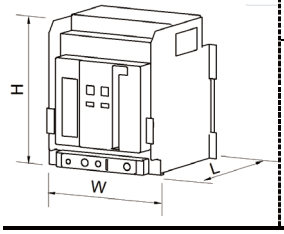
Model			UEW6-1600	
Frame Rating I_{nm} (A)			1600	
Rated current I_n (A)			200. 400. 630. 800. 1000. 1250. 1600	
Rated operational voltage U_e (V)			AC400. AC690	
Rated insulation voltage U_i (V)			AC1000	
Rated impulse withstand voltage U_{imp} (kV)			12	
Number of poles			3, 4,3PN	
Rated current of N pole I_n (A)			100% I_n	
Breaking capacity			M	H
Rated ultimate breaking capacity Icu (kA) (effective value)		AC400V	50	65
		AC690V	25	35
Rated serivce breaking capacity (kA) (effective value)		AC400V	50	55
		AC690V	25	35
Rated short-circuit making capacity Icm (kA) (peak value)		AC400V	105	143
		AC690V	52.5	73.5
Rated short-time withstand current Icw (kA) /s (effective value)		AC400V	42/0.5s	42/1s
		AC690V	25/0.5s	35/1s
Breaking time (No additional delay) (ms)			< 30	
Closing time (ms)			Maximum 70	
Dielectric properties 50Hz			AC 2500V 1min	
Operational performance	Electrical life *	AC400V	8000 cycle	
		AC690V	3000 cycle	
	Mechanical life *	Maintenance-free	15000 cycle	
		With maintenance	30000 cycle	
	Connection method		Horizontal connection	
	Installation method		Draw out ,Fixed	
	Outline dimension WxHxL (mm)	Fixed 3P	263×320×224	
		Fixed 4P	338×320×224	
		Draw out 3P	317×353×304	
		Draw out 4P	392×353×304	

TECHNICAL PARAMETERS

UEW6-2000 main technical parameter

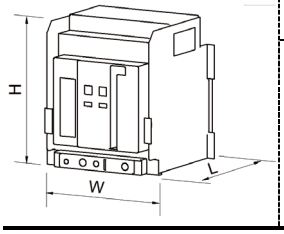
Model			UEW6-2000	
Frame Rating I_{nm} (A)			2000	
Rated current I_n (A)			630, 800, 1000, 1250, 1600, 2000	
Rated operational voltage U_e (V)			AC400, AC690, AC800	
Rated insulation voltage U_i (V)			AC1000	
Rated impulse withstand voltage U_{imp} (kV)			12	
Number of poles			3, 4,3PN	
Rated current of N pole I_n (A)			100% I_n	
Breaking capacity			M	H
Rated ultimate breaking capacity Icu (kA) (effective value)		AC400V	80	85
		AC690V	50	65
		AC800V	40	--
Rated serivce breaking capacity Ics (kA) (effective value)		AC400V	65	65
		AC690V	50	65
		AC800V	40	--
Rated short-circuit making capacity Icm (kA) (peak value)		AC400V	176	187
		AC690V	105	143
		AC800V	84	--
Rated short-time withstand current Icw (kA) /s (effective value)		AC400V	50/1s	65/1s
		AC690V	40/1s	65/1s
		AC800V	40/1s	--
Breaking time (No additional delay) (ms)			< 30	
Closing time (ms)			Maximum 70	
Dielectric properties 50Hz			AC 2500V 1min	
Operational performance	Electrical life * Mechanical life *	AC400V	8000 cycle	
		AC690V	3000 cycle	
		AC800V	2400 cycle	
	Mechanical life	Maintenance-free	15000 cycle	
		With maintenance	30000 cycle	
	Connection method		Horizontal connection	
	Installation method		Draw out,Fixed	
	Outline dimension WxHxL (mm)	Fixed 3P	364×398×296	
		Fixed 4P	459×398×296	
		Draw out 3P	405×436×395	
		Draw out 4P	500×436×395	

UEW6-3200 main technical parameter

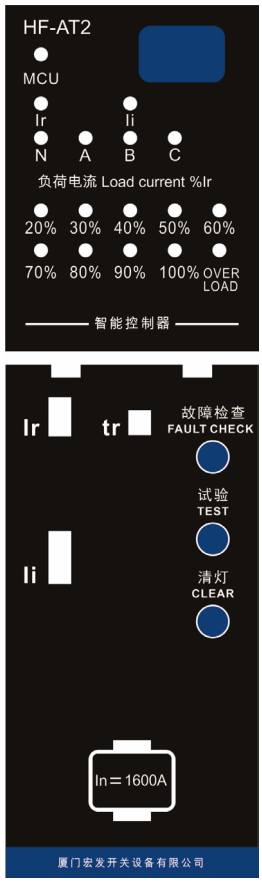
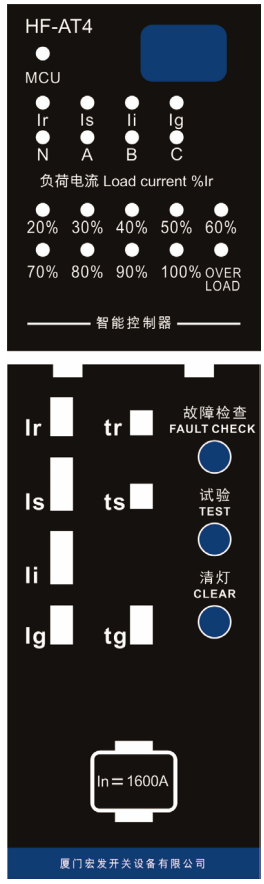
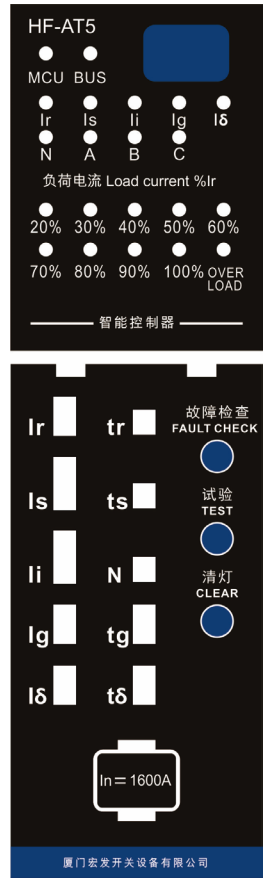
Model			UEW6-3200	
Frame Rating I_{nm} (A)			3200	
Rated current I_n (A)			1000, 1250, 1600, 2000, 2500, 3200	
Rated operational voltage U_e (V)			AC400, AC690, AC800	
Rated insulation voltage U_i (V)			AC1250	
Rated impulse withstand voltage U_{imp} (kV)			12	
Number of poles			3, 4,3PN	
Rated current of N pole I_n (A)			100%I_n	
Breaking capacity			M	H
Rated ultimate breaking capacity Icu (kA) (effective value)		AC400V	100	100
		AC690V	75	85
		AC800V	50	50
Rated serivce breaking capacity Ics (kA) (effective value)		AC400V	100	100
		AC690V	75	85
		AC800V	50	50
Rated short-circuit making capacity Icm (kA) (peak value)		AC400V	220	220
		AC690V	165	187
		AC800V	105	105
Rated short-time withstand current Icw (kA) /s (effective value)		AC400V	85/1s	100/1s
		AC690V	75/1s	85/1s
		AC800V	50/1s	50/1s
Breaking time (No additional delay) (ms)			< 30	
Closing time (ms)			Maximum 70	
Dielectric properties 50Hz			AC 2500V 1min	
Operational performance	Electrical life *	AC400V	4000 cycle	
		AC690V	2000 cycle	
		AC800V	1000 cycle	
	Mechanical life *	Maintenance-free	10000 cycle	
		With maintenance	20000 cycle	
	Connection method		Horizontal connection	
	Installation method		Draw out,Fixed	
	Outline dimension WxHxL (mm)	Fixed3P	426×401×296.5	
		Fixed 4P	541×401×296.5	
		Draw out 3P	474×446×405	
		Draw out 4P	589×446×405	

TECHNICAL PARAMETERS

UEW6-4000 main technical parameter

Model			UEW6-4000	
Frame Rating I_{nm} (A)			4000	
Rated current I_n (A)			1000, 1250, 1600, 2000, 2500, 3200, 4000	
Rated operational voltage U_e (V)			AC400, AC690, AC800	
Rated insulation voltage U_i (V)			AC1250	
Rated impulse withstand voltage U_{imp} (kV)			12	
Number of poles			3, 4,3PN	
Rated current of N pole I_n (A)			100%I_n	
Breaking capacity			M	H
Rated ultimate breaking capacity Icu (kA) (effective value)		AC400V	100	100
		AC690V	75	85
		AC800V	50	50
Rated serivce breaking capacity Ics (kA) (effective value)		AC400V	100	100
		AC690V	75	85
		AC800V	50	50
Rated short-circuit making capacity Icm (kA) (peak value)		AC400V	220	220
		AC690V	165	187
		AC800V	110	110
Rated short-time withstand current Icw (kA) /s (effective value)		AC400V	85/1s	100/1s
		AC690V	75/1s	85/1s
		AC800V	50/1s	50/1s
Breaking time (No additional delay) (ms)			< 30	
Closing time (ms)			Maximum 70	
Dielectric properties 50Hz			AC 2500V 1min	
Operational performance	Electrical life * Mechanical life *	AC400V	4000 cycle	
		AC690V	2000 cycle	
		AC800V	1000 cycle	
	Mechanical life	Maintenance-free	10000 cycle	
		With maintenance	20000 cycle	
	Connection method		Horizontal connection, vertical connection	
	Installation method		Draw out,Fixed	
	Outline dimension WxHxL (mm)	Fixed 3P	426×401×296.5	
		Fixed 4P	541×401×296.5	
		Draw out 3P	474×446×405	
		Draw out 4P	589×446×405	

UEW6-1600 trip unit introduction

Model	HF-AT2	HF-AT4	HF-AT5
Appearance			
Introduction	Light column indication of load current, adopting toggle switch setting mode, convenient operation. Main protection functions: Overload long time delay Short circuit instantaneous	Light column indication of load current, adopting toggle switch setting mode, convenient operation. Main protection functions: Overload long time delay Short circuit short time delay Short circuit instantaneous Grounding protection	Light column indication of load current, adopting toggle switch setting mode, convenient operation. With communication function. Main protection functions: Overload long time delay Short circuit short time delay Short circuit instantaneous Grounding protection Current unbalance protection

TECHNICAL PARAMETERS

UEW6-1600 trip unit introduction

Model	HF-BT2	HF-BT5
Appearance		
Introduction	LCD display, adopting key-type setting mode, comprehensive protection, complete auxiliary functions Main protection functions: Overload long time delay Short circuit short time delay Short circuit instantaneous Grounding protection	LCD display, adopting key-type setting mode, comprehensive protection, complete auxiliary functions, with communication function Main protection functions: Overload long time delay Short circuit short time delay Short circuit instantaneous Grounding protection Current unbalance protection

Trip unit function

Function		HF-AT			HF-BT	
		AT2	AT4	AT5	BT2	BT5
Protection	Overload long time delay protection	●	●	●	●	●
	Short circuit short time delay protection	-	●	●	●	●
	Instantaneous short circuit protection	●	●	●	●	●
	Grounding protection （differential type）	-	●	●	●	●
	Current unbalance protection	-	-	●	○	●
	MCR and HSISC protection	○	○	○	○	○
	Voltage unbalance protection	-	-	-	-	○
	Neutral line protection	●	●	●	●	●
	Undervoltage protection	-	-	-	-	○
	Overvoltage protection	-	-	-	-	○
	Residual current protection	-	-	-	○	○
	Overfrequency protection	-	-	-	-	○
	Underfrequency protection	-	-	-	-	○
	Thermal memory function	●	●	●	●	●
Measurement	Current measurement	●	●	●	●	●
	Voltage measurement	-	-	○	-	○
	Power measurement	-	-	○	-	○
	Frequency measurement	-	-	○	-	○
	Electric energy measurement	-	-	○	-	○
Maintenance	Contact wear rate	-	-	●	●	●
	Number of operations	-	-	●	●	●
	Fault status indication	●	●	●	●	●
	Fault record	●	●	●	●	●
	Self-diagnostic function	●	●	●	●	●
	Local clock	-	-	●	●	●
	Historical peak current record	-	-	-	●	●
	Fault record: 8 tripping records and 8 alarm records;	-	-	●	●	●
	Tripping test	●	●	●	●	●
Others	Communication function	-	-	●	-	●
	Remote reset module	○	○	○	○	○
	Voltage module	-	-	○	○	○
	Signalling contact unit	-	○	●	○	●

Note:

1. ● basic functions, ○ optional function, - without the function

2. The optional voltage module can realize the optional functions of voltage unbalance protection, under and over voltage protection, under and Overfrequency protection, voltage measurement, power measurement, frequency measurement, electric energy measurement, etc.

3. The Signalling contact unit provides four contact signal outputs, and the functions can be configured as follows （the specific functions vary according to different trip units:

Fault trip, self-diagnosis alarm, load monitoring I, load monitoring II, overload pre-alarm, overload protection trip, short time delay protection trip, instantaneous protection trip, grounding/residual current protection trip, grounding alarm, current unbalance protection trip, neutral phase protection trip, undervoltage fault trip, overvoltage fault trip, voltage unbalance protection trip, underfrequency protection trip, overfrequency protection trip, inverse power protection trip, regional interlocking, closing, opening, grounding interlocking, short circuit interlocking

TECHNICAL PARAMETERS

Protection parameters of AT trip unit

Overload long time delay						
Setting current I_r (Tolerance ±10%)		(0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0) ×I_n+OFF				
Trippingtime (Tolerance ±15%) $Tr = \frac{(1.5Ir)^2}{I^2} tr$	Current	Tripping time				
	≤1.05I_r	Not trip within 2 hours				
	> 1.3I_r	Trip within 1 hour				
	1.5 I_r	Setting current t_r (s)	30	60	120	240
	2.0I_r	Tripping time T_r (s)	16.9	33.7	67.5	135
	7.2I_r	Tripping time T_r (s)	1.3	2.6	5.2	10
Thermal memory		30min+OFF (can be cleared after power off)				
Short circuit short delay						
Setting current I_{sd} (Tolerance ±10%)		(1.2, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10) xIr+OFF Note: When Ir is OFF, Ir in the formula is replaced by In value				
Setting time t_{sd} (s) (Tolerance ±15%)		0.1~0.4s (step 0.1s)				
Thermal memory		30min+OFF (can be cleared after power off)				
Short circuit instantaneous						
Setting current I_i (Tolerance ±10%)		(1.2, 1.5, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15) xIn+OFF				
Tripping time		within 30ms				
Grounding protection						
Setting current I_g (Tolerance ±10%)		(0.2 0.3 0.4 0.5 0.6 0.7 0.8) ×I_n+OFF				
Setting current t_g (s) (Tolerance±15%)		0.2s, 0.4s, 0.8s, 1s, 10s, 30s, 60s+OFF (OFF means only alarm and not trip)				
Neutral pole protection						
Protection type		50%, 100%, 200%, OFF Note: 1. Taking 50% as an example, it means that the operation point of neutral pole protection is equal to half of the setting value of phase line overload, short circuit and grounding protection 2. 3P circuit breaker only has this function when adding external neutral CT 3. The factory default setting is 100% if there's no additional requirement (not adjustable by the user)				
Tripping time		Equal to overload long time delay				
Current unbalance protection						
Unbalance rate δ Setting range		5%, 10%, 20%, 40%, 60%, 80%, 100%+OFF				
Delay Time		0.2s, 0.4s, 0.8s, 1s, 10s, 30s, 60s+OFF (OFF means only alarm and not trip)				

Protection parameters of BT trip unit

Overload long delay									
Setting current I_r (Tolerance ±10%)		(0.4～1.0) ×I_n+OFF (Step 1A)							
Tripping time (Tolerance±15%) The trip unit factory default is curve 6	Current	Tripping time							
	≤1.05I_r	Not trip within 2 hours							
	> 1.3I_r	Trip within 1 hour							
	Curve type	Setting time tr (The value in the bracket is coefficient K)							
	Standard inverse time limit $T=K/(N^{0.02}-1)$	0.61 (0.005)	0.98 (1.0)	1.47 (0.012)	2.46 (0.02)	3.68 (0.03)	4.91 (0.04)	6.14 (0.05)	8.2 (0.0075)
		11.1 (0.09)	17.2 (0.14)	24.6 (0.2)	36.8 (0.3)	49.1 (0.4)	61.4 (0.5)	73.7 (0.6)	86 (0.7)
	Fast inverse time limit $T=K/(N-1)$	2 (1)	3.2 (1.6)	4.8 (2.4)	8 (4)	12 (6)	16 (8)	20 (10)	27 (13.5)
		36 (18)	56 (28)	80 (40)	120 (60)	160 (80)	200 (100)	240 (120)	280 (140)
	Super fast inverse time limit (general purpose) $T=K/(N^2-1)$	8 (10)	12.8 (16)	19.2 (24)	32 (40)	48 (60)	64 (80)	80 (100)	108 (135)
		144 (180)	224 (280)	320 (400)	480 (600)	640 (800)	800 (1000)	960 (1200)	1040 (1300)
	Super fast inverse time limit (Motorprotection) $T=(K/1.15)\times\log_e[N^2/(N^2-1.15)]$	6.22 (10)	9.96 (16)	14.9 (24)	24.9 (40)	37.3 (60)	49.8 (80)	62.2 (100)	84 (135)
		112 (180)	174 (280)	249 (400)	373 (600)	498 (800)	622 (1000)	747 (1200)	871 (1300)
	Compatible with high voltage fuse $T=K/(N^4-1)$	2.46 (10)	3.94 (16)	5.9 (24)	9.85 (40)	14.8 (60)	19.7 (80)	24.6 (100)	33.2 (1300)
		44.3 (180)	69.8 (280)	98.5 (400)	147 (600)	197 (800)	246 (1000)	295 (1200)	344 (1300)
	Universal inverse time limit $T=(1.5/N)^2\times K$	15 (15)	30 (30)	60 (60)	120 (120)	240 (240)	360 (360)	480 (480)	6000 (6000)
		720 (720)	840 (840)	960 (960)					
Note: N=I/Ir (I is the actual fault current, Ir is the setting value of overload current), the setting time displayed on the trip unit is the actual operation time when I=1.5Ir, and the operation time will be shortened with the increase of current I, which can be calculated according to the formula.									
Thermal memory		30min+OFF (can be cleared after power off)							
Short circuit short delay									
Setting current I_s (Tolerance ±10%)		(1.2~10) xIr+OFF (Step 1A)							
Timing limit setting time t_s (s) (Tolerance±15%)		0.1～0.4s (step 0.1s)							
Inverse time limit operation time		The curve is the same as that of over load long time delay, and the speed is 10 times faster than that of long time delay The time calculated by the delay curve formula divided by 10 is the short delay inverse delay time							
Thermal memory		30min+OFF (can be cleared after power off)							
Note: 1. Double short circuit short time delay protection (protection 1 and 2) can be configured to achieve more accurate protection. 2. When both the inverse time limit and the definite time limit protection are turned on, the setting value of the inverse time limit current must be less than the setting value of the definite time limit current, otherwise the inverse time limit function will automatically fail. In addition, the actual delay time is not less than the setting time of the definite time limit									
Short circuit instantaneous									

TECHNICAL PARAMETERS

Protection parameters of BT trip unit

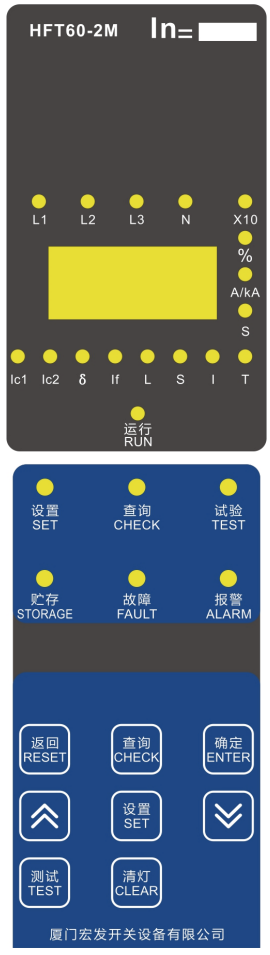
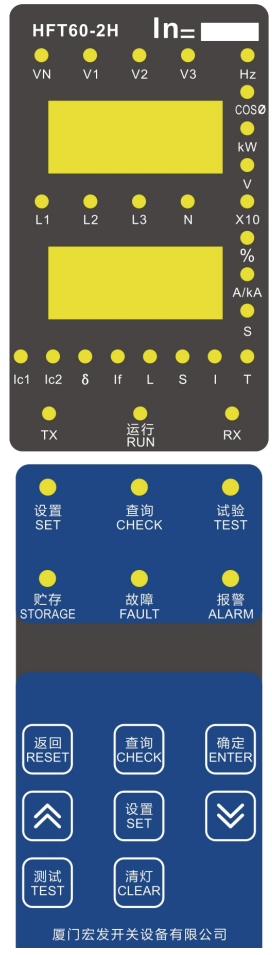
Setting current I_i (Tolerance±10%)	(1~15) xIn+OFF (Step 1A)
Tripping time	With 30ms
Grounding protection	
Setting current I_g (Tolerance±10%)	(0.2～1) ×I_n+OFF
Timing limit setting time t_g (s) (Tolerance±15%)	0.1s~100s+OFF (Step within 1s is 0.1s, step above 1s is 1s, OFF means only alarm and not trip)
Inverse time shear coefficient Cr	1.5～6+OFF (step 0.1s OFF indicates that the inverse time limit is off)
Inverse time limit operation time	Formula $t=t_g \times C_r \times I_g/I$ t - delay time T_g - set delay time C_r - shear coefficient I_g - set operation current I - ground current When the multiple of fault current (I/If) is less than Cr, the operation characteristic is inverse limit time characteristic; when the multiple of fault current is greater than or equal to Cr, the operation characteristic is limit time characteristic
Residual current protection	
Setting current Ig (Tolerance10%)	0.5A~30A+OFF (step within 1A is 0.1A, step above 1A is 1A)
Setting time tg (Tolerance10%)	0.1~1s+OFF (step 0.1s, OFF means only alarm and not trip)
Neutral pole protection	
Protection type	50%, 100%, 200%, OFF Note: 1. Taking 50% as an example, it means that the operation point of neutral pole protection is equal to half of the setting value of phase line overload, short circuit and grounding protection 2.3P circuit breaker only has this function when adding external neutral CT 3. factory default setting is 100% if there's no special requirement. The user can set it by himself.
Current unbalance protection	
Protection setting value	5%~80%+OFF
Setting time tδ (Tolerance10%)	0.1s~100s+OFF (Step within 1s is 0.1s, step above 1s is 1s, OFF means only alarm and not trip)
Voltage unbalance protection	
Protection setting value (Tolerance10%)	5%~80%+OFF
Setting time (Tolerance10%)	0.1s~100s+OFF (Step within 1s is 0.1s, step above 1s is 1s, OFF means only alarm and not trip)
Undervoltage protection	
Protection setting value	100V~690V+OFF (Step 1V)
Setting time	0.1s~100s+OFF (Step within 1s is 0.1s, step above 1s is 1s, OFF means only alarm and not trip)
Overvoltage protection	
Protection setting value (Tolerance10%)	200V~1200V+OFF (step 1V)
Protection setting value (Tolerance10%)	0.1s~100s+OFF (Step within 1s is 0.1s, step above 1s is 1s, OFF means only alarm and not trip)
Load monitor	Method A, method B, OFF

Protection parameters of BT trip unit

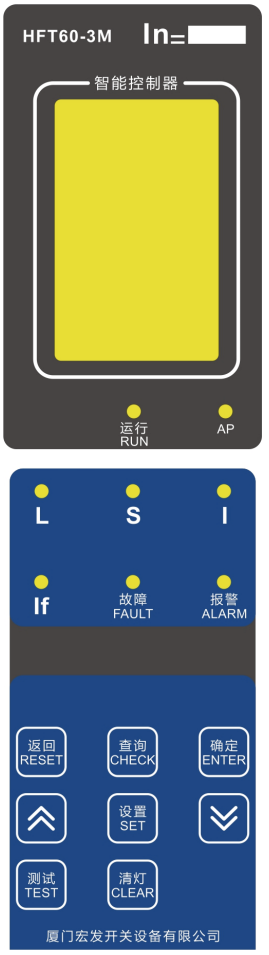
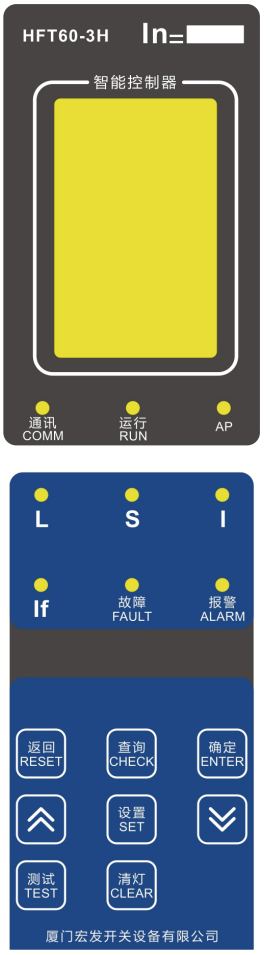
Method A	
Load 1 unloading current	(0.2~1) Ir (Step 1A)
Setting time	(20%~80%) tr (Step 1%, the protection curve is the same as that of overload protection.)
Load 2 unloading current	(0.2~1) Ir (Step 1A)
Setting time	(20%~80%) tr (Step 1%, the protection curve is the same as that of overload protection.)
Method B	
Load 1 unloading current	(0.2~1) Ir (Step 1A)
Setting time	(20%~80%) tr (Step 1%, the protection curve is the same as that of overload protection)
Load 1 return current	0.2Ir~unloading current (Step 1A)
Setting time	10s~3600s (Step 1%, the protection curve is the same as that of overload protection)
Low frequency protection	
Protection setting value	45Hz~65Hz (step 1Hz)
Operation time (Tolerance 10%)	0.2s~5s (step 0.1s)
High frequency protection	
Protection setting value	50Hz~65Hz (step 1Hz)
Operation time (Tolerance 10%)	0.2s~5s (step 0.1s)

TECHNICAL PARAMETERS

UEW6-2000~4000 trip unit introduction

Model	HFT60-2M	HFT60-2H
Appearance		
Introduction	The digital display adopts the key-type setting mode, and the protection parameters are set accurately. Main protection functions: Overload long time delay Short circuit short time delay Short circuit instantaneous Grounding protection Current unbalance protection	The digital display adopts the key-type setting mode, and the protection parameters are set accurately. With communication function. Main protection functions: Overload long time delay Short circuit short time delay Short circuit instantaneous Grounding protection Current unbalance protection

UEW6-2000~4000 trip unit introduction

Model	HFT60-3M	HFT60-3H
Appearance		
Introduction	LCD display, adopting key-type setting mode, comprehensive protection and complete auxiliary functions Main protection functions: Overload long time delay Short circuit short time delay Short circuit instantaneous Grounding protection Current unbalance protection	LCD display, adopting key-type setting mode, comprehensive protection and complete auxiliary functions. With communication function. Main protection functions: Overload long time delay Short circuit short time delay Short circuit instantaneous Grounding protection Current unbalance protection

TECHNICAL PARAMETERS

Trip unit function

Protection		HFT60-2		HFT60-3	
		2M	2H	3M	3H
Protection	Overload long time delay protection	●	●	●	●
	Short circuit short time delay protection	●	●	●	●
	Instantaneous short circuit protection	●	●	●	●
	Grounding protection （differential type）	●	●	●	●
	Current unbalance protection	●	●	●	●
	MCR and HSISC protection	○	○	○	○
	Voltage unbalance protection	-	-	○	○
	Neutral line protection	●	●	●	●
	Undervoltage protection	-	-	○	○
	Overvoltage protection	-	-	○	○
	Residual current protection	○	○	○	○
	Overfrequency protection	-	-	○	○
	Underfrequency protection	-	-	○	○
	Inverse power protection	-	-	○	○
	Phase sequence protection	-	-	○	○
	Current demand value protection	-	-	○	○
	Thermal memory function	●	●	●	●
Measurement	Current measurement	●	●	●	●
	Voltage measurement	○	●	○	○
	Power measurement	○	●	○	○
	Frequency measurement	○	●	○	○
	Electric energy measurement	○	●	○	○
	Phase sequence measurement	-	-	○	○
	Harmonic wave measurement	-	-	○	○
	Required value	-	-	○	○
Maintenance	Contact wear rate	●	●	●	●
	Number of operations	●	●	●	●
	Fault status indication	●	●	●	●
	Fault checking	●	●	●	●
	Self-diagnosis function	●	●	●	●
	Local clock	-	-	●	●
	Historic peak record	-	-	●	●
	Fault record: 8 tripping records and 8 alarm records;	-	-	●	●
	Tripping test	●	●	●	●
Others	Communication function	-	●	-	●
	Remote reset module	○	○	○	○
	Signalling contact unit	○	●	○	●

Trip unit function

Note:

1. ● basic function, ○ Optional function, - without the function

2. The Signalling contact unit provides 4 contact signal outputs. Function configurable as follows （specific functions vary according to different trip unit）：

Fault trip, self-diagnosis alarm, load monitoring I, load monitoring II, overload pre-alarm, overload protection trip, short delay protection trip, instantaneous protection trip, grounding/residual current protection trip, grounding alarm, current unbalance protection trip, neutral phase protection trip, undervoltage fault trip, overvoltage fault trip, voltage unbalance protection trip, Underfrequency protection tripping, Overfrequency protection tripping, inverse power protection trip, area interlocking, closing, opening, grounding interlocking, short circuit interlocking

3M / 3H trip unit additional function code as follows:

D	U	UD	P	PD	H	HD
Required value measurement (current)	Voltage measurement	Required value measurement (current)	Voltage measurement	Required value measurement (current,frequency)	Voltage measurement	Required value measurement (current, frequency)
Required value protection	Voltage unbalance rate measurement	Voltage measurement	Frequency measurement	Voltage measurement	Frequency measurement	Voltage measurement
	Voltage unbalance protection	Voltage unbalance rate measurement	Voltage unbalance rate measurement	Voltage unbalance rate measurement	Voltage unbalance rate measurement	Voltage unbalance rate measurement
	Frequency measurement	Voltage unbalance protection	Voltage unbalance protection	Voltage unbalance protection	Voltage unbalance protection	Voltage unbalance protection
	Phase sequence detection	Frequency measurement	Phase sequence detection	Frequency measurement	Phase sequence detection	Frequency measurement
	Overvoltage protection	Phase sequence detection	Overvoltage protection	Phase sequence detection	Overvoltage protection	Phase sequence detection
	Undervoltage protection	Required value protection	Undervoltage protection	Required value protection	Undervoltage protection	Required value protection
	Overfrequency rate protection	Overvoltage protection	Overfrequency rate protection	Overvoltage protection	Overfrequency rate protection	Overvoltage protection
	Underfrequency rate protection	Undervoltage protection	Underfrequency rate protection	Undervoltage protection	Underfrequency rate protection	Undervoltage protection
	Phase sequence protection	Overfrequency rate protection	Phase sequence protection	Overfrequency rate protection	Phase sequence protection	Overfrequency rate protection
		Underfrequency rate protection	Power measurement	Underfrequency rate protection	Power measurement	Underfrequency rate protection
		Phase sequence protection	Power factor measurement	Phase sequence protection	Power factor measurement	Phase sequence protection
			Electric energy measurement	Power measurement	Electric energy measurement	Power measurement
			Inverse power protection	Power factor measurement	Inverse power protection	Power factor measurement
				Electric energy measurement	Harmonic wave measurement	Electric energy measurement
				Inverse power protection		Inverse power protection
						Harmonic wave measurement

TECHNICAL PARAMETERS

Protection parameters of 2M/2H trip unit

<table>
<tr><td colspan="11">Overload long time delay</td></tr>
<tr><td colspan="2">Setting current I_{r1} (Tolerance±10%)</td><td colspan="9">(0.4～1.0) ×I_n+OFF (step: 1A)</td></tr>
<tr><td rowspan="11">Operation time
(Tolerance±15%)
$Tr=\frac{K}{(N^2-1)}$</td><td>Current</td><td colspan="9">Operation time</td></tr>
<tr><td>≤1.05I_r</td><td colspan="9">Not trip within 2 hours</td></tr>
<tr><td>＞1.2I_r</td><td colspan="9">Trip within 1 hour</td></tr>
<tr><td colspan="10">Setting time t_L (coefficient K in brackets)</td></tr>
<tr><td rowspan="2">1.5 I_r</td><td>8
(10)</td><td>12.8
(16)</td><td>19.2
(24)</td><td>32
(40)</td><td>48
(60)</td><td>64
(80)</td><td>80
(100)</td><td>108
(135)</td></tr>
<tr><td>144
(180)</td><td>224
(280)</td><td>320
(400)</td><td>480
(600)</td><td>640
(800)</td><td>800
(1000)</td><td>960
(1200)</td><td>1040
(1300)</td></tr>
<tr><td rowspan="2">2.0I_r</td><td>3.32
(10)</td><td>5.32
(16)</td><td>8.00
(24)</td><td>13.32
(40)</td><td>20
(60)</td><td>26.66
(80)</td><td>33.30
(100)</td><td>45
(135)</td></tr>
<tr><td>60
(180)</td><td>93.32
(280)</td><td>133
(400)</td><td>200
(600)</td><td>266
(800)</td><td>333
(1000)</td><td>400
(1200)</td><td>433
(1300)</td></tr>
<tr><td rowspan="2">7.2I_r</td><td>0.19
(10)</td><td>0.32
(16)</td><td>10.47
(24)</td><td>10.79
(40)</td><td>1.7
(60)</td><td>1.57
(80)</td><td>1.97
(100)</td><td>2.66
(135)</td></tr>
<tr><td>3.54
(180)</td><td>5.51
(280)</td><td>7.87
(400)</td><td>11.8
(600)</td><td>15.7
(800)</td><td>19.7
(1000)</td><td>23.6
(1200)</td><td>25.6
(1300)</td></tr>
<tr><td colspan="11">Note: N=I/I_r (I is the actual fault current, I_r is the setting value of overload current) , when the setting time displayed by the trip unit is the actual operation time I=2Ir, with the increase of current I, the operation time will be shortened accordingly, which can be calculated according to the formula</td></tr>
<tr><td colspan="2">Thermal memory</td><td colspan="9">30min+OFF (can be cleared after power off)</td></tr>
<tr><td colspan="11">Short circuit short time delay</td></tr>
<tr><td colspan="2">Setting current I_{r2} (Tolerance±10%)</td><td colspan="9">(1.5～15) × I_r + OFF (step: 1A)</td></tr>
<tr><td colspan="2">Setting time t_s (s) (Tolerance±15%)</td><td colspan="9">0.1～1s (step: 0.1s)</td></tr>
<tr><td colspan="2">Inverse limit operation time</td><td colspan="9">The curve is the same as that of overload long time delay,and the speed is 10 times of that of overload long time delay
The time calculated by the delay curve formula divided by 10 is the short delay inverse delay time.</td></tr>
<tr><td colspan="2">Thermal memory</td><td colspan="9">30min+OFF (can be cleared after power off)</td></tr>
<tr><td colspan="11">Note: When both inverse time limit and definite time limit protection are enabled, the setting value of inverse time limit current must be less than the setting value of definite time limit current, otherwise the inverse time limit function will automatically fail, and the actual delay time is not less than the setting time of definite time limit</td></tr>
<tr><td colspan="11">Short circuit instantaneous</td></tr>
<tr><td colspan="2">Setting current I_{r3} (Tolerance±10%)</td><td colspan="9">I_n～50kA+OFF (I_n＜3200A) I_n～70kA+OFF (I_n=3200A) I_n～100kA+OFF (I_n＞3200A)</td></tr>
<tr><td colspan="2">Tripping time</td><td colspan="9">Within 30ms</td></tr>
<tr><td colspan="11">Grounding protection</td></tr>
<tr><td colspan="2">Setting current I_f (Tolerance±10%)</td><td colspan="9">(0.2～1) ×I_n+OFF (Minimum 100A)</td></tr>
<tr><td colspan="2">Definite time limit setting time t_g (s) (Tolerance±15%)</td><td colspan="9">0.1～1s+OFF (step 0.1s OFF mean alarm and not trip)</td></tr>
<tr><td colspan="2">Inverse time shear coefficient Cr</td><td colspan="9">1.5～6+OFF (step 0.1s OFF means inverse time limit is off)</td></tr>
<tr><td colspan="2">Inverse time limit operation time</td><td colspan="9">Formula $t=t_g \times C_r \times I_g/I$ t - delay time T_g - set delay time C_r - shear coefficient
I_g –setting operation current I -ground current. When the multiple of fault current (I/If) is less than Cr, the operation characteristic is inverse time limit characteristic;when the multiple of fault current is greater than or equal to C_r,the operation character istic is definite time limit characteristic.</td></tr>
<tr><td colspan="11">Residual current protection</td></tr>
<tr><td colspan="2">Setting current Ig (Tolerance10%)</td><td colspan="9">0.5A~30A+OFF (step = 0.1A)</td></tr>
<tr><td colspan="2">Setting time tg (Tolerance10%)</td><td>Instantaneous</td><td>0.06</td><td>0.08</td><td>0.17</td><td>0.25</td><td>0.33</td><td>0.42</td><td>0.5</td><td>0.58</td><td>0.67</td><td>0.75</td><td>0.83</td></tr>
</table>

Protection parameters of 2M/2H trip unit

Fault current multiple	Maximum breaking time (s)											
If	0.04	0.36	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
2If	0.04	0.18	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5
5If~10If	0.04	0.072	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.s9	1
Neutral pole protection												
Setting current I_n (Tolerance±10%)	(0.5, 1) ×I_n +OFF											
Operation time	Same as that of overload long time delay											
current unbalance protection												
Unbalance rate δ setting range	(40%～100%) +OFF											
Time of delay	0.1～1s+OFF (step 0.1s OFF means alarm and not trip)											
Load monitor	Method 1, method 2											
Method 1												
Method 1 unloading current	(0.2~1) In+OFF (OFF means escaping, minimum100A)											
Setting time (inverse time limit, the operation characteristic same as that of overload long time delay)	Same as the time setting table of overload long time delay											
Load 2 unloading current	(0.2~1) In+OFF (OFF means escaping, minimum100A)											
Setting time (inverse time limit, the operation characteristic same as that of overload long time delay)	Same as the time setting table of overload long time delay											
Method 2												
Load 1 unloading current	(0.2~1) In+OFF (OFF means escaping, minimum100A)											
Setting time (inverse time limit, the operation characteristic same as that of overload long time delay)	Same as the time setting table of overload long time delay											
Load 1 Return current	(0.2~1) In+OFF (OFF means escaping, minimum100A)											
Return time	Fixed 60s											

TECHNICAL PARAMETERS

Protection parameters of 3M/3H trip unit

overload long time delay									
Setting current I_{r1} (Tolerance±10%)		(0.4～1.0) ×I_n+OFF (step: 1A)							
Operation time (Tolerance± 15%)	Current	Operation time							
	≤1.05I_r	No trip within 2 hours							
	> 1.2I_r	Trip within 1 hour							
	Curve type	Setting time t_r (Coefficient K in the bracket)							
	Standard inverse time limit $T=K/(N^{0.02}-1)$	0.61 (0.005)	0.98 (1.0)	1.47 (0.012)	2.46 (0.02)	3.68 (0.03)	4.91 (0.04)	6.14 (0.05)	8.29 (0.0075)
		11.1 (0.09)	17.2 (0.14)	24.6 (0.2)	36.8 (0.3)	49.1 (0.4)	61.4 (0.5)	73.7 (0.6)	86 (0.7)
	Fast inverse time limit $T=K/(N-1)$	2 (1)	3.2 (1.6)	4.8 (2.4)	8 (4)	12 (6)	16 (8)	20 (10)	27 (13.5)
		36 (18)	56 (28)	80 (40)	120 (60)	160 (80)	200 (100)	240 (120)	280 (140)
	Super fast inverse time limit (general purpose) $T=K/(N^2-1)$	8 (10)	12.8 (16)	19.2 (24)	32 (40)	48 (60)	64 (80)	80 (100)	108 (135)
		144 (180)	224 (280)	320 (400)	480 (600)	640 (800)	800 (1000)	960 (1200)	1040 (1300)
The trip unit factory default curve is curve 3	Super fast inverse time limit (Motorprotection) $T=(K/1.15)\times\log[N^2/(N^2-1.15)]$	6.22 (10)	9.96 (16)	14.9 (24)	24.9 (40)	37.3 (60)	49.8 (80)	62.2 (100)	84 (135)
		112 (180)	174 (280)	249 (400)	373 (600)	498 (800)	622 (1000)	747 (1200)	871 (1300)
	Compatible with high voltage fuse $T=K/(N^4-1)$	2.46 (10)	3.94 (16)	5.9 (24)	9.85 (40)	14.8 (60)	19.7 (80)	24.6 (100)	33.2 (1300)
		44.3 (180)	69.8 (280)	98.5 (400)	147 (600)	197 (800)	246 (1000)	295 (1200)	344 (1300)
	Universal inverse time limit $T=(1.5/N)^2\times K$	15 (15)	30 (30)	60 (60)	120 (120)	240 (240)	360 (360)	480 (480)	600 (600)
		720 (720)	840 (840)	960 (960)					
Note: N=I/Ir (I is the actual fault current, Ir is the setting value of overload current) When the setting time displayed by the trip unit I=1.5Ir , the actual operation time will be shortened with the increase of the current I accordingly, which can be calculated according to the formula.									
Thermal memory		30min+OFF (can be cleared after power off)							

Short circuit short time delay	
Setting current I_s (Tolerance±10%)	(1.5～15) ×Ir+OFF (Step 1A)
Definite time list setting time t_s (s) (Tolerance±15%)	0.1～0.4s (step 0.1s)
Inverse time limit operation time	The curve is the same as that of the overload long time delay, and the curve speed is 10 times faster than that of the overload long time delay curve, The time calculated by the delay curve formula divided by 10 is the short delay inverse delay time
Thermal memory	30min+OFF (can be cleared after power off)
Note: When both inverse time limit and definite time limit protection are enabled, the setting value of inverse time limit current must be less than the setting value of definite time limit current, otherwise the inverse time limit function will automatically fail, and the actual delay time is not less than the setting time of definite time limit.	

Short circuit instantaneous	
Setting current I_{r3} (Tolerance±10%)	(1～20) ×I_n+OFF (Step 1A)
Tripping time	Within 30ms

Grounding protection	
Setting current I_f (Tolerance±10%)	(0.2～1) ×In+OFF (minimum 100A)

Protection parameters of 3M/3H trip unit

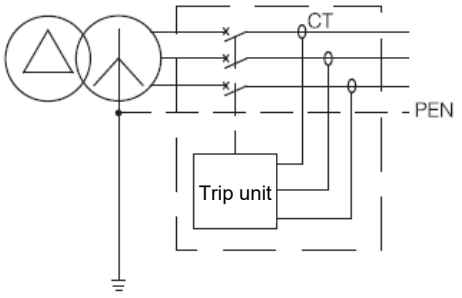
Definite time limit setting time t_g (s) (Tolerance±15%)	0.1～1s (step.0.1s)											
Inverse time shear coefficient C_r	1.5～6+OFF (step.0.1s OFF means inverse time limit off)											
Inverse time limit operation time	Formula $t = t_g \times C_r \times I_g/I$ t - delay time T_g - set delay time C_r - shear coefficient I_g – setting operation current I - ground current. When the multiple of fault current (I/I_r) is less than Cr, the operation characteristic is inverse time limit characteristic; when the multiple of fault current is greater than or equal to Cr, the operation characteristic is definite time limit characteristic.											
Grounding alarm (Grounding alarm protection and grounding protection are independent and have their own parameter setting respectively and can exist at the same time)												
Alarm operation setting value	Current (0.2～1) ×I_n+OFF											
	Time 0.1～1s (step 0.1s)											
Alarm end setting value	Current (0.2～1) ×I_n											
	Time 0.1～1s (step 0.1s)											
residual current protection												
Setting current Ig (Tolerance10%)	0.5A~30A+OFF (step 为 0.1A)											
Setting time tg (Tolerance10%)	Instantaneous	0.06	0.08	0.17	0.25	0.33	0.42	0.5	0.58	0.67	0.75	0.83
Fault current multiple	Maximum breaking time (s)											
If	0.04	0.36	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
2If	0.04	0.18	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5
5If~10If	0.04	0.072	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Neutral pole protection												
Setting current I_n (Tolerance±10%)	(0.5, 1) ×I_n+OFF											
Operation time	The same as overload long time delay											
current unbalance protection												
protection setting value	5%～60%											
Time delay time	0.1～40s (step 0.1s)											
Protection return setting value	5%～start value%	This setting is only available when the mode is alarm										
Tripping time	10～200s (step 0.1s)											
Operation	Trip, alarm, OFF											
Load monitor	1. Current method 1 2. Current method 2 3. Power method 1 4. Power method 2 5. OFF											
Unloading Ⅰ operation setting value	0.2~1.0Ir (current method 1/2)											
	200~10000kW (power method 1/2)											
Unloading Ⅰ operation delay	20%~80%tr (current method 1/2)											
	10~3600s (power method 1/2)											
Unloading Ⅱ operation setting value	0.2~1.0Ir (current method1) , 0.2Ir~undloading value (current method 2)											
	200~10000kW (power method 1) , 100~unloading value (power method 2)											
Unloading Ⅱ operation delay	20%~80%tr (Current method 1) , 10~600s (current method 2)											
	10~3600s (power method 1/2)											

TECHNICAL PARAMETERS

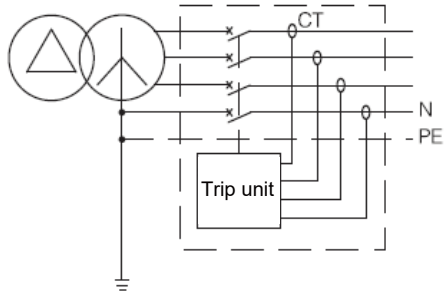
Protection parameters of 3M/3H trip unit

Voltage unbalance protection		
Protection setting value	2%~30%	
Setting time	0.2~60s	
protection return setting value	2%~start value	This setting value is only available when the mode is "Alarm"
Setting time	0.2~60s	
Mode	Alarm/Trip/OFF	
Undervoltage protection		
Protection setting value	100V~return value	
Setting time	0.2~60s	
protection return setting value	Start value~1200V	This setting value is only available when the mode is "Alarm"
Setting time	0.2~60s	
Mode	Alarm/Trip/OFF	
Overvoltage protection		
Protection setting value	Return value~1200V	
Setting time	0.2~60s	
Protection return setting value	100V~return value	
Setting time	0.2~60s	
Mode	Alarm/Trip/OFF	
Low frequency protection		
Protection setting value	45Hz~return value	
Setting time	0.2~5s	
Protection return setting value	Start value~65Hz	This setting value is only available when the mode is "Alarm"
Setting time	0.2~36s	
Mode	Alarm/Trip/OFF	
High frequency protection		
Protection return setting value	return value~65Hz	
Setting time	0.2~5s	
Protection return setting value	45Hz~return value	This setting value is only available when the mode is "Alarm"
Setting time	0.2~36s	
Mode	Alarm/Trip/OFF	

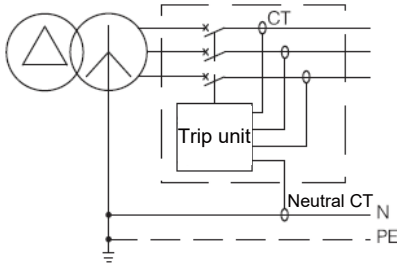
Grounding protection detection schematic diagram



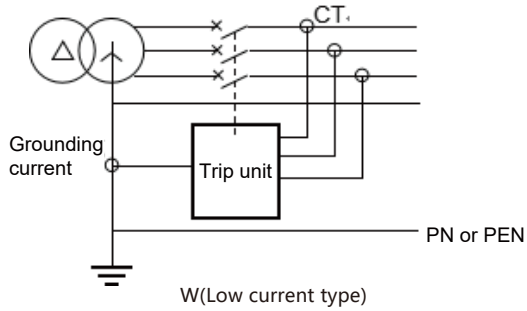
3PT (Differential type)



3PT (Differential type)



3PT (Differential type)



W(Low current type)

Note:

1. For 3P circuit breaker, differential grounding protection has two modes: 3P and 3P+N, as shown in the figure above, TN-C system adopts 3P mode, and TN-S system recommends to use 3P+N mode (with external neutral CT).

Factory setting value (if there is no special requirement, the factory setting value of the product is as follows)

Overload long time delay	Current setting value I_{r1}	I_n
	Time setting value t_1	240s (AT) /433s (2M, 2H) /960s (BT, 3M, 3H)
Short circuit short time delay	Current setting value I_{r2}	$3I_n$
	Time setting value t_2	0.2s
Short circuit Instantaneous	Current setting value I_{r3}	$6I_n$
Grounding protection	Current setting value I_{r4}	$0.8I_n$ or 1200A (select the smaller one)
	Time setting value t_4	0.4s

Derating coefficient

Ambient temperature derating coefficient (current derating coefficient)

Ambient temperature		+40℃	+45℃	+50℃	+55℃	+60℃	+70℃
UEW6-1600	200A~1250A	1	1	1	1	1	1
	1600A	1	1	1	1	1	0.95
UEW6-2000	630A~1250A	1	1	1	1	1	1
	1600A	1	1	1	1	1	0.95
	2000A	1	1	1	1	1	0.89
UEW6-3200	1000A~2000A	1	1	1	1	1	1
	2500A	1	1	1	1	0.95	0.90
	2900A	1	1	1	1	0.97	0.95
	3200A	1	1	1	0.99	0.95	0.90
UEW6-4000	1000A~2000A	1	1	1	1	1	1
	2500A	1	1	1	1	0.95	0.90
	2900A	1	1	1	1	0.97	0.95
	3200A	1	1	1	1	1	0.95
	3600A	1	1	1	1	0.95	0.89
	4000A	1	1	0.95	0.91	0.86	0.81

Derating for altitude (voltage)

Altitude(m)		2000	3000	4000	5000
Rated impulse withstand voltage（V）		12	12	12	12
Power frequency withstand voltage（V）		3500	3500	3150	2500
Maximum rated operational voltage（V）	690V	690	690	690	690
	800V	800	800	800	700

Derating for altitude (current derating coefficient)

Altitude(m)		2000	3000	4000	5000
UEW6-1600	200A~630A	1	1	1	1
	800A~1000A	1	1	1	1
	1250A~1600A	1	1	0.97	0.87
UEW6-2000	630A~800A	1	1	1	1
	1000A~1600A	1	1	1	1
	2000A	1	1	0.97	0.87
UEW6-3200	2000A~2500A	1	1	1	1
	2900A~3200A	1	0.83	0.8	0.75
UEW6-4000	3200A	1	1	1	1
	3600A~4000A	1	0.93	0.88	0.82

Accessory

Accessory parameter

Shunt Trip

Rated operational voltage（V）	AC220/AC230	AC380/AC400	DC110	DC220	DC24
Instantaneous current（A）	2.1	2.2	5.2	2.7	3.75
Operation voltage（V）	(0.7~1.1) Ue				
Breaking time（ms）	Not greater than 30ms				

Closing coil

Rated operational voltage（V）	AC220/AC230	AC380/AC400	DC110	DC220	DC24
Instantaneous current （A）	2.1	2.2	5.2	2.7	3.75
Operational voltage （V）	(0.85~1.1) Ue				
Closing time （ms）	Not greater than 70ms				

Undervoltage Trip Device

Rated operational voltage（V）	AC110	AC220/AC230	AC380/AC400	DC110	DC24
Instantaneous current （A）	2	0.65	0.45	2	9.5
Steady current （mA）	73	110	75	80	228
Operation voltage （V）	(0.35~0.7) Ue				
Reliable closing voltage	(0.85~1.1) Ue				
Reliable non-closing voltage	≤0.35 Ue				
Delay time	Instantaneous, 1s, 3s, 5s				
Note: When the voltage is lower than 0.35 Ue,the delay-type undervoltage trip device will trip instantaneously. If power failure delay is required,voltage loss trip device shall be selected					

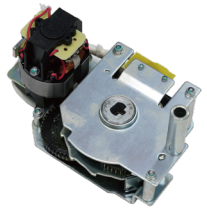
No-voltage Trip Device

Rated operational voltage（V）	AC110	AC220/AC230	AC380/AC400	DC110	DC24
Instantaneous current（A）	2	0.65	0.45	2	9.5
Steady current （mA）	73	110	75	80	228
Operation voltage（V）	(0~0.7) Ue				
Reliable closing voltage	(0.85~1.1) Ue				
Reliable non-closing voltage	≤0.35 Ue				
Delay Time	1s, 3s, 5s				

Accessory

Accessory parameter

Charging motor



Rated operational voltage （V）	AC220/AC230	AC380/AC400	DC110	DC220	DC24
Power consumption（VA/W）	75 （1600 frame）/85 （2000 frame）/110 （3200 and bigger frame）				
Operation voltage（V）	(0.85~1.1) Ue				

Note: please contact us if special specification is needed.

Auxiliary contact

Conventional thermal current（A）	Ith=16A	
Rated insulation voltage（V）	Ui=400V	
Volume	（1600, 2000 frame）	AC-12 380V 16A, DC-12 250V 5A AC-15 400V 3A, DC-13 220V 1.2A
	（3200 and bigger frame）	AC-12 400V 10A, DC-12 250V 1A AC-15 400V 2A, DC-13 220V 0.3A

Power module

Input voltage（V）	AC220/AC230	AC380/AC400	DC110	DC220
Out voltage（V）	DC24			

T201 relay module

Operational voltage	DC24V
Contact number	3
Contact volume	AC250V, 10A DC28V, 10A
When the trip unit DO output signal is used to control the opening and closing of the circuit breaker or the load capacity is large, it needs to be controlled after the ST201 relay module is converted.	

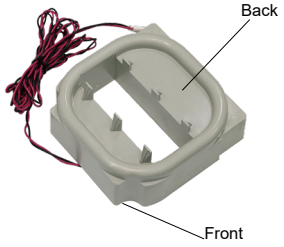
Accessory

Accessory parameter

Three position electrical Indicator

	Contact number	One for racked-in/test isolated/racked-out positions respectively
	Contact volume	AC380/AC400 , 2A DC250V, 0.3A

External neutral CT

	Inner hole dimension	60x20 (UEW6-1600/2000) 80x30 (UEW6-3200~4000) Note: The above is the standard dimension. Please contact us if special dimension needed.
		The distance between the installation point and the circuit breaker shall not exceed 2m. When the circuit breaker is connected with the upper coming terminal, the front side of the external CT should be facing away from the neutral line grounding side; When the circuit breaker is connected with the lower incoming terminal line, the front of the external CT shall face the neutral line grounding side during installation.

Residual current CT

Inner hole dimension	115x280
	If residual current protection is needed, residual current should be selected.

Key Interlock

	Lock the breaker at the opening position to ensure that it cannot be closed
	One lock and one key: one switch is equipped with one lock and one key Two locks and one key: two switches are equipped with two identical locks and one key Three locks and two keys: three switches are equipped with three identical locks and two keys Five locks and three keys: five switches are equipped with five identical locks and three keys Five locks and three keys (three incoming lines and two busbar coupler) : special five locks and three keys, used for three incoming lines and two bus coupler system

Accessory

Accessory parameter

Operation counter

	Record the opening and closing operation cycles of the circuit breaker

Pushbutton locking

	The opening and closing button on the cover can be locked to prevent mis-operation

Door frame

	Installed on the opening of the cabinet door to guarantee IP40.

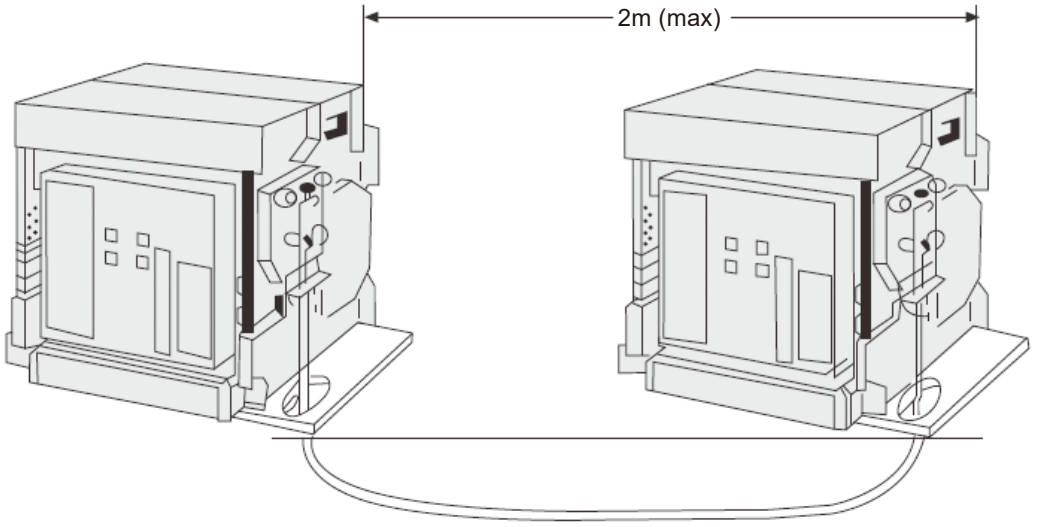
Interphase barrier

	Installed between each phase of the busbar to increase the insulation strength between each phase and prevent short circuit between the phases of the busbar.

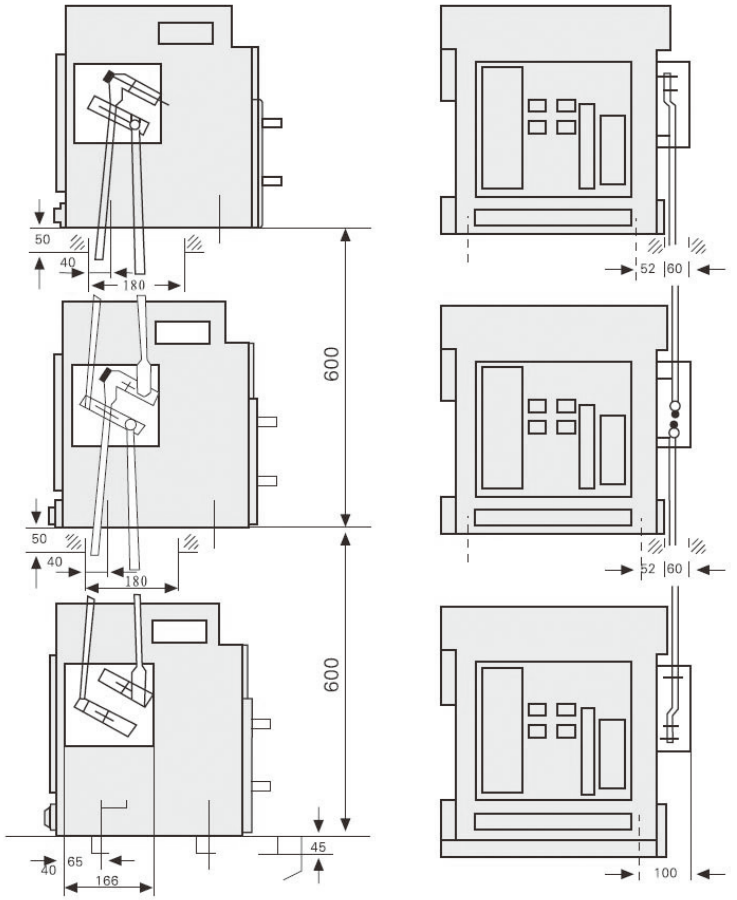
Accessory

Mechanical interlock

Wirerope interlock, used for horizontal or vertical installation of two breakers



Steel lever interlock, used for vertical installation of two or three circuit breakers



Note: Three circuit breakers with interlock can provide two types of connection: two closed and one open, or two open and one closed.

ATS system

Description and usage

The ATS system can realize the transfer switching between two power supplies to ensure the reliability of power supply. The ATS system is composed of ACBs, automatic transfer trip unit, control cable, mechanical interlock, transfer connection terminal and other accessories. The whole series of ACB can be used in ATS system.

Controller characteristics

-Suitable for automatic transfer switching of two power supplies: "grid-grid" and "grid-generator"

-Automatic transfer switching mode: automatic change and automatic recovery, automatic change without automatic

-Real-time monitoring of two three-phase voltages, accurate judgment and automatic switching off abnormal voltage（voltage loss, phase loss）in the circuit

-With automatic and manual switching mode. In the manual state, the switch can be forced to close and open

-With fire alarm function

-Can be remote controlled

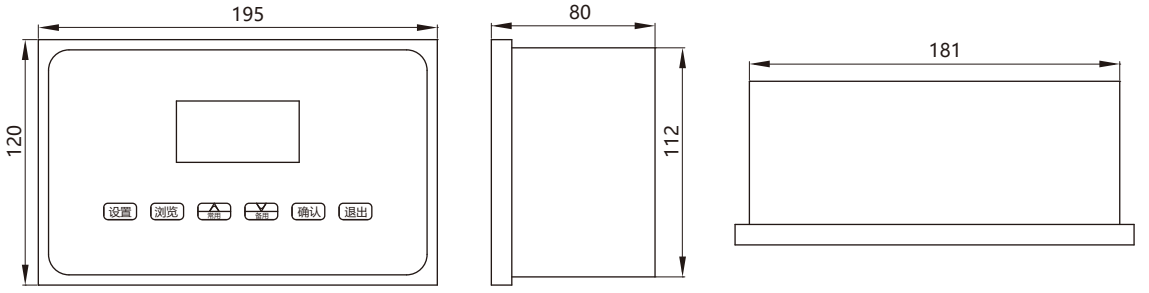
Product composition

Mechanical interlocking + two circuit breakers +controller

Installation and wiring

Overall dimension and installation dimension

The recommended opening dimension on the panel of the switchboard is 183mm（width)×113mm（height).
The overall dimensions are shown in the figure.

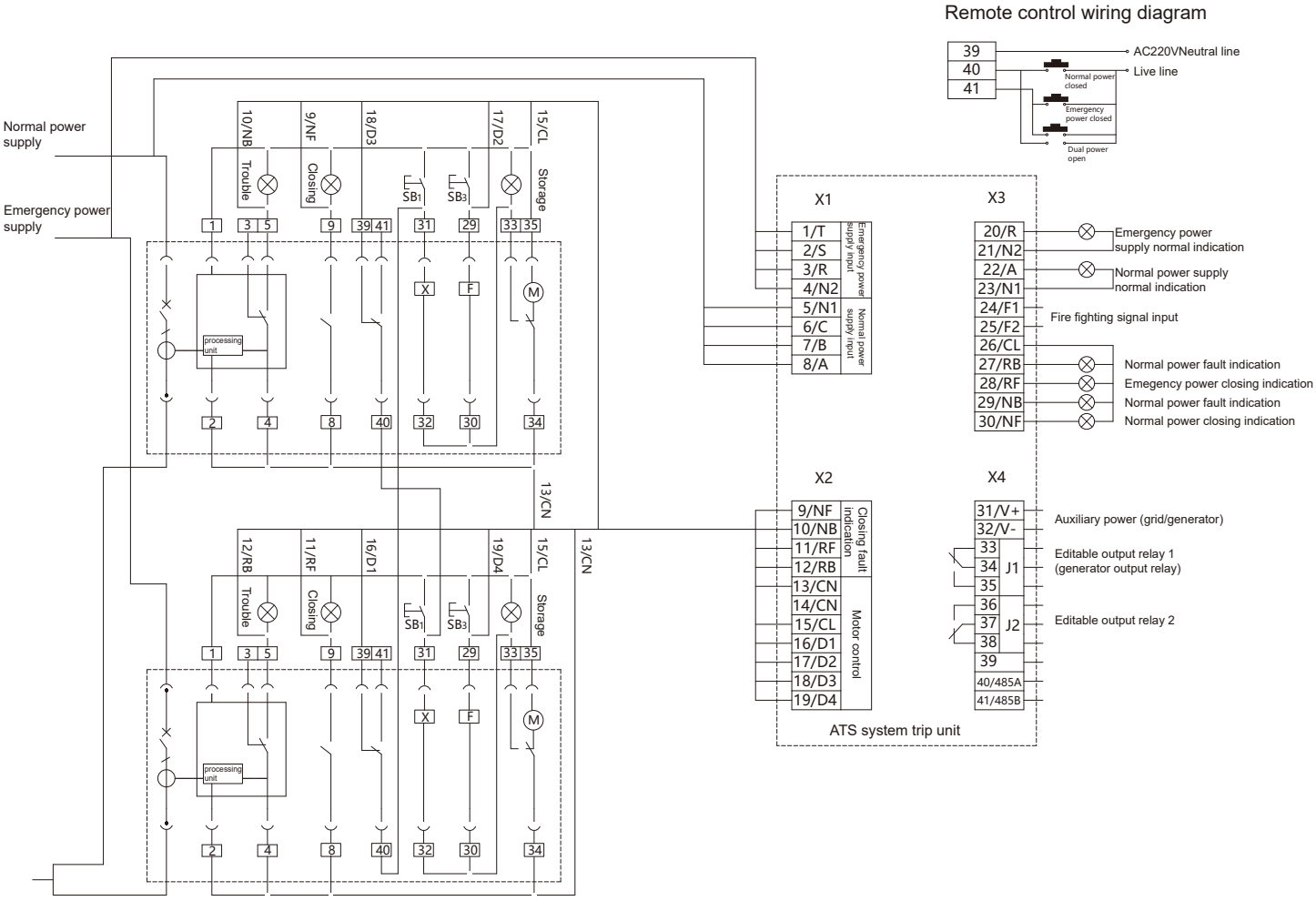


ATS system

Installation and wiring

Electrical schematic diagram of frame-type automatic power conversion system

Circuit diagram of ACB-type ATS system (Take UEW6-2000～4000, 4 changeover, 6 changeover and 8 changeover for example. If the breaker is of other models, the circuit diagram may be different. If necessary, contact the manufacturer)



ATS system

Installation and wiring

Connection terminal description			
NO.	Connection terminal description	NO.	Connection terminal description
1/T	Emergency power supply Phase C	16/D1	normal power supply close
2/S	Emergency power supply Phase B	17/D2	normal power supply open
3/R	Emergency power supply Phase A	18/D3	Emergency power supply close
4/N2	Emergency power supply Phase N	19/D4	Emergency power supply open
5/N1	Normal power supply Phase N	20, 21	Emergency power supply indication
6/C	Normal power supply Phase C	22, 23	Normal power supply indication
7/B	Normal power supply Phase B	24, 25	Fire protection signal input
8/A	Normal power supply Phase A	26, 27	Emergency power supply fault trip indication
9/NF	normal power supply closing detection	26, 28	Emergency power supply closing indication
10/NB	normal power supply fault detection	26, 29	Normal power supply fault indication
11/RF	Emergency power supply closing detection	26, 30	Normal power supply closing indication
12/RB	Emergency power supply fault detection	31, 32	Generation control auxiliary (grid-generator)
13/CN	AC220/AC230 power supply common neutral line	33, 34, 35	Generator control output relay
14/CN	AC220/AC230 power supply common neutral line	36, 37, 38	Editable output relay 2
15/CL	AC220/AC230 power supply common live line	39, 40, 41	Remote control input signal

Note:

1 X-Closing coil, F-Shunt trip, M-Charging motor.

2 The operational voltage of trip unit,Shunt trip, Closing coil and Charing motor of ACB is AC220/AC230.

3 For the "grid-generator" system, the trip unit shall be provided with auxiliary power supply, with the power supply voltage of DC24V and the power not less than 10W.

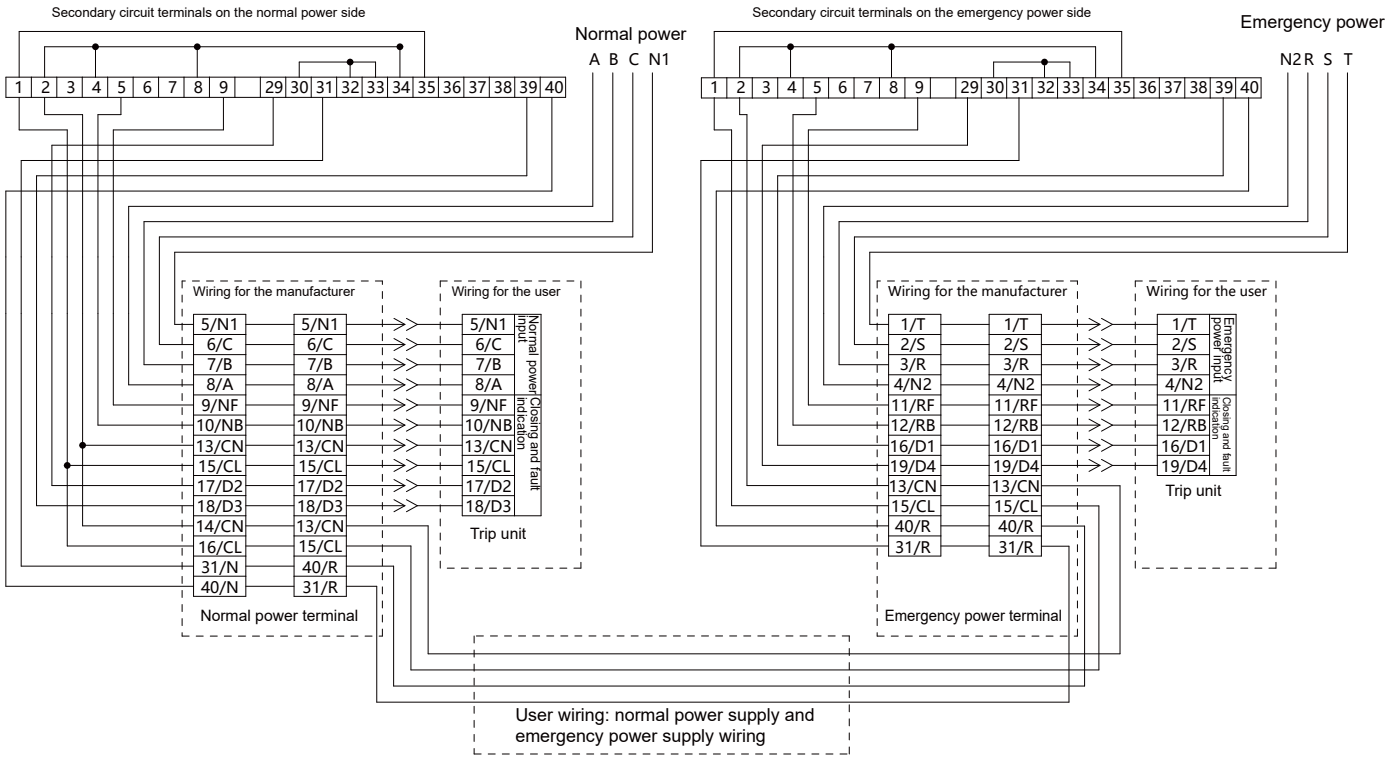
4 The input signal of remote control and fire protection is constant voltage. The voltage can be DC/AC220/AC230 or DC/AC24V, and the default is DC/AC24V.

ATS system

Installation and wiring

Circuit diagram of ACB-type ATS system

(Take UEW6-2000～4000, 4 changeover, 6 changeover and 8 changeover for example. If the breaker is of other models, the circuit diagram may be different. If necessary, contact the manufacturer.

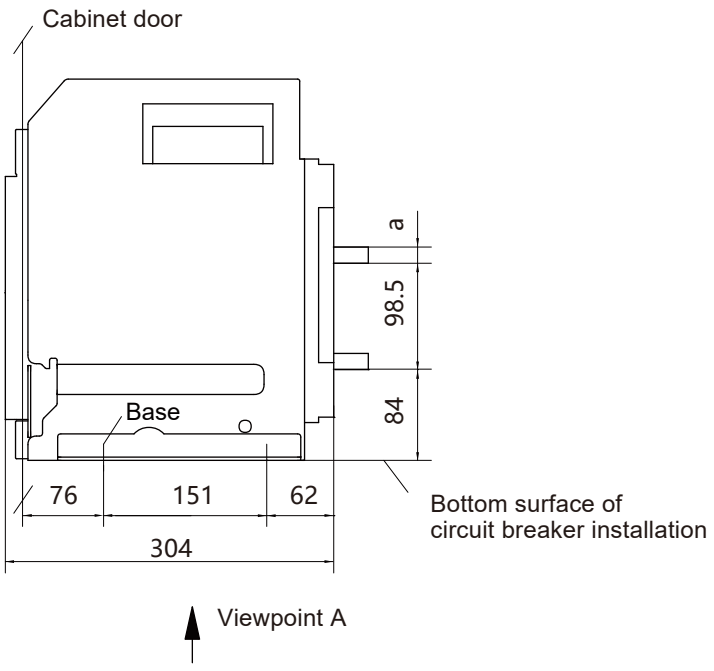


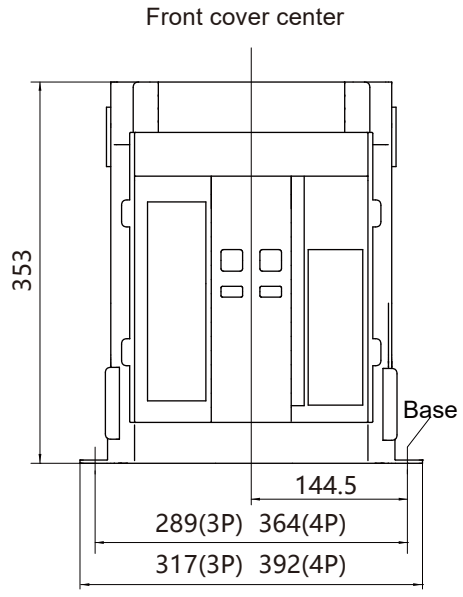
Note: The connection of the secondary circuit terminal and the conversion terminal of the normal power and standby power side are by the manufacturer.

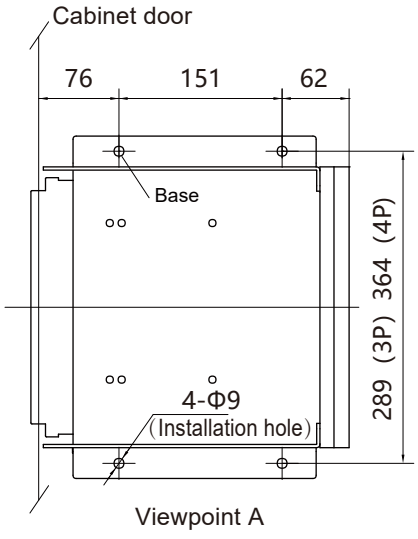
Wiring method and overall dimension

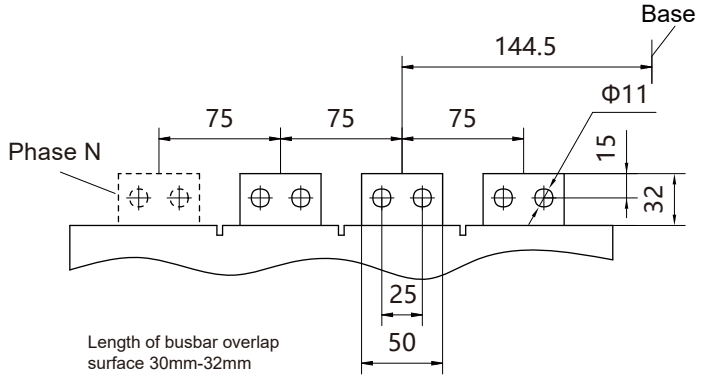
UEW6-1600

Draw out 3P, 4P







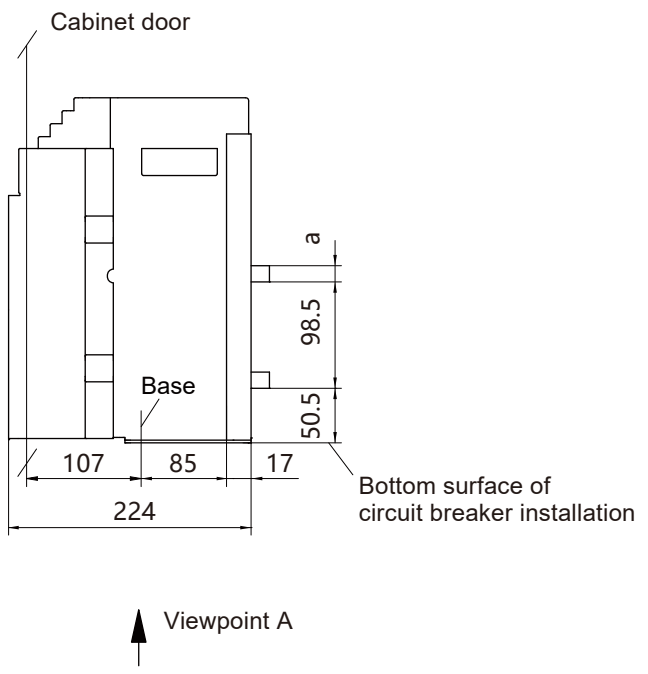


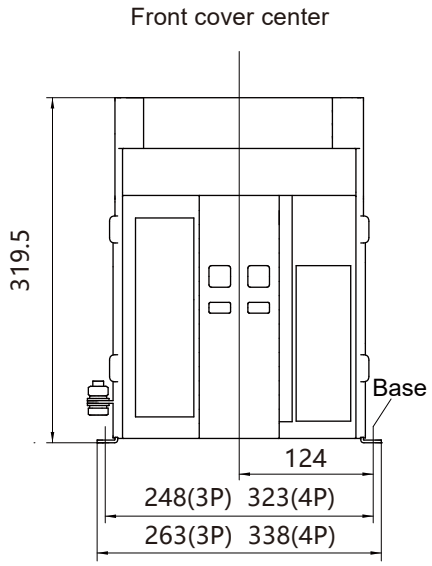
UEW6-1600

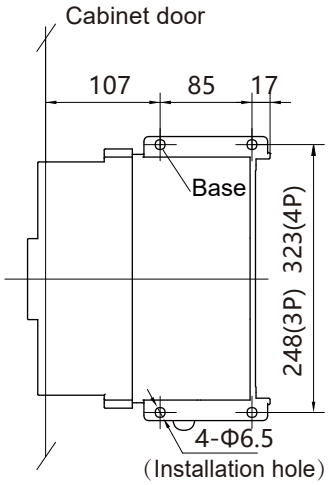
I_n (A)	a(mm)
200-630	5
800-1250	10
1600	15

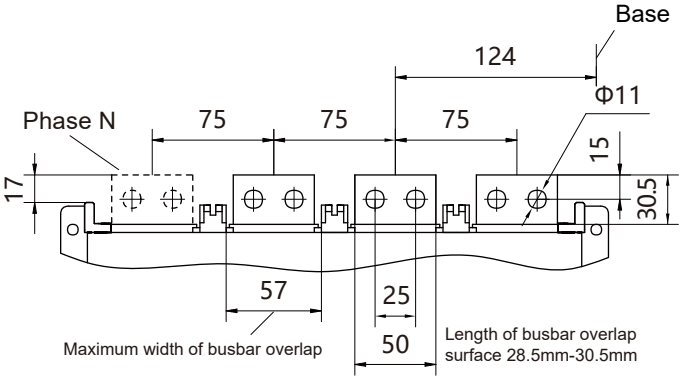
UEW6-1600

Fixed 3P, 4P









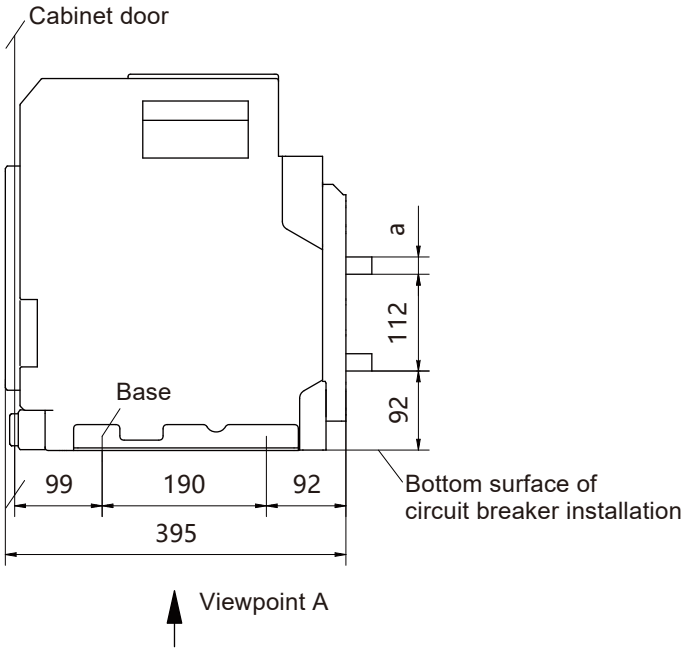
UEW6-1600

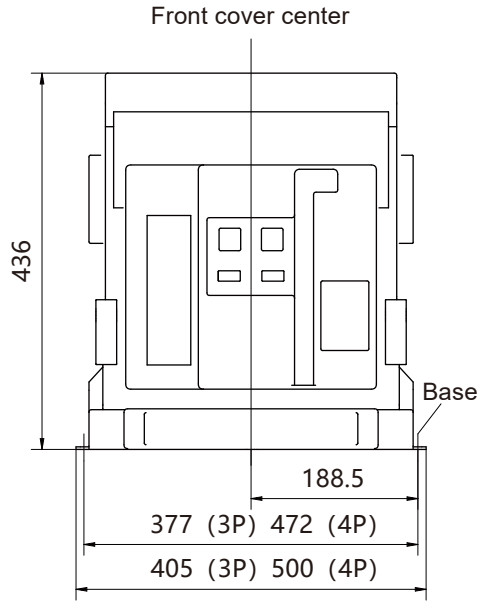
In (A)	a(mm)
200-630	5
800-1250	10
1600	15

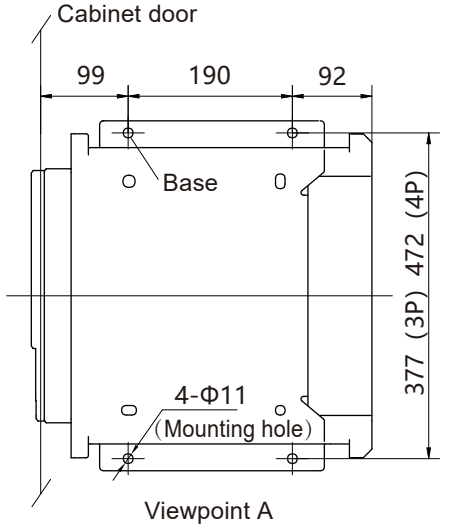
Wiring method and overall dimension

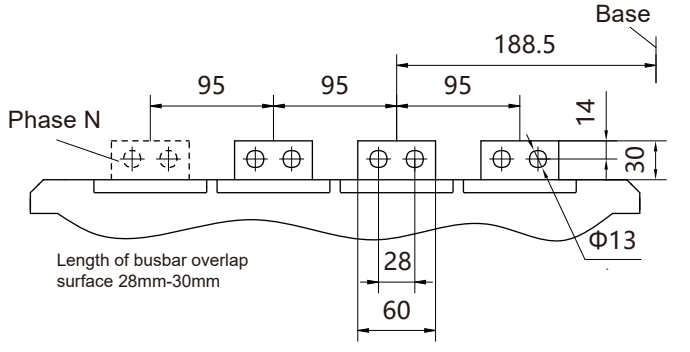
UEW6-2000

Draw out 3P, 4P

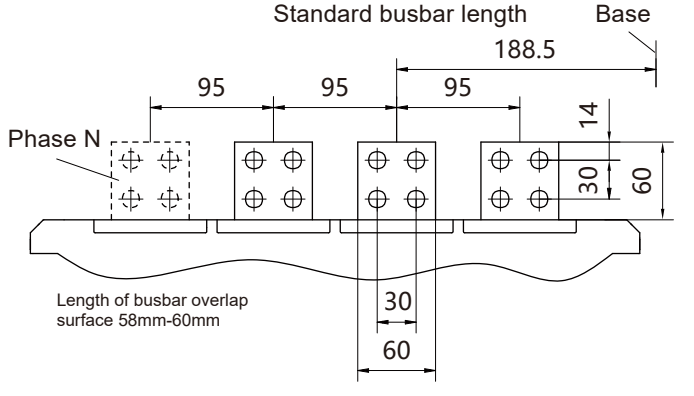








Standard busbar length



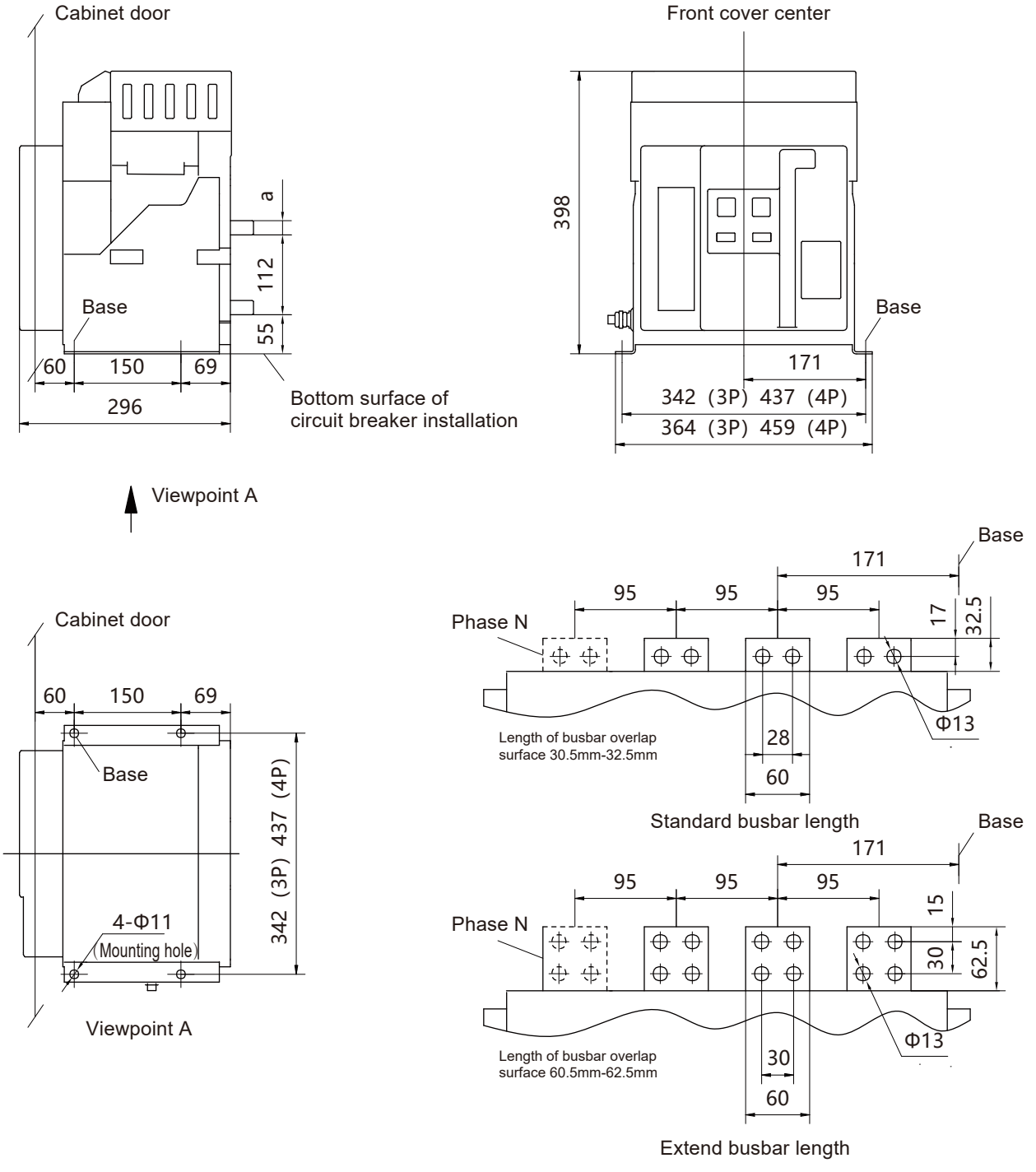
Extend busbar length

UEW6-2000

I_n (A)	a(mm)
630-800	10
1000-1600	15
2000	20

UEW6-2000

Fixed 3P, 4P



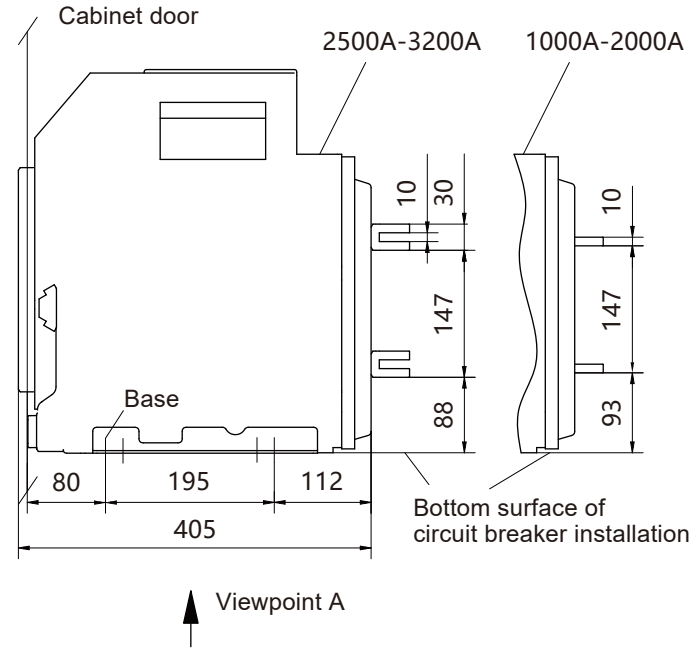
UEW6-2000

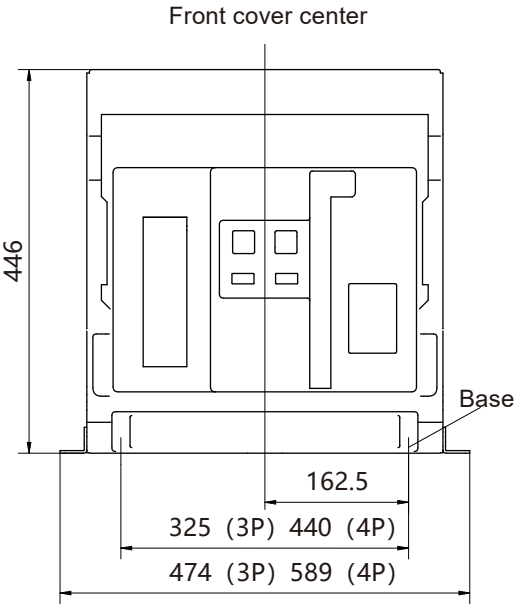
I_n (A)	a(mm)
630-800	10
1000-1600	15
2000	20

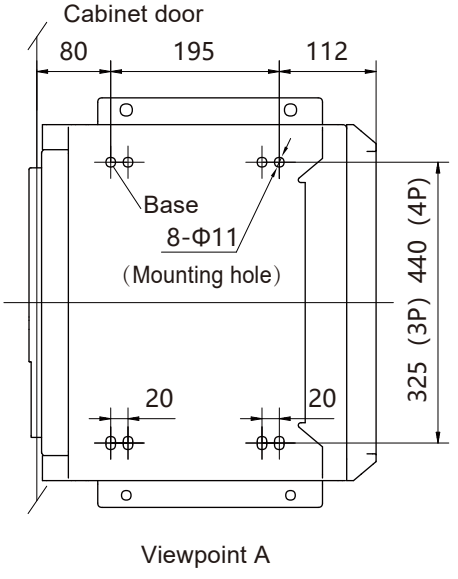
Wiring method and overall dimension

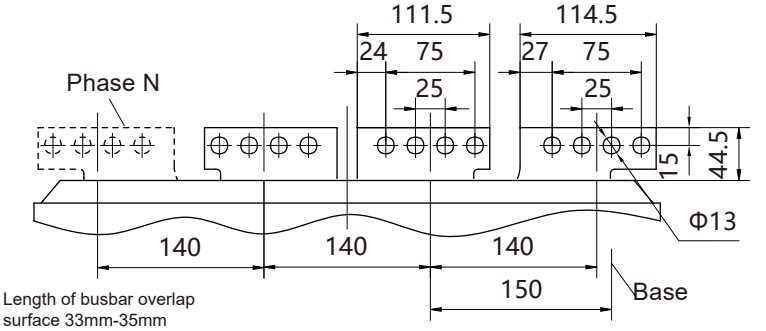
UEW6-3200

Draw out 3P, 4P

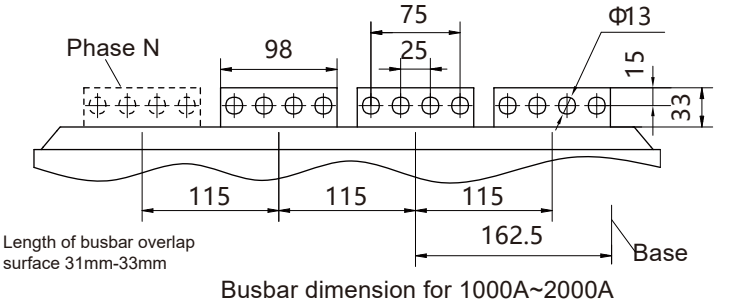








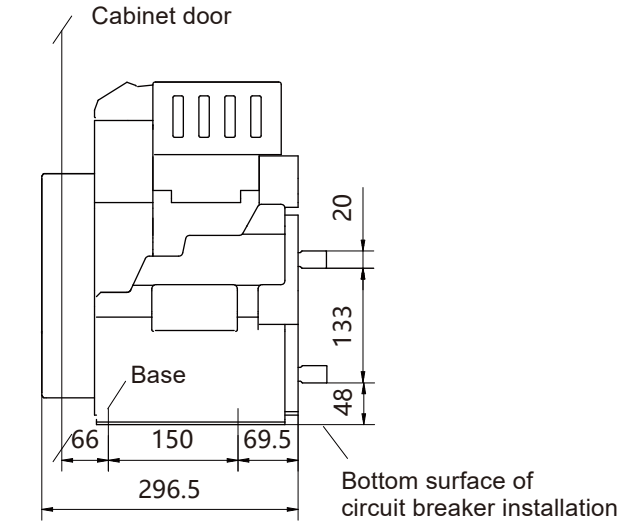
Busbar dimension for 2500A~3200A

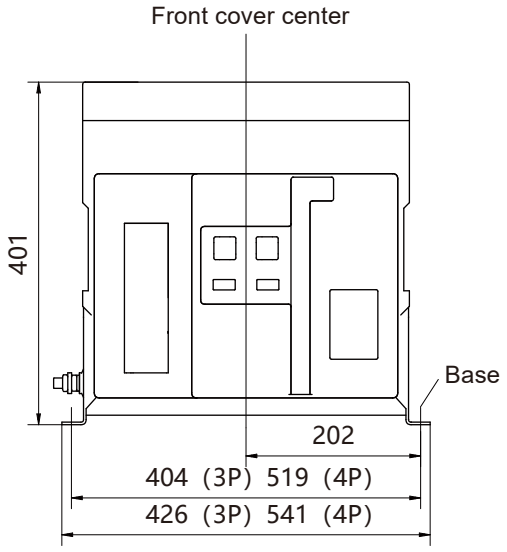


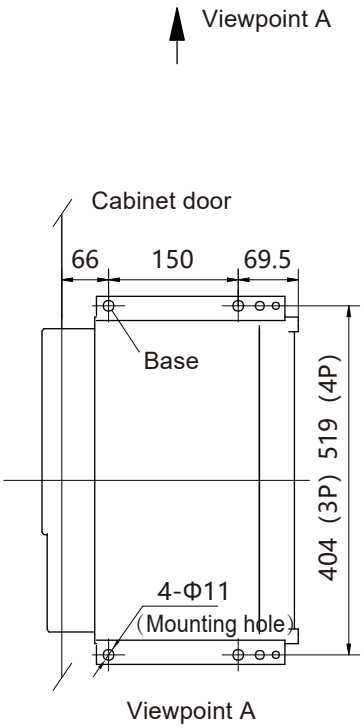
Busbar dimension for 1000A~2000A

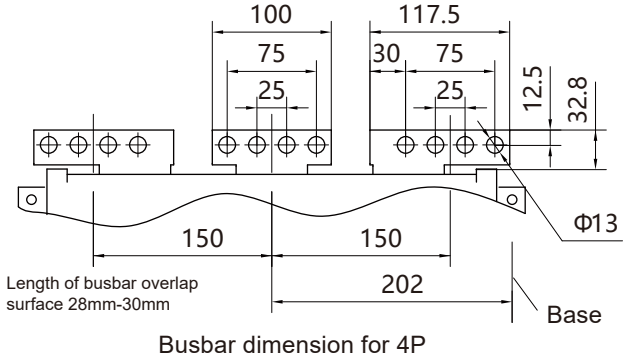
UEW6-3200 (2900A-3200A standard horizontal busbar)

Fixed 3P, 4P

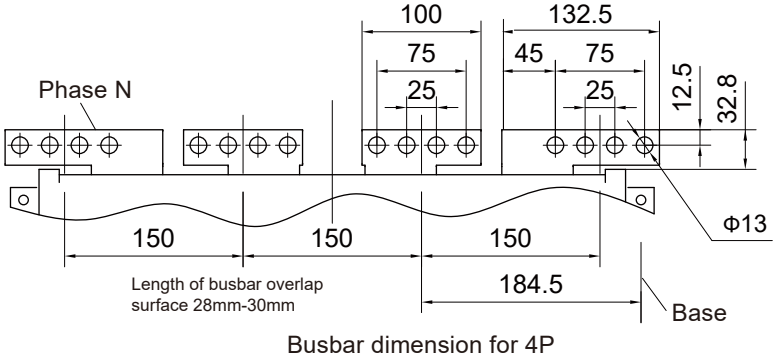








Busbar dimension for 4P

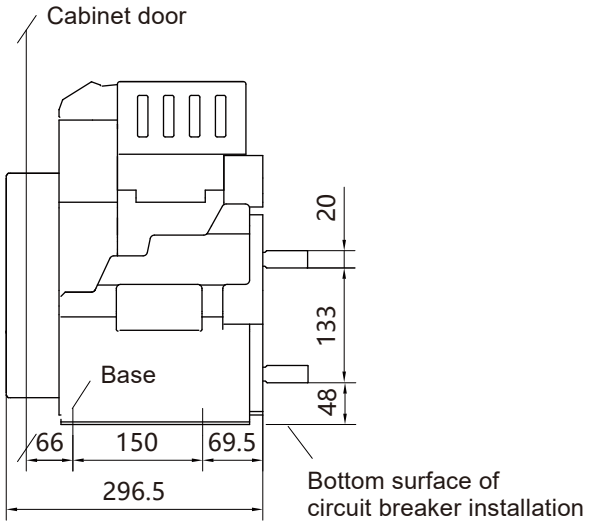


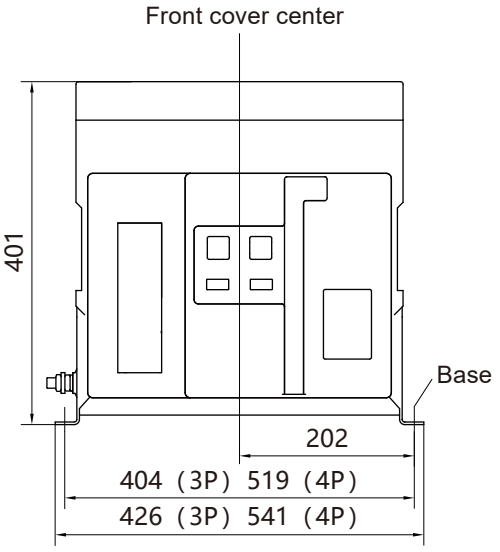
Busbar dimension for 4P
(note: phase segregation cannot
be installed for the busbar dimension)

Wiring method and overall dimension

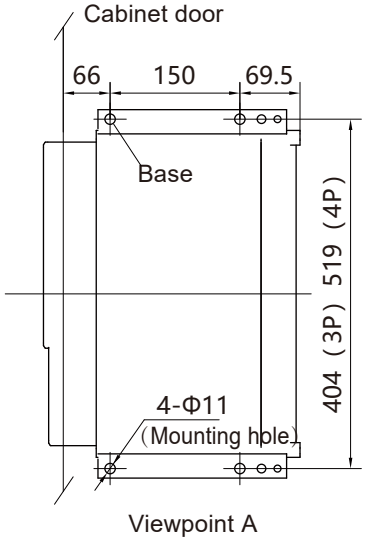
UEW6-3200 (2900A-3200A extended horizontal busbar)

Fixed 3P, 4P

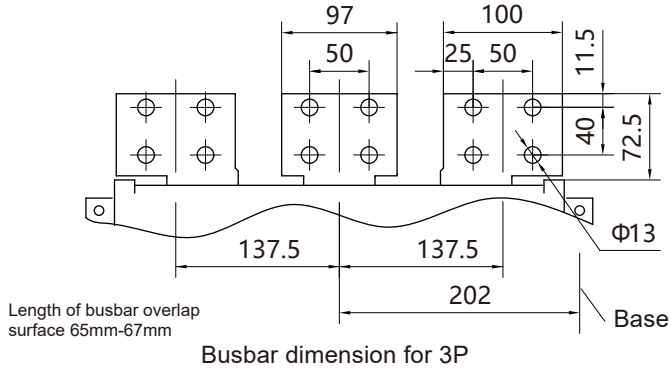




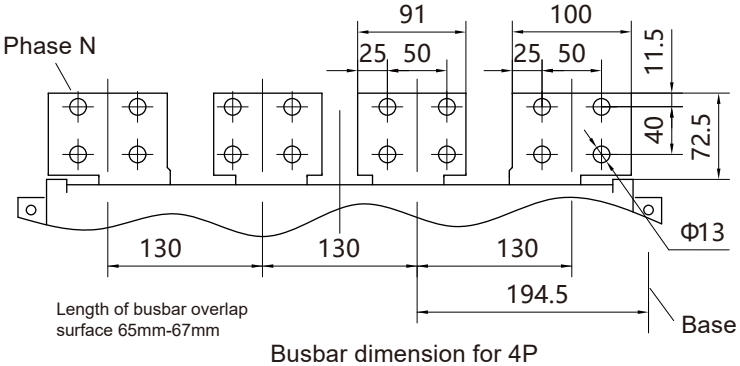
Viewpoint A



Viewpoint A



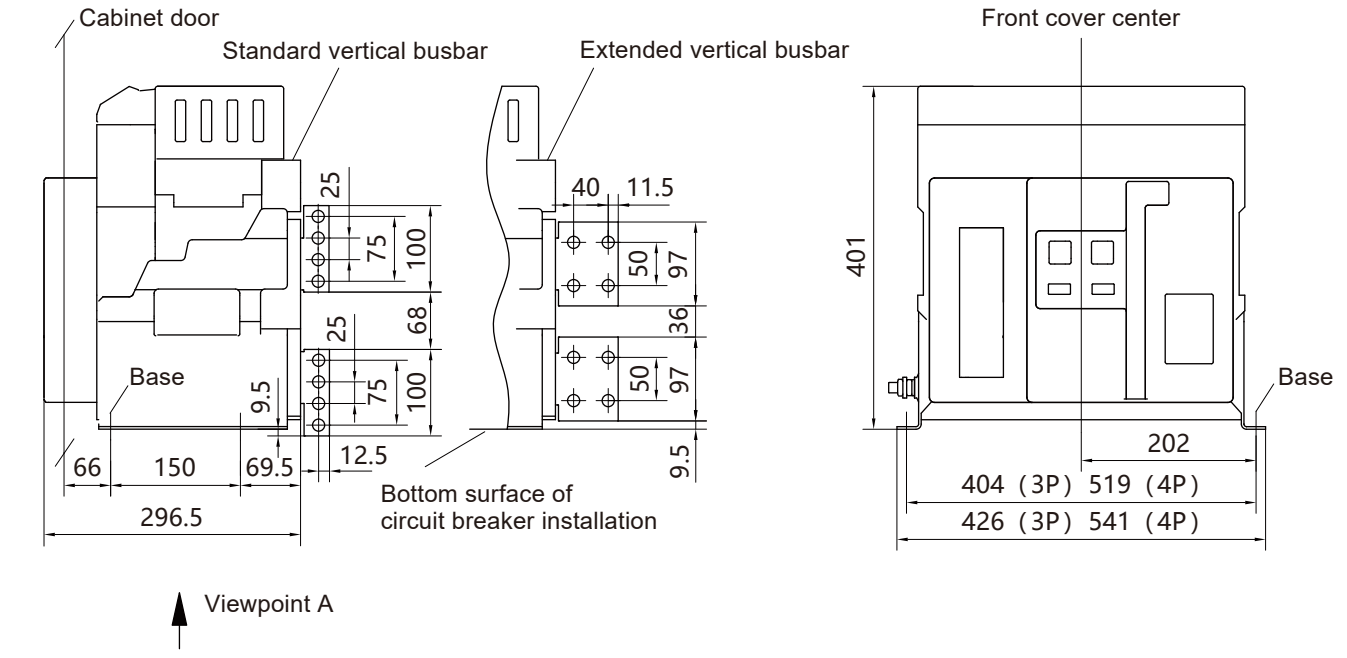
Busbar dimension for 3P

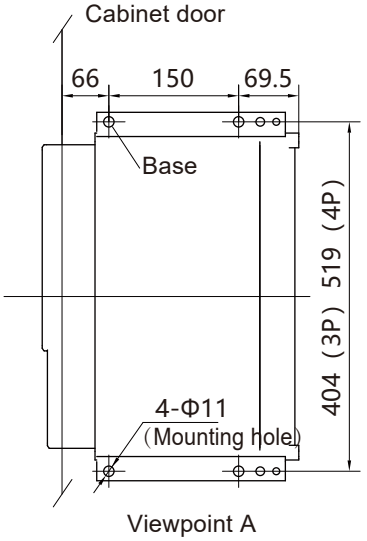


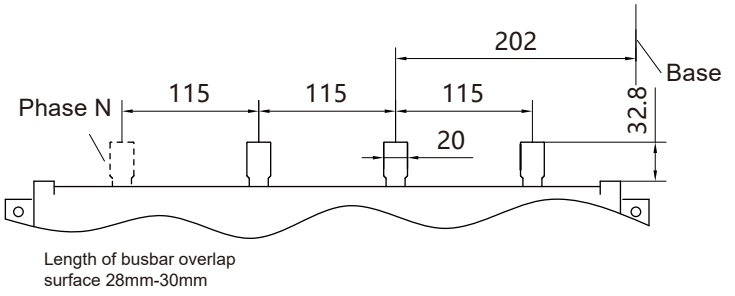
Busbar dimension for 4P

UEW6-3200 (2900A-3200A standard vertical busbar)

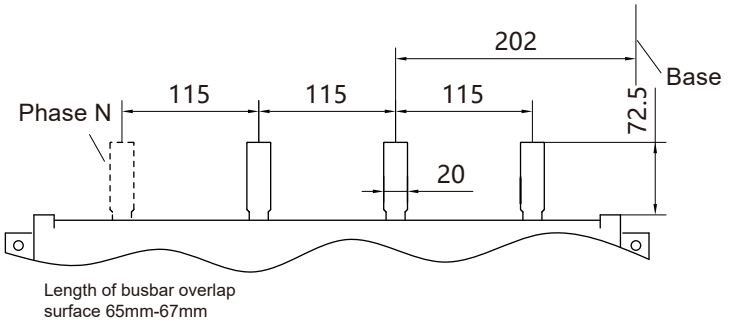
Fixed 3P, 4P







Standard vertical busbar dimension

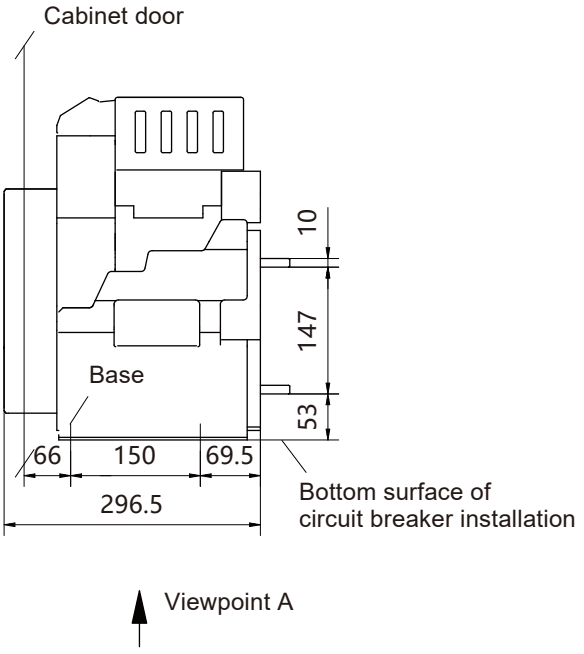


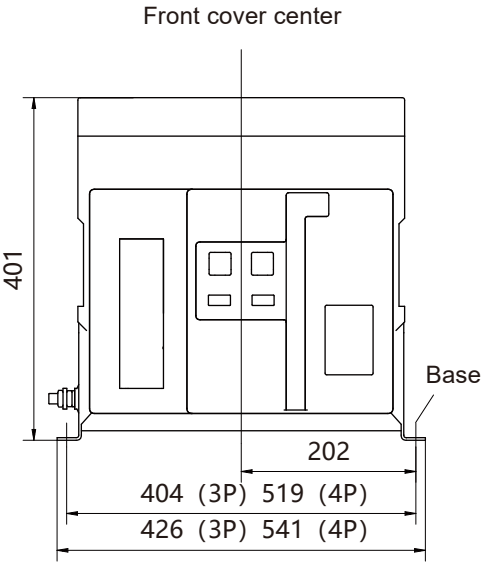
Extended vertical busbar dimension

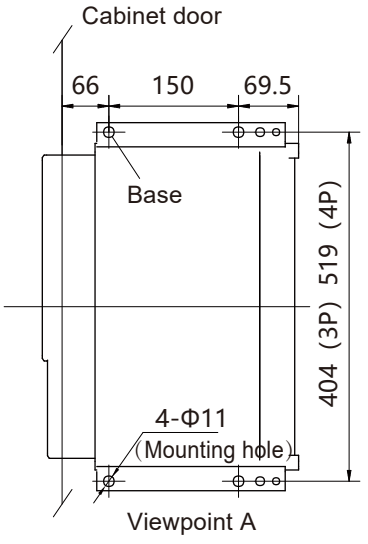
Wiring method and overall dimension

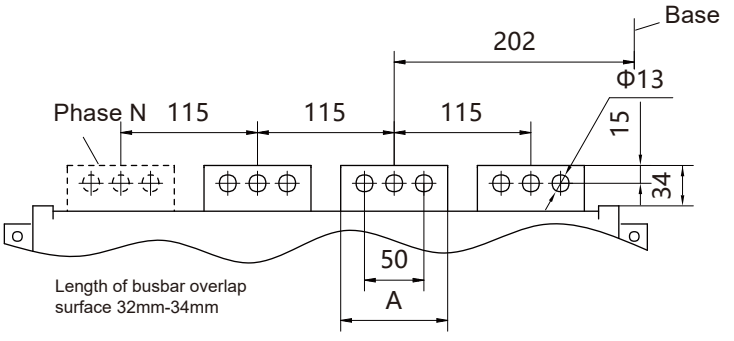
UEW6-3200 (1000A-2500A)

Fixed 3P, 4P





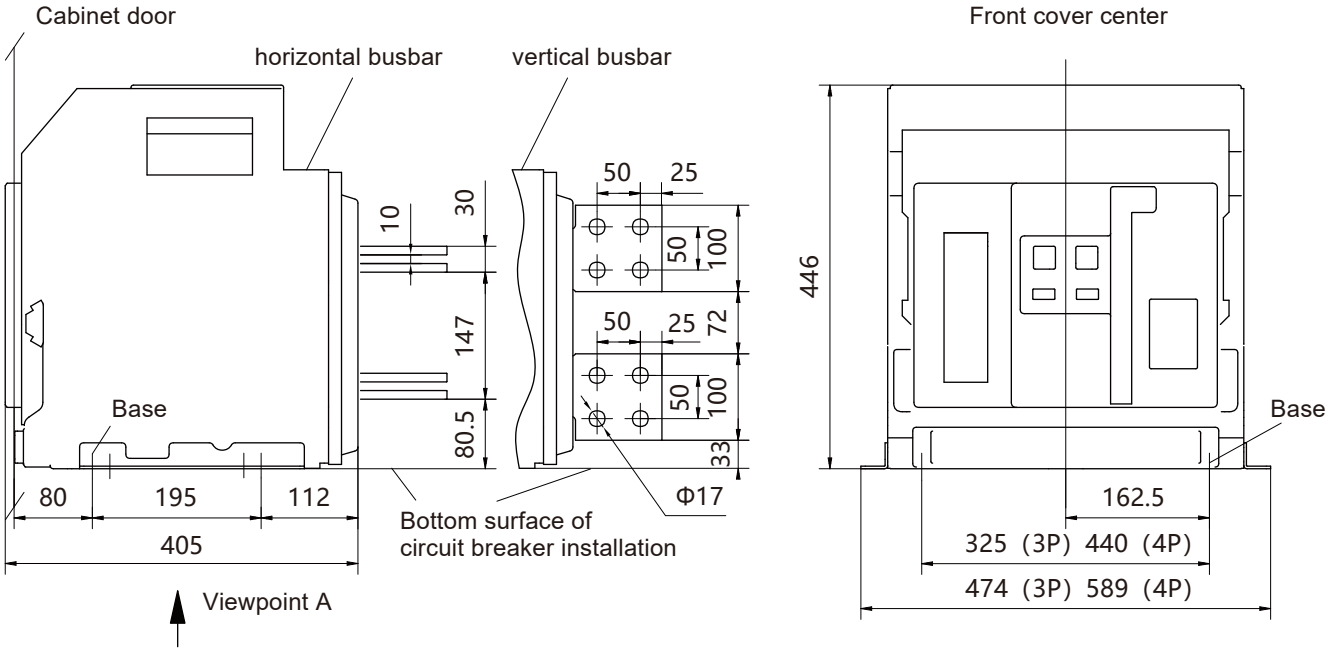


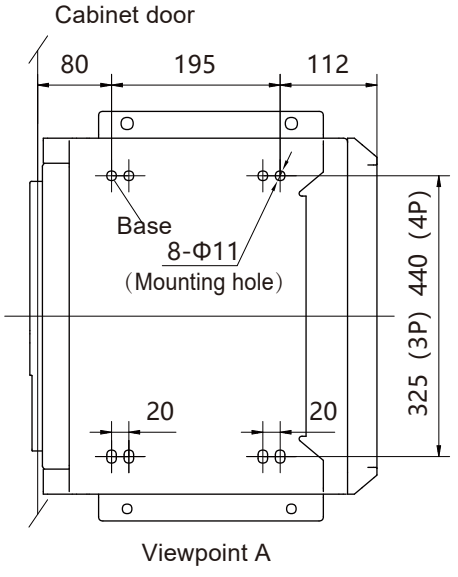


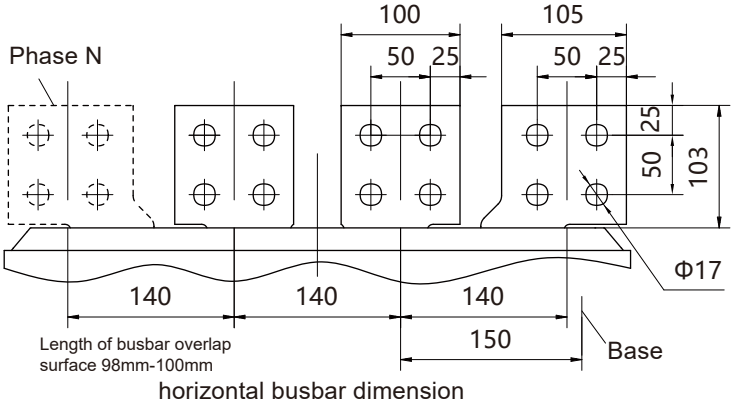
(Note: dimension A, upper busbar 90mm, lower busbar 86mm)

UEW6-4000 (3600A-4000A)

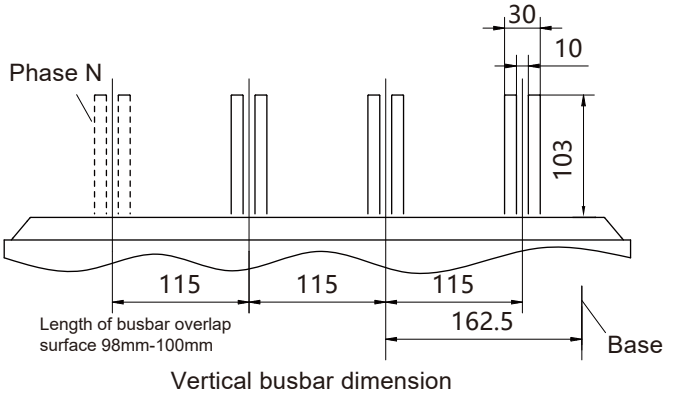
Draw out 3P, 4P







horizontal busbar dimension

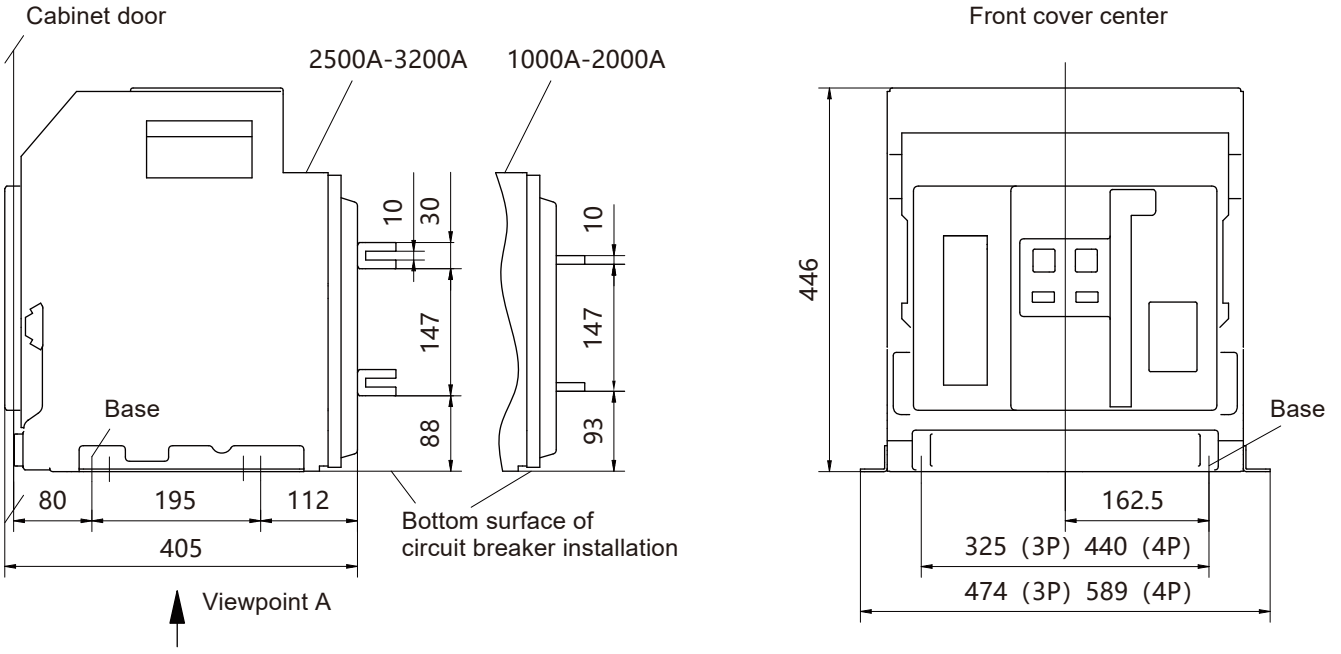


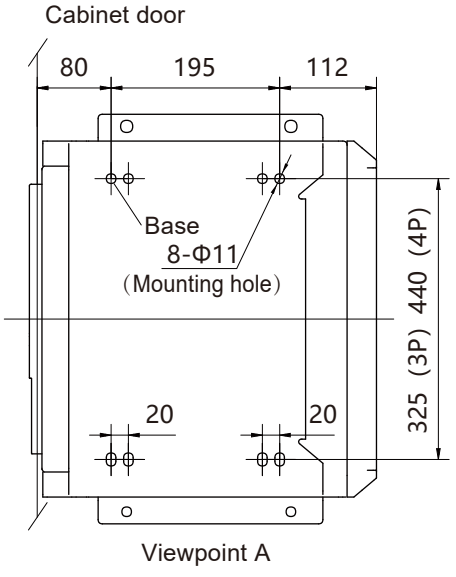
Vertical busbar dimension

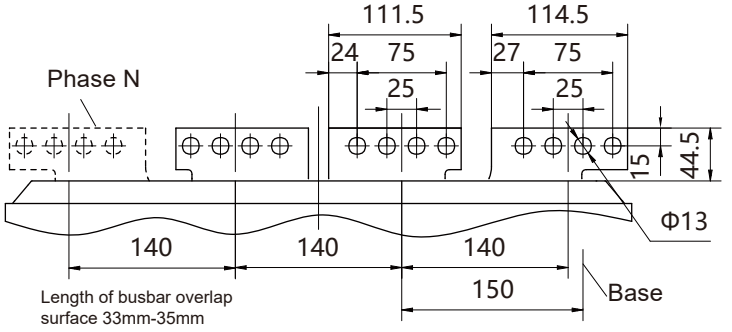
Wiring method and overall dimension

UEW6-4000 (1000A-3200A)

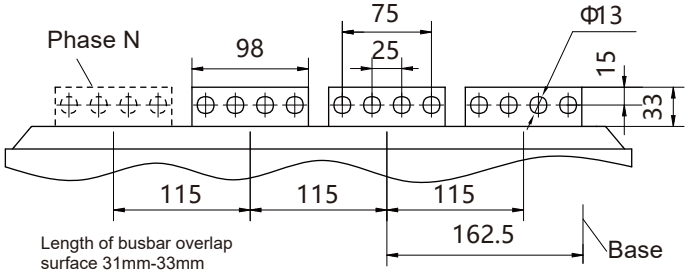
Draw out 3P, 4P







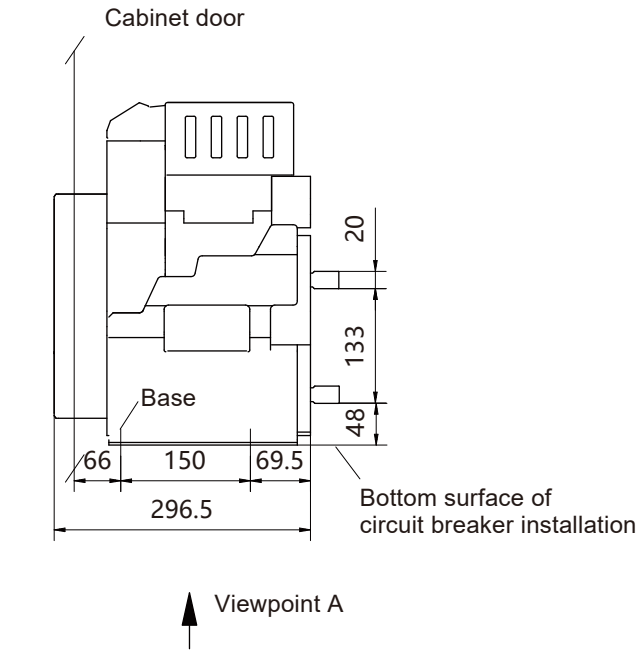
Busbar dimension for 2500A~3200A

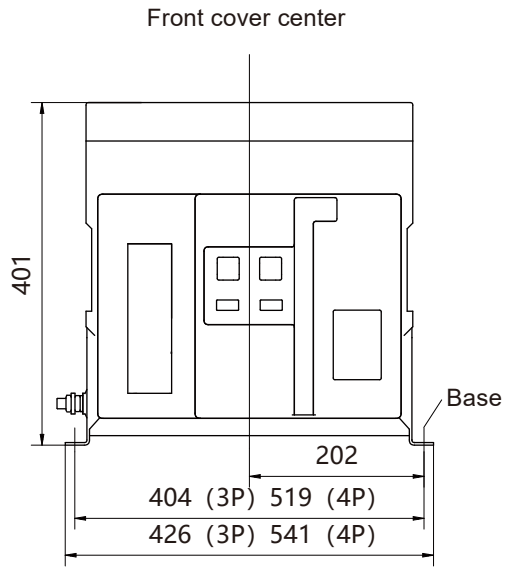


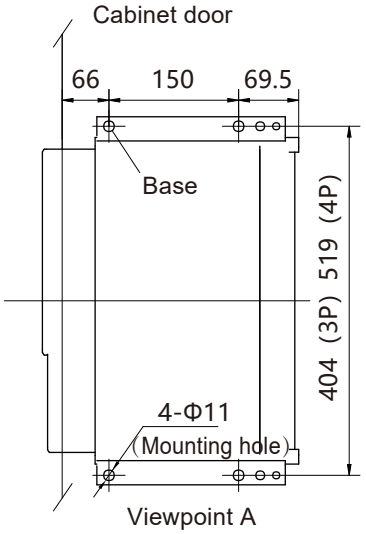
Busbar dimension for 1000A~2000A

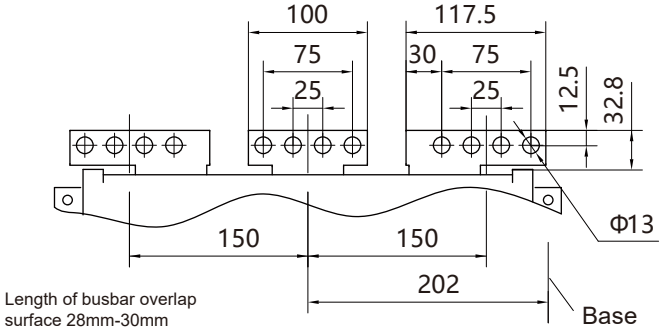
UEW6-4000 (2900A-4000A standard horizontal busbar)

Fixed 3P, 4P

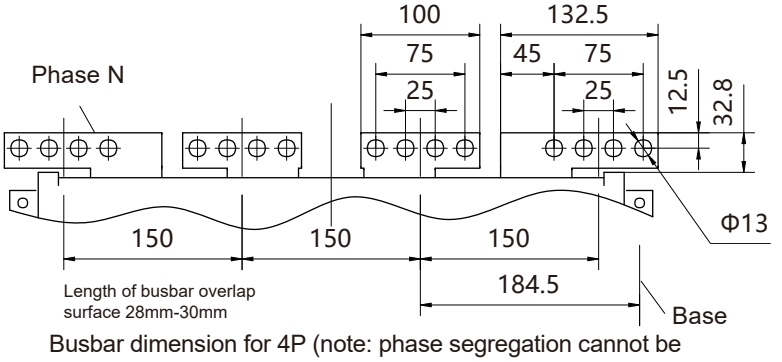








Busbar dimension for 3P

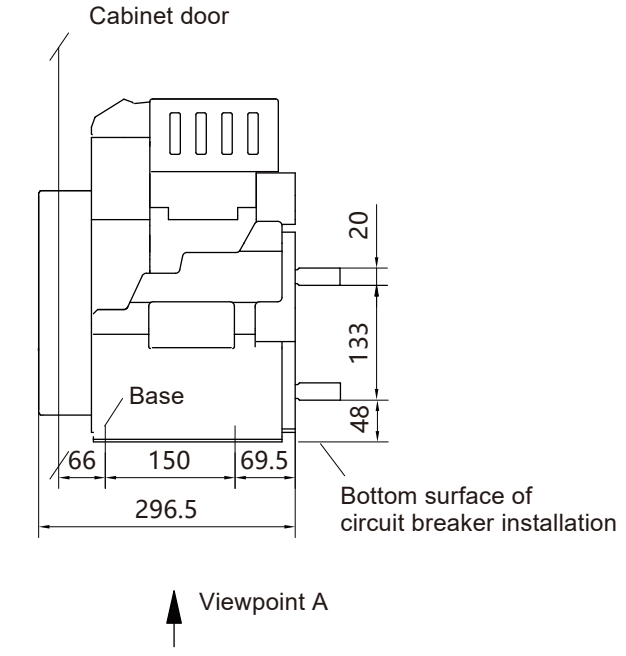


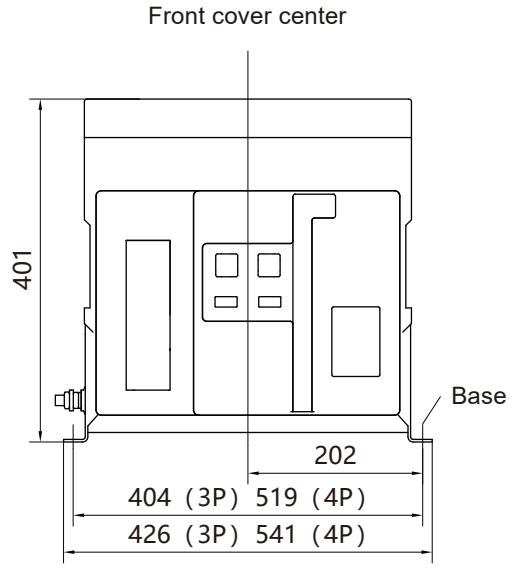
Busbar dimension for 4P (note: phase segregation cannot be installed in this scheme. If it is necessary to install the phase segregation, the extended busbar should be selected)

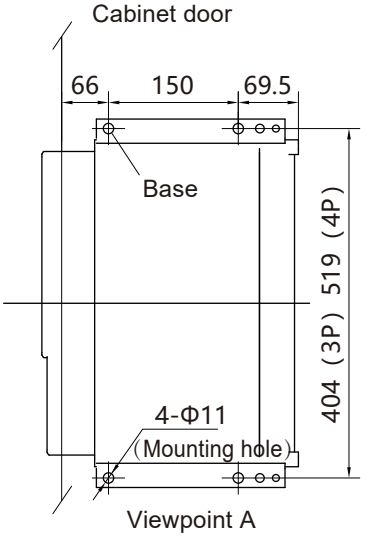
Wiring method and overall dimension

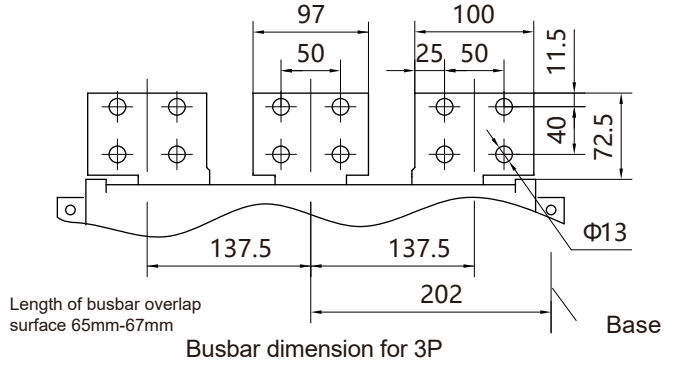
UEW6-4000 (2900A-4000A extended horizontal busbar)

Fixed 3P, 4P

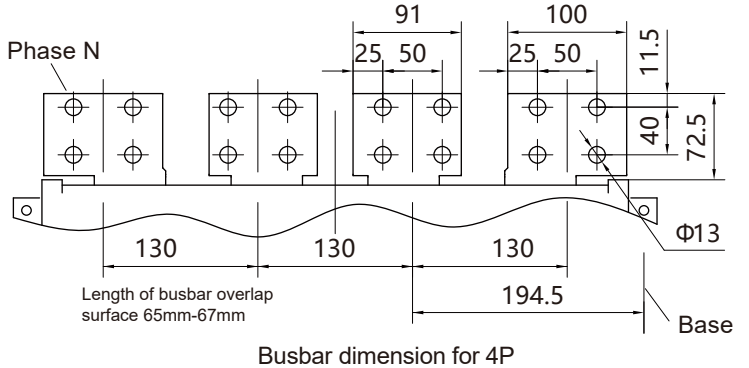








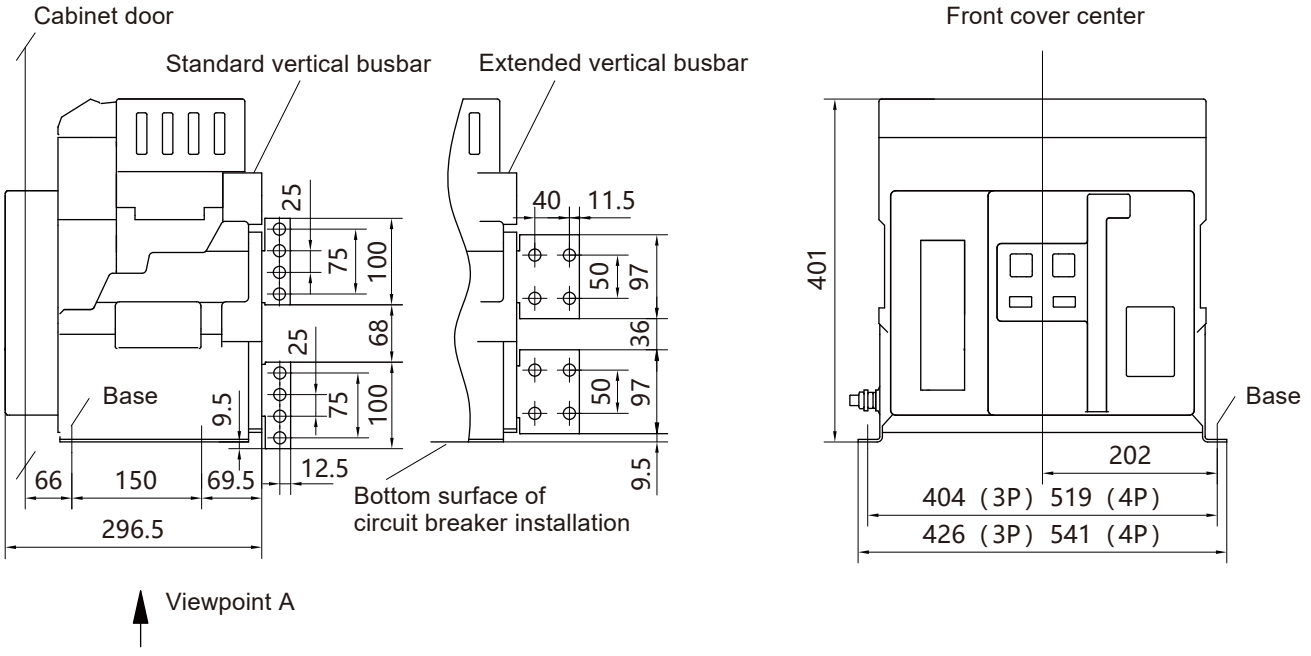
Busbar dimension for 3P

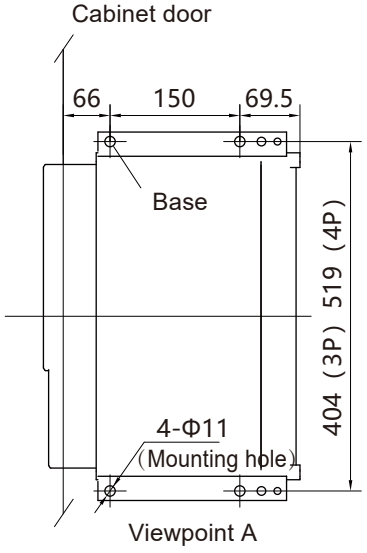


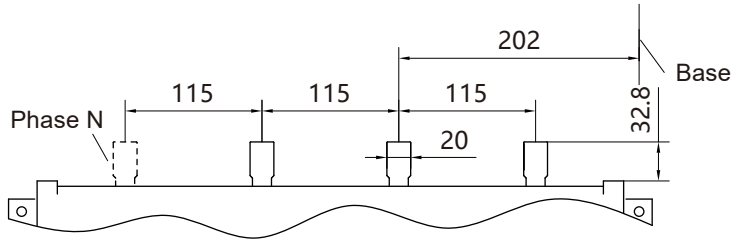
Busbar dimension for 4P

UEW6-4000 (2900A-4000A standard vertical busbar)

Fixed 3P, 4P

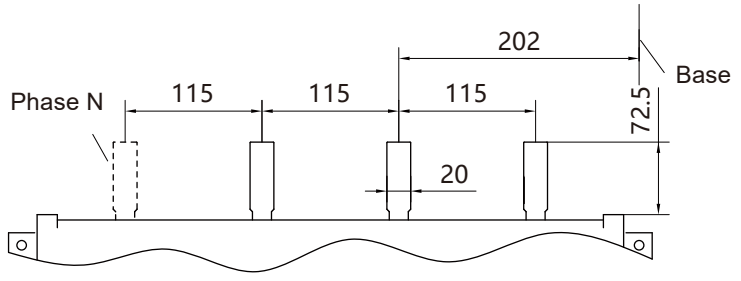






Length of busbar overlap
surface 28mm-30mm

Standard vertical busbar dimension



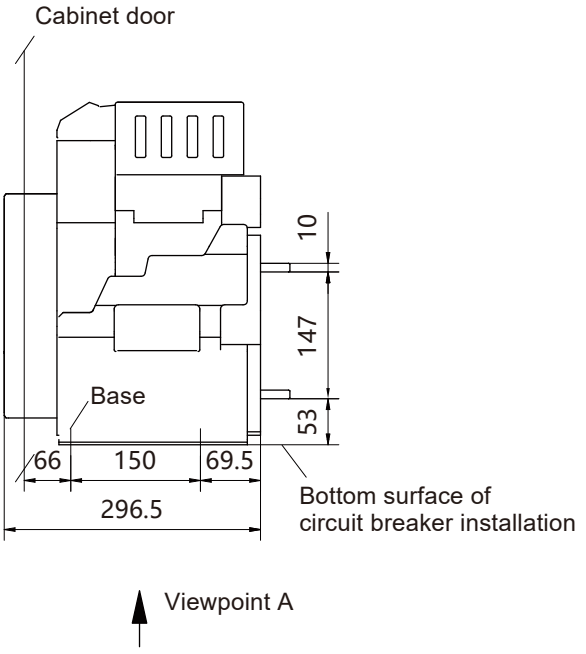
Length of busbar overlap
surface 65mm-67mm

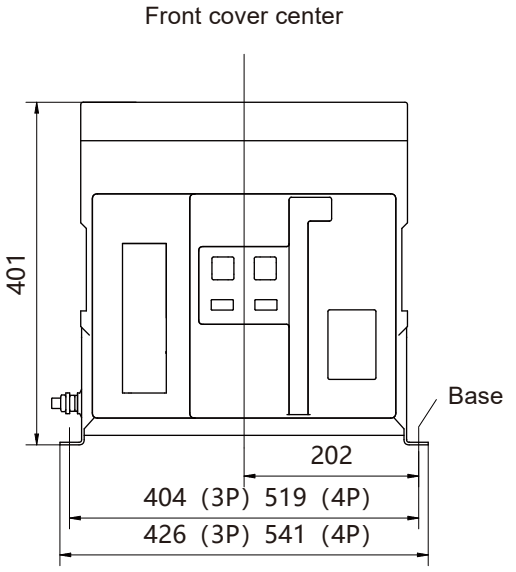
Extended vertical busbar dimension

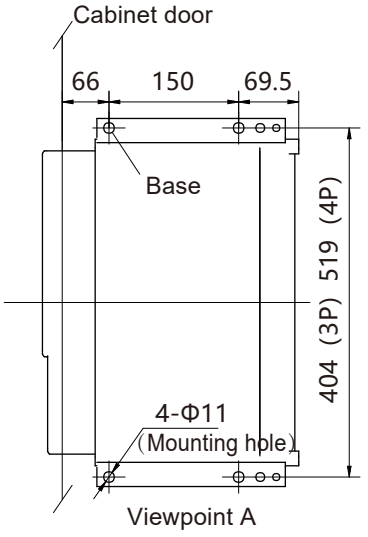
Wiring method and overall dimension

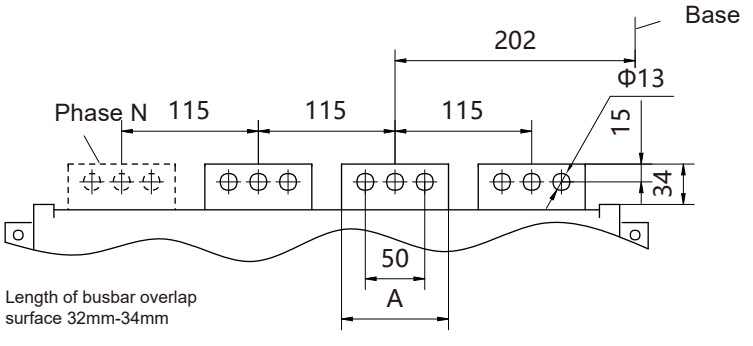
UEW6-4000 (1000A-2500A)

Fixed 3P, 4P







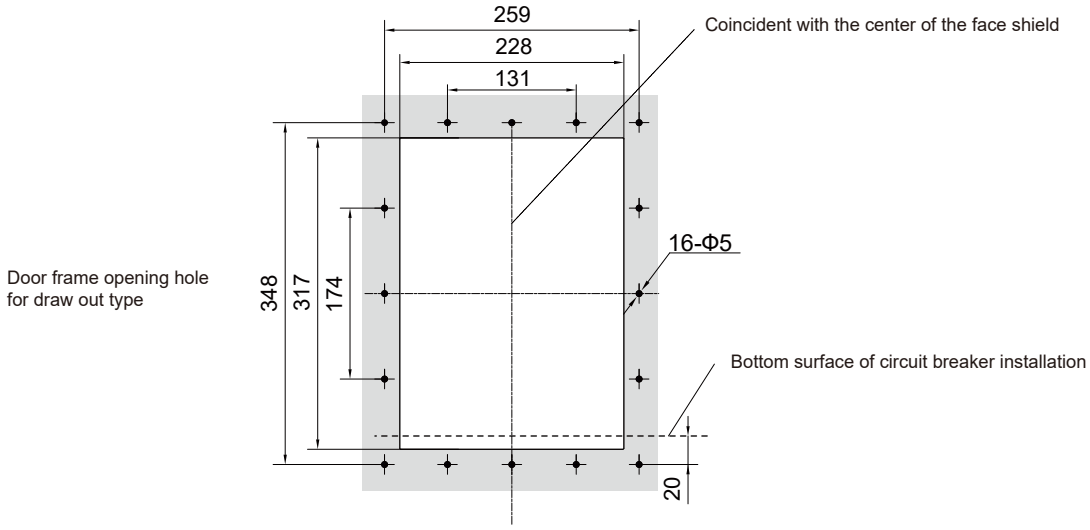


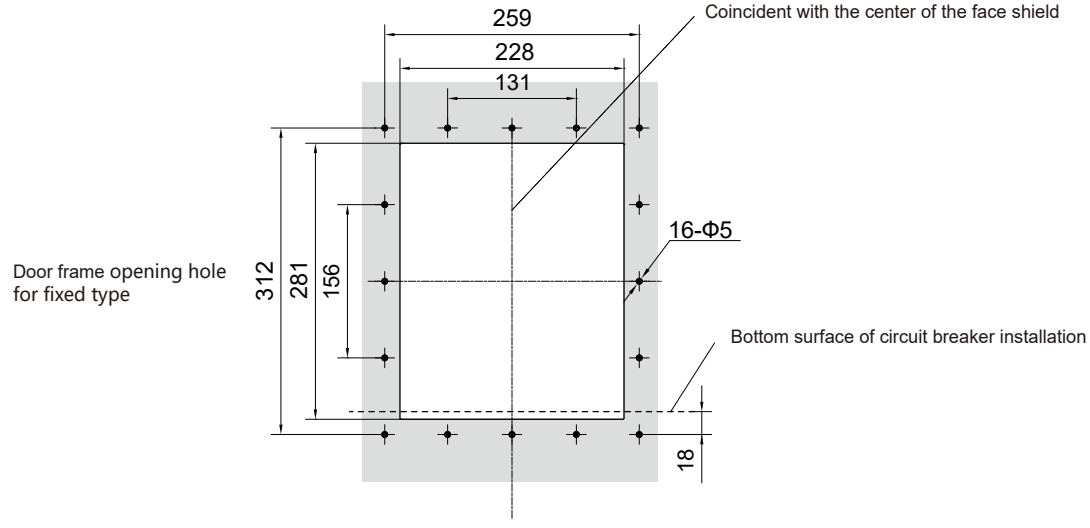
(Note: dimension A, upper busbar 90mm, lower busbar 86mm)

Frame opening dimension

UEW6-1600

UEW6-1600（3P、4P）



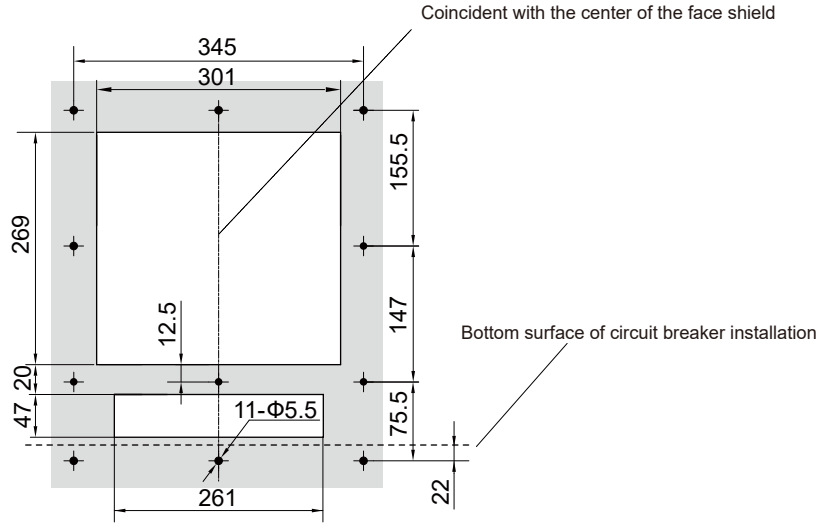


Frame opening dimension

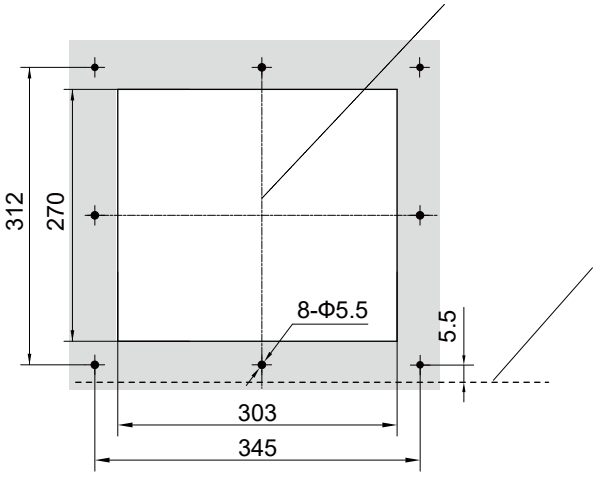
UEW6-2000

UEW6-2000（3P、4P）

Door frame opening hole
for draw out type



Door frame opening hole
for fixed type

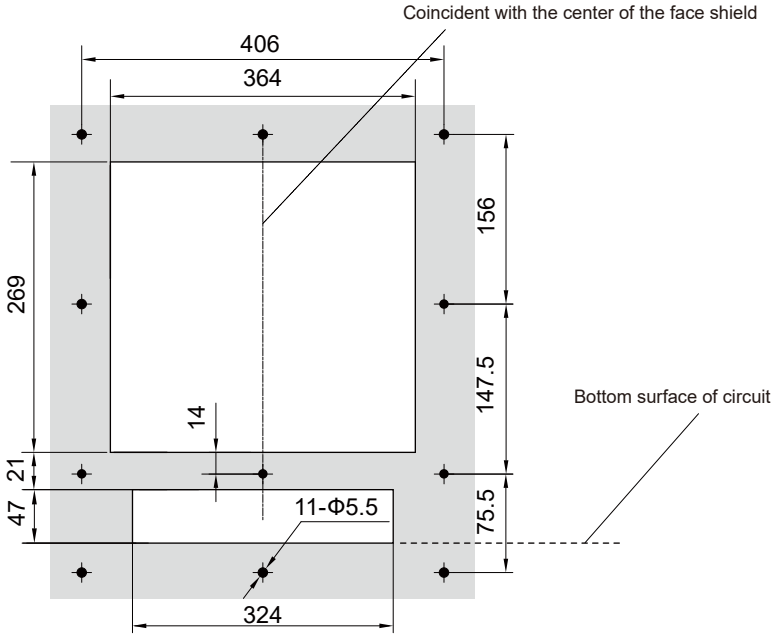


Frame opening dimension

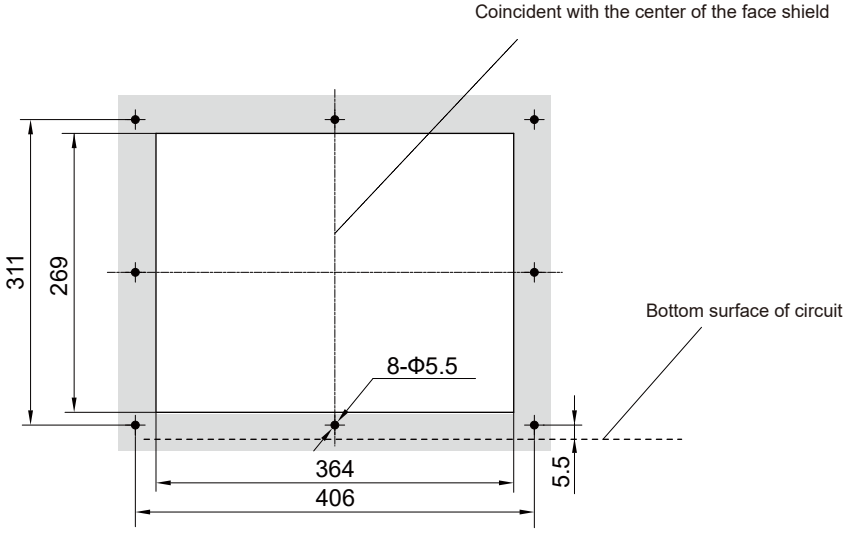
UEW6-3200/4000

UEW6-3200、4000（3P、4P）

Door frame opening hole
for draw out type

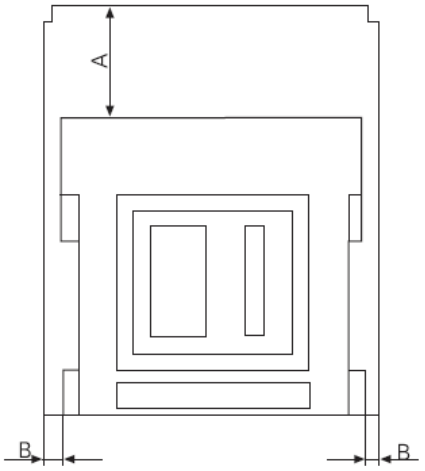


Door frame opening hole
for fixed type

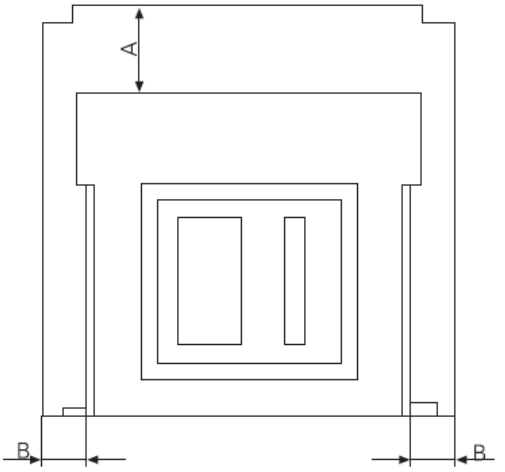


Installation safety distance of circuit breaker

Draw out



Fixed

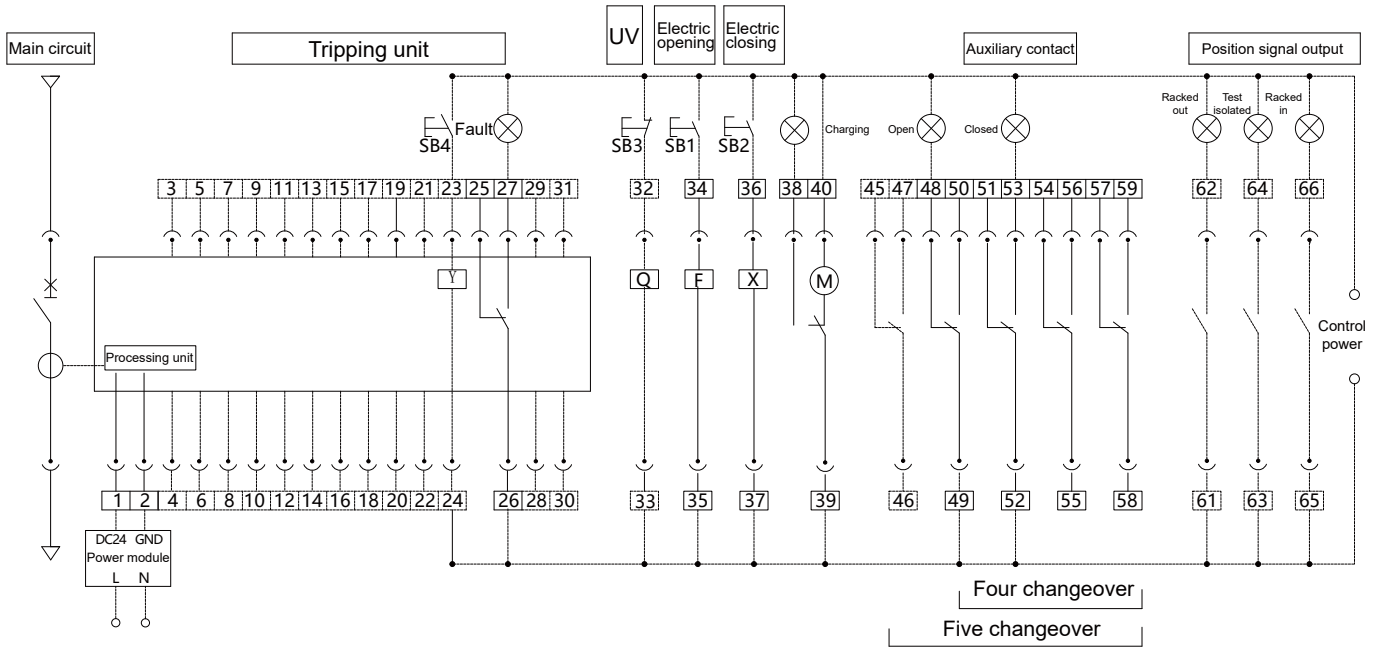


Minimum distance between circuit breaker and switchboard wall or live parts

	To insulation (mm)		To metal (mm)	
	A	B	A	B
Draw out	0	0	60	60
Fixed	0	0	60	60

Wiring diagram

UEW6-1600 Secondary circuit wiring diagram



SB1 Shunt button（Prepared by user）　X Closing coil

Q undervoltage trip device

SB2 Closing coil button（Prepared by user）　M Charging motor

SB3 undervoltage trip device button（Prepared by user）　F Shunt trip

SB4 Reset button（Closing coil）　Y Remote reset electromagnetic

Terminal number description:

1# 2#: Operation power supply of trip（Must be connected to power module）

3# 4# : communication terminal

5# 6# 7#: ZSI signal input, 5# input 1, 16# input 2, 7# common

8# 9# 10#: ZSI signal input, 8# common, 9# output 1, 10# output 2

11#12#, 13#14#, 15#16#, 17#18#: DO1, DO2, DO3, DO4

Signalling contact output

19#～22#: voltage sampling, in sequence A, B, C, N

23# 24#: Remote reset electromagnet

25# 26# 27#: Fault tripping signal output

28# 29#: residual CT

30# 31#: External neutral CT （when 3P switch is not equipped with external neutral CT, the two points are short-circuited）

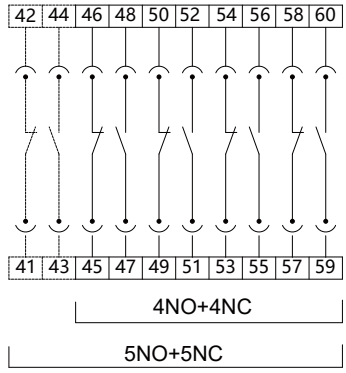
32# 33#: undervoltage trip device

34# 35#: Shunt trip

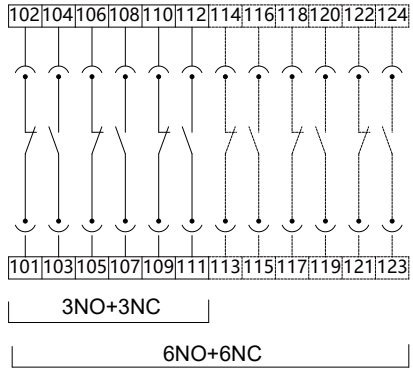
36# 37#: Closing coil

38# 39# 40#: Charing motor

Auxiliary contact (4NO+4NC/5NO+5NC)



Add-on auxiliary contact block (3NO+3NC/6NO+6NC)



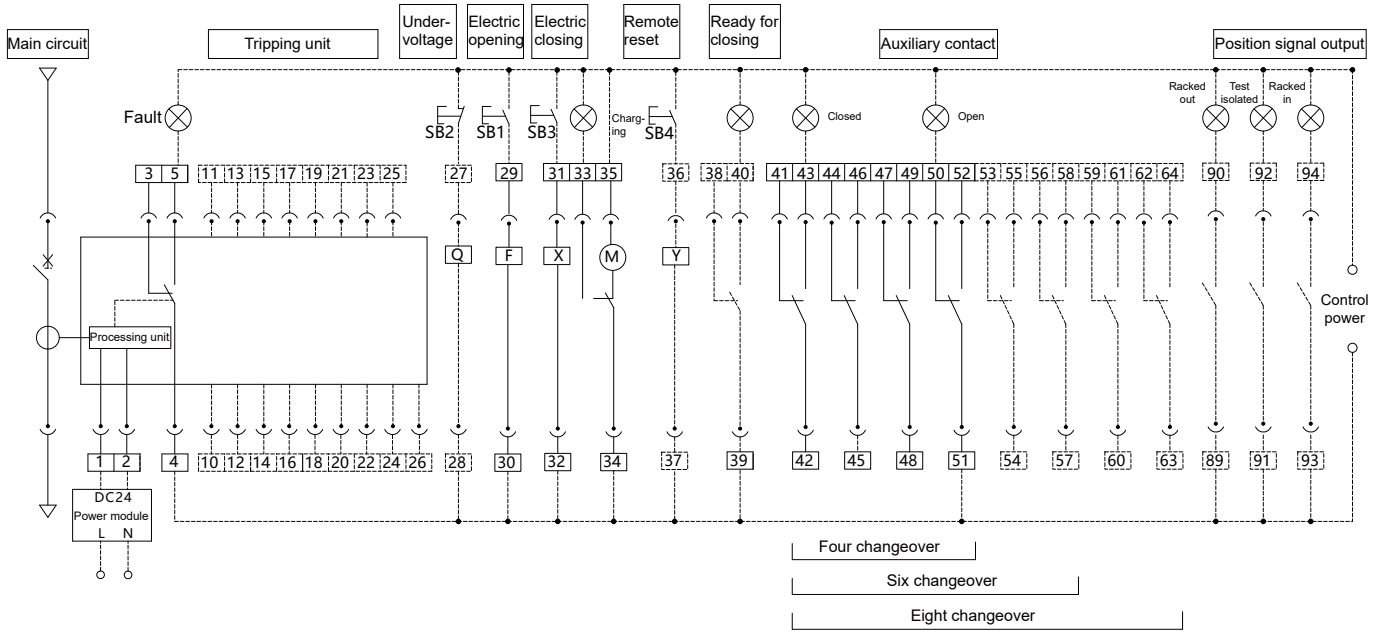
Wiring diagram

UEW6-1600 Secondary circuit wiring diagram

1. The auxiliary contacts have following combination: 4 changeover/5 changeover （45 #~47 # only be used for 5 changeover selected）, 4NO+4NC/5NO+5NC （41 #~44 # only be used for 5NO+5NC selected）.
2. If more auxiliary contacts are needed, add-on auxiliary contact blocks can be selected, with 3NO+3NC and 6NO+6NC （113 #~114 # only be used for 6NO+6NC selected）
3. When the auxiliary contacts are 4NO+4NC or 5NO+5NC （including add on auxiliary block）, and the normally open and normally closed contacts are connected in series with the load, the circuit phase should be the same. For example, one end of the closed indicator is connected to power L1, and the other end is connected to an auxiliary normally open contact, then one end of the open indicator must also be connected to power L1 and the other end connect to an auxiliary normally closed contact. If one end of the closed indicator is connected to power supply L1, the open indicator should not be connected to power supply N, and in this case, the indicators are connected to normally open and normally closed contact in series.

Wiring diagram

UEW6-2000～4000 Secondary circuit wiring diagram



SB1 trip button（prepared by the users）　SB4 reset button（prepared by the users）　F Shunt trip

SB2 undervoltage button （prepared by the users）　M Charing motor

Q undervoltagetrip device or undervoltage trip device delay

SB3 closing button （prepared by the users）　X Closing coil　Y remote reset release

Terminal description：

1# 2#：power supply for trip
(should be connected to power supply block)

3# 4# 5#：fault tripping Signalling output

10# 11#：communication terminal

12#13#, 14#15#, 16#17#, 18#19#：in sequence are
DO1, DO2, DO3, DO4 Signalling contact output

20#：grounding for trip unit protection

21#～24#：voltage sampling, N, A, B, C in sequence

25# 26#：connected to external neutral CT

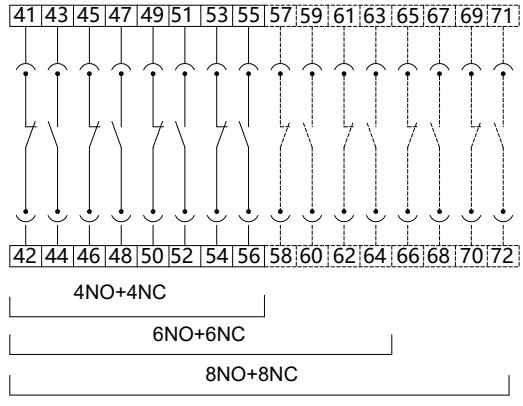
27# 28#：undervoltage trip device

29# 30#：Shunt trip

31# 32#：Closing coil

33# 34# 35#：Charing motor

Auxiliary contact (4NO+4NC/6NO+6NC/8NO+8NC)



Note:

1. Terminal 1 # 2 # can not be directly connected to DC220V/380V and DC110V/220V power supply. It is necessary to convert the voltage to DC24V through the power module.
2. UEW6-2000 product auxiliary points can only provide 6 changeover and 6NO+6NC at most.

Busbar for the breakers

Frame Rating	Rated current	Busbar specification	
		Number	Dimension
UEW6-1600	200-400	1	50×5
	600-800	2	50×5
	1000	3	50×5
	1250-1600	2	50×10
UEW6-2000	630-1000	2	60×5
	1250	3	60×5
	1600	2	60×10
	2000	3	60×10
UEW6-3200 UEW6-4000	1000	1	100×5
	1250	2	100×5
	1600	2	100×5
	2000	3	100×5
	2500	4	100×5
	2900	3	100×10
	3200	4	100×10
	3600	4	100×10
	4000	5	100×10

Note: The specifications of the busbar in the table are based on the standard temperature rise test, which can only be used for reference, and cannot replace the actual requirement or temperature rise test. Due to the diversity of the conditions of circuit breaker applications, different solutions in practice must be tested and verified. In the actual use of experimental verification, it is required that the overall temperature of the circuit breaker outgoing terminal under the maximum rated continuous operating current should not exceed 120 ℃

Screw and torque requirements for product installation

1. Tightening torque of secondary circuit screw is 0.3N. m~0.4N.m

2. Specifications and torque requirements for the installation bolts of circuit breaker and busbar

	Bolt installation of the product		Bolt installation of the product	
Product specification	**Bolt specification**	**Recommended tightening torque**	**Bolt specification**	**Recommended tightening torque**
UEW6-1600 Draw out	M8 Grade 8.8	24 N.m	M10 Grad 8.8	37.5 N.m
UEW6-1600 Fixed	M6 Grade 8.8	5 N.m	M10 Grad 8.8	37.5 N.m
UEW6-2000 Draw out/Fixed	M10 Grad 8.8	37.5 N.m	M12 Grad 8.8	70N.m
UEW6-3200 Draw out/Fixed	M10 Grad 8.8	37.5 N.m	M12 Grad 8.8	70N.m
UEW6-4000 Fixed 3600A~4000A	M10 Grad 8.8	37.5 N.m	M16 Grad 8.8	120N.m
UEW6-4000 Other specifications	M10 Grad 8.8	37.5 N.m	M12 Grad 8.8	70N.m

Ordering instruction

UEW6-1600

Customer			Quantity		Date	
Application type	□ Industrial □ Building □ Grid □ PV □Wind power □ Others				
Model	UEW6-1600			Rated current	
□ Draw out □ Fixed	□3 poles □4 poles	Rated voltage □AC380 (400) V □AC660 (690) V		□ Low temperature type □ High breaking capacity type	
Connection	□ Standard horizontal busbar				

	Model	Main function	Optional function（module）
Trip Unit	□AT2	1.Overload long time delay, short circuit Instantaneous 2.Light column indication of load current 3.MCU operation monitoring 4.Fault indication 5. Fault record function	□ MCR and HSISC protection □ Remote reset module
	□AT4	1.Overload long time delay, short circuit short time delay, Instantaneous 2.Grounding protection □T（differential type） □TN （differential type 3P+N） 3.Light column indication of load current 4.MCU operation monitoring 5. Fault status indication 6. Fault record function	□ MCR and HSISC protection □ Remote reset module □ Signalling contact function
	□AT5 （communication type）	1.Overload long time delay, short circuit short time delay, Instantaneous 2.Grounding protection □T（differential type） □TN （differential type 3P+N） 3. Current unbalance protection 4. Light column indication of load current 5.MCU operation monitoring 6. Fault status indication 7. Fault record function 8. Signalling contact function	□ MCR and HSISC protection □ Remote reset module □ Voltage module □ Relay module
	□BT2	1.Overload long time delay, short circuit short time delay, instantaneous 2.Grounding protection □T（differential type） □TN （differential type 3P+N） 3.Various status and value display 4.Self diagnostic function	□ Current unbalance protection □ Residual current protection (should select residual current CT) □ Voltage module □ Signalling contact function □ Remote reset module □ MCR and HSISC protection
	□BT5 （communication type）	1.Overload long time delay, short circuit short time delay, instantaneous 2.Grounding protection □T（differential type） □TN （differential type 3P+N） 3. Current unbalance protection 4. Various status and value display 5. Self diagnostic function 6.Signalling contact function	□ MCR and HSISC protection □ Residual current protection (should select residual current CT) □ Voltage module □ Remote reset module □ Relay module

Standard accessory	Trip unit power supply	□ AC220/AC230 □ AC380/AC400 □ DC110 □ DC220	
	Shunt Trip	□ AC220/AC230 □ AC380/AC400 □ DC110 □ DC220	
	Closing coil	□ AC220/AC230 □ AC380/AC400 □ DC110 □ DC220	
	Charging motor	□ AC220/AC230 □ AC380/AC400 □ DC110 □ DC220	
	Auxiliary contacts	□ 4 changeover （standard） □ 5 changeover □ 4NO+4NC □ 5NO+5NC	
Optional accessories	□ Undervoltage Trip Device	□ AC220/AC230 □ AC380/AC400	
		□ Undervoltage instantaneous trip □ Undervoltage time delay trip □ 1S □ 3S □ 5S □ No-voltage time delay trip (delay time needs to be selected) Note: When the voltage is lower than 35% Ue, the undervoltage time delay trip will operate instantaneously	
	□ Mechanical interlock	□ Wire rope interlocking（horizontal or vertical installation） □ Lever interlock（vertical installation）	
	□ ATS system (including ATS controller and mechanical interlock)	□ Grid - Grid □ Grid - Generator（only automatic change and automatic recovery mode available）	□ Automatic change and automatic recovery □ Automatic change without automatic recovery
		Note: When the user selects the ATS trip unit, the voltage level of the Shunt trip, Closing coil and other accessories can only select AC220/230V	
	□ External neutral transformer （TN type grounding protection shall be selected for three-pole circuit breaker） □residual current CT		
	□ Three position electrical Indicator □ Extension auxiliary contacts（3NO+3NC）		□ Pushbutton locking □ Extension auxiliary contacts（6NO+6NC）
	□ one key one lock □ two keys one lock □ three locks two keys □ five keys three locks □ five keys three locks （for three-incoming and two-busbar system） **Note: Except for one lock and one key, please remark which circuit breakers share one lock.**		
	□ Door Frame		□ Interphase barrier

UEW6-2000~4000

Customer		Quantity		Date	
Application type	□ Industrial □ Building □ Grid □ PV □Wind power □ Others				
Model	□ UEW6-2000 □ UEW6-3200 □ UEW6-4000			Rated current	

□ Draw out □3 poles □AC380 (400) V □ Low temperature type
□ Fixed □4 poles □AC660 (690) V □ High breaking capacity type

□ Connection □ Standard horizontal busbar
□ Extended horizontal busbar （only for UEW6-2000）
□ Vertical outgoing terminal （only for UEW6-3200/3200A fixed type, UEW6-4000/4000A draw out type, UEW6-4000/3200A fixed type UEW6-4000/3200A fixed type）

	Model	Main function （Standard supply）	Optional function（module）
Trip Unit	□ 2M	1.Overload long time delay, short circuit short time delay, Instantaneous 2.Grounding protection □T（differential type） □TN （differential type 3P+N） 3.Current unbalance protection 4.Various status and value display 5. Self diagnostic function	□ MCR and HSISC protection □ Signalling contact function □ Residual current protection (should select residual current CT) □ Voltage measurement □ Remote reset module
	□ 2H （communication type）	1.Overload long time delay, short circuit short time delay, Instantaneous 2.Grounding protection □T（differential type） □TN （differential type 3P+N） 3. Voltage measurement 4. Current unbalance protection 5.Various status and value display 6. Self diagnostic function 7. Signalling contact function	□ MCR and HSISC protection □ Residual current protection (should select residual current CT) □ Remote reset module □ Relay module
	□ 3M	1.Overload long time delay, short circuit short time delay, Instantaneous 2.Grounding protection □T（differential type） □TN （differential type 3P+N） 3. Current unbalance protection 4.Various status and value display 5. Self diagnostic function	□ MCR and HSISC protection □ Signalling contact function □ Residual current protection (should select residual current CT) □ Remote reset module Select □D □U □UD □P □PD □H □HD
	□ 3H	1.Overload long time delay, short circuit short time delay, Instantaneous 2.Grounding protection □T（differential type） □TN （differential type 3P+N） 3. Current unbalance protection 4.Various status and value display 5. Self diagnostic function 6. Signalling contact function	□ MCR and HSISC protection □ Residual current protection (should select residual current CT) □ Remote reset module Select □D □U □UD □P □PD □H □HD □ Relay module

Standard accessory	Trip unit power supply	□ AC220/AC230 □ AC380/AC400 □ DC110 □ DC220
	Shunt Trip	□ AC220/AC230 □ AC380/AC400 □ DC110 □ DC220
	Closing coil	□ AC220/AC230 □ AC380/AC400 □ DC110 □ DC220
	Charging motor	□ AC220/AC230 □ AC380/AC400 □ DC110 □ DC220
	Auxiliary contact	□ 4 changeover （standard） □ 6 changeover □ 8 changeover （only for UEW6-3200/4000 frame） □4NO+4NC □ 6NO+6NC □8NO+8NC （only for UEW6-3200/4000 frame）
Optional accessories	□ Undervoltage Trip Device	□ AC220/AC230 □ AC380/AC400 □ Undervoltage instantaneous trip □ Undervoltage time delay trip (delay time needs to be selected) □ 1S □ 3S □ 5S □ No-voltage time delay trip Note: When the voltage is lower than 35% Ue, the undervoltage time delay release will operate instantaneously. If delayed tripping is required, please select No-voltage time delay trip .
	□ Mechanical interlock	□ Wire rope interlocking（horizontal or vertical installation） □ Lever interlock（vertical installation）
	□ ATS system (including ATS controller and mechanical interlock)	□ Grid - Grid □ Grid - Generator（only automatic change and automatic recovery mode available） □ Automatic change and automatic recovery □ Automatic change without automatic recovery **Note: When the user selects the ATS trip unit, the voltage level of the Shunt trip,Closing coil and other accessories can only select AC220/AC230V**
	□ External neutral transformer （TN type grounding protection shall be selected for three-pole circuit breaker） □ Residual current CT （should select grounding protection for type W） □ Residual current CT	
	□ Three position electrical Indicator □ Extension auxiliary contacts（3NO+3NC）	□ Pushbutton locking □ Extension auxiliary contacts（6NO+6NC）
	□ one key one lock □ two keys one lock □ three locks two keys □ five keys three locks □ five keys three locks Note: Except for one lock and one key, please remark which circuit breakers share one lock. （for three-incoming and two-busbar system）	
	□ Door Frame □ Interphase barrier	

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